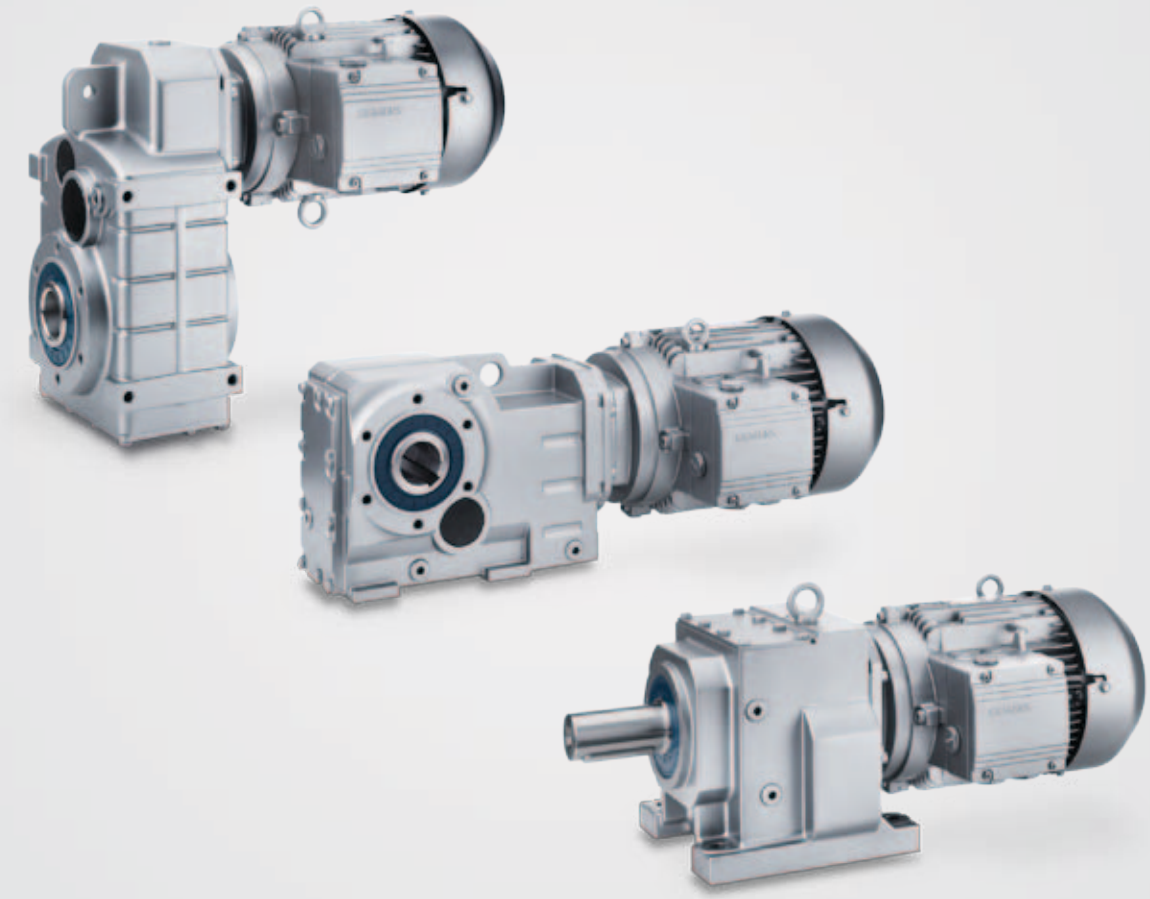
MOTOX Geared Motors

Catalog D 87.1 · 2011



MOTOX

Answers for industry.

SIEMENS

Related catalogs

Low-Voltage Motors D 81.1
IEC Squirrel-Cage Motors

E86060-K5581-A111-A3-7600

FLENDER
Standard Couplings MD 10.1

E86060-K5710-A111-A3-7600

SINAMICS G110, SINAMICS G120 D 11.1
Standard Inverters
SINAMICS G110D, SINAMICS G120D
Distributed Inverters

E86060-K5511-A111-A6-7600

SINAMICS G130 D 11
Drive Converter Chassis Units
SINAMICS G150
Drive Converter Cabinet Units

E86060-K5511-A101-A4-7600

MICROMASTER DA 51.2
MICROMASTER 420/430/440
Inverters
0.12 kW to 250 kW

E86060-K5151-A121-A6-7600

MICROMASTER/COMBIMASTER DA 51.3
MICROMASTER 411 Inverter
COMBIMASTER 411
Distributed Drive Solutions

E86060-K5251-A131-A2-7600

Industrial Communication IK PI
Part 5:
SIMATIC ET 200 Distributed I/O
ET 200S FC Frequency converter

E86060-K6710-A101-B6-7600

AC NEMA & IEC Motors D81.2
Further details available on the Internet at: U.S./Canada

Only PDF
http://www.sea.siemens.com/motors

MOTOX Konfigurator MOTOX
MOTOX Configurator
Information / Configuration
(CD)

E86060-D5203-A100-A5-X100

Additional documentation

You will find all information material, such as brochures, catalogs, manuals and operating instructions for standard drive systems up-to-date on the Internet at the address:

http://www.siemens.com/gearedmotors

You can order the listed documentation or download it in common file formats (PDF, ZIP).

MOTOX
Geared Motors

Catalog D 87.1 · 2011

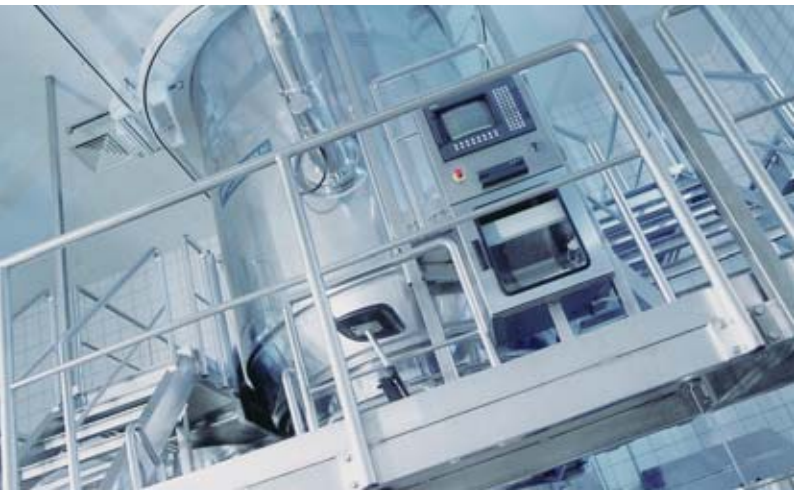
The products and systems described in this catalog are manufactured/distributed under application of a certified quality management system in accordance with DIN EN ISO 9001 (Certified Registration No. DE-409908 QM08). The certificate is recognized by all IQNet countries.

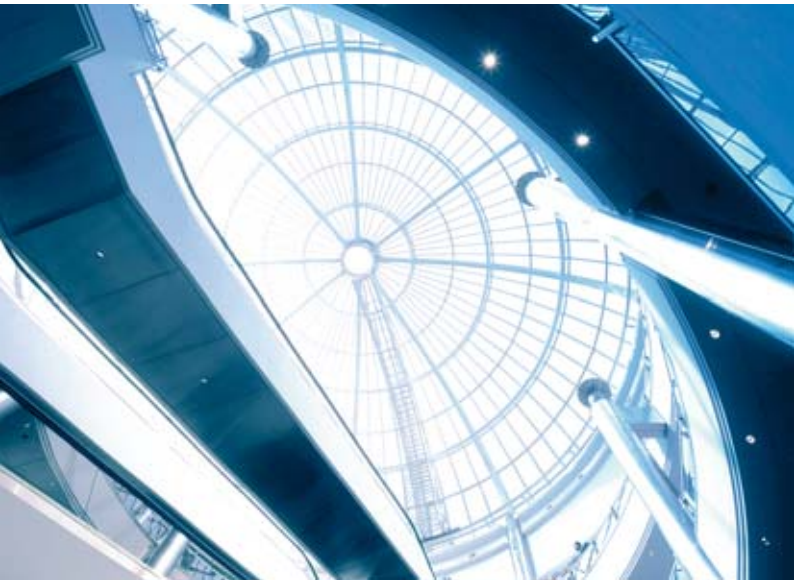
Supersedes:
Catalogs D 87.1 · 2008 and 2010

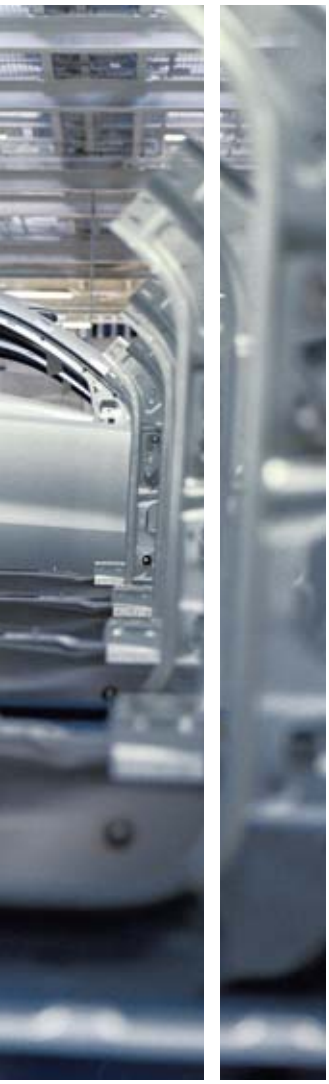
The products contained in this catalog can also be found in the electronic catalog MOTOX Configurator 7.4.
Order No.:
E86060-D5203-A100-A5-X100 (CD-ROM)

Please contact your local Siemens branch

Introduction 1
Helical geared motors 2
Parallel shaft geared motors 3
Bevel helical geared motors 4
Helical worm geared motors 5
Worm geared motors 6
Input units 7
Motors 8
Appendix 9







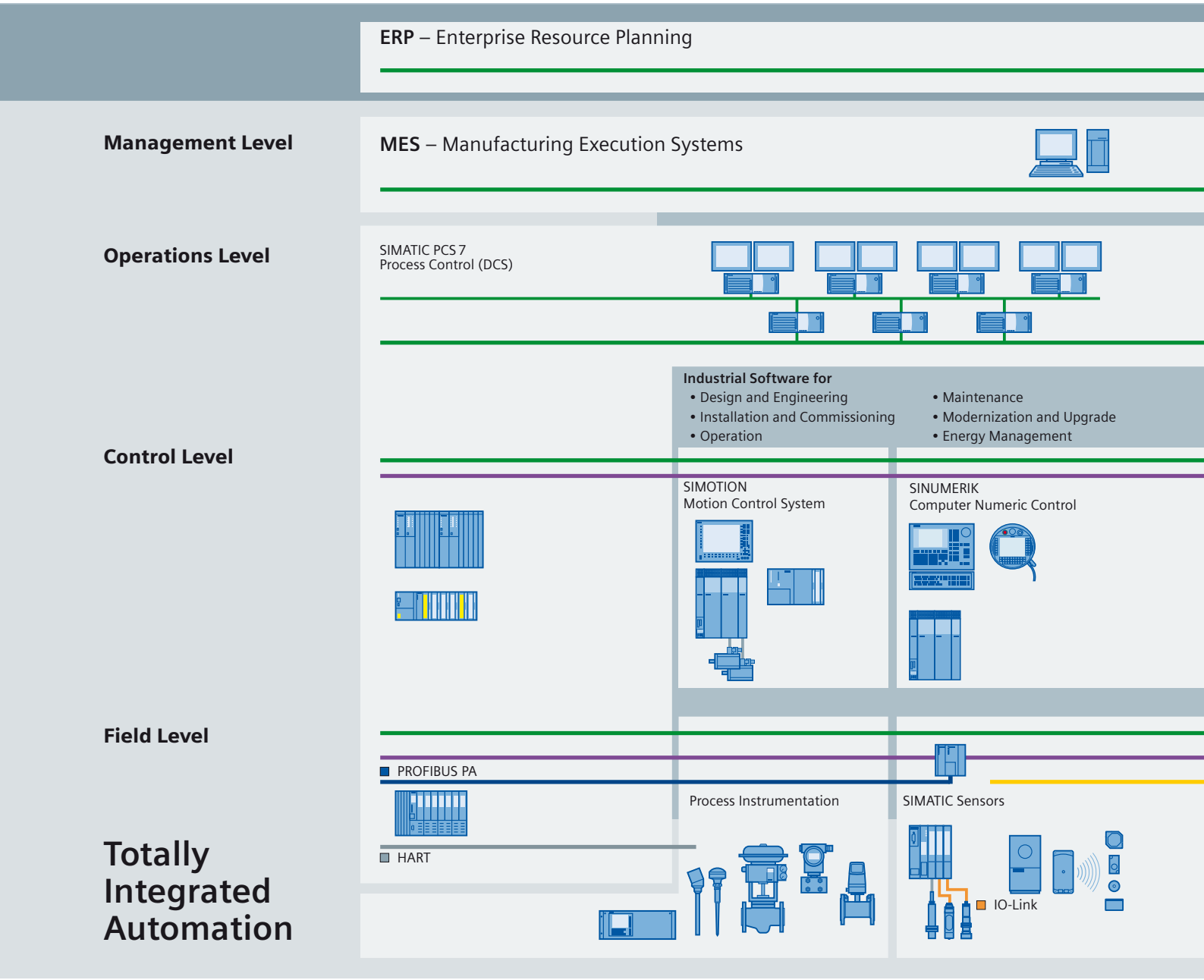
Answers for industry.

Siemens Industry answers the challenges in the manufacturing and the process industry as well as in the building automation business. Our drive and automation solutions based on Totally Integrated Automation (TIA) and Totally Integrated Power (TIP) are employed in all kinds of industry. In the manufacturing and the process industry. In industrial as well as in functional buildings.

Siemens offers automation, drive, and low-voltage switching technology as well as industrial software from standard products up to entire industry solutions. The industry software enables our industry customers to optimize the entire value chain – from product design and development through manufacture and sales up to after-sales service. Our electrical and mechanical components offer integrated technologies for the entire drive train – from couplings to gear units, from motors to control and drive solutions for all engineering industries. Our technology platform TIP offers robust solutions for power distribution.

The high quality of our products sets industry-wide benchmarks. High environmental aims are part of our eco-management, and we implement these aims consistently. Right from product design, possible effects on the environment are examined. Hence many of our products and systems are RoHS compliant (Restriction of Hazardous Substances). As a matter of course, our production sites are certified according to DIN EN ISO 14001, but to us, environmental protection also means most efficient utilization of valuable resources. The best example are our energy-efficient drives with energy savings up to 60 %.

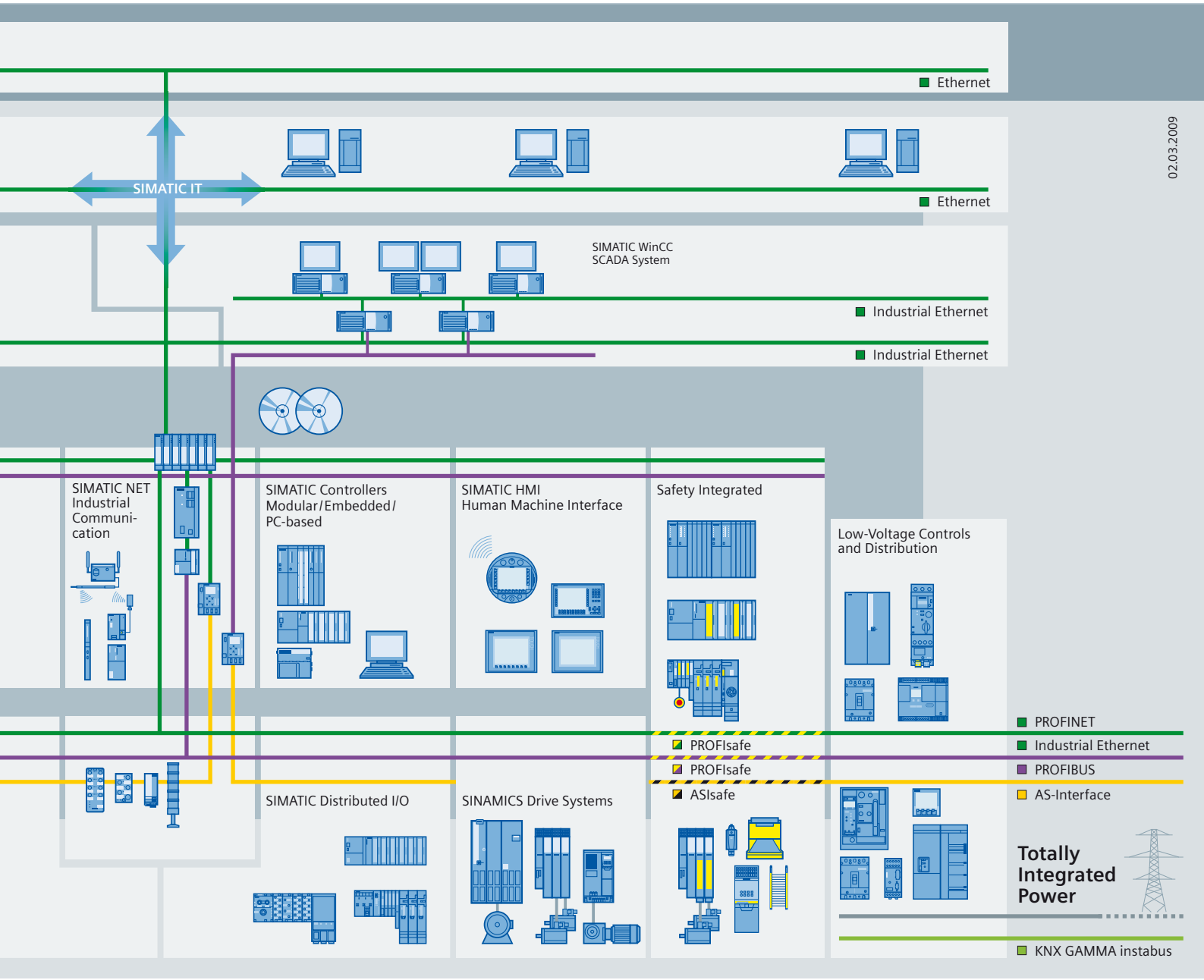
Check out the opportunities our automation and drive solutions provide. And discover how you can sustainably enhance your competitive edge with us.



Setting standards in productivity and competitiveness.

Totally Integrated Automation.

Thanks to Totally Integrated Automation, Siemens is the only provider of an integrated basis for implementation of customized automation solutions – in all industries from inbound to outbound.



TIA is characterized by its unique continuity.

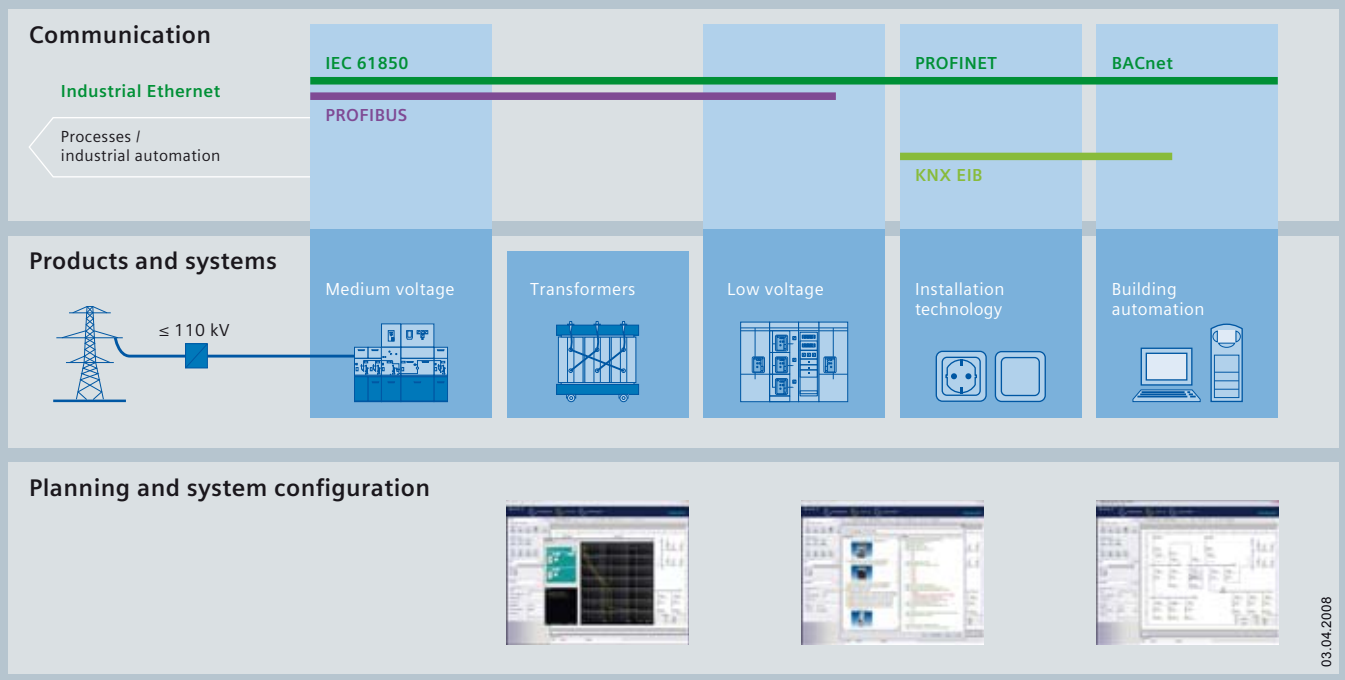
It provides maximum transparency at all levels with reduced interfacing requirements – covering the field level, production control level, up to the corporate management level. With TIA you also profit throughout the complete life cycle of your plant – starting with the initial planning steps through operation up to modernization, where we offer a high measure of investment security resulting from continuity in the further development of our products and from reducing the number of interfaces to a minimum.

The unique continuity is already a defined characteristic at the development stage of our products and systems.

The result: maximum interoperability – covering the controller, HMI, drives, up to the process control system. This reduces the complexity of the automation solution in your plant. You will experience this, for example, in the engineering phase of the automation solution in the form of reduced time requirements and cost, or during operation using the continuous diagnostics facilities of Totally Integrated Automation for increasing the availability of your plant.

Integrated power distribution from one source.

Totally Integrated Power.



Electrical power distribution in buildings requires integrated solutions. Our response: Totally Integrated Power. This means innovative and integrated, interface-optimized products and systems which have been optimally coordinated and complemented with communication and software modules that link power distribution to building automation or industrial automation. Totally Integrated Power accompanies power distribution projects from one end to the other. From A to Z.
From the planning to the building's use: Totally Integrated Power offers significant advantages in every project stage and to everyone involved in the project – the investors, electrical planning engineers, electricians, users and building facility managers.

Our portfolio comprises everything from engineering tools to the matching hardware: from switchgear and distribution systems for medium voltage to transformers, from switching and circuit-protection devices to low-voltage switchgear and busbar trunking systems, as far as to the small distribution board and the wall outlet. It goes without saying that both the medium-voltage switchgear, which requires no maintenance, and the low-voltage switchgear are type-tested, and their busbar connections, too. Comprehensive protection systems ensure the safety of man and machine at any time.

Much more than a catalog. The Industry Mall.

You have a catalog in your hands that will serve you well for selecting and ordering your products. But have you heard of the electronic online catalog (the Industry Mall) and all its benefits? Take a look around it sometime:

www.siemens.com/industrymall

Selecting

Find your products in the structure tree, in the new "Bread-crumb" navigation or with the integral search machine with expert functions. Electronic configurators are also integrated into the Mall. Enter the various characteristic values and the appropriate product will be displayed with the relevant order numbers. You can save configurations, load them and reset them to their initial status.

Ordering

You can load the products that you have selected in this way into the shopping basket at a click of the mouse. You can create your own templates and you will be informed about the availability of the products in your shopping cart. You can load the completed parts lists directly into Excel or Word.

Delivery status

When you have sent the order, you will receive a short e-mail confirmation which you can print out or save. With a click on "Carrier", you will be directly connected to the website of the carrier where you can easily track the delivery status.

Added value due to additional information

So you have found your product and want more information about it? In just a few clicks of the mouse, you will arrive at the image data base, manuals and operating instructions. Create your own user documentation with My Documentation Manager.
Also available are FAQs, software downloads, certificates and technical data sheets as well as our training programs. In the image database you will find, depending on the product, 2D/3Dgraphics, dimension drawings and exploded drawings, characteristic curves or circuit diagrams which you can download.

Convinced? We look forward to your visit!

Introduction

Guide to selecting and ordering geared motors

1/2 Description of the range of geared motors
1/4 Guide to drive selection
1/5 Order number code
1/7 Determining the gearbox type in accordance with the power rating and output speed
1/10 Determining the gearbox type in accordance with the max. torque, transmission ratio and size
1/13 Overview of "special versions"

Configuring guide

1/18 Determining the drive data
1/19 Efficiency of the geared motor
1/20 Determining the required service factor
1/21 Required service factor
1/22 Maximum motor speed
1/22 Ambient temperature
1/22 Required output torque
1/22 Selection of the gearbox
1/23 Reduced-backlash gearbox version
1/23 Permissible radial force
1/25 Determining the operating mode
1/28 Coolant temperature and site altitude
1/28 Selecting the brake
1/29 Selecting the braking torque

Special versions

1/30 Motors for inverter-fed operation
1/31 Determining the permissible number of startings
1/32 Checking the input torque for mounted units

General technical data

1/33 Overview of drive sizing data
1/34 Important drive technology variables
1/36 Overview
1/36 Designs in accordance with standards and specifications
1/41 Explosion protection as per ATEX
1/42 Standards
1/42 Fits
1/43 Degrees of protection
1/43 Direction of rotation of geared motors
1/44 Power ratings and torques
1/44 Speeds
1/44 Noise
1/44 Weight of geared motors
1/44 Three-phase AC motors
1/44 Brakes
1/45 Lubricants
1/46 Long-term preservation
1/47 Surface treatment
1/48 Increased protection against humidity and tropical climate
1/48 Increased protection against acid and alkali
1/49 Rating plate
1/49 Documentation

Guide to selecting and ordering geared motors

1

Description of the range of geared motors

MOTOX geared motors are available in an almost infinite number of combinations for adaptation to a wide range of drive scenarios.
All geared motors can be supplied with a mounted brake.
All the usual additional components and variants are also offered.

Made-to-measure solutions for all kinds of drive technology tasks are achieved with different gearbox types (helical, parallel shaft, bevel helical, helical worm, and worm).

Electronic catalog

MOTOX Configurator (CD)

The MOTOX Configurator makes it easy to select the right geared motor, providing you with the correct geared motor order numbers, prices and relevant documentation.

Data sheets and dimension drawings can be created for the different products.

Product range

The printed catalog contains the basic selection of standard MOTOX geared motors. The MOTOX Configurator, however, contains practically all combinations of MOTOX geared motors which are theoretically possible. It also contains additional sector-specific applications, such as:

- Monorail conveyor drives
- Extruder geared motors
- Cooling tower drives
- Mixer and agitator geared motors

You can also use the electronic catalog to configure explosion-proof ATEX geared motors for zones 1, 2, 21, and 22.

The MOTOX Configurator can also be accessed online at: www.siemens.com/gearedmotors.

Description of the range of geared motors (continued)

Helical geared motor D/Z

Helical geared motors and gearboxes

Torque	20 000 Nm
Power rating (50 Hz)	200 kW
Output speed (50 Hz)	0.05 ... 1 085 / min

Parallel shaft geared motor FD/FZ

Parallel shaft geared motors and gearboxes

Torque	34 000 Nm
Power rating (50 Hz)	200 kW
Output speed (50 Hz)	0.05 ... 738 / min

Bevel helical geared motor K

Bevel helical geared motors and gearboxes

Torque	20 000 Nm
Power rating (50 Hz)	200 kW
Output speed (50 Hz)	0.05 ... 403 / min

Helical worm geared motor C

Helical worm geared motors and gearboxes

Torque	1 590 Nm
Power rating (50 Hz)	9.2 kW
Output speed (50 Hz)	0.21 ... 149 / min

Worm geared motor S

Worm geared motors and gearboxes

Torque	116 Nm
Power rating (50 Hz)	1.1 kW
Output speed (50 Hz)	8.5 ... 566 / min

1

Guide to selecting and ordering geared motors

Guide to drive selection

This "guide to drive selection" takes you to the geared motor you require in easy-to-follow steps.

1st step	**Technical requirements of the geared motor -> see the "Configuring guide" section of this chapter**
Determine the required product profile, the following are required:	Gearbox type
	Power rating
	Output speed
	Service factor
	Radial force
	Ambient temperature
2nd step	**Preselection of the geared motor -> see subsequent pages**
Determine the range of possible geared motors	Size of the gearbox and the motor in accordance with the power rating and output speed
3rd step	**Detailed selection of the geared motor -> see the individual chapters for the different gearbox types**
Determine the basic order number	Define the order number in accordance with the power / torque and output speed
	Add more details to the order number in accordance with the mounting type, shaft, and mounting position of the geared motor
	Define the order code for the mounting type / mounting position
4th step	**Selection of motor options -> see chapter "Technical explanations and motor options"**
Complete the order number	Add more details to the order number in accordance with the voltage and frequency
	Define additional components and the associated order codes

Order number code

The order number consists of a combination of digits and letters and is divided into three blocks linked with hyphens for a better overview,

e.g.:

2KJ1503-1CE13-1AE2-Z

+D06+M55

The first block (positions 1 to 7) identifies the gearbox type, the second (positions 8 to 12) codes the output shaft and the motor type and additional design characteristics are coded in the third block (positions 13 to 16).

Ordering data:

- Complete order number, with a **-Z** suffix, and order code(s) or plain text.
- If a quotation is available, please specify the quotation number in addition to the order number.
- When ordering a complete geared motor as a spare part, please specify the works serial number for the previously supplied geared motor as well as the order number.

Structure of the order number		Position	1	2	3	4	5	6	7	–	8	9	10	11	12	–	13	14	15	16	
MOTOX geared motors																					
1st to 5th positions: Digit, letter, letter, digit, digit	Helical gearbox E, 1-stage		**2**	**K**	**J**	**1**	**0**														
	Helical gearbox Z, 2-stage		**2**	**K**	**J**	**1**	**1**														
	Helical gearbox D, 3-stage		**2**	**K**	**J**	**1**	**2**														
	Parallel shaft gearbox FZ, 2-stage		**2**	**K**	**J**	**1**	**3**														
	Parallel shaft gearbox FD, 3-stage		**2**	**K**	**J**	**1**	**4**														
	Bevel helical gearboxes B and K		**2**	**K**	**J**	**1**	**5**														
	Helical worm gearbox C		**2**	**K**	**J**	**1**	**6**														
	Worm gearbox S		**2**	**K**	**J**	**1**	**7**														
6th and 7th positions: Digit, digit	Gearbox size																				
8th position: Digit	Output shaft																				
9th to 10th positions: Letter Letter	Motor size																				
11th position: Digit	Without motor													**0**							
	Standard motor													**1**							
12th position: Digit	Motor generation														**3**						
13th position: Digit	Frequency, voltage																				
14th position: Letter	Foot-mounted design																	**A**			
	Foot / flange-mounted design																	**B**			
	Torque arm																	**D**			
	Extruder flange																	**E**			
	Flange-mounted design (A-type)																	**F**			
	Housing flange (C-type)																	**H**			
	Mixer flange																	**M**			
	Agitator flange																	**R**			
15th to 16th positions: Letter, digit	Transmission ratio																				
	Special order versions: • Coded: order code also required • Non-coded: plain text also required																			–	**Z**

Guide to selecting and ordering geared motors

1

Order number code (continued)

Ordering example:

A bevel helical geared motor is required:

- Gearbox type / gearbox size K48
- Motor 0.37 kW, 4-pole with 50 Hz line frequency
- Output speed 13, transmission ratio i = 107.47
- Solid shaft V 30 x 60
- Mounting type / mounting position B3-00-A
- Terminal box position 1A

This results in the order number and order codes below:

Selection criteria	Requirements	Structure of the order number
Gearbox type	Bevel helical gearbox K, size 48	**2KJ1503**-■■■■■- ■■■■
Output shaft	Solid shaft V 30 x 60	2KJ1503-**1**■■■■- ■■■■
Motor size	Size 71; 0.37 kW; 4-pole	2KJ1503-1**CE**■■- ■■■■
Motor type	Standard motor	2KJ1503-1CE**1**■- ■■■■
Motor generation	LA / LG	2KJ1503-1CE1**3**- ■■■■
Frequency, line voltage	50 Hz, 220 … 240 / 380 … 420 V, D/Y (S100)	2KJ1503-1CE13-**1**■■■
Mounting type	Foot-mounted design	2KJ1503-1CE13-1**A**■■
Transmission ratio	i = 107.47	2KJ1503-1CE13-1A**E2**
Mounting position	B3-00-A	2KJ1503-1CE13-1AE2**-Z+D06**
Terminal box position	1A	2KJ1503-1CE13-1AE2-Z+D06**+M55**

Determining the gearbox type in accordance with the power rating and output speed

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Torque T_2 Nm	Gearbox ratio i_{tot}	For further information, see page
	Helical geared motors E, D, and Z			
0.09	3.00 … 6.7	285 … 128.0	208.77 … 133.57	2/8
0.12	0.05 … 313.0	15 788 … 3.7	28 260.00 … 4.47	2/8 … 2/11
0.18	0.06 … 383.0	23 784 … 4.5	24 996.00 … 3.58	2/11 … 2/15
0.25	0.08 … 405.0	23 171 … 5.9	16 361.00 … 3.33	2/15 … 2/19
0.37	0.12 … 383.0	24 391 … 9.2	11 066.00 … 3.58	2/19 … 2/22
0.55	0.20 … 414.0	23 625 … 13.0	7 008.00 … 3.31	2/22 … 2/26
0.75	0.27 … 560.0	23 327 … 13.0	5 107.00 … 2.50	2/26 … 2/30
1.1	0.40 … 906.0	23 626 … 12.0	3 580.00 … 1.59	2/30 … 2/34
1.5	0.54 … 906.0	24 171 … 16.0	2 666.00 … 1.59	2/34 … 2/39
2.2	0.85 … 944.0	22 590 … 22.0	1 682.00 … 1.52	2/39 … 2/44
3	1.10 … 1 018.0	23 069 … 28.0	1 255.00 … 1.41	2/44 … 2/49
4	1.60 … 1 021.0	21 939 … 37.0	896.00 … 1.41	2/49 … 2/54
5.5	1.90 … 1 025.0	25 081 … 51.0	746.00 … 1.41	2/54 … 2/59
7.5	2.70 … 1 032.0	24 896 … 69.0	546.00 … 1.41	2/59 … 2/59
9.2	5.70 … 1 032.0	15 282 … 85.0	253.08 … 1.41	2/64 … 2/67
11	4.40 … 1 035.0	24 093 … 101.0	243.82 … 1.41	2/67 … 2/70
15	6.00 … 1 074.0	23 923 … 133.0	243.82 … 1.36	2/70 … 2/74
18.5	7.10 … 1 081.0	24 799 … 163.0	206.34 … 1.36	2/74 … 2/77
22	9.60 … 1 077.0	21 959 … 195.0	153.12 … 1.36	2/77 … 2/80
30	12.10 … 1 085.0	23 633 … 264.0	121.67 … 1.36	2/80 … 2/83
37	14.60 … 1 081.0	24 268 … 327.0	100.96 … 1.36	2/83 … 2/85
45	18.30 … 1 085.0	23 533 … 396.0	80.77 … 1.36	2/85 … 2/88
55	21.00 … 902.0	24 634 … 582.0	69.41 … 1.64	2/88 … 2/89
75	35.00 … 512.0	20 716 … 1 399.0	42.95 … 2.90	2/89 … 2/91
90	35.00 … 512.0	24 859 … 1 678.0	42.95 … 2.90	2/91 … 2/92
110	88.00 … 180.0	11 887 … 5 852.0	16.86 … 8.30	2/92
132	88.00 … 179.0	14 312 … 7 046.0	16.86 … 8.30	2/92
160	88.00 … 179.0	17 348 … 8 540.0	16.86 … 8.30	2/92
200	88.00 … 180.0	21 612 … 10 640.0	16.86 … 8.30	2/92
	Parallel shaft geared motors FZ and FD			
0.09	2.30 … 4.7	367 … 184.0	280.41 … 191.34	3/6
0.12	0.05 … 111	16 202 … 10.0	29 000.00 … 12.62	3/6 … 3/9
0.18	0.05 … 210	24 072 … 8.2	25 299.00 … 6.53	3/9 … 3/12
0.25	0.09 … 355	22 462 … 6.7	15 519.00 … 3.80	3/12 … 3/15
0.37	0.13 … 73	23 944 … 49.0	10 863.00 … 18.86	3/15 … 3/15
0.55	0.19 … 170	24 147 … 31.0	7 163.00 … 8.06	3/18 … 3/20
0.75	0.28 … 368	22 934 … 19.0	5 021.00 … 3.80	3/20 … 3/23
1.1	0.38 … 379	24 675 … 28.0	3 739.00 … 3.80	3/23 … 3/26
1.5	0.61 … 379	21 388 … 38.0	2 359.00 … 3.80	3/26 … 3/26
2.2	0.82 … 372	23 638 … 56.0	1 760.00 … 4.33	3/30 … 3/33
3	1.2 … 639	22 720 … 45.0	1 236.00 … 3.80	3/33 … 3/33
4	1.4 … 671	24 905 … 57.0	1 030.00 … 4.33	3/37 … 3/39
5.5	2.4 … 364	22 097 … 144.0	403.86 … 3.97	3/39 … 3/42
7.5	3.0 … 738	24 243 … 97.0	403.86 … 3.97	3/42 … 3/45
9.2	4.9 … 305	18 067 … 288.0	299.20 … 4.77	3/45 … 3/47
11	3.0 … 306	35 066 … 343.0	299.20 … 4.77	3/47 … 3/49
15	3.5 … 306	40 468 … 468	248.85 … 4.77	3/49 … 3/51
18.5	4.5 … 259	39 601 … 683	242.01 … 5.68	3/51 … 3/53
22	5.5 … 386	37 909 … 545	242.01 … 3.80	3/53 … 3/55
30	6.7 … 388	42 449 … 738	218.54 … 3.80	3/55 … 3/56

Determining the gearbox type in accordance with the power rating and output speed (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm			Torque T_2 Nm			Gearbox ratio i_{tot}			For further information, see page
	Parallel shaft geared motors FZ and FD									
37	8.4	…	387	42 287	…	913	175.92	…	3.80	3/56 … 3/58
45	11.0	…	388	39 088	…	1 106	134.16	…	3.80	3/58 … 3/59
55	14.8	…	280	35 564	…	1 874	100.21	…	5.28	3/59 … 3/59
75	18.5	…	281	38 668	…	2 547	80.17	…	5.28	3/61
90	22.0	…	281	39 878	…	3 056	68.90	…	5.28	3/61 … 3/62
110	28.0	…	179	37 832	…	5 880	53.66	…	8.34	3/62 … 3/63
132	35.0	…	178	36 188	…	7 080	42.63	…	8.34	3/63
160	38.0	…	178	39 965	…	8 581	38.84	…	8.34	3/63
200	49.0	…	179	38 777	…	10 691	30.25	…	8.34	3/63 … 3/63
	Bevel helical geared motors B and K									
0.09	3.70	…	7.2	231	…	120.0	179.13	…	124.78	4/6
0.12	0.05	…	187.0	16 836	…	6.1	30 135.00	…	7.49	4/6 … 4/9
0.18	0.06	…	277.0	23 014	…	6.2	24 187.00	…	4.94	4/9 … 4/12
0.25	0.08	…	378.0	24 007	…	6.3	16 951.00	…	3.57	4/12 … 4/15
0.37	0.12	…	93.0	24 723	…	38.0	11 463.00	…	14.75	4/15 … 4/18
0.55	0.19	…	300.0	24 353	…	18.0	7 224.00	…	4.56	4/18 … 4/21
0.75	0.26	…	392.0	24 688	…	18.0	5 405.00	…	3.57	4/21 … 4/25
1.1	0.42	…	403.0	22 504	…	26.0	3 410.00	…	3.57	4/25 … 4/25
1.5	0.55	…	403.0	23 582	…	36.0	2 601.00	…	3.57	4/29 … 4/32
2.2	0.77	…	374.0	25 008	…	56.0	1 862.00	…	3.84	4/32 … 4/35
3	1.10	…	402.0	23 639	…	71.0	1 286.00	…	3.57	4/35 … 4/38
4	1.50	…	255.0	23 702	…	142.0	968.00	…	5.36	4/38 … 4/41
5.5	2.20	…	270.0	22 492	…	195.0	669.00	…	5.36	4/41 … 4/43
7.5	2.70	…	271.0	24 988	…	264.0	548.00	…	5.36	4/43 … 4/45
9.2	3.40	…	263.0	24 013	…	335.0	429.00	…	5.54	4/45 … 4/47
11	4.20	…	264.0	25 035	…	399.0	191.34	…	5.54	4/47 … 4/49
15	6.00	…	264.0	23 790	…	544.0	191.34	…	5.54	4/49 … 4/50
18.5	7.70	…	207.0	22 997	…	853.0	191.34	…	7.10	4/50 … 4/52
22	8.50	…	303.0	24 779	…	693.0	172.78	…	4.83	4/52 … 4/53
30	12.30	…	305.0	23 340	…	938.0	120.16	…	4.83	4/53 … 4/54
37	15.40	…	304.0	22 951	…	1 161.0	95.48	…	4.83	4/54 … 4/54
45	18.60	…	305.0	23 084	…	1 407.0	79.23	…	4.83	4/56 … 4/57
55	23.00	…	306.0	22 493	…	1 714.0	63.38	…	4.83	4/57
75	35.00	…	225.0	20 465	…	3 188.0	42.43	…	6.61	4/58
90	35.00	…	225.0	24 558	…	3 826.0	42.43	…	6.61	4/58
110	76.00	…	123.0	13 790	…	8 531.0	19.56	…	12.10	4/59
132	76.00	…	123.0	16 604	…	10 272.0	19.56	…	12.10	4/59
160	76.00	…	123.0	20 126	…	12 450.0	19.56	…	12.10	4/59
200	76.00	…	123.0	25 074	…	15 511.0	19.56	…	12.10	4/59
	Helical worm geared motors C									
0.09	2.00	…	4	241	…	125	320.67	…	223.36	5/7
0.12	0.21	…	55	1 913	…	19	6 722.00	…	25.28	5/7… 5/9
0.18	0.37	…	54	1 885	…	29	3 719.00	…	25.28	5/9 … 5/10
0.25	0.60	…	53	1 782	…	41	2 256.00	…	25.28	5/10 … 5/12
0.37	0.91	…	54	1 918	…	60	1 510.00	…	25.28	5/12 … 5/14
0.55	1.7	…	68	1 870	…	68	440.70	…	20.31	5/14 … 5/14
0.75	2.4	…	145	1 969	…	44	440.70	…	9.67	5/15 … 5/16
1.1	3.7	…	149	1 983	…	62	390.00	…	9.67	5/16 … 5/18
1.5	5.8	…	149	1 779	…	85	247.00	…	9.67	5/18 … 5/20
2.2	11.4	…	148	1 355	…	125	126.18	…	9.67	5/20 … 5/21

Determining the gearbox type in accordance with the power rating and output speed (continued)

Power rating	Output speed			Torque			Gearbox ratio			For further information,
P_{Motor}	n_2 (50 Hz)			T_2			i_{tot}			see page
kW (50 Hz)	rpm			Nm						
Helical worm geared motors C										
3	14.6	…	148	1 668	…	170	98.17	…	9.67	5/21 … 5/22
4	22.0	…	149	1 482	…	227	65.32	…	9.67	5/22 … 5/23
5.5	34.0	…	130	1 302	…	367	41.85	…	11.15	5/23 ... 5/24
7.5	62.0	…	130	992	…	497	23.56	…	11.15	5/24
9.2	109.0	…	130	732	…	609	13.39	…	11.15	5/24
11	109.0	…	131	872	…	726	13.39	…	11.15	5/24
Worm geared motors S										
0.09	8.5	…	21.2	46.2	…	23.5	100	…	40	6/5
0.12	13.5	…	270	40.3	…	3.8	100	…	5	6/5 ... 6/6
0.18	10.6	…	564	82.0	…	2.8	100	…	5	6/6 ... 6/7
0.25	14.3	…	566	94.9	…	3.8	80	…	5	6/7 ... 6/8
0.37	22.8	…	548	90.9	…	5.9	60	…	5	6/8
0.55	46.5	…	560	82.1	…	8.6	30	…	5	6/8
0.75	70.0	…	574	81.9	…	11.6	30	…	5	6/9
1.1	143.0	…	572	59.4	…	17.0	20	…	5	6/9

1

Guide to selecting and ordering geared motors

Determining the gearbox type in accordance with the max. torque, transmission ratio, and size

Max. gearbox torque	Gearbox type	Order No.	Transmission ratio	For further information,
Nm				see page
	Helical gearbox E			
82	E38	**2KJ1001**	1.59 ... 9.33	2/93
170	E48	**2KJ1002**	1.52 ... 11.30	2/93
250	E68	**2KJ1003**	1.41 ... 12.40	2/94
450	E88	**2KJ1004**	1.71 ... 10.33	2/94
745	E108	**2KJ1005**	1.81 ... 5.46	2/95
1 000	E128	**2KJ1006**	1.36 ... 10.14	2/95
1 550	E148	**2KJ1007**	1.64 ... 13.67	2/95
	Helical gearbox Z			
90	Z18	**2KJ1100**	3.58 ... 43.15	2/96
140	Z28	**2KJ1101**	3.33 ... 51.35	2/97
220	Z38	**2KJ1102**	4.77 ... 44.12	2/99
450	Z48	**2KJ1103**	4.28 ... 51.28	2/101
800	Z68	**2KJ1104**	3.49 ... 48.09	2/103
1 680	Z88	**2KJ1105**	3.11 ... 50.73	2/105
3 100	Z108	**2KJ1106**	3.42 ... 59.05	2/107
5 100	Z128	**2KJ1107**	3.07 ... 44.19	2/109
8 000	Z148	**2KJ1108**	4.44 ... 57.50	2/111
14 000	Z168	**2KJ1110**	4.46 ... 46.61	2/113
20 000	Z188	**2KJ1111**	8.30 ... 52.35	2/115
220	Z38 - Z28	**2KJ1112**	207.00 ... 1 258.00	2/98
220	Z38 - D28	**2KJ1113**	1 343.00 ... 5 905.00	2/98
	Helical gearbox D			
90	D18	**2KJ1200**	32.26 ... 200.36	2/96
140	D28	**2KJ1201**	48.38 ... 241.05	2/97
220	D38	**2KJ1202**	30.74 ... 191.75	2/99
450	D48	**2KJ1203**	35.59 ... 208.77	2/101
800	D68	**2KJ1204**	37.80 ... 281.01	2/103
1 680	D88	**2KJ1205**	34.14 ... 300.41	2/105
3 100	D108	**2KJ1206**	42.61 ... 359.30	2/107
5 100	D128	**2KJ1207**	37.57 ... 268.16	2/109
8 000	D148	**2KJ1208**	34.15 ... 336.11	2/111
14 000	D168	**2KJ1210**	40.99 ... 341.61	2/113
20 000	D188	**2KJ1211**	42.95 ... 243.82	2/115
450	D48 - Z28	**2KJ1212**	223.00 ... 5 019.00	2/100
450	D48 - D28	**2KJ1213**	5 608.00 ... 27 940.00	2/100
800	D68 - Z28	**2KJ1214**	320.00 ... 7 548.00	2/102
800	D68 - D28	**2KJ1215**	8 422.00 ... 41 961.00	2/102
800	D88 - Z28	**2KJ1218**	341.00 ... 8 305.00	2/104
800	D88 - D28	**2KJ1220**	9 279.00 ... 46 233.00	2/104
3 100	D108 - Z38	**2KJ1223**	392.00 ... 15 853.00	2/106
3 100	D108 - D38	**2KJ1224**	15 280.00 ... 68 896.00	2/106
5 100	D128 - Z38	**2KJ1225**	1 280.00 ... 51 420.00	2/108
5 100	D128 - D38	**2KJ1226**	11 404.00 ... 51 420.00	2/108
5 100	D128 - Z48	**2KJ1227**	285.00 ... 1 271.00	2/108
8 000	D148 - Z38	**2KJ1228**	1 604.00 ... 14 830.00	2/110
8 000	D148 - D38	**2KJ1230**	14 294.00 ... 64 450.00	2/110
8 000	D148 - Z48	**2KJ1231**	398.00 ... 1 631.00	2/110
14 000	D168 - Z48	**2KJ1232**	1 463.00 ... 17 519.00	2/112
14 000	D168 - D48	**2KJ1233**	17 080 ... 71 317	2/112
14 000	D168 - Z68	**2KJ1234**	376 ... 1 226	2/112
20 000	D188 - Z48	**2KJ1235**	1 044 ... 12 504	2/114

Determining the gearbox type in accordance with the max. torque, transmission ratio, and size (continued)

Max. gearbox torque	Gearbox type	Order No.	Transmission ratio	For further information,
Nm				see page
	Helical gearbox D			
20 000	D188 - D48	**2KJ1236**	12 191 ... 50 901	2/114
20 000	D188 - Z68	**2KJ1237**	322 ... 896	2/114
	Parallel shaft gearbox FZ			
150	FZ28	**2KJ1300**	56.20 ... 280.00	3/65
290	FZ38B	**2KJ1301**	4.52 ... 56.72	3/67
540	FZ48B	**2KJ1302**	4.33 ... 60.71	3/69
1 000	FZ68B	**2KJ1303**	3.97 ... 61.17	3/71
1 900	FZ88B	**2KJ1304**	4.77 ... 64.58	3/73
3 400	FZ108B	**2KJ1305**	5.68 ... 64.21	3/75
6 100	FZ128B	**2KJ1306**	3.80 ... 56.42	3/77
9 000	FZ148B	**2KJ1307**	5.39 ... 68.23	3/79
14 000	FZ168B	**2KJ1308**	5.28 ... 53.48	3/81
20 000	FZ188B	**2KJ1310**	8.34 ... 52.63	3/83
32 681	FZ208	**2KJ1311**	9.01 ... 20.06	3/85
290	FZ38B - Z28	**2KJ1313**	303.00 ... 1 617.00	3/66
290	FZ38B - D28	**2KJ1314**	1 726.00 ... 7 591.00	3/66
	Parallel shaft gearbox FD			
150	FD28	**2KJ1400**	3.80 ... 59.65	3/65
290	FD38B	**2KJ1401**	56.28 ... 280.41	3/67
540	FD48B	**2KJ1402**	43.09 ... 268.80	3/69
1 000	FD68B	**2KJ1403**	50.48 ... 296.18	3/71
1 900	FD88B	**2KJ1404**	54.47 ... 404.92	3/73
3 400	FD108B	**2KJ1405**	48.24 ... 424.49	3/75
6 100	FD128B	**2KJ1406**	53.13 ... 447.96	3/77
9 000	FD148B	**2KJ1407**	62.93 ... 449.21	3/79
14 000	FD168B	**2KJ1408**	41.85 ... 369.26	3/81
20 000	FD188B	**2KJ1410**	48.46 ... 403.86	3/83
34 000	FD208	**2KJ1411**	24.03 ... 242.01	3/85
540	FD48B - Z28	**2KJ1413**	299.00 ... 4 197.00	3/68
540	FD48B - D28	**2KJ1414**	4 480.00 ... 19 701.00	3/68
1 000	FD68B - Z28	**2KJ1417**	317.00 ... 4 454.00	3/70
1 000	FD68B - D28	**2KJ1418**	4 755.00 ... 39 638.00	3/70
1 900	FD88B - Z28	**2KJ1422**	461.00 ... 6 000.00	3/72
1 900	FD88B - D28	**2KJ1423**	6 703.00 ... 54 705.00	3/72
3 400	FD108B - Z38	**2KJ1426**	466.00 ... 15 230.00	3/74
3 400	FD108B - D38	**2KJ1427**	16 603.00 ... 66 190.00	3/74
6 100	FD128B - Z38	**2KJ1428**	1 970.00 ... 15 663.00	3/76
6 100	FD128B - D38	**2KJ1430**	17 075.00 ... 68 070.00	3/76
6 100	FD128B - Z48	**2KJ1431**	439.00 ... 1 504.00	3/76
9 000	FD148B - Z38	**2KJ1432**	1 757.00 ... 16 239.00	3/78
9 000	FD148B - D38	**2KJ1433**	17 704.00 ... 70 576.00	3/78
9 000	FD148B - Z48	**2KJ1434**	477.00 ... 1 634.00	3/78
14 000	FD168B - Z48	**2KJ1435**	1 337.00 ... 16 007.00	3/80
14 000	FD168B - D48	**2KJ1436**	17 454.00 ... 65 160.00	3/80
14 000	FD168B - Z68	**2KJ1437**	398.00 ... 1 298.00	3/82
20 000	FD188B - Z48	**2KJ1438**	1 465.00 ... 17 537.00	3/82
20 000	FD188B - D48	**2KJ1440**	19 122.00 ... 71 388.00	3/82
20 000	FD188B - Z68	**2KJ1441**	444.00 ... 1 449.00	3/82
34 000	FD208 - Z68	**2KJ1442**	766.00 ... 8 251.00	3/84
34 000	FD208 - D68	**2KJ1443**	9 924.00 ... 61 412.00	3/84
34 000	FD208 - Z88	**2KJ1444**	284.00 ... 694.00	3/84

Determining the gearbox type in accordance with the max. torque, transmission ratio, and size (continued)

Max. gearbox torque	Gearbox type	Order No.	Transmission ratio	For further information,
Nm				see page
	Bevel helical gearbox B and K			
130	B28	**2KJ1500**	3.57 … 57.53	4/60
250	B38	**2KJ1501**	3.84 … 65.69	4/61
250	K38	**2KJ1502**	5.65 … 179.13	4/63
450	K48	**2KJ1503**	7.22 … 169.53	4/65
820	K68	**2KJ1504**	5.36 … 243.72	4/67
1 650	K88	**2KJ1505**	5.54 … 302.68	4/69
3 000	K108	**2KJ1506**	7.68 … 307.24	4/71
4 700	K128	**2KJ1507**	7.10 … 295.38	4/73
8 000	K148	**2KJ1508**	4.83 … 306.08	4/75
13 500	K168	**2KJ1510**	6.61 … 287.95	4/77
20 000	K188	**2KJ1511**	12.10 … 191.34	4/79
250	K38 - Z28	**2KJ1514**	181.00 … 2 797.00	4/62
250	K38 - D28	**2KJ1515**	2 986.00 … 13 129.00	4/62
450	K48 - Z28	**2KJ1516**	181.00 … 2 798.00	4/64
450	K48 - D28	**2KJ1517**	2 987.00 … 13 135.00	4/64
820	K68 - Z28	**2KJ1518**	277.00 … 4 282.00	4/66
820	K68 - D28	**2KJ1520**	4 572.00 … 20 103.00	4/66
1 650	K88 - Z28	**2KJ1523**	344.00 … 5 309.00	4/68
1 650	K88 - D28	**2KJ1524**	5 667.00 … 24 920.00	4/68
3 000	K108 - Z38	**2KJ1527**	1 466.00 … 13 556.00	4/70
3 000	K108 - D38	**2KJ1528**	13 066.00 … 58 914.00	4/70
3 000	K108 - Z48	**2KJ1530**	301.00 … 1 343.00	4/70
4 700	K128 - Z38	**2KJ1531**	1 410.00 … 13 032.00	4/72
4 700	K128 - D38	**2KJ1532**	12 562.00 … 56 640.00	4/72
4 700	K128 - Z48	**2KJ1533**	313.00 … 1 400.00	4/72
8 000	K148 - Z38	**2KJ1534**	1 466.00 … 13 505.00	4/74
8 000	K148 - D38	**2KJ1535**	13 017.00 … 58 692.00	4/74
8 000	K148 - Z68	**2KJ1536**	296.00 … 1 392.00	4/74
13 500	K168 - Z48	**2KJ1537**	1 233.00 … 14 767.00	4/76
13 500	K168 - D48	**2KJ1538**	14 397.00 … 60 115.00	4/76
13 500	K168 - Z68	**2KJ1540**	317.00 … 1 033.00	4/76
20 000	K188 - Z68	**2KJ1541**	669.00 … 9 201.00	4/78
20 000	K188 - D68	**2KJ1542**	8 689.00 … 53 767.00	4/78
20 000	K188 - Z88	**2KJ1543**	225.00 … 669.00	4/78
	Helical worm gearbox C			
118	C28	**2KJ1600**	25.28 … 372.00	5/25 … 5/26
243	C38	**2KJ1601**	9.67 … 320.67	5/28 … 5/30
387	C48	**2KJ1602**	9.67 … 320.67	5/32 … 5/34
687	C68	**2KJ1603**	11.67 … 364.00	5/36 … 5/38
1 590	C88	**2KJ1604**	11.15 … 440.70	5/40 … 5/42
225	C38 - Z28	**2KJ1605**	324.00 … 4 222.00	5/27
222	C38 - D28	**2KJ1606**	4 717.00 … 23 503.00	5/27
369	C48 - Z28	**2KJ1607**	324.00 … 4 222.00	5/31
364	C48 - D28	**2KJ1608**	4 717.00 … 23 503.00	5/31
680	C68 - Z28	**2KJ1610**	398.00 … 5 066.00	5/35
675	C68 - D28	**2KJ1611**	5 661.00 … 28 203.00	5/35
1 590	C88 - Z28	**2KJ1614**	6 722.00 … 33 491.00	5/39
1 590	C88 - D28	**2KJ1615**	462.00 … 6 016.00	5/39
	Worm gearbox S			
33	S08	**2KJ1730**	5 … 80	6/10 ... 6/10
64	S18	**2KJ1731**	5 … 80	6/10 ... 6/10
116	S28	**2KJ1732**	5 … 100	6/10 ... 6/10

Overview of "special versions"

Order code	Special version Designation	For further information, see page
	Input units	
A00	Input unit A with free input shaft	7/3, 7/30
A03	Input unit K2 (coupling lantern) with flexible coupling for connecting an IEC motor	7/3, 7/20
A04	Input unit K4 (short coupling lantern) with clamp connection for connecting an IEC motor	7/3, 7/23
A07	Input unit KQ (lantern for servomotor) with zero-free, flexible coupling for connecting a servomotor (with feather key)	7/3, 7/28
A08	Input unit KQS attachment (lantern for servomotor) with zero-free, flexible coupling for connecting a servomotor (with plain shaft)	7/3, 7/28
A09	Input unit P with free input shaft and piggy back for connecting an IEC motor	7/3, 7/33
A10	Input unit PS with free input shaft, piggy back and protective belt cover	7/3
N61	Size index .2 for KQ/KQS coupling lantern for servomotor	7/3
N62	Size index .3 for KQ/KQS coupling lantern for servomotor	7/3
N63	Size index .4 for KQ/KQS coupling lantern for servomotor	7/3
	Backstop in the input unit	
A15	Backstop X	7/18
	Coupling types and input unit options	
A16	Flexible coupling	7/3
A17	Friction clutch	7/18
A18	Proximity switch	7/18
A19	Speed monitor	7/18
	Piggy back position	
A22	3h	7/33
A23	9h	7/33
A24	12h	7/33
	Brake type	
B00 to B66	Brake types according to size and braking torque	8/29 … 8/30
	Brake design	
C01	Enclosed brake	8/42
C02	Manual brake release lever	8/39
C03	Manual brake release lever with locking mechanism	8/39
C04	Microswitch for release monitoring	8/38
C06	Reduced-noise rotor-hub connection and wear-resistant friction lining	8/36
C09	Basic anti-corrosion protection	8/42
C10	Increased anti-corrosion protection	8/42
C11	Enclosed brake with condensation drain hole	8/42
	Manual brake release lever position	
C26	1	8/39
C27	2	8/39
C28	3	8/39
C29	4	8/39
	Brake control voltage	
C46 ... C70	Brake standard voltage	8/32
	Mounting types / mounting positions	
D00 to E17	Geared motor mounting types and mounting positions	2/119 ... 2/129, 3/92 ... 3/95, 4/87 ... 4/91, 5/47 ... 5/49, 6/15
	Torque arm figure	
G09	Figure 1	4/81, 5/44
G10	Figure 2	4/81, 5/44
	Output shaft bearings	
G20	Radially reinforced output shaft bearings	2/133, 3/99, 4/95, 5/53

Overview of "special versions" (continued)

Order code	Special version Designation	For further information, see page
	Output sealing	
G22 + G31	Double radial shaft seal	2/132, 3/98, 4/94, 5/52
G23	Double sealing MSS1	2/132, 3/98, 4/94, 5/52
G24	Combination shaft sealing	2/132, 3/98, 4/94, 5/52
G25	High temperature resistant sealing	2/132, 3/98, 4/94, 5/52
	Oil level control	
G34	Oil sight glass	2/130, 3/96, 4/93, 5/50
	Gearbox ventilation	
G44	Vent filter	2/131, 3/97, 4/93, 5/51
G45	Pressure ventilation valve	2/131, 3/97, 4/93, 5/51
	Oil drain	
G53	Magnetic oil drain plug	2/131, 3/97, 4/94, 5/51
G54	Oil drain valve, straight	2/131, 3/97, 4/94, 5/51
	Hollow-shaft cover	
G60	Steel protection cover	3/99, 4/95, 5/52
G61	Steel protection cover (ATEX)	3/99, 4/95, 5/52
G62	Protection cover	3/99, 4/95, 5/52
G63	Protection cover (ATEX)	3/99, 4/95, 5/52
	Backstop for bevel helical gearbox	
G72	Backstop (gearbox)	4/96
	Options for gearbox output shafts	
G73	2nd shaft extension (output shaft on both sides)	4/96, 5/53, 6/16
	Dry-well options for mixer and agitator drives	
G89	Dry-well design with sight glass	2/133, 3/100, 4/97
G90	Dry-well design with sensor	2/133, 3/100, 4/97
	Reduced-backlash version	
G99	Reduced-backlash version	1/23, 2/93, 3/65, 4/62
	Flange diameter	
H01 to H06	Flange diameter	2/118, 3/91, 4/86, 5/46, 6/14
	Degree of protection	
K01	IP 55	8/8
K02	IP 56	8/8
K03	IP 65	8/8
	Lubricants	
K06	CLP ISO VG 220 - Mineral oil	1/46, 2/130, 3/94, 4/92
K07	CLP ISO PG VG 220 - Synthetic oil	1/46, 2/130, 3/96, 4/92
K08	CLP ISO PG VG 460 - Synthetic oil	1/46, 2/130, 3/96, 4/92, 5/50, 6/16
K10	CLP ISO E VG 220 - Biologically degradable oil	1/46, 2/130, 3/96, 4/92, 5/50
K11	CLP ISO H1 VG 460 - Oil for use in the food industry	1/46, 2/130, 3/96, 4/92, 5/50, 6/16
K12	CLP ISO PAO VG 220 - Oil for low temperature usage	1/46, 2/130, 3/96, 4/92, 5/50
K13	CLP ISO PAO VG 68 - Oil for lowest temperature usage	1/46, 2/130, 3/96, 4/92
	Long-term preservation	
K17	Long-term preservation up to 36 months	1/46
	Direction of rotation of the output shaft (required with backstop)	
K18	Clockwise	1/43, 4/96
K19	Counterclockwise	1/43, 4/96
	Rating plate and additional rating plates	
K26	Rating plate on stainless steel support plate	1/49
K41	2nd rating plate, enclosed separately	1/49
K68	2nd rating plate, mounted	1/49

Overview of "special versions" (continued)

Order code	Special version Designation	For further information, see page
	Surface treatment	
L00	Unpainted	1/48
L01	Primed according to corrosion category C2 G	1/48
L02	Surface protection for normal environmental stress	1/47
L03	Surface protection for minimal environmental stress	1/47
L04	Surface protection for medium environmental stress	1/47
L05	Surface protection for extremely high environmental stress	1/47
L09	Primed according to corrosion category C4 G	1/48
L19	Special pre-treatment before painting	1/48
L20	Surface protection for high environmental stress	1/47
	RAL colors	
L50	RAL 5015 Sky blue	1/48
L51	RAL 7011 Steel gray	1/48
L53	RAL 7031 Blue gray	1/48
L54	RAL 7035 Light gray	1/48
L55	RAL 7030 Stone gray	1/48
	Other colors can be selected by entering order code Y80 and plain text	1/48
	Insulating material class	
M08	Temperature class 180 (H)	8/25
M09	Special insulation for inverter-fed operation up to 690 V	8/25
	Thermal motor protection	
M10	PTC thermistor for disconnection	8/23
M11	PTC thermistor for warning and disconnection	8/23
M12	Winding thermostat for disconnection (WT)	8/23
M13	Winding thermostat for warning and disconnection for sizes 71 to 200 (WT)	8/23
M16	KTY 84-130 temperature sensor	8/24
	Fan	
M21	Metal fan	8/9
M22	High inertia fan	8/9
M23	External fan	8/10
	Anti-condensation heating	
M40	115 V supply voltage	8/24
M41	230 V supply voltage	8/24
	Terminal box position	
M55 to M86	Location and position of the terminal box	8/11
	ECOFAST motor plugs	
N04	ECOFAST motor plug HAN 10E (single-bracket lock)	8/18
N05	ECOFAST motor plug HAN 10E with counterplug HAN 10B (single-bracket lock)	8/18
N06	ECOFAST motor plug HAN 10E, EMC design (single-bracket lock)	8/18
N07	ECOFAST motor plug HAN 10E with counterplug HAN 10B, EMC design (single-bracket lock)	8/18
	Canopy	
N22	Canopy	8/8
	Backstop on motor	
N23	Motor backstop	8/63
	2nd shaft extension on motor	
N39	2nd shaft extension	8/64
	Handwheel	
N40	Handwheel	8/65
	Motor side B, can be retrofitted	
N48	Motor side B, can be retrofitted	8/2

Overview of "special versions" (continued)

Order code	Special version Designation	For further information, see page
	Additional feet	
N49	Additional feet	8/65
	Designs in accordance with standards and specifications	
N30	Design in accordance with GOST-R	1/40, 8/3
N36	Design in accordance with CSA	1/40, 8/3
N37	Design in accordance with UL-R	1/40, 8/3
N38	Design in accordance with UL-R and CSA	1/40, 8/3
N65	Design in accordance with NEMA (electrical)	1/39, 8/3
N67	Design in accordance with CCC	1/40, 8/3
N69	Design in accordance with China Energy Efficiency Label	1/40, 8/3
	Versions for special environmental conditions	
N41	Motor-internal anti-corrosion protection	8/19
	Protection against humidity and acid	
N43	Increased protection against humidity and tropical climate	1/48
N44	Increased protection against acid and alkali	1/48
N54	Motor winding protection against humidity and acid	8/26
	External earthing	
N53	External earthing	8/19
	Motors prepared for encoder mounting	
N50	Encoder mounting prepared	8/60
	Pole number of the motor	
P00	2-pole	8/68, 8/68, 8/96
P01	6-pole	8/70, 8/84, 8/70, 8/98, 8/102, 8/132, 8/136, 8/132, 8/136
P02	8-pole	8/72, 8/86, 8/104, 8/122, 8/128
P04	4/2-pole	8/74, 8/106
P08	8/4-pole	8/76, 8/78
P07	8/2-pole	8/80
	Gateways EnDAT for absolute encoders	
Q02	Gateway EnDAT Profibus DP	8/63
Q03	Gateway EnDAT CANopen	8/63
Q04	Gateway EnDAT DeviceNET	8/63
	Incremental encoder IN	
Q44	Rotary pulse encoder 1XP8032-20 (IN 1024 TTL with coupling socket)	8/51
Q45	Rotary pulse encoder 1XP8032-21 (IN 2048 TTL with coupling socket)	8/51
Q46	Rotary pulse encoder 1XP8032-22 (IN 512 TTL with coupling socket)	8/51
Q47	Rotary pulse encoder 1XP8032-10 (IN 1024 HTL with coupling socket)	8/51
Q48	Rotary pulse encoder 1XP8032-11 (IN 2048 HTL with coupling socket)	8/51
Q49	Rotary pulse encoder 1XP8032-12 (IN 512 HTL with coupling socket)	8/51
Q50	Rotary pulse encoder 1XP8012-20 (IN 1024 TTL with flange socket)	8/50
Q51	Rotary pulse encoder 1XP8012-21 (IN 2048 TTL with flange socket)	8/50
Q52	Rotary pulse encoder 1XP8012-22 (IN 512 TTL with flange socket)	8/50
Q53	Rotary pulse encoder 1XP8012-10 (IN 1024 HTL with flange socket)	8/50
Q54	Rotary pulse encoder 1XP8012-11 (IN 2048 HTL with flange socket)	8/50
Q55	Rotary pulse encoder 1XP8012-12 (IN 512 HTL with flange socket)	8/50
Q56	Rotary pulse encoder 1XP8022-20 (IN 1024 TTL with cable terminal box)	8/52
Q57	Rotary pulse encoder 1XP8022-21 (IN 2048 TTL with cable terminal box)	8/52
Q58	Rotary pulse encoder 1XP8022-22 (IN 512 TTL with cable terminal box)	8/52
Q59	Rotary pulse encoder 1XP8022-10 (IN 1024 HTL with cable terminal box)	8/52
Q60	Rotary pulse encoder 1XP8022-11 (IN 2048 HTL with cable terminal box)	8/52
Q61	Rotary pulse encoder 1XP8022-12 (IN 512 HTL with cable terminal box)	8/52

Overview of "special versions" (continued)

Order code	Special version Designation	For further information, see page
	Cable terminal boxes for encoders 1XP8012, 1XP8032, 1XP8013, 1XP8023.1XP8014 and 1XP8024	
Q62	Connector	8/61
Q69	Cable with connector and ferrules, 2 m	8/61
Q70	Cable with connector and ferrules, 8 m	8/61
Q71	Cable with connector and ferrules, 15 m	8/61
Q72	Cable with coupling socket, 2 m	8/62
Q73	Cable with coupling socket, 8 m	8/62
Q74	Cable with coupling socket, 15 m	8/62
	Cable terminal boxes for encoders 1XP8022	
Q63	Cable with ferrules, 2 m	8/61
Q64	Cable with ferrules, 8 m	8/61
Q65	Cable with ferrules, 15 m	8/61
Q66	Cable with coupling socket, 2 m	8/62
Q67	Cable with coupling socket, 8 m	8/62
Q68	Cable with coupling socket, 15 m	8/62
	Absolute encoder IA	
Q80	Absolute encoder 1XP8014-20 (IA SSI protocol with flange socket)	8/55
Q81	Absolute encoder 1XP8024-20 (IA SSI protocol cable with coupling socket)	8/55
Q82	Absolute encoder 1XP8014-10 (IA EnDAT protocol with flange socket)	8/55
Q83	Absolute encoder 1XP8024-10 (IA EnDAT protocol cable with coupling socket)	8/55
	Resolver IR	
Q85	Resolver 1XP8013-10 (IR with flange socket)	8/54
Q86	Resolver 1XP8023-11 (IR cable with coupling socket)	8/54
Q87	Resolver 1XP8013-11 (IR with flange socket)	8/54
Q88	Resolver 1XP8023-10 (IR cable with coupling socket)	8/54
	Rugged encoder	
Q92	Rotary pulse encoder LL Leine & Linde	8/57
Q93	Rotary pulse encoder HOG 9	8/58
Q94	Rotary pulse encoder HOG 10	8/59
	Mechanical protection	
Q95	Encoder under cover	8/60

Configuring guide

Determining the drive data

Data relating to the machine to be driven (machine type, mass, input speed, speed range, etc.) is required in order to size the machine correctly. This data is then used to determine the required power rating, torque, and input speed of the geared motor. The correct drive can be selected based on its calculated power rating and speed.

Data required for selection

The following data is required in order to select the correct gearbox:

1. Type of driven machine
2. Daily operating time h
3. Required input power kW or required torque Nm
4. Required output speed n_2 of the geared motor rpm or gearbox ratio i
5. Operating voltage V and frequency Hz
6. Operating mode, number of startings, inverter-fed operation, type of startup
7. Moment of inertia J_{Load} kgm^2 of the driving machine reduced to the motor shaft
8. Type of power transmission on gearbox shafts (direct, coupling, belt, chain, gear wheel)
9. Radial force F_r N at the input shaft and direction of force with distance from the shaft shoulder to the point of application and axial force F_{ax} [N] with direction of force
10. Ambient temperature °C
11. Degree of protection
12. Mounting position
13. Required braking torque Nm
14. Any regulations (CSA, VIK, etc.)

Efficiency of the geared motor

The efficiency of the gearbox is determined by the gear teeth, rolling-contact bearing friction, and the shaft sealing rings, among other things. The starting efficiency also has to be taken into account, particularly as regards helical worm and worm gearboxes. Efficiency may be impaired at high input speeds, if a relatively large amount of oil is used (depending on mounting position), and during cold operation in low temperature ranges.

Helical, bevel helical, and parallel shaft gearboxes

MOTOX helical, parallel shaft, and bevel helical gearboxes are extremely efficient. As a rule, efficiencies of 98 % (1-stage), 96 % (2-stage), and 94 % (3-stage) can be assumed.

Helical worm and worm gearboxes

The gear teeth of the worm gearboxes lead to high sliding friction losses at high transmission ratios. Therefore, these gearboxes can be less efficient than other types. The efficiencies of the helical worm and worm gearboxes primarily depend on the transmission ratio in question.
With helical worm gearboxes, some of the transmission ratio is realized by the helical gear stage. In this way, higher degrees of efficiency can be achieved.
For further information see the chapter dealing with helical worm gearboxes.

Self-locking with worm gearboxes

In respect of restoring torques on worm gearboxes, the efficiency is considerably reduced in comparison to standard efficiency. The restoring efficiency can be calculated as follows: $\eta' = 2 - 1/\eta$. At a standard efficiency of $\eta \leq 0.5$, worm gearboxes are usually self-locking, which is determined by the particular lead angle of the worm gear teeth.
Self-locking only occurs with certain combinations of MOTOX gearboxes and is not always of benefit, as the associated loss of efficiency is then relatively high, which in turn requires increased motor power.

A worm gearbox is "self-locking while stationary" (static self-locking), if it is not possible to start from stationary when the worm wheel is driving.
A worm gearbox is "self-braking while running" (dynamic self-locking), if it is not possible to continue running when the worm wheel is driving while the gearbox is running – that is, if the running gearbox comes to a stop while the worm wheel is driving.

Shocks can neutralize self-locking.
A self-locking gearbox is, therefore, no substitute for a brake or backstop. If you want to use the self-locking braking effect for a technical purpose, please contact us.

Run-in phase for helical worm and worm gearboxes

The tooth flanks on new helical worm and worm gearboxes will not yet be fully smoothed, meaning that the friction angle will be greater and efficiency lower during initial operation. The higher the transmission ratio, the more pronounced the effect.

The run-in procedure should take approximately 24 hours of operation at full load. In most cases, the catalog values will then be reached.

Losses of splashing

With certain gearbox mounting positions, the first stage can become completely immersed in the gear lubricant. In the case of large gearboxes with a high input speed, particularly with vertical mounting positions, this may lead to increased losses of splashing, which must not be ignored. Please contact us if you want to use such gearboxes. If at all possible, you should choose horizontal mounting positions in order to keep losses of splashing to a minimum.

Determining the required service factor

The operating conditions are crucial in determining the service factor and for selecting the geared motor. These conditions are taken into account with service factor f_B.

The gearbox size or rated gear torque and the resulting service factor are not standardized and depend on the manufacturer.

In standard operation, i.e. with a uniform load provided by the driving machine, small masses to be accelerated, and a low number of startings, the service factor of $f_B = 1$ can be selected.

For different operating conditions see the tables found under "Service factor". If the motor power and the gearbox output speed are known, a gearbox type is selected with a service factor that meets the following condition.

$$f_{Btot} \leq f_B$$

For drives operating under special conditions, e.g. frequent reversing, short-time or intermittent duty, abnormal temperature ratios, reversal braking, extreme or rotating transverse forces on the gear output shaft, etc. please contact us for advice on how to design the drive configuration.

The operating conditions can vary greatly.
To determine the service factor, empirical values can be derived from the configuration of other similar applications. The driving machines can be assigned to three load groups according to their shock load. These groups can be assessed by means of their mass acceleration factor (m_{AF}).

In the case of high mass acceleration factors (m_{AF} >10), a large amount of play in the transmission elements, or high transverse forces, unexpected additional loads may arise.
Please contact us in such an event.

The mass acceleration factor m_{AF} is calculated as follows:

$$m_{AF} = \frac{J_{Load}}{(J_M + J_B + J_{add})}$$

All external moments of inertia are moments of inertia of the driving machine and the gearbox, which are to be reduced to the motor speed. In most cases the moment of inertia of the gearbox has no effect and can be ignored.
The calculation is made using the following formula:

$$J_{Load} = J_2 \cdot \left(\frac{n_2}{n_1}\right)^2 = \frac{J_2}{i^2}$$

Code	Description	Unit
f_{Btot}	Service factor of the driving machine	–
f_B	Service factor of the geared motor	–
m_{AF}	Mass acceleration factor	–
J_{Load}	All external moments of inertia (based on the motor shaft)	kgm²
J_M	Moment of inertia of the motor	kgm²
J_B	Moment of inertia of the brake	kgm²
J_{add}	Additional moment of inertia (e.g. centrifugal mass or high inertia fan)	kgm²
J_2	Moment of inertia based on the output speed of the gearbox	kgm²
n_1	Input speed of the motor	rpm
n_2	Output speed of the gearbox	rpm
i	Gearbox ratio	–
DC	Relative duty cycle	%

Required service factor

Service factor for helical, parallel shaft, and bevel helical gearboxes

The service factor of the driving machine f_{Btot} is determined from the tables by taking the load classification, number of startings, and duration of service per day into account.
Contact our drive experts to check drive sizing in the case of high shock loads and, for example, high motor and braking torques that are greater than 2.5x the rated motor torque.

$f_{Btot} = f_{B1}$

Load classification for driving machines

Shock load	Driving machine
I Light shock loads	Mass acceleration factor ≤ 0.3: Electric generators, belt conveyors, apron conveyors, screw conveyors, lightweight elevators, electric hoists, machine tool feed drives, turbo blowers, centrifugal compressors, mixers and agitators for uniform densities.
II Moderate shock loads	Mass acceleration factor ≤ 3: Machine tool main drives, heavyweight elevators, turning tools, cranes, shaft ventilators, mixers and agitators for non-uniform densities, piston pumps with multiple cylinders, metering pumps.
III Heavy shock loads	Mass acceleration factor ≤ 10: Punching presses, shears, rubber kneaders, machinery used in rolling mills and the iron and steel industry, mechanical shovels, heavyweight centrifuges, heavyweight metering pumps, rotary drilling rigs, briquetting presses, pug mills.

Service factors f_{B1}:

Daily operating duration		**4 hours**			**8 hours**			**16 hours**			**24 hours**		
Starts*) / h		< 10	10 … 200	> 200	< 10	10 … 200	> 200	< 10	10 … 200	> 200	< 10	10 … 200	> 200
Shock load	I	0.8	0.9	1.0	0.9	1.0	1.1	1.0	1.1	1.2	1.2	1.3	1.5
	II	1.0	1.1	1.3	1.1	1.2	1.3	1.2	1.4	1.5	1.4	1.5	1.6
	III	1.3	1.4	1.5	1.4	1.5	1.6	1.5	1.6	1.7	1.6	1.7	1.8

*) The number of startings is calculated from the sum of times it is switched on, braking operations, and changeovers.

Service factors for helical worm and worm gearboxes:

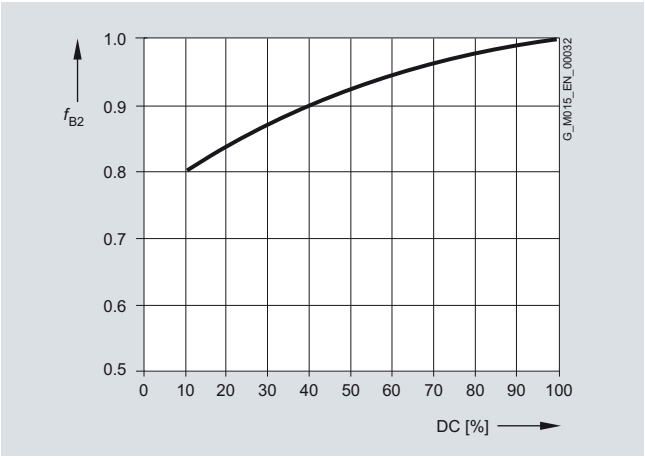
With worm gearboxes, two additional service factors are used, which take the duty cycle and ambient temperature into account. These additional factors can be determined from the graph opposite.

$f_{Btot} = f_{B1} \cdot f_{B2} \cdot f_{B3}$

In the standard version the gearboxes can operate at an ambient temperature of –20 °C to +40 °C.

In the case of a service factor $f_{B3} < 1$ for temperatures below 20 °C please contact us.

Service factor f_{B2} for short-time duty:



$$DC = \frac{\text{Loading time in min/h}}{60} \cdot 100$$

Required service factor (continued)

Example worm gearbox:

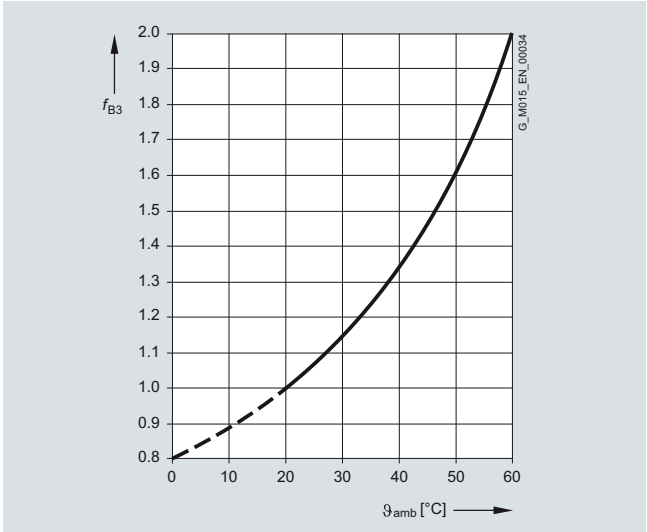
Mass acceleration factor 2.5 (shock load II), runtime 15 hours per day (read off at 16 hours), and 70 starts / h gives a service factor of f_{B1} = 1.4 for service factor f_{B1} according to the table.

A load duration of 30 minutes per hour gives a duty cycle (*DC*) of 50 %. According to the diagram, this results in a service factor of f_B = 0.94 for service factor f_{B2}.

At an ambient temperature of ϑ_{amb} = 20 °C, the diagram gives a service factor of f_{B3} = 1.0 for service factor f_{B3}.

So, the required service factor is
$f_{Btot} = 1.4 \cdot 0.94 \cdot 1.0 = 1.32$.

Service facor f_{B3} for the ambient temperature:



ϑ_{amb} = Ambient temperature

Maximum motor speed

At high motor speeds (>1.500 rpm) you will generally experience higher than average noise emissions and a lower than average bearing service life. This depends to a large extent on the transmission ratio and gearbox size in question. Furthermore, high speeds affect the thermal properties and service intervals of the gearbox.

The maximum input speed of the gearbox is usually 3.600 rpm. If you require higher speeds, please contact us.

Ambient temperature

In the standard version the gearboxes can operate at an ambient temperature of –20 °C to +40 °C, if the lubricant recommendations are kept. In the case of a few additional options the category temperatures must be checked.

Other temperature ranges -10 °C ... +50 °C on request.

Required torque T_{2req}

If the drive data and the service factor are selecetd, the required output torque can be determined.

$$T_{2req} = \frac{9550 \cdot P_1}{n_2} \cdot f_{Btot}$$

Selection of the gearbox

The following conditions need to be observed:

$P_1 > P_{req}$
$T_{2rated} > T_{2req}$
$f_B > f_{Btot}$
$T_2 > T_{req}$

Code	Description	Unit
f_{Btot}	Service factor of the driving machine	–
f_B	Service factor of the geared motor	–
P_{2m}	Input power of the motor	kW
P_{req}	Required input power	kW
T_{req}	Required torque	Nm
T_2	Output torque of the geared motor	Nm
T_{2rated}	Nominal output torque of the geared motor	Nm
T_{2req}	Required output torque of the driving machine	Nm

Reduced-backlash gearbox version

Helical, parallel shaft and bevel-helical gearboxes are available on request in a reduced-backlash version. In the transmission table, the torsion angle (φ) is specified for the reduced-backlash version. If a value is not specified, this gearbox cannot be realized with reduced backlash.

A high degree of positioning accuracy is achieved with reduced-backlash gearboxes and the shock loads in the gearbox are reduced at load changeover. When a gearbox is used that has a certain amount of play, the relative position of the output shaft of the gearbox cannot be determined precisely because the controller cannot detect whether the right or left flank of the tooth is engaged.

- Accurate positioning and repeatability
- Maintain position information in the case of a change of direction of rotation
- Reduced shock loading of the tooth flanks

Order code:

Reduced-backlash version **G99**

Permissible radial force

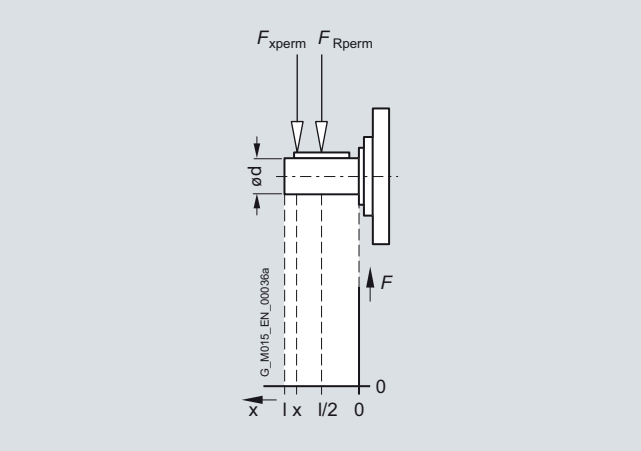
Available radial force

The available radial force F_{Ravail} at the shaft journals results from the available output torque of the geared motor T and the diameter d and type of the output element (e.g. sprocket wheel).

The type of output element determines factor C (see table below), by which the available radial force is to be increased.

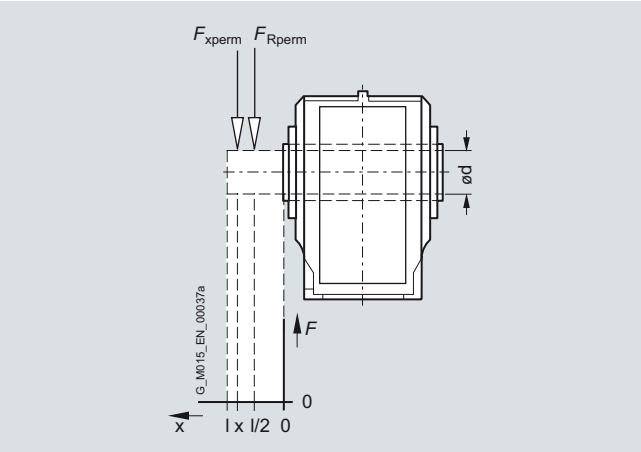
$$F_{Ravail} = 2000 \cdot \frac{T_2}{d} \cdot C$$

Code	Description	Unit
F_{Ravail}	Available radial force resulting from the output torque and the diameter of the output element	N
F_{Rperm}	Permissible radial force at the center of shaft extension	N
d	Diameter of the input element	mm
T_2	Output torque of the geared motor	Nm
F_{xperm1}	Permissible radial force, limited by the bearing service life, at a distance of x from the shaft shoulder	N
F_{xperm2}	Permissible radial force, limited by the shaft strength, at a distance of x from the shaft shoulder	N
C	Additional factor	–
b, d, l, y, z	Gearbox constants	mm
a	Gearbox constant	kNmm
F_{ax}	Axial force at d	N
α	Angle of action of the radial force	°



Factor C for the type of the transmission element

Transmission element	Design	C
Gear wheel	> 17 teeth	1.00
	≤ 17 teeth	1.15
Sprocket wheel	≥ 20 teeth	1.00
	14 – 19 teeth	1.25
	≤ 13 teeth	1.40
Toothed belt	Preload	1.50
V belt	Preload	2.00
Flat belt	Preload	2.50
Agitator / mixer	Rotating radial force	2.50



Permissible radial force (continued)

Permissible radial force

The permissible radial force F_{Rperm} is determined by the required bearing service life, among other things. The nominal service life L_{h10} is determined in accordance with ISO 281. The bearing service life can be calculated for special operating conditions on request, based on the calculation procedure for the modified service life L_{na}.

Furthermore, the permissible radial force is determined by the housing and shaft strength of the gearbox. The selection tables specify the permissible radial force F_{Rperm} for the output shafts. These values refer to the point of load at the center of the shaft extension and are minimum values, which apply to the worst possible conditions in the gearbox (force angle, mounting position, direction of rotation).

If the point of load is not at the center of the shaft extension, the permissible radial force must be calculated as follows: the smaller value of F_{xperm1} (bearing service life) and F_{xperm2} (shaft strength) is the permissible radial force. The calculation does not include additional axial forces.

If the direction of rotation of the output shaft and the additional axial forces are known, or the values in the table are insufficient, our drive experts have to perform the calculation. Our agitator and mixer drives allow you to achieve higher permissible radial forces. These drives are particularly well suited to large and rotating radial forces.

Permissible radial force in accordance with bearing service life for all gearbox types:

$$F_{xperm1} = F_{Rperm} \cdot \frac{y}{(z + x)}$$

Permissible radial force in accordance with shaft strength for bevel helical, parallel shaft, and helical worm gearboxes:

$$F_{xperm2} = \frac{a}{x}$$

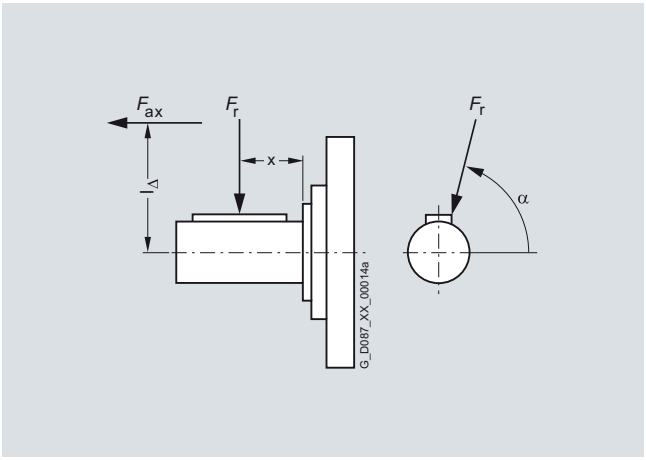
Permissible radial force in accordance with shaft strength for helical and worm gearboxes:

$$F_{xperm2} = \frac{a}{(b + x)}$$

The shaft strength only has to be calculated for solid shafts, with hollow shafts this step can be omitted.

Higher permissible radial forces

The permissible radial force load can be increased, taking the angle of force action α and the direction of rotation into account. Installing reinforced bearings also means that higher loads are permitted on the input shaft.



Permissible axial loads

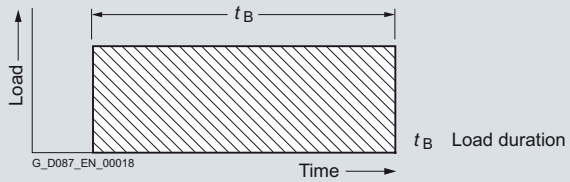
If no transverse force load is present, an axial force F_{ax} (tension or compression) of around 50 % of the specified radial force with standard bearings can be achieved for gearbox sizes 18 to 148.

You can use our "Calculation of input shaft bearing arrangement" assistant in the MOTOX Configurator to calculate the permissible forces. Combined forces with an axial and a radial component can also be calculated. Please contact us in case of doubt.

The permissible radial forces are specified in the gearbox chapters.

Determining the operating mode

If no specifications are made in the power tables, the power ratings specified in the power tables apply to the **S1 operating mode** (continuous duty with constant load) according to EN 60034-1. The same regulation defines the groups of operating modes specified below:



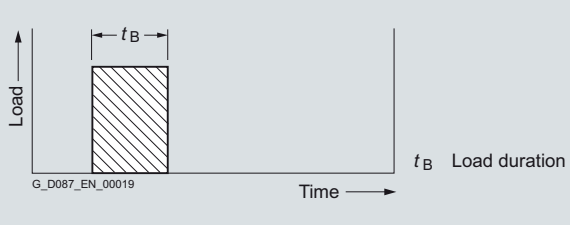
Operating mode S1 · Continuous duty

Operating modes in which starting and electrical braking **do not affect the overtemperature of the stator winding** of the motor:

Operating mode **S2**:

Short-time duty

Operating times of 10, 30, 60, and 90 min. are recommended. After each period of duty the motor remains at zero current until the winding has cooled down to the coolant temperature.

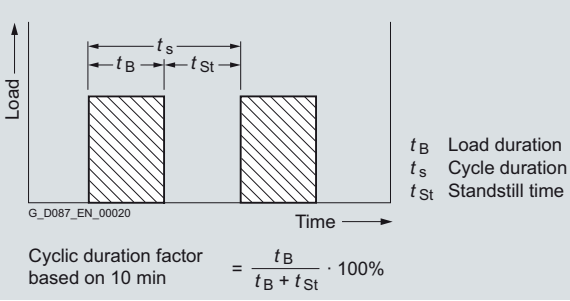


Operating mode S2 · Short-time duty

Operating mode **S3**:

Intermittent duty

Starting does not affect the temperature. Unless any agreement is made to the contrary, the cycle duration is 10 minutes. Values of 15 %, 25 %, 40 %, and 60 % are recommended for the cyclic duration factor.

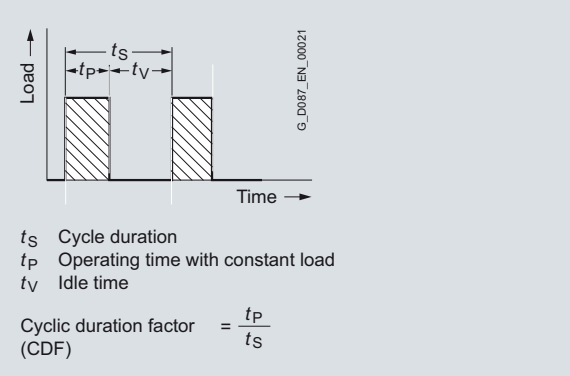


Operating mode S3 · Intermittent periodic duty

Operating mode **S6**:

Continuous duty with intermittent loading

Unless any agreement is made to the contrary, the cycle duration here is also 10 minutes. Values of 15 %, 25 %, 40 %, and 60 % are recommended for the load duration factor.

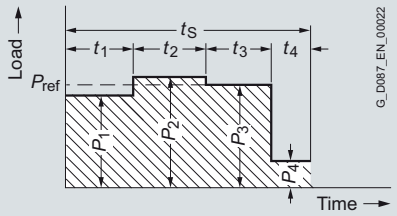


Determining the operating mode (continued)

Operating mode **S10**:

Duty with discrete constant loads

In this mode a maximum of four discrete loads are available, of which each load achieves the thermal steady state.
A load of the same value as the one used in S1 operating mode should be selected for this operating mode.

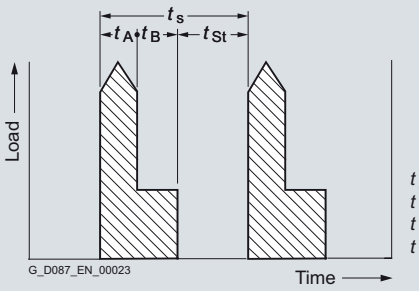


P_i Constant load within one load cycle
P_{ref} Reference load
t_S Cycle duration

Operating modes in which starting and braking have a corresponding **effect on the overtemperature of the stator winding** and of the rotor cage:

Operating mode **S4**:

Intermittent duty where starting affects the temperature



t_A Starting time
t_B Load duration
t_s Cycle duration
t_{St} Standstill time

Cyclic duration factor based on 10 min $= \frac{t_A + t_B}{t_A + t_B + t_{St}} \cdot 100\%$

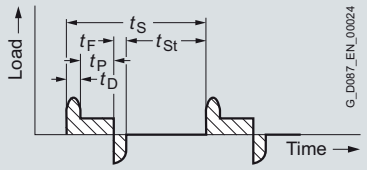
Operating mode S4 · Intermittent periodic duty with starting

Operating mode **S5**:

Intermittent duty where starting and braking affects the temperature

For the **S4** and **S5 operating modes**, this code should be followed by the cyclic duration factor, the moment of inertia of the motor (J_M), and the moment of inertia of the load (J_{Load}), both based on the motor shaft.

Unless any agreement is made to the contrary, the cycle duration here is also 10 minutes. Values of 15 %, 25 %, 40 %, and 60 % are recommended for the cyclic duration factor.



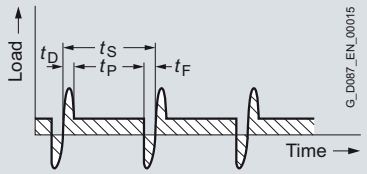
t_S Cycle duration
t_D Starting time
t_P Operating time with constant load
t_F Time with electrical braking
t_{St} Standstill time with windings at zero current

Cyclic duration factor (CDF) $= \frac{t_D + t_P + t_F}{t_S}$

Operating mode **S7**:

Continuous-operation periodic duty with starting and braking

For the S7 and S8 operating modes, the moment of inertia of the load (J_{Load}) based on the motor shaft must be known.



t_S Cycle duration
t_D Starting time
t_P Operating time with constant load
t_F Time with electrical braking

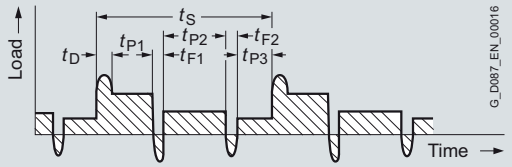
Cyclic duration factor = 1

Determining the operating mode (continued)

Operating mode **S8**:

Continuous-operation duty with non-periodic load and speed variations (inverter-fed operation)

Most of the intermittent operating conditions which occur in real situations are a combination of the operating modes defined above. All operating conditions must be specified in order to accurately define a suitable motor.



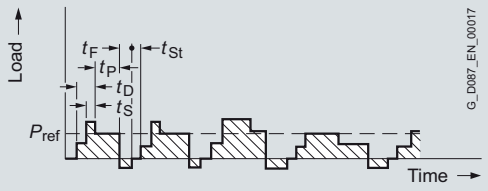
t_S Cycle duration
t_D Starting time
t_P Operating time with constant load (P1, P2, P3)
t_F Time with electrical braking (F1, F2)

Cyclic duration factor (CDF) $= \frac{t_D + t_{P1}}{t_S} \cdot \frac{t_{F1} + t_{P2}}{t_S} \cdot \frac{t_{F2} + t_{P3}}{t_S}$

Operating mode **S9**:

Continuous-operation duty with non-periodic load and speed variations (inverter-fed operation)

Most of the intermittent operating conditions which occur in real situations are a combination of the operating modes defined above. All operating conditions must be specified in order to accurately define a suitable motor.



t_D Starting time
t_P Operating time with constant load
t_F Time with electrical braking
t_{St} Standstill time with windings at zero current
t_S Time with overload

Operating modes according to EN 60034 (IEC 60034-1)

Operating mode	Description	Information required		k_{DC}
S1	Continuous duty with 100 % DC	–		
S2	Constant load for brief period, e.g. S2 - 30 min	Load duration	60 min	1.10
			30 min	1.20
			10 min	1.40
S3	Intermittent periodic duty without starting (cyclic operation), e.g. S3 - 40 %	Cyclic duration factor DC in % (based on 10 min)	60 %	1.10
			40 %	1.15
			25 %	1.30
			15 %	1.40
S4 … S10	Intermittent periodic duty with starting	Cyclic duration factor DC in %, times switched on per hour, load torque, and moment of inertia The operating mode and motor power can be determined if the number of startings per hour, starting time, load duration, type of braking, braking time, idle time, cycle time, standstill time, and required power are specified.	On request	

According to the table below, the motor list powers can be converted to the lower duty cycle using the corresponding k_{DC} factors for the S1, S2, and S3 operating modes.

With enhanced performance, you should note that the breakdown torque ratio must not fall below 1.6.

$$\frac{T_{Bd}}{T_{DC}}$$

$$P_{DC} = P_{rated} \cdot k_{DC}$$
$$T_{DC} \sim T_{rated} \cdot k_{DC}$$

Code	Description	Unit
P_{DC}	Power rating for the new duty cycle	–
P_{rated}	Rated motor power	kW
k_{DC}	Factor for enhanced performance	kgm^2
T_{DC}	Torque for the new duty cycle	Nm
T_{Bd}	Breakdown torque	Nm
T_{rated}	Rated torque	Nm

Coolant temperature and site altitude

The rated power specified in the selection tables in section 8 applies to continuous duty (S1) or inverter-fed operation (S9) according to IEC 60034-1 at the corresponding rated frequency, a coolant temperature of 40 °C and a site altitude of 1.000 m above sea level. Please contact us if higher coolant temperatures are to be used. The table containing correction factors provides a rough idea of derating if conditions are different.

This results in a permissible motor power of:

$$P_{perm} = P_{rated} \cdot k_{HT}$$

If the permissible motor power is no longer adequate for the drive, a check should be performed as to whether or not the motor with the next higher rated power fulfills the requirements.

Code	Description	Unit
P_{perm}	Permissible motor power	kW
P_{rated}	Rated motor power	kW
k_{HT}	Factor for abnormal coolant temperature and site altitude	–

Factor k_{HT} for different site altitudes and / or coolant temperatures

Site altitude (SA)	Coolant temperature (CT)					
m	< 30 °C	30… 40 °C	45 °C	50 °C	55 °C	60 °C
1 000	1.07	1.00	0.96	0.92	0.87	0.82
1 500	1.04	0.97	0.93	0.89	0.84	0.79
2 000	1.00	0.94	0.90	0.86	0.82	0.77
2 500	0.96	0.90	0.86	0.83	0.78	0.74
3 000	0.92	0.86	0.82	0.79	0.75	0.70
3 500	0.88	0.82	0.79	0.75	0.71	0.67
4 000	0.82	0.77	0.74	0.71	0.67	0.63

Selecting the brake

MOTOX geared motors can be supplied with fail-safe spring-operated disk brakes in order to reduce the motor's follow-on time or to hold loads, for example. Our MODULOG modular system can be used to assign / attach several brake sizes to one motor size. See Chapter 8 for information on assigning brake sizes to motor sizes, and on possible brake options.

The following information is required in order to select and check the brake:

- Speed
- Load torque
- Moments of inertia
- Number of startings

Selecting the braking torque

The braking torque must be selected in accordance with the particular drive scenario. The following criteria are crucial when it comes to making this selection: static safety, required braking time, permissible deceleration rate, and possible braking distance and brake wear.

The ambient conditions and number of startings are also important. Our drive experts will be able to provide optimum brake sizing.

In principle the selection is made according to the formula:

$$T_{br} > T_x \cdot \frac{k}{\eta}$$

Where k = 1.0 - 2.5 is selected. As a general rule of thumb, the factor for horizontal motion is around 1.0 - 1.5 and for vertical motion around 2.0 - 2.5. However, the exact specification of the braking torque depends to a large extent on the particular operating conditions.

Operating time of the brake

The time it takes the motor to come to a standstill comprises the following components: the application time of the brake t_1 and the braking time t_{br}. The first is the time it takes the brake to reach 90 % of its braking torque. This time may be circuit- and actuation-dependent. This information is provided for each brake in Chapter 8. The braking time can be calculated as follows:

$$t_{br} = \frac{(J_M + J_{add} + J_x \cdot \eta) \cdot n_{br}}{9.55 \cdot (T_{br} \pm T_x \cdot \eta)} \quad [s]$$

If T_x supports the braking operation, T_x is positive, otherwise it is negative.

Braking distance and positioning accuracy

Braking distance s_{br} is the distance traveled by the driven machine during braking time t_{br} and application time t_1. The formula below applies to horizontal motion and upward vertical motion. With linear motion, a positioning accuracy of around ± 15 % can be assumed. However, this can be heavily influenced by the condition of the brake.

$$s_{br} = v \cdot 100 \cdot (t_1 + 0.5 \cdot t_{br}) \quad [mm]$$

Braking energy per braking operation

The braking energy W per braking operation comprises the energy of the moments of inertia to be braked and the energy which must be applied in order to brake against a load torque:

$$W = \frac{T_{br}}{T_{br} \pm T_x \cdot \eta} \cdot \frac{(J_M + J_{perm} + J_x \cdot \eta) \cdot n_{br}^2}{182.5}$$

T_x is positive if the load torque is working against the braking torque
(horizontal motion, upward vertical motion).

T_x is negative if it supports the braking operation
(downward vertical motion).

The permissible operating energy Q_{perm} must be checked against the relevant number of startings using the "Permissible operating energy" diagram (see Chapter 8). This is of particular importance for emergency-stop circuits.

$$W < Q_{perm}$$

Code	Description	Unit
T_{br}	Rated braking torque	Nm
T_x	Load torque	Nm
k	Factor for taking operating conditions into account	kgm²
η	Efficiency	%
t_{br}	Braking time	s
t_1	Application time of the brake	ms
J_{mot}	Moment of inertia of the motor	kgm²
J_{add}	Additional moment of inertia (e.g. centrifugal mass or high inertia fan)	kgm²
J_x	Reduced moment of inertia of the load	kgm²
n_{br}	Braking speed	rpm
s_{br}	Braking distance	mm
W	Friction energy per braking operation	J
Q_{perm}	Permissible operating energy	J
L_{rated}	Service life of the brake lining until readjustment	h
$L_{ratedmax}$	Service life of the brake lining until replacement = total service life	h
v	Conveying speed	m/s
W_V	Friction energy until the brake is adjusted	MJ
W_{tot}	Friction energy until the brake lining is replaced	MJ
Z	Number of startings	1/h

Brake service life

The brake lining wears due to friction, which increases the air gap and the application time of the brake. The air gap can be readjusted. The friction lining should be replaced after it has been readjusted a certain number of times.

Service life of the brake lining until readjustment:

$$L_{rated} = \frac{W_V}{W \cdot Z}$$

Service life of the brake lining until replacement:

$$L_{ratedmax} = \frac{W_{tot}}{W \cdot Z}$$

Motors for inverter-fed operation

Selection of motors on the inverter

For selecting electrical drives on the inverter, the torque-speed response of the motors and the driving machine is important.

With inverter-fed operation, it is particularly important to pay attention to the torque limit curve. The torque of the driving machine must be smaller during continuous operation than the motor limit torque. The design of the motor depends to a large extent on the desired speed control range. In general, a range from 25 to 50 Hz is preferable.

The effectiveness of the self-ventilation is reduced with decreasing speed, which in turn also reduces the continuous output torque. Forced ventilation can be used to prevent the torque from decreasing.

The fan noise can increase at speeds that are higher than the rated speed of self-ventilated geared motors.
Above the frequency limit, the continuous output torque decreases (field weakening).

Bearings and bearing currents

With operation with inverters, additional bearing currents can occur. They are mainly caused by the steep voltage rises which occur during switching. Without output filters, significant voltage variations can occur on the winding terminals. This phenomenon mainly occurs with larger machines.

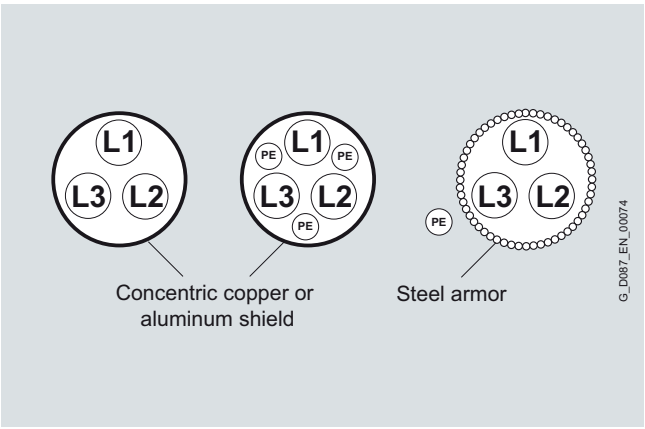
EMC-compliant installation of the drive system is a basic prerequisite for preventing premature bearing damage via bearing currents.

The most important measures for reducing bearing currents:

- Use of cables with a symmetrical cable cross-section,
- Use of grounding cables with low impedance in a large frequency range (0 Hz up to approximately 70 MHz), for example, plaited copper ribbon cables, HF litz wires,
- Separate HF equipotential-bonding cable between the motor housing and the driving machine,
- Separate HF equipotential-bonding cable between the motor housing and the inverter PE busbar,
- 360° HF contacting of the cable shield on the motor housing and the inverter PE busbar. This can be achieved using EMC cable glands at the motor end and EMC shield clips at the inverter end, for example,
- Use of motor reactors,
- Common-mode filters at the inverter output,
- Insulated motor bearing at the non-drive end.
  Motors from size 280 are delivered with bearing insulation for inverter-fed operation.

Mechanical stress and grease lifetime

High speeds that exceed the rated speed and the resulting increased vibrations alter the mechanical running smoothness and the bearings are subjected to increased mechanical stress. This reduces the grease lifetime and the bearing service life. More detailed information is available on request.



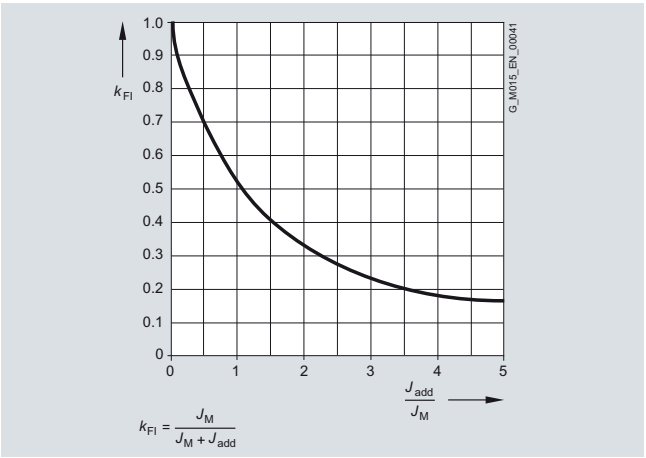
Determining the permissible number of startings Z_{perm}

A high number of startings means that the motor winding will be subject to a thermal load. The permissible no-load operating Z_0 for brake motors is specified in the no-load operating tables. The permissible number of startings Z_{perm} has to be determined for different operating cases. This value is influenced by the corresponding load torque, any additional moment of inertia, the power requirement, and the cyclic duration factor. These can be evaluated using the factors k_M, k_{FI}, and k_P.

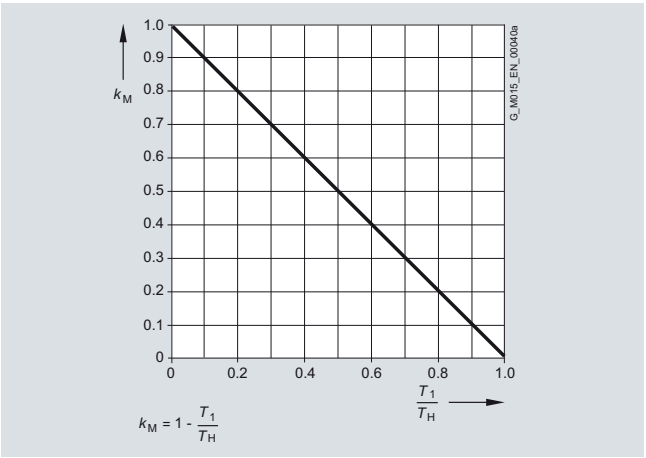
$$Z_{perm} = Z_0 \cdot k_M \cdot k_{FI} \cdot k_P$$

Code	Description	Unit
J_{mot}	Moment of inertia of the motor	kgm^2
J_{add}	Additional moment of inertia (e.g. centrifugal mass or high inertial fan)	kgm^2
k_M	Factor for taking the counter torque during acceleration into account	–
k_{FI}	Factor for taking the additional moment of inertia into account	–
k_P	Factor for taking the required power and duty cycle into account	–
T_{rated}	Rated torque of the motor	Nm
T_H	Acceleration torque of the motor	Nm
P_{rated}	Rated motor power	kW
Z_{perm}	Permissible number of startings	rph
Z_0	No-load operating from the list	rph

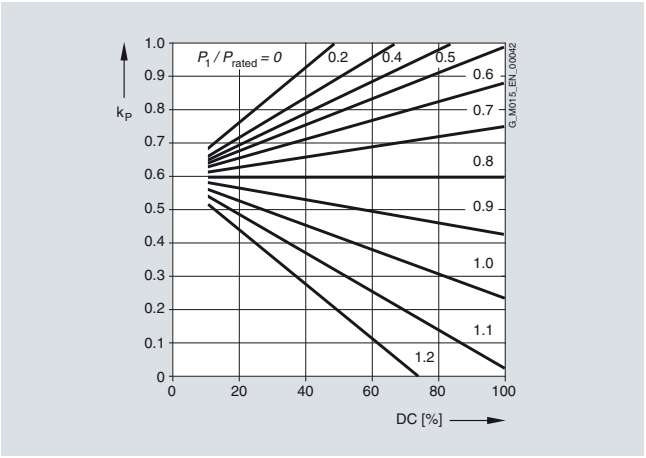
During operation at 60 Hz, the calculated permissible number of startings Z_{perm} must be reduced by 25 %. See the technical data for brakes found in Chapter 8 for the permissible number of startings during operation with function rectifiers.



Additional moment of inertia



Torque during acceleration



Required power and duty cycle

Checking the input torque for mounted units

Geared motors are usually integrated, i.e. they are mounted on the gearbox directly and the products are supplied as complete drives. Alternatively, the gearboxes can also be supplied with various input units for motor mounting. The criteria below must be taken into account, particularly for special motors.

Maximum input speed

We recommend that four-pole motors are mounted in order to achieve optimum gearbox service life. Higher input speeds can have an effect on bearing service life and the thermal properties of the gearbox, among other things.
See the section titled "Maximum speed", page 1/22.

Permissible radial force of the input shaft

Input units A and P can be powered by a V belt drive, for example. This results in a radial load on the input shaft. The permissible radial forces are specified in the section titled "Input unit".

Maximum input torque

The input units are primarily designed for four-pole standard three-phase AC motors. Considerably higher motor torques, which are above the maximum permissible input torque, may occur with special motors.

First of all, the continuous torque T_{1mot} of the motor and the permissible input torque of the input unit T_1 must be checked, along with the maximum torques (starting, breakdown, and braking). The torques for input units are specified in the section titled "Input unit". Please contact us if you have any questions.

$$T_{1mot} < T_1 = \frac{P_1 \cdot 9550}{n_1}$$

$$T_{1max} < 2.5 \cdot T_1$$

Code	Description	Unit
T_1	Permissible input torque of the input unit	Nm
T_{rated}	Rated torque of the motor	Nm
T_{1max}	Temporarily permissible max. input torque of the input unit	Nm
n_1	Input speed of the motor	rpm
P_1	Input power of the motor	kW

Overview of drive sizing data

Code	Description	Unit
a	Gearbox constant	kNmm
b, d, l, y, z	Gearbox constants	mm
C	Factor	–
d	Diameter of the input element	mm
DC	Cyclic duration factor (CDF)	%
f_{Btot}	Service factor of the driving machine	–
f_B	Service factor of the geared motor	–
F_{ax}	Axial force at d	N
F_r	Radial force at the output shaft	N
F_{Ravail}	Available radial force resulting from the output torque and the diameter of the output element	N
F_{Rperm}	Permissible radial force at the center of shaft extension (l/2)	N
F_{xperm1}	Permissible radial force, limited by the bearing service life, at a distance of x from the shaft shoulder	N
F_{xperm2}	Permissible radial force, limited by the shaft strength, at a distance of x from the shaft shoulder	N
i	Gearbox ratio	–
J_2	Moment of inertia based on the output speed of the gearbox	kgm^2
J_B	Moment of inertia of the brake	kgm^2
J_{Load}	All external moments of inertia (based on the motor shaft)	kgm^2
J_M	Moment of inertia of the motor	kgm^2
J_x	Reduced moment of inertia of the load	kgm^2
J_{add}	Additional moment of inertia (e.g. centrifugal mass or high inertia fan)	kgm^2
J_{Fan}	Centrifugal mass fan of handwheel	kgm^2
k	Factor for taking operating conditions into account	–
k_{DC}	Factor for enhanced performance	–
k_{FI}	Factor for taking the additional moment of inertia into account	–
k_{HT}	Factor for abnormal coolant temperature and site altitude	–
k_M	Factor for taking the counter torque during acceleration into account	–
k_P	Factor for taking the required power and duty cycle into account	–
L_{rated}	Service life of the brake lining until readjustment	h
$L_{ratedmax}$	Service life of the brake lining until replacement	h
m_{AF}	Mass acceleration factor	–
n_1	Input speed of the gearbox	rpm
n_2	Output speed of the gearbox	rpm
n_{br}	Braking speed	rpm

Code	Description	Unit
P_{2m}	Input power of the motor	kW
P_2	Output power of the gearbox	kW
P_{DC}	Power rating for the new duty cycle	kW
P_{req}	Required input power	kW
P_{rated}	Rated motor power	kW
P_{perm}	Permissible motor power	kW
Q_{perm}	Permissible operating energy	J
r	Radius of the output element	m
s_{br}	Braking distance	m
t_1	Application time of the brake	ms
t_{br}	Braking time	s
T_1	Permissible input torque of the input unit	Nm
T_{rated}	Rated torque of the motor	Nm
T_{1max}	Temporarily permissible max. input torque of the input unit	Nm
T_2	Output torque of the geared motor	Nm
T_{2req}	Required output torque of the driving machine	Nm
T_{2rated}	Nominal output torque of the geared motor	Nm
T_{br}	Rated braking torque	Nm
T_{DC}	Torque for the new duty cycle	Nm
T_{req}	Required torque	Nm
T_H	Acceleration torque of the motor	Nm
T_{Bd}	Breakdown torque	Nm
T_{rated}	Nominal torque	Nm
T_{avail}	Available torque of the geared motor	Nm
T_x	Load torque	Nm
v	Conveying speed	m/s
W	Friction energy per braking operation	J
W_{tot}	Friction energy until the brake lining is replaced	MJ
W_V	Friction energy until the brake is adjusted	MJ
Z	Number of startings	1/h
Z_{perm}	Permissible number of startings	1/h
Z_0	No-load operating from the list	1/h
α	Angle of action of the radial force	°
η	Efficiency	%
ϑ_{amb}	Ambient temperature	°C

Important drive technology variables

SI unit Variable	Abbreviation		Unit abbreviation		Designation or conversion rate *)
	SI	Previously	SI	Previously	
Length (distance)	l	L, s	m	m	1 km = 1.000 m
Area	A	F	m^2	m^2	1 m^2 = 100 dm^2
Volume	V	V	m^3	m^3	1 m^3 = 1.000 dm^3 1 dm^3 = 1 l
Plane angle	α, β, γ	α, β, γ	rad	Degrees °	1 rad = 1 m/m 1 L = π/2 rad 1° = π/180 rad
Rotation angle	ϕ	φ		Degrees °	1' = 1°/60; 1'' = 1'/60
Time					1 min = 60 s 1 h = 60 min
Time range	t	t	s	s	1 d = 24 h
Duration					1 a = 24 h
Frequency	f	f	Hz	1/s	1 Hz = 1/s
Speed	n	n	rpm	rev/min	Revolutions per minute
Velocity	v	v	m/s	m/s	1 km/h = $\frac{1}{3.6}$ m/s
Acceleration Free-fall acceleration	a g	b g	m/s^2	m/s^2	g = 9.81 m/s^2
Angular velocity	ω	Ω	rad/s	1/s	
Angular acceleration	α	ξ	rad/s^2	$1/s^2$	
Mass	m	m	kg	kg	1
Density		d	kg/dm^3	kg/dm^3	10^3
Force Weight force	F G	P, K G	N	kp	9.81 1 N = 1 kg · 1 m/s^2
Pressure Mechanical tension	p σ	p σ	Pa N/m^2 N/mm^2	 kp/cm^2 kp/mm^2	1 Pa = 1 N/m^2 9.81 · 10^4 9.81
Work Energy Quantity of heat	W W Q	A E Q	 J 	kpm kcal 	9.81 4.187 1 J = 1 Nm = 1 Ws
Force torque Torque Bending torque	 T 	M_t M_d M_b	 Nm 	 kpm 	9.81 1 Nm = 1 J
Power rating	P	N	W	PS	735.5; 1 W = 1 J/s = 1 Nm/s = $\frac{kgm^2}{s^3}$
Moment of inertia	J	θ	kgm^2	kpm^2	9.81

*) The numerical value of a variable in previously used units multiplied by the conversion rate gives the numerical value of the variable in the SI unit.

Conversion between kW and hp:

1 kW = 1.34102 hp

1 hp = 0.745700 kW

1 hp = 1.01387 PS

hp = horse power (US)
PS = Pferdestärke

Important drive technology variables (continued)

SI unit Variable	Abbreviation		Unit abbreviation		Designation or conversion rate *)
	SI	Previously	SI	Previously	
Dynamic viscosity	η	η	Pa · s	P	10^{-1}
Kinematic viscosity	υ	υ	m^2/s	St	10^{-4}
Electrical current intensity	I	I	A	A	1 A = 1 W/V = 1 V/Ω
Electrical voltage	U	U	V	V	1 V = 1 W/A
Electrical resistance	R	R	Ω	Ω	1 Ω = 1 V/A = 1/S
Electrical conductance	G	G	S	S	1 S = 1/Ω
Electrical capacitance	C	C	F	F	1 F = 1 C/V
Electric charge	Q	Q	C	C	1 C = 1 A · s
Inductance	L	L	H	H	1 H = 1 Vs/A
Magnetic flux density Induction	B	B	T	G	10^4 1 T = 1 Wb/m^2
Magnetic field strength	H	H	A/m	A/m	
Magnetic flux	ϕ	ϕ	Wb	M	10^8 1 Wb = 1 V · s
Temperature	T(ϑ)	t	K(°C)	°C	0 K = -273.15 °C

*) The numerical value of a variable in previously used units multiplied by the conversion rate gives the numerical value of the variable in the SI unit.

General technical data

1

Overview

MOTOX geared motors are available in an almost infinite number of combinations for adaptation to a wide range of drive scenarios. All the usual additional components and variants are also offered.

Made-to-measure solutions for all kinds of drive technology tasks are achieved with different gearbox types (helical, parallel shaft, bevel helical, helical worm, and worm), combined with motors by means of modular mounting technology.

Designs in accordance with standards and specifications

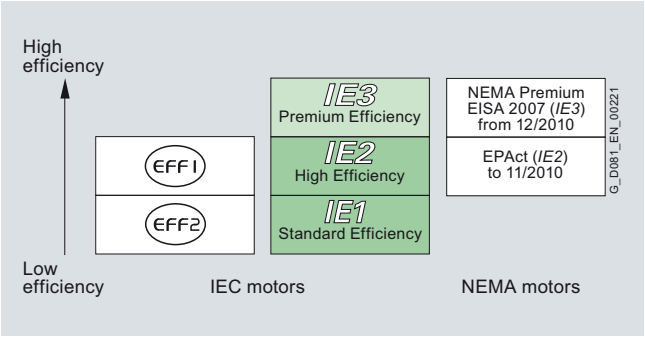
New efficiency classes and efficiences according to IEC 60034-30:2008 and IEC 60034-2-1:2007

New efficiency classes according to IEC 60034-30:2008

Different energy efficiency standards exist worldwide for asynchronous motors. To promote international harmonization, the international standard IEC 60034-30:2008 (Rotating electrical machines – Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors (IE code)) was created. This groups low-voltage asynchronous motors into new efficiency classes (valid since October 2008). The efficiencies of IEC 60034-30:2008 are based on losses determined in accordance with the IEC 60034-2-1:2007 standard. This has been valid since November 2007 and will replace the previous standard IEC 60034-2:1996 as of November 2010. The supplementary losses are now measured and no longer added as a percentage.

New standard classes for efficiencies
A new nomenclature applies to the new efficiency classes (IE = International Efficiency):

- IE1 (Standard Efficiency)
- IE2 (High Efficiency)
- IE3 (Premium Efficiency)



New efficiency classes

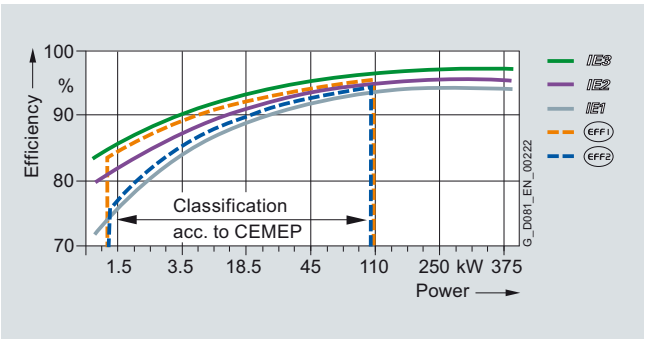
New measuring method according to IEC 60034-2-1:2007

With the new measuring method, the supplementary losses are no longer applied as a percentage (0.5 %), but instead they are determined with measurements (IEC 60034-2-1: 2007). The nominal efficiencies are therefore reduced from EFF1 to IE2 and from EFF2 to IE1, even though there have been no technical or physical changes to the motors.

Previously: P_{LL} = 0.5 % of *P* added

Now: P_{LL} = individual measurement

P_{LL} = load-dependent supplementary losses.



IE1 to IE3 efficiencies 4-pole 50 Hz

The following table shows examples of the efficiency values according to the new and old loss calculating methods.

	EFF measuring method (incl. percentage losses) EN / IEC 60034-2:1996 50 Hz	Losses determined according to IEC 60034-2:2007 50 Hz	Losses determined according to IEC 60034-2:2007 60 Hz
5.5 kW 4-pole	89.2 %	87.7 %	89.5 %
45 kW 4-pole	93.9 %	93.1 %	93.6 %
110 kW 4-pole	Not defined	94.5 %	95.0 %

Background information

The EuP directive (Energy Using Products) is implemented in the national laws of EU member countries. The framework conditions for the European directives have already been agreed. EU directive 2005/32/EC (= EuP directive) is based on IEC 60034-30:2008 with regard to the minimum efficiency values.

This directive is implemented in Germany in the form of the so-called "Energiebetriebene-Produkte-Gesetz" (EBPG - Energy Using Products Directive).

Designs in accordance with standards and specifications (continued)

The most important changes at a glance:

	CEMEP voluntary EU agreement	NEMA	EuP directive based on IEC 60034-30:2008 standard EuP = Energy Using Products
Description	Voluntary agreement between the EU commission and the European sector committee of manufacturers of electrical machines (CEMEP)	The current legislature in USA/CAN/MX also governs efficiencies	The EuP directive must be implemented in national law in all EU countries. The determination of losses, and therefore of efficiency classes, is based on IEC 60034-2-1:2007
Number of poles	2, 4	2, 4, 6	2, 4, 6
Performance range	1.1 – 90 kW	0.75 – 150 kW	0.75 – 375 kW
Level	Standard – EFF3 Enhanced efficiency – EFF2 Highly efficient – EFF1	High Efficiency NEMA Premium	Standard Efficiency – IE1 High Efficiency – IE2 Premium Efficiency – IE3
Voltage	400 V, 50 Hz	230 / 460 V, 60 Hz	< 1000 V, 50 / 60 Hz
Degree of protection	IP5X	Open + closed motors	All
Motors with brake	NO	YES	In agreement
Geared motors	NO	NO	YES
Ex motors	NO	YES	EuP directive – NO IEC 60034-30 – YES (but explosion protection always has a higher priority)
Law	Voluntary agreement; will be replaced on implementation of the national measures.	Up to 11/2010 EPACT (IE2) From 12/2010 EISA 2007 Premium (IE3) minimum efficiency	IEC 600034-30 standard, valid since October 2008, EuP

For more information on EuP:

- Excluded: Explosion-proof motors according to ATEX, brake motors, smoke-extraction motors
- Deadline 16 June 2011: IE2 minimum efficiency for motors from 0.75 kW to 375 kW
- Deadline 01 January 2015: IE3 minimum efficiency for motors from 7.5 kW to 375 kW or a combination of IE2 motor and frequency converter
- Deadline 01 January 2017: IE3 minimum efficiency for all motors from 0.75 kW to 375 kW or a combination of IE2 motor and frequency converter

Abbreviations

CEMEP – Comité Européen de Constructeurs de Machines Électriques et d'Électronique de Puissance (European sector committee of manufacturers of electrical machines)

EISA 2007 – Energy Independence and Security Act of 2007

EPACT – Energy Policy Act

NEMA – National Electrical Manufacturers Association

IEC – International Electrotechnical Commission

IE – International Efficiency

What will change?

The rating plates of the motors will be adapted to the new technical data and their clarity and readability will be enhanced (for examples, see page 1/38).

For motors up to frame size 315 L, this means:

- Nominal efficiencies in accordance with the IEC 60034-30 standard are specified regardless of the actual efficiency, i.e. in accordance with the standardized performance classes such as 7.5 kW, 11 kW and 15 kW, nominal efficiencies only will be offered in accordance with efficiency class IE1 and IE2.
- The rated currents have been adapted in accordance with the new efficiencies. The motor rated currents will increase minimally (by up to 3 %).
- There is no need for a voltage range to be specified on the new rating plates. The rated voltages only are specified.

  Note: The transition period for adjustment of mains voltages with increased tolerances within the EU expired on January 1, 2008. Since then the permissible mains tolerances are 230 / 400 V ±10 %, 50 Hz and 400 / 690 V ±10 %, 50 Hz.

Summary

The standard motor series LA and LG will be converted to the new efficiency designations "IE1" and "IE2" in accordance with IEC 60034-30:2008. The order numbers will remain unchanged.

This affects all motors that were previously designated with "EFF2" and "EFF1" as well as the motor types that have been added due to the IEC 60034-30:2008 efficiency standard:

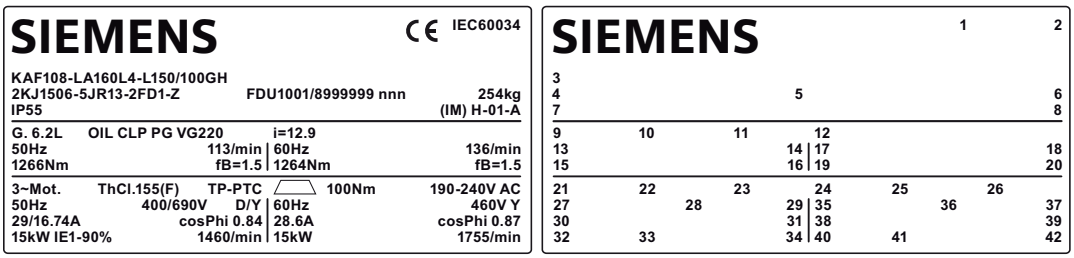
- 2-pole, 4-pole and 6-pole motors (only "single-speed motors", not pole-changing motors and not 8-pole motors)
- Output range from 0.75 kW to 375 kW

A detailed presentation of the affected motors, including their frame sizes, can be found in the overview tables in the separate catalog parts under "Orientation" in the "Selection and ordering data". The changed technical data is also listed here.

Designs in accordance with standards and specifications (continued)

Example of rating plate

Due to the IE changeover, the affected motors will be equipped with new rating plates complete with the new technical data.



1 CE marking or, if required, other marking
2 Standard taken as a basis
3 Type - Type of construction - Size
4 Order No.
5 Serial No.
6 Weight m [kg]
7 Degree of protection acc. to IEC 60034-5 and IEC 60529
8 Mounting position (IM)
9 Oil quantity [l] main gearbox / intermediate gearbox + extruder flange
10 Kind of oil
11 Oil viscosity ISO VG Class acc. to DIN 51519 / ISO 3448
12 Total transmission ratio *i*

Frequency 1
13 Rated frequency *f* [Hz]
14 Speed at the output n_2 [rpm]
15 Torque at the output T_2 [Nm]
16 Service factor f_B

Frequency 2
17 Rated frequency *f* [Hz]
18 Speed at the output n_2 [rpm]
19 Torque at the output T_2 [Nm]
20 Service factor f_B

Motor data
21 Phase number and kind of current of the motor
22 Temperature class Th.Cl.
23 Motor protection (TP)
24 Symbols (IEC 60617-2): = Brake
25 Braking torque T_{br} [Nm]
26 Brake supply voltage *U* [V]

Frequency 1
27 Rated frequency *f* [Hz]
28 Rated voltage / rated voltage range *U* [V]
29 Circuit, graphical symbol acc. to DIN EN 60617 T6 / IEC 60617-6
30 Rated current *I* [A]
31 Power factor cos φ
32 Rated power *P* [kW], operating mode (if ≠ S1)
33 Designation of the efficiency class acc. to IEC 60034-30
34 Rated speed n_1 [rpm]

Frequency 2
35 Rated frequency *f* [Hz]
36 Rated voltage / rated voltage range *U* [V]
37 Rated current *I* [A]
38 Power factor cos φ
39 Circuit, graphical symbol acc. to DIN EN 60617 T6 / IEC 60617-6
40 Rated power *P* [kW], operating mode (if ≠ S1)
41 Designation of the efficiency class
42 Rated speed n_1 [rpm]

Designs in accordance with standards and specifications (continued)

Minimum efficiencies required by law

In 1997, an act was passed in the USA to define minimum efficiencies for low-voltage three-phase AC motors (EPACT = Energy Policy Act). An act is in force in Canada that is largely identical, although it is based on different verification methods. The efficiency is verified for these motors for the USA using IEEE 112, Test Method B and for Canada using CSA-C390. Apart from a few exceptions, all low-voltage three-phase AC motors exported to the USA or Canada must comply with the legal efficiency requirements.

The law demands minimum efficiency levels for motors with a voltage of 230 and 460 V at 60 Hz, in the power range 1 to 200 hp (0.75 to 160 kW) with 2, 4, and 6 poles. Explosion-proof motors must also be included. The EPACT efficiency requirements exclude, for example:

- Motors whose size power classification does not correspond with the standard series according to NEMA MG1-12.
- Flange-mounting motors without feet
- Brake motors
- Inverter-fed motors
- Motors with design letter C and higher.

For more information on EPACT:

www.eren.doe.gov/

Special requirements for the USA: Energy Policy Act

The act lays down that the nominal efficiency at full load and a "CC" number (Compliance Certification) must be included on the rating plate.
The "CC" number is issued by the US Department of Energy (DOE).
The following information is stamped on the rating plate of EPACT motors which must be marked by law:
Nominal efficiency (service factor SF 1.15), design letter, code letter, CONT, CC no. CC 032A (Siemens), and NEMA MG1-12.

Special requirements for Canada: CSA – Energy Efficiency Verification

These motors fulfill the minimum efficiency requirements laid down by the CSA standard C390. These motors can be ordered and feature the CSA-E mark on their rating plates.

NEMA – National Electrical Manufacturing Association

Data on the rating plate:

Rated voltage range, design letter, code letter, CONT, and NEMA MG1-12.

Order code:
Design in accordance with NEMA **N65**

UL-R – Underwriters Laboratories Inc. listing

The motors are listed for up to 600 V by Underwriters Laboratories Inc. ("Recognition Mark" = R/C).

Motor voltages up to 600 V are certified in accordance with UL.

"UL Recognition Mark" is included on the rating plate of the motor.

In addition, the motor is designed to meet the NEMA MG1-12 electrical standard and includes the following data on the rating plate:
Rated voltage, nominal efficiency, design letter, code letter, CONT, and NEMA MG1-12.

Externally or internally mounted components such as:

- Motor protection
- Heating element
- External fan unit
- Brake
- Encoder
- Plug connection

are UL-R/C, CSA, or C-US listed or used by manufacturers in accordance with regulations.

UL-R/C cable glands must be used for cable entry.

Order code:
Design in accordance with UL-R **N37**

Designs in accordance with standards and specifications (continued)

CSA – Canadian Standard Association

Motors are approved for up to 690 V in accordance with the Canadian regulations of the "Canadian Standard Association" (CSA). Externally or internally mounted components which are used are listed by CSA or are used by manufacturers in accordance with regulations. The CSA mark and the rated voltage are included on the rating plate.

When energy-saving motors are ordered, they also include the CSA-E mark on the rating plate.

Order code:
Design in accordance with CSA **N36**

UL-R and CSA approval

UL-R approval and CSA approval can also be ordered together for the motors.

Order code:
Design in accordance with UL-R and CSA **N38**

CCC – China Compulsory Certification

"Small power motors" which are exported to China must be certified up to a rated power of:

2-pole: ≤ 2.2 kW

4-pole: ≤ 1.1 kW

6-pole: ≤ 0.75 kW

8-pole: ≤ 0.55 kW

The **LA motors which must be certified** are certified by the CQC (China Quality Cert. Center). When one of these motors is ordered, the logo "CCC (Safety Mark)" is included on the rating plate and the packaging.

Notes:

Chinese customs checks the need for certification of imported products by means of the commodity code.

The following do not need to be certified:

- Motors imported to China which have already been installed in a machine
- Repair parts

Order code:
Design in accordance with CCC **N67**

CEEL – China Energy Efficiency Label

In June 2008 China introduced mandatory energy efficiency labeling for electric motors.

Since September 1, 2008, when the transition period expired, the applicable electrical motors could only be imported and sold in China with a valid "China Energy Efficiency Label".

The motor must be labeled with the "China Energy Efficiency Label" sticker, which states the efficiency class.

Apart from the Energy Label sticker (dimensions 80 x 54 mm) the efficiency must also be stated on the rating plate.

The labeling requirements apply to 2, 4 and 6-pole motors with a line frequency of 50 Hz and rated voltages of up to 690 V.

Efficiency classes 2 and 3 apply here to motors with a rated power of 0.55 kW to 315 kW and efficiency class 1 applies to motors with a rated power from 3 kW to 315 kW.

Order code:
Design in accordance with China Energy Efficiency Label **K69**

GOST-R conformity

The following gearboxes can be supplied, certified according to GOST-R:

- Helical gearboxes
- Bevel helical gearboxes
- Parallel shaft gearboxes
- Helical worm gearboxes
- Worm gearboxes
- CAVEX worm gearboxes

Order code:
Design in accordance with GOST **N30**

VIK version

For a VIK version, select an IEC motor from Catalog D 81.1 that can be mounted on gearboxes with an input unit K2 or K4.

Explosion protection as per ATEX

In the European market ATEX Directive 94/9/EC applies to all types of equipment used in potentially explosive atmospheres - which include geared motors. It became mandatory on July 1, 2003 and has unrestricted validity for the use of all geared motors within the European Union. Other countries too have now complied with this regulation.

Helical gearboxes, parallel shaft gearboxes, bevel helical gearboxes, and helical worm gearboxes are available to comply with this Directive. A wide range of gearbox and motor designs and sizes are approved for zones 1, 2 (gases) and zones 21 and 22 (dusts).

Ex-atmosphere / Zone		Category	Frequency
G (gas and steam)	D (dust)		
0	20	1	Continuously or long-term
1	21	2	Intermittent
2	22	3	Rarely or briefly

MOTOX geared motors can be provided for categories 2 and 3.

Use in explosive atmospheres caused by gases is permissible for temperature classes T1 to T4. With use in explosive atmospheres caused by dust, the maximum temperature of 120 °C must be taken into consideration for the gearbox. An oil level sensor can be integrated for monitoring in inaccessible areas.

Motors are available in the following protection types: flameproof enclosure (Exd), flameproof enclosure and terminal box with increased safety (Exde), increased safety (Exe), and non sparking (ExnA) as well as motors for dust explosion protection.

The motors are mounted on the gearbox with an input unit K4 or K2.

General technical data

Standards

The motors comply with all applicable international (IEC), European (EN, CENELEC), and national (DIN/VDE) standards:

IEC	EN / HD	DIN / VDE	Title
IEC 60027-4	EN 60027-4	DIN EN 60027-4	Letter symbols for electrical engineering, part 4: Rotating electrical machines
IEC 60034-1	EN 60034-1	DIN EN 60034-1 VDE 0530-1	Rotating electrical machines: - Rating and performance
IEC 60034-2-1	EN 60034-2-1	DIN EN 60034-2-1 VDE 0530-2-1	- Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles) (IEC 60034-2-1:2007); German version EN 60034-2-1:2007
IEC 60034-5	EN 60034-5	DIN EN 60034-5 VDE 0530-5	- Degrees of protection provided by integral design of rotating electrical machines (IP code) - Classification
IEC 60034-6	EN 60034-6	DIN EN 60034-6 VDE 0530-6	- Methods of cooling (IC code)
IEC 60034-7	EN 60034-7	DIN EN 60034-7 VDE 0530-7	- Classification of types of construction, mounting arrangements and terminal box position (IM code)
IEC 60034-8	EN 60034-8	DIN EN 60034-8 VDE 0530-8	- Terminal markings and direction of rotation
IEC 60034-9	EN 60034-9	DIN EN 60034-9 VDE 0530-9	- Noise limits
IEC 60034-12	EN 60034-12	DIN EN 60034-12 VDE 0530-12	- Starting performance of three-phase cage induction motors except for pole-changing motors
IEC 60034-14	EN 60034-14	DIN EN 60034-14 VDE 0530-14	- Mechanical vibration of certain machines with shaft heights 56 mm and higher
IEC TS 60034-17	–	DIN VDE 0530-17	- Cage induction motors when fed from converters - Application guide
IEC 60038	HD 472	DIN IEC 60038	IEC standard voltages
–	EN 50347	DIN EN 50347	General purpose three-phase induction motors having standard dimensions and outputs - Sizes 56 to 315 and flange sizes 65 to 740
IEC 60085	EN 60085	DIN EN 60085	Electrical insulation, thermal evaluation and designation
IEC 60445	EN 60445	DIN EN 60445 VDE 0197	Identification of equipment terminals and conductor terminations
IEC 60529	EN 60529	DIN EN 60529 VDE 0470-1	Degrees of protection provided by enclosures (IP code)
–	EN 50262	DIN EN 50262 VDE 0619	Cable glands for electrical installations
–	–	DIN 42925	Terminal box cable entries for three-phase cage induction motors at rated voltages from 400 V to 690 V

The main dimensions of all gearboxes comply with the following DIN standards:

DIN 747	Shaft heights for machines
DIN 748-1	Cylindrical shaft extensions; dimensions, nominal torques
DIN 42955	Concentricity of shaft extensions, concentricity and axial eccentricity of mounting flange
DIN 6885-1	Drive-type fastenings without taper action; feather key, slots, high format
DIN 332-2	Center holes in shaft ends

Fits

Flange form A, C:

$b1 \leq \varnothing 230$ = j6

$b1 > \varnothing 230$ = h6

Drive-side shaft extension:

$d1 < \varnothing 55$ = k6

$d1 \geq \varnothing 55$ = m6

See the dimension drawings for other fits.

Degrees of protection

The geared motors are supplied with IP55 to standard IEC 60034-5. For higher degrees of protection for motors, see Chapter 8 "Motor degrees of protection".

Direction of rotation of geared motors

The geared motors are configured so the motor shaft rotates clockwise (IEC 60034-8).

The direction of rotation of the gearbox output shaft can be reversed by swapping two external connection wires on the motor.

Specifying the direction of rotation for geared motors and gearboxes with backstop

It is necessary to specify the desired direction of rotation of the output shaft when ordering a gearbox with backstop. The direction of rotation is determined by the front view of the output shaft (shaft end face). With parallel shaft, bevel helical, and helical worm gearboxes, it is again necessary to specify the side on which the output shaft is located, i.e. either "Output side A" or "Output side B". The output side is defined by specifying the mounting position.

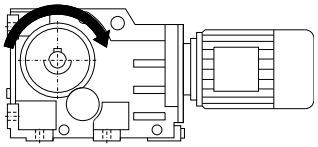
Direction of rotation of the geared motor when viewing the output shaft

Output shaft direction of rotation order codes:

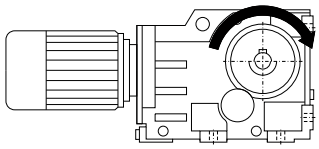
Clockwise **K18**

Counterclockwise **K19**

Clockwise

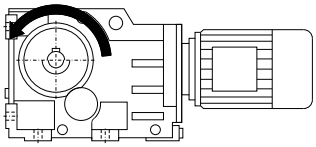


Output side A

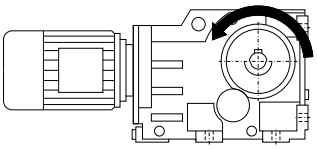


Output side B

Counterclockwise



Output side A



Output side B

Gearbox	Size	Gear stages	Front view	Output shaft direction of rotation	Input shaft direction of rotation
Z	38 ... 188	2	Output shaft	Clockwise	Clockwise
				Counterclockwise	Counterclockwise
D	38 ... 188	3	Output shaft	Clockwise	Counterclockwise
				Counterclockwise	Clockwise
FZ	38B ... 188B, 208	2	Drive end of output shaft	Clockwise	Clockwise
				Counterclockwise	Counterclockwise
FD	38B ... 188B, 208	3	Drive end of output shaft	Clockwise	Counterclockwise
				Counterclockwise	Clockwise
C	38 ... 88	2	Drive end of output shaft	Clockwise	Clockwise
				Counterclockwise	Counterclockwise
B	28 ... 38	2	Drive end of output shaft	Clockwise	Clockwise
				Counterclockwise	Counterclockwise
K	38 ... 88	3	Drive end of output shaft	Clockwise	Counterclockwise
				Counterclockwise	Clockwise
K	108 ... 188	3	Drive end of output shaft	Clockwise	Clockwise
				Counterclockwise	Counterclockwise
K	38 ... 188	3	Non-drive end of output shaft	Clockwise	Counterclockwise
				Counterclockwise	Clockwise

General technical data

Power ratings and torques

The specified power ratings and torques refer to standard versions, mounting positions B3../ B5../H01 and other comparable mounting positions, whereby the first stage is not completely immersed in oil. Normal ambient conditions and standard lubrication are also required.

Speeds

The specified output speeds are guide values, rounded to the first decimal place. You can use the rated motor speed and the gearbox speed to calculate the rated drive speed.

Please note that the actual output speed will depend on the motor load and the power supply conditions.

Noise

Noise emitted by the motors during mains operation

Noise is measured in accordance with ISO 1680 in a dead room. The noise level is specified as A-weighted measuring surface sound pressure level L_{pfA} in dB (A). This value is the spatial average value of the sound pressure levels measured at the measuring surface. The measuring surface is a cube 1 m away from the surface of the motor. The sound power level is also specified as L_{WA} in dB (A).

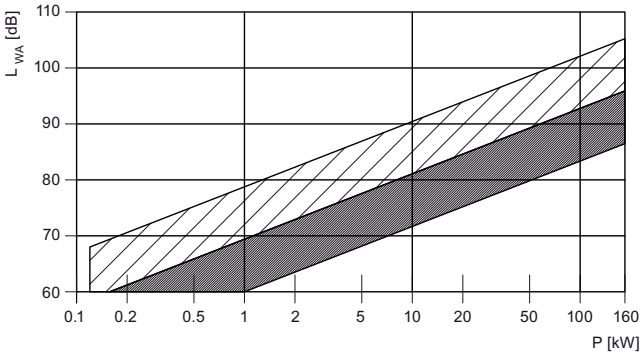
The values specified in the motor selection tables apply to the motor without gearbox at 50 Hz (see the selection and ordering data in the corresponding sections of the catalog).
The tolerance is +3 dB. At 60 Hz, the values are approximately 4 dB (A) higher. Please enquire about noise levels for pole-changing motors, geared motors, and inverter-fed motors.

Noise emitted by the geared motors

The geared motors do not exceed the permissible noise levels defined for gearboxes in VDI guideline 2159 and for motors in IEC 60034-9.
The values L_{pA} and L_S increase in each case by a general average of 3-5 dB (A) for geared motors as compared to motors without gears.

However, there is a strong correlation between noise level and:
- gear design
- speed and transmission ratios
- mounting positions
- other influencing factors

Precise data is available on request.



Weight of geared motors

The weight data contained in the dimension drawings are averaged values and do not take account of oil. The weights vary according to the gearbox design and size. The oil quantity depends on the mounting position.

The exact weight of the drive will be specified on the order confirmation.

Three-phase AC motors

Three-phase AC motors are designed to be perfectly coordinated with the gearbox system and can be supplied with or without a brake.

The motor series covers sizes 63 to 315.

The power ratings of the 2-, 4-, 6-, 8-, 8/2-, 8/4-, and 4/2-pole motors are classified in accordance with IEC. Pole-changing design with pole number 6/4 is available on request.
The housings of motors up to size 160 are made from high-quality aluminum alloy. Housings for sizes 180 and above are made from gray cast iron.

Brakes

The motors can be supplied with spring-operated disk brakes. These are double-disk brakes, which are spring-operated at zero current. (Safety brake)

The torque can be set within certain limits for every brake size.

Lubricants

All gearboxes are filled with lubricant at the factory. The lubricants used meet the requirements of DIN 51502. The gearboxes are filled with varying oil quantities (see operating instructions and rating plate) depending on their mounting position.
If no specifications are made to the contrary, the standard lubricant is used.

Required quality of gear lubricants

The oils used in the MOTOX gearboxes are subject to stringent quality control. For MOTOX gearboxes, only CLP-quality oils are approved which contain ingredients to DIN 51517-3 for improvement of corrosion protection, resistance to ageing, and which reduce wear in mixed-friction areas. The scuffing resistance in the FZG test to DIN 51354-2 must comply with stage 12 or higher under A/8.3/90 test conditions. In the FE-8 rolling bearing test to DIN 51817 rolling element wear must be under 30 mg and cage wear under 100 mg under D-7.5/80-80 test conditions.

In addition, the lubricants must meet the following quality requirements demanded by FLENDER:

- Sufficiently high gray-staining resistance in accordance with FVA 54 gray-staining test
- Low degree of foaming with less than 15 % foam formation in the FLENDER foam test
- Suitable for the elastomer material used in the radial shaft sealing of gearboxes
- Compatible with residues of corrosion-protection agent and run-in oils
- Compatible with the paints used by Siemens in the gearbox interiors
- Compatible with liquid sealing between bolted-joint surfaces.

For a list of approved oils from different manufacturers please refer to the Operating Instructions BA 7300.

Furthermore, for use in worm gearboxes:

Low wear, high pitting resistance, and high efficiency (low temperature) in the cylindrical worm gearbox test.

For a list of approved oils from different manufacturers please refer to the Operating Instructions BA 7303.

Lubricants (continued)

Lubricants for helical gearboxes E / D / Z, parallel shaft gearbox F, bevel helical gearbox K:

Area of application	Ambient temperature [1]	DIN 51 502 designation	Order code
Standard oils			
Standard temperature	-10 … +40 °C	CLP ISO VG220	**K06**
Improved oil service life	-20 … +50 °C	CLP ISO PG VG220	**K07**
High temperature usage	0 … +60 °C	CLP ISO PG VG460	**K08**
Low temperature usage	-40 … +40 °C	CLP ISO PAO VG220	[2]
Lowest temperature usage	-40 … +10 °C	CLP ISO PAO VG68	[2]
Physiologically safe oils (for use in the food industry) in acc. with NSF (USDA)-H1			
Standard temperature	-30 … +40 °C	CLP ISO H1 VG460	**K11**
Biologically degradable oils			
Standard temperature	-20 … +40 °C	CLP ISO E VG220	**K10**

[1] Recommended
[2] On request

Lubricants for bevel helical gearbox B and helical worm gearbox C:

Area of application	Ambient temperature [1]	DIN 51 502 designation	Order code
Standard oils			
Standard temperature	0 … +60 °C	CLP ISO PG VG460	**K08**
Low temperature usage	-20 … +50 °C	CLP ISO PG VG220	**K07**
Lowest temperature usage	-40 … +40 °C	CLP ISO PAO VG220	[2]
Physiologically safe oils (for use in the food industry) in acc. with NSF (USDA)-H1			
Standard temperature	-30 … +40 °C	CLP ISO H1 VG460	**K11**
Biologically degradable oils			
Standard temperature	-20 … +40 °C	CLP ISO E VG220	**K10**

[1] Recommended
[2] On request

Lubricants for worm gearbox S:

Area of application	Ambient temperature [1]	DIN 51 502 designation	Order code
Standard oils			
Standard temperature	0 … +60 °C	CLP ISO PG VG460	**K08**
Lowest temperature usage	-40 … +40 °C	CLP ISO PAO VG 220	[2]
Physiologically safe oils (for use in the food industry) in acc. with NSF (USDA)-H1			
Standard temperature	-30 … +50 °C	CLP ISO H1 VG460	**K11**

[1] Recommended
[2] On request

The ambient temperatures are applicable for gearboxes in standard operation. The data is based on our experience with standard applications. The oil sump temperature is a decisive factor for the service life of the lubricant and depends to a large extent on the gearbox type, gearbox size, transmission ratio, mounting position, input speed, and operating mode.

The standard gearbox version can be used in the range -20 °C to +40°C. Operation outside this range requires a variety of measures. Please contact us.

The data on usage in high, low, and lowest temperature ranges only refers to the lubricant.

It may be necessary to take other design measures. Please contact us.

With low ambient temperatures, critical startup characteristics need to be taken into account.

With higher ambient temperatures (> 40 °C), the permissible oil sump temperature must not be exceeded. Please contact us if you require your drive to be thermally tested.

Long-term preservation

Helical gearboxes, parallel shaft gearboxes, bevel helical gearboxes, and helical worm gearboxes can be delivered with a long-term preservation of up to 36 months. The free shaft extensions, sealing elements, and flanges are coated with a protective layer of grease. The gearbox is completely filled with oil for long-term preservation.

See the operating instructions for information on storage and commissioning.

Order code:
Long-term preservation up to 36 months **K17**

Surface treatment

We offer 5 high-quality paint systems in different hues to protect drives against corrosion and external influences.

Our corrosion protection range is available in accordance with the corrosion categories of the DIN EN ISO 12944-2 standard.

Geared motors of size 38 and above are painted in RAL 5015 (sky blue) as standard according to corrosion category C1. This ensures that they are protected against corrosion for installation in interior areas. Gearboxes of size 08,18 and 28 with an aluminum housing are supplied unpainted as standard.

For transport, the bare parts are coated with anti-corrosion paint which will last for a limited amount of time.

Overview of surface treatment

Corrosion category	Order code	Paint system	Hue	Description
Surface protection for normal environmental stress				
C1	**L02**	1-component water-based coating	Standard: 5015 On request: RAL 1003, 1007, 1012, 1018, 1023, 2000, 2004, 3000, 5007, 5009, 5010, 5012, 6011, 6018, 7001, 7011, 7016, 7030, 7031, 7032, 7035, 9005, 9006, 9010	• Indoor installation • Heated buildings with neutral atmospheres • Resistance to greases and some resistance to mineral oils, aliphatic solvents • Standard paint finish
Surface protection for minimal environmental stress				
C2	**L03**	2-component polyurethane primer 2-component polyurethane top coat	Standard: RAL 7031 On request: RAL 1003, 1012, 1018, 1023, 2004, 3000, 5002, 5007, 5009, 5010, 5012, 5015, 6011, 6018, 7000, 7001, 7011, 7030, 7032, 7035, 9005, 9006, 9010, 9011, 9016	• Indoor and outdoor installation • Unheated buildings with condensation, production areas with low humidity, e. g. warehouses and sports facilities • Atmospheres with little contamination, mostly rural areas • Resistant to greases, mineral oils and sulfuric acid (10 %), caustic soda (10 %) and some resistance to aliphatic solvents
Surface protection for medium environmental stress				
C3	**L04**	2-component polyurethane primer 2-component polyurethane top coat	Standard: RAL 7031 On request: RAL 1003, 1012, 1018, 1023, 2004, 3000, 5002, 5007, 5009, 5010, 5012, 5015, 6011, 6018, 7000, 7001, 7011, 7016, 7030, 7031, 7032, 7035, 9005, 9006, 9010, 9011, 9016	• Indoor and outdoor installation • Production areas with high levels of humidity and some air pollution, e. g. plants for food manufacturing, dairies, laundries and breweries • Urban and industrial atmospheres, moderate contamination from sulfur dioxide, coastal areas with low salt levels • Resistant to greases, mineral oils, aliphatic solvents, sulfuric acid (10 %), caustic soda (10 %)
Surface protection for high environmental stress				
C4	**L20**	2-component epoxy zinc phosphate primer 2-component polyurethane top coat	Standard: RAL 7031 On request: RAL 1003, 1012, 1018, 1023, 2004, 3000, 5002, 5007, 5009, 5010, 5012, 5015, 6011, 6018, 7000, 7001, 7011, 7016, 7030, 7031, 7032, 7035, 9005, 9006, 9010, 9011, 9016	• Indoor and outdoor installation • Chemical plants, swimming pools, wastewater treatment plants, electroplating shops, and boathouses above seawater • Industrial areas and coastal areas with moderate salt levels • Resistant to greases, mineral oils, aliphatic solvents, sulfuric acid (10 %), caustic soda (10 %)
Surface protection for extremely high environmental stress				
C5	**L05**	2-component epoxy zinc phosphate primer 2-component epoxy iron mica 2-component polyurethane top coat	Standard: RAL 7031 On request: RAL 1003, 1012, 1018, 1023, 2004, 3000, 5002, 5007, 5009, 5010, 5012, 5015, 6011, 6018, 7000, 7001, 7011, 7016, 7030, 7031, 7032, 7035, 9005, 9006, 9010, 9011, 9016	• Indoor and outdoor installation • Buildings and areas with almost constant condensation and with heavy pollution, e. g. malt factories and aseptic areas • Industrial areas with high humidity and aggressive atmosphere, coastal areas and offshore environments with high salt levels • Resistant to greases, mineral oils, aliphatic solvents, sulfuric acid (10 %), caustic soda (20 %)

Surface treatment (continued)

Corrosion category	Order code	Paint system	Hue	Description
Primed according to corrosion category C2 G				**Repaintability with *)**
C2 G	**L01**	2-component polyurethane primer		• 2-component polyurethane paint, 2-component epoxide paint and acid hardening paint, 2-component acrylic paint
Primed according to corrosion category C4 G				**Repaintability with *)**
C4 G	**L09**	2-component epoxy zinc phosphate primer		• 2-component polyurethane paint, 2-component epoxide paint and acid hardening paint, 2-component acrylic paint
Unpainted				**Repaintability with *)**
C1 G	**L00**			• Plastic paint, synthetic resin paint, oil paint, 2-component polyurethane paint, 2-component epoxide paint
Special pre-treatment before painting				
	L19			• For special requirements for the surface treatment and priming of drives, especially as a primer and intermediate coating for surface protection under severe environmental stress

* Note:
Information about repaintability is not a guarantee of the quality of the paint product purchased from your supplier. Only the paint manufacturer is liable for the quality and compatibility.

Order codes for RAL colors:

5015 Sky blue (standard)	**L50**
7011 Steel gray	**L51**
7031 Blue gray	**L53**
7035 Light gray	**L54**
7030 Stone gray	**L55**

The colors listed above can be specified using order code Y80 and the RAL color code in plain text.

Example: Reseda green (RAL6011)

Order code: **Y80**

Plain text: **Y80*RAL @ 6011***

Increased protection against humidity and tropical climate

Increased protection against humidity and tropical climate can be supplied as an option for (geared) motors of frame sizes 71 to 200L. This version is designed for humidity in the range from 30 to 60 g water per m^3 air depending on the temperature (see page 8/26). This version comprises a surface treatment for corrosion category C2 (**L03**), increased humidity and acid protection for the winding (**N54**), motor-internal corrosion protection (**N41**) and temperature class (155) F.

Combination with increased acid and alkali protection is not possible.

If function expansions (brakes, backstop, encoder systems) are required on the motor, consultation with the manufacturer is necessary beforehand.

Increased protection against humidity and tropical climate is not possible together with worm geared motors S.

Order code:

Increased protection against humidity and tropical climate **N43**

Increased protection against acid and alkali

Increased protection against acid and alkali can be supplied as an option for (geared) motors of frame sizes 71 to 200L. This version is suitable for city and industrial atmospheres with moderate pollution with sulfur dioxide, coastal areas with low salt levels and aggressive atmospheres with up to 1 % concentrations of acids or alkalis. This version comprises a surface treatment for corrosion category C3 (**L04**), increased humidity and acid protection for the winding (**N54**), motor-internal corrosion protection (**N41**), temperature class (155) F and pressure ventilation in the gearbox (**G45**).

Combination with increased humidity and tropical climate protection is not possible.

If function expansions (brakes, backstop, encoder systems) are required on the motor, consultation with the manufacturer is necessary beforehand.

Increased protection against acid and alkali is not possible together with worm geared motors S.

Order code:

Increased protection against acid and alkali **N44**

Rating plate

The rating plates of the gearboxes or geared motors are made of coated aluminum foil. They are covered by a special adhesive foil which gives them permanent resistance to ultraviolet rays and a variety of other substances (oils, greases, salt water, cleaning agents, etc.).

The adhesives and materials have been specially selected to ensure reliable adhesion and good legibility for the service life of the product, even when it is operated at the boundaries of the permissible temperature range (-40 °C ... +155 °C).

In accordance with DIN EN 60034-1, the total weight (as of approximately 30 kg) is specified on the rating plate for all geared motors.

Rating plate on stainless steel support plate

For geared motors with motors up to and including size 200, the rating plate can also be attached to a stainless steel support plate.

Order code:

Rating plate on stainless steel support plate **K26**

2nd rating plate enclosed separately

An additional rating plate can be supplied as a separately enclosed item for all gearboxes and geared motors.

Order code:

2nd rating plate, enclosed separately **K41**

2nd rating plate mounted

On request, the 2nd rating plate can be supplied mounted to the motor for geared motors with motors up to and including size 200.

Order code:

2nd rating plate, mounted **K68**

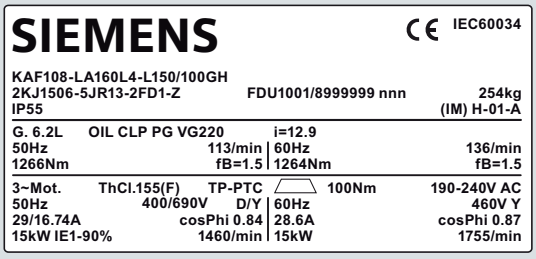
The rating plate is labeled in international format as standard.

For geared motors with motors up to and including size 200, the rating plate is mounted on an aluminum support plate which is attached to the motor.

In the case of gearboxes without motor and geared motors with motor of size 225 to 315, the rating plate is attached to the gearbox housing.

Motors of ≥ size 225 also have a rating plate with the motor data.

Example of a rating plate:



Documentation

The geared motors are supplied with the following documentation as standard:

- Commissioning guide (paper) English/German
- Manual Collection (on CD) with all operating instructions in Czech, Dutch, English, French, German, Italian, Russian, Spanish, and Swedish.

The following documents are optionally available:

- Circuit diagram of motor
- Certificate of compliance with the order EN 10204-2.1 and works test certificate EN 10204-2.2 for the geared motor on request
- Works test certificate EN 10204-2.2 for the material on request
- Works test certificate EN 10204-3.1 for the gearbox, tests carried out on:
  - Output shaft diameter
  - The concentricity of the output shaft
  - The concentricity of input shaft (for solo gearboxes only, input units A and P)
  - The input shaft diameter (for solo gearboxes only, input units A and P)
  - Noise (subjective evaluation) The concentricity of the input shaft (for solo gearboxes only)
- Works test certificate EN 10204-3.1 for motors, tests carried out on:
  - The 3 no-load currents of the 3 phases
  - The power loss during no-load operation
  - The no-load speed.

1

Notes

Bevel helical geared motors

4

Orientation
4/2 Overview
4/4 Modular system

General technical data
4/5 Permissible radial force

Geared motors up to 200 kW
4/6 Selection and ordering data

Transmission ratios and maximum torques
4/60 Selection and ordering data

Mounting types
4/80 Selection and ordering data

Shaft designs
4/83 Selection and ordering data

Flange-mounted designs
4/86 Selection and ordering data

Mounting types and mounting positions
4/87 Selection and ordering data

Special versions
4/92 Lubricants
4/93 Oil level control
4/93 Gearbox ventilation
4/94 Oil drain
4/94 Sealing
4/95 Hollow shaft cover (protection cover)
4/95 Reinforced output shaft bearings
4/96 2nd output shaft extension
4/96 Bevel helical gearbox with backstop
4/97 Mixer flange in dry-well design

Dimensions
4/98 Dimension drawing overview
4/102 Dimension drawings

Bevel helical geared motors

Orientation

Overview

MOTOX bevel helical gearboxes are part of the MOTOX modular system. With helical, parallel shaft, helical worm, or variable speed gearboxes and three-phase AC motors with or without brakes, this system covers all possible drive combinations, right up to electronic variable speed drives.

MOTOX bevel helical gearboxes are designed for continuous duty. The gearbox housings made of gray cast iron or aluminium are developed in 3D CAD and have an optimized structure in terms of rigidity and vibration absorption. Radial shaft seals with dust-protection lips prevent oil from leaking out of the housing and dust and water from entering it. The gear wheels of the helical gear stages are milled and their surfaces hardened.
The tooth flanks are ground or honed so that they are convex and corrected in terms of the profile. For the standard range, the bevel gear stage is milled, its surface is hardened, and it is lapped in pairs. Optimum running smoothness is also achieved thanks to the helical gears' helical teeth.
Positioning the bevel gear stage as the second stage means that less noise is emitted. The output shaft is positioned at a right angle to the input shaft.

Overview (continued)

Bevel helical gearboxes are designated as follows:

Gearbox type:

(-) Bevel helical gearbox

B 2-stage
K 3-stage

Transmission stage (-) Unspecified

Type:

Shaft
(-) Solid shaft
A Hollow shaft

Mounting
(-) Foot-mounted design
F Flange-mounted design (A-type)
Z Housing flange (C-type)
D Torque arm
G Flange (A-type) on opposite side to output shaft
M Agitator / mixer flange
E Extruder flange

Connections
(-) Feather key
S Shrink disk
T Hollow shaft with splined shaft

Special features **W** Reduced-backlash version

Backstop **X** Backstop in intermediate stage

Type of intermediate gearbox

(-) Helical gearbox

Transmission stage
Z 2-stage
D 3-stage

Input unit

K2 Coupling lantern with flexible coupling for connecting an IEC motor

K2TC Coupling lantern with flexible coupling for connecting a NEMA motor [1)]

K4 Short coupling lantern with clamp connection for connecting an IEC motor

K5 Short coupling lantern with clamp connection for connecting a NEMA motor [1)]

KQ Lantern for servomotor with feather key and with zero-backlash flexible coupling for connecting a servomotor

KQS Lantern for servomotor without feather key and with zero-backlash flexible coupling for connecting a servomotor

A Input unit with free input shaft

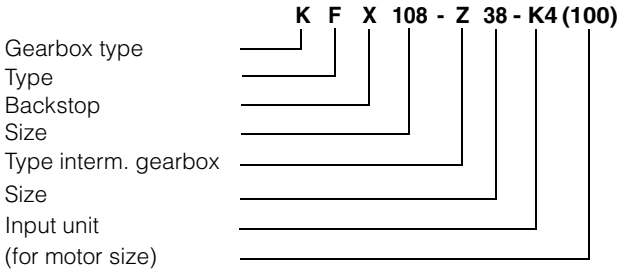
A5 Input unit with free input shaft (NEMA design) [1)]

P Input unit with free input shaft and piggy back for connecting an IEC motor

P5 Input unit with free input shaft and piggy back for connecting a NEMA motor [1)]

PS Input unit with free input shaft and piggy back with protection cover

Example:



The series currently comprises 10 gearbox sizes.

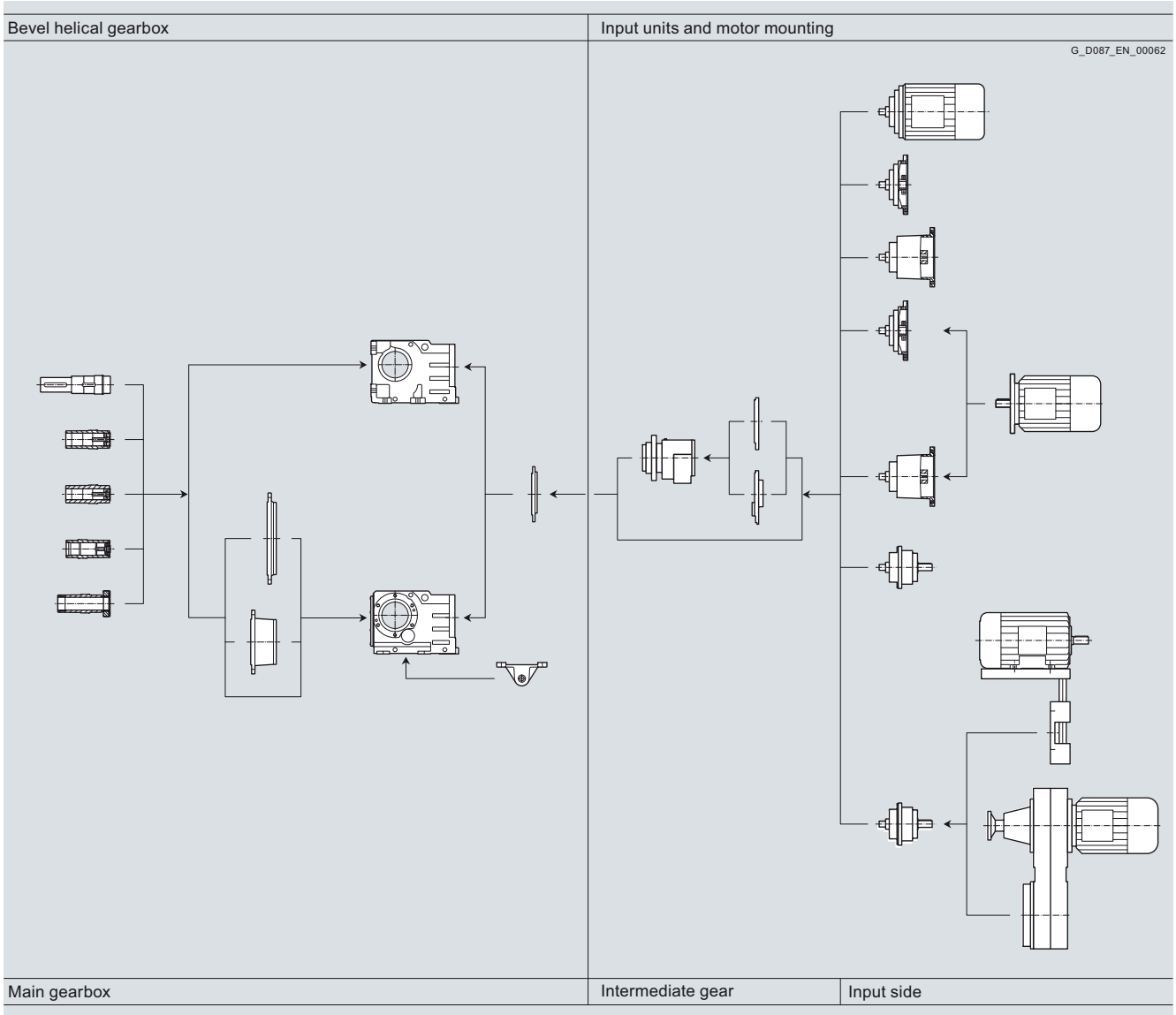
Type K bevel helical gearboxes are available in a 3-stage version, type B in a 2-stage version.

4

[1)] These designs can be selected from our MOTOX Configurator electronic catalog.

General technical data

Modular system



Use

The MOTOX bevel helical gearbox series can be supplied in foot-mounted or flange-mounted design for mounting in any position.

The gearboxes are available in a solid-shaft or hollow-shaft design with a feather key connection, shrink disk connection, or splined shaft.

Oil quantities

The oil quantities corresponding to the applicable mounting positions are specified in the operating instructions and on the rating plate.

Permissible radial force F_{Rperm}

3-stage bevel helical gearbox – standard bearing arrangement

Gearbox type	d mm	l mm	y mm	z mm	a kNmm	F_{Rperm} in N with x = l/2 for output speeds n_2 in rpm: Direction of rotation when viewing the output shaft	≤ 16	≤ 25	≤ 40	≤ 63	≤ 100	≤ 160	≤ 250	≤ 320	≤ 400
BF28	20	40	138	118	63.4	Left	–	3 170	3 170	3 170	3 170	3 120	2 870	2 520	2 430
						Right	–	3 170	3 170	3 170	3 170	3 170	3 120	2 770	2 260
BF38	30	60	173	143	193.0	Left	–	6 446	6 060	4 840	3 960	3 820	3 570	3 430	3 240
						Right	–	6 446	6 446	5 690	4 730	4 350	3 860	3 670	3 430
KF38	25	50	146	121	153.0	Left	5 530	5 400	4 320	3 810	3 210	2 640	2 160	2 080	–
						Right	5 820	5 700	4 610	4 060	3 420	2 820	2 330	2 250	–
KF48	30	60	176	146	255.0	Left	8 280	7 660	6 120	4 990	3 850	3 490	3 420	–	–
						Right	8 500	8 090	6 560	5 430	4 280	3 900	3 630	–	–
KF68	40	80	213	173	440.0	Left	9 490	7 590	6 130	4 430	3 550	2 970	3 470	–	–
						Right	10 050	8 140	6 690	4 990	4 110	3 490	3 720	–	–
KF88	50	100	262	212	845.0	Left	13 740	10 910	9 010	6 300	5 550	4 840	5 560	5 210	–
						Right	14 810	11 980	10 080	7 370	6 520	5 710	5 950	5 570	–
KF108	60	120	298	238	1 350	Left	16 210	12 070	8 990	6 470	5 730	5 310	5 450	–	–
						Right	18 170	14 030	10 850	8 290	7 370	6 730	6 260	–	–
KF128	70	140	372	302	2 247	Left	24 380	19 170	14 150	10 790	6 550	6 160	7 250	–	–
						Right	26 540	21 330	16 320	12 960	8 680	8 200	8 310	–	–
KF148	90	170	434	349	2 873	Left	19 620	13 920	9 150	3 620	1 240	840	6 360	5 700	–
						Right	22 310	16 620	11 840	6 310	3 800	3 080	7 370	6 630	–
KF168	110	210	518	413	5 891	Left	31 190	21 030	16 060	7 200	6 020	5 300	10 160	–	–
						Right	34 350	24 180	19 220	10 350	8 810	7 880	11 530	–	–
KF188	120	210	598	493	8 159	Left	77 700	77 700	77 700	77 700	77 240	70 580	–	–	–
						Right	77 700	77 700	77 700	77 700	77 700	73 960	–	–	–

3-stage bevel helical gearbox – reinforced bearing arrangement

Gearbox type	d mm	l mm	y mm	z mm	a kNmm	F_{Rperm} in N with x = l/2 for output speeds n_2 in rpm: Direction of rotation when viewing the output shaft	≤ 16	≤ 25	≤ 40	≤ 63	≤ 100	≤ 160	≤ 250	≤ 320
KF68	40	80	213	173	555	Left	13 870	13 870	13 870	13 870	13 870	12 690	11 510	–
						Right	13 870	13 870	13 870	13 870	13 870	13 240	11 780	–
KF88	50	100	262	212	1 182	Left	23 630	23 630	23 630	23 630	23 000	20 590	18 910	17 880
						Right	23 630	23 630	23 630	23 630	23 630	21 400	19 320	18 270
KF108	60	120	298	238	1 743	Left	29 050	29 050	29 050	29 050	28 280	25 080	23 640	–
						Right	29 050	29 050	29 050	29 050	29 050	26 010	24 500	–
KF128	70	140	372	302	2 893	Left	41 330	41 330	41 330	41 330	41 330	39 430	36 540	–
						Right	41 330	41 330	41 330	41 330	41 330	40 660	37 680	–
KF148	90	170	434	349	4 225	Left	49 710	49 710	49 710	49 710	42 240	37 130	38 240	35 110
						Right	49 710	49 710	49 710	49 710	44 970	39 520	39 320	36 100
KF168	110	210	518	413	8 059	Left	76 750	76 750	76 750	76 750	70 560	65 140	59 690	–
						Right	76 750	76 750	76 750	76 750	73 550	67 890	61 160	–
KF188	120	210	598	493	8 159	Left	77 700	77 700	77 700	77 700	77 240	70 580	–	–
						Right	77 700	77 700	77 700	77 700	77 700	73 960	–	–

The values in the table apply to the worst-case scenario. The output shaft bearing arrangement can be calculated using our MOTOX Configurator electronic catalog. See Chapter 1 of the configuring guide for more infomation on calculating the permissible radial force.

Selection and ordering data

The selection tables show the most common variants and combinations. Other combinations can be selected using our MOTOX Configurator or made available on request

At an identical power rating and output speed, priority is given in the selection tables to 4-pole geared motors.

At the available transmission ratios, they cover the majority of output speeds.

Due to their prevalence, 4-pole geared motors are easily available, with short delivery times and at a low cost. They also feature a favorable size / power ratio.

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.09	**K.48-LA71M8**							
	3.7	231	1.9	169.53	★	**2KJ1503 - ■CE13 - ■■J2**	**P02**	25
	K.38-LA71M8							
	3.5	244	1.0	179.13	★	**2KJ1502 - ■CE13 - ■■L2**	**P02**	21
	4.0	217	1.2	159.04		**2KJ1502 - ■CE13 - ■■K2**	**P02**	21
	4.5	190	1.3	139.43	★	**2KJ1502 - ■CE13 - ■■J2**	**P02**	21
	K.38-LA71B6							
	5.0	172	1.5	179.13	★	**2KJ1502 - ■CB13 - ■■L2**	**P01**	21
	5.6	153	1.6	159.04		**2KJ1502 - ■CB13 - ■■K2**	**P01**	21
	6.4	134	1.9	139.43	★	**2KJ1502 - ■CB13 - ■■J2**	**P01**	21
	7.2	120	2.1	124.78		**2KJ1502 - ■CB13 - ■■H2**	**P01**	21
0.12	**K.188-D68-LA71B4**							
	0.05	15 541	1.3	27 817		**2KJ1542 - ■CB13 - ■■M1**		749
	0.05	16 836	1.2	30 135	★	**2KJ1542 - ■CB13 - ■■N1**		749
	0.06	12 269	1.6	21 961		**2KJ1542 - ■CB13 - ■■K1**		749
	0.06	13 513	1.5	24 187	★	**2KJ1542 - ■CB13 - ■■L1**		749
	0.07	11 203	1.8	20 052	★	**2KJ1542 - ■CB13 - ■■J1**		749
	0.08	10 279	1.9	18 398		**2KJ1542 - ■CB13 - ■■H1**		749
	K.168-D48-LA71B4							
	0.05	14 947	0.90	26 754		**2KJ1538 - ■CB13 - ■■G1**		487
	0.05	16 493	0.82	29 521	★	**2KJ1538 - ■CB13 - ■■H1**		487
	0.06	13 194	1.0	23 617	★	**2KJ1538 - ■CB13 - ■■F1**		487
	0.07	10 795	1.3	19 323	★	**2KJ1538 - ■CB13 - ■■D1**		487
	0.07	11 902	1.1	21 304		**2KJ1538 - ■CB13 - ■■E1**		487
	0.08	9 835	1.4	17 605		**2KJ1538 - ■CB13 - ■■C1**		487
	0.09	8 996	1.5	16 102	★	**2KJ1538 - ■CB13 - ■■B1**		487
	0.10	8 043	1.7	14 397		**2KJ1538 - ■CB13 - ■■A1**		487
	K.168-Z48-LA71B4							
	0.10	8 431	1.6	14 767		**2KJ1537 - ■CB13 - ■■A2**		486
	0.11	7 461	1.8	13 068	★	**2KJ1537 - ■CB13 - ■■X1**		486
	0.12	6 783	2.0	11 880		**2KJ1537 - ■CB13 - ■■W1**		486
	K.148-D38-LA71B4							
	0.08	9 970	0.80	17 845		**2KJ1535 - ■CB13 - ■■D1**		296
	0.09	9 039	0.89	16 180		**2KJ1535 - ■CB13 - ■■C1**		296
	0.10	8 225	0.97	14 722		**2KJ1535 - ■CB13 - ■■B1**		296
	0.11	7 272	1.1	13 017		**2KJ1535 - ■CB13 - ■■A1**		296
	K.148-Z38-LA71B4							
	0.10	7 711	1.0	13 505		**2KJ1534 - ■CB13 - ■■W1**		296

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B		Gearbox ratio i_{tot}	Order No.	Order code (No. of poles)	Weight *) kg
0.12	**K.148-Z38-LA71B4**							
	0.12	6 857	1.2		12 009	**2KJ1534 - ■CB13 - ■■V1**		296
	0.13	5 948	1.3		10 418	**2KJ1534 - ■CB13 - ■■U1**		296
	0.14	5 558	1.4		9 734	**2KJ1534 - ■CB13 - ■■T1**		296
	0.16	4 888	1.6		8 561	**2KJ1534 - ■CB13 - ■■S1**		296
	0.19	4 281	1.9		7 498	**2KJ1534 - ■CB13 - ■■R1**		296
	K.128-Z38-LA71B4							
	0.14	5 740	0.82		10 054	★ **2KJ1531 - ■CB13 - ■■U1**		201
	0.15	5 364	0.88		9 394	**2KJ1531 - ■CB13 - ■■T1**		201
	0.17	4 717	1.0		8 262	★ **2KJ1531 - ■CB13 - ■■S1**		201
	0.19	4 131	1.1		7 236	**2KJ1531 - ■CB13 - ■■R1**		201
	0.22	3 654	1.3		6 400	★ **2KJ1531 - ■CB13 - ■■Q1**		201
	0.24	3 312	1.4		5 800	**2KJ1531 - ■CB13 - ■■P1**		201
	0.27	2 923	1.6		5 120	★ **2KJ1531 - ■CB13 - ■■N1**		201
	0.30	2 637	1.8		4 619	**2KJ1531 - ■CB13 - ■■M1**		201
	0.33	2 392	2.0		4 189	★ **2KJ1531 - ■CB13 - ■■L1**		201
	K.108-Z38-LA71B4							
	0.23	3 445	0.87		6 033	**2KJ1527 - ■CB13 - ■■P1**		134
	0.26	3 041	0.99		5 326	**2KJ1527 - ■CB13 - ■■N1**		134
	0.29	2 743	1.1		4 804	**2KJ1527 - ■CB13 - ■■M1**		134
	0.32	2 488	1.2		4 357	**2KJ1527 - ■CB13 - ■■L1**		134
	0.35	2 267	1.3		3 970	**2KJ1527 - ■CB13 - ■■K1**		134
	0.39	2 073	1.4		3 631	**2KJ1527 - ■CB13 - ■■J1**		134
	0.43	1 854	1.6		3 247	**2KJ1527 - ■CB13 - ■■H1**		134
	0.47	1 702	1.8		2 981	**2KJ1527 - ■CB13 - ■■G1**		134
	0.52	1 534	2.0		2 687	**2KJ1527 - ■CB13 - ■■F1**		134
	K.88-Z28-LA71B4							
	0.40	1 990	0.83		3 485	★ **2KJ1523 - ■CB13 - ■■X1**		76
	0.45	1 780	0.93		3 118	**2KJ1523 - ■CB13 - ■■W1**		76
	0.51	1 580	1.0		2 768	★ **2KJ1523 - ■CB13 - ■■V1**		76
	0.58	1 385	1.2		2 426	**2KJ1523 - ■CB13 - ■■U1**		76
	0.66	1 218	1.4		2 133	★ **2KJ1523 - ■CB13 - ■■T1**		76
	0.73	1 100	1.5		1 926	**2KJ1523 - ■CB13 - ■■S1**		76
	0.83	959	1.7		1 679	★ **2KJ1523 - ■CB13 - ■■R1**		76
	0.93	861	1.9		1 508	**2KJ1523 - ■CB13 - ■■Q1**		76
	K.68-Z28-LA71B4							
	0.81	982	0.83		1 720	★ **2KJ1518 - ■CB13 - ■■T1**		47
	0.90	887	0.92		1 554	**2KJ1518 - ■CB13 - ■■S1**		47
	1.0	773	1.1		1 354	★ **2KJ1518 - ■CB13 - ■■R1**		47
	1.2	694	1.2		1 216	**2KJ1518 - ■CB13 - ■■Q1**		47
	1.3	627	1.3		1 098	★ **2KJ1518 - ■CB13 - ■■P1**		47
	1.4	569	1.4		996	**2KJ1518 - ■CB13 - ■■N1**		47
	1.5	517	1.6		906	★ **2KJ1518 - ■CB13 - ■■M1**		47
	1.7	457	1.8		801	**2KJ1518 - ■CB13 - ■■L1**		47

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.12	**K.68-Z28-LA71B4**							
	1.9	423	1.9	740	★	**2KJ1518 - ■CB13 - ■■K1**		47
	K.68-LA71MB8							
	2.6	433	1.9	243.72		**2KJ1504 - ■CF13 - ■■N2**	**P02**	44
	K.48-Z28-LA71B4							
	1.6	505	0.89	885	★	**2KJ1516 - ■CB13 - ■■R1**		28
	1.8	454	0.99	795		**2KJ1516 - ■CB13 - ■■Q1**		28
	2.0	409	1.1	717	★	**2KJ1516 - ■CB13 - ■■P1**		28
	2.2	372	1.2	651		**2KJ1516 - ■CB13 - ■■N1**		28
	2.4	338	1.3	592	★	**2KJ1516 - ■CB13 - ■■M1**		28
	2.7	299	1.5	523		**2KJ1516 - ■CB13 - ■■L1**		28
	2.9	276	1.6	483	★	**2KJ1516 - ■CB13 - ■■K1**		28
	3.4	238	1.9	416		**2KJ1516 - ■CB13 - ■■J1**		28
	K.48-LA71MB8							
	3.8	301	1.5	169.53	★	**2KJ1503 - ■CF13 - ■■J2**	**P02**	25
	4.3	268	1.7	150.76		**2KJ1503 - ■CF13 - ■■H2**	**P02**	25
	K.48-LA71C6							
	5.1	226	2.0	169.53	★	**2KJ1503 - ■CC13 - ■■J2**	**P01**	25
	K.38-Z28-LA71B4							
	2.7	299	0.84	523		**2KJ1514 - ■CB13 - ■■L1**		24
	2.9	276	0.91	483	★	**2KJ1514 - ■CB13 - ■■K1**		24
	K.38-LA71MB8							
	4.1	283	0.88	159.04		**2KJ1502 - ■CF13 - ■■K2**	**P02**	21
	4.6	248	1.0	139.43	★	**2KJ1502 - ■CF13 - ■■J2**	**P02**	21
	K.38-LA71C6							
	4.8	239	1.0	179.13	★	**2KJ1502 - ■CC13 - ■■L2**	**P01**	21
	5.4	212	1.2	159.04		**2KJ1502 - ■CC13 - ■■K2**	**P01**	21
	6.2	186	1.3	139.43	★	**2KJ1502 - ■CC13 - ■■J2**	**P01**	21
	6.9	166	1.5	124.78		**2KJ1502 - ■CC13 - ■■H2**	**P01**	21
	K.38-LA71B4							
	7.8	147	1.7	179.13	★	**2KJ1502 - ■CB13 - ■■L2**		21
	8.8	130	1.9	159.04		**2KJ1502 - ■CB13 - ■■K2**		21
	10.0	114	2.2	139.43	★	**2KJ1502 - ■CB13 - ■■J2**		21
	B.38-LA71MB8							
	9.8	117	2.1	65.69		**2KJ1501 - ■CF13 - ■■U2**	**P02**	23
	B.28-LA71B4							
	24	47	2.8	57.53		**2KJ1500 - ■CB13 - ■■D2**		11
	29	40	3.3	48.51		**2KJ1500 - ■CB13 - ■■C2**		11
	32	35	3.7	43.07		**2KJ1500 - ■CB13 - ■■B2**		11
	37	31	4.2	37.76		**2KJ1500 - ■CB13 - ■■A2**		11
	41	28	4.7	33.79		**2KJ1500 - ■CB13 - ■■X1**		11
	47	24	5.3	29.99		**2KJ1500 - ■CB13 - ■■W1**		11
	53	22	6.0	26.28		**2KJ1500 - ■CB13 - ■■V1**		11

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.12	**B.28-LA71B4**							
	61	19	6.9	23.11		**2KJ1500 - ■CB13 - ■■7U1**		11
	67	17	7.6	20.87		**2KJ1500 - ■CB13 - ■■T1**		11
	77	15	8.7	18.19		**2KJ1500 - ■CB13 - ■■S1**		11
	86	13	9.7	16.34		**2KJ1500 - ■CB13 - ■■R1**		11
	95	12	10.8	14.75		**2KJ1500 - ■CB13 - ■■Q1**		11
	105	11	11.9	13.38		**2KJ1500 - ■CB13 - ■■P1**		11
	115	10	13.0	12.17		**2KJ1500 - ■CB13 - ■■N1**		11
	130	8.8	14.8	10.76		**2KJ1500 - ■CB13 - ■■M1**		11
	187	6.1	14.7	7.49		**2KJ1500 - ■CB13 - ■■H1**		11
0.18	**K.188-D68-LA71C4**							
	0.06	20 896	0.96	21 961		**2KJ1542 - ■CC13 - ■■K1**		749
	0.06	23 014	0.87	24 187	★	**2KJ1542 - ■CC13 - ■■L1**		749
	0.07	17 506	1.1	18 398		**2KJ1542 - ■CC13 - ■■H1**		749
	0.07	19 080	1.0	20 052	★	**2KJ1542 - ■CC13 - ■■J1**		749
	0.08	16 129	1.2	16 951	★	**2KJ1542 - ■CC13 - ■■G1**		749
	0.09	14 648	1.4	15 394		**2KJ1542 - ■CC13 - ■■F1**		749
	0.10	13 344	1.5	14 024	★	**2KJ1542 - ■CC13 - ■■E1**		749
	0.11	12 224	1.6	12 847		**2KJ1542 - ■CC13 - ■■D1**		749
	0.12	10 907	1.8	11 463	★	**2KJ1542 - ■CC13 - ■■C1**		749
	K.168-D48-LA71C4							
	0.08	15 321	0.88	16 102	★	**2KJ1538 - ■CC13 - ■■B1**		487
	0.08	16 751	0.81	17 605		**2KJ1538 - ■CC13 - ■■C1**		487
	0.10	13 699	0.99	14 397		**2KJ1538 - ■CC13 - ■■A1**		487
	K.168-Z48-LA71C4							
	0.09	14 360	0.94	14 767		**2KJ1537 - ■CC13 - ■■A2**		486
	0.10	12 708	1.1	13 068	★	**2KJ1537 - ■CC13 - ■■X1**		486
	0.12	11 552	1.2	11 880		**2KJ1537 - ■CC13 - ■■W1**		486
	0.13	10 379	1.3	10 673	★	**2KJ1537 - ■CC13 - ■■V1**		486
	0.15	8 896	1.5	9 148		**2KJ1537 - ■CC13 - ■■U1**		486
	0.17	8 049	1.7	8 277	★	**2KJ1537 - ■CC13 - ■■T1**		486
	0.18	7 429	1.8	7 640		**2KJ1537 - ■CC13 - ■■S1**		486
	K.148-Z38-LA71C4							
	0.14	9 466	0.85	9 734		**2KJ1534 - ■CC13 - ■■T1**		296
	0.16	8 325	0.96	8 561		**2KJ1534 - ■CC13 - ■■S1**		296
	0.18	7 291	1.1	7 498		**2KJ1534 - ■CC13 - ■■R1**		296
	0.21	6 449	1.2	6 632		**2KJ1534 - ■CC13 - ■■Q1**		296
	0.23	5 844	1.4	6 010		**2KJ1534 - ■CC13 - ■■P1**		296
	0.26	5 159	1.6	5 305		**2KJ1534 - ■CC13 - ■■N1**		296
	0.29	4 654	1.7	4 786		**2KJ1534 - ■CC13 - ■■M1**		296
	0.32	4 221	1.9	4 341		**2KJ1534 - ■CC13 - ■■L1**		296
	K.128-Z38-LA71C4							
	0.24	5 640	0.83	5 800		**2KJ1531 - ■CC13 - ■■P1**		201
	0.27	4 979	0.94	5 120	★	**2KJ1531 - ■CC13 - ■■N1**		201

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.18	**K.128-Z38-LA71C4**							
	0.30	4 492	1.0	4 619		**2KJ1531 - ■CC13 - ■■M1**		201
	0.33	4 073	1.2	4 189	★	**2KJ1531 - ■CC13 - ■■L1**		201
	0.36	3 712	1.3	3 817		**2KJ1531 - ■CC13 - ■■K1**		201
	0.39	3 395	1.4	3 491	★	**2KJ1531 - ■CC13 - ■■J1**		201
	0.44	3 035	1.5	3 121		**2KJ1531 - ■CC13 - ■■H1**		201
	0.48	2 787	1.7	2 866	★	**2KJ1531 - ■CC13 - ■■G1**		201
	0.53	2 512	1.9	2 583		**2KJ1531 - ■CC13 - ■■F1**		201
	K.108-Z38-LA71C4							
	0.38	3 531	0.85	3 631		**2KJ1527 - ■CC13 - ■■J1**		134
	0.42	3 157	0.95	3 247		**2KJ1527 - ■CC13 - ■■H1**		134
	0.46	2 899	1.0	2 981		**2KJ1527 - ■CC13 - ■■G1**		134
	0.51	2 613	1.1	2 687		**2KJ1527 - ■CC13 - ■■F1**		134
	0.59	2 247	1.3	2 311		**2KJ1527 - ■CC13 - ■■E1**		134
	0.66	2 003	1.5	2 060		**2KJ1527 - ■CC13 - ■■D1**		134
	0.72	1 840	1.6	1 892		**2KJ1527 - ■CC13 - ■■C1**		134
	0.8	1 658	1.8	1 705		**2KJ1527 - ■CC13 - ■■B1**		134
	K.88-Z28-LA71C4							
	0.64	2 074	0.80	2 133	★	**2KJ1523 - ■CC13 - ■■T1**		76
	0.71	1 873	0.88	1 926		**2KJ1523 - ■CC13 - ■■S1**		76
	0.82	1 633	1.0	1 679	★	**2KJ1523 - ■CC13 - ■■R1**		76
	0.91	1 466	1.1	1 508		**2KJ1523 - ■CC13 - ■■Q1**		76
	1.0	1 323	1.2	1 361	★	**2KJ1523 - ■CC13 - ■■P1**		76
	1.1	1 200	1.4	1 234		**2KJ1523 - ■CC13 - ■■N1**		76
	1.2	1 092	1.5	1 123	★	**2KJ1523 - ■CC13 - ■■M1**		76
	1.4	966	1.7	993		**2KJ1523 - ■CC13 - ■■L1**		76
	1.5	892	1.9	917	★	**2KJ1523 - ■CC13 - ■■K1**		76
	K.88-LA80S8							
	2.2	771	2.0	302.68	★	**2KJ1505 - ■DB13 - ■■M2**	**P02**	78
	K.68-Z28-LA71C4							
	1.4	969	0.85	996		**2KJ1518 - ■CC13 - ■■N1**		47
	1.5	881	0.93	906	★	**2KJ1518 - ■CC13 - ■■M1**		47
	1.7	779	1.1	801		**2KJ1518 - ■CC13 - ■■L1**		47
	1.9	720	1.1	740	★	**2KJ1518 - ■CC13 - ■■K1**		47
	2.2	619	1.3	637		**2KJ1518 - ■CC13 - ■■J1**		47
	2.4	563	1.5	579	★	**2KJ1518 - ■CC13 - ■■H1**		47
	K.68-LA80S8							
	2.8	621	1.3	243.72		**2KJ1504 - ■DB13 - ■■N2**	**P02**	48
	3.1	549	1.5	215.68	★	**2KJ1504 - ■DB13 - ■■M2**	**P02**	48
	K.68-LA71S6							
	3.5	493	1.7	243.72		**2KJ1504 - ■CD13 - ■■N2**	**P01**	44
	3.9	436	1.9	215.68	★	**2KJ1504 - ■CD13 - ■■M2**	**P01**	44
	K.48-Z28-LA71C4							
	2.6	509	0.88	523		**2KJ1516 - ■CC13 - ■■L1**		28

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.18	**K.48-Z28-LA71C4**							
	2.8	470	0.96	483	★	**2KJ1516 - ■CC13 - ■■K1**		28
	3.3	405	1.1	416		**2KJ1516 - ■CC13 - ■■J1**		28
	K.48-LA80S8							
	4.0	432	1.0	169.53	★	**2KJ1503 - ■DB13 - ■■J2**	**P02**	29
	4.5	384	1.2	150.76		**2KJ1503 - ■DB13 - ■■H2**	**P02**	29
	K.48-LA71S6							
	5.0	343	1.3	169.53	★	**2KJ1503 - ■CD13 - ■■J2**	**P01**	25
	5.6	305	1.5	150.76		**2KJ1503 - ■CD13 - ■■H2**	**P01**	25
	6.5	264	1.7	130.78	★	**2KJ1503 - ■CD13 - ■■G2**	**P01**	25
	7.0	247	1.8	122.19		**2KJ1503 - ■CD13 - ■■F2**	**P01**	25
	K.48-LA71C4							
	8.1	213	2.1	169.53	★	**2KJ1503 - ■CC13 - ■■J2**		25
	K.38-LA71S6							
	6.1	282	0.89	139.43	★	**2KJ1502 - ■CD13 - ■■J2**	**P01**	21
	6.8	252	0.99	124.78		**2KJ1502 - ■CD13 - ■■H2**	**P01**	21
	K.38-LA71C4							
	7.6	225	1.1	179.13	★	**2KJ1502 - ■CC13 - ■■L2**		21
	8.6	200	1.3	159.04		**2KJ1502 - ■CC13 - ■■K2**		21
	9.8	175	1.4	139.43	★	**2KJ1502 - ■CC13 - ■■J2**		21
	11.0	157	1.6	124.78		**2KJ1502 - ■CC13 - ■■H2**		21
	12.4	139	1.8	110.75	★	**2KJ1502 - ■CC13 - ■■G2**		21
	14.1	122	2.1	97.05		**2KJ1502 - ■CC13 - ■■F2**		21
	16.1	107	2.3	85.33	★	**2KJ1502 - ■CC13 - ■■E2**		21
	B.38-LA80S8							
	11.8	145	1.7	57.04		**2KJ1501 - ■DB13 - ■■T2**	**P02**	27
	B.38-LA71S6							
	12.9	133	1.9	65.69		**2KJ1501 - ■CD13 - ■■U2**	**P01**	23
	14.9	115	2.2	57.04		**2KJ1501 - ■CD13 - ■■T2**	**P01**	23
	B.28-LA71C4							
	24	72	1.8	57.53		**2KJ1500 - ■CC13 - ■■D2**		11
	28	61	2.1	48.51		**2KJ1500 - ■CC13 - ■■C2**		11
	32	54	2.4	43.07		**2KJ1500 - ■CC13 - ■■B2**		11
	36	47	2.7	37.76		**2KJ1500 - ■CC13 - ■■A2**		11
	40	42	3.1	33.79		**2KJ1500 - ■CC13 - ■■X1**		11
	46	38	3.5	29.99		**2KJ1500 - ■CC13 - ■■W1**		11
	52	33	3.9	26.28		**2KJ1500 - ■CC13 - ■■V1**		11
	59	29	4.5	23.11		**2KJ1500 - ■CC13 - ■■U1**		11
	66	26	5.0	20.87		**2KJ1500 - ■CC13 - ■■T1**		11
	75	23	5.7	18.19		**2KJ1500 - ■CC13 - ■■S1**		11
	84	20	6.3	16.34		**2KJ1500 - ■CC13 - ■■R1**		11
	93	18	7.0	14.75		**2KJ1500 - ■CC13 - ■■Q1**		11
	102	17	7.7	13.38		**2KJ1500 - ■CC13 - ■■P1**		11

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.18	**B.28-LA71C4**							
	113	15	8.5	12.17		**2KJ1500 - ■CC13 - ■■N1**		11
	127	14	9.6	10.76		**2KJ1500 - ■CC13 - ■■M1**		11
	138	12	10.3	9.94		**2KJ1500 - ■CC13 - ■■L1**		11
	160	11	11.3	8.56		**2KJ1500 - ■CC13 - ■■K1**		11
	176	9.8	12.0	7.78		**2KJ1500 - ■CC13 - ■■J1**		11
	183	9.4	9.6	7.49		**2KJ1500 - ■CC13 - ■■H1**		11
	203	8.5	10.6	6.76		**2KJ1500 - ■CC13 - ■■G1**		11
	223	7.7	11.7	6.13		**2KJ1500 - ■CC13 - ■■F1**		11
	246	7.0	12.9	5.58		**2KJ1500 - ■CC13 - ■■E1**		11
	277	6.2	14.5	4.94		**2KJ1500 - ■CC13 - ■■D1**		11
0.25	**K.188-D68-LA71S4**							
	0.08	24 007	0.83	16 951	★	**2KJ1542 - ■CD13 - ■■G1**		749
	0.09	21 801	0.92	15 394		**2KJ1542 - ■CD13 - ■■F1**		749
	0.10	18 194	1.1	12 847		**2KJ1542 - ■CD13 - ■■D1**		749
	0.10	19 861	1.0	14 024	★	**2KJ1542 - ■CD13 - ■■E1**		749
	0.12	16 234	1.2	11 463	★	**2KJ1542 - ■CD13 - ■■C1**		749
	K.188-Z68-LA71S4							
	0.15	13 317	1.5	9 201	★	**2KJ1541 - ■CD13 - ■■X1**		747
	0.17	11 647	1.7	8 047		**2KJ1541 - ■CD13 - ■■W1**		747
	0.19	10 456	1.9	7 224	★	**2KJ1541 - ■CD13 - ■■V1**		747
	K.168-Z48-LA71S4							
	0.13	15 448	0.87	10 673	★	**2KJ1537 - ■CD13 - ■■V1**		486
	0.15	13 240	1.0	9 148		**2KJ1537 - ■CD13 - ■■U1**		486
	0.16	11 980	1.1	8 277	★	**2KJ1537 - ■CD13 - ■■T1**		486
	0.18	11 058	1.2	7 640		**2KJ1537 - ■CD13 - ■■S1**		486
	0.20	9 615	1.4	6 643	★	**2KJ1537 - ■CD13 - ■■R1**		486
	0.22	8 730	1.5	6 032		**2KJ1537 - ■CD13 - ■■Q1**		486
	0.24	7 971	1.7	5 507	★	**2KJ1537 - ■CD13 - ■■P1**		486
	0.27	7 313	1.8	5 053		**2KJ1537 - ■CD13 - ■■N1**		486
	0.29	6 739	2.0	4 656	★	**2KJ1537 - ■CD13 - ■■M1**		486
	K.148-Z38-LA71S4							
	0.20	9 599	0.83	6 632		**2KJ1534 - ■CD13 - ■■Q1**		296
	0.22	8 699	0.92	6 010		**2KJ1534 - ■CD13 - ■■P1**		296
	0.25	7 678	1.0	5 305		**2KJ1534 - ■CD13 - ■■N1**		296
	0.28	6 927	1.2	4 786		**2KJ1534 - ■CD13 - ■■M1**		296
	0.31	6 283	1.3	4 341		**2KJ1534 - ■CD13 - ■■L1**		296
	0.34	5 724	1.4	3 955		**2KJ1534 - ■CD13 - ■■K1**		296
	0.37	5 235	1.5	3 617		**2KJ1534 - ■CD13 - ■■J1**		296
	0.42	4 681	1.7	3 234		**2KJ1534 - ■CD13 - ■■H1**		296
	0.46	4 299	1.9	2 970		**2KJ1534 - ■CD13 - ■■G1**		296
	K.128-Z38-LA71S4							
	0.35	5 525	0.85	3 817		**2KJ1531 - ■CD13 - ■■K1**		201
	0.39	5 053	0.93	3 491	★	**2KJ1531 - ■CD13 - ■■J1**		201

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.25	**K.128-Z38-LA71S4**							
	0.43	4 517	1.0	3 121		**2KJ1531 - ■CD13 - ■■H1**		201
	0.47	4 148	1.1	2 866	★	**2KJ1531 - ■CD13 - ■■G1**		201
	0.52	3 739	1.3	2 583		**2KJ1531 - ■CD13 - ■■F1**		201
	0.61	3 215	1.5	2 221	★	**2KJ1531 - ■CD13 - ■■E1**		201
	0.68	2 867	1.6	1 981		**2KJ1531 - ■CD13 - ■■D1**		201
	0.74	2 633	1.8	1 819	★	**2KJ1531 - ■CD13 - ■■C1**		201
	0.82	2 372	2.0	1 639		**2KJ1531 - ■CD13 - ■■B1**		201
	K.108-Z38-LA71S4							
	0.58	3 345	0.90	2 311		**2KJ1527 - ■CD13 - ■■E1**		134
	0.66	2 982	1.0	2 060		**2KJ1527 - ■CD13 - ■■D1**		134
	0.71	2 738	1.1	1 892		**2KJ1527 - ■CD13 - ■■C1**		134
	0.79	2 468	1.2	1 705		**2KJ1527 - ■CD13 - ■■B1**		134
	0.92	2 122	1.4	1 466		**2KJ1527 - ■CD13 - ■■A1**		134
	K.108-Z48-LA71S4							
	1.0	1 944	1.5	1 343	★	**2KJ1530 - ■CD13 - ■■P1**		143
	1.1	1 785	1.7	1 233		**2KJ1530 - ■CD13 - ■■N1**		143
	1.2	1 644	1.8	1 136	★	**2KJ1530 - ■CD13 - ■■M1**		143
	1.3	1 492	2.0	1 031		**2KJ1530 - ■CD13 - ■■L1**		143
	K.88-Z28-LA71S4							
	0.99	1 970	0.84	1 361	★	**2KJ1523 - ■CD13 - ■■P1**		76
	1.1	1 786	0.92	1 234		**2KJ1523 - ■CD13 - ■■N1**		76
	1.2	1 625	1.0	1 123	★	**2KJ1523 - ■CD13 - ■■M1**		76
	1.4	1 437	1.1	993		**2KJ1523 - ■CD13 - ■■L1**		76
	1.5	1 327	1.2	917	★	**2KJ1523 - ■CD13 - ■■K1**		76
	1.7	1 142	1.4	789		**2KJ1523 - ■CD13 - ■■J1**		76
	1.9	1 039	1.6	718	★	**2KJ1523 - ■CD13 - ■■H1**		76
	2.1	944	1.7	652	★	**2KJ1523 - ■CD13 - ■■G1**		76
	K.88-LA80M8							
	2.3	1 055	1.5	302.68	★	**2KJ1505 - ■DC13 - ■■M2**	**P02**	78
	2.5	951	1.7	272.95		**2KJ1505 - ■DC13 - ■■L2**	**P02**	78
	K.88-LA71M6							
	2.8	840	1.8	302.68	★	**2KJ1505 - ■CE13 - ■■M2**	**P01**	74
	K.68-Z28-LA71S4							
	2.1	922	0.89	637		**2KJ1518 - ■CD13 - ■■J1**		47
	2.3	838	0.98	579	★	**2KJ1518 - ■CD13 - ■■H1**		47
	K.68-LA80M8							
	2.8	849	0.97	243.72		**2KJ1504 - ■DC13 - ■■N2**	**P02**	48
	3.2	752	1.1	215.68	★	**2KJ1504 - ■DC13 - ■■M2**	**P02**	48
	K.68-LA71M6							
	3.5	677	1.2	243.72		**2KJ1504 - ■CE13 - ■■N2**	**P01**	44
	4.0	599	1.4	215.68	★	**2KJ1504 - ■CE13 - ■■M2**	**P01**	44
	4.4	544	1.5	196.07		**2KJ1504 - ■CE13 - ■■L2**	**P01**	44

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.25	**K.68-LA71M6**							
	4.9	489	1.7	176.14	★	**2KJ1504 - ■CE13 - ■■K2**	**P01**	44
	K.68-LA71S4							
	5.5	431	1.9	243.72		**2KJ1504 - ■CD13 - ■■N2**		44
	6.3	381	2.1	215.68	★	**2KJ1504 - ■CD13 - ■■M2**		44
	K.48-LA80M8							
	4.5	525	0.86	150.76		**2KJ1503 - ■DC13 - ■■H2**	**P02**	29
	K.48-LA71M6							
	5.1	471	0.96	169.53	★	**2KJ1503 - ■CE13 - ■■J2**	**P01**	25
	5.7	419	1.1	150.76		**2KJ1503 - ■CE13 - ■■H2**	**P01**	25
	6.6	363	1.2	130.78	★	**2KJ1503 - ■CE13 - ■■G2**	**P01**	25
	7.0	339	1.3	122.19		**2KJ1503 - ■CE13 - ■■F2**	**P01**	25
	K.48-LA71S4							
	8.0	300	1.5	169.53	★	**2KJ1503 - ■CD13 - ■■J2**		25
	9.0	267	1.7	150.76		**2KJ1503 - ■CD13 - ■■H2**		25
	10.3	231	1.9	130.78	★	**2KJ1503 - ■CD13 - ■■G2**		25
	11.0	216	2.1	122.19		**2KJ1503 - ■CD13 - ■■F2**		25
	K.38-LA71S4							
	8.5	281	0.89	159.04		**2KJ1502 - ■CD13 - ■■K2**		21
	9.7	247	1.0	139.43	★	**2KJ1502 - ■CD13 - ■■J2**		21
	10.8	221	1.1	124.78		**2KJ1502 - ■CD13 - ■■H2**		21
	12.2	196	1.3	110.75	★	**2KJ1502 - ■CD13 - ■■G2**		21
	13.9	172	1.5	97.05		**2KJ1502 - ■CD13 - ■■F2**		21
	15.8	151	1.7	85.33	★	**2KJ1502 - ■CD13 - ■■E2**		21
	17.5	136	1.8	77.09		**2KJ1502 - ■CD13 - ■■D2**		21
	20	119	2.1	67.18	★	**2KJ1502 - ■CD13 - ■■C2**		21
	22	107	2.3	60.33		**2KJ1502 - ■CD13 - ■■B2**		21
	B.38-LA80M8							
	12	199	1.3	57.04		**2KJ1501 - ■DC13 - ■■T2**	**P02**	27
	B.38-LA71M6							
	13.1	182	1.4	65.69		**2KJ1501 - ■CE13 - ■■U2**	**P01**	23
	15.1	158	1.6	57.04		**2KJ1501 - ■CE13 - ■■T2**	**P01**	23
	17.0	141	1.8	50.72		**2KJ1501 - ■CE13 - ■■S2**	**P01**	23
	19.5	122	2.0	44		**2KJ1501 - ■CE13 - ■■R2**	**P01**	23
	B.38-LA71S4							
	21	116	2.2	65.69		**2KJ1501 - ■CD13 - ■■U2**		23
	B.28-LA71S4							
	24	102	1.3	57.53		**2KJ1500 - ■CD13 - ■■D2**		11
	28	86	1.5	48.51		**2KJ1500 - ■CD13 - ■■C2**		11
	31	76	1.7	43.07		**2KJ1500 - ■CD13 - ■■B2**		11
	36	67	1.9	37.76		**2KJ1500 - ■CD13 - ■■A2**		11
	40	60	2.2	33.79		**2KJ1500 - ■CD13 - ■■X1**		11
	45	53	2.5	29.99		**2KJ1500 - ■CD13 - ■■W1**		11

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.25	**B.28-LA71S4**							
	51	46	2.8	26.28		**2KJ1500 - ■CD13 - ■■V1**		11
	58	41	3.2	23.11		**2KJ1500 - ■CD13 - ■■U1**		11
	65	37	3.5	20.87		**2KJ1500 - ■CD13 - ■■T1**		11
	74	32	4.0	18.19		**2KJ1500 - ■CD13 - ■■S1**		11
	83	29	4.5	16.34		**2KJ1500 - ■CD13 - ■■R1**		11
	92	26	5.0	14.75		**2KJ1500 - ■CD13 - ■■Q1**		11
	101	24	5.5	13.38		**2KJ1500 - ■CD13 - ■■P1**		11
	111	22	6.0	12.17		**2KJ1500 - ■CD13 - ■■N1**		11
	125	19	6.8	10.76		**2KJ1500 - ■CD13 - ■■M1**		11
	136	18	7.3	9.94		**2KJ1500 - ■CD13 - ■■L1**		11
	158	15	8.0	8.56		**2KJ1500 - ■CD13 - ■■K1**		11
	174	14	8.5	7.78		**2KJ1500 - ■CD13 - ■■J1**		11
	180	13	6.8	7.49		**2KJ1500 - ■CD13 - ■■H1**		11
	200	12	7.5	6.76		**2KJ1500 - ■CD13 - ■■G1**		11
	220	11	8.3	6.13		**2KJ1500 - ■CD13 - ■■F1**		11
	242	9.9	9.1	5.58		**2KJ1500 - ■CD13 - ■■E1**		11
	273	8.7	10.3	4.94		**2KJ1500 - ■CD13 - ■■D1**		11
	296	8.1	10.8	4.56		**2KJ1500 - ■CD13 - ■■C1**		11
	344	6.9	11.8	3.92		**2KJ1500 - ■CD13 - ■■B1**		11
	378	6.3	12.5	3.57		**2KJ1500 - ■CD13 - ■■A1**		11
0.37	**K.188-D68-LA71M4**							
	0.12	24 723	0.81	11 463	★	**2KJ1542 - ■CE13 - ■■C1**		749
	K.188-Z68-LA71M4							
	0.15	20 281	0.99	9 201	★	**2KJ1541 - ■CE13 - ■■X1**		747
	0.17	17 737	1.1	8 047		**2KJ1541 - ■CE13 - ■■W1**		747
	0.19	15 923	1.3	7 224	★	**2KJ1541 - ■CE13 - ■■V1**		747
	0.21	14 543	1.4	6 598		**2KJ1541 - ■CE13 - ■■U1**		747
	0.23	12 905	1.5	5 855	★	**2KJ1541 - ■CE13 - ■■T1**		747
	0.25	11 914	1.7	5 405		**2KJ1541 - ■CE13 - ■■S1**		747
	0.28	10 776	1.9	4 889	★	**2KJ1541 - ■CE13 - ■■R1**		747
	0.30	9 923	2.0	4 502		**2KJ1541 - ■CE13 - ■■Q1**		747
	K.168-Z48-LA71M4							
	0.18	16 840	0.80	7 640		**2KJ1537 - ■CE13 - ■■S1**		486
	0.21	14 642	0.92	6 643	★	**2KJ1537 - ■CE13 - ■■R1**		486
	0.23	13 296	1.0	6 032		**2KJ1537 - ■CE13 - ■■Q1**		486
	0.25	12 138	1.1	5 507	★	**2KJ1537 - ■CE13 - ■■P1**		486
	0.27	11 138	1.2	5 053		**2KJ1537 - ■CE13 - ■■N1**		486
	0.29	10 263	1.3	4 656	★	**2KJ1537 - ■CE13 - ■■M1**		486
	0.32	9 319	1.4	4 228		**2KJ1537 - ■CE13 - ■■L1**		486
	0.36	8 490	1.6	3 852	★	**2KJ1537 - ■CE13 - ■■K1**		486
	0.39	7 776	1.7	3 528		**2KJ1537 - ■CE13 - ■■J1**		486
	0.44	6 939	1.9	3 148	★	**2KJ1537 - ■CE13 - ■■H1**		486

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.37	**K.148-Z38-LA71M4**							
	0.32	9 568	0.84	4 341		**2KJ1534 - ■CE13 - ■■L1**		296
	0.35	8 717	0.92	3 955		**2KJ1534 - ■CE13 - ■■K1**		296
	0.38	7 972	1.0	3 617		**2KJ1534 - ■CE13 - ■■J1**		296
	0.42	7 128	1.1	3 234		**2KJ1534 - ■CE13 - ■■H1**		296
	0.46	6 546	1.2	2 970		**2KJ1534 - ■CE13 - ■■G1**		296
	0.51	5 901	1.4	2 677		**2KJ1534 - ■CE13 - ■■F1**		296
	0.60	5 074	1.6	2 302		**2KJ1534 - ■CE13 - ■■E1**		296
	0.67	4 525	1.8	2 053		**2KJ1534 - ■CE13 - ■■D1**		296
	0.73	4 155	1.9	1 885		**2KJ1534 - ■CE13 - ■■C1**		296
	K.128-Z38-LA71M4							
	0.53	5 693	0.83	2 583		**2KJ1531 - ■CE13 - ■■F1**		201
	0.62	4 895	0.96	2 221	★	**2KJ1531 - ■CE13 - ■■E1**		201
	0.69	4 366	1.1	1 981		**2KJ1531 - ■CE13 - ■■D1**		201
	0.75	4 009	1.2	1 819	★	**2KJ1531 - ■CE13 - ■■C1**		201
	0.84	3 613	1.3	1 639		**2KJ1531 - ■CE13 - ■■B1**		201
	0.97	3 108	1.5	1 410	★	**2KJ1531 - ■CE13 - ■■A1**		201
	K.128-Z48-LA71M4							
	0.98	3 086	1.5	1 400		**2KJ1533 - ■CE13 - ■■P1**		210
	1.1	2 830	1.7	1 284		**2KJ1533 - ■CE13 - ■■N1**		210
	1.2	2 608	1.8	1 183		**2KJ1533 - ■CE13 - ■■M1**		210
	1.3	2 367	2.0	1 074		**2KJ1533 - ■CE13 - ■■L1**		210
	K.108-Z38-LA71M4							
	0.80	3 758	0.80	1 705		**2KJ1527 - ■CE13 - ■■B1**		134
	0.94	3 231	0.93	1 466		**2KJ1527 - ■CE13 - ■■A1**		134
	K.108-Z48-LA71M4							
	1.0	2 960	1.0	1 343	★	**2KJ1530 - ■CE13 - ■■P1**		143
	1.1	2 718	1.1	1 233		**2KJ1530 - ■CE13 - ■■N1**		143
	1.2	2 504	1.2	1 136	★	**2KJ1530 - ■CE13 - ■■M1**		143
	1.3	2 272	1.3	1 031		**2KJ1530 - ■CE13 - ■■L1**		143
	1.5	2 072	1.4	940	★	**2KJ1530 - ■CE13 - ■■K1**		143
	1.6	1 898	1.6	861		**2KJ1530 - ■CE13 - ■■J1**		143
	1.8	1 693	1.8	768	★	**2KJ1530 - ■CE13 - ■■H1**		143
	K.108-LA90SA8							
	2.2	1 608	1.8	307.24		**2KJ1506 - ■EB13 - ■■K2**	**P02**	135
	2.4	1 456	1.9	278.1	★	**2KJ1506 - ■EB13 - ■■J2**	**P02**	135
	K.88-Z28-LA71M4							
	1.5	2 021	0.82	917	★	**2KJ1523 - ■CE13 - ■■K1**		76
	1.7	1 739	0.95	789		**2KJ1523 - ■CE13 - ■■J1**		76
	1.9	1 583	1.0	718	★	**2KJ1523 - ■CE13 - ■■H1**		76
	2.1	1 437	1.1	652	★	**2KJ1523 - ■CE13 - ■■G1**		76
	K.88-LA90SA8							
	2.2	1 584	0.97	302.68	★	**2KJ1505 - ■EB13 - ■■M2**	**P02**	81
	2.5	1 429	1.2	272.95		**2KJ1505 - ■EB13 - ■■L2**	**P02**	81

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.37	**K.88-LA90SA8**							
	2.7	1 288	1.3	246.13	★	**2KJ1505 - ■EB13 - ■■K2**	**P02**	81
	K.88-LA80S6							
	3.0	1 163	1.3	302.68	★	**2KJ1505 - ■DB13 - ■■M2**	**P01**	78
	3.4	1 048	1.6	272.95		**2KJ1505 - ■DB13 - ■■L2**	**P01**	78
	3.7	945	1.7	246.13	★	**2KJ1505 - ■DB13 - ■■K2**	**P01**	78
	4.3	827	2.0	215.25		**2KJ1505 - ■DB13 - ■■J2**	**P01**	78
	K.88-LA71M4							
	4.5	781	2.0	302.68	★	**2KJ1505 - ■CE13 - ■■M2**		74
	K.68-LA80S6							
	3.8	936	0.88	243.72		**2KJ1504 - ■DB13 - ■■N2**	**P01**	48
	4.3	828	0.99	215.68	★	**2KJ1504 - ■DB13 - ■■M2**	**P01**	48
	4.7	753	1.1	196.07		**2KJ1504 - ■DB13 - ■■L2**	**P01**	48
	5.2	677	1.2	176.14	★	**2KJ1504 - ■DB13 - ■■K2**	**P01**	48
	K.68-LA71M4							
	5.6	629	1.3	243.72		**2KJ1504 - ■CE13 - ■■N2**		44
	6.4	556	1.5	215.68	★	**2KJ1504 - ■CE13 - ■■M2**		44
	7.0	506	1.6	196.07		**2KJ1504 - ■CE13 - ■■L2**		44
	7.8	454	1.8	176.14	★	**2KJ1504 - ■CE13 - ■■K2**		44
	9.1	389	2.1	150.98		**2KJ1504 - ■CE13 - ■■J2**		44
	K.48-LA80S6							
	7.0	502	0.90	130.78	★	**2KJ1503 - ■DB13 - ■■G2**	**P01**	29
	7.5	469	0.96	122.19		**2KJ1503 - ■DB13 - ■■F2**	**P01**	29
	K.48-LA71M4							
	8.1	437	1.0	169.53	★	**2KJ1503 - ■CE13 - ■■J2**		25
	9.1	389	1.2	150.76		**2KJ1503 - ■CE13 - ■■H2**		25
	10.5	337	1.3	130.78	★	**2KJ1503 - ■CE13 - ■■G2**		25
	11.2	315	1.4	122.19		**2KJ1503 - ■CE13 - ■■F2**		25
	12.7	277	1.6	107.47	★	**2KJ1503 - ■CE13 - ■■E2**		25
	14.6	243	1.9	94.12		**2KJ1503 - ■CE13 - ■■D2**		25
	16.5	215	2.1	83.25	★	**2KJ1503 - ■CE13 - ■■C2**		25
	18.2	195	2.3	75.45		**2KJ1503 - ■CE13 - ■■B2**		25
	K.38-LA71M4							
	12.4	286	0.88	110.75	★	**2KJ1502 - ■CE13 - ■■G2**		21
	14.1	250	1.0	97.05		**2KJ1502 - ■CE13 - ■■F2**		21
	16.1	220	1.1	85.33	★	**2KJ1502 - ■CE13 - ■■E2**		21
	17.8	199	1.3	77.09		**2KJ1502 - ■CE13 - ■■D2**		21
	20	173	1.4	67.18	★	**2KJ1502 - ■CE13 - ■■C2**		21
	23	156	1.6	60.33		**2KJ1502 - ■CE13 - ■■B2**		21
	25	140	1.8	54.47	★	**2KJ1502 - ■CE13 - ■■A2**		21
	28	127	2.0	49.38		**2KJ1502 - ■CE13 - ■■X1**		21
	30	116	2.2	44.94	★	**2KJ1502 - ■CE13 - ■■W1**		21
	34	102	2.4	39.73		**2KJ1502 - ■CE13 - ■■V1**		21
	37	95	2.6	36.69	★	**2KJ1502 - ■CE13 - ■■U1**		21

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.37	**B.38-LA80S6**							
	16.1	219	1.1	57.04		**2KJ1501 - ■DB13 - ■■T2**	**P01**	27
	18.1	195	1.3	50.72		**2KJ1501 - ■DB13 - ■■S2**	**P01**	27
	B.38-LA71M4							
	21	169	1.5	65.69		**2KJ1501 - ■CE13 - ■■U2**		23
	24	147	1.7	57.04		**2KJ1501 - ■CE13 - ■■T2**		23
	27	131	1.9	50.72		**2KJ1501 - ■CE13 - ■■S2**		23
	31	113	2.2	44		**2KJ1501 - ■CE13 - ■■R2**		23
	33	106	2.4	41.11		**2KJ1501 - ■CE13 - ■■Q2**		23
	B.28-LA71M4							
	24	148	0.88	57.53		**2KJ1500 - ■CE13 - ■■D2**		11
	28	125	1.0	48.51		**2KJ1500 - ■CE13 - ■■C2**		11
	32	111	1.2	43.07		**2KJ1500 - ■CE13 - ■■B2**		11
	36	97	1.3	37.76		**2KJ1500 - ■CE13 - ■■A2**		11
	40	87	1.5	33.79		**2KJ1500 - ■CE13 - ■■X1**		11
	46	77	1.7	29.99		**2KJ1500 - ■CE13 - ■■W1**		11
	52	68	1.9	26.28		**2KJ1500 - ■CE13 - ■■V1**		11
	59	60	2.2	23.11		**2KJ1500 - ■CE13 - ■■U1**		11
	66	54	2.4	20.87		**2KJ1500 - ■CE13 - ■■T1**		11
	75	47	2.8	18.19		**2KJ1500 - ■CE13 - ■■S1**		11
	84	42	3.1	16.34		**2KJ1500 - ■CE13 - ■■R1**		11
	93	38	3.4	14.75		**2KJ1500 - ■CE13 - ■■Q1**		11
0.55	**K.188-Z68-LA71ZMP4**							
	0.19	24 353	0.82	7 224	★	**2KJ1541 - ■CG13 - ■■V1**		747
	0.21	22 242	0.9	6 598		**2KJ1541 - ■CG13 - ■■U1**		747
	0.23	19 738	1.0	5 855	★	**2KJ1541 - ■CG13 - ■■T1**		747
	0.25	18 221	1.1	5 405		**2KJ1541 - ■CG13 - ■■S1**		747
	0.28	16 481	1.2	4 889	★	**2KJ1541 - ■CG13 - ■■R1**		747
	0.30	15 177	1.3	4 502		**2KJ1541 - ■CG13 - ■■Q1**		747
	0.33	14 034	1.4	4 163	★	**2KJ1541 - ■CG13 - ■■P1**		747
	0.35	13 029	1.5	3 865		**2KJ1541 - ■CG13 - ■■N1**		747
	0.40	11 495	1.7	3 410	★	**2KJ1541 - ■CG13 - ■■M1**		747
	0.44	10 612	1.9	3 148		**2KJ1541 - ■CG13 - ■■L1**		747
	K.168-Z48-LA71ZMP4							
	0.29	15 696	0.86	4 656	★	**2KJ1537 - ■CG13 - ■■M1**		486
	0.32	14 253	0.95	4 228		**2KJ1537 - ■CG13 - ■■L1**		486
	0.36	12 985	1.0	3 852	★	**2KJ1537 - ■CG13 - ■■K1**		486
	0.39	11 893	1.1	3 528		**2KJ1537 - ■CG13 - ■■J1**		486
	0.44	10 612	1.3	3 148	★	**2KJ1537 - ■CG13 - ■■H1**		486
	0.70	6 590	2.0	1 955	★	**2KJ1537 - ■CG13 - ■■D1**		486
	K.148-Z38-LA71ZMP4							
	0.46	10 012	0.80	2 970		**2KJ1534 - ■CG13 - ■■G1**		296
	0.51	9 024	0.89	2 677		**2KJ1534 - ■CG13 - ■■F1**		296
	0.60	7 760	1.0	2 302		**2KJ1534 - ■CG13 - ■■E1**		296

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.55	**K.148-Z38-LA71ZMP4**							
	0.67	6 921	1.2	2 053		**2KJ1534 - ■CG13 - ■■D1**		296
	0.73	6 354	1.3	1 885		**2KJ1534 - ■CG13 - ■■C1**		296
	0.81	5 727	1.4	1 699		**2KJ1534 - ■CG13 - ■■B1**		296
	0.94	4 925	1.6	1 461		**2KJ1534 - ■CG13 - ■■A1**		296
	K.148-Z68-LA71ZMP4							
	0.98	4 693	1.7	1 392		**2KJ1536 - ■CG13 - ■■L1**		322
	1.1	4 204	1.9	1 247	★	**2KJ1536 - ■CG13 - ■■K1**		322
	K.128-Z38-LA71ZMP4							
	0.84	5 525	0.85	1 639		**2KJ1531 - ■CG13 - ■■B1**		201
	0.97	4 753	0.99	1 410	★	**2KJ1531 - ■CG13 - ■■A1**		201
	K.128-Z48-LA71ZMP4							
	0.98	4 720	1.0	1 400		**2KJ1533 - ■CG13 - ■■P1**		210
	1.1	4 328	1.1	1 284		**2KJ1533 - ■CG13 - ■■N1**		210
	1.2	3 988	1.2	1 183		**2KJ1533 - ■CG13 - ■■M1**		210
	1.3	3 621	1.3	1 074		**2KJ1533 - ■CG13 - ■■L1**		210
	1.4	3 300	1.4	979		**2KJ1533 - ■CG13 - ■■K1**		210
	1.5	3 024	1.6	897		**2KJ1533 - ■CG13 - ■■J1**		210
	1.7	2 697	1.7	800		**2KJ1533 - ■CG13 - ■■H1**		210
	K.128-LA90LA8							
	2.3	2 298	2.0	295.38	★	**2KJ1507 - ■EE13 - ■■L2**	**P02**	209
	K.108-Z48-LA71ZMP4							
	1.3	3 476	0.86	1 031		**2KJ1530 - ■CG13 - ■■L1**		143
	1.5	3 169	0.95	940	★	**2KJ1530 - ■CG13 - ■■K1**		143
	1.6	2 903	1.0	861		**2KJ1530 - ■CG13 - ■■J1**		143
	1.8	2 589	1.2	768	★	**2KJ1530 - ■CG13 - ■■H1**		143
	K.108-LA90LA8							
	2.2	2 391	1.2	307.24		**2KJ1506 - ■EE13 - ■■K2**	**P02**	138
	2.4	2 164	1.3	278.1	★	**2KJ1506 - ■EE13 - ■■J2**	**P02**	138
	2.8	1 895	1.6	243.47		**2KJ1506 - ■EE13 - ■■H2**	**P02**	138
	K.108-LA80M6							
	3.0	1 773	1.6	307.24		**2KJ1506 - ■DC13 - ■■K2**	**P01**	132
	3.3	1 605	1.8	278.1	★	**2KJ1506 - ■DC13 - ■■J2**	**P01**	132
	K.88-LA90LA8							
	2.7	1 915	0.86	246.13	★	**2KJ1505 - ■EE13 - ■■K2**	**P02**	84
	K.88-LA80M6							
	3.0	1 747	0.88	302.68	★	**2KJ1505 - ■DC13 - ■■M2**		78
	3.3	1 575	1.0	272.95		**2KJ1505 - ■DC13 - ■■L2**		78
	3.7	1 421	1.2	246.13	★	**2KJ1505 - ■DC13 - ■■K2**		78
	4.2	1 242	1.3	215.25		**2KJ1505 - ■DC13 - ■■J2**		78
	K.88-LA71ZMP4							
	4.5	1 160	1.3	302.68	★	**2KJ1505 - ■CG13 - ■■M2**		74
	5.0	1 046	1.6	272.95		**2KJ1505 - ■CG13 - ■■L2**		74

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.55	**K.88-LA71ZMP4**							
	5.6	944	1.7	246.13	★	**2KJ1505 - ■CG13 - ■■K2**		74
	6.4	825	2.0	215.25		**2KJ1505 - ■CG13 - ■■J2**		74
	K.68-LA80M6							
	5.2	1 017	0.81	176.14	★	**2KJ1504 - ■DC13 - ■■K2**	**P01**	48
	K.68-LA71ZMP4							
	5.6	934	0.88	243.72		**2KJ1504 - ■CG13 - ■■N2**		44
	6.4	827	0.99	215.68	★	**2KJ1504 - ■CG13 - ■■M2**		44
	7.0	752	1.1	196.07		**2KJ1504 - ■CG13 - ■■L2**		44
	7.8	675	1.2	176.14	★	**2KJ1504 - ■CG13 - ■■K2**		44
	9.1	579	1.4	150.98		**2KJ1504 - ■CG13 - ■■J2**		44
	10.0	524	1.6	136.6	★	**2KJ1504 - ■CG13 - ■■H2**		44
	10.9	483	1.7	126.09		**2KJ1504 - ■CG13 - ■■G2**		44
	12.5	420	2.0	109.64	★	**2KJ1504 - ■CG13 - ■■F2**		44
	13.8	382	2.1	99.55		**2KJ1504 - ■CG13 - ■■E2**		44
	K.48-LA71ZMP4							
	10.5	501	0.90	130.78	★	**2KJ1503 - ■CG13 - ■■G2**		25
	11.2	468	0.96	122.19		**2KJ1503 - ■CG13 - ■■F2**		25
	12.7	412	1.1	107.47	★	**2KJ1503 - ■CG13 - ■■E2**		25
	14.6	361	1.2	94.12		**2KJ1503 - ■CG13 - ■■D2**		25
	16.5	319	1.4	83.25	★	**2KJ1503 - ■CG13 - ■■C2**		25
	18.2	289	1.6	75.45		**2KJ1503 - ■CG13 - ■■B2**		25
	21	255	1.8	66.6	★	**2KJ1503 - ■CG13 - ■■A2**		25
	23	230	2.0	60.08		**2KJ1503 - ■CG13 - ■■X1**		25
	25	209	2.2	54.49	★	**2KJ1503 - ■CG13 - ■■W1**		25
	28	190	2.4	49.65		**2KJ1503 - ■CG13 - ■■V1**		25
	K.38-LA71ZMP4							
	17.8	296	0.85	77.09		**2KJ1502 - ■CG13 - ■■D2**		21
	20	258	0.97	67.18	★	**2KJ1502 - ■CG13 - ■■C2**		21
	23	231	1.1	60.33		**2KJ1502 - ■CG13 - ■■B2**		21
	25	209	1.2	54.47	★	**2KJ1502 - ■CG13 - ■■A2**		21
	28	189	1.3	49.38		**2KJ1502 - ■CG13 - ■■X1**		21
	30	172	1.5	44.94	★	**2KJ1502 - ■CG13 - ■■W1**		21
	34	152	1.6	39.73		**2KJ1502 - ■CG13 - ■■V1**		21
	37	141	1.8	36.69	★	**2KJ1502 - ■CG13 - ■■U1**		21
	43	121	2.1	31.59		**2KJ1502 - ■CG13 - ■■T1**		21
	48	110	2.3	28.72	★	**2KJ1502 - ■CG13 - ■■S1**		21
	51	103	2.1	26.9	★	**2KJ1502 - ■CG13 - ■■R1**		21
	57	93	2.3	24.16		**2KJ1502 - ■CG13 - ■■Q1**		21
	63	84	2.4	21.81	★	**2KJ1502 - ■CG13 - ■■P1**		21
	69	76	2.6	19.78		**2KJ1502 - ■CG13 - ■■N1**		21
	76	69	2.8	17.99	★	**2KJ1502 - ■CG13 - ■■M1**		21
	86	61	3.0	15.91		**2KJ1502 - ■CG13 - ■■L1**		21
	93	56	3.2	14.69	★	**2KJ1502 - ■CG13 - ■■K1**		21

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.55	**K.38-LA71ZMP4**							
	108	48	3.5	12.65		**2KJ1502 - ■CG13 - ■■J1**		21
	B.38-LA80M6							
	17.9	293	0.85	50.72		**2KJ1501 - ■DC13 - ■■S2**	**P01**	27
	B.38-LA71ZMP4							
	21	252	0.99	65.69		**2KJ1501 - ■CG13 - ■■U2**		23
	24	219	1.1	57.04		**2KJ1501 - ■CG13 - ■■T2**		23
	27	194	1.3	50.72		**2KJ1501 - ■CG13 - ■■S2**		23
	31	169	1.5	44		**2KJ1501 - ■CG13 - ■■R2**		23
	33	158	1.6	41.11		**2KJ1501 - ■CG13 - ■■Q2**		23
	38	139	1.8	36.16		**2KJ1501 - ■CG13 - ■■P2**		23
	43	121	2.1	31.67		**2KJ1501 - ■CG13 - ■■N2**		23
	49	107	2.3	28.01		**2KJ1501 - ■CG13 - ■■M2**		23
	54	97	2.6	25.38		**2KJ1501 - ■CG13 - ■■L2**		23
	61	86	2.8	22.41		**2KJ1501 - ■CG13 - ■■K2**		23
	68	78	3.0	20.22		**2KJ1501 - ■CG13 - ■■J2**		23
	75	70	3.2	18.33		**2KJ1501 - ■CG13 - ■■H2**		23
	B.28-LA71ZMP4							
	36	145	0.90	37.76		**2KJ1500 - ■CG13 - ■■A2**		11
	40	130	1.0	33.79		**2KJ1500 - ■CG13 - ■■X1**		11
	46	115	1.1	29.99		**2KJ1500 - ■CG13 - ■■W1**		11
	52	101	1.3	26.28		**2KJ1500 - ■CG13 - ■■V1**		11
	59	89	1.5	23.11		**2KJ1500 - ■CG13 - ■■U1**		11
	66	80	1.6	20.87		**2KJ1500 - ■CG13 - ■■T1**		11
	75	70	1.9	18.19		**2KJ1500 - ■CG13 - ■■S1**		11
	84	63	2.1	16.34		**2KJ1500 - ■CG13 - ■■R1**		11
	93	57	2.3	14.75		**2KJ1500 - ■CG13 - ■■Q1**		11
	102	51	2.5	13.38		**2KJ1500 - ■CG13 - ■■P1**		11
	113	47	2.8	12.17		**2KJ1500 - ■CG13 - ■■N1**		11
	127	41	3.2	10.76		**2KJ1500 - ■CG13 - ■■M1**		11
	138	38	3.4	9.94		**2KJ1500 - ■CG13 - ■■L1**		11
	160	33	3.7	8.56		**2KJ1500 - ■CG13 - ■■K1**		11
	176	30	3.9	7.78		**2KJ1500 - ■CG13 - ■■J1**		11
	183	29	3.1	7.49		**2KJ1500 - ■CG13 - ■■H1**		11
	203	26	3.5	6.76		**2KJ1500 - ■CG13 - ■■G1**		11
	223	24	3.8	6.13		**2KJ1500 - ■CG13 - ■■F1**		11
	246	21	4.2	5.58		**2KJ1500 - ■CG13 - ■■E1**		11
	277	19	4.8	4.94		**2KJ1500 - ■CG13 - ■■D1**		11
	300	18	5.0	4.56		**2KJ1500 - ■CG13 - ■■C1**		11
0.75	**K.188-Z68-LA80ZMB4E**							
	0.26	24 688	0.81	5 405		**2KJ1541 - ■DE13 - ■■S1**		751
	0.29	22 331	0.90	4 889	★	**2KJ1541 - ■DE13 - ■■R1**		751
	0.31	20 563	0.97	4 502		**2KJ1541 - ■DE13 - ■■Q1**		751
	0.34	19 015	1.1	4 163	★	**2KJ1541 - ■DE13 - ■■P1**		751

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.75	**K.188-Z68-LA80ZMB4E**							
	0.36	17 654	1.1	3 865		**2KJ1541 - ■DE13 - ■■N1**		751
	0.41	15 576	1.3	3 410	★	**2KJ1541 - ■DE13 - ■■M1**		751
	0.44	14 379	1.4	3 148		**2KJ1541 - ■DE13 - ■■L1**		751
	0.50	12 885	1.6	2 821	★	**2KJ1541 - ■DE13 - ■■K1**		751
	0.54	11 880	1.7	2 601		**2KJ1541 - ■DE13 - ■■J1**		751
	0.64	9 967	2.0	2 182		**2KJ1541 - ■DE13 - ■■H1**		751
	K.168-Z48-LA80ZMB4E							
	0.40	16 115	0.84	3 528		**2KJ1537 - ■DE13 - ■■J1**		490
	0.44	14 379	0.94	3 148	★	**2KJ1537 - ■DE13 - ■■H1**		490
	0.50	12 835	1.1	2 810		**2KJ1537 - ■DE13 - ■■G1**		490
	0.59	10 898	1.2	2 386		**2KJ1537 - ■DE13 - ■■F1**		490
	0.70	9 071	1.5	1 986	★	**2KJ1537 - ■DE13 - ■■E1**		490
	0.72	8 930	1.5	1 955	★	**2KJ1537 - ■DE13 - ■■D1**		490
	0.80	7 971	1.7	1 745		**2KJ1537 - ■DE13 - ■■C1**		490
	0.94	6 769	2.0	1 482		**2KJ1537 - ■DE13 - ■■B1**		490
	K.148-Z38-LA80ZMB4E							
	0.68	9 377	0.85	2 053		**2KJ1534 - ■DE13 - ■■D1**		300
	0.74	8 610	0.93	1 885		**2KJ1534 - ■DE13 - ■■C1**		300
	0.82	7 760	1.0	1 699		**2KJ1534 - ■DE13 - ■■B1**		300
	0.96	6 673	1.2	1 461		**2KJ1534 - ■DE13 - ■■A1**		300
	K.148-Z68-LA80ZMB4E							
	1.0	6 358	1.3	1 392		**2KJ1536 - ■DE13 - ■■L1**		326
	1.1	5 696	1.4	1 247	★	**2KJ1536 - ■DE13 - ■■K1**		326
	1.2	5 253	1.5	1 150		**2KJ1536 - ■DE13 - ■■J1**		326
	1.5	4 408	1.8	965		**2KJ1536 - ■DE13 - ■■H1**		326
	K.128-Z48-LA80ZMB4E							
	1.1	5 865	0.80	1 284		**2KJ1533 - ■DE13 - ■■N1**		214
	1.2	5 404	0.87	1 183		**2KJ1533 - ■DE13 - ■■M1**		214
	1.3	4 906	0.96	1 074		**2KJ1533 - ■DE13 - ■■L1**		214
	1.4	4 472	1.1	979		**2KJ1533 - ■DE13 - ■■K1**		214
	1.6	4 097	1.1	897		**2KJ1533 - ■DE13 - ■■J1**		214
	1.8	3 654	1.3	800		**2KJ1533 - ■DE13 - ■■H1**		214
	2.0	3 261	1.4	714		**2KJ1533 - ■DE13 - ■■G1**		214
	K.128-LA100LA8							
	2.3	3 111	1.5	295.38	★	**2KJ1507 - ■FB13 - ■■L2**	**P02**	217
	2.5	2 853	1.6	270.9		**2KJ1507 - ■FB13 - ■■K2**	**P02**	217
	2.8	2 549	1.8	242.02	★	**2KJ1507 - ■FB13 - ■■J2**	**P02**	217
	3.1	2 335	2.0	221.64		**2KJ1507 - ■FB13 - ■■H2**	**P02**	217
	K.108-Z48-LA80ZMB4E							
	1.8	3 508	0.86	768	★	**2KJ1530 - ■DE13 - ■■H1**		147
	2.0	3 129	0.96	685		**2KJ1530 - ■DE13 - ■■G1**		147
	K.108-LA100LA8							
	2.8	2 564	1.2	243.47		**2KJ1506 - ■FB13 - ■■H2**	**P02**	146

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.75	**K.108-LA90SB6E**							
	3.0	2 379	1.2	307.24		**2KJ1506 - ■ED13 - ■■K2**	**P01**	135
	3.3	2 153	1.3	278.1	★	**2KJ1506 - ■ED13 - ■■J2**	**P01**	135
	3.8	1 885	1.6	243.47		**2KJ1506 - ■ED13 - ■■H2**	**P01**	135
	4.2	1 701	1.8	219.64	★	**2KJ1506 - ■ED13 - ■■G2**	**P01**	135
	K.108-LA80ZMB4E							
	4.6	1 572	1.8	307.24		**2KJ1506 - ■DE13 - ■■K2**		132
	5.0	1 423	2.0	278.1	★	**2KJ1506 - ■DE13 - ■■J2**		132
	K.88-LA90SB6E							
	3.8	1 906	0.87	246.13	★	**2KJ1505 - ■ED13 - ■■K2**	**P01**	81
	4.3	1 667	0.99	215.25		**2KJ1505 - ■ED13 - ■■J2**	**P01**	81
	K.88-LA80ZMB4E							
	4.6	1 549	0.99	302.68	★	**2KJ1505 - ■DE13 - ■■M2**		78
	5.1	1 396	1.2	272.95		**2KJ1505 - ■DE13 - ■■L2**		78
	5.7	1 259	1.3	246.13	★	**2KJ1505 - ■DE13 - ■■K2**		78
	6.5	1 101	1.5	215.25		**2KJ1505 - ■DE13 - ■■J2**		78
	7.2	989	1.7	193.24	★	**2KJ1505 - ■DE13 - ■■H2**		78
	7.9	903	1.8	176.5		**2KJ1505 - ■DE13 - ■■G2**		78
	8.9	801	2.1	156.63	★	**2KJ1505 - ■DE13 - ■■F2**		78
	K.68-LA80ZMB4E							
	7.1	1 003	0.82	196.07		**2KJ1504 - ■DE13 - ■■L2**		48
	7.9	901	0.91	176.14	★	**2KJ1504 - ■DE13 - ■■K2**		48
	9.3	772	1.1	150.98		**2KJ1504 - ■DE13 - ■■J2**		48
	10.2	699	1.2	136.6	★	**2KJ1504 - ■DE13 - ■■H2**		48
	11.1	645	1.3	126.09		**2KJ1504 - ■DE13 - ■■G2**		48
	12.8	561	1.5	109.64	★	**2KJ1504 - ■DE13 - ■■F2**		48
	14.1	509	1.6	99.55		**2KJ1504 - ■DE13 - ■■E2**		48
	15.4	465	1.8	90.89	★	**2KJ1504 - ■DE13 - ■■D2**		48
	16.8	427	1.9	83.4		**2KJ1504 - ■DE13 - ■■C2**		48
	18.2	393	2.1	76.84	★	**2KJ1504 - ■DE13 - ■■B2**		48
	20	357	2.3	69.78		**2KJ1504 - ■DE13 - ■■A2**		48
	K.48-LA80ZMB4E							
	13.0	550	0.82	107.47	★	**2KJ1503 - ■DE13 - ■■E2**		29
	14.9	482	0.93	94.12		**2KJ1503 - ■DE13 - ■■D2**		29
	16.8	426	1.1	83.25	★	**2KJ1503 - ■DE13 - ■■C2**		29
	18.6	386	1.2	75.45		**2KJ1503 - ■DE13 - ■■B2**		29
	21	341	1.3	66.6	★	**2KJ1503 - ■DE13 - ■■A2**		29
	23	307	1.5	60.08		**2KJ1503 - ■DE13 - ■■X1**		29
	26	279	1.6	54.49	★	**2KJ1503 - ■DE13 - ■■W1**		29
	28	254	1.8	49.65		**2KJ1503 - ■DE13 - ■■V1**		29
	31	232	1.9	45.41	★	**2KJ1503 - ■DE13 - ■■U1**		29
	34	208	2.2	40.6		**2KJ1503 - ■DE13 - ■■T1**		29
	38	191	2.4	37.28	★	**2KJ1503 - ■DE13 - ■■S1**		29
	42	172	2.6	33.6		**2KJ1503 - ■DE13 - ■■R1**		29

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.75	**K.38-LA80ZMB4E**							
	23	309	0.81	60.33		**2KJ1502 - ■DE13 - ■■B2**		25
	26	279	0.90	54.47	★	**2KJ1502 - ■DE13 - ■■A2**		25
	28	253	0.99	49.38		**2KJ1502 - ■DE13 - ■■X1**		25
	31	230	1.1	44.94	★	**2KJ1502 - ■DE13 - ■■W1**		25
	35	203	1.2	39.73		**2KJ1502 - ■DE13 - ■■V1**		25
	38	188	1.3	36.69	★	**2KJ1502 - ■DE13 - ■■U1**		25
	44	162	1.5	31.59		**2KJ1502 - ■DE13 - ■■T1**		25
	49	147	1.7	28.72	★	**2KJ1502 - ■DE13 - ■■S1**		25
	52	138	1.6	26.9	★	**2KJ1502 - ■DE13 - ■■R1**		25
	58	124	1.7	24.16		**2KJ1502 - ■DE13 - ■■Q1**		25
	64	112	1.8	21.81	★	**2KJ1502 - ■DE13 - ■■P1**		25
	71	101	1.9	19.78		**2KJ1502 - ■DE13 - ■■N1**		25
	78	92	2.1	17.99	★	**2KJ1502 - ■DE13 - ■■M1**		25
	88	81	2.3	15.91		**2KJ1502 - ■DE13 - ■■L1**		25
	95	75	2.4	14.69	★	**2KJ1502 - ■DE13 - ■■K1**		25
	111	65	2.7	12.65		**2KJ1502 - ■DE13 - ■■J1**		25
	122	59	2.8	11.5	★	**2KJ1502 - ■DE13 - ■■H1**		25
	131	55	2.9	10.72	★	**2KJ1502 - ■DE13 - ■■G1**		25
	144	50	3.2	9.72		**2KJ1502 - ■DE13 - ■■F1**		25
	158	45	3.5	8.85	★	**2KJ1502 - ■DE13 - ■■E1**		25
	179	40	4.0	7.82		**2KJ1502 - ■DE13 - ■■D1**		25
	194	37	4.3	7.22	★	**2KJ1502 - ■DE13 - ■■C1**		25
	B.38-LA80ZMB4E							
	24	292	0.86	57.04		**2KJ1501 - ■DE13 - ■■T2**		27
	28	259	0.96	50.72		**2KJ1501 - ■DE13 - ■■S2**		27
	32	225	1.1	44		**2KJ1501 - ■DE13 - ■■R2**		27
	34	210	1.2	41.11		**2KJ1501 - ■DE13 - ■■Q2**		27
	39	185	1.4	36.16		**2KJ1501 - ■DE13 - ■■P2**		27
	44	162	1.5	31.67		**2KJ1501 - ■DE13 - ■■N2**		27
	50	143	1.7	28.01		**2KJ1501 - ■DE13 - ■■M2**		27
	55	130	1.9	25.38		**2KJ1501 - ■DE13 - ■■L2**		27
	62	115	2.1	22.41		**2KJ1501 - ■DE13 - ■■K2**		27
	69	103	2.2	20.22		**2KJ1501 - ■DE13 - ■■J2**		27
	76	94	2.4	18.33		**2KJ1501 - ■DE13 - ■■H2**		27
	84	85	2.6	16.7		**2KJ1501 - ■DE13 - ■■G2**		27
	92	78	2.7	15.28		**2KJ1501 - ■DE13 - ■■F2**		27
	102	70	3.0	13.66		**2KJ1501 - ■DE13 - ■■E2**		27
	112	64	3.4	12.5		**2KJ1501 - ■DE13 - ■■C2**		27
	B.28-LA80ZMB4E							
	47	153	0.85	29.99		**2KJ1500 - ■DE13 - ■■W1**		15
	53	134	0.97	26.28		**2KJ1500 - ■DE13 - ■■V1**		15
	61	118	1.1	23.11		**2KJ1500 - ■DE13 - ■■U1**		15
	67	107	1.2	20.87		**2KJ1500 - ■DE13 - ■■T1**		15

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.75	**B.28-LA80ZMB4E**							
	77	93	1.4	18.19		**2KJ1500 - ■DE13 - ■■S1**		15
	86	84	1.6	16.34		**2KJ1500 - ■DE13 - ■■R1**		15
	95	76	1.7	14.75		**2KJ1500 - ■DE13 - ■■Q1**		15
	105	68	1.9	13.38		**2KJ1500 - ■DE13 - ■■P1**		15
	115	62	2.1	12.17		**2KJ1500 - ■DE13 - ■■N1**		15
	130	55	2.4	10.76		**2KJ1500 - ■DE13 - ■■M1**		15
	141	51	2.5	9.94		**2KJ1500 - ■DE13 - ■■L1**		15
	164	44	2.8	8.56		**2KJ1500 - ■DE13 - ■■K1**		15
	180	40	2.9	7.78		**2KJ1500 - ■DE13 - ■■J1**		15
	187	38	2.3	7.49		**2KJ1500 - ■DE13 - ■■H1**		15
	207	35	2.6	6.76		**2KJ1500 - ■DE13 - ■■G1**		15
	228	31	2.9	6.13		**2KJ1500 - ■DE13 - ■■F1**		15
	251	28	3.2	5.58		**2KJ1500 - ■DE13 - ■■E1**		15
	283	25	3.6	4.94		**2KJ1500 - ■DE13 - ■■D1**		15
	307	23	3.7	4.56		**2KJ1500 - ■DE13 - ■■C1**		15
	357	20	4.1	3.92		**2KJ1500 - ■DE13 - ■■B1**		15
	392	18	4.3	3.57		**2KJ1500 - ■DE13 - ■■A1**		15
1.1	**K.188-Z68-LA90SB4E**							
	0.42	22 504	0.89	3 410	★	**2KJ1541 - ■EM13 - ■■M1**		754
	0.46	20 775	0.96	3 148		**2KJ1541 - ■EM13 - ■■L1**		754
	0.51	18 617	1.1	2 821	★	**2KJ1541 - ■EM13 - ■■K1**		754
	0.55	17 165	1.2	2 601		**2KJ1541 - ■EM13 - ■■J1**		754
	0.66	14 400	1.4	2 182		**2KJ1541 - ■EM13 - ■■H1**		754
	0.77	12 288	1.6	1 862	★	**2KJ1541 - ■EM13 - ■■G1**		754
	K.168-Z68-LA90SB4E							
	1.4	6 817	2.0	1 033		**2KJ1540 - ■EM13 - ■■H1**		510
	K.168-Z48-LA90SB4E							
	0.60	15 746	0.86	2 386		**2KJ1537 - ■EM13 - ■■F1**		493
	0.72	13 107	1.0	1 986	★	**2KJ1537 - ■EM13 - ■■E1**		493
	0.74	12 902	1.0	1 955	★	**2KJ1537 - ■EM13 - ■■D1**		493
	0.82	11 516	1.2	1 745		**2KJ1537 - ■EM13 - ■■C1**		493
	0.97	9 780	1.4	1 482		**2KJ1537 - ■EM13 - ■■B1**		493
	1.2	8 137	1.7	1 233	★	**2KJ1537 - ■EM13 - ■■A1**		493
	K.148-Z68-LA90SB4E							
	1.0	9 186	0.87	1 392		**2KJ1536 - ■EM13 - ■■L1**		329
	1.2	8 230	0.97	1 247	★	**2KJ1536 - ■EM13 - ■■K1**		329
	1.3	7 589	1.1	1 150		**2KJ1536 - ■EM13 - ■■J1**		329
	1.5	6 368	1.3	965		**2KJ1536 - ■EM13 - ■■H1**		329
	1.7	5 431	1.5	823	★	**2KJ1536 - ■EM13 - ■■G1**		329
	K.148-Z38-LA90SB4E							
	0.99	9 642	0.83	1 461		**2KJ1534 - ■EM13 - ■■A1**		303

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.1	**K.148-LA100L8**							
	2.2	4 728	1.7	306.08		**2KJ1508 - ■FL13 - ■■N2**	**P02**	317
	2.5	4 239	1.9	274.42	★	**2KJ1508 - ■FL13 - ■■M2**	**P02**	317
	K.128-Z48-LA90SB4E							
	1.8	5 280	0.89	800		**2KJ1533 - ■EM13 - ■■H1**		217
	2.0	4 712	1.0	714		**2KJ1533 - ■EM13 - ■■G1**		217
	K.128-LA100L8							
	2.3	4 563	1.0	295.38	★	**2KJ1507 - ■FL13 - ■■L2**	**P02**	217
	2.5	4 185	1.1	270.9		**2KJ1507 - ■FL13 - ■■K2**	**P02**	217
	2.8	3 739	1.3	242.02	★	**2KJ1507 - ■FL13 - ■■J2**	**P02**	217
	3.1	3 424	1.4	221.64		**2KJ1507 - ■FL13 - ■■H2**	**P02**	217
	K.128-LA90ZLD6E							
	3.2	3 301	1.4	295.38	★	**2KJ1507 - ■EQ13 - ■■L2**	**P01**	209
	3.5	3 027	1.6	270.9		**2KJ1507 - ■EQ13 - ■■K2**	**P01**	209
	3.9	2 705	1.7	242.02	★	**2KJ1507 - ■EQ13 - ■■J2**	**P01**	209
	4.2	2 477	1.9	221.64		**2KJ1507 - ■EQ13 - ■■H2**	**P01**	209
	K.108-LA100L8							
	2.8	3 761	0.80	243.47		**2KJ1506 - ■FL13 - ■■H2**	**P02**	146
	K.108-LA90ZLD6E							
	3.1	3 434	0.85	307.24		**2KJ1506 - ■EQ13 - ■■K2**	**P01**	138
	3.4	3 108	0.91	278.1	★	**2KJ1506 - ■EQ13 - ■■J2**	**P01**	138
	3.9	2 721	1.1	243.47		**2KJ1506 - ■EQ13 - ■■H2**	**P01**	138
	4.3	2 455	1.2	219.64	★	**2KJ1506 - ■EQ13 - ■■G2**	**P01**	138
	K.108-LA90SB4E							
	4.7	2 241	1.3	307.24		**2KJ1506 - ■EM13 - ■■K2**		135
	5.2	2 029	1.4	278.1	★	**2KJ1506 - ■EM13 - ■■J2**		135
	5.9	1 776	1.7	243.47		**2KJ1506 - ■EM13 - ■■H2**		135
	6.6	1 602	1.9	219.64	★	**2KJ1506 - ■EM13 - ■■G2**		135
	7.2	1 467	2.0	201.11		**2KJ1506 - ■EM13 - ■■F2**		135
	K.88-LA90SB4E							
	5.3	1 991	0.83	272.95		**2KJ1505 - ■EM13 - ■■L2**		81
	5.9	1 796	0.92	246.13	★	**2KJ1505 - ■EM13 - ■■K2**		81
	6.7	1 570	1.1	215.25		**2KJ1505 - ■EM13 - ■■J2**		81
	7.5	1 410	1.2	193.24	★	**2KJ1505 - ■EM13 - ■■H2**		81
	8.2	1 288	1.3	176.5		**2KJ1505 - ■EM13 - ■■G2**		81
	9.2	1 143	1.4	156.63	★	**2KJ1505 - ■EM13 - ■■F2**		81
	10.0	1 055	1.6	144.58		**2KJ1505 - ■EM13 - ■■E2**		81
	11.0	954	1.7	130.77	★	**2KJ1505 - ■EM13 - ■■D2**		81
	12.0	878	1.9	120.42		**2KJ1505 - ■EM13 - ■■C2**		81
	12.9	812	2.0	111.37	★	**2KJ1505 - ■EM13 - ■■B2**		81
	13.9	754	2.2	103.38		**2KJ1505 - ■EM13 - ■■A2**		81

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.1	**K.68-LA90SB4E**							
	10.5	997	0.82	136.6	★	**2KJ1504 - ■EM13 - ■■H2**		51
	11.4	920	0.89	126.09		**2KJ1504 - ■EM13 - ■■G2**		51
	13.1	800	1.0	109.64	★	**2KJ1504 - ■EM13 - ■■F2**		51
	14.5	726	1.1	99.55		**2KJ1504 - ■EM13 - ■■E2**		51
	15.8	663	1.2	90.89	★	**2KJ1504 - ■EM13 - ■■D2**		51
	17.3	608	1.3	83.4		**2KJ1504 - ■EM13 - ■■C2**		51
	18.7	561	1.5	76.84	★	**2KJ1504 - ■EM13 - ■■B2**		51
	21	509	1.6	69.78		**2KJ1504 - ■EM13 - ■■A2**		51
	23	464	1.8	63.57	★	**2KJ1504 - ■EM13 - ■■X1**		51
	25	425	1.9	58.23		**2KJ1504 - ■EM13 - ■■W1**		51
	28	379	2.2	51.96	★	**2KJ1504 - ■EM13 - ■■V1**		51
	31	338	2.4	46.37		**2KJ1504 - ■EM13 - ■■U1**		51
	K.48-LA90SB4E							
	19.1	550	0.82	75.45		**2KJ1503 - ■EM13 - ■■B2**		32
	22	486	0.93	66.6	★	**2KJ1503 - ■EM13 - ■■A2**		32
	24	438	1.0	60.08		**2KJ1503 - ■EM13 - ■■X1**		32
	26	398	1.1	54.49	★	**2KJ1503 - ■EM13 - ■■W1**		32
	29	362	1.2	49.65		**2KJ1503 - ■EM13 - ■■V1**		32
	32	331	1.4	45.41	★	**2KJ1503 - ■EM13 - ■■U1**		32
	36	296	1.5	40.6		**2KJ1503 - ■EM13 - ■■T1**		32
	39	272	1.7	37.28	★	**2KJ1503 - ■EM13 - ■■S1**		32
	43	245	1.8	33.6		**2KJ1503 - ■EM13 - ■■R1**		32
	50	211	2.1	28.9	★	**2KJ1503 - ■EM13 - ■■Q1**		32
	52	201	2.2	27.55	★	**2KJ1503 - ■EM13 - ■■P1**		32
	58	181	2.5	24.85		**2KJ1503 - ■EM13 - ■■N1**		32
	64	164	2.7	22.54	★	**2KJ1503 - ■EM13 - ■■M1**		32
	70	150	3.0	20.54		**2KJ1503 - ■EM13 - ■■L1**		32
	127	83	3.5	11.35	★	**2KJ1503 - ■EM13 - ■■E1**		32
	142	74	3.8	10.15		**2KJ1503 - ■EM13 - ■■D1**		32
	K.38-LA90SB4E							
	36	290	0.86	39.73		**2KJ1502 - ■EM13 - ■■V1**		28
	39	268	0.93	36.69	★	**2KJ1502 - ■EM13 - ■■U1**		28
	46	230	1.1	31.59		**2KJ1502 - ■EM13 - ■■T1**		28
	50	210	1.2	28.72	★	**2KJ1502 - ■EM13 - ■■S1**		28
	54	196	1.1	26.9	★	**2KJ1502 - ■EM13 - ■■R1**		28
	60	176	1.2	24.16		**2KJ1502 - ■EM13 - ■■Q1**		28
	66	159	1.3	21.81	★	**2KJ1502 - ■EM13 - ■■P1**		28
	73	144	1.4	19.78		**2KJ1502 - ■EM13 - ■■N1**		28
	80	131	1.5	17.99	★	**2KJ1502 - ■EM13 - ■■M1**		28
	90	116	1.6	15.91		**2KJ1502 - ■EM13 - ■■L1**		28
	98	107	1.7	14.69	★	**2KJ1502 - ■EM13 - ■■K1**		28
	114	92	1.9	12.65		**2KJ1502 - ■EM13 - ■■J1**		28
	125	84	2.0	11.5	★	**2KJ1502 - ■EM13 - ■■H1**		28

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.1	**K.38-LA90SB4E**							
	134	78	2.0	10.72	★	**2KJ1502 - ■EM13 - ■■G1**		28
	148	71	2.2	9.72		**2KJ1502 - ■EM13 - ■■F1**		28
	163	65	2.5	8.85	★	**2KJ1502 - ■EM13 - ■■E1**		28
	184	57	2.8	7.82		**2KJ1502 - ■EM13 - ■■D1**		28
	199	53	3.0	7.22	★	**2KJ1502 - ■EM13 - ■■C1**		28
	232	45	3.3	6.22		**2KJ1502 - ■EM13 - ■■B1**		28
	255	41	3.6	5.65	★	**2KJ1502 - ■EM13 - ■■A1**		28
	B.38-LA90SB4E							
	35	300	0.83	41.11		**2KJ1501 - ■EM13 - ■■Q2**		30
	40	264	0.95	36.16		**2KJ1501 - ■EM13 - ■■P2**		30
	46	231	1.1	31.67		**2KJ1501 - ■EM13 - ■■N2**		30
	51	204	1.2	28.01		**2KJ1501 - ■EM13 - ■■M2**		30
	57	185	1.4	25.38		**2KJ1501 - ■EM13 - ■■L2**		30
	64	163	1.5	22.41		**2KJ1501 - ■EM13 - ■■K2**		30
	71	148	1.6	20.22		**2KJ1501 - ■EM13 - ■■J2**		30
	79	134	1.7	18.33		**2KJ1501 - ■EM13 - ■■H2**		30
	86	122	1.8	16.7		**2KJ1501 - ■EM13 - ■■G2**		30
	94	111	1.9	15.28		**2KJ1501 - ■EM13 - ■■F2**		30
	105	100	2.1	13.66		**2KJ1501 - ■EM13 - ■■E2**		30
	115	91	2.4	12.5		**2KJ1501 - ■EM13 - ■■C2**		30
	130	81	2.8	11.05		**2KJ1501 - ■EM13 - ■■A2**		30
	144	73	3.0	10.02		**2KJ1501 - ■EM13 - ■■X1**		30
	163	64	3.7	8.84		**2KJ1501 - ■EM13 - ■■U1**		30
	180	58	4.1	7.98		**2KJ1501 - ■EM13 - ■■S1**		30
	B.28-LA90SB4E							
	69	152	0.85	20.87		**2KJ1500 - ■EM13 - ■■T1**		18
	79	133	0.98	18.19		**2KJ1500 - ■EM13 - ■■S1**		18
	88	119	1.1	16.34		**2KJ1500 - ■EM13 - ■■R1**		18
	98	108	1.2	14.75		**2KJ1500 - ■EM13 - ■■Q1**		18
	108	98	1.3	13.38		**2KJ1500 - ■EM13 - ■■P1**		18
	118	89	1.5	12.17		**2KJ1500 - ■EM13 - ■■N1**		18
	134	78	1.7	10.76		**2KJ1500 - ■EM13 - ■■M1**		18
	145	72	1.8	9.94		**2KJ1500 - ■EM13 - ■■L1**		18
	168	62	1.9	8.56		**2KJ1500 - ■EM13 - ■■K1**		18
	185	57	2.1	7.78		**2KJ1500 - ■EM13 - ■■J1**		18
	192	55	1.6	7.49		**2KJ1500 - ■EM13 - ■■H1**		18
	213	49	1.8	6.76		**2KJ1500 - ■EM13 - ■■G1**		18
	235	45	2.0	6.13		**2KJ1500 - ■EM13 - ■■F1**		18
	258	41	2.2	5.58		**2KJ1500 - ■EM13 - ■■E1**		18
	291	36	2.5	4.94		**2KJ1500 - ■EM13 - ■■D1**		18
	316	33	2.6	4.56		**2KJ1500 - ■EM13 - ■■C1**		18
	367	29	2.9	3.92		**2KJ1500 - ■EM13 - ■■B1**		18
	403	26	3.0	3.57		**2KJ1500 - ■EM13 - ■■A1**		18

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.5	**K.188-Z68-LA90ZLB4E**							
	0.55	23 582	0.85	2 601		**2KJ1541 - ■EQ13 - ■■J1**		757
	0.66	19 783	1.0	2 182		**2KJ1541 - ■EQ13 - ■■H1**		757
	0.77	16 882	1.2	1 862	★	**2KJ1541 - ■EQ13 - ■■G1**		757
	1.3	10 291	1.9	1 135		**2KJ1541 - ■EQ13 - ■■D1**		757
	K.168-Z68-LA90ZLB4E							
	1.4	9 366	1.4	1 033		**2KJ1540 - ■EQ13 - ■■H1**		513
	1.6	7 988	1.7	881		**2KJ1540 - ■EQ13 - ■■G1**		513
	K.168-Z48-LA90ZLB4E							
	0.82	15 821	0.85	1 745		**2KJ1537 - ■EQ13 - ■■C1**		496
	0.97	13 437	1.0	1 482		**2KJ1537 - ■EQ13 - ■■B1**		496
	1.2	11 179	1.2	1 233	★	**2KJ1537 - ■EQ13 - ■■A1**		496
	K.148-Z68-LA90ZLB4E							
	1.5	8 749	0.91	965		**2KJ1536 - ■EQ13 - ■■H1**		332
	1.7	7 462	1.1	823	★	**2KJ1536 - ■EQ13 - ■■G1**		332
	K.148-LA112M8							
	2.3	6 219	1.3	306.08		**2KJ1508 - ■GG13 - ■■N2**	**P02**	324
	2.6	5 576	1.4	274.42	★	**2KJ1508 - ■GG13 - ■■M2**	**P02**	324
	2.8	5 111	1.6	251.55		**2KJ1508 - ■GG13 - ■■L2**	**P02**	324
	3.0	4 713	1.7	231.95	★	**2KJ1508 - ■GG13 - ■■K2**	**P02**	324
	K.148-LA100ZLP6E							
	3.1	4 689	1.7	306.08		**2KJ1508 - ■FM13 - ■■N2**	**P01**	317
	3.4	4 204	1.9	274.42	★	**2KJ1508 - ■FM13 - ■■M2**	**P01**	317
	K.128-LA112M8							
	2.6	5 504	0.85	270.9		**2KJ1507 - ■GG13 - ■■K2**	**P02**	224
	2.9	4 918	0.96	242.02	★	**2KJ1507 - ■GG13 - ■■J2**	**P02**	224
	K.128-LA100ZLP6E							
	3.2	4 525	1.0	295.38	★	**2KJ1507 - ■FM13 - ■■L2**	**P01**	217
	3.5	4 150	1.1	270.9		**2KJ1507 - ■FM13 - ■■K2**	**P01**	217
	3.9	3 708	1.3	242.02	★	**2KJ1507 - ■FM13 - ■■J2**	**P01**	217
	4.2	3 396	1.4	221.64		**2KJ1507 - ■FM13 - ■■H2**	**P01**	217
	4.6	3 128	1.5	204.18	★	**2KJ1507 - ■FM13 - ■■G2**	**P01**	217
	K.128-LA90ZLB4E							
	4.9	2 938	1.6	295.38	★	**2KJ1507 - ■EQ13 - ■■L2**		209
	5.3	2 695	1.7	270.9		**2KJ1507 - ■EQ13 - ■■K2**		209
	5.9	2 408	2.0	242.02	★	**2KJ1507 - ■EQ13 - ■■J2**		209
	6.5	2 205	2.1	221.64		**2KJ1507 - ■EQ13 - ■■H2**		209
	K.108-LA100ZLP6E							
	3.8	3 730	0.80	243.47		**2KJ1506 - ■FM13 - ■■H2**	**P01**	146
	4.3	3 365	0.89	219.64	★	**2KJ1506 - ■FM13 - ■■G2**	**P01**	146
	K.108-LA90ZLB4E							
	4.7	3 056	0.95	307.24		**2KJ1506 - ■EQ13 - ■■K2**		138
	5.2	2 767	1.0	278.1	★	**2KJ1506 - ■EQ13 - ■■J2**		138

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.5	**K.108-LA90ZLB4E**							
	5.9	2 422	1.2	243.47		**2KJ1506 - ■EQ13 - ■■H2**		138
	6.6	2 185	1.4	219.64	★	**2KJ1506 - ■EQ13 - ■■G2**		138
	7.2	2 001	1.5	201.11		**2KJ1506 - ■EQ13 - ■■F2**		138
	8.0	1 780	1.7	178.9	★	**2KJ1506 - ■EQ13 - ■■E2**		138
	8.8	1 627	1.8	163.51		**2KJ1506 - ■EQ13 - ■■D2**		138
	9.6	1 495	2.0	150.31	★	**2KJ1506 - ■EQ13 - ■■C2**		138
	10.4	1 381	2.2	138.87		**2KJ1506 - ■EQ13 - ■■B2**		138
	K.88-LA90ZLB4E							
	7.5	1 922	0.86	193.24	★	**2KJ1505 - ■EQ13 - ■■H2**		84
	8.2	1 756	0.94	176.5		**2KJ1505 - ■EQ13 - ■■G2**		84
	9.2	1 558	1.1	156.63	★	**2KJ1505 - ■EQ13 - ■■F2**		84
	10.0	1 438	1.1	144.58		**2KJ1505 - ■EQ13 - ■■E2**		84
	11.0	1 301	1.3	130.77	★	**2KJ1505 - ■EQ13 - ■■D2**		84
	12.0	1 198	1.4	120.42		**2KJ1505 - ■EQ13 - ■■C2**		84
	12.9	1 108	1.5	111.37	★	**2KJ1505 - ■EQ13 - ■■B2**		84
	13.9	1 028	1.6	103.38		**2KJ1505 - ■EQ13 - ■■A2**		84
	15.8	907	1.8	91.22	★	**2KJ1505 - ■EQ13 - ■■X1**		84
	17.1	838	2.0	84.21		**2KJ1505 - ■EQ13 - ■■W1**		84
	19.1	751	2.2	75.45	★	**2KJ1505 - ■EQ13 - ■■V1**		84
	21	692	2.4	69.57		**2KJ1505 - ■EQ13 - ■■U1**		84
	K.68-LA90ZLB4E							
	14.5	990	0.83	99.55		**2KJ1504 - ■EQ13 - ■■E2**		54
	15.8	904	0.91	90.89	★	**2KJ1504 - ■EQ13 - ■■D2**		54
	17.3	830	0.99	83.4		**2KJ1504 - ■EQ13 - ■■C2**		54
	18.7	764	1.1	76.84	★	**2KJ1504 - ■EQ13 - ■■B2**		54
	21	694	1.2	69.78		**2KJ1504 - ■EQ13 - ■■A2**		54
	23	632	1.3	63.57	★	**2KJ1504 - ■EQ13 - ■■X1**		54
	25	579	1.4	58.23		**2KJ1504 - ■EQ13 - ■■W1**		54
	28	517	1.6	51.96	★	**2KJ1504 - ■EQ13 - ■■V1**		54
	31	461	1.8	46.37		**2KJ1504 - ■EQ13 - ■■U1**		54
	37	392	2.1	39.39		**2KJ1504 - ■EQ13 - ■■T1**		54
	44	326	2.5	32.78	★	**2KJ1504 - ■EQ13 - ■■S1**		54
	47	302	2.7	30.38		**2KJ1504 - ■EQ13 - ■■R1**		54
	126	114	3.8	11.41		**2KJ1504 - ■EQ13 - ■■G1**		54
	K.48-LA90ZLB4E							
	26	542	0.83	54.49	★	**2KJ1503 - ■EQ13 - ■■W1**		35
	29	494	0.91	49.65		**2KJ1503 - ■EQ13 - ■■V1**		35
	32	452	1.0	45.41	★	**2KJ1503 - ■EQ13 - ■■U1**		35
	36	404	1.1	40.6		**2KJ1503 - ■EQ13 - ■■T1**		35
	39	371	1.2	37.28	★	**2KJ1503 - ■EQ13 - ■■S1**		35
	43	334	1.3	33.6		**2KJ1503 - ■EQ13 - ■■R1**		35
	50	287	1.6	28.9	★	**2KJ1503 - ■EQ13 - ■■Q1**		35
	52	274	1.6	27.55	★	**2KJ1503 - ■EQ13 - ■■P1**		35

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.5	**K.48-LA90ZLB4E**							
	58	247	1.8	24.85		**2KJ1503 - ■EQ13 - ■■N1**		35
	64	224	2.0	22.54	★	**2KJ1503 - ■EQ13 - ■■M1**		35
	70	204	2.2	20.54		**2KJ1503 - ■EQ13 - ■■L1**		35
	77	187	2.4	18.78	★	**2KJ1503 - ■EQ13 - ■■K1**		35
	86	167	2.7	16.79		**2KJ1503 - ■EQ13 - ■■J1**		35
	93	153	2.9	15.42	★	**2KJ1503 - ■EQ13 - ■■H1**		35
	104	138	3.2	13.9		**2KJ1503 - ■EQ13 - ■■G1**		35
	121	119	3.5	11.95	★	**2KJ1503 - ■EQ13 - ■■F1**		35
	127	113	2.6	11.35	★	**2KJ1503 - ■EQ13 - ■■E1**		35
	142	101	2.8	10.15		**2KJ1503 - ■EQ13 - ■■D1**		35
	155	93	3.0	9.32	★	**2KJ1503 - ■EQ13 - ■■C1**		35
	171	84	3.2	8.4		**2KJ1503 - ■EQ13 - ■■B1**		35
	199	72	3.6	7.22	★	**2KJ1503 - ■EQ13 - ■■A1**		35
	K.38-LA90ZLB4E							
	46	314	0.80	31.59		**2KJ1502 - ■EQ13 - ■■T1**		31
	50	286	0.88	28.72	★	**2KJ1502 - ■EQ13 - ■■S1**		31
	54	268	0.81	26.9	★	**2KJ1502 - ■EQ13 - ■■R1**		31
	60	240	0.87	24.16		**2KJ1502 - ■EQ13 - ■■Q1**		31
	66	217	0.94	21.81	★	**2KJ1502 - ■EQ13 - ■■P1**		31
	73	197	1.0	19.78		**2KJ1502 - ■EQ13 - ■■N1**		31
	80	179	1.1	17.99	★	**2KJ1502 - ■EQ13 - ■■M1**		31
	90	158	1.2	15.91		**2KJ1502 - ■EQ13 - ■■L1**		31
	98	146	1.2	14.69	★	**2KJ1502 - ■EQ13 - ■■K1**		31
	114	126	1.4	12.65		**2KJ1502 - ■EQ13 - ■■J1**		31
	125	114	1.5	11.5	★	**2KJ1502 - ■EQ13 - ■■H1**		31
	134	107	1.5	10.72	★	**2KJ1502 - ■EQ13 - ■■G1**		31
	148	97	1.6	9.72		**2KJ1502 - ■EQ13 - ■■F1**		31
	163	88	1.8	8.85	★	**2KJ1502 - ■EQ13 - ■■E1**		31
	184	78	2.0	7.82		**2KJ1502 - ■EQ13 - ■■D1**		31
	199	72	2.2	7.22	★	**2KJ1502 - ■EQ13 - ■■C1**		31
	232	62	2.5	6.22		**2KJ1502 - ■EQ13 - ■■B1**		31
	255	56	2.6	5.65	★	**2KJ1502 - ■EQ13 - ■■A1**		31
	B.38-LA90ZLB4E							
	51	279	0.90	28.01		**2KJ1501 - ■EQ13 - ■■M2**		33
	57	252	0.99	25.38		**2KJ1501 - ■EQ13 - ■■L2**		33
	64	223	1.1	22.41		**2KJ1501 - ■EQ13 - ■■K2**		33
	71	201	1.2	20.22		**2KJ1501 - ■EQ13 - ■■J2**		33
	79	182	1.2	18.33		**2KJ1501 - ■EQ13 - ■■H2**		33
	86	166	1.3	16.7		**2KJ1501 - ■EQ13 - ■■G2**		33
	94	152	1.4	15.28		**2KJ1501 - ■EQ13 - ■■F2**		33
	105	136	1.5	13.66		**2KJ1501 - ■EQ13 - ■■E2**		33
	115	124	1.8	12.5		**2KJ1501 - ■EQ13 - ■■C2**		33
	130	110	2.0	11.05		**2KJ1501 - ■EQ13 - ■■A2**		33

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.5	**B.38-LA90ZLB4E**							
	144	100	2.2	10.02		**2KJ1501 - ■EQ13 - ■■X1**		33
	163	88	2.7	8.84		**2KJ1501 - ■EQ13 - ■■U1**		33
	180	79	3.0	7.98		**2KJ1501 - ■EQ13 - ■■S1**		33
	199	72	3.3	7.24		**2KJ1501 - ■EQ13 - ■■R1**		33
	219	66	3.6	6.59		**2KJ1501 - ■EQ13 - ■■P1**		33
	239	60	3.9	6.03		**2KJ1501 - ■EQ13 - ■■M1**		33
	267	54	3.9	5.39		**2KJ1501 - ■EQ13 - ■■K1**		33
	291	49	4.5	4.95		**2KJ1501 - ■EQ13 - ■■H1**		33
	323	44	4.8	4.46		**2KJ1501 - ■EQ13 - ■■F1**		33
	375	38	5.3	3.84		**2KJ1501 - ■EQ13 - ■■C1**		33
	B.28-LA90ZLB4E							
	88	163	0.80	16.34		**2KJ1500 - ■EQ13 - ■■R1**		21
	98	147	0.89	14.75		**2KJ1500 - ■EQ13 - ■■Q1**		21
	108	133	0.98	13.38		**2KJ1500 - ■EQ13 - ■■P1**		21
	118	121	1.1	12.17		**2KJ1500 - ■EQ13 - ■■N1**		21
	134	107	1.2	10.76		**2KJ1500 - ■EQ13 - ■■M1**		21
	145	99	1.3	9.94		**2KJ1500 - ■EQ13 - ■■L1**		21
	168	85	1.4	8.56		**2KJ1500 - ■EQ13 - ■■K1**		21
	185	77	1.5	7.78		**2KJ1500 - ■EQ13 - ■■J1**		21
	192	74	1.2	7.49		**2KJ1500 - ■EQ13 - ■■H1**		21
	213	67	1.3	6.76		**2KJ1500 - ■EQ13 - ■■G1**		21
	235	61	1.5	6.13		**2KJ1500 - ■EQ13 - ■■F1**		21
	258	56	1.6	5.58		**2KJ1500 - ■EQ13 - ■■E1**		21
	291	49	1.8	4.94		**2KJ1500 - ■EQ13 - ■■D1**		21
	316	45	1.9	4.56		**2KJ1500 - ■EQ13 - ■■C1**		21
	367	39	2.1	3.92		**2KJ1500 - ■EQ13 - ■■B1**		21
	403	36	2.2	3.57		**2KJ1500 - ■EQ13 - ■■A1**		21
2.2	**K.188-Z68-LA100ZLP4E**							
	0.77	25 008	0.80	1 862	★	**2KJ1541 - ■FM13 - ■■G1**		765
	0.92	20 831	0.96	1 551		**2KJ1541 - ■FM13 - ■■F1**		765
	1.1	17 272	1.2	1 286	★	**2KJ1541 - ■FM13 - ■■E1**		765
	1.3	15 244	1.3	1 135		**2KJ1541 - ■FM13 - ■■D1**		765
	1.5	13 001	1.5	968	★	**2KJ1541 - ■FM13 - ■■C1**		765
	1.8	10 838	1.8	807		**2KJ1541 - ■FM13 - ■■B1**		765
	K.168-Z68-LA100ZLP4E							
	1.4	13 874	0.97	1 033		**2KJ1540 - ■FM13 - ■■H1**		521
	1.6	11 832	1.1	881		**2KJ1540 - ■FM13 - ■■G1**		521
	2.0	9 871	1.4	735		**2KJ1540 - ■FM13 - ■■F1**		521
	K.168-Z48-LA100ZLP4E							
	1.2	16 560	0.82	1 233	★	**2KJ1537 - ■FM13 - ■■A1**		504
	K.168-LA132S8							
	2.4	8 643	1.6	287.95	★	**2KJ1510 - ■HE13 - ■■H2**	**P02**	519
	2.6	7 929	1.7	264.18		**2KJ1510 - ■HE13 - ■■G2**	**P02**	519

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
2.2	**K.168-LA132S8**							
	2.9	7 317	1.8	243.8	★	**2KJ1510 - ■HE13 - ■■F2**	**P02**	519
	3.1	6 788	2.0	226.15		**2KJ1510 - ■HE13 - ■■E2**	**P02**	519
	K.148-Z68-LA100ZLP4E							
	2.1	9 213	0.87	686		**2KJ1536 - ■FM13 - ■■F1**		340
	K.148-LA132S8							
	2.6	8 237	0.97	274.42	★	**2KJ1508 - ■HE13 - ■■M2**	**P02**	334
	2.8	7 550	1.1	251.55		**2KJ1508 - ■HE13 - ■■L2**	**P02**	334
	3.0	6 962	1.1	231.95	★	**2KJ1508 - ■HE13 - ■■K2**	**P02**	334
	K.148-LA112ZMP6E							
	3.1	6 734	1.2	306.08		**2KJ1508 - ■GJ13 - ■■N2**	**P01**	324
	3.5	6 037	1.3	274.42	★	**2KJ1508 - ■GJ13 - ■■M2**	**P01**	324
	3.8	5 534	1.4	251.55		**2KJ1508 - ■GJ13 - ■■L2**	**P01**	324
	4.1	5 103	1.6	231.95	★	**2KJ1508 - ■GJ13 - ■■K2**	**P01**	324
	4.4	4 729	1.7	214.96		**2KJ1508 - ■GJ13 - ■■J2**	**P01**	324
	K.148-LA100ZLP4E							
	4.7	4 481	1.8	306.08		**2KJ1508 - ■FM13 - ■■N2**		317
	5.2	4 018	2.0	274.42	★	**2KJ1508 - ■FM13 - ■■M2**		317
	K.128-LA112ZMP6E							
	3.9	5 324	0.88	242.02	★	**2KJ1507 - ■GJ13 - ■■J2**	**P01**	224
	4.3	4 876	0.96	221.64		**2KJ1507 - ■GJ13 - ■■H2**	**P01**	224
	4.7	4 492	1.0	204.18	★	**2KJ1507 - ■GJ13 - ■■G2**	**P01**	224
	K.128-LA100ZLP4E							
	4.9	4 325	1.1	295.38	★	**2KJ1507 - ■FM13 - ■■L2**		217
	5.3	3 966	1.2	270.9		**2KJ1507 - ■FM13 - ■■K2**		217
	5.9	3 543	1.3	242.02	★	**2KJ1507 - ■FM13 - ■■J2**		217
	6.5	3 245	1.4	221.64		**2KJ1507 - ■FM13 - ■■H2**		217
	7.0	2 989	1.6	204.18	★	**2KJ1507 - ■FM13 - ■■G2**		217
	7.6	2 768	1.7	189.04		**2KJ1507 - ■FM13 - ■■F2**		217
	8.2	2 574	1.8	175.8	★	**2KJ1507 - ■FM13 - ■■E2**		217
	8.7	2 403	2.0	164.11		**2KJ1507 - ■FM13 - ■■D2**		217
	K.108-LA100ZLP4E							
	5.9	3 565	0.84	243.47		**2KJ1506 - ■FM13 - ■■H2**		146
	6.5	3 216	0.93	219.64	★	**2KJ1506 - ■FM13 - ■■G2**		146
	7.1	2 944	1.0	201.11		**2KJ1506 - ■FM13 - ■■F2**		146
	8.0	2 619	1.1	178.9	★	**2KJ1506 - ■FM13 - ■■E2**		146
	8.8	2 394	1.3	163.51		**2KJ1506 - ■FM13 - ■■D2**		146
	9.5	2 201	1.4	150.31	★	**2KJ1506 - ■FM13 - ■■C2**		146
	10.3	2 033	1.5	138.87		**2KJ1506 - ■FM13 - ■■B2**		146
	11.1	1 887	1.6	128.86	★	**2KJ1506 - ■FM13 - ■■A2**		146
	12.0	1 757	1.7	120.03		**2KJ1506 - ■FM13 - ■■X1**		146
	13.2	1 589	1.9	108.52	★	**2KJ1506 - ■FM13 - ■■W1**		146
	14.4	1 463	2.1	99.9		**2KJ1506 - ■FM13 - ■■V1**		146
	16.0	1 316	2.3	89.85	★	**2KJ1506 - ■FM13 - ■■U1**		146

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
2.2	**K.88-LA100ZLP4E**							
	11.0	1 915	0.86	130.77	★	**2KJ1505 - ■FM13 - ■■D2**		92
	11.9	1 763	0.94	120.42		**2KJ1505 - ■FM13 - ■■C2**		92
	12.9	1 631	1.0	111.37	★	**2KJ1505 - ■FM13 - ■■B2**		92
	13.9	1 514	1.1	103.38		**2KJ1505 - ■FM13 - ■■A2**		92
	15.7	1 336	1.2	91.22	★	**2KJ1505 - ■FM13 - ■■X1**		92
	17.0	1 233	1.3	84.21		**2KJ1505 - ■FM13 - ■■W1**		92
	19.0	1 105	1.5	75.45	★	**2KJ1505 - ■FM13 - ■■V1**		92
	21	1 019	1.6	69.57		**2KJ1505 - ■FM13 - ■■U1**		92
	25	855	1.9	58.37		**2KJ1505 - ■FM13 - ■■T1**		92
	29	729	2.3	49.8	★	**2KJ1505 - ■FM13 - ■■S1**		92
	K.68-LA100ZLP4E							
	21	1 022	0.80	69.78		**2KJ1504 - ■FM13 - ■■A2**		62
	23	931	0.88	63.57	★	**2KJ1504 - ■FM13 - ■■X1**		62
	25	853	0.96	58.23		**2KJ1504 - ■FM13 - ■■W1**		62
	28	761	1.1	51.96	★	**2KJ1504 - ■FM13 - ■■V1**		62
	31	679	1.2	46.37		**2KJ1504 - ■FM13 - ■■U1**		62
	36	577	1.4	39.39		**2KJ1504 - ■FM13 - ■■T1**		62
	44	480	1.7	32.78	★	**2KJ1504 - ■FM13 - ■■S1**		62
	47	445	1.8	30.38		**2KJ1504 - ■FM13 - ■■R1**		62
	51	410	2.0	27.99	★	**2KJ1504 - ■FM13 - ■■Q1**		62
	56	372	2.2	25.42		**2KJ1504 - ■FM13 - ■■P1**		62
	62	339	2.4	23.16	★	**2KJ1504 - ■FM13 - ■■N1**		62
	68	311	2.6	21.22		**2KJ1504 - ■FM13 - ■■M1**		62
	76	277	3.0	18.93	★	**2KJ1504 - ■FM13 - ■■L1**		62
	85	247	3.3	16.89		**2KJ1504 - ■FM13 - ■■K1**		62
	126	167	2.6	11.41		**2KJ1504 - ■FM13 - ■■G1**		62
	138	152	2.8	10.4	★	**2KJ1504 - ■FM13 - ■■F1**		62
	151	139	2.9	9.52		**2KJ1504 - ■FM13 - ■■E1**		62
	169	124	3.2	8.5	★	**2KJ1504 - ■FM13 - ■■D1**		62
	189	111	3.5	7.58		**2KJ1504 - ■FM13 - ■■C1**		62
	223	94	3.9	6.44		**2KJ1504 - ■FM13 - ■■B1**		62
	268	78	4.4	5.36	★	**2KJ1504 - ■FM13 - ■■A1**		62
	K.48-LA100ZLP4E							
	38	546	0.82	37.28	★	**2KJ1503 - ■FM13 - ■■S1**		43
	43	492	0.91	33.6		**2KJ1503 - ■FM13 - ■■R1**		43
	50	423	1.1	28.9	★	**2KJ1503 - ■FM13 - ■■Q1**		43
	52	403	1.1	27.55	★	**2KJ1503 - ■FM13 - ■■P1**		43
	58	364	1.2	24.85		**2KJ1503 - ■FM13 - ■■N1**		43
	64	330	1.4	22.54	★	**2KJ1503 - ■FM13 - ■■M1**		43
	70	301	1.5	20.54		**2KJ1503 - ■FM13 - ■■L1**		43
	76	275	1.6	18.78	★	**2KJ1503 - ■FM13 - ■■K1**		43
	86	246	1.8	16.79		**2KJ1503 - ■FM13 - ■■J1**		43
	93	226	2.0	15.42	★	**2KJ1503 - ■FM13 - ■■H1**		43

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
2.2	**K.48-LA100ZLP4E**							
	103	204	2.2	13.9		**2KJ1503 - ■FM13 - ■■G1**		43
	120	175	2.4	11.95	★	**2KJ1503 - ■FM13 - ■■F1**		43
	126	166	1.8	11.35	★	**2KJ1503 - ■FM13 - ■■E1**		43
	141	149	1.9	10.15		**2KJ1503 - ■FM13 - ■■D1**		43
	154	136	2.0	9.32	★	**2KJ1503 - ■FM13 - ■■C1**		43
	171	123	2.2	8.4		**2KJ1503 - ■FM13 - ■■B1**		43
	199	106	2.4	7.22	★	**2KJ1503 - ■FM13 - ■■A1**		43
	K.38-LA100ZLP4E							
	98	215	0.84	14.69	★	**2KJ1502 - ■FM13 - ■■K1**		39
	113	185	0.93	12.65		**2KJ1502 - ■FM13 - ■■J1**		39
	125	168	0.99	11.5	★	**2KJ1502 - ■FM13 - ■■H1**		39
	134	157	1.0	10.72	★	**2KJ1502 - ■FM13 - ■■G1**		39
	148	142	1.1	9.72		**2KJ1502 - ■FM13 - ■■F1**		39
	162	130	1.2	8.85	★	**2KJ1502 - ■FM13 - ■■E1**		39
	184	114	1.4	7.82		**2KJ1502 - ■FM13 - ■■D1**		39
	199	106	1.5	7.22	★	**2KJ1502 - ■FM13 - ■■C1**		39
	231	91	1.7	6.22		**2KJ1502 - ■FM13 - ■■B1**		39
	254	83	1.8	5.65	★	**2KJ1502 - ■FM13 - ■■A1**		39
	B.38-LA100ZLP4E							
	78	268	0.84	18.33		**2KJ1501 - ■FM13 - ■■H2**		41
	86	245	0.90	16.7		**2KJ1501 - ■FM13 - ■■G2**		41
	94	224	0.96	15.28		**2KJ1501 - ■FM13 - ■■F2**		41
	105	200	1.0	13.66		**2KJ1501 - ■FM13 - ■■E2**		41
	115	183	1.2	12.5		**2KJ1501 - ■FM13 - ■■C2**		41
	130	162	1.4	11.05		**2KJ1501 - ■FM13 - ■■A2**		41
	143	147	1.5	10.02		**2KJ1501 - ■FM13 - ■■X1**		41
	162	129	1.8	8.84		**2KJ1501 - ■FM13 - ■■U1**		41
	180	117	2.0	7.98		**2KJ1501 - ■FM13 - ■■S1**		41
	198	106	2.2	7.24		**2KJ1501 - ■FM13 - ■■R1**		41
	218	96	2.4	6.59		**2KJ1501 - ■FM13 - ■■P1**		41
	238	88	2.7	6.03		**2KJ1501 - ■FM13 - ■■M1**		41
	266	79	2.7	5.39		**2KJ1501 - ■FM13 - ■■K1**		41
	290	72	3.0	4.95		**2KJ1501 - ■FM13 - ■■H1**		41
	322	65	3.3	4.46		**2KJ1501 - ■FM13 - ■■F1**		41
	374	56	3.6	3.84		**2KJ1501 - ■FM13 - ■■C1**		41
3	**K.188-Z68-LA100ZLD4E**							
	1.1	23 639	0.85	1 286	★	**2KJ1541 - ■FP13 - ■■E1**		765
	1.3	20 863	0.96	1 135		**2KJ1541 - ■FP13 - ■■D1**		765
	1.5	17 794	1.1	968	★	**2KJ1541 - ■FP13 - ■■C1**		765
	1.8	14 834	1.3	807		**2KJ1541 - ■FP13 - ■■B1**		765
	2.1	12 298	1.6	669	★	**2KJ1541 - ■FP13 - ■■A1**		765

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
3	**K.188-Z88-LA100ZLD4E**							
	2.1	12 298	1.6	669	★	**2KJ1543 - ■FP13 - ■■H1**		798
	2.6	10 073	2.0	548	★	**2KJ1543 - ■FP13 - ■■G1**		798
	K.168-Z68-LA100ZLD4E							
	1.6	16 194	0.83	881		**2KJ1540 - ■FP13 - ■■G1**		521
	2.0	13 511	1.0	735		**2KJ1540 - ■FP13 - ■■F1**		521
	K.168-LA132MA8							
	2.4	11 785	1.1	287.95	★	**2KJ1510 - ■HG13 - ■■H2**	**P02**	527
	2.6	10 813	1.2	264.18		**2KJ1510 - ■HG13 - ■■G2**	**P02**	527
	2.9	9 978	1.4	243.8	★	**2KJ1510 - ■HG13 - ■■F2**	**P02**	527
	3.1	9 256	1.5	226.15		**2KJ1510 - ■HG13 - ■■E2**	**P02**	527
	K.168-LA132SB6E							
	3.3	8 684	1.6	287.95	★	**2KJ1510 - ■HF13 - ■■H2**	**P01**	527
	3.6	7 967	1.7	264.18		**2KJ1510 - ■HF13 - ■■G2**	**P01**	527
	3.9	7 352	1.8	243.8	★	**2KJ1510 - ■HF13 - ■■F2**	**P01**	527
	4.2	6 820	2.0	226.15		**2KJ1510 - ■HF13 - ■■E2**	**P01**	527
	K.148-LA132MA8							
	3.0	9 493	0.84	231.95	★	**2KJ1508 - ■HG13 - ■■K2**	**P02**	342
	K.148-LA132SB6E							
	3.5	8 276	0.97	274.42	★	**2KJ1508 - ■HF13 - ■■M2**	**P01**	342
	3.8	7 586	1.1	251.55		**2KJ1508 - ■HF13 - ■■L2**	**P01**	342
	4.1	6 995	1.1	231.95	★	**2KJ1508 - ■HF13 - ■■K2**	**P01**	342
	4.4	6 483	1.2	214.96		**2KJ1508 - ■HF13 - ■■J2**	**P01**	342
	K.148-LA100ZLD4E							
	4.7	6 111	1.3	306.08		**2KJ1508 - ■FP13 - ■■N2**		317
	5.2	5 479	1.5	274.42	★	**2KJ1508 - ■FP13 - ■■M2**		317
	5.7	5 022	1.6	251.55		**2KJ1508 - ■FP13 - ■■L2**		317
	6.2	4 631	1.7	231.95	★	**2KJ1508 - ■FP13 - ■■K2**		317
	6.7	4 292	1.9	214.96		**2KJ1508 - ■FP13 - ■■J2**		317
	7.0	4 080	2.0	204.38	★	**2KJ1508 - ■FP13 - ■■H2**		317
	7.5	3 814	2.1	191.02		**2KJ1508 - ■FP13 - ■■G2**		317
	K.128-LA100ZLD4E							
	4.9	5 897	0.80	295.38	★	**2KJ1507 - ■FP13 - ■■L2**		217
	5.3	5 409	0.87	270.9		**2KJ1507 - ■FP13 - ■■K2**		217
	5.9	4 832	0.97	242.02	★	**2KJ1507 - ■FP13 - ■■J2**		217
	6.5	4 425	1.1	221.64		**2KJ1507 - ■FP13 - ■■H2**		217
	7.0	4 076	1.2	204.18	★	**2KJ1507 - ■FP13 - ■■G2**		217
	7.6	3 774	1.2	189.04		**2KJ1507 - ■FP13 - ■■F2**		217
	8.2	3 510	1.3	175.8	★	**2KJ1507 - ■FP13 - ■■E2**		217
	8.7	3 276	1.4	164.11		**2KJ1507 - ■FP13 - ■■D2**		217
	9.8	2 932	1.6	146.84	★	**2KJ1507 - ■FP13 - ■■C2**		217
	10.5	2 716	1.7	136.06		**2KJ1507 - ■FP13 - ■■B2**		217
	11.5	2 490	1.9	124.73	★	**2KJ1507 - ■FP13 - ■■A2**		217
	12.6	2 283	2.1	114.34		**2KJ1507 - ■FP13 - ■■X1**		217

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
3	**K.108-LA100ZLD4E**							
	8.0	3 572	0.84	178.9	★	**2KJ1506 - ■FP13 - ■■E2**		146
	8.8	3 265	0.92	163.51		**2KJ1506 - ■FP13 - ■■D2**		146
	9.5	3 001	1.0	150.31	★	**2KJ1506 - ■FP13 - ■■C2**		146
	10.3	2 773	1.1	138.87		**2KJ1506 - ■FP13 - ■■B2**		146
	11.1	2 573	1.2	128.86	★	**2KJ1506 - ■FP13 - ■■A2**		146
	12.0	2 396	1.3	120.03		**2KJ1506 - ■FP13 - ■■X1**		146
	13.2	2 167	1.4	108.52	★	**2KJ1506 - ■FP13 - ■■W1**		146
	14.4	1 995	1.5	99.9		**2KJ1506 - ■FP13 - ■■V1**		146
	16.0	1 794	1.7	89.85	★	**2KJ1506 - ■FP13 - ■■U1**		146
	17.3	1 655	1.8	82.9		**2KJ1506 - ■FP13 - ■■T1**		146
	20	1 402	2.1	70.24		**2KJ1506 - ■FP13 - ■■S1**		146
	K.88-LA100ZLD4E							
	13.9	2 064	0.80	103.38		**2KJ1505 - ■FP13 - ■■A2**		92
	15.7	1 821	0.91	91.22	★	**2KJ1505 - ■FP13 - ■■X1**		92
	17.0	1 681	0.98	84.21		**2KJ1505 - ■FP13 - ■■W1**		92
	19.0	1 506	1.1	75.45	★	**2KJ1505 - ■FP13 - ■■V1**		92
	21	1 389	1.2	69.57		**2KJ1505 - ■FP13 - ■■U1**		92
	25	1 165	1.4	58.37		**2KJ1505 - ■FP13 - ■■T1**		92
	29	994	1.7	49.8	★	**2KJ1505 - ■FP13 - ■■S1**		92
	35	829	2.0	41.5		**2KJ1505 - ■FP13 - ■■Q1**		92
	42	687	2.4	34.4	★	**2KJ1505 - ■FP13 - ■■P1**		92
	46	616	2.7	30.87	★	**2KJ1505 - ■FP13 - ■■N1**		92
	128	224	3.6	11.21		**2KJ1505 - ■FP13 - ■■E1**		92
	K.68-LA100ZLD4E							
	31	926	0.89	46.37		**2KJ1504 - ■FP13 - ■■U1**		62
	36	786	1.0	39.39		**2KJ1504 - ■FP13 - ■■T1**		62
	44	654	1.3	32.78	★	**2KJ1504 - ■FP13 - ■■S1**		62
	47	607	1.4	30.38		**2KJ1504 - ■FP13 - ■■R1**		62
	51	559	1.5	27.99	★	**2KJ1504 - ■FP13 - ■■Q1**		62
	56	508	1.6	25.42		**2KJ1504 - ■FP13 - ■■P1**		62
	62	462	1.8	23.16	★	**2KJ1504 - ■FP13 - ■■N1**		62
	68	424	1.9	21.22		**2KJ1504 - ■FP13 - ■■M1**		62
	76	378	2.2	18.93	★	**2KJ1504 - ■FP13 - ■■L1**		62
	85	337	2.4	16.89		**2KJ1504 - ■FP13 - ■■K1**		62
	100	286	2.8	14.35		**2KJ1504 - ■FP13 - ■■J1**		62
	120	238	3.2	11.94	★	**2KJ1504 - ■FP13 - ■■H1**		62
	126	228	1.9	11.41		**2KJ1504 - ■FP13 - ■■G1**		62
	138	208	2.0	10.4	★	**2KJ1504 - ■FP13 - ■■F1**		62
	151	190	2.2	9.52		**2KJ1504 - ■FP13 - ■■E1**		62
	169	170	2.3	8.5	★	**2KJ1504 - ■FP13 - ■■D1**		62
	189	151	2.5	7.58		**2KJ1504 - ■FP13 - ■■C1**		62
	223	129	2.8	6.44		**2KJ1504 - ■FP13 - ■■B1**		62
	268	107	3.2	5.36	★	**2KJ1504 - ■FP13 - ■■A1**		62

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
3	**K.48-LA100ZLD4E**							
	52	550	0.82	27.55	★	**2KJ1503 - ■FP13 - ■■P1**		43
	58	496	0.91	24.85		**2KJ1503 - ■FP13 - ■■N1**		43
	64	450	1.0	22.54	★	**2KJ1503 - ■FP13 - ■■M1**		43
	70	410	1.1	20.54		**2KJ1503 - ■FP13 - ■■L1**		43
	76	375	1.2	18.78	★	**2KJ1503 - ■FP13 - ■■K1**		43
	86	335	1.3	16.79		**2KJ1503 - ■FP13 - ■■J1**		43
	93	308	1.5	15.42	★	**2KJ1503 - ■FP13 - ■■H1**		43
	103	278	1.6	13.9		**2KJ1503 - ■FP13 - ■■G1**		43
	120	239	1.8	11.95	★	**2KJ1503 - ■FP13 - ■■F1**		43
	126	227	1.3	11.35	★	**2KJ1503 - ■FP13 - ■■E1**		43
	141	203	1.4	10.15		**2KJ1503 - ■FP13 - ■■D1**		43
	154	186	1.5	9.32	★	**2KJ1503 - ■FP13 - ■■C1**		43
	171	168	1.6	8.4		**2KJ1503 - ■FP13 - ■■B1**		43
	199	144	1.8	7.22	★	**2KJ1503 - ■FP13 - ■■A1**		43
	K.38-LA100ZLD4E							
	148	194	0.82	9.72		**2KJ1502 - ■FP13 - ■■F1**		39
	162	177	0.90	8.85	★	**2KJ1502 - ■FP13 - ■■E1**		39
	184	156	1.0	7.82		**2KJ1502 - ■FP13 - ■■D1**		39
	199	144	1.1	7.22	★	**2KJ1502 - ■FP13 - ■■C1**		39
	231	124	1.2	6.22		**2KJ1502 - ■FP13 - ■■B1**		39
	254	113	1.3	5.65	★	**2KJ1502 - ■FP13 - ■■A1**		39
	B.38-LA100ZLD4E							
	115	250	0.88	12.5		**2KJ1501 - ■FP13 - ■■C2**		41
	130	221	1.0	11.05		**2KJ1501 - ■FP13 - ■■A2**		41
	143	200	1.1	10.02		**2KJ1501 - ■FP13 - ■■X1**		41
	162	176	1.3	8.84		**2KJ1501 - ■FP13 - ■■U1**		41
	180	159	1.5	7.98		**2KJ1501 - ■FP13 - ■■S1**		41
	198	145	1.6	7.24		**2KJ1501 - ■FP13 - ■■R1**		41
	218	132	1.8	6.59		**2KJ1501 - ■FP13 - ■■P1**		41
	238	120	2.0	6.03		**2KJ1501 - ■FP13 - ■■M1**		41
	266	108	2.0	5.39		**2KJ1501 - ■FP13 - ■■K1**		41
	290	99	2.2	4.95		**2KJ1501 - ■FP13 - ■■H1**		41
	322	89	2.4	4.46		**2KJ1501 - ■FP13 - ■■F1**		41
	374	77	2.6	3.84		**2KJ1501 - ■FP13 - ■■C1**		41
	B.28-LA100ZLD4E							
	257	111	0.81	5.58		**2KJ1500 - ■FP13 - ■■E1**		29
	290	99	0.91	4.94		**2KJ1500 - ■FP13 - ■■D1**		29
	315	91	0.96	4.56		**2KJ1500 - ■FP13 - ■■C1**		29
	366	78	1.0	3.92		**2KJ1500 - ■FP13 - ■■B1**		29
	402	71	1.1	3.57		**2KJ1500 - ■FP13 - ■■A1**		29
4	**K.188-Z68-LA112ZMP4E**							
	1.5	23 702	0.84	968	★	**2KJ1541 - ■GJ13 - ■■C1**		772
	1.8	19 760	1.0	807		**2KJ1541 - ■GJ13 - ■■B1**		772

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
4	**K.188-Z68-LA112ZMP4E**							
	2.2	16 381	1.2	669	★	**2KJ1541 - ■GJ13 - ■■A1**		772
	K.188-Z88-LA112ZMP4E							
	2.2	16 381	1.2	669	★	**2KJ1543 - ■GJ13 - ■■H1**		805
	2.6	13 418	1.5	548	★	**2KJ1543 - ■GJ13 - ■■G1**		805
	2.9	12 316	1.6	503		**2KJ1543 - ■GJ13 - ■■F1**		805
	3.4	10 504	1.9	429	★	**2KJ1543 - ■GJ13 - ■■E1**		805
	K.188-LA160M8							
	3.7	10 223	2.0	191.34		**2KJ1511 - ■JE13 - ■■U1**	**P02**	800
	K.168-LA132ZMB6E							
	3.3	11 579	1.2	287.95	★	**2KJ1510 - ■HJ13 - ■■H2**	**P01**	527
	3.6	10 623	1.3	264.18		**2KJ1510 - ■HJ13 - ■■G2**	**P01**	527
	3.9	9 803	1.4	243.8	★	**2KJ1510 - ■HJ13 - ■■F2**	**P01**	527
	4.2	9 094	1.5	226.15		**2KJ1510 - ■HJ13 - ■■E2**	**P01**	527
	4.5	8 578	1.6	213.33	★	**2KJ1510 - ■HJ13 - ■■D2**	**P01**	527
	4.8	8 024	1.7	199.54		**2KJ1510 - ■HJ13 - ■■C2**	**P01**	527
	K.148-LA132ZMB6E							
	4.1	9 327	0.86	231.95	★	**2KJ1508 - ■HJ13 - ■■K2**	**P01**	342
	4.4	8 644	0.93	214.96		**2KJ1508 - ■HJ13 - ■■J2**	**P01**	342
	K.148-LA112ZMP4E							
	4.7	8 120	0.99	306.08		**2KJ1508 - ■GJ13 - ■■N2**		324
	5.2	7 280	1.1	274.42	★	**2KJ1508 - ■GJ13 - ■■M2**		324
	5.7	6 673	1.2	251.55		**2KJ1508 - ■GJ13 - ■■L2**		324
	6.2	6 153	1.3	231.95	★	**2KJ1508 - ■GJ13 - ■■K2**		324
	6.7	5 702	1.4	214.96		**2KJ1508 - ■GJ13 - ■■J2**		324
	7.0	5 422	1.5	204.38	★	**2KJ1508 - ■GJ13 - ■■H2**		324
	7.5	5 067	1.6	191.02		**2KJ1508 - ■GJ13 - ■■G2**		324
	8.5	4 470	1.8	168.5	★	**2KJ1508 - ■GJ13 - ■■F2**		324
	9.1	4 216	1.9	158.93		**2KJ1508 - ■GJ13 - ■■E2**		324
	10.1	3 778	2.1	142.41	★	**2KJ1508 - ■GJ13 - ■■D2**		324
	K.128-LA112ZMP4E							
	6.5	5 880	0.80	221.64		**2KJ1507 - ■GJ13 - ■■H2**		224
	7.1	5 416	0.87	204.18	★	**2KJ1507 - ■GJ13 - ■■G2**		224
	7.6	5 015	0.94	189.04		**2KJ1507 - ■GJ13 - ■■F2**		224
	8.2	4 664	1.0	175.8	★	**2KJ1507 - ■GJ13 - ■■E2**		224
	8.8	4 353	1.1	164.11		**2KJ1507 - ■GJ13 - ■■D2**		224
	9.8	3 895	1.2	146.84	★	**2KJ1507 - ■GJ13 - ■■C2**		224
	10.6	3 609	1.3	136.06		**2KJ1507 - ■GJ13 - ■■B2**		224
	11.5	3 309	1.4	124.73	★	**2KJ1507 - ■GJ13 - ■■A2**		224
	12.6	3 033	1.5	114.34		**2KJ1507 - ■GJ13 - ■■X1**		224
	14.8	2 585	1.8	97.44		**2KJ1507 - ■GJ13 - ■■W1**		224
	16.7	2 281	2.1	85.98	★	**2KJ1507 - ■GJ13 - ■■V1**		224
	K.108-LA112ZMP4E							
	10.4	3 684	0.81	138.87		**2KJ1506 - ■GJ13 - ■■B2**		153

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
4	**K.108-LA112ZMP4E**							
	11.2	3 418	0.88	128.86	★	**2KJ1506 - ■GJ13 - ■■A2**		153
	12.0	3 184	0.94	120.03		**2KJ1506 - ■GJ13 - ■■X1**		153
	13.3	2 879	1.0	108.52	★	**2KJ1506 - ■GJ13 - ■■W1**		153
	14.4	2 650	1.1	99.9		**2KJ1506 - ■GJ13 - ■■V1**		153
	16.0	2 384	1.3	89.85	★	**2KJ1506 - ■GJ13 - ■■U1**		153
	17.4	2 199	1.4	82.9		**2KJ1506 - ■GJ13 - ■■T1**		153
	20	1 863	1.6	70.24		**2KJ1506 - ■GJ13 - ■■S1**		153
	24	1 624	1.8	61.22	★	**2KJ1506 - ■GJ13 - ■■R1**		153
	28	1 382	2.2	52.08		**2KJ1506 - ■GJ13 - ■■Q1**		153
	32	1 179	2.5	44.44	★	**2KJ1506 - ■GJ13 - ■■P1**		153
	K.88-LA112ZMP4E							
	19.1	2 002	0.82	75.45	★	**2KJ1505 - ■GJ13 - ■■V1**		99
	21	1 846	0.89	69.57		**2KJ1505 - ■GJ13 - ■■U1**		99
	25	1 548	1.1	58.37		**2KJ1505 - ■GJ13 - ■■T1**		99
	29	1 321	1.2	49.8	★	**2KJ1505 - ■GJ13 - ■■S1**		99
	35	1 101	1.5	41.5		**2KJ1505 - ■GJ13 - ■■Q1**		99
	42	913	1.8	34.4	★	**2KJ1505 - ■GJ13 - ■■P1**		99
	47	819	2.0	30.87	★	**2KJ1505 - ■GJ13 - ■■N1**		99
	50	756	2.2	28.5		**2KJ1505 - ■GJ13 - ■■M1**		99
	56	677	2.4	25.53	★	**2KJ1505 - ■GJ13 - ■■L1**		99
	61	624	2.6	23.54		**2KJ1505 - ■GJ13 - ■■K1**		99
	73	524	3.0	19.75		**2KJ1505 - ■GJ13 - ■■J1**		99
	128	297	2.7	11.21		**2KJ1505 - ■GJ13 - ■■E1**		99
	153	250	3.1	9.41		**2KJ1505 - ■GJ13 - ■■D1**		99
	179	213	3.4	8.03	★	**2KJ1505 - ■GJ13 - ■■C1**		99
	215	177	3.9	6.69		**2KJ1505 - ■GJ13 - ■■B1**		99
	260	147	4.4	5.54	★	**2KJ1505 - ■GJ13 - ■■A1**		99
	K.68-LA112ZMP4E							
	44	870	0.94	32.78	★	**2KJ1504 - ■GJ13 - ■■S1**		69
	47	806	1.0	30.38		**2KJ1504 - ■GJ13 - ■■R1**		69
	51	743	1.1	27.99	★	**2KJ1504 - ■GJ13 - ■■Q1**		69
	57	674	1.2	25.42		**2KJ1504 - ■GJ13 - ■■P1**		69
	62	614	1.3	23.16	★	**2KJ1504 - ■GJ13 - ■■N1**		69
	68	563	1.5	21.22		**2KJ1504 - ■GJ13 - ■■M1**		69
	76	502	1.6	18.93	★	**2KJ1504 - ■GJ13 - ■■L1**		69
	85	448	1.8	16.89		**2KJ1504 - ■GJ13 - ■■K1**		69
	100	381	2.1	14.35		**2KJ1504 - ■GJ13 - ■■J1**		69
	121	317	2.4	11.94	★	**2KJ1504 - ■GJ13 - ■■H1**		69
	126	303	1.4	11.41		**2KJ1504 - ■GJ13 - ■■G1**		69
	138	276	1.5	10.4	★	**2KJ1504 - ■GJ13 - ■■F1**		69
	151	253	1.6	9.52		**2KJ1504 - ■GJ13 - ■■E1**		69
	169	225	1.8	8.5	★	**2KJ1504 - ■GJ13 - ■■D1**		69
	190	201	1.9	7.58		**2KJ1504 - ■GJ13 - ■■C1**		69

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
4	**K.68-LA112ZMP4E**							
	224	171	2.1	6.44		**2KJ1504 - ■GJ13 - ■■B1**		69
	269	142	2.4	5.36	★	**2KJ1504 - ■GJ13 - ■■A1**		69
	K.48-LA112ZMP4E							
	70	545	0.83	20.54		**2KJ1503 - ■GJ13 - ■■L1**		50
	77	498	0.90	18.78	★	**2KJ1503 - ■GJ13 - ■■K1**		50
	86	445	1.0	16.79		**2KJ1503 - ■GJ13 - ■■J1**		50
	93	409	1.1	15.42	★	**2KJ1503 - ■GJ13 - ■■H1**		50
	104	369	1.2	13.9		**2KJ1503 - ■GJ13 - ■■G1**		50
	121	317	1.3	11.95	★	**2KJ1503 - ■GJ13 - ■■F1**		50
	127	301	0.97	11.35	★	**2KJ1503 - ■GJ13 - ■■E1**		50
	142	269	1.1	10.15		**2KJ1503 - ■GJ13 - ■■D1**		50
	155	247	1.1	9.32	★	**2KJ1503 - ■GJ13 - ■■C1**		50
	171	223	1.2	8.4		**2KJ1503 - ■GJ13 - ■■B1**		50
	199	192	1.3	7.22	★	**2KJ1503 - ■GJ13 - ■■A1**		50
	K.38-LA112ZMP4E							
	199	192	0.83	7.22	★	**2KJ1502 - ■GJ13 - ■■C1**		46
	232	165	0.92	6.22		**2KJ1502 - ■GJ13 - ■■B1**		46
	255	150	0.99	5.65	★	**2KJ1502 - ■GJ13 - ■■A1**		46
5.5	**K.188-Z68-LA132SP4E**							
	2.2	22 492	0.89	669	★	**2KJ1541 - ■HG13 - ■■A1**		790
	K.188-Z88-LA132SP4E							
	2.2	22 492	0.89	669	★	**2KJ1543 - ■HG13 - ■■H1**		823
	2.6	18 424	1.1	548	★	**2KJ1543 - ■HG13 - ■■G1**		823
	2.9	16 911	1.2	503		**2KJ1543 - ■HG13 - ■■F1**		823
	3.4	14 423	1.4	429	★	**2KJ1543 - ■HG13 - ■■E1**		823
	K.188-LA160MB8							
	3.7	14 155	1.4	191.34		**2KJ1511 - ■JF13 - ■■U1**	**P02**	800
	4.1	12 782	1.6	172.78		**2KJ1511 - ■JF13 - ■■T1**	**P02**	800
	4.4	11 979	1.7	161.92		**2KJ1511 - ■JF13 - ■■S1**	**P02**	800
	K.188-LA132ZMD6E							
	5.0	10 469	1.9	191.34		**2KJ1511 - ■HK13 - ■■U1**	**P01**	776
	5.6	9 453	2.1	172.78		**2KJ1511 - ■HK13 - ■■T1**	**P01**	776
	K.168-LA132ZMD6E							
	3.3	15 755	0.86	287.95	★	**2KJ1510 - ■HK13 - ■■H2**	**P01**	527
	3.6	14 454	0.93	264.18		**2KJ1510 - ■HK13 - ■■G2**	**P01**	527
	3.9	13 339	1.0	243.8	★	**2KJ1510 - ■HK13 - ■■F2**	**P01**	527
	4.2	12 373	1.1	226.15		**2KJ1510 - ■HK13 - ■■E2**	**P01**	527
	4.5	11 672	1.2	213.33	★	**2KJ1510 - ■HK13 - ■■D2**	**P01**	527
	4.8	10 918	1.2	199.54		**2KJ1510 - ■HK13 - ■■C2**	**P01**	527
	K.168-LA132SP4E							
	5.0	10 467	1.3	287.95	★	**2KJ1510 - ■HG13 - ■■H2**		527
	5.5	9 603	1.4	264.18		**2KJ1510 - ■HG13 - ■■G2**		527

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
5.5	**K.168-LA132SP4E**							
	5.9	8 862	1.5	243.8	★	**2KJ1510 - ■HG13 - ■■F2**		527
	6.4	8 220	1.6	226.15		**2KJ1510 - ■HG13 - ■■E2**		527
	6.8	7 754	1.7	213.33	★	**2KJ1510 - ■HG13 - ■■D2**		527
	7.2	7 253	1.9	199.54		**2KJ1510 - ■HG13 - ■■C2**		527
	8.1	6 449	2.1	177.43	★	**2KJ1510 - ■HG13 - ■■B2**		527
	K.148-LA132SP4E							
	5.3	9 975	0.80	274.42	★	**2KJ1508 - ■HG13 - ■■M2**		342
	5.7	9 144	0.87	251.55		**2KJ1508 - ■HG13 - ■■L2**		342
	6.2	8 431	0.95	231.95	★	**2KJ1508 - ■HG13 - ■■K2**		342
	6.7	7 814	1.0	214.96		**2KJ1508 - ■HG13 - ■■J2**		342
	7.1	7 429	1.1	204.38	★	**2KJ1508 - ■HG13 - ■■H2**		342
	7.6	6 943	1.2	191.02		**2KJ1508 - ■HG13 - ■■G2**		342
	8.6	6 125	1.3	168.5	★	**2KJ1508 - ■HG13 - ■■F2**		342
	9.1	5 777	1.4	158.93		**2KJ1508 - ■HG13 - ■■E2**		342
	10.1	5 177	1.5	142.41	★	**2KJ1508 - ■HG13 - ■■D2**		342
	11.0	4 780	1.7	131.49		**2KJ1508 - ■HG13 - ■■C2**		342
	12.9	4 084	2.0	112.35		**2KJ1508 - ■HG13 - ■■B2**		342
	14.2	3 691	2.2	101.53	★	**2KJ1508 - ■HG13 - ■■A2**		342
	14.8	3 556	2.2	97.82		**2KJ1508 - ■HG13 - ■■X1**		342
	K.128-LA132SP4E							
	9.8	5 338	0.88	146.84	★	**2KJ1507 - ■HG13 - ■■C2**		242
	10.6	4 946	0.95	136.06		**2KJ1507 - ■HG13 - ■■B2**		242
	11.6	4 534	1.0	124.73	★	**2KJ1507 - ■HG13 - ■■A2**		242
	12.6	4 156	1.1	114.34		**2KJ1507 - ■HG13 - ■■X1**		242
	14.8	3 542	1.3	97.44		**2KJ1507 - ■HG13 - ■■W1**		242
	16.8	3 125	1.5	85.98	★	**2KJ1507 - ■HG13 - ■■V1**		242
	19.7	2 660	1.8	73.18		**2KJ1507 - ■HG13 - ■■U1**		242
	23	2 305	2.0	63.41	★	**2KJ1507 - ■HG13 - ■■T1**		242
	27	1 940	2.4	53.36	★	**2KJ1507 - ■HG13 - ■■S1**		242
	K.108-LA132SP4E							
	14.5	3 631	0.83	99.9		**2KJ1506 - ■HG13 - ■■V1**		171
	16.1	3 266	0.92	89.85	★	**2KJ1506 - ■HG13 - ■■U1**		171
	17.4	3 013	1.0	82.9		**2KJ1506 - ■HG13 - ■■T1**		171
	21	2 553	1.2	70.24		**2KJ1506 - ■HG13 - ■■S1**		171
	24	2 225	1.3	61.22	★	**2KJ1506 - ■HG13 - ■■R1**		171
	28	1 893	1.6	52.08		**2KJ1506 - ■HG13 - ■■Q1**		171
	32	1 615	1.9	44.44	★	**2KJ1506 - ■HG13 - ■■P1**		171
	40	1 325	2.1	36.44	★	**2KJ1506 - ■HG13 - ■■N1**		171
	43	1 231	2.4	33.87	★	**2KJ1506 - ■HG13 - ■■M1**		171
	46	1 136	2.6	31.25		**2KJ1506 - ■HG13 - ■■L1**		171
	K.88-LA132SP4E							
	29	1 810	0.91	49.8	★	**2KJ1505 - ■HG13 - ■■S1**		117
	35	1 509	1.1	41.5		**2KJ1505 - ■HG13 - ■■Q1**		117

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
5.5	**K.88-LA132SP4E**							
	42	1 250	1.3	34.4	★	**2KJ1505 - ■HG13 - ■■P1**		117
	47	1 122	1.5	30.87	★	**2KJ1505 - ■HG13 - ■■N1**		117
	51	1 036	1.6	28.5		**2KJ1505 - ■HG13 - ■■M1**		117
	57	928	1.8	25.53	★	**2KJ1505 - ■HG13 - ■■L1**		117
	61	856	1.9	23.54		**2KJ1505 - ■HG13 - ■■K1**		117
	73	718	2.2	19.75		**2KJ1505 - ■HG13 - ■■J1**		117
	86	612	2.4	16.85	★	**2KJ1505 - ■HG13 - ■■H1**		117
	103	510	2.8	14.04		**2KJ1505 - ■HG13 - ■■G1**		117
	124	423	3.2	11.64	★	**2KJ1505 - ■HG13 - ■■F1**		117
	129	407	2.0	11.21		**2KJ1505 - ■HG13 - ■■E1**		117
	154	342	2.2	9.41		**2KJ1505 - ■HG13 - ■■D1**		117
	180	292	2.5	8.03	★	**2KJ1505 - ■HG13 - ■■C1**		117
	216	243	2.8	6.69		**2KJ1505 - ■HG13 - ■■B1**		117
	261	201	3.2	5.54	★	**2KJ1505 - ■HG13 - ■■A1**		117
	K.68-LA132SP4E							
	52	1 017	0.81	27.99	★	**2KJ1504 - ■HG13 - ■■Q1**		87
	57	924	0.89	25.42		**2KJ1504 - ■HG13 - ■■P1**		87
	62	842	0.97	23.16	★	**2KJ1504 - ■HG13 - ■■N1**		87
	68	771	1.1	21.22		**2KJ1504 - ■HG13 - ■■M1**		87
	76	688	1.2	18.93	★	**2KJ1504 - ■HG13 - ■■L1**		87
	86	614	1.3	16.89		**2KJ1504 - ■HG13 - ■■K1**		87
	101	522	1.6	14.35		**2KJ1504 - ■HG13 - ■■J1**		87
	121	434	1.8	11.94	★	**2KJ1504 - ■HG13 - ■■H1**		87
	127	415	1.0	11.41		**2KJ1504 - ■HG13 - ■■G1**		87
	139	378	1.1	10.4	★	**2KJ1504 - ■HG13 - ■■F1**		87
	152	346	1.2	9.52		**2KJ1504 - ■HG13 - ■■E1**		87
	170	309	1.3	8.5	★	**2KJ1504 - ■HG13 - ■■D1**		87
	191	276	1.4	7.58		**2KJ1504 - ■HG13 - ■■C1**		87
	224	234	1.6	6.44		**2KJ1504 - ■HG13 - ■■B1**		87
	270	195	1.8	5.36	★	**2KJ1504 - ■HG13 - ■■A1**		87
7.5	**K.188-Z88-LA132ZMP4E**							
	2.7	24 988	0.80	548	★	**2KJ1543 - ■HK13 - ■■G1**		823
	2.9	22 936	0.87	503		**2KJ1543 - ■HK13 - ■■F1**		823
	3.4	19 561	1.0	429	★	**2KJ1543 - ■HK13 - ■■E1**		823
	K.188-LA160LB8							
	3.7	19 167	1.0	191.34		**2KJ1511 - ■JJ13 - ■■U1**	**P02**	812
	4.1	17 308	1.2	172.78		**2KJ1511 - ■JJ13 - ■■T1**	**P02**	812
	4.4	16 220	1.2	161.92		**2KJ1511 - ■JJ13 - ■■S1**	**P02**	812
	K.188-LA160MD6E							
	5.0	14 202	1.4	191.34		**2KJ1511 - ■JJ13 - ■■U1**	**P01**	812
	5.6	12 824	1.6	172.78		**2KJ1511 - ■JJ13 - ■■T1**	**P01**	812
	6.0	12 018	1.7	161.92		**2KJ1511 - ■JJ13 - ■■S1**	**P01**	812
	6.9	10 323	1.9	139.08	★	**2KJ1511 - ■JJ13 - ■■R1**	**P01**	812

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
7.5	**K.188-LA132ZMP4E**							
	7.6	9 419	2.1	191.34		**2KJ1511 - ■HK13 - ■■U1**		776
	K.168-LA160MD6E							
	4.5	15 834	0.85	213.33	★	**2KJ1510 - ■JJ13 - ■■D2**	**P01**	563
	4.8	14 810	0.91	199.54		**2KJ1510 - ■JJ13 - ■■C2**	**P01**	563
	K.168-LA132ZMP4E							
	5.1	14 175	0.95	287.95	★	**2KJ1510 - ■HK13 - ■■H2**		527
	5.5	13 005	1.0	264.18		**2KJ1510 - ■HK13 - ■■G2**		527
	6.0	12 001	1.1	243.8	★	**2KJ1510 - ■HK13 - ■■F2**		527
	6.4	11 133	1.2	226.15		**2KJ1510 - ■HK13 - ■■E2**		527
	6.8	10 502	1.3	213.33	★	**2KJ1510 - ■HK13 - ■■D2**		527
	7.3	9 823	1.4	199.54		**2KJ1510 - ■HK13 - ■■C2**		527
	8.2	8 734	1.5	177.43	★	**2KJ1510 - ■HK13 - ■■B2**		527
	8.7	8 245	1.6	167.5		**2KJ1510 - ■HK13 - ■■A2**		527
	9.7	7 402	1.8	150.36	★	**2KJ1510 - ■HK13 - ■■X1**		527
	10.5	6 793	2.0	138		**2KJ1510 - ■HK13 - ■■W1**		527
	K.148-LA132ZMP4E							
	7.1	10 061	0.80	204.38	★	**2KJ1508 - ■HK13 - ■■H2**		342
	7.6	9 403	0.85	191.02		**2KJ1508 - ■HK13 - ■■G2**		342
	8.6	8 295	0.96	168.5	★	**2KJ1508 - ■HK13 - ■■F2**		342
	9.2	7 824	1.0	158.93		**2KJ1508 - ■HK13 - ■■E2**		342
	10.2	7 010	1.1	142.41	★	**2KJ1508 - ■HK13 - ■■D2**		342
	11.1	6 473	1.2	131.49		**2KJ1508 - ■HK13 - ■■C2**		342
	13.0	5 531	1.4	112.35		**2KJ1508 - ■HK13 - ■■B2**		342
	14.3	4 998	1.6	101.53	★	**2KJ1508 - ■HK13 - ■■A2**		342
	14.9	4 815	1.7	97.82		**2KJ1508 - ■HK13 - ■■X1**		342
	17.2	4 165	1.9	84.61		**2KJ1508 - ■HK13 - ■■W1**		342
	19.7	3 633	2.2	73.8	★	**2KJ1508 - ■HK13 - ■■V1**		342
	K.128-LA132ZMP4E							
	12.7	5 629	0.84	114.34		**2KJ1507 - ■HK13 - ■■X1**		242
	14.9	4 797	0.98	97.44		**2KJ1507 - ■HK13 - ■■W1**		242
	16.9	4 233	1.1	85.98	★	**2KJ1507 - ■HK13 - ■■V1**		242
	19.9	3 602	1.3	73.18		**2KJ1507 - ■HK13 - ■■U1**		242
	23	3 121	1.5	63.41	★	**2KJ1507 - ■HK13 - ■■T1**		242
	27	2 627	1.8	53.36	★	**2KJ1507 - ■HK13 - ■■S1**		242
	30	2 370	2.0	48.14		**2KJ1507 - ■HK13 - ■■R1**		242
	35	2 037	2.3	41.38	★	**2KJ1507 - ■HK13 - ■■Q1**		242
	37	1 929	2.4	39.19	★	**2KJ1507 - ■HK13 - ■■P1**		242
	40	1 768	2.7	35.92		**2KJ1507 - ■HK13 - ■■N1**		242
	K.108-LA132ZMP4E							
	21	3 458	0.87	70.24		**2KJ1506 - ■HK13 - ■■S1**		171
	24	3 014	1.0	61.22	★	**2KJ1506 - ■HK13 - ■■R1**		171
	28	2 564	1.2	52.08		**2KJ1506 - ■HK13 - ■■Q1**		171
	33	2 188	1.4	44.44	★	**2KJ1506 - ■HK13 - ■■P1**		171

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
7.5	**K.108-LA132ZMP4E**							
	40	1 794	1.6	36.44	★	**2KJ1506 - ■HK13 - ■■N1**		171
	43	1 667	1.8	33.87	★	**2KJ1506 - ■HK13 - ■■M1**		171
	47	1 538	2.0	31.25		**2KJ1506 - ■HK13 - ■■L1**		171
	55	1 304	2.2	26.48		**2KJ1506 - ■HK13 - ■■K1**		171
	63	1 136	2.4	23.08	★	**2KJ1506 - ■HK13 - ■■J1**		171
	74	966	2.7	19.63		**2KJ1506 - ■HK13 - ■■G1**		171
	87	825	3.0	16.75	★	**2KJ1506 - ■HK13 - ■■F1**		171
	106	676	3.5	13.74	★	**2KJ1506 - ■HK13 - ■■E1**		171
	113	635	3.1	12.9	★	**2KJ1506 - ■HK13 - ■■D1**		171
	133	540	3.4	10.97		**2KJ1506 - ■HK13 - ■■C1**		171
	155	461	3.8	9.36	★	**2KJ1506 - ■HK13 - ■■B1**		171
	K.88-LA132ZMP4E							
	35	2 043	0.81	41.5		**2KJ1505 - ■HK13 - ■■Q1**		117
	42	1 693	0.97	34.4	★	**2KJ1505 - ■HK13 - ■■P1**		117
	47	1 520	1.1	30.87	★	**2KJ1505 - ■HK13 - ■■N1**		117
	51	1 403	1.2	28.5		**2KJ1505 - ■HK13 - ■■M1**		117
	57	1 257	1.3	25.53	★	**2KJ1505 - ■HK13 - ■■L1**		117
	62	1 159	1.4	23.54		**2KJ1505 - ■HK13 - ■■K1**		117
	74	972	1.6	19.75		**2KJ1505 - ■HK13 - ■■J1**		117
	86	829	1.8	16.85	★	**2KJ1505 - ■HK13 - ■■H1**		117
	104	691	2.1	14.04		**2KJ1505 - ■HK13 - ■■G1**		117
	125	573	2.3	11.64	★	**2KJ1505 - ■HK13 - ■■F1**		117
	130	552	1.5	11.21		**2KJ1505 - ■HK13 - ■■E1**		117
	155	463	1.6	9.41		**2KJ1505 - ■HK13 - ■■D1**		117
	181	395	1.8	8.03	★	**2KJ1505 - ■HK13 - ■■C1**		117
	217	329	2.1	6.69		**2KJ1505 - ■HK13 - ■■B1**		117
	263	273	2.4	5.54	★	**2KJ1505 - ■HK13 - ■■A1**		117
	K.68-LA132ZMP4E							
	77	932	0.88	18.93	★	**2KJ1504 - ■HK13 - ■■L1**		87
	86	831	0.99	16.89		**2KJ1504 - ■HK13 - ■■K1**		87
	101	706	1.1	14.35		**2KJ1504 - ■HK13 - ■■J1**		87
	122	588	1.3	11.94	★	**2KJ1504 - ■HK13 - ■■H1**		87
	140	512	0.82	10.4	★	**2KJ1504 - ■HK13 - ■■F1**		87
	153	469	0.88	9.52		**2KJ1504 - ■HK13 - ■■E1**		87
	171	418	0.95	8.5	★	**2KJ1504 - ■HK13 - ■■D1**		87
	192	373	1.0	7.58		**2KJ1504 - ■HK13 - ■■C1**		87
	226	317	1.2	6.44		**2KJ1504 - ■HK13 - ■■B1**		87
	271	264	1.3	5.36	★	**2KJ1504 - ■HK13 - ■■A1**		87
9.2	**K.188-Z88-LA160MB4E**							
	3.4	24 013	0.83	429	★	**2KJ1543 - ■JP13 - ■■E1**		847
	K.188-LA160MB4E							
	7.6	11 554	1.7	191.34		**2KJ1511 - ■JP13 - ■■U1**		800
	8.4	10 433	1.9	172.78		**2KJ1511 - ■JP13 - ■■T1**		800

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
9.2	**K.188-LA160MB4E**							
	9.0	9 778	2.0	161.92		**2KJ1511 - ■JP13 - ■■S1**		800
	K.168-LA160MB4E							
	6.8	12 882	1.0	213.33	★	**2KJ1510 - ■JP13 - ■■D2**		551
	7.3	12 049	1.1	199.54		**2KJ1510 - ■JP13 - ■■C2**		551
	8.2	10 714	1.3	177.43	★	**2KJ1510 - ■JP13 - ■■B2**		551
	8.7	10 114	1.3	167.5		**2KJ1510 - ■JP13 - ■■A2**		551
	9.7	9 079	1.5	150.36	★	**2KJ1510 - ■JP13 - ■■X1**		551
	10.5	8 333	1.6	138		**2KJ1510 - ■JP13 - ■■W1**		551
	12.2	7 191	1.9	119.09		**2KJ1510 - ■JP13 - ■■V1**		551
	14.0	6 291	2.1	104.18		**2KJ1510 - ■JP13 - ■■U1**		551
	K.148-LA160MB4E							
	9.2	9 597	0.83	158.93		**2KJ1508 - ■JP13 - ■■E2**		366
	10.2	8 599	0.93	142.41	★	**2KJ1508 - ■JP13 - ■■D2**		366
	11.1	7 940	1.0	131.49		**2KJ1508 - ■JP13 - ■■C2**		366
	13.0	6 784	1.2	112.35		**2KJ1508 - ■JP13 - ■■B2**		366
	14.3	6 131	1.3	101.53	★	**2KJ1508 - ■JP13 - ■■A2**		366
	14.9	5 907	1.4	97.82		**2KJ1508 - ■JP13 - ■■X1**		366
	17.2	5 109	1.6	84.61		**2KJ1508 - ■JP13 - ■■W1**		366
	19.7	4 456	1.8	73.8	★	**2KJ1508 - ■JP13 - ■■V1**		366
	23	3 814	2.1	63.16	★	**2KJ1508 - ■JP13 - ■■U1**		366
	26	3 416	2.3	56.57		**2KJ1508 - ■JP13 - ■■T1**		366
	K.128-LA160MB4E							
	14.9	5 884	0.80	97.44		**2KJ1507 - ■JP13 - ■■W1**		266
	16.9	5 192	0.91	85.98	★	**2KJ1507 - ■JP13 - ■■V1**		266
	19.9	4 419	1.1	73.18		**2KJ1507 - ■JP13 - ■■U1**		266
	23	3 829	1.2	63.41	★	**2KJ1507 - ■JP13 - ■■T1**		266
	27	3 222	1.5	53.36	★	**2KJ1507 - ■JP13 - ■■S1**		266
	30	2 907	1.6	48.14		**2KJ1507 - ■JP13 - ■■R1**		266
	35	2 499	1.9	41.38	★	**2KJ1507 - ■JP13 - ■■Q1**		266
	37	2 366	2.0	39.19	★	**2KJ1507 - ■JP13 - ■■P1**		266
	40	2 169	2.2	35.92		**2KJ1507 - ■JP13 - ■■N1**		266
	48	1 848	2.5	30.61		**2KJ1507 - ■JP13 - ■■M1**		266
	54	1 632	2.9	27.02	★	**2KJ1507 - ■JP13 - ■■L1**		266
	K.108-LA160MB4E							
	24	3 697	0.81	61.22	★	**2KJ1506 - ■JP13 - ■■R1**		195
	28	3 145	0.95	52.08		**2KJ1506 - ■JP13 - ■■Q1**		195
	33	2 684	1.1	44.44	★	**2KJ1506 - ■JP13 - ■■P1**		195
	40	2 200	1.3	36.44	★	**2KJ1506 - ■JP13 - ■■N1**		195
	43	2 045	1.5	33.87	★	**2KJ1506 - ■JP13 - ■■M1**		195
	47	1 887	1.6	31.25		**2KJ1506 - ■JP13 - ■■L1**		195
	55	1 599	1.8	26.48		**2KJ1506 - ■JP13 - ■■K1**		195
	63	1 394	2.0	23.08	★	**2KJ1506 - ■JP13 - ■■J1**		195
	74	1 185	2.2	19.63		**2KJ1506 - ■JP13 - ■■G1**		195

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
9.2	**K.108-LA160MB4E**							
	87	1 011	2.5	16.75	★	**2KJ1506 - ■JP13 - ■■F1**		195
	106	830	2.8	13.74	★	**2KJ1506 - ■JP13 - ■■E1**		195
	113	779	2.5	12.9	★	**2KJ1506 - ■JP13 - ■■D1**		195
	133	662	2.8	10.97		**2KJ1506 - ■JP13 - ■■C1**		195
	155	565	3.1	9.36	★	**2KJ1506 - ■JP13 - ■■B1**		195
	189	464	3.6	7.68	★	**2KJ1506 - ■JP13 - ■■A1**		195
	K.88-LA160MB4E							
	47	1 864	0.89	30.87	★	**2KJ1505 - ■JP13 - ■■N1**		141
	51	1 721	0.96	28.5		**2KJ1505 - ■JP13 - ■■M1**		141
	57	1 542	1.1	25.53	★	**2KJ1505 - ■JP13 - ■■L1**		141
	62	1 421	1.2	23.54		**2KJ1505 - ■JP13 - ■■K1**		141
	74	1 193	1.3	19.75		**2KJ1505 - ■JP13 - ■■J1**		141
	86	1 017	1.5	16.85	★	**2KJ1505 - ■JP13 - ■■H1**		141
	104	848	1.7	14.04		**2KJ1505 - ■JP13 - ■■G1**		141
	125	703	1.9	11.64	★	**2KJ1505 - ■JP13 - ■■F1**		141
	130	677	1.2	11.21		**2KJ1505 - ■JP13 - ■■E1**		141
	155	568	1.3	9.41		**2KJ1505 - ■JP13 - ■■D1**		141
	181	485	1.5	8.03	★	**2KJ1505 - ■JP13 - ■■C1**		141
	217	404	1.7	6.69		**2KJ1505 - ■JP13 - ■■B1**		141
	263	335	1.9	5.54	★	**2KJ1505 - ■JP13 - ■■A1**		141
11	**K.188-LG180LA8**							
	4.2	25 035	0.80	172.78		**2KJ1511 - ■KM13 - ■■T1**	**P02**	882
	4.5	23 462	0.85	161.92		**2KJ1511 - ■KM13 - ■■S1**	**P02**	882
	K.188-LA160ZLP6E							
	5.0	20 938	0.96	191.34		**2KJ1511 - ■JT13 - ■■U1**	**P01**	812
	5.6	18 907	1.1	172.78		**2KJ1511 - ■JT13 - ■■T1**	**P01**	812
	5.9	17 718	1.1	161.92		**2KJ1511 - ■JT13 - ■■S1**	**P01**	812
	6.9	15 219	1.3	139.08	★	**2KJ1511 - ■JT13 - ■■R1**	**P01**	812
	K.188-LA160MP4E							
	7.6	13 767	1.5	191.34		**2KJ1511 - ■JQ13 - ■■U1**		800
	8.5	12 432	1.6	172.78		**2KJ1511 - ■JQ13 - ■■T1**		800
	9.0	11 650	1.7	161.92		**2KJ1511 - ■JQ13 - ■■S1**		800
	10.5	10 007	2.0	139.08	★	**2KJ1511 - ■JQ13 - ■■R1**		800
	K.168-LA160MP4E							
	6.8	15 350	0.88	213.33	★	**2KJ1510 - ■JQ13 - ■■D2**		551
	7.3	14 357	0.94	199.54		**2KJ1510 - ■JQ13 - ■■C2**		551
	8.2	12 766	1.1	177.43	★	**2KJ1510 - ■JQ13 - ■■B2**		551
	8.7	12 052	1.1	167.5		**2KJ1510 - ■JQ13 - ■■A2**		551
	9.7	10 819	1.2	150.36	★	**2KJ1510 - ■JQ13 - ■■X1**		551
	10.6	9 929	1.4	138		**2KJ1510 - ■JQ13 - ■■W1**		551
	12.3	8 569	1.6	119.09		**2KJ1510 - ■JQ13 - ■■V1**		551
	14.0	7 496	1.8	104.18		**2KJ1510 - ■JQ13 - ■■U1**		551
	16.1	6 519	2.1	90.6		**2KJ1510 - ■JQ13 - ■■T1**		551

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
11	**K.148-LA160MP4E**							
	11.1	9 461	0.85	131.49		**2KJ1508 - ■JQ13 - ■■C2**		366
	13.0	8 084	0.99	112.35		**2KJ1508 - ■JQ13 - ■■B2**		366
	14.4	7 305	1.1	101.53	★	**2KJ1508 - ■JQ13 - ■■A2**		366
	14.9	7 038	1.1	97.82		**2KJ1508 - ■JQ13 - ■■X1**		366
	17.3	6 088	1.3	84.61		**2KJ1508 - ■JQ13 - ■■W1**		366
	19.8	5 310	1.5	73.8	★	**2KJ1508 - ■JQ13 - ■■V1**		366
	23	4 544	1.8	63.16	★	**2KJ1508 - ■JQ13 - ■■U1**		366
	26	4 070	2.0	56.57		**2KJ1508 - ■JQ13 - ■■T1**		366
	30	3 447	2.3	47.91	★	**2KJ1508 - ■JQ13 - ■■R1**		366
	K.128-LA160MP4E							
	20	5 265	0.89	73.18		**2KJ1507 - ■JQ13 - ■■U1**		266
	23	4 562	1.0	63.41	★	**2KJ1507 - ■JQ13 - ■■T1**		266
	27	3 839	1.2	53.36	★	**2KJ1507 - ■JQ13 - ■■S1**		266
	30	3 464	1.4	48.14		**2KJ1507 - ■JQ13 - ■■R1**		266
	35	2 977	1.6	41.38	★	**2KJ1507 - ■JQ13 - ■■Q1**		266
	37	2 820	1.7	39.19	★	**2KJ1507 - ■JQ13 - ■■P1**		266
	41	2 585	1.8	35.92		**2KJ1507 - ■JQ13 - ■■N1**		266
	48	2 202	2.1	30.61		**2KJ1507 - ■JQ13 - ■■M1**		266
	54	1 944	2.4	27.02	★	**2KJ1507 - ■JQ13 - ■■L1**		266
	64	1 654	2.8	22.99		**2KJ1507 - ■JQ13 - ■■K1**		266
	116	904	3.6	12.56		**2KJ1507 - ■JQ13 - ■■E1**		266
	K.108-LA160MP4E							
	28	3 747	0.80	52.08		**2KJ1506 - ■JQ13 - ■■Q1**		195
	33	3 198	0.94	44.44	★	**2KJ1506 - ■JQ13 - ■■P1**		195
	40	2 622	1.1	36.44	★	**2KJ1506 - ■JQ13 - ■■N1**		195
	43	2 437	1.2	33.87	★	**2KJ1506 - ■JQ13 - ■■M1**		195
	47	2 249	1.3	31.25		**2KJ1506 - ■JQ13 - ■■L1**		195
	55	1 905	1.5	26.48		**2KJ1506 - ■JQ13 - ■■K1**		195
	63	1 661	1.7	23.08	★	**2KJ1506 - ■JQ13 - ■■J1**		195
	74	1 412	1.9	19.63		**2KJ1506 - ■JQ13 - ■■G1**		195
	87	1 205	2.1	16.75	★	**2KJ1506 - ■JQ13 - ■■F1**		195
	106	989	2.4	13.74	★	**2KJ1506 - ■JQ13 - ■■E1**		195
	113	928	2.1	12.9	★	**2KJ1506 - ■JQ13 - ■■D1**		195
	133	789	2.3	10.97		**2KJ1506 - ■JQ13 - ■■C1**		195
	156	673	2.6	9.36	★	**2KJ1506 - ■JQ13 - ■■B1**		195
	190	553	3.0	7.68	★	**2KJ1506 - ■JQ13 - ■■A1**		195
	K.88-LA160MP4E							
	51	2 051	0.80	28.5		**2KJ1505 - ■JQ13 - ■■M1**		141
	57	1 837	0.90	25.53	★	**2KJ1505 - ■JQ13 - ■■L1**		141
	62	1 694	0.97	23.54		**2KJ1505 - ■JQ13 - ■■K1**		141
	74	1 421	1.1	19.75		**2KJ1505 - ■JQ13 - ■■J1**		141
	87	1 212	1.2	16.85	★	**2KJ1505 - ■JQ13 - ■■H1**		141
	104	1 010	1.4	14.04		**2KJ1505 - ■JQ13 - ■■G1**		141

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
11	**K.88-LA160MP4E**							
	125	838	1.6	11.64	★	**2KJ1505 - ■JQ13 - ■■F1**		141
	130	807	1.0	11.21		**2KJ1505 - ■JQ13 - ■■E1**		141
	155	677	1.1	9.41		**2KJ1505 - ■JQ13 - ■■D1**		141
	182	578	1.3	8.03	★	**2KJ1505 - ■JQ13 - ■■C1**		141
	218	481	1.4	6.69		**2KJ1505 - ■JQ13 - ■■B1**		141
	264	399	1.6	5.54	★	**2KJ1505 - ■JQ13 - ■■A1**		141
15	**K.188-LG180ZLB6E**							
	6.0	23 790	0.84	161.92		**2KJ1511 - ■KP13 - ■■S1**	**P01**	882
	7.0	20 434	0.98	139.08	★	**2KJ1511 - ■KP13 - ■■R1**	**P01**	882
	K.188-LA160ZLP4E							
	7.6	18 774	1.1	191.34		**2KJ1511 - ■JT13 - ■■U1**		812
	8.5	16 953	1.2	172.78		**2KJ1511 - ■JT13 - ■■T1**		812
	9.0	15 887	1.3	161.92		**2KJ1511 - ■JT13 - ■■S1**		812
	10.5	13 646	1.5	139.08	★	**2KJ1511 - ■JT13 - ■■R1**		812
	12.2	11 790	1.7	120.16		**2KJ1511 - ■JT13 - ■■Q1**		812
	13.8	10 407	1.9	106.07		**2KJ1511 - ■JT13 - ■■P1**		812
	15.3	9 368	2.1	95.48	★	**2KJ1511 - ■JT13 - ■■N1**		812
	K.168-LA160ZLP4E							
	8.7	16 435	0.82	167.5		**2KJ1510 - ■JT13 - ■■A2**		563
	9.7	14 753	0.92	150.36	★	**2KJ1510 - ■JT13 - ■■X1**		563
	10.6	13 540	1.0	138		**2KJ1510 - ■JT13 - ■■W1**		563
	12.3	11 685	1.2	119.09		**2KJ1510 - ■JT13 - ■■V1**		563
	14.0	10 222	1.3	104.18		**2KJ1510 - ■JT13 - ■■U1**		563
	16.1	8 889	1.5	90.6		**2KJ1510 - ■JT13 - ■■T1**		563
	18.4	7 799	1.7	79.49	★	**2KJ1510 - ■JT13 - ■■S1**		563
	22	6 595	2.0	67.22	★	**2KJ1510 - ■JT13 - ■■R1**		563
	24	5 984	2.3	60.99		**2KJ1510 - ■JT13 - ■■Q1**		563
	K.148-LA160ZLP4E							
	14.4	9 962	0.80	101.53	★	**2KJ1508 - ■JT13 - ■■A2**		378
	14.9	9 598	0.83	97.82		**2KJ1508 - ■JT13 - ■■X1**		378
	17.3	8 302	0.96	84.61		**2KJ1508 - ■JT13 - ■■W1**		378
	19.8	7 241	1.1	73.8	★	**2KJ1508 - ■JT13 - ■■V1**		378
	23	6 197	1.3	63.16	★	**2KJ1508 - ■JT13 - ■■U1**		378
	26	5 550	1.4	56.57		**2KJ1508 - ■JT13 - ■■T1**		378
	30	4 701	1.7	47.91	★	**2KJ1508 - ■JT13 - ■■R1**		378
	35	4 060	2.0	41.38		**2KJ1508 - ■JT13 - ■■Q1**		378
	47	3 051	2.6	31.1	★	**2KJ1508 - ■JT13 - ■■N1**		378
	48	3 016	2.7	30.74		**2KJ1508 - ■JT13 - ■■M1**		378
	K.128-LA160ZLP4E							
	27	5 235	0.9	53.36	★	**2KJ1507 - ■JT13 - ■■S1**		278
	30	4 723	1.0	48.14		**2KJ1507 - ■JT13 - ■■R1**		278
	35	4 060	1.2	41.38	★	**2KJ1507 - ■JT13 - ■■Q1**		278
	37	3 845	1.2	39.19	★	**2KJ1507 - ■JT13 - ■■P1**		278

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
15	**K.128-LA160ZLP4E**							
	41	3 524	1.3	35.92		**2KJ1507 - ■JT13 - ■■N1**		278
	48	3 003	1.6	30.61		**2KJ1507 - ■JT13 - ■■M1**		278
	54	2 651	1.8	27.02	★	**2KJ1507 - ■JT13 - ■■L1**		278
	64	2 256	2.1	22.99		**2KJ1507 - ■JT13 - ■■K1**		278
	73	1 954	2.4	19.92	★	**2KJ1507 - ■JT13 - ■■J1**		278
	87	1 644	2.9	16.76	★	**2KJ1507 - ■JT13 - ■■H1**		278
	96	1 485	3.1	15.13		**2KJ1507 - ■JT13 - ■■G1**		278
	112	1 276	3.5	13	★	**2KJ1507 - ■JT13 - ■■F1**		278
	116	1 232	2.6	12.56		**2KJ1507 - ■JT13 - ■■E1**		278
	134	1 068	2.9	10.88	★	**2KJ1507 - ■JT13 - ■■D1**		278
	159	899	3.3	9.16	★	**2KJ1507 - ■JT13 - ■■C1**		278
	177	810	3.5	8.26		**2KJ1507 - ■JT13 - ■■B1**		278
	206	697	3.9	7.1	★	**2KJ1507 - ■JT13 - ■■A1**		278
	K.108-LA160ZLP4E							
	43	3 323	0.90	33.87	★	**2KJ1506 - ■JT13 - ■■M1**		207
	47	3 066	0.98	31.25		**2KJ1506 - ■JT13 - ■■L1**		207
	55	2 598	1.1	26.48		**2KJ1506 - ■JT13 - ■■K1**		207
	63	2 265	1.2	23.08	★	**2KJ1506 - ■JT13 - ■■J1**		207
	74	1 926	1.4	19.63		**2KJ1506 - ■JT13 - ■■G1**		207
	87	1 643	1.5	16.75	★	**2KJ1506 - ■JT13 - ■■F1**		207
	106	1 348	1.8	13.74	★	**2KJ1506 - ■JT13 - ■■E1**		207
	113	1 266	1.5	12.9	★	**2KJ1506 - ■JT13 - ■■D1**		207
	133	1 076	1.7	10.97		**2KJ1506 - ■JT13 - ■■C1**		207
	156	918	1.9	9.36	★	**2KJ1506 - ■JT13 - ■■B1**		207
	190	754	2.2	7.68	★	**2KJ1506 - ■JT13 - ■■A1**		207
	K.88-LA160ZLP4E							
	74	1 938	0.81	19.75		**2KJ1505 - ■JT13 - ■■J1**		153
	87	1 653	0.91	16.85	★	**2KJ1505 - ■JT13 - ■■H1**		153
	104	1 378	1.0	14.04		**2KJ1505 - ■JT13 - ■■G1**		153
	125	1 142	1.2	11.64	★	**2KJ1505 - ■JT13 - ■■F1**		153
	155	923	0.83	9.41		**2KJ1505 - ■JT13 - ■■D1**		153
	182	788	0.92	8.03	★	**2KJ1505 - ■JT13 - ■■C1**		153
	218	656	1.0	6.69		**2KJ1505 - ■JT13 - ■■B1**		153
	264	544	1.2	5.54	★	**2KJ1505 - ■JT13 - ■■A1**		153
18.5	**K.188-LG180ZMB4E**							
	7.7	22 997	0.87	191.34		**2KJ1511 - ■KL13 - ■■U1**		867
	8.5	20 766	0.96	172.78		**2KJ1511 - ■KL13 - ■■T1**		867
	9.1	19 461	1.0	161.92		**2KJ1511 - ■KL13 - ■■S1**		867
	10.6	16 716	1.2	139.08	★	**2KJ1511 - ■KL13 - ■■R1**		867
	12.2	14 442	1.4	120.16		**2KJ1511 - ■KL13 - ■■Q1**		867
	13.9	12 748	1.6	106.07		**2KJ1511 - ■KL13 - ■■P1**		867
	15.4	11 475	1.7	95.48	★	**2KJ1511 - ■KL13 - ■■N1**		867
	18.6	9 522	2.1	79.23	★	**2KJ1511 - ■KL13 - ■■M1**		867

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
18.5	**K.188-LG180ZMB4E**							
	20	8 682	2.3	72.24		**2KJ1511 - ■KL13 - ■■L1**		867
	K.168-LG180ZMB4E							
	10.7	16 586	0.81	138		**2KJ1510 - ■KL13 - ■■W1**		618
	12.3	14 313	0.94	119.09		**2KJ1510 - ■KL13 - ■■V1**		618
	14.1	12 521	1.1	104.18		**2KJ1510 - ■KL13 - ■■U1**		618
	16.2	10 889	1.2	90.6		**2KJ1510 - ■KL13 - ■■T1**		618
	18.5	9 554	1.4	79.49	★	**2KJ1510 - ■KL13 - ■■S1**		618
	22	8 079	1.7	67.22	★	**2KJ1510 - ■KL13 - ■■R1**		618
	24	7 330	1.8	60.99		**2KJ1510 - ■KL13 - ■■Q1**		618
	28	6 392	2.1	53.18	★	**2KJ1510 - ■KL13 - ■■P1**		618
	33	5 426	2.5	45.15		**2KJ1510 - ■KL13 - ■■N1**		618
	K.148-LG180ZMB4E							
	19.9	8 870	0.90	73.8	★	**2KJ1508 - ■KL13 - ■■V1**		433
	23	7 591	1.1	63.16	★	**2KJ1508 - ■KL13 - ■■U1**		433
	26	6 799	1.2	56.57		**2KJ1508 - ■KL13 - ■■T1**		433
	31	5 758	1.4	47.91	★	**2KJ1508 - ■KL13 - ■■R1**		433
	36	4 973	1.6	41.38		**2KJ1508 - ■KL13 - ■■Q1**		433
	47	3 738	2.1	31.1	★	**2KJ1508 - ■KL13 - ■■N1**		433
	48	3 695	2.2	30.74		**2KJ1508 - ■KL13 - ■■M1**		433
	55	3 195	2.5	26.58		**2KJ1508 - ■KL13 - ■■L1**		433
	63	2 787	2.9	23.19	★	**2KJ1508 - ■KL13 - ■■K1**		433
	167	1 056	3.8	8.79		**2KJ1508 - ■KL13 - ■■D1**		433
	198	894	4.2	7.44	★	**2KJ1508 - ■KL13 - ■■C1**		433
	K.128-LG180ZMB4E							
	30	5 786	0.81	48.14		**2KJ1507 - ■KL13 - ■■R1**		333
	36	4 973	0.95	41.38	★	**2KJ1507 - ■KL13 - ■■Q1**		333
	38	4 710	1.0	39.19	★	**2KJ1507 - ■KL13 - ■■P1**		333
	41	4 317	1.1	35.92		**2KJ1507 - ■KL13 - ■■N1**		333
	48	3 679	1.3	30.61		**2KJ1507 - ■KL13 - ■■M1**		333
	54	3 247	1.4	27.02	★	**2KJ1507 - ■KL13 - ■■L1**		333
	64	2 763	1.7	22.99		**2KJ1507 - ■KL13 - ■■K1**		333
	74	2 394	2.0	19.92	★	**2KJ1507 - ■KL13 - ■■J1**		333
	88	2 014	2.3	16.76	★	**2KJ1507 - ■KL13 - ■■H1**		333
	97	1 818	2.5	15.13		**2KJ1507 - ■KL13 - ■■G1**		333
	113	1 562	2.8	13	★	**2KJ1507 - ■KL13 - ■■F1**		333
	117	1 510	2.1	12.56		**2KJ1507 - ■KL13 - ■■E1**		333
	135	1 308	2.4	10.88	★	**2KJ1507 - ■KL13 - ■■D1**		333
	160	1 101	2.7	9.16	★	**2KJ1507 - ■KL13 - ■■C1**		333
	178	993	2.9	8.26		**2KJ1507 - ■KL13 - ■■B1**		333
	207	853	3.2	7.1	★	**2KJ1507 - ■KL13 - ■■A1**		333
	K.108-LG180ZMB4E							
	47	3 756	0.80	31.25		**2KJ1506 - ■KL13 - ■■L1**		262
	56	3 183	0.91	26.48		**2KJ1506 - ■KL13 - ■■K1**		262

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
18.5	**K.108-LG180ZMB4E**							
	64	2 774	1.0	23.08	★	**2KJ1506 - ■KL13 - ■■J1**		262
	75	2 359	1.1	19.63		**2KJ1506 - ■KL13 - ■■G1**		262
	88	2 013	1.2	16.75	★	**2KJ1506 - ■KL13 - ■■F1**		262
	107	1 651	1.4	13.74	★	**2KJ1506 - ■KL13 - ■■E1**		262
	114	1 550	1.2	12.9	★	**2KJ1506 - ■KL13 - ■■D1**		262
	134	1 318	1.4	10.97		**2KJ1506 - ■KL13 - ■■C1**		262
	157	1 125	1.6	9.36	★	**2KJ1506 - ■KL13 - ■■B1**		262
	191	923	1.8	7.68	★	**2KJ1506 - ■KL13 - ■■A1**		262
22	**K.188-LG180ZLB4E**							
	8.5	24 779	0.81	172.78		**2KJ1511 - ■KP13 - ■■T1**		882
	9.0	23 221	0.86	161.92		**2KJ1511 - ■KP13 - ■■S1**		882
	10.5	19 946	1.0	139.08	★	**2KJ1511 - ■KP13 - ■■R1**		882
	12.2	17 233	1.2	120.16		**2KJ1511 - ■KP13 - ■■Q1**		882
	13.8	15 212	1.3	106.07		**2KJ1511 - ■KP13 - ■■P1**		882
	15.3	13 693	1.5	95.48	★	**2KJ1511 - ■KP13 - ■■N1**		882
	18.5	11 363	1.8	79.23	★	**2KJ1511 - ■KP13 - ■■M1**		882
	20	10 360	1.9	72.24		**2KJ1511 - ■KP13 - ■■L1**		882
	23	9 090	2.2	63.38	★	**2KJ1511 - ■KP13 - ■■K1**		882
	K.168-LG180ZLB4E							
	14.1	14 941	0.9	104.18		**2KJ1510 - ■KP13 - ■■U1**		633
	16.2	12 993	1.0	90.6		**2KJ1510 - ■KP13 - ■■T1**		633
	18.4	11 400	1.2	79.49	★	**2KJ1510 - ■KP13 - ■■S1**		633
	22	9 640	1.4	67.22	★	**2KJ1510 - ■KP13 - ■■R1**		633
	24	8 747	1.5	60.99		**2KJ1510 - ■KP13 - ■■Q1**		633
	28	7 627	1.8	53.18	★	**2KJ1510 - ■KP13 - ■■P1**		633
	32	6 475	2.1	45.15		**2KJ1510 - ■KP13 - ■■N1**		633
	42	4 955	2.7	34.55	★	**2KJ1510 - ■KP13 - ■■M1**		633
	K.148-LG180ZLB4E							
	23	9 058	0.88	63.16	★	**2KJ1508 - ■KP13 - ■■U1**		448
	26	8 113	0.99	56.57		**2KJ1508 - ■KP13 - ■■T1**		448
	31	6 871	1.2	47.91	★	**2KJ1508 - ■KP13 - ■■R1**		448
	35	5 934	1.3	41.38		**2KJ1508 - ■KP13 - ■■Q1**		448
	47	4 460	1.8	31.1	★	**2KJ1508 - ■KP13 - ■■N1**		448
	48	4 409	1.8	30.74		**2KJ1508 - ■KP13 - ■■M1**		448
	55	3 812	2.1	26.58		**2KJ1508 - ■KP13 - ■■L1**		448
	63	3 326	2.4	23.19	★	**2KJ1508 - ■KP13 - ■■K1**		448
	74	2 845	2.8	19.84	★	**2KJ1508 - ■KP13 - ■■J1**		448
	82	2 548	3.1	17.77		**2KJ1508 - ■KP13 - ■■H1**		448
	97	2 158	3.5	15.05	★	**2KJ1508 - ■KP13 - ■■G1**		448
	167	1 261	3.2	8.79		**2KJ1508 - ■KP13 - ■■D1**		448
	197	1 067	3.5	7.44	★	**2KJ1508 - ■KP13 - ■■C1**		448
	228	922	3.9	6.43		**2KJ1508 - ■KP13 - ■■B1**		448
	303	693	4.8	4.83	★	**2KJ1508 - ■KP13 - ■■A1**		448

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
22	**K.128-LG180ZLB4E**							
	37	5 620	0.84	39.19	★	**2KJ1507 - ■KP13 - ■■P1**		348
	41	5 151	0.91	35.92		**2KJ1507 - ■KP13 - ■■N1**		348
	48	4 390	1.1	30.61		**2KJ1507 - ■KP13 - ■■M1**		348
	54	3 875	1.2	27.02	★	**2KJ1507 - ■KP13 - ■■L1**		348
	64	3 297	1.4	22.99		**2KJ1507 - ■KP13 - ■■K1**		348
	74	2 857	1.6	19.92	★	**2KJ1507 - ■KP13 - ■■J1**		348
	87	2 404	2.0	16.76	★	**2KJ1507 - ■KP13 - ■■H1**		348
	97	2 170	2.1	15.13		**2KJ1507 - ■KP13 - ■■G1**		348
	113	1 864	2.4	13	★	**2KJ1507 - ■KP13 - ■■F1**		348
	117	1 801	1.8	12.56		**2KJ1507 - ■KP13 - ■■E1**		348
	135	1 560	2.0	10.88	★	**2KJ1507 - ■KP13 - ■■D1**		348
	160	1 314	2.2	9.16	★	**2KJ1507 - ■KP13 - ■■C1**		348
	177	1 185	2.4	8.26		**2KJ1507 - ■KP13 - ■■B1**		348
	206	1 018	2.7	7.1	★	**2KJ1507 - ■KP13 - ■■A1**		348
	K.108-LG180ZLB4E							
	64	3 310	0.84	23.08	★	**2KJ1506 - ■KP13 - ■■J1**		277
	75	2 815	0.93	19.63		**2KJ1506 - ■KP13 - ■■G1**		277
	88	2 402	1.0	16.75	★	**2KJ1506 - ■KP13 - ■■F1**		277
	107	1 970	1.2	13.74	★	**2KJ1506 - ■KP13 - ■■E1**		277
	114	1 850	1.0	12.9	★	**2KJ1506 - ■KP13 - ■■D1**		277
	134	1 573	1.2	10.97		**2KJ1506 - ■KP13 - ■■C1**		277
	157	1 342	1.3	9.36	★	**2KJ1506 - ■KP13 - ■■B1**		277
	191	1 101	1.5	7.68	★	**2KJ1506 - ■KP13 - ■■A1**		277
30	**K.188-LG200LB4E**							
	12.3	23 340	0.86	120.16		**2KJ1511 - ■LM13 - ■■Q1**		932
	13.9	20 603	0.97	106.07		**2KJ1511 - ■LM13 - ■■P1**		932
	15.4	18 546	1.1	95.48	★	**2KJ1511 - ■LM13 - ■■N1**		932
	18.6	15 389	1.3	79.23	★	**2KJ1511 - ■LM13 - ■■M1**		932
	20	14 032	1.4	72.24		**2KJ1511 - ■LM13 - ■■L1**		932
	23	12 311	1.6	63.38	★	**2KJ1511 - ■LM13 - ■■K1**		932
	27	10 580	1.9	54.47		**2KJ1511 - ■LM13 - ■■J1**		932
	35	8 241	2.4	42.43	★	**2KJ1511 - ■LM13 - ■■H1**		932
	K.168-LG200LB4E							
	18.6	15 440	0.87	79.49	★	**2KJ1510 - ■LM13 - ■■S1**		683
	22	13 057	1.0	67.22	★	**2KJ1510 - ■LM13 - ■■R1**		683
	24	11 847	1.1	60.99		**2KJ1510 - ■LM13 - ■■Q1**		683
	28	10 330	1.3	53.18	★	**2KJ1510 - ■LM13 - ■■P1**		683
	33	8 770	1.5	45.15		**2KJ1510 - ■LM13 - ■■N1**		683
	43	6 711	2.0	34.55	★	**2KJ1510 - ■LM13 - ■■M1**		683
	45	6 319	2.1	32.53		**2KJ1510 - ■LM13 - ■■L1**		683
	52	5 544	2.4	28.54	★	**2KJ1510 - ■LM13 - ■■K1**		683
	61	4 689	2.9	24.14	★	**2KJ1510 - ■LM13 - ■■J1**		683
	67	4 254	3.1	21.9		**2KJ1510 - ■LM13 - ■■H1**		683

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
30	**K.168-LG200LB4E**							
	126	2 267	3.1	11.67		**2KJ1510 - ■LM13 - ■■D1**		683
	145	1 975	3.4	10.17	★	**2KJ1510 - ■LM13 - ■■C1**		683
	171	1 678	3.8	8.64		**2KJ1510 - ■LM13 - ■■B1**		683
	223	1 284	4.6	6.61	★	**2KJ1510 - ■LM13 - ■■A1**		683
	K.148-LG200LB4E							
	31	9 306	0.86	47.91	★	**2KJ1508 - ■LM13 - ■■R1**		498
	36	8 038	1.0	41.38		**2KJ1508 - ■LM13 - ■■Q1**		498
	47	6 041	1.3	31.1	★	**2KJ1508 - ■LM13 - ■■N1**		498
	48	5 971	1.3	30.74		**2KJ1508 - ■LM13 - ■■M1**		498
	56	5 163	1.5	26.58		**2KJ1508 - ■LM13 - ■■L1**		498
	64	4 504	1.8	23.19	★	**2KJ1508 - ■LM13 - ■■K1**		498
	74	3 854	2.1	19.84	★	**2KJ1508 - ■LM13 - ■■J1**		498
	83	3 452	2.3	17.77		**2KJ1508 - ■LM13 - ■■H1**		498
	98	2 923	2.6	15.05	★	**2KJ1508 - ■LM13 - ■■G1**		498
	113	2 525	2.9	13		**2KJ1508 - ■LM13 - ■■F1**		498
	151	1 898	3.5	9.77	★	**2KJ1508 - ■LM13 - ■■E1**		498
	168	1 707	2.3	8.79		**2KJ1508 - ■LM13 - ■■D1**		498
	198	1 445	2.6	7.44	★	**2KJ1508 - ■LM13 - ■■C1**		498
	229	1 249	2.9	6.43		**2KJ1508 - ■LM13 - ■■B1**		498
	305	938	3.5	4.83	★	**2KJ1508 - ■LM13 - ■■A1**		498
	K.128-LG200LB4E							
	55	5 248	0.9	27.02	★	**2KJ1507 - ■LM13 - ■■L1**		398
	64	4 466	1.1	22.99		**2KJ1507 - ■LM13 - ■■K1**		398
	74	3 869	1.2	19.92	★	**2KJ1507 - ■LM13 - ■■J1**		398
	88	3 255	1.4	16.76	★	**2KJ1507 - ■LM13 - ■■H1**		398
	98	2 939	1.6	15.13		**2KJ1507 - ■LM13 - ■■G1**		398
	113	2 525	1.8	13	★	**2KJ1507 - ■LM13 - ■■F1**		398
	117	2 440	1.3	12.56		**2KJ1507 - ■LM13 - ■■E1**		398
	136	2 113	1.5	10.88	★	**2KJ1507 - ■LM13 - ■■D1**		398
	161	1 779	1.6	9.16	★	**2KJ1507 - ■LM13 - ■■C1**		398
	179	1 604	1.8	8.26		**2KJ1507 - ■LM13 - ■■B1**		398
	208	1 379	2.0	7.1	★	**2KJ1507 - ■LM13 - ■■A1**		398
37	**K.188-LG225S4E**							
	15.4	22 951	0.87	95.48	★	**2KJ1511 - ■ME13 - ■■N1**		1 012
	18.6	19 045	1.1	79.23	★	**2KJ1511 - ■ME13 - ■■M1**		1 012
	20	17 365	1.2	72.24		**2KJ1511 - ■ME13 - ■■L1**		1 012
	23	15 235	1.3	63.38	★	**2KJ1511 - ■ME13 - ■■K1**		1 012
	27	13 093	1.5	54.47		**2KJ1511 - ■ME13 - ■■J1**		1 012
	35	10 199	2.0	42.43	★	**2KJ1511 - ■ME13 - ■■H1**		1 012
	43	8 240	2.4	34.28	★	**2KJ1511 - ■ME13 - ■■G1**		1 012
	52	6 839	2.9	28.45	★	**2KJ1511 - ■ME13 - ■■F1**		1 012
	K.168-LG225S4E							
	22	16 158	0.84	67.22	★	**2KJ1510 - ■ME13 - ■■R1**		763

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
37	**K.168-LG225S4E**							
	24	14 660	0.92	60.99		**2KJ1510 - ■ME13 - ■■Q1**		763
	28	12 783	1.1	53.18	★	**2KJ1510 - ■ME13 - ■■P1**		763
	33	10 853	1.2	45.15		**2KJ1510 - ■ME13 - ■■N1**		763
	42	8 305	1.6	34.55	★	**2KJ1510 - ■ME13 - ■■M1**		763
	45	7 819	1.7	32.53		**2KJ1510 - ■ME13 - ■■L1**		763
	52	6 860	2.0	28.54	★	**2KJ1510 - ■ME13 - ■■K1**		763
	61	5 803	2.3	24.14	★	**2KJ1510 - ■ME13 - ■■J1**		763
	67	5 264	2.5	21.9		**2KJ1510 - ■ME13 - ■■H1**		763
	77	4 589	2.7	19.09	★	**2KJ1510 - ■ME13 - ■■G1**		763
	91	3 896	3.1	16.21		**2KJ1510 - ■ME13 - ■■F1**		763
	118	2 983	3.7	12.41	★	**2KJ1510 - ■ME13 - ■■E1**		763
	126	2 805	2.5	11.67		**2KJ1510 - ■ME13 - ■■D1**		763
	145	2 445	2.7	10.17	★	**2KJ1510 - ■ME13 - ■■C1**		763
	170	2 077	3.1	8.64		**2KJ1510 - ■ME13 - ■■B1**		763
	222	1 589	3.7	6.61	★	**2KJ1510 - ■ME13 - ■■A1**		763
	K.148-LG225S4E							
	36	9 947	0.8	41.38		**2KJ1508 - ■ME13 - ■■Q1**		578
	47	7 476	1.1	31.1	★	**2KJ1508 - ■ME13 - ■■N1**		578
	48	7 389	1.1	30.74		**2KJ1508 - ■ME13 - ■■M1**		578
	55	6 389	1.3	26.58		**2KJ1508 - ■ME13 - ■■L1**		578
	63	5 574	1.4	23.19	★	**2KJ1508 - ■ME13 - ■■K1**		578
	74	4 769	1.7	19.84	★	**2KJ1508 - ■ME13 - ■■J1**		578
	83	4 271	1.9	17.77		**2KJ1508 - ■ME13 - ■■H1**		578
	98	3 618	2.1	15.05	★	**2KJ1508 - ■ME13 - ■■G1**		578
	113	3 125	2.3	13		**2KJ1508 - ■ME13 - ■■F1**		578
	150	2 348	2.8	9.77	★	**2KJ1508 - ■ME13 - ■■E1**		578
	167	2 113	1.9	8.79		**2KJ1508 - ■ME13 - ■■D1**		578
	198	1 788	2.1	7.44	★	**2KJ1508 - ■ME13 - ■■C1**		578
	229	1 546	2.3	6.43		**2KJ1508 - ■ME13 - ■■B1**		578
	304	1 161	2.9	4.83	★	**2KJ1508 - ■ME13 - ■■A1**		578
	K.128-K4-LGI225S4E							
	64	5 526	0.85	22.99		**2KJ1507 - ■ME13 - ■■K1**		478
	74	4 788	0.98	19.92	★	**2KJ1507 - ■ME13 - ■■J1**		478
	88	4 029	1.2	16.76	★	**2KJ1507 - ■ME13 - ■■H1**		478
	97	3 637	1.3	15.13		**2KJ1507 - ■ME13 - ■■G1**		478
	113	3 125	1.4	13	★	**2KJ1507 - ■ME13 - ■■F1**		478
	117	3 019	1.1	12.56		**2KJ1507 - ■ME13 - ■■E1**		478
	135	2 615	1.2	10.88	★	**2KJ1507 - ■ME13 - ■■D1**		478
	160	2 202	1.3	9.16	★	**2KJ1507 - ■ME13 - ■■C1**		478
	178	1 985	1.4	8.26		**2KJ1507 - ■ME13 - ■■B1**		478
	207	1 707	1.6	7.1	★	**2KJ1507 - ■ME13 - ■■A1**		478

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
45	**K.188-LG225ZM4E**							
	18.6	23 084	0.87	79.23	★	**2KJ1511 - ■MU13 - ■■M1**		1 012
	20	21 048	0.95	72.24		**2KJ1511 - ■MU13 - ■■L1**		1 012
	23	18 466	1.1	63.38	★	**2KJ1511 - ■MU13 - ■■K1**		1 012
	27	15 870	1.3	54.47		**2KJ1511 - ■MU13 - ■■J1**		1 012
	35	12 362	1.6	42.43	★	**2KJ1511 - ■MU13 - ■■H1**		1 012
	43	9 988	2.0	34.28	★	**2KJ1511 - ■MU13 - ■■G1**		1 012
	52	8 289	2.4	28.45	★	**2KJ1511 - ■MU13 - ■■F1**		1 012
	57	7 558	2.6	25.94		**2KJ1511 - ■MU13 - ■■E1**		1 012
	65	6 631	3.0	22.76	★	**2KJ1511 - ■MU13 - ■■D1**		1 012
	K.168-LG225ZM4E							
	28	15 494	0.87	53.18	★	**2KJ1510 - ■MU13 - ■■P1**		763
	33	13 155	1.0	45.15		**2KJ1510 - ■MU13 - ■■N1**		763
	43	10 066	1.3	34.55	★	**2KJ1510 - ■MU13 - ■■M1**		763
	45	9 478	1.4	32.53		**2KJ1510 - ■MU13 - ■■L1**		763
	52	8 315	1.6	28.54	★	**2KJ1510 - ■MU13 - ■■K1**		763
	61	7 033	1.9	24.14	★	**2KJ1510 - ■MU13 - ■■J1**		763
	67	6 381	2.1	21.9		**2KJ1510 - ■MU13 - ■■H1**		763
	77	5 562	2.3	19.09	★	**2KJ1510 - ■MU13 - ■■G1**		763
	91	4 723	2.5	16.21		**2KJ1510 - ■MU13 - ■■F1**		763
	119	3 616	3.0	12.41	★	**2KJ1510 - ■MU13 - ■■E1**		763
	126	3 400	2.1	11.67		**2KJ1510 - ■MU13 - ■■D1**		763
	145	2 963	2.3	10.17	★	**2KJ1510 - ■MU13 - ■■C1**		763
	171	2 517	2.5	8.64		**2KJ1510 - ■MU13 - ■■B1**		763
	223	1 926	3.0	6.61	★	**2KJ1510 - ■MU13 - ■■A1**		763
	K.148-LG225ZM4E							
	47	9 061	0.88	31.1	★	**2KJ1508 - ■MU13 - ■■N1**		578
	48	8 956	0.89	30.74		**2KJ1508 - ■MU13 - ■■M1**		578
	56	7 744	1.0	26.58		**2KJ1508 - ■MU13 - ■■L1**		578
	64	6 757	1.2	23.19	★	**2KJ1508 - ■MU13 - ■■K1**		578
	74	5 781	1.4	19.84	★	**2KJ1508 - ■MU13 - ■■J1**		578
	83	5 177	1.5	17.77		**2KJ1508 - ■MU13 - ■■H1**		578
	98	4 385	1.7	15.05	★	**2KJ1508 - ■MU13 - ■■G1**		578
	113	3 788	1.9	13		**2KJ1508 - ■MU13 - ■■F1**		578
	151	2 847	2.3	9.77	★	**2KJ1508 - ■MU13 - ■■E1**		578
	168	2 561	1.6	8.79		**2KJ1508 - ■MU13 - ■■D1**		578
	198	2 168	1.7	7.44	★	**2KJ1508 - ■MU13 - ■■C1**		578
	229	1 873	1.9	6.43		**2KJ1508 - ■MU13 - ■■B1**		578
	305	1 407	2.4	4.83	★	**2KJ1508 - ■MU13 - ■■A1**		578
	K.128-K4-LGI225ZM4E							
	74	5 797	0.81	19.92	★	**2KJ1507 - ■MU13 - ■■J1**		478
	88	4 877	0.96	16.76	★	**2KJ1507 - ■MU13 - ■■H1**		478
	98	4 403	1.1	15.13		**2KJ1507 - ■MU13 - ■■G1**		478
	113	3 783	1.2	13	★	**2KJ1507 - ■MU13 - ■■F1**		478

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
45	**K.128-K4-LGI225ZM4E**							
	117	3 655	0.88	12.56		**2KJ1507 - ■MU13 - ■■E1**		478
	136	3 166	0.97	10.88	★	**2KJ1507 - ■MU13 - ■■D1**		478
	161	2 666	1.1	9.16	★	**2KJ1507 - ■MU13 - ■■C1**		478
	179	2 404	1.2	8.26		**2KJ1507 - ■MU13 - ■■B1**		478
	208	2 066	1.3	7.1	★	**2KJ1507 - ■MU13 - ■■A1**		478
55	**K.188-LG250ZM4E**							
	23	22 493	0.89	63.38	★	**2KJ1511 - ■NN13 - ■■K1**		1 102
	27	19 331	1.0	54.47		**2KJ1511 - ■NN13 - ■■J1**		1 102
	35	15 058	1.3	42.43	★	**2KJ1511 - ■NN13 - ■■H1**		1 102
	43	12 166	1.6	34.28	★	**2KJ1511 - ■NN13 - ■■G1**		1 102
	52	10 097	2.0	28.45	★	**2KJ1511 - ■NN13 - ■■F1**		1 102
	57	9 206	2.2	25.94		**2KJ1511 - ■NN13 - ■■E1**		1 102
	65	8 077	2.5	22.76	★	**2KJ1511 - ■NN13 - ■■D1**		1 102
	76	6 942	2.9	19.56		**2KJ1511 - ■NN13 - ■■C1**		1 102
	97	5 405	3.5	15.23	★	**2KJ1511 - ■NN13 - ■■B1**		1 102
	K.168-LG250ZM4E							
	33	16 024	0.84	45.15		**2KJ1510 - ■NN13 - ■■N1**		853
	43	12 262	1.1	34.55	★	**2KJ1510 - ■NN13 - ■■M1**		853
	46	11 545	1.2	32.53		**2KJ1510 - ■NN13 - ■■L1**		853
	52	10 129	1.3	28.54	★	**2KJ1510 - ■NN13 - ■■K1**		853
	61	8 567	1.6	24.14	★	**2KJ1510 - ■NN13 - ■■J1**		853
	68	7 772	1.7	21.9		**2KJ1510 - ■NN13 - ■■H1**		853
	78	6 775	1.9	19.09	★	**2KJ1510 - ■NN13 - ■■G1**		853
	91	5 753	2.1	16.21		**2KJ1510 - ■NN13 - ■■F1**		853
	119	4 404	2.5	12.41	★	**2KJ1510 - ■NN13 - ■■E1**		853
	127	4 142	1.7	11.67		**2KJ1510 - ■NN13 - ■■D1**		853
	146	3 609	1.9	10.17	★	**2KJ1510 - ■NN13 - ■■C1**		853
	171	3 066	2.1	8.64		**2KJ1510 - ■NN13 - ■■B1**		853
	224	2 346	2.5	6.61	★	**2KJ1510 - ■NN13 - ■■A1**		853
	K.148-K4-LGI250ZM4E							
	56	9 433	0.85	26.58		**2KJ1508 - ■NN13 - ■■L1**		668
	64	8 230	0.97	23.19	★	**2KJ1508 - ■NN13 - ■■K1**		668
	75	7 041	1.1	19.84	★	**2KJ1508 - ■NN13 - ■■J1**		668
	83	6 307	1.3	17.77		**2KJ1508 - ■NN13 - ■■H1**		668
	98	5 341	1.4	15.05	★	**2KJ1508 - ■NN13 - ■■G1**		668
	114	4 614	1.6	13		**2KJ1508 - ■NN13 - ■■F1**		668
	151	3 467	1.9	9.77	★	**2KJ1508 - ■NN13 - ■■E1**		668
	168	3 120	1.3	8.79		**2KJ1508 - ■NN13 - ■■D1**		668
	199	2 640	1.4	7.44	★	**2KJ1508 - ■NN13 - ■■C1**		668
	230	2 282	1.6	6.43		**2KJ1508 - ■NN13 - ■■B1**		668
	306	1 714	1.9	4.83	★	**2KJ1508 - ■NN13 - ■■A1**		668

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
75	**K.188-K4-LGI280S4E**							
	35	20 465	0.98	42.43	★	**2KJ1511 - ■PG13 - ■■H1**		1 227
	43	16 534	1.2	34.28	★	**2KJ1511 - ■PG13 - ■■G1**		1 227
	52	13 722	1.5	28.45	★	**2KJ1511 - ■PG13 - ■■F1**		1 227
	57	12 511	1.6	25.94		**2KJ1511 - ■PG13 - ■■E1**		1 227
	65	10 978	1.8	22.76	★	**2KJ1511 - ■PG13 - ■■D1**		1 227
	76	9 434	2.1	19.56		**2KJ1511 - ■PG13 - ■■C1**		1 227
	98	7 346	2.6	15.23	★	**2KJ1511 - ■PG13 - ■■B1**		1 227
	123	5 836	3.0	12.1	★	**2KJ1511 - ■PG13 - ■■A1**		1 227
	K.168-K4-LGI280S4E							
	43	16 664	0.81	34.55	★	**2KJ1510 - ■PG13 - ■■M1**		978
	46	15 690	0.86	32.53		**2KJ1510 - ■PG13 - ■■L1**		978
	52	13 766	0.98	28.54	★	**2KJ1510 - ■PG13 - ■■K1**		978
	62	11 643	1.2	24.14	★	**2KJ1510 - ■PG13 - ■■J1**		978
	68	10 563	1.2	21.9		**2KJ1510 - ■PG13 - ■■H1**		978
	78	9 208	1.4	19.09	★	**2KJ1510 - ■PG13 - ■■G1**		978
	92	7 818	1.5	16.21		**2KJ1510 - ■PG13 - ■■F1**		978
	120	5 986	1.8	12.41	★	**2KJ1510 - ■PG13 - ■■E1**		978
	127	5 629	1.2	11.67		**2KJ1510 - ■PG13 - ■■D1**		978
	146	4 905	1.4	10.17	★	**2KJ1510 - ■PG13 - ■■C1**		978
	172	4 167	1.5	8.64		**2KJ1510 - ■PG13 - ■■B1**		978
	225	3 188	1.8	6.61	★	**2KJ1510 - ■PG13 - ■■A1**		978
90	**K.188-K4-LGI280ZM4E**							
	35	24 558	0.81	42.43	★	**2KJ1511 - ■PW13 - ■■H1**		1 267
	43	19 841	1.0	34.28	★	**2KJ1511 - ■PW13 - ■■G1**		1 267
	52	16 467	1.2	28.45	★	**2KJ1511 - ■PW13 - ■■F1**		1 267
	57	15 014	1.3	25.94		**2KJ1511 - ■PW13 - ■■E1**		1 267
	65	13 173	1.5	22.76	★	**2KJ1511 - ■PW13 - ■■D1**		1 267
	76	11 321	1.8	19.56		**2KJ1511 - ■PW13 - ■■C1**		1 267
	98	8 815	2.2	15.23	★	**2KJ1511 - ■PW13 - ■■B1**		1 267
	123	7 003	2.5	12.1	★	**2KJ1511 - ■PW13 - ■■A1**		1 267
	K.168-K4-LGI280ZM4E							
	52	16 519	0.82	28.54	★	**2KJ1510 - ■PW13 - ■■K1**		1 018
	62	13 972	0.97	24.14	★	**2KJ1510 - ■PW13 - ■■J1**		1 018
	68	12 675	1.0	21.9		**2KJ1510 - ■PW13 - ■■H1**		1 018
	78	11 049	1.1	19.09	★	**2KJ1510 - ■PW13 - ■■G1**		1 018
	92	9 382	1.3	16.21		**2KJ1510 - ■PW13 - ■■F1**		1 018
	120	7 183	1.5	12.41	★	**2KJ1510 - ■PW13 - ■■E1**		1 018
	127	6 754	1.0	11.67		**2KJ1510 - ■PW13 - ■■D1**		1 018
	146	5 886	1.1	10.17	★	**2KJ1510 - ■PW13 - ■■C1**		1 018
	172	5 001	1.3	8.64		**2KJ1510 - ■PW13 - ■■B1**		1 018
	225	3 826	1.5	6.61	★	**2KJ1510 - ■PW13 - ■■A1**		1 018

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
110	**K.188-K2-LGI315S4E**							
	76	13 790	1.5	19.56		**2KJ1511 - ■QQ13 - ■■C1**		1 447
	98	10 738	1.8	15.23	★	**2KJ1511 - ■QQ13 - ■■B1**		1 447
	123	8 531	2.1	12.1	★	**2KJ1511 - ■QQ13 - ■■A1**		1 447
132	**K.188-K2-LGI315ZM4E**							
	76	16 604	1.2	19.56		**2KJ1511 - ■QS13 - ■■C1**		1 502
	98	12 929	1.5	15.23	★	**2KJ1511 - ■QS13 - ■■B1**		1 502
	123	10 272	1.7	12.1	★	**2KJ1511 - ■QS13 - ■■A1**		1 502
160	**K.188-K2-LGI315L4E**							
	76	20 126	0.99	19.56		**2KJ1511 - ■QU13 - ■■C1**		1 627
	98	15 671	1.2	15.23	★	**2KJ1511 - ■QU13 - ■■B1**		1 627
	123	12 450	1.4	12.1	★	**2KJ1511 - ■QU13 - ■■A1**		1 627
200	**K.188-K2-LGI315ZLB4E**							
	76	25 074	0.80	19.56		**2KJ1511 - ■QV13 - ■■C1**		1 742
	98	19 523	0.97	15.23	★	**2KJ1511 - ■QV13 - ■■B1**		1 742
	123	15 511	1.1	12.1	★	**2KJ1511 - ■QV13 - ■■A1**		1 742

★ Preferred transmission ratio

Shaft designs, see page 4/83 — **1, 2, 3, 5, 6 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 4/87 — **A, D, E, F, H or M**

*) For mounting type B3

Transmission ratios and maxiumum torques

Selection and ordering data

Gearbox size	Ratio code	Transmission ratio	Output speed	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No				3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	T_{2N} (f_B=1)	**Motor size**													
Nm			rpm	Nm	63	71	80	90	100	112	132	160	180	220	225	250	280	315
B.28	**D2**	57.53	24	130		•												
79 ... 130	**C2**	48.51 ★	29	130		•	•											
	B2	43.07	33	130		•	•											
	A2	37.76 ★	37	130		•	•	•										
	X1	33.79	41	130		•	•	•										
	W1	29.99 ★	47	130		•	•	•										
	V1	26.28	53	130		•	•	•										
	U1	23.11 ★	61	130		•	•	•										
	T1	20.87	67	130		•	•	•	•									
	S1	18.19 ★	77	130		•	•	•										
	R1	16.34	86	130		•	•	•										
	Q1	14.75 ★	95	130		•	•	•	•									
	P1	13.38	105	130		•	•	•	•									
	N1	12.17 ★	115	130		•	•	•	•									
	M1	10.76	130	130		•	•	•	•									
	L1	9.94 ★	141	128		•	•	•	•									
	K1	8.56	164	121		•	•	•	•									
	J1	7.78 ★	180	117		•	•	•	•									
	H1	7.49	187	90		•	•	•										
	G1	6.76 ★	207	90		•	•	•	•									
	F1	6.13	228	90		•	•	•	•									
	E1	5.58 ★	251	90		•	•	•	•									
	D1	4.94	284	90		•	•	•	•									
	C1	4.56 ★	307	87		•	•	•	•									
	B1	3.92	357	82		•	•	•	•									
	A1	3.57 ★	393	79		•	•	•	•									

★ Preferred transmission ratio

[1] Only possible with integrated motor.

In the case of gearboxes of size 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the unit is the decisive factor.

Selection and ordering data

Gearbox size	Ratio code	Transmis-sion ratio	Output speed	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)												
Max. gearbox torque Nm	Order No 15th and 16th position	i_{tot}	n_2 (50 Hz) rpm	T_{2N} (f_B=1) Nm	3	3	5	10	20	26	61	98	198	198	291	356	580	1290
					Motor size													
					63	71	80	90	100	112	132	160	180	220	225	250	280	315
B.38 203 … 250	U2	65.69	22	200		•												
	T2	57.04 ★	25	250		•	•											
	S2	50.72	29	250		•	•											
	R2	44.00 ★	33	250		•	•	•										
	Q2	41.11	35	250		•	•	•										
	P2	36.16 ★	40	250		•	•	•										
	N2	31.67	46	250		•	•	•	•									
	M2	28.01 ★	52	250		•	•	•	•									
	L2	25.38	57	250		•	•	•	•									
	K2	22.41 ★	65	250		•	•	•	•									
	J2	20.22	72	245		•	•	•	•									
	H2	18.33 ★	79	237		•	•	•	•									
	G2	16.70	87	230		•	•	•	•									
	F2	15.28 ★	95	225		•	•	•	•									
	E2	13.66	106	217		•	•	•	•									
	C2	12.50 ★	116	220		•	•	•	•									
	A2	11.05 ★	131	223		•	•	•	•									
	X1	10.02	145	221		•	•	•	•									
	U1	8.84 ★	164	236		•	•	•	•									
	S1	7.98	182	236		•	•	•	•									
	R1	7.24 ★	200	236		•	•	•	•									
	P1	6.59	220	236		•	•	•	•									
	M1	6.03 ★	240	235		•	•	•	•									
	K1	5.39	269	211		•	•	•	•									
	H1	4.95 ★	293	221		•	•	•	•									
	F1	4.46	325	213		•	•	•	•									
	C1	3.84 ★	378	203		•	•	•	•									

★ Preferred transmission ratio

[1] Only possible with integrated motor.

In the case of gearboxes of size 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the unit is the decisive factor.

Transmission ratios and maxiumum torques

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmission ratio		Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)												
Max. gearbox torque							3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}		n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm				rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.38-D.28 250	**M1**	13 129		0.11	–	250		•												
	L1	11 327	★	0.12	–	250		•	•											
	K1	9 731		0.14	–	250		•	•											
	J1	8 959	★	0.16	–	250		•	•	•										
	H1	8 144		0.17	–	250		•	•	•										
	G1	7 209	★	0.19	–	250		•	•	•										
	F1	6 038		0.23	–	250		•	•	•										
	E1	5 148	★	0.27	–	250		•	•	•										
	D1	4 376	★	0.32	–	250		•	•	•										
	C1	3 803		0.37	–	250		•	•	•										
	B1	3 310	★	0.42	–	250		•	•	•										
	A1	2 986		0.47	–	250		•	•	•										
K.38-Z.28 250	**C2**	2 797		0.50	–	250		•												
	B2	2 359	★	0.59	–	250		•	•											
	A2	2 094		0.67	–	250		•	•											
	X1	1 836		0.76	–	250		•	•	•										
	W1	1 643	★	0.85	–	250		•	•	•										
	V1	1 458		0.96	–	250		•	•	•										
	U1	1 278	★	1.10	–	250		•	•	•										
	T1	1 124		1.30	–	250		•	•	•										
	S1	1 015	★	1.40	–	250		•	•	•	•									
	R1	884		1.60	–	250		•	•	•										
	Q1	794	★	1.80	–	250		•	•	•										
	P1	717		1.90	–	250		•	•	•	•									
	N1	650	★	2.10	–	250		•	•	•	•									
	M1	592		2.40	–	250		•	•	•	•									
	L1	523	★	2.70	–	250		•	•	•	•									
	K1	483		2.90	–	250		•	•	•	•									
	J1	416		3.40	–	250		•	•	•	•									
	H1	378		3.70	–	250		•	•	•	•									
	G1	344		4.10	–	250		•	•	•	•									
	F1	312		4.50	–	250		•	•	•	•									
	E1	284		4.90	–	250		•	•	•	•									
	D1	251		5.60	–	250		•	•	•	•									
	C1	231		6.10	–	250		•	•	•	•									
	B1	199		7.00	–	250		•	•	•	•									
	A1	181		7.70	–	250		•	•	•	•									

★ Preferred transmission ratio

[1] Only possible with integrated motor.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque						3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.38	**L2**	179.13 ★	8.1	15	250	•	•	•											
148 ... 250	**K2**	159.04	9.1	15	250	•	•	•											
	J2	139.43 ★	10.4	15	250	•	•	•	•										
	H2	124.78	11.6	15	250	•	•	•	•										
	G2	110.75 ★	13.1	15	250	•	•	•	•										
	F2	97.05	14.9	15	250	•	•	•	•										
	E2	85.33 ★	17.0	15	250	•	•	•	•										
	D2	77.09	18.8	15	250	•	•	•	•										
	C2	67.18 ★	22.0	15	250	•	•	•	•										
	B2	60.33	24.0	15	250	•	•	•	•										
	A2	54.47 ★	27.0	15	250	•	•	•	•										
	X1	49.38	29.0	15	250	•	•	•	•										
	W1	44.94 ★	32.0	15	250	•	•	•	•										
	V1	39.73	36.0	15	250	•	•	•	•										
	U1	36.69 ★	40.0	15	250	•	•	•	•										
	T1	31.59	46.0	16	250	•	•	•	•										
	S1	28.72 ★	50.0	16	250	•	•	•	•										
	R1	26.90 ★	54.0	17	216	•	•	•	•										
	Q1	24.16	60.0	17	209	•	•	•	•										
	P1	21.81 ★	66.0	17	203	•	•	•	•										
	N1	19.78	73.0	17	197	•	•	•	•										
	M1	17.99 ★	81.0	17	191	•	•	•	•										
	L1	15.91	91.0	18	184	•	•	•	•										
	K1	14.69 ★	99.0	18	180	•	•	•	•	•	• [1]								
	J1	12.65	115.0	18	172	•	•	•	•	•	• [1]								
	H1	11.50 ★	126.0	18	167	•	•	•	•	•	• [1]								
	G1	10.72 ★	135.0	24	159	•	•	•	•	•	• [1]								
	F1	9.72	149.0	24	159	•	•	•	•	•	• [1]								
	E1	8.85 ★	164.0	25	159	•	•	•	•	•	• [1]								
	D1	7.82	185.0	25	159	•	•	•	•	•	• [1]								
	C1	7.22 ★	201.0	25	159	•	•	•	•	•	• [1]								
	B1	6.22	233.0	25	152	•	•	•	•	•	• [1]								
	A1	5.65 ★	257.0	25	148	•	•	•	•	•	• [1]								

★ Preferred transmission ratio

[1] Only possible with integrated motor.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

4

Transmission ratios and maxiumum torques

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio		Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	15th and 16th position	i_{tot}		n_2 (50 Hz)	φ	T_{2N} (f_B=1)	3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm				rpm	arcmin	Nm	Motor size 63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.48-D.28 450	**M1**	13 135		0.11	–	450		•												
	L1	11 332	★	0.12	–	450		•	•											
	K1	9 735		0.14	–	450		•	•											
	J1	8 963	★	0.16	–	450		•	•	•										
	H1	8 148		0.17	–	450		•	•	•										
	G1	7 212	★	0.19	–	450		•	•	•										
	F1	6 041		0.23	–	450		•	•	•										
	E1	5 151	★	0.27	–	450		•	•	•										
	D1	4 378	★	0.32	–	450		•	•	•										
	C1	3 805		0.37	–	450		•	•	•										
	B1	3 312	★	0.42	–	450		•	•	•										
	A1	2 987		0.47	–	450		•	•	•										
K.48-Z.28 450	**C2**	2 798		0.50	–	450		•												
	B2	2 360	★	0.59	–	450		•	•											
	A2	2 095		0.67	–	450		•	•											
	X1	1 837	★	0.76	–	450		•	•	•										
	W1	1 644		0.85	–	450		•	•	•										
	V1	1 459	★	0.96	–	450		•	•	•										
	U1	1 279		1.10	–	450		•	•	•										
	T1	1 124	★	1.30	–	450		•	•	•										
	S1	1 015		1.40	–	450		•	•	•	•									
	R1	885	★	1.60	–	450		•	•	•										
	Q1	795		1.80	–	450		•	•	•										
	P1	717	★	2.00	–	450		•	•	•	•									
	N1	651		2.20	–	450		•	•	•	•									
	M1	592	★	2.40	–	450		•	•	•	•									
	L1	523		2.70	–	450		•	•	•	•									
	K1	483	★	2.90	–	450		•	•	•	•									
	J1	416		3.40	–	450		•	•	•	•									
	H1	378	★	3.70	–	450		•	•	•	•									
	G1	344	★	4.10	–	450		•	•	•	•									
	F1	312		4.50	–	450		•	•	•	•									
	E1	284	★	4.90	–	450		•	•	•	•									
	D1	251		5.60	–	450		•	•	•	•									
	C1	232	★	6.10	–	450		•	•	•	•									
	B1	199		7.00	–	450		•	•	•	•									
	A1	181	★	7.70	–	450		•	•	•	•									

★ Preferred transmission ratio
[1] Only possible with integrated motor.
[2] Twisting angle applies to reduced-backlash gearboxes.
In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.
Calculation of maximum output torque T_{2max} for gearboxes with input units:
$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$
If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	3	3	5	10	20	26	61	98	198	198	291	356	580	1290
						Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.48	**J2**	169.53 ★	8.6	14	450	•	•	•											
256 ... 450	**H2**	150.76	9.6	14	450	•	•	•											
	G2	130.78 ★	11.1	14	450	•	•	•	•										
	F2	122.19	11.9	14	450	•	•	•	•										
	E2	107.47 ★	13.5	14	450	•	•	•	•										
	D2	94.12	15.4	14	450	•	•	•	•	•									
	C2	83.25 ★	17.4	14	450	•	•	•	•	•	• [1]								
	B2	75.45	19.2	14	450	•	•	•	•	•	• [1]								
	A2	66.60 ★	22.0	14	450	•	•	•	•	•	• [1]								
	X1	60.08	24.0	14	450	•	•	•	•	•	• [1]								
	W1	54.49 ★	27.0	14	450	•	•	•	•	•	• [1]								
	V1	49.65	29.0	14	450	•	•	•	•	•	• [1]								
	U1	45.41 ★	32.0	14	450	•	•	•	•	•	• [1]								
	T1	40.60	36.0	14	450	•	•	•	•	•	• [1]								
	S1	37.28 ★	39.0	14	450	•	•	•	•	•	• [1]								
	R1	33.60	43.0	14	450	•	•	•	•	•	• [1]								
	Q1	28.90 ★	50.0	14	450	•	•	•	•	•	• [1]								
	P1	27.55 ★	53.0	16	450	•	•	•	•	•	• [1]								
	N1	24.85	58.0	16	450	•	•	•	•	•	• [1]								
	M1	22.54 ★	64.0	16	450	•	•	•	•	•	• [1]								
	L1	20.54	71.0	16	450	•	•	•	•	•	• [1]								
	K1	18.78 ★	77.0	17	450	•	•	•	•	•	• [1]								
	J1	16.79	86.0	17	450	•	•	•	•	•	• [1]								
	H1	15.42 ★	94.0	17	450	•	•	•	•	•	• [1]								
	G1	13.90	104.0	17	440	•	•	•	•	•	• [1]								
	F1	11.95 ★	121.0	17	420	•	•	•	•	•	• [1]								
	E1	11.35 ★	128.0	23	291	•	•	•	•	•	• [1]								
	D1	10.15	143.0	24	284	•	•	•	•	•	• [1]								
	C1	9.32 ★	156.0	24	277	•	•	•	•	•	• [1]								
	B1	8.40	173.0	24	268	•	•	•	•	•	• [1]								
	A1	7.22 ★	201.0	24	256	•	•	•	•	•	• [1]								

★ Preferred transmission ratio

[1] Only possible with integrated motor.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maxiumum torques

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio		Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)												
Max. gearbox torque							3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}		n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm				rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.68-D.28 820	**M1**	20 103		0.07	–	820		•												
	L1	17 343	★	0.08	–	820		•	•											
	K1	14 900		0.09	–	820		•	•											
	J1	13 717	★	0.10	–	820		•	•	•										
	H1	12 470		0.11	–	820		•	•	•										
	G1	11 038	★	0.13	–	820		•	•	•										
	F1	9 245		0.15	–	820		•	•	•										
	E1	7 883	★	0.18	–	820		•	•	•										
	D1	6 700	★	0.21	–	820		•	•	•										
	C1	5 823		0.24	–	820		•	•	•										
	B1	5 068	★	0.28	–	820		•	•	•										
	A1	4 572		0.31	–	820		•	•	•										
K.68-Z.28 820	**C2**	4 282		0.33	–	820		•												
	B2	3 611	★	0.39	–	820		•	•											
	A2	3 206		0.44	–	820		•	•											
	X1	2 811	★	0.50	–	820		•	•	•										
	W1	2 515		0.56	–	820		•	•	•										
	V1	2 233	★	0.63	–	820		•	•	•										
	U1	1 957		0.72	–	820		•	•	•										
	T1	1 720	★	0.81	–	820		•	•	•										
	S1	1 554		0.90	–	820		•	•	•	•									
	R1	1 354	★	1.00	–	820		•	•	•										
	Q1	1 216		1.20	–	820		•	•	•										
	P1	1 098	★	1.30	–	820		•	•	•	•									
	N1	996		1.40	–	820		•	•	•	•									
	M1	906	★	1.60	–	820		•	•	•	•									
	L1	801		1.80	–	820		•	•	•	•									
	K1	740	★	1.90	–	820		•	•	•	•									
	J1	637		2.20	–	820		•	•	•	•									
	H1	579	★	2.40	–	820		•	•	•	•									
	G1	526	★	2.70	–	820		•	•	•	•									
	F1	477		2.90	–	820		•	•	•	•									
	E1	434	★	3.20	–	820		•	•	•	•									
	D1	384		3.70	–	820		•	•	•	•									
	C1	354	★	4.00	–	820		•	•	•	•									
	B1	305		4.60	–	820		•	•	•	•									
	A1	277	★	5.10	–	820		•	•	•	•									

★ Preferred transmission ratio

[1] Only possible with integrated motor.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque						3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.68	**N2**	243.72	5.9	12	820	•	•	•											
345 ... 820	**M2**	215.68 ★	6.7	12	820	•	•	•	•										
	L2	196.07	7.4	12	820	•	•	•	•										
	K2	176.14 ★	8.2	12	820	•	•	•	•										
	J2	150.98	9.6	12	820	•	•	•	•	•									
	H2	136.60 ★	10.6	12	820	•	•	•	•	•	•								
	G2	126.09	11.5	12	820	•	•	•	•	•	•								
	F2	109.64 ★	13.2	12	820	•	•	•	•	•	•	• [1]							
	E2	99.55	14.6	12	820	•	•	•	•	•	•	• [1]							
	D2	90.89 ★	16.0	12	820	•	•	•	•	•	•	• [1]							
	C2	83.40	17.4	12	820	•	•	•	•	•	•	• [1]							
	B2	76.84 ★	18.9	12	820	•	•	•	•	•	•	• [1]							
	A2	69.78	21.0	12	820	•	•	•	•	•	•	• [1]							
	X1	63.57 ★	23.0	12	820	•	•	•	•	•	•	• [1]							
	W1	58.23	25.0	12	820	•	•	•	•	•	•	• [1]							
	V1	51.96 ★	28.0	12	820	•	•	•	•	•	•	• [1]							
	U1	46.37	31.0	12	820			•	•	•	•	• [1]							
	T1	39.39	37.0	12	820			•	•	•	•	• [1]							
	S1	32.78 ★	44.0	13	820			•	•	•	•	• [1]							
	R1	30.38	48.0	14	820	•	•	•	•	•	•	• [1]							
	Q1	27.99 ★	52.0	14	820	•	•	•	•	•	•	• [1]							
	P1	25.42	57.0	14	820	•	•	•	•	•	•	• [1]							
	N1	23.16 ★	63.0	14	820	•	•	•	•	•	•	• [1]							
	M1	21.22	68.0	14	820	•	•	•	•	•	•	• [1]							
	L1	18.93 ★	77.0	14	820	•	•	•	•	•	•	• [1]							
	K1	16.89	86.0	14	820			•	•	•	•	• [1]							
	J1	14.35	101.0	14	812			•	•	•	•	• [1]							
	H1	11.94 ★	121.0	15	768			•	•	•	•	• [1]							
	G1	11.41	127.0	21	434	•	•	•	•	•	•	• [1]							
	F1	10.40 ★	139.0	21	422	•	•	•	•	•	•	• [1]							
	E1	9.52	152.0	21	411	•	•	•	•	•	•	• [1]							
	D1	8.50 ★	171.0	21	397	•	•	•	•	•	•	• [1]							
	C1	7.58	191.0	22	383			•	•	•	•	• [1]							
	B1	6.44	225.0	22	365			•	•	•	•	• [1]							
	A1	5.36 ★	271.0	23	345			•	•	•	•	• [1]							

★ Preferred transmission ratio

[1] Only possible with integrated motor.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maxiumum torques

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio		Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	15th and 16th position	i_{tot}		n_2 (50 Hz)	φ	T_{2N} (f_B=1)	3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm				rpm	arcmin	Nm	Motor size 63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.88-D.28	**M1**	24 920		0.06	–	1 650		•												
1 650	**L1**	21 499	★	0.07	–	1 650		•	•											
	K1	18 470		0.08	–	1 650		•	•											
	J1	17 005	★	0.08	–	1 650		•	•	•										
	H1	15 459		0.09	–	1 650		•	•	•										
	G1	13 683	★	0.10	–	1 650		•	•	•										
	F1	11 460		0.12	–	1 650		•	•	•										
	E1	9 772	★	0.14	–	1 650		•	•	•										
	D1	8 306	★	0.17	–	1 650		•	•	•										
	C1	7 218		0.19	–	1 650		•	•	•										
	B1	6 283	★	0.22	–	1 650		•	•	•										
	A1	5 667		0.25	–	1 650		•	•	•										
K.88-Z.28	**C2**	5 309		0.26	–	1 650		•												
1 650	**B2**	4 477	★	0.31	–	1 650		•	•											
	A2	3 975		0.35	–	1 650		•	•											
	X1	3 485	★	0.40	–	1 650		•	•	•										
	W1	3 118		0.45	–	1 650		•	•	•										
	V1	2 768	★	0.51	–	1 650		•	•	•										
	U1	2 426		0.58	–	1 650		•	•	•										
	T1	2 133	★	0.66	–	1 650		•	•	•										
	S1	1 926		0.73	–	1 650		•	•	•	•									
	R1	1 679	★	0.83	–	1 650		•	•	•										
	Q1	1 508		0.93	–	1 650		•	•	•										
	P1	1 361	★	1.00	–	1 650		•	•	•	•									
	N1	1 234		1.10	–	1 650		•	•	•	•									
	M1	1 123	★	1.30	–	1 650		•	•	•	•									
	L1	993		1.40	–	1 650		•	•	•	•									
	K1	917	★	1.50	–	1 650		•	•	•	•									
	J1	789		1.80	–	1 650		•	•	•	•									
	H1	718	★	2.00	–	1 650		•	•	•	•									
	G1	652	★	2.20	–	1 650		•	•	•	•									
	F1	591		2.40	–	1 650		•	•	•	•									
	E1	538	★	2.60	–	1 650		•	•	•	•									
	D1	476		2.90	–	1 650		•	•	•	•									
	C1	439	★	3.20	–	1 650		•	•	•	•									
	B1	378		3.70	–	1 650		•	•	•	•									
	A1	344	★	4.10	–	1 650		•	•	•	•									

★ Preferred transmission ratio

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[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque						3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.88	**M2**	302.68 ★	4.8	10	1 540	•	•	•	•										
651 ... 1 650	**L2**	272.95	5.3	10	1 650	•	•	•	•										
	K2	246.13 ★	5.9	10	1 650	•	•	•	•										
	J2	215.25	6.7	10	1 650	•	•	•	•	•									
	H2	193.24 ★	7.5	10	1 650	•	•	•	•	•	•								
	G2	176.50	8.2	10	1 650	•	•	•	•	•	•								
	F2	156.63 ★	9.3	10	1 650	•	•	•	•	•	•	•							
	E2	144.58	10.0	10	1 650	•	•	•	•	•	•	•							
	D2	130.77 ★	11.1	10	1 650	•	•	•	•	•	•	•							
	C2	120.42	12.0	10	1 650	•	•	•	•	•	•	•							
	B2	111.37 ★	13.0	10	1 650	•	•	•	•	•	•	•	• [1]						
	A2	103.38	14.0	10	1 650	•	•	•	•	•	•	•	• [1]						
	X1	91.22 ★	15.9	10	1 650	•	•	•	•	•	•	•	• [1]						
	W1	84.21	17.2	10	1 650	•	•	•	•	•	•	•	• [1]						
	V1	75.45 ★	19.2	10	1 650	•	•	•	•	•	•	•	• [1]						
	U1	69.57	21.0	10	1 650			•	•	•	•	•	• [1]						
	T1	58.37	25.0	10	1 650			•	•	•	•	•	• [1]						
	S1	49.80 ★	29.0	10	1 650			•	•	•	•	•	• [1]						
	Q1	41.50	35.0	10	1 650					•	•	•	• [1]						
	P1	34.40 ★	42.0	10	1 650					•	•	•	• [1]						
	N1	30.87 ★	47.0	12	1 650	•	•	•	•	•	•	•	• [1]						
	M1	28.50	51.0	12	1 650	•	•	•	•	•	•	•	• [1]						
	L1	25.53 ★	57.0	12	1 650	•	•	•	•	•	•	•	• [1]						
	K1	23.54	62.0	12	1 650			•	•	•	•	•	• [1]						
	J1	19.75	73.0	12	1 572			•	•	•	•	•	• [1]						
	H1	16.85 ★	86.0	12	1 498			•	•	•	•	•	• [1]						
	G1	14.04	103.0	12	1 417					•	•	•	• [1]						
	F1	11.64 ★	125.0	12	1 339					•	•	•	• [1]						
	E1	11.21	129.0	18	806			•	•	•	•	•	• [1]						
	D1	9.41	154.0	18	764			•	•	•	•	•	• [1]						
	C1	8.03 ★	181.0	19	728			•	•	•	•	•	• [1]						
	B1	6.69	217.0	19	689					•	•	•	• [1]						
	A1	5.54 ★	262.0	19	651					•	•	•	• [1]						

★ Preferred transmission ratio

[1] Only possible with integrated motor.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maxiumum torques

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque						3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.108-D38 3 000	**P1**	58 914	0.02	–	3 000	•	•	•											
	N1	52 306	0.03	–	3 000	•	•	•											
	M1	45 858	0.03	–	3 000	•	•	•	•										
	L1	41 037	0.04	–	3 000	•	•	•	•										
	K1	36 423	0.04	–	3 000	•	•	•	•										
	J1	31 918	0.05	–	3 000	•	•	•	•										
	H1	28 064	0.05	–	3 000	•	•	•	•										
	G1	25 354	0.06	–	3 000	•	•	•	•										
	F1	22 093	0.07	–	3 000	•	•	•	•										
	E1	19 842	0.07	–	3 000	•	•	•	•										
	D1	17 913	0.08	–	3 000	•	•	•	•										
	C1	16 241	0.09	–	3 000	•	•	•	•										
	B1	14 778	0.10	–	3 000	•	•	•	•										
	A1	13 066	0.11	–	3 000	•	•	•	•										
K.108-Z38 3 000	**W1**	13 556	0.11	–	3 000	•	•	•											
	V1	12 055	0.12	–	3 000	•	•	•											
	U1	10 457	0.14	–	3 000	•	•	•	•										
	T1	9 771	0.15	–	3 000	•	•	•	•										
	S1	8 593	0.17	–	3 000	•	•	•	•										
	R1	7 526	0.19	–	3 000	•	•	•	•	•									
	Q1	6 657	0.22	–	3 000	•	•	•	•	•									
	P1	6 033	0.24	–	3 000	•	•	•	•	•									
	N1	5 326	0.27	–	3 000	•	•	•	•	•									
	M1	4 804	0.30	–	3 000	•	•	•	•	•									
	L1	4 357	0.33	–	3 000	•	•	•	•	•									
	K1	3 970	0.37	–	3 000	•	•	•	•	•									
	J1	3 631	0.40	–	3 000	•	•	•	•	•									
	H1	3 247	0.45	–	3 000	•	•	•	•	•									
	G1	2 981	0.49	–	3 000	•	•	•	•	•									
	F1	2 687	0.54	–	3 000	•	•	•	•	•									
	E1	2 311	0.63	–	3 000	•	•	•	•	•									
	D1	2 060	0.70	–	3 000	•	•	•	•	•									
	C1	1 892	0.77	–	3 000	•	•	•	•	•									
	B1	1 705	0.85	–	3 000	•	•	•	•	•									
	A1	1 466	0.99	–	3 000	•	•	•	•	•									
K.108-Z48 3 000	**P1**	1 343	1.08	–	3 000	•	•	•	•	•	•								
	N1	1 233	1.18	–	3 000	•	•	•	•	•	•								
	M1	1 136	1.28	–	3 000	•	•	•	•	•	•								
	L1	1 031	1.41	–	3 000	•	•	•	•	•	•								
	K1	940	1.54	–	3 000	•	•	•	•	•	•								
	J1	861	1.68	–	3 000	•	•	•	•	•	•								
	H1	768	1.89	–	3 000	•	•	•	•	•	•								
	G1	685	2.12	–	3 000			•	•	•	•								
	F1	582	2.49	–	3 000			•	•	•	•								
	E1	485	2.99	–	3 000			•	•	•	•								
	D1	477	3.04	–	3 000	•	•	•	•	•	•								
	C1	426	3.40	–	3 000			•	•	•	•								
	B1	361	4.02	–	3 000			•	•	•	•								
	A1	301	4.82	–	3 000			•	•	•	•								

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In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.
Calculation of maximum output torque T_{2max} for gearboxes with input units:
$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$
If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	3	3	5	10	20	26	61	98	198	198	291	356	580	1290
						Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.108	**K2**	307.24	4.70	10	2 906			•	•										
1 656 ... 3 000	**J2**	278.10 ★	5.20	10	2 830			•	•										
	H2	243.47	6.00	10	3 000			•	•	•									
	G2	219.64 ★	6.60	10	3 000			•	•	•	•								
	F2	201.11	7.20	10	3 000			•	•	•	•								
	E2	178.90 ★	8.10	10	3 000			•	•	•	•	•							
	D2	163.51	8.90	10	3 000			•	•	•	•	•							
	C2	150.31 ★	9.60	10	3 000			•	•	•	•	•							
	B2	138.87	10.40	10	3 000			•	•	•	•	•							
	A2	128.86 ★	11.30	10	3 000			•	•	•	•	•	•						
	X1	120.03	12.10	10	3 000			•	•	•	•	•	•						
	W1	108.52 ★	13.40	10	3 000			•	•	•	•	•	•	• [1]					
	V1	99.90	14.50	10	3 000			•	•	•	•	•	•	• [1]					
	U1	89.85 ★	16.10	10	3 000			•	•	•	•	•	•	• [1]					
	T1	82.90	17.50	10	3 000			•	•	•	•	•	•	• [1]					
	S1	70.24	21.00	10	3 000			•	•	•	•	•	•	• [1]					
	R1	61.22 ★	24.00	10	3 000			•	•	•	•	•	•	• [1]					
	Q1	52.08	28.00	10	3 000					•	•	•	•	• [1]					
	P1	44.44 ★	33.00	10	3 000					•	•	•	•	• [1]					
	N1	36.44 ★	40.00	10	2 832					•	•	•	•	• [1]					
	M1	33.87 ★	43.00	11	3 000			•	•	•	•	•	•	• [1]					
	L1	31.25	46.00	11	3 000			•	•	•	•	•	•	• [1]					
	K1	26.48	55.00	11	2 882			•	•	•	•	•	•	• [1]					
	J1	23.08 ★	63.00	11	2 764			•	•	•	•	•	•	• [1]					
	G1	19.63	74.00	11	2 632					•	•	•	•	• [1]					
	F1	16.75 ★	87.00	11	2 509					•	•	•	•	• [1]					
	E1	13.74 ★	106.00	11	2 362					•	•	•	•	• [1]					
	D1	12.90 ★	112.00	15	1 938			•	•	•	•	•	•	• [1]					
	C1	10.97	132.00	16	1 845					•	•	•	•	• [1]					
	B1	9.36 ★	155.00	16	1 759					•	•	•	•	• [1]					
	A1	7.68 ★	189.00	16	1 656					•	•	•	•	• [1]					

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Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maxiumum torques

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio		Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	15th and 16th position	i_{tot}		n_2 (50 Hz)	φ	T_{2N} (f_B=1)	3	3	5	10	20	26	61	98	198	198	291	356	580	1290
							Motor size													
Nm				rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.128-D38	**P1**	56 640	★	0.03	–	4 700	•	•	•											
4 700	**N1**	50 287		0.03	–	4 700	•	•	•											
	M1	44 087	★	0.03	–	4 700	•	•	•	•										
	L1	39 453		0.04	–	4 700	•	•	•	•										
	K1	35 017	★	0.04	–	4 700	•	•	•	•										
	J1	30 686		0.05	–	4 700	•	•	•	•										
	H1	26 980	★	0.05	–	4 700	•	•	•	•										
	G1	24 375		0.06	–	4 700	•	•	•	•										
	F1	21 240	★	0.07	–	4 700	•	•	•	•										
	E1	19 076		0.08	–	4 700	•	•	•	•										
	D1	17 221	★	0.08	–	4 700	•	•	•	•										
	C1	15 614		0.09	–	4 700	•	•	•	•										
	B1	14 208	★	0.10	–	4 700	•	•	•	•										
	A1	12 562		0.12	–	4 700	•	•	•	•										
K.128-Z38	**W1**	13 032	★	0.11	–	4 700	•	•	•											
4 700	**V1**	11 590		0.13	–	4 700	•	•	•											
	U1	10 054	★	0.14	–	4 700	•	•	•	•										
	T1	9 394		0.15	–	4 700	•	•	•	•										
	S1	8 262	★	0.18	–	4 700	•	•	•	•										
	R1	7 236		0.20	–	4 700	•	•	•	•	•									
	Q1	6 400	★	0.23	–	4 700	•	•	•	•	•									
	P1	5 800		0.25	–	4 700	•	•	•	•	•									
	N1	5 120	★	0.28	–	4 700	•	•	•	•	•									
	M1	4 619		0.31	–	4 700	•	•	•	•	•									
	L1	41 89	★	0.35	–	4 700	•	•	•	•	•									
	K1	3 817		0.38	–	4 700	•	•	•	•	•									
	J1	3 491	★	0.42	–	4 700	•	•	•	•	•									
	H1	3 121		0.46	–	4 700	•	•	•	•	•									
	G1	2 866	★	0.51	–	4 700	•	•	•	•	•									
	F1	2 583		0.56	–	4 700	•	•	•	•	•									
	E1	2 221	★	0.65	–	4 700	•	•	•	•	•									
	D1	1 981		0.73	–	4 700	•	•	•	•	•									
	C1	1 819	★	0.80	–	4 700	•	•	•	•	•									
	B1	1 639		0.88	–	4 700	•	•	•	•	•									
	A1	1 410	★	1.03	–	4 700	•	•	•	•	•									
K.128-Z48	**P1**	1 400		1.04	–	4 700	•	•	•	•	•	•								
4 700	**N1**	1 284		1.13	–	4 700	•	•	•	•	•	•								
	M1	1 183		1.23	–	4 700	•	•	•	•	•	•								
	L1	1 074		1.35	–	4 700	•	•	•	•	•	•								
	K1	979		1.48	–	4 700	•	•	•	•	•	•								
	J1	897		1.62	–	4 700	•	•	•	•	•	•								
	H1	800		1.81	–	4 700	•	•	•	•	•	•								
	G1	714		2.03	–	4 700			•	•	•	•								
	F1	606		2.39	–	4 700			•	•	•	•								
	E1	505		2.87	–	4 700			•	•	•	•								
	D1	497		2.92	–	4 700	•	•	•	•	•	•								
	C1	443		3.27	–	4 700			•	•	•	•								
	B1	377		3.85	–	4 700			•	•	•	•								
	A1	313		4.63	–	4 700			•	•	•	•								

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[1] Only possible with integrated motor.
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In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.
Calculation of maximum output torque T_{2max} for gearboxes with input units:
$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$
If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	3	3	5	10	20	26	61	98	198	198	291	356	580	1290
						Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.128	**L2**	295.38 ★	4.9	8	4 700				•	•	•								
2 707 ... 4 700	**K2**	270.90	5.4	8	4 700				•	•	•								
	J2	242.02 ★	6.0	8	4 700				•	•	•	•							
	H2	221.64	6.5	8	4 700				•	•	•	•							
	G2	204.18 ★	7.1	8	4 700				•	•	•	•							
	F2	189.04	7.7	8	4 700				•	•	•	•							
	E2	175.80 ★	8.2	8	4 700				•	•	•	•	•						
	D2	164.11	8.8	8	4 700				•	•	•	•	•						
	C2	146.84 ★	9.9	8	4 700				•	•	•	•	•	•	•				
	B2	136.06	10.7	8	4 700				•	•	•	•	•	•	•				
	A2	124.73 ★	11.6	8	4 700				•	•	•	•	•	•	•	• [1]			
	X1	114.34	12.7	8	4 700				•	•	•	•	•	•	•	• [1]			
	W1	97.44	14.9	8	4 700				•	•	•	•	•	•	•	• [1]			
	V1	85.98 ★	16.9	8	4 700				•	•	•	•	•	•	•	• [1]			
	U1	73.18	19.8	8	4 700					•	•	•	•	•	•	• [1]			
	T1	63.41 ★	23.0	8	4 700					•	•	•	•	•	•	• [1]			
	S1	53.36 ★	27.0	8	4 700					•	•	•	•	•	•	• [1]			
	R1	48.14	30.0	8	4 700							•	•	•	•	• [1]			
	Q1	41.38 ★	35.0	8	4 700							•	•	•	•	• [1]			
	P1	39.19 ★	37.0	9	4 700				•	•	•	•	•	•	•	• [1]			
	N1	35.92	40.0	9	4 700				•	•	•	•	•	•	•	• [1]			
	M1	30.61	47.0	9	4 700				•	•	•	•	•	•	•	• [1]			
	L1	27.02 ★	54.0	9	4 700				•	•	•	•	•	•	•	• [1]			
	K1	22.99	63.0	9	4 700					•	•	•	•	•	•	• [1]			
	J1	19.92 ★	73.0	9	4 700					•	•	•	•	•	•	• [1]			
	H1	16.76 ★	87.0	9	4 700					•	•	•	•	•	•	• [1]			
	G1	15.13	96.0	9	4 626							•	•	•	•	• [1]			
	F1	13.00 ★	112.0	10	4 419							•	•	•	•	• [1]			
	E1	12.56	115.0	13	3 217					•	•	•	•	•	•	• [1]			
	D1	10.88 ★	133.0	13	3 081					•	•	•	•	•	•	• [1]			
	C1	9.16 ★	158.0	13	2 924					•	•	•	•	•	•	• [1]			
	B1	8.26	176.0	14	2 834							•	•	•	•	• [1]			
	A1	7.10 ★	204.0	14	2 707							•	•	•	•	• [1]			

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Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maxiumum torques

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	3	3	5	10	20	26	61	98	198	198	291	356	580	1290
						Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.148-D38 8 000	**P1**	58 692	0.02	–	8 000	•	•	•											
	N1	52 109	0.03	–	8 000	•	•	•											
	M1	45 684	0.03	–	8 000	•	•	•	•										
	L1	40 882	0.04	–	8 000	•	•	•	•										
	K1	36 286	0.04	–	8 000	•	•	•	•										
	J1	31 797	0.05	–	8 000	•	•	•	•										
	H1	27 958	0.05	–	8 000	•	•	•	•										
	G1	25 258	0.06	–	8 000	•	•	•	•										
	F1	22 009	0.07	–	8 000	•	•	•	•										
	E1	19 767	0.07	–	8 000	•	•	•	•										
	D1	17 845	0.08	–	8 000	•	•	•	•										
	C1	16 180	0.09	–	8 000	•	•	•	•										
	B1	14 722	0.10	–	8 000	•	•	•	•										
	A1	13 017	0.11	–	8 000	•	•	•	•										
K.148-Z38 8 000	**W1**	13 505	0.11	–	8 000	•	•	•											
	V1	12 009	0.12	–	8 000	•	•	•											
	U1	10 418	0.14	–	8 000	•	•	•	•										
	T1	9 734	0.15	–	8 000	•	•	•	•										
	S1	8 561	0.17	–	8 000	•	•	•	•										
	R1	7 498	0.19	–	8 000	•	•	•	•	•									
	Q1	6 632	0.22	–	8 000	•	•	•	•	•									
	P1	6 010	0.24	–	8 000	•	•	•	•	•									
	N1	5 305	0.27	–	8 000	•	•	•	•	•									
	M1	4 786	0.30	–	8 000	•	•	•	•	•									
	L1	4 341	0.33	–	8 000	•	•	•	•	•									
	K1	3 955	0.37	–	8 000	•	•	•	•	•									
	J1	3 617	0.40	–	8 000	•	•	•	•	•									
	H1	3 234	0.45	–	8 000	•	•	•	•	•									
	G1	2 970	0.49	–	8 000	•	•	•	•	•									
	F1	2 677	0.54	–	8 000	•	•	•	•	•									
	E1	2 302	0.63	–	8 000	•	•	•	•	•									
	D1	2 053	0.71	–	8 000	•	•	•	•	•									
	C1	1 885	0.77	–	8 000	•	•	•	•	•									
	B1	1 699	0.85	–	8 000	•	•	•	•	•									
	A1	1 466	0.99	–	8 000	•	•	•	•	•									
K.148-Z68 8 000	**L1**	1 392	1.04	–	8 000	•	•	•	•	•	•	•							
	K1	1 247	1.16	–	8 000	•	•	•	•	•	•	•							
	J1	1 150	1.26	–	8 000			•	•	•	•	•							
	H1	965	1.50	–	8 000			•	•	•	•	•							
	G1	823	1.76	–	8 000			•	•	•	•	•							
	F1	686	2.11	–	8 000					•	•	•							
	E1	569	2.55	–	8 000					•	•	•							
	D1	502	2.89	–	8 000			•	•	•	•	•							
	C1	428	3.39	–	8 000			•	•	•	•	•							
	B1	357	4.06	–	8 000					•	•	•							
	A1	296	4.90	–	8 000					•	•	•							

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$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$
If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm			rpm	arcmin	Nm	Motor size 63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.148	**N2**	306.08	4.7	7	8 000					•	•								
3 320 ... 8 000	**M2**	274.42 ★	5.3	7	8 000					•	•	•							
	L2	251.55	5.8	7	8 000					•	•	•							
	K2	231.95 ★	6.3	7	8 000					•	•	•							
	J2	214.96	6.7	7	8 000					•	•	•							
	H2	204.38 ★	7.1	7	8 000					•	•	•	•						
	G2	191.02	7.6	7	8 000					•	•	•	•						
	F2	168.50 ★	8.6	7	8 000					•	•	•	•	•	•				
	E2	158.93	9.1	7	8 000					•	•	•	•	•	•				
	D2	142.41 ★	10.2	7	8 000					•	•	•	•	•	•	•			
	C2	131.49	11.0	7	8 000					•	•	•	•	•	•	•			
	B2	112.35	12.9	7	8 000					•	•	•	•	•	•	•	• [1]		
	A2	101.53 ★	14.3	7	8 000					•	•	•	•	•	•	•	• [1]		
	X1	97.82	14.8	7	8 000						•	•	•	•	•	•	• [1]		
	W1	84.61	17.1	7	8 000					•	•	•	•	•	•	•	• [1]		
	V1	73.80 ★	19.6	7	8 000					•	•	•	•	•	•	•	• [1]		
	U1	63.16 ★	23.0	7	8 000					•	•	•	•	•	•	•	• [1]		
	T1	56.57	26.0	7	8 000							•	•	•	•	•	• [1]		
	R1	47.91 ★	30.0	7	8 000							•	•	•	•	•	• [1]		
	Q1	41.38	35.0	7	8 000								•	•	•	•	• [1]		
	N1	31.10 ★	47.0	7	8 000								•	•	•	•	• [1]		
	M1	30.74	47.0	8	8 000						•	•	•	•	•	•	• [1]		
	L1	26.58	55.0	8	8 000					•	•	•	•	•	•	•	• [1]		
	K1	23.19 ★	63.0	8	8 000					•	•	•	•	•	•	•	• [1]		
	J1	19.84 ★	73.0	9	8 000					•	•	•	•	•	•	•	• [1]		
	H1	17.77	82.0	9	8 000							•	•	•	•	•	• [1]		
	G1	15.05 ★	96.0	9	7 603							•	•	•	•	•	• [1]		
	F1	13.00	112.0	9	7 273								•	•	•	•	• [1]		
	E1	9.77 ★	148.0	9	6 670								•	•	•	•	• [1]		
	D1	8.79	165.0	13	3 980							•	•	•	•	•	• [1]		
	C1	7.44 ★	195.0	13	3 785							•	•	•	•	•	• [1]		
	B1	6.43	226.0	13	3 620								•	•	•	•	• [1]		
	A1	4.83 ★	300.0	13	3 320								•	•	•	•	• [1]		

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Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maxiumum torques

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio		Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	15th and 16th position	i_{tot}		n_2 (50 Hz)	φ	T_{2N} (f_B=1)	3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm				rpm	arcmin	Nm	Motor size 63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.168-D48 13 500	**P1**	60 115	★	0.02	–	13 500	•	•	•											
	N1	53 459		0.03	–	13 500	•	•	•											
	M1	46 374	★	0.03	–	13 500	•	•	•	•										
	L1	43 330		0.03	–	13 500	•	•	•	•										
	K1	38 109	★	0.04	–	13 500	•	•	•	•										
	J1	33 375		0.04	–	13 500	•	•	•	•	•									
	H1	29 521	★	0.05	–	13 500	•	•	•	•	•									
	G1	26 754		0.05	–	13 500	•	•	•	•	•									
	F1	23 617	★	0.06	–	13 500	•	•	•	•	•									
	E1	21 304		0.07	–	13 500	•	•	•	•	•									
	D1	19 323	★	0.08	–	13 500	•	•	•	•	•									
	C1	17 605		0.08	–	13 500	•	•	•	•	•									
	B1	16 102	★	0.09	–	13 500	•	•	•	•	•									
	A1	14 397		0.10	–	13 500	•	•	•	•	•									
K.168-Z48 13 500	**A2**	14 767		0.10	–	13 500	•	•	•											
	X1	13 068	★	0.11	–	13 500	•	•	•	•										
	W1	11 880		0.12	–	13 500	•	•	•	•										
	V1	10 673	★	0.14	–	13 500	•	•	•	•										
	U1	9 148		0.16	–	13 500	•	•	•	•	•									
	T1	8 277	★	0.18	–	13 500	•	•	•	•	•	•								
	S1	7 640		0.19	–	13 500	•	•	•	•	•	•								
	R1	6 643	★	0.22	–	13 500	•	•	•	•	•	•								
	Q1	6 032		0.24	–	13 500	•	•	•	•	•	•								
	P1	5 507	★	0.26	–	13 500	•	•	•	•	•	•								
	N1	5 053		0.29	–	13 500	•	•	•	•	•	•								
	M1	4 656	★	0.31	–	13 500	•	•	•	•	•	•								
	L1	4 228		0.34	–	13 500	•	•	•	•	•	•								
	K1	3 852	★	0.38	–	13 500	•	•	•	•	•	•								
	J1	3 528		0.41	–	13 500	•	•	•	•	•	•								
	H1	3 148	★	0.46	–	13 500	•	•	•	•	•	•								
	G1	2 810		0.52	–	13 500	•	•	•	•	•	•								
	F1	2 386		0.61	–	13 500	•	•	•	•	•	•								
	E1	1 986	★	0.73	–	13 500	•	•	•	•	•	•								
	D1	1 955	★	0.74	–	13 500	•	•	•	•	•	•								
	C1	1 745		0.83	–	13 500			•	•	•	•								
	B1	1 482		0.98	–	13 500			•	•	•	•								
	A1	1 233	★	1.18	–	13 500			•	•	•	•								
K.168-Z68 13 500	**H1**	1 033		1.40	–	13 500			•	•	•	•	•							
	G1	881		1.65	–	13 500			•	•	•	•	•							
	F1	735		1.97	–	13 500					•	•	•							
	E1	609		2.38	–	13 500					•	•	•							
	D1	537		2.70	–	13 500			•	•	•	•	•							
	C1	458		3.17	–	13 500			•	•	•	•	•							
	B1	382		3.80	–	13 500					•	•	•							
	A1	317		4.57	–	13 500					•	•	•							

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$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$
If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	3	3	5	10	20	26	61	98	198	198	291	356	580	1290
						Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.168	**H2**	287.95 ★	5.0	7	13 500							•							
5 870 ... 13 500	**G2**	264.18	5.5	7	13 500							•							
	F2	243.80 ★	5.9	7	13 500							•							
	E2	226.15	6.4	7	13 500							•							
	D2	213.33 ★	6.8	7	13 500							•	•						
	C2	199.54	7.3	7	13 500							•	•						
	B2	177.43 ★	8.2	7	13 500							•	•	•	•				
	A2	167.50	8.7	7	13 500							•	•	•	•				
	X1	150.36 ★	9.6	7	13 500							•	•	•	•	•			
	W1	138.00	10.5	7	13 500							•	•	•	•	•			
	V1	119.09	12.2	7	13 500							•	•	•	•	•	•		
	U1	104.18	13.9	7	13 500							•	•	•	•	•	•		
	T1	90.60	16.0	7	13 500							•	•	•	•	•	•		
	S1	79.49 ★	18.2	7	13 500							•	•	•	•	•	•		
	R1	67.22 ★	22.0	7	13 500							•	•	•	•	•	•		
	Q1	60.99	24.0	7	13 500							•	•	•	•	•	•		
	P1	53.18 ★	27.0	7	13 500							•	•	•	•	•	•		
	N1	45.15	32.0	7	13 500								•	•	•	•	•		
	M1	34.55 ★	42.0	7	13 500								•	•	•	•	•	• [1]	
	L1	32.53	45.0	8	13 500							•	•	•	•	•	•	• [1]	
	K1	28.54 ★	51.0	8	13 500							•	•	•	•	•	•	• [1]	
	J1	24.14 ★	60.0	8	13 500							•	•	•	•	•	•	• [1]	
	H1	21.90	66.0	8	13 086							•	•	•	•	•	•	• [1]	
	G1	19.09 ★	76.0	8	12 553							•	•	•	•	•	•	• [1]	
	F1	16.21	89.0	8	11 946								•	•	•	•	•	• [1]	
	E1	12.41 ★	117.0	8	11 016								•	•	•	•	•	• [1]	
	D1	11.67	124.0	12	6 973							•	•	•	•	•	•	• [1]	
	C1	10.17 ★	143.0	12	6 689							•	•	•	•	•	•	• [1]	
	B1	8.64	168.0	12	6 366								•	•	•	•	•	• [1]	
	A1	6.61 ★	219.0	12	5 870								•	•	•	•	•	• [1]	

★ Preferred transmission ratio

[1] Only possible with integrated motor.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maxiumum torques

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio		Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	15th and 16th position	i_{tot}		n_2 (50 Hz)	φ	T_{2N} (f_B=1)	3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm				rpm	arcmin	Nm	Motor size 63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.188-D68 20 000	**T1**	53 767		0.03	–	20 000	•	•	•											
	S1	47 582	★	0.03	–	20 000	•	•	•	•										
	R1	43 256		0.03	–	20 000	•	•	•	•										
	Q1	38 858	★	0.04	–	20 000	•	•	•	•										
	P1	33 307		0.04	–	20 000	•	•	•	•	•									
	N1	30 135	★	0.05	–	20 000	•	•	•	•	•									
	M1	27 817		0.05	–	20 000	•	•	•	•	•									
	L1	24 187	★	0.06	–	20 000	•	•	•	•	•									
	K1	21 961		0.07	–	20 000	•	•	•	•	•									
	J1	20 052	★	0.07	–	20 000	•	•	•	•	•									
	H1	18 398		0.08	–	20 000	•	•	•	•	•									
	G1	16 951	★	0.09	–	20 000	•	•	•	•	•									
	F1	15 394		0.09	–	20 000	•	•	•	•	•									
	E1	14 024	★	0.10	–	20 000	•	•	•	•	•									
	D1	12 847		0.11	–	20 000	•	•	•	•	•									
	C1	11 463	★	0.13	–	20 000	•	•	•	•	•									
	B1	10 230		0.14	–	20 000			•	•	•									
	A1	8 689		0.17	–	20 000			•	•	•									
K.188-Z68 20 000	**X1**	9 201	★	0.16	–	20 000	•	•	•	•										
	W1	8 047		0.18	–	20 000	•	•	•	•	•									
	V1	7 224	★	0.20	–	20 000	•	•	•	•	•	•								
	U1	6 598		0.22	–	20 000	•	•	•	•	•	•								
	T1	5 855	★	0.25	–	20 000	•	•	•	•	•	•	•							
	S1	5 405		0.27	–	20 000	•	•	•	•	•	•	•							
	R1	4 889	★	0.30	–	20 000	•	•	•	•	•	•	•							
	Q1	4 502		0.32	–	20 000	•	•	•	•	•	•	•							
	P1	4 163	★	0.35	–	20 000	•	•	•	•	•	•	•							
	N1	3 865		0.38	–	20 000	•	•	•	•	•	•	•							
	M1	3 410	★	0.43	–	20 000	•	•	•	•	•	•	•							
	L1	3 148		0.46	–	20 000	•	•	•	•	•	•	•							
	K1	2 821	★	0.51	–	20 000	•	•	•	•	•	•	•							
	J1	2 601		0.56	–	20 000			•	•	•	•	•							
	H1	2 182		0.66	–	20 000			•	•	•	•	•							
	G1	1 862	★	0.78	–	20 000			•	•	•	•	•							
	F1	1 551		0.93	–	20 000					•	•	•							
	E1	1 286	★	1.10	–	20 000					•	•	•							
	D1	1 135		1.30	–	20 000			•	•	•	•	•							
	C1	968	★	1.50	–	20 000			•	•	•	•	•							
	B1	807		1.80	–	20 000					•	•	•							
	A1	669	★	2.20	–	20 000					•	•	•							
K.188-Z88 20 000	**H1**	669	★	2.2	–	20 000					•	•	•	•						
	G1	548	★	2.6	–	20 000					•	•	•	•						
	F1	503		2.9	–	20 000					•	•	•	•						
	E1	429	★	3.4	–	20 000					•	•	•	•						
	D1	352	★	4.1	–	20 000					•	•	•	•						
	C1	321		4.5	–	20 000					•	•	•	•						
	B1	274	★	5.3	–	20 000					•	•	•	•						
	A1	225	★	6.4	–	20 000					•	•	•	•						

★ Preferred transmission ratio

[1] Only possible with integrated motor.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code Order No.	Transmis-sion ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm			rpm	arcmin	Nm	Motor size 63	71	80	90	100	112	132	160	180	220	225	250	280	315
K.188 17 500 ... 20 000	**U1**	191.34	7.6	6	20 000							•	•	•	•	•			
	T1	172.78	8.4	6	20 000									•	•	•			
	S1	161.92	9.0	6	20 000								•	•	•	•	•		
	R1	139.08 ★	10.4	6	20 000								•	•	•	•	•		
	Q1	120.16	12.1	6	20 000							•	•	•	•	•	•	•	
	P1	106.07	13.7	6	20 000							•	•	•	•	•	•	•	
	N1	95.48 ★	15.2	6	20 000							•	•	•	•	•	•	•	
	M1	79.23 ★	18.3	6	20 000							•	•	•	•	•	•	•	
	L1	72.24	20.0	6	20 000							•	•	•	•	•	•	•	
	K1	63.38 ★	23.0	6	20 000							•	•	•	•	•	•	•	
	J1	54.47	27.0	7	20 000								•	•	•	•	•	•	•
	H1	42.43 ★	34.0	7	20 000								•	•	•	•	•	•	•
	G1	34.28 ★	42.0	7	20 000							•	•	•	•	•	•	•	
	F1	28.45 ★	51.0	7	20 000							•	•	•	•	•	•	•	
	E1	25.94	56.0	7	20 000							•	•	•	•	•	•	•	
	D1	22.76 ★	64.0	7	20 000							•	•	•	•	•	•	•	
	C1	19.56	74.0	7	20 000								•	•	•	•	•	•	•
	B1	15.23 ★	95.0	7	19 000								•	•	•	•	•	•	•
	A1	12.10 ★	120.0	8	17 500									•	•	•	•	•	•

★ Preferred transmission ratio

[1] Only possible with integrated motor.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

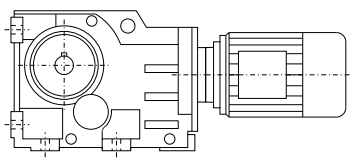
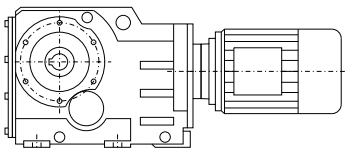
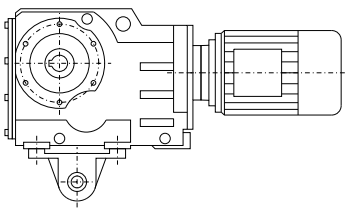
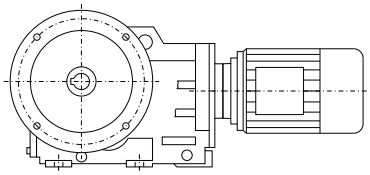
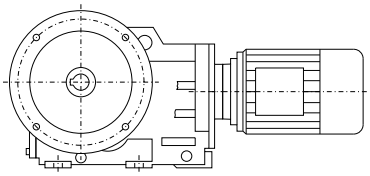
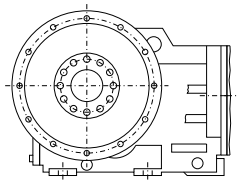
Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Mounting types

Selection and ordering data

Mounting type	Order No. 14th position	Code in type designation 2nd position for solid shaft, 3rd position for hollow shaft	Representation
Foot-mounted design	**A**	–	
Housing flange (C-type)	**H**	Z	
Design with torque arm	**D**	D	
Flange-mounted design (A-type)	**F**	F	
Mixer flange	**M**	M	
Extruder flange	**E**	E	

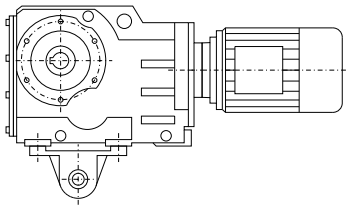
Selection and ordering data (continued)

Bevel helical gearbox K with torque arm

The torque arm of bevel helical gearbox K is mounted on the underside of the housing. The rubber buffers (supplied loose) are used to flexibly support the gearbox on the torque arm.
The rubber buffers are suitable for all mounting positions and can withstand temperatures of between –40 °C and +80 °C.

Material: Natural rubber, hardness 70 ± 5 Shore A

Order No.: **D** in **14th position**



Bevel helical gearbox B with torque arm

The torque arm of bevel helical gearbox B consists of an arm with an eye; it can be screwed onto the gearbox housing at an angular pitch of 30° in any one of nine positions around the output.

Order No.: **D** in **14th position**

The shafts and mounting positions correspond to the design featuring a housing flange.

Order code:
Figure 1 **G09**
Figure 2 **G10**

Figure 1

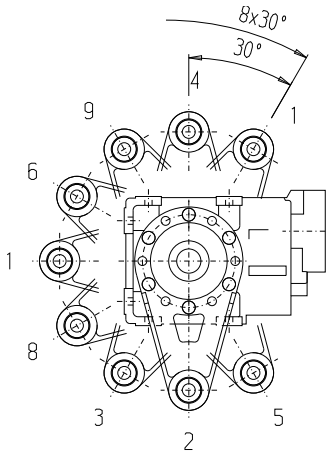
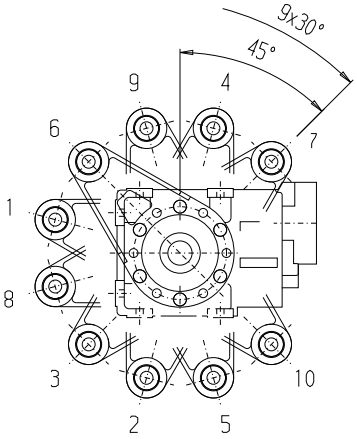


Figure 2



Bevel helical gearbox with mixer flange, sizes 88 to 168

The mixer flange is fitted with a heavy-duty output bearing with a sizable bearing span for absorbing large radial and axial forces.

The optimized design ensures that no axial forces are transferred to the gearbox housing.

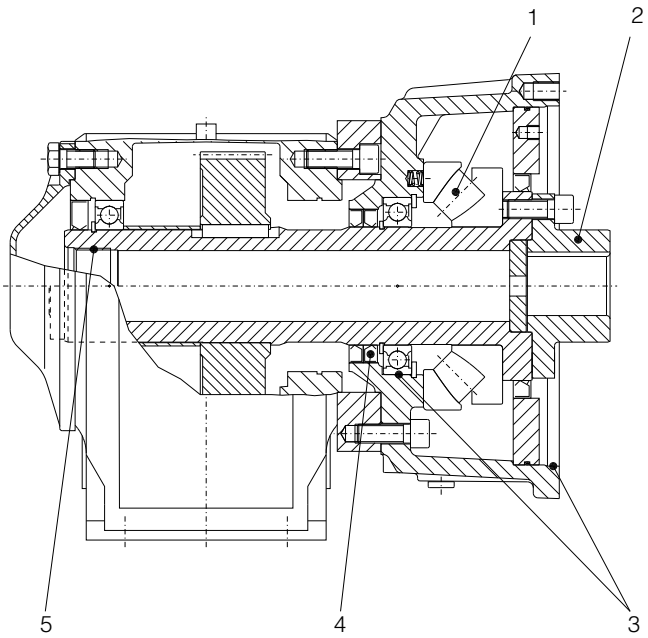
Bearing life can be calculated on request or using the MOTOX Configurator calculation program.

Mounting types

Selection and ordering data (continued)

Bevel helical gearbox with extruder flange, sizes 68 to 168

Gearboxes with an extruder flange are ideal for use in the extrusion industry, particularly in the low to medium performance range.



1. Large axial spherical roller bearing

294... series spherical roller bearing for heavy axial loads.

2. Simple, low-cost design

Flange hub supplied by customer, no grinding processes. Standard shaft-hub connection with feather key in acc. with DIN 6885/1.

3. Good radial eccentricity

Radial bearing hole and center hole created in one clamping operation and direction.

4. Optimum lubrication

Extruder oil chamber separate from gearbox oil chamber.

5. Standard connection

Metric thread for supporting the extruder worm (worm pulled out from rear).

Area of application

Parallel shaft gearbox		KAE 68	KAE 88	KAE 108	KAE 128	KAE 148	KAE 168
Max. power	[kW]	9.2	15	30	45	55	90
Transmission ratio/min./max	[3-stage]	5.36 / 243.72	5.54 / 302.68	7.68 / 307.24	7.1 / 295.38	4.83 / 306.08	6.61 / 287.95
Max. torque	[Nm]	820	1 650	3 000	4 700	8 000	13 500
Max. axial forces	[kN]	65	105	180	260	400	580
Spherical roller bearing	[.]	29414E	29417E	29420E	29424E	29426E	29432E

Selection and ordering data

Shaft design	Order No. 8th position	Order No. suffix	Shaft dimensions					
Bevel helical gearboxes B and K, foot-mounted design								
Size			**B.28**	**B.38**	**K.38**	**K.48**	**K.68**	**K.88**
Solid shaft with feather key	**1**		V20 x 40 *)	V30 x 60 *)	V25 x 50 *)	V30 x 60 *)	V40 x 80 *)	V50 x 100 *)
	3				V35 x 70		V50 x 100	V70 x 140
	4					V40 x 80	V35 x 70	
Hollow shaft	**5**		H20 x 120 *)	H30 x 140 *)	H30 x 120 *)	H35 x 150 *)	H40 x 180 *)	H50 x 210 *)
	6		H25 x 120	H35 x 140		H40 x 150	H45 x 180	H60 x 210
	7			H40 x 140				
Hollow shaft with shrink disk	**9**	**H3A**	H20 x 142 *)	H30 x 166 *)	H30 x 146 *)	H40 x 177	H50 x 209	H60 x 241
	9	**H3B**		H35 x 166	H30/31 x 146	H40/41 x 177	H50/51 x 209	H60/61 x 241
	9	**H3C**				H35 x 177 *)	H40 x 209 *)	H50 x 241 *)
	9	**H3D**					H40/42 x 209	H50/52 x 241
Hollow shaft with splined shaft	**9**	**H4A**		N30x1.25x30x 22 x 140	N35x1.25x30x 26 x 9H x 120	N40x2x30x18x 9H x 150	N50x2x30x24x 9H x 180	N60x2x30x28 x 9H x 210
Size			**K.108**	**K.128**	**K.148**	**K.168**	**K.188**	
Solid shaft with feather key	**1**		V60 x 120 *)	V70 x 140 *)	V90 x 170 *)	V110 x 210 *)	V120 x 210 *)	
	3		V80 x 170	V90 x 170	V100 x 210	V120 x 210	V140 x 250	
Hollow shaft	**5**		H60 x 240 *)	H70 x 300 *)	H80 x 350	H100 x 410	H120 x 500 *)	
	6		H70 x 240	H80 x 300	H90 x 350 *)	H110 x 410 *)		
Hollow shaft with shrink disk	**9**	**H3A**	H70 x 280	H80 x 345	H95 x 404 *)	H105 x 483 *)	H125 x 580 *)	
	9	**H3B**	H70/71 x 280	H80/81 x 345	H95/96 x 404	H105/106 x 483	H125/126 x 580	
	9	**H3C**	H65 x 280	H75 x 345				
	9	**H3D**	H65/66 x 280	H75/76 x 345				
Hollow shaft with splined shaft	**9**	**H4A**	N70x2x30x34 x 9H x 240	N80x3x30x25 x 9H x 300	N90x3x30x28 x 9H x 350	N110x3x30x35 x9H x 410	N130x5x30x24x 9H x 500	
Bevel helical gearboxes B and K with housing flange								
Size			**B.Z28**	**B.Z38**	**K.Z38**	**K.Z48**	**K.Z68**	**K.Z88**
Solid shaft with feather key	**1**		V20 x 40 *)	V30 x 60 *)	V25 x 50 *)	V30 x 60 *)	V40 x 80 *)	V50 x 100 *)
	3				V35 x 70		V50 x 100	V70 x 140
	4					V40 x 80	V35 x 70	
Hollow shaft	**5**		H20 x 120 *)	H30 x 140 *)	H30 x 120 *)	H35 x 150 *)	H40 x 180 *)	H50 x 210 *)
	6		H25 x 120	H35 x 140		H40 x 150	H45 x 180	H60 x 210
	7			H40 x 140				
Hollow shaft with shrink disk	**9**	**H3A**	H20 x 142 *)	H30 x 166 *)	H30 x 146 *)	H40 x 177	H50 x 209	H60 x 241
	9	**H3B**		H35 x 166	H30/31 x 146	H40/41 x 177	H50/51 x 209	H60/61 x 241
	9	**H3C**				H35 x 177 *)	H40 x 209 *)	H50 x 241 *)
	9	**H3D**					H40/42 x 209	H50/52 x 241
Hollow shaft with splined shaft	**9**	**H4A**		N30x1.25x30x 22 x 140	N35x1.25x30x 26 x 9H x 120	N40x2x30x18x 9H x 150	N50x2x30x24x 9H x 180	N60x2x30x28 x 9H x 210
Size			**K.Z108**	**K.Z128**	**K.Z148**	**K.Z168**	**K.Z188**	
Solid shaft with feather key	**1**		V60 x 120 *)	V70 x 140 *)	V90 x 170 *)	V110 x 210 *)	V120 x 210 *)	
	3		V80 x 170	V90 x 170	V100 x 210	V120 x 210	V140 x 250	
Hollow shaft	**5**		H60 x 240 *)	H70 x 300 *)	H80 x 350	H100 x 410	H120 x 500 *)	
	6		H70 x 240	H80 x 300	H90 x 350 *)	H110 x 410 *)		
Hollow shaft with shrink disk	**9**	**H3A**	H70 x 280	H80 x 345	H95 x 404 *)	H105 x 483 *)	H125 x 580 *)	
	9	**H3B**	H70/71 x 280	H80/81 x 345	H95/96 x 404	H105/106 x 483	H125/126 x 580	
	9	**H3C**	H65 x 280	H75 x 345				
	9	**H3D**	H65/66 x 280	H75/76 x 345				
Hollow shaft with splined shaft	**9**	**H4A**	N70x2x30x34 x 9H x 240	N80x3x30x25 x 9H x 300	N90x3x30x28 x 9H x 350	N110x3x30x35 x9H x 410	N130x5x30x24x 9H x 500	

*) Preferred series

Shaft designs

Selection and ordering data (continued)

Shaft design	Order No. 8th position	Order No. suffix	Shaft dimensions					
Bevel helical gearboxes B and K with torque arm								
Shaft design			**B.D28**	**B.D38**	**K.D38**	**K.D48**	**K.D68**	**K.D88**
Hollow shaft	**5**		H20 x 120 *)	H30 x 140 *)	H30 x 120 *)	H35 x 150 *)	H40 x 180 *)	H50 x 210 *)
	6		H25 x 120	H35 x 140		H40 x 150	H45 x 180	H60 x 210
	7			H40 x 140				
Hollow shaft with shrink disk	**9**	**H3A**	H20 x 142 *)	H30 x 166 *)	H30 x 146 *)	H40 x 177	H50 x 209	H60 x 241
	9	**H3B**		H35 x 166	H30/31 x 146	H40/41 x 177	H50/51 x 209	H60/61 x 241
	9	**H3C**				H35 x 177 *)	H40 x 209 *)	H50 x 241 *)
	9	**H3D**					H40/42 x 209	H50/52 x 241
Hollow shaft with splined shaft	**9**	**H4A**		N30x1.25x30x 22 x 140	N35x1.25x30x 26 x 9H x 120	N40x2x30x18x 9H x 150	N50x2x30x24x 9H x 180	N60x2x30x28 x 9H x 210
Size			**K.D108**	**K.D128**	**K.D148**	**K.D168**	**K.D188**	
Hollow shaft	**5**		H60 x 240 *)	H70 x 300 *)	H80 x 350	H100 x 410	H120 x 500 *)	
	6		H70 x 240	H80 x 300	H90 x 350 *)	H110 x 410 *)		
Hollow shaft with shrink disk	**9**	**H3A**	H70 x 280	H80 x 345	H95 x 404 *)	H105 x 483 *)	H125 x 580 *)	
	9	**H3B**	H70/71 x 280	H80/81 x 345	H95/96 x 404	H105/106 x 483	H125/126 x 580	
	9	**H3C**	H65 x 280	H75 x 345				
	9	**H3D**	H65/66 x 280	H75/76 x 345				
Hollow shaft with splined shaft	**9**	**H4A**	N70x2x30x34x 9H x 240	N80x3x30x25 x 9H x 300	N90x3x30x28 x 9H x 350	N110x3x30x35 x9H x 410	N130x5x30x24 x9H x 500	
Bevel helical gearboxes B and K, flange-mounted design (A-type)								
Size			**B.F28**	**B.F38**	**K.F38**	**K.F48**	**K.F68**	**K.F88**
Solid shaft with feather key	**2**		V20 x 40 (i2=I) *)	V30 x 60 (i2=I) *)	V25 x 50 (i2=I) *)	V30 x 60 (i2=I) *)	V40 x 80 (i2=I) *)	V50 x 100 (i2=I) *)
Hollow shaft	**5**		H20 x 120 *)	H30 x 140 *)	H30 x 120 *)	H35 x 150 *)	H40 x 180 *)	H50 x 210 *)
	6		H25 x 120	H35 x 140		H40 x 150	H45 x 180	H60 x 210
	7			H40 x 140				
Hollow shaft with shrink disk	**9**	**H3A**	H20 x 142 *)	H30 x 166 *)	H30 x 146 *)	H40 x 177	H50 x 209	H60 x 241
	9	**H3B**		H35 x 166	H30/31 x 146	H40/41 x 177	H50/51 x 209	H60/61 x 241
	9	**H3C**				H35 x 177 *)	H40 x 209 *)	H50 x 241 *)
	9	**H3D**					H40/42 x 209	H50/52 x 241
Hollow shaft with splined shaft	**9**	**H4A**		N30x1.25x30x 22 x 140	N35x1.25x30x 26 x 9H x 120	N40x2x30x18x 9H x 150	N50x2x30x24x 9H x 180	N60x2x30x28 x 9H x 210
Size			**K.F108**	**K.F128**	**K.F148**	**K.F168**	**K.F188**	
Solid shaft with feather key	**2**		V60 x 120 (i2=I) *)	V70 x 140 (i2=I) *)	V90 x 170 (i2=I) *)	V110 x 210 (i2=I) *)	V120 x 210 (i2=I) *)	
Hollow shaft	**5**		H60 x 240 *)	H70 x 300 *)	H80 x 350	H100 x 410	H120 x 500 *)	
	6		H70 x 240	H80 x 300	H90 x 350 *)	H110 x 410 *)		
Hollow shaft with shrink disk	**9**	**H3A**	H70 x 280	H80 x 345	H95 x 404 *)	H105 x 483 *)	H125 x 580 *)	
	9	**H3B**	H70/71 x 280	H80/81 x 345	H95/96 x 404	H105/106 x 483	H125/126 x 580	
	9	**H3C**	H65 x 280	H75 x 345				
	9	**H3D**	H65/66 x 280	H75/76 x 345				
Hollow shaft with splined shaft	**9**	**H4A**	N70x2x30x34x 9H x 240	N80x3x30x25 x 9H x 300	N90x3x30x28 x 9H x 350	N110x3x30x35 x9H x 410	N130x5x30x24 x9H x 500	

*) Preferred series

Selection and ordering data (continued)

Shaft designs for bevel helical gearbox with mixer flange

Shaft design	Order No. 8th position	Order No. suffix.	Shaft dimensions				
Bevel helical gearbox K.M							
Size			**K.M88**	**K.M108**	**K.M128**	**K.M148**	**K.M168**
Solid shaft with feather key	**3**		V70 x 140	V80 x 170	V90 x 170	V100 x 210	V120 x 210
Hollow shaft	**9**	**H2F**	H60 x 321	H70 x 366	H80 x 456	H90 x 524	H110 x 609

Shaft designs for bevel helical gearbox with extruder flange

Shaft design	Order No. 8th position	Order No. suffix.	Shaft dimensions					
Bevel helical gearbox KAE								
Size			**KAE68**	**KAE88**	**KAE108**	**KAE128**	**KAE148**	**KAE168**
Hollow shaft	**9**	**H2A**	H20 x 48	H30 x 58	H40 x 71	H45 x 87	H60 x 95	H70 x 105
	9	**H2B**	H25 x 48	H35 x 58	H45 x 71	H50 x 87	H70 x 95	H80 x 105
	9	**H2C**	H30 x 48 *)	H40 x 58 *)	H50 x 71 *)	H60 x 87 *)	H75 x 95 *)	H90 x 105 *)

*) Preferred series

Flange-mounted designs (A-type)

Selection and ordering data

Order code	Flange diameter										
Bevel helical gearboxes B and K											
Size	**B.F28**	**B.F38**	**K.F38**	**K.F48**	**K.F68**	**K.F88**	**K.F108**	**K.F128**	**K.F148**	**K.F168**	**K.F188**
H02	120		160			300	350		450		660
H03	160			200	250			450		550	
H04		160									
H05		200									

Selection and ordering data

The mounting type / mounting position must be specified when you place your order to ensure that the gearbox is supplied with the correct quantity of oil.

Please contact customer service to discuss the oil quantity if you wish to use a mounting position which is not shown here.

Position of the terminal box

The terminal box of the motor can be mounted in four different positions. See Chapter 8 for an accurate representation of the terminal box position and the corresponding order codes

Bevel helical gearbox B, foot-mounted design, flange-mounted design, and with housing flange

Oil control valves:

- Size 28: These types are lubricated for life. No ventilation, oil level, or drain plugs are present.
- Size 38: Oil inlet Oil drain A, B position of the customer's solid/plug-in shaft

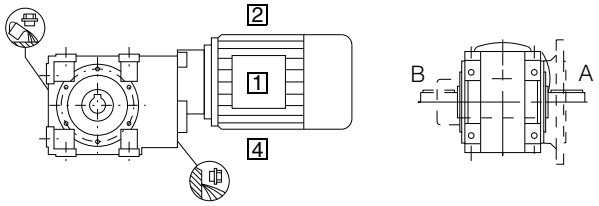
1 ... 4 Position of the terminal box, see Chapter 8.

1) Standard mounting type

B: B3-00 (IM B3-00) 1)
Order code: Output side A **D06**, output side B **D08**

BF, BZ: B5-01 (IM B5-01) 1)
Order code: Output side A **D22**, output side B **D24**

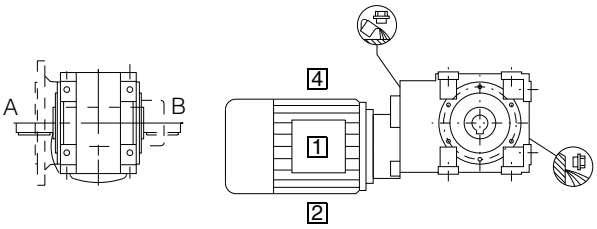
BA, BAF, BAZ: H-01 1)
Order code: Output side A **D76**, output side B **D77**



B: B8-00 (IM B8-00)
Order code: Output side A **D68**, output side B **D70**

BF, BZ: B5-03 (IM B5-03)
Order code: Output side A **D32**, output side B **D34**

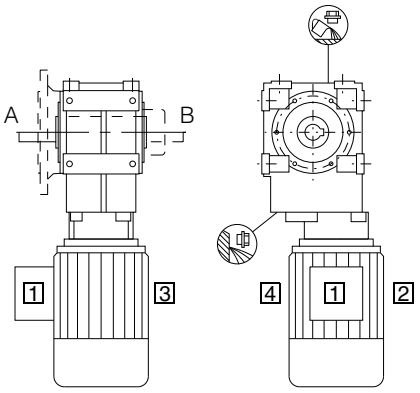
BA, BAF, BAZ: H-02
Order code: Output side A **D78**, output side B **D79**



B: B6-00 (IM B6-00)
Order code: Output side A **D38**, output side B **D40**

BF, BZ: B5-00 (IM B5-00)
Order code: Output side A **D18**, output side B **D20**

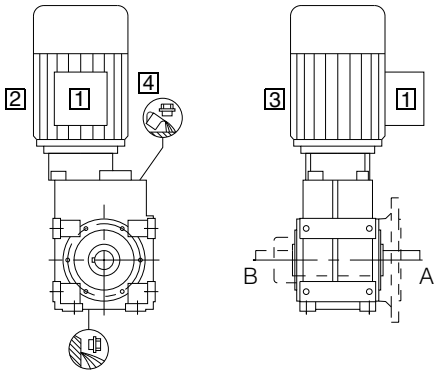
BA, BAF, BAZ: H-04
Order code: Output side A **D82**, output side B **D83**



B: B7-00 (IM B7-00)
Order code: Output side A **D59**, output side B **D61**

BF, BZ: B5-02 (IM B5-02)
Order code: Output side A **D27**, output side B **D29**

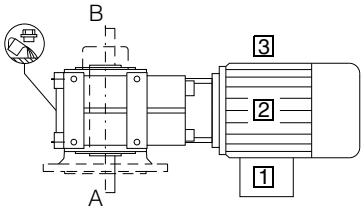
BA, BAF, BAZ: H-03
Order code: Output side **D80**, output side B **D81**



B: V5-00 (IM V5-00)
Order code: Output side A **E03**, output side B **E05**

BF, BZ: V1-00 (IM V1-00)
Order code: Output side A **D90**, output side B **D92**

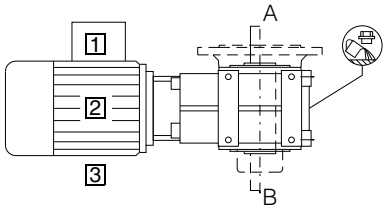
BA, BAF, BAZ: H-05
Order code: Output side A **D84**, output side B **D85**



B: V6-00 (IM V6-00)
Order code: Output side A **E15**, output side B **E17**

BF, BZ: V3-00 (IM V3-00)
Order code: Output side A **D98**, output side B **E00**

BA, BAF, BAZ: H-06
Order code: Output side A **D86**, output side B **D87**



Mounting types and mounting positions

Selection and ordering data (continued)

Bevel helical gearbox K, foot-mounted design

Oil control valves:

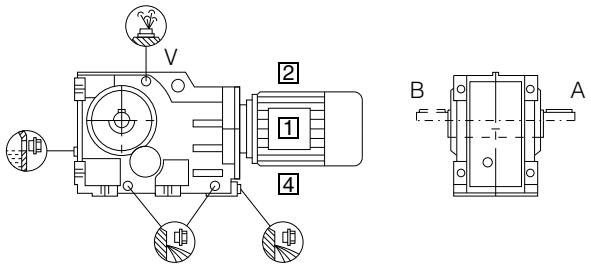
- Size 38: V Oil inlet/oil drain
- From size 48 up: Oil level, Ventilation, Oil drain, * On opposite side

A,B position of the customer's solid/plug-in shaft

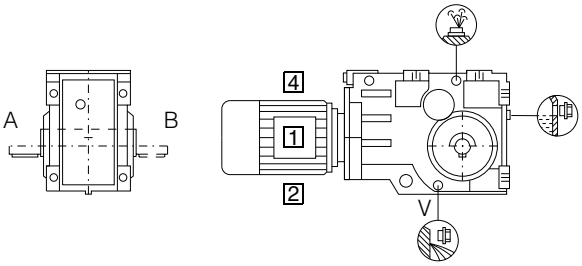
1 ... 4 Position of the terminal box, see Chapter 8.

1) Standard mounting type

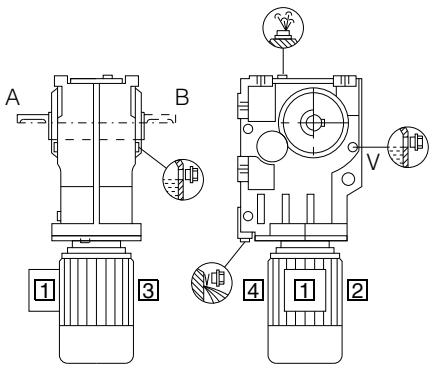
K: B3-00 (IM B3-00) 1)
Order code: Output side A **D06**, output side B **D08**
KA: H-01 1)
Order code: Output side A **D76**, output side B **D77**



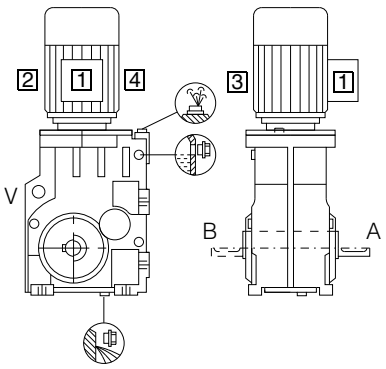
K: B8-00 (IM B8-00)
Order code: Output side A **D68**, output side B **D70**
KA: H-02
Order code: Output side A **D78**, output side B **D79**



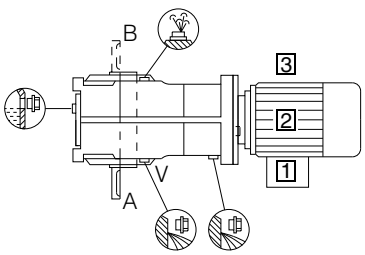
K: B6-00 (IM B6-00)
Order code: Output side A **D38**, output side B **D40**
KA: H-04
Order code: Output side A **D82**, output side B **D83**



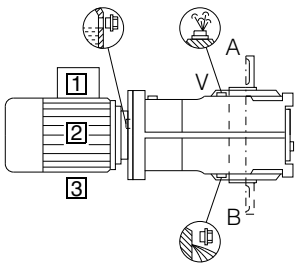
K: B7-00 (IM B7-00)
Order code: Output side A **D59**, output side B **D61**
KA: H-03
Order code: Output side A **D80**, output side B **D81**



K: V5-00 (IM V5-00)
Order code: Output side A **E03**, output side B **E05**
KA: H-05
Order code: Output side A **D84**, output side B **D85**



K: V6-00 (IM V6-00)
Order code: Output side A **E15**, output side B **E17**
KA: H-06
Order code: Output side A **D86**, output side B **D87**



Selection and ordering data (continued)

Bevel helical gearbox K, flange-mounted design (K.F), with housing flange (K.Z) or torque arm (K.D)

Oil control valves:

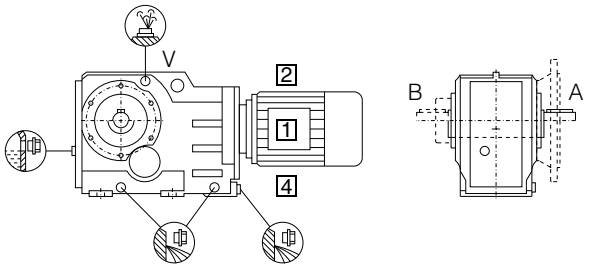
- Size 38: V Oil inlet/oil drain
- From size 48 up: Oil level, Ventilation, Oil drain, * On opposite side

A,B position of the customer's solid/plug-in shaft

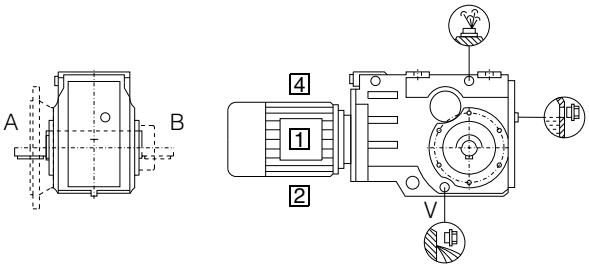
1 ... 4 Position of the terminal box, see Chapter 8.

1) Standard mounting type

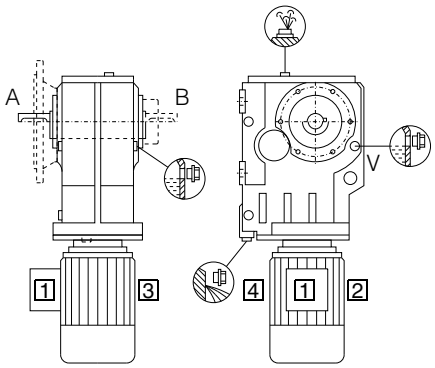
KF: B5-01 (IM B5-01) 1)
Order code: Output side A **D22**, output side B **D24**
KAD, KAF, KAZ: H-01 1)
Order code: Output side A **D76**, output side B **D77**



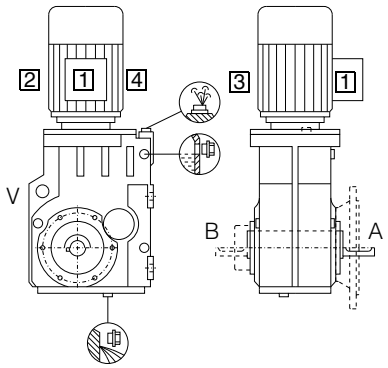
KF: B5-03 (IM B5-03)
Order code: Output side A **D32**, output side B **D34**
KAD, KAF, KAZ: H-02
Order code: Output side A **D78**, output side B **D79**



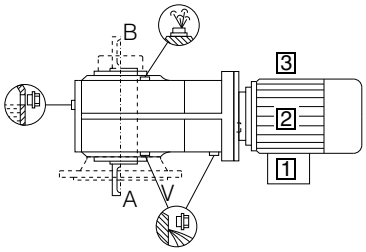
KF: B5-00 (IM B5-00)
Order code: Output side A **D18**, output side B **D20**
KAD, KAF, KAZ: H-04
Order code: Output side A **D82**, output side B **D83**



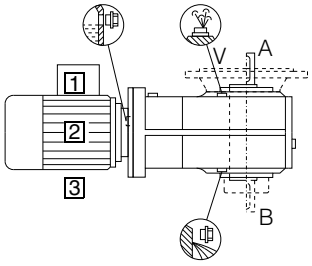
KF: B5-02 (IM B5-02)
Order code: Output side A **D68**, output side B **D29**
KAD, KAF, KAZ: H-03
Order code: Output side A **D80**, output side B **D81**



KF: V1-00 (IM V1-00)
Order code: Output side A **D90**, output side B **D92**
KAD, KAF, KAZ: H-05
Order code: Output side A **D84**, output side B **D85**



KF: V3-00 (IM V3-00)
Order code: Output side A **D98**, output side B **E00**
KAD, KAF, KAZ: H-06
Order code: Output side A **D86**, output side B **D87**



Bevel helical gearbox with extruder flange (KAE)

Mounting positions correspond to those of standard gearboxes with hollow shaft.

Mounting types and mounting positions

Selection and ordering data (continued)

Bevel helical gearbox K with mixer flange (K.M)

Oil control valves:

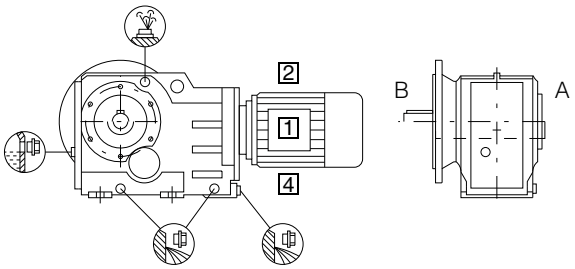
Oil level Ventilation Oil drain * On opposite side

A,B position of the customer's solid/plug-in shaft

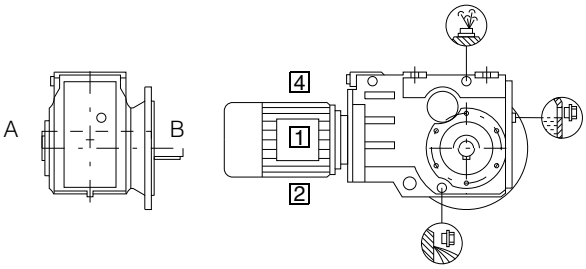
1 ... 4 Position of the terminal box, see Chapter 8.

1) Standard mounting type

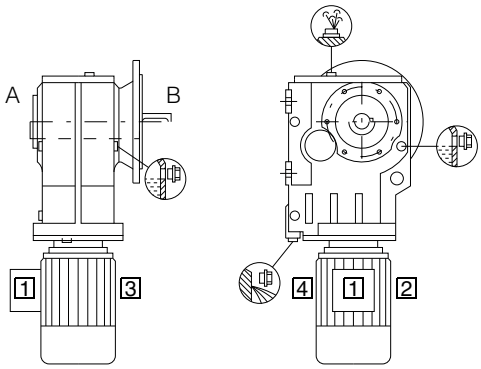
KM: B5-01 (IM B5-01) 1)
Order code: Output side B **D24**
KAM: H-01 1)
Order code: Output side B **D77**



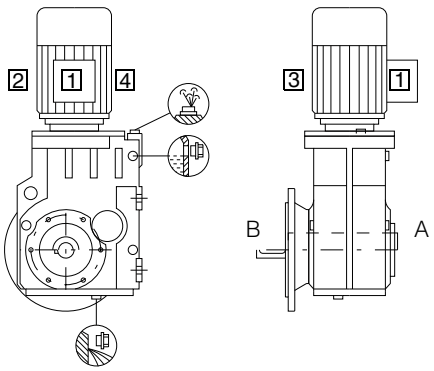
KM: B5-03 (IM B5-03)
Order code: Output side B **D34**
KAM: H-02
Order code: Output side B **D79**



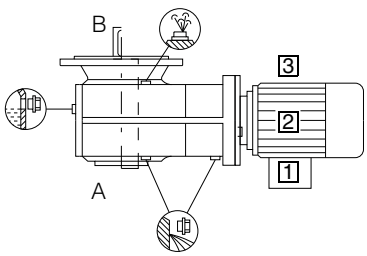
KM: B5-00 (IM B5-00)
Order code: Output side B **D20**
KAM: H-04
Order code: Output side B **D83**



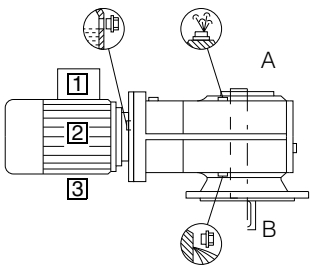
KM: B5-02 (IM B5-02)
Order code: Output side B **D29**
KAM: H-03
Order code: Output side B **D81**



KM: V1-00 (IM V1-00)
Order code: Output side B **D92**
KAM: H-05
Order code: Output side B **D85**



KM: V3-00 (IM V3-00)
Order code: Output side B **E00**
KAM: H-06
Order code: Output side B **D87**



Selection and ordering data (continued)

Bevel helical tandem gearbox

The mounting type / mounting position of the tandem gearbox corresponds to that of the main gearbox. The figures below are only designed to show the position of the oil control valves of the 2nd gearbox.

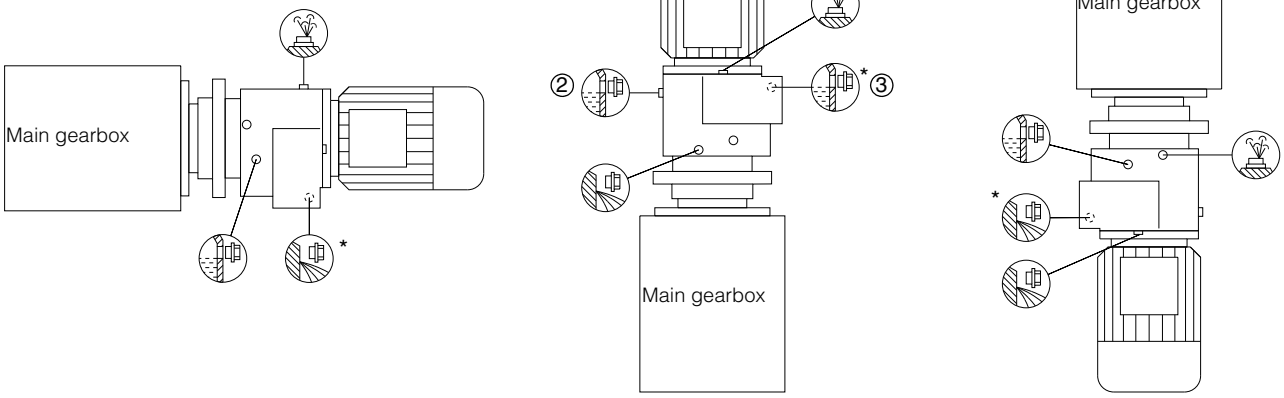
Note:

In a horizontal operating position the bulging part of the housing of the 2nd gearbox generally faces vertically downwards.

Oil control valves:

- Size 28/38 (2nd gearbox): These types are lubricated for life. No ventilation, oil level, or drain plugs are present.
- From size 48 up: Oil level Ventilation Oil drain * On opposite side

② 2-stage gearbox ③ 3-stage gearbox



Special versions

Lubricants

2-stage bevel helical gearbox B

Bevel helical gearboxes B.28 and B.38 are always filled with synthetic lubricant prior to dispatch. The rating plate contains information about the appropriate type of oil (PGLP) and ISO viscosity class.

If the gearbox is to be used in an application with special requirements, the lubricants listed in the table below can be used.

Area of application	Ambient temperature [1]	DIN ISO designation	Order code
Standard oils			
Standard temperature	0 … +60 °C	CLP ISO PG VG460	**K08**
Low temperature usage	-20 … +50 °C	CLP ISO PG VG220	**K07**
Lowest temperature usage	-40 … +40 °C	CLP ISO PAO VG220	[2]
Physiologically safe oils (for use in the food industry) in acc. with NSF(USDA)-H1			
Standard temperature	-30 … +40 °C	CLP ISO H1 VG460	**K11**
Biologically degradable oils			
Standard temperature	-20 … +40 °C	CLP ISO E VG220	**K10**

1) Recommendation
2) On request

3-stage bevel helical gearbox K

Bevel helical gearboxes K are filled with mineral oil as standard.

If the gearbox is to be used in an application with special requirements, the lubricants listed in the table below can be used.

Area of application	Ambient temperature [1]	DIN ISO designation	Order code
Standard oils			
Standard temperature	-10 … +40 °C	CLP ISO VG220	**K06**
Improved oil service life	-20 … +50 °C	CLP ISO PG VG220	**K07**
High temperature usage	0 … +60 °C	CLP ISO PG VG460	**K08**
Low temperature usage	-40 … +40 °C	CLP ISO PAO VG220	[2]
Lowest temperature usage	-40 … +10 °C	CLP ISO PAO VG68	[2]
Physiologically safe oils (for use in the food industry) in acc. with NSF(USDA)-H1			
Standard temperature	-30 … +40 °C	CLP ISO H1 VG460	**K11**
Biologically degradable oils			
Standard temperature	-20 … +40 °C	CLP ISO E VG220	**K10**

1) Recommendation
2) On request

Size 28 does not feature any ventilation, oil level, or drain plugs. The lubricant does not need to be changed, due to the low thermal load the gearbox is subjected to. Bevel helical gearboxes of size 38 have an oil screw; these gearboxes do not require ventilation or ventilation elements.

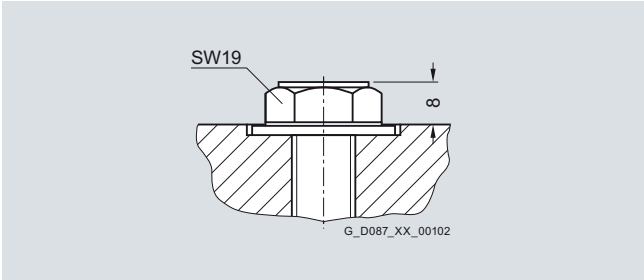
Gearboxes of sizes 48 to 188 are fitted with filler, oil level, and drain plugs as standard. The ventilation and vent filter, which is delivered loose, must be attached in place of the filler plug prior to startup.

Oil level control

Oil sight glass

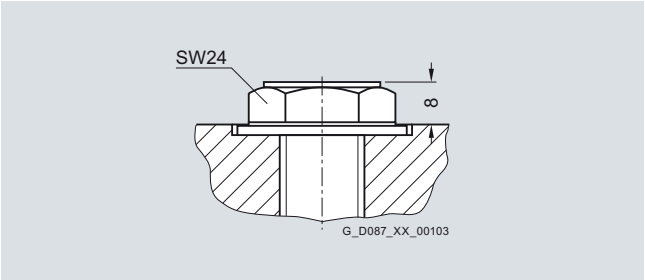
For size 48 and above, bevel helical gearbox K can be equipped with a visual oil level indicator (oil sight glass) for most mounting types and mounting positions.

Order code:
Oil sight glass **G34**



SW = Wrench width

Gearbox	Size
Bevel helical gearbox	K.48 … K.128



SW = Wrench width

Gearbox	Size
Bevel helical gearbox	K.148 … K.188

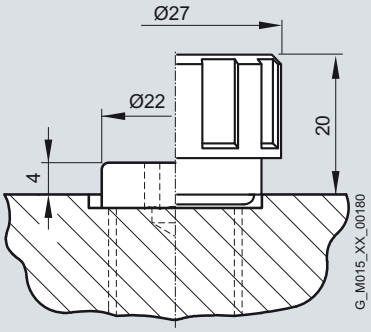
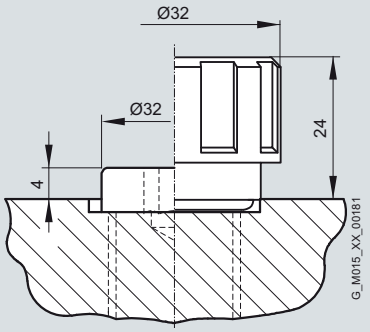
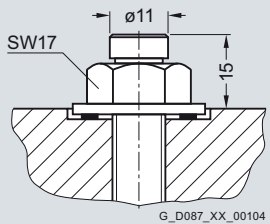
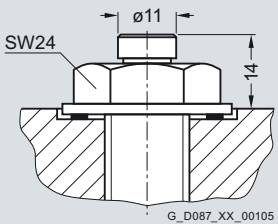
Electrical oil level monitoring system

If required, the gearbox can be supplied with an electrical oil level monitoring system, which enables the oil level of the gearbox to be monitored remotely. The oil level is monitored by a capacitive sensor only when the gearbox starts up; it is not measured continuously.

Gearbox ventilation

The positions of the ventilation and ventilation elements can be seen on the mounting position diagrams.

If required, a pressure ventilation valve can be used for bevel helical gearbox K, size 48 and above.

Order code	K.48 … K.128	K.148 … K.188
Vent filter Order code: **G44**		
Pressure ventilation valve Order code: **G45**		

SW = Wrench width

Special versions

Oil drain

Magnetic oil drain plug

A magnetic oil drain plug for inserting in the oil drainage hole is available on request for bevel helical gearboxes of size 48 and above. This serves to collect any grit contained in the gear lubricant.

Order code:
Magnetic oil drain plug **G53**

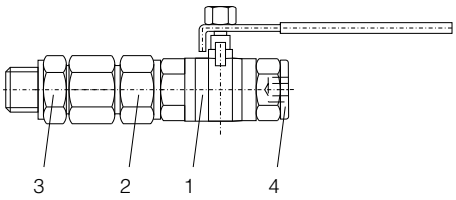
Oil drain valve

An oil drain valve is available on request for bevel helical gearboxes of size 48 and above.

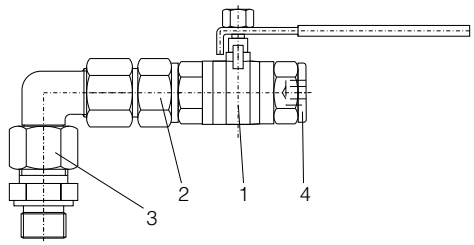
The plug valve may be designed as a complete unit featuring a screw plug, depending on the corresponding mounting position.

Order code:
Oil drain valve, straight **G54**

An angled oil drain valve is also available on request.



Pos.1 Oil drain valve
Pos.2 Screwed connection EGE
Pos.3 Screwed connection GE
Pos.4 Screw plug

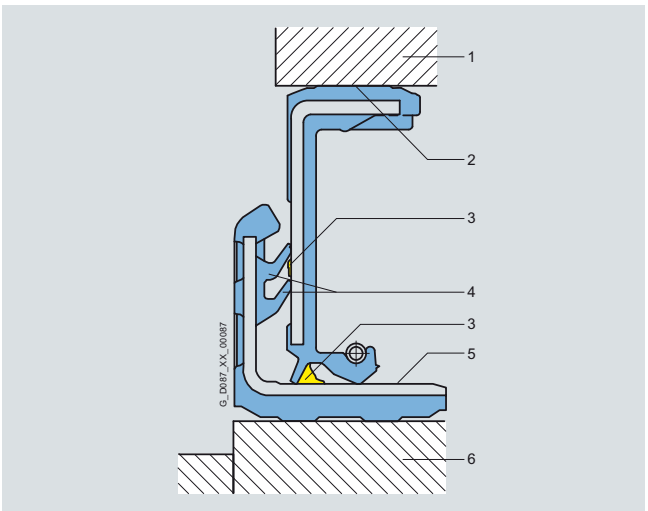


Pos.1 Oil drain valve
Pos.2 Screwed connection EGE
Pos.3 Screwed connection GE
Pos.4 Screw plug

Sealing

Combination shaft sealing

A combination shaft sealing, which helps to prevent oil from leaking, is available for bevel helical gearbox K of sizes 38 to 168.



A combination shaft sealing is particularly well suited to external use.

Order code:
Combination shaft sealing **G24**

1 • Housing
2 • Rubberized inner and outer diameter
3 • Grease filling prevents dry running of the sealing lips
4 • Additional sealing lips to protect against dirt
• Decoupled sealing system prevents scoring of the shaft as a result of corrosion or dirt
5 • Protected running surface for radial shaft sealing ring
• No damage when mounting
6 • Shaft

Double sealing

Double sealing is possible for bevel helical gearboxes of sizes 28 and 188. Double sealing is particularly well suited to external use.

Order code:
Double sealing MSS1 (Sizes 18) **G23**
Double radial shaft seal (Sizes 188) **G22+G31**

High temperature resistant sealing

High temperature resistant sealing (Viton/fluorinated rubber) for high operating and ambient temperatures of +60 °C and above are available for bevel helical gearboxes.

Order code:
High temperature resistant sealing **G25**

Hollow shaft cover (protection cover)

Gearboxes with hollow shaft are delivered with a plastic sealing cap as standard.

They can be fitted with a fixed protection cover on request. Gearboxes of size 28 are fitted as standard with a steel protection cover.

The steel protection cover is the only type of cover which can be used on gearboxes with hollow shaft and shrink disk.

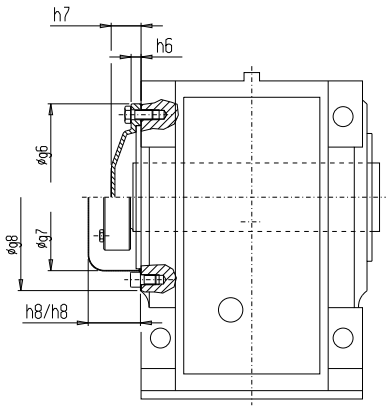
For outdoor use we recommend the ATEX versions.

Order codes:

Protection cover	**G62**
Protection cover (ATEX)	**G63**
Steel protection cover	**G60**
Steel protection cover (ATEX)	**G61**

Protection cover

Protection cover Steel

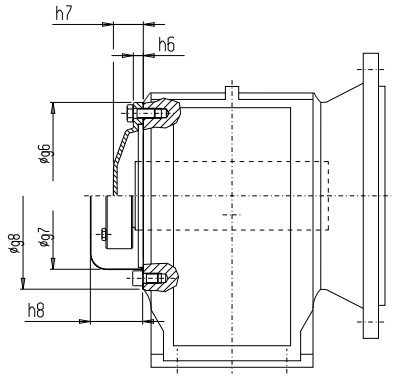


KA, KAS[1)], KAT

Gearbox type	Steel protection cover					Protection cover	
	g7	g8	h8*	h8	g6	h6	h7*
K.38	–	–	–	–	–	–	–
K.48	99.0	130	44.0	44.0	132	10	33
K.68	115.0	150	62.5	69.0	150	10	37
K.88	137.0	190	70.0	70.0	190	13	50
K.108	187.0	240	80.0	92.0	245	13	55
K.128	233.0	292	85.0	97.0	295	16	48
K.148	257.5	334	100.0	113.0	335	13	50
K.168	309.5	390	129.5	154.5	400	13	50
K.188	309.5	390	129.5	129.5	400	13	50

Protection cover

Protection cover Steel



BAF, BAZ, BAFS, BAZS, BAFT, BAZT
KAF, KAZ, KAFS[1)], KAZS[1)], KAFT, KAZT

Gearbox type	Steel protection cover				Protection cover	
	g7	g8	h8	g6	h6	h7
B.28	58.0	102	33.5	–	–	–
B.38	99.0	130	44.0	132	10	33
K.38	82.2	115	40.0	120	10	33
K.48	99.0	130	44.0	132	10	33
K.68	115.0	150	62.5	150	10	37
K.88	137.0	190	70.0	190	13	50
K.108	187.0	240	80.0	245	13	55
K.128	233.0	292	85.0	295	16	48
K.148	257.5	334	100.0	335	13	50
K.168	309.5	390	129.5	400	13	50
K.188	309.5	390	129.5	400	13	50

1) Only a steel protection cover is available for KAS, KADS, KAFS, and KAZS; standard protection cover for size 28

h7* / h8* = Touch protection
h7 / h8 = Touch protection and dust proof

Radially reinforced output shaft bearings

The bearings of the MOTOX gearboxes are dimensioned such that they are strong enough to withstand most application cases.

However, the gearboxes can be fitted with a reinforced output shaft bearing arrangement for applications with particularly high radial forces.

Order code:
Radially reinforced output shaft bearing **G20**

Special versions

2nd output shaft extension

If required, bevel helical gearboxes in a foot-mounted design with solid shaft are available with a 2nd shaft extension. See the dimension drawings for the corresponding design for the relevant dimensions.

Order code:
2nd output shaft extension **G73**

Bevel helical gearbox with backstop in the intermediate stage (K.X)

Bevel helical gearboxes of types KF, KAD, KAF, KAZ, KADS, KAFS, and KAZS can be supplied with a backstop in the intermediate stage.

The backstop can only be attached opposite the output side A or B.

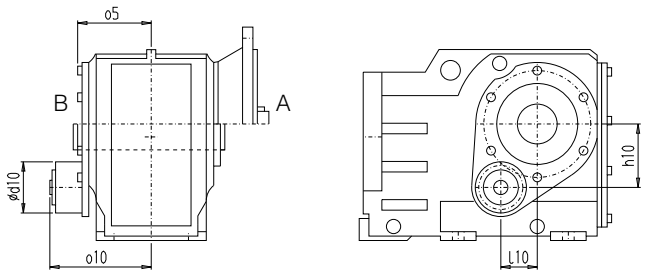
Non-drive-end cover (protection cover) can not be attached on bevel helical gearboxes with backstop.

Order code:
Backstop **G72**

Note:

The direction of rotation of the output shaft must be specified for geared motors with a backstop. See also "Direction of rotation of geared motors", page 1/43.

Order codes:
Output shaft direction of rotation
Clockwise **K18**
Counterclockwise **K19**



Gearbox	d10	o10	l10	h10	o5
K.X88	79	166.0	56.3	98	112
K.X108	110	192.5	70.8	112	131
K.X128	132	238.5	80.8	141	163
K.X148	145	276.5	71.0	173	191
K.X168	190	320.5	89.9	203	221

Configuring guide

Gearbox	Main gearbox transmission ratio		Max. permissible output torque of backstop at f_B=1 Nm	Oil quantity of backstop l
K.X88	5.54	… 11.21	2 036	0.04
	11.64	… 302.68	4 275 *)	
K.X108	7.68	… 12.90	3 828	0.06
	13.74	… 307.24	6 852 *)	
K.X128	7.10	… 12.56	7 595	0.09
	13.00	… 295.38	13 907 *)	
K.X148	4.83	… 8.79	10 450	0.11
	9.77	… 306.08	21 139 *)	
K.X168	6.61	… 11.67	16 386	0.44
	12.41	… 287.95	30 750 *)	

*) Data for tandem gearbox

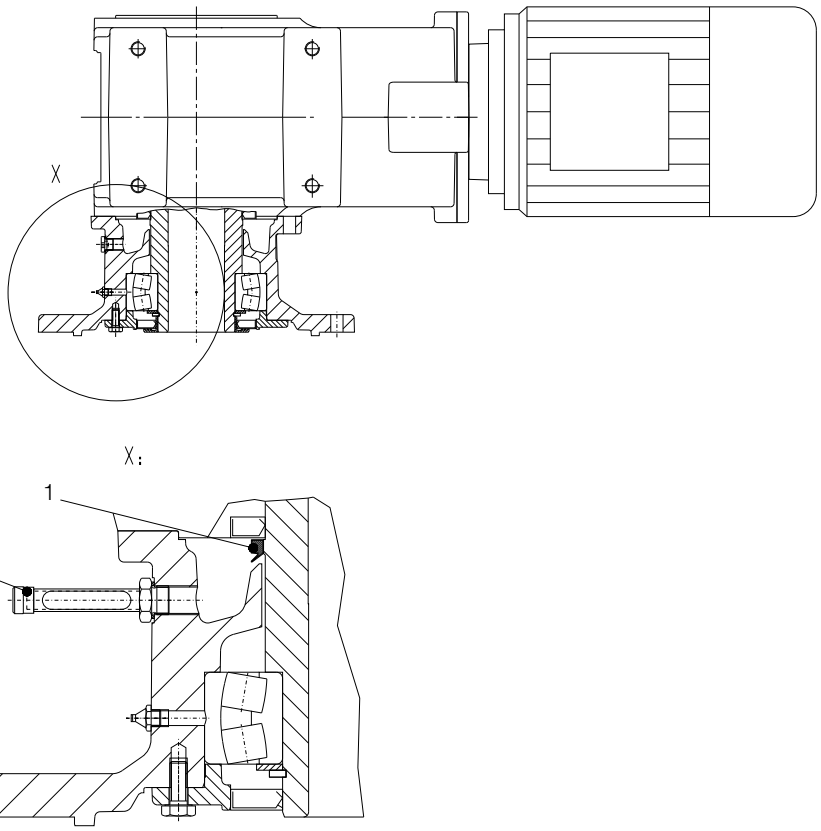
Mixer flange in dry-well design

The agitator flange can be fitted with an additional "V" ring (1) in mounting position V3-00 in order to drain off any leak oil to a safety chamber and protect the equipment against the effects of leakages.

The oil can either be viewed through a sight glass, or its presence indicated by an electrical sensor (2).

Order codes:

Dry-well design with sight glass	**G89**
Dry-well design with sensor	**G90**

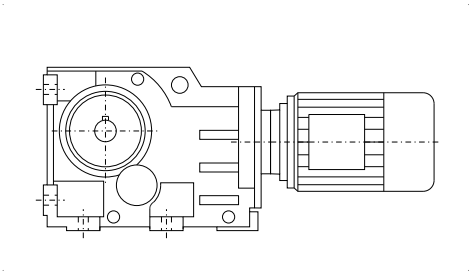
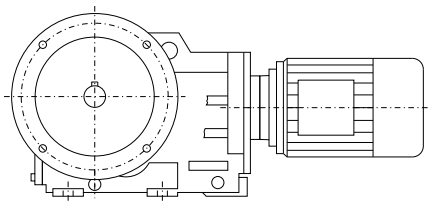
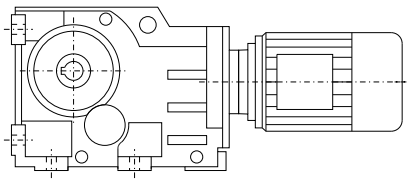
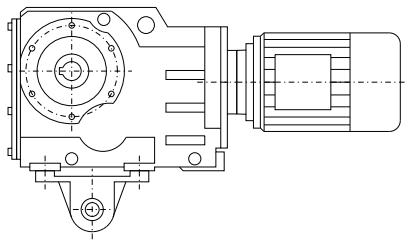


Regreasing device for the mixer flange

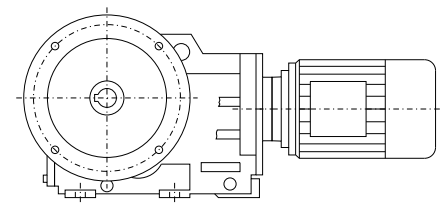
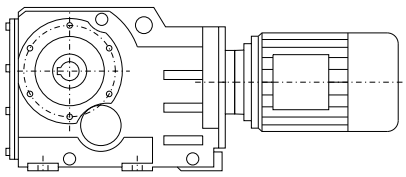
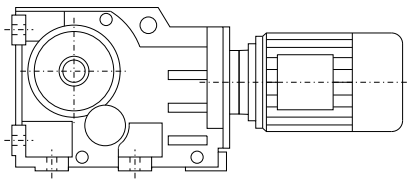
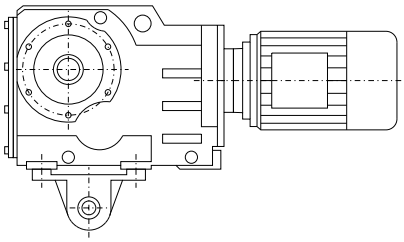
The agitator flange gearbox can be fitted with a regreasing device on request.

Dimensions

Dimension drawing overview

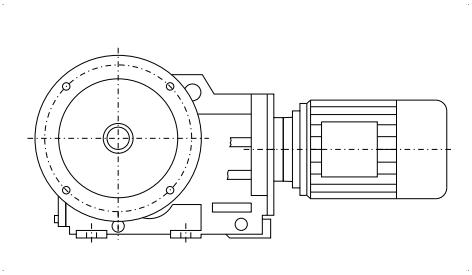
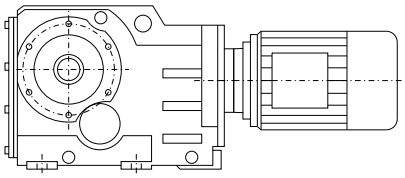
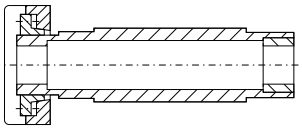
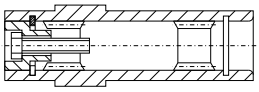
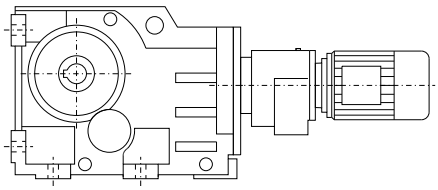
Representation	Gearbox type	Dimension drawing on page
	B28 / BZ28	4/102
	B38 / BZ38	4/110
	K38	4/118
	K48	4/128
	K68	4/138
	K88	4/148
	K108	4/158
	K128	4/168
	K148	4/178
	K168	4/188
	K188	4/198
	BF28	4/103
	BF38	4/111
	KF38	4/119
	KF48	4/129
	KF68	4/139
	KF88	4/149
	KF108	4/159
	KF128	4/169
	KF148	4/179
	KF168	4/189
	KF188	4/199
	BA28 / BAZ28	4/104
	BA38 / BAZ38	4/112
	KA38	4/120
	KA48	4/130
	KA68	4/140
	KA88	4/150
	KA108	4/160
	KA128	4/170
	KA148	4/180
	KA168	4/190
	KA188	4/200
	BAD28	4/105
	BAD38	4/113
	KAD38	4/121
	KAD48	4/131
	KAD68	4/141
	KAD88	4/151
	KAD108	4/161
	KAD128	4/171
	KAD148	4/181
	KAD168	4/191
	KAD188	4/201

Dimension drawing overview (continued)

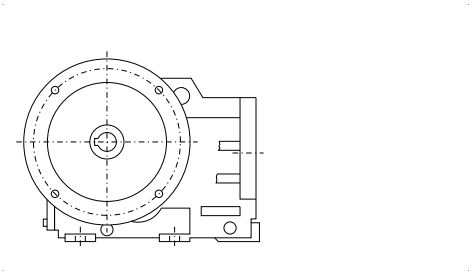
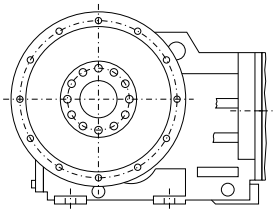
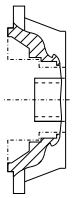
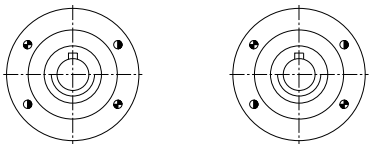
Representation	Gearbox type	Dimension drawing on page
	BAF28	4/106
	BAF38	4/114
	KAF38	4/122
	KAF48	4/132
	KAF68	4/142
	KAF88	4/152
	KAF108	4/162
	KAF128	4/172
	KAF148	4/182
	KAF168	4/192
	KAF188	4/202
	KAZ38	4/123
	KAZ48	4/133
	KAZ68	4/143
	KAZ88	4/153
	KAZ108	4/163
	KAZ128	4/173
	KAZ148	4/183
	KAZ168	4/193
	KAZ188	4/203
	BAS28 / BAZS28	4/107
	BAS38 / BAZS38	4/115
	KAS38	4/124
	KAS48	4/134
	KAS68	4/144
	KAS88	4/154
	KAS108	4/164
	KAS128	4/174
	KAS148	4/184
	KAS168	4/194
	KAS188	4/204
	BADS28	4/108
	BADS38	4/116
	KADS38	4/125
	KADS48	4/135
	KADS68	4/145
	KADS88	4/155
	KADS108	4/165
	KADS128	4/175
	KADS148	4/185
	KADS168	4/195
	KADS188	4/205

Dimensions

Dimension drawing overview (continued)

Representation	Gearbox type	Dimension drawing on page
	BAFS28	4/109
	BAFS38	4/117
	KAFS38	4/126
	KAFS48	4/136
	KAFS68	4/146
	KAFS88	4/156
	KAFS108	4/166
	KAFS128	4/176
	KAFS148	4/186
	KAFS168	4/196
	KAFS188	4/206
	KAZS38	4/127
	KAZS48	4/137
	KAZS68	4/147
	KAZS88	4/157
	KAZS108	4/167
	KAZS128	4/177
	KAZS148	4/187
	KAZS168	4/197
	KAZS188	4/207
	KA.S38 ... KA.S188	4/208
	KA.T38 ... KA.T188	4/209
	K.38-Z28 ... K.188-Z68	4/210

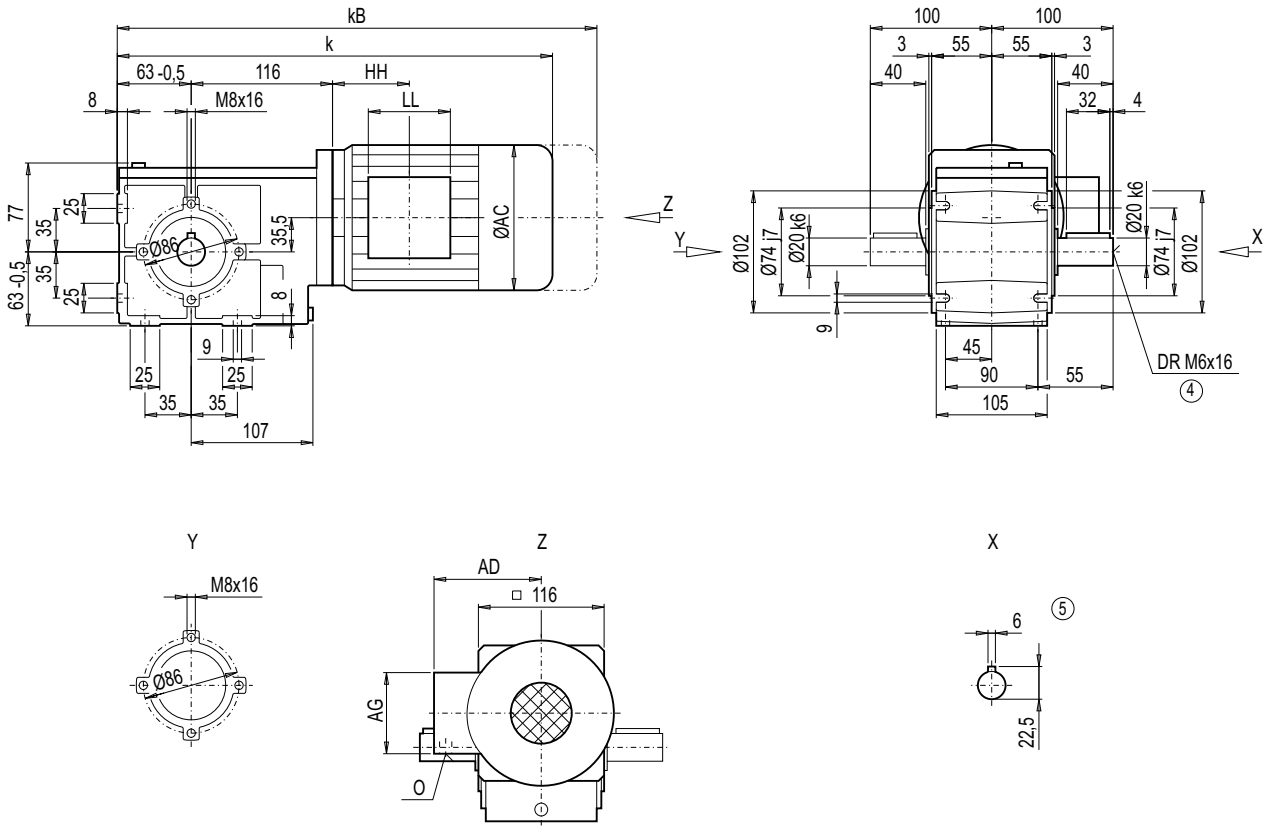
Dimension drawing overview (continued)

Representation	Gearbox type	Dimension drawing on page
	K.M88 ... K.M168	4/213
	KAE88 ... KAE168	4/215
	Additional flange-mounted design	4/217
	Pin holes	4/218

Dimensions

Gearbox B/BZ28 (2-stage), housing-flange-mounted design (C-type)

B012
BZ012



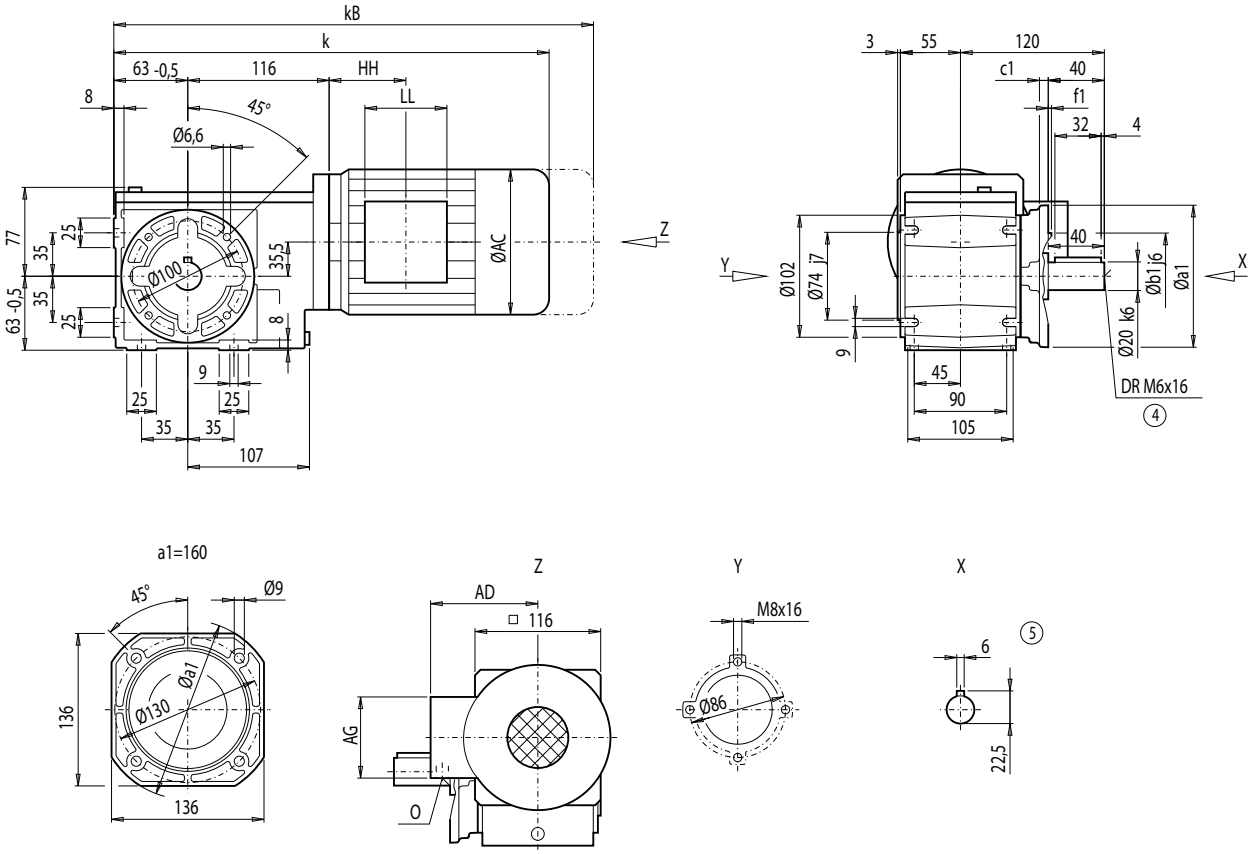
Motor	B.28 k	kB	AC	AD	AG	LL	HH	O	Weight B.28
LA71	381.5	436.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA71Z	400.5	455.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA90S/L	478.5	549.5	174	163	90	90	87.0	M20x1.5/M25x1.5	20
LA90ZL	523.5	594.5	174	163	90	90	211.0	M20x1.5/M25x1.5	28
LA100L	560.5	641.5	195	168	120	120	163.5	2xM32x1.5	29
LA100ZL	630.5	711.5	195	168	120	120	295.5	2xM32x1.5	39

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox BF28 (2-stage), flange-mounted design (A-type)

BF012



Flange	a1	b1	to2	c1	f1
A120	120	80	j6	8	3.0
A160	160	110	j6	9	3.5

	BF28								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**BF28**
LA71	381.5	436.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA71Z	400.5	455.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA90S/L	478.5	549.5	174	163	90	90	87.0	M20x1.5/M25x1.5	20
LA90ZL	523.5	594.5	174	163	90	90	211.0	M20x1.5/M25x1.5	29
LA100L	560.5	641.5	195	168	120	120	163.5	2xM32x1.5	29
LA100ZL	630.5	711.5	195	168	120	120	295.5	2xM32x1.5	39

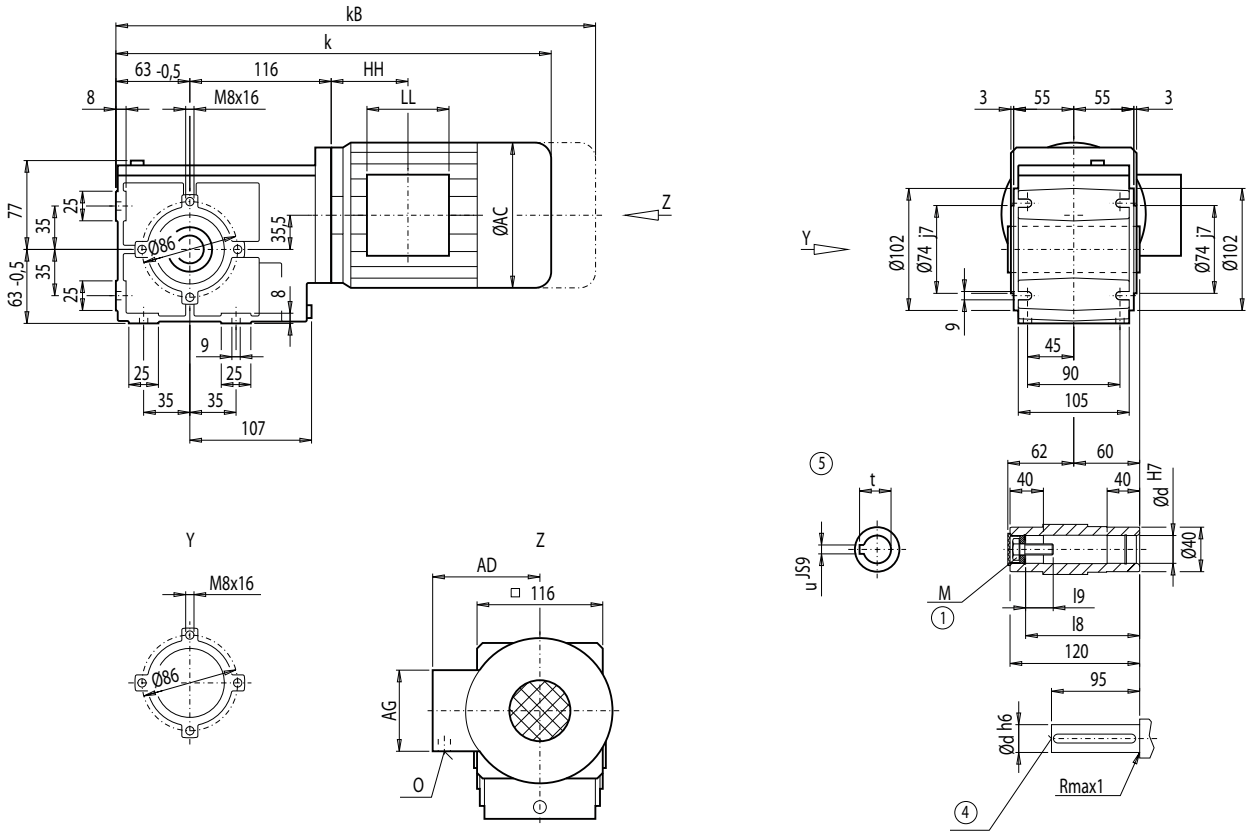
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox BA/BAZ28 (2-stage), housing-flange-mounted design (C-type)

BA012
BAZ012



d	l9	l8	M	t	u
20 *)	23.4	106	M6	22.8	6
25	27.6	105	M10	28.3	8

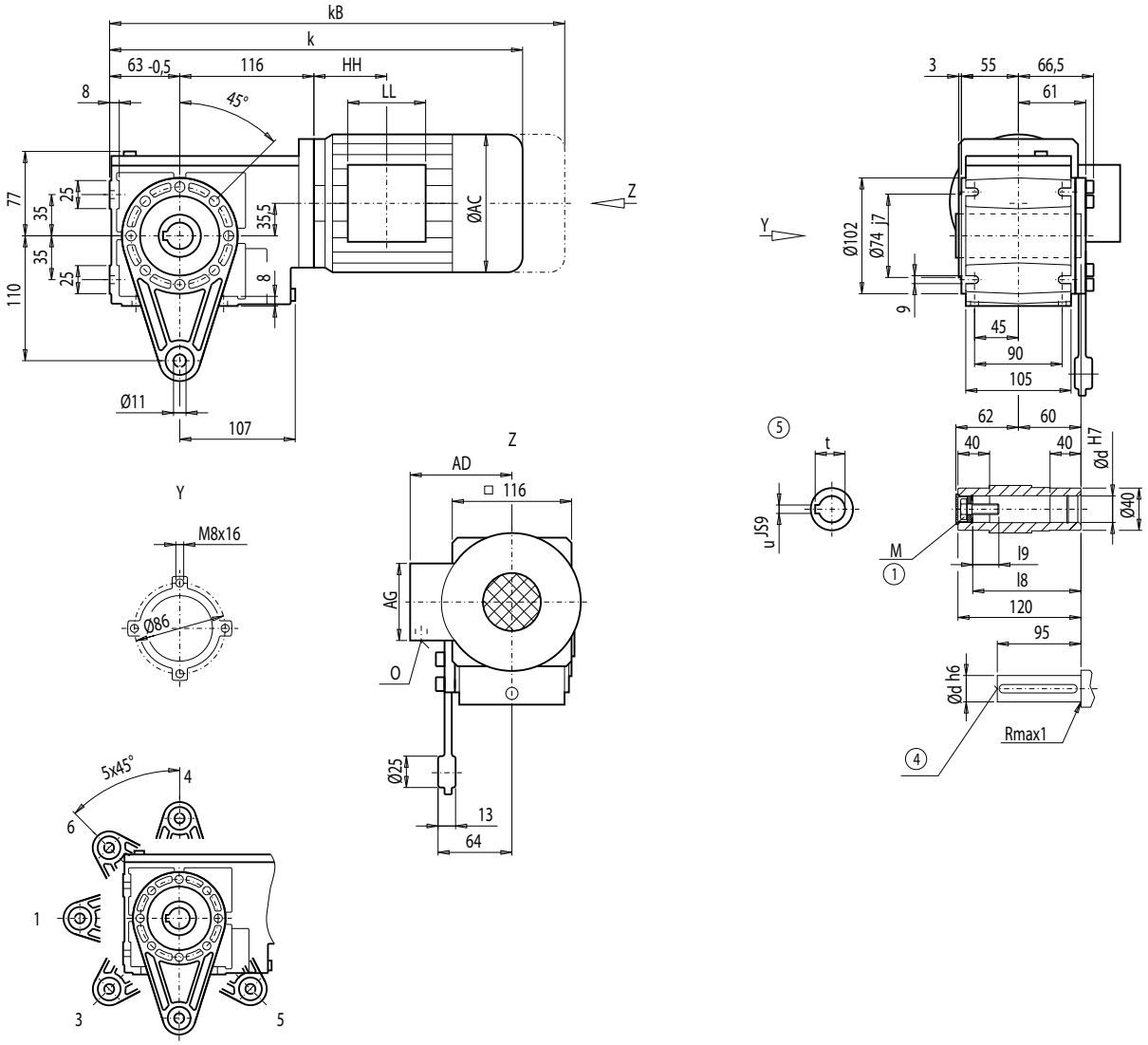
*) Preferred series

Motor	BA.28 k	kB	AC	AD	AG	LL	HH	O	Weight BA.28
LA71	381.5	436.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA71Z	400.5	455.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA90S/L	478.5	549.5	174	163	90	90	87.0	M20x1.5/M25x1.5	19
LA90ZL	523.5	594.5	174	163	90	90	211.0	M20x1.5/M25x1.5	28
LA100L	560.5	641.5	195	168	120	120	163.5	2xM32x1.5	28
LA100ZL	630.5	711.5	195	168	120	120	295.5	2xM32x1.5	38

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① EN ISO 4014

Gearbox BAD28 (2-stage), shaft-mounted design with torque arm

BAD012



d	l9	l8	M	t	u
20 *)	23.4	106	M6	22.8	6
25	27.6	105	M10	28.3	8

*) Preferred series

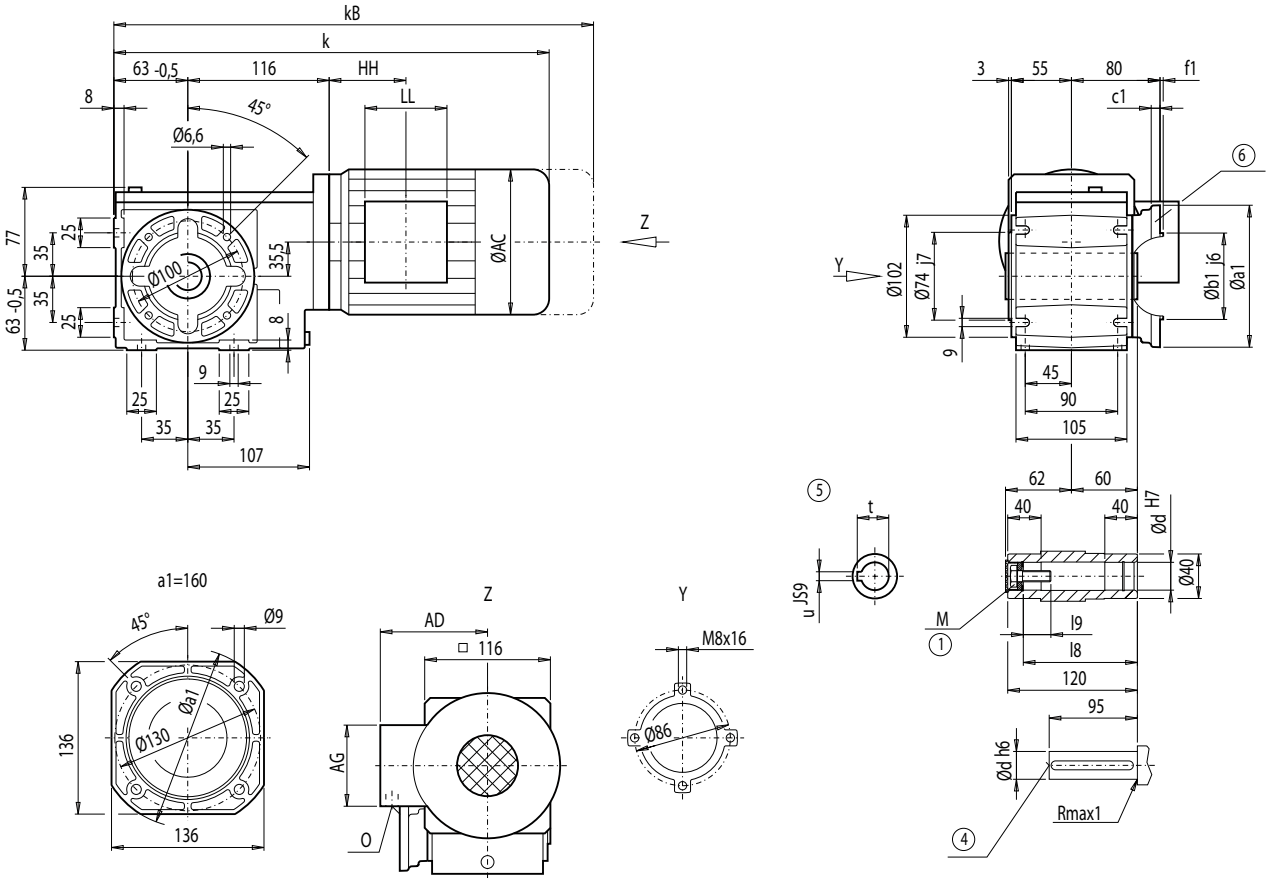
Motor	BAD28 k	kB	AC	AD	AG	LL	HH	O	Weight BAD28
LA71	381.5	436.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA71Z	400.5	455.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA90S/L	478.5	549.5	174	163	90	90	87.0	M20x1.5/M25x1.5	19
LA90ZL	523.5	594.5	174	163	90	90	211.0	M20x1.5/M25x1.5	28
LA100L	560.5	641.5	195	168	120	120	163.5	2xM32x1.5	28
LA100ZL	630.5	711.5	195	168	120	120	295.5	2xM32x1.5	38

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① EN ISO 4014

Dimensions

Gearbox BAF28 (2-stage), flange-mounted design

BAF012



Flange	a1	b1	to2	c1	f1	d	M	l9	l8	t	u
A120	120	80	j6	8	3.0	20 *)	M6	23.4	106	22.8	6
						25	M10	27.6	105	28.3	8
A160	160	110	j6	9	3.5	20 *)	M6	23.4	106	22.8	6
						25	M10	27.6	105	28.3	8

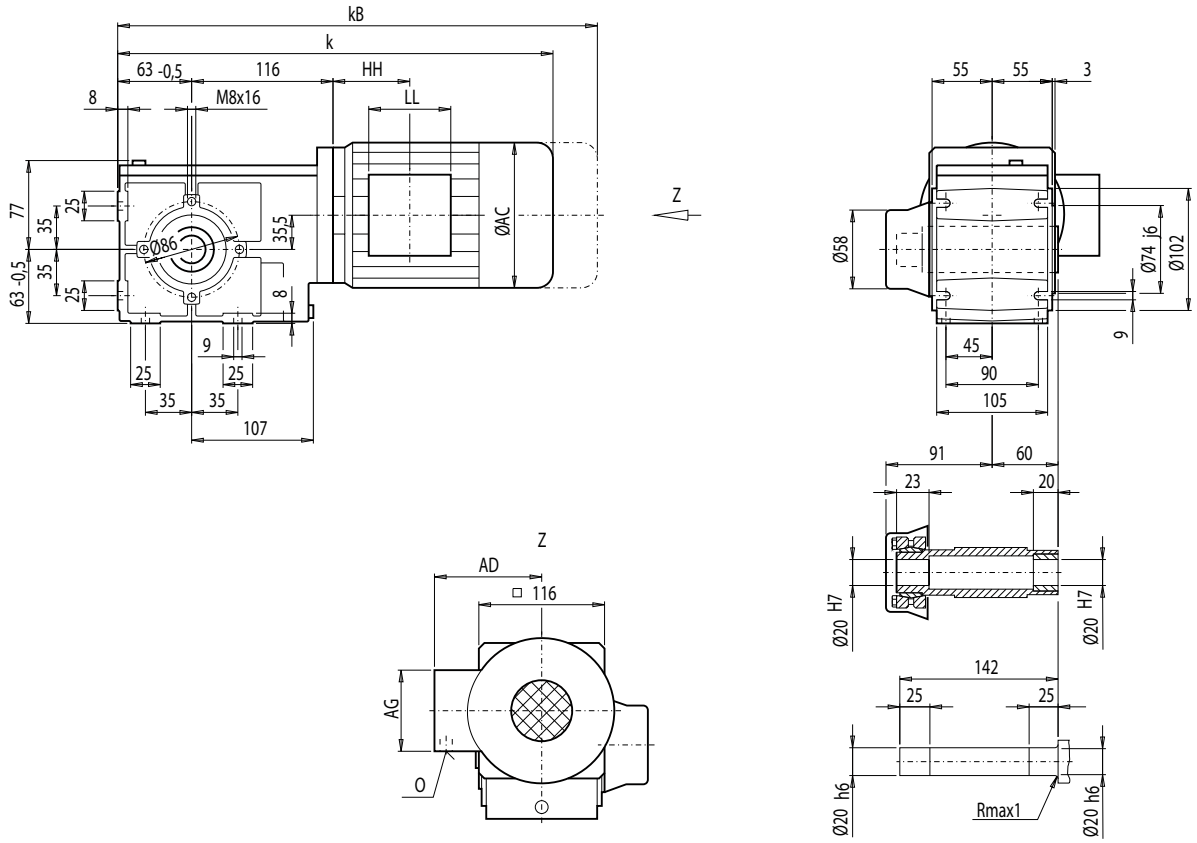
*) Preferred series

	BAF28								Weight
Motor	k	kB	AC	AD	AG	LL	HH	O	BAF28
LA71	381.5	436.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA71Z	400.5	455.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA90S/L	478.5	549.5	174	163	90	90	87.0	M20x1.5/M25x1.5	19
LA90ZL	523.5	594.5	174	163	90	90	211.0	M20x1.5/M25x1.5	28
LA100L	560.5	641.5	195	168	120	120	163.5	2xM32x1.5	29
LA100ZL	630.5	711.5	195	168	120	120	295.5	2xM32x1.5	39

① EN ISO 4014 ④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Gearbox BAS/BAZS28 (2-stage), shaft-mounted design with housing flange (C-type) and shrink disk

BAS012
BAZS012

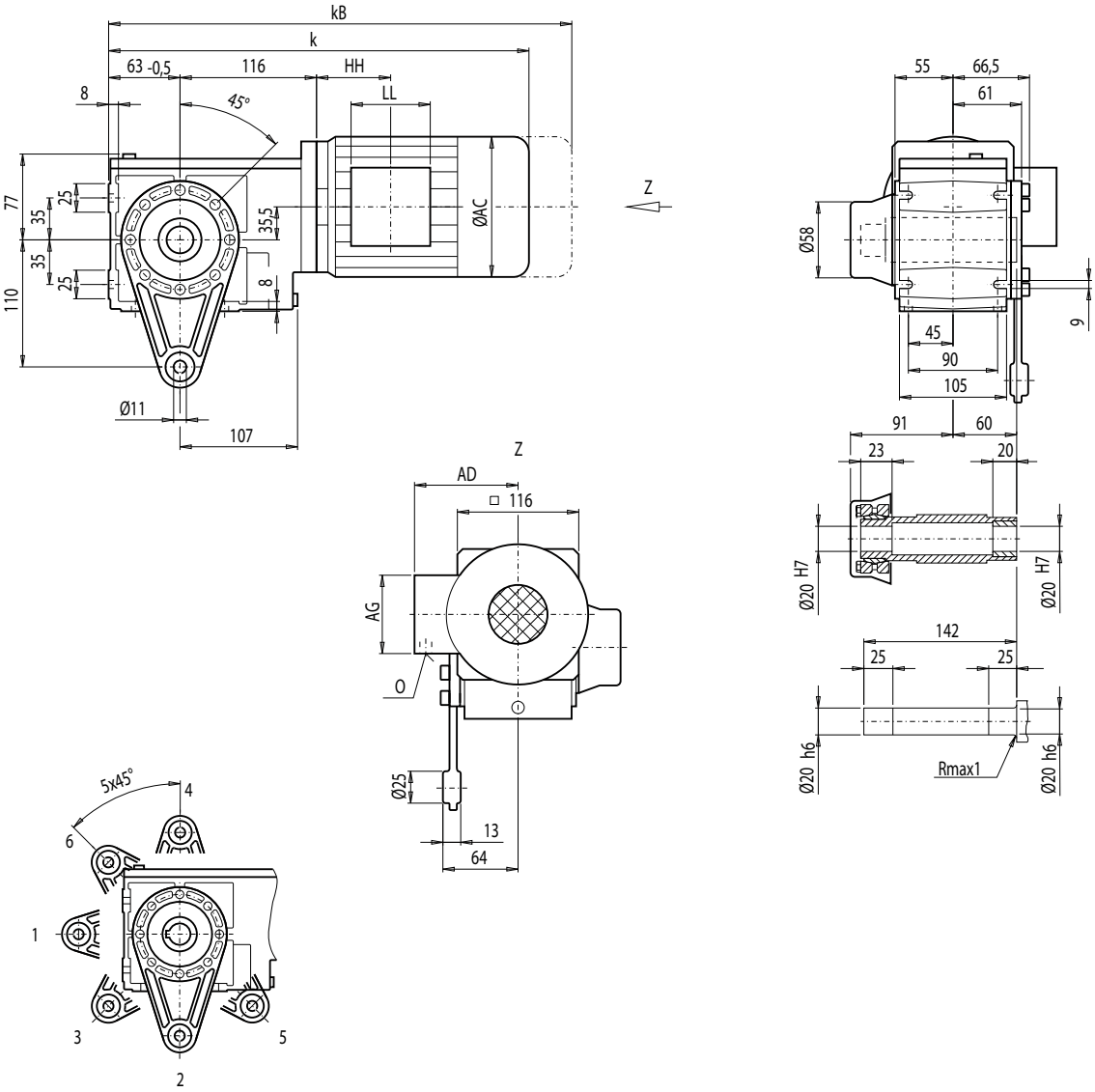


Motor	BA.S28 k	kB	AC	AD	AG	LL	HH	O	Weight BA.S28
LA71	381.5	436.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA71Z	400.5	455.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA90S/L	478.5	549.5	174	163	90	90	87.0	M20x1.5/M25x1.5	19
LA90ZL	523.5	594.5	174	163	90	90	211.0	M20x1.5/M25x1.5	28
LA100L	560.5	641.5	195	168	120	120	163.5	2xM32x1.5	29
LA100ZL	630.5	711.5	195	168	120	120	295.5	2xM32x1.5	39

Dimensions

GGearbox BADS28 (2-stage), shaft-mounted design with torque arm and shrink disk

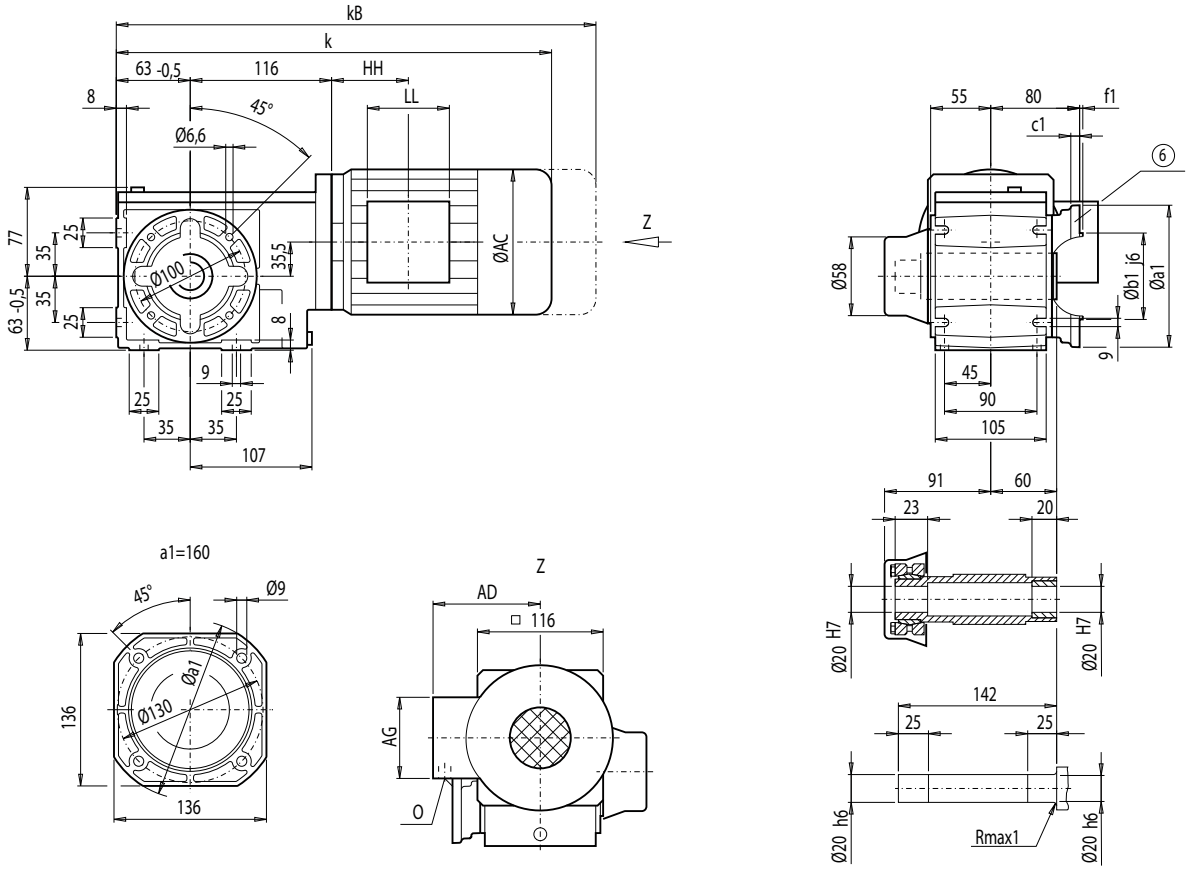
BADS012



Motor	BADS28 k	kB	AC	AD	AG	LL	HH	O	Weight BADS28
LA71	381.5	436.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA71Z	400.5	455.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA90S/L	478.5	549.5	174	163	90	90	87.0	M20x1.5/M25x1.5	20
LA90ZL	523.5	594.5	174	163	90	90	211.0	M20x1.5/M25x1.5	29
LA100L	560.5	641.5	195	168	120	120	163.5	2xM32x1.5	29
LA100ZL	630.5	711.5	195	168	120	120	295.5	2xM32x1.5	39

Gearbox BAFS28 (2-stage), flange-mounted design and shrink disk

BAFS012



Flange	a1	b1	to2	c1	f1
A120	120	80	j6	8	3.0
A160	160	110	j6	9	3.5

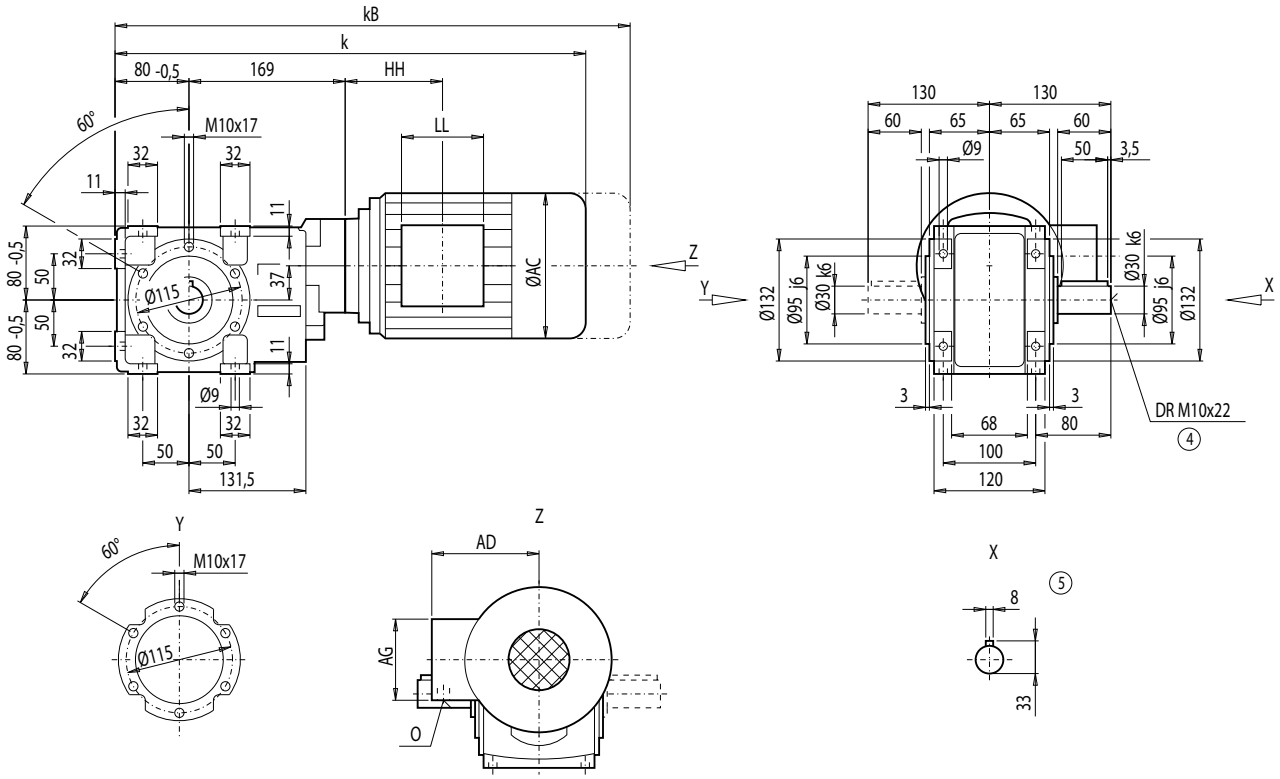
	BAFS28								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**BAFS28**
LA71	381.5	436.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA71Z	400.5	455.5	139	146	90	90	58.5	M20x1.5/M25x1.5	10
LA90S/L	478.5	549.5	174	163	90	90	87.0	M20x1.5/M25x1.5	20
LA90ZL	523.5	594.5	174	163	90	90	211.0	M20x1.5/M25x1.5	29
LA100L	560.5	641.5	195	168	120	120	163.5	2xM32x1.5	29
LA100ZL	630.5	711.5	195	168	120	120	295.5	2xM32x1.5	39

⑥ For note, see page 4/217

Dimensions

Gearbox B/BZ38 (2-stage), housing-flange-mounted design (C-type)

B012
BZ012



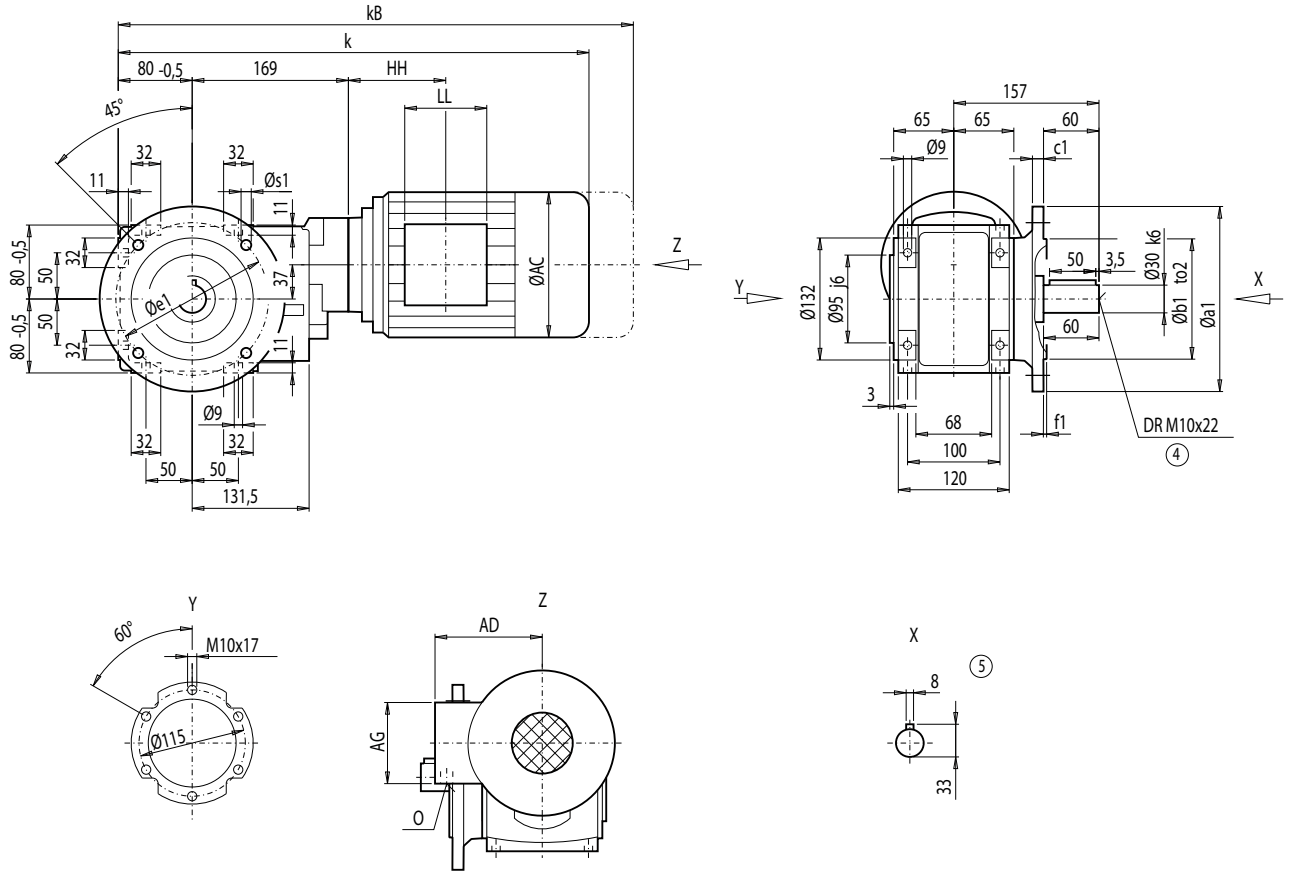
Motor	B.38 k	kB	AC	AD	AG	LL	HH	O	Weight B.38
LA71	482.0	537.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	21
LA71Z	501.0	556.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	21
LA80	519.0	582.5	156.5	155	90	90	88.5	M20x1.5/M25x1.5	26
LA80Z	541.5	605.0	156.5	155	90	90	161.5	M20x1.5/M25x1.5	30
LA90S/L	550.0	621.0	174.0	163	90	90	88.5	M20x1.5/M25x1.5	31
LA90ZL	595.0	666.0	174.0	163	90	90	212.5	M20x1.5/M25x1.5	37
LA100L	596.0	677.0	195.0	168	120	120	129.0	2xM32x1.5	40
LA100ZL	666.0	747.0	195.0	168	120	120	261.0	2xM32x1.5	50

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox BF38 (2-stage), flange-mounted design (A-type)

BF012



Flange	a1	b1	to2	c1	e1	f1	s1
A160	160	110	j6	10	130	3.0	9
A200	200	130	j6	12	165	3.5	11

	BF38								Weight
Motor	k	kB	AC	AD	AG	LL	HH	O	BF38
LA71	482.0	537.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	23
LA71Z	501.0	556.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	23
LA80	519.0	582.5	156.5	155	90	90	88.5	M20x1.5/M25x1.5	28
LA80Z	541.5	605.0	156.5	155	90	90	161.5	M20x1.5/M25x1.5	32
LA90S/L	550.0	621.0	174.0	163	90	90	88.5	M20x1.5/M25x1.5	32
LA90ZL	595.0	666.0	174.0	163	90	90	212.5	M20x1.5/M25x1.5	38
LA100L	596.0	677.0	195.0	168	120	120	129.0	2xM32x1.5	41
LA100ZL	666.0	747.0	195.0	168	120	120	261.0	2xM32x1.5	51

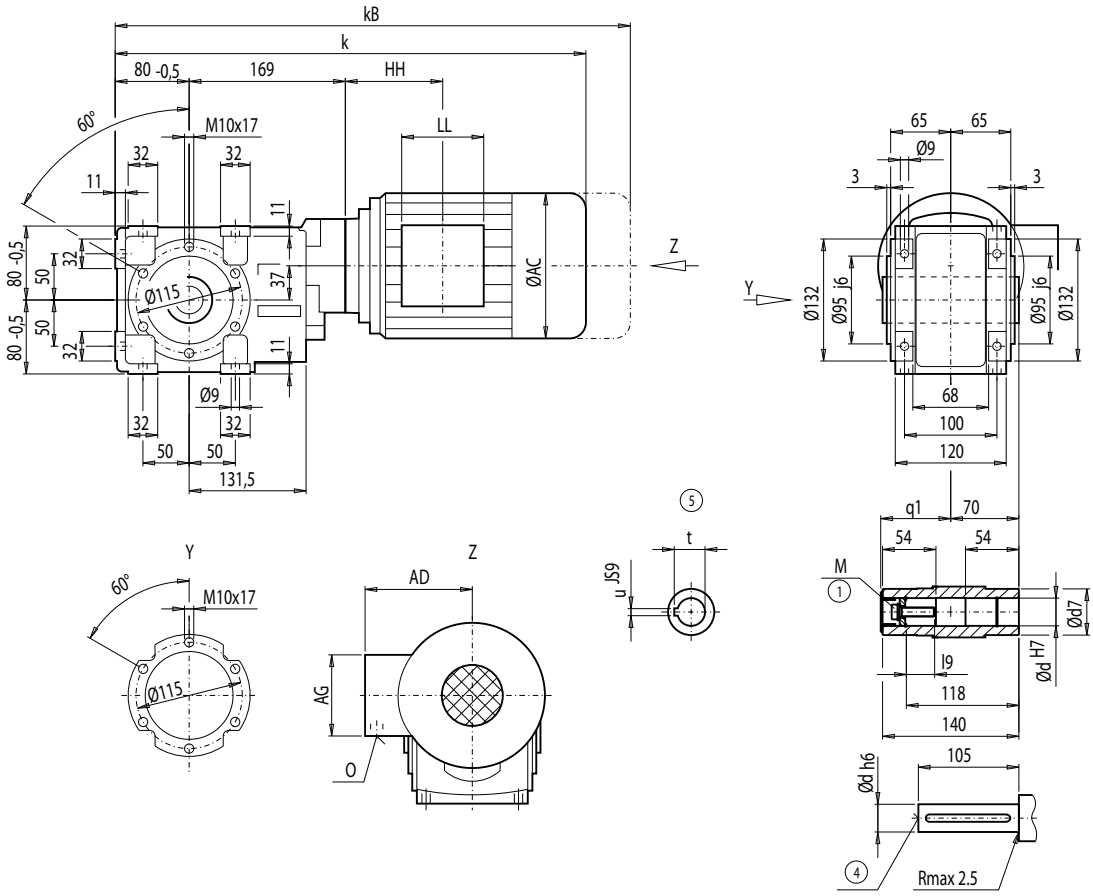
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox BA/BAZ38 (2-stage), housing-flange-mounted design (C-type)

BA012
BAZ012



d	l9	M	t	u	d7	q1
30 *)	31	M10	33.3	8	50	72
35	40	M12	38.3	10	50	72
40	48	M16	43.3	12	55	73

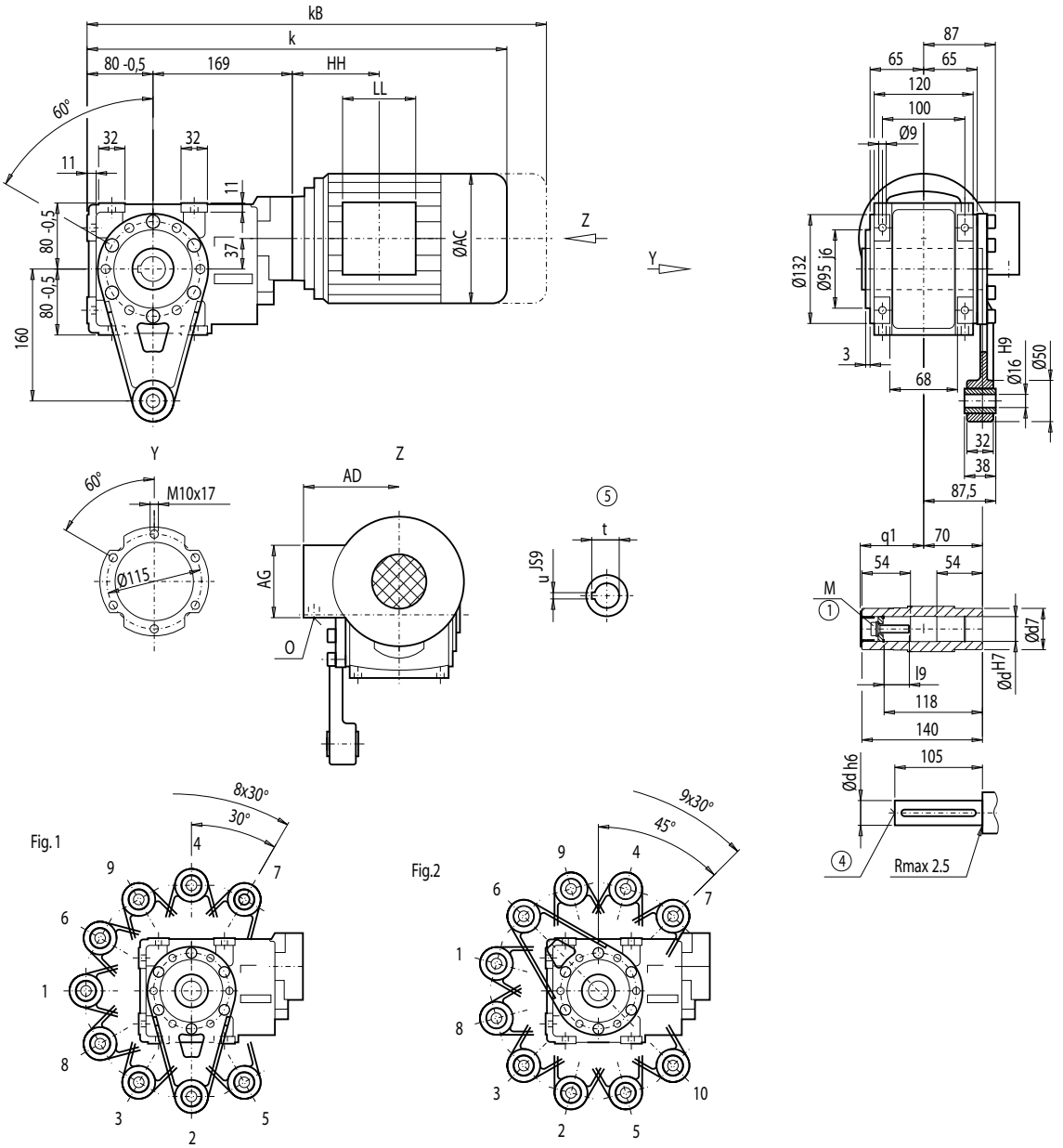
*) Preferred series

	BA.38								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**BA.38**
LA71	482.0	537.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	21
LA71Z	501.0	556.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	21
LA80	519.0	582.5	156.5	155	90	90	88.5	M20x1.5/M25x1.5	26
LA80Z	541.5	605.0	156.5	155	90	90	161.5	M20x1.5/M25x1.5	30
LA90S/L	550.0	621.0	174.0	163	90	90	88.5	M20x1.5/M25x1.5	30
LA90ZL	595.0	666.0	174.0	163	90	90	212.5	M20x1.5/M25x1.5	36
LA100L	596.0	677.0	195.0	168	120	120	129.0	2xM32x1.5	39
LA100ZL	666.0	747.0	195.0	168	120	120	261.0	2xM32x1.5	49

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912

Gearbox BAD38 (2-stage), shaft-mounted design with torque arm

BAD012



d	l9	M	t	u	d7	q1
30 *)	31	M10	33.3	8	50	72
35	40	M12	38.3	10	50	72
40	48	M16	43.3	12	55	73

*) Preferred series

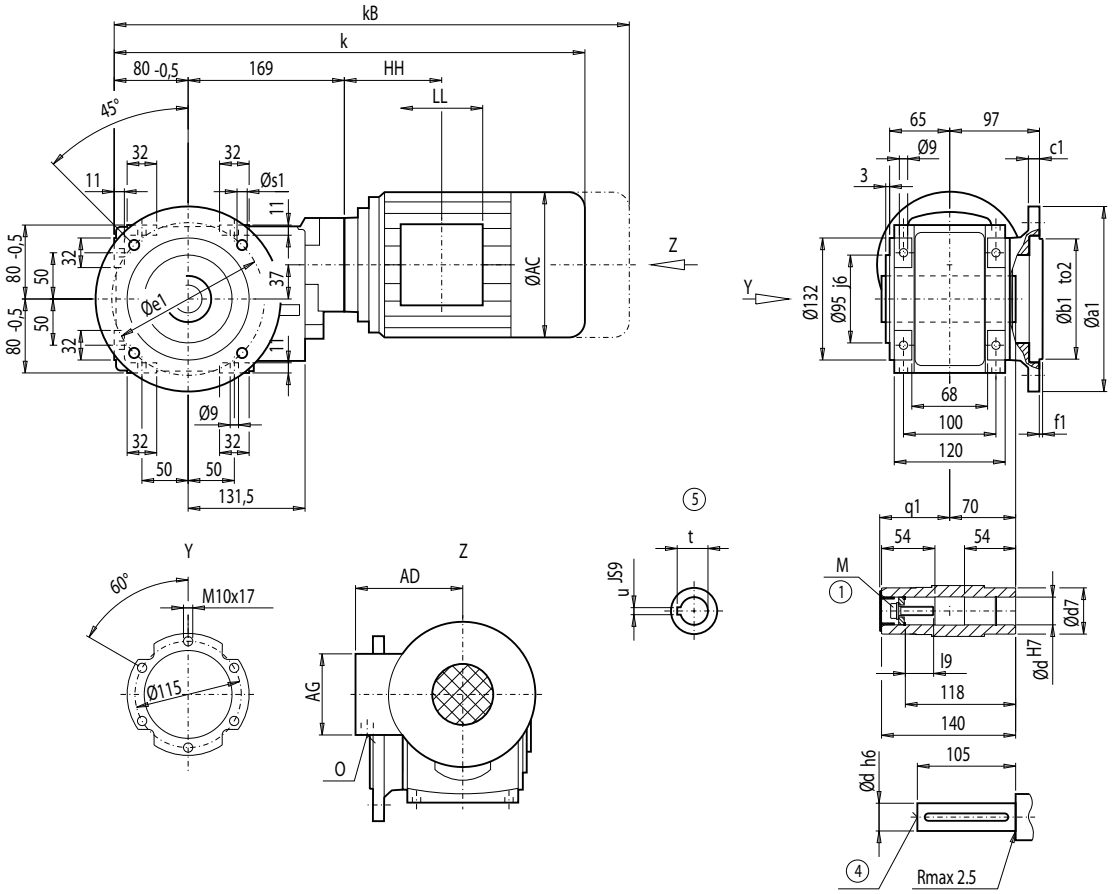
	BAD38								Weight
Motor	k	kB	AC	AD	AG	LL	HH	O	BAD38
LA71	482.0	537.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	22
LA71Z	501.0	556.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	22
LA80	519.0	582.5	156.5	155	90	90	88.5	M20x1.5/M25x1.5	27
LA80Z	541.5	605.0	156.5	155	90	90	161.5	M20x1.5/M25x1.5	31
LA90S/L	550.0	621.0	174.0	163	90	90	88.5	M20x1.5/M25x1.5	32
LA90ZL	595.0	666.0	174.0	163	90	90	212.5	M20x1.5/M25x1.5	38
LA100L	596.0	677.0	195.0	168	120	120	129.0	2xM32x1.5	41
LA100ZL	666.0	747.0	195.0	168	120	120	261.0	2xM32x1.5	51

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912

Dimensions

Gearbox BAF38 (2-stage), flange mounted design

BAF012



Flange	a1	b1	to2	c1	e1	f1	s1	d	l9	M	t	u	d7	q1
A160	160	110	j6	10	130	3.0	9	30 *)	31	M10	33.3	8	50	72
								35	40	M12	38.3	10	50	72
								40	48	M16	43.3	12	55	73
A200	200	130	j6	12	165	3.5	11	30 *)	31	M10	33.3	8	50	72
								35	40	M12	38.3	10	50	72
								40	48	M16	43.3	12	55	73

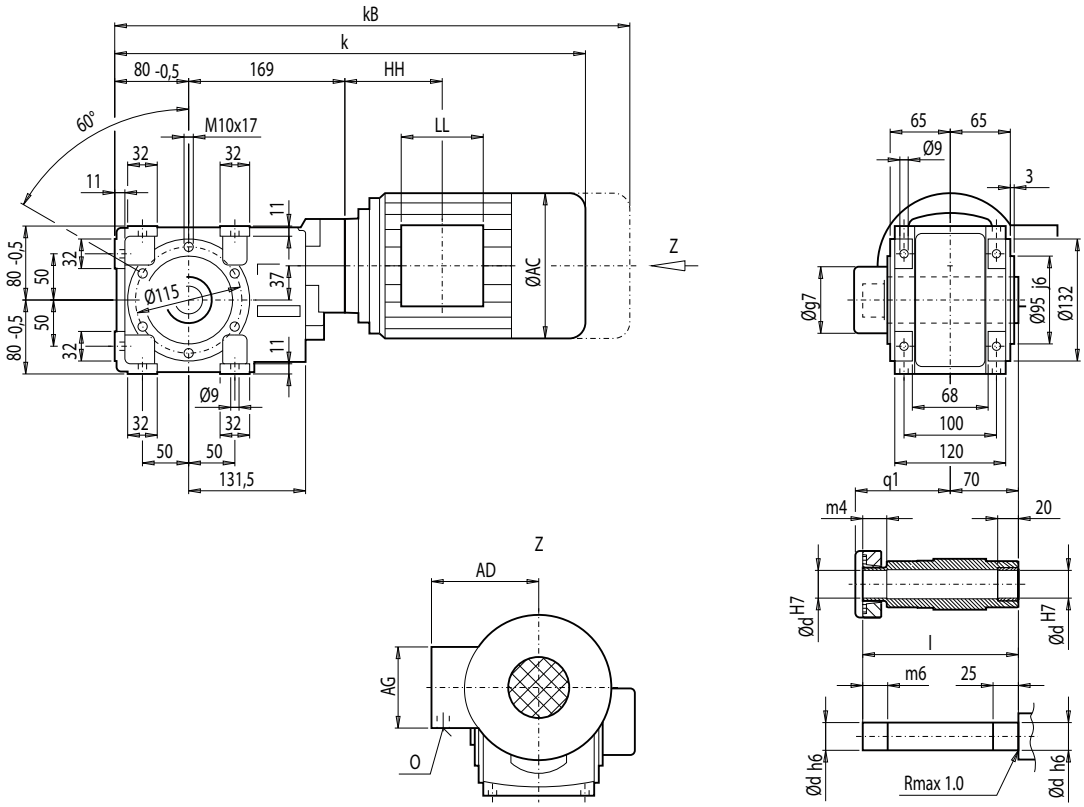
*) Preferred series

	BAF38								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**BAF38**
LA71	482.0	537.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	22
LA71Z	501.0	556.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	22
LA80	519.0	582.5	156.5	155	90	90	88.5	M20x1.5/M25x1.5	27
LA80Z	541.5	605.0	156.5	155	90	90	161.5	M20x1.5/M25x1.5	31
LA90S/L	550.0	621.0	174.0	163	90	90	88.5	M20x1.5/M25x1.5	31
LA90ZL	595.0	666.0	174.0	163	90	90	212.5	M20x1.5/M25x1.5	37
LA100L	596.0	677.0	195.0	168	120	120	129.0	2xM32x1.5	40
LA100ZL	666.0	747.0	195.0	168	120	120	261.0	2xM32x1.5	50

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912 ⑥ For note, see page 4/217

Gearbox BAS/BAZS38 (2-stage), shaft-mounted design with housing flange (C-type) and shrink disk

BAS012
BAZS012



d	l	g7	m4	m6	q1
30 *)	166	77	27	32	104
35	168	85	27	32	106

*) Preferred series

	BA.S38								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**BA.S38**
LA71	482.0	537.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	21
LA71Z	501.0	556.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	21
LA80	519.0	582.5	156.5	155	90	90	88.5	M20x1.5/M25x1.5	26
LA80Z	541.5	605.0	156.5	155	90	90	161.5	M20x1.5/M25x1.5	30
LA90S/L	550.0	621.0	174.0	163	90	90	88.5	M20x1.5/M25x1.5	31
LA90ZL	595.0	666.0	174.0	163	90	90	212.5	M20x1.5/M25x1.5	37
LA100L	596.0	677.0	195.0	168	120	120	129.0	2xM32x1.5	40
LA100ZL	666.0	747.0	195.0	168	120	120	261.0	2xM32x1.5	50

Dimensions

Gearbox BADS38 (2-stage), shaft-mounted design with torque arm

BADS012

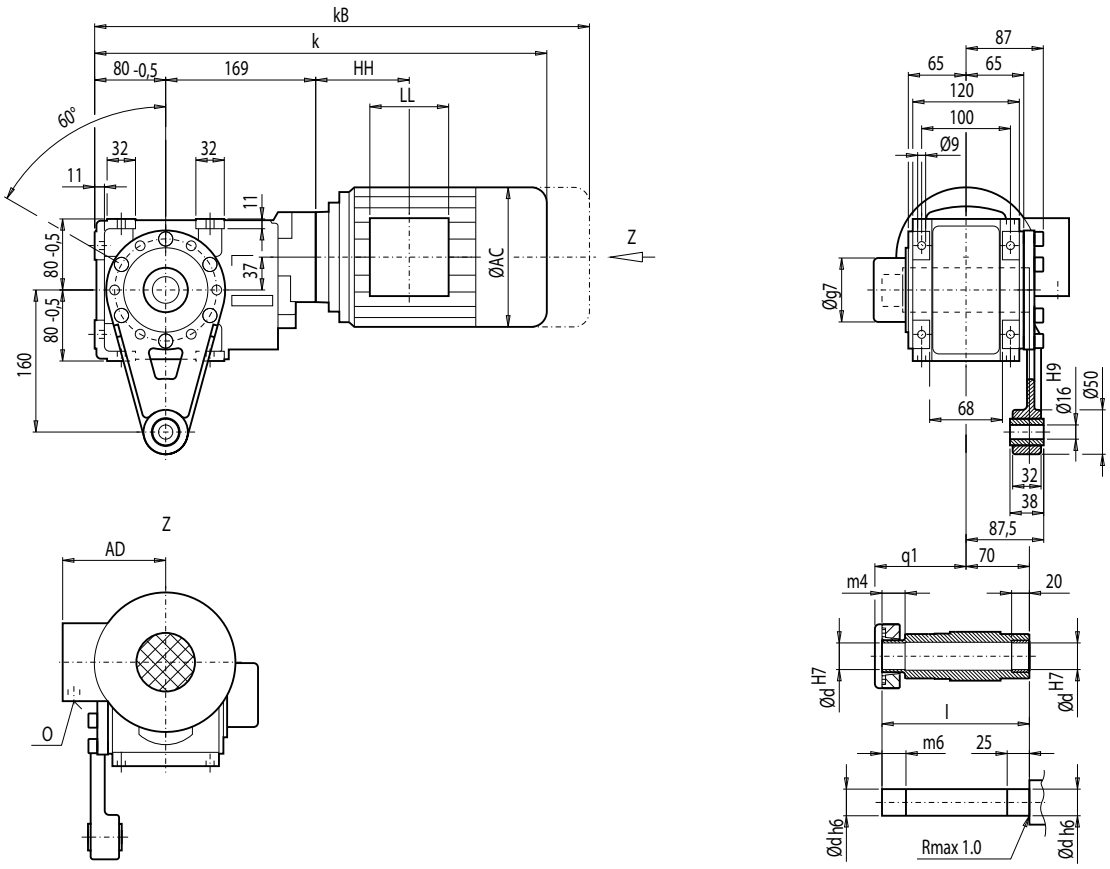


Fig.1

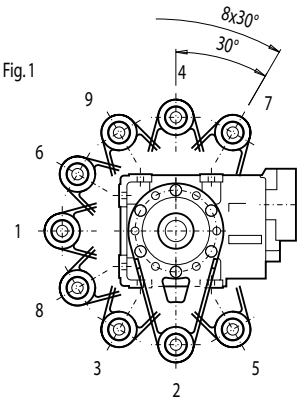
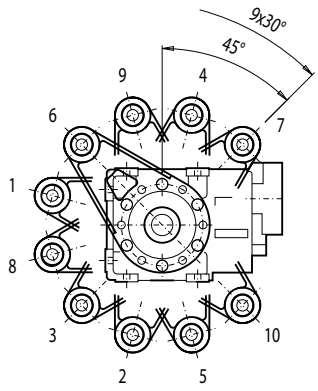


Fig.2



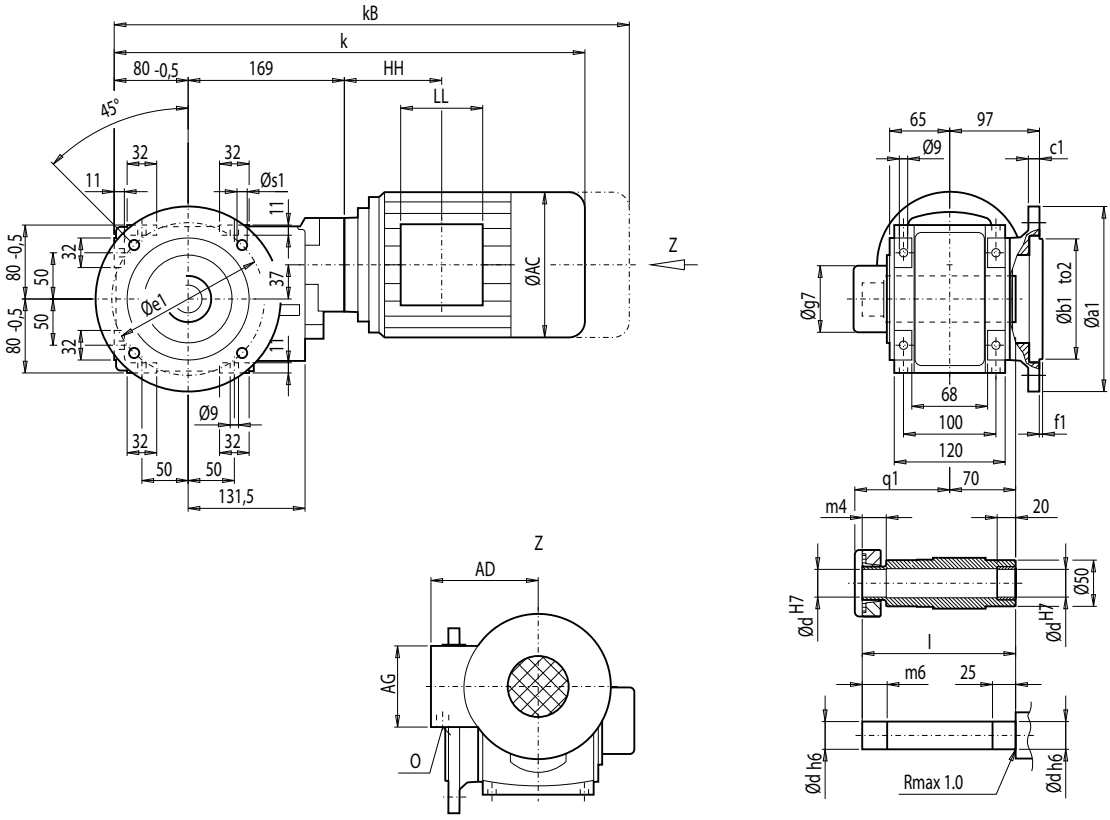
d	l	g7	m4	m6	q1
30 *)	166	77	27	32	104
35	168	85	27	32	106

*) Preferred series

	BADS38								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**BADS38**
LA71	482.0	537.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	23
LA71Z	501.0	556.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	23
LA80	519.0	582.5	156.5	155	90	90	88.5	M20x1.5/M25x1.5	28
LA80Z	541.5	605.0	156.5	155	90	90	161.5	M20x1.5/M25x1.5	32
LA90S/L	550.0	621.0	174.0	163	90	90	88.5	M20x1.5/M25x1.5	32
LA90ZL	595.0	666.0	174.0	163	90	90	212.5	M20x1.5/M25x1.5	38
LA100L	596.0	677.0	195.0	168	120	120	129.0	2xM32x1.5	41
LA100ZL	666.0	747.0	195.0	168	120	120	261.0	2xM32x1.5	51

Gearbox BAFS38 (2-stage), flange mounted design and shrink disk

BAFS012



Flange	a1	b1	to2	c1	e1	f1	s1	d	l	g7	m4	m6	q1
A160	160	110	j6	10	130	3.0	9	30 *)	166	77	27	32	104
								35	168	85	27	32	106
A200	200	130	j6	12	165	3.5	11	30 *)	166	77	27	32	104
								35	168	85	27	32	106

*) Preferred series

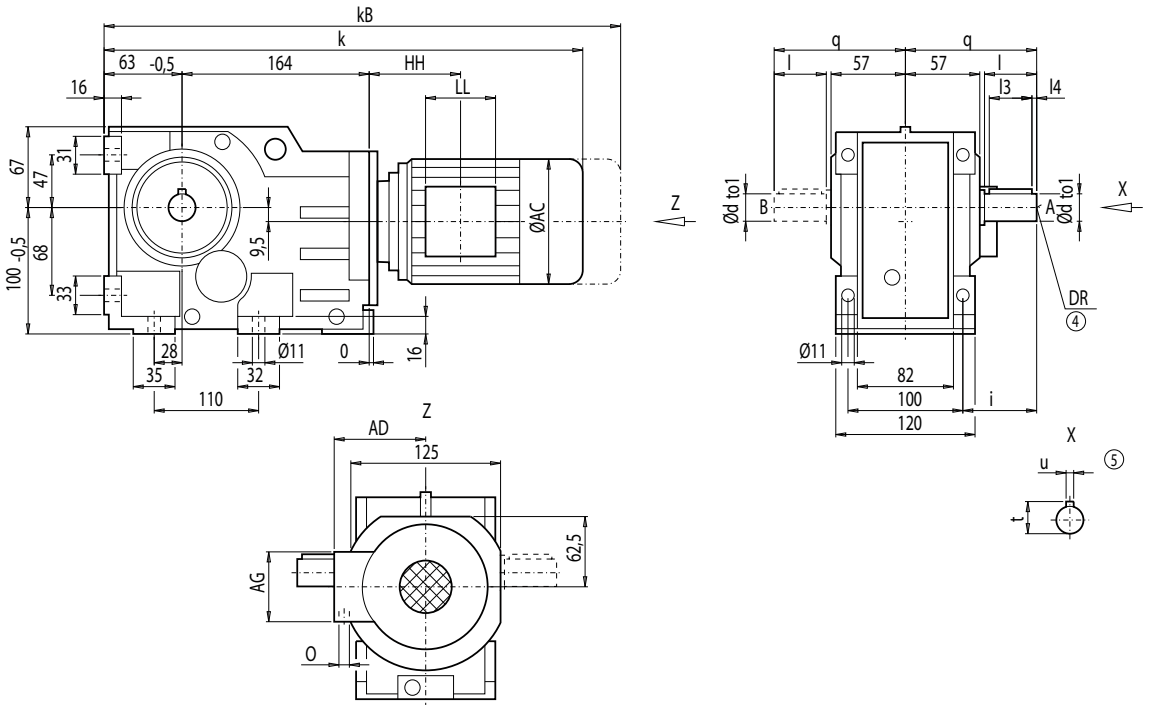
	BAFS38								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**BAFS38**
LA71	482.0	537.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	22
LA71Z	501.0	556.0	139.0	146	90	90	89.0	M20x1.5/M25x1.5	22
LA80	519.0	582.5	156.5	155	90	90	88.5	M20x1.5/M25x1.5	27
LA80Z	541.5	605.0	156.5	155	90	90	161.5	M20x1.5/M25x1.5	31
LA90S/L	550.0	621.0	174.0	163	90	90	88.5	M20x1.5/M25x1.5	32
LA90ZL	595.0	666.0	174.0	163	90	90	212.5	M20x1.5/M25x1.5	38
LA100L	596.0	677.0	195.0	168	120	120	129.0	2xM32x1.5	41
LA100ZL	666.0	747.0	195.0	168	120	120	261.0	2xM32x1.5	51

⑥ For note, see page 4/217

Dimensions

Gearbox K38 (3-stage), housing-flange-mounted design (C-type)

K012



d	to1	l	l3	l4	t	u	i	q	DR
25 *)	k6	50	40	5	28	8	60	110	M10x22
35	k6	70	56	5	38	10	80	130	M12x28

*) Preferred series

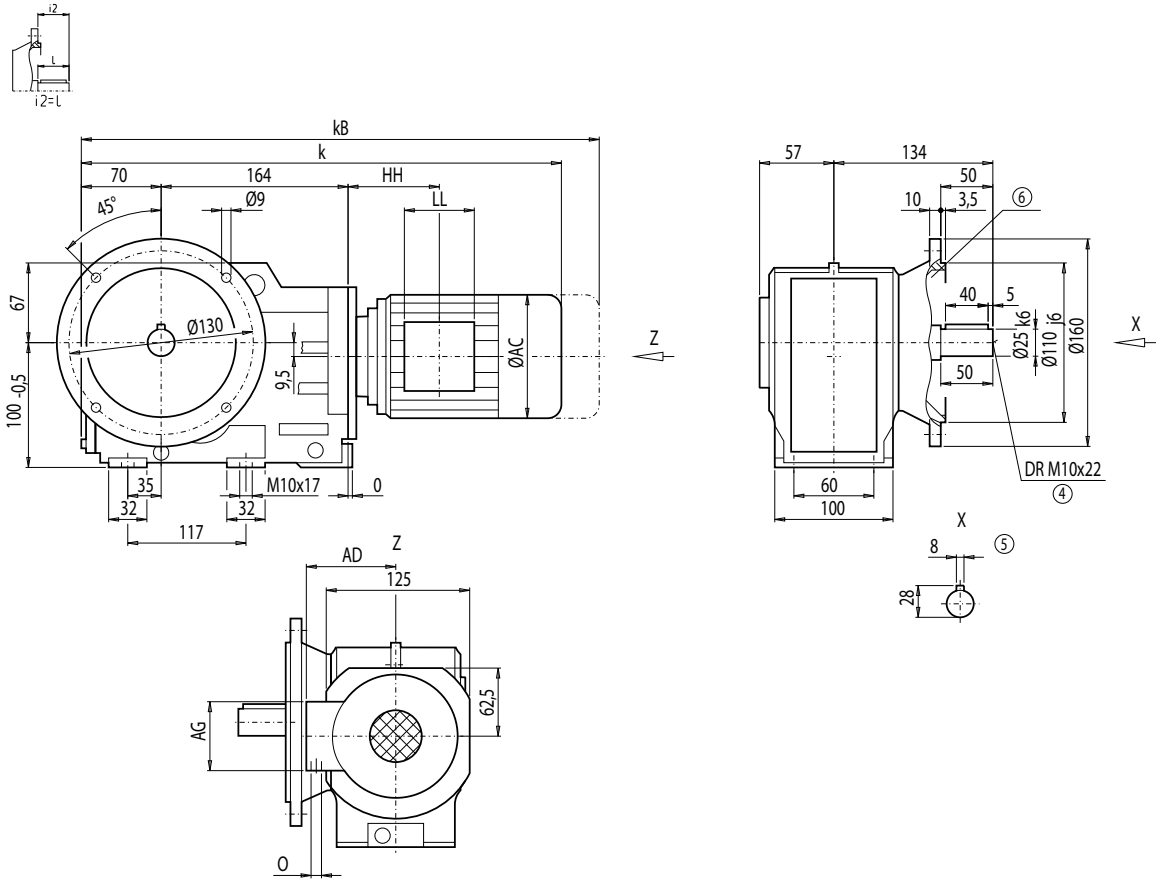
	K38								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**K38**
LA71	485.5	540.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	20
LA71Z	504.5	559.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	20
LA80	522.5	586.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	25
LA80Z	545.0	608.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	29
LA90S/L	553.5	624.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	29
LA90ZL	598.5	669.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	35
LA100L	599.5	680.5	195.0	168	120	120	154.5	2xM32x1.5	38
LA100ZL	669.5	750.5	195.0	168	120	120	286.5	2xM32x1.5	48
LA112M	629.0	710.0	219.0	181	120	120	160.0	2xM32x1.5	49
LA112ZM	657.0	738.0	219.0	181	120	120	264.0	2xM32x1.5	56

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox KF38 (3-stage), flange-mounted design (A-type)

KF012



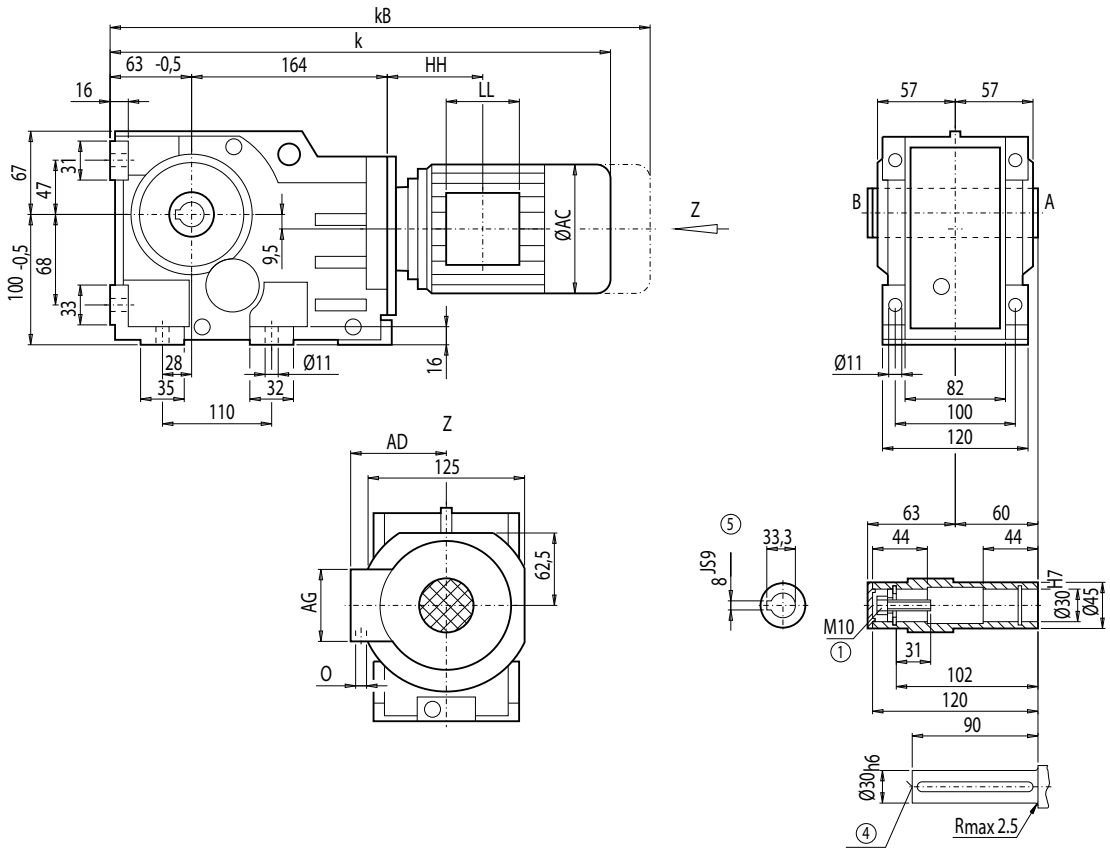
Motor	KF38 k	kB	AC	AD	AG	LL	HH	O	Weight KF38
LA71	492.5	547.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	21
LA71Z	511.5	566.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	21
LA80	529.5	593.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	26
LA80Z	552.0	615.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	30
LA90S/L	560.5	631.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	31
LA90ZL	605.5	676.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	37
LA100L	606.5	687.5	195.0	168	120	120	154.5	2xM32x1.5	40
LA100ZL	676.5	757.5	195.0	168	120	120	286.5	2xM32x1.5	50
LA112M	636.0	717.0	219.0	181	120	120	160.0	2xM32x1.5	50
LA112ZM	664.0	745.0	219.0	181	120	120	264.0	2xM32x1.5	57

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Dimensions

Gearbox KA38 (3-stage), housing-flange-mounted design (C-type)

KA012

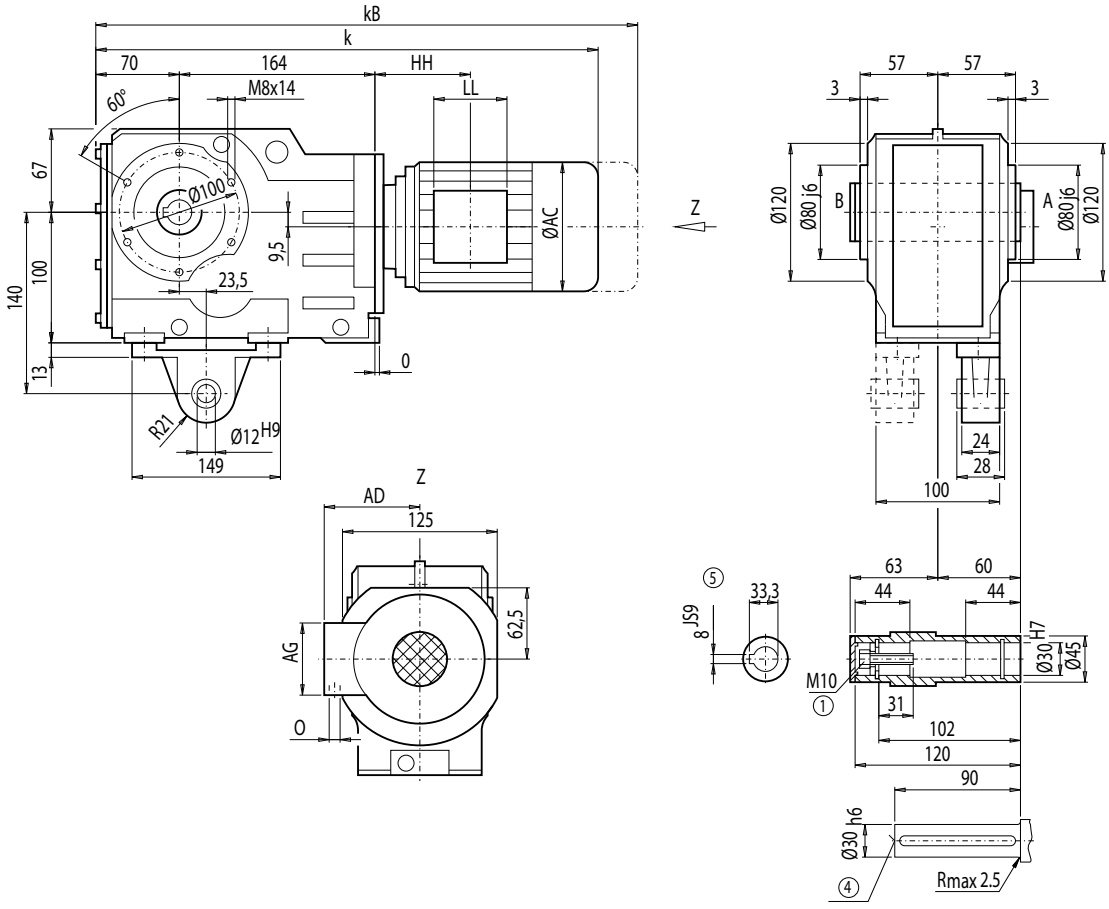


Motor	KA38 k	kB	AC	AD	AG	LL	HH	O	Weight KA38
LA71	485.5	540.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	18
LA71Z	504.5	559.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	18
LA80	522.5	586.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	23
LA80Z	545.0	608.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	27
LA90S/L	553.5	624.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	28
LA90ZL	598.5	669.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	34
LA100L	599.5	680.5	195.0	168	120	120	154.5	2xM32x1.5	37
LA100ZL	669.5	750.5	195.0	168	120	120	286.5	2xM32x1.5	47
LA112M	629.0	710.0	219.0	181	120	120	160.0	2xM32x1.5	48
LA112ZM	657.0	738.0	219.0	181	120	120	264.0	2xM32x1.5	55

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912

Gearbox KAD38 (3-stage), shaft-mounted design with torque arm

KAD012



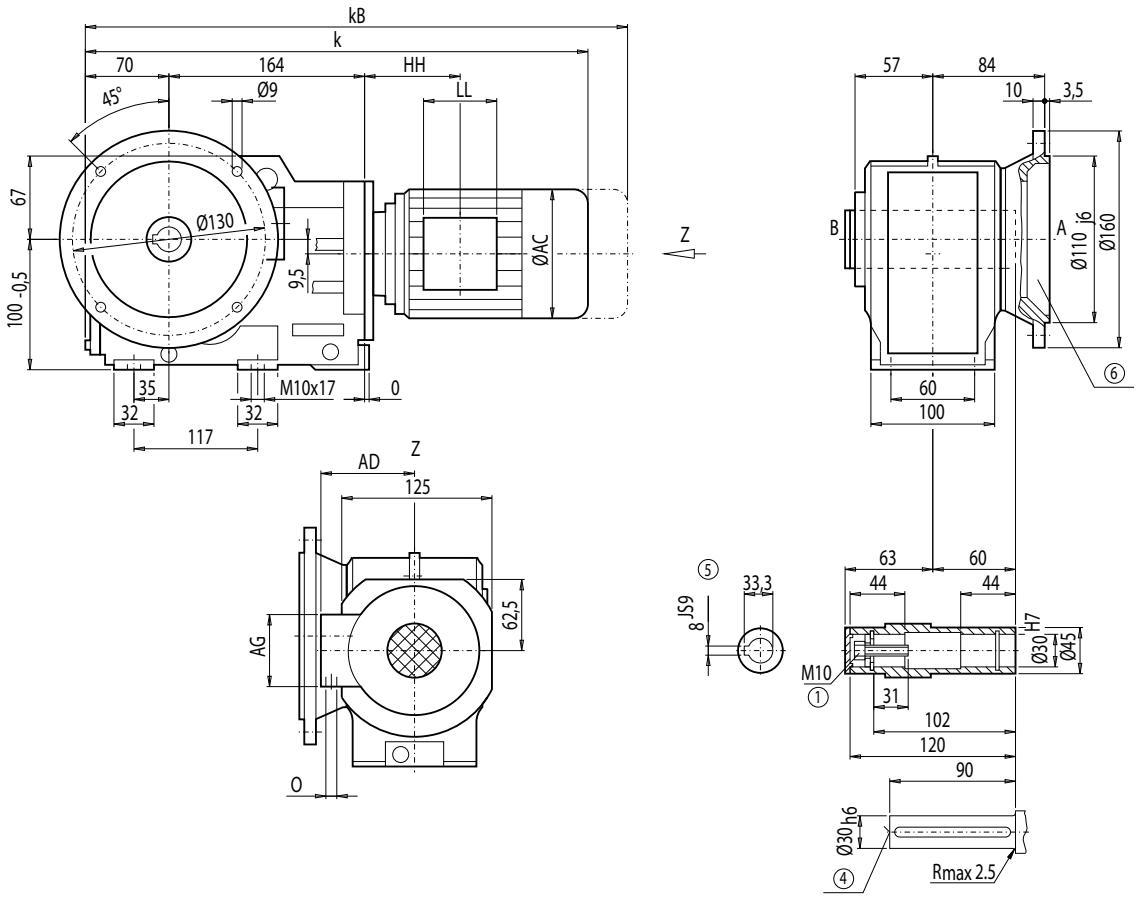
Motor	KAD38 k	kB	AC	AD	AG	LL	HH	O	Weight KAD38
LA71	492.5	547.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	19
LA71Z	511.5	566.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	19
LA80	529.5	593.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	24
LA80Z	552.0	615.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	28
LA90S/L	560.5	631.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	28
LA90ZL	605.5	676.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	34
LA100L	606.5	687.5	195.0	168	120	120	154.5	2xM32x1.5	38
LA100ZL	676.5	757.5	195.0	168	120	120	286.5	2xM32x1.5	48
LA112M	636.0	717.0	219.0	181	120	120	160.0	2xM32x1.5	48
LA112ZM	664.0	745.0	219.0	181	120	120	264.0	2xM32x1.5	55

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912

Dimensions

Gearbox KAF38 (3-stage), flange-mounted design

KAF012

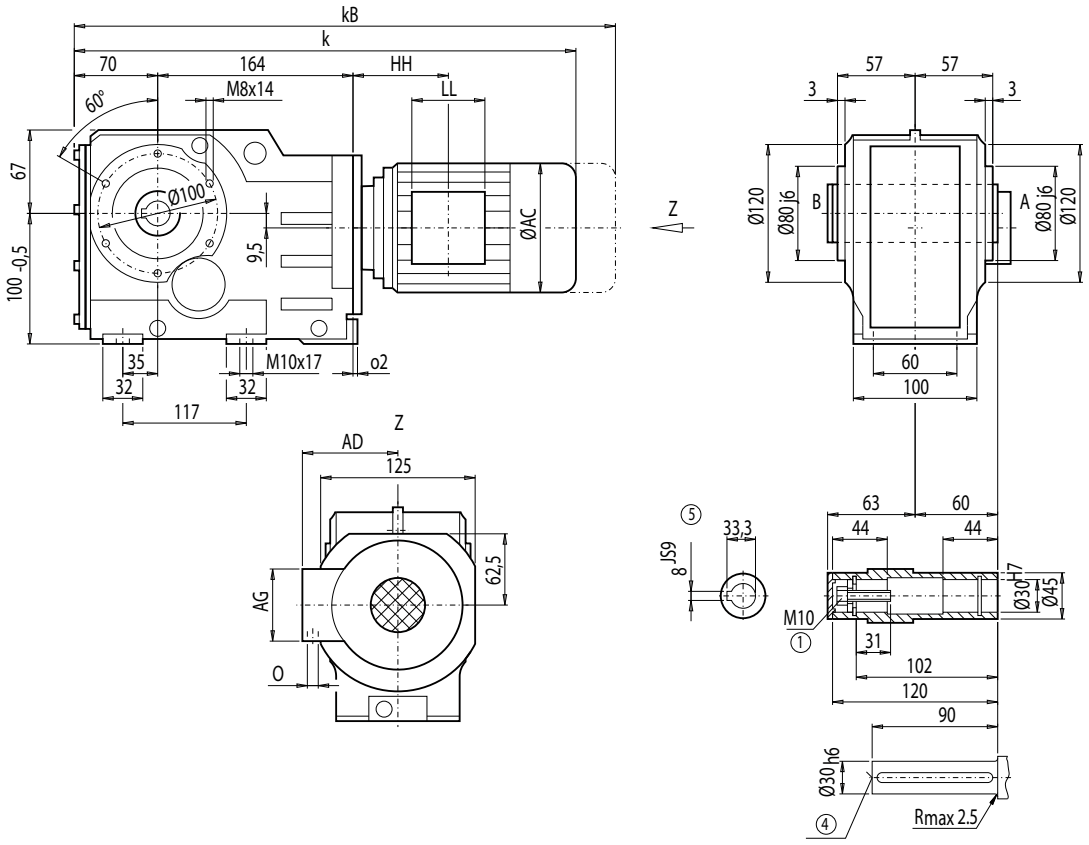


Motor	KAF38 k	kB	AC	AD	AG	LL	HH	O	Weight KAF38
LA71	492.5	547.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	20
LA71Z	511.5	566.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	20
LA80	529.5	593.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	25
LA80Z	552.0	615.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	29
LA90S/L	560.5	631.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	29
LA90ZL	605.5	676.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	35
LA100L	606.5	687.5	195.0	168	120	120	154.5	2xM32x1.5	39
LA100ZL	676.5	757.5	195.0	168	120	120	286.5	2xM32x1.5	49
LA112M	636.0	717.0	219.0	181	120	120	160.0	2xM32x1.5	49
LA112ZM	664.0	745.0	219.0	181	120	120	264.0	2xM32x1.5	56

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912 ⑥ For note, see page 4/217

Gearbox KAZ38 (3-stage), shaft-mounted design with housing flange (C-type)

KAZ012



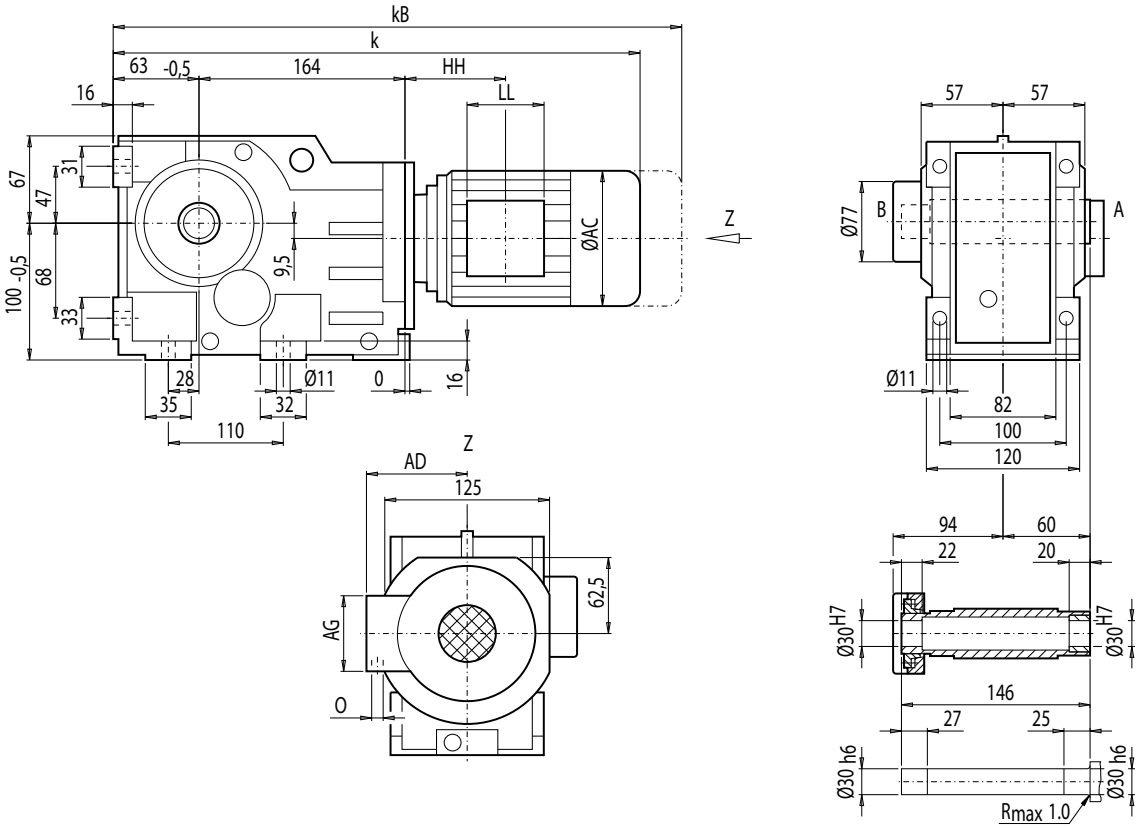
Motor	KAZ38 k	kB	AC	AD	AG	LL	HH	O	Weight KAZ38
LA71	492.5	547.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	18
LA71Z	511.5	566.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	18
LA80	529.5	593.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	23
LA80Z	552.0	615.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	27
LA90S/L	560.5	631.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	28
LA90ZL	605.5	676.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	34
LA100L	606.5	687.5	195.0	168	120	120	154.5	2xM32x1.5	37
LA100ZL	676.5	757.5	195.0	168	120	120	286.5	2xM32x1.5	47
LA112M	636.0	717.0	219.0	181	120	120	160.0	2xM32x1.5	48
LA112ZM	664.0	745.0	219.0	181	120	120	264.0	2xM32x1.5	55

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912

Dimensions

Gearbox KAS38 (3-stage), shaft-mounted design with shrink disk

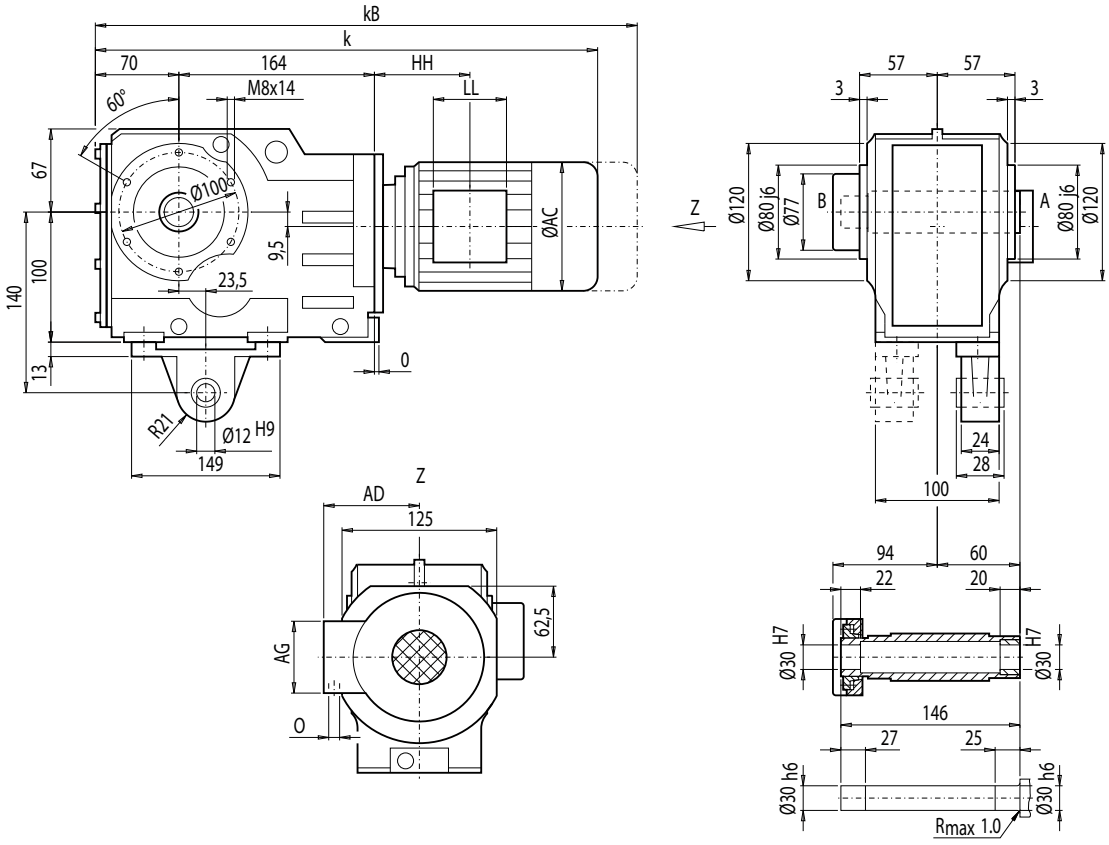
KAS012



Motor	KAS38 k	kB	AC	AD	AG	LL	HH	O	Weight KAS38
LA71	485.5	540.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	19
LA71Z	504.5	559.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	19
LA80	522.5	586.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	24
LA80Z	545.0	608.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	28
LA90S/L	553.5	624.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	28
LA90ZL	598.5	669.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	34
LA100L	599.5	680.5	195.0	168	120	120	154.5	2xM32x1.5	38
LA100ZL	669.5	750.5	195.0	168	120	120	286.5	2xM32x1.5	48
LA112M	629.0	710.0	219.0	181	120	120	160.0	2xM32x1.5	48
LA112ZM	657.0	738.0	219.0	181	120	120	264.0	2xM32x1.5	55

Gearbox KADS38 (3-stage), shaft-mounted design with torque arm and shrink disk

KADS012

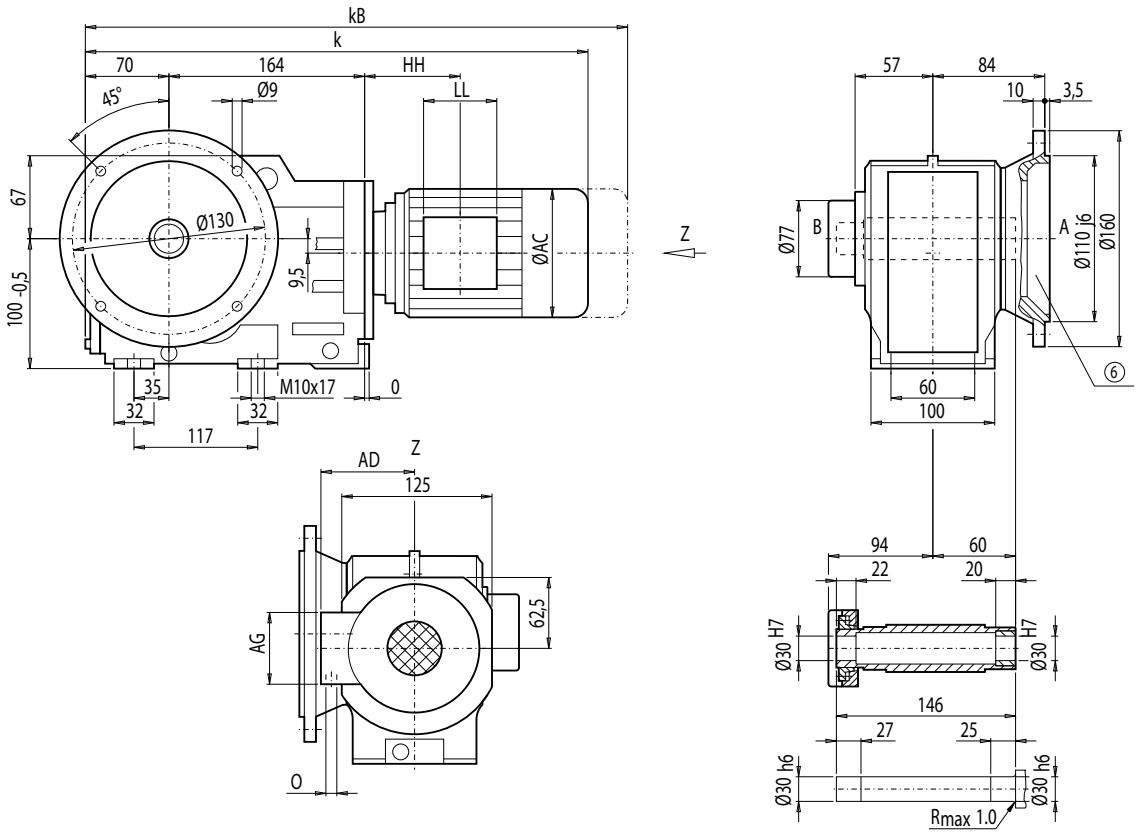


Motor	KADS38 k	kB	AC	AD	AG	LL	HH	O	Weight KADS38
LA71	492.5	547.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	20
LA71Z	511.5	566.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	20
LA80	529.5	593.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	24
LA80Z	552.0	615.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	28
LA90S/L	560.5	631.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	29
LA90ZL	605.5	676.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	35
LA100L	606.5	687.5	195.0	168	120	120	154.5	2xM32x1.5	38
LA100ZL	676.5	757.5	195.0	168	120	120	286.5	2xM32x1.5	48
LA112M	636.0	717.0	219.0	181	120	120	160.0	2xM32x1.5	49
LA112ZM	664.0	745.0	219.0	181	120	120	264.0	2xM32x1.5	56

Dimensions

Gearbox KAFS38 (3-stage), flange-mounted design and shrink disk

KAFS012

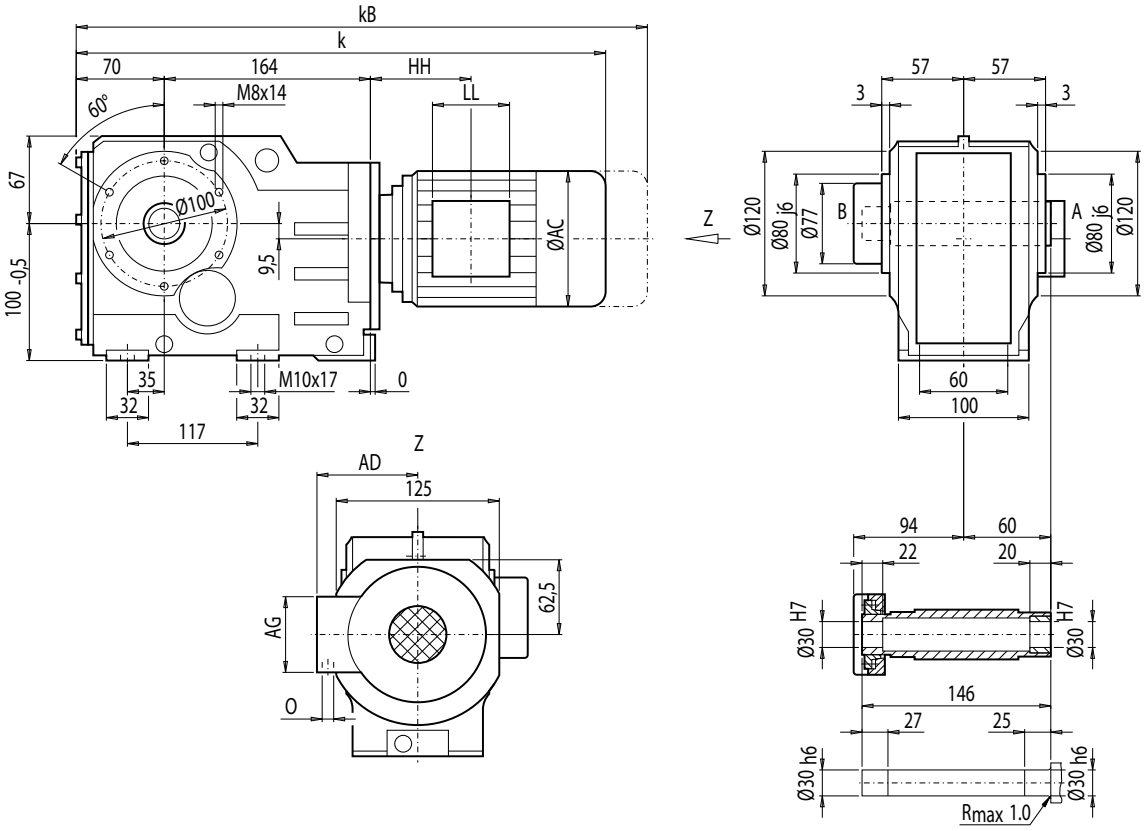


Motor	KAFS38 k	kB	AC	AD	AG	LL	HH	O	Weight KAFS38
LA71	492.5	547.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	20
LA71Z	511.5	566.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	20
LA80	529.5	593.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	25
LA80Z	552.0	615.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	29
LA90S/L	560.5	631.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	30
LA90ZL	605.5	676.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	36
LA100L	606.5	687.5	195.0	168	120	120	154.5	2xM32x1.5	39
LA100ZL	676.5	757.5	195.0	168	120	120	286.5	2xM32x1.5	49
LA112M	636.0	717.0	219.0	181	120	120	160.0	2xM32x1.5	49
LA112ZM	664.0	745.0	219.0	181	120	120	264.0	2xM32x1.5	56

⑥ For note, see page 4/217

Gearbox KAZS38 (3-stage), shaft-mounted design with housing flange (C-type) and shrink disk

KAZS012

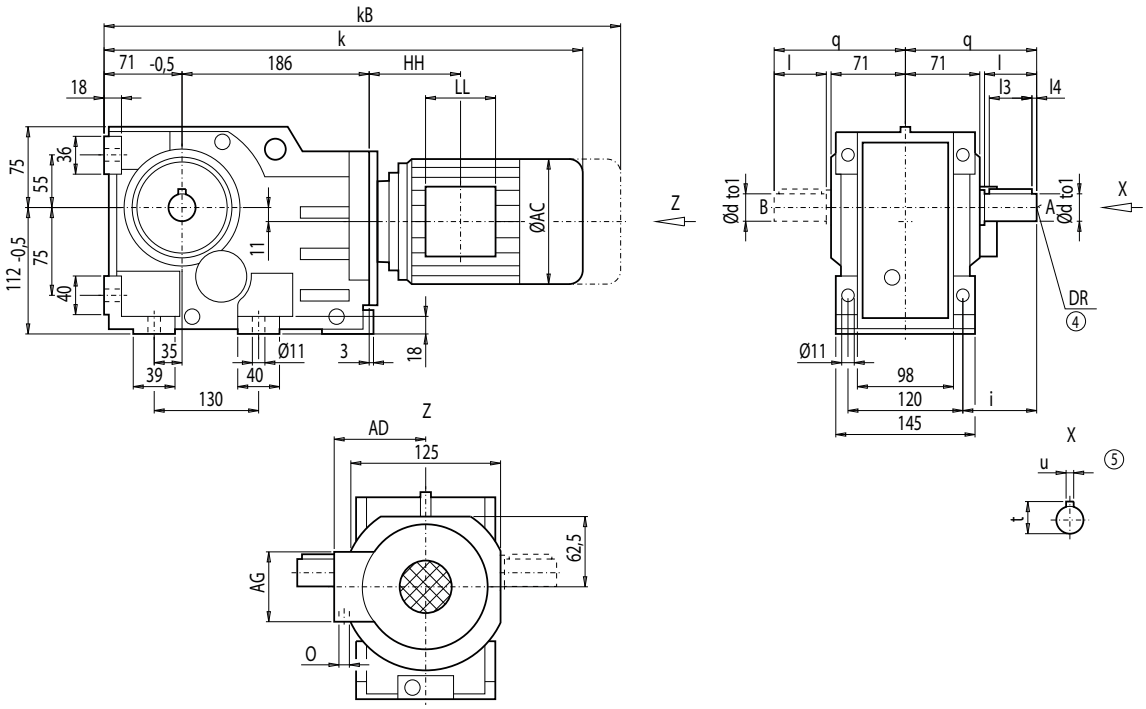


Motor	KAZS38 k	kB	AC	AD	AG	LL	HH	O	Weight KAZS38
LA71	492.5	547.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	19
LA71Z	511.5	566.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	19
LA80	529.5	593.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	24
LA80Z	552.0	615.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	28
LA90S/L	560.5	631.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	28
LA90ZL	605.5	676.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	34
LA100L	606.5	687.5	195.0	168	120	120	154.5	2xM32x1.5	37
LA100ZL	676.5	757.5	195.0	168	120	120	286.5	2xM32x1.5	47
LA112M	636.0	717.0	219.0	181	120	120	160.0	2xM32x1.5	48
LA112ZM	664.0	745.0	219.0	181	120	120	264.0	2xM32x1.5	55

Dimensions

Gearbox K48 (3-stage), housing-flange-mounted design (C-type)

K012



d	to1	l	l3	l4	t	u	i	q	DR
30 *)	k6	60	50	3.5	33	8	75	135	M10x22
40	k6	80	70	5.0	43	12	95	155	M16x36

*) Preferred series

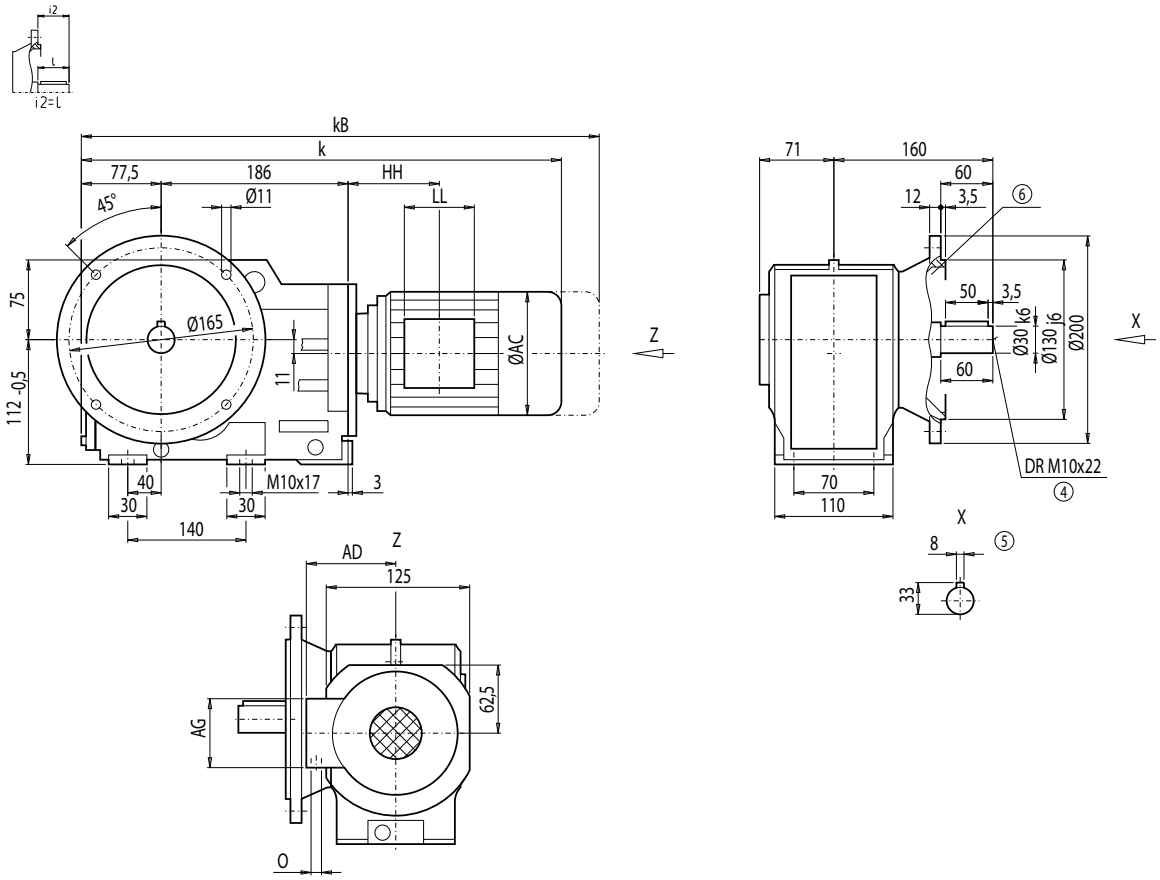
	K48								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**K48**
LA71	515.5	570.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	24
LA71Z	534.5	589.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	24
LA80	552.5	616.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	29
LA80Z	575.0	638.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	33
LA90S/L	583.5	654.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	34
LA90ZL	628.5	669.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	40
LA100L	629.5	710.5	195.0	168	120	120	154.5	2xM32x1.5	43
LA100ZL	699.5	780.5	195.0	168	120	120	286.5	2xM32x1.5	53
LA112M	659.0	740.0	219.0	181	120	120	160.0	2xM32x1.5	53
LA112ZM	687.0	768.0	219.0	181	120	120	264.0	2xM32x1.5	70

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox KF48 (3-stage), flange-mounted design (A-type)

KF012



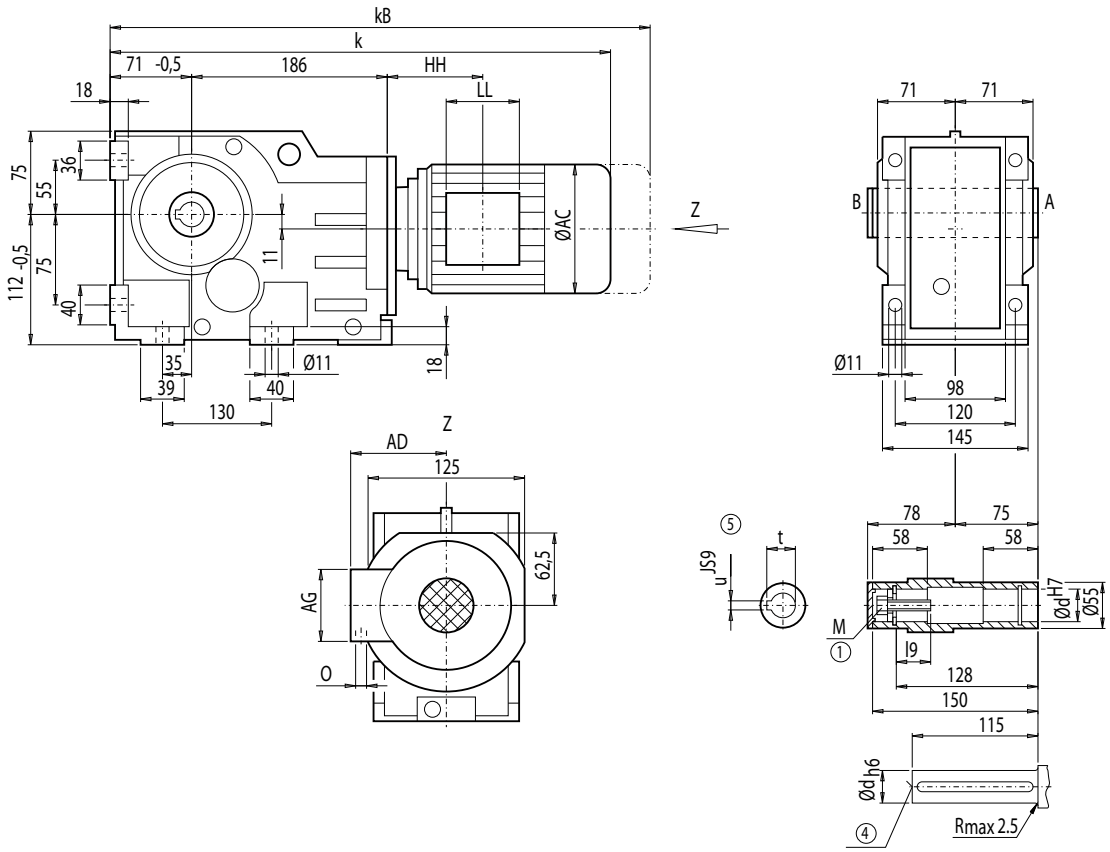
Motor	KF48 k	kB	AC	AD	AG	LL	HH	O	Weight KF48
LA71	522.0	577.0	139.0	146	90	90	114.5	M20x1.5/M25x1.5	26
LA71Z	541.0	596.0	139.0	146	90	90	114.5	M20x1.5/M25x1.5	26
LA80	559.0	622.5	156.5	155	90	90	114.0	M20x1.5/M25x1.5	31
LA80Z	581.5	645.0	156.5	155	90	90	187.0	M20x1.5/M25x1.5	31
LA90S/L	590.0	661.0	174.0	163	90	90	114.0	M20x1.5/M25x1.5	36
LA90ZL	635.0	706.0	174.0	163	90	90	238.0	M20x1.5/M25x1.5	36
LA100L	636.0	717.0	195.0	168	120	120	154.5	2xM32x1.5	45
LA100ZL	706.0	787.0	195.0	168	120	120	286.5	2xM32x1.5	45
LA112M	665.5	746.5	219.0	181	120	120	160.0	2xM32x1.5	56
LA112ZM	693.5	774.5	219.0	181	120	120	264.0	2xM32x1.5	56

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Dimensions

Gearbox KA48 (3-stage), housing-flange-mounted design (C-type)

KA012



d	l9	M	t	u
35 *)	40	M12	38.3	10
40	48	M16	43.3	12

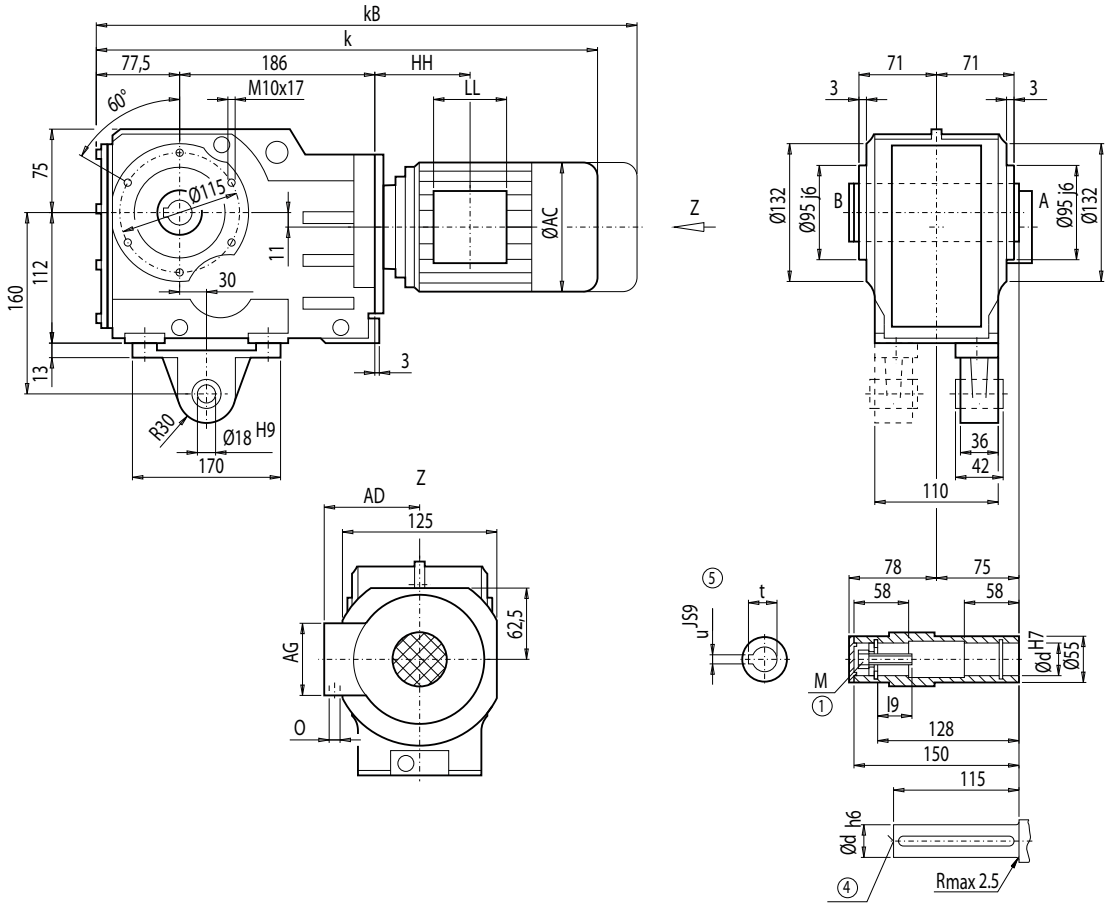
*) Preferred series

Motor	KA48 k	kB	AC	AD	AG	LL	HH	O	Weight KA48
LA71	515.5	570.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	23
LA71Z	534.5	589.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	23
LA80	552.5	616.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	28
LA80Z	575.0	638.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	32
LA90S/L	583.5	654.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	32
LA90ZL	628.5	669.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	38
LA100L	629.5	710.5	195.0	168	120	120	154.5	2xM32x1.5	41
LA100ZL	699.5	780.5	195.0	168	120	120	286.5	2xM32x1.5	51
LA112M	659.0	740.0	219.0	181	120	120	160.0	2xM32x1.5	52
LA112ZM	687.0	768.0	219.0	181	120	120	264.0	2xM32x1.5	59

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912

Gearbox KAD48 (3-stage), shaft-mounted design with torque arm

KAD012



d	l9	M	t	u
35 *)	40	M12	38.3	10
40	48	M16	43.3	12

*) Preferred series

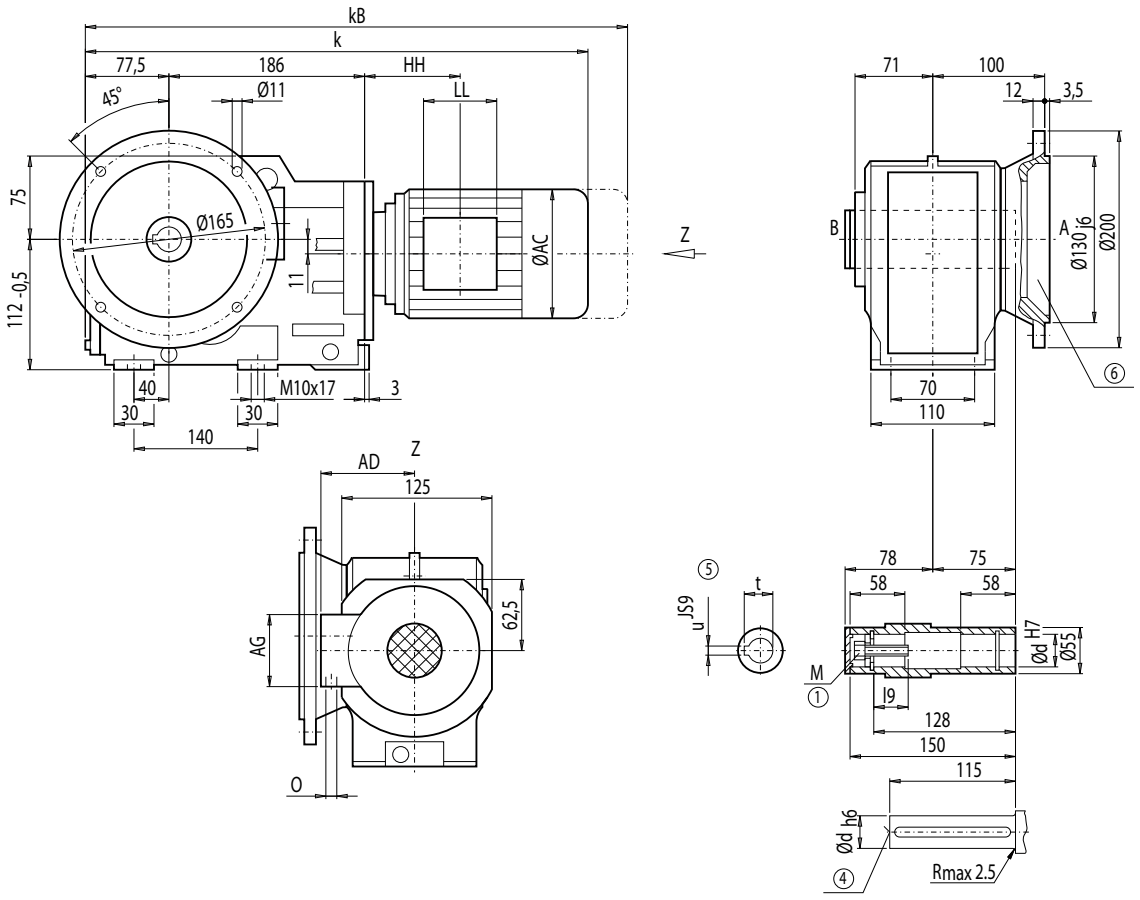
Motor	KAD48 k	kB	AC	AD	AG	LL	HH	O	Weight KAD48
LA71	522.0	577.0	139.0	146	90	90	114.5	M20x1.5/M25x1.5	24
LA71Z	541.0	596.0	139.0	146	90	90	114.5	M20x1.5/M25x1.5	24
LA80	559.0	622.5	156.5	155	90	90	114.0	M20x1.5/M25x1.5	29
LA80Z	581.5	645.0	156.5	155	90	90	187.0	M20x1.5/M25x1.5	33
LA90S/L	590.0	661.0	174.0	163	90	90	114.0	M20x1.5/M25x1.5	33
LA90ZL	635.0	706.0	174.0	163	90	90	238.0	M20x1.5/M25x1.5	39
LA100L	636.0	717.0	195.0	168	120	120	154.5	2xM32x1.5	42
LA100ZL	706.0	787.0	195.0	168	120	120	286.5	2xM32x1.5	52
LA112M	665.5	746.5	219.0	181	120	120	160.0	2xM32x1.5	53
LA112ZM	693.5	774.5	219.0	181	120	120	264.0	2xM32x1.5	60

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912

Dimensions

Gearbox KAF48 (3-stage), flange-mounted design

KAF012



d	l9	M	t	u
35 *)	40	M12	38.3	10
40	48	M16	43.3	12

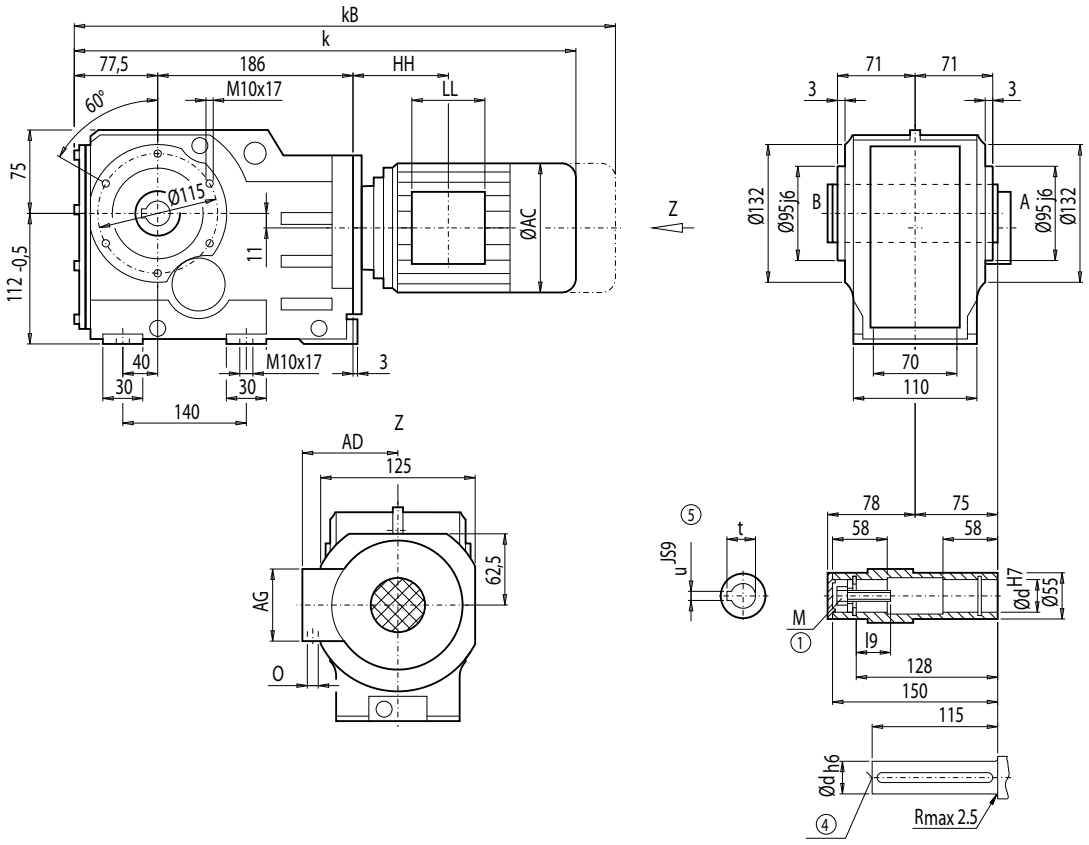
*) Preferred series

Motor	KAF48 k	kB	AC	AD	AG	LL	HH	O	Weight KAF48
LA71	522.0	577.0	139.0	146	90	90	114.5	M20x1.5/M25x1.5	25
LA71Z	541.0	596.0	139.0	146	90	90	114.5	M20x1.5/M25x1.5	25
LA80	559.0	622.5	156.5	155	90	90	114.0	M20x1.5/M25x1.5	30
LA80Z	581.5	645.0	156.5	155	90	90	187.0	M20x1.5/M25x1.5	34
LA90S/L	590.0	661.0	174.0	163	90	90	114.0	M20x1.5/M25x1.5	34
LA90ZL	635.0	706.0	174.0	163	90	90	238.0	M20x1.5/M25x1.5	40
LA100L	636.0	717.0	195.0	168	120	120	154.5	2xM32x1.5	44
LA100ZL	706.0	787.0	195.0	168	120	120	286.5	2xM32x1.5	54
LA112M	665.5	746.5	219.0	181	120	120	160.0	2xM32x1.5	54
LA112ZM	693.5	774.5	219.0	181	120	120	264.0	2xM32x1.5	61

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912 ⑥ For note, see page 4/217

Gearbox KAZ48 (3-stage), shaft-mounted design with housing flange (C-type)

KAZ012



d	l9	M	t	u
35 *)	40	M12	38.3	10
40	48	M16	43.3	12

*) Preferred series

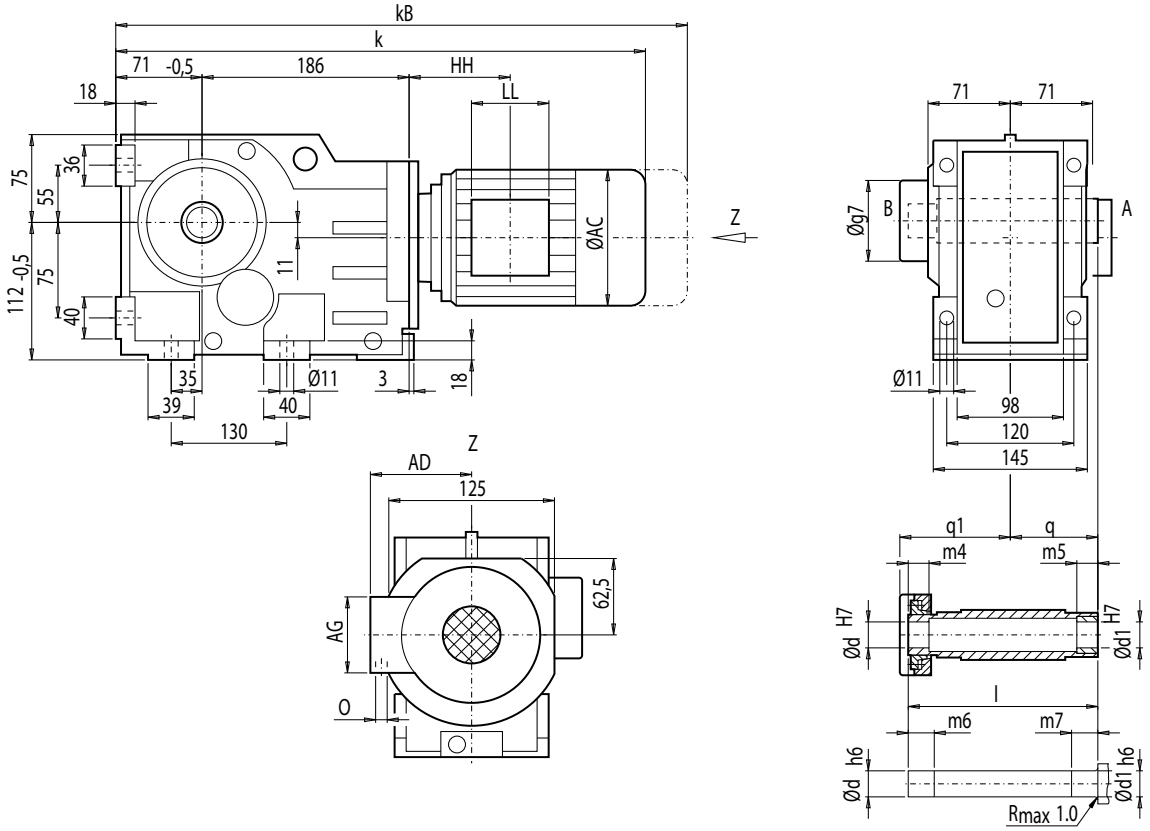
Motor	KAZ48 k	kB	AC	AD	AG	LL	HH	O	Weight KAZ48
LA71	522.0	577.0	139.0	146	90	90	114.5	M20x1.5/M25x1.5	22
LA71Z	541.0	596.0	139.0	146	90	90	114.5	M20x1.5/M25x1.5	22
LA80	559.0	622.5	156.5	155	90	90	114.0	M20x1.5/M25x1.5	27
LA80Z	581.5	645.0	156.5	155	90	90	187.0	M20x1.5/M25x1.5	31
LA90S/L	590.0	661.0	174.0	163	90	90	114.0	M20x1.5/M25x1.5	32
LA90ZL	635.0	706.0	174.0	163	90	90	238.0	M20x1.5/M25x1.5	38
LA100L	636.0	717.0	195.0	168	120	120	154.5	2xM32x1.5	41
LA100ZL	706.0	787.0	195.0	168	120	120	286.5	2xM32x1.5	51
LA112M	665.5	746.5	219.0	181	120	120	160.0	2xM32x1.5	52
LA112ZM	693.5	774.5	219.0	181	120	120	264.0	2xM32x1.5	59

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912

Dimensions

Gearbox KAS48 (3-stage), shaft-mounted design with shrink disk

KAS012



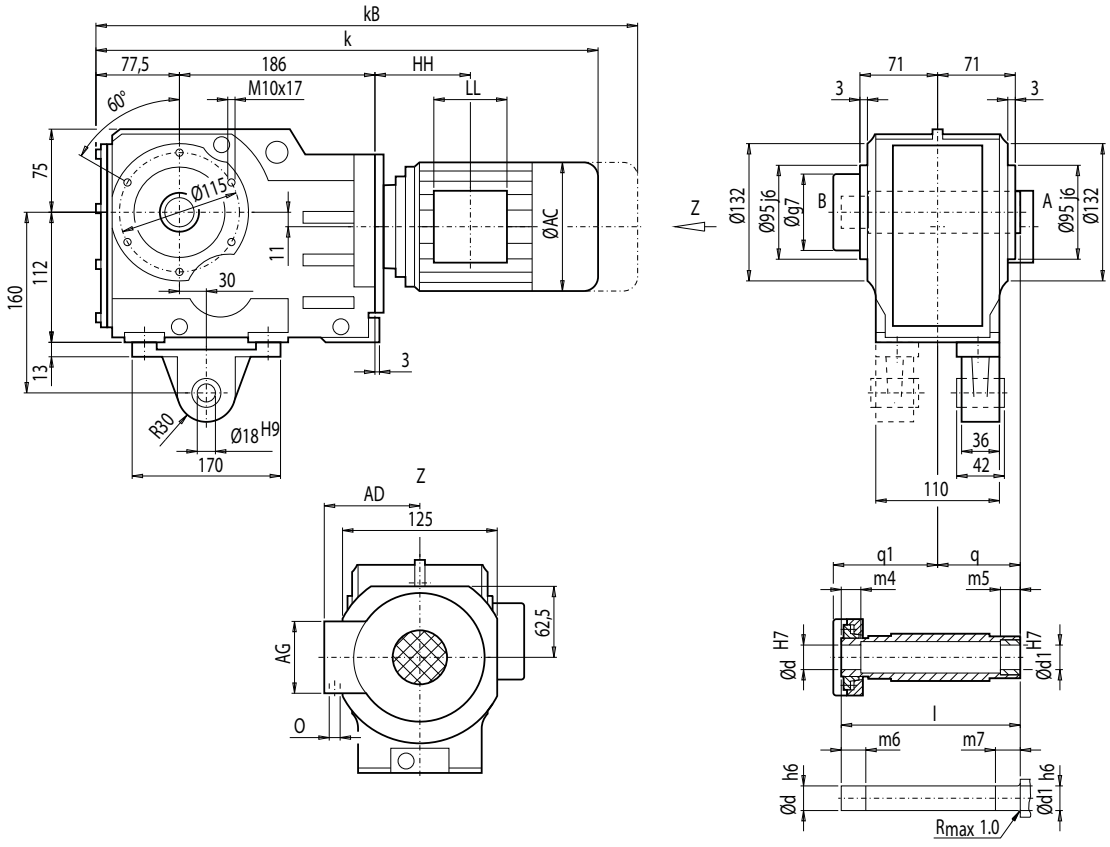
d	d1	l	m4	m5	m6	m7	q1	q	g7
35 *)	35	177	32	20	37	25	109	75	93
40	40	177	25	20	30	25	109	75	93

*) Preferred series

	KAS48								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAS48**
LA71	515.5	570.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	23
LA71Z	534.5	589.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	23
LA80	552.5	616.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	28
LA80Z	575.0	638.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	32
LA90S/L	583.5	654.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	33
LA90ZL	628.5	669.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	39
LA100L	629.5	710.5	195.0	168	120	120	154.5	2xM32x1.5	42
LA100ZL	699.5	780.5	195.0	168	120	120	286.5	2xM32x1.5	52
LA112M	659.0	740.0	219.0	181	120	120	160.0	2xM32x1.5	53
LA112ZM	687.0	768.0	219.0	181	120	120	264.0	2xM32x1.5	60

Gearbox KADS48 (3-stage), shaft-mounted design with torque arm and shrink disk

KADS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
35 *)	35	177	32	20	37	25	109	75	93
40	40	177	25	20	30	25	109	75	93

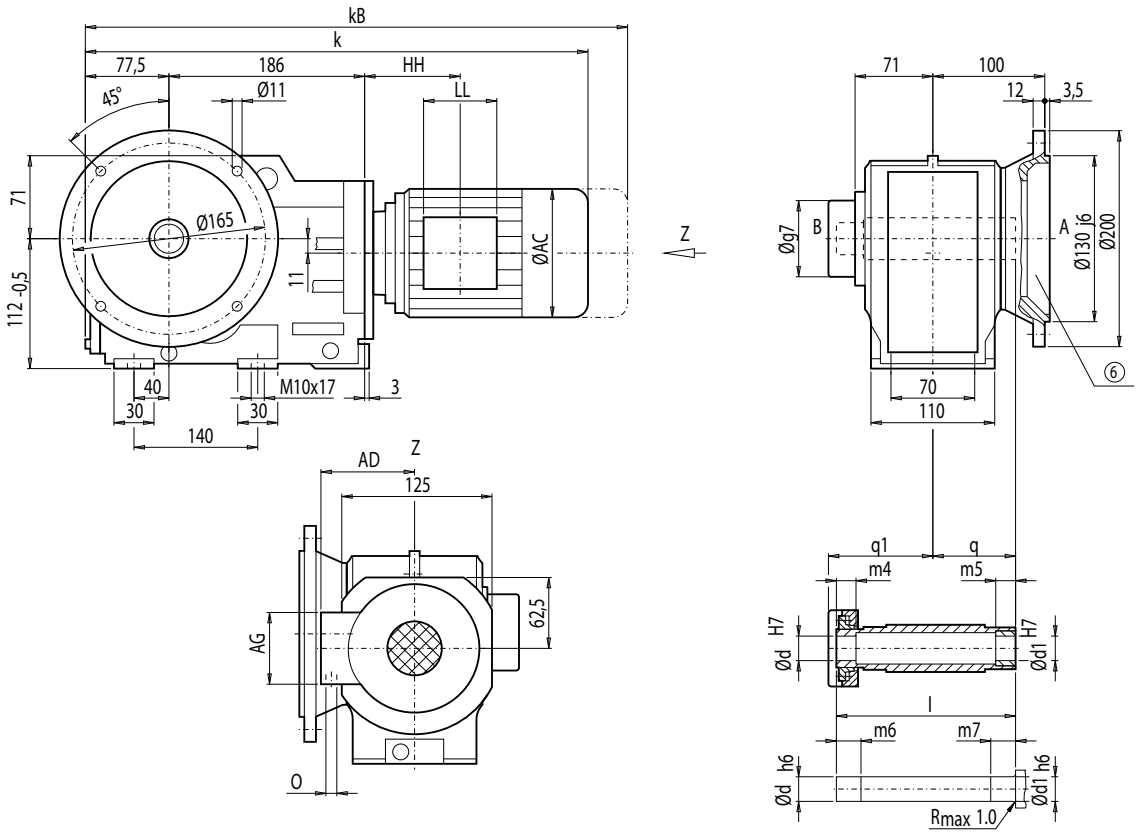
*) Preferred series

	KADS48								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KADS48**
LA71	522.0	577.0	139.0	146	90	90	114.5	M20x1.5/M25x1.5	24
LA71Z	541.0	596.0	139.0	146	90	90	114.5	M20x1.5/M25x1.5	24
LA80	559.0	622.5	156.5	155	90	90	114.0	M20x1.5/M25x1.5	29
LA80Z	581.5	645.0	156.5	155	90	90	187.0	M20x1.5/M25x1.5	33
LA90S/L	590.0	661.0	174.0	163	90	90	114.0	M20x1.5/M25x1.5	34
LA90ZL	635.0	706.0	174.0	163	90	90	238.0	M20x1.5/M25x1.5	40
LA100L	636.0	717.0	195.0	168	120	120	154.5	2xM32x1.5	43
LA100ZL	706.0	787.0	195.0	168	120	120	286.5	2xM32x1.5	53
LA112M	665.5	746.5	219.0	181	120	120	160.0	2xM32x1.5	54
LA112ZM	693.5	774.5	219.0	181	120	120	264.0	2xM32x1.5	61

Dimensions

Gearbox KAFS48 (3-stage), flange-mounted design and shrink disk

KAFS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
35 *)	35	177	32	20	37	25	109	75	93
40	40	177	25	20	30	25	109	75	93

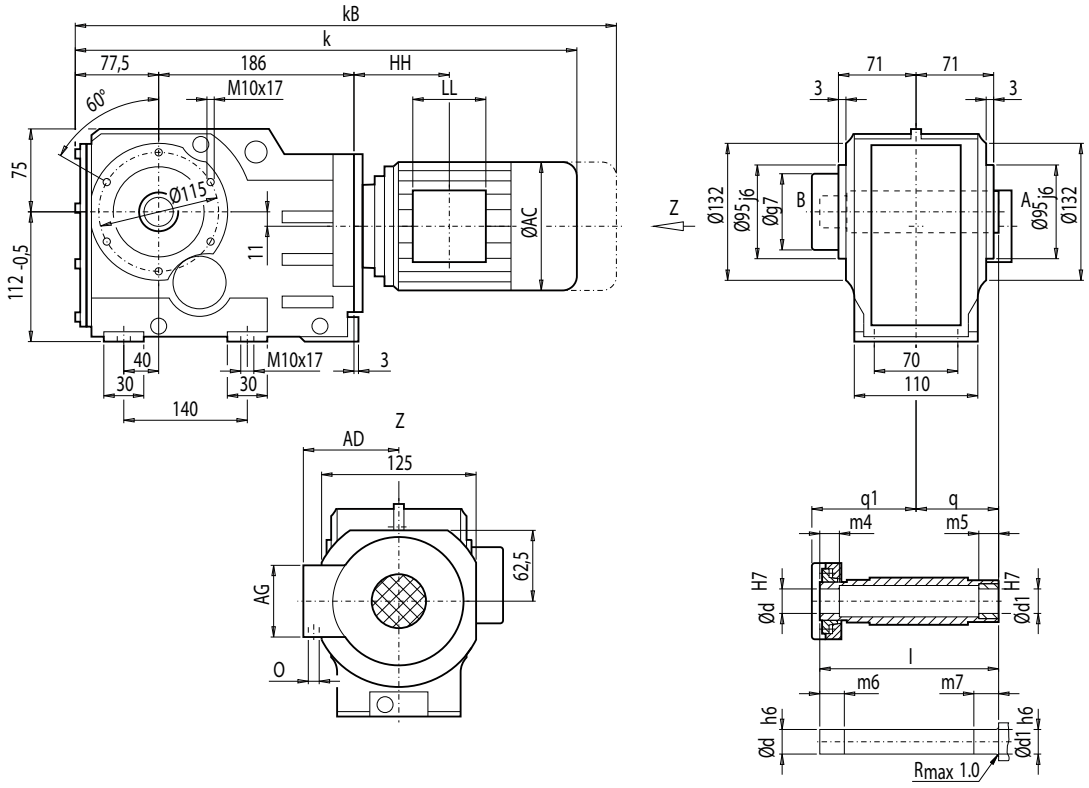
*) Preferred series

	KAFS48								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAFS48**
LA71	522.0	577.0	139.0	146	90	90	114.5	M20x1.5/M25x1.5	26
LA71Z	541.0	596.0	139.0	146	90	90	114.5	M20x1.5/M25x1.5	26
LA80	559.0	622.5	156.5	155	90	90	114.0	M20x1.5/M25x1.5	31
LA80Z	581.5	645.0	156.5	155	90	90	187.0	M20x1.5/M25x1.5	35
LA90S/L	590.0	661.0	174.0	163	90	90	114.0	M20x1.5/M25x1.5	35
LA90ZL	635.0	706.0	174.0	163	90	90	238.0	M20x1.5/M25x1.5	41
LA100L	636.0	717.0	195.0	168	120	120	154.5	2xM32x1.5	44
LA100ZL	706.0	787.0	195.0	168	120	120	286.5	2xM32x1.5	54
LA112M	665.5	746.5	219.0	181	120	120	160.0	2xM32x1.5	55
LA112ZM	693.5	774.5	219.0	181	120	120	264.0	2xM32x1.5	65

⑥ For note, see page 4/217

Gearbox KAZS48 (3-stage), shaft-mounted design with housing flange (C-type) and shrink disk

KAZS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
35 *)	35	177	32	20	37	25	109	75	93
40	40	177	25	20	30	25	109	75	93

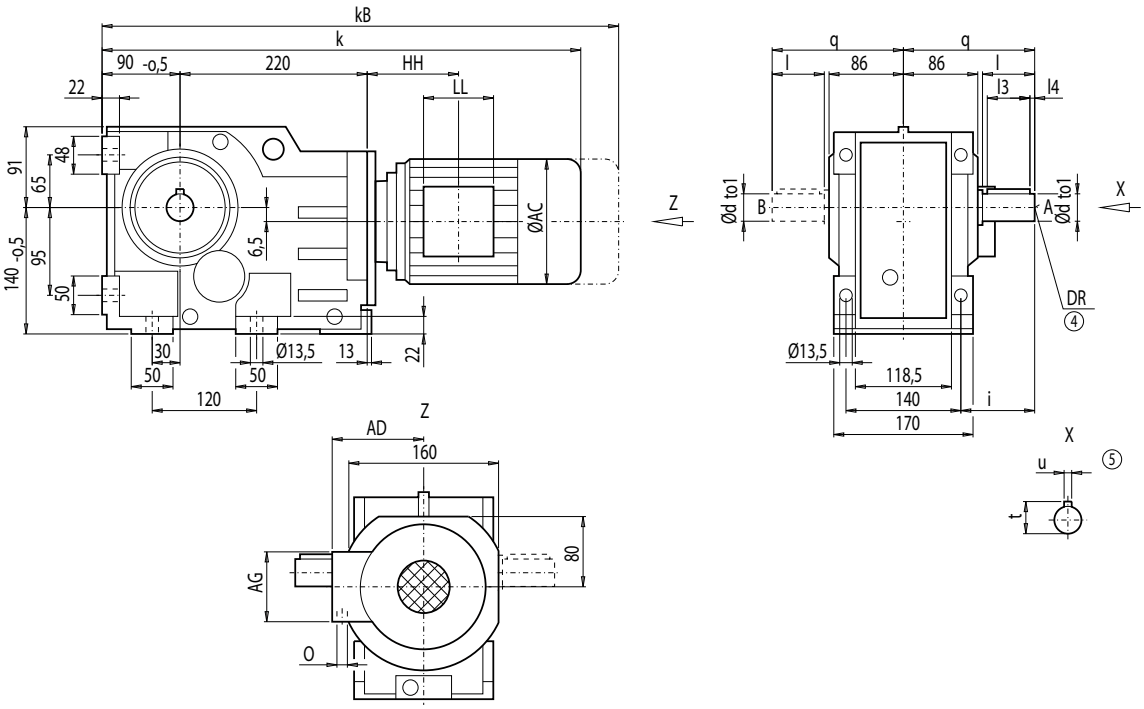
*) Preferred series

	KAZS48								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAZS48**
LA71	522.0	577.0	139.0	146	90	90	114.5	M20x1.5/M25x1.5	23
LA71Z	541.0	596.0	139.0	146	90	90	114.5	M20x1.5/M25x1.5	23
LA80	559.0	622.5	156.5	155	90	90	114.0	M20x1.5/M25x1.5	28
LA80Z	581.5	645.0	156.5	155	90	90	187.0	M20x1.5/M25x1.5	32
LA90S/L	590.0	661.0	174.0	163	90	90	114.0	M20x1.5/M25x1.5	33
LA90ZL	635.0	706.0	174.0	163	90	90	238.0	M20x1.5/M25x1.5	39
LA100L	636.0	717.0	195.0	168	120	120	154.5	2xM32x1.5	42
LA100ZL	706.0	787.0	195.0	168	120	120	286.5	2xM32x1.5	52
LA112M	665.5	746.5	219.0	181	120	120	160.0	2xM32x1.5	52
LA112ZM	693.5	774.5	219.0	181	120	120	264.0	2xM32x1.5	59

Dimensions

Gearbox K68 (3-stage), housing-flange-mounted design (C-type)

K012



d	to1	l	l3	l4	t	u	i	q	DR
35	k6	70	56	5	38.0	10	90	160	M12x28
40 *)	k6	80	70	5	43.0	12	100	170	M16x36
50	k6	100	80	10	53.5	14	120	190	M16x36

*) Preferred series

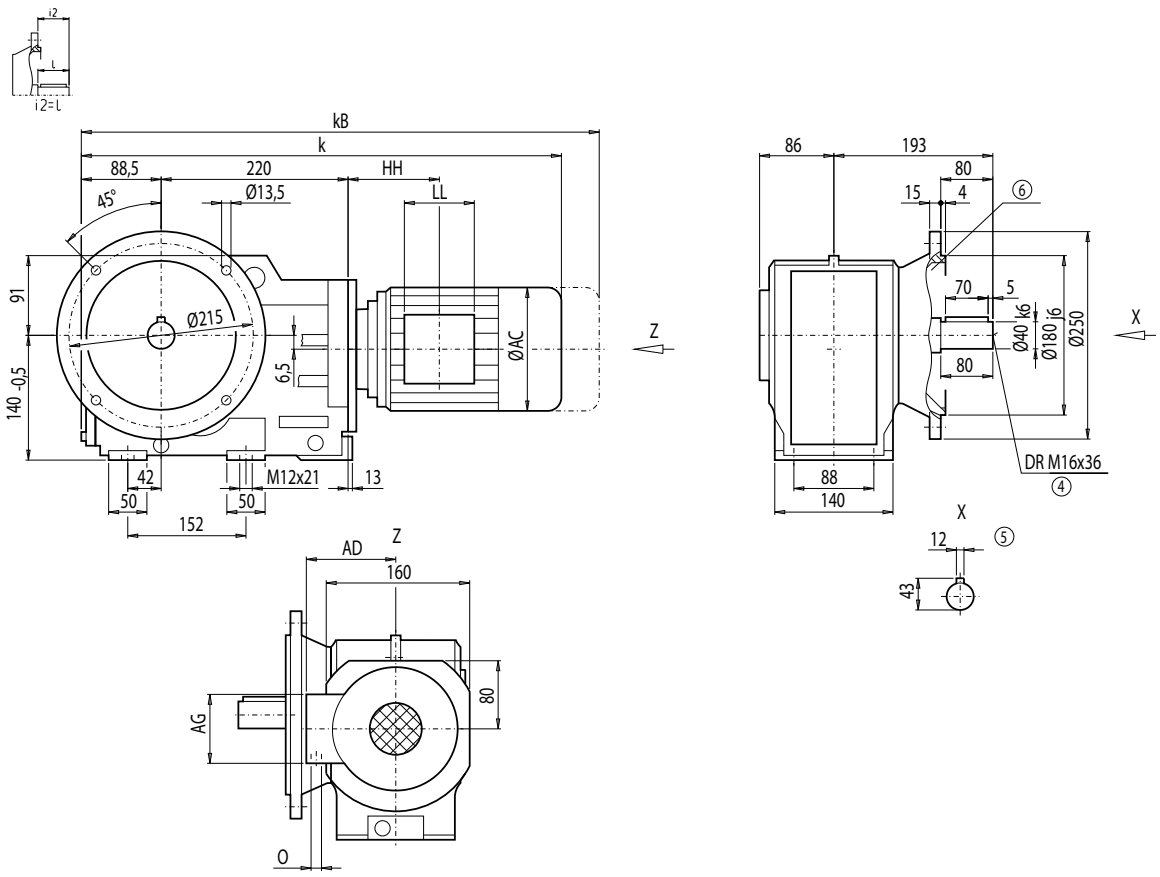
	K68								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**K68**
LA71	563.0	618.0	139.0	146	90	90	109.0	M20x1.5/M25x1.5	44
LA71Z	582.0	637.0	139.0	146	90	90	109.0	M20x1.5/M25x1.5	44
LA80	600.0	663.5	156.5	155	90	90	108.5	M20x1.5/M25x1.5	49
LA80Z	622.5	686.0	156.5	155	90	90	181.5	M20x1.5/M25x1.5	53
LA90S/L	631.0	702.0	174.0	163	90	90	108.5	M20x1.5/M25x1.5	53
LA90ZL	676.0	747.0	174.0	163	90	90	232.5	M20x1.5/M25x1.5	59
LA100L	677.0	758.0	195.0	168	120	120	149.0	2xM32x1.5	62
LA100ZL	747.0	828.0	195.0	168	120	120	281.0	2xM32x1.5	72
LA112M	706.0	787.0	219.0	181	120	120	154.0	2xM32x1.5	74
LA112ZM	734.0	815.0	219.0	181	120	120	258.0	2xM32x1.5	81
LA132S/M	768.0	870.0	259.0	195	140	140	196.5	2xM32x1.5	84
LA132ZM	814.0	916.0	259.0	195	140	140	304.5	2xM32x1.5	105

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox KF68 (3-stage), flange-mounted design (A-type)

KF012



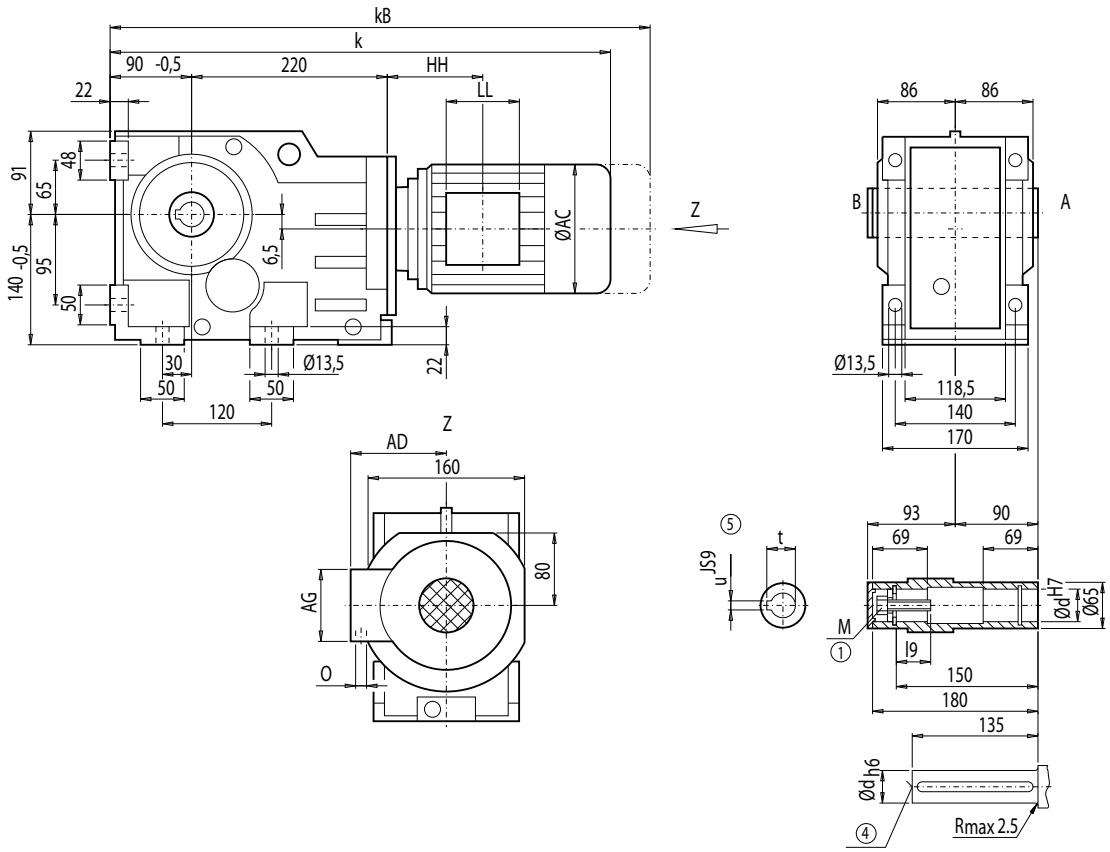
Motor	KF68 k	kB	AC	AD	AG	LL	HH	O	Weight KF68
LA71	561.5	616.5	139.0	146	90	90	109.0	M20x1.5/M25x1.5	49
LA71Z	580.5	635.5	139.0	146	90	90	109.0	M20x1.5/M25x1.5	49
LA80	598.5	662.0	156.5	155	90	90	108.5	M20x1.5/M25x1.5	54
LA80Z	621.0	684.5	156.5	155	90	90	181.5	M20x1.5/M25x1.5	58
LA90S/L	629.5	700.5	174.0	163	90	90	108.5	M20x1.5/M25x1.5	58
LA90ZL	674.5	745.5	174.0	163	90	90	232.5	M20x1.5/M25x1.5	64
LA100L	675.5	756.5	195.0	168	120	120	149.0	2xM32x1.5	67
LA100ZL	745.5	826.5	195.0	168	120	120	281.0	2xM32x1.5	77
LA112M	704.5	785.5	219.0	181	120	120	154.0	2xM32x1.5	79
LA112ZM	732.5	813.5	219.0	181	120	120	258.0	2xM32x1.5	86
LA132S/M	766.5	868.5	259.0	195	140	140	196.5	2xM32x1.5	89
LA132ZM	812.5	914.5	259.0	195	140	140	304.5	2xM32x1.5	110

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Dimensions

Gearbox KA68 (3-stage), housing-flange-mounted design (C-type)

KA012



d	l9	M	t	u
40 *)	48	M16	43.3	12
45	47	M16	48.8	14

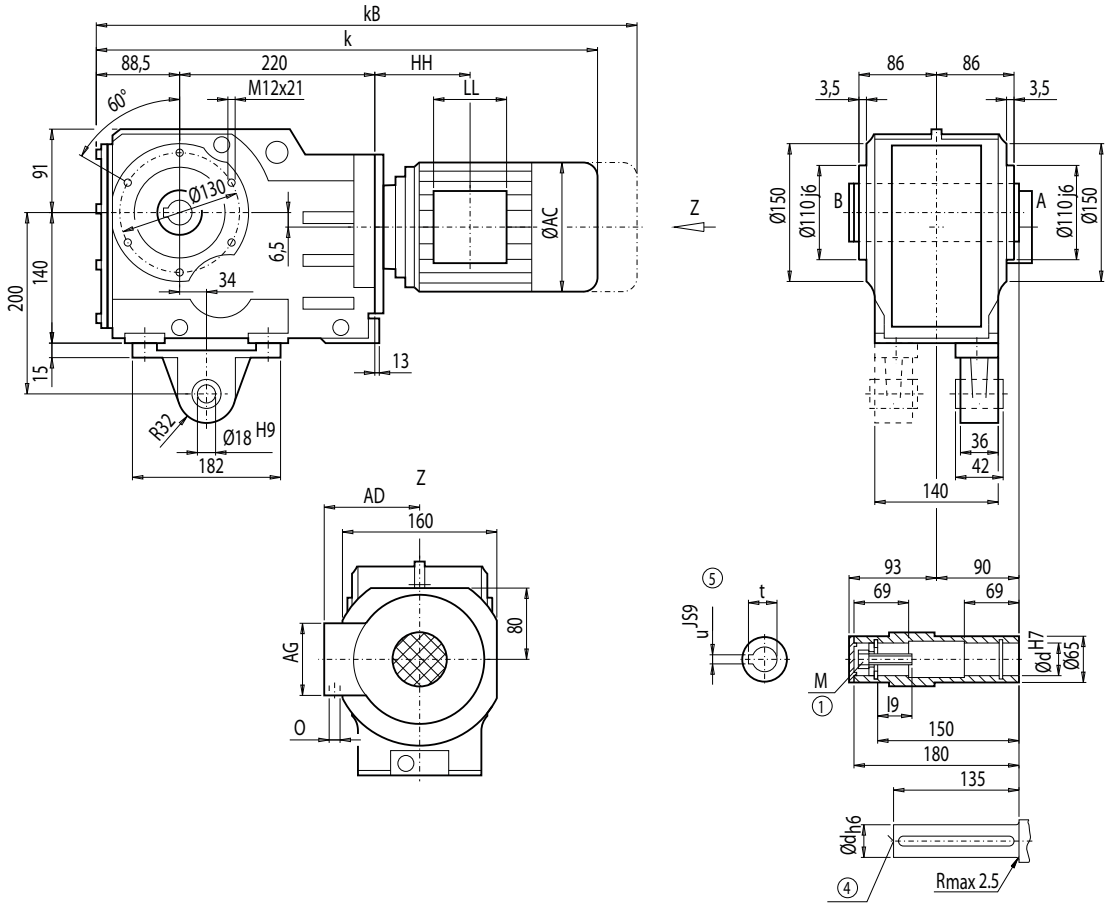
*) Preferred series

Motor	KA68 k	kB	AC	AD	AG	LL	HH	O	Weight KA68
LA71	563.0	618.0	139.0	146	90	90	109.0	M20x1.5/M25x1.5	40
LA71Z	582.0	637.0	139.0	146	90	90	109.0	M20x1.5/M25x1.5	40
LA80	600.0	663.5	156.5	155	90	90	108.5	M20x1.5/M25x1.5	45
LA80Z	622.5	686.0	156.5	155	90	90	181.5	M20x1.5/M25x1.5	49
LA90S/L	631.0	702.0	174.0	163	90	90	108.5	M20x1.5/M25x1.5	50
LA90ZL	676.0	747.0	174.0	163	90	90	232.5	M20x1.5/M25x1.5	56
LA100L	677.0	758.0	195.0	168	120	120	149.0	2xM32x1.5	59
LA100ZL	747.0	828.0	195.0	168	120	120	281.0	2xM32x1.5	69
LA112M	706.0	787.0	219.0	181	120	120	154.0	2xM32x1.5	70
LA112ZM	734.0	815.0	219.0	181	120	120	258.0	2xM32x1.5	77
LA132S/M	768.0	870.0	259.0	195	140	140	196.5	2xM32x1.5	80
LA132ZM	814.0	916.0	259.0	195	140	140	304.5	2xM32x1.5	102

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912

Gearbox KAD68 (3-stage), shaft-mounted design with torque arm

KAD012



d	l9	M	t	u
40 *)	48	M16	43.3	12
45	47	M16	48.8	14

*) Preferred series

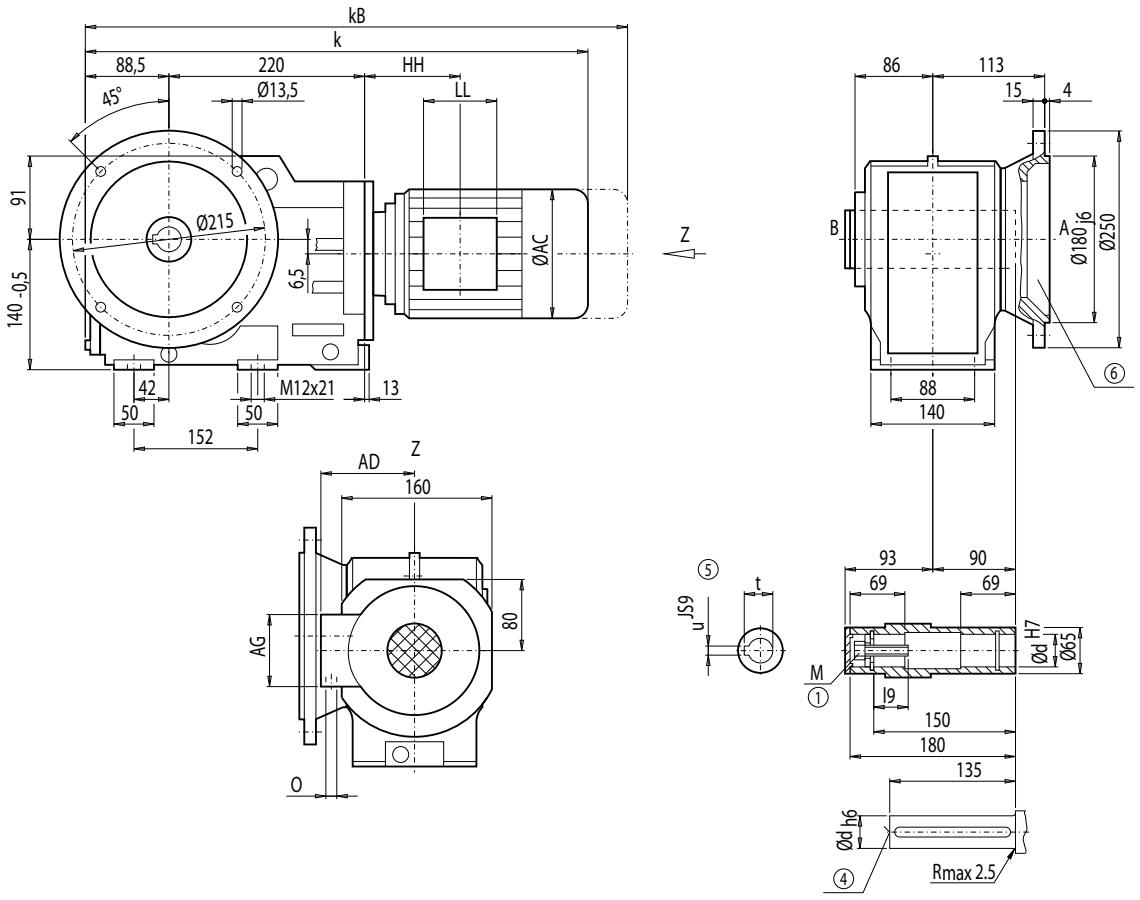
Motor	KAD68 k	kB	AC	AD	AG	LL	HH	O	Weight KAD68
LA71	561.5	616.5	139.0	146	90	90	109.0	M20x1.5/M25x1.5	42
LA71Z	580.5	635.5	139.0	146	90	90	109.0	M20x1.5/M25x1.5	42
LA80	598.5	662.0	156.5	155	90	90	108.5	M20x1.5/M25x1.5	47
LA80Z	621.0	684.5	156.5	155	90	90	181.5	M20x1.5/M25x1.5	51
LA90S/L	629.5	700.5	174.0	163	90	90	108.5	M20x1.5/M25x1.5	52
LA90ZL	674.5	745.5	174.0	163	90	90	232.5	M20x1.5/M25x1.5	58
LA100L	675.5	756.5	195.0	168	120	120	149.0	2xM32x1.5	61
LA100ZL	745.5	826.5	195.0	168	120	120	281.0	2xM32x1.5	71
LA112M	704.5	785.5	219.0	181	120	120	154.0	2xM32x1.5	72
LA112ZM	732.5	813.5	219.0	181	120	120	258.0	2xM32x1.5	79
LA132S/M	766.5	868.5	259.0	195	140	140	196.5	2xM32x1.5	82
LA132ZM	812.5	914.5	259.0	195	140	140	304.5	2xM32x1.5	104

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912

Dimensions

Gearbox KAF68 (3-stage), flange-mounted design

KAF012



d	l9	M	t	u
40 *)	48	M16	43.3	12
45	47	M16	48.8	14

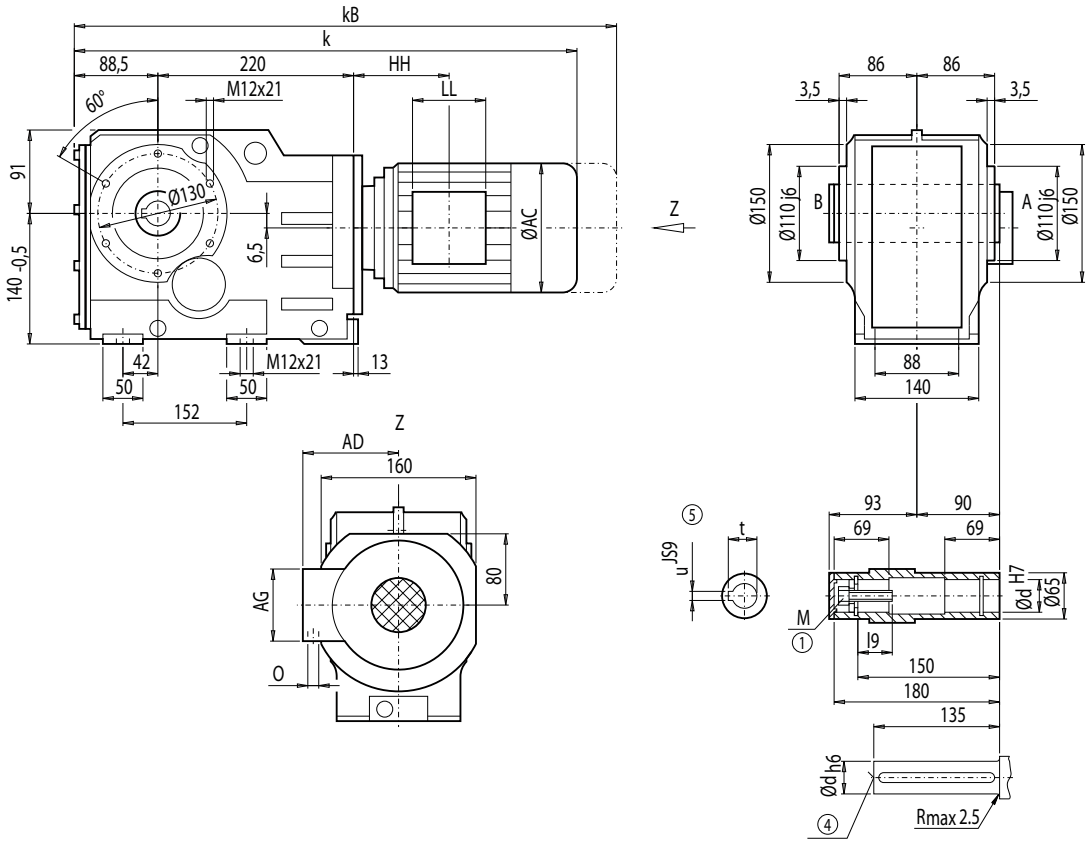
*) Preferred series

Motor	KAF68 k	kB	AC	AD	AG	LL	HH	O	Weight KAF68
LA71	561.5	616.5	139.0	146	90	90	109.0	M20x1.5/M25x1.5	45
LA71Z	580.5	635.5	139.0	146	90	90	109.0	M20x1.5/M25x1.5	45
LA80	598.5	662.0	156.5	155	90	90	108.5	M20x1.5/M25x1.5	50
LA80Z	621.0	684.5	156.5	155	90	90	181.5	M20x1.5/M25x1.5	54
LA90S/L	629.5	700.5	174.0	163	90	90	108.5	M20x1.5/M25x1.5	55
LA90ZL	674.5	745.5	174.0	163	90	90	232.5	M20x1.5/M25x1.5	61
LA100L	675.5	756.5	195.0	168	120	120	149.0	2xM32x1.5	64
LA100ZL	745.5	826.5	195.0	168	120	120	281.0	2xM32x1.5	74
LA112M	704.5	785.5	219.0	181	120	120	154.0	2xM32x1.5	75
LA112ZM	732.5	813.5	219.0	181	120	120	258.0	2xM32x1.5	82
LA132S/M	766.5	868.5	259.0	195	140	140	196.5	2xM32x1.5	85
LA132ZM	812.5	914.5	259.0	195	140	140	304.5	2xM32x1.5	107

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912 ⑥ For note, see page 4/217

Gearbox KAZ68 (3-stage), shaft-mounted design with housing flange (C-type)

KAZ012



d	l9	M	t	u
40 *)	48	M16	43.3	12
45	47	M16	48.8	14

*) Preferred series

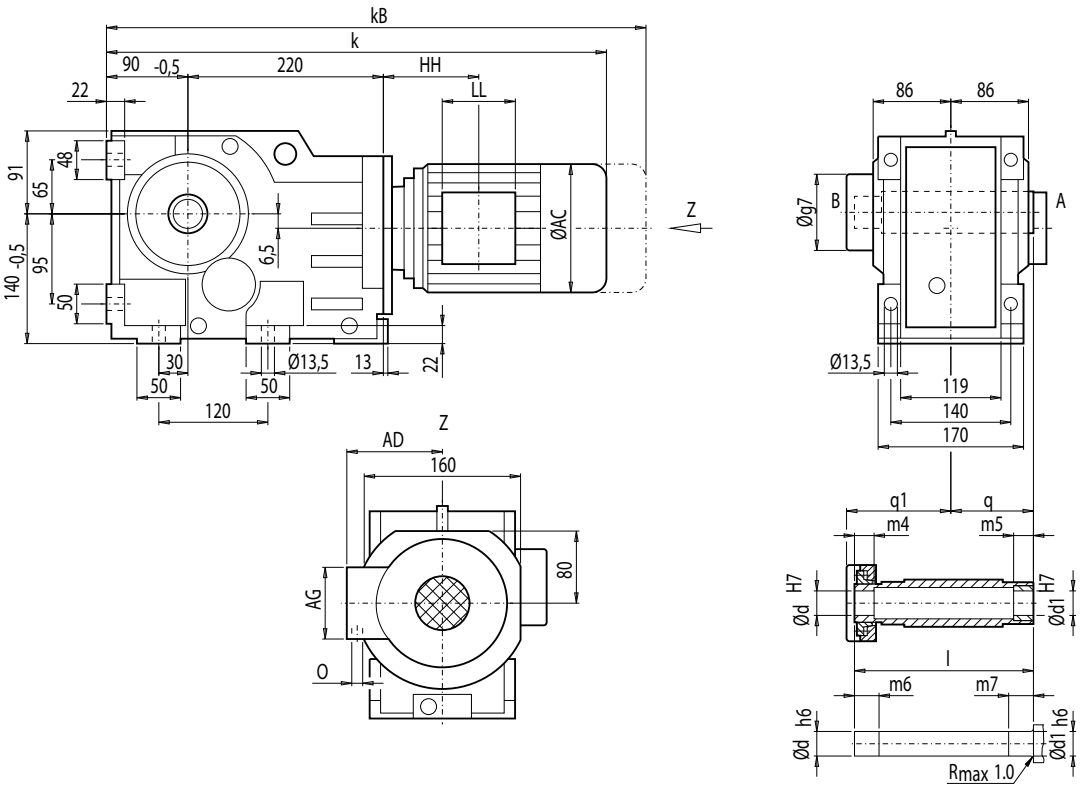
Motor	KAZ68 k	kB	AC	AD	AG	LL	HH	O	Weight KAZ68
LA71	561.5	616.5	139.0	146	90	90	109.0	M20x1.5/M25x1.5	41
LA71Z	580.5	635.5	139.0	146	90	90	109.0	M20x1.5/M25x1.5	41
LA80	598.5	662.0	156.5	155	90	90	108.5	M20x1.5/M25x1.5	46
LA80Z	621.0	684.5	156.5	155	90	90	181.5	M20x1.5/M25x1.5	50
LA90S/L	629.5	700.5	174.0	163	90	90	108.5	M20x1.5/M25x1.5	50
LA90ZL	674.5	745.5	174.0	163	90	90	232.5	M20x1.5/M25x1.5	56
LA100L	675.5	756.5	195.0	168	120	120	149.0	2xM32x1.5	59
LA100ZL	745.5	826.5	195.0	168	120	120	281.0	2xM32x1.5	69
LA112M	704.5	785.5	219.0	181	120	120	154.0	2xM32x1.5	71
LA112ZM	732.5	813.5	219.0	181	120	120	258.0	2xM32x1.5	78
LA132S/M	766.5	868.5	259.0	195	140	140	196.5	2xM32x1.5	81
LA132ZM	812.5	914.5	259.0	195	140	140	304.5	2xM32x1.5	102

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN 6912

Dimensions

Gearbox KAS68 (3-stage), shaft-mounted design with shrink disk

KAS012



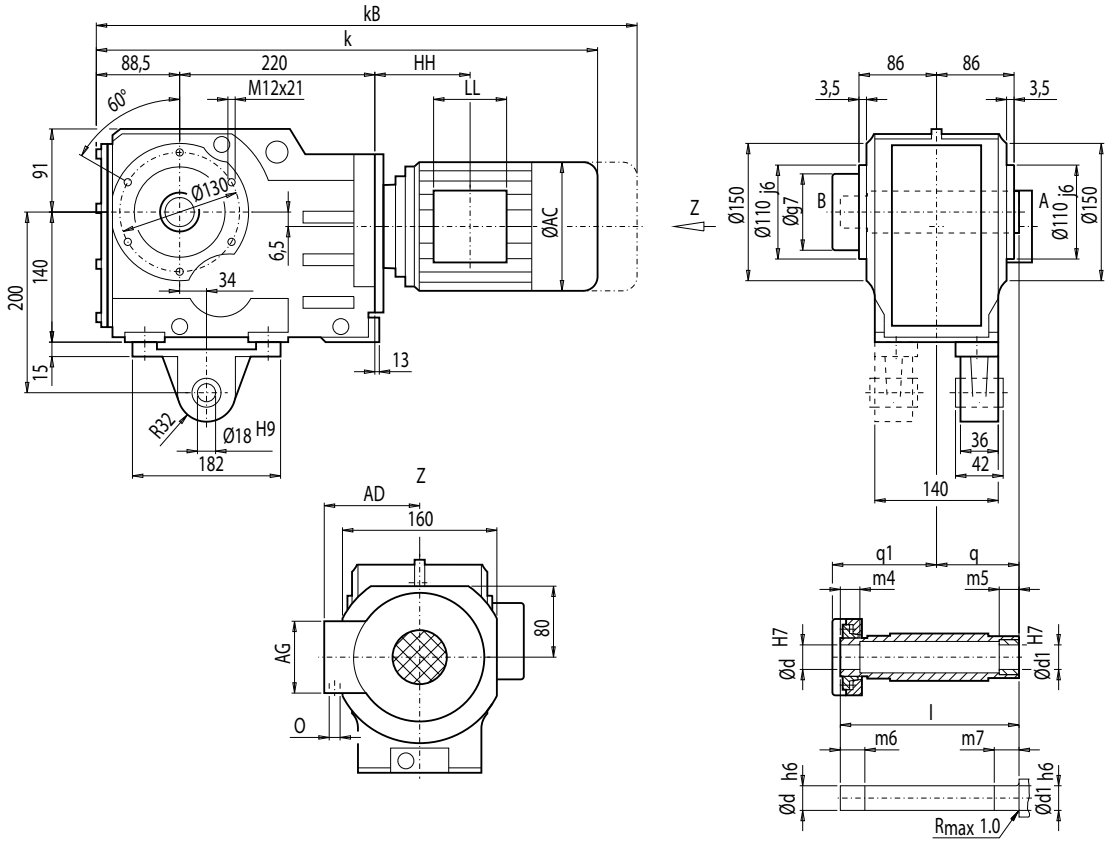
d	d1	l	m4	m5	m6	m7	q1	q	g7
40 *)	40	209	35	20	40	25	126	90	112
50	50	209	27	20	32	25	126	90	112

*) Preferred series

	KAS68								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAS68**
LA71	563.0	618.0	139.0	146	90	90	109.0	M20x1.5/M25x1.5	42
LA71Z	582.0	637.0	139.0	146	90	90	109.0	M20x1.5/M25x1.5	42
LA80	600.0	663.5	156.5	155	90	90	108.5	M20x1.5/M25x1.5	47
LA80Z	622.5	686.0	156.5	155	90	90	181.5	M20x1.5/M25x1.5	51
LA90S/L	631.0	702.0	174.0	163	90	90	108.5	M20x1.5/M25x1.5	51
LA90ZL	676.0	747.0	174.0	163	90	90	232.5	M20x1.5/M25x1.5	57
LA100L	677.0	758.0	195.0	168	120	120	149.0	2xM32x1.5	60
LA100ZL	747.0	828.0	195.0	168	120	120	281.0	2xM32x1.5	70
LA112M	706.0	787.0	219.0	181	120	120	154.0	2xM32x1.5	72
LA112ZM	734.0	815.0	219.0	181	120	120	258.0	2xM32x1.5	79
LA132S/M	768.0	870.0	259.0	195	140	140	196.5	2xM32x1.5	82
LA132ZM	814.0	916.0	259.0	195	140	140	304.5	2xM32x1.5	103

Gearbox KADS68 (3-stage), shaft-mounted design with torque arm and shrink disk

KADS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
40 *)	40	209	35	20	40	25	126	90	112
50	50	209	27	20	32	25	126	90	112

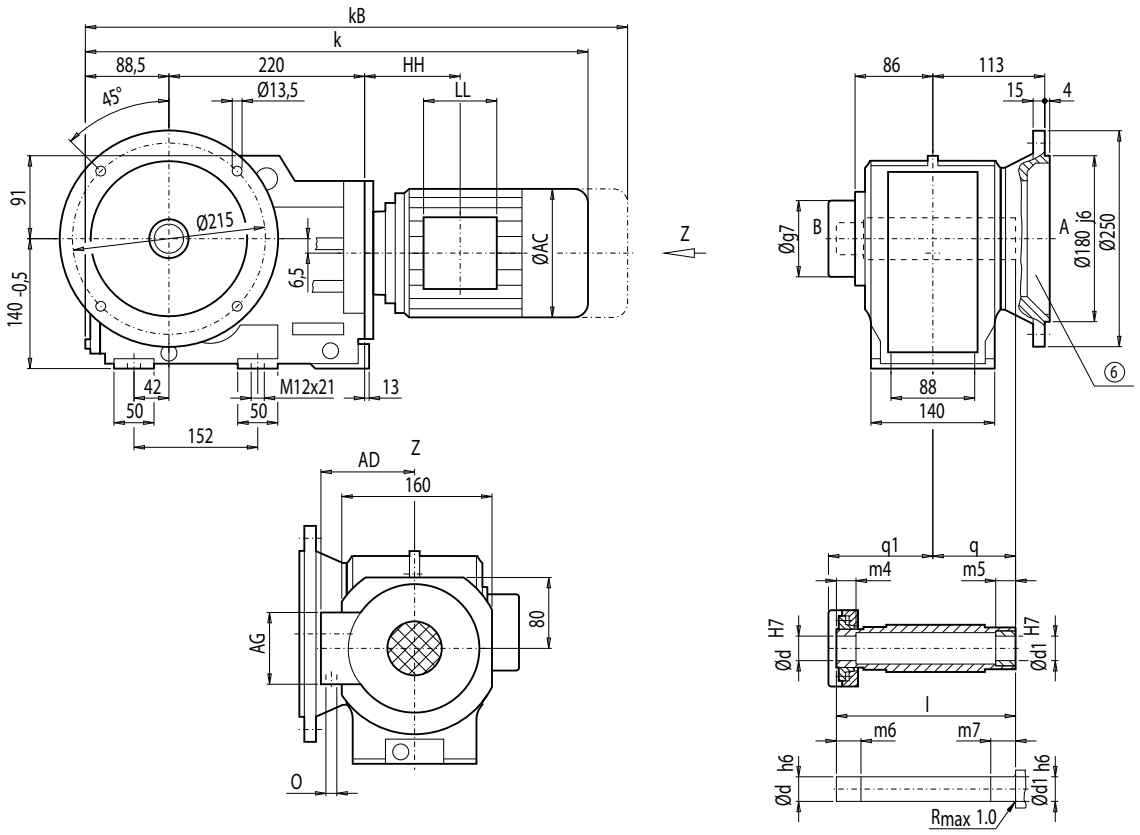
*) Preferred series

	KADS68								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KADS68**
LA71	561.5	616.5	139.0	146	90	90	109.0	M20x1.5/M25x1.5	44
LA71Z	580.5	635.5	139.0	146	90	90	109.0	M20x1.5/M25x1.5	44
LA80	598.5	662.0	156.5	155	90	90	108.5	M20x1.5/M25x1.5	49
LA80Z	621.0	684.5	156.5	155	90	90	181.5	M20x1.5/M25x1.5	54
LA90S/L	629.5	700.5	174.0	163	90	90	108.5	M20x1.5/M25x1.5	53
LA90ZL	674.5	745.5	174.0	163	90	90	232.5	M20x1.5/M25x1.5	59
LA100L	675.5	756.5	195.0	168	120	120	149.0	2xM32x1.5	62
LA100ZL	745.5	826.5	195.0	168	120	120	281.0	2xM32x1.5	72
LA112M	704.5	785.5	219.0	181	120	120	154.0	2xM32x1.5	74
LA112ZM	732.5	813.5	219.0	181	120	120	258.0	2xM32x1.5	81
LA132S/M	766.5	868.5	259.0	195	140	140	196.5	2xM32x1.5	84
LA132ZM	812.5	914.5	259.0	195	140	140	304.5	2xM32x1.5	105

Dimensions

Gearbox KAFS68 (3-stage), flange-mounted design and shrink disk

KAFS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
40 *)	40	209	35	20	40	25	126	90	112
50	50	209	27	20	32	25	126	90	112

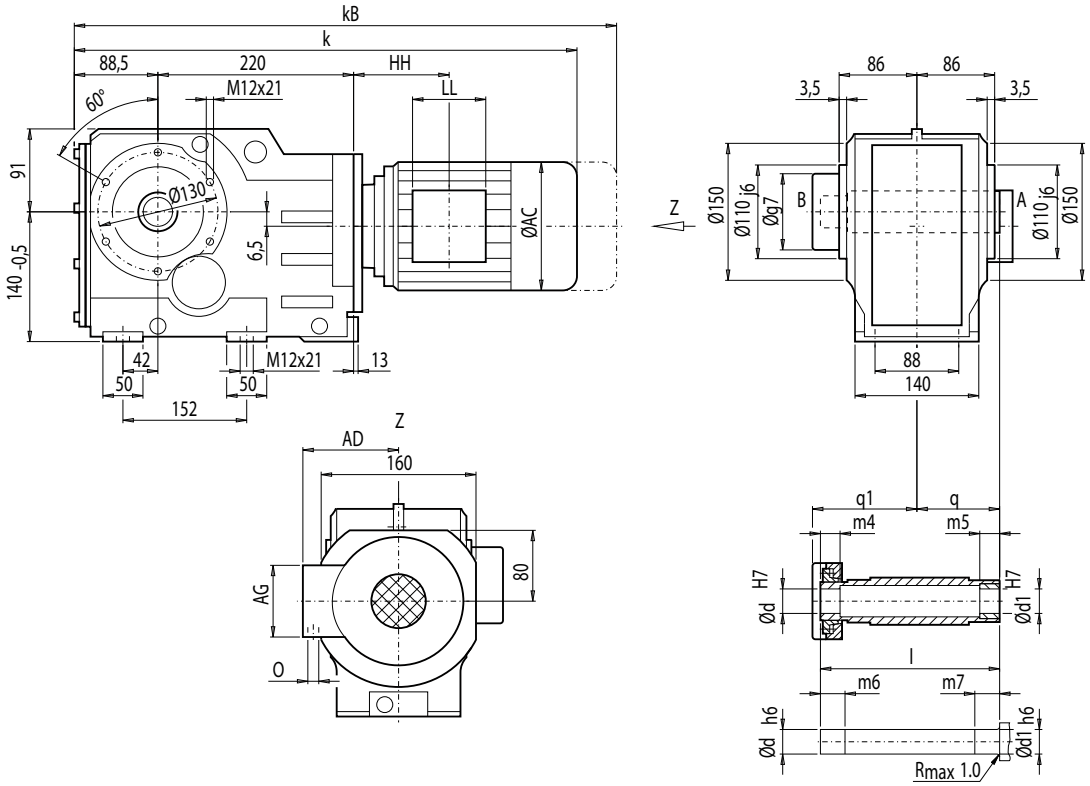
*) Preferred series

	KAFS68								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAFS68**
LA71	561.5	616.5	139.0	146	90	90	109.0	M20x1.5/M25x1.5	47
LA71Z	580.5	635.5	139.0	146	90	90	109.0	M20x1.5/M25x1.5	47
LA80	598.5	662.0	156.5	155	90	90	108.5	M20x1.5/M25x1.5	52
LA80Z	621.0	684.5	156.5	155	90	90	181.5	M20x1.5/M25x1.5	56
LA90S/L	629.5	700.5	174.0	163	90	90	108.5	M20x1.5/M25x1.5	56
LA90ZL	674.5	745.5	174.0	163	90	90	232.5	M20x1.5/M25x1.5	62
LA100L	675.5	756.5	195.0	168	120	120	149.0	2xM32x1.5	65
LA100ZL	745.5	826.5	195.0	168	120	120	281.0	2xM32x1.5	75
LA112M	704.5	785.5	219.0	181	120	120	154.0	2xM32x1.5	77
LA112ZM	732.5	813.5	219.0	181	120	120	258.0	2xM32x1.5	84
LA132S/M	766.5	868.5	259.0	195	140	140	196.5	2xM32x1.5	87
LA132ZM	812.5	914.5	259.0	195	140	140	304.5	2xM32x1.5	108

⑥ For note, see page 4/217

Gearbox KAZS68 (3-stage), shaft-mounted design with housing flange (C-type) and shrink disk

KAZS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
40 *)	40	209	35	20	40	25	126	90	112
50	50	209	27	20	32	25	126	90	112

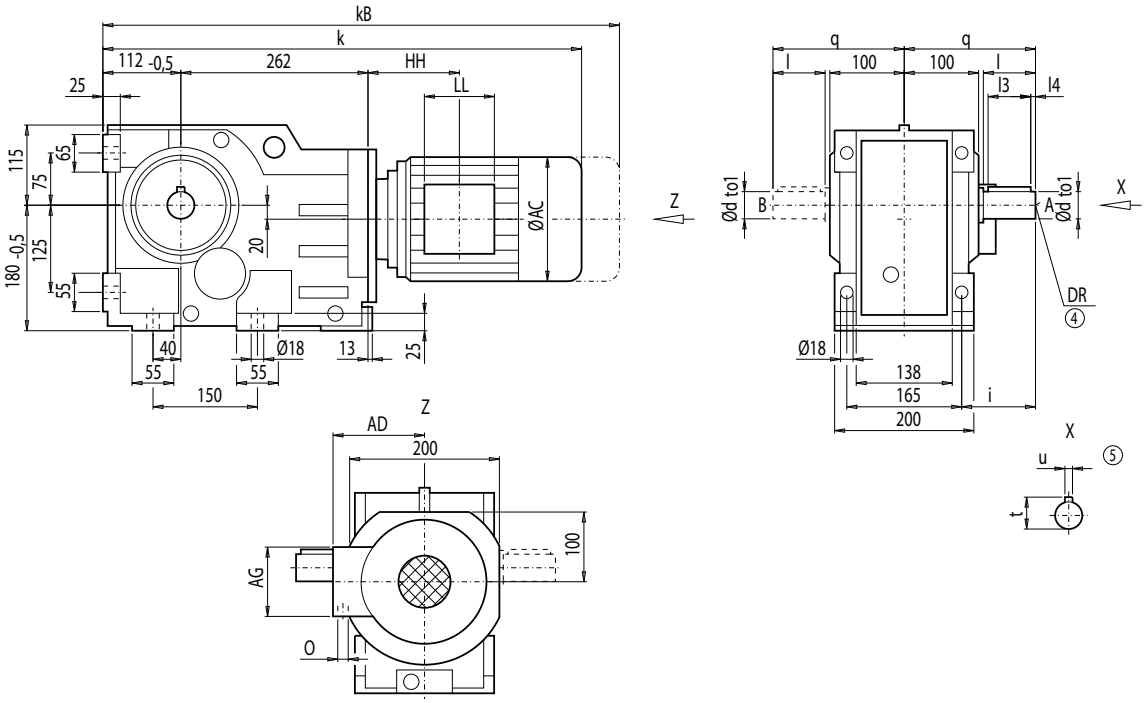
*) Preferred series

	KAZS68								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAZS68**
LA71	561.5	616.5	139.0	146	90	90	109.0	M20x1.5/M25x1.5	42
LA71Z	580.5	635.5	139.0	146	90	90	109.0	M20x1.5/M25x1.5	42
LA80	598.5	662.0	156.5	155	90	90	108.5	M20x1.5/M25x1.5	47
LA80Z	621.0	684.5	156.5	155	90	90	181.5	M20x1.5/M25x1.5	51
LA90S/L	629.5	700.5	174.0	163	90	90	108.5	M20x1.5/M25x1.5	52
LA90ZL	674.5	745.5	174.0	163	90	90	232.5	M20x1.5/M25x1.5	58
LA100L	675.5	756.5	195.0	168	120	120	149.0	2xM32x1.5	61
LA100ZL	745.5	826.5	195.0	168	120	120	281.0	2xM32x1.5	71
LA112M	704.5	785.5	219.0	181	120	120	154.0	2xM32x1.5	72
LA112ZM	732.5	813.5	219.0	181	120	120	258.0	2xM32x1.5	79
LA132S/M	766.5	868.5	259.0	195	140	140	196.5	2xM32x1.5	82
LA132ZM	812.5	914.5	259.0	195	140	140	304.5	2xM32x1.5	103

Dimensions

Gearbox K88 (3-stage), housing-flange-mounted design (C-type)

K012



d	to1	l	l3	l4	t	u	i	q	DR
50 *)	k6	100	80	10	53.5	14	122.5	205	M16x36
70	m6	140	110	15	74.5	20	162.5	245	M20x42

*) Preferred series

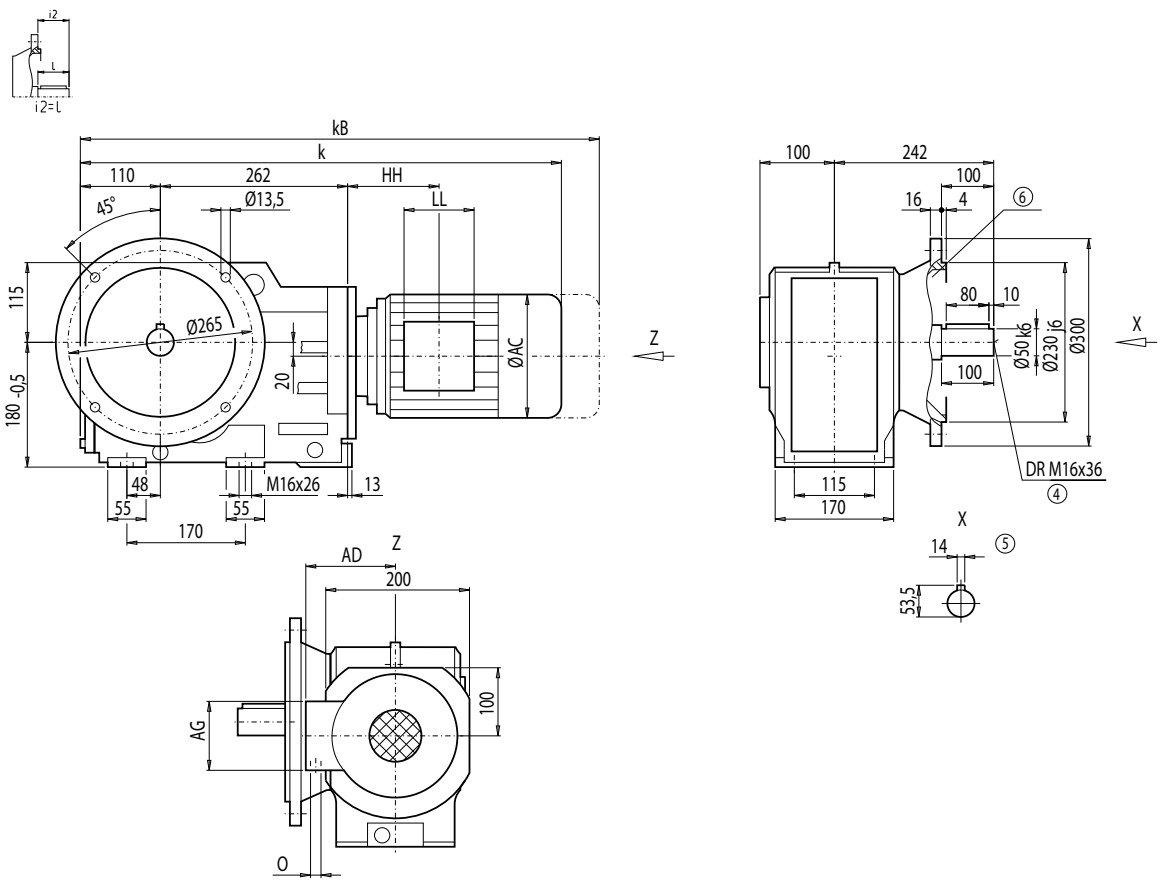
	K88								Weight
Motor	k	kB	AC	AD	AG	LL	HH	O	K88
LA71	621.0	676.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	73
LA71Z	640.0	695.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	73
LA80	658.0	721.5	156.5	155	90	90	102.5	M20x1.5/M25x1.5	78
LA80Z	680.5	744.0	156.5	155	90	90	175.5	M20x1.5/M25x1.5	82
LA90S/L	689.0	760.0	174.0	163	90	90	102.5	M20x1.5/M25x1.5	83
LA90ZL	734.0	805.0	174.0	163	90	90	226.5	M20x1.5/M25x1.5	89
LA100L	735.0	816.0	195.0	168	120	120	143.0	2xM32x1.5	92
LA100ZL	805.0	886.0	195.0	168	120	120	275.0	2xM32x1.5	102
LA112M	762.0	843.0	219.0	181	120	120	146.0	2xM32x1.5	104
LA112ZM	790.0	871.0	219.0	181	120	120	250.0	2xM32x1.5	111
LA132S/M	822.0	924.0	259.0	195	140	140	186.5	2xM32x1.5	117
LA132ZM	868.0	970.0	259.0	195	140	140	294.5	2xM32x1.5	138
LA160M/L	924.5	1 043.0	313.5	227	165	165	212.0	2xM40x1.5	149
LA160ZL	972.5	1 091.0	313.5	227	165	165	365.0	2xM40x1.5	188

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox KF88 (3-stage), flange-mounted design (A-type)

KF012



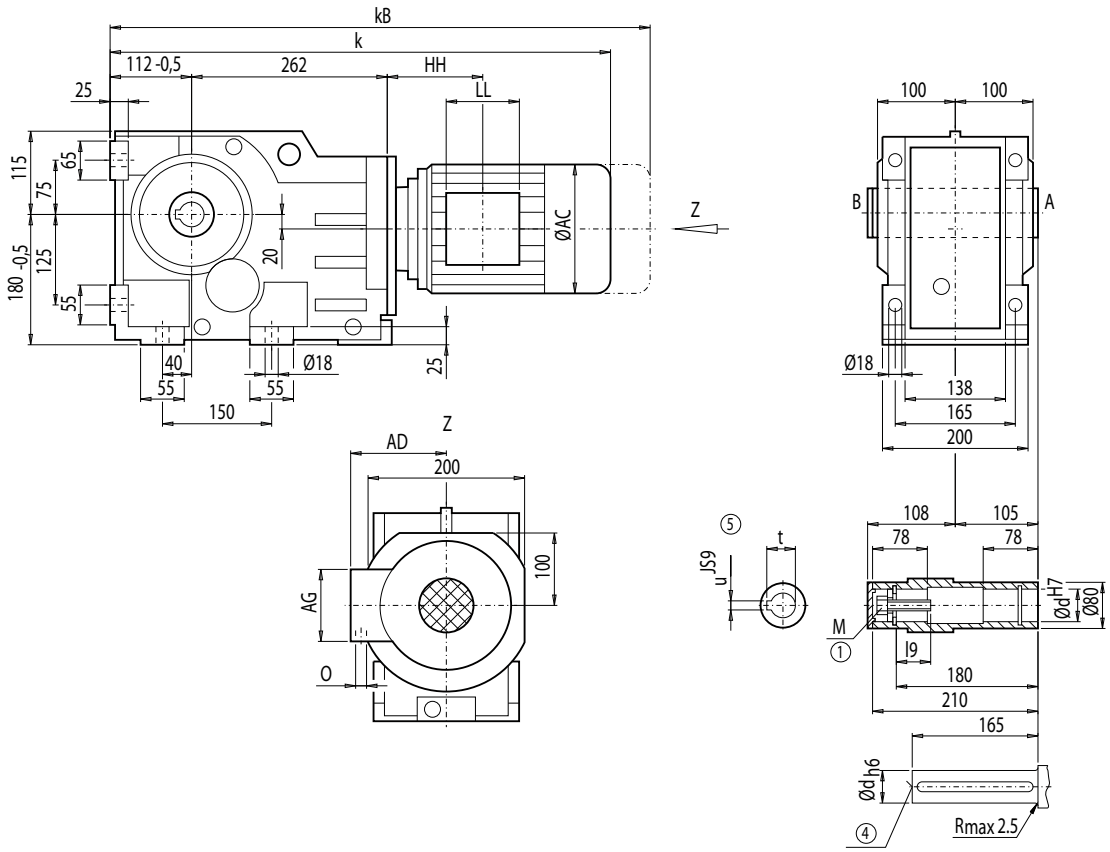
Motor	KF88 k	kB	AC	AD	AG	LL	HH	O	Weight KF88
LA71	619.0	674.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	80
LA71Z	638.0	693.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	80
LA80	656.0	719.5	156.5	155	90	90	102.5	M20x1.5/M25x1.5	85
LA80Z	678.5	742.0	156.5	155	90	90	175.5	M20x1.5/M25x1.5	89
LA90S/L	687.0	758.0	174.0	163	90	90	102.5	M20x1.5/M25x1.5	89
LA90ZL	732.0	803.0	174.0	163	90	90	226.5	M20x1.5/M25x1.5	95
LA100L	733.0	814.0	195.0	168	120	120	143.0	2xM32x1.5	99
LA100ZL	803.0	884.0	195.0	168	120	120	275.0	2xM32x1.5	109
LA112M	760.0	841.0	219.0	181	120	120	146.0	2xM32x1.5	110
LA112ZM	788.0	869.0	219.0	181	120	120	250.0	2xM32x1.5	117
LA132S/M	820.0	922.0	259.0	195	140	140	186.5	2xM32x1.5	123
LA132ZM	866.0	968.0	259.0	195	140	140	294.5	2xM32x1.5	144
LA160M/L	922.5	1 041.0	313.5	227	165	165	212.0	2xM40x1.5	156
LA160ZL	970.5	1 089.0	313.5	227	165	165	365.0	2xM40x1.5	195

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Dimensions

Gearbox KA88 (3-stage), housing-flange-mounted design (C-type)

KA012



d	l9	M	t	u
50 *)	44.5	M16	53.8	14
60	54.0	M20	64.4	18

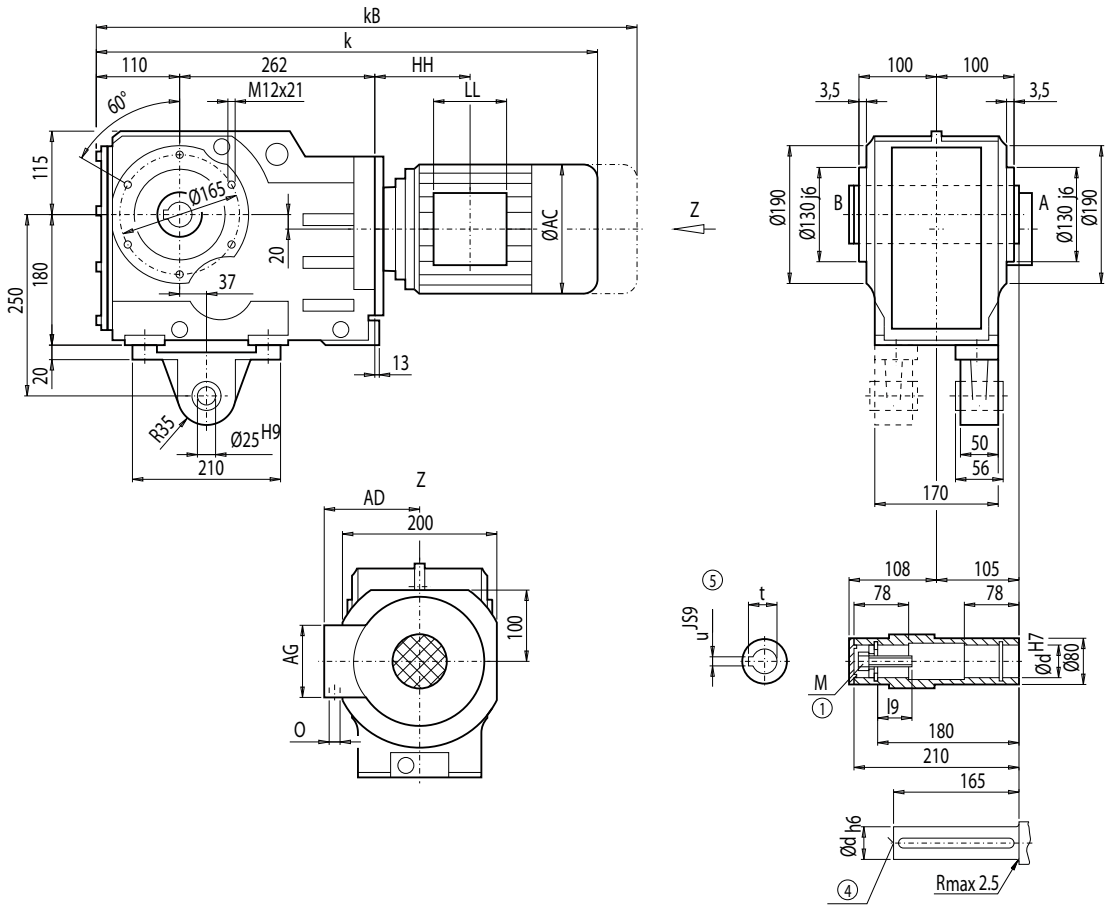
*) Preferred series

	KA88								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KA88**
LA71	621.0	676.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	65
LA71Z	640.0	695.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	65
LA80	658.0	721.5	156.5	155	90	90	102.5	M20x1.5/M25x1.5	70
LA80Z	680.5	744.0	156.5	155	90	90	175.5	M20x1.5/M25x1.5	74
LA90S/L	689.0	760.0	174.0	163	90	90	102.5	M20x1.5/M25x1.5	75
LA90ZL	734.0	805.0	174.0	163	90	90	226.5	M20x1.5/M25x1.5	81
LA100L	735.0	816.0	195.0	168	120	120	143.0	2xM32x1.5	84
LA100ZL	805.0	886.0	195.0	168	120	120	275.0	2xM32x1.5	94
LA112M	762.0	843.0	219.0	181	120	120	146.0	2xM32x1.5	96
LA112ZM	790.0	871.0	219.0	181	120	120	250.0	2xM32x1.5	103
LA132S/M	822.0	924.0	259.0	195	140	140	186.5	2xM32x1.5	109
LA132ZM	868.0	970.0	259.0	195	140	140	294.5	2xM32x1.5	130
LA160M/L	924.5	1 043.0	313.5	227	165	165	212.0	2xM40x1.5	141
LA160ZL	972.5	1 091.0	313.5	227	165	165	365.0	2xM40x1.5	180

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN EN ISO 4014

Gearbox KAD88 (3-stage), shaft-mounted design with torque arm

KAD012



d	l9	M	t	u
50 *)	44.5	M16	53.8	14
60	54.0	M20	64.4	18

*) Preferred series

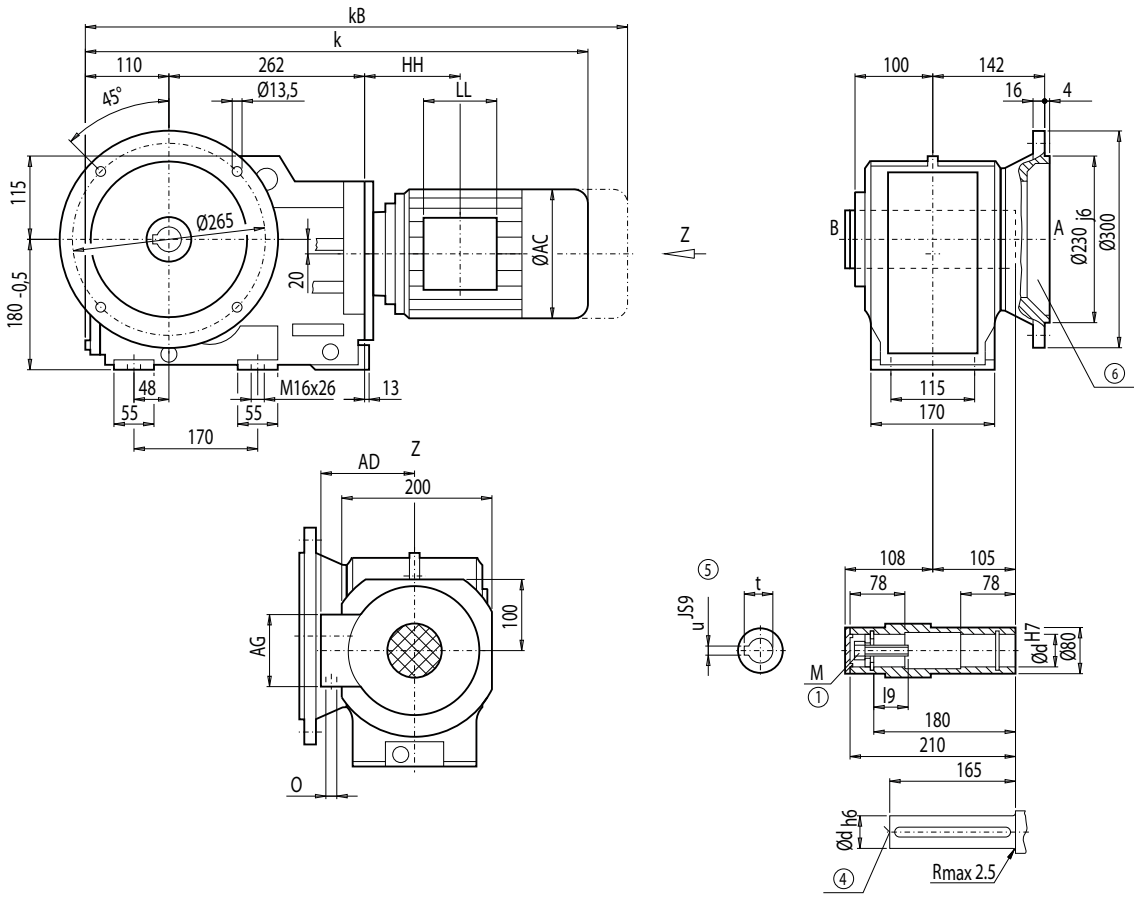
	KAD88								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAD88**
LA71	619.0	674.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	68
LA71Z	638.0	693.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	68
LA80	656.0	719.5	156.5	155	90	90	102.5	M20x1.5/M25x1.5	73
LA80Z	678.5	742.0	156.5	155	90	90	175.5	M20x1.5/M25x1.5	77
LA90S/L	687.0	758.0	174.0	163	90	90	102.5	M20x1.5/M25x1.5	77
LA90ZL	732.0	803.0	174.0	163	90	90	226.5	M20x1.5/M25x1.5	83
LA100L	733.0	814.0	195.0	168	120	120	143.0	2xM32x1.5	86
LA100ZL	803.0	884.0	195.0	168	120	120	275.0	2xM32x1.5	96
LA112M	760.0	841.0	219.0	181	120	120	146.0	2xM32x1.5	98
LA112ZM	788.0	869.0	219.0	181	120	120	250.0	2xM32x1.5	105
LA132S/M	820.0	922.0	259.0	195	140	140	186.5	2xM32x1.5	111
LA132ZM	866.0	968.0	259.0	195	140	140	294.5	2xM32x1.5	132
LA160M/L	922.5	1 041.0	313.5	227	165	165	212.0	2xM40x1.5	140
LA160ZL	970.5	1 089.0	313.5	227	165	165	365.0	2xM40x1.5	179

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN EN ISO 4014

Dimensions

Gearbox KAF88 (3-stage), flange-mounted design

KAF012



d	l9	M	t	u
50 *)	44.5	M16	53.8	14
60	54.0	M20	64.4	18

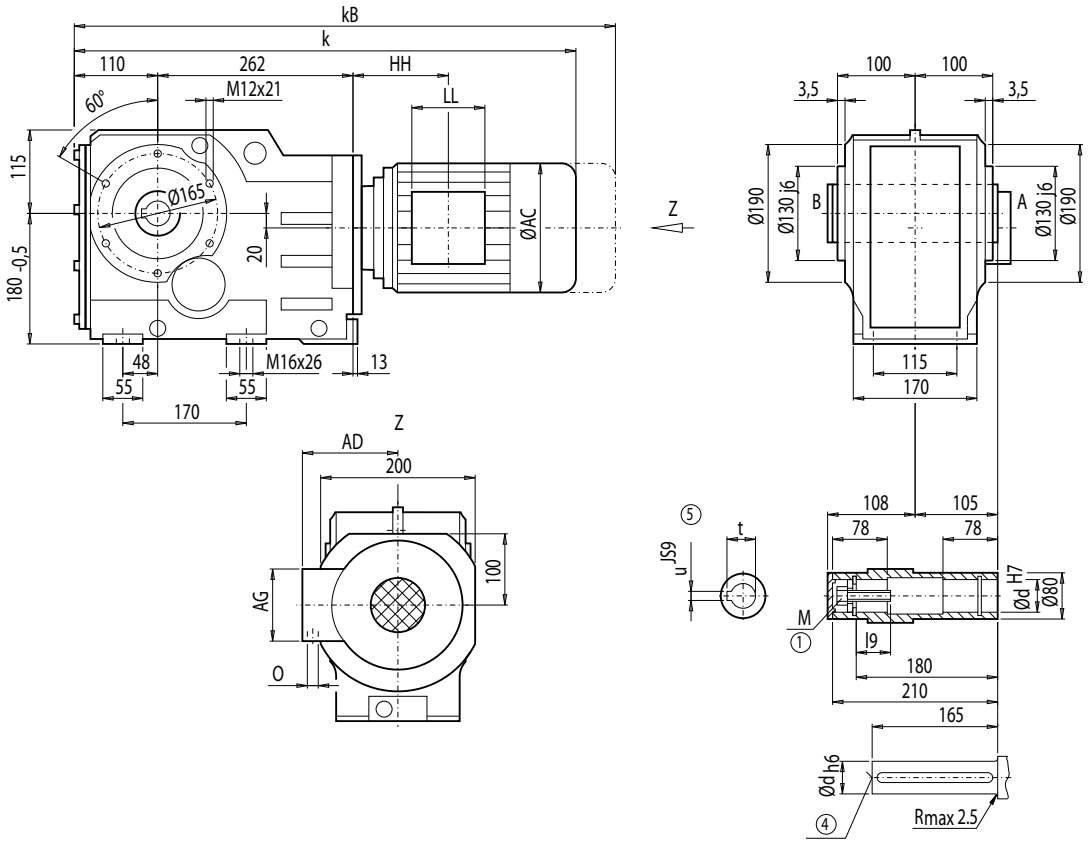
*) Preferred series

	KAF88								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAF88**
LA71	619.0	674.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	72
LA71Z	638.0	693.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	72
LA80	656.0	719.5	156.5	155	90	90	102.5	M20x1.5/M25x1.5	77
LA80Z	678.5	742.0	156.5	155	90	90	175.5	M20x1.5/M25x1.5	81
LA90S/L	687.0	758.0	174.0	163	90	90	102.5	M20x1.5/M25x1.5	81
LA90ZL	732.0	803.0	174.0	163	90	90	226.5	M20x1.5/M25x1.5	87
LA100L	733.0	814.0	195.0	168	120	120	143.0	2xM32x1.5	90
LA100ZL	803.0	884.0	195.0	168	120	120	275.0	2xM32x1.5	100
LA112M	760.0	841.0	219.0	181	120	120	146.0	2xM32x1.5	102
LA112ZM	788.0	869.0	219.0	181	120	120	250.0	2xM32x1.5	109
LA132S/M	820.0	922.0	259.0	195	140	140	186.5	2xM32x1.5	115
LA132ZM	866.0	968.0	259.0	195	140	140	294.5	2xM32x1.5	136
LA160M/L	922.5	1 041.0	313.5	227	165	165	212.0	2xM40x1.5	148
LA160ZL	970.5	1 089.0	313.5	227	165	165	365.0	2xM40x1.5	187

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN EN ISO 4014 ⑥ For note, see page 4/217

Gearbox KAZ88 (3-stage), shaft-mounted design with housing flange (C-type)

KAZ012



d	l9	M	t	u
50 *)	44.5	M16	53.8	14
60	54.0	M20	64.4	18

*) Preferred series

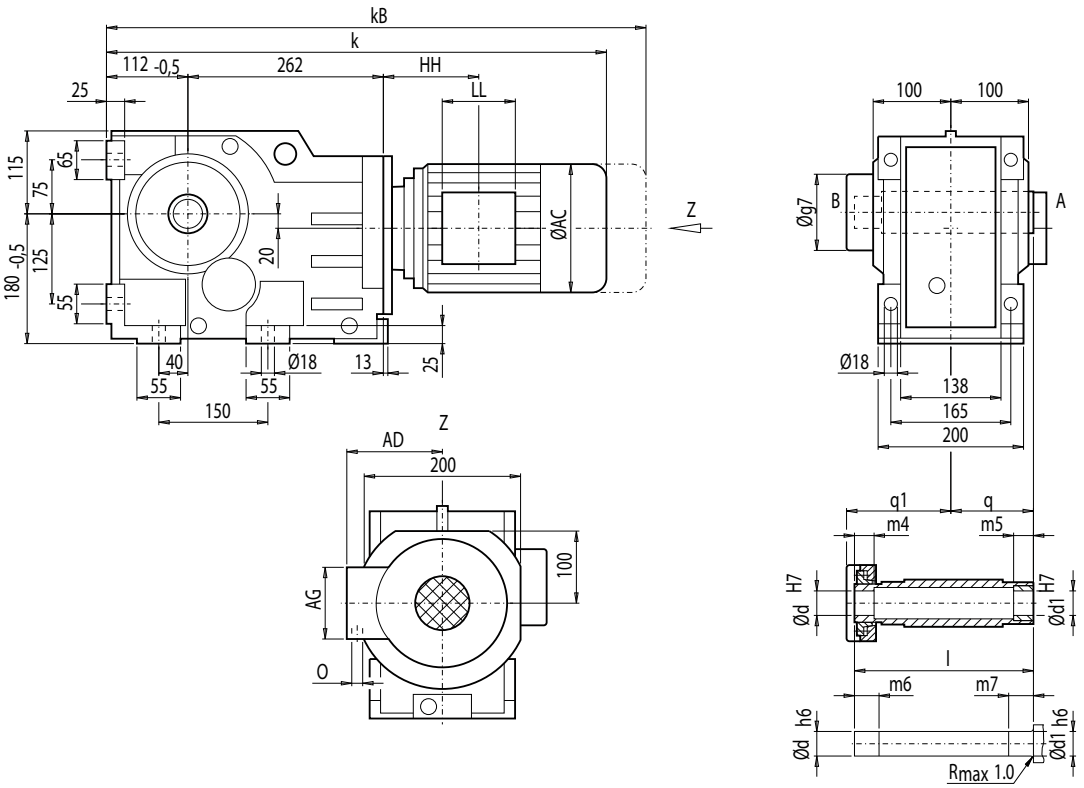
	KAZ88								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAZ88**
LA71	619.0	674.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	65
LA71Z	638.0	693.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	65
LA80	656.0	719.5	156.5	155	90	90	102.5	M20x1.5/M25x1.5	70
LA80Z	678.5	742.0	156.5	155	90	90	175.5	M20x1.5/M25x1.5	74
LA90S/L	687.0	758.0	174.0	163	90	90	102.5	M20x1.5/M25x1.5	74
LA90ZL	732.0	803.0	174.0	163	90	90	226.5	M20x1.5/M25x1.5	80
LA100L	733.0	814.0	195.0	168	120	120	143.0	2xM32x1.5	84
LA100ZL	803.0	884.0	195.0	168	120	120	275.0	2xM32x1.5	94
LA112M	760.0	841.0	219.0	181	120	120	146.0	2xM32x1.5	95
LA112ZM	788.0	869.0	219.0	181	120	120	250.0	2xM32x1.5	102
LA132S/M	820.0	922.0	259.0	195	140	140	186.5	2xM32x1.5	108
LA132ZM	866.0	968.0	259.0	195	140	140	294.5	2xM32x1.5	129
LA160M/L	922.5	1 041.0	313.5	227	165	165	212.0	2xM40x1.5	141
LA160ZL	970.5	1 089.0	313.5	227	165	165	365.0	2xM40x1.5	180

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN EN ISO 4014

Dimensions

Gearbox KAS88 (3-stage), shaft-mounted design with shrink disk

KAS012



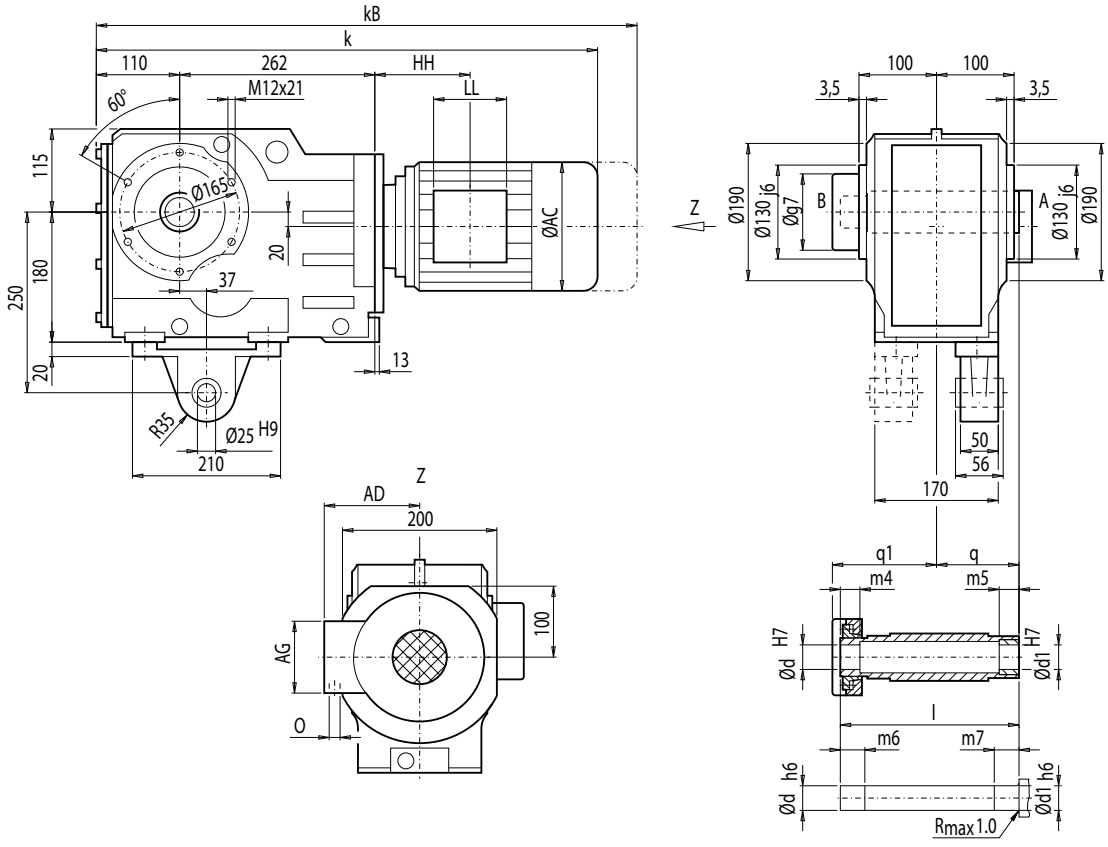
d	d1	l	m4	m5	m6	m7	q1	q	g7
50 *)	50	241	29	30	34	35	144	105	132
60	60	241	29	30	34	35	144	105	132

*) Preferred series

	KAS88								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAS88**
LA71	621.0	676.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	67
LA71Z	640.0	695.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	67
LA80	658.0	721.5	156.5	155	90	90	102.5	M20x1.5/M25x1.5	72
LA80Z	680.5	744.0	156.5	155	90	90	175.5	M20x1.5/M25x1.5	76
LA90S/L	689.0	760.0	174.0	163	90	90	102.5	M20x1.5/M25x1.5	77
LA90ZL	734.0	805.0	174.0	163	90	90	226.5	M20x1.5/M25x1.5	83
LA100L	735.0	816.0	195.0	168	120	120	143.0	2xM32x1.5	86
LA100ZL	805.0	886.0	195.0	168	120	120	275.0	2xM32x1.5	96
LA112M	762.0	843.0	219.0	181	120	120	146.0	2xM32x1.5	97
LA112ZM	790.0	871.0	219.0	181	120	120	250.0	2xM32x1.5	104
LA132S/M	822.0	924.0	259.0	195	140	140	186.5	2xM32x1.5	110
LA132ZM	868.0	970.0	259.0	195	140	140	294.5	2xM32x1.5	132
LA160M/L	924.5	1 043.0	313.5	227	165	165	212.0	2xM40x1.5	143
LA160ZL	972.5	1 091.0	313.5	227	165	165	365.0	2xM40x1.5	182

Gearbox KADS88 (3-stage), shaft-mounted design with torque arm and shrink disk

KADS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
50 *)	50	241	29	30	34	35	144	105	132
60	60	241	29	30	34	35	144	105	132

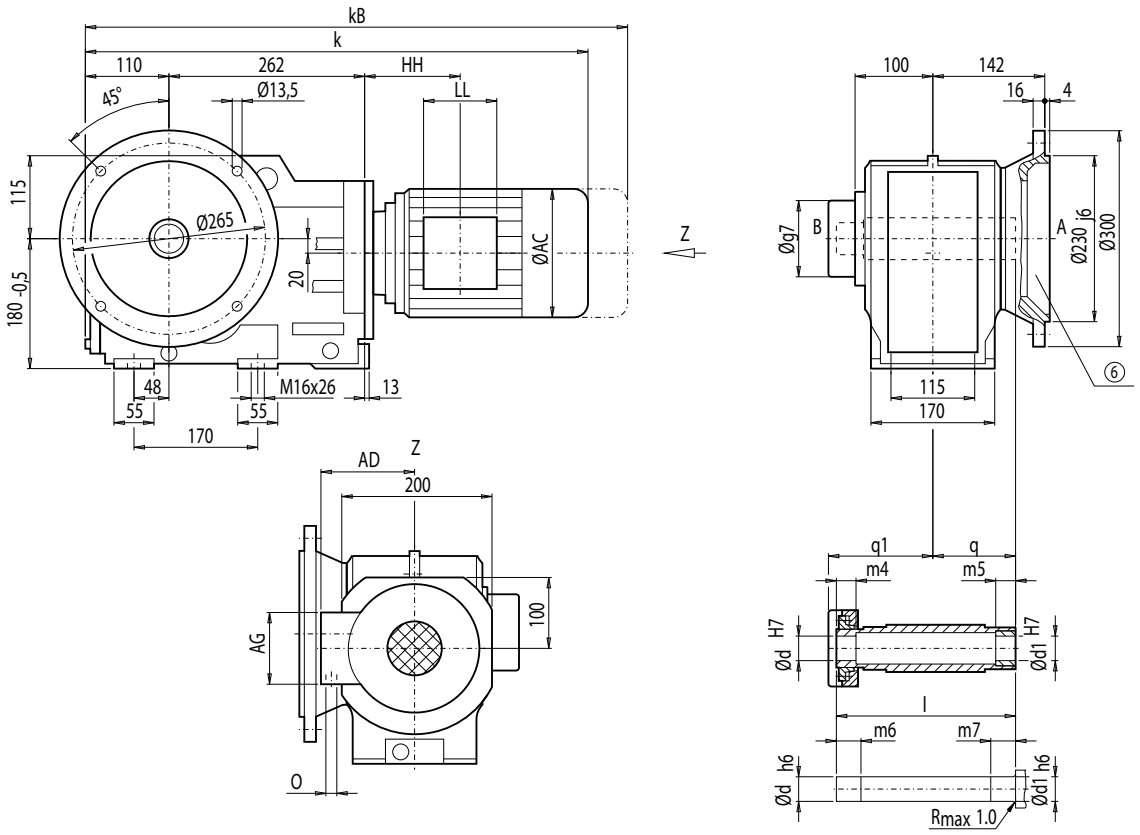
*) Preferred series

	KADS88								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KADS88**
LA71	619.0	674.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	70
LA71Z	638.0	693.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	70
LA80	656.0	719.5	156.5	155	90	90	102.5	M20x1.5/M25x1.5	75
LA80Z	678.5	742.0	156.5	155	90	90	175.5	M20x1.5/M25x1.5	79
LA90S/L	687.0	758.0	174.0	163	90	90	102.5	M20x1.5/M25x1.5	79
LA90ZL	732.0	803.0	174.0	163	90	90	226.5	M20x1.5/M25x1.5	85
LA100L	733.0	814.0	195.0	168	120	120	143.0	2xM32x1.5	88
LA100ZL	803.0	884.0	195.0	168	120	120	275.0	2xM32x1.5	98
LA112M	760.0	841.0	219.0	181	120	120	146.0	2xM32x1.5	100
LA112ZM	788.0	869.0	219.0	181	120	120	250.0	2xM32x1.5	107
LA132S/M	820.0	922.0	259.0	195	140	140	186.5	2xM32x1.5	113
LA132ZM	866.0	968.0	259.0	195	140	140	294.5	2xM32x1.5	134
LA160M/L	922.5	1 041.0	313.5	227	165	165	212.0	2xM40x1.5	146
LA160ZL	970.5	1 089.0	313.5	227	165	165	365.0	2xM40x1.5	185

Dimensions

Gearbox KAFS88 (3-stage), flange-mounted design and shrink disk

KAFS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
50 *)	50	241	29	30	34	35	144	105	132
60	60	241	29	30	34	35	144	105	132

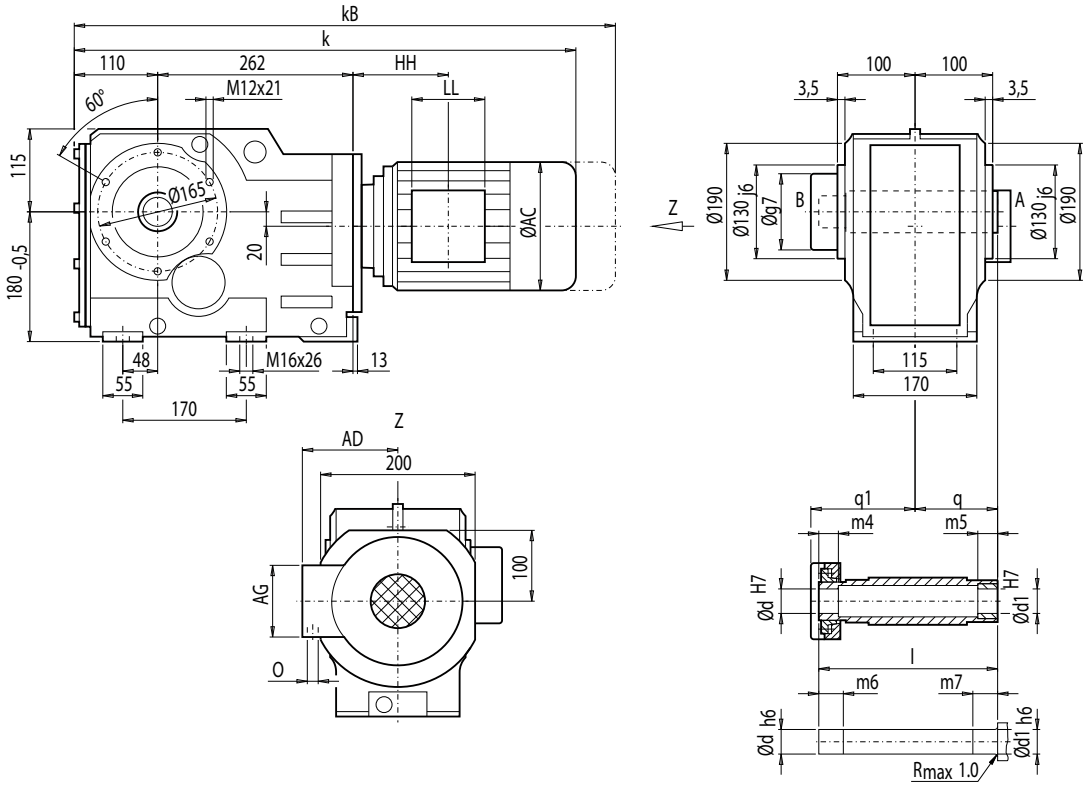
*) Preferred series

	KAFS88								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAFS88**
LA71	619.0	674.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	74
LA71Z	638.0	693.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	74
LA80	656.0	719.5	156.5	155	90	90	102.5	M20x1.5/M25x1.5	79
LA80Z	678.5	742.0	156.5	155	90	90	175.5	M20x1.5/M25x1.5	83
LA90S/L	687.0	758.0	174.0	163	90	90	102.5	M20x1.5/M25x1.5	83
LA90ZL	732.0	803.0	174.0	163	90	90	226.5	M20x1.5/M25x1.5	89
LA100L	733.0	814.0	195.0	168	120	120	143.0	2xM32x1.5	92
LA100ZL	803.0	884.0	195.0	168	120	120	275.0	2xM32x1.5	102
LA112M	760.0	841.0	219.0	181	120	120	146.0	2xM32x1.5	104
LA112ZM	788.0	869.0	219.0	181	120	120	250.0	2xM32x1.5	111
LA132S/M	820.0	922.0	259.0	195	140	140	186.5	2xM32x1.5	117
LA132ZM	866.0	968.0	259.0	195	140	140	294.5	2xM32x1.5	138
LA160M/L	922.5	1 041.0	313.5	227	165	165	212.0	2xM40x1.5	150
LA160ZL	970.5	1 089.0	313.5	227	165	165	365.0	2xM40x1.5	189

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Gearbox KAZS88 (3-stage), shaft-mounted design with housing flange (C-type) and shrink disk

KAZS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
50 *)	50	241	29	30	34	35	144	105	132
60	60	241	29	30	34	35	144	105	132

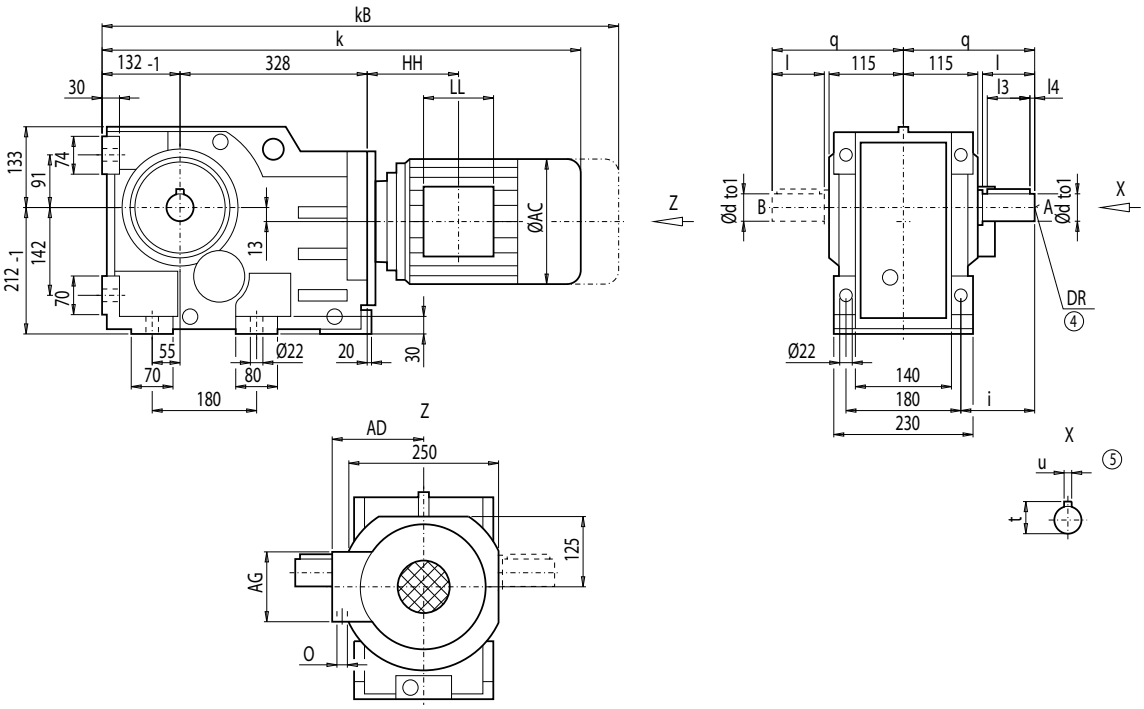
*) Preferred series

	KAZS88								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAZS88**
LA71	619.0	674.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	67
LA71Z	638.0	693.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	67
LA80	656.0	719.5	156.5	155	90	90	102.5	M20x1.5/M25x1.5	72
LA80Z	678.5	742.0	156.5	155	90	90	175.5	M20x1.5/M25x1.5	76
LA90S/L	687.0	758.0	174.0	163	90	90	102.5	M20x1.5/M25x1.5	76
LA90ZL	732.0	803.0	174.0	163	90	90	226.5	M20x1.5/M25x1.5	82
LA100L	733.0	814.0	195.0	168	120	120	143.0	2xM32x1.5	85
LA100ZL	803.0	884.0	195.0	168	120	120	275.0	2xM32x1.5	95
LA112M	760.0	841.0	219.0	181	120	120	146.0	2xM32x1.5	97
LA112ZM	788.0	869.0	219.0	181	120	120	250.0	2xM32x1.5	104
LA132S/M	820.0	922.0	259.0	195	140	140	186.5	2xM32x1.5	110
LA132ZM	866.0	968.0	259.0	195	140	140	294.5	2xM32x1.5	131
LA160M/L	922.5	1 041.0	313.5	227	165	165	212.0	2xM40x1.5	143
LA160ZL	970.5	1 089.0	313.5	227	165	165	365.0	2xM40x1.5	182

Dimensions

Gearbox K108 (3-stage), housing-flange-mounted design (C-type)

K012



d	to1	l	l3	l4	t	u	i	q	DR
60 *)	m6	120	110	5	64	18	150	240	M20x42
80	m6	170	125	20	85	22	200	290	

*) Preferred series

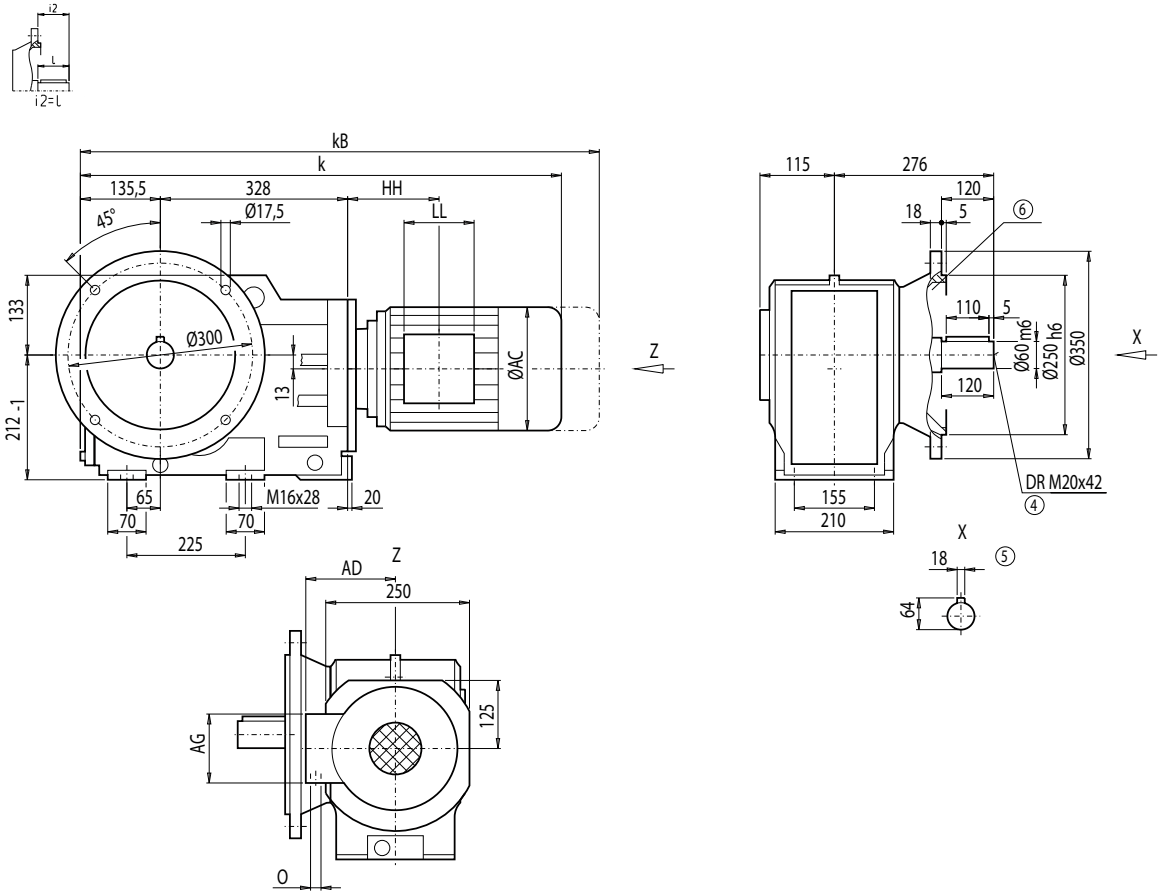
	K108								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**K108**
LA80	729.0	792.5	156.5	155.0	90	90	87.5	M20x1.5/M25x1.5	133
LA80Z	751.5	815.0	156.5	155.0	90	90	160.5	M20x1.5/M25x1.5	137
LA90S/L	760.0	831.0	174.0	163.0	90	90	87.5	M20x1.5/M25x1.5	138
LA90ZL	805.0	876.0	174.0	163.0	90	90	211.5	M20x1.5/M25x1.5	144
LA100L	803.5	884.5	195.0	168.0	120	120	125.5	2xM32x1.5	146
LA100ZL	873.5	954.5	195.0	168.0	120	120	257.5	2xM32x1.5	156
LA112M	829.5	910.5	219.0	181.0	120	120	127.5	2xM32x1.5	158
LA112ZM	857.5	938.5	219.0	181.0	120	120	231.5	2xM32x1.5	165
LA132S/M	889.5	991.5	259.0	195.0	140	140	168.0	2xM32x1.5	169
LA132ZM	935.5	1 037.5	259.0	195.0	140	140	276.0	2xM32x1.5	191
LA160M/L	994.0	1 112.5	313.5	227.0	165	165	195.5	2xM40x1.5	204
LA160ZL	1 042.0	1 160.5	313.5	227.0	165	165	348.5	2xM40x1.5	243
LG180M/L	1 053.5	1 175.5	348.0	322.5	260	192	212.5	2xM40x1.5	296
LG180ZM/ZL	1 104.5	1 226.5	348.0	322.5	260	192	212.5	2xM40x1.5	326

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox KF108 (3-stage), flange-mounted design (A-type)

KF012



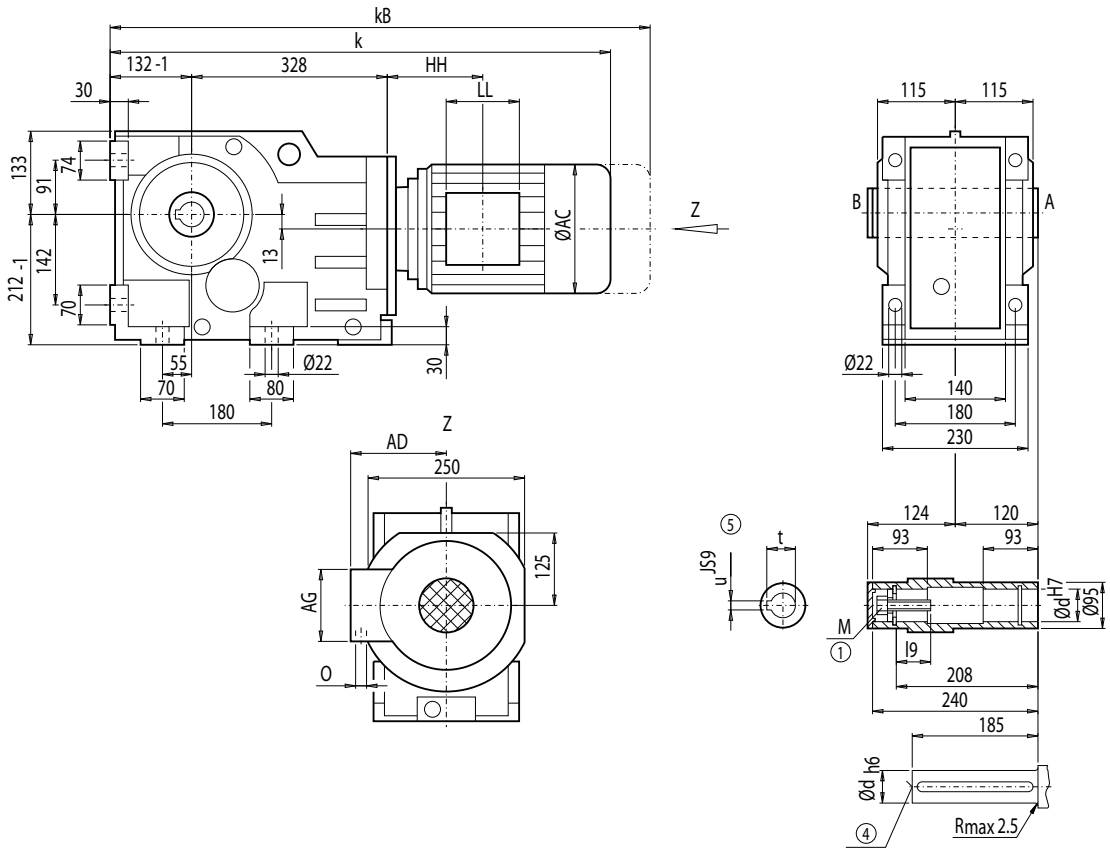
Motor	KF108 k	kB	AC	AD	AG	LL	HH	O	Weight KF108
LA80	732.5	796.0	156.5	155.0	90	90	87.5	M20x1.5/M25x1.5	146
LA80Z	755.0	818.5	156.5	155.0	90	90	160.5	M20x1.5/M25x1.5	150
LA90S/L	763.5	834.5	174.0	163.0	90	90	87.5	M20x1.5/M25x1.5	151
LA90ZL	808.5	879.5	174.0	163.0	90	90	211.5	M20x1.5/M25x1.5	157
LA100L	807.0	888.0	195.0	168.0	120	120	125.5	2xM32x1.5	159
LA100ZL	877.0	958.0	195.0	168.0	120	120	257.5	2xM32x1.5	169
LA112M	833.0	914.0	219.0	181.0	120	120	127.5	2xM32x1.5	171
LA112ZM	861.0	942.0	219.0	181.0	120	120	231.5	2xM32x1.5	178
LA132S/M	893.0	995.0	259.0	195.0	140	140	168.0	2xM32x1.5	183
LA132ZM	939.0	1 041.0	259.0	195.0	140	140	276.0	2xM32x1.5	204
LA160M/L	997.5	1 116.0	313.5	227.0	165	165	195.5	2xM40x1.5	217
LA160ZL	1 045.5	1 164.0	313.5	227.0	165	165	348.5	2xM40x1.5	256
LG180M/L	1 057.0	1 179.0	348.0	322.5	260	192	212.5	2xM40x1.5	309
LG180ZM/ZL	1 108.0	1 230.0	348.0	322.5	260	192	212.5	2xM40x1.5	339

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Dimensions

Gearbox KA108 (3-stage), housing-flange-mounted design (C-type)

KA012



d	l9	M	t	u
60 *)	64.0	M20	64.4	18
70	63.5	M20	74.9	20

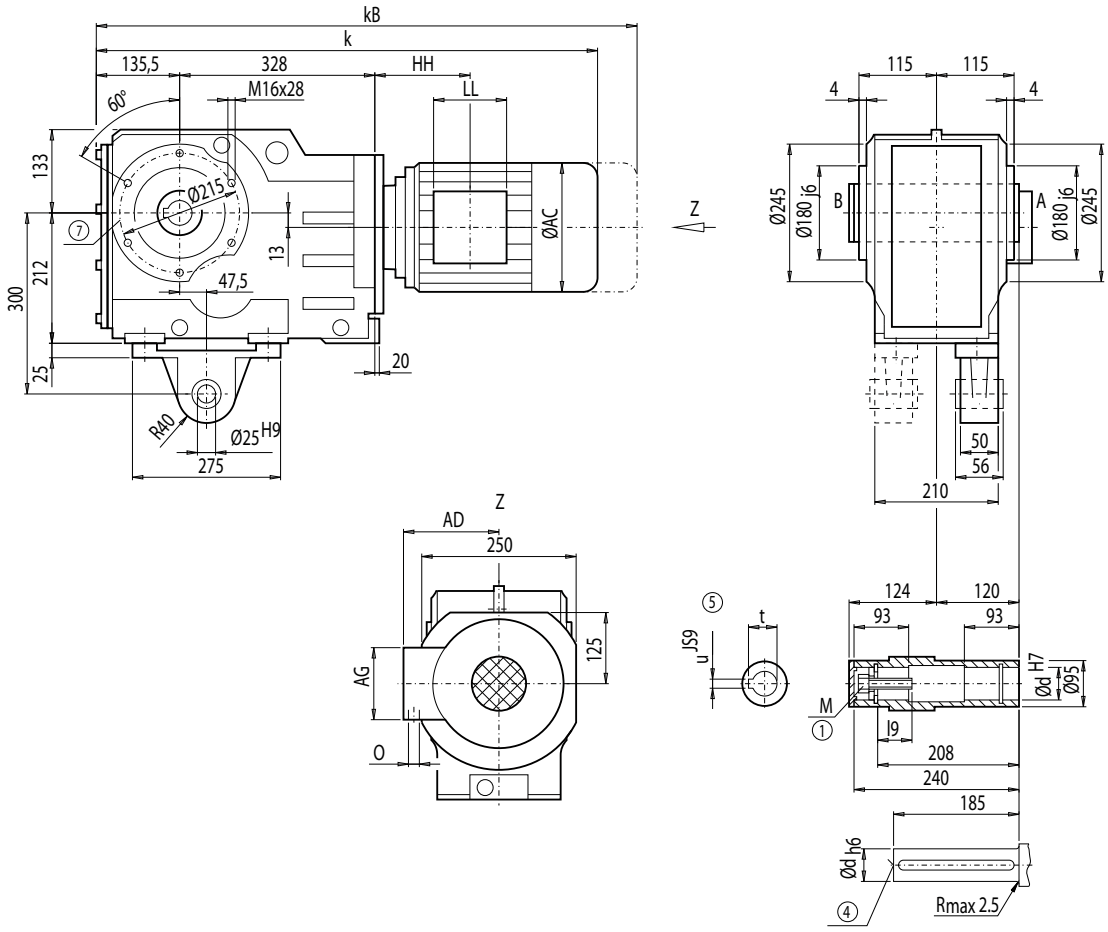
*) Preferred series

	KA108								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KA108**
LA80	729.0	792.5	156.5	155.0	90	90	87.5	M20x1.5/M25x1.5	120
LA80Z	751.5	815.0	156.5	155.0	90	90	160.5	M20x1.5/M25x1.5	124
LA90S/L	760.0	831.0	174.0	163.0	90	90	87.5	M20x1.5/M25x1.5	125
LA90ZL	805.0	876.0	174.0	163.0	90	90	211.5	M20x1.5/M25x1.5	131
LA100L	803.5	884.5	195.0	168.0	120	120	125.5	2xM32x1.5	133
LA100ZL	873.5	954.5	195.0	168.0	120	120	257.5	2xM32x1.5	143
LA112M	829.5	910.5	219.0	181.0	120	120	127.5	2xM32x1.5	145
LA112ZM	857.5	938.5	219.0	181.0	120	120	231.5	2xM32x1.5	152
LA132S/M	889.5	991.5	259.0	195.0	140	140	168.0	2xM32x1.5	157
LA132ZM	935.5	1 037.5	259.0	195.0	140	140	276.0	2xM32x1.5	178
LA160M/L	994.0	1 112.5	313.5	227.0	165	165	195.5	2xM40x1.5	191
LA160ZL	1 042.0	1 160.5	313.5	227.0	165	165	348.5	2xM40x1.5	230
LG180M/L	1 053.5	1 175.5	348.0	322.5	260	192	212.5	2xM40x1.5	283
LG180ZM/ZL	1 104.5	1 226.5	348.0	322.5	260	192	212.5	2xM40x1.5	313

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN EN ISO 4014

Gearbox KAD108 (3-stage), shaft-mounted design with torque arm

KAD012



d	l9	M	t	u
60 *)	64.0	M20	64.4	18
70	63.5	M20	74.9	20

*) Preferred series

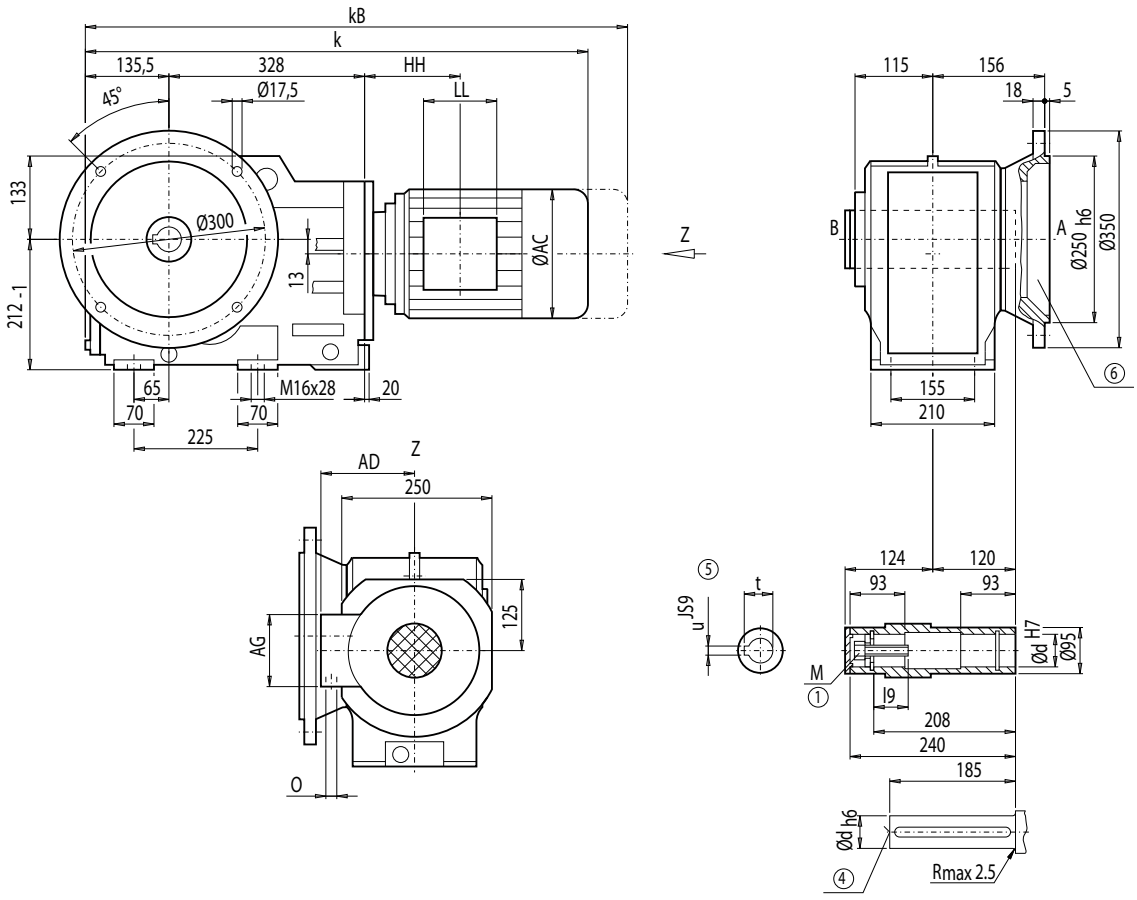
	KAD108								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAD108**
LA80	732.5	796.0	156.5	155.0	90	90	87.5	M20x1.5/M25x1.5	128
LA80Z	755.0	818.5	156.5	155.0	90	90	160.5	M20x1.5/M25x1.5	132
LA90S/L	763.5	834.5	174.0	163.0	90	90	87.5	M20x1.5/M25x1.5	133
LA90ZL	808.5	879.5	174.0	163.0	90	90	211.5	M20x1.5/M25x1.5	139
LA100L	807.0	888.0	195.0	168.0	120	120	125.5	2xM32x1.5	141
LA100ZL	877.0	958.0	195.0	168.0	120	120	257.5	2xM32x1.5	151
LA112M	833.0	914.0	219.0	181.0	120	120	127.5	2xM32x1.5	153
LA112ZM	861.0	942.0	219.0	181.0	120	120	231.5	2xM32x1.5	160
LA132S/M	893.0	995.0	259.0	195.0	140	140	168.0	2xM32x1.5	164
LA132ZM	939.0	1 041.0	259.0	195.0	140	140	276.0	2xM32x1.5	186
LA160M/L	997.5	1 116.0	313.5	227.0	165	165	195.5	2xM40x1.5	199
LA160ZL	1 045.5	1 164.0	313.5	227.0	165	165	348.5	2xM40x1.5	238
LG180M/L	1 057.0	1 179.0	348.0	322.5	260	192	212.5	2xM40x1.5	291
LG180ZM/ZL	1 108.0	1 230.0	348.0	322.5	260	192	212.5	2xM40x1.5	321

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN EN ISO 4014 ⑦ For note, see page 4/218

Dimensions

Gearbox KAF108 (3-stage), flange-mounted design

KAF012



d	l9	M	t	u
60 *)	64.0	M20	64.4	18
70	63.5	M20	74.9	20

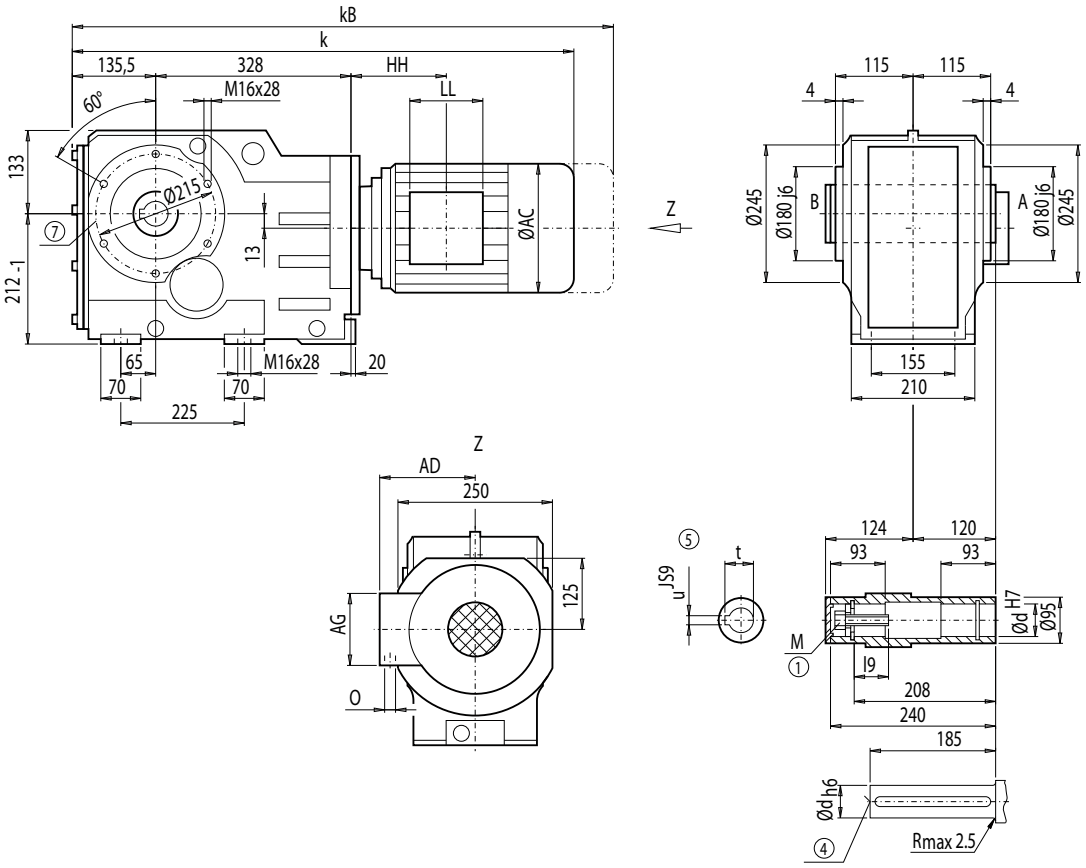
*) Preferred series

	KAF108								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAF108**
LA80	732.5	796.0	156.5	155.0	90	90	87.5	M20x1.5/M25x1.5	133
LA80Z	755.0	818.5	156.5	155.0	90	90	160.5	M20x1.5/M25x1.5	137
LA90S/L	763.5	834.5	174.0	163.0	90	90	87.5	M20x1.5/M25x1.5	137
LA90ZL	808.5	879.5	174.0	163.0	90	90	211.5	M20x1.5/M25x1.5	143
LA100L	807.0	888.0	195.0	168.0	120	120	125.5	2xM32x1.5	145
LA100ZL	877.0	958.0	195.0	168.0	120	120	257.5	2xM32x1.5	155
LA112M	833.0	914.0	219.0	181.0	120	120	127.5	2xM32x1.5	158
LA112ZM	861.0	942.0	219.0	181.0	120	120	231.5	2xM32x1.5	165
LA132S/M	893.0	995.0	259.0	195.0	140	140	168.0	2xM32x1.5	169
LA132ZM	939.0	1 041.0	259.0	195.0	140	140	276.0	2xM32x1.5	190
LA160M/L	997.5	1 116.0	313.5	227.0	165	165	195.5	2xM40x1.5	204
LA160ZL	1 045.5	1 164.0	313.5	227.0	165	165	348.5	2xM40x1.5	243
LG180M/L	1 057.0	1 179.0	348.0	322.5	260	192	212.5	2xM40x1.5	296
LG180ZM/ZL	1 108.0	1 230.0	348.0	322.5	260	192	212.5	2xM40x1.5	326

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN EN ISO 4014 ⑥ For note, see page 4/217

Gearbox KAZ108 (3-stage), shaft-mounted design with housing flange (C-type)

KAZ012



d	l9	M	t	u
60 *)	64.0	M20	64.4	18
70	63.5	M20	74.9	20

*) Preferred series

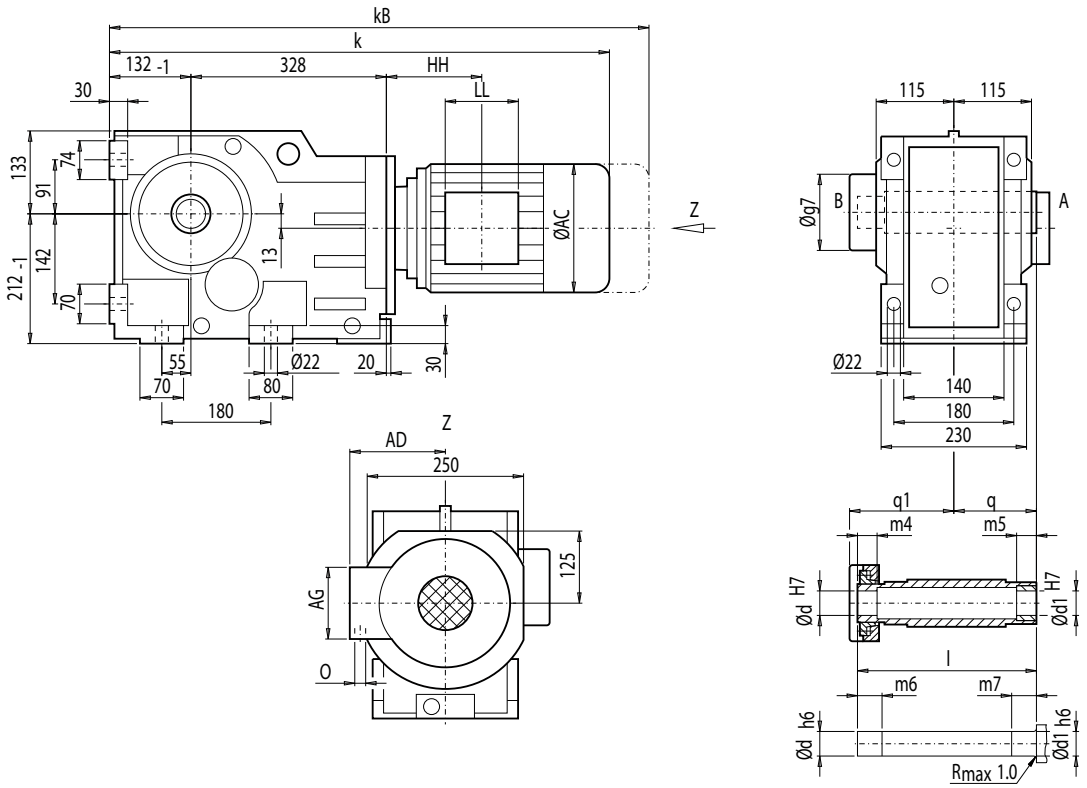
	KAZ108								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAZ108**
LA80	732.5	796.0	156.5	155.0	90	90	87.5	M20x1.5/M25x1.5	123
LA80Z	755.0	818.5	156.5	155.0	90	90	160.5	M20x1.5/M25x1.5	127
LA90S/L	763.5	834.5	174.0	163.0	90	90	87.5	M20x1.5/M25x1.5	128
LA90ZL	808.5	879.5	174.0	163.0	90	90	211.5	M20x1.5/M25x1.5	134
LA100L	807.0	888.0	195.0	168.0	120	120	125.5	2xM32x1.5	136
LA100ZL	877.0	958.0	195.0	168.0	120	120	257.5	2xM32x1.5	146
LA112M	833.0	914.0	219.0	181.0	120	120	127.5	2xM32x1.5	148
LA112ZM	861.0	942.0	219.0	181.0	120	120	231.5	2xM32x1.5	155
LA132S/M	893.0	995.0	259.0	195.0	140	140	168.0	2xM32x1.5	160
LA132ZM	939.0	1 041.0	259.0	195.0	140	140	276.0	2xM32x1.5	181
LA160M/L	997.5	1 116.0	313.5	227.0	165	165	195.5	2xM40x1.5	194
LA160ZL	1 045.5	1 164.0	313.5	227.0	165	165	348.5	2xM40x1.5	233
LG180M/L	1 057.0	1 179.0	348.0	322.5	260	192	212.5	2xM40x1.5	286
LG180ZM/ZL	1 108.0	1 230.0	348.0	322.5	260	192	212.5	2xM40x1.5	316

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ① DIN EN ISO 4014 ⑦ For note, see page 4/218

Dimensions

Gearbox KAS108 (3-stage), shaft-mounted design with shrink disk

KAS012



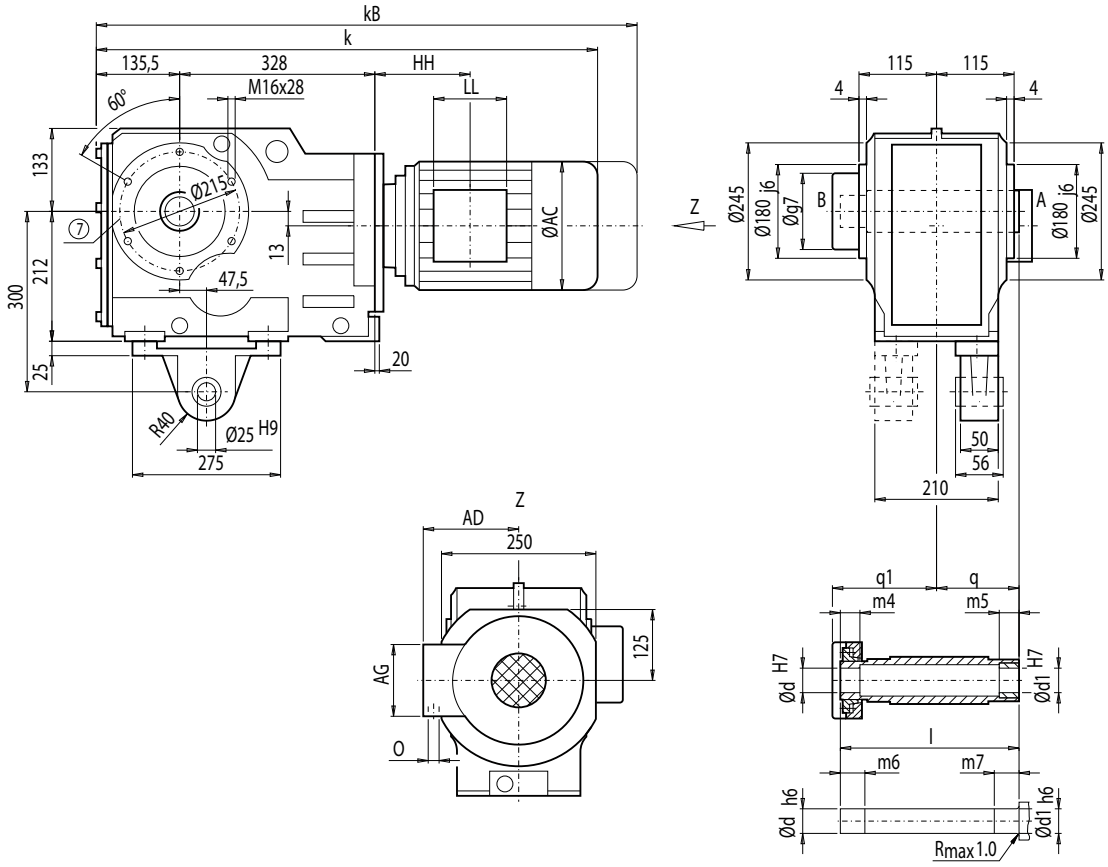
d	d1	l	m4	m5	m6	m7	q1	q	g7
65 *)	65	280	30	40	35	45	168	120	144
70	70	280	30	40	35	45	168	120	144

*) Preferred series

	KAS108								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAS108**
LA80	729.0	792.5	156.5	155.0	90	90	87.5	M20x1.5/M25x1.5	123
LA80Z	751.5	815.0	156.5	155.0	90	90	160.5	M20x1.5/M25x1.5	127
LA90S/L	760.0	831.0	174.0	163.0	90	90	87.5	M20x1.5/M25x1.5	127
LA90ZL	805.0	876.0	174.0	163.0	90	90	211.5	M20x1.5/M25x1.5	133
LA100L	803.5	884.5	195.0	168.0	120	120	125.5	2xM32x1.5	135
LA100ZL	873.5	954.5	195.0	168.0	120	120	257.5	2xM32x1.5	145
LA112M	829.5	910.5	219.0	181.0	120	120	127.5	2xM32x1.5	147
LA112ZM	857.5	938.5	219.0	181.0	120	120	231.5	2xM32x1.5	154
LA132S/M	889.5	991.5	259.0	195.0	140	140	168.0	2xM32x1.5	159
LA132ZM	935.5	1 037.5	259.0	195.0	140	140	276.0	2xM32x1.5	170
LA160M/L	994.0	1 112.5	313.5	227.0	165	165	195.5	2xM40x1.5	194
LA160ZL	1 042.0	1 160.5	313.5	227.0	165	165	348.5	2xM40x1.5	233
LG180M/L	1 053.5	1 175.5	348.0	322.5	260	192	212.5	2xM40x1.5	286
LG180ZM/ZL	1 104.5	1 226.5	348.0	322.5	260	192	212.5	2xM40x1.5	316

Gearbox KADS108 (3-stage), shaft-mounted design with torque arm and shrink disk

KADS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
65 *)	65	280	30	40	35	45	168	120	144
70	70	280	30	40	35	45	168	120	144

*) Preferred series

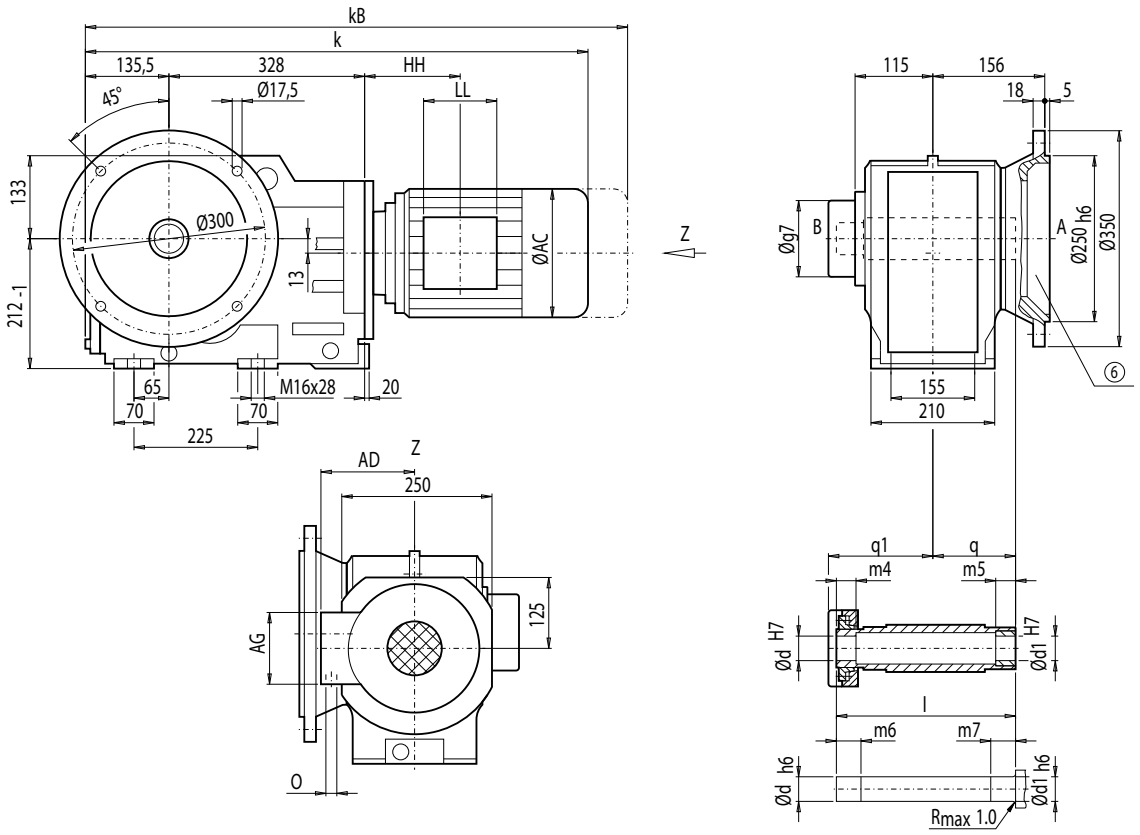
	KADS108								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KADS108**
LA80	732.5	796.0	156.5	155.0	90	90	87.5	M20x1.5/M25x1.5	130
LA80Z	755.0	818.5	156.5	155.0	90	90	160.5	M20x1.5/M25x1.5	134
LA90S/L	763.5	834.5	174.0	163.0	90	90	87.5	M20x1.5/M25x1.5	135
LA90ZL	808.5	879.5	174.0	163.0	90	90	211.5	M20x1.5/M25x1.5	141
LA100L	807.0	888.0	195.0	168.0	120	120	125.5	2xM32x1.5	143
LA100ZL	877.0	958.0	195.0	168.0	120	120	257.5	2xM32x1.5	153
LA112M	833.0	914.0	219.0	181.0	120	120	127.5	2xM32x1.5	155
LA112ZM	861.0	942.0	219.0	181.0	120	120	231.5	2xM32x1.5	162
LA132S/M	893.0	995.0	259.0	195.0	140	140	168.0	2xM32x1.5	167
LA132ZM	939.0	1 041.0	259.0	195.0	140	140	276.0	2xM32x1.5	188
LA160M/L	997.5	1 116.0	313.5	227.0	165	165	195.5	2xM40x1.5	201
LA160ZL	1 045.5	1 164.0	313.5	227.0	165	165	348.5	2xM40x1.5	240
LG180M/L	1 057.0	1 179.0	348.0	322.5	260	192	212.5	2xM40x1.5	293
LG180ZM/ZL	1 108.0	1 230.0	348.0	322.5	260	192	212.5	2xM40x1.5	323

⑦ For note, see page 4/218

Dimensions

Gearbox KAFS108 (3-stage), flange-mounted design and shrink disk

KAFS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
65 *)	65	280	30	40	35	45	168	120	144
70	70	280	30	40	35	45	168	120	144

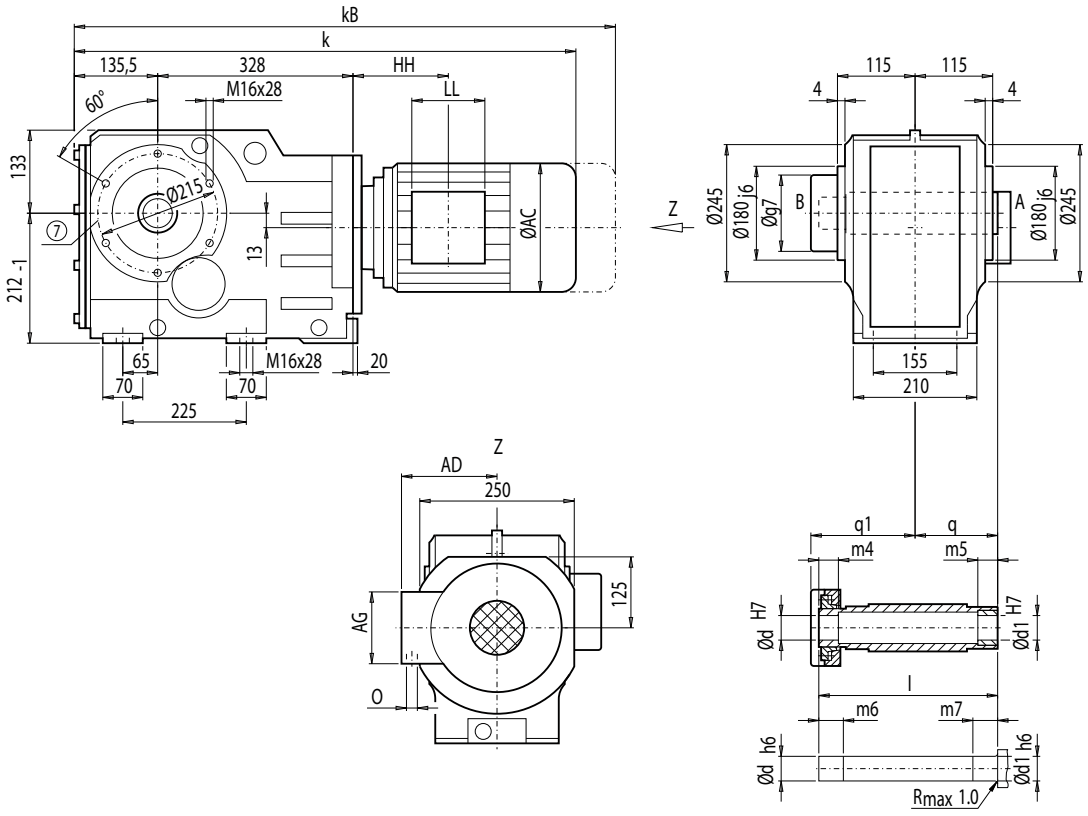
*) Preferred series

	KAFS108								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAFS108**
LA80	732.5	796.0	156.5	155.0	90	90	87.5	M20x1.5/M25x1.5	136
LA80Z	755.0	818.5	156.5	155.0	90	90	160.5	M20x1.5/M25x1.5	140
LA90S/L	763.5	834.5	174.0	163.0	90	90	87.5	M20x1.5/M25x1.5	140
LA90ZL	808.5	879.5	174.0	163.0	90	90	211.5	M20x1.5/M25x1.5	146
LA100L	807.0	888.0	195.0	168.0	120	120	125.5	2xM32x1.5	148
LA100ZL	877.0	958.0	195.0	168.0	120	120	257.5	2xM32x1.5	158
LA112M	833.0	914.0	219.0	181.0	120	120	127.5	2xM32x1.5	161
LA112ZM	861.0	942.0	219.0	181.0	120	120	231.5	2xM32x1.5	168
LA132S/M	893.0	995.0	259.0	195.0	140	140	168.0	2xM32x1.5	172
LA132ZM	939.0	1 041.0	259.0	195.0	140	140	276.0	2xM32x1.5	193
LA160M/L	997.5	1 116.0	313.5	227.0	165	165	195.5	2xM40x1.5	207
LA160ZL	1 045.5	1 164.0	313.5	227.0	165	165	348.5	2xM40x1.5	246
LG180M/L	1 057.0	1 179.0	348.0	322.5	260	192	212.5	2xM40x1.5	299
LG180ZM/ZL	1 108.0	1 230.0	348.0	322.5	260	192	212.5	2xM40x1.5	329

⑥ For note, see page 4/217

Gearbox KAZS108 (3-stage), shaft-mounted design with housing flange (C-type) and shrink disk

KAZS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
65 *)	65	280	30	40	35	45	168	120	144
70	70	280	30	40	35	45	168	120	144

*) Preferred series

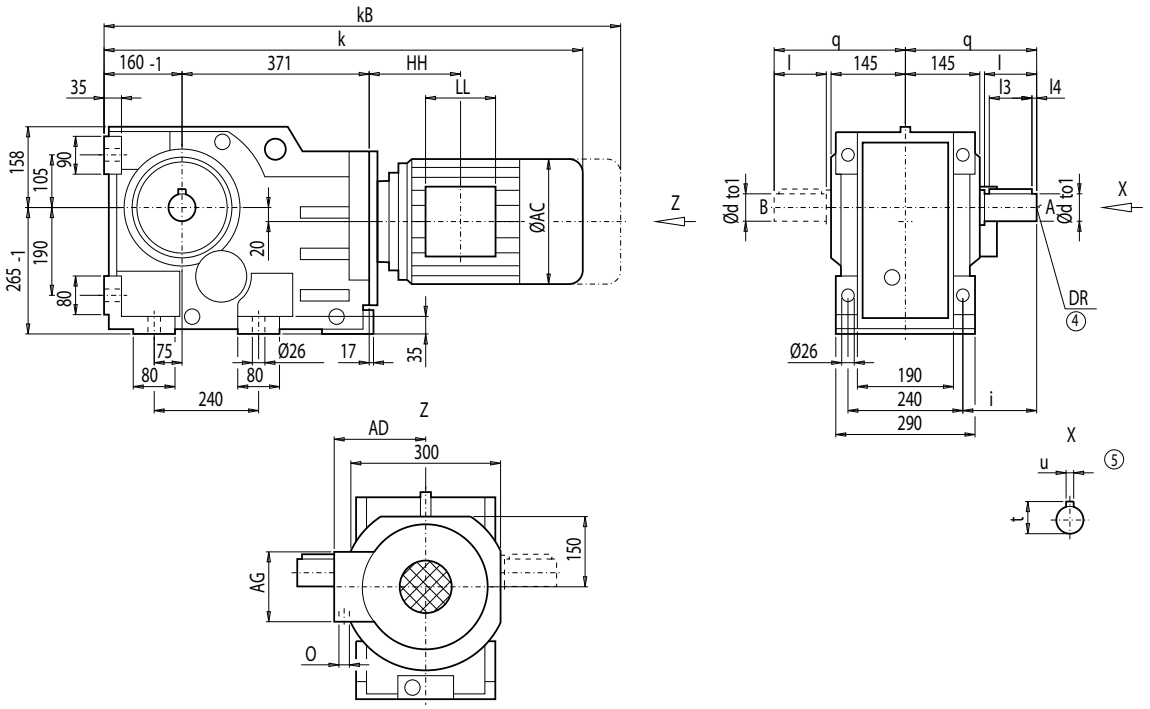
	KAZS108								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAZS108**
LA80	732.5	796.0	156.5	155.0	90	90	87.5	M20x1.5/M25x1.5	116
LA80Z	755.0	818.5	156.5	155.0	90	90	160.5	M20x1.5/M25x1.5	120
LA90S/L	763.5	834.5	174.0	163.0	90	90	87.5	M20x1.5/M25x1.5	120
LA90ZL	808.5	879.5	174.0	163.0	90	90	211.5	M20x1.5/M25x1.5	126
LA100L	807.0	888.0	195.0	168.0	120	120	125.5	2xM32x1.5	128
LA100ZL	877.0	958.0	195.0	168.0	120	120	257.5	2xM32x1.5	138
LA112M	833.0	914.0	219.0	181.0	120	120	127.5	2xM32x1.5	140
LA112ZM	861.0	942.0	219.0	181.0	120	120	231.5	2xM32x1.5	147
LA132S/M	893.0	995.0	259.0	195.0	140	140	168.0	2xM32x1.5	152
LA132ZM	939.0	1 041.0	259.0	195.0	140	140	276.0	2xM32x1.5	173
LA160M/L	997.5	1 116.0	313.5	227.0	165	165	195.5	2xM40x1.5	187
LA160ZL	1 045.5	1 164.0	313.5	227.0	165	165	348.5	2xM40x1.5	226
LG180M/L	1 057.0	1 179.0	348.0	322.5	260	192	212.5	2xM40x1.5	279
LG180ZM/ZL	1 108.0	1 230.0	348.0	322.5	260	192	212.5	2xM40x1.5	309

⑦ For note, see page 4/218

Dimensions

Gearbox K128 (3-stage), housing-flange-mounted design (C-type)

K012



d	to1	l	l3	l4	t	u	i	q	DR
70 *)	m6	140	125	7.5	74.5	20	170	290	M20x42
90	m6	170	140	15.0	95.0	25	200	320	M24x50

*) Preferred series

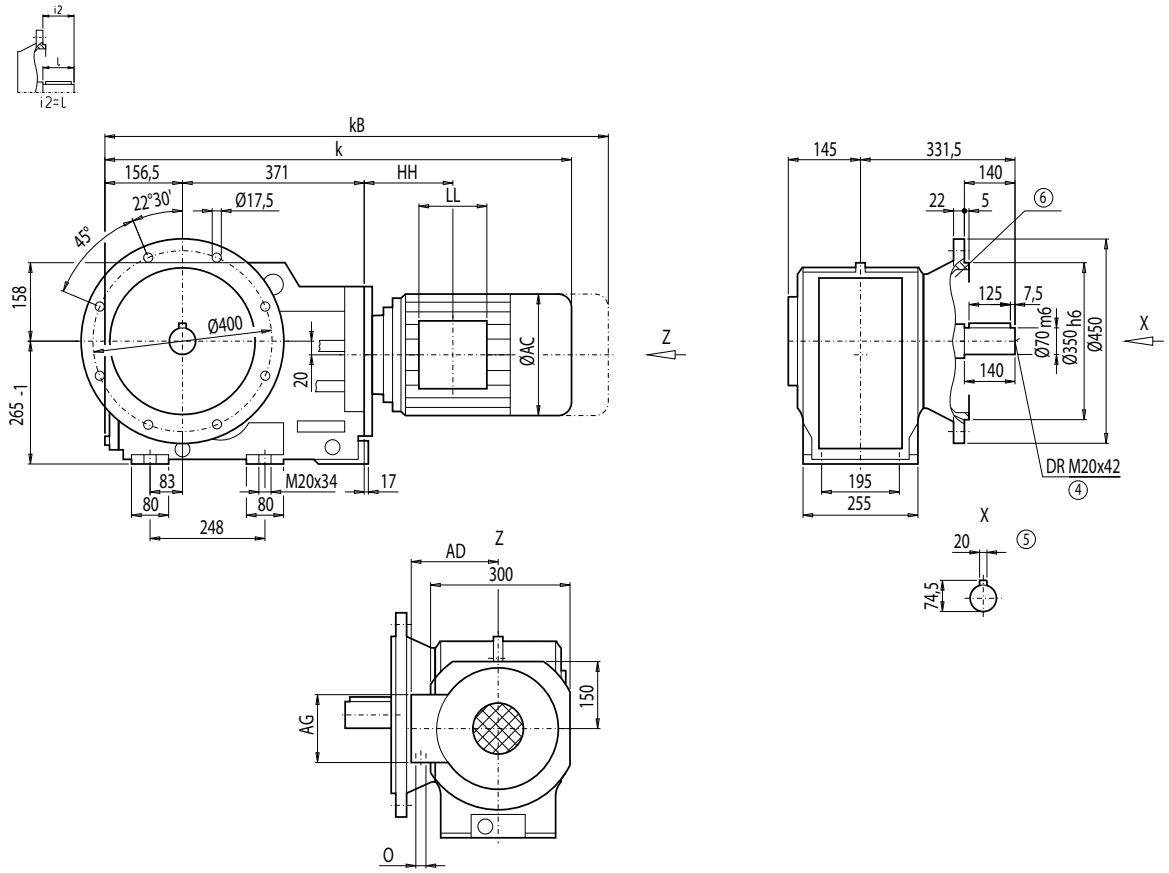
	K128								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**K128**
LA90S/L	819.5	890.5	174.0	163.0	90	90	76.0	M20x1.5/M25x1.5	210
LA90ZL	864.5	935.5	174.0	163.0	90	90	200.0	M20x1.5/M25x1.5	216
LA100L	862.5	943.5	195.0	168.0	120	120	113.5	2xM32x1.5	218
LA100ZL	932.5	1 013.5	195.0	168.0	120	120	245.5	2xM32x1.5	228
LA112M	889.0	970.0	219.0	181.0	120	120	116.0	2xM32x1.5	230
LA112ZM	917.0	998.0	219.0	181.0	120	120	220.0	2xM32x1.5	237
LA132S/M	948.0	1 050.0	259.0	195.0	140	140	155.5	2xM32x1.5	240
LA132ZM	994.0	1 096.0	259.0	195.0	140	140	263.5	2xM32x1.5	261
LA160M/L	1 053.5	1 172.0	313.5	227.0	165	165	184.0	2xM40x1.5	275
LA160ZL	1 101.5	1 220.0	313.5	227.0	165	165	337.0	2xM40x1.5	314
LG180M/L	1 110.0	1 232.0	348.0	322.5	260	192	198.0	2xM40x1.5	371
LG180ZM/ZL	1 161.0	1 283.0	348.0	322.5	260	192	198.0	2xM40x1.5	401
LG200L	1 166.0	1 292.0	385.0	301.0	260	192	228.0	2xM50x1.5	451
K4-LGI225S	1 426.5	1 665.5	442.0	325.0	260	192	443.0	2xM50x1.5	607
K4-LGI225M	1 426.5	1 665.5	442.0	325.0	260	192	443.0	2xM50x1.5	595
K4-LGI225ZM	1 486.5	1 725.5	442.0	325.0	260	192	443.0	2xM50x1.5	653

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox KF128 (3-stage), flange-mounted design (A-type)

KF012



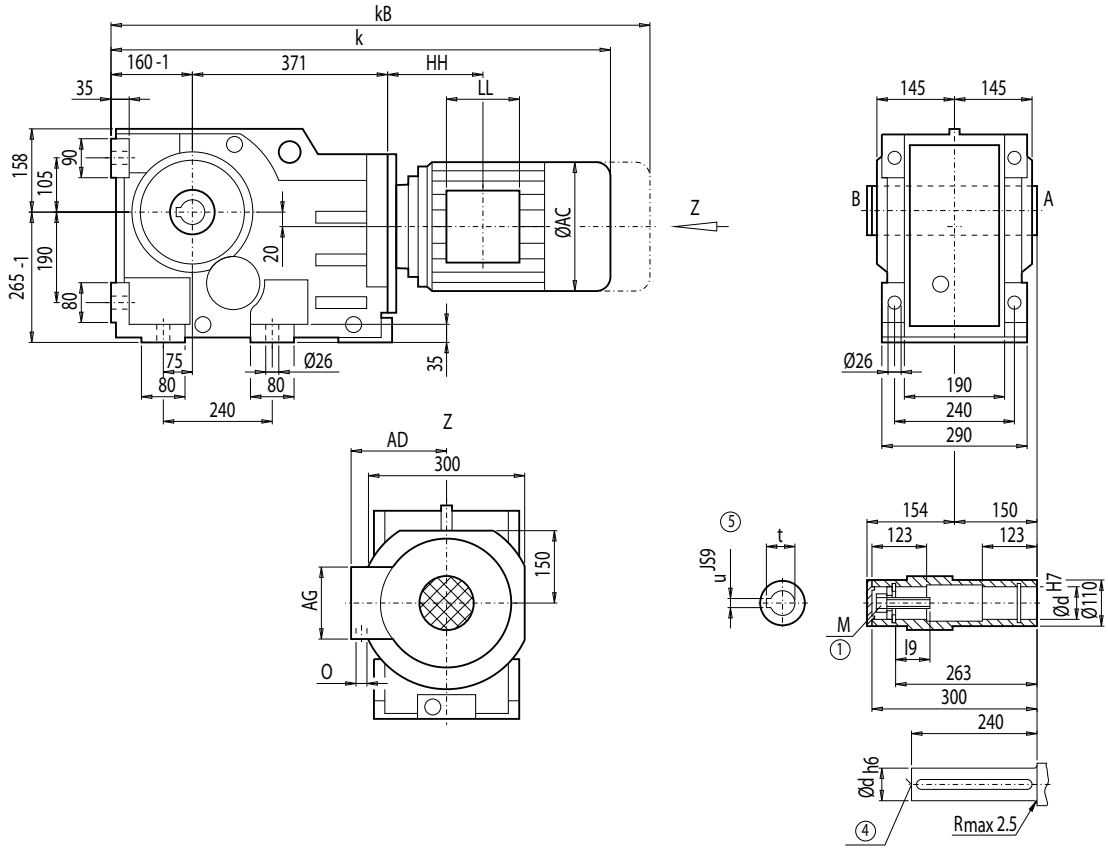
Motor	KF128 k	kB	AC	AD	AG	LL	HH	O	Weight KF128
LA90S/L	816.0	887.0	174.0	163.0	90	90	76.0	M20x1.5/M25x1.5	235
LA90ZL	861.0	932.0	174.0	163.0	90	90	200.0	M20x1.5/M25x1.5	241
LA100L	859.0	940.0	195.0	168.0	120	120	113.5	2xM32x1.5	243
LA100ZL	929.0	1 010.0	195.0	168.0	120	120	245.5	2xM32x1.5	253
LA112M	885.5	966.5	219.0	181.0	120	120	116.0	2xM32x1.5	255
LA112ZM	913.5	994.5	219.0	181.0	120	120	220.0	2xM32x1.5	262
LA132S/M	944.5	1 046.5	259.0	195.0	140	140	155.5	2xM32x1.5	265
LA132ZM	990.5	1 092.5	259.0	195.0	140	140	263.5	2xM32x1.5	287
LA160M/L	1 050.0	1 168.5	313.5	227.0	165	165	184.0	2xM40x1.5	300
LA160ZL	1 098.0	1 216.5	313.5	227.0	165	165	337.0	2xM40x1.5	339
LG180M/L	1 106.5	1 228.5	348.0	322.5	260	192	198.0	2xM40x1.5	397
LG180ZM/ZL	1 157.5	1 279.5	348.0	322.5	260	192	198.0	2xM40x1.5	427
LG200L	1 162.5	1 288.5	385.0	301.0	260	192	228.0	2xM50x1.5	477
K4-LGI225S	1 423.0	1 662.0	442.0	325.0	260	192	443.0	2xM50x1.5	633
K4-LGI225M	1 423.0	1 662.0	442.0	325.0	260	192	443.0	2xM50x1.5	621
K4-LGI225ZM	1 483.0	1 722.0	442.0	325.0	260	192	443.0	2xM50x1.5	679

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Dimensions

Gearbox KA128 (3-stage), housing-flange-mounted design (C-type)

KA012



d	l9	M	t	u
70 *)	63.5	M20	74.9	20
80	63.5	M20	85.4	22

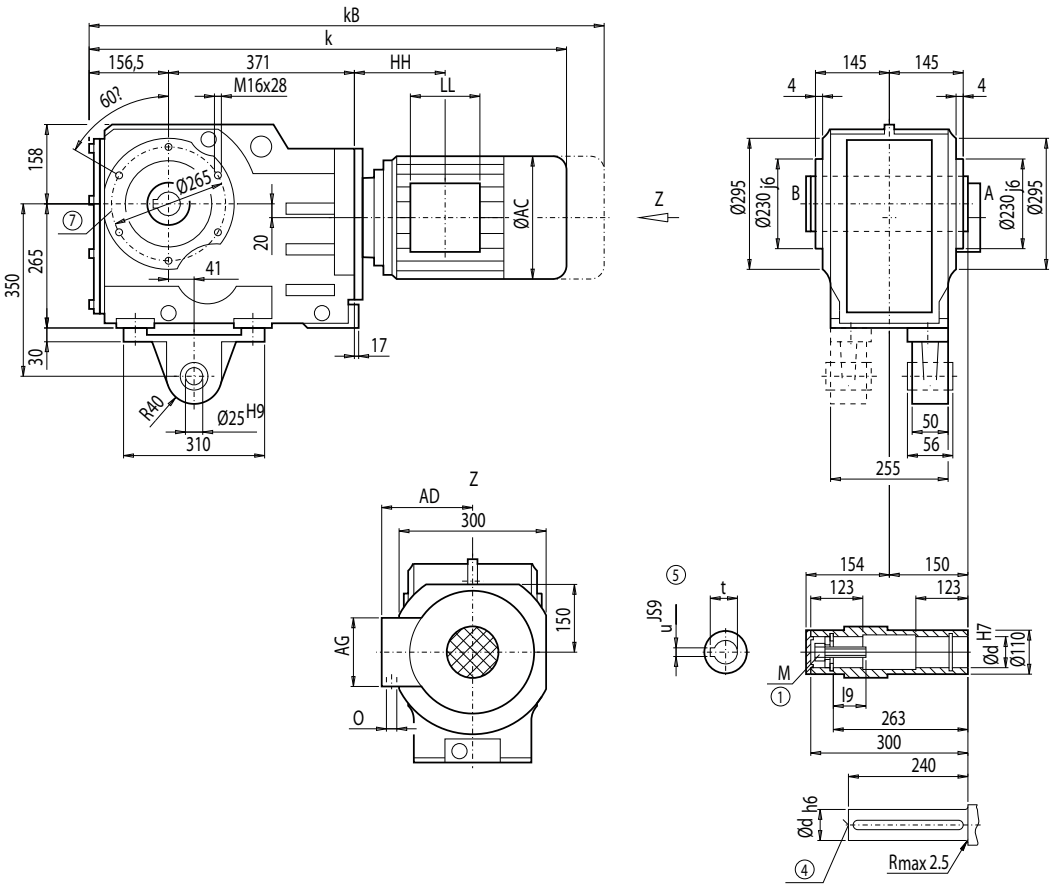
*) Preferred series

	KA128								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KA128**
LA90S/L	819.5	890.5	174.0	163.0	90	90	76.0	M20x1.5/M25x1.5	190
LA90ZL	864.5	935.5	174.0	163.0	90	90	200.0	M20x1.5/M25x1.5	196
LA100L	862.5	943.5	195.0	168.0	120	120	113.5	2xM32x1.5	198
LA100ZL	932.5	1 013.5	195.0	168.0	120	120	245.5	2xM32x1.5	208
LA112M	889.0	970.0	219.0	181.0	120	120	116.0	2xM32x1.5	210
LA112ZM	917.0	998.0	219.0	181.0	120	120	220.0	2xM32x1.5	217
LA132S/M	948.0	1 050.0	259.0	195.0	140	140	155.5	2xM32x1.5	220
LA132ZM	994.0	1 096.0	259.0	195.0	140	140	263.5	2xM32x1.5	242
LA160M/L	1 053.5	1 172.0	313.5	227.0	165	165	184.0	2xM40x1.5	255
LA160ZL	1 101.5	1 220.0	313.5	227.0	165	165	337.0	2xM40x1.5	294
LG180M/L	1 110.0	1 232.0	348.0	322.5	260	192	198.0	2xM40x1.5	352
LG180ZM/ZL	1 161.0	1 283.0	348.0	322.5	260	192	198.0	2xM40x1.5	382
LG200L	1 166.0	1 292.0	385.0	301.0	260	192	228.0	2xM50x1.5	432
K4-LGI225S	1 426.5	1 665.5	442.0	325.0	260	192	443.0	2xM50x1.5	588
K4-LGI225M	1 426.5	1 665.5	442.0	325.0	260	192	443.0	2xM50x1.5	576
K4-LGI225ZM	1 486.5	1 725.5	442.0	325.0	260	192	443.0	2xM50x1.5	634

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885

Gearbox KAD128 (3-stage), shaft-mounted design with torque arm

KAD012



d	l9	M	t	u
70 *)	63.5	M20	74.9	20
80	63.5	M20	85.4	22

*) Preferred series

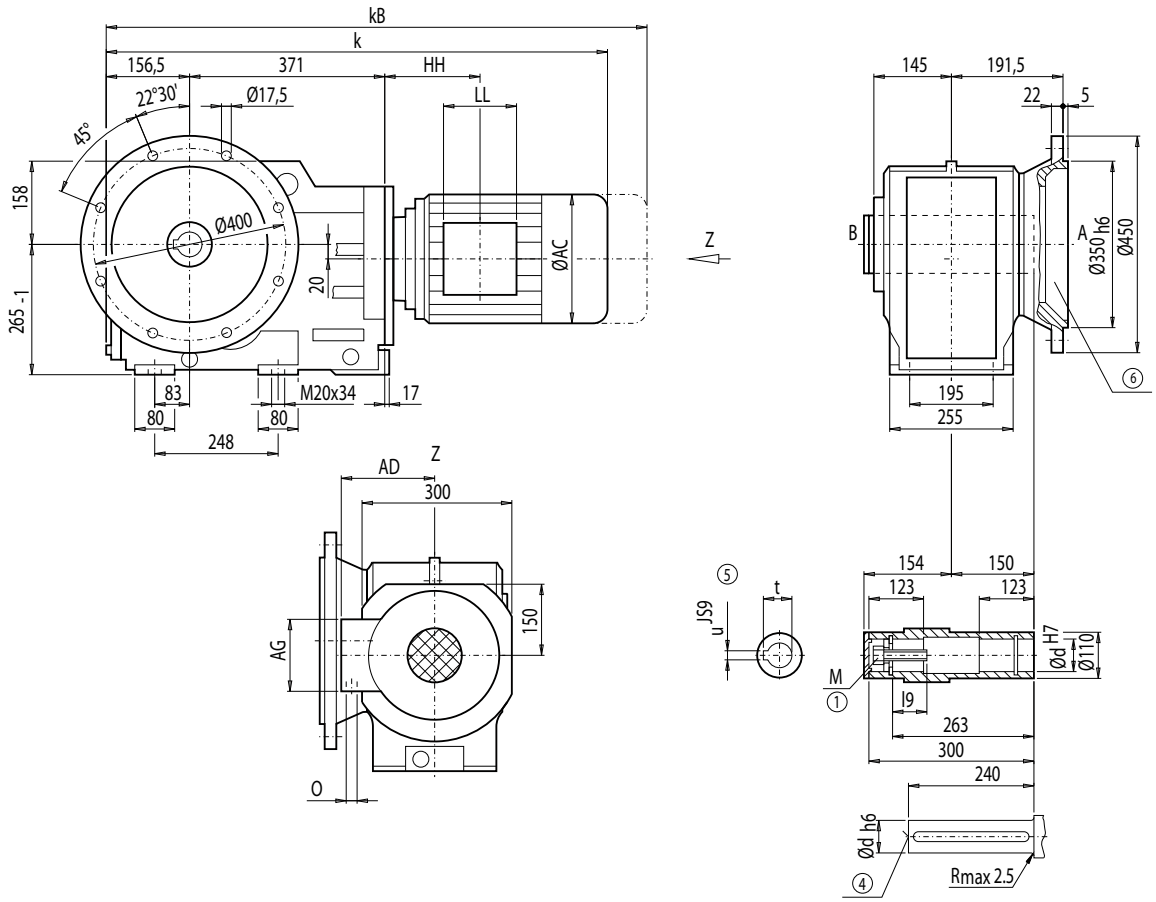
	KAD128								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAD128**
LA90S/L	816.0	887.0	174.0	163.0	90	90	76.0	M20x1.5/M25x1.5	204
LA90ZL	861.0	932.0	174.0	163.0	90	90	200.0	M20x1.5/M25x1.5	210
LA100L	859.0	940.0	195.0	168.0	120	120	113.5	2xM32x1.5	212
LA100ZL	929.0	1 010.0	195.0	168.0	120	120	245.5	2xM32x1.5	222
LA112M	885.5	966.5	219.0	181.0	120	120	116.0	2xM32x1.5	224
LA112ZM	913.5	994.5	219.0	181.0	120	120	220.0	2xM32x1.5	231
LA132S/M	944.5	1 046.5	259.0	195.0	140	140	155.5	2xM32x1.5	235
LA132ZM	990.5	1 092.5	259.0	195.0	140	140	263.5	2xM32x1.5	256
LA160M/L	1 050.0	1 168.5	313.5	227.0	165	165	184.0	2xM40x1.5	269
LA160ZL	1 098.0	1 216.5	313.5	227.0	165	165	337.0	2xM40x1.5	308
LG180M/L	1 106.5	1 228.5	348.0	322.5	260	192	198.0	2xM40x1.5	366
LG180ZM/ZL	1 157.5	1 279.5	348.0	322.5	260	192	198.0	2xM40x1.5	396
LG200L	1 162.5	1 288.5	385.0	301.0	260	192	228.0	2xM50x1.5	446
K4-LGI225S	1 423.0	1 662.0	442.0	325.0	260	192	443.0	2xM50x1.5	602
K4-LGI225M	1 423.0	1 662.0	442.0	325.0	260	192	443.0	2xM50x1.5	590
K4-LGI225ZM	1 483.0	1 722.0	442.0	325.0	260	192	443.0	2xM50x1.5	648

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 4/218

Dimensions

Gearbox KAF128 (3-stage), flange-mounted design

KAF012



d	l9	M	t	u
70 *)	63.5	M20	74.9	20
80	63.5	M20	85.4	22

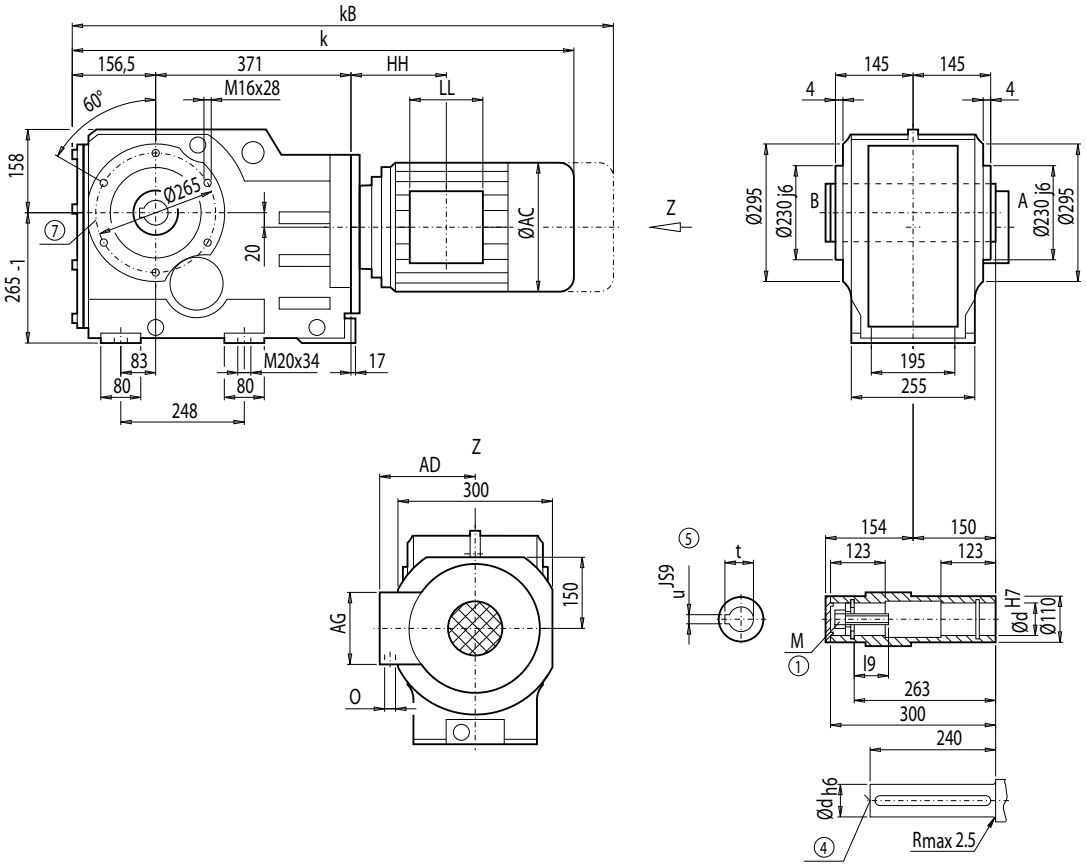
*) Preferred series

Motor	KAF128 k	kB	AC	AD	AG	LL	HH	O	Weight KAF128
LA90S/L	816.0	887.0	174.0	163.0	90	90	76.0	M20x1.5/M25x1.5	215
LA90ZL	861.0	932.0	174.0	163.0	90	90	200.0	M20x1.5/M25x1.5	221
LA100L	859.0	940.0	195.0	168.0	120	120	113.5	2xM32x1.5	223
LA100ZL	929.0	1 010.0	195.0	168.0	120	120	245.5	2xM32x1.5	233
LA112M	885.5	966.5	219.0	181.0	120	120	116.0	2xM32x1.5	235
LA112ZM	913.5	994.5	219.0	181.0	120	120	220.0	2xM32x1.5	242
LA132S/M	944.5	1 046.5	259.0	195.0	140	140	155.5	2xM32x1.5	246
LA132ZM	990.5	1 092.5	259.0	195.0	140	140	263.5	2xM32x1.5	267
LA160M/L	1 050.0	1 168.5	313.5	227.0	165	165	184.0	2xM40x1.5	280
LA160ZL	1 098.0	1 216.5	313.5	227.0	165	165	337.0	2xM40x1.5	319
LG180M/L	1 106.5	1 228.5	348.0	322.5	260	192	198.0	2xM40x1.5	377
LG180ZM/ZL	1 157.5	1 279.5	348.0	322.5	260	192	198.0	2xM40x1.5	407
LG200L	1 162.5	1 288.5	385.0	301.0	260	192	228.0	2xM50x1.5	457
K4-LGI225S	1 423.0	1 662.0	442.0	325.0	260	192	443.0	2xM50x1.5	603
K4-LGI225M	1 423.0	1 662.0	442.0	325.0	260	192	443.0	2xM50x1.5	601
K4-LGI225ZM	1 483.0	1 722.0	442.0	325.0	260	192	443.0	2xM50x1.5	659

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Gearbox KAZ128 (3-stage), shaft-mounted design with housing flange (C-type)

KAZ012



d	l9	M	t	u
70 *)	63.5	M20	74.9	20
80	63.5	M20	85.4	22

*) Preferred series

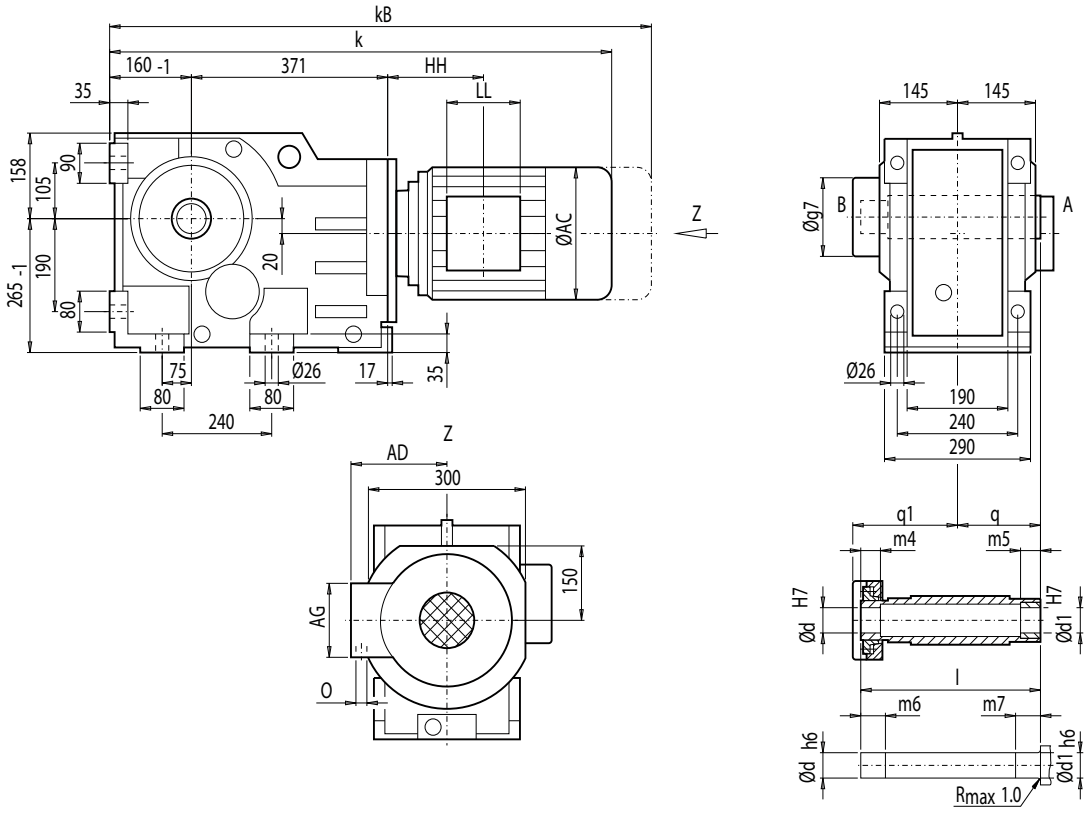
Motor	KAZ128 k	kB	AC	AD	AG	LL	HH	O	Weight KAZ128
LA90S/L	816.0	887.0	174.0	163.0	90	90	76.0	M20x1.5/M25x1.5	198
LA90ZL	861.0	932.0	174.0	163.0	90	90	200.0	M20x1.5/M25x1.5	204
LA100L	859.0	940.0	195.0	168.0	120	120	113.5	2xM32x1.5	206
LA100ZL	929.0	1 010.0	195.0	168.0	120	120	245.5	2xM32x1.5	216
LA112M	885.5	966.5	219.0	181.0	120	120	116.0	2xM32x1.5	218
LA112ZM	913.5	994.5	219.0	181.0	120	120	220.0	2xM32x1.5	225
LA132S/M	944.5	1 046.5	259.0	195.0	140	140	155.5	2xM32x1.5	228
LA132ZM	990.5	1 092.5	259.0	195.0	140	140	263.5	2xM32x1.5	250
LA160M/L	1 050.0	1 168.5	313.5	227.0	165	165	184.0	2xM40x1.5	263
LA160ZL	1 098.0	1 216.5	313.5	227.0	165	165	337.0	2xM40x1.5	302
LG180M/L	1 106.5	1 228.5	348.0	322.5	260	192	198.0	2xM40x1.5	360
LG180ZM/ZL	1 157.5	1 279.5	348.0	322.5	260	192	198.0	2xM40x1.5	390
LG200L	1 162.5	1 288.5	385.0	301.0	260	192	228.0	2xM50x1.5	440
K4-LGI225S	1 423.0	1 662.0	442.0	325.0	260	192	443.0	2xM50x1.5	596
K4-LGI225M	1 423.0	1 662.0	442.0	325.0	260	192	443.0	2xM50x1.5	584
K4-LGI225ZM	1 483.0	1 722.0	442.0	325.0	260	192	443.0	2xM50x1.5	642

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 4/218

Dimensions

Gearbox KAS128 (3-stage), shaft-mounted design with shrink disk

KAS012



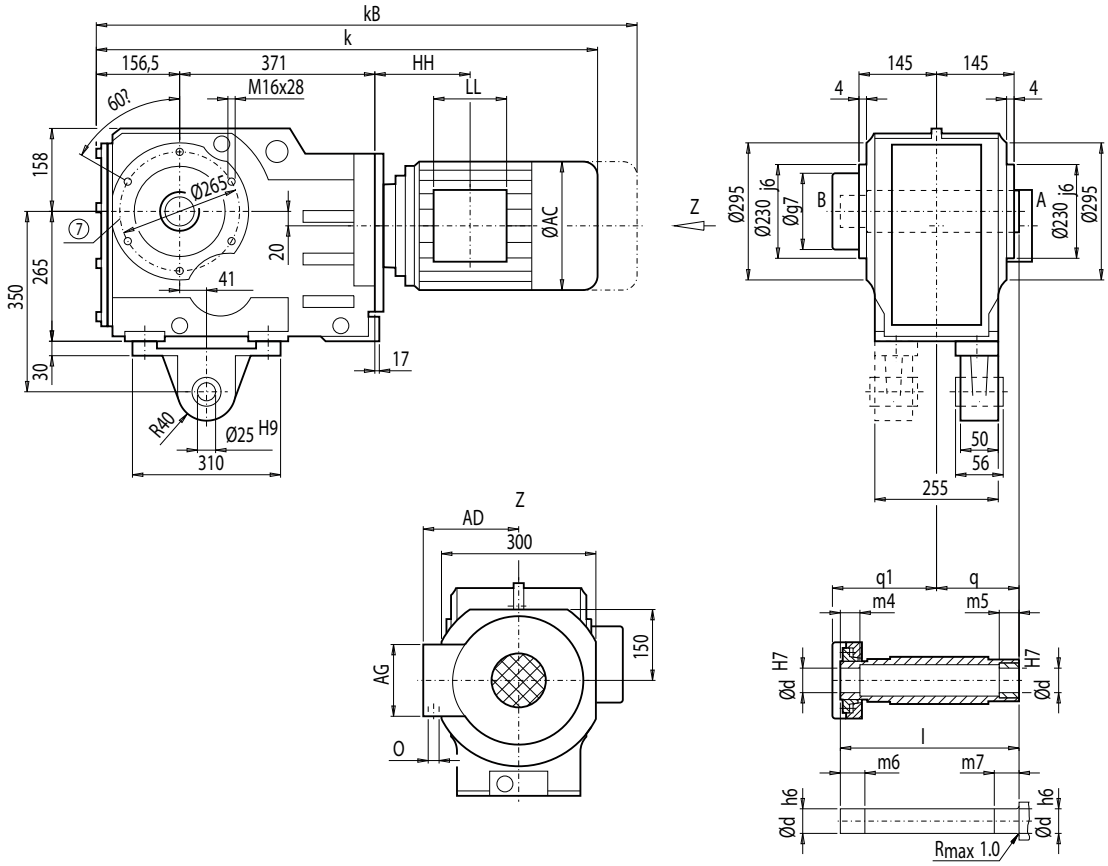
d	d1	l	m4	m5	m6	m7	q1	q	g7
75 *)	75	345	44	50	49	55	207	150	180
80	80	345	40	50	45	55	207	150	180

*) Preferred series

	KAS128								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAS128**
LA90S/L	819.5	890.5	174.0	163.0	90	90	76.0	M20x1.5/M25x1.5	194
LA90ZL	864.5	935.5	174.0	163.0	90	90	200.0	M20x1.5/M25x1.5	200
LA100L	862.5	943.5	195.0	168.0	120	120	113.5	2xM32x1.5	202
LA100ZL	932.5	1 013.5	195.0	168.0	120	120	245.5	2xM32x1.5	212
LA112M	889.0	970.0	219.0	181.0	120	120	116.0	2xM32x1.5	214
LA112ZM	917.0	998.0	219.0	181.0	120	120	220.0	2xM32x1.5	221
LA132S/M	948.0	1 050.0	259.0	195.0	140	140	155.5	2xM32x1.5	225
LA132ZM	994.0	1 096.0	259.0	195.0	140	140	263.5	2xM32x1.5	246
LA160M/L	1 053.5	1 172.0	313.5	227.0	165	165	184.0	2xM40x1.5	259
LA160ZL	1 101.5	1 220.0	313.5	227.0	165	165	337.0	2xM40x1.5	299
LG180M/L	1 110.0	1 232.0	348.0	322.5	260	192	198.0	2xM40x1.5	356
LG180ZM/ZL	1 161.0	1 283.0	348.0	322.5	260	192	198.0	2xM40x1.5	386
LG200L	1 166.0	1 292.0	385.0	301.0	260	192	228.0	2xM50x1.5	436
K4-LGI225S	1 426.5	1 665.5	442.0	325.0	260	192	443.0	2xM50x1.5	592
K4-LGI225M	1 426.5	1 665.5	442.0	325.0	260	192	443.0	2xM50x1.5	580
K4-LGI225ZM	1 486.5	1 725.5	442.0	325.0	260	192	443.0	2xM50x1.5	638

Gearbox KADS128 (3-stage), shaft-mounted design with torque arm and shrink disk

KADS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
75 *)	75	345	44	50	49	55	207	150	180
80	80	345	40	50	45	55	207	150	180

*) Preferred series

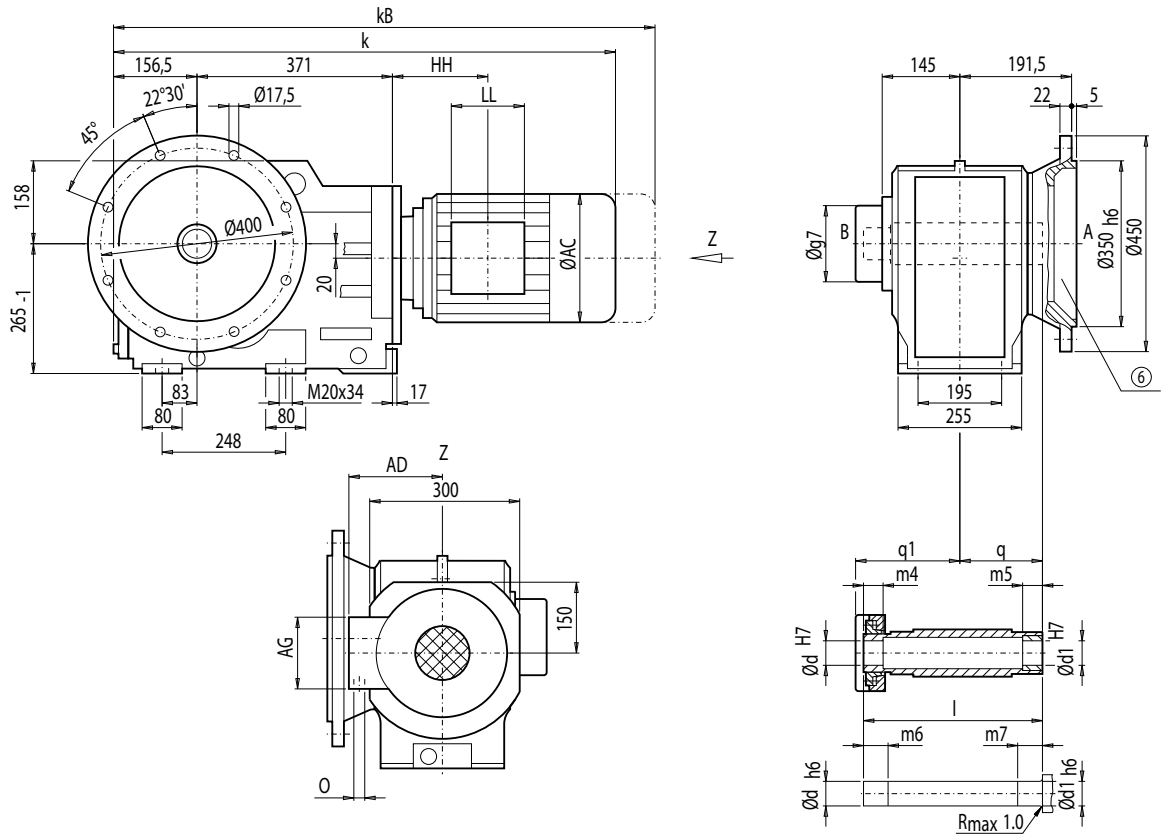
	KADS128								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KADS128**
LA90S/L	816.0	887.0	174.0	163.0	90	90	76.0	M20x1.5/M25x1.5	209
LA90ZL	861.0	932.0	174.0	163.0	90	90	200.0	M20x1.5/M25x1.5	215
LA100L	859.0	940.0	195.0	168.0	120	120	113.5	2xM32x1.5	217
LA100ZL	929.0	1 010.0	195.0	168.0	120	120	245.5	2xM32x1.5	227
LA112M	885.5	966.5	219.0	181.0	120	120	116.0	2xM32x1.5	228
LA112ZM	913.5	994.5	219.0	181.0	120	120	220.0	2xM32x1.5	235
LA132S/M	944.5	1 046.5	259.0	195.0	140	140	155.5	2xM32x1.5	239
LA132ZM	990.5	1 092.5	259.0	195.0	140	140	263.5	2xM32x1.5	260
LA160M/L	1 050.0	1 168.5	313.5	227.0	165	165	184.0	2xM40x1.5	274
LA160ZL	1 098.0	1 216.5	313.5	227.0	165	165	337.0	2xM40x1.5	313
LG180M/L	1 106.5	1 228.5	348.0	322.5	260	192	198.0	2xM40x1.5	370
LG180ZM/ZL	1 157.5	1 279.5	348.0	322.5	260	192	198.0	2xM40x1.5	400
LG200L	1 162.5	1 288.5	385.0	301.0	260	192	228.0	2xM50x1.5	450
K4-LGI225S	1 423.0	1 662.0	442.0	325.0	260	192	443.0	2xM50x1.5	606
K4-LGI225M	1 423.0	1 662.0	442.0	325.0	260	192	443.0	2xM50x1.5	594
K4-LGI225ZM	1 483.0	1 722.0	442.0	325.0	260	192	443.0	2xM50x1.5	652

⑦ For note, see page 4/218

Dimensions

Gearbox KAFS128 (3-stage), flange-mounted design with flange and shrink disk

KAFS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
75 *)	75	345	44	50	49	55	207	150	180
80	80	345	40	50	45	55	207	150	180

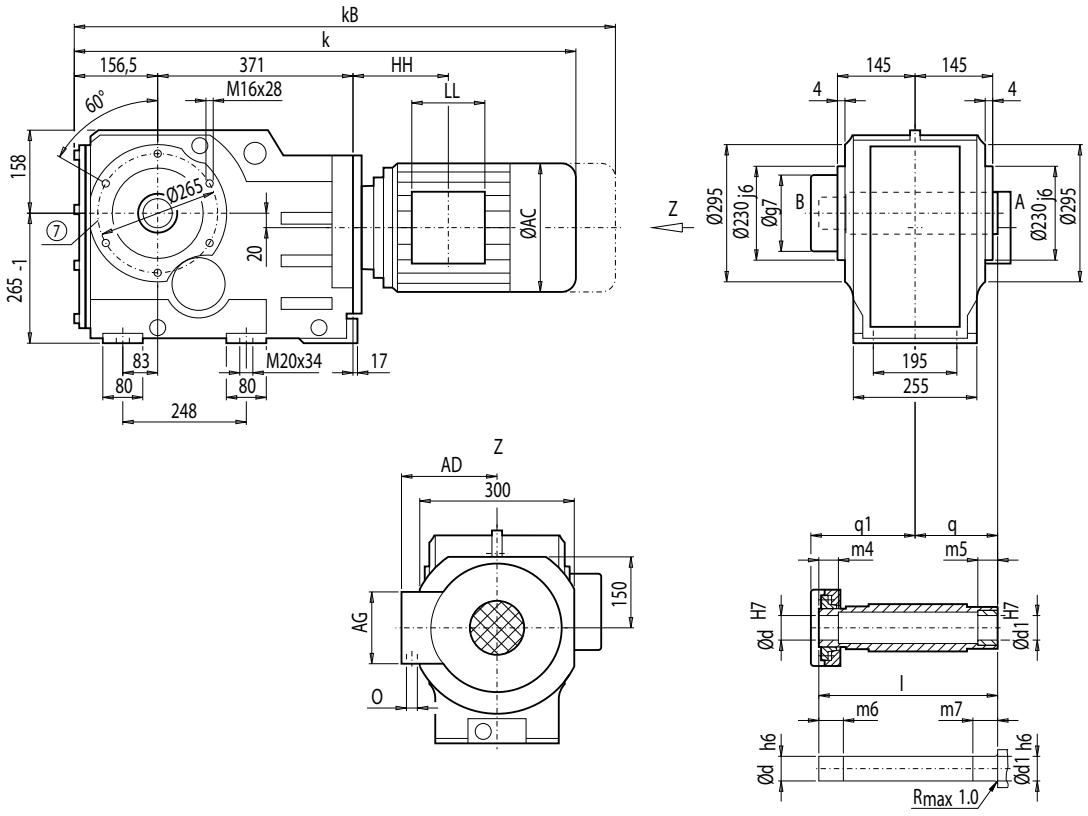
*) Preferred series

	KAFS128								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAFS128**
LA90S/L	816.0	887.0	174.0	163.0	90	90	76.0	M20x1.5/M25x1.5	220
LA90ZL	861.0	932.0	174.0	163.0	90	90	200.0	M20x1.5/M25x1.5	226
LA100L	859.0	940.0	195.0	168.0	120	120	113.5	2xM32x1.5	228
LA100ZL	929.0	1 010.0	195.0	168.0	120	120	245.5	2xM32x1.5	238
LA112M	885.5	966.5	219.0	181.0	120	120	116.0	2xM32x1.5	239
LA112ZM	913.5	994.5	219.0	181.0	120	120	220.0	2xM32x1.5	246
LA132S/M	944.5	1 046.5	259.0	195.0	140	140	155.5	2xM32x1.5	250
LA132ZM	990.5	1 092.5	259.0	195.0	140	140	263.5	2xM32x1.5	271
LA160M/L	1 050.0	1 168.5	313.5	227.0	165	165	184.0	2xM40x1.5	285
LA160ZL	1 098.0	1 216.5	313.5	227.0	165	165	337.0	2xM40x1.5	324
LG180M/L	1 106.5	1 228.5	348.0	322.5	260	192	198.0	2xM40x1.5	381
LG180ZM/ZL	1 157.5	1 279.5	348.0	322.5	260	192	198.0	2xM40x1.5	411
LG200L	1 162.5	1 288.5	385.0	301.0	260	192	228.0	2xM50x1.5	461
K4-LGI225S	1 423.0	1 662.0	442.0	325.0	260	192	443.0	2xM50x1.5	617
K4-LGI225M	1 423.0	1 662.0	442.0	325.0	260	192	443.0	2xM50x1.5	605
K4-LGI225ZM	1 483.0	1 722.0	442.0	325.0	260	192	443.0	2xM50x1.5	663

⑥ For note, see page 4/217

Gearbox KAZS128 (3-stage), shaft-mounted design with housing flange (C-type) and shrink disk

KAZS012



d	d1	l	m4	m5	m6	m7	q1	q	g7
75 *)	75	345	44	50	49	55	207	150	180
80	80	345	40	50	45	55	207	150	180

*) Preferred series

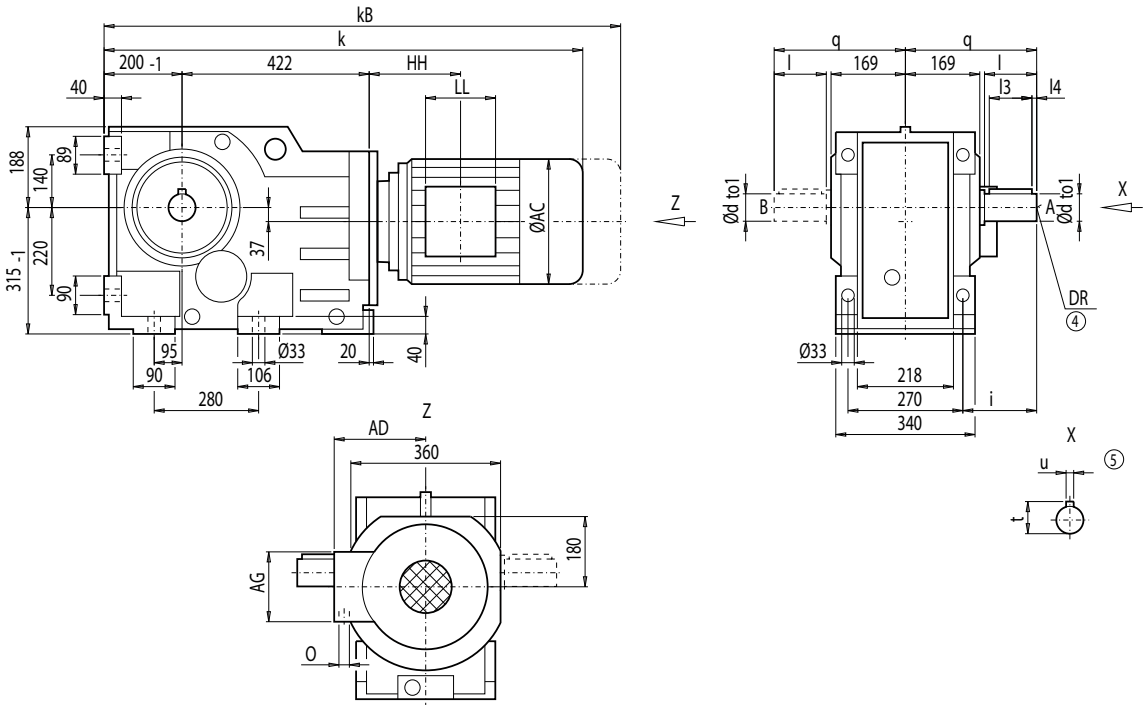
	KAZS128								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAZS128**
LA90S/L	816.0	887.0	174.0	163.0	90	90	76.0	M20x1.5/M25x1.5	202
LA90ZL	861.0	932.0	174.0	163.0	90	90	200.0	M20x1.5/M25x1.5	208
LA100L	859.0	940.0	195.0	168.0	120	120	113.5	2xM32x1.5	210
LA100ZL	929.0	1 010.0	195.0	168.0	120	120	245.5	2xM32x1.5	220
LA112M	885.5	966.5	219.0	181.0	120	120	116.0	2xM32x1.5	222
LA112ZM	913.5	994.5	219.0	181.0	120	120	220.0	2xM32x1.5	229
LA132S/M	944.5	1 046.5	259.0	195.0	140	140	155.5	2xM32x1.5	233
LA132ZM	990.5	1 092.5	259.0	195.0	140	140	263.5	2xM32x1.5	254
LA160M/L	1 050.0	1 168.5	313.5	227.0	165	165	184.0	2xM40x1.5	267
LA160ZL	1 098.0	1 216.5	313.5	227.0	165	165	337.0	2xM40x1.5	306
LG180M/L	1 106.5	1 228.5	348.0	322.5	260	192	198.0	2xM40x1.5	364
LG180ZM/ZL	1 157.5	1 279.5	348.0	322.5	260	192	198.0	2xM40x1.5	394
LG200L	1 162.5	1 288.5	385.0	301.0	260	192	228.0	2xM50x1.5	444
K4-LGI225S	1 423.0	1 662.0	442.0	325.0	260	192	443.0	2xM50x1.5	600
K4-LGI225M	1 423.0	1 662.0	442.0	325.0	260	192	443.0	2xM50x1.5	588
K4-LGI225ZM	1 483.0	1 722.0	442.0	325.0	260	192	443.0	2xM50x1.5	646

⑦ For note, see page 4/218

Dimensions

Gearbox K148 (3-stage), housing-flange-mounted design (C-type)

K012



d	to1	l	l3	l4	t	u	i	q	DR
90 *)	m6	170	140	15	95	25	210	345	M24x50
100	m6	210	180	15	106	28	250	385	

*) Preferred series

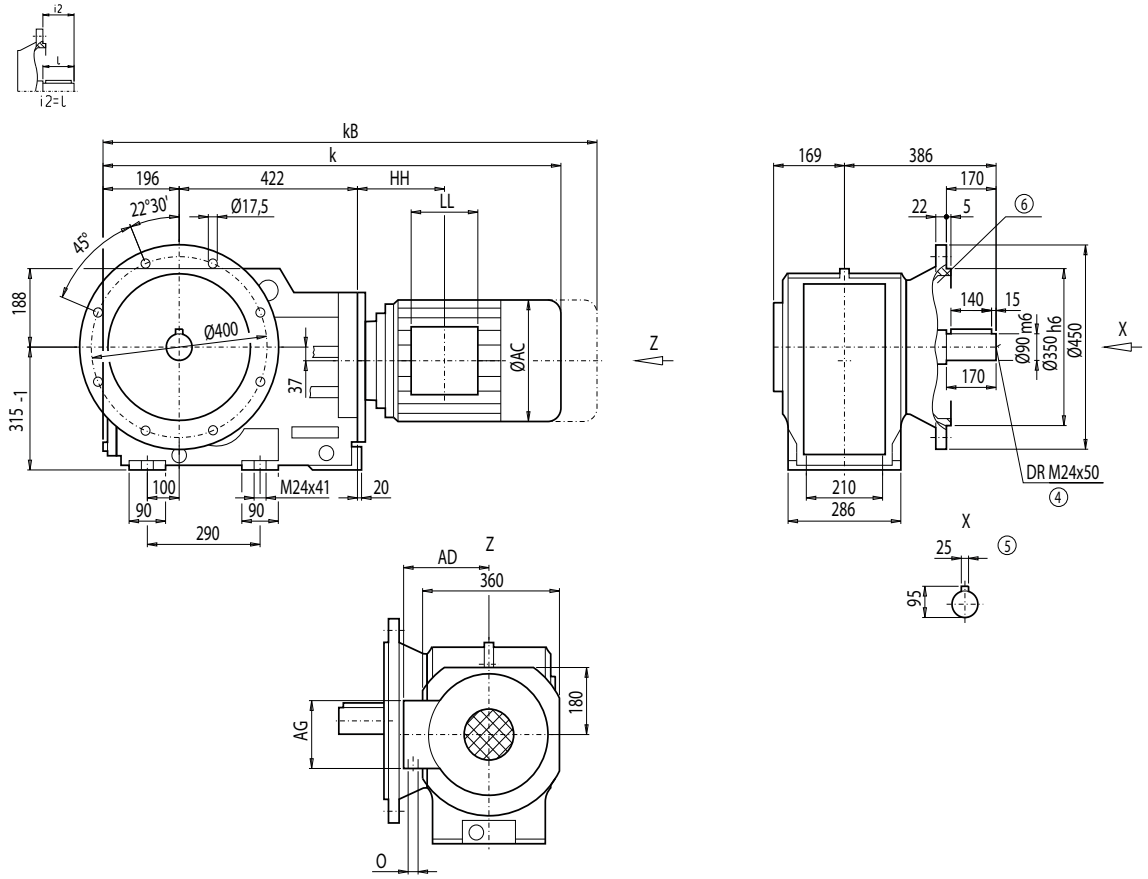
	K148								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**K148**
LA100L	944.0	1 025.0	195.0	168.0	120	120	104.0	2xM32x1.5	319
LA100ZL	1 014.0	1 095.0	195.0	168.0	120	120	236.0	2xM32x1.5	329
LA112M	969.5	1 050.5	219.0	181.0	120	120	105.5	2xM32x1.5	331
LA112ZM	997.5	1 078.5	219.0	181.0	120	120	209.5	2xM32x1.5	338
LA132S/M	1 028.5	1 130.5	259.0	195.0	140	140	145.0	2xM32x1.5	340
LA132ZM	1 074.5	1 176.5	259.0	195.0	140	140	253.0	2xM32x1.5	361
LA160M/L	1 128.0	1 246.5	313.5	227.0	165	165	167.5	2xM40x1.5	379
LA160ZL	1 176.0	1 294.5	313.5	227.0	165	165	320.5	2xM40x1.5	418
LG180M/L	1 187.5	1 309.5	348.0	322.5	260	192	184.5	2xM40x1.5	470
LG180ZM/ZL	1 238.5	1 360.5	348.0	322.5	260	192	184.5	2xM40x1.5	500
LG200L	1 243.5	1 369.5	385.0	301.0	260	192	214.5	2xM50x1.5	550
LG225S	1 314.5	1 553.5	442.0	325.0	260	192	250.5	2xM50x1.5	626
LG225M	1 314.5	1 553.5	442.0	325.0	260	192	250.5	2xM50x1.5	614
LG225ZM	1 374.5	1 613.5	442.0	325.0	260	192	250.5	2xM50x1.5	672
K4-LGI250M	1 601.5	1 826.5	495.0	392.0	300	236	469.5	2xM63x1.5	794
K4-LGI250ZM	1 671.5	1 896.5	495.0	392.0	300	236	469.5	2xM63x1.5	897

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox KF148 (3-stage), flange-mounted design (A-type)

KF012



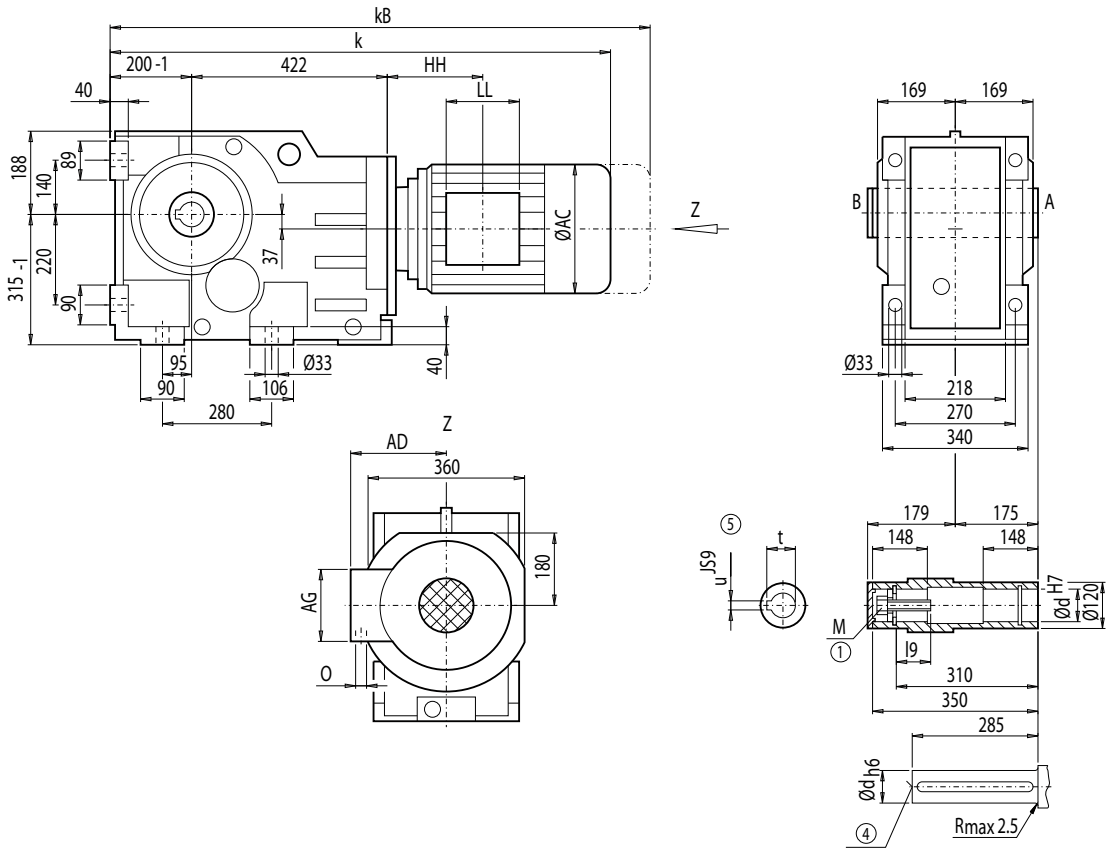
Motor	KF148 k	kB	AC	AD	AG	LL	HH	O	Weight KF148
LA100L	940.0	1 021.0	195.0	168.0	120	120	104.0	2xM32x1.5	349
LA100ZL	1 010.0	1 091.0	195.0	168.0	120	120	236.0	2xM32x1.5	359
LA112M	965.5	1 046.5	219.0	181.0	120	120	105.5	2xM32x1.5	361
LA112ZM	993.5	1 074.5	219.0	181.0	120	120	209.5	2xM32x1.5	368
LA132S/M	1 024.5	1 126.5	259.0	195.0	140	140	145.0	2xM32x1.5	370
LA132ZM	1 070.5	1 172.5	259.0	195.0	140	140	253.0	2xM32x1.5	391
LA160M/L	1 124.0	1 242.5	313.5	227.0	165	165	167.5	2xM40x1.5	409
LA160ZL	1 172.0	1 290.5	313.5	227.0	165	165	320.5	2xM40x1.5	448
LG180M/L	1 183.5	1 305.5	348.0	322.5	260	192	184.5	2xM40x1.5	500
LG180ZM/ZL	1 234.5	1 356.5	348.0	322.5	260	192	184.5	2xM40x1.5	530
LG200L	1 239.5	1 365.5	385.0	301.0	260	192	214.5	2xM50x1.5	580
LG225S	1 310.5	1 549.5	442.0	325.0	260	192	250.5	2xM50x1.5	656
LG225M	1 310.5	1 549.5	442.0	325.0	260	192	250.5	2xM50x1.5	644
LG225ZM	1 370.5	1 609.5	442.0	325.0	260	192	250.5	2xM50x1.5	702
K4-LGI250M	1 597.5	1 822.5	495.0	392.0	300	236	469.5	2xM63x1.5	824
K4-LGI250ZM	1 667.5	1 892.5	495.0	392.0	300	236	469.5	2xM63x1.5	927

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Dimensions

Gearbox KA148 (3-stage), housing-flange-mounted design (C-type)

KA012



d	l9	M	t	u
80 *)	63.5	M20	85.4	22
90	72.0	M24	95.4	25

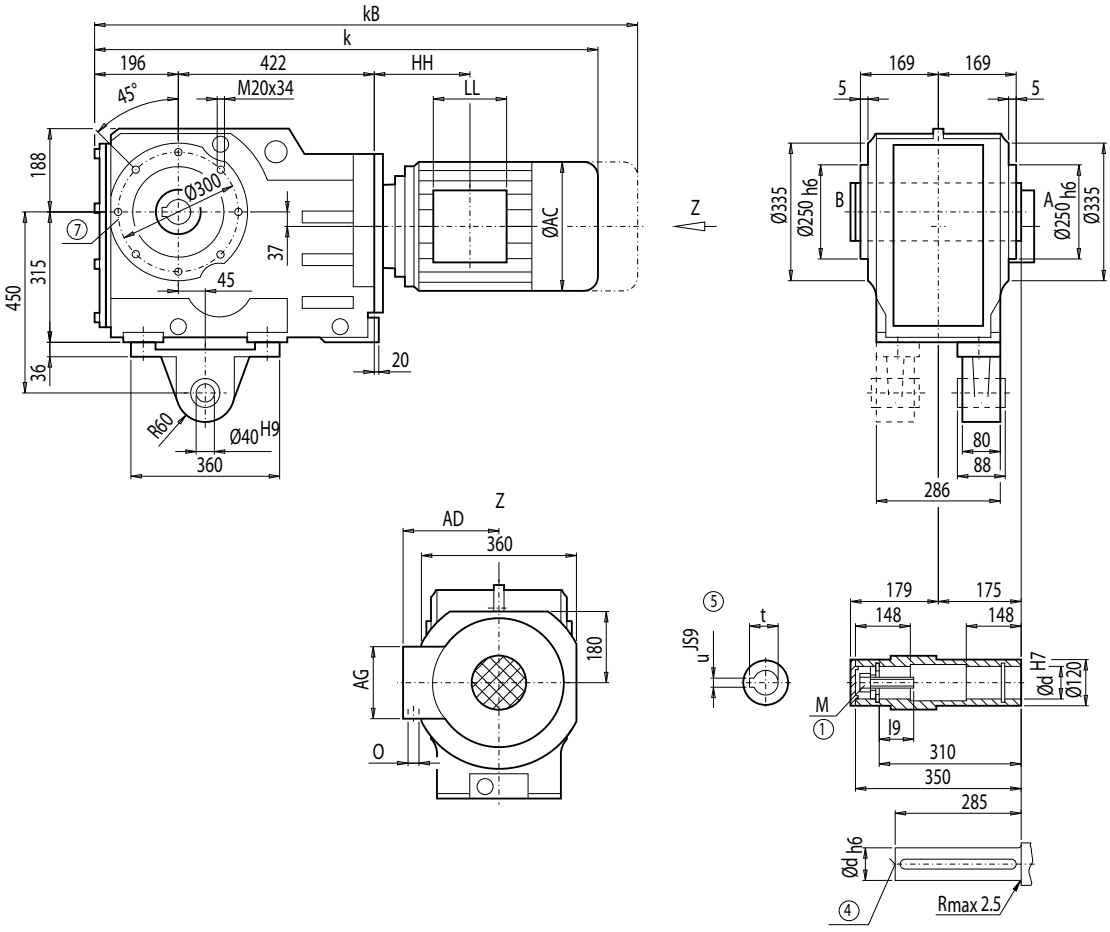
*) Preferred series

	KA148								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KA148**
LA100L	944.0	1 025.0	195.0	168.0	120	120	104.0	2xM32x1.5	291
LA100ZL	1 014.0	1 095.0	195.0	168.0	120	120	236.0	2xM32x1.5	301
LA112M	969.5	1 050.5	219.0	181.0	120	120	105.5	2xM32x1.5	303
LA112ZM	997.5	1 078.5	219.0	181.0	120	120	209.5	2xM32x1.5	310
LA132S/M	1 028.5	1 130.5	259.0	195.0	140	140	145.0	2xM32x1.5	312
LA132ZM	1 074.5	1 176.5	259.0	195.0	140	140	253.0	2xM32x1.5	333
LA160M/L	1 128.0	1 246.5	313.5	227.0	165	165	167.5	2xM40x1.5	351
LA160ZL	1 176.0	1 294.5	313.5	227.0	165	165	320.5	2xM40x1.5	390
LG180M/L	1 187.5	1 309.5	348.0	322.5	260	192	184.5	2xM40x1.5	442
LG180ZM/ZL	1 238.5	1 360.5	348.0	322.5	260	192	184.5	2xM40x1.5	472
LG200L	1 243.5	1 369.5	385.0	301.0	260	192	214.5	2xM50x1.5	522
LG225S	1 314.5	1 553.5	442.0	325.0	260	192	250.5	2xM50x1.5	598
LG225M	1 314.5	1 553.5	442.0	325.0	260	192	250.5	2xM50x1.5	586
LG225ZM	1 374.5	1 613.5	442.0	325.0	260	192	250.5	2xM50x1.5	644
K4-LGI250M	1 601.5	1 826.5	495.0	392.0	300	236	469.5	2xM63x1.5	766
K4-LGI250ZM	1 671.5	1 896.5	495.0	392.0	300	236	469.5	2xM63x1.5	869

① DIN EN ISO 4014 ④ DIN 332 ⑤ Feather key / keyway DIN 6885

Gearbox KAD148 (3-stage), shaft-mounted design with torque arm

KAD012



d	l9	M	t	u
80 *)	63.5	M20	85.4	22
90	72.0	M24	95.4	25

*) Preferred series

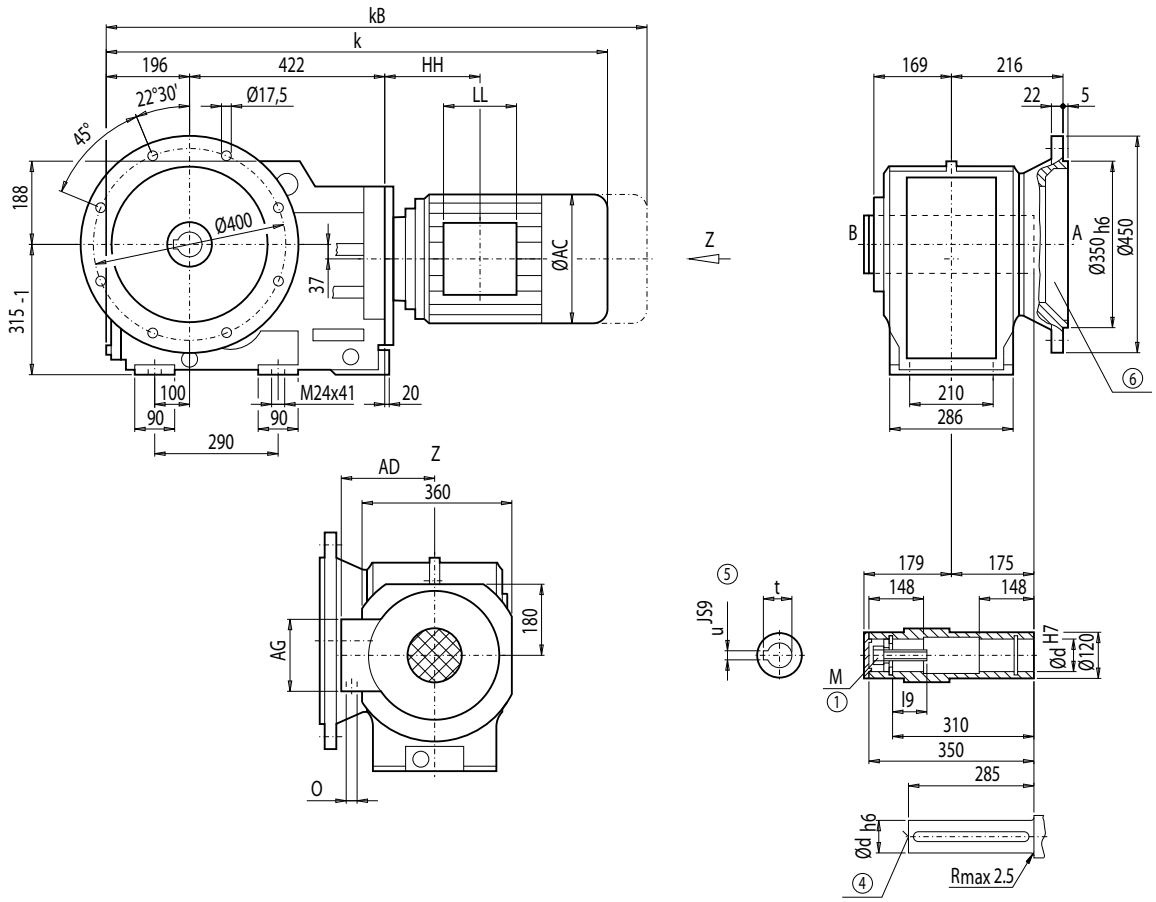
	KAD148								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAD148**
LA100L	940.0	1 021.0	195.0	168.0	120	120	104.0	2xM32x1.5	319
LA100ZL	1 010.0	1 091.0	195.0	168.0	120	120	236.0	2xM32x1.5	329
LA112M	965.5	1 046.5	219.0	181.0	120	120	105.5	2xM32x1.5	330
LA112ZM	993.5	1 074.5	219.0	181.0	120	120	209.5	2xM32x1.5	337
LA132S/M	1 024.5	1 126.5	259.0	195.0	140	140	145.0	2xM32x1.5	339
LA132ZM	1 070.5	1 172.5	259.0	195.0	140	140	253.0	2xM32x1.5	361
LA160M/L	1 124.0	1 242.5	313.5	227.0	165	165	167.5	2xM40x1.5	379
LA160ZL	1 172.0	1 290.5	313.5	227.0	165	165	320.5	2xM40x1.5	418
LG180M/L	1 183.5	1 305.5	348.0	322.5	260	192	184.5	2xM40x1.5	470
LG180ZM/ZL	1 234.5	1 356.5	348.0	322.5	260	192	184.5	2xM40x1.5	500
LG200L	1 239.5	1 365.5	385.0	301.0	260	192	214.5	2xM50x1.5	550
LG225S	1 310.5	1 549.5	442.0	325.0	260	192	250.5	2xM50x1.5	626
LG225M	1 310.5	1 549.5	442.0	325.0	260	192	250.5	2xM50x1.5	614
LG225ZM	1 370.5	1 609.5	442.0	325.0	260	192	250.5	2xM50x1.5	672
K4-LGI250M	1 597.5	1 822.5	495.0	392.0	300	236	469.5	2xM63x1.5	794
K4-LGI250ZM	1 667.5	1 892.5	495.0	392.0	300	236	469.5	2xM63x1.5	897

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 4/218

Dimensions

Gearbox KAF148 (3-stage), flange-mounted design

KAF012



d	l9	M	t	u
80 *)	63.5	M20	85.4	22
90	72.0	M24	95.4	25

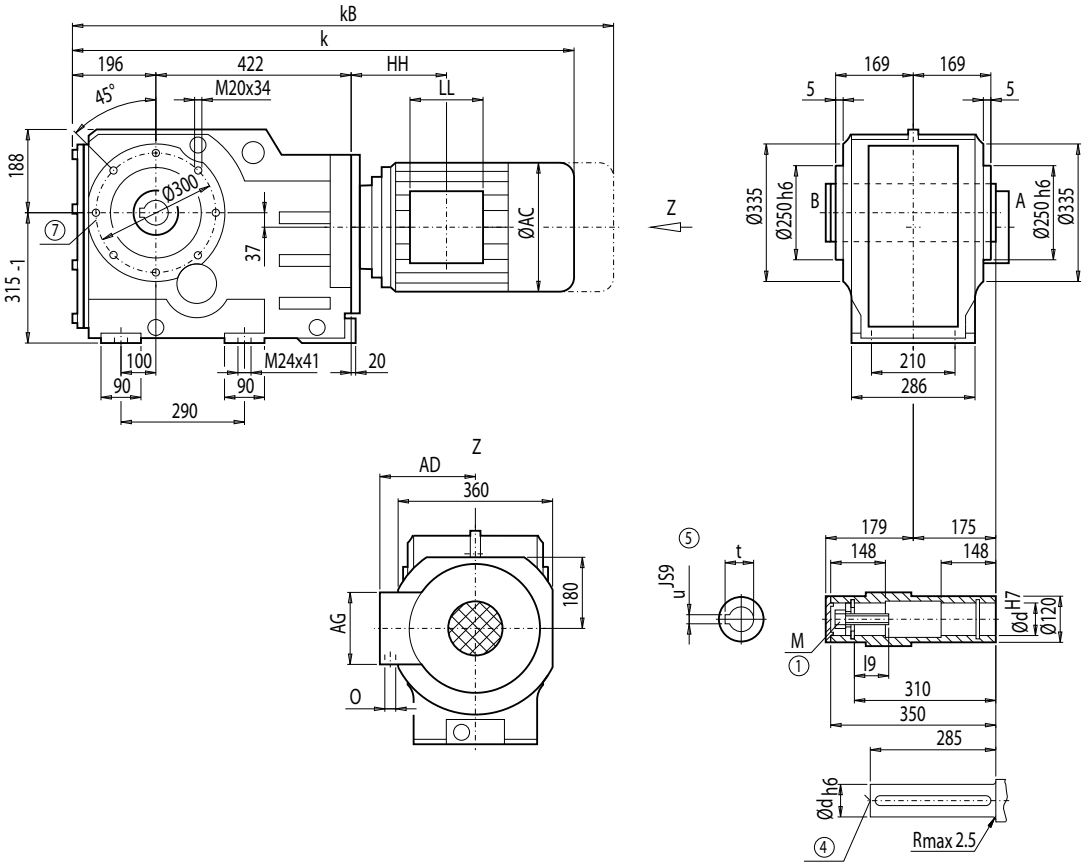
*) Preferred series

Motor	KAF148 k	kB	AC	AD	AG	LL	HH	O	Weight KAF148
LA100L	940.0	1 021.0	195.0	168.0	120	120	104.0	2xM32x1.5	321
LA100ZL	1 010.0	1 091.0	195.0	168.0	120	120	236.0	2xM32x1.5	331
LA112M	965.5	1 046.5	219.0	181.0	120	120	105.5	2xM32x1.5	333
LA112ZM	993.5	1 074.5	219.0	181.0	120	120	209.5	2xM32x1.5	340
LA132S/M	1 024.5	1 126.5	259.0	195.0	140	140	145.0	2xM32x1.5	342
LA132ZM	1 070.5	1 172.5	259.0	195.0	140	140	253.0	2xM32x1.5	363
LA160M/L	1 124.0	1 242.5	313.5	227.0	165	165	167.5	2xM40x1.5	381
LA160ZL	1 172.0	1 290.5	313.5	227.0	165	165	320.5	2xM40x1.5	420
LG180M/L	1 183.5	1 305.5	348.0	322.5	260	192	184.5	2xM40x1.5	472
LG180ZM/ZL	1 234.5	1 356.5	348.0	322.5	260	192	184.5	2xM40x1.5	502
LG200L	1 239.5	1 365.5	385.0	301.0	260	192	214.5	2xM50x1.5	552
LG225S	1 310.5	1 549.5	442.0	325.0	260	192	250.5	2xM50x1.5	628
LG225M	1 310.5	1 549.5	442.0	325.0	260	192	250.5	2xM50x1.5	616
LG225ZM	1 370.5	1 609.5	442.0	325.0	260	192	250.5	2xM50x1.5	674
K4-LGI250M	1 597.5	1 822.5	495.0	392.0	300	236	469.5	2xM63x1.5	796
K4-LGI250ZM	1 667.5	1 892.5	495.0	392.0	300	236	469.5	2xM63x1.5	899

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Gearbox KAZ148 (3-stage), shaft-mounted design with housing flange (C-type)

KAZ012



d	l9	M	t	u
80 *)	63.5	M20	85.4	22
90	72.0	M24	95.4	25

*) Preferred series

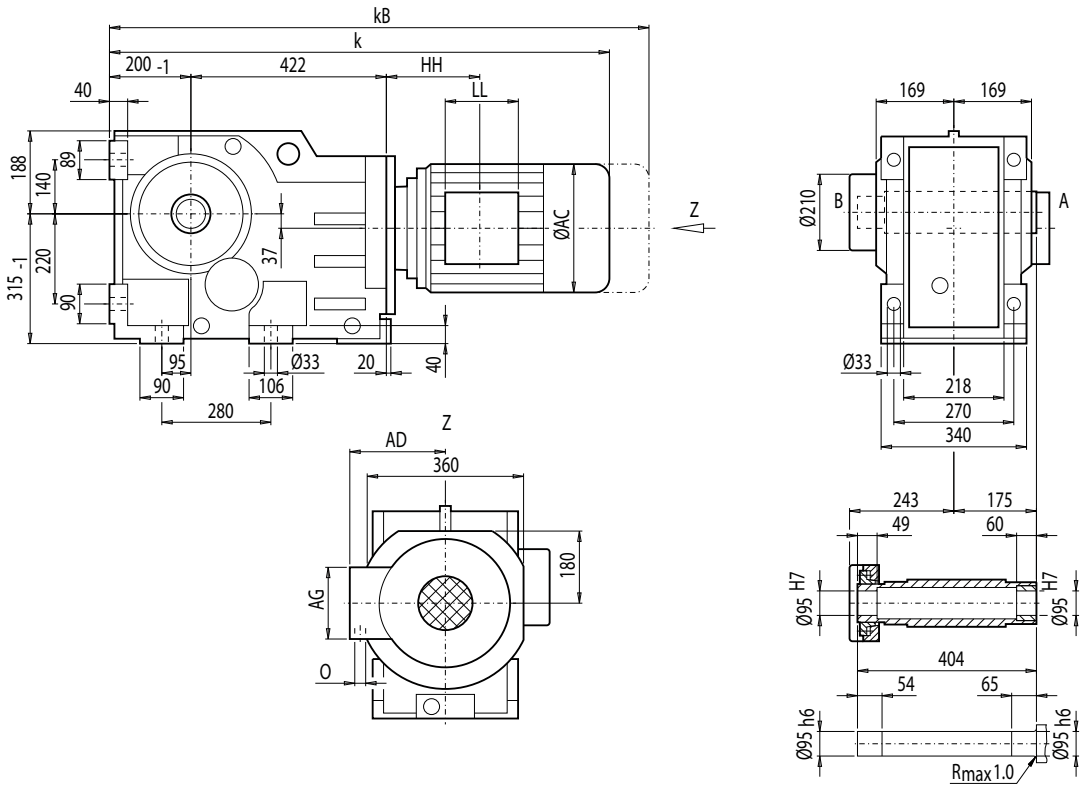
Motor	KAZ148 k	kB	AC	AD	AG	LL	HH	O	Weight KAZ148
LA100L	940.0	1 021.0	195.0	168.0	120	120	104.0	2xM32x1.5	302
LA100ZL	1 010.0	1 091.0	195.0	168.0	120	120	236.0	2xM32x1.5	312
LA112M	965.5	1 046.5	219.0	181.0	120	120	105.5	2xM32x1.5	314
LA112ZM	993.5	1 074.5	219.0	181.0	120	120	209.5	2xM32x1.5	321
LA132S/M	1 024.5	1 126.5	259.0	195.0	140	140	145.0	2xM32x1.5	323
LA132ZM	1 070.5	1 172.5	259.0	195.0	140	140	253.0	2xM32x1.5	344
LA160M/L	1 124.0	1 242.5	313.5	227.0	165	165	167.5	2xM40x1.5	362
LA160ZL	1 172.0	1 290.5	313.5	227.0	165	165	320.5	2xM40x1.5	401
LG180M/L	1 183.5	1 305.5	348.0	322.5	260	192	184.5	2xM40x1.5	453
LG180ZM/ZL	1 234.5	1 356.5	348.0	322.5	260	192	184.5	2xM40x1.5	483
LG200L	1 239.5	1 365.5	385.0	301.0	260	192	214.5	2xM50x1.5	533
LG225S	1 310.5	1 549.5	442.0	325.0	260	192	250.5	2xM50x1.5	609
LG225M	1 310.5	1 549.5	442.0	325.0	260	192	250.5	2xM50x1.5	597
LG225ZM	1 370.5	1 609.5	442.0	325.0	260	192	250.5	2xM50x1.5	655
K4-LGI250M	1 597.5	1 822.5	495.0	392.0	300	236	469.5	2xM63x1.5	777
K4-LGI250ZM	1 667.5	1 892.5	495.0	392.0	300	236	469.5	2xM63x1.5	880

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 4/218

Dimensions

Gearbox KAS148 (3-stage), shaft-mounted design with shrink disk

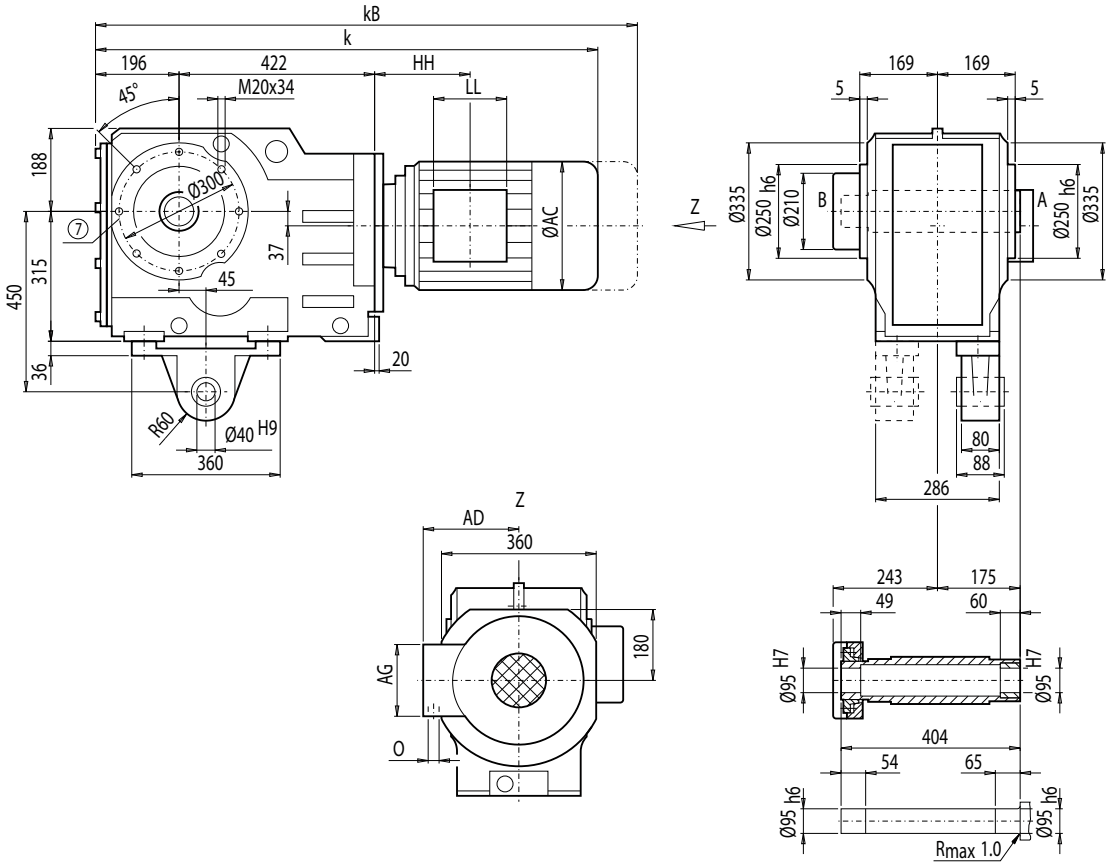
KAS012



Motor	KAS148 k	kB	AC	AD	AG	LL	HH	O	Weight KAS148
LA100L	944.0	1 025.0	195.0	168.0	120	120	104.0	2xM32x1.5	298
LA100ZL	1 014.0	1 095.0	195.0	168.0	120	120	236.0	2xM32x1.5	308
LA112M	969.5	1 050.5	219.0	181.0	120	120	105.5	2xM32x1.5	310
LA112ZM	997.5	1 078.5	219.0	181.0	120	120	209.5	2xM32x1.5	317
LA132S/M	1 028.5	1 130.5	259.0	195.0	140	140	145.0	2xM32x1.5	319
LA132ZM	1 074.5	1 176.5	259.0	195.0	140	140	253.0	2xM32x1.5	340
LA160M/L	1 128.0	1 246.5	313.5	227.0	165	165	167.5	2xM40x1.5	358
LA160ZL	1 176.0	1 294.5	313.5	227.0	165	165	320.5	2xM40x1.5	397
LG180M/L	1 187.5	1 309.5	348.0	322.5	260	192	184.5	2xM40x1.5	449
LG180ZM/ZL	1 238.5	1 360.5	348.0	322.5	260	192	184.5	2xM40x1.5	479
LG200L	1 243.5	1 369.5	385.0	301.0	260	192	214.5	2xM50x1.5	529
LG225S	1 314.5	1 553.5	442.0	325.0	260	192	250.5	2xM50x1.5	605
LG225M	1 314.5	1 553.5	442.0	325.0	260	192	250.5	2xM50x1.5	593
LG225ZM	1 374.5	1 613.5	442.0	325.0	260	192	250.5	2xM50x1.5	651
K4-LGI250M	1 601.5	1 826.5	495.0	392.0	300	236	469.5	2xM63x1.5	773
K4-LGI250ZM	1 671.5	1 896.5	495.0	392.0	300	236	469.5	2xM63x1.5	876

Gearbox KADS148 (3-stage), shaft-mounted design with torque arm and shrink disk

KADS012



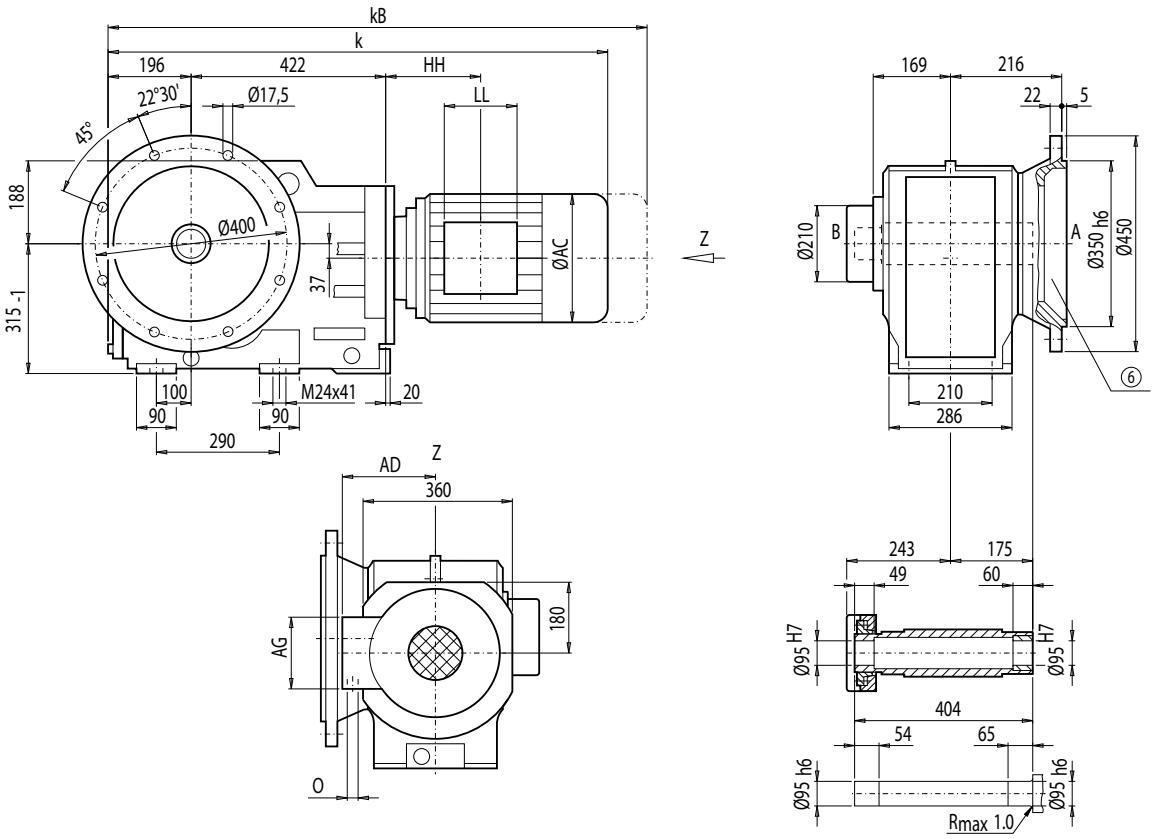
Motor	KADS148 k	kB	AC	AD	AG	LL	HH	O	Weight KADS148
LA100L	940.0	1 021.0	195.0	168.0	120	120	104.0	2xM32x1.5	326
LA100ZL	1 010.0	1 091.0	195.0	168.0	120	120	236.0	2xM32x1.5	336
LA112M	965.5	1 046.5	219.0	181.0	120	120	105.5	2xM32x1.5	337
LA112ZM	993.5	1 074.5	219.0	181.0	120	120	209.5	2xM32x1.5	344
LA132S/M	1 024.5	1 126.5	259.0	195.0	140	140	145.0	2xM32x1.5	346
LA132ZM	1 070.5	1 172.5	259.0	195.0	140	140	253.0	2xM32x1.5	368
LA160M/L	1 124.0	1 242.5	313.5	227.0	165	165	167.5	2xM40x1.5	386
LA160ZL	1 172.0	1 290.5	313.5	227.0	165	165	320.5	2xM40x1.5	425
LG180M/L	1 183.5	1 305.5	348.0	322.5	260	192	184.5	2xM40x1.5	477
LG180ZM/ZL	1 234.5	1 356.5	348.0	322.5	260	192	184.5	2xM40x1.5	507
LG200L	1 239.5	1 365.5	385.0	301.0	260	192	214.5	2xM50x1.5	557
LG225S	1 310.5	1 549.5	442.0	325.0	260	192	250.5	2xM50x1.5	633
LG225M	1 310.5	1 549.5	442.0	325.0	260	192	250.5	2xM50x1.5	621
LG225ZM	1 370.5	1 609.5	442.0	325.0	260	192	250.5	2xM50x1.5	679
K4-LGI250M	1 597.5	1 822.5	495.0	392.0	300	236	469.5	2xM63x1.5	801
K4-LGI250ZM	1 667.5	1 892.5	495.0	392.0	300	236	469.5	2xM63x1.5	904

⑦ For note, see page 4/218

Dimensions

Gearbox KAFS148 (3-stage), flange-mounted design and shrink disk

KAFS012

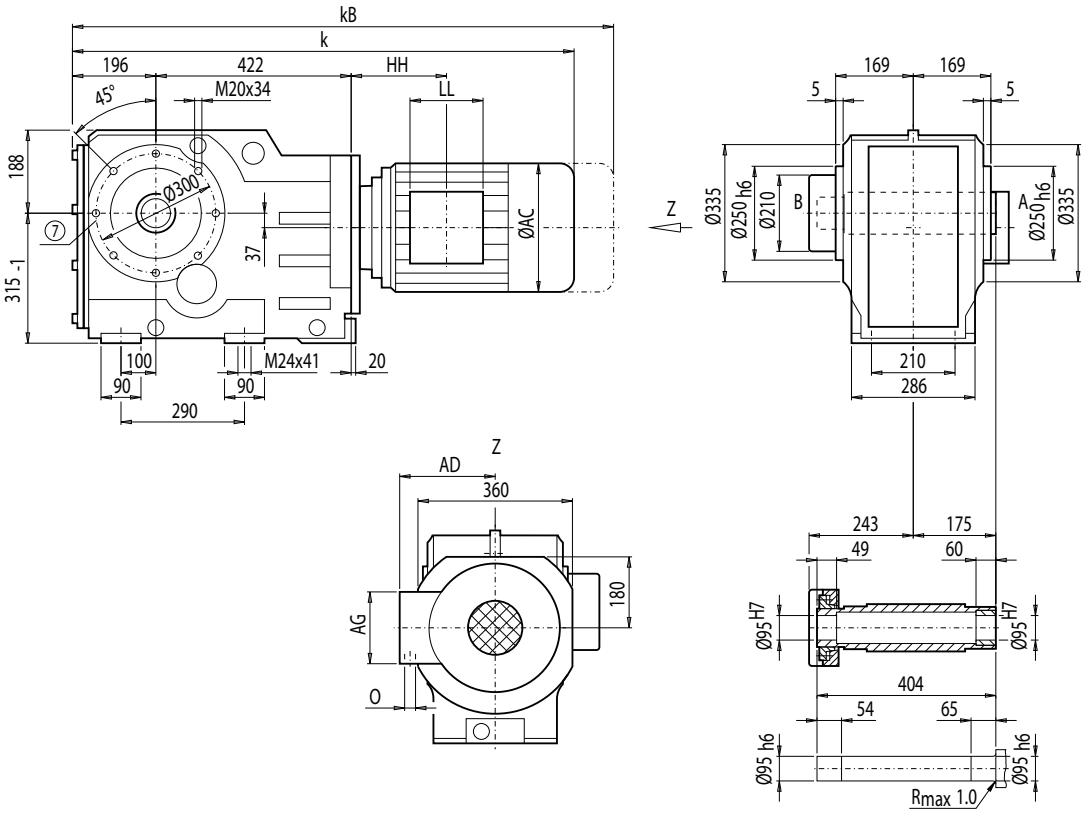


Motor	KAFS148 k	kB	AC	AD	AG	LL	HH	O	Weight KAFS148
LA100L	940.0	1 021.0	195.0	168.0	120	120	104.0	2xM32x1.5	328
LA100ZL	1 010.0	1 091.0	195.0	168.0	120	120	236.0	2xM32x1.5	338
LA112M	965.5	1 046.5	219.0	181.0	120	120	105.5	2xM32x1.5	340
LA112ZM	993.5	1 074.5	219.0	181.0	120	120	209.5	2xM32x1.5	347
LA132S/M	1 024.5	1 126.5	259.0	195.0	140	140	145.0	2xM32x1.5	349
LA132ZM	1 070.5	1 172.5	259.0	195.0	140	140	253.0	2xM32x1.5	360
LA160M/L	1 124.0	1 242.5	313.5	227.0	165	165	167.5	2xM40x1.5	388
LA160ZL	1 172.0	1 290.5	313.5	227.0	165	165	320.5	2xM40x1.5	427
LG180M/L	1 183.5	1 305.5	348.0	322.5	260	192	184.5	2xM40x1.5	479
LG180ZM/ZL	1 234.5	1 356.5	348.0	322.5	260	192	184.5	2xM40x1.5	509
LG200L	1 239.5	1 365.5	385.0	301.0	260	192	214.5	2xM50x1.5	559
LG225S	1 310.5	1 549.5	442.0	325.0	260	192	250.5	2xM50x1.5	635
LG225M	1 310.5	1 549.5	442.0	325.0	260	192	250.5	2xM50x1.5	623
LG225ZM	1 370.5	1 609.5	442.0	325.0	260	192	250.5	2xM50x1.5	681
K4-LGI250M	1 597.5	1 822.5	495.0	392.0	300	236	469.5	2xM63x1.5	803
K4-LGI250ZM	1 667.5	1 892.5	495.0	392.0	300	236	469.5	2xM63x1.5	906

⑥ For note, see page 4/217

Gearbox KAZS148 (3-stage), shaft-mounted design with housing flange (C-type) and shrink disk

KAZS012



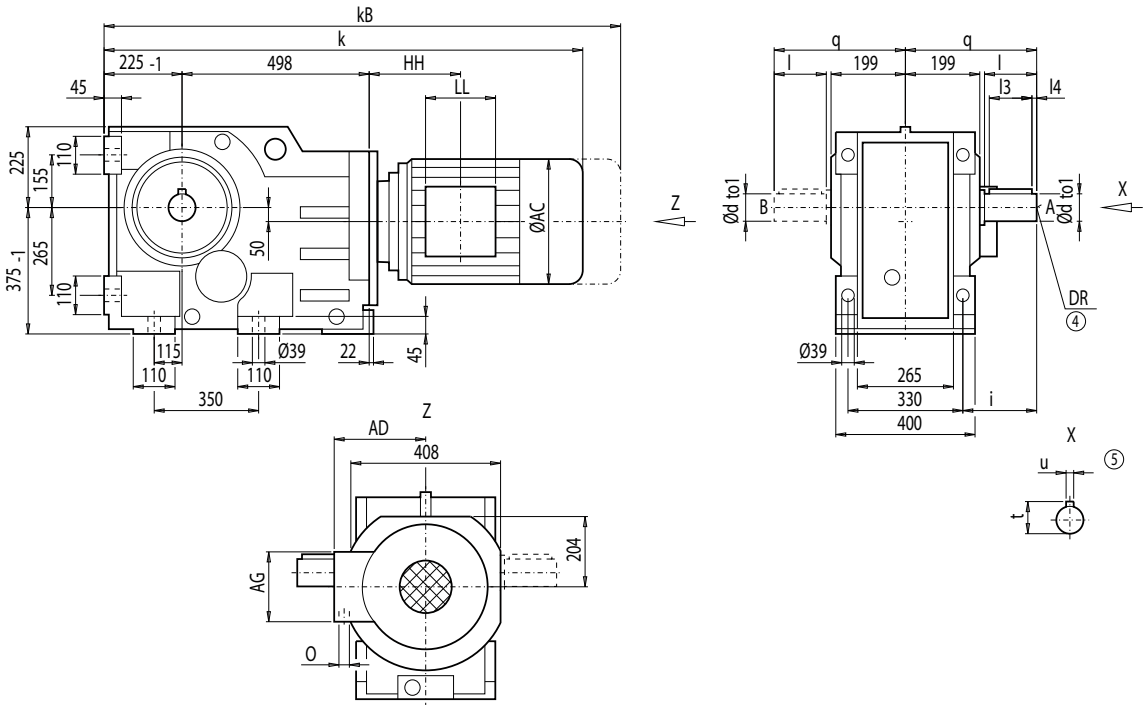
	KAZS148								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAZS148**
LA100L	940.0	1 021.0	195.0	168.0	120	120	104.0	2xM32x1.5	309
LA100ZL	1 010.0	1 091.0	195.0	168.0	120	120	236.0	2xM32x1.5	319
LA112M	965.5	1 046.5	219.0	181.0	120	120	105.5	2xM32x1.5	321
LA112ZM	993.5	1 074.5	219.0	181.0	120	120	209.5	2xM32x1.5	328
LA132S/M	1 024.5	1 126.5	259.0	195.0	140	140	145.0	2xM32x1.5	330
LA132ZM	1 070.5	1 172.5	259.0	195.0	140	140	253.0	2xM32x1.5	351
LA160M/L	1 124.0	1 242.5	313.5	227.0	165	165	167.5	2xM40x1.5	369
LA160ZL	1 172.0	1 290.5	313.5	227.0	165	165	320.5	2xM40x1.5	408
LG180M/L	1 183.5	1 305.5	348.0	322.5	260	192	184.5	2xM40x1.5	460
LG180ZM/ZL	1 234.5	1 356.5	348.0	322.5	260	192	184.5	2xM40x1.5	490
LG200L	1 239.5	1 365.5	385.0	301.0	260	192	214.5	2xM50x1.5	540
LG225S	1 310.5	1 549.5	442.0	325.0	260	192	250.5	2xM50x1.5	616
LG225M	1 310.5	1 549.5	442.0	325.0	260	192	250.5	2xM50x1.5	604
LG225ZM	1 370.5	1 609.5	442.0	325.0	260	192	250.5	2xM50x1.5	662
K4-LGI250M	1 597.5	1 822.5	495.0	392.0	300	236	469.5	2xM63x1.5	784
K4-LGI250ZM	1 667.5	1 892.5	495.0	392.0	300	236	469.5	2xM63x1.5	887

⑦ For note, see page 4/218

Dimensions

Gearbox K168 (3-stage), housing-flange-mounted design (C-type)

K012



d	to1	l	l3	l4	t	u	i	q	DR
110 *)	m6	210	180	15	116	28	250	415	M24x50
120	m6	210	180	15	127	32	250	415	

*) Preferred series

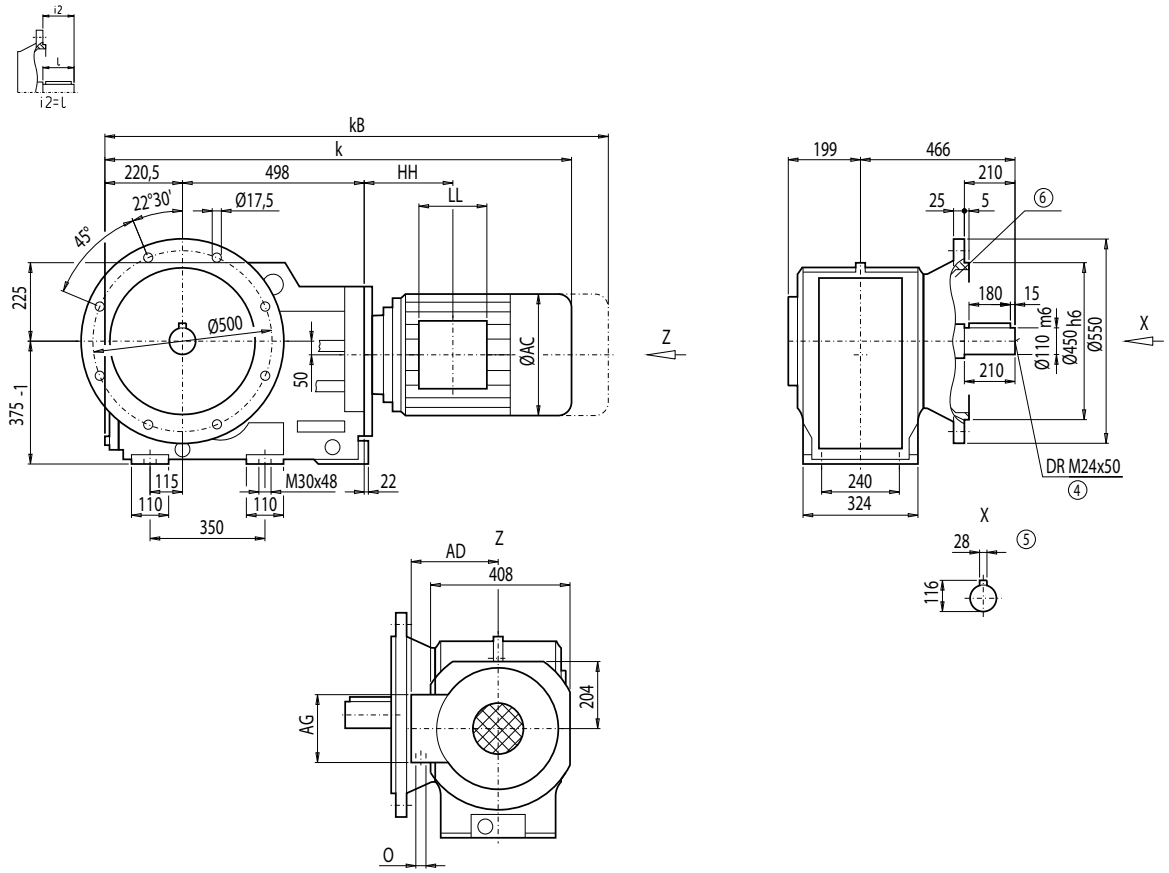
	K168								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**K168**
LA132S/M	1 121.5	1 223.5	259.0	195.0	140	140	137.0	2xM32x1.5	511
LA132ZM	1 167.5	1 269.5	259.0	195.0	140	140	245.0	2xM32x1.5	532
LA160M/L	1 221.5	1 340.0	313.5	227.0	165	165	160.0	2xM40x1.5	545
LA160ZL	1 269.5	1 388.0	313.5	227.0	165	165	313.0	2xM40x1.5	584
LG180M/L	1 281.0	1 403.0	348.0	322.5	260	192	177.0	2xM40x1.5	641
LG180ZM/ZL	1 332.0	1 454.0	348.0	322.5	260	192	177.0	2xM40x1.5	671
LG200L	1 337.0	1 463.0	385.0	301.0	260	192	207.0	2xM50x1.5	721
LG225S	1 408.0	1 647.0	442.0	325.0	260	192	243.0	2xM50x1.5	794
LG225M	1 408.0	1 647.0	442.0	325.0	260	192	243.0	2xM50x1.5	782
LG225ZM	1 468.0	1 707.0	442.0	325.0	260	192	243.0	2xM50x1.5	840
LG250M	1 501.5	1 726.5	495.0	392.0	300	236	278.5	2xM63x1.5	884
LG250ZM	1 571.5	1 797.0	495.0	392.0	300	236	278.5	2xM63x1.5	987
K4-LGI280S	1 780.5	2 007.5	555.0	432.0	300	236	489.5	2xM63x1.5	1 115
K4-LGI280M	1 780.5	2 007.5	555.0	432.0	300	236	489.5	2xM63x1.5	1 127
K4-LGI280ZM	1 890.5	2 117.5	555.0	432.0	300	236	489.5	2xM63x1.5	1 215

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox KF168 (3-stage), flange-mounted design (A-type)

KF012



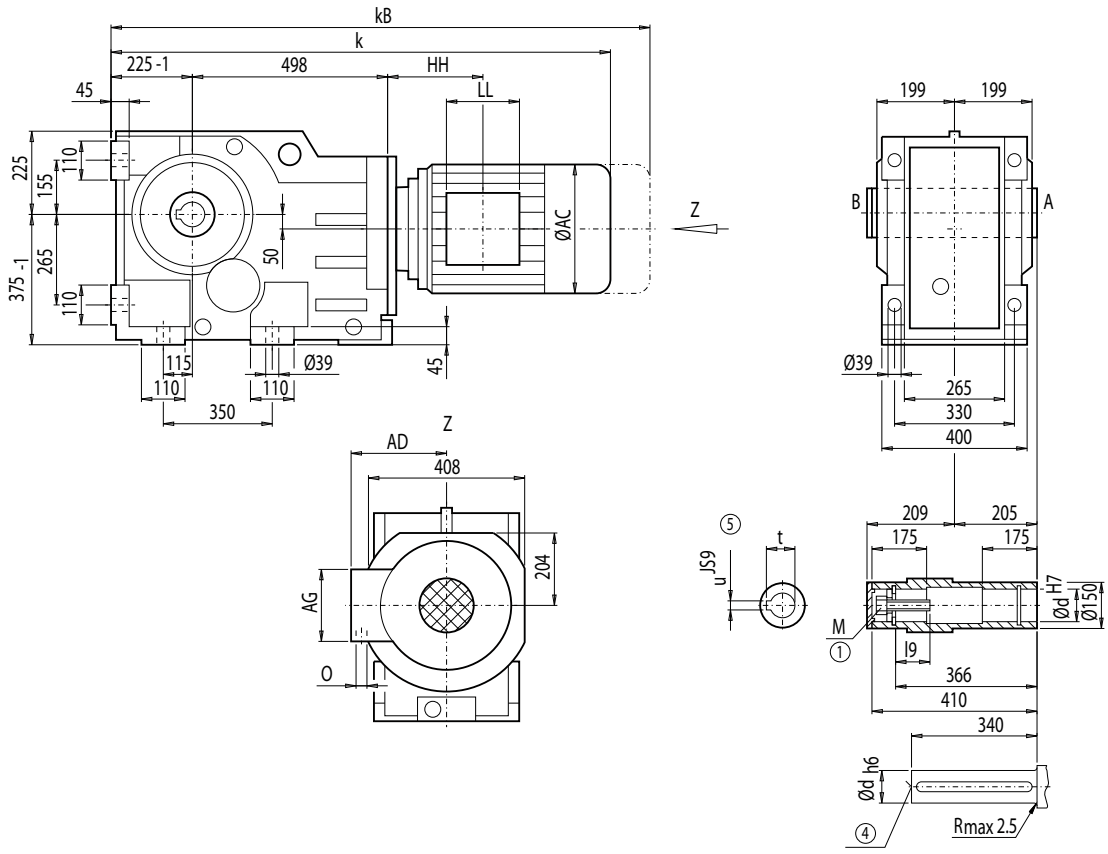
Motor	KF168 k	kB	AC	AD	AG	LL	HH	O	Weight KF168
LA132S/M	1 117.0	1 219.0	259.0	195.0	140	140	137.0	2xM32x1.5	573
LA132ZM	1 163.0	1 265.0	259.0	195.0	140	140	245.0	2xM32x1.5	594
LA160M/L	1 217.0	1 335.5	313.5	227.0	165	165	160.0	2xM40x1.5	607
LA160ZL	1 265.0	1 383.5	313.5	227.0	165	165	313.0	2xM40x1.5	646
LG180M/L	1 276.5	1 398.5	348.0	322.5	260	192	177.0	2xM40x1.5	703
LG180ZM/ZL	1 327.5	1 449.5	348.0	322.5	260	192	177.0	2xM40x1.5	733
LG200L	1 332.5	1 458.5	385.0	301.0	260	192	207.0	2xM50x1.5	783
LG225S	1 403.5	1 642.5	442.0	325.0	260	192	243.0	2xM50x1.5	856
LG225M	1 403.5	1 642.5	442.0	325.0	260	192	243.0	2xM50x1.5	845
LG225ZM	1 463.5	1 702.5	442.0	325.0	260	192	243.0	2xM50x1.5	903
LG250M	1 497.0	1 722.0	495.0	392.0	300	236	278.5	2xM63x1.5	947
LG250ZM	1 567.0	1 792.5	495.0	392.0	300	236	278.5	2xM63x1.5	1 050
K4-LGI280S	1 776.0	2 003.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 180
K4-LGI280M	1 776.0	2 003.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 190
K4-LGI280ZM	1 886.0	2 113.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 278

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Dimensions

Gearbox KA168 (3-stage), housing-flange-mounted design (C-type)

KA012



d	l9	M	t	u
100 *)	72	M24	106.4	28
110	73	M24	116.4	28

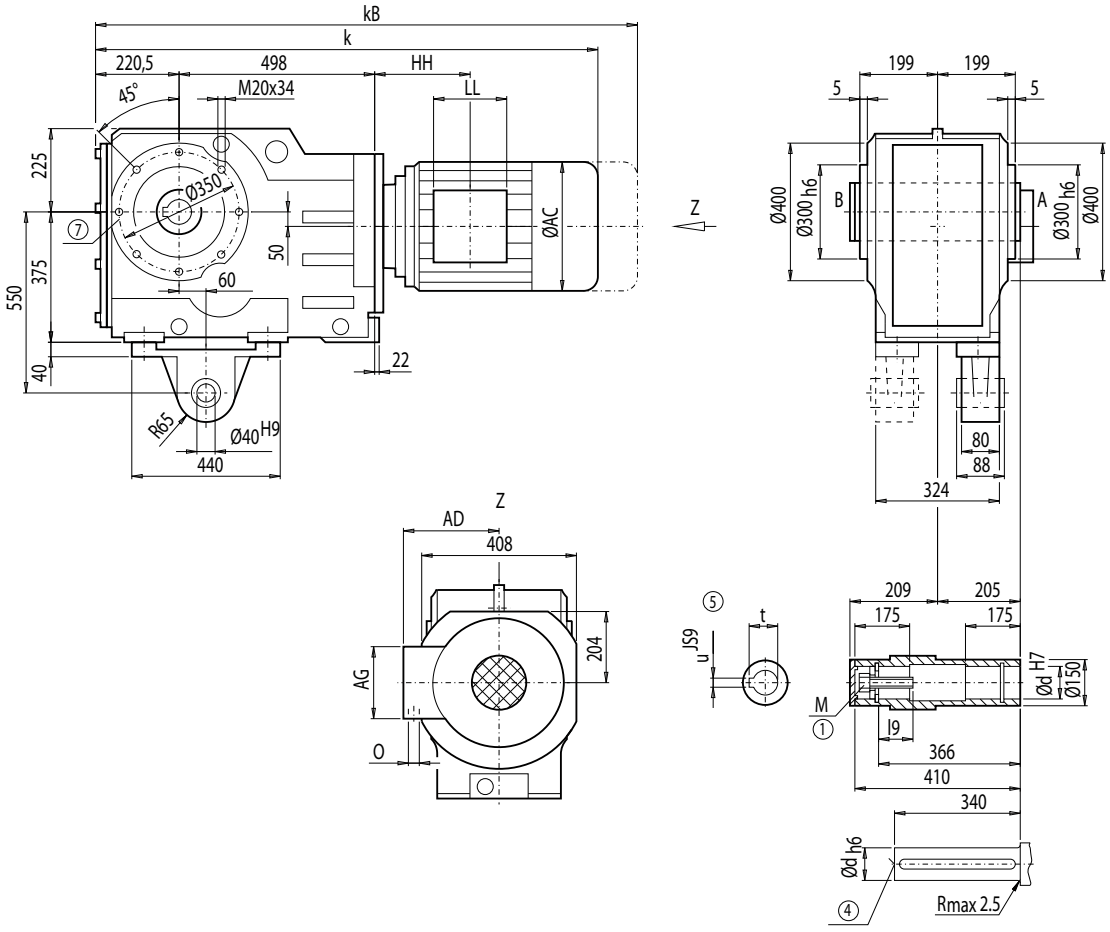
*) Preferred series

Motor	KA168 k	kB	AC	AD	AG	LL	HH	O	Weight KA168
LA132S/M	1 121.5	1 223.5	259.0	195.0	140	140	137.0	2xM32x1.5	483
LA132ZM	1 167.5	1 269.5	259.0	195.0	140	140	245.0	2xM32x1.5	504
LA160M/L	1 221.5	1 340.0	313.5	227.0	165	165	160.0	2xM40x1.5	517
LA160ZL	1 269.5	1 388.0	313.5	227.0	165	165	313.0	2xM40x1.5	556
LG180M/L	1 281.0	1 403.0	348.0	322.5	260	192	177.0	2xM40x1.5	613
LG180ZM/ZL	1 332.0	1 454.0	348.0	322.5	260	192	177.0	2xM40x1.5	643
LG200L	1 337.0	1 463.0	385.0	301.0	260	192	207.0	2xM50x1.5	693
LG225S	1 408.0	1 647.0	442.0	325.0	260	192	243.0	2xM50x1.5	766
LG225M	1 408.0	1 647.0	442.0	325.0	260	192	243.0	2xM50x1.5	754
LG225ZM	1 468.0	1 707.0	442.0	325.0	260	192	243.0	2xM50x1.5	712
LG250M	1 501.5	1 726.5	495.0	392.0	300	236	278.5	2xM63x1.5	856
LG250ZM	1 571.5	1 797.0	495.0	392.0	300	236	278.5	2xM63x1.5	959
K4-LGI280S	1 780.5	2 007.5	555.0	432.0	300	236	489.5	2xM63x1.5	1 087
K4-LGI280M	1 780.5	2 007.5	555.0	432.0	300	236	489.5	2xM63x1.5	1 099
K4-LGI280ZM	1 890.5	2 117.5	555.0	432.0	300	236	489.5	2xM63x1.5	1 187

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885

Gearbox KAD168 (3-stage), shaft-mounted design with torque arm

KAD012



d	l9	M	t	u
100 *)	72	M24	106.4	28
110	73	M24	116.4	28

*) Preferred series

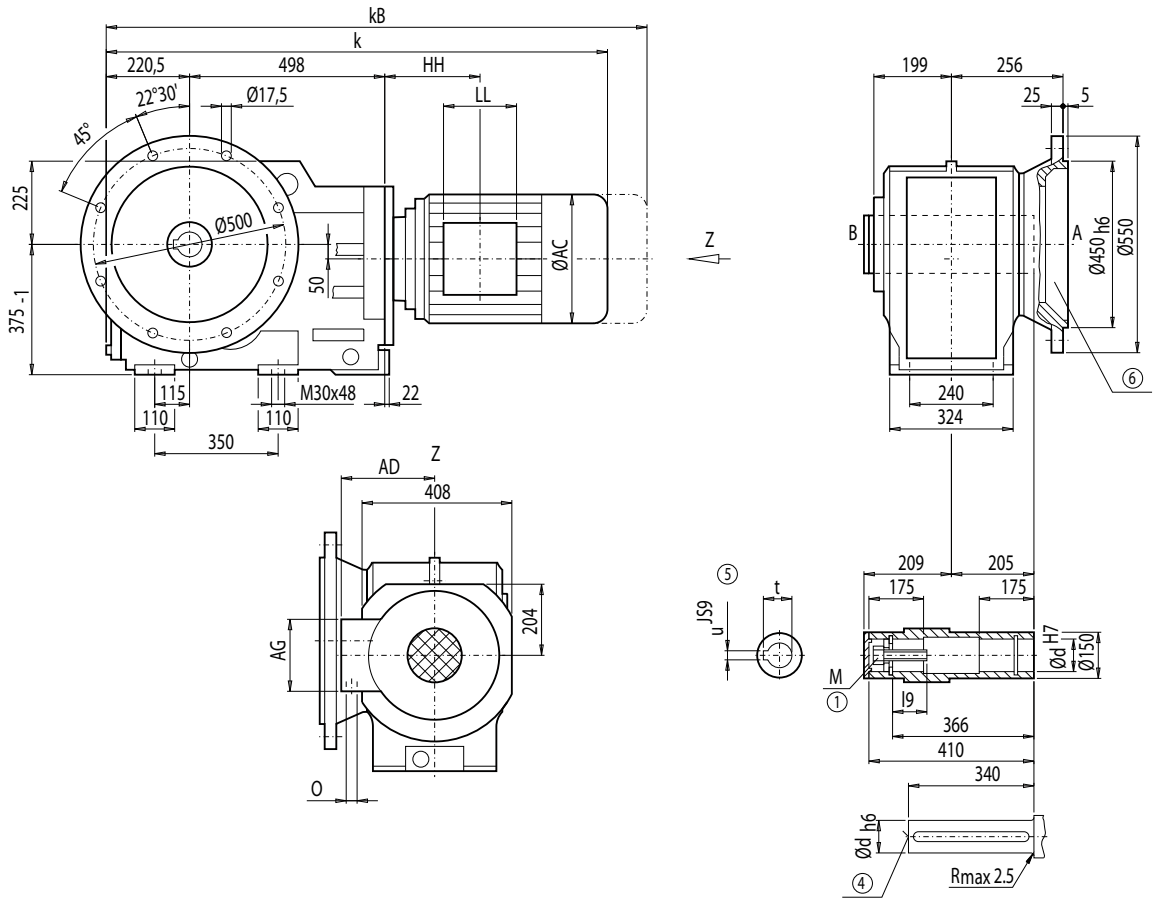
Motor	KAD168 k	kB	AC	AD	AG	LL	HH	O	Weight KAD168
LA132S/M	1 117.0	1 219.0	259.0	195.0	140	140	137.0	2xM32x1.5	519
LA132ZM	1 163.0	1 265.0	259.0	195.0	140	140	245.0	2xM32x1.5	541
LA160M/L	1 217.0	1 335.5	313.5	227.0	165	165	160.0	2xM40x1.5	553
LA160ZL	1 265.0	1 383.5	313.5	227.0	165	165	313.0	2xM40x1.5	592
LG180M/L	1 276.5	1 398.5	348.0	322.5	260	192	177.0	2xM40x1.5	649
LG180ZM/ZL	1 327.5	1 449.5	348.0	322.5	260	192	177.0	2xM40x1.5	679
LG200L	1 332.5	1 458.5	385.0	301.0	260	192	207.0	2xM50x1.5	729
LG225S	1 403.5	1 642.5	442.0	325.0	260	192	243.0	2xM50x1.5	802
LG225M	1 403.5	1 642.5	442.0	325.0	260	192	243.0	2xM50x1.5	791
LG225ZM	1 463.5	1 702.5	442.0	325.0	260	192	243.0	2xM50x1.5	851
LG250M	1 497.0	1 722.0	495.0	392.0	300	236	278.5	2xM63x1.5	893
LG250ZM	1 567.0	1 792.5	495.0	392.0	300	236	278.5	2xM63x1.5	996
K4-LGI280S	1 776.0	2 003.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 126
K4-LGI280M	1 776.0	2 003.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 136
K4-LGI280ZM	1 886.0	2 113.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 224

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 4/218

Dimensions

Gearbox KAF168 (3-stage), flange-mounted design

KAF012



d	l9	M	t	u
100 *)	72	M24	106.4	28
110	73	M24	116.4	28

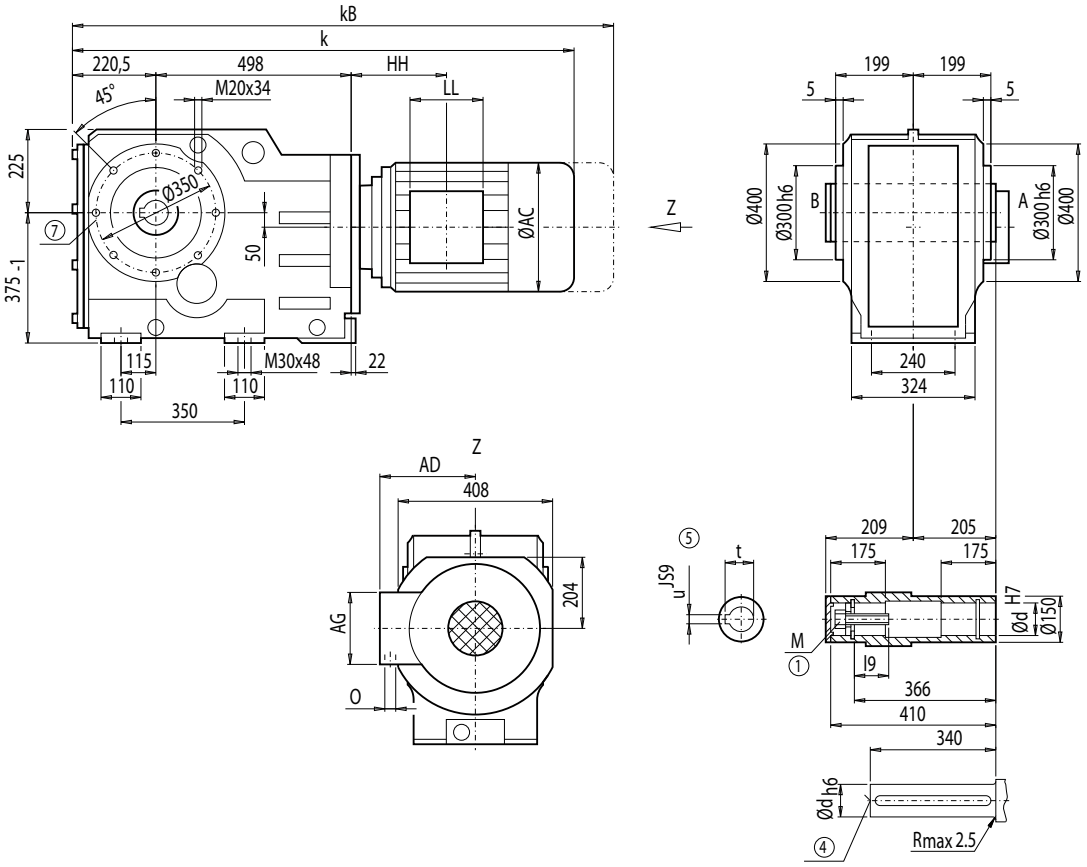
*) Preferred series

Motor	KAF168 k	kB	AC	AD	AG	LL	HH	O	Weight KAF168
LA132S/M	1 117.0	1 219.0	259.0	195.0	140	140	137.0	2xM32x1.5	528
LA132ZM	1 163.0	1 265.0	259.0	195.0	140	140	245.0	2xM32x1.5	549
LA160M/L	1 217.0	1 335.5	313.5	227.0	165	165	160.0	2xM40x1.5	562
LA160ZL	1 265.0	1 383.5	313.5	227.0	165	165	313.0	2xM40x1.5	601
LG180M/L	1 276.5	1 398.5	348.0	322.5	260	192	177.0	2xM40x1.5	658
LG180ZM/ZL	1 327.5	1 449.5	348.0	322.5	260	192	177.0	2xM40x1.5	688
LG200L	1 332.5	1 458.5	385.0	301.0	260	192	207.0	2xM50x1.5	738
LG225S	1 403.5	1 642.5	442.0	325.0	260	192	243.0	2xM50x1.5	811
LG225M	1 403.5	1 642.5	442.0	325.0	260	192	243.0	2xM50x1.5	800
LG225ZM	1 463.5	1 702.5	442.0	325.0	260	192	243.0	2xM50x1.5	858
LG250M	1 497.0	1 722.0	495.0	392.0	300	236	278.5	2xM63x1.5	902
LG250ZM	1 567.0	1 792.5	495.0	392.0	300	236	278.5	2xM63x1.5	1 005
K4-LGI280S	1 776.0	2 003.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 135
K4-LGI280M	1 776.0	2 003.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 145
K4-LGI280ZM	1 886.0	2 113.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 233

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Gearbox KAZ168 (3-stage), shaft-mounted design with housing flange (C-type)

KAZ012



d	l9	M	t	u
100 *)	72	M24	106.4	28
110	73	M24	116.4	28

*) Preferred series

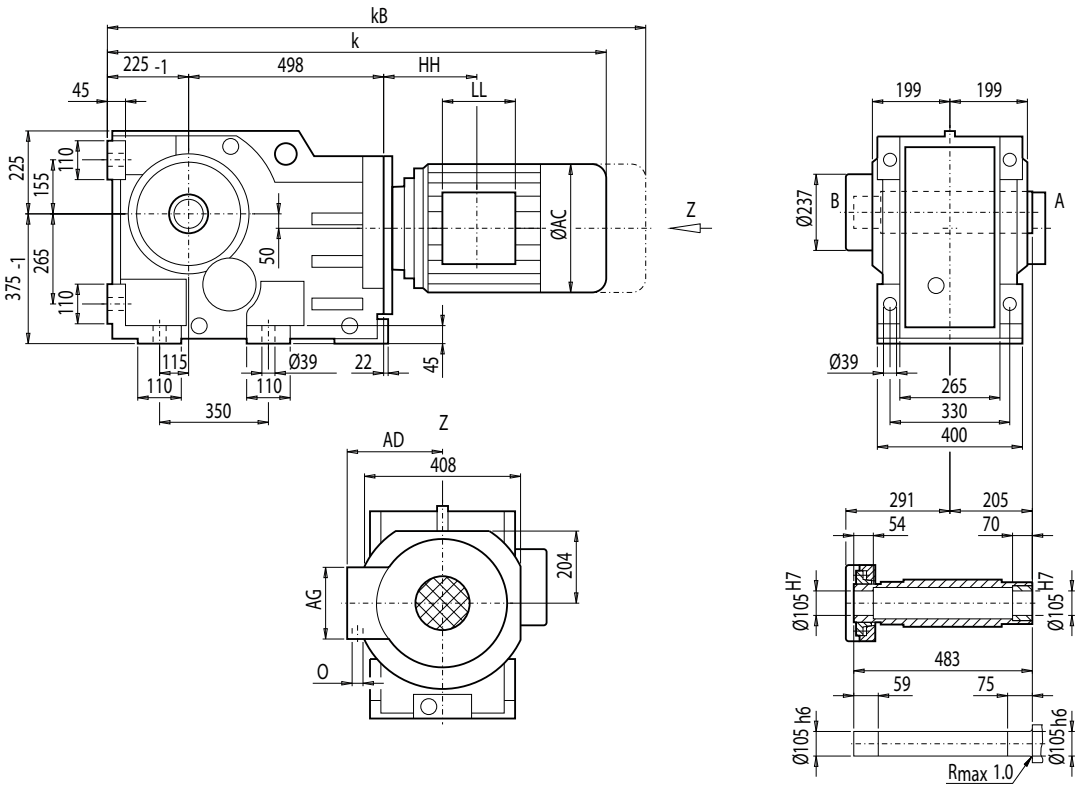
	KAZ168								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**KAZ168**
LA132S/M	1 117.0	1 219.0	259.0	195.0	140	140	137.0	2xM32x1.5	496
LA132ZM	1 163.0	1 265.0	259.0	195.0	140	140	245.0	2xM32x1.5	517
LA160M/L	1 217.0	1 335.5	313.5	227.0	165	165	160.0	2xM40x1.5	530
LA160ZL	1 265.0	1 383.5	313.5	227.0	165	165	313.0	2xM40x1.5	569
LG180M/L	1 276.5	1 398.5	348.0	322.5	260	192	177.0	2xM40x1.5	625
LG180ZM/ZL	1 327.5	1 449.5	348.0	322.5	260	192	177.0	2xM40x1.5	655
LG200L	1 332.5	1 458.5	385.0	301.0	260	192	207.0	2xM50x1.5	705
LG225S	1 403.5	1 642.5	442.0	325.0	260	192	243.0	2xM50x1.5	778
LG225M	1 403.5	1 642.5	442.0	325.0	260	192	243.0	2xM50x1.5	767
LG225ZM	1 463.5	1 702.5	442.0	325.0	260	192	243.0	2xM50x1.5	825
LG250M	1 497.0	1 722.0	495.0	392.0	300	236	278.5	2xM63x1.5	869
LG250ZM	1 567.0	1 792.5	495.0	392.0	300	236	278.5	2xM63x1.5	972
K4-LGI280S	1 776.0	2 003.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 102
K4-LGI280M	1 776.0	2 003.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 112
K4-LGI280ZM	1 886.0	2 113.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 200

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 4/218

Dimensions

Gearbox KAS168 (3-stage), shaft-mounted design with shrink disk

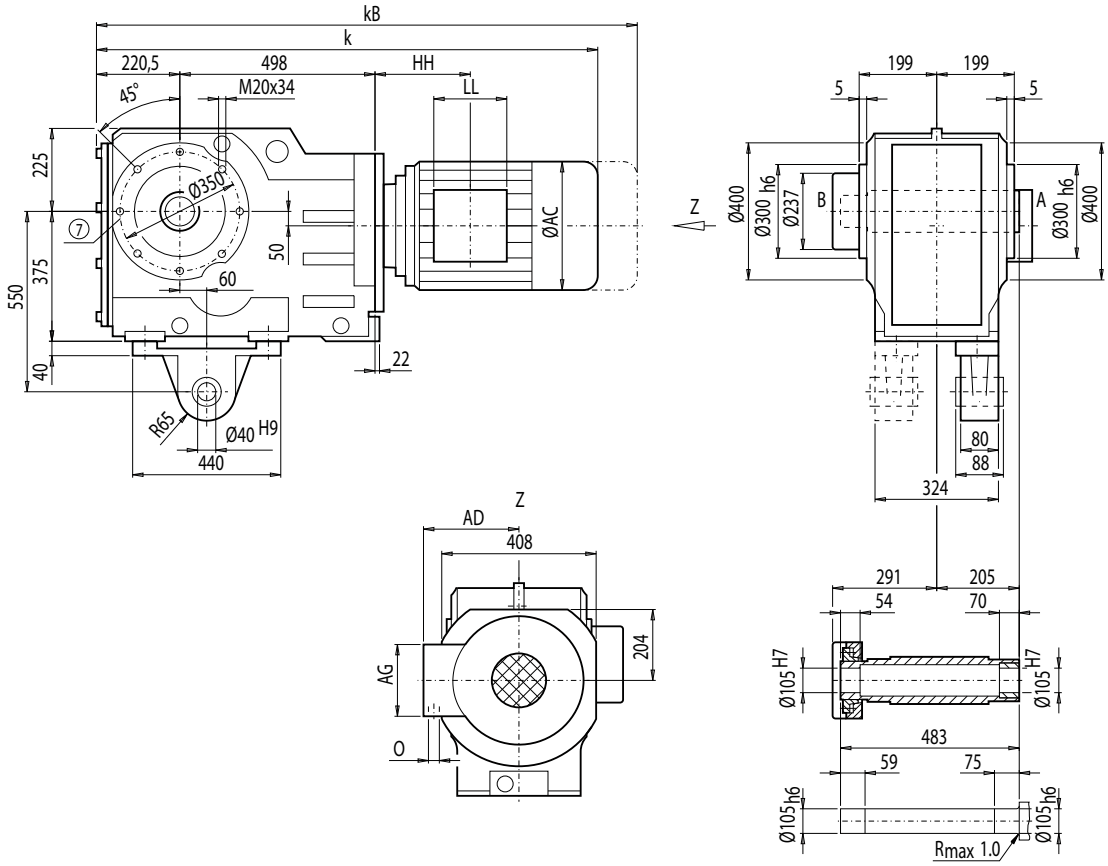
KAS012



Motor	KAS168 k	kB	AC	AD	AG	LL	HH	O	Weight KAS168
LA132S/M	1 121.5	1 223.5	259.0	195.0	140	140	137.0	2xM32x1.5	493
LA132ZM	1 167.5	1 269.5	259.0	195.0	140	140	245.0	2xM32x1.5	515
LA160M/L	1 221.5	1 340.0	313.5	227.0	165	165	160.0	2xM40x1.5	527
LA160ZL	1 269.5	1 388.0	313.5	227.0	165	165	313.0	2xM40x1.5	566
LG180M/L	1 281.0	1 403.0	348.0	322.5	260	192	177.0	2xM40x1.5	623
LG180ZM/ZL	1 332.0	1 454.0	348.0	322.5	260	192	177.0	2xM40x1.5	653
LG200L	1 337.0	1 463.0	385.0	301.0	260	192	207.0	2xM50x1.5	703
LG225S	1 408.0	1 647.0	442.0	325.0	260	192	243.0	2xM50x1.5	776
LG225M	1 408.0	1 647.0	442.0	325.0	260	192	243.0	2xM50x1.5	764
LG225ZM	1 468.0	1 707.0	442.0	325.0	260	192	243.0	2xM50x1.5	822
LG250M	1 501.5	1 726.5	495.0	392.0	300	236	278.5	2xM63x1.5	866
LG250ZM	1 571.5	1 797.0	495.0	392.0	300	236	278.5	2xM63x1.5	969
K4-LGI280S	1 780.5	2 007.5	555.0	432.0	300	236	489.5	2xM63x1.5	1 097
K4-LGI280M	1 780.5	2 007.5	555.0	432.0	300	236	489.5	2xM63x1.5	1 109
K4-LGI280ZM	1 890.5	2 117.5	555.0	432.0	300	236	489.5	2xM63x1.5	1 197

Gearbox KADS168 (3-stage), shaft-mounted design with torque arm and shrink disk

KADS012



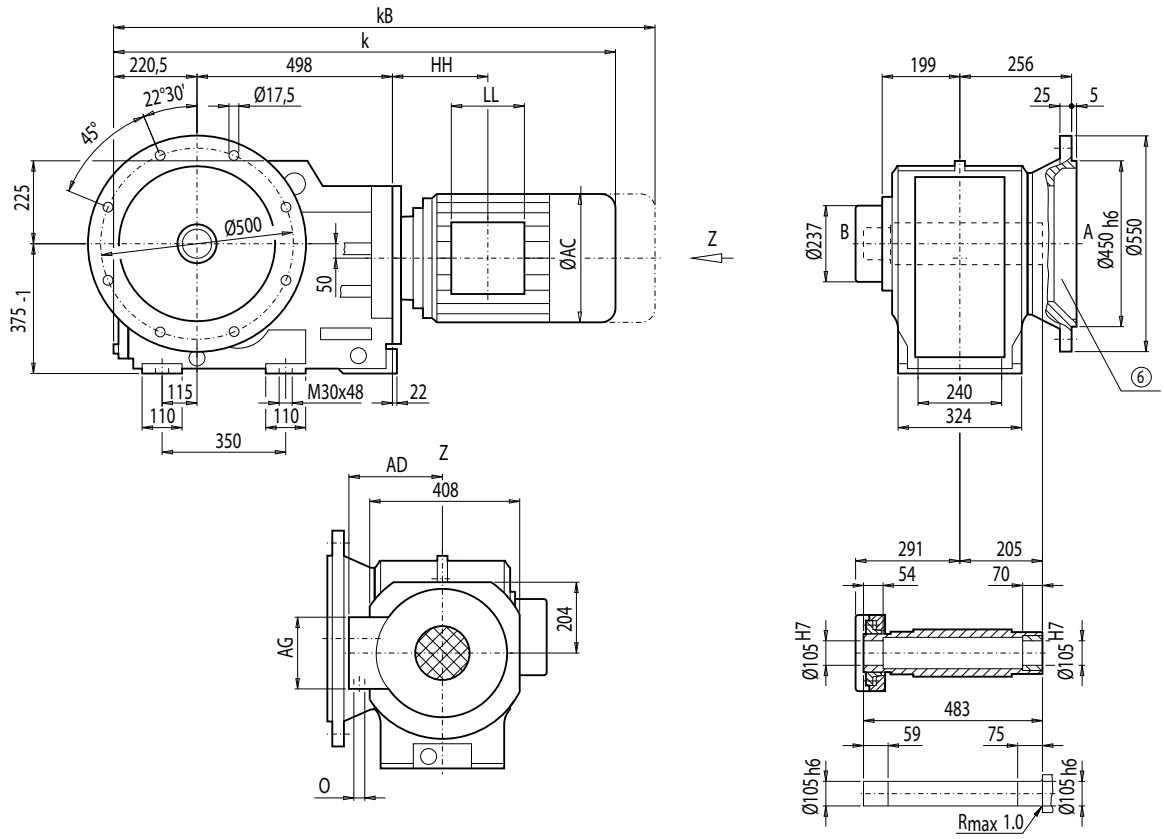
Motor	KADS168 k	kB	AC	AD	AG	LL	HH	O	Weight KADS168
LA132S/M	1 117.0	1 219.0	259.0	195.0	140	140	137.0	2xM32x1.5	530
LA132ZM	1 163.0	1 265.0	259.0	195.0	140	140	245.0	2xM32x1.5	551
LA160M/L	1 217.0	1 335.5	313.5	227.0	165	165	160.0	2xM40x1.5	564
LA160ZL	1 265.0	1 383.5	313.5	227.0	165	165	313.0	2xM40x1.5	603
LG180M/L	1 276.5	1 398.5	348.0	322.5	260	192	177.0	2xM40x1.5	659
LG180ZM/ZL	1 327.5	1 449.5	348.0	322.5	260	192	177.0	2xM40x1.5	689
LG200L	1 332.5	1 458.5	385.0	301.0	260	192	207.0	2xM50x1.5	739
LG225S	1 403.5	1 642.5	442.0	325.0	260	192	243.0	2xM50x1.5	812
LG225M	1 403.5	1 642.5	442.0	325.0	260	192	243.0	2xM50x1.5	801
LG225ZM	1 463.5	1 702.5	442.0	325.0	260	192	243.0	2xM50x1.5	859
LG250M	1 497.0	1 722.0	495.0	392.0	300	236	278.5	2xM63x1.5	903
LG250ZM	1 567.0	1 792.5	495.0	392.0	300	236	278.5	2xM63x1.5	1 006
K4-LGI280S	1 776.0	2 003.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 136
K4-LGI280M	1 776.0	2 003.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 146
K4-LGI280ZM	1 886.0	2 113.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 234

⑦ For note, see page 4/218

Dimensions

Gearbox KAFS168 (3-stage), flange-mounted design and shrink disk

KAFS012

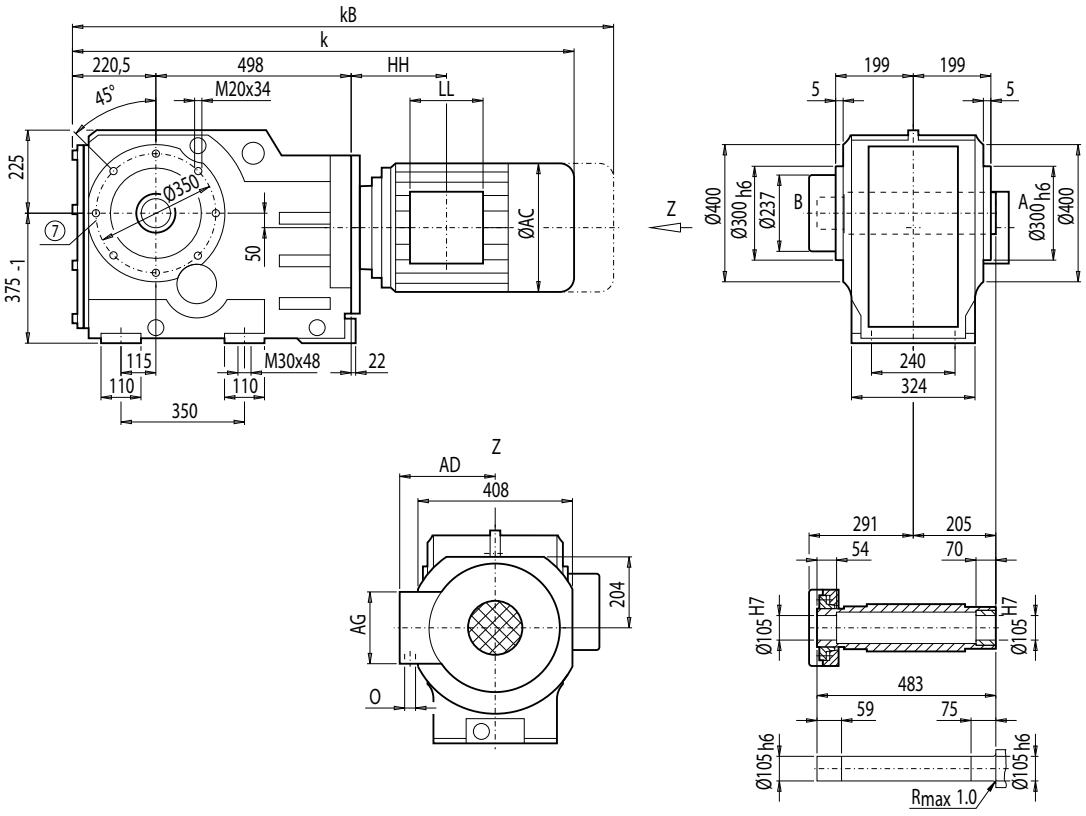


Motor	KAFS168 k	kB	AC	AD	AG	LL	HH	O	Weight KAFS168
LA132S/M	1 117.0	1 219.0	259.0	195.0	140	140	137.0	2xM32x1.5	538
LA132ZM	1 163.0	1 265.0	259.0	195.0	140	140	245.0	2xM32x1.5	560
LA160M/L	1 217.0	1 335.5	313.5	227.0	165	165	160.0	2xM40x1.5	572
LA160ZL	1 265.0	1 383.5	313.5	227.0	165	165	313.0	2xM40x1.5	611
LG180M/L	1 276.5	1 398.5	348.0	322.5	260	192	177.0	2xM40x1.5	668
LG180ZM/ZL	1 327.5	1 449.5	348.0	322.5	260	192	177.0	2xM40x1.5	698
LG200L	1 332.5	1 458.5	385.0	301.0	260	192	207.0	2xM50x1.5	748
LG225S	1 403.5	1 642.5	442.0	325.0	260	192	243.0	2xM50x1.5	821
LG225M	1 403.5	1 642.5	442.0	325.0	260	192	243.0	2xM50x1.5	810
LG225ZM	1 463.5	1 702.5	442.0	325.0	260	192	243.0	2xM50x1.5	868
LG250M	1 497.0	1 722.0	495.0	392.0	300	236	278.5	2xM63x1.5	912
LG250ZM	1 567.0	1 792.5	495.0	392.0	300	236	278.5	2xM63x1.5	1 015
K4-LGI280S	1 776.0	2 003.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 145
K4-LGI280M	1 776.0	2 003.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 155
K4-LGI280ZM	1 886.0	2 113.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 243

⑥ For note, see page 4/217

Gearbox KAZS168 (3-stage), shaft-mounted design with housing flange (C-type) and shrink disk

KAZS012



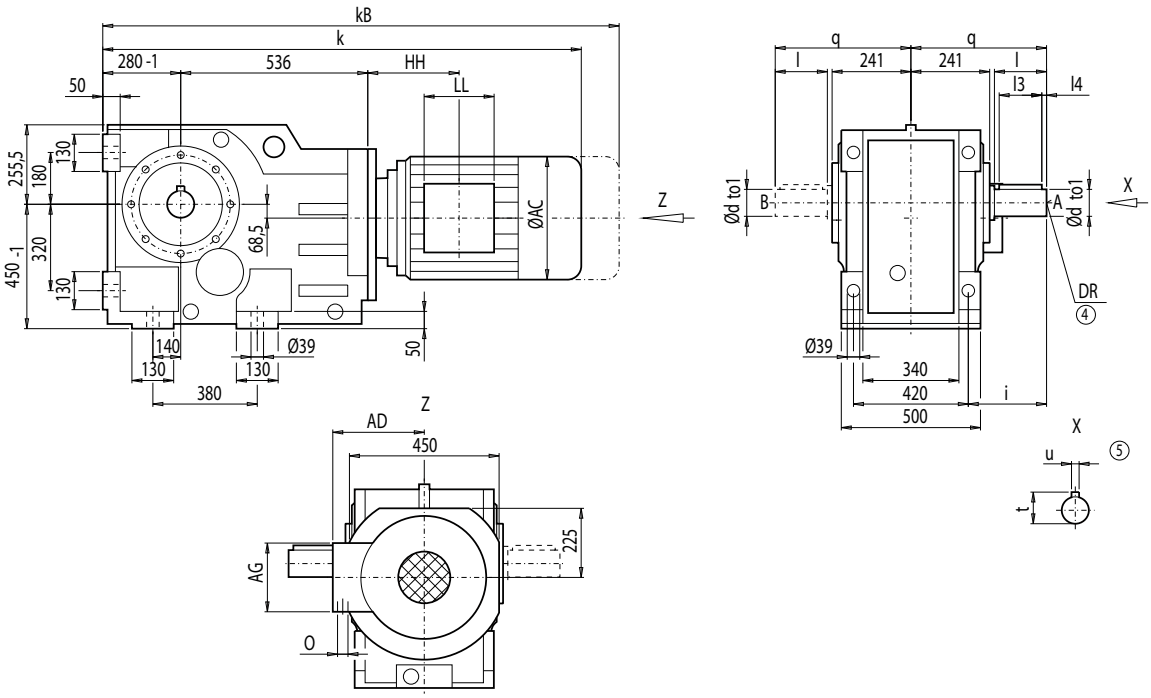
Motor	KAZS168 k	kB	AC	AD	AG	LL	HH	O	Weight KAZS168
LA132S/M	1 117.0	1 219.0	259.0	195.0	140	140	137.0	2xM32x1.5	506
LA132ZM	1 163.0	1 265.0	259.0	195.0	140	140	245.0	2xM32x1.5	527
LA160M/L	1 217.0	1 335.5	313.5	227.0	165	165	160.0	2xM40x1.5	540
LA160ZL	1 265.0	1 383.5	313.5	227.0	165	165	313.0	2xM40x1.5	579
LG180M/L	1 276.5	1 398.5	348.0	322.5	260	192	177.0	2xM40x1.5	636
LG180ZM/ZL	1 327.5	1 449.5	348.0	322.5	260	192	177.0	2xM40x1.5	666
LG200L	1 332.5	1 458.5	385.0	301.0	260	192	207.0	2xM50x1.5	716
LG225S	1 403.5	1 642.5	442.0	325.0	260	192	243.0	2xM50x1.5	789
LG225M	1 403.5	1 642.5	442.0	325.0	260	192	243.0	2xM50x1.5	778
LG225ZM	1 463.5	1 702.5	442.0	325.0	260	192	243.0	2xM50x1.5	836
LG250M	1 497.0	1 722.0	495.0	392.0	300	236	278.5	2xM63x1.5	880
LG250ZM	1 567.0	1 792.5	495.0	392.0	300	236	278.5	2xM63x1.5	983
K4-LGI280S	1 776.0	2 003.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 113
K4-LGI280M	1 776.0	2 003.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 123
K4-LGI280ZM	1 886.0	2 113.0	555.0	432.0	300	236	489.5	2xM63x1.5	1 211

⑦ For note, see page 4/218

Dimensions

Gearbox K188 (3-stage), housing-flange-mounted design (C-type)

K012



d	to1	l	l3	l4	t	u	i	q	DR
120 *)	m6	210	180	15	127	32	250	460	M24x50
140	m6	250	220	10	148	36	290	500	

*) Preferred series

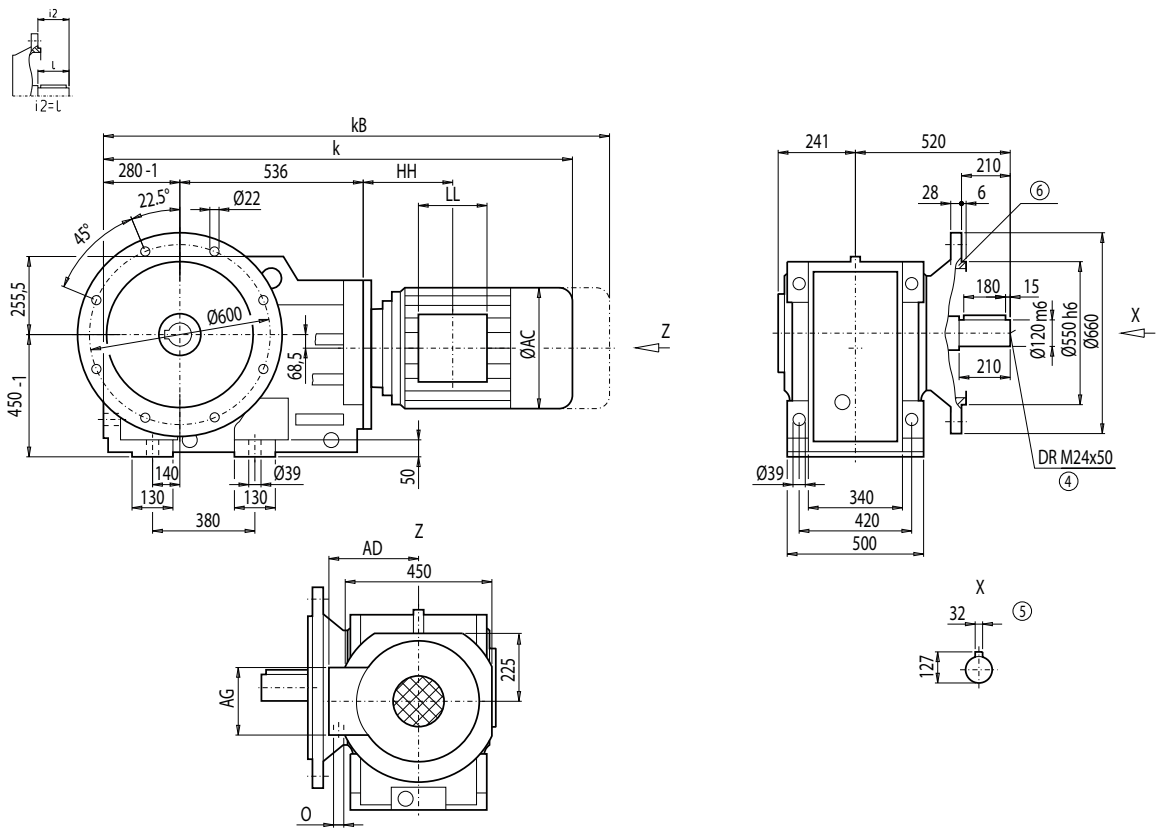
	K188								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**K188**
LA132S/M	1 200.0	1 302.0	259.0	195.0	140	140	122.5	2xM32x1.5	777
LA132ZM	1 246.0	1 348.0	259.0	195.0	140	140	230.5	2xM32x1.5	799
LA160M/L	1 300.0	1 418.5	313.5	227.0	165	165	145.5	2xM40x1.5	811
LA160ZL	1 348.0	1 466.5	313.5	227.0	165	165	298.5	2xM40x1.5	850
LG180M/L	1 359.5	1 481.5	348.0	322.5	260	192	162.5	2xM40x1.5	907
LG180ZM/ZL	1 410.5	1 532.5	348.0	322.5	260	192	162.5	2xM40x1.5	937
LG200L	1 415.5	1 541.5	385.0	301.0	260	192	192.5	2xM50x1.5	987
LG225S	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	1 059
LG225M	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	1 047
LG225ZM	1 546.5	1 785.5	442.0	325.0	260	192	228.5	2xM50x1.5	1 105
LG250M	1 580.0	1 805.0	495.0	392.0	300	236	264.0	2xM63x1.5	1 149
LG250ZM	1 650.0	1 875.5	495.0	392.0	300	236	264.0	2xM63x1.5	1 252
K4-LGI280S	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 278
K4-LGI280M	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 384
K4-LGI280ZM	1 969.5	2 196.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 472
K2-LGI315S/M	2 047.5	2 312.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 513
K2-LGI315ZM	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 668
K2-LGI315L	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 808
K2-LGI315ZL	2 347.5	2 612.5	610.0	500.0	380	307	584.5	2xM63x1.5	2 008

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox KF188 (3-stage), flange-mounted design (A-type)

KF012



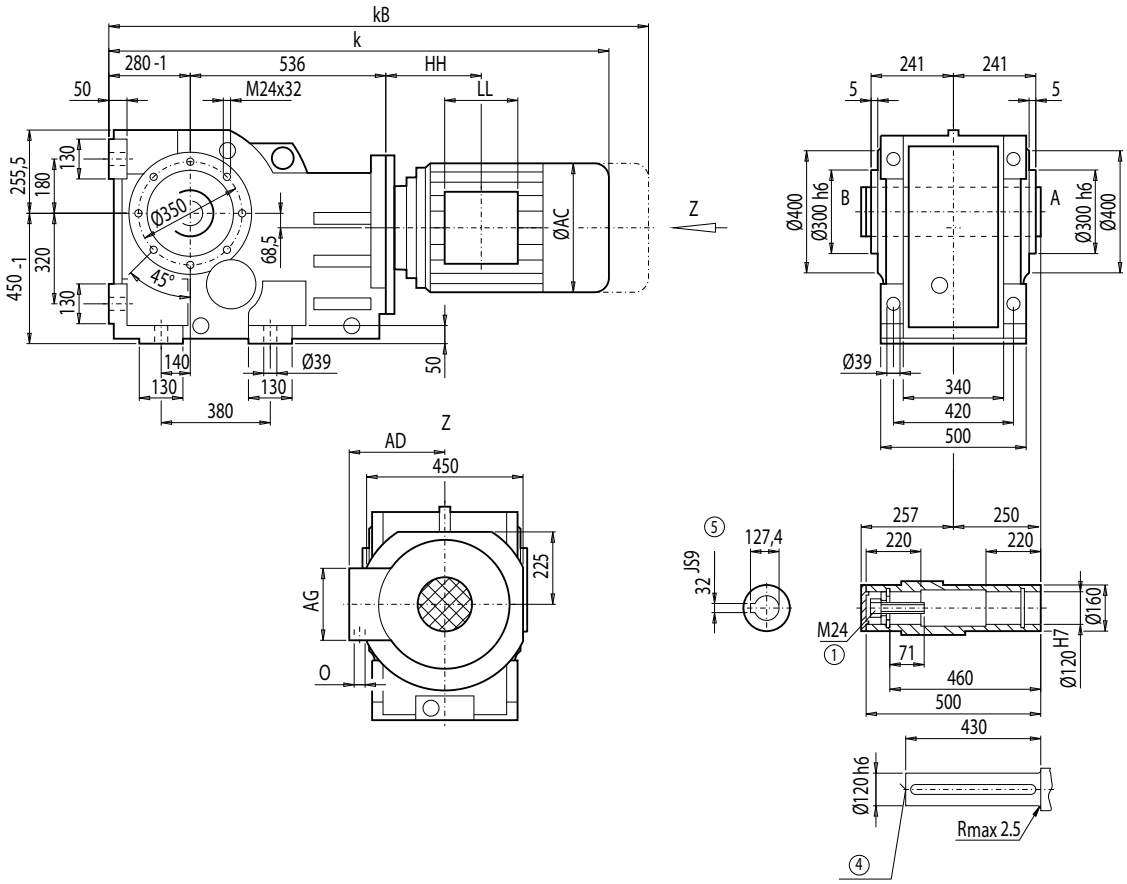
Motor	KF188 k	kB	AC	AD	AG	LL	HH	O	Weight KF188
LA132S/M	1 200.0	1 302.0	259.0	195.0	140	140	122.5	2xM32x1.5	832
LA132ZM	1 246.0	1 348.0	259.0	195.0	140	140	230.5	2xM32x1.5	853
LA160M/L	1 300.0	1 418.5	313.5	227.0	165	165	145.5	2xM40x1.5	866
LA160ZL	1 348.0	1 466.5	313.5	227.0	165	165	298.5	2xM40x1.5	905
LG180M/L	1 359.5	1 481.5	348.0	322.5	260	192	162.5	2xM40x1.5	961
LG180ZM/ZL	1 410.5	1 532.5	348.0	322.5	260	192	162.5	2xM40x1.5	991
LG200L	1 415.5	1 541.5	385.0	301.0	260	192	192.5	2xM50x1.5	1 041
LG225S	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	1 113
LG225M	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	1 101
LG225ZM	1 546.5	1 785.5	442.0	325.0	260	192	228.5	2xM50x1.5	1 159
LG250M	1 580.0	1 805.0	495.0	392.0	300	236	264.0	2xM63x1.5	1 203
LG250ZM	1 650.0	1 875.5	495.0	392.0	300	236	264.0	2xM63x1.5	1 306
K4-LG280S	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 332
K4-LG280M	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 438
K4-LG280ZM	1 969.5	2 196.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 526
K2-LGI315S/M	2 047.5	2 312.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 567
K2-LGI315ZM	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 722
K4-LG315L	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 862
K4-LG315ZL	2 347.5	2 612.5	610.0	500.0	380	307	584.5	2xM63x1.5	2 062

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Dimensions

Gearbox KA188 (3-stage), housing-flange-mounted design (C-type)

KA012

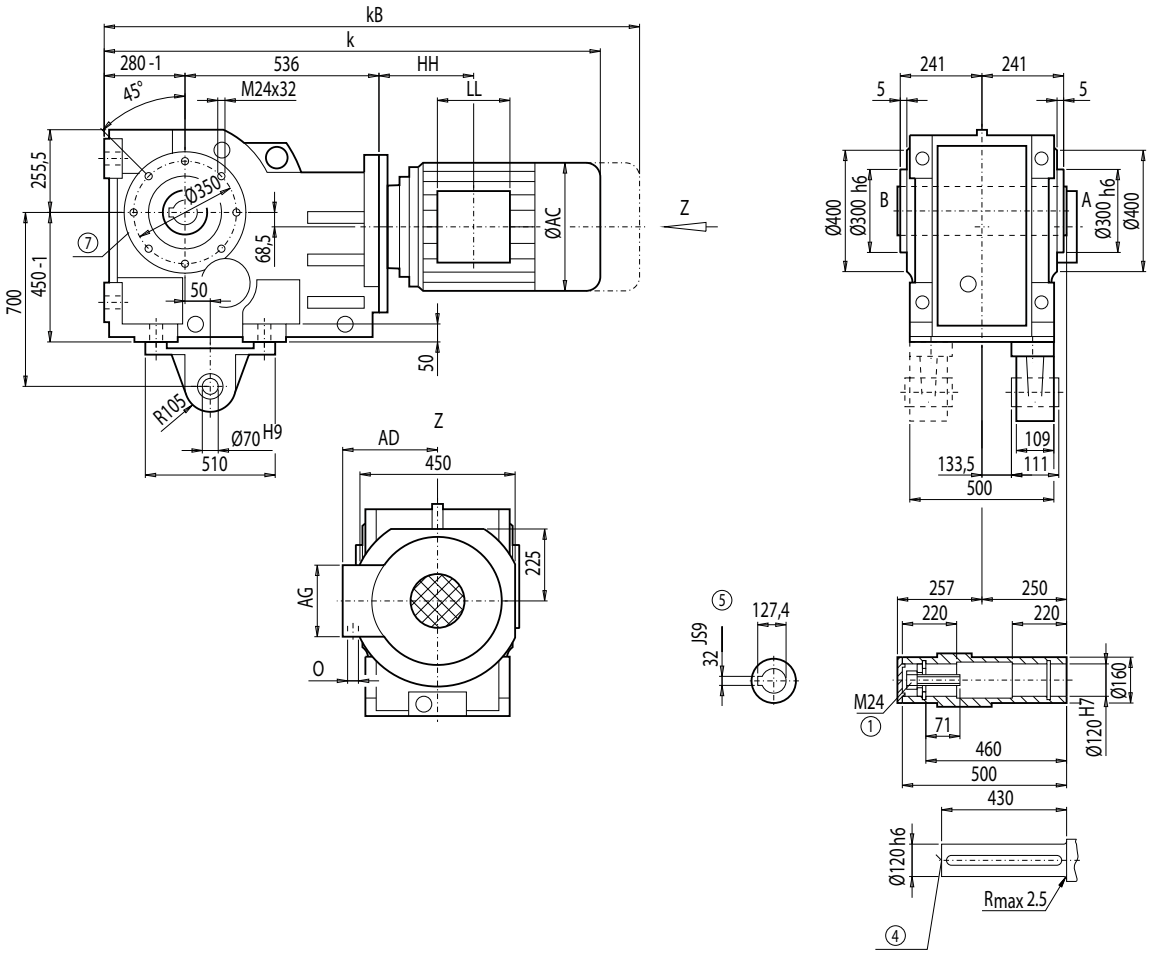


Motor	KA188 k	kB	AC	AD	AG	LL	HH	O	Weight KA188
LA132S/M	1 200.0	1 302.0	259.0	195.0	140	140	122.5	2xM32x1.5	674
LA132ZM	1 246.0	1 348.0	259.0	195.0	140	140	230.5	2xM32x1.5	695
LA160M/L	1 300.0	1 418.5	313.5	227.0	165	165	145.5	2xM40x1.5	707
LA160ZL	1 348.0	1 466.5	313.5	227.0	165	165	298.5	2xM40x1.5	746
LG180M/L	1 359.5	1 481.5	348.0	322.5	260	192	162.5	2xM40x1.5	803
LG180ZM/ZL	1 410.5	1 532.5	348.0	322.5	260	192	162.5	2xM40x1.5	833
LG200L	1 415.5	1 541.5	385.0	301.0	260	192	192.5	2xM50x1.5	883
LG225S	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	955
LG225M	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	943
LG225ZM	1 546.5	1 785.5	442.0	325.0	260	192	228.5	2xM50x1.5	1 001
LG250M	1 580.0	1 805.0	495.0	392.0	300	236	264.0	2xM63x1.5	1 045
LG250ZM	1 650.0	1 875.5	495.0	392.0	300	236	264.0	2xM63x1.5	1 148
K4-LG280S	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 174
K4-LG280M	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 280
K4-LG280ZM	1 969.5	2 196.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 368
K2-LGI315S/M	2 047.5	2 312.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 409
K2-LGI315ZM	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 564
K4-LG315L	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 704
K4-LG315ZL	2 347.5	2 612.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 904

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885

Gearbox KAD188 (3-stage), shaft-mounted design with torque arm

KAD012



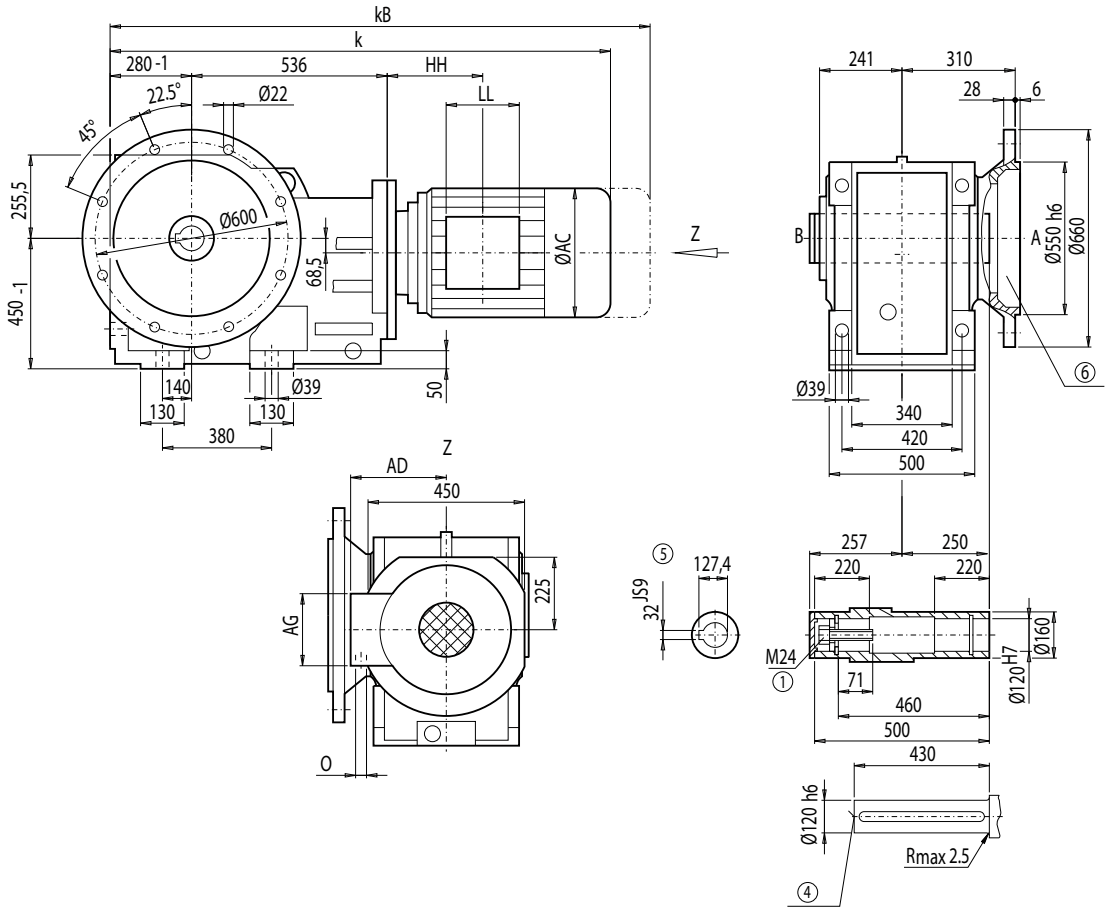
Motor	KAD188 k	kB	AC	AD	AG	LL	HH	O	Weight KAD188
LA132S/M	1 200.0	1 302.0	259.0	195.0	140	140	122.5	2xM32x1.5	697
LA132ZM	1 246.0	1 348.0	259.0	195.0	140	140	230.5	2xM32x1.5	718
LA160M/L	1 300.0	1 418.5	313.5	227.0	165	165	145.5	2xM40x1.5	731
LA160ZL	1 348.0	1 466.5	313.5	227.0	165	165	298.5	2xM40x1.5	770
LG180M/L	1 359.5	1 481.5	348.0	322.5	260	192	162.5	2xM40x1.5	826
LG180ZM/ZL	1 410.5	1 532.5	348.0	322.5	260	192	162.5	2xM40x1.5	856
LG200L	1 415.5	1 541.5	385.0	301.0	260	192	192.5	2xM50x1.5	906
LG225S	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	978
LG225M	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	966
LG225ZM	1 546.5	1 785.5	442.0	325.0	260	192	228.5	2xM50x1.5	1 024
LG250M	1 580.0	1 805.0	495.0	392.0	300	236	264.0	2xM63x1.5	1 068
LG250ZM	1 650.0	1 875.5	495.0	392.0	300	236	264.0	2xM63x1.5	1 171
K4-LG280S	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 197
K4-LG280M	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 303
K4-LG280ZM	1 969.5	2 196.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 391
K2-LGI315S/M	2 047.5	2 312.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 432
K2-LGI315ZM	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 587
K4-LG315L	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 727
K4-LG315ZL	2 347.5	2 612.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 927

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 4/218

Dimensions

Gearbox KAF188 (3-stage), flange-mounted design

KAF012

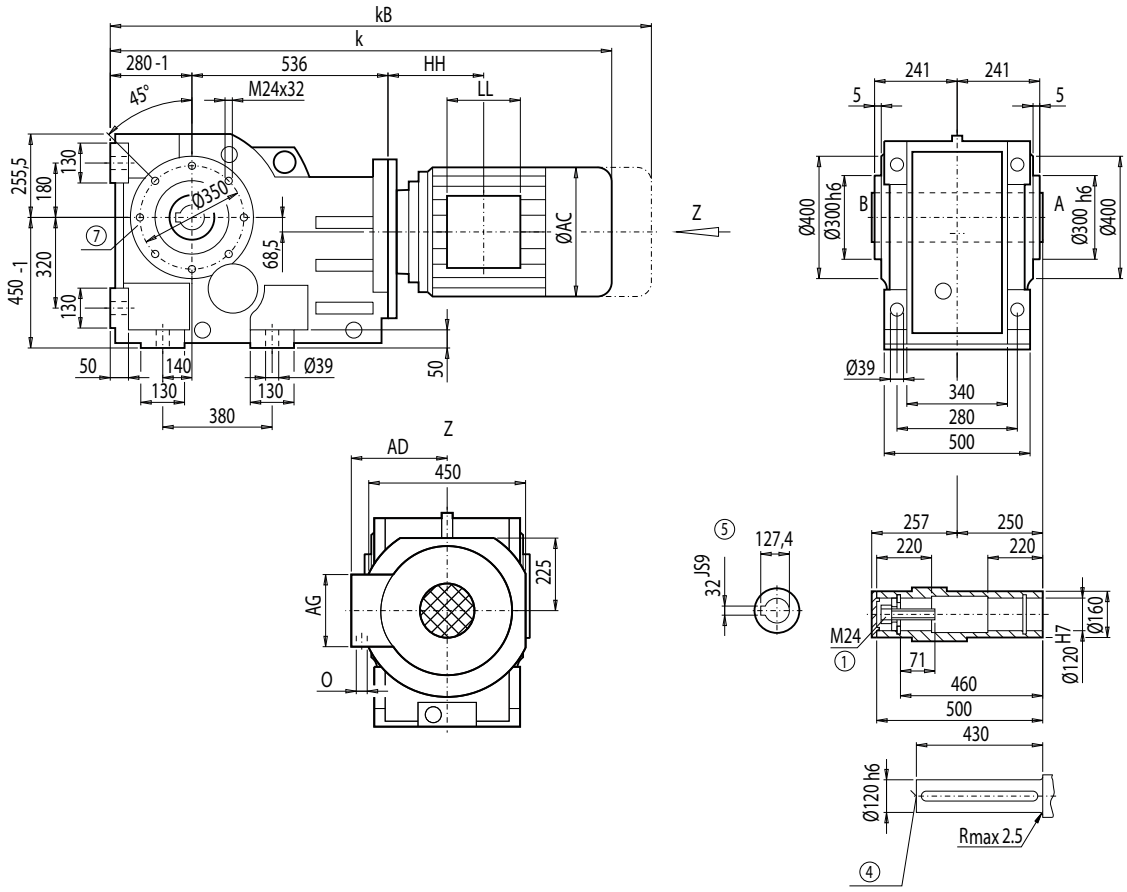


Motor	KAF188 k	kB	AC	AD	AG	LL	HH	O	Weight KAF188
LA132S/M	1 200.0	1 302.0	259.0	195.0	140	140	122.5	2xM32x1.5	706
LA132ZM	1 246.0	1 348.0	259.0	195.0	140	140	230.5	2xM32x1.5	727
LA160M/L	1 300.0	1 418.5	313.5	227.0	165	165	145.5	2xM40x1.5	740
LA160ZL	1 348.0	1 466.5	313.5	227.0	165	165	298.5	2xM40x1.5	779
LG180M/L	1 359.5	1 481.5	348.0	322.5	260	192	162.5	2xM40x1.5	835
LG180ZM/ZL	1 410.5	1 532.5	348.0	322.5	260	192	162.5	2xM40x1.5	865
LG200L	1 415.5	1 541.5	385.0	301.0	260	192	192.5	2xM50x1.5	915
LG225S	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	987
LG225M	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	975
LG225ZM	1 546.5	1 785.5	442.0	325.0	260	192	228.5	2xM50x1.5	1 033
LG250M	1 580.0	1 805.0	495.0	392.0	300	236	264.0	2xM63x1.5	1 077
LG250ZM	1 650.0	1 875.5	495.0	392.0	300	236	264.0	2xM63x1.5	1 180
K4-LG280S	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 206
K4-LG280M	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 312
K4-LG280ZM	1 969.5	2 196.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 400
K4-LG315S/M	2 047.5	2 312.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 441
K4-LG315ZM	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 596
K4-LG315L	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 736
K4-LG315ZL	2 347.5	2 612.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 936

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885 ⑥ For note, see page 4/217

Gearbox KAZ188 (3-stage), shaft-mounted design with housing flange (C-type)

KAZ012



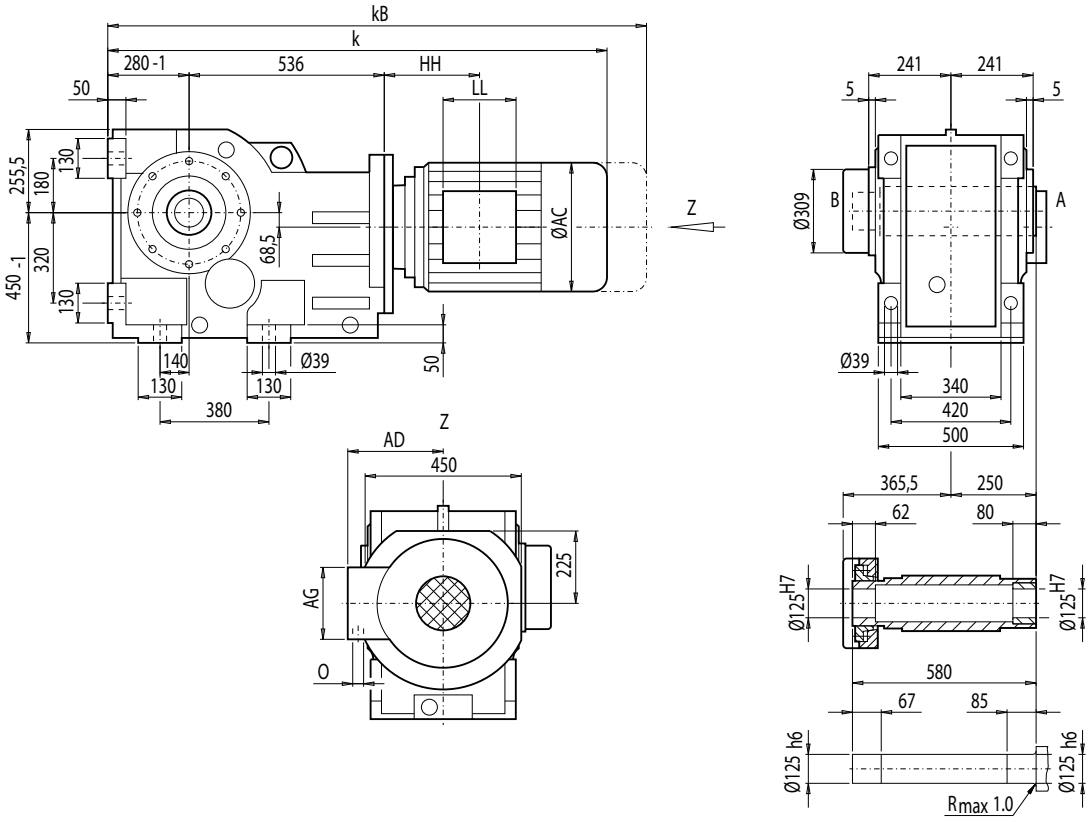
Motor	KAZ188 k	kB	AC	AD	AG	LL	HH	O	Weight KAZ188
LA132S/M	1 200.0	1 302.0	259.0	195.0	140	140	122.5	2xM32x1.5	674
LA132ZM	1 246.0	1 348.0	259.0	195.0	140	140	230.5	2xM32x1.5	695
LA160M/L	1 300.0	1 418.5	313.5	227.0	165	165	145.5	2xM40x1.5	707
LA160ZL	1 348.0	1 466.5	313.5	227.0	165	165	298.5	2xM40x1.5	746
LG180M/L	1 359.5	1 481.5	348.0	322.5	260	192	162.5	2xM40x1.5	803
LG180ZM/ZL	1 410.5	1 532.5	348.0	322.5	260	192	162.5	2xM40x1.5	833
LG200L	1 415.5	1 541.5	385.0	301.0	260	192	192.5	2xM50x1.5	883
LG225S	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	954
LG225M	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	943
LG225ZM	1 546.5	1 785.5	442.0	325.0	260	192	228.5	2xM50x1.5	1 001
LG250M	1 580.0	1 805.0	495.0	392.0	300	236	264.0	2xM63x1.5	1 045
LG250ZM	1 650.0	1 875.5	495.0	392.0	300	236	264.0	2xM63x1.5	1 148
K4-LG280S	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 174
K4-LG280M	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 280
K4-LG280ZM	1 969.5	2 196.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 368
K4-LG315S/M	2 047.5	2 312.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 409
K4-LG315ZM	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 564
K4-LG315L	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 704
K4-LG315ZL	2 347.5	2 612.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 904

④ DIN 332 ① DIN EN ISO 4014 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 4/218

Dimensions

Gearbox KAS188 (3-stage), shaft-mounted design with shrink disk

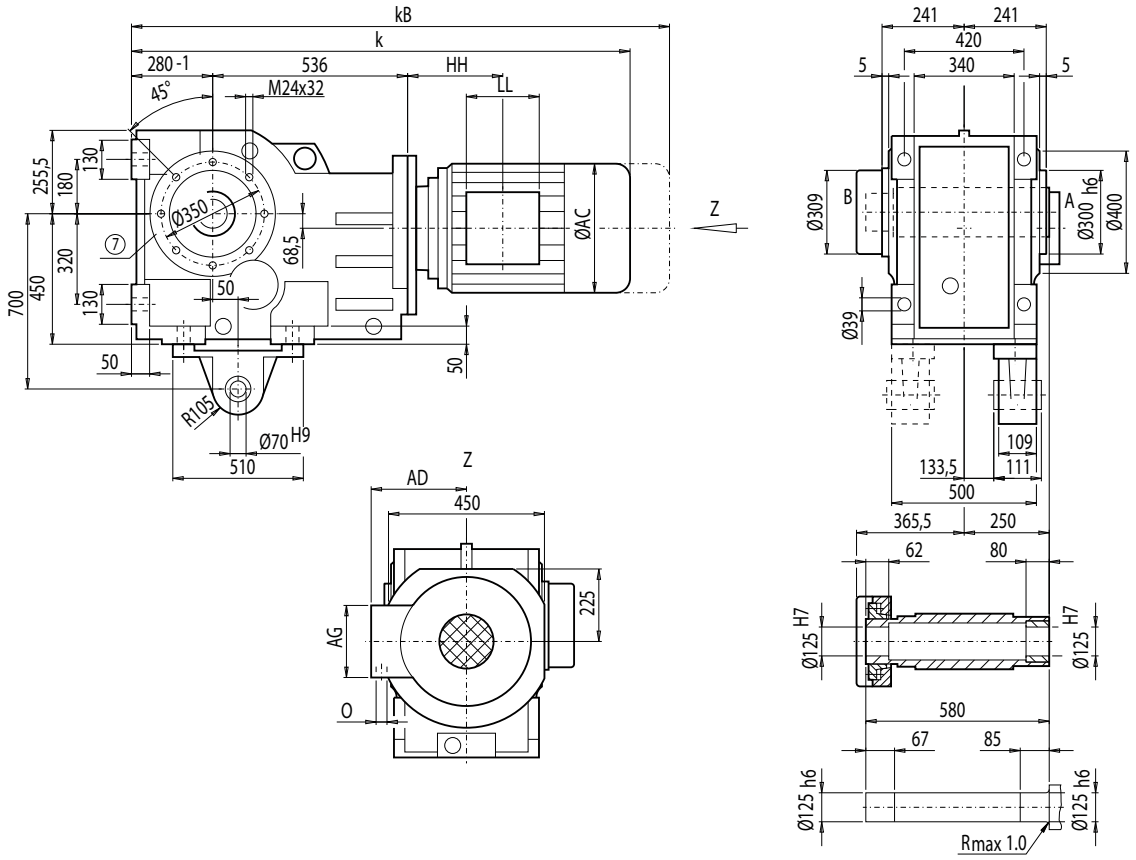
KAS012



Motor	KAS188 k	kB	AC	AD	AG	LL	HH	O	Weight KAS188
LA132S/M	1 200.0	1 302.0	259.0	195.0	140	140	122.5	2xM32x1.5	684
LA132ZM	1 246.0	1 348.0	259.0	195.0	140	140	230.5	2xM32x1.5	705
LA160M/L	1 300.0	1 418.5	313.5	227.0	165	165	145.5	2xM40x1.5	718
LA160ZL	1 348.0	1 466.5	313.5	227.0	165	165	298.5	2xM40x1.5	757
LG180M/L	1 359.5	1 481.5	348.0	322.5	260	192	162.5	2xM40x1.5	813
LG180ZM/ZL	1 410.5	1 532.5	348.0	322.5	260	192	162.5	2xM40x1.5	843
LG200L	1 415.5	1 541.5	385.0	301.0	260	192	192.5	2xM50x1.5	893
LG225S	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	965
LG225M	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	953
LG225ZM	1 546.5	1 785.5	442.0	325.0	260	192	228.5	2xM50x1.5	1 011
LG250M	1 580.0	1 805.0	495.0	392.0	300	236	264.0	2xM63x1.5	1 055
LG250ZM	1 650.0	1 875.5	495.0	392.0	300	236	264.0	2xM63x1.5	1 158
K4-LG280S	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 184
K4-LG280M	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 290
K4-LG280ZM	1 969.5	2 196.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 378
K4-LG315S/M	2 047.5	2 312.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 419
K4-LG315ZM	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 574
K4-LG315L	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 714
K4-LG315ZL	2 347.5	2 612.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 914

Gearbox KADS188 (3-stage), shaft-mounted design with torque arm and shrink disk

KADS012



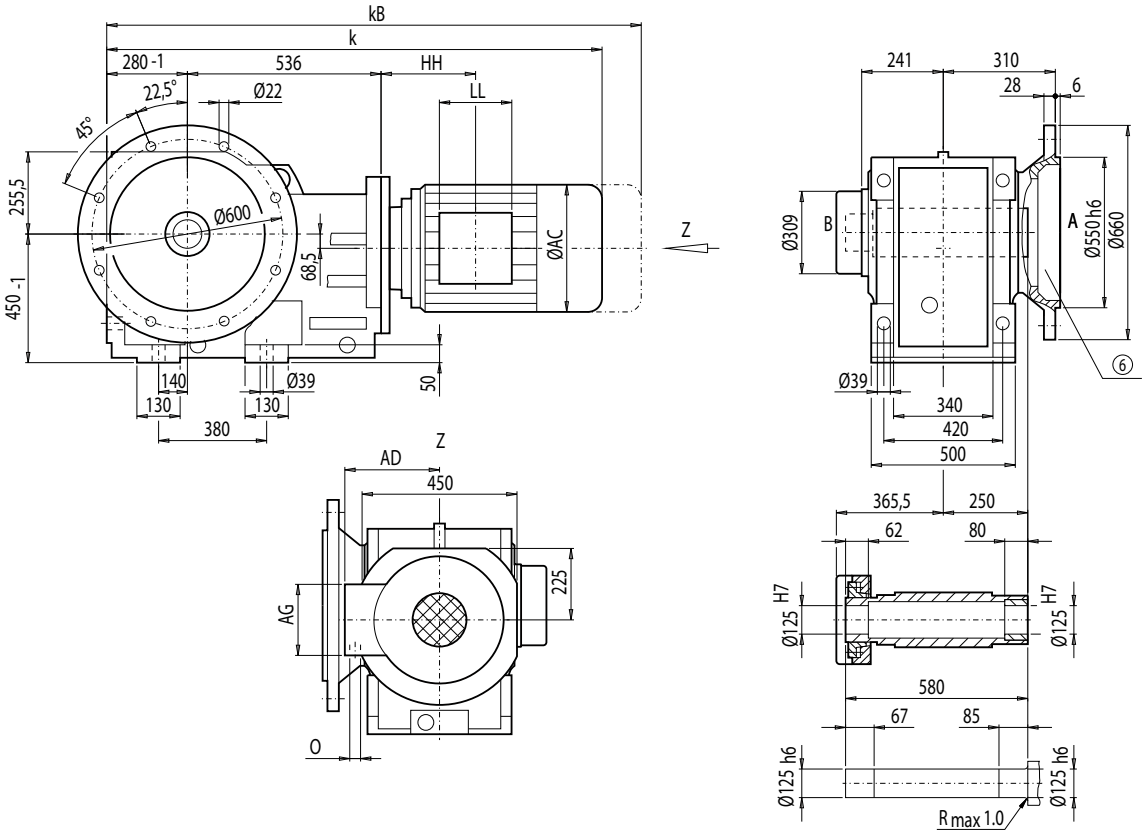
Motor	KADS188 k	kB	AC	AD	AG	LL	HH	O	Weight KADS188
LA132S/M	1 200.0	1 302.0	259.0	195.0	140	140	122.5	2xM32x1.5	708
LA132ZM	1 246.0	1 348.0	259.0	195.0	140	140	230.5	2xM32x1.5	729
LA160M/L	1 300.0	1 418.5	313.5	227.0	165	165	145.5	2xM40x1.5	741
LA160ZL	1 348.0	1 466.5	313.5	227.0	165	165	298.5	2xM40x1.5	780
LG180M/L	1 359.5	1 481.5	348.0	322.5	260	192	162.5	2xM40x1.5	837
LG180ZM/ZL	1 410.5	1 532.5	348.0	322.5	260	192	162.5	2xM40x1.5	867
LG200L	1 415.5	1 541.5	385.0	301.0	260	192	192.5	2xM50x1.5	917
LG225S	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	989
LG225M	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	977
LG225ZM	1 546.5	1 785.5	442.0	325.0	260	192	228.5	2xM50x1.5	1 035
LG250M	1 580.0	1 805.0	495.0	392.0	300	236	264.0	2xM63x1.5	1 079
LG250ZM	1 650.0	1 875.5	495.0	392.0	300	236	264.0	2xM63x1.5	1 182
K4-LG280S	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 208
K4-LG280M	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 314
K4-LG280ZM	1 969.5	2 196.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 402
K4-LG315S/M	2 047.5	2 312.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 443
K4-LG315ZM	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 598
K4-LG315L	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 738
K4-LG315ZL	2 347.5	2 612.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 938

⑦ For note, see page 4/218

Dimensions

Gearbox KAFS188 (3-stage), flange-mounted design and shrink disk

KAFS012

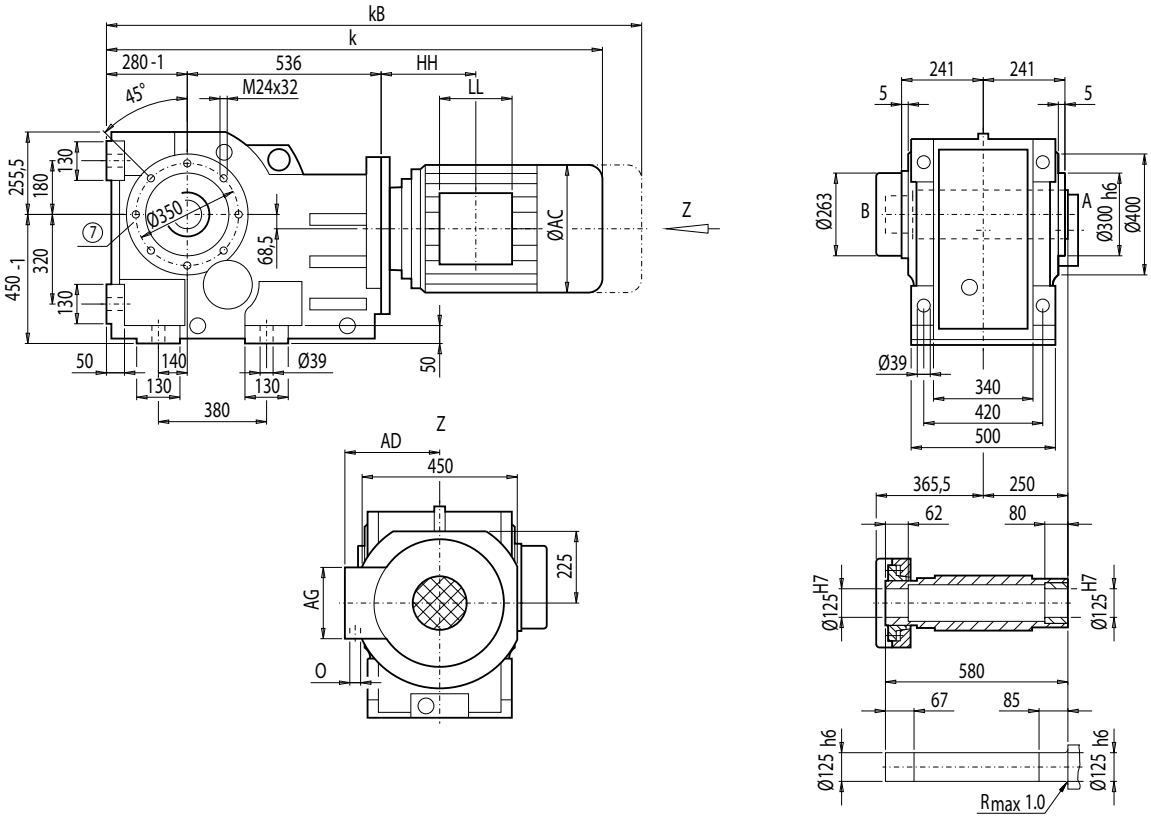


Motor	KAFS188 k	kB	AC	AD	AG	LL	HH	O	Weight KAFS188
LA132S/M	1 200.0	1 302.0	259.0	195.0	140	140	122.5	2xM32x1.5	716
LA132ZM	1 246.0	1 348.0	259.0	195.0	140	140	230.5	2xM32x1.5	737
LA160M/L	1 300.0	1 418.5	313.5	227.0	165	165	145.5	2xM40x1.5	750
LA160ZL	1 348.0	1 466.5	313.5	227.0	165	165	298.5	2xM40x1.5	789
LG180M/L	1 359.5	1 481.5	348.0	322.5	260	192	162.5	2xM40x1.5	845
LG180ZM/ZL	1 410.5	1 532.5	348.0	322.5	260	192	162.5	2xM40x1.5	875
LG200L	1 415.5	1 541.5	385.0	301.0	260	192	192.5	2xM50x1.5	925
LG225S	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	997
LG225M	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	985
LG225ZM	1 546.5	1 785.5	442.0	325.0	260	192	228.5	2xM50x1.5	1 043
LG250M	1 580.0	1 805.0	495.0	392.0	300	236	264.0	2xM63x1.5	1 087
LG250ZM	1 650.0	1 875.5	495.0	392.0	300	236	264.0	2xM63x1.5	1 190
K4-LG280S	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 216
K4-LG280M	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 322
K4-LG280ZM	1 969.5	2 196.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 410
K4-LG315S/M	2 047.5	2 312.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 451
K4-LG315ZM	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 606
K4-LG315L	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 746
K4-LG315ZL	2 347.5	2 612.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 946

⑥ For note, see page 4/217

Gearbox KAZS188 (3-stage), shaft-mounted design with housing flange (C-type) and shrink disk

KAZS012



Motor	KAZS188 k	kB	AC	AD	AG	LL	HH	O	Weight KAZS188
LA132S/M	1 200.0	1 302.0	259.0	195.0	140	140	122.5	2xM32x1.5	684
LA132ZM	1 246.0	1 348.0	259.0	195.0	140	140	230.5	2xM32x1.5	705
LA160M/L	1 300.0	1 418.5	313.5	227.0	165	165	145.5	2xM40x1.5	718
LA160ZL	1 348.0	1 466.5	313.5	227.0	165	165	298.5	2xM40x1.5	757
LG180M/L	1 359.5	1 481.5	348.0	322.5	260	192	162.5	2xM40x1.5	813
LG180ZM/ZL	1 410.5	1 532.5	348.0	322.5	260	192	162.5	2xM40x1.5	843
LG200L	1 415.5	1 541.5	385.0	301.0	260	192	192.5	2xM50x1.5	893
LG225S	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	965
LG225M	1 486.5	1 725.5	442.0	325.0	260	192	228.5	2xM50x1.5	953
LG225ZM	1 546.5	1 785.5	442.0	325.0	260	192	228.5	2xM50x1.5	1 011
LG250M	1 580.0	1 805.0	495.0	392.0	300	236	264.0	2xM63x1.5	1 055
LG250ZM	1 650.0	1 875.5	495.0	392.0	300	236	264.0	2xM63x1.5	1 158
K4-LG280S	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 184
K4-LG280M	1 859.5	2 086.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 290
K4-LG280ZM	1 969.5	2 196.5	555.0	432.0	300	236	475.5	2xM63x1.5	1 378
K4-LG315S/M	2 047.5	2 312.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 419
K4-LG315ZM	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 574
K4-LG315L	2 207.5	2 472.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 714
K4-LG315ZL	2 347.5	2 612.5	610.0	500.0	380	307	584.5	2xM63x1.5	1 914

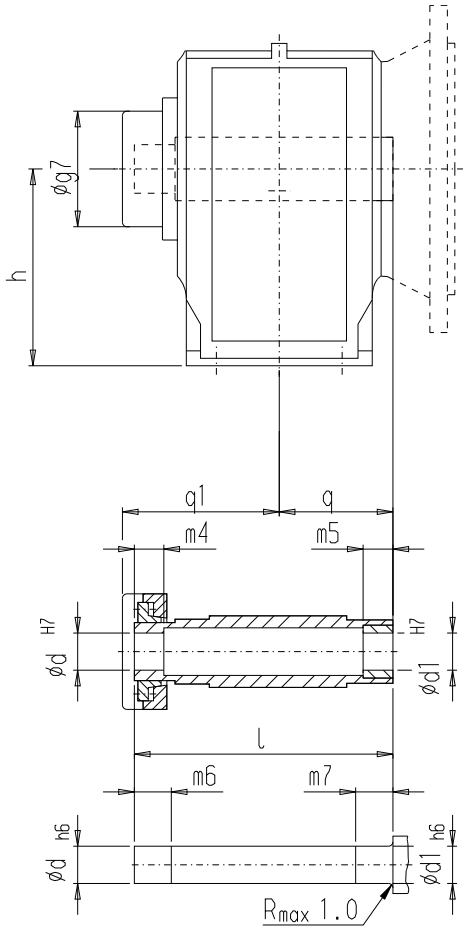
⑥ For note, see page 4/218

Dimensions

Offset hollow shafts with shrink disk

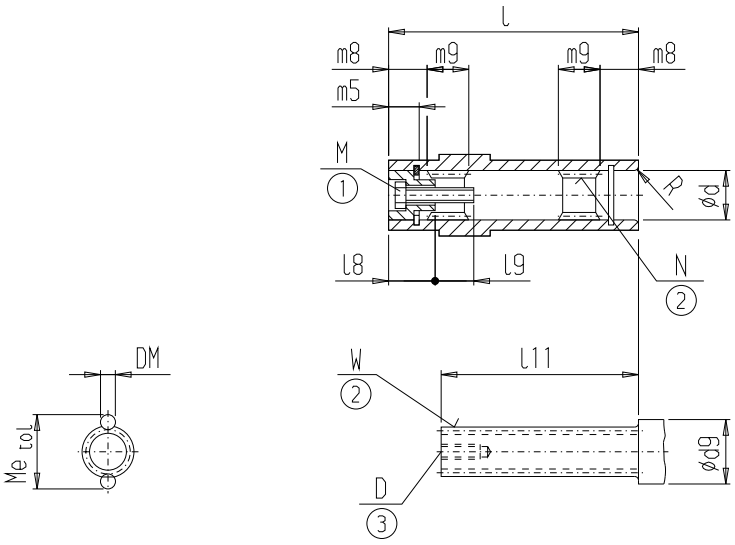
Optional hollow shafts for bevel helical gearboxes with shrink disk

KA.S



Gearbox	d	d1	l	m4	m5	m6	m7	q1	q	g7	h
KAS/KAFS38	30	31	146	22	20	27	25	94	60	77	100
KAS/KAFS48	40	41	177	25	20	30	25	109	75	93	112
KAS/KAFS68	40	42	209	35	20	37	25	126	90	112	140
	50	51	209	27	20	32	25	126	90	112	140
KAS/KAFS88	50	52	241	29	30	34	35	144	105	132	180
	60	61	241	29	30	34	35	144	105	132	180
KAS/KAFS108	65	66	280	30	40	35	45	168	120	144	212
	70	71	280	30	40	35	45	168	120	144	212
KAS/KAFS128	75	76	345	44	50	49	55	207	150	180	265
	80	81	345	40	50	45	55	207	150	180	265
KAS/KAFS148	95	96	404	49	60	54	65	243	175	210	315
KAS/KAFS168	105	106	483	54	70	59	75	291	205	237	375
KAS/KAFS188	125	126	580	62	80	67	85	342	250	263	450

Shaft-mounted design with splined shaft in acc. with DIN 5480



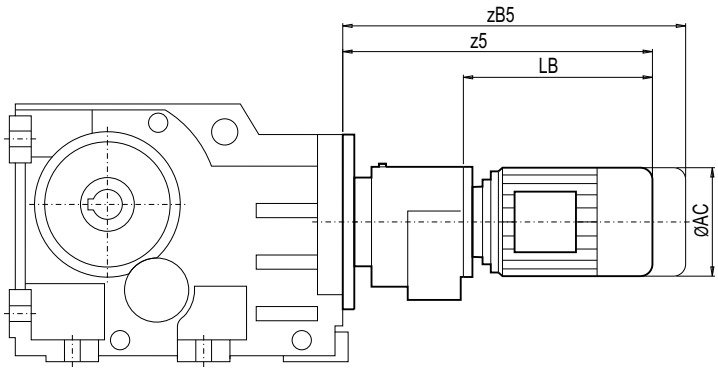
Gearbox	d	l	d9 min.	l11	W	D	R	m8	m9
BA.T38	30	140	45	115	W30x1.25x30x22 8f	M10	R3	20.0	30
KA.T38	35	120	45	95	W35x1.25x30x26 8f	M10	R2	17.0	27
KA.T48	40	150	52	120	W40x2x30x18 8f	M12	R3	22.0	34
KA.T68	55	180	65	142	W50x2x30x24 8f	M16	R2	21.0	40
KA.T88	65	210	80	172	W60x2x30x28 8f	M16	R2	22.5	49
KA.T108	72	240	85	201	W70x2x30x34 8f	M20	R2	22.5	56
KA.T128	90	300	105	257	W80x3x30x25 8f	M20	R2	24.0	71
KA.T148	90	350	110	306	W90x3x30x28 8f	M20	R3	25.0	88
KA.T168	110	410	130	350	W110x3x30x35 8f	M24	R3	32.0	99
KA.T188	135	500	145	445	W130x5x30x24 8f	M24	R4	42.0	120

Gearbox	N	m5	l8	l9	M	DM	Me	tol
BA.T38	N30x1.25x30x22 9H	12.0	18	27.0	M10x35	2.75	33.015	-0.056
KA.T38	N35x1.25x30x26 9H	12.0	18	27.0	M10x35	2.50	37.423	-0.041
KA.T48	N40x2x30x18 9H	14.0	20	37.0	M12x45	4.50	45.083	-0.043
KA.T68	N50x2x30x24 9H	16.0	23	49.5	M16x55	4.00	54.156	-0.049
KA.T88	N60x2x30x28 9H	16.5	26	46.5	M16x55	4.00	63.918	-0.053
KA.T108	N70x2x30x34 9H	16.5	28	51.0	M20x60	4.00	74.181	-0.057
KA.T128	N80x3x30x25 9H	17.0	31	46.0	M20x60	6.00	85.856	-0.053
KA.T148	N90x3x30x28 9H	17.0	31	51.0	M20x60	6.00	95.911	-0.053
KA.T168	N110x3x30x35 9H	20.0	41	65.5	M24x80	6.00	115.998	-0.061
KA.T188	N130x5x30x24 9H	20.0	50	35.5	M24x60	10.00	139.848	-0.061

① DIN 912 ② DIN 5480 ③ DIN 332-D

Dimensions

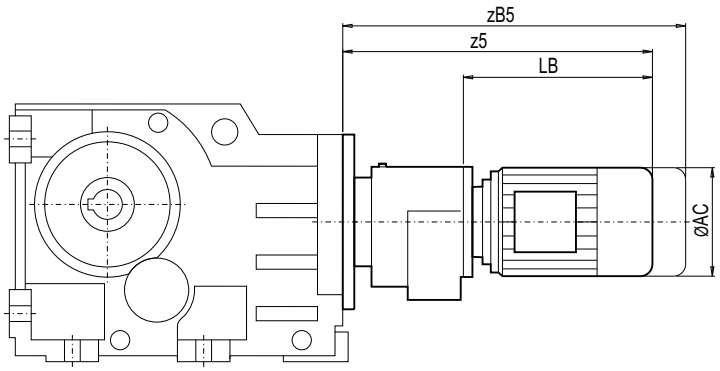
Bevel helical tandem gearbox



Gearbox	Motor	AC	z5	zB5	LB
K.38-Z28	LA71	139.0	363.0	418.0	202.5
	LA71Z	139.0	382.0	437.0	221.5
	LA80	156.5	465.0	528.5	304.5
	LA80Z	156.5	487.5	551.0	327.0
	LA90S/L	174.0	460.0	531.0	299.5
	LA90ZL	174.0	505.0	576.0	344.5
	LA100L	195.0	542.0	623.0	381.5
	LA100ZL	195.0	612.0	693.0	451.5
K.38-D28	LA71	139.0	363.0	418.0	202.5
	LA71Z	139.0	382.0	437.0	221.5
	LA80	156.5	465.0	528.5	304.5
	LA80Z	156.5	487.5	551.0	327.0
	LA90S/L	174.0	460.0	531.0	299.5
	LA90ZL	174.0	505.0	576.0	344.5
K.48-Z28	LA71	139.0	363.0	418.0	202.5
	LA71Z	139.0	382.0	437.0	221.5
	LA80	156.5	465.0	528.5	304.5
	LA80Z	156.5	487.5	551.0	327.0
	LA90S/L	174.0	460.0	531.0	299.5
	LA90ZL	174.0	505.0	576.0	344.5
	LA100L	195.0	542.0	623.0	381.5
	LA100ZL	195.0	612.0	693.0	451.5
K.48-D28	LA71	139.0	363.0	418.0	202.5
	LA71Z	139.0	382.0	437.0	221.5
	LA80	156.5	465.0	528.5	304.5
	LA80Z	156.5	487.5	551.0	327.0
	LA90S/L	174.0	460.0	531.0	299.5
	LA90ZL	174.0	505.0	576.0	344.5
K.68-Z28	LA71	139.0	357.5	412.5	202.5
	LA71Z	139.0	376.5	431.5	221.5
	LA80	156.5	459.5	523.0	304.5
	LA80Z	156.5	482.0	545.5	327.0
	LA90S/L	174.0	454.5	525.5	299.5
	LA90ZL	174.0	499.5	570.5	344.5
	LA100L	195.0	536.5	617.5	381.5
	LA100ZL	195.0	606.5	687.5	451.5

Gearbox	Motor	AC	z5	zB5	LB
K.68-D28	LA71	139.0	357.5	412.5	202.5
	LA71Z	139.0	376.5	431.5	221.5
	LA80	156.5	459.5	523.0	304.5
	LA80Z	156.5	482.0	545.5	327.0
	LA90S/L	174.0	454.5	525.5	299.5
	LA90ZL	174.0	499.5	570.5	344.5
K.88-Z28	LA71	139.0	351.5	406.5	202.5
	LA71Z	139.0	370.5	425.5	221.5
	LA80	156.5	453.5	517.0	304.5
	LA80Z	156.5	476.0	539.5	327.0
	LA90S/L	174.0	448.5	519.5	299.5
	LA90ZL	174.0	493.5	564.5	344.5
	LA100L	195.0	530.5	611.5	381.5
	LA100ZL	195.0	600.5	681.5	451.5
K.88-D28	LA71	139.0	351.5	406.5	202.5
	LA71Z	139.0	370.5	425.5	221.5
	LA80	156.5	453.5	517.0	304.5
	LA80Z	156.5	476.0	539.5	327.0
	LA90S/L	174.0	448.5	519.5	299.5
	LA90ZL	174.0	493.5	564.5	344.5
K.108-Z38	LA71	139.0	465.5	520.5	258.5
	LA71Z	139.0	484.5	539.5	277.5
	LA80	156.5	502.5	566.0	295.5
	LA80Z	156.5	525.0	588.5	318.0
	LA90S	174.0	533.5	604.5	326.5
	LA90L	174.0	533.5	604.5	326.5
	LA90ZL	174.0	578.5	649.5	371.5
	LA100L	195.0	579.5	660.5	372.5
	LA100ZL	195.0	649.5	730.5	442.5
	LA112M	219.0	609.0	690.0	402.0
	LA112ZM	219.0	637.0	718.0	430.0
K.108-D38	LA71	139.0	480.5	535.5	273.5
	LA71Z	139.0	499.5	554.5	292.5
	LA80	156.5	517.5	581.0	310.5
	LA80Z	156.5	540.0	603.5	333.0
	LA90S/L	174.0	548.5	619.5	341.5
	LA90ZL	174.0	593.5	664.5	386.5

Bevel helical tandem gearbox (continued)

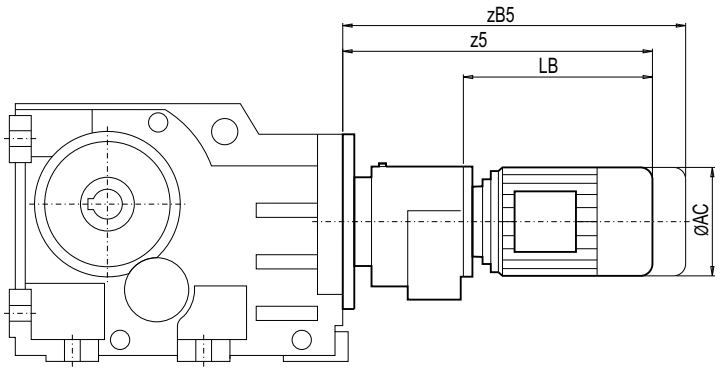


Gearbox	Motor	AC	z5	zB5	LB
K.108-Z48	LA71	139.0	544.5	599.5	253.0
	LA71Z	139.0	563.5	618.5	272.0
	LA80	156.5	581.5	645.0	290.0
	LA80Z	156.5	604.0	667.5	312.5
	LA90S/L	174.0	612.5	683.5	321.0
	LA90ZL	174.0	657.5	728.5	366.0
	LA100L	195.0	658.5	739.5	367.0
	LA100ZL	195.0	728.5	809.5	437.0
	LA112M	219.0	687.5	768.5	396.0
	LA112ZM	219.0	715.5	796.5	424.0
	LA132S/M	259.0	749.5	851.5	458.0
	LA132ZM	259.0	795.5	897.5	504.0
K.128-Z38	LA71	139.0	458.5	513.5	258.5
	LA71Z	139.0	477.5	532.5	277.5
	LA80	156.5	495.5	559.0	295.5
	LA80Z	156.5	518.0	581.5	318.0
	LA90S/L	174.0	526.5	597.5	326.5
	LA90ZL	174.0	571.5	642.5	371.5
	LA100L	195.0	572.5	653.5	372.5
	LA100ZL	195.0	642.5	723.5	442.5
	LA112M	219.0	602.0	683.0	402.0
	LA112ZM	219.0	630.0	711.0	430.0
K.128-D38	LA71	139.0	473.5	528.5	273.5
	LA71Z	139.0	492.5	547.5	292.5
	LA80	156.5	510.5	574.0	310.5
	LA80Z	156.5	533.0	596.5	333.0
	LA90S/L	174.0	541.5	612.5	341.5
	LA90ZL	174.0	586.5	657.5	386.5
K.128-Z48	LA71	139.0	532.0	587.0	253.0
	LA71Z	139.0	551.0	606.0	272.0
	LA80	156.5	569.0	632.5	290.0
	LA80Z	156.5	591.5	655.0	312.5
	LA90S/L	174.0	600.0	671.0	321.0
	LA90ZL	174.0	645.0	716.0	366.0
	LA100L	195.0	646.0	727.0	367.0
	LA100ZL	195.0	716.0	797.0	437.0

Gearbox	Motor	AC	z5	zB5	LB
K.128-Z48	LA112M	219.0	675.0	756.0	396.0
	LA112ZM	219.0	703.0	784.0	424.0
	LA132S/M	259.0	737.0	839.0	458.0
	LA132ZM	259.0	783.0	885.0	504.0
K.148-Z38	LA71	139.0	454.0	509.0	258.5
	LA71Z	139.0	473.0	528.0	277.5
	LA80	156.5	491.0	554.5	295.5
	LA80Z	156.5	513.5	577.0	318.0
	LA90S/L	174.0	522.0	593.0	326.5
	LA90ZL	174.0	567.0	638.0	371.5
	LA100L	195.0	568.0	649.0	372.5
	LA100ZL	195.0	638.0	719.0	442.5
	LA112M	219.0	597.5	678.5	402.0
	LA112ZM	219.0	625.5	706.5	430.0
K.148-D38	LA71	139.0	469.0	524.0	273.5
	LA71Z	139.0	488.0	543.0	292.5
	LA80	156.5	506.0	569.5	310.5
	LA80Z	156.5	528.5	592.0	333.0
	LA90S/L	174.0	537.0	608.0	341.5
	LA90ZL	174.0	582.0	653.0	386.5
K.148-Z68	LA71	139.0	590.5	645.5	247.0
	LA71Z	139.0	609.5	664.5	266.0
	LA80	156.5	627.5	691.0	284.0
	LA80Z	156.5	650.0	713.5	306.5
	LA90S/L	174.0	658.5	729.5	315.0
	LA90ZL	174.0	703.5	774.5	360.0
	LA100L	195.0	704.5	785.5	361.0
	LA100ZL	195.0	774.5	855.5	431.0
	LA112M	219.0	731.5	812.5	388.0
	LA112ZM	219.0	759.5	840.5	416.0
	LA132S/M	259.0	791.5	893.5	448.0
	LA132ZM	259.0	837.5	939.5	494.0
	LA160M/L	313.5	894.0	1 012.5	550.5
	LA160ZL	313.5	942.0	1 060.5	598.5

Dimensions

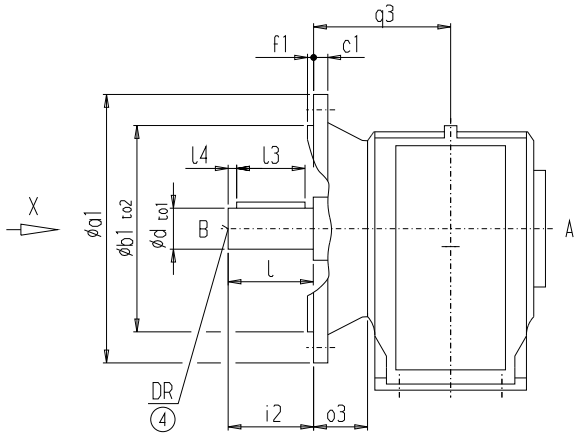
Bevel helical tandem gearbox (continued)

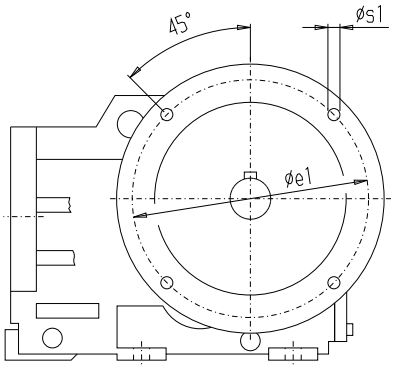


Gearbox	Motor	AC	z5	zB5	LB
K.168-Z48	LA71	139.0	513.5	568.5	253.0
	LA71Z	139.0	532.5	587.5	272.0
	LA80	156.5	550.5	614.0	290.0
	LA80Z	156.5	573.0	636.5	312.5
	LA90S/L	174.0	581.5	652.5	321.0
	LA90ZL	174.0	626.5	697.5	366.0
	LA100L	195.0	627.5	708.5	367.0
	LA100ZL	195.0	697.5	778.5	437.0
	LA112M	219.0	656.5	737.5	396.0
	LA112ZM	219.0	684.5	765.5	424.0
	LA132S/M	259.0	718.5	820.5	458.0
	LA132ZM	259.0	764.5	866.5	504.0
K.168-D48	LA71	139.0	530.5	585.5	270.0
	LA71Z	139.0	549.5	604.5	289.0
	LA80	156.5	567.5	631.0	307.0
	LA80Z	156.5	590.0	653.5	329.5
	LA90S/L	174.0	598.5	669.5	338.0
	LA90ZL	174.0	643.5	714.5	383.0
	LA100L	195.0	644.5	725.5	384.0
	LA100ZL	195.0	714.5	795.5	454.0
K.168-Z68	LA71	139.0	599.5	654.5	247.0
	LA71Z	139.0	618.5	673.5	266.0
	LA80	156.5	636.5	700.0	284.0
	LA80Z	156.5	659.0	722.5	306.5
	LA90S	174.0	667.5	738.5	315.0
	LA90L	174.0	667.5	738.5	315.0
	LA90ZL	174.0	712.5	783.5	360.0
	LA100L	195.0	713.5	794.5	361.0
	LA100ZL	195.0	783.5	864.5	431.0
	LA132S	259.0	800.5	902.5	448.0
	LA132M	259.0	800.5	902.5	448.0
	LA132ZM	259.0	846.5	948.5	494.0
	LA160M	313.5	903.0	1 021.5	550.5
	LA160L	313.5	903.0	1 021.5	550.5
	LA160ZL	313.5	951.0	1 069.5	598.5

Gearbox	Motor	AC	z5	zB5	LB
K.188-Z68	LA71	139.0	568.5	623.5	247.0
	LA71Z	139.0	587.5	642.5	266.0
	LA80	156.5	605.5	669.0	284.0
	LA80Z	156.5	628.0	691.5	306.5
	LA90S/L	174.0	636.5	707.5	315.0
	LA90ZL	174.0	681.5	752.5	360.0
	LA100L	195.0	682.5	763.5	361.0
	LA100ZL	195.0	752.5	833.5	431.0
	LA112M	219.0	709.5	790.5	388.0
	LA112ZM	219.0	737.5	818.5	416.0
	LA132S/M	259.0	769.5	871.5	448.0
	LA132ZM	259.0	815.5	917.5	494.0
	LA160M/L	313.5	872.0	990.5	550.5
	LA160ZL	313.5	920.0	1 038.5	598.5
K.188-D68	LA71	139.0	587.0	642.0	265.5
	LA71Z	139.0	606.0	661.0	284.5
	LA80	156.5	624.0	687.5	302.5
	LA80Z	156.5	646.5	710.0	325.0
	LA90S/L	174.0	655.0	726.0	333.5
	LA90ZL	174.0	700.0	771.0	378.5
	LA100L	195.0	701.0	782.0	379.5
	LA100ZL	195.0	771.0	852.0	449.5
K.188-Z88	LA90S/L	174.0	776.5	847.5	300.0
	LA90ZL	174.0	821.5	892.5	345.0
	LA100L	195.0	820.0	901.0	343.5
	LA100ZL	195.0	890.0	971.0	413.5
	LA112M	219.0	846.0	927.0	369.5
	LA112ZM	219.0	874.0	955.0	397.5
	LA132S/M	259.0	906.0	1 008.0	429.5
	LA132ZM	259.0	952.0	1 054.0	475.5
	LA160M/L	313.5	1 010.5	1 129.0	534.0
	LA160ZL	313.5	1 058.5	1 177.0	582.0
	LG180M/L	348.0	1 070.0	1 192.0	593.5
	LG180ZM/ZL	348.0	1 121.0	1 243.0	644.5

Flange design for mixers





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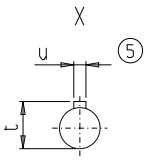
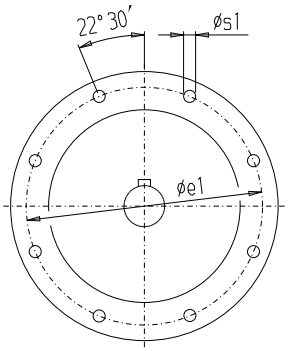




Gearbox	a1	b1	to2	c1	e1	f1	s1	o3	q3	i2
KM88	300	230	j6	20	265	4	13.5	120	216.5	140
KM108	350	250	h6	20	300	5	17.5	135	246.0	170
KM128	450	350	h6	25	400	5	17.5	165	306.0	170
KM148	450	350	h6	25	400	5	17.5	185	349.0	210
KM168	550	450	h6	28	500	5	17.5	210	404.0	210

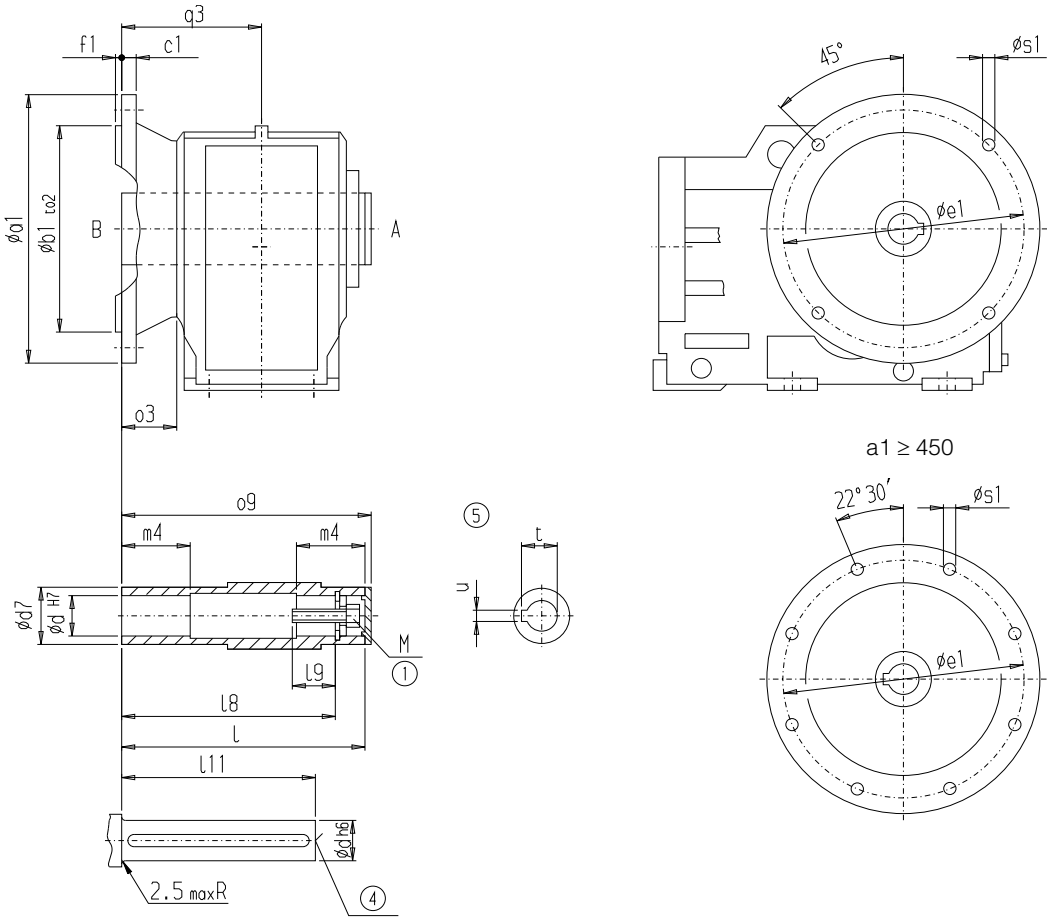
Gearbox	d	to1	l	l3	l4	t	u	DR	Weight
KM88	70	m6	140	110	15	74.5	20	M20x42	84
KM108	80	m6	170	125	20	85.0	22	M20x42	150
KM128	90	m6	170	140	15	95.0	25	M24x50	248
KM148	100	m6	210	180	15	106.0	28	M24x50	357
KM168	120	m6	210	180	15	127.0	32	M24x50	584

④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Flange design for mixers



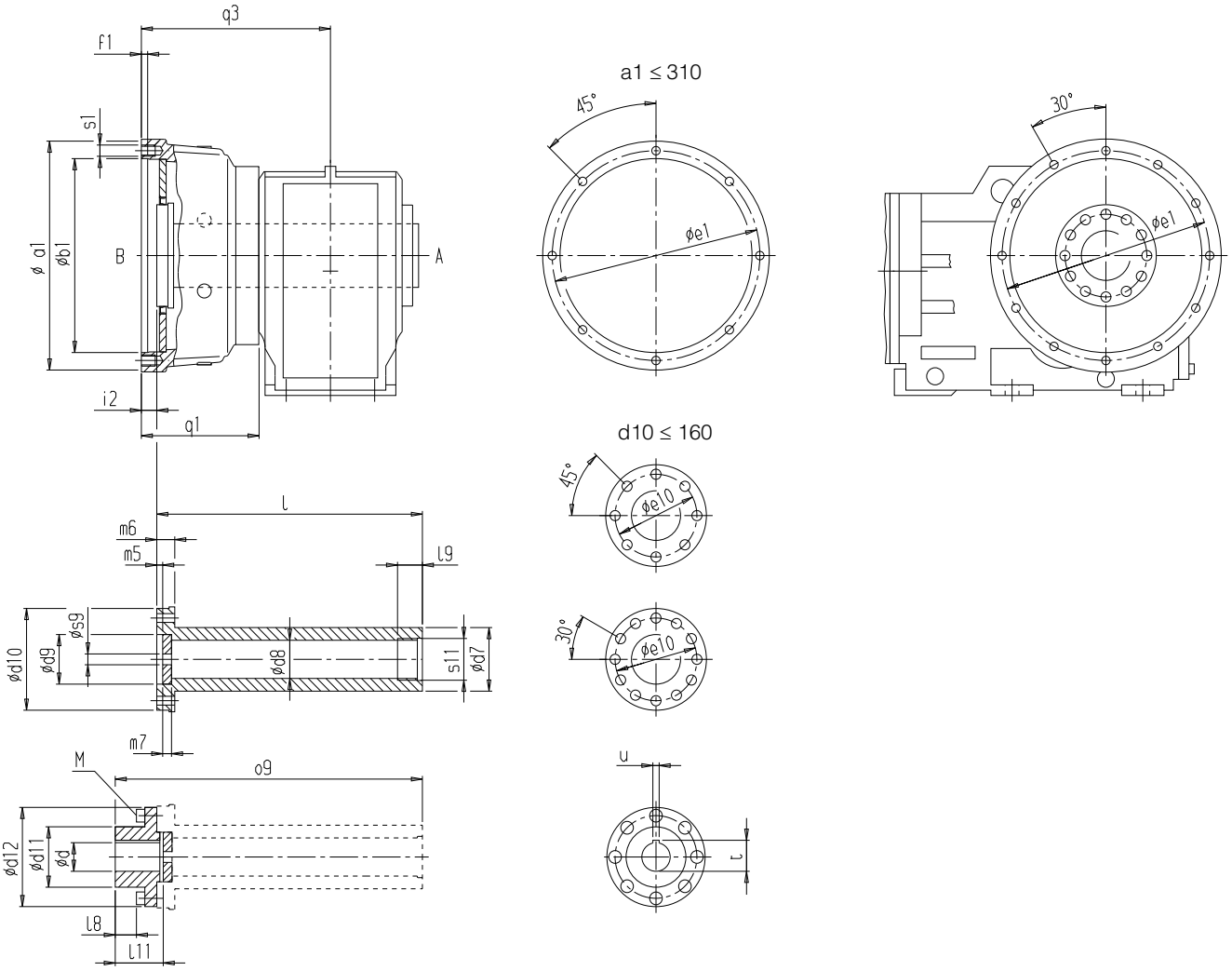
Gearbox	a1	b1	to2	c1	e1	f1	s1	o3	q3	o9
KAM88	300	230	j6	20	265	4	13.5	120	216.5	324.0
KAM108	350	250	h6	20	300	5	17.5	135	246.0	369.5
KAM128	450	350	h6	25	400	5	17.5	165	306.0	458.0
KAM148	450	350	h6	25	400	5	17.5	185	349.0	526.0
KAM168	550	450	h6	28	500	5	17.5	210	404.0	611.0

Gearbox	d	d7	l	m4	l8	l9	l11	t	u	M	Weight
KAM88	60	80	321	78	291	54.0	275	64.4	18	M20	76
KAM108	70	95	366	93	334	63.5	310	74.9	20	M20	137
KAM128	80	110	456	123	419	63.5	395	85.4	22	M20	228
KAM148	90	120	524	148	484	72.0	460	95.4	25	M24	329
KAM168	110	150	609	175	565	73.0	540	116.4	28	M24	539

④ DIN 332

⑤ Feather key / keyway DIN 6885

Flange design for extruder drives



Gearbox	a1	b1		e1	f1	s1	q1	i2	q3
KAE68	260	220	+0.046 / 0	236	10	M12x17	147.5	15.0	230.0
KAE88	310	255	+0.052 / 0	280	10	M16x22	171.0	15.5	267.5
KAE108	360	305	+0.052 / 0	330	10	M16x22	188.0	23.0	229.0
KAE128	420	345	+0.057 / 0	380	10	M20x27	206.0	25.0	347.0
KAE148	450	360	+0.057 / 0	400	10	M24x32	225.0	27.0	389.0
KAE168	510	420	+0.063 / 0	460	15	M24x32	262.0	38.0	456.0

Dimensions

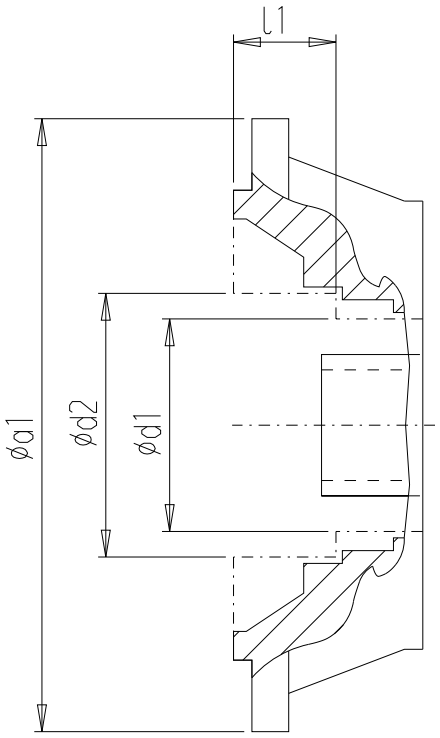
Flange design for extruder drives (continued)

Gearbox	d	l11	d7	d8	l9	s11	o9 l	d10 d12	m6	e10
KAE68	20	48	65	38	30	M42x2	349.0	105	14	88
	25									
	30						305.0	104		
KAE88	30	58	80	49	39	M56x2	410.5	130	23	110
	35									
	40						357.0	129		
KAE108	40	71	95	60	39	M64x2	462.0	160	25	130
	45									
	50						396.0	156		
KAE128	45	87	110	71	49	M80x3	554.0	175	31	150
	50									
	60						472.0	174		
KAE148	60	95	120	88	52	M95x3	626.0	190	33	160
	70									
	75						537.0	189		
KAE168	70	105	150	104	57	M110x3	722.0	230	42	195
	80									
	90						623.0	229		

Gearbox	d	d9		s9	m7	d11	m5	l8	M	t	u
KAE68	20	48	+0.025 / 0	11	11	65	4.0	20.0	M10x25	22.8	6
	25									28.3	8
	30									33.3	8
KAE88	30	63	+0.030 / 0	17	12	80	4.5	23.5	M12x35	33.3	8
	35									38.3	10
	40									43.3	12
KAE108	40	78	+0.030 / 0	17	14	95	5.0	31.0	M16x40	43.3	12
	45									48.8	14
	50									53.8	14
KAE128	45	88	+0.035 / 0	22	17	110	5.0	42.0	M16x45	48.8	14
	50									53.8	14
	60									64.4	18
KAE148	60	105	+0.035 / 0	22	20	120	6.0	45.0	M16x55	64.4	18
	70									74.9	20
	75									79.9	20
KAE168	70	125	+0.040 / 0	25	22	150	6.0	49.0	M20x55	74.9	20
	80									85.4	22
	90									95.4	25

Inside contour of the flange-mounted design (A-type)

Design notes for the customer's interface, e.g. plug-in shaft for hollow shaft design.



Gearbox	a1	d1	d2	l1
B.F.28	120	70	72	24.0
B.F.28	160	70	103	8.5
B.F.38	160	95	98	27.0
B.F.38	200	84	90	22.5
K.F.38	160	70	77	20.0
K.F.48	200	84	90	22.5
K.F.68	250	96	96	–
K.F.88	300	126	138	31.0
K.F.108	350	176	185	32.0
K.F.128	450	226	234	38.5
K.F.148	450	246	262	34.0
K.F.168	550	296	313	39.0
K.F.188	660	296	296	–

Dimensions

Pin holes

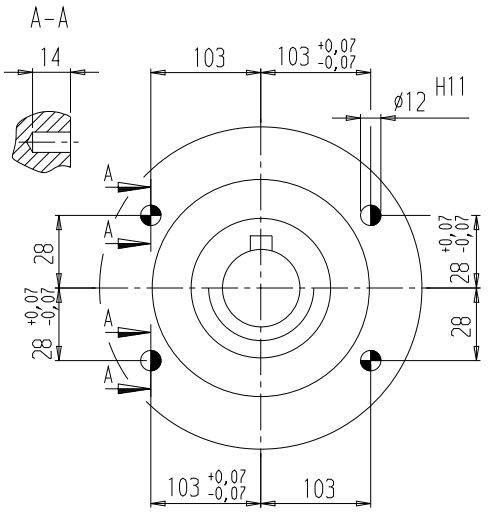
In the case of sizes K.Z.108 - 188, the customer's interface can be pinned on the housing flange (C-type).

The output flanges have been designed to ensure the reliable transmission of the permissible torques and radial forces by the bolt connections.

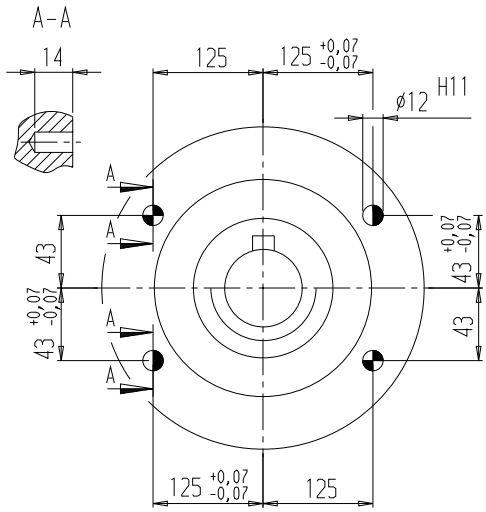
If an additional fuse, e. g. for high shock loads, is required, the existing pin holes can be used.

The gearbox and the machine can be drilled and pinned together. To do so, the provided dimensions must be observed.

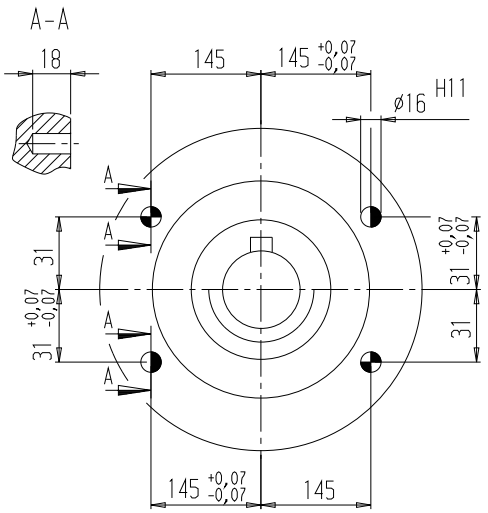
K.Z.108



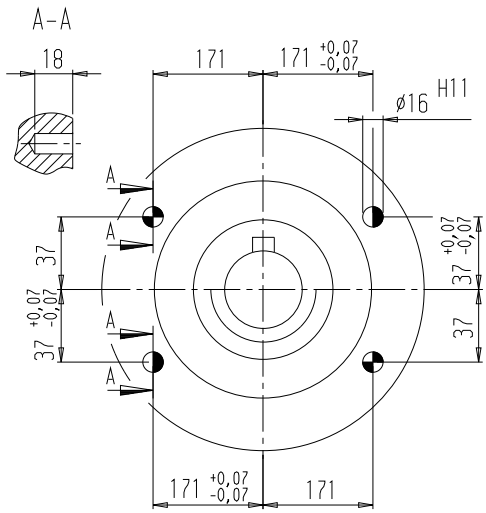
K.Z.128



K.Z.148



K.Z.168, K.Z.188



◑ Spring pins, heavy-duty design, to DIN 1481: Use pin holes provided in the housing flange.

◕ Grooved cylindrical pins with chamfer to DIN EN 28740/ISO 8740: Drill connecting component together with housing.

Input units

7

Orientation
7/2 Overview

General technical data
7/4 Permissible radial forces and torques
7/6 Maximum motor weight

Input unit K2
7/7 Selection and ordering data
Input unit K4
7/9 Selection and ordering data
Input units KQ / KQS
7/11 Selection and ordering data
Input unit A
7/13 Selection and ordering data
Input unit P
7/15 Selection and ordering data

Special versions
7/17 Input units with backstop K2X, AX, PX
7/18 Friction clutch
7/18 Speed monitoring

Dimensions
7/19 Dimension drawing overview
7/20 Dimension drawings

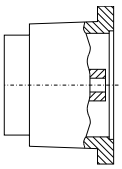
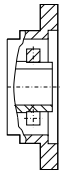
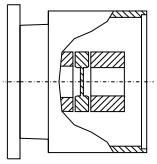
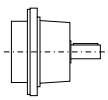
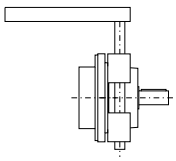
Input units

Orientation

Overview

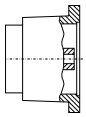
For most applications, it is best to mount the motor so that it is integrated on the gearbox. This provides an optimum solution in terms of a short overall length and the least weight.

On request, the gearboxes can also be fitted with an input unit for mounting standard motors.

Input unit	Description	Flexible coupling	Zero-backlash flexible coupling	Clamping hub	Backstop	Friction clutch	Speed encoder	Protective belt cover, optional
 **K2**	Coupling lantern with flexible coupling for connecting an IEC motor	✔			✔	✔	✔	
 **K4**	Short coupling lantern with clamp connection for connecting an IEC motor			✔				
 **KQ KQS**	Lantern for servomotor with zero-backlash flexible coupling for connecting a servomotor		✔	✔				
 **A**	Input unit with free input shaft				✔			
 **P**	Input unit with free input shaft and piggy back for connecting an IEC motor				✔			✔

Overview (continued)

Input unit K2 (coupling lantern)



This input unit for motors in IEC sizes is suitable for general applications with all load types. The input unit contains a torsionally flexible cam coupling which can compensate for axial movement.

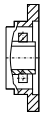
Input unit K2 is also available in an ATEX version.

Please refer to the Operating Instructions for information on mounting.

For additional options, see "Special versions".

Order codes:
Input unit K2 **A03**
Flexible coupling **A16**

Input unit K4 (short coupling lantern)



This input unit is designed for mounting situations that call for an extremely short overall length. The input units are suitable for connecting IEC standard motors within the context of general applications.

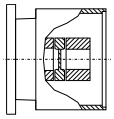
The connection between the shafts is rigid and there is no axial compensation. Therefore, we recommend using motors with a fixed bearing on the drive side for optimum service life. It is preferable to use K2 input units in situations involving a high mass inertia and a high number of starting operations in particular. With a class III load classification, you should use input unit K2 or contact us for more information.

Input unit K4 is also available in an ATEX version.

Please refer to the Operating Instructions for information on mounting.

Order code:
Input unit K4 **A04**

Input unit KQ / KQS (lantern for servomotor)



This input unit enables servomotors with a square mounting flange to be mounted on the gearbox. This provides the geared motor with a solid and attractive design. The input unit features a zero-backlash, torsionally flexible cam coupling which compensates for axial movement.

Input unit KQ is designed for motor shafts with feather key.

Input unit KQS is designed for motor shafts without feather key.

Order codes:
Input unit KQ **A07**
Input unit KQS **A08**

Size index	Order code
71.2	**N61**
80.3	**N62**
90.4	**N63**
112.3	**N62**
132.3	**N62**

Input unit A with free input shaft

Input unit A has a free solid input shaft and is designed for general solutions where the motor is mounted separately from the gearbox. It is also suitable for solutions that call for manual operation of the input shaft.

Order code:
Input unit A **A00**

Input unit P with free input shaft and piggy back

Input unit P has a free solid input shaft as well as a piggy back. A foot-mounted standard motor can be piggy backed onto the unit and connected to the gearbox input shaft by means of a V belt. A protective belt cover (PS version) is available on request.

Pulley and belt are not included in the scope of delivery.

Order codes:
Input unit P **A09**
Input unit PS **A10**

General technical data

Permissible radial forces and torques

Permissible torques for input units K, A and P

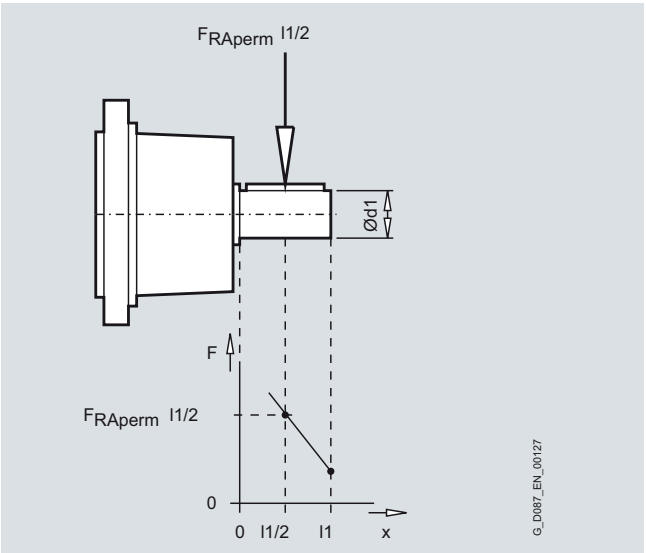
Size	Permissible input torque T_1 [1]
	Nm
71	3
80	5
90	10
100	20
112	26
132	61
160	98
180	198
200	198
225	291
250	356
280	580
315 [2]	1 290

[1] 2.5x the value is permissible for a brief period (e.g. motor starting torque)
[2] only for K2

Permissible radial force for input units A and P

Size	d1	l1	Permissible radial force F_{RAperm} l1/2 at 0.5xl1 [1]
	mm	mm	N
71	16	40	240
80	19	40	240
90	24	50	620
100	28	60	840
112	28	60	1 000
132	38	80	1 700
160	42	110	1 800
180	55	110	3 000
200	55	110	3 000
225	60	140	3 450
250	65	140	3 900
280	70	140	5 150
315	–	–	–

[1] based on 1 450 rpm with input units A, P



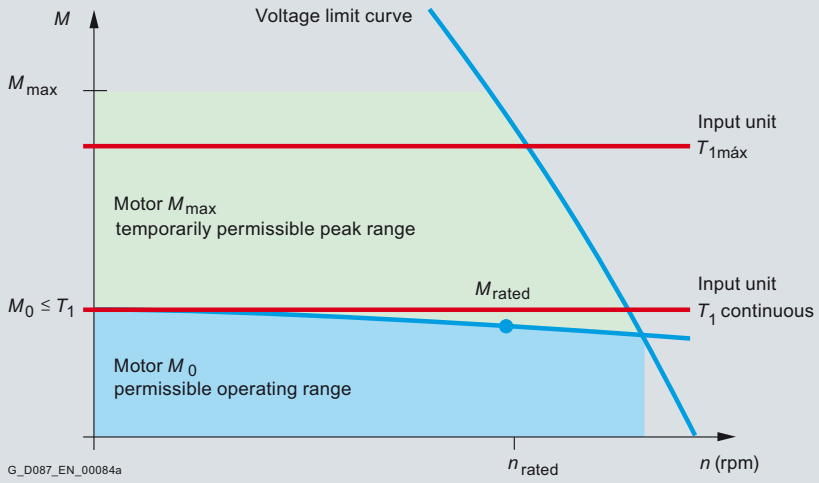
Permissible radial forces and torques (continued)

Permissible torque with input unit KQ (S)

Input unit KQ / KQS	Transmitted torques		Max. speed
	T_1	T_{1max}	n_{1max}
	Nm	Nm	rpm
71.2	3.0	7.5	3 600
80.3	5.0	12.5	3 600
90.4	10.0	25.0	3 600
112.3	26.0	65.0	3 600
132.3	61.0	152.5	3 600

T_1 = max. torque transmitted with continuous duty

T_{1max} = max. permissible peak torque



Speed-torque characteristic for servomotors and with S1 duty

Explanation of servomotor characteristic values

Abbreviation	Name	Explanation
M_0	Permanent static torque	Permanent torque acting on motor shaft at speed n = 0
M_{rated}	Rated torque	Permanent torque at rated speed
M_{max}	Maximum torque	Maximum transient torque
n_{rated}	Rated speed	Motor speed specified by manufacturer

General technical data

Maximum motor weight

Geared motors with an input unit should be designed to be as short as possible.

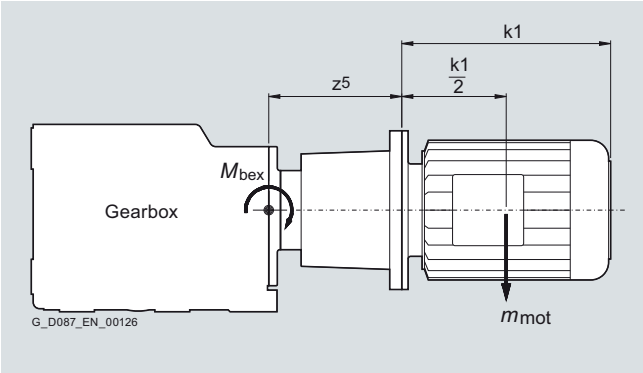
The prevailing bending moment can be calculated on the basis of the formulae below. If the permissible bending moment is exceeded, it means that a shorter design is required or that the motor requires additional support.

This particularly applies in the case of the following drive scenarios:

- Any geared motors that are not listed in this catalog
- Any motors that are mounted on the gearbox using a K2, K4 or KQ / KQS input unit
- Any gearboxes, particularly tandem gearboxes with input units that are exposed to high levels of impact and vibration.

However, if a connection to the input unit is necessary, the motor must be supported independently of the gearbox. Within this context, it is important to ensure that no additional forces are induced in the gearbox as a result of this support.

In the case of extremely long designs, you will need to contact us.



Code	Description	Unit
z5	For dimensions, see Chapter 7 "Input units"	mm
k1/2	Motor length	mm
m_{mot}	Motor weight force	N
M_{bex}	Prevailing bending moment	

IEC size	71	80	90	100	112	132	160	180	200	225	250	280	315
Permiss. bending moment M_{bperm} Nm	159	159	159	159	441	765	2 289	6 105	6 105	6 010	5 894	18 000	22 000

The prevailing bending moment M_{bex} is calculated as follows:

$$M_{bex} = m_{mot} \cdot \{z5 + (k1/2)\}$$

In the case of applications that involve powerful impacts or vibrations M_{bex} must be multiplied by 2.

The following condition applies here in respect of M_{bex}:

$$M_{bex} < M_{bperm}$$

Selection and ordering data

Gearboxes with K2 input units can be supplied as solo gearboxes or with an IEC standard motor. For possible gearbox ratios, see "Gearbox ratios and maximum torques" in the gearbox sections.

When selecting a solo gearbox configuration, remember to insert an **A** in the **10th position** of the order number, and a **0** in the **11th** to **13th positions**.

Order code:
Input unit K2 **A03**

Size Gearbox	Order No. Gearbox	IEC size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
1-stage helical gearbox E															
E38	**2KJ1001 - ■■■■■ - ■■■■**			✓	✓	✓									
E48	**2KJ1002 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
E68	**2KJ1003 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
E88	**2KJ1004 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
E108	**2KJ1005 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓				
E128	**2KJ1006 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓			
E148	**2KJ1007 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
2-stage helical gearbox Z															
Z38	**2KJ1102 - ■■■■■ - ■■■■**			✓	✓	✓									
Z48	**2KJ1103 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
Z68	**2KJ1104 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
Z88	**2KJ1105 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
Z108	**2KJ1106 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓				
Z128	**2KJ1107 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓			
Z148	**2KJ1108 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
Z168	**2KJ1110 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
Z188	**2KJ1111 - ■■■■■ - ■■■■**								✓	✓	✓	✓	✓	✓	✓
3-stage helical gearbox D															
D38	**2KJ1202 - ■■■■■ - ■■■■**			✓	✓										
D48	**2KJ1203 - ■■■■■ - ■■■■**			✓	✓	✓									
D68	**2KJ1204 - ■■■■■ - ■■■■**			✓	✓	✓									
D88	**2KJ1205 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
D108	**2KJ1206 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
D128	**2KJ1207 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓				
D148	**2KJ1208 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓			
D168	**2KJ1210 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓			
D188	**2KJ1211 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓		

Selection and ordering data (continued)

Size Gearbox	Order No. Gearbox	IEC size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
2-stage parallel-shaft gearbox FZ															
FZ38B	2KJ1301 - ■■■■■ - ■■■■			✓	✓	✓									
FZ48B	2KJ1302 - ■■■■■ - ■■■■			✓	✓	✓									
FZ68B	2KJ1303 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
FZ88B	2KJ1304 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
FZ108B	2KJ1305 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
FZ128B	2KJ1306 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓				
FZ148B	2KJ1307 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓			
FZ168B	2KJ1308 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FZ188B	2KJ1310 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	✓
FZ208	2KJ1311 - ■■■■■ - ■■■■								✓	✓	✓	✓	✓	✓	✓
3-stage parallel-shaft gearbox FD															
FD38B	2KJ1401 - ■■■■■ - ■■■■			✓	✓	✓									
FD48B	2KJ1402 - ■■■■■ - ■■■■			✓	✓	✓									
FD68B	2KJ1403 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
FD88B	2KJ1404 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
FD108B	2KJ1405 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
FD128B	2KJ1406 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓				
FD148B	2KJ1407 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓			
FD168B	2KJ1408 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FD188B	2KJ1410 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FD208	2KJ1411 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	✓
Bevel helical gearbox B															
B38	2KJ1501 - ■■■■■ - ■■■■			✓	✓	✓									
Bevel helical gearbox K															
K38	2KJ1502 - ■■■■■ - ■■■■			✓	✓	✓									
K48	2KJ1503 - ■■■■■ - ■■■■			✓	✓	✓									
K68	2KJ1504 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
K88	2KJ1505 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
K108	2KJ1506 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
K128	2KJ1507 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓				
K148	2KJ1508 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓			
K168	2KJ1510 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
K188	2KJ1511 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	✓
Helical worm gearbox C															
C38	2KJ1601 - ■■■■■ - ■■■■			✓	✓	✓									
C48	2KJ1602 - ■■■■■ - ■■■■			✓	✓	✓									
C68	2KJ1603 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
C88	2KJ1604 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							

Selection and ordering data

Gearboxes with K4 input units can be supplied as solo gearboxes or with an IEC standard motor. For possible gearbox ratios, see "Gearbox ratios and maximum torques" in the gearbox sections.

When selecting a solo gearbox configuration, remember to insert an **A** in the **10th position** of the order number, and a **0** in the **11th** to **13th positions**.

Order code:
Input unit K4 **A04**

Size Gearbox	Order No. Gearbox	IEC size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
1-stage helical gearbox E															
E38	**2KJ1001 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓									
E48	**2KJ1002 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓	✓	✓							
E68	**2KJ1003 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓	✓	✓	✓						
E88	**2KJ1004 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓	✓					
E108	**2KJ1005 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓	✓			
E128	**2KJ1006 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓	✓		
E148	**2KJ1007 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
2-stage helical gearbox Z															
Z38	**2KJ1102 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓	✓								
Z48	**2KJ1103 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓	✓	✓							
Z68	**2KJ1104 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓	✓	✓	✓						
Z88	**2KJ1105 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓	✓					
Z108	**2KJ1106 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓	✓			
Z128	**2KJ1107 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓	✓		
Z148	**2KJ1108 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
Z168	**2KJ1110 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
Z188	**2KJ1111 - ■■■■■ - ■■■■**								✓	✓	✓	✓	✓	✓	
3-stage helical gearbox D															
D38	**2KJ1202 - ■■■■■ - ■■■■**	✓	✓	✓	✓										
D48	**2KJ1203 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓									
D68	**2KJ1204 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓									
D88	**2KJ1205 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓	✓	✓							
D108	**2KJ1206 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
D128	**2KJ1207 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓				
D148	**2KJ1208 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓			
D168	**2KJ1210 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓			
D188	**2KJ1211 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	

Selection and ordering data (continued)

Size Gearbox	Order No. Gearbox	IEC size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
2-stage parallel-shaft gearbox FZ															
FZ38B	2KJ1301 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓									
FZ48B	2KJ1302 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓								
FZ68B	2KJ1303 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓							
FZ88B	2KJ1304 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓	✓						
FZ108B	2KJ1305 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓	✓					
FZ128B	2KJ1306 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓	✓			
FZ148B	2KJ1307 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓	✓		
FZ168B	2KJ1308 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FZ188B	2KJ1310 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FZ208	2KJ1311 - ■■■■■ - ■■■■								✓	✓	✓	✓	✓	✓	
3-stage parallel-shaft gearbox FD															
FD38B	2KJ1401 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓									
FD48B	2KJ1402 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓								
FD68B	2KJ1403 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓							
FD88B	2KJ1404 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓	✓						
FD108B	2KJ1405 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓	✓					
FD128B	2KJ1406 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓	✓			
FD148B	2KJ1407 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓	✓		
FD168B	2KJ1408 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FD188B	2KJ1410 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FD208	2KJ1411 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
Bevel helical gearbox B															
B38	2KJ1501 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓									
Bevel helical gearbox K															
K38	2KJ1502 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓								
K48	2KJ1503 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓								
K68	2KJ1504 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓							
K88	2KJ1505 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓	✓						
K108	2KJ1506 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓	✓					
K128	2KJ1507 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓	✓			
K148	2KJ1508 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓	✓		
K168	2KJ1510 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
K188	2KJ1511 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
Helical worm gearbox C															
C38	2KJ1601 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓								
C48	2KJ1602 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓								
C68	2KJ1603 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓							
C88	2KJ1604 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓	✓						

Selection and ordering data

For possible gearbox ratios, see "Gearbox ratios and maximum torques" in the gearbox sections.

Order code:
Input unit KQ **A07**
Input unit KQS **A08**

Size Gearbox	Order No. Gearbox	Size index				
		71.2	80.3	90.4	112.3	132.3
		Order code for size index				
		N61	N62	N63	N62	N62
		Order No. 9th position				
		C	D	E	G	H
1-stage helical gearbox E						
E38	**2KJ1001 - ■■■■■ - ■■■■**	✓	✓	✓		
E48	**2KJ1002 - ■■■■■ - ■■■■**	✓	✓	✓	✓	
E68	**2KJ1003 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓
E88	**2KJ1004 - ■■■■■ - ■■■■**		✓	✓	✓	✓
E108	**2KJ1005 - ■■■■■ - ■■■■**			✓	✓	✓
E128	**2KJ1006 - ■■■■■ - ■■■■**				✓	✓
E148	**2KJ1007 - ■■■■■ - ■■■■**					✓
2-stage helical gearbox Z						
Z28	**2KJ1101 - ■■■■■ - ■■■■**	✓	✓	✓		
Z38	**2KJ1102 - ■■■■■ - ■■■■**	✓	✓	✓		
Z48	**2KJ1103 - ■■■■■ - ■■■■**	✓	✓	✓	✓	
Z68	**2KJ1104 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓
Z88	**2KJ1105 - ■■■■■ - ■■■■**		✓	✓	✓	✓
Z108	**2KJ1106 - ■■■■■ - ■■■■**			✓	✓	✓
Z128	**2KJ1107 - ■■■■■ - ■■■■**				✓	✓
Z148	**2KJ1108 - ■■■■■ - ■■■■**					✓
Z168	**2KJ1110 - ■■■■■ - ■■■■**					✓
Z188	**2KJ1111 - ■■■■■ - ■■■■**					✓
3-stage helical gearbox D						
D28	**2KJ1202 - ■■■■■ - ■■■■**	✓	✓	✓		
D38	**2KJ1202 - ■■■■■ - ■■■■**	✓	✓	✓		
D48	**2KJ1203 - ■■■■■ - ■■■■**	✓	✓	✓		
D68	**2KJ1204 - ■■■■■ - ■■■■**	✓	✓	✓		
D88	**2KJ1205 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓
D108	**2KJ1206 - ■■■■■ - ■■■■**		✓	✓	✓	✓
D128	**2KJ1207 - ■■■■■ - ■■■■**			✓	✓	✓
D148	**2KJ1208 - ■■■■■ - ■■■■**				✓	✓
D168	**2KJ1210 - ■■■■■ - ■■■■**					✓
D188	**2KJ1211 - ■■■■■ - ■■■■**					✓

Selection and ordering data (continued)

Size Gearbox	Order No. Gearbox	Size index				
		71.2	80.3	90.4	112.3	132.3
		Order code for size index				
		N61	N62	N63	N62	N62
		Order No. 9th position				
		C	D	E	G	H
2-stage parallel-shaft gearbox FZ						
FZ28	2KJ1300 - ■■■■■ - ■■■■	✓	✓	✓		
FZ38B	2KJ1301 - ■■■■■ - ■■■■	✓	✓	✓		
FZ48B	2KJ1302 - ■■■■■ - ■■■■	✓	✓	✓		
FZ68B	2KJ1303 - ■■■■■ - ■■■■	✓	✓	✓	✓	
FZ88B	2KJ1304 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓
FZ108B	2KJ1305 - ■■■■■ - ■■■■		✓	✓	✓	✓
FZ128B	2KJ1306 - ■■■■■ - ■■■■			✓	✓	✓
FZ148B	2KJ1307 - ■■■■■ - ■■■■				✓	✓
FZ168B	2KJ1308 - ■■■■■ - ■■■■					✓
3-stage parallel-shaft gearbox FD						
FD28	2KJ1400 - ■■■■■ - ■■■■	✓	✓	✓		
FD38B	2KJ1401 - ■■■■■ - ■■■■	✓	✓	✓		
FD48B	2KJ1402 - ■■■■■ - ■■■■	✓	✓	✓		
FD68B	2KJ1403 - ■■■■■ - ■■■■	✓	✓	✓	✓	
FD88B	2KJ1404 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓
FD108B	2KJ1405 - ■■■■■ - ■■■■		✓	✓	✓	✓
FD128B	2KJ1406 - ■■■■■ - ■■■■			✓	✓	✓
FD148B	2KJ1407 - ■■■■■ - ■■■■				✓	✓
FD168B	2KJ1408 - ■■■■■ - ■■■■					✓
FD188B	2KJ1410 - ■■■■■ - ■■■■					✓
Bevel helical gearbox B						
B28	2KJ1500 - ■■■■■ - ■■■■	✓	✓	✓		
B38	2KJ1501 - ■■■■■ - ■■■■	✓	✓	✓		
Bevel helical gearbox K						
K38	2KJ1502 - ■■■■■ - ■■■■	✓	✓	✓		
K48	2KJ1503 - ■■■■■ - ■■■■	✓	✓	✓		
K68	2KJ1504 - ■■■■■ - ■■■■	✓	✓	✓	✓	
K88	2KJ1505 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓
K108	2KJ1506 - ■■■■■ - ■■■■		✓	✓	✓	✓
K128	2KJ1507 - ■■■■■ - ■■■■			✓	✓	✓
K148	2KJ1508 - ■■■■■ - ■■■■				✓	✓
K168	2KJ1510 - ■■■■■ - ■■■■					✓
K188	2KJ1511 - ■■■■■ - ■■■■					✓
Helical worm gearbox C						
C38	2KJ1601 - ■■■■■ - ■■■■	✓	✓	✓		
C48	2KJ1602 - ■■■■■ - ■■■■	✓	✓	✓		
C68	2KJ1603 - ■■■■■ - ■■■■	✓	✓	✓	✓	
C88	2KJ1604 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓

Selection and ordering data

For possible gearbox ratios, see "Gearbox ratios and maximum torques" in the gearbox sections.

Order code:
Input unit A **A00**

Size Gearbox	Order No. Gearbox	Size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
1-stage helical gearbox E															
E38	**2KJ1001 - ■■■■■ - ■■■■**		✓	✓	✓	✓									
E48	**2KJ1002 - ■■■■■ - ■■■■**		✓	✓	✓	✓	✓								
E68	**2KJ1003 - ■■■■■ - ■■■■**		✓	✓	✓	✓	✓	✓							
E88	**2KJ1004 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
E108	**2KJ1005 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓		✓				
E128	**2KJ1006 - ■■■■■ - ■■■■**					✓	✓	✓	✓		✓	✓			
E148	**2KJ1007 - ■■■■■ - ■■■■**							✓	✓		✓	✓	✓	✓	
2-stage helical gearbox Z															
Z38	**2KJ1102 - ■■■■■ - ■■■■**		✓	✓	✓	✓									
Z48	**2KJ1103 - ■■■■■ - ■■■■**		✓	✓	✓	✓	✓								
Z68	**2KJ1104 - ■■■■■ - ■■■■**		✓	✓	✓	✓	✓	✓							
Z88	**2KJ1105 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
Z108	**2KJ1106 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓		✓				
Z128	**2KJ1107 - ■■■■■ - ■■■■**					✓	✓	✓	✓		✓	✓			
Z148	**2KJ1108 - ■■■■■ - ■■■■**							✓	✓		✓	✓	✓	✓	
Z168	**2KJ1110 - ■■■■■ - ■■■■**							✓	✓		✓	✓	✓	✓	
Z188	**2KJ1111 - ■■■■■ - ■■■■**								✓		✓	✓	✓	✓	
3-stage helical gearbox D															
D38	**2KJ1202 - ■■■■■ - ■■■■**		✓	✓	✓										
D48	**2KJ1203 - ■■■■■ - ■■■■**		✓	✓	✓	✓									
D68	**2KJ1204 - ■■■■■ - ■■■■**		✓	✓	✓	✓									
D88	**2KJ1205 - ■■■■■ - ■■■■**		✓	✓	✓	✓	✓	✓							
D108	**2KJ1206 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
D128	**2KJ1207 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓		✓				
D148	**2KJ1208 - ■■■■■ - ■■■■**					✓	✓	✓	✓		✓	✓			
D168	**2KJ1210 - ■■■■■ - ■■■■**							✓	✓		✓	✓			
D188	**2KJ1211 - ■■■■■ - ■■■■**							✓	✓		✓	✓	✓	✓	

Input unit A

Selection and ordering data (continued)

Size Gearbox	Order No. Gearbox	Size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
2-stage parallel-shaft gearbox FZ															
FZ38B	2KJ1301 - ■■■■■ - ■■■■		✓	✓	✓	✓									
FZ48B	2KJ1302 - ■■■■■ - ■■■■		✓	✓	✓	✓									
FZ68B	2KJ1303 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓								
FZ88B	2KJ1304 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓	✓							
FZ108B	2KJ1305 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
FZ128B	2KJ1306 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓		✓				
FZ148B	2KJ1307 - ■■■■■ - ■■■■					✓	✓	✓	✓		✓	✓			
FZ168B	2KJ1308 - ■■■■■ - ■■■■							✓	✓		✓	✓	✓	✓	
FZ188B	2KJ1310 - ■■■■■ - ■■■■							✓	✓		✓	✓	✓	✓	
FZ208	2KJ1311 - ■■■■■ - ■■■■								✓		✓	✓	✓	✓	
3-stage parallel-shaft gearbox FD															
FD38B	2KJ1401 - ■■■■■ - ■■■■		✓	✓	✓	✓									
FD48B	2KJ1402 - ■■■■■ - ■■■■		✓	✓	✓	✓									
FD68B	2KJ1403 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓								
FD88B	2KJ1404 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓	✓							
FD108B	2KJ1405 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
FD128B	2KJ1406 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓		✓				
FD148B	2KJ1407 - ■■■■■ - ■■■■					✓	✓	✓	✓		✓	✓			
FD168B	2KJ1408 - ■■■■■ - ■■■■							✓	✓		✓	✓	✓	✓	
FD188B	2KJ1410 - ■■■■■ - ■■■■							✓	✓		✓	✓	✓	✓	
FD208	2KJ1411 - ■■■■■ - ■■■■							✓	✓		✓	✓	✓	✓	
Bevel helical gearbox B															
B38	2KJ1501 - ■■■■■ - ■■■■		✓	✓	✓	✓									
Bevel helical gearbox K															
K38	2KJ1502 - ■■■■■ - ■■■■		✓	✓	✓	✓									
K48	2KJ1503 - ■■■■■ - ■■■■		✓	✓	✓	✓									
K68	2KJ1504 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓								
K88	2KJ1505 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓	✓							
K108	2KJ1506 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
K128	2KJ1507 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓		✓				
K148	2KJ1508 - ■■■■■ - ■■■■					✓	✓	✓	✓		✓	✓			
K168	2KJ1510 - ■■■■■ - ■■■■							✓	✓		✓	✓	✓	✓	
K188	2KJ1511 - ■■■■■ - ■■■■							✓	✓		✓	✓	✓	✓	
Helical worm gearbox C															
C38	2KJ1601 - ■■■■■ - ■■■■		✓	✓	✓	✓									
C48	2KJ1602 - ■■■■■ - ■■■■		✓	✓	✓	✓									
C68	2KJ1603 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓								
C88	2KJ1604 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓	✓							

Selection and ordering data

For possible gearbox ratios, see "Gearbox ratios and maximum torques" in the gearbox sections.

Order code:
Input unit P **A09**

Size Gearbox	Order No. Gearbox	Size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
1-stage helical gearbox E															
E38	**2KJ1001 - ■■■■■ - ■■■■**			✓	✓	✓									
E48	**2KJ1002 - ■■■■■ - ■■■■**			✓	✓	✓	✓								
E68	**2KJ1003 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
E88	**2KJ1004 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
E108	**2KJ1005 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓				
E128	**2KJ1006 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓			
E148	**2KJ1007 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
2-stage helical gearbox Z															
Z38	**2KJ1102 - ■■■■■ - ■■■■**			✓	✓	✓									
Z48	**2KJ1103 - ■■■■■ - ■■■■**			✓	✓	✓	✓								
Z68	**2KJ1104 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
Z88	**2KJ1105 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
Z108	**2KJ1106 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓				
Z128	**2KJ1107 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓			
Z148	**2KJ1108 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
Z168	**2KJ1110 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
Z188	**2KJ1111 - ■■■■■ - ■■■■**								✓	✓	✓	✓	✓	✓	
3-stage helical gearbox D															
D38	**2KJ1202 - ■■■■■ - ■■■■**			✓	✓										
D48	**2KJ1203 - ■■■■■ - ■■■■**			✓	✓	✓									
D68	**2KJ1204 - ■■■■■ - ■■■■**			✓	✓	✓									
D88	**2KJ1205 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
D108	**2KJ1206 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
D128	**2KJ1207 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓				
D148	**2KJ1208 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓			
D168	**2KJ1210 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓			
D188	**2KJ1211 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	

Input unit P

Selection and ordering data (continued)

Size Gearbox	Order No. Gearbox	Size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
2-stage parallel-shaft gearbox FZ															
FZ38B	2KJ1301 - ■■■■■ - ■■■■			✓	✓	✓									
FZ48B	2KJ1302 - ■■■■■ - ■■■■			✓	✓	✓									
FZ68B	2KJ1303 - ■■■■■ - ■■■■			✓	✓	✓	✓								
FZ88B	2KJ1304 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
FZ108B	2KJ1305 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
FZ128B	2KJ1306 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓				
FZ148B	2KJ1307 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓			
FZ168B	2KJ1308 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FZ188B	2KJ1310 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
3-stage parallel-shaft gearbox FD															
FD38B	2KJ1401 - ■■■■■ - ■■■■			✓	✓	✓									
FD48B	2KJ1402 - ■■■■■ - ■■■■			✓	✓	✓									
FD68B	2KJ1403 - ■■■■■ - ■■■■			✓	✓	✓	✓								
FD88B	2KJ1404 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
FD108B	2KJ1405 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
FD128B	2KJ1406 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓				
FD148B	2KJ1407 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓			
FD168B	2KJ1408 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FD188B	2KJ1410 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
Bevel helical gearbox B															
B38	2KJ1501 - ■■■■■ - ■■■■			✓	✓	✓									
Bevel helical gearbox K															
K38	2KJ1502 - ■■■■■ - ■■■■			✓	✓	✓									
K48	2KJ1503 - ■■■■■ - ■■■■			✓	✓	✓									
K68	2KJ1504 - ■■■■■ - ■■■■			✓	✓	✓	✓								
K88	2KJ1505 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
K108	2KJ1506 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
K128	2KJ1507 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓				
K148	2KJ1508 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓			
K168	2KJ1510 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
K188	2KJ1511 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
Helical worm gearbox C															
C38	2KJ1601 - ■■■■■ - ■■■■			✓	✓	✓									
C48	2KJ1602 - ■■■■■ - ■■■■			✓	✓	✓									
C68	2KJ1603 - ■■■■■ - ■■■■			✓	✓	✓	✓								
C88	2KJ1604 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							

Input units with backstop K2X, AX, PX

For applications that only require one permissible direction of rotation, input units K2, A and P can be supplied with a backstop feature. In this case, an **X** needs to be added to the input unit code.

The backstops have centrifugal sprags and are suitable for use up to a maximum speed of 3600 rpm.

The backstops have been designed to offer a long service life, provided that they are used at a higher speed than the minimum specified in the table. Once this speed is reached and exceeded, the sprags lift off so that the backstop is not subject to wear and is maintenance-free.

All backstops are integrated into the input units and have no impact on the dimensions.

Note:

It is necessary to specify the desired direction of rotation of the output shaft when ordering a gearbox with backstop. The direction of rotation is determined by front view of the output shaft. See also "Direction of rotation of geared motors", Page 1/43.

With parallel shaft gearboxes, bevel helical gearboxes and helical worm gearboxes, it is again necessary to specify the side on which the output shaft is located, i.e. either "Output side A" or "Output side B". The output side is defined by specifying the mounting position. See also "Mounting types and mounting positions", Pages 3/92, 4/87 and 5/47.

K2, A, P													
IEC size		**71**	**80**	**90**	**100**	**112**	**132**	**160**	**180**	**200**	**225**	**250**	**280**
Minimum speed	[rpm]	890	820	820	750	750	670	670	610	610	610	610	400
Max. backstop starting torque	[Nm]	12.3	12.3	25	49	66	151	247	305	494	741	906	1 482

Gearbox	Size	Gear stages	View in relation to the output shaft	Output shaft direction of rotation	Input shaft direction of rotation
Z	38 ... 188	2	Facing output shaft	Clockwise	Clockwise
Z	38 ... 188	2	Facing output shaft	Counterclockwise	Counterclockwise
D	38 ... 188	3	Facing output shaft	Clockwise	Counterclockwise
D	38 ... 188	3	Facing output shaft	Counterclockwise	Clockwise
FZ	38 ... 188B	2	Facing drive end of output shaft	Clockwise	Clockwise
FZ	38 ... 188B	2	Facing drive end of output shaft	Counterclockwise	Counterclockwise
FD	38 ... 188B	3	Facing drive end of output shaft	Clockwise	Counterclockwise
FD	38 ... 188B	3	Facing drive end of output shaft	Counterclockwise	Clockwise
C	38 ... 88	2	Facing drive end of output shaft	Clockwise	Clockwise
C	38 ... 88	2	Facing drive end of output shaft	Counterclockwise	Counterclockwise
B	28 ... 38	2	Facing drive end of output shaft	Clockwise	Clockwise
B	28 ... 38	2	Facing drive end of output shaft	Counterclockwise	Counterclockwise
K	38 ... 88	3	Facing drive end of output shaft	Clockwise	Counterclockwise
K	38 ... 88	3	Facing drive end of output shaft	Counterclockwise	Clockwise
K	108 ... 188	3	Facing drive end of output shaft	Clockwise	Clockwise
K	108 ... 188	3	Facing drive end of output shaft	Counterclockwise	Counterclockwise
K	38 ... 188	3	Facing non-drive end of output shaft	Clockwise	Counterclockwise
K	38 ... 188	3	Facing non-drive end of output shaft	Counterclockwise	Clockwise

Input units with backstop K2X, AX, PX (continued)

Example:

K 108 - 188

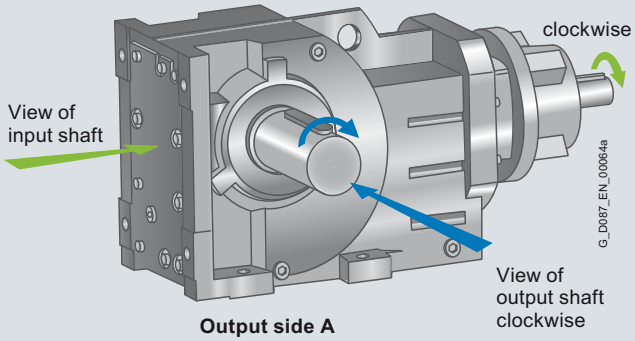
Facing drive end of output shaft

Output shaft direction of rotation = clockwise

Input shaft direction of rotation = clockwise

Additional order codes:
Backstop (X) **A15**

Output shaft direction of rotation:
Clockwise **K18**
Counterclockwise **K19**



Friction clutch

Gearboxes and geared motors with a K2 input unit can be fitted with a friction clutch as an option. The friction clutch creates a friction-locked connection between the motor output shaft and the gearbox input shaft until a set torque value is achieved. Once this torque is exceeded the clutch will slip.
Friction clutches are used when there is a risk of the geared motor sustaining damage as a result of stalling.

A torque setting can be specified in plain text for the friction clutch.

Order code:
Friction clutch **A17**
Set torque **Y00**
Plain text: **Y00*RKD(a) ....***

Example: required torque 125 Nm

Plain text: Y00*RKD(a)125*

Speed monitoring

For monitoring speed deviations, a speed monitor can be used in coupling lantern K2 together with a friction clutch (order code **A17**).

The complete speed monitor system consists of proximity switch and speed monitor. The proximity switch operates contact-free according to the sampling method and emits one signal per coupling rotation which is evaluated by the speed monitor.

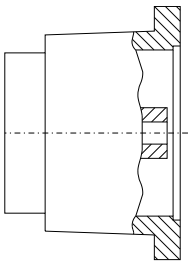
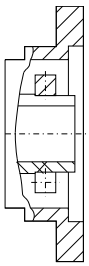
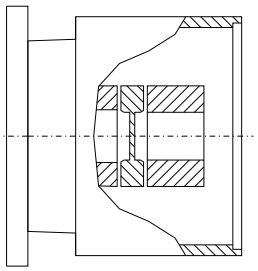
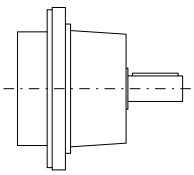
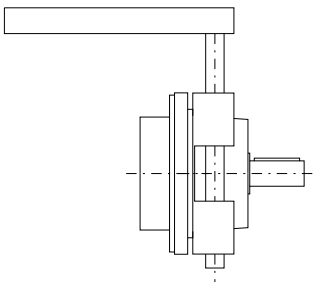
The signal sequence sent by the proximity switch is compared in the speed monitor with the set setpoint speed. If the speed is below or above the configured setpoint speed, a relay is actuated (depending on the function setting) via an output stage.

Both components can also be obtained separately.

Order code:

Proximity switch **A18**
Speed monitor **A19**

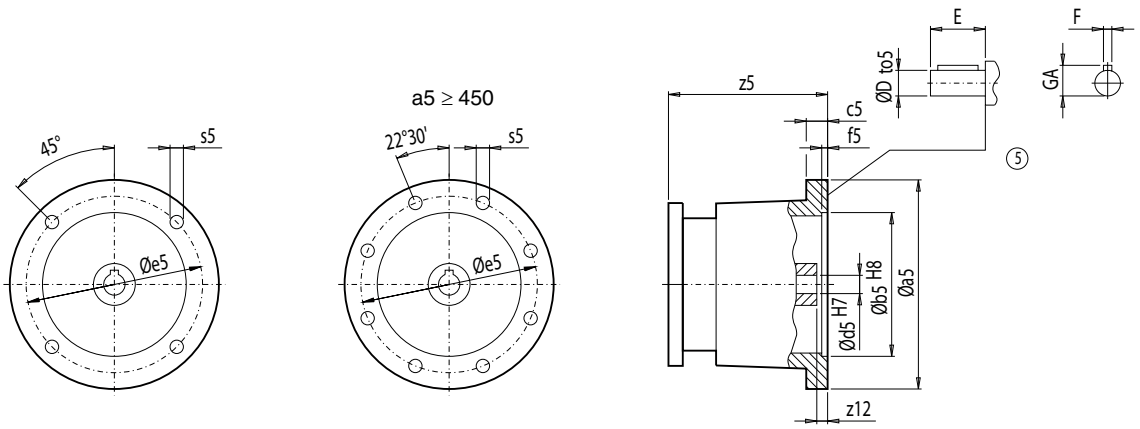
Dimension drawing overview

Representation	Input unit	Dimension drawing on page
	K2	7/20
	K4	7/23
	KQ and KQS	7/28
	A	7/30
	P	7/33

Input units

Dimensions

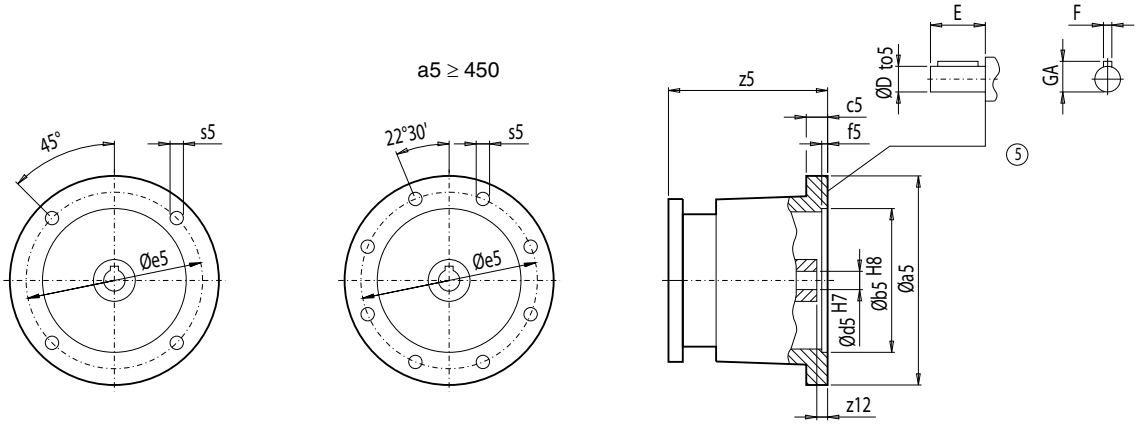
Input unit K2



Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
–	–	B38	38B	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	176.0
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	176.0
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	198.5
38	–	38 48	48B	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	201.0
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	201.0
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	223.5
–	38	–	–	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	216.0
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	216.0
48	–	68	68B	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	195.5
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	195.5
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	218.0
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	217.0
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	280.0
–	48	–	–	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	212.5
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	212.5
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	235.0
68	–	88	88B	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	189.5
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	189.5
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	212.0
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	209.0
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	270.5
–	68	–	–	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	208.0
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	208.0
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	230.5
88	–	108	108B	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	174.5
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	174.5
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	194.5
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	190.5
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	252.0
					(160)	350	250	30	6.0	300	M16	66	42	k6	110	45.0	12	318.5
–	88	–	–	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	199.5
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	199.5
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	222.0
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	219.5
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	280.0

⑤ Feather key / keyway DIN 6885

Input unit K2 (continued)

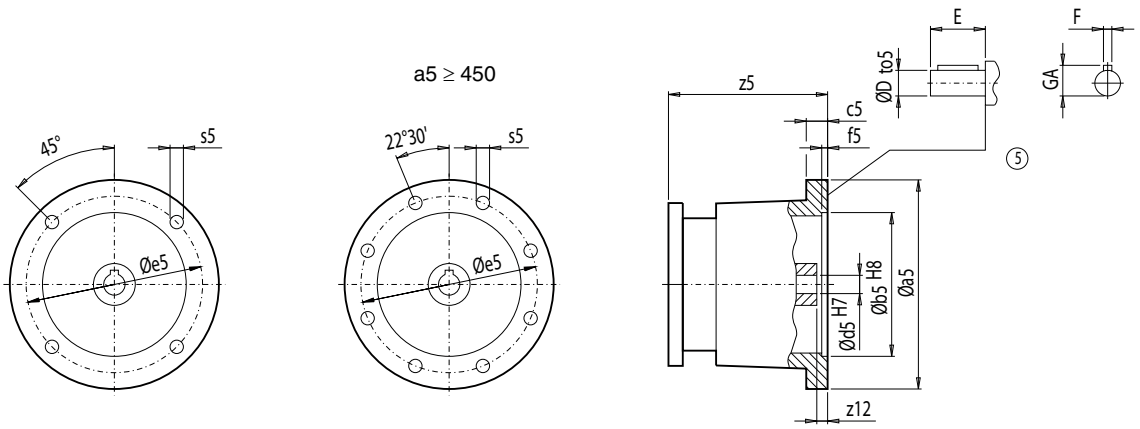


Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
108	–	128	128B	-K2	(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	163.0
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	182.5
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	179.0
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	239.5
					(160)	350	250	30	6.0	300	M16	66	42	k6	110	45.0	12	307.0
					(180)	350	250	25	6.0	300	M16	59	48	k6	110	51.5	14	357.5
					(200)	400	300	25	6.0	350	M16	60	55	m6	110	59.0	16	358.5
–	108	–	–	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	193.5
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	193.5
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	216.0
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	210.5
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	272.0
					(160)	350	250	30	6.0	300	M16	66	42	k6	110	45.0	12	336.5
128	–	148	148B	-K2	(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	173.0
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	168.5
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	229.0
					(160)	350	250	30	6.0	300	M16	66	42	k6	110	45.0	12	290.5
					(180)	350	250	25	6.0	300	M16	59	48	k6	110	51.5	14	344.0
					(200)	400	300	25	6.0	350	M16	60	55	m6	110	59.0	16	345.0
					(225)	450	350	27	6.0	400	M16	90	60	m6	140	64.0	18	428.5
–	128	–	–	-K2	(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	186.5
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	209.0
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	202.5
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	263.0
					(160)	350	250	30	6.0	300	M16	66	42	k6	110	45.0	12	327.5
					(180)	350	250	25	6.0	300	M16	59	48	k6	110	51.5	14	381.0
					(200)	400	300	25	6.0	350	M16	60	55	m6	110	59.0	16	382.0
148	–	168	168B	-K2	(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	221.0
					(160)	350	250	30	6.0	300	M16	66	42	k6	110	45.0	12	283.0
					(180)	350	250	25	6.0	300	M16	59	48	k6	110	51.5	14	336.5
					(200)	400	300	25	6.0	350	M16	60	55	m6	110	59.0	16	337.5
					(225)	450	350	27	6.0	400	M16	90	60	m6	140	64.0	18	421.0
					(250)	550	450	27	6.0	500	M16	75	65	m6	140	69.0	18	425.5
					(280)	550	450	27	7.0	500	M16	51	75	m6	140	79.5	18	469.0

⑤ Feather key / keyway DIN 6885

Dimensions

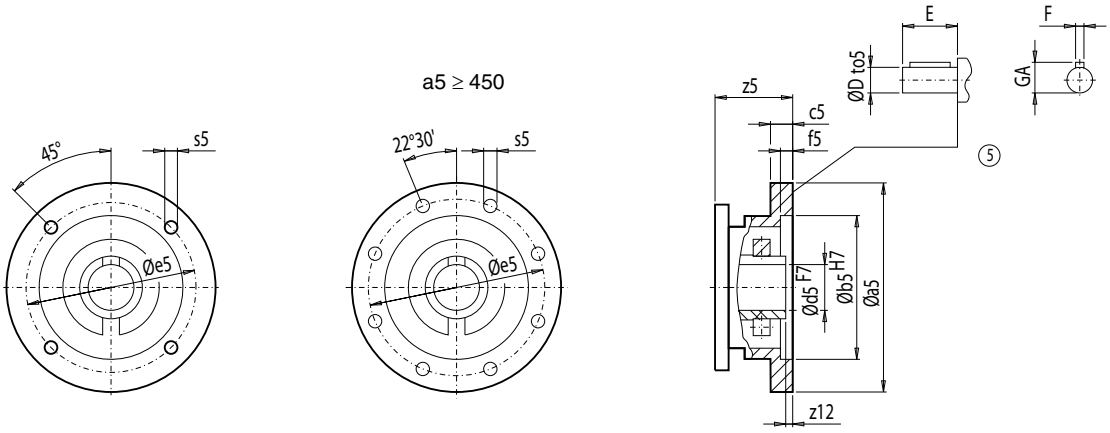
Input unit K2 (continued)



Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
–	148	–	–	-K2	(100)	250	180	19	5	215	M12	30	28	k6	60	31.0	8	204.0
					(112)	250	180	19	5	215	M12	30	28	k6	60	31.0	8	199.5
					(132)	300	230	19	5	265	M12	45	38	k6	80	41.0	10	259.0
					(160)	350	250	30	6	300	M16	66	42	k6	110	45.0	12	321.0
					(180)	350	250	25	6	300	M16	59	48	k6	110	51.5	14	374.5
					(200)	400	300	25	6	350	M16	60	55	m6	110	59.0	16	375.5
					(225)	450	350	27	6	400	M16	90	60	m6	140	64.0	18	459.0
168	–	188	188B 208	-K2	(132)	300	230	19	5	265	M12	45	38	k6	80	41.0	10	206.5
					(160)	350	250	30	6	300	M16	66	42	k6	110	45.0	12	268.5
					(180)	350	250	25	6	300	M16	59	48	k6	110	51.5	14	322.0
					(200)	400	300	25	6	350	M16	60	55	m6	110	59.0	16	323.0
					(225)	450	350	27	6	400	M16	90	60	m6	140	64.0	18	406.5
					(250)	550	450	27	6	500	M16	75	65	m6	140	69.0	18	411.0
					(280)	550	450	27	7	500	M16	51	75	m6	140	79.5	18	469.0
					(315) *)	660	550	32	8	600	M20	33	80	m6	170	85.0	22	299.0
–	168	–	–	-K2	(132)	300	230	19	5	265	M12	45	38	k6	80	41.0	10	247.5
					(160)	350	250	30	6	300	M16	66	42	k6	110	45.0	12	309.5
					(180)	350	250	25	6	300	M16	59	48	k6	110	51.5	14	363.0
					(200)	400	300	25	6	350	M16	60	55	m6	110	59.0	16	364.0
					(225)	450	350	27	6	400	M16	90	60	m6	140	64.0	18	447.5
188	–	–	–	-K2	(160)	350	250	30	6	300	M16	66	42	k6	110	45.0	12	268.5
					(180)	350	250	25	6	300	M16	59	48	k6	110	51.5	14	322.0
					(200)	400	300	25	6	350	M16	60	55	m6	110	59.0	16	323.0
					(225)	450	350	27	6	400	M16	90	60	m6	140	64.0	18	406.5
					(250)	550	450	27	6	500	M16	75	65	m6	140	69.0	18	411.0
					(280)	550	450	27	7	500	M16	51	75	m6	140	79.5	18	469.0
					(315)	660	550	32	8	600	M20	33	80	m6	170	85.0	22	299.0
–	188	–	–	-K2	(132)	300	230	19	5	265	M12	45	38	k6	80	41.0	10	206.5
					(160)	350	250	30	6	300	M16	66	42	k6	110	45.0	12	268.5
					(180)	350	250	25	6	300	M16	59	48	k6	110	51.5	14	322.0
					(200)	400	300	25	6	350	M16	60	55	m6	110	59.0	16	323.0
					(225)	450	350	27	6	400	M16	90	60	m6	140	64.0	18	406.5
					(250)	550	450	27	6	500	M16	75	65	m6	140	69.0	18	411.0
					(280)	550	450	27	7	500	M16	51	75	m6	140	79.5	18	469.0

⑤ Feather key / keyway DIN 6885 *) Not possible in conjunction with Z.168

Input unit K4



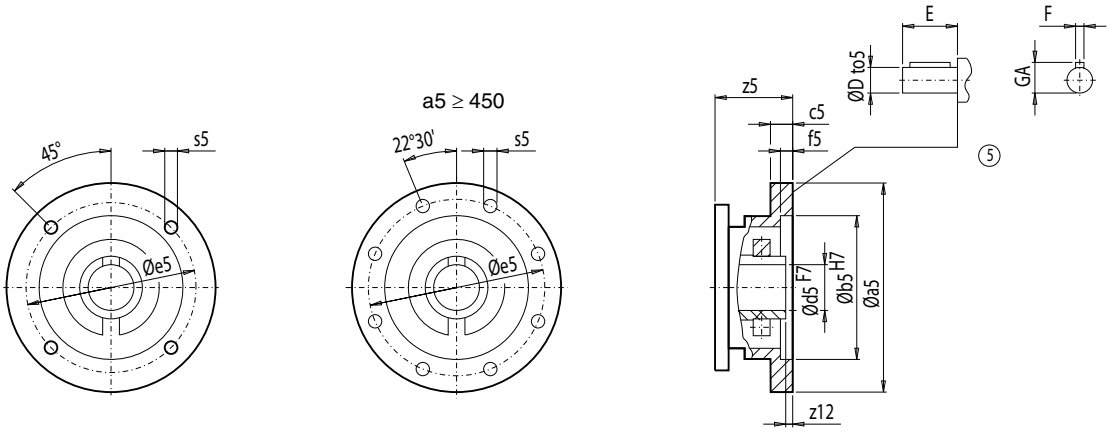
Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
–	–	B38	38B	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	48.5
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	45.0
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	69.0
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	69.0
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	76.5
38	–	38 48	48B	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	73.5
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	70.0
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	94.0
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	94.0
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	101.5
					(112)	250	180	20.0	5.0	215	M12	7.0	28	k6	60	31.0	8	110.5
–	38	–	–	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	88.5
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	85.0
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	109.0
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	109.0
48	–	68	68B	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	68.0
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	64.5
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	88.5
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	88.5
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	96.0
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	104.5
					(132)	300	230	20.0	5.0	265	M12	22.0	38	k6	80	41.0	10	147.5
–	48	–	–	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	85.0
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	81.5
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	105.5
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	105.5
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	113.0

⑤ Feather key / keyway DIN 6885

Input units

Dimensions

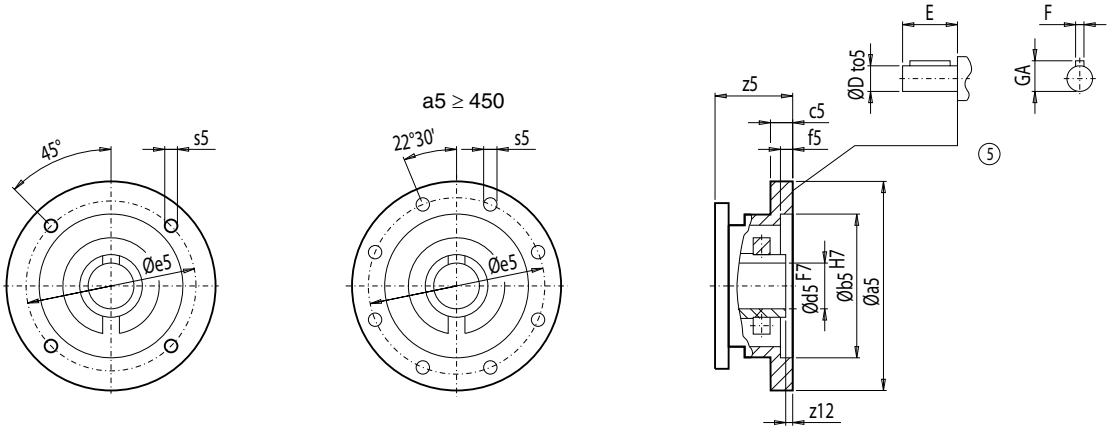
Input unit K4 (continued)



Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
68	–	88	88B	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	62.0
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	58.5
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	82.5
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	82.5
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	90.0
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	96.5
					(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	137.5
					(160)	350	250	26.0	6.0	300	M16	20.0	42	k6	110	45.0	12	178.5
–	68	–	–	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	80.5
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	77.0
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	101.0
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	101.0
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	108.5
88	–	108	108B	-K4	(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	67.5
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	72.5
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	78.0
					(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	119.0
					(160)	350	250	26.0	6.0	300	M16	20.0	42	k6	110	45.0	12	162.0
					(180)	350	250	26.0	6.0	300	M16x22	21.0	48	k6	110	51.5	14	179.0
–	88	–	–	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	72.0
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	68.5
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	92.5
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	92.5
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	100.0
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	107.0
					(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	147.0
108	–	128	128B	-K4	(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	56.0
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	60.5
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	66.5
					(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	106.5
					(160)	350	250	25.0	6.0	300	M16	20.0	42	k6	110	45.0	12	150.5
					(180)	350	250	15.5	6.0	300	M16x22	21.0	48	k6	110	51.5	14	164.0
					(200)	400	300	25.0	6.0	350	M16	30.0	55	m6	110	59.0	16	174.0
					(225)	450	350	27.0	6.0	400	M16	30.0	60	m6	140	64.0	18	247.0

⑤ Feather key / keyway DIN 6885

Input unit K4 (continued)

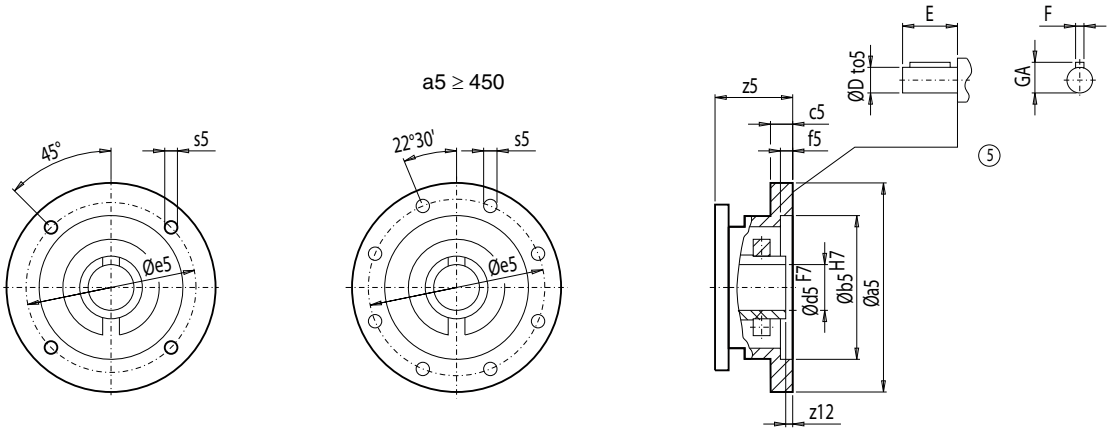


Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
–	108	–	–	-K4	(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	86.5
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	86.5
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	94.0
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	98.0
					(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	139.0
					(160)	350	250	25.0	6.0	300	M16	20.0	42	k6	110	45.0	12	180.0
128	–	148	148B	-K4	(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	51.0
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	56.0
					(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	96.0
					(160)	350	250	25.0	6.0	300	M16	20.0	42	k6	110	45.0	12	134.0
					(180)	350	250	15.5	6.0	300	M16x22	21.0	48	k6	110	51.5	14	150.5
					(200)	400	300	25.0	6.0	350	M16	30.0	55	m6	110	59.0	16	160.5
					(225)	450	350	27.0	6.0	400	M16	30.0	60	m6	140	64.0	18	233.0
					(250)	550	450	27.0	6.0	500	M16	30.0	65	m6	140	69.0	18	233.0
–	128	–	–	-K4	(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	79.5
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	87.0
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	90.0
					(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	130.0
					(160)	350	250	25.0	6.0	300	M16	20.0	42	k6	110	45.0	12	171.0
					(180)	350	250	15.5	6.0	300	M16x22	21.0	48	k6	110	51.5	14	187.5
					(200)	400	300	25.0	6.0	350	M16	30.0	55	m6	110	59.0	16	197.5
148	–	168	168B	-K4	(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	88.0
					(160)	350	250	25.0	6.0	300	M16	20.0	42	k6	110	45.0	12	126.5
					(180)	350	250	15.5	6.0	300	M16x22	21.0	48	k6	110	51.5	14	143.0
					(200)	400	300	25.0	6.0	350	M16	30.0	55	m6	110	59.0	16	153.0
					(225)	450	350	27.0	6.0	400	M16	30.0	60	m6	140	64.0	18	225.5
					(250)	550	450	27.0	6.0	500	M16	30.0	65	m6	140	69.0	18	225.0
					(280)	550	450	27.0	6.0	500	M16	30.0	75	m6	140	79.5	20	238.0

⑤ Feather key / keyway DIN 6885

Dimensions

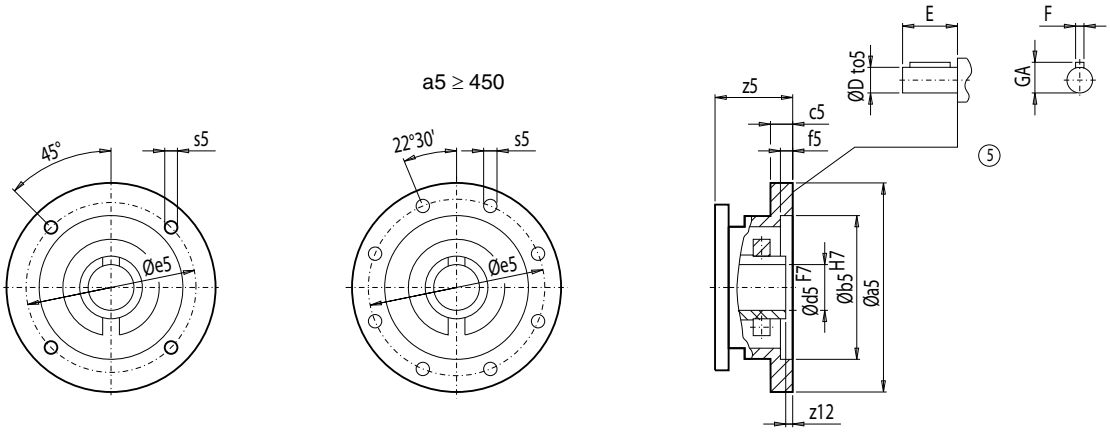
Input unit K4 (continued)



Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
–	148	–	–	-K4	(100)	250	180	20.5	5	215	M12	7	28	k6	60	31.0	8	82.0
					(112)	250	180	19.0	5	215	M12	7	28	k6	60	31.0	8	87.0
					(132)	300	230	19.0	5	265	M12	22	38	k6	80	41.0	10	126.0
					(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	164.5
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	181.0
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	191.0
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	263.5
168	–	188	188B 208	-K4	(132)	300	230	19.0	5	265	M12	22	38	k6	80	41.0	10	73.5
					(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	112.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	128.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	138.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	211.0
					(250)	550	450	27.0	6	500	M16	30	65	m6	140	69.0	18	210.5
					(280)	550	450	27.0	6	500	M16	30	75	m6	140	79.5	20	223.5
–	168	–	–	-K4	(132)	300	230	19.0	5	265	M12	22	38	k6	80	41.0	10	114.5
					(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	153.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	169.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	179.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	252.0
188	–	–	–	-K4	(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	112.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	128.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	138.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	211.0
					(250)	550	450	27.0	6	500	M16	30	65	m6	140	69.0	18	210.5
					(280)	550	450	27.0	6	500	M16	30	75	m6	140	79.5	20	223.5

⑤ Feather key / keyway DIN 6885

Input unit K4 (continued)



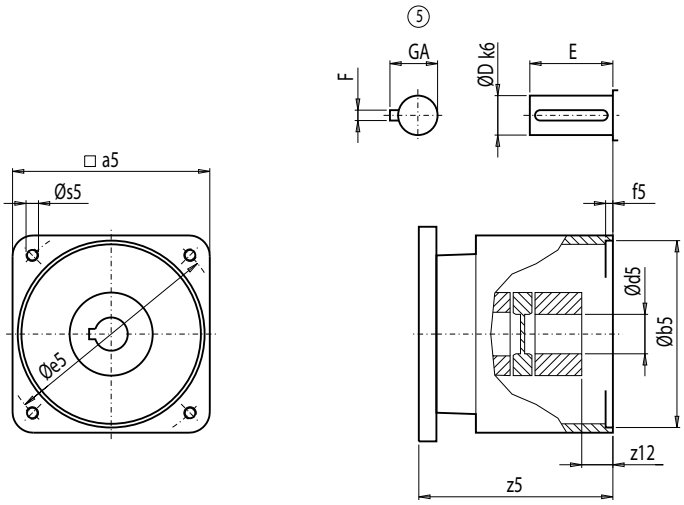
Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
–	188	–	–	-K4	(132)	300	230	19.0	5	265	M12	22	38	k6	80	41.0	10	73.5
					(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	112.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	128.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	138.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	211.0
					(250)	550	450	27.0	6	500	M16	30	65	m6	140	69.0	18	210.5
					(280)	550	450	27.0	6	500	M16	30	75	m6	140	79.5	20	223.5
168	–	188	188B 208	-K4	(132)	300	230	19.0	5	265	M12	22	38	k6	80	41.0	10	73.5
					(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	112.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	128.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	138.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	211.0
					(250)	550	450	27.0	6	500	M16	30	65	m6	140	69.0	18	210.5
					(280)	550	450	27.0	6	500	M16	30	75	m6	140	79.5	20	223.5
–	168	–	–	-K4	(132)	300	230	19.0	5	265	M12	22	38	k6	80	41.0	10	114.5
					(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	153.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	169.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	179.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	252.0
188	–	–	–	-K4	(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	112.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	128.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	138.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	211.0
					(250)	550	450	27.0	6	500	M16	30	65	m6	140	69.0	18	210.5
					(280)	550	450	27.0	6	500	M16	30	75	m6	140	79.5	20	223.5
–	188	–	–	-K4	(132)	300	230	19.0	5	265	M12	22	38	k6	80	41.0	10	73.5
					(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	112.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	128.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	138.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	211.0
					(250)	550	450	27.0	6	500	M16	30	65	m6	140	69.0	18	210.5
					(280)	550	450	27.0	6	500	M16	30	75	m6	140	79.5	20	223.5

⑤ Feather key / keyway DIN 6885

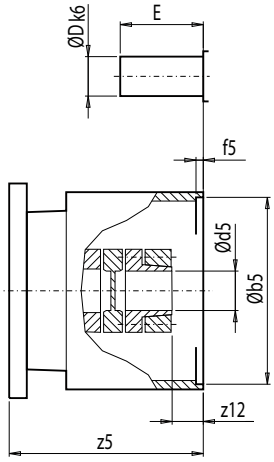
Dimensions

Input units KQ and KQS

KQ (keyway)



KQS (clamping ring hub / clamping collar hub)

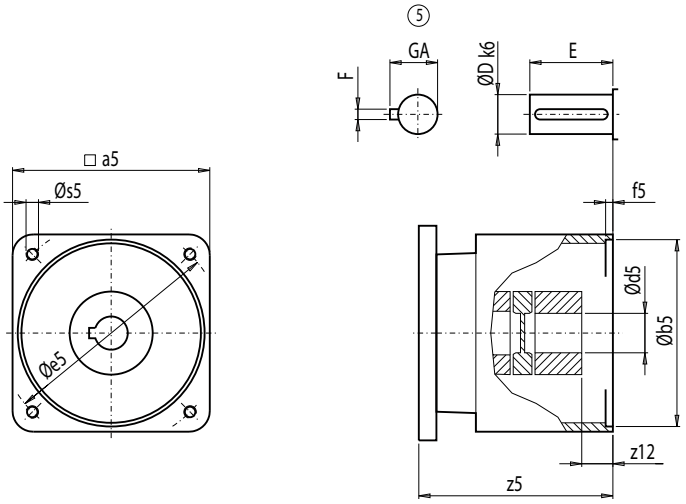


Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	f5	e5	s5	z12	d5 D	E	GA	F	z5
Z28	28	B28	28	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	102.5
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	145.5
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	160.5
–	–	B38	38B	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	69.0
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	112.0
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	127.0
38	–	38 48	48B	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	94.0
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	137.0
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	152.0
–	38	–	–	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	109.0
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	152.0
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	167.0
48	–	68	68B	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	88.5
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	131.5
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	146.5
					(112.3)	140	130	5	165	M10	25	32	60	35.0	10	183.0
–	48	–	–	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	105.5
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	148.5
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	163.5
68	–	88	88B	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	82.5
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	125.5
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	140.5
					(112.3)	140	130	5	165	M10	25	32	60	35.0	10	175.0
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	224.5
–	68	–	–	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	101.0
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	144.0
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	159.0

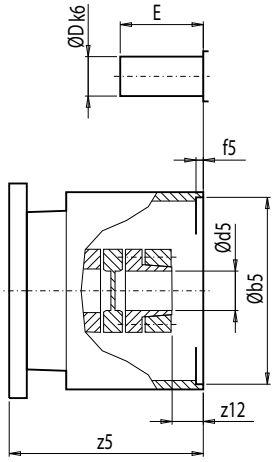
⑤ Feather key / keyway DIN 6885

Input units KQ and KQS (continued)

KQ (keyway)



KQS (clamping ring hub / clamping collar hub)



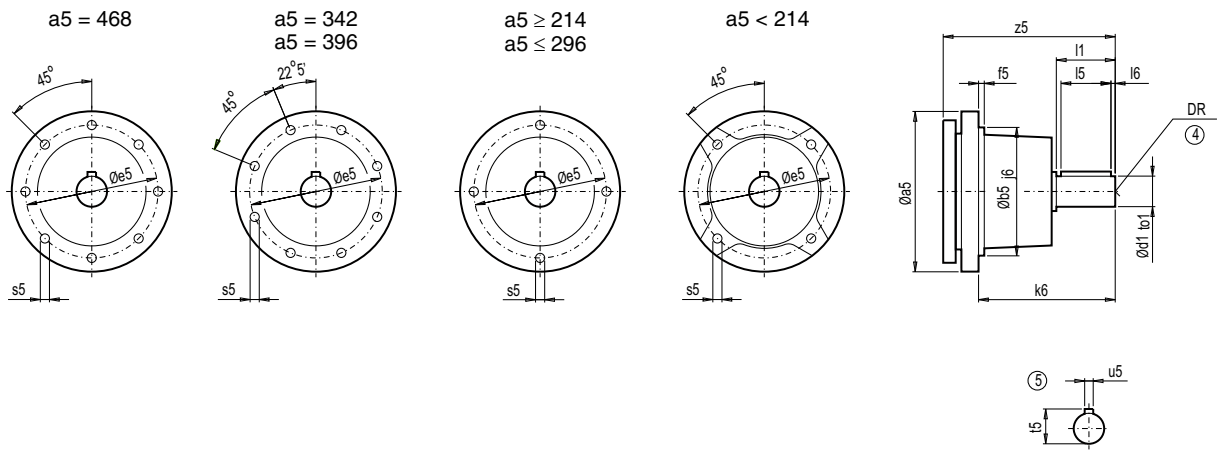
Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	f5	e5	s5	z12	d5 D	E	GA	F	z5
88	–	108	108B	-KQ -KQS	(80.3)	100	80	5	100	M6	15	19	40	21.5	6	110.5
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	125.5
					(112.3)	140	130	5	165	M10	25	32	60	35.0	10	156.5
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	206.0
–	88	–	–	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	92.5
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	135.5
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	150.5
					(112.3)	140	130	5	165	M10	25	32	60	35.0	10	185.5
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	234.0
108	–	128	128B	-KQ -KQS	(90.4)	115	110	7	130	M8	15	24	50	27.0	8	114.0
					(112.3)	140	130	5	165	M10	25	32	60	35.0	10	145.0
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	193.5
–	108	–	–	-KQ -KQS	(80.3)	100	80	5	100	M6	15	19	40	21.5	6	129.5
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	144.5
					(112.3)	140	130	5	165	M10	25	32	60	35.0	10	176.5
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	226.0
128	–	148	148B	-KQ -KQS	(112.3)	140	130	5	165	M10	25	32	60	35.0	10	134.5
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	183.0
–	128	–	–	-KQ -KQS	(90.4)	115	110	7	130	M8	15	24	50	27.0	8	137.5
					(112.3)	140	130	5	165	M10	25	32	60	35.0	10	168.5
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	217.0
148	–	168	168B	-KQ -KQS	(132.3)	190	180	7	215	M12	30	38	80	41.0	10	175.0
–	148	–	–	-KQ -KQS	(112.3)	140	130	5	165	M10	25	32	60	35.0	10	165.5
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	213.0
168	–	188	188B	-KQ -KQS	(132.3)	190	180	7	215	M12	30	38	80	41.0	10	160.5
–	168	–	–	-KQ -KQS	(132.3)	190	180	7	215	M12	30	38	80	41.0	10	201.5
–	188	–	–	-KQ -KQS	(132.3)	190	180	7	215	M12	30	38	80	41.0	10	160.5

⑤ Feather key / keyway DIN 6885

Input units

Dimensions

Input unit A



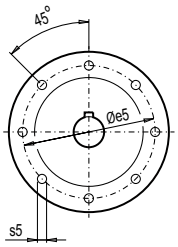
Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	f5	e5	s5	d1	to1	l1	l5	l6	t5	u5	DR	k6	z5
–	–	B38	38B	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	125.5
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	160.5
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	170.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	186.5
38	–	38 48	48B	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	151.0
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	186.0
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	196.0
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	212.0
–	38	–	–	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	166.0
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	201.0
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	211.0
48	–	68	68B	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	145.5
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	180.5
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	190.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	206.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	207.5
–	48	–	–	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	162.5
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	197.5
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	207.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	223.5
68	–	88	88B	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	139.5
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	174.5
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	184.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	200.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	199.5
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168	284.0
–	68	–	–	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	158.0
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	193.0
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	203.0
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	219.0

④ DIN 332

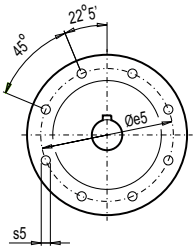
⑤ Feather key / keyway DIN 6885

Input unit A (continued)

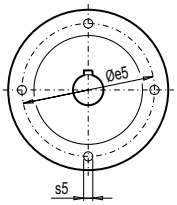
a5 = 468



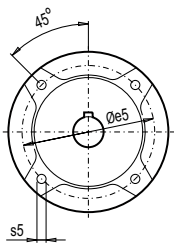
a5 = 342
a5 = 396

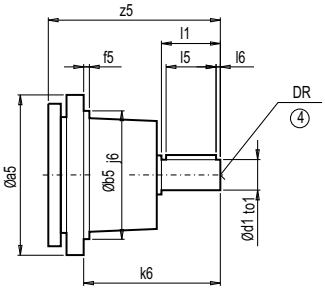


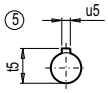
a5 ≥ 214
a5 ≤ 296



a5 < 214







Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	f5	e5	s5	d1	to1	l1	l5	l6	t5	u5	DR	k6	z5
88	-	108	108B	-A	(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	169.0
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	182.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	180.5
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168	265.0
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215	308.5
–	88	–	–	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	149.5
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	184.5
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	194.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	210.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	210.0
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168	293.5
108	–	128	128B	-A	(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	157.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	170.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	169.0
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168	252.5
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215	297.0
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235	317.5
–	108	–	–	-A	(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	178.5
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	188.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	204.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	201.0
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168	285.5
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215	327.0
128	–	148	148B	-A	(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	161.0
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	158.5
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168	242.0
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215	280.5
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235	304.0
					(225)	342	250	5.0	300	M16x22	60	m6	140	110	15	64.0	18	M20x42	259	361.5
–	128	–	–	-A	(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	181.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	197.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	193.0
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168	276.5
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215	318.0
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235	341.5

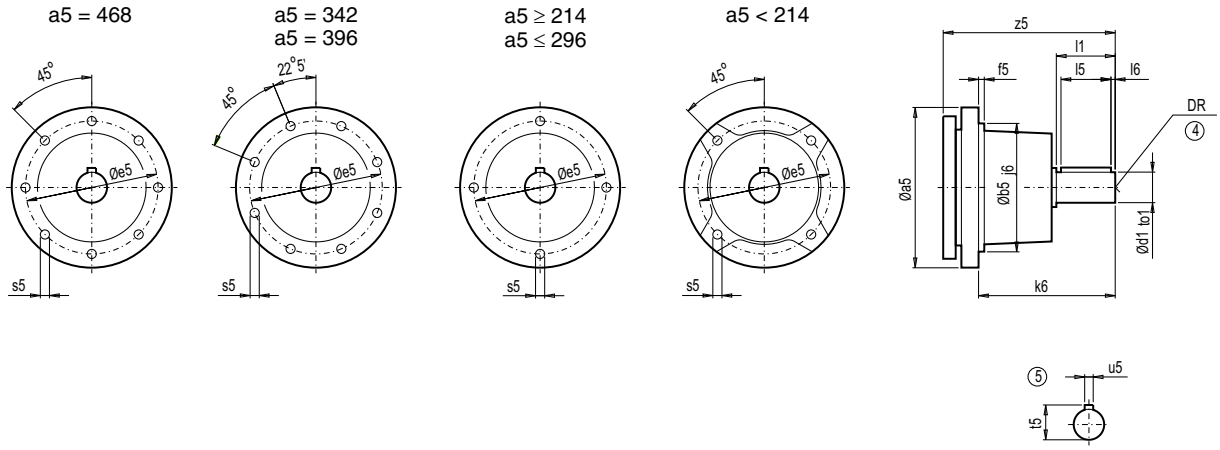
④ DIN 332

⑤ Feather key / keyway DIN 6885

Input units

Dimensions

Input unit A (continued)



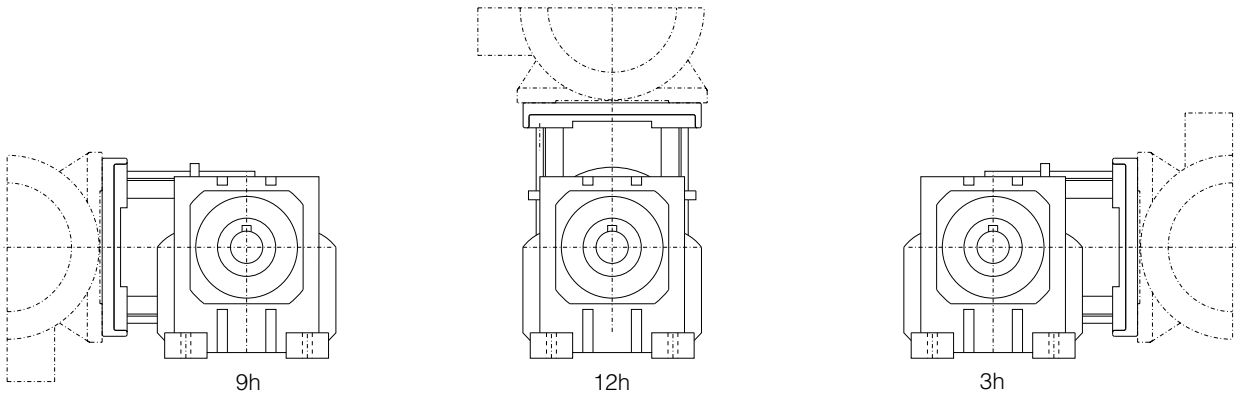
Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	f5	e5	s5	d1	to1	l1	l5	l6	t5	u5	DR	k6	z5
148	–	168	168B	-A	(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168.0	234.0
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215.0	273.0
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235.0	296.5
					(225)	342	250	5.0	300	M16x22	60	m6	140	110	15	64.0	18	M20x42	259.0	354.0
					(250)	396	250	5.0	300	M16x22	65	m6	140	110	15	69.0	18	M20x42	259.0	353.5
					(280)	485	250	5.0	300	M20x34	70	m6	140	110	15	74.5	20	M20x42	300.0	361.5
–	148	–	–	-A	(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83.0	192.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83.0	190.0
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168.0	272.5
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215.0	311.5
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235.0	335.0
					(225)	342	250	5.0	300	M16x22	60	m6	140	110	15	64.0	18	M20x42	259.0	392.5
168	–	188	188B 208	-A	(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168.0	220.0
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215.0	259.0
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235.0	282.5
					(225)	342	250	5.0	300	M16x22	60	m6	140	110	15	64.0	18	M20x42	259.0	340.0
					(250)	396	250	5.0	300	M16x22	65	m6	140	110	15	69.0	18	M20x42	259.0	339.5
					(280)	468	250	5.0	300	M20x34	70	m6	140	110	15	74.5	20	M20x42	288.5	347.5
–	168	–	–	-A	(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168.0	261.0
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215.0	300.0
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235.0	323.5
					(225)	342	250	5.0	300	M16x22	60	m6	140	110	15	64.0	18	M20x42	259.0	381.0
188	–	–	–	A-	(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215.0	259.0
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235.0	282.5
					(225)	342	250	5.0	300	M16x22	60	m6	140	110	15	64.0	18	M20x42	259.0	340.0
					(250)	396	250	5.0	300	M16x22	65	m6	140	110	15	69.0	18	M20x42	259.0	339.5
					(280)	485	250	5.0	300	M20x34	70	m6	140	110	15	74.5	20	M20x42	286.0	347.5
–	188	–	–	-A	(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168.0	220.0
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215.0	259.0
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235.0	282.5
					(225)	342	250	5.0	300	M16x22	60	m6	140	110	15	64.0	18	M20x42	259.0	340.0
					(250)	396	250	5.0	300	M16x22	65	m6	140	110	15	69.0	18	M20x42	259.0	339.5
					(280)	485	250	5.0	300	M20x34	70	m6	140	110	15	74.5	20	M20x42	286.0	347.5

④ DIN 332

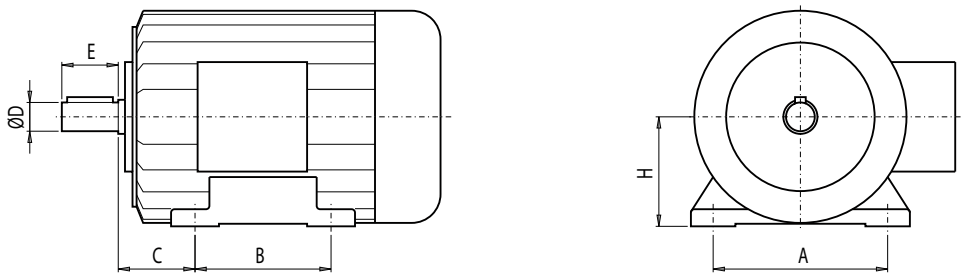
⑤ Feather key / keyway DIN 6885

Input unit P

Piggy back design position



Fixing dimensions for surface-cooled AC motors, mounting position IM B3 to DIN 42673/1

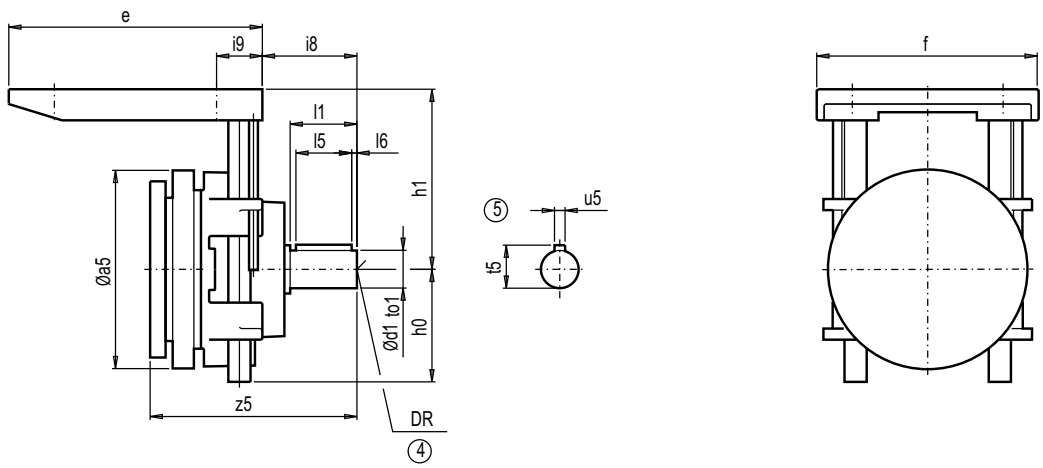


Size	D	E	C	H	B	A
80	19	40	50	80	100	125
90S	24	50	56	90	100	140
90L					125	
100L	28	60	63	100	140	160
112M	28	60	70	112	140	190
132S	38	80	89	132	140	216
132M					178	
160M	42	110	108	160	210	254
160L					254	
180M	48	110	121	180	241	279
180L					279	
200L	55	110	133	200	305	318
225S	55 60*)	110 140*)	149	225	286	356
225M					311	
250M	60 65*)	140	168	250	349	406
280S	65 75*)	140	190	280	368	457
280M					419	

*) 4-pole and multi-pole motors

Dimensions

Input unit P (continued)

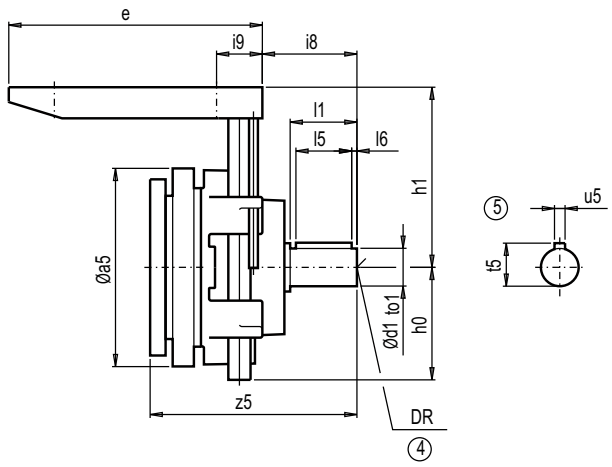


Gearbox			a5	e	f	i9	12h h0 Max.	12h h1 Min.	12h h1 Max.	3/9h h0 Max.	3/9h h1 Min.	3/9h h1 Max.	d1	to1	l1	l5	l6	t5	u5	DR	i8	z5
F.38B	-P	(80)	140	225	174	44	88	130	225	88	130	225	19	k6	40	32	4	21.5	6	M6x16	53	160.5
		(90)	140	225	174	53	88	130	225	88	130	225	24	k6	50	40	5	27.0	8	M8x19	63	170.5
		(100)	174	250	232	60	88	145	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	186.5
E./Z.38 K.38/48 C.38/48	-P	(80)	140	225	174	44	88	130	235	88	130	235	19	k6	40	32	4	21.5	6	M6x16	53	185.5
		(90)	140	225	174	53	88	130	235	88	130	235	24	k6	50	40	5	27.0	8	M8x19	63	195.5
		(100)	174	250	232	60	88	145	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	211.5
D.38	-P	(80)	140	225	174	44	88	130	235	88	130	235	19	k6	40	32	4	21.5	6	M6x16	53	200.5
		(90)	140	225	174	53	88	130	235	88	130	235	24	k6	50	40	5	27.0	8	M8x19	63	210.0
E./Z.48	-P	(80)	140	225	174	44	88	130	235	88	140	235	19	k6	40	32	4	21.5	6	M6x16	53	180.0
		(90)	140	225	174	53	88	130	235	88	140	235	24	k6	50	40	5	27.0	8	M8x19	63	190.0
		(100)	174	250	232	60	88	145	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	206.0
		(112)	178	250	232	67	88	145	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	207.0
D.48	-P	(80)	140	225	174	44	88	130	235	88	140	235	19	k6	40	32	4	21.5	6	M6x16	53	197.0
		(90)	140	225	174	53	88	130	235	88	140	235	24	k6	50	40	5	27.0	8	M8x19	63	207.0
		(100)	174	250	232	60	88	145	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	223.0
F.48B	-P	(80)	140	225	174	44	88	130	225	88	130	225	19	k6	40	32	4	21.5	6	M6x16	53	186.0
		(90)	140	225	174	53	88	130	225	88	130	225	24	k6	50	40	5	27.0	8	M8x19	63	196.0
		(100)	174	250	232	60	88	145	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	212.0
		(112)	178	250	232	67	88	145	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	181.0
E.68	-P	(80)	140	225	174	44	88	140	235	88	130	235	19	k6	40	32	4	21.5	6	M6x16	53	174.0
		(90)	140	225	174	53	88	140	235	88	130	235	24	k6	50	40	5	27.0	8	M8x19	63	184.0
		(100)	174	250	232	60	88	150	240	88	150	240	28	k6	60	50	5	31.0	8	M10x22	73	200.0
		(112)	178	250	232	67	88	150	240	88	150	240	28	k6	60	50	5	31.0	8	M10x22	73	199.0
		(132)	214	374	300	84	209	180	270	184	180	270	38	k6	80	70	5	41.0	10	M12x28	85	283.5
D.68	-P	(80)	140	225	174	44	88	140	235	88	160	235	19	k6	40	32	4	21.5	6	M6x16	53	192.5
		(90)	140	225	174	53	88	140	235	88	160	235	24	k6	50	40	5	27.0	8	M8x19	63	202.5
		(100)	174	250	232	60	88	145	240	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	218.5
Z.68	-P	(80)	140	225	174	44	88	140	235	88	160	235	19	k6	40	32	4	21.5	6	M6x16	53	174.0
		(90)	140	225	174	53	88	140	235	88	160	235	24	k6	50	40	5	27.0	8	M8x19	63	184.0
		(100)	174	250	232	60	88	145	240	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	200.0
		(112)	178	250	232	67	88	145	240	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	199.0
		(132)	214	374	300	84	139	180	230	139	180	230	38	k6	80	70	5	41.0	10	M12x28	85	283.5

④ DIN 332

⑤ Feather key / keyway DIN 6885

Input unit P (continued)



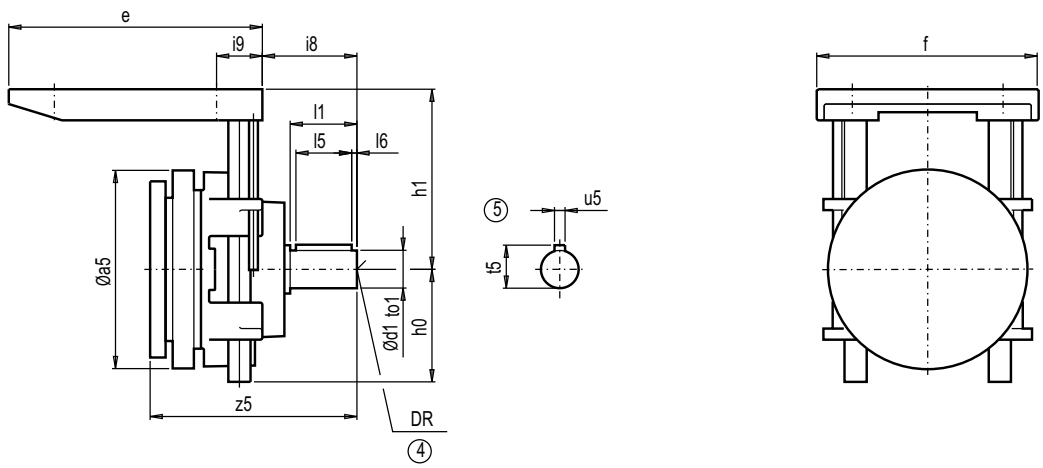
Gearbox							12h			3/9h												
			a5	e	f	i9	h0	h1	h1	h0	h1	h1	d1	to1	l1	l5	l6	t5	u5	DR	i8	z5
							Max.	Min.	Max.	Max.	Min.	Max.										
K.68	-P	(80)	140	225	174	44	88	140	235	88	160	235	19	k6	40	32	4	21.5	6	M6x16	53	180.5
		(90)	140	225	174	53	88	140	235	88	160	235	24	k6	50	40	5	27.0	8	M8x19	63	190.5
		(100)	174	250	232	60	88	145	240	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	206.5
		(112)	178	250	232	67	88	145	240	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	207.5
F.68B	-P	(80)	140	225	174	44	88	140	225	88	140	225	19	k6	40	32	4	21.5	6	M6x16	53	180.5
		(90)	140	225	174	53	88	140	225	88	140	225	24	k6	50	40	5	27.0	8	M8x19	63	190.5
		(100)	174	250	232	60	88	145	240	88	148	238	28	k6	60	50	5	31.0	8	M10x22	73	206.5
		(112)	178	250	232	67	88	145	240	88	148	238	28	k6	60	50	5	31.0	8	M10x22	73	207.5
C.68	-P	(80)	140	225	174	44	88	170	235	88	140	235	19	k6	40	32	4	21.5	6	M6x16	53	180.0
		(90)	140	225	174	53	88	170	235	88	140	235	24	k6	50	40	5	27.0	8	M8x19	63	190.0
		(100)	174	250	232	60	88	175	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	206.0
		(112)	178	250	232	67	88	175	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	207.0
E.88	-P	(90)	140	225	174	53	88	165	235	88	160	235	24	k6	50	40	5	27.0	8	M8x19	63	169.0
		(100)	174	250	232	60	88	160	240	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	182.5
		(112)	178	250	232	67	88	160	240	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	180.5
		(132)	214	374	300	84	139	200	270	139	180	270	38	k6	80	70	5	41.0	10	M12x29	85	265.0
		(160)	251	374	300	86	139	200	270	134	180	270	42	k6	110	90	10	45.0	12	M16x36	132	308.5
Z.88	-P	(90)	140	225	174	53	88	160	235	88	190	235	24	k6	50	40	5	27.0	8	M8x19	63	169.0
		(100)	174	250	232	60	88	160	240	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	182.5
		(112)	178	250	232	67	88	160	240	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	180.5
		(132)	214	374	300	84	154	180	230	124	220	270	38	k6	80	70	5	41.0	10	M12x29	85	265.0
		(160)	251	374	300	86	209	180	230	184	220	270	42	k6	110	90	10	45.0	12	M16x36	132	308.5
K.88	-P	(80)	140	225	174	44	88	160	235	88	190	235	19	k6	40	32	4	21.5	6	M6x16	53	174.5
		(90)	140	225	174	53	88	160	235	88	190	235	24	k6	50	40	5	27.0	8	M8x19	63	184.5
		(100)	174	250	232	60	88	160	240	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	200.5
		(112)	178	250	232	67	88	160	240	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	199.5
		(132)	214	374	300	84	139	180	230	139	180	230	38	k6	80	70	5	41.0	10	M12x28	85	284.0
F.88B	-P	(80)	140	225	174	44	88	163	228	88	168	228	19	k6	40	32	4	21.5	6	M6x16	53	174.5
		(90)	140	225	174	53	88	163	228	88	168	228	24	k6	50	40	5	27.0	8	M8x19	63	184.5
		(100)	174	250	232	60	88	163	238	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	200.5
		(112)	178	250	232	67	88	163	238	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	199.5
		(132)	214	374	300	84	137	178	228	127	188	228	38	k6	80	70	5	41.0	10	M12x28	85	284.0

④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Input unit P (continued)

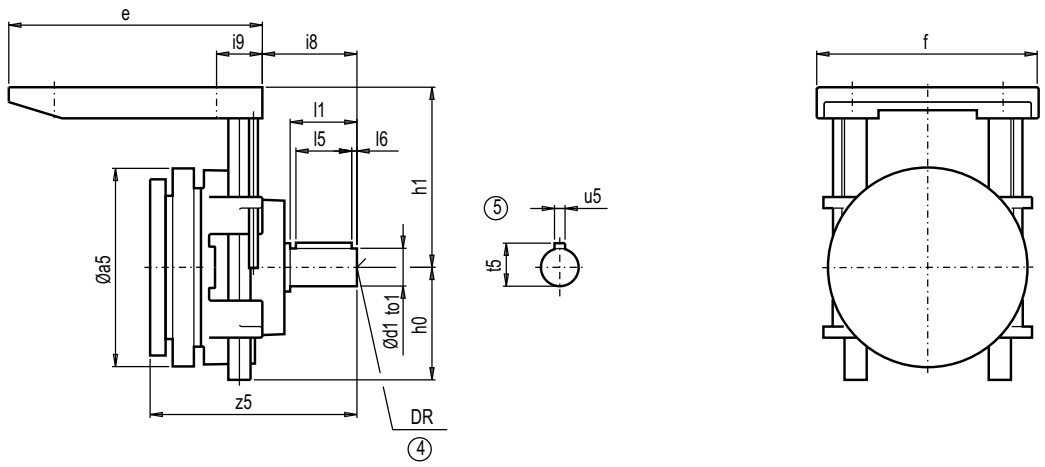


Gearbox							12h			3/9h												
			a5	e	f	i9	h0	h1	h1	h0	h1	h1	d1	to1	l1	l5	l6	t5	u5	DR	i8	z5
							Max.	Min.	Max.	Max.	Min.	Max.										
C.88	-P	(80)	140	225	174	44	88	200	235	88	150	235	19	k6	40	32	4	21.5	6	M6x16	53	174.0
		(90)	140	225	174	53	88	200	235	88	150	235	24	k6	50	40	5	27.0	8	M8x19	63	184.0
		(100)	174	250	232	60	88	200	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	200.0
		(112)	178	250	232	67	88	200	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	199.0
		(132)	214	374	300	84	139	220	270	134	220	270	38	k6	80	70	5	41.0	10	M12x28	85	283.5
D.88	-P	(80)	140	225	174	44	88	160	235	88	190	235	19	k6	40	32	4	21.5	6	M6x16	53	184.0
		(90)	140	225	174	53	88	160	235	88	190	235	24	k6	50	40	5	27.0	8	M8x19	63	194.0
		(100)	174	250	232	60	88	160	240	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	210.0
		(112)	178	250	232	67	88	160	240	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	209.5
		(132)	214	374	300	84	154	180	230	124	220	270	38	k6	80	70	5	41.0	10	M12x28	85	293.0
E.108	-P	(90)	140	225	174	53	88	195	300	88	195	300	24	k6	50	40	5	27.0	8	M8x19	63	157.5
		(100)	174	250	232	60	88	220	320	88	220	320	28	k6	60	50	5	31.0	8	M10x22	73	170.5
		(112)	178	250	232	67	88	220	320	88	220	320	28	k6	60	50	5	31.0	8	M10x22	73	169.0
		(132)	214	374	300	84	209	240	340	184	220	340	38	k6	80	70	5	41.0	10	M12x30	85	252.5
		(160)	251	374	300	86	184	240	340	159	220	340	42	k6	110	90	10	45.0	12	M16x36	132	297.0
		(180)	296	476	400	96	218	250	352	218	290	352	55	m6	110	90	10	59.0	16	M20x42	135	317.5
		(200)	296	476	400	108	218	250	352	218	290	352	55	m6	110	90	10	59.0	16	M20x42	135	317.5
Z.108	-P	(90)	140	225	174	53	88	190	300	88	230	300	24	k6	50	40	5	27.0	8	M8x19	63	157.5
		(100)	174	250	232	60	88	220	320	88	230	320	28	k6	60	50	5	31.0	8	M10x22	73	170.5
		(112)	178	250	232	67	88	220	320	88	230	320	28	k6	60	50	5	31.0	8	M10x22	73	169.0
		(132)	214	374	300	84	134	220	270	209	255	300	38	k6	80	70	5	41.0	10	M12x30	85	252.5
		(160)	251	374	300	86	134	220	270	209	255	305	42	k6	110	90	10	45.0	12	M16x36	132	297.0
		(180)	296	476	400	96	243	268	352	233	268	352	55	m6	110	90	10	59.0	16	M20x42	135	317.5
		(200)	296	476	400	108	243	268	352	233	268	352	55	m6	110	90	10	59.0	16	M20x42	135	317.5
K.108	-P	(80)	140	225	174	53	88	190	300	88	230	300	24	k6	50	40	5	27.0	8	M8x19	53	159.5
		(90)	140	225	174	53	88	190	300	88	230	300	24	k6	50	40	5	27.0	8	M8x19	63	169.5
		(100)	174	250	232	60	88	220	320	88	230	320	28	k6	60	50	5	31.0	8	M10x22	73	183.0
		(112)	178	250	232	67	88	220	320	88	230	320	28	k6	60	50	5	31.0	8	M10x22	73	181.0
		(132)	214	374	300	84	154	180	230	124	220	270	38	k6	80	70	5	41.0	10	M12x30	85	265.5
		(160)	251	374	300	86	209	180	230	184	220	270	42	k6	110	90	10	45.0	12	M16x36	132	309.0

④ DIN 332

⑤ Feather key / keyway DIN 6885

Input unit P (continued)



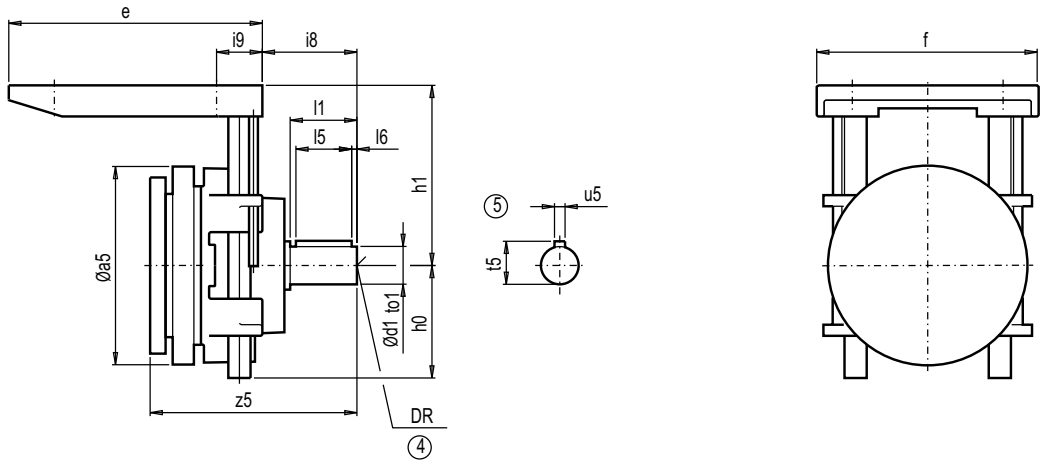
Gearbox			a5	e	f	i9	12h h0 Max.	12h h1 Min.	12h h1 Max.	3/9h h0 Max.	3/9h h1 Min.	3/9h h1 Max.	d1	to1	l1	l5	l6	t5	u5	DR	i8	z5
F.108B	-P	(80)	140	225	174	44	88	190	295	88	190	295	19	k6	40	32	4	21.5	6	M6x16	53	159.5
		(90)	140	225	174	53	88	190	295	88	190	295	24	k6	50	40	5	27.0	8	M8x19	63	169.5
		(100)	174	250	232	60	88	223	318	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	183.0
		(112)	178	250	232	67	88	223	318	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	181.0
		(132)	214	374	300	84	143	207	257	135	215	265	38	k6	80	70	5	41.0	10	M12x28	85	265.5
		(160)	251	374	300	86	143	207	257	135	215	265	42	k6	110	90	10	45.0	12	M16x36	132	309.0
D.108	-P	(80)	140	225	174	44	88	190	300	88	230	300	19	k6	40	32	4	21.5	6	M6x16	53	178.0
		(90)	140	225	174	53	88	190	300	88	230	300	24	k6	50	40	5	27.0	8	M8x19	63	188.0
		(100)	174	250	232	60	88	220	320	88	230	320	28	k6	60	50	5	31.0	8	M10x22	73	204.0
		(112)	178	250	232	67	88	220	320	88	230	320	28	k6	60	50	5	31.0	8	M10x22	73	200.5
		(132)	214	374	300	84	134	220	270	209	255	300	38	k6	80	70	5	41.0	10	M12x28	85	285.0
		(160)	251	374	300	86	134	220	270	209	255	305	42	k6	110	90	10	45.0	12	M16x36	132	326.5
E.128	-P	(100)	174	250	232	60	88	220	320	88	220	320	28	k6	60	50	5	31.0	8	M10x22	73	161.0
		(112)	178	250	232	67	88	220	320	88	220	320	28	k6	60	50	5	31.0	8	M10x22	73	158.5
		(132)	214	374	300	84	154	250	340	124	250	340	38	k6	80	70	5	41.0	10	M12x31	85	242.0
		(160)	251	374	300	86	209	250	340	184	250	340	42	k6	110	90	10	45.0	12	M16x36	132	280.5
		(180)	296	476	400	96	243	270	352	243	270	352	55	m6	110	90	10	59.0	16	M20x42	135	304.0
		(200)	296	476	400	108	243	270	352	243	270	352	55	m6	110	90	10	59.0	16	M20x42	135	304.0
		(225)	342	557	480	142	209	295	345	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	361.5
Z.128	-P	(100)	174	250	232	60	88	220	320	88	255	320	28	k6	60	50	5	31.0	8	M10x22	73	161.0
		(112)	178	250	232	67	88	220	320	88	255	320	28	k6	60	50	5	31.0	8	M10x22	73	158.5
		(132)	214	374	300	84	139	255	305	134	280	330	38	k6	80	70	5	41.0	10	M12x31	85	242.0
		(160)	251	374	300	86	139	255	305	134	280	330	42	k6	110	90	10	45.0	12	M16x36	132	280.5
		(180)	296	476	400	96	233	253	352	209	293	352	55	m6	110	90	10	59.0	16	M20x42	135	304.0
		(200)	296	476	400	108	233	253	352	209	293	352	55	m6	110	90	10	59.0	16	M20x42	135	304.0
		(225)	342	557	480	142	199	295	340	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	361.5
K.128	-P	(90)	140	225	174	53	88	230	300	88	255	300	24	k6	50	40	5	27.0	8	M8x19	63	158.0
		(100)	174	250	232	60	88	220	320	88	255	320	28	k6	60	50	5	31.0	8	M10x22	73	171.0
		(112)	178	250	232	67	88	220	320	88	255	320	28	k6	60	50	5	31.0	8	M10x22	73	169.5
		(132)	214	374	300	84	134	220	270	209	255	300	38	k6	80	70	5	41.0	10	M12x28	85	253.0
		(160)	251	374	300	86	134	220	270	209	255	305	42	k6	110	90	10	45.0	12	M16x36	132	297.5
		(180)	296	476	400	96	196	243	352	261	243	352	55	m6	110	90	10	59.0	16	M20x42	135	318.0
		(200)	296	476	400	108	196	243	352	261	243	352	55	m6	110	90	10	59.0	16	M20x42	135	318.0

④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Input unit P (continued)

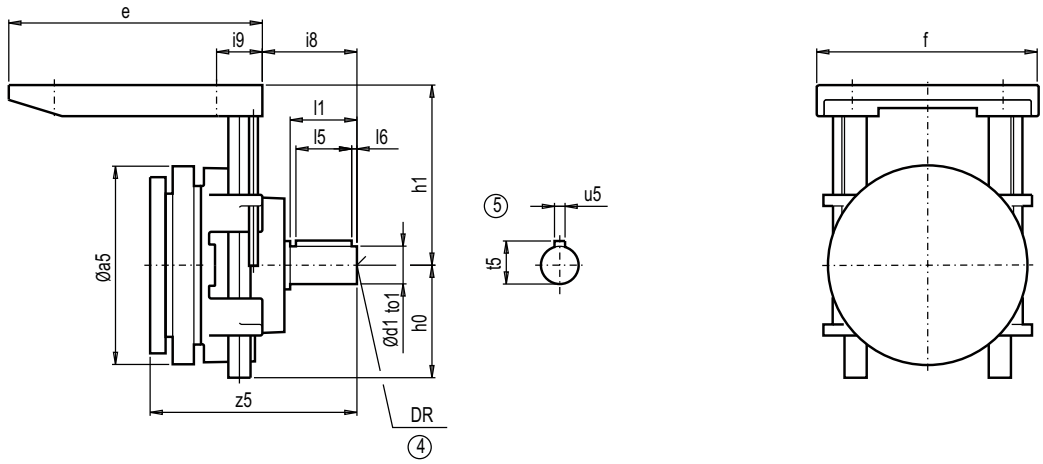


Gearbox			a5	e	f	i9	12h h0 Max.	12h h1 Min.	12h h1 Max.	3/9h h0 Max.	3/9h h1 Min.	3/9h h1 Max.	d1	to1	l1	l5	l6	t5	u5	DR	i8	z5
F.128B	-P	(90)	140	225	174	53	88	235	295	88	230	295	24	k6	50	40	5	27.0	8	M8x19	63	158.0
		(100)	174	250	232	60	88	250	320	88	235	320	28	k6	60	50	5	31.0	8	M10x22	73	171.0
		(112)	178	250	232	67	88	250	320	88	235	320	28	k6	60	50	5	31.0	8	M10x22	73	169.5
		(132)	214	374	300	84	195	265	365	175	285	365	38	k6	80	70	5	41.0	10	M12x28	85	253.0
		(160)	251	374	300	86	195	265	365	175	285	365	42	k6	110	90	10	45.0	12	M16x36	132	297.5
		(180)	296	476	400	96	217	268	358	217	268	358	55	m6	110	90	10	59.0	16	M20x42	135	318.0
		(200)	296	476	400	108	217	268	358	217	268	358	55	m6	110	90	10	59.0	16	M20x42	135	318.0
D.128	-P	(90)	140	225	174	53	88	230	300	88	255	300	24	k6	50	40	5	27.0	8	M8x19	63	181.0
		(100)	174	250	232	60	88	220	320	88	255	320	28	k6	60	50	5	31.0	8	M10x22	73	197.0
		(112)	178	250	232	67	88	220	320	88	255	320	28	k6	60	50	5	31.0	8	M10x22	73	192.5
		(132)	214	374	300	84	139	255	305	134	280	330	38	k6	80	70	5	41.0	10	M12x28	85	276.0
		(160)	251	374	300	86	139	255	305	134	280	330	42	k6	110	90	10	45.0	12	M16x36	132	317.5
		(180)	296	476	400	96	233	253	352	209	293	352	55	m6	110	90	10	59.0	16	M20x42	135	341.0
		(200)	296	476	400	108	233	253	352	209	293	352	55	m6	110	90	10	59.0	16	M20x42	135	341.0
E.148	-P	(132)	214	374	300	84	134	280	380	209	280	380	38	k6	80	70	5	41.0	10	M12x32	85	234.0
		(160)	251	374	300	86	134	280	380	209	280	380	42	k6	110	90	10	45.0	12	M16x36	132	273.0
		(180)	296	476	400	96	193	300	425	233	300	425	55	m6	110	90	10	59.0	16	M20x42	135	296.5
		(200)	296	476	400	108	193	300	425	233	300	425	55	m6	110	90	10	59.0	16	M20x42	135	296.5
		(225)	342	557	480	142	254	315	415	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	354.0
		(250)	396	557	480	161	254	305	350	–	–	–	65	m6	140	110	15	69.0	18	M20x42	147	353.5
		(280)	485	666	558	173	265	399	369	–	–	–	70	m6	140	110	15	74.5	20	M20x42	171	361.5
D.148	-P	(100)	174	250	232	60	88	245	320	88	280	320	28	k6	60	50	5	31.0	8	M10x22	73	192.0
		(112)	178	250	232	67	88	245	320	88	280	320	28	k6	60	50	5	31.0	8	M10x22	73	189.5
		(132)	214	374	300	84	184	280	330	159	305	355	38	k6	80	70	5	41.0	10	M12x28	85	272.0
		(160)	251	374	300	86	184	280	330	159	305	355	42	k6	110	90	10	45.0	12	M16x36	132	311.0
		(180)	296	476	400	96	248	318	407	248	318	407	55	m6	110	90	10	59.0	16	M20x42	135	334.5
		(200)	296	476	400	108	248	293	352	248	318	407	55	m6	110	90	10	59.0	16	M20x42	135	334.5
		(225)	342	557	480	142	199	305	350	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	392.0
Z.148	-P	(132)	214	374	300	84	184	280	330	159	305	355	38	k6	80	70	5	41.0	10	M12x28	85	234.0
		(160)	251	374	300	86	184	280	330	159	305	355	42	k6	110	90	10	45.0	12	M16x36	132	273.0
		(180)	296	476	400	96	248	318	407	248	318	407	55	m6	110	90	10	59.0	16	M20x42	135	296.5
		(200)	296	476	400	108	248	293	352	248	318	407	55	m6	110	90	10	59.0	16	M20x42	135	296.5
		(225)	342	557	480	142	199	305	350	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	354.0
		(250)	396	557	480	161	254	305	350	–	–	–	65	m6	140	110	15	69.0	18	M20x42	147	353.5
		(280)	485	666	558	173	265	399	429	–	–	–	70	m6	140	110	15	74.5	20	M20x42	171	361.5

④ DIN 332

⑤ Feather key / keyway DIN 6885

Input unit P (continued)



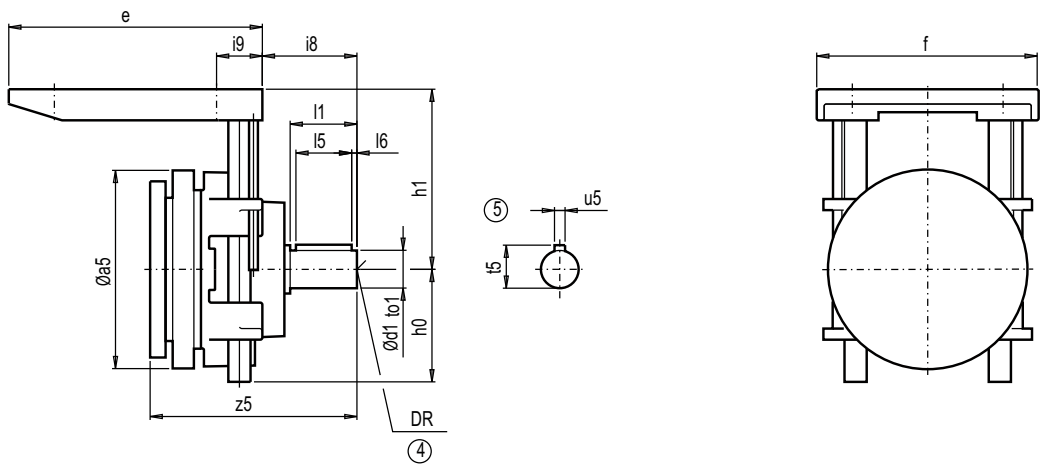
Gearbox			a5	e	f	i9	12h h0 Max.	12h h1 Min.	12h h1 Max.	3/9h h0 Max.	3/9h h1 Min.	3/9h h1 Max.	d1	to1	l1	l5	l6	t5	u5	DR	i8	z5
K.148	-P	(100)	174	250	232	60	88	245	320	88.0	280	320	28	k6	60	50	5	31.0	8	M10x22	73	161.5
		(112)	178	250	232	67	88	245	320	88.0	280	320	28	k6	60	50	5	31.0	8	M10x22	73	159.0
		(132)	214	374	300	84	139	255	305	134.0	280	330	38	k6	80	70	5	41.0	10	M12x28	85	242.5
		(160)	251	374	300	86	139	255	305	134.0	280	330	42	k6	110	90	10	45.0	12	M16x36	132	281.0
		(180)	296	476	400	96	193	293	352	233.0	253	352	55	m6	110	90	10	59.0	16	M20x42	135	304.5
		(200)	296	476	400	108	193	293	352	233.0	253	352	55	m6	110	90	10	59.0	16	M20x42	135	304.5
		(225)	342	557	480	142	199	345	390	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	362.0
F.148B	-P	(100)	174	250	232	60	88	255	320	88.0	255	320	28	k6	60	50	5	31.0	8	M10x22	73	161.5
		(112)	178	250	232	67	88	255	320	88.0	255	320	28	k6	60	50	5	31.0	8	M10x22	73	159.0
		(132)	214	374	300	84	170	290	365	175.0	285	365	38	k6	80	70	5	41.0	10	M12x28	85	242.5
		(160)	251	374	300	86	170	290	365	175.0	285	365	42	k6	110	90	10	45.0	12	M16x36	132	281.0
		(180)	296	476	400	96	192	293	358	198.0	287	357	55	m6	110	90	10	59.0	16	M20x42	135	304.5
		(200)	296	476	400	108	192	293	358	198.0	287	357	55	m6	110	90	10	59.0	16	M20x42	135	304.5
		(225)	342	557	480	142	244	323	353	187.5	393	423	60	m6	140	110	15	64.0	18	M20x42	147	362.0
D.168	-P	(132)	214	374	300	84	154	310	360	124.0	340	390	38	k6	80	70	5	41.0	10	M12x28	85	260.5
		(160)	251	374	300	86	154	310	360	124.0	340	390	42	k6	110	90	10	45.0	12	M16x36	132	299.5
		(180)	296	476	400	96	239	337	407	233.0	343	407	55	m6	110	90	10	59.0	16	M20x42	135	323.0
		(200)	296	476	400	108	239	337	407	233.0	343	407	55	m6	110	90	10	59.0	16	M20x42	135	323.0
		(225)	342	557	480	142	199	345	390	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	380.5
Z.168	-P	(132)	214	374	300	84	154	310	360	124.0	340	390	38	k6	80	70	5	41.0	10	M12x28	85	219.5
		(160)	251	374	300	86	154	310	360	124.0	340	390	42	k6	110	90	10	45.0	12	M16x36	132	258.5
		(180)	296	476	400	96	239	337	407	233.0	343	407	55	m6	110	90	10	59.0	16	M20x42	135	282.0
		(200)	296	476	400	108	239	337	407	233.0	343	407	55	m6	110	90	10	59.0	16	M20x42	135	282.0
		(225)	342	557	480	142	199	345	390	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	339.5
		(250)	396	557	480	161	194	345	390	–	–	–	65	m6	140	110	15	69.0	18	M20x42	147	339.0
		(280)	468	666	558	173	200	402	432	–	–	–	70	m6	140	110	15	74.5	20	M20x42	171	347.5
K.168	-P	(132)	214	374	300	84	184	280	330	159.0	305	355	38	k6	80	70	5	41.0	10	M12x28	85	234.5
		(160)	251	374	300	86	184	280	330	159.0	305	355	42	k6	110	90	10	45.0	12	M16x36	132	273.5
		(180)	296	476	400	96	239	337	407	209.0	277	352	55	m6	110	90	10	59.0	16	M20x42	135	297.0
		(200)	296	476	400	108	239	337	407	209.0	277	352	55	m6	110	90	10	59.0	16	M20x42	135	297.0
		(225)	342	557	480	142	199	390	435	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	354.5
		(250)	396	557	480	161	199	390	435	–	–	–	65	m6	140	110	15	69.0	18	M20x42	147	354.0
		(280)	485	666	558	173	180	472	502	–	–	–	70	m6	140	110	15	74.5	20	M20x42	171	361.5

④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Input unit P (continued)

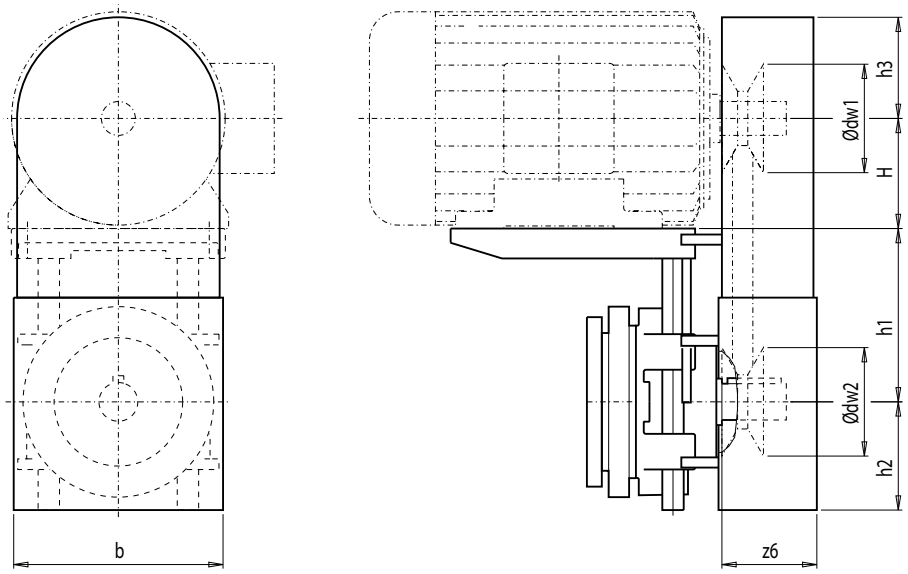


Gearbox			a5	e	f	i9	12h h0 Max.	12h h1 Min.	12h h1 Max.	3/9h h0 Max.	3/9h h1 Min.	3/9h h1 Max.	d1	to1	l1	l5	l6	t5	u5	DR	i8	z5
F.168B	-P	(132)	214	374	300	84	152.0	308	368	155.0	305	365	38	k6	80	70	5	41.0	10	M12x28	85	234.5
		(160)	251	374	300	86	152.0	308	368	155.0	305	365	42	k6	110	90	10	45.0	12	M16x36	132	273.5
		(180)	296	476	400	96	258.0	318	432	262.0	313	428	55	m6	110	90	10	59.0	16	M20x42	135	297.0
		(200)	296	476	400	108	258.0	318	432	262.0	313	428	55	m6	110	90	10	59.0	16	M20x42	135	297.0
		(225)	342	557	480	142	218.5	393	423	218.5	393	423	60	m6	140	110	15	64.0	18	M20x42	147	354.5
		(250)	396	557	480	161	255.5	356	386	187.5	424	454	65	m6	140	110	15	69.0	18	M20x42	147	354.0
		(280)	485	666	558	173	253.0	399	429	252.0	400	430	70	m6	140	110	15	74.5	20	M20x42	171	361.5
D.188	-P	(132)	214	374	300	84	120.0	340	380	125.0	372	412	38	k6	80	70	5	41.0	10	M12x28	85	219.5
		(160)	251	374	300	86	120.0	340	380	125.0	372	412	42	k6	110	90	10	45.0	12	M16x36	132	258.5
		(180)	296	476	400	96	207.0	368	433	193.0	382	432	55	m6	110	90	10	59.0	16	M20x42	135	282.0
		(200)	296	476	400	108	207.0	368	433	193.0	382	432	55	m6	110	90	10	59.0	16	M20x42	135	282.0
		(225)	342	557	480	142	193.5	393	423	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	339.5
		(250)	396	557	480	161	193.5	418	448	–	–	–	65	m6	140	110	15	69.0	18	M20x42	147	339.0
		(280)	485	666	558	173	201.0	399	424	–	–	–	70	m6	140	110	15	74.5	20	M20x42	171	347.0
Z.188	-P	(160)	251	374	300	86	120.0	340	380	125.0	372	412	42	k6	110	90	10	45.0	12	M16x36	132	259.0
		(180)	296	476	400	96	207.0	368	433	193.0	382	432	55	m6	110	90	10	59.0	16	M20x42	135	282.5
		(200)	296	476	400	108	207.0	368	433	193.0	382	432	55	m6	110	90	10	59.0	16	M20x42	135	282.5
		(225)	342	557	480	142	193.5	393	423	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	340.0
		(250)	396	557	480	161	193.5	418	448	–	–	–	65	m6	140	110	15	69.0	18	M20x42	147	339.5
		(280)	468	666	558	173	201.0	399	424	–	–	–	70	m6	140	110	15	74.5	20	M20x42	171	347.5
K.188	-P	(132)	214	374	300	84	140.0	360	410	160.0	300	370	38	k6	80	70	5	41.0	10	M12x28	85	220.0
		(160)	251	374	300	86	140.0	360	410	160.0	300	370	42	k6	110	90	10	45.0	12	M16x36	132	259.0
		(180)	296	476	400	96	197.0	378	433	183.0	302	357	55	m6	110	90	10	59.0	16	M20x42	135	282.5
		(200)	296	476	400	108	197.0	378	433	183.0	302	357	55	m6	110	90	10	59.0	16	M20x42	135	282.5
		(225)	342	557	480	142	223.5	463	493	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	340.0
		(250)	396	557	480	161	193.5	493	523	–	–	–	65	m6	140	110	15	69.0	18	M20x42	147	339.5
		(280)	485	666	558	173	180.0	472	502	–	–	–	70	m6	140	110	15	74.5	20	M20x42	171	347.0
F.188B	-P	(132)	214	374	300	84	125.0	335	375	125.0	335	375	38	k6	80	70	5	41.0	10	M12x28	85	220.0
		(160)	251	374	300	86	125.0	335	375	125.0	335	375	42	k6	110	90	10	45.0	12	M16x36	132	259.0
		(180)	296	476	400	96	228.0	347	432	232.0	343	428	55	m6	110	90	10	59.0	16	M20x42	135	282.5
		(200)	296	476	400	108	228.0	347	432	232.0	343	428	55	m6	110	90	10	59.0	16	M20x42	135	282.5
		(225)	342	557	480	142	196.5	390	420	223.5	463	493	60	m6	140	110	15	64.0	18	M20x42	147	340.0
		(250)	396	557	480	161	192.5	419	449	187.5	424	454	65	m6	140	110	15	69.0	18	M20x42	147	339.5
		(280)	468	666	558	173	186.5	463	493	181.0	471	501	70	m6	140	110	15	74.5	20	M20x42	171	347.5

④ DIN 332

⑤ Feather key / keyway DIN 6885

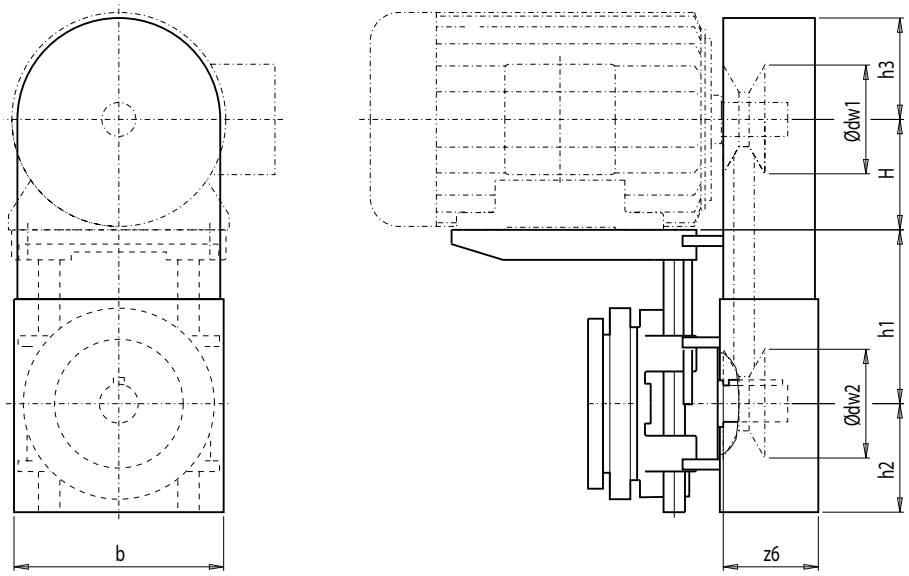
Protective belt cover for piggy back design PS



Gearbox					12h		3/9h						
			dw1	dw2	h1	h1	h1	h1	H	h2	h3	z6	b
			Max.	Max.	Min.	Max.	Min.	Max.					
B.38 F.38B/48B	-PS	(80)	150	140	130	225	130	225	80	88	97	71	190
		(90)	150	140	130	225	130	225	90	88	97	71	190
		(100)	210	140	145	240	145	240	100	88	132	83	248
E./Z.38 C.38/48 K.38/48	-PS	(80)	150	140	130	235	130	235	80	88	97	71	190
		(90)	150	140	130	235	130	235	90	88	97	71	190
		(100)	210	140	145	240	145	240	100	88	132	83	248
D.38	-PS	(80)	150	140	130	235	130	235	80	88	97	71	190
		(90)	150	140	130	235	130	235	90	88	97	71	190
E./Z.48	-PS	(80)	150	140	130	235	140	235	80	88	97	71	190
		(90)	150	140	130	235	140	235	90	88	97	71	190
		(100)	210	140	145	240	145	240	100	88	132	83	248
		(112)	210	140	145	240	145	240	112	88	120	83	248
D.48	-PS	(80)	150	140	130	235	140	235	80	88	97	71	190
		(90)	150	140	130	235	140	235	90	88	97	71	190
		100	210	140	145	240	145	240	100	88	132	83	248
E./Z.68 C.68 K.68	-PS	(80)	150	140	140	235	160	235	80	88	97	71	190
		(90)	150	140	140	235	160	235	90	88	97	71	190
		(100)	210	140	145	240	160	240	100	88	132	83	248
		(112)	210	140	145	240	160	240	112	88	120	83	248
		(132)	250	220	180	230	180	230	132	135	140	147	288
F.68B	-PS	(80)	150	140	140	225	140	225	80	88	97	71	190
		(90)	150	140	140	225	140	225	90	88	97	71	190
		(100)	210	140	145	240	148	238	100	88	132	83	248
		(112)	210	140	145	240	148	238	112	88	120	83	248
D.68	-PS	(80)	150	140	140	235	160	235	80	88	97	71	190
		(90)	150	140	140	235	160	235	90	88	97	71	190
		(100)	210	140	145	240	160	240	100	88	132	83	248
E./Z.88	-PS	(90)	150	140	160	235	190	235	90	88	97	71	190
		(100)	210	140	160	240	190	240	100	88	132	83	248
		(112)	210	140	160	240	190	240	112	88	120	83	248
		(132)	250	220	180	230	220	270	132	135	140	147	288
		(160)	250	220	180	230	220	270	160	135	140	135	288

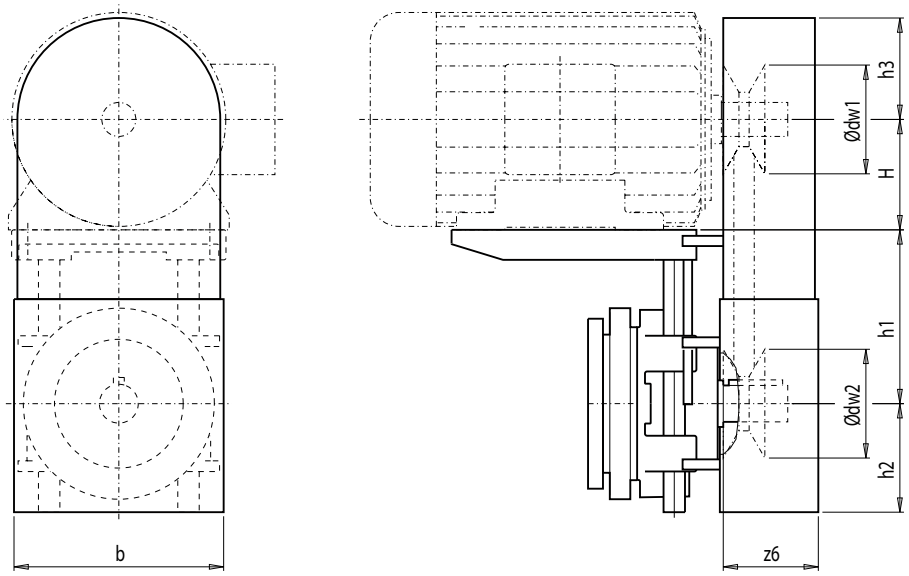
Dimensions

Protective belt cover for piggy back design PS (continued)



Gearbox			dw1	dw2	12h h1	h1	3/9h h1	h1	H	h2	h3	z6	b
			Max.	Max.	Min.	Max.	Min.	Max.					
F.88B	-PS	(80)	150	140	163	228	168	228	80	88	97	71	190
		(90)	150	140	163	228	168	228	90	88	97	71	190
		(100)	210	140	163	238	160	240	100	88	132	83	248
		(112)	210	140	163	238	160	240	112	88	120	83	248
		(132)	250	220	178	228	188	228	132	135	140	147	288
C.88	-PS	(80)	150	140	160	235	190	235	80	88	97	71	190
		(90)	150	140	160	235	190	235	90	88	97	71	190
		(100)	210	140	160	240	190	240	100	88	132	83	248
		(112)	210	140	160	240	190	240	112	88	120	83	248
		(132)	250	220	180	230	180	230	132	135	140	147	288
K.88	-PS	(80)	150	140	160	235	190	235	80	88	97	71	190
		(90)	150	140	160	235	190	235	90	88	97	71	190
		(100)	210	140	160	240	190	240	100	88	132	83	248
		(112)	210	140	160	240	190	240	112	88	120	83	248
		(132)	250	220	180	230	180	230	132	135	140	147	288
D.88	-PS	(80)	150	140	160	235	190	235	80	88	97	71	190
		(90)	150	140	160	235	190	235	90	88	97	71	190
		(100)	210	140	160	240	190	240	100	88	132	83	248
		(112)	210	140	160	240	190	240	112	88	120	83	248
		(132)	250	220	180	230	220	270	132	135	140	147	288
E./Z.108 K.108	-PS	(80)	150	140	190	300	230	300	80	88	97	71	190
		(90)	150	140	190	300	230	300	90	88	97	71	190
		(100)	210	140	220	320	230	320	100	88	132	83	248
		(112)	210	140	220	320	230	320	112	88	120	83	248
		(132)	250	220	220	270	255	305	132	135	140	147	288
		(160)	250	220	220	270	255	305	160	135	140	135	288
		(180)	330	310	268	352	268	352	180	205	182	134	372
		(200)	330	310	268	352	268	352	200	205	182	134	372

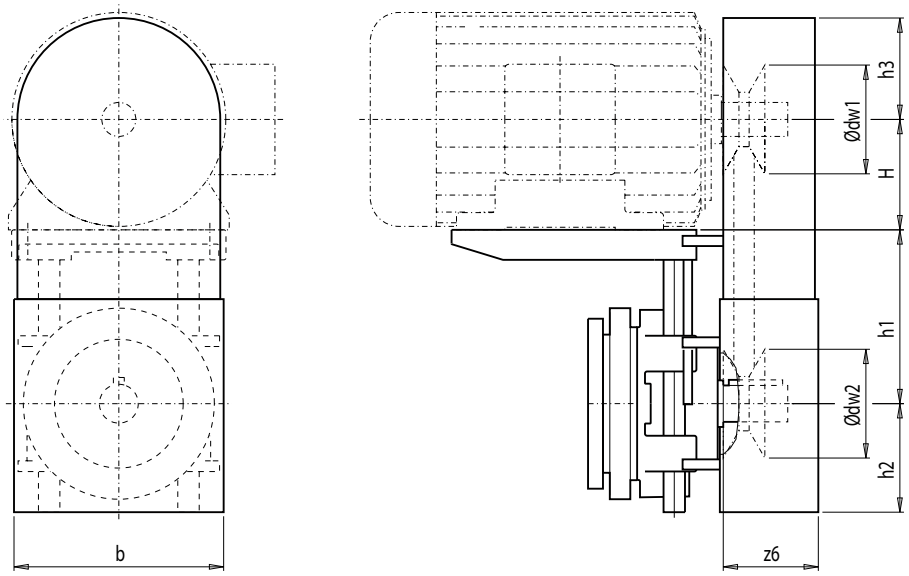
Protective belt cover for piggy back design PS (continued)



Gearbox			dw1	dw2	12h h1		3/9h h1		H	h2	h3	z6	b
			Max.	Max.	Min.	Max.	Min.	Max.					
F.108B	-PS	(80)	150	140	190	295	190	295	80	88	97.0	71	190
		(90)	150	140	190	295	190	295	90	88	97.0	71	190
		(100)	210	140	223	318	190	240	100	88	132.0	83	248
		(112)	210	140	223	318	190	240	112	88	120.0	83	248
		(132)	250	220	207	257	215	265	132	135	140.0	147	288
		(160)	250	220	207	257	215	265	160	135	140.0	135	288
D.108	-PS	(80)	150	140	190	300	23	300	80	88	97.0	71	190
		(90)	150	140	190	300	230	300	90	88	97.0	71	190
		(100)	210	140	220	320	230	320	100	88	132.0	83	248
		(112)	210	140	220	320	230	320	112	88	120.0	83	248
		(132)	250	220	220	270	255	305	132	135	140.0	147	288
		(160)	250	220	220	270	255	305	160	135	140.0	135	288
E./Z.128	-PS	(100)	210	140	220	320	255	320	100	88	132.0	83	248
		(112)	210	140	220	320	255	320	112	88	120.0	83	248
		(132)	250	220	255	305	280	330	132	135	140.0	147	288
		(160)	250	220	255	305	280	330	160	135	140.0	135	288
		(180)	330	310	253	352	293	352	180	205	182.0	134	372
		(200)	330	310	253	352	293	352	200	205	182.0	134	372
		(225)	390	390	295	340	–	–	225	215	232.5	174	428
F.128B	-PS	(90)	150	140	235	295	230	295	90	88	97.0	71	190
		(100)	210	140	250	320	235	320	100	88	132.0	83	248
		(112)	210	140	250	320	235	320	112	88	120.0	83	248
		(132)	250	220	265	365	285	365	132	135	140.0	147	288
		(160)	250	220	265	365	285	330	160	135	140.0	135	288
		(180)	330	310	268	358	268	358	180	205	182.0	134	372
		(200)	330	310	268	358	268	358	200	205	182.0	134	372
K.128	-PS	(90)	150	140	230	300	255	300	90	88	97.0	71	190
		(100)	210	140	220	320	255	320	100	88	132.0	83	248
		(112)	210	140	220	320	255	320	112	88	120.0	83	248
		(132)	250	220	220	270	255	305	132	135	140.0	147	288
		(160)	250	220	220	270	255	305	160	135	140.0	135	288
		(180)	330	310	243	352	243	352	180	205	182.0	134	372
		(200)	330	310	243	352	243	352	200	205	182.0	134	372

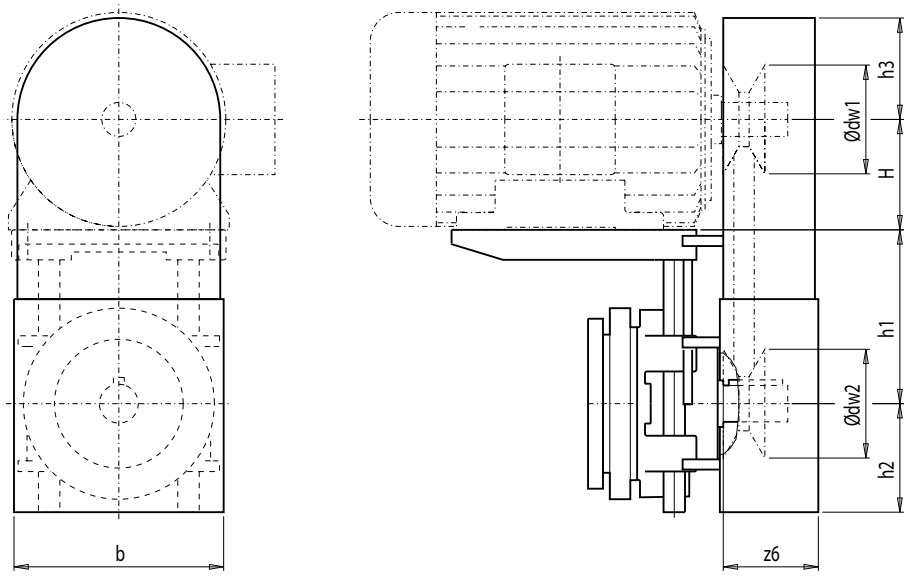
Dimensions

Protective belt cover for piggy back design PS (continued)



Gearbox			dw1	dw2	12h h1	h1	3/9h h1	h1	H	h2	h3	z6	b
			Max.	Max.	Min.	Max.	Min.	Max.					
D.128	-PS	(90)	150	140	230	300	255	300	90	88	97.0	71	190
		(100)	210	140	220	320	255	320	100	88	132.0	83	248
		(112)	210	140	220	320	255	320	112	88	120.0	83	248
		(132)	250	220	255	305	280	330	132	135	140.0	147	288
		(160)	250	220	255	305	280	330	160	135	140.0	135	288
		(180)	330	310	253	352	293	352	180	205	182.0	134	372
		(200)	330	310	253	352	293	352	200	205	182.0	134	372
E./Z.148	-PS	(132)	250	220	280	330	305	355	132	135	140.0	147	288
		(160)	250	220	280	330	305	355	160	135	140.0	135	288
		(180)	330	310	293	352	318	407	180	205	182.0	134	372
		(200)	330	310	293	352	318	407	200	205	182.0	134	372
		(225)	390	390	305	350	–	–	225	215	232.5	174	428
		(250)	390	350	305	350	–	–	250	215	210.0	174	428
		(280)	520	410	339	369	–	–	280	240	274.0	162	556
F.148B	-PS	(100)	210	140	255	320	255	320	100	88	132.0	83	248
		(112)	210	140	255	320	255	320	112	88	120.0	83	248
		(132)	250	220	290	365	285	365	132	135	140.0	147	288
		(160)	250	220	290	365	285	365	160	135	140.0	135	288
		(180)	330	310	293	358	287	357	180	205	182.0	134	372
		(200)	330	310	293	358	287	357	200	205	182.0	134	372
		(225)	390	390	323	353	393	423	225	215	232.5	174	428
K.148	-PS	(100)	210	140	245	320	280	320	100	88	132.0	83	248
		(112)	210	140	245	320	280	320	112	88	120.0	83	248
		(132)	250	220	255	305	280	330	132	135	140.0	147	288
		(160)	250	220	255	305	280	330	160	135	140.0	135	288
		(180)	330	310	293	352	253	352	180	205	182.0	134	372
		(200)	330	310	293	352	253	352	200	205	182.0	134	372
		(225)	390	390	345	390	–	–	225	215	232.5	174	428

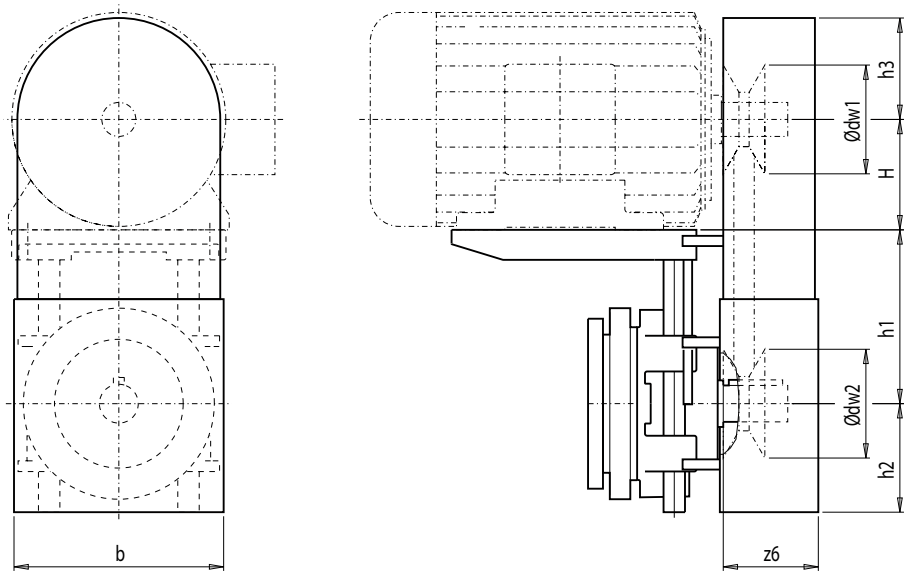
Protective belt cover for piggy back design PS (continued)



Gearbox			dw1	dw2	12h h1	h1	3/9h h1	h1	H	h2	h3	z6	b
			Max.	Max.	Min.	Max.	Min.	Max.					
D.148	-PS	(100)	210	140	245	320	280	320	100	88	132.0	83	248
		(112)	210	140	245	320	280	320	112	88	120.0	83	248
		(132)	250	220	280	330	305	355	132	135	140.0	147	288
		(160)	250	220	280	330	305	355	160	135	140.0	135	288
		(180)	330	310	293	352	318	407	180	205	182.0	134	372
		(200)	330	310	293	352	318	407	200	205	182.0	134	372
		(225)	390	390	305	350	–	–	225	215	232.5	174	428
Z.168	-PS	(132)	250	220	310	360	340	390	132	135	140.0	147	288
		(160)	250	220	310	360	340	390	160	135	140.0	135	288
		(180)	330	310	337	407	343	407	180	205	182.0	134	372
		(200)	330	310	337	407	343	407	200	205	182.0	134	372
		(225)	390	390	345	390	–	–	225	215	232.5	174	428
		(250)	390	350	345	390	–	–	250	215	210.0	174	428
		(280)	520	410	402	432	–	–	280	240	274.0	162	556
F.168B	-PS	(132)	250	220	308	368	305	365	132	135	140.0	147	288
		(160)	250	220	308	368	305	365	160	135	140.0	135	288
		(180)	330	310	318	432	313	428	180	205	182.0	134	372
		(200)	330	310	318	432	313	428	200	205	182.0	134	372
		(225)	390	390	393	423	393	423	225	215	232.5	174	428
		(250)	390	350	356	386	424	454	250	215	210.0	174	428
		(280)	520	410	399	429	400	430	280	240	274.0	162	556
K.168	-PS	(132)	250	220	280	330	305	355	132	135	140.0	147	288
		(160)	250	220	280	330	305	355	160	135	140.0	135	288
		(180)	330	310	337	407	277	352	180	205	182.0	134	372
		(200)	330	310	337	407	277	352	200	205	182.0	134	372
		(225)	390	390	390	435	–	–	225	215	232.5	174	428
		(250)	390	350	390	435	–	–	250	215	210.0	174	428
		(280)	520	410	472	502	–	–	280	240	274.0	162	556
D.168	-PS	(132)	250	220	310	360	340	390	132	135	140.0	147	288
		(160)	250	220	310	360	340	390	160	135	140.0	135	288
		(180)	330	310	337	407	343	407	180	205	182.0	134	372
		(200)	330	310	337	407	343	407	200	205	182.0	134	372
		(225)	390	390	345	390	–	–	225	215	232.5	174	428

Dimensions

Protective belt cover for piggy back design PS (continued)



Gearbox			dw1	dw2	12h h1	h1	3/9h h1	h1	H	h2	h3	z6	b
			Max.	Max.	Min.	Max.	Min.	Max.					
Z.188	-PS	(132)	250	220	340	380	372	412	132	135	140.0	147	288
		(160)	250	220	340	380	372	412	160	135	140.0	135	288
		(180)	330	310	368	433	382	432	180	205	182.0	134	372
		(200)	330	310	368	433	382	432	200	205	182.0	134	372
		(225)	390	390	393	423	–	–	225	215	232.5	174	428
		(250)	390	350	418	448	–	–	250	215	210.0	174	428
		(280)	520	410	399	424	–	–	280	240	274.0	177	556
K.188	-PS	(132)	250	220	360	410	300	370	132	135	140.0	147	288
		(160)	250	220	360	410	300	370	160	135	140.0	135	288
		(180)	330	310	378	433	302	357	180	205	182.0	134	372
		(200)	330	310	378	433	302	357	200	205	182.0	134	372
		(225)	390	390	463	493	–	–	225	215	232.5	174	428
		(250)	390	350	493	523	–	–	250	215	210.0	174	428
		(280)	520	410	472	502	–	–	280	240	274.0	177	556
F.188B	-PS	(132)	250	220	335	375	335	375	132	135	140.0	147	288
		(160)	250	220	335	375	335	375	160	135	140.0	135	288
		(180)	330	310	347	432	343	428	180	205	182.0	134	372
		(200)	330	310	347	432	343	428	200	205	182.0	134	372
		(225)	390	390	390	420	463	493	225	215	232.5	174	428
		(250)	390	350	419	449	424	454	250	215	210.0	174	428
		(280)	520	410	463	493	471	501	280	240	274.0	177	556
D.188	-PS	(132)	250	220	340	380	372	412	132	135	140.0	147	288
		(160)	250	220	340	380	372	412	160	135	140.0	135	288
		(180)	330	310	368	433	382	432	180	205	182.0	134	372
		(200)	330	310	368	433	382	432	200	205	182.0	134	372
		(225)	390	390	393	423	–	–	225	215	232.5	174	428
		(250)	390	350	418	448	–	–	250	215	210.0	174	428
		(280)	520	410	399	424	–	–	280	240	274.0	177	556

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