



Geared servo motors

g500-H / MCA helical geared servo motor

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About this document

Document description

This document addresses to all persons who want to carry out any configurations with the products described.

The data and information compiled in this document serve to support you in the dimensioning and selection processes and in carrying out the electrical and mechanical installation. You will receive information regarding product extensions and accessories.

- The document includes safety instructions which must be observed.
- All persons working on and with the drives must have the documentation at hand during work and observe the information and notes relevant for it.
- The documentation must always be complete and in a perfectly readable state.

Further documents



Information and tools with regard to the Lenze products can be found on the Internet:

www.Lenze.com → Downloads

About this document

Notations and conventions



Notations and conventions

Conventions are used in this document to distinguish between different types of information.

Numeric notation		
Decimal separator	Point	Generally shown as a decimal point. Example: 1 234.56
Warnings		
UL Warnings	UL	Are used in English and French.
UR warnings	UR	
Text		
Engineering Tools	" "	Software Example: "Engineer", "EASY Starter"
Icons		
Page reference		Reference to another page with additional information. Example:  16 = see page 16
Documentation reference		Reference to other documentation with additional information. Example:  EDKxxx = see documentation EDKxxx

Layout of the safety instructions

DANGER!

Indicates an extremely hazardous situation. Failure to comply with this instruction will result in severe irreparable injury and even death.

WARNING!

Indicates an extremely hazardous situation. Failure to comply with this instruction may result in severe irreparable injury and even death.

CAUTION!

Indicates a hazardous situation. Failure to comply with this instruction may result in slight to medium injury.

NOTICE

Indicates a material hazard. Failure to comply with this instruction may result in material damage.



Product information

Product description

When used in combination with servo motors, our helical gearboxes form a compact, powerful and dynamic drive unit. Numerous options at the input and output end provide for the drive to be exactly adapted to your application.

The robust helical gearboxes are characterized by high permissible radial forces, closely stepped ratios and a low backlash. They are available in a 2-, 3- and 4-stage design with an output torque of up to 3000 Nm and a ratio of up to $i = 3529$.

Designs

- Fine-scaling of size/torque provides for an optimum machine adaptation
- Standardised shaft and flange dimensions for an easy machine integration
- High efficiency

Asynchronous servo motors as a basis for geared motors

In a power range of 0.8 to 20.3 kW, Lenze offers servo motors with a scalable modular design.

The drives are designed for the open-loop or closed-loop controlled servo inverter operation.

These motors feature a high dynamic performance and a wide speed setting range.

Customer benefit

- High dynamic performance thanks to low moments of inertia
- High efficiency
- Wide speed setting range
- Field weakening operation usable
- Space-saving thanks to compact direct attachment to Lenze gearboxes
- Can be used universally for a wide range of machine tasks due to the market-oriented modular system



Fig. 1: MCA13I asynchronous servo motor - g500-H450 helical gearbox

Product information

Identification of the products



Identification of the products

Gearbox product name

Gearbox type	Product series		Type	Rated torque Nm	Gearbox
Helical gearbox	g500	-	H	45	g500-H45
				100	g500-H100
				140	g500-H140
				210	g500-H210
				320	g500-H320
				450	g500-H450
				600	g500-H600
				850	g500-H850
				1500	g500-H1500
				3000	g500-H3000

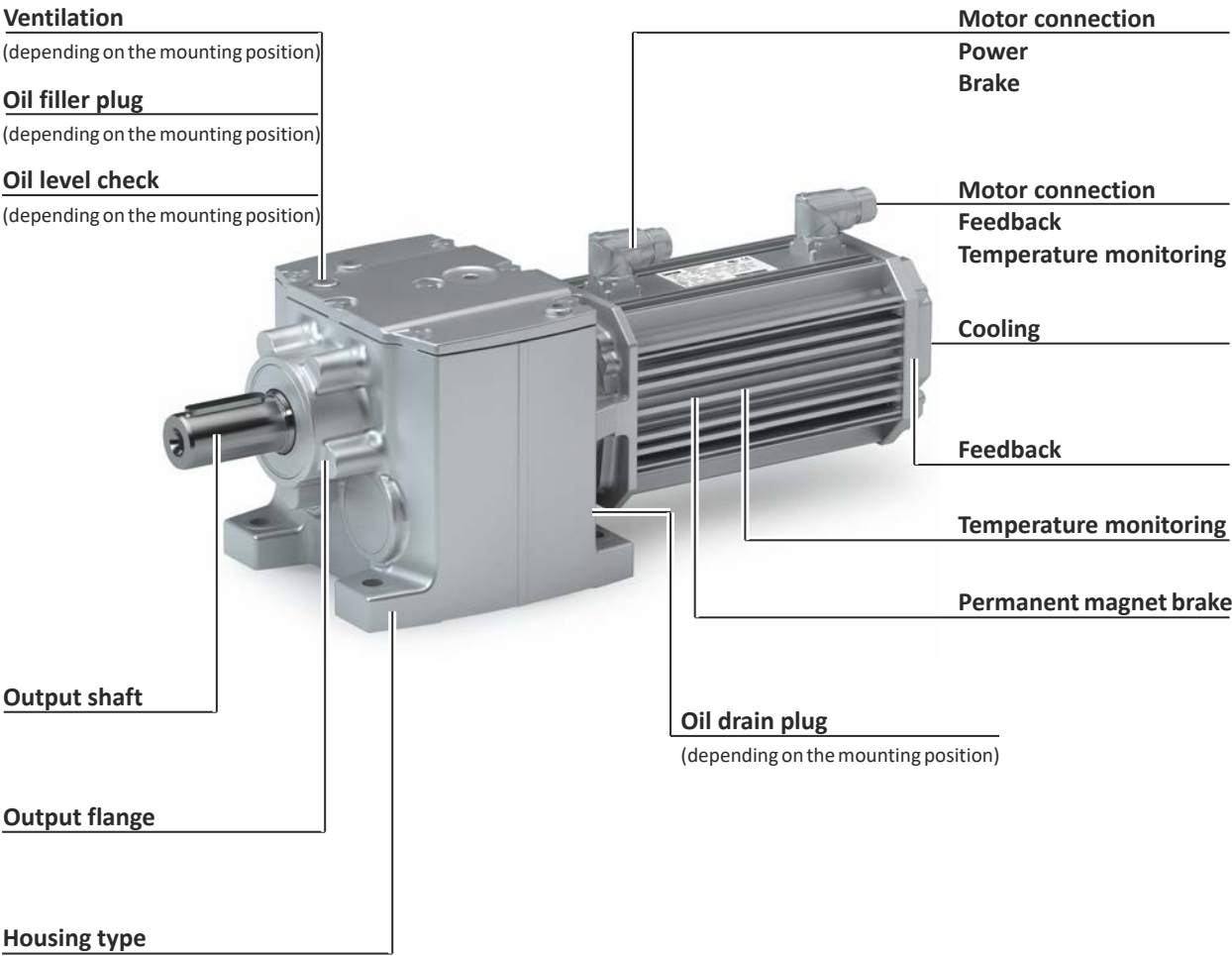
Servo motor product name

		Motor				
Example		MCA	10	I	40	-
Meaning	Variant					
Product family		MCA				
Size			10 13 14 17 19 21			
Overall length				I ... X		
Rated speed	rpm x 100				16 ... 42	
Mains voltage	3 x 400 V, IP54/IP65					-



Features

The following figure provides an overview of the elements and connections on the product.
Their position, size and appearance may vary.



Product information

The modular system



The modular system



Values printed in bold are standard designs. Values that are not printed in bold are potential extensions, some of them including a surcharge.

Geared motors up to 450 Nm

Gearbox		g500-H100	g500-H140	g500-H210	g500-H320	g500-H450
Min. motor assignment		MCA10	MCA10	MCA10	MCA10	MCA10
Max. motor assignment		MCA13	MCA13	MCA14	MCA17	MCA19
Technical data						
Max. output torque	Nm	100	140	210	320	450
Min. drive torque	Nm	0.8	0.8	0.8	0.8	0.8
Max. drive torque	Nm	6.3	6.3	12.0	21.5	36.0
Mounting position						
Standard		M1, M2, M3, M4, M5, M6 (ABCDEF)				
Combined		M1/5/6 (AEF)				
Color		Primed Painted in RAL colors				
Surface and corrosion protection		OKS-G Different types of OKS				
Output shaft						
Solid shaft with featherkey	mm	20 x 40	25 x 50	25 x 50	30 x 60	30 x 60 35 x 70
Solid shaft without keyway	mm	20 x 40	25 x 50	25 x 50	30 x 60	35 x 70
Shaft material		Steel Stainless steel				
Shaft sealing ring material		NBR FKM (Viton)				
Output shaft bearing		Normal Reinforced				
Gearbox version		With foot (VBR) With foot and centering (VAR) With foot and output flange (VAK) With centering (VCR) With output flange (VCK) With output flange (VCP)				
Output flange	mm	120/140/160	120/140/160	120/140 160/200	160/200	160/200/250
Lubricant		Synthetic oil Food-compatible oil				
Ventilation		Without			Vent valve	
Cooling		Self-ventilated Forced-ventilated				
Motor connection		Connector Terminal box				
Permanent magnet holding brake		Without Brake design: Standard				
Feedback						
Without functional safety		Resolver Absolute value encoder Incremental encoder				
With functional safety		Resolver Incremental encoder				
Temperature monitoring		PT1000 temperature sensor				



Product information

The modular system

Geared motors 600 Nm to 3000 Nm

Gearbox		g500-H600	g500-H850	g500-H1500	g500-H3000
Min. motor assignment		MCA10	MCA10	MCA10	MCA14
Max. motor assignment		MCA19	MCA19	MCA19	MCA19
Technical data					
Max. output torque	Nm	600	850	1500	3000
Min. drive torque	Nm	0.8	0.8	0.8	5.4
Max. drive torque	Nm	36	36	36	36
Mounting position					
Standard		M1, M2, M3, M4, M5, M6 (ABCDEF)			
Combined					
Color		Primed Painted in RAL colors			
Surface and corrosion protection		OKS-G Different types of OKS			
Output shaft					
Solid shaft with featherkey	mm	35 x 70 40 x 80	40 x 80	50 x 100	60 x 120
Solid shaft without keyway	mm	35 x 70	40 x 80	50 x 100	60 x 120
Shaft material		Steel Stainless steel			
Shaft sealing ring material		NBR FKM (Viton)			
Output shaft bearing		Normal Reinforced			
Gearbox version		With foot (VBR) With foot and centering (VAR) With foot and output flange (VAK) With centering (VCR) With output flange (VCK)			
Output flange	mm	200/250	250/300	250/300/350	300/350/450
Lubricant		Synthetic oil Food-compatible oil			
Ventilation		Vent valve Oil compensation reservoir			
Cooling		Self-ventilated Forced-ventilated			
Motor connection		Connector Terminal box			
Permanent magnet holding brake		Without Brake design: Standard			
Feedback					
Without functional safety		Resolver Absolute value encoder Incremental encoder			
With functional safety		Resolver Incremental encoder			
Temperature monitoring		PT1000 temperature sensor			

Product information

The modular system
Designs



Designs

Gearbox designs

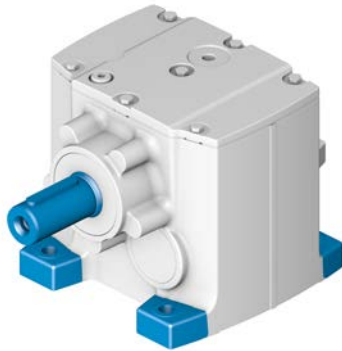


Observe the available gearbox designs!

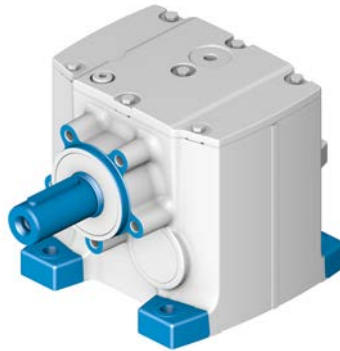
► [The modular system](#)  10

The VCP design (reinforced flange) is suitable for absorbing high radial and axial forces  49 .

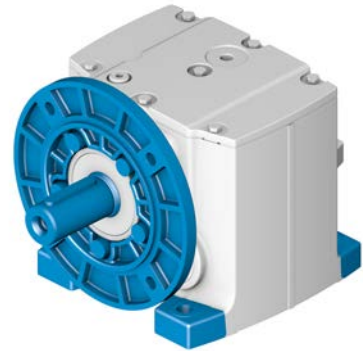
Solid shaft, with foot



Without centring (VBR)

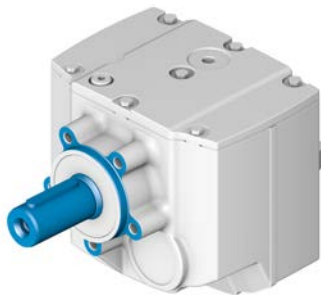


With centring (VAR)



Flange with through holes (VAK)

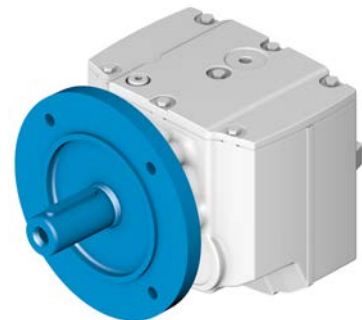
Solid shaft, without foot



With centering (VCR)



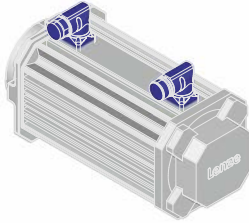
Flange with through holes (VCK)



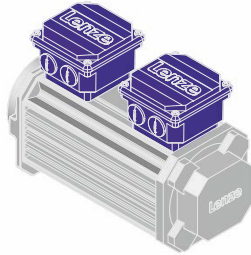
Reinforced flange with through holes (VCP)



Models at the output
Motor connection

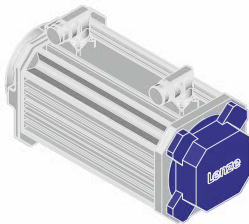


Connectors

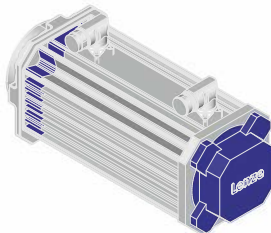


Terminal box

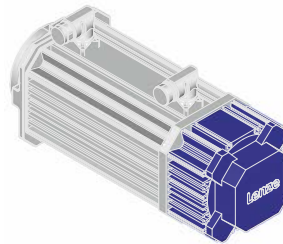
Cooling: self-ventilated



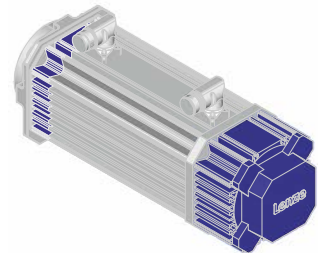
Resolver



Resolver and brake

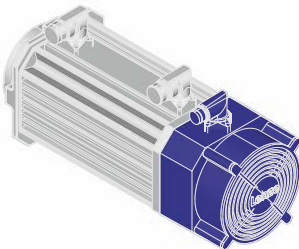


Absolute value/incremental
encoder

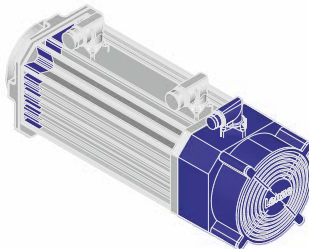


Absolute value/incremental
encoder and brake

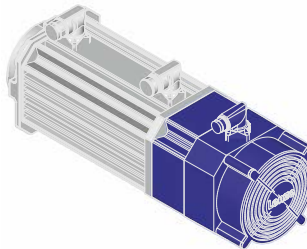
Cooling: forced ventilated



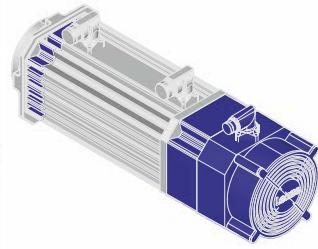
Resolver



Resolver and brake



Absolute value/incremental
encoder



Absolute value/incremental
encoder and brake

Product information

The modular system
Mounting positions

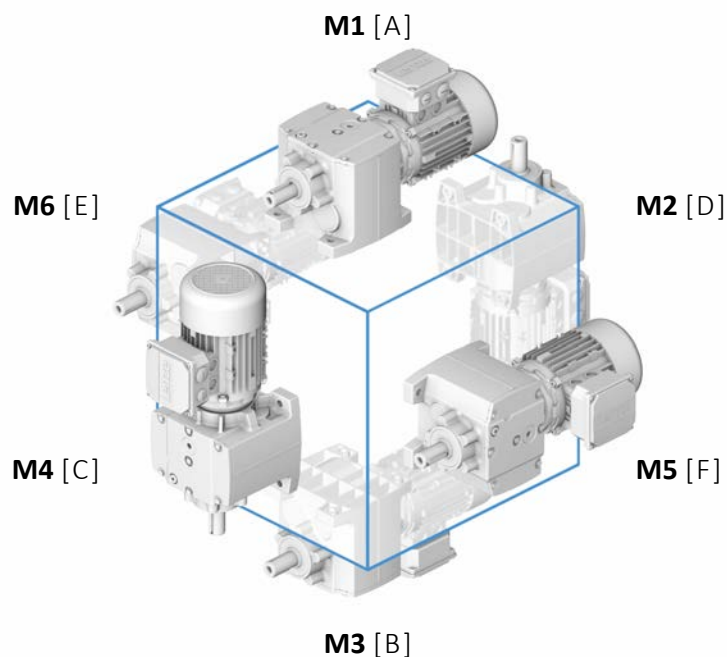


Mounting positions

Details of the mounting position are needed to ensure the corresponding lubricant amount, position of the ventilation, oil checks and oil drain plug on the gearbox.

To reduce the number of different versions, the gearboxes can also be ordered with combined mounting positions:

- g500-H100 ... H450 in mounting position M1/5/6 (AEF)

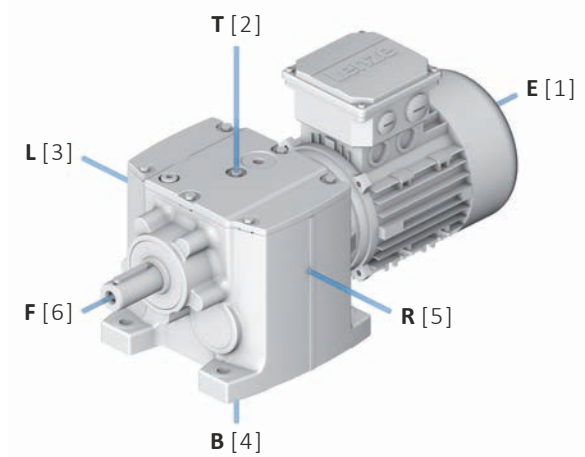


Defined positions on the geared motor

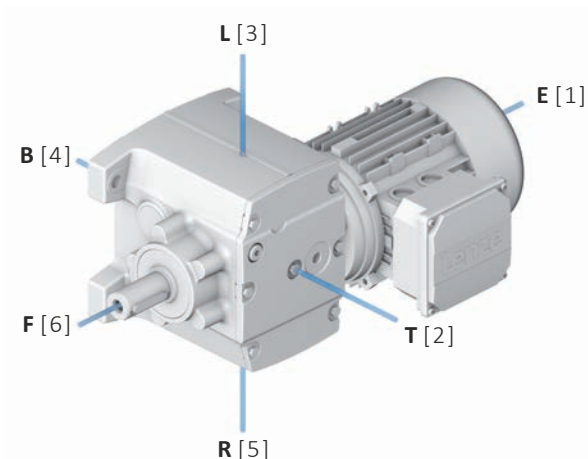
All of the defined positions refer to the areas on the geared motor in mounting position **M1 (A)**.

Position of the built-on accessories with T, L, R, B, F, E (Top, Left, Right, Bottom, Front and End)

If the geared motor is rotated into a different mounting position M2 ... M6 (B...F), the defined positions on the geared motor are retained.



Example: Mounting position M5 (F)



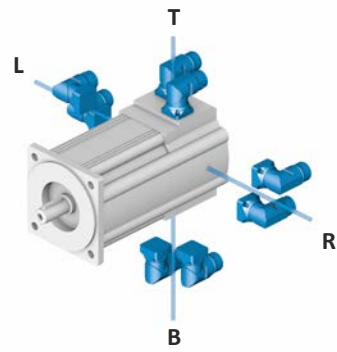
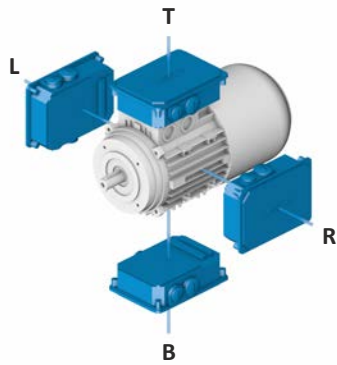


Product information

The modular system
Mounting positions

Positions of the terminal boxes/connectors

Terminal box	ICN connector
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Information on project planning

Safety instructions

Basic safety instructions

Disregarding the following basic safety instructions and safety information may lead to severe personal injury and damage to property!

- Only use the product as directed.
- Never commission the product in the event of visible damage.
- Never modify the product technically.
- Never commission the product before assembly has been completed.
- Never operate the product without the required covers.
- Connect/disconnect all pluggable connections only in deenergized condition!
- Only remove the product from the installation in the deenergized state.
- The product can – depending on their degree of protection – have live, movable or rotating parts during or after operation. Surfaces can be hot.
- Observe all specifications of the corresponding documentation supplied. This is the condition for safe and trouble-free operation and the achievement of the specified product features.
- The procedural notes and circuit details given in the associated documentation are suggestions and their transferability to the respective application has to be checked. The manufacturer of the product does not take responsibility for the suitability of the process and circuit proposals.
- All work with and on the product may only be carried out by qualified personnel. IEC 60364 and CENELEC HD 384 define the qualifications of these persons:
 - They are familiar with installing, mounting, commissioning, and operating the product.
 - They have the corresponding qualifications for their work.
 - They know and can apply all regulations for the prevention of accidents, directives, and laws applicable at the place of use.

Application as directed

- The product is a professional equipment intended for use by trades, specific professions or industry and not for sale to the general public. IEC 60050 [IEV 161-05-05]
- To prevent personal injury and damage to property, higher-level safety and protection systems must be used!
- All transport locks must be removed.
- Mounted eye bolts on the motor are not suitable for transporting geared motors.
- The product may only be operated under the specified operating conditions and in the specified mounting positions.
- The product may only be operated on the inverter.
- Built-in brakes must not be used as safety brakes.
- The product must not be operated in private areas, in potentially explosive atmospheres and in areas with harmful gases, oils, acids and radiation.



Residual hazards

Even if notes given are taken into consideration and protective measures are implemented, the occurrence of residual risks cannot be fully prevented.

The user must take the residual hazards mentioned into consideration in the risk assessment for his/her machine/system.

If the above is disregarded, this can lead to severe injuries to persons and damage to property!

Product

Observe the warning labels on the product!



Dangerous electrical voltage:

Before working on the product, make sure there is no voltage applied to the power terminals! After mains disconnection, the power terminals will still carry the hazardous electrical voltage for the time given next to the symbol!



Electrostatic sensitive devices:

Before working on the product, the staff must ensure to be free of electrostatic charge!



High leakage current:

Carry out fixed installation and PE connection in compliance with:
EN 61800-5-1 / EN 60204-1



Hot surface:

Use personal protective equipment or wait until the device has cooled down!

Protection of persons

- The power terminals may carry voltage in the switched-off state or when the motor is stopped.
 - Before working, check whether all power terminals are deenergized.
- Voltages may occur on the drive components (e.g. capacitive, caused by inverter supply).
 - Careful earthing in the marked positions of the components must be carried out.
- There is a risk of burns from hot surfaces.
 - Provide protection against accidental contact.
 - Use personal protective equipment or wait until the device has cooled down.
 - Prevent contact with flammable substances.
- There is a risk of injury due to rotating parts.
 - Before working on the drive system, ensure that the motor is at a standstill.
- There is a risk of accidental start-up or electric shock.

Motor protection

- Installed temperature sensors are no full protection for the machine.
 - If necessary, limit the maximum current. Parameterize the inverter so that it will be switched off after some seconds of operation with $I > I_{\text{rated}}$, especially if there is a risk of blocking.
 - Integrated overload protection does not prevent overloading under all conditions.
- The fuses are no motor protection.
 - Use a current-dependent motor protection switch.
 - Use the built-in temperature sensors.

Information on project planning

General information
Residual hazards



Gearbox protection

- Excessive vibration accelerations and resonances will damage the gearbox.
 - Do not operate the gearbox at vibration accelerations $> 2 \text{ g}$ (20 m/s^2) of the machine.
 - Do not operate the gearbox in the resonance range of the machine.
- Excessive torques will damage the gearboxes.
 - Do not exceed the output torques specified on the nameplate.
- Excessive input speeds lead to increased temperatures.
 - Do not exceed the input speeds specified on the nameplate.
- Avoid excessive lateral forces on the gearbox shaft.
 - Align the shafts of the gearbox and driven machine exactly with each other.
- Machine elements can be damaged by a lack of lubricant.
 - Mount the gearbox only in the mounting position indicated on the nameplate.
 - When changing the lubricant, use the lubricant type and quantity specified on the nameplate.

General information

Thermal power limit

The thermal power limit, defined by the heat balance, limits the permissible continuous gearbox power. It is affected by

- the churning losses in the lubricant. These are determined by the mounting position and the circumferential speed of the gears
- the load and the speed spectrum.
- the ambient conditions: temperature, air circulation, input or dissipation of heat via shafts and the foundations.

NOTICE

A thermal check with the Drive Solution Designer (DSD) or contacting your Lenze representative is required if

- ▶ the input speed $n_1 > 1500 \text{ rpm}$ is fallen below in case of the gearbox ratios given in the following.
- ▶ the drive speeds mentioned in the following will be exceeded as a function of the mounting position. For a short period of time up to 5 min, 30 % higher speeds are permissible.
- ▶ the ambient temperature is predominantly above $+30 \text{ °C}$.

Gearboxes	Ratio i
g500-H850 ... H3000	≤ 50

Motor	Mounting position M1	Mounting position M3, M5, M6	Mounting position M2, M4
MCA10 ... 14	4000 rpm	3500 rpm	3000 rpm
MCS17 ... 21	3000 rpm	2600 rpm	1500 rpm

Possible ways of extending the application area

- Shaft sealing ring made of FKM material/Viton (option)
- Reducing the lubricant amount (after consultation with Lenze)
- Cooling the geared motor by air convection on the machine/system



Drive dimensioning

In order to carry out an accurate drive dimensioning process, you can use our configuring software, the »Drive Solution Designer«.

With the »Drive Solution Designer«, you can design the drive both quickly and to a high quality. The software contains profound and proven expertise with regard to drive applications and mechatronic drive components.

Please get in touch with your Lenze representative.

NOTICE

The dimensioning is suitable for the operating modes S1, S2, S3 and S6

The following 3 elements are taken into consideration in the dimensioning process :

Drive function

On the basis of the values required for the process that are specified, a drive is selected, for which all operating points are within the speed-torque characteristic curve of the motor.

As a result, a motor with a suitable speed with an inverter with a sufficient maximum current is selected. Further limits (maximum speed, installation height...) are specified in tables.

Mechanical strength

On the basis of the forces and torques which build, a drive is selected that has a sufficient mechanic strength (endurance strength for the periodically occurring torques and fatigue strength for the sporadically occurring torques).

Thermal dimensioning

For the inverter, the thermal dimensioning process is carried out on the basis of the continuous inverter current or on the basis of the continuous torque from the motor-inverter combination, which can be reached.

The motor is thermally dimensioned on the basis of the mean speed and the effective torque.

The thermal dimensioning of the gearbox is based on the medium speed and the permanent torque of the motor/gearbox combination. The thermal limit speed is to be understood as a recommendation.

The mean speed of the drive should not exceed the values specified.



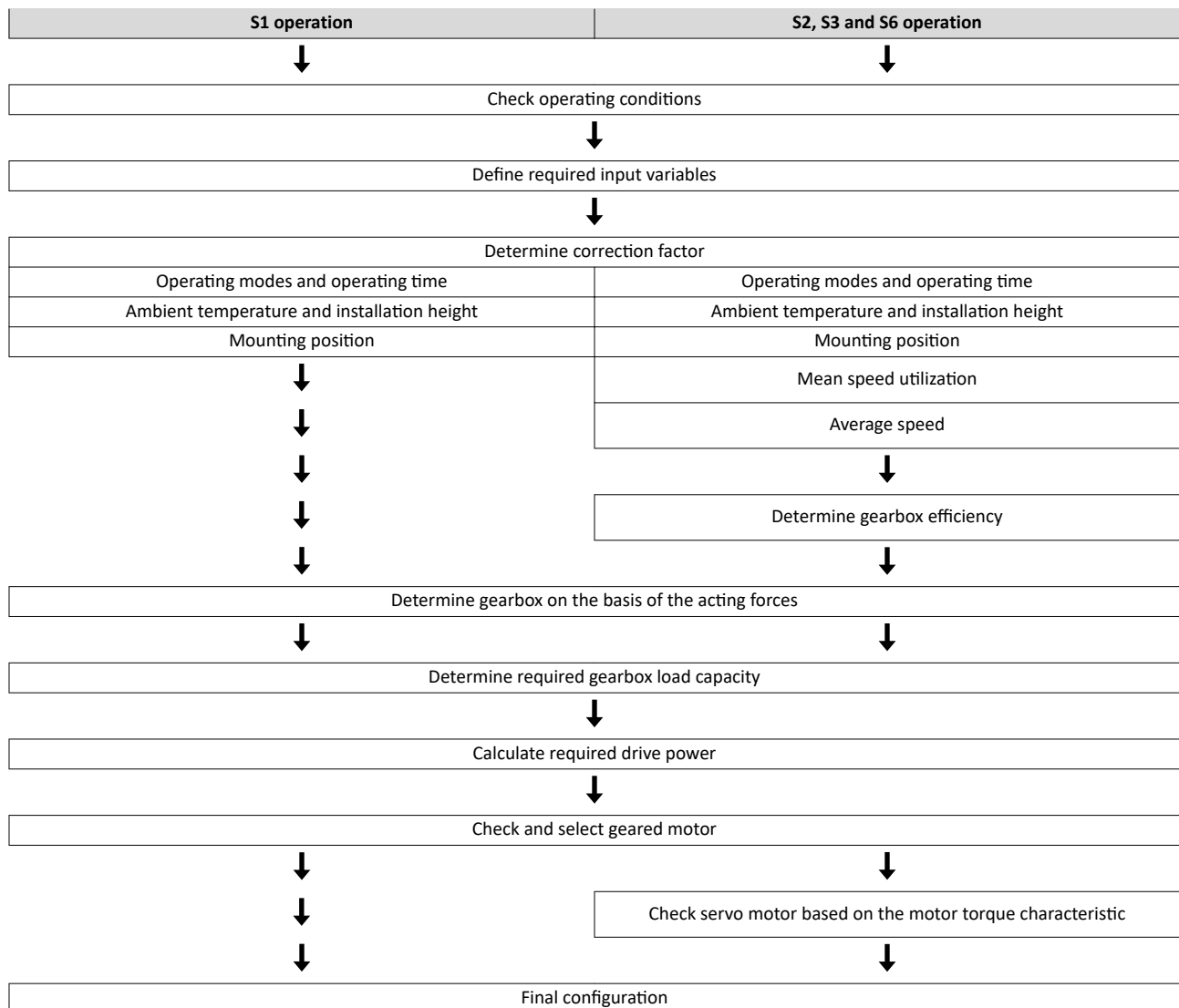
If dimensioning processes are complex or reach limit loads, please refer to your Lenze branch office

Information on project planning

Drive dimensioning



Workflow



Check operating conditions

Check
Approvals Conformities Supply voltage Degree of protection Ambient temperature Surface protection

► Standards and operating conditions [📖 37](#)

► Surface and corrosion protection [📖 26](#)



Define required input variables

Necessary input variables	Note	Symbol	Unit
Operating time/day		BD	h
Mean speed utilization of the geared motor	Relating to the load speed n_L		%
Ambient temperature		T_V	°C
Site altitude Amsl		H	m
Radial force		F_{rad}	rated
Axial force		F_{ax}	rated
Transmission element at the output	Gear wheels, sprockets ...		
Effective diameter of the transmission element		d_w	mm
Load torque	Only with S1, S2, S3, and S6 operating modes	M_L	Nm
Load speed	Only with S1, S2, S3, and S6 operating modes	n_L	rpm
Short-time maximum torque	Emergency off, quick stop, occasional high starting duty	$M_{L,max}$	Nm
Runtime with maximum torque		t_L	%

Determine correction factor

Operating modes S1, S2, S3, S6, and operating time							
Operating mode S1		Operating mode S2		Operating mode S3		Operating mode S6	
ED	k_L	ED	k_L	ED	k_L	ED	k_L
%		min		%		%	
100	1.0	10	1.4 - 1.5	15	1.4 - 1.5	15	1.5 - 1.6
		30	1.15 - 1.2	25	1.3 - 1.4	25	1.4 - 1.5
		60	1.07 - 1.1	40	1.15 - 1.2	40	1.3 - 1.4
		90	1.0 - 1.05	60	1.05 - 1.1	60	1.15 - 1.2

► Operating modes of the motor [255](#)

Ambient temperature and installation height				
Ambient temperature	Installation height amsl			
	≤ 1000 m	≤ 2000 m	≤ 3000 m	≤ 4000 m
	Correction factor			
T_U	k_H	k_H	k_H	k_H
≤ 20 °C	1.15	1.06	0.97	0.89
30 °C	1.07	0.99	0.90	0.83
40 °C	1.00	0.92	0.83	0.77
50 °C	0.92	0.85	0.76	0.71
60 °C	0.83	0.77	0.70	0.65

Mounting position						
Gearboxes	Mounting position					
	M1	M2	M3	M4	M5	M6
	Correction factor					
	k_E	k_E	k_E	k_E	k_E	k_E
g500-H	1.00	0.70	0.80	0.80	1.00	1.00
g500-S	1.00	0.70	0.80	0.85	0.80	0.90
g500-B	1.00	0.70	0.80	0.80	0.80	0.80

► Selection tables [54](#)

Information on project planning

Drive dimensioning



Mean speed utilisation					
Daily operating time	Mean speed utilisation relating to the load speed n_L				
	100 %	80 %	60 %	50 %	25 %
	Correction factor				
	k_N	k_N	k_N	k_N	k_N
1.0 h	1.29	1.33	1.38	1.42	1.55
2.0 h	1.15	1.20	1.25	1.29	1.42
3.0 h	1.08	1.12	1.17	1.21	1.34
4.0 h	1.02	1.06	1.12	1.15	1.29
5.5 h	0.96	1.00	1.06	1.09	1.22
8.0 h	0.89	0.93	0.99	1.02	1.15
12.0 h	0.81	0.85	0.91	0.94	1.08
16.0 h	0.76	0.80	0.85	0.89	1.02
22.0 h	0.71	0.76	0.81	0.85	0.98
24.0 h	0.68	0.72	0.78	0.81	0.94

Mean speed					
Operating mode S2		Operating mode S3		Operating mode S6	
ED	k_M	ED	k_M	ED	k_M
min		%		%]	
10	0.16	15	0.15	15	1.00
30	0.50	25	0.25	25	
60	1.00	40	0.40	40	
90		60	0.60	60	

Gearbox efficiency

Gearboxes	Gearbox efficiency	
	η_{c1}	
g500-H		
2-stage	0.96	
3-stage	0.95	
4-stage	0.94	

Determine product on the basis of the forces

Transmission element			Gear wheels	Sprockets	Toothed belt pulleys (depending on the pretension)	Narrow V-belt (depending on the pretension)
Additional radial force factor	f_z		≥ 17 teeth: 1.0	≥ 20 teeth: 1.0	With belt tightener: 2.0 – 2.5	1.5 – 2.0
			< 17 teeth: 1.15	< 20 teeth: 1.25	Without belt tightener: 2.5 – 3.0	
				< 13 teeth: 1.4		
			Calculation		Check	
Radial force	F_{rad}	N	$F_{rad} = 2000 \times \frac{M_{L,max} \times f_z}{dw}$		$F_{rad} \leq f_w \times F_{rad,max}$	
Axial force	F_{ax}	N			$F_{ax} \leq F_{rad,max} \times 0.5$	

dw Effective diameter of transmission element in mm

f_w Additional load factor

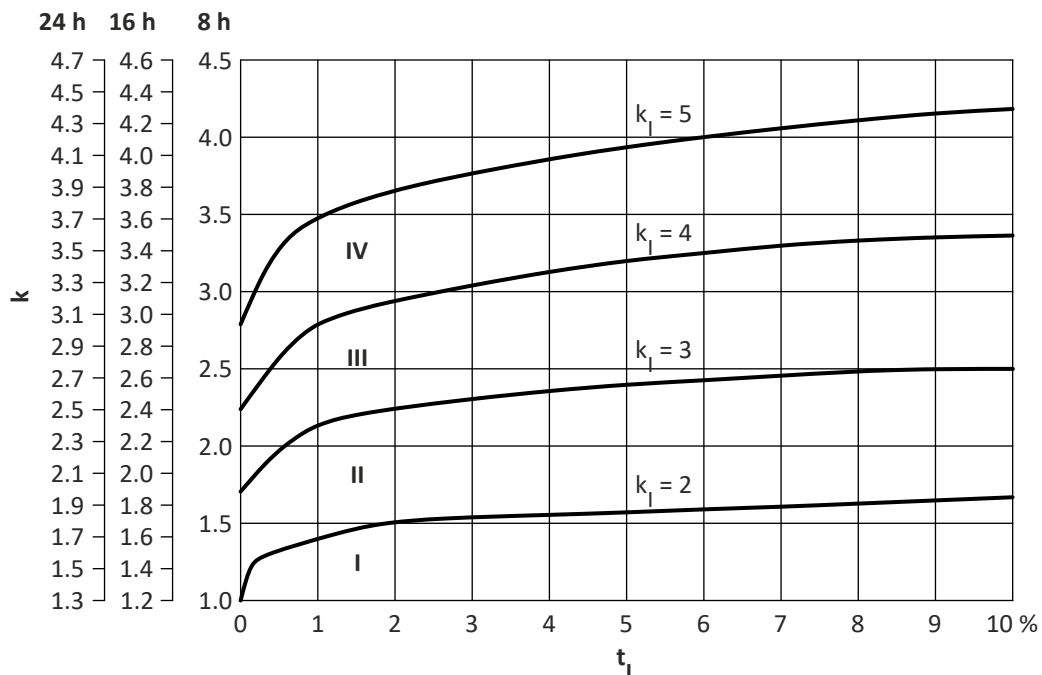
► [Radial forces and axial forces](#) 49



Determination of the required gearbox load capacity

Define the required load factor at runtime t_L		
Runtime $t_L \leq 10\%$	Take the load factor k from diagram into account	
Runtime $t_L > 10\%$	Take intensity k_i from calculation into account	
Calculate intensity		
no alternating load	$k_i = M_{L,max} / M_L$	$k_i =$
at alternating load	$k_i = M_{L,max} / M_L \times 1.4$	$k_i =$

Load factor k



Operating mode S1

Calculation of the required drive power			
	Calculation	Result	Unit
Output torque	$M_R \geq M_L / (k_L \times k_H)$	$M_R =$	Nm
Output speed	$n_R \geq n_L / k_E$	$n_R =$	rpm
Drive power	$P_R \geq M_R \times n_R / 9549$	$P_R =$	kW

Check geared servo motor and determine from the selection table			
	Check	Selection	Unit
Drive power	$P_1 \geq P_R$	$P_1 =$	kW
Output torque	$M_2 \geq M_L$	$M_2 =$	Nm
Output speed	$n_{2,th} \geq n_L$	$n_{2,th} =$	rpm
Load capacity of the geared motor	$c \geq k$ $c \geq k_I$	$c =$	
Short-time maximum torque			
no alternating load	$M_{2,max} \geq M_{L,max}$	$M_{2,max} =$	Nm
at alternating load	$M_{2,max} \times 1.5 \geq M_{L,max}$	$M_{2,max} =$	Nm
Ratio		$i =$	

► Selection tables 54

Information on project planning

Drive dimensioning



Order data			
	Ratio i	Geared motor	
Example	4,600	g500-H100	MCA10I40-
Example	5.021	g500-S130	MCA10I40-
Example	5.185	g500-B110	MCA10I40-

Operating modes S2, S3, and S6

Calculation of the required drive power			
	Calculation	Result	Unit
Output torque	$M_R \geq M_L / (k_L \times k_H)$	$M_R =$	Nm
Output speed	$n_R \geq (n_L \times k_M) / (k_E \times k_{rated})$	$n_R =$	rpm
Drive power	$P_R \geq M_R \times n_R / 9549$	$p_R =$	kW

Check geared servo motor and determine from the selection table			
	Check	Selection	Unit
Drive power	$P_1 \geq P_R$	$p_1 =$	kW
Output torque	$M_2 \geq M_L$	$M_2 =$	Nm
Output speed	$n_2 \geq n_L$	$n_2 =$	rpm
Load capacity of the geared motor	$c \geq k$ $c \geq k_I$	$c =$	
Short-time maximum torque			
no alternating load	$M_{2,max} \geq M_{L,max}$	$M_{2,max} =$	Nm
at alternating load	$M_{2,max} \times 1.5 \geq M_{L,max}$	$M_{2,max} =$	Nm
Ratio		$i =$	

► Selection tables [54](#)

Check servo motor based on the motor torque characteristic		
Gearbox efficiency	$\eta_G = \eta_{c1} - (c - 1) \times 0.01$	$\eta_G =$
All operating points (●)		$i \times n_L$
below the maximum torque characteristic of the servo motor/ inverter combination here, $M_{L,max}$ must be considered		$M_L / (i \times \eta_G)$
Thermally effective operating point (○)		$(i \times n_L \times k_M) / (k_E \times k_{rated})$
below the S1 torque characteristic of the servo motor		$M_L / (k_L \times k_H \times i \times \eta_G)$

► Torque characteristics [244](#)

Order data			
	Ratio i	Geared motor	
Example	4,600	g500-H100	MCA10I40-
Example	5.021	g500-S130	MCA10I40-
Example	5.185	g500-B110	MCA10I40-



Final configuration

	Screening
Connection dimensions	Output shaft Output flange/foot
Mounting position	Geared motor Connector/terminal box Driven shaft/output flange
Product extensions	Torque plate Shaft cover Connector/terminal box Brake Feedback Blower Temperature monitoring Second shaft end Handwheel Protection cover ...

More information about the final configuration:

- ▶ [The modular system](#) 10
- ▶ [Product extensions](#) 217

Information on project planning

Final configuration

Surface and corrosion protection



Surface and corrosion protection

Depending on the ambient conditions, the surface and corrosion protection system (called OKS) offers tailor-made solutions for optimum protection.

Various surface coatings ensure that the motors operate reliably even at high air humidity, in outdoor installation or in the presence of atmospheric impurities. Any color from the "RAL Classic" collection can be chosen for the top coat.



The OKS-XL (extra Large) version requires a check by your responsible Lenze subsidiary.

Surface and corrosion protection	Applications	Product g500
OKS-G (primed)	Dependent on subsequent top coat applied	Standard
OKS-S (small)	- Standard applications - Internal installation in heated buildings - Air humidity up to 90%	Optional
OKS-M (medium)	- Internal installation in non-heated buildings - Covered, protected external installation - Air humidity up to 95 %	Optional
OKS-L (large)	- External installation - Air humidity above 95 % - Chemical industrial plants - Food industry	
OKS-XL (extra Large)	- External installation - Air humidity above 95 % - Chemical industrial plants - Food industry - Coastal areas with moderate salinity	

Surface and corrosion protection	Corrosivity category	Surface coating	Color	Coating thickness
	DIN EN ISO 12944-2	Design		
OKS-G (primed)		2K PUR priming coat	- Standard: RAL 7012 - Optional: RAL Classic	60 ... 90 µm
OKS-S (small)	Comparable to C1	2K-PUR top coat		80 ... 120 µm
OKS-M (medium)	Comparable to C2	2K PUR priming coat 2K-PUR top coat		110 ... 160 µm
OKS-L (large)	Comparable to C3			140 ... 200 µm
OKS-XL (extra large)	Comparable to C4	2K-EP priming coat (two times) 2K-PUR top coat		160 ... 240 µm



Information on project planning

Final configuration
Lubricants

Lubricants

The following gearboxes are lubricated for life:

- g500-H45
- g500-H100
- g500-H140

Recommended lubricants:

Lubricant	CLP HC 220	CLP HC 320	CLP HC 46 NSF H1	CLP HC 220 NSF H1
Ambient temperature	-30 ... +40 °C	-20 ... +50 °C	-30 ... +10 °C	-20 ... +40 °C
Specification	Synthetic oil (polyalphaolefins basis)			
Changing interval				
Operating hours	25000	25000	16000	16000
Not later than after	4 years	4 years	3 Jahren	3 Jahren
At oil temperature	70 C°			
Fuchs	Renolin Unisyn XT 220	Renolin Unisyn XT 320		Cassida Fluid GL 220
Klüber	Klübersynth GEM4-220 N	Klübersynth GEM4-320 N	Klüberoil Summit HYSYN FG-46	Klüberoil 4 UH1-220 N
SHELL	Shell Omala S4 GXV 220	Shell Omala S4 GXV 320		

Lubricant amounts for stocking

All lubricant amounts are reference values for a change of lubricant. They serve stocking purposes, for example.

The exact values can be found on the nameplate.

Mounting position		M1 (A)	M2 (D)	M3 (B)	M4 (C)	M5 (F)	M6 (E)	M1-M6 (A-F)	M1, M5, M6 (AEF)
Gearbox									
g500-H45	I	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-
g500-H100	I	0.5	0.7	0.8	0.7	0.5	0.7	-	0.7
g500-H140	I	0.5	0.8	0.9	0.7	0.5	0.8	-	0.8
g500-H210	I	0.8	1.1	1.2	1.3	0.9	1.2	-	1.2
g500-H320	I	0.8	1.2	1.3	1.3	1.0	1.2	-	1.2
g500-H450	I	1.1	1.6	1.7	1.8	1.4	1.6	-	1.6
g500-H600	I	1.7	2.6	2.4	3.0	1.9	2.3	-	-
g500-H850	I	2.3	3.5	3.0	4.0	2.5	3.2	-	-
g500-H1500	I	4.6	7.0	6.0	7.7	5.0	6.0	-	-
g500-H3000	I	8.0	12.6	10.0	13.2	9.5	9.8	-	-
Pre-stage	I	0.4							

► Gearbox with pre-stage 214

Information on project planning

Final configuration
Ventilation



Ventilation



No ventilation is required for the gearboxes g500-H45 ...H210.

The gearbox g500-H210 can optionally be fitted with ventilation units.

From g500-H320 onwards, the gearboxes are supplied with ventilation units as standard.

Gearbox in combined mounting position

To reduce the number of different versions, the gearboxes can also be ordered with combined mounting positions:

- g500-H100 ... H450 in mounting position M1/5/6 (AEF)



In these gearboxes, the lubricant amount has been optimised for the use in different mounting positions. If required, the breather elements are loosely enclosed and must be mounted before commissioning depending on the mounting position.

► [The modular system](#)  10

NOTICE

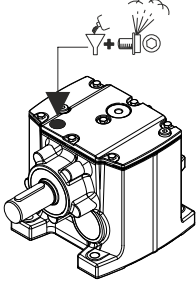
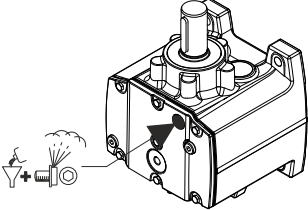
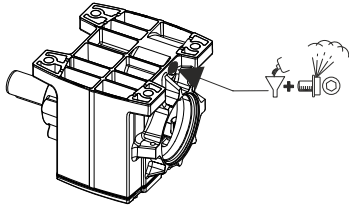
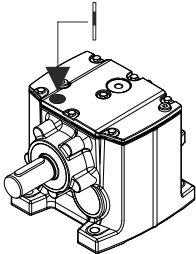
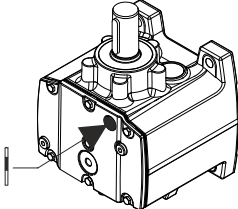
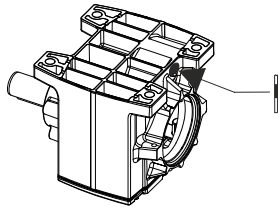
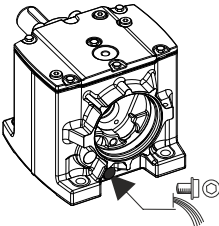
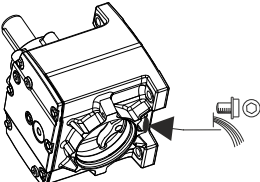
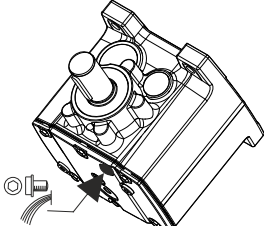
- For gearboxes with ventilation, a gap of at least 30 mm has to be observed to the machine wall on the corresponding gearbox side.



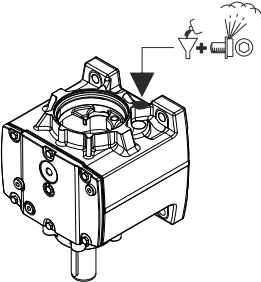
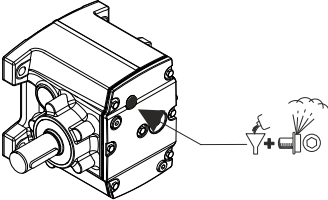
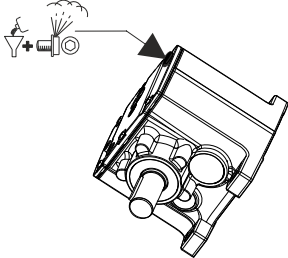
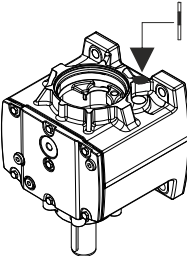
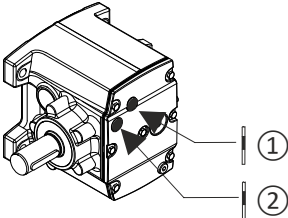
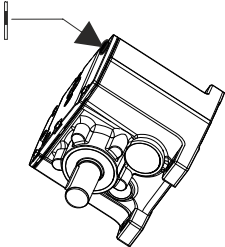
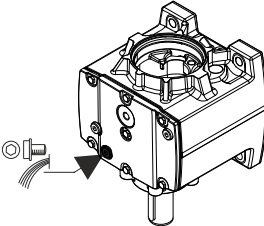
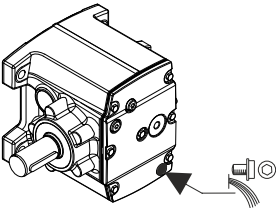
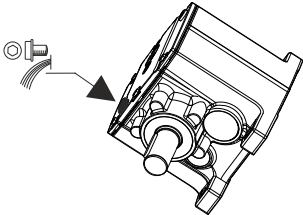
Information on project planning

Final configuration
Ventilation

g500-H210 ... H450

Mounting position M1 (A)	Mounting position M2 (D)	Mounting position M3 (B)
Filling and ventilation		
		
Control		
		
Drain		
		



Mounting position M4 (C)	Mounting position M5 (F)	Mounting position M6 (E)
Filling and ventilation		
		
Control		
		
Drain		
		

- ① g500-H210
- ② g500-H320
g500-H450



Information on project planning

Final configuration
Ventilation

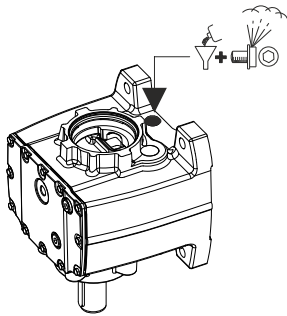
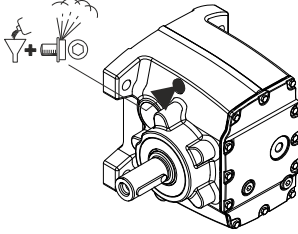
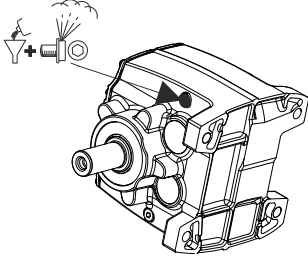
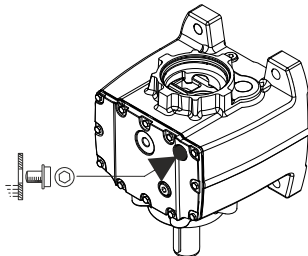
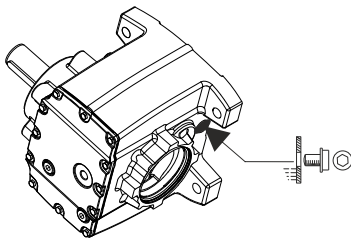
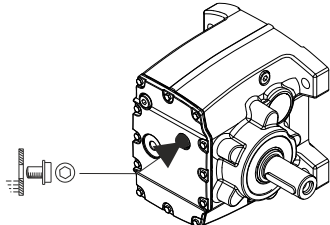
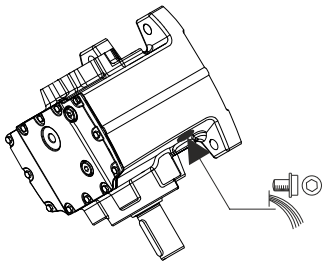
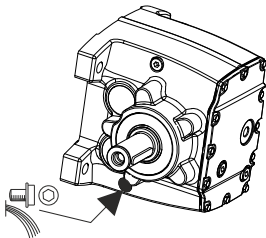
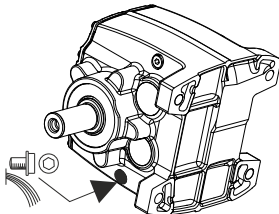
g500-H600 ... H3000

Mounting position M1 (A)	Mounting position M2 (D)	Mounting position M3 (B)
Filling and ventilation		
Check		
Drain		

Information on project planning

Final configuration
Ventilation



Mounting position M4 (C)	Mounting position M5 (F)	Mounting position M6 (E)
Filling and ventilation		
		
Control		
		
Drain		
		

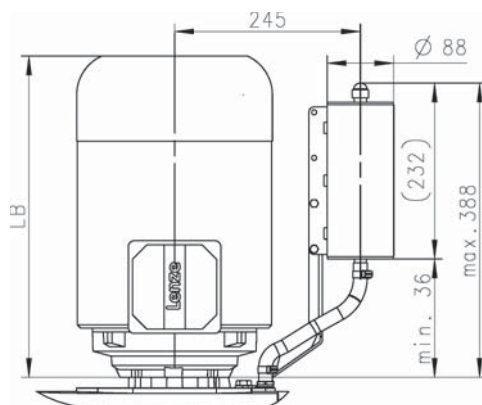
Gearbox with oil compensation reservoir for mounting position M4 (C)

In order to guarantee a reliable lubrication of the toothed parts in mounting position M4 (C) (motor is on the gearbox vertical from the top), a high filling level is required in the gearbox. As a result of the reduced volume of air in the gearbox, this may lead to oil escaping from the ventilation at higher input speeds. The oil compensation reservoir increases the expansion space for the lubricant.

The oil compensation reservoir can be ordered as a mounting set for fastening to the gearbox. If insufficient space is available, the oil compensation reservoir can also be mounted over the gearbox hose connection on nearby system parts.



Dimensions of the oil compensation reservoir



8800783-00

For the following gearboxes in mounting position M4 (C), which exceed the specified min. input speed, an oil expansion reservoir is required depending on the specified gear ratio:

g500-H1500		g500-H3000	
Gearbox ratio	Min. input speed	Gearbox ratio	Min. input speed
	rpm		rpm
3.743	2000	4.496	2000
4.758	2000	5.902	2000
5.400	2000	6.344	2000
6.245	2000	6.968	2000
6.864	2000	8.327	2000
7.592	2000	9.146	2000
9.010	2000	10.005	2000
10.267	2000	11.619	2000
11.356	2000	12.762	2000
12.362	3000	14.233	2000
13.673	3000	15.633	2000
15.156	3000	18.752	3000
16.763	3000	20.596	3000
20.533	3000	23.044	3000
22.711	3000	25.311	3000
24.933	3000	29.822	3000
27.578	3000	32.756	3000
32.267	4000	36.193	4000
35.689	4000	39.753	4000
39.160	4000	45.750	4000
43.313	4000	50.250	4000
49.500	4000		
54.750	4000		



Mechanical installation

Important notes

- Install the product according to the information in the chapter "Standards and operating conditions".
 - ▶ [Standards and operating conditions](#) 37
- The technical data and the data regarding the supply conditions can be found on the nameplate and in this documentation.
- Ambient media – especially chemically aggressive ones – may damage shaft sealing rings, lacquers and plastics.
- Lenze offers special surface and corrosion protection in this case.

Transport

- Ensure appropriate handling.
- Make sure that all component parts are securely mounted. Secure or remove loose component parts.
- Only use safely fixed transport aids (e.g., eye bolts or support plates).
- Do not damage any components during transport.
- Avoid electrostatic discharges on electronic components and contacts.
- Avoid impacts.
- Check the carrying capacity of the hoists and load handling devices. The weights can be found in the shipping documents.
- Secure the load against tipping and falling down.
- Standing beneath suspended loads is prohibited.

Installation

- The mounting surfaces must be plane, torsionally rigid and free from vibrations.
- The mounting areas must be suited to absorb the forces and torques generated during operation.
- Ensure an unhindered ventilation.
- For versions with a fan, keep a minimum distance of 10 % from the outside diameter of the fan cover in intake direction.



Electrical installation

Important notes

DANGER!

Risk of injury and risk of burns from dangerous voltage

Power terminals may also carry voltage in the switched-off state or when the motor is stopped and may cause life-threatening cardiac arrhythmia and serious burns.

- ▶ Disconnect the product from the mains.
- ▶ Check that the power terminals are deenergized before starting work.

-
- When working on energized products, comply with the applicable national accident prevention regulations.
 - The electrical installation must be carried out according to the appropriate regulations (e.g. cable cross-sections, fuses, PE connection).
 - The manufacturer of the system or machine is responsible for adherence to the limits required in connection with EMC legislation.

Operation on an external inverter

A max. pulse voltage amplitude of $U_{pk} = 1560 \text{ V}$ at the motor terminals must not be exceeded. Here, the minimum pulse rise time must be $t_R = 0.1 \text{ } \mu\text{s}$.

If it cannot be ruled out that the permissible voltage peaks will be exceeded or that the minimum pulse rise time will not be reached, the following measures must be initiated:

- Reduction of the DC-bus voltage (threshold for brake chopper voltage)
- Use of filters, chokes
- Use of special motor cables

Preparation



The notes for the electrical connection can be found in the enclosed mounting instructions.

EMC-compliant wiring



The EMC-compliant wiring is described in detail in the documentation of the Lenze inverters.

Technical data

Notes regarding the given data



Technical data

Notes regarding the given data

Catalog data

The power values, torques and speeds specified in the configuration are rounded values and apply to:

- Operating time per day = 8 hrs (100 % ED)
- Duty class up to 10 switching operations per hour
- Ambient temperature = 40 °C
- Site altitude ≤ 1000 m above mean sea level
- The selection tables indicate the mechanically permissible power levels and torques.
- The ratings apply to the operating mode S1 (acc. to EN 60034-1).

NOTICE

In case of other operating conditions, the achievable values can differ for those mentioned.

► In case of extreme operating conditions, please get in touch with your Lenze representative.



Standards and operating conditions

Conformities and approvals

More information and certificates of approval can be found under

[g500 + MCA helical geared motors](#)

Europe					
Country	Conformity/ approval	Law/standard	Description	Special feature	Product representation
European Union	CE	2006/42/EC	Machinery Directive	Only for safety- relevant components	CE mark
		2014/35/EU	Low-Voltage Directive		
		2014/30/EU	EMC Directive		
		2011/65/EU	RoHS		
				-	
Great Britain	UKCA	S.I. 2008/1597	The Supply of Machinery (Safety) Regulations 2008	Only for safety- relevant components	UKCA mark
		S.I. 2016/1091	The Electromagnetic Compatibility Regulations 2016	-	
		S.I. 2016/1101	The Electrical Equipment (Safety) Regulations 2016		
		S.I. 2012/3032	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012		

America					
Country	Conformity/ approval	Law/standard	Description	Special feature	Product representation
Canada	CSA	CSA 22.1 No. 100	CSA Standard for Motors and Generators	-	cURus mark
USA	UL	UL 1004-1	UL Standard for Rotating Electrical Machines		

Asia					
Country	Conformity/ approval	Law/standard	Description	Special feature	Product representation
China	-	GB/T 26572	Requirements on concentration limits for certain restricted substances in electrical and electronic products	-	EFUP mark

Protection of persons and device protection

Degree of protection			
-	EN IEC 60529, EN IEC 60034-5	IP23S	Forced ventilated: MCA20, MCA22, MCA26
		IP54	Self-ventilated: MCA10 ... MCA19, MCA21
			Forced ventilated: MCA13 ... MCA19, MCA21 ... MCA26
		IP65	Self-ventilated: MCA10 ... MCA19, MCA21
Temperature class			
-	EN IEC 60034-1	F (155 °C)	Insulation system
Permissible voltage			
-	IEC 60034-18-41	IVIC C	At 500 V
	IEC/TS 60034-25:2007	Limit curve A	Of the pulse voltage

Technical data

Standards and operating conditions
EMC data



EMC data

Noise emission		
-	EN IEC 60034-1	A final overall assessment of the drive system is indispensable
Noise immunity		
-	EN IEC 60034-1	A final overall assessment of the drive system is indispensable

Environmental conditions

Climate			
Storage	EN 60721-3-1:1997	1K3 (-20 ... +40 °C)	>3 months
		1K3 (-20 ... +60 °C)	<3 months
Transport	EN 60721-3-2:1997	2K3 (-20 ... +70 °C)	
Operation	EN 60721-3-3:1995 + A2:1997	3K3 (-10 ... +40 °C)	Operation, without brake
		3K3 (-15 ...+40 °C)	Operation without brake, forced ventilated
		3K3 (-20 ...+40 °C)	Operation without brake, self-ventilated
Site altitude			
0 ... 1000 m amsl	-	Without current derating	
1000 ... 4000 m amsl		Reduce rated output current by 5 %/1000 m	
Air humidity			
-	-	Average relative humidity 85 %	Without condensation



Technical data

Data overview

In order to calculate the exact ratio, the number of teeth z_g (driven) can be divided by the number of teeth z_t (driving).

g500-H100, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
62.0	3.354	161	48	29
72.0	4.600	23	5	27
75.0	5.167	31	6	24
81.0	5.887	989	168	27
83.0	6.440	161	25	27
86.0	7.086	248	35	23
92.0	8.214	115	14	27
96.0	9.068	1333	147	23
99.0	10.063	161	16	27
100	11.360	284	25	22
100	12.653	620	49	23
100	14.490	710	49	22
100	15.500	31	2	23
100	17.750	71	4	22
100	19.486	682	35	23
100	22.314	781	35	22
100	25.095	527	21	23
100	28.738	1207	42	21

g500-H100, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
100	51.962	5456	105	23
100	59.505	6248	105	22
100	66.499	29326	441	23
100	72.747	5456	75	23
100	83.307	6248	75	22
100	92.789	13640	147	23



g500-H140, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
82.0	3.267	49	15	25
94.0	4.480	112	25	24
103	5.733	86	15	23
105	6.272	784	125	23
106	7.269	189	26	18
117	8.000	8	1	23
117	9.029	316	35	18
125	9.800	49	5	23
128	11.554	3397	294	18
132	12.640	316	25	18
136	13.957	4536	325	17
140	16.122	790	49	18
140	17.802	1620	91	17
140	19.750	79	4	18
140	21.808	567	26	17
140	24.829	869	35	18
140	27.415	1782	65	17
140	31.976	1343	42	18
140	35.308	459	13	17

g500-H140, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
140	57.582	12956	225	18
140	63.582	20664	325	17
140	73.447	32390	441	18
140	84.732	37367	441	18
140	92.693	6952	75	18
140	102.351	33264	325	17
140	118.231	17380	147	18
140	130.549	11880	91	17



g500-H210, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
126	3.389	61	18	22
143	4.648	488	105	22
159	5.583	67	12	18
158	6.250	25	4	17
172	7.657	268	35	18
171	8.571	60	7	17
182	9.799	2881	294	18
189	10.720	268	25	18
186	12.000	12	1	17
201	13.673	670	49	17
200	15.306	750	49	17
210	16.750	67	4	17
210	18.750	75	4	16
210	21.802	2747	126	17
210	24.405	1025	42	16
210	27.119	1139	42	17
210	30.357	425	14	16
210	35.095	737	21	17
210	39.286	275	7	16
183	42.593	5963	140	16
206	47.679	1335	28	16

g500-H210, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
210	43.390	4556	105	17
210	48.571	340	7	16
210	55.529	48977	882	17
210	62.160	18275	294	16
210	71.026	62645	882	16
210	79.507	23375	294	16
210	92.205	19363	210	16
210	103.214	1445	14	16



g500-H320, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
165	3.389	61	18	20
189	4.648	488	105	20
227	6.083	73	12	16
218	6.910	539	78	15
249	8.343	292	35	16
238	9.477	616	65	15
265	10.677	3139	294	15
271	11.680	292	25	15
254	12.128	473	39	15
262	13.268	4312	325	15
294	14.898	730	49	15
281	16.923	220	13	14
313	18.250	73	4	15
299	20.731	539	26	14
320	23.754	2993	126	15
320	26.983	3157	117	14
320	29.548	1241	42	15
320	33.564	1309	39	14
251	38.238	803	21	15
285	43.436	1694	39	14
218	46.407	6497	140	14
248	52.715	6853	130	14

g500-H320, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
320	47.276	4964	105	15
320	53.703	10472	195	14
320	60.502	53363	882	15
320	68.726	8041	117	14
320	77.387	68255	882	15
320	87.906	10285	117	14
320	100.462	21097	210	15
320	114.118	22253	195	14



g500-H450, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
256	3.444	31	9	19
293	4.724	496	105	17
315	5.678	511	90	15
323	6.045	2666	441	17
334	6.613	496	75	17
354	7.787	584	75	14
370	8.800	44	5	13
384	9.965	3139	315	14
400	11.262	473	42	13
411	12.320	308	25	13
426	13.905	292	21	13
441	15.714	110	7	13
450	17.033	511	30	13
448	19.250	77	4	13
450	22.170	2993	135	13
450	25.056	451	18	13
450	27.578	1241	45	13
450	31.167	187	6	13
450	35.689	1606	45	13
450	40.333	121	3	12
322	43.313	6497	150	13
366	48.950	979	20	12
273	54.750	219	4	13
307	61.875	495	8	12

g500-H450, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
450	44.124	9928	225	14
450	49.867	748	15	13
450	56.469	53363	945	14
450	61.774	69496	1125	14
450	69.813	5236	75	13
450	78.794	4964	63	14
450	89.048	1870	21	13
450	96.522	8687	90	14
450	109.083	1309	12	13
450	121.342	27302	225	14
450	137.133	2057	15	13
450	156.274	21097	135	14
450	176.611	3179	18	13



g500-H450, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
450	323.579	218416	675	13
450	365.689	16456	45	14
450	414.104	1173986	2835	14

g500-H600, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
240	3.267	49	15	17
297	4.480	112	25	15
339	5.733	86	15	15
404	6.456	581	90	13
435	7.250	29	4	13
487	8.853	664	75	12
510	9.943	348	35	12
537	11.330	3569	315	12
553	12.395	4648	375	12
578	13.920	348	25	12
600	15.810	332	21	12
600	17.755	870	49	12
600	19.367	581	30	12
600	21.750	87	4	11
600	25.207	3403	135	12
600	28.310	1189	42	11
600	31.356	1411	45	12
600	35.214	493	14	11
558	40.578	1826	45	11
600	45.571	319	7	11
456	49.247	7387	150	11
513	55.307	7743	140	11
371	62.250	249	4	11
418	69.911	3915	56	11



g500-H600, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
600	31.197	49136	1575	13
600	35.037	8584	245	12
600	39.925	264106	6615	13
600	43.676	49136	1125	12
600	49.051	8584	175	12
600	55.710	24568	441	12
600	62.566	21460	343	12
600	68.244	3071	45	12
600	76.643	1073	14	12
600	88.826	251822	2835	12
600	99.757	43993	441	12
600	110.491	104414	945	12
600	124.088	18241	147	12
600	142.988	135124	945	12
600	160.585	23606	147	12
600	173.536	273319	1575	12
600	194.892	95497	490	12

g500-H600, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
600	198.970	2014576	10125	13
600	223.457	351944	1575	12
600	253.789	1007288	3969	13
600	285.021	879860	3087	12
600	320.294	1080992	3375	12
600	359.710	188848	525	12
600	408.538	540496	1323	12
600	458.814	472120	1029	12
600	500.459	67562	135	12
600	562.048	11803	21	12



g500-H850, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
306	3.147	1734	551	15
378	4.362	663	152	15
429	5.368	102	19	14
551	5.946	1207	203	13
578	6.644	578	87	12
615	8.241	923	112	12
649	9.208	221	24	12
667	10.143	71	7	12
696	11.360	284	25	12
725	12.693	952	75	11
758	14.490	710	49	11
792	16.190	340	21	11
814	17.750	71	4	11
833	19.833	119	6	11
850	23.103	2911	126	11
850	25.815	697	27	11
850	28.315	4757	168	11
850	31.639	1139	36	11
850	37.190	781	21	11
850	41.556	374	9	11
850	45.136	6319	140	11
850	50.433	1513	30	11

g500-H850, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
850	29.536	3692	125	12
850	33.003	12376	375	12
850	37.799	39689	1050	12
850	41.350	25844	625	12
850	46.204	86632	1875	12
850	52.743	1846	35	12
850	58.933	884	15	12
850	64.610	6461	100	12
850	72.193	10829	150	12
850	84.096	37843	450	12
850	93.966	63427	675	12
850	104.607	15691	150	12
850	116.884	26299	225	12
850	135.373	10153	75	12
850	151.262	34034	225	12
850	164.294	82147	500	12
850	183.577	137683	750	12
850	207.675	8307	40	12
850	232.050	4641	20	12



g500-H850, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
850	210.484	3551912	16875	12
850	234.319	439348	1875	12
850	261.821	1472744	5625	12
850	294.334	264901	900	12
850	328.881	443989	1350	12
850	368.019	1150058	3125	12
850	411.213	3855124	9375	12
850	473.807	71071	150	12
850	529.418	119119	225	12
850	575.029	575029	1000	12
850	616.701	416273	675	12
850	689.083	1395394	2025	12
850	767.116	172601	225	12

g500-H1500, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
775	3.743	1647	440	14
924	4.758	2379	500	13
1021	5.400	27	5	10
1098	6.245	2623	420	13
1157	6.864	858	125	10
1217	7.592	949	125	10
1320	9.010	946	105	10
1380	10.267	154	15	10
1400	11.356	511	45	9
1420	12.362	1298	105	10
1430	13.673	4307	315	9
1440	15.156	682	45	10
1450	16.763	2263	135	9
1500	20.533	308	15	10
1500	22.711	1022	45	9
1500	24.933	374	15	9
1500	27.578	1241	45	9
1484	32.267	484	15	9
1500	35.689	1606	45	9
1500	39.160	979	25	9
1500	43.313	6497	150	9
1250	49.500	99	2	9
1382	54.750	219	4	9



g500-H1500, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
1500	40.517	2431	60	10
1500	44.814	16133	360	10
1500	49.867	748	15	10
1500	55.851	20944	375	10
1500	61.774	69496	1125	10
1500	71.238	1496	21	10
1500	78.794	4964	63	10
1500	87.267	1309	15	10
1500	96.522	8687	90	10
1500	113.585	15334	135	10
1500	125.632	50881	405	10
1500	139.211	12529	90	10
1500	153.976	83147	540	10
1500	182.844	8228	45	10
1500	202.237	27302	135	10
1500	221.907	16643	75	10
1500	245.442	110449	450	10
1500	280.500	561	2	10
1500	310.250	1241	4	10

g500-H1500, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
1500	203.537	29920	147	10
1500	225.125	99280	441	10
1500	254.431	858704	3375	10
1500	281.416	2849336	10125	10
1500	316.487	356048	1125	10
1500	350.054	1181432	3375	10
1500	397.548	53669	135	10
1500	446.497	84388	189	10
1500	494.511	22253	45	10
1500	572.324	2086121	3645	10
1500	634.184	513689	810	10
1500	701.446	3409027	4860	10
1500	788.863	212993	270	10
1500	872.530	1413499	1620	10
1500	921.302	1119382	1215	10
1500	1020.881	137819	135	10
1500	1129.157	914617	810	10
1500	1340.859	181016	135	10



g500-H3000, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{z, max}	i	z _g	z _t	
Nm				'
1360	4.496	1911	425	12
1610	5.902	301	51	12
1910	6.344	793	125	9
2025	6.968	871	125	9
2155	8.327	2623	315	9
2225	9.146	2881	315	9
2300	10.005	3752	375	9
2400	11.619	244	21	9
2475	12.762	268	21	9
2530	14.233	427	30	8
2610	15.633	469	30	8
2750	18.752	5063	270	8
2815	20.596	5561	270	8
2900	23.044	1037	45	8
2965	25.311	1139	45	8
3000	29.822	1342	45	8
3000	32.756	1474	45	8
3000	36.193	5429	150	8
3000	39.753	5963	150	8
1765	45.750	183	4	8
1938	50.250	201	4	8

g500-H3000, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{z, max}	i	z _g	z _t	
Nm				'
2830	47.186	44591	945	9
2910	51.828	48977	945	9
2950	53.770	7259	135	9
3000	59.059	7973	135	9
3000	64.744	61183	945	9
3000	71.112	67201	945	9
3000	79.375	32147	405	9
3000	87.183	35309	405	9
3000	107.541	14518	135	9
3000	118.119	15946	135	9
3000	130.585	17629	135	9
3000	143.430	19363	135	9
3000	168.993	22814	135	9
3000	185.615	25058	135	9
3000	205.096	92293	450	9
3000	225.269	101371	450	9
3000	259.250	1037	4	9
3000	284.750	1139	4	9



g500-H3000, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
2850	203.178	268804	1323	9
2650	226.604	61183	270	9
2950	248.893	67201	270	9
3000	292.511	987224	3375	9
3000	321.282	1084328	3375	9
3000	376.393	50813	135	9
3000	413.415	55811	135	9
3000	457.048	123403	270	9
3000	489.908	595238	1215	9
3000	538.095	653786	1215	9
3000	594.888	722789	1215	9
3000	653.402	793883	1215	9
3000	739.983	299693	405	9
3000	788.632	319396	405	9
3000	866.202	350812	405	9
3000	957.625	387838	405	9
3000	1051.817	425986	405	9
3000	1239.279	501908	405	9
3000	1361.175	551276	405	9
3000	1504.034	1015223	675	9
3000	1651.972	1115081	675	9
3000	1825.350	8214077	4500	9
3000	2004.893	9022019	4500	9



Radial forces and axial forces

Permissible radial force

The calculation of the permissible radial force must take account of the additional load factor f_w .

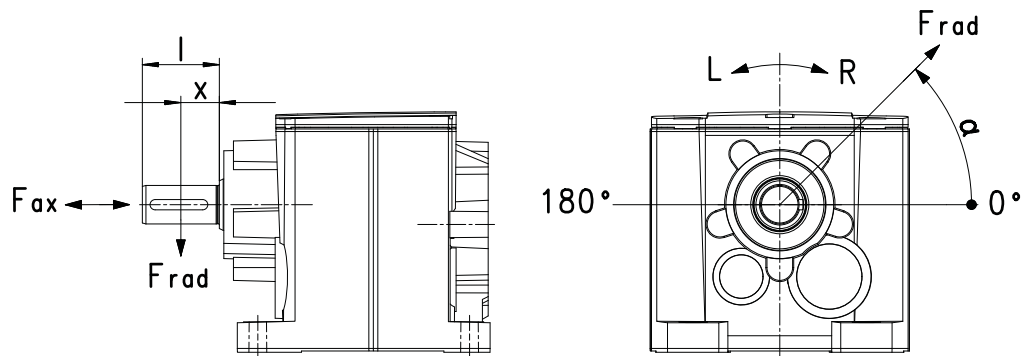
$$F_{\text{rad, perm}} = f_w \times F_{\text{rad, max}}$$

Permissible axial force

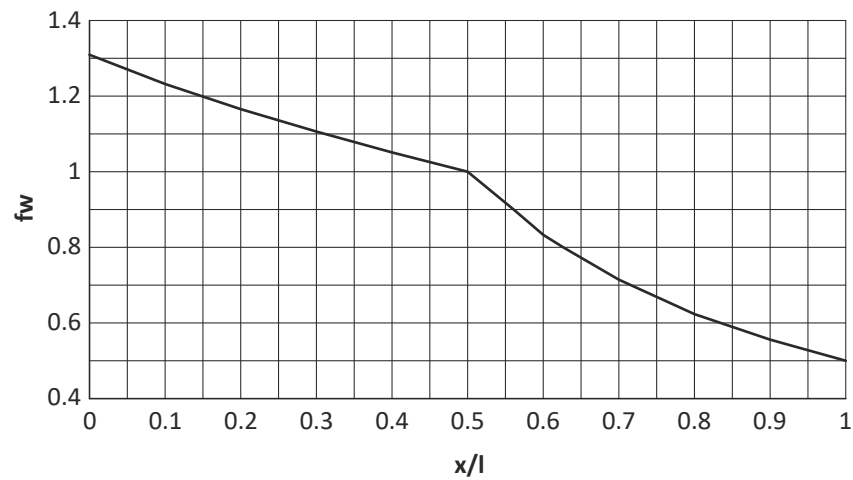
If there is no radial force, the maximum axial force is 50% of the value in the table $F_{\text{rad, max}}$

$$F_{\text{ax, zul}} = 0.5 \times F_{\text{rad, max}}$$

Application of forces



Additional load factor f_w on the drive shaft



Technical data

Radial forces and axial forces



The values given in the tables refer to the centre shaft end force application point and are minimum values calculated according to the most unfavourable conditions (force application angle, mounting position, direction of rotation). The values were calculated with a load capacity of $c = 1.3$ and an input speed of 1400 rpm.



In case of different operating conditions, considerably higher forces can be transmitted. Please get in touch with your Lenze representative

Max. radial force, gearbox with foot (VBR)

Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. radial force $F_{rad,max}$ [rated]									
g500-H45	300	400	600	700	800	900	1100	1400	1500	1500
g500-H100	800	1000	1200	1500	1800	2100	2600	2700	2700	2700
g500-H140	1000	1440	1800	2200	2500	3000	3300	3700	4100	4200
g500-H210	1100	1600	2000	2400	2800	3400	3900	4100	4400	4800
g500-H320	1760	2090	2480	3000	3520	4190	5000	5700	5700	5700
g500-H450	2440	2820	3340	4020	4660	5540	6500	7100	7100	7100
g500-H600	3820	4480	5250	6100	7260	8450	9500	9500	9500	9500
g500-H850	4700	5510	6430	7500	8860	10400	11500	11500	11500	11500
g500-H1500	6300	7440	8790	10300	12200	14500	17000	17000	17000	17000
g500-H3000	7510	8880	10100	12400	14600	17200	20000	20000	20000	20000

Reinforced bearings

Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. radial force $F_{rad,max}$ [rated]									
g500-H100	1000	1200	1500	1800	2200	2700	3200	3300	3300	3300
g500-H140	1300	1800	2300	2700	3100	3700	4100	4600	5100	5300
g500-H210	1400	2000	2500	3000	3500	4200	4900	5100	5500	6000
g500-H320	2380	3250	4380	5600	6800	7100	7100	7100	7100	7100
g500-H450	4030	5100	6870	8650	8900	8900	8900	8900	8900	8900
g500-H600	7180	8710	9860	11300	12000	12000	12000	12000	12000	12000
g500-H850	9520	10500	11900	13300	15400	15600	15600	15600	15600	15600
g500-H1500	12600	14600	16500	19100	21000	21000	21000	21000	21000	21000
g500-H3000	16100	18000	20200	23600	25000	25000	25000	25000	25000	25000



Technical data

Radial forces and axial forces

Max. radial force, gearbox with/without foot with threaded pitch circle (V□R/V□K)

Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. radial force $F_{rad,max}$ [rated]									
g500-H45	300	400	600	700	800	900	1100	1400	1500	1500
g500-H100	800	1000	1200	1500	1700	1700	1700	1700	1700	1700
g500-H140	1000	1400	1800	2200	2500	2600	2600	2600	2600	2600
g500-H210	1100	1600	2000	2400	2800	3000	3000	3000	3000	3000
g500-H320	1760	2090	2480	3000	3520	3600	3600	3600	3600	3600
g500-H450	2440	2820	3340	4020	4400	4400	4400	4400	4400	4400
g500-H600	3820	4480	5250	6100	7260	8450	8500	8500	8500	8500
g500-H850	4700	5510	6430	7500	8860	10000	10000	10000	10000	10000
g500-H1500	6300	7440	8790	10300	12200	14000	14000	14000	14000	14000
g500-H3000	7510	8880	10100	12400	14600	17000	17000	17000	17000	17000

Reinforced bearings

Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. radial force $F_{rad,max}$ [rated]									
g500-H100	1000	1200	1500	1700	1700	1700	1700	1700	1700	1700
g500-H140	1300	1800	2300	2600	2600	2600	2600	2600	2600	2600
g500-H210	1400	2000	2500	3000	3000	3000	3000	3000	3000	3000
g500-H320	2380	3250	3600	3600	3600	3600	3600	3600	3600	3600
g500-H450	4030	4400	4400	4400	4400	4400	4400	4400	4400	4400
g500-H600	7180	8500	8500	8500	8500	8500	8500	8500	8500	8500
g500-H850	9250	10000	10000	10000	10000	10000	10000	10000	10000	10000
g500-H1500	12600	14000	14000	14000	14000	14000	14000	14000	14000	14000
g500-H3000	16100	17000	17000	17000	17000	17000	17000	17000	17000	17000

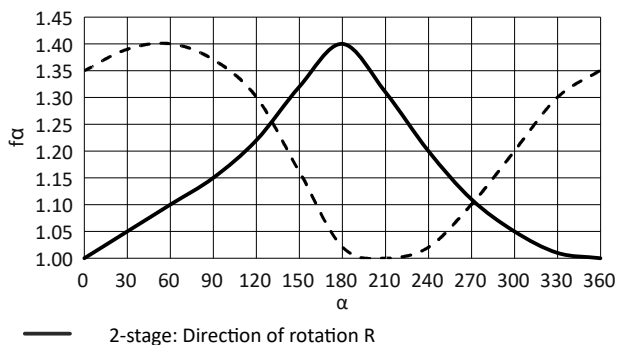
Max. radial force, gearbox with reinforced flange (VCP)

Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. radial force $F_{rad,max}$ [rated]									
g500-H100	1900	2400	2900	3330	3650	3890	4060	4160	4240	4280
g500-H140	3000	3500	4000	5510	5950	6270	6480	6620	6710	6770
g500-H210	3400	4000	5000	6170	6670	7060	7330	7500	7620	7700
g500-H320	3900	4500	6000	7040	7690	8210	8570	8810	8970	9080
g500-H450	4300	5200	6400	7810	8550	9160	9590	9880	10100	10200

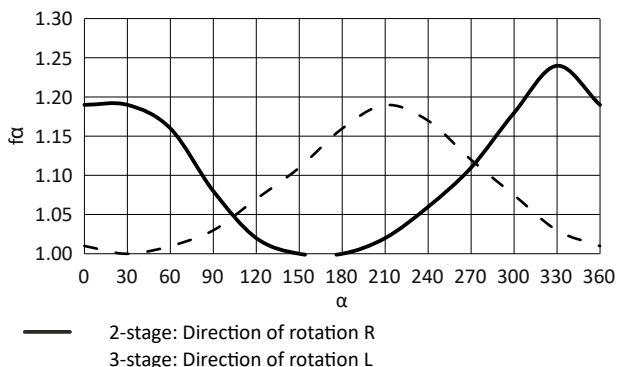


Effective direction factor f_α on the output shaft

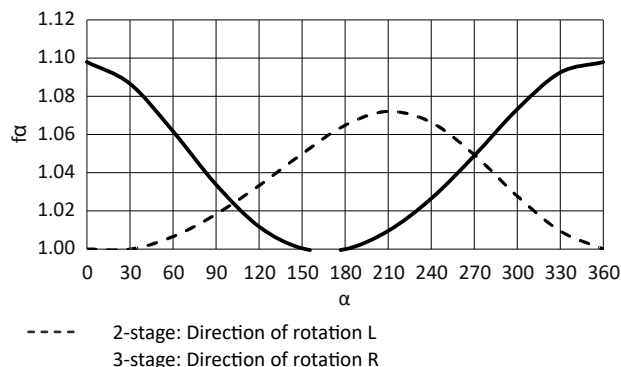
g500-H45



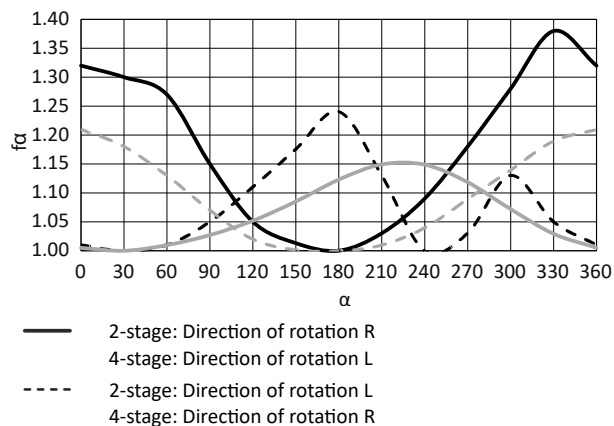
g500-H100



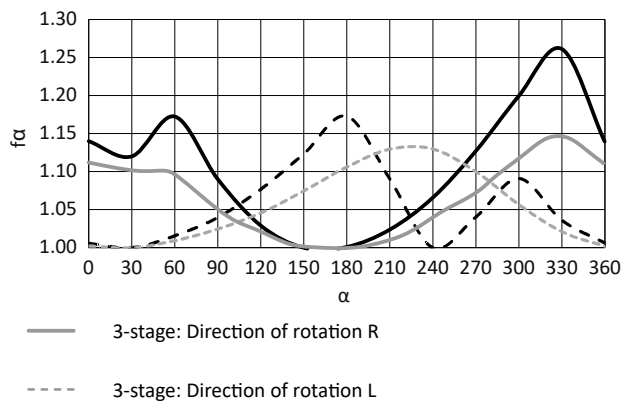
g500-H140



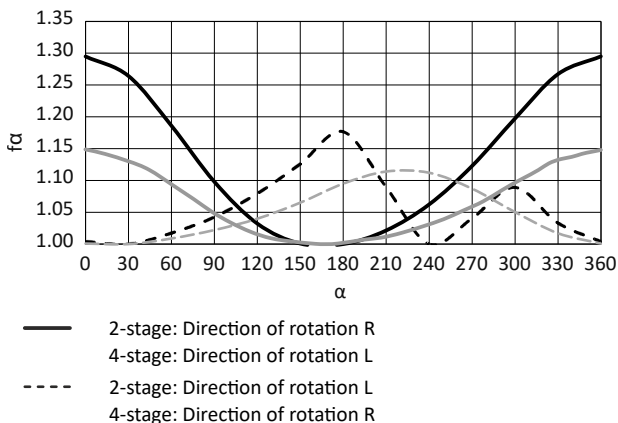
g500-H210



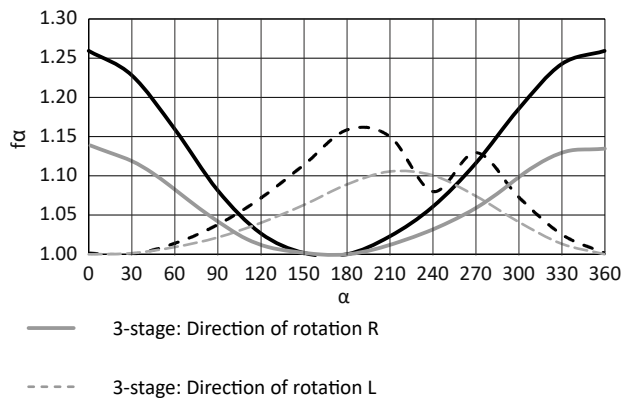
g500-H320



g500-H450



g500-H600

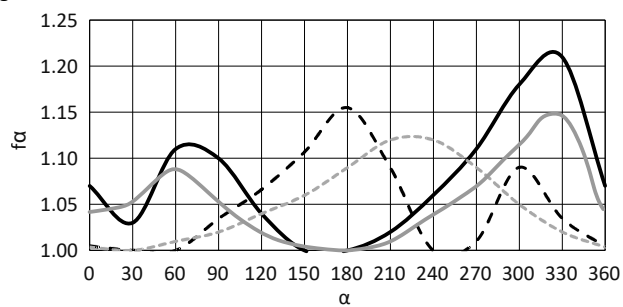




Technical data

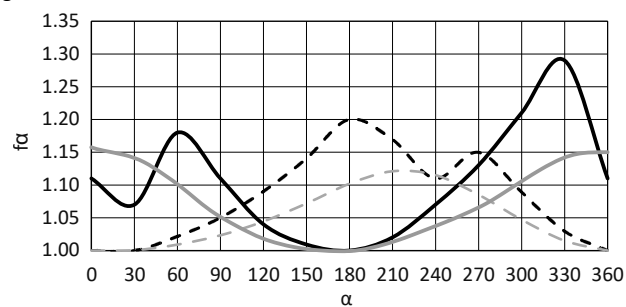
Radial forces and axial forces

g500-H850



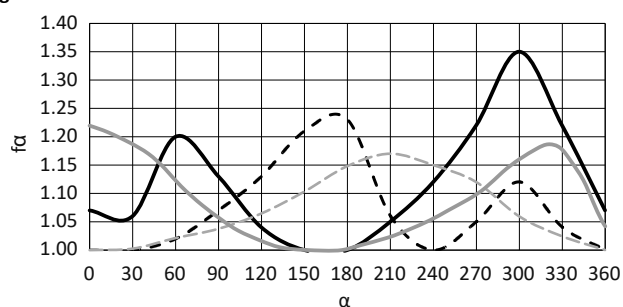
— 2-stage: Direction of rotation R
 — 4-stage: Direction of rotation L
 - - - 2-stage: Direction of rotation L
 - - - 4-stage: Direction of rotation R

g500-H1500



— 3-stage: Direction of rotation R
 — 3-stage: Direction of rotation L
 - - - 3-stage: Direction of rotation R
 - - - 3-stage: Direction of rotation L

g500-H3000



— 2-stage: Direction of rotation R
 — 4-stage: Direction of rotation L
 - - - 2-stage: Direction of rotation L
 - - - 4-stage: Direction of rotation R

— 3-stage: Direction of rotation R
 — 3-stage: Direction of rotation L
 - - - 3-stage: Direction of rotation R
 - - - 3-stage: Direction of rotation L



Selection tables

Notes on the selection tables

The selection tables represent the available combinations of gearbox, number of stages, ratio and motor for the mounting position M1. They only serve as a rough overview.

The following legend shows the layout of the selection tables:

Example

Inverter power supply 400 V, self-ventilated motors
0.8 kW

Explanation

Voltage of inverter mains connection, motor cooling type
Rated motor power

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2,max}	n _{2,th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
9.0	859	5.8	45.0	859	2.735	4,600	H100	10i40-	2	9.9
10.0	765	5.4	50.0	708	2.829	5.167	H100	10i40-	2	9.9
11.0	671	5.1	57.0	671	2.636	5.887	H100	10i40-	2	9.9
12.0	613	4.8	62.0	613	2.607	6.440	H100	10i40-	2	9.9

										Mass
										Number of gear stages
										Motor product name
										Gearbox product name
										Ratio
										Moment of inertia
										With feedback, without brake
										Max. permissible output speed in S1 operation
										Max. permissible acceleration torque
										Dependent on inverter
										Load capacity of the gearbox
										c is the ratio of permissible rated torque of the gearbox to the rated torque of the motor (converted to the driven shaft).
										c must always be higher than the application factor detected for the application k.
										$c = \frac{M_{2,zul}}{M_{1,N} \times i \times \eta_{Getr}} > k$
										Output speed
										Output torque



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

Inverter mains connection 400 V, Self-ventilated motors

0.8 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
9.0	859	5.8	45.0	859	2.735	4.600	H100	10I40-	2	9.9
11.0	671	5.1	57.0	671	2.636	5.887	H100	10I40-	2	9.9
12.0	613	4.8	62.0	613	2.607	6.440	H100	10I40-	2	9.9
16.0	494	5.5	78.0	494	2.611	8.000	H140	10I40-	2	11
16.0	481	4.2	80.0	481	2.548	8.214	H100	10I40-	2	9.9
18.0	438	4.8	88.0	438	2.742	9.029	H140	10I40-	2	11
19.0	403	4.8	95.0	403	2.555	9.800	H140	10I40-	2	11
20.0	393	3.7	98.0	393	2.513	10.063	H100	10I40-	2	9.9
22.0	348	3.3	100	348	2.575	11.360	H100	10I40-	2	9.9
22.0	342	4.1	112	342	2.640	11.554	H140	10I40-	2	11
23.0	329	5.8	116	329	2.897	12.000	H210	10I40-	2	12
25.0	313	3.9	123	313	2.610	12.640	H140	10I40-	2	11
28.0	273	2.6	100	273	2.529	14.490	H100	10I40-	2	9.9
30.0	258	4.9	149	258	2.765	15.306	H210	10I40-	2	12
31.0	245	3.2	140	245	2.550	16.122	H140	10I40-	2	11
34.0	223	2.1	100	223	2.500	17.750	H100	10I40-	2	9.9
36.0	211	4.2	182	211	2.685	18.750	H210	10I40-	2	12
38.0	200	2.7	140	200	2.514	19.750	H140	10I40-	2	11
43.0	177	1.7	100	177	2.467	22.314	H100	10I40-	2	9.9
46.0	166	5.0	230	166	2.609	23.754	H320	10I40-	2	14
47.0	162	3.2	210	162	2.579	24.405	H210	10I40-	2	12
48.0	159	2.1	140	159	2.477	24.829	H140	10I40-	2	11
56.0	137	1.5	100	137	2.447	28.738	H100	10I40-	2	9.9
57.0	134	4.6	287	134	2.552	29.548	H320	10I40-	2	14
59.0	130	2.9	210	130	2.532	30.357	H210	10I40-	2	12
62.0	124	1.9	140	124	2.453	31.976	H140	10I40-	2	11
74.0	103	2.8	251	103	2.495	38.238	H320	10I40-	2	14
76.0	101	2.3	210	101	2.483	39.286	H210	10I40-	2	12
76.0	98.9	5.7	382	98.9	3.162	39.925	H600	10I40-	3	30
78.0	97.9	5.3	391	97.9	2.638	40.333	H450	10I40-	2	18
83.0	90.4	5.2	417	90.4	3.058	43.676	H600	10I40-	3	30
88.0	87.5	5.9	438	87.5	2.931	45.136	H850	10I40-	2	38
90.0	85.1	2.2	218	85.1	2.470	46.407	H320	10I40-	2	14
90.0	83.6	2.9	320	83.6	2.534	47.276	H320	10I40-	3	15
93.0	82.8	2.0	206	82.8	2.461	47.679	H210	10I40-	2	12
93.0	81.3	1.9	210	81.3	2.526	48.571	H210	10I40-	3	13
95.0	80.7	3.5	366	80.7	2.575	48.950	H450	10I40-	2	18
95.0	79.2	3.9	450	79.2	2.756	49.867	H450	10I40-	3	18
96.0	80.2	4.4	456	80.2	2.593	49.247	H600	10I40-	2	29
106	70.9	4.6	532	70.9	2.864	55.710	H600	10I40-	3	30
110	68.6	1.1	140	68.6	2.602	57.582	H140	10I40-	3	14
116	65.3	2.3	320	65.3	2.493	60.502	H320	10I40-	3	15
119	63.5	1.5	210	63.5	2.488	62.160	H210	10I40-	3	13
120	63.8	2.3	307	63.8	2.514	61.875	H450	10I40-	2	18
121	63.5	2.8	371	63.5	2.525	62.250	H600	10I40-	2	29
130	57.9	3.8	600	57.9	2.751	68.244	H600	10I40-	3	30
133	56.6	2.8	450	56.6	2.617	69.813	H450	10I40-	3	18
148	51.0	1.8	320	51.0	2.462	77.387	H320	10I40-	3	15
152	49.7	1.1	210	49.7	2.459	79.507	H210	10I40-	3	13
161	47.0	4.8	804	47.0	2.951	84.096	H850	10I40-	3	39

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
170	44.5	3.2	600	44.5	2.617	88.826	H600	10I40-	3	30
170	44.4	2.4	450	44.4	2.555	89.048	H450	10I40-	3	18
192	39.3	1.5	320	39.3	2.444	100.462	H320	10I40-	3	15
200	37.8	3.9	850	37.8	2.805	104.607	H850	10I40-	3	39
208	36.2	2.0	450	36.2	2.517	109.083	H450	10I40-	3	18
211	35.7	2.6	600	35.7	2.557	110.491	H600	10I40-	3	30
259	29.2	3.0	850	29.2	2.653	135.373	H850	10I40-	3	39
262	28.8	1.6	450	28.8	2.478	137.133	H450	10I40-	3	18
273	27.6	2.0	600	27.6	2.498	142.988	H600	10I40-	3	30
314	24.0	2.5	850	24.0	2.586	164.294	H850	10I40-	3	39
332	22.8	1.7	600	22.8	2.472	173.536	H600	10I40-	3	30
338	22.4	1.2	450	22.4	2.454	176.611	H450	10I40-	3	18
375	19.9	1.5	600	19.9	2.624	198.970	H600	10I40-	4	33
387	19.5	3.5	1500	19.5	3.076	202.237	H1500	10I40-	3	69
397	19.0	2.0	850	19.0	2.520	207.675	H850	10I40-	3	39
424	17.5	3.2	1500	17.5	3.122	225.125	H1500	10I40-	4	72
427	17.4	5.7	2133	17.4	3.452	226.604	H3000	10I40-	4	117
441	16.9	1.8	850	16.9	2.588	234.319	H850	10I40-	4	42
469	16.1	2.9	1500	16.1	2.903	245.442	H1500	10I40-	3	69
478	15.6	1.2	600	15.6	2.614	253.789	H600	10I40-	4	33
530	14.0	2.6	1500	14.0	2.766	281.416	H1500	10I40-	4	72
551	13.5	5.0	2754	13.5	3.619	292.511	H3000	10I40-	4	117
554	13.4	1.4	850	13.4	2.632	294.334	H850	10I40-	4	42
593	12.7	2.3	1500	12.7	2.725	310.250	H1500	10I40-	3	69
659	11.3	2.1	1500	11.3	2.653	350.054	H1500	10I40-	4	72
693	10.7	1.1	850	10.7	2.484	368.019	H850	10I40-	4	42
709	10.5	3.9	3000	10.5	3.070	376.393	H3000	10I40-	4	117
841	8.8	1.6	1500	8.8	2.622	446.497	H1500	10I40-	4	72
860	8.6	3.2	3000	8.6	2.981	457.048	H3000	10I40-	4	117
922	8.1	3.0	3000	8.1	2.806	489.908	H3000	10I40-	4	117
1077	6.9	1.3	1500	6.9	2.658	572.324	H1500	10I40-	4	72
1120	6.6	2.4	3000	6.6	2.753	594.888	H3000	10I40-	4	117
1321	5.6	1.0	1500	5.6	2.641	701.446	H1500	10I40-	4	72
1393	5.3	2.0	3000	5.3	2.644	739.983	H3000	10I40-	4	117
1485	5.0	1.8	3000	5.0	2.571	788.632	H3000	10I40-	4	117
1803	4.1	1.5	3000	4.1	2.551	957.625	H3000	10I40-	4	117
2333	3.2	1.2	3000	3.2	2.530	1239.279	H3000	10I40-	4	117



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

1.4 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
22.0	590	5.2	126	590	20.730	3.389	H210	14L20-	2	21
30.0	430	4.3	143	430	20.177	4.648	H210	14L20-	2	21
30.0	430	5.7	189	430	20.015	4.648	H320	14L20-	2	23
40.0	329	5.2	227	329	20.855	6.083	H320	14L20-	2	23
41.0	320	3.5	158	320	20.384	6.250	H210	14L20-	2	21
54.0	240	4.2	249	240	20.244	8.343	H320	14L20-	2	23
56.0	233	2.8	171	233	19.993	8.571	H210	14L20-	2	21
57.0	227	5.9	370	227	21.604	8.800	H450	14L20-	2	26
69.0	187	3.5	265	187	19.923	10.677	H320	14L20-	2	23
73.0	178	5.0	400	178	20.937	11.262	H450	14L20-	2	26
76.0	171	3.2	271	171	19.825	11.680	H320	14L20-	2	23
78.0	167	2.2	186	167	19.697	12.000	H210	14L20-	2	21
80.0	162	4.7	411	162	20.763	12.320	H450	14L20-	2	26
97.0	134	2.8	294	134	19.644	14.898	H320	14L20-	2	23
99.0	131	1.8	200	131	19.565	15.306	H210	14L20-	2	21
102	127	3.9	441	127	20.369	15.714	H450	14L20-	2	26
103	127	5.3	600	127	20.540	15.810	H600	14L20-	2	38
119	110	2.4	313	110	19.538	18.250	H320	14L20-	2	23
122	107	1.6	210	107	19.485	18.750	H210	14L20-	2	21
125	104	3.3	448	104	20.125	19.250	H450	14L20-	2	26
126	103	4.3	600	103	20.238	19.367	H600	14L20-	2	38
150	86.6	5.1	850	86.6	20.853	23.103	H850	14L20-	2	47
163	79.8	2.5	450	79.8	19.712	25.056	H450	14L20-	2	26
164	79.3	3.3	600	79.3	19.779	25.207	H600	14L20-	2	38
184	70.6	4.6	850	70.6	20.341	28.315	H850	14L20-	2	47
189	67.7	4.1	850	67.7	21.923	29.536	H850	14L20-	3	48
200	64.1	2.7	600	64.1	20.308	31.197	H600	14L20-	3	39
203	64.2	2.2	450	64.2	19.579	31.167	H450	14L20-	2	26
204	63.8	2.9	600	63.8	19.623	31.356	H600	14L20-	2	38
232	56.0	5.5	1269	56.0	21.525	35.689	H1500	14L20-	2	77
235	55.3	5.7	1342	55.3	24.577	36.193	H3000	14L20-	2	118
242	53.8	3.5	850	53.8	19.919	37.190	H850	14L20-	2	47
242	52.9	3.2	850	52.9	21.132	37.799	H850	14L20-	3	48
256	50.1	2.1	600	50.1	19.962	39.925	H600	14L20-	3	39
265	48.4	2.9	850	48.4	20.926	41.350	H850	14L20-	3	48
280	45.8	2.0	600	45.8	19.858	43.676	H600	14L20-	3	39
282	46.2	4.6	1289	46.2	20.911	43.313	H1500	14L20-	2	77
293	44.3	2.9	850	44.3	19.731	45.136	H850	14L20-	2	47
297	43.7	4.6	1364	43.7	22.743	45.750	H3000	14L20-	2	118
338	37.9	2.5	850	37.9	20.469	52.743	H850	14L20-	3	48
356	36.5	3.7	1309	36.5	20.334	54.750	H1500	14L20-	2	77
357	35.9	1.7	600	35.9	19.664	55.710	H600	14L20-	3	39
396	32.4	3.8	1500	32.4	23.357	61.774	H1500	14L20-	3	78
414	31.0	2.1	850	31.0	20.192	64.610	H850	14L20-	3	48
437	29.3	1.4	600	29.3	19.551	68.244	H600	14L20-	3	39
505	25.4	3.0	1500	25.4	21.983	78.794	H1500	14L20-	3	78
538	23.8	1.6	850	23.8	19.751	84.096	H850	14L20-	3	48
618	20.7	2.4	1500	20.7	21.402	96.522	H1500	14L20-	3	78
670	19.1	1.3	850	19.1	19.605	104.607	H850	14L20-	3	48
689	18.6	4.4	3000	18.6	23.808	107.541	H3000	14L20-	3	123
804	15.9	1.9	1500	15.9	20.872	125.632	H1500	14L20-	3	78

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
836	15.3	3.6	3000	15.3	22.719	130.585	H3000	14L20-	3	123
986	13.0	1.5	1500	13.0	20.268	153.976	H1500	14L20-	3	78
1082	11.8	2.8	3000	11.8	21.461	168.993	H3000	14L20-	3	123
1295	9.9	1.2	1500	9.9	19.876	202.237	H1500	14L20-	3	78
1313	9.8	2.3	3000	9.8	20.867	205.096	H3000	14L20-	3	123
1420	8.9	1.1	1500	8.9	19.922	225.125	H1500	14L20-	4	81
1429	8.8	1.9	2650	8.8	20.252	226.604	H3000	14L20-	4	126
1660	7.7	1.8	3000	7.7	20.307	259.250	H3000	14L20-	3	123
1845	6.8	1.6	3000	6.8	20.419	292.511	H3000	14L20-	4	126
2374	5.3	1.3	3000	5.3	19.870	376.393	H3000	14L20-	4	126
2883	4.4	1.0	3000	4.4	19.781	457.048	H3000	14L20-	4	126



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

1.7 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
13.0	1240	4.7	82.0	1090	9.202	3.267	H140	13I41-	2	15
13.0	1208	3.4	62.0	1003	8.825	3.354	H100	13I41-	2	14
17.0	904	3.9	94.0	853	8.836	4.480	H140	13I41-	2	15
18.0	880	2.9	72.0	790	8.635	4.600	H100	13I41-	2	14
18.0	871	5.7	143	778	9.277	4.648	H210	13I41-	2	16
22.0	706	3.3	103	706	8.659	5.733	H140	13I41-	2	15
23.0	688	2.6	81.0	688	8.536	5.887	H100	13I41-	2	14
24.0	648	4.7	158	477	9.484	6.250	H210	13I41-	2	16
24.0	646	3.1	105	646	8.609	6.272	H140	13I41-	2	15
25.0	629	2.4	83.0	629	8.507	6.440	H100	13I41-	2	14
31.0	506	2.7	117	506	8.511	8.000	H140	13I41-	2	15
32.0	493	2.1	92.0	493	8.448	8.214	H100	13I41-	2	14
32.0	485	5.5	249	431	9.344	8.343	H320	13I41-	2	18
33.0	473	3.7	171	390	9.093	8.571	H210	13I41-	2	16
35.0	449	2.4	117	389	8.642	9.029	H140	13I41-	2	15
38.0	413	2.4	125	413	8.455	9.800	H140	13I41-	2	15
39.0	403	1.8	99.0	403	8.413	10.063	H100	13I41-	2	14
41.0	379	4.6	265	355	9.023	10.677	H320	13I41-	2	18
44.0	357	1.6	100	333	8.475	11.360	H100	13I41-	2	14
45.0	351	2.1	128	349	8.540	11.554	H140	13I41-	2	15
45.0	347	4.3	271	332	8.925	11.680	H320	13I41-	2	18
47.0	338	2.9	186	302	8.797	12.000	H210	13I41-	2	16
49.0	320	1.9	132	320	8.510	12.640	H140	13I41-	2	15
56.0	280	1.3	100	269	8.429	14.490	H100	13I41-	2	14
58.0	272	3.7	294	272	8.744	14.898	H320	13I41-	2	18
59.0	265	2.4	200	265	8.665	15.306	H210	13I41-	2	16
61.0	258	5.2	441	249	9.469	15.714	H450	13I41-	2	22
63.0	251	1.6	140	251	8.450	16.122	H140	13I41-	2	15
69.0	228	1.0	100	228	8.400	17.750	H100	13I41-	2	14
71.0	222	3.2	313	222	8.638	18.250	H320	13I41-	2	18
73.0	216	2.1	210	216	8.585	18.750	H210	13I41-	2	16
75.0	210	4.3	448	210	9.225	19.250	H450	13I41-	2	22
75.0	209	5.7	600	209	9.338	19.367	H600	13I41-	2	33
77.0	205	1.3	140	205	8.414	19.750	H140	13I41-	2	15
90.0	175	6.0	717	175	9.953	23.103	H850	13I41-	2	42
92.0	171	2.5	320	171	8.509	23.754	H320	13I41-	2	18
95.0	166	1.6	210	166	8.479	24.405	H210	13I41-	2	16
97.0	162	3.3	450	162	8.812	25.056	H450	13I41-	2	22
98.0	161	4.4	600	161	8.879	25.207	H600	13I41-	2	33
110	143	5.8	780	143	9.441	28.315	H850	13I41-	2	42
115	137	2.3	320	137	8.452	29.548	H320	13I41-	2	18
118	133	1.5	210	133	8.432	30.357	H210	13I41-	2	16
119	130	3.6	600	130	9.408	31.197	H600	13I41-	3	34
121	130	3.0	450	130	8.679	31.167	H450	13I41-	2	22
122	129	4.0	600	129	8.723	31.356	H600	13I41-	2	33
144	109	4.6	805	109	9.019	37.190	H850	13I41-	2	42
144	107	4.2	850	107	10.232	37.799	H850	13I41-	3	43
153	101	2.8	600	101	9.062	39.925	H600	13I41-	3	34
157	100	2.6	450	100	8.538	40.333	H450	13I41-	2	22
157	99.8	3.2	558	99.8	8.564	40.578	H600	13I41-	2	33
158	97.9	3.9	850	97.9	10.026	41.350	H850	13I41-	3	43

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
167	92.7	2.6	600	92.7	8.958	43.676	H600	13I41-	3	34
175	89.7	4.2	818	89.7	8.831	45.136	H850	13I41-	2	42
190	82.7	1.7	366	82.7	8.475	48.950	H450	13I41-	2	22
191	82.2	2.2	456	82.2	8.493	49.247	H600	13I41-	2	33
191	81.2	1.9	450	81.2	8.656	49.867	H450	13I41-	3	22
202	76.8	3.4	850	76.8	9.569	52.743	H850	13I41-	3	43
213	72.7	2.3	600	72.7	8.764	55.710	H600	13I41-	3	34
247	62.7	2.8	850	62.7	9.292	64.610	H850	13I41-	3	43
261	59.3	1.9	600	59.3	8.651	68.244	H600	13I41-	3	34
267	58.0	1.4	450	58.0	8.517	69.813	H450	13I41-	3	22
301	51.4	4.1	1500	51.4	11.083	78.794	H1500	13I41-	3	73
321	48.2	2.4	850	48.2	8.851	84.096	H850	13I41-	3	43
340	45.6	1.6	600	45.6	8.517	88.826	H600	13I41-	3	34
340	45.5	1.2	450	45.5	8.455	89.048	H450	13I41-	3	22
400	38.7	1.9	850	38.7	8.705	104.607	H850	13I41-	3	43
422	36.7	1.3	600	36.7	8.457	110.491	H600	13I41-	3	34
480	32.2	2.8	1500	32.2	9.972	125.632	H1500	13I41-	3	73
517	29.9	1.5	850	29.9	8.553	135.373	H850	13I41-	3	43
589	26.3	2.3	1500	26.3	9.368	153.976	H1500	13I41-	3	73
628	24.7	1.2	850	24.7	8.486	164.294	H850	13I41-	3	43
773	20.0	1.8	1500	20.0	8.976	202.237	H1500	13I41-	3	73
848	18.0	1.6	1500	18.0	9.022	225.125	H1500	13I41-	4	76
853	17.9	2.8	2650	17.9	9.352	226.604	H3000	13I41-	4	121
938	16.5	1.5	1500	16.5	8.803	245.442	H1500	13I41-	3	73
1060	14.4	1.3	1500	14.4	8.666	281.416	H1500	13I41-	4	76
1101	13.8	2.5	3000	13.8	9.519	292.511	H3000	13I41-	4	121
1186	13.1	1.1	1500	13.1	8.625	310.250	H1500	13I41-	3	73
1318	11.6	1.0	1500	11.6	8.553	350.054	H1500	13I41-	4	76
1417	10.8	1.9	3000	10.8	8.970	376.393	H3000	13I41-	4	121
1721	8.9	1.6	3000	8.9	8.881	457.048	H3000	13I41-	4	121
1845	8.3	1.5	3000	8.3	8.706	489.908	H3000	13I41-	4	121
2240	6.8	1.2	3000	6.8	8.653	594.888	H3000	13I41-	4	121



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

2.3 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
18.0	1210	5.1	126	893	20.730	3.389	H210	14L41-	2	21
24.0	882	4.2	143	736	20.177	4.648	H210	14L41-	2	21
24.0	882	5.6	189	773	20.015	4.648	H320	14L41-	2	23
32.0	674	5.1	227	498	20.855	6.083	H320	14L41-	2	23
33.0	656	3.5	158	449	20.384	6.250	H210	14L41-	2	21
44.0	491	4.1	249	408	20.244	8.343	H320	14L41-	2	23
45.0	478	2.7	171	367	19.993	8.571	H210	14L41-	2	21
46.0	466	5.7	370	345	21.604	8.800	H450	14L41-	2	26
56.0	384	3.4	265	336	19.923	10.677	H320	14L41-	2	23
59.0	364	4.9	400	302	20.937	11.262	H450	14L41-	2	26
61.0	351	3.2	271	307	19.825	11.680	H320	14L41-	2	23
63.0	342	2.1	186	286	19.697	12.000	H210	14L41-	2	21
65.0	333	4.6	411	282	20.763	12.320	H450	14L41-	2	26
78.0	275	2.7	294	241	19.644	14.898	H320	14L41-	2	23
80.0	268	1.8	200	235	19.565	15.306	H210	14L41-	2	21
82.0	261	3.8	441	229	20.369	15.714	H450	14L41-	2	26
83.0	259	5.2	600	227	20.540	15.810	H600	14L41-	2	38
96.0	225	2.3	313	197	19.538	18.250	H320	14L41-	2	23
98.0	219	1.5	210	192	19.485	18.750	H210	14L41-	2	21
101	213	3.2	448	187	20.125	19.250	H450	14L41-	2	26
101	212	4.2	600	185	20.238	19.367	H600	14L41-	2	38
121	178	5.0	850	155	20.853	23.103	H850	14L41-	2	47
131	164	2.5	450	143	19.712	25.056	H450	14L41-	2	26
132	163	3.3	600	142	19.779	25.207	H600	14L41-	2	38
148	145	4.7	850	127	20.341	28.315	H850	14L41-	2	47
152	139	4.0	850	122	21.923	29.536	H850	14L41-	3	48
161	131	2.7	600	115	20.308	31.197	H600	14L41-	3	39
163	132	2.2	450	115	19.579	31.167	H450	14L41-	2	26
164	131	3.0	600	115	19.623	31.356	H600	14L41-	2	38
187	115	5.5	1269	101	21.525	35.689	H1500	14L41-	2	77
190	113	5.8	1342	99.2	24.577	36.193	H3000	14L41-	2	118
195	110	3.5	850	96.5	19.919	37.190	H850	14L41-	2	47
195	109	3.1	850	95.0	21.132	37.799	H850	14L41-	3	48
206	103	2.1	600	89.9	19.962	39.925	H600	14L41-	3	39
213	99.2	2.9	850	86.8	20.926	41.350	H850	14L41-	3	48
225	93.9	1.9	600	82.2	19.858	43.676	H600	14L41-	3	39
227	94.7	5.1	1289	82.9	20.911	43.313	H1500	14L41-	2	77
236	90.8	3.2	850	79.5	19.731	45.136	H850	14L41-	2	47
240	89.6	5.1	1364	78.5	22.743	45.750	H3000	14L41-	2	118
272	77.7	2.5	850	68.1	20.469	52.743	H850	14L41-	3	48
287	74.9	4.1	1309	65.6	20.334	54.750	H1500	14L41-	2	77
287	73.6	1.7	600	64.4	19.664	55.710	H600	14L41-	3	39
319	66.4	3.8	1500	58.1	23.357	61.774	H1500	14L41-	3	78
333	63.5	2.1	850	55.6	20.192	64.610	H850	14L41-	3	48
352	60.1	1.4	600	52.6	19.551	68.244	H600	14L41-	3	39
407	52.0	3.0	1500	45.6	21.983	78.794	H1500	14L41-	3	78
434	48.8	1.8	850	42.7	19.751	84.096	H850	14L41-	3	48
498	42.5	2.7	1500	37.2	21.402	96.522	H1500	14L41-	3	78
540	39.2	1.4	850	34.3	19.605	104.607	H850	14L41-	3	48
555	38.1	4.9	3000	33.4	23.808	107.541	H3000	14L41-	3	123
648	32.6	2.1	1500	28.6	20.872	125.632	H1500	14L41-	3	78

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
674	31.4	4.0	3000	27.5	22.719	130.585	H3000	14L41-	3	123
795	26.6	1.7	1500	23.3	20.268	153.976	H1500	14L41-	3	78
872	24.3	3.1	3000	21.2	21.461	168.993	H3000	14L41-	3	123
1044	20.3	1.3	1500	17.8	19.876	202.237	H1500	14L41-	3	78
1058	20.0	2.6	3000	17.5	20.867	205.096	H3000	14L41-	3	123
1144	18.2	1.2	1500	15.9	19.922	225.125	H1500	14L41-	4	81
1152	18.1	2.1	2650	15.8	20.252	226.604	H3000	14L41-	4	126
1267	16.7	1.1	1500	14.6	19.703	245.442	H1500	14L41-	3	78
1338	15.8	2.0	3000	13.8	20.307	259.250	H3000	14L41-	3	123
1487	14.0	1.8	3000	12.3	20.419	292.511	H3000	14L41-	4	126
1913	10.9	1.4	3000	9.5	19.870	376.393	H3000	14L41-	4	126
2323	9.0	1.2	3000	7.9	19.781	457.048	H3000	14L41-	4	126



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

2.6 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
36.0	679	4.0	165	679	37.225	3.389	H320	17N23-	2	31
47.0	513	5.5	297	513	40.253	4.480	H600	17N23-	2	45
49.0	495	3.4	189	495	36.815	4.648	H320	17N23-	2	31
49.0	487	5.1	293	487	39.213	4.724	H450	17N23-	2	34
60.0	401	4.9	339	401	38.866	5.733	H600	17N23-	2	45
63.0	381	4.4	323	381	38.231	6.045	H450	17N23-	2	34
64.0	378	3.1	227	378	37.655	6.083	H320	17N23-	2	31
68.0	356	5.2	404	356	40.444	6.456	H600	17N23-	2	45
69.0	348	4.2	334	348	37.976	6.613	H450	17N23-	2	34
87.0	276	2.5	249	276	37.044	8.343	H320	17N23-	2	31
92.0	261	3.5	370	261	38.404	8.800	H450	17N23-	2	34
93.0	260	4.6	487	260	38.947	8.853	H600	17N23-	2	45
106	227	5.4	667	227	41.129	10.143	H850	17N23-	2	54
112	215	2.1	265	215	36.723	10.677	H320	17N23-	2	31
118	204	2.9	400	204	37.737	11.262	H450	17N23-	2	34
119	203	3.9	537	203	38.069	11.330	H600	17N23-	2	45
119	203	5.1	696	203	40.223	11.360	H850	17N23-	2	54
122	197	1.9	271	197	36.625	11.680	H320	17N23-	2	31
129	187	2.8	411	187	37.563	12.320	H450	17N23-	2	34
130	186	3.7	553	186	37.841	12.395	H600	17N23-	2	45
152	159	4.3	758	159	39.061	14.490	H850	17N23-	2	54
156	154	1.6	294	154	36.444	14.898	H320	17N23-	2	31
165	146	2.3	441	146	37.169	15.714	H450	17N23-	2	34
166	146	3.1	600	146	37.340	15.810	H600	17N23-	2	45
186	130	3.8	814	130	38.387	17.750	H850	17N23-	2	54
202	120	1.9	448	120	36.925	19.250	H450	17N23-	2	34
203	119	2.6	600	119	37.038	19.367	H600	17N23-	2	45
238	101	5.0	1383	101	40.766	22.711	H1500	17N23-	2	84
241	99.8	5.4	1493	99.8	47.350	23.044	H3000	17N23-	2	126
242	99.6	3.0	850	99.6	37.653	23.103	H850	17N23-	2	54
263	91.8	1.5	450	91.8	36.512	25.056	H450	17N23-	2	34
264	91.2	2.0	600	91.2	36.579	25.207	H600	17N23-	2	45
289	83.4	4.9	1433	83.4	39.627	27.578	H1500	17N23-	2	84
297	81.2	2.8	850	81.2	37.141	28.315	H850	17N23-	2	54
305	77.9	2.4	850	77.9	38.723	29.536	H850	17N23-	3	55
312	77.1	4.9	1547	77.1	43.304	29.822	H3000	17N23-	2	126
322	73.7	1.6	600	73.7	37.108	31.197	H600	17N23-	3	46
374	64.4	3.9	1485	64.4	38.325	35.689	H1500	17N23-	2	84
379	63.5	4.1	1572	63.5	41.377	36.193	H3000	17N23-	2	126
390	60.8	1.9	850	60.8	37.932	37.799	H850	17N23-	3	55
412	57.6	1.3	600	57.6	36.762	39.925	H600	17N23-	3	46
427	55.6	1.7	850	55.6	37.726	41.350	H850	17N23-	3	55
451	52.7	1.2	600	52.7	36.658	43.676	H600	17N23-	3	46
454	53.1	3.3	1500	53.1	37.711	43.313	H1500	17N23-	2	84
463	51.3	2.8	1500	51.3	42.404	44.814	H1500	17N23-	3	86
479	50.3	3.3	1598	50.3	39.543	45.750	H3000	17N23-	2	126
487	48.7	5.7	2830	48.7	51.742	47.186	H3000	17N23-	3	131
544	43.6	1.5	850	43.6	37.269	52.743	H850	17N23-	3	55
555	42.8	5.2	2950	42.8	48.174	53.770	H3000	17N23-	3	131
575	41.3	1.0	600	41.3	36.464	55.710	H600	17N23-	3	46
638	37.2	2.3	1500	37.2	40.157	61.774	H1500	17N23-	3	86

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
667	35.6	1.3	850	35.6	36.992	64.610	H850	17N23-	3	55
668	35.5	4.4	3000	35.5	45.627	64.744	H3000	17N23-	3	131
813	29.2	1.8	1500	29.2	38.783	78.794	H1500	17N23-	3	86
819	29.0	3.6	3000	29.0	43.544	79.375	H3000	17N23-	3	131
996	23.8	1.5	1500	23.8	38.202	96.522	H1500	17N23-	3	86
1110	21.4	2.7	3000	21.4	40.608	107.541	H3000	17N23-	3	131
1297	18.3	1.2	1500	18.3	37.672	125.632	H1500	17N23-	3	86
1348	17.6	2.2	3000	17.6	39.519	130.585	H3000	17N23-	3	131
1744	13.6	1.7	3000	13.6	38.261	168.993	H3000	17N23-	3	131
2117	11.2	1.4	3000	11.2	37.667	205.096	H3000	17N23-	3	131
2974	7.9	1.0	3000	7.9	37.219	292.511	H3000	17N23-	4	134



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

4 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
50.0	744	5.3	306	704	86.097	3.147	H850	19S23-	2	76
52.0	716	4.0	240	716	78.900	3.267	H600	19S23-	2	67
54.0	679	4.1	256	679	76.943	3.444	H450	19S23-	2	56
69.0	537	4.7	378	537	80.786	4.362	H850	19S23-	2	76
71.0	522	3.6	297	522	76.253	4.480	H600	19S23-	2	67
75.0	495	3.4	293	495	75.213	4.724	H450	19S23-	2	56
85.0	436	4.4	429	436	78.388	5.368	H850	19S23-	2	76
91.0	408	3.2	339	408	74.866	5.733	H600	19S23-	2	67
94.0	394	5.1	551	369	82.432	5.946	H850	19S23-	2	76
96.0	387	2.9	323	387	74.231	6.045	H450	19S23-	2	56
102	363	3.4	404	363	76.444	6.456	H600	19S23-	2	67
105	354	2.8	334	354	73.976	6.613	H450	19S23-	2	56
130	284	4.1	615	284	78.878	8.241	H850	19S23-	2	76
139	266	2.3	370	266	74.404	8.800	H450	19S23-	2	56
140	264	3.0	487	264	74.947	8.853	H600	19S23-	2	67
160	231	3.6	667	231	77.129	10.143	H850	19S23-	2	76
178	208	1.9	400	208	73.737	11.262	H450	19S23-	2	56
179	207	2.6	537	207	74.069	11.330	H600	19S23-	2	67
180	206	3.3	696	206	76.223	11.360	H850	19S23-	2	76
195	190	1.8	411	190	73.563	12.320	H450	19S23-	2	56
196	189	2.4	553	189	73.841	12.395	H600	19S23-	2	67
216	171	5.7	1430	171	82.063	13.673	H1500	19S23-	2	106
229	162	2.9	758	162	75.061	14.490	H850	19S23-	2	76
249	149	1.5	441	149	73.169	15.714	H450	19S23-	2	56
250	148	2.1	600	148	73.340	15.810	H600	19S23-	2	67
265	140	4.7	1450	140	79.834	16.763	H1500	19S23-	2	106
281	132	2.5	814	132	74.387	17.750	H850	19S23-	2	76
304	122	1.3	448	122	72.925	19.250	H450	19S23-	2	56
306	121	1.7	600	121	73.038	19.367	H600	19S23-	2	67
359	103	3.6	1500	103	76.766	22.711	H1500	19S23-	2	106
365	101	2.0	850	101	73.653	23.103	H850	19S23-	2	76
436	84.9	3.4	1500	84.9	75.627	27.578	H1500	19S23-	2	106
460	79.2	1.6	850	79.2	74.723	29.536	H850	19S23-	3	77
572	64.7	5.1	3000	64.7	77.377	36.193	H3000	19S23-	2	148
589	61.9	1.2	850	61.9	73.932	37.799	H850	19S23-	3	77
644	56.6	1.1	850	56.6	73.726	41.350	H850	19S23-	3	77
698	52.2	1.9	1500	52.2	78.404	44.814	H1500	19S23-	3	108
735	49.6	3.8	2830	49.6	87.742	47.186	H3000	19S23-	3	153
822	44.4	1.0	850	44.4	73.269	52.743	H850	19S23-	3	77
838	43.5	3.5	2950	43.5	84.174	53.770	H3000	19S23-	3	153
962	37.9	1.5	1500	37.9	76.157	61.774	H1500	19S23-	3	108
1009	36.1	2.9	3000	36.1	81.627	64.744	H3000	19S23-	3	153
1227	29.7	1.2	1500	29.7	74.783	78.794	H1500	19S23-	3	108
1236	29.5	2.4	3000	29.5	79.544	79.375	H3000	19S23-	3	153
1504	24.2	1.0	1500	24.2	74.202	96.522	H1500	19S23-	3	108
1675	21.8	1.8	3000	21.8	76.608	107.541	H3000	19S23-	3	153
2034	17.9	1.5	3000	17.9	75.519	130.585	H3000	19S23-	3	153

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



4.1 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
30.0	1258	5.7	240	803	42.900	3.267	H600	17N41-	2	45
31.0	1213	3.8	165	843	37.225	3.389	H320	17N41-	2	31
32.0	1193	5.8	256	763	40.943	3.444	H450	17N41-	2	34
41.0	917	5.1	297	664	40.253	4.480	H600	17N41-	2	45
43.0	884	3.2	189	669	36.815	4.648	H320	17N41-	2	31
44.0	870	4.8	293	622	39.213	4.724	H450	17N41-	2	34
53.0	717	4.6	339	543	38.866	5.733	H600	17N41-	2	45
56.0	680	4.1	323	515	38.231	6.045	H450	17N41-	2	34
56.0	676	2.9	227	445	37.655	6.083	H320	17N41-	2	31
60.0	637	4.9	404	394	40.444	6.456	H600	17N41-	2	45
61.0	622	3.9	334	470	37.976	6.613	H450	17N41-	2	34
76.0	499	5.8	615	314	42.878	8.241	H850	17N41-	2	54
77.0	493	2.3	249	364	37.044	8.343	H320	17N41-	2	31
81.0	467	3.3	370	309	38.404	8.800	H450	17N41-	2	34
82.0	464	4.3	487	324	38.947	8.853	H600	17N41-	2	45
93.0	405	5.1	667	282	41.129	10.143	H850	17N41-	2	54
98.0	385	1.9	265	291	36.723	10.677	H320	17N41-	2	31
104	365	2.8	400	270	37.737	11.262	H450	17N41-	2	34
104	363	3.7	537	275	38.069	11.330	H600	17N41-	2	45
105	362	4.8	696	258	40.223	11.360	H850	17N41-	2	54
108	352	1.8	271	266	36.625	11.680	H320	17N41-	2	31
114	334	2.6	411	253	37.563	12.320	H450	17N41-	2	34
114	332	3.5	553	251	37.841	12.395	H600	17N41-	2	45
134	284	4.1	758	215	39.061	14.490	H850	17N41-	2	54
137	276	1.5	294	209	36.444	14.898	H320	17N41-	2	31
145	262	2.2	441	198	37.169	15.714	H450	17N41-	2	34
146	260	2.9	600	197	37.340	15.810	H600	17N41-	2	45
164	232	3.6	814	175	38.387	17.750	H850	17N41-	2	54
173	219	6.0	1451	166	51.200	18.752	H3000	17N41-	2	126
177	214	1.8	448	162	36.925	19.250	H450	17N41-	2	34
179	212	2.4	600	161	37.038	19.367	H600	17N41-	2	45
209	181	4.7	1383	137	40.766	22.711	H1500	17N41-	2	84
212	178	5.0	1493	135	47.350	23.044	H3000	17N41-	2	126
213	178	2.9	850	135	37.653	23.103	H850	17N41-	2	54
231	164	1.4	450	124	36.512	25.056	H450	17N41-	2	34
232	163	1.9	600	123	36.579	25.207	H600	17N41-	2	45
254	149	4.6	1433	113	39.627	27.578	H1500	17N41-	2	84
261	145	2.6	850	110	37.141	28.315	H850	17N41-	2	54
268	139	2.3	850	105	38.723	29.536	H850	17N41-	3	55
275	138	4.6	1547	104	43.304	29.822	H3000	17N41-	2	126
283	132	1.5	600	99.7	37.108	31.197	H600	17N41-	3	46
329	115	3.7	1485	87.2	38.325	35.689	H1500	17N41-	2	84
334	114	3.8	1572	86.0	41.377	36.193	H3000	17N41-	2	126
343	109	1.8	850	82.3	37.932	37.799	H850	17N41-	3	55
362	103	1.2	600	77.9	36.762	39.925	H600	17N41-	3	46
375	99.4	1.6	850	75.2	37.726	41.350	H850	17N41-	3	55
397	94.1	1.1	600	71.2	36.658	43.676	H600	17N41-	3	46
399	94.9	3.4	1500	71.8	37.711	43.313	H1500	17N41-	2	84
407	91.7	2.6	1500	63.5	42.404	44.814	H1500	17N41-	3	86
422	89.8	3.4	1598	68.0	39.543	45.750	H3000	17N41-	2	126
428	87.1	5.4	2830	64.2	51.742	47.186	H3000	17N41-	3	131



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
479	77.9	1.4	850	59.0	37.269	52.743	H850	17N41-	3	55
488	76.4	4.9	2950	57.9	48.174	53.770	H3000	17N41-	3	131
561	66.5	2.2	1500	50.4	40.157	61.774	H1500	17N41-	3	86
587	63.6	1.2	850	48.2	36.992	64.610	H850	17N41-	3	55
588	63.5	4.1	3000	48.1	45.627	64.744	H3000	17N41-	3	131
715	52.2	1.7	1500	39.5	38.783	78.794	H1500	17N41-	3	86
721	51.8	3.4	3000	39.2	43.544	79.375	H3000	17N41-	3	131
763	48.9	1.0	850	37.0	36.551	84.096	H850	17N41-	3	55
876	42.6	1.5	1500	32.2	38.202	96.522	H1500	17N41-	3	86
976	38.2	2.8	3000	28.9	40.608	107.541	H3000	17N41-	3	131
1141	32.7	1.2	1500	24.8	37.672	125.632	H1500	17N41-	3	86
1186	31.5	2.3	3000	23.8	39.519	130.585	H3000	17N41-	3	131
1534	24.3	1.8	3000	18.4	38.261	168.993	H3000	17N41-	3	131
1862	20.0	1.5	3000	15.2	37.667	205.096	H3000	17N41-	3	131
2616	14.1	1.0	3000	10.6	37.219	292.511	H3000	17N41-	4	134

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



5.2 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
37.0	1319	6.0	306	722	86.097	3.147	H850	19S42-	2	76
38.0	1270	4.5	240	750	78.900	3.267	H600	19S42-	2	67
40.0	1205	4.6	256	711	76.943	3.444	H450	19S42-	2	56
51.0	951	5.3	378	561	80.786	4.362	H850	19S42-	2	76
52.0	926	4.1	297	547	76.253	4.480	H600	19S42-	2	67
55.0	879	3.8	293	518	75.213	4.724	H450	19S42-	2	56
63.0	773	4.9	429	456	78.388	5.368	H850	19S42-	2	76
67.0	724	3.6	339	427	74.866	5.733	H600	19S42-	2	67
69.0	698	5.7	551	378	82.432	5.946	H850	19S42-	2	76
70.0	687	3.3	323	405	74.231	6.045	H450	19S42-	2	56
75.0	643	3.8	404	375	76.444	6.456	H600	19S42-	2	67
77.0	628	3.1	334	370	73.976	6.613	H450	19S42-	2	56
96.0	504	4.6	615	297	78.878	8.241	H850	19S42-	2	76
102	472	2.6	370	278	74.404	8.800	H450	19S42-	2	56
103	469	3.4	487	277	74.947	8.853	H600	19S42-	2	67
118	409	4.0	667	241	77.129	10.143	H850	19S42-	2	76
131	369	2.2	400	217	73.737	11.262	H450	19S42-	2	56
132	366	2.9	537	216	74.069	11.330	H600	19S42-	2	67
132	365	3.8	696	216	76.223	11.360	H850	19S42-	2	76
143	337	2.0	411	199	73.563	12.320	H450	19S42-	2	56
144	335	2.7	553	198	73.841	12.395	H600	19S42-	2	67
169	286	3.2	758	169	75.061	14.490	H850	19S42-	2	76
183	264	1.7	441	156	73.169	15.714	H450	19S42-	2	56
184	263	2.3	600	155	73.340	15.810	H600	19S42-	2	67
195	248	5.3	1450	146	79.834	16.763	H1500	19S42-	2	106
207	234	2.8	814	138	74.387	17.750	H850	19S42-	2	76
224	216	1.4	448	127	72.925	19.250	H450	19S42-	2	56
225	214	1.9	600	126	73.038	19.367	H600	19S42-	2	67
264	183	4.0	1500	108	76.766	22.711	H1500	19S42-	2	106
269	180	2.3	850	106	73.653	23.103	H850	19S42-	2	76
321	151	3.8	1500	88.8	75.627	27.578	H1500	19S42-	2	106
339	141	1.8	850	82.9	74.723	29.536	H850	19S42-	3	77
421	115	5.8	3000	67.7	77.377	36.193	H3000	19S42-	2	148
433	110	1.4	850	64.8	73.932	37.799	H850	19S42-	3	77
474	100	1.3	850	59.2	73.726	41.350	H850	19S42-	3	77
514	92.6	2.1	1500	54.6	78.404	44.814	H1500	19S42-	3	108
541	87.9	4.2	2830	51.9	87.742	47.186	H3000	19S42-	3	153
605	78.7	1.1	850	46.4	73.269	52.743	H850	19S42-	3	77
617	77.2	3.9	2950	45.5	84.174	53.770	H3000	19S42-	3	153
708	67.2	1.7	1500	39.6	76.157	61.774	H1500	19S42-	3	108
742	64.1	3.3	3000	37.8	81.627	64.744	H3000	19S42-	3	153
904	52.7	1.3	1500	31.1	74.783	78.794	H1500	19S42-	3	108
910	52.3	2.7	3000	30.8	79.544	79.375	H3000	19S42-	3	153
1107	43.0	1.2	1500	25.4	74.202	96.522	H1500	19S42-	3	108
1233	38.6	2.2	3000	22.8	76.608	107.541	H3000	19S42-	3	153
1498	31.8	1.8	3000	18.8	75.519	130.585	H3000	19S42-	3	153



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

6.4 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
181	328	5.7	1217	265	203.724	7.592	H1500	21X25-	2	122
271	219	4.4	1400	177	192.806	11.356	H1500	21X25-	2	122
326	182	3.7	1430	147	190.063	13.673	H1500	21X25-	2	122
400	149	3.1	1450	120	187.834	16.763	H1500	21X25-	2	122
448	133	5.2	2750	107	195.200	18.752	H3000	21X25-	2	163
550	108	4.5	2900	87.4	191.350	23.044	H3000	21X25-	2	163
1054	55.6	1.2	1500	44.9	186.404	44.814	H1500	21X25-	3	123
1109	52.8	2.5	2830	42.7	195.742	47.186	H3000	21X25-	3	168
1264	46.3	2.2	2950	37.4	192.174	53.770	H3000	21X25-	3	168
1522	38.5	1.9	3000	31.1	189.627	64.744	H3000	21X25-	3	168
1866	31.4	1.5	3000	25.4	187.544	79.375	H3000	21X25-	3	168

7.4 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
187	366	5.3	1400	177	192.806	11.356	H1500	21X42-	2	122
226	304	4.5	1430	147	190.063	13.673	H1500	21X42-	2	122
276	248	3.7	1450	120	187.834	16.763	H1500	21X42-	2	122
380	181	5.4	2900	87.4	191.350	23.044	H3000	21X42-	2	163
728	92.8	1.5	1500	44.9	186.404	44.814	H1500	21X42-	3	123
767	88.2	3.0	2830	42.7	195.742	47.186	H3000	21X42-	3	168
874	77.4	2.7	2950	37.4	192.174	53.770	H3000	21X42-	3	168
1004	67.3	1.2	1500	32.6	184.157	61.774	H1500	21X42-	3	123
1052	64.3	2.3	3000	31.1	189.627	64.744	H3000	21X42-	3	168
1290	52.4	1.9	3000	25.4	187.544	79.375	H3000	21X42-	3	168

Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors



Inverter mains connection 400 V, Forced ventilated motors

2.1 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
39.0	483	3.1	126	483	20.730	3.389	H210	14L16-	2	23
39.0	483	4.1	165	483	20.425	3.389	H320	14L16-	2	25
52.0	365	5.5	261	365	23.453	4.480	H600	14L16-	2	39
54.0	352	2.6	143	352	20.177	4.648	H210	14L16-	2	23
54.0	352	3.4	189	352	20.015	4.648	H320	14L16-	2	25
55.0	346	5.2	275	346	22.413	4.724	H450	14L16-	2	28
67.0	285	4.9	334	285	22.066	5.733	H600	14L16-	2	39
70.0	271	4.5	323	271	21.431	6.045	H450	14L16-	2	28
71.0	269	3.1	227	269	20.855	6.083	H320	14L16-	2	25
73.0	262	2.1	158	262	20.384	6.250	H210	14L16-	2	23
75.0	253	5.2	376	253	23.644	6.456	H600	14L16-	2	39
77.0	247	4.2	334	247	21.176	6.613	H450	14L16-	2	28
97.0	196	2.5	249	196	20.244	8.343	H320	14L16-	2	25
100	191	1.7	171	191	19.993	8.571	H210	14L16-	2	23
102	186	3.5	370	186	21.604	8.800	H450	14L16-	2	28
103	185	4.6	487	185	22.147	8.853	H600	14L16-	2	39
118	161	5.5	590	161	24.329	10.143	H850	14L16-	2	48
124	153	2.1	265	153	19.923	10.677	H320	14L16-	2	25
131	145	3.0	400	145	20.937	11.262	H450	14L16-	2	28
132	144	4.0	537	144	21.269	11.330	H600	14L16-	2	39
132	144	5.1	661	144	23.423	11.360	H850	14L16-	2	48
136	140	1.9	271	140	19.825	11.680	H320	14L16-	2	25
140	136	1.3	186	136	19.697	12.000	H210	14L16-	2	23
143	133	2.8	411	133	20.763	12.320	H450	14L16-	2	28
144	132	3.7	553	132	21.041	12.395	H600	14L16-	2	39
169	113	4.4	758	113	22.261	14.490	H850	14L16-	2	48
173	110	1.6	294	110	19.644	14.898	H320	14L16-	2	25
178	107	1.1	200	107	19.565	15.306	H210	14L16-	2	23
183	104	2.3	441	104	20.369	15.714	H450	14L16-	2	28
184	103	3.2	600	103	20.540	15.810	H600	14L16-	2	39
207	92.1	3.8	814	92.1	21.587	17.750	H850	14L16-	2	48
212	89.6	1.4	313	89.6	19.538	18.250	H320	14L16-	2	25
224	84.9	1.9	448	84.9	20.125	19.250	H450	14L16-	2	28
225	84.4	2.6	600	84.4	20.238	19.367	H600	14L16-	2	39
264	72.0	4.3	1182	72.0	23.966	22.711	H1500	14L16-	2	78
269	70.8	3.1	850	70.8	20.853	23.103	H850	14L16-	2	48
292	65.3	1.5	450	65.3	19.712	25.056	H450	14L16-	2	28
293	64.9	2.0	600	64.9	19.779	25.207	H600	14L16-	2	39
321	59.3	3.8	1225	59.3	22.827	27.578	H1500	14L16-	2	78
330	57.7	2.6	850	57.7	20.341	28.315	H850	14L16-	2	48
339	55.4	2.4	850	55.4	21.923	29.536	H850	14L16-	3	49
347	54.8	3.8	1321	54.8	26.504	29.822	H3000	14L16-	2	120
358	52.4	1.6	600	52.4	20.308	31.197	H600	14L16-	3	40
363	52.5	1.2	450	52.5	19.579	31.167	H450	14L16-	2	28
365	52.1	1.6	600	52.1	19.623	31.356	H600	14L16-	2	39
416	45.8	3.1	1269	45.8	21.525	35.689	H1500	14L16-	2	78
421	45.2	3.2	1342	45.2	24.577	36.193	H3000	14L16-	2	120
433	44.0	2.0	850	44.0	19.919	37.190	H850	14L16-	2	48
433	43.3	1.9	850	43.3	21.132	37.799	H850	14L16-	3	49
458	41.0	1.3	600	41.0	19.962	39.925	H600	14L16-	3	40



Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors

Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
474	39.5	1.7	850	39.5	20.926	41.350	H850	14L16-	3	49
501	37.4	1.2	600	37.4	19.858	43.676	H600	14L16-	3	40
504	37.7	2.6	1289	37.7	20.911	43.313	H1500	14L16-	2	78
526	36.2	1.6	850	36.2	19.731	45.136	H850	14L16-	2	48
533	35.7	2.6	1364	35.7	22.743	45.750	H3000	14L16-	2	120
605	31.0	1.4	850	31.0	20.469	52.743	H850	14L16-	3	49
637	29.9	2.1	1309	29.9	20.334	54.750	H1500	14L16-	2	78
708	26.5	2.1	1500	26.5	23.357	61.774	H1500	14L16-	3	80
741	25.3	1.2	850	25.3	20.192	64.610	H850	14L16-	3	49
742	25.3	4.0	3000	25.3	28.827	64.744	H3000	14L16-	3	125
904	20.8	1.7	1500	20.8	21.983	78.794	H1500	14L16-	3	80
1107	16.9	1.4	1500	16.9	21.402	96.522	H1500	14L16-	3	80
1233	15.2	2.4	3000	15.2	23.808	107.541	H3000	14L16-	3	125
1441	13.0	1.0	1500	13.0	20.872	125.632	H1500	14L16-	3	80
1498	12.5	2.0	3000	12.5	22.719	130.585	H3000	14L16-	3	125
1938	9.7	1.6	3000	9.7	21.461	168.993	H3000	14L16-	3	125
2352	8.0	1.3	3000	8.0	20.867	205.096	H3000	14L16-	3	125
2560	7.2	1.0	2650	7.2	20.252	226.604	H3000	14L16-	4	128
2973	6.3	1.0	3000	6.3	20.307	259.250	H3000	14L16-	3	125

Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors



2.2 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
20.0	1044	3.1	82.0	1013	9.202	3.267	H140	13I34-	2	17
21.0	1017	2.3	62.0	928	8.825	3.354	H100	13I34-	2	16
21.0	1006	4.6	105	877	9.830	3.389	H210	13I34-	2	18
21.0	1006	5.1	105	895	9.525	3.389	H320	13I34-	2	20
27.0	761	2.6	94.0	761	8.836	4.480	H140	13I34-	2	17
28.0	741	2.0	72.0	733	8.635	4.600	H100	13I34-	2	16
28.0	734	3.8	143	723	9.277	4.648	H210	13I34-	2	18
28.0	734	5.1	144	734	9.115	4.648	H320	13I34-	2	20
35.0	595	2.2	103	595	8.659	5.733	H140	13I34-	2	17
35.0	595	5.1	178	595	11.166	5.733	H600	13I34-	2	35
36.0	579	1.7	81.0	579	8.536	5.887	H100	13I34-	2	16
37.0	564	5.1	188	564	10.531	6.045	H450	13I34-	2	23
37.0	561	4.7	189	489	9.955	6.083	H320	13I34-	2	20
38.0	546	3.2	158	440	9.484	6.250	H210	13I34-	2	18
38.0	544	2.1	105	544	8.609	6.272	H140	13I34-	2	17
39.0	530	1.6	83.0	530	8.507	6.440	H100	13I34-	2	16
40.0	516	5.1	205	516	10.276	6.613	H450	13I34-	2	23
49.0	426	1.8	117	426	8.511	8.000	H140	13I34-	2	17
50.0	415	1.4	92.0	415	8.448	8.214	H100	13I34-	2	16
51.0	409	3.7	249	401	9.344	8.343	H320	13I34-	2	20
52.0	398	2.5	171	360	9.093	8.571	H210	13I34-	2	18
55.0	378	1.6	117	340	8.642	9.029	H140	13I34-	2	17
60.0	348	1.6	125	348	8.455	9.800	H140	13I34-	2	17
62.0	339	1.2	99.0	339	8.413	10.063	H100	13I34-	2	16
65.0	319	3.1	265	319	9.023	10.677	H320	13I34-	2	20
69.0	303	4.4	350	297	10.037	11.262	H450	13I34-	2	23
69.0	301	5.1	352	301	10.369	11.330	H600	13I34-	2	35
69.0	300	1.1	100	280	8.475	11.360	H100	13I34-	2	16
71.0	295	1.4	128	289	8.540	11.554	H140	13I34-	2	17
71.0	292	2.9	271	292	8.925	11.680	H320	13I34-	2	20
73.0	284	1.9	186	279	8.797	12.000	H210	13I34-	2	18
75.0	277	4.2	383	277	9.863	12.320	H450	13I34-	2	23
76.0	275	5.1	385	275	10.141	12.395	H600	13I34-	2	35
77.0	270	1.3	132	270	8.510	12.640	H140	13I34-	2	17
89.0	235	5.1	450	235	11.361	14.490	H850	13I34-	2	43
91.0	229	2.5	294	229	8.744	14.898	H320	13I34-	2	20
94.0	223	1.6	200	223	8.665	15.306	H210	13I34-	2	18
96.0	217	3.5	441	217	9.469	15.714	H450	13I34-	2	23
97.0	216	4.7	491	216	9.640	15.810	H600	13I34-	2	35
99.0	212	1.1	140	212	8.450	16.122	H140	13I34-	2	17
112	187	2.1	313	187	8.638	18.250	H320	13I34-	2	20
115	182	1.4	210	182	8.585	18.750	H210	13I34-	2	18
118	177	2.9	448	177	9.225	19.250	H450	13I34-	2	23
118	176	3.9	600	176	9.338	19.367	H600	13I34-	2	35
141	148	4.0	717	148	9.953	23.103	H850	13I34-	2	43
145	144	1.7	320	144	8.509	23.754	H320	13I34-	2	20
149	140	1.1	210	140	8.479	24.405	H210	13I34-	2	18
153	136	2.2	450	136	8.812	25.056	H450	13I34-	2	23
154	135	3.0	600	135	8.879	25.207	H600	13I34-	2	35
173	120	3.9	780	120	9.441	28.315	H850	13I34-	2	43
181	115	1.5	320	115	8.452	29.548	H320	13I34-	2	20



Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors

Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
188	109	2.4	600	109	9.408	31.197	H600	13I34-	3	35
191	109	2.0	450	109	8.679	31.167	H450	13I34-	2	23
192	109	2.7	600	109	8.723	31.356	H600	13I34-	2	35
227	91.7	3.1	805	91.7	9.019	37.190	H850	13I34-	2	43
228	90.2	2.8	850	90.2	10.232	37.799	H850	13I34-	3	45
240	85.4	1.9	600	85.4	9.062	39.925	H600	13I34-	3	35
247	84.5	1.8	450	84.5	8.538	40.333	H450	13I34-	2	23
248	84.0	2.2	558	84.0	8.564	40.578	H600	13I34-	2	35
249	82.5	2.6	850	82.5	10.026	41.350	H850	13I34-	3	45
263	78.1	1.7	600	78.1	8.958	43.676	H600	13I34-	3	35
276	75.5	2.8	818	75.5	8.831	45.136	H850	13I34-	2	43
299	69.7	1.2	366	69.7	8.475	48.950	H450	13I34-	2	23
300	68.4	1.3	450	68.4	8.656	49.867	H450	13I34-	3	24
301	69.2	1.5	456	69.2	8.493	49.247	H600	13I34-	2	35
318	64.7	2.3	850	64.7	9.569	52.743	H850	13I34-	3	45
335	61.2	1.6	600	61.2	8.764	55.710	H600	13I34-	3	35
389	52.8	1.9	850	52.8	9.292	64.610	H850	13I34-	3	45
411	50.0	1.3	600	50.0	8.651	68.244	H600	13I34-	3	35
474	43.3	2.7	1500	43.3	11.083	78.794	H1500	13I34-	3	75
506	40.5	1.6	850	40.5	8.851	84.096	H850	13I34-	3	45
535	38.4	1.1	600	38.4	8.517	88.826	H600	13I34-	3	35
630	32.6	1.3	850	32.6	8.705	104.607	H850	13I34-	3	45
756	27.1	1.9	1500	27.1	9.972	125.632	H1500	13I34-	3	75
815	25.2	1.0	850	25.2	8.553	135.373	H850	13I34-	3	45
927	22.1	1.6	1500	22.1	9.368	153.976	H1500	13I34-	3	75
1218	16.9	1.2	1500	16.9	8.976	202.237	H1500	13I34-	3	75
1335	15.1	1.1	1500	15.1	9.022	225.125	H1500	13I34-	4	78
1344	15.0	1.9	2650	15.0	9.352	226.604	H3000	13I34-	4	123
1735	11.7	1.7	3000	11.7	9.519	292.511	H3000	13I34-	4	123
2232	9.1	1.3	3000	9.1	8.970	376.393	H3000	13I34-	4	123
2710	7.5	1.1	3000	7.5	8.881	457.048	H3000	13I34-	4	123

Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors



3.8 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
66.0	534	4.5	305	534	50.097	3.147	H850	17N17-	2	57
68.0	514	3.4	240	514	42.900	3.267	H600	17N17-	2	48
71.0	496	2.3	165	496	37.225	3.389	H320	17N17-	2	33
72.0	488	3.4	256	488	40.943	3.444	H450	17N17-	2	37
91.0	385	4.0	378	385	44.786	4.362	H850	17N17-	2	57
93.0	375	3.1	297	375	40.253	4.480	H600	17N17-	2	48
97.0	362	1.9	189	362	36.815	4.648	H320	17N17-	2	33
99.0	356	2.9	293	356	39.213	4.724	H450	17N17-	2	37
112	313	3.7	429	313	42.388	5.368	H850	17N17-	2	57
120	293	2.7	339	293	38.866	5.733	H600	17N17-	2	48
124	283	4.3	551	283	46.432	5.946	H850	17N17-	2	57
126	278	2.5	323	278	38.231	6.045	H450	17N17-	2	37
127	276	1.7	227	276	37.655	6.083	H320	17N17-	2	33
130	269	5.3	606	269	54.863	6.245	H1500	17N17-	2	87
135	260	2.9	404	260	40.444	6.456	H600	17N17-	2	48
138	254	2.3	334	254	37.976	6.613	H450	17N17-	2	37
172	204	3.5	615	204	42.878	8.241	H850	17N17-	2	57
174	201	1.4	249	201	37.044	8.343	H320	17N17-	2	33
184	191	1.9	370	191	38.404	8.800	H450	17N17-	2	37
185	190	2.5	487	190	38.947	8.853	H600	17N17-	2	48
212	166	3.0	667	166	41.129	10.143	H850	17N17-	2	57
223	157	1.2	265	157	36.723	10.677	H320	17N17-	2	33
235	149	1.6	400	149	37.737	11.262	H450	17N17-	2	37
236	148	2.2	537	148	38.069	11.330	H600	17N17-	2	48
237	148	2.8	696	148	40.223	11.360	H850	17N17-	2	57
237	148	4.8	1102	148	48.806	11.356	H1500	17N17-	2	87
242	145	5.2	1127	145	66.315	11.619	H3000	17N17-	2	129
244	144	1.1	271	144	36.625	11.680	H320	17N17-	2	33
257	136	1.5	411	136	37.563	12.320	H450	17N17-	2	37
259	136	2.1	553	136	37.841	12.395	H600	17N17-	2	48
285	123	4.2	1240	123	46.063	13.673	H1500	17N17-	2	87
302	116	2.4	758	116	39.061	14.490	H850	17N17-	2	57
328	107	1.3	441	107	37.169	15.714	H450	17N17-	2	37
330	106	1.8	600	106	37.340	15.810	H600	17N17-	2	48
350	100	3.6	1304	100	43.834	16.763	H1500	17N17-	2	87
370	94.6	2.1	814	94.6	38.387	17.750	H850	17N17-	2	57
391	89.6	3.6	1451	89.6	51.200	18.752	H3000	17N17-	2	129
402	87.3	1.1	448	87.3	36.925	19.250	H450	17N17-	2	37
404	86.7	1.4	600	86.7	37.038	19.367	H600	17N17-	2	48
474	74.0	2.8	1383	74.0	40.766	22.711	H1500	17N17-	2	87
481	72.9	3.0	1493	72.9	47.350	23.044	H3000	17N17-	2	129
482	72.7	1.7	850	72.7	37.653	23.103	H850	17N17-	2	57
526	66.6	1.1	600	66.6	36.579	25.207	H600	17N17-	2	48
575	60.9	2.5	1433	60.9	39.627	27.578	H1500	17N17-	2	87
591	59.3	1.4	850	59.3	37.141	28.315	H850	17N17-	2	57
607	56.9	1.4	850	56.9	38.723	29.536	H850	17N17-	3	58
622	56.3	2.5	1547	56.3	43.304	29.822	H3000	17N17-	2	129
744	47.1	2.0	1485	47.1	38.325	35.689	H1500	17N17-	2	87
755	46.4	2.1	1572	46.4	41.377	36.193	H3000	17N17-	2	129
777	44.4	1.1	850	44.4	37.932	37.799	H850	17N17-	3	58
904	38.8	1.7	1500	38.8	37.711	43.313	H1500	17N17-	2	87



Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors

Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
921	37.5	1.6	1500	37.5	42.404	44.814	H1500	17N17-	3	89
954	36.7	1.7	1598	36.7	39.543	45.750	H3000	17N17-	2	129
970	35.6	2.9	2830	35.6	51.742	47.186	H3000	17N17-	3	134
1105	31.2	2.7	2950	31.2	48.174	53.770	H3000	17N17-	3	134
1269	27.2	1.2	1500	27.2	40.157	61.774	H1500	17N17-	3	89
1330	25.9	2.3	3000	25.9	45.627	64.744	H3000	17N17-	3	134
1631	21.2	1.8	3000	21.2	43.544	79.375	H3000	17N17-	3	134
2210	15.6	1.4	3000	15.6	40.608	107.541	H3000	17N17-	3	134
2683	12.9	1.1	3000	12.9	39.519	130.585	H3000	17N17-	3	134

Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors



3.9 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
34.0	1058	5.2	190	789	26.100	3.267	H600	14L35-	2	39
36.0	1020	2.7	126	786	20.730	3.389	H210	14L35-	2	23
36.0	1020	3.5	165	831	20.425	3.389	H320	14L35-	2	25
36.0	1003	5.2	201	749	24.143	3.444	H450	14L35-	2	28
47.0	771	4.8	261	656	23.453	4.480	H600	14L35-	2	39
49.0	743	2.2	143	649	20.177	4.648	H210	14L35-	2	23
49.0	743	2.9	189	687	20.015	4.648	H320	14L35-	2	25
49.0	731	4.5	275	614	22.413	4.724	H450	14L35-	2	28
56.0	644	5.6	313	543	25.588	5.368	H850	14L35-	2	48
60.0	603	4.3	334	580	22.066	5.733	H600	14L35-	2	39
63.0	572	3.9	323	539	21.431	6.045	H450	14L35-	2	28
64.0	568	2.7	227	438	20.855	6.083	H320	14L35-	2	25
65.0	553	1.8	158	381	20.384	6.250	H210	14L35-	2	23
68.0	535	4.5	376	388	23.644	6.456	H600	14L35-	2	39
69.0	522	3.7	334	504	21.176	6.613	H450	14L35-	2	28
87.0	414	2.2	249	359	20.244	8.343	H320	14L35-	2	25
90.0	403	1.4	171	288	19.993	8.571	H210	14L35-	2	23
92.0	393	3.0	370	304	21.604	8.800	H450	14L35-	2	28
93.0	390	4.0	487	320	22.147	8.853	H600	14L35-	2	39
106	341	4.8	590	278	24.329	10.143	H850	14L35-	2	48
112	324	1.8	265	290	19.923	10.677	H320	14L35-	2	25
118	307	2.6	400	266	20.937	11.262	H450	14L35-	2	28
119	305	3.4	537	281	21.269	11.330	H600	14L35-	2	39
119	304	4.4	661	254	23.423	11.360	H850	14L35-	2	48
122	296	1.7	271	267	19.825	11.680	H320	14L35-	2	25
126	288	1.1	186	219	19.697	12.000	H210	14L35-	2	23
129	280	2.4	411	249	20.763	12.320	H450	14L35-	2	28
130	279	3.2	553	263	21.041	12.395	H600	14L35-	2	39
143	253	5.6	796	213	29.263	13.673	H1500	14L35-	2	78
152	238	3.8	758	226	22.261	14.490	H850	14L35-	2	48
156	232	1.4	294	230	19.644	14.898	H320	14L35-	2	25
165	220	2.0	441	210	20.369	15.714	H450	14L35-	2	28
166	219	2.7	600	219	20.540	15.810	H600	14L35-	2	39
186	195	3.3	814	195	21.587	17.750	H850	14L35-	2	48
191	189	1.2	313	189	19.538	18.250	H320	14L35-	2	25
202	180	1.7	448	180	20.125	19.250	H450	14L35-	2	28
203	178	2.2	600	178	20.238	19.367	H600	14L35-	2	39
238	152	3.8	1182	152	23.966	22.711	H1500	14L35-	2	78
242	150	2.7	850	150	20.853	23.103	H850	14L35-	2	48
263	138	1.3	450	138	19.712	25.056	H450	14L35-	2	28
264	137	1.7	600	137	19.779	25.207	H600	14L35-	2	39
289	125	3.7	1225	125	22.827	27.578	H1500	14L35-	2	78
297	122	2.5	850	122	20.341	28.315	H850	14L35-	2	48
305	117	2.1	850	109	21.923	29.536	H850	14L35-	3	49
312	116	3.6	1321	116	26.504	29.822	H3000	14L35-	2	120
322	111	1.4	600	102	20.308	31.197	H600	14L35-	3	40
327	111	1.2	450	111	19.579	31.167	H450	14L35-	2	28
329	110	1.6	600	110	19.623	31.356	H600	14L35-	2	39
374	96.8	2.9	1269	96.8	21.525	35.689	H1500	14L35-	2	78
379	95.5	3.0	1342	95.5	24.577	36.193	H3000	14L35-	2	120
390	92.9	1.9	850	92.9	19.919	37.190	H850	14L35-	2	48



Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors

Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
390	91.4	1.7	850	87.6	21.132	37.799	H850	14L35-	3	49
412	86.5	1.1	600	80.8	19.962	39.925	H600	14L35-	3	40
427	83.6	1.5	850	79.6	20.926	41.350	H850	14L35-	3	49
451	79.1	1.0	600	75.3	19.858	43.676	H600	14L35-	3	40
454	79.8	2.7	1289	79.8	20.911	43.313	H1500	14L35-	2	78
473	76.5	1.7	850	76.5	19.731	45.136	H850	14L35-	2	48
479	75.5	2.7	1364	75.5	22.743	45.750	H3000	14L35-	2	120
544	65.5	1.3	850	65.5	20.469	52.743	H850	14L35-	3	49
574	63.1	2.2	1309	63.1	20.334	54.750	H1500	14L35-	2	78
638	55.9	2.0	1500	51.4	23.357	61.774	H1500	14L35-	3	80
667	53.5	1.1	850	53.5	20.192	64.610	H850	14L35-	3	49
668	53.4	3.9	3000	53.4	28.827	64.744	H3000	14L35-	3	125
813	43.8	1.6	1500	41.5	21.983	78.794	H1500	14L35-	3	80
996	35.8	1.4	1500	35.8	21.402	96.522	H1500	14L35-	3	80
1110	32.1	2.6	3000	32.1	23.808	107.541	H3000	14L35-	3	125
1297	27.5	1.1	1500	27.5	20.872	125.632	H1500	14L35-	3	80
1348	26.5	2.1	3000	26.5	22.719	130.585	H3000	14L35-	3	125
1744	20.4	1.6	3000	20.4	21.461	168.993	H3000	14L35-	3	125
2117	16.8	1.4	3000	16.8	20.867	205.096	H3000	14L35-	3	125
2304	15.2	1.1	2650	15.2	20.252	226.604	H3000	14L35-	4	128
2676	13.3	1.1	3000	13.3	20.307	259.250	H3000	14L35-	3	125

Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors



6.4 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
111	540	2.7	306	540	86.097	3.147	H850	19S17-	2	80
115	520	2.0	240	520	78.900	3.267	H600	19S17-	2	71
121	494	2.0	256	494	76.943	3.444	H450	19S17-	2	60
132	454	5.6	654	454	109.796	3.743	H1500	19S17-	2	110
154	390	2.4	378	390	80.786	4.362	H850	19S17-	2	80
158	380	1.8	297	380	76.253	4.480	H600	19S17-	2	71
166	360	1.7	293	360	75.213	4.724	H450	19S17-	2	60
168	357	5.3	831	357	99.688	4.758	H1500	19S17-	2	110
189	317	2.2	429	317	78.388	5.368	H850	19S17-	2	80
202	297	1.6	339	297	74.866	5.733	H600	19S17-	2	71
209	286	2.5	551	286	82.432	5.946	H850	19S17-	2	80
213	281	1.5	323	281	74.231	6.045	H450	19S17-	2	60
220	272	4.8	1091	272	90.863	6.245	H1500	19S17-	2	110
227	263	1.7	404	263	76.444	6.456	H600	19S17-	2	71
233	257	1.4	334	257	73.976	6.613	H450	19S17-	2	60
267	224	4.4	1217	224	95.724	7.592	H1500	19S17-	2	110
290	206	2.0	615	206	78.878	8.241	H850	19S17-	2	80
310	193	1.1	370	193	74.404	8.800	H450	19S17-	2	60
312	192	1.5	487	192	74.947	8.853	H600	19S17-	2	71
357	168	1.8	667	168	77.129	10.143	H850	19S17-	2	80
399	150	1.3	537	150	74.069	11.330	H600	19S17-	2	71
400	150	3.4	1400	150	84.806	11.356	H1500	19S17-	2	110
400	150	1.7	696	150	76.223	11.360	H850	19S17-	2	80
409	146	5.6	2029	146	102.315	11.619	H3000	19S17-	2	151
437	137	1.2	553	137	73.841	12.395	H600	19S17-	2	71
482	124	2.9	1430	124	82.063	13.673	H1500	19S17-	2	110
501	119	4.8	2486	119	95.535	14.233	H3000	19S17-	2	151
510	117	1.4	758	117	75.061	14.490	H850	19S17-	2	80
557	108	1.0	600	108	73.340	15.810	H600	19S17-	2	71
590	101	2.4	1450	101	79.834	16.763	H1500	19S17-	2	110
625	95.8	1.3	814	95.8	74.387	17.750	H850	19S17-	2	80
660	90.7	4.0	2750	90.7	87.200	18.752	H3000	19S17-	2	151
800	74.9	1.8	1500	74.9	76.766	22.711	H1500	19S17-	2	110
812	73.8	3.4	2900	73.8	83.350	23.044	H3000	19S17-	2	151
814	73.6	1.0	850	73.6	73.653	23.103	H850	19S17-	2	80
971	61.6	1.5	1500	61.6	75.627	27.578	H1500	19S17-	2	110
1050	57.0	2.9	3000	57.0	79.304	29.822	H3000	19S17-	2	151
1275	47.0	2.4	3000	47.0	77.377	36.193	H3000	19S17-	2	151
1637	36.0	1.7	2830	36.0	87.742	47.186	H3000	19S17-	3	156
1865	31.6	1.6	2950	31.6	84.174	53.770	H3000	19S17-	3	156
2246	26.3	1.3	3000	26.3	81.627	64.744	H3000	19S17-	3	156
2754	21.4	1.1	3000	21.4	79.544	79.375	H3000	19S17-	3	156



Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors

6.9 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
58.0	1106	4.0	305	662	50.097	3.147	H850	17N35-	2	57
60.0	1065	3.0	240	703	42.900	3.267	H600	17N35-	2	48
62.0	1027	2.0	165	741	37.225	3.389	H320	17N35-	2	33
63.0	1010	3.1	256	669	40.943	3.444	H450	17N35-	2	37
80.0	798	3.6	378	537	44.786	4.362	H850	17N35-	2	57
83.0	777	2.7	297	583	40.253	4.480	H600	17N35-	2	48
86.0	749	1.7	189	574	36.815	4.648	H320	17N35-	2	33
87.0	737	2.5	293	545	39.213	4.724	H450	17N35-	2	37
99.0	648	3.3	429	485	42.388	5.368	H850	17N35-	2	57
106	607	2.4	339	517	38.866	5.733	H600	17N35-	2	48
110	585	3.8	551	346	46.432	5.946	H850	17N35-	2	57
111	576	2.2	323	479	38.231	6.045	H450	17N35-	2	37
112	572	1.5	227	356	37.655	6.083	H320	17N35-	2	33
115	557	4.7	606	364	54.863	6.245	H1500	17N35-	2	87
119	539	2.6	404	343	40.444	6.456	H600	17N35-	2	48
122	526	2.1	334	449	37.976	6.613	H450	17N35-	2	37
152	422	3.1	615	275	42.878	8.241	H850	17N35-	2	57
154	417	1.2	249	273	37.044	8.343	H320	17N35-	2	33
162	396	1.7	370	256	38.404	8.800	H450	17N35-	2	37
163	393	2.3	487	283	38.947	8.853	H600	17N35-	2	48
187	343	2.7	667	246	41.129	10.143	H850	17N35-	2	57
197	326	1.0	265	225	36.723	10.677	H320	17N35-	2	33
208	309	1.5	400	211	37.737	11.262	H450	17N35-	2	37
209	307	1.9	537	248	38.069	11.330	H600	17N35-	2	48
209	307	4.2	1102	214	48.806	11.356	H1500	17N35-	2	87
209	306	2.5	696	226	40.223	11.360	H850	17N35-	2	57
214	300	4.6	1127	195	66.315	11.619	H3000	17N35-	2	129
227	283	1.4	411	195	37.563	12.320	H450	17N35-	2	37
228	281	1.8	553	227	37.841	12.395	H600	17N35-	2	48
252	255	3.7	1240	196	46.063	13.673	H1500	17N35-	2	87
267	240	2.1	758	201	39.061	14.490	H850	17N35-	2	57
290	222	1.2	441	163	37.169	15.714	H450	17N35-	2	37
291	220	1.6	600	185	37.340	15.810	H600	17N35-	2	48
309	208	3.2	1304	168	43.834	16.763	H1500	17N35-	2	87
327	196	1.9	814	173	38.387	17.750	H850	17N35-	2	57
346	186	3.2	1451	150	51.200	18.752	H3000	17N35-	2	129
357	180	1.3	600	159	37.038	19.367	H600	17N35-	2	48
419	153	2.5	1383	137	40.766	22.711	H1500	17N35-	2	87
425	151	2.7	1493	135	47.350	23.044	H3000	17N35-	2	129
426	151	1.5	850	135	37.653	23.103	H850	17N35-	2	57
508	126	2.4	1433	113	39.627	27.578	H1500	17N35-	2	87
522	123	1.4	850	110	37.141	28.315	H850	17N35-	2	57
536	118	1.2	850	81.9	38.723	29.536	H850	17N35-	3	58
550	117	2.4	1547	104	43.304	29.822	H3000	17N35-	2	129
658	97.5	1.9	1485	87.2	38.325	35.689	H1500	17N35-	2	87
667	96.2	2.0	1572	86.0	41.377	36.193	H3000	17N35-	2	129
798	80.3	1.8	1500	71.8	37.711	43.313	H1500	17N35-	2	87
814	77.7	1.4	1500	48.5	42.404	44.814	H1500	17N35-	3	89
843	76.1	1.8	1598	68.0	39.543	45.750	H3000	17N35-	2	129
857	73.8	2.8	2830	55.9	51.742	47.186	H3000	17N35-	3	134
976	64.7	2.6	2950	52.7	48.174	53.770	H3000	17N35-	3	134

Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors



Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
1122	56.3	1.2	1500	38.3	40.157	61.774	H1500	17N35-	3	89
1176	53.8	2.2	3000	47.6	45.627	64.744	H3000	17N35-	3	134
1441	43.8	1.8	3000	39.2	43.544	79.375	H3000	17N35-	3	134
1953	32.4	1.5	3000	28.9	40.608	107.541	H3000	17N35-	3	134
2371	26.6	1.2	3000	23.8	39.519	130.585	H3000	17N35-	3	134

11 kW

Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
223	457	3.3	775	444	217.796	3.743	H1500	21X17-	2	125
268	380	4.9	1309	375	257.626	4.496	H3000	21X17-	2	167
283	359	3.1	924	359	207.688	4.758	H1500	21X17-	2	125
352	290	4.4	1610	290	232.695	5.902	H3000	21X17-	2	167
372	274	2.8	1098	274	198.863	6.245	H1500	21X17-	2	125
378	270	4.8	1847	265	250.420	6.344	H3000	21X17-	2	167
452	225	2.6	1217	225	203.724	7.592	H1500	21X17-	2	125
496	205	4.2	2155	205	228.512	8.327	H3000	21X17-	2	167
676	151	2.0	1400	151	192.806	11.356	H1500	21X17-	2	125
692	147	3.3	2400	147	210.315	11.619	H3000	21X17-	2	167
815	125	1.7	1430	125	190.063	13.673	H1500	21X17-	2	125
848	120	2.9	2530	120	203.535	14.233	H3000	21X17-	2	167
999	102	1.4	1450	102	187.834	16.763	H1500	21X17-	2	125
1117	91.2	2.4	2750	91.2	195.200	18.752	H3000	21X17-	2	167
1373	74.2	2.0	2900	74.2	191.350	23.044	H3000	21X17-	2	167
2769	36.2	1.0	2830	36.2	195.742	47.186	H3000	21X17-	3	172



Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors

13.2 kW

Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
110	1115	2.1	306	566	86.097	3.147	H850	19S35-	2	80
114	1075	1.6	240	561	78.900	3.267	H600	19S35-	2	71
120	1019	1.6	256	536	76.943	3.444	H450	19S35-	2	60
131	938	4.5	654	476	109.796	3.743	H1500	19S35-	2	110
152	805	1.9	378	454	80.786	4.362	H850	19S35-	2	80
156	784	1.4	297	454	76.253	4.480	H600	19S35-	2	71
165	743	1.3	293	416	75.213	4.724	H450	19S35-	2	60
166	738	4.2	831	409	99.688	4.758	H1500	19S35-	2	110
188	654	1.7	429	398	78.388	5.368	H850	19S35-	2	80
200	612	1.3	339	386	74.866	5.733	H600	19S35-	2	71
208	590	2.0	551	298	82.432	5.946	H850	19S35-	2	80
211	581	1.2	323	348	74.231	6.045	H450	19S35-	2	60
218	562	3.8	1091	347	90.863	6.245	H1500	19S35-	2	110
225	544	1.4	404	261	76.444	6.456	H600	19S35-	2	71
231	531	1.1	334	327	73.976	6.613	H450	19S35-	2	60
265	462	3.5	1217	246	95.724	7.592	H1500	19S35-	2	110
288	426	1.6	615	220	78.878	8.241	H850	19S35-	2	80
309	397	1.2	487	209	74.947	8.853	H600	19S35-	2	71
354	346	1.4	667	188	77.129	10.143	H850	19S35-	2	80
396	310	1.0	537	176	74.069	11.330	H600	19S35-	2	71
397	309	2.7	1400	193	84.806	11.356	H1500	19S35-	2	110
397	309	1.3	696	171	76.223	11.360	H850	19S35-	2	80
406	302	4.5	2029	194	102.315	11.619	H3000	19S35-	2	151
478	257	2.3	1430	175	82.063	13.673	H1500	19S35-	2	110
497	247	3.8	2486	172	95.535	14.233	H3000	19S35-	2	151
506	242	1.1	758	145	75.061	14.490	H850	19S35-	2	80
585	209	1.9	1450	146	79.834	16.763	H1500	19S35-	2	110
655	187	3.2	2750	131	87.200	18.752	H3000	19S35-	2	151
793	155	1.4	1500	108	76.766	22.711	H1500	19S35-	2	110
805	152	2.7	2900	106	83.350	23.044	H3000	19S35-	2	151
963	127	1.3	1500	88.8	75.627	27.578	H1500	19S35-	2	110
1042	118	2.5	3000	82.1	79.304	29.822	H3000	19S35-	2	151
1264	97.0	2.0	3000	67.7	77.377	36.193	H3000	19S35-	2	151
1623	74.4	1.5	2830	43.8	87.742	47.186	H3000	19S35-	3	156
1850	65.3	1.4	2950	40.0	84.174	53.770	H3000	19S35-	3	156
2227	54.2	1.2	3000	34.3	81.627	64.744	H3000	19S35-	3	156

Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors



20.3 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
200	940	2.9	775	430	217.796	3.743	H1500	21X35-	2	125
240	783	4.3	1309	364	257.626	4.496	H3000	21X35-	2	167
254	740	2.7	924	371	207.688	4.758	H1500	21X35-	2	125
315	596	3.9	1610	315	232.695	5.902	H3000	21X35-	2	167
333	564	2.5	1098	315	198.863	6.245	H1500	21X35-	2	125
339	555	4.3	1847	257	250.420	6.344	H3000	21X35-	2	167
405	464	2.3	1217	221	203.724	7.592	H1500	21X35-	2	125
444	423	3.7	2155	220	228.512	8.327	H3000	21X35-	2	167
606	310	1.7	1400	167	192.806	11.356	H1500	21X35-	2	125
620	303	2.9	2400	173	210.315	11.619	H3000	21X35-	2	167
730	257	1.5	1430	142	190.063	13.673	H1500	21X35-	2	125
760	247	2.5	2530	142	203.535	14.233	H3000	21X35-	2	167
895	210	1.2	1450	119	187.834	16.763	H1500	21X35-	2	125
1001	188	2.1	2750	107	195.200	18.752	H3000	21X35-	2	167
1230	153	1.8	2900	87.4	191.350	23.044	H3000	21X35-	2	167



Dimensions

Notes on the basic dimensions

Gearbox	Without pre-stage	With pre-stage
g500-H45	2-stage	-
g500-H100 ... g500-H140	2-stage	3-stage
g500-H210 ... g500-H3000	2-/3-stage	4-stage

The ratio range of gearboxes with pre-stage is extended via an additional housing with gear stage between the gearbox and motor.

The basic dimensions are shown without pre-stage and are valid up to the following deviating dimensions for gearbox with pre-stage valid:

- Total length "L"
- Center distance "a" (gearbox output shaft – motor shaft)

Deviating dimensions: ▶ [Gearbox with pre-stage](#) [214](#)

Example

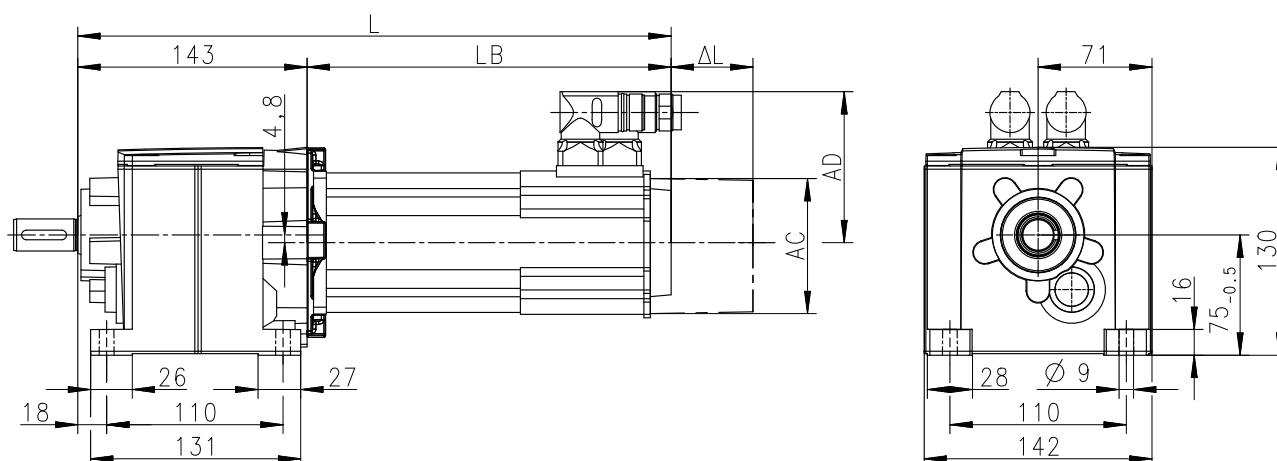
g500-H100 with MCA10

Gearbox version: Solid shaft with foot (VBR)

Explanation

Geared motor product

▶ [Designs](#) [12](#)



Motor		MCA
		10I40
Cooling type		Natural
Table content		Explanation
Total length	L	Total length of the drive with resolver
Motor length	LB	Length of the motor with resolver
Length of motor options	Δ L	Additional length (longest design) In detail ▶ Additional lengths 215
Motor diameter	AC	Motor diameter
Motor/connection distance	AD	Distance from motor centre to connector end



The dimensions shown in the dimensional drawings for the solid shafts with featherkey (V□□) also apply for solid shafts without a keyway (G□□).

Please observe the available output shaft designs!

▶ [The modular system](#) [10](#)



If the mounting area (foot support) towards the motor is longer than the gearbox foot, some motors collide with the mounting area!

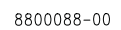
For an accurate check of the geometrical data, Lenze recommends the use of the »Product Finder« at www.Lenze.com.

Dimensions

Basic dimensions



Gearbox version: Solid shaft with foot (VBR)

84

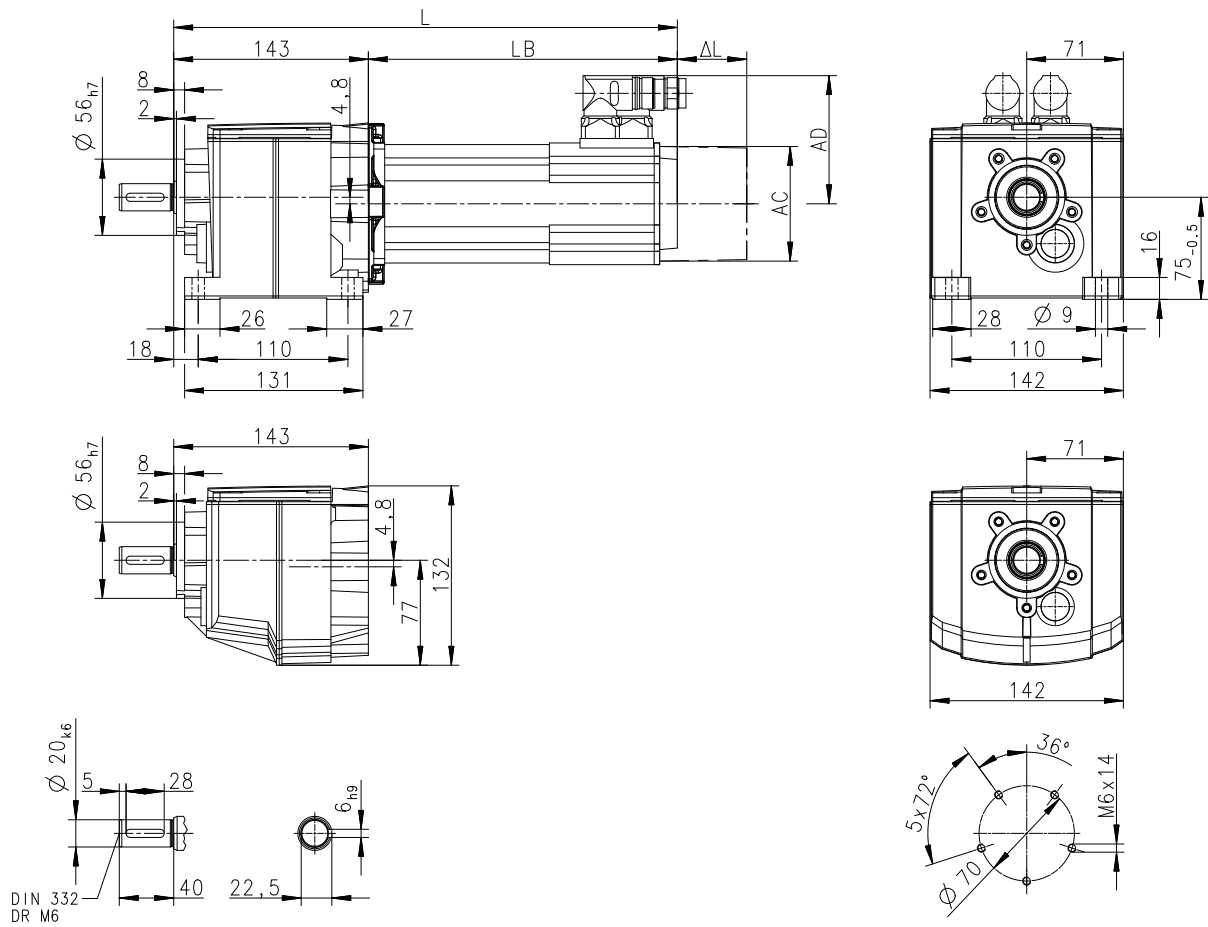


Technical data

Dimensions
Basic dimensions

g500-H100, 2-stage with MCA10

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800090-00

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	402
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

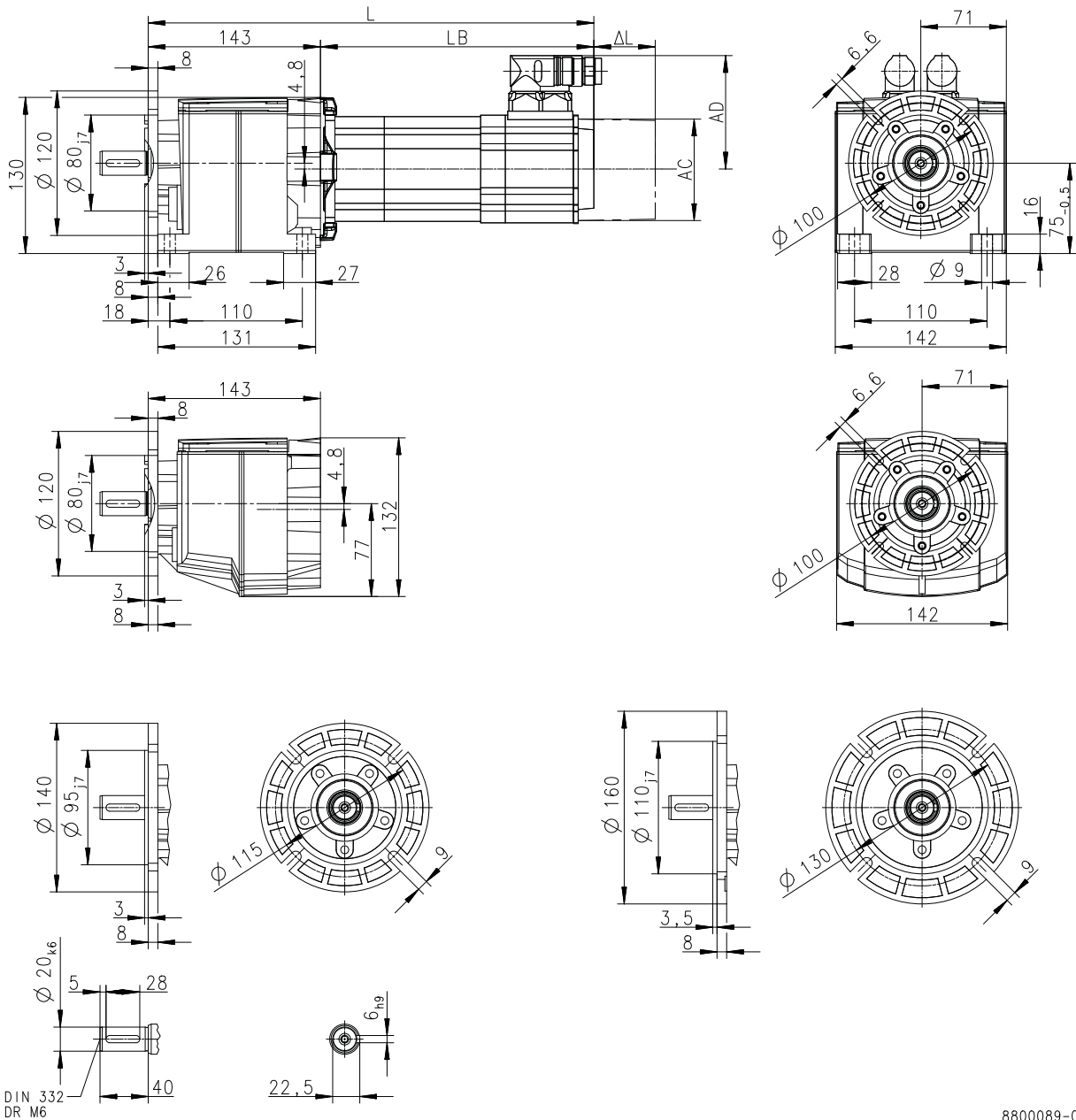
Technical data

Dimensions
Basic dimensions



g500-H100, 2-stage with MCA10

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800089-03

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	402
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

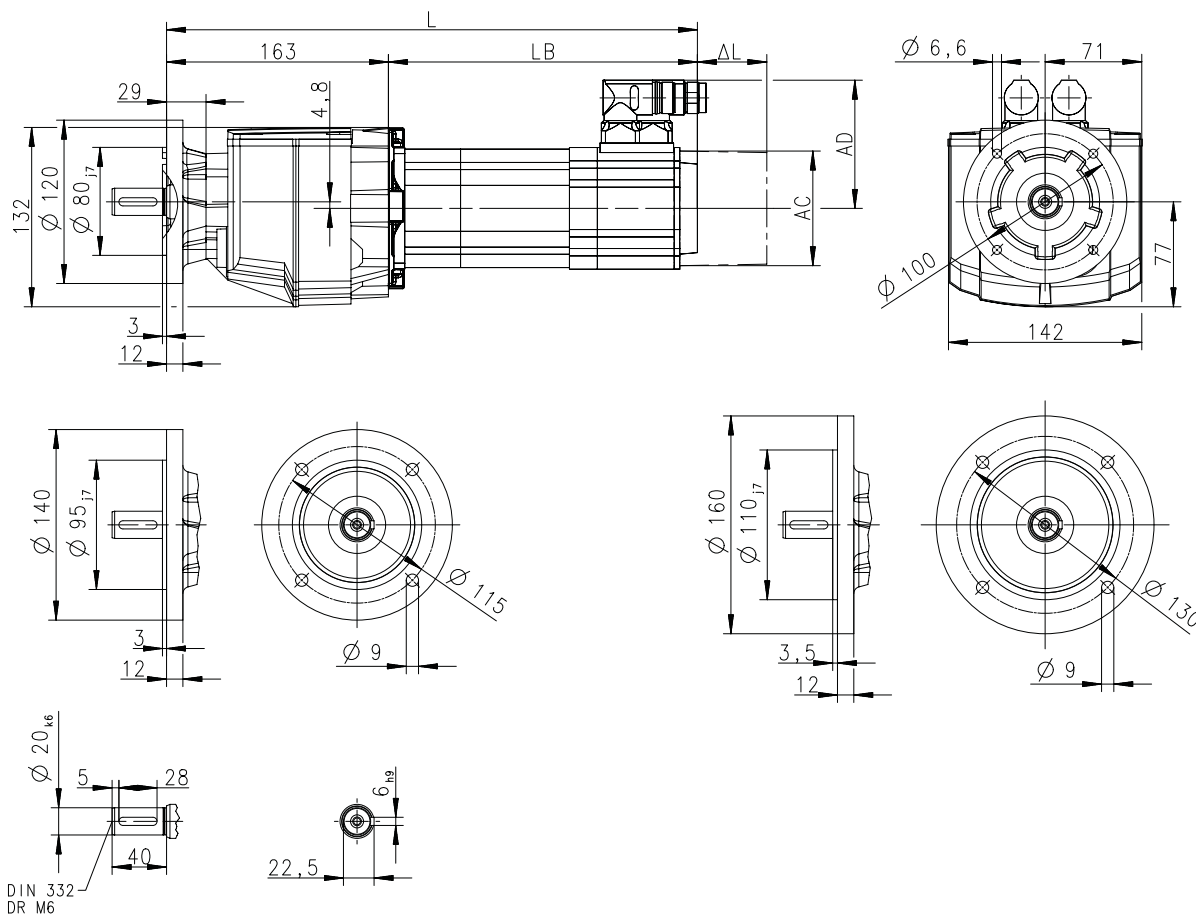


Technical data

Dimensions
Basic dimensions

g500-H100, 2-stage with MCA10

Gearbox version: Solid shaft and flange (VCP)



8800317-00

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	422
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

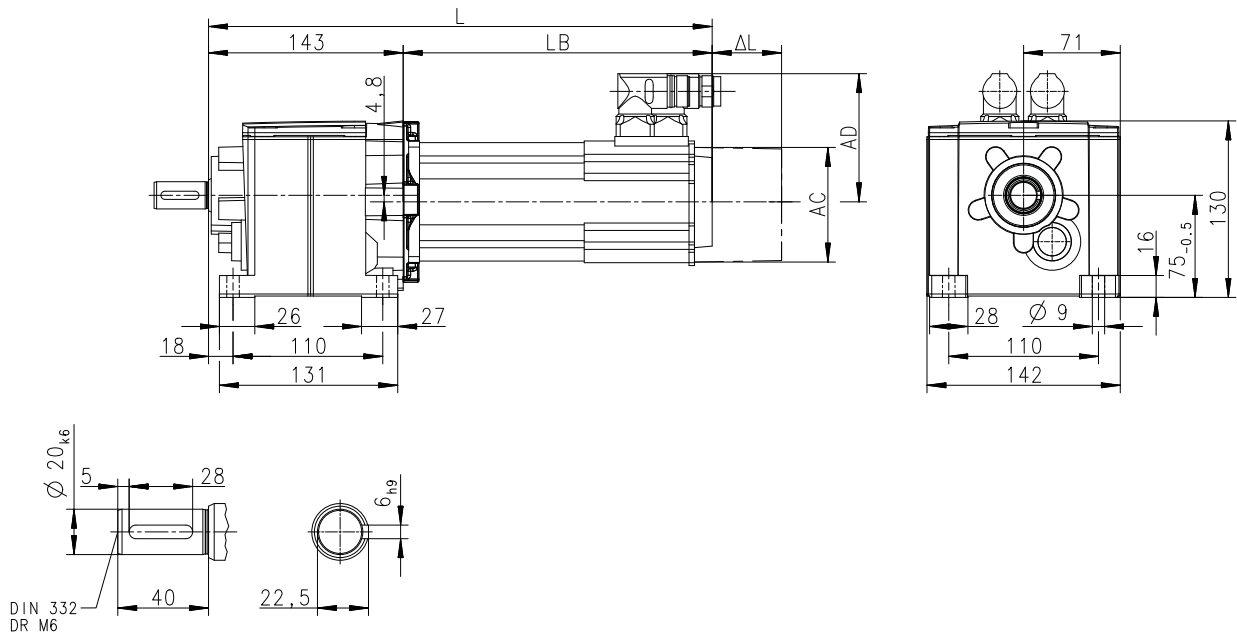
Technical data

Dimensions
Basic dimensions



g500-H100, 2-stage with MCA13

Gearbox version: Solid shaft with foot (VBR)



8800088-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	479	411
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

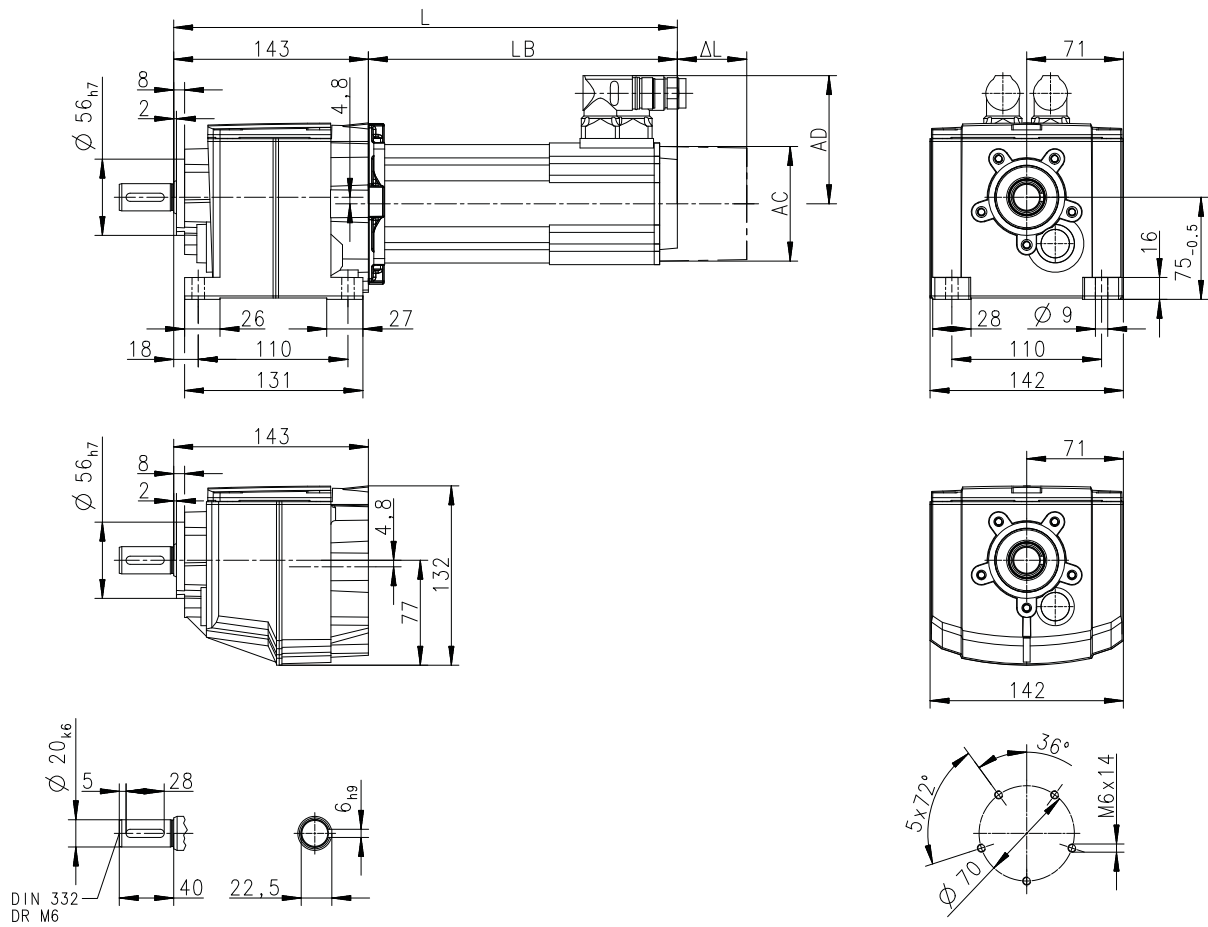


Technical data

Dimensions
Basic dimensions

g500-H100, 2-stage with MCA13

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800090-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	479	411
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

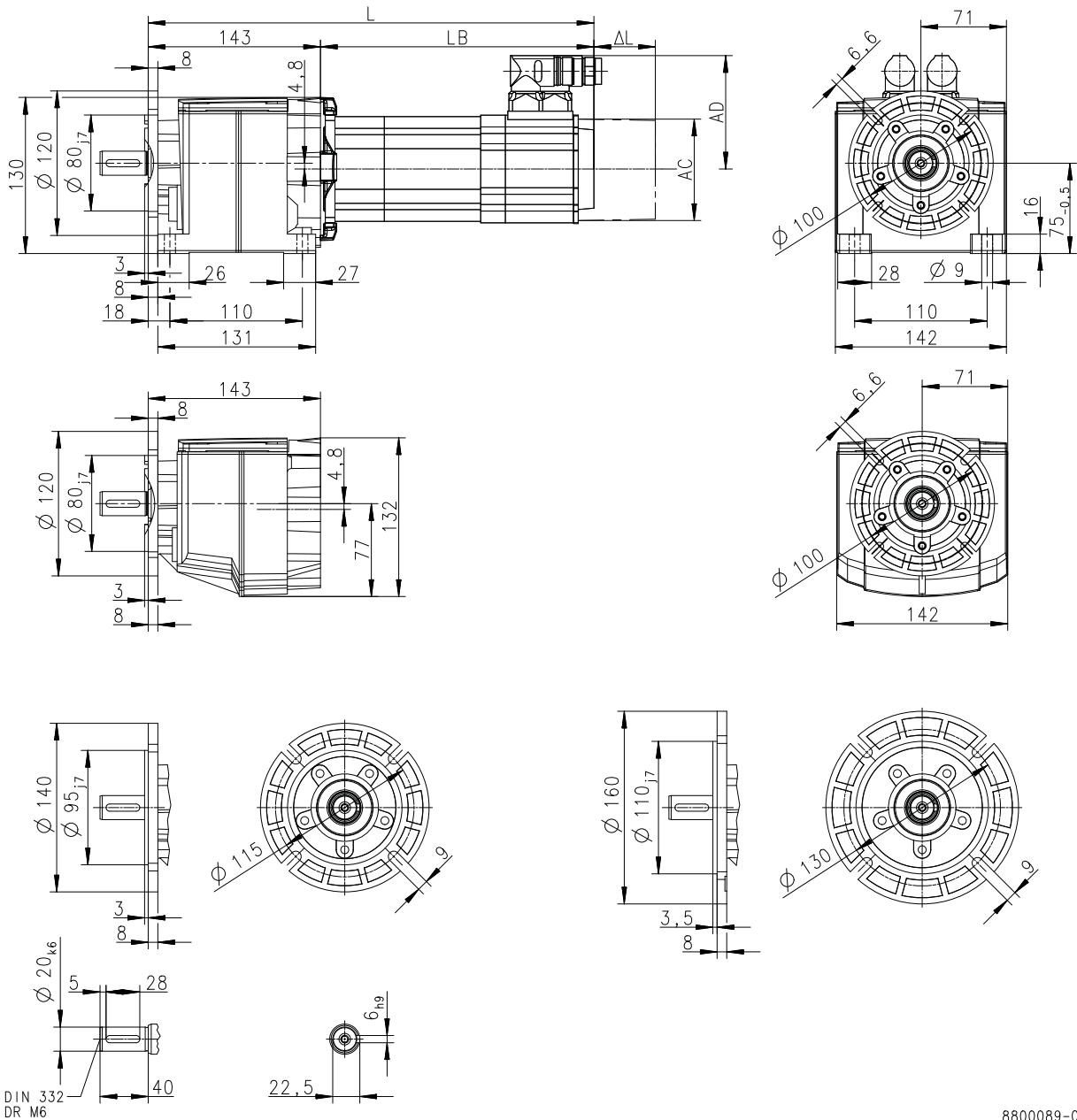
Technical data

Dimensions
Basic dimensions



g500-H100, 2-stage with MCA13

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800089-03

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	479	411
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

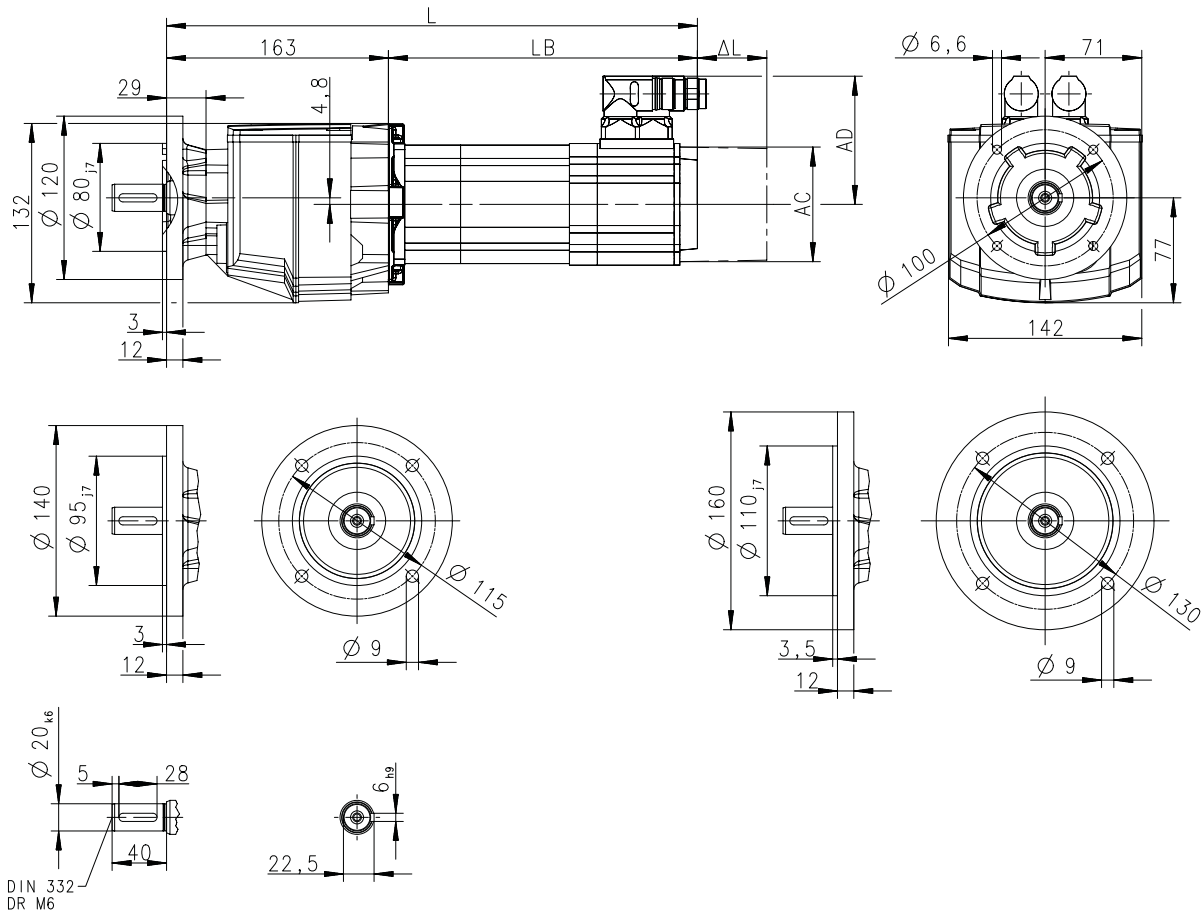


Technical data

Dimensions
Basic dimensions

g500-H100, 2-stage with MCA13

Gearbox version: Solid shaft and flange (VCP)



8800317-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	499	431
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

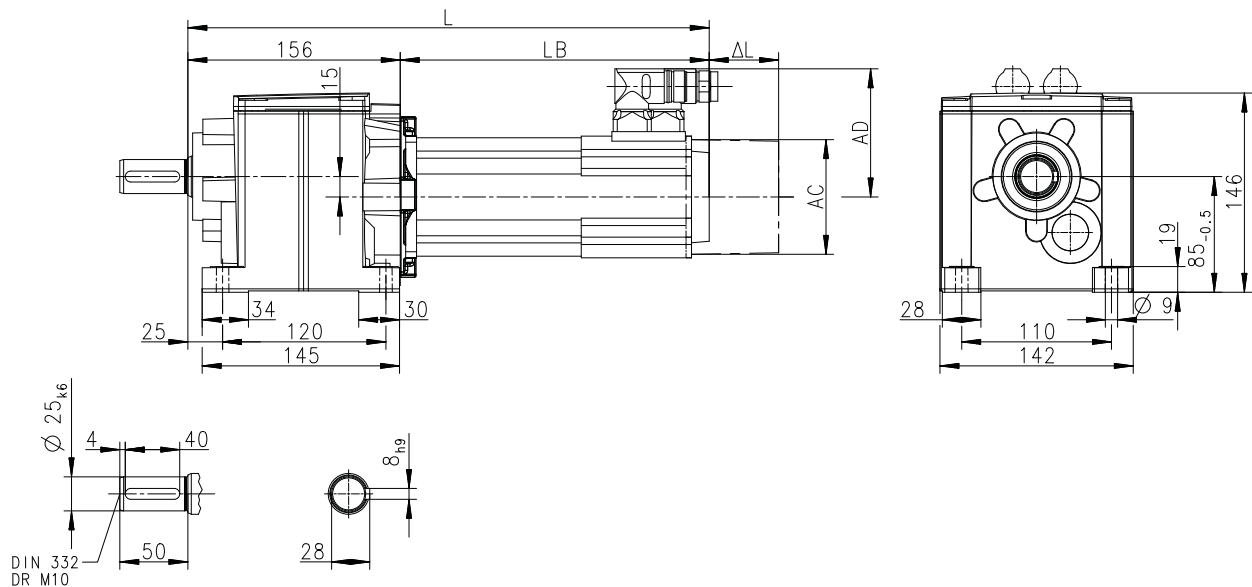
Technical data

Dimensions
Basic dimensions



g500-H140, 2-stage with MCA10

Gearbox version: Solid shaft with foot (VBR)



8800100-00

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	415
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

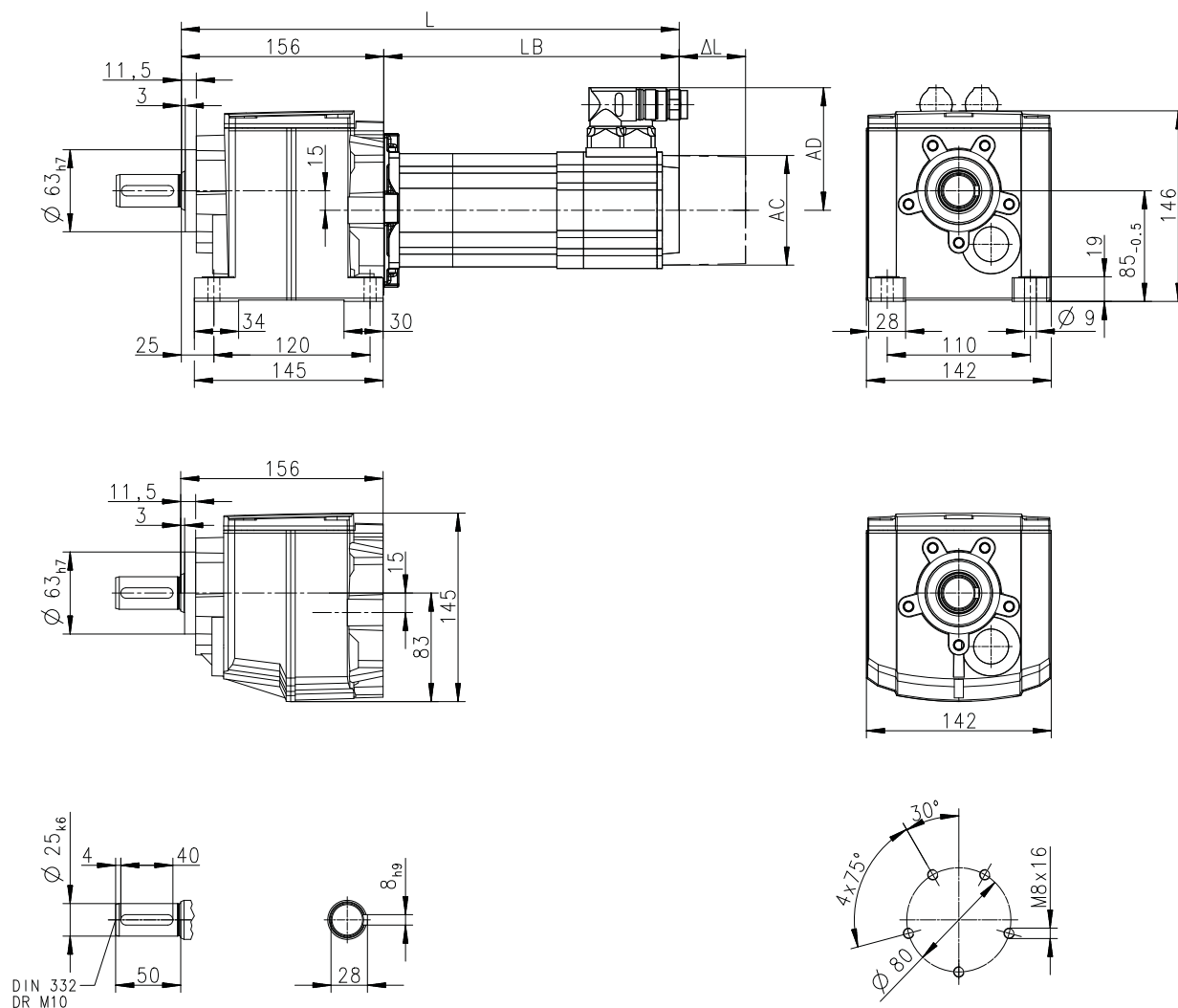


Technical data

Dimensions
Basic dimensions

g500-H140, 2-stage with MCA10

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800102-01

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	415
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

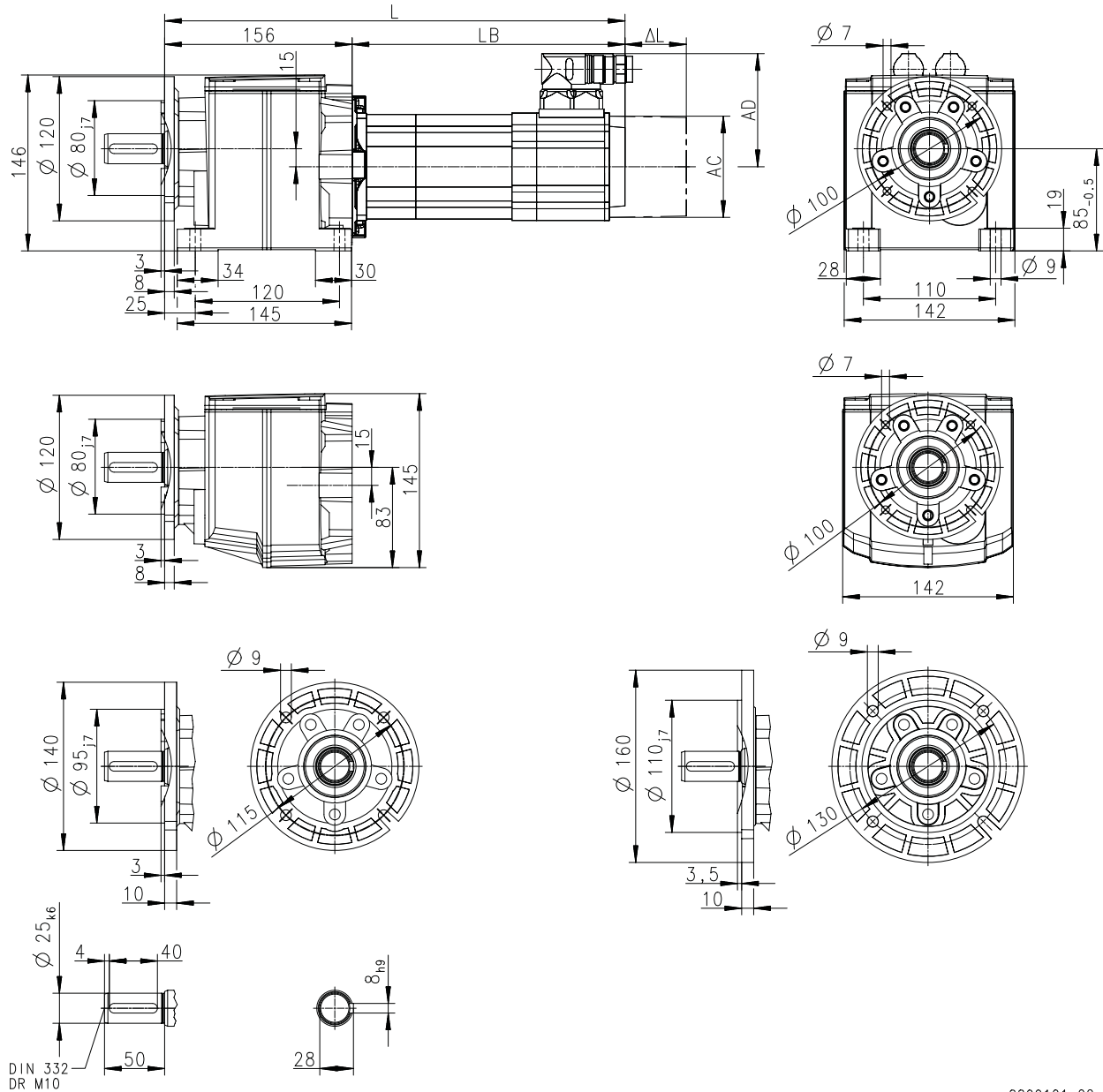
Technical data

Dimensions
Basic dimensions



g500-H140, 2-stage with MCA10

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800101-02

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	415
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

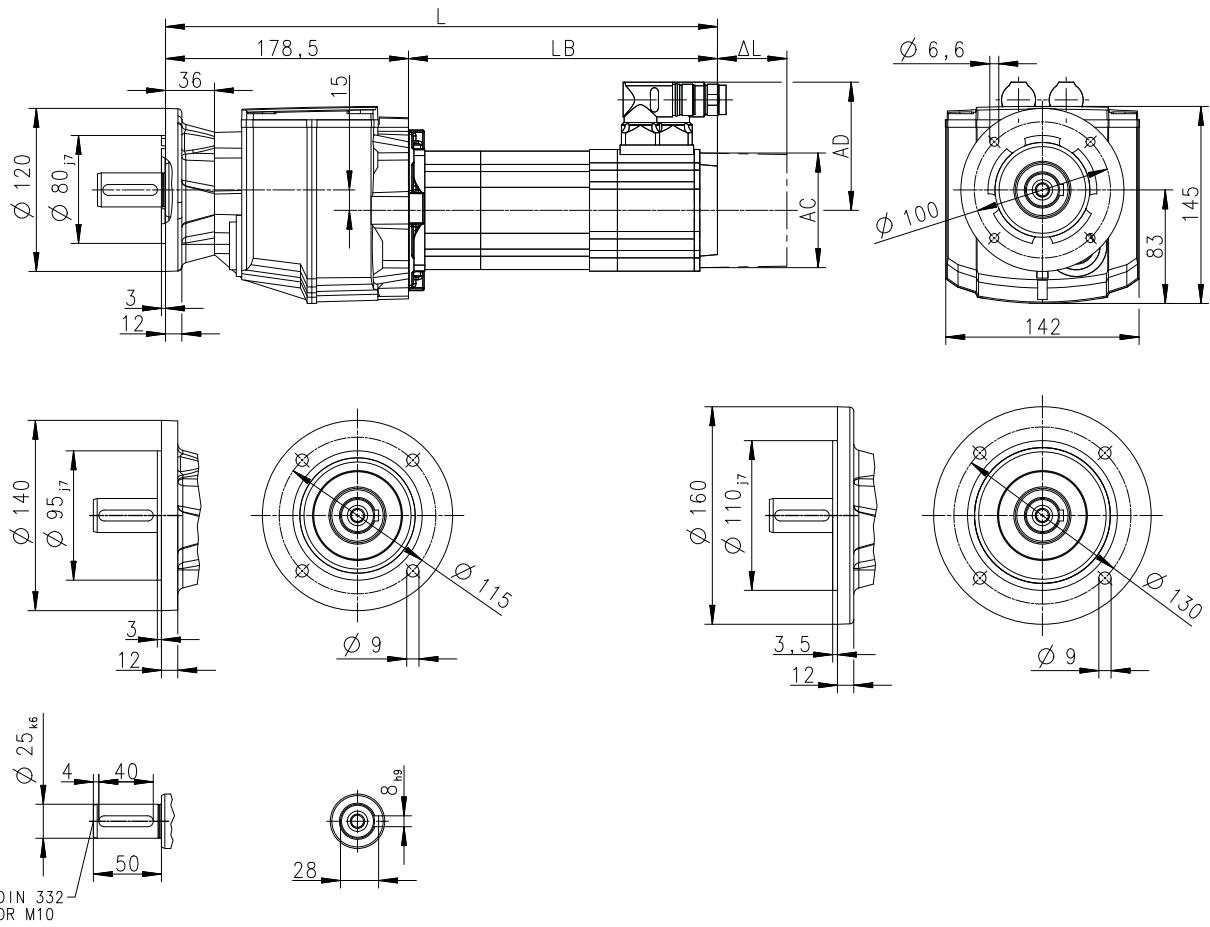


Technical data

Dimensions
Basic dimensions

g500-H140, 2-stage with MCA10

Gearbox version: Solid shaft and flange (VCP)



8800318-01

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	438
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

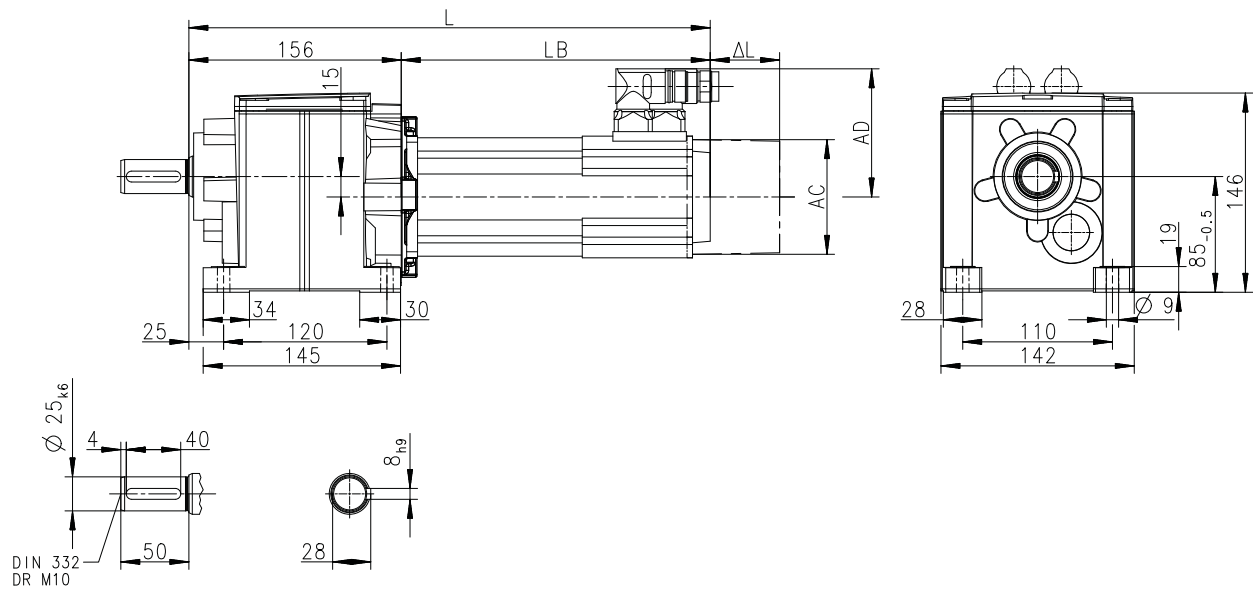
Technical data

Dimensions
Basic dimensions



g500-H140, 2-stage with MCA13

Gearbox version: Solid shaft with foot (VBR)



8800100-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	492	424
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102



g500-H140, 2-stage with MCA13

8800102-01

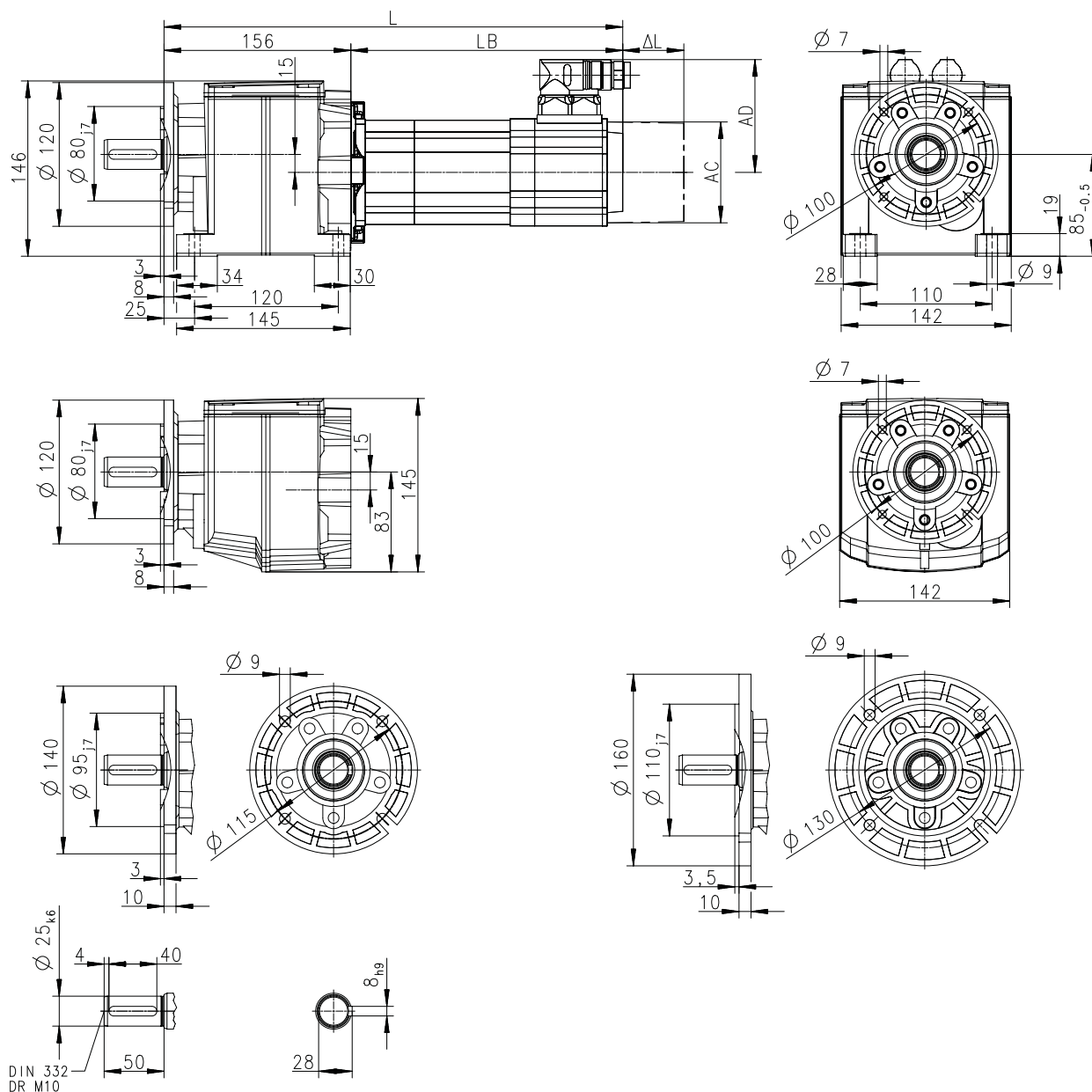
97

Dimensions

Basic dimensions



Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800101-02

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	492	424
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

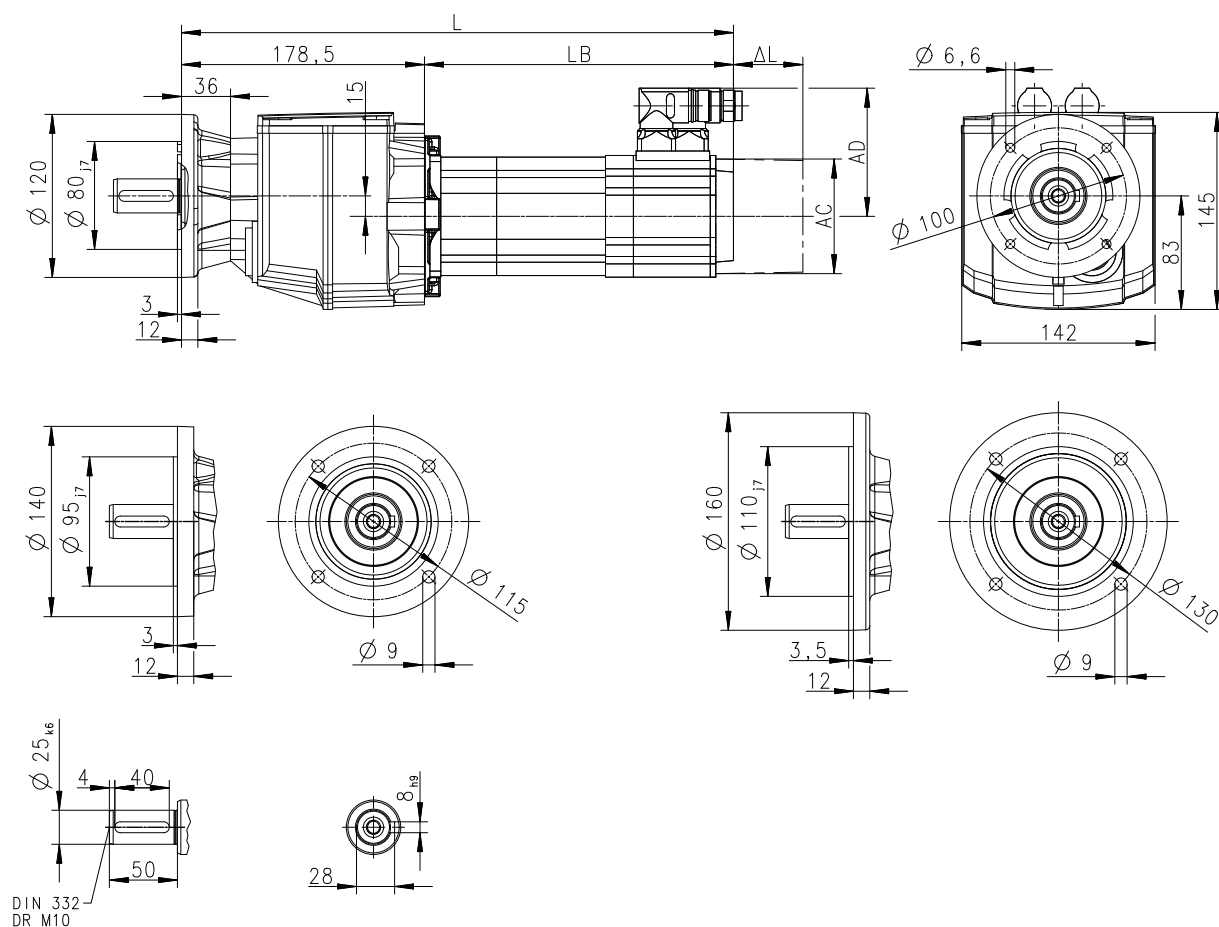


Technical data

Dimensions
Basic dimensions

g500-H140, 2-stage with MCA13

Gearbox version: Solid shaft and flange (VCP)



8800318-01

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	514	446
Motor length	LB	mm	336	268
Length of motor options	ΔL	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

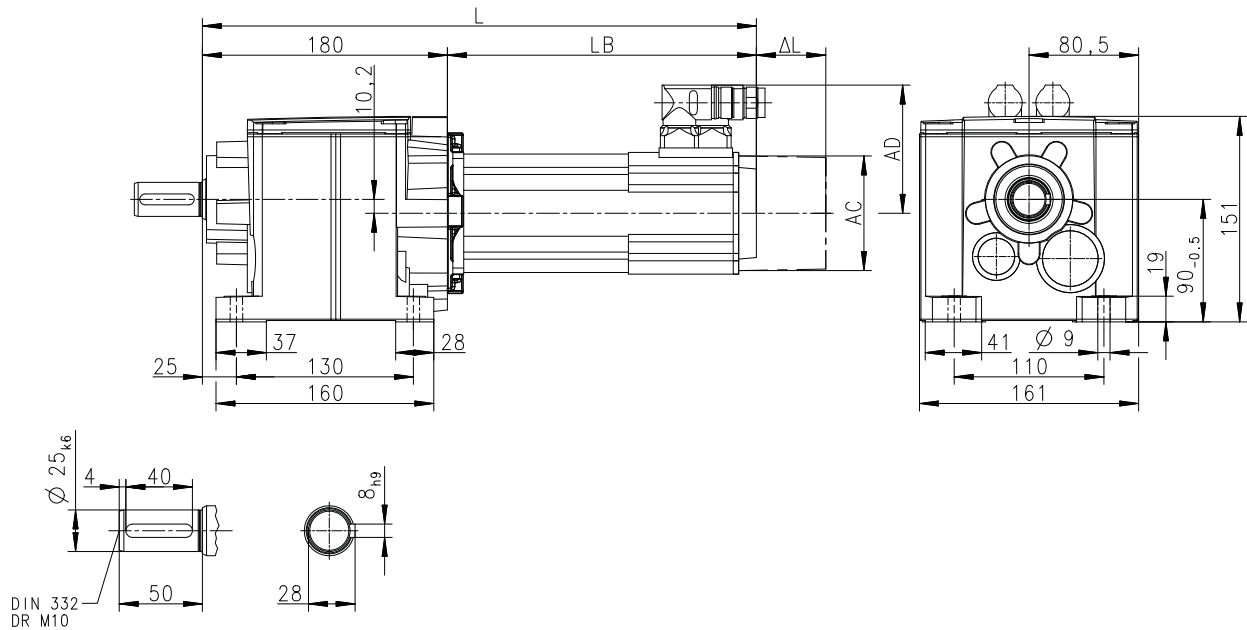
Technical data

Dimensions
Basic dimensions



g500-H210, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot (VBR)



8800112-00

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	439
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

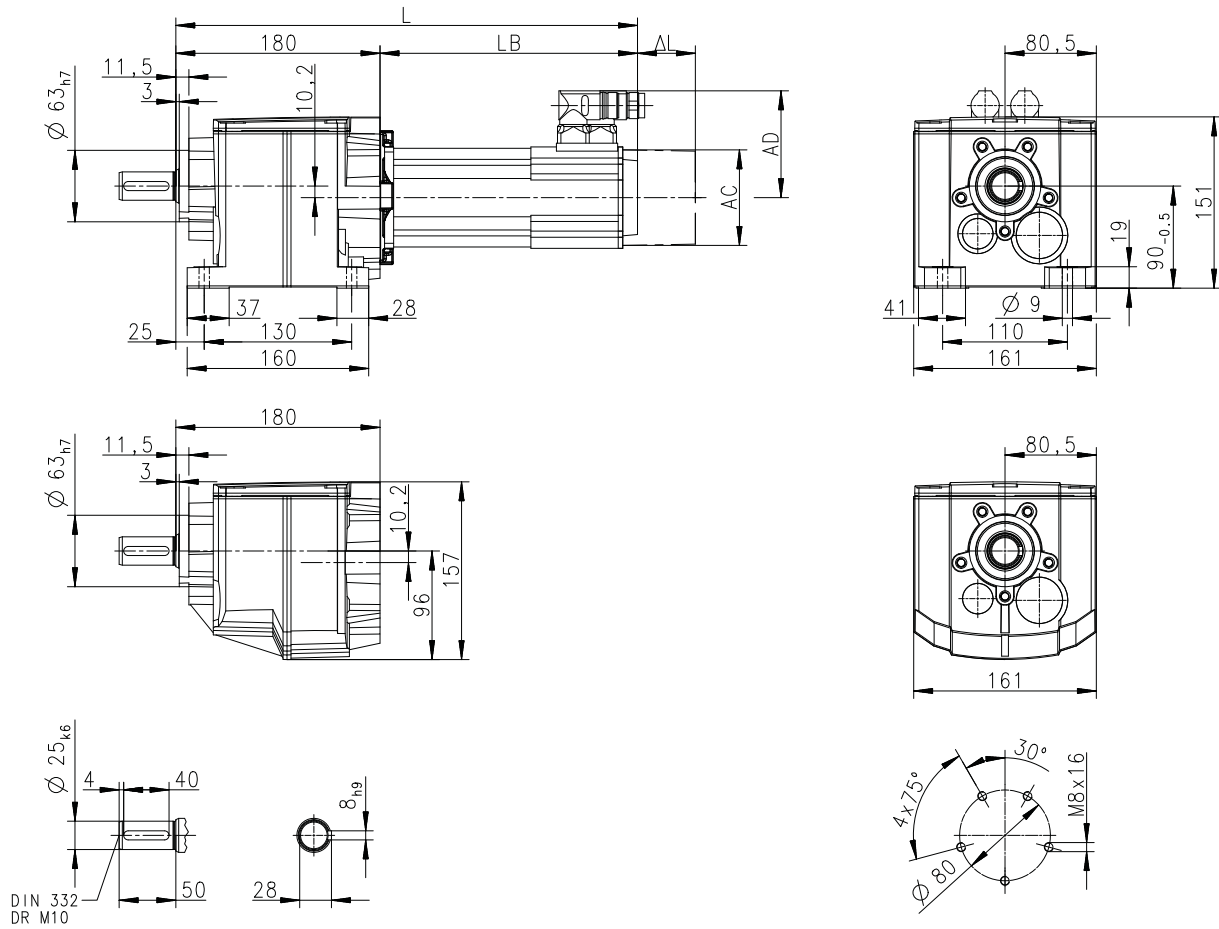


Technical data

Dimensions
Basic dimensions

g500-H210, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800114-00

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	439
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

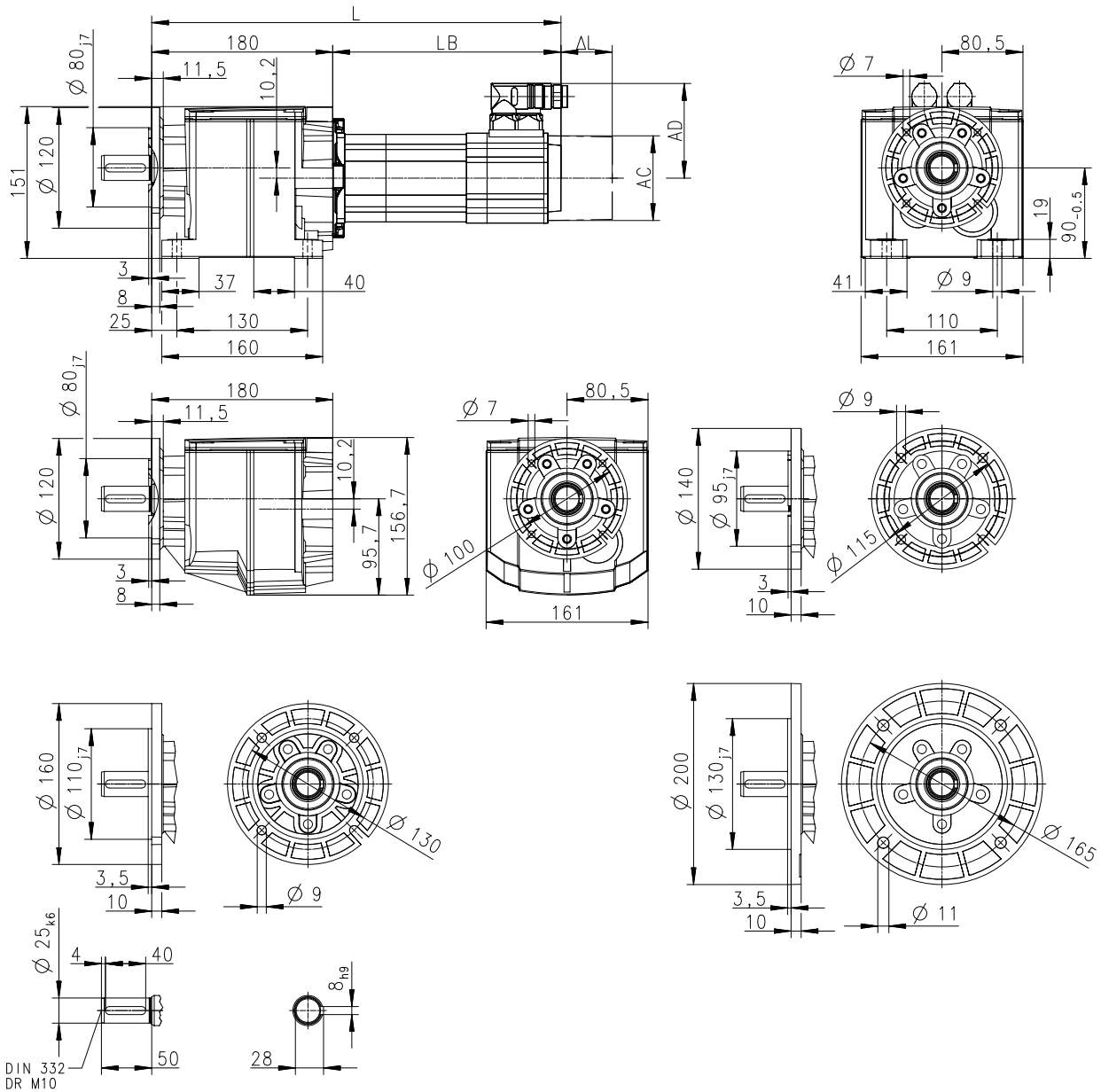
Technical data

Dimensions
Basic dimensions



g500-H210, 2-/3-stage with MCA10

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800113-02

Motor			MCA
Cooling type			10I40-natural
Total length	L	mm	439
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

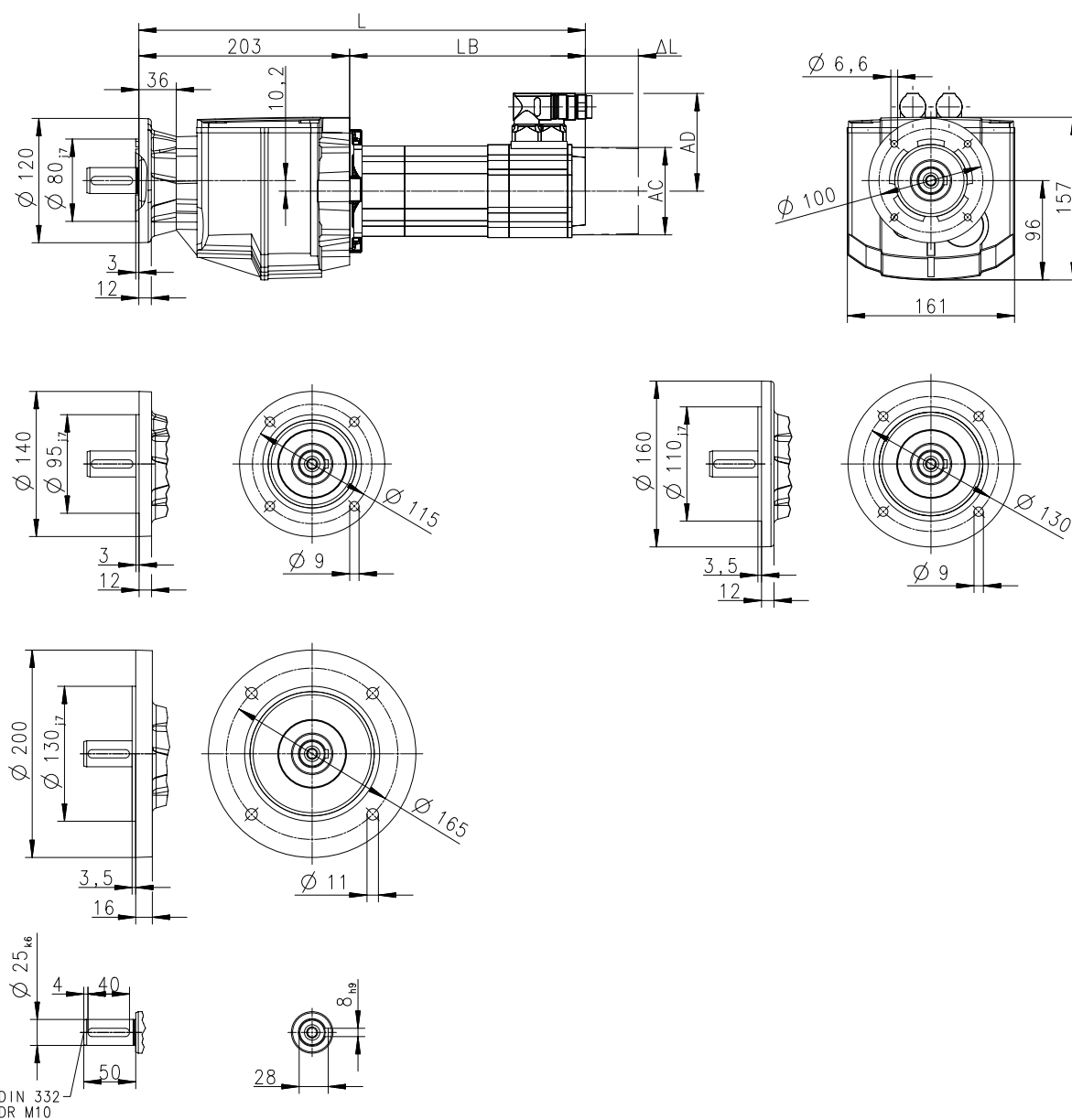


Technical data

Dimensions
Basic dimensions

g500-H210, 2-/3-stage with MCA10

Gearbox version: Solid shaft and flange (VCP)



8800319-01

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	462
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

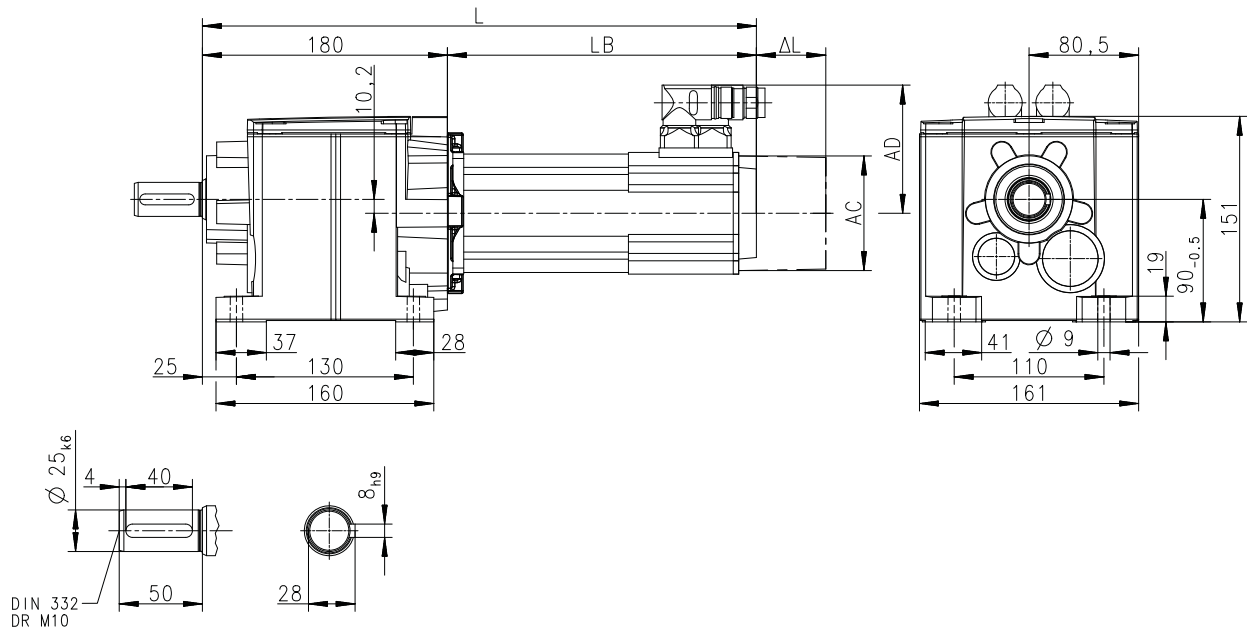
Technical data

Dimensions
Basic dimensions



g500-H210, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot (VBR)



8800112-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	516	448
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

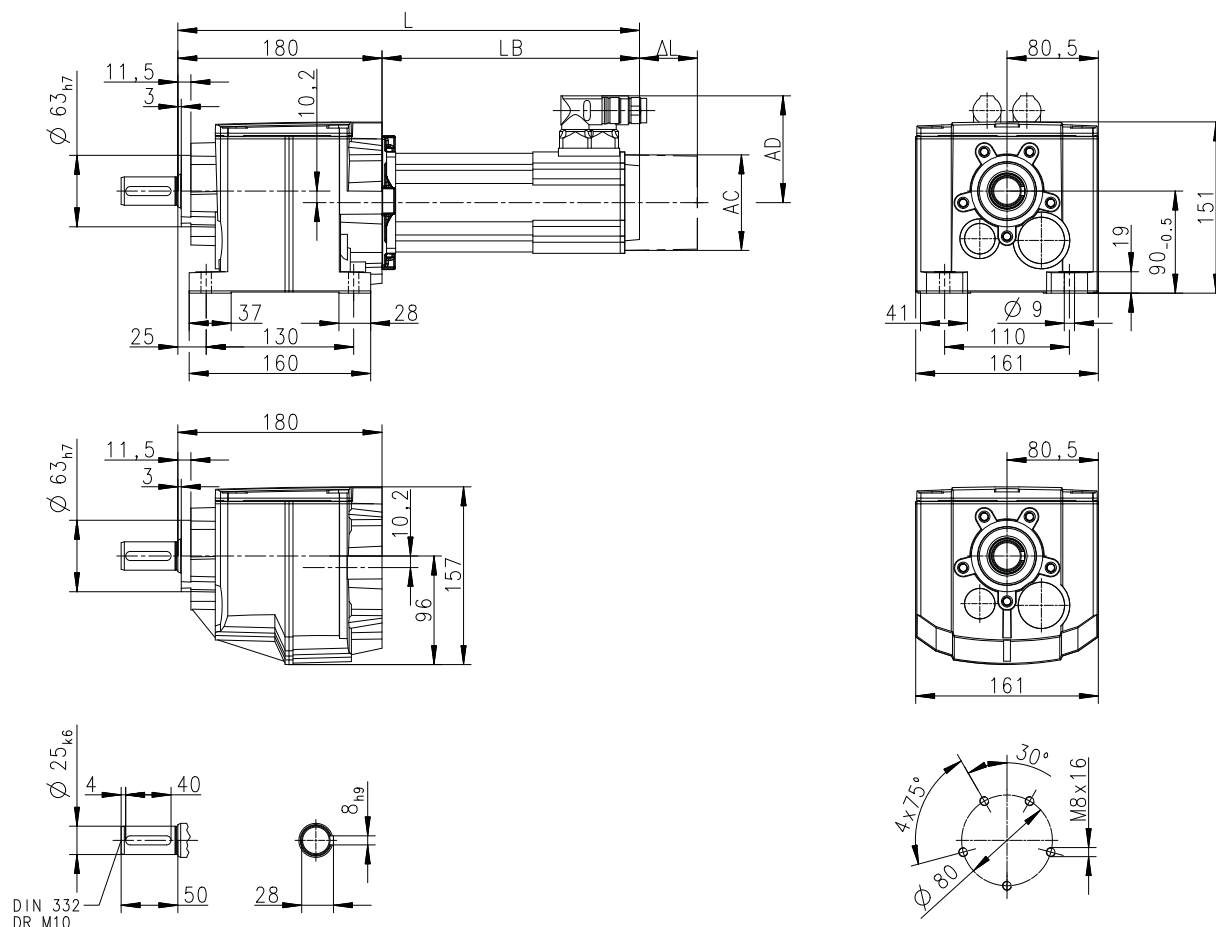


Technical data

Dimensions
Basic dimensions

g500-H210, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800114-00

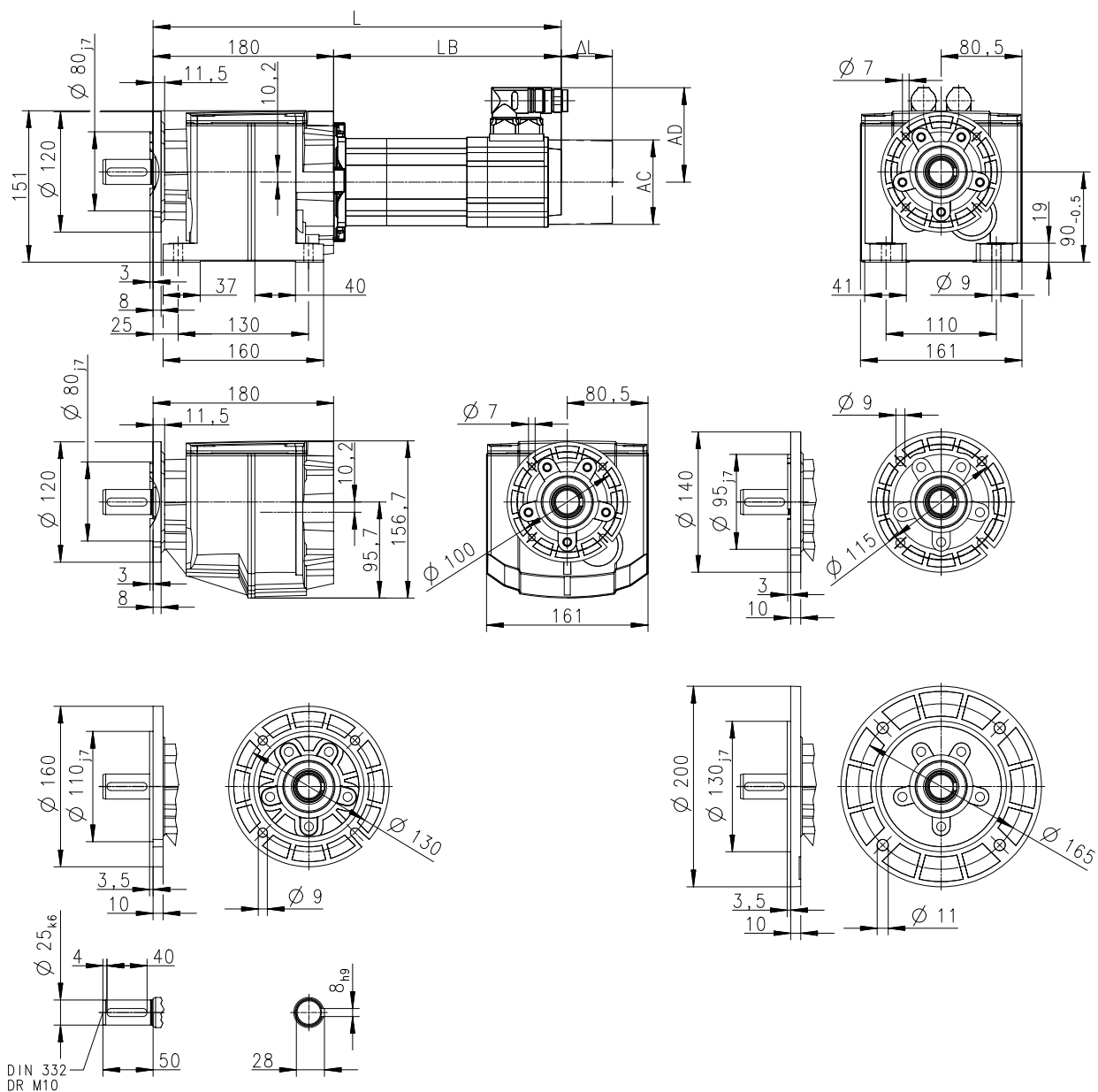
Motor			MCA	
			13i34-	13i41-
Cooling type			Blower	natural
Total length	L	mm	516	448
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

Dimensions

Basic dimensions



Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800113-02

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	516	448
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

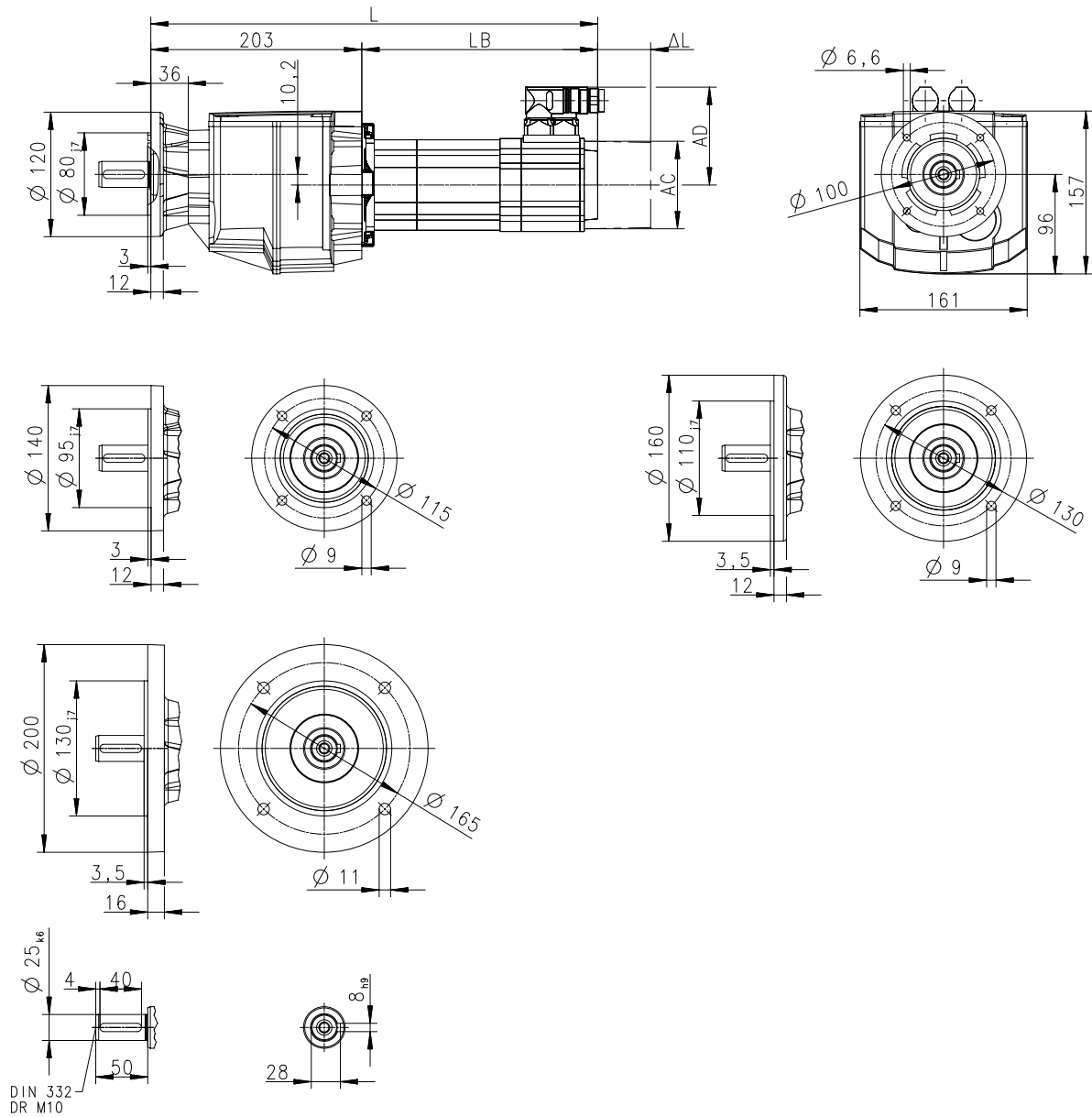


Technical data

Dimensions
Basic dimensions

g500-H210, 2-/3-stage with MCA13

Gearbox version: Solid shaft and flange (VCP)



8800319-01

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	539	471
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

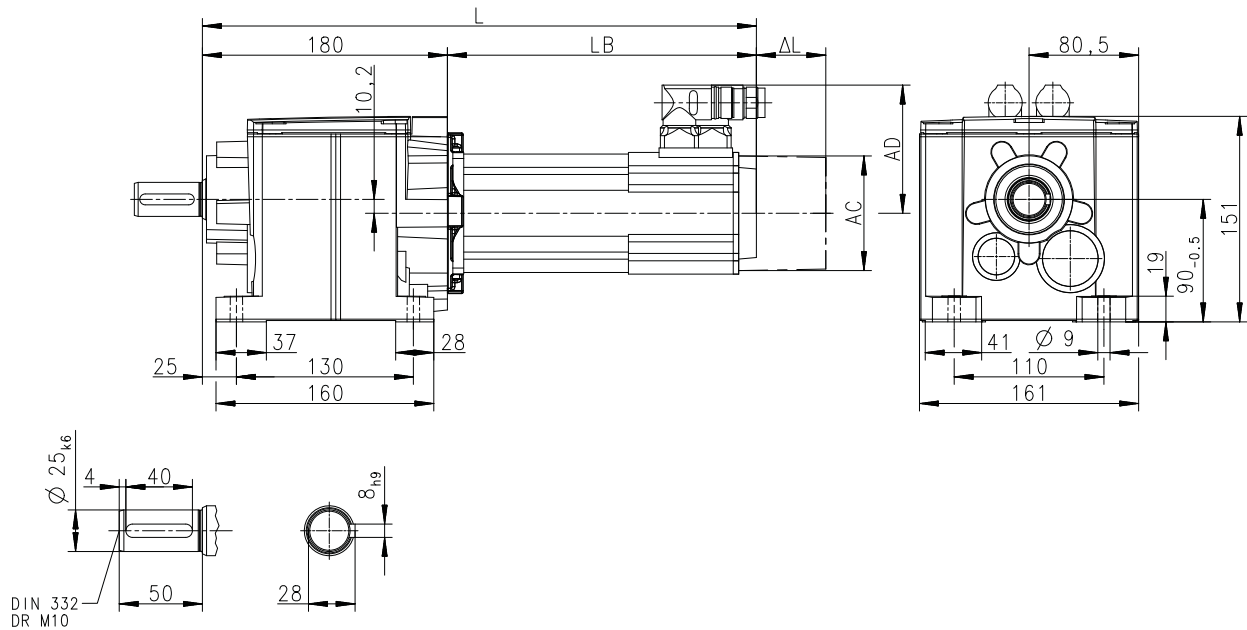
Technical data

Dimensions
Basic dimensions



g500-H210, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot (VBR)



8800112-00

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	560	498	560	498
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

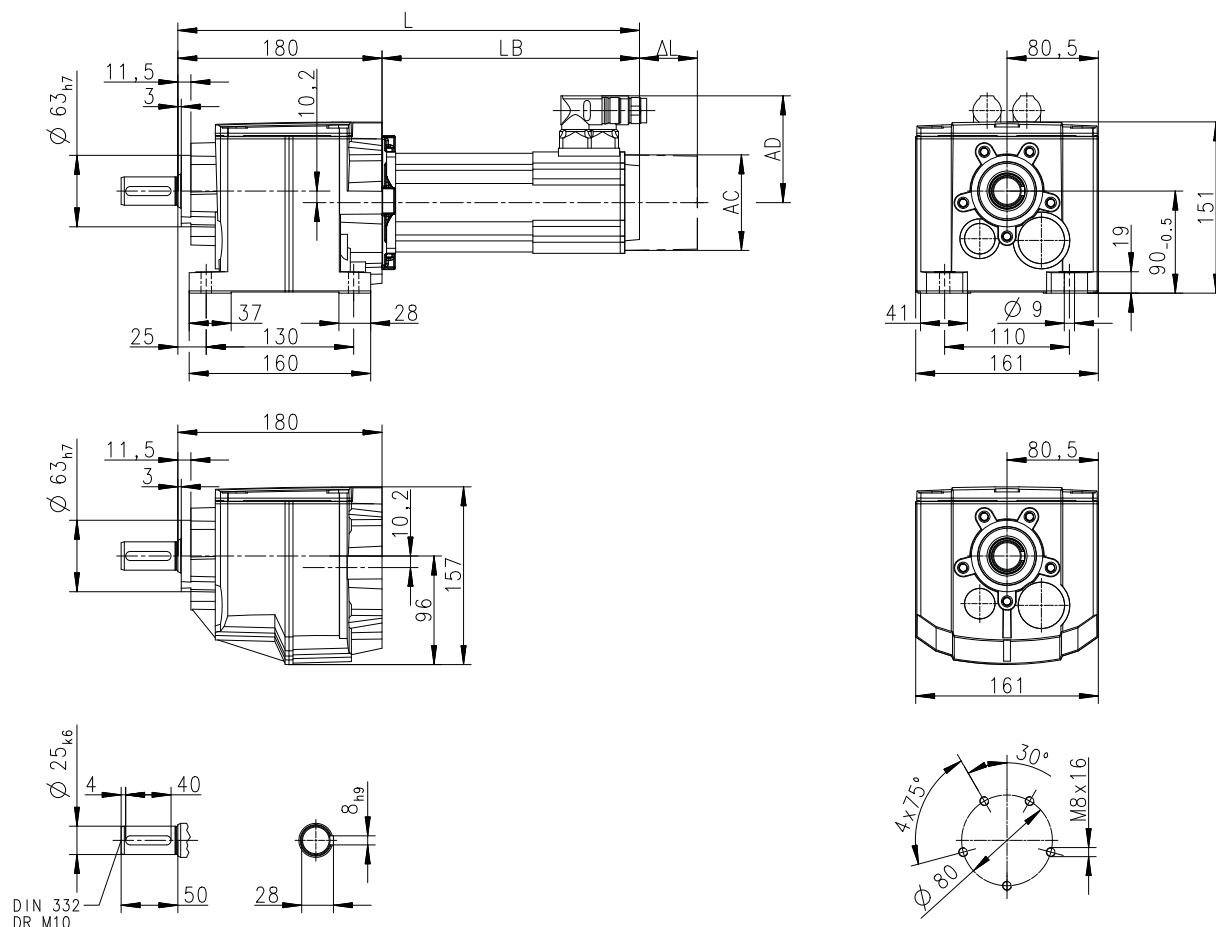


Technical data

Dimensions
Basic dimensions

g500-H210, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800114-00

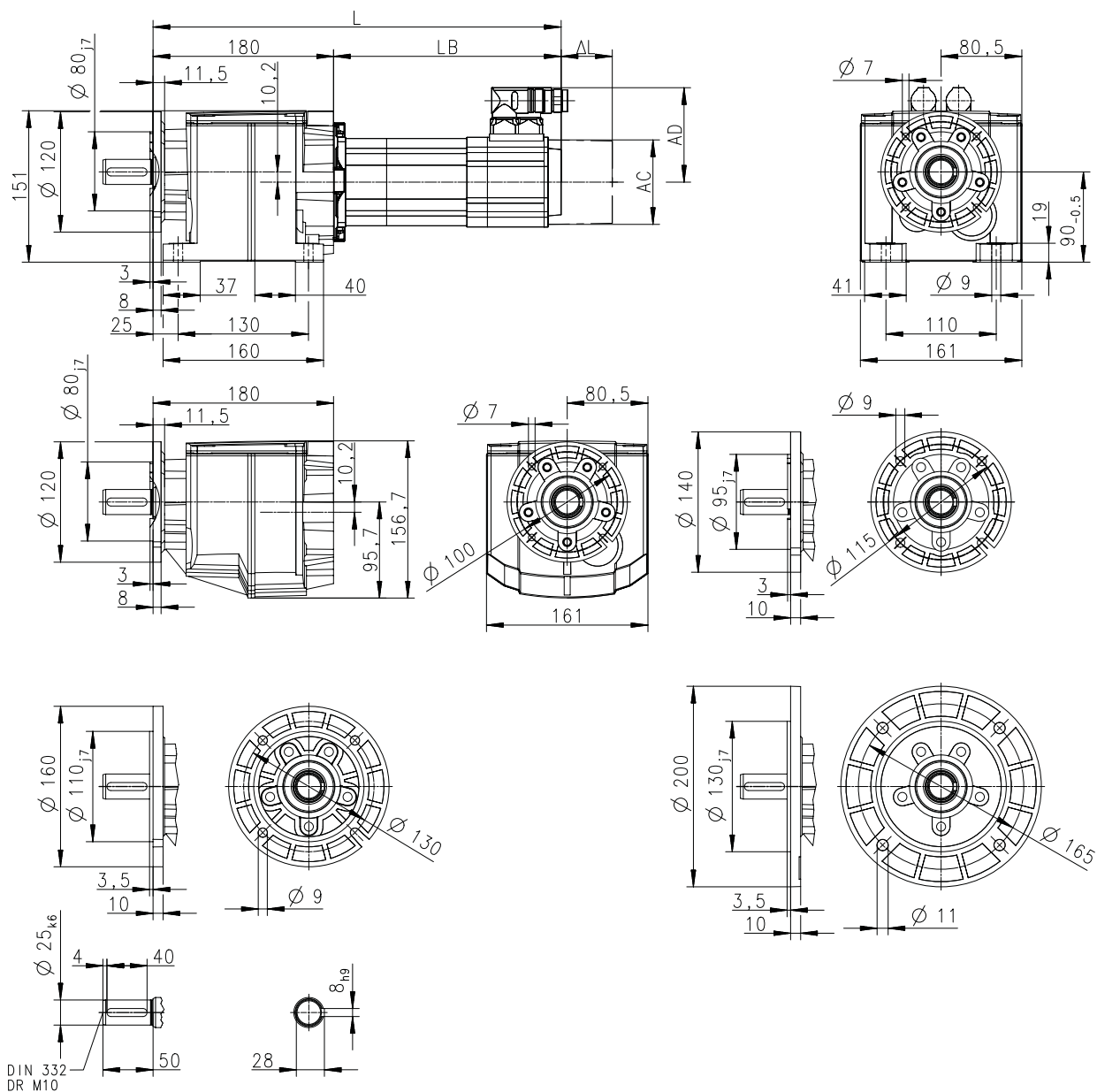
Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	560	498	560	498
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

Dimensions

Basic dimensions



Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800113-02

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	560	498	560	498
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

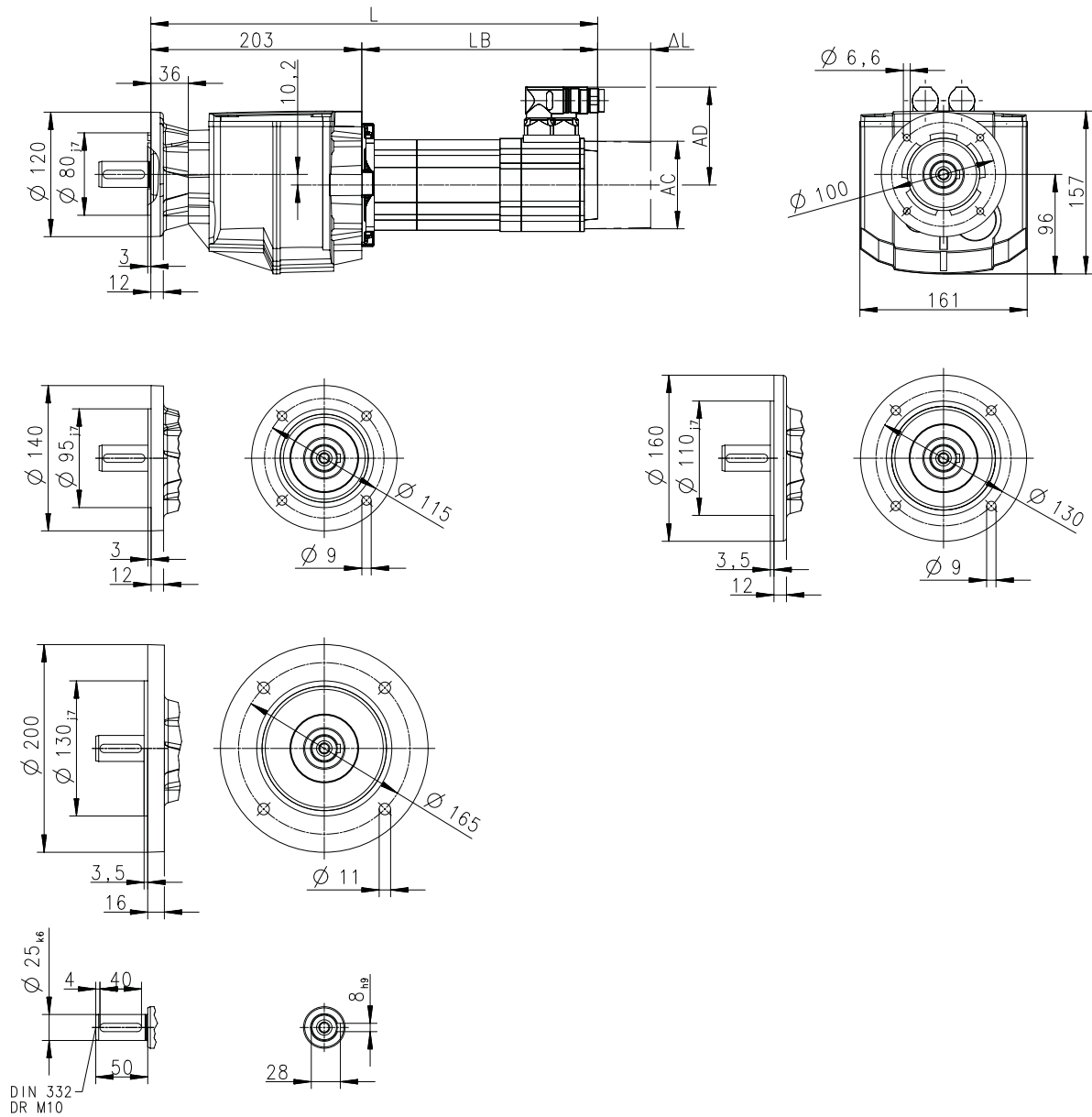


Technical data

Dimensions
Basic dimensions

g500-H210, 2-/3-stage with MCA14

Gearbox version: Solid shaft and flange (VCP)



8800319-01

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	583	521	583	521
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

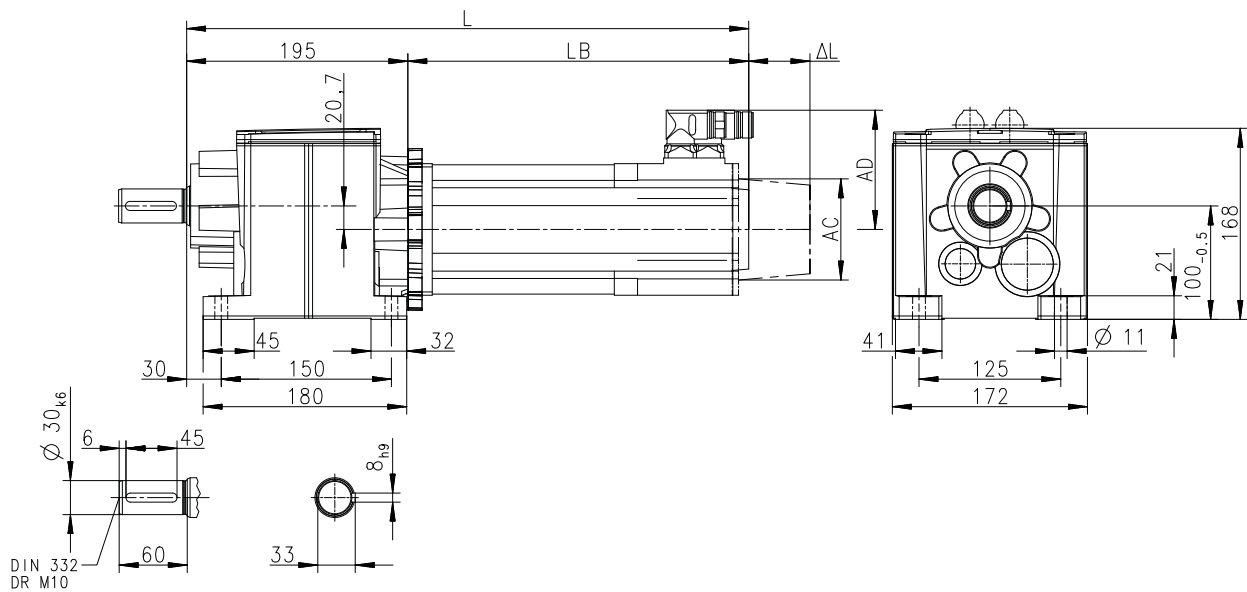
Technical data

Dimensions
Basic dimensions



g500-H320, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot (VBR)



8800124-00

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	454
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

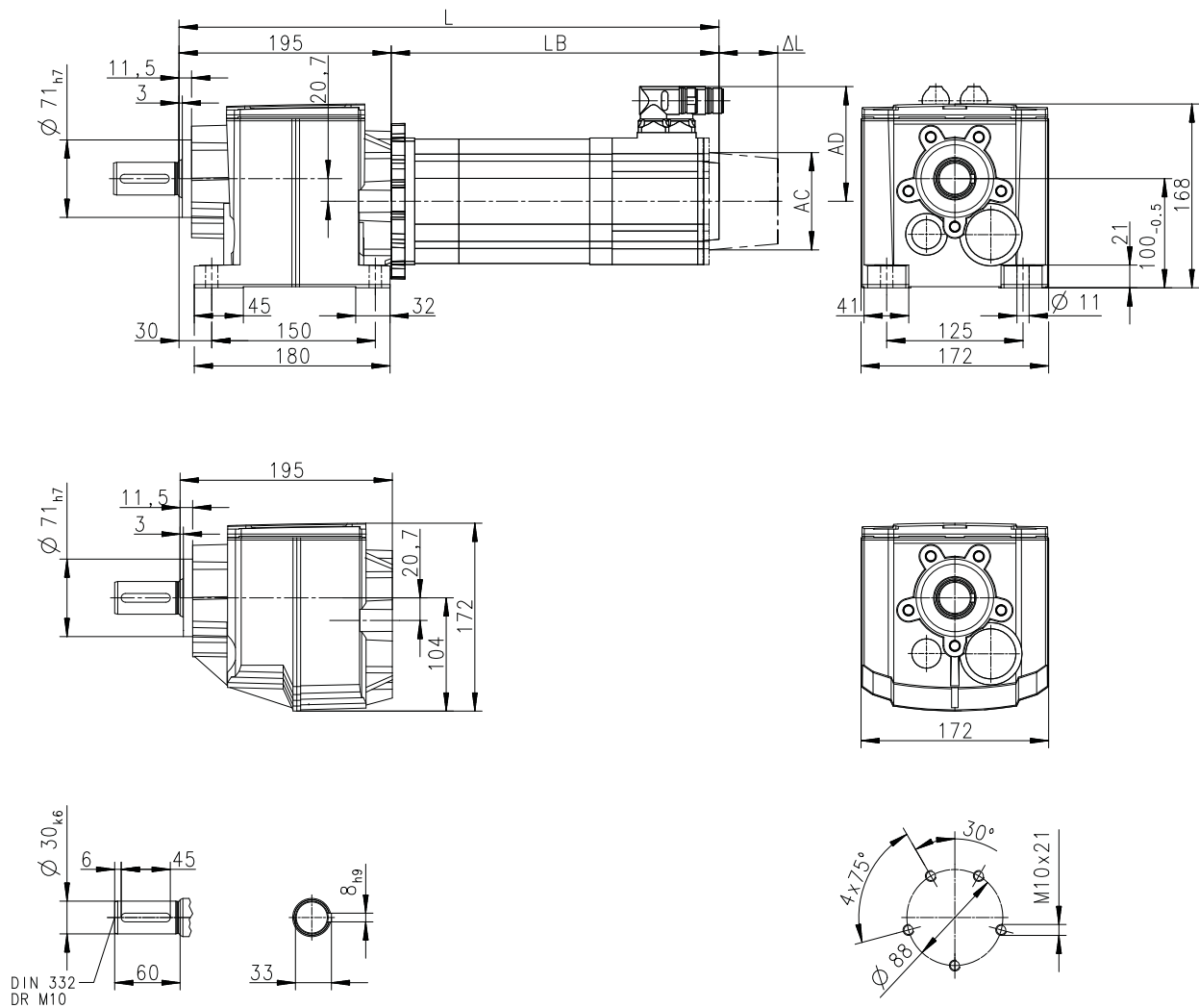


Technical data

Dimensions
Basic dimensions

g500-H320, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800126-01

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	454
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

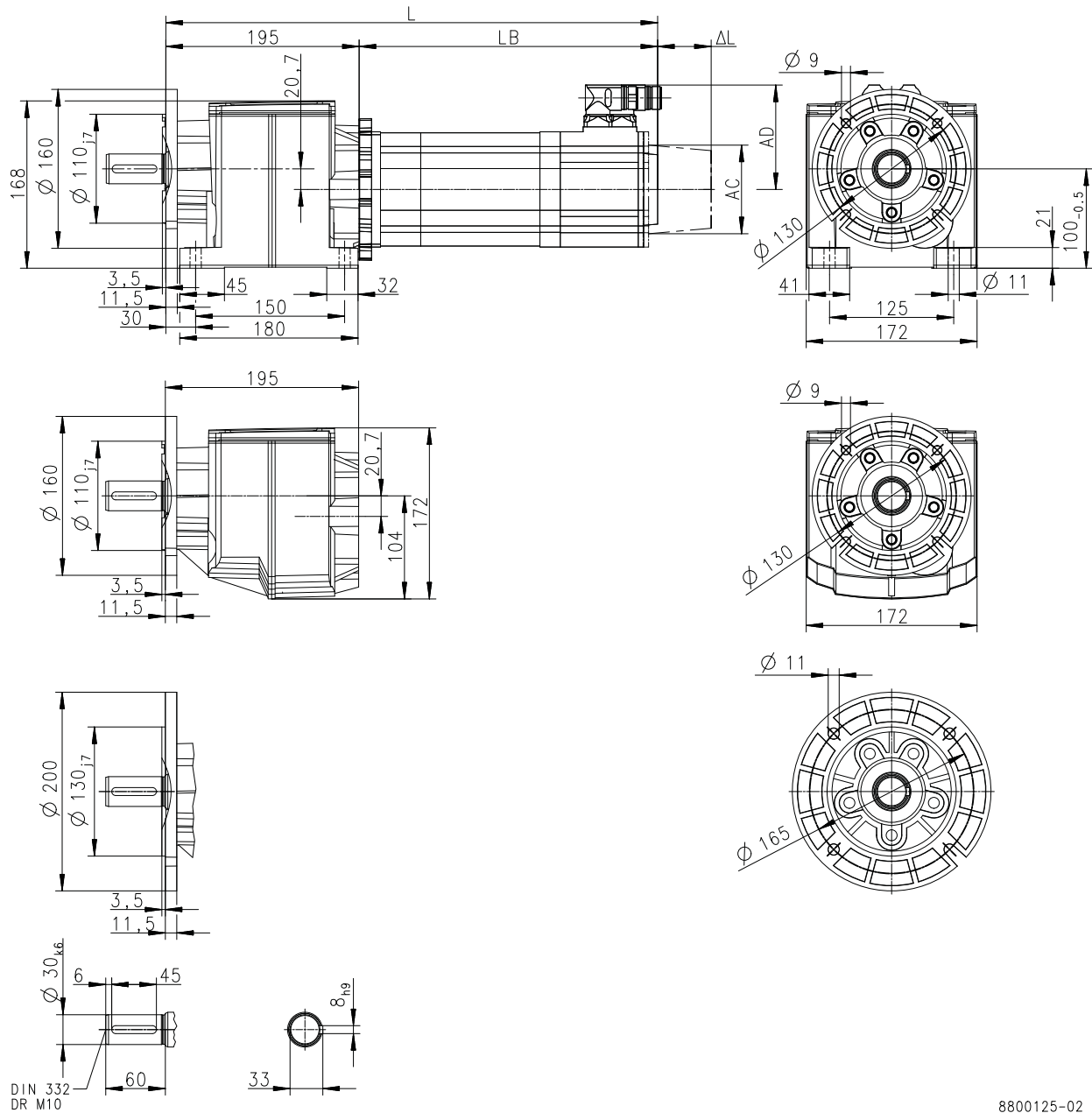
Technical data

Dimensions
Basic dimensions



g500-H320, 2-/3-stage with MCA10

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800125-02

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	454
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90



g500-H320, 2-/3-stage with MCA10

Technical drawing of a pump assembly, showing multiple views and dimensions:

- Top View (Main):** Shows the overall dimensions: total length L , distance from front face to center of pump $214,5$, distance from center of pump to rear face LB , and distance from rear face to center of pump ΔL . The front face has a diameter of $\varnothing 160$ and a central hole of $\varnothing 110_{+0,17}$. The pump body has a diameter of $\varnothing 130$ and a height of $20,7$. The rear face has a diameter of $\varnothing 165$ and a central hole of $\varnothing 11$. The distance from the front face to the center of the pump is 33 . The distance from the center of the pump to the rear face is $3,5$. The distance from the rear face to the center of the pump is 16 .
- Front View (Main):** Shows the front face with a diameter of $\varnothing 160$ and a central hole of $\varnothing 110_{+0,17}$. The distance from the front face to the center of the pump is 33 . The distance from the center of the pump to the rear face is $3,5$. The distance from the rear face to the center of the pump is 16 .
- Side View (Main):** Shows the side profile with a diameter of $\varnothing 130$ and a height of $20,7$. The distance from the front face to the center of the pump is 33 . The distance from the center of the pump to the rear face is $3,5$. The distance from the rear face to the center of the pump is 16 .
- Detail View (Top Left):** Shows a detail of the front face with a diameter of $\varnothing 200$ and a central hole of $\varnothing 130_{+0,17}$. The distance from the front face to the center of the pump is $3,5$. The distance from the rear face to the center of the pump is 16 .
- Detail View (Bottom Left):** Shows a detail of the front face with a diameter of $\varnothing 30_{k6}$ and a central hole of $\varnothing 110_{+0,17}$. The distance from the front face to the center of the pump is 6 . The distance from the center of the pump to the rear face is 45 . The distance from the rear face to the center of the pump is 60 .
- Detail View (Bottom Right):** Shows a detail of the rear face with a diameter of $\varnothing 165$ and a central hole of $\varnothing 11$. The distance from the front face to the center of the pump is 33 . The distance from the center of the pump to the rear face is $3,5$. The distance from the rear face to the center of the pump is 16 .
- Detail View (Bottom Center):** Shows a detail of the rear face with a diameter of $\varnothing 11$ and a central hole of $\varnothing 11$. The distance from the front face to the center of the pump is 33 . The distance from the center of the pump to the rear face is $3,5$. The distance from the rear face to the center of the pump is 16 .
- Detail View (Bottom Right):** Shows a detail of the rear face with a diameter of $\varnothing 11$ and a central hole of $\varnothing 11$. The distance from the front face to the center of the pump is 33 . The distance from the center of the pump to the rear face is $3,5$. The distance from the rear face to the center of the pump is 16 .

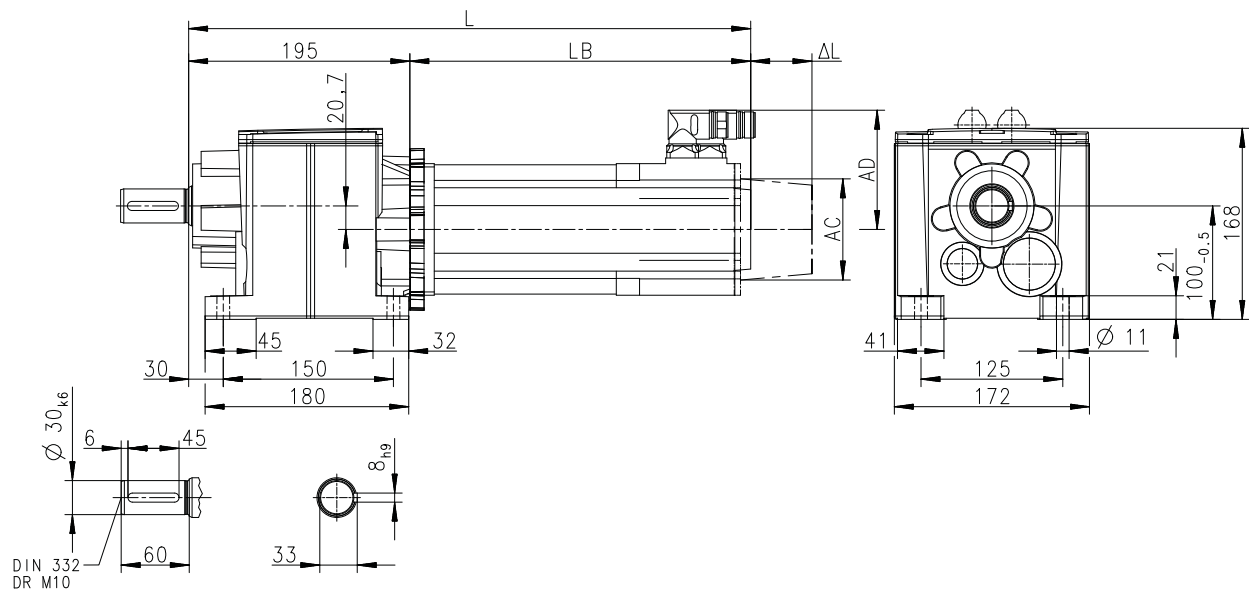
Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	474
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

Technical data

Dimensions
Basic dimensions



g500-H320, 2-/3-stage with MCA13
Gearbox version: Solid shaft with foot (VBR)



8800124-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	531	463
Motor length	LB	mm	336	268
Length of motor options	ΔL	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

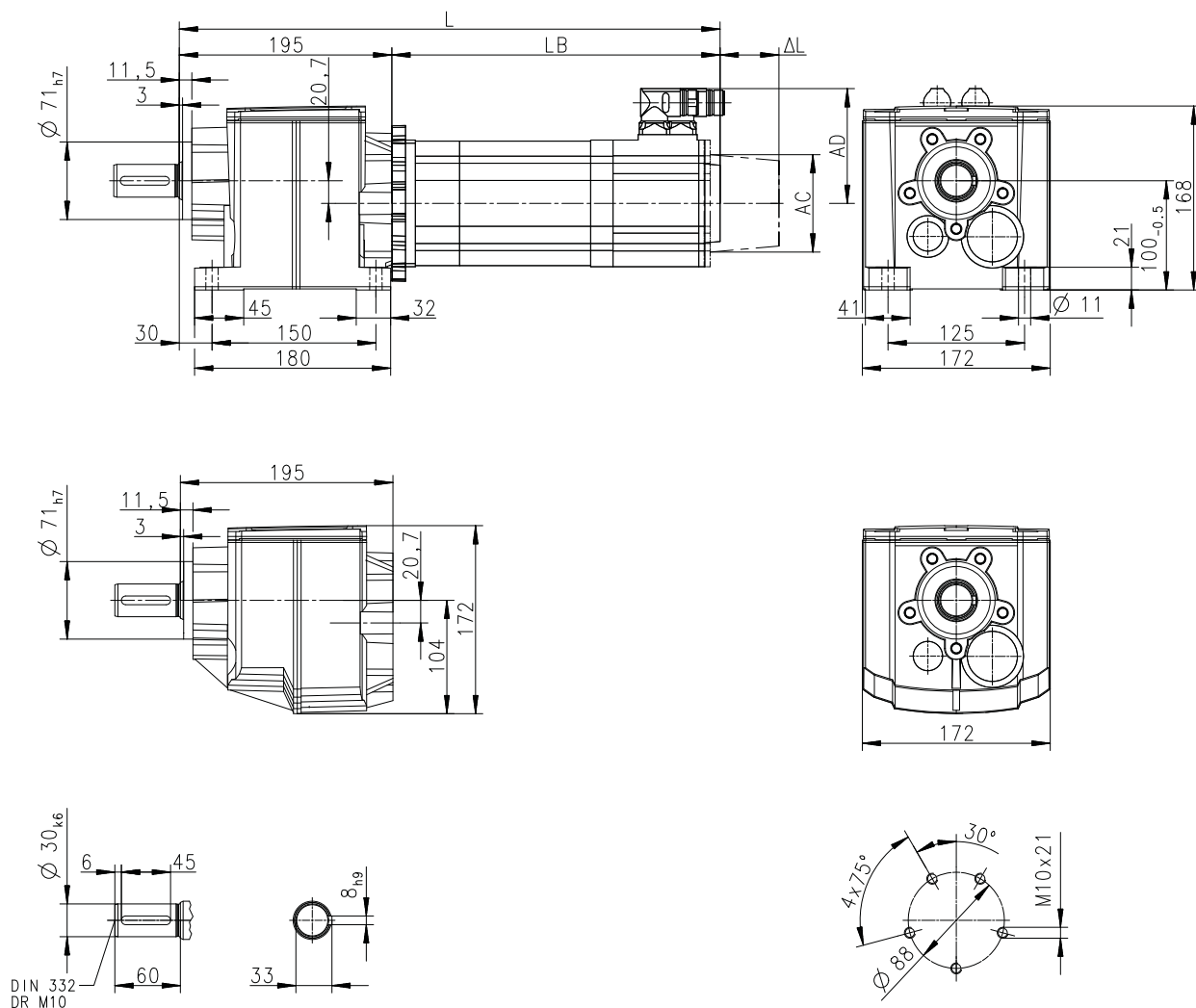


Technical data

Dimensions
Basic dimensions

g500-H320, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800126-01

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	531	463
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

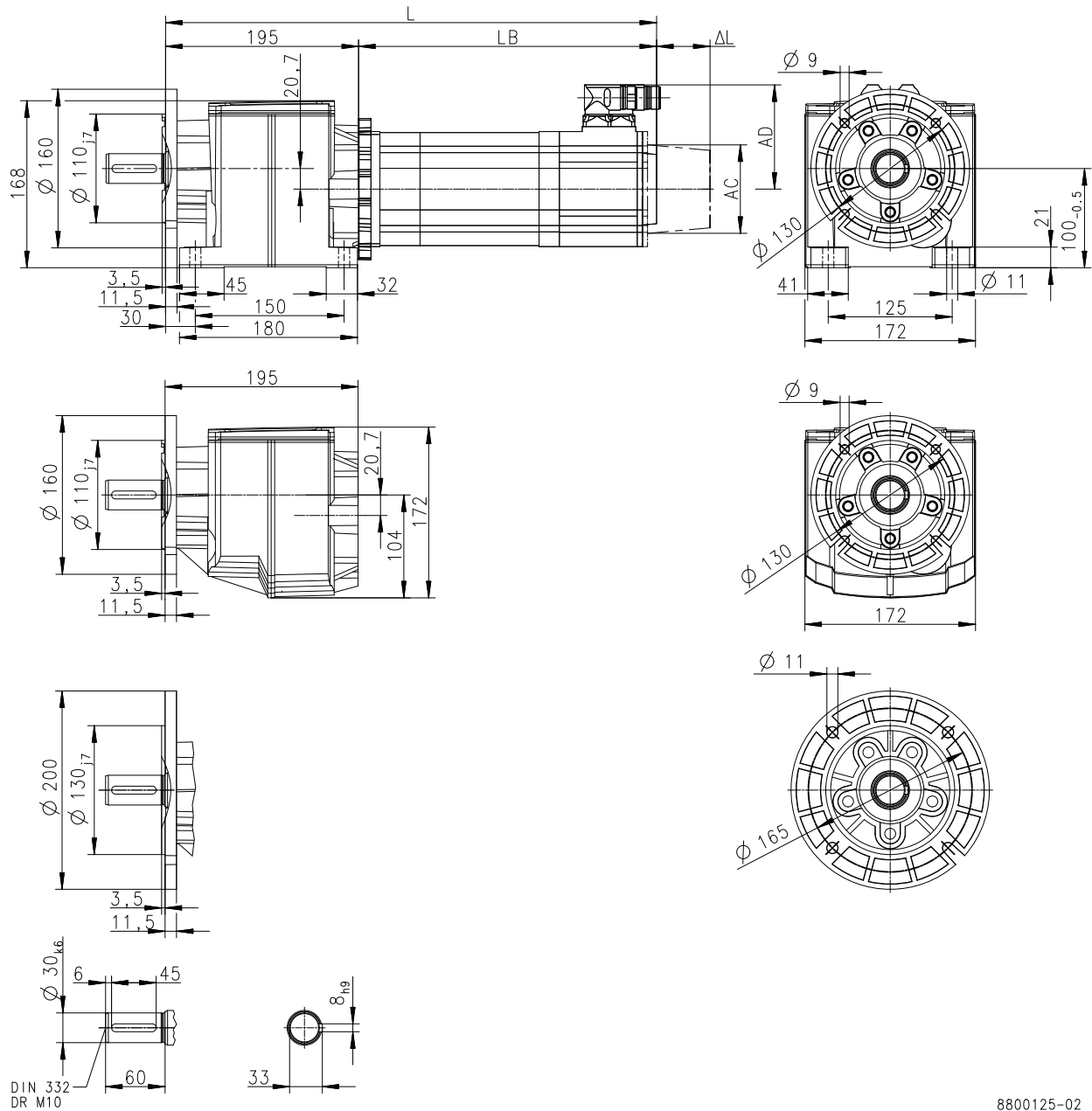
Technical data

Dimensions
Basic dimensions



g500-H320, 2-/3-stage with MCA13

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800125-02

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	531	463
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102



g500-H320, 2-/3-stage with MCA13

[illegible]

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	550	482
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

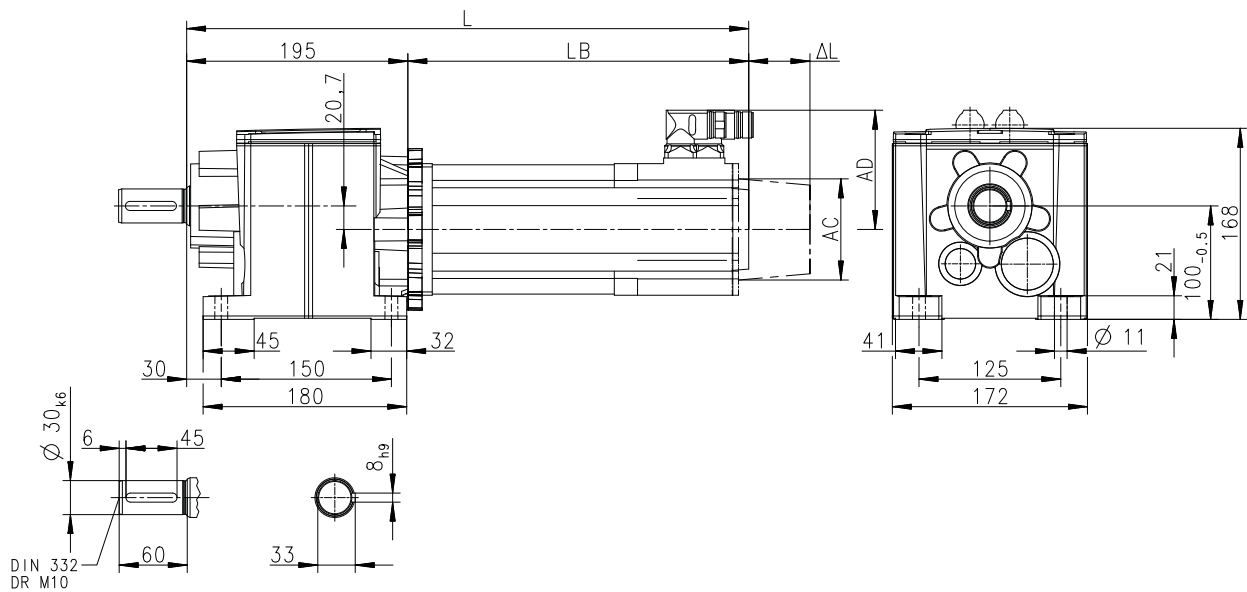
Technical data

Dimensions
Basic dimensions



g500-H320, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot (VBR)



8800124-00

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	575	513	575	513
Motor length	LB	mm	380	318	380	318
Length of motor options	ΔL	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

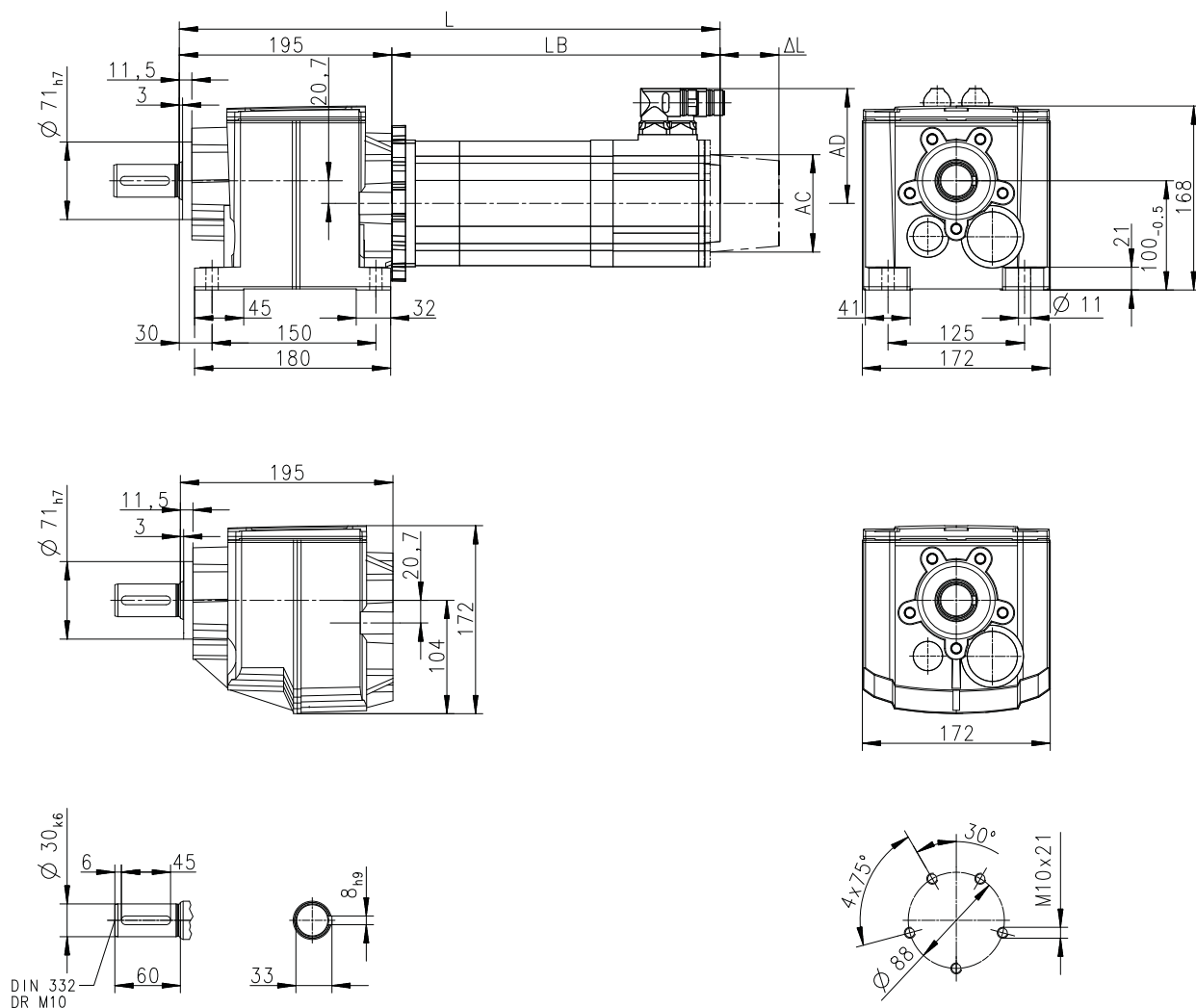


Technical data

Dimensions
Basic dimensions

g500-H320, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800126-01

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	575	513	575	513
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

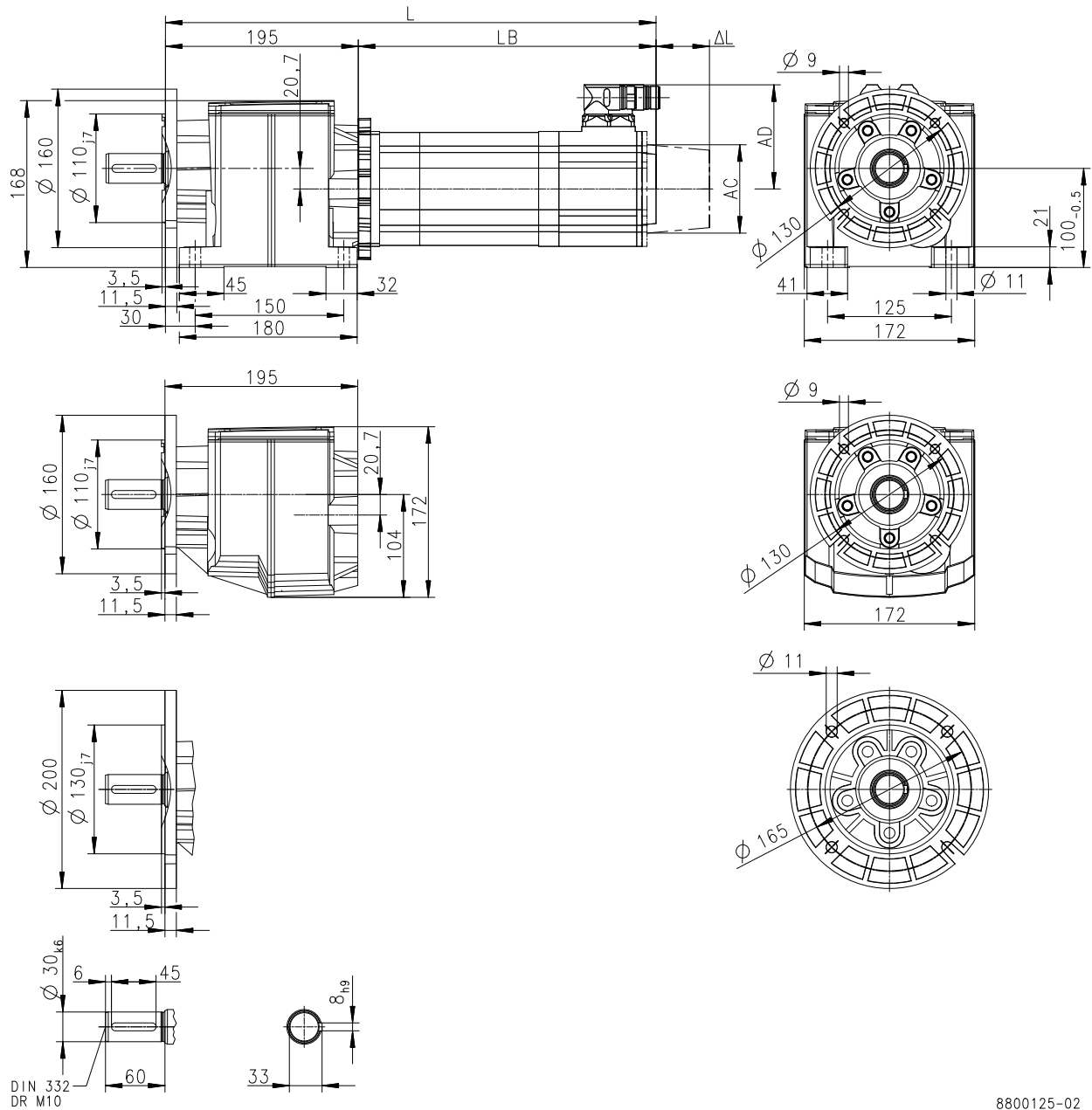
Technical data

Dimensions
Basic dimensions



g500-H320, 2-/3-stage with MCA14

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800125-02

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	575	513	575	513
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

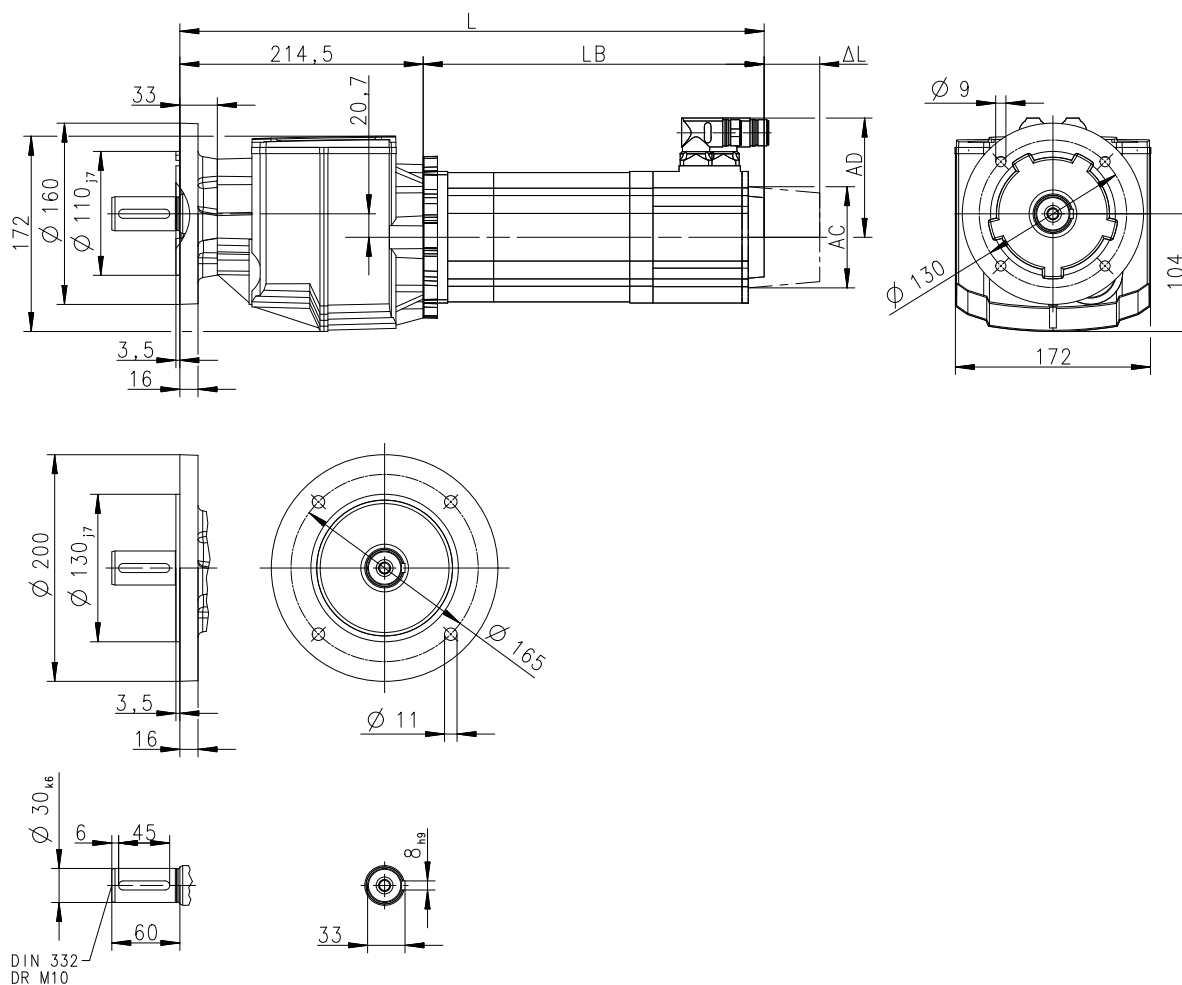


Technical data

Dimensions
Basic dimensions

g500-H320, 2-/3-stage with MCA14

Gearbox version: Solid shaft and flange (VCP)



8800320-00

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	594	532	594	532
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

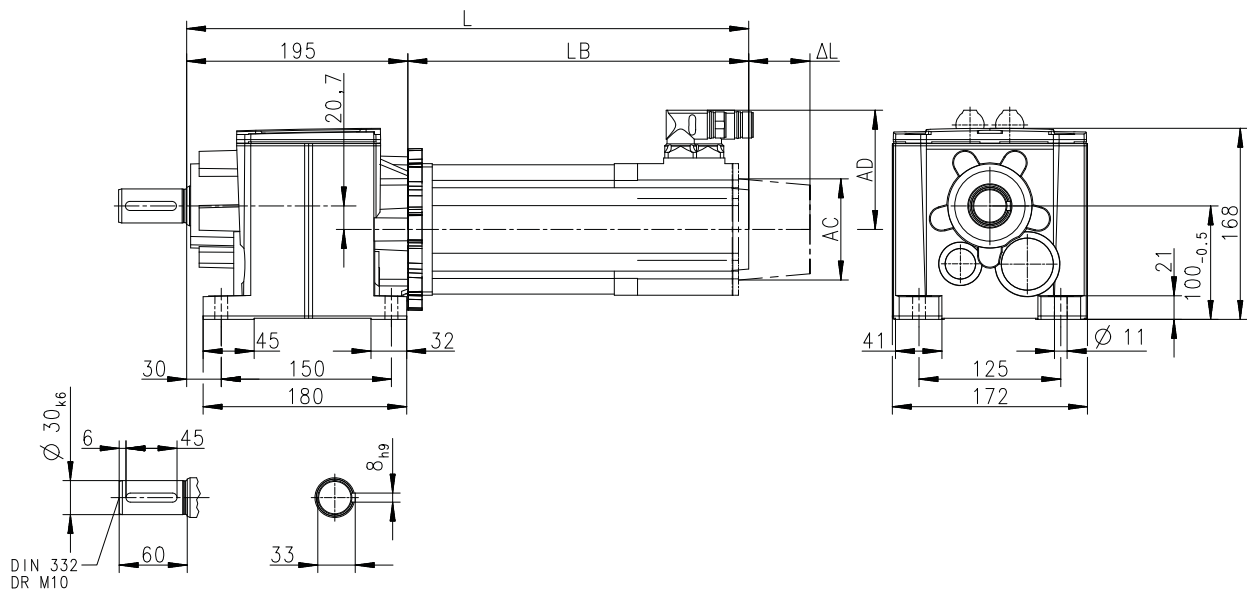
Technical data

Dimensions
Basic dimensions



g500-H320, 2-/3-stage with MCA17

Gearbox version: Solid shaft with foot (VBR)



8800124-00

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	638	552	638	552
Motor length	LB	mm	443	357	443	357
Length of motor options	ΔL	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

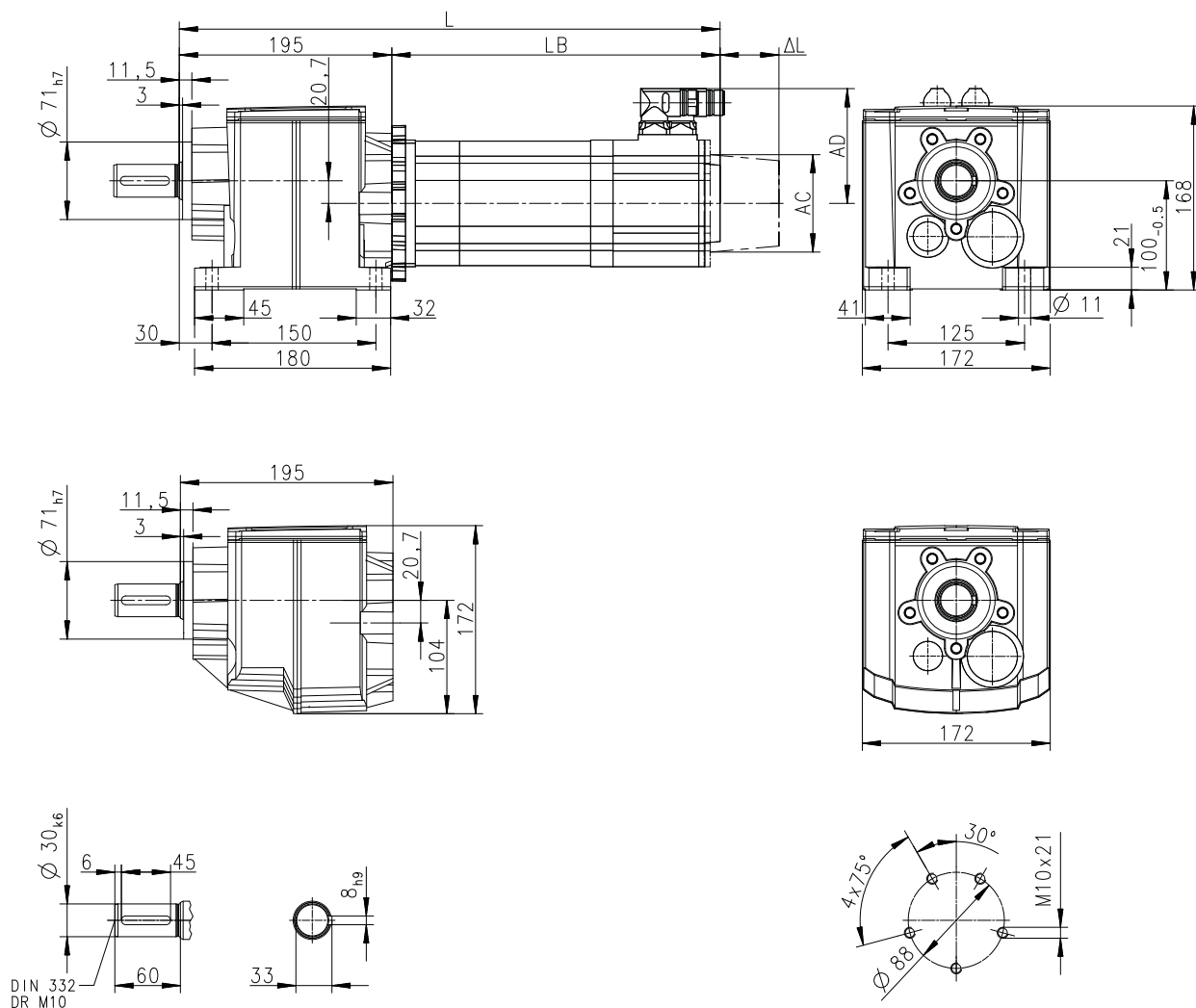


Technical data

Dimensions
Basic dimensions

g500-H320, 2-/3-stage with MCA17

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800126-01

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	638	552	638	552
Motor length	LB	mm	443	357	443	357
Length of motor options	Δ L	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

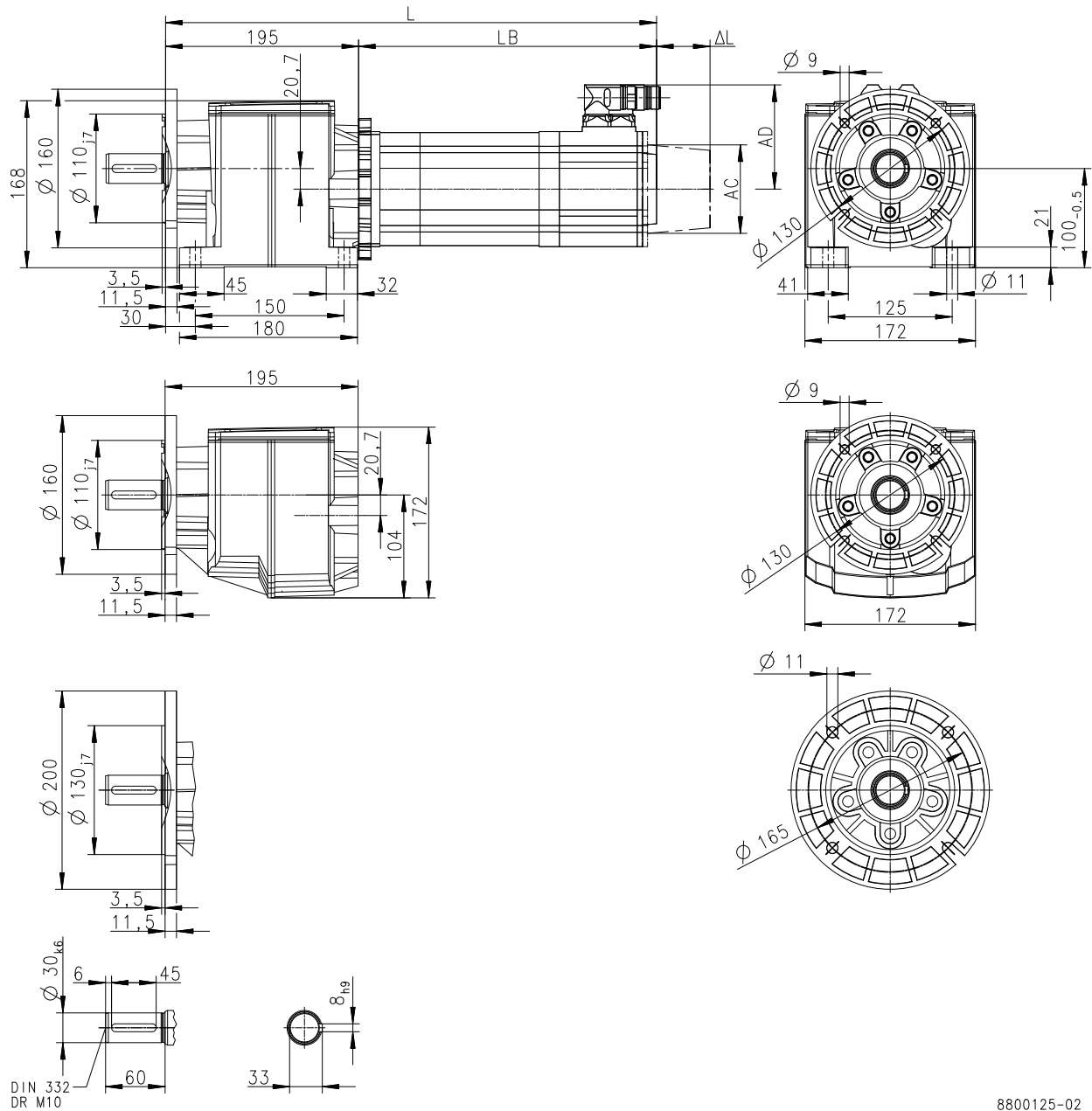
Technical data

Dimensions
Basic dimensions



g500-H320, 2-/3-stage with MCA17

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800125-02

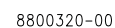
Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	638	552	638	552
Motor length	LB	mm	443	357	443	357
Length of motor options	Δ L	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118



Dimensions

Basic dimensions

Gearbox version: Solid shaft and flange (VCP)

127

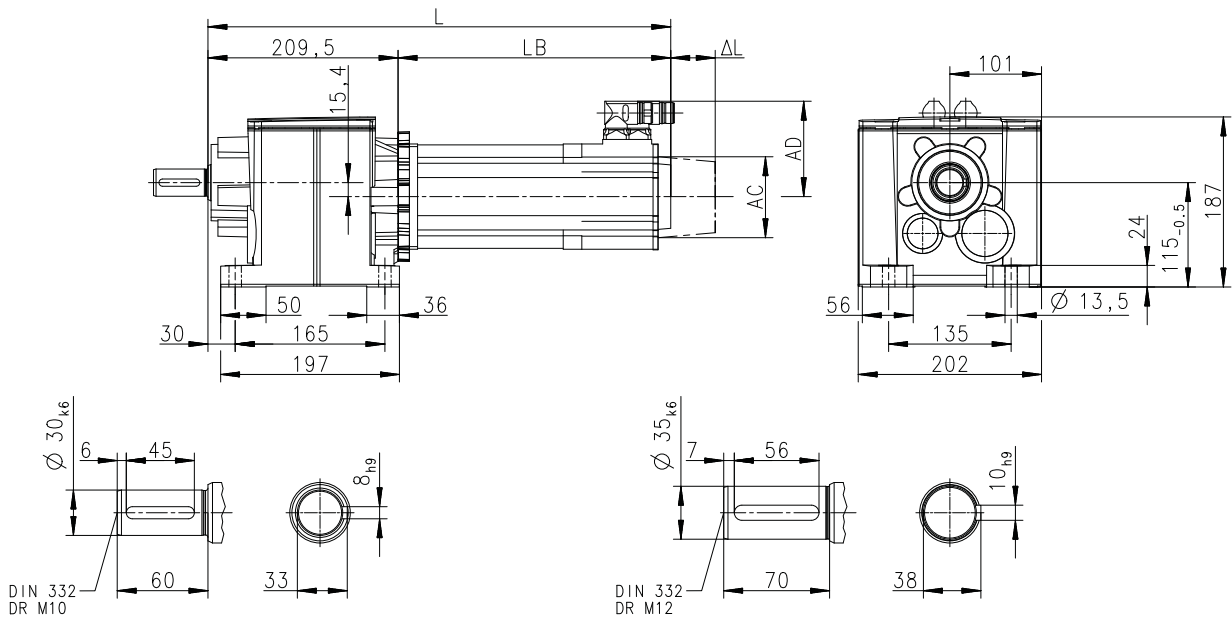
Technical data

Dimensions
Basic dimensions



g500-H450, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot (VBR)



8800136-00

Motor			MCA
Cooling type			10I40-natural
Total length	L	mm	469
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

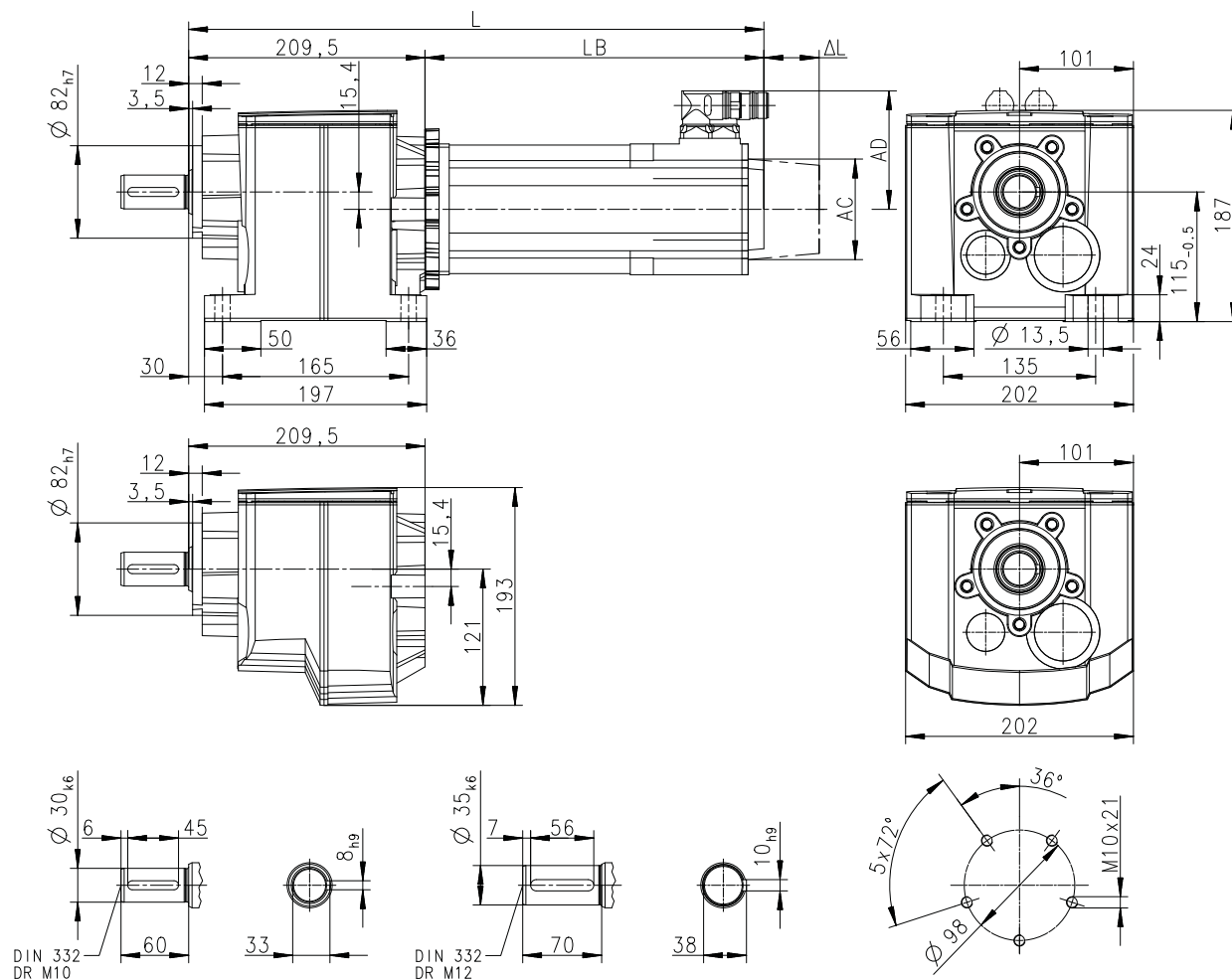


Technical data

Dimensions
Basic dimensions

g500-H450, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800138-00

Motor			MCA
Cooling type			10I40-natural
Total length	L	mm	469
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

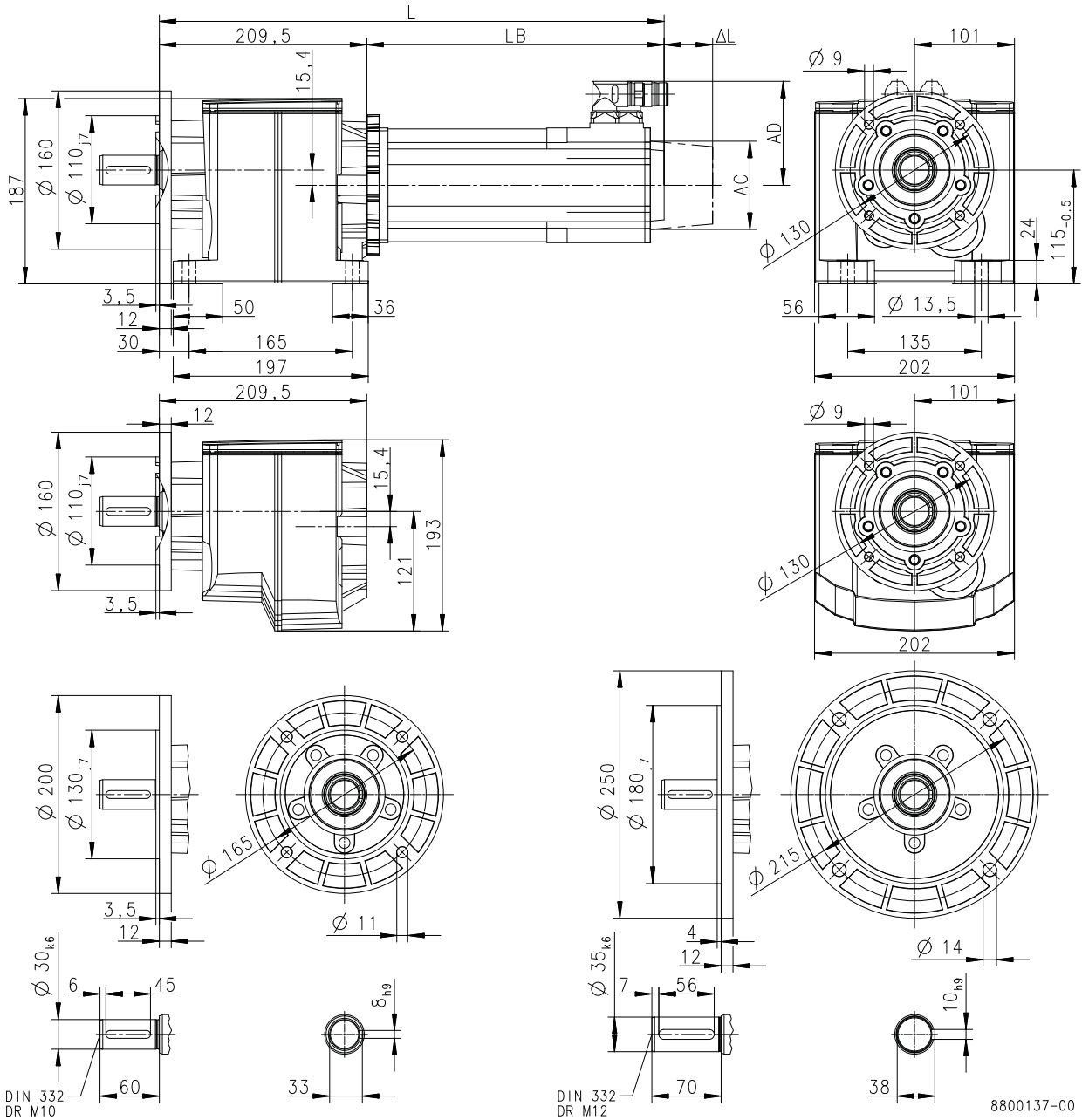
Technical data

Dimensions
Basic dimensions



g500-H450, 2-/3-stage with MCA10

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	469
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

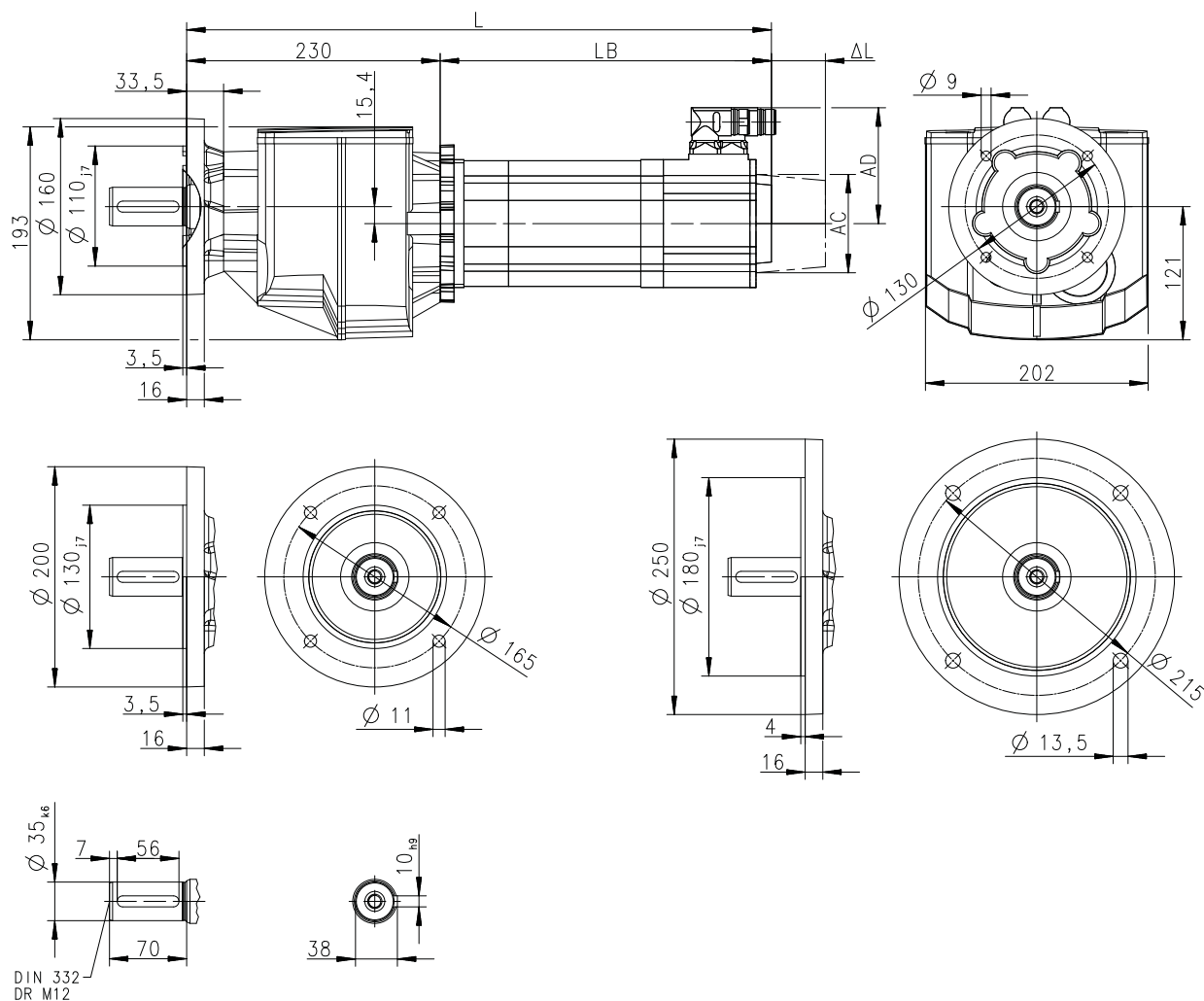


Technical data

Dimensions
Basic dimensions

g500-H450, 2-/3-stage with MCA10

Gearbox version: Solid shaft and flange (VCP)



8800321-00

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	489
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

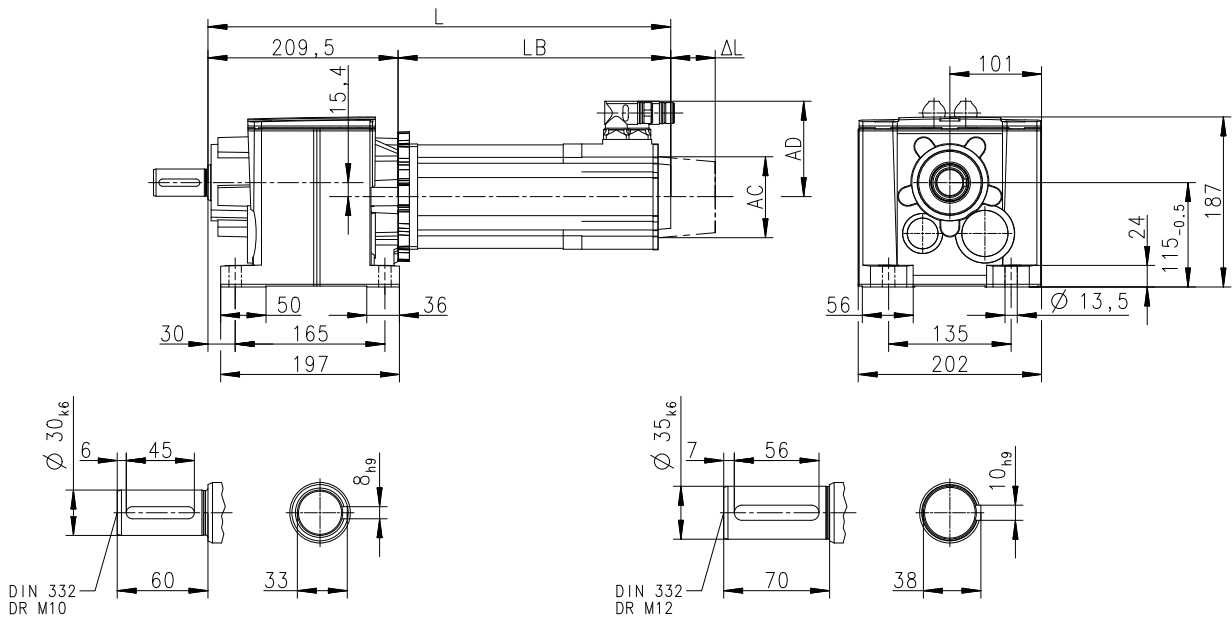
Technical data

Dimensions
Basic dimensions



g500-H450, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot (VBR)



8800136-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	545	477
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

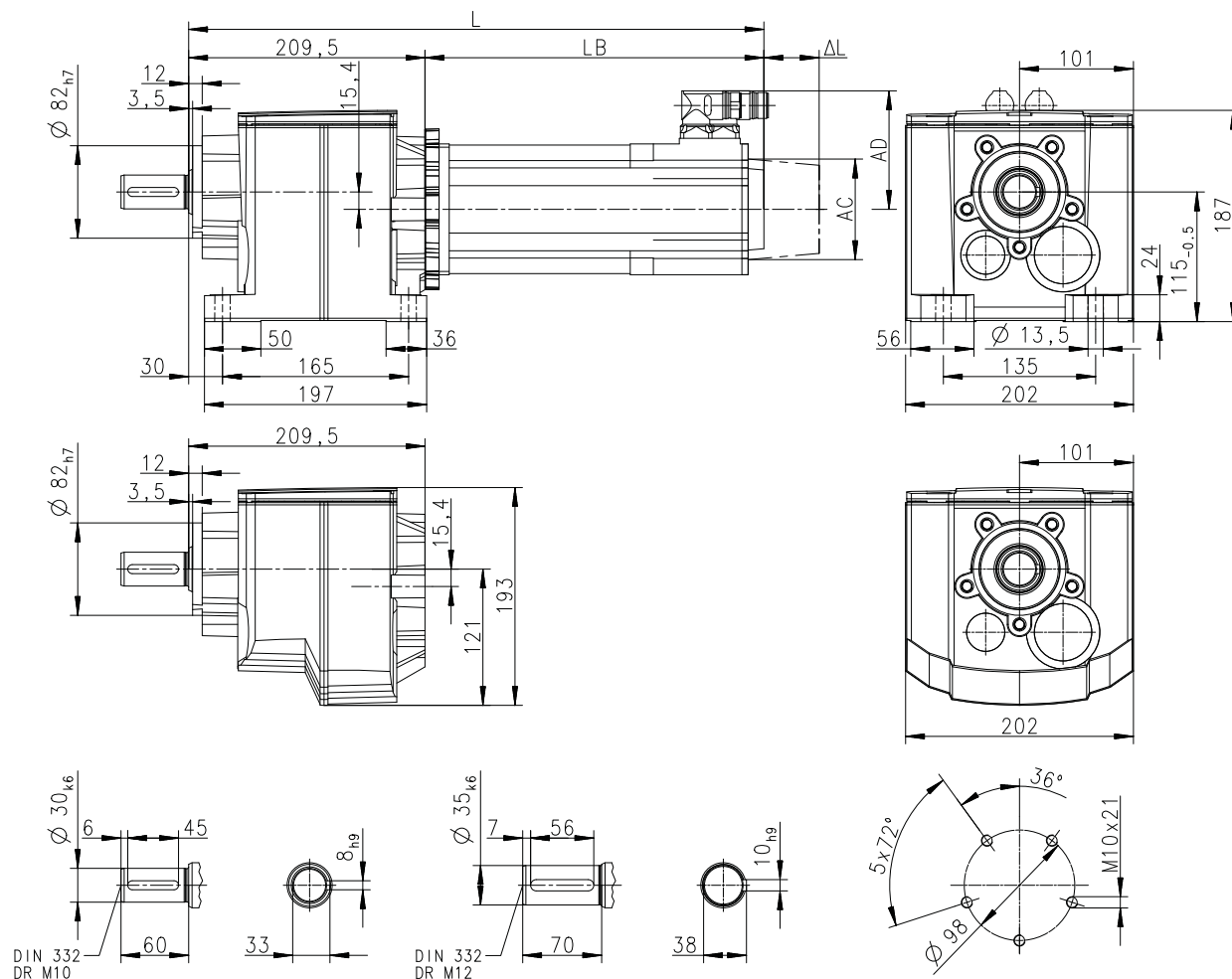


Technical data

Dimensions
Basic dimensions

g500-H450, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800138-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	545	477
Motor length	LB	mm	336	268
Length of motor options	ΔL	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

Technical data

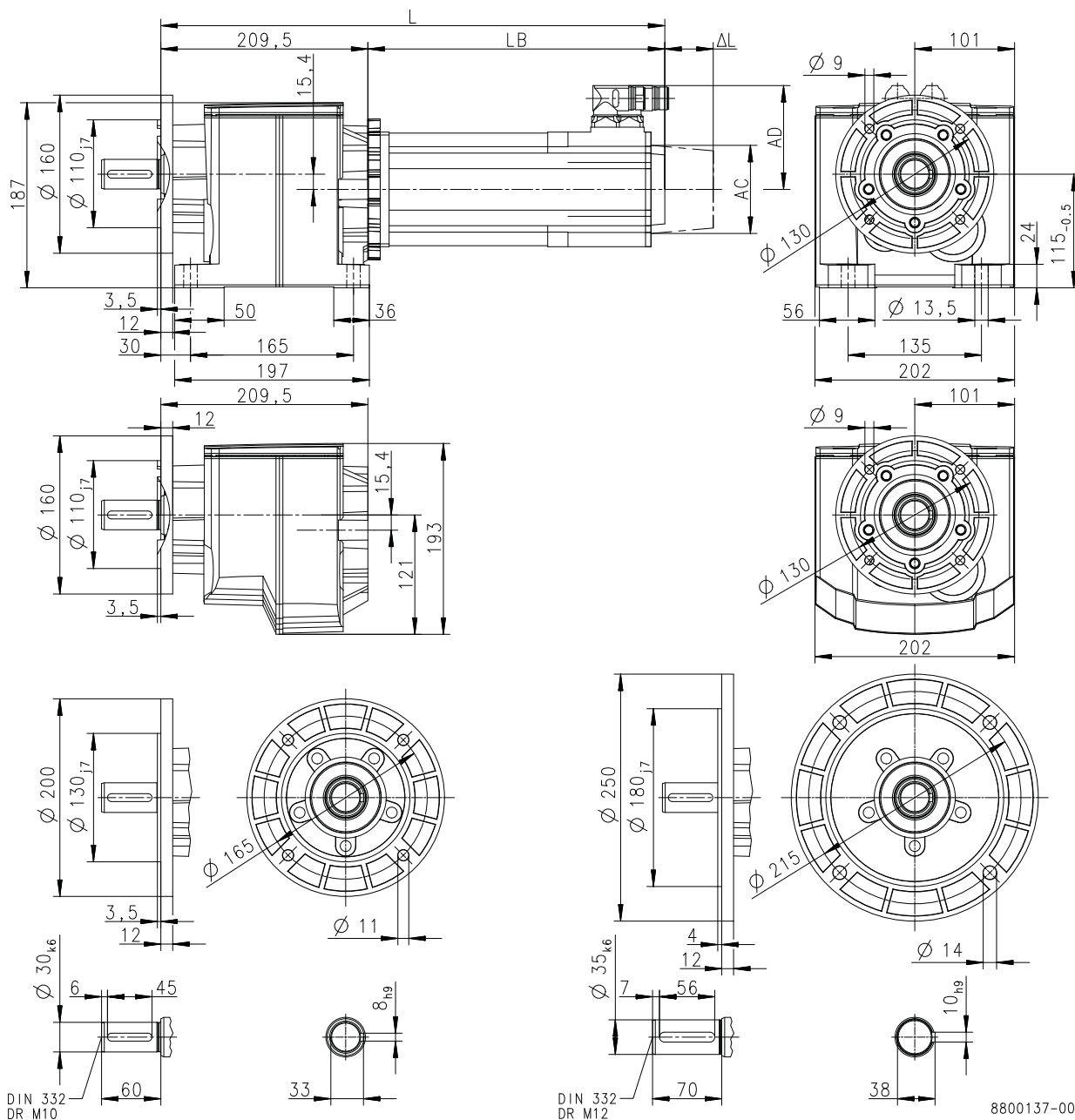
Dimensions

Basic dimensions



g500-H450, 2-/3-stage with MCA13

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	545	477
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

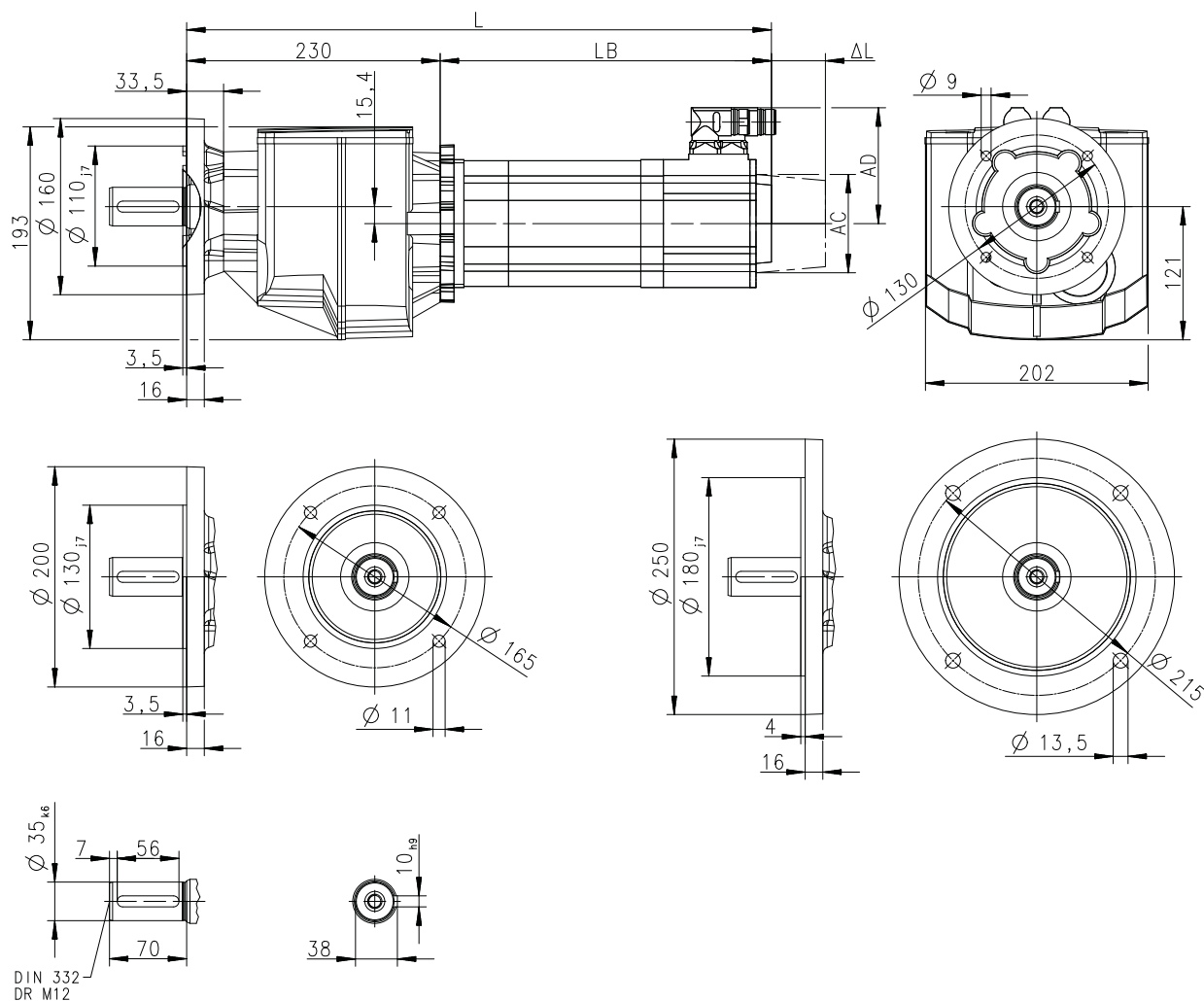


Technical data

Dimensions
Basic dimensions

g500-H450, 2-/3-stage with MCA13

Gearbox version: Solid shaft and flange (VCP)



8800321-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	566	498
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

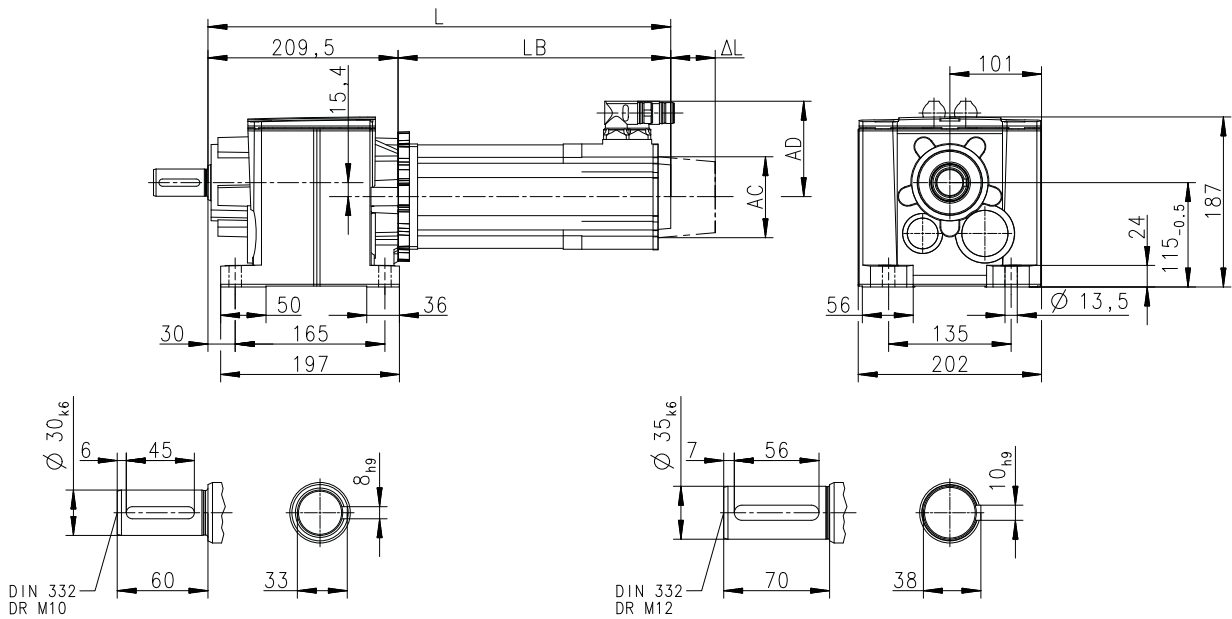
Technical data

Dimensions
Basic dimensions



g500-H450, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot (VBR)



8800136-00

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	589	527	589	527
Motor length	LB	mm	380	318	380	318
Length of motor options	ΔL	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

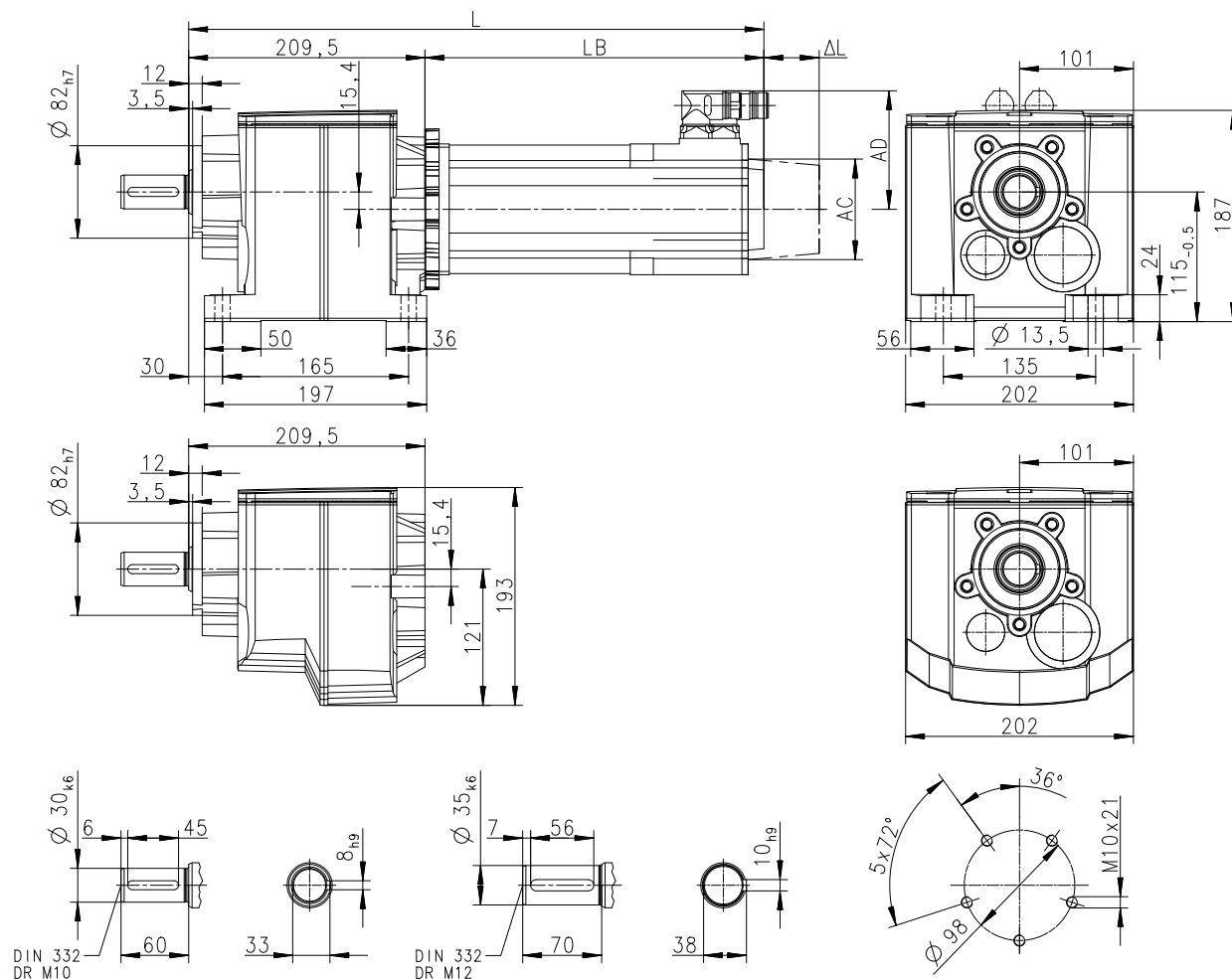


Technical data

Dimensions
Basic dimensions

g500-H450, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800138-00

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Total length	L	mm	589	527	589	527
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

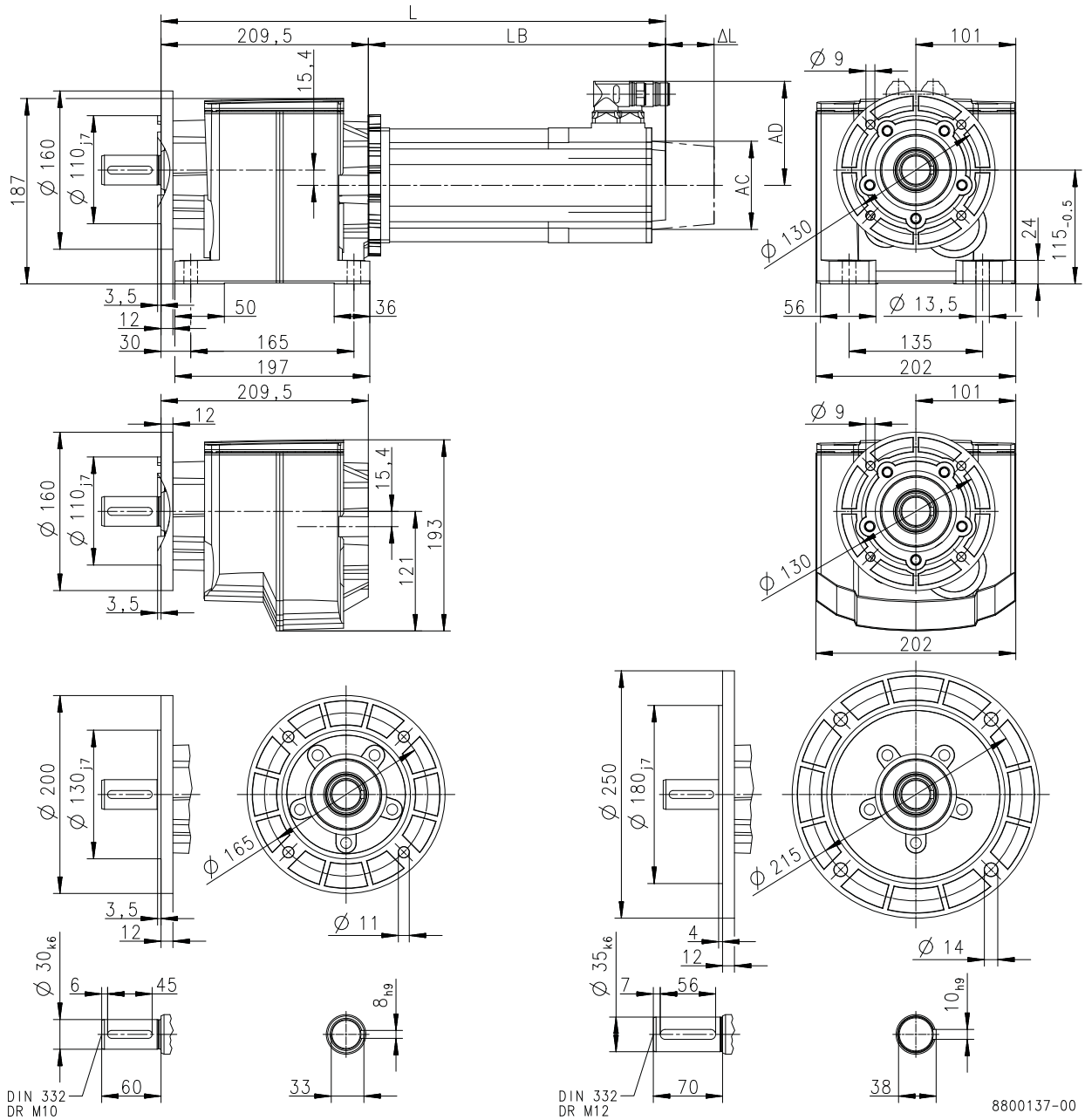
Technical data

Dimensions
Basic dimensions



g500-H450, 2-/3-stage with MCA14

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



Motor			MCA			
			14L16-Blower	14L20-natural	14L35-Blower	14L41-natural
Cooling type						
Total length	L	mm	589	527	589	527
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

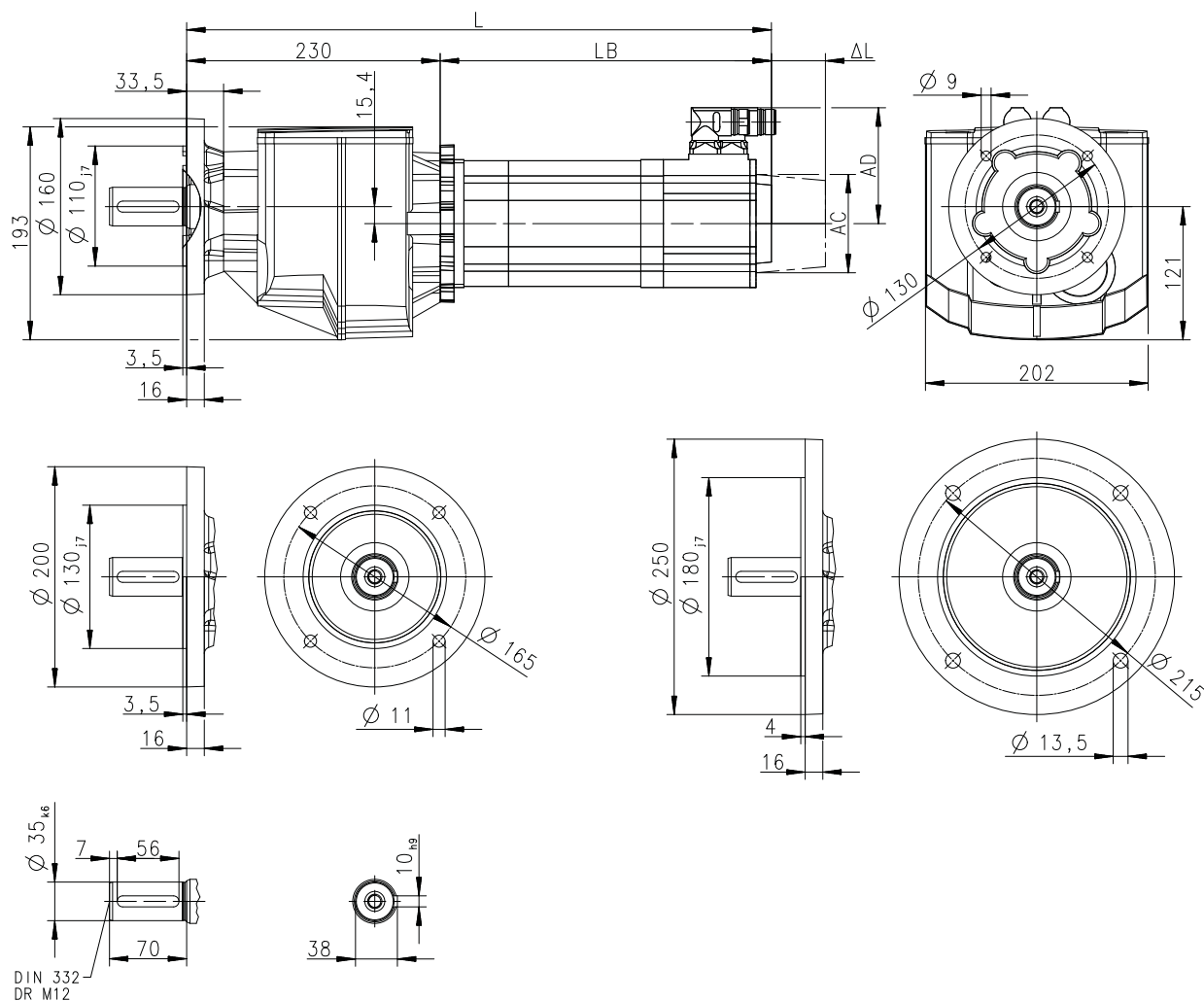


Technical data

Dimensions
Basic dimensions

g500-H450, 2-/3-stage with MCA14

Gearbox version: Solid shaft and flange (VCP)



8800321-00

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	610	548	610	548
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

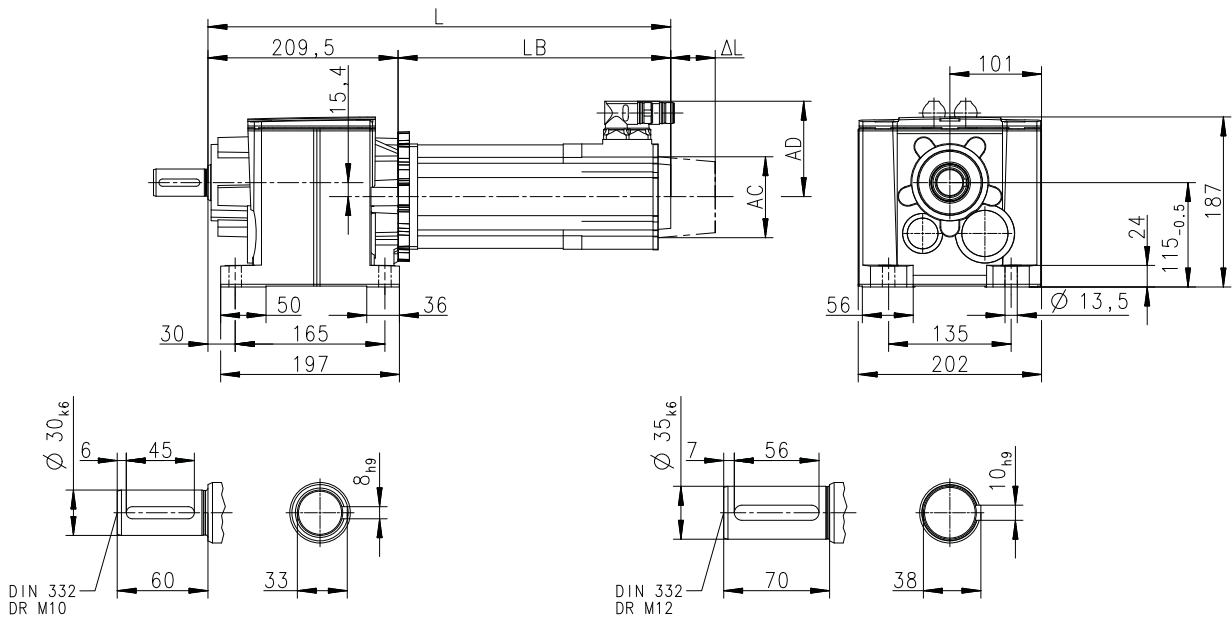
Technical data

Dimensions
Basic dimensions



g500-H450, 2-/3-stage with MCA17

Gearbox version: Solid shaft with foot (VBR)



8800136-00

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	652	566	652	566
Motor length	LB	mm	443	357	443	357
Length of motor options	ΔL	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118



g500-H450, 2-/3-stage with MCA17

[illegible]

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	652	566	652	566
Motor length	LB	mm	443	357	443	357
Length of motor options	Δ L	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

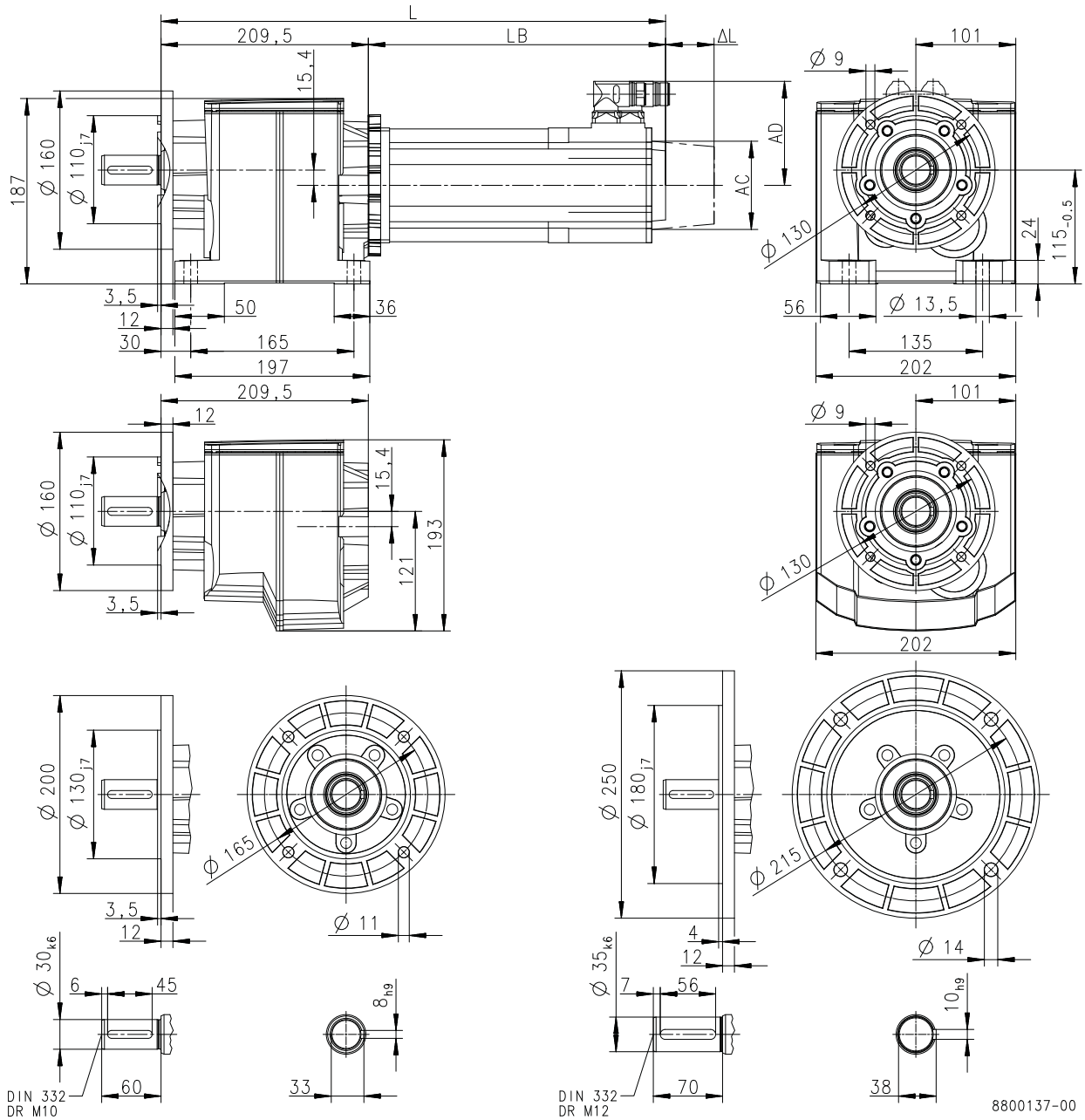
Technical data

Dimensions
Basic dimensions



g500-H450, 2-/3-stage with MCA17

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	652	566	652	566
Motor length	LB	mm	443	357	443	357
Length of motor options	Δ L	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

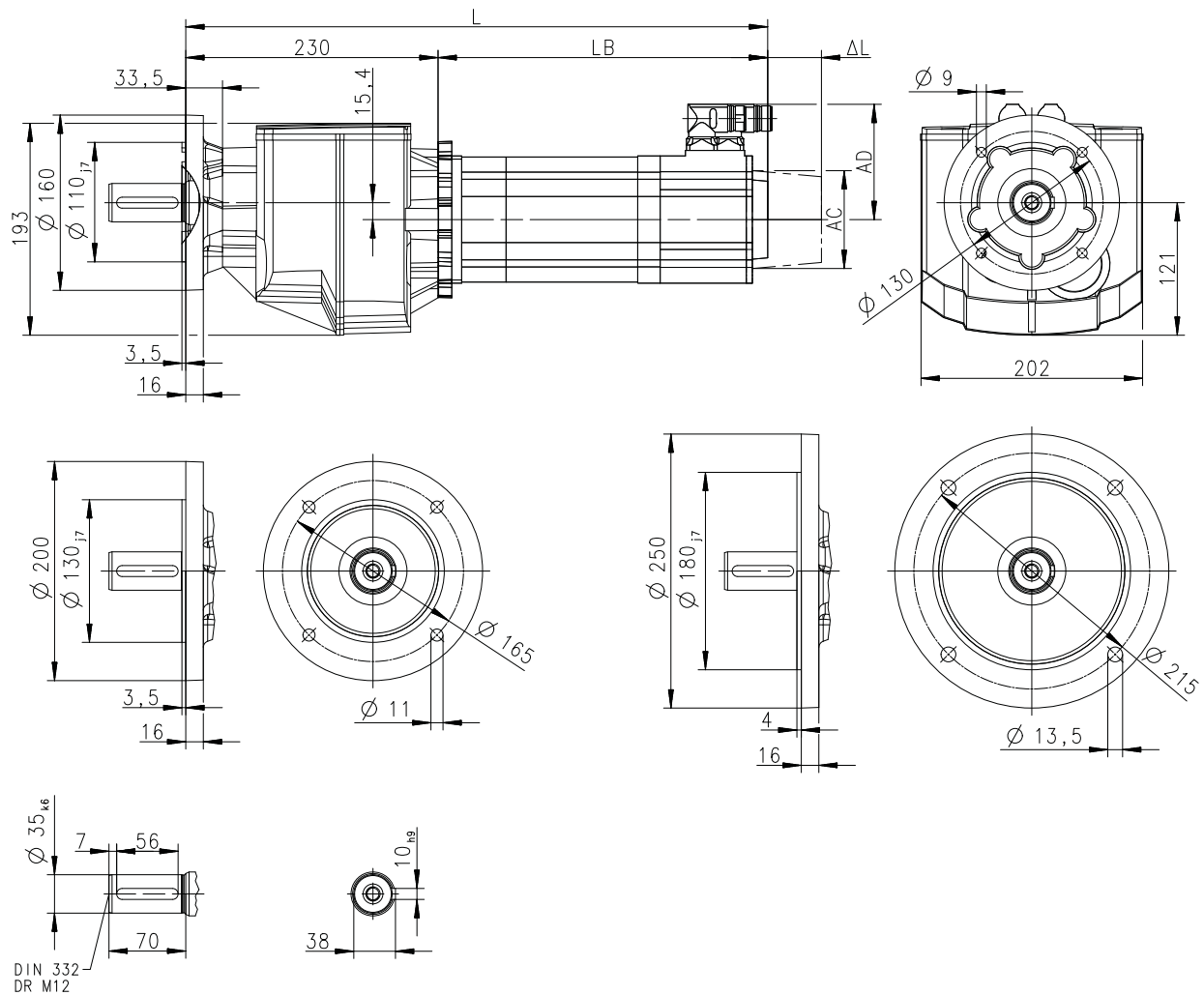


Technical data

Dimensions
Basic dimensions

g500-H450, 2-/3-stage with MCA17

Gearbox version: Solid shaft and flange (VCP)



8800321-00

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	673	587	673	587
Motor length	LB	mm	443	357	443	357
Length of motor options	ΔL	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

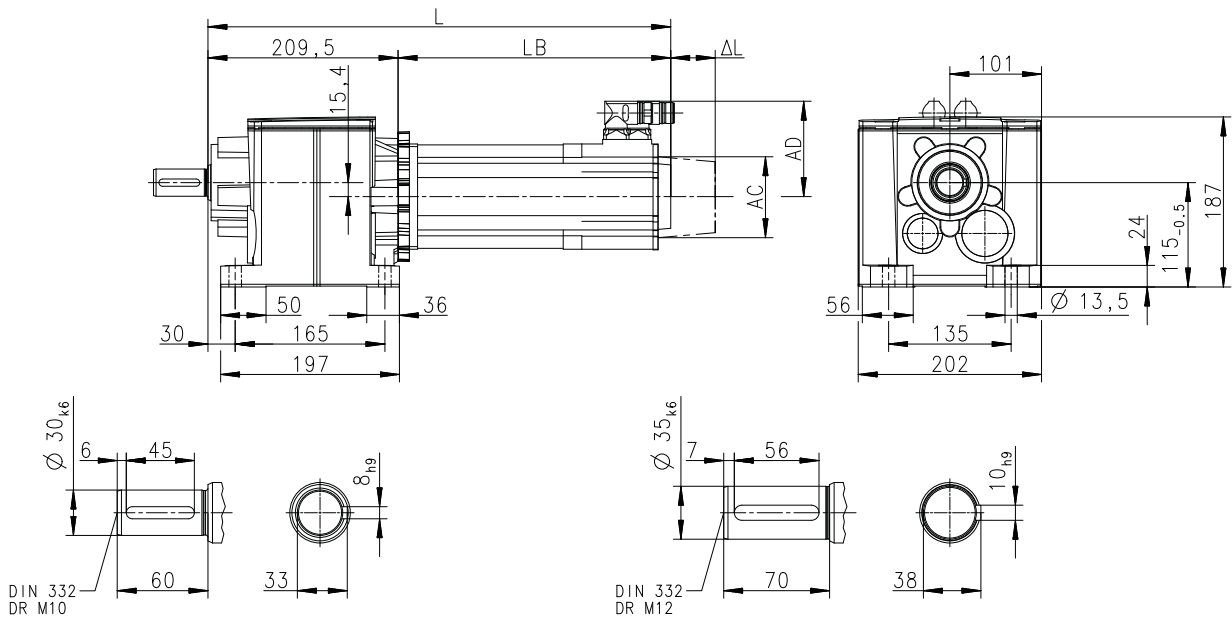
Technical data

Dimensions
Basic dimensions



g500-H450, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot (VBR)



8800136-00

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	732	635	732	635
Motor length	LB	mm	522	425	522	425
Length of motor options	ΔL	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151

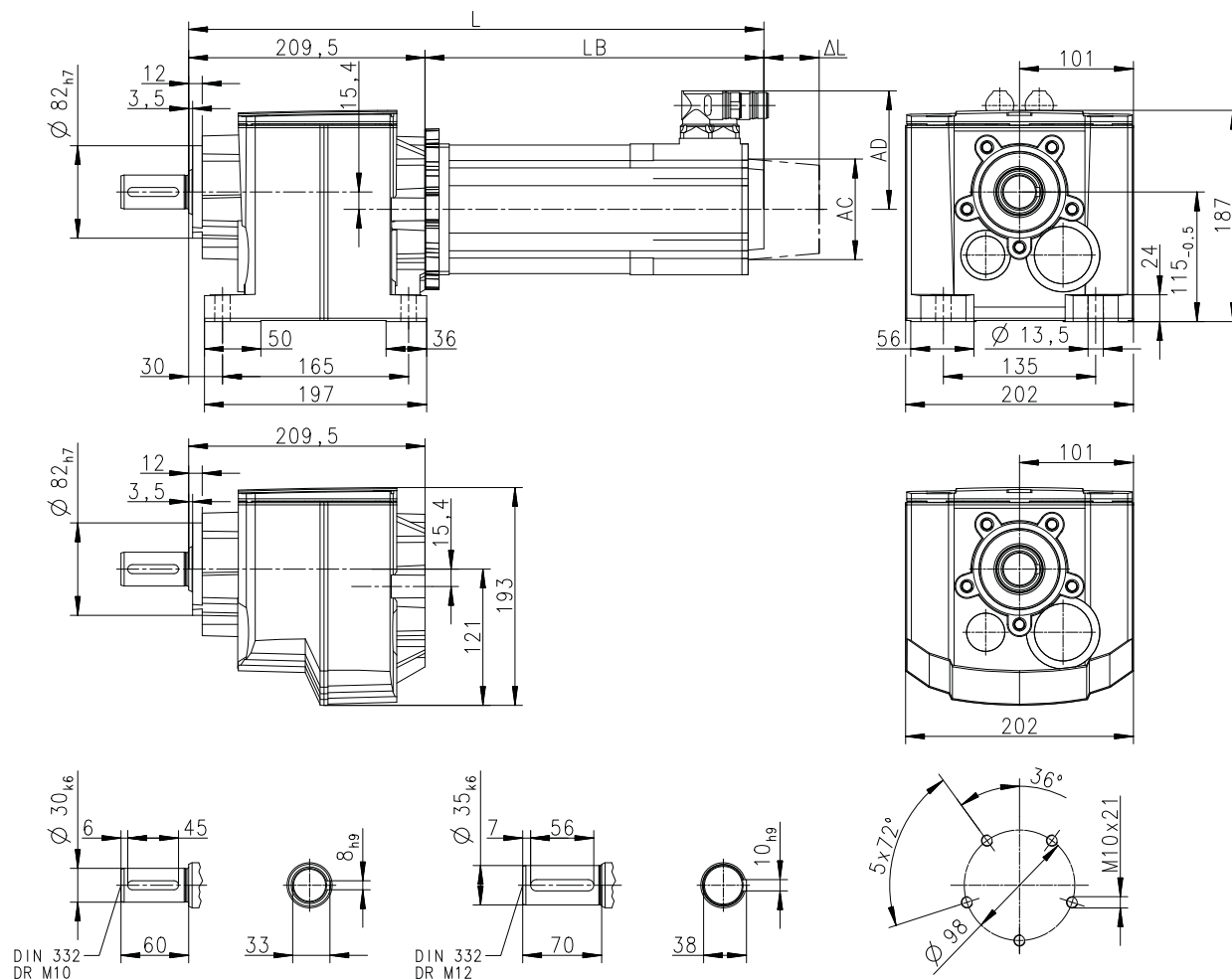


Technical data

Dimensions
Basic dimensions

g500-H450, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800138-00

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	732	635	732	635
Motor length	LB	mm	522	425	522	425
Length of motor options	Δ L	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151

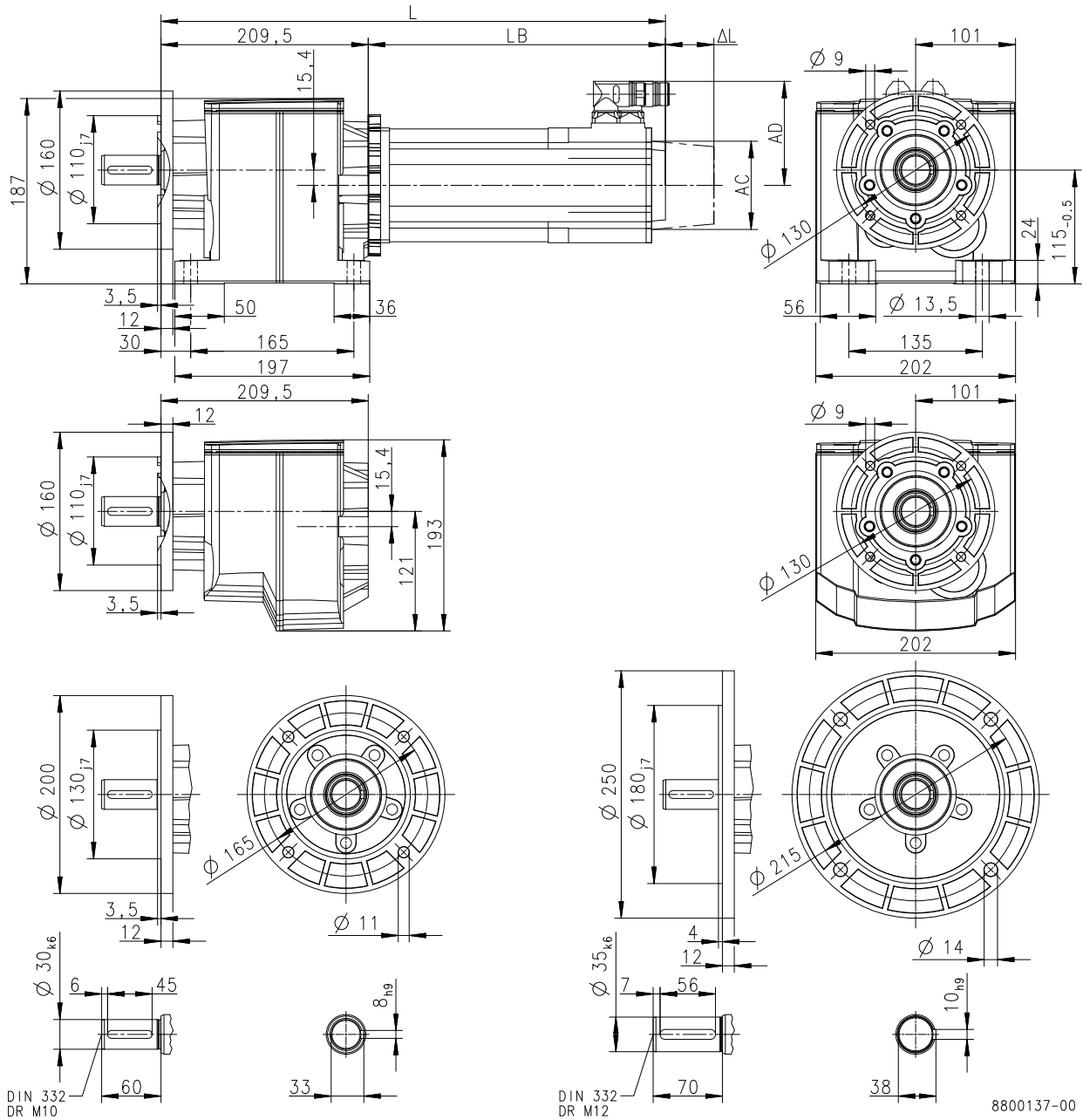
Technical data

Dimensions
Basic dimensions



g500-H450, 2-/3-stage with MCA19

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



Motor			MCA			
			19S17- Blower	19S23- natural	19S35- Blower	19S42- natural
Total length	L	mm	732	635	732	635
Motor length	LB	mm	522	425	522	425
Length of motor options	Δ L	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151

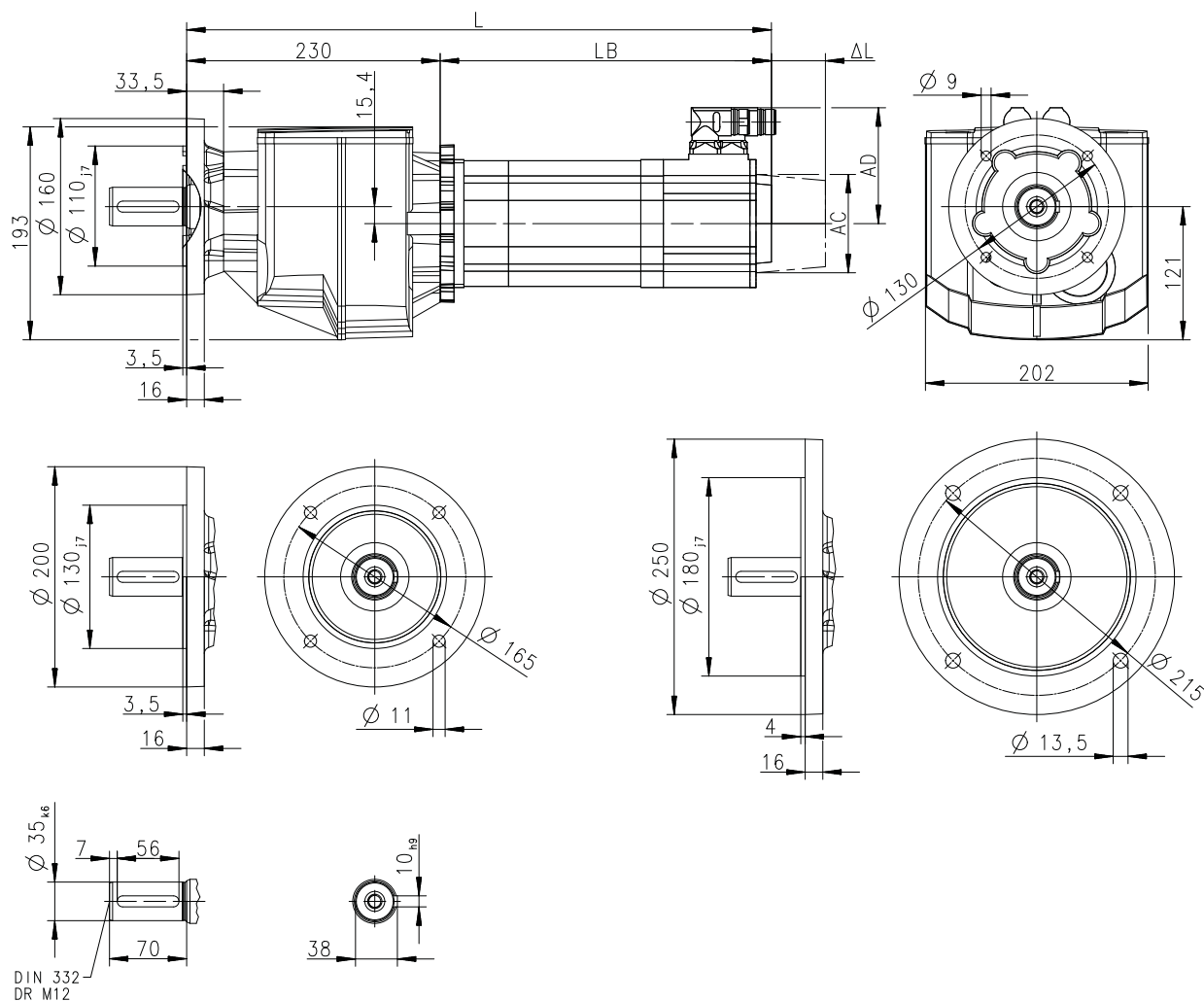


Technical data

Dimensions
Basic dimensions

g500-H450, 2-/3-stage with MCA19

Gearbox version: Solid shaft and flange (VCP)



8800321-00

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	752	655	752	655
Motor length	LB	mm	522	425	522	425
Length of motor options	Δ L	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151

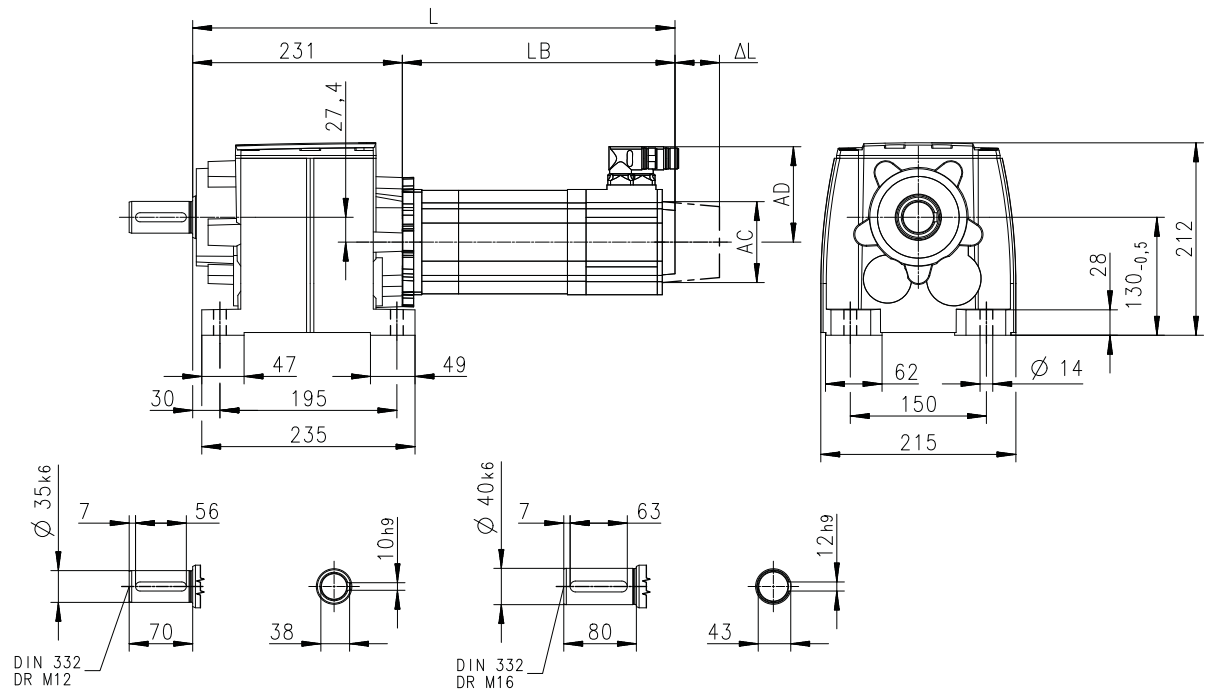
Technical data

Dimensions
Basic dimensions



g500-H600, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot (VBR)



8800540-00

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	490
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

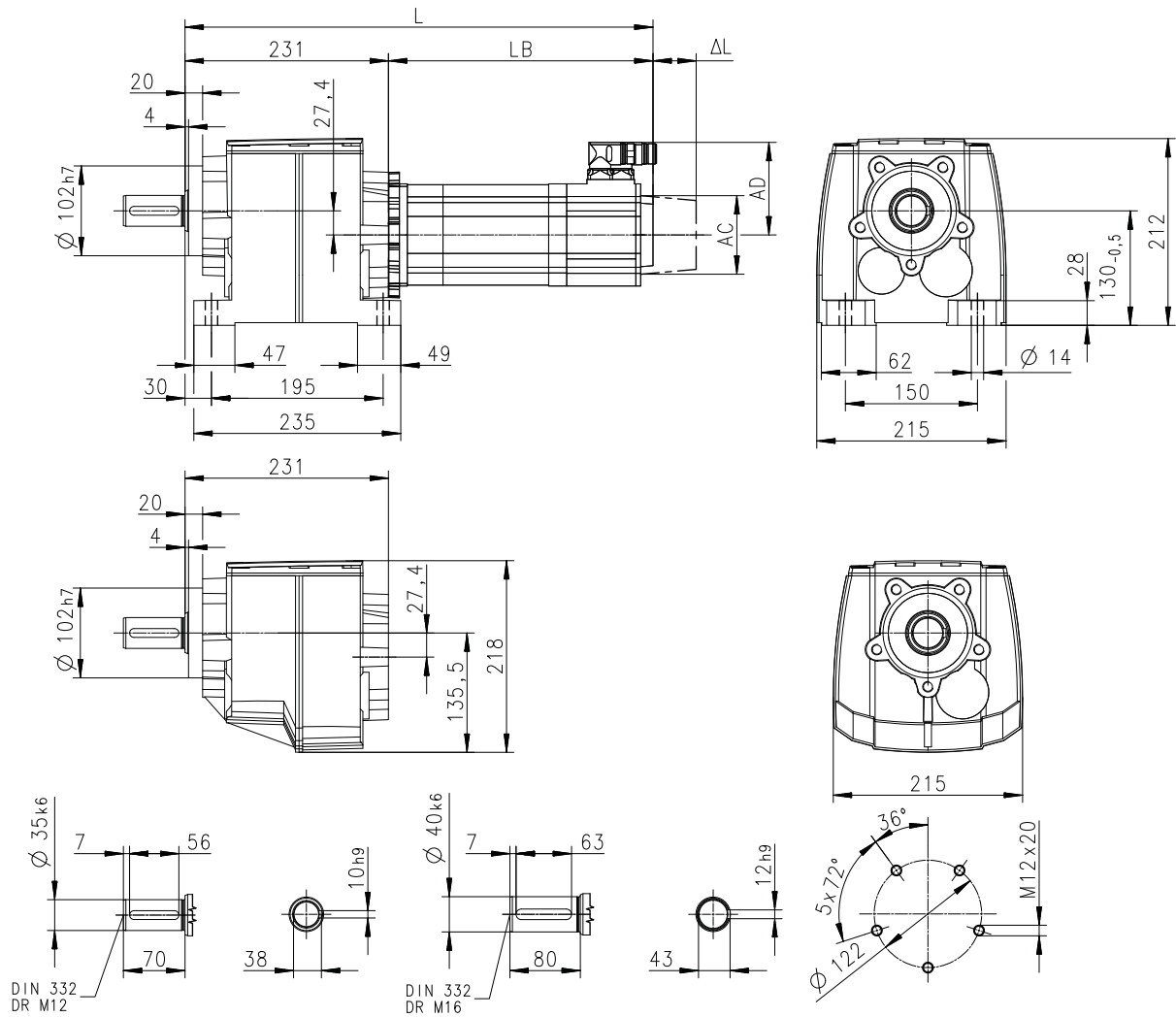


Technical data

Dimensions
Basic dimensions

g500-H600, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800541-00

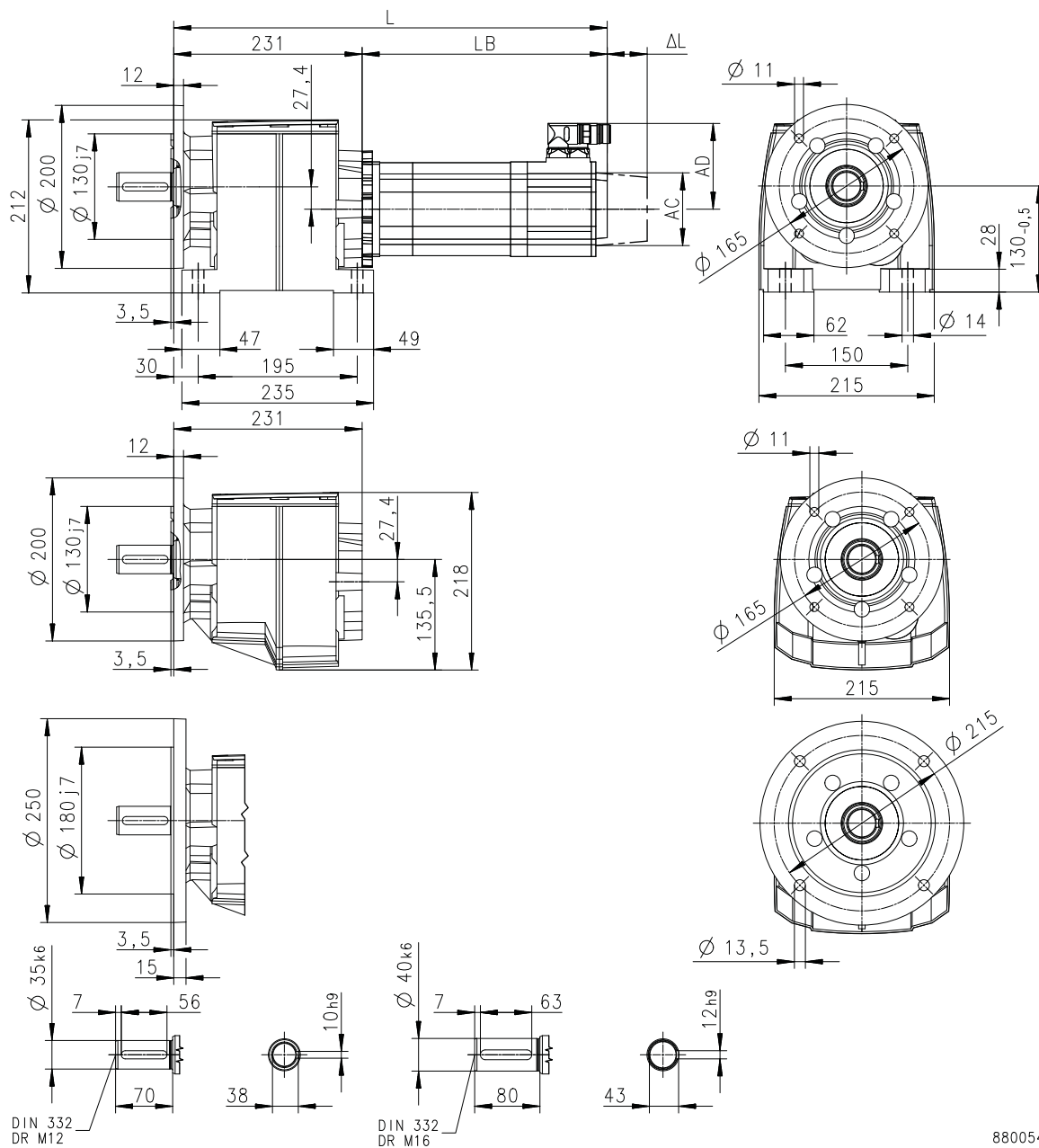
Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	490
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

Dimensions

Basic dimensions



Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800542-00

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	490
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

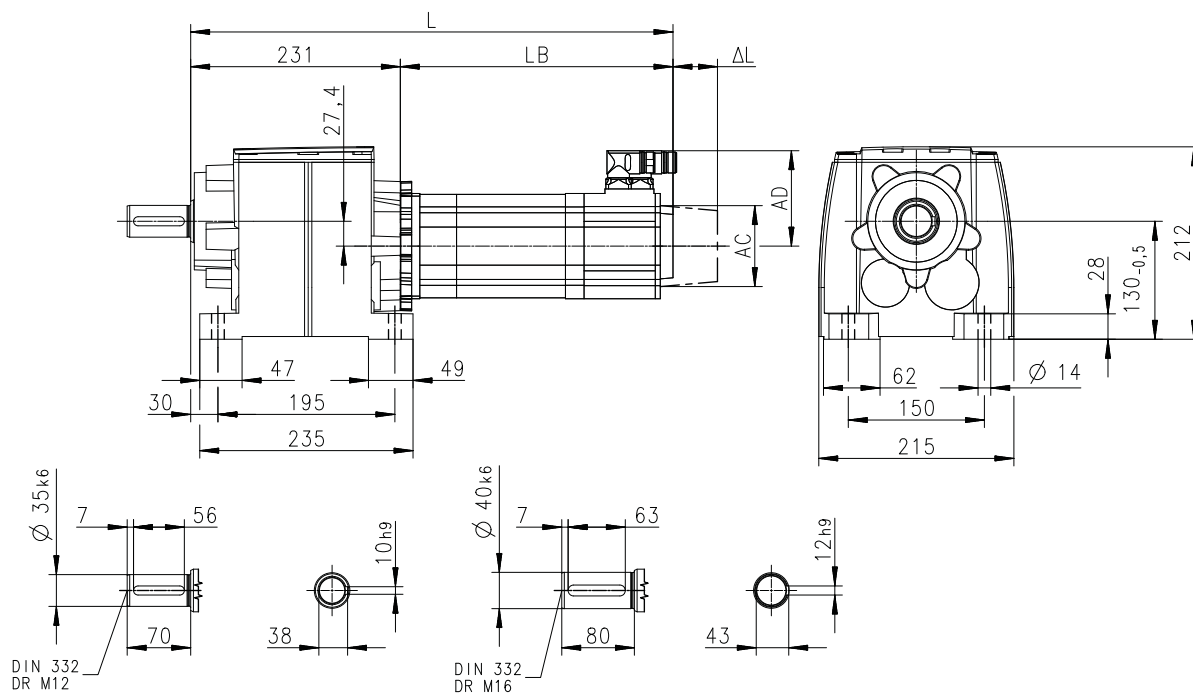


Technical data

Dimensions
Basic dimensions

g500-H600, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot (VBR)



8800540-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	567	499
Motor length	LB	mm	336	268
Length of motor options	ΔL	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

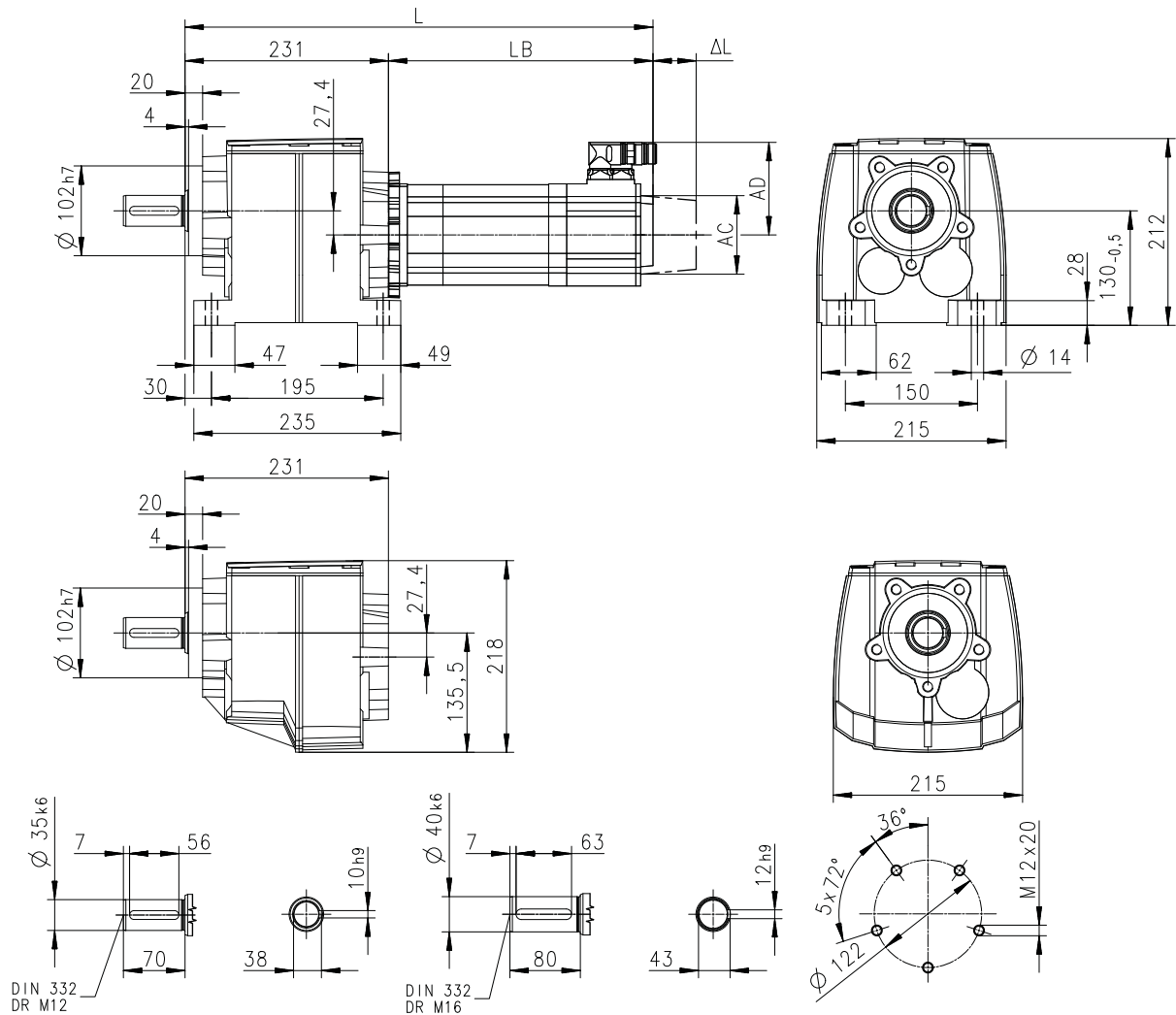
Technical data

Dimensions
Basic dimensions



g500-H600, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800541-00

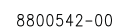
Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	567	499
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102



Dimensions

Basic dimensions

Gearbox version: Solid shaft and foot/flange (VAK/VCK)

153

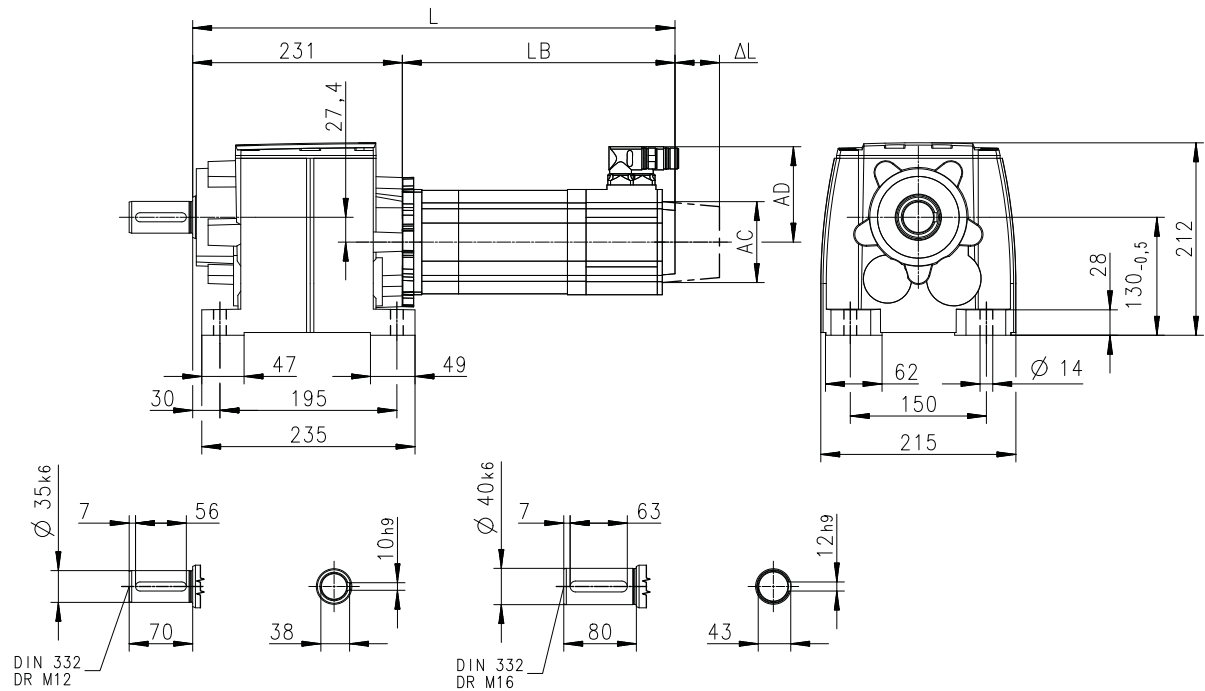
Technical data

Dimensions
Basic dimensions



g500-H600, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot (VBR)



8800540-00

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	611	549	611	549
Motor length	LB	mm	380	318	380	318
Length of motor options	ΔL	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109



g500-H600, 2-/3-stage with MCA14

[illegible]

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	611	549	611	549
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

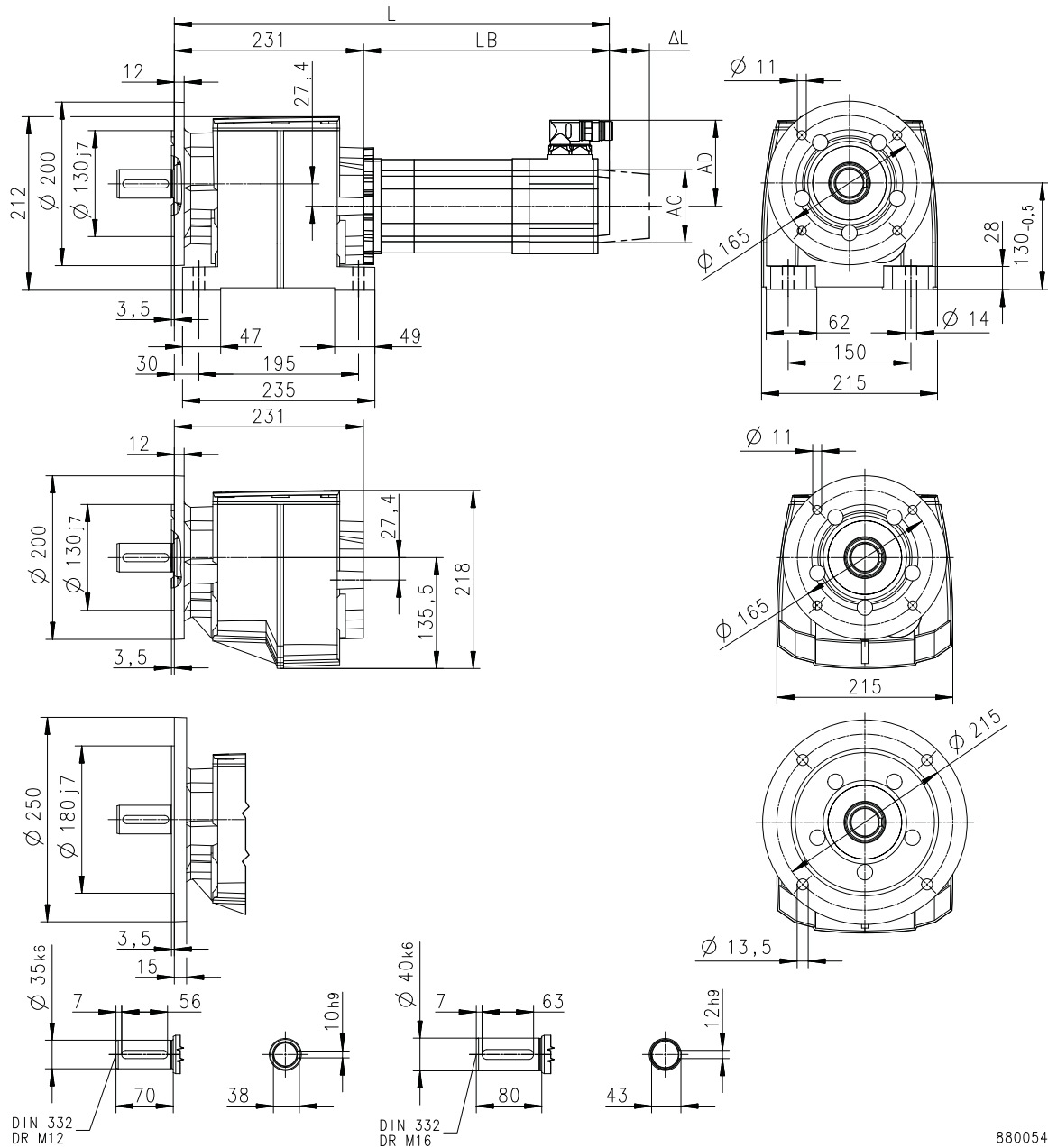
Technical data

Dimensions
Basic dimensions



g500-H600, 2-/3-stage with MCA14

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800542-00

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Total length	L	mm	611	549	611	549
Motor length	LB	mm	380	318	380	318
Length of motor options	ΔL	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

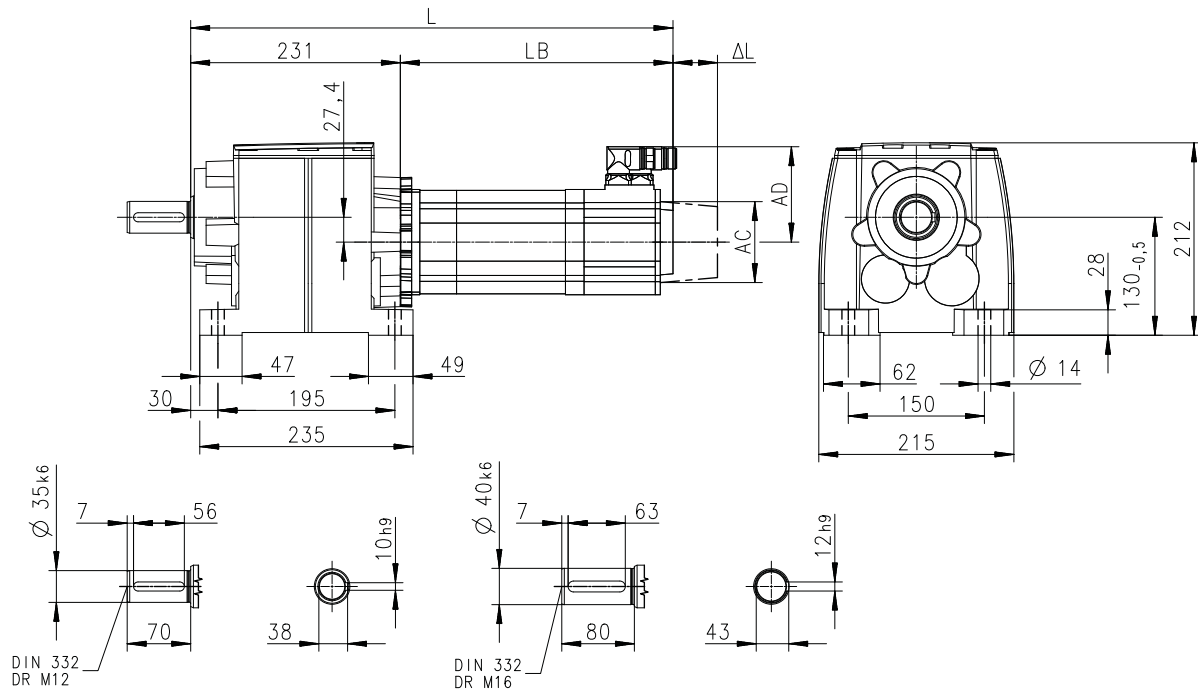


Technical data

Dimensions
Basic dimensions

g500-H600, 2-/3-stage with MCA17

Gearbox version: Solid shaft with foot (VBR)



8800540-00

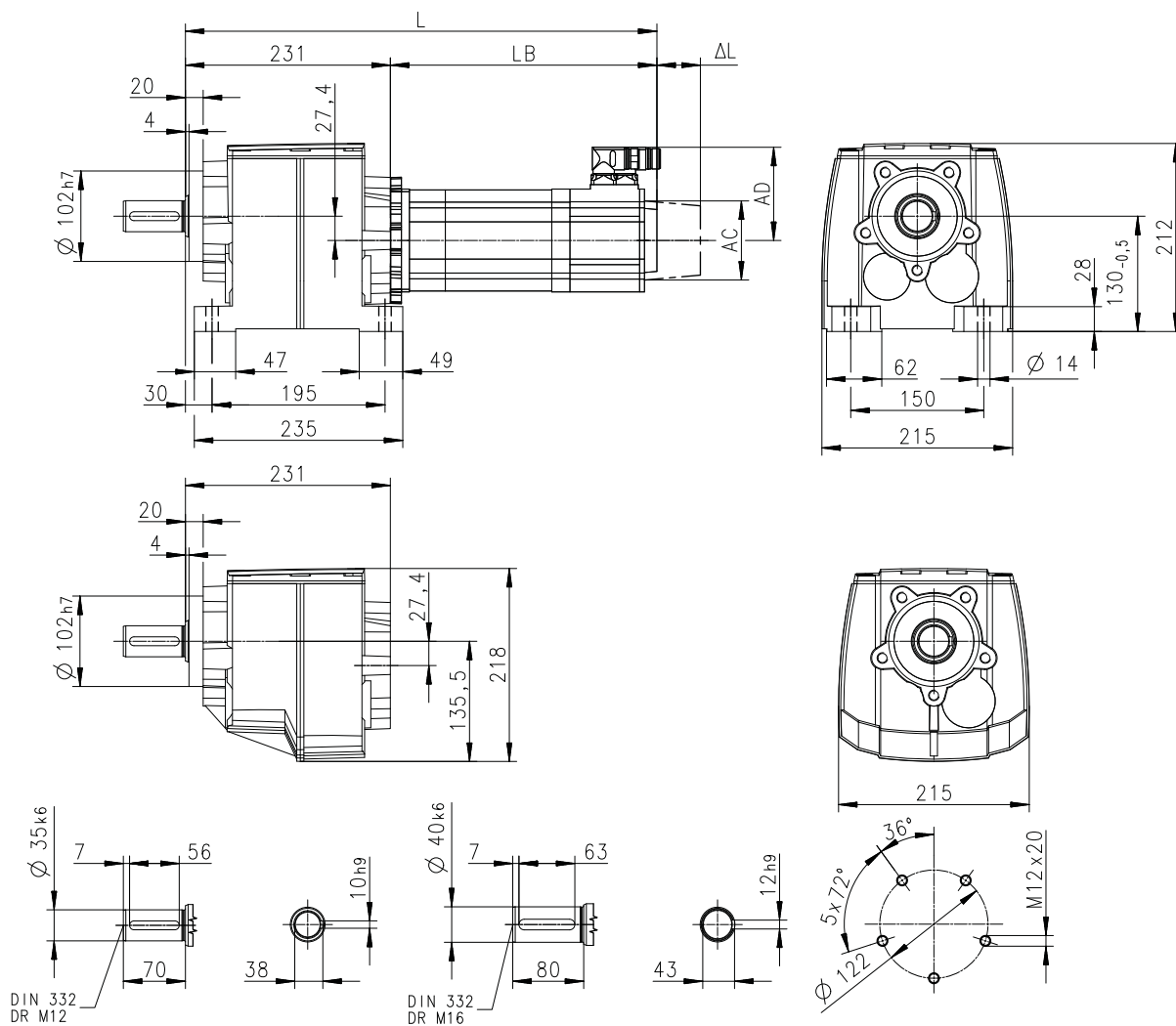
Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	674	588	674	588
Motor length	LB	mm	443	357	443	357
Length of motor options	ΔL	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

Dimensions

Basic dimensions



Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800541-00

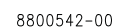
Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	674	588	674	588
Motor length	LB	mm	443	357	443	357
Length of motor options	Δ L	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118



Dimensions

Basic dimensions

Gearbox version: Solid shaft and foot/flange (VAK/VCK)

159

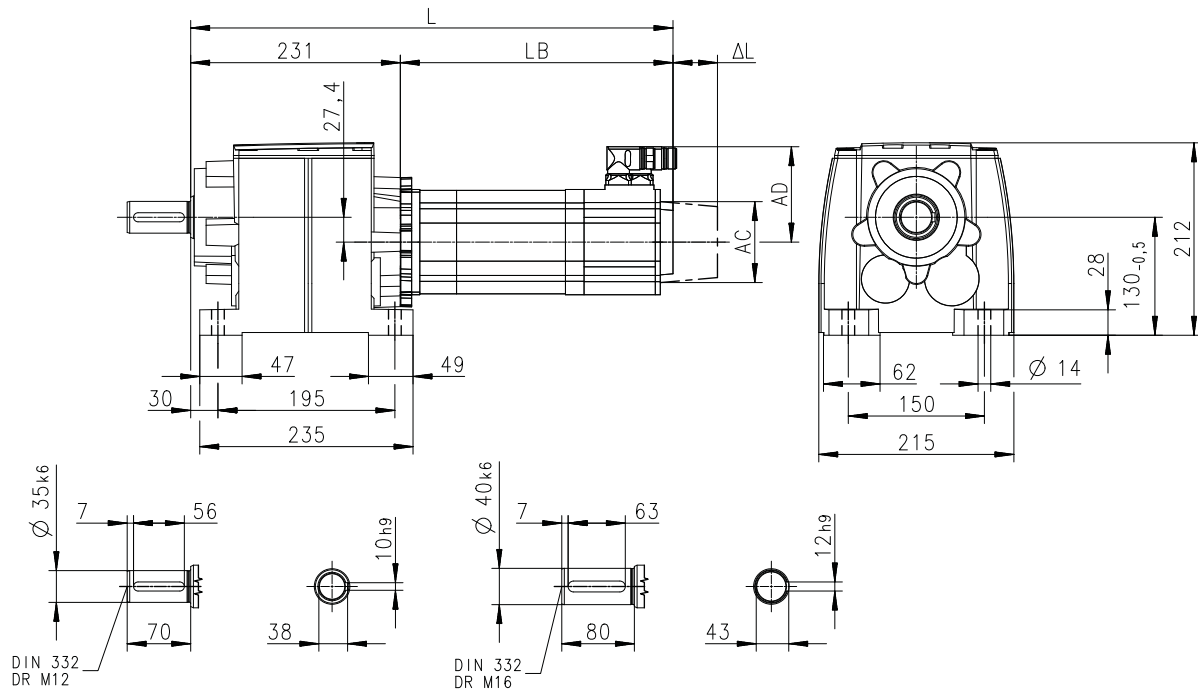
Technical data

Dimensions
Basic dimensions



g500-H600, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot (VBR)



8800540-00

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	753	656	753	656
Motor length	LB	mm	522	425	522	425
Length of motor options	ΔL	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151

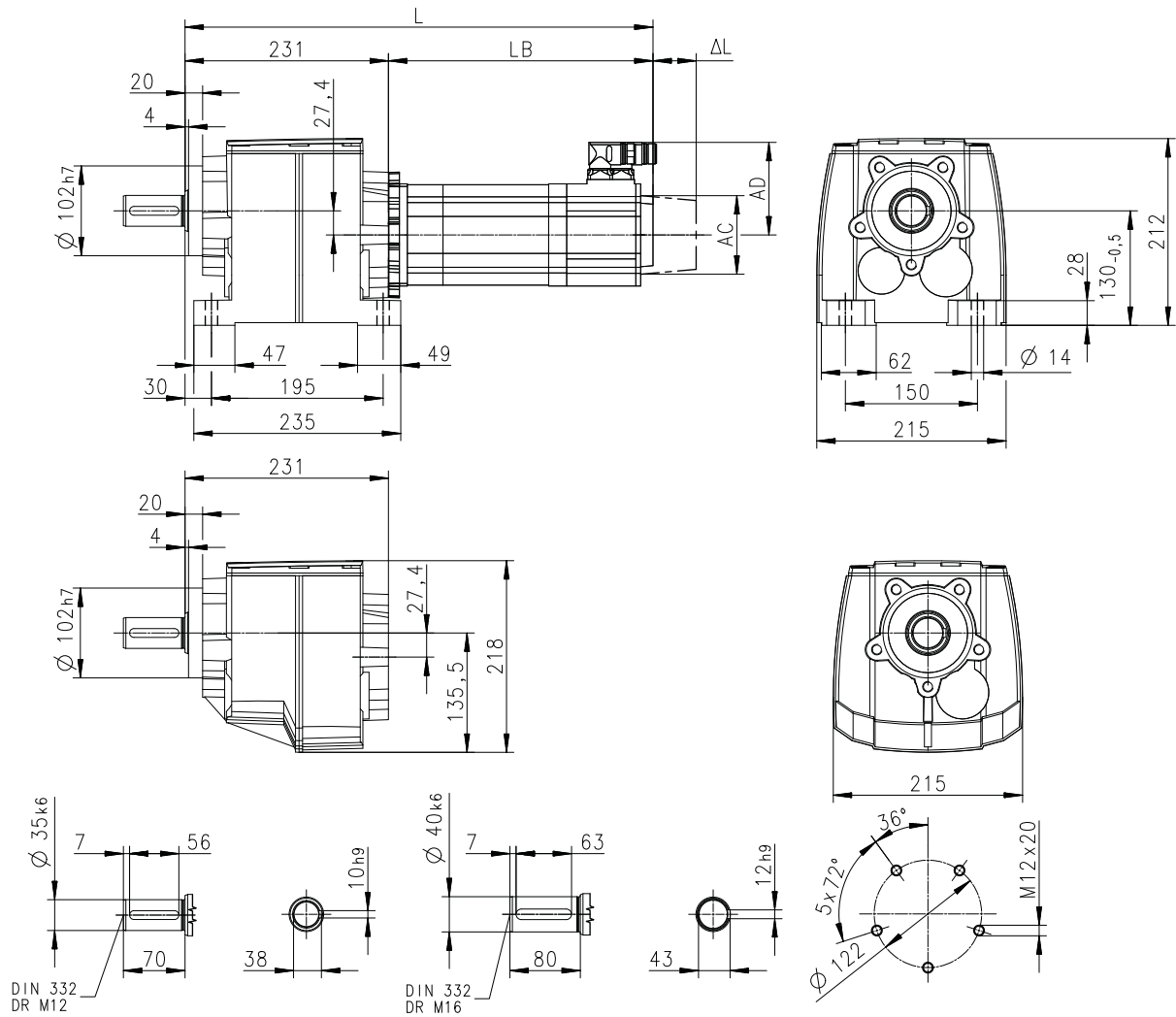


Technical data

Dimensions
Basic dimensions

g500-H600, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800541-00

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	753	656	753	656
Motor length	LB	mm	522	425	522	425
Length of motor options	Δ L	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151

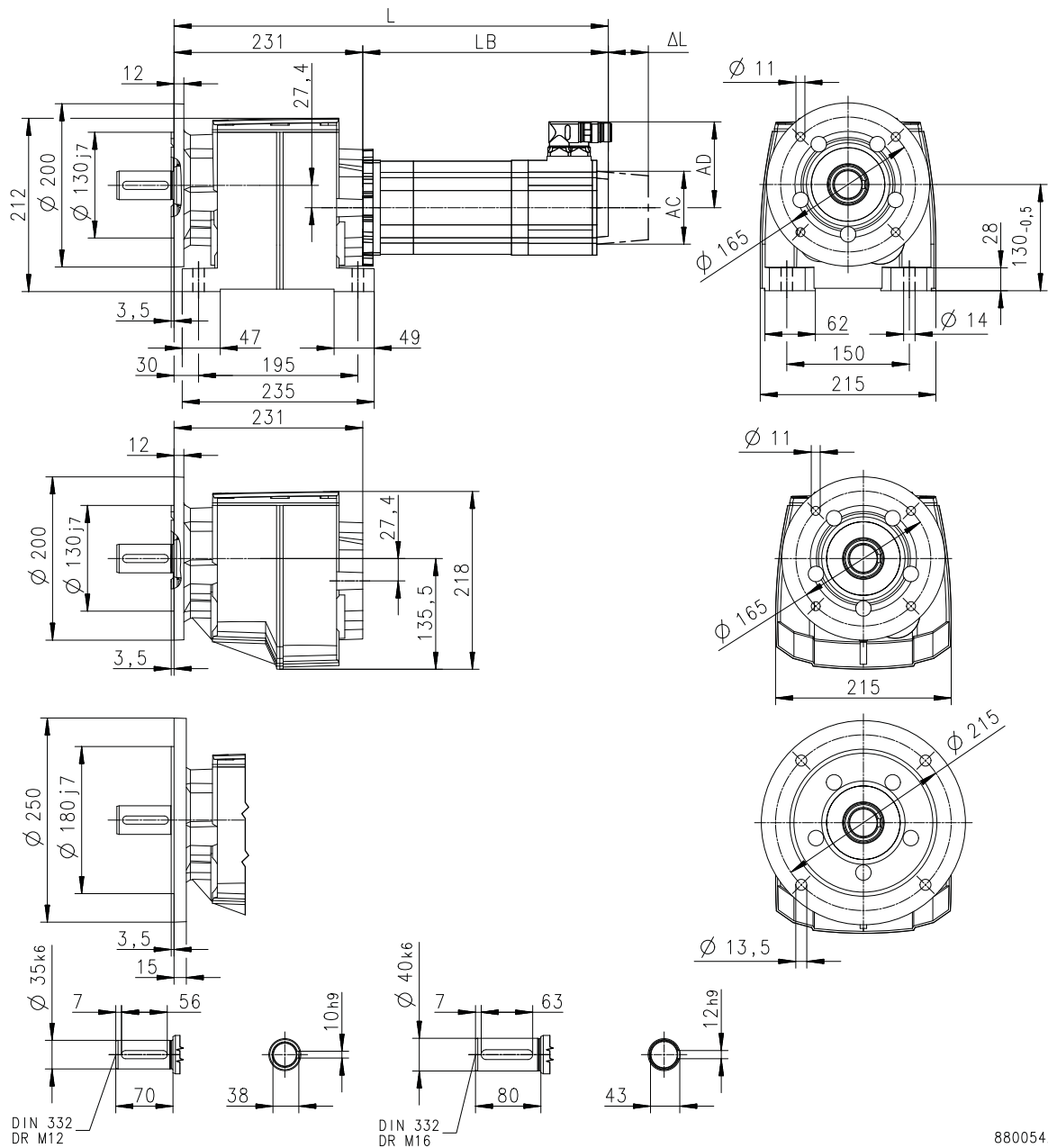
Technical data

Dimensions
Basic dimensions



g500-H600, 2-/3-stage with MCA19

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800542-00

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	753	656	753	656
Motor length	LB	mm	522	425	522	425
Length of motor options	Δ L	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151

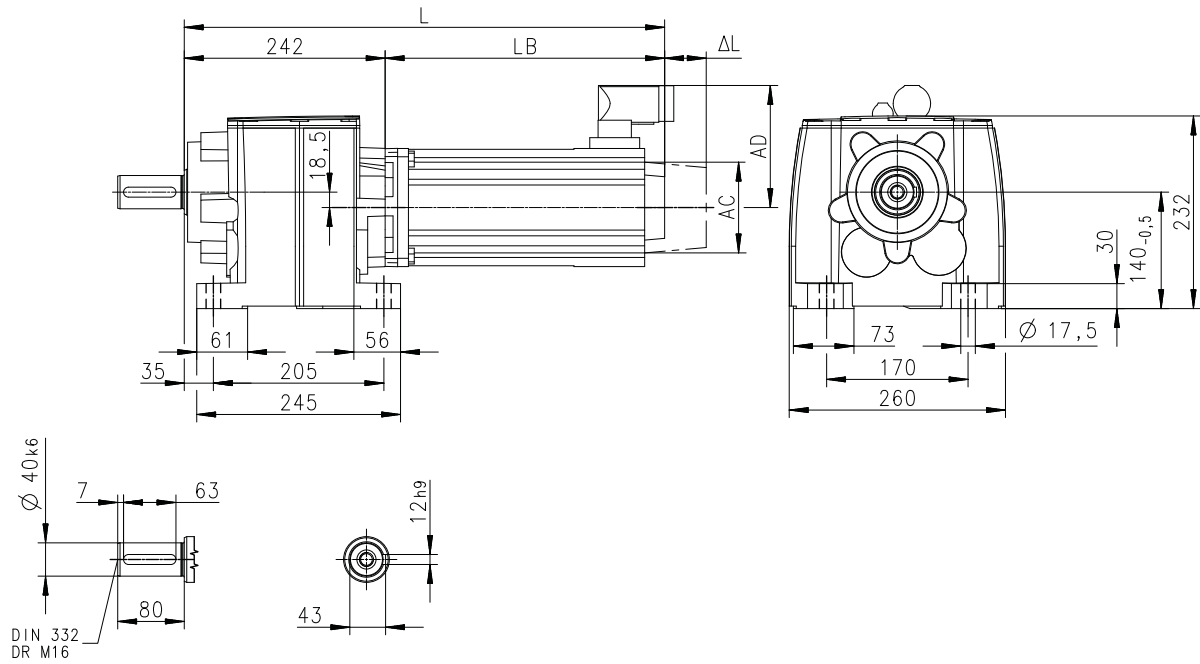


Technical data

Dimensions
Basic dimensions

g500-H850, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot (VBR)



8800543-00

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	501
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

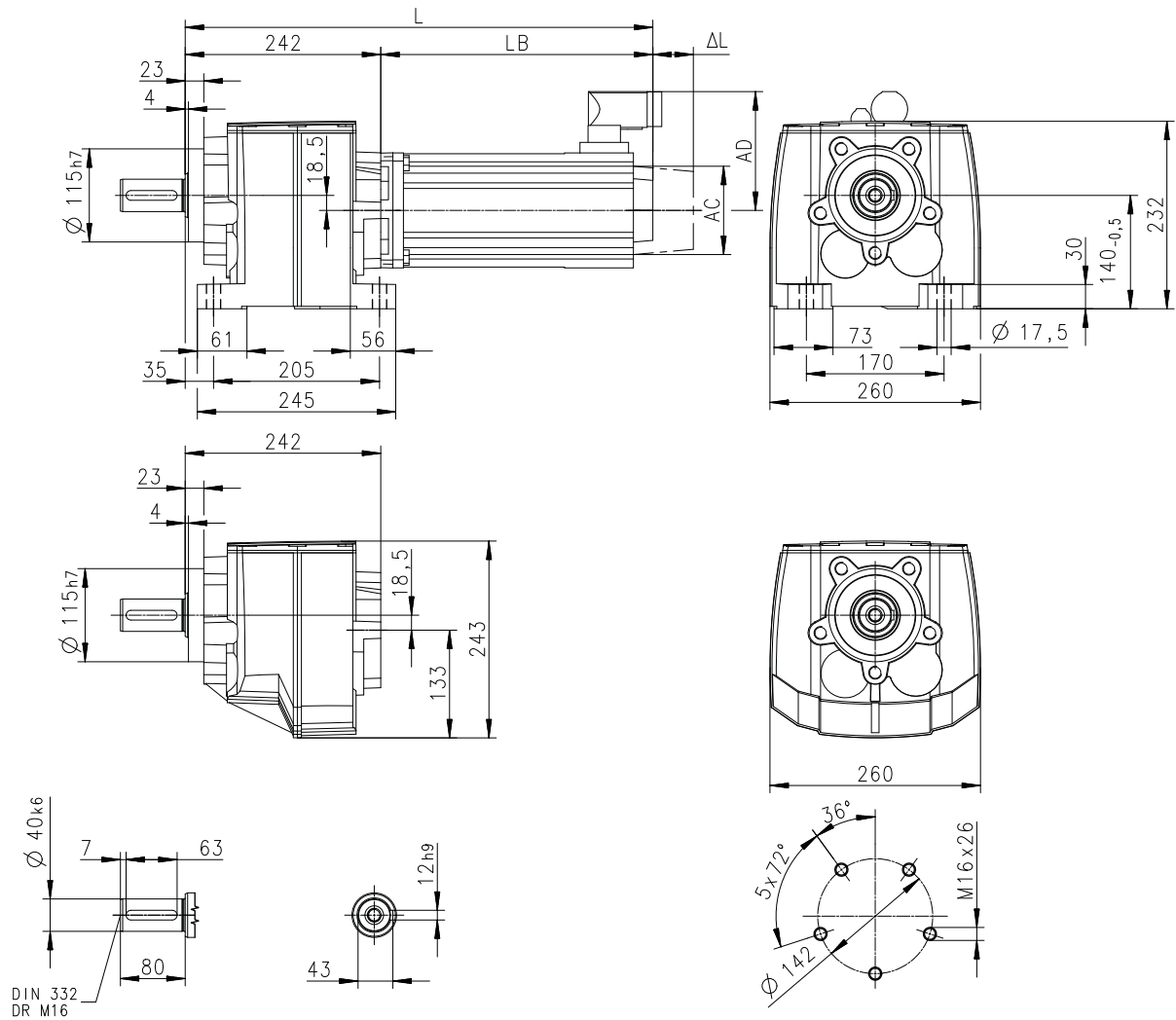
Technical data

Dimensions
Basic dimensions



g500-H850, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800544-00

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	501
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

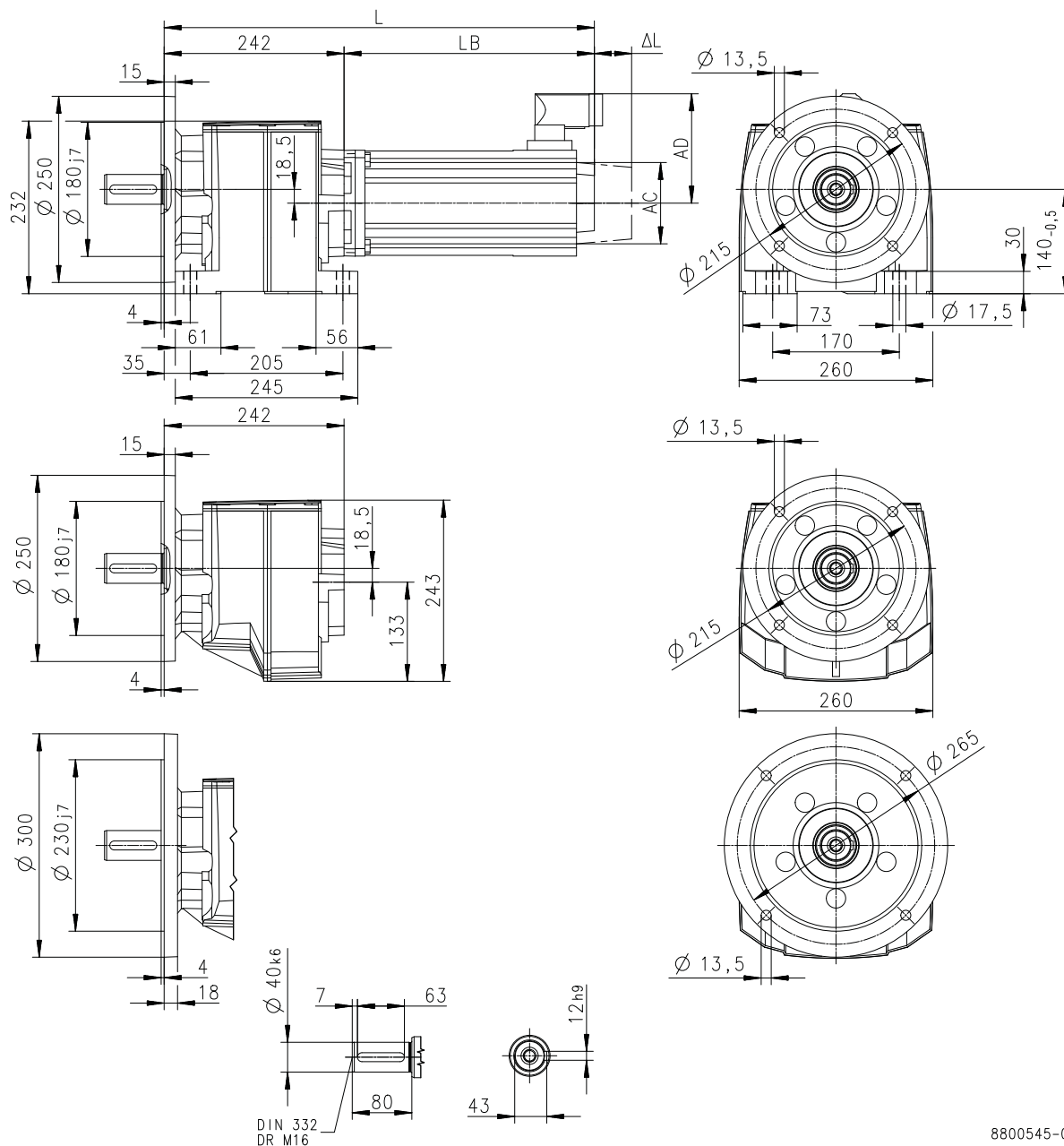


Technical data

Dimensions
Basic dimensions

g500-H850, 2-/3-stage with MCA10

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	501
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

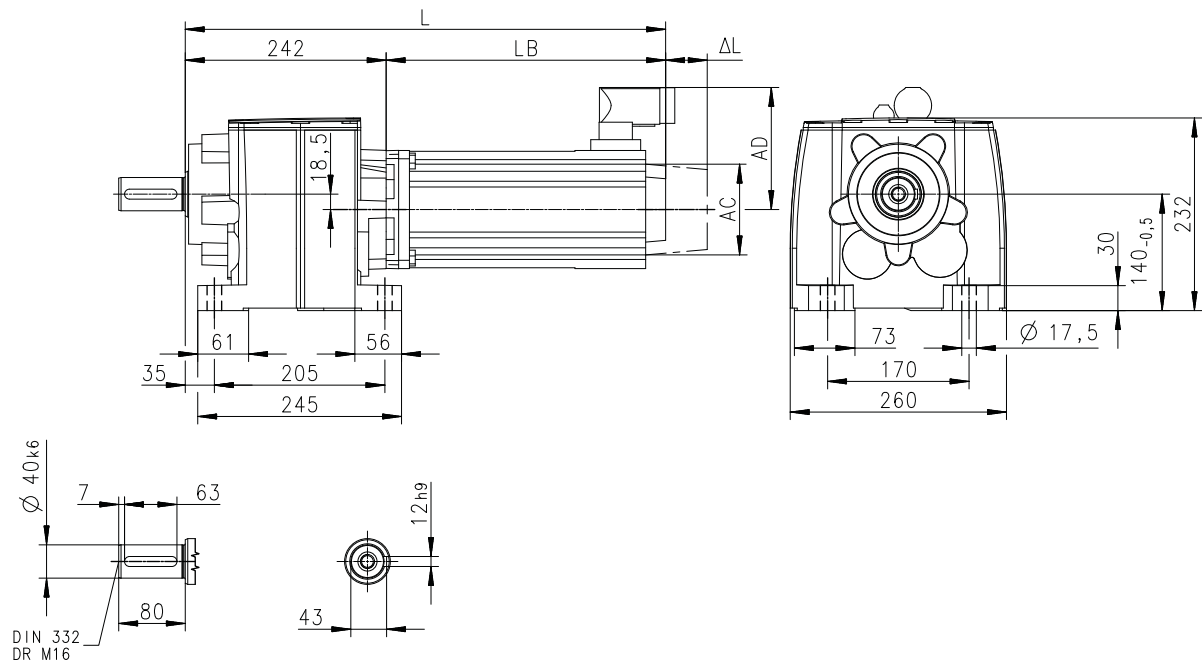
Technical data

Dimensions
Basic dimensions



g500-H850, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot (VBR)



8800543-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	578	510
Motor length	LB	mm	336	268
Length of motor options	ΔL	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

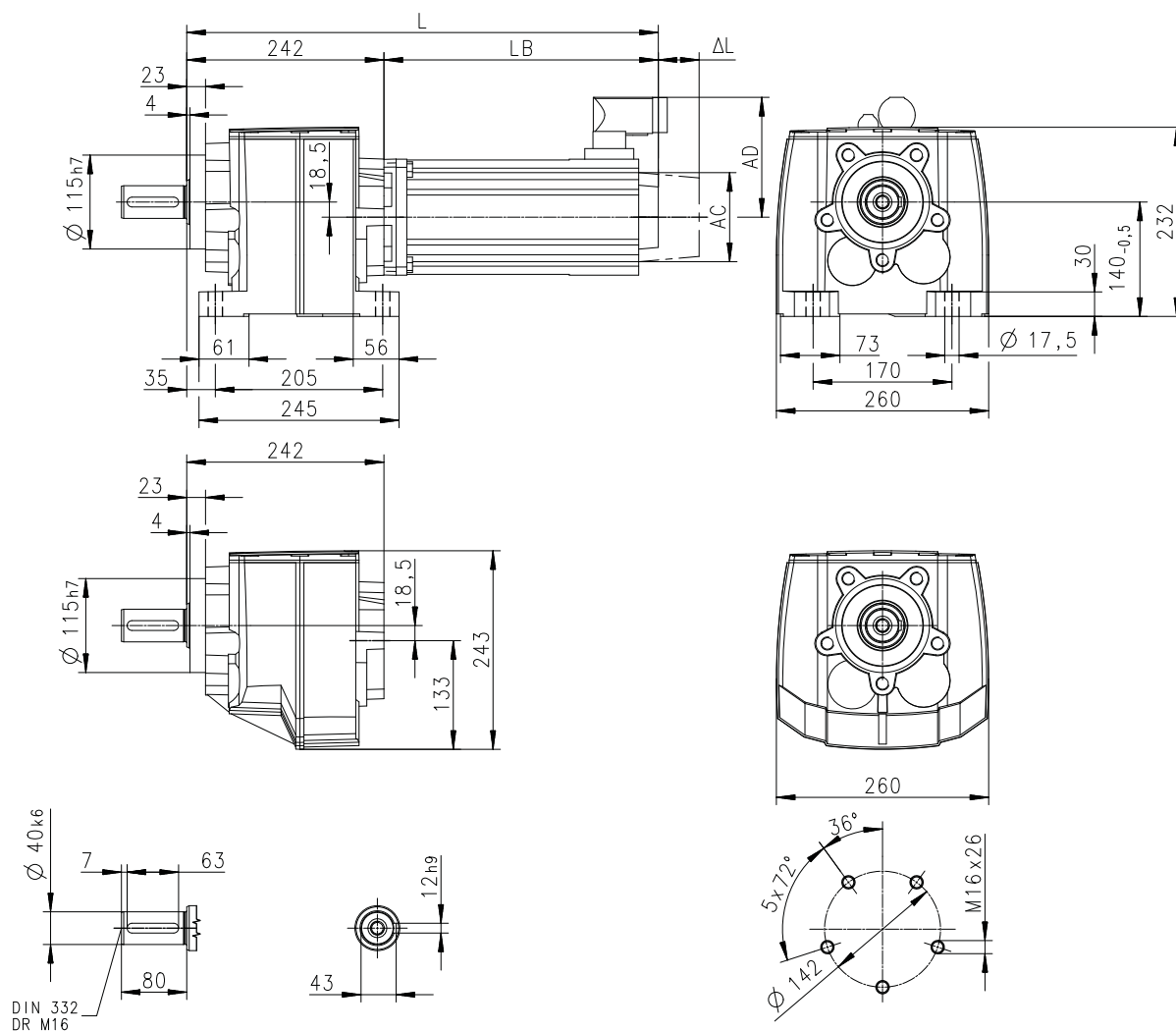


Technical data

Dimensions
Basic dimensions

g500-H850, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800544-00

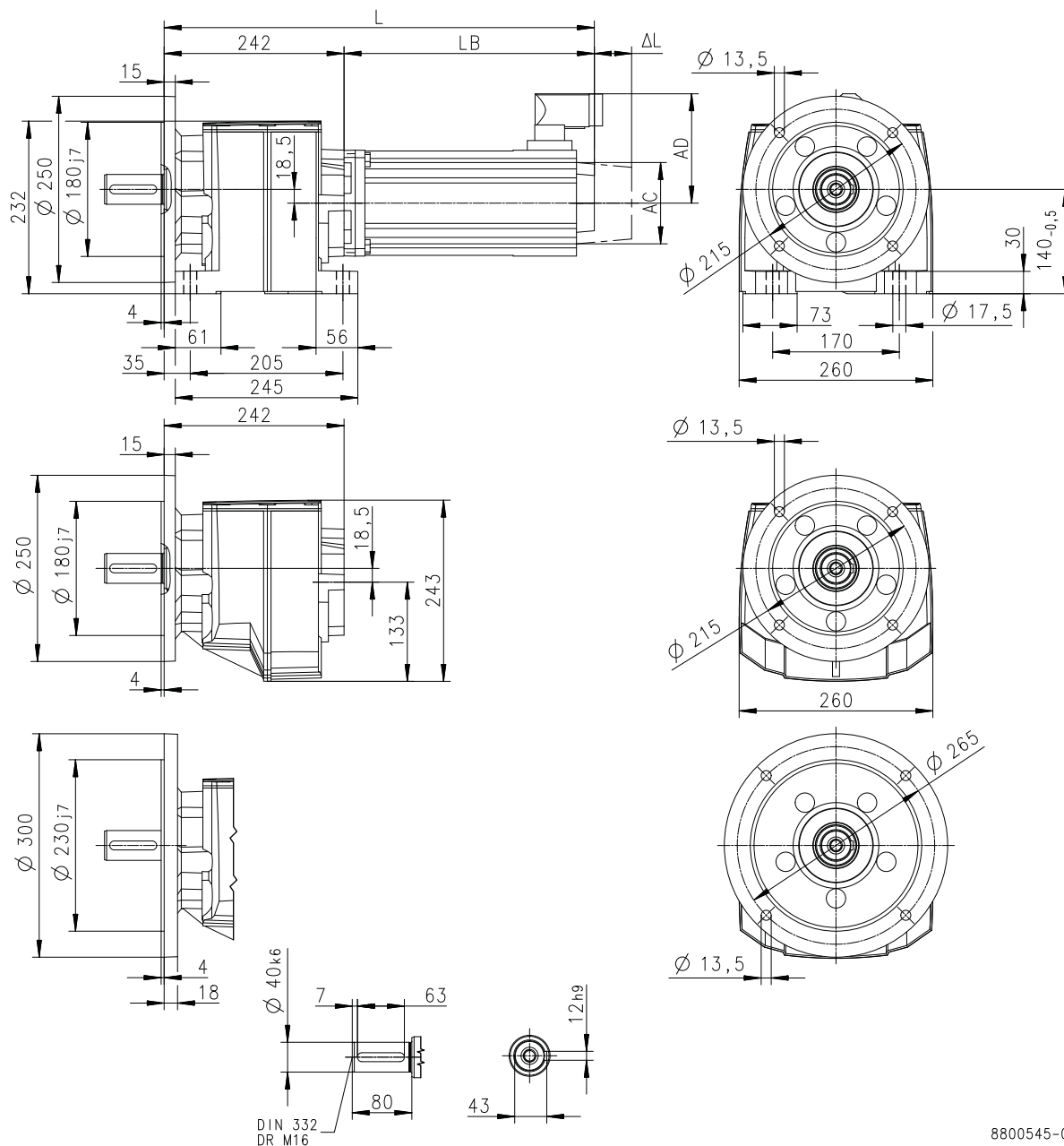
Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	578	510
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

Dimensions

Basic dimensions



Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800545-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	578	510
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

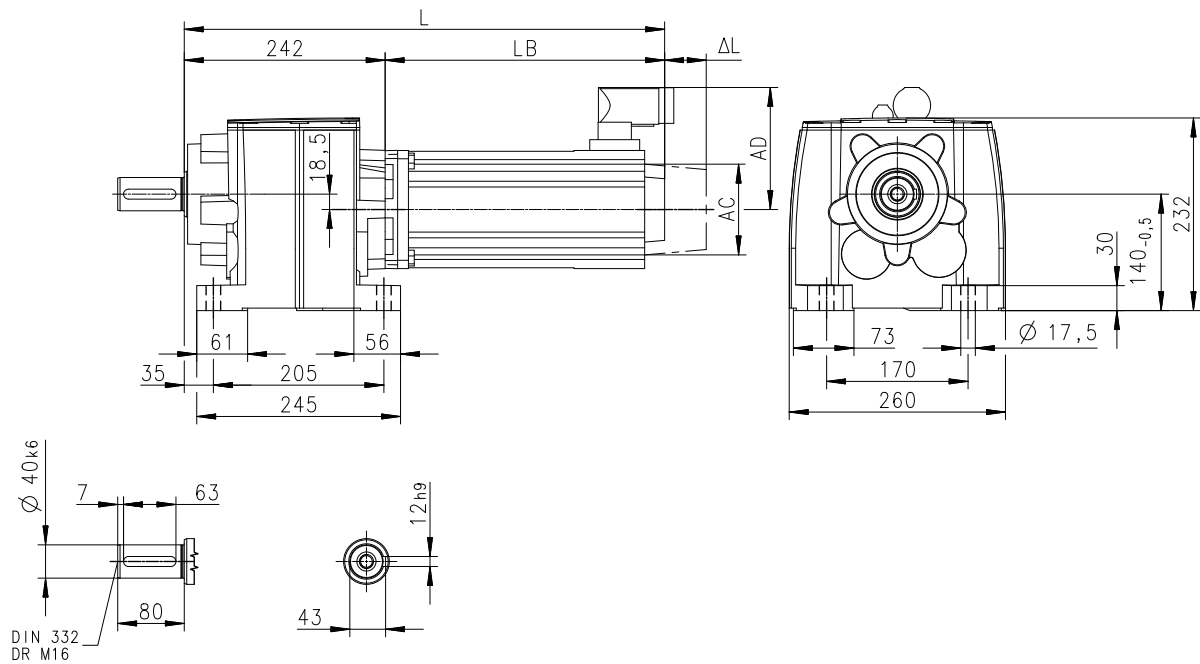


Technical data

Dimensions
Basic dimensions

g500-H850, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot (VBR)



8800543-00

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	622	560	622	560
Motor length	LB	mm	380	318	380	318
Length of motor options	ΔL	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

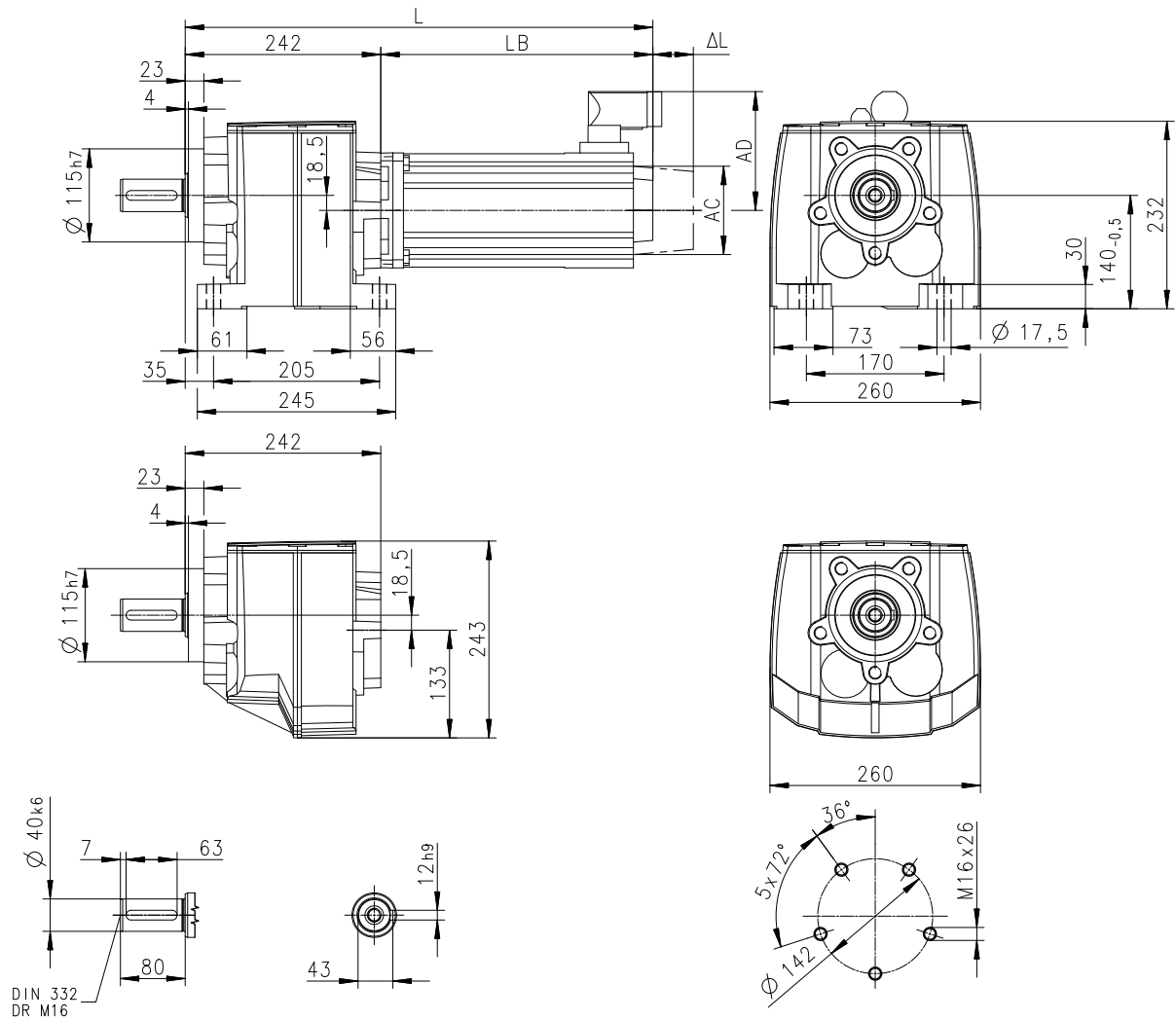
Technical data

Dimensions
Basic dimensions



g500-H850, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800544-00

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	622	560	622	560
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

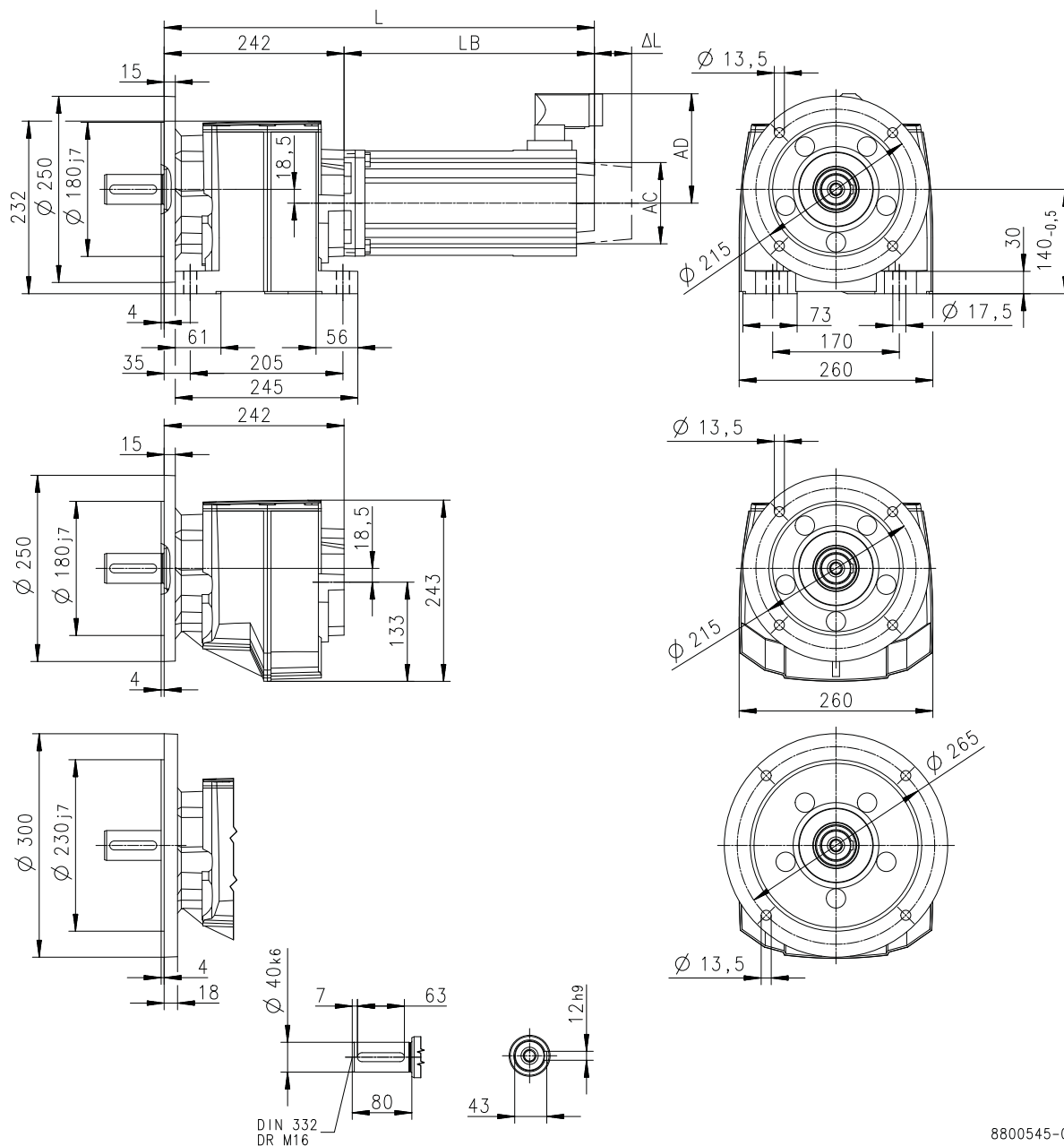


Technical data

Dimensions
Basic dimensions

g500-H850, 2-/3-stage with MCA14

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800545-00

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	622	560	622	560
Motor length	LB	mm	380	318	380	318
Length of motor options	ΔL	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

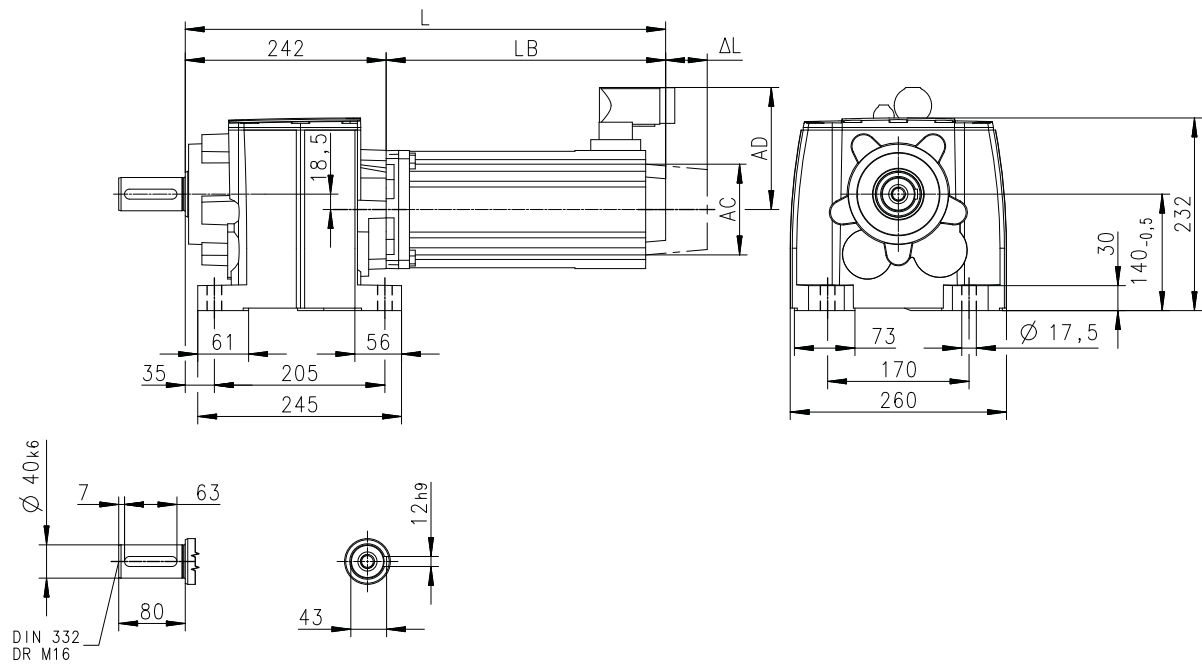
Technical data

Dimensions
Basic dimensions



g500-H850, 2-/3-stage with MCA17

Gearbox version: Solid shaft with foot (VBR)



8800543-00

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	685	599	685	599
Motor length	LB	mm	443	357	443	357
Length of motor options	ΔL	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

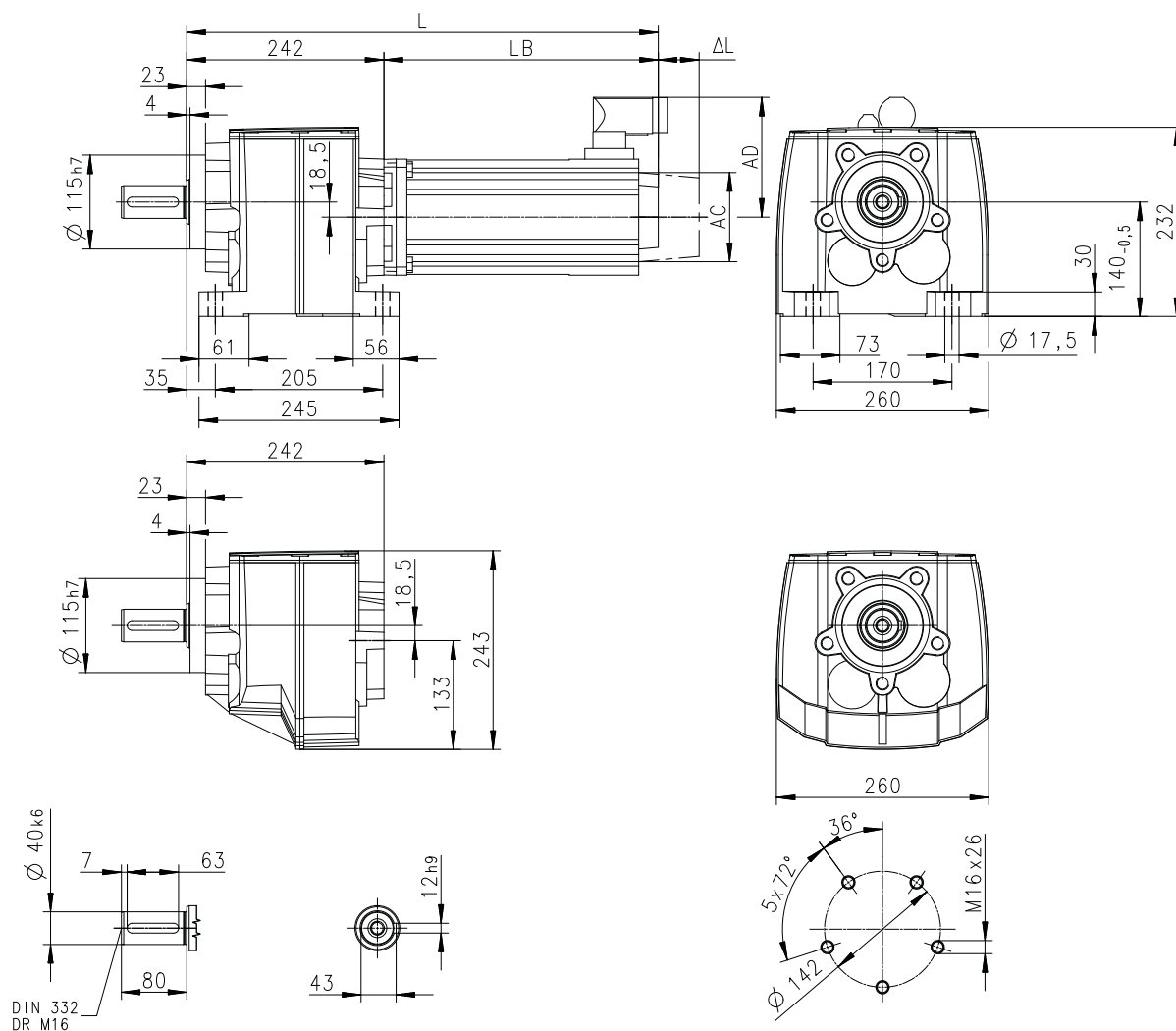


Technical data

Dimensions
Basic dimensions

g500-H850, 2-/3-stage with MCA17

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800544-00

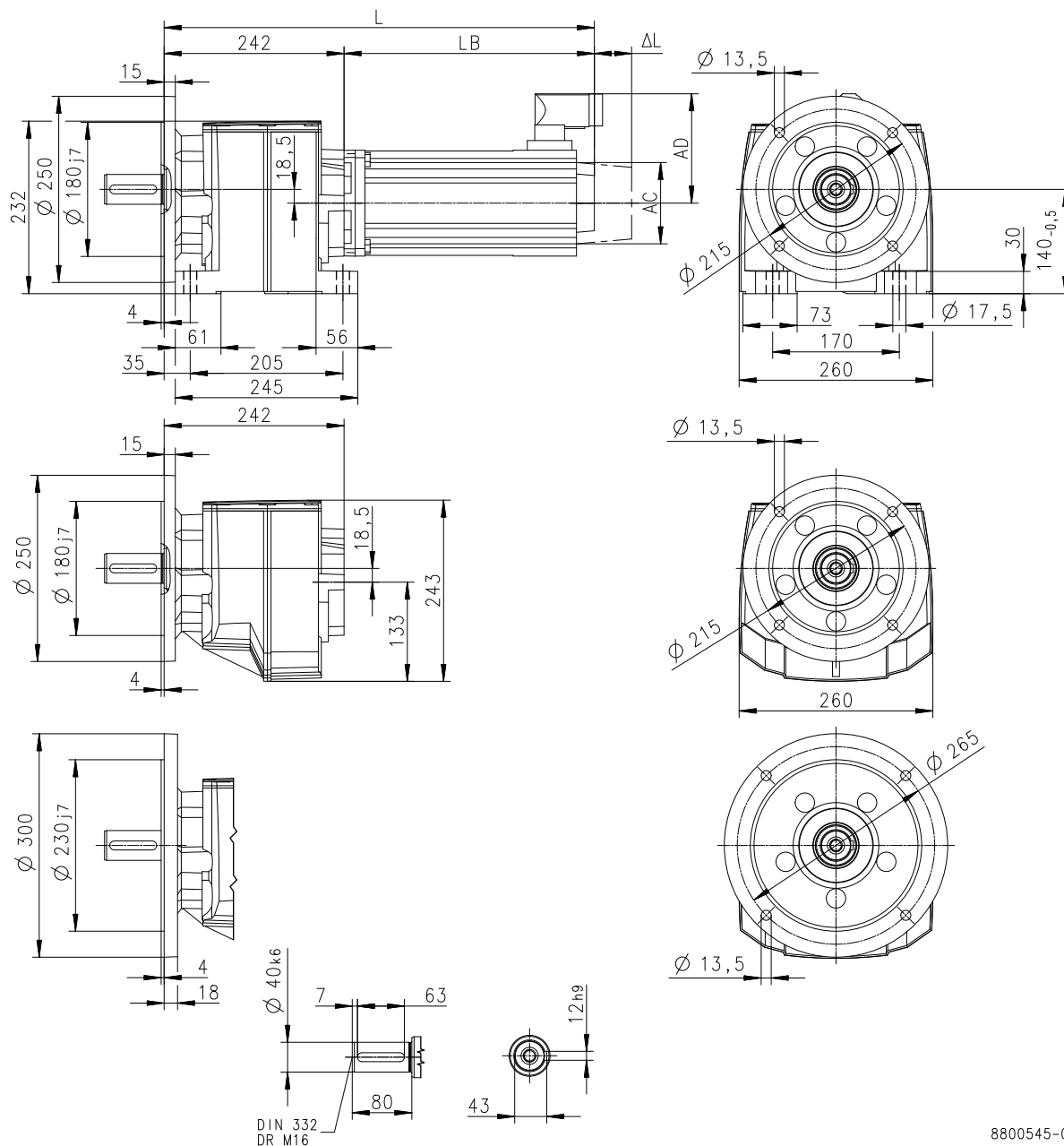
Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	685	599	685	599
Motor length	LB	mm	443	357	443	357
Length of motor options	Δ L	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

Dimensions

Basic dimensions



Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800545-00

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	685	599	685	599
Motor length	LB	mm	443	357	443	357
Length of motor options	Δ L	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

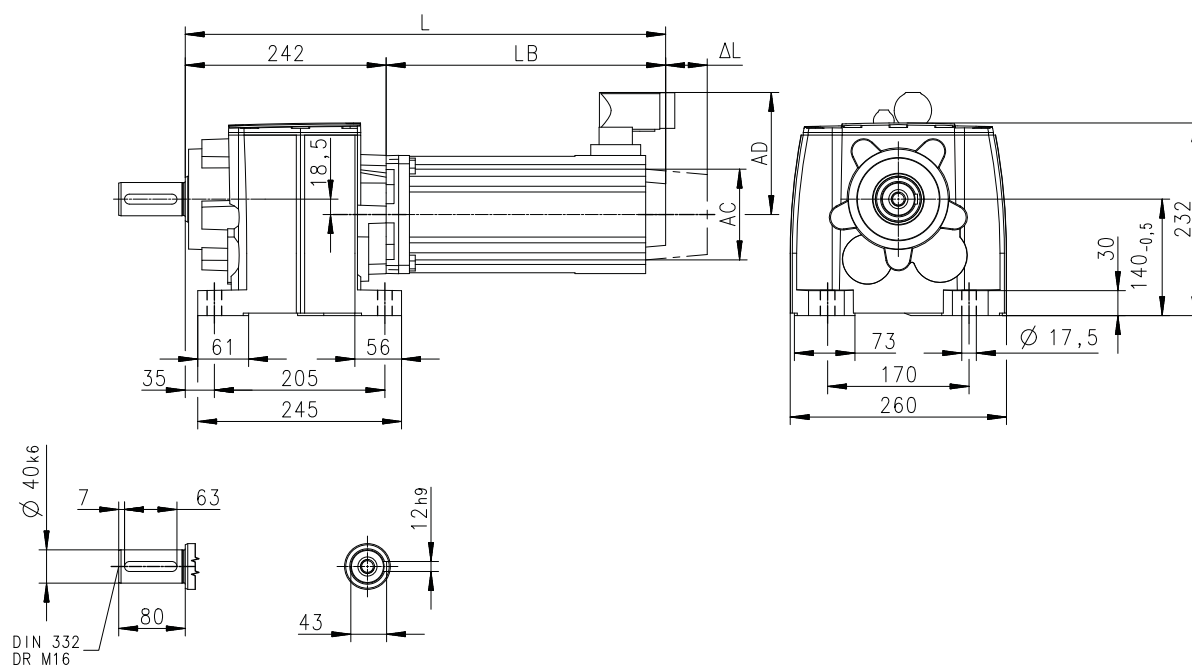


Technical data

Dimensions
Basic dimensions

g500-H850, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot (VBR)



8800543-00

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	764	667	764	667
Motor length	LB	mm	522	425	522	425
Length of motor options	ΔL	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151

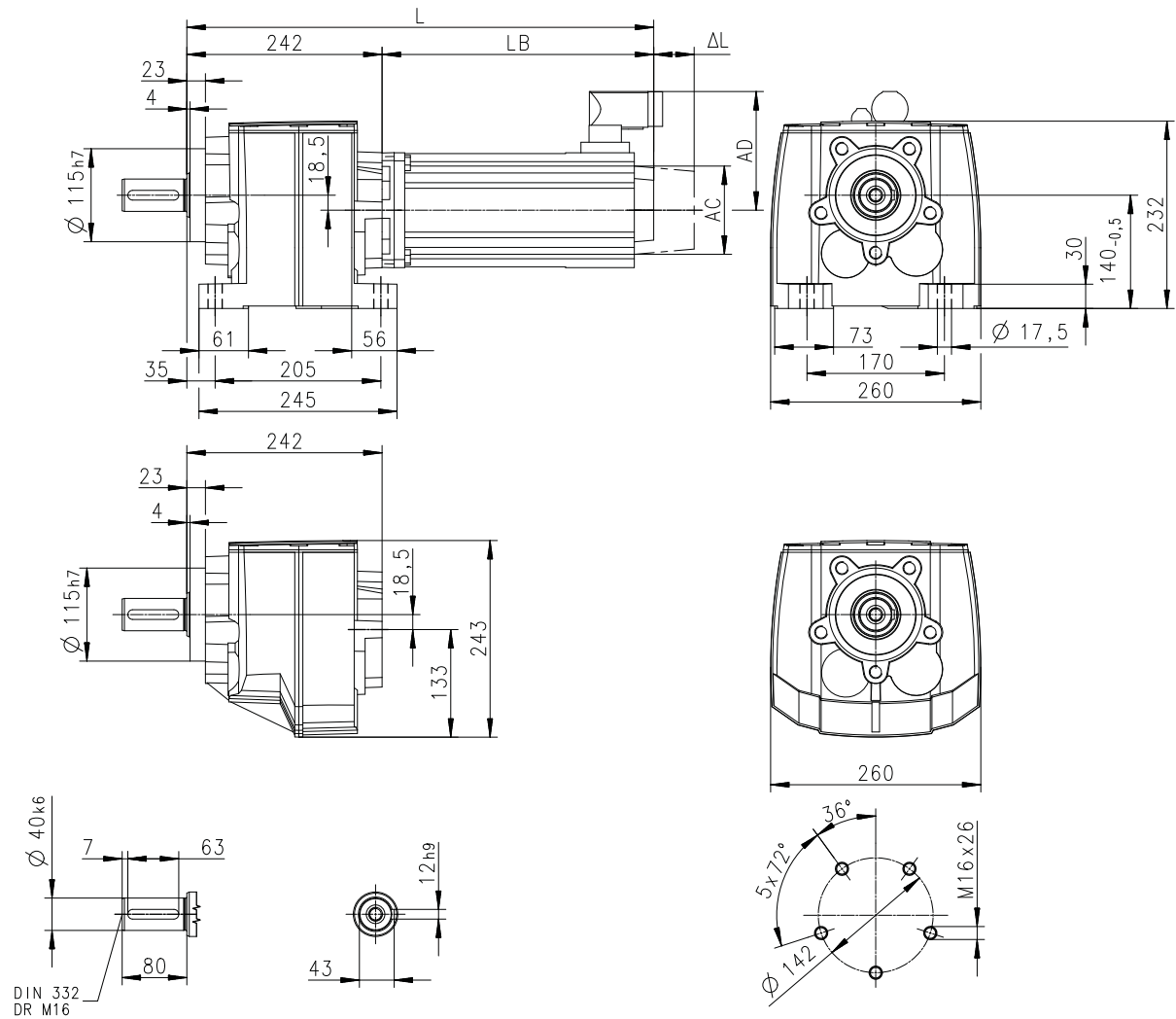
Technical data

Dimensions
Basic dimensions



g500-H850, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800544-00

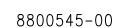
Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	764	667	764	667
Motor length	LB	mm	522	425	522	425
Length of motor options	Δ L	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151



Dimensions

Basic dimensions

Gearbox version: Solid shaft and foot/flange (VAK/VCK)

177

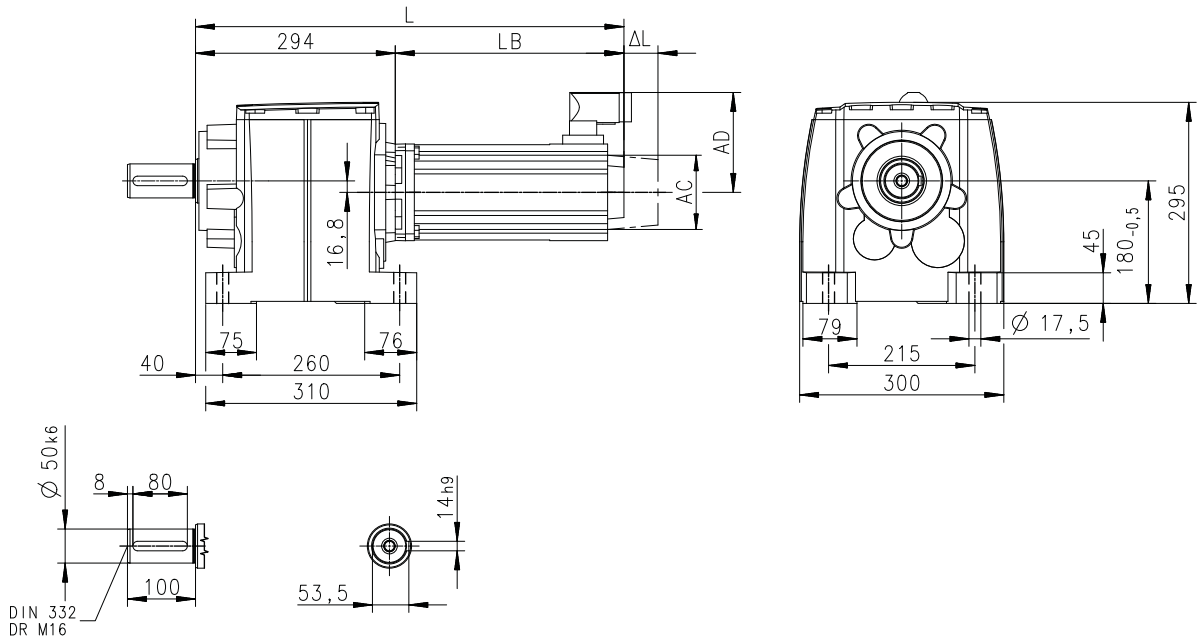
Technical data

Dimensions
Basic dimensions



g500-H1500, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot (VBR)



8800546-00

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	553
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

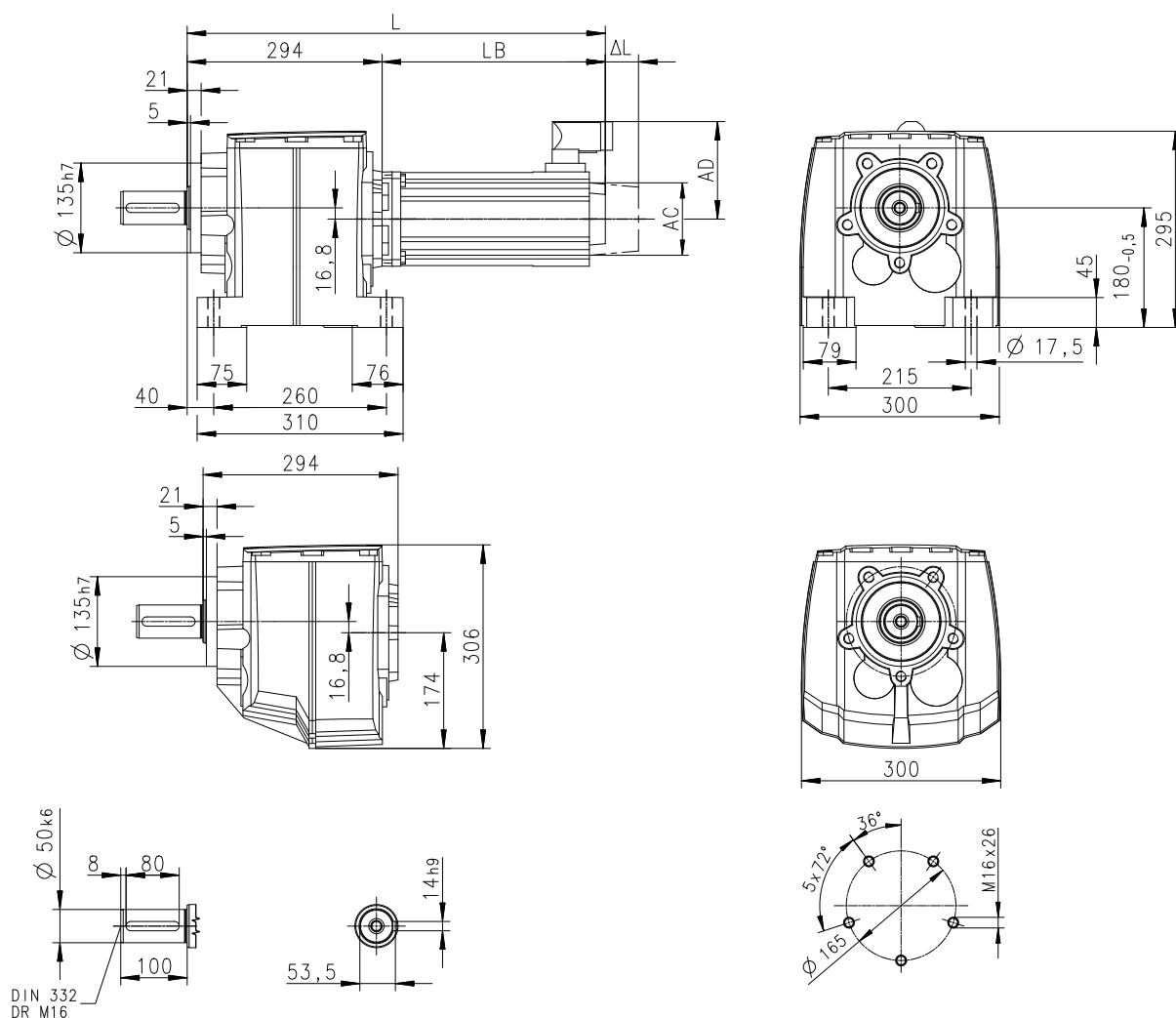


Technical data

Dimensions
Basic dimensions

g500-H1500, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800547-00

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	553
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

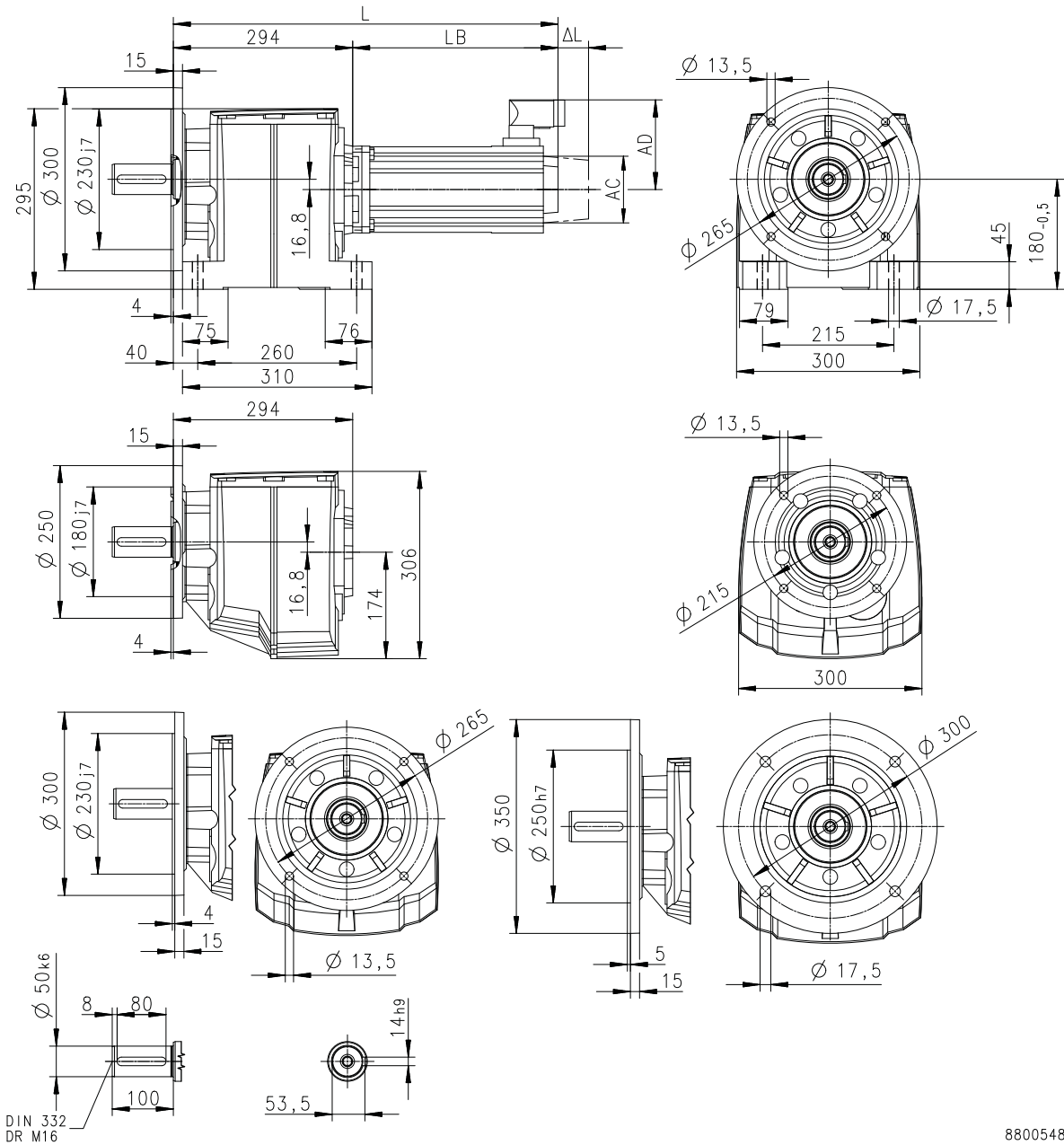
Technical data

Dimensions
Basic dimensions



g500-H1500, 2-/3-stage with MCA10

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800548-00

Motor			MCA
Cooling type			10I40-natural
Total length	L	mm	553
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

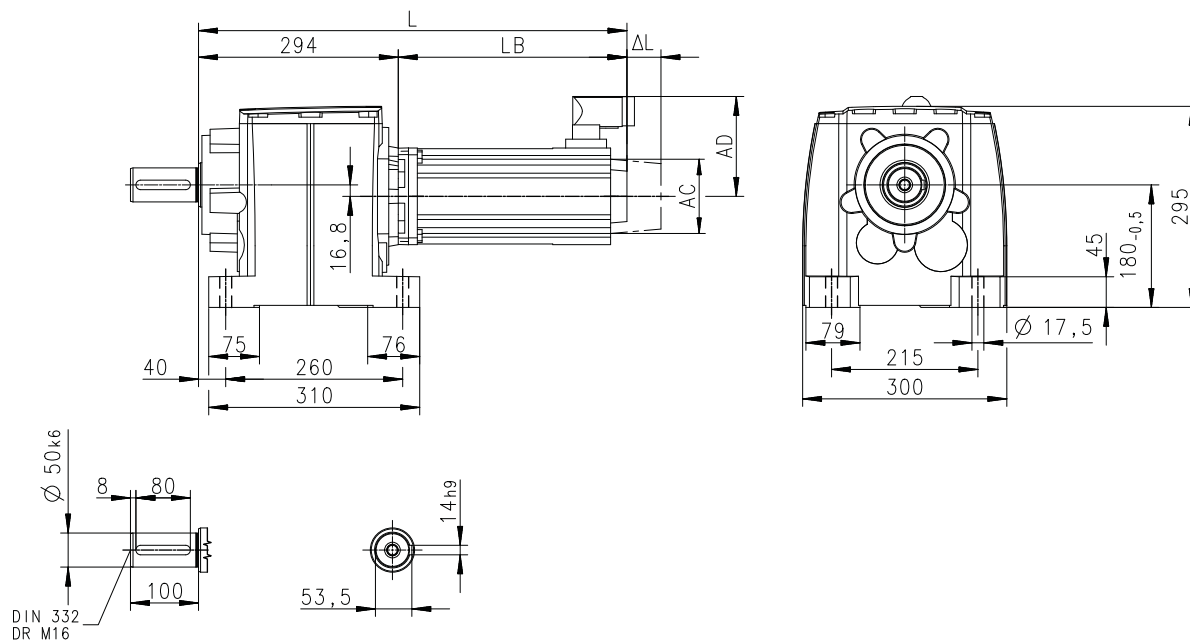


Technical data

Dimensions
Basic dimensions

g500-H1500, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot (VBR)



8800546-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	630	562
Motor length	LB	mm	336	268
Length of motor options	ΔL	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

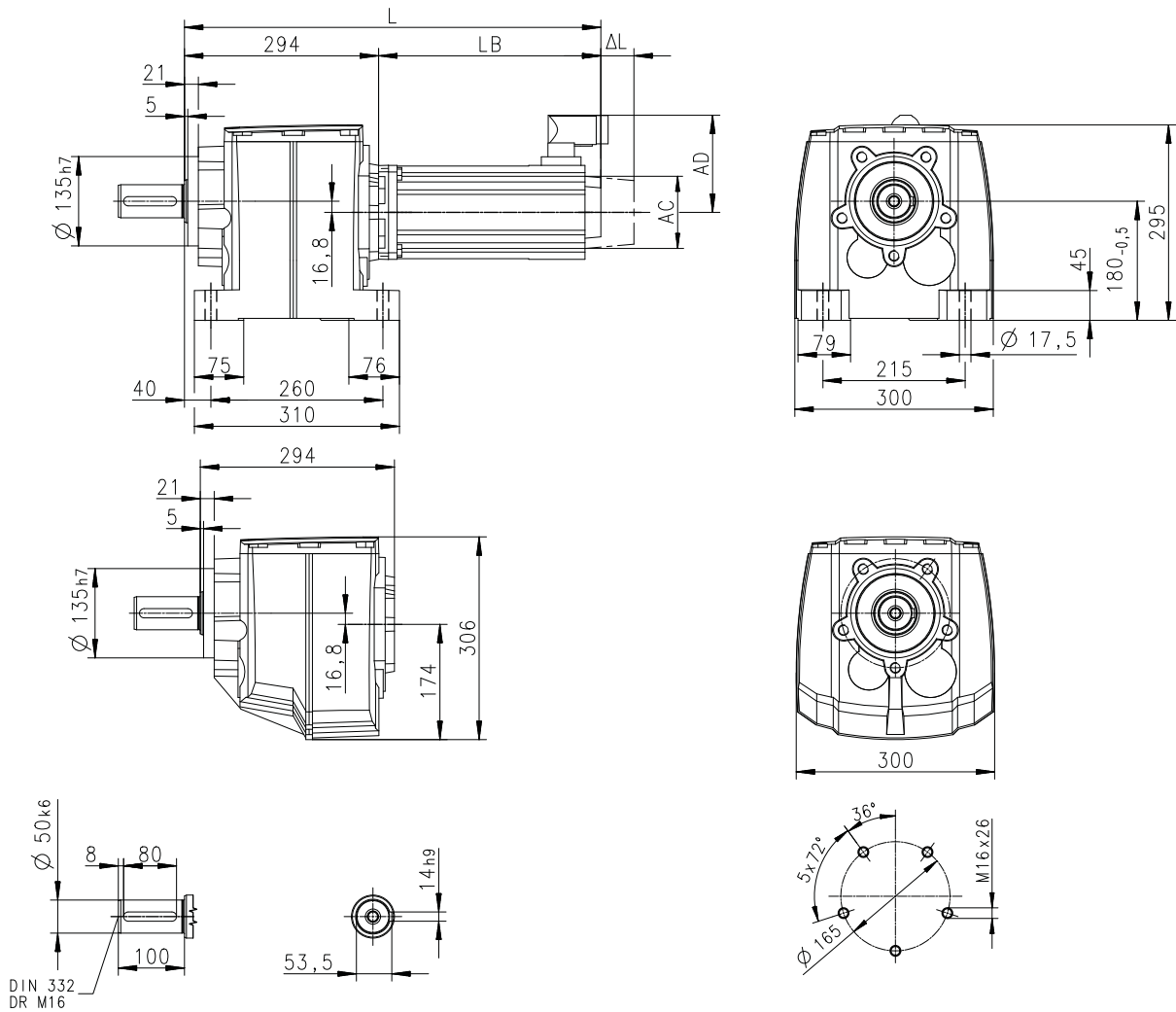
Technical data

Dimensions
Basic dimensions



g500-H1500, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800547-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	630	562
Motor length	LB	mm	336	268
Length of motor options	ΔL	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102



g500-H1500, 2-/3-stage with MCA13

[illegible]

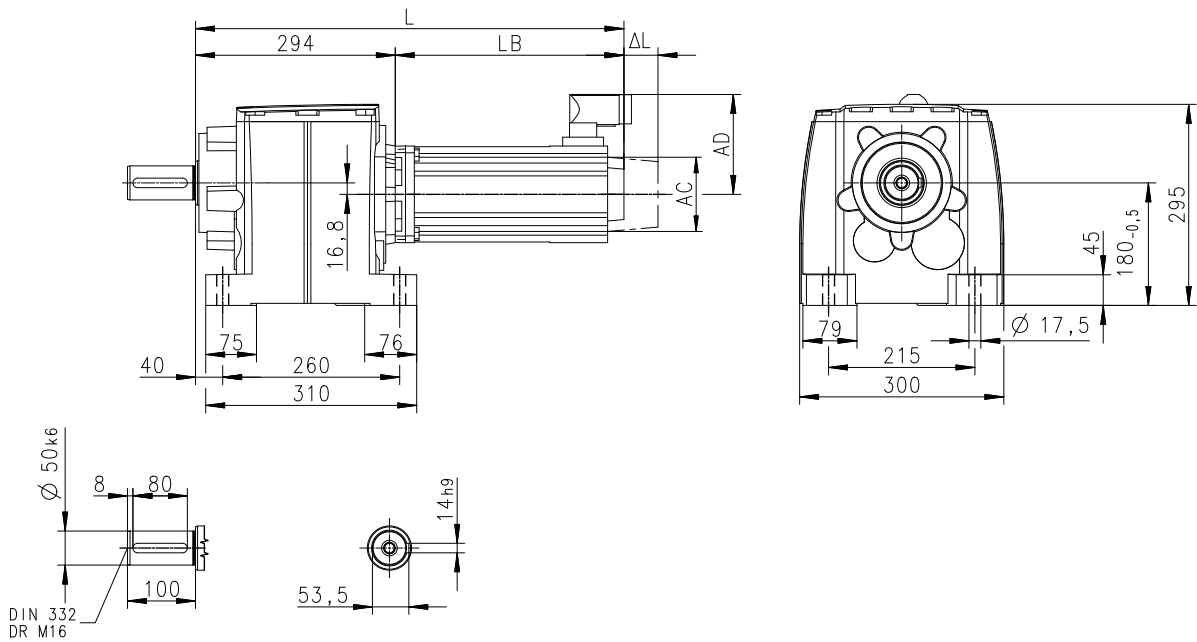
Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	630	562
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

Technical data

Dimensions
Basic dimensions



g500-H1500, 2-/3-stage with MCA14
Gearbox version: Solid shaft with foot (VBR)



8800546-00

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	674	612	674	612
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

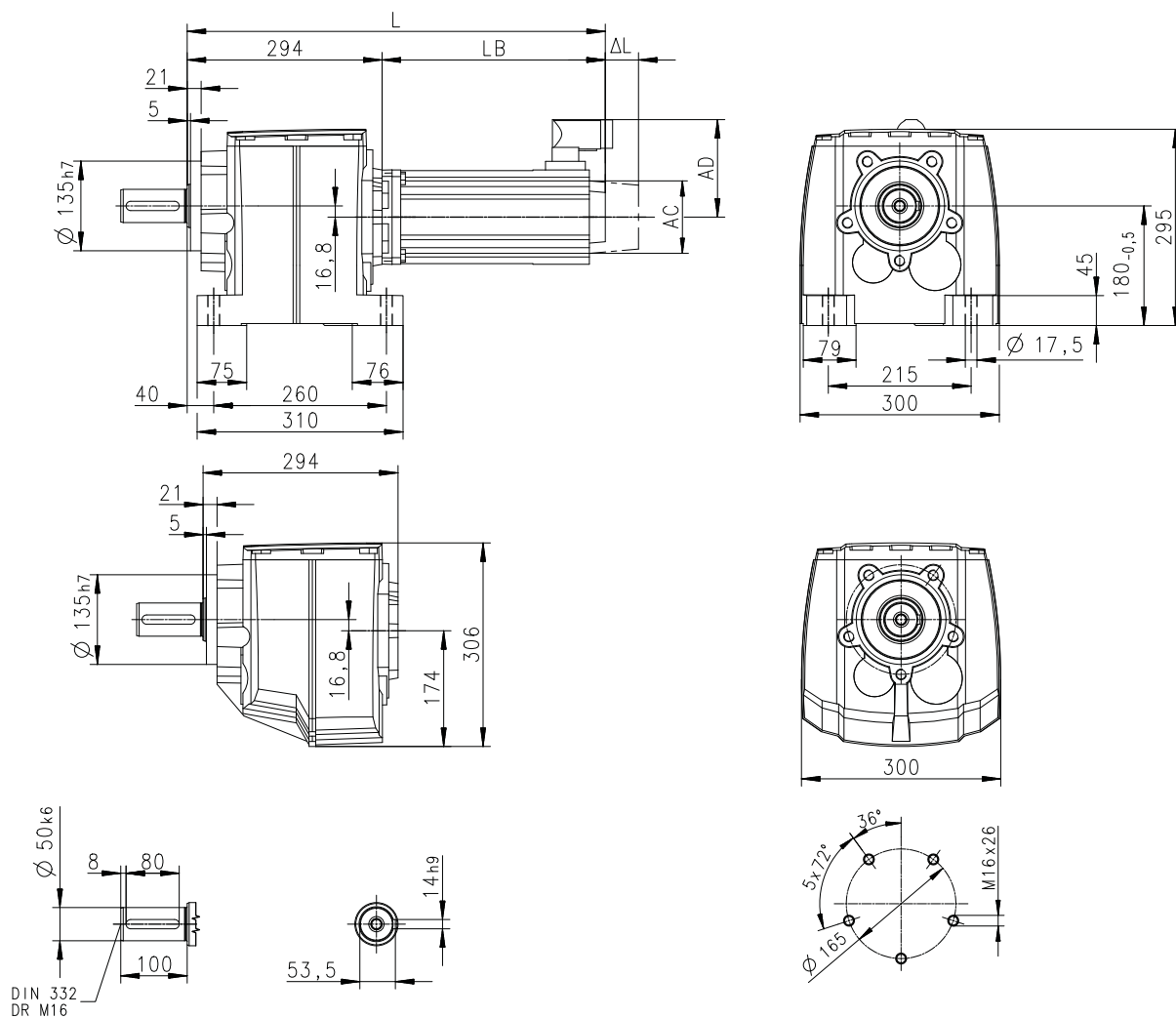


Technical data

Dimensions
Basic dimensions

g500-H1500, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800547-00

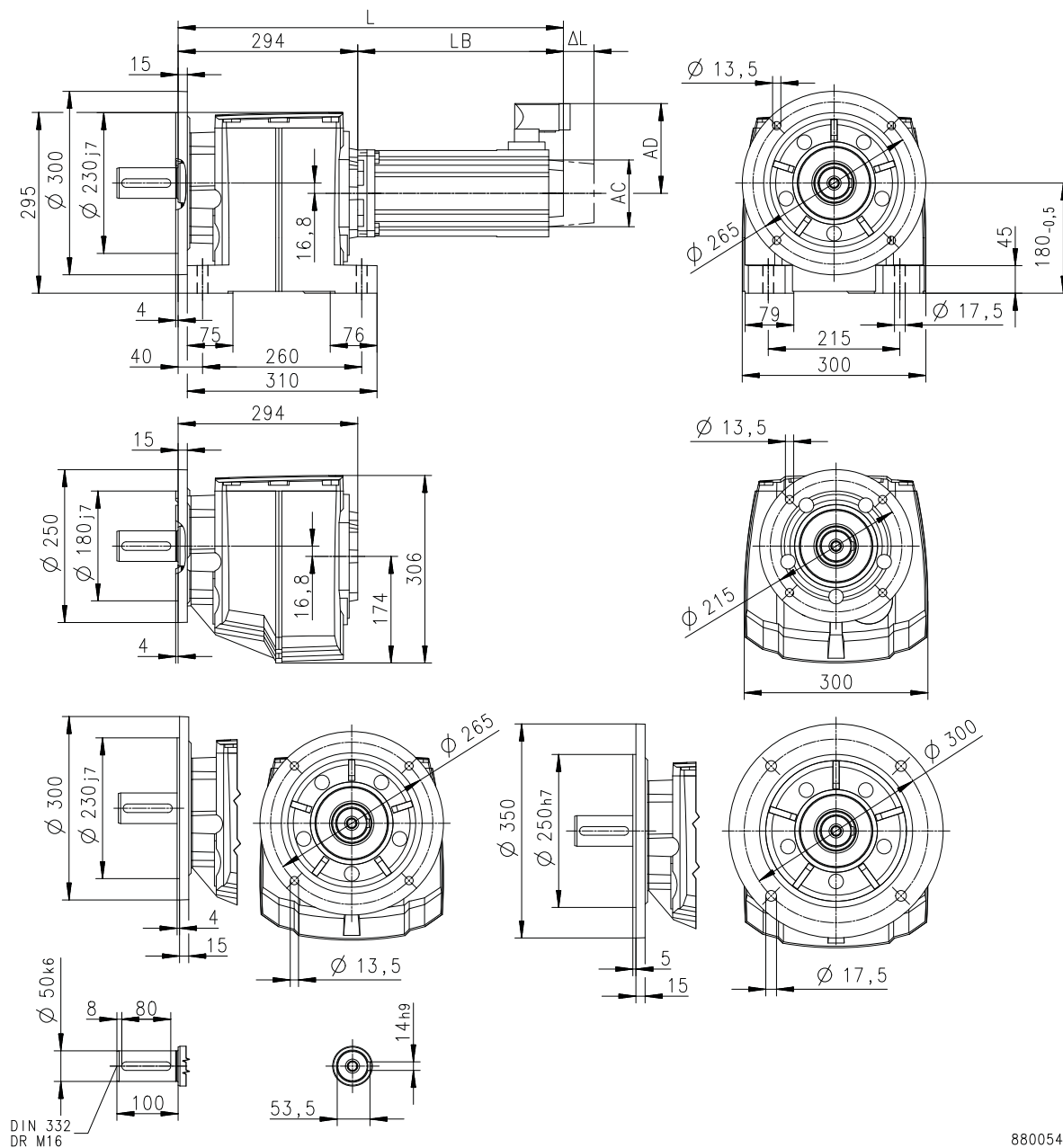
Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	674	612	674	612
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

Dimensions

Basic dimensions



Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800548-00

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	674	612	674	612
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

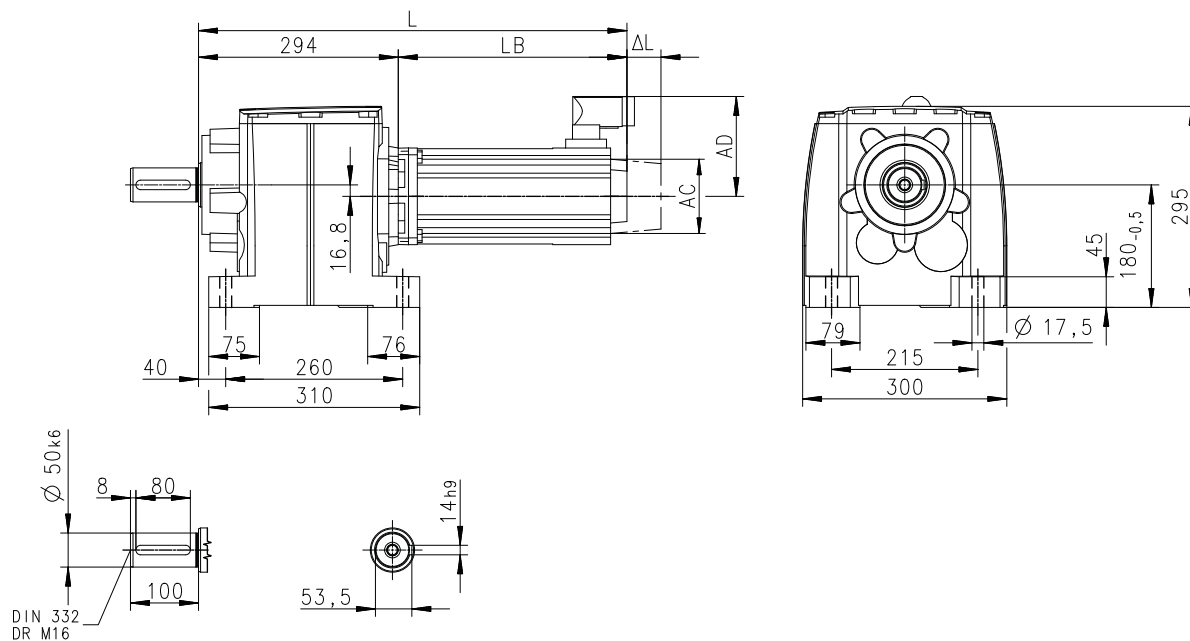


Technical data

Dimensions
Basic dimensions

g500-H1500, 2-/3-stage with MCA17

Gearbox version: Solid shaft with foot (VBR)



8800546-00

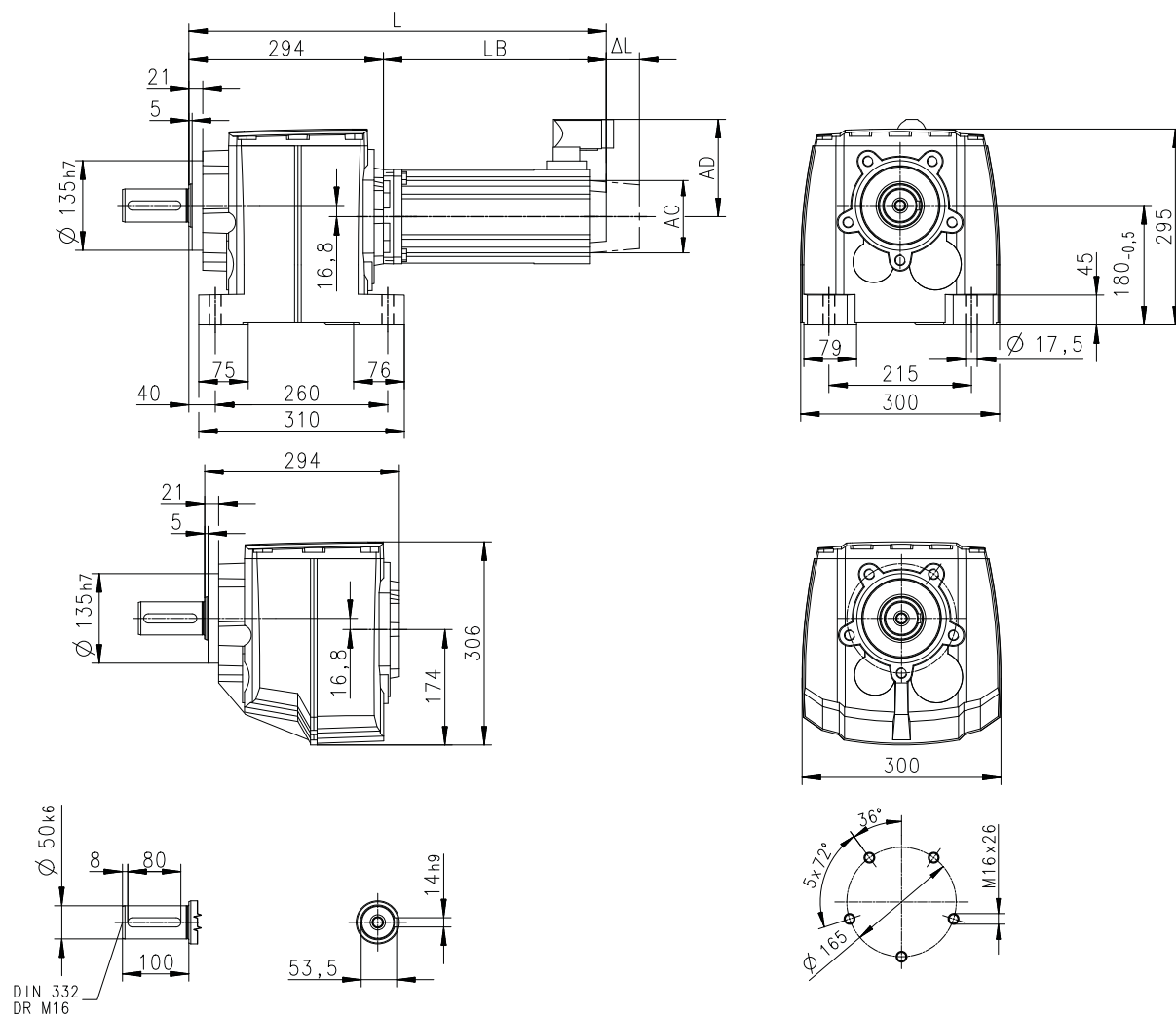
Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	737	651	737	651
Motor length	LB	mm	443	357	443	357
Length of motor options	Δ L	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

Dimensions

Basic dimensions



Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800547-00

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	737	651	737	651
Motor length	LB	mm	443	357	443	357
Length of motor options	Δ L	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

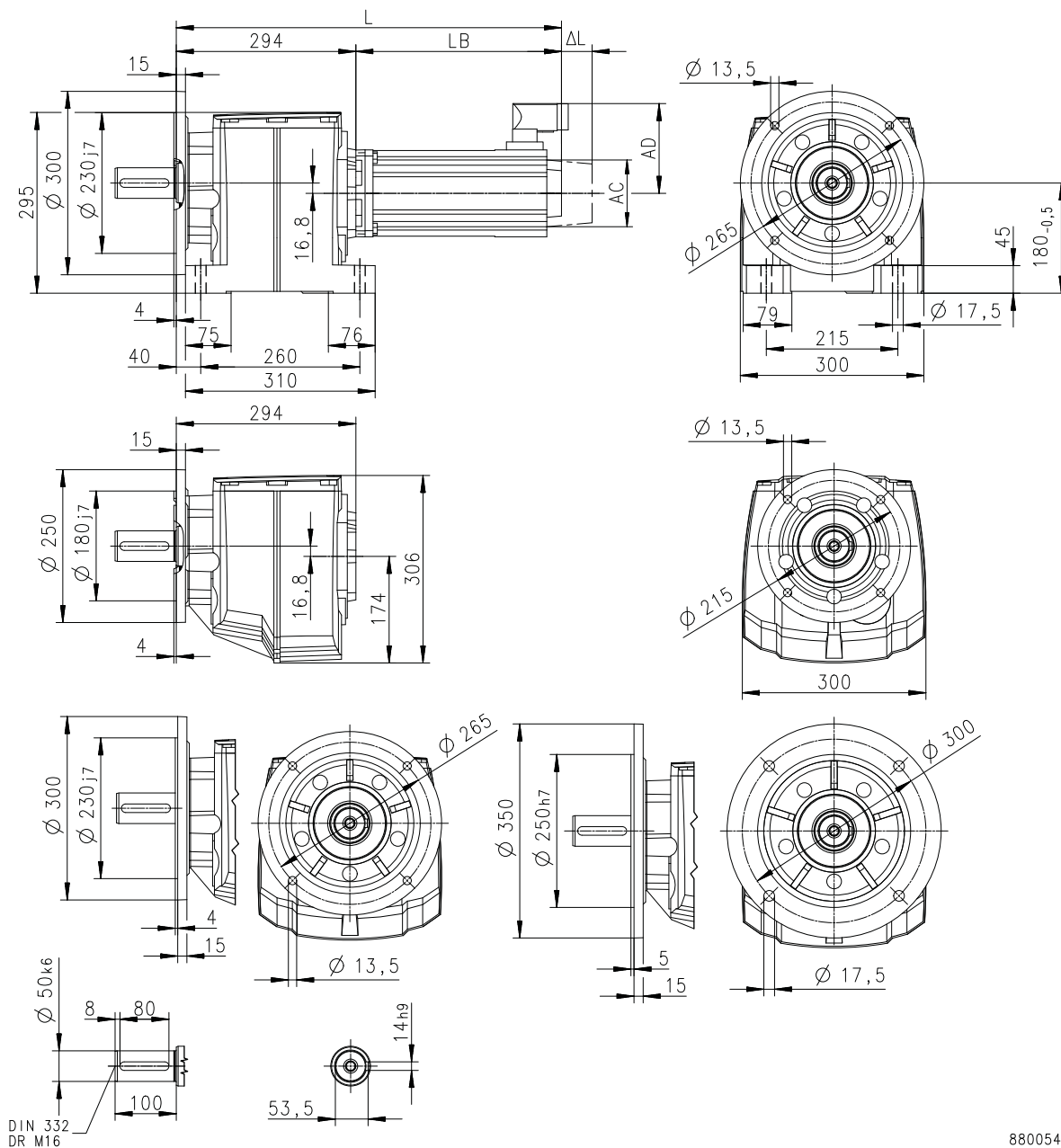


Technical data

Dimensions
Basic dimensions

g500-H1500, 2-/3-stage with MCA17

Gearbox version: Solid shaft and foot/flange (VAK/VCK)



8800548-00

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	737	651	737	651
Motor length	LB	mm	443	357	443	357
Length of motor options	Δ L	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

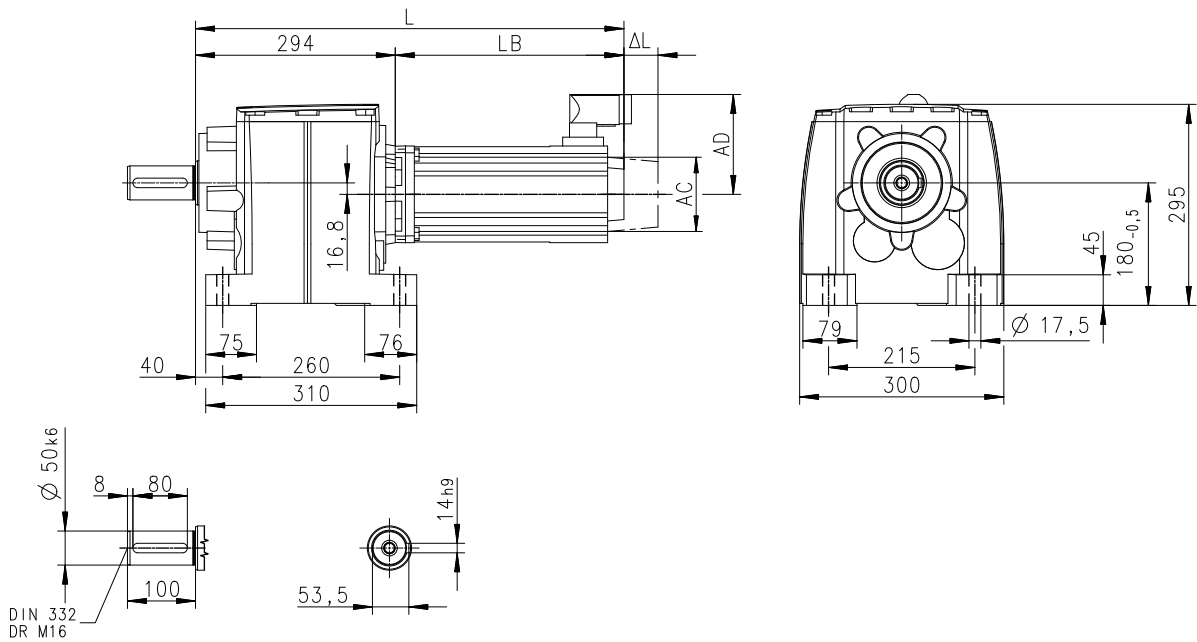
Technical data

Dimensions
Basic dimensions



g500-H1500, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot (VBR)



8800546-00

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	816	719	816	719
Motor length	LB	mm	522	425	522	425
Length of motor options	Δ L	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151

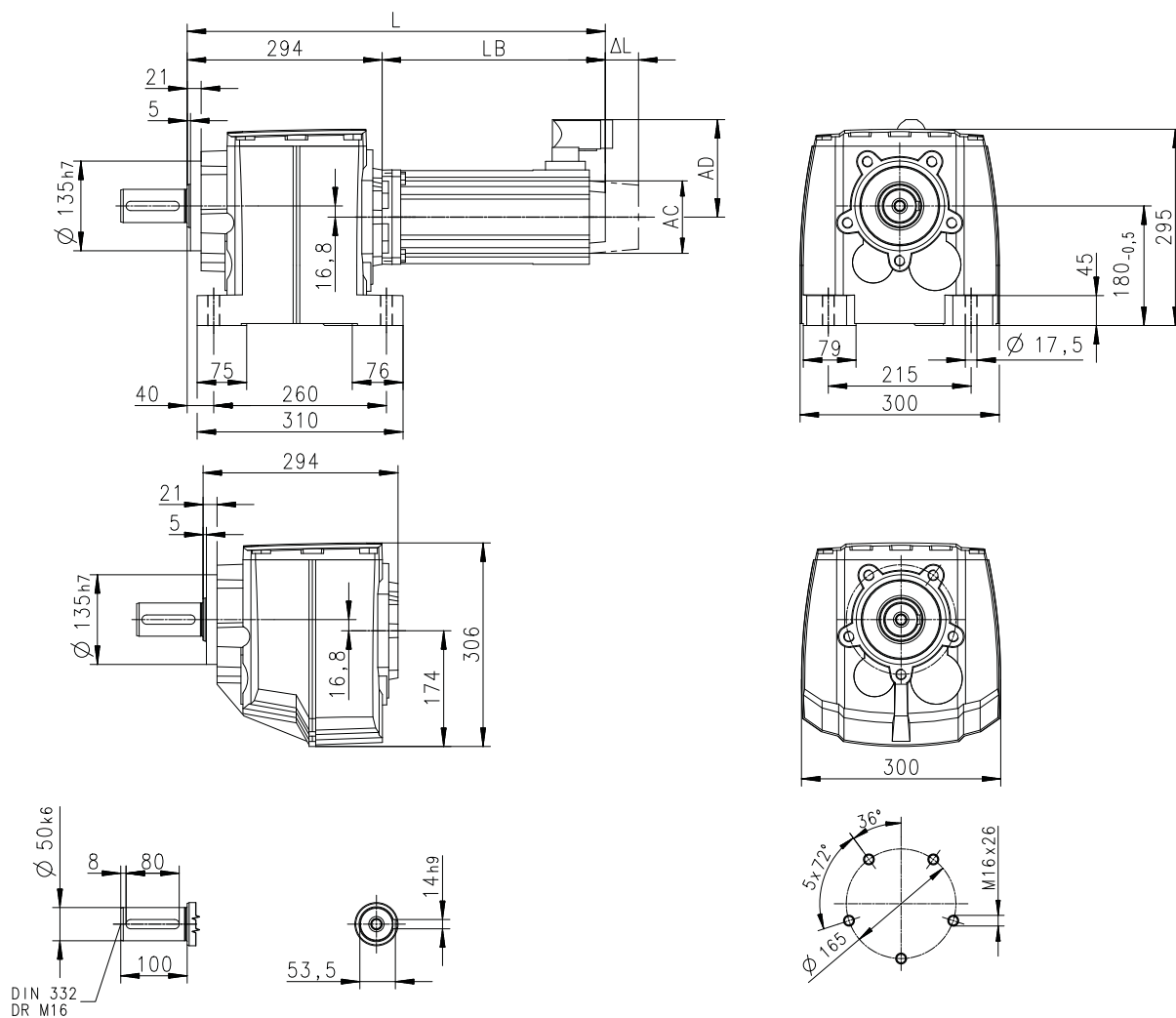


Technical data

Dimensions
Basic dimensions

g500-H1500, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800547-00

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	816	719	816	719
Motor length	LB	mm	522	425	522	425
Length of motor options	Δ L	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151

Dimensions

Basic dimensions

[illegible]

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	816	719	816	719
Motor length	LB	mm	522	425	522	425
Length of motor options	Δ L	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151

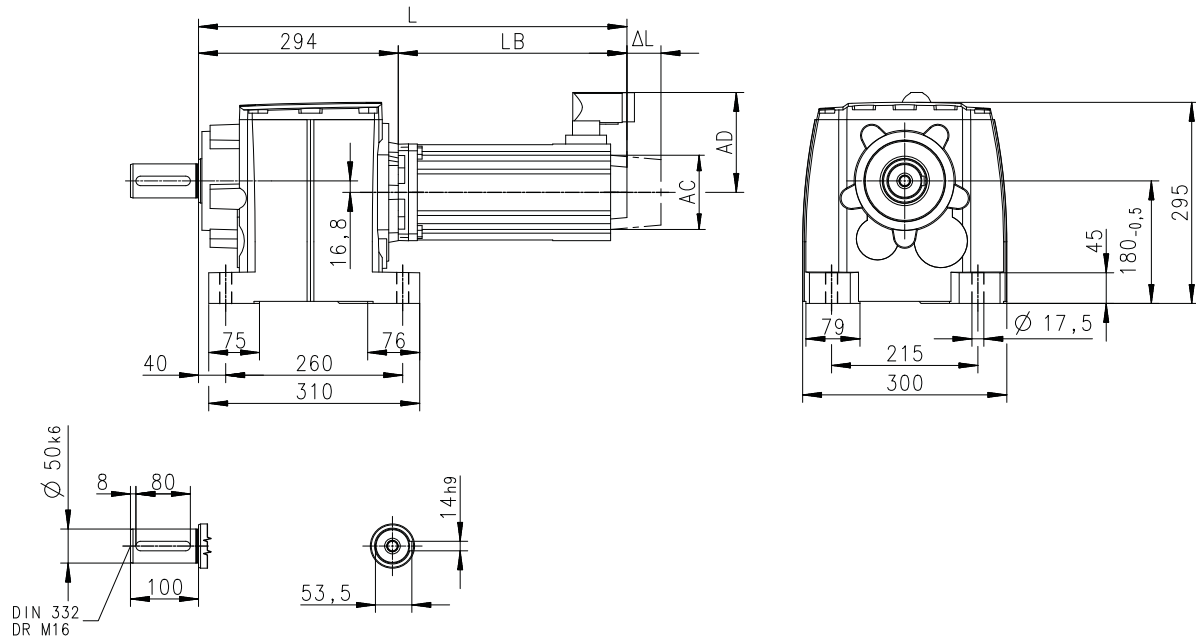


Technical data

Dimensions
Basic dimensions

g500-H1500, 2-/3-stage with MCA21

Gearbox version: Solid shaft with foot (VBR)



8800546-00

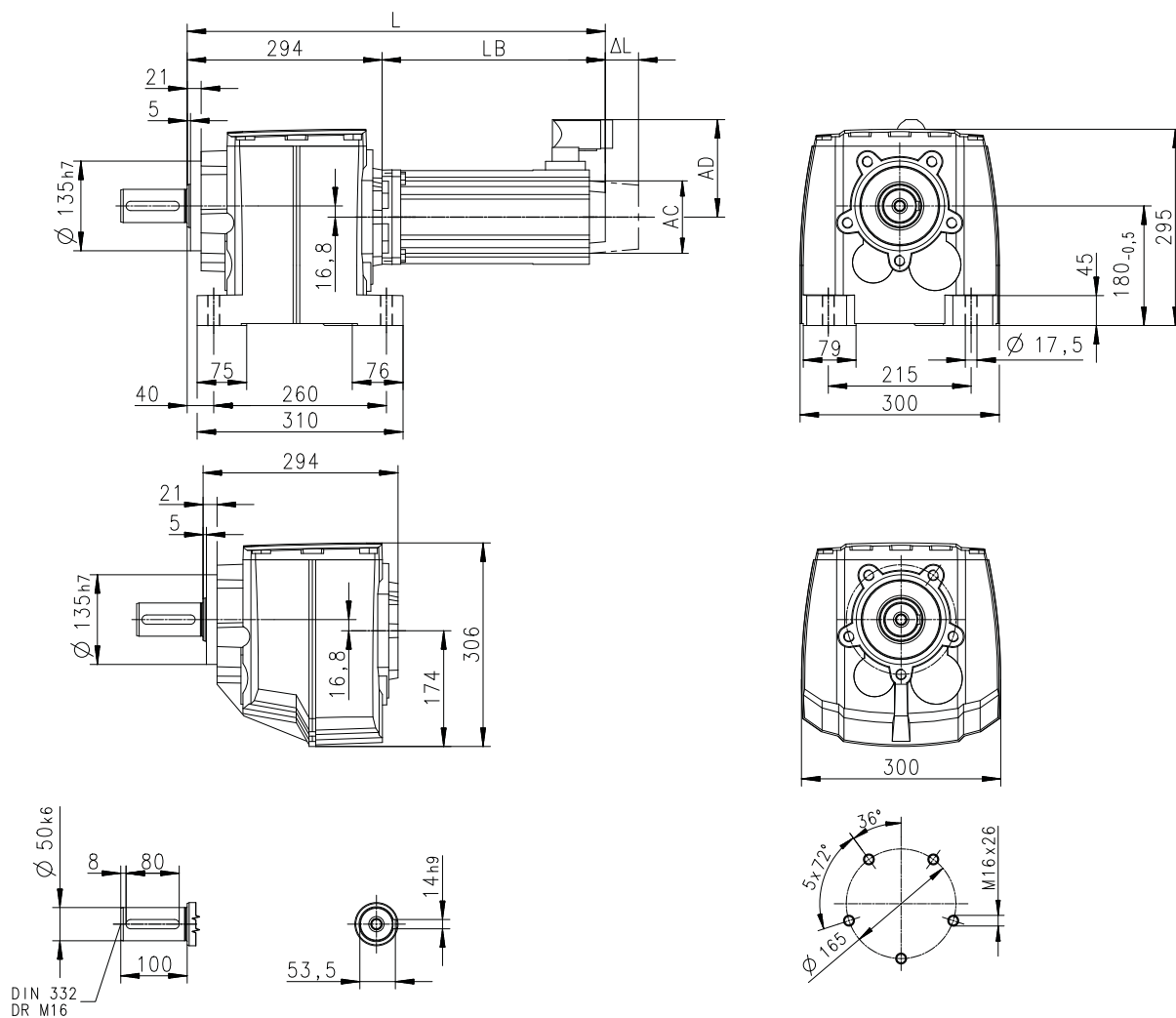
Motor			MCA			
			21X17-	21X25-	21X35-	21X42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	908	812	908	812
Motor length	LB	mm	614	518	614	518
Length of motor options	Δ L	mm	92	92	92	92
Motor diameter	AC	mm	214	214	214	214
Motor/connection distance	AD	mm	162	162	162	162

Dimensions

Basic dimensions



Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800547-00

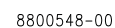
Motor			MCA			
			21X17-	21X25-	21X35-	21X42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	908	812	908	812
Motor length	LB	mm	614	518	614	518
Length of motor options	Δ L	mm	92	92	92	92
Motor diameter	AC	mm	214	214	214	214
Motor/connection distance	AD	mm	162	162	162	162



Dimensions

Basic dimensions

Gearbox version: Solid shaft and foot/flange (VAK/VCK)

195

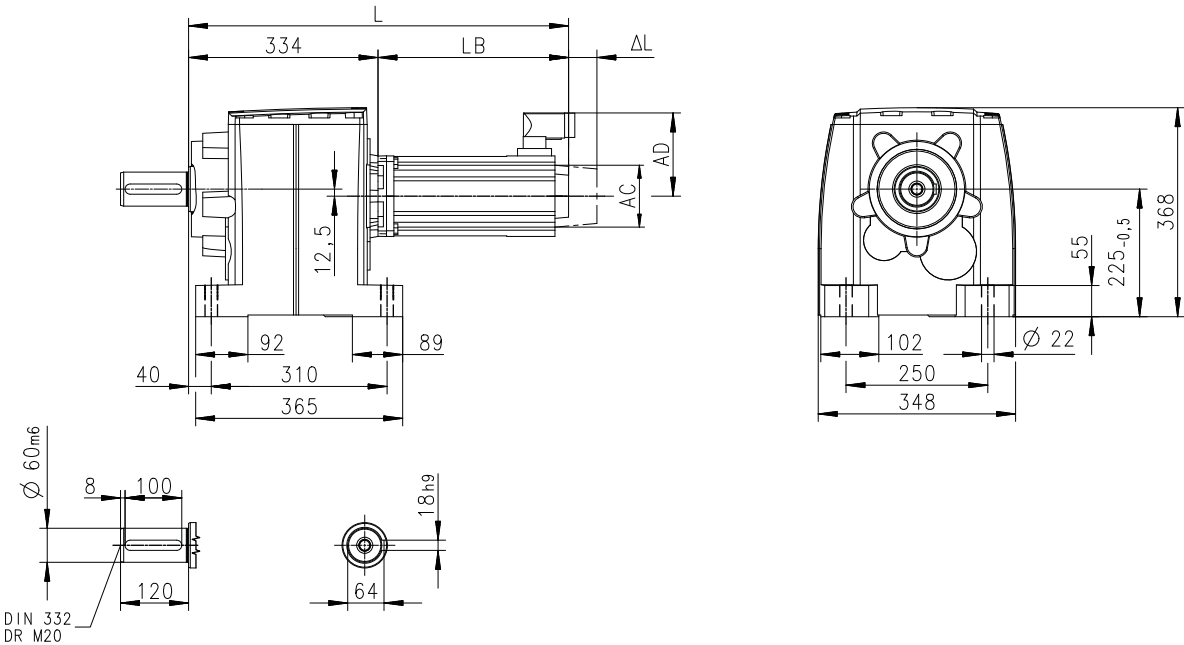
Technical data

Dimensions
Basic dimensions



g500-H3000, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot (VBR)



8800549-00

Motor			MCA
Cooling type			10I40-natural
Total length	L	mm	593
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

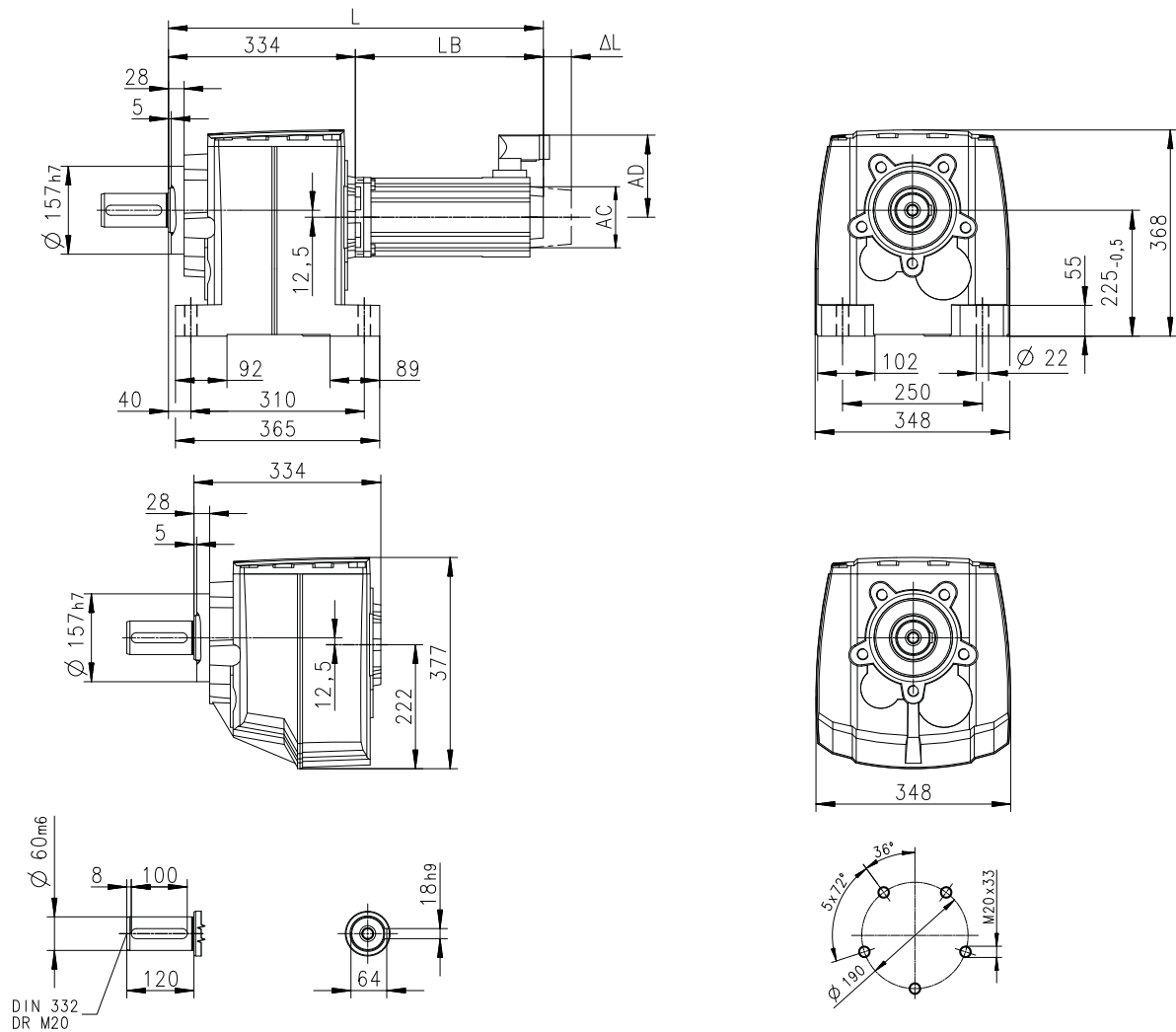


Technical data

Dimensions
Basic dimensions

g500-H3000, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot/centering (VAR/VCR)

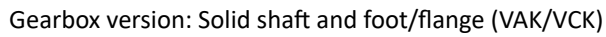


8800550-00

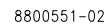
Motor			MCA
Cooling type			10I40-natural
Total length	L	mm	593
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

Dimensions

Basic dimensions



- ▶ Additionally secure the Ø300 output flange with two spiral pins.

198

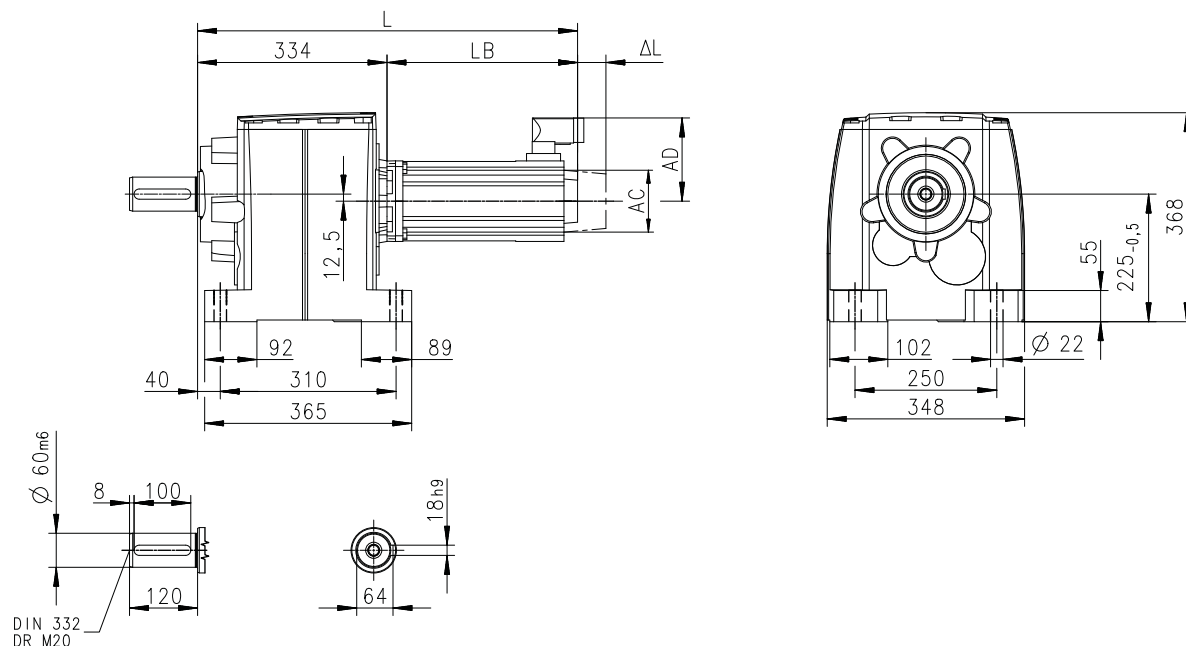


Technical data

Dimensions
Basic dimensions

g500-H3000, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot (VBR)



8800549-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	670	602
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

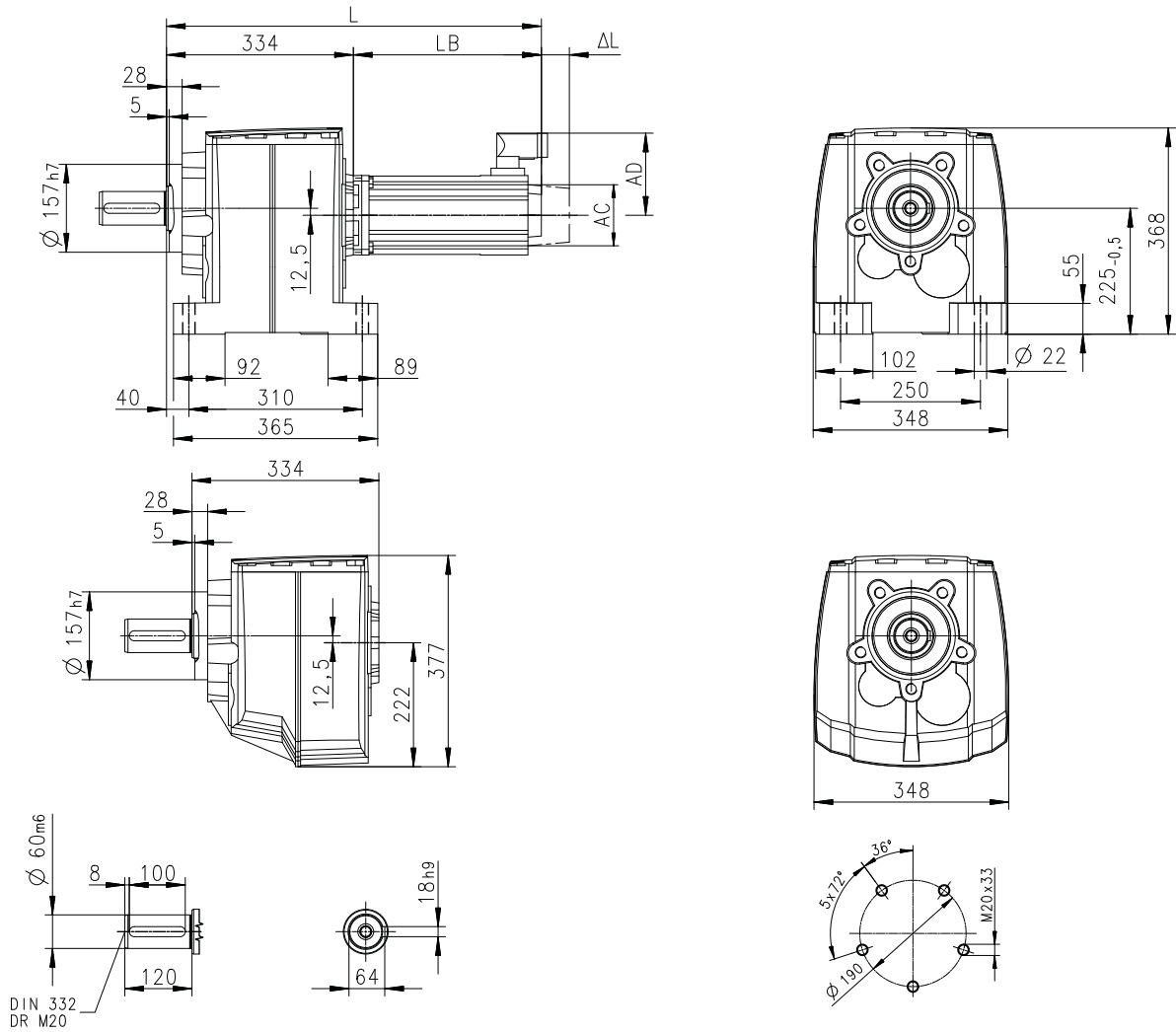
Technical data

Dimensions
Basic dimensions



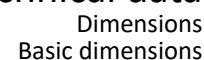
g500-H3000, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800550-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	670	602
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102



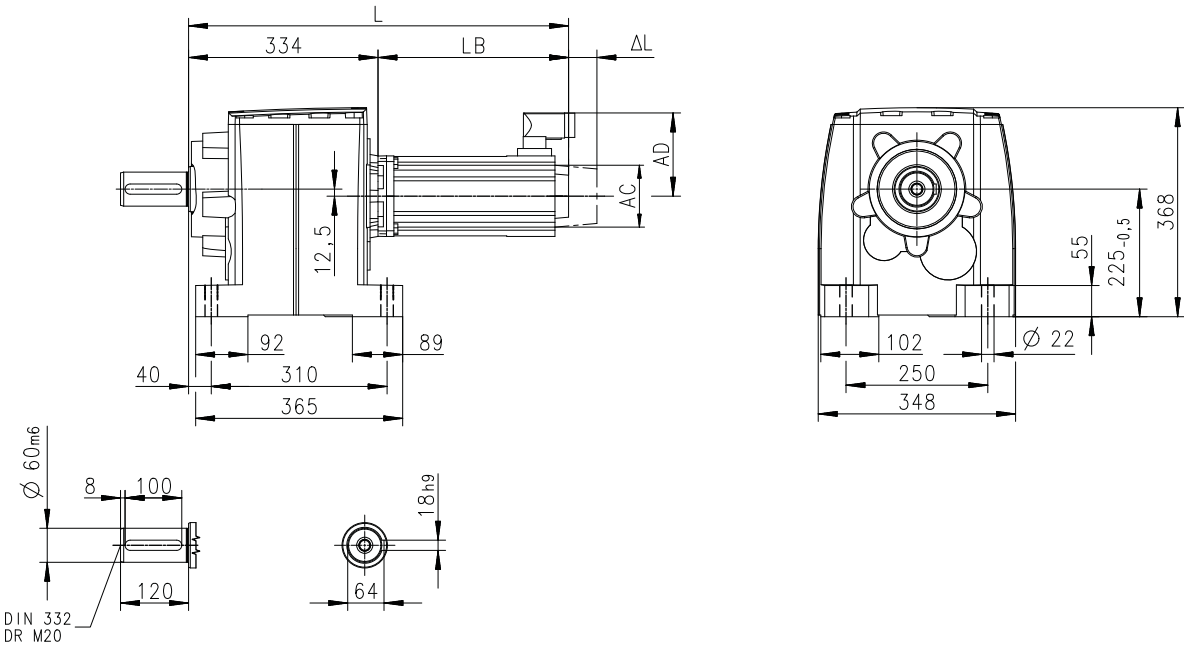
Technical data

Dimensions
Basic dimensions



g500-H3000, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot (VBR)



8800549-00

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	714	652	714	652
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

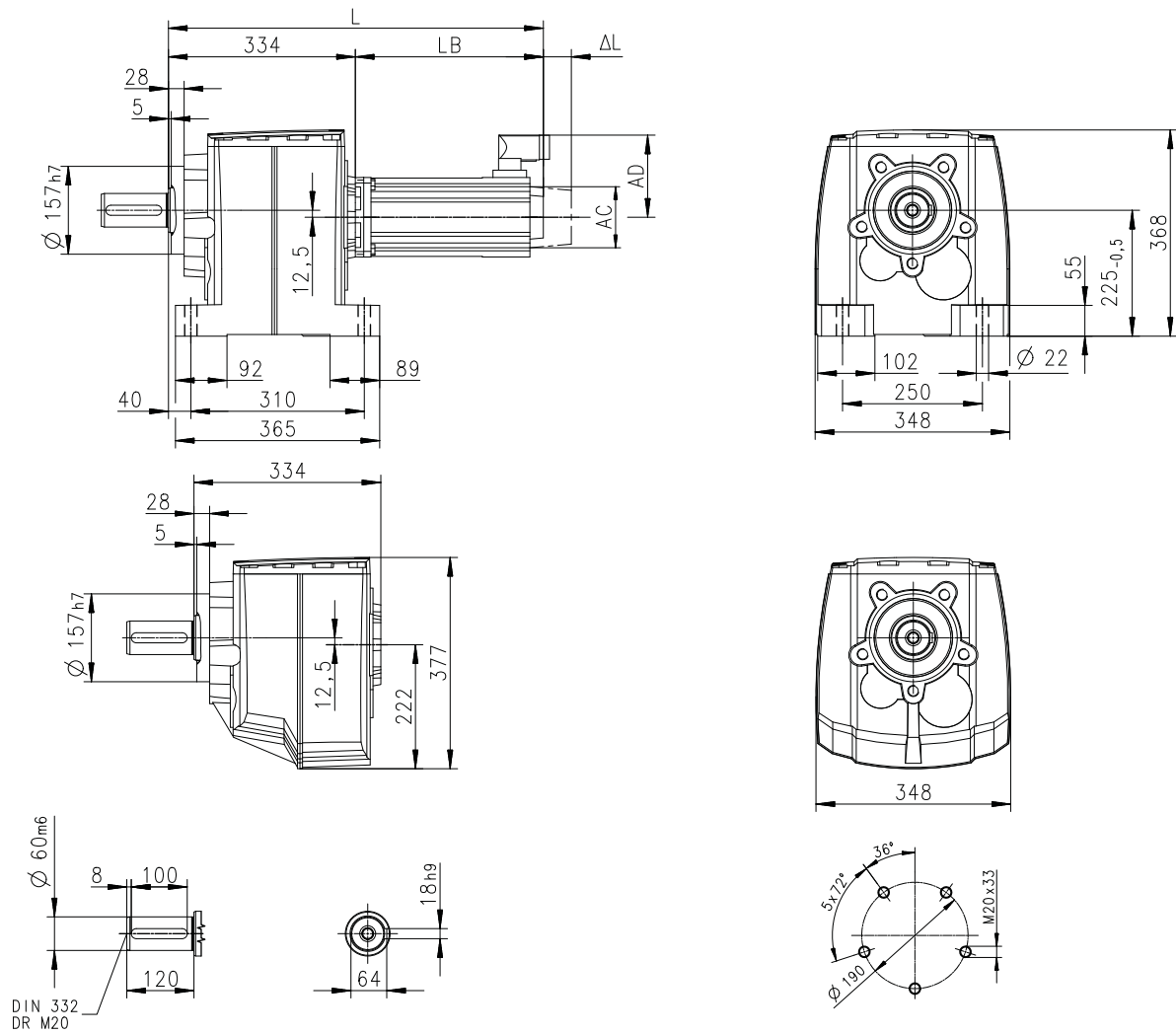


Technical data

Dimensions
Basic dimensions

g500-H3000, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800550-00

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	714	652	714	652
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

Technical data

Dimensions
Basic dimensions

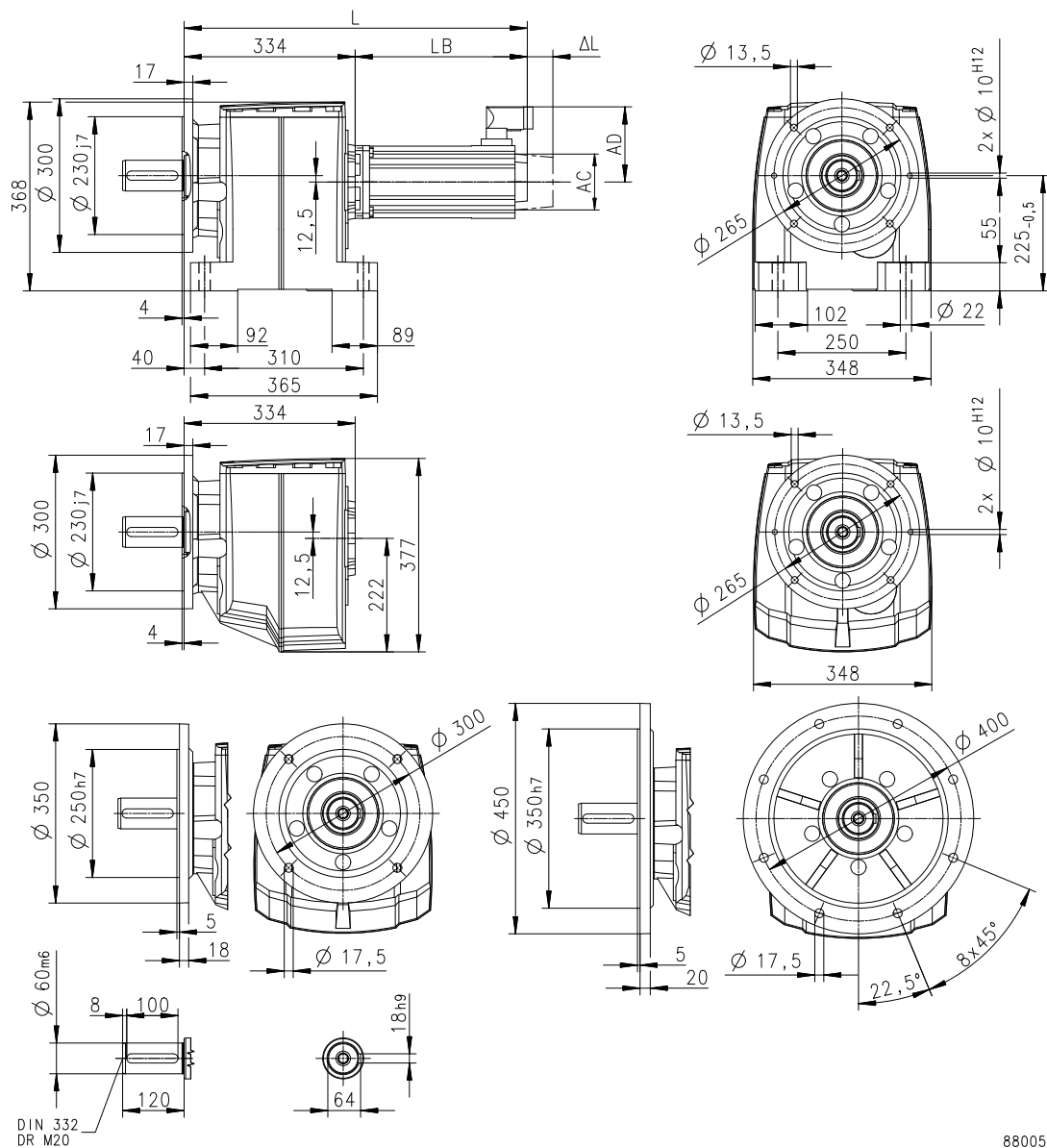


g500-H3000, 2-/3-stage with MCA14

Gearbox version: Solid shaft and foot/flange (VAK/VCK)

NOTICE

► Additionally secure the $\varnothing 300$ output flange with two spiral pins.



8800551-02

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	714	652	714	652
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

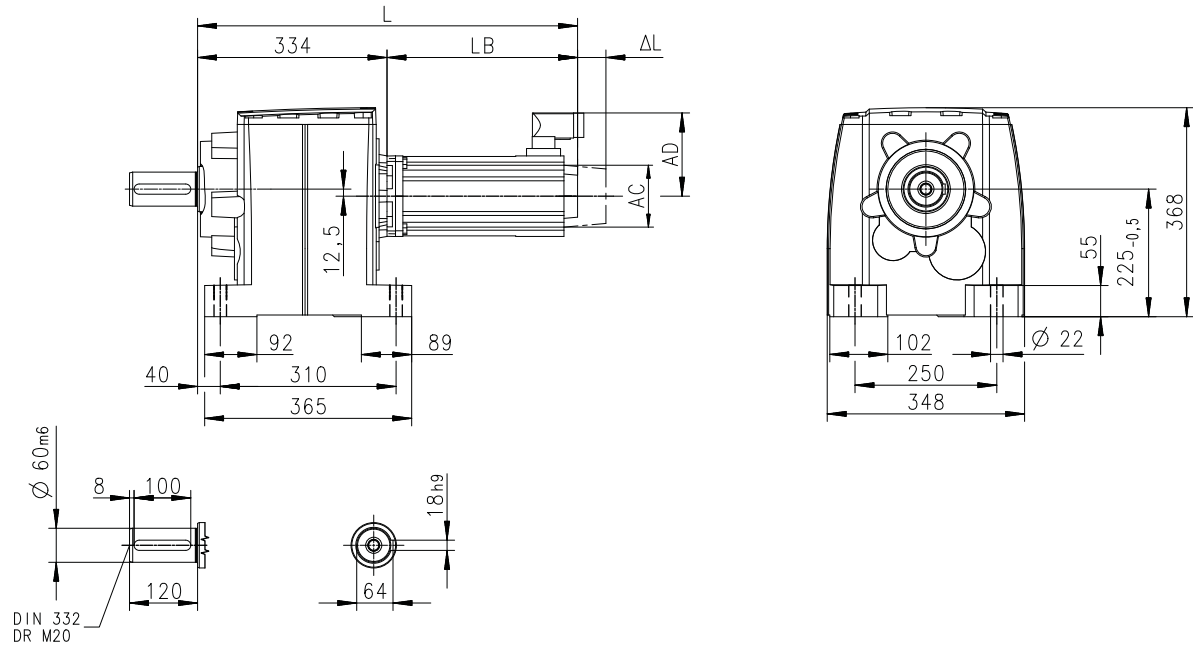


Technical data

Dimensions
Basic dimensions

g500-H3000, 2-/3-stage with MCA17

Gearbox version: Solid shaft with foot (VBR)



8800549-00

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	777	691	777	691
Motor length	LB	mm	443	357	443	357
Length of motor options	Δ L	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

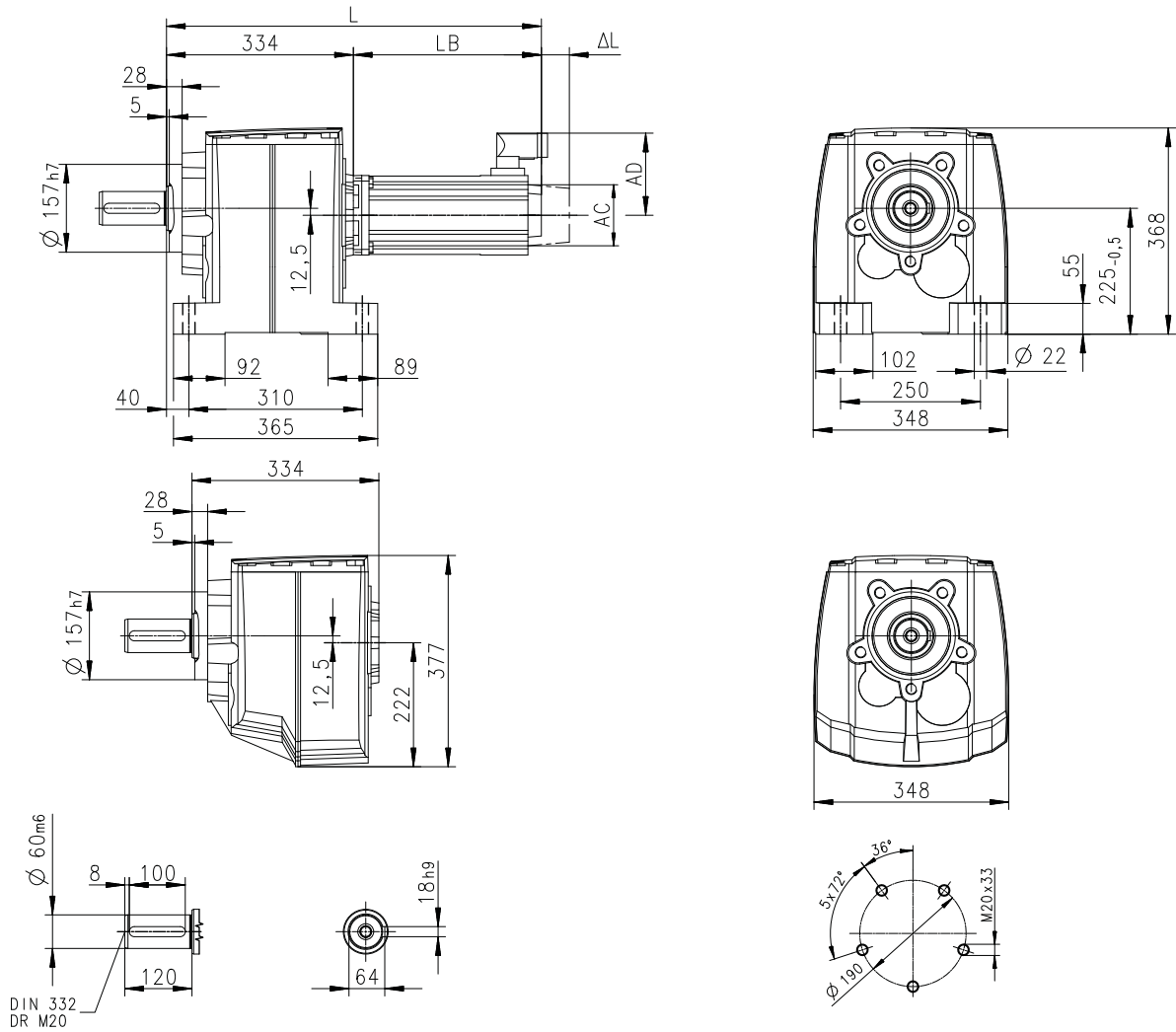
Technical data

Dimensions
Basic dimensions



g500-H3000, 2-/3-stage with MCA17

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800550-00

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	777	691	777	691
Motor length	LB	mm	443	357	443	357
Length of motor options	Δ L	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118



Technical data

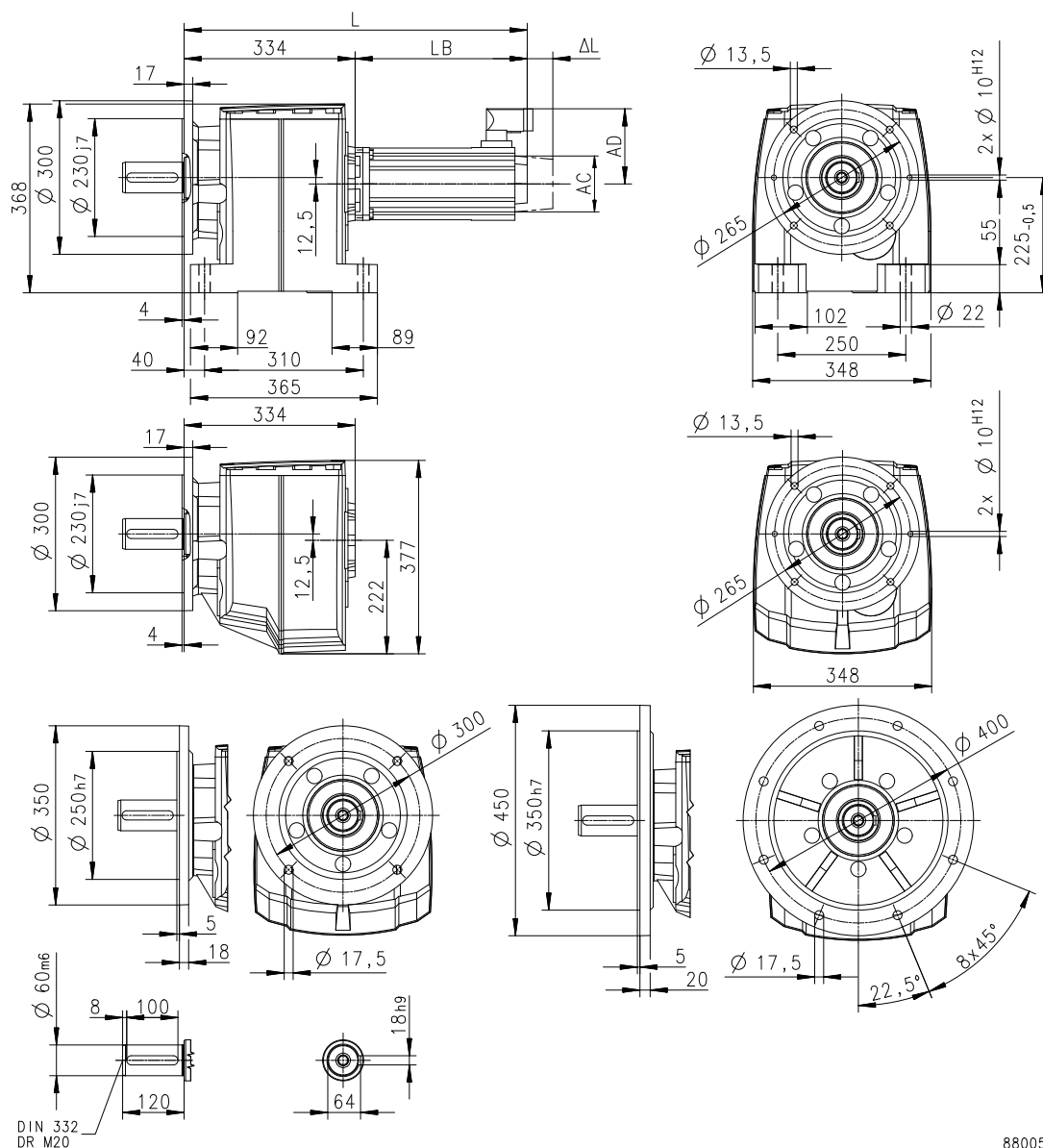
Dimensions
Basic dimensions

g500-H3000, 2-/3-stage with MCA17

Gearbox version: Solid shaft and foot/flange (VAK/VCK)

NOTICE

► Additionally secure the $\varnothing 300$ output flange with two spiral pins.



8800551-02

Motor			MCA			
			17N17- Blower	17N23- natural	17N35- Blower	17N41- natural
Cooling type						
Total length	L	mm	777	691	777	691
Motor length	LB	mm	443	357	443	357
Length of motor options	ΔL	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

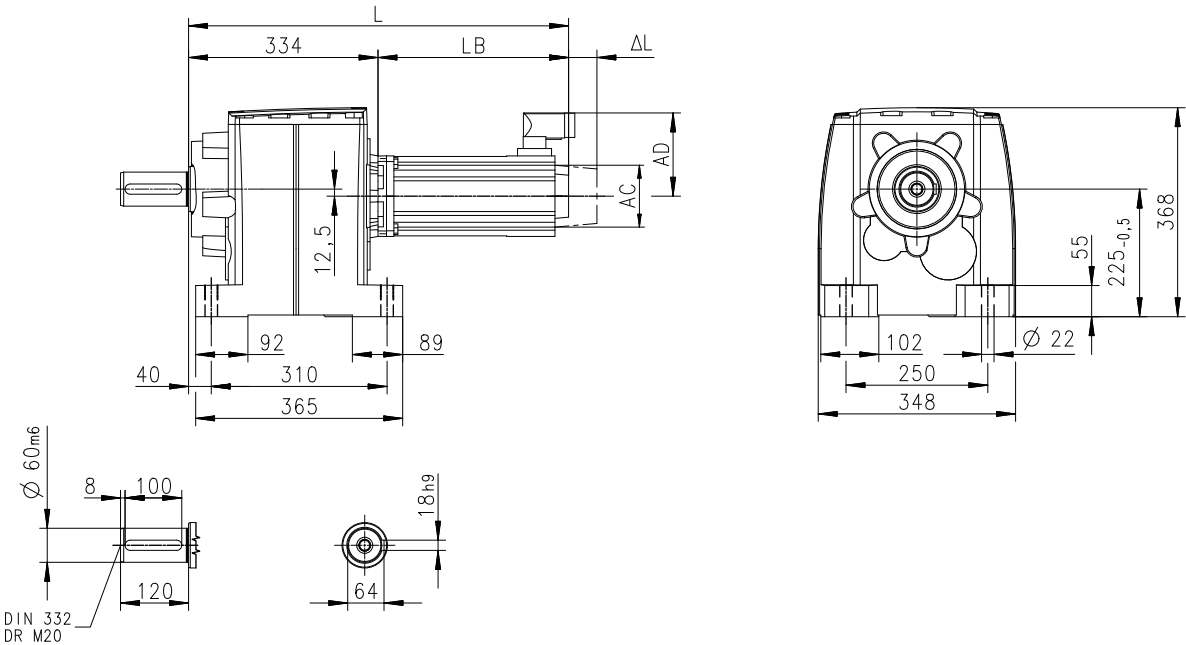
Technical data

Dimensions
Basic dimensions



g500-H3000, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot (VBR)



8800549-00

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	856	759	856	759
Motor length	LB	mm	522	425	522	425
Length of motor options	Δ L	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151

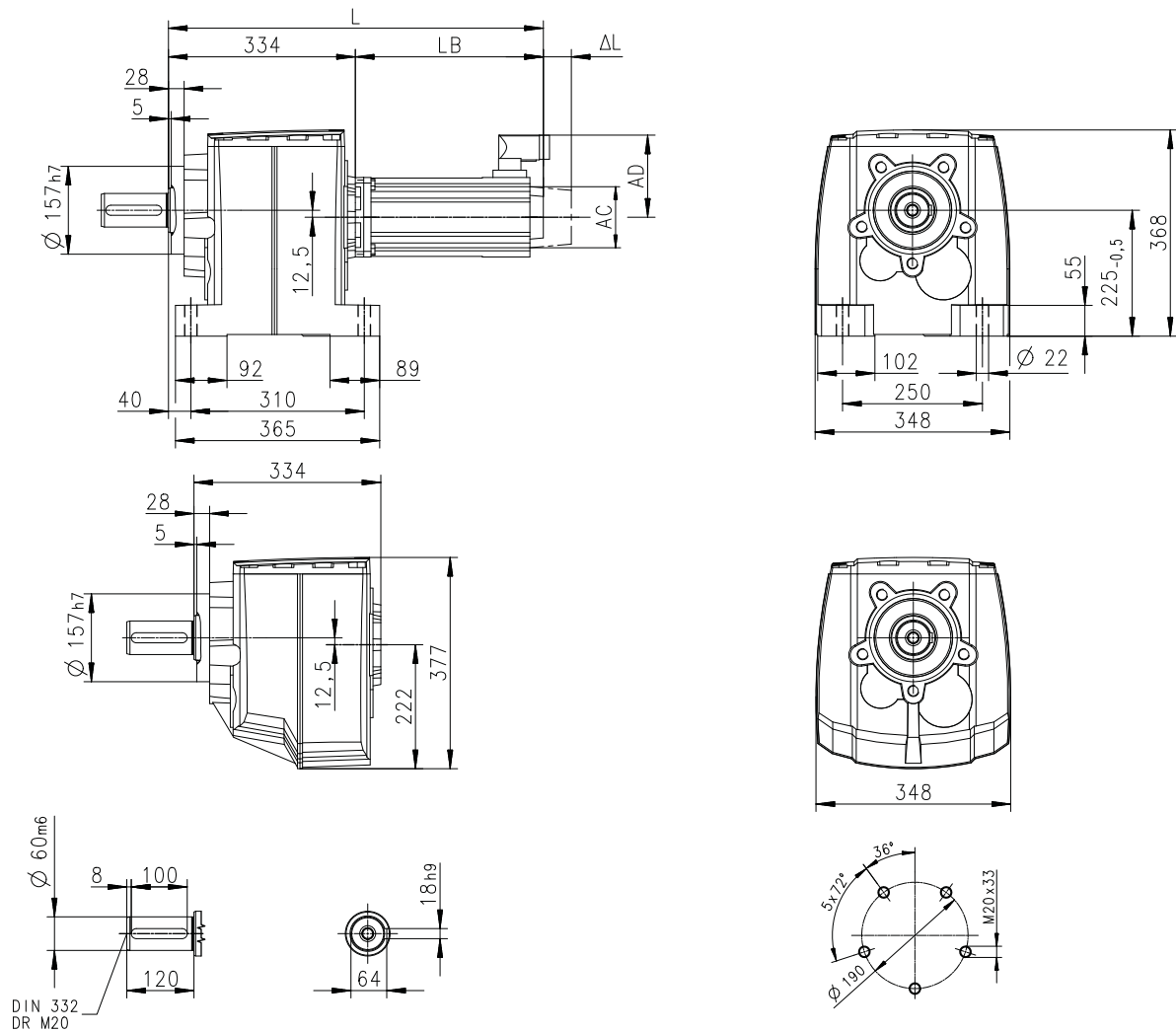


Technical data

Dimensions
Basic dimensions

g500-H3000, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot/centering (VAR/VCR)



8800550-00

Motor			MCA			
			19S17- Blower	19S23- natural	19S35- Blower	19S42- natural
Cooling type						
Total length	L	mm	856	759	856	759
Motor length	LB	mm	522	425	522	425
Length of motor options	Δ L	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151

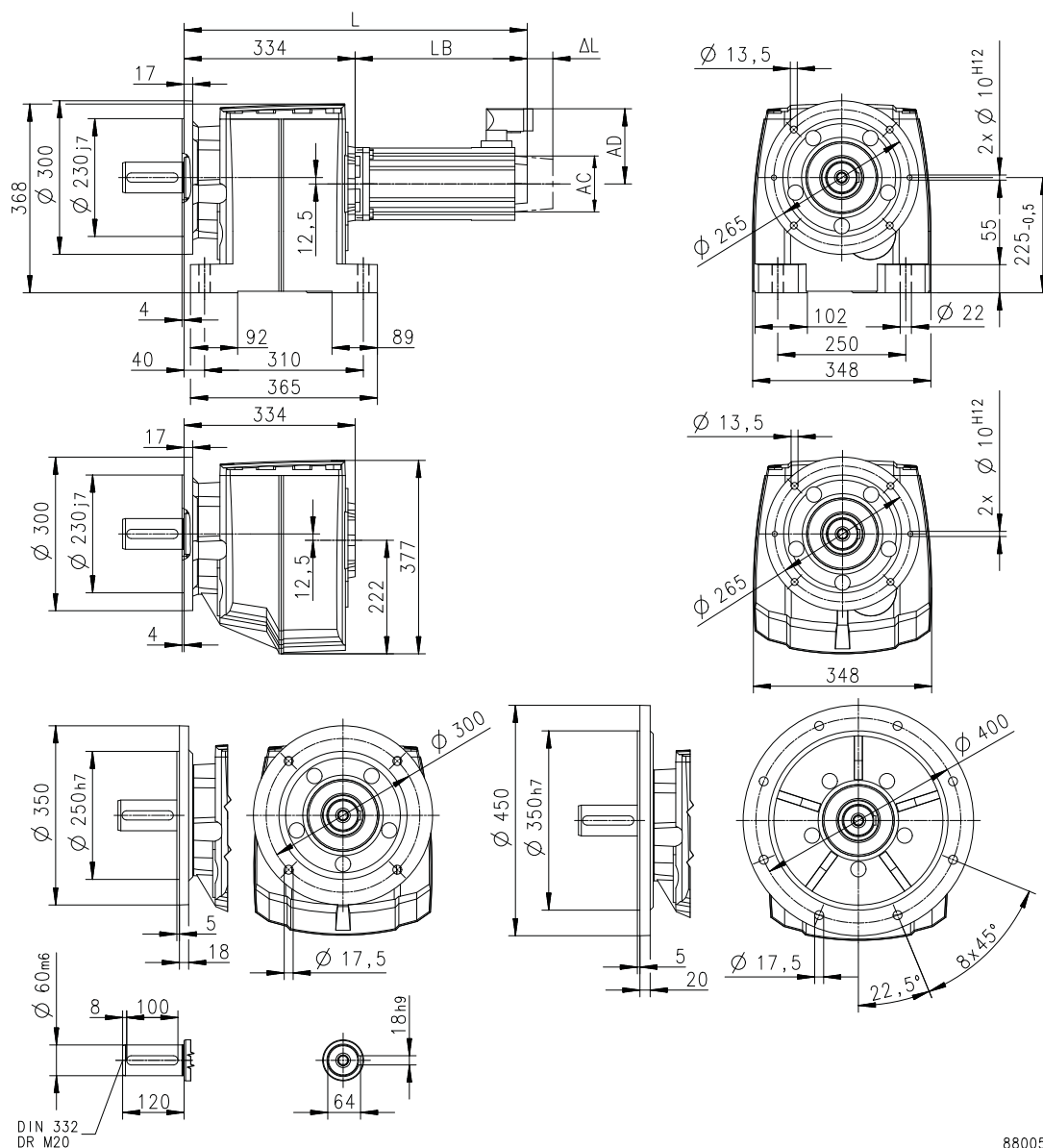
Dimensions

Basic dimensions



Gearbox version: Solid shaft and foot/flange (VAK/VCK)

- ▶ Additionally secure the Ø300 output flange with two spiral pins.



8800551-02

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	856	759	856	759
Motor length	LB	mm	522	425	522	425
Length of motor options	Δ L	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151

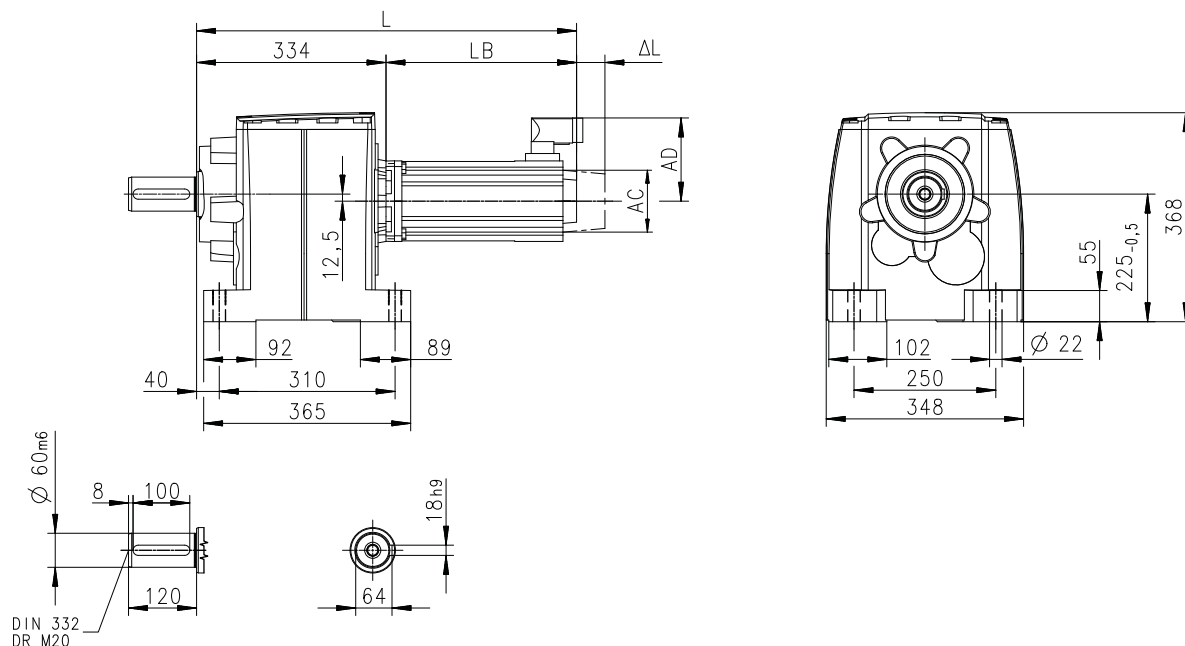


Technical data

Dimensions
Basic dimensions

g500-H3000, 2-/3-stage with MCA21

Gearbox version: Solid shaft with foot (VBR)



8800549-00

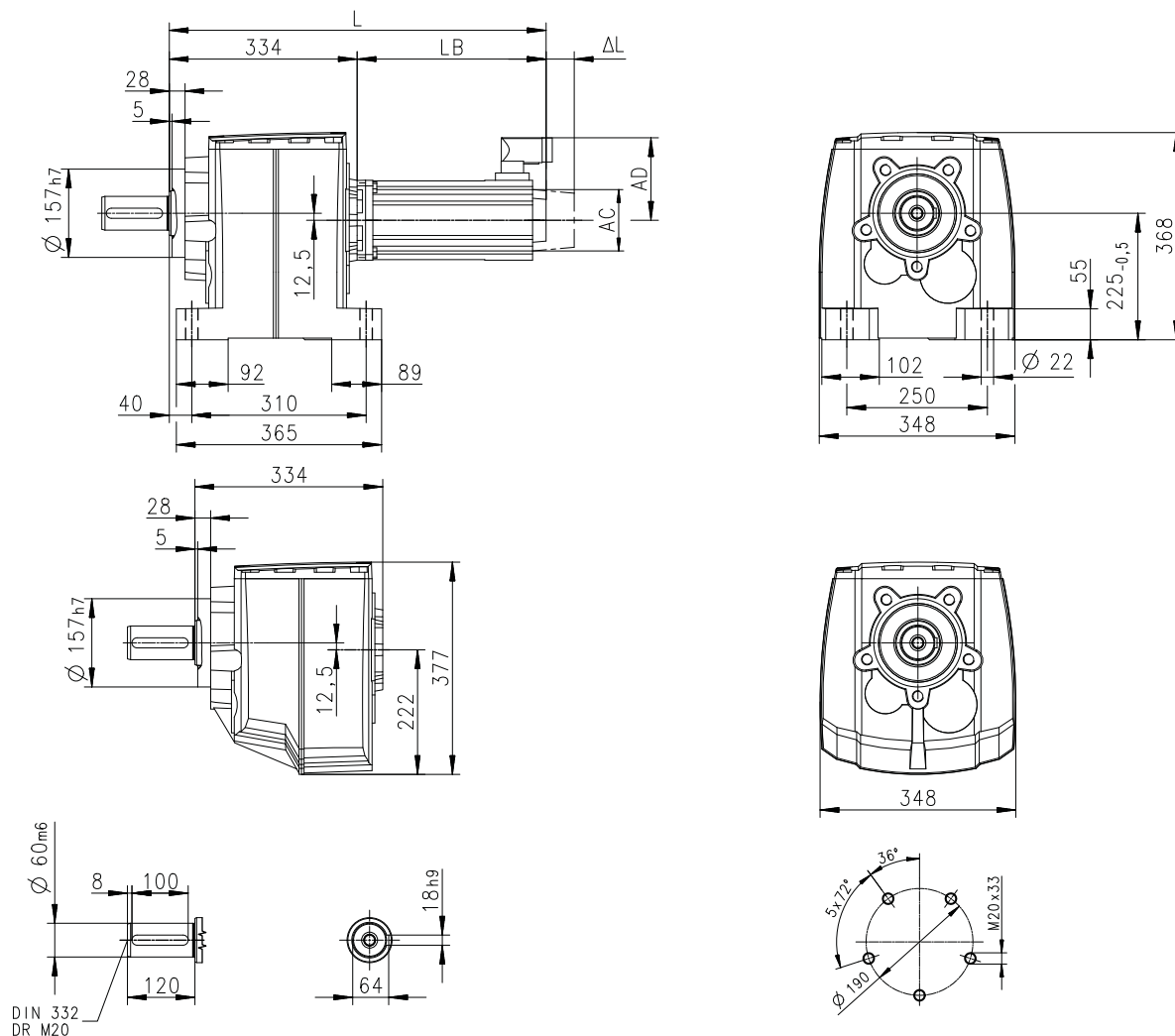
Motor			MCA			
			21X17-	21X25-	21X35-	21X42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	948	852	948	852
Motor length	LB	mm	614	518	614	518
Length of motor options	Δ L	mm	92	92	92	92
Motor diameter	AC	mm	214	214	214	214
Motor/connection distance	AD	mm	162	162	162	162

Dimensions

Basic dimensions



Gearbox version: Solid shaft with foot/centering (VAR/VCR)



Motor			MCA			
			21X17-	21X25-	21X35-	21X42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	948	852	948	852
Motor length	LB	mm	614	518	614	518
Length of motor options	Δ L	mm	92	92	92	92
Motor diameter	AC	mm	214	214	214	214
Motor/connection distance	AD	mm	162	162	162	162



Technical data

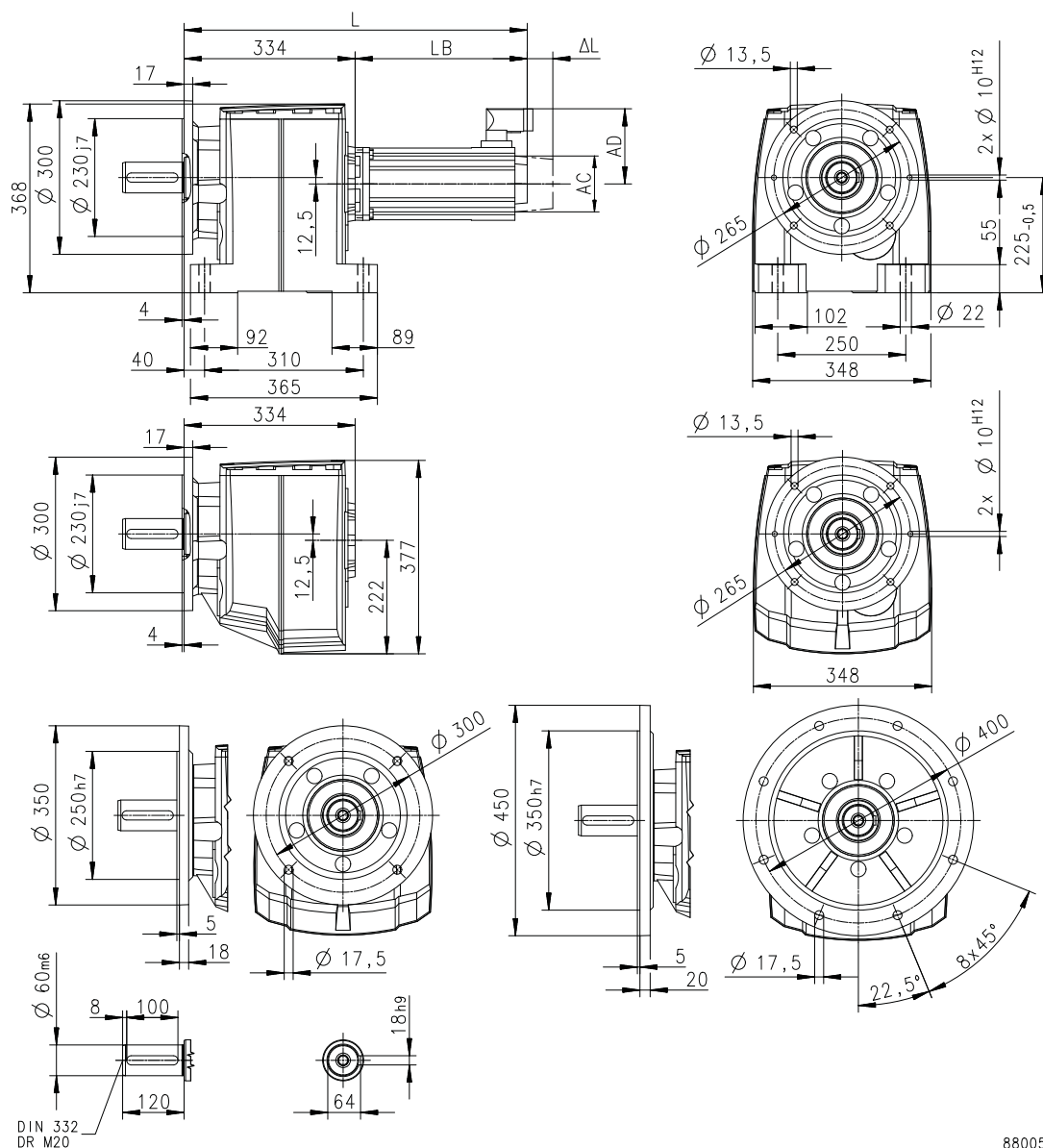
Dimensions
Basic dimensions

g500-H3000, 2-/3-stage with MCA21

Gearbox version: Solid shaft and foot/flange (VAK/VCK)

NOTICE

► Additionally secure the $\varnothing 300$ output flange with two spiral pins.



8800551-02

Motor			MCA			
			21X17-	21X25-	21X35-	21X42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	948	852	948	852
Motor length	LB	mm	614	518	614	518
Length of motor options	ΔL	mm	92	92	92	92
Motor diameter	AC	mm	214	214	214	214
Motor/connection distance	AD	mm	162	162	162	162

Technical data

Dimensions
Gearbox with pre-stage



Gearbox with pre-stage

g500-H100 ... H140, 3-stage

g500-H210 ... H3000, 4-stage

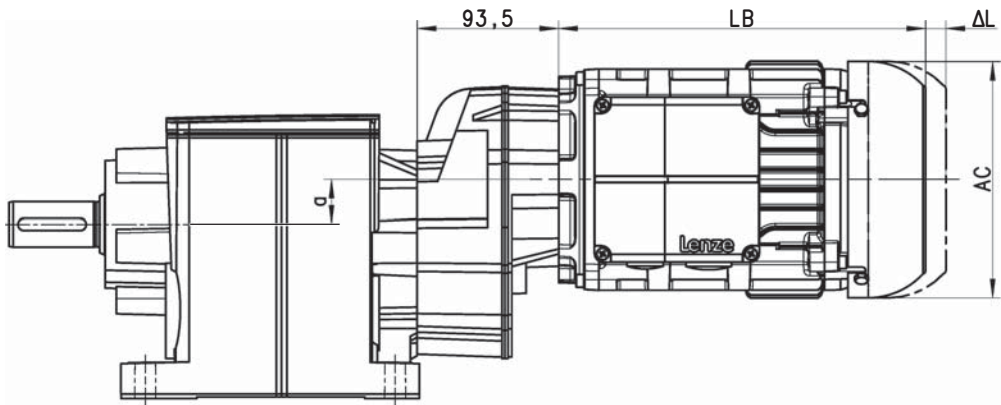


The geared motor dimensions can be found in the basic dimensions, except the total length "L" and the center distance "a".

► [Basic dimensions](#) 84

The total length "L" in the basic dimensions is extended by the 93.5 mm of the pre-stage.

Observe the altered center distance "a" between the gearbox and motor shaft.



8801279-00

Gearboxes			g500-H100	g500-H140	g500-H210	g500-H320	g500-H450	g500-H600	g500-H850	g500-H1500	g500-H3000
			3-stage		4-stage						
Center distance	a	mm	40.2	30	34.8	24.3	29.6	17.6	26.5	28.2	32.5



Technical data

Dimensions
Additional lengths

Additional lengths



The motor code indicates the short designation of the brake and feedback.
Detailed information can be found for

► [Product codes](#) 235

► [Brakes](#) 226

► [Feedback](#) 229

MCA10

Motor			MCA	
			10I40-	
Cooling type			natural	
Feedback (without brake B0)				
R□0	Δ L	mm	0	
SR□ / T20 / E□□	Δ L	mm	54	
Brake (P□) and feedback				
R□0 / C40	Δ L	mm	25	
SR□ / T20 / E□□	Δ L	mm	78	

MCA13

Motor			MCA	
			13I34-	13I41-
Cooling type			Forced	Natural
Feedback (without brake B0)				
R□0	Δ L	mm	0	0
SR□ / T20 / E□□	Δ L	mm	54	54
Brake (P□) and feedback				
R□0 / C40	Δ L	mm	35	35
SR□ / T20 / E□□	Δ L	mm	90	90

MCA14

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Forced	Natural	Forced	Natural
Feedback (without brake B0)						
R□0	Δ L	mm	0	0	0	0
SR□ / T20 / E□□	Δ L	mm	55	55	55	55
Brake (P□) and feedback						
R□0	Δ L	mm	33	33	33	33
SR□ / T20 / E□□	Δ L	mm	89	89	89	89

MCA17

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Forced	Natural	Forced	Natural
Feedback (without brake B0)						
R□0	Δ L	mm	0	0	0	0
SR□ / T20 / E□□	Δ L	mm	54	54	54	54
Brake (P□) and feedback						
R□0	Δ L	mm	35	35	35	35
SR□ / T20 / E□□	Δ L	mm	90	90	90	90

Technical data

Weights
Basic weights



MCA19

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Feedback (without brake B0)						
R□0	Δ L	mm	0	0	0	0
SR□ / T20 / E□□	Δ L	mm	50	50	50	50
Brake (P□) and feedback						
R□0	Δ L	mm	38	38	38	38
SR□ / T20 / E□□	Δ L	mm	88	88	88	88

MCA21

Motor			MCA			
			21X17-	21X25-	21X35-	21X42-
Cooling type			Forced	Natural	Forced	Natural
Feedback (without brake B0)						
R□0	Δ L	mm	0	0	0	0
SR□ / T20 / E□□	Δ L	mm	49	49	49	49
Brake (P□) and feedback						
R□0	Δ L	mm	42	42	42	42
SR□ / T20 / E□□	Δ L	mm	92	92	92	92

Weights

Basic weights



The basic weights are listed in the selection tables.

Weights with lubricant for mounting position M1, all data approximate values.
The exact values can be found in the delivery documents

► [Selection tables](#)  54

Observe ► [Additional weights](#)  216!

Additional weights

Gearbox

Gearbox			g500-H45	g500-H100	g500-H140	g500-H210	g500-H320	g500-H450
Foot	m	kg	0.1	0.1	0.2	0.1	0.1	0.2
Flange	m	kg	0.3	0.4	0.6	0.6	0.8	0.9
Flange (VCP)	m	kg		2.0	3.9	3.9	4.1	6.1

Gearbox			g500-H600	g500-H850	g500-H1500	g500-H3000
Foot	m	kg	2.0	2.8	4.3	5.8
Flange	m	kg	4.3	7.6	8.3	20
Flange (VCP)	m	kg				

Motors

Motor			MCA10	MCA13	MCA14	MCA17	MCA19	MCA21
Permanent magnet holding brake	m	kg	0.8	1.5	2.4	2.4	4.8	5.0



Product extensions

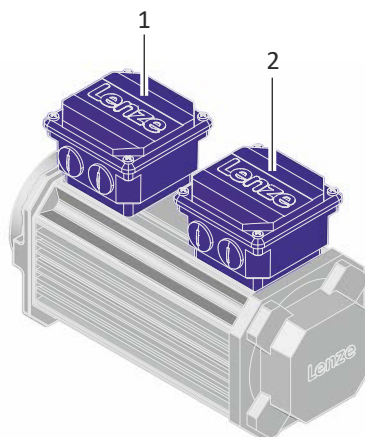
Motor connection
Connection via terminal box

Product extensions

Motor connection

Connection via terminal box

Position of the connections



Position	Meaning
1	Power connection Brake connection PE connection
2	Feedback connection Connection of temperature monitoring Blower connection

Cable glands MCA10 ... 19/21



The openings for the cable glands are closed with plugs and arranged on one side. If required, the terminal box can be rotated step by step by 90 ° after loosening the screws in the terminal box.

Motor		MCA10 MCA13	MCA14 MCA17	MCA19 MCA21
Screwed connections		2x M20 x 1.5		1x M32 x 1.5 1x M25 x 1.5
cable cross-section	mm ²	0.08 ... 2.5		0.2 ... 10
Stripping length	mm	10 ... 11		
Terminal design		Spring-loaded terminal		

Terminal box, power		
Contact	Name	Meaning
U1	L1	Motor winding phase
V1	L2	
W1	L3	
PE	PE	PE conductor

Terminal box, DC brake		
Contact	Name	Meaning
BD1	+	Brake +
BD2	-	Brake -

Product extensions

Motor connection
Connection via terminal box



Terminal box, AC brake		
Contact	Name	Meaning
~	L1	Mains
	N	
+	+	Holding brake (factory-wired)
-	-	
Schalter		Switching contact - DC switching

Terminal box, resolver		
Contact	Name	Meaning
B1	+Ref	Transformer windings (reference windings)
B2	-Ref	
B3	+VCC ETS	Supply: Electronic nameplate (only for variant with electronic nameplate ETS)
B4	+COS	Cosine stator windings
B5	-COS	
B6	+SIN	Sine stator windings
B7	-SIN	
B8		Not assigned

Terminal box, SinCos absolute value encoder with Hiperface		
Contact	Name	Meaning
B1	+ UB	Supply +
B2	GND	Mass
B3	A	Track A / + COS
B4	A ⁻	Track A inverse /-COS
B5	B	Track B / +SIN
B6	B ⁻	Track B inverse/-SIN
B7	Z	Zero track / + RS485
B8	Z ⁻	Zero track inverse /-RS485
B10		Incremental encoder shield

Terminal box, SinCos absolute value encoder with EnDat		
Contact	Name	Meaning
B1	+ UB	Supply +
B2	GND	Mass
B3	A	Track A / + COS
B4	A ⁻	Track A inverse /-COS
B5	B	Track B / +SIN
B6	B ⁻	Track B inverse/-SIN
B7	Daten	EnDat interface data
B8	Daten ⁻	Data inverse EnDat interface
B20	Takt	EnDat interface cycle
B21	Takt ⁻	Inverse EnDat interface cycle
B22	Up Sensor	Up Sensor
B23	0 V Sensor	0 V sensor
B24	Schirm	Encoder housing shield
B25		Not assigned

Terminal box with temperature monitoring R		
Contact	Name	Meaning
R1	+	Temperature sensor +
R2	-	Temperature sensor -



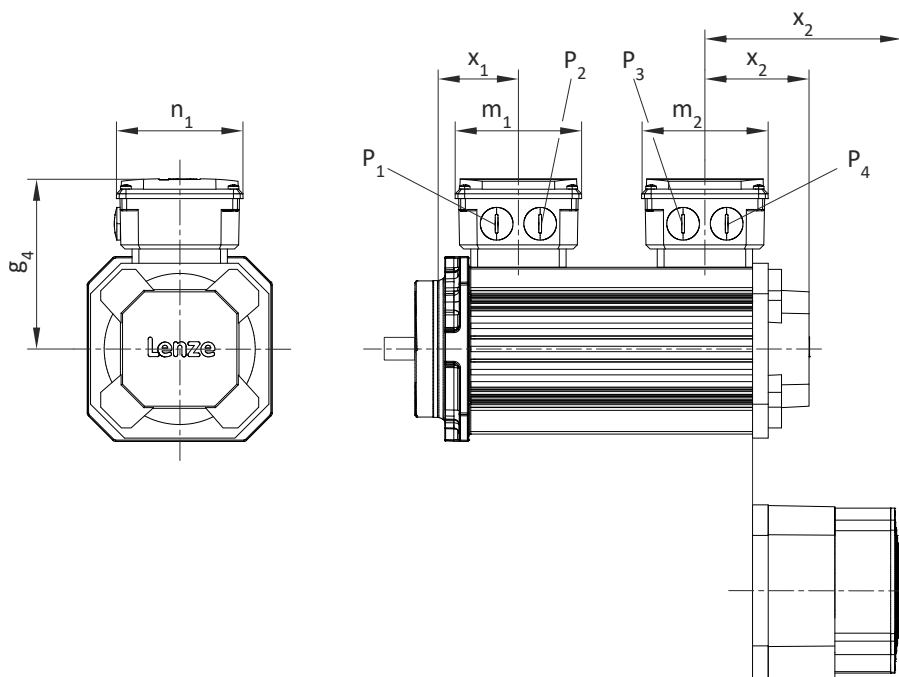
Product extensions

Motor connection
Connection via terminal box

Terminal box, 1-phase separate fan

Contact	Name	Meaning
PE	PE	PE conductor
U1	L1	Mains
U2	N	

Terminal box dimensions MCA10 ... 17



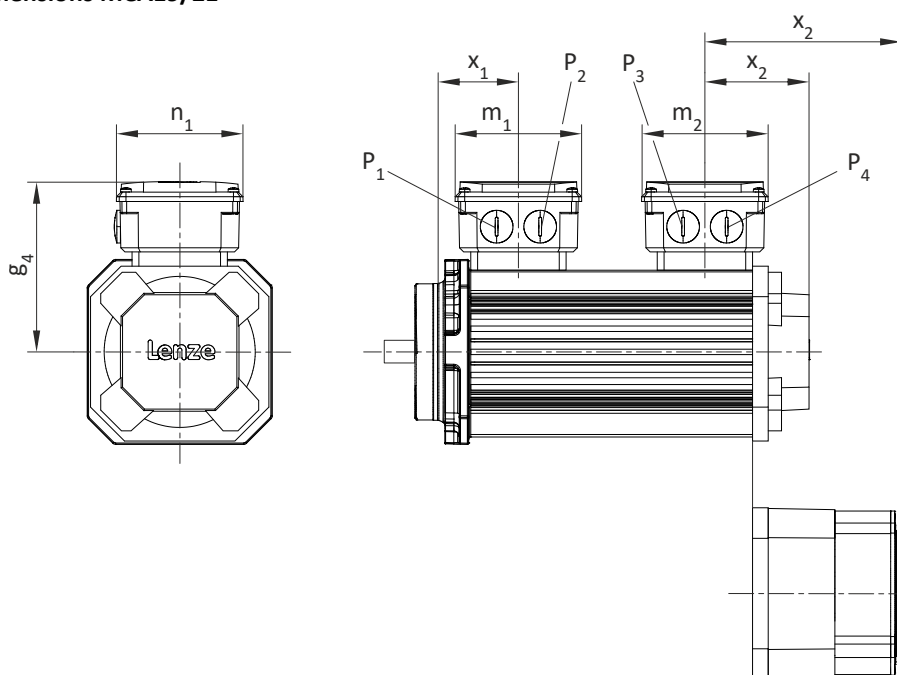
Motor			MCA						
			10I40-	13I34-	13I41-	14L16- 14L35-	14L20- 14L41-	17N17- 17N35-	17N23- 17N41-
Cooling type			Natural	Forced	Natural	Forced	Natural	Forced	Natural
Motor/connection distance	g ₄	mm	113	125		133		141	
Power connection, brake									
Screwed connections	P ₁	mm	M20x1.5						
	P ₂	mm	M20x1.5						
Terminal box	m ₁	mm	93						
	n ₁	mm	93						
	x ₁		51	54		69		72	
Feedback connection, temperature monitoring									
Screwed connections	P ₃	mm	M20x1.5						
	P ₄	mm	M20x1.5						
Terminal box	m ₂	mm	93						
	n ₁	mm	93						
Resolver	x ₂	mm	78	145	77	147	85	171	85
Absolute value encoder/incremental encoder	x ₂	mm	132	199	131	202	140	225	139

Product extensions

Motor connection
Connection via terminal box



Terminal box dimensions MCA19/21



Motor			MCA			
			19S17-	19S23-	21X17-	21X25-
			19S35-	19S42-	21X35-	21X42-
Cooling type			Forced	Natural	Forced	Natural
Motor/connection distance	g ₄	mm	158		169	
Powe connection, brake						
Screwed connections	P ₁	mm	M25x1.5			
	P ₂	mm	M32x1.5			
Terminal box	m ₁	mm	115			
	n ₁	mm	115			
	x ₁		88		118	
Feedback connection, temperature monitoring						
Screwed connections	P ₃	mm	M20x1.5			
	P ₄	mm	M20x1.5			
Terminal box	m ₂	mm	115			
	n ₁	mm	115			
Resolver	x ₂	mm	190	93	193	97
Absolute value encoder/incremental encoder	x ₂	mm	240	143	243	147



Product extensions

Motor connection
Connection via ICN connector

Connection via ICN connector

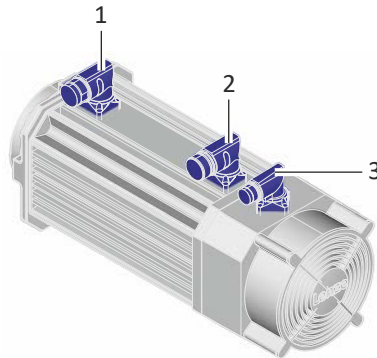
The electrical connection to the servo motors as a standard is established via ICN connectors.

The connectors can be rotated by 270 ° and are provided with a bayonet catch. Since the catch of the connector is also compatible with conventional box nuts, existing mating connectors with a screw plug can continue to be used without any problems.



In order to provide for a quick and error-free connection of Lenze motors to Lenze inverters, we recommend using prefabricated Lenze system cables.

Position of the connections



Position	Meaning
1	Power connection Brake connection PE connection
2	Feedback connection Connection of temperature monitoring
3	Blower connection

Product extensions

Motor connection
Connection via ICN connector

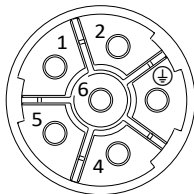


Power and brake connection

Valid for MCA10 ... 17

ICN-M23 connector assignment

6-pole



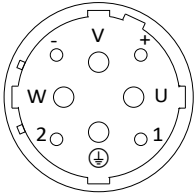
ICN M23 6-pole		
Contact	Name	Meaning
PE	PE	PE conductor
1	BD1	DC +/AC brake
2	BD2	DC -/AC brake
4	U	Power phase U
5	V	Power phase V
6	W	Power phase W



Valid for MCA19 ... 21

ICN-M40 connector assignment

8-pole



ICN M40 8-pole		
Contact	Name	Meaning
+	BD1	Holding brake +
-	BD2	Holding brake -
PE	PE	PE conductor
U	U	Power phase U
V	V	Power phase V
W	W	Power phase W
1		Not assigned
2		Not assigned

Product extensions

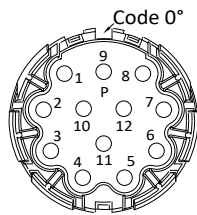
Motor connection
Connection via ICN connector



Feedback and temperature monitoring connection

ICN-M23 connector assignment

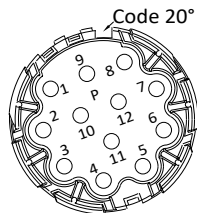
Resolver



ICN M23 for resolvers		
Contact	Name	Meaning
1	+Ref	Transformer windings
2	-Ref	Transformer windings
3	+VCC ETS	Supply: Electronic nameplate (Only for motors and inverters that support this function)
4	+COS	Cosine stator windings
5	-COS	Cosine stator windings
6	+SIN	Sine stator windings
7	-SIN	Sine stator windings
8		Not assigned
9		Not assigned
10	Schirm	Encoder housing shield
11	+	Temperature monitoring: PT1000
12	-	Temperature monitoring: PT1000

ICN-M23 connector assignment

Incremental and SinCos absolute value encoder Hiperface©



ICN M23 for incremental and SinCos absolute value encoder Hiperface		
Contact	Name	Meaning
1	B	Track B / +SIN
2	A ⁻	Track A inverse /-COS
3	A	Track A / + COS
4	+UB	Supply +
5	GND	Mass
6	Z ⁻	Zero track inverse /-RS485
7	Z	Zero track / + RS485
8		Not assigned
9	B ⁻	Track B inverse/-SIN
10	Schirm	Encoder housing shield
11	+	Temperature monitoring: PT1000
12	-	Temperature monitoring: PT1000

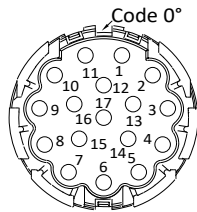


Product extensions

Motor connection
Connection via ICN connector

ICN-M23 connector assignment

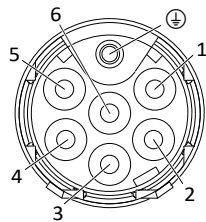
SinCos absolute value encoder with EnDat interface



ICN M23 SinCos absolute value encoder with EnDat		
Contact	Name	Meaning
1	UP Sensor	Up Sensor
2		Not assigned
3		Not assigned
4	0 V Sensor	0 V sensor
5	+	PT1000/KTY temperature sensor
6	-	PT1000/KTY temperature sensor
7	+UB	Supply +
8	Takt	EnDat interface cycle
9	Takt-	Inverse EnDat interface cycle
10	GND	Mass
11	Schirm	Encoder housing shield
12	B	Track B
13	B-	Track B inverse/-SIN
14	Daten	EnDat interface data
15	A	Track A
16	A-	Track A inverse /-COS
17	Daten-	Data inverse EnDat interface

Blower

Pin assignment ICN-M17



ICN M17 for blowers 1-ph		
Contact	Name	Meaning
PE	PE	PE conductor
1	U1	Fan
2	U2	Fan
3		Not assigned
4		Not assigned
5		Not assigned
6		Not assigned

Product extensions

Brakes
Connection via ICN connector



Brakes

Optionally, the motors can be ordered with a permanent magnet brake as holding brake.

⚠ CAUTION!

They may not be used as safety elements (particularly with hoist axes) without additional measures being implemented.

The brakes used are not fail-safe brakes in the sense that prospective disruptive factors, e.g. oil ingress, can lead to a reduction in torque!

- ▶ The brakes must only be used as holding brakes for holding the axes at a standstill or in the deenergised state.
- ▶ The brake must not be used as a service brake.

⚠ CAUTION!

If no suitable voltage (incorrect value, incorrect polarity) is applied to the brake, the brake will be applied and can be overheated and destroyed by the motor continuing to rotate.

Motor supply cables

If long motor supply cables are used, pay attention to the ohmic voltage drop along the cable and compensate for it with a higher voltage at the input end of the cable.

The following applies to Lenze system cables:

$U[V] = U_B[V] + 0.08 \frac{[V]}{[A] \times [m]} \times I_{Lg}[m] \times I_B[A]$	U	V	Resulting supply voltage
	U_B	V	Rated voltage of the brake
	I_{Lg}	m	Cable length
	I_B	A	Rated current of the brake

NOTICE

- ▶ The brakes become active when the supply voltage has been switched off (closed-circuit principle).
- ▶ When using the brakes purely as holding brakes, virtually no wear occurs on the friction surfaces.
- ▶ The friction surfaces must always be free from oil and grease because even small amounts of grease or oil will considerably reduce the braking torque.

NOTICE

In case of these permanent magnet brakes, the rated torque applies solely as holding torque at standstill.

- ▶ Emergency stops at higher speeds are possible but high switching energy increases wear on the friction surfaces and the hub.
- ▶ During braking from full motor speed, e.g. in the event of emergency stops, the braking torque is significantly reduced.



NOTICE

In case of travel axes, the compliance of the permissible ratio of mass inertia load/brake motor (J_L/J_{MB}) ensures that the permissible maximum switching energy of the brake will not be exceeded and at least the values given for the emergency stop functions from the given speed (see rated data) are applied.

For hoist axes, the load torque resulting from the weight acts additionally. In this case, the specifications for (J_L/J_{MB}) do not apply.

To simplify matters, the friction energy per switching cycle can be calculated using the formula below and must not exceed the limit value for emergency stops, which depends on the switching rate:

$Q = \frac{1}{2} \times J_{ges} \times \left(2\pi \times \frac{\Delta n}{60} \right)^2 \times \frac{M_N}{M_N - M_L}$	Q	J	Friction energy
	J_{total}	kgm ²	Total mass inertia (motor + load)
	Δn	rpm	Differential speed
	M_N	Nm	Rated torque of the brake
	M_L	nM	Load torque



The shortest operating times of the brakes are achieved by DC switching of the voltage and an external suppressor circuit (varistor or spark suppressor).

Without suppressor circuit, the operating times may increase. A varistor/ spark suppressor limits the breaking voltage peaks. It must be ensured that the power limit of the suppressor circuit is not exceeded. This limit depends on the brake current, brake voltage, disengagement time and the switching operations per time unit.

Furthermore the suppressor circuit is necessary for interference suppression and for increasing the service life of the relay contacts (external, is not integrated into the motor).



It is not possible to readjust the brake.

Permanent magnet brakes

Rated data



Engagement and disengagement times apply to rated voltage ($\pm 0\%$) and suppressor circuit of the brakes with a varistor with DC switching. Without a suppressor circuit, the times may be longer.

The currents are the maximum values when the brake is cold (value used for dimensioning the current supply). The values for a motor at operating temperature are considerably lower.

With 24 V DC brake: smoothed DC voltage, ripple $\leq 1\%$.

With 205 V DC brake: connection to 230 V AC via external rectifier (no cURus possible).

Maximum switching energy per emergency stop with $n = 3000$ rpm for at least 2000 emergency stops.

Supply voltage DC 24 V

Product extensions

Brakes

Permanent magnet brakes



Supply voltage DC 205 V

Motor			MCA10I	MCA13I	MCA14L	MCA17N	MCA21X
Motor code			P5	P8	P8	P8	P5
Supply voltage range	V_{in}	V	186.55 ... 215.25				
Supply voltage	V_{rated}	V	205				
Bemessungsdrehmoment							
At 20 °C	M_{rated}	Nm	6	26	46	88	
At 120 °C	M_{rated}	Nm	5	22	40	80	
Rated current	I_{rated}	A	0.08	0.088	0.11	0.18	
Engagement time t1	t_1	ms	20	16	25	23	
Disengagement time t2	t_2	ms	29	70	73	140	
Friction energy	Q_E	kJ	0.40	0.7	1.90	2.80	
Weight	m	kg	0.80	1.1	1.9	3.9	
Massenträgheitsmoment							
Brake	J	kgcm ²	1.06	3.60	9.50	31.8	
Brake motor	J_{MB}	kgcm ²	3.46	11.9	28.7	45.5	212
Load/brake motor ratio	J_L/J_{MB}		22.4	8.4	6.6	5.1	1.7



Feedback

For speed control with a servo inverter, the servo motor can be equipped with the following feedback systems:

Inverter	Feedback without functional safety		
	Resolver	Absolute value encoder	Incremental encoder
i950 servo inverter	RS0	AM1024-8V-H AS1024-8V-H	-
i700 servo inverter	RS0	AM1024-8V-H AS1024-8V-H	-
8400 TopLine inverter drives	RS0	AM1024-8V-H AS1024-8V-H	IG2048-5V-S IG2048-5V-T IG4096-5V-T
9400 HighLine servo drives	RS0	AM32-5V-E AM1024-8V-H AM2048-5V-E AS1024-8V-H AS2048-5V-E	IG2048-5V-S IG2048-5V-T IG4096-5V-T

Inverter	Feedback with functional safety		
	Resolver	Absolute value encoder	Incremental encoder
i950 servo inverter	RV03	-	-
9400 HighLine servo drives	RV03	-	-

Feedbacks in the environment of functional safety

Motors can perform speed-dependent safety functions for safe speed and/or safe relative position monitoring in a drive system by Lenze inverters or Controllers. In case of inverters, these functions are implemented by integrable safety modules and in case of Controllers by the additionally required Safety Controller.

When planning systems/installations of this kind, always observe the following:

- When using just one single feedback system in the environment of these safety applications, the applicable safety engineering standard EN 61800-5-2 (adjustable speed electrical power drive systems - Part: 5-2: Safety requirements - Functional) stipulates special requirements for the connection between feedback system and motor shaft.
- This is due to the fact that two-channel safety systems at this point in the mechanical system are actually designed as single-channel systems. If this mechanical connection is designed with considerable overdimensioning, the standard permits exclusion of the fault "encoder-shaft breakage" or "encoder-shaft slip". As such, the permissible angular acceleration limit values must not be exceeded for the individual drive solutions.

You can find the limit values in the corresponding feedback data of the individual motor ranges.

Speed-dependent safety functions

Examples of speed-dependent safety functions:

- Safe stop 1 (SS1)
- Safe operational stop (SOS)
- Safely limited speed (SLS)
- Safe maximum speed (SMS)
- Safe direction (SDI)
- Operation mode selector (OMS) with confirmation (ES)
- Safe speed monitor (SSM)
- Safely limited increment (SLI)

Product extensions

Feedback
Resolver



Resolver

The stator-supplied, 2-pole resolver with two stator windings shifted by 90 degrees and a rotor winding with a transformer winding can record both the speed and the rotor position, just like a single-turn absolute value encoder. The rotor position can be determined within one mechanical motor revolution after a voltage failure.

Feedback type			Resolver	
Feedback			RS0	RV03
Speed-dependent safety functions			No	Yes
Design			Mounting	
Resolution - angle		'	0.8	0.8
Min. accuracy		'	-10	-10
Max. accuracy		'	10	10
Absolute positioning			1 revolution	1 revolution
Max. speed	$n_{\max}$	rpm	8000	8000
Max. DC input voltage	$V_{\text{in,max}}$	V	10	10
Max. input frequency	$f_{\text{in,max}}$	kHz	4	4
Ratio stator/rotor			0.3	0.3
Min ratio tolerance		%	-5	-5
Max ratio tolerance		%	5	5
Rotor impedance	Z_{ro}	Ω	51+j90	51+j90
Stator impedance	Z_{so}	Ω	102+j150	102+j150
Impedance	Z_{rs}	Ω	44+j76	44+j76
Min. insulation resistance at DC 500 V	R_{min}	M Ω	10	10
Number of pole pairs			1	1
Max. angle error Min		'	-10	-10
Max. angle error Max		'	10	10

Speed-dependent safety functions

Feedback			RV03
Motor code			RV03
Max. permissible angular acceleration	α	rad/s ²	22000
Functional safety			
IEC 61508			SIL3
EN 13849-1			Up to Performance Level e



Product extensions

Feedback
Incremental encoder

Incremental encoder

Incremental encoders can be used for speed measurement. Homing is required in order to enable positioning later.

Feedback type			SinCos-Inkremental		TTL-Inkremental	
Feedback				IG2048-5V-S	IG2048-5V-T	IG4096-5V-T
Speed-dependent safety functions				No	No	No
Design			Mounting			
Pulses				2048	2048	4096
Output signals				SinCos 1 Vss	TTL	TTL
Interfaces					A, B; N; Ai, Bi; Ni	
Absolute revolution				0	0	0
Min. accuracy		'		-0.8	-2	-2
Max. accuracy		'		0.8	2	2
Min. DC input voltage	$V_{in,min}$	V		4.5	4.75	4.75
Max. DC input voltage	$V_{in,max}$	V		5.5	5.25	5.25
Max. current consumption	I_{max}	A		0.1	0.15	0.15
Limit frequency	f_{max}	kHz		180	300	300

Product extensions

Feedback
Absolute value encoder



Absolute value encoder

Absolute value encoders can detect the speed, the rotor position, and the machine position with a very high resolution. They are used for the positioning of dynamic applications and do not require homing.

Feedback type			SinCos absolute value encoder				
Feedback			AM32-5V-E	AM1024-8V-H	AM2048-5V-E	AS1024-8V-H	AS2048-5V-E
Speed-dependent safety functions			No	No	No	No	No
Design			Mounting	Mounting	Mounting	Mounting	Mounting
Encoder type			Multi-turn	Multi-turn	Multi-turn	Single-turn	Single-turn
Resolution		bit	-	-	-	-	-
Pulses			32	1024	2048	1024	2048
Output signals			SinCos 1 Vss	SinCos 1 Vss	SinCos 1 Vss	SinCos 1 Vss	SinCos 1 Vss
Interfaces			EnDat	Hiperface	EnDat	Hiperface	EnDat
Absolute revolution			4096	4096	4096	1	1
Resolution - angle			0.4	0.4	0.4	0.4	0.4
Min. accuracy		'	-5	-0.8	-0.6	-0.8	-0.6
Max. accuracy		'	5	0.8	0.6	0.8	0.6
Fehlergrenze Positionswert							
System accuracy			-	-	-	-	-
Integral nonlinearity			-	-	-	-	-
Min. DC input voltage	$V_{in,min}$	V	4.75	7	4.75	7	4.75
Max. DC input voltage	$V_{in,max}$	V	5.25	12	5.25	12	5.25
Max. current consumption	I_{max}	A	0.17	0.08	0.25	0.08	0.15
Limit frequency	f_{max}	kHz	600	200	200	200	200



Blower

The forced ventilation motors are cooled as a standard by means of a separate axial fan.

Rated data 50 Hz

Motor series			MCA								
Size			13	14	17	19	20	21	22		26
Degree of protection			IP54				IP23	IP54		IP23	IP54
Number of phases			1	1	1	1	1	1	1	1	1
Rated voltage	V _{rated}	V	230	230	230	230	230	230	230	230	230
Rated power	P _{rated}	kW	0.019	0.019	0.05	0.05	0.165	0.055	0.085	0.085	0.1
Rated current	I _{rated}	A	0.115	0.115	0.3	0.3	0.73	0.25	0.75	0.75	0.45

Motor series			MCA								
Size			26								
Degree of protection			IP23								
Number of phases			1								
Rated voltage	V _{rated}	V	230								
Rated power	P _{rated}	kW	0.1								
Rated current	I _{rated}	A	0.45								

Rated data 60 Hz

Motor series			MCA								
Size			13	14	17	19	20	21	22		26
Degree of protection			IP54				IP23	IP54		IP23	IP54
Number of phases			1	1	1	1	1	1	1	1	1
Rated voltage	V _{rated}	V	230	230	230	230	230	230	230	230	230
Rated power	P _{rated}	kW	0.018	0.018	0.039	0.039	0.205	0.065	0.085	0.085	0.138
Rated current	I _{rated}	A	0.105	0.105	0.25	0.25	0.9	0.29	0.75	0.75	0.61

Motor series			MCA								
Size			26								
Degree of protection			IP23								
Number of phases			1								
Rated voltage	V _{rated}	V	230								
Rated power	P _{rated}	kW	0.138								
Rated current	I _{rated}	A	0.61								

Product extensions

Temperature monitoring
Thermal detectors PT1000



Temperature monitoring

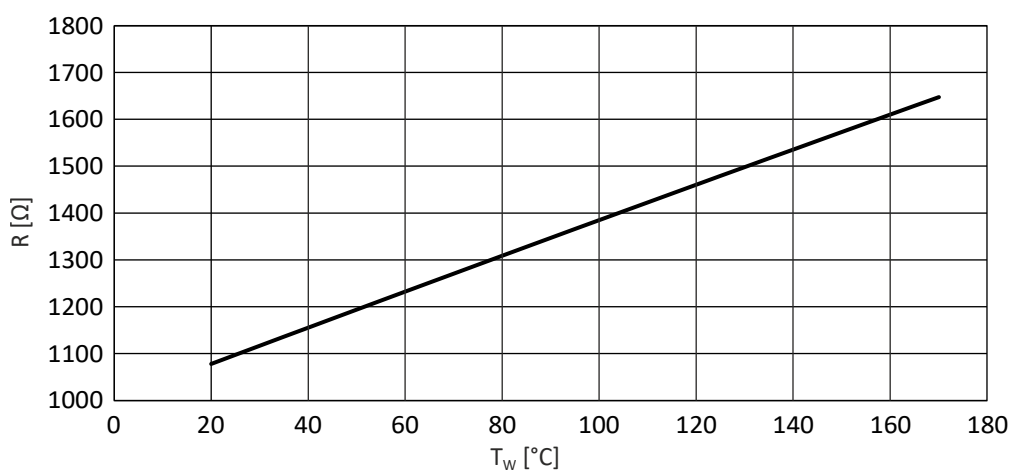
Thermal detectors PT1000

The thermal detector used continuously monitors the motor temperature. The temperature information is transferred to the inverter using the system cable of the feedback system. **This is not a full motor protection!**

This makes it possible to determine the motor temperature in the permissible operating range with great accuracy.



When supplying the thermal sensors with a measurement current of 1 mA, the connection between the temperature and the resistance measured applies.



R Resistance
 T_w Winding temperature



Product codes

Gearbox product code

Example		G	50	A	H	045	M	V	C	R	2	C	1A
Product type	Gearboxes	G											
Product family			50										
Generation				A B									
Gearbox type	Helical gearbox				H								
Output torque	45 Nm					045							
	100 Nm					110							
	140 Nm					114							
	210 Nm					121							
	320 Nm					132							
	450 Nm					145							
	600 Nm					160							
	850 Nm					185							
	1500 Nm					215							
	3000 Nm					230							
	5000 Nm					250							
	8000 Nm					280							
	14000 Nm					314							
Type of construction	Geared motor						M						
	Gearboxes						N						
Shaft type	Solid shaft with featherkey							V					
	Solid shaft without featherkey							G					
Housing type	Foot mounting + centering								A				
	Foot mounting								B				
	With centering								C				
Flange mounting	Without flange									R			
	Flange with through holes									K			
	Reinforced flange with through holes									P			
Number of stages	2-stage										2		
	3-stage										3		
	4-stage										4		
Motor mounting	Integrated motor											C	
	IEC adapter with jaw coupling											N T	
	IEC adapter with plug-in hollow shaft											H	
	NEMA adapter with jaw coupling											A	
	NEMA adapter with plug-in hollow shaft											B	
	Servomotor adapter with plug-in hollow shaft											S	
	Servomotor adapter with jaw coupling											E D G	
Drive size													1A ... □H 08 ... 82



Product code of MCA asynchronous servo motor

Example		M	C	A	10	C	40	-	RS0	B0
Meaning	Variant	Product code								
Product family	Motor	M								
Type	Compact servo motors		C							
Version	Asynchronous			A						
Motor frame size	Square dimension 102 mm				10					
	Square dimension 130 mm				13					
	Square dimension 142 mm				14					
	Square dimension 165 mm				17					
	Square dimension 192 mm				19					
	Square dimension 200 mm				20					
	Square dimension 214 mm				21					
	Square dimension 220 mm				22					
	Square dimension 260 mm				26					
Overall length						I ... X				
Rated speed	rpm x 100						05 ... 42			
Inverter mains connection	3 x 400 V							-		
Motor protection class	Degree of protection: IP54 / IP65									
	3 x 400 V							H		
	Degree of protection: IP23									
Feedback	SinCos absolute value encoder, single-turn, EnDat AS2048-5V-E									ECN
	SinCos absolute value encoder, multi-turn, EnDat AM32-5V-E									EQI
	SinCos absolute value encoder, multi-turn, EnDat AM2048-5V-E									EQN
	Resolver									RS0
	Safety resolver RV03									RV0
	SinCos incremental encoder, single-turn IG2048-5V-S									S20
	SinCos absolute value encoder, multi-turn, Hiperface® AM1024-8V-H									SRM
	SinCos absolute value encoder, single-turn, Hiperface® AS1024-8V-H									SRS
	TTL incremental encoder IG2048-5V-T									T20
	TTL incremental encoder IG4096-5V-T									T40
Brake	Without brake									B0
	Spring-applied brake DC 24 V									F1
	Spring-applied brake DC 24 V, reinforced									F2
	Spring-applied brake AC 230 V									FG
	Spring-applied brake AC 230 V, reinforced									FH
	Permanent magnet brake DC 24V									P1 ... P4
	Permanent magnet brake DC 205 V									P5 ... P8



Motor data

Rated data
Inverter mains connection 400 V, Self-ventilated motors

Motor data

Rated data

Inverter mains connection 400 V, Self-ventilated motors

Motor			MCA 10I40-	MCA 13I41-	MCA 14L41-	MCA 14L20-	MCA 17N23-	MCA 17N41-
Degree of protection			IPxx	IPxx	IPxx	IPxx	IPxx	IPxx
Standstill torque	M_0	Nm	2.30	4.60	8.00	8.00	12.8	12.8
Rated torque	M_{rated}	Nm	2.00	4.00	5.40	6.70	10.8	9.50
Max. torque	M_{max}	Nm	10.0	32.0	60.0	60.0	100	100
Rated speed	n_{rated}	rpm	3950	4050	4100	2000	2300	4110
Max. speed	n_{max}	rpm	8000	8000	8000	8000	8000	8000
Rated power	P_{rated}	kW	0.8	1.7	2.3	1.4	2.6	4.1
Standstill current	I_0	A	2.55	4.60	7.70	3.85	6.00	12.0
Rated current	I_{rated}	A	2.40	4.40	5.80	3.30	5.50	10.2
Max. current	I_{max}	A	9.60	17.6	23.2	13.2	22.0	40.8
Rated voltage	V_{rated}	V	390	390	390	390	390	350
Rated frequency	f_{rated}	Hz	140	140	140	70	80	140
Moment of inertia	J	kgcm ²	2.40	8.30	19.2	19.2	36.0	36.0
Efficiency	η		0.700	0.750	0.780	0.840	0.860	0.830
Stator terminal resistance	$R_{UV\ 20}$ °C	Ω	9.4	3.4	1.5	6	3.04	0.76
Stator terminal resistance	$R_{UV\ 150}$ °C	Ω	14.166	5.124	2.261	9.042	4.581	1.145
Mutual inductance	L_H	mH	169.15	92.64	65.8	268.7	176.4	43.4
Stator leakage inductance	$L_{1\sigma}$	mH	9.8	5.408	2.493	9.971	6.162	1.536
Rotor leakage inductance	$L_{2\sigma}$	mH	10	4.896	2.503	10.016	6.836	1.703
Stator resistance	$R_{1,\ 20}$	Ω	4.7	1.7	0.75	3	1.52	0.38
Rotor resistance	$R_{2',\ 20}$	Ω	5.2	1.4	0.781	3.13	1.37	0.342
Weight	m	kg	6.40	10.4	15.1	15.1	22.9	22.9

Motor data

Rated data

Inverter mains connection 400 V, Self-ventilated motors



Motor			MCA 19S42-	MCA 19S23-	MCA 21X42-	MCA 21X25-
Degree of protection			IPxx	IPxx	IPxx	IPxx
Standstill torque	M_0	Nm	22.5	22.5	39.0	39.0
Rated torque	M_{rated}	Nm	12.0	16.3	17.0	24.6
Max. torque	M_{max}	Nm	180	180	300	300
Rated speed	n_{rated}	rpm	4150	2340	4160	2490
Max. speed	n_{max}	rpm	8000	8000	8000	8000
Rated power	P_{rated}	kW	5.2	4	7.4	6.4
Standstill current	I_0	A	19.7	9.85	31.8	15.9
Rated current	I_{rated}	A	14.0	8.20	19.8	13.5
Max. current	I_{max}	A	56.0	32.8	79.2	54.0
Rated voltage	V_{rated}	V	330	390	320	390
Rated frequency	f_{rated}	Hz	140	80	140	85
Moment of inertia	J	kgcm ²	72.0	72.0	180	180
Efficiency	η		0.830	0.900	0.840	0.850
Stator terminal resistance	$R_{UV\ 20}$ °C	Ω	0.35	1.38	0.18	0.72
Stator terminal resistance	$R_{UV\ 150}$ °C	Ω	0.527	2.08	0.271	1.085
Mutual inductance	L_H	mH	27.98	110.6	19.5	78.1
Stator leakage inductance	$L_{1\sigma}$	mH	0.822	3.245	0.563	2.263
Rotor leakage inductance	$L_{2\sigma}$	mH	0.99	3.902	0.701	2.819
Stator resistance	$R_{1,\ 20}$	Ω	0.175	0.69	0.09	0.36
Rotor resistance	$R_{2',\ 20}$	Ω	0.154	0.616	0.0894	0.358
Weight	m	kg	44.7	44.7	60.0	60.0



Motor data

Rated data

Inverter mains connection 400 V, Forced ventilated motors

Inverter mains connection 400 V, Forced ventilated motors

Motor			MCA 13I34-	MCA 14L35-	MCA 14L16-	MCA 17N35-	MCA 17N17-	MCA 19S35-
Degree of protection			IP54	IP54	IP54	IP54	IP54	IP54
Standstill torque	M_0	Nm	7.00	13.5	13.5	23.9	23.9	40.0
Rated torque	M_{rated}	Nm	6.30	10.8	12.0	19.0	21.5	36.0
Max. torque	M_{max}	Nm	32.0	60.0	60.0	100	100	180
Rated speed	n_{rated}	rpm	3410	3455	1635	3480	1680	3510
Max. speed	n_{max}	rpm	8000	8000	8000	8000	8000	8000
Rated power	P_{rated}	kW	2.2	3.9	2.1	6.9	3.8	13.2
Standstill current	I_0	A	6.30	10.5	5.25	18.1	9.05	30.8
Rated current	I_{rated}	A	6.00	9.10	4.80	15.8	8.50	28.7
Max. current	I_{max}	A	24.0	36.4	19.2	63.2	34.0	115
Rated voltage	V_{rated}	V	390	390	390	390	390	390
Rated frequency	f_{rated}	Hz	120	120	60	120	60	120
Moment of inertia	J	kgcm ²	8.30	19.2	19.2	36.0	36.0	72.0
Efficiency	η		0.720	0.790	0.800	0.810	0.830	0.850
Stator terminal resistance	$R_{UV\ 20}$ °C	Ω	3.4	1.5	6	0.76	3.04	0.35
Stator terminal resistance	$R_{UV\ 150}$ °C	Ω	5.124	2.261	9.042	1.145	4.581	0.527
Mutual inductance	L_H	mH	76.7	56.7	224.34	36.9	143.66	20.32
Stator leakage inductance	$L_{1\sigma}$	mH	4.949	2.365	9.464	1.396	5.585	0.652
Rotor leakage inductance	$L_{2\sigma}$	mH	4.392	2.324	9.303	1.51	6.042	0.765
Stator resistance	$R_{1,\ 20}$	Ω	1.7	0.75	3	0.38	1.52	0.175
Rotor resistance	$R_{2,\ 20}$	Ω	1.41	0.781	3.13	0.342	1.37	0.154
Weight	m	kg	12.0	16.9	16.9	25.5	25.5	48.2

Motor data

Rated data

Inverter mains connection 400 V, Forced ventilated motors



Motor			MCA 19S17-	MCA 20X29H	MCA 20X14H	MCA 21X35-	MCA 21X17-	MCA 22P29-
Degree of protection			IP54	IP23	IP23	IP54	IP54	IP54
Standstill torque	M_0	Nm	40.0	68.0	68.0	75.0	75.0	120
Rated torque	M_{rated}	Nm	36.3	53.5	61.0	55.0	61.4	100
Max. torque	M_{max}	Nm	180	250	250	300	300	500
Rated speed	n_{rated}	rpm	1700	2930	1420	3520	1710	2935
Max. speed	n_{max}	rpm	8000	6500	6500	8000	8000	6500
Rated power	P_{rated}	kW	6.4	16.4	9.1	20.3	11	30.7
Standstill current	I_0	A	15.4	52.0	26.0	49.5	25.8	80.9
Rated current	I_{rated}	A	13.9	42.4	23.0	42.5	22.5	72.1
Max. current	I_{max}	A	55.6	170	92.0	170	90.0	288
Rated voltage	V_{rated}	V	390	350	350	390	390	360
Rated frequency	f_{rated}	Hz	60	100	50	120	60	100
Moment of inertia	J	kgcm ²	72.0	171	171	180	180	487
Efficiency	η		0.820	0.870	0.820	0.880	0.850	0.870
Stator terminal resistance	$R_{UV\ 20}$ °C	Ω	1.38	0.183	0.731	0.18	0.72	0.089
Stator terminal resistance	$R_{UV\ 150}$ °C	Ω	2.08	0.276	1.102	0.271	1.085	0.134
Mutual inductance	L_H	mH	80.92	14.28	60.16	16.8	68.9	22.93
Stator leakage inductance	$L_{1\sigma}$	mH	2.608	0.5	2.01	0.519	2.076	0.901
Rotor leakage inductance	$L_{2\sigma}$	mH	3.063	0.54	2.14	0.645	2.58	1.213
Stator resistance	$R_{1,\ 20}$	Ω	0.69	0.0915	0.365	0.09	0.36	0.134
Rotor resistance	$R_{2',\ 20}$	Ω	0.616	0.09	0.361	0.0894	0.358	0.12
Weight	m	kg	48.2	64	64	63.5	63.5	105



Motor data

Rated data

Inverter mains connection 400 V, Forced ventilated motors

Motor			MCA 22P17-	MCA 22P14-	MCA 22P08-	MCA 22P29H	MCA 22P17H	MCA 22P14H
Degree of protection			IP54	IP54	IP54	IP23	IP23	IP23
Standstill torque	M_0	Nm	120	120	120	135	135	135
Rated torque	M_{rated}	Nm	106	107	110	110	112	115
Max. torque	M_{max}	Nm	500	500	500	500	500	500
Rated speed	n_{rated}	rpm	1670	1425	760	2935	1670	1425
Max. speed	n_{max}	rpm	6500	6500	6500	6500	6500	6500
Rated power	P_{rated}	kW	18.5	16	8.8	33.8	19.6	17.2
Standstill current	I_0	A	46.7	40.5	23.4	90.2	52.1	45.1
Rated current	I_{rated}	A	42.7	37.7	22.1	77.8	44.5	40.0
Max. current	I_{max}	A	171	151	88.4	311	178	160
Rated voltage	V_{rated}	V	360	350	345	360	360	360
Rated frequency	f_{rated}	Hz	58	50	28	100	58	50
Moment of inertia	J	kgcm ²	487	487	487	487	487	487
Efficiency	η		0.880	0.870	0.800	0.890	0.880	0.860
Stator terminal resistance	$R_{UV\ 20}$ °C	Ω	0.268	0.357	1.072	0.089	0.268	0.357
Stator terminal resistance	$R_{UV\ 150}$ °C	Ω	0.404	0.538	1.616	0.134	0.404	0.538
Mutual inductance	L_H	mH	23.35	94.23	94.89	22.9	23.46	90.94
Stator leakage inductance	$L_{1\sigma}$	mH	0.901	3.601	3.56	0.901	0.902	3.552
Rotor leakage inductance	$L_{2\sigma}$	mH	1.214	4.852	4.802	1.214	1.215	4.794
Stator resistance	$R_{1,\ 20}$	Ω	0.134	0.536	0.536	0.134	0.134	0.536
Rotor resistance	$R_{2',\ 20}$	Ω	0.12	0.477	0.477	0.12	0.12	0.477
Weight	m	kg	105	105	105	105	105	105

Motor data

Rated data

Inverter mains connection 400 V, Forced ventilated motors



Motor			MCA 22P08H	MCA 26T22-	MCA 26T12-	MCA 26T10-	MCA 26T05-	MCA 26T22H
Degree of protection			IP23	IP54	IP54	IP54	IP54	IP23
Standstill torque	M_0	Nm	135	220	220	220	220	290
Rated torque	M_{rated}	Nm	120	195	207	210	216	230
Max. torque	M_{max}	Nm	500	1100	1100	1100	1100	1100
Rated speed	n_{rated}	rpm	760	2235	1200	1030	550	2235
Max. speed	n_{max}	rpm	6500	5500	5500	5500	5500	5500
Rated power	P_{rated}	kW	9.6	45.6	26	22.7	12.4	53.8
Standstill current	I_0	A	26.0	125	78.4	62.9	35.4	160
Rated current	I_{rated}	A	23.5	113	75.1	61.5	34.9	127
Max. current	I_{max}	A	94.0	452	300	246	140	507
Rated voltage	V_{rated}	V	355	340	350	350	350	340
Rated frequency	f_{rated}	Hz	28	76	41	35	19	76
Moment of inertia	J	kgcm ²	487	1340	1340	1340	1340	1340
Efficiency	η		0.800	0.920	0.870	0.880	0.830	0.920
Stator terminal resistance	$R_{UV\ 20}$ °C	Ω	1.072	0.05	0.15	0.196	0.589	0.05
Stator terminal resistance	$R_{UV\ 150}$ °C	Ω	1.616	0.075	0.226	0.295	0.888	0.075
Mutual inductance	L_H	mH	91.93	19.84	18.1	69.24	66.8	20.2
Stator leakage inductance	$L_{1\sigma}$	mH	3.5	0.778	0.74	2.932	2.862	0.78
Rotor leakage inductance	$L_{2\sigma}$	mH	4.738	1.29	1.29	5.117	5.037	1.3
Stator resistance	$R_{1,\ 20}$	Ω	0.536	0.075	0.075	0.294	0.294	0.075
Rotor resistance	$R_{2',\ 20}$	Ω	0.477	0.0621	0.0621	0.25	0.25	0.0621
Weight	m	kg	105	194	194	194	194	194



Motor data

Rated data

Inverter mains connection 400 V, Forced ventilated motors

Motor			MCA 26T12H	MCA 26T10H	MCA 26T05H
Degree of protection			IP23	IP23	IP23
Standstill torque	M_0	Nm	290	290	290
Rated torque	M_{rated}	Nm	255	260	280
Max. torque	M_{max}	Nm	1100	1100	1100
Rated speed	n_{rated}	rpm	1200	1030	550
Max. speed	n_{max}	rpm	5500	5500	5500
Rated power	P_{rated}	kW	32	28	16.1
Standstill current	I_0	A	101	78.0	44.0
Rated current	I_{rated}	A	83.3	69.6	42.4
Max. current	I_{max}	A	333	278	170
Rated voltage	V_{rated}	V	350	350	350
Rated frequency	f_{rated}	Hz	41	36	20
Moment of inertia	J	kgcm ²	1340	1340	1340
Efficiency	η		0.870	0.870	0.810
Stator terminal resistance	$R_{UV\ 20}$ °C	Ω	0.15	0.196	0.589
Stator terminal resistance	$R_{UV\ 150}$ °C	Ω	0.226	0.295	0.888
Mutual inductance	L_H	mH	18.64	71.4	72.1
Stator leakage inductance	$L_{1\sigma}$	mH	0.78	3.165	3.112
Rotor leakage inductance	$L_{2\sigma}$	mH	1.3	5.135	5.08
Stator resistance	$R_{1,\ 20}$	Ω	0.075	0.294	0.294
Rotor resistance	$R_{2',\ 20}$	Ω	0.0621	0.25	0.25
Weight	m	kg	194	194	194



Torque characteristics

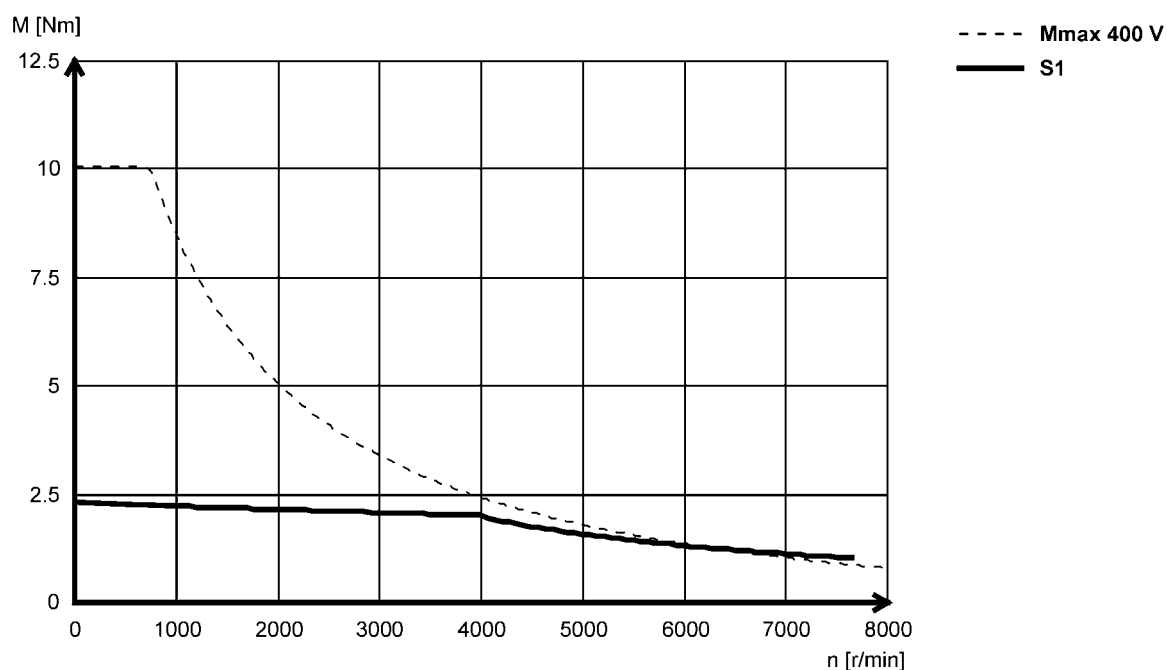


The torque/speed characteristic for your motor/inverter combination can be found on the Internet:
<http://www.lenze.com> → Product Finder → M-n characteristics

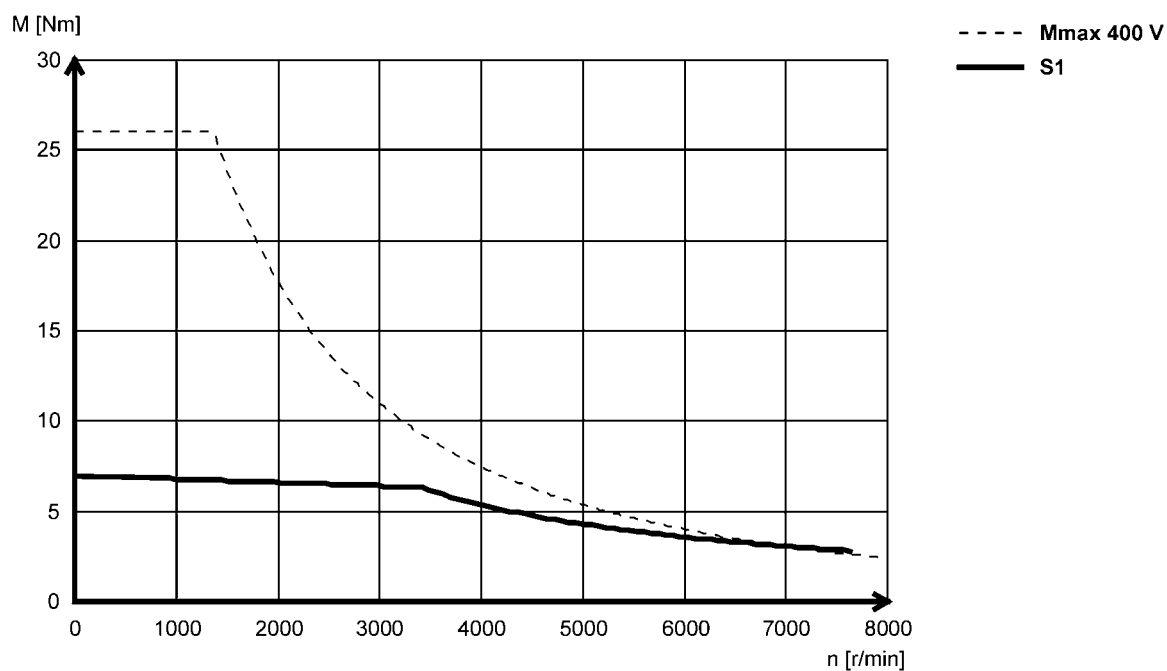


The following data apply to a mains voltage 3 x 400 V of the inverter.

MCA10I40- (self-ventilated)



MCA13I34- (forced ventilated)

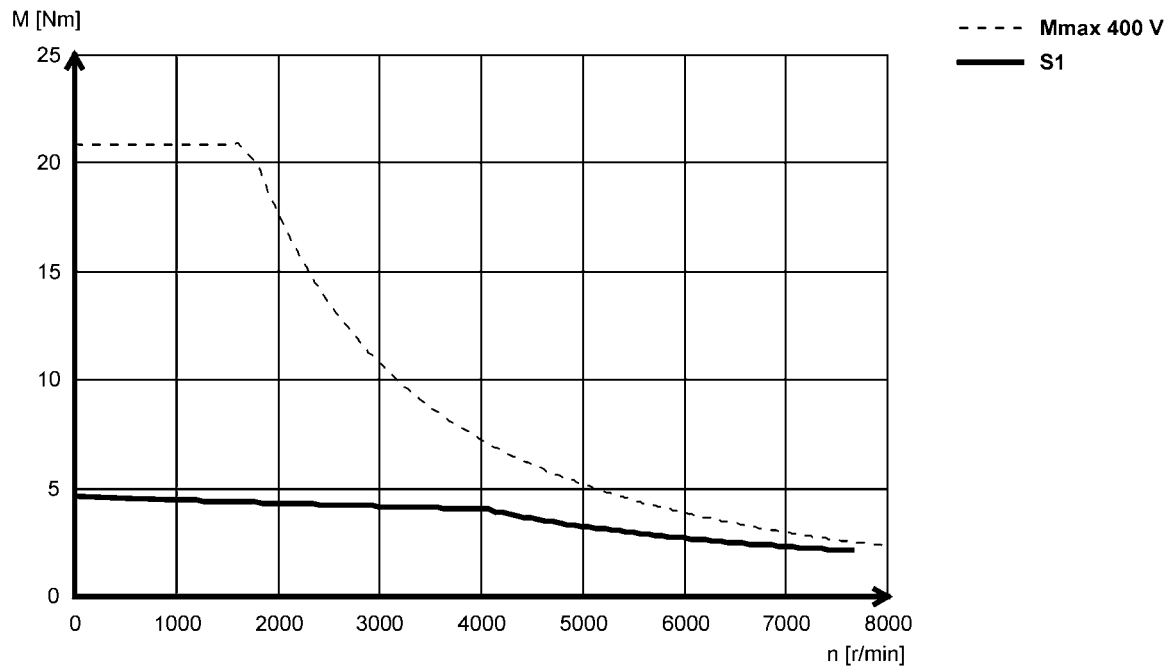




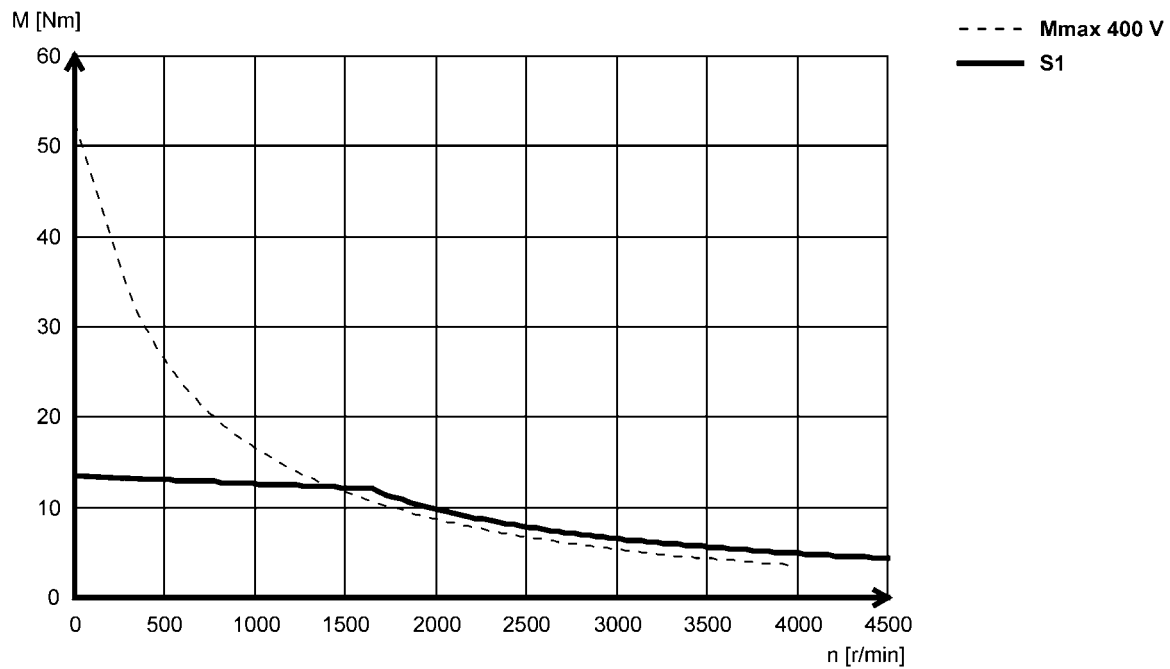
Motor data

Torque characteristics

MCA13I41- (self-ventilated)

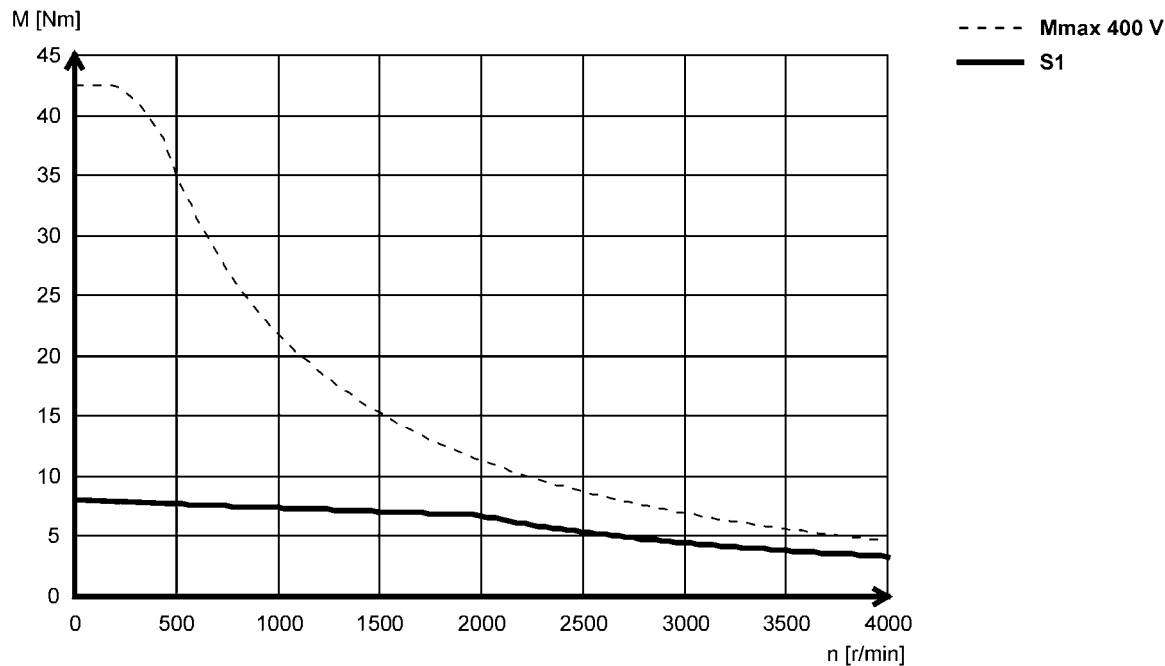


MCA14L16- (forced ventilated)

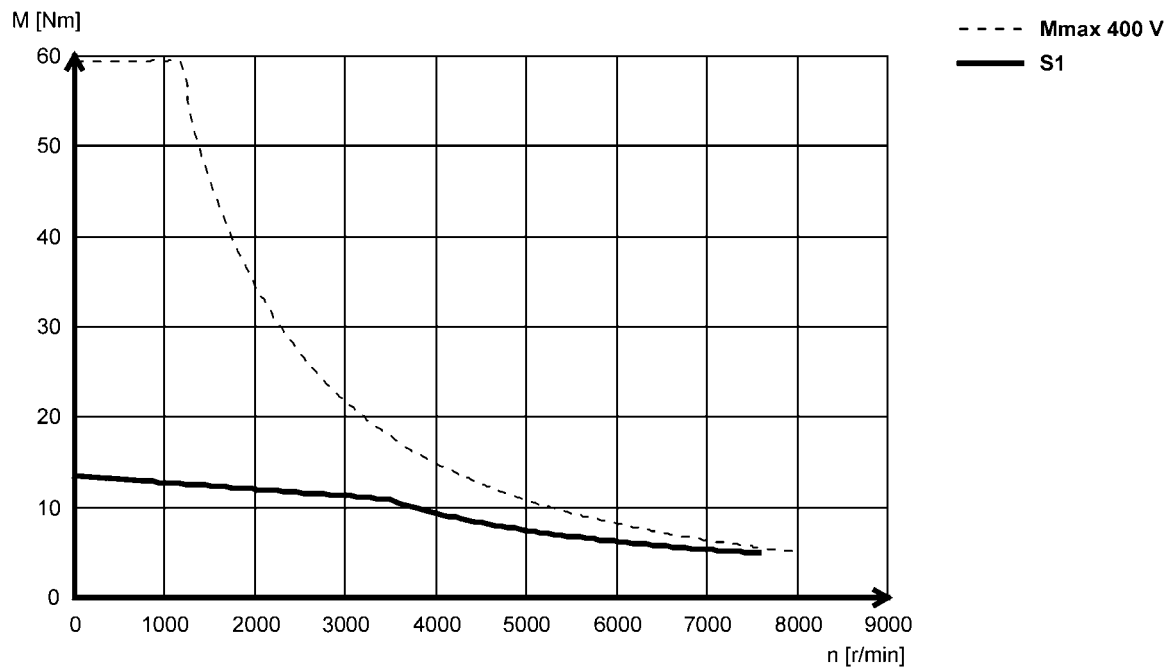




MCA14L20- (self-ventilated)



MCA14L35- (forced ventilated)

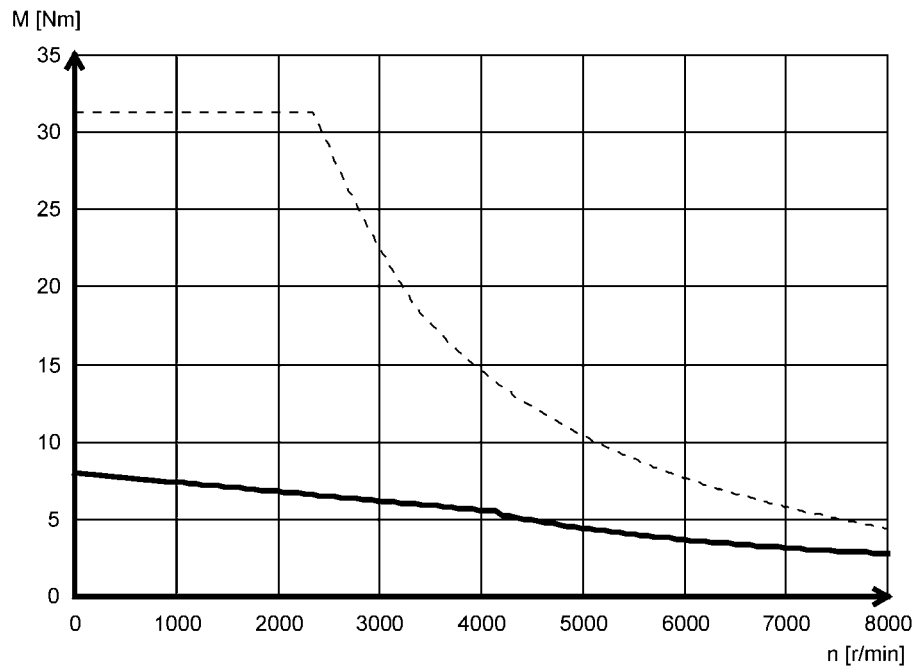




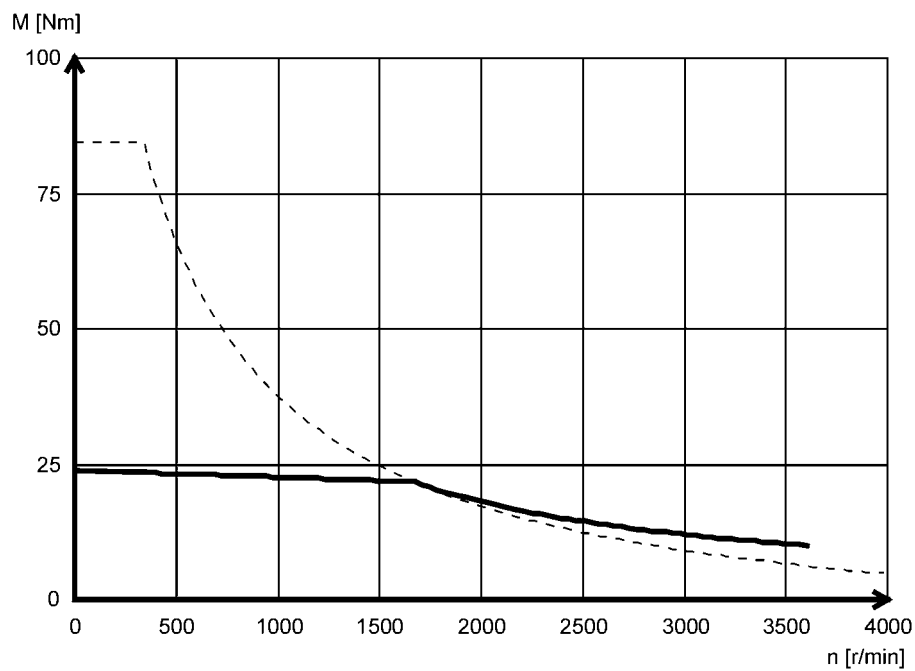
Motor data

Torque characteristics

MCA14L41- (self-ventilated)



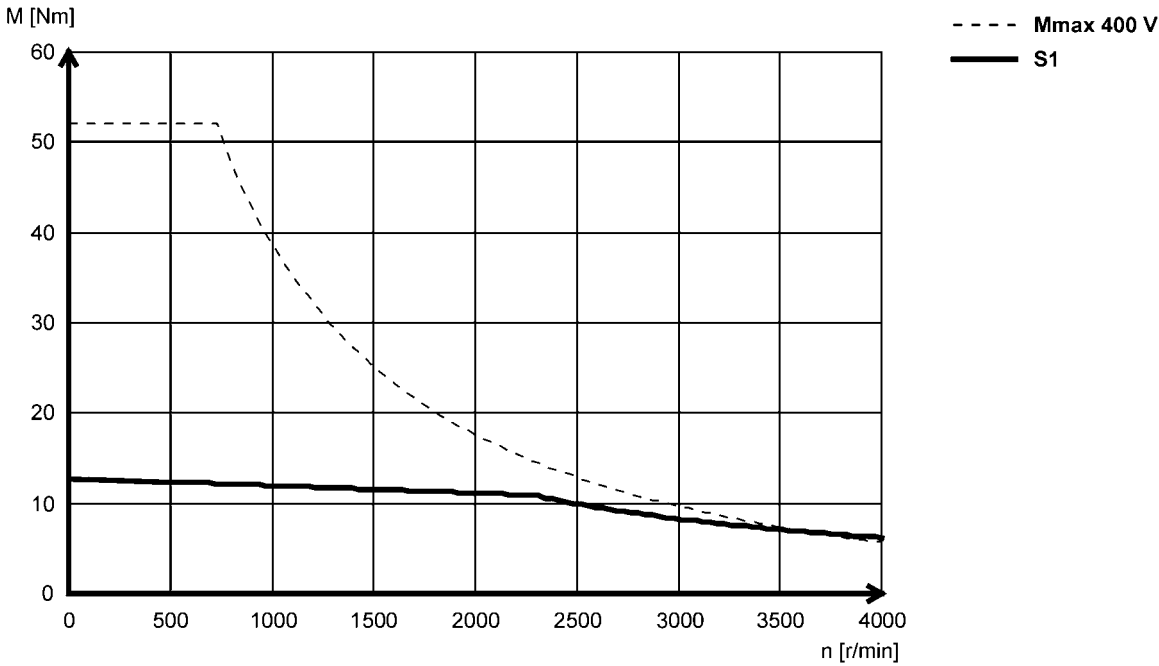
MCA17N17- (forced ventilated)



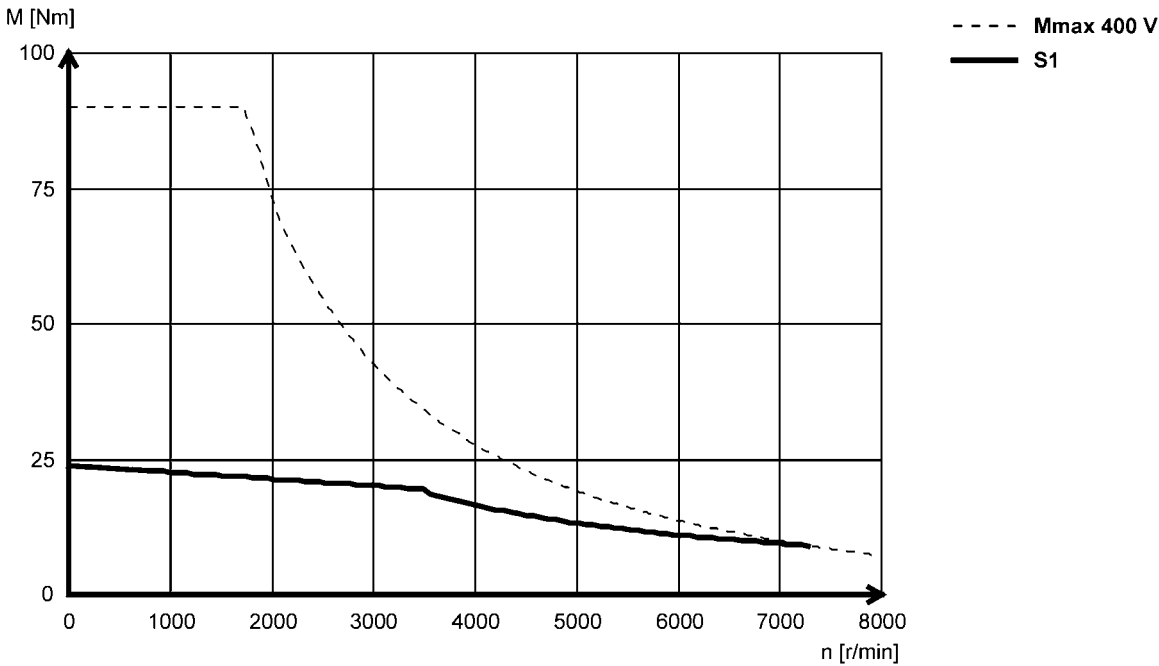
Motor data
Torque characteristics



MCA17N23- (self-ventilated)



MCA17N35- (forced ventilated)

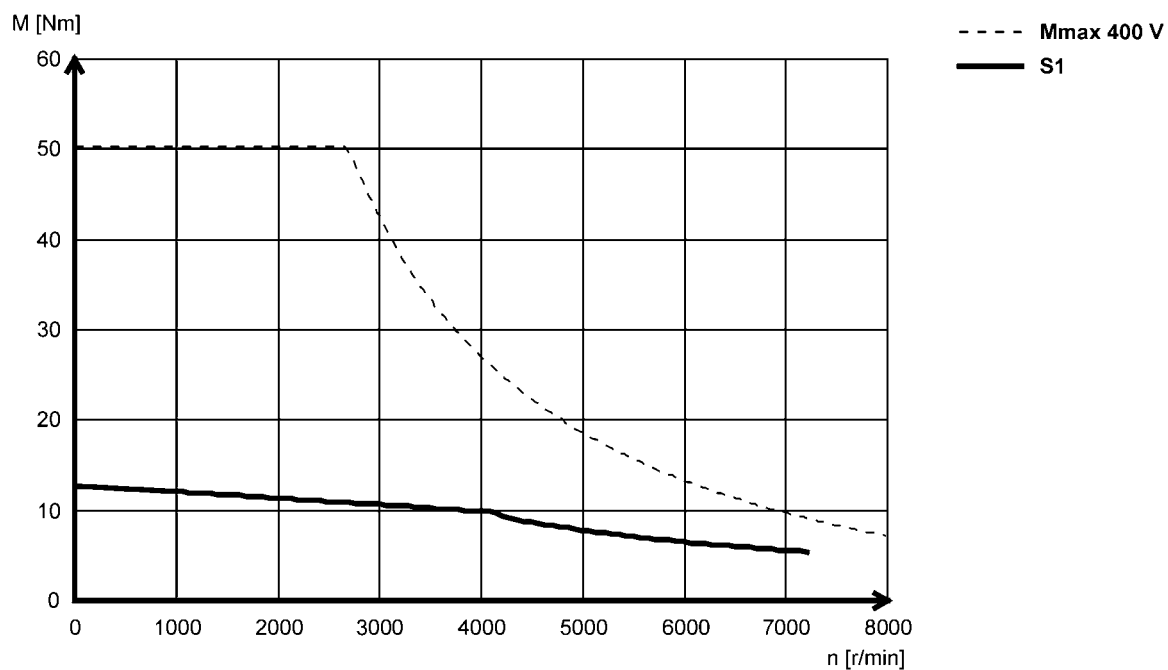




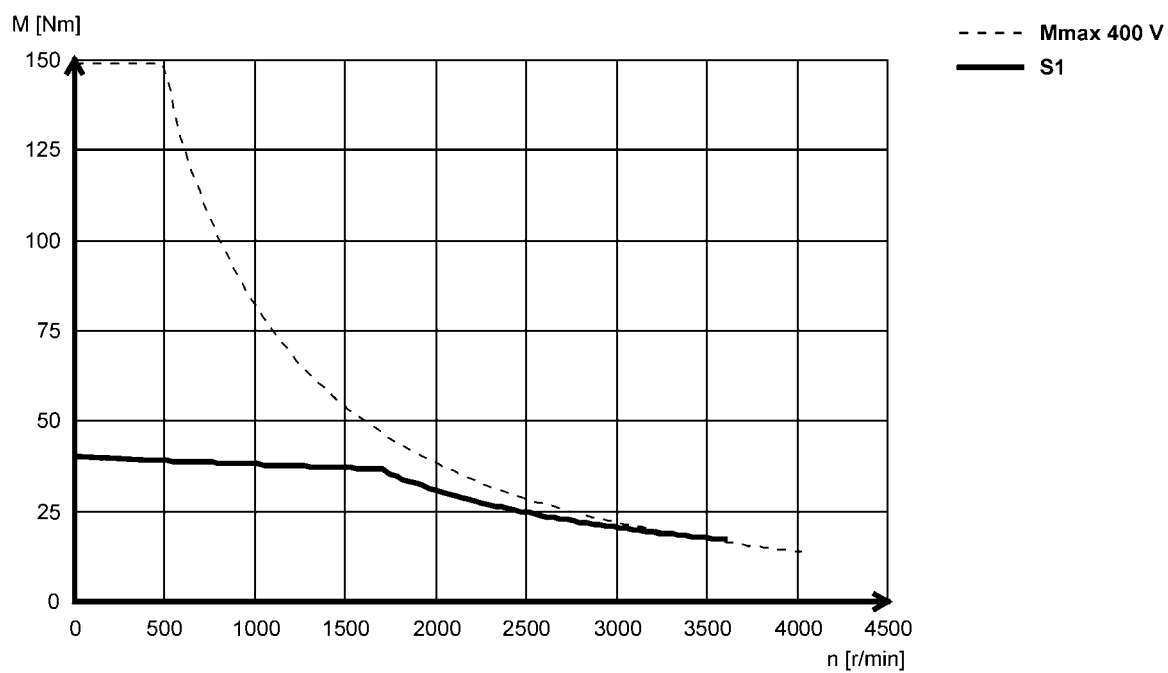
Motor data

Torque characteristics

MCA17N41- (self-ventilated)



MCA19S17- (forced ventilated)

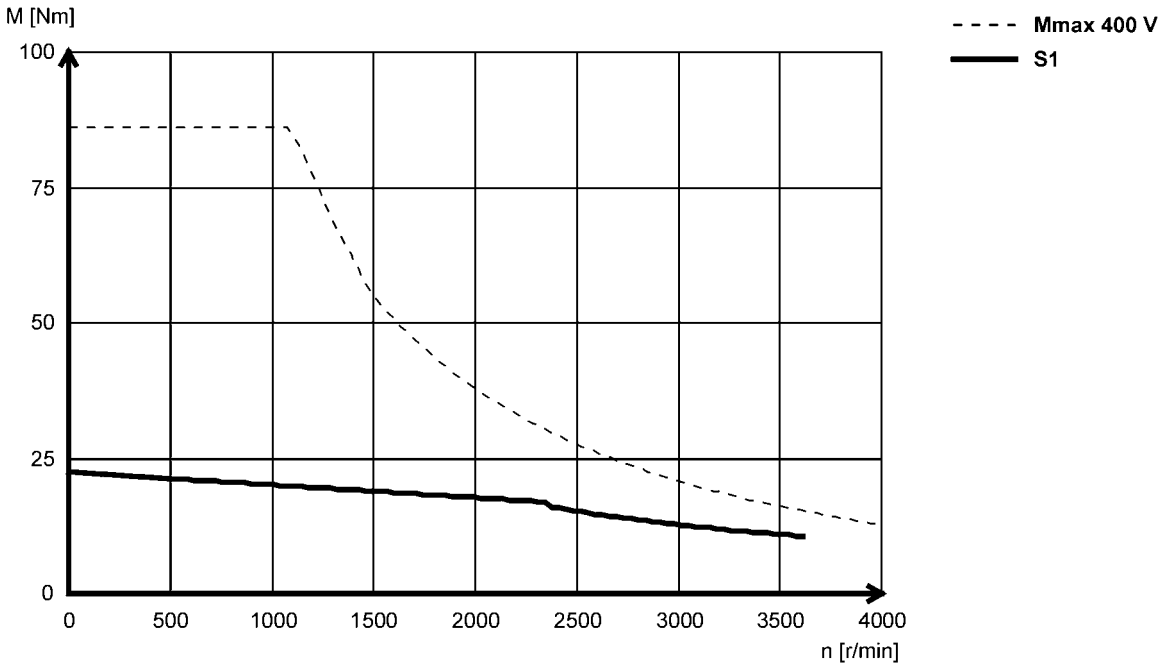


Motor data

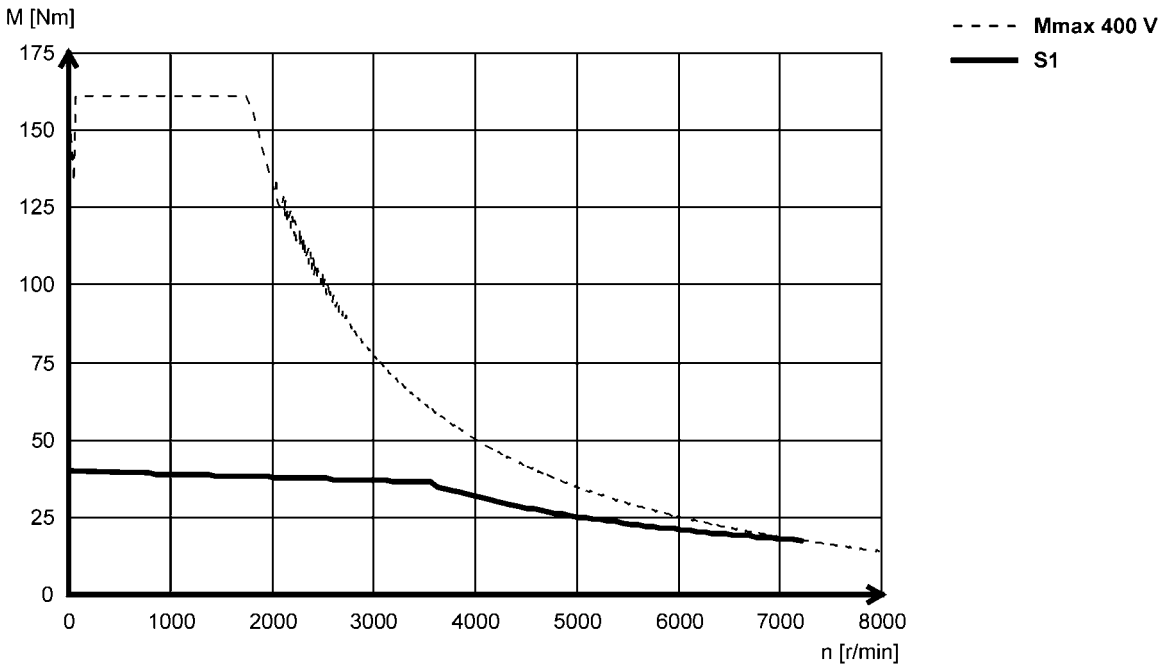
Torque characteristics



MCA19S23- (self-ventilated)



MCA19S35- (forced ventilated)

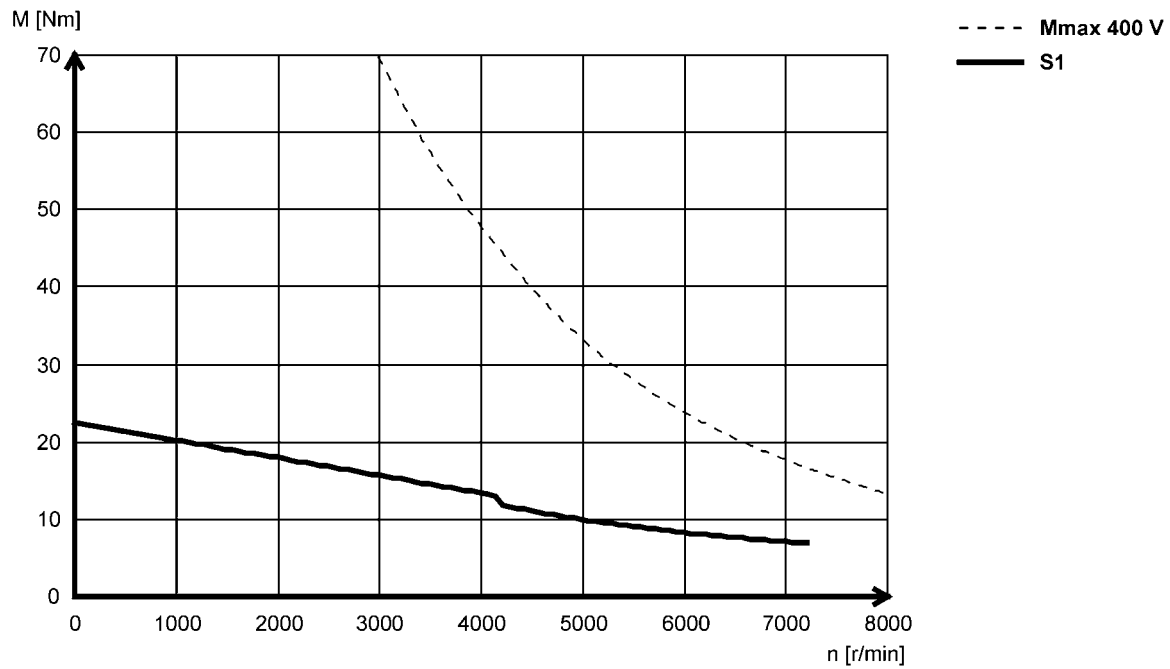




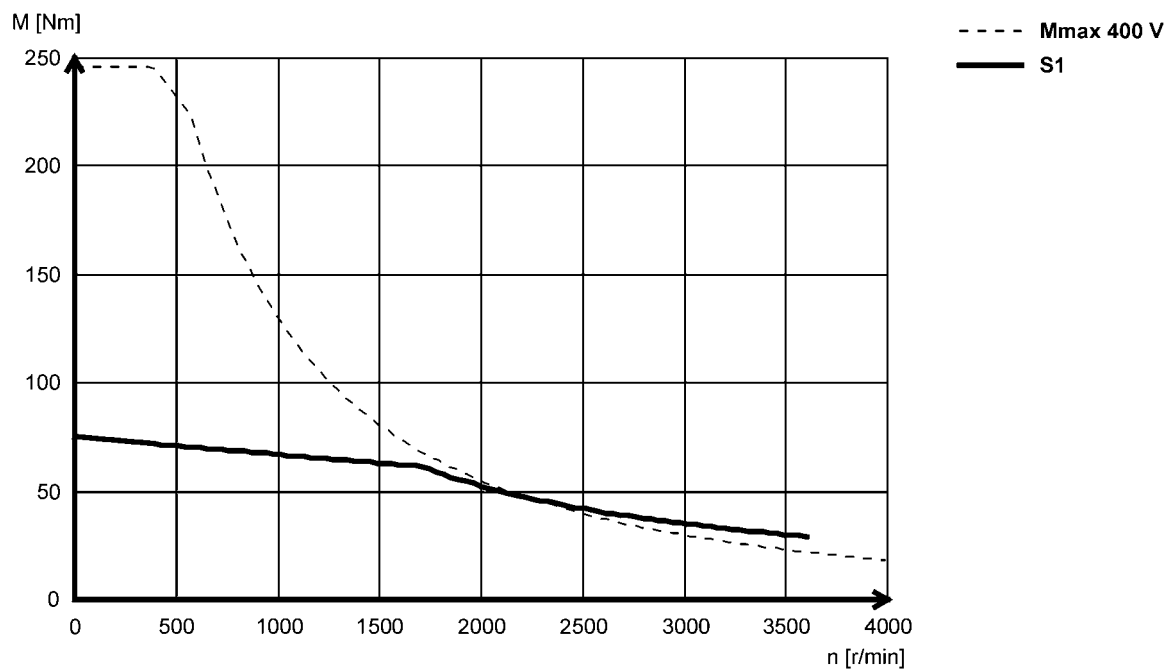
Motor data

Torque characteristics

MCA19S42- (self-ventilated)



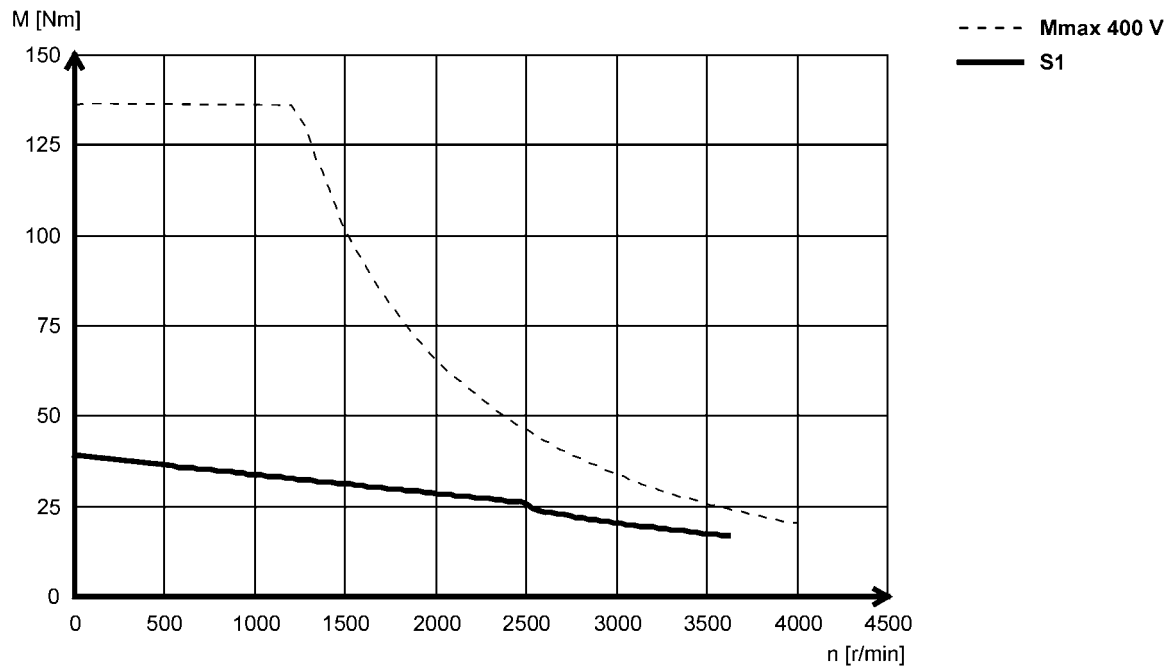
MCA21X17- (forced ventilated)



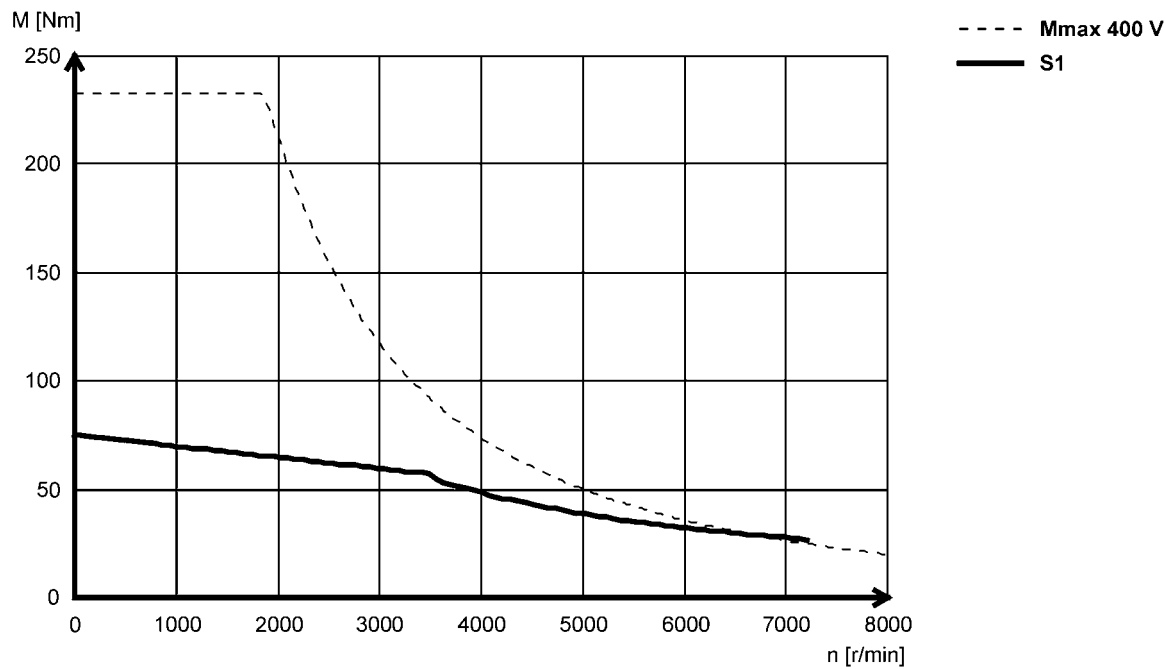
Motor data
Torque characteristics



MCA21X25- (self-ventilated)



MCA21X35- (forced ventilated)

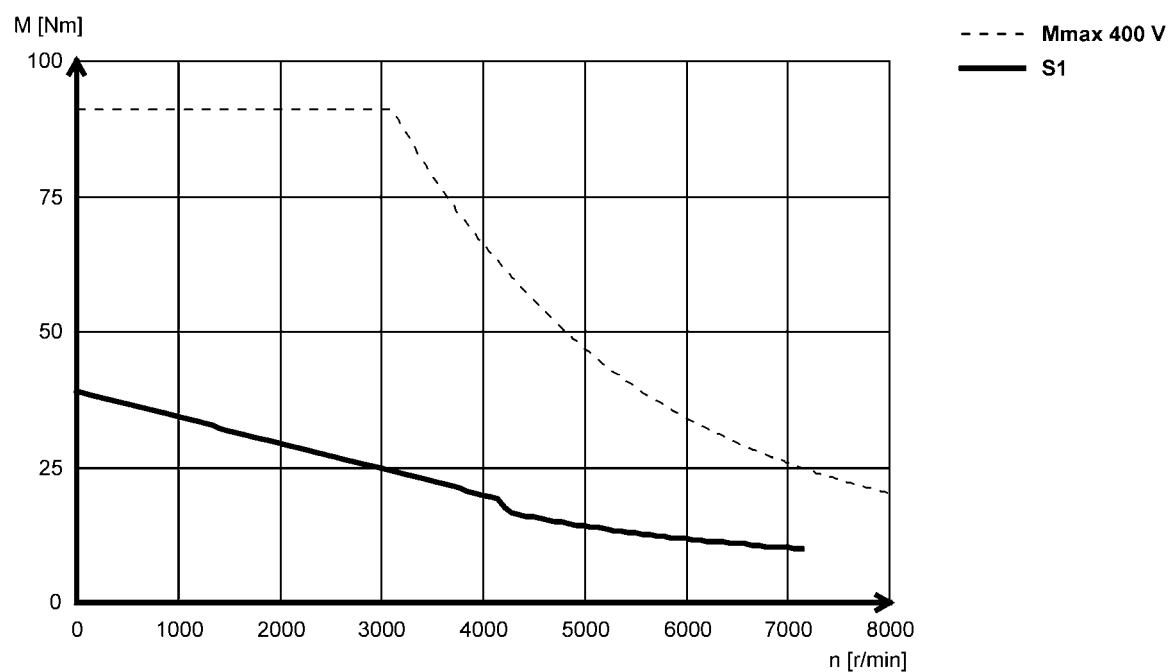




Motor data

Torque characteristics

MCA21X42- (self-ventilated)





Environmental notes and recycling

Lenze has been certified to the worldwide environmental management standard for many years (DIN EN ISO 14001). As part of our environmental policy and the associated climate responsibility, please note the following information on hazardous ingredients and the recycling of Lenze products and their packaging:



Lenze products are partly subject to the EU Directive on the restriction of certain hazardous substances in electrical and electronic equipment 2011/65/EU: RoHS Directive [UKCA: S.I. 2012/3032 - The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012] . This is documented accordingly in the EU declaration of conformity and with the CE mark.



The crossed-out wheeled bin symbol is located on the equipment. This information indicates that used electrical and electronic products must not be disposed of with normal household waste.

The EU Directive 2012/19/EU: Directive on waste electrical and electronic equipment (WEEE) [UKCA: S.I. 2013/3113 - The Waste Electrical and Electronic Equipment Regulations 2013] , which has been transposed into national law by the respective EU member states, applies to the disposal of equipment. As a customer, you have the option of disposing of the electrical and electronic equipment that you have purchased from us and that is subject to WEEE via the Lenze branch in your country.

Lenze addresses in Europe: <https://www.lenze.com/en-de/company/global-presence>

Some Lenze products contain batteries/rechargeable batteries in accordance with EU Directive 2006/66/EC: Battery Directive [UKCA: S.I. 2009/890 - The Waste Batteries and Accumulators Regulations 2009] . Any batteries/rechargeable batteries included are designed to last the life of the product and do not need to be replaced or otherwise removed by the end user.



Lenze products are usually sold with cardboard or plastic packaging. This packaging complies with EU Directive 94/62/EC: Directive on packaging and packaging waste [UKCA: S.I. 1997/648 - The Producer Responsibility Obligations (Packaging Waste) Regulations 1997] . The required disposal route is indicated by material-specific labels with the "recycling triangle". Example: "21 - other cardboard"

REACH

Lenze products are subject to REGULATION (EC) No 1907/2006: REACH Regulation [UKCA: S.I. 2008/2852 - The REACH Enforcement Regulations 2008] . When used as intended, exposure of substances to humans, animals and the environment is excluded.

Lenze products are industrial electrical and electronic products and are disposed of professionally. Both the mechanical and electrical components such as electric motors, gearboxes or inverters contain valuable raw materials that can be recycled and reused. Proper recycling and thus maintaining the highest possible level of recyclability is therefore important and sensible from an economic and ecological point of view.

- Coordinate professional disposal with your waste disposal company.
- Separate mechanical and electrical components, packaging, hazardous waste (e.g. gear oils) and batteries/rechargeable batteries wherever possible.
- Dispose of the separated waste in an environmentally sound and proper manner (no household waste or municipal bulky waste).

What?	Material	Disposal instructions
Pallets	Wood	Return to manufacturers, freight forwarders or reusable materials collection system
Packaging material	Paper, cardboard, pasteboard, plastics	Collect and dispose of separately
Products		
Electronic devices	Metal, plastics, circuit boards, heatsinks	As electronic waste give to professional disposer for recycling
Gearbox	Oil	Drain oil and dispose of separately
	Casting, steel, aluminium	Dispose as metal scrap
Motors	Casting, copper, rotors, magnets, potting compound	As engine scrap give to professional disposer for recycling
Dry-cell batteries/rechargeable batteries		As used batteries give to professional disposer for recycling



Further information on Lenze's environmental and climate responsibility and on the topic of energy efficiency can be found on the Internet:

www.Lenze.com → search word: "Sustainability"



Appendix

Good to know

Operating modes of the motor

In continuous operation a motor reaches its permissible temperature limit if it outputs the rated power dimensioned for continuous operation. However, if the motor is only subjected to load for a short time, the power output by the motor may be greater without the motor reaching its permissible temperature limit. This behaviour is referred to as overload capacity.

Depending on the duration of the load and the resulting temperature rise, the required motor can be selected reduced by the overload capacity.

Operating modes S1 ... S10 as specified by EN 60034-1 describe the basic stress of an electrical machine.

The most important operating modes

Continuous operation S1	Short-time operation S2
Operation with a constant load until the motor reaches the thermal steady state. The motor may be actuated continuously with its rated power.	Operation with constant load; however, the motor does not reach the thermal steady state. During the following standstill, the motor winding cools down to the ambient temperature again. The increase in power depends on the load duration.

Appendix

Good to know
Enclosures



Intermittent operation S3	Non-intermittent periodic operation S6
Sequence of identical duty cycles comprising operation with a constant load and subsequent standstill. Start-up and braking processes do not have an impact on the winding temperature. The steady-state is not reached. The guide values apply to a cycle duration of 10 minutes. The power increase depends on the cycle duration and on the load period/downtime ratio.	Sequence of identical duty cycles comprising operation with a constant load and subsequent no-load operation. The motor cools down during the no-load phase. Start-up and braking processes do not have an impact on the winding temperature. The steady-state is not reached. The guide values apply to a cycle duration of 10 minutes. The power increase depends on the cycle duration and on the load period/idle time ratio.
P Power t Time t_L Idle time θ Temperature	P_v Power loss t_B Load period t_S Cycle duration

Enclosures

The protection class indicates the suitability of a product for specific ambient conditions with regard to humidity as well as the protection against contact and the ingress of foreign particles. The protection classes are classified in the EN 60034-5/ EN IEC 60529.

The first code number after the code letters IP indicates the protection against the ingress of foreign particles and dust. The second code number refers to the protection against the ingress of humidity.

Code number 1	Degree of protection	Code number 2	Degree of protection
0	No protection	0	No protection
1	Protection against the ingress of foreign particles $d > 50$ mm. No protection in case of deliberate access.	1	Protection against vertically dripping water (dripping water).
2	Protection against medium-sized foreign particles, $d > 12$ mm, keeping away fingers or the like.	2	Protection against diagonally falling water (dripping water), 15° compared to normal service position.
3	Protection against small foreign particles $d > 2.5$ mm. Keeping away tools, wires or the like.	3	Protection against spraying water, up to 60° from vertical.
4	Protection against granular foreign particles, $d > 1$ mm, keeping away tools, wire or the like.	4	Protection against spraying water from all directions.
5	Protection against dust deposits (dust-protected), complete protection against contact.	5	Protection against water jets from all directions.
6	Protection against the ingress of dust (dust-proof), complete protection against contact.	6	Protection against choppy seas or heavy water jets (flood protection).

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