



Geared servo motors

g500-S / MCA shaft-mounted 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

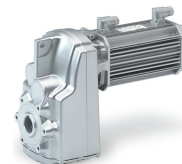


Information and tools with regard to the Lenze products can be found on the Internet:

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 shaft-mounted 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 slimline shaft-mounted helical gearboxes are characterized by high permissible radial forces, closely stepped speed reduction ratios and a low backlash. They are available in a 2-, 3- and 4-stage design with a torque of up to 4500 Nm and a ratio of up to $i=5849$.

Designs

- Slimline design saves installation space of the machine
- Solid shaft, hollow shaft and shrink disc for direct integration into the machine
- High accuracy with axial output provide for the highest 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

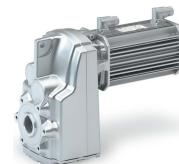
- High dynamic performance thanks to low moments of inertia
- High efficiency
- Wide speed setting range
- Field weakening operation usable
- Space-saving thanks to compact direct attachment to Lenze gearboxes
- Can be used universally for a wide range of machine tasks due to the market-oriented modular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



Fig. 1: MCA13I asynchronous servo motor - g500-S660 shaft-mounted helical gearbox

Product information

Identification of the products



Identification of the products

Gearbox product name

Gearbox type	Product series		Type	Rated torque Nm	Product
Shaft-mounted helical gearbox	g500	-	S	130	g500-S130
				220	g500-S220
				400	g500-S400
				660	g500-S660
				950	g500-S950
				2100	g500-S2100
				3100	g500-S3100
				4500	g500-S4500

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.

Ventilation

(depending on the mounting position)

Oil filler plug

(depending on the mounting position)

Remove oil control plug

(depending on the mounting position)

Torque plate

Output flange

Output shaft

Oil drain plug

(depending on the mounting position)

Housing type

Motor connection

Power

Brake

Motor connection

Feedback

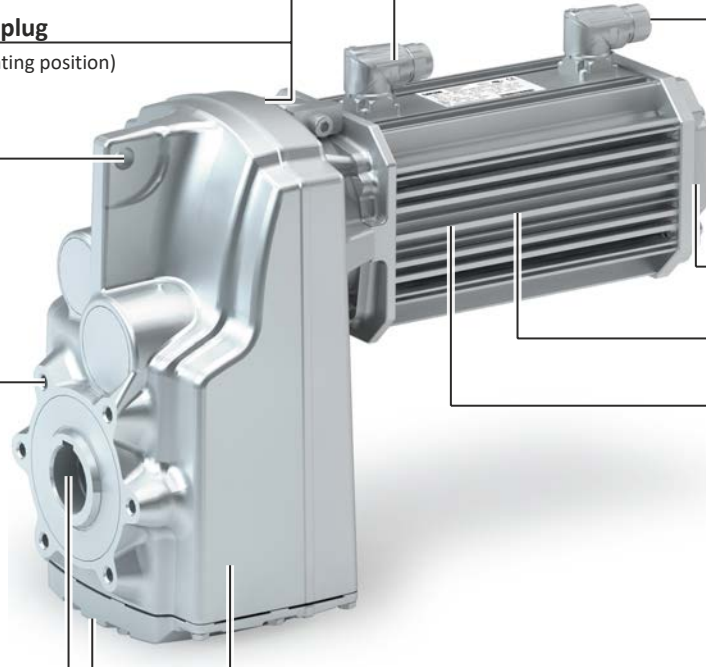
Temperature monitoring

Cooling

Feedback

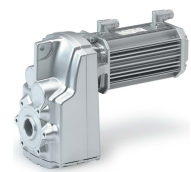
Temperature monitoring

Permanent magnet brake



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 660 Nm

Gearbox		g500-S130	g500-S220	g500-S400	g500-S660
Min. motor assignment		MCA10	MCA10	MCA10	MCA10
Max. motor assignment		MCA13	MCA14	MCA17	MCA19
Technical data					
Max. output torque	Nm	130	220	400	660
Min. drive torque	Nm	0.8	0.8	0.8	0.8
Max. drive torque	Nm	6.3	12.0	21.5	36
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 (V)	mm	25 x 50	25 x 50	30 x 60	35 x 70 40 x 80
Hollow shaft with keyway (H)	mm	25	25/30	30/35	40/45
Hollow shaft with shrink disc (S)	mm	25	25/30	35	40
Shaft material		Steel Stainless steel			
Shaft sealing ring material		NBR FKM (Viton)			
Output shaft bearing		Normal			
Gearbox version		With foot (HBR/VBR) Without foot and centring (HCR)/(VCR/SCR) With centring (HCR/VCR/SCR) With output flange (HCK/VCK/SCK)			
Output flange (K)	mm	160	160	200	200/250
Lubricant		Synthetic oil Food-compatible oil			
Ventilation		Without		Vent valve	
Cooling		Self-ventilated Forced-ventilated			
Torque plate		Rubber buffers			
Shaft cover		Shrink disc cover			
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			



Geared motors from 950 Nm to 4500 Nm

Gearbox		g500-S950	g500-S2100	g500-S3100	g500-S4500
Min. motor assignment		MCA10	MCA10	MCA10	MCA10
Max. motor assignment		MCA19	MCA19	MCA19	MCA19
Technical data					
Max. output torque	Nm	950	2100	3100	4500
Min. drive torque	Nm	0.8	0.8	0.8	0.8
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 (V)	mm	40 x 80	50 x 100	60 x 120	70 x 140 80 x 160
Hollow shaft with keyway (H)	mm	40	50/55	60/70	70/80
Hollow shaft with shrink disc (S)	mm	40	50	65	75/80
Shaft material		Steel Stainless steel			
Shaft sealing ring material		NBR FKM (Viton)			
Output shaft bearing		Normal			
Gearbox version		With foot (HBR)/(VBR/SBR) With foot and centering (HAR/VAR(SAR) With foot and output flange (HAK/VAK/SAK)			
Output flange (K)	mm	250	250/300	350	400/450
Lubricant		Synthetic oil Food-compatible oil			
Ventilation		Vent valve Oil compensation reservoir			
Cooling		Self-ventilated Forced-ventilated			
Torque plate		Rubber buffers			
Shaft cover		Shrink disc cover			
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

g500-S130 ... S660

Hollow shaft, with foot



Without centring (HBR)

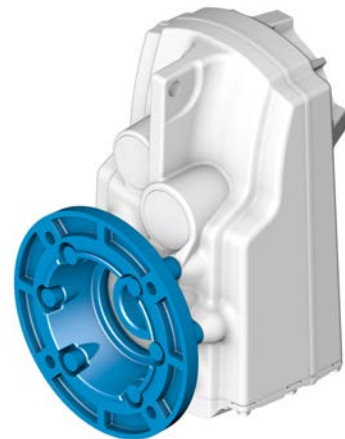
Hollow shaft, without foot



Without centring (HDR)



With centering (HCR)



Flange with through holes (HCK)



Product information

The modular system
Designs

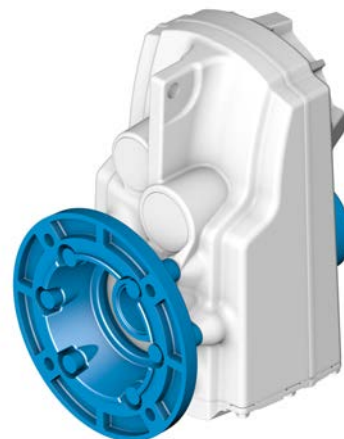
Shrink disc, without foot



Without centring (SDR)

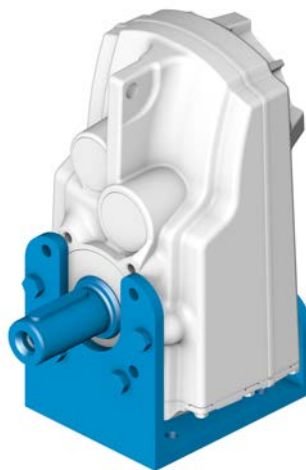


With centring (SCR)



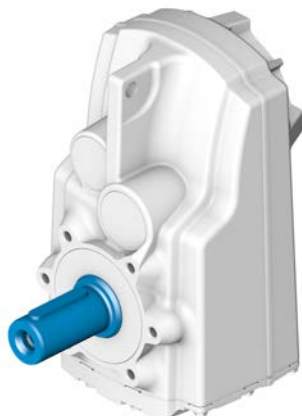
Flange with through holes (SCK)

Solid shaft, with foot

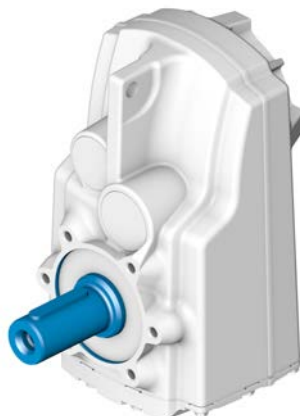


Without centring (VBR)

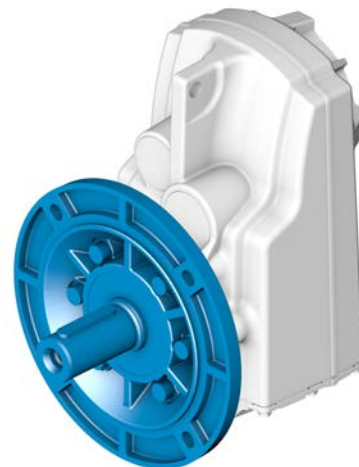
Solid shaft, without foot



Without centring (VDR)



With centering (VCR)



Flange with through holes (VCK)

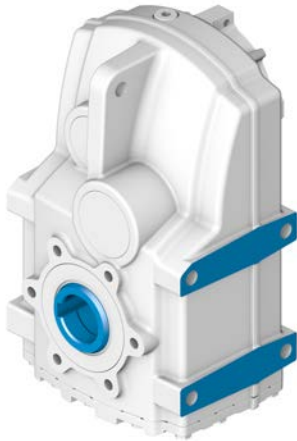
Product information

The modular system
Designs

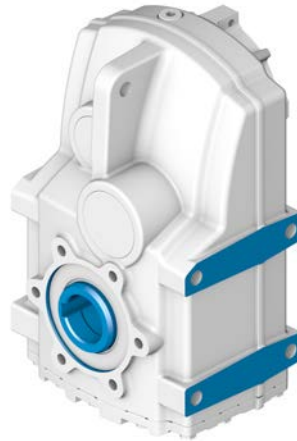


g500-S950 ... S4500

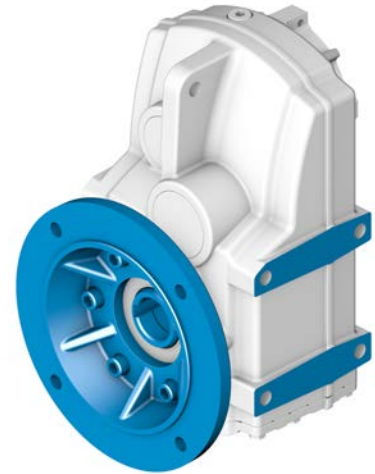
Hollow shaft, with foot



Without centring (HBR)

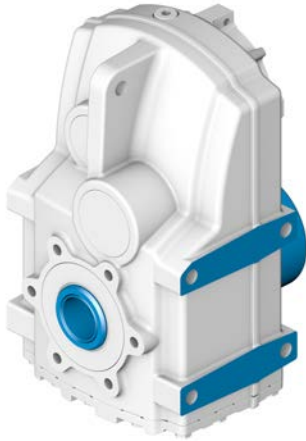


With centring (HAR)

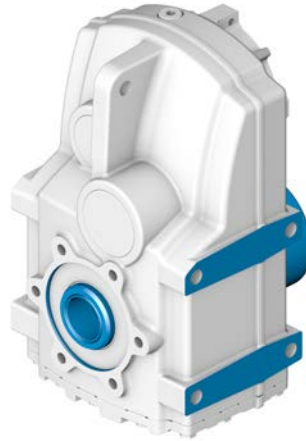


Flange with through holes (HAK)

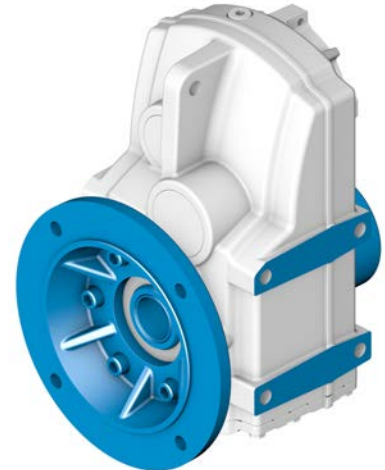
Shrink disc, with foot



Without centring (SBR)

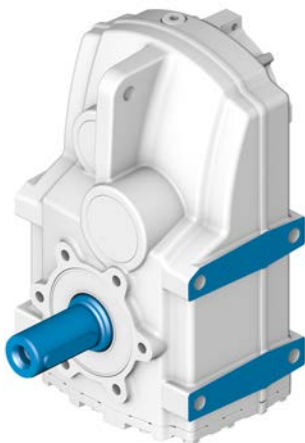


With centring (SAR)

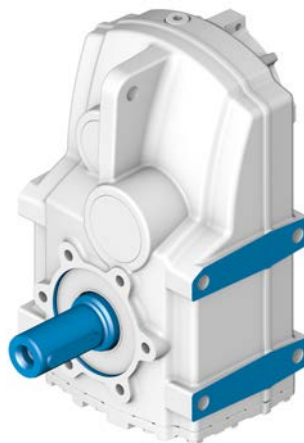


Flange with through holes (SAK)

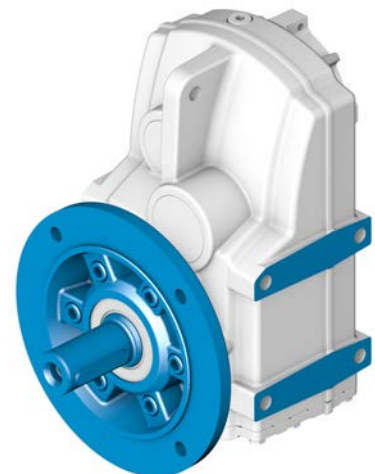
Solid shaft, with foot



Without centring (VBR)



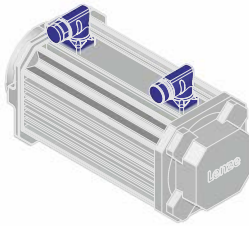
With centring (VAR)



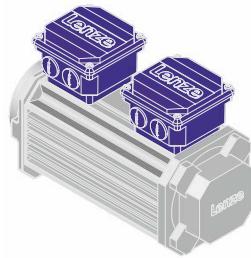
Flange with through holes (VAK)



Models at the output Motor connection

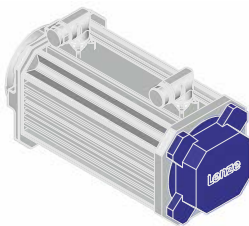


Connectors

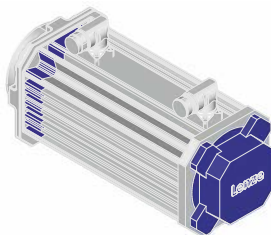


Terminal box

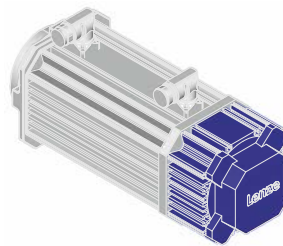
Cooling: self-ventilated



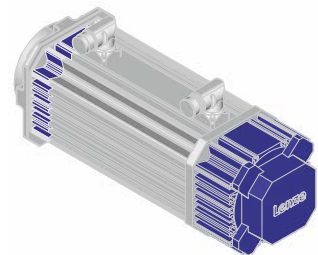
Resolver



Resolver and brake

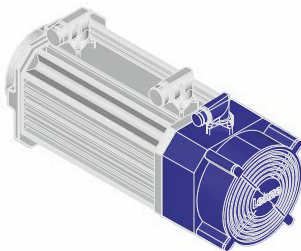


Absolute value/incremental
encoder

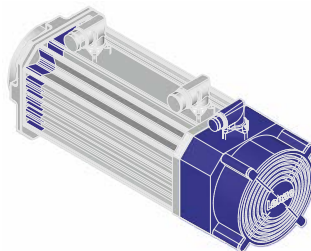


Absolute value/incremental
encoder and brake

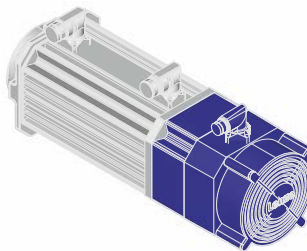
Cooling: forced ventilated



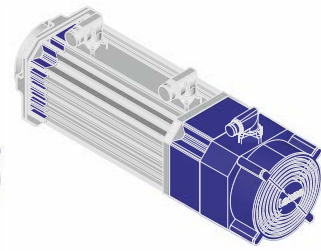
Resolver



Resolver and brake



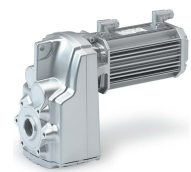
Absolute value/incremental
encoder



Absolute value/incremental
encoder and brake

Product information

The modular system
Mounting positions

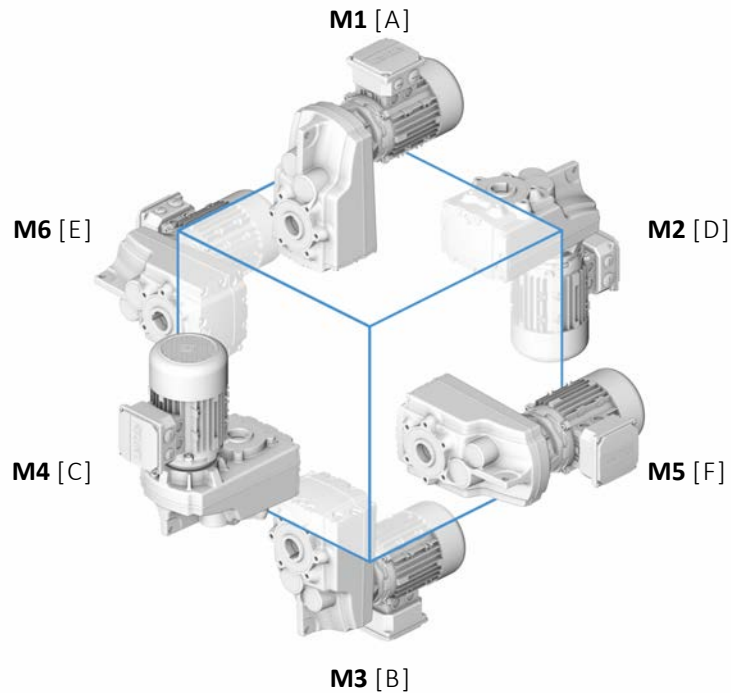


Mounting positions

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 following gearboxes can also be ordered with combined mounting positions:

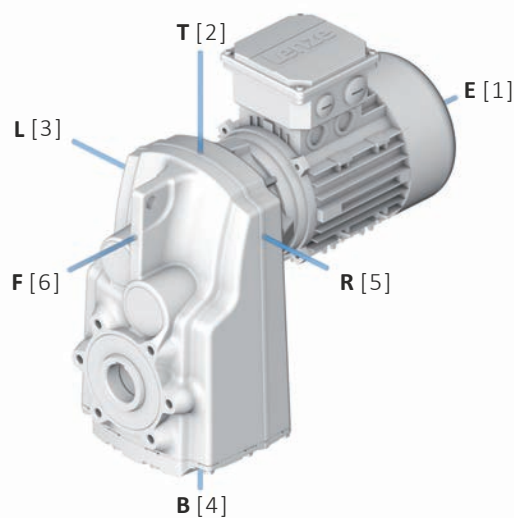
- g500-S130 ... S660 in mounting position M1/5/6 (AEF)



Defined positions on the geared motor

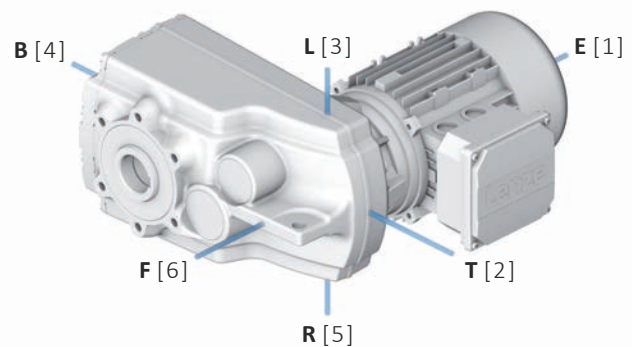
All of the defined positions refer to the areas on the geared motor in mounting position **M1 (A)**.

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



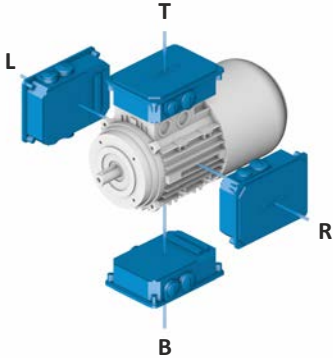
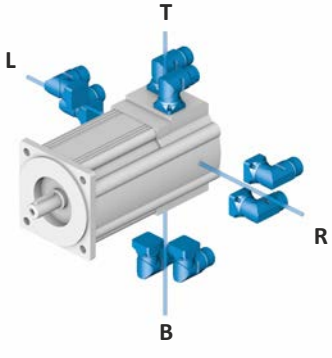
If the geared motor is rotated into a different mounting position M2 ... M6 (B...F), the defined positions on the geared motor are retained.

Example: Mounting position M5 (F)





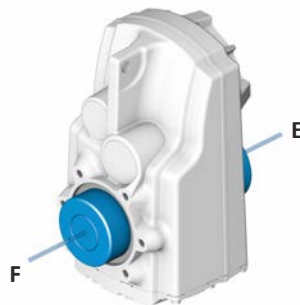
Positions of the terminal boxes/connectors

Terminal box	ICN connector
	

Position of the hollow shaft with shrink disc



The output flange is only available in position "F".
Output flange and shrink disc are not possible in the same position.





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 $I > I_{rated}$, 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

Safety instructions
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

NOTICE

For gearboxes with hollow shaft and shrink disk
observe the following requirements for the machine shaft:

- ▶ Fit tolerance h6
- ▶ Material yield strength $Re \geq 360 \text{ MPa}$
- ▶ Modulus of elasticity approx. 210000 MPa
- ▶ Surface roughness $Rz \leq 15 \text{ }\mu\text{m}$
- ▶ No radial, axial forces and forces due to stress/rotation permissible

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 $+30 \text{ }^\circ\text{C}$.

Gearboxes		Ratio i	
g500-S2100 ... S4500		≤ 50	

Motor	Mounting position M5, M6	Mounting position M1, M3	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.

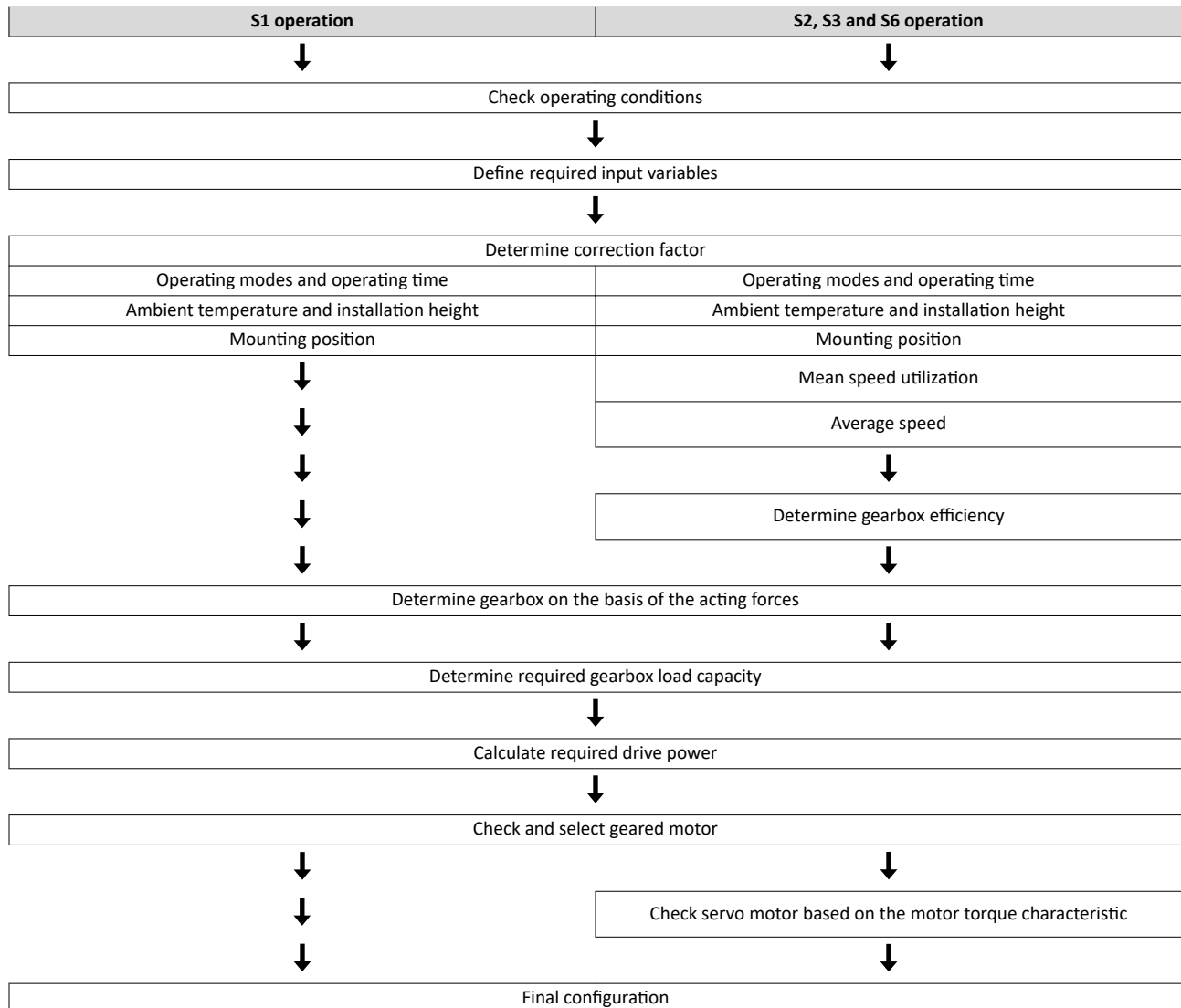
The mean speed of the drive should not exceed the values specified.



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



Workflow

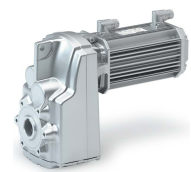


Check operating conditions

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

► Standards and operating conditions [40](#)

► Surface and corrosion protection [29](#)



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 [265](#)

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 [52](#)



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-S		
2-stage	0.96	
3-stage	0.95	
4-stage	0.94	

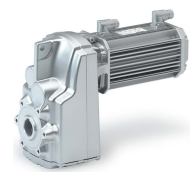
Determine product on the basis of the forces

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 < 17 teeth: 1.15	≥ 20 teeth: 1.0 < 20 teeth: 1.25 < 13 teeth: 1.4	With belt tightener: 2.0 – 2.5 Without belt tightener: 2.5 – 3.0	1.5 – 2.0
			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

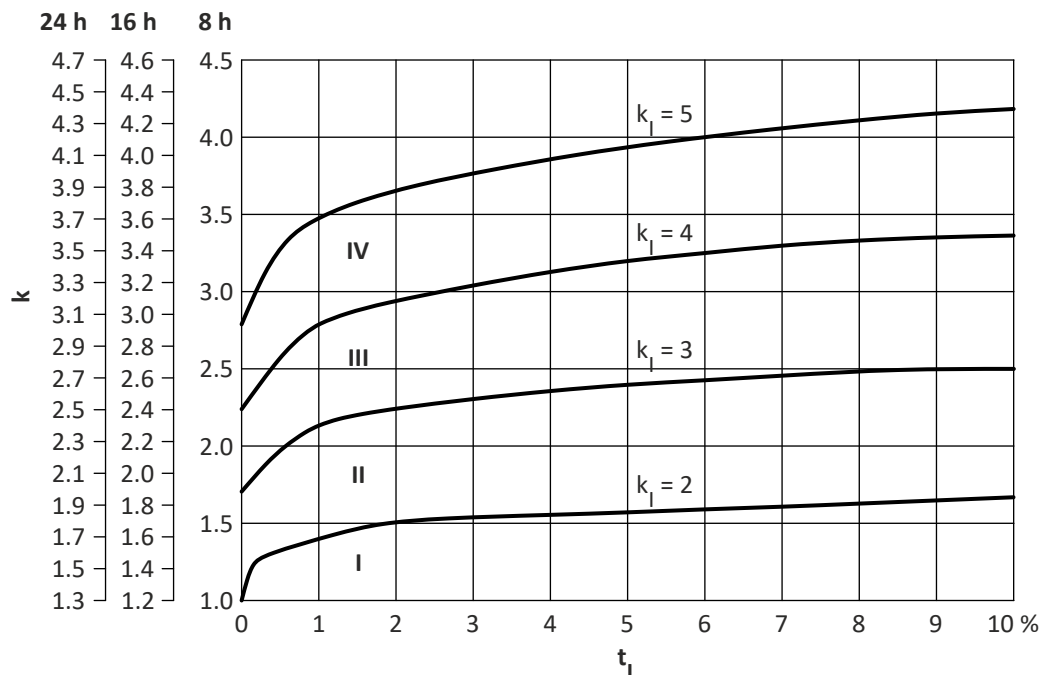
► [Radial forces and axial forces](#) 50



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 52



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 [52](#)

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 (○)		$(i \times n_L \times k_M) / (k_E \times k_{rated})$ $M_L / (k_L \times k_H \times i \times \eta_G)$

Torque characteristics [254](#)

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](#)  225



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.



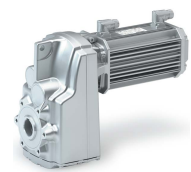
The OKS-XL (extra Large) version requires a check by your responsible Lenze subsidiary.

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	2K-PUR top coat		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-S130

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, M5, M6 (AEF)
Gearboxes								
g500-S130	I	0.7	0.8	0.7	0.7	0.6	0.6	0.7
g500-S220	I	1.1	1.1	.9	1.1	1.0	0.8	1.1
g500-S400	I	1.6	1.3	1.2	1.5	1.3	1.1	1.6
g500-S660	I	2.5	2.4	1.8	2.4	1.9	1.9	2.5
g500-S950	I	2.9	3.2	2.4	3.2	2.4	2.4	-
g500-S2100	I	7.1	7.5	6.0	7.5	5.6	5.5	-
g500-S3100	I	9.7	10.6	8.0	11.7	8.7	7.3	-
g500-S4500	I	19.4	20.0	13.7	21.2	14.7	15.8	-
Pre-stage	I	0.4						

► Gearbox with pre-stage [221](#)



Ventilation



No venting measures are required for the g500-S130 ... S220 gearboxes.

The g500-S220 gearbox can optionally be equipped with a breather element.

From g500-S400 onwards, the gearboxes are supplied with breather elements as standard.

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

- g500-S130 ... S660 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

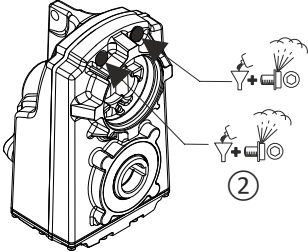
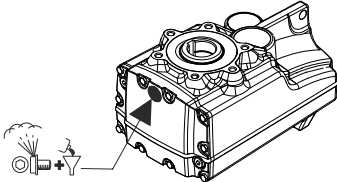
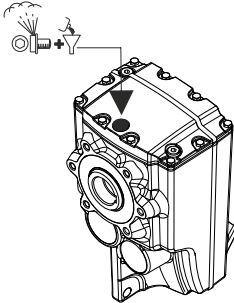
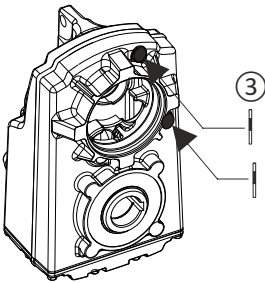
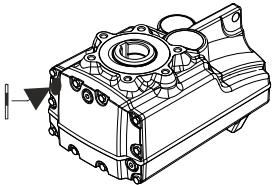
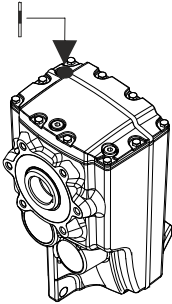
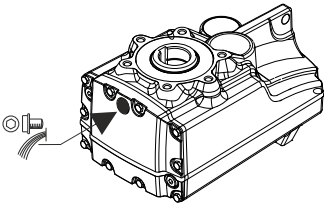
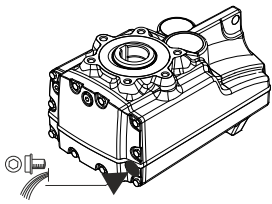
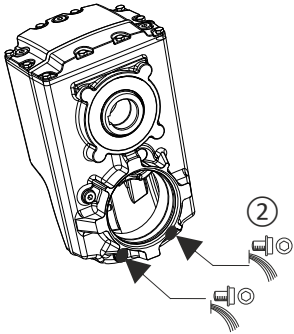
- For gearboxes with ventilation, a gap of at least 30 mm has to be observed to the machine wall on the corresponding gearbox side.
-

Information on project planning

Final configuration
Ventilation



g500-S220 ... S660

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

- ② g500-S220
- ③ g500-S400



Information on project planning

Final configuration
Ventilation

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

- ② g500-S220
- ③ g500-S400
- ④ g500-S660

Information on project planning

Final configuration
Ventilation



g500-S950 ... S4500

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		
Check		
Drain		

⑤ g500-S3100

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

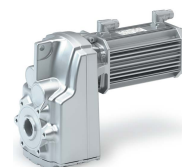
In order to guarantee a reliable lubrication of the toothed parts in mounting position M4 (C) (motor is on the gearbox vertical from the top), a high filling level is required in the gearbox. As a result of the reduced volume of air in the gearbox, this may lead to oil escaping from the ventilation at 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.

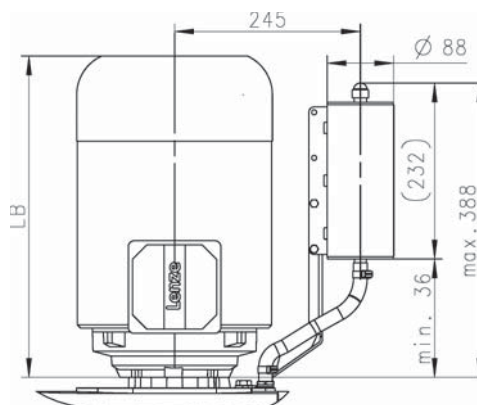
If insufficient space is available, the oil compensation reservoir can also be mounted over the gearbox hose connection on nearby system parts.

Information on project planning

Final configuration
Ventilation



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-S2100		g500-S3100		g500-S4500	
Gearbox ratio	Min. input speed	Gearbox ratio	Min. input speed	Gearbox ratio	Min. input speed
	rpm		rpm		rpm
4.593	2000	4.951	2000	4.914	2000
6.029	2000	6.499	2000	6.450	2000
6.870	2000	7.406	2000	7.056	2000
8.272	2000	8.917	2000	8.944	2000
9.452	2000	10.932	2000	9.984	2000
10.504	2000	11.128	2000	11.740	2000
12.406	2000	12.584	2000	12.843	2000
13.787	2000	14.606	2000	13.105	2000
14.137	2000	16.517	2000	14.336	2000
15.711	2000	16.644	2000	16.381	2000
17.022	3000	18.822	2000	18.286	2000
18.917	3000	20.041	3000	20.067	2000
20.869	3000	22.663	3000	22.400	2000
23.193	3000	24.570	3000	26.437	3000
28.275	3000	27.785	3000	29.511	3000
31.422	3000	33.289	3000	32.489	3000
34.333	3000	37.644	3000	36.267	3000
38.156	3000	40.422	3000	42.044	3000
44.431	4000	45.711	3000	46.933	3000
49.378	4000	52.311	4000	51.027	4000
53.924	4000	59.156	4000	56.960	4000
59.927	4000	63.487	4000	64.500	4000
68.162	4000	71.793	4000	72.000	4000
75.750	4000				



Mechanical installation

Important notes

- Install the product according to the information in the chapter "Standards and operating conditions".
 - ▶ [Standards and operating conditions](#) 40
- 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

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).

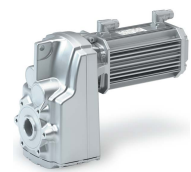
NOTICE

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.

Technical data

Standards and operating conditions
Conformities and approvals



Standards and operating conditions

Conformities and approvals

More information and certificates of approval can be found under

[g500 + MCA shaft-mounted 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-S130, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
63.0	3.661	637	174	19
76.0	5.021	728	145	18
87.0	6.425	559	87	18
92.0	7.029	5096	725	18
116	8.322	749	90	13
125	9.411	847	90	12
130	11.413	856	75	13
130	12.907	968	75	12
130	14.606	4601	315	12
130	15.979	5992	375	12
130	18.069	6776	375	12
130	20.381	428	21	13
130	23.048	484	21	12
130	24.967	749	30	12
130	28.233	847	30	12
130	31.387	2354	75	12
130	35.493	2662	75	12
130	40.422	1819	45	12
130	45.711	2057	45	12

g500-S130, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
130	83.698	18832	225	13
130	94.649	21296	225	12
130	107.113	101222	945	13
130	117.177	131824	1125	13

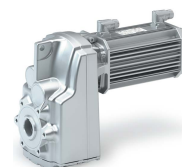


g500-S220, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
178	3.840	553	144	16
181	5.267	79	15	16
220	6.767	203	30	13
217	7.667	23	3	12
220	9.280	232	25	13
220	10.514	368	35	12
220	11.876	1247	105	12
220	12.992	1624	125	12
220	13.456	1978	147	12
220	14.720	368	25	12
220	16.571	116	7	12
220	18.776	920	49	12
220	20.300	203	10	12
220	23.000	23	1	11
220	26.422	1189	45	12
220	29.937	1886	63	11
220	32.867	493	15	12
220	37.238	782	21	11
220	42.533	638	15	12
220	48.190	1012	21	11
220	51.620	2581	50	11
220	58.486	2047	35	11

g500-S220, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
220	52.587	3944	75	12
220	59.581	6256	105	12
220	67.298	21199	315	12
220	76.249	33626	441	12
220	86.079	5423	63	12
220	97.528	43010	441	12
220	111.747	8381	75	12
220	126.610	13294	105	12



g500-S400, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
203	3.339	581	174	16
243	4.579	664	145	16
258	5.860	3569	609	13
261	6.411	4648	725	12
365	7.467	112	15	13
380	8.436	329	39	12
400	10.240	256	25	12
400	11.569	752	65	12
400	13.105	1376	105	12
400	14.336	1792	125	12
400	14.806	4042	273	12
400	16.197	5264	325	12
400	18.286	128	7	12
400	20.659	1880	91	11
400	22.400	112	5	12
400	25.308	329	13	11
400	29.156	1312	45	12
400	32.940	3854	117	11
400	36.267	544	15	12
400	40.974	1598	39	11
314	46.933	704	15	11
348	53.026	2068	39	11
268	56.960	1424	25	11
302	64.354	4183	65	11

g500-S400, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
400	58.027	4352	75	11
400	65.559	12784	195	11
400	74.260	23392	315	11
400	83.900	68714	819	11
400	94.984	5984	63	11
399	107.314	87890	819	11
400	123.307	9248	75	11
399	139.313	27166	195	11

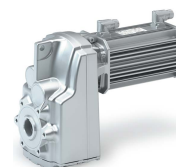


g500-S660, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
419	3.920	98	25	14
492	5.376	672	125	13
601	6.417	77	12	11
496	6.880	172	25	13
593	7.311	329	45	11
638	8.800	44	5	10
625	10.027	752	75	10
660	11.262	473	42	10
660	12.320	308	25	10
660	12.832	4042	315	10
660	14.037	5264	375	10
660	15.714	110	7	10
660	17.905	376	21	10
660	19.250	77	4	10
660	21.933	329	15	9
578	25.056	451	18	10
660	28.548	3854	135	9
660	31.167	187	6	10
660	35.511	1598	45	9
545	40.333	121	3	10
620	45.956	2068	45	9
446	48.950	979	20	10
508	55.773	4183	75	9

g500-S660, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
625	49.867	748	15	10
650	56.818	12784	225	10
660	63.817	8041	126	10
660	69.813	5236	75	10
660	72.713	68714	945	10
660	79.545	89488	1125	10
660	89.048	1870	21	10
660	101.460	6392	63	10
660	109.083	1309	12	10
660	124.289	5593	45	10
660	137.133	2057	15	10
660	156.249	35156	225	10
660	176.611	3179	18	10
660	201.230	27166	135	10



g500-S660, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
660	318.039	214676	675	11
592	365.689	16456	45	11
660	467.995	88451	189	11
660	511.964	115192	225	11
660	583.329	1968736	3375	10

g500-S950, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
621	4.380	403	92	15
691	5.391	124	23	14
732	6.038	3472	575	14
783	7.702	1240	161	14
950	9.100	91	10	10
950	10.183	611	60	10
950	11.200	56	5	10
950	12.544	1568	125	9
950	14.037	5264	375	9
950	16.000	16	1	9
950	17.905	376	21	9
950	19.600	98	5	9
950	21.933	329	15	9
950	25.511	1148	45	9
950	28.548	3854	135	9
950	31.267	469	15	9
950	34.989	3149	90	9
950	41.067	616	15	9
950	45.956	2068	45	9
924	49.840	1246	25	9
950	55.773	4183	75	9
668	63.000	63	1	9
736	70.500	141	2	9



g500-S950, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
950	50.027	3752	75	10
950	55.982	12596	225	9
950	64.022	2881	45	10
950	70.037	26264	375	9
950	71.644	135407	1890	10
950	78.375	88172	1125	9
950	89.333	268	3	10
950	99.968	6298	63	9
950	109.433	3283	30	9
950	122.461	22043	180	9
950	142.437	19229	135	9
950	159.394	129109	810	9
950	177.178	7973	45	9
950	198.270	53533	270	9
950	229.289	10318	45	9
950	256.585	34639	135	9
950	278.273	41741	150	9
950	311.401	280261	900	9

g500-S950, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
950	319.059	1076824	3375	10
950	357.042	3615052	10125	10
950	406.963	10988	27	10
950	455.411	258218	567	10
950	513.607	577808	1125	10
950	574.751	1939784	3375	10
950	655.111	5896	9	10
950	733.101	138556	189	10
950	802.511	36113	45	10
950	898.048	242473	270	10



g500-S2100, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
1331	4.593	689	150	12
1487	6.029	2279	378	11
1487	6.870	371	54	11
1487	8.272	3127	378	11
1866	9.452	4017	425	8
1872	10.504	1313	125	8
2030	12.406	4429	357	7
2047	13.787	4343	315	7
2050	14.137	721	51	7
2050	15.711	707	45	7
2050	17.022	6077	357	7
2050	18.917	5959	315	7
2050	20.869	3193	153	7
2050	23.193	3131	135	7
2050	28.275	1442	51	8
2050	31.422	1414	45	7
2050	34.333	103	3	7
2050	38.156	1717	45	7
2044	44.431	2266	51	7
2050	49.378	2222	45	7
1957	53.924	9167	170	7
2050	59.927	8989	150	7
1454	68.162	4635	68	7
1576	75.750	303	4	7



g500-S2100, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
1945	40.056	721	18	8
2050	44.515	12019	270	8
2050	54.933	824	15	8
2050	61.049	13736	225	8
2050	70.302	4429	63	8
2050	76.907	5768	75	8
2050	78.128	73831	945	7
2050	85.468	96152	1125	7
2050	98.095	2060	21	8
2050	109.016	6868	63	7
2050	120.167	721	6	8
2050	133.544	12019	90	7
2050	156.407	4223	27	8
2050	173.820	70397	405	7
2050	194.556	1751	9	8
2050	216.215	29189	135	7
2050	251.778	2266	9	8
2050	279.807	37774	135	7
2050	305.567	9167	30	8
2050	339.584	152813	450	7
2050	386.250	1545	4	7
2050	429.250	1717	4	7

g500-S2100, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
2050	320.263	181589	567	8
2050	350.353	236488	675	8
2050	389.356	3942232	10125	8
2050	446.878	84460	189	8
2050	496.628	281588	567	8
2050	547.426	29561	54	8
2050	608.369	492779	810	8
2050	712.523	173143	243	8
2050	791.846	2886277	3645	8
2050	886.309	71791	81	8
2050	984.979	1196749	1215	8
2050	1146.988	92906	81	8
2050	1274.678	1548734	1215	8
2050	1426.741	38522	27	8
2050	1585.575	642158	405	8
2050	1846.370	49852	27	8



g500-S3100, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
1842	4.951	2847	575	10
2110	6.499	3139	483	10
2235	7.406	511	69	9
2264	8.917	4307	483	9
2275	10.932	2263	207	9
3022	11.128	1391	125	6
2965	12.584	1573	125	6
3100	14.606	4601	315	6
3100	16.517	5203	315	6
3100	16.644	749	45	6
3100	18.822	847	45	6
3100	20.041	6313	315	6
3100	22.663	7139	315	6
3100	24.570	3317	135	6
3100	27.785	3751	135	6
3100	33.289	1498	45	6
3100	37.644	1694	45	6
3100	40.422	1819	45	6
3100	45.711	2057	45	6
2587	52.311	2354	45	6
2743	59.156	2662	45	6
2250	63.487	9523	150	6
2408	71.793	10769	150	6

g500-S3100, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
2958	47.159	12733	270	6
3054	53.330	14399	270	6
3100	64.676	14552	225	6
3100	73.138	16456	225	6
3100	82.769	78217	945	6
3100	90.546	101864	1125	6
3100	93.599	88451	945	6
3100	102.393	115192	1125	6
3100	115.492	7276	63	6
3100	130.603	8228	63	6
3100	141.478	12733	90	6
3100	159.989	14399	90	6
3100	184.146	74579	405	6
3100	208.240	84337	405	6
3100	229.059	30923	135	6
3100	259.030	34969	135	6
3100	296.430	40018	135	6
3100	335.215	45254	135	6
3100	359.758	161891	450	6
3100	406.829	183073	450	6



g500-S3100, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
3100	316.910	356524	1125	7
3100	358.375	403172	1125	6
3100	404.222	3638	9	7
3100	457.111	4114	9	6
3100	495.172	89131	180	6
3100	559.961	100793	180	6
3100	644.510	522053	810	6
3100	728.838	590359	810	6
3100	801.707	216461	270	6
3100	906.604	244783	270	6
3100	1043.492	1267843	1215	6
3100	1180.024	1433729	1215	6
3100	1298.002	525691	405	6
3100	1467.835	594473	405	6
3100	1679.768	680306	405	6
3100	1899.551	769318	405	6
3100	2173.817	880396	405	6
3100	2458.242	995588	405	6
3100	2638.224	1780801	675	6
3100	2983.412	2013803	675	6

g500-S4500, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
2352	4.914	2457	500	9
2451	6.450	129	20	9
2535	7.056	882	125	9
4087	8.944	1118	125	5
4163	9.984	1248	125	5
4451	11.740	3698	315	5
4500	12.843	4816	375	5
4500	13.105	1376	105	4
4500	14.336	1792	125	4
4500	16.381	344	21	5
4500	18.286	128	7	4
4500	20.067	301	15	5
4500	22.400	112	5	4
4500	26.437	3569	135	5
4500	29.511	1328	45	4
4500	32.489	1462	45	5
4500	36.267	544	15	4
4101	42.044	1892	45	5
4394	46.933	704	15	4
3653	51.027	3827	75	5
3946	56.960	1424	25	4
2488	64.500	129	2	5
2586	72.000	72	1	4

Technical data

Data overview



g500-S4500, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{z, max}	i	z _g	z _t	'
Nm				
4150	38.090	49708	1305	5
4291	42.520	18496	435	4
4500	52.794	9503	180	5
4500	58.933	884	15	4
4500	64.978	2924	45	5
4500	72.533	1088	15	4
4500	72.775	81872	1125	5
4500	81.237	30464	375	4
4500	92.825	5848	63	5
4500	103.619	2176	21	4
4500	113.711	5117	45	5
4500	126.933	1904	15	4
4500	148.005	59942	405	5
4500	165.215	22304	135	4
4500	181.396	48977	270	5
4500	202.489	9112	45	4
4500	238.252	32164	135	5
4500	265.956	11968	45	4
4500	289.151	65059	225	5
4500	322.773	24208	75	4
3962	365.500	731	2	5
4410	408.000	408	1	4

g500-S4500, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{z, max}	i	z _g	z _t	
Nm				'
4500	324.889	2924	9	5
4500	362.667	1088	3	5
4500	397.989	35819	90	5
4500	444.267	6664	15	5
4500	518.017	209797	405	5
4500	578.252	78064	135	4
4500	634.887	342839	540	5
4500	708.711	31892	45	4
4500	826.361	2008057	2430	5
4500	922.449	373592	405	4
4500	1027.912	832609	810	5
4500	1147.437	154904	135	4
4500	1211.575	490688	405	4
4500	1350.094	546788	405	5
4500	1507.081	203456	135	4
4500	1747.180	707608	405	5
4500	1950.341	263296	135	4
4500	2120.441	1431298	675	5
4500	2367.004	532576	225	4
4500	2872.683	1077256	375	4

Technical data

Radial forces and axial forces



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 .

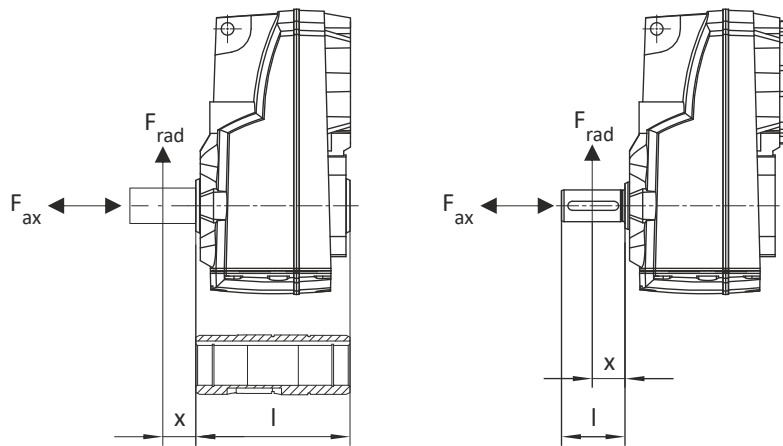
$$F_{\text{rad, perm}} = f_w \times F_{\text{rad, max}}$$

Permissible axial force

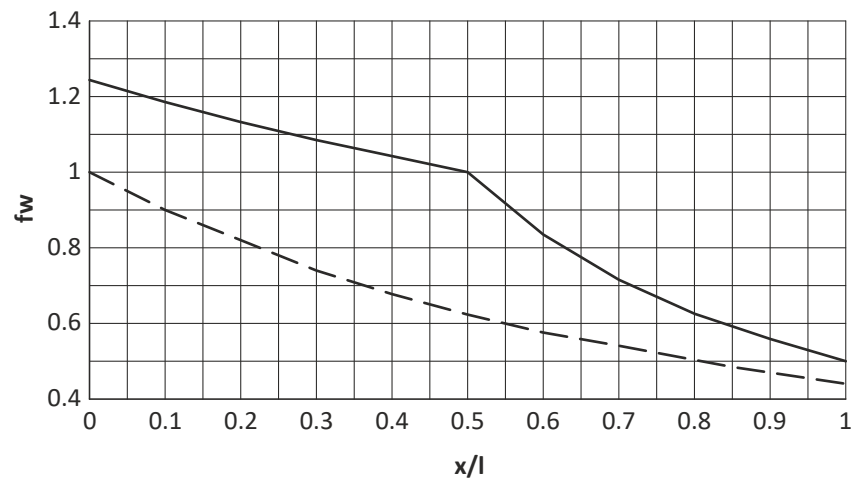
If there is no radial force, the maximum axial force is 50% of the value in the table $F_{\text{rad, max}}$

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

Application of forces



Additional load factor f_w on the drive shaft



— Solid shaft
- - - Hollow 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



A hollow shaft with shrink disc (SAR/SBR/SCR/SDR/SAK/SCK) requires a check by Lenze.

Max. radial force, gearbox with hollow shaft (H□R/H□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-S130	1000	1100	1300	1500	1650	2200	2750	3450	4200	4500
g500-S220	2100	2300	2800	3200	3800	4600	5500	6300	7000	7000
g500-S400	2200	2500	3000	3400	4100	5000	6000	7100	8000	8000
g500-S660	2500	2900	3500	4000	5000	6600	8500	10800	12000	12000
g500-S950	3400	4000	4300	5000	6000	8000	10300	11500	12500	13000
g500-S2100	4500	5100	6200	6500	7500	10000	12000	15700	15700	16000
g500-S3100	5200	5700	7000	8000	9000	12500	15000	17000	19800	19800
g500-S4500	11100	12900	15000	17500	19000	20000	23000	30000	30000	30000

Max. radial force, gearbox with solid shaft, without flange (V□R)

Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. radial force $F_{rad,max}$ [rated]									
g500-S130	1000	1100	1300	1500	1650	2200	2750	3450	4200	4500
g500-S220	1700	1900	2300	2700	3200	3600	3600	3600	3600	3600
g500-S400	1700	1900	2300	2700	3200	4000	4800	5800	6200	6200
g500-S660	2300	2600	3100	3600	3900	5100	6500	8400	9000	9000
g500-S950	6100	6800	8200	9500	10300	10300	10300	10300	10300	10300
g500-S2100	7500	8200	10000	11500	13600	15700	15700	15700	15700	15700
g500-S3100	9400	10300	12600	14500	16500	18000	19800	19800	19800	19800
g500-S4500	12000	13100	16100	18500	20000	22000	25000	30000	30000	30000

Max. radial force, gearbox with solid shaft and flange (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-S130	1000	1100	1300	1500	1650	2200	2750	3450	4200	4500
g500-S220	2400	2600	3200	3700	4400	4600	4600	4600	4600	4600
g500-S400	3300	3600	4400	5100	5900	6800	7000	7000	7000	7000
g500-S660	4500	5000	6100	7000	7800	9600	10000	10000	10000	10000
g500-S950	4900	5300	6500	7500	8500	10300	10300	10300	10300	10300
g500-S2100	7400	8200	10000	11500	13600	15700	15700	15700	15700	15700
g500-S3100	12800	14100	17200	19800	19800	19800	19800	19800	19800	19800
g500-S4500	17500	19200	23500	27000	28000	30000	30000	30000	30000	30000



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
10.0	787	5.7	49.0	787	3.287	5.021	S130	10I40-	2	12
12.0	615	5.1	62.0	615	2.973	6.425	S130	10I40-	2	12
14.0	562	4.9	68.0	562	2.888	7.029	S130	10I40-	2	12
16.0	475	5.2	81.0	437	3.085	8.322	S130	10I40-	2	12

										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

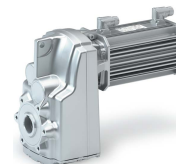
0.8 kW

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
10.0	787	5.7	49.0	787	3.287	5.021	S130	10I40-	2	12
12.0	615	5.1	62.0	615	2.973	6.425	S130	10I40-	2	12
14.0	562	4.9	68.0	562	2.888	7.029	S130	10I40-	2	12
18.0	420	5.0	91.0	383	3.430	9.411	S130	10I40-	2	12
25.0	306	3.8	125	295	3.004	12.907	S130	10I40-	2	12
29.0	268	5.6	143	268	2.983	14.720	S220	10I40-	2	14
35.0	219	3.1	130	219	2.744	18.069	S130	10I40-	2	12
36.0	210	5.0	182	210	2.818	18.776	S220	10I40-	2	14
45.0	172	4.1	220	172	2.720	23.000	S220	10I40-	2	14
45.0	171	2.4	130	171	2.632	23.048	S130	10I40-	2	12
55.0	140	2.0	130	140	2.569	28.233	S130	10I40-	2	12
58.0	132	3.1	220	132	2.599	29.937	S220	10I40-	2	14
64.0	120	5.7	320	120	2.628	32.940	S400	10I40-	2	17
69.0	111	1.7	130	111	2.511	35.493	S130	10I40-	2	12
72.0	106	2.8	220	106	2.545	37.238	S220	10I40-	2	14
80.0	96.4	4.6	398	96.4	2.564	40.974	S400	10I40-	2	17
89.0	86.4	1.3	130	86.4	2.474	45.711	S130	10I40-	2	12
94.0	82.0	2.2	220	82.0	2.491	48.190	S220	10I40-	2	14
103	74.5	3.1	348	74.5	2.503	53.026	S400	10I40-	2	17
108	70.8	4.3	508	70.8	2.601	55.773	S660	10I40-	2	22
108	70.8	5.9	541	70.8	2.960	55.773	S950	10I40-	2	42
109	69.5	4.9	543	69.5	2.781	56.818	S660	10I40-	3	23
113	67.5	1.8	220	67.5	2.467	58.486	S220	10I40-	2	14
114	66.3	1.6	220	66.3	2.531	59.581	S220	10I40-	3	14
125	61.4	2.2	302	61.4	2.474	64.354	S400	10I40-	2	17
125	60.3	2.6	400	60.3	2.539	65.559	S400	10I40-	3	17
137	56.0	4.7	684	56.0	2.761	70.500	S950	10I40-	2	42
139	54.3	4.3	660	54.3	2.664	72.713	S660	10I40-	3	23
146	51.8	1.4	220	51.8	2.491	76.249	S220	10I40-	3	14
150	50.4	5.8	749	50.4	3.034	78.375	S950	10I40-	3	43
152	49.7	4.0	660	49.7	2.630	79.545	S660	10I40-	3	23
160	47.1	2.3	400	47.1	2.495	83.900	S400	10I40-	3	17
186	40.5	1.1	220	40.5	2.461	97.528	S220	10I40-	3	14
191	39.5	4.5	950	39.5	2.849	99.968	S950	10I40-	3	43
194	38.9	3.1	660	38.9	2.562	101.460	S660	10I40-	3	23
205	36.8	1.8	399	36.8	2.464	107.314	S400	10I40-	3	17
234	32.3	3.7	950	32.3	2.741	122.461	S950	10I40-	3	43
238	31.8	2.5	660	31.8	2.523	124.289	S660	10I40-	3	23
266	28.4	1.4	399	28.4	2.445	139.313	S400	10I40-	3	17
299	25.3	2.0	660	25.3	2.482	156.249	S660	10I40-	3	23
305	24.8	2.9	950	24.8	2.612	159.394	S950	10I40-	3	43
332	22.7	5.6	1661	22.7	2.995	173.820	S2100	10I40-	3	75
379	19.9	2.3	950	19.9	2.553	198.270	S950	10I40-	3	43
385	19.6	1.6	660	19.6	2.456	201.230	S660	10I40-	3	23
413	18.3	4.5	2050	18.3	2.833	216.215	S2100	10I40-	3	75
490	15.4	1.8	950	15.4	2.496	256.585	S950	10I40-	3	43
495	15.2	5.7	2475	15.2	2.858	259.030	S3100	10I40-	3	114
535	14.1	3.5	2050	14.1	2.670	279.807	S2100	10I40-	3	75
595	12.7	1.5	950	12.7	2.470	311.401	S950	10I40-	3	43
617	12.2	5.9	3085	12.2	3.028	322.773	S4500	10I40-	3	189

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
641	11.8	4.4	3100	11.8	2.685	335.215	S3100	10I40-	3	114
649	11.6	2.9	2050	11.6	2.597	339.584	S2100	10I40-	3	75
672	11.1	1.3	950	11.1	2.622	357.042	S950	10I40-	4	46
675	11.0	4.2	3100	11.0	2.857	358.375	S3100	10I40-	4	117
733	10.1	2.6	2050	10.1	2.674	389.356	S2100	10I40-	4	78
778	9.7	3.6	3100	9.7	2.607	406.829	S3100	10I40-	3	114
780	9.7	4.7	3899	9.7	2.803	408.000	S4500	10I40-	3	189
820	9.2	2.3	2050	9.2	2.527	429.250	S2100	10I40-	3	75
836	8.9	4.9	4182	8.9	2.940	444.267	S4500	10I40-	4	192
857	8.7	1.0	950	8.7	2.614	455.411	S950	10I40-	4	46
861	8.6	3.3	3100	8.6	2.811	457.111	S3100	10I40-	4	117
935	8.0	2.0	2050	8.0	2.649	496.628	S2100	10I40-	4	78
1054	7.1	2.7	3100	7.1	2.785	559.961	S3100	10I40-	4	117
1089	6.8	3.8	4500	6.8	2.859	578.252	S4500	10I40-	4	192
1145	6.5	1.6	2050	6.5	2.635	608.369	S2100	10I40-	4	78
1334	5.6	3.1	4500	5.6	2.818	708.711	S4500	10I40-	4	192
1372	5.4	2.1	3100	5.4	2.638	728.838	S3100	10I40-	4	117
1491	5.0	1.3	2050	5.0	2.621	791.846	S2100	10I40-	4	78
1707	4.4	1.7	3100	4.4	2.570	906.604	S3100	10I40-	4	117
1737	4.3	2.4	4500	4.3	2.657	922.449	S4500	10I40-	4	192
1854	4.0	1.0	2050	4.0	2.559	984.979	S2100	10I40-	4	78
2160	3.4	1.9	4500	3.4	2.582	1147.437	S4500	10I40-	4	192
2222	3.3	1.3	3100	3.3	2.560	1180.024	S3100	10I40-	4	117
2281	3.3	1.8	4500	3.3	2.523	1211.575	S4500	10I40-	4	192
2763	2.7	1.0	3100	2.7	2.554	1467.835	S3100	10I40-	4	117
2837	2.6	1.5	4500	2.6	2.567	1507.081	S4500	10I40-	4	192
3672	2.0	1.1	4500	2.0	2.505	1950.341	S4500	10I40-	4	192



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
34.0	380	4.8	181	380	20.744	5.267	S220	14L20-	2	22
42.0	312	5.7	261	312	20.776	6.411	S400	14L20-	2	26
50.0	261	4.0	217	261	20.699	7.667	S220	14L20-	2	22
68.0	190	2.9	220	190	20.161	10.514	S220	14L20-	2	22
75.0	173	4.8	400	173	20.398	11.569	S400	14L20-	2	26
87.0	149	2.3	220	149	19.873	13.456	S220	14L20-	2	22
96.0	136	2.1	220	136	19.783	14.720	S220	14L20-	2	22
96.0	135	3.8	400	135	20.017	14.806	S400	14L20-	2	26
105	124	3.5	400	124	19.904	16.197	S400	14L20-	2	26
116	112	5.2	660	112	20.615	17.905	S660	14L20-	2	31
122	107	1.8	220	107	19.618	18.776	S220	14L20-	2	22
134	96.8	3.0	400	96.8	19.692	20.659	S400	14L20-	2	26
143	91.2	4.6	660	91.2	20.289	21.933	S660	14L20-	2	31
150	87.0	1.5	220	87.0	19.520	23.000	S220	14L20-	2	22
165	79.0	2.4	400	79.0	19.570	25.308	S400	14L20-	2	26
186	70.1	3.6	660	70.1	19.809	28.548	S660	14L20-	2	31
186	70.1	5.1	950	70.1	20.963	28.548	S950	14L20-	2	51
227	57.2	4.2	950	57.2	20.414	34.989	S950	14L20-	2	51
231	56.3	2.9	660	56.3	19.642	35.511	S660	14L20-	2	31
299	43.5	3.2	950	43.5	19.961	45.956	S950	14L20-	2	51
321	40.5	5.5	1755	40.5	21.736	49.378	S2100	14L20-	2	83
358	35.7	2.7	950	35.7	20.261	55.982	S950	14L20-	3	51
363	35.9	2.6	950	35.9	19.760	55.773	S950	14L20-	2	51
370	35.1	5.7	2112	35.1	25.447	56.960	S4500	14L20-	2	195
385	33.8	5.5	2103	33.8	22.159	59.156	S3100	14L20-	2	122
390	33.4	4.6	1784	33.4	21.054	59.927	S2100	14L20-	2	83
391	32.8	5.2	2050	32.8	22.272	61.049	S2100	14L20-	3	84
459	27.9	2.1	950	27.9	19.934	71.644	S950	14L20-	3	51
467	27.9	4.6	2137	27.9	21.341	71.793	S3100	14L20-	2	122
468	27.8	4.6	2146	27.8	23.287	72.000	S4500	14L20-	2	195
492	26.4	3.2	1576	26.4	20.424	75.750	S2100	14L20-	2	83
500	25.6	4.1	2050	25.6	21.346	78.128	S2100	14L20-	3	84
502	25.5	1.9	950	25.5	19.834	78.375	S950	14L20-	3	51
547	23.4	3.8	2050	23.4	21.104	85.468	S2100	14L20-	3	84
599	21.4	5.2	3100	21.4	21.542	93.599	S3100	14L20-	3	123
640	20.0	1.5	950	20.0	19.649	99.968	S950	14L20-	3	51
656	19.5	4.7	3100	19.5	21.268	102.393	S3100	14L20-	3	123
698	18.3	2.9	2050	18.3	20.579	109.016	S2100	14L20-	3	84
784	16.3	1.2	950	16.3	19.541	122.461	S950	14L20-	3	51
813	15.8	5.5	4500	15.8	22.212	126.933	S4500	14L20-	3	198
836	15.3	3.7	3100	15.3	20.680	130.603	S3100	14L20-	3	123
855	15.0	2.4	2050	15.0	20.265	133.544	S2100	14L20-	3	84
1024	12.5	3.0	3100	12.5	20.332	159.989	S3100	14L20-	3	123
1058	12.1	4.3	4500	12.1	21.222	165.215	S4500	14L20-	3	198
1113	11.5	1.8	2050	11.5	19.795	173.820	S2100	14L20-	3	84
1297	9.9	3.5	4500	9.9	20.586	202.489	S4500	14L20-	3	198
1333	9.6	2.3	3100	9.6	19.887	208.240	S3100	14L20-	3	123
1384	9.3	1.5	2050	9.3	19.633	216.215	S2100	14L20-	3	84
1659	7.7	1.9	3100	7.7	19.658	259.030	S3100	14L20-	3	123
1703	7.5	2.6	4500	7.5	20.061	265.956	S4500	14L20-	3	198
2067	6.2	2.2	4500	6.2	19.828	322.773	S4500	14L20-	3	198

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
2260	5.6	1.4	3100	5.6	19.657	358.375	S3100	14L20-	4	126
2287	5.5	2.0	4500	5.5	19.822	362.667	S4500	14L20-	4	201
2802	4.5	1.6	4500	4.5	19.740	444.267	S4500	14L20-	4	201
2883	4.4	1.1	3100	4.4	19.611	457.111	S3100	14L20-	4	126
3647	3.5	1.2	4500	3.5	19.659	578.252	S4500	14L20-	4	201
4470	2.8	1.0	4500	2.8	19.618	708.711	S4500	14L20-	4	201



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

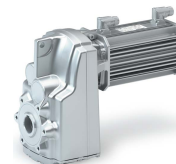
1.7 kW

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
14.0	1106	3.2	63.0	907	9.863	3.661	S130	13I41-	2	16
19.0	807	2.8	76.0	720	9.187	5.021	S130	13I41-	2	16
25.0	630	2.5	87.0	630	8.873	6.425	S130	13I41-	2	16
27.0	576	2.4	92.0	576	8.788	7.029	S130	13I41-	2	16
30.0	528	5.2	217	397	9.799	7.667	S220	13I41-	2	18
37.0	430	2.5	125	335	9.330	9.411	S130	13I41-	2	16
41.0	385	3.9	220	320	9.261	10.514	S220	13I41-	2	18
50.0	314	1.9	130	255	8.904	12.907	S130	13I41-	2	16
52.0	301	3.0	220	262	8.973	13.456	S220	13I41-	2	18
57.0	275	2.8	220	244	8.883	14.720	S220	13I41-	2	18
57.0	274	5.0	400	260	9.117	14.806	S400	13I41-	2	21
63.0	250	4.6	400	242	9.004	16.197	S400	13I41-	2	21
70.0	224	1.5	130	202	8.644	18.069	S130	13I41-	2	16
73.0	216	2.5	220	216	8.718	18.776	S220	13I41-	2	18
80.0	196	4.1	400	196	8.792	20.659	S400	13I41-	2	21
89.0	176	2.0	220	176	8.620	23.000	S220	13I41-	2	18
89.0	176	1.2	130	164	8.532	23.048	S130	13I41-	2	16
98.0	160	3.3	400	160	8.670	25.308	S400	13I41-	2	21
111	142	4.9	660	142	8.909	28.548	S660	13I41-	2	26
116	135	1.6	220	135	8.499	29.937	S220	13I41-	2	18
128	123	2.8	400	123	8.528	32.940	S400	13I41-	2	21
138	114	4.3	660	114	8.742	35.511	S660	13I41-	2	26
145	109	1.4	220	109	8.445	37.238	S220	13I41-	2	18
159	98.8	2.3	400	98.8	8.464	40.974	S400	13I41-	2	21
178	88.1	3.2	620	88.1	8.575	45.956	S660	13I41-	2	26
178	88.1	4.8	950	88.1	9.061	45.956	S950	13I41-	2	46
214	72.3	3.6	950	72.3	9.361	55.982	S950	13I41-	3	47
216	72.6	2.1	508	72.6	8.501	55.773	S660	13I41-	2	26
216	72.6	4.0	950	72.6	8.860	55.773	S950	13I41-	2	46
217	71.3	2.4	650	71.3	8.681	56.818	S660	13I41-	3	27
274	57.4	2.4	736	57.4	8.661	70.500	S950	13I41-	2	46
274	56.5	3.1	950	56.5	9.034	71.644	S950	13I41-	3	47
278	55.7	2.2	660	55.7	8.564	72.713	S660	13I41-	3	27
300	51.7	2.9	950	51.7	8.934	78.375	S950	13I41-	3	47
304	50.9	2.0	660	50.9	8.530	79.545	S660	13I41-	3	27
327	47.4	5.7	2050	47.4	10.204	85.468	S2100	13I41-	3	79
382	40.5	2.3	950	40.5	8.749	99.968	S950	13I41-	3	47
388	39.9	1.5	660	39.9	8.462	101.460	S660	13I41-	3	27
417	37.2	4.5	2050	37.2	9.679	109.016	S2100	13I41-	3	79
468	33.1	1.8	950	33.1	8.641	122.461	S950	13I41-	3	47
475	32.6	1.3	660	32.6	8.423	124.289	S660	13I41-	3	27
499	31.0	5.6	3100	31.0	9.780	130.603	S3100	13I41-	3	118
510	30.3	3.6	2050	30.3	9.365	133.544	S2100	13I41-	3	79
609	25.4	1.4	950	25.4	8.512	159.394	S950	13I41-	3	47
612	25.3	4.6	3100	25.3	9.432	159.989	S3100	13I41-	3	118
664	23.3	2.8	2050	23.3	8.895	173.820	S2100	13I41-	3	79
758	20.4	1.1	950	20.4	8.453	198.270	S950	13I41-	3	47
774	20.0	5.3	4500	20.0	9.686	202.489	S4500	13I41-	3	193
796	19.4	3.5	3100	19.4	8.987	208.240	S3100	13I41-	3	118
827	18.7	2.2	2050	18.7	8.733	216.215	S2100	13I41-	3	79
990	15.6	2.8	3100	15.6	8.758	259.030	S3100	13I41-	3	118

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
1017	15.2	4.0	4500	15.2	9.161	265.956	S4500	13I41-	3	193
1070	14.5	1.7	2050	14.5	8.570	279.807	S2100	13I41-	3	79
1234	12.5	3.3	4500	12.5	8.928	322.773	S4500	13I41-	3	193
1281	12.1	2.2	3100	12.1	8.585	335.215	S3100	13I41-	3	118
1298	11.9	1.4	2050	11.9	8.497	339.584	S2100	13I41-	3	79
1349	11.3	2.1	3100	11.3	8.757	358.375	S3100	13I41-	4	121
1366	11.2	3.0	4500	11.2	8.922	362.667	S4500	13I41-	4	196
1466	10.4	1.3	2050	10.4	8.574	389.356	S2100	13I41-	4	82
1555	10.0	1.8	3100	10.0	8.507	406.829	S3100	13I41-	3	118
1560	9.9	2.6	4410	9.9	8.703	408.000	S4500	13I41-	3	193
1673	9.1	2.4	4500	9.1	8.840	444.267	S4500	13I41-	4	196
1721	8.9	1.6	3100	8.9	8.711	457.111	S3100	13I41-	4	121
2108	7.2	1.3	3100	7.2	8.685	559.961	S3100	13I41-	4	121
2177	7.0	1.9	4500	7.0	8.759	578.252	S4500	13I41-	4	196
2669	5.7	1.5	4500	5.7	8.718	708.711	S4500	13I41-	4	196
2744	5.6	1.0	3100	5.6	8.538	728.838	S3100	13I41-	4	121
3473	4.4	1.2	4500	4.4	8.557	922.449	S4500	13I41-	4	196



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

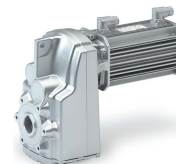
2.3 kW

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
28.0	779	4.7	181	663	20.744	5.267	S220	14L41-	2	22
34.0	640	5.6	261	560	20.776	6.411	S400	14L41-	2	26
40.0	535	3.9	217	374	20.699	7.667	S220	14L41-	2	22
55.0	390	2.9	220	302	20.161	10.514	S220	14L41-	2	22
61.0	354	4.7	400	302	20.398	11.569	S400	14L41-	2	26
70.0	305	2.2	220	247	19.873	13.456	S220	14L41-	2	22
77.0	279	2.0	220	231	19.783	14.720	S220	14L41-	2	22
78.0	277	3.7	400	243	20.017	14.806	S400	14L41-	2	26
85.0	253	3.4	400	222	19.904	16.197	S400	14L41-	2	26
94.0	229	5.0	660	201	20.615	17.905	S660	14L41-	2	31
98.0	218	1.8	220	191	19.618	18.776	S220	14L41-	2	22
108	199	3.0	400	174	19.692	20.659	S400	14L41-	2	26
115	187	4.7	660	164	20.289	21.933	S660	14L41-	2	31
121	178	1.5	220	156	19.520	23.000	S220	14L41-	2	22
133	162	2.5	400	142	19.570	25.308	S400	14L41-	2	26
150	144	3.6	660	126	19.809	28.548	S660	14L41-	2	31
150	144	5.2	950	126	20.963	28.548	S950	14L41-	2	51
183	117	4.7	950	103	20.414	34.989	S950	14L41-	2	51
186	116	3.2	660	101	19.642	35.511	S660	14L41-	2	31
241	89.2	3.6	950	78.1	19.961	45.956	S950	14L41-	2	51
289	73.2	2.7	950	64.1	20.261	55.982	S950	14L41-	3	51
292	73.5	2.9	950	64.4	19.760	55.773	S950	14L41-	2	51
314	68.4	5.1	1784	59.9	21.054	59.927	S2100	14L41-	2	83
315	67.2	5.3	2050	58.8	22.272	61.049	S2100	14L41-	3	84
370	57.2	2.3	950	50.1	19.934	71.644	S950	14L41-	3	51
376	57.1	5.1	2137	50.0	21.341	71.793	S3100	14L41-	2	122
377	56.9	5.1	2146	49.9	23.287	72.000	S4500	14L41-	2	195
397	54.1	3.6	1576	47.4	20.424	75.750	S2100	14L41-	2	83
403	52.5	4.6	2050	46.0	21.346	78.128	S2100	14L41-	3	84
404	52.3	2.1	950	45.8	19.834	78.375	S950	14L41-	3	51
441	48.0	4.2	2050	42.0	21.104	85.468	S2100	14L41-	3	84
483	43.8	5.8	3100	38.4	21.542	93.599	S3100	14L41-	3	123
516	41.0	1.7	950	35.9	19.649	99.968	S950	14L41-	3	51
528	40.0	5.3	3100	35.1	21.268	102.393	S3100	14L41-	3	123
563	37.6	3.3	2050	32.9	20.579	109.016	S2100	14L41-	3	84
632	33.5	1.4	950	29.3	19.541	122.461	S950	14L41-	3	51
674	31.4	4.1	3100	27.5	20.680	130.603	S3100	14L41-	3	123
689	30.7	2.7	2050	26.9	20.265	133.544	S2100	14L41-	3	84
826	25.6	3.4	3100	22.4	20.332	159.989	S3100	14L41-	3	123
853	24.8	4.8	4500	21.7	21.222	165.215	S4500	14L41-	3	198
897	23.6	2.1	2050	20.7	19.795	173.820	S2100	14L41-	3	84
1045	20.2	3.9	4500	17.7	20.586	202.489	S4500	14L41-	3	198
1075	19.7	2.6	3100	17.2	19.887	208.240	S3100	14L41-	3	123
1116	19.0	1.7	2050	16.6	19.633	216.215	S2100	14L41-	3	84
1337	15.8	2.1	3100	13.9	19.658	259.030	S3100	14L41-	3	123
1372	15.4	3.0	4500	13.5	20.061	265.956	S4500	14L41-	3	198
1666	12.7	2.4	4500	11.1	19.828	322.773	S4500	14L41-	3	198
1822	11.4	1.5	3100	10.0	19.657	358.375	S3100	14L41-	4	126
1844	11.3	2.2	4500	9.9	19.822	362.667	S4500	14L41-	4	201
2258	9.2	1.8	4500	8.1	19.740	444.267	S4500	14L41-	4	201
2324	9.0	1.2	3100	7.9	19.611	457.111	S3100	14L41-	4	126

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
2939	7.1	1.4	4500	6.2	19.659	578.252	S4500	14L41-	4	201
3603	5.8	1.1	4500	5.1	19.618	708.711	S4500	14L41-	4	201



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
35.0	689	5.0	203	689	41.160	3.339	S400	17N23-	2	34
48.0	502	4.4	243	502	38.907	4.579	S400	17N23-	2	34
61.0	393	3.6	258	393	37.861	5.860	S400	17N23-	2	34
67.0	359	3.4	261	359	37.576	6.411	S400	17N23-	2	34
72.0	334	5.9	493	334	39.484	6.880	S660	17N23-	2	39
81.0	299	5.9	548	299	41.080	7.702	S950	17N23-	2	59
88.0	273	3.7	380	273	37.945	8.436	S400	17N23-	2	34
105	229	5.2	625	229	39.188	10.027	S660	17N23-	2	39
121	199	2.9	400	199	37.198	11.569	S400	17N23-	2	34
134	179	4.3	660	179	38.216	12.832	S660	17N23-	2	39
147	164	3.9	660	164	37.963	14.037	S660	17N23-	2	39
147	164	5.6	950	164	40.678	14.037	S950	17N23-	2	59
155	155	2.2	400	155	36.817	14.806	S400	17N23-	2	34
170	142	2.0	400	142	36.704	16.197	S400	17N23-	2	34
188	129	3.1	660	129	37.415	17.905	S660	17N23-	2	39
188	129	4.4	950	129	39.342	17.905	S950	17N23-	2	59
216	111	1.8	400	111	36.492	20.659	S400	17N23-	2	34
230	105	2.8	660	105	37.089	21.933	S660	17N23-	2	39
230	105	4.1	950	105	38.574	21.933	S950	17N23-	2	59
299	80.6	2.2	660	80.6	36.609	28.548	S660	17N23-	2	39
299	80.6	3.1	950	80.6	37.763	28.548	S950	17N23-	2	59
329	73.2	5.8	1914	73.2	41.288	31.422	S2100	17N23-	2	91
367	65.7	2.6	950	65.7	37.214	34.989	S950	17N23-	2	59
394	61.1	5.8	2293	61.1	42.332	37.644	S3100	17N23-	2	130
400	60.3	5.0	1983	60.3	39.981	38.156	S2100	17N23-	2	91
459	51.7	3.9	2050	51.7	40.679	44.515	S2100	17N23-	3	91
479	50.3	5.0	2375	50.3	40.689	45.711	S3100	17N23-	2	130
492	49.0	5.0	2435	49.0	44.586	46.933	S4500	17N23-	2	203
517	46.6	4.0	2050	46.6	38.536	49.378	S2100	17N23-	2	91
550	43.1	5.5	3054	43.1	41.283	53.330	S3100	17N23-	3	131
578	41.1	1.6	950	41.1	37.061	55.982	S950	17N23-	3	59
597	40.4	4.2	2474	40.4	42.247	56.960	S4500	17N23-	2	203
620	38.9	4.0	2461	38.9	38.959	59.156	S3100	17N23-	2	130
628	38.4	3.3	2050	38.4	37.854	59.927	S2100	17N23-	2	91
630	37.7	3.2	2050	37.7	39.072	61.049	S2100	17N23-	3	91
739	32.1	1.3	950	32.1	36.734	71.644	S950	17N23-	3	59
752	32.0	3.2	2408	32.0	38.141	71.793	S3100	17N23-	2	130
754	31.9	3.3	2514	31.9	40.087	72.000	S4500	17N23-	2	203
755	31.4	4.1	3100	31.4	39.394	73.138	S3100	17N23-	3	131
806	29.4	2.5	2050	29.4	38.146	78.128	S2100	17N23-	3	91
809	29.3	1.2	950	29.3	36.634	78.375	S950	17N23-	3	59
838	28.3	5.4	4500	28.3	41.749	81.237	S4500	17N23-	3	206
882	26.9	2.3	2050	26.9	37.904	85.468	S2100	17N23-	3	91
966	24.6	3.2	3100	24.6	38.342	93.599	S3100	17N23-	3	131
1057	22.5	2.9	3100	22.5	38.068	102.393	S3100	17N23-	3	131
1069	22.2	4.2	4500	22.2	39.999	103.619	S4500	17N23-	3	206
1125	21.1	1.8	2050	21.1	37.379	109.016	S2100	17N23-	3	91
1310	18.1	3.4	4500	18.1	39.012	126.933	S4500	17N23-	3	206
1348	17.6	2.3	3100	17.6	37.480	130.603	S3100	17N23-	3	131
1378	17.2	1.5	2050	17.2	37.065	133.544	S2100	17N23-	3	91
1651	14.4	1.9	3100	14.4	37.132	159.989	S3100	17N23-	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, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
1705	13.9	2.6	4500	13.9	38.022	165.215	S4500	17N23-	3	206
1794	13.2	1.1	2050	13.2	36.595	173.820	S2100	17N23-	3	91
2090	11.4	2.2	4500	11.4	37.386	202.489	S4500	17N23-	3	206
2149	11.0	1.4	3100	11.0	36.687	208.240	S3100	17N23-	3	131

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
62.0	597	5.8	419	597	80.801	3.920	S660	19S23-	2	61
85.0	435	5.0	492	435	77.264	5.376	S660	19S23-	2	61
109	340	3.9	496	340	75.484	6.880	S660	19S23-	2	61
116	320	4.4	593	320	76.896	7.311	S660	19S23-	2	61
122	304	5.5	783	304	77.080	7.702	S950	19S23-	2	80
159	233	3.4	625	233	75.188	10.027	S660	19S23-	2	61
161	230	5.1	950	230	79.744	10.183	S950	19S23-	2	80
203	182	2.8	660	182	74.216	12.832	S660	19S23-	2	61
222	167	2.6	660	167	73.963	14.037	S660	19S23-	2	61
222	167	3.7	950	167	76.678	14.037	S950	19S23-	2	80
283	131	2.0	660	131	73.415	17.905	S660	19S23-	2	61
283	131	2.9	950	131	75.342	17.905	S950	19S23-	2	80
347	107	1.9	660	107	73.089	21.933	S660	19S23-	2	61
347	107	2.7	950	107	74.574	21.933	S950	19S23-	2	80
367	101	5.5	2050	101	80.792	23.193	S2100	19S23-	2	113
451	82.0	2.1	950	82.0	73.763	28.548	S950	19S23-	2	80
497	74.5	4.1	2050	74.5	77.288	31.422	S2100	19S23-	2	113
595	62.2	5.2	3100	62.2	78.332	37.644	S3100	19S23-	2	152
603	61.3	3.4	2050	61.3	75.981	38.156	S2100	19S23-	2	113
662	55.0	5.6	4291	55.0	88.002	42.520	S4500	19S23-	3	228
693	52.6	2.6	2050	52.6	76.679	44.515	S2100	19S23-	3	113
723	51.2	4.3	3100	51.2	76.689	45.711	S3100	19S23-	2	152
742	49.9	5.9	4394	49.9	80.586	46.933	S4500	19S23-	2	225
831	43.9	3.6	3054	43.9	77.283	53.330	S3100	19S23-	3	153
901	41.1	4.4	3946	41.1	78.247	56.960	S4500	19S23-	2	225
918	39.7	4.8	4500	39.7	81.777	58.933	S4500	19S23-	3	228
951	38.3	2.1	2050	38.3	75.072	61.049	S2100	19S23-	3	113
1130	32.3	4.0	4500	32.3	79.043	72.533	S4500	19S23-	3	228
1139	32.0	2.7	3100	32.0	75.394	73.138	S3100	19S23-	3	153
1217	30.0	1.7	2050	30.0	74.146	78.128	S2100	19S23-	3	113
1265	28.8	3.6	4500	28.8	77.749	81.237	S4500	19S23-	3	228
1331	27.4	1.5	2050	27.4	73.904	85.468	S2100	19S23-	3	113
1458	25.0	2.1	3100	25.0	74.342	93.599	S3100	19S23-	3	153
1595	22.9	1.9	3100	22.9	74.068	102.393	S3100	19S23-	3	153
1614	22.6	2.8	4500	22.6	75.999	103.619	S4500	19S23-	3	228
1698	21.5	1.2	2050	21.5	73.379	109.016	S2100	19S23-	3	113
1977	18.4	2.3	4500	18.4	75.012	126.933	S4500	19S23-	3	228
2034	17.9	1.5	3100	17.9	73.480	130.603	S3100	19S23-	3	153
2492	14.6	1.2	3100	14.6	73.132	159.989	S3100	19S23-	3	153
2574	14.2	1.8	4500	14.2	74.022	165.215	S4500	19S23-	3	228



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

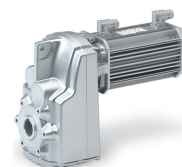
4.1 kW

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
31.0	1231	4.7	203	894	41.160	3.339	S400	17N41-	2	34
42.0	898	4.1	243	679	38.907	4.579	S400	17N41-	2	34
54.0	701	3.4	258	531	37.861	5.860	S400	17N41-	2	34
59.0	641	3.2	261	485	37.576	6.411	S400	17N41-	2	34
63.0	597	5.6	493	452	39.484	6.880	S660	17N41-	2	39
71.0	534	5.5	548	404	41.080	7.702	S950	17N41-	2	59
78.0	487	3.5	380	333	37.945	8.436	S400	17N41-	2	34
92.0	410	4.8	625	293	39.188	10.027	S660	17N41-	2	39
107	355	2.7	400	269	37.198	11.569	S400	17N41-	2	34
118	320	4.0	660	243	38.216	12.832	S660	17N41-	2	39
129	293	3.7	660	222	37.963	14.037	S660	17N41-	2	39
129	293	5.3	950	213	40.678	14.037	S950	17N41-	2	59
136	278	2.1	400	210	36.817	14.806	S400	17N41-	2	34
149	254	1.9	400	192	36.704	16.197	S400	17N41-	2	34
165	230	2.9	660	174	37.415	17.905	S660	17N41-	2	39
165	230	4.1	950	174	39.342	17.905	S950	17N41-	2	59
190	199	1.7	400	151	36.492	20.659	S400	17N41-	2	34
202	187	2.7	660	142	37.089	21.933	S660	17N41-	2	39
202	187	3.8	950	142	38.574	21.933	S950	17N41-	2	59
263	144	2.0	660	109	36.609	28.548	S660	17N41-	2	39
263	144	2.9	950	109	37.763	28.548	S950	17N41-	2	59
290	131	6.0	1914	99.0	41.288	31.422	S2100	17N41-	2	91
322	118	2.7	950	88.9	37.214	34.989	S950	17N41-	2	59
347	109	6.0	2293	82.6	42.332	37.644	S3100	17N41-	2	130
352	108	5.1	1983	81.5	39.981	38.156	S2100	17N41-	2	91
404	92.3	3.6	2050	69.8	40.679	44.515	S2100	17N41-	3	91
421	89.9	5.1	2375	68.1	40.689	45.711	S3100	17N41-	2	130
433	87.6	5.1	2435	66.3	44.586	46.933	S4500	17N41-	2	203
455	83.2	4.1	2050	63.0	38.536	49.378	S2100	17N41-	2	91
484	77.1	5.1	3054	58.3	41.283	53.330	S3100	17N41-	3	131
508	73.4	1.5	950	55.6	37.061	55.982	S950	17N41-	3	59
525	72.2	4.2	2474	54.6	42.247	56.960	S4500	17N41-	2	203
545	69.5	4.1	2461	52.6	38.959	59.156	S3100	17N41-	2	130
552	68.6	3.3	2050	51.9	37.854	59.927	S2100	17N41-	2	91
554	67.3	3.0	2050	51.0	39.072	61.049	S2100	17N41-	3	91
650	57.4	1.3	950	43.4	36.734	71.644	S950	17N41-	3	59
662	57.2	3.3	2408	43.3	38.141	71.793	S3100	17N41-	2	130
664	57.1	3.4	2514	43.2	40.087	72.000	S4500	17N41-	2	203
664	56.2	4.2	3100	42.5	39.394	73.138	S3100	17N41-	3	131
709	52.6	2.6	2050	39.8	38.146	78.128	S2100	17N41-	3	91
712	52.4	1.2	950	39.7	36.634	78.375	S950	17N41-	3	59
738	50.6	5.5	4500	38.3	41.749	81.237	S4500	17N41-	3	206
776	48.1	2.4	2050	36.4	37.904	85.468	S2100	17N41-	3	91
850	43.9	3.3	3100	33.2	38.342	93.599	S3100	17N41-	3	131
930	40.1	3.0	3100	30.4	38.068	102.393	S3100	17N41-	3	131
941	39.7	4.3	4500	30.0	39.999	103.619	S4500	17N41-	3	206
990	37.7	1.9	2050	28.5	37.379	109.016	S2100	17N41-	3	91
1152	32.4	3.5	4500	24.5	39.012	126.933	S4500	17N41-	3	206
1186	31.5	2.4	3100	23.8	37.480	130.603	S3100	17N41-	3	131
1212	30.8	1.5	2050	23.3	37.065	133.544	S2100	17N41-	3	91
1453	25.7	1.9	3100	19.4	37.132	159.989	S3100	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, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
1500	24.9	2.7	4500	18.8	38.022	165.215	S4500	17N41-	3	206
1578	23.6	1.2	2050	17.9	36.595	173.820	S2100	17N41-	3	91
1838	20.3	2.2	4500	15.4	37.386	202.489	S4500	17N41-	3	206
1891	19.7	1.5	3100	14.9	36.687	208.240	S3100	17N41-	3	131

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
63.0	772	5.6	492	456	77.264	5.376	S660	19S42-	2	61
80.0	603	4.4	496	356	75.484	6.880	S660	19S42-	2	61
85.0	568	5.0	593	335	76.896	7.311	S660	19S42-	2	61
117	414	3.8	625	244	75.188	10.027	S660	19S42-	2	61
119	408	5.7	950	241	79.744	10.183	S950	19S42-	2	80
149	323	3.2	660	191	74.216	12.832	S660	19S42-	2	61
163	296	2.9	660	174	73.963	14.037	S660	19S42-	2	61
163	296	4.1	950	174	76.678	14.037	S950	19S42-	2	80
208	232	2.3	660	137	73.415	17.905	S660	19S42-	2	61
208	232	3.3	950	137	75.342	17.905	S950	19S42-	2	80
255	189	2.1	660	112	73.089	21.933	S660	19S42-	2	61
255	189	3.0	950	112	74.574	21.933	S950	19S42-	2	80
332	145	2.3	950	85.8	73.763	28.548	S950	19S42-	2	80
366	132	5.0	2050	77.9	77.288	31.422	S2100	19S42-	2	113
444	109	4.1	2050	64.2	75.981	38.156	S2100	19S42-	2	113
510	93.2	2.9	2050	55.0	76.679	44.515	S2100	19S42-	3	113
532	90.8	5.2	3100	53.6	76.689	45.711	S3100	19S42-	2	152
612	77.8	4.0	3054	45.9	77.283	53.330	S3100	19S42-	3	153
663	72.9	5.3	3946	43.0	78.247	56.960	S4500	19S42-	2	225
676	70.4	5.4	4500	41.5	81.777	58.933	S4500	19S42-	3	228
700	68.0	2.4	2050	40.1	75.072	61.049	S2100	19S42-	3	113
832	57.2	4.9	4500	33.8	79.043	72.533	S4500	19S42-	3	228
839	56.7	3.3	3100	33.5	75.394	73.138	S3100	19S42-	3	153
896	53.1	2.1	2050	31.3	74.146	78.128	S2100	19S42-	3	113
932	51.1	4.3	4500	30.1	77.749	81.237	S4500	19S42-	3	228
980	48.6	1.9	2050	28.6	73.904	85.468	S2100	19S42-	3	113
1073	44.3	2.6	3100	26.2	74.342	93.599	S3100	19S42-	3	153
1174	40.5	2.4	3100	23.9	74.068	102.393	S3100	19S42-	3	153
1188	40.1	3.4	4500	23.6	75.999	103.619	S4500	19S42-	3	228
1250	38.1	1.5	2050	22.5	73.379	109.016	S2100	19S42-	3	113
1456	32.7	2.8	4500	19.3	75.012	126.933	S4500	19S42-	3	228
1498	31.8	1.9	3100	18.7	73.480	130.603	S3100	19S42-	3	153
1531	31.1	1.2	2050	18.3	73.065	133.544	S2100	19S42-	3	113
1835	25.9	1.5	3100	15.3	73.132	159.989	S3100	19S42-	3	153
1895	25.1	2.1	4500	14.8	74.022	165.215	S4500	19S42-	3	228



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	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
329	181	5.3	2047	146	199.274	13.787	S2100	21X25-	2	128
375	159	4.6	2050	128	194.894	15.711	S2100	21X25-	2	128
452	132	4.4	2050	106	191.503	18.917	S2100	21X25-	2	128
541	110	5.5	3100	88.8	194.383	22.663	S3100	21X25-	2	167
554	107	3.6	2050	86.8	188.792	23.193	S2100	21X25-	2	128
663	89.6	4.5	3100	72.5	190.708	27.785	S3100	21X25-	2	167
866	68.7	5.2	4500	55.5	193.495	36.267	S4500	21X25-	2	240
1000	58.6	3.6	4291	47.4	196.002	42.520	S4500	21X25-	3	243
1385	42.3	3.1	4500	34.2	189.777	58.933	S4500	21X25-	3	243
1705	34.3	2.6	4500	27.8	187.043	72.533	S4500	21X25-	3	243
1910	30.7	2.4	4500	24.8	185.749	81.237	S4500	21X25-	3	243

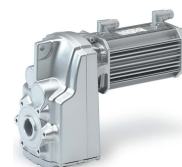
7.4 kW

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
259	265	5.6	2050	128	194.894	15.711	S2100	21X42-	2	128
312	220	5.3	2050	106	191.503	18.917	S2100	21X42-	2	128
383	179	4.3	2050	86.8	188.792	23.193	S2100	21X42-	2	128
458	150	5.5	3100	72.5	190.708	27.785	S3100	21X42-	2	167
691	97.8	4.4	4291	47.4	196.002	42.520	S4500	21X42-	3	243
957	70.6	3.8	4500	34.2	189.777	58.933	S4500	21X42-	3	243
1178	57.4	3.4	4500	27.8	187.043	72.533	S4500	21X42-	3	243
1320	51.2	3.1	4500	24.8	185.749	81.237	S4500	21X42-	3	243

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	490	4.9	194	490	24.360	3.339	S400	14L16-	2	28
45.0	426	3.9	178	426	21.796	3.840	S220	14L16-	2	24
53.0	357	4.4	243	357	22.107	4.579	S400	14L16-	2	28
61.0	310	2.9	181	310	20.744	5.267	S220	14L16-	2	24
68.0	279	3.7	258	279	21.061	5.860	S400	14L16-	2	28
75.0	255	3.4	261	255	20.776	6.411	S400	14L16-	2	28
80.0	238	5.1	401	238	22.684	6.880	S660	14L16-	2	33
89.0	213	2.4	217	213	20.699	7.667	S220	14L16-	2	24
90.0	212	5.1	448	212	24.280	7.702	S950	14L16-	2	53
98.0	194	3.8	380	194	21.145	8.436	S400	14L16-	2	28
117	163	5.2	584	163	22.388	10.027	S660	14L16-	2	33
122	156	1.8	220	156	20.161	10.514	S220	14L16-	2	24
135	141	2.9	400	141	20.398	11.569	S400	14L16-	2	28
149	127	4.3	660	127	21.416	12.832	S660	14L16-	2	33
157	122	1.4	220	122	19.873	13.456	S220	14L16-	2	24
163	117	3.9	660	117	21.163	14.037	S660	14L16-	2	33
163	117	5.7	817	117	23.878	14.037	S950	14L16-	2	53
171	111	1.3	220	111	19.783	14.720	S220	14L16-	2	24
172	110	2.3	400	110	20.017	14.806	S400	14L16-	2	28
189	101	2.1	400	101	19.904	16.197	S400	14L16-	2	28
208	91.3	3.1	660	91.3	20.615	17.905	S660	14L16-	2	33
208	91.3	4.4	950	91.3	22.542	17.905	S950	14L16-	2	53
219	87.1	1.0	220	87.1	19.618	18.776	S220	14L16-	2	24
241	79.1	1.7	400	79.1	19.692	20.659	S400	14L16-	2	28
255	74.5	2.6	660	74.5	20.289	21.933	S660	14L16-	2	33
255	74.5	3.7	950	74.5	21.774	21.933	S950	14L16-	2	53
295	64.6	1.4	400	64.6	19.570	25.308	S400	14L16-	2	28
332	57.3	2.0	660	57.3	19.809	28.548	S660	14L16-	2	33
332	57.3	2.9	950	57.3	20.963	28.548	S950	14L16-	2	53
366	52.0	4.5	1635	52.0	24.488	31.422	S2100	14L16-	2	85
407	46.7	2.3	950	46.7	20.414	34.989	S950	14L16-	2	53
413	46.0	1.6	660	46.0	19.642	35.511	S660	14L16-	2	33
438	43.4	4.5	1958	43.4	25.532	37.644	S3100	14L16-	2	124
444	42.9	3.8	1694	42.9	23.181	38.156	S2100	14L16-	2	85
510	36.7	3.9	2050	36.7	23.879	44.515	S2100	14L16-	3	85
532	35.8	3.8	2030	35.8	23.889	45.711	S3100	14L16-	2	124
535	35.6	1.8	950	35.6	19.961	45.956	S950	14L16-	2	53
546	34.8	3.8	2079	34.8	27.786	46.933	S4500	14L16-	2	197
575	33.1	3.1	1755	33.1	21.736	49.378	S2100	14L16-	2	85
612	30.7	5.0	3054	30.7	24.483	53.330	S3100	14L16-	3	125
642	29.2	1.5	950	29.2	20.261	55.982	S950	14L16-	3	53
649	29.3	1.5	950	29.3	19.760	55.773	S950	14L16-	2	53
663	28.7	3.2	2112	28.7	25.447	56.960	S4500	14L16-	2	197
689	27.6	3.1	2103	27.6	22.159	59.156	S3100	14L16-	2	124
698	27.3	2.6	1784	27.3	21.054	59.927	S2100	14L16-	2	85
700	26.8	2.9	2050	26.8	22.272	61.049	S2100	14L16-	3	85
822	22.8	1.2	950	22.8	19.934	71.644	S950	14L16-	3	53
832	22.5	5.4	4159	22.5	26.243	72.533	S4500	14L16-	3	200
836	22.8	2.6	2137	22.8	21.341	71.793	S3100	14L16-	2	124
838	22.7	2.6	2146	22.7	23.287	72.000	S4500	14L16-	2	197



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
839	22.4	3.7	3100	22.4	22.594	73.138	S3100	14L16-	3	125
882	21.6	1.8	1576	21.6	20.424	75.750	S2100	14L16-	2	85
896	20.9	2.3	2050	20.9	21.346	78.128	S2100	14L16-	3	85
899	20.9	1.1	950	20.9	19.834	78.375	S950	14L16-	3	53
932	20.1	4.8	4500	20.1	24.949	81.237	S4500	14L16-	3	200
980	19.1	2.1	2050	19.1	21.104	85.468	S2100	14L16-	3	85
1073	17.5	2.9	3100	17.5	21.542	93.599	S3100	14L16-	3	125
1174	16.0	2.6	3100	16.0	21.268	102.393	S3100	14L16-	3	125
1188	15.8	3.8	4500	15.8	23.199	103.619	S4500	14L16-	3	200
1250	15.0	1.6	2050	15.0	20.579	109.016	S2100	14L16-	3	85
1456	12.9	3.1	4500	12.9	22.212	126.933	S4500	14L16-	3	200
1498	12.5	2.1	3100	12.5	20.680	130.603	S3100	14L16-	3	125
1531	12.2	1.3	2050	12.2	20.265	133.544	S2100	14L16-	3	85
1835	10.2	1.7	3100	10.2	20.332	159.989	S3100	14L16-	3	125
1895	9.9	2.4	4500	9.9	21.222	165.215	S4500	14L16-	3	200
1993	9.4	1.0	2050	9.4	19.795	173.820	S2100	14L16-	3	85
2322	8.1	1.9	4500	8.1	20.586	202.489	S4500	14L16-	3	200
2388	7.9	1.3	3100	7.9	19.887	208.240	S3100	14L16-	3	125
2971	6.3	1.0	3100	6.3	19.658	259.030	S3100	14L16-	3	125
3050	6.1	1.5	4500	6.1	20.061	265.956	S4500	14L16-	3	200
3702	5.1	1.2	4500	5.1	19.828	322.773	S4500	14L16-	3	200
4097	4.5	1.1	4500	4.5	19.822	362.667	S4500	14L16-	4	203

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	1021	5.1	104	908	13.460	3.339	S400	13I34-	2	23
22.0	932	2.1	63.0	837	9.863	3.661	S130	13I34-	2	18
23.0	888	5.1	119	790	10.896	3.840	S220	13I34-	2	19
28.0	745	5.1	142	745	11.207	4.579	S400	13I34-	2	23
31.0	679	1.9	76.0	660	9.187	5.021	S130	13I34-	2	18
32.0	648	4.3	164	648	9.844	5.267	S220	13I34-	2	19
36.0	582	4.7	182	582	10.161	5.860	S400	13I34-	2	23
39.0	532	4.5	199	532	9.876	6.411	S400	13I34-	2	23
39.0	531	1.7	87.0	531	8.873	6.425	S130	13I34-	2	18
42.0	496	5.1	214	496	11.784	6.880	S660	13I34-	2	28
43.0	485	1.6	92.0	485	8.788	7.029	S130	13I34-	2	18
47.0	445	3.5	217	368	9.799	7.667	S220	13I34-	2	19
47.0	443	5.1	239	443	13.380	7.702	S950	13I34-	2	48
52.0	404	5.1	262	360	10.245	8.436	S400	13I34-	2	23
58.0	362	1.7	125	290	9.330	9.411	S130	13I34-	2	18
64.0	324	2.6	220	296	9.261	10.514	S220	13I34-	2	19
71.0	295	4.3	359	295	9.498	11.569	S400	13I34-	2	23
78.0	266	5.1	398	266	10.516	12.832	S660	13I34-	2	28
79.0	264	1.3	130	213	8.904	12.907	S130	13I34-	2	18
82.0	253	2.0	220	243	8.973	13.456	S220	13I34-	2	19
86.0	243	5.1	436	243	10.263	14.037	S660	13I34-	2	28
90.0	232	1.9	220	223	8.883	14.720	S220	13I34-	2	19
90.0	230	3.4	400	230	9.117	14.806	S400	13I34-	2	23
99.0	211	3.1	400	211	9.004	16.197	S400	13I34-	2	23
109	191	4.6	556	191	9.715	17.905	S660	13I34-	2	28
109	191	5.1	556	191	11.642	17.905	S950	13I34-	2	48
110	189	1.0	130	171	8.644	18.069	S130	13I34-	2	18
115	182	1.7	220	182	8.718	18.776	S220	13I34-	2	19
126	165	2.7	400	165	8.792	20.659	S400	13I34-	2	23
134	156	4.3	660	156	9.389	21.933	S660	13I34-	2	28
141	148	1.4	220	148	8.620	23.000	S220	13I34-	2	19
155	135	2.2	400	135	8.670	25.308	S400	13I34-	2	23
174	119	3.3	660	119	8.909	28.548	S660	13I34-	2	28
174	119	4.6	886	119	10.063	28.548	S950	13I34-	2	48
183	114	1.0	220	114	8.499	29.937	S220	13I34-	2	19
201	104	1.9	400	104	8.528	32.940	S400	13I34-	2	23
214	97.5	4.3	950	97.5	9.514	34.989	S950	13I34-	2	48
217	96.0	2.9	660	96.0	8.742	35.511	S660	13I34-	2	28
250	83.2	1.5	400	83.2	8.464	40.974	S400	13I34-	2	23
281	74.2	2.1	620	74.2	8.575	45.956	S660	13I34-	2	28
281	74.2	3.2	950	74.2	9.061	45.956	S950	13I34-	2	48
337	60.9	2.4	950	60.9	9.361	55.982	S950	13I34-	3	48
341	61.1	1.4	508	61.1	8.501	55.773	S660	13I34-	2	28
341	61.1	2.7	950	61.1	8.860	55.773	S950	13I34-	2	48
342	60.0	1.6	650	60.0	8.681	56.818	S660	13I34-	3	28
431	48.4	1.6	736	48.4	8.661	70.500	S950	13I34-	2	48
431	47.6	2.1	950	47.6	9.034	71.644	S950	13I34-	3	48
438	46.9	1.4	660	46.9	8.564	72.713	S660	13I34-	3	28
470	43.6	4.2	2050	43.6	10.446	78.128	S2100	13I34-	3	80
472	43.5	1.9	950	43.5	8.934	78.375	S950	13I34-	3	48
479	42.9	1.3	660	42.9	8.530	79.545	S660	13I34-	3	28



Technical data

Selection tables

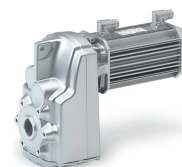
Inverter mains connection 400 V, Forced ventilated motors

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
515	39.9	3.8	2050	39.9	10.204	85.468	S2100	13I34-	3	80
564	36.4	5.3	2862	36.4	10.642	93.599	S3100	13I34-	3	120
602	34.1	1.5	950	34.1	8.749	99.968	S950	13I34-	3	48
611	33.6	1.0	660	33.6	8.462	101.460	S660	13I34-	3	28
616	33.3	4.8	3100	33.3	10.368	102.393	S3100	13I34-	3	120
656	31.3	3.0	2050	31.3	9.679	109.016	S2100	13I34-	3	80
737	27.8	1.2	950	27.8	8.641	122.461	S950	13I34-	3	48
786	26.1	3.8	3100	26.1	9.780	130.603	S3100	13I34-	3	120
804	25.5	2.4	2050	25.5	9.365	133.544	S2100	13I34-	3	80
963	21.3	3.1	3100	21.3	9.432	159.989	S3100	13I34-	3	120
995	20.6	4.3	4500	20.6	10.322	165.215	S4500	13I34-	3	195
1047	19.6	1.9	2050	19.6	8.895	173.820	S2100	13I34-	3	80
1219	16.8	3.5	4500	16.8	9.686	202.489	S4500	13I34-	3	195
1254	16.4	2.4	3100	16.4	8.987	208.240	S3100	13I34-	3	120
1302	15.8	1.5	2050	15.8	8.733	216.215	S2100	13I34-	3	80
1560	13.2	1.9	3100	13.2	8.758	259.030	S3100	13I34-	3	120
1601	12.8	2.7	4500	12.8	9.161	265.956	S4500	13I34-	3	195
1685	12.2	1.2	2050	12.2	8.570	279.807	S2100	13I34-	3	80
1943	10.6	2.2	4500	10.6	8.928	322.773	S4500	13I34-	3	195
2018	10.2	1.5	3100	10.2	8.585	335.215	S3100	13I34-	3	120
2125	9.5	1.4	3100	9.5	8.757	358.375	S3100	13I34-	4	123
2151	9.4	2.0	4500	9.4	8.922	362.667	S4500	13I34-	4	198
2449	8.4	1.2	3100	8.4	8.507	406.829	S3100	13I34-	3	120
2456	8.4	1.7	4410	8.4	8.703	408.000	S4500	13I34-	3	195
2635	7.7	1.6	4500	7.7	8.840	444.267	S4500	13I34-	4	198
2711	7.5	1.1	3100	7.5	8.711	457.111	S3100	13I34-	4	123
3429	5.9	1.3	4500	5.9	8.759	578.252	S4500	13I34-	4	198
4203	4.8	1.0	4500	4.8	8.718	708.711	S4500	13I34-	4	198

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
70.0	503	2.8	203	503	41.160	3.339	S400	17N17-	2	36
82.0	429	3.9	332	429	44.801	3.920	S660	17N17-	2	42
91.0	384	4.8	425	384	49.117	4.380	S950	17N17-	2	61
96.0	367	2.5	243	367	38.907	4.579	S400	17N17-	2	36
112	313	3.9	455	313	41.264	5.376	S660	17N17-	2	42
112	312	4.2	491	312	45.248	5.391	S950	17N17-	2	61
122	287	2.0	258	287	37.861	5.860	S400	17N17-	2	36
126	279	5.3	585	279	65.232	6.029	S2100	17N17-	2	93
126	278	3.9	511	278	43.506	6.038	S950	17N17-	2	61
134	262	1.9	261	262	37.576	6.411	S400	17N17-	2	36
136	259	5.3	631	259	86.653	6.499	S3100	17N17-	2	133
143	245	4.8	667	245	58.562	6.870	S2100	17N17-	2	93
144	244	3.3	493	244	39.484	6.880	S660	17N17-	2	42
153	230	3.7	593	230	40.896	7.311	S660	17N17-	2	42
154	227	4.8	719	227	75.059	7.406	S3100	17N17-	2	133
161	218	3.3	548	218	41.080	7.702	S950	17N17-	2	61
173	203	4.2	750	203	52.792	8.272	S2100	17N17-	2	93
176	199	2.1	380	199	37.945	8.436	S400	17N17-	2	36
186	188	4.2	809	188	64.171	8.917	S3100	17N17-	2	133
209	168	2.9	625	168	39.188	10.027	S660	17N17-	2	42
212	165	4.3	950	165	43.744	10.183	S950	17N17-	2	61
228	154	3.6	851	154	55.882	10.932	S3100	17N17-	2	133
241	145	1.6	400	145	37.198	11.569	S400	17N17-	2	36
268	131	2.4	660	131	38.216	12.832	S660	17N17-	2	42
288	122	5.3	1338	122	55.274	13.787	S2100	17N17-	2	93
293	120	2.2	660	120	37.963	14.037	S660	17N17-	2	42
293	120	3.1	950	120	40.678	14.037	S950	17N17-	2	61
309	114	1.3	400	114	36.817	14.806	S400	17N17-	2	36
328	107	4.8	1524	107	50.894	15.711	S2100	17N17-	2	93
338	104	1.1	400	104	36.704	16.197	S400	17N17-	2	36
345	102	5.3	1603	102	60.696	16.517	S3100	17N17-	2	133
373	93.8	1.7	660	93.8	37.415	17.905	S660	17N17-	2	42
373	93.8	2.5	950	93.8	39.342	17.905	S950	17N17-	2	61
381	91.9	5.4	1774	91.9	74.754	18.286	S4500	17N17-	2	206
393	89.3	5.0	1826	89.3	55.070	18.822	S3100	17N17-	2	133
395	88.8	4.4	1716	88.8	47.503	18.917	S2100	17N17-	2	93
458	76.6	1.4	660	76.6	37.089	21.933	S660	17N17-	2	42
458	76.6	2.1	950	76.6	38.574	21.933	S950	17N17-	2	61
473	74.1	4.4	2056	74.1	50.383	22.663	S3100	17N17-	2	133
484	72.4	3.7	1804	72.4	44.792	23.193	S2100	17N17-	2	93
580	60.5	3.7	2162	60.5	46.708	27.785	S3100	17N17-	2	133
596	58.8	1.1	660	58.8	36.609	28.548	S660	17N17-	2	42
596	58.8	1.6	950	58.8	37.763	28.548	S950	17N17-	2	61
616	56.9	3.7	2283	56.9	54.441	29.511	S4500	17N17-	2	206
655	53.5	2.9	1914	53.5	41.288	31.422	S2100	17N17-	2	93
730	48.0	1.3	950	48.0	37.214	34.989	S950	17N17-	2	61
757	46.3	3.1	2350	46.3	49.495	36.267	S4500	17N17-	2	206
785	44.6	2.9	2293	44.6	42.332	37.644	S3100	17N17-	2	133
796	44.0	2.5	1983	44.0	39.981	38.156	S2100	17N17-	2	93
874	39.5	4.7	4063	39.5	52.002	42.520	S4500	17N17-	3	209
915	37.7	2.2	2050	37.7	40.679	44.515	S2100	17N17-	3	94



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
954	36.8	2.5	2375	36.8	40.689	45.711	S3100	17N17-	2	133
979	35.8	2.5	2435	35.8	44.586	46.933	S4500	17N17-	2	206
1030	34.0	2.0	2050	34.0	38.536	49.378	S2100	17N17-	2	93
1096	31.5	2.8	3054	31.5	41.283	53.330	S3100	17N17-	3	134
1188	29.5	2.1	2474	29.5	42.247	56.960	S4500	17N17-	2	206
1211	28.5	3.7	4500	28.5	45.777	58.933	S4500	17N17-	3	209
1234	28.4	2.0	2461	28.4	38.959	59.156	S3100	17N17-	2	133
1250	28.0	1.6	2050	28.0	37.854	59.927	S2100	17N17-	2	93
1254	27.5	1.6	2050	27.5	39.072	61.049	S2100	17N17-	3	94
1490	23.2	3.0	4500	23.2	43.043	72.533	S4500	17N17-	3	209
1498	23.4	1.6	2408	23.4	38.141	71.793	S3100	17N17-	2	133
1502	23.3	1.7	2514	23.3	40.087	72.000	S4500	17N17-	2	206
1503	23.0	2.1	3100	23.0	39.394	73.138	S3100	17N17-	3	134
1605	21.5	1.3	2050	21.5	38.146	78.128	S2100	17N17-	3	94
1669	20.7	2.7	4500	20.7	41.749	81.237	S4500	17N17-	3	209
1756	19.7	1.2	2050	19.7	37.904	85.468	S2100	17N17-	3	94
1923	17.9	1.6	3100	17.9	38.342	93.599	S3100	17N17-	3	134
2104	16.4	1.5	3100	16.4	38.068	102.393	S3100	17N17-	3	134
2129	16.2	2.1	4500	16.2	39.999	103.619	S4500	17N17-	3	209
2608	13.2	1.7	4500	13.2	39.012	126.933	S4500	17N17-	3	209
2683	12.9	1.2	3100	12.9	37.480	130.603	S3100	17N17-	3	134
3395	10.2	1.3	4500	10.2	38.022	165.215	S4500	17N17-	3	209
4161	8.3	1.1	4500	8.3	37.386	202.489	S4500	17N17-	3	209

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
35.0	1035	4.2	194	874	24.360	3.339	S400	14L35-	2	28
40.0	900	3.4	178	726	21.796	3.840	S220	14L35-	2	24
41.0	881	5.2	228	658	28.001	3.920	S660	14L35-	2	33
48.0	755	3.8	243	735	22.107	4.579	S400	14L35-	2	28
55.0	656	2.5	181	586	20.744	5.267	S220	14L35-	2	24
56.0	643	5.2	313	556	24.464	5.376	S660	14L35-	2	33
56.0	641	5.6	314	540	28.448	5.391	S950	14L35-	2	53
61.0	590	3.2	258	590	21.061	5.860	S400	14L35-	2	28
63.0	572	5.2	352	494	26.706	6.038	S950	14L35-	2	53
67.0	539	3.0	261	539	20.776	6.411	S400	14L35-	2	28
72.0	502	4.4	401	487	22.684	6.880	S660	14L35-	2	33
77.0	473	5.2	426	353	24.096	7.311	S660	14L35-	2	33
80.0	451	2.1	217	327	20.699	7.667	S220	14L35-	2	24
81.0	449	4.4	448	437	24.280	7.702	S950	14L35-	2	53
87.0	418	5.6	482	352	35.992	8.272	S2100	14L35-	2	85
88.0	410	3.3	380	329	21.145	8.436	S400	14L35-	2	28
93.0	388	5.6	519	326	47.371	8.917	S3100	14L35-	2	124
105	345	4.5	584	289	22.388	10.027	S660	14L35-	2	33
110	329	1.5	220	241	20.161	10.514	S220	14L35-	2	24
121	299	2.5	400	267	20.398	11.569	S400	14L35-	2	28
134	269	3.7	660	252	21.416	12.832	S660	14L35-	2	33
141	257	1.2	220	190	19.873	13.456	S220	14L35-	2	24
147	246	3.4	660	234	21.163	14.037	S660	14L35-	2	33
147	246	4.9	817	210	23.878	14.037	S950	14L35-	2	53
154	235	1.1	220	176	19.783	14.720	S220	14L35-	2	24
155	233	2.0	400	219	20.017	14.806	S400	14L35-	2	28
170	213	1.8	400	199	19.904	16.197	S400	14L35-	2	28
188	193	2.7	660	193	20.615	17.905	S660	14L35-	2	33
188	193	3.8	950	183	22.542	17.905	S950	14L35-	2	53
216	167	1.6	400	167	19.692	20.659	S400	14L35-	2	28
230	158	2.5	660	158	20.289	21.933	S660	14L35-	2	33
230	158	3.6	950	158	21.774	21.933	S950	14L35-	2	53
265	137	1.3	400	137	19.570	25.308	S400	14L35-	2	28
299	121	1.9	660	121	19.809	28.548	S660	14L35-	2	33
299	121	2.7	950	121	20.963	28.548	S950	14L35-	2	53
329	110	4.7	1635	110	24.488	31.422	S2100	14L35-	2	85
367	98.7	2.5	950	98.7	20.414	34.989	S950	14L35-	2	53
372	97.3	1.7	660	97.3	19.642	35.511	S660	14L35-	2	33
394	91.8	4.7	1958	91.8	25.532	37.644	S3100	14L35-	2	124
400	90.6	4.0	1694	90.6	23.181	38.156	S2100	14L35-	2	85
459	77.6	3.4	2050	68.8	23.879	44.515	S2100	14L35-	3	85
479	75.6	4.0	2030	75.6	23.889	45.711	S3100	14L35-	2	124
482	75.2	1.9	950	75.2	19.961	45.956	S950	14L35-	2	53
492	73.6	4.0	2079	73.6	27.786	46.933	S4500	14L35-	2	197
517	70.0	3.2	1755	70.0	21.736	49.378	S2100	14L35-	2	85
550	64.8	4.8	3054	61.7	24.483	53.330	S3100	14L35-	3	125
578	61.7	1.4	950	56.8	20.261	55.982	S950	14L35-	3	53
584	61.9	1.6	950	61.9	19.760	55.773	S950	14L35-	2	53
597	60.7	3.4	2112	60.7	25.447	56.960	S4500	14L35-	2	197
620	58.4	3.2	2103	58.4	22.159	59.156	S3100	14L35-	2	124
628	57.7	2.7	1784	57.7	21.054	59.927	S2100	14L35-	2	85



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
630	56.6	2.8	2050	56.0	22.272	61.049	S2100	14L35-	3	85
739	48.2	1.2	950	47.0	19.934	71.644	S950	14L35-	3	53
749	47.6	5.7	4159	47.6	26.243	72.533	S4500	14L35-	3	200
752	48.1	2.7	2137	48.1	21.341	71.793	S3100	14L35-	2	124
754	48.0	2.7	2146	48.0	23.287	72.000	S4500	14L35-	2	197
755	47.2	3.9	3100	47.2	22.594	73.138	S3100	14L35-	3	125
794	45.6	1.9	1576	45.6	20.424	75.750	S2100	14L35-	2	85
806	44.2	2.4	2050	44.2	21.346	78.128	S2100	14L35-	3	85
809	44.1	1.1	950	43.6	19.834	78.375	S950	14L35-	3	53
838	42.5	5.1	4500	42.5	24.949	81.237	S4500	14L35-	3	200
882	40.4	2.2	2050	40.4	21.104	85.468	S2100	14L35-	3	85
966	36.9	3.1	3100	36.9	21.542	93.599	S3100	14L35-	3	125
1057	33.7	2.8	3100	33.7	21.268	102.393	S3100	14L35-	3	125
1069	33.3	4.0	4500	33.3	23.199	103.619	S4500	14L35-	3	200
1125	31.7	1.7	2050	31.7	20.579	109.016	S2100	14L35-	3	85
1310	27.2	3.3	4500	27.2	22.212	126.933	S4500	14L35-	3	200
1348	26.5	2.2	3100	26.5	20.680	130.603	S3100	14L35-	3	125
1378	25.9	1.4	2050	25.9	20.265	133.544	S2100	14L35-	3	85
1651	21.6	1.8	3100	21.6	20.332	159.989	S3100	14L35-	3	125
1705	20.9	2.5	4500	20.9	21.222	165.215	S4500	14L35-	3	200
1794	19.9	1.1	2050	19.9	19.795	173.820	S2100	14L35-	3	85
2090	17.1	2.1	4500	17.1	20.586	202.489	S4500	14L35-	3	200
2149	16.6	1.4	3100	16.6	19.887	208.240	S3100	14L35-	3	125
2674	13.3	1.1	3100	13.3	19.658	259.030	S3100	14L35-	3	125
2745	13.0	1.6	4500	13.0	20.061	265.956	S4500	14L35-	3	200
3331	10.7	1.3	4500	10.7	19.828	322.773	S4500	14L35-	3	200
3687	9.5	1.2	4500	9.5	19.822	362.667	S4500	14L35-	4	203

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
138	434	2.9	419	434	80.801	3.920	S660	19S17-	2	64
154	388	3.9	621	388	85.117	4.380	S950	19S17-	2	84
189	316	2.5	492	316	77.264	5.376	S660	19S17-	2	64
190	315	3.5	691	315	81.248	5.391	S950	19S17-	2	84
213	282	3.3	732	282	79.506	6.038	S950	19S17-	2	84
242	247	5.9	1200	247	94.562	6.870	S2100	19S17-	2	116
242	247	2.0	496	247	75.484	6.880	S660	19S17-	2	64
257	233	2.2	593	233	76.896	7.311	S660	19S17-	2	64
261	230	6.0	1293	230	111.059	7.406	S3100	19S17-	2	155
271	221	2.8	783	221	77.080	7.702	S950	19S17-	2	84
291	206	4.9	1445	206	88.792	8.272	S2100	19S17-	2	116
314	191	5.3	1557	191	100.171	8.917	S3100	19S17-	2	155
353	170	1.7	625	170	75.188	10.027	S660	19S17-	2	64
359	167	2.5	950	167	79.744	10.183	S950	19S17-	2	84
370	162	4.9	1834	162	100.396	10.504	S2100	19S17-	2	116
385	156	4.5	1807	156	91.882	10.932	S3100	19S17-	2	155
452	133	1.4	660	133	74.216	12.832	S660	19S17-	2	64
486	123	4.0	2047	123	91.274	13.787	S2100	19S17-	2	116
494	121	1.3	660	121	73.963	14.037	S660	19S17-	2	64
494	121	1.8	950	121	76.678	14.037	S950	19S17-	2	84
553	108	3.6	2050	108	86.894	15.711	S2100	19S17-	2	116
582	103	5.1	2885	103	96.696	16.517	S3100	19S17-	2	155
631	94.9	1.0	660	94.9	73.415	17.905	S660	19S17-	2	64
631	94.9	1.4	950	94.9	75.342	17.905	S950	19S17-	2	84
663	90.3	4.7	3100	90.3	91.070	18.822	S3100	19S17-	2	155
666	89.9	3.1	2050	89.9	83.503	18.917	S2100	19S17-	2	116
772	77.5	1.2	950	77.5	74.574	21.933	S950	19S17-	2	84
789	75.9	5.6	3912	75.9	101.159	22.400	S4500	19S17-	2	228
798	75.0	3.9	3100	75.0	86.383	22.663	S3100	19S17-	2	155
817	73.3	2.5	2050	73.3	80.792	23.193	S2100	19S17-	2	116
979	61.2	3.2	3100	61.2	82.708	27.785	S3100	19S17-	2	155
1039	57.6	4.3	4500	57.6	90.441	29.511	S4500	19S17-	2	228
1107	54.1	1.9	2050	54.1	77.288	31.422	S2100	19S17-	2	116
1277	46.9	3.5	4500	46.9	85.495	36.267	S4500	19S17-	2	228
1326	45.2	2.3	3100	45.2	78.332	37.644	S3100	19S17-	2	155
1344	44.6	1.5	2050	44.6	75.981	38.156	S2100	19S17-	2	116
1475	40.0	2.8	4291	40.0	88.002	42.520	S4500	19S17-	3	231
1544	38.2	1.3	2050	38.2	76.679	44.515	S2100	19S17-	3	117
1610	37.2	1.9	3100	37.2	76.689	45.711	S3100	19S17-	2	155
1653	36.2	2.7	4394	36.2	80.586	46.933	S4500	19S17-	2	228
1850	31.9	1.7	3054	31.9	77.283	53.330	S3100	19S17-	3	156
2006	29.8	2.0	3946	29.8	78.247	56.960	S4500	19S17-	2	228
2044	28.8	2.2	4500	28.8	81.777	58.933	S4500	19S17-	3	231
2516	23.4	1.8	4500	23.4	79.043	72.533	S4500	19S17-	3	231
2537	23.2	1.2	3100	23.2	75.394	73.138	S3100	19S17-	3	156
2818	20.9	1.6	4500	20.9	77.749	81.237	S4500	19S17-	3	231
3595	16.4	1.3	4500	16.4	75.999	103.619	S4500	19S17-	3	231
4403	13.4	1.0	4500	13.4	75.012	126.933	S4500	19S17-	3	231



Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors

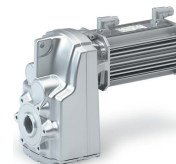
6.9 kW

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
62.0	1042	2.5	203	785	41.160	3.339	S400	17N35-	2	36
72.0	888	3.5	332	604	44.801	3.920	S660	17N35-	2	42
81.0	794	4.3	425	556	49.117	4.380	S950	17N35-	2	61
84.0	760	2.2	243	655	38.907	4.579	S400	17N35-	2	36
99.0	647	3.5	455	512	41.264	5.376	S660	17N35-	2	42
99.0	646	3.7	491	497	45.248	5.391	S950	17N35-	2	61
108	594	1.8	258	529	37.861	5.860	S400	17N35-	2	36
111	577	4.7	585	377	65.232	6.029	S2100	17N35-	2	93
111	576	3.5	511	455	43.506	6.038	S950	17N35-	2	61
118	543	1.7	261	485	37.576	6.411	S400	17N35-	2	36
120	536	4.7	631	349	86.653	6.499	S3100	17N35-	2	133
127	507	4.2	667	354	58.562	6.870	S2100	17N35-	2	93
127	506	2.9	493	448	39.484	6.880	S660	17N35-	2	42
135	476	3.3	593	321	40.896	7.311	S660	17N35-	2	42
137	470	4.2	719	328	75.059	7.406	S3100	17N35-	2	133
142	452	2.9	548	403	41.080	7.702	S950	17N35-	2	61
152	421	3.7	750	323	52.792	8.272	S2100	17N35-	2	93
156	413	1.8	380	284	37.945	8.436	S400	17N35-	2	36
164	390	3.7	809	300	64.171	8.917	S3100	17N35-	2	133
185	347	2.6	625	257	39.188	10.027	S660	17N35-	2	42
188	342	3.8	950	234	43.744	10.183	S950	17N35-	2	61
202	318	3.2	851	258	55.882	10.932	S3100	17N35-	2	133
213	301	1.4	400	212	37.198	11.569	S400	17N35-	2	36
237	271	2.1	660	224	38.216	12.832	S660	17N35-	2	42
254	252	4.7	1338	165	55.274	13.787	S2100	17N35-	2	93
259	248	1.9	660	207	37.963	14.037	S660	17N35-	2	42
259	248	2.8	950	187	40.678	14.037	S950	17N35-	2	61
273	235	1.1	400	168	36.817	14.806	S400	17N35-	2	36
290	222	4.2	1524	155	50.894	15.711	S2100	17N35-	2	93
299	215	1.0	400	156	36.704	16.197	S400	17N35-	2	36
304	211	4.7	1603	137	60.696	16.517	S3100	17N35-	2	133
330	194	1.5	660	161	37.415	17.905	S660	17N35-	2	42
330	194	2.2	950	163	39.342	17.905	S950	17N35-	2	61
337	190	5.2	1774	127	74.754	18.286	S4500	17N35-	2	206
347	185	4.8	1826	133	55.070	18.822	S3100	17N35-	2	133
349	184	4.2	1716	145	47.503	18.917	S2100	17N35-	2	93
404	159	1.4	660	142	37.089	21.933	S660	17N35-	2	42
404	159	2.0	950	142	38.574	21.933	S950	17N35-	2	61
418	154	4.2	2056	121	50.383	22.663	S3100	17N35-	2	133
428	150	3.6	1804	125	44.792	23.193	S2100	17N35-	2	93
512	125	3.6	2162	104	46.708	27.785	S3100	17N35-	2	133
526	122	1.1	660	109	36.609	28.548	S660	17N35-	2	42
526	122	1.6	950	109	37.763	28.548	S950	17N35-	2	61
544	118	3.6	2283	98.0	54.441	29.511	S4500	17N35-	2	206
579	111	3.1	1914	99.0	41.288	31.422	S2100	17N35-	2	93
645	99.5	1.4	950	88.9	37.214	34.989	S950	17N35-	2	61
669	96.0	3.4	2350	85.8	49.495	36.267	S4500	17N35-	2	206
694	92.4	3.1	2293	82.6	42.332	37.644	S3100	17N35-	2	133
703	91.2	2.7	1983	81.5	39.981	38.156	S2100	17N35-	2	93
772	81.8	4.2	4063	64.4	52.002	42.520	S4500	17N35-	3	209
808	78.2	1.9	2050	59.8	40.679	44.515	S2100	17N35-	3	94

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
843	76.1	2.7	2375	68.1	40.689	45.711	S3100	17N35-	2	133
865	74.1	2.7	2435	66.3	44.586	46.933	S4500	17N35-	2	206
910	70.5	2.1	2050	63.0	38.536	49.378	S2100	17N35-	2	93
968	65.3	2.7	3054	54.7	41.283	53.330	S3100	17N35-	3	134
1050	61.1	2.2	2474	54.6	42.247	56.960	S4500	17N35-	2	206
1070	59.0	3.6	4500	51.8	45.777	58.933	S4500	17N35-	3	209
1090	58.8	2.2	2461	52.6	38.959	59.156	S3100	17N35-	2	133
1105	58.1	1.8	2050	51.9	37.854	59.927	S2100	17N35-	2	93
1109	57.0	1.6	2050	45.8	39.072	61.049	S2100	17N35-	3	94
1317	48.0	3.3	4500	42.9	43.043	72.533	S4500	17N35-	3	209
1323	48.5	1.7	2408	43.3	38.141	71.793	S3100	17N35-	2	133
1327	48.3	1.8	2514	43.2	40.087	72.000	S4500	17N35-	2	206
1328	47.6	2.2	3100	42.5	39.394	73.138	S3100	17N35-	3	134
1419	44.5	1.4	2050	38.3	38.146	78.128	S2100	17N35-	3	94
1475	42.8	2.9	4500	38.3	41.749	81.237	S4500	17N35-	3	209
1552	40.7	1.3	2050	35.1	37.904	85.468	S2100	17N35-	3	94
1700	37.2	1.7	3100	33.2	38.342	93.599	S3100	17N35-	3	134
1859	34.0	1.6	3100	30.4	38.068	102.393	S3100	17N35-	3	134
1881	33.6	2.3	4500	30.0	39.999	103.619	S4500	17N35-	3	209
2305	27.4	1.9	4500	24.5	39.012	126.933	S4500	17N35-	3	209
2371	26.6	1.2	3100	23.8	37.480	130.603	S3100	17N35-	3	134
2905	21.8	1.0	3100	19.4	37.132	159.989	S3100	17N35-	3	134
3000	21.1	1.4	4500	18.8	38.022	165.215	S4500	17N35-	3	209
3677	17.2	1.2	4500	15.4	37.386	202.489	S4500	17N35-	3	209



Technical data

Selection tables

Inverter mains connection 400 V, Forced ventilated motors

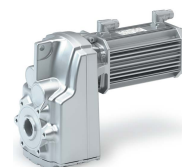
11 kW

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
274	372	4.7	1331	372	225.551	4.593	S2100	21X17-	2	131
295	345	5.3	1441	345	262.458	4.951	S3100	21X17-	2	171
359	284	4.0	1487	284	209.232	6.029	S2100	21X17-	2	131
384	265	5.6	1877	265	281.485	6.450	S4500	21X17-	2	244
387	263	4.4	1797	263	230.653	6.499	S3100	21X17-	2	171
409	249	3.5	1487	249	202.562	6.870	S2100	21X17-	2	131
420	242	5.3	2054	242	265.966	7.056	S4500	21X17-	2	244
441	231	4.1	1875	231	219.059	7.406	S3100	21X17-	2	171
493	207	2.9	1487	207	196.792	8.272	S2100	21X17-	2	131
531	192	3.6	1973	192	208.171	8.917	S3100	21X17-	2	171
626	163	2.9	1872	163	208.396	10.504	S2100	21X17-	2	131
651	156	3.1	2079	156	199.882	10.932	S3100	21X17-	2	171
750	136	3.8	2965	136	217.737	12.584	S3100	21X17-	2	171
781	131	5.5	3814	131	244.945	13.105	S4500	21X17-	2	244
821	124	2.4	2047	124	199.274	13.787	S2100	21X17-	2	131
854	119	5.0	4173	119	235.433	14.336	S4500	21X17-	2	244
936	109	2.1	2050	109	194.894	15.711	S2100	21X17-	2	131
984	104	3.0	3100	104	204.696	16.517	S3100	21X17-	2	171
1089	93.5	4.1	4500	93.5	218.754	18.286	S4500	21X17-	2	244
1121	90.9	2.8	3100	90.9	199.070	18.822	S3100	21X17-	2	171
1127	90.4	1.8	2050	90.4	191.503	18.917	S2100	21X17-	2	131
1334	76.3	3.4	4500	76.3	209.159	22.400	S4500	21X17-	2	244
1350	75.5	2.3	3100	75.5	194.383	22.663	S3100	21X17-	2	171
1382	73.7	1.5	2050	73.7	188.792	23.193	S2100	21X17-	2	131
1655	61.5	1.9	3100	61.5	190.708	27.785	S3100	21X17-	2	171
1758	57.9	2.6	4500	57.9	198.441	29.511	S4500	21X17-	2	244
2160	47.2	2.1	4500	47.2	193.495	36.267	S4500	21X17-	2	244
2495	40.2	1.7	4291	40.2	196.002	42.520	S4500	21X17-	3	247
3458	29.0	1.3	4500	29.0	189.777	58.933	S4500	21X17-	3	247
4256	23.6	1.1	4500	23.6	187.043	72.533	S4500	21X17-	3	247

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, th}	J	i	g500-	MCA	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
137	895	2.3	419	551	80.801	3.920	S660	19S35-	2	64
153	801	3.1	621	517	85.117	4.380	S950	19S35-	2	84
160	764	5.2	802	445	117.551	4.593	S2100	19S35-	2	116
173	709	5.2	865	413	154.458	4.951	S3100	19S35-	2	155
188	653	2.0	492	453	77.264	5.376	S660	19S35-	2	64
188	651	2.8	691	454	81.248	5.391	S950	19S35-	2	84
211	582	4.9	1053	379	101.232	6.029	S2100	19S35-	2	116
211	581	2.6	732	406	79.506	6.038	S950	19S35-	2	84
227	540	4.9	1135	352	122.653	6.499	S3100	19S35-	2	155
240	511	4.7	1200	356	94.562	6.870	S2100	19S35-	2	116
240	510	1.6	496	356	75.484	6.880	S660	19S35-	2	64
246	497	5.2	1232	290	157.966	7.056	S4500	19S35-	2	228
255	480	1.8	593	265	76.896	7.311	S660	19S35-	2	64
259	474	4.7	1293	331	111.059	7.406	S3100	19S35-	2	155
269	456	2.2	783	318	77.080	7.702	S950	19S35-	2	84
289	424	3.9	1445	296	88.792	8.272	S2100	19S35-	2	116
311	394	4.2	1557	275	100.171	8.917	S3100	19S35-	2	155
350	350	1.3	625	196	75.188	10.027	S660	19S35-	2	64
356	345	2.0	950	202	79.744	10.183	S950	19S35-	2	84
367	334	3.8	1834	182	100.396	10.504	S2100	19S35-	2	116
382	321	3.6	1807	224	91.882	10.932	S3100	19S35-	2	155
440	279	5.1	2198	161	109.737	12.584	S3100	19S35-	2	155
448	274	1.1	660	161	74.216	12.832	S660	19S35-	2	64
482	255	3.2	2047	151	91.274	13.787	S2100	19S35-	2	116
490	250	1.0	660	149	73.963	14.037	S660	19S35-	2	64
490	250	1.5	950	146	76.678	14.037	S950	19S35-	2	84
501	245	5.2	2504	143	127.433	14.336	S4500	19S35-	2	228
549	223	2.8	2050	141	86.894	15.711	S2100	19S35-	2	116
577	213	4.1	2885	133	96.696	16.517	S3100	19S35-	2	155
625	196	1.1	950	118	75.342	17.905	S950	19S35-	2	84
639	192	5.6	3193	129	110.754	18.286	S4500	19S35-	2	228
657	187	4.0	3100	128	91.070	18.822	S3100	19S35-	2	155
661	186	2.7	2050	129	83.503	18.917	S2100	19S35-	2	116
766	160	1.1	950	107	74.574	21.933	S950	19S35-	2	84
782	157	4.8	3912	109	101.159	22.400	S4500	19S35-	2	228
792	155	3.4	3100	108	86.383	22.663	S3100	19S35-	2	155
810	151	2.2	2050	106	80.792	23.193	S2100	19S35-	2	116
970	126	2.7	3100	88.1	82.708	27.785	S3100	19S35-	2	155
1031	119	3.7	4500	83.0	90.441	29.511	S4500	19S35-	2	228
1098	112	1.8	2050	77.9	77.288	31.422	S2100	19S35-	2	116
1267	96.8	3.4	4500	67.5	85.495	36.267	S4500	19S35-	2	228
1315	93.2	2.2	3100	65.0	78.332	37.644	S3100	19S35-	2	155
1333	92.0	1.5	2050	64.2	75.981	38.156	S2100	19S35-	2	116
1463	82.6	2.2	4291	55.2	88.002	42.520	S4500	19S35-	3	231
1531	78.9	1.0	2050	42.8	76.679	44.515	S2100	19S35-	3	117
1597	76.8	1.8	3100	53.6	76.689	45.711	S3100	19S35-	2	155
1639	74.8	2.5	4394	52.2	80.586	46.933	S4500	19S35-	2	228
1835	65.8	1.4	3054	42.2	77.283	53.330	S3100	19S35-	3	156
1990	61.6	1.9	3946	43.0	78.247	56.960	S4500	19S35-	2	228
2028	59.6	1.9	4500	41.5	81.777	58.933	S4500	19S35-	3	231
2495	48.4	1.7	4500	33.8	79.043	72.533	S4500	19S35-	3	231



Technical data

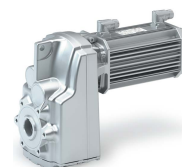
Selection tables

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
2516	48.0	1.2	3100	32.7	75.394	73.138	S3100	19S35-	3	156
2795	43.2	1.5	4500	30.1	77.749	81.237	S4500	19S35-	3	231
3565	33.9	1.2	4500	23.6	75.999	103.619	S4500	19S35-	3	231

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
245	766	4.1	1331	422	225.551	4.593	S2100	21X35-	2	131
262	716	5.8	1430	357	341.684	4.914	S4500	21X35-	2	244
264	711	4.6	1441	402	262.458	4.951	S3100	21X35-	2	171
322	584	3.5	1487	334	209.232	6.029	S2100	21X35-	2	131
344	546	4.9	1877	304	281.485	6.450	S4500	21X35-	2	244
347	542	3.9	1797	310	230.653	6.499	S3100	21X35-	2	171
367	512	3.1	1487	293	202.562	6.870	S2100	21X35-	2	131
377	499	4.6	2054	283	265.966	7.056	S4500	21X35-	2	244
395	475	3.6	1875	272	219.059	7.406	S3100	21X35-	2	171
441	426	2.5	1487	243	196.792	8.272	S2100	21X35-	2	131
476	395	3.1	1973	226	208.171	8.917	S3100	21X35-	2	171
533	353	5.8	2906	176	278.730	9.984	S4500	21X35-	2	244
561	335	2.5	1872	164	208.396	10.504	S2100	21X35-	2	131
583	322	2.7	2079	184	199.882	10.932	S3100	21X35-	2	171
672	280	3.3	2965	147	217.737	12.584	S3100	21X35-	2	171
699	269	4.8	3814	149	244.945	13.105	S4500	21X35-	2	244
736	255	2.1	2047	137	199.274	13.787	S2100	21X35-	2	131
765	246	4.4	4173	138	235.433	14.336	S4500	21X35-	2	244
838	224	1.8	2050	125	194.894	15.711	S2100	21X35-	2	131
881	213	2.7	3100	121	204.696	16.517	S3100	21X35-	2	171
976	193	3.9	4500	110	218.754	18.286	S4500	21X35-	2	244
1004	187	2.6	3100	107	199.070	18.822	S3100	21X35-	2	171
1009	186	1.7	2050	106	191.503	18.917	S2100	21X35-	2	131
1195	157	3.2	4500	89.9	209.159	22.400	S4500	21X35-	2	244
1209	155	2.2	3100	88.8	194.383	22.663	S3100	21X35-	2	171
1238	152	1.4	2050	86.8	188.792	23.193	S2100	21X35-	2	131
1483	127	1.8	3100	72.5	190.708	27.785	S3100	21X35-	2	171
1575	119	2.4	4500	68.2	198.441	29.511	S4500	21X35-	2	244
1935	97.1	2.2	4500	55.5	193.495	36.267	S4500	21X35-	2	244
2235	82.8	1.4	4291	44.5	196.002	42.520	S4500	21X35-	3	247
3098	59.7	1.2	4500	34.2	189.777	58.933	S4500	21X35-	3	247
3812	48.5	1.1	4500	27.8	187.043	72.533	S4500	21X35-	3	247
4270	43.3	1.0	4500	24.8	185.749	81.237	S4500	21X35-	3	247



Dimensions

Notes on the basic dimensions

Gearboxes	Without pre-stage	With pre-stage
g500-S130	2-stage	3-stage
g500-S220 ... S4500	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](#) [221](#)

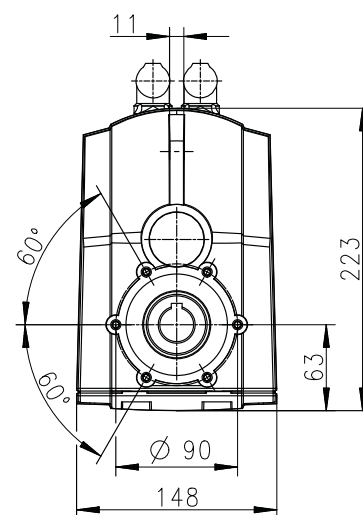
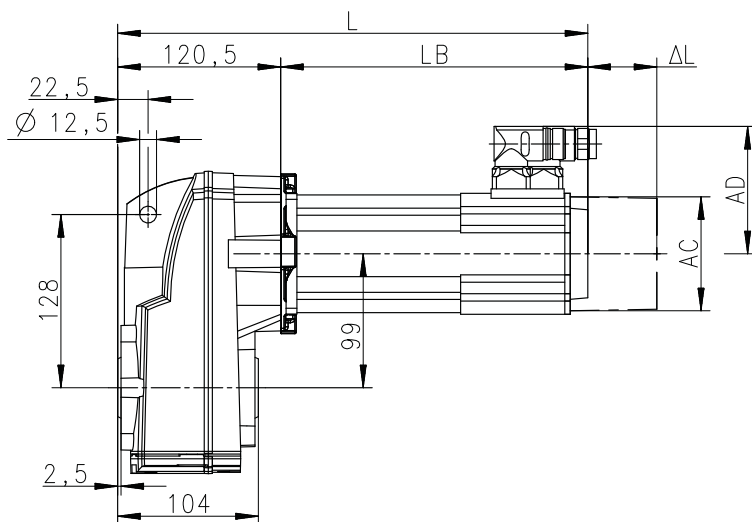
Example

g500-S130 with MCA10

Gearbox version: Hollow shaft without foot (HDR/HCR/HCK) [► Designs](#) [12](#)

Explanation

Geared motor product



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 222
Motor diameter	AC	Motor diameter
Motor/connection distance	AD	Distance from motor centre to connector end

NOTICE

For gearboxes with hollow shaft and keyway (H□□), the hole fitting H7 is interrupted in the middle area of the hollow shaft length by a free rotation.

Ensure the double-ended control of the machine shaft in the hollow shaft.

- The specified min. length of the machine shaft must be reached.



Technical data

Dimensions

Gearboxes	Min. length of the machine shaft
	mm
g500-S130	75
g500-S220	80
g500-S400	100
g500-S660	110
g500-S950	120
g500-S2100	135
g500-S3100	155
g500-S4500	190

Technical data

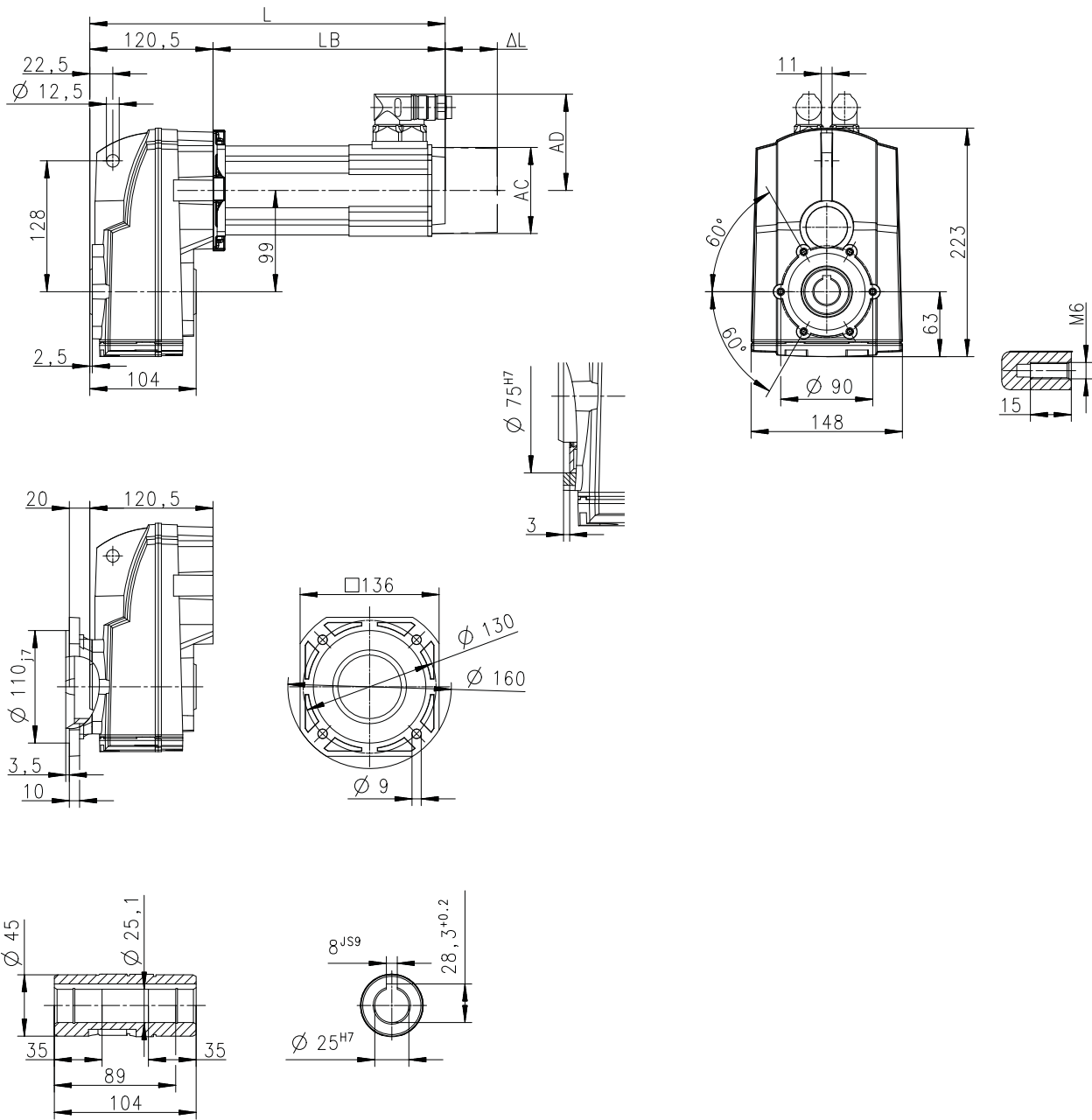
Dimensions
Basic dimensions



Basic dimensions

g500-S130, 2-stage with MCA10

Gearbox version: Hollow shaft without foot (HDR/HCR/HCK)



8800013-00

Motor			MCA
			10140-
Cooling type			natural
Total length	L	mm	380
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

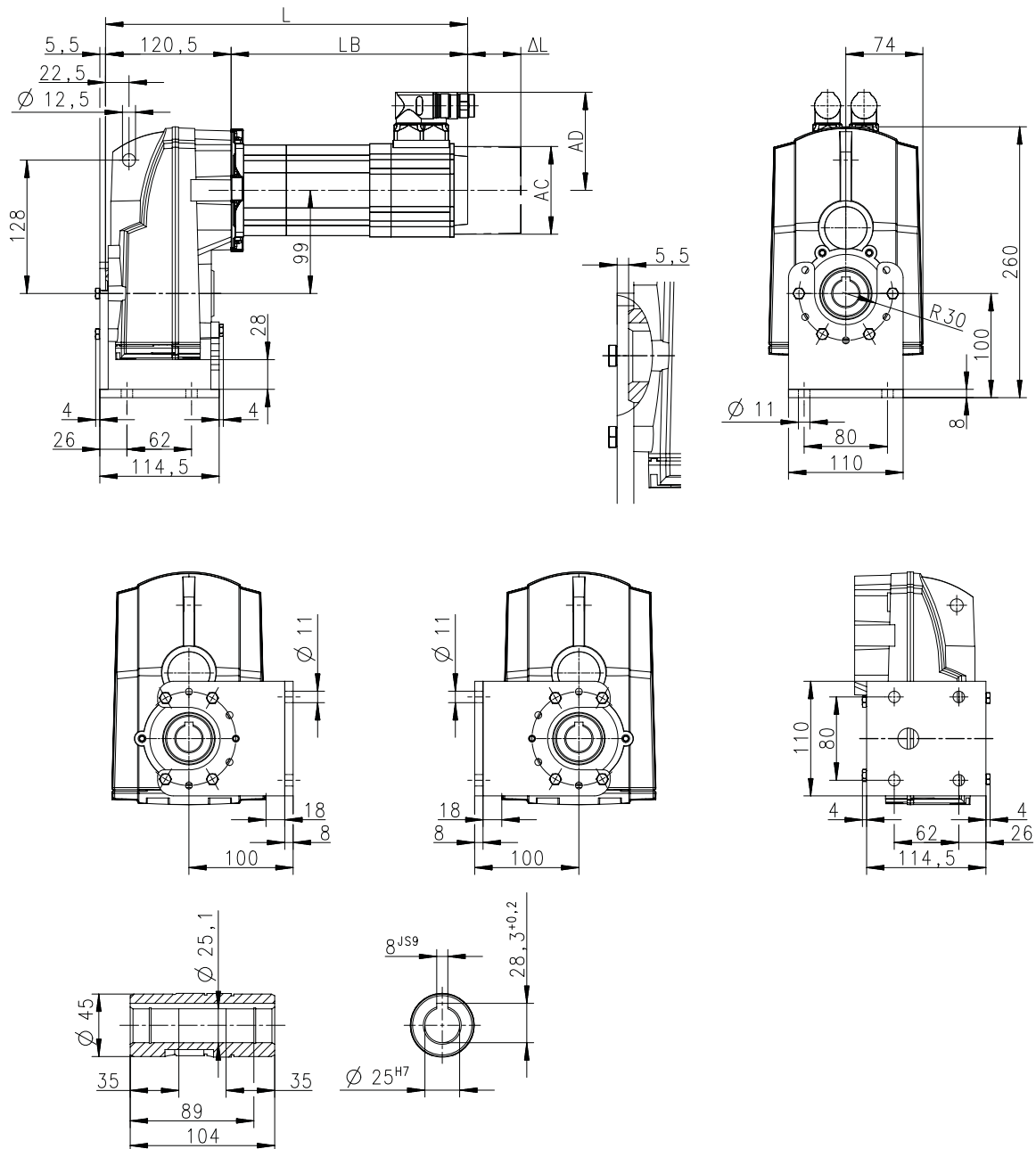


Technical data

Dimensions
Basic dimensions

g500-S130, 2-stage with MCA10

Gearbox version: Hollow shaft with foot (HBR)



8800552-00

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	380
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

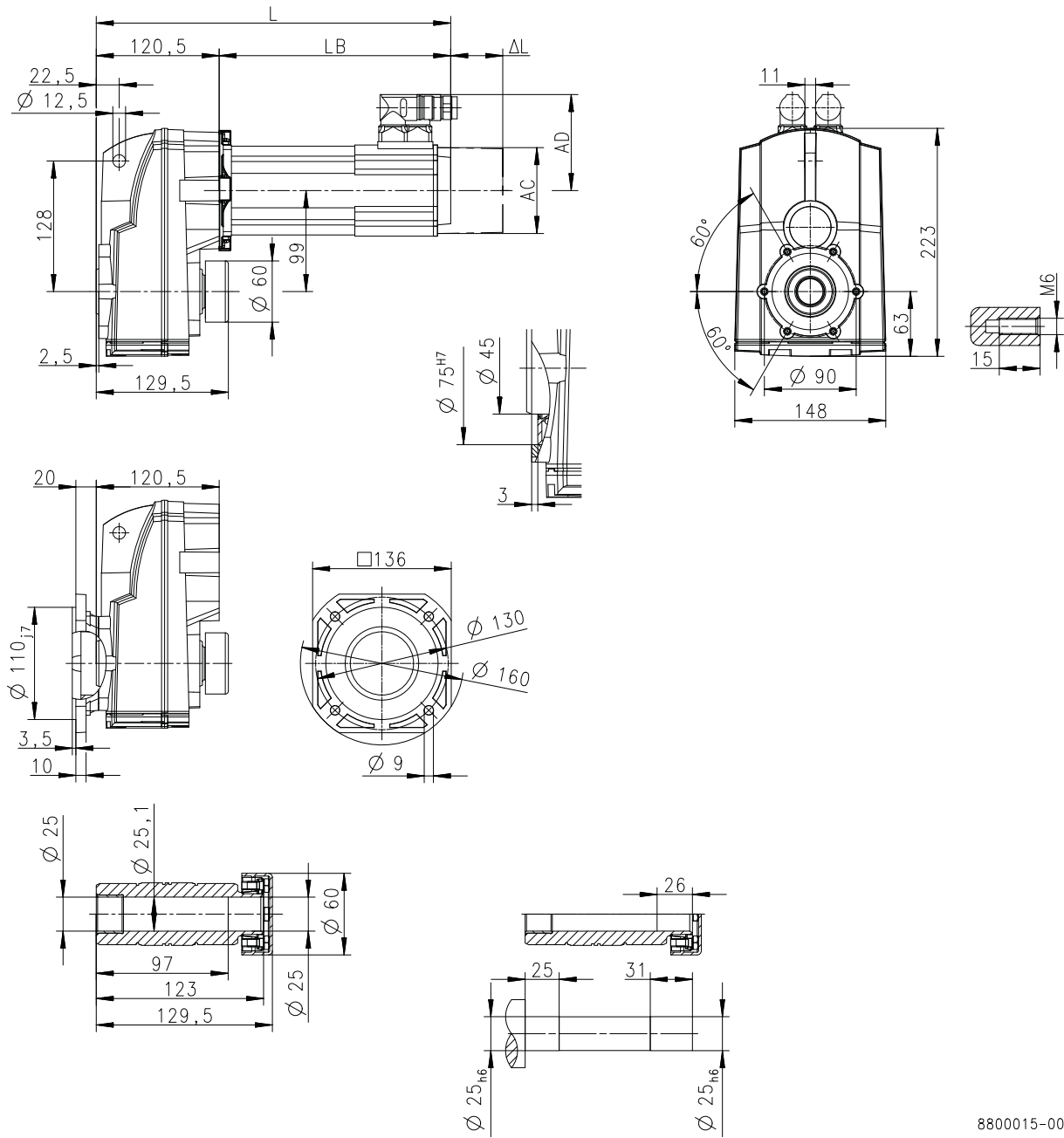
Technical data

Dimensions
Basic dimensions



g500-S130, 2-stage with MCA10

Gearbox version: Hollow shaft with shrink disc, without foot (SDR/SCR/SCK)



8800015-00

Motor			MCA
			10140-
Cooling type			natural
Total length	L	mm	380
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

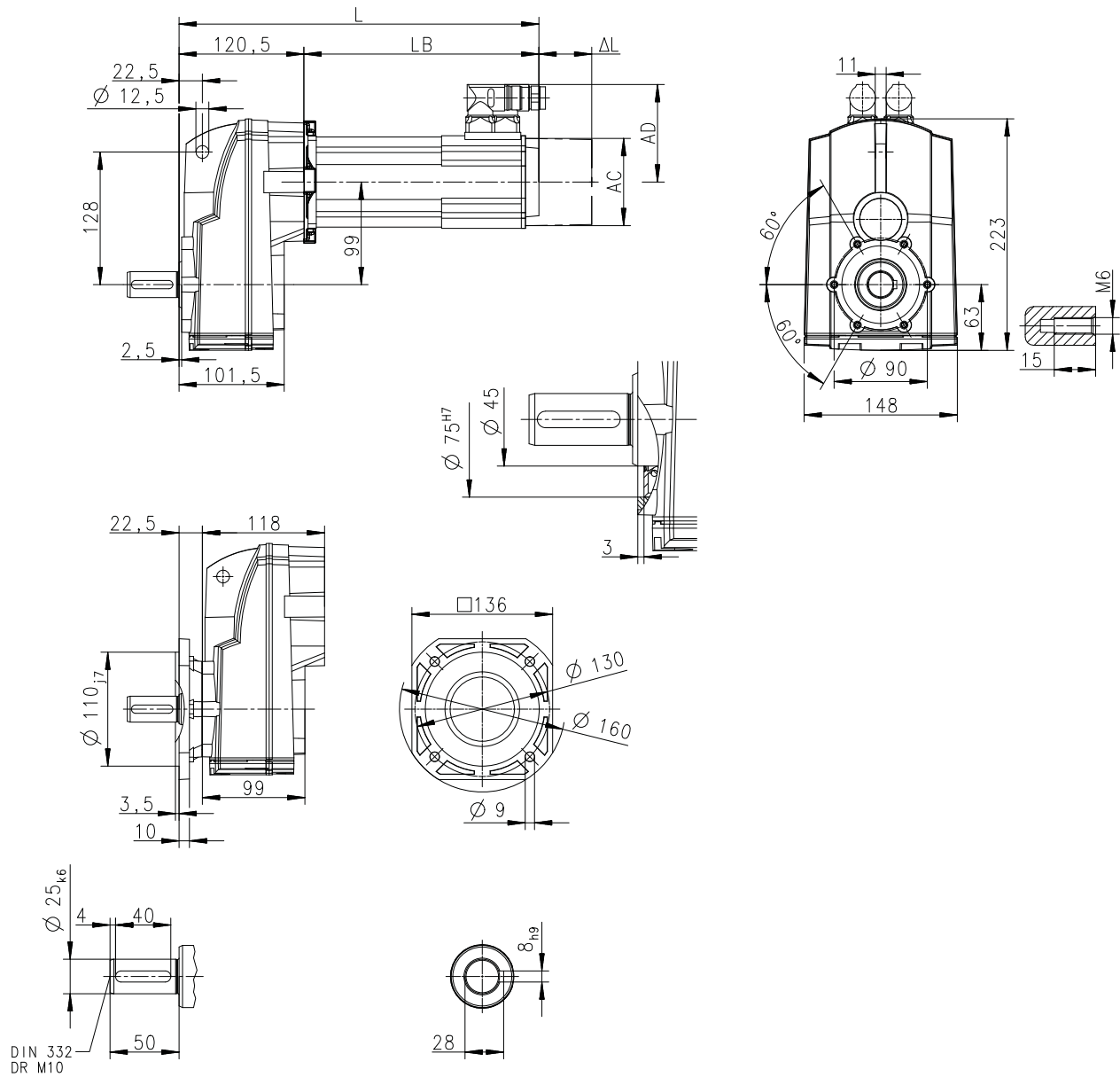


Technical data

Dimensions
Basic dimensions

g500-S130, 2-stage with MCA10

Gearbox version: Solid shaft without foot (VDR/VCR/VCK)



DIN 332
DR M10

8800014-00

Motor			MCA
			10140-
Cooling type			natural
Total length	L	mm	380
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

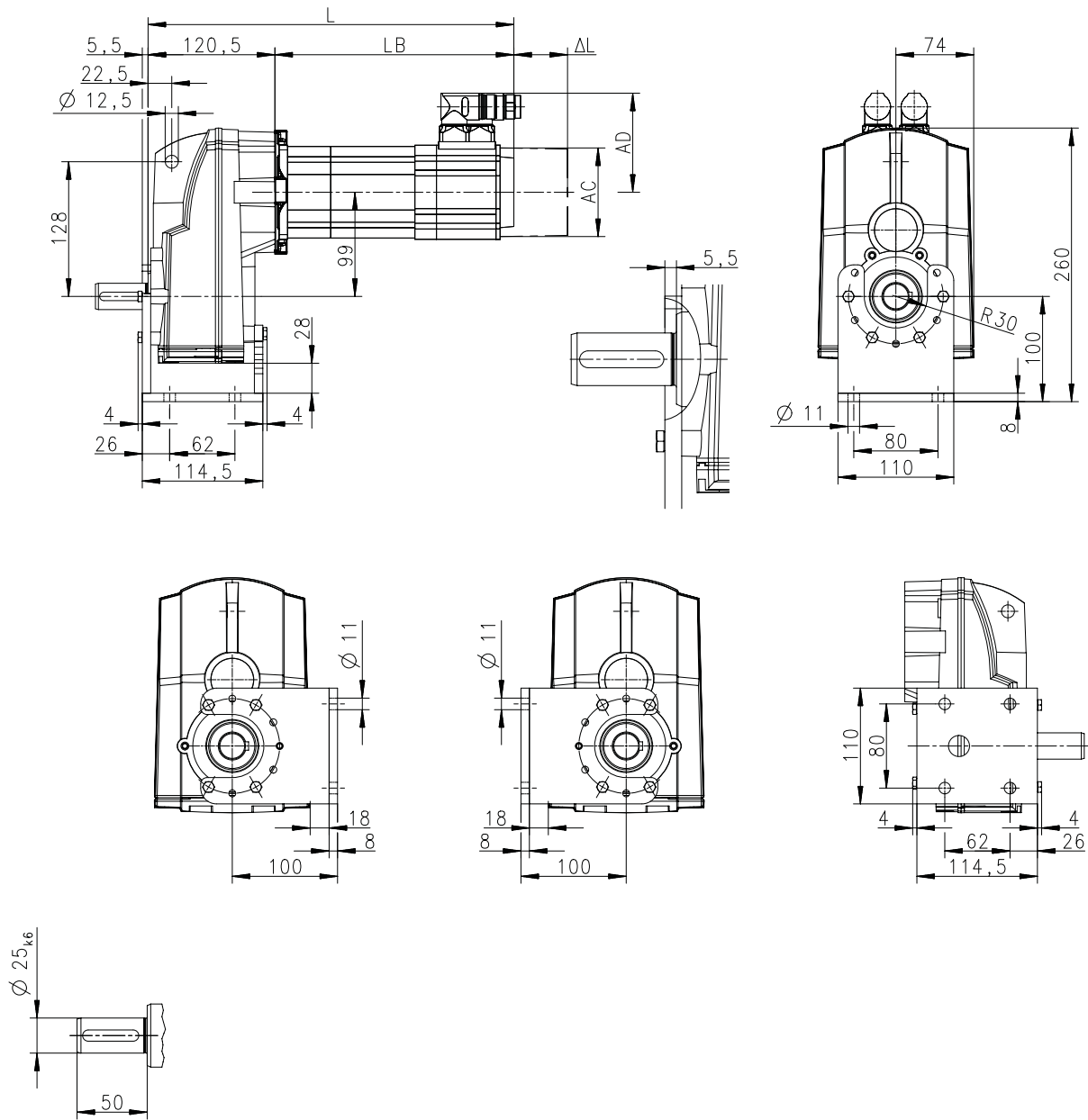
Technical data

Dimensions
Basic dimensions



g500-S130, 2-stage with MCA10

Gearbox version: Solid shaft with foot (VBR)



8800016-00

Motor			MCA
Cooling type			10I40-natural
Total length	L	mm	380
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

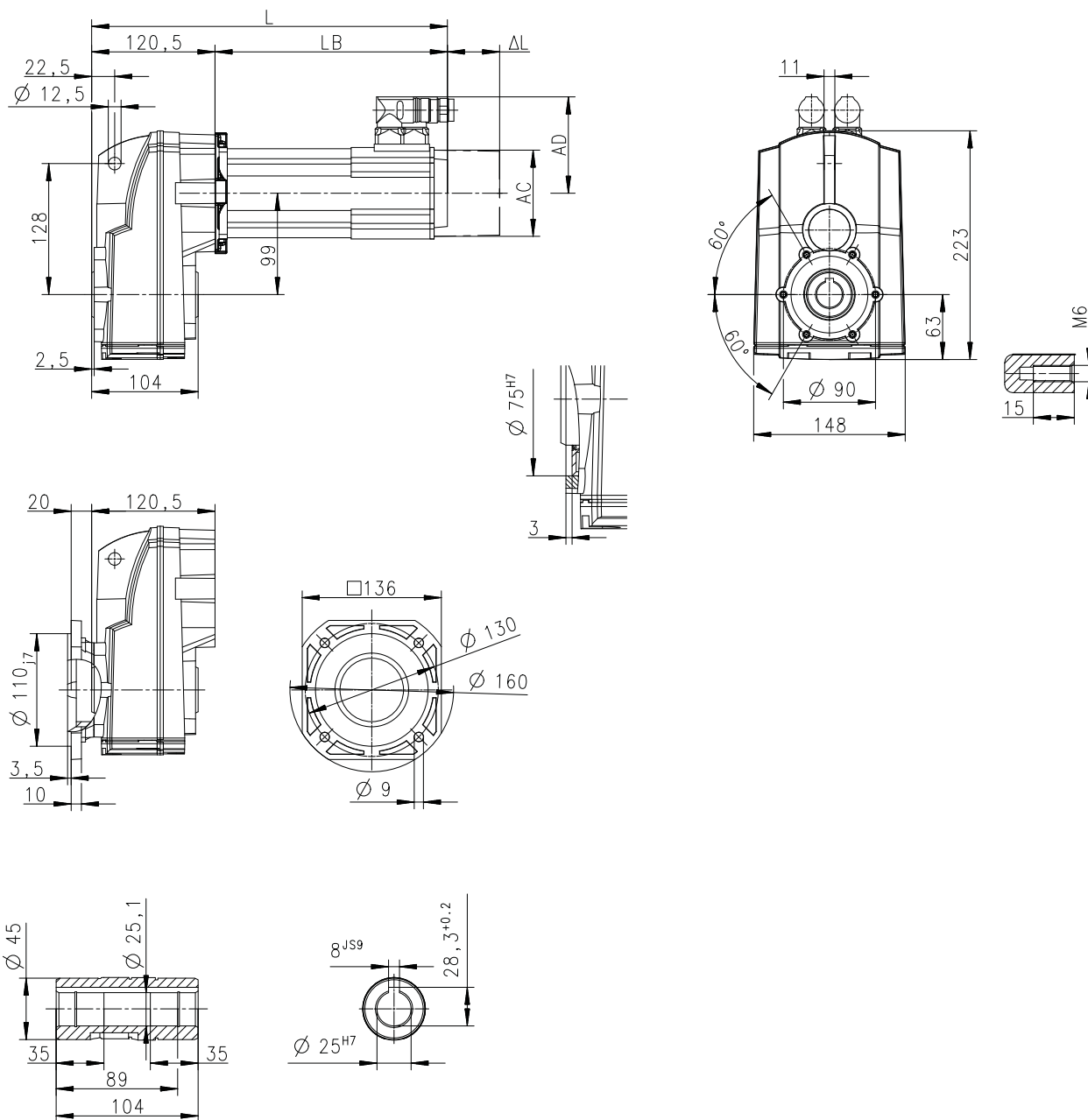


Technical data

Dimensions
Basic dimensions

g500-S130, 2-stage with MCA13

Gearbox version: Hollow shaft without foot (HDR/HCR/HCK)



8800013-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	456	388
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

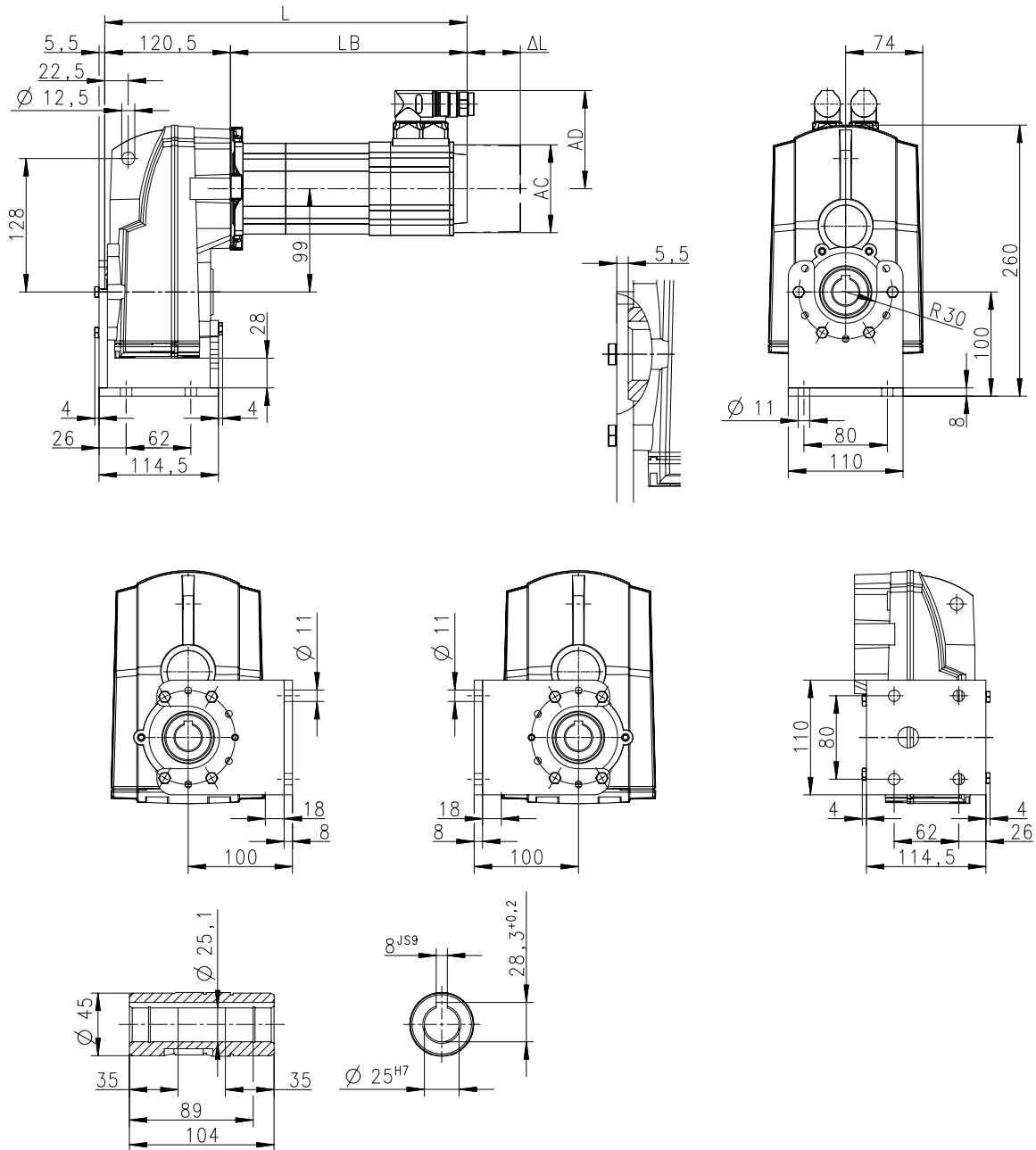
Technical data

Dimensions
Basic dimensions



g500-S130, 2-stage with MCA13

Gearbox version: Hollow shaft with foot (HBR)



8800552-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	456	388
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

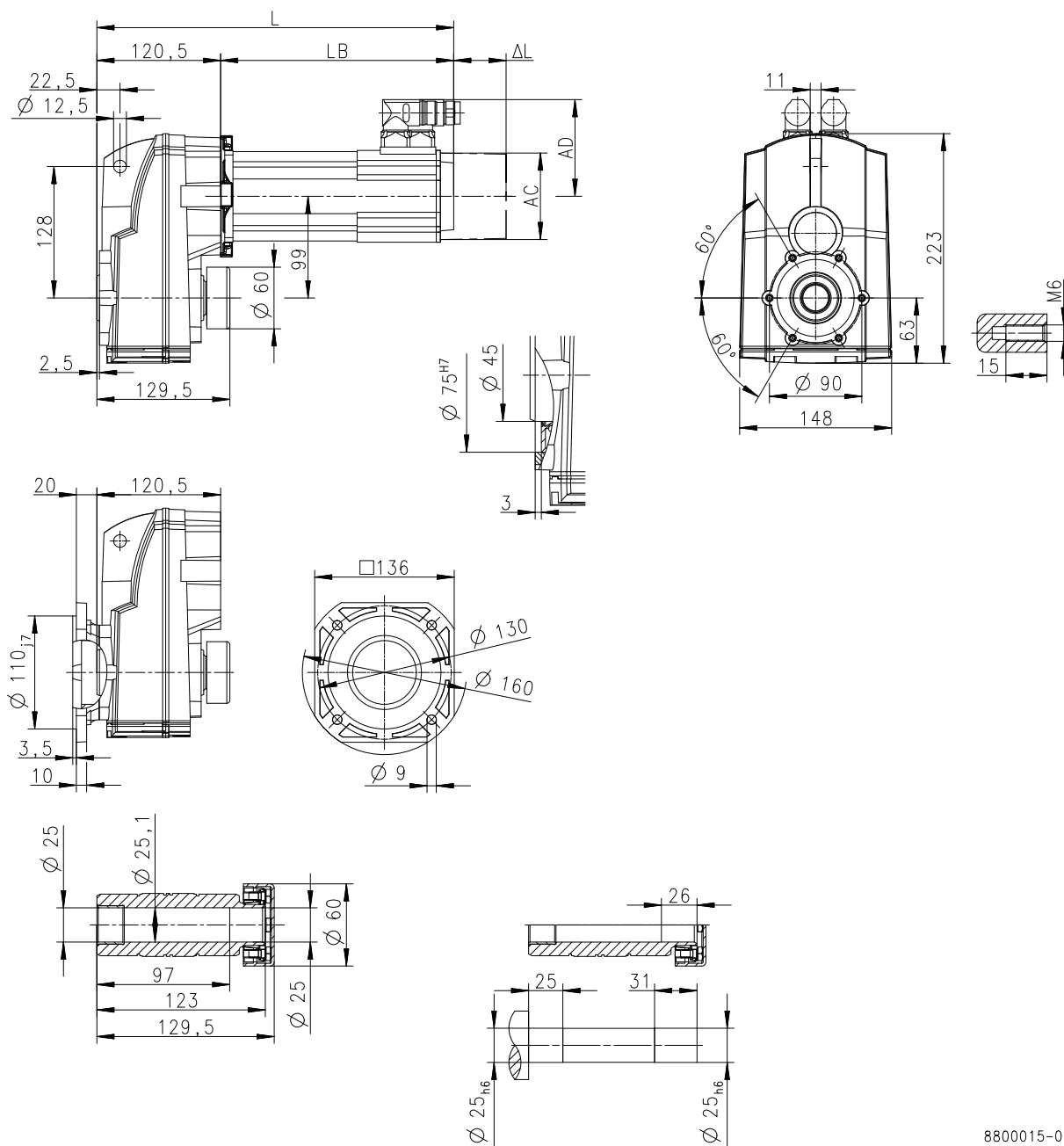


Technical data

Dimensions
Basic dimensions

g500-S130, 2-stage with MCA13

Gearbox version: Hollow shaft with shrink disc, without foot (SDR/SCR/SCK)



8800015-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	456	388
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

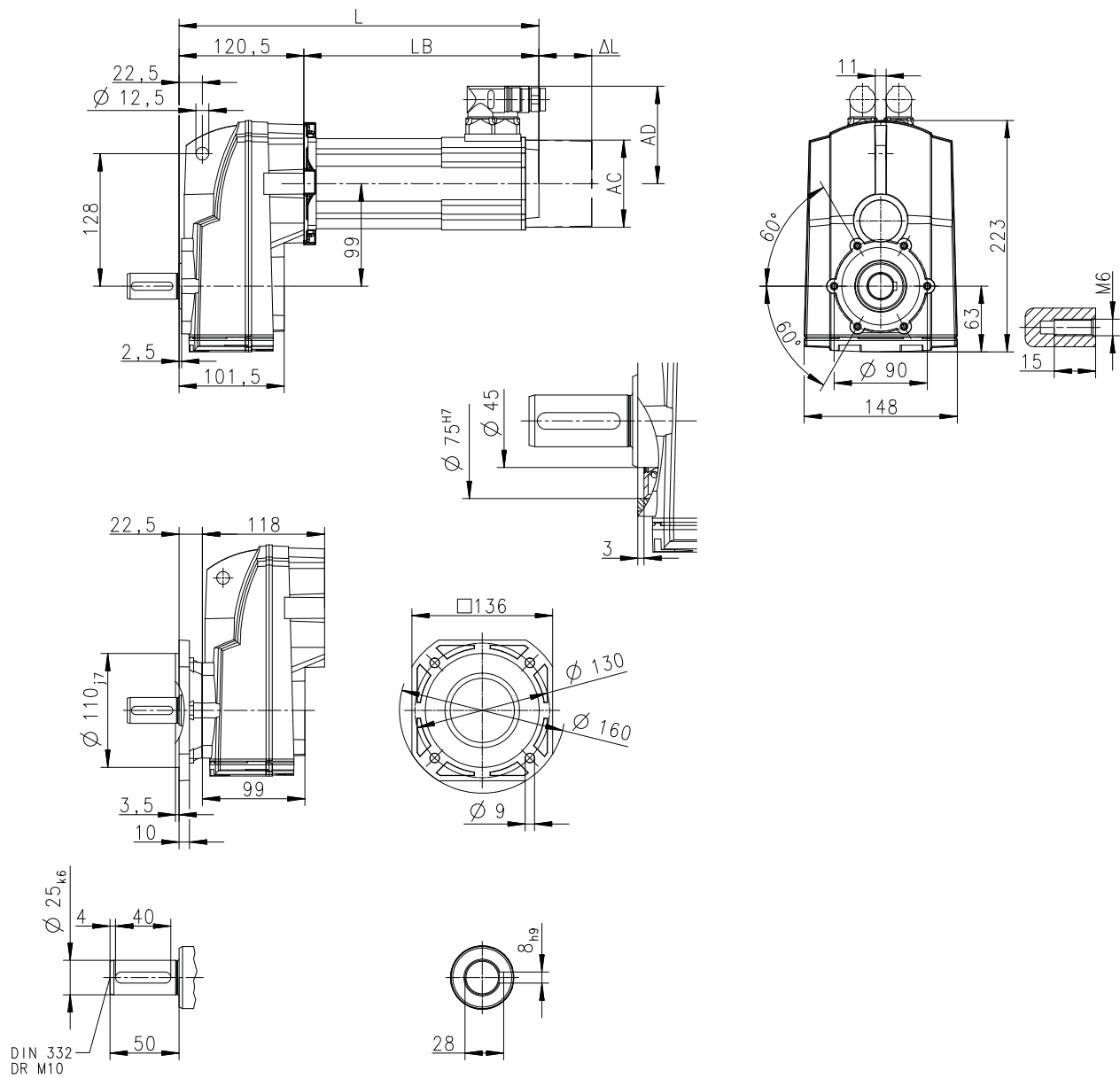
Technical data

Dimensions
Basic dimensions



g500-S130, 2-stage with MCA13

Gearbox version: Solid shaft without foot (VDR/VCR/VCK)



8800014-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	456	388
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

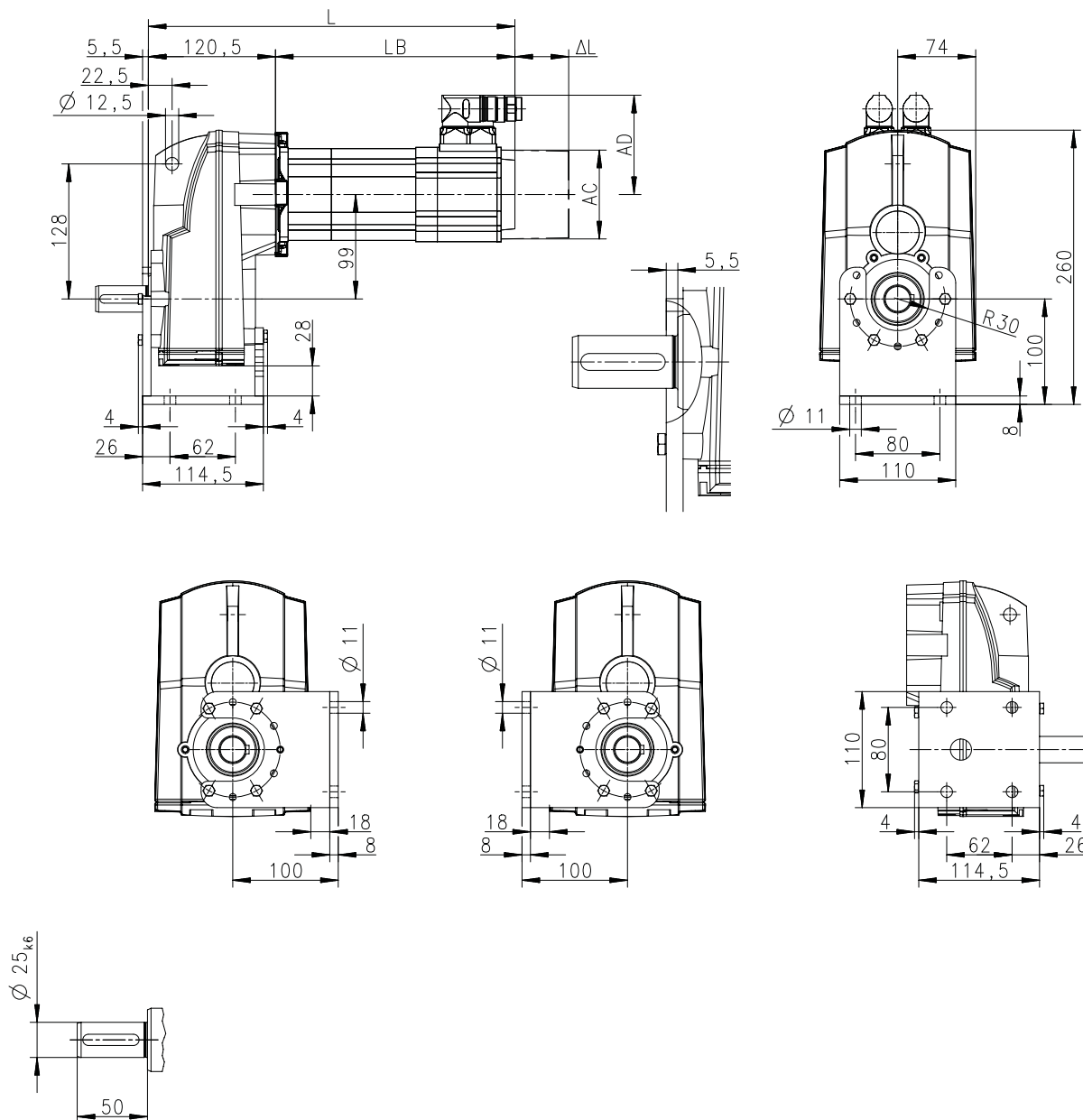


Technical data

Dimensions
Basic dimensions

g500-S130, 2-stage with MCA13

Gearbox version: Solid shaft with foot (VBR)



8800016-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	456	388
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

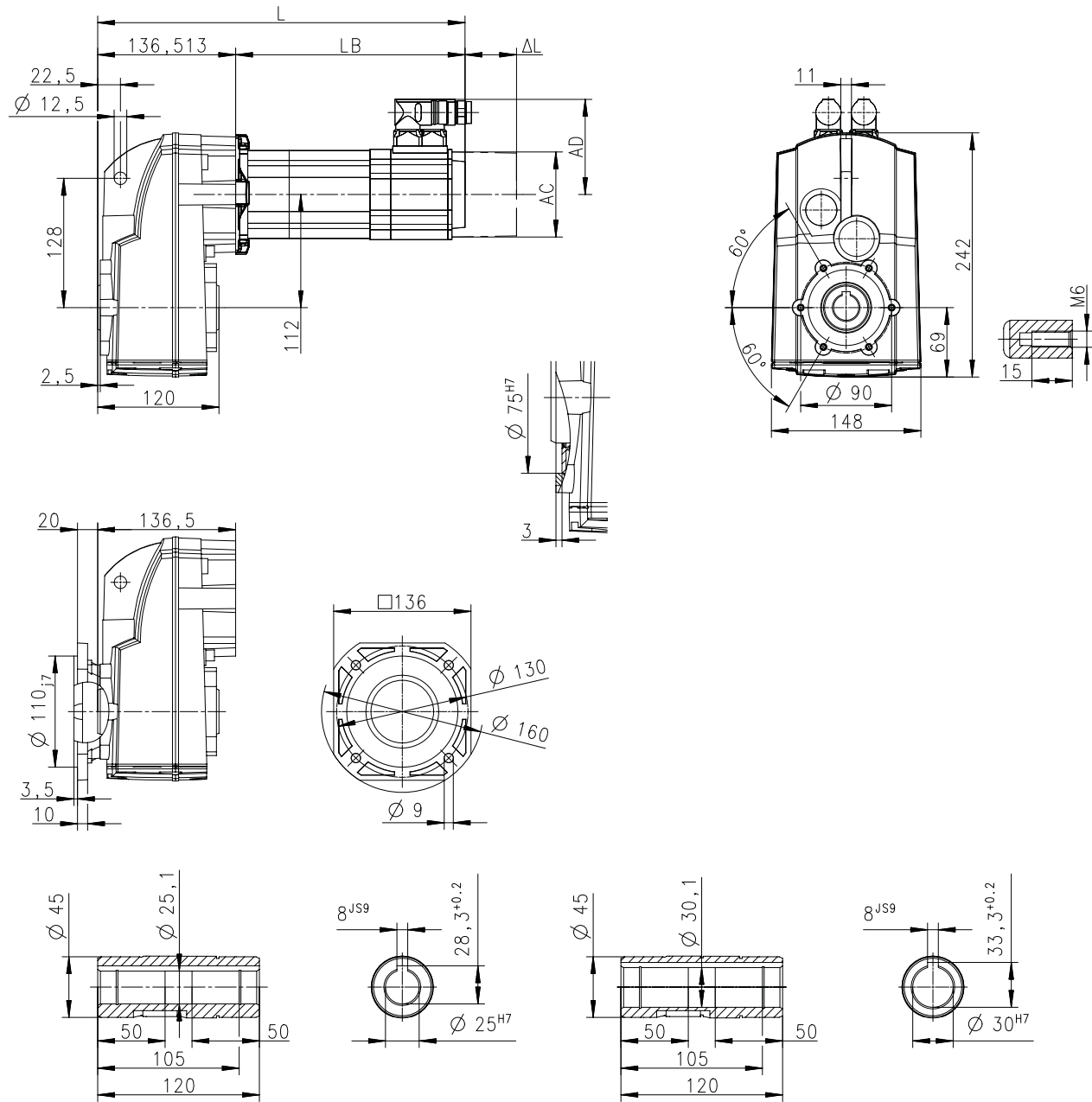
Technical data

Dimensions
Basic dimensions



g500-S220, 2-/3-stage with MCA10

Gearbox version: Hollow shaft without foot (HDR/HCR/HCK)



8800029-01

Motor			MCA
Cooling type			10I40-natural
Total length	L	mm	396
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

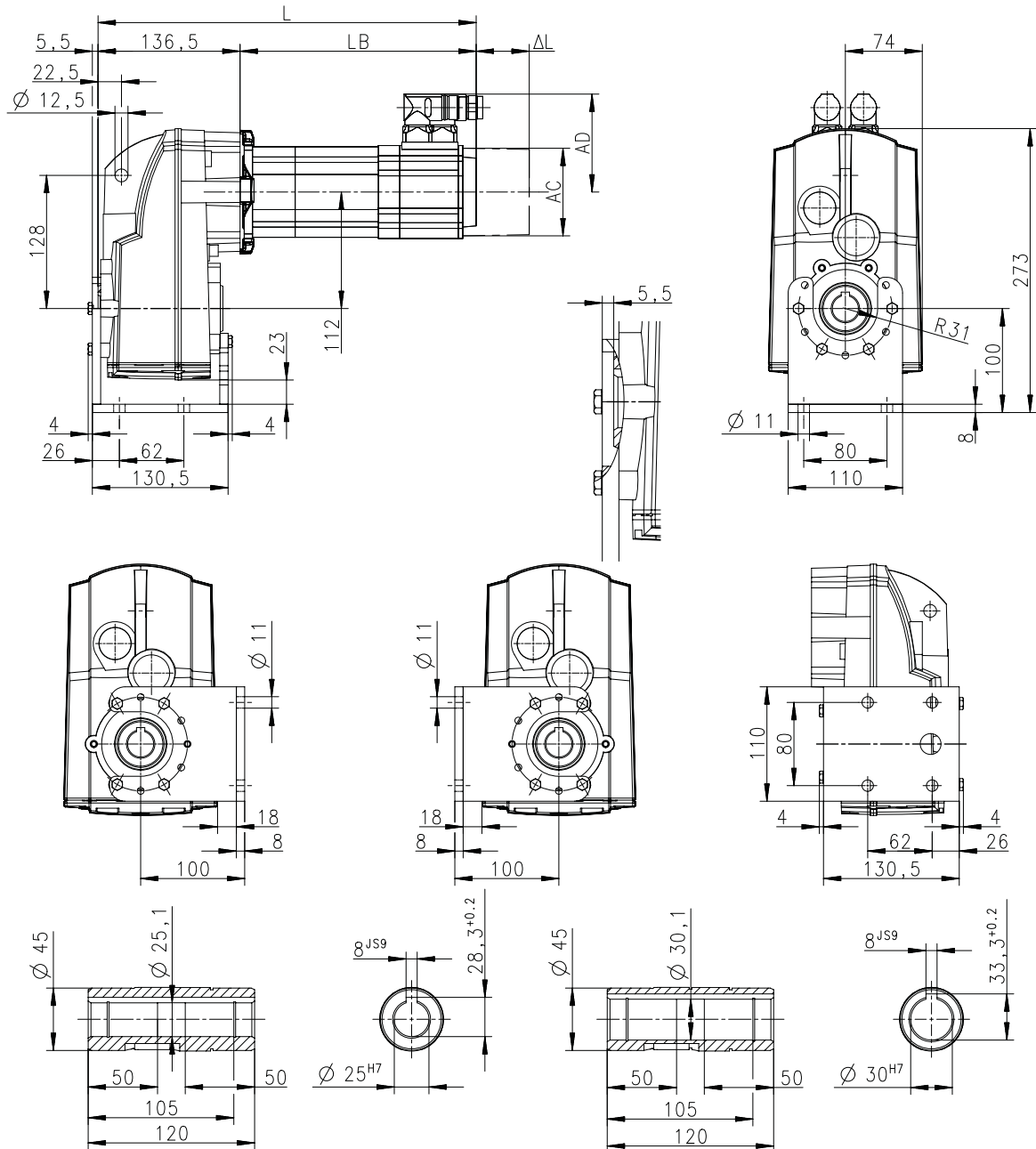


Technical data

Dimensions
Basic dimensions

g500-S220, 2-/3-stage with MCA10

Gearbox version: Hollow shaft with foot (HBR)



8800535-01

Motor			MCA
			10140-
Cooling type			natural
Total length	L	mm	396
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

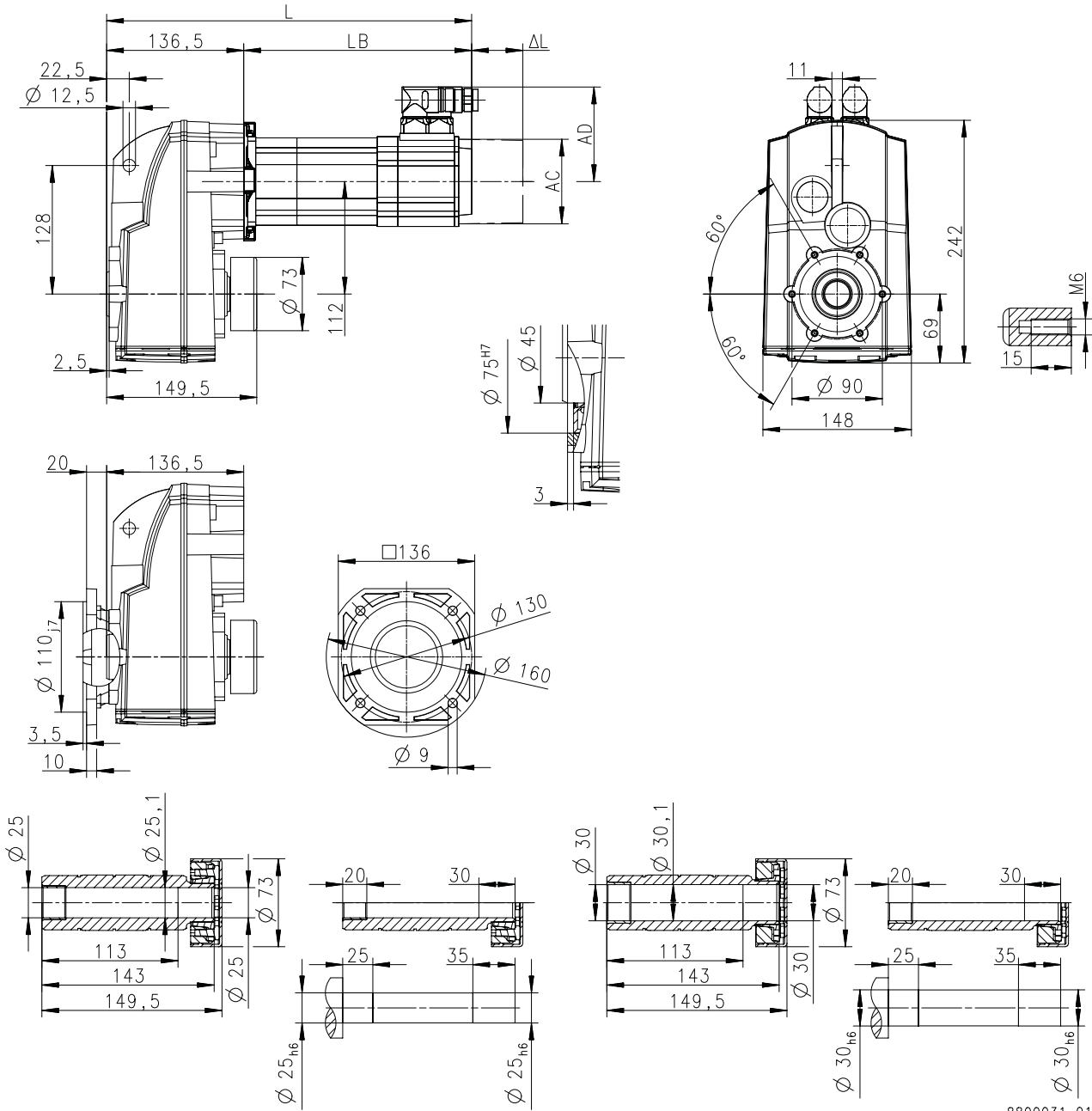
Technical data

Dimensions
Basic dimensions



g500-S220, 2-/3-stage with MCA10

Gearbox version: Hollow shaft with shrink disc, without foot (SDR/SCR/SCK)



8800031-01

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	396
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

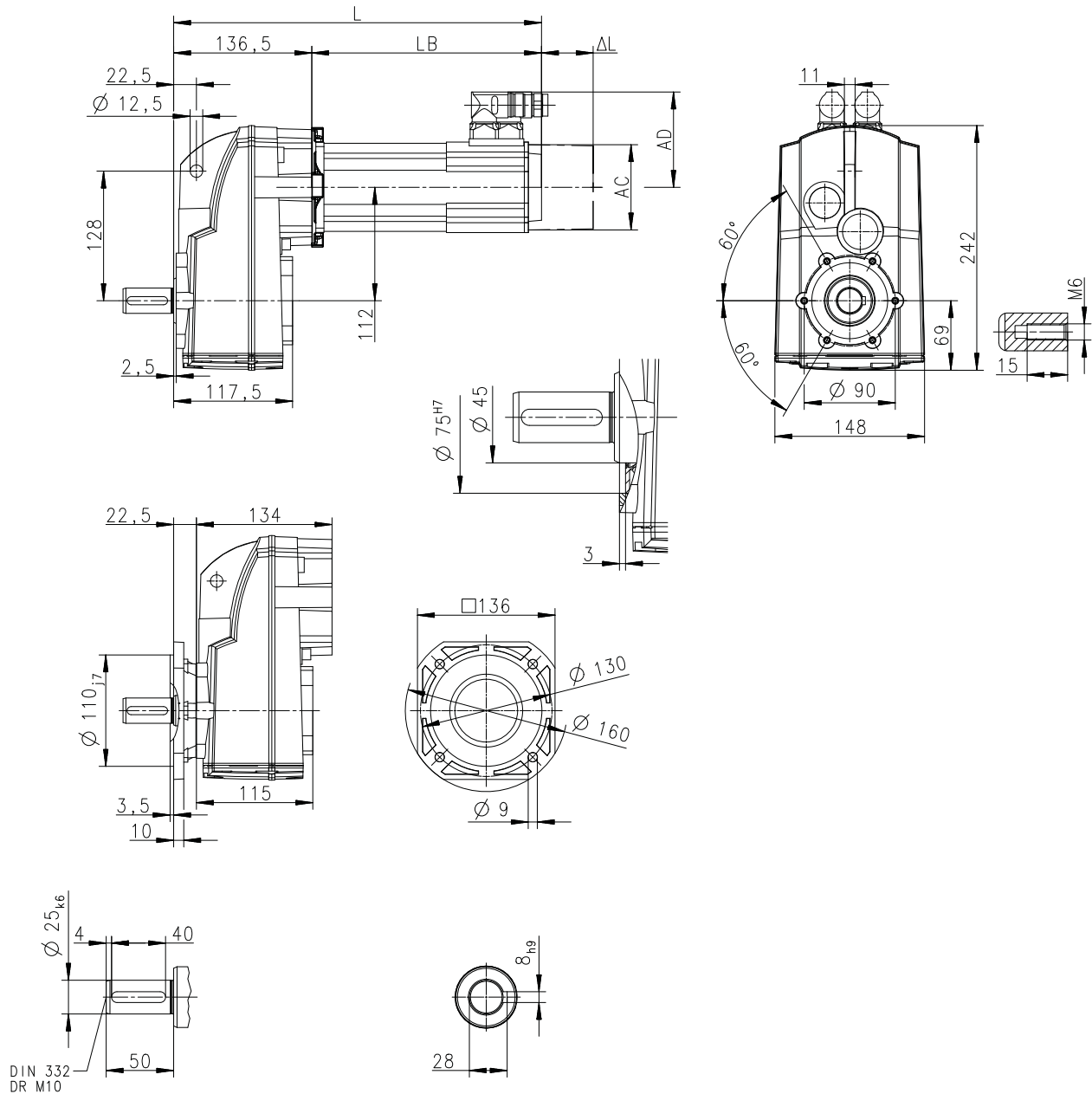


Technical data

Dimensions
Basic dimensions

g500-S220, 2-/3-stage with MCA10

Gearbox version: Solid shaft without foot (VDR/VCR/VCK)



8800030-00

Motor			MCA
			10i40-
Cooling type			natural
Total length	L	mm	396
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

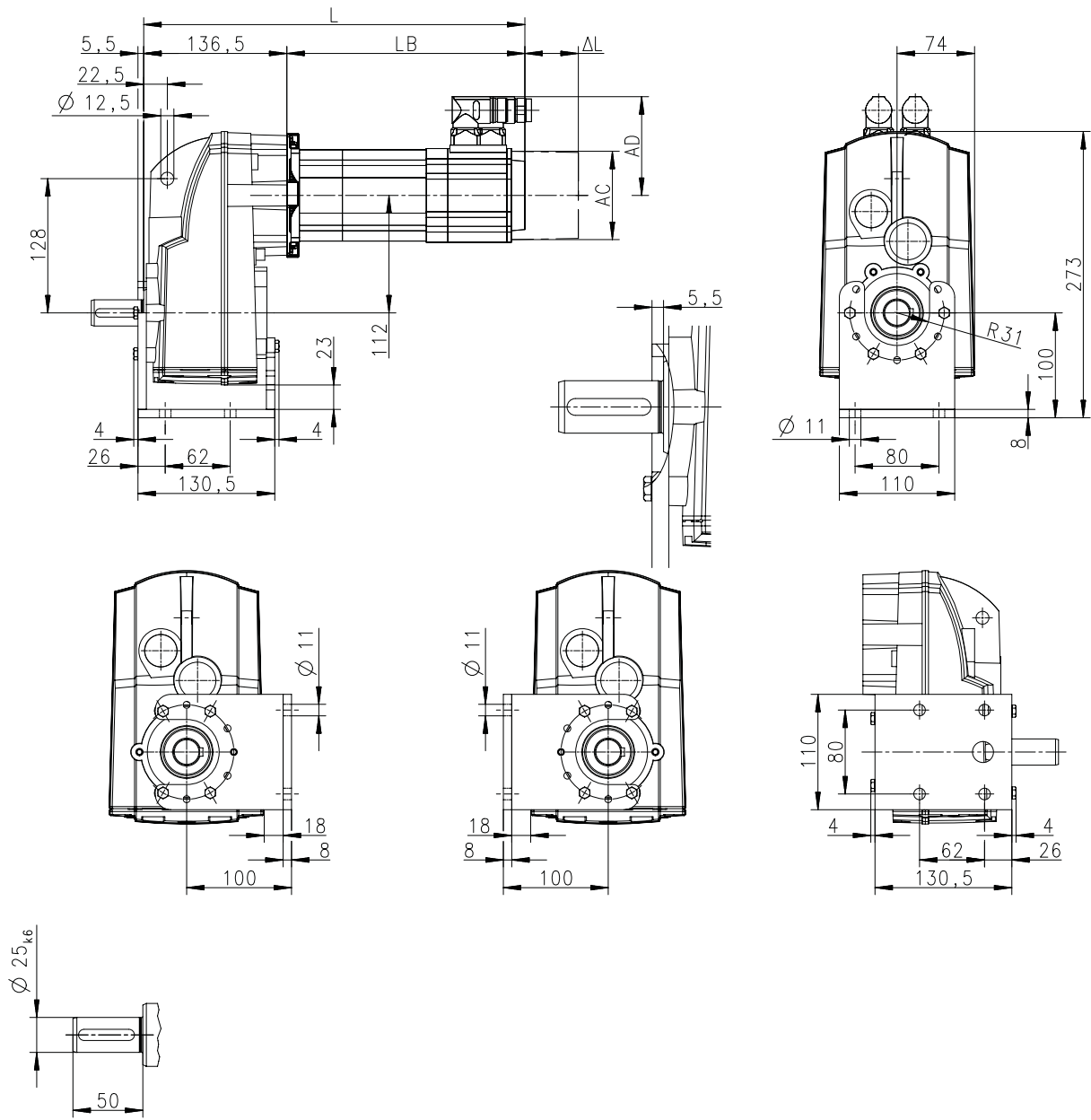
Technical data

Dimensions
Basic dimensions



g500-S220, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot (VBR)



8800032-00

Motor			MCA
Cooling type			10I40-natural
Total length	L	mm	396
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

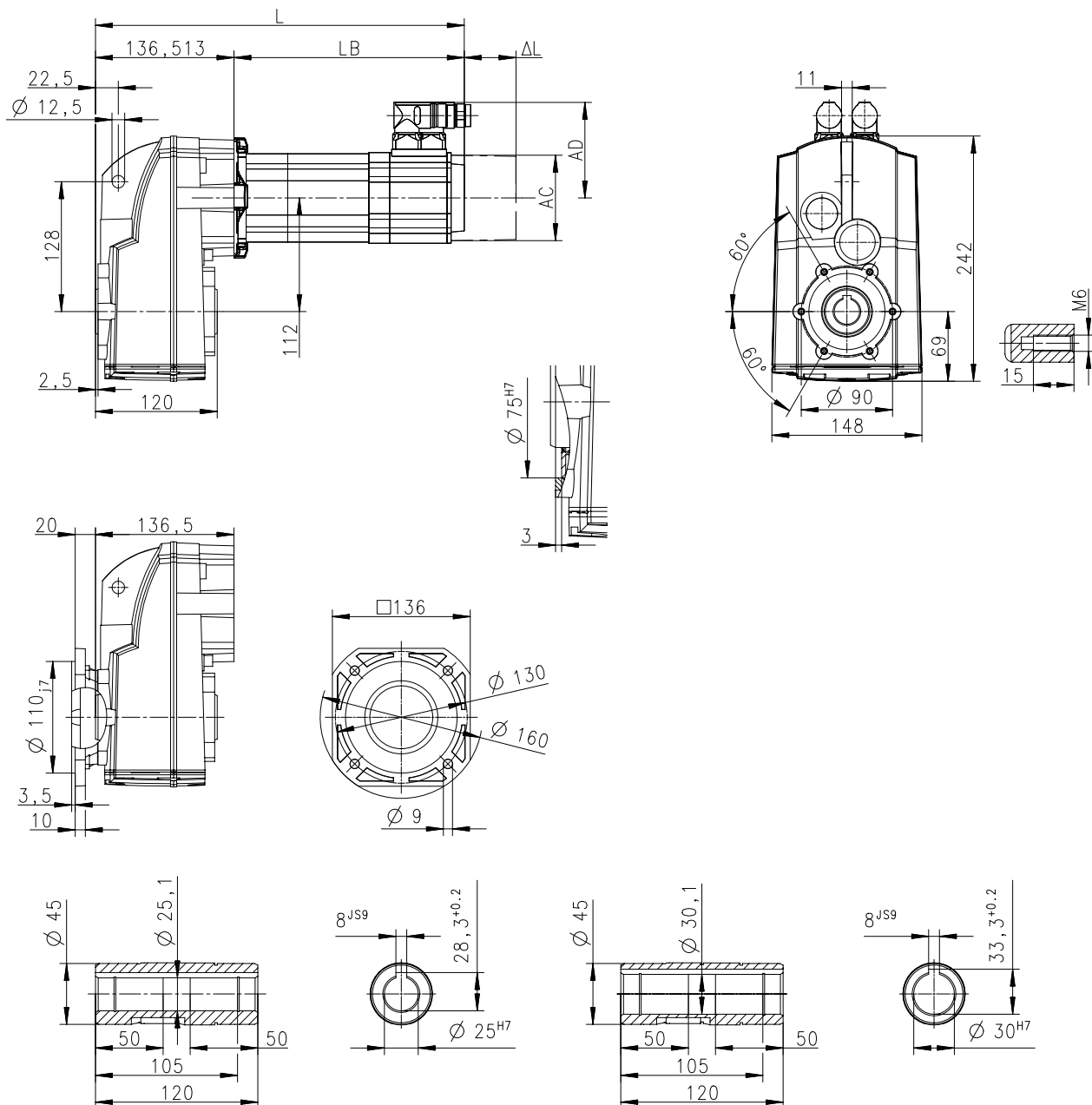


Technical data

Dimensions
Basic dimensions

g500-S220, 2-/3-stage with MCA13

Gearbox version: Hollow shaft without foot (HDR/HCR/HCK)



8800029-01

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	472	404
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



Technical drawing of the 1000 series pressure washer, showing front, side, top, and detail views with dimensions in mm.

Front View Dimensions:

- Top: 5.5, 136.5, LB, ΔL
- Left: 22.5, $\varnothing 12.5$
- Right: AD, AC
- Bottom: 128, 112, 23, 4, 26, 62, 130.5

Side View Dimensions:

- Top: 5.5

Top View Dimensions:

- Top: 74
- Right: 273, 100, 80
- Bottom: $\varnothing 11$, 80, 110
- Feature: R31

Detail Views:

- Bottom Left:** $\varnothing 45$, $\varnothing 25.1$, 50, 105, 120
- Bottom Center:** $\varnothing 25H7$, $\varnothing JS9$, 28.3^{+0.2}
- Bottom Right:** $\varnothing 45$, $\varnothing 30.1$, 50, 105, 120
- Bottom Far Right:** $\varnothing 30H7$, $\varnothing JS9$, 33.3^{+0.2}

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	472	404
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

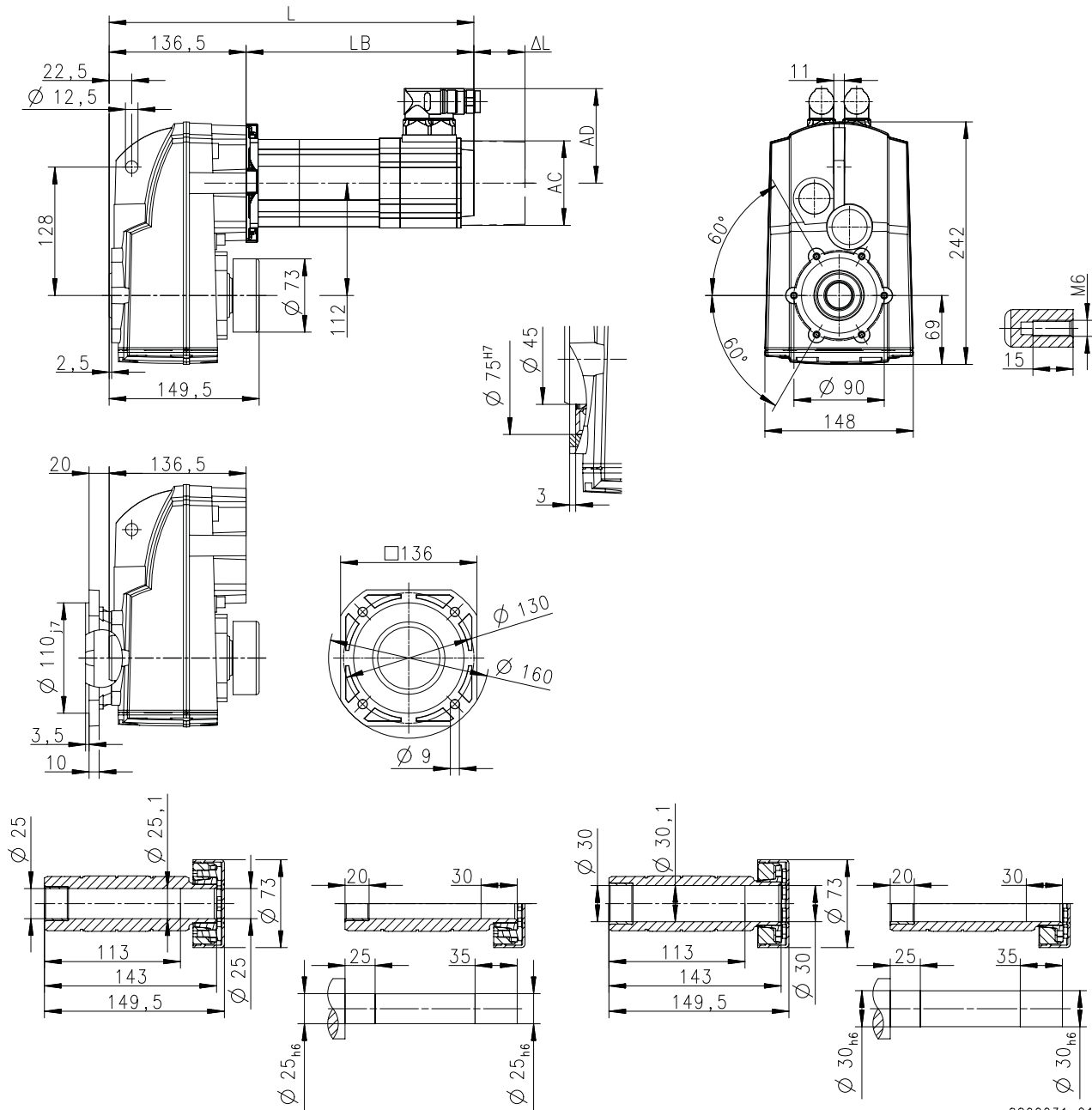


Technical data

Dimensions
Basic dimensions

g500-S220, 2-/3-stage with MCA13

Gearbox version: Hollow shaft with shrink disc, without foot (SDR/SCR/SCK)



8800031-01

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	472	404
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

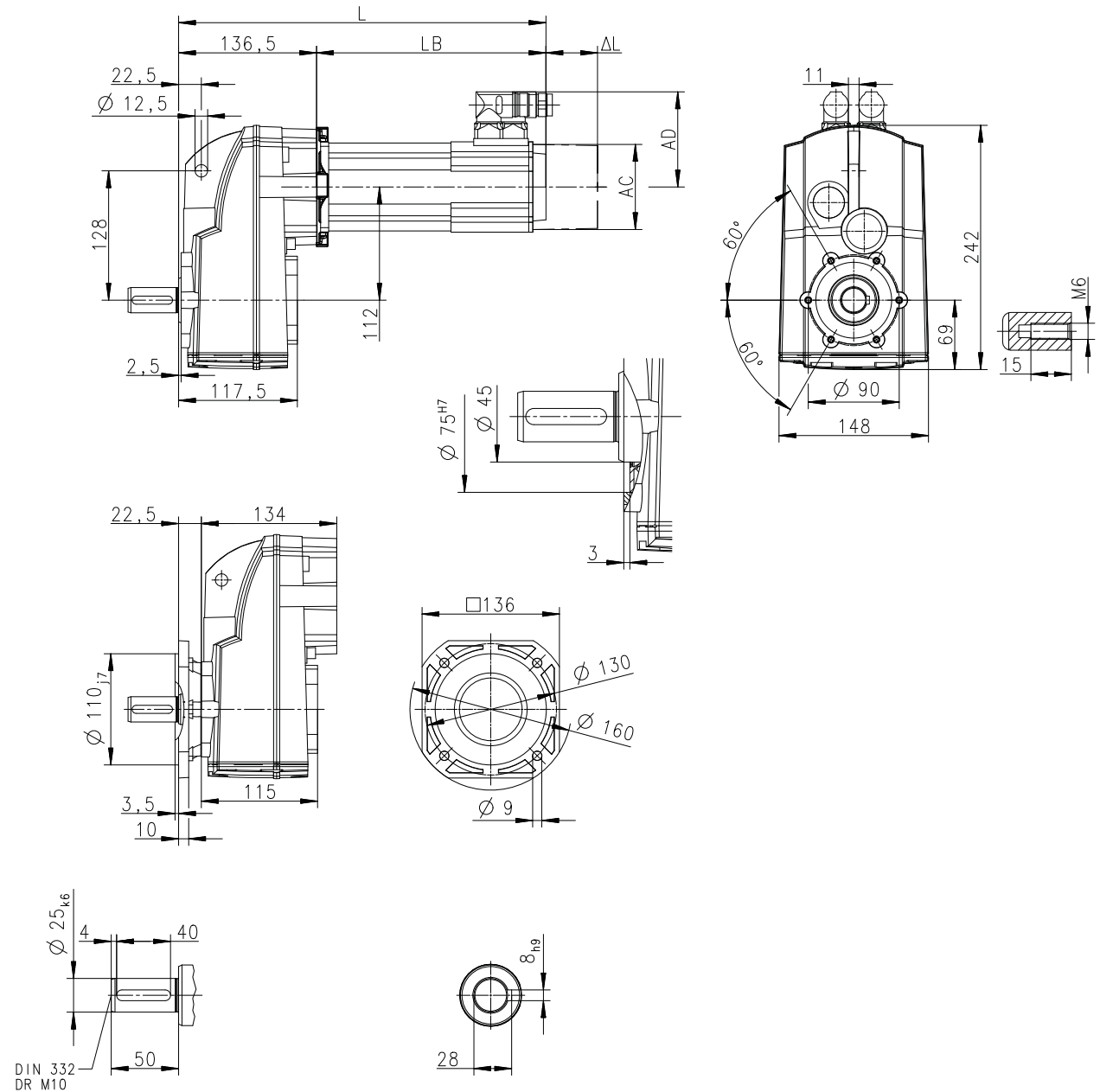
Technical data

Dimensions
Basic dimensions



g500-S220, 2-/3-stage with MCA13

Gearbox version: Solid shaft without foot (VDR/VCR/VCK)



8800030-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	472	404
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

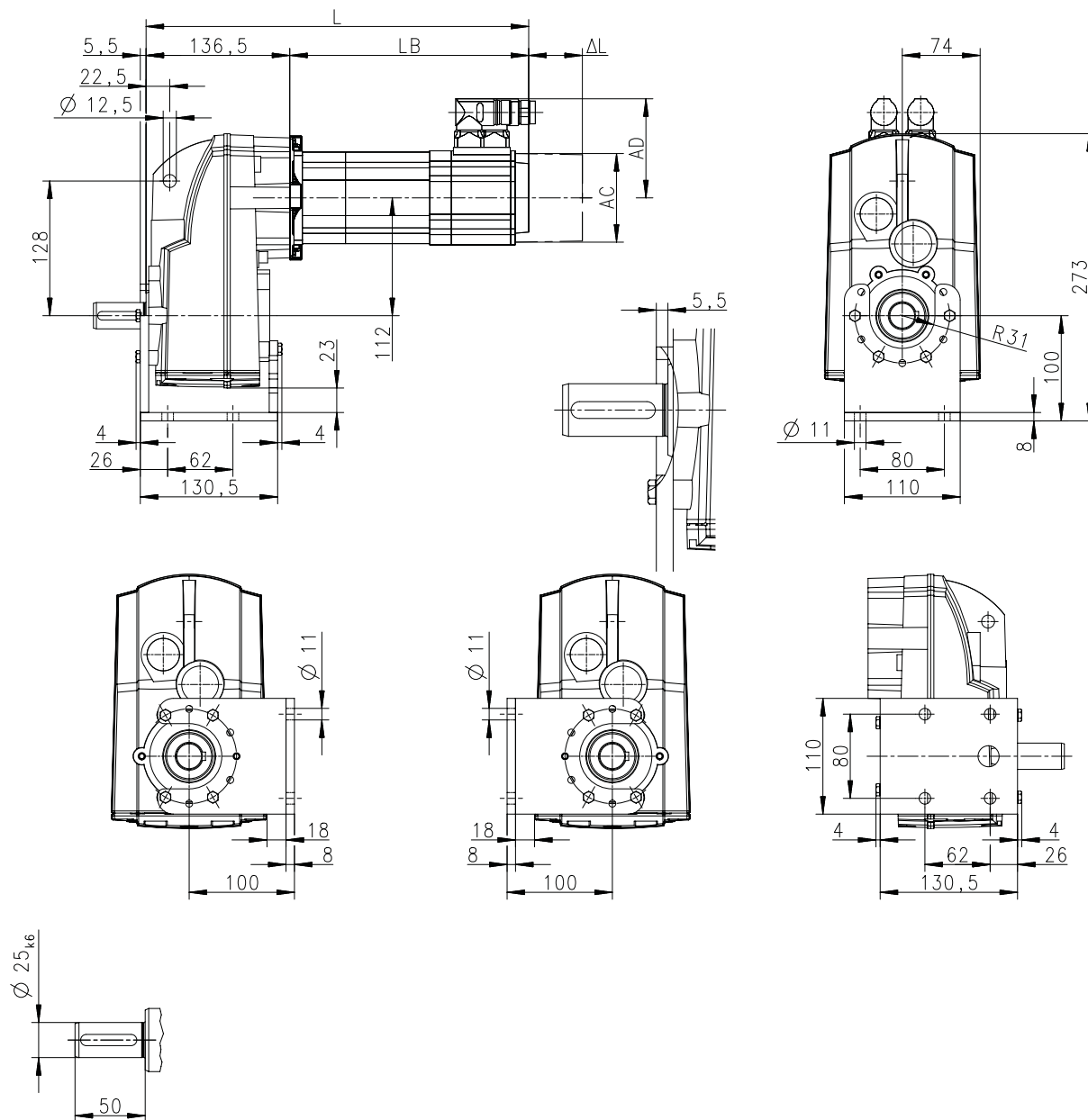


Technical data

Dimensions
Basic dimensions

g500-S220, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot (VBR)



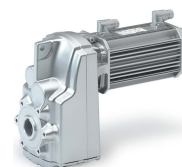
8800032-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	472	404
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

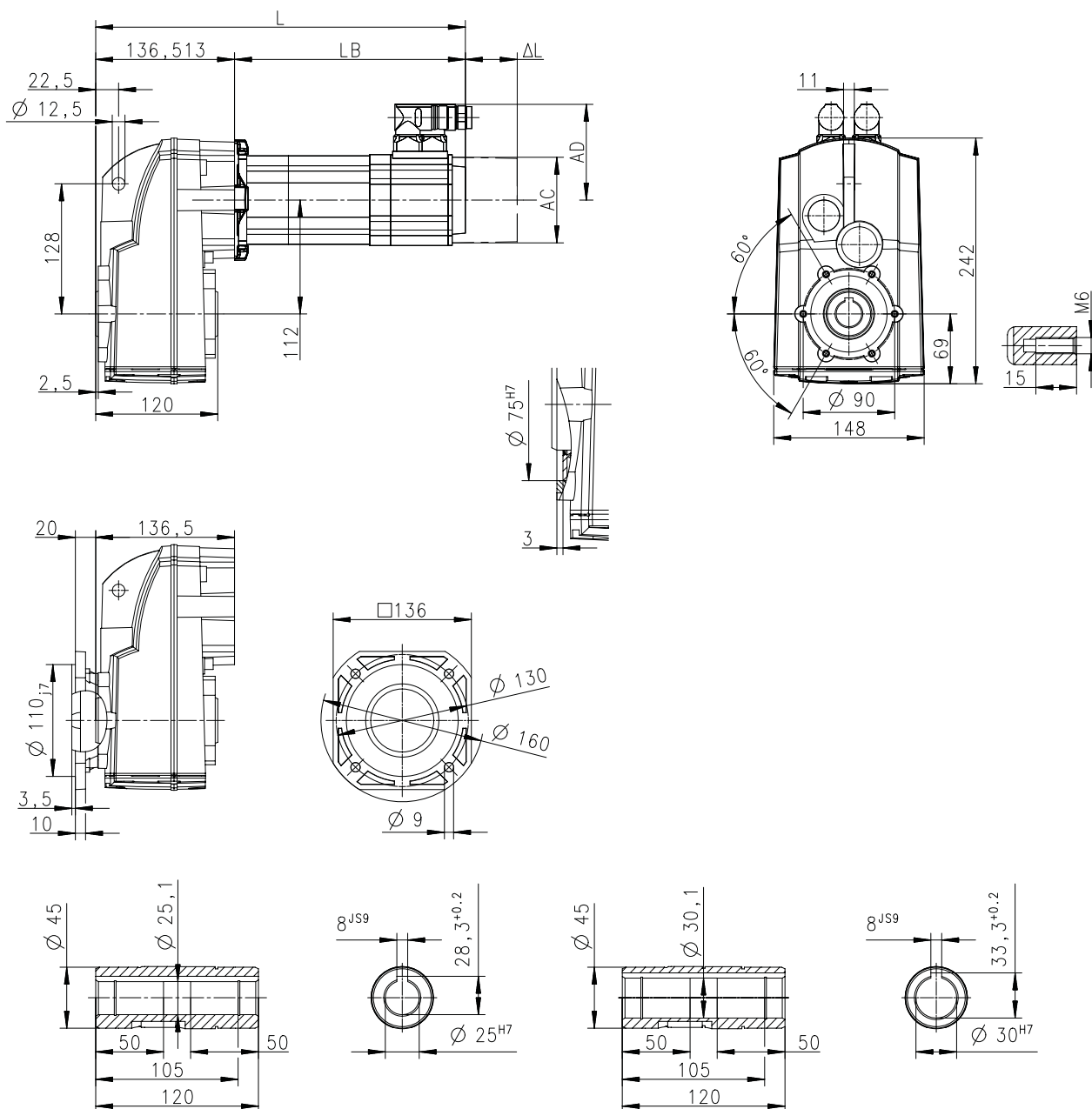
Dimensions

Basic dimensions



g500-S220, 2-/3-stage with MCA14

Gearbox version: Hollow shaft without foot (HDR/HCR/HCK)



8800029-01

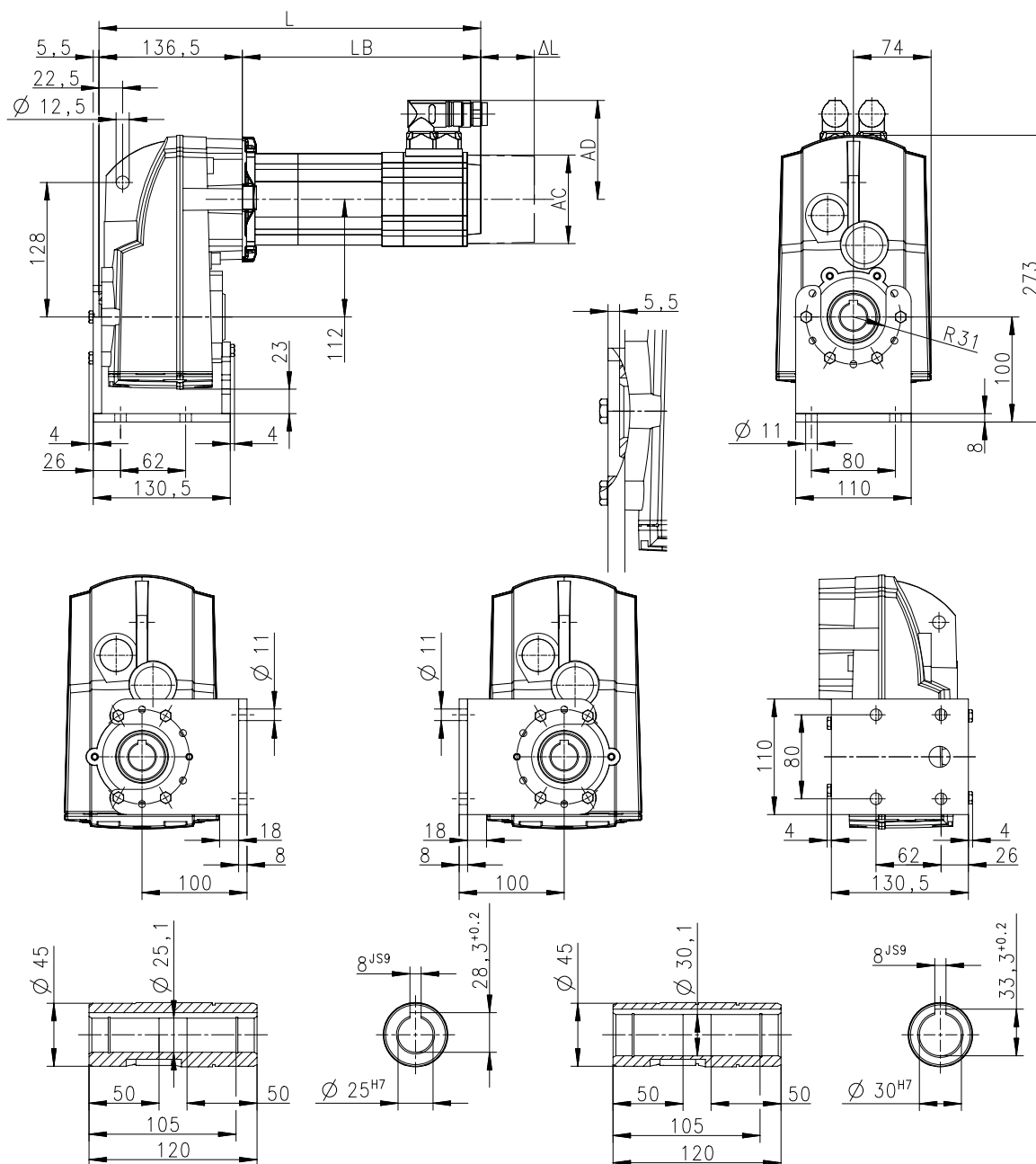
Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	516	454	516	454
Motor length	LB	mm	380	318	380	318
Length of motor options	ΔL	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

Technical data

Dimensions
Basic dimensions

g500-S220, 2-/3-stage with MCA14

Gearbox version: Hollow shaft with foot (HBR)



8800535-01

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	516	454	516	454
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

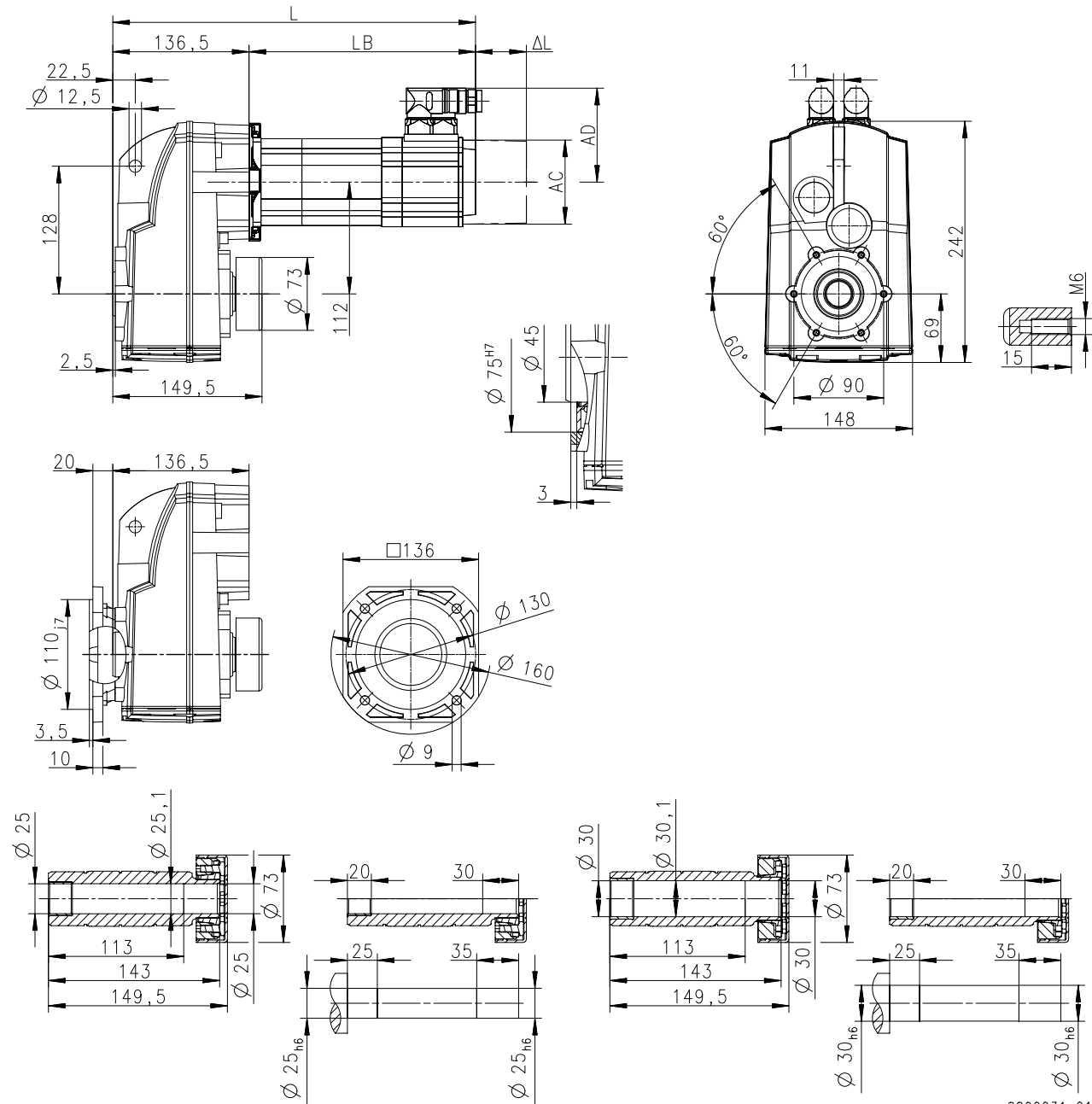
Technical data

Dimensions
Basic dimensions



g500-S220, 2-/3-stage with MCA14

Gearbox version: Hollow shaft with shrink disc, without foot (SDR/SCR/SCK)



8800031-01

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	516	454	516	454
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

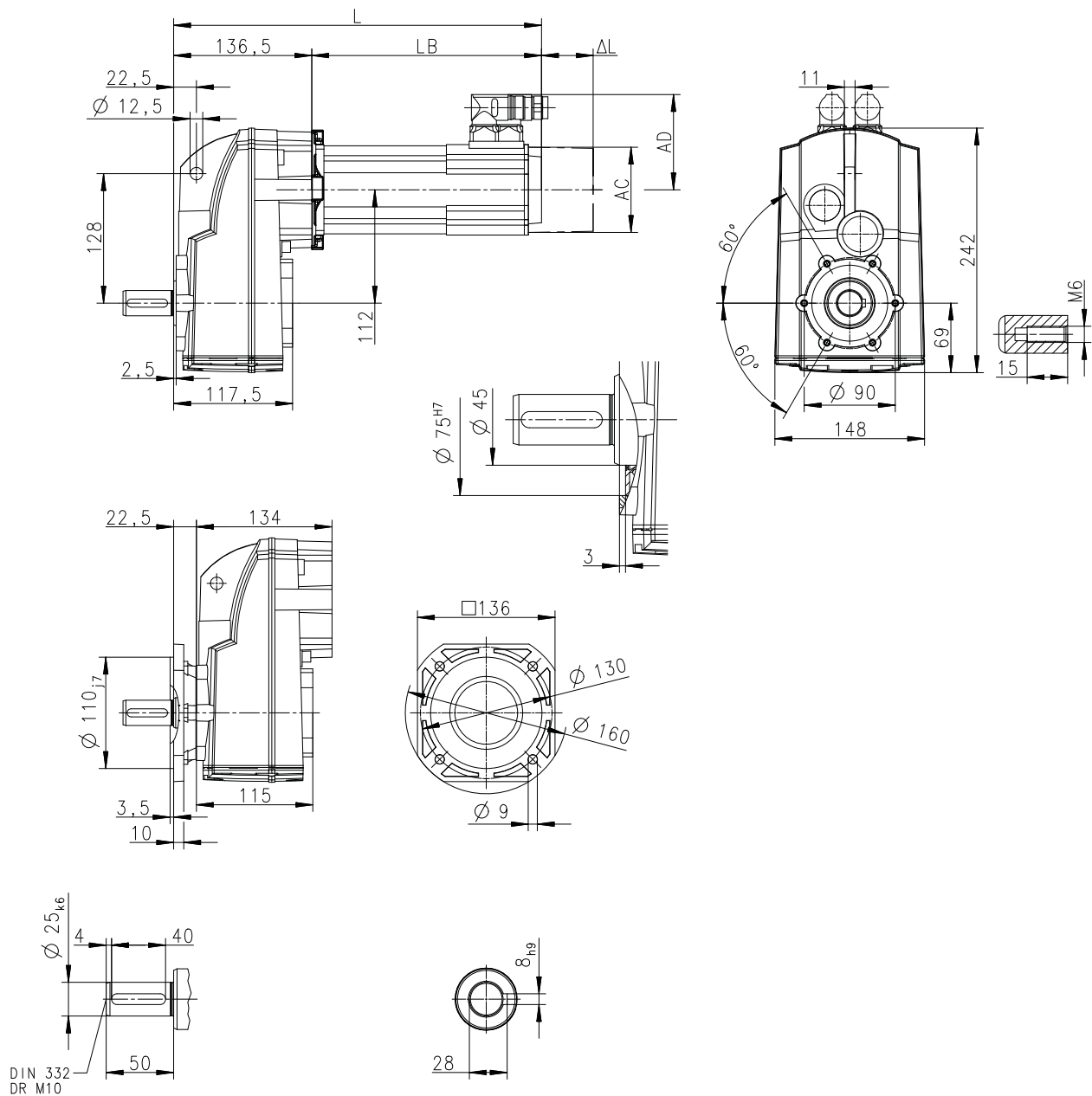


Technical data

Dimensions
Basic dimensions

g500-S220, 2-/3-stage with MCA14

Gearbox version: Solid shaft without foot (VDR/VCR/VCK)



8800030-00

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	516	454	516	454
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

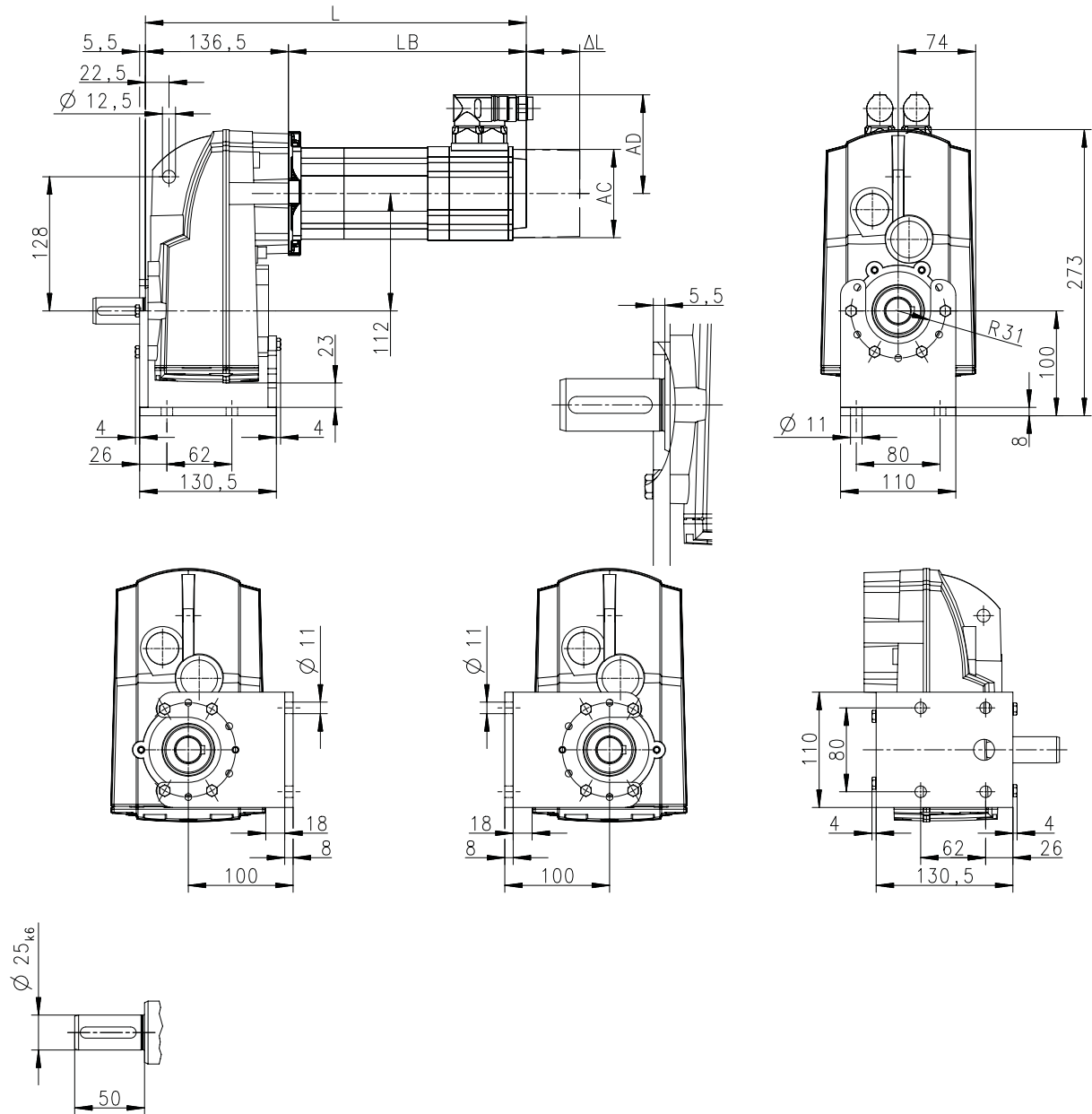
Technical data

Dimensions
Basic dimensions



g500-S220, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot (VBR)



8800032-00

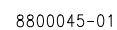
Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	516	454	516	454
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109



Dimensions

Basic dimensions

Gearbox version: Hollow shaft without foot (HDR/HCR/HCK)

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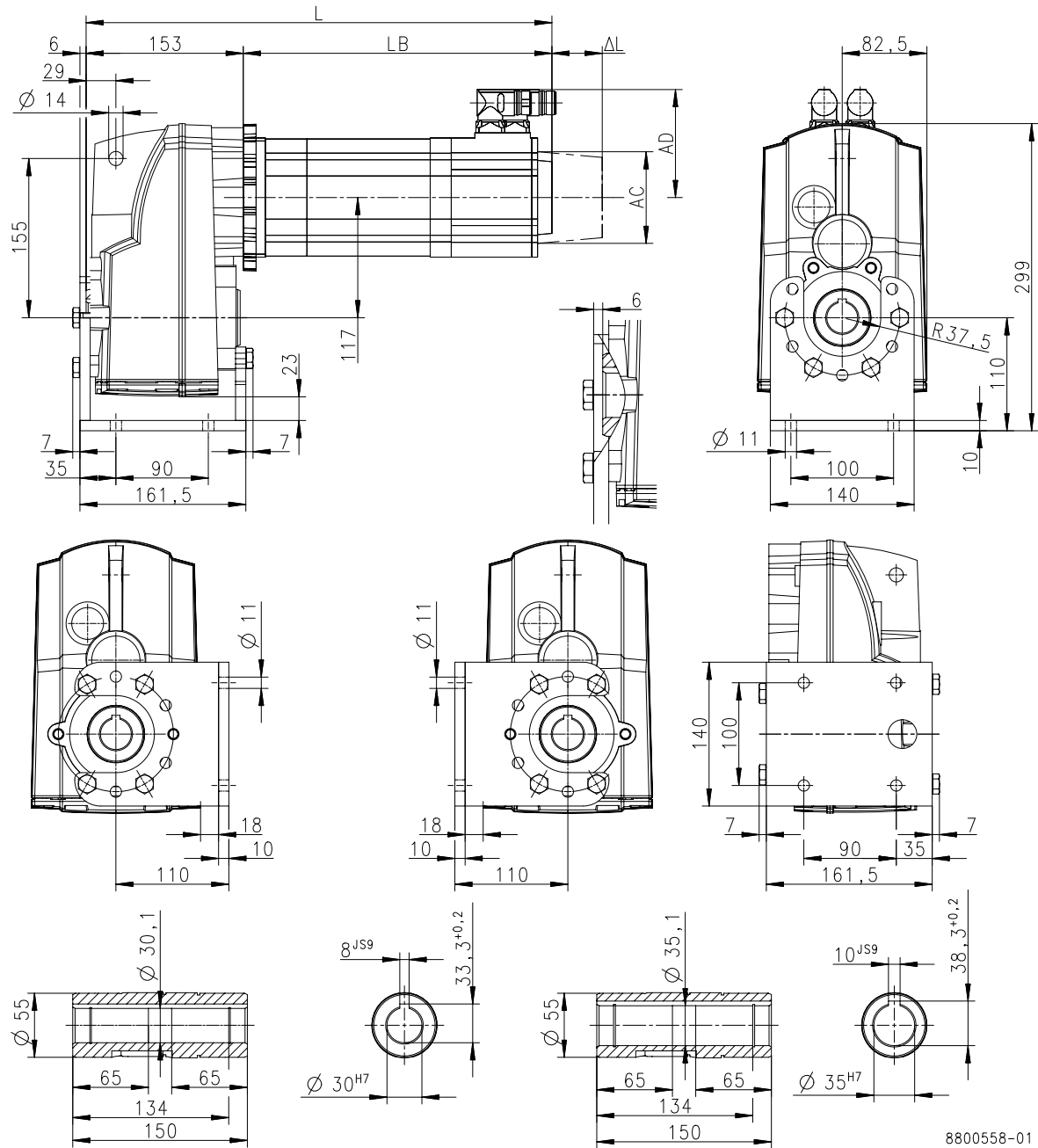
Technical data

Dimensions
Basic dimensions



g500-S400, 2-/3-stage with MCA10

Gearbox version: Hollow shaft with foot (HBR)



8800558-01

Motor			MCA
Cooling type			10I40-natural
Total length	L	mm	412
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

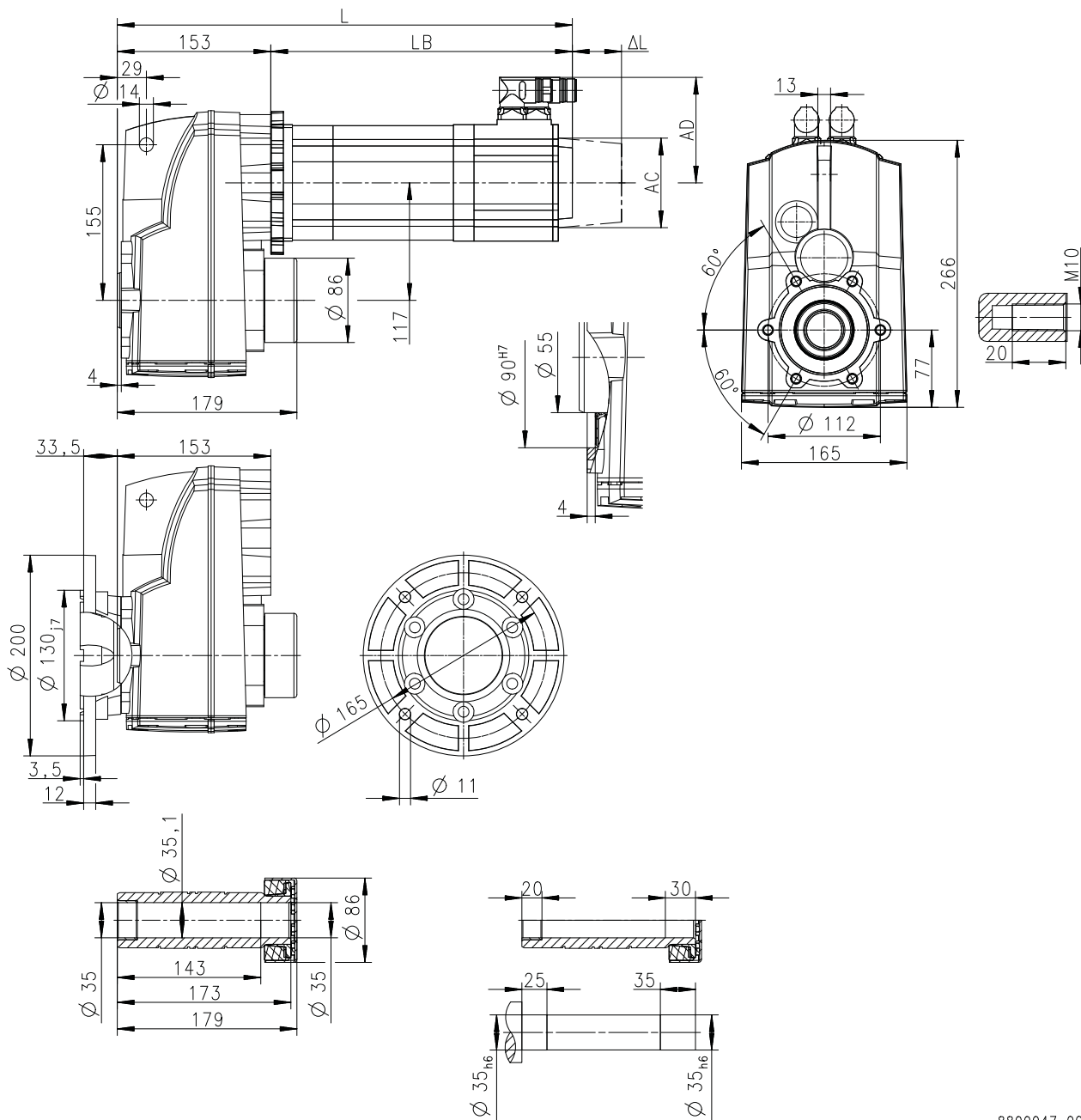


Technical data

Dimensions
Basic dimensions

g500-S400, 2-/3-stage with MCA10

Gearbox version: Hollow shaft with shrink disc, without foot (SDR/SCR/SCK)



8800047-00

Motor			MCA
			10140-
Cooling type			natural
Total length	L	mm	412
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

[illegible]

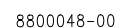
Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	412
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90



Dimensions

Basic dimensions

Gearbox version: Solid shaft with foot (VBR)

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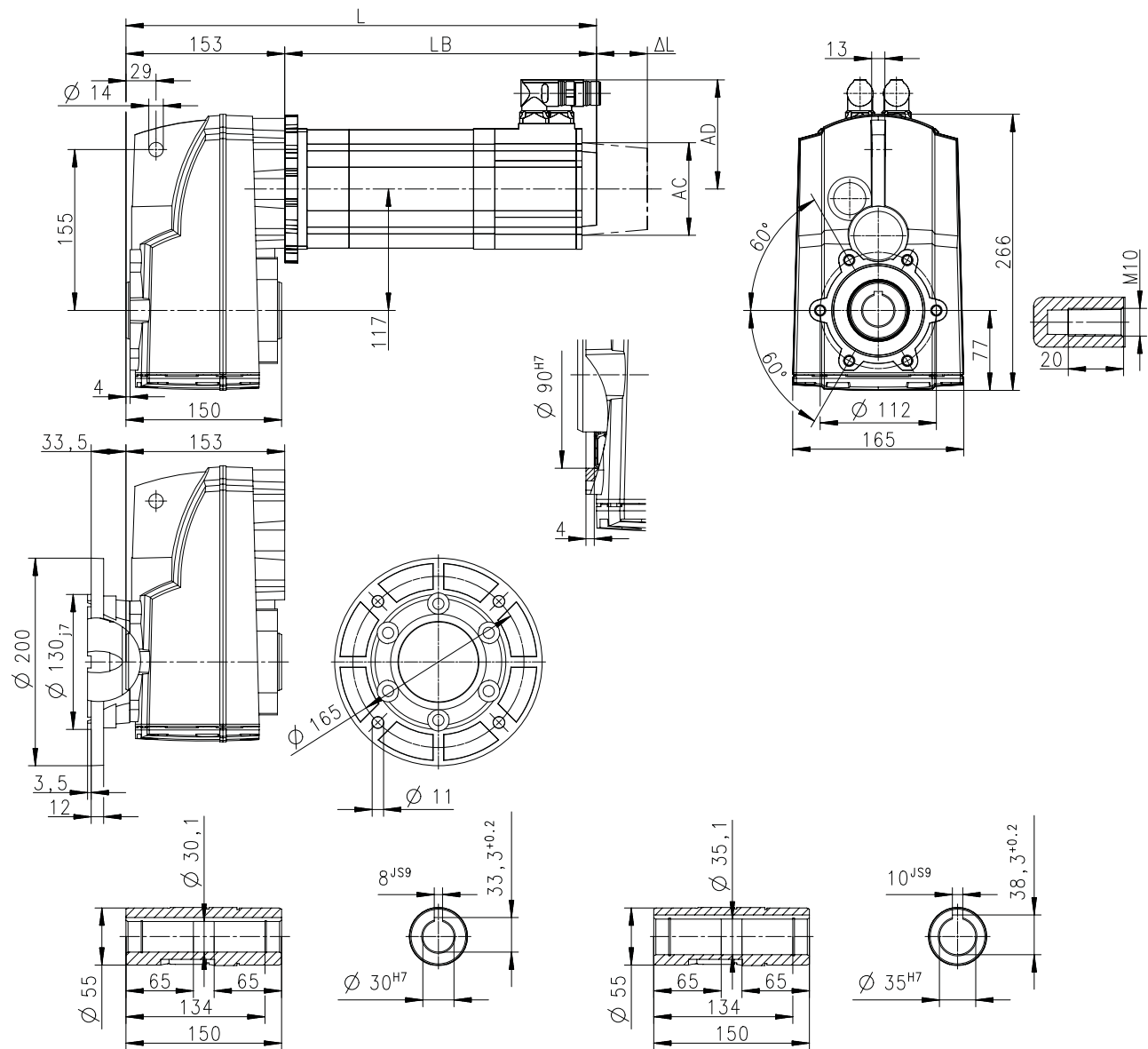
Technical data

Dimensions
Basic dimensions



g500-S400, 2-/3-stage with MCA13

Gearbox version: Hollow shaft without foot (HDR/HCR/HCK)



8800045-01

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	489	421
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

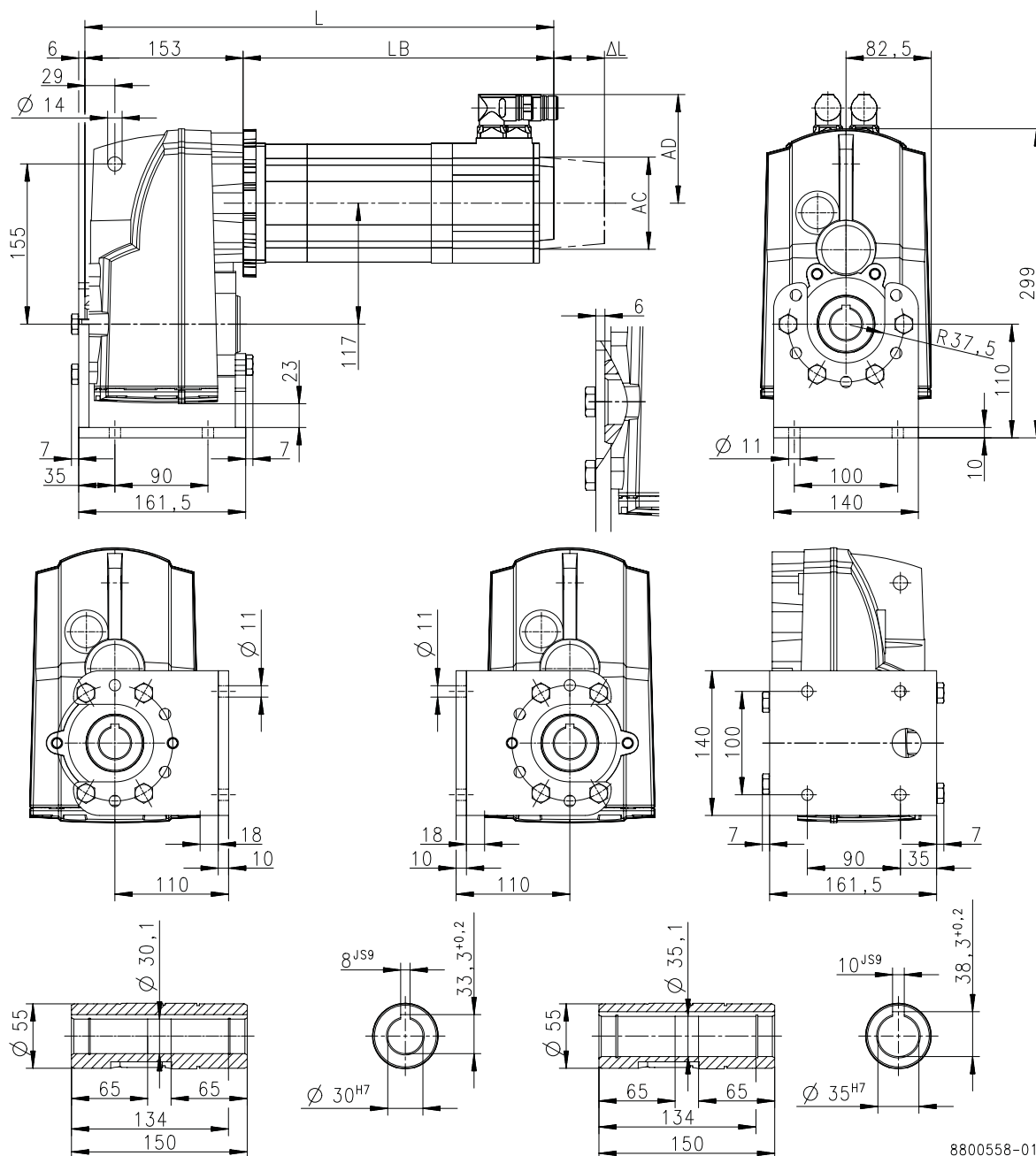


Technical data

Dimensions
Basic dimensions

g500-S400, 2-/3-stage with MCA13

Gearbox version: Hollow shaft with foot (HBR)



8800558-01

Motor			MCA	
			13I34- Blower	13I41- natural
Cooling type				
Total length	L	mm	489	421
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

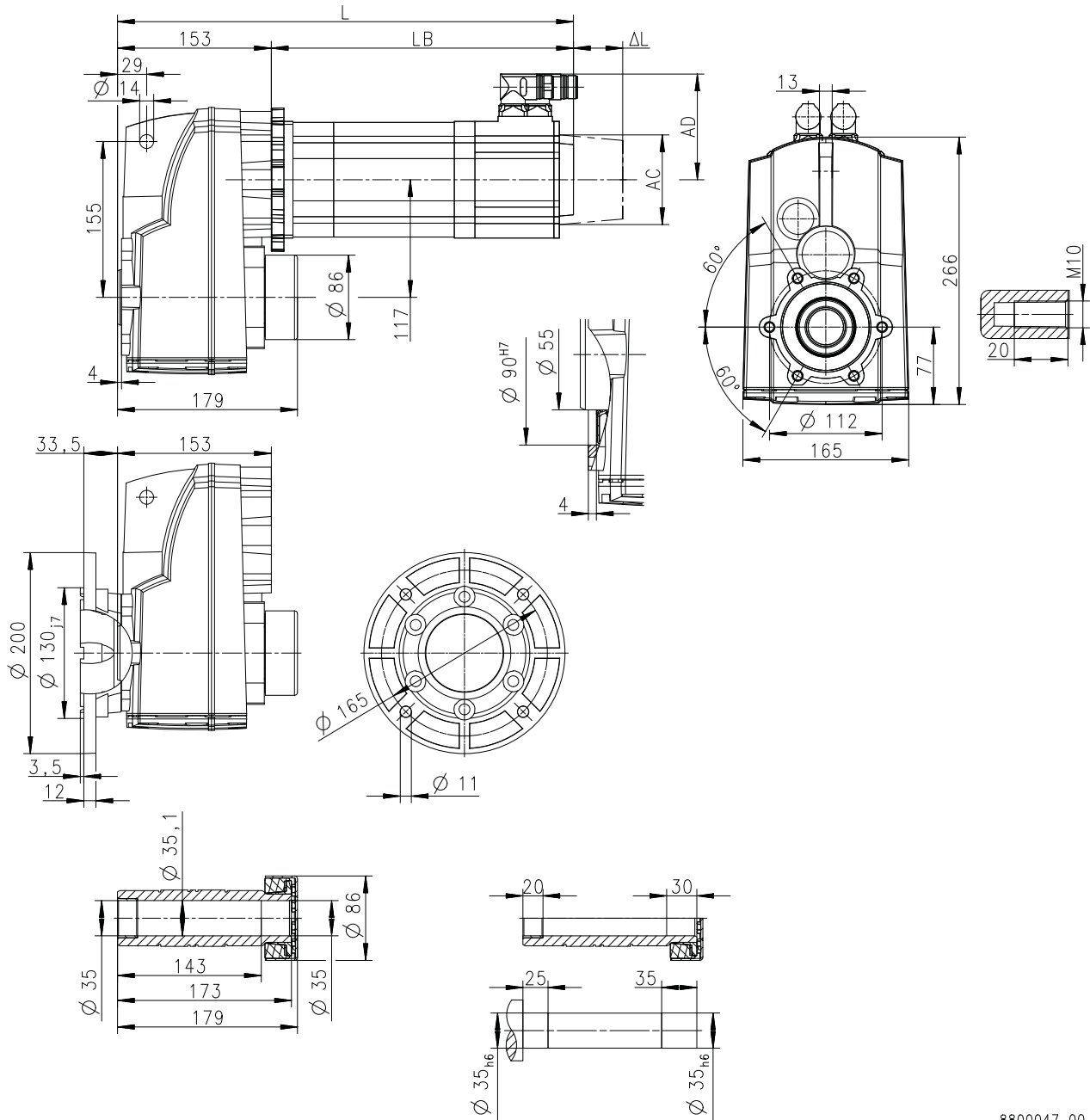
Technical data

Dimensions
Basic dimensions



g500-S400, 2-/3-stage with MCA13

Gearbox version: Hollow shaft with shrink disc, without foot (SDR/SCR/SCK)



8800047-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	489	421
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

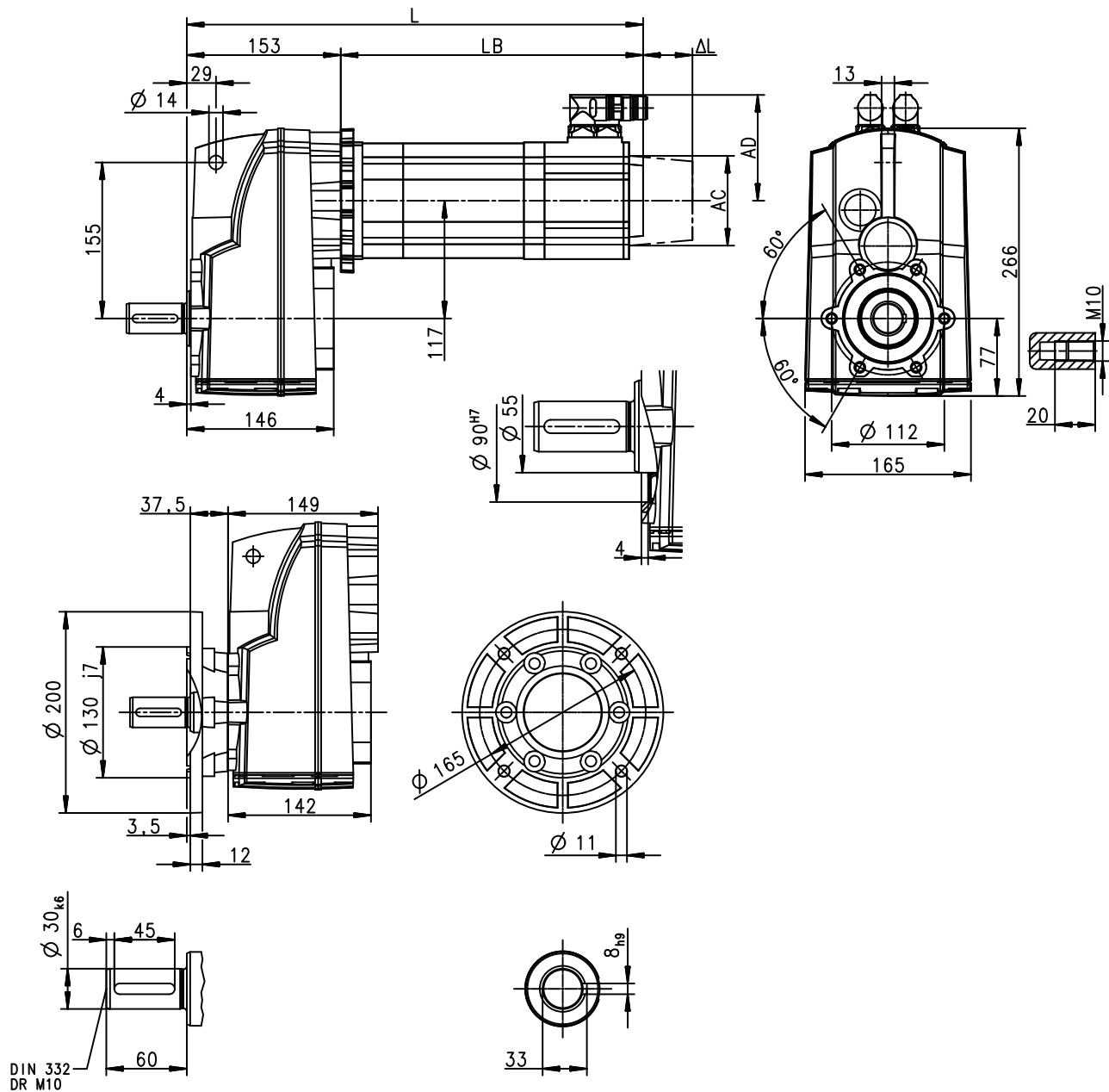


Technical data

Dimensions
Basic dimensions

g500-S400, 2-/3-stage with MCA13

Gearbox design: Solid shaft without foot (VDR/VCR/VCK)

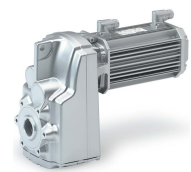


8800046-01

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	489	421
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

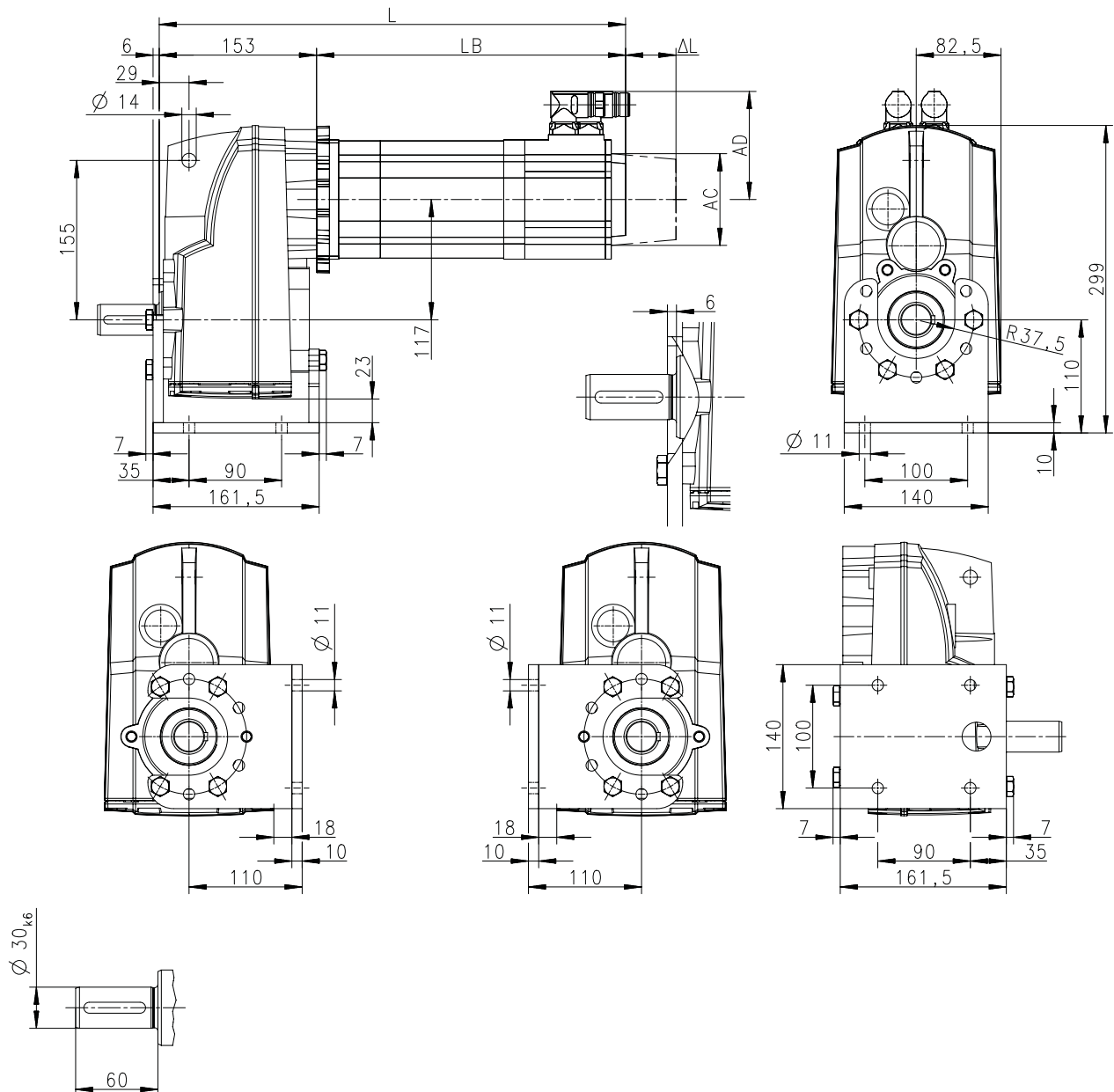
Technical data

Dimensions
Basic dimensions



g500-S400, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot (VBR)



8800048-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	489	421
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-S400, 2-/3-stage with MCA14

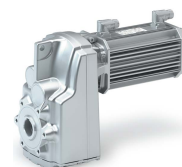
8800045-01

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Technical data

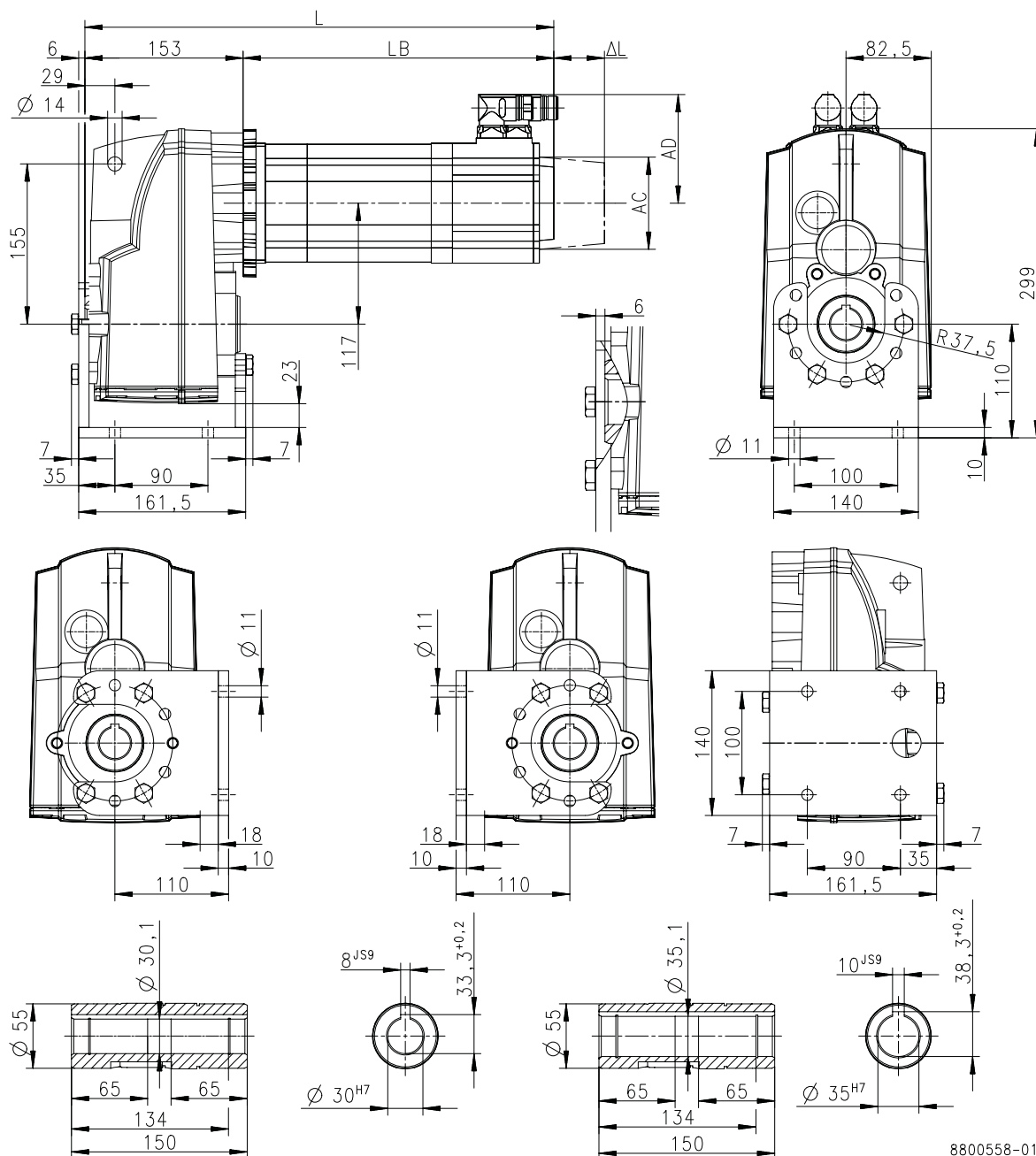
Dimensions

Basic dimensions



g500-S400, 2-/3-stage with MCA14

Gearbox version: Hollow shaft with foot (HBR)



8800558-01

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	533	471	533	471
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

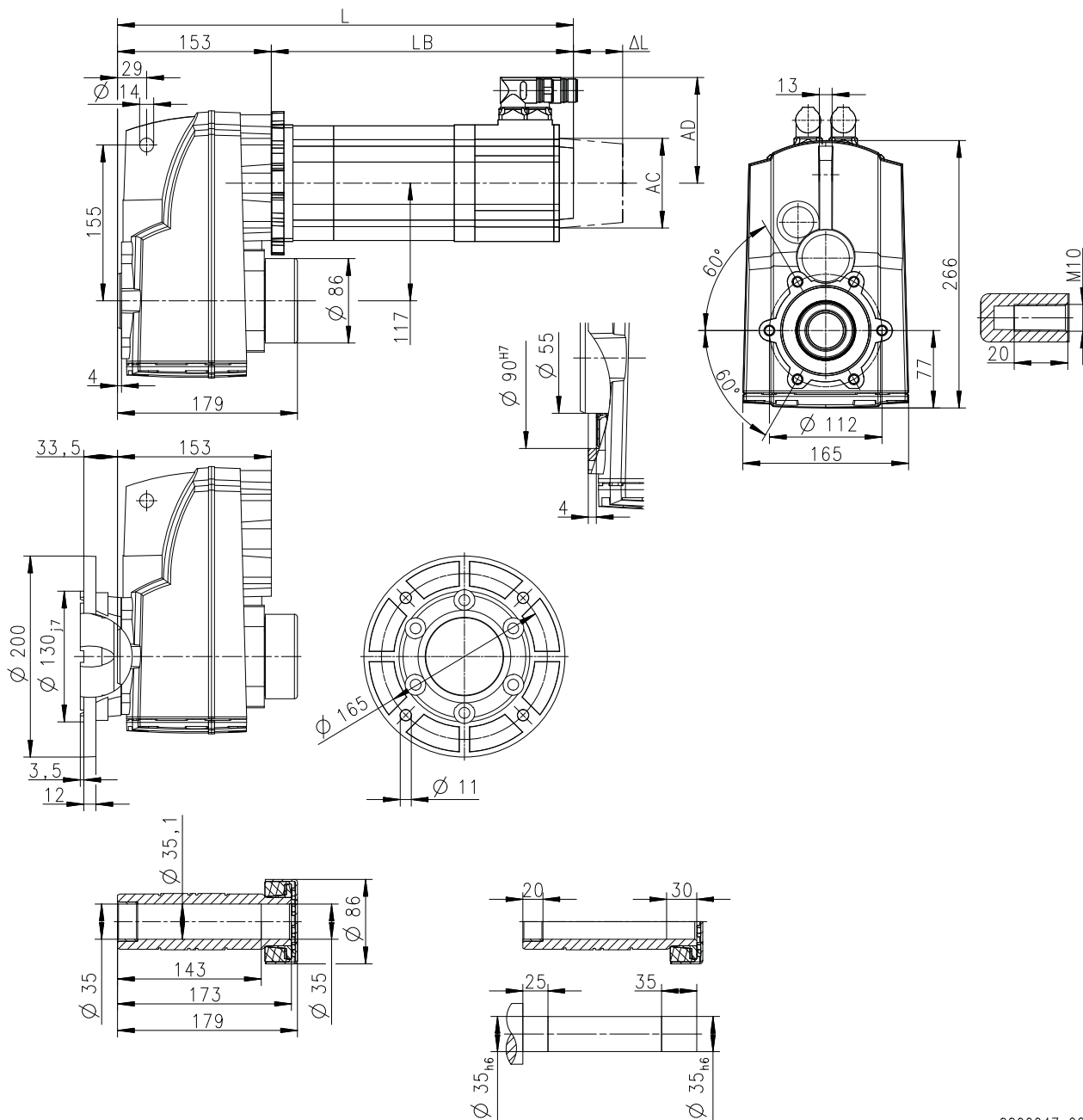


Technical data

Dimensions
Basic dimensions

g500-S400, 2-/3-stage with MCA14

Gearbox version: Hollow shaft with shrink disc, without foot (SDR/SCR/SCK)



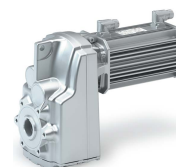
8800047-00

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Total length	L	mm	533	471	533	471
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

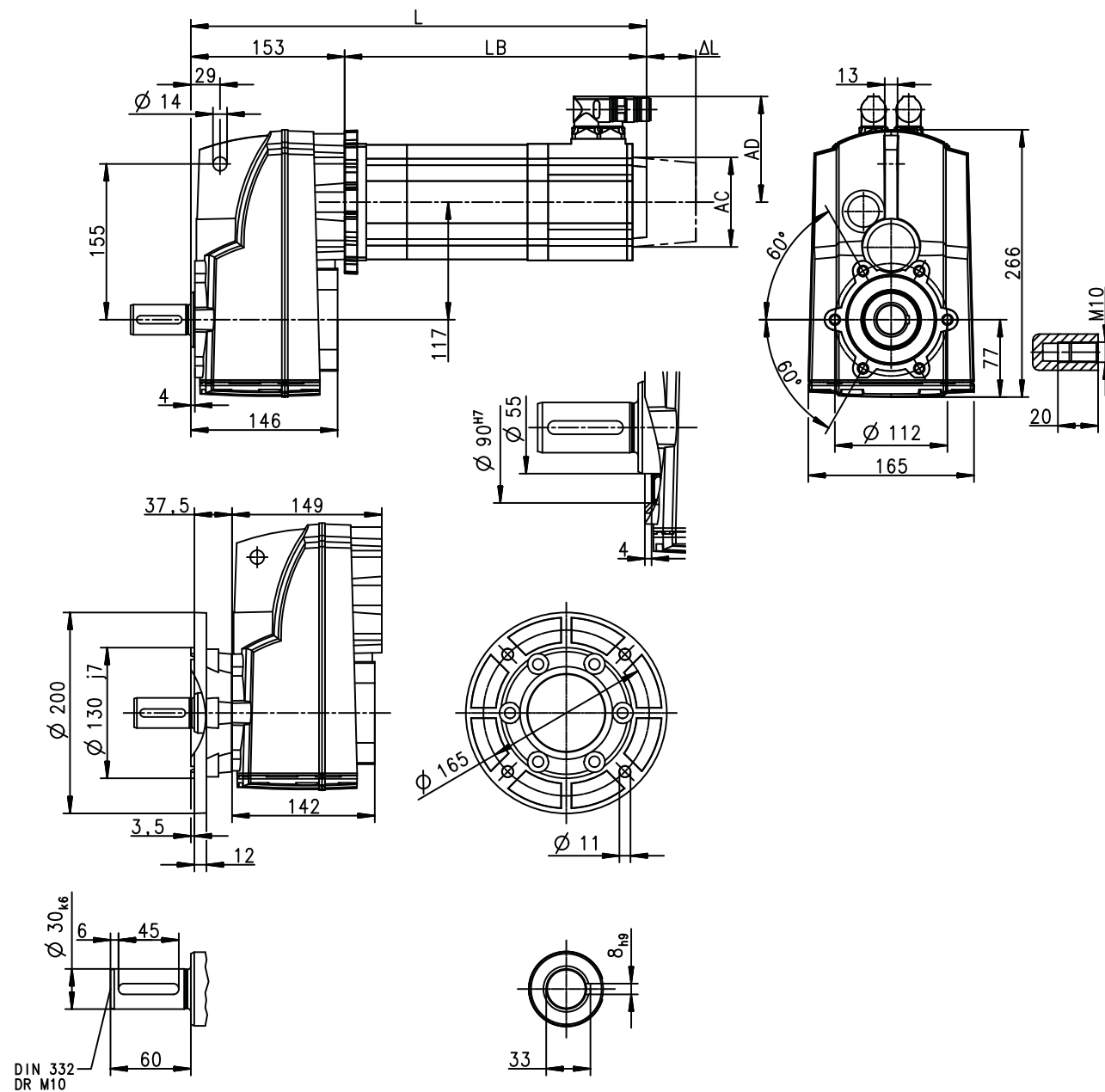
Dimensions

Basic dimensions



g500-S400, 2-/3-stage with MCA14

Gearbox design: Solid shaft without foot (VDR/VCR/VCK)



8800046-01

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	533	471	533	471
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

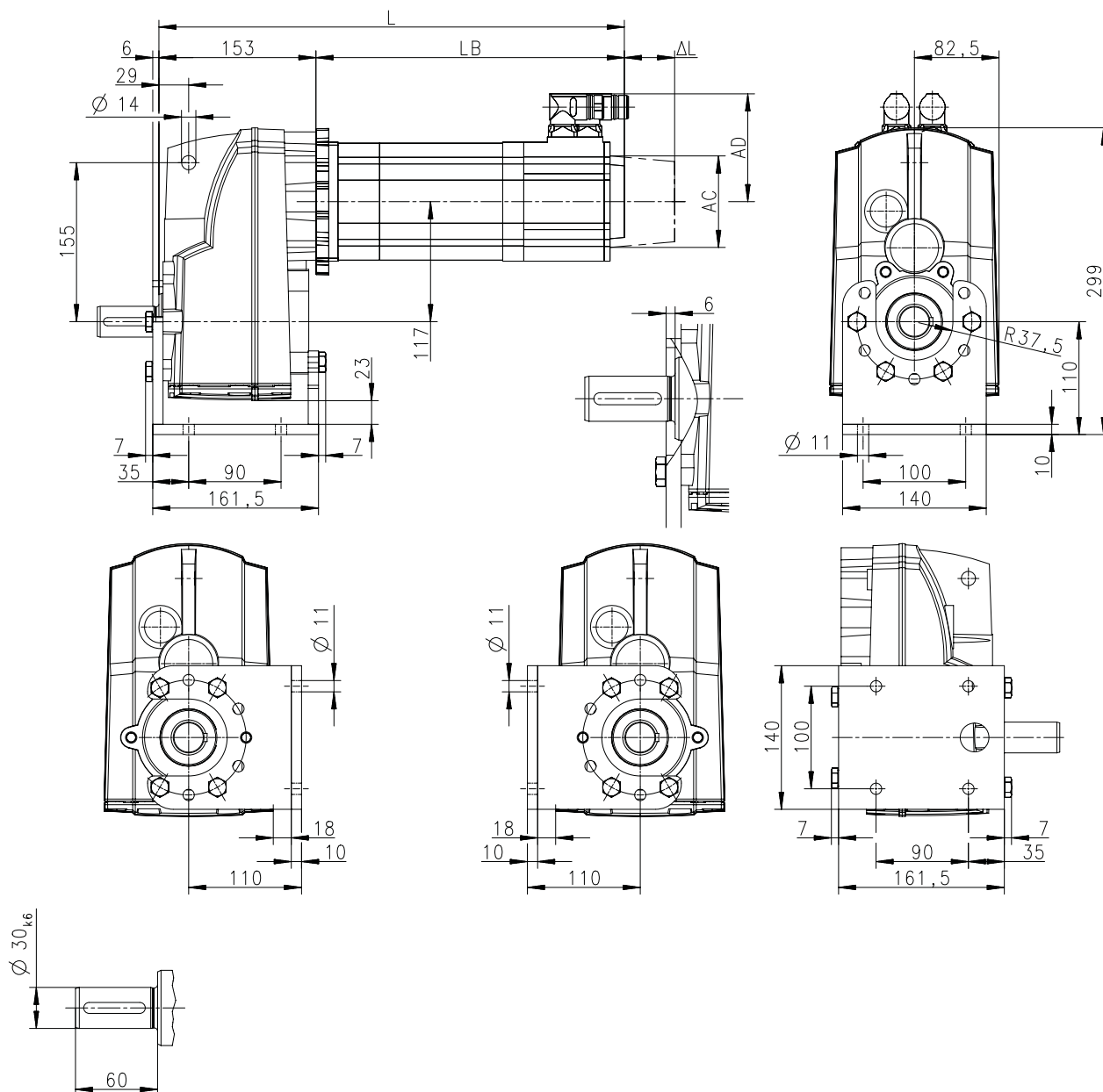


Technical data

Dimensions
Basic dimensions

g500-S400, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot (VBR)



8800048-00

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	533	471	533	471
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



Technical drawing of a mechanical part, likely a pump or motor housing, showing multiple views (front, side, top, bottom, and cross-sections) with dimensions in millimeters. Key dimensions include overall length L, width 153, height 155, and various diameters like Ø 14, Ø 112, and Ø 165. The drawing also shows a cross-section of a mounting flange with M10 holes.

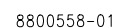
Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	596	510	596	510
Motor length	LB	mm	443	357	443	357
Length of motor options	Δ L	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118



Dimensions

Basic dimensions

Gearbox version: Hollow shaft with foot (HBR)

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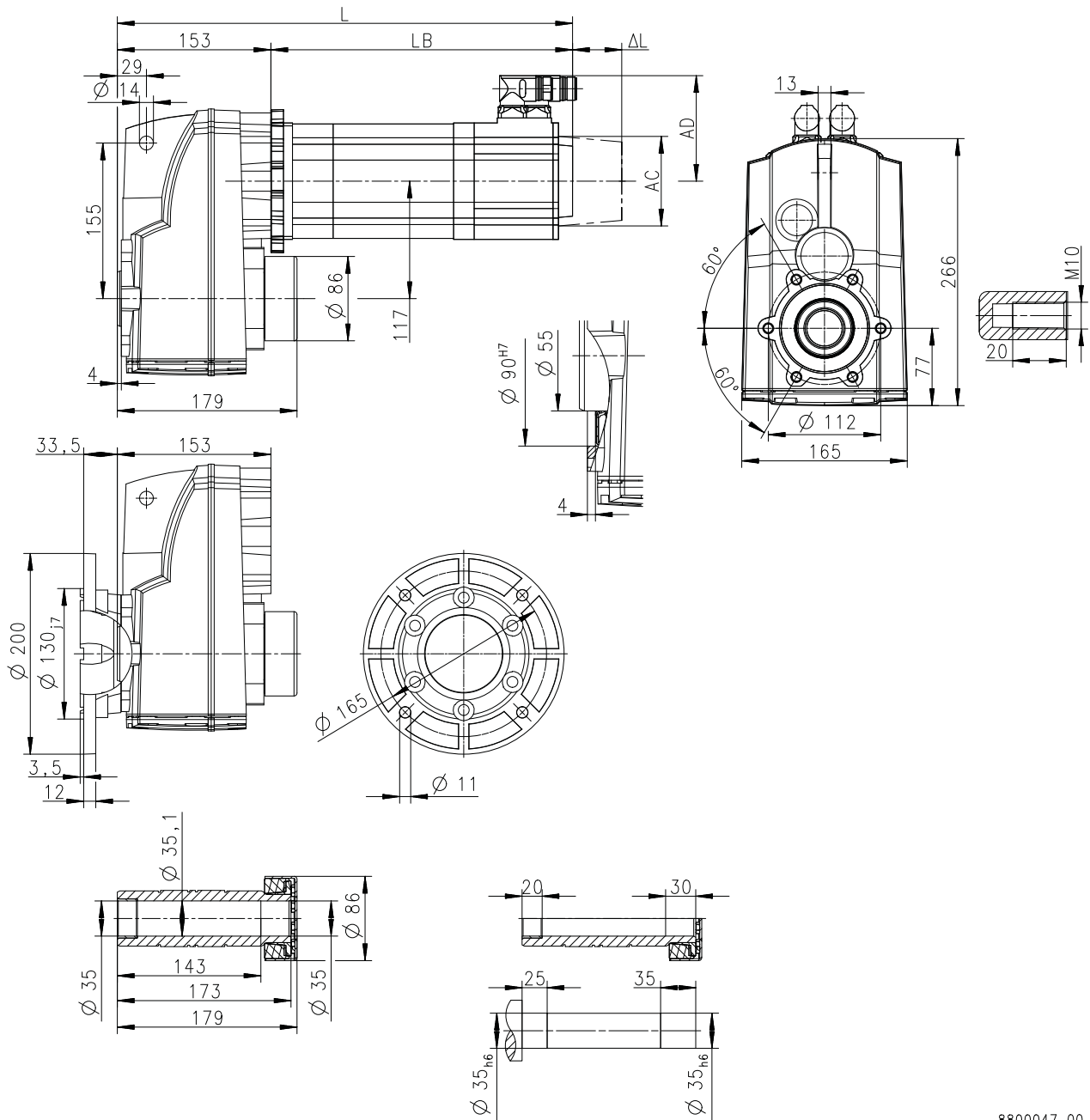
Technical data

Dimensions
Basic dimensions



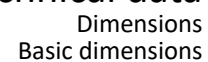
g500-S400, 2-/3-stage with MCA17

Gearbox version: Hollow shaft with shrink disc, without foot (SDR/SCR/SCK)



8800047-00

Motor			MCA			
			17N17- Blower	17N23- natural	17N35- Blower	17N41- natural
Total length	L	mm	596	510	596	510
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

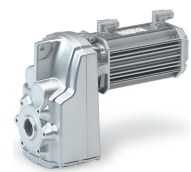


Gearbox design: Solid shaft without foot (VDR/VCR/VCK)

8800046-01

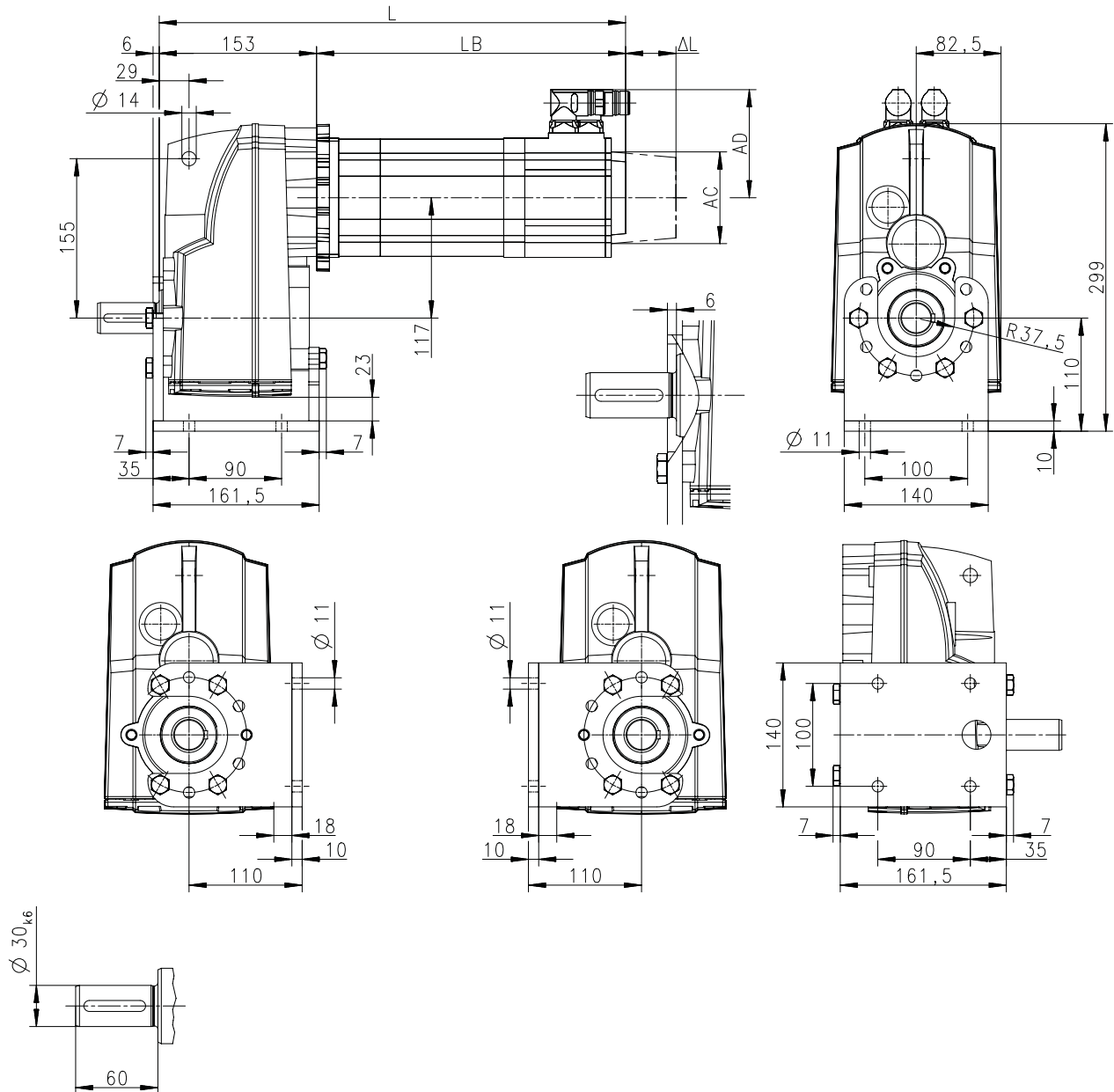
Technical data

Dimensions
Basic dimensions



g500-S400, 2-/3-stage with MCA17

Gearbox version: Solid shaft with foot (VBR)



8800048-00

Motor			MCA			
			17N17- Blower	17N23- natural	17N35- Blower	17N41- natural
Cooling type						
Total length	L	mm	596	510	596	510
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

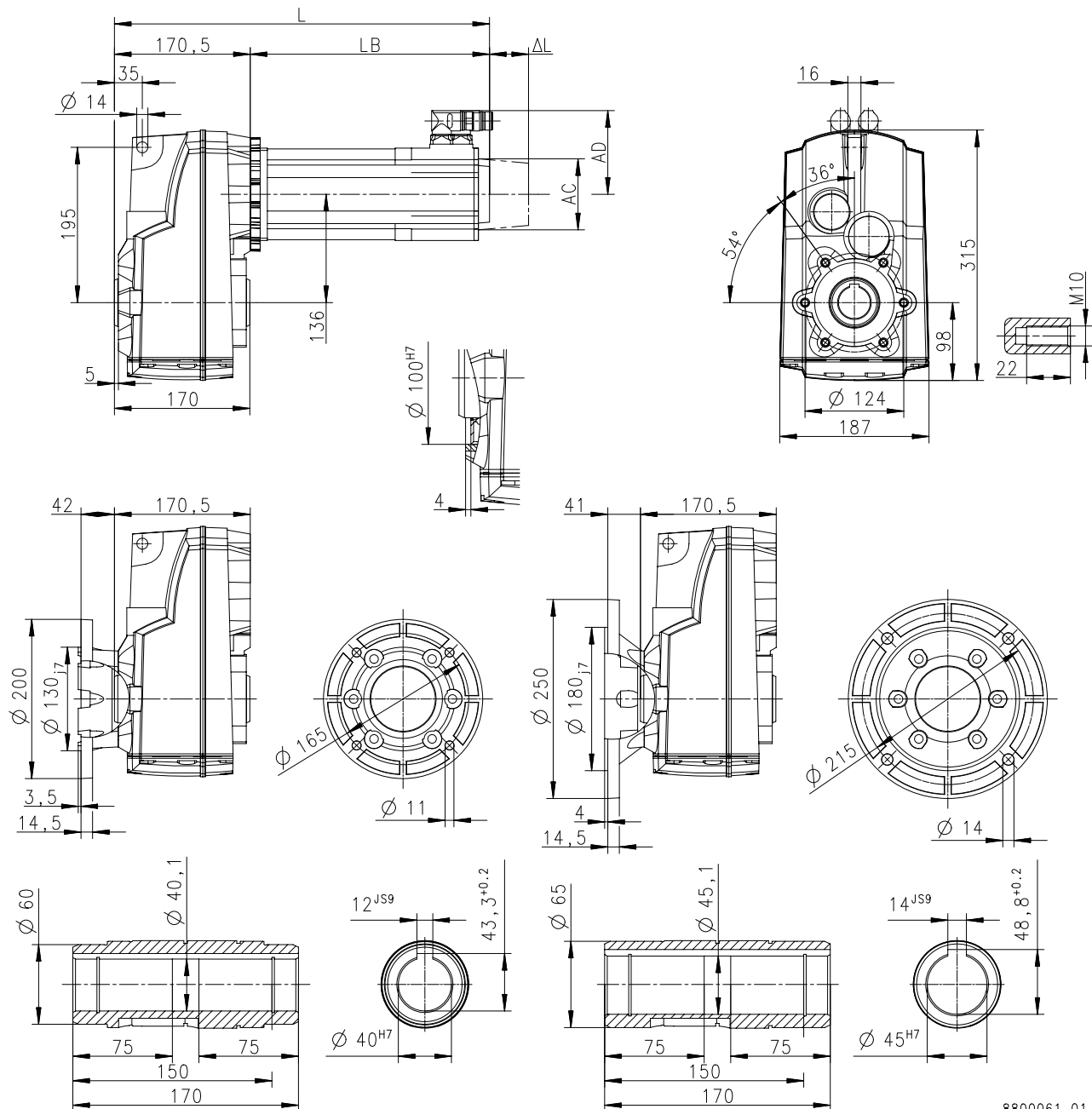


Technical data

Dimensions
Basic dimensions

g500-S660, 2-/3-stage with MCA10

Gearbox version: Hollow shaft without foot (HDR/HCR/HCK)



8800061-01

Motor			MCA
Cooling type			10I40-natural
Total length	L	mm	430
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



Technical drawing of the 1000 series pump assembly, showing front, side, and detail views with dimensions in mm.

Front View (Top Left): Shows the main body with dimensions: 5, 170.5, LB, ΔL , 35, $\varnothing 14$, 195, 136, 12, 7, 39, 102, 180, 7, AC, AD.

Side View (Top Right): Shows the side profile with dimensions: 93.5, 337, R35, 120, 10, 150, 110, $\varnothing 11$.

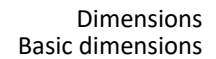
Top View (Middle Left): Shows the top of the pump with dimensions: 11, $\varnothing 11$, 16, 10, 120.

Bottom View (Middle Right): Shows the bottom of the pump with dimensions: 150, 110, 7, 102, 180, 39, 7.

Detail Views (Bottom):

- Detail 1 (Bottom Left):** Shows a cross-section of the pump body with dimensions: 60, $\varnothing 40,1$, 75, 150, 170.
- Detail 2 (Bottom Middle Left):** Shows a cross-section of the pump body with dimensions: 12^{JS9}, 43.3^{+0.2}, $\varnothing 40^{H7}$.
- Detail 3 (Bottom Middle Right):** Shows a cross-section of the pump body with dimensions: 65, $\varnothing 45,1$, 75, 150, 170.
- Detail 4 (Bottom Right):** Shows a cross-section of the pump body with dimensions: 14^{JS9}, 48.8^{+0.2}, $\varnothing 45^{H7}$.

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	430
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90



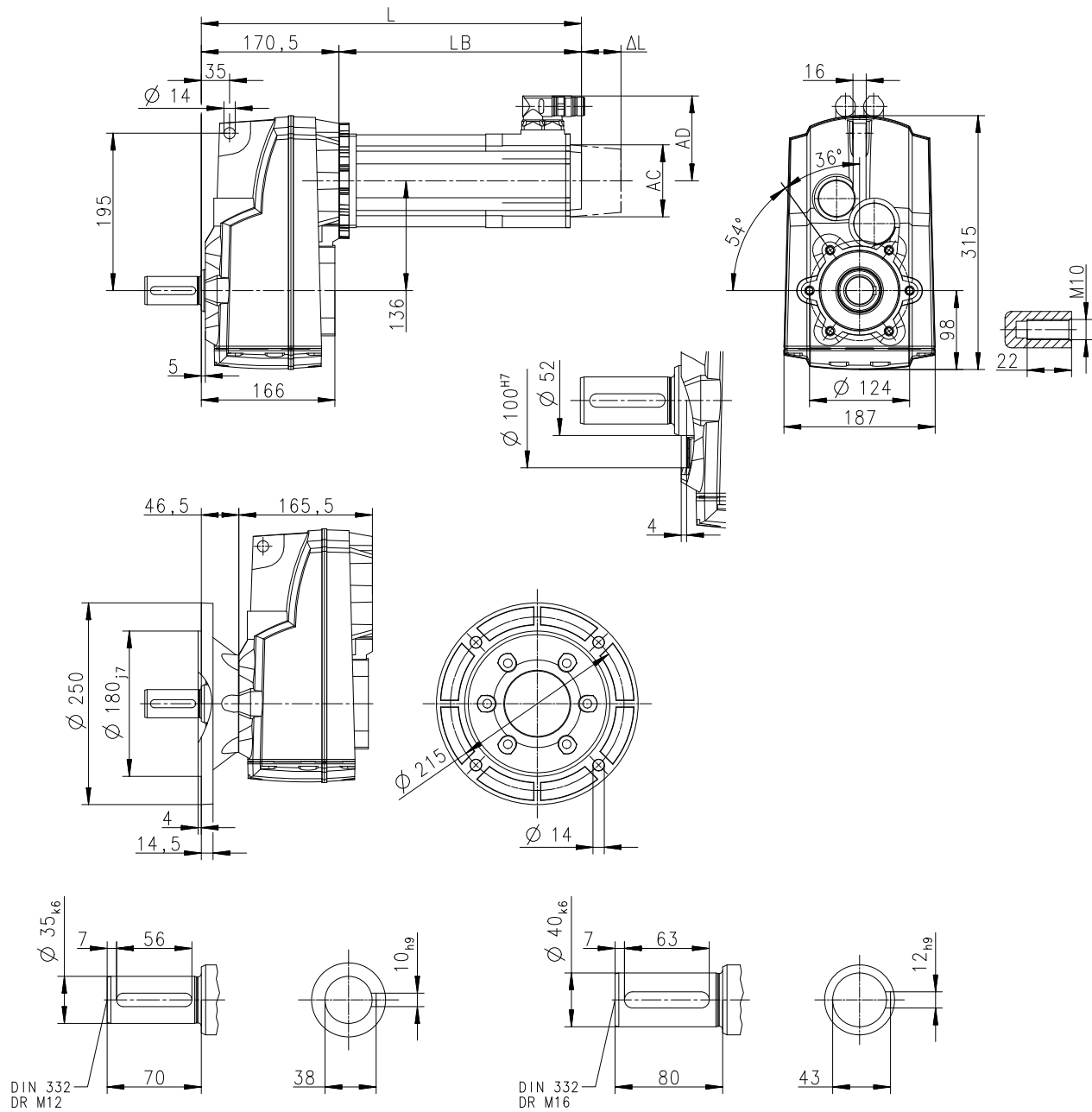
Technical data

Dimensions
Basic dimensions



g500-S660, 2-/3-stage with MCA10

Gearbox version: Solid shaft without foot (VDR/VCR/VCK)



8800062-00

Motor			MCA
			10140-
Cooling type			natural
Total length	L	mm	430
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90



g500-S660, 2-/3-stage with MCA10

8800064-00

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Dimensions

Basic dimensions



Technical drawing of a mechanical part, showing multiple views (front, top, side, and cross-sections) with dimensions in millimeters. The drawing includes a main front view, a top view, a side view, and two cross-sections. Dimensions are provided for various features, including diameters, lengths, and angles.

Front View Dimensions:

- Overall length: L
- Distance from left face to center of first hole: $170,5$
- Distance from left face to center of second hole: LB
- Distance from left face to center of third hole: ΔL
- Distance from left face to center of fourth hole: AC
- Distance from left face to center of fifth hole: AD
- Distance from left face to center of sixth hole: 136
- Distance from left face to center of seventh hole: 170
- Distance from left face to center of eighth hole: 195
- Distance from left face to center of ninth hole: 5
- Distance from left face to center of tenth hole: 35
- Distance from left face to center of eleventh hole: $\varnothing 14$

Top View Dimensions:

- Overall width: 187
- Distance from top face to center of first hole: 16
- Distance from top face to center of second hole: 36°
- Distance from top face to center of third hole: 54°
- Distance from top face to center of fourth hole: 98
- Distance from top face to center of fifth hole: 315
- Distance from top face to center of sixth hole: 22
- Distance from top face to center of seventh hole: $\varnothing 124$

Side View Dimensions:

- Overall height: 42
- Distance from left face to center of first hole: $170,5$
- Distance from left face to center of second hole: 4
- Distance from left face to center of third hole: 100^{H7}
- Distance from left face to center of fourth hole: 136
- Distance from left face to center of fifth hole: 170
- Distance from left face to center of sixth hole: 195
- Distance from left face to center of seventh hole: 5
- Distance from left face to center of eighth hole: 35
- Distance from left face to center of ninth hole: $\varnothing 14$

Cross-section Dimensions:

- Overall diameter: $\varnothing 165$
- Distance from center to first hole: $\varnothing 11$
- Distance from center to second hole: $\varnothing 14$
- Distance from center to third hole: $\varnothing 180,7$
- Distance from center to fourth hole: $\varnothing 215$
- Distance from center to fifth hole: $\varnothing 40,1$
- Distance from center to sixth hole: $\varnothing 45,1$
- Distance from center to seventh hole: $\varnothing 40^{H7}$
- Distance from center to eighth hole: $\varnothing 45^{H7}$
- Distance from center to ninth hole: 12^{JS9}
- Distance from center to tenth hole: $43,3^{+0,2}$
- Distance from center to eleventh hole: $48,8^{+0,2}$
- Distance from center to twelfth hole: 14^{JS9}
- Distance from center to thirteenth hole: 75
- Distance from center to fourteenth hole: 150
- Distance from center to fifteenth hole: 170
- Distance from center to sixteenth hole: 60
- Distance from center to seventeenth hole: 65

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	506	438
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

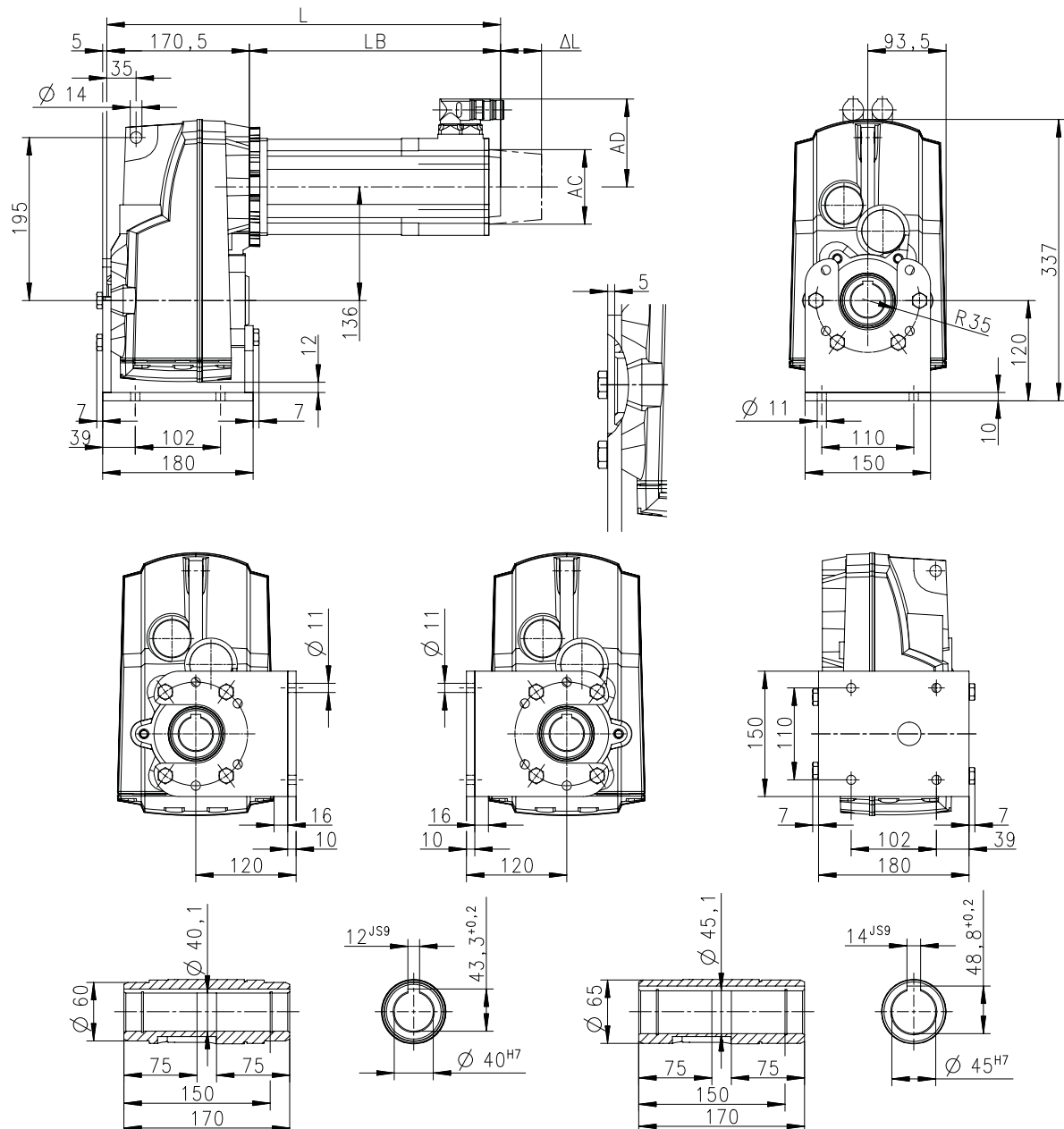


Technical data

Dimensions
Basic dimensions

g500-S660, 2-/3-stage with MCA13

Gearbox version: Hollow shaft with foot (HBR)



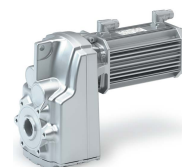
8800561-01

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	506	438
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

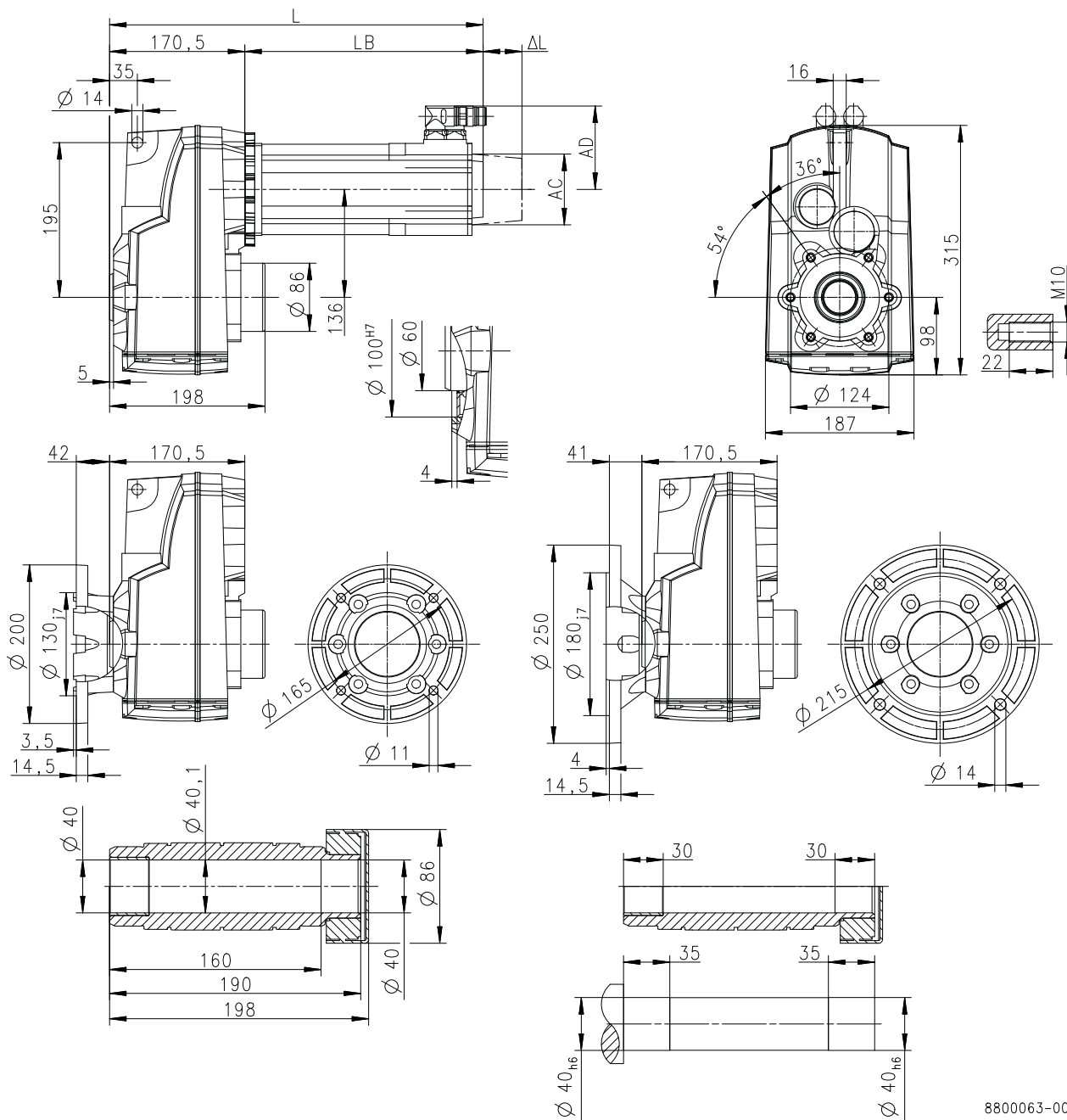
Dimensions

Basic dimensions



g500-S660, 2-/3-stage with MCA13

Gearbox version: Hollow shaft with shrink disc, without foot (SDR/SCR/SCK)



8800063-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	506	438
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

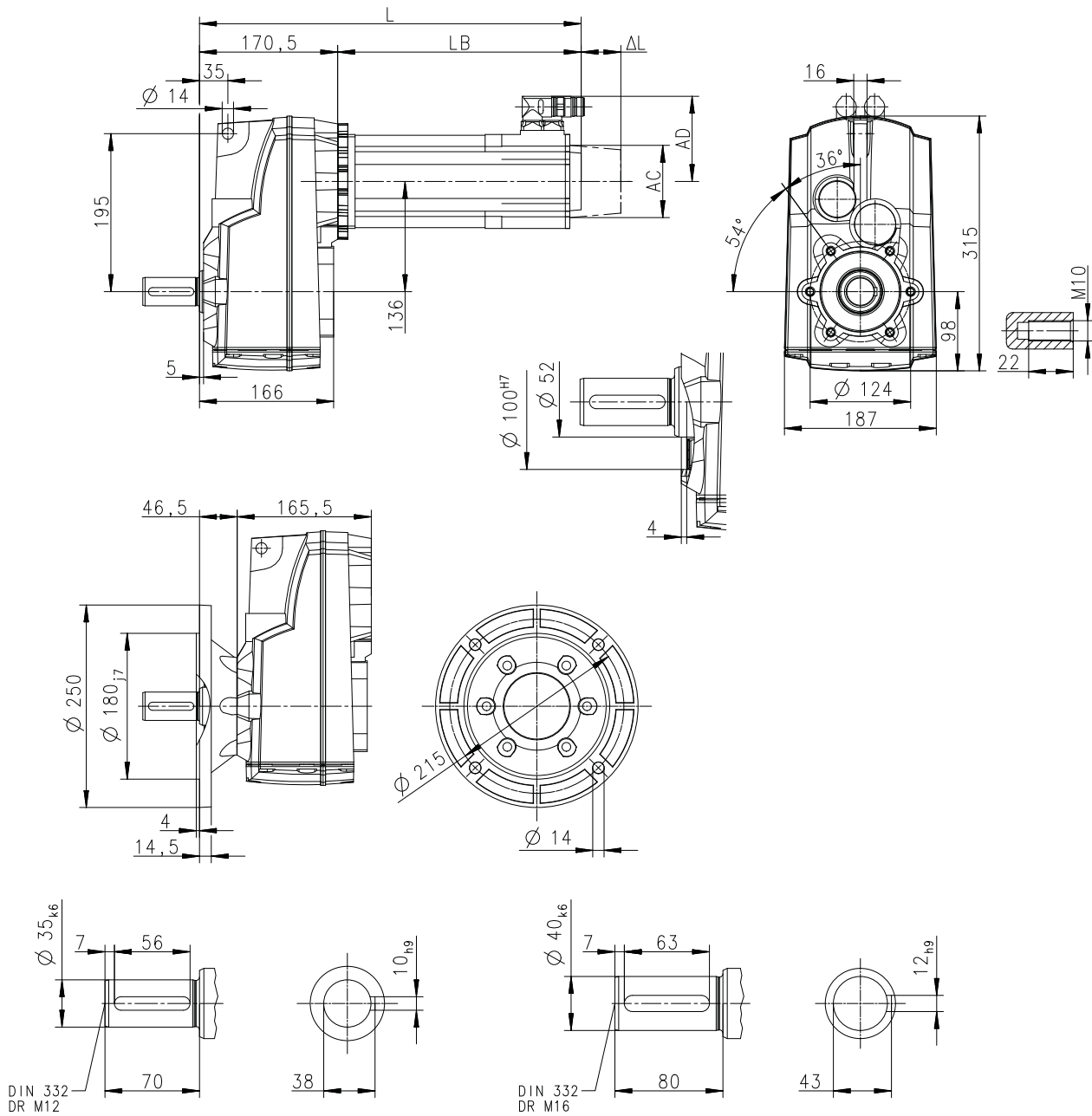


Technical data

Dimensions
Basic dimensions

g500-S660, 2-/3-stage with MCA13

Gearbox version: Solid shaft without foot (VDR/VCR/VCK)

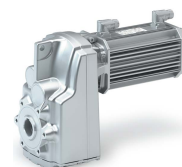


8800062-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	506	438
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

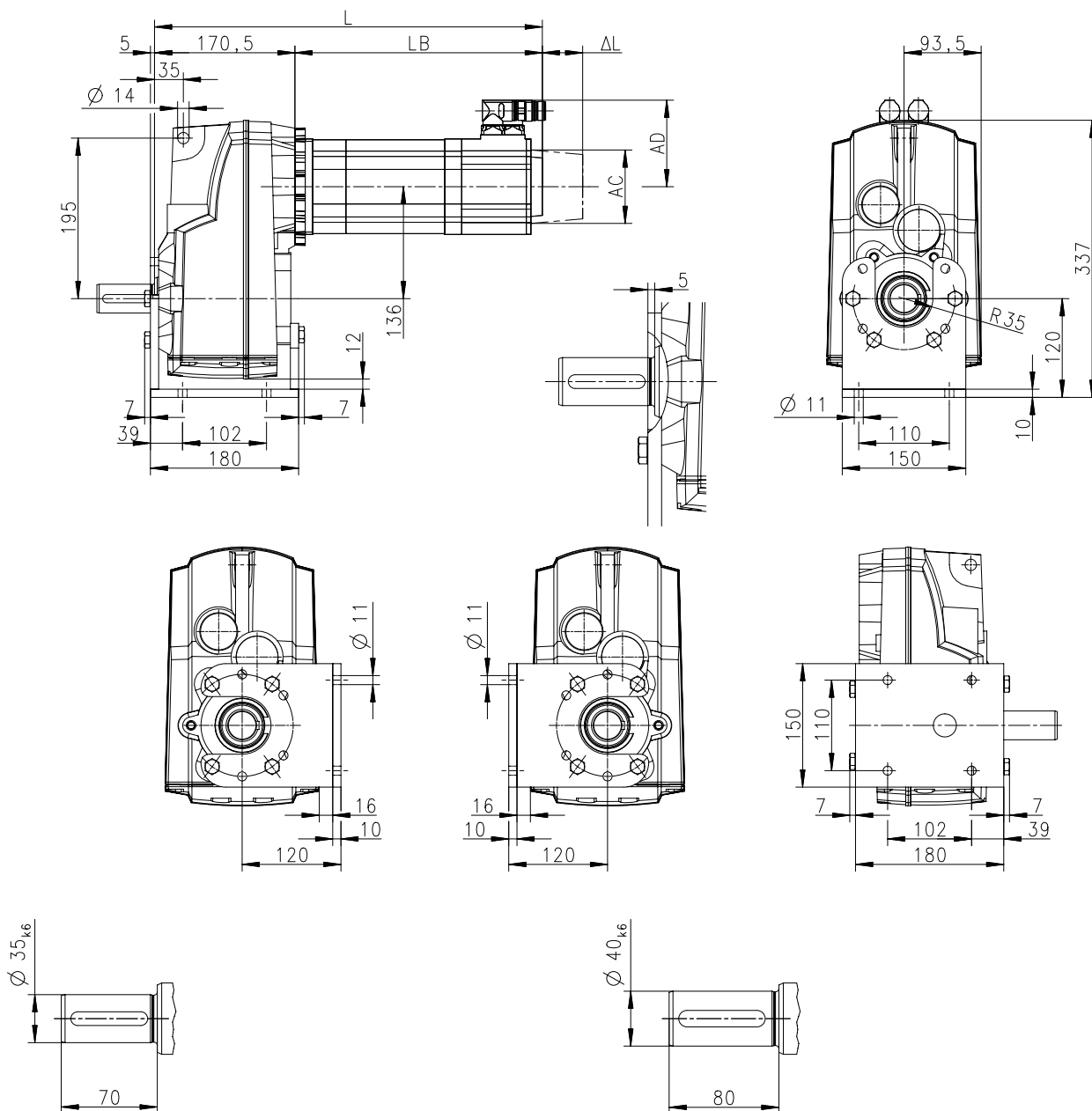
Technical data

Dimensions
Basic dimensions



g500-S660, 2-/3-stage with MCA13

Gearbox version: Solid shaft with foot (VBR)



8800064-00

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	506	438
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

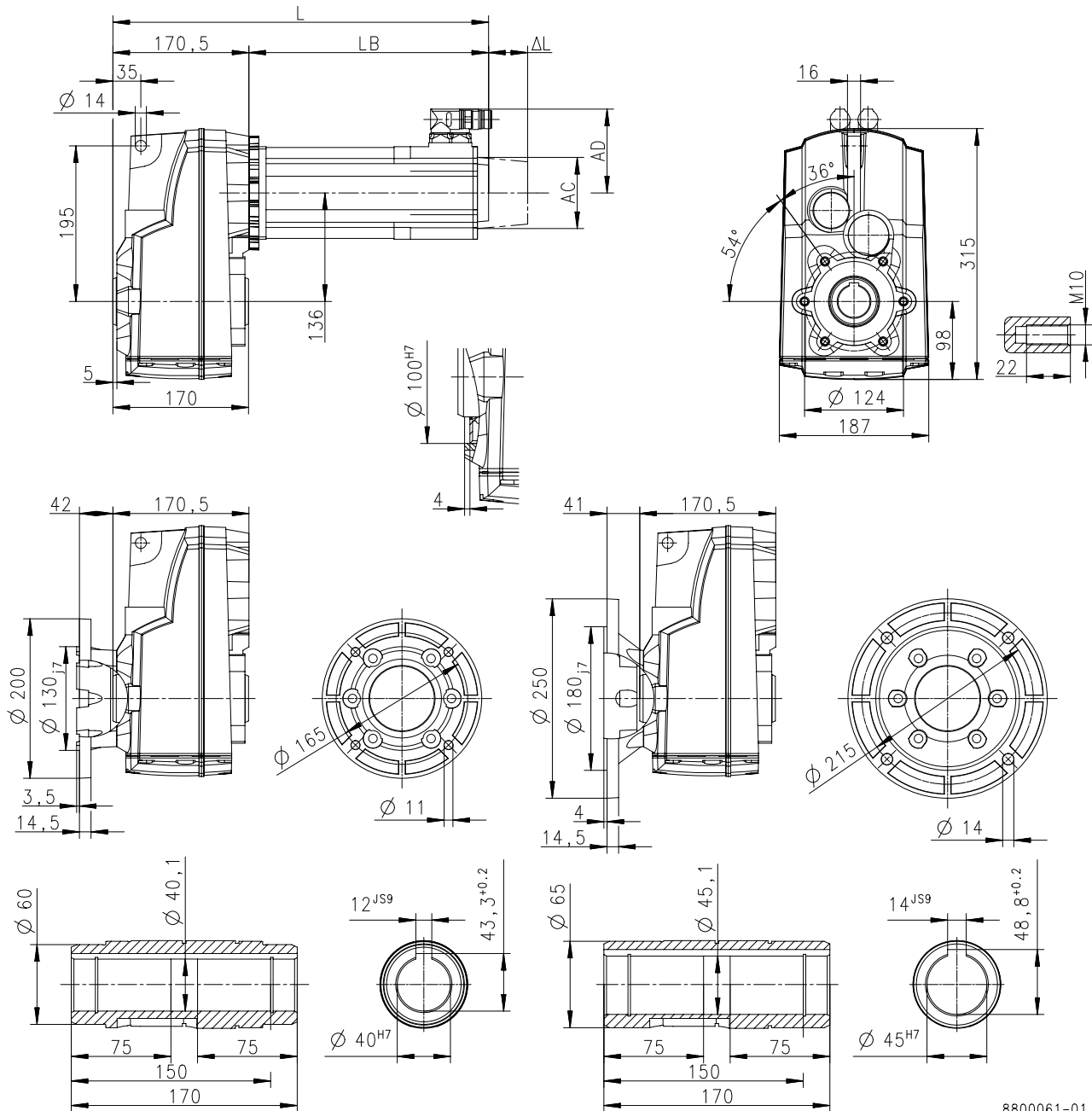


Technical data

Dimensions
Basic dimensions

g500-S660, 2-/3-stage with MCA14

Gearbox version: Hollow shaft without foot (HDR/HCR/HCK)

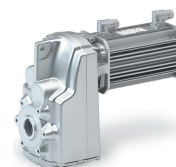


8800061-01

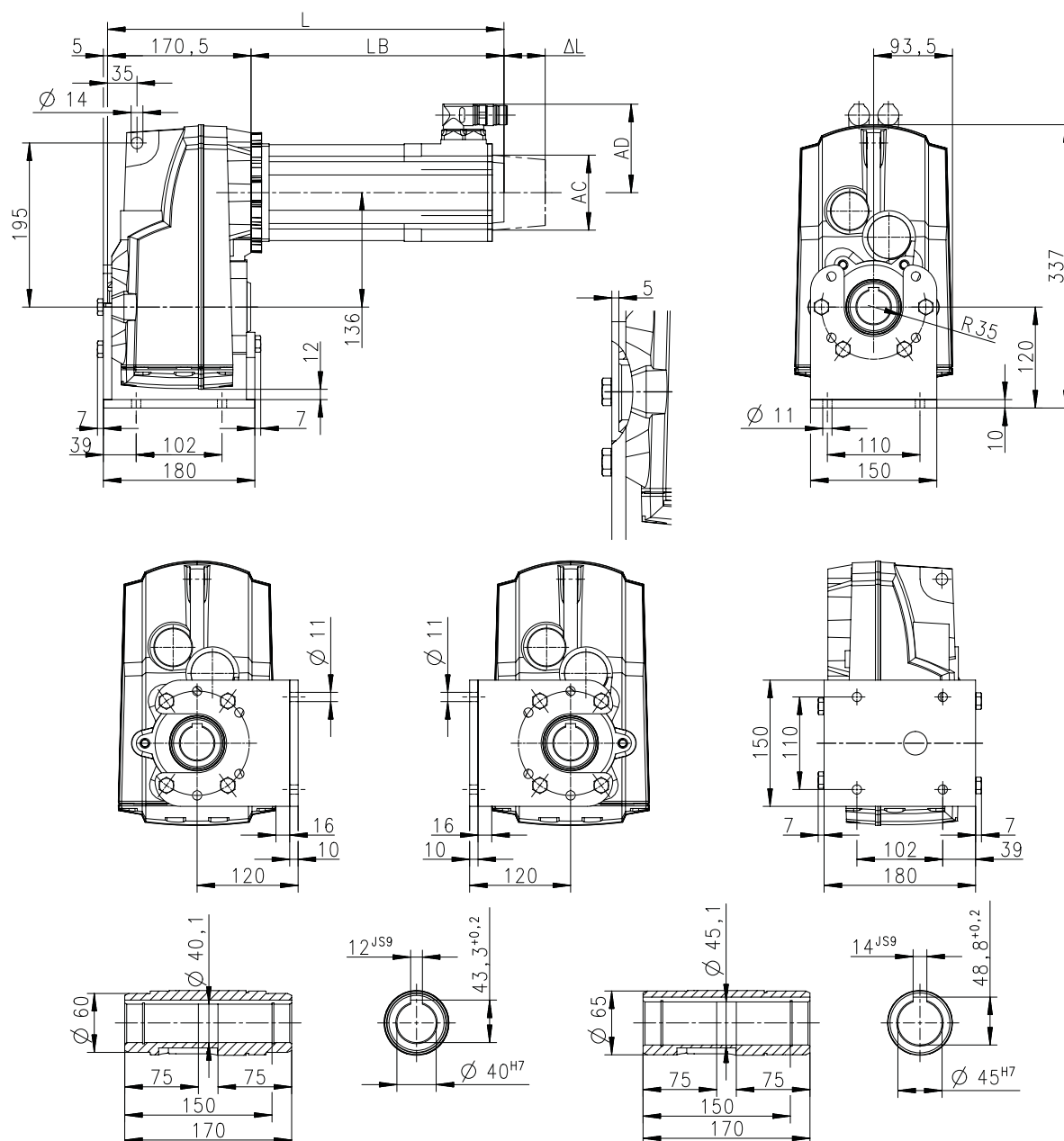
Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Total length	L	mm	550	488	550	488
Motor length	LB	mm	380	318	380	318
Length of motor options	Δ L	mm	89	89	89	89
Motor diameter	AC	mm	142	142	142	142
Motor/connection distance	AD	mm	109	109	109	109

Dimensions

Basic dimensions



Gearbox version: Hollow shaft with foot (HBR)



8800561-01

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	550	488	550	488
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

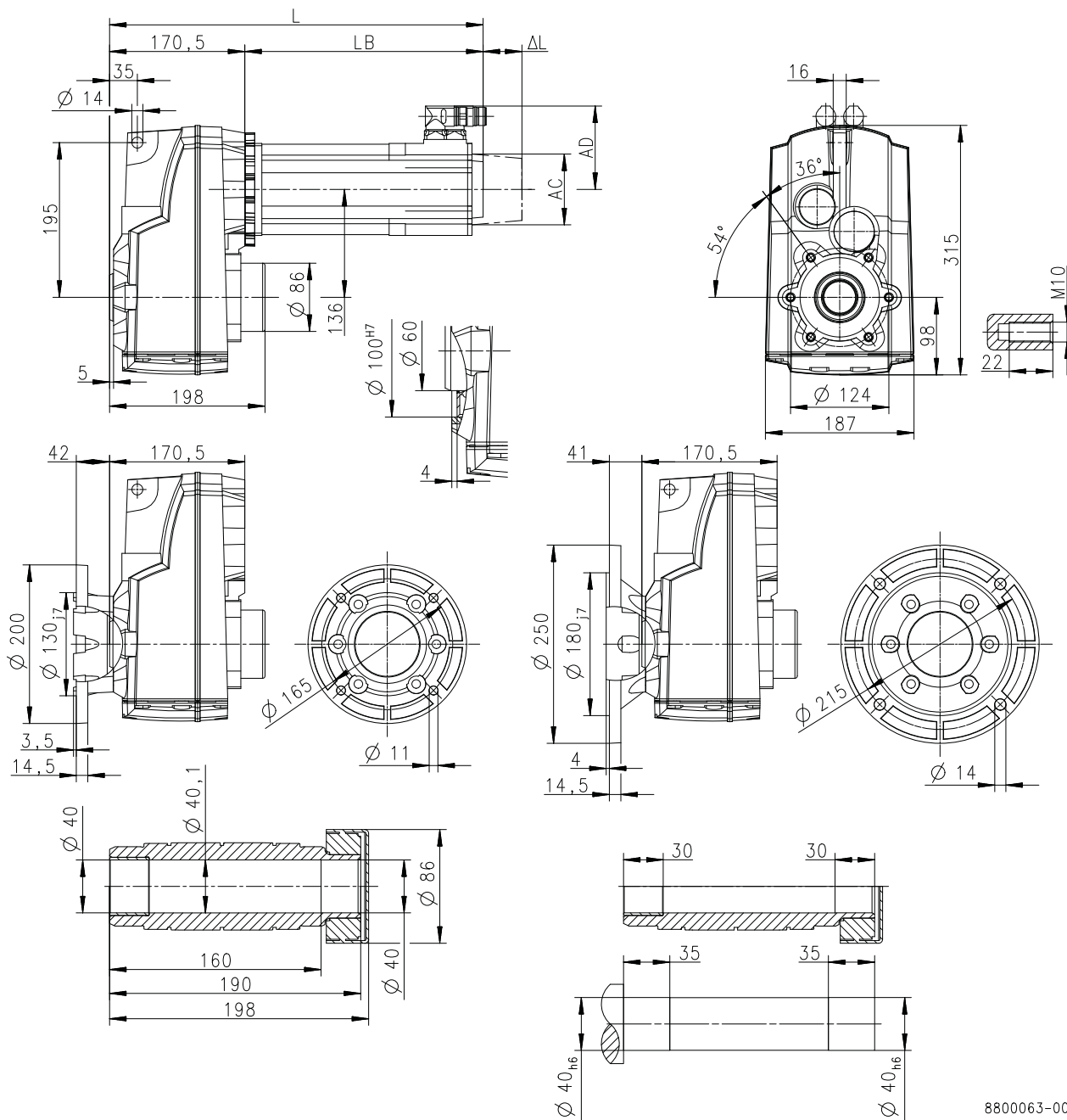


Technical data

Dimensions
Basic dimensions

g500-S660, 2-/3-stage with MCA14

Gearbox version: Hollow shaft with shrink disc, without foot (SDR/SCR/SCK)



8800063-00

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Total length	L	mm	550	488	550	488
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

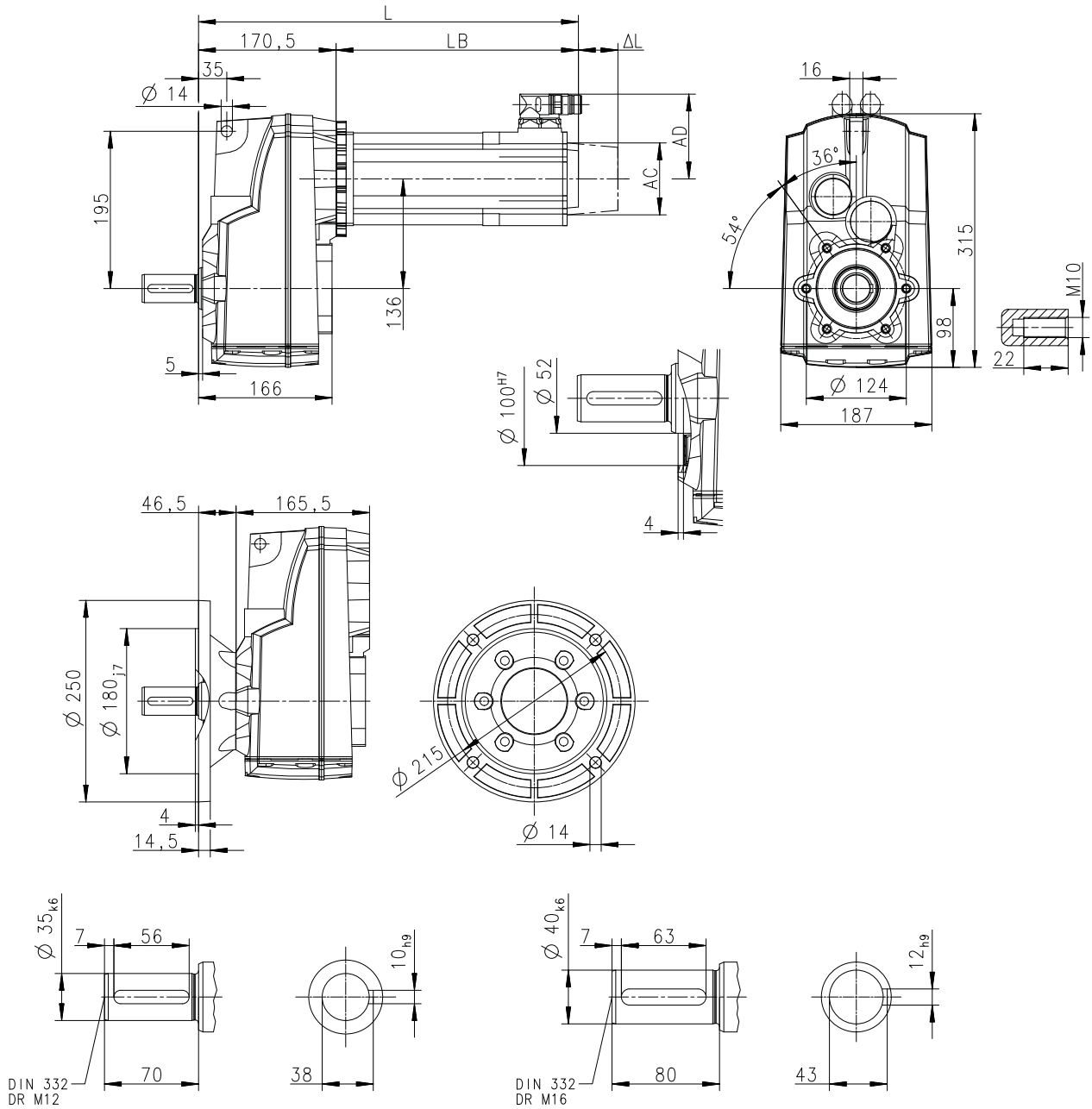
Technical data

Dimensions
Basic dimensions



g500-S660, 2-/3-stage with MCA14

Gearbox version: Solid shaft without foot (VDR/VCR/VCK)



8800062-00

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	550	488	550	488
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

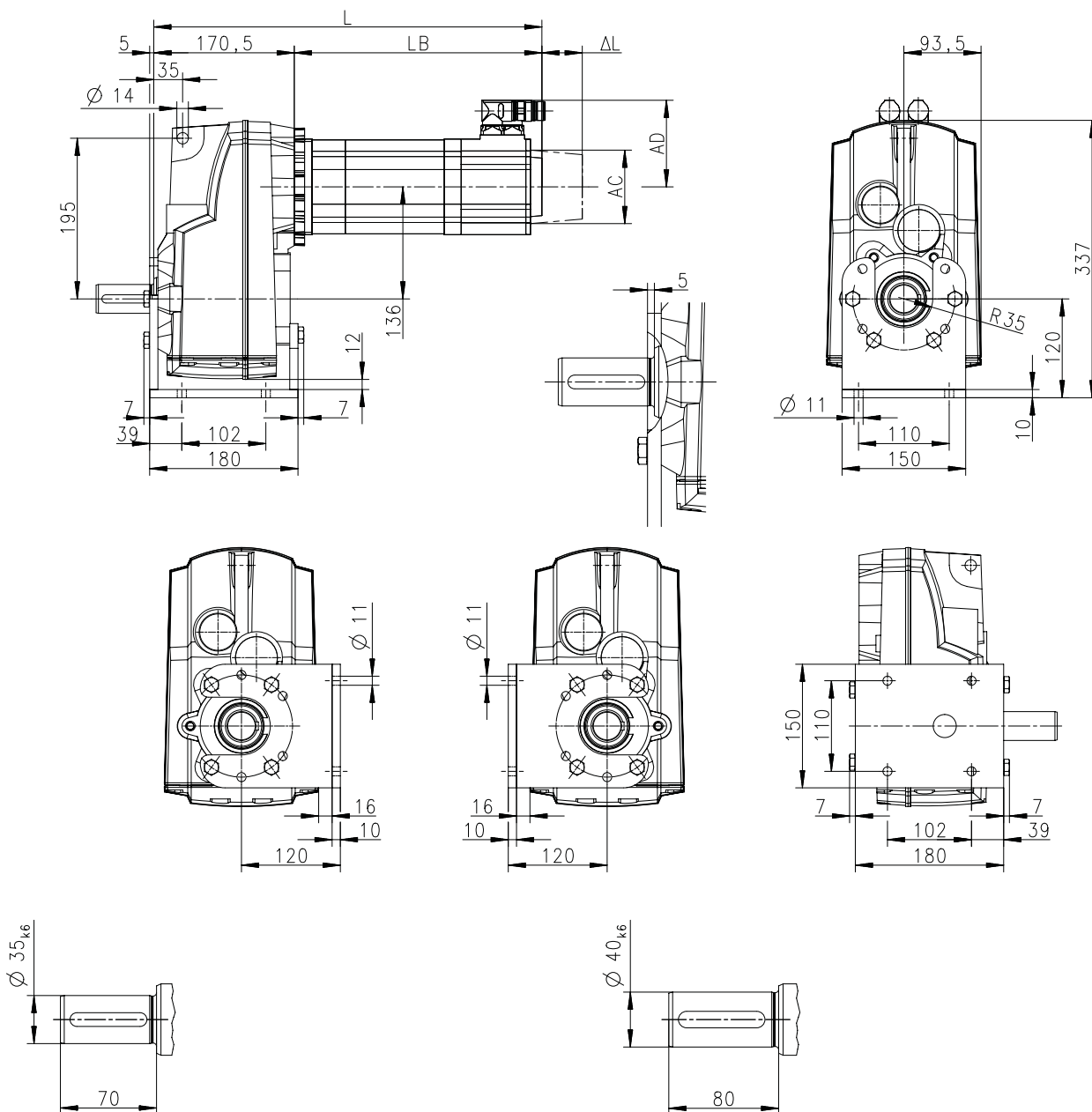


Technical data

Dimensions
Basic dimensions

g500-S660, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot (VBR)



8800064-00

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	550	488	550	488
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

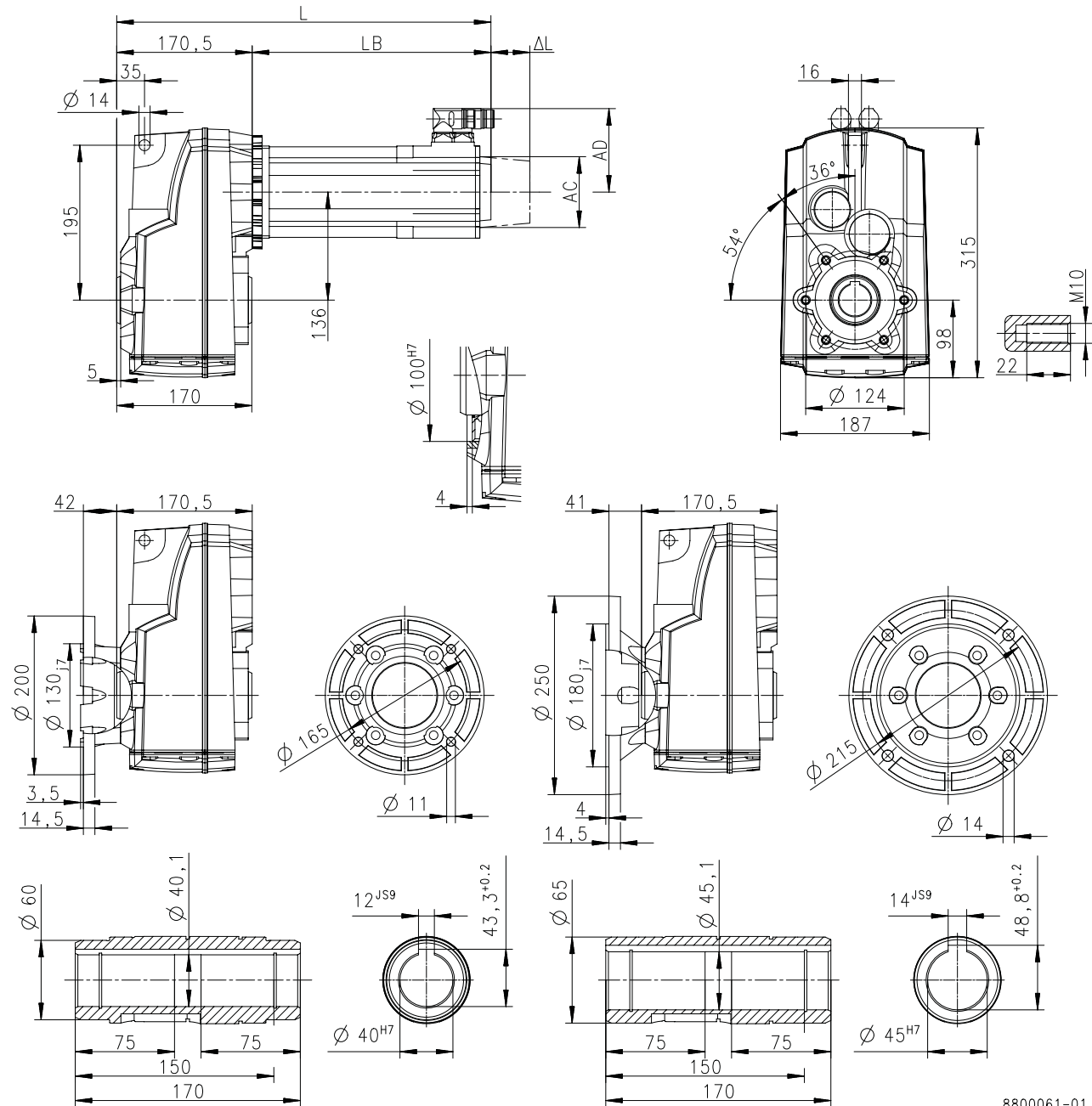
Technical data

Dimensions
Basic dimensions



g500-S660, 2-/3-stage with MCA17

Gearbox version: Hollow shaft without foot (HDR/HCR/HCK)



8800061-01

Motor			MCA			
			17N17- Blower	17N23- natural	17N35- Blower	17N41- natural
Total length	L	mm	613	527	613	527
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



g500-S660, 2-/3-stage with MCA17

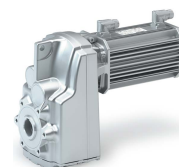
8800561-01

143

Technical data

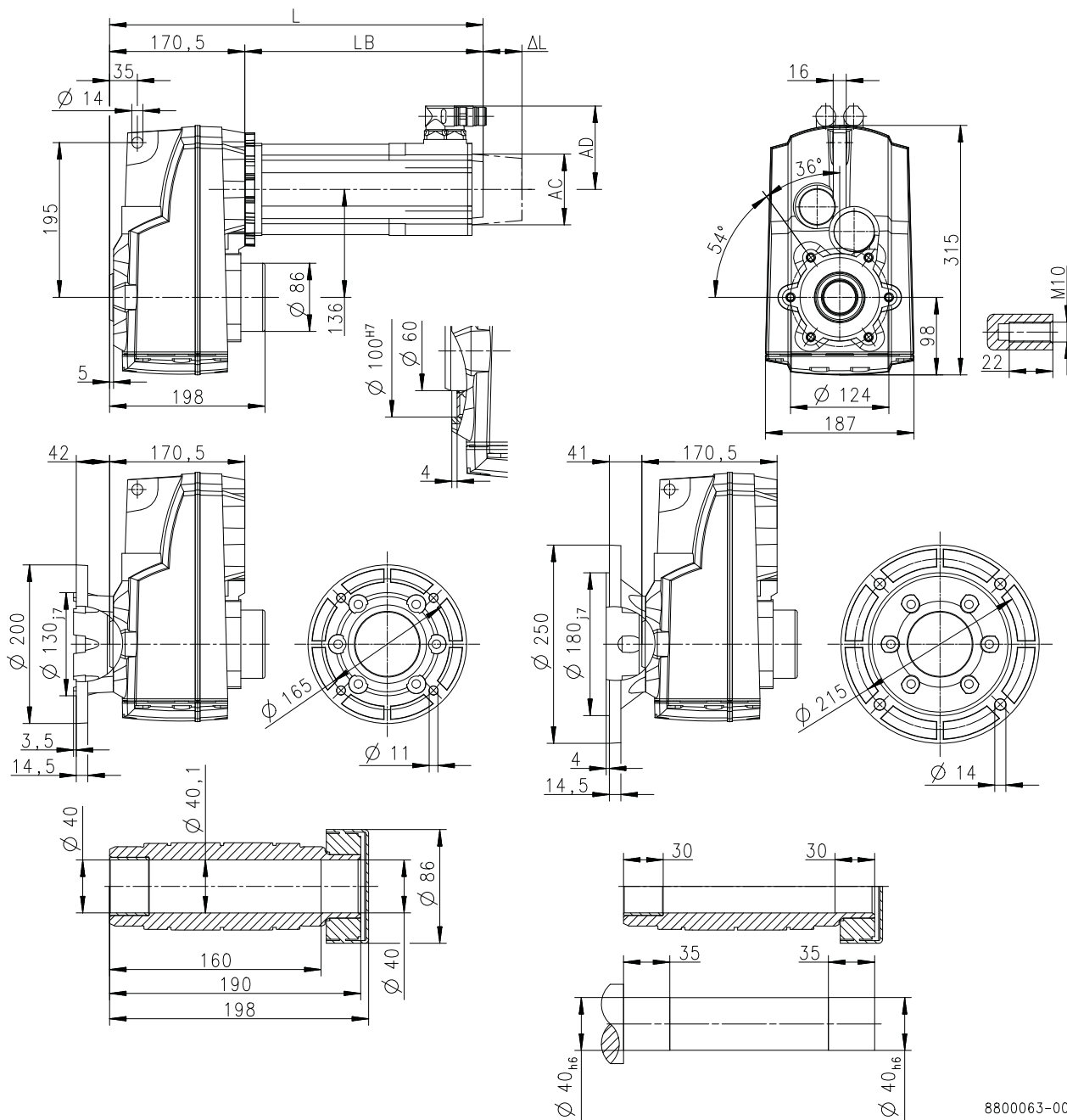
Dimensions

Basic dimensions



g500-S660, 2-/3-stage with MCA17

Gearbox version: Hollow shaft with shrink disc, without foot (SDR/SCR/SCK)



8800063-00

Motor			MCA			
			17N17- Blower	17N23- natural	17N35- Blower	17N41- natural
Cooling type						
Total length	L	mm	613	527	613	527
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



g500-S660, 2-/3-stage with MCA17

8800062-00

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Dimensions

Basic dimensions

[illegible]

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	613	527	613	527
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

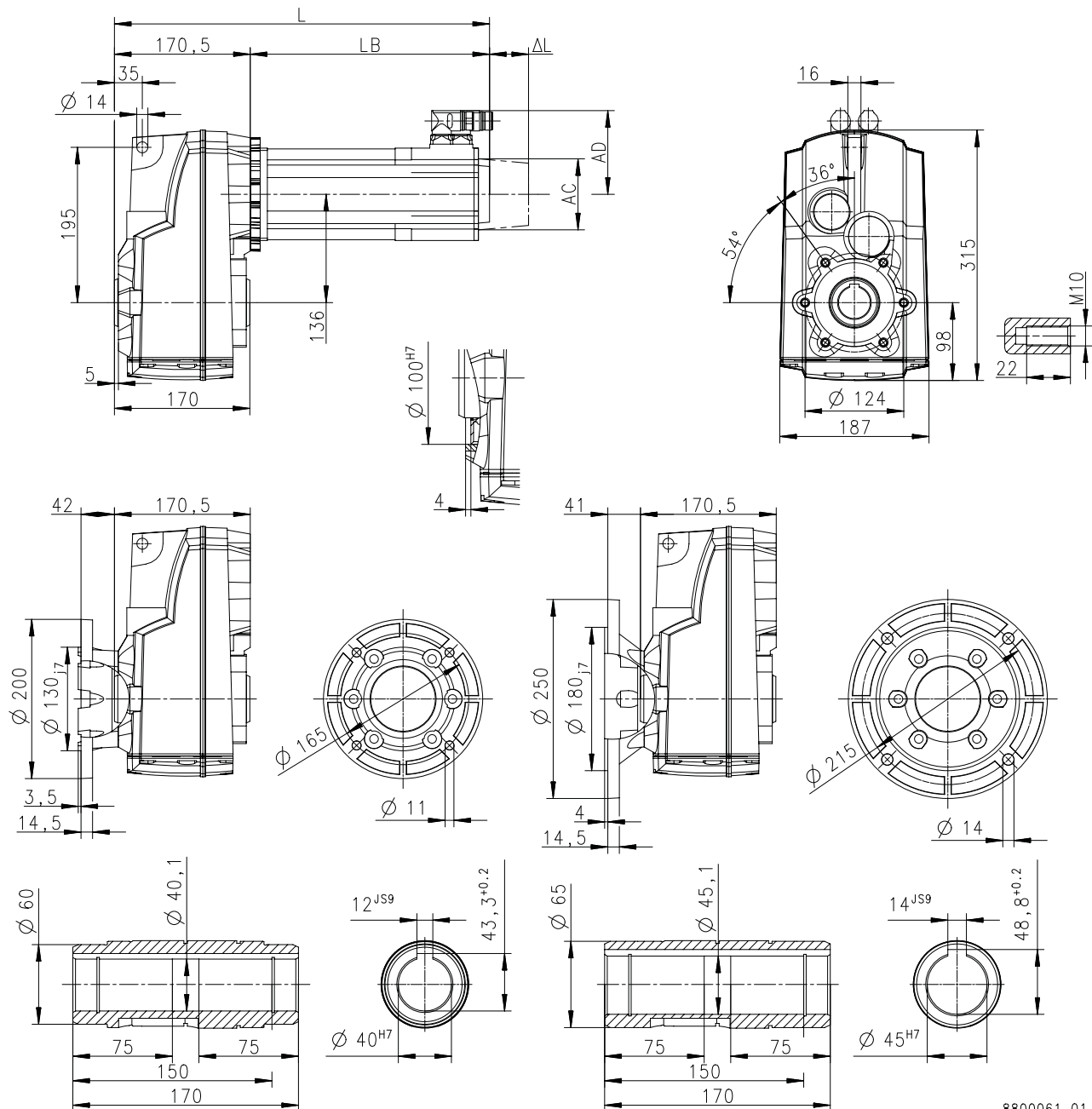


Technical data

Dimensions
Basic dimensions

g500-S660, 2-/3-stage with MCA19

Gearbox version: Hollow shaft without foot (HDR/HCR/HCK)



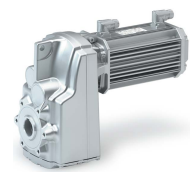
8800061-01

Motor			MCA			
			19S17- Blower	19S23- natural	19S35- Blower	19S42- natural
Total length	L	mm	693	596	693	596
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

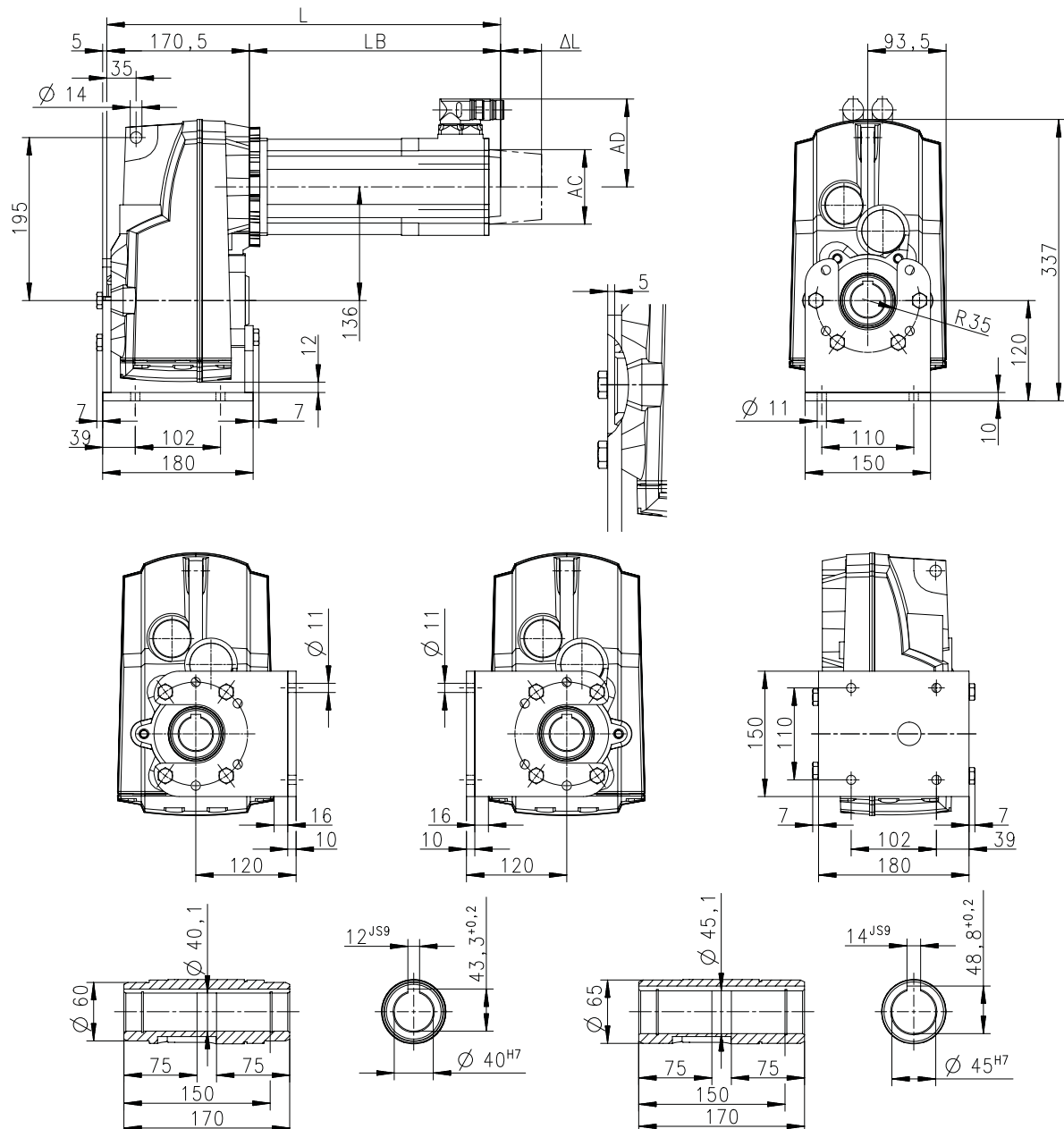
Dimensions

Basic dimensions



g500-S660, 2-/3-stage with MCA19

Gearbox version: Hollow shaft with foot (HBR)



8800561-01

Motor			MCA			
			19S17- Blower	19S23- natural	19S35- Blower	19S42- natural
Cooling type						
Total length	L	mm	693	596	693	596
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

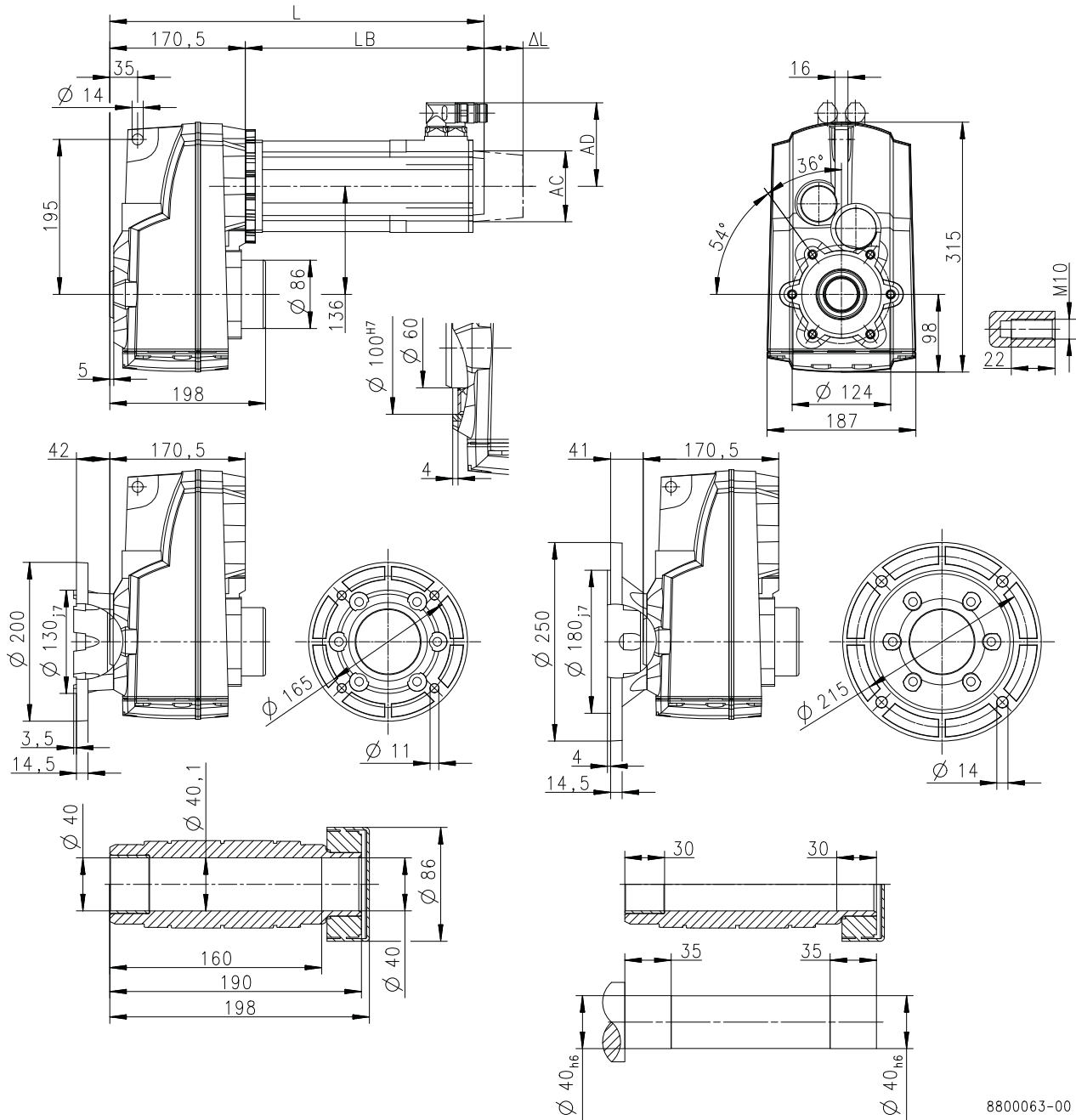


Technical data

Dimensions
Basic dimensions

g500-S660, 2-/3-stage with MCA19

Gearbox version: Hollow shaft with shrink disc, without foot (SDR/SCR/SCK)



8800063-00

Motor			MCA			
			19S17- Blower	19S23- natural	19S35- Blower	19S42- natural
Total length	L	mm	693	596	693	596
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

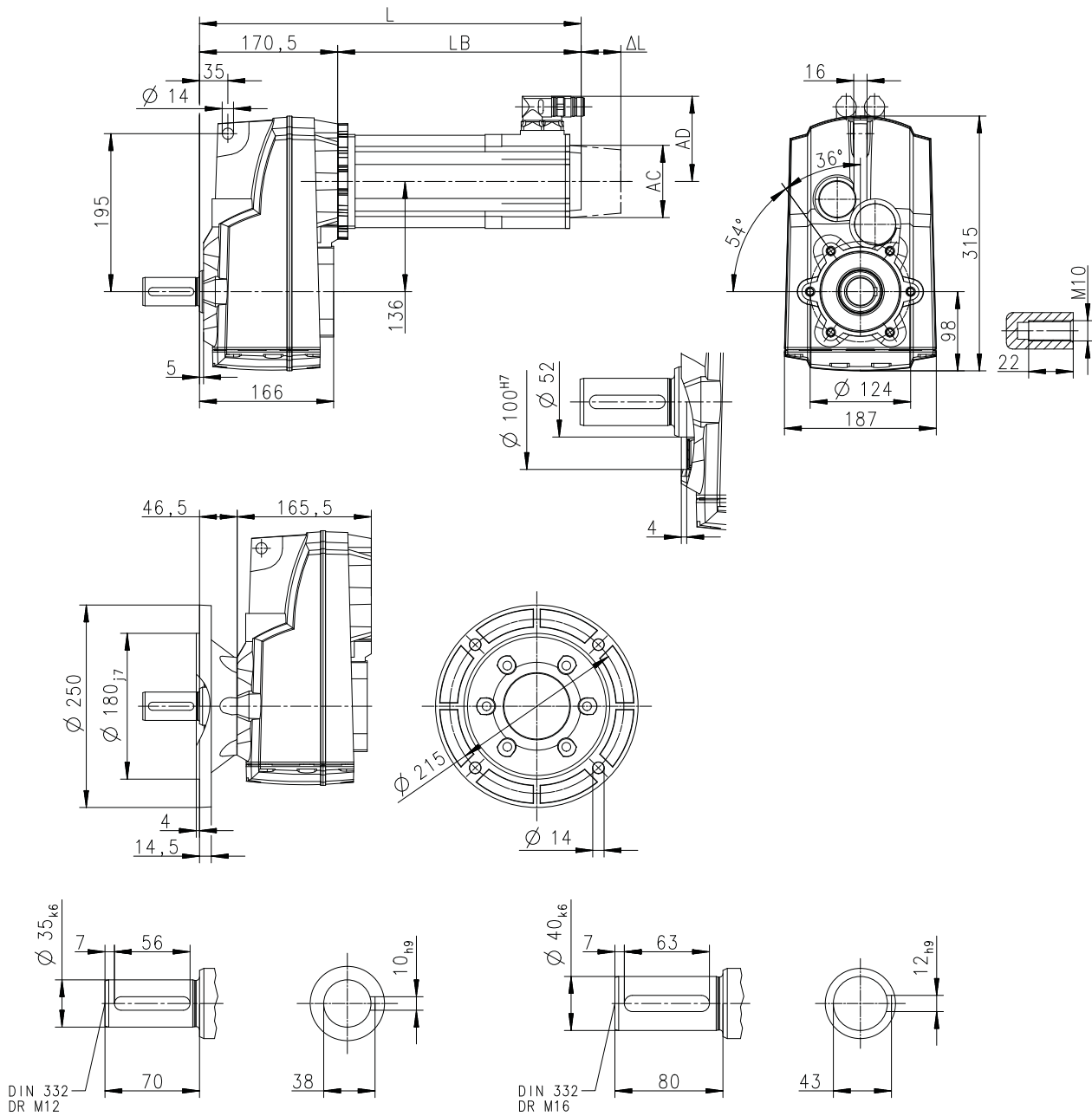
Technical data

Dimensions
Basic dimensions



g500-S660, 2-/3-stage with MCA19

Gearbox version: Solid shaft without foot (VDR/VCR/VCK)



8800062-00

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	693	596	693	596
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

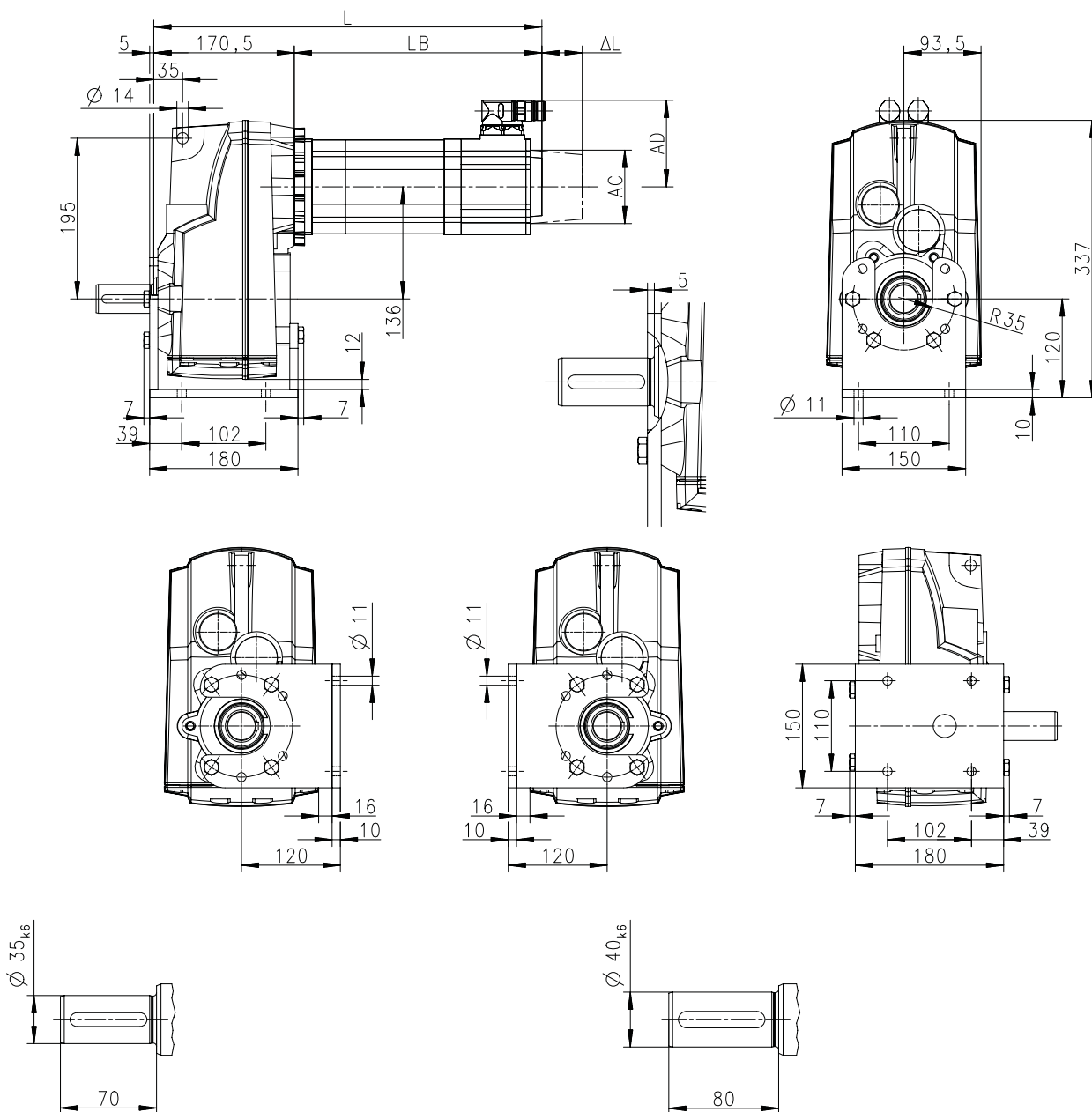


Technical data

Dimensions
Basic dimensions

g500-S660, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot (VBR)



8800064-00

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	693	596	693	596
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



Technical drawing of a 100W7 ball bearing, showing multiple views and dimensions. The drawing includes the following dimensions and labels:

- Overall Dimensions:**
 - Outer Diameter: $\varnothing 125$
 - Inner Diameter: $\varnothing 100^{H7}$
 - Width: 20
 - Height: 41
- Internal Features:**
 - Ball Diameter: $\varnothing 14$
 - Ball Count: 12
 - Ball Position: 12^{JS9}
 - Ball Diameter: $\varnothing 40^{H7}$
 - Ball Position: $43, 3^{+0,2}$
- Mounting and Assembly:**
 - Mounting Hole Diameter: $\varnothing 14$
 - Mounting Hole Position: 12^{JS9}
 - Mounting Hole Diameter: $\varnothing 40^{H7}$
 - Mounting Hole Position: $43, 3^{+0,2}$
- Other Dimensions:**
 - Overall Length: 179,5
 - Overall Width: 167
 - Overall Height: 218
 - Overall Diameter: $\varnothing 250$
 - Overall Width: $\varnothing 180^{17}$
 - Overall Height: 4
 - Overall Width: 15
 - Overall Diameter: $\varnothing 40,1$
 - Overall Width: 55
 - Overall Length: 80
 - Overall Width: 160
 - Overall Diameter: $\varnothing 180$
- Labels:**
 - 100W7
 - M12x20
 - M16
 - 26
 - 20
 - 41
 - 179,5
 - 167
 - 218
 - 4
 - 15
 - 55
 - 80
 - 160
 - 180
 - 40,1
 - 43, 3^{+0,2}
 - 12^{JS9}
 - 40^{H7}
 - 14
 - 125
 - 250
 - 180¹⁷
 - 20
 - 16
 - 26

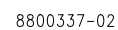
Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	439
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90



Dimensions

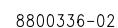
Basic dimensions

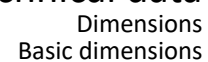
Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



Motor			MCA
			10I40-
Cooling type			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

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)

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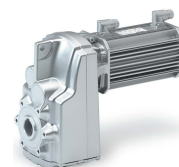
Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)

8800335-03

Technical data

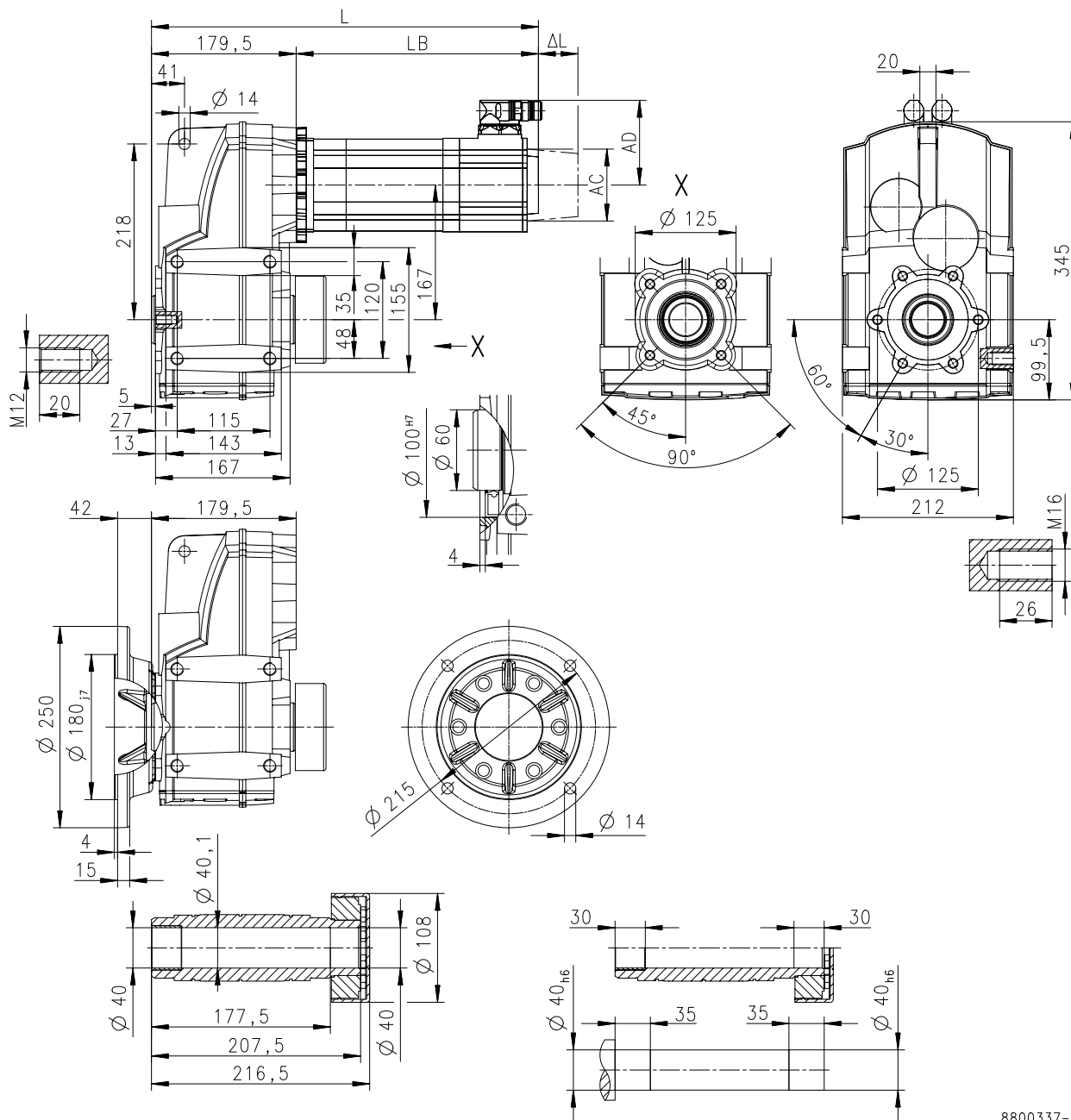
Dimensions

Basic dimensions



g500-S950, 2-/3-stage with MCA13

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



8800337-02

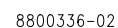
Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	515	447
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102



Dimensions

Basic dimensions

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)

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Dimensions

Basic dimensions



Technical drawing of a 100 mm diameter, 16 bar, 300 mm stroke hydraulic cylinder. The drawing includes a front view, a side view, a top view, a bottom view, and a cross-section of the piston rod. Dimensions are given in millimeters. Key features include a 100 mm bore diameter, 16 bar pressure rating, 300 mm stroke, and 12 mm rod diameter. The drawing also shows mounting brackets, a cushioning feature, and a 16 mm thread for the rod end. The cylinder is shown in a retracted position.

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	559	497	559	497
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

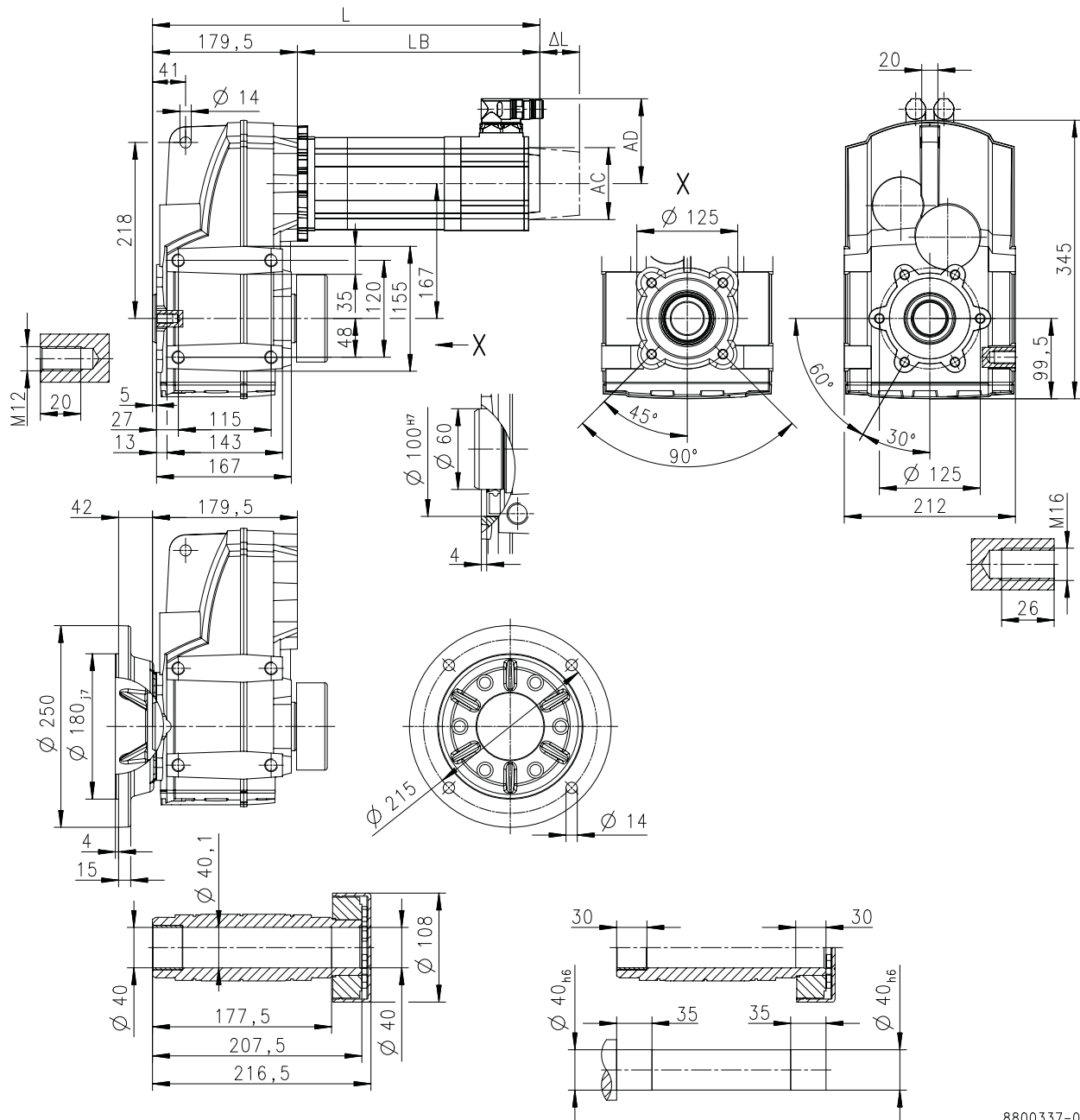


Technical data

Dimensions
Basic dimensions

g500-S950, 2-/3-stage with MCA14

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



8800337-02

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	559	497	559	497
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

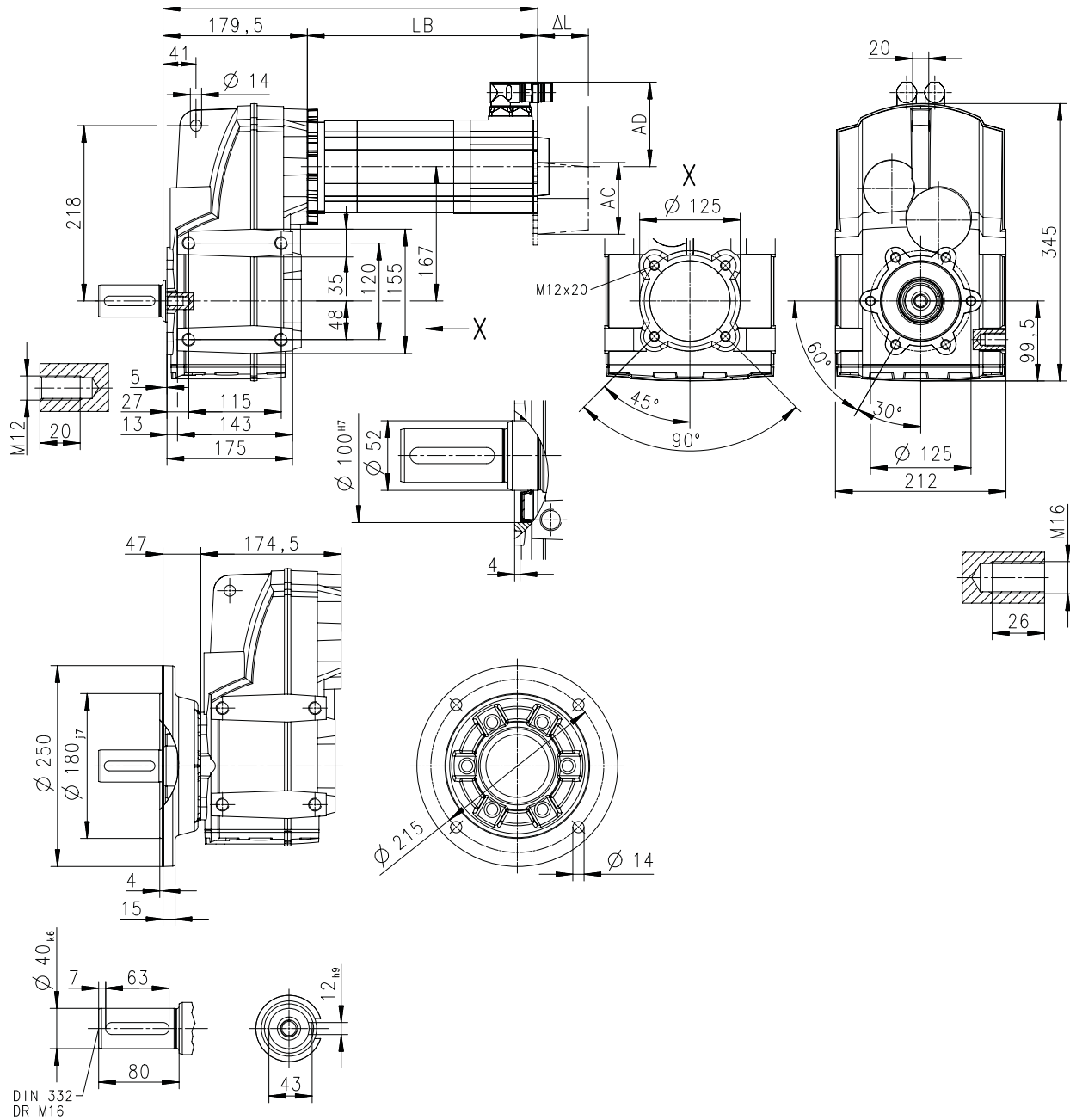
Dimensions

Basic dimensions



g500-S950, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)



8800336-02

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	559	497	559	497
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

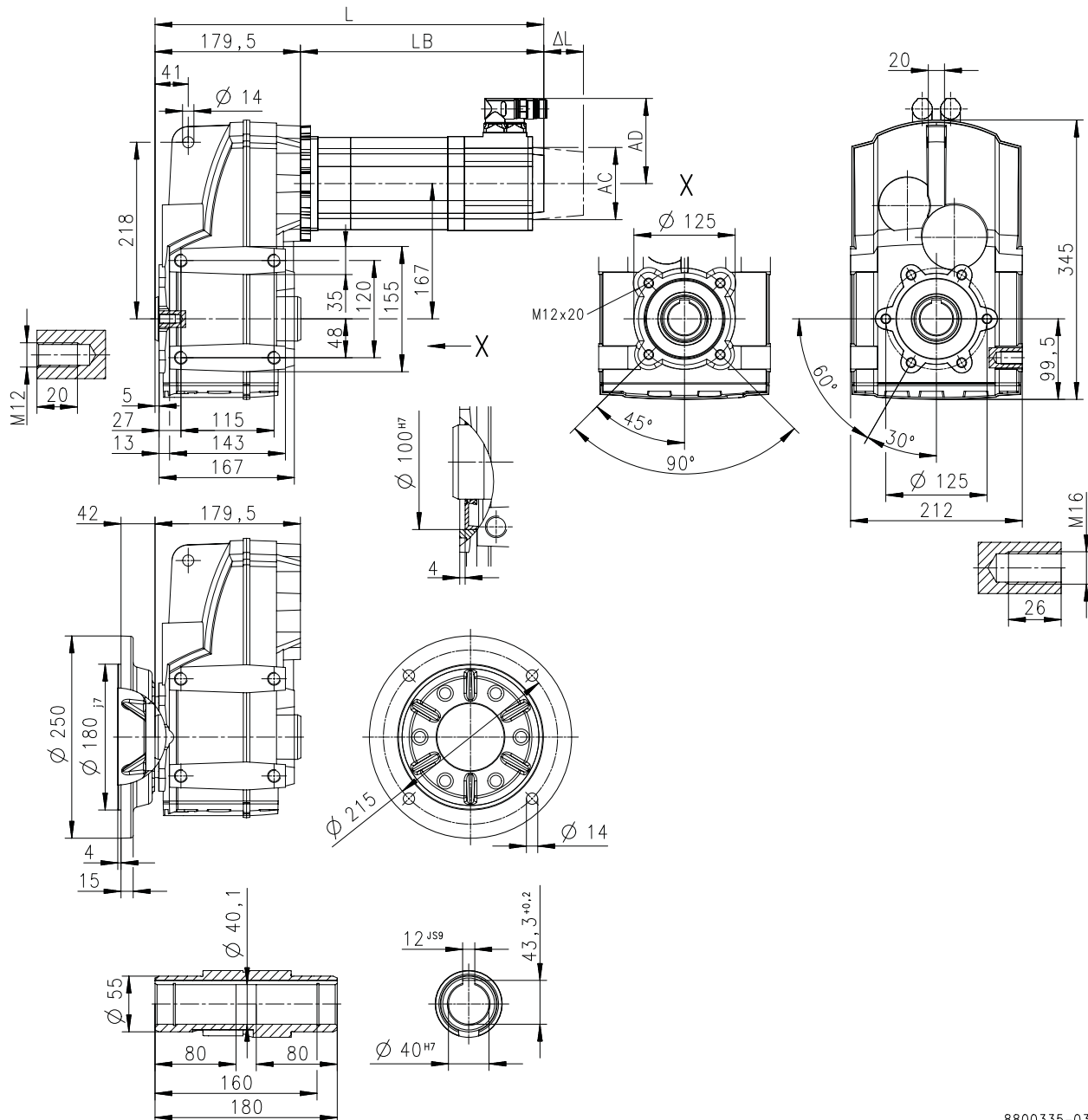


Technical data

Dimensions
Basic dimensions

g500-S950, 2-/3-stage with MCA17

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800335-03

Motor			MCA			
			17N17- Blower	17N23- natural	17N35- Blower	17N41- natural
Cooling type						
Total length	L	mm	622	536	622	536
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

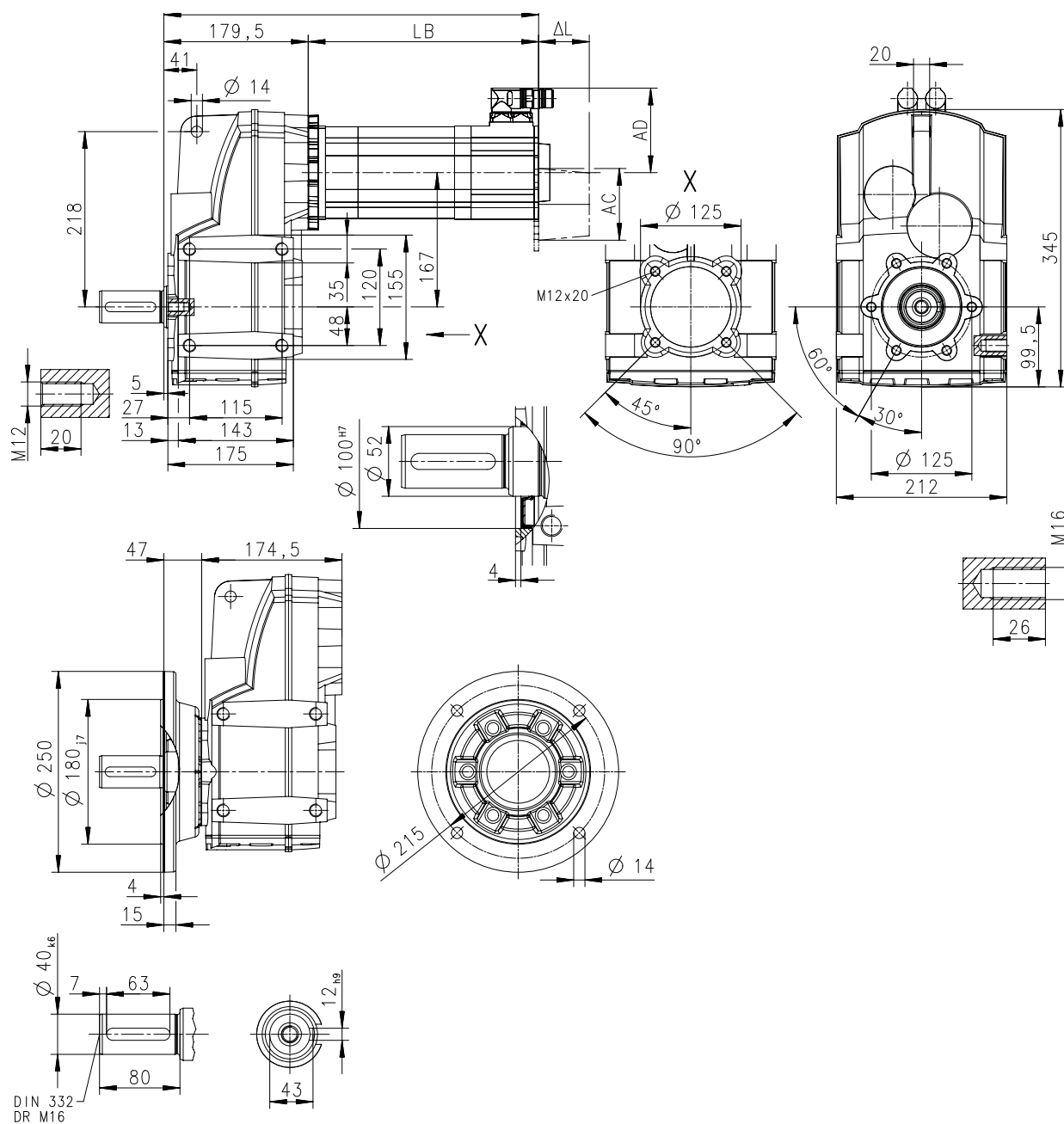
Basic dimensions



Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	622	536	622	536
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

g500-S950, 2-/3-stage with MCA17

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)



8800336-02

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	622	536	622	536
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

[illegible]

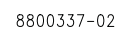
Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	702	605	702	605
Motor length	LB	mm	522	425	522	425
Length of motor options	Δ L	mm	88	88	88	88
Motor diameter	AC	mm	192	192	192	192
Motor/connection distance	AD	mm	151	151	151	151



Dimensions

Basic dimensions

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	702	605	702	605
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

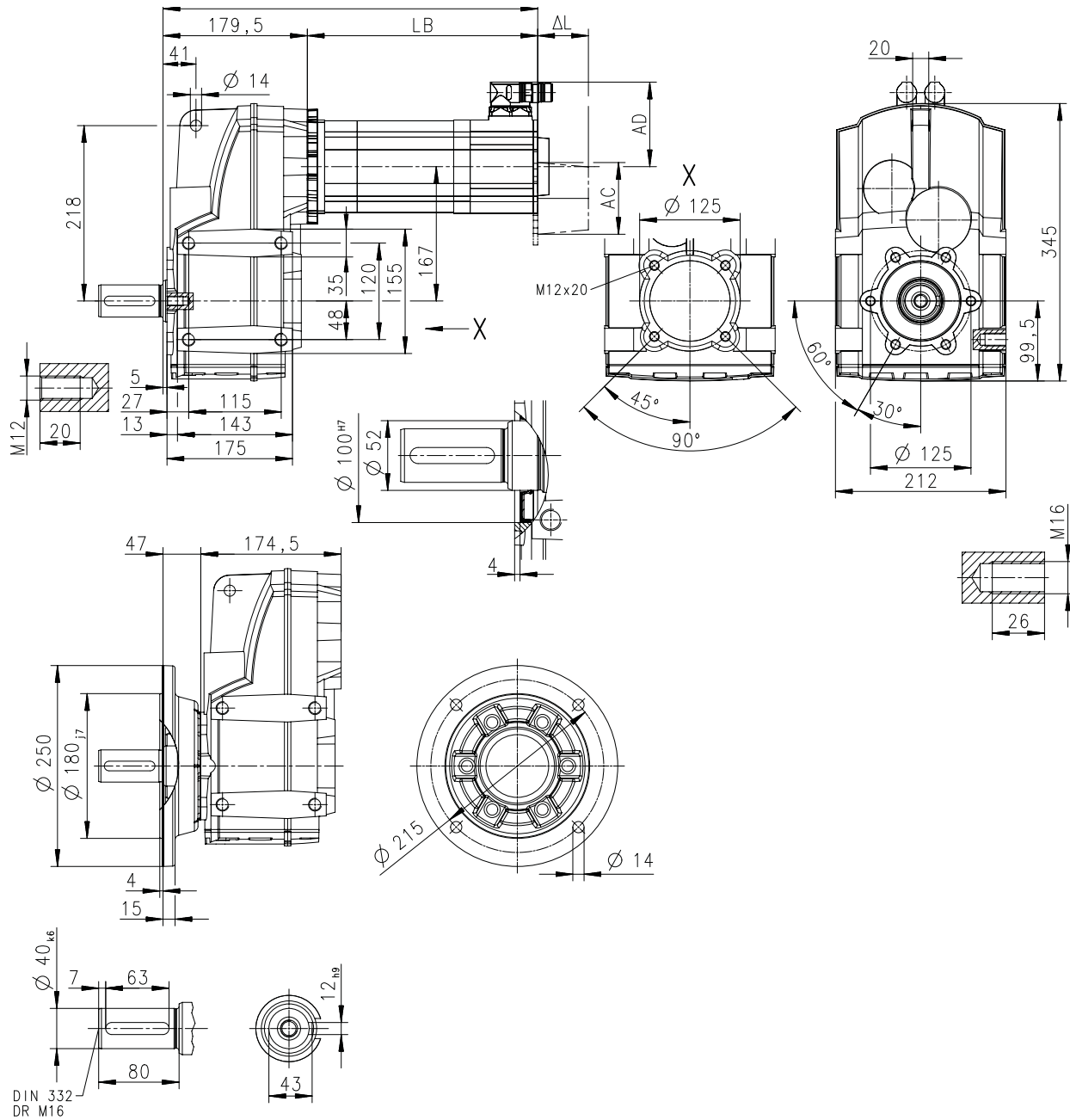
Technical data

Dimensions
Basic dimensions



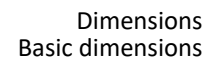
g500-S950, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)



8800336-02

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	702	605	702	605
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



Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)

8800369-03

Dimensions

Basic dimensions



Technical drawing of a mechanical component, likely a pump or motor housing, showing multiple views (front, side, top, bottom, and cross-sections) with detailed dimensions and annotations.

Key Dimensions and Annotations:

- Overall Dimensions:**
 - Length: 203,5
 - Width: 270
 - Height: 460
- Internal Features and Mounting:**
 - Mounting holes: $\varnothing 18$, $\varnothing 155$, $\varnothing 155$
 - Internal hole: $\varnothing 115_{H7}$
 - Internal hole: $\varnothing 75$
 - Internal hole: $\varnothing 250$
 - Internal hole: $\varnothing 180_{17}$
 - Internal hole: $\varnothing 215$
 - Internal hole: $\varnothing 265$
 - Internal hole: $\varnothing 14$
 - Internal hole: $\varnothing 300$
 - Internal hole: $\varnothing 230_{17}$
 - Internal hole: $\varnothing 50$
 - Internal hole: $\varnothing 50,1$
 - Internal hole: $\varnothing 50_{H6}$
 - Internal hole: $\varnothing 50_{h6}$
- Angles and Tolerances:**
 - Angles: 45° , 60° , 30°
 - Tolerances: ΔL , ΔD , ΔC
- Material and Fasteners:**
 - Material: M16
 - Fasteners: M16x26

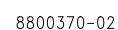
Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	463
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90



Dimensions

Basic dimensions

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)



Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	463
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

[illegible]

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

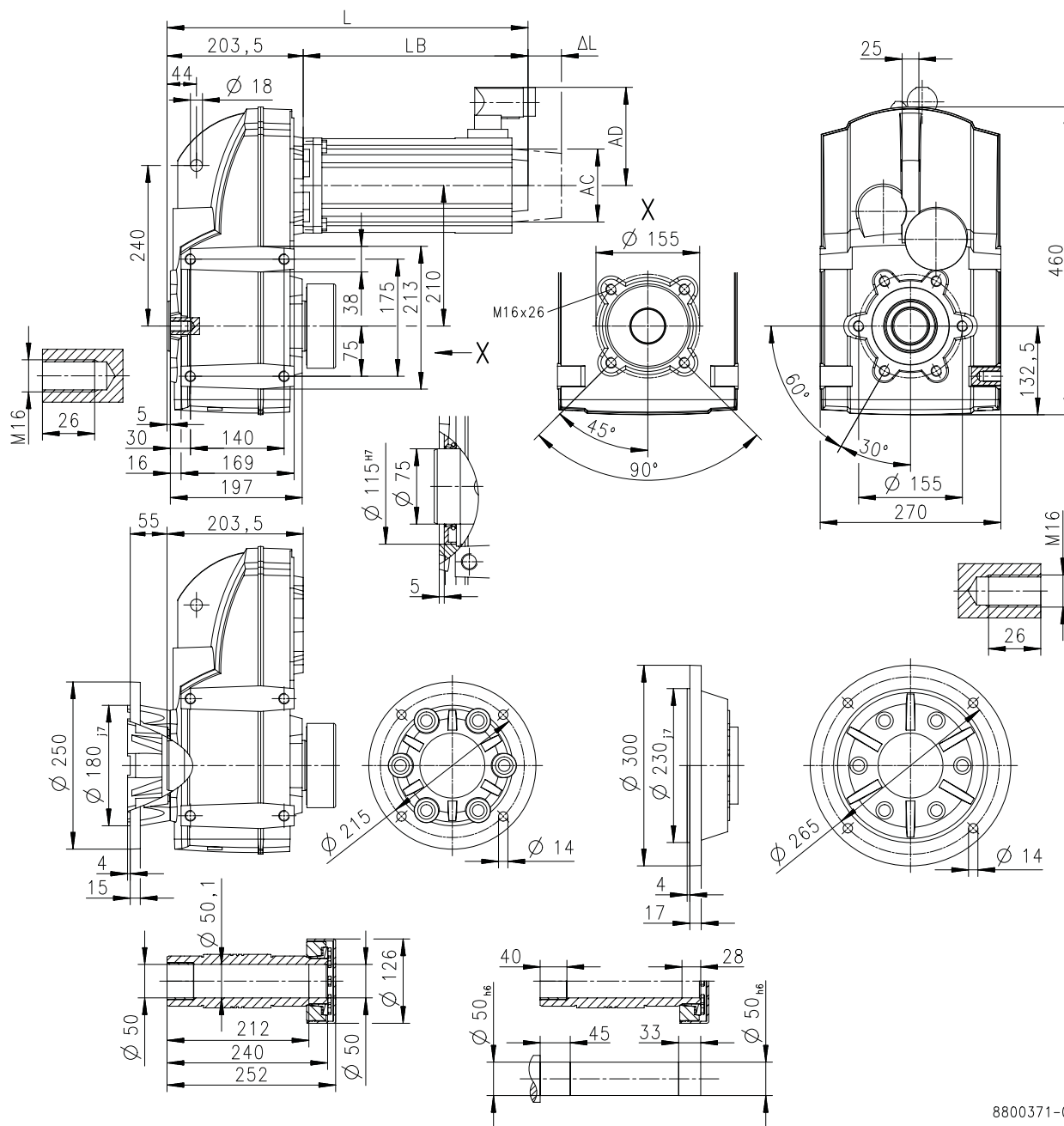


Technical data

Dimensions
Basic dimensions

g500-S2100, 2-/3-stage with MCA13

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)

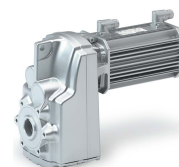


8800371-02

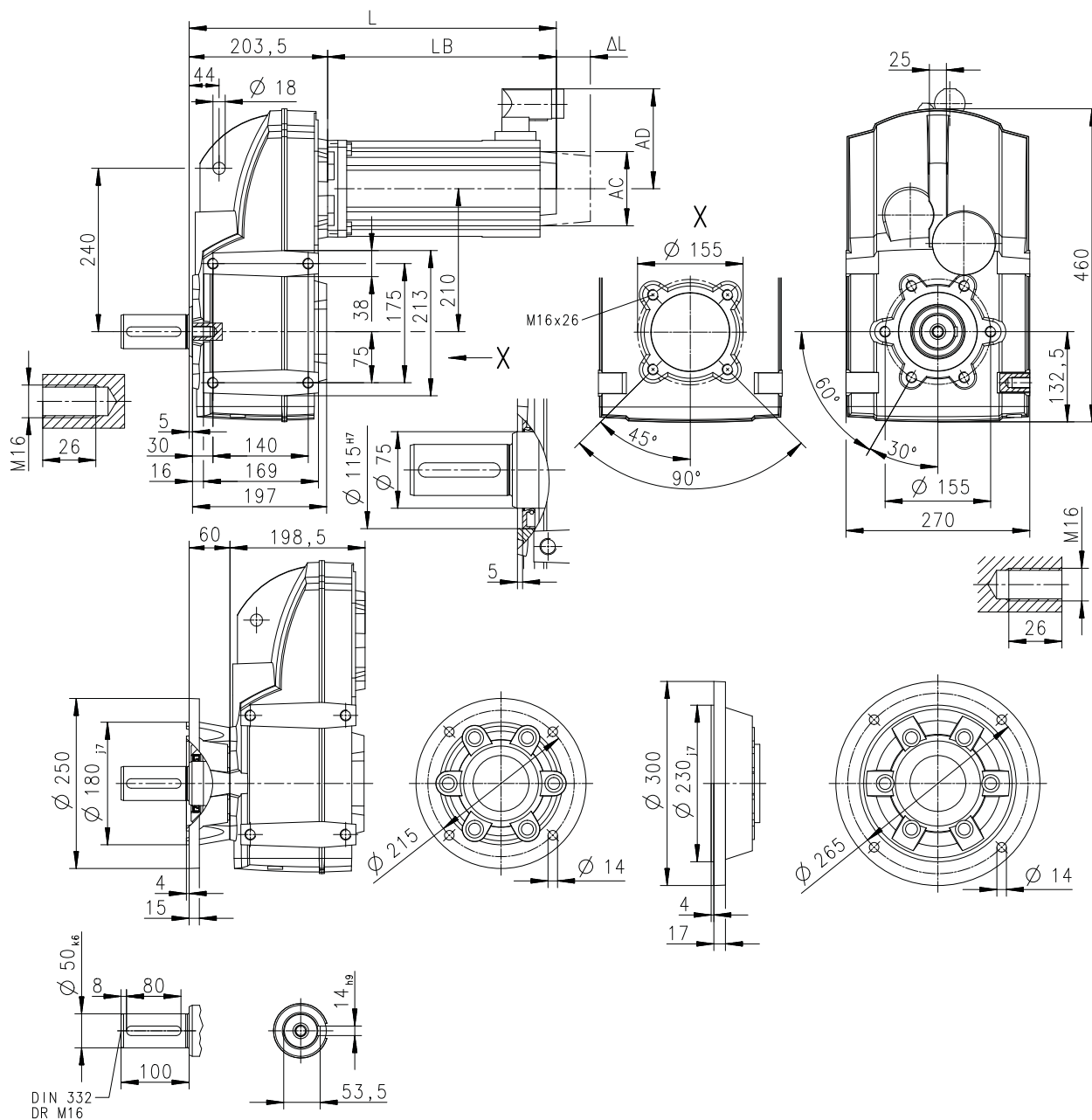
Motor			MCA	
			13I34- Blower	13I41- natural
Cooling type				
Total length	L	mm	539	471
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102

Dimensions

Basic dimensions

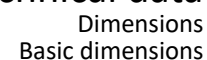


Gearbox version: Solid shaft with foot (VAR/VBR/VAK)



8800370-02

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

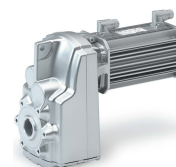


Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)

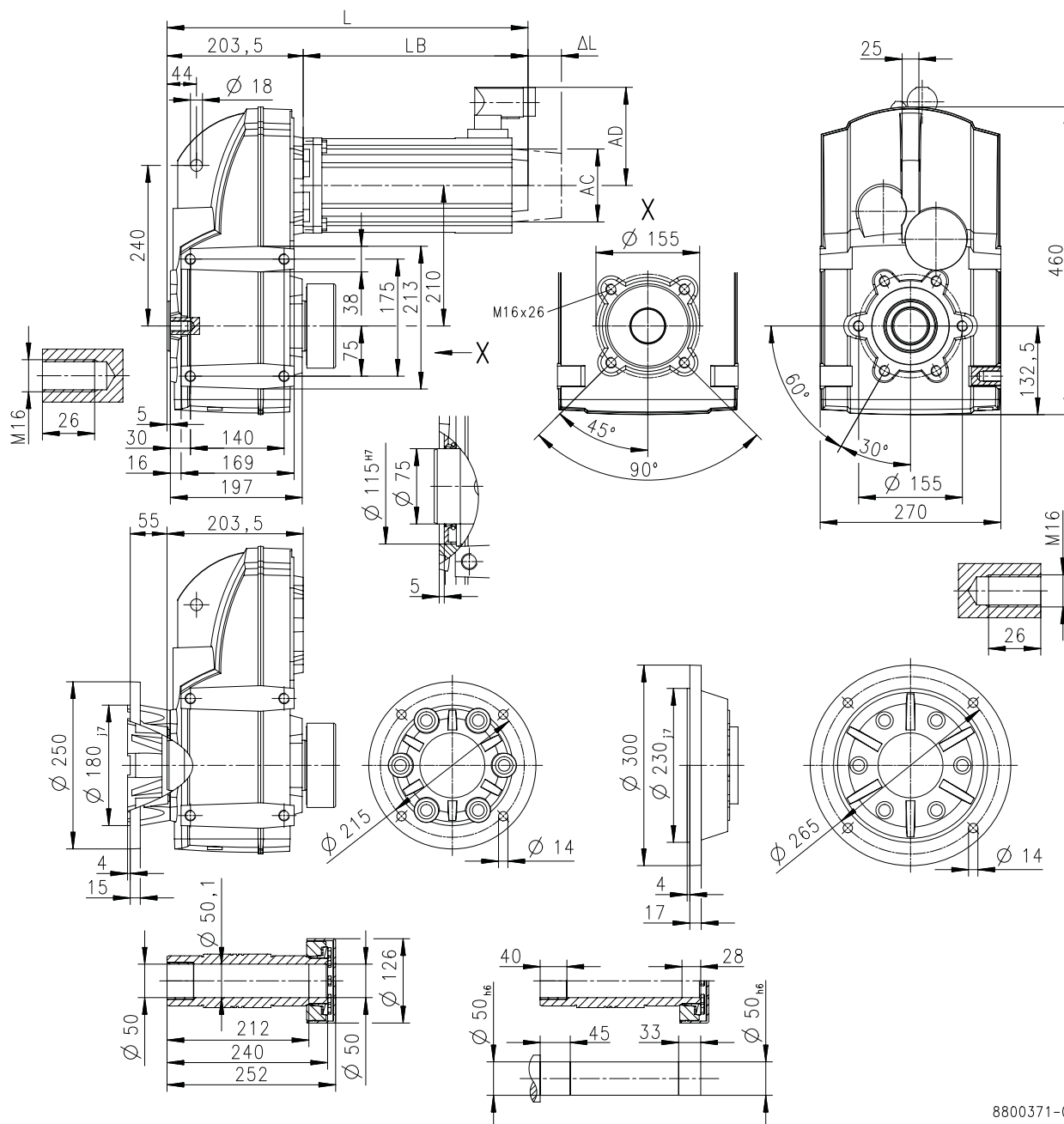
8800369-03

Dimensions

Basic dimensions



Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



8800371-02

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
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

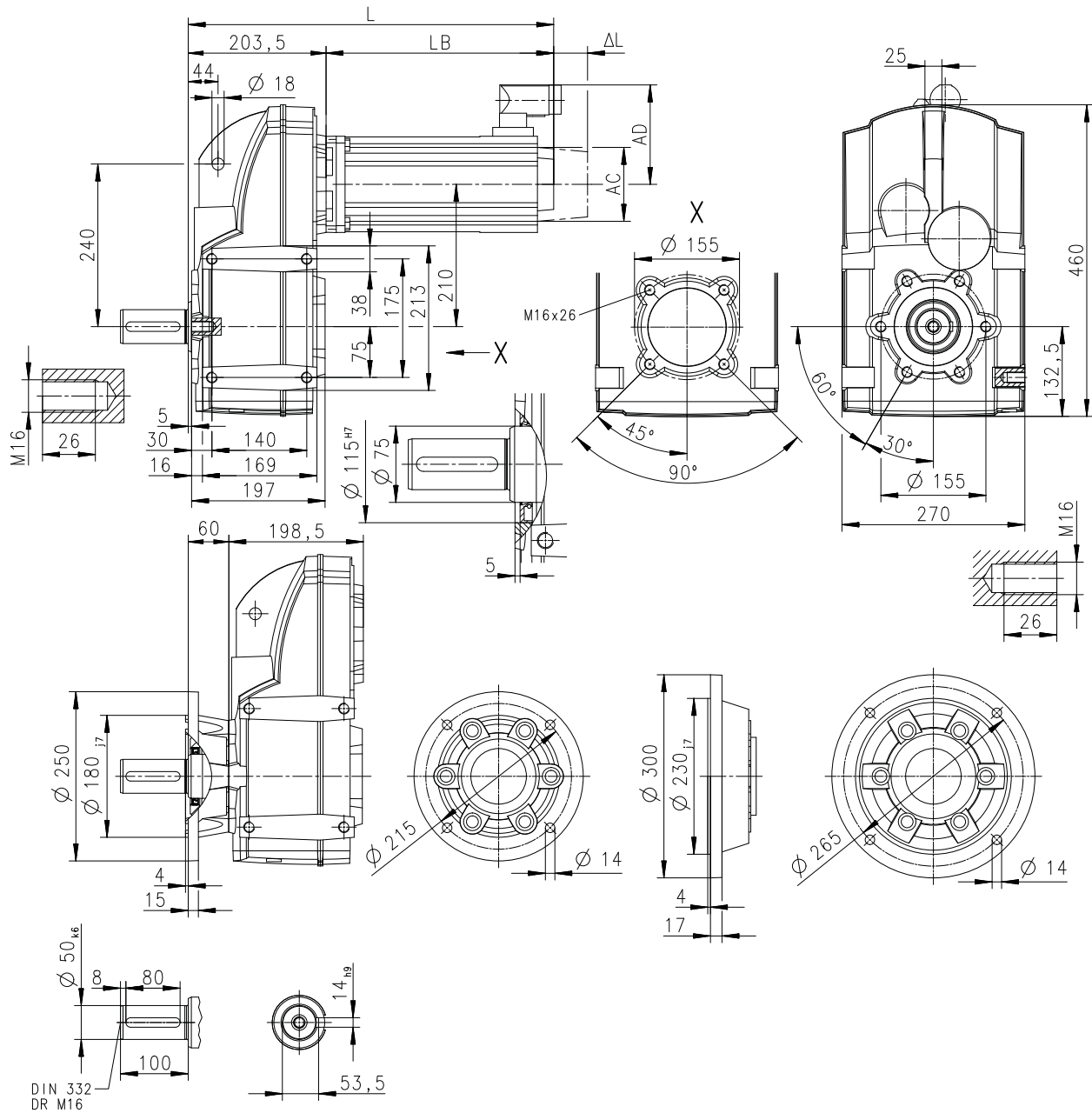


Technical data

Dimensions
Basic dimensions

g500-S2100, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)



8800370-02

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
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

Dimensions

Basic dimensions

[illegible]

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	646	560	646	560
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

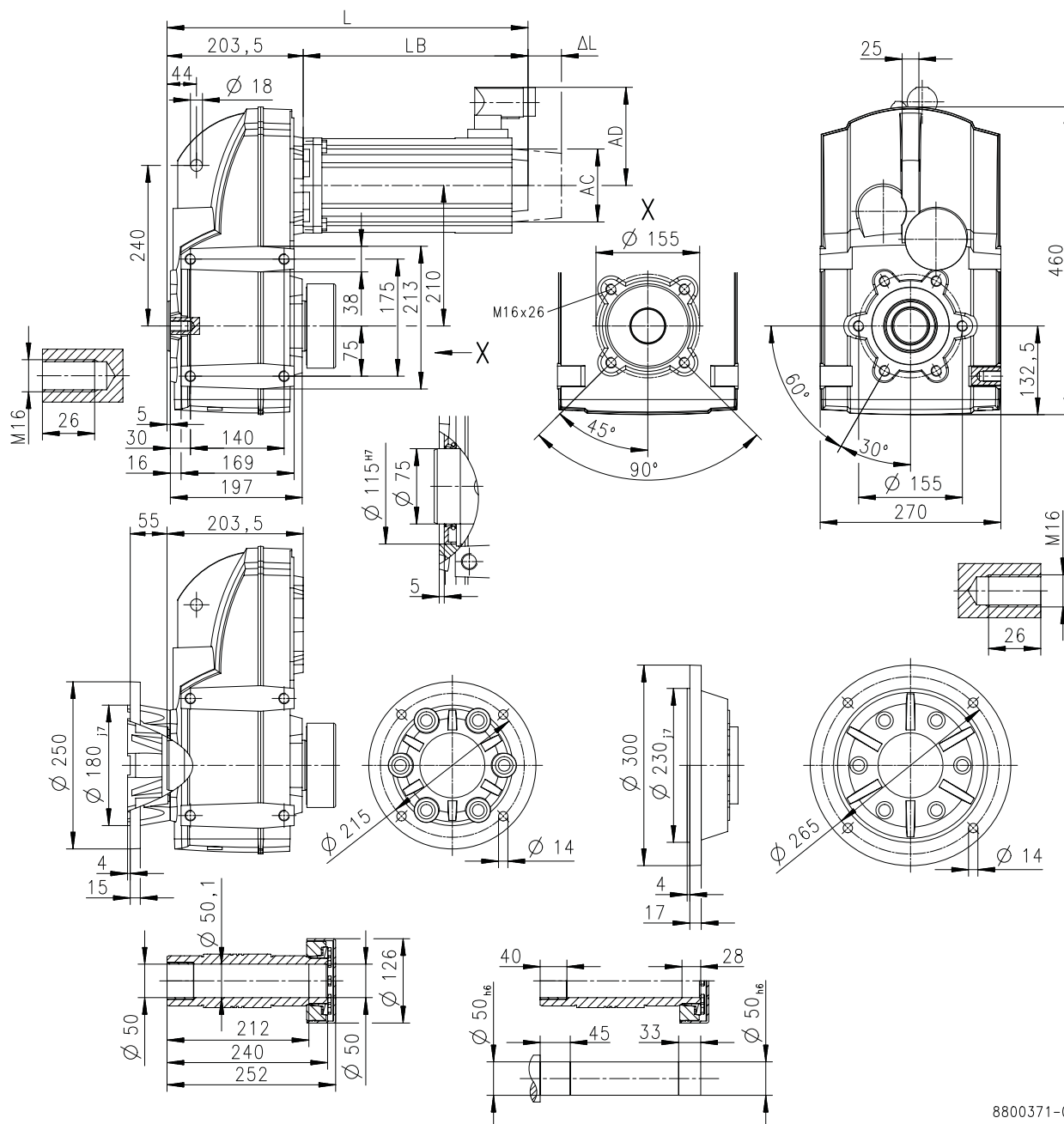
Technical data

Dimensions

Basic dimensions

g500-S2100, 2-/3-stage with MCA17

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



8800371-02

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	646	560	646	560
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



Technical drawing of a 1000 mm x 1000 mm x 1000 mm ball mill, showing multiple views (front, side, top, bottom, and detail views) with dimensions in millimeters. The drawing includes a main front view, a side view, a top view, a bottom view, and several detail views of the mill's components. Dimensions are provided for various parts, including the mill body, grinding balls, and the mill's mounting and drive components. The drawing is labeled "1000 mm x 1000 mm x 1000 mm" and "1000 mm x 1000 mm x 1000 mm".

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	646	560	646	560
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

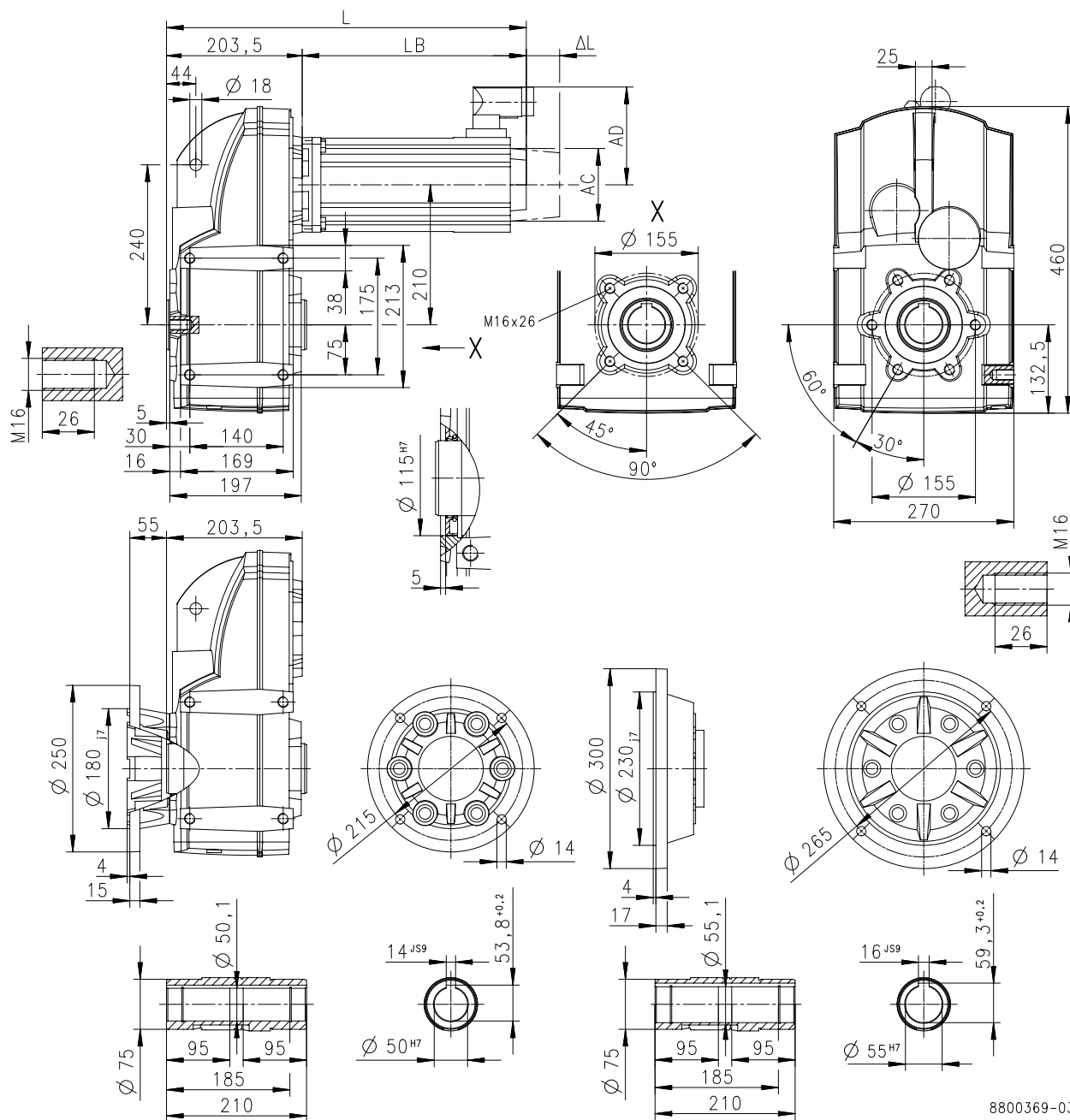
Technical data

Dimensions

Basic dimensions

g500-S2100, 2-/3-stage with MCA19

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



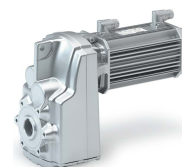
8800369-03

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	726	629	726	629
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

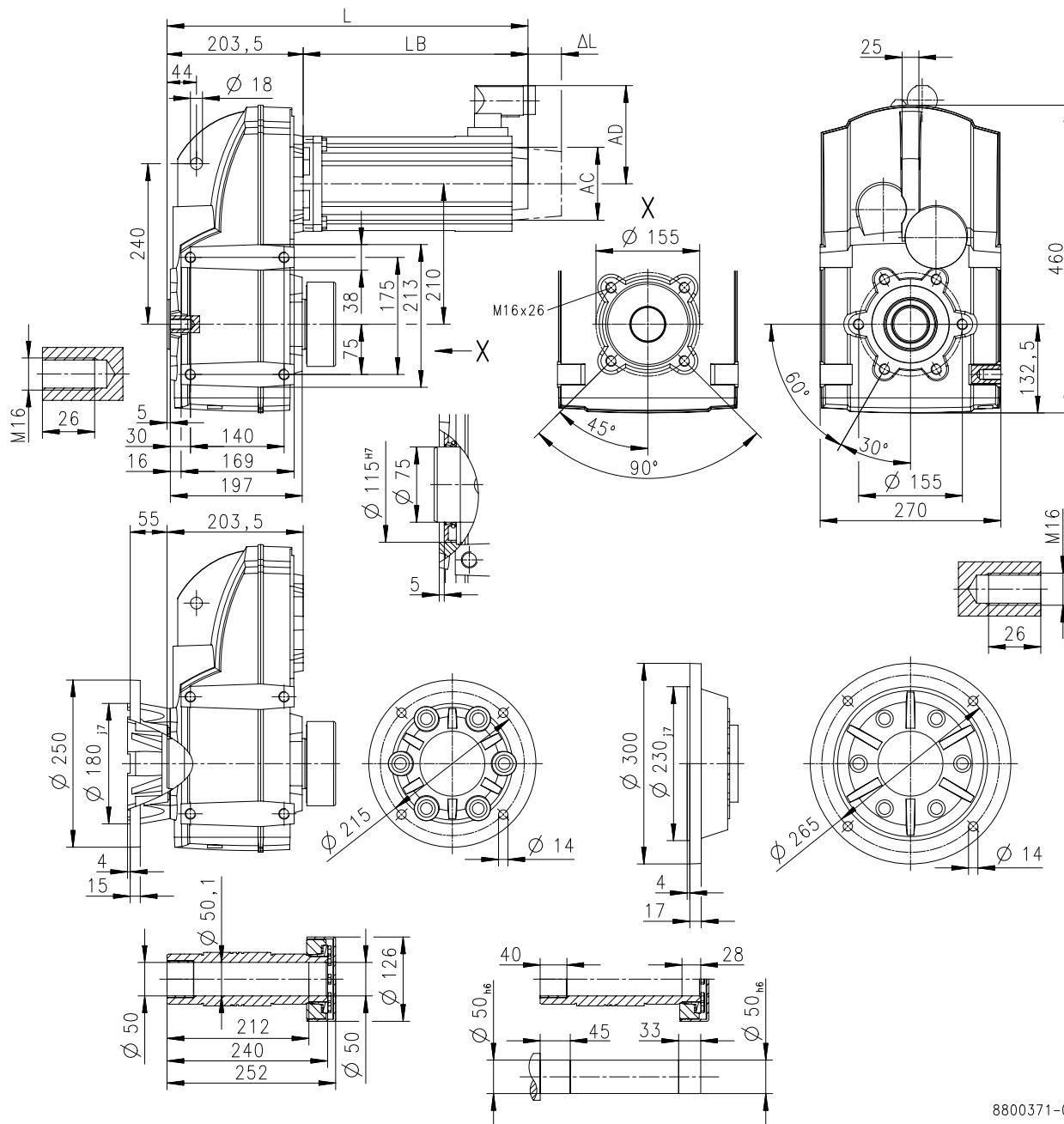
Dimensions

Basic dimensions



g500-S2100, 2-/3-stage with MCA19

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



8800371-02

Motor			MCA			
			19S17- Blower	19S23- natural	19S35- Blower	19S42- natural
Total length	L	mm	726	629	726	629
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

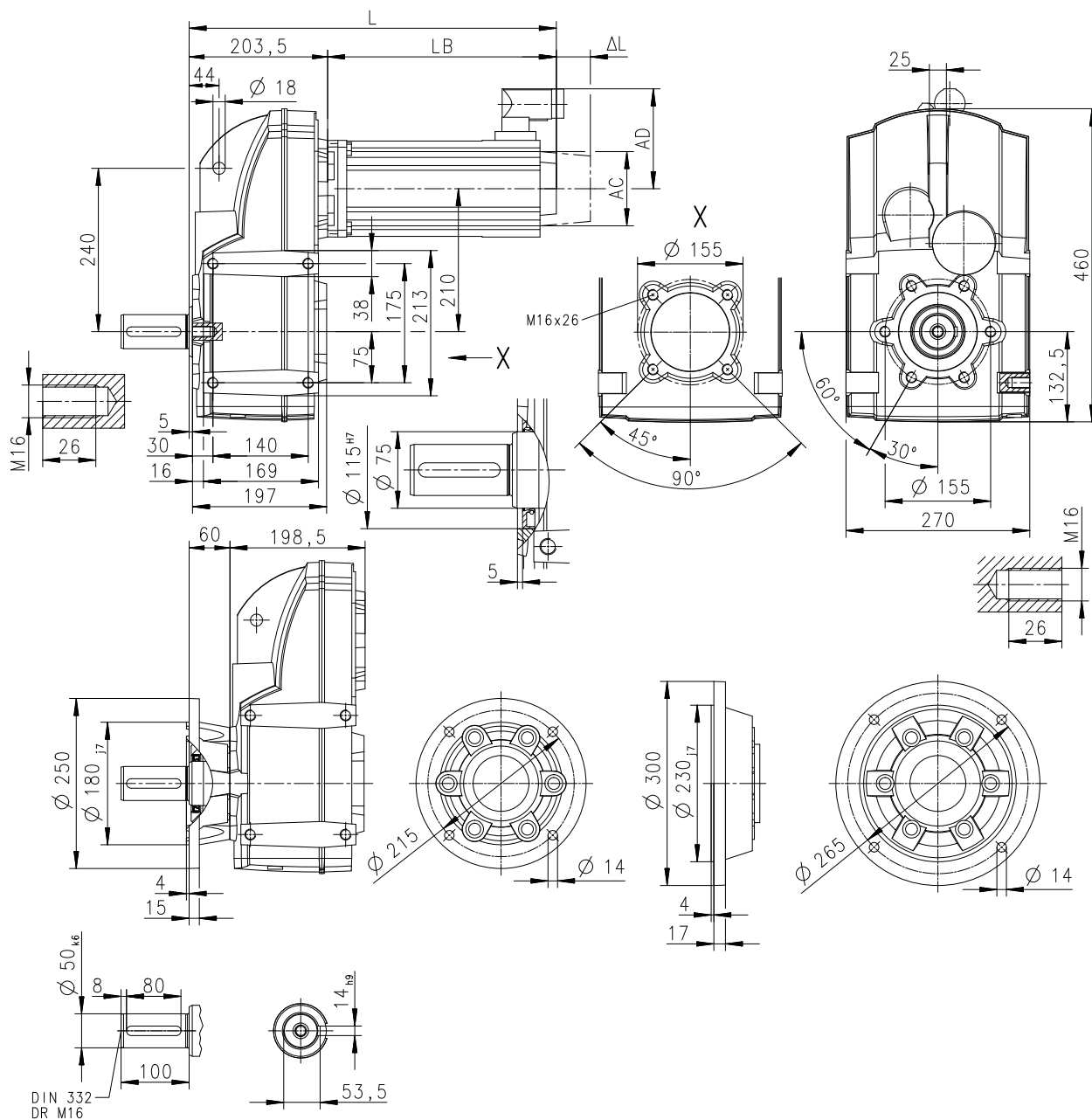
Technical data

Dimensions

Basic dimensions

g500-S2100, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)



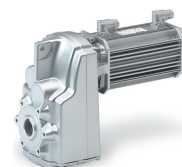
8800370-02

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	726	629	726	629
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

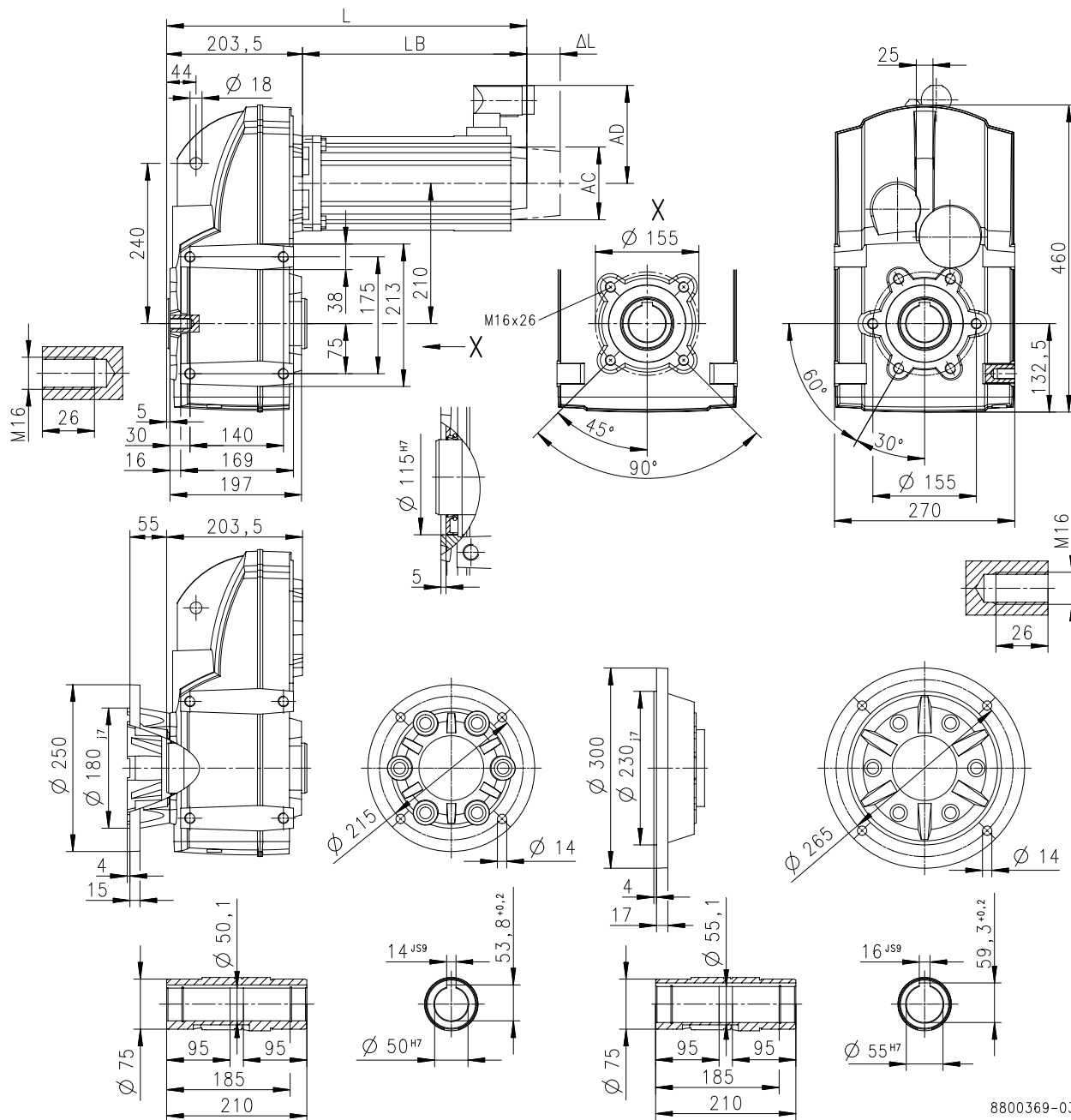
Dimensions

Basic dimensions



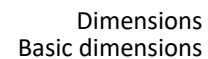
g500-S2100, 2-/3-stage with MCA21

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800369-03

Motor			MCA			
			21X17- Blower	21X25- natural	21X35- Blower	21X42- natural
Cooling type						
Total length	L	mm	817	721	817	721
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



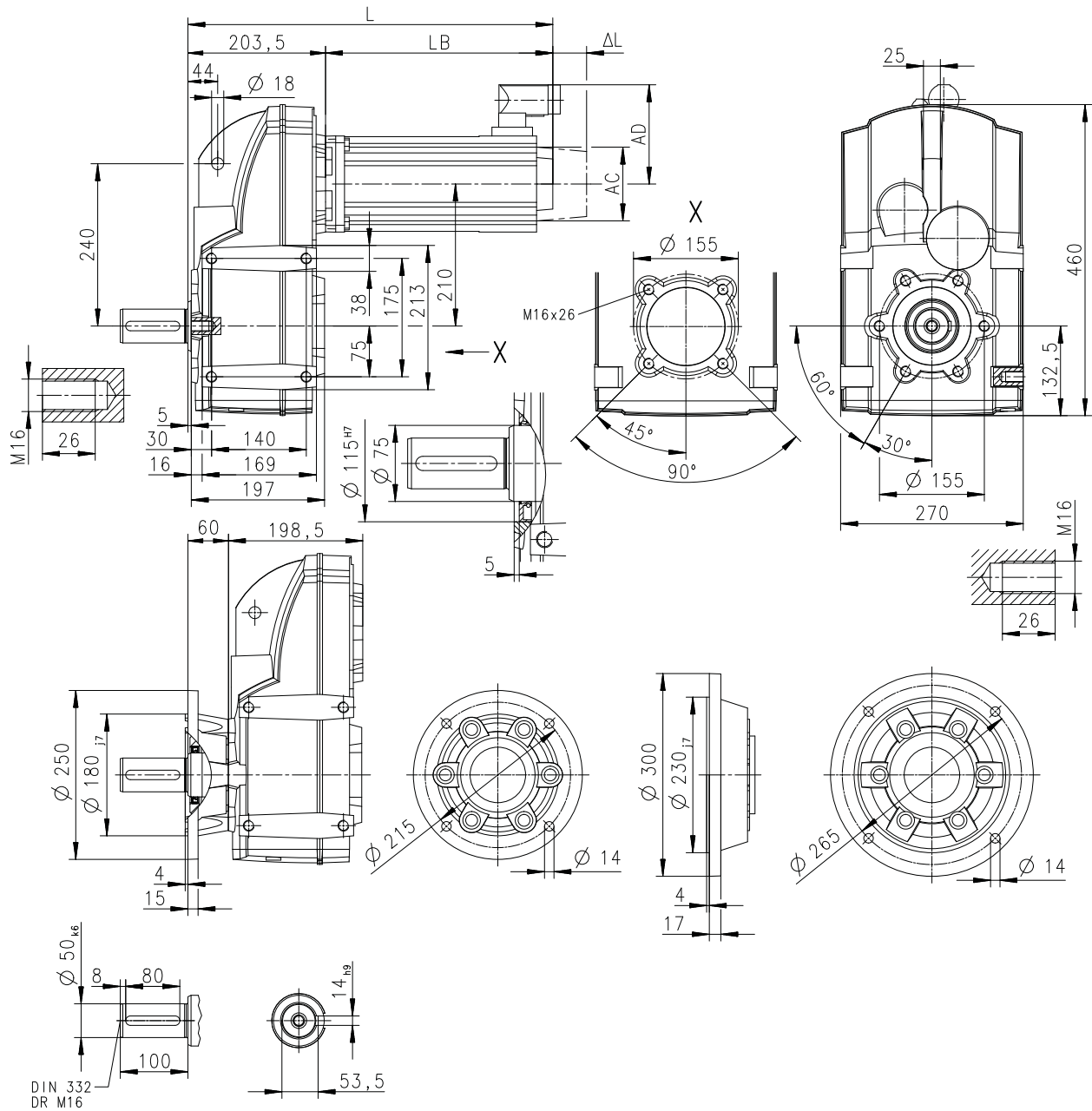
Technical data

Dimensions
Basic dimensions



g500-S2100, 2-/3-stage with MCA21

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)

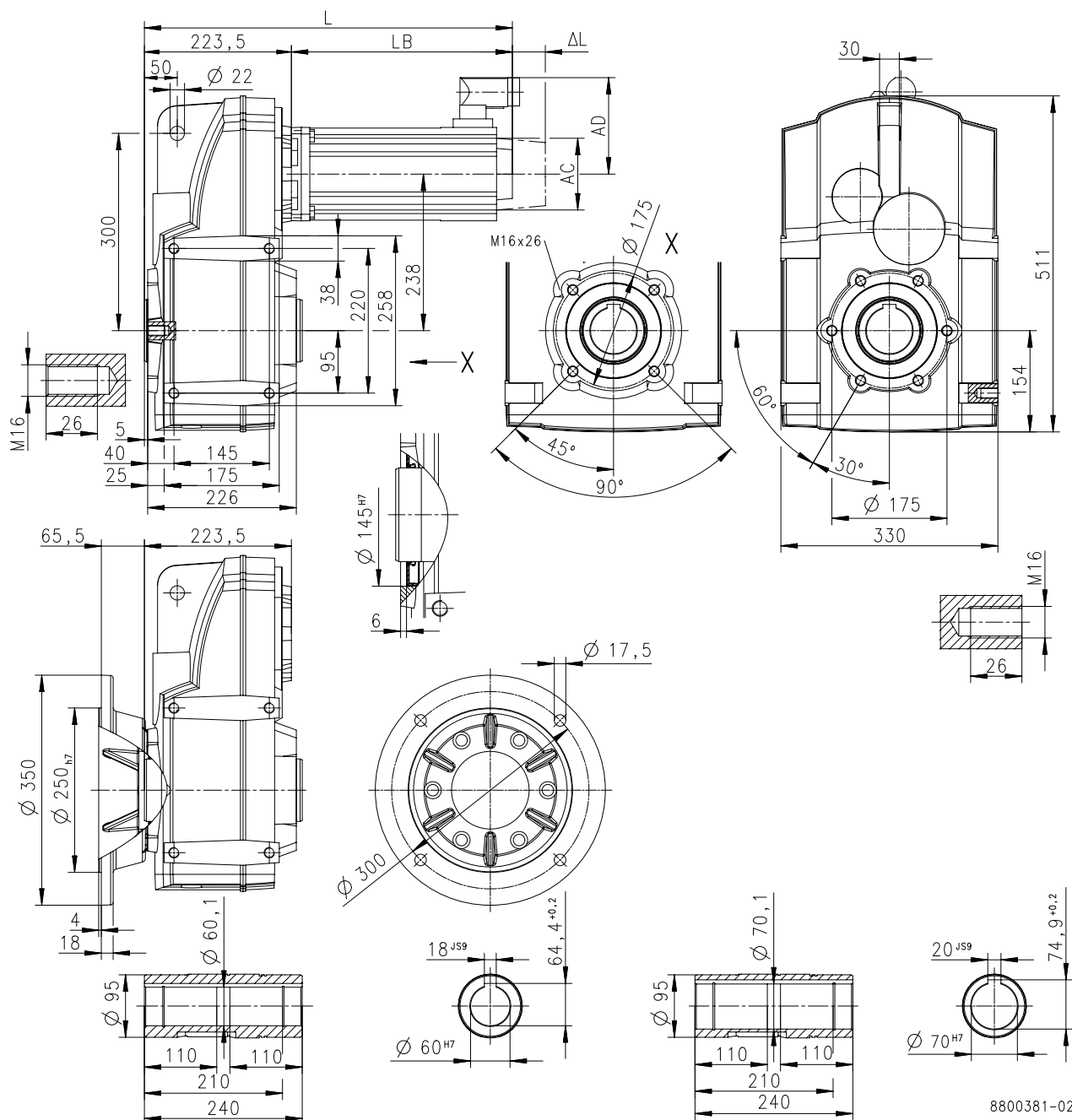


8800370-02

Motor			MCA			
			21X17-	21X25-	21X35-	21X42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	817	721	817	721
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

g500-S3100, 2-/3-stage with MCA10

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)

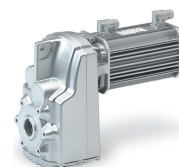


8800381-02

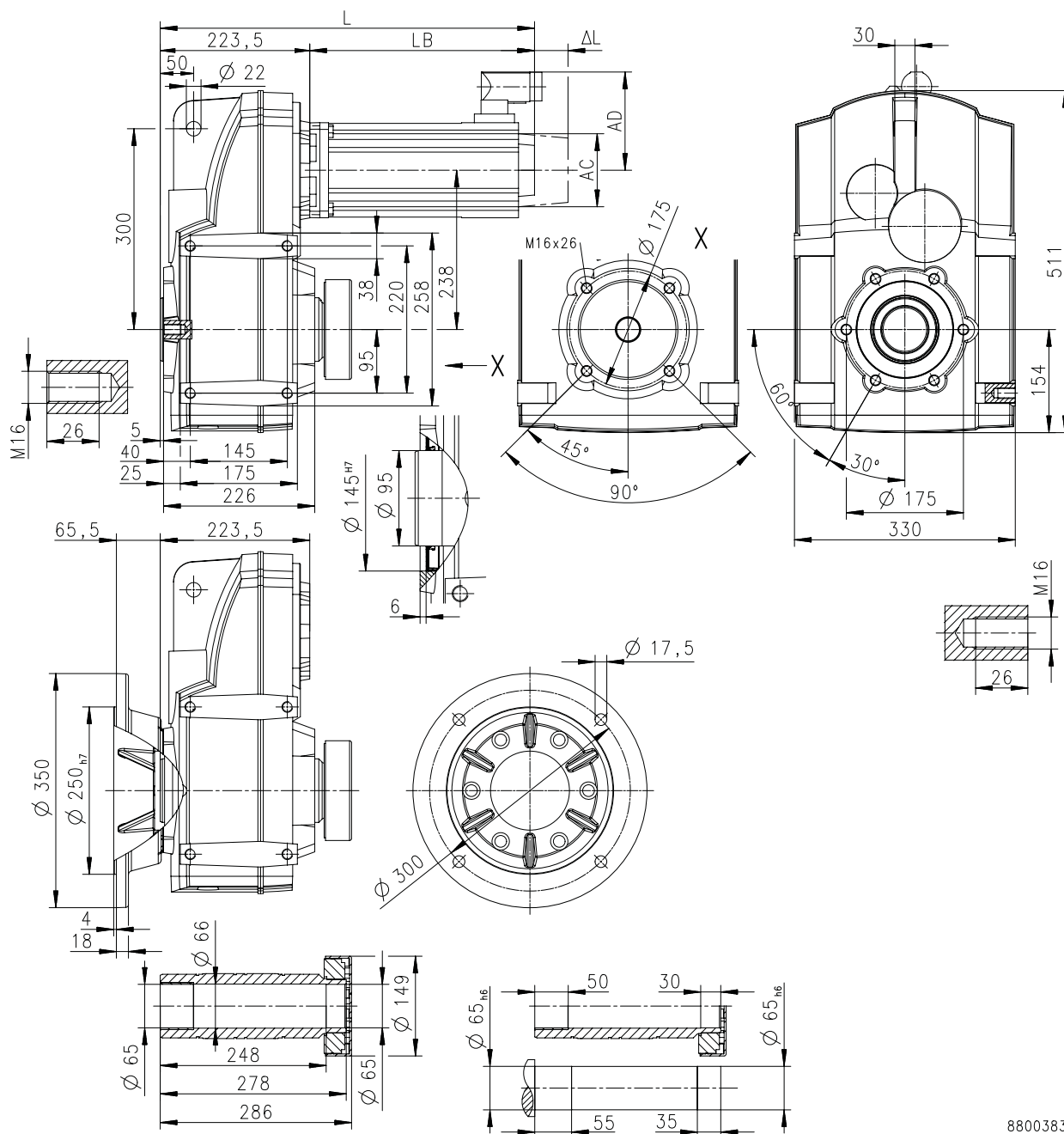
Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	483
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

Dimensions

Basic dimensions



Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



8800383-01

Motor			MCA
			10I40-
Cooling type			natural
Total length	L	mm	483
Motor length	LB	mm	259
Length of motor options	Δ L	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

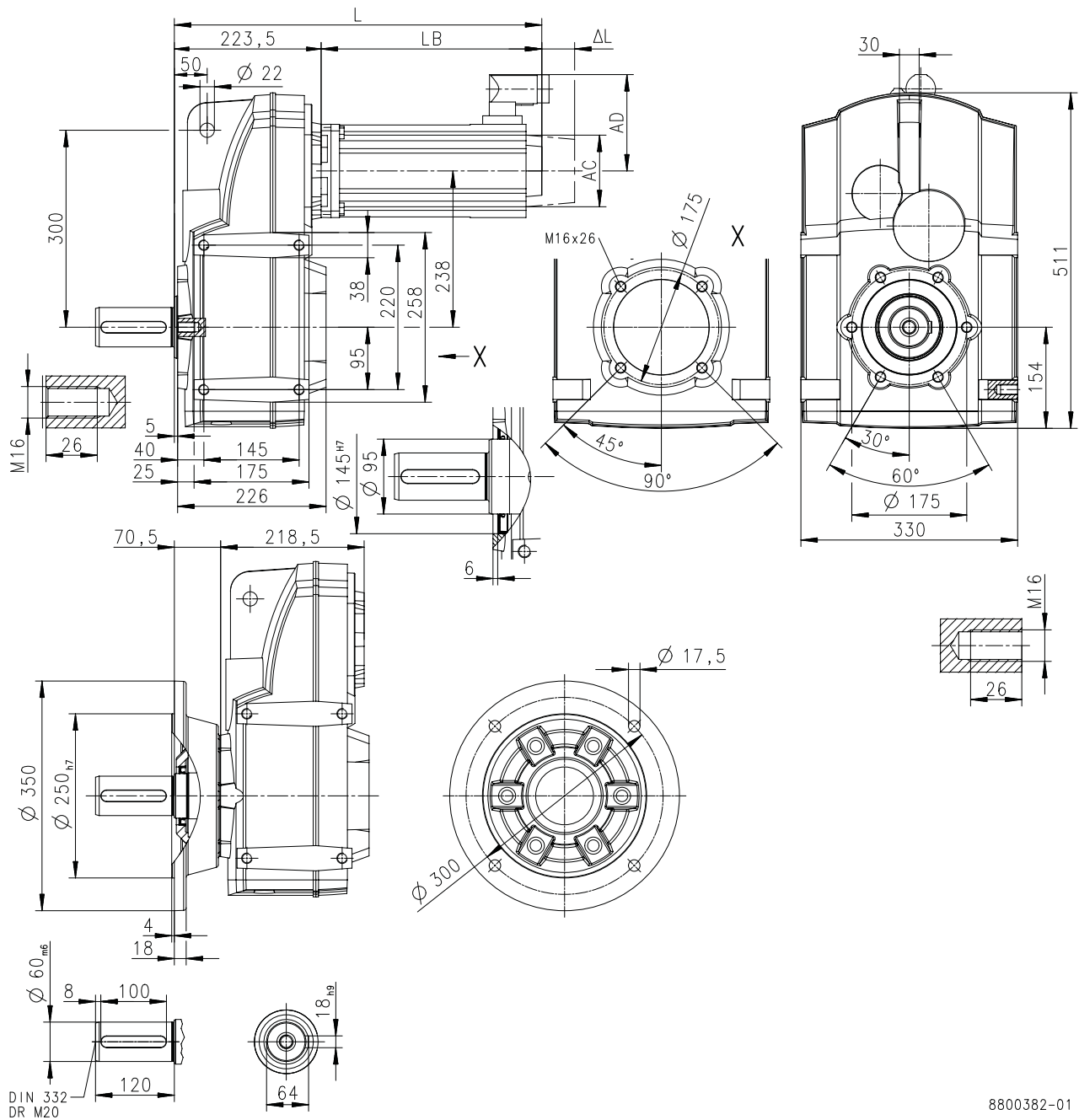


Technical data

Dimensions
Basic dimensions

g500-S3100, 2-/3-stage with MCA10

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)

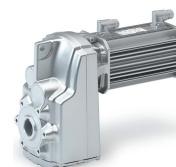


8800382-01

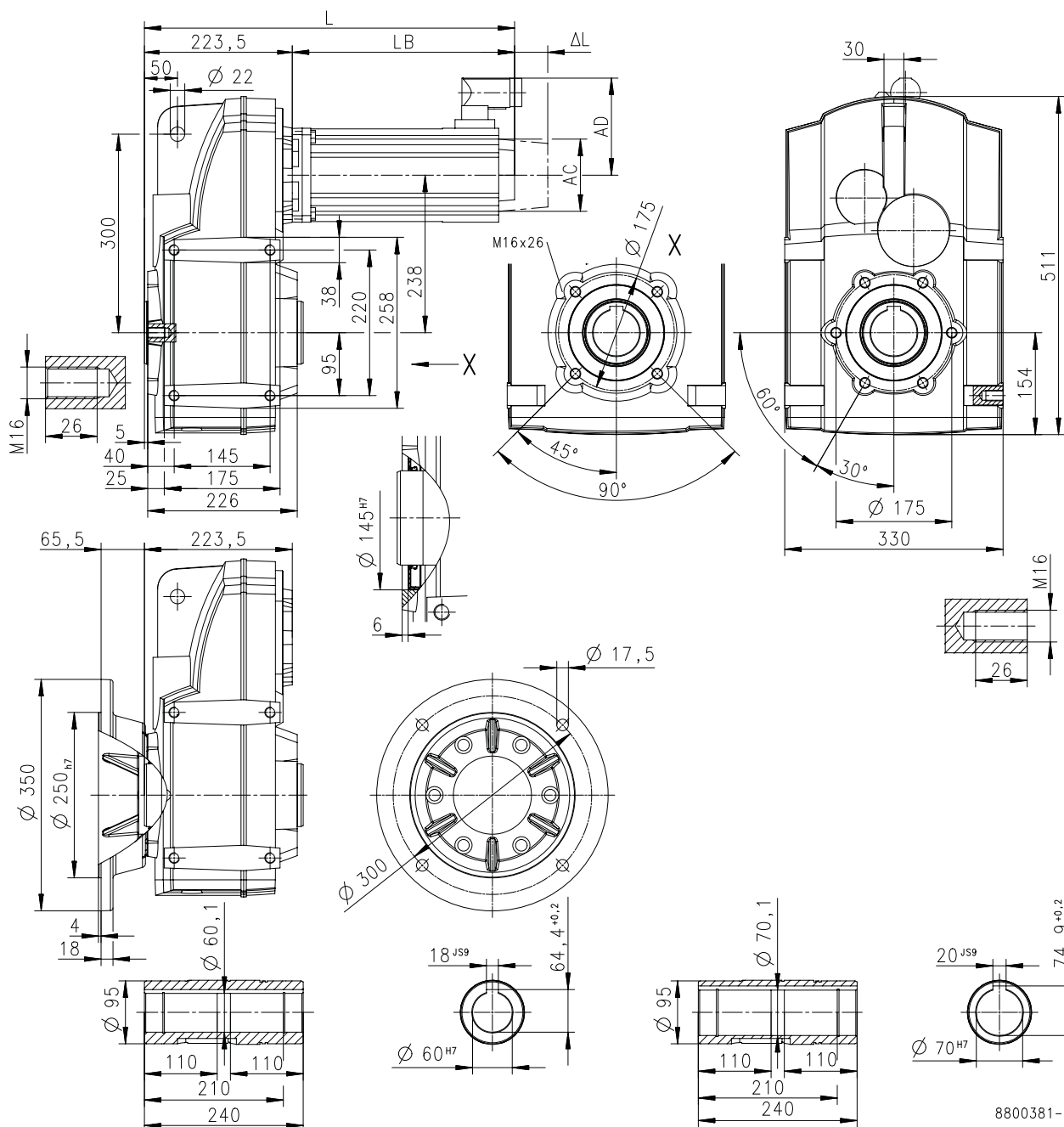
Motor			MCA
			10140-
Cooling type			natural
Total length	L	mm	483
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

Dimensions

Basic dimensions



Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800381-02

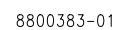
Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	559	491
Motor length	LB	mm	336	268
Length of motor options	Δ L	mm	90	90
Motor diameter	AC	mm	130	130
Motor/connection distance	AD	mm	102	102



Dimensions

Basic dimensions

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	559	491
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



Technical drawing of a 3-phase asynchronous motor, showing dimensions in mm.

Key dimensions and features:

- Overall length: L
- Mounting bracket length: LB
- Shaft diameter: $\varnothing 22$
- Mounting bracket height: 300
- Motor frame width: 330
- Motor frame height: 511
- Base diameter: $\varnothing 300$
- Mounting flange diameter: $\varnothing 175$
- Motor tilt angle: 30°
- Motor connection terminals: $M16 \times 26$
- Motor housing cross-section: $M16$, 26

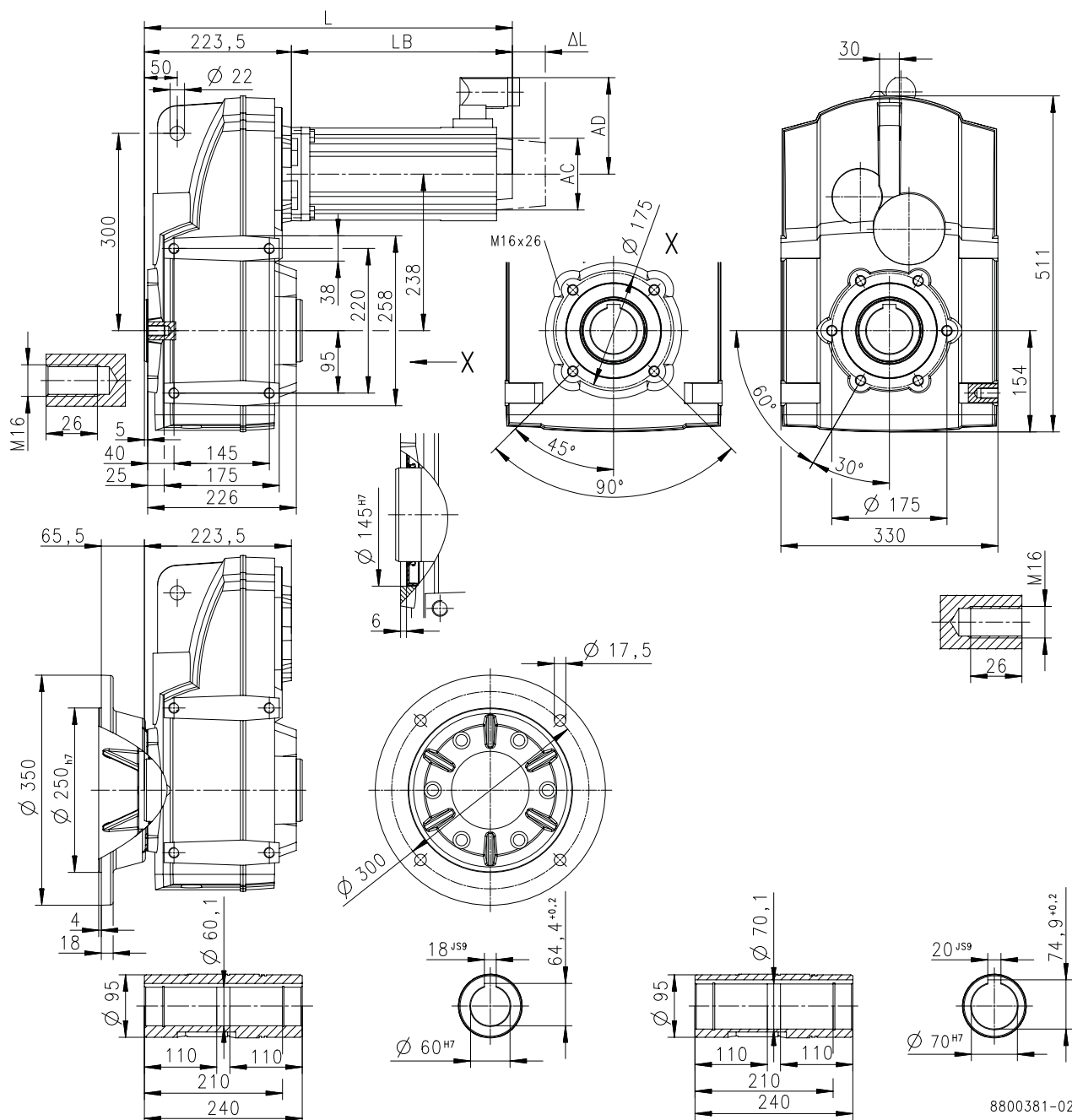
Standards: DIN 332, DR M20

Part number: 8800382-01

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	559	491
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-S3100, 2-/3-stage with MCA14

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800381-02

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	603	541	603	541
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

[illegible]

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	603	541	603	541
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

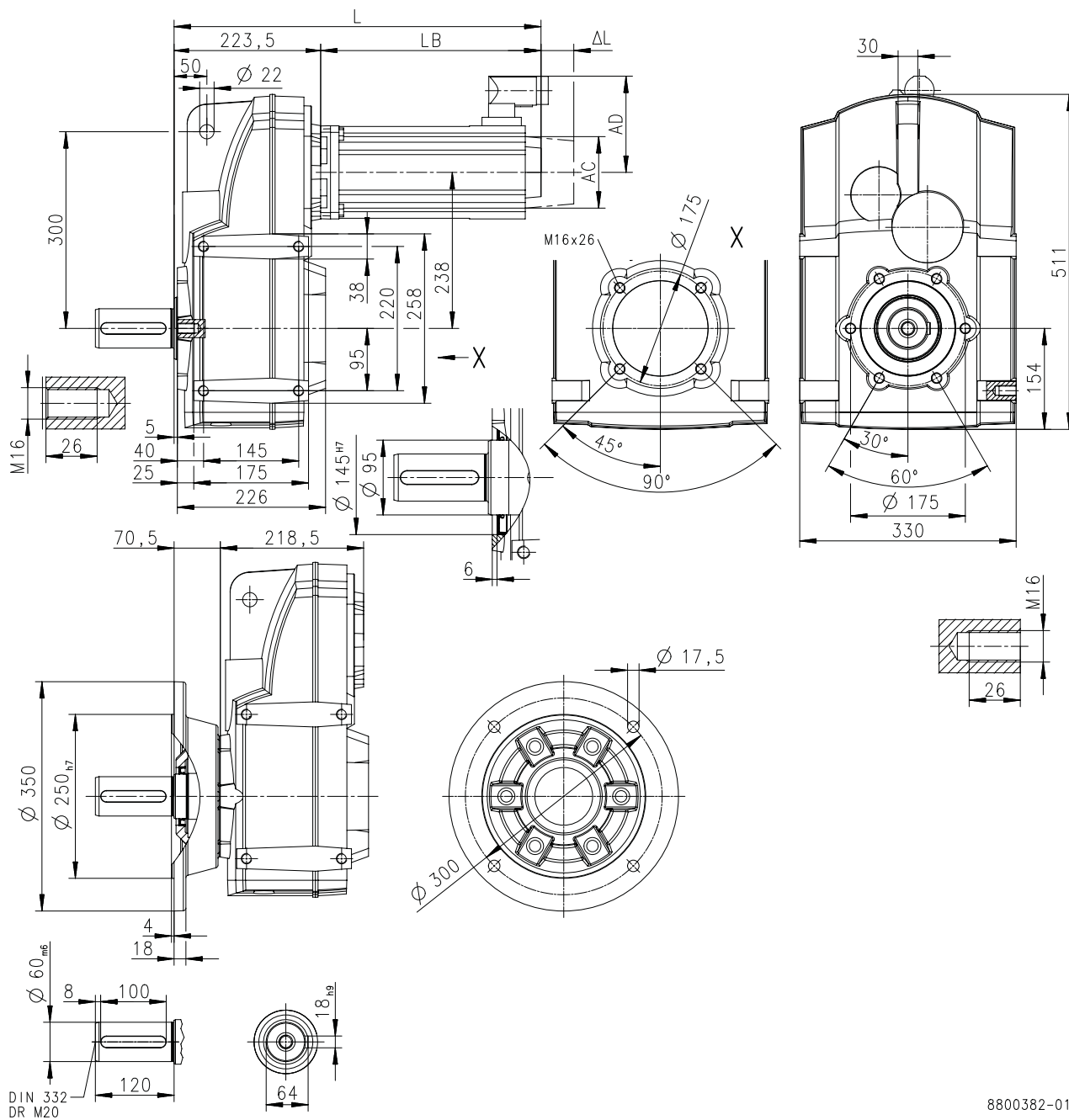
Technical data

Dimensions

Basic dimensions

g500-S3100, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)

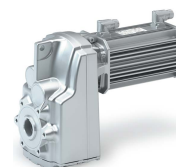


8800382-01

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	603	541	603	541
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

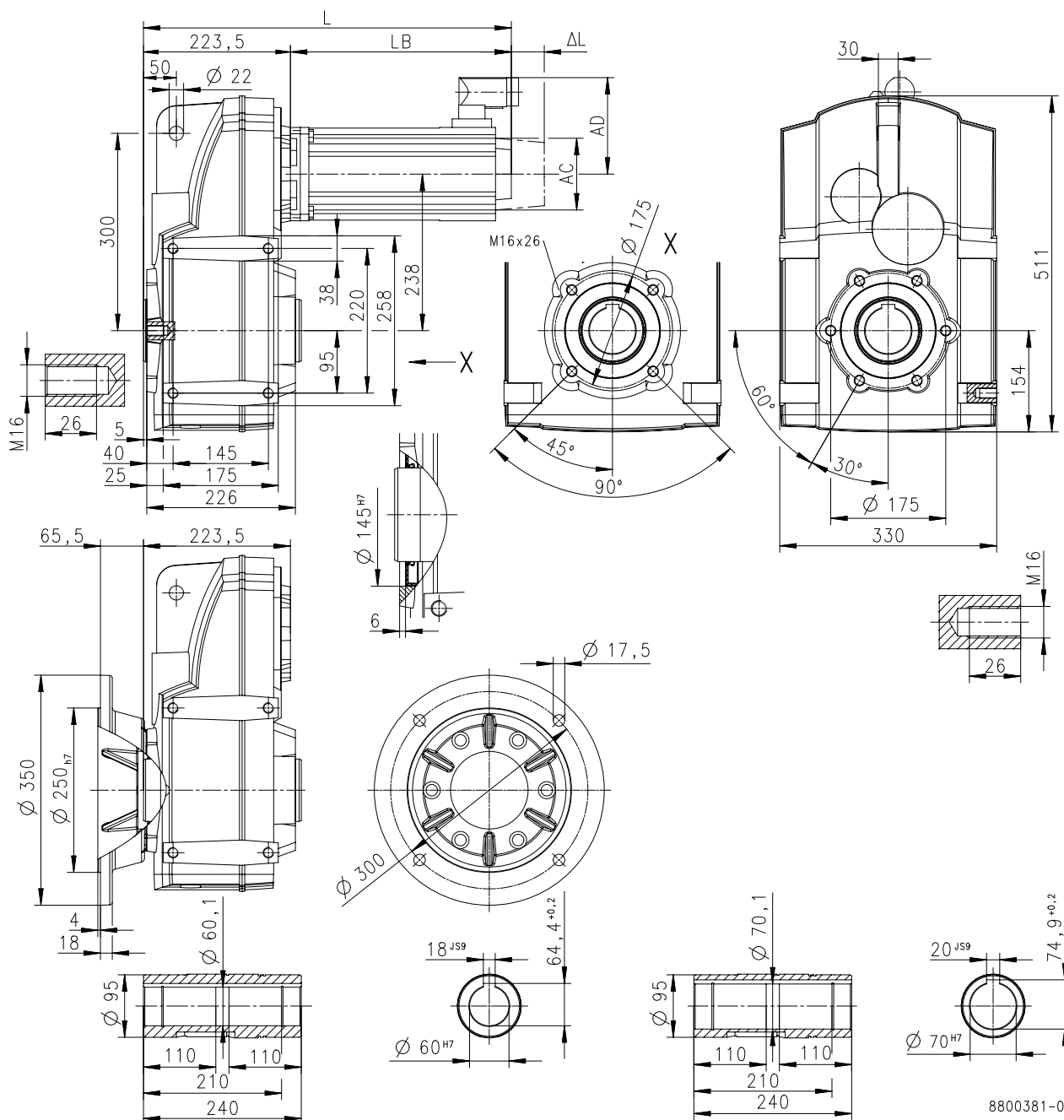
Technical data

Dimensions
Basic dimensions



g500-S3100, 2-/3-stage with MCA17

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800381-02

Motor			MCA			
			17N17- Blower	17N23- natural	17N35- Blower	17N41- natural
Total length	L	mm	666	580	666	580
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

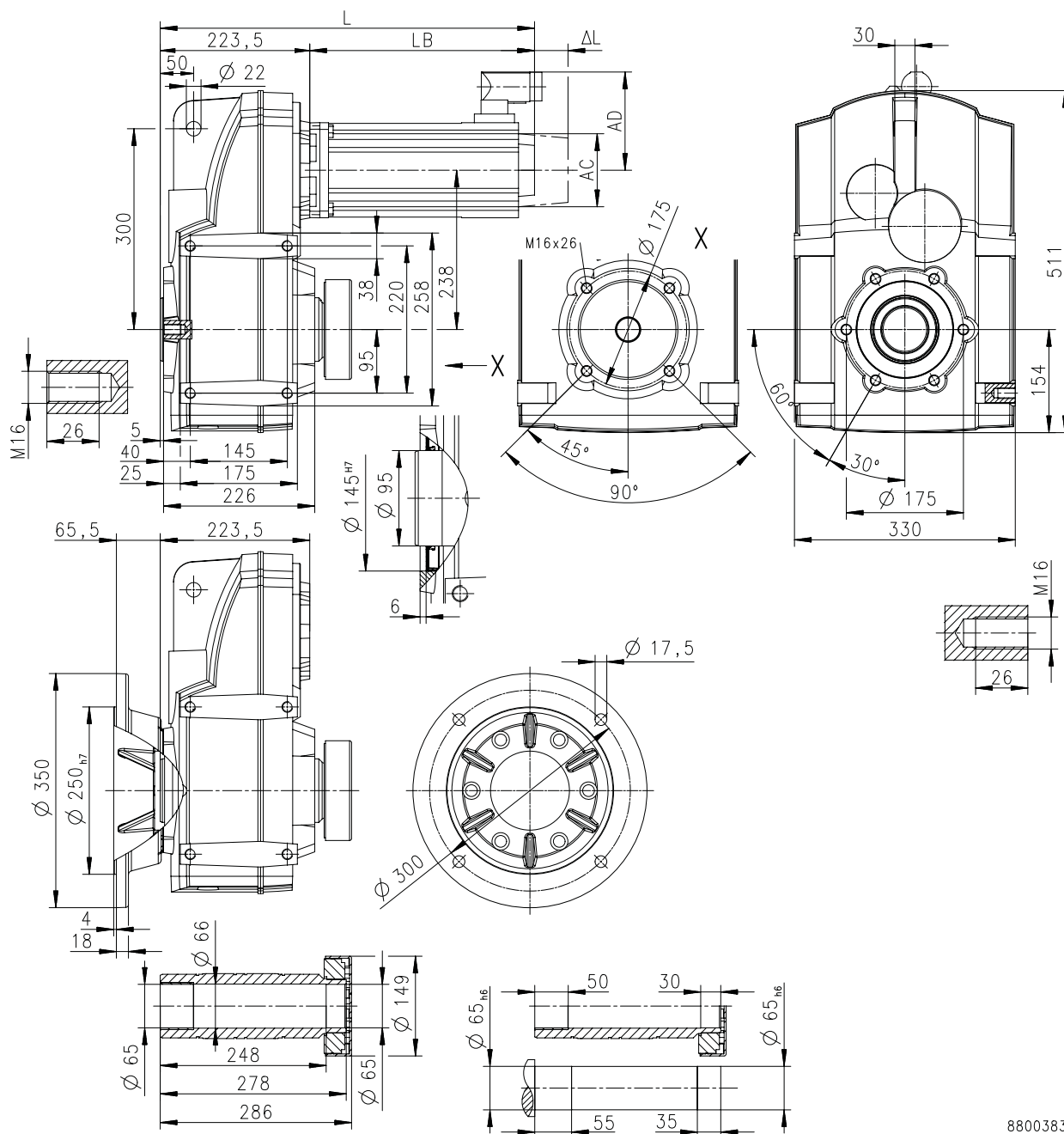
Technical data

Dimensions

Basic dimensions

g500-S3100, 2-/3-stage with MCA17

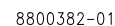
Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



8800383-01

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	666	580	666	580
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

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)

196

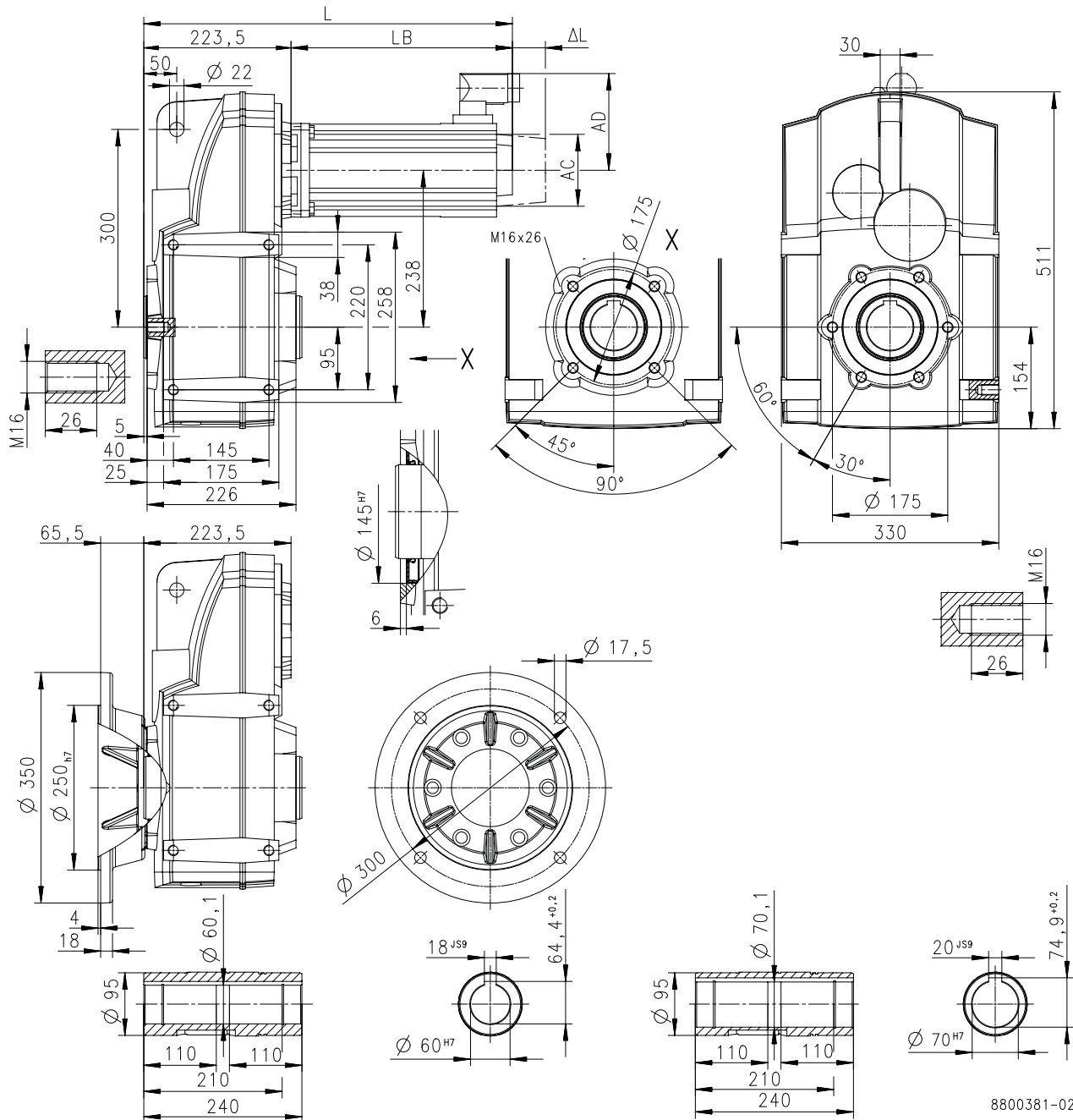


Technical data

Dimensions
Basic dimensions

g500-S3100, 2-/3-stage with MCA19

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800381-02

Motor			MCA			
			19S17- Blower	19S23- natural	19S35- Blower	19S42- natural
Total length	L	mm	746	649	746	649
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	746	649	746	649
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

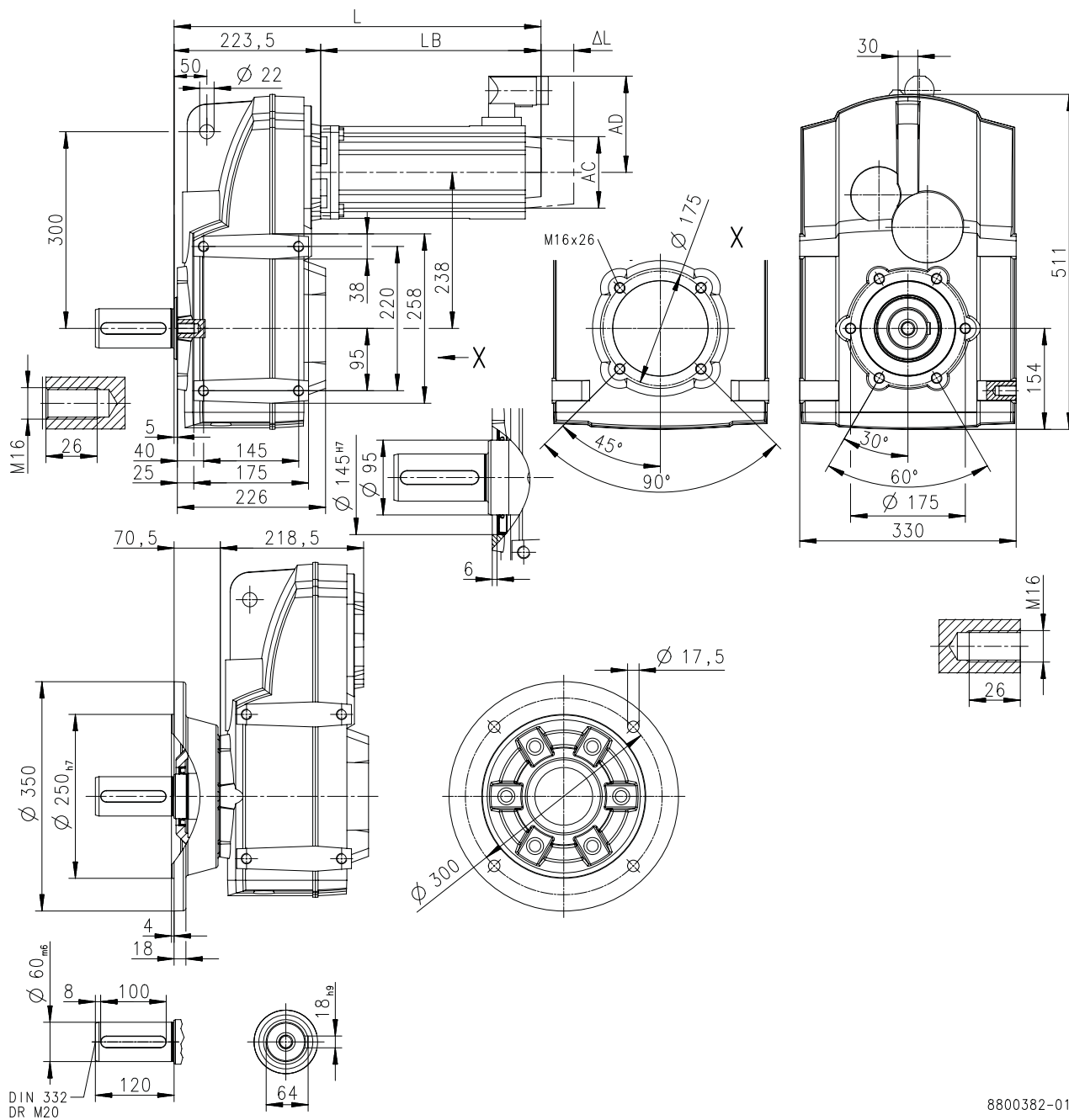
Technical data

Dimensions

Basic dimensions

g500-S3100, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)

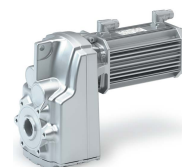


8800382-01

Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	746	649	746	649
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

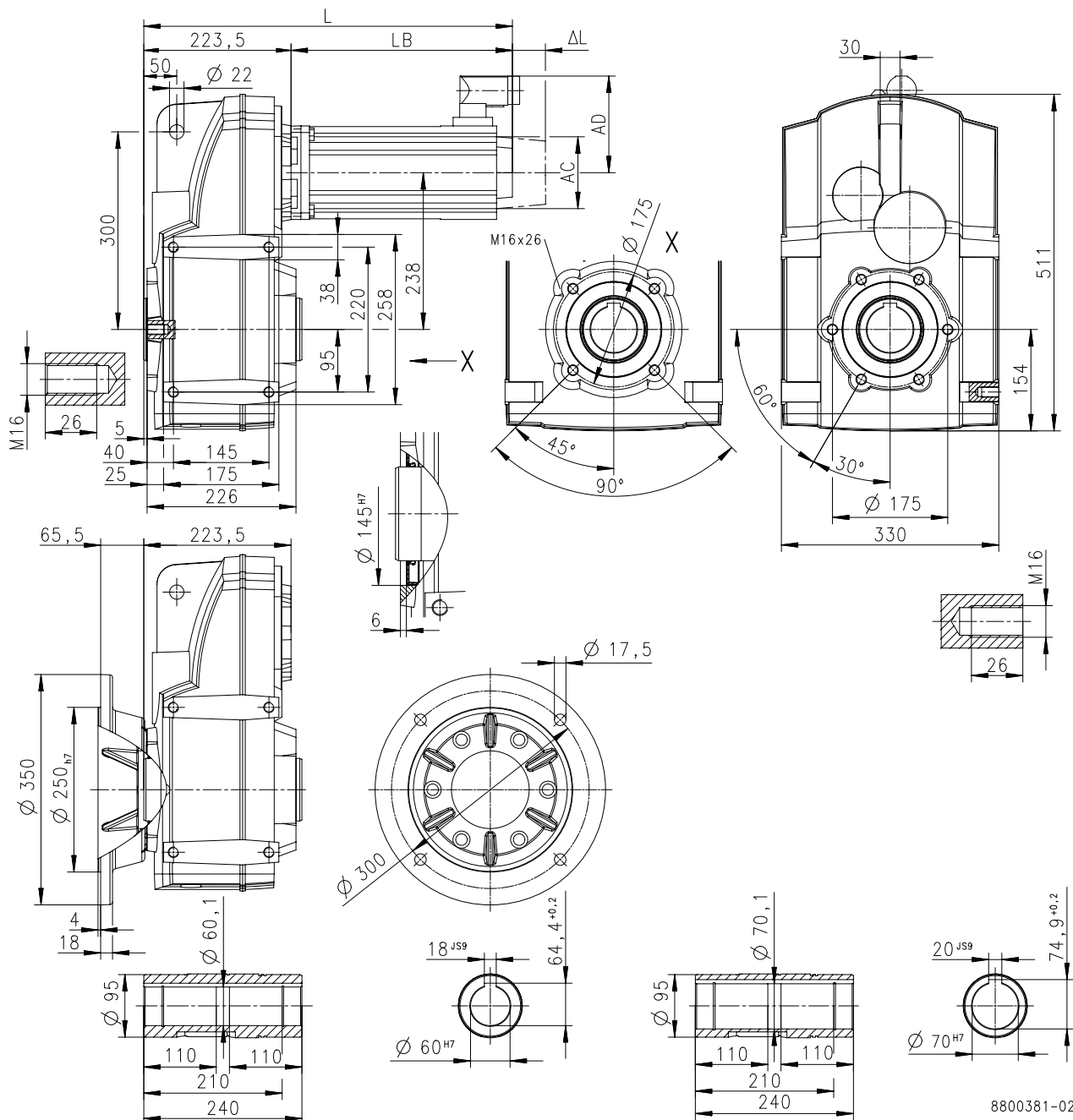
Technical data

Dimensions
Basic dimensions



g500-S3100, 2-/3-stage with MCA21

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800381-02

Motor			MCA			
			21X17- Blower	21X25- natural	21X35- Blower	21X42- natural
Cooling type						
Total length	L	mm	837	741	837	741
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

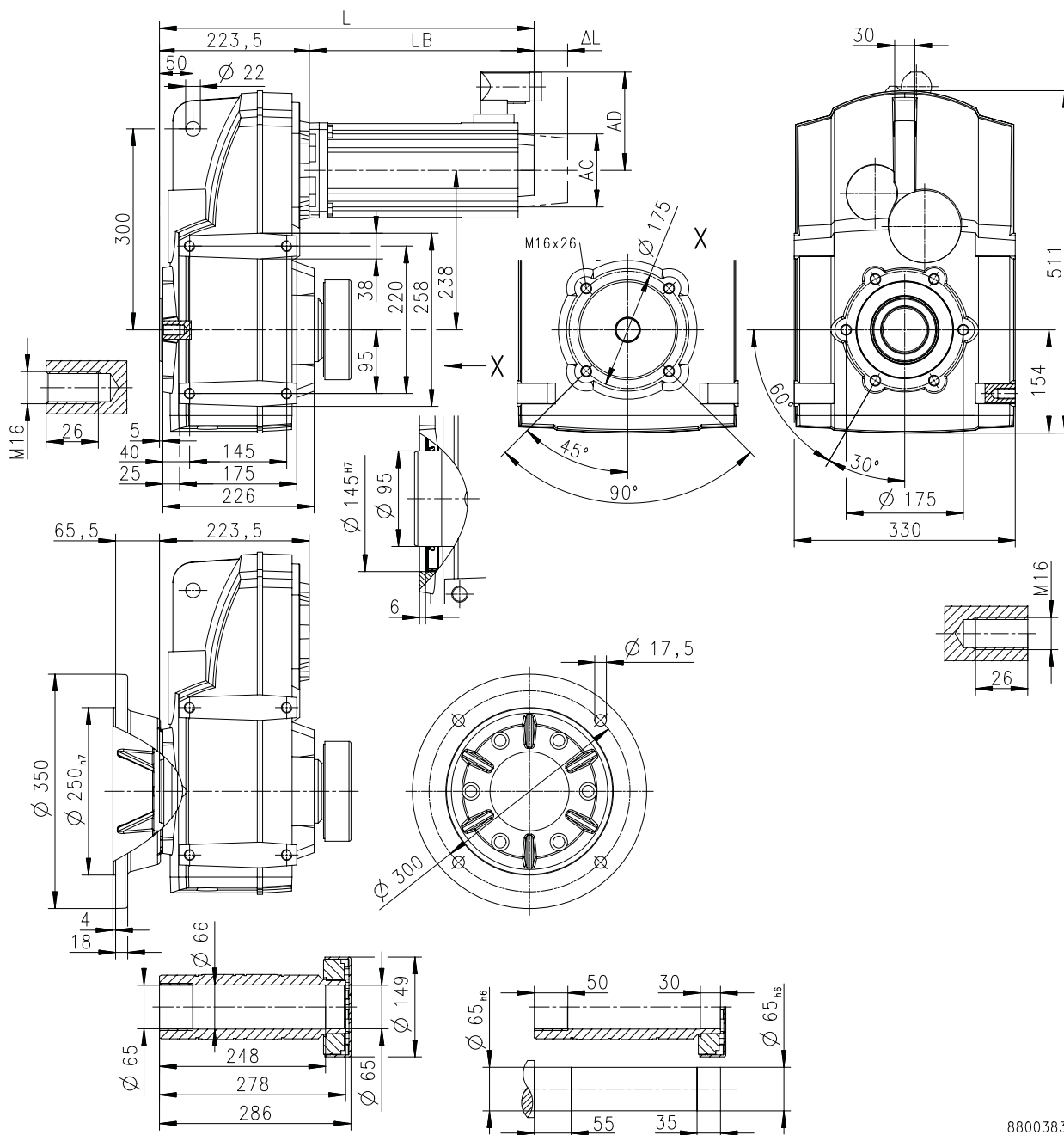


Technical data

Dimensions
Basic dimensions

g500-S3100, 2-/3-stage with MCA21

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



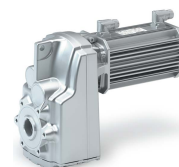
8800383-01

Motor			MCA			
			21X17- Blower	21X25- natural	21X35- Blower	21X42- natural
Cooling type						
Total length	L	mm	837	741	837	741
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

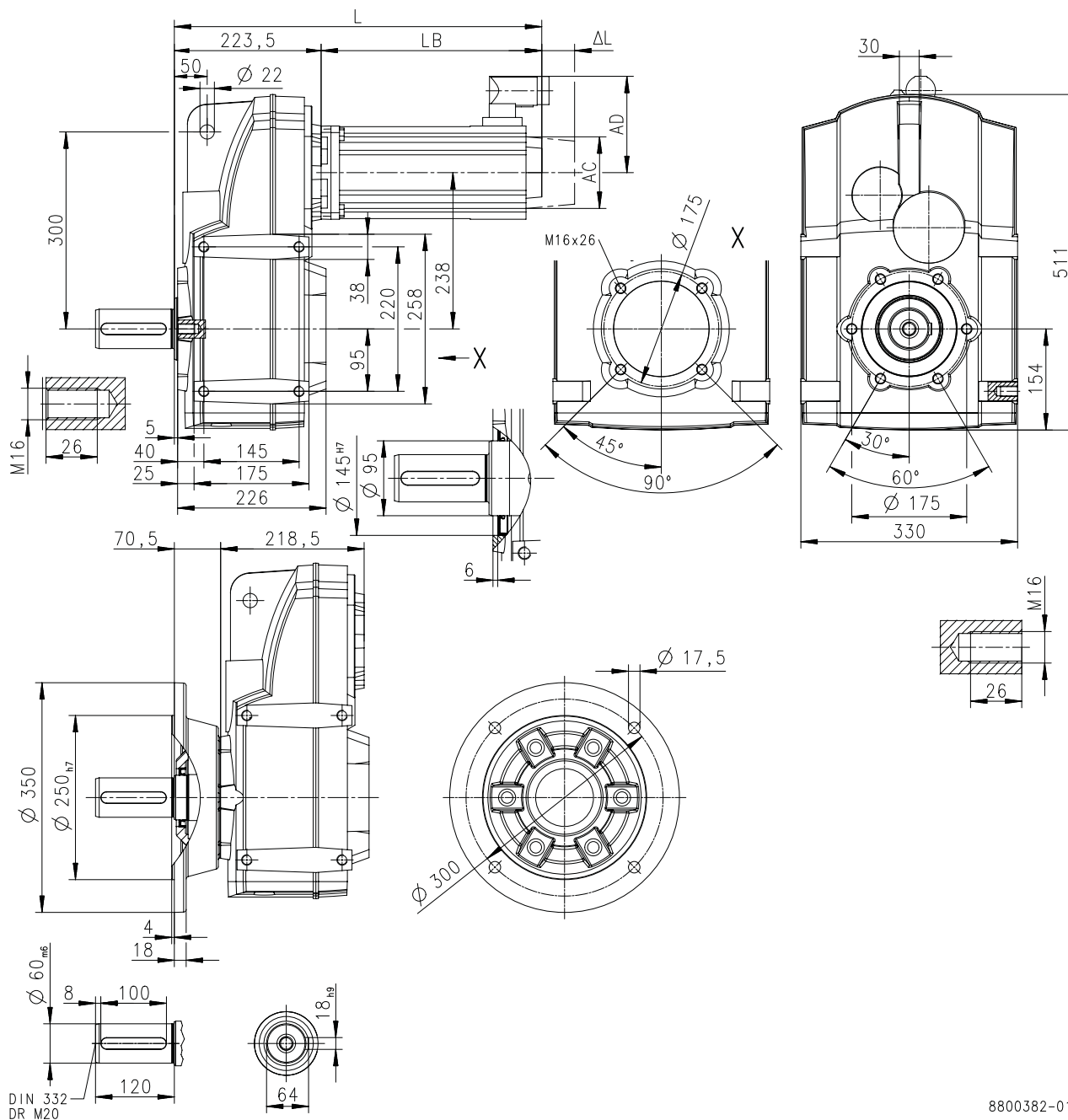
Dimensions

Basic dimensions



g500-S3100, 2-/3-stage with MCA21

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)



8800382-01

Motor			MCA			
			21X17-	21X25-	21X35-	21X42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	837	741	837	741
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

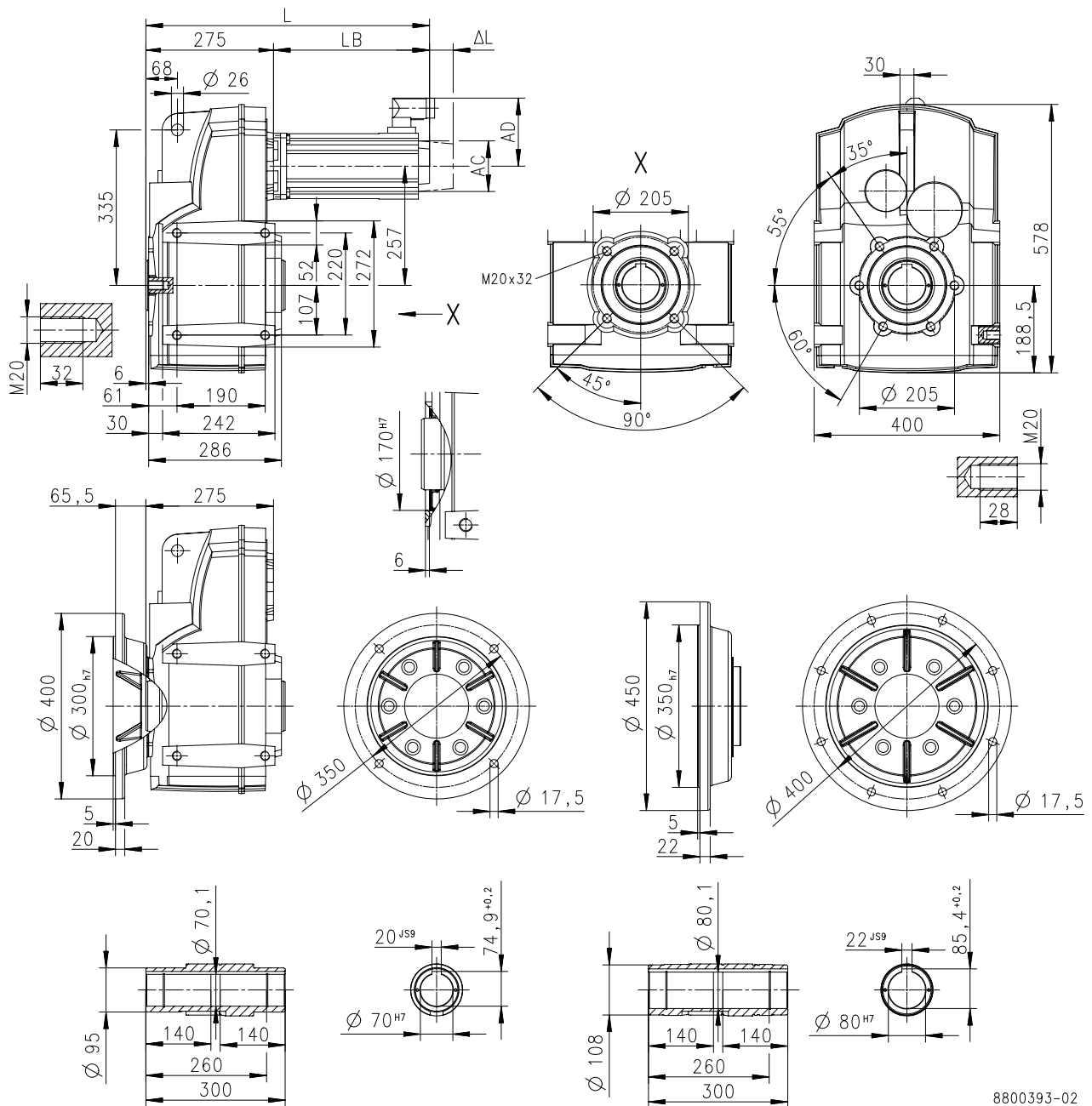


Technical data

Dimensions
Basic dimensions

g500-S4500, 2-/3-stage with MCA10

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800393-02

Motor			MCA
			10140-
Cooling type			natural
Total length	L	mm	534
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90

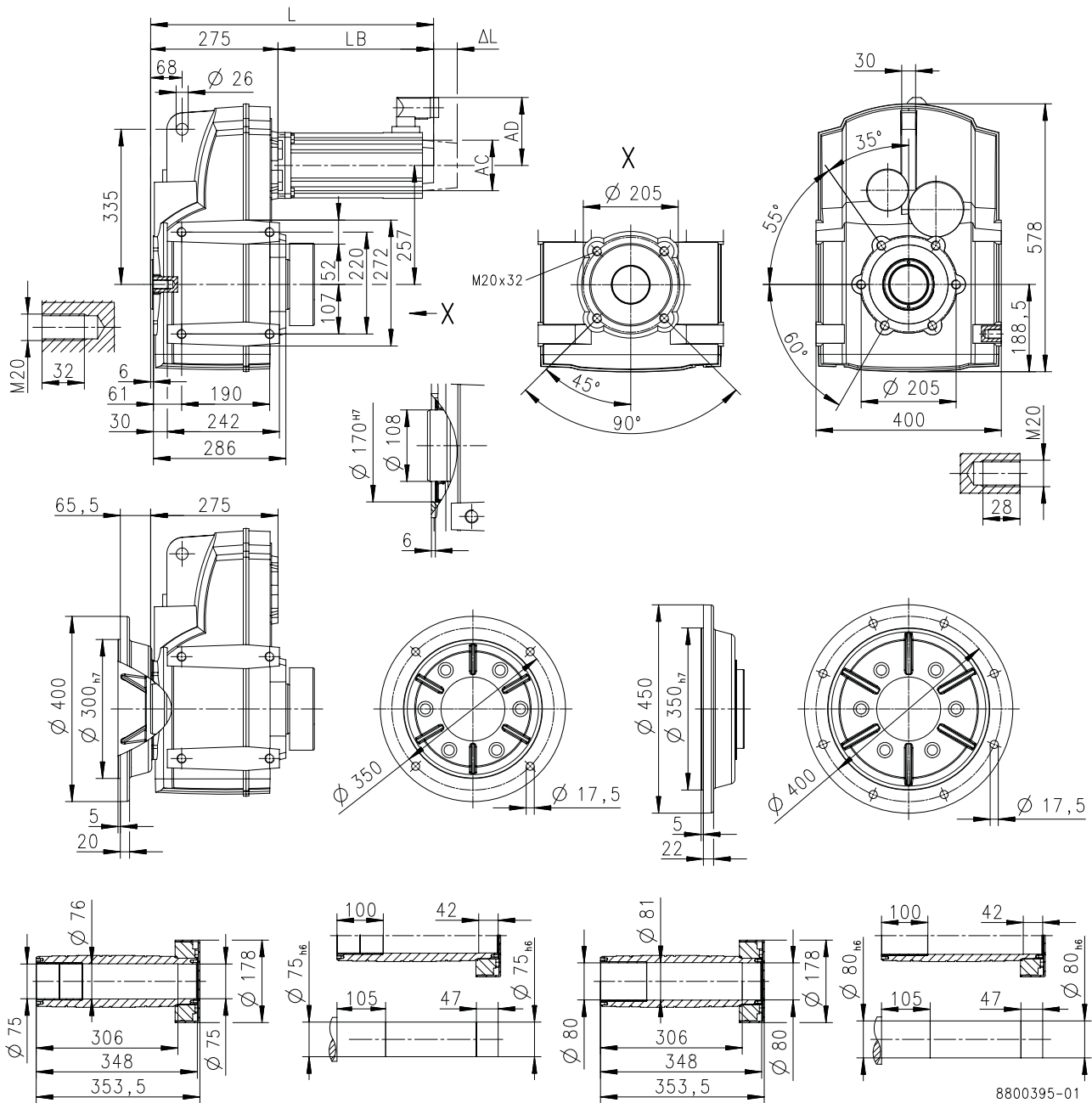
Technical data

Dimensions
Basic dimensions

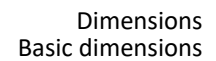


g500-S4500, 2-/3-stage with MCA10

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



Motor			MCA
Cooling type			10140-natural
Total length	L	mm	534
Motor length	LB	mm	259
Length of motor options	ΔL	mm	78
Motor diameter	AC	mm	102
Motor/connection distance	AD	mm	90



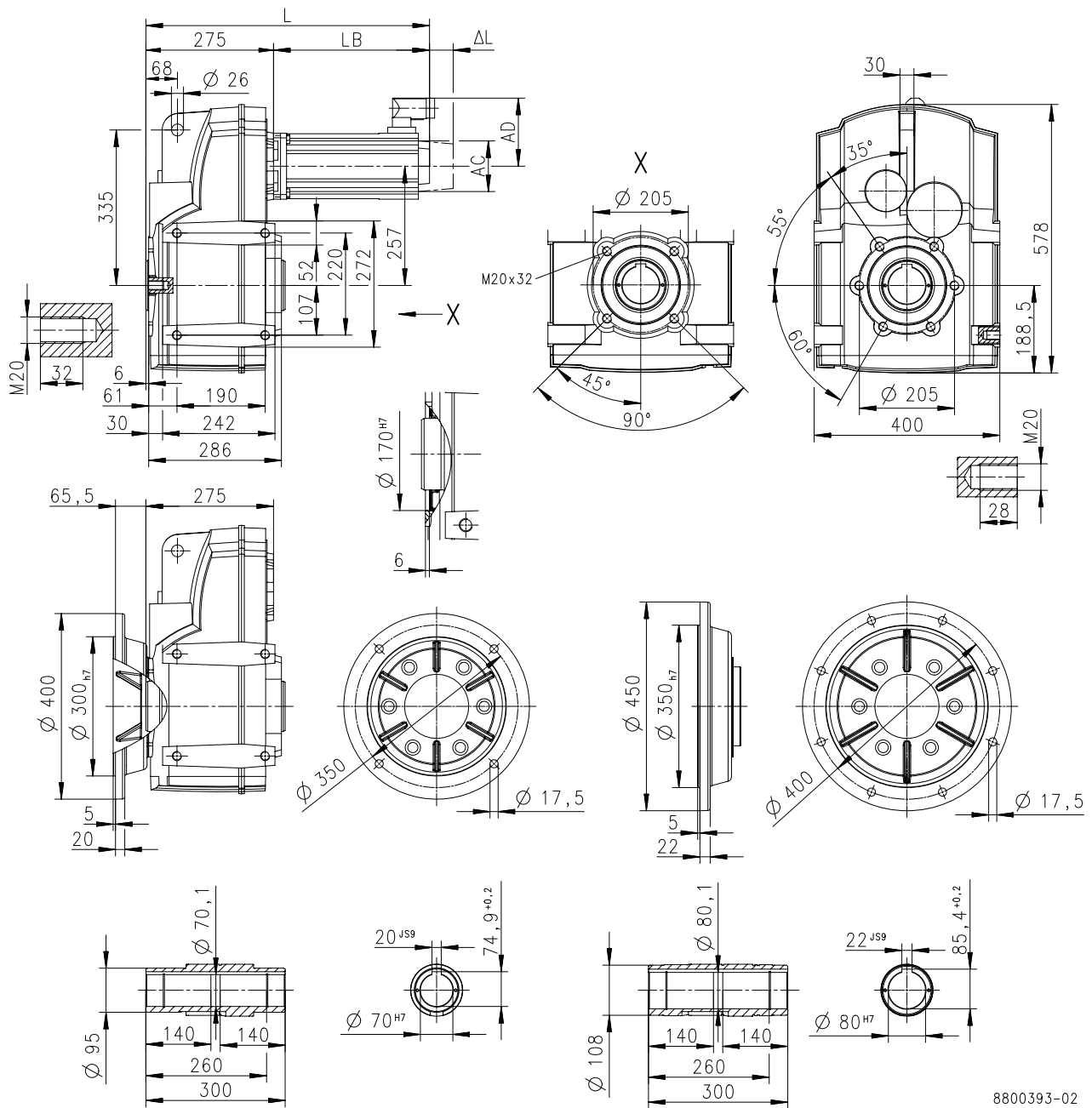
Technical data

Dimensions
Basic dimensions



g500-S4500, 2-/3-stage with MCA13

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800393-02

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	611	543
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

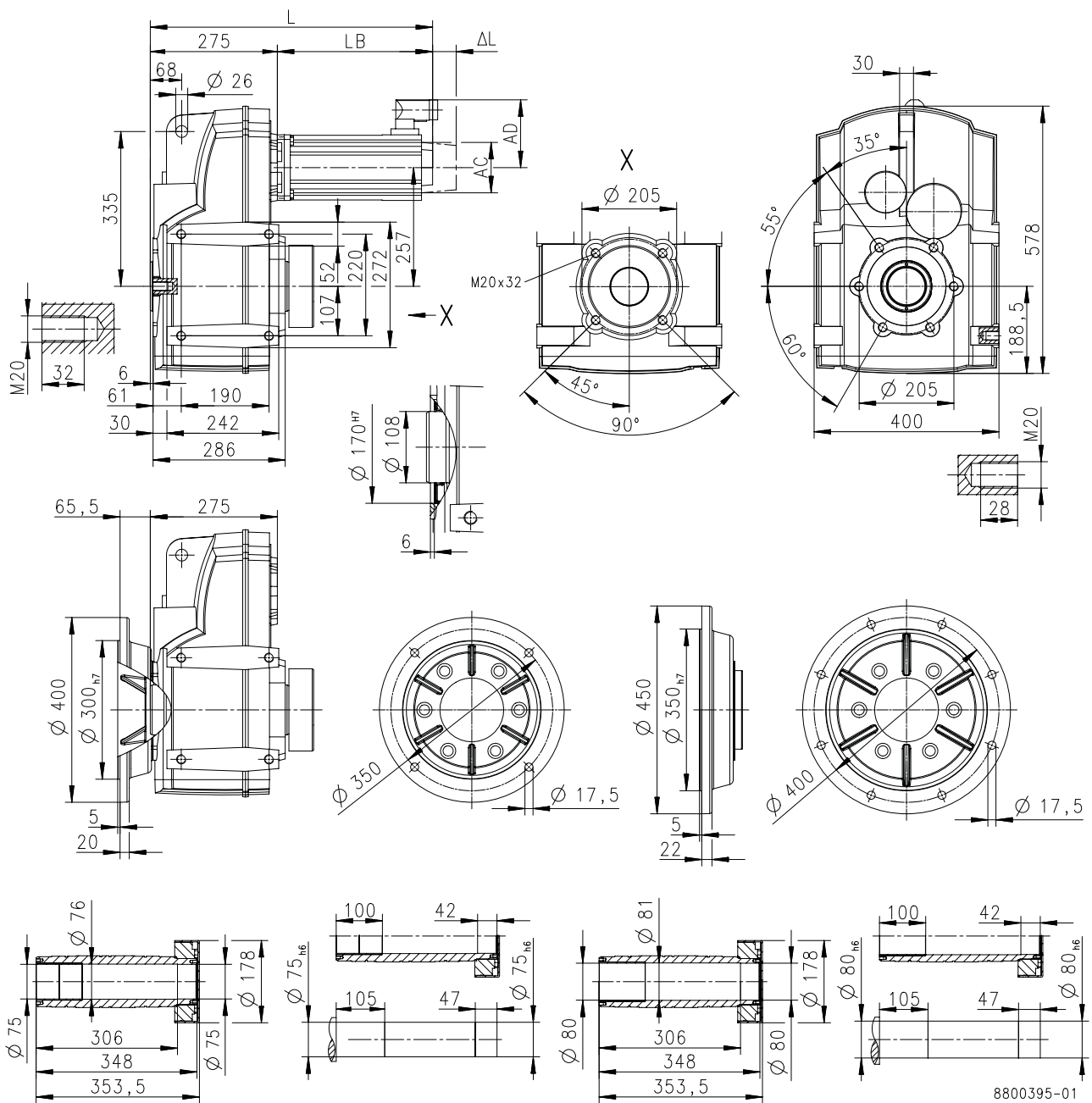


Technical data

Dimensions
Basic dimensions

g500-S4500, 2-/3-stage with MCA13

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



8800395-01

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	611	543
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



Technical drawing of a 1000 mm x 1000 mm x 1000 mm ball valve, showing multiple views (front, side, top, bottom, and detail views) with dimensions in millimeters. The drawing includes a main front view, a side view, a top view, a bottom view, and several detail views of the valve handle and stem. Dimensions are given in millimeters. The drawing is labeled "1000 mm x 1000 mm x 1000 mm" and "1000 mm x 1000 mm x 1000 mm".

Key dimensions and features include:

- Main Front View:** Overall width 1000 mm, height 1000 mm. Flange diameter $\varnothing 400$. Stem diameter $\varnothing 26$. Handle length 275 mm. Flange thickness 68 mm. Stem thread M20.
- Side View:** Overall width 1000 mm, height 1000 mm. Flange diameter $\varnothing 400$. Stem diameter $\varnothing 26$. Handle length 275 mm. Flange thickness 68 mm. Stem thread M20.
- Top View:** Overall width 1000 mm, height 1000 mm. Flange diameter $\varnothing 400$. Stem diameter $\varnothing 26$. Handle length 275 mm. Flange thickness 68 mm. Stem thread M20.
- Bottom View:** Overall width 1000 mm, height 1000 mm. Flange diameter $\varnothing 400$. Stem diameter $\varnothing 26$. Handle length 275 mm. Flange thickness 68 mm. Stem thread M20.
- Detail Views:**
 - Handle detail: Length 110 mm, width 12 mm, thread M20.
 - Stem detail: Length 160 mm, diameter $\varnothing 80_{m6}$, thread M20.
 - Flange detail: Diameter $\varnothing 400$, thickness 22 mm.

Motor			MCA	
			13I34-	13I41-
Cooling type			Blower	natural
Total length	L	mm	611	543
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

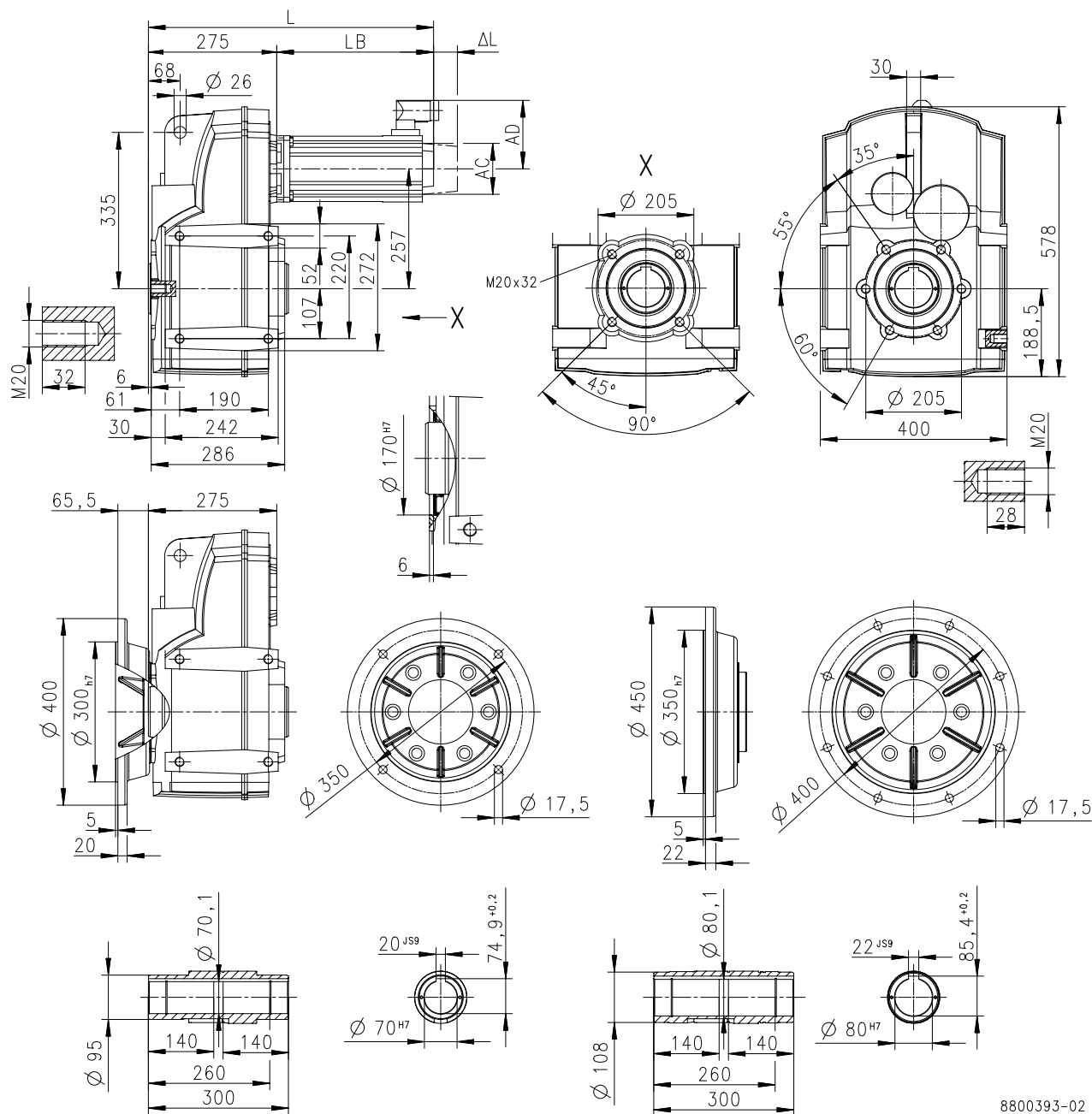


Technical data

Dimensions
Basic dimensions

g500-S4500, 2-/3-stage with MCA14

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



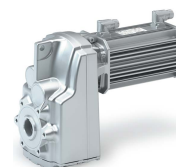
8800393-02

Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Total length	L	mm	655	593	655	593
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

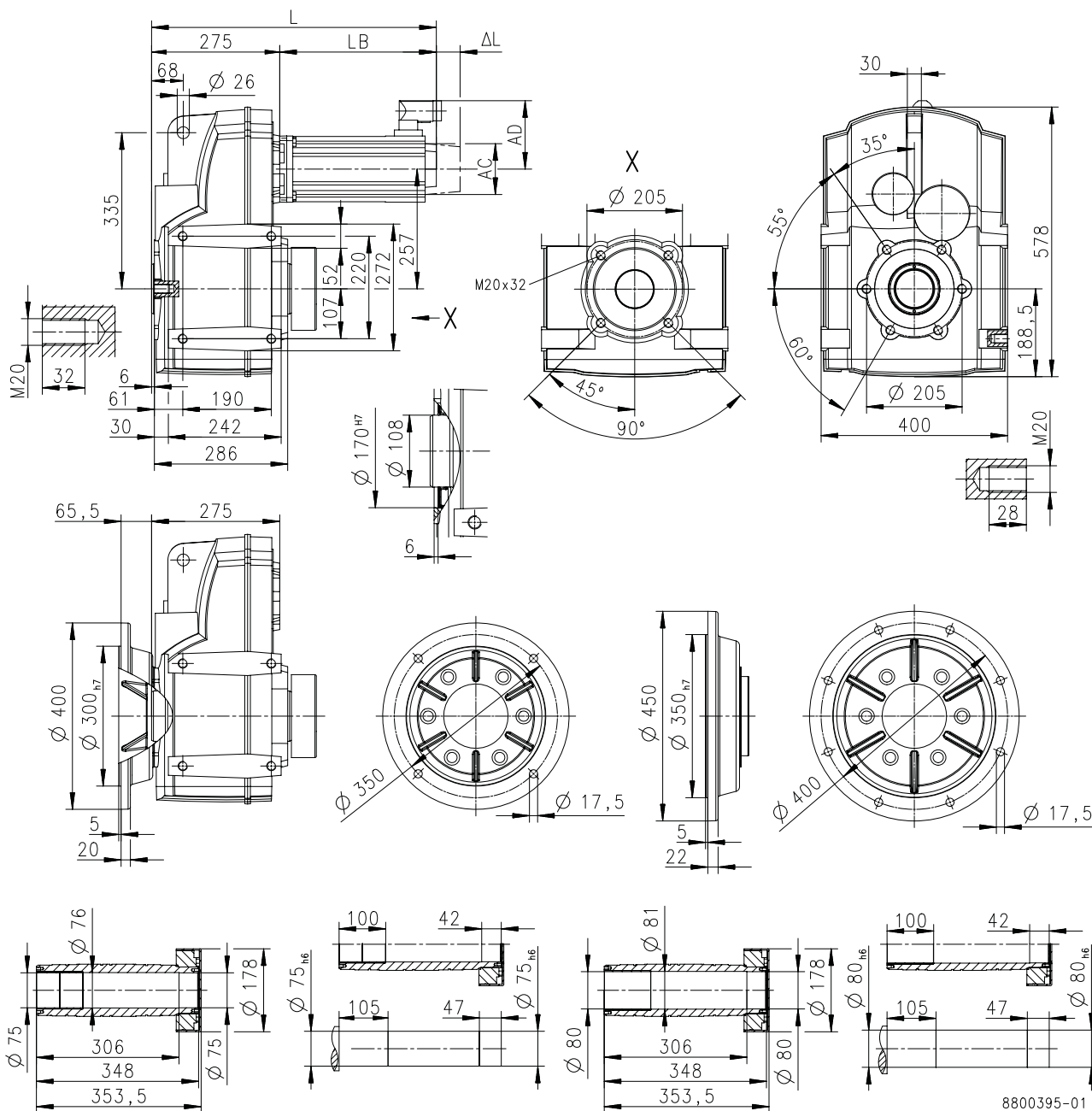
Dimensions

Basic dimensions



g500-S4500, 2-/3-stage with MCA14

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



Motor			MCA			
			14L16- Blower	14L20- natural	14L35- Blower	14L41- natural
Cooling type						
Total length	L	mm	655	593	655	593
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

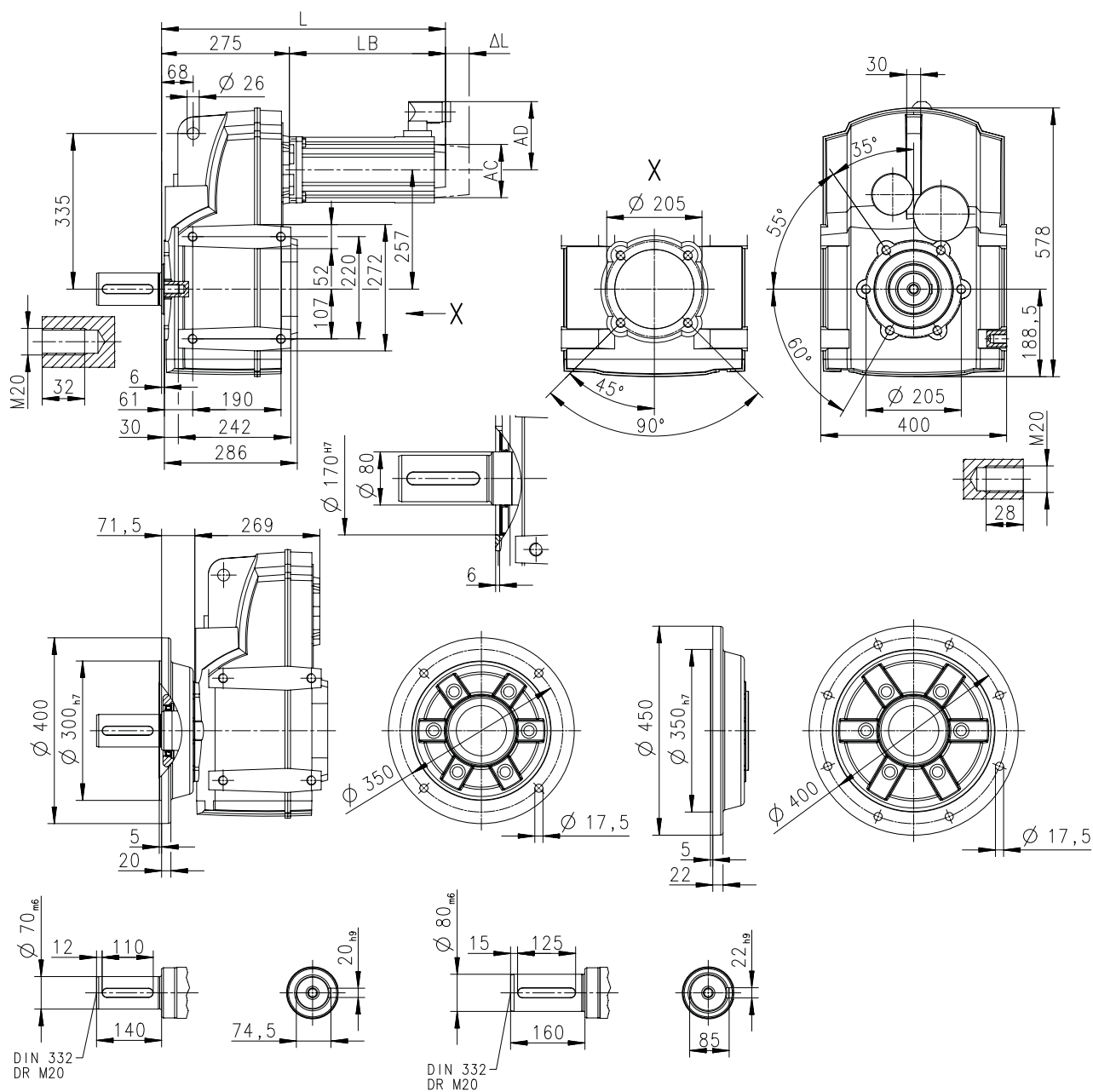
Technical data

Dimensions

Basic dimensions

g500-S4500, 2-/3-stage with MCA14

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)



8800394-01

Motor			MCA			
			14L16-	14L20-	14L35-	14L41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	655	593	655	593
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

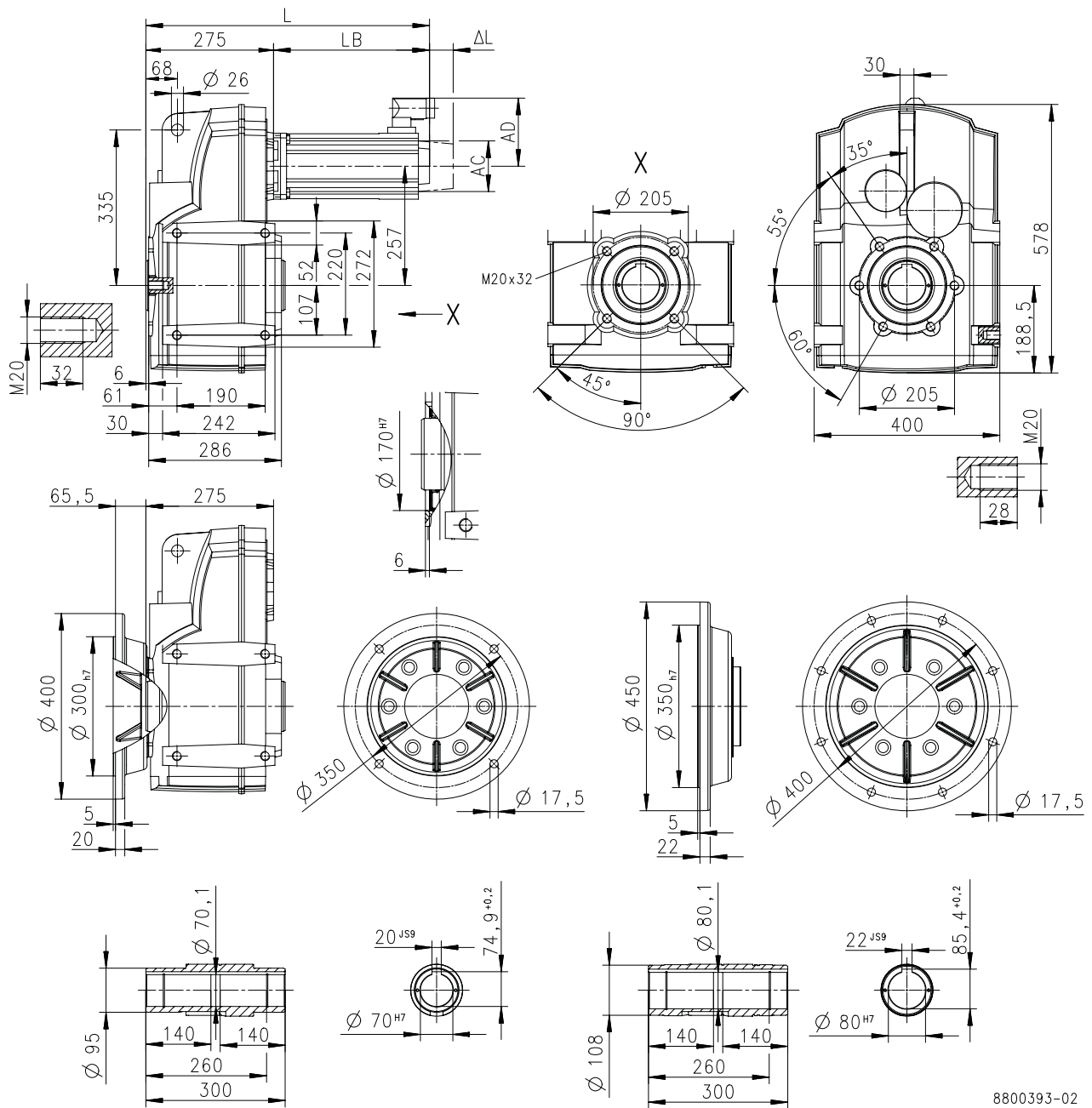
Technical data

Dimensions
Basic dimensions



g500-S4500, 2-/3-stage with MCA17

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800393-02

Motor			MCA			
			17N17- Blower	17N23- natural	17N35- Blower	17N41- natural
Total length	L	mm	718	632	718	632
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

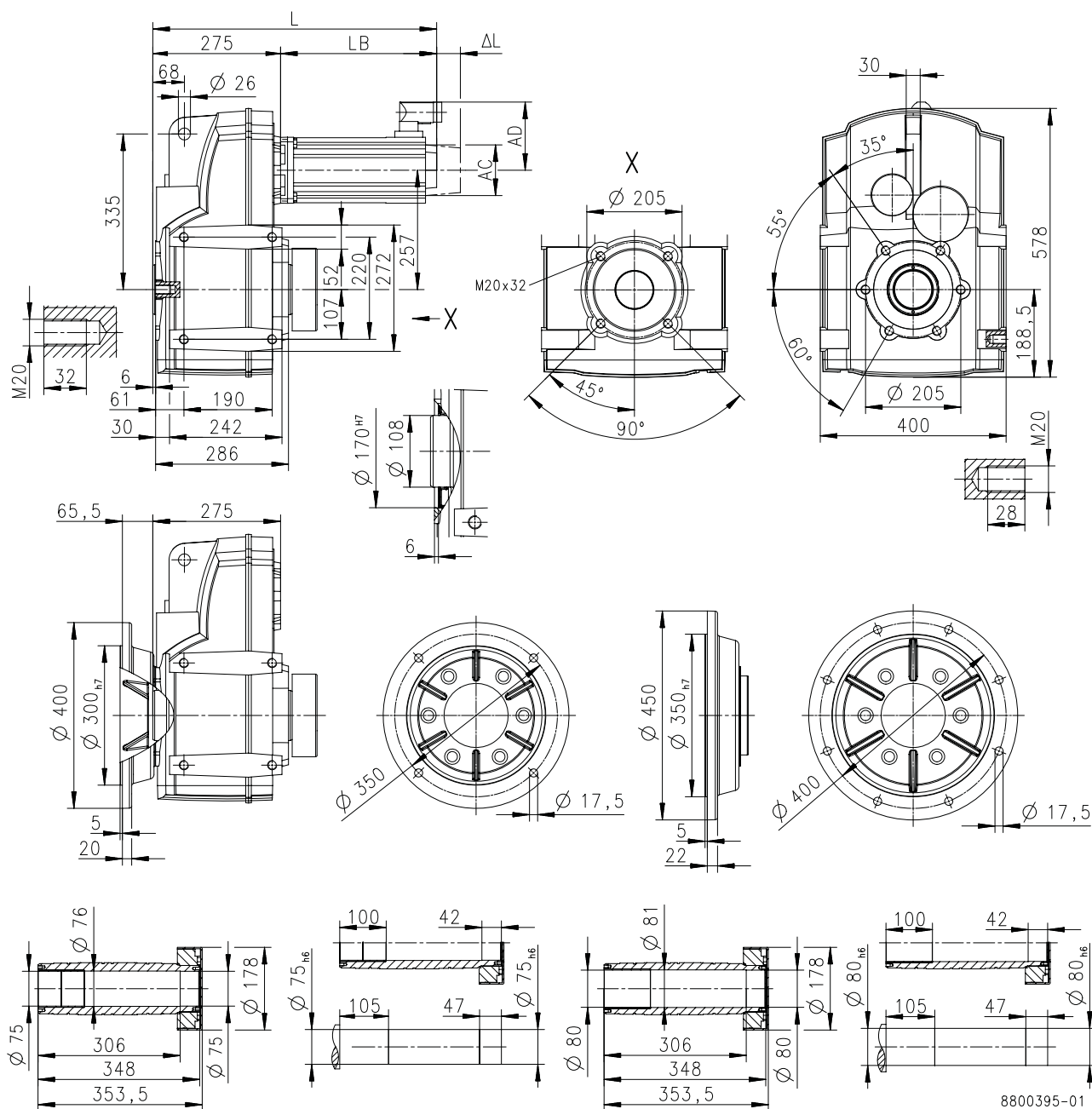


Technical data

Dimensions
Basic dimensions

g500-S4500, 2-/3-stage with MCA17

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)

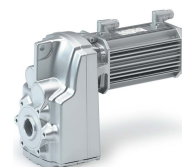


8800395-01

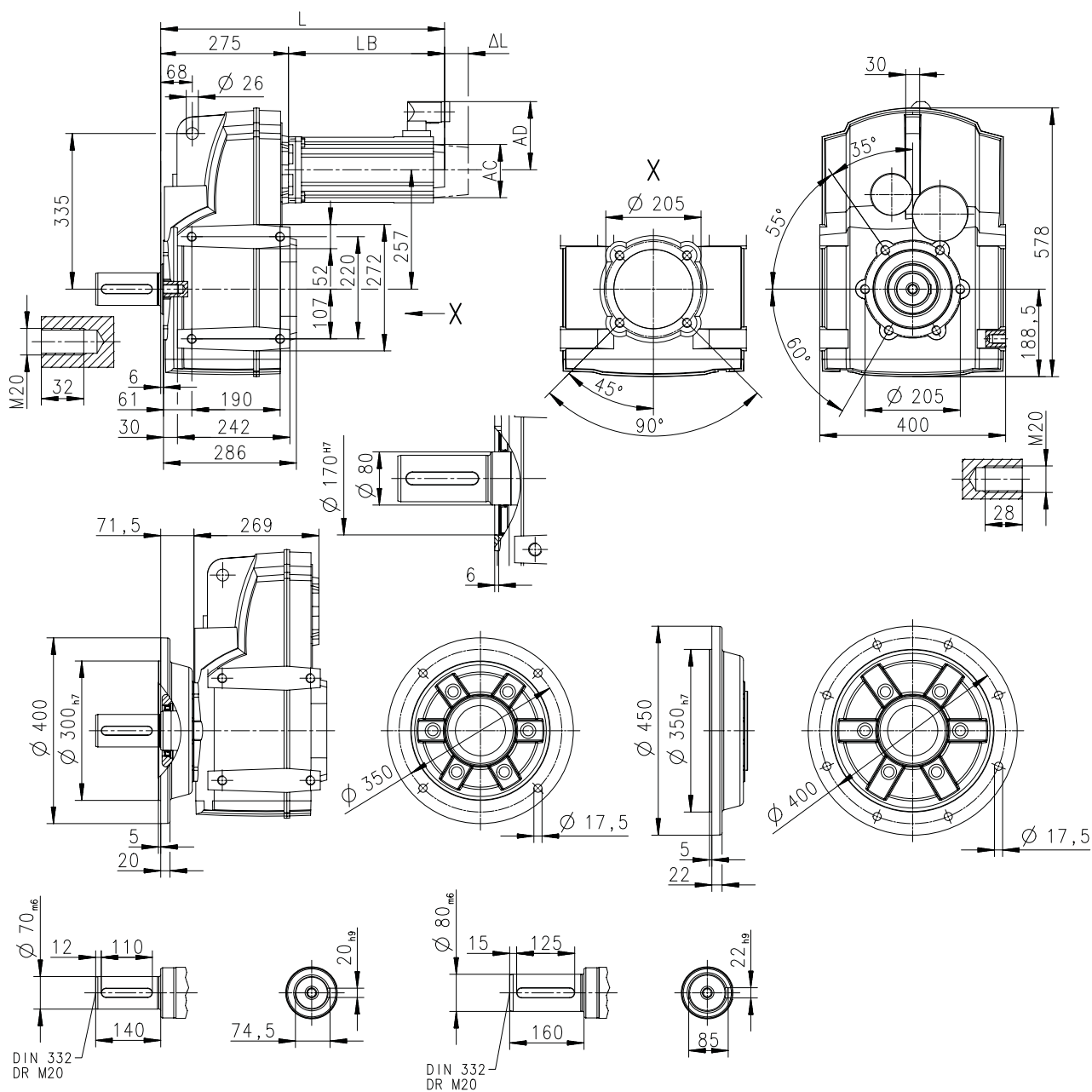
Motor			MCA			
			17N17- Blower	17N23- natural	17N35- Blower	17N41- natural
Cooling type						
Total length	L	mm	718	632	718	632
Motor length	LB	mm	443	357	443	357
Length of motor options	Δ L	mm	90	90	90	90
Motor diameter	AC	mm	165	165	165	165
Motor/connection distance	AD	mm	118	118	118	118

Dimensions

Basic dimensions

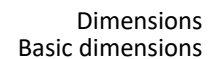


Gearbox version: Solid shaft with foot (VAR/VBR/VAK)



8800394-01

Motor			MCA			
			17N17-	17N23-	17N35-	17N41-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	718	632	718	632
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



Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)

8800393-02

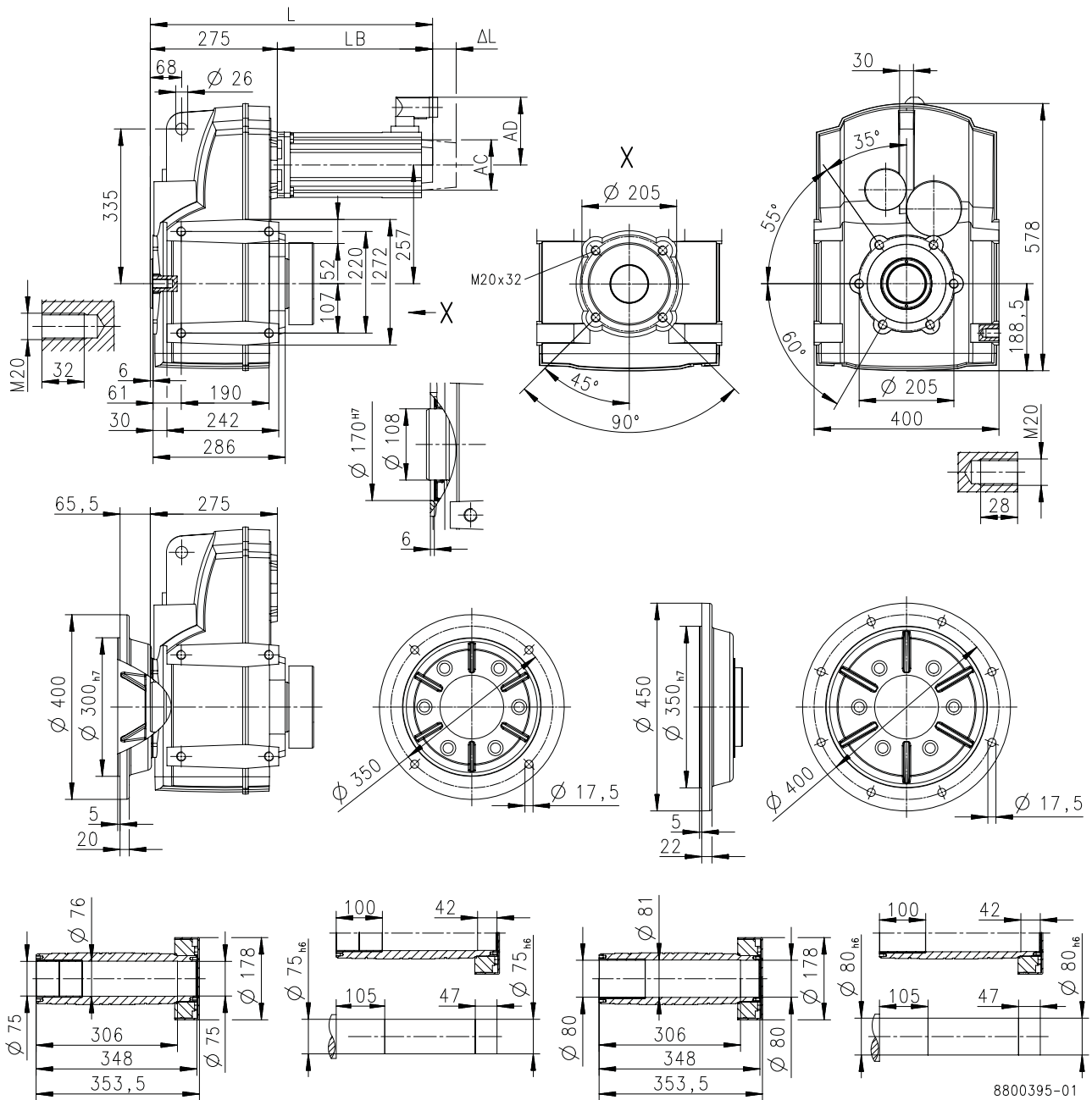
Technical data

Dimensions
Basic dimensions



g500-S4500, 2-/3-stage with MCA19

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



Motor			MCA			
			19S17- Blower	19S23- natural	19S35- Blower	19S42- natural
Total length	L	mm	797	700	797	700
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

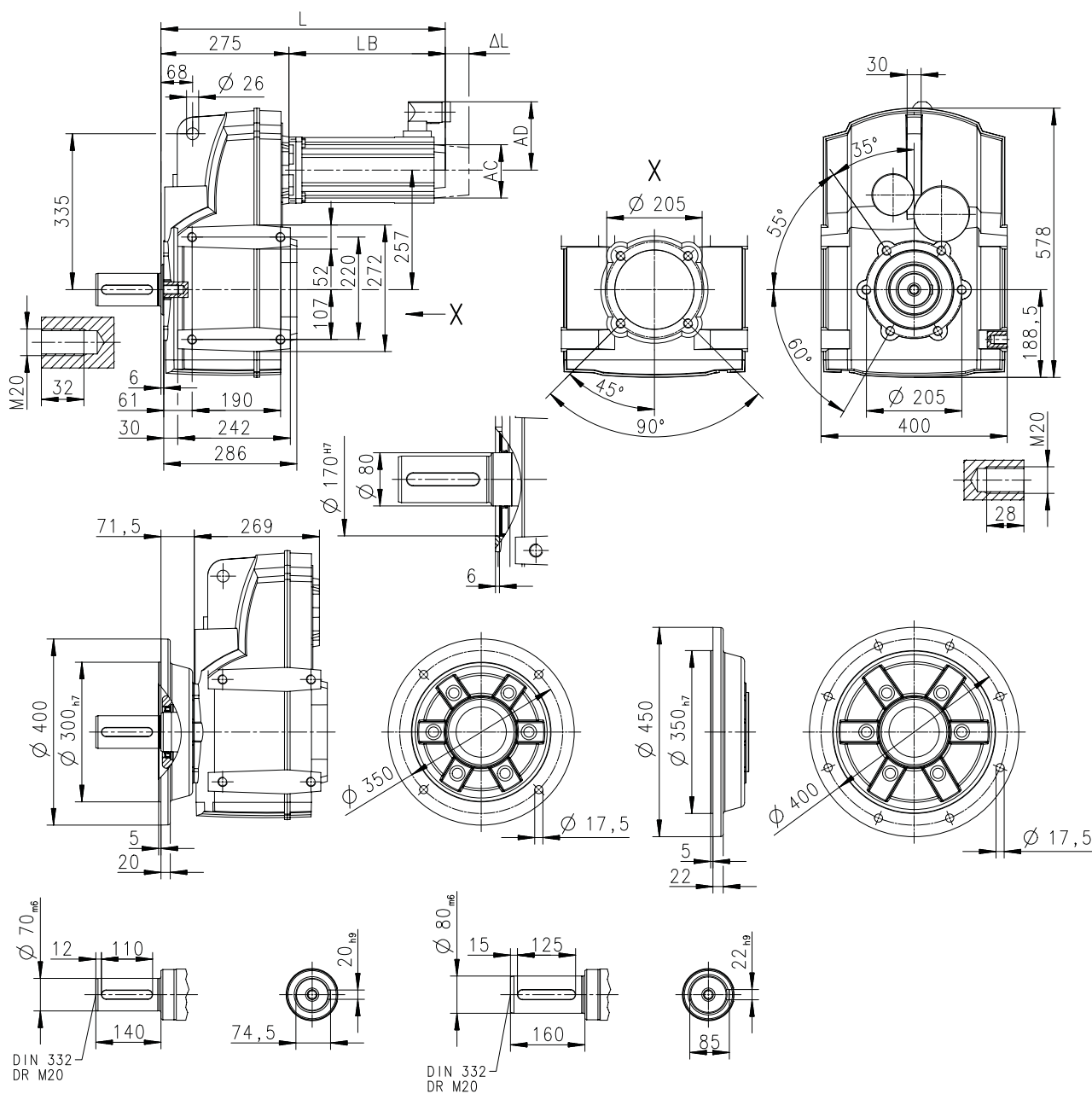


Technical data

Dimensions
Basic dimensions

g500-S4500, 2-/3-stage with MCA19

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)



8800394-01

Motor			MCA			
			19S17- Blower	19S23- natural	19S35- Blower	19S42- natural
Total length	L	mm	797	700	797	700
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

Dimensions

Basic dimensions

[illegible]

Motor			MCA			
			21X17-	21X25-	21X35-	21X42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	889	793	889	793
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

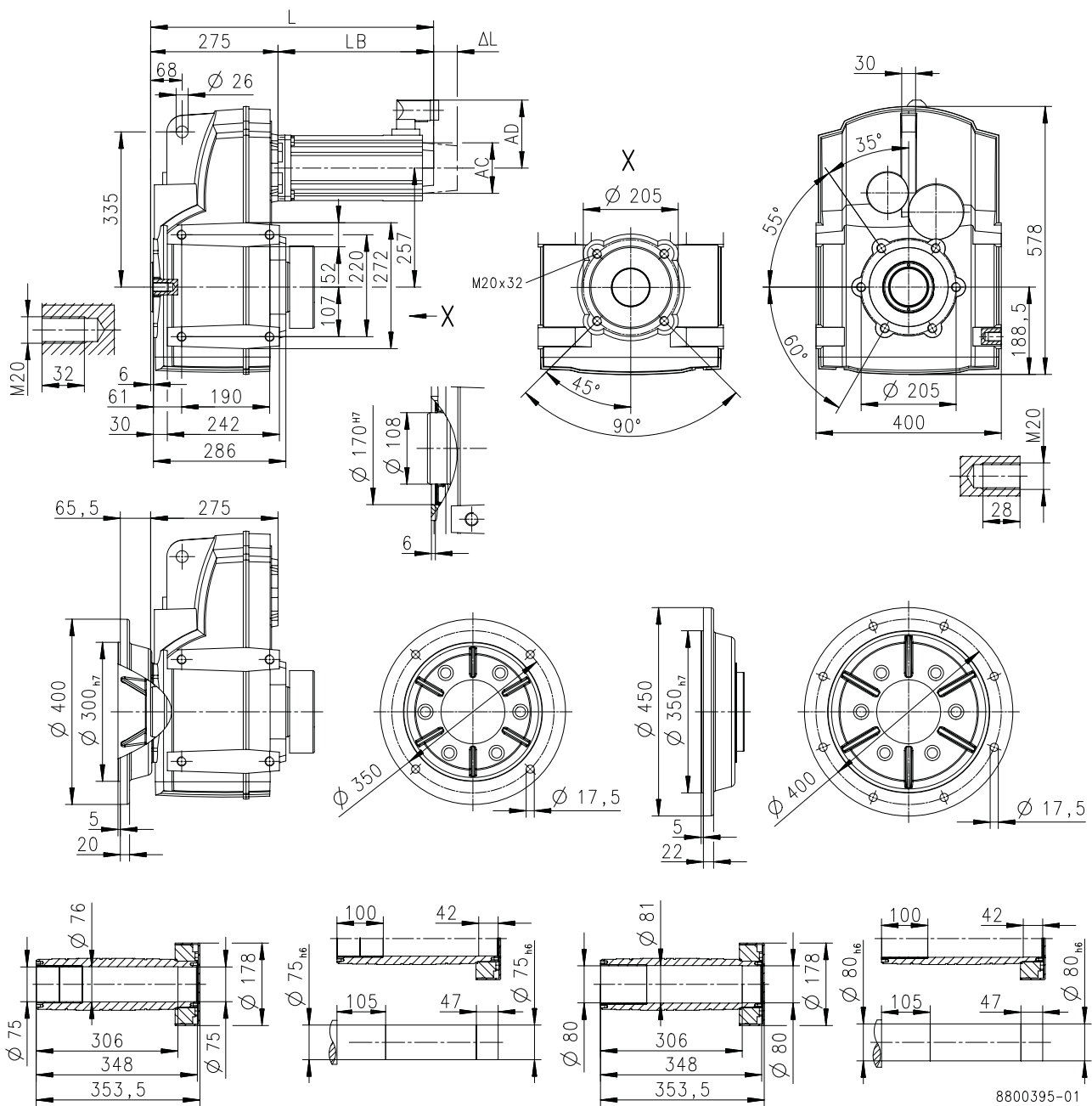


Technical data

Dimensions
Basic dimensions

g500-S4500, 2-/3-stage with MCA21

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



8800395-01

Motor			MCA			
			21X17- Blower	21X25- natural	21X35- Blower	21X42- natural
Cooling type						
Total length	L	mm	889	793	889	793
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



Technical drawing of a 1000 series ball valve, showing multiple views (front, side, top, bottom, and detail views) with dimensions in millimeters. The drawing includes a main front view with dimensions like 275, 170, 335, 205, 400, and 578. It also shows a side view with dimensions 71.5, 269, 400, and 300. Top and bottom views show the valve's circular profile with dimensions 350, 450, and 400. Detail views show the handle and stem assembly with dimensions like 70, 80, 15, 125, 160, 140, 110, 12, 20, 74.5, 85, and 22. The drawing is labeled '1000' and 'DR M20'.

Motor			MCA			
			21X17-	21X25-	21X35-	21X42-
Cooling type			Blower	natural	Blower	natural
Total length	L	mm	889	793	889	793
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



Gearbox with pre-stage

g500-S130, 3-stage

g500-S220 ... S4500, 4-stage

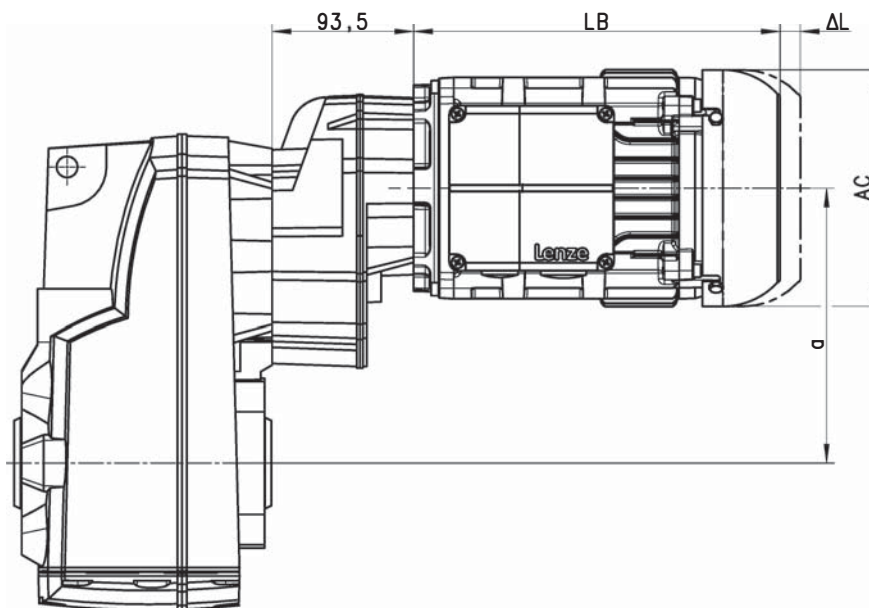


The geared motor dimensions can be found in the basic dimensions, except the total length "L" and the center distance "a".

► [Basic dimensions](#) 82

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

Pay attention to the altered center distance "a" between the gearbox and motor shaft.

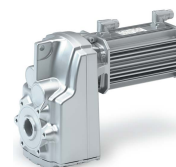


8801278-00

Gearboxes			S130	S220	S400	S660	S950	S2100	S3100	S4500
			3-stage	4-stage						
Center distance	a	mm	144	157	162	181	212	255	283	302

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](#) 245

► [Brakes](#) 236

► [Feedback](#) 239

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

Dimensions
Additional lengths

MCA19

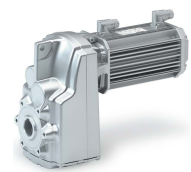
Motor			MCA			
			19S17-	19S23-	19S35-	19S42-
Cooling type			Blower	natural	Blower	natural
Feedback (without brake B0)						
R□0	Δ L	mm	0	0	0	0
SR□ / T20 / E□□	Δ L	mm	50	50	50	50
Brake (P□) and feedback						
R□0	Δ L	mm	38	38	38	38
SR□ / T20 / E□□	Δ L	mm	88	88	88	88

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

Technical data

Weights
Basic weights



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](#)  52

Observe ► [Additional weights](#)  224!

Additional weights

Gearboxes

Gearboxes			g500-S130	g500-S220	g500-S400	g500-S660
Solid shaft	m	kg	0.5	0.5	1.7	2.5
Shrink disc	m	kg	0.2	0.4	0.6	0.6
Foot	m	kg	1.7	1.8	3.3	4.3
Flange	m	kg	0.4	0.4	0.9	1.7
Torque plate						
Rubber buffers	m	kg	0.1	0.1	0.1	0.1
Shaft cover						
Shrink disc cover	m	kg	0.1	0.1	0.1	0.1

Gearboxes			g500-S950	g500-S2100	g500-S3100	g500-S4500
Solid shaft	m	kg	3.0	5.5	8.4	19.0
Shrink disc	m	kg	1.2	1.7	2.3	4.3
Foot	m	kg		-	-	-
Flange	m	kg	6.0	11.5	15.0	29.0
Torque plate						
Rubber buffers	m	kg	0.1	0.5	0.5	0.5
Shaft cover						
Shrink disc cover	m	kg	0.1	0.2	0.3	0.4

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



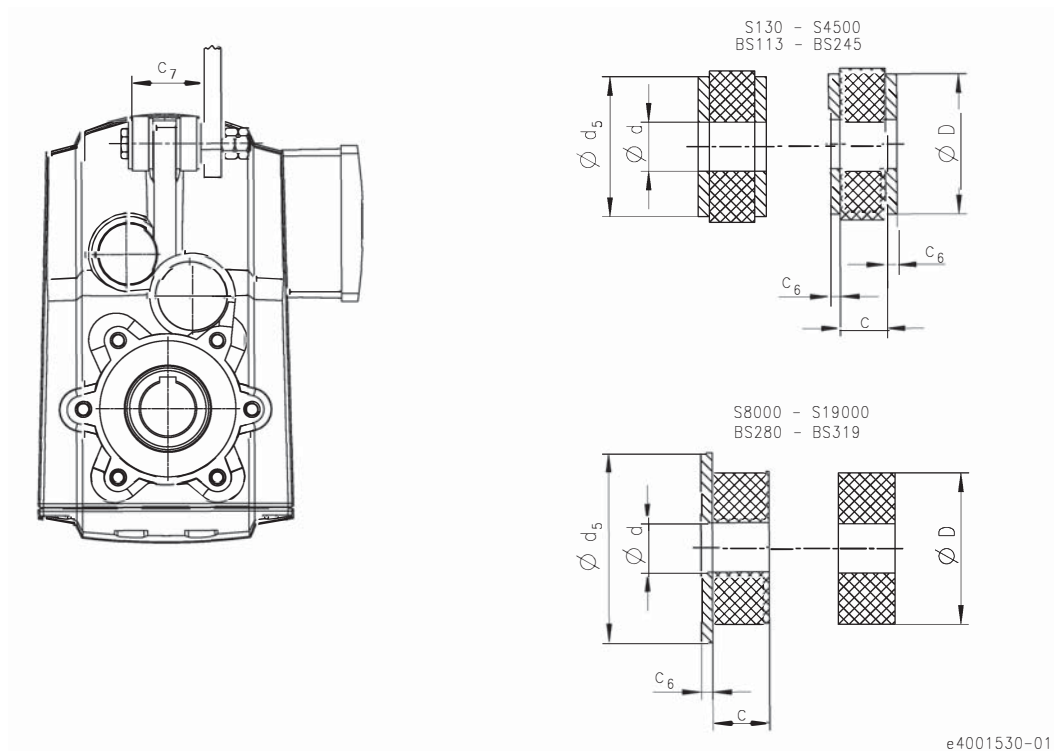
Product extensions

Torque plates

Torque support is usually provided by means of the foot or flange.

The integrated torque plate is another simple possibility. In this case, torque support is provided only via one point and is suitable for shaft-mounted gearboxes, among other things. Moreover, suitable rubber buffers ensure stress-free installation and absorb any slight impacts.

Rubber buffer for torque plate



Gearboxes	Dimensions					
	d	D	d ₅	c	c ₆	c ₇
	mm	mm	mm	mm	mm	mm
g500-S130	11.0	30.0	30	12.0	2.50	45.0
g500-S220	11.0	30.0	30	12.0	2.50	45.0
g500-S400	13.0	40,0	37	12.0	3.00	49.0
g500-S660	13.0	40,0	37	12.0	3.00	52.0
g500-S950	13.0	40,0	37	12.0	3.00	56.0
g500-S2100	17.0	50.0	50	24.0	3.00	85.0
g500-S3100	21.0	60.0	60	24.0	4.00	94.0
g500-S4500	26.0	72.0	72	24.0	5.00	98.0

Product extensions

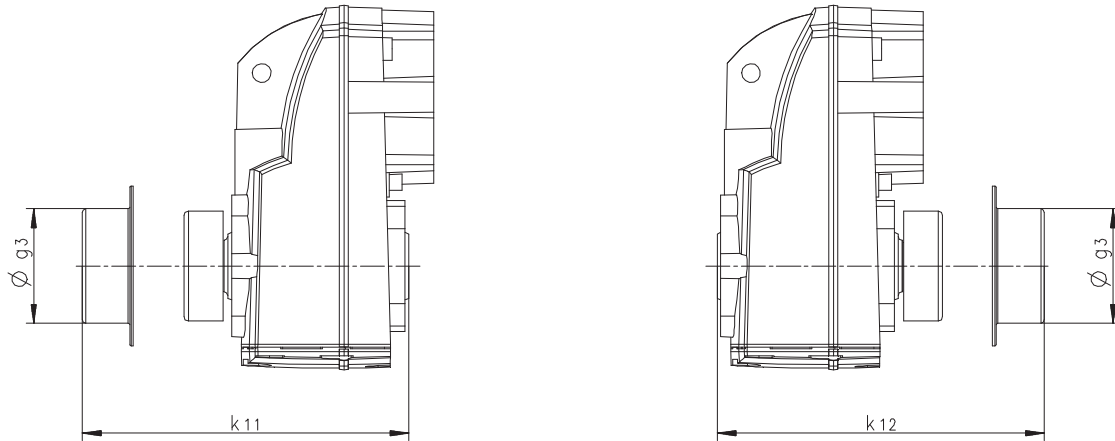
Shaft covers



Shaft covers

The shrink disc cover is provided for the shrink disc to be protected from contact.

Shrink disc cover



Gearboxes	Dimensions		
	G_3	k_{11}	k_{12}
	mm	mm	mm
g500-S130	63.0	132	132
g500-S220	76.0	152	152
g500-S400	90.0	182	182
g500-S660	90.0	200	202
g500-S950	110	219	219
g500-S2100	127	252	252
g500-S3100	155	290	290
g500-S4500	188	355	357



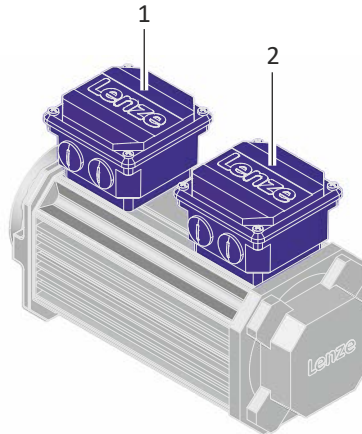
Product extensions

Motor connection
Connection via terminal box

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.

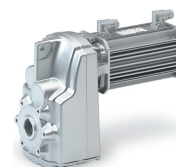
Motor		MCA10 MCA13	MCA14 MCA17	MCA19 MCA21
Screwed connections		2x M20 x 1.5		1x M32 x 1.5 1x M25 x 1.5
cable cross-section	mm ²	0.08 ... 2.5		0.2 ... 10
Stripping length	mm	10 ... 11		
Terminal design		Spring-loaded terminal		

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 -



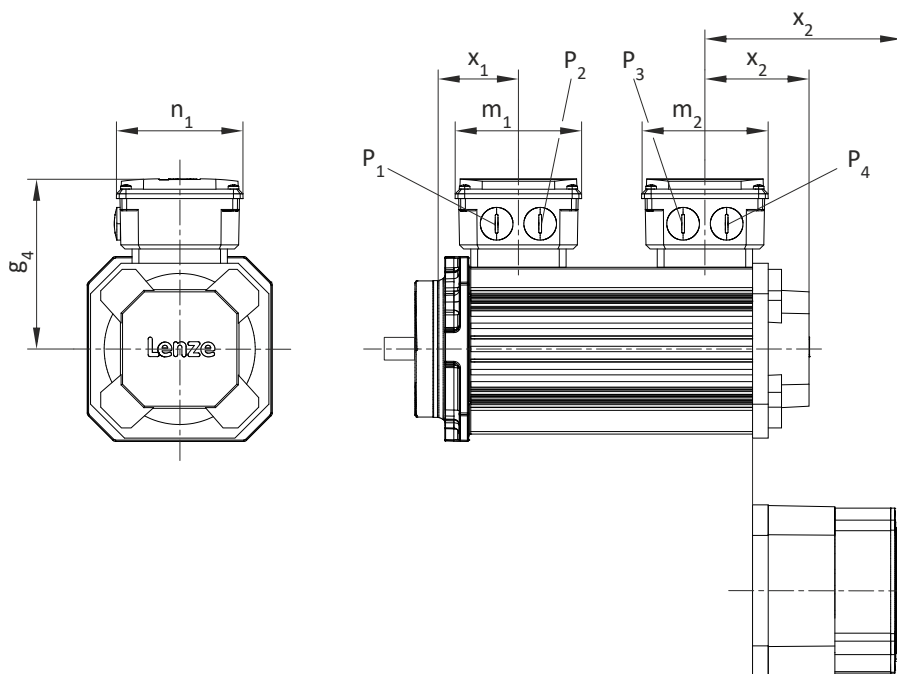
Product extensions

Motor connection
Connection via terminal box

Terminal box, 1-phase separate fan

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

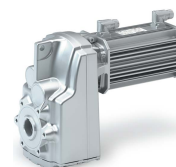
Terminal box dimensions MCA10 ... 17



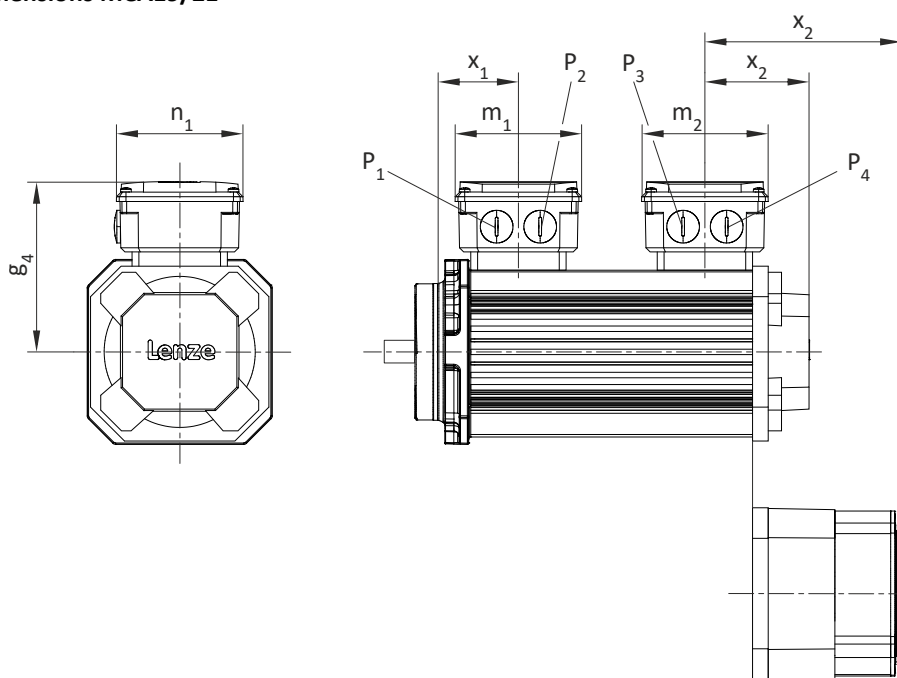
Motor			MCA						
			10I40-	13I34-	13I41-	14L16- 14L35-	14L20- 14L41-	17N17- 17N35-	17N23- 17N41-
Cooling type			Natural	Forced	Natural	Forced	Natural	Forced	Natural
Motor/connection distance	g ₄	mm	113	125		133		141	
Power connection, brake									
Screwed connections	P ₁	mm	M20x1.5						
	P ₂	mm	M20x1.5						
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

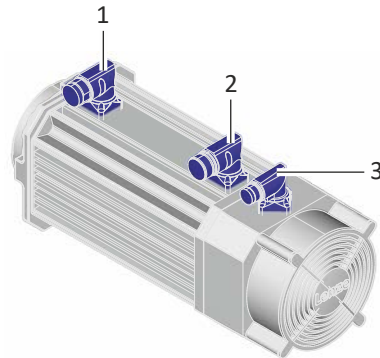
The electrical connection to the servo motors as a standard is established via ICN connectors.

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

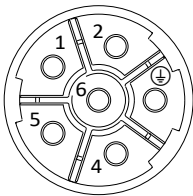


Power and brake connection

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



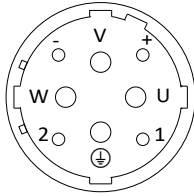
Product extensions

Motor connection
Connection via ICN connector

Valid for MCA19 ... 21

ICN-M40 connector assignment

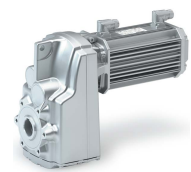
8-pole



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

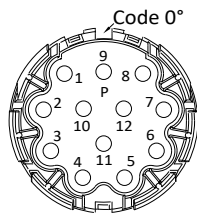
Motor connection
Connection via ICN connector



Feedback and temperature monitoring connection

ICN-M23 connector assignment

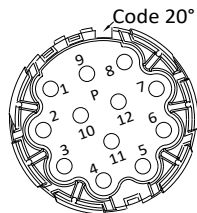
Resolver



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

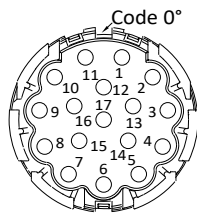


Product extensions

Motor connection
Connection via ICN connector

ICN-M23 connector assignment

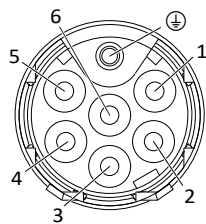
SinCos absolute value encoder with EnDat interface



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 $\leq 1\%$.

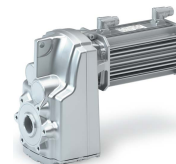
With 205 V DC brake: connection to 230 V AC via external rectifier (no cURus possible).

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.

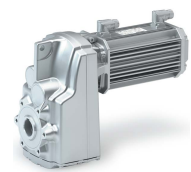
Speed-dependent safety functions

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

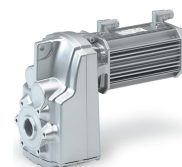
Incremental encoder

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								

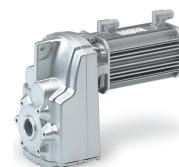
Rated data 60 Hz

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

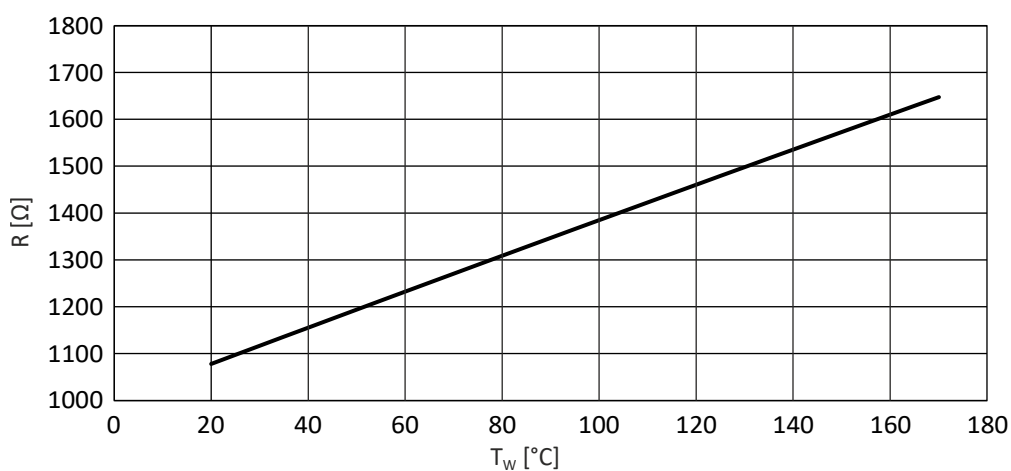
Thermal detectors PT1000

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.



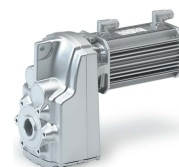
R Resistance
 T_w Winding temperature



Product codes

Gearbox product code

Example		G	50	B	S	113	M	H	D	R	2	C	1B
Product type	Gearbox	G											
Product family			50										
Version				B									
Gearbox type	Shaft-mounted helical gearbox				S								
Output torque	130 Nm					113							
	220 Nm					122							
	400 Nm					140							
	660 Nm					166							
	950 Nm					195							
	2100 Nm					221							
	3100 Nm					231							
	4500 Nm					245							
	8000 Nm					280							
	14000 Nm					314							
	19000 Nm					319							
Type of construction	Geared motor						M						
	Gearbox						N						
Shaft design	Solid shaft with featherkey							V					
	Hollow shaft with keyway							H					
	Hollow shaft with shrink disc							S					
Housing type	Foot mounting + centering								A				
	Foot mounting								B				
	With centering								C				
	Threaded pitch circle								D				
Flange mounting	Without flange									R			
	Flange with through holes									K			
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	
	Servo motor adapter with plug-in hollow shaft											S	
	Servo motor 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

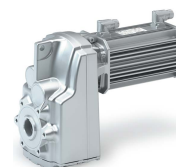
Inverter mains connection 400 V, Self-ventilated motors

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

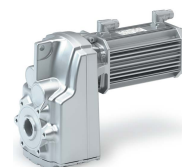
Inverter mains connection 400 V, Forced ventilated motors

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

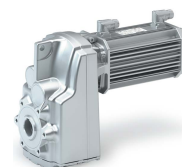
Inverter mains connection 400 V, Forced ventilated motors

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

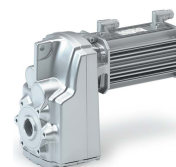


Motor data

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

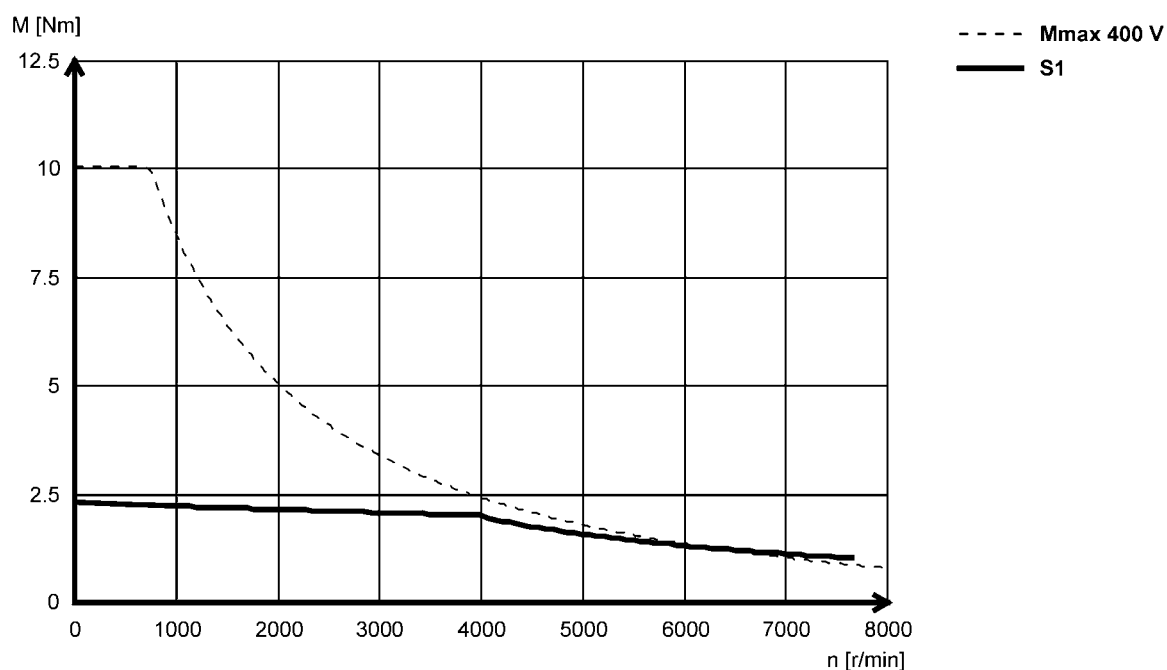


The torque/speed characteristic for your motor/inverter combination can be found on the Internet:
<http://www.lenze.com> → Product Finder → M-n characteristics

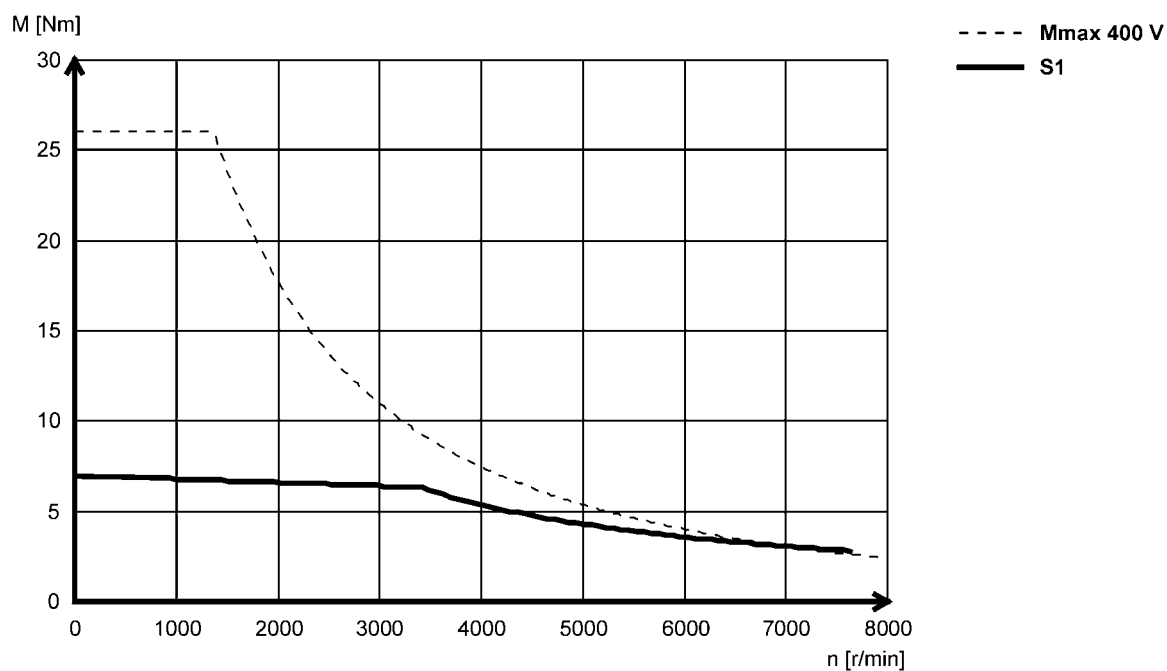


The following data apply to a mains voltage 3 x 400 V of the inverter.

MCA10I40- (self-ventilated)



MCA13I34- (forced ventilated)

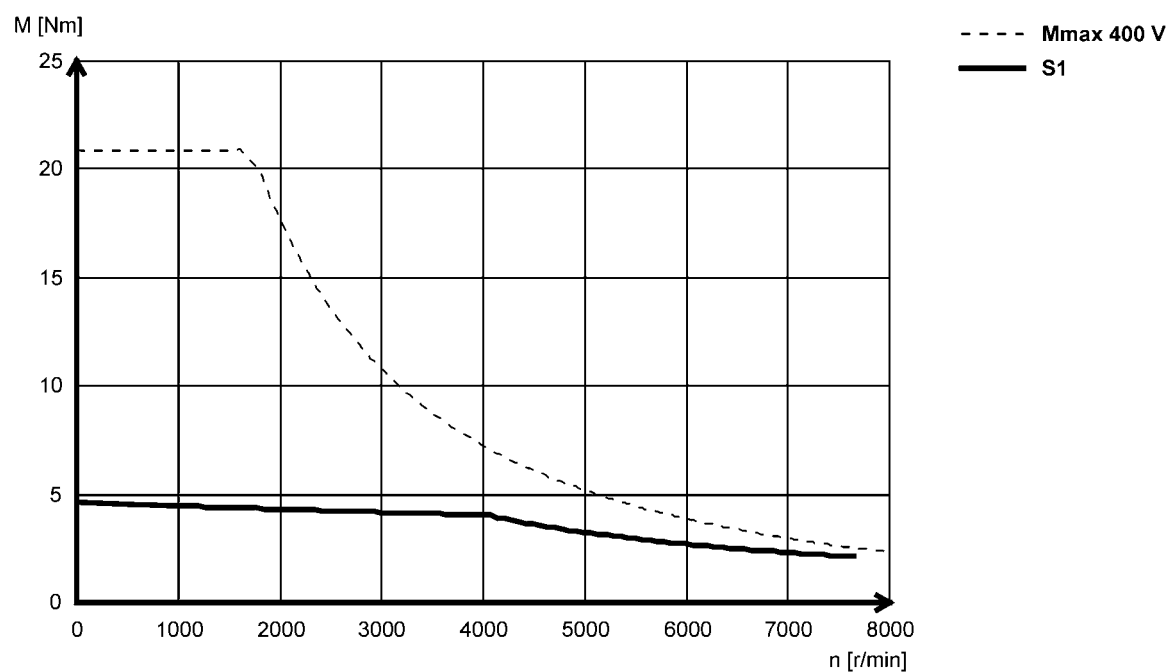




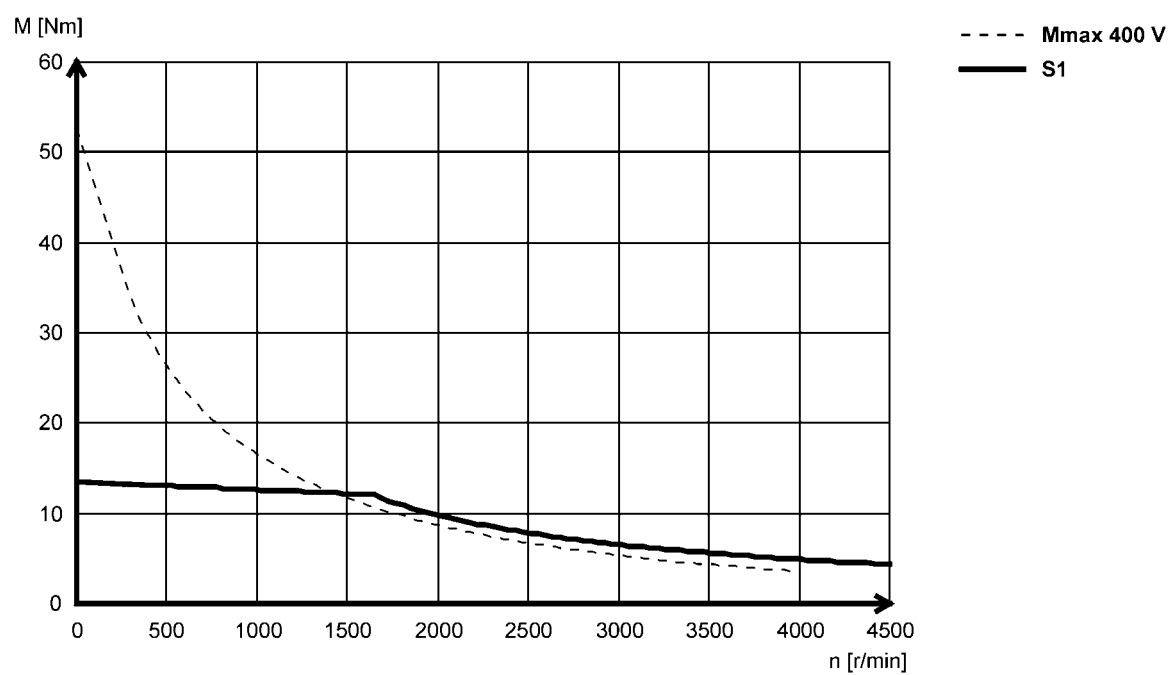
Motor data

Torque characteristics

MCA13I41- (self-ventilated)

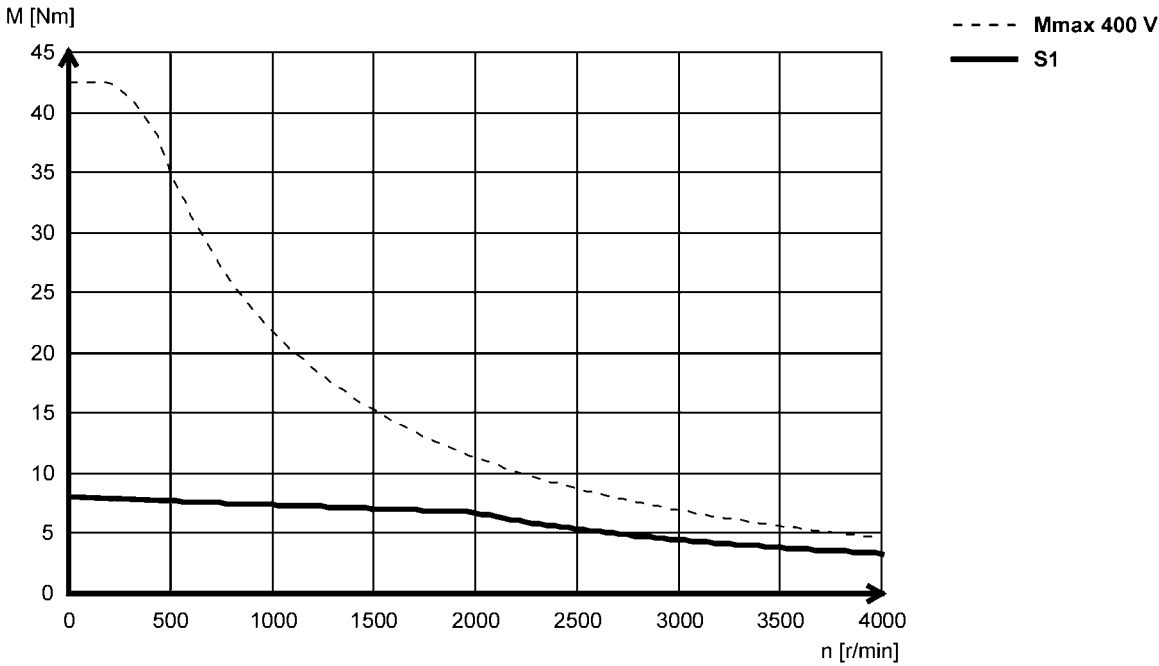


MCA14L16- (forced ventilated)

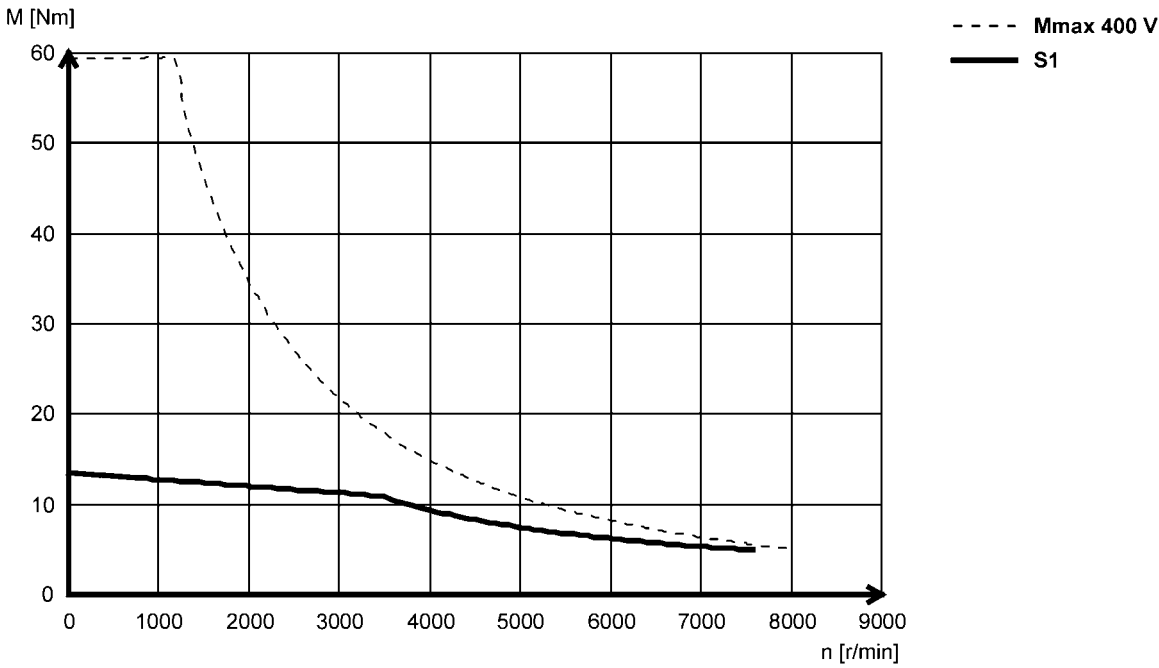




MCA14L20- (self-ventilated)



MCA14L35- (forced ventilated)

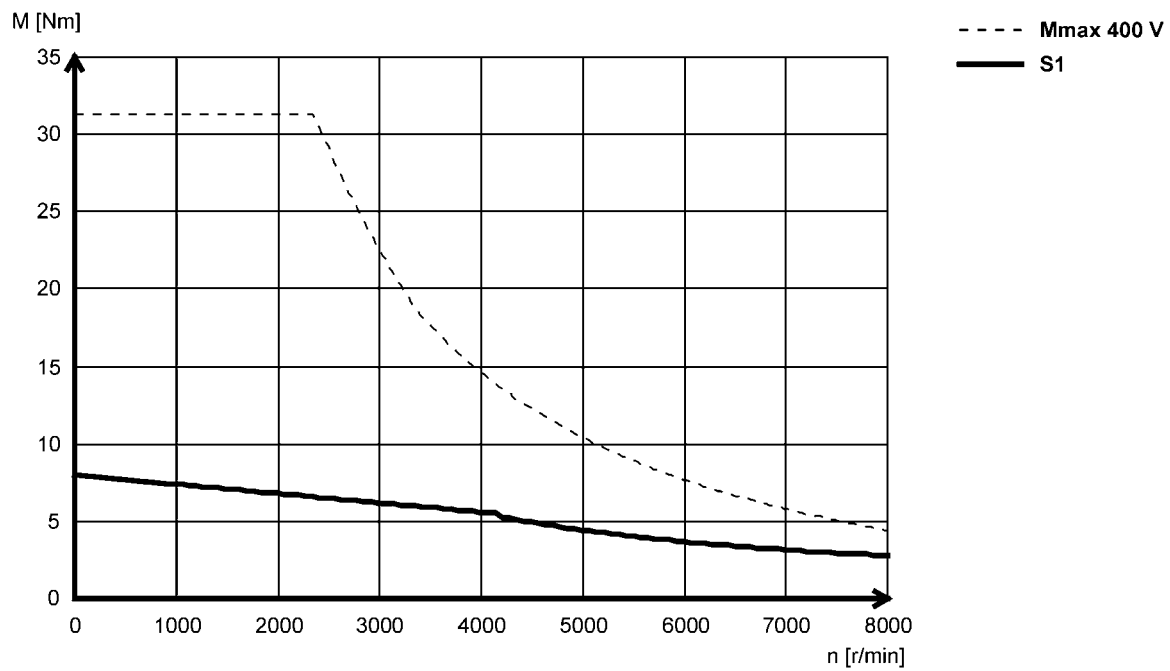




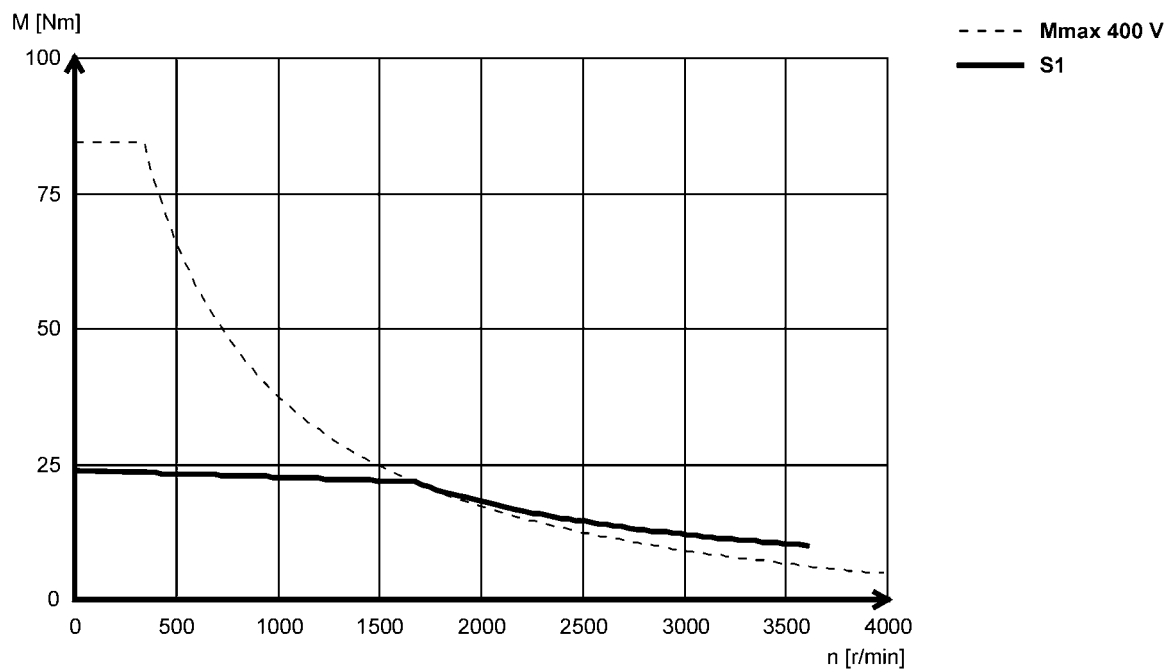
Motor data

Torque characteristics

MCA14L41- (self-ventilated)

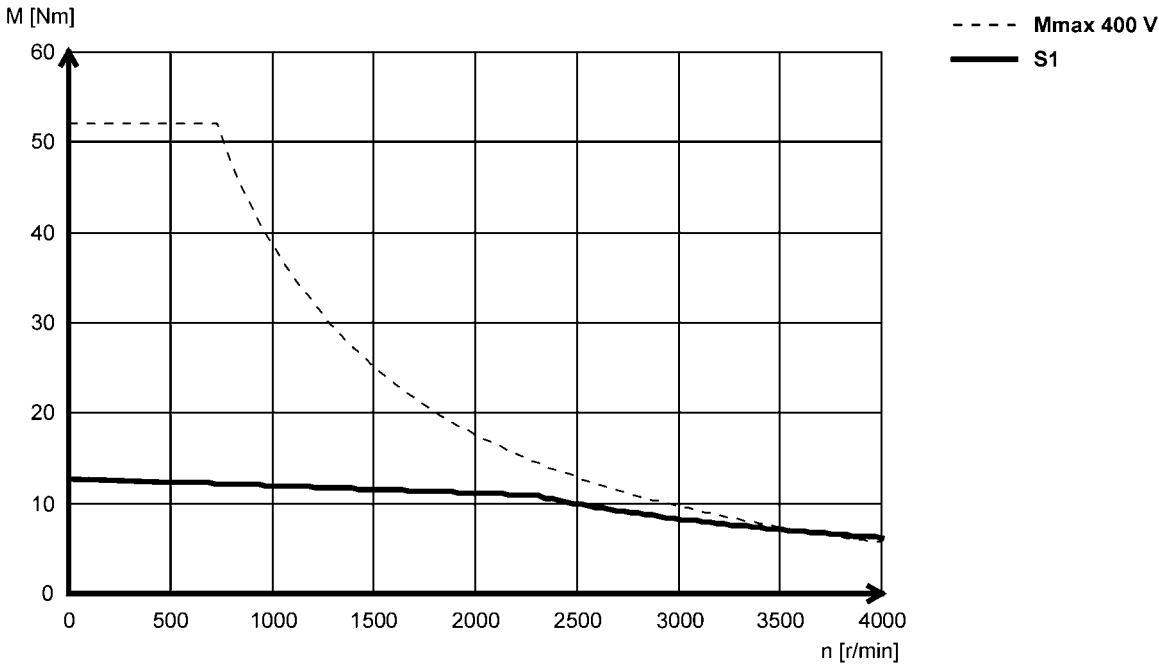


MCA17N17- (forced ventilated)

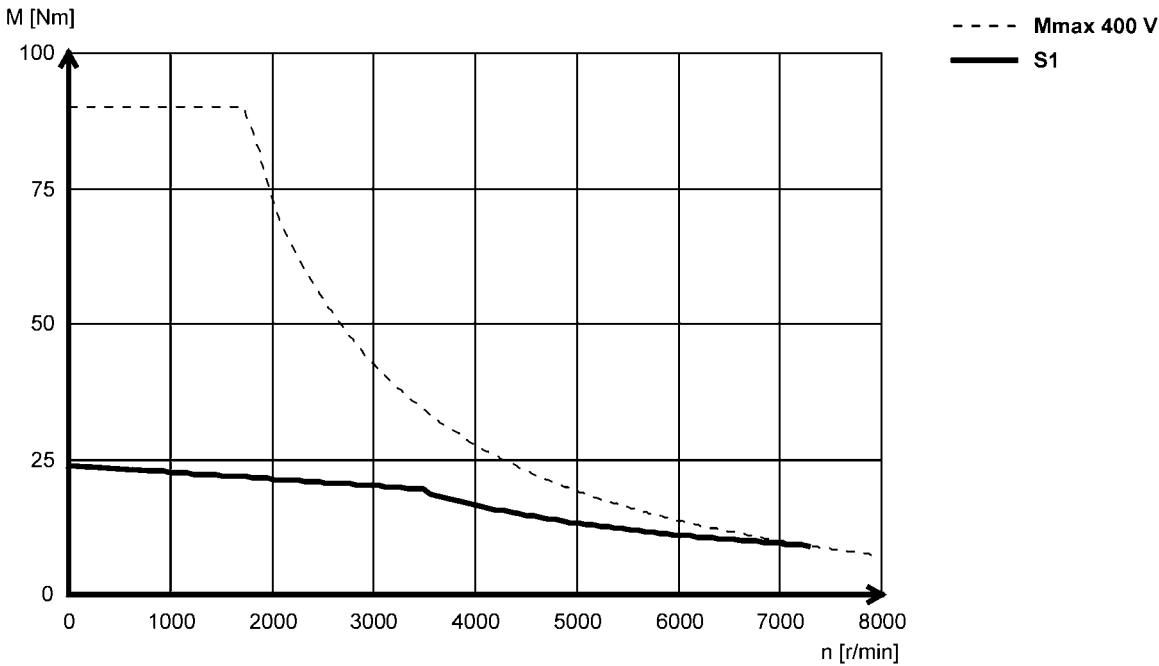




MCA17N23- (self-ventilated)



MCA17N35- (forced ventilated)

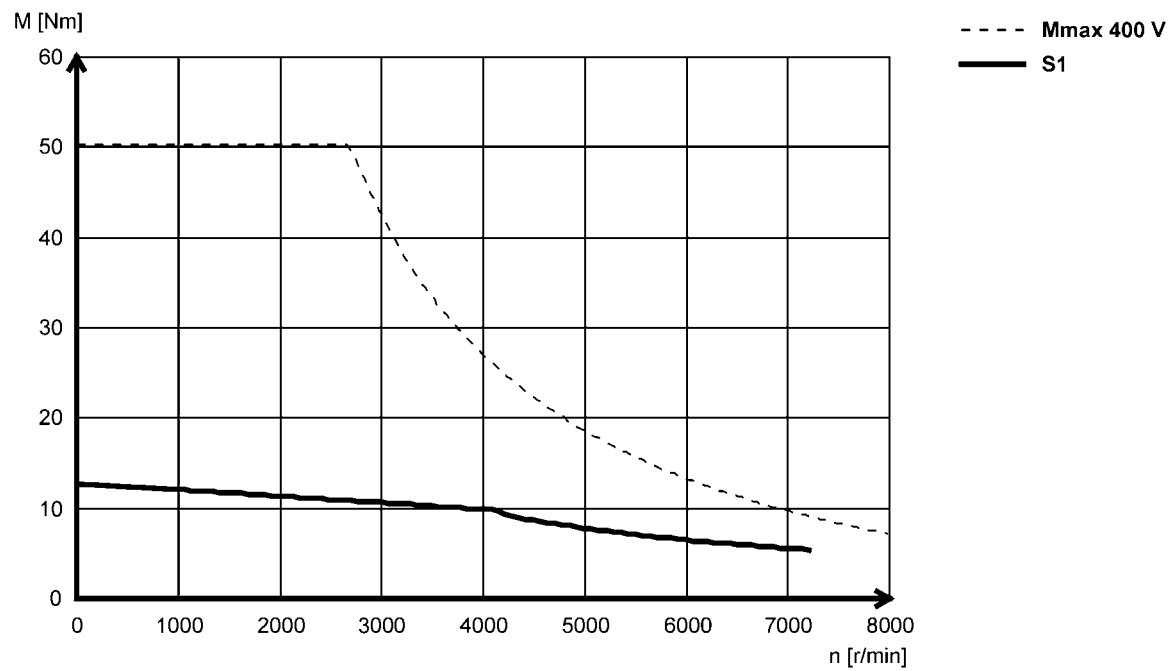




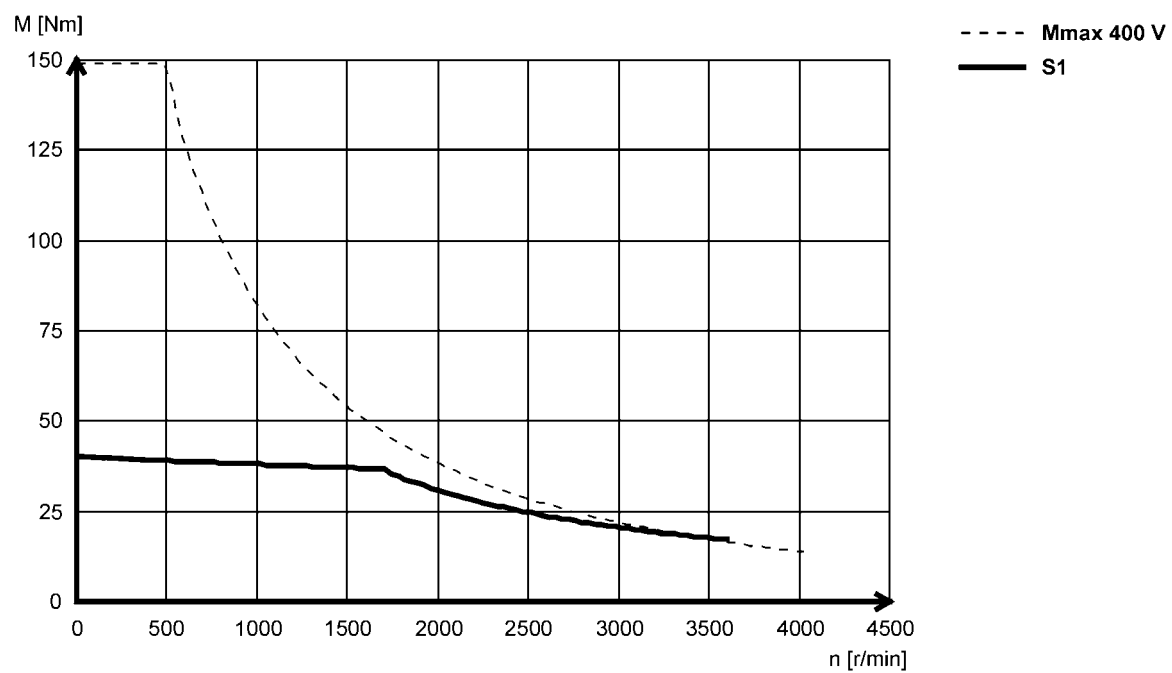
Motor data

Torque characteristics

MCA17N41- (self-ventilated)

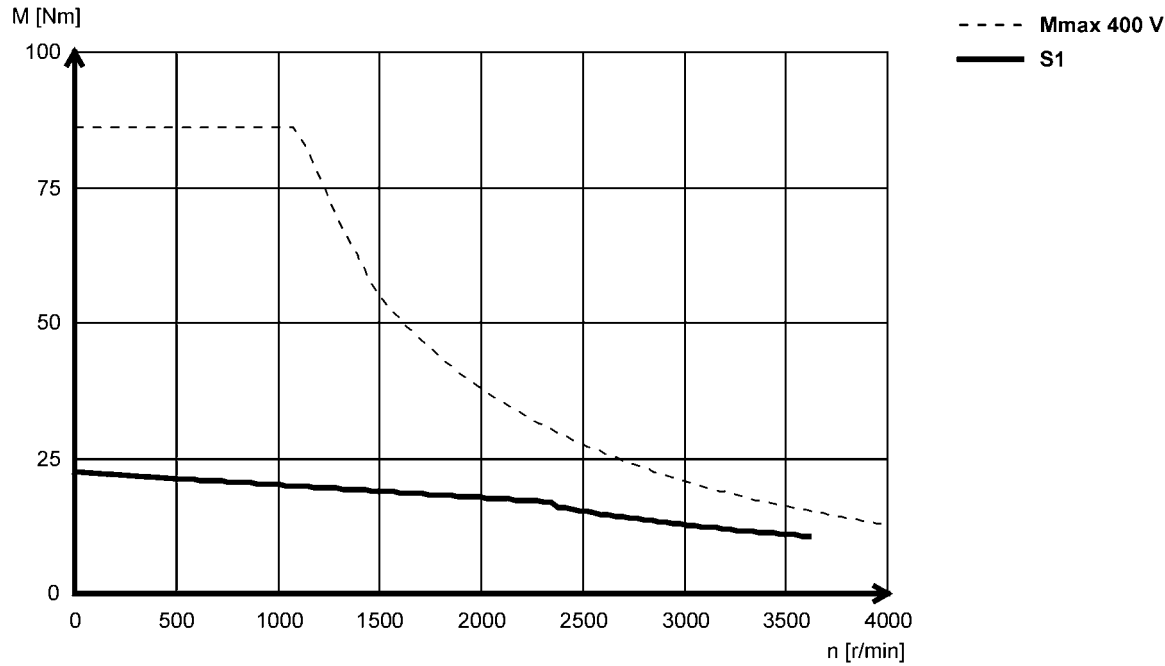


MCA19S17- (forced ventilated)

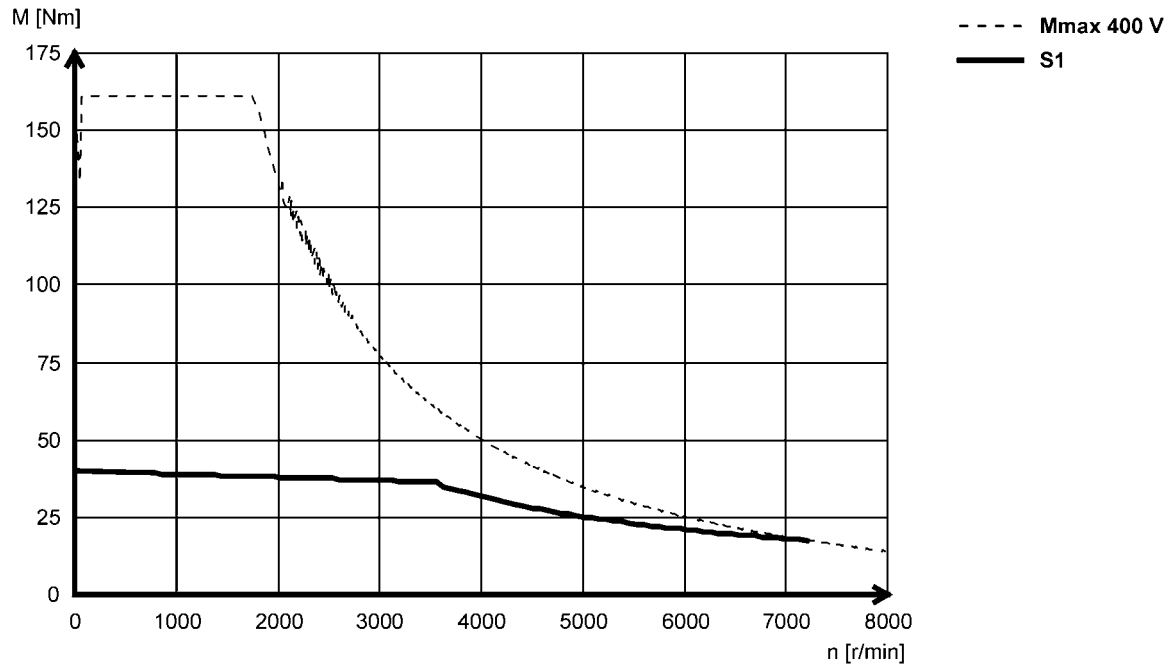




MCA19S23- (self-ventilated)



MCA19S35- (forced ventilated)

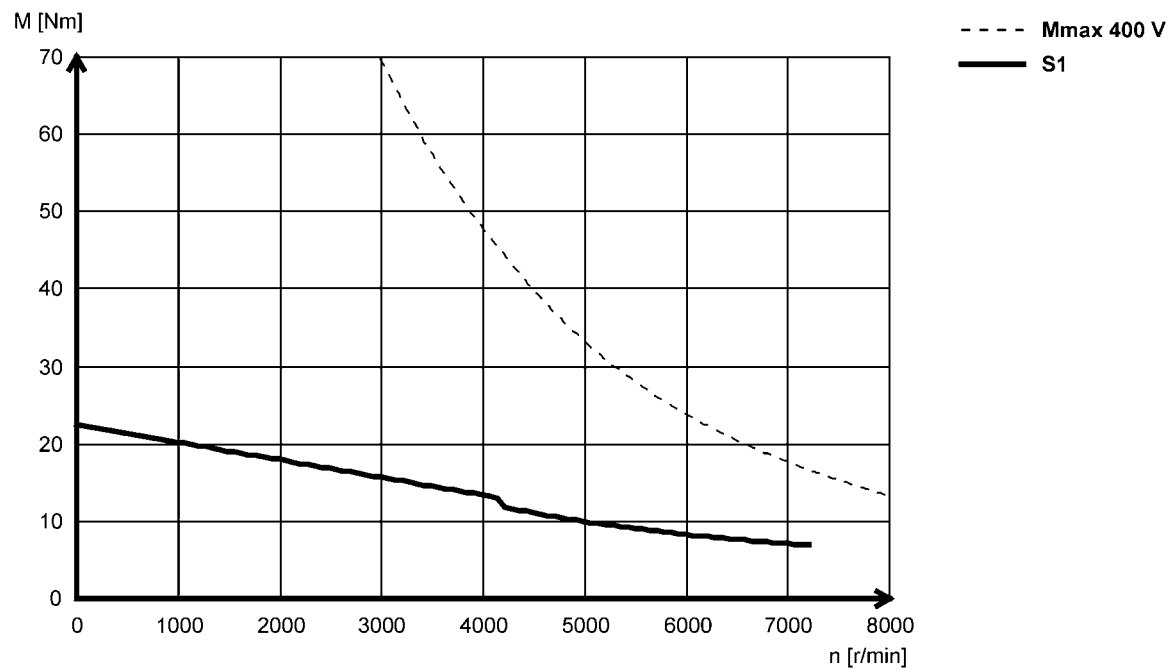




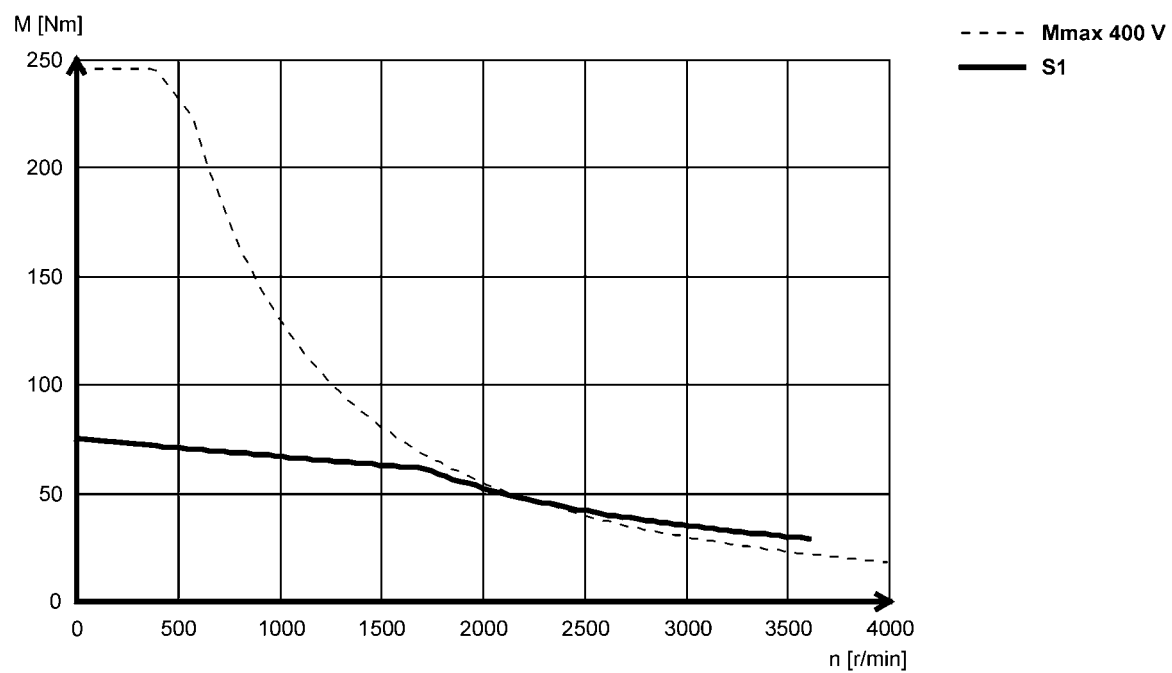
Motor data

Torque characteristics

MCA19S42- (self-ventilated)

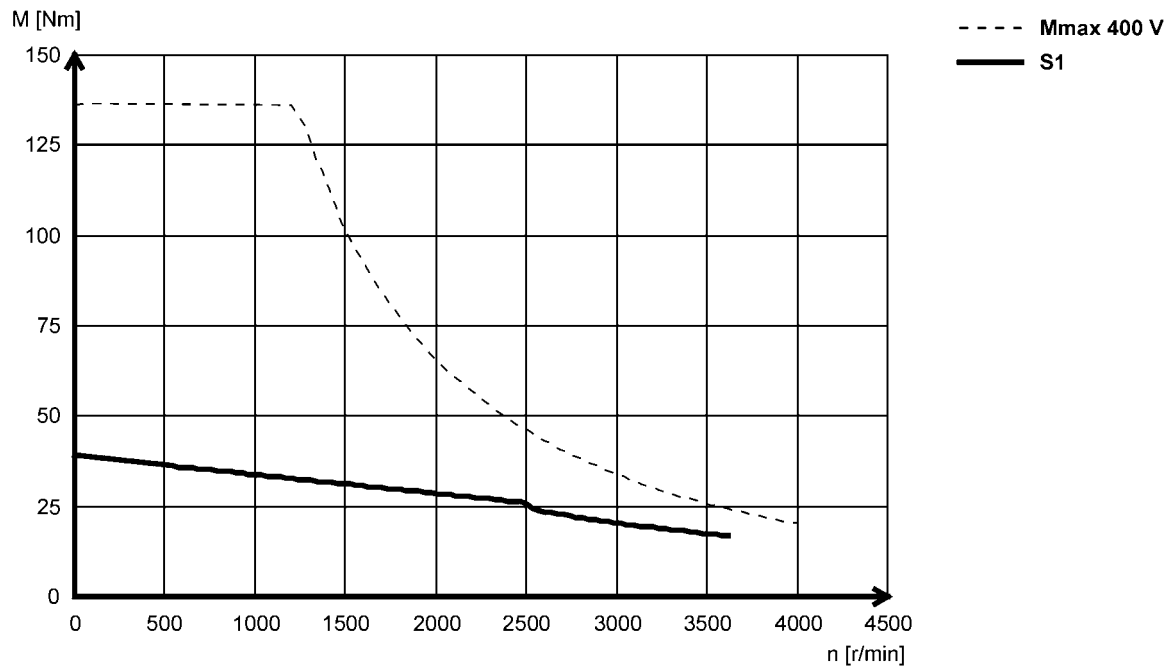


MCA21X17- (forced ventilated)

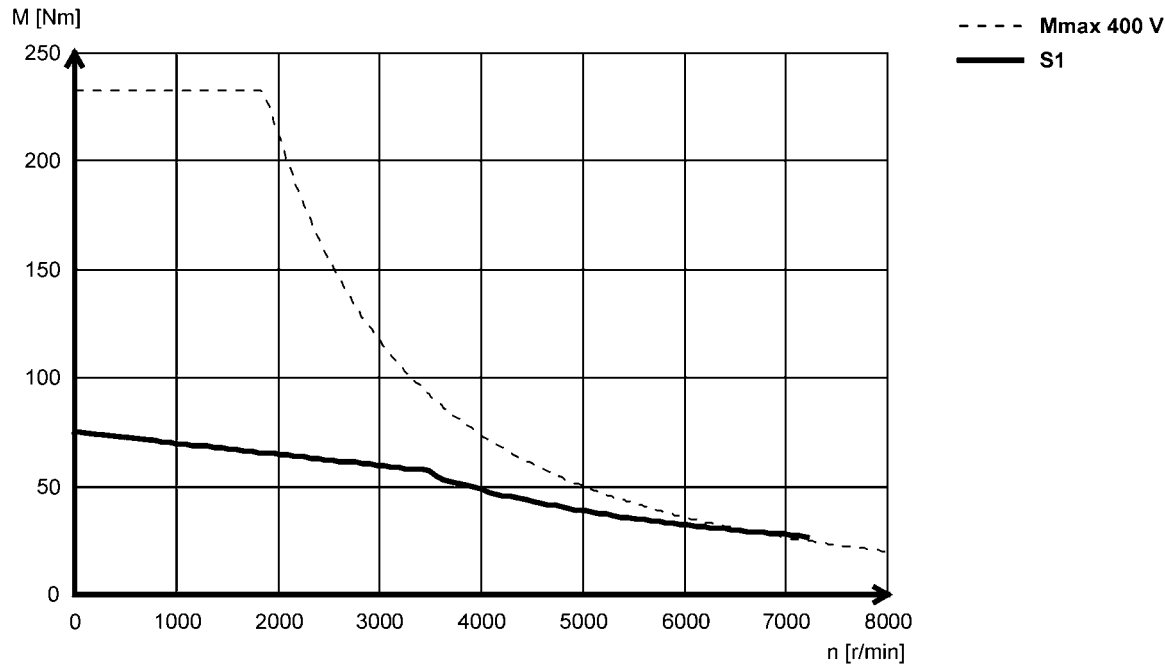




MCA21X25- (self-ventilated)



MCA21X35- (forced ventilated)

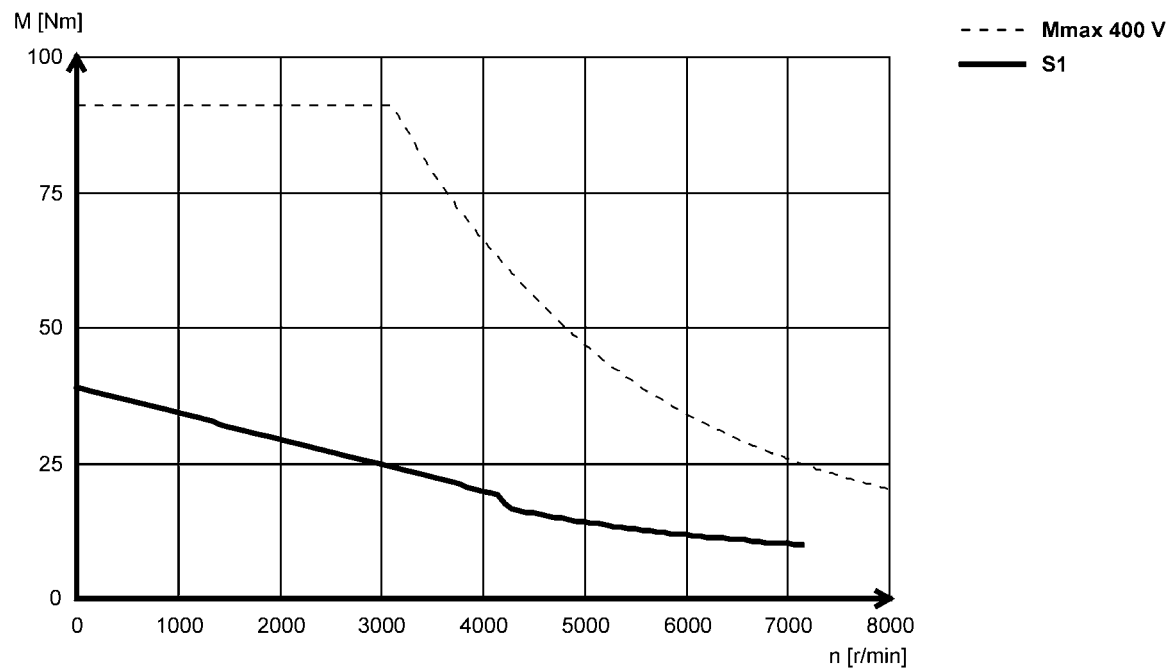


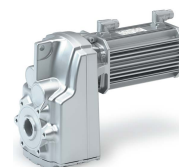


Motor data

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.

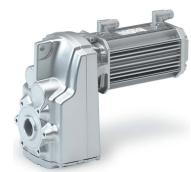
Operating modes S1 ... S10 as specified by EN 60034-1 describe the basic stress of an electrical machine.

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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