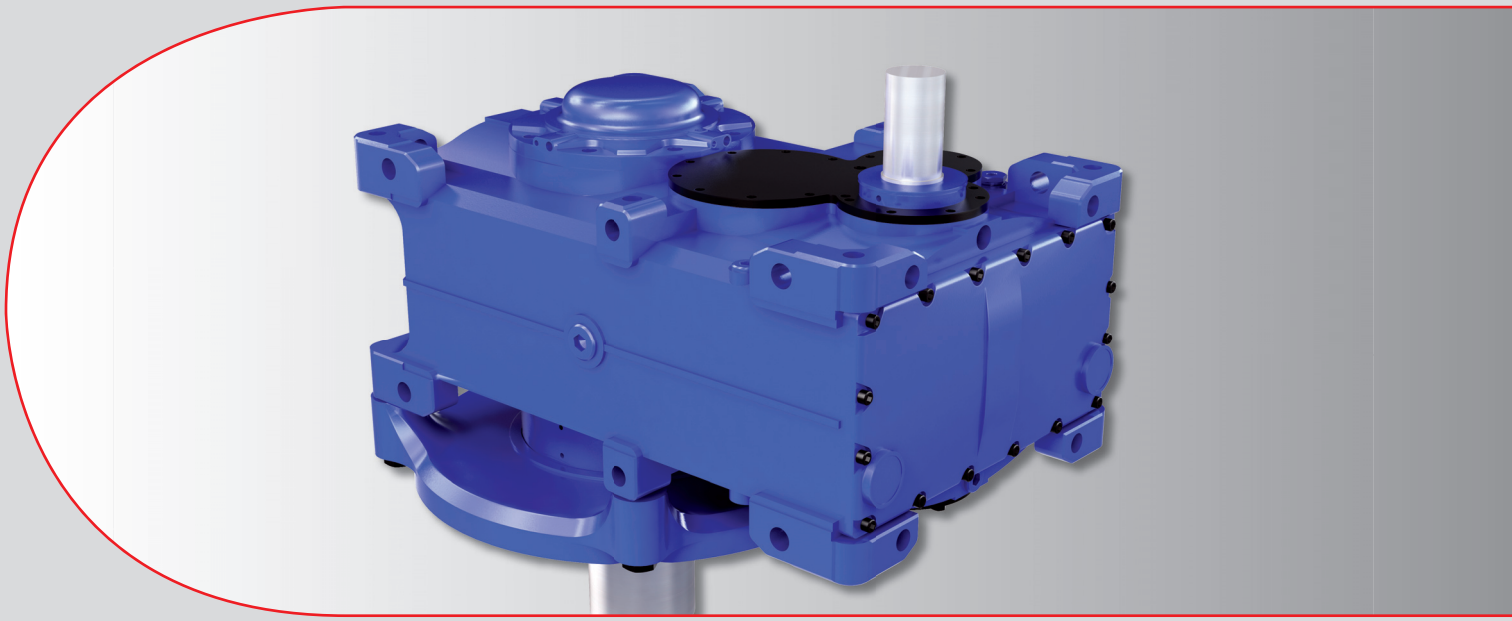
E4

Environmental.



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English Version

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1 The Rexnord Group

Combined for better performance
Integrated solutions for mechanical drive technology are our strength. We have formed a group of top businesses, who, in cooperation with each other, offer economical solutions for your drive technology needs – everything from single products to integrated system solutions.

Rexnord drive technology	Industrial couplings	BSD® Thomas® OmegaTM
Rexnord – France	Mechanical drive elements	Sureflex® Pencoflex Hydroflow
Rexnord chain	Industrial chains	Rex® Link Belt®
Rexnord Marbett	Conveyor systems accessories	Marbett® ROBO®
Rexnord – MCC	Hinged slat chains	Table Top® Mat Top®
Rexnord – Stephan	Geared motors	Rexnord-Stephan S4 C4 Series E4 Series

Your basis for success
High-quality products, application expertise and absolute dependability; your decision for the whole spectrum of the Rexnord family is a decision for a strong and reliable partner.

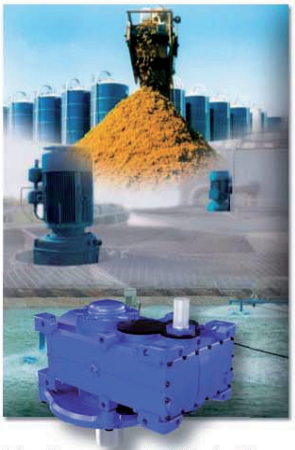
The Rexnord-Stephan Company
Rexnord-Stephan, a member of the Rexnord group, has been developing and manufacturing a wide selection of gear units, geared motors and other products from the field of mechanical drive technology at its Hameln site for decades. Perfected design, computation and manufacturing technologies have contributed to Rexnord-Stephan's outstanding reputation as a partner for individual drive solutions. Customer-oriented customised gear units or backlash-free precision gears for industrial robots are established components in our product assortment, along with the S4, C4 and E4 series. In our production area of 17,000 m² , we manufacture according to the most modern, computer-assisted and above all "streamlined" management principles of the third milennium. Rexnord-Stephan is an associated partner of the Rexnord group for mechanical drive technology. Along with planning, development and design, we offer our customers not only individual products, but customised solutions through worldwide distribution. Whether assemblies or closed systems, we have the correct solution for your application.

We possess outstanding references for the development, construction and manufacture of individual drive solutions. Through our worldwide distribution, we also offer package solutions with over-sized gear units and drive elements:

- Standard gear units
- Drive-Packages
- Complete solutions
- Customised gear units
- low-backlash gear units

2 Rexnord-Stephan Product Assortment

Conveyor Solutions
E4-Gearmotor Series



Environmental Solutions
E4-Gearmotor Series

Customized Solutions
by Rexnord-Stephan

Belt conveyor Bucket elevator Crane drives Cable drums Roller table	Amusement Mining Harbours Storage area Cement industry	Agitator Mixer Aerators Cooling towers Pumps	Bio energy Underwater agitators Screw press Grit separation Grit treatment	Customised housings Welded housings Special gear ratios Reduced noise emissions	Customised gearing Transfer gear unit Gearing attributes 5-10 as per DIN 3990/ ISO 6338

2.1 The E4 product series

System attributes:
Housing design optimised for
High stiffness
High efficiency factor (high heat limit performance)
Versatile scaling without (cost) impact to the basic design
Construction kit optimised for
High number of multiple-use components
Scaling possibilities for meeting application-specific requirements
Basic principle:
Only as many features as are needed, scaling where possible
Basic functionalities:
Basic functionalities cover conventional performance needs Examples:
Versatile shaft options, for example, hollow shafts, solid shafts
Parallel shaft drives in 2-, 3- stage designs
• Wide ratio spectrum from i = 6.3 ... > 1000 (with primary reduction gearing)
Applicable in typical installation positions and designs, for example, with protective sealing for "no leakage".
Designed for operation in the field of environmental and engineering technology and the existing specific application and surrounding conditions

Application features Environmental product series:

Scaling for special operation conditions, for example, high outer axial/radial forces through the Advanced Bearing System series
Application possibilities for special surrounding conditions, for example, high temperatures, through function integration with the "advanced cooling" assemby series.
Leak-free with protective sealing, for example, in combination with the active lubricant system for reducing operating costs
Your benefits with Rexnord-Stephan:
Best cost-performance ratio
High availability thanks to large number of multiple-use components
Functionality determines the total cost - no unnecessary features in the basic design
"Best fit" – a custom designed drive for your application

More than 80 years of experience in geared motor technology.
More than 25 years of experience in agitator, mixer and fan/cooling tower applications.

2.2 Performance overview E4

Features		Size J	K	L	M
Torque [kNm]		**25**	**31,5**	**40**	**50**
Motor power [kW]	from	5,5	5,5	7,5	7,5
	up to	160	200	200	250
ratio	Standard, 2/3 stage	6,3 ... 100	6,3 ... 100	6,3 ... 100	6,3 ... 100
	with prestage	... > 2000	... > 2000	... > 2000	... > 2000
Fixing	Flansch Ø dA [mm]	670	670	730	730
Housing material	Grey cast iron GG 25	●	●	●	●
	Spheroidal cast iron GGG 40	○	○	○	○
housing	Heavy duty design	●	●	●	●
Weight	[kg]	850	900	950	1100
Input	Input drive shaft	●	●	●	●
	IEC motor flange	○	○	○	○
	Belt drive	○	○	○	○
Input sealing	Oil seal HSS	●	●	●	●
	Double Oil seal HSS	○	○	○	○
	Labyrinthabdichtung HSS	○	○	○	○
	Labyrinth sealing with regreasing facility (Taconite)*	○	○	○	○
Output	Solid shaft Ø [mm]	140	150	160	170
	Hollow shaft Ø [mm]	130	140	150	160
	Hollow shaft with shrink-fit ring	○	○	○	○
Output sealing	"DryWell" System ProtectiveSealing	○	○	○	○
	Double Oil seal LSS	○	○	○	○
	Labyrinth sealing with regreasing facility (Taconite)*	○	○	○	○
Mounting position	Vertical output shaft	●	●	●	●
Lubrication	**A**ctive**L**ubricant**S**ystem (integrierter Ölkreislauf)	○	○	○	○
	Splash lubrication	●	●	●	●
Painting Cooling	2 layer PU paint	●	●	●	●
	3 layer epoxy paint	○	○	○	○
	Increased protection for rough environmental conditions	○	○	○	○
Cooling	No additional cooling system	●	●	●	●
	Fan on HSS -Advanced Cooling	○	○	○	○
	Increased cooling ProCool System (of series C4)	○	○	○	○
	Oil-Water heat exchanger	○	○	○	○
Bearings	Heavy duty bearings	●	●	●	●
	Long life bearings	○	○	○	○
Back rotation lock	Integrated back stop, oil lubricated	○	○	○	○
Oil level control	Oil sight glass	○	○	○	○
	Oil dip stick	○	○	○	○
	Oil level sensor	○	○	○	○
Bleeding	Breather valve	●	●	●	●
Maintenance	Oil drain with large diameter	●	●	●	●
	Oil drain tap	○	○	○	○
	Oil filler with large diameter	○	○	○	○
	Relubrication facility for input and output shaft	○	○	○	○
	Heater	○	○	○	○
Accessories	Coupling on HSS and LSS	○	○	○	○
	Flange coupling LSS	○	○	○	○
	Drive motor (all makes)	○	○	○	○
Oilquality	Synthetic Oil	○	○	○	○
	Mineraloil	○	○	○	○
Norm / Standards	ISO 6336	●	●	●	●
	* Advanced Protection Sealing	● Standard		○ Option	

3 Product description

3.1 Name and model number

1	2	3	4	5	6	7	8	9	-	10	-	11

1	Gear unit series	E	Environmental application	
2	Gear unit design	P	Parallel shaft gear units	
		K	Helical bevel gear units	
3	Fixing	Z	Foot mounting	
		F	Flange mounting	
		D	Torque arm	
4	Shaft design	N	Solid shaft	
		H	Hollow shaft with keyway	
		S	Hollow shaft with shrink disc	
5	Gear unit size	J	25kNm	
		K	31,5kNm	
		L	40kNm	
		M	50kNm	
6	Construction type 1			
7	Number of stages	B	Two-stage	
		C	Three-stage	
8	Rated gear ratio			
9	Input shaft	I	Coupling shaft	
		U	Motor lantern	
10	type of cooling	K	No additional cooling system	
		L	Fan on a fast rotating shaft (HSS)	
		F	Motor fan, ProCool System	
		W	Cooling coil for water cooling	
		O	Oil-water cooler	
11	Additional information	/M5/F3/W23		
		M1 - M6	Mounting position	Section 3.2.1
		F1-F6	Mounting surfaces	Section 3.2.2
		Wxx - Wxx	Shaft arrangement	Section 3.2.3

Example:

1	2	3	4	5	6	7	8	9	-	10	-	11
E	**P**	**F**	**N**	**K**	**1**	**C**	**35,5**	**U200**		**/L/W**		**/M5/F3/W23**

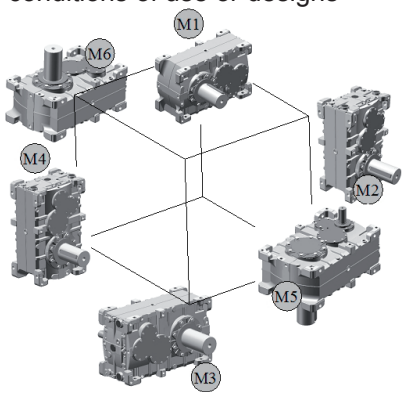
1	E	Rexnord E4 Environmental Series		
2	P	Helical gear unit		
3	F	Flange mounting		
4	N	Solid shaft		
5	M	Gear unit size K 31.5 kNm		
6	1	Construction type		
7	C	3-stage gear unit		
8	35,5	Rated gear ratio		
9	U200	Lantern for IEC motor 200		
10	/L	Fan on a fast rotating shaft (HSS)		
	/W	Cooling coil for water cooling		
11	/M5	Mounting position M5 vertical output shaft	Section 3.2.1	
	/F3	Mounting surface F3	Section 3.2.2	
	/W23	Shaft arrangement	Section 3.2.3	

3.2 Installation

The standard design of the E4 series gear units is intended for vertical output shaft position. For positioning the output shaft horizontally, please consult with Rexnord-Stephan. Slanted installation, i.e. for helical conveyors, is possible. The oil level and the oil control instruments must be adapted to the mounting position. After the gear unit has been delivered, the mounting position may only be changed after consulting with Rexnord-Stephan! For the correct selection, please contact Rexnord-Stephan.

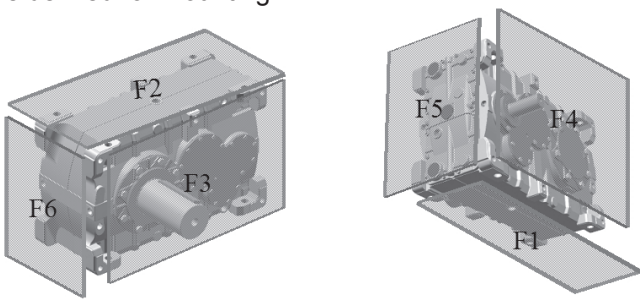
3.2.1 Positioning:

- Standard mounting position for E4 gear units is M5. (Abbildung 5)
- Other mounting positions are possible. Specific indications must also be observed. There are some limitations regarding the conditions of use or designs



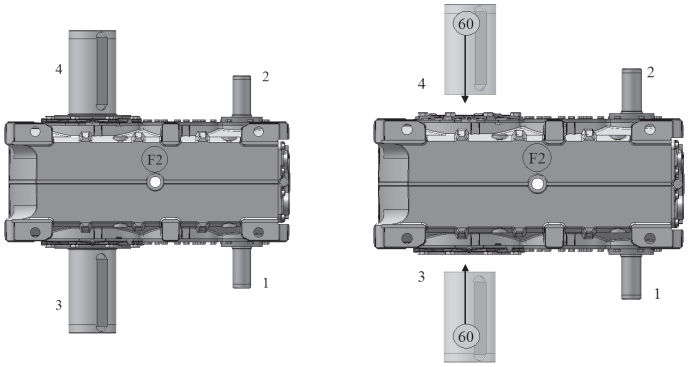
3.2.2 Mounting surfaces

The surfaces F1 to F6 are defined for mounting.



3.2.3 Shaft position

The shaft position is marked with 1, 2, 3 and 4.
There may be limitations in some options (reverse rotation lock, integrated pump).

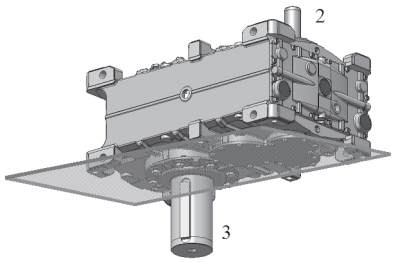


1 or 2: Position of the high speed shaft (HSS) or the IEC motor lantern.
3 or 4: Position of the low speed shaft (LSS)
60 Customer shaft

Double-sided high speed shaft design is possible.
Designation for example, W123

Double sided low speed shaft is available.
Designation for example, W234

3.2.4 3.6 Standard positioning, mounting surface and shaft position



- Positioning: M5
- Mounting surface F3
- Shaft position W23

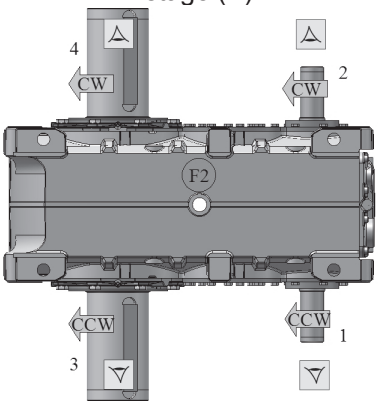
Ordering information:

/M5/F3/W23

3.2.5 Rotation direction dependencies

- The gear units are suitable for both rotation directions
- The rotation direction of the output shaft is dependent on the number of gear speeds.
- An installed rotation lock can prevent one rotation direction from operating.

2 stage (B)

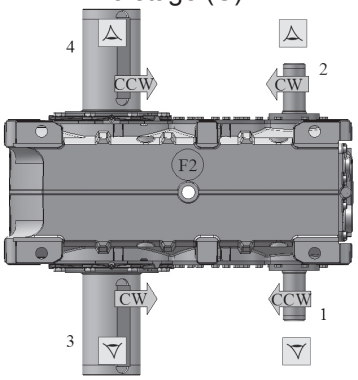


Rotation direction with view towards the gear unit : View towards the output shaft.

CW: right (clockwise)

CCW: left (counter-clockwise)

3 stage (C)



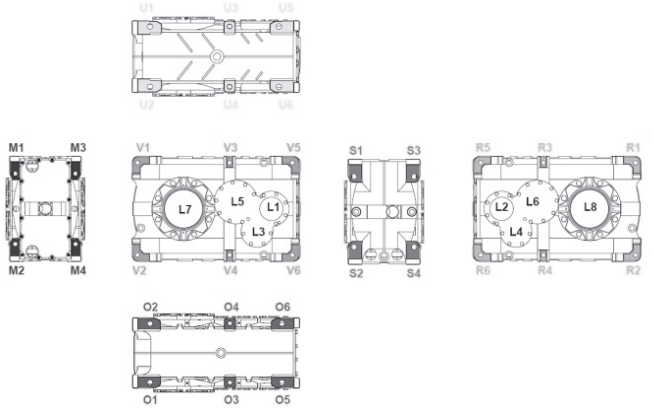
3.3 Main components

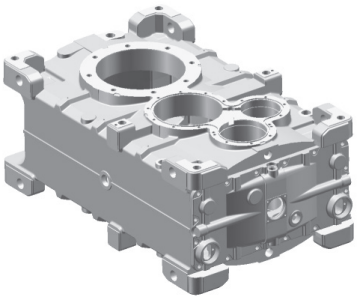
3.3.1 Gearing

The helical cut spur gears are optimised according to AGMA/ISO 6336 for highest torque transfer with minimal losses and less noise development.

3.3.2 Housing

High stiffness with low material use is achieved by the mono-block housing made of grey cast iron (optionally available in spheriodal iron design). The openings are positioned far from the stress zones (output shaft, flange mounting). Various fixing points always ensure the optimal installation that corresponds to customer requirements.





3.3.3 Low speed shaft (LSS)

The output shaft can be produced as solid shafts or hollow shafts. The solid shaft can be positioned either on the left or the right. Hollow shafts can be supplied with a feather key* connection or a shrink-fit ring connection. Couplings on the output shaft cam be offered as an option and mounted by Rexnord-Stephan.

3.3.4 Bearings

For position selection and planning, Rexnord-Stephan standards and the market-approved calculation programs will be used. Self-aligning roller bearings, cylindrical roller bearings and tapered roller bearings will be used from various manufacturers. The specific calculation data from the bearing manufacturer facilitate the bearing configuration that is customised to the application.

3.3.5 "**Heavy Duty Bearings**"

Selecting the position of the output shaft is done in accordance with the requirements of the application and the necessary storage life span. For the "Heavy Duty Bearings" design, generously measured tapered roller bearings are used.

3.4 Lubrication

Mineral oil with pressure additives are used as the standard lubrication substance. Please observe the operating instructions that are included in delivery.
Gear units with a horizontal output shaft are designed with Splash lubrication as a standard. A pump design can also be used for vertical output shafts. In some application cases, pressure lubrication can be used.

3.5 Sealing

O-rings or liquid sealing agent is used for static sealing.

3.5.1 Standard shaft* sealing

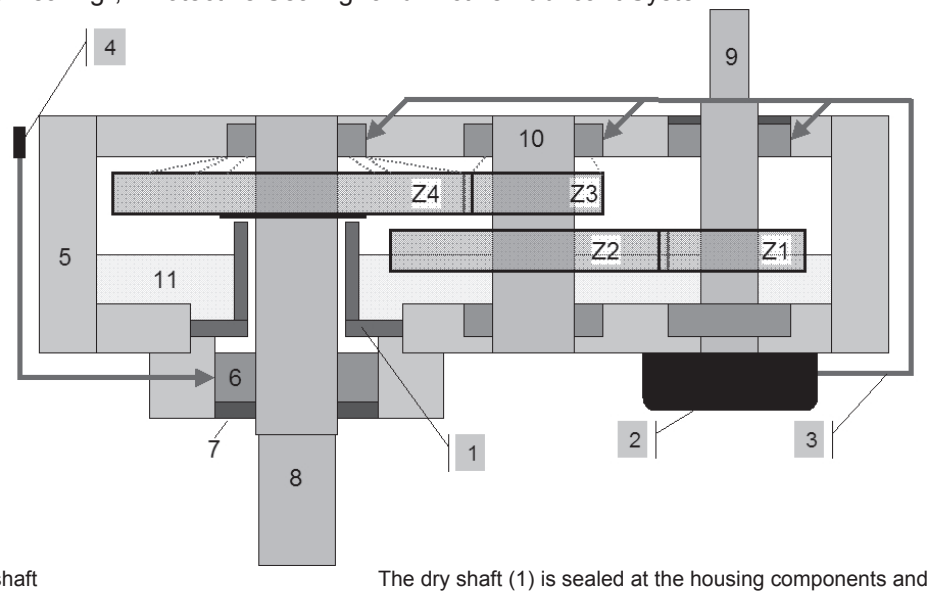
The shaft sealing is done radially with shaft sealing rings. As an alternative, shaft sealing rings made of viton on an annealed running surface ground to a perfectly flat finish are used.

3.5.2 "Advanced Protective Sealing"

For very high dust exposure, the "Advanced Protective Sealing" series is used, with a labyrinth sealing and re-greasing.
Leak tightness for vertical output shaft can be achieved with "Protective Sealing". In combination with the "Active Lubricant System", operating costs are reduced, due to less oil usage.

3.5.3 Cross section of an E4 gear unit

"Heavy Duty Bearing", "Protective Sealing" and "Active Lubricant System"



1	Dry shaft
2	Oil pump
3	Oil line
4	Re-greasing bearing output shaft
5	housing
6	Output bearing "Heavy Duty"
7	Shaft seal , low speed shaft
8	low speed shaft
9	Input drive shaft
10	Intermediate shaft
11	Reduced oil level
Z1 - Z4	Gearing

The dry shaft (1) is sealed at the housing components and encloses the output shaft. The oil level (11) is reduced to the point that no oil can get into the dry shaft. This ensures that no gear unit oil can contaminate the environment in the case of failure of the output shaft seal (7).
The flange-mounted oil pump (2) supplies the bearing positioned above it and the oil line (3) with lubricant. At the same time, adequate lubrication for the gearing Z3 and Z4 is ensured.
The generously dimensioned bearing (6) on the output shaft is supplied with grease by the re-greasing element (4).

3.6 Cooling

The resulting heat loss in the gear unit warms the oil and other components. In order not to exceed temperature limits, adequate cooling must be ensured. When selecting a gear unit, the cooling conditions must be considered.
By combining the types of cooling, the utilisation of the gear unit can be further increased. The following variations are possible:

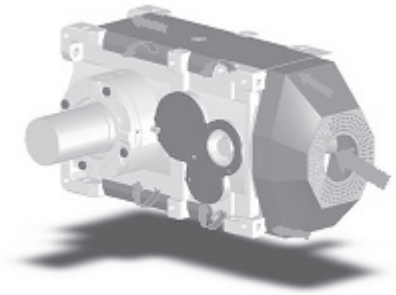
	LU0	LU1	LU2	WK1	VAR4	VAR5	WT0
Convection	X						
Fan (HSS)		X			X		
Electronic fan with hood			X			X	
Cooling cartridge				X	X	X	
heat exchanger							X

3.6.1 Convection cooling

Without additional cooling, the housing surface cooling is adequate for discharging the resulting heat loss.

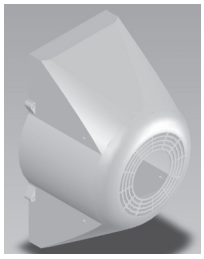
3.6.2 **"ProCool"** System:

The gear units can be designed with a ProCool system for discharging large amounts of heat or with high surrounding temperatures. An electro-motor with fan mounted on the front side of the gear unit supplies the necessary air quantity for cooling the gear unit. The optimised airflow system "ProCool" directs the air flow over the housing surfaces. This includes the side surfaces as cooling surfaces. Depending on conditions of use, the entire mechanically available capacity can be transferred.



"ProCool" System:

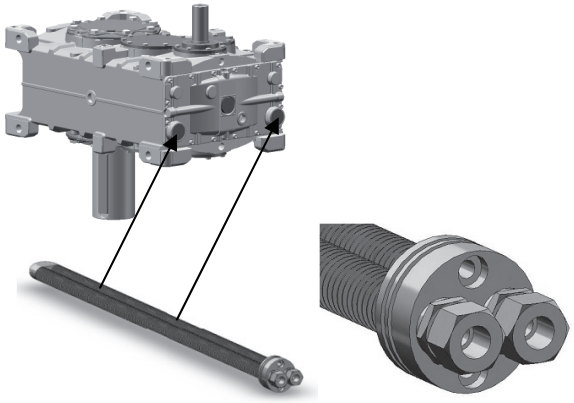
- The air flow created by the fan blade is directed over the entire housing surface by means of air baffles.
- Intensive cooling of the gear unit leads to less construction volume
- Customer advantages: Less space, light weight, smaller amounts of oil, less maintenance costs



- Two-part ventilation hood made of GRP
- Air flow over the entire length of the housing surface
- Smooth surface of the fan hood, no dust accumulation
- Optimal noise reduction

3.6.3 Water cooling

For the optimal utilisation of the transferred capacity, the gear unit can be additionally fitted with one or two cooling cartridges for water cooling.
If two cooling cartridges are installed, they must be connected parallel to the cooling water supply.



The water cooling cartridge is positioned in the oil sump. The water connection takes place on sit by G1/2" threaded bores Cooling capacity is dependent on the intake temperature and flow volume. Reference values are 11 litre/min., at a maximum of 30°C.

The cooling cartridge is made of ribbed pipe. Due to the large surface area, only a small amount of water is needed.
Displacement-safe connections ensure a trouble-free installation of the water supply line,

3.6.4 Oil-air cooler with pump (WT0)

For intensive cooling of the gear unit, a heat exchanger as an oil-air or oil-water cooler is available. The assembly can be connected directly to the gear unit or be assembled separately. Please ensure that the cooling assembly is filled with oil.

3.7 Heater

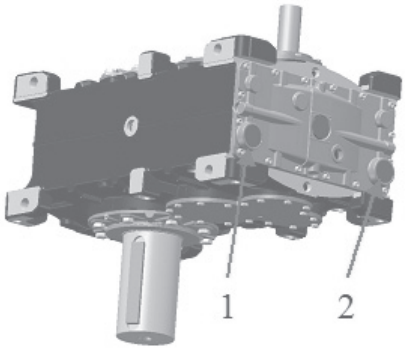
In order to maintain lubrication for a cold start, an oil heating unit is required.

3.7.1 Water heating

The cooling cartridge can also handle warm water flow (max. 80°C) and can then serve as heating. A start-up with cold oil should be avoided by means of installed thermostats and thermostat valves.

3.7.2 Electric heating

An electronic heat rod with an integrated thermostat can also be installed for oil heating. By means of separately installed temperature sensors, it must be ensured that a start-up is only performed after the gear unit has been heated to the temperature listed in the operating instructions.



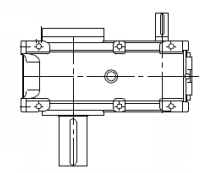
The electronic heat rod is completely immersed in the oil sump and installed instead of a cooling cartridge.

Control is done by a thermostat. The standard connection voltage for the heating elements is 230V/50/60Hz.
1 or 2 mounting positions for the electronic heating

3.8 Designs for the drive side, overview

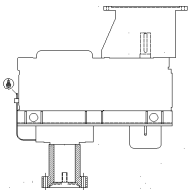
Drive shaft "I"

Normally the gear units are fitted with a solid shaft on the drive side, with a feather key to hold the coupling or pulley



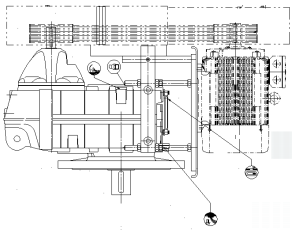
Motor lantern with coupling "U"

For assembly of flange motors, the gear units can be fitted with a lantern on the drive side.



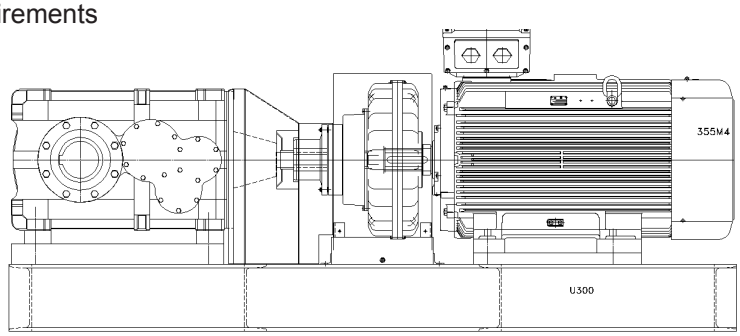
Motor type and belt drive "MSR"

Operated by foot motor with v-belt drive



Base frame and motor shifting arm "RAH"

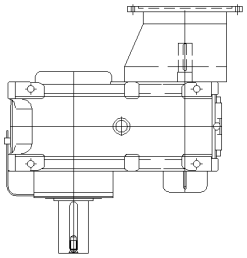
Ready-to-install drive units are combined according to customer requirements



3.9 Motor attachment

3.9.1 Motor lantern

For mounting motors with a B5 flange, the gear unit can be delivered optionally with a motor lantern. The required claw coupling is not included in delivery. The motor lantern is also available in combination with a fan and the ProCool System.
The illustration shows the mounting principles for the motor lantern (without fan).
The following motor adapters are available for mounting standard IEC motors with B5 flange:



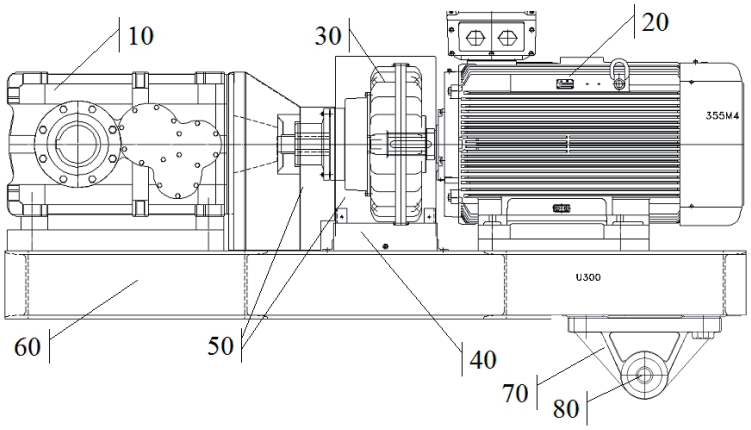
	Size			
IEC motor	**J**	**K**	**L**	**M**
180	X	X		
200	X	X	X	X
225	X	X	X	X
250	X	X	X	X
280	X	X	X	X
315	X	X	X	X
355			X	X

Further motor sizes or flange dimensions in accordance with NEMA if requested.
The weight of the motor may not exceed the weight of the gear unit. For heavy motors, please consult Rexnord-Stephan and inform us of the exact motor dimensions and weight.

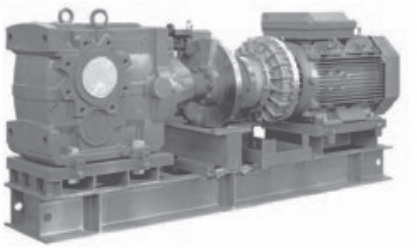
3.9.2 Base frame

As a ready-to-install unit with a drive motor, coupling and brake, the gear units can be mounted on a base frame.

Example for a typical configuration (illustrated here with C4 gear unit on lever). In a similar way, an fitting with a parallel shaft gear unit E4 with solid shaft is available for delivery:



10 Gear unit with hollow shaft
20 Electric motor .....
30 Fluid coupling with electronic monitoring
40 Oil pan
50 Protection hood
60 Fixing frame
70 Torque arm
80 Elastic element



Description and assembly:
- Ready-to-install drive unit
- Base frame as a steel construction
- For hollow shaft gear units as lever with torque support
- Optionally with creep feed gear unit

3-phase motor:
- 3-phase motor up to 355kW
- Design according to international standard
- 3-phase motors from various renowned manufacturers, such as Siemens, VEM, ABB

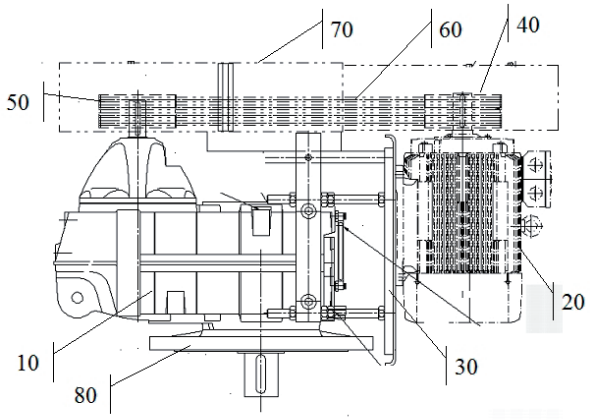
Highly flexible couplings
- Torsionally flexible coupling between motor and gear unit for drives with frequency converter.
- Delivery of the output-side coupling

Fluid coupling
- Use with direct start-up
- Restriction of start-up torque

Disc brake
- Use in connection with highly flexible coupling or start-up coupling

3.9.3 Belt drive

A motor bracket with belt drive and protective covering is available as an option. The complete belt drive is also available in ATEX.



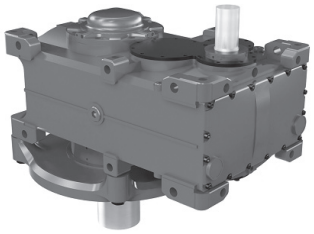
10	Gear unit
20	motor
30	Motor type
40	Motor belt disk
50	Pulley, gear unit
60	Drive belts
70	Contact protection
80	Gear unit flange

Customer advantages:

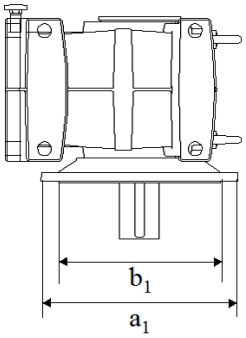
- Speed adjustment by v-belt pulleys
- Ready-to-install drive unit
- Adjustable engine bracket mounted on the gear unit
- Use of foot motors up to IEC 315
- 3-phase motors from various renowned manufacturers, such as Siemens, VEM, ABB
- Standard efficiency level and Eff1 (IE2) motors

3.10 flange design

The gear units are available with a flange on the output shaft. If attached above the flange, the permissible weights in the required mounting position must be observed. Consultation with Rexnord-Stephan is required.



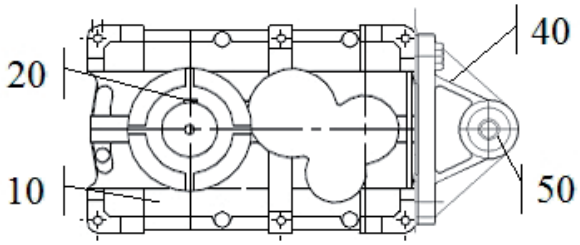
Example of an E4 gear unit with fitted flange on the output shaft side.



Size	J	K	L	M
a_1	670	670	730	730
b_1	520	520	560	560

3.11 Torque arm

Optional for hollow shaft gear units. Design and dimensions are determined according to customer requirements. Dimensions and exact design depend on the fixing possibilities.

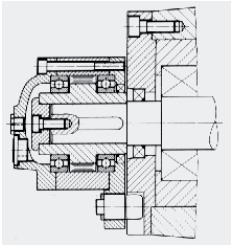


10 Gear unit
20 Hollow shaft
40 Torque arm
50 Rubber bumper

The torque arm absorbs the force in hollow shaft gear units. Depending on conditions of use and requirements, the torque arm can be fitted onto mounting surfaces F1 to F6. Rexnord-Stephan offers a customised solution for your individual usage needs. Thrust bearing and necessary elastic elements can also be offered if needed.

3.12 Back rotation lock

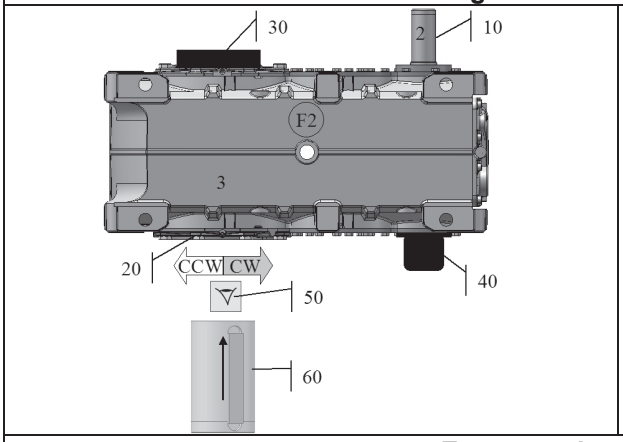
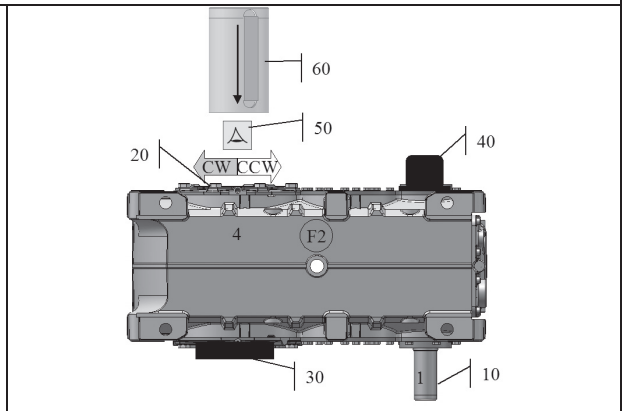
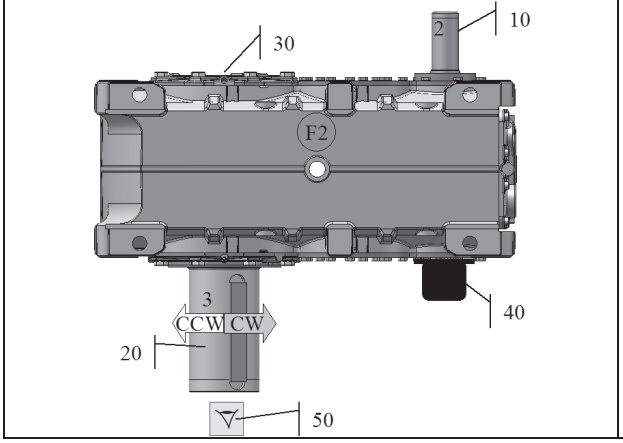
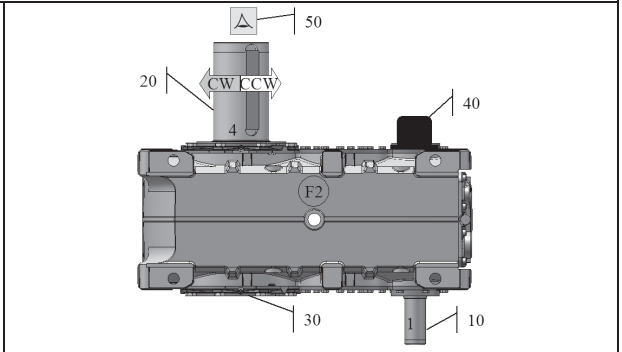
The back rotation lock is optional for all gear unit designs. No separate lubrication is necessary. The back rotation lock is low maintenance, and externally mounted so that it is easily accessible.



Back rotation locks function on the principle of clamping the rolls at a construction-specified geometric angle to lock one rotation direction
The lock-up torques correspond to the gear unit size.
Warning! A start-up against the lock-up torque must always be avoided.

3.13 Rotation direction and positioning of back rotation lock

- The rotation direction must be specified in the order.
- The rotation direction is defined from the perspective of the output shaft (LSS).
- The permissible rotation direction is marked on the casing.
- For full-length output shafts or double-sided solid shafts (W034), the rotation direction is defined for shaft position 3.

W23 Shaft position	W14 Shaft position
E4 gear unit with hollow shaft	
	
E4 gear unit with solid shaft	
	

10	High speed shaft (HSS)	40	Back rotation lock
20	Low speed shaft (LSS)	50	View looking toward the gear unit
30	Shaft covering or shrink-fit ring	60	Customer shaft

CW Rotation direction **"right"** (**C**lock-**W**ise)

CCW: Rotation direction **"left"** (**C**ounter-**Cl**ock-**W**ise)

3.14 Painting system

Rexnord-Stephan normally uses cast elements with a base coat. This ensures complete covering of all non-processed cast surfaces. Blank components (shafts, fixing surfaces, flange coatings) are treated with a rust-protection substance prior to delivery.

- Standard surface protection A01 for light load, NDFT on GG 60µm.
- Increased surface protection A04 for medium environmental load, NDFT on GG 100µm.
- Increased surface protection A05 for heavy environmental load, NDFT on GG 180µm.

Standard colour RAL 5002, other RAL shades, other layer thicknesses or another base coat is possible.

Painting system	**A01.**	**A04.**	**A05.**
Total layer thickness NDFT (on GG)	60 µm	100 µm	180 µm
Colour composition	Immersion base coat cover paint RAL 5002	Immersion base coat primer paint cover paint RAL 5002	Immersion base coat 2 x primer paint Intermediate coat 2 x cover paint RAL 5002
Paint basis	Acrylic/PVC	Polyurethane	Epoxide
Application	**Standard** Low environmental load Within buildings	**Option** Medium environmental load Outdoor assembly	**Option** Heavy environmental load Outdoor assembly Indoor assembly

NDFT: (nominal dry film thickness) = nominal layer thickness; min 80% NDFT; max 3 x NDFT

3.15 Lubricants

All E4 series Rexnord-Stephan gear units are delivered without oil. The oil types and quantities can be found in the enclosed operating instructions. All greasing points are filled with the necessary quantities at the factory.

4 Selection

4.1 Information sheet in the internet

In order to facilitate your selection, you can refer to the information sheet on gear unit selection in the internet at www.rexnord-stephan.de. Fill out the information sheet as completely as possible. We will select a gear unit for you and make you an offer.

4.2 Application factor SF

The operating factors are empirical values based on AGMA and ISO and our experience. They apply to electromotor-driven gear units and for state-of-the-art machinery. Operation is done under normal operating conditions. For gear unit selection, the positioning notices from Rexnord-Stephan must be observed.

Application	Machinery	Operating factor		
		Operating hours per day		
	Machinery	<= 3 h	<= 10 h	> 10 h
Sewage technology	Brush aerator			2,00
	Thickener	1,15	1,25	1,50
	rotary aerator		1,80	2,00
	Centrifugal pumps	1,00	1,20	1,30
	Collector	1,15	1,25	1,50
	Spiral pumps		1,30	1,50
	Vacuum filter	1,15	1,30	1,50
Energy	Frequency converter		1,80	2,00
	Water wheels (<20 U/min)			1,70
	Water turbines			2,00
Food industry	Digester			1,30
	Extruders	1,50	1,50	1,50
	Bottling plant	1,00	1,15	1,20
Paper industry	all applications		1,80	2,00
Pumping	Centrifugal pumps	1,15	1,30	1,40
	piston pump (1 cylinder)	1,30	1,45	1,70
	piston pump (multi-cylinder)	1,15	1,25	1,50
agitators	Liquids	1,00	1,15	1,30
	Liquids with solids	1,15	1,25	1,45
	Liquids with variable densities	1,15	1,25	1,60
Mixers	firm median (irregular material)	1,35	1,55	1,65
	firm median (regular material)		1,30	1,35
Fan	heat exchanger	1,40	1,45	1,50
	Dry cooling tower			2,00
	Wet cooling tower	2,00	2,00	2,00
	Blowers	1,45	1,50	1,50
Compactor	piston compactor		1,60	1,85
	radial compactor		1,40	1,50
	screw compactor		1,40	1,60
Wash presses	Screw presses	1,20	1,35	1,50
Other applications	Industrial gear units	1)	1)	1)

1) It is necessary to consult with Rexnord-Stephan.

4.3 Process chart for gear unit selection

1	Fill in information sheet at
Step 2	Determination of basic data M_2, n_1, n_2, P_2, i
Step 3	Determination of application factor SF
Step 4	Calculation of gear unit torque, M2mi
Step 5	Determination of gear unit size, M_{2n}
Step 6	Calculation of motor output, P_m
Step 6	Control the peak load torque and factors
Step 7	Determination of the thermal performance limit
Step 8	Examine the permissible thermal performance limit
Step 9	Examine the permissible outside forces and the storage life span
Step 10	Select the options
Step 11	Summarize the gear unit selection

4.4 Selection "Step by Step"

Step 1. Fill out gear unit information sheet

Step 2. Determine the basic data

M_{2org} Organic performance P_2 n_2

M_{2inst} installed motor output P_{1inst} n_1

$$M_2 = \frac{P_2 \quad 9550}{n_2}$$

i_{soll} ratio i_{soll}

$$i = \frac{n_1}{n_2}$$

Step 3. Application specific operating factor SF:
SF selected:
If the operating factor is not minimal, the appropriate factor based on the classification can be selected by using the "operating factors" table. The table applies to gear units which are driven by electro-motors. For drives with combustion engines, please consult Rexnord-Stephan.
The selected operating factor is based on: ☒ organic performance ☐ installed motor output

Step 4. Calculation of the necessary gear unit torque M_{nmin}

M_{nmin} Necessary rated torque at continuous load

$$M_{n\min} \quad M_2 \quad S_F \quad r$$

☐ oscillating load r = 1.43 ☐ non-oscillating load: r = 1
M2 drive torque based on step 2
SF Operating factor

M_{nmin}:

Step 5. Selection of gear unit size and ratio from the selection tables
Gear unit size
Rated gear ratio
Exact gear ratio
Number of stages

Step 6. Calculation of the required motor performance (only necessary if no installed motor performance is listed in step 2)

$$P_m \quad \frac{M_2 \quad n_2}{9550}$$

Stages	b	C	D	E
η	0,96	0,95	0,94	0,93

Required motor performance (kW):
Selected motor performance (kW):

Step 7. Control of the peak load torque

$$M_{2zul} = \frac{M_n \quad r_2}{F_7 \quad r}$$

M_n Gear unit rated torque from the selection table
r See **Step 4**
r2 ☐ r2 = 2 for solid shaft ☐ r2 = 1.6 for hollow shaft
F7 Peak load factor
The peak load factor considers the overload capability of the mechanical components and the frequency of peak load occurrences.

Frequency of peak load per hour	1 - 5	6 - 20	21 - 40	41 - 100	101 - 160	> 160
Peak load factor F7	1	1,2	1,3	1,6	1,8	2

F7 selected:
M_{2zul}:

Determination of the required peak drive torque M2ma

$$M_{2\max} = M_m \quad F_8 \quad i$$

M_m Torque at high speed shaft (HSS)
F8 The start-up factor considers the load of the gear unit caused by the start-up procedure.

Type of start-up	Direct start-up	Star-delta start-up	Electronic soft starter	frequency converter	fluid coupling
start factor F8	3,0	1,3	1,5...1,9)*	1,3...2,0)*	1,5...2,0)*

)* Dependent on the required warm-up time and device settings

F8 selected:
M_{2max} :

Test: $M_{2\max} \quad M_{2zul}$ ☐ yes ☐ no

If no, select a larger gear unit or reduce start-up factor F8

Step 8. Examine the permissible thermal performance limit

The permissible thermal performance limit is dependent on various factors: - Surrounding temperature and mounting height - Air circulation and direct sunlight at the place of operation - Type of gear unit, size, ratio - Workload of the gear unit - Gear unit cooling type - Type of lubrication and lubricant used - Duration of operation	The permissible thermal performance limit must be taken from the following Table 2. The values apply to: - Horizontal mounting in a large hall - Cooling agent temperature of 20° C - Drive rpm 1500U/min - Natural cooling or cooling by: + Fan + cooling spiral + combination of fan and cooling coil - Mounting height <= 1000m - Splash lubrication

Thermal performance limit

Stages		iN from		iN up to	Cooling	Thermal performance at n1=1500 rpm Pth J	K	L	M
b	2	6,3	up to	22,4	without	70	70	95	95
					Fan	265	265	330	330
					cooling coil	260	260	330	330
					Fan/cooling cartridge	370	370	490	490
C	3	22,4	up to	100	without	65	65	90	90
					Fan	190	190	250	250
					cooling coil	210	210	270	270
					Fan/cooling cartridge	315	315	405	405

Selected cooling type:
☐ without additional cooling ☐ Fan, ProCool System
☐ cooling coil ☐ Fan and cooling coil

Deviating conditions:
In the case of deviating surrounding conditions, values from the table for the following factors should be corrected:
- F3 for rotation speed different from 1500U/min
- F4 for surrounding temperature differing from 20° C
- F5 for mounting heights above 1000m
- F6 for mounting in small rooms or above a hall

F3 rotation speed factor

	rotation speed n1					
Cooling	**1800**	**1500**	**1200**	**1000**	**900**	**750**
without	1	1	1	1	1	1
Fan	1,1	1	0,9	0,81	0,75	0,7
cooling coil	1	1	1	1	1	1
both	1,05	1	0,95	0,9	0,86	0,83

Temperature	10°C	20°C	30°C	40°C	50°C
F4	1,11	1,00	0,88	0,75	0,63

Höhe über	0 m	1000 m	2000 m	3000 m	4000 m
F5	1,00	0,95	0,91	0,87	0,83

F6

Installation	Air speed m/sec	F6 for gear units without additional cooling	F6 for gear units with additional cooling
Closed small room	0,50	0,70	1,00
Large hall	1,40	1,00	1,00
Outdoors, no direct sunlight	3,00	1,35	1,00

Thermal performance limit at place of application: $P_{thzul} = P_{th} \quad F3 \quad F4 \quad F5 \quad F6$

Test: $P_m \quad P_{thzul}$ ☐ yes ☐ no

If no, select a different cooling type or larger gear unit.

Step 9. Examine the permissible outside forces and the storage life span
The transferrable forces to the drive and output shaft are dependent on various factors:
- Required storage life span
- Balancing of axial forces
- Point of origin and angle of the radial forces
- Gear unit operation factor
- Type of transfer device (chain wheel, belt drive)

For testing the projected storage life span under the specific application conditions, please consult with Rexnord-Stephan.

Step 10. Selection of options and mounting position
Gear unit mounting position:
☐ M1 ☐ M2 ☐ M3 ☐ M4 ☐ M5 ☐ M6

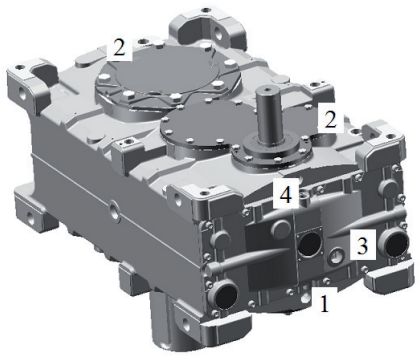
Fixing surface:
☐ F1 ☐ F2 ☐ F3 ☐ F4 ☐ F5 ☐ F6

Shaft arrangement W

Step 11. Summary of the selection
Selected gear unit type:

5 Maintenance elements

5.1 Attachment positions

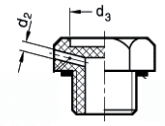
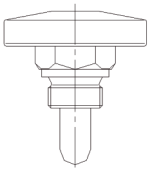
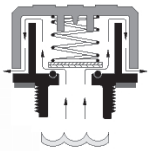


1	Oil drain plug
	Optional: Oil drain cock
2	Breather plug
	Optional: Filter or valve
3	Oil-level plug
4	Option: Oil dip stick

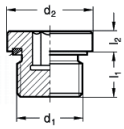
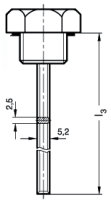
5.2 Oil change

For a necessary oil change, the oil is drained by the generously-dimensioned oil drainage plug. For tight installation conditions, a ball valve can be used at the same location. The oil change should be performed by using a connected hose. The oil quality, quantity and oil changing intervals can be found in the operating instructions enclosed in the delivery.

5.3 Bleeding

 The gear units are fitted with a bleeding screw as a standard.	 To prevent the penetration of dust, a fan filter is used.	 In damp surroundings, a bleeding valve may be used: In this way, the penetration of water is prevented and the oil life duration is extended.

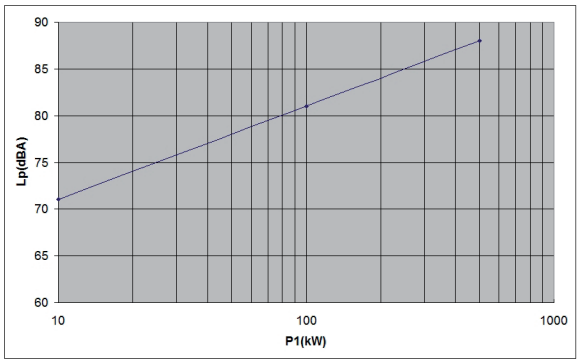
5.4 Oil level control

 The oil level is monitored by the control screw as a standard	 An oil inspection glass can also be used as an alternative. Reading is easy because of the clear marking.	 An Oil dip stick can also be installed for easy control of the oil level.

6 Explosion protection according to ATEX

The E4 series Rexnord-Stephan gear units can be delivered in a modified design, certified in accordance with guidelines 94/9/EC, if requested by the customer. These gear units may be used in explosion prone surroundings. They are designed for category 2 and 3, and therefore usable in zones 1 and 2 for occurring gases and vapours, and in zones 21 and 22 for explosive dusts.
For gear units in the ATEX design, the thermal arrangement can be different from the parameters listed in this catalogue. In this case, consultation with Rexnord-Stephan is required.
Gear units in ATEX design are marked accordingly on the name plate. Standard gear units may not be used in explosion prone areas.

7 Sound power level



The diagram shows the maximum sound power level for Rexnord-Stephan C4 gear units.
Conditions:
SF > 5
N1 = 1500 /min
Probability: 90%
For compulsory values for the sound power level, please ask Rexnord-Stephan.

8 Selection

8.1 i = 6,3 ..... 12,5 2 stages (B)

Nennleistung	Mechanical power rating	Puissances mécaniques nominales
Nenndrehmoment	Nominal torque	Couple nominal

			Baugröße - Size - Taille							
			J		K		L		M	
iN	n1	n2	kNm	kW	kNm	kW	kNm	kW	kNm	kW
6,3	**1800**	**285,7**	**25,0**	748	**31,5**	942	**40,0**	1.197	**50,0**	1.496
	1500	**238,1**		623		785		997		1.247
	1200	**190,5**		499		628		798		997
	1000	**158,7**		416		524		665		831
	900	**142,9**		374		471		598		748
	750	**119,0**		312		393		499		623
7,1	**1800**	**253,5**	**25,0**	664	**31,5**	836	**40,0**	1.062	**50,0**	1.327
	1500	**211,3**		553		697		885		1.106
	1200	**169,0**		442		558		708		885
	1000	**140,8**		369		465		590		737
	900	**126,8**		332		418		531		664
	750	**105,6**		277		348		442		553
8	**1800**	**225,0**	**25,0**	589	**31,5**	742	**40,0**	942	**50,0**	1.178
	1500	**187,5**		491		619		785		982
	1200	**150,0**		393		495		628		785
	1000	**125,0**		327		412		524		654
	900	**112,5**		295		371		471		589
	750	**93,8**		245		309		393		491
9	**1800**	**200,0**	**25,0**	524	**31,5**	660	**40,0**	838	**50,0**	1.047
	1500	**166,7**		436		550		698		873
	1200	**133,3**		349		440		559		698
	1000	**111,1**		291		367		465		582
	900	**100,0**		262		330		419		524
	750	**83,3**		218		275		349		436
10	**1800**	**180,0**	**25,0**	471	**31,5**	594	**40,0**	754	**50,0**	942
	1500	**150,0**		393		495		628		785
	1200	**120,0**		314		396		503		628
	1000	**100,0**		262		330		419		524
	900	**90,0**		236		297		377		471
	750	**75,0**		196		247		314		393
11,2	**1800**	**160,7**	**25,0**	421	**31,5**	530	**40,0**	673	**50,0**	841
	1500	**133,9**		351		442		561		701
	1200	**107,1**		280		353		449		561
	1000	**89,3**		234		295		374		467
	900	**80,4**		210		265		337		421
	750	**67,0**		175		221		280		351
12,5	**1800**	**144,0**	**25,0**	377	**31,5**	475	**40,0**	603	**50,0**	754
	1500	**120,0**		314		396		503		628
	1200	**96,0**		251		317		402		503
	1000	**80,0**		209		264		335		419
	900	**72,0**		188		238		302		377
	750	**60,0**		157		198		251		314

8.2 i = 14 ..... 22,4 2 stages (B)

Nennleistung	Mechanical power rating	Puissances mécaniques nominales
Nenndrehmoment	Nominal torque	Couple nominal

			Baugröße - Size - Taille							
			J		K		L		M	
14	**1800**	**128,6**	**25,0**	337	**31,5**	424	**40,0**	539	**50,0**	673
	1500	**107,1**		280		353		449		561
	1200	**85,7**		224		283		359		449
	1000	**71,4**		187		236		299		374
	900	**64,3**		168		212		269		337
	750	**53,6**		140		177		224		280
16	**1800**	**112,5**	**25,0**	295	**31,5**	371	**40,0**	471	**50,0**	589
	1500	**93,8**		245		309		393		491
	1200	**75,0**		196		247		314		393
	1000	**62,5**		164		206		262		327
	900	**56,3**		147		186		236		295
	750	**46,9**		123		155		196		245
18	**1800**	**100,0**	**25,0**	262	**31,5**	330	**40,0**	419	**50,0**	524
	1500	**83,3**		218		275		349		436
	1200	**66,7**		175		220		279		349
	1000	**55,6**		145		183		233		291
	900	**50,0**		131		165		209		262
	750	**41,7**		109		137		175		218
20	**1800**	**90,0**	**25,0**	236	**31,5**	297	**40,0**	377	**50,0**	471
	1500	**75,0**		196		247		314		393
	1200	**60,0**		157		198		251		314
	1000	**50,0**		131		165		209		262
	900	**45,0**		118		148		188		236
	750	**37,5**		98		124		157		196
22,4	**1800**	**80,4**	**25,0**	210	**31,5**	265	**40,0**	337	**50,0**	421
	1500	**67,0**		175		221		280		351
	1200	**53,6**		140		177		224		280
	1000	**44,6**		117		147		187		234
	900	**40,2**		105		133		168		210
	750	**33,5**		88		110		140		175

8.3 i = 22,4 ..... 50 3 stages (C)

Nennleistung	Mechanical power rating	Puissances mécaniques nominales
Nenndrehmoment	Nominal torque	Couple nominal

			Baugröße - Size - Taille							
			J		K		L		M	
iN	n1	n2	kNm	kW	kNm	kW	kNm	kW	kNm	kW
22,4	1800	80,4	25,0	191	31,5	191	36,0	303	36,0	303
	1500	67,0		159		159		252		252
	1200	53,6		127		127		202		202
	1000	44,6		106		106		168		168
	900	40,2		96		96		151		151
	750	33,5		80		80		126		126
25	1800	72,0	25,0	188	31,5	196	40,0	302	41,5	313
	1500	60,0		157		163		251		261
	1200	48,0		126		131		201		209
	1000	40,0		105		109		168		174
	900	36,0		94		98		151		156
	750	30,0		79		82		126		130
28	1800	64,3	25,0	168	31,5	212	40,0	269	50,0	337
	1500	53,6		140		177		224		280
	1200	42,9		112		141		180		224
	1000	35,7		93		118		150		187
	900	32,1		84		106		135		168
	750	26,8		70		88		112		140
31,5	1800	57,1	25,0	150	31,5	188	40,0	239	50,0	299
	1500	47,6		125		157		199		249
	1200	38,1		100		126		160		199
	1000	31,7		83		105		133		166
	900	28,6		75		94		120		150
	750	23,8		62		79		100		125
35,5	1800	50,7	25,0	133	31,5	167	40,0	212	50,0	265
	1500	42,3		111		139		177		221
	1200	33,8		88		112		142		177
	1000	28,2		74		93		118		147
	900	25,4		66		84		106		133
	750	21,1		55		70		88		111
40	1800	45,0	25,0	118	31,5	148	40,0	188	50,0	236
	1500	37,5		98		124		157		196
	1200	30,0		79		99		126		157
	1000	25,0		65		82		105		131
	900	22,5		59		74		94		118
	750	18,8		49		62		79		98
45	1800	40,0	25,0	105	31,5	132	40,0	168	50,0	209
	1500	33,3		87		110		140		175
	1200	26,7		70		88		112		140
	1000	22,2		58		73		93		116
	900	20,0		52		66		84		105
	750	16,7		44		55		70		87
50	1800	36,0	25,0	94	31,5	119	40,0	151	50,0	188
	1500	30,0		79		99		126		157
	1200	24,0		63		79		101		126
	1000	20,0		52		66		84		105
	900	18,0		47		59		75		94
	750	15,0		39		49		63		79

8.4 i = 56 ..... 100 3 stages (C)

Nennleistung	Mechanical power rating	Puissances mécaniques nominales
Nenndrehmoment	Nominal torque	Couple nominal

			Baugröße - Size - Taille							
			J		K		L		M	
56	**1800**	**32,1**	**25,0**	84	**31,5**	106	**40,0**	135	**50,0**	168
	1500	**26,8**		70		88		112		140
	1200	**21,4**		56		71		90		112
	1000	**17,9**		47		59		75		93
	900	**16,1**		42		53		67		84
	750	**13,4**		35		44		56		70
63	**1800**	**28,6**	**25,0**	75	**31,5**	94	**40,0**	120	**50,0**	150
	1500	**23,8**		62		79		100		125
	1200	**19,0**		50		63		80		100
	1000	**15,9**		42		52		66		83
	900	**14,3**		37		47		60		75
	750	**11,9**		31		39		50		62
71	**1800**	**25,4**	**25,0**	66	**31,5**	84	**40,0**	106	**50,0**	133
	1500	**21,1**		55		70		88		111
	1200	**16,9**		44		56		71		88
	1000	**14,1**		37		46		59		74
	900	**12,7**		33		42		53		66
	750	**10,6**		28		35		44		55
80	**1800**	**22,5**	**25,0**	59	**31,5**	74	**40,0**	94	**50,0**	118
	1500	**18,8**		49		62		79		98
	1200	**15,0**		39		49		63		79
	1000	**12,5**		33		41		52		65
	900	**11,3**		29		37		47		59
	750	**9,4**		25		31		39		49
90	**1800**	**20,0**	**25,0**	52	**31,5**	66	**40,0**	84	**50,0**	105
	1500	**16,7**		44		55		70		87
	1200	**13,3**		35		44		56		70
	1000	**11,1**		29		37		47		58
	900	**10,0**		26		33		42		52
	750	**8,3**		22		27		35		44
100	**1800**	**18,0**	**25,0**	47	**31,5**	59	**40,0**	75	**50,0**	94
	1500	**15,0**		39		49		63		79
	1200	**12,0**		31		40		50		63
	1000	**10,0**		26		33		42		52
	900	**9,0**		24		30		38		47
	750	**7,5**		20		25		31		39

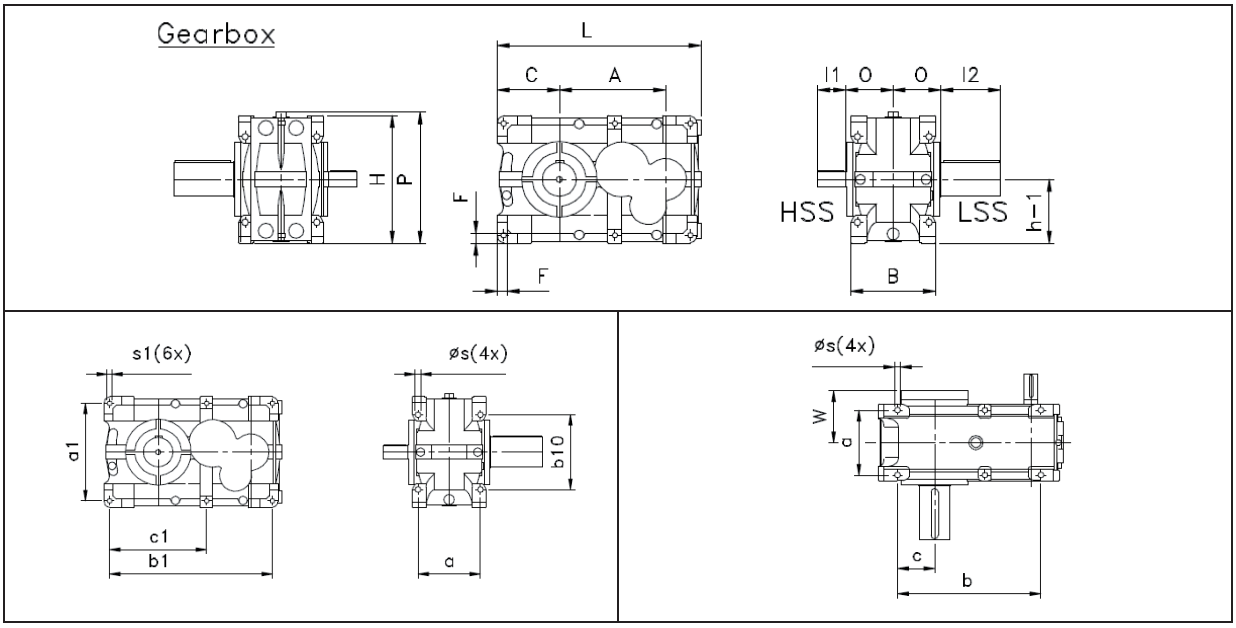
9 Dimensional drawings

9.1 Standard bearings

Es werden die erforderlichen Funktionsflächen bearbeitet. Die angegebenen Maße sind nur für die bearbeiten Flächen gültig.

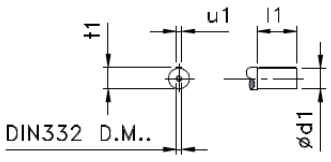
The necessary function surfaces are worked on. The indicated measures are only for those work on surfaces valid.

Les surfaces de fonction nécessaires sont travaillées. La masse indiquée que pour ceux travaillent, valable des surfaces ne sont.



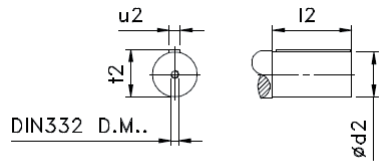
Gearbox											Mounting								
Size	**A**	**B**	**C**	**F**	**H**	**L**	**O**	**P**	**h**	**W**	**a**	**b**	**c**	**Øs**	**a1**	**b1**	**c1**	**s1**	**b10**
J	455	367$_{-1}$	274$_{-1}$	45	560	888	210	580	280$_{-1}$	208,5	305	700	180	28	490	830	490	M24x32	380
K	455	367$_{-1}$	274$_{-1}$	45	560	888	210	580	280$_{-1}$	208,5	305	700	180	28	490	830	490	M24x32	380
L	535	430$_{-1}$	311$_{-1}$	50	640	1016	240	660	320$_{-1}$	238,5	360	800	205	35	560	950	560	M30x37	430
M	535	430$_{-1}$	311$_{-1}$	50	640	1016	240	660	320$_{-1}$	238,5	360	800	205	35	560	950	560	M30x37	430

9.1.1 Input shaft



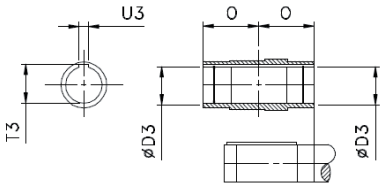
	i =6,3 - 22,4					i = 25 - 100				
Size	**Ød1**	**l1**	**u1**	**t1**	DIN332 D.M..	**Ød1**	**l1**	**u1**	**t1**	DIN332 D.M..
J	65$_{m6}$	140	18	69	M20	55$_{m6}$	110	16	59	M20
K	65$_{m6}$	140	18	69	M20	55$_{m6}$	110	16	59	M20
L	75$_{m6}$	160	20	79,5	M20	65$_{m6}$	160	18	69	M20
M	75$_{m6}$	160	20	79,5	M20	65$_{m6}$	160	18	69	M20

9.1.2 Solid shaft



Size	Ød2	l2	u2	t2	DIN332 D.M..
J	140_{m6}	250	36	148	M30
K	150_{m6}	250	36	158	M30
L	160_{m6}	300	40	169	M30
M	170_{m6}	300	40	179	M30

9.1.3 Hollow shaft with keyway

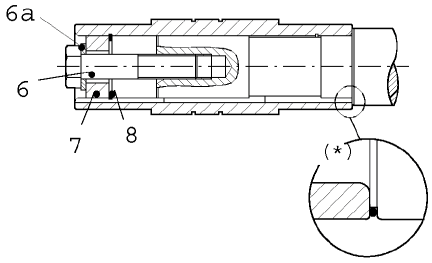


Size	ØD3	U3	T3	W	O
J	130^{H7}	32	137,4	220	210
K	140^{H7}	36	148,4	220	210
L	150^{H7}	36	159,4	250	240
M	160^{H7}	40	169,4	250	240

Die kundenseitige Welle ist ausreichend zu dimensionieren. Rexnord-Stephan ist nicht verantwortlich für die korrekte Ausführung der Welle. Hinweise zur Wellenausführung erhalten Sie von Rexnord-Stephan. Die erforderlichen Befestigungsteile sind im Standardlieferumfang erhalten. Ein Montage- und Demontagekit ist optional erhältlich.

The user shaft is to be dimensioned sufficiently. Rexnord Stephan is not responsible for the correct execution of the shaft. References to the shaft execution receive you from Rexnord Stephan. The necessary mounting elements are received in the standard scope of supply. An assembly and an disassembly kit are optionally available.

L'axe d'utilisateur doit être dimensionné suffisamment. Rexnord Stephan n'est pas responsable de l'exécution correcte de l'axe. Les références à l'exécution d'axe vous reçoivent de Rexnord Stephan. Les éléments nécessaires de support sont reçus dans la portée standard de l'approvisionnement. Une trousse de démontage et d'assemblage est optionnellement disponible..

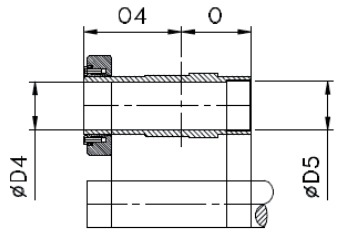


Befestigung:
6: Befestigungsschraube
6a: Scheibe
7: Befestigungsscheibe
8: Sicherungsring
(*) Für erhöhten Feuchtigkeitsschutz wird ein O-Ring empfohlen.

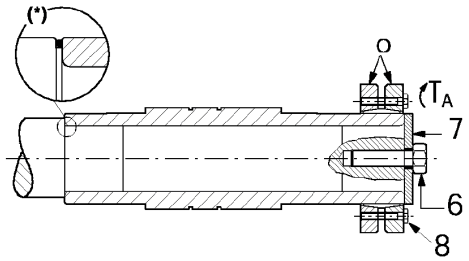
Attachment:
6: Fixing bolt
6a: Disk
7: Attachment disk
8: Snap ring
(*) For increased humidity protection an O-ring is recommended.

Fixation :
6 : Vis de fixation
6a : Glace
7 : Glace de fixation
8 : Circlip
(*) pour protection d'humidité accrue un joint circulaire est recommandé.

9.1.4 Shrink disc connection



Size	ØD4	ØD5	O4	W	O
J	130^{H7}	130	318	330	210
K	140^{H7}	140	318	330	210
L	150^{H7}	150	348	360	240
M	160^{H7}	160	348	360	240



Die Drehmomentübertragung erfolgt über die reibschlüssige Verbindung der Schrumpfscheibe.
Falls die axiale Belastung nicht vom Absatz der Maschinenwelle aufgenommen wird, sind eine Befestigungsscheibe (7) und eine Schraube (6) vorzusehen.
(*) Für erhöhten Feuchtigkeitsschutz wird ein O-Ring empfohlen

The torque transmission is made by the frictionconclusive connection of the contraction disk.
If the axial load is not taken up by the paragraph of the machine shaft, is an attachment disk to plan (7) and a screw (6).
(*) For increased humidity protection becomes an O-ring recommended

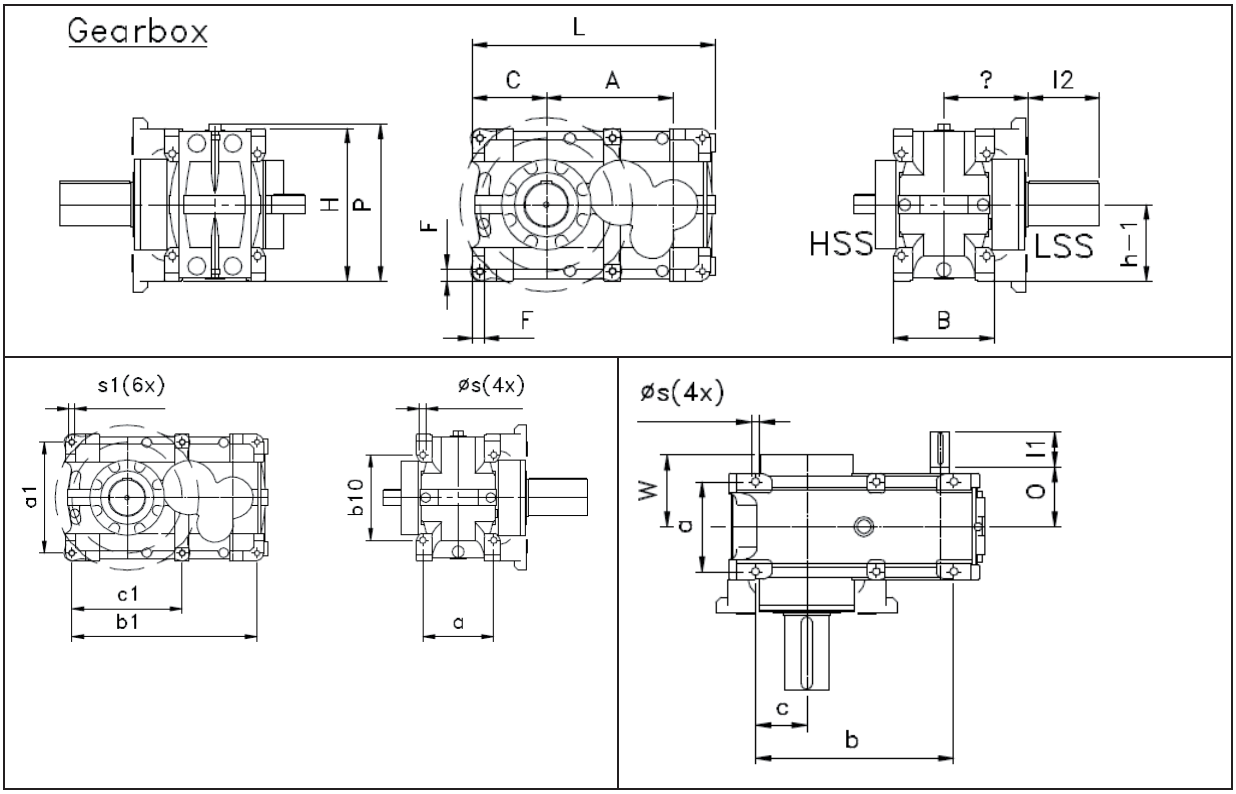
Le transfert de couple est effectué sur la relation reibschlüssige de la glace de rétrécissement.
Si la charge axiale n'est pas commencée par la vente de la vague d'appareil, une glace de fixation (7) et une vis (6) doivent être prévues.
(*) pour protection d'humidité accrue devient un joint circulaire recommandé

9.2 Heavy duty bearing

Es werden die erforderlichen Funktionsflächen bearbeitet. Die angegebenen Maße sind nur für die bearbeiten Flächen gültig.

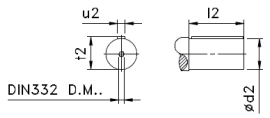
The necessary function surfaces are worked on. The indicated measures are only for those work on surfaces valid.

Les surfaces de fonction nécessaires sont travaillées. La masse indiquée que pour ceux travaillent, valable des surfaces ne sont.



Gearbox										Mounting								
Size	A	B	C	F	H	L	O	P	h	a	b	c	Øs	a1	b1	c1	s1	b10
J	455	367_{-1}	274_{-1}	45	560	888	210	580	280_{-1}	305	700	180	28	490	830	490	M24x32	380
K	455	367_{-1}	274_{-1}	45	560	888	210	580	280_{-1}	305	700	180	28	490	830	490	M24x32	380
L	535	430_{-1}	313_{-1}	50	640	1016	240	660	320_{-1}	360	800	205	35	560	950	560	M30x37	430
M	535	430_{-1}	313_{-1}	50	640	1016	240	660	320_{-1}	360	800	205	35	560	950	560	M30x37	430

9.2.1 Solid shaft



Size	Ød2	I2	u2	t2	DIN332 D.M..	W
J	150_{m6}	250	36	158	M30	248
K	160_{m6}	300	40	169	M30	248
L	170_{m6}	300	40	179	M30	288
M	180_{m6}	300	45	190	M30	288

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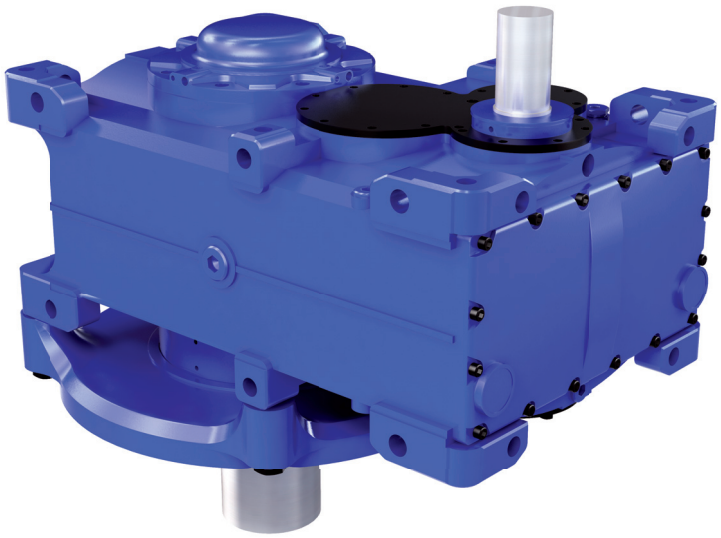

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