



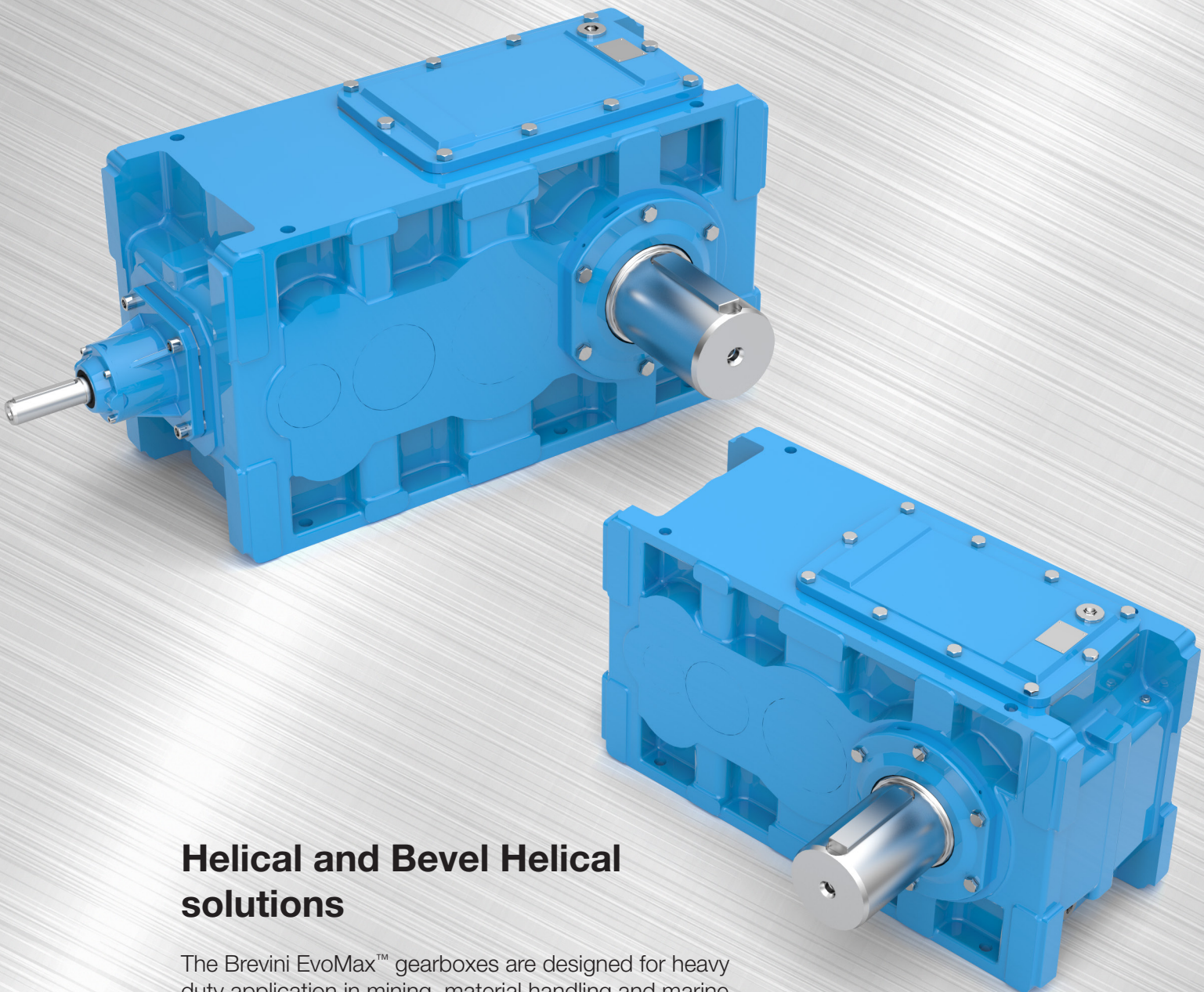
BREVINI[®]
Motion Systems

DBRCAT02-5-1-07.22
07.2022

Product Catalog

Helical and Bevel Helical Gearboxes **Brevini EvoMax™ Series**

Output torque up to 50.000 Nm



Helical and Bevel Helical solutions

The Brevini EvoMax™ gearboxes are designed for heavy duty application in mining, material handling and marine application. They ensure high performances in demanding applications based on their modularity and a wide range of combinations.



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Helical gears - bevel helical gears - compact gears

Brevini EvoMax™

The Brevini EvoMax™ gearbox series is a further development of the PIV Posired 2 from Dana Motion Systems Deutschland. The development has incorporated over 90 years of application knowledge and customer feedback and the outcome is a series of highly reliable, efficient and economical products.

The development of the Brevini EvoMax™ gearbox series enabled the improvement in torque density, smaller physical envelope, higher efficiency, lower weight, noise and power consumption. Overall, the modular design of the Brevini EvoMax™ series gives sustainable and efficient transmission that minimize operating costs and maximize availability.

The Dana Motion Systems Deutschland ISO 9001:2015 quality assurance system for design, development, production, assembly, and aftersales service guarantees a uniformly high World-class standard.

Brevini EvoMax™

is an "intelligent" transmission concept with advantages to customers including:

- Short delivery times due to a high degree of standardization
- Cost-efficient gear selection for every application due to better torque distribution between sizes.
- High product quality resulting from a more robust construction
- Greater product flexibility enables a wide range of uses
- Custom-made production based on a modular system.

Available Options:

- 2 to 4-stage helical gear units
- 3 to 4-stage bevel helical gear units
- 3 and 4-stage compact gear units
- 8 sizes based on the modular principle

Construction and Design:

- Horizontal, vertical and standing installation with attachment to all 6 housing surfaces
- Compact drives as bevel helical gear units
- Compact drives as bevel helical gear units with vertical output shafts

Output torques

T_{N2} from 8000 Nm to 50000 Nm

Ratios

$i_N = 4$ to 500 for spur gears

$i_N = 18$ to 500 for bevel-helical gear units

$i_N > 500$ by combining planetary gear units.

Housing:

The innovative housing of the Brevini EvoMax™ series have been developed using the latest calculation methods to ensure optimum stiffness and acoustics with minimal use of material.

The following versions are available

- Compact block housing for sizes 18 to 31

Housing Material:

- Standard is gray cast iron EN-GJL-250
- On request nodular cast iron EN-GJS-500-7
- On request nodular cast iron EN-GJS-400-18-LT
- Or steel-welded housing

Output Shaft Designs:

- Solid shaft with parallel key or splined according to DIN5480
- Hollow shaft with key splined, according to DIN5480 or shrink disk
- Flange shaft

Input Shaft Design:

- Solid shaft with key
- With helical gearboxes, double extended input shaft
- Extended intermediate shaft is available for all gearboxes.
- Keys according to DIN 6885/1 are included in the scope of delivery.
- Centering bores on the shaft ends are designed according to DIN 332 Form DS.

Gears

The Brevini EvoMax™ series uses helical gears and bevel gears with Cyclo-Paloid teeth. All gears are designed for optimum load-bearing behavior and to minimize noise. In our own hardening shop, the gears are case-hardened and then the profiles are ground with the necessary correction according to the design.

Bearing:

The dimensioning of the rolling bearing service life takes into account the high expectations of mechanical and plant engineering. Only bearings from premium manufacturers are used.

Seals:

Sealing systems available as standard for input and output shafts are:

- Radial shaft seals in various materials
- Radial shaft seals with additional dust lip,
- Second radial shaft seal with grease-filled chamber in between
- Grease-lubricated labyrinth seals also with radial shaft seals
- Non-contact seals

Maintenance cover with reusable seal.

Lubrication:

- Gears and roller bearings are splash lubricated as standard
- Standardized injection lubrication systems with shaft or motor pumps are optionally available
- Oil dipstick as the standard solution for horizontal gears
- II sight glass as a standard solution for vertical gears

Cooling:

Additional cooling devices available as standard are:

- Mechanical or Electrical fan cooling
- Cooling coil (cartridge type)
- External oil-air cooler
- External oil-water cooler

Accessories:

Motors according to IEC, NEMA and other standards, three-phase drives with the required motor mountings are available as standard:

- Motor bell housings
 - Motor swing base for shaft mounted applications
 - Motor scoop
 - Motor base plates fixed to gearbox housing
 - Base-frame to accommodate the motor and gearbox
-
- Torque Arms – Available with one or two hinges on request.
 - Backstops are available as standard and are easily accessible in a closed housing.
 - Auxiliary drive with overrunning clutch.
 - Flange on output for attachments (e.g. agitator lanterns).

Couplings:

At the output suitable for the series output shafts and gearbox torques:

- Flexible couplings
- Tooth couplings
- Barrel couplings
- Multi-disc clutches
- Other couplings on request

At the input, suitable for the series drive shafts and gearbox torques:

- Flexible couplings
- Fluid couplings
- Other couplings on request

Other Accessories:

- Heaters mounted from the outside
- Operating monitoring systems for speed, torque
- Indicators for temperature, oil flow, oil level etc.
- Sensor for bearing monitoring

General:

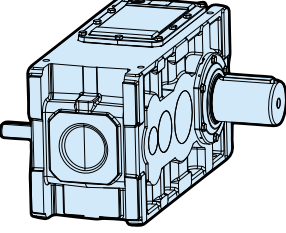
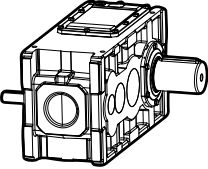
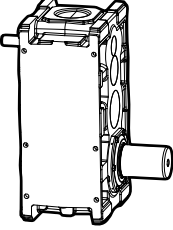
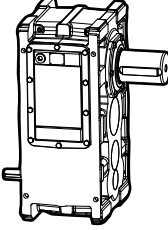
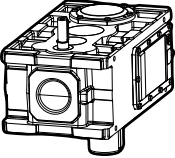
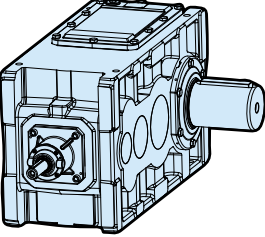
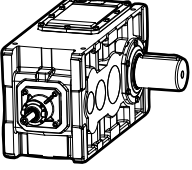
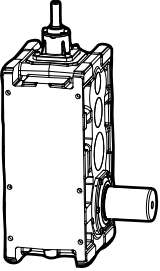
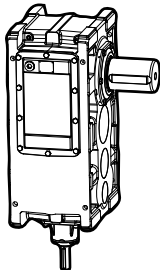
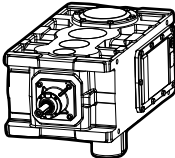
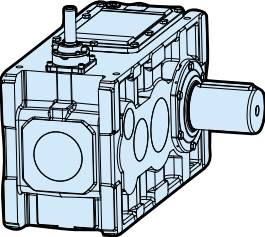
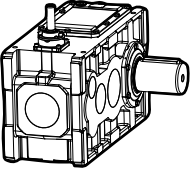
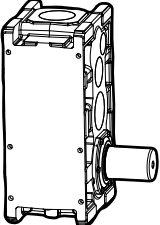
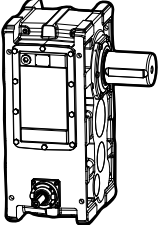
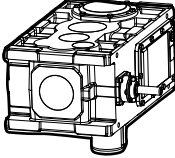
- Dimension sheets are available as CAD files for various IT systems and interfaces.
- Computer programs for drive selection.
- Gear, shaft and bearing verification.
- The degree of protection corresponds to IP 55.
- Information on the weight of the gear unit and the amount of gear oil are estimate values. Exact values can be found on the gear unit nameplate or technical description.

Scope of delivery, installation and commissioning:

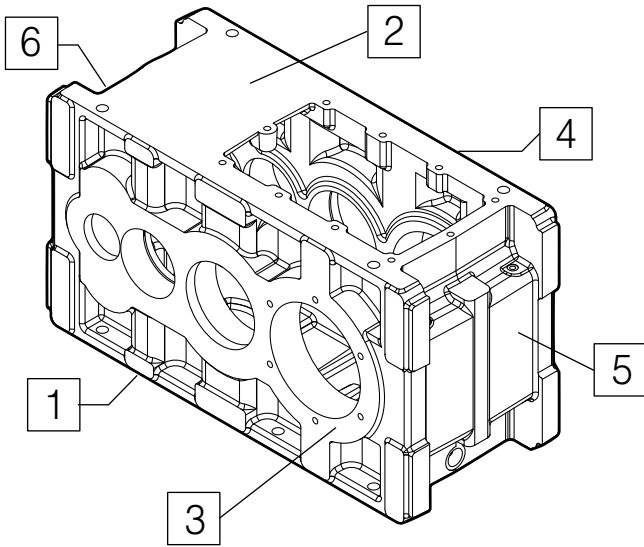
- The delivery takes place without oil filling.
- Transport aids such as eye bolts are not included.
- Oil type and oil quantity according to the nameplate or technical description
- Recommended quality: CLP according to DIN 51517 or see technical description
- The standard preservation under normal transport and storage conditions is sufficient for a period of 18 months.
- Installation and commissioning according to Brevini Motion Systems operating instructions
- On request, we can supply the legally prescribed contact protection on rotating parts.
- Protective covers for the shrink disk are provided for hollow shaft gear units

Dimensions	
Symbol referring to gear unit type E2H, E3H, E4H	
Symbol referring to gear unit type E3B, E4B	
Symbol referring to gear unit type E3C, E4C	
Symbols identifying the gear unit stages (2, 3, 4)	
Symbols describing kind of output shaft: V = Solid shaft VS = Solid spline shaft G = Hollow shaft with shrink disc H = Hollow shaft with key HS = Hollow spline shaft F = Flanged shaft	V VS G H HS F
Gear unit weight [kg]	
Lubrication	
Oil quantity in liters [l]	
Type of oil plug on gear units	
Filling plug	
Oil level	
Oil drain	
Breather	
Reference to page	

MONOBLOCK HOUSING

MONOBLOCK HOUSING				
Construction types	Mounting positions			
	R	S	T	U (on request)
	Horizontal, output shaft horizontal	Vertical, output shaft below	Vertical, output shaft above	Horizontal, output shaft vertical
E2H, E3H, E4H	Helical gear units			
				
E3B, E4B	Bevel-helical gear units			
				
E3C, E4C	Compact drives			
				


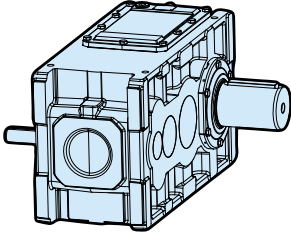
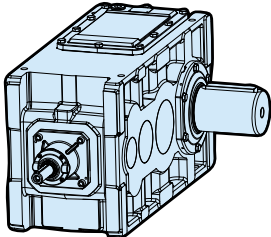
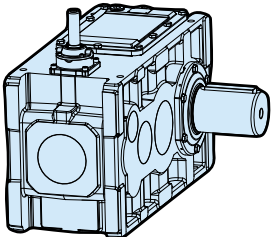
MONOBLOCK HOUSING



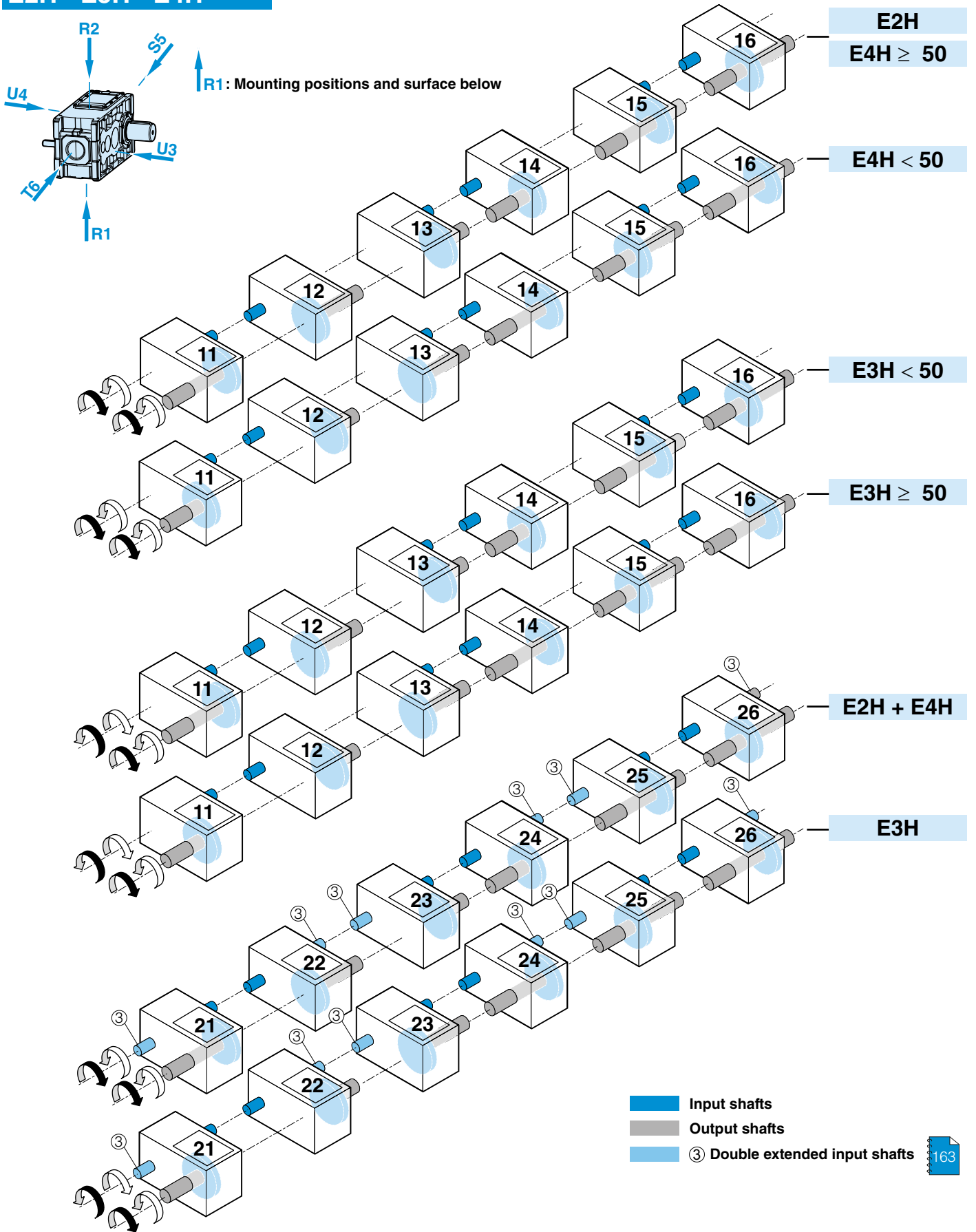
Designation of housing surfaces (1 ... 6).
Permissible mounting positions: see dimension sheets.

Example:

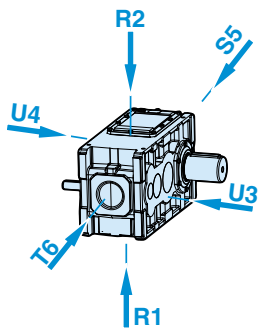
R1 = R for horizontal mounting position; 1 for surface 1 below

Type	MONOBLOCK HOUSING	Mounting positions and surfaces		
Helical gears		E2H	R1, R2, S5, T6, U3, U4	10
		E3H	R1, R2, S5, T6, U3, U4	
		E4H	R1, R2, S5, T6, U3, U4	
Bevel-helical gears		E3B	R1, R2, S5, T6, U3, U4	12
		E4B	R1, R2, S5, T6, U3, U4	
Compact gears		E3C E4C	R1	14
		E3C E4C	S5, T6, U3, U4	

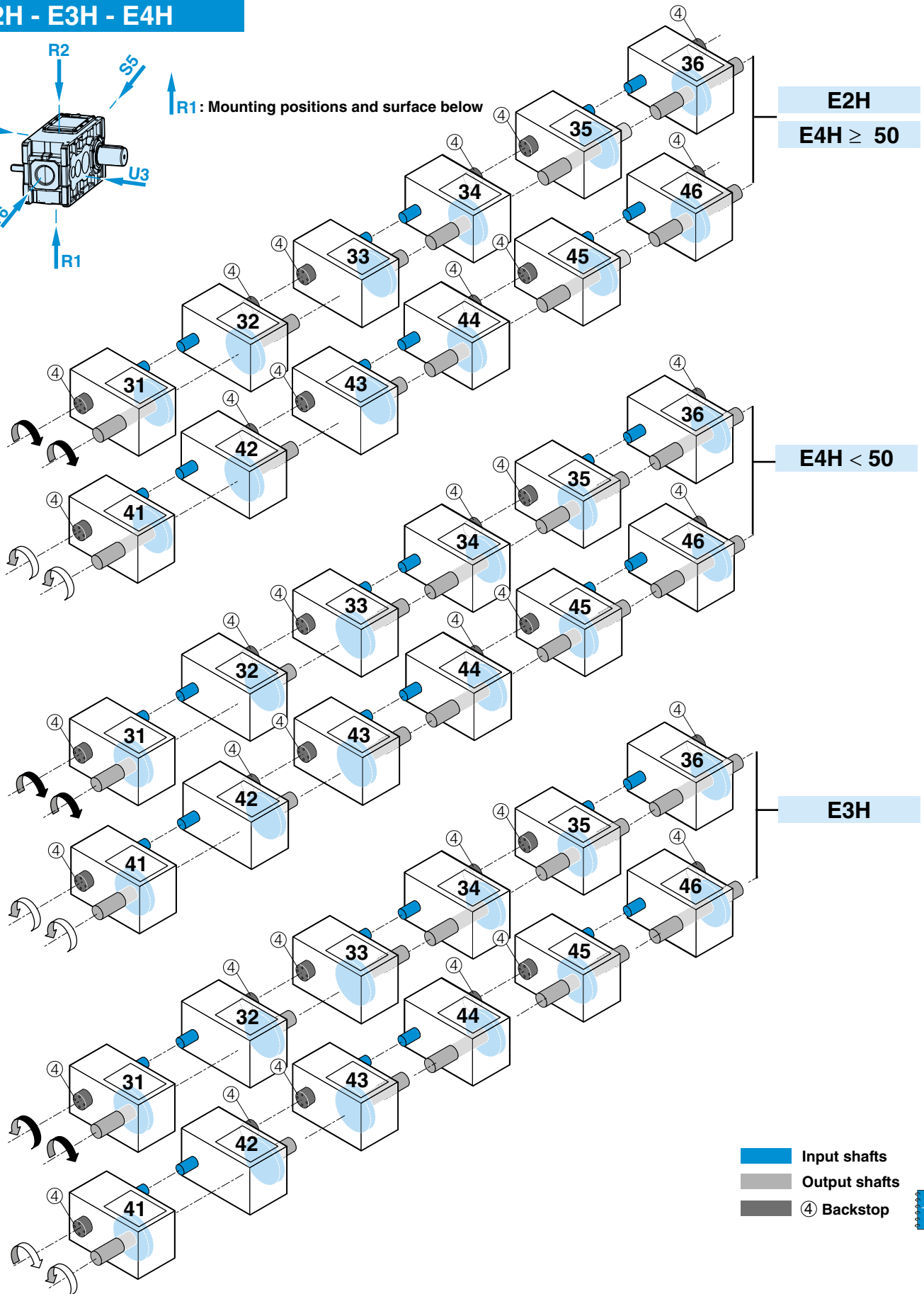
E2H - E3H - E4H



E2H - E3H - E4H



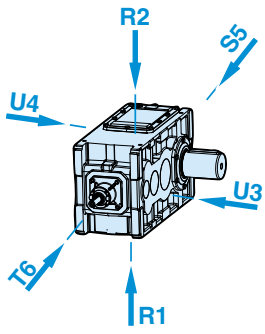
R1: Mounting positions and surface below



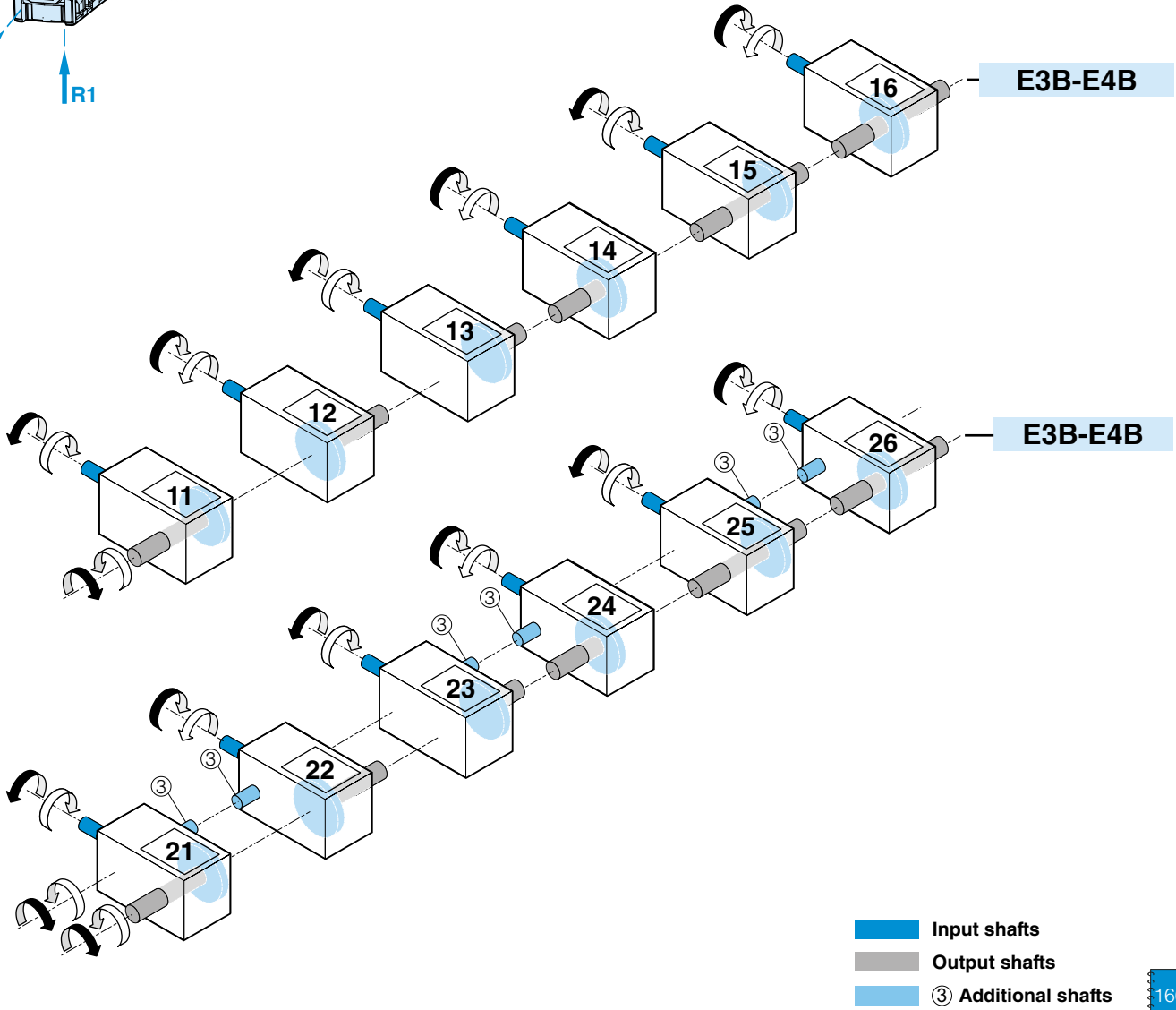
- Input shafts
- Output shafts
- 4 Backstop

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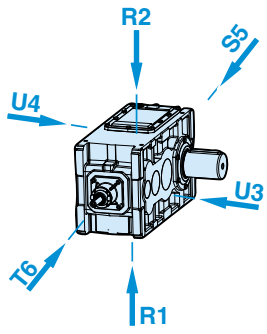
E3B - E4B



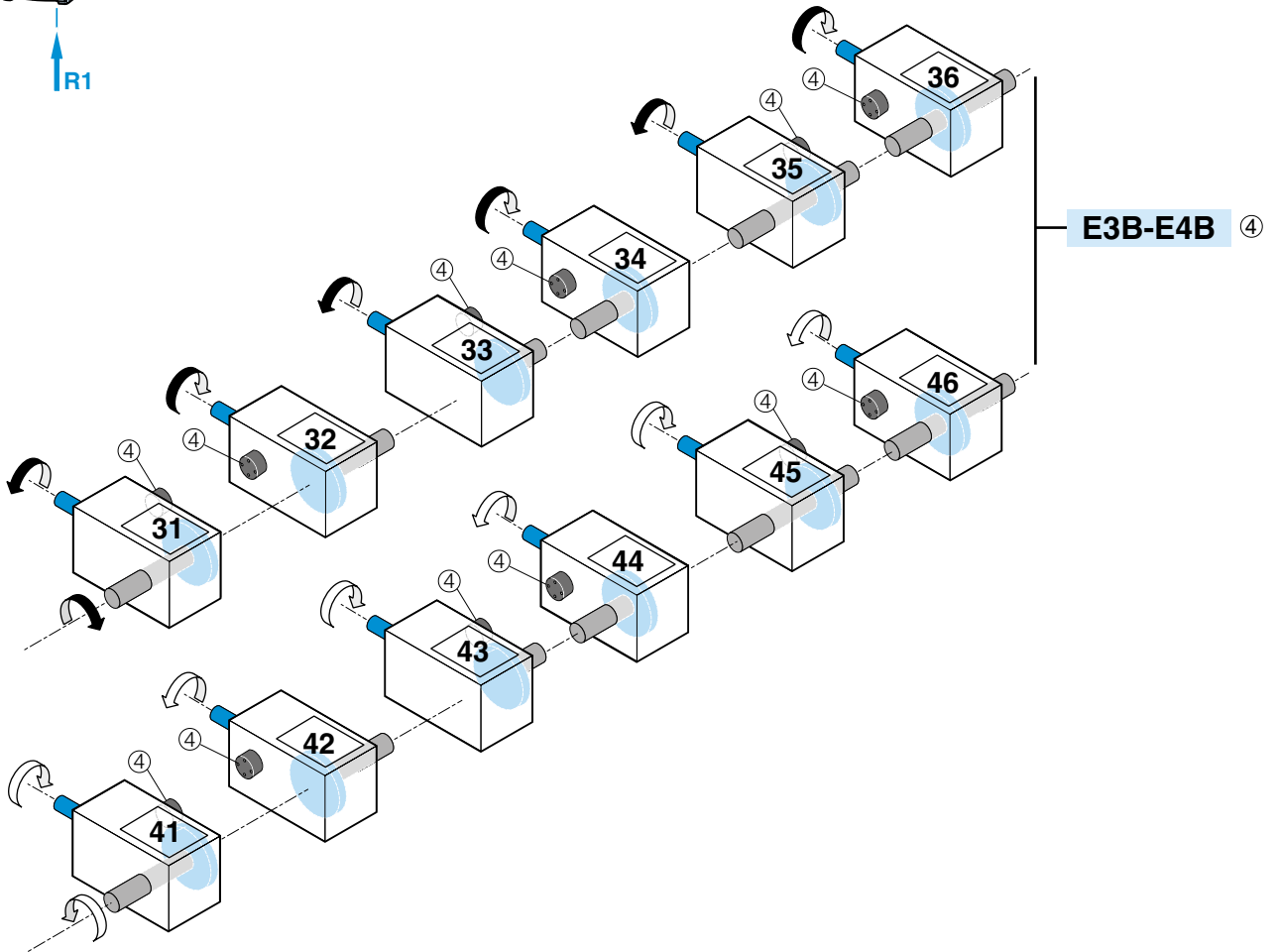
R1: Mounting positions and surface below



E3B - E4B



R1: Mounting positions and surface below

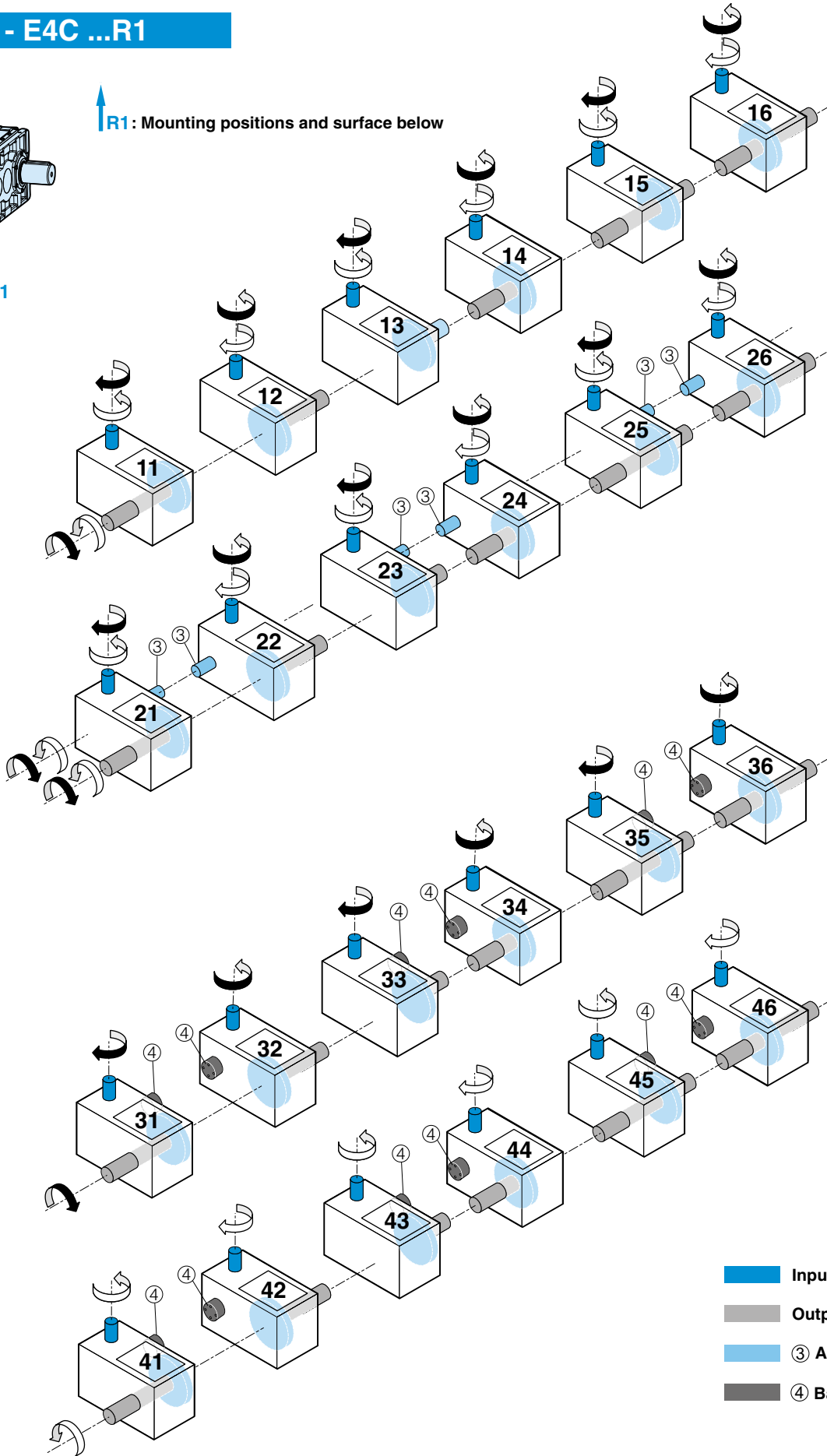
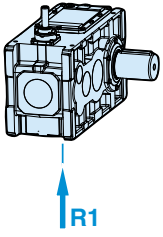


- Input shafts
- Output shafts
- Backstop



E3C - E4C ...R1

R1: Mounting positions and surface below



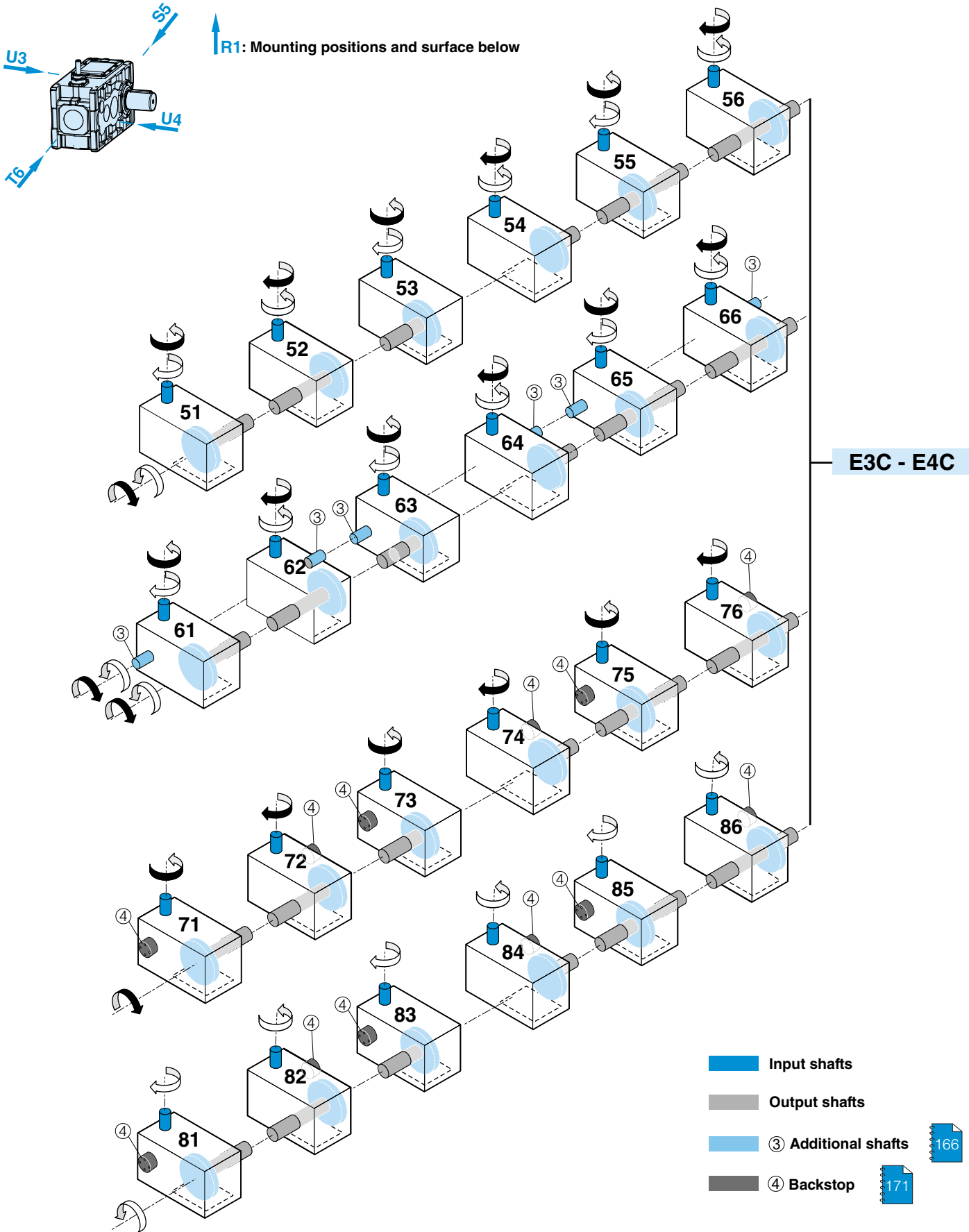
E3C - E4C

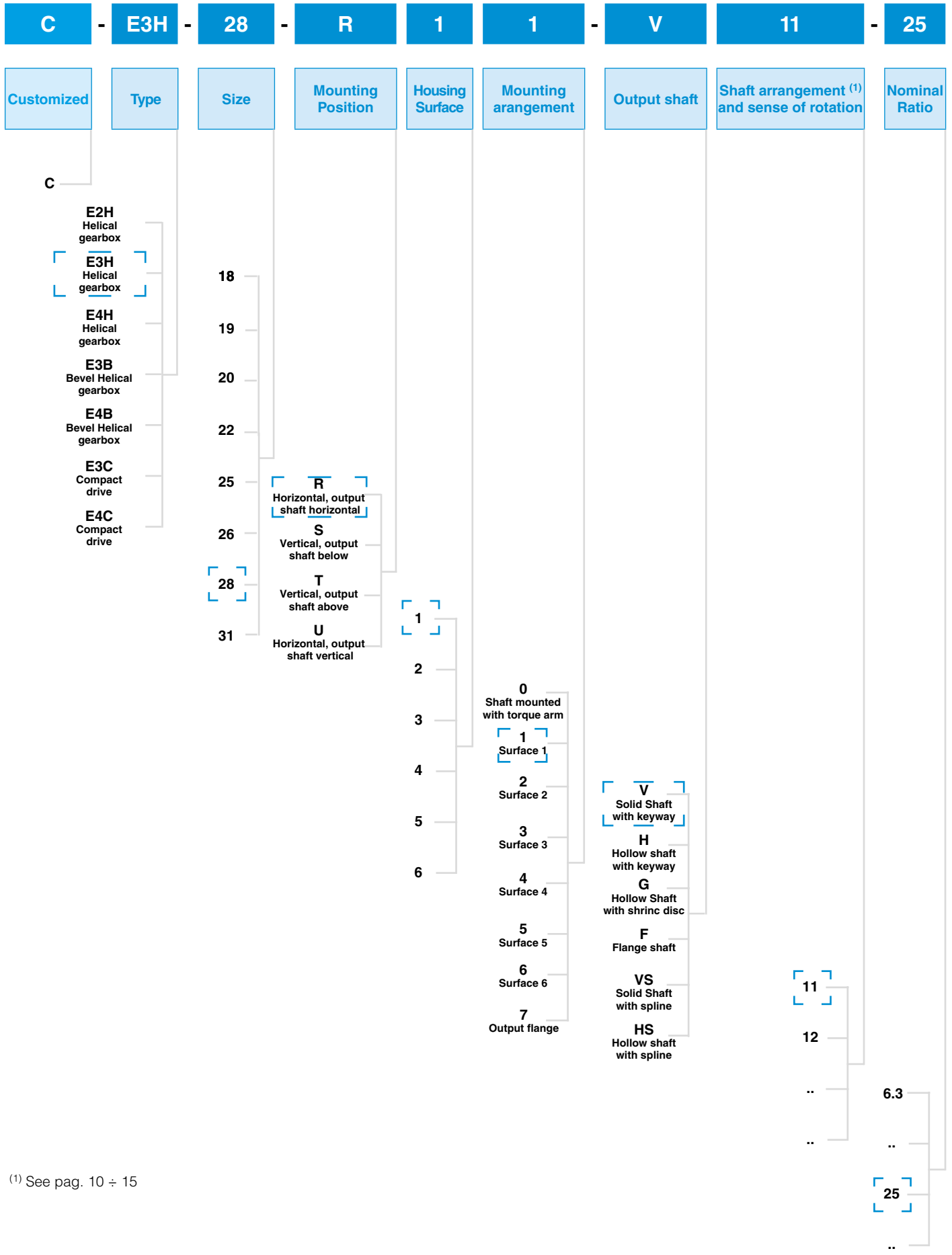
- Input shafts
- Output shafts
- ③ Additional shafts
- ④ Backstop

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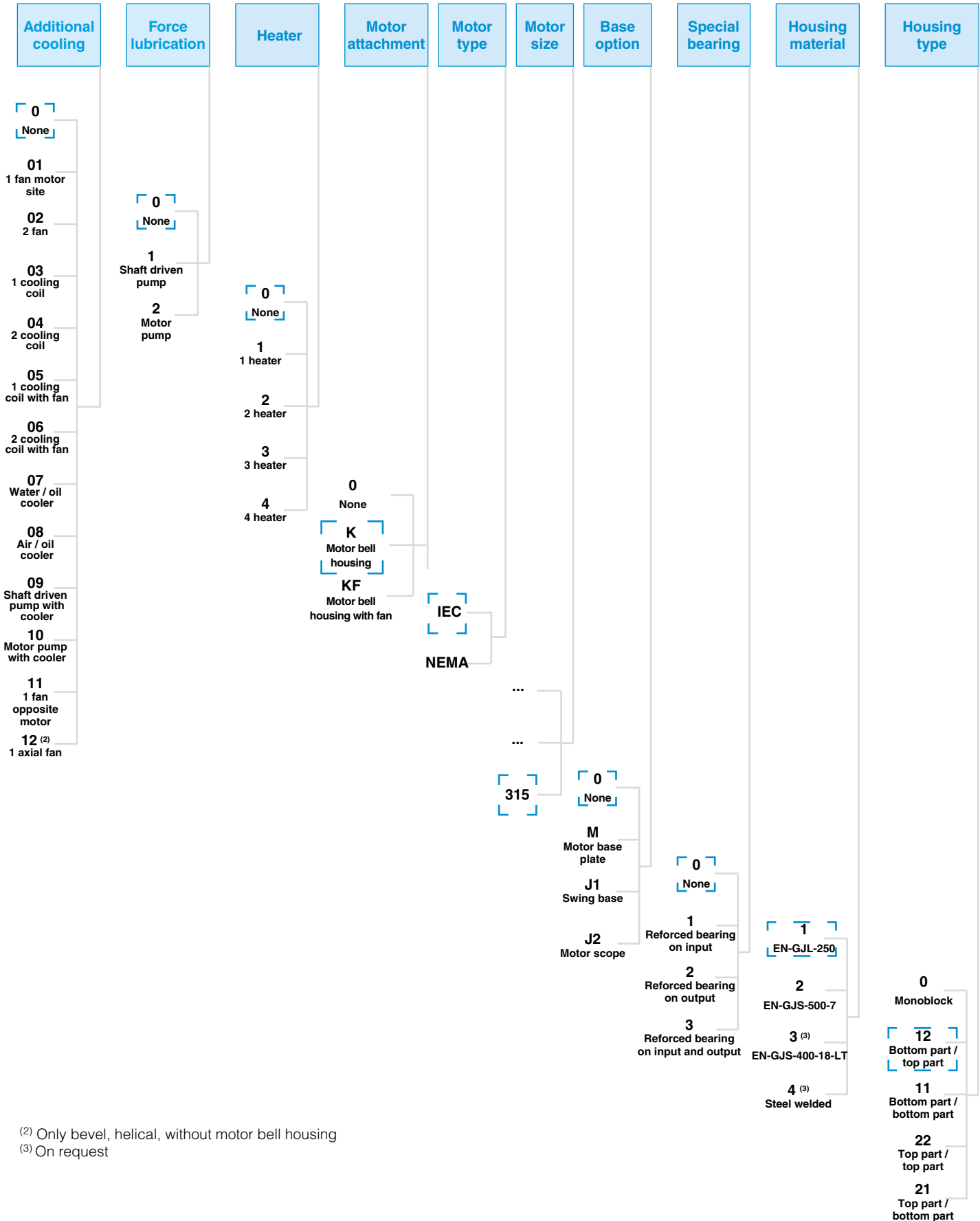
E3C - E4C ...S5, T6, U3, U4








⁽¹⁾ See pag. 10 ÷ 15

Z 0 - FL 0 - H 0 - K IEC 315 0 - S 0 - 1 - 12



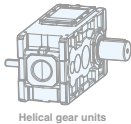
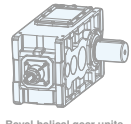
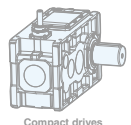
⁽²⁾ Only bevel, helical, without motor bell housing

⁽³⁾ On request

Description	Unit	Symbol
Input speed	[rpm]	n_1
Output speed	[rpm]	n_2
Required ratio		i
Nominal gearbox ratio		i_N
Effective ratio		i_{eff}
Motor power	[kW]	P_M
Nominal gearbox power	[kW]	P_N
Absorbed power of driven machine	[kW]	P_e
Thermal capacity	[kW]	P_t
Thermal capacity without additional cooling	[kW]	P_{t0}
Thermal capacity with radial fan	[kW]	P_{t1} 
Thermal capacity with cooling coil	[kW]	P_{t3} 
Thermal capacity with radial fan and cooling coil	[kW]	P_{t4} 
Demand torque	[Nm]	T_2
Nominal gearbox torque	[Nm]	T_{N2}
Start-up or maximum motor or braking torque	[Nm]	T_{MAX}
Thermal Factor		f_w
Ambient temperature	[°C]	ϑ_U
Duty cycle per hour	[%]	ED
Altitude factor		f_H

Step	Selection	
1	Establish the type of gear unit and mounting arrangement	
2	Define the ratio required	$i = n_1 / n_2$
3	Define the demand torque	$T_2 = (9550 \cdot P_e) / n_2$
4	Pre-selection of gearbox checking nominal torque	T_{N2}

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Type	Size	i_N	T_{N2} [kNm]	Efficiency η		
 Helical gear units	E2H	18	4 - 315	8 - 10	0.980	
		19	5 - 400	10 - 13	32	
		20	5.6 - 450	13 - 15	36	
	E3H	22	4 - 450	16 - 21	0.970	40
		25	5.6 - 560	21 - 30	44	
		26	4 - 450	30 - 36	48	
	E4H	28	4 - 450	30 - 38	0.960	52
		31	5.6 - 630	38 - 50	56	
		18	18 - 315	8 - 10	60	
		19	22.4 - 400	10 - 13	64	
 Bevel-helical gear units	E3B	20	25 - 450	13 - 15	0.960	
		22	18 - 315	16 - 21	72	
		25	22.4 - 400	21 - 30	76	
	E4B	26	18 - 315	30 - 36	0.950	80
		28	18 - 315	30 - 38	84	
		31	25 - 450	38 - 50	88	
		18	25 - 315	8 - 10	92	
	 Compact drives	E3C	19	31.5 - 400	10 - 13	0.960
			20	35.5 - 450	13 - 15	96
			22	25 - 315	16 - 21	98
E4C		25	31.5 - 400	21 - 30	0.950	100
		26	25 - 315	30 - 36	102	
		28	25 - 315	30 - 38	104	
		31	35.5 - 450	38 - 50	106	

5	Define application factor	K_A
---	---------------------------	-------

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Table 1: Gear unit application factor K_A 1)	Intermitt. Use (0,5 h)	Shifts 2)
Blowers, Ventilators		
Air cooler		1.4...1.5
Axial blowers	0.8	1.0...1.25
Cooling tower fans	1.2	1.6...1.7
Heat exchangers		1.5
Rotary piston blowers	1	1.25...1.5
Suction draught blower	1	1.25...1.5
Turbo exhauster	0.8	1.0...1.25
Cableways		
Continuous ropeways		1.4...1.6
Freight ways		1.3...1.4
Shuttle cableways		1.4...1.8
T-bar lifts		1.3...1.4
Cement industry		
Concrete mixers		1.5
Crushers		1.2...1.4
Roller mills		2
Rotary kilns		2
Separators		1.6

6	Determine the gearbox size	$T_{N2} \geq T_2 \cdot K_A$
---	----------------------------	-----------------------------

7	Check the peak torque	$T_{max} \leq (9550 \cdot P_N) / n_1 \cdot f_E \cdot f_R$
	Define frequency factor	f_E
	Define reversal factor	f_R

Table 2: Operating frequency factor f_E					
2	1.6	1.4	1.2	1.1	1
with ... load peaks per hour					
1	2-10	11-20	21-50	51-100	>100

Table 3: Reversal factor f_R		
1.0	0.85	0.7
Steady direction of load	reversing very rarely ⁴⁾ or only slightly ⁵⁾	regular reversing operations

8	Check thermal capacity	$P_t \geq P_e$
		$P_t = P_{t-} \cdot f_W \cdot f_H$

Input and output shafts are intended for torque transmission only through the application of load-free couplings. In cases of presence of external radial or axial loads contact Dana for application verification. (See Enquiry Form on page 23).

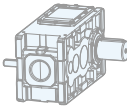
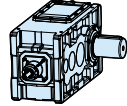
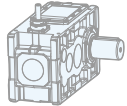
Design Example

Driven Machine: Belt conveyor for freight loading
 Required output power: $P_e = 44 \text{ kW}$
 Speed: $n_2 = 22 \text{ rpm}$
 Duty cycle: $ED = 100 \%$
 Starts per hour: 10
 Daily operation duration: 24 h/day
 Ambient temperature: $\vartheta_U = 30 \text{ }^\circ\text{C}$
 Installation: Outdoors in the open air (shaded), at sea level

Prime mover:
 Three-phase electric motor
 Motor output: $P_M = 55 \text{ kW}$
 Motor speed: $n_1 = 1500 \text{ rpm}$
 Max. motor torque: $T_{max} = 560 \text{ Nm}$ (pull-out torque)

1 Establish the type of gear unit and mounting arrangement

A bevel helical gear unit for horizontal installation in a hollow shaft version with shrink disc is required.

Type	Size	i_N	T_{N2} [kNm]	Efficiency η		
 Helical gear units	E2H	18	4 - 315	8 - 10	0.980	28
		19	5 - 400	10 - 13		32
		20	5.6 - 450	13 - 15		36
	E3H	22	4 - 450	16 - 21	0.970	40
		25	5.6 - 560	21 - 30		44
		26	4 - 450	30 - 36		48
	E4H	28	4 - 450	30 - 38	0.960	52
		28	4 - 450	30 - 38		52
		31	5.6 - 630	38 - 50		56
 Bevel-helical gear units	E3B	18	18 - 315	8 - 10	0.960	60
		19	22.4 - 400	10 - 13		64
		20	25 - 450	13 - 15		68
	E4B	22	18 - 315	16 - 21	0.950	72
		25	22.4 - 400	21 - 30		76
		26	18 - 315	30 - 36		80
	E4B	28	18 - 315	30 - 38	0.950	84
		28	18 - 315	30 - 38		84
		31	25 - 450	38 - 50		88
 Compact drives	E3C	18	25 - 315	8 - 10	0.960	92
		19	31.5 - 400	10 - 13		94
		20	35.5 - 450	13 - 15		96
	E4C	22	25 - 315	16 - 21	0.950	98
		25	31.5 - 400	21 - 30		100
		26	25 - 315	30 - 36		102
	E4C	28	25 - 315	30 - 38	0.950	104
		28	25 - 315	30 - 38		104
		31	35.5 - 450	38 - 50		106

2 Define the ratio required

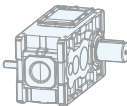
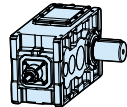
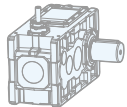
$$i = n_1 / n_2 = 1500 / 22 = 68.2$$

3 Define the demand torque

$$T_2 = (9550 \cdot P_e) / n_2 = (9550 \cdot 44 \text{ kW}) / 22 \text{ rpm} = 19100 \text{ Nm}$$

4 Pre-selection of gearbox checking nominal torque



Type	Size	i_N	T_{N2} [kNm]	Efficiency η		
 Helical gear units	E2H	18	4 - 315	8 - 10	0.980	28
		19	5 - 400	10 - 13		32
		20	5.6 - 450	13 - 15		36
	E3H	22	4 - 450	16 - 21	0.970	40
		25	5.6 - 560	21 - 30		44
		26	4 - 450	30 - 36		48
	E4H	28	4 - 450	30 - 38	0.960	52
		28	4 - 450	30 - 38		52
		31	5.6 - 630	38 - 50		56
 Bevel-helical gear units	E3B	18	18 - 315	8 - 10	0.960	60
		19	22.4 - 400	10 - 13		64
		20	25 - 450	13 - 15		68
	E4B	22	18 - 315	16 - 21	0.950	72
		25	22.4 - 400	21 - 30		76
		26	18 - 315	30 - 36		80
	E4B	28	18 - 315	30 - 38	0.950	84
		28	18 - 315	30 - 38		84
		31	25 - 450	38 - 50		88
 Compact drives	E3C	18	25 - 315	8 - 10	0.960	92
		19	31.5 - 400	10 - 13		94
		20	35.5 - 450	13 - 15		96
	E4C	22	25 - 315	16 - 21	0.950	98
		25	31.5 - 400	21 - 30		100
		26	25 - 315	30 - 36		102
	E4C	28	25 - 315	30 - 38	0.950	104
		28	25 - 315	30 - 38		104
		31	35.5 - 450	38 - 50		106

5 Define Application factor

24

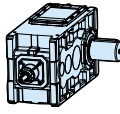
Table 1: Gear unit application factor K_A (1)	Intermitt. Use (0,5 h)	Shifts 2)
Blowers, Ventilators		
Air cooler		1.4...1.5
Axial blowers	0.8	1.0...1.25
Turbo compressors	1	1.25...1.5
Conveyors		
Apron conveyors		1.2...1.5
Band elevators	1	1.25...1.5
Belt conveyors	1.0...1.1	1.2...1.4
Bucket conveyors		1.2...1.5
Canvas belt elevators	1	1.25...1.5

$K_A = 1.4$ (upper value for continuous use)

6 Determine the gearbox size

$$T_{N2} \geq T_2 \cdot K_A = 19100 \cdot 1.4 = 26740 \text{ Nm}$$

Refer to page 27 (technical data summary)
Pre-Selection: **E3B25**



Bevel-helical gear units

Ratio	Input speed [rpm]	Output speed [rpm]	Efficiency [%]	Weight [kg]
18	18-315	8-10		60
19	22.4-400	10-13		64
20	25-450	13-15		68
22	18-315	16-21		72
25	22.4-400	21-30	0.960	76
26	18-315	30-36		80
28	18-315	30-38		84
31	25-450	38-50		88

Refer to page 79 for details on pre-selected size
E3B25 with ratio $i_{eff} = 68.57:1$, $P_N = 65 \text{ kW}$ and $T_{N2} = 28556 \text{ Nm}$

E3B / E4B ...25		50 Hz				30 kNm				Type								
i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [kgm ²]	R1		S5			T6							
						P_{10} [kW]	H_2O	P_{10} [kW]	H_2O	P_{10} [kW]	H_2O							
22.4	23.88	63	29098	191	0.0549	83	233	225	360	92	222	233	344	59	188	198	292	E3B x3
25	26.63	56	28556	168	0.0531	96	238	226	368	108	227	238	351	76	187	196	290	
28	29.85	50	25451	134	0.0507	79	212	225	327	93	203	212	314	60	168	176	260	
31.5	34.29	44	28556	131	0.0275	78	201	225	311	91	195	204	302	79	175	183	270	
35.5	38.24	39	29020	115	0.0266	79	198	225	307	94	192	201	297	81	169	178	262	
40	42.86	35	25629	94	0.0255	71	184	225	288	88	178	187	276	74	157	165	243	
45	47.76	31	28556	94	0.0157	66	166	225	286	80	163	170	251	72	149	156	231	
50	53.27	28	27489	81	0.0152	65	162	225	286	79	158	166	245	71	144	151	223	
56	59.69	25	25629	67	0.0146	65	153	225	286	75	150	162	231	68	136	149	211	
63	68.57	22	28556	65	0.0084	65	133	225	286	66	131	162	207	61	123	149	191	
71	76.48	20	27489	56	0.0082	65	129	225	286	64	127	162	206	59	118	149	189	
80	85.71	18	25629	47	0.0079	65	126	225	286	60	120	162	206	56	111	149	189	

$$T_{N2} \geq 26740 \text{ Nm}$$

$$28556 \text{ Nm} \geq 26740 \text{ Nm} \text{ OK}$$

7 Check the peak torque

$$T_{max} \leq (9550 \cdot P_N) / n_1 \cdot f_E \cdot f_R$$

With operating frequency factor f_E from table 2: $f_E = 1.6$

Table 2: Operating frequency factor f_E

2	1.6	1.4	1.2	1.1	1
with ... load peaks per hour					
1	2-10	11-20	21-50	51-100	>100

With reversal factor f_R from table 3: $f_R = 1.0$

Table 3: Reversal factor f_R

1.0	0.85	0.7
Steady direction of load	reversing very rarely ⁴⁾ or only slightly ⁵⁾	regular reversing operations

$$T_{max} \leq (9550 \cdot 65 \text{ kW}) / 1500 \text{ rpm} \cdot 1.6 \cdot 1 = 662.1 \text{ Nm}$$

$$560 \text{ Nm} \leq 662.1 \text{ Nm} \text{ OK}$$

8 Check thermal capacity

$$P_t \geq P_e$$

$$\text{with } P_t = P_{t_} \cdot f_w \cdot F_H$$

$P_{t_}$ choosing from one of the following:

- P_{t0} Thermal capacity without additional cooling
- P_{t1} Thermal capacity with Fan
- P_{t3} Thermal capacity with cooling coil
- P_{t4} Thermal capacity with fan and cooling coil

With $P_{t0} = 65$ (see page. 79)

E3B / E4B ...25							50 Hz				30 kNm				Type			
i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kg·m ²]	P_{t0} [kW]				P_{t0} [kW]				P_{t0} [kW]				
22.4	23.88	63	29098	191	0.0549	83	233	225	360	92	222	233	344	59	188	198	292	E3B
25	26.63	56	28556	168	0.0531	96	238	226	368	108	227	238	351	76	187	196	290	
28	29.85	50	25451	134	0.0507	79	212	225	327	93	203	212	314	60	168	176	260	
31.5	34.29	44	28556	131	0.0275	78	201	225	311	91	195	204	302	79	175	183	270	
35.5	38.24	39	28020	115	0.0266	79	198	225	307	94	192	201	297	81	169	178	262	
40	42.86	35	25629	94	0.0255	71	184	225	288	88	178	187	276	74	157	165	243	
45	47.76	31	28556	94	0.0157	66	166	225	286	80	163	170	251	72	149	156	231	
50	53.27	28	27489	81	0.0152	65	162	225	286	79	158	166	245	71	144	151	223	
56	59.69	25	25629	67	0.0146	65	153	225	286	75	150	162	231	68	136	149	211	
63	68.57	22	28556	65	0.0084	65	133	225	286	66	131	162	207	61	123	149	191	
71	76.48	20	27489	56	0.0082	65	129	225	286	64	127	162	206	59	118	149	189	
80	85.71	18	25629	47	0.0079	65	126	225	286	60	120	162	206	56	111	149	189	
90	94.29	16	25926	43	0.0078	65	126	225	286	58	115	162	206	53	106	149	189	
100	102.86	15	28020	43	0.0135	54	136	180	229	66	131	137	202	53	105	119	163	

With thermal factor f_w from table below:
 $f_w = 0.86$ for $\vartheta_U = 30$ °C and $ED = 100\%$

f_w					
ϑ_U [°C]	ED %				
	100	80	60	40	20
10	1.14	1.21	1.34	1.53	2.03
20	1.00	1.06	1.17	1.34	1.78
30	0.86	0.91	1.00	1.15	1.53
40	0.71	0.76	0.84	0.96	1.27
50	0.57	0.61	0.67	0.77	1.02

With f_H from table below:
 $f_H = 1.00$

f_H	Altitude H in m above sea level				
	up to 999	1000 - 2000	2000 - 3000	3000 - 4000	4000 - 5000
f_H	1.00	0.95	0.91	0.87	0.83

Gearbox without additional cooling:

$$P_t = 65 \text{ kW} \cdot 0.86 \cdot 1 = 55.9 \text{ kW}$$

$P_e = 44 \text{ kW} < P_t = 55.9 \text{ kW}$: **No additional cooling is necessary**

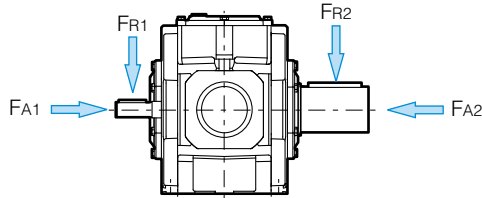
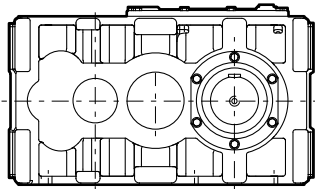
Confirmed Selection:

E3B-25-R11-H11-63-Z0

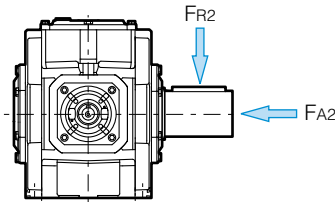
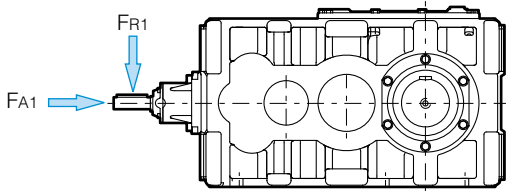
RADIAL AND AXIAL LOADS (ENQUIRY FORM)

To be sent to the Dana area contact person

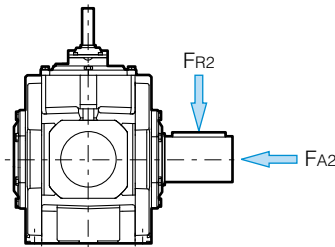
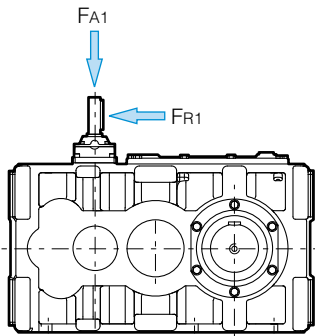
Mr. / Mrs. _____
 Company _____
 Street _____
 Postal code / Locality _____
 Country _____
 Telephone _____
 Telefax _____
 E-Mail _____



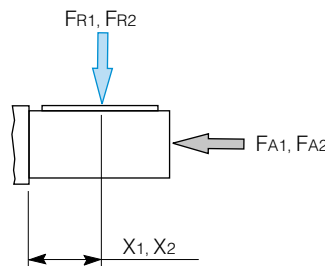
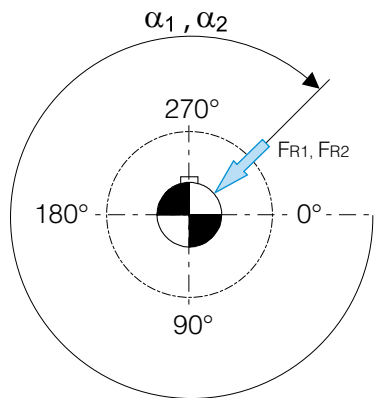
To the verification of the admissible strain of the input shaft and the output shaft due to exterior forces.



Specify please with negative sign the forces working in a direction opposite to the one represented.



Please note the negative sign of distance of load applications on a hollow shaft.



F_{R1} [N] = _____ **Radial loads**
 F_{A1} [N] = _____ **Axial loads**
 X_1 [mm] = _____ **Distance of load application**
 α_1 = _____ **Direction of load**

F_{R2} [N] = _____ **Radial loads**
 F_{A2} [N] = _____ **Axial loads**
 X_2 [mm] = _____ **Distance of load application**
 α_2 = _____ **Direction of load**

Gear unit application factors are in line with DIN standard no. 3990 part 11 (edition 2/89) and are based on our experience for normal operating conditions.

Changes in the necessary drive selection may take place after stating the exact operating conditions.

Table 1: Gear unit application factor K_A 1)	Intermitt. Use (0,5 h)	Shifts 2)
Blowers, Ventilators		
Air cooler		1.4...1.5
Axial blowers	0.8	1.0...1.25
Cooling tower fans	1.2	1.6...1.7
Heat exchangers		1.5
Rotary piston blowers	1	1.25...1.5
Suction draught blower	1	1.25...1.5
Turbo exhauster	0.8	1.0...1.25
Cableways		
Continuous ropeways		1.4...1.6
Freight ways		1.3...1.4
Shuttle cableways		1.4...1.8
T-bar lifts		1.3...1.4
Cement Industry		
Concrete mixers		1.5
Crushers		1.2...1.4
Roller mills		2
Rotary kilns		2
Separators		1.6
Tube mills		1.8
Chemical industry		
Agitators for materials		
with constant density	1	1.3...1.5
with variable density	1.2	1.4...1.6
Agitators with variable gas absorbt.	1.4	1.6...1.8
Centrifuges	1	1.25...1.35
Drying kilns		1.5
Kneading machines		2
Toasters	1	1.3...1.5
Compressors		
Piston compressors		1.8...1.9
Rotary compressors		1.4...1.5
Turbo compressors	1	1.25...1.5
Conveyors		
Apron conveyors		1.2...1.5
Band elevators	1	1.25...1.5
Belt conveyors	1.0...1.1	1.2...1.4
Bucket conveyors		1.2...1.5
Canvas belt elevators	1	1.25...1.5
Cellular bucket belt conveyors	1	1.25...1.5
Chain bucket elevators	1	1.25...1.5
Circular conveyors	1	1.25...1.5
Escalators	1	1.2...1.4
Goods lifts		1.2...1.5
Hoisting engines		1.5...1.8
Passenger lifts		1.5...1.8
Rail travelling devices		1.5
Scraper chain conveyors	1	1.25...1.5
Screw conveyors	1	1.25...1.5
Sinking mine machines	1.5	1.75...2.0
Steel belt conveyors	1	1.25...1.5
Winders	1.4	1.6

Table 1: Gear unit application factor K_A 1)	Intermitt. Use (0,5 h)	Shifts 2)
Cranes Classified acc. to FEM 1001		
Crushers		
Ball crushers		1.75...2.0
Hammer mills		1.75...2.0
Rebound crushers		1.75...2.0
Rod mills		1.75...2.0
Roller mills		2
Swinging crushers		1.75...2.0
Tube mills		1.8
Dredgers		
Bucket chain drives		1.75...1.85
Bucket wheels		1.75...2.2
Cutter heads		2.2
Dumping devices		1.3...1.5
Manoeuvring winches	1	1.25...1.5
Slewing gears		1.4...1.8
Sucking pumps	1	1.25...1.5
Travelling gears (caterpillar)	1.2	1.6...1.8
Travelling gears (rails)	1	1.25...1.5
Food Industry Machinery		
Beet sugar production		
Beet washing machines & cutters		1.5
Slicing machines	1.2	1.2
Juice boilers and refrigerators		1.4
Bottling&container filling machines	0.8	1.25...1.5
Flour bucket elevators	0.8	1.0...1.25
Kneading machines	1	1.25...1.5
Mash tubs	1	1.25...1.5
Packaging machines	0.8	1.0...1.25
Sugar cane crushers		1.25...1.5
Sugar cane knives 3)		1.7
Sugar cane mills 3)		1.7
Generators, Converters (3)		
Frequency converters		1.8...2.0
Generators	0.8	1.0...1.25
Welding generators	1.5	1.75...2.0
Metal Working Machines		
Crank presses		1.75...2.0
Forging presses		1.75...2.0
Hammers		1.75...2.0
Plate bending machines		1.25...1.5
Plate straitening presses		1.75...2.0
Roller levellers		1.6
Stamping presses		1.75...2.0
Metallurgical Industry		
Blast furnace blowers		1.25...1.5
Converters		1.75...2.0
Inclined furnace hoists		1.75...2.0
Mining, Stone an Clay Working Machines		
Conical crushers		2
Endless chain transporters		1.5
Jaw breakers		2
Jolters		1.5
Mine ventilating fans		1.5
Rolling crushers		1.5
Rotary crushers		2
Rotary kilns		2
Separators		1.5
Toothed roll crusher		2
Tub-pushing devices		1.5

Table 1: Gear unit application factor K_A 1)	Intermitt. Use (0,5 h)	Shifts 2)
Oil Industry		
Charging filter pumps		1.25...1.5
Flush boring pumps		1.25...1.5
Pipeline pumps		1.25...1.5
Rotary drilling equipment	1.5	1.75...2.0
Paper Machines for all types		
Presses 3)		1.0...1.1
Pumps		
Centrifugal pumps	1	1.2...1.3
Charge pumps	1.5	1.75...2.0
Piston pumps	1.2...1.3	1.4...1.8
Plunger pumps		2
Sludgers	1	1.25...1.5
Rolling Mills		
Belt winders	1	1.25...1.5
Billet shears		2
Blooming- and slabbing mills		2
Capstan wheels		1.5
Chain transfer		1.5
Cold band rolling mills 3)		1.75...1.85
Cooling bed transfer frames		1.5
Continuous casting drivers 3)		1.4
Continuous shears 3)		1.5
Crank type shears	1	1
Cropping shears		2
De-scaling breakers		2
Drawing bench drives		2
High speed roller tables		1.5
Ingot conveyors		2
Ingot pushers		1.2
Looper		1.5
Loop lifter		1.5
Low speed roller tables		1.5
Plate rolling trains		2
Plate shears		2
Plate tilters	1	1.0...1.2
Plate trimming shears		1.5
Reversing blooming mills		2.5
Reversing plate mills		1.8
Reversing sheet mills		2
Reversing slabbing mills		2.5
Reversing wire mills		1.8
Rod reel & belt winders		1.5
Roll adjustment devices		1.5
Roll weighting drives	0.9	1
Roller straighteners		1.6
Roller tables continuous		1.5
Roller tables intermittent		2
Sintering belt drives		1.5
Straightening & transp. equipment		1.5
Thin sheet rolling trains		2
Transfer skids		1.5
Tube reverse equipment		1.8
Turntables (Continuous casting)		1.5
Walking beam conveyors		2
Winders		1.6
Working roller tables		2

Table 1: Gear unit application factor K_A 1)	Intermitt. Use (0,5 h)	Shifts 2)
Rubber and Plastic Industry Machinery		
Calenders		1.5
Extruders		1.5
Kneading machines		1.8
Mixers	1.0...1.4	1.3...1.7
Rolling mills		2
Rotary cooler		1.3...1.4
Textile Machines		
Calender	1	1.25...1.5
Looms	1	1.25...1.5
Printing and dyeing machines	1	1.25...1.5
Take-up rollers	1	1.25...1.5
Willows	1	1.25...1.5
Water Treatment		
Circular and longitudinal rakes	1	1.3...1.5
Filter presses	1	1.3...1.5
Flocculation agitators	0.8	1.0...1.3
Pre-thickeners		1.1...1.3
Raking equipment	1	1.2...1.3
Rotary aerators		1.5...1.7
Screw pumps		1.3...1.4
Thickeners		1.2
Water wheels		2
Wood Working Machines		
Barkers	1.5	1.75...2.0
Planing machines	1	1.25...1.5
Saw frames	1.5	1.75...2.0

Table 2: Operating frequency factor f_E					
2	1.6	1.4	1.2	1.1	1
with ... load peaks per hour					
1	2-10	11-20	21-50	51-100	>100

Table 3: Reversal factor f_R		
1.0	0.85	0.7
Steady direction of load	reversing very rarely ⁴⁾ or only slightly ⁵⁾	regular reversing operations

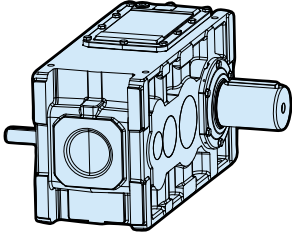
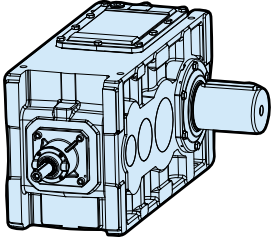
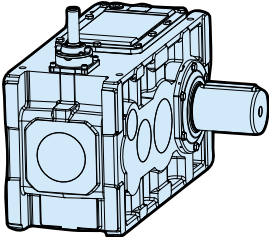
- 1) Application factors apply to the following driving motors: electric motors, turbines and fluid power motors. When combustion engines are the driving force, inquiries have to be made.
- 2) The lower table value is for single shift operation and for lighter applications, the upper table value is for continuous use and heavier applications.
- 3) Design is in accordance with maximum torque.
- 4) Rarely reversing: up to 3 reversing cycles in the lifetime with equal load in both directions.
- 5) Slightly reversing: up to 3 million reversing cycles in the lifetime with a reversing load of up to 40% of the main directional load.



BREVINI[®]

Motion Systems

















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Type		Size	i_N	T_{N2} [kNm]	Efficiency η	Pag.
 <p>Helical gear units</p>	E2H	18	4 - 315	8 - 10	0.980	30
		19	5 - 400	10 - 13		34
		20	5.6 - 450	13 - 15		38
	E3H	22	4 - 450	16 - 21	0.97	42
		25	5.6 - 560	21 - 30		46
		26	4 - 450	30 - 36		50
	E4H	28	4 - 450	30 - 38	0.96	54
		31	5.6 - 630	38 - 50		58
 <p>Bevel-helical gear units</p>	E3B	18	18 - 315	8 - 10	0.960	62
		19	22.4 - 400	10 - 13		66
		20	25 - 450	13 - 15		70
	E4B	22	18 - 315	16 - 21	0.95	74
		25	22.4 - 400	21 - 30		78
		26	18 - 315	30 - 36		82
		28	18 - 315	30 - 38		86
		31	25 - 450	38 - 50		90
 <p>Compact drives</p>	E3C	18	25 - 315	8 - 10	0.96	94
		19	31.5 - 400	10 - 13		96
		20	35.5 - 450	13 - 15		98
	E4C	22	25 - 315	16 - 21	0.95	100
		25	31.5 - 400	21 - 30		102
		26	25 - 315	30 - 36		104
		28	25 - 315	30 - 38		106
		31	35.5 - 450	38 - 50		108

E2H / E3H / E4H ...18

50 Hz


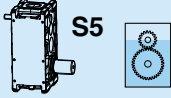
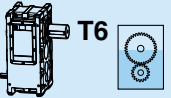







10 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1 				S5 				T6 				Type
							P _{t0} [kW]				P _{t0} [kW]				P _{t0} [kW]				
																			
4	4.00	250	8857	232	0.0313	107	160	143	213	95	161	159	207	89	153	151	199	E2H 	
4.5	4.49	223	8932	208	0.0264	108	157	140	208	97	161	159	207	96	152	151	198		
5	5.06	198	9165	190	0.0222	107	155	138	205	100	161	159	207	98	152	151	198		
5.6	5.72	175	9457	173	0.0195	106	150	136	198	101	159	157	204	100	151	148	195		
6.3	6.35	157	9457	156	0.0162	104	147	134	195	103	157	155	202	101	150	148	192		
7.1	7.26	138	9457	136	0.0134	99	139	133	185	101	150	149	193	98	143	142	184		
8	7.94	126	9457	125	0.0123	92	130	133	173	96	141	139	181	92	134	133	173		
9	9.00	111	9457	110	0.0099	85	119	133	164	90	131	129	168	87	124	123	160		
10	9.90	101	9457	100	0.0094	82	117	133	164	89	128	127	164	85	122	120	156		
11.2	11.44	87	9457	87	0.0073	79	112	133	164	87	123	122	158	82	117	116	150		
12.5	12.71	79	9457	78	0.0068	73	105	133	164	82	116	115	149	78	110	109	142		
14	14.17	71	9457	70	0.0057	70	101	133	164	75	107	106	137	71	101	100	130		
16	16.08	62	9457	62	0.0043	71	102	133	164	78	111	110	143	74	106	105	136		
18	17.79	56	9366	55	0.0039	70	101	133	164	72	103	102	132	69	98	97	126		
16	15.88	63	9457	62	0.0079	57	80	89	110	62	88	86	112	56	80	80	103		
18	17.71	56	9457	56	0.0072	55	79	89	110	60	86	85	110	55	78	77	100		
20	20.10	50	9457	49	0.0063	58	83	89	110	62	89	88	114	56	80	79	103		
22.4	22.48	44	9515	44	0.0047	51	73	89	110	56	80	79	103	52	74	73	95		
25	25.07	40	9366	39	0.0043	50	71	89	110	55	78	77	100	50	71	70	91		
28	28.45	35	9366	34	0.0039	52	74	89	110	56	80	79	103	51	73	72	93		
31.5	31.47	32	9191	31	0.0038	47	68	89	110	50	71	70	91	45	65	64	83		
35.5	35.09	28	9366	28	0.0029	47	68	89	110	47	67	66	86	43	61	61	79		
40	39.82	25	9366	25	0.0027	47	68	89	110	48	68	68	88	44	62	62	80		
45	44.05	23	9191	22	0.0026	47	68	89	110	43	61	64	79	39	56	59	73		
50	51.73	19	9366	19	0.0014	47	68	89	110	42	60	64	79	39	56	59	73		
56	57.70	17	9366	17	0.0014	47	68	89	110	41	59	64	79	38	54	59	73		
63	65.47	15	9366	15	0.0013	47	68	89	110	42	60	64	79	39	55	59	73		
71	72.42	14	9016	13	0.0012	47	68	89	110	37	53	64	79	34	49	59	73		
80	78.96	13	9191	12	0.0009	47	68	89	110	37	52	64	79	34	48	59	73		
90	89.59	11	9191	11	0.0009	47	68	89	110	37	53	64	79	34	49	59	73		
100	99.11	10	9016	10	0.0009	47	68	89	110	34	49	64	79	31	45	59	73		
90	93.28	11	9191	10	0.0011	35	51	67	83	35	50	49	64	30	43	44	55		
100	104.04	10	9191	9	0.0011	35	51	67	83	35	49	49	63	29	41	44	54		
112	118.05	8	9191	8	0.0011	35	51	67	83	36	51	50	65	29	42	44	54		
125	130.59	8	9016	7	0.0011	35	51	67	83	32	45	48	59	26	37	44	54		
140	144.21	7	9191	7	0.0006	35	51	67	83	32	45	48	59	27	39	44	54		
160	160.85	6	9191	6	0.0006	35	51	67	83	31	44	48	59	26	37	44	54		
180	182.52	5	9191	5	0.0006	45	64	68	93	46	65	66	84	35	49	52	66		
200	201.89	5	8844	5	0.0006	35	51	67	83	29	41	48	59	24	34	44	54		
224	233.19	4	9191	4	0.0003	35	51	67	83	28	39	48	59	24	34	44	54		
250	260.10	4	9191	4	0.0003	35	51	67	83	27	39	48	59	23	34	44	54		
280	295.13	3	9191	3	0.0003	35	51	67	83	28	40	48	59	23	34	44	54		
315	326.47	3	8844	3	0.0003	35	51	67	83	25	37	48	59	23	34	44	54		

E2H / E3H / E4H ...18

50 Hz













10 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	 R1				 S5				 T6				Type			
							P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		
n₁ = 1500 rpm	4	4.00	375	8857	348	0.0313	76	166	133	221	50	98	96	143	46	90	88	131	E2H 			
	4.5	4.49	334	8932	312	0.0264	80	168	137	222	50	98	96	143	46	90	88	131				
	5	5.06	296	9165	285	0.0222	88	170	139	222	50	98	96	145	46	90	88	135				
	5.6	5.72	262	9457	260	0.0195	91	170	142	219	50	98	96	154	46	90	88	144				
	6.3	6.35	236	9457	234	0.0162	92	169	141	217	50	103	101	159	46	91	89	151				
	7.1	7.26	207	9457	205	0.0134	90	162	136	207	55	111	110	163	46	101	100	152				
	8	7.94	189	9457	187	0.0123	87	152	133	199	56	111	109	157	54	101	100	146				
	9	9.00	167	9457	165	0.0099	82	139	133	199	58	107	106	152	52	101	100	139				
	10	9.90	152	9457	150	0.0094	82	138	133	199	60	109	108	151	57	102	101	139				
	11.2	11.44	131	9457	130	0.0073	80	136	133	199	65	109	108	146	59	100	99	136				
	12.5	12.71	118	9457	117	0.0068	75	136	133	199	65	105	104	143	59	97	95	131				
	14	14.17	106	9457	105	0.0057	70	136	133	199	63	99	98	143	59	91	89	131				
	16	16.08	93	9457	92	0.0043	71	136	133	199	67	101	100	143	62	94	93	131				
	18	17.79	84	9366	83	0.0039	70	136	133	199	63	98	96	143	58	90	88	131				
	16	15.88	94	9457	94	0.0079	56	92	89	133	44	74	74	101	31	63	63	89				
	18	17.71	85	9457	84	0.0072	58	92	89	133	49	78	77	100	38	66	63	88				
	20	20.10	75	9457	74	0.0063	59	96	89	133	53	80	79	103	41	68	68	88				
	22.4	22.48	67	9515	66	0.0047	51	91	89	133	47	73	72	96	40	65	64	88				
25	25.07	60	9366	59	0.0043	50	91	89	133	49	71	70	96	40	62	62	88					
28	28.45	53	9366	52	0.0039	52	91	89	133	51	72	72	96	43	63	62	88					
31.5	31.47	48	9191	46	0.0038	47	91	89	133	45	66	64	96	38	60	59	88					
35.5	35.09	43	9366	42	0.0029	47	91	89	133	43	66	64	96	38	60	59	88					
40	39.82	38	9366	37	0.0027	47	91	89	133	44	66	64	96	38	60	59	88					
45	44.05	34	9191	33	0.0026	47	91	89	133	39	66	64	96	34	60	59	88					
50	51.73	29	9366	28	0.0014	47	91	89	133	39	66	64	96	35	60	59	88					
56	57.70	26	9366	25	0.0014	47	91	89	133	38	66	64	96	34	60	59	88					
63	65.47	23	9366	22	0.0013	47	91	89	133	38	66	64	96	34	60	59	88					
71	72.42	21	9016	20	0.0012	47	91	89	133	34	66	64	96	31	60	59	88					
80	78.96	19	9191	18	0.0009	47	91	89	133	34	66	64	96	31	60	59	88					
90	89.59	17	9191	16	0.0009	47	91	89	133	34	66	64	96	31	60	59	88					
100	99.11	15	9016	14	0.0009	47	91	89	133	34	66	64	96	31	60	59	88					
90	93.28	16	9191	15	0.0011	35	68	67	100	33	49	48	72	26	45	44	66					
100	104.04	14	9191	14	0.0011	35	68	67	100	32	49	48	72	25	45	44	66					
112	118.05	13	9191	12	0.0011	35	68	67	100	33	49	48	72	25	45	44	66					
125	130.59	11	9016	11	0.0011	35	68	67	100	29	49	48	72	23	45	44	66					
140	144.21	10	9191	10	0.0006	35	68	67	100	30	49	48	72	24	45	44	66					
160	160.85	9	9191	9	0.0006	35	68	67	100	29	49	48	72	23	45	44	66					
180	182.52	8	9191	8	0.0006	43	77	69	105	41	62	61	83	28	46	45	66					
200	201.89	7	8844	7	0.0006	35	68	67	100	26	49	48	72	23	45	44	66					
224	233.19	6	9191	6	0.0003	35	68	67	100	26	49	48	72	23	45	44	66					
250	260.10	6	9191	6	0.0003	35	68	67	100	25	49	48	72	23	45	44	66					
280	295.13	5	9191	5	0.0003	35	68	67	100	26	49	48	72	23	45	44	66					
315	326.47	5	8844	4	0.0003	35	68	67	100	25	49	48	72	23	45	44	66					

E2H / E3H / E4H ...18

60 Hz

10 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1 				S5 				T6 				Type			
							P _{t0} [kW]					P _{t0} [kW]					P _{t0} [kW]					
n ₁ = 1200 rpm	4	4.00	300	8857	278	0.0313	95	153	134	209	50	115	114	181	46	107	106	169	E2H 			
	4.5	4.49	267	8932	250	0.0264	98	153	134	206	57	124	119	184	51	116	115	172				
	5	5.06	237	9165	228	0.0222	100	153	135	204	67	132	128	191	59	125	120	176				
	5.6	5.72	210	9457	208	0.0195	101	150	134	200	76	135	134	191	68	128	126	177				
	6.3	6.35	189	9457	187	0.0162	101	149	133	197	81	140	136	190	73	132	128	179				
	7.1	7.26	165	9457	164	0.0134	98	142	133	188	84	138	134	184	81	130	128	173				
	8	7.94	151	9457	150	0.0123	92	133	133	175	82	131	130	173	77	124	122	163				
	9	9.00	133	9457	132	0.0099	85	122	133	164	80	124	122	161	76	116	115	152				
	10	9.90	121	9457	120	0.0094	82	119	133	164	80	123	121	157	74	115	113	148				
	11.2	11.44	105	9457	104	0.0073	78	113	133	164	79	118	117	152	74	111	110	143				
	12.5	12.71	94	9457	94	0.0068	73	106	133	164	76	112	110	143	70	105	103	135				
	14	14.17	85	9457	84	0.0057	70	101	133	164	71	102	101	132	65	96	95	124				
	16	16.08	75	9457	74	0.0043	71	103	133	164	75	106	105	136	69	100	98	128				
	18	17.79	67	9366	66	0.0039	70	101	133	164	69	98	98	126	64	92	91	118				
	16	15.88	76	9457	75	0.0079	56	82	89	110	56	83	82	107	46	75	74	96		E3H 		
	18	17.71	68	9457	67	0.0072	56	81	89	110	56	82	81	105	48	72	71	93				
	20	20.10	60	9457	59	0.0063	58	84	89	112	59	84	83	108	50	74	73	95				
	22.4	22.48	53	9515	53	0.0047	51	74	89	110	54	76	76	98	47	69	68	89				
25	25.07	48	9366	47	0.0043	50	72	89	110	52	74	73	95	46	66	65	85					
28	28.45	42	9366	41	0.0039	52	75	89	110	53	76	75	98	47	67	66	86					
31.5	31.47	38	9191	37	0.0038	47	68	89	110	47	67	67	87	41	60	59	77					
35.5	35.09	34	9366	34	0.0029	47	68	89	110	45	64	64	82	40	57	59	74					
40	39.82	30	9366	30	0.0027	47	68	89	110	46	65	64	83	40	58	59	74					
45	44.05	27	9191	26	0.0026	47	68	89	110	41	58	64	79	36	52	59	73					
50	51.73	23	9366	23	0.0014	47	68	89	110	41	58	64	79	37	53	59	73					
56	57.70	21	9366	20	0.0014	47	68	89	110	40	56	64	79	35	51	59	73					
63	65.47	18	9366	18	0.0013	47	68	89	110	40	57	64	79	35	51	59	73					
71	72.42	17	9016	16	0.0012	47	68	89	110	36	51	64	79	32	45	59	73					
80	78.96	15	9191	15	0.0009	47	68	89	110	35	50	64	79	31	45	59	73					
90	89.59	13	9191	13	0.0009	47	68	89	110	35	50	64	79	31	45	59	73					
100	99.11	12	9016	11	0.0009	47	68	89	110	34	49	64	79	31	45	59	73					
90	93.28	13	9191	12	0.0011	35	51	67	83	34	49	48	62	28	40	44	54	E4H 				
100	104.04	12	9191	11	0.0011	35	51	67	83	34	48	48	61	26	38	44	54					
112	118.05	10	9191	10	0.0011	35	51	67	83	34	49	48	62	26	38	44	54					
125	130.59	9	9016	9	0.0011	35	51	67	83	31	44	48	59	24	34	44	54					
140	144.21	8	9191	8	0.0006	35	51	67	83	31	44	48	59	25	36	44	54					
160	160.85	7	9191	7	0.0006	35	51	67	83	30	43	48	59	24	34	44	54					
180	182.52	7	9191	6	0.0006	44	64	67	92	43	61	63	80	30	43	48	61					
200	201.89	6	8844	6	0.0006	35	51	67	83	27	39	48	59	23	34	44	54					
224	233.19	5	9191	5	0.0003	35	51	67	83	27	38	48	59	23	34	44	54					
250	260.10	5	9191	4	0.0003	35	51	67	83	26	37	48	59	23	34	44	54					
280	295.13	4	9191	4	0.0003	35	51	67	83	27	38	48	59	23	34	44	54					
315	326.47	4	8844	3	0.0003	35	51	67	83	25	37	48	59	23	34	44	54					

E2H / E3H / E4H ...18

60 Hz
















10 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kg·m ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O					
								+	-		+	-		+	-	+	-		
n₁ = 1800 rpm	4	4.00	450	8857	417	0.0313	70	144	133	205	50	98	96	143	46	90	88	131	E2H
	4.5	4.49	401	8932	375	0.0264	70	150	133	210	50	98	96	143	46	90	88	131	
	5	5.06	356	9165	341	0.0222	77	160	133	215	50	98	96	143	46	90	88	131	
	5.6	5.72	315	9457	312	0.0195	87	163	133	215	50	98	96	143	46	90	88	131	
	6.3	6.35	283	9457	281	0.0162	87	167	135	215	50	98	96	143	46	90	88	131	
	7.1	7.26	248	9457	246	0.0134	86	162	137	207	50	98	96	143	46	90	88	131	
	8	7.94	227	9457	225	0.0123	83	152	133	199	50	98	96	143	46	90	88	131	
	9	9.00	200	9457	198	0.0099	78	141	133	199	50	98	96	143	46	90	88	131	
	10	9.90	182	9457	180	0.0094	76	138	133	199	50	98	96	143	46	90	88	131	
	11.2	11.44	157	9457	156	0.0073	74	136	133	199	50	98	96	143	46	90	88	131	
	12.5	12.71	142	9457	140	0.0068	71	136	133	199	50	98	96	143	46	90	88	131	
	14	14.17	127	9457	126	0.0057	70	136	133	199	50	98	96	143	46	90	88	131	
	16	16.08	112	9457	111	0.0043	70	136	133	199	51	98	96	143	47	90	88	131	
	18	17.79	101	9366	99	0.0039	70	136	133	199	52	98	96	143	46	90	88	131	
	16	15.88	113	9457	112	0.0079	53	92	89	133	34	66	64	96	31	60	59	88	
	18	17.71	102	9457	101	0.0072	58	93	89	133	34	66	64	96	31	60	59	88	
	20	20.10	90	9457	89	0.0063	59	98	89	133	34	68	66	96	31	60	59	88	
	22.4	22.48	80	9515	80	0.0047	51	91	89	133	34	66	64	96	31	60	59	88	
25	25.07	72	9366	70	0.0043	51	91	89	133	39	66	64	96	31	60	59	88		
28	28.45	63	9366	62	0.0039	52	91	89	133	41	66	64	96	31	60	59	88		
31.5	31.47	57	9191	55	0.0038	47	91	89	133	36	66	64	96	31	60	59	88		
35.5	35.09	51	9366	50	0.0029	47	91	89	133	37	66	64	96	31	60	59	88		
40	39.82	45	9366	44	0.0027	47	91	89	133	39	66	64	96	32	60	59	88		
45	44.05	41	9191	39	0.0026	47	91	89	133	35	66	64	96	31	60	59	88		
50	51.73	35	9366	34	0.0014	47	91	89	133	36	66	64	96	32	60	59	88		
56	57.70	31	9366	31	0.0014	47	91	89	133	34	66	64	96	31	60	59	88		
63	65.47	27	9366	27	0.0013	47	91	89	133	34	66	64	96	31	60	59	88		
71	72.42	25	9016	23	0.0012	47	91	89	133	34	66	64	96	31	60	59	88		
80	78.96	23	9191	22	0.0009	47	91	89	133	34	66	64	96	31	60	59	88		
90	89.59	20	9191	19	0.0009	47	91	89	133	34	66	64	96	31	60	59	88		
100	99.11	18	9016	17	0.0009	47	91	89	133	34	66	64	96	31	60	59	88		
90	93.28	19	9191	19	0.0011	35	68	67	100	31	49	48	72	24	45	44	66		
100	104.04	17	9191	17	0.0011	35	68	67	100	29	49	48	72	23	45	44	66		
112	118.05	15	9191	15	0.0011	35	68	67	100	30	49	48	72	23	45	44	66		
125	130.59	14	9016	13	0.0011	35	68	67	100	27	49	48	72	23	45	44	66		
140	144.21	12	9191	12	0.0006	35	68	67	100	27	49	48	72	23	45	44	66		
160	160.85	11	9191	11	0.0006	35	68	67	100	26	49	48	72	23	45	44	66		
180	182.52	10	9191	9	0.0006	43	77	70	105	36	57	56	77	26	45	44	66		
200	201.89	9	8844	8	0.0006	35	68	67	100	25	49	48	72	23	45	44	66		
224	233.19	8	9191	7	0.0003	35	68	67	100	25	49	48	72	23	45	44	66		
250	260.10	7	9191	7	0.0003	35	68	67	100	25	49	48	72	23	45	44	66		
280	295.13	6	9191	6	0.0003	35	68	67	100	25	49	48	72	23	45	44	66		
315	326.47	6	8844	5	0.0003	35	68	67	100	25	49	48	72	23	45	44	66		
																		E4H 	

E2H / E3H / E4H ...19

50 Hz


















13 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1 				S5 				T6 				Type
							P _{t0} [kW]			P _{t0} [kW]			P _{t0} [kW]						
																			
5	4.96	202	10916	230	0.0409	114	171	189	225	107	178	165	224	106	172	158	216	E2H 	
5.6	5.57	180	11106	209	0.0340	112	165	189	223	108	176	162	221	107	170	155	213		
6.3	6.28	159	11390	190	0.0282	110	163	189	223	110	174	160	219	107	168	154	211		
7.1	7.09	141	12245	181	0.0242	104	154	189	223	107	167	154	209	104	161	148	202		
8	7.88	127	12174	162	0.0200	97	144	189	223	102	156	144	196	98	151	138	189		
9	9.01	111	12316	143	0.0163	90	132	189	223	95	145	136	182	92	139	128	175		
10	9.85	102	12316	131	0.0147	87	129	189	223	94	142	136	178	90	136	126	171		
11.2	11.17	90	12316	115	0.0118	83	124	189	223	91	136	136	171	87	131	124	165		
12.5	12.29	81	12316	105	0.0110	80	117	189	223	86	129	136	163	82	124	124	155		
14	14.19	70	12316	91	0.0085	80	115	189	223	79	119	136	161	76	114	124	147		
16	15.76	63	12316	82	0.0077	80	115	189	223	82	123	136	161	79	118	124	150		
18	17.58	57	12301	73	0.0064	80	115	189	223	76	114	136	161	73	109	124	147		
20	19.95	50	11889	62	0.0049	80	115	189	223	80	120	136	161	77	116	124	147		
22.4	22.07	45	11639	55	0.0044	80	115	189	223	84	126	136	161	81	122	124	153		
20	19.71	51	12301	65	0.0085	61	92	130	154	65	98	94	123	60	90	86	112		E3H 
22.4	21.98	45	12301	59	0.0077	54	81	130	154	59	88	94	111	55	82	86	104		
25	24.94	40	11960	50	0.0067	53	79	130	154	57	86	94	111	53	79	86	101		
28	27.89	36	12301	46	0.0050	55	82	130	154	59	89	94	111	54	81	86	102		
31.5	31.11	32	12301	41	0.0046	53	77	130	154	52	79	94	111	48	72	86	101		
35.5	35.30	28	11858	35	0.0041	53	77	130	154	49	74	94	111	46	69	86	101		
40	39.05	26	11423	31	0.0039	53	77	130	154	50	76	94	111	46	70	86	101		
45	43.54	23	12078	29	0.0030	53	77	130	154	45	68	94	111	41	62	86	101		
50	49.41	20	11858	25	0.0028	53	77	130	154	44	66	94	111	41	62	86	101		
56	54.65	18	11208	21	0.0027	53	77	130	154	43	65	94	111	41	61	86	101		
63	64.18	16	12078	20	0.0015	53	77	130	154	44	66	94	111	41	61	86	101		
71	71.59	14	12078	18	0.0014	53	77	130	154	39	59	94	111	36	55	86	101		
80	81.23	12	11639	15	0.0013	53	77	130	154	38	58	94	111	36	54	86	101		
90	89.86	11	11208	13	0.0013	53	77	130	154	39	59	94	111	36	54	86	101		
100	97.97	10	12078	13	0.0009	53	77	130	154	38	55	94	111	35	50	86	101		
112	111.16	9	11639	11	0.0009	53	77	130	154	39	59	94	111	37	55	86	101		
125	122.96	8	11208	10	0.0009	53	77	130	154	40	60	94	111	37	56	86	101		
112	115.73	9	12078	11	0.0011	40	57	98	115	37	56	70	83	31	47	64	76	E4H 	
125	129.09	8	12078	10	0.0011	40	57	98	115	33	50	70	83	28	42	64	76		
140	146.47	7	11639	8	0.0011	40	57	98	115	33	50	70	83	29	43	64	76		
160	162.02	6	10996	7	0.0011	40	57	98	115	33	49	70	83	28	42	64	76		
180	178.93	6	11858	7	0.0006	48	72	98	115	48	72	79	101	37	55	64	81		
200	199.57	5	11858	6	0.0006	40	57	98	115	30	45	70	83	26	38	64	76		
224	226.45	4	11423	5	0.0006	40	57	98	115	29	44	70	83	26	38	64	76		
250	250.50	4	10996	5	0.0006	40	57	98	115	29	43	70	83	26	38	64	76		
280	289.33	3	11858	4	0.0003	40	57	98	115	29	44	70	83	26	38	64	76		
315	322.71	3	11858	4	0.0003	40	57	98	115	28	41	70	83	26	38	64	76		
355	366.18	3	11423	3	0.0003	40	57	98	115	29	43	70	83	26	38	64	76		
400	405.06	2	10996	3	0.0003	40	57	98	115	30	44	70	83	26	39	64	76		

E2H / E3H / E4H ...19

50 Hz

13 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kg·m ²]	R1 				S5 				T6 				Type
							P _{t0} [kW]			P _{t0} [kW]			P _{t0} [kW]						
																			
E2H 	5	4.96	302	10916	346	0.0409	96	190	189	262	57	111	136	188	52	102	124	173	
	5.6	5.57	269	11106	313	0.0340	98	188	189	262	57	115	136	188	52	109	124	173	
	6.3	6.28	239	11390	285	0.0282	98	187	189	262	57	130	136	188	52	120	124	174	
	7.1	7.09	212	12245	271	0.0242	97	179	189	262	62	132	136	188	56	125	124	175	
	8	7.88	190	12174	243	0.0200	94	168	189	262	59	128	136	188	57	121	124	173	
	9	9.01	166	12316	215	0.0163	89	156	189	262	64	123	136	188	59	117	124	173	
	10	9.85	152	12316	196	0.0147	88	155	189	262	66	125	136	188	61	117	124	173	
	11.2	11.17	134	12316	173	0.0118	84	155	189	262	71	124	136	188	65	116	124	173	
	12.5	12.29	122	12316	157	0.0110	80	155	189	262	71	119	136	188	65	111	124	173	
	14	14.19	106	12316	136	0.0085	80	155	189	262	66	111	136	188	62	103	124	173	
	16	15.76	95	12316	123	0.0077	80	155	189	262	71	113	136	188	67	106	124	173	
	18	17.58	85	12301	110	0.0064	80	155	189	262	67	111	136	188	63	102	124	173	
20	19.95	75	11889	94	0.0049	80	155	189	262	69	112	136	188	67	106	124	173		
22.4	22.07	68	11639	83	0.0044	80	155	189	262	74	116	136	188	71	111	124	173		
E3H 	20	19.71	76	12301	98	0.0085	62	107	130	180	56	89	94	130	46	77	86	119	
	22.4	21.98	68	12301	88	0.0077	54	103	130	180	51	81	94	130	44	73	86	119	
	25	24.94	60	11960	75	0.0067	53	103	130	180	51	78	94	130	44	70	86	119	
	28	27.89	54	12301	69	0.0050	55	103	130	180	53	80	94	130	47	70	86	119	
	31.5	31.11	48	12301	62	0.0046	53	103	130	180	47	74	94	130	41	68	86	119	
	35.5	35.30	42	11858	53	0.0041	53	103	130	180	45	74	94	130	40	68	86	119	
	40	39.05	38	11423	46	0.0039	53	103	130	180	46	74	94	130	40	68	86	119	
	45	43.54	34	12078	44	0.0030	53	103	130	180	41	74	94	130	36	68	86	119	
	50	49.41	30	11858	38	0.0028	53	103	130	180	41	74	94	130	37	68	86	119	
	56	54.65	27	11208	32	0.0027	53	103	130	180	40	74	94	130	36	68	86	119	
	63	64.18	23	12078	30	0.0015	53	103	130	180	40	74	94	130	35	68	86	119	
	71	71.59	21	12078	27	0.0014	53	103	130	180	38	74	94	130	35	68	86	119	
80	81.23	18	11639	23	0.0013	53	103	130	180	38	74	94	130	35	68	86	119		
90	89.86	17	11208	20	0.0013	53	103	130	180	38	74	94	130	35	68	86	119		
100	97.97	15	12078	19	0.0009	53	103	130	180	38	74	94	130	35	68	86	119		
112	111.16	13	11639	16	0.0009	53	103	130	180	38	74	94	130	35	68	86	119		
125	122.96	12	11208	14	0.0009	53	103	130	180	38	74	94	130	35	68	86	119		
E4H 	112	115.73	13	12078	16	0.0011	40	77	98	135	34	56	70	97	26	51	64	89	
	125	129.09	12	12078	15	0.0011	40	77	98	135	31	56	70	97	26	51	64	89	
	140	146.47	10	11639	12	0.0011	40	77	98	135	31	56	70	97	26	51	64	89	
	160	162.02	9	10996	11	0.0011	40	77	98	135	30	56	70	97	26	51	64	89	
	180	178.93	8	11858	10	0.0006	47	86	98	135	43	69	73	100	30	52	64	89	
	200	199.57	8	11858	9	0.0006	40	77	98	135	28	56	70	97	26	51	64	89	
	224	226.45	7	11423	8	0.0006	40	77	98	135	28	56	70	97	26	51	64	89	
	250	250.50	6	10996	7	0.0006	40	77	98	135	28	56	70	97	26	51	64	89	
	280	289.33	5	11858	6	0.0003	40	77	98	135	28	56	70	97	26	51	64	89	
	315	322.71	5	11858	6	0.0003	40	77	98	135	28	56	70	97	26	51	64	89	
	355	366.18	4	11423	5	0.0003	40	77	98	135	28	56	70	97	26	51	64	89	
	400	405.06	4	10996	4	0.0003	40	77	98	135	28	56	70	97	26	51	64	89	

E2H / E3H / E4H ...19

60 Hz
















13 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]		H ₂ O		P _{t0} [kW]		H ₂ O		P _{t0} [kW]		H ₂ O		
							107	170	189	225	76	153	137	207	69	146	131	197	
5	4.96	242	10916	277	0.0409	107	170	189	225	76	153	137	207	69	146	131	197	E2H 	
5.6	5.57	215	11106	251	0.0340	108	167	189	223	80	155	138	207	79	151	134	198		
6.3	6.28	191	11390	228	0.0282	108	165	189	223	89	160	143	206	88	152	136	196		
7.1	7.09	169	12245	217	0.0242	104	157	189	223	91	156	141	199	87	149	134	190		
8	7.88	152	12174	194	0.0200	97	147	189	223	88	149	138	187	86	142	128	178		
9	9.01	133	12316	172	0.0163	89	135	189	223	85	138	136	174	82	132	124	166		
10	9.85	122	12316	157	0.0147	87	132	189	223	84	136	136	171	82	129	124	162		
11.2	11.17	107	12316	139	0.0118	83	126	189	223	84	131	136	165	80	125	124	156		
12.5	12.29	98	12316	126	0.0110	80	118	189	223	80	124	136	161	76	117	124	149		
14	14.19	85	12316	109	0.0085	80	115	189	223	75	113	136	161	71	108	124	147		
16	15.76	76	12316	98	0.0077	80	115	189	223	78	117	136	161	74	112	124	147		
18	17.58	68	12301	88	0.0064	80	115	189	223	72	109	136	161	69	103	124	147		
20	19.95	60	11889	75	0.0049	80	115	189	223	77	116	136	161	73	111	124	147		
22.4	22.07	54	11639	66	0.0044	80	115	189	223	80	121	136	161	77	116	124	148		
20	19.71	61	12301	78	0.0085	61	94	130	154	62	93	94	117	55	82	86	103		
22.4	21.98	55	12301	70	0.0077	54	82	130	154	56	85	94	111	51	77	86	101		
25	24.94	48	11960	60	0.0067	53	80	130	154	55	82	94	111	49	74	86	101		
28	27.89	43	12301	55	0.0050	55	84	130	154	56	84	94	111	50	75	86	101		
31.5	31.11	39	12301	50	0.0046	53	77	130	154	50	75	94	111	44	67	86	101		
35.5	35.30	34	11858	42	0.0041	53	77	130	154	47	71	94	111	43	64	86	101		
40	39.05	31	11423	37	0.0039	53	77	130	154	48	72	94	111	43	65	86	101		
45	43.54	28	12078	35	0.0030	53	77	130	154	43	64	94	111	39	58	86	101		
50	49.41	24	11858	30	0.0028	53	77	130	154	42	64	94	111	39	59	86	101		
56	54.65	22	11208	26	0.0027	53	77	130	154	42	62	94	111	38	57	86	101		
63	64.18	19	12078	24	0.0015	53	77	130	154	42	63	94	111	38	57	86	101		
71	71.59	17	12078	21	0.0014	53	77	130	154	38	56	94	111	35	51	86	101		
80	81.23	15	11639	18	0.0013	53	77	130	154	38	55	94	111	35	51	86	101		
90	89.86	13	11208	16	0.0013	53	77	130	154	38	55	94	111	35	51	86	101		
100	97.97	12	12078	15	0.0009	53	77	130	154	38	55	94	111	35	50	86	101		
112	111.16	11	11639	13	0.0009	53	77	130	154	38	56	94	111	35	52	86	101		
125	122.96	10	11208	11	0.0009	53	77	130	154	38	57	94	111	35	53	86	101		
112	115.73	10	12078	13	0.0011	40	57	98	115	36	54	70	83	28	42	64	76		
125	129.09	9	12078	12	0.0011	40	57	98	115	32	48	70	83	26	38	64	76		
140	146.47	8	11639	10	0.0011	40	57	98	115	32	48	70	83	27	40	64	76		
160	162.02	7	10996	9	0.0011	40	57	98	115	31	47	70	83	26	38	64	76		
180	178.93	7	11858	8	0.0006	48	71	98	115	45	68	75	96	32	48	64	76		
200	199.57	6	11858	7	0.0006	40	57	98	115	29	43	70	83	26	38	64	76		
224	226.45	5	11423	6	0.0006	40	57	98	115	28	42	70	83	26	38	64	76		
250	250.50	5	10996	6	0.0006	40	57	98	115	28	42	70	83	26	38	64	76		
280	289.33	4	11858	5	0.0003	40	57	98	115	28	42	70	83	26	38	64	76		
315	322.71	4	11858	5	0.0003	40	57	98	115	28	41	70	83	26	38	64	76		
355	366.18	3	11423	4	0.0003	40	57	98	115	28	42	70	83	26	38	64	76		
400	405.06	3	10996	3	0.0003	40	57	98	115	29	43	70	83	26	38	64	76		

E2H / E3H / E4H ...19

60 Hz

13 kNm



















	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1 				S5 				T6 				Type
							P _{t0} [kW]			P _{t0} [kW]			P _{t0} [kW]						
																			
5	4.96	363	10916	415	0.0409	87	183	189	262	57	111	136	188	52	102	124	173	E2H 	
5.6	5.57	323	11106	376	0.0340	92	186	189	262	57	111	136	188	52	102	124	173		
6.3	6.28	287	11390	342	0.0282	92	185	189	262	57	111	136	188	52	102	124	173		
7.1	7.09	254	12245	326	0.0242	92	180	189	262	57	111	136	188	52	102	124	173		
8	7.88	228	12174	291	0.0200	88	168	189	262	57	111	136	188	52	102	124	173		
9	9.01	200	12316	258	0.0163	83	157	189	262	57	111	136	188	52	102	124	173		
10	9.85	183	12316	236	0.0147	83	155	189	262	57	111	136	188	52	102	124	173		
11.2	11.17	161	12316	208	0.0118	81	155	189	262	57	111	136	188	52	102	124	173		
12.5	12.29	146	12316	189	0.0110	80	155	189	262	57	111	136	188	52	102	124	173		
14	14.19	127	12316	164	0.0085	80	155	189	262	57	111	136	188	52	102	124	173		
16	15.76	114	12316	147	0.0077	80	155	189	262	58	111	136	188	52	102	124	173		
18	17.58	102	12301	132	0.0064	80	155	189	262	57	111	136	188	53	102	124	173		
20	19.95	90	11889	112	0.0049	80	155	189	262	57	111	136	188	52	102	124	173		
22.4	22.07	82	11639	99	0.0044	80	155	189	262	62	111	136	188	57	103	124	173		
20	19.71	91	12301	118	0.0085	62	108	130	180	40	78	94	130	35	68	86	119	E3H 	
22.4	21.98	82	12301	105	0.0077	54	103	130	180	38	74	94	130	35	68	86	119		
25	24.94	72	11960	90	0.0067	54	103	130	180	41	74	94	130	35	68	86	119		
28	27.89	65	12301	83	0.0050	55	103	130	180	45	74	94	130	35	68	86	119		
31.5	31.11	58	12301	75	0.0046	53	103	130	180	39	74	94	130	35	68	86	119		
35.5	35.30	51	11858	63	0.0041	53	103	130	180	40	74	94	130	35	68	86	119		
40	39.05	46	11423	55	0.0039	53	103	130	180	41	74	94	130	35	68	86	119		
45	43.54	41	12078	52	0.0030	53	103	130	180	38	74	94	130	35	68	86	119		
50	49.41	36	11858	45	0.0028	53	103	130	180	38	74	94	130	35	68	86	119		
56	54.65	33	11208	39	0.0027	53	103	130	180	38	74	94	130	35	68	86	119		
63	64.18	28	12078	35	0.0015	53	103	130	180	38	74	94	130	35	68	86	119		
71	71.59	25	12078	32	0.0014	53	103	130	180	38	74	94	130	35	68	86	119		
80	81.23	22	11639	27	0.0013	53	103	130	180	38	74	94	130	35	68	86	119		
90	89.86	20	11208	24	0.0013	53	103	130	180	38	74	94	130	35	68	86	119		
100	97.97	18	12078	23	0.0009	53	103	130	180	38	74	94	130	35	68	86	119		
112	111.16	16	11639	20	0.0009	53	103	130	180	38	74	94	130	35	68	86	119		
125	122.96	15	11208	17	0.0009	53	103	130	180	38	74	94	130	35	68	86	119		
112	115.73	16	12078	20	0.0011	40	77	98	135	31	56	70	97	26	51	64	89	E4H 	
125	129.09	14	12078	18	0.0011	40	77	98	135	28	56	70	97	26	51	64	89		
140	146.47	12	11639	15	0.0011	40	77	98	135	29	56	70	97	26	51	64	89		
160	162.02	11	10996	13	0.0011	40	77	98	135	28	56	70	97	26	51	64	89		
180	178.93	10	11858	12	0.0006	47	86	98	135	38	64	70	97	28	51	64	89		
200	199.57	9	11858	11	0.0006	40	77	98	135	28	56	70	97	26	51	64	89		
224	226.45	8	11423	10	0.0006	40	77	98	135	28	56	70	97	26	51	64	89		
250	250.50	7	10996	8	0.0006	40	77	98	135	28	56	70	97	26	51	64	89		
280	289.33	6	11858	8	0.0003	40	77	98	135	28	56	70	97	26	51	64	89		
315	322.71	6	11858	7	0.0003	40	77	98	135	28	56	70	97	26	51	64	89		
355	366.18	5	11423	6	0.0003	40	77	98	135	28	56	70	97	26	51	64	89		
400	405.06	4	10996	5	0.0003	40	77	98	135	28	56	70	97	26	51	64	89		



E2H / E3H / E4H ...20

50 Hz

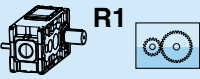












15 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	R1				S5				T6				Type
																			
							P_{t0} [kW]				P_{t0} [kW]				P_{t0} [kW]				
5.6	5.77	173	13526	245	0.0466	138	203	253	344	103	209	272	335	140	205	266	328	E2H 	
6.3	6.49	154	12968	209	0.0385	135	199	247	336	103	209	271	334	138	203	263	325		
7.1	7.31	137	13344	191	0.0318	134	195	245	329	103	208	270	333	138	202	261	323		
8	8.26	121	14472	183	0.0269	130	188	244	319	103	205	265	327	136	198	257	317		
9	9.18	109	14190	162	0.0223	127	185	244	313	103	201	261	322	134	195	252	311		
10	10.49	95	14472	144	0.0181	120	175	244	296	103	191	248	307	129	185	240	296		
11.2	11.47	87	14472	132	0.0162	112	164	244	282	103	180	233	288	121	174	225	278		
12.5	13.00	77	14236	115	0.0129	102	150	244	282	103	167	216	267	112	161	208	257		
14	14.30	70	14236	104	0.0119	100	147	244	282	103	163	212	261	109	157	204	251		
16	16.52	61	14236	90	0.0092	96	140	244	282	103	157	203	251	105	151	195	241		
18	18.35	54	14236	81	0.0083	90	132	244	282	102	148	192	236	99	142	184	227		
20	20.47	49	14236	73	0.0069	89	129	244	282	95	137	178	219	92	132	170	211		
22.4	23.23	43	14002	63	0.0052	89	130	244	282	100	143	186	229	96	138	179	221		
25	25.69	39	13689	56	0.0047	89	129	244	282	92	133	176	212	89	128	165	204		
22.4	22.94	44	14236	65	0.0089	69	102	171	197	78	112	145	179	73	104	135	167		E3H 
25	25.59	39	13961	57	0.0080	69	101	171	197	77	111	144	178	71	103	133	164		
28	29.03	34	13961	50	0.0069	72	106	171	197	80	115	149	184	74	106	137	170		
31.5	32.47	31	13961	45	0.0052	63	92	171	197	71	102	132	163	66	95	124	153		
35.5	36.22	28	13961	40	0.0047	62	90	171	197	70	100	130	160	65	93	120	149		
40	41.10	24	13961	36	0.0042	64	94	171	197	72	104	134	166	67	96	124	153		
45	45.46	22	13419	31	0.0040	59	85	171	197	64	92	123	147	59	85	113	136		
50	50.69	20	13961	29	0.0031	59	85	171	197	60	86	123	142	56	80	113	130		
56	57.52	17	13961	25	0.0028	59	85	171	197	62	88	123	142	57	82	113	131		
63	63.62	16	13419	22	0.0027	59	85	171	197	55	79	123	142	51	73	113	130		
71	74.72	13	13689	19	0.0015	59	85	171	197	53	76	123	142	50	72	113	130		
80	83.34	12	13689	17	0.0014	59	85	171	197	52	75	123	142	49	70	113	130		
90	94.57	11	13689	15	0.0013	59	85	171	197	53	77	123	142	50	72	113	130		
100	104.61	10	13152	13	0.0013	59	85	171	197	48	68	123	142	44	64	113	130		
112	114.05	9	13689	13	0.0010	59	85	171	197	47	67	123	142	44	63	113	130		
125	129.41	8	13689	11	0.0009	59	85	171	197	48	68	123	142	44	64	113	130		
140	143.15	7	13152	10	0.0009	59	85	171	197	42	61	123	142	40	57	113	130		
125	134.73	7	13689	11	0.0012	44	64	128	148	44	64	92	106	39	56	84	98	E4H 	
140	150.28	7	13689	10	0.0011	44	64	128	148	44	63	92	106	38	55	84	98		
160	170.52	6	13689	8	0.0011	44	64	128	148	45	65	92	106	38	55	84	98		
180	188.63	5	13152	7	0.0011	44	64	128	148	40	58	92	106	34	49	84	98		
200	208.3	5	13689	7	0.0006	44	64	128	148	40	57	92	106	35	50	84	98		
224	232.34	4	13689	6	0.0006	44	64	128	148	39	57	92	106	34	49	84	98		
250	263.63	4	13689	5	0.0006	44	64	128	148	40	58	92	106	34	49	84	98		
280	291.62	3	12888	5	0.0006	44	64	128	148	36	52	92	106	31	44	84	98		
315	336.83	3	13689	4	0.0003	44	64	128	148	35	50	92	106	31	44	84	98		
355	375.70	3	13689	4	0.0003	44	64	128	148	35	50	92	106	30	43	84	98		
400	426.30	2	13419	3	0.0003	44	64	128	148	35	51	92	106	30	44	84	98		
450	471.56	2	12888	3	0.0003	44	64	128	148	32	46	92	106	29	42	84	98		

E2H / E3H / E4H ...22

50 Hz

20 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1 				S5 				T6 				Type
							P _{t0} [kW]			P _{t0} [kW]			P _{t0} [kW]						
																			
4	3.95	253	16915	448	0.1097	147	252	279	398	81	220	271	382	80	208	266	366	E2H 	
4.5	4.44	225	17427	411	0.0923	146	248	275	388	107	220	279	377	106	217	271	360		
5	5.01	200	18453	386	0.0775	148	242	267	376	115	227	284	370	114	222	267	353		
5.6	5.66	177	18709	346	0.0649	148	234	262	363	122	232	281	362	122	219	267	345		
6.3	6.29	159	17812	297	0.0560	146	230	262	356	128	230	281	358	127	222	266	341		
7.1	7.18	139	18581	271	0.0463	143	218	262	338	131	227	270	344	130	215	258	328		
8	7.86	127	20174	269	0.0436	138	205	262	318	136	216	255	325	129	206	243	310		
9	8.90	112	19606	231	0.0341	133	196	262	309	133	211	247	315	129	201	235	300		
10	9.80	102	19792	211	0.0329	124	182	262	308	128	198	232	296	123	189	221	281		
11.2	11.31	88	19792	183	0.0252	113	166	262	308	119	183	214	272	116	174	204	259		
12.5	12.57	80	19792	165	0.0230	109	160	262	308	117	177	207	263	112	168	197	251		
14	14.02	71	19792	148	0.0201	108	156	262	308	111	166	194	247	106	158	185	235		
16	15.71	64	19792	132	0.0160	108	156	262	308	112	165	193	246	107	157	184	234		
18	17.29	58	19413	118	0.0143	108	156	262	308	107	158	189	235	102	150	176	224		
20	19.61	51	19413	104	0.0184	78	116	154	186	85	126	147	188	77	116	136	173		
22.4	21.87	46	19413	93	0.0172	79	116	154	186	86	127	148	188	79	116	136	173		
25	24.51	41	19413	83	0.0156	73	109	154	186	81	119	139	177	74	108	127	162		
28	26.97	37	19413	75	0.0149	72	105	154	186	77	114	133	169	71	104	121	154		
31.5	31.43	32	19413	65	0.0104	72	104	154	186	72	105	123	157	67	98	115	146		
35.5	35.05	29	19413	58	0.0100	72	104	154	186	71	105	122	156	66	97	113	144		
40	39.29	25	19038	51	0.0093	72	104	154	186	67	99	116	147	62	91	107	136		
45	43.21	23	19038	46	0.0090	72	104	154	186	64	95	111	141	59	87	102	130		
50	49.32	20	19038	40	0.0051	72	104	154	186	63	92	111	137	58	86	102	128		
56	55.01	18	19038	36	0.0049	72	104	154	186	63	92	111	137	58	85	102	127		
63	61.65	16	19038	32	0.0046	72	104	154	186	59	86	111	134	54	80	102	123		
71	67.81	15	19038	29	0.0045	72	104	154	186	56	83	111	134	52	76	102	123		
71	67.64	15	18068	28	0.0070	72	107	133	175	80	117	137	175	63	93	109	138		
80	75.44	13	19038	26	0.0069	70	104	129	171	78	114	134	170	61	89	104	133		
90	84.55	12	19038	24	0.0068	72	106	132	175	77	113	133	169	58	86	101	128		
100	95.74	10	18196	20	0.0042	54	78	116	140	54	79	92	117	46	67	79	100		
112	106.78	9	19038	19	0.0042	54	78	116	140	54	80	94	119	45	67	78	100		
125	119.67	8	18667	16	0.0041	54	78	116	140	51	75	87	111	42	62	77	93		
140	131.64	8	18667	15	0.0041	54	78	116	140	49	72	85	107	40	59	77	92		
160	149.45	7	19038	13	0.0028	54	78	116	140	50	73	85	109	42	61	77	92		
180	167.49	6	18667	12	0.0028	54	78	116	140	46	68	84	102	39	57	77	92		
200	184.24	5	18667	11	0.0028	54	78	116	140	45	66	84	100	37	54	77	92		
224	220.31	5	18324	9	0.0013	54	78	116	140	43	63	84	100	37	55	77	92		
250	245.73	4	18667	8	0.0013	54	78	116	140	43	64	84	100	37	55	77	92		
280	275.39	4	18667	7	0.0013	54	78	116	140	41	60	84	100	36	52	77	92		
315	302.93	3	18667	6	0.0013	54	78	116	140	39	57	84	100	36	51	77	92		
355	336.27	3	18667	6	0.0009	54	78	116	140	39	57	84	100	36	51	77	92		
400	376.85	3	18299	5	0.0009	54	78	116	140	39	56	84	100	36	51	77	92		
450	414.54	2	18299	5	0.0009	54	78	116	140	39	56	84	100	36	51	77	92		

E2H / E3H / E4H ...22

50 Hz

20 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kg m^2]	R1				S5				T6				Type
							P_{t0} [kW]	H ₂ O		P_{t0} [kW]	H ₂ O		P_{t0} [kW]	H ₂ O					
E2H 	4	3.95	380	16915	673	0.1097	108	230	262	399	78	151	189	258	71	139	173	237	
	4.5	4.44	338	17427	617	0.0923	108	239	262	398	78	151	189	258	71	139	173	237	
	5	5.01	299	18453	579	0.0775	108	245	262	393	78	151	189	258	71	139	173	237	
	5.6	5.66	265	18709	519	0.0649	119	250	264	386	78	151	189	258	71	139	173	237	
	6.3	6.29	238	17812	445	0.0560	126	255	263	383	78	151	189	258	71	139	173	240	
	7.1	7.18	209	18581	407	0.0463	124	247	262	366	78	151	189	267	71	139	173	240	
	8	7.86	191	20174	403	0.0436	118	233	262	359	78	151	189	264	71	139	173	241	
	9	8.90	169	19606	346	0.0341	115	224	262	359	78	151	190	271	71	139	177	245	
	10	9.80	153	19792	317	0.0329	110	211	262	359	78	151	190	263	71	139	173	240	
	11.2	11.31	133	19792	275	0.0252	108	210	262	359	78	151	189	258	71	139	173	237	
	12.5	12.57	119	19792	247	0.0230	108	210	262	359	78	151	189	258	71	139	173	237	
	14	14.02	107	19792	222	0.0201	108	210	262	359	78	151	189	258	71	139	173	237	
	16	15.71	95	19792	198	0.0160	108	210	262	359	80	151	189	258	71	139	173	237	
	18	17.29	87	19413	176	0.0143	108	210	262	359	82	151	189	258	73	139	173	237	
	E3H 	20	19.61	76	19413	156	0.0184	73	140	154	222	55	104	130	167	48	92	110	149
		22.4	21.87	69	19413	139	0.0172	82	140	154	222	64	112	134	170	49	95	116	149
		25	24.51	61	19413	124	0.0156	72	140	154	222	55	103	122	160	48	92	107	147
		28	26.97	56	19413	113	0.0149	72	140	154	222	58	101	116	160	48	92	102	147
31.5		31.43	48	19413	97	0.0104	72	140	154	222	60	101	112	160	52	92	102	147	
35.5		35.05	43	19413	87	0.0100	72	140	154	222	61	101	111	160	53	92	102	147	
40		39.29	38	19038	76	0.0093	72	140	154	222	59	101	111	160	49	92	102	147	
45		43.21	35	19038	69	0.0090	72	140	154	222	57	101	111	160	48	92	102	147	
50		49.32	30	19038	61	0.0051	72	140	154	222	57	101	111	160	50	92	102	147	
56		55.01	27	19038	54	0.0049	72	140	154	222	56	101	111	160	50	92	102	147	
63		61.65	24	19038	49	0.0046	72	140	154	222	53	101	111	160	48	92	102	147	
71	67.81	22	19038	44	0.0045	72	140	154	222	52	101	111	160	48	92	102	147		
E4H 	71	67.64	22	18068	42	0.0070	70	127	134	194	71	104	122	157	51	79	90	121	
	80	75.44	20	19038	40	0.0069	68	124	130	189	69	101	118	153	48	76	86	116	
	90	84.55	18	19038	35	0.0068	70	127	133	194	68	101	117	154	46	74	85	114	
	100	95.74	16	18196	30	0.0042	54	105	116	167	50	76	85	120	39	69	77	110	
	112	106.78	14	19038	28	0.0042	54	105	116	167	50	76	85	120	38	69	77	110	
	125	119.67	13	18667	25	0.0041	54	105	116	167	47	76	84	120	36	69	77	110	
	140	131.64	11	18667	22	0.0041	54	105	116	167	45	76	84	120	36	69	77	110	
	160	149.45	10	19038	20	0.0028	54	105	116	167	45	76	84	120	36	69	77	110	
	180	167.49	9	18667	18	0.0028	54	105	116	167	42	76	84	120	36	69	77	110	
	200	184.24	8	18667	16	0.0028	54	105	116	167	41	76	84	120	36	69	77	110	
	224	220.31	7	18324	13	0.0013	54	105	116	167	40	76	84	120	36	69	77	110	
	250	245.73	6	18667	12	0.0013	54	105	116	167	40	76	84	120	36	69	77	110	
	280	275.39	5	18667	11	0.0013	54	105	116	167	39	76	84	120	36	69	77	110	
	315	302.93	5	18667	10	0.0013	54	105	116	167	39	76	84	120	36	69	77	110	
355	336.27	4	18667	9	0.0009	54	105	116	167	39	76	84	120	36	69	77	110		
400	376.85	4	18299	8	0.0009	54	105	116	167	39	76	84	120	36	69	77	110		
450	414.54	4	18299	7	0.0009	54	105	116	167	39	76	84	120	36	69	77	110		

E2H / E3H / E4H ...22

60 Hz

20 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type	
							P _{t0} [kW]		H ₂ O		P _{t0} [kW]		H ₂ O		P _{t0} [kW]		H ₂ O			
							1	2	1	2	1	2	1	2	1	2	1	2		
E2H 	4	3.95	304	16915	538	0.1097	108	233	263	382	78	112	189	279	71	103	173	270		
	4.5	4.44	270	17427	493	0.0923	126	235	262	379	78	128	203	298	71	123	174	287		
	5	5.01	240	18453	463	0.0775	126	234	262	372	78	155	214	312	71	150	198	298		
	5.6	5.66	212	18709	415	0.0649	132	230	262	361	78	178	223	322	71	162	215	297		
	6.3	6.29	191	17812	356	0.0560	137	228	262	356	78	185	235	331	71	173	221	305		
	7.1	7.18	167	18581	325	0.0463	133	218	262	339	93	189	239	322	90	183	222	303		
	8	7.86	153	20174	323	0.0436	130	206	262	319	97	188	227	305	86	174	217	287		
	9	8.90	135	19606	277	0.0341	127	198	262	310	102	186	230	297	98	175	215	279		
	10	9.80	122	19792	254	0.0329	120	184	262	308	108	179	220	280	99	168	203	263		
	11.2	11.31	106	19792	220	0.0252	111	168	262	308	103	169	204	259	99	159	192	244		
	12.5	12.57	95	19792	198	0.0230	108	161	262	308	104	167	197	251	98	156	185	236		
	14	14.02	86	19792	177	0.0201	108	156	262	308	98	158	189	235	95	147	175	222		
	16	15.71	76	19792	158	0.0160	108	156	262	308	101	157	189	234	95	148	174	220		
	18	17.29	69	19413	141	0.0143	108	156	262	308	97	150	189	225	92	141	173	210		
	E3H 	20	19.61	61	19413	124	0.0184	76	117	154	186	75	119	139	177	66	108	126	160	
		22.4	21.87	55	19413	112	0.0172	78	118	154	186	79	120	140	179	69	107	126	160	
		25	24.51	49	19413	100	0.0156	72	110	154	186	72	111	130	166	62	99	116	148	
		28	26.97	44	19413	90	0.0149	72	105	154	186	71	106	124	158	61	95	111	141	
31.5		31.43	38	19413	78	0.0104	72	104	154	186	68	101	118	150	61	92	108	137		
35.5		35.05	34	19413	70	0.0100	72	104	154	186	68	99	116	148	61	90	105	134		
40		39.29	31	19038	61	0.0093	72	104	154	186	64	94	111	140	58	85	102	126		
45		43.21	28	19038	55	0.0090	72	104	154	186	61	90	111	134	55	81	102	123		
50		49.32	24	19038	49	0.0051	72	104	154	186	60	88	111	134	55	80	102	123		
56		55.01	22	19038	43	0.0049	72	104	154	186	59	87	111	134	54	79	102	123		
63		61.65	19	19038	39	0.0046	72	104	154	186	56	82	111	134	51	74	102	123		
71		67.81	18	19038	35	0.0045	72	104	154	186	53	78	111	134	48	71	102	123		
E4H 	71	67.64	18	18068	34	0.0070	71	106	131	174	75	111	129	165	56	82	96	123		
	80	75.44	16	19038	32	0.0069	69	103	128	170	73	107	126	160	53	78	93	117		
	90	84.55	14	19038	28	0.0068	71	106	130	174	72	106	124	158	51	75	91	114		
	100	95.74	13	18196	24	0.0042	54	78	116	140	52	76	89	113	42	62	77	92		
	112	106.78	11	19038	22	0.0042	54	78	116	140	52	76	89	114	41	61	77	92		
	125	119.67	10	18667	20	0.0041	54	78	116	140	49	72	84	107	38	56	77	92		
	140	131.64	9	18667	18	0.0041	54	78	116	140	47	69	84	102	36	53	77	92		
	160	149.45	8	19038	16	0.0028	54	78	116	140	47	70	84	104	38	56	77	92		
	180	167.49	7	18667	14	0.0028	54	78	116	140	44	65	84	100	36	52	77	92		
	200	184.24	7	18667	13	0.0028	54	78	116	140	43	63	84	100	36	51	77	92		
	224	220.31	5	18324	10	0.0013	54	78	116	140	41	61	84	100	36	51	77	92		
	250	245.73	5	18667	10	0.0013	54	78	116	140	42	61	84	100	36	51	77	92		
280	275.39	4	18667	9	0.0013	54	78	116	140	39	57	84	100	36	51	77	92			
315	302.93	4	18667	8	0.0013	54	78	116	140	39	56	84	100	36	51	77	92			
355	336.27	4	18667	7	0.0009	54	78	116	140	39	56	84	100	36	51	77	92			
400	376.85	3	18299	6	0.0009	54	78	116	140	39	56	84	100	36	51	77	92			
450	414.54	3	18299	6	0.0009	54	78	116	140	39	56	84	100	36	51	77	92			

E2H / E3H / E4H ...25

50 Hz

30 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kg m^2]	R1				S5				T6				Type
							P_{t0} [kW]	H ₂ O		P_{t0} [kW]	H ₂ O		P_{t0} [kW]	H ₂ O					
n₁ = 1500 rpm	5.6	5.39	278	23137	674	0.1513	130	310	425	595	94	181	276	384	86	166	253	351	E2H
	6.3	6.06	248	23849	618	0.1252	141	321	425	588	94	181	290	414	86	166	262	389	
	7.1	6.83	220	25095	577	0.1035	150	319	421	576	94	181	315	437	86	166	296	408	
	8	7.71	195	25451	519	0.0852	147	311	407	559	94	181	339	448	86	166	310	422	
	9	8.57	175	24383	447	0.0725	153	309	403	553	94	186	354	447	86	166	330	421	
	10	9.80	153	25273	405	0.0589	153	300	389	533	94	203	366	446	86	186	337	420	
	11.2	10.71	140	29644	435	0.0542	145	284	383	503	100	206	350	426	86	189	330	401	
	12.5	12.14	124	26696	345	0.0423	146	276	383	491	103	216	347	424	98	199	327	398	
	14	13.36	112	29644	349	0.0397	137	258	383	486	106	206	329	401	95	197	309	376	
	16	15.43	97	29098	296	0.0303	131	252	383	486	106	198	304	370	103	184	286	348	
	18	17.14	88	29098	267	0.0271	131	252	383	486	112	197	294	358	104	182	276	337	
	20	19.12	78	28556	235	0.0234	130	252	383	486	114	187	276	350	105	172	256	321	
	22.4	21.43	70	26963	198	0.0187	130	252	383	486	113	184	276	350	108	171	254	321	
	25	23.57	64	26963	180	0.0165	130	252	383	486	112	181	276	350	106	168	253	321	
	25	26.74	56	29098	171	0.0201	96	168	300	382	83	143	216	275	68	127	198	252	
	28	29.83	50	28020	148	0.0186	99	168	300	382	94	147	216	275	82	130	198	252	
	31.5	33.43	45	26442	124	0.0167	87	168	300	382	84	134	216	275	71	119	198	252	
	35.5	36.77	41	26442	113	0.0158	86	168	300	382	82	128	216	275	67	113	198	252	
	40	42.86	35	28556	105	0.0111	86	168	300	382	81	123	216	275	72	112	198	252	
	45	47.80	31	28020	92	0.0105	86	168	300	382	81	121	216	275	72	111	198	252	
	50	53.57	28	26442	78	0.0097	86	168	300	382	77	121	216	275	68	111	198	252	
	56	58.93	25	25926	69	0.0094	86	168	300	382	74	121	216	275	66	111	198	252	
	63	67.25	22	28556	67	0.0053	86	168	300	382	73	121	216	275	67	111	198	252	
	71	75.01	20	27489	58	0.0051	86	168	300	382	71	121	216	275	64	111	198	252	
	80	84.07	18	25926	48	0.0048	86	168	300	382	67	121	216	275	61	111	198	252	
90	92.47	16	25926	44	0.0047	86	168	300	382	64	121	216	275	58	111	198	252		
100	92.24	16	24739	42	0.0072	65	126	225	287	68	100	162	206	55	83	149	189		
100	102.88	15	27052	41	0.0070	82	150	225	298	87	128	196	244	64	97	155	193		
112	115.30	13	25926	35	0.0069	84	154	230	305	86	127	199	247	61	96	154	191		
125	130.55	11	24917	30	0.0043	65	126	225	287	63	93	162	206	52	83	149	189		
140	145.61	10	26963	29	0.0042	65	126	225	287	62	92	162	206	50	83	149	189		
160	163.19	9	25415	24	0.0042	65	126	225	287	59	91	162	206	46	83	149	189		
180	179.51	8	25415	22	0.0041	65	126	225	287	56	91	162	206	43	83	149	189		
200	203.80	7	26963	21	0.0029	65	126	225	287	57	91	162	206	46	83	149	189		
224	228.39	7	25415	17	0.0028	65	126	225	287	53	91	162	206	43	83	149	189		
250	251.23	6	25415	16	0.0028	65	126	225	287	51	91	162	206	43	83	149	189		
280	300.43	5	25095	13	0.0013	65	126	225	287	50	91	162	206	43	83	149	189		
315	335.09	4	26963	13	0.0013	65	126	225	287	49	91	162	206	43	83	149	189		
355	375.53	4	25415	11	0.0013	65	126	225	287	47	91	162	206	43	83	149	189		
400	413.09	4	25415	10	0.0013	65	126	225	287	47	91	162	206	43	83	149	189		
450	458.54	3	26442	9	0.0009	65	126	225	287	47	91	162	206	43	83	149	189		
500	513.89	3	24909	8	0.0009	65	126	225	287	47	91	162	206	43	83	149	189		
560	565.28	3	24909	7	0.0009	65	126	225	287	47	91	162	206	43	83	149	189		
																		E4H 	

E2H / E3H / E4H ...25

60 Hz

30 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O					
								+	-		+	-		+	-				
n ₁ = 1200 rpm	5.6	5.39	223	23137	539	0.1513	149	292	425	575	94	204	401	507	86	204	384	489	E2H
	6.3	6.06	198	23849	495	0.1252	168	294	422	565	94	230	416	507	86	219	394	486	
	7.1	6.83	176	25095	462	0.1035	167	289	412	552	114	240	413	503	113	236	395	480	
	8	7.71	156	25451	415	0.0852	174	281	398	533	134	249	404	492	122	241	385	468	
	9	8.57	140	24383	358	0.0725	171	278	392	525	141	262	400	488	131	248	381	464	
	10	9.80	122	25273	324	0.0589	169	268	383	505	152	263	394	480	149	246	375	456	
	11.2	10.71	112	29644	348	0.0542	162	252	383	475	150	250	374	456	143	239	356	433	
	12.5	12.14	99	26696	276	0.0423	157	245	383	461	154	252	369	449	150	235	350	426	
	14	13.36	90	29644	279	0.0397	148	228	383	433	147	238	347	423	143	225	329	401	
	16	15.43	78	29098	237	0.0303	134	207	383	431	140	219	319	389	134	207	303	369	
	18	17.14	70	29098	213	0.0271	130	199	383	431	137	211	308	376	131	199	292	356	
	20	19.12	63	28556	188	0.0234	130	187	383	431	130	196	287	350	123	185	272	331	
	22.4	21.43	56	26963	158	0.0187	130	187	383	431	131	193	282	344	124	182	267	326	
	25	23.57	51	26963	144	0.0165	130	187	383	431	127	187	277	333	120	177	259	315	
	25	26.74	45	29098	137	0.0201	95	145	300	339	101	154	224	273	92	140	206	251	
	28	29.83	40	28020	118	0.0186	95	146	300	339	103	153	223	272	93	138	203	247	
	31.5	33.43	36	26442	99	0.0167	87	137	300	339	97	142	216	253	86	129	198	230	
	35.5	36.77	33	26442	90	0.0158	86	131	300	339	92	136	216	244	83	122	198	224	
	40	42.86	28	28556	84	0.0111	86	125	300	339	87	128	216	244	81	118	198	224	
	45	47.80	25	28020	74	0.0105	86	125	300	339	85	125	216	244	78	115	198	224	
	50	53.57	22	26442	62	0.0097	86	125	300	339	81	119	216	244	74	109	198	224	
	56	58.93	20	25926	55	0.0094	86	125	300	339	78	114	216	244	71	104	198	224	
	63	67.25	18	28556	53	0.0053	86	125	300	339	76	112	216	244	70	103	198	224	
	71	75.01	16	27489	46	0.0051	86	125	300	339	75	110	216	244	69	101	198	224	
	80	84.07	14	25926	39	0.0048	86	125	300	339	70	104	216	244	65	95	198	224	
90	92.47	13	25926	35	0.0047	86	125	300	339	67	99	216	244	62	90	198	224		
90	92.24	13	24739	34	0.0072	65	94	225	254	70	103	162	185	59	86	149	168		
100	102.88	12	27052	33	0.0070	83	125	225	275	92	135	204	241	70	103	164	194		
112	115.30	10	25926	28	0.0069	85	129	228	281	91	134	208	246	68	100	164	193		
125	130.55	9	24917	24	0.0043	65	94	225	254	65	96	162	183	55	80	149	168		
140	145.61	8	26963	23	0.0042	65	94	225	254	65	96	162	183	54	79	149	168		
160	163.19	7	25415	20	0.0042	65	94	225	254	61	90	162	183	49	73	149	168		
180	179.51	7	25415	18	0.0041	65	94	225	254	59	86	162	183	47	69	149	168		
200	203.80	6	26963	17	0.0029	65	94	225	254	59	87	162	183	49	72	149	168		
224	228.39	5	25415	14	0.0028	65	94	225	254	55	82	162	183	45	67	149	168		
250	251.23	5	25415	13	0.0028	65	94	225	254	53	79	162	183	43	64	149	168		
280	300.43	4	25095	10	0.0013	65	94	225	254	52	76	162	183	45	65	149	168		
315	335.09	4	26963	10	0.0013	65	94	225	254	52	76	162	183	44	64	149	168		
355	375.53	3	25415	9	0.0013	65	94	225	254	48	71	162	183	43	62	149	168		
400	413.09	3	25415	8	0.0013	65	94	225	254	47	69	162	183	43	62	149	168		
450	458.54	3	26442	7	0.0009	65	94	225	254	47	68	162	183	43	62	149	168		
500	513.89	2	24909	6	0.0009	65	94	225	254	47	68	162	183	43	62	149	168		
560	565.28	2	24909	6	0.0009	65	94	225	254	47	68	162	183	43	62	149	168		
																		E4H 	

E2H / E3H / E4H ...25

60 Hz

30 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kg m^2]	R1				S5				T6				Type
							P_{t0} [kW]	H ₂ O		P_{t0} [kW]	H ₂ O		P_{t0} [kW]	H ₂ O					
1800 rpm	5.6	5.39	334	23137	809	0.1513	130	267	402	566	94	181	276	350	86	166	253	321	E2H
	6.3	6.06	297	23849	742	0.1252	130	271	404	571	94	181	276	350	86	166	253	321	
	7.1	6.83	264	25095	693	0.1035	130	289	405	563	94	181	276	350	86	166	253	321	
	8	7.71	233	25451	622	0.0852	130	301	397	547	94	181	276	350	86	166	253	321	
	9	8.57	210	24383	536	0.0725	139	298	397	543	94	181	276	350	86	166	253	321	
	10	9.80	184	25273	486	0.0589	141	294	388	526	94	181	276	359	86	166	253	335	
	11.2	10.71	168	29644	522	0.0542	135	280	383	498	94	181	276	364	86	166	253	332	
	12.5	12.14	148	26696	415	0.0423	134	274	383	490	94	181	284	372	86	166	263	347	
	14	13.36	135	29644	418	0.0397	132	257	383	486	94	181	278	355	86	166	260	341	
	16	15.43	117	29098	355	0.0303	130	252	383	486	94	181	276	350	86	166	253	322	
	18	17.14	105	29098	320	0.0271	130	252	383	486	94	181	276	350	86	166	253	321	
	20	19.12	94	28556	282	0.0234	130	252	383	486	94	181	276	350	86	166	253	321	
	22.4	21.43	84	26963	237	0.0187	130	252	383	486	94	181	276	350	86	166	253	321	
	25	23.57	76	26963	216	0.0165	130	252	383	486	94	181	276	350	86	166	253	321	
	25	26.74	67	29098	205	0.0201	87	168	300	382	62	121	216	275	57	111	198	252	
28	29.83	60	28020	177	0.0186	101	169	300	382	68	129	216	275	57	111	198	252		
31.5	33.43	54	26442	149	0.0167	86	168	300	382	62	121	216	275	57	111	198	252		
35.5	36.77	49	26442	136	0.0158	86	168	300	382	62	121	216	275	57	111	198	252		
40	42.86	42	28556	126	0.0111	86	168	300	382	63	121	216	275	57	111	198	252		
45	47.80	38	28020	110	0.0105	86	168	300	382	70	121	216	275	60	111	198	252		
50	53.57	34	26442	93	0.0097	86	168	300	382	64	121	216	275	57	111	198	252		
56	58.93	31	25926	83	0.0094	86	168	300	382	64	121	216	275	57	111	198	252		
63	67.25	27	28556	80	0.0053	86	168	300	382	66	121	216	275	60	111	198	252		
71	75.01	24	27489	69	0.0051	86	168	300	382	64	121	216	275	58	111	198	252		
80	84.07	21	25926	58	0.0048	86	168	300	382	62	121	216	275	57	111	198	252		
90	92.47	19	25926	53	0.0047	86	168	300	382	62	121	216	275	57	111	198	252		
100	92.24	20	24739	51	0.0072	65	126	225	287	63	92	162	206	48	83	149	189		
100	102.88	17	27052	50	0.0070	81	150	225	297	78	115	182	227	56	89	149	189		
112	115.30	16	25926	42	0.0069	83	154	231	304	77	116	184	229	53	88	149	189		
125	130.55	14	24917	36	0.0043	65	126	225	287	58	91	162	206	47	83	149	189		
140	145.61	12	26963	35	0.0042	65	126	225	287	57	91	162	206	45	83	149	189		
160	163.19	11	25415	29	0.0042	65	126	225	287	54	91	162	206	43	83	149	189		
180	179.51	10	25415	27	0.0041	65	126	225	287	52	91	162	206	43	83	149	189		
200	203.80	9	26963	25	0.0029	65	126	225	287	52	91	162	206	43	83	149	189		
224	228.39	8	25415	21	0.0028	65	126	225	287	49	91	162	206	43	83	149	189		
250	251.23	7	25415	19	0.0028	65	126	225	287	47	91	162	206	43	83	149	189		
280	300.43	6	25095	16	0.0013	65	126	225	287	47	91	162	206	43	83	149	189		
315	335.09	5	26963	15	0.0013	65	126	225	287	47	91	162	206	43	83	149	189		
355	375.53	5	25415	13	0.0013	65	126	225	287	47	91	162	206	43	83	149	189		
400	413.09	4	25415	12	0.0013	65	126	225	287	47	91	162	206	43	83	149	189		
450	458.54	4	26442	11	0.0009	65	126	225	287	47	91	162	206	43	83	149	189		
500	513.89	4	24909	9	0.0009	65	126	225	287	47	91	162	206	43	83	149	189		
560	565.28	3	24909	8	0.0009	65	126	225	287	47	91	162	206	43	83	149	189		

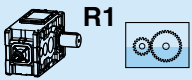

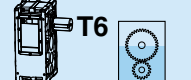








E3B / E4B ...18

50 Hz

10 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O					
								86	77		85	86		74	75	73	73		
n ₁ = 1000 rpm	18	17.70	56	9457	56	0.0139	52	86	77	111	62	85	86	109	54	74	75	96	E3B
	20	19.74	51	9457	50	0.0134	51	85	76	109	61	84	85	108	52	73	73	93	
	22.4	22.40	45	9515	44	0.0126	51	84	74	107	60	83	83	106	50	70	70	90	
	25	25.41	39	9366	39	0.0072	45	74	67	94	53	73	73	94	48	66	66	85	
	28	28.34	35	9366	35	0.0069	44	72	67	92	52	71	72	92	46	64	65	83	
	31.5	32.16	31	9366	30	0.0066	43	71	67	91	51	70	71	90	45	62	63	80	
	35.5	35.39	28	9366	28	0.0041	36	60	67	83	43	60	60	77	40	55	56	71	
	40	39.48	25	9366	25	0.0040	36	59	67	83	42	59	59	75	39	54	54	69	
	45	44.80	22	9366	22	0.0038	35	58	67	83	42	58	58	74	38	53	53	68	
	50	50.82	20	9366	19	0.0022	35	51	67	83	35	48	49	62	32	45	45	58	
	56	56.69	18	9366	17	0.0022	35	51	67	83	34	47	49	61	32	44	45	57	
	63	64.32	16	9366	15	0.0021	35	51	67	83	34	47	48	61	31	43	44	56	
	71	71.15	14	9016	13	0.0020	35	51	67	83	31	43	48	60	29	40	44	55	
	80	81.20	12	9191	12	0.0032	32	52	53	67	37	52	52	66	31	43	43	55	E4B
	90	90.57	11	9191	11	0.0031	31	51	53	67	36	51	51	65	29	41	41	52	
	100	102.77	10	9191	9	0.0031	32	52	53	67	37	51	52	66	29	41	41	52	
	112	116.60	9	9191	8	0.0016	29	47	53	66	34	47	47	60	29	40	40	52	
	125	130.05	8	9191	7	0.0015	28	46	53	66	33	46	46	59	28	39	39	50	
	140	147.57	7	9191	7	0.0015	29	47	53	66	34	47	47	60	28	39	39	50	
	160	162.40	6	9191	6	0.0009	28	42	53	66	30	42	42	54	27	37	37	47	
180	181.14	6	9191	5	0.0009	28	42	53	66	30	41	41	53	25	35	36	46		
200	205.54	5	9191	5	0.0009	28	42	53	66	30	41	42	53	25	35	36	45		
224	233.19	4	9191	4	0.0005	28	41	53	66	27	37	38	49	24	33	35	44		
250	260.10	4	9191	4	0.0005	28	41	53	66	26	36	38	48	23	32	35	44		
280	295.13	3	9191	3	0.0005	28	41	53	66	26	36	38	48	23	32	35	44		
315	326.47	3	8844	3	0.0005	28	41	53	66	24	33	38	48	21	29	35	44		

E3B / E4B ...18
50 Hz
10 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	 R1				 S5				 T6				Type			
							P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		
n₁ = 1500 rpm	18	17.70	85	9457	84	0.0139	50	121	75	146	51	114	80	137	29	92	57	110	E3B 			
	20	19.74	76	9457	75	0.0134	51	121	75	145	55	114	81	137	35	90	60	108				
	22.4	22.40	67	9515	67	0.0126	50	118	74	142	55	111	78	134	36	86	60	103				
	25	25.41	59	9366	58	0.0072	44	104	67	125	48	100	70	119	39	86	60	103				
	28	28.34	53	9366	52	0.0069	43	101	67	122	49	97	69	117	39	83	58	99				
	31.5	32.16	47	9366	46	0.0066	42	99	67	119	48	95	67	113	39	79	56	95				
	35.5	35.39	42	9366	42	0.0041	36	85	67	102	41	82	58	98	36	73	51	88				
	40	39.48	38	9366	37	0.0040	35	81	67	100	40	79	55	94	35	69	49	83				
	45	44.80	33	9366	33	0.0038	35	80	67	100	39	77	54	93	34	67	47	81				
	50	50.82	30	9366	29	0.0022	35	68	67	100	33	66	48	79	30	60	44	72				
	56	56.69	26	9366	26	0.0022	35	68	67	100	32	63	48	76	29	57	44	69				
	63	64.32	23	9366	23	0.0021	35	68	67	100	31	62	48	74	28	56	44	67				
	71	71.15	21	9016	20	0.0020	35	68	67	100	29	58	48	72	26	52	44	66				
	80	81.20	18	9191	18	0.0032	31	73	53	88	35	69	49	83	26	52	36	62		E4B 		
	90	90.57	17	9191	16	0.0031	30	71	53	85	34	66	47	80	24	48	35	58				
	100	102.77	15	9191	14	0.0031	31	72	53	86	34	67	47	80	24	47	35	56				
	112	116.60	13	9191	12	0.0016	28	66	53	80	32	63	44	75	25	50	35	60				
125	130.05	12	9191	11	0.0015	28	64	53	80	31	61	43	73	24	47	35	57					
140	147.57	10	9191	10	0.0015	28	65	53	80	31	61	43	73	23	46	35	56					
160	162.40	9	9191	9	0.0009	28	59	53	80	28	56	40	67	23	46	35	56					
180	181.14	8	9191	8	0.0009	28	57	53	80	27	54	39	65	22	44	35	53					
200	205.54	7	9191	7	0.0009	28	58	53	80	27	54	39	65	22	43	35	53					
224	233.19	6	9191	6	0.0005	28	54	53	80	25	49	38	59	21	42	35	53					
250	260.10	6	9191	6	0.0005	28	54	53	80	24	48	38	58	20	40	35	53					
280	295.13	5	9191	5	0.0005	28	54	53	80	24	48	38	58	20	39	35	53					
315	326.47	5	8844	4	0.0005	28	54	53	80	22	43	38	58	18	36	35	53					

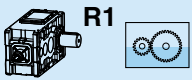

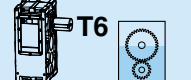








E3B / E4B ...18

60 Hz

10 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O					
								+	-		+	-		+	-	+	-		
n ₁ = 1200 rpm	18	17.70	68	9457	67	0.0139	51	101	77	125	59	97	83	121	45	81	70	101	E3B
	20	19.74	61	9457	60	0.0134	51	99	76	124	59	96	83	120	46	79	68	98	
	22.4	22.40	54	9515	53	0.0126	50	98	74	121	58	94	81	117	46	76	65	94	
	25	25.41	47	9366	46	0.0072	44	86	67	107	52	84	72	104	45	74	63	92	
	28	28.34	42	9366	42	0.0069	43	84	67	104	51	82	70	102	44	72	61	89	
	31.5	32.16	37	9366	37	0.0066	42	82	67	102	49	80	69	100	42	69	59	86	
	35.5	35.39	34	9366	33	0.0041	36	70	67	87	43	69	59	86	38	62	54	78	
	40	39.48	30	9366	30	0.0040	35	68	67	85	41	67	57	83	37	60	51	74	
	45	44.80	27	9366	26	0.0038	35	67	67	84	41	66	56	82	36	58	50	73	
	50	50.82	24	9366	23	0.0022	35	56	67	83	34	55	48	69	31	51	45	64	
	56	56.69	21	9366	21	0.0022	35	54	67	83	33	54	48	67	30	49	44	62	
	63	64.32	19	9366	18	0.0021	35	53	67	83	33	53	48	66	30	48	44	60	
	71	71.15	17	9016	16	0.0020	35	51	67	83	30	49	48	61	27	45	44	56	
	80	81.20	15	9191	14	0.0032	31	60	53	75	36	59	50	73	28	46	39	57	
	90	90.57	13	9191	13	0.0031	31	59	53	73	35	57	49	71	26	43	37	54	
	100	102.77	12	9191	11	0.0031	31	60	53	75	36	58	50	72	26	42	36	53	
	112	116.60	10	9191	10	0.0016	28	55	53	68	33	53	46	66	27	44	38	55	
	125	130.05	9	9191	9	0.0015	28	54	53	67	32	52	45	65	26	42	36	52	
	140	147.57	8	9191	8	0.0015	28	55	53	68	32	53	45	65	25	41	35	51	
	160	162.40	7	9191	7	0.0009	28	49	53	66	29	48	41	59	25	40	35	50	
180	181.14	7	9191	6	0.0009	28	48	53	66	29	46	40	58	24	38	35	48		
200	205.54	6	9191	6	0.0009	28	48	53	66	29	47	40	58	23	38	35	47		
224	233.19	5	9191	5	0.0005	28	43	53	66	26	42	38	53	23	37	35	46		
250	260.10	5	9191	4	0.0005	28	42	53	66	25	41	38	51	21	35	35	44		
280	295.13	4	9191	4	0.0005	28	42	53	66	25	41	38	51	21	35	35	44		
315	326.47	4	8844	3	0.0005	28	41	53	66	23	37	38	48	19	31	35	44		
																		E4B 	

E3B / E4B ...18
60 Hz
10 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	 R1				 S5				 T6				Type			
							P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		
n₁ = 1800 rpm	18	17.70	102	9457	101	0.0139	43	126	72	150	38	111	68	132	23	82	44	104	E3B 			
	20	19.74	91	9457	90	0.0134	49	127	75	151	44	112	73	133	23	86	44	102				
	22.4	22.40	80	9515	80	0.0126	48	124	73	148	47	109	72	129	23	80	44	96				
	25	25.41	71	9366	69	0.0072	42	109	67	130	42	98	65	116	27	84	50	100				
	28	28.34	64	9366	62	0.0069	42	107	67	127	43	96	64	114	28	81	51	97				
	31.5	32.16	56	9366	55	0.0066	41	104	67	123	44	93	62	111	30	77	51	91				
	35.5	35.39	51	9366	50	0.0041	35	89	67	105	37	81	54	97	30	73	48	87				
	40	39.48	46	9366	45	0.0040	35	85	67	102	37	78	52	92	30	69	46	82				
	45	44.80	40	9366	39	0.0038	35	83	67	101	36	76	51	90	30	66	45	79				
	50	50.82	35	9366	35	0.0022	35	70	67	100	31	65	48	78	27	60	44	72				
	56	56.69	32	9366	31	0.0022	35	68	67	100	30	62	48	74	26	57	44	68				
	63	64.32	28	9366	27	0.0021	35	68	67	100	29	61	48	73	26	55	44	67				
	71	71.15	25	9016	24	0.0020	35	68	67	100	27	57	48	72	24	52	44	66				
	80	81.20	22	9191	21	0.0032	30	76	53	90	32	67	45	80	23	49	35	58		E4B 		
	90	90.57	20	9191	19	0.0031	29	73	53	87	31	64	43	76	21	45	35	53				
	100	102.77	18	9191	17	0.0031	30	75	53	89	31	65	43	77	20	43	35	53				
	112	116.60	15	9191	15	0.0016	28	69	53	82	29	62	41	73	23	48	35	57				
125	130.05	14	9191	13	0.0015	28	67	53	80	28	59	39	70	21	45	35	54					
140	147.57	12	9191	12	0.0015	28	68	53	81	28	59	40	71	21	44	35	53					
160	162.40	11	9191	11	0.0009	28	61	53	80	26	55	38	66	21	45	35	54					
180	181.14	10	9191	10	0.0009	28	59	53	80	25	53	38	63	20	42	35	53					
200	205.54	9	9191	8	0.0009	28	59	53	80	25	53	38	63	19	41	35	53					
224	233.19	8	9191	7	0.0005	28	55	53	80	23	49	38	59	20	41	35	53					
250	260.10	7	9191	7	0.0005	28	54	53	80	22	47	38	58	19	39	35	53					
280	295.13	6	9191	6	0.0005	28	54	53	80	22	46	38	58	18	38	35	53					
315	326.47	6	8844	5	0.0005	28	54	53	80	20	42	38	58	18	36	35	53					

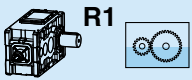

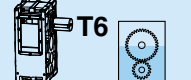








E3B / E4B ...19

50 Hz

13 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]		H ₂ O		P _{t0} [kW]		H ₂ O		P _{t0} [kW]		H ₂ O		
							93	98	98	117	92	91	115	57	79	77	99		
22.4	21.96	46	12301	59	0.0144	55	93	98	117	67	92	91	115	57	79	77	99	E3B 	
25	24.49	41	12301	53	0.0138	49	81	98	116	59	81	80	102	54	74	73	93		
28	27.79	36	11960	45	0.0129	48	80	98	116	58	79	78	100	52	72	71	91		
31.5	31.53	32	12301	41	0.0074	47	78	98	116	57	78	77	98	51	70	69	88		
35.5	35.17	28	12301	37	0.0071	40	67	98	116	49	66	70	84	45	62	64	78		
40	39.90	25	11858	31	0.0067	40	65	98	116	48	65	70	83	44	60	64	77		
45	43.92	23	12078	29	0.0043	40	64	98	116	47	64	70	83	43	59	64	76		
50	48.98	20	12078	26	0.0041	40	58	98	116	39	53	70	83	37	51	64	76		
56	55.58	18	11858	22	0.0039	40	58	98	116	38	53	70	83	36	49	64	76		
63	63.06	16	12078	20	0.0023	40	58	98	116	38	52	70	83	35	48	64	76		
71	70.33	14	12078	18	0.0022	40	58	98	116	35	48	70	83	32	45	64	76	E4B 	
80	79.81	13	11639	15	0.0021	40	58	98	116	39	53	70	83	36	50	64	76		
90	88.28	11	11208	13	0.0021	40	58	98	116	38	52	70	83	36	49	64	76		
100	100.75	10	12078	13	0.0032	35	58	78	92	42	57	57	72	33	45	51	61		
112	112.37	9	12078	11	0.0031	32	52	78	92	38	52	56	67	33	45	51	61		
125	127.51	8	11639	10	0.0031	32	51	78	92	37	51	56	67	32	43	51	61		
140	144.66	7	11858	9	0.0016	32	52	78	92	38	52	56	67	31	43	51	61		
160	161.36	6	11858	8	0.0015	32	47	78	92	34	46	56	67	30	41	51	61		
180	183.09	5	11639	7	0.0015	32	47	78	92	33	45	56	67	29	40	51	61		
200	201.50	5	11858	6	0.0009	32	47	78	92	34	46	56	67	29	40	51	61		
224	224.75	4	11858	6	0.0009	32	46	78	92	30	41	56	67	27	37	51	61		
250	255.02	4	11423	5	0.0009	32	46	78	92	29	40	56	67	26	36	51	61		
280	289.33	3	11858	4	0.0005	32	46	78	92	30	40	56	67	26	36	51	61		
315	322.71	3	11858	4	0.0005	32	46	78	92	27	36	56	67	23	32	51	61		
355	366.18	3	11423	3	0.0005	32	46	78	92	30	40	56	67	27	37	51	61		
400	405.06	2	10996	3	0.0005	32	46	78	92	30	41	56	67	27	37	51	61		

E3B / E4B ...19
50 Hz
13 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	 R1				 S5				 T6				Type			
							P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		
n₁ = 1500 rpm	22.4	21.96	68	12301	88	0.0144	55	131	98	155	63	123	85	146	43	96	66	113	E3B 			
	25	24.49	61	12301	79	0.0138	48	116	98	137	56	110	76	130	46	96	66	113				
	28	27.79	54	11960	68	0.0129	47	112	98	135	55	108	75	127	46	93	65	109				
	31.5	31.53	48	12301	61	0.0074	46	110	98	135	54	105	73	124	45	89	64	105				
	35.5	35.17	43	12301	55	0.0071	40	94	98	135	47	91	70	107	42	82	64	97				
	40	39.90	38	11858	47	0.0067	40	90	98	135	45	87	70	103	40	78	64	92				
	45	43.92	34	12078	43	0.0043	40	88	98	135	44	85	70	101	38	76	64	90				
	50	48.98	31	12078	39	0.0041	40	77	98	135	37	73	70	97	34	67	64	89				
	56	55.58	27	11858	34	0.0039	40	77	98	135	36	70	70	97	33	64	64	89				
	63	63.06	24	12078	30	0.0023	40	77	98	135	35	69	70	97	32	63	64	89				
	71	70.33	21	12078	27	0.0022	40	77	98	135	33	64	70	97	30	58	64	89				
	80	79.81	19	11639	23	0.0021	40	77	98	135	36	71	70	97	33	66	64	89				
	90	88.28	17	11208	20	0.0021	40	77	98	135	36	69	70	97	33	64	64	89				
	100	100.75	15	12078	19	0.0032	33	80	78	108	38	74	56	88	27	53	51	71	E4B 			
	112	112.37	13	12078	17	0.0031	32	73	78	108	36	70	56	82	29	56	51	71				
	125	127.51	12	11639	14	0.0031	32	71	78	108	34	67	56	79	27	53	51	71				
	140	144.66	10	11858	13	0.0016	32	72	78	108	35	68	56	80	26	52	51	71				
	160	161.36	9	11858	12	0.0015	32	65	78	108	32	62	56	78	26	52	51	71				
	180	183.09	8	11639	10	0.0015	32	63	78	108	31	60	56	78	25	49	51	71				
	200	201.50	7	11858	9	0.0009	32	64	78	108	31	60	56	78	25	48	51	71				
224	224.75	7	11858	8	0.0009	32	62	78	108	28	55	56	78	24	47	51	71					
250	255.02	6	11423	7	0.0009	32	62	78	108	27	53	56	78	23	45	51	71					
280	289.33	5	11858	6	0.0005	32	62	78	108	27	53	56	78	22	44	51	71					
315	322.71	5	11858	6	0.0005	32	62	78	108	24	47	56	78	21	41	51	71					
355	366.18	4	11423	5	0.0005	32	62	78	108	27	53	56	78	24	46	51	71					
400	405.06	4	10996	4	0.0005	32	62	78	108	27	54	56	78	23	46	51	71					

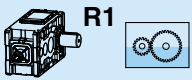

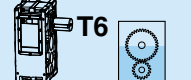








E3B / E4B ...19

60 Hz

13 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O					
								108	98		132	65		104	88	127	53	85	
22.4	21.96	55	12301	70	0.0144	55	108	98	132	65	104	88	127	53	85	71	103	E3B 	
25	24.49	49	12301	63	0.0138	49	95	98	117	58	93	79	113	51	83	69	101		
28	27.79	43	11960	54	0.0129	47	93	98	116	57	91	77	111	50	80	67	98		
31.5	31.53	38	12301	49	0.0074	46	91	98	116	55	89	75	108	48	77	65	94		
35.5	35.17	34	12301	44	0.0071	40	78	98	116	48	76	70	93	43	70	64	85		
40	39.90	30	11858	37	0.0067	40	75	98	116	46	74	70	90	42	67	64	82		
45	43.92	27	12078	35	0.0043	40	74	98	116	45	73	70	89	41	65	64	80		
50	48.98	24	12078	31	0.0041	40	62	98	116	38	61	70	83	36	57	64	76		
56	55.58	22	11858	27	0.0039	40	60	98	116	37	60	70	83	34	55	64	76		
63	63.06	19	12078	24	0.0023	40	59	98	116	37	59	70	83	34	54	64	76		
71	70.33	17	12078	22	0.0022	40	58	98	116	34	54	70	83	31	50	64	76		
80	79.81	15	11639	18	0.0021	40	60	98	116	38	60	70	83	35	56	64	76		
90	88.28	14	11208	16	0.0021	40	59	98	116	37	59	70	83	34	55	64	76		
100	100.75	12	12078	15	0.0032	34	67	78	92	40	64	56	78	29	48	51	61	E4B 	
112	112.37	11	12078	14	0.0031	32	61	78	92	37	59	56	72	31	49	51	61		
125	127.51	9	11639	11	0.0031	32	59	78	92	36	57	56	70	29	47	51	61		
140	144.66	8	11858	10	0.0016	32	60	78	92	36	58	56	71	29	46	51	61		
160	161.36	7	11858	9	0.0015	32	54	78	92	33	53	56	67	28	45	51	61		
180	183.09	7	11639	8	0.0015	32	53	78	92	32	51	56	67	27	43	51	61		
200	201.50	6	11858	7	0.0009	32	54	78	92	32	52	56	67	26	43	51	61		
224	224.75	5	11858	7	0.0009	32	48	78	92	29	47	56	67	26	41	51	61		
250	255.02	5	11423	6	0.0009	32	47	78	92	28	45	56	67	24	39	51	61		
280	289.33	4	11858	5	0.0005	32	47	78	92	28	45	56	67	24	39	51	61		
315	322.71	4	11858	5	0.0005	32	46	78	92	26	41	56	67	22	35	51	61		
355	366.18	3	11423	4	0.0005	32	47	78	92	29	46	56	67	25	40	51	61		
400	405.06	3	10996	3	0.0005	32	47	78	92	29	46	56	67	25	40	51	61		

E3B / E4B ...19
60 Hz
13 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	 R1				 S5				 T6				Type			
							P_{t0} [kW]					P_{t0} [kW]					P_{t0} [kW]					
$n_1 = 1800$ rpm	22.4	21.96	82	12301	106	0.0144	53	138	98	161	41	121	79	141	26	90	64	105	E3B 			
	25	24.49	73	12301	95	0.0138	46	121	98	141	41	109	71	127	35	94	64	110				
	28	27.79	65	11960	81	0.0129	46	118	98	138	41	106	70	124	37	91	64	106				
	31.5	31.53	57	12301	74	0.0074	45	115	98	136	41	103	70	121	37	86	64	101				
	35.5	35.17	51	12301	66	0.0071	40	98	98	135	41	90	70	105	36	82	64	95				
	40	39.90	45	11858	56	0.0067	40	94	98	135	41	86	70	101	35	77	64	90				
	45	43.92	41	12078	52	0.0043	40	92	98	135	40	84	70	99	36	74	64	89				
	50	48.98	37	12078	46	0.0041	40	78	98	135	35	72	70	97	32	68	64	89				
	56	55.58	32	11858	40	0.0039	40	77	98	135	33	69	70	97	31	64	64	89				
	63	63.06	29	12078	36	0.0023	40	77	98	135	33	68	70	97	30	62	64	89				
	71	70.33	26	12078	32	0.0022	40	77	98	135	31	63	70	97	28	58	64	89				
	80	79.81	23	11639	27	0.0021	40	77	98	135	34	70	70	97	31	66	64	89				
	90	88.28	20	11208	24	0.0021	40	77	98	135	33	69	70	97	31	64	64	89				
	100	100.75	18	12078	23	0.0032	33	83	78	108	35	72	56	84	23	48	51	71	E4B 			
	112	112.37	16	12078	20	0.0031	32	76	78	108	33	68	56	80	26	54	51	71				
	125	127.51	14	11639	17	0.0031	32	74	78	108	32	66	56	78	24	50	51	71				
	140	144.66	12	11858	15	0.0016	32	75	78	108	32	66	56	78	24	49	51	71				
	160	161.36	11	11858	14	0.0015	32	67	78	108	30	61	56	78	24	51	51	71				
	180	183.09	10	11639	12	0.0015	32	65	78	108	28	58	56	78	23	47	51	71				
	200	201.50	9	11858	11	0.0009	32	66	78	108	28	59	56	78	22	46	51	71				
224	224.75	8	11858	10	0.0009	32	62	78	108	26	54	56	78	22	46	51	71					
250	255.02	7	11423	8	0.0009	32	62	78	108	25	52	56	78	21	43	51	71					
280	289.33	6	11858	8	0.0005	32	62	78	108	25	51	56	78	21	42	51	71					
315	322.71	6	11858	7	0.0005	32	62	78	108	23	46	56	78	21	41	51	71					
355	366.18	5	11423	6	0.0005	32	62	78	108	25	52	56	78	22	45	51	71					
400	405.06	4	10996	5	0.0005	32	62	78	108	25	53	56	78	22	44	51	71					

E3B / E4B ...20

50 Hz

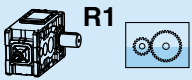

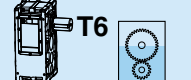








15 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P_{t0} [kW]	H ₂ O		P_{t0} [kW]	H ₂ O		P_{t0} [kW]	H ₂ O					
n₁ = 1000 rpm	25	25.56	39	13961	57	0.0147	64	109	130	174	79	108	144	173	70	97	128	154	E3B
	28	28.51	35	13961	51	0.0140	63	107	129	171	78	107	142	171	69	94	125	151	
	31.5	32.35	31	13961	45	0.0131	63	106	129	170	78	106	141	170	68	93	123	148	
	35.5	36.71	27	13961	40	0.0076	55	92	128	150	67	92	123	147	62	85	113	136	
	40	40.94	24	13961	36	0.0072	53	90	128	148	66	90	120	145	60	83	110	132	
	45	46.46	22	13961	31	0.0068	53	90	128	148	66	90	119	143	59	82	108	130	
	50	51.13	20	13961	29	0.0043	45	75	128	148	55	76	101	121	52	71	94	113	
	56	57.03	18	13961	26	0.0042	45	74	128	148	55	75	99	119	51	70	92	111	
	63	64.71	15	13961	23	0.0039	44	73	128	148	54	74	98	118	50	69	91	110	
	71	73.41	14	13689	20	0.0023	44	64	128	148	44	61	92	107	42	58	84	98	
	80	81.88	12	13689	18	0.0022	44	64	128	148	44	60	92	107	41	57	84	98	
	90	92.91	11	13689	15	0.0021	44	64	128	148	43	59	92	107	41	56	84	98	
	100	102.78	10	13152	13	0.0021	44	64	128	148	40	55	92	107	38	52	84	98	
	112	117.29	9	13689	12	0.0032	39	66	103	118	48	65	87	105	41	56	74	89	
	125	130.82	8	13689	11	0.0032	39	65	103	118	47	65	86	104	40	54	72	87	
	140	148.44	7	13689	10	0.0031	39	67	103	118	48	66	88	106	40	55	72	87	
	160	168.42	6	13689	9	0.0016	36	59	103	118	43	59	79	95	38	52	69	83	
	180	187.85	5	13689	8	0.0016	36	59	103	118	43	58	78	94	37	51	68	81	
	200	213.15	5	13689	7	0.0015	36	60	103	118	44	60	80	96	37	51	69	82	
	224	234.58	4	13689	6	0.0009	36	53	103	118	39	53	74	86	35	48	68	78	
250	261.65	4	13689	5	0.0009	36	53	103	118	38	52	74	86	34	47	68	78		
280	296.89	3	13419	5	0.0009	36	54	103	118	39	53	74	87	34	47	68	78		
315	336.83	3	13689	4	0.0005	36	51	103	118	34	47	74	85	31	43	68	78		
355	375.70	3	13689	4	0.0005	36	51	103	118	34	46	74	85	30	42	68	78		
400	426.30	2	13419	3	0.0005	36	51	103	118	34	47	74	85	30	42	68	78		
450	471.56	2	12888	3	0.0005	49	78	114	144	54	74	107	126	44	60	88	104		
																		E4B 	

E3B / E4B ...20

60 Hz

15 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	 R1				 S5				 T6				Type			
							P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		
n₁ = 1500 rpm	25	25.56	59	13961	86	0.0147	62	153	129	217	51	145	135	206	55	121	112	171	E3B 			
	28	28.51	53	13961	77	0.0140	63	152	129	216	51	145	136	207	58	119	110	169				
	31.5	32.35	46	13961	68	0.0131	62	151	128	214	51	144	134	205	58	116	108	164				
	35.5	36.71	41	13961	60	0.0076	54	131	128	186	51	126	117	179	57	111	103	157				
	40	40.94	37	13961	54	0.0072	53	127	128	181	51	123	115	175	55	107	100	152				
	45	46.46	32	13961	47	0.0068	52	126	128	178	51	122	113	173	54	105	97	149				
	50	51.13	29	13961	43	0.0043	45	106	128	170	51	104	97	147	48	94	87	134				
	56	57.03	26	13961	38	0.0042	44	103	128	170	50	101	94	143	46	91	86	129				
	63	64.71	23	13961	34	0.0039	44	102	128	170	50	99	94	141	45	89	85	127				
	71	73.41	20	13689	29	0.0023	44	86	128	170	42	83	92	122	39	77	84	112				
	80	81.88	18	13689	26	0.0022	44	86	128	170	41	81	92	122	38	74	84	112				
	90	92.91	16	13689	23	0.0021	44	86	128	170	41	79	92	122	37	73	84	112				
	100	102.78	15	13152	20	0.0021	44	86	128	170	38	74	92	122	35	68	84	112				
	112	117.29	13	13689	18	0.0032	38	92	103	136	45	88	82	125	35	68	68	97	E4B 			
	125	130.82	11	13689	16	0.0032	37	90	103	136	44	86	80	122	33	65	68	93				
	140	148.44	10	13689	14	0.0031	38	92	103	136	45	87	81	124	33	65	68	92				
	160	168.42	9	13689	13	0.0016	36	83	103	136	41	80	75	113	33	66	68	93				
	180	187.85	8	13689	11	0.0016	36	81	103	136	40	78	74	111	32	63	68	90				
	200	213.15	7	13689	10	0.0015	36	83	103	136	41	79	75	112	32	63	68	90				
	224	234.58	6	13689	9	0.0009	36	74	103	136	37	71	74	101	31	61	68	90				
250	261.65	6	13689	8	0.0009	36	72	103	136	36	70	74	100	30	59	68	90					
280	296.89	5	13419	7	0.0009	36	74	103	136	36	70	74	100	30	58	68	90					
315	336.83	4	13689	6	0.0005	36	69	103	136	32	63	74	98	28	55	68	90					
355	375.70	4	13689	6	0.0005	36	69	103	136	31	61	74	98	27	53	68	90					
400	426.30	4	13419	5	0.0005	36	69	103	136	31	61	74	98	27	52	68	90					
450	471.56	3	12888	4	0.0005	48	107	112	171	49	95	99	144	36	71	77	111					

E3B / E4B ...20

60 Hz

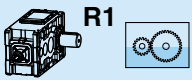

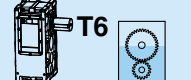








15 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O					
								127	130		123	140		106	120	63	101		
n ₁ = 1200 rpm	25	25.56	47	13961	69	0.0147	64	127	130	192	77	123	140	187	66	106	120	160	E3B
	28	28.51	42	13961	62	0.0140	63	125	129	190	77	122	139	185	64	104	117	157	
	31.5	32.35	37	13961	54	0.0131	63	124	128	188	76	121	138	184	63	101	115	153	
	35.5	36.71	33	13961	48	0.0076	55	108	128	163	66	106	121	160	59	95	108	144	
	40	40.94	29	13961	43	0.0072	53	105	128	159	65	104	118	157	57	92	105	139	
	45	46.46	26	13961	38	0.0068	53	104	128	158	64	103	117	155	56	91	103	137	
	50	51.13	23	13961	34	0.0043	45	88	128	148	54	87	99	132	50	80	91	121	
	56	57.03	21	13961	31	0.0042	44	86	128	148	53	85	97	129	49	78	88	118	
	63	64.71	19	13961	27	0.0039	44	85	128	148	53	84	96	128	48	77	87	116	
	71	73.41	16	13689	23	0.0023	44	70	128	148	44	70	92	108	41	65	84	100	
	80	81.88	15	13689	21	0.0022	44	69	128	148	43	69	92	107	40	64	84	98	E4B
	90	92.91	13	13689	19	0.0021	44	68	128	148	42	68	92	107	39	63	84	98	
	100	102.78	12	13152	16	0.0021	44	64	128	148	39	63	92	107	36	58	84	98	
	112	117.29	10	13689	15	0.0032	39	76	103	118	47	75	85	113	37	60	68	91	
	125	130.82	9	13689	13	0.0032	38	75	103	118	46	73	84	111	36	58	68	88	
	140	148.44	8	13689	12	0.0031	39	77	103	118	47	75	85	113	36	58	68	87	
	160	168.42	7	13689	10	0.0016	36	69	103	118	42	68	77	102	35	57	68	86	
	180	187.85	6	13689	9	0.0016	36	68	103	118	42	66	76	101	34	55	68	83	
	200	213.15	6	13689	8	0.0015	36	69	103	118	42	68	77	102	34	55	68	83	
	224	234.58	5	13689	7	0.0009	36	62	103	118	38	61	74	92	33	53	68	80	
250	261.65	5	13689	7	0.0009	36	61	103	118	37	60	74	90	32	51	68	79		
280	296.89	4	13419	6	0.0009	36	62	103	118	38	60	74	91	32	51	68	78		
315	336.83	4	13689	5	0.0005	36	54	103	118	33	54	74	85	30	48	68	78		
355	375.70	3	13689	5	0.0005	36	53	103	118	33	52	74	85	29	46	68	78		
400	426.30	3	13419	4	0.0005	36	54	103	118	33	53	74	85	28	46	68	78		
450	471.56	3	12888	3	0.0005	49	87	114	152	52	83	104	131	39	63	82	103		

E3B / E4B ...20

60 Hz



15 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	 R1				 S5				 T6				Type			
							P_{t0} [kW]					P_{t0} [kW]					P_{t0} [kW]					
$n_1 = 1800$ rpm	25	25.56	70	13961	103	0.0147	59	159	128	222	41	142	125	198	33	116	101	161	E3B 			
	28	28.51	63	13961	92	0.0140	62	160	128	224	41	143	126	200	41	114	100	159				
	31.5	32.35	56	13961	81	0.0131	61	158	128	221	41	142	125	198	44	111	97	154				
	35.5	36.71	49	13961	72	0.0076	52	136	128	190	41	124	109	173	48	109	96	152				
	40	40.94	44	13961	64	0.0072	52	134	128	186	41	122	107	170	49	106	93	147				
	45	46.46	39	13961	57	0.0068	51	131	128	184	41	120	106	168	49	103	90	144				
	50	51.13	35	13961	51	0.0043	44	111	128	170	41	103	93	144	45	94	85	131				
	56	57.03	32	13961	46	0.0042	44	108	128	170	41	100	92	140	44	91	84	127				
	63	64.71	28	13961	41	0.0039	44	106	128	170	41	98	92	137	43	89	84	124				
	71	73.41	25	13689	35	0.0023	44	88	128	170	40	82	92	122	37	77	84	112				
	80	81.88	22	13689	32	0.0022	44	87	128	170	39	80	92	122	36	74	84	112				
	90	92.91	19	13689	28	0.0021	44	86	128	170	38	78	92	122	35	73	84	112				
	100	102.78	18	13152	24	0.0021	44	86	128	170	35	73	92	122	33	68	84	112				
	112	117.29	15	13689	22	0.0032	38	96	103	136	42	86	76	120	31	65	68	91	E4B 			
	125	130.82	14	13689	20	0.0032	37	93	103	136	40	84	75	117	30	62	68	90				
	140	148.44	12	13689	17	0.0031	37	95	103	136	41	85	75	118	29	60	68	90				
	160	168.42	11	13689	15	0.0016	36	87	103	136	38	79	74	110	30	63	68	90				
	180	187.85	10	13689	14	0.0016	36	84	103	136	37	76	74	107	29	60	68	90				
	200	213.15	8	13689	12	0.0015	36	86	103	136	37	77	74	108	29	60	68	90				
	224	234.58	8	13689	11	0.0009	36	77	103	136	34	70	74	99	28	59	68	90				
250	261.65	7	13689	10	0.0009	36	75	103	136	33	68	74	98	27	57	68	90					
280	296.89	6	13419	9	0.0009	36	76	103	136	33	69	74	99	27	56	68	90					
315	336.83	5	13689	8	0.0005	36	69	103	136	30	62	74	98	26	54	68	90					
355	375.70	5	13689	7	0.0005	36	69	103	136	29	60	74	98	25	51	68	90					
400	426.30	4	13419	6	0.0005	36	69	103	136	29	60	74	98	24	51	68	90					
450	471.56	4	12888	5	0.0005	48	110	111	174	44	91	92	137	33	67	72	106					

E3B / E4B ...22

50 Hz

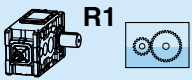

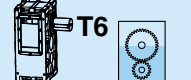








20 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O					
								134	143		132	157		117	139	117	140		
n ₁ = 1000 rpm	18	17.51	57	19413	116	0.0528	77	134	143	200	91	132	157	197	78	117	139	174	E3B 
	20	19.53	51	19413	104	0.0514	79	136	145	202	94	134	160	200	81	117	140	174	
	22.4	21.89	46	18709	90	0.0494	72	125	138	186	87	123	147	184	74	108	128	160	
	25	25.14	40	19413	81	0.0264	67	116	138	172	80	115	137	171	74	105	126	157	
	28	28.04	36	19413	73	0.0258	66	115	138	171	80	114	136	170	73	104	124	155	
	31.5	31.43	32	18837	63	0.0248	62	108	138	163	75	107	128	160	68	98	116	145	
	35.5	35.02	29	19413	58	0.0151	55	96	138	162	67	95	114	142	63	89	106	133	
	40	39.06	26	19413	52	0.0148	54	141	151	215	39	83	129	162	36	135	161	201	
	45	43.78	23	18837	45	0.0143	54	89	138	162	63	89	106	133	58	83	99	123	
	50	50.29	20	19038	40	0.0081	54	78	138	162	54	78	99	117	51	73	91	109	
	56	56.09	18	19038	36	0.0080	54	79	138	162	55	78	99	118	51	73	91	109	
	63	62.86	16	18837	31	0.0077	54	78	138	162	51	72	99	117	48	68	91	107	
	71	69.14	14	19038	29	0.0076	54	78	138	162	49	70	99	117	46	65	91	107	
	80	75.43	13	19038	26	0.0134	46	80	92	130	55	78	93	117	47	66	79	99	E4B 
	90	84.13	12	19038	24	0.0133	46	80	92	130	55	79	94	117	46	65	78	97	
	100	94.29	11	18667	21	0.0132	43	74	92	130	51	73	87	109	42	60	72	90	
	112	108.31	9	19038	18	0.0069	43	72	92	130	50	71	84	105	44	62	74	93	
	125	120.80	8	19038	17	0.0069	43	72	92	130	50	71	85	106	43	62	74	92	
	140	135.38	7	18667	14	0.0068	43	67	92	130	46	66	78	98	40	57	68	86	
	160	150.86	7	19038	13	0.0040	43	63	92	130	44	62	74	94	39	56	67	86	
180	168.26	6	18667	12	0.0040	43	63	92	130	44	62	74	94	39	55	66	86		
200	188.57	5	18667	10	0.0040	43	62	92	130	41	58	69	93	36	51	61	86		
224	216.62	5	18667	9	0.0022	43	62	92	130	38	55	66	93	35	50	61	86		
250	241.61	4	18667	8	0.0021	43	62	92	130	38	54	66	93	35	49	61	86		
280	270.77	4	18667	7	0.0021	43	62	92	130	35	50	66	93	32	46	61	86		
315	297.85	3	18299	6	0.0021	43	62	92	130	34	48	66	93	30	43	61	86		

E3B / E4B ...22

50 Hz

20 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	 R1				 S5				 T6				Type			
							P_{t0} [kW]					P_{t0} [kW]					P_{t0} [kW]					
n₁ = 1500 rpm	18	17.51	86	19413	174	0.0528	63	185	139	248	62	173	140	232	36	137	104	190	E3B 			
	20	19.53	77	19413	156	0.0514	76	192	143	257	77	180	150	241	42	143	112	192				
	22.4	21.89	69	18709	134	0.0494	60	170	138	228	62	160	133	214	36	128	98	171				
	25	25.14	60	19413	121	0.0264	61	161	138	216	67	153	127	205	50	134	112	180				
	28	28.04	53	19413	109	0.0258	64	160	138	215	70	153	127	205	58	132	110	178				
	31.5	31.43	48	18837	94	0.0248	57	148	138	199	65	142	118	190	51	122	102	164				
	35.5	35.02	43	19413	87	0.0151	54	133	138	189	59	128	107	172	52	116	97	156				
	40	39.06	38	19413	78	0.0148	54	220	153	295	39	169	99	227	36	199	130	267				
	45	43.78	34	18837	68	0.0143	54	123	138	189	57	119	100	159	50	106	91	143				
	50	50.29	30	19038	59	0.0081	54	107	138	189	50	104	99	139	46	96	91	129				
	56	56.09	27	19038	53	0.0080	54	106	138	189	50	102	99	138	46	94	91	127				
	63	62.86	24	18837	47	0.0077	54	105	138	189	47	96	99	136	44	89	91	125				
	71	69.14	22	19038	43	0.0076	54	105	138	189	45	92	99	136	41	84	91	125				
	80	75.43	20	19038	40	0.0134	44	109	92	151	50	102	85	137	39	79	66	106	E4B 			
	90	84.13	18	19038	36	0.0133	43	108	92	151	49	100	84	135	37	76	63	102				
	100	94.29	16	18667	31	0.0132	43	101	92	151	46	94	79	126	34	70	61	100				
	112	108.31	14	19038	28	0.0069	43	98	92	151	45	92	77	124	37	76	64	102				
	125	120.80	12	19038	25	0.0069	43	97	92	151	45	91	76	123	36	74	62	100				
	140	135.38	11	18667	22	0.0068	43	90	92	151	42	85	71	114	34	69	61	100				
	160	150.86	10	19038	20	0.0040	43	85	92	151	40	81	68	110	34	69	61	100				
180	168.26	9	18667	17	0.0040	43	85	92	151	39	80	67	109	33	67	61	100					
200	188.57	8	18667	16	0.0040	43	84	92	151	36	74	66	109	31	62	61	100					
224	216.62	7	18667	14	0.0022	43	84	92	151	34	70	66	109	30	62	61	100					
250	241.61	6	18667	12	0.0021	43	84	92	151	34	69	66	109	30	60	61	100					
280	270.77	6	18667	11	0.0021	43	84	92	151	31	64	66	109	28	56	61	100					
315	297.85	5	18299	10	0.0021	43	84	92	151	31	61	66	109	28	55	61	100					

E3B / E4B ...22

60 Hz

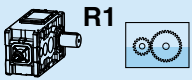

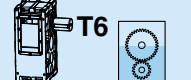








20 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O					
								155	141		149	151		126	128	159	162		
n ₁ = 1200 rpm	18	17.51	69	19413	139	0.0528	73	155	141	220	81	149	151	211	61	126	128	179	E3B
	20	19.53	61	19413	125	0.0514	78	158	144	224	88	152	155	216	67	127	129	180	
	22.4	21.89	55	18709	107	0.0494	68	143	138	203	79	138	141	196	59	115	117	163	
	25	25.14	48	19413	97	0.0264	65	134	138	190	76	130	133	185	66	117	119	166	
	28	28.04	43	19413	87	0.0258	65	133	138	189	78	130	132	184	67	115	117	163	
	31.5	31.43	38	18837	75	0.0248	61	125	138	177	73	121	124	172	63	107	109	152	
	35.5	35.02	34	19413	70	0.0151	55	111	138	162	65	109	111	154	59	100	102	142	
	40	39.06	31	19413	62	0.0148	54	171	155	242	39	95	133	186	36	159	162	225	
	45	43.78	27	18837	54	0.0143	54	103	138	162	61	101	103	144	55	92	94	131	
	50	50.29	24	19038	48	0.0081	54	89	138	162	53	88	99	125	49	82	91	117	
	56	56.09	21	19038	43	0.0080	54	89	138	162	53	88	99	125	49	82	91	116	
	63	62.86	19	18837	38	0.0077	54	83	138	162	49	82	99	118	46	76	91	109	
	71	69.14	17	19038	35	0.0076	54	80	138	162	47	79	99	117	44	73	91	107	
	80	75.43	16	19038	32	0.0134	45	91	92	130	53	88	90	125	42	71	72	100	E4B
	90	84.13	14	19038	28	0.0133	45	91	92	130	52	88	89	124	41	69	70	97	
	100	94.29	13	18667	25	0.0132	43	85	92	130	49	82	83	116	38	63	65	90	
	112	108.31	11	19038	22	0.0069	43	82	92	130	48	80	81	113	40	67	69	96	
	125	120.80	10	19038	20	0.0069	43	82	92	130	48	79	81	113	40	66	67	94	
	140	135.38	9	18667	17	0.0068	43	76	92	130	44	74	75	104	37	61	62	87	
	160	150.86	8	19038	16	0.0040	43	72	92	130	42	70	71	99	37	61	62	87	
180	168.26	7	18667	14	0.0040	43	72	92	130	42	70	71	99	36	60	61	86		
200	188.57	6	18667	12	0.0040	43	67	92	130	39	65	67	93	33	55	61	86		
224	216.62	6	18667	11	0.0022	43	63	92	130	37	61	66	93	33	54	61	86		
250	241.61	5	18667	10	0.0021	43	63	92	130	36	60	66	93	32	53	61	86		
280	270.77	4	18667	9	0.0021	43	62	92	130	33	56	66	93	30	49	61	86		
315	297.85	4	18299	8	0.0021	43	62	92	130	32	53	66	93	28	47	61	86		

E3B / E4B ...22

60 Hz

20 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kg m^2]	 R1				 S5				 T6				Type			
							P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		
$n_1 = 1800$ rpm	18	17.51	103	19413	209	0.0528	56	191	138	253	39	165	113	221	36	100	91	171	E3B 			
	20	19.53	92	19413	187	0.0514	69	201	141	266	55	175	133	232	36	117	91	178				
	22.4	21.89	82	18709	161	0.0494	54	174	138	231	44	154	115	204	36	101	91	157				
	25	25.14	72	19413	146	0.0264	55	167	138	220	48	149	117	198	36	130	92	172				
	28	28.04	64	19413	131	0.0258	59	168	138	222	55	150	118	199	36	129	95	171				
	31.5	31.43	57	18837	113	0.0248	54	153	138	202	51	138	109	183	36	118	91	156				
	35.5	35.02	51	19413	104	0.0151	54	138	138	189	48	126	100	167	38	115	92	152				
	40	39.06	46	19413	94	0.0148	54	242	138	320	39	76	99	244	36	210	91	278				
	45	43.78	41	18837	81	0.0143	54	127	138	189	48	117	99	154	39	105	91	138				
	50	50.29	36	19038	71	0.0081	54	110	138	189	43	103	99	138	38	96	91	128				
	56	56.09	32	19038	64	0.0080	54	108	138	189	44	100	99	136	39	94	91	126				
	63	62.86	29	18837	56	0.0077	54	105	138	189	43	95	99	136	38	88	91	125				
	71	69.14	26	19038	52	0.0076	54	105	138	189	42	91	99	136	36	84	91	125				
	80	75.43	24	19038	48	0.0134	43	113	92	151	46	99	78	131	29	73	61	100	E4B 			
	90	84.13	21	19038	43	0.0133	43	110	92	151	45	96	76	127	29	70	61	100				
	100	94.29	19	18667	37	0.0132	43	104	92	151	42	91	71	120	29	65	61	100				
	112	108.31	17	19038	33	0.0069	43	101	92	151	42	90	71	119	34	73	61	100				
	125	120.80	15	19038	30	0.0069	43	99	92	151	41	88	69	117	33	70	61	100				
	140	135.38	13	18667	26	0.0068	43	93	92	151	38	82	66	110	30	65	61	100				
	160	150.86	12	19038	24	0.0040	43	87	92	151	37	79	66	109	31	67	61	100				
180	168.26	11	18667	21	0.0040	43	86	92	151	36	77	66	109	30	64	61	100					
200	188.57	10	18667	19	0.0040	43	84	92	151	33	72	66	109	28	60	61	100					
224	216.62	8	18667	16	0.0022	43	84	92	151	32	68	66	109	28	60	61	100					
250	241.61	7	18667	15	0.0021	43	84	92	151	31	67	66	109	28	58	61	100					
280	270.77	7	18667	13	0.0021	43	84	92	151	31	62	66	109	28	55	61	100					
315	297.85	6	18299	12	0.0021	43	84	92	151	31	60	66	109	28	55	61	100					

E3B / E4B ...25

50 Hz

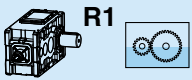

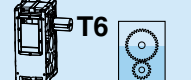








30 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O					
								168	227		168	251		151	226				
n ₁ = 1000 rpm	22.4	23.88	42	29098	128	0.0549	95	168	227	300	120	168	251	298	107	151	226	270	E3B
	25	26.63	38	28556	112	0.0531	96	168	227	299	120	168	251	298	106	149	223	266	
	28	29.85	34	25451	89	0.0507	88	156	225	277	111	155	232	276	98	138	206	246	
	31.5	34.29	29	28556	87	0.0275	82	144	225	257	103	144	216	257	96	134	201	239	
	35.5	38.24	26	28020	77	0.0266	80	142	225	256	102	142	213	253	93	131	196	233	
	40	42.86	23	25629	63	0.0255	76	134	225	254	96	134	200	238	88	123	184	219	
	45	47.76	21	28556	63	0.0157	67	119	225	254	86	120	179	213	80	112	168	201	
	50	53.27	19	27489	54	0.0152	67	118	225	254	85	118	177	211	79	111	166	197	
	56	59.69	17	25629	45	0.0146	65	111	225	254	80	111	166	198	74	104	156	186	
	63	68.57	15	28556	44	0.0084	65	96	225	254	69	97	162	183	66	92	149	168	
	71	76.48	13	27489	38	0.0082	65	96	225	254	69	96	162	183	65	91	149	168	
	80	85.71	12	25629	31	0.0079	65	94	225	254	64	90	162	183	61	85	149	168	
	90	94.29	11	25926	29	0.0078	65	94	225	254	62	86	162	183	58	81	149	168	
	100	102.86	10	28020	29	0.0135	56	99	180	203	71	99	148	176	61	86	129	153	
	112	114.73	9	27489	25	0.0134	56	99	180	203	71	99	147	176	60	84	126	150	
	125	128.57	8	25415	21	0.0133	52	92	180	203	66	92	137	163	56	78	119	139	
	140	147.69	7	28020	20	0.0070	52	89	180	203	64	89	133	158	57	80	120	142	
	160	164.73	6	26963	17	0.0069	52	89	180	203	63	88	132	157	56	78	119	139	
	180	184.62	5	25415	14	0.0069	52	82	180	203	59	82	130	147	51	72	119	134	
	200	205.71	5	28020	14	0.0040	52	79	180	203	56	79	130	146	51	72	119	134	
224	229.45	4	26963	12	0.0040	52	78	180	203	56	78	130	146	50	70	119	134		
250	257.14	4	25415	10	0.0040	52	75	180	203	52	72	130	146	47	65	119	134		
280	295.38	3	28020	10	0.0022	52	75	180	203	49	69	130	146	45	64	119	134		
315	329.47	3	26963	9	0.0022	52	75	180	203	48	68	130	146	44	62	119	134		
355	369.23	3	25415	7	0.0021	52	75	180	203	45	63	130	146	41	57	119	134		
400	406.15	2	25415	7	0.0021	52	75	180	203	43	60	130	146	39	54	119	134		
																		E4B 	

E3B / E4B ...25

50 Hz

30 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kg m^2]	 R1				 S5				 T6				Type			
							P_{t0} [kW]					P_{t0} [kW]					P_{t0} [kW]					
$n_1 = 1500$ rpm	22.4	23.88	63	29098	191	0.0549	83	233	225	360	92	222	233	344	59	188	198	292	E3B 			
	25	26.63	56	28556	168	0.0531	96	238	226	368	108	227	238	351	76	187	196	290				
	28	29.85	50	25451	134	0.0507	79	212	225	327	93	203	212	314	60	168	176	260				
	31.5	34.29	44	28556	131	0.0275	78	201	225	311	91	195	204	302	79	175	183	270				
	35.5	38.24	39	28020	115	0.0266	79	198	225	307	94	192	201	297	81	169	178	262				
	40	42.86	35	25629	94	0.0255	71	184	225	288	88	178	187	276	74	157	165	243				
	45	47.76	31	28556	94	0.0157	66	166	225	286	80	163	170	251	72	149	156	231				
	50	53.27	28	27489	81	0.0152	65	162	225	286	79	158	166	245	71	144	151	223				
	56	59.69	25	25629	67	0.0146	65	153	225	286	75	150	162	231	68	136	149	211				
	63	68.57	22	28556	65	0.0084	65	133	225	286	66	131	162	207	61	123	149	191				
	71	76.48	20	27489	56	0.0082	65	129	225	286	64	127	162	206	59	118	149	189				
	80	85.71	18	25629	47	0.0079	65	126	225	286	60	120	162	206	56	111	149	189				
	90	94.29	16	25926	43	0.0078	65	126	225	286	58	115	162	206	53	106	149	189				
	100	102.86	15	28020	43	0.0135	54	136	180	229	66	131	137	202	53	105	119	163	E4B 			
	112	114.73	13	27489	38	0.0134	53	134	180	229	64	128	134	197	50	100	119	155				
	125	128.57	12	25415	31	0.0133	52	126	180	229	60	120	130	185	46	93	119	151				
	140	147.69	10	28020	30	0.0070	52	122	180	229	59	118	130	182	50	101	119	156				
	160	164.73	9	26963	26	0.0069	52	120	180	229	58	115	130	178	48	96	119	151				
	180	184.62	8	25415	22	0.0069	52	112	180	229	54	107	130	166	44	89	119	151				
	200	205.71	7	28020	21	0.0040	52	107	180	229	52	103	130	165	45	91	119	151				
224	229.45	7	26963	18	0.0040	52	105	180	229	51	101	130	165	44	87	119	151					
250	257.14	6	25415	16	0.0040	52	101	180	229	47	94	130	165	40	81	119	151					
280	295.38	5	28020	15	0.0022	52	101	180	229	45	89	130	165	40	80	119	151					
315	329.47	5	26963	13	0.0022	52	101	180	229	43	87	130	165	38	77	119	151					
355	369.23	4	25415	11	0.0021	52	101	180	229	40	80	130	165	35	71	119	151					
400	406.15	4	25415	10	0.0021	52	101	180	229	38	76	130	165	34	67	119	151					

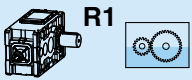

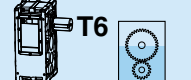








E3B / E4B ...25

60 Hz

30 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kg m^2]	R1				S5				T6				Type
							P_{t0} [kW]	H ₂ O		P_{t0} [kW]	H ₂ O		P_{t0} [kW]	H ₂ O					
$n_1 = 1200$ rpm	22.4	23.88	50	29098	153	0.0549	92	195	226	324	110	190	243	317	91	166	212	277	E3B
	25	26.63	45	28556	135	0.0531	95	196	227	327	116	192	245	320	96	164	210	274	
	28	29.85	40	25451	107	0.0507	85	179	225	298	107	175	223	291	86	149	191	250	
	31.5	34.29	35	28556	105	0.0275	81	168	225	280	101	166	211	276	90	150	192	251	
	35.5	38.24	31	28020	92	0.0266	80	165	225	274	99	162	207	271	89	146	187	244	
	40	42.86	28	25629	75	0.0255	75	155	225	258	93	152	195	254	83	137	175	228	
	45	47.76	25	28556	75	0.0157	67	138	225	254	84	137	175	229	78	127	163	213	
	50	53.27	23	27489	65	0.0152	66	136	225	254	82	135	172	224	76	124	159	207	
	56	59.69	20	25629	54	0.0146	65	128	225	254	78	127	164	212	71	117	151	195	
	63	68.57	18	28556	52	0.0084	65	111	225	254	68	111	162	186	64	104	149	174	
	71	76.48	16	27489	45	0.0082	65	109	225	254	67	109	162	185	62	102	149	171	E4B
	80	85.71	14	25629	38	0.0079	65	103	225	254	63	102	162	183	58	96	149	168	
	90	94.29	13	25926	35	0.0078	65	98	225	254	60	98	162	183	56	91	149	168	
	100	102.86	12	28020	34	0.0135	55	114	180	203	68	112	143	187	57	93	119	156	
	112	114.73	10	27489	30	0.0134	55	113	180	203	68	111	141	184	55	90	119	150	
	125	128.57	9	25415	25	0.0133	52	106	180	203	63	103	132	172	51	83	119	139	
	140	147.69	8	28020	24	0.0070	52	103	180	203	62	101	130	168	54	88	119	147	
	160	164.73	7	26963	21	0.0069	52	102	180	203	61	99	130	166	52	85	119	142	
	180	184.62	6	25415	17	0.0069	52	94	180	203	56	92	130	154	48	78	119	134	
	200	205.71	6	28020	17	0.0040	52	90	180	203	54	89	130	149	48	79	119	134	
224	229.45	5	26963	15	0.0040	52	89	180	203	54	88	130	148	47	77	119	134		
250	257.14	5	25415	12	0.0040	52	83	180	203	50	81	130	146	43	71	119	134		
280	295.38	4	28020	12	0.0022	52	78	180	203	47	77	130	146	43	70	119	134		
315	329.47	4	26963	10	0.0022	52	77	180	203	46	76	130	146	41	68	119	134		
355	369.23	3	25415	9	0.0021	52	75	180	203	43	70	130	146	38	63	119	134		
400	406.15	3	25415	8	0.0021	52	75	180	203	41	67	130	146	36	59	119	134		

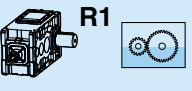
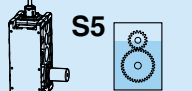
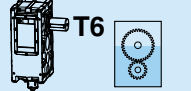








E3B / E4B ...25
60 Hz
30 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	 R1				 S5				 T6				Type			
							P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		
n₁ = 1800 rpm	22.4	23.88	75	29098	230	0.0549	73	241	225	365	69	217	214	329	43	163	161	273	E3B 			
	25	26.63	68	28556	202	0.0531	88	250	225	379	86	223	221	338	43	179	174	272				
	28	29.85	60	25451	161	0.0507	66	218	225	330	67	197	195	299	43	158	157	240				
	31.5	34.29	52	28556	157	0.0275	70	209	225	317	76	192	190	291	55	172	170	261				
	35.5	38.24	47	28020	138	0.0266	77	207	225	314	84	190	188	288	64	167	166	254				
	40	42.86	42	25629	113	0.0255	67	190	225	290	75	175	173	265	55	153	152	233				
	45	47.76	38	28556	113	0.0157	65	173	225	286	70	161	162	244	60	149	150	227				
	50	53.27	34	27489	97	0.0152	65	168	225	286	71	157	162	237	62	144	149	218				
	56	59.69	30	25629	81	0.0146	65	158	225	286	68	148	162	224	59	135	149	205				
	63	68.57	26	28556	78	0.0084	65	138	225	286	59	131	162	206	55	124	149	191				
	71	76.48	24	27489	68	0.0082	65	133	225	286	59	126	162	206	54	119	149	189				
	80	85.71	21	25629	56	0.0079	65	128	225	286	56	119	162	206	52	112	149	189				
	90	94.29	19	25926	52	0.0078	65	126	225	286	54	114	162	206	50	106	149	189				
	100	102.86	17	28020	51	0.0135	53	141	180	229	60	128	130	194	47	100	119	153	E4B 			
	112	114.73	16	27489	45	0.0134	52	137	180	229	58	123	130	187	44	94	119	151				
	125	128.57	14	25415	37	0.0133	52	130	180	229	55	116	130	176	41	87	119	151				
	140	147.69	12	28020	36	0.0070	52	126	180	229	55	116	130	175	46	98	119	151				
	160	164.73	11	26963	31	0.0069	52	123	180	229	53	111	130	169	43	92	119	151				
	180	184.62	10	25415	26	0.0069	52	115	180	229	49	104	130	165	40	85	119	151				
	200	205.71	9	28020	26	0.0040	52	110	180	229	48	102	130	165	42	89	119	151				
224	229.45	8	26963	22	0.0040	52	107	180	229	46	98	130	165	40	85	119	151					
250	257.14	7	25415	19	0.0040	52	101	180	229	43	92	130	165	37	78	119	151					
280	295.38	6	28020	18	0.0022	52	101	180	229	41	88	130	165	37	79	119	151					
315	329.47	5	26963	15	0.0022	52	101	180	229	40	84	130	165	35	75	119	151					
355	369.23	5	25415	13	0.0021	52	101	180	229	38	78	130	165	34	69	119	151					
400	406.15	4	25415	12	0.0021	52	101	180	229	37	74	130	165	34	67	119	151					

E3B / E4B ...26

50 Hz

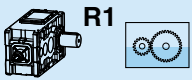

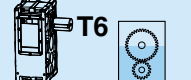








36 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	R1 				S5 				T6 				Type			
							P_{t0} [kW]					P_{t0} [kW]					P_{t0} [kW]					
$n_1 = 1000$ rpm	18	17.83	56	36008	211	0.1217	115	214	223	318	135	210	247	312	114	185	221	280	E3B 			
	20	19.89	50	36324	191	0.1176	111	201	210	299	129	198	233	294	112	175	208	263				
	22.4	22.60	44	36324	168	0.1105	108	197	206	293	129	194	228	288	110	172	202	255				
	25	25.60	39	35672	146	0.0659	103	185	195	275	122	183	215	271	113	169	199	252				
	28	28.55	35	35672	131	0.0639	97	174	195	259	118	173	203	257	108	160	188	237				
	31.5	32.46	31	35672	115	0.0605	95	171	195	255	117	169	199	252	106	156	183	232				
	35.5	35.66	28	35672	105	0.0380	85	153	195	231	105	153	179	227	98	143	169	213				
	40	39.77	25	35672	94	0.0370	81	145	195	229	100	145	170	215	94	136	160	202				
	45	45.21	22	35672	83	0.0352	79	142	195	229	98	142	167	210	91	133	156	197				
	50	51.20	20	35027	73	0.0204	77	125	195	229	86	125	147	185	82	118	139	176				
	56	57.11	18	35027	64	0.0199	77	119	195	229	82	119	142	177	78	113	133	168				
	63	64.91	15	35027	57	0.0190	77	116	195	229	80	116	140	172	76	110	130	163				
	71	72.86	14	35027	50	0.0187	77	111	195	229	76	109	140	165	71	103	129	154				
	80	80.82	12	35027	45	0.0164	72	129	156	192	89	129	151	191	79	115	136	171	E4B 			
	90	90.15	11	35027	41	0.0162	68	123	156	183	84	122	144	181	75	109	128	162				
	100	102.47	10	35027	36	0.0159	67	121	156	183	83	120	141	178	73	106	124	157				
	112	116.05	9	35027	32	0.0084	65	117	156	183	81	117	138	174	74	107	126	159				
	125	129.44	8	35027	28	0.0083	62	112	156	183	77	111	131	165	70	102	120	151				
	140	147.14	7	35027	25	0.0081	61	110	156	183	75	109	128	162	68	99	116	147				
	160	161.65	6	35027	23	0.0048	61	105	156	183	72	105	123	156	67	97	114	145				
180	180.30	6	35027	20	0.0047	61	100	156	183	69	100	117	148	63	92	108	137					
200	204.94	5	35027	18	0.0046	61	98	156	183	67	97	115	145	62	89	105	133					
224	232.11	4	34387	16	0.0025	61	93	156	183	64	93	112	138	60	87	103	129					
250	258.89	4	34387	14	0.0025	61	89	156	183	61	88	112	133	57	83	103	123					
280	294.28	3	34387	12	0.0025	61	89	156	183	59	86	112	132	55	80	103	121					
315	330.31	3	34387	11	0.0024	61	89	156	183	56	81	112	132	52	75	103	121					

E3B / E4B ...26

50 Hz

36 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	 R1				 S5				 T6				Type			
							P_{t0} [kW]					P_{t0} [kW]					P_{t0} [kW]					
n₁ = 1500 rpm	18	17.83	84	36008	317	0.1217	97	297	214	399	79	264	203	368	51	193	129	306	E3B 			
	20	19.89	75	36324	287	0.1176	91	278	200	373	85	253	196	347	51	192	136	286				
	22.4	22.60	66	36324	252	0.1105	87	271	196	363	84	252	199	337	51	189	140	274				
	25	25.60	59	35672	219	0.0659	91	260	195	348	91	245	197	328	69	218	168	292				
	28	28.55	53	35672	196	0.0639	85	244	195	326	89	231	188	310	65	204	161	274				
	31.5	32.46	46	35672	173	0.0605	84	238	195	319	93	225	185	302	68	197	162	264				
	35.5	35.66	42	35672	157	0.0380	79	216	195	290	87	207	170	277	74	190	156	254				
	40	39.77	38	35672	141	0.0370	79	204	195	273	86	196	161	262	76	179	147	240				
	45	45.21	33	35672	124	0.0352	77	199	195	270	86	191	157	255	76	173	142	232				
	50	51.20	29	35672	109	0.0204	77	174	195	267	76	170	142	227	72	158	131	212				
	56	57.11	26	35027	96	0.0199	77	165	195	267	74	161	140	216	69	150	129	201				
	63	64.91	23	35027	85	0.0190	77	161	195	267	74	157	140	210	67	145	129	195				
	71	72.86	21	35027	76	0.0187	77	152	195	267	70	148	140	198	64	136	129	183				
	80	80.82	19	35027	68	0.0164	70	179	156	240	82	170	140	228	70	144	119	194	E4B 			
	90	90.15	17	35027	61	0.0162	66	169	156	227	78	161	133	216	65	135	112	182				
	100	102.47	15	35027	54	0.0159	65	166	156	222	76	157	130	211	63	130	107	174				
	112	116.05	13	35027	47	0.0084	63	163	156	218	76	157	129	210	66	138	113	185				
	125	129.44	12	35027	43	0.0083	61	154	156	214	72	149	122	199	63	130	107	174				
	140	147.14	10	35027	37	0.0081	61	151	156	214	70	144	119	194	60	125	103	167				
	160	161.65	9	35027	34	0.0048	61	145	156	214	68	140	115	188	61	126	104	169				
180	180.30	8	35027	31	0.0047	61	137	156	214	64	133	112	178	57	119	103	159					
200	204.94	7	35027	27	0.0046	61	134	156	214	62	129	112	173	55	114	103	153					
224	232.11	6	34387	23	0.0025	61	127	156	214	60	123	112	165	54	113	103	151					
250	258.89	6	34387	21	0.0025	61	121	156	214	57	117	112	157	51	106	103	143					
280	294.28	5	34387	18	0.0025	61	119	156	214	55	113	112	154	49	102	103	141					
315	330.31	5	34387	16	0.0024	61	119	156	214	51	106	112	154	46	95	103	141					

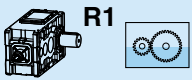

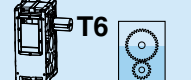








E3B / E4B ...26

60 Hz

36 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O					
								+	-		+	-		+	-				
n ₁ = 1200 rpm	18	17.83	67	36008	254	0.1217	107	248	219	351	114	233	234	334	76	193	194	288	E3B
	20	19.89	60	36324	229	0.1176	103	232	206	328	113	222	223	315	72	181	182	270	
	22.4	22.60	53	36324	202	0.1105	100	227	202	321	114	217	218	307	77	184	185	260	
	25	25.60	47	35672	175	0.0659	100	215	195	304	112	208	209	294	99	188	189	267	
	28	28.55	42	35672	157	0.0639	95	202	195	286	109	197	197	278	96	177	178	251	
	31.5	32.46	37	35672	138	0.0605	92	198	195	281	108	192	193	272	94	172	173	244	
	35.5	35.66	34	35672	126	0.0380	84	179	195	253	99	175	175	247	91	162	163	229	
	40	39.77	30	35672	113	0.0370	79	169	195	239	95	166	166	234	87	153	154	217	
	45	45.21	27	35672	88	0.0352	78	165	195	234	95	162	162	229	87	149	149	210	
	50	51.20	23	35672	88	0.0204	77	145	195	229	84	143	144	202	78	134	135	190	
	56	57.11	21	35027	77	0.0199	77	137	195	229	80	136	140	192	75	128	130	181	
	63	64.91	18	35027	68	0.0190	77	134	195	229	78	132	140	187	73	124	129	175	
	71	72.86	16	35027	60	0.0187	77	126	195	229	74	125	140	177	69	117	129	165	
	80	80.82	15	35027	54	0.0164	71	149	156	211	86	146	146	206	74	126	127	179	
	90	90.15	13	35027	49	0.0162	67	142	156	200	82	138	139	195	70	119	120	169	
	100	102.47	12	35027	43	0.0159	66	139	156	196	80	135	136	191	67	115	115	162	
	112	116.05	10	35027	38	0.0084	65	136	156	192	79	133	134	188	70	119	120	169	
	125	129.44	9	35027	34	0.0083	61	129	156	184	75	127	127	179	66	113	113	160	
	140	147.14	8	35027	30	0.0081	61	126	156	183	73	124	124	175	64	109	109	154	
	160	161.65	7	35027	27	0.0048	61	121	156	183	70	119	120	169	64	109	109	154	
180	180.30	7	35027	24	0.0047	61	115	156	183	67	113	114	160	60	103	104	145		
200	204.94	6	35027	21	0.0046	61	113	156	183	65	110	112	156	58	99	103	140		
224	232.11	5	34387	19	0.0025	61	107	156	183	62	105	112	149	57	97	103	138		
250	258.89	5	34387	17	0.0025	61	101	156	183	59	100	112	142	54	92	103	130		
280	294.28	4	34387	15	0.0025	61	99	156	183	57	97	112	137	52	89	103	126		
315	330.31	4	34387	13	0.0024	61	93	156	183	54	91	112	132	49	83	103	121		
																		E4B 	









E3B / E4B ...26
60 Hz
36 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kg m^2]	 R1				 S5				 T6				Type			
							P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		
n₁ = 1800 rpm	18	17.83	101	36008	381	0.1217	78	306	197	411	55	230	146	346	51	113	129	228	E3B 			
	20	19.89	90	36324	344	0.1176	77	287	196	383	55	230	142	330	51	117	129	229				
	22.4	22.60	80	36324	303	0.1105	80	281	195	371	55	235	155	321	51	125	129	227				
	25	25.60	70	35672	263	0.0659	86	272	195	359	57	239	166	316	51	192	130	281				
	28	28.55	63	35672	236	0.0639	80	255	195	336	71	225	164	299	51	187	129	264				
	31.5	32.46	55	35672	207	0.0605	79	248	195	327	66	220	167	291	51	188	132	253				
	35.5	35.66	50	35672	189	0.0380	77	227	195	300	69	205	156	270	57	189	135	250				
	40	39.77	45	35672	169	0.0370	77	213	195	282	68	194	150	256	53	178	132	236				
	45	45.21	40	35672	149	0.0352	77	208	195	274	70	188	146	249	56	172	132	227				
	50	51.20	35	35027	131	0.0204	77	183	195	267	63	169	140	223	56	160	129	212				
	56	57.11	32	35027	116	0.0199	77	173	195	267	65	161	140	212	56	152	129	201				
	63	64.91	28	35027	102	0.0190	77	168	195	267	65	156	140	206	57	146	129	194				
	71	72.86	25	35027	91	0.0187	77	158	195	267	63	147	140	196	55	137	129	182				
	80	80.82	22	35027	82	0.0164	68	186	156	246	76	166	129	220	57	139	108	184	E4B 			
	90	90.15	20	35027	73	0.0162	65	176	156	232	72	157	122	208	53	130	103	172				
	100	102.47	18	35027	64	0.0159	63	172	156	227	70	153	119	202	53	124	103	163				
	112	116.05	16	35027	57	0.0084	62	169	156	224	70	154	119	203	62	135	105	179				
	125	129.44	14	35027	51	0.0083	61	160	156	214	66	146	113	192	58	127	103	168				
	140	147.14	12	35027	45	0.0081	61	156	156	214	65	141	112	187	55	121	103	160				
	160	161.65	11	35027	41	0.0048	61	151	156	214	63	138	112	182	57	124	103	164				
180	180.30	10	35027	37	0.0047	61	142	156	214	60	130	112	172	53	117	103	155					
200	204.94	9	35027	32	0.0046	61	138	156	214	58	126	112	167	51	112	103	148					
224	232.11	8	34387	28	0.0025	61	131	156	214	55	121	112	160	51	112	103	148					
250	258.89	7	34387	25	0.0025	61	124	156	214	52	115	112	154	48	105	103	141					
280	294.28	6	34387	22	0.0025	61	121	156	214	51	111	112	154	46	100	103	141					
315	330.31	5	34387	20	0.0024	61	119	156	214	47	104	112	154	43	93	103	141					

E3B / E4B ...28

50 Hz

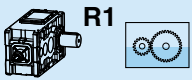

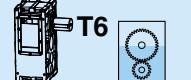








39 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	R1				S5				T6				Type			
							P_{t0} [kW]					P_{t0} [kW]					P_{t0} [kW]					
								P_{t0} [kW]	P_{t0} [kW]	P_{t0} [kW]	P_{t0} [kW]		P_{t0} [kW]	P_{t0} [kW]	P_{t0} [kW]	P_{t0} [kW]						
$n_1 = 1000 \text{ rpm}$	18	17.83	56	36300	213	0.1207	115	214	223	318	135	210	247	312	114	185	221	280	E3B 			
	20	19.89	50	38076	200	0.1168	111	201	210	299	129	198	233	294	112	175	208	263				
	22.4	22.60	44	36598	170	0.1099	108	197	206	293	129	194	228	288	110	172	202	255				
	25	25.60	39	38076	156	0.0654	103	185	195	275	122	183	215	271	113	169	199	252				
	28	28.55	35	38076	140	0.0635	97	174	195	259	118	173	203	257	108	160	188	237				
	31.5	32.46	31	36598	118	0.0602	95	171	195	255	117	169	199	252	106	156	183	232				
	35.5	35.66	28	37333	110	0.0378	85	153	195	231	105	153	179	227	98	143	169	213				
	40	39.77	25	37333	98	0.0368	81	145	195	229	100	145	170	215	94	136	160	202				
	45	45.21	22	35869	83	0.0351	79	142	195	229	98	142	167	210	91	133	156	197				
	50	51.20	20	37333	76	0.0203	77	125	195	229	86	125	147	185	82	118	139	176				
	56	57.11	18	37333	68	0.0198	77	119	195	229	82	119	142	177	78	113	133	168				
	63	64.91	15	35869	58	0.0190	77	116	195	229	80	116	140	172	76	110	130	163				
	71	72.86	14	37333	54	0.0187	77	111	195	229	76	109	140	165	71	103	129	154				
	80	80.82	12	37333	48	0.0163	72	129	156	192	89	129	151	191	79	115	136	171				
	90	90.15	11	36598	43	0.0162	68	123	156	183	84	122	144	181	75	109	128	162				
	100	102.47	10	35148	36	0.0158	67	121	156	183	83	120	141	178	73	106	124	157				
	112	116.05	9	36598	33	0.0084	65	117	156	183	81	117	138	174	74	107	126	159				
	125	129.44	8	36598	30	0.0083	62	112	156	183	77	111	131	165	70	102	120	151				
	140	147.14	7	35148	25	0.0081	61	110	156	183	75	109	128	162	68	99	116	147				
	160	161.65	6	36598	24	0.0047	61	105	156	183	72	105	123	156	67	97	114	145				
180	180.30	6	36598	21	0.0047	61	100	156	183	69	100	117	148	63	92	108	137					
200	204.94	5	35148	18	0.0046	61	98	156	183	67	97	115	145	62	89	105	133					
224	232.11	4	36598	17	0.0025	61	93	156	183	64	93	112	138	60	87	103	129					
250	258.89	4	36598	15	0.0025	61	89	156	183	61	88	112	133	57	83	103	123					
280	294.28	3	35148	13	0.0025	61	89	156	183	59	86	112	132	55	80	103	121					
315	330.31	3	36598	12	0.0024	61	89	156	183	56	81	112	132	52	75	103	121					
																		E4B 				

E3B / E4B ...28

50 Hz


















39 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	 R1				 S5				 T6				Type			
							P_{t0} [kW]					P_{t0} [kW]					P_{t0} [kW]					
n₁ = 1500 rpm	18	17.83	84	36300	320	0.1207	97	297	214	399	79	264	203	368	51	193	129	306	E3B 			
	20	19.89	75	38076	301	0.1168	91	278	200	373	85	253	196	347	51	192	136	286				
	22.4	22.60	66	36598	254	0.1099	87	271	196	363	84	252	199	337	51	189	140	274				
	25	25.60	59	38076	234	0.0654	91	260	195	348	91	245	197	328	69	218	168	292				
	28	28.55	53	38076	209	0.0635	85	244	195	326	89	231	188	310	65	204	161	274				
	31.5	32.46	46	36598	177	0.0602	84	238	195	319	93	225	185	302	68	197	162	264				
	35.5	35.66	42	37333	164	0.0378	79	216	195	290	87	207	170	277	74	190	156	254				
	40	39.77	38	37333	147	0.0368	79	204	195	273	86	196	161	262	76	179	147	240				
	45	45.21	33	35869	125	0.0351	77	199	195	270	86	191	157	255	76	173	142	232				
	50	51.20	29	37333	115	0.0203	77	174	195	267	76	170	142	227	72	158	131	212				
	56	57.11	26	37333	103	0.0198	77	165	195	267	74	161	140	216	69	150	129	201				
	63	64.91	23	35869	87	0.0190	77	161	195	267	74	157	140	210	67	145	129	195				
	71	72.86	21	37333	80	0.0187	77	152	195	267	70	148	140	198	64	136	129	183				
	80	80.82	19	37333	73	0.0163	70	179	156	240	82	170	140	228	70	144	119	194	E4B 			
	90	90.15	17	36598	64	0.0162	66	169	156	227	78	161	133	216	65	135	112	182				
	100	102.47	15	35148	54	0.0158	65	166	156	222	76	157	130	211	63	130	107	174				
	112	116.05	13	36598	50	0.0084	63	163	156	218	76	157	129	210	66	138	113	185				
	125	129.44	12	36598	44	0.0083	61	154	156	214	72	149	122	199	63	130	107	174				
	140	147.14	10	35148	38	0.0081	61	151	156	214	70	144	119	194	60	125	103	167				
	160	161.65	9	36598	36	0.0047	61	145	156	214	68	140	115	188	61	126	104	169				
180	180.30	8	36598	32	0.0047	61	137	156	214	64	133	112	178	57	119	103	159					
200	204.94	7	35148	27	0.0046	61	134	156	214	62	129	112	173	55	114	103	153					
224	232.11	6	36598	25	0.0025	61	127	156	214	60	123	112	165	54	113	103	151					
250	258.89	6	36598	22	0.0025	61	121	156	214	57	117	112	157	51	106	103	143					
280	294.28	5	35148	19	0.0025	61	119	156	214	55	113	112	154	49	102	103	141					
315	330.31	5	36598	17	0.0024	61	119	156	214	51	106	112	154	46	95	103	141					

E3B / E4B ...28

60 Hz

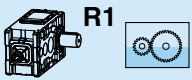

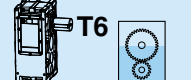








39 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	R1 				S5 				T6 				Type			
							P_{t0} [kW]	 		 		P_{t0} [kW]	 		 		P_{t0} [kW]	 		 		
$n_1 = 1200 \text{ rpm}$	18	17.83	67	36300	256	0.1207	107	248	219	351	114	233	234	334	76	193	194	288	E3B 			
	20	19.89	60	38076	241	0.1168	103	232	206	328	113	222	223	315	72	181	182	270				
	22.4	22.60	53	36598	203	0.1099	100	227	202	321	114	217	218	307	77	184	185	260				
	25	25.60	47	38076	187	0.0654	100	215	195	304	112	208	209	294	99	188	189	267				
	28	28.55	42	38076	168	0.0635	95	202	195	286	109	197	197	278	96	177	178	251				
	31.5	32.46	37	36598	142	0.0602	92	198	195	281	108	192	193	272	94	172	173	244				
	35.5	35.66	34	37333	132	0.0378	84	179	195	253	99	175	175	247	91	162	163	229				
	40	39.77	30	37333	118	0.0368	79	169	195	239	95	166	166	234	87	153	154	217				
	45	45.21	27	35869	100	0.0351	78	165	195	234	95	162	162	229	87	149	149	210				
	50	51.20	23	37333	92	0.0203	77	145	195	229	84	143	144	202	78	134	135	190				
	56	57.11	21	37333	82	0.0198	77	137	195	229	80	136	140	192	75	128	130	181				
	63	64.91	18	35869	69	0.0190	77	134	195	229	78	132	140	187	73	124	129	175				
	71	72.86	16	37333	64	0.0187	77	126	195	229	74	125	140	177	69	117	129	165				
	80	80.82	15	37333	58	0.0163	71	149	156	211	86	146	146	206	74	126	127	179	E4B 			
	90	90.15	13	36598	51	0.0162	67	142	156	200	82	138	139	195	70	119	120	169				
	100	102.47	12	35148	43	0.0158	66	139	156	196	80	135	136	191	67	115	115	162				
	112	116.05	10	36598	40	0.0084	65	136	156	192	79	133	134	188	70	119	120	169				
	125	129.44	9	36598	36	0.0083	61	129	156	184	75	127	127	179	66	113	113	160				
	140	147.14	8	35148	30	0.0081	61	126	156	183	73	124	124	175	64	109	109	154				
	160	161.65	7	36598	28	0.0047	61	121	156	183	70	119	120	169	64	109	109	154				
180	180.30	7	36598	26	0.0047	61	115	156	183	67	113	114	160	60	103	104	145					
200	204.94	6	35148	22	0.0046	61	113	156	183	65	110	112	156	58	99	103	140					
224	232.11	5	36598	20	0.0025	61	107	156	183	62	105	112	149	57	97	103	138					
250	258.89	5	36598	18	0.0025	61	101	156	183	59	100	112	142	54	92	103	130					
280	294.28	4	35148	15	0.0025	61	99	156	183	57	97	112	137	52	89	103	126					
315	330.31	4	36598	14	0.0024	61	93	156	183	54	91	112	132	49	83	103	121					

E3B / E4B ...28

60 Hz









39 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	 R1				 S5				 T6				Type			
							P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		
n₁ = 1800 rpm	18	17.83	101	36300	384	0.1207	78	306	197	411	55	230	146	346	51	113	129	228	E3B 			
	20	19.89	90	38076	361	0.1168	77	287	196	383	55	230	142	330	51	117	129	229				
	22.4	22.60	80	36598	305	0.1099	80	281	195	371	55	235	155	321	51	125	129	227				
	25	25.60	70	38076	280	0.0654	86	272	195	359	57	239	166	316	51	192	130	281				
	28	28.55	63	38076	251	0.0635	80	255	195	336	71	225	164	299	51	187	129	264				
	31.5	32.46	55	36598	213	0.0602	79	248	195	327	66	220	167	291	51	188	132	253				
	35.5	35.66	50	37333	197	0.0378	77	227	195	300	69	205	156	270	57	189	135	250				
	40	39.77	45	37333	177	0.0368	77	213	195	282	68	194	150	256	53	178	132	236				
	45	45.21	40	35869	150	0.0351	77	208	195	274	70	188	146	249	56	172	132	227				
	50	51.20	35	37333	137	0.0203	77	183	195	267	63	169	140	223	56	160	129	212				
	56	57.11	32	37333	123	0.0198	77	173	195	267	65	161	140	212	56	152	129	201				
	63	64.91	28	35869	104	0.0190	77	168	195	267	65	156	140	206	57	146	129	194				
	71	72.86	25	37333	97	0.0187	77	158	195	267	63	147	140	196	55	137	129	182				
	80	80.82	22	37333	87	0.0163	68	186	156	246	76	166	129	220	57	139	108	184	E4B 			
	90	90.15	20	36598	77	0.0162	65	176	156	232	72	157	122	208	53	130	103	172				
	100	102.47	18	35148	65	0.0158	63	172	156	227	70	153	119	202	53	124	103	163				
	112	116.05	16	36598	59	0.0084	62	169	156	224	70	154	119	203	62	135	105	179				
	125	129.44	14	36598	53	0.0083	61	160	156	214	66	146	113	192	58	127	103	168				
	140	147.14	12	35148	45	0.0081	61	156	156	214	65	141	112	187	55	121	103	160				
	160	161.65	11	36598	43	0.0047	61	151	156	214	63	138	112	182	57	124	103	164				
180	180.30	10	36598	38	0.0047	61	142	156	214	60	130	112	172	53	117	103	155					
200	204.94	9	35148	32	0.0046	61	138	156	214	58	126	112	167	51	112	103	148					
224	232.11	8	36598	30	0.0025	61	131	156	214	55	121	112	160	51	112	103	148					
250	258.89	7	36598	27	0.0025	61	124	156	214	52	115	112	154	48	105	103	141					
280	294.28	6	35148	23	0.0025	61	121	156	214	51	111	112	154	46	100	103	141					
315	330.31	5	36598	21	0.0024	61	119	156	214	47	104	112	154	43	93	103	141					

E3B / E4B ...31

50 Hz

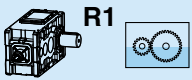

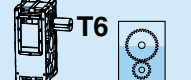








50 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	R1				S5				T6				Type			
							P_{t0} [kW]					P_{t0} [kW]					P_{t0} [kW]					
								250	335	449	170		247	371	443	154		228		338	406	
25	24.14	41	49350	214	0.1261	136	250	335	449	170	247	371	443	154	228	338	406	E3B 				
28	26.93	37	49520	193	0.1211	128	235	316	421	162	233	349	417	146	214	317	381					
31.5	30.61	33	49520	169	0.1132	124	230	314	412	161	227	341	407	144	207	307	368					
35.5	34.67	29	49520	150	0.0680	118	215	314	386	152	214	321	384	142	203	301	361					
40	38.67	26	49520	134	0.0656	111	203	314	364	143	202	303	362	134	191	284	340					
45	43.95	23	49520	118	0.0618	109	199	314	359	140	198	297	354	131	186	276	331					
50	48.29	21	49520	107	0.0391	98	178	314	355	126	178	268	320	120	171	254	305					
56	53.86	19	49520	96	0.0379	93	169	314	355	120	169	254	304	114	162	241	289					
63	61.22	16	48741	83	0.0359	92	165	314	355	117	165	248	296	111	158	235	282					
71	69.33	14	49855	75	0.0209	92	144	314	355	103	145	226	261	99	141	210	251					
80	77.33	13	49855	68	0.0203	92	137	314	355	98	138	226	256	94	134	207	239					
90	87.90	11	48741	58	0.0194	92	135	314	355	95	134	226	256	91	130	207	235					
100	98.67	10	49855	53	0.0190	92	133	314	355	90	127	226	256	86	122	207	234					
112	109.45	9	49855	48	0.0166	82	151	251	284	107	151	226	270	98	139	206	247					
125	122.08	8	49855	43	0.0164	78	143	251	284	102	143	215	257	92	131	195	234					
140	138.76	7	47780	36	0.0160	77	141	251	284	99	140	210	251	89	127	189	226					
160	157.16	6	49855	33	0.0085	75	136	251	284	97	137	205	245	90	128	190	228					
180	175.29	6	49855	30	0.0084	74	130	251	284	92	130	195	233	85	121	180	216					
200	199.25	5	47780	25	0.0082	74	127	251	284	90	127	191	228	83	118	175	210					
224	218.90	5	49855	24	0.0048	74	122	251	284	87	122	184	219	82	116	172	207					
250	244.15	4	49855	21	0.0047	74	116	251	284	83	116	181	209	77	110	166	196					
280	277.53	4	47780	18	0.0047	74	114	251	284	80	114	181	205	75	107	166	190					
315	314.31	3	49855	17	0.0026	74	108	251	284	77	108	181	204	73	103	166	187					
355	350.58	3	49855	15	0.0025	74	106	251	284	73	103	181	204	69	98	166	187					
400	398.50	3	46829	12	0.0025	74	106	251	284	71	100	181	204	67	95	166	187					
450	447.29	2	49711	12	0.0025	74	106	251	284	66	93	181	204	62	88	166	187					
																		E4B 				

E3B / E4B ...31

50 Hz

50 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	 R1				 S5				 T6				Type			
							P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		P_{t0} [kW]	 H ₂ O		 + H ₂ O		
n₁ = 1500 rpm	25	24.14	62	49350	321	0.1261	114	347	325	540	115	325	341	505	63	272	283	433	E3B 			
	28	26.93	56	49520	289	0.1211	109	324	314	503	114	305	321	475	70	258	272	405				
	31.5	30.61	49	49520	254	0.1132	105	314	314	488	118	296	311	460	71	249	259	385				
	35.5	34.67	43	49520	224	0.0680	108	302	314	469	129	288	302	447	107	263	273	407				
	40	38.67	39	49520	201	0.0656	101	283	314	439	122	271	285	421	105	246	256	381				
	45	43.95	34	49520	177	0.0618	101	275	314	428	122	263	276	409	104	237	246	366				
	50	48.29	31	49520	161	0.0391	95	251	314	401	114	243	255	378	105	228	237	353				
	56	53.86	28	49520	144	0.0379	92	237	314	401	109	230	242	357	100	215	224	333				
	63	61.22	25	48741	125	0.0359	92	230	314	401	109	223	234	347	99	208	216	321				
	71	69.33	22	49855	113	0.0209	92	202	314	401	95	198	226	308	91	189	207	292				
	80	77.33	19	49855	101	0.0203	92	191	314	401	92	188	226	294	87	179	207	277				
	90	87.90	17	48741	87	0.0194	92	185	314	401	90	182	226	289	85	172	207	269				
	100	98.67	15	49855	79	0.0190	92	179	314	401	85	171	226	289	79	161	207	265				
	112	109.45	14	49855	72	0.0166	80	209	251	324	100	201	211	312	86	176	183	272	E4B 			
	125	122.08	12	49855	64	0.0164	76	198	251	321	94	190	200	296	81	165	172	256				
	140	138.76	11	47780	54	0.0160	74	193	251	321	92	185	194	287	78	158	166	244				
	160	157.16	10	49855	50	0.0085	74	189	251	321	91	183	192	285	82	166	172	257				
	180	175.29	9	49855	45	0.0084	74	179	251	321	86	174	182	270	77	156	166	242				
	200	199.25	8	47780	38	0.0082	74	175	251	321	84	168	181	262	74	150	166	232				
	224	218.90	7	49855	36	0.0048	74	169	251	321	81	164	181	255	75	151	166	234				
250	244.15	6	49855	32	0.0047	74	160	251	321	77	156	181	242	70	143	166	221					
280	277.53	5	47780	27	0.0047	74	155	251	321	75	150	181	234	67	137	166	213					
315	314.31	5	49855	25	0.0026	74	147	251	321	71	144	181	231	66	135	166	212					
355	350.58	4	49855	22	0.0025	74	143	251	321	67	136	181	231	62	127	166	212					
400	398.50	4	46829	18	0.0025	74	143	251	321	65	131	181	231	60	121	166	212					
450	447.29	3	49711	17	0.0025	74	143	251	321	60	122	181	231	55	112	166	212					

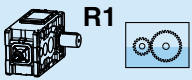

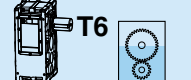








E3B / E4B ...31

60 Hz

50 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O					
								+	-		+	-		+	-	+	-		
n ₁ = 1200 rpm	25	24.14	50	49350	257	0.1261	130	289	331	485	153	279	357	468	126	248	315	414	E3B
	28	26.93	45	49520	231	0.1211	122	271	314	454	146	262	336	440	121	233	295	388	
	31.5	30.61	39	49520	203	0.1132	118	264	314	442	147	255	327	428	119	223	283	372	
	35.5	34.67	35	49520	179	0.0680	115	250	314	420	142	244	313	409	130	227	288	378	
	40	38.67	31	49520	161	0.0656	109	235	314	395	137	230	295	386	124	213	270	356	
	45	43.95	27	49520	142	0.0618	106	230	314	386	136	224	288	376	122	206	261	344	
	50	48.29	25	49520	129	0.0391	96	208	314	356	124	205	262	343	116	194	246	324	
	56	53.86	22	49520	116	0.0379	93	197	314	355	117	194	249	325	110	184	233	306	
	63	61.22	20	48741	100	0.0359	92	192	314	355	114	189	242	317	107	178	226	297	
	71	69.33	17	49855	90	0.0209	92	168	314	355	101	167	226	279	96	160	207	267	
	80	77.33	16	49855	81	0.0203	92	159	314	355	96	158	226	265	91	152	207	253	
	90	87.90	14	48741	70	0.0194	92	155	314	355	93	154	226	260	88	147	207	245	
	100	98.67	12	49855	63	0.0190	92	145	314	355	87	145	226	256	83	138	207	235	
	112	109.45	11	49855	57	0.0166	81	174	251	292	104	171	219	287	92	153	194	256	
	125	122.08	10	49855	51	0.0164	77	165	251	284	98	163	208	273	87	145	183	241	
	140	138.76	9	47780	43	0.0160	76	162	251	284	96	158	203	266	83	139	176	231	
	160	157.16	8	49855	40	0.0085	74	158	251	284	94	156	200	261	86	143	181	239	
	180	175.29	7	49855	36	0.0084	74	150	251	284	89	148	189	248	81	135	171	225	
	200	199.25	6	47780	30	0.0082	74	147	251	284	87	144	185	241	78	130	166	217	
	224	218.90	5	49855	29	0.0048	74	141	251	284	84	140	181	234	78	130	167	217	
250	244.15	5	49855	26	0.0047	74	134	251	284	80	133	181	222	74	123	166	206		
280	277.53	4	47780	22	0.0047	74	131	251	284	78	129	181	216	71	119	166	198		
315	314.31	4	49855	20	0.0026	74	124	251	284	74	123	181	207	70	116	166	194		
355	350.58	3	49855	18	0.0025	74	117	251	284	71	117	181	204	66	110	166	187		
400	398.50	3	46829	15	0.0025	74	114	251	284	68	113	181	204	63	105	166	187		
450	447.29	3	49711	14	0.0025	74	107	251	284	64	105	181	204	59	98	166	187		
																		E4B 	

E3B / E4B ...31
60 Hz
50 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	 R1				 S5				 T6				Type			
							P_{t0} [kW]					P_{t0} [kW]					P_{t0} [kW]					
$n_1 = 1800$ rpm	25	24.14	75	49350	385	0.1261	102	362	319	551	73	301	299	479	61	218	212	401	E3B 			
	28	26.93	67	49520	347	0.1211	101	337	314	513	70	294	292	451	61	204	207	374				
	31.5	30.61	59	49520	305	0.1132	93	325	314	496	85	286	284	436	61	213	209	353				
	35.5	34.67	52	49520	269	0.0680	99	315	314	480	96	282	280	430	69	258	250	392				
	40	38.67	47	49520	241	0.0656	95	295	314	449	95	266	263	405	71	242	237	367				
	45	43.95	41	49520	212	0.0618	94	286	314	435	97	257	255	392	69	231	226	350				
	50	48.29	37	49520	193	0.0391	92	263	314	406	95	241	239	367	84	229	224	347				
	56	53.86	33	49520	173	0.0379	92	248	314	401	94	228	229	347	82	216	212	327				
	63	61.22	29	48741	150	0.0359	92	240	314	401	96	221	226	336	84	207	207	314				
	71	69.33	26	49855	136	0.0209	92	212	314	401	86	198	226	301	81	192	207	291				
	80	77.33	23	49855	122	0.0203	92	200	314	401	83	188	226	291	78	181	207	275				
	90	87.90	20	48741	105	0.0194	92	194	314	401	83	181	226	289	77	174	207	268				
	100	98.67	18	49855	95	0.0190	92	183	314	401	79	170	226	289	73	163	207	265				
	112	109.45	16	49855	86	0.0166	78	217	251	330	92	197	195	300	78	171	168	259				
	125	122.08	15	49855	77	0.0164	74	205	251	321	87	186	185	284	74	160	166	243				
	140	138.76	13	47780	65	0.0160	74	200	251	321	84	180	181	275	70	151	166	230				
	160	157.16	11	49855	60	0.0085	74	196	251	321	84	180	181	275	76	164	166	248				
	180	175.29	10	49855	54	0.0084	74	186	251	321	80	171	181	260	71	154	166	233				
	200	199.25	9	47780	45	0.0082	74	181	251	321	77	165	181	252	68	146	166	222				
	224	218.90	8	49855	43	0.0048	74	175	251	321	76	162	181	247	70	151	166	228				
250	244.15	7	49855	38	0.0047	74	165	251	321	72	153	181	234	66	142	166	215					
280	277.53	6	47780	32	0.0047	74	160	251	321	69	148	181	231	63	135	166	212					
315	314.31	6	49855	30	0.0026	74	151	251	321	66	142	181	231	62	134	166	212					
355	350.58	5	49855	27	0.0025	74	144	251	321	63	134	181	231	59	126	166	212					
400	398.50	5	46829	22	0.0025	74	143	251	321	60	128	181	231	56	120	166	212					
450	447.29	4	49711	21	0.0025	74	143	251	321	56	119	181	231	51	111	166	212					
																		E4B 				

E3C / E4C ...18

60 Hz

10 kNm

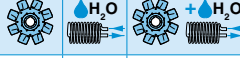
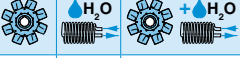














	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O					
n₁ = 1200 rpm	25	25.41	47	9366	46	0.0072	44	65	67	86	50	72	71	92	43	63	62	81	E3C
	28	28.34	42	9366	42	0.0069	43	63	67	84	49	70	69	90	42	61	60	78	
	31.5	32.16	37	9366	37	0.0066	42	62	67	83	48	68	68	88	41	59	58	76	
	35.5	35.39	34	9366	33	0.0041	36	53	67	83	41	59	58	76	37	53	53	69	
	40	39.48	30	9366	30	0.0040	35	52	67	83	40	57	56	73	35	51	50	66	
	45	44.80	27	9366	26	0.0038	35	51	67	83	39	56	55	72	35	50	49	64	
	50	50.82	24	9366	23	0.0022	35	51	67	83	33	47	48	61	30	44	44	56	
	56	56.69	21	9366	21	0.0022	35	51	67	83	32	46	48	60	29	42	44	55	
	63	64.32	19	9366	18	0.0021	35	51	67	83	32	45	48	60	29	41	44	55	
	71	71.15	17	9016	16	0.0020	35	51	67	83	29	42	48	60	26	38	44	55	
	80	81.20	15	9191	14	0.0032	31	46	53	66	35	50	49	64	27	39	39	50	
	90	90.57	13	9191	13	0.0031	31	45	53	66	34	49	48	62	26	37	36	47	
	100	102.77	12	9191	11	0.0031	31	46	53	66	35	49	49	63	25	36	36	47	
	112	116.60	10	9191	10	0.0016	28	41	53	66	32	45	45	58	26	37	37	48	
	125	130.05	9	9191	9	0.0015	28	41	53	66	31	44	44	57	25	36	35	46	
140	147.57	8	9191	8	0.0015	28	41	53	66	32	45	44	58	24	35	35	45		
160	162.40	7	9191	7	0.0009	28	41	53	66	29	41	40	52	24	35	35	44		
180	181.14	7	9191	6	0.0009	28	41	53	66	28	40	39	51	23	33	35	44		
200	205.54	6	9191	6	0.0009	28	41	53	66	28	40	39	51	23	32	35	44		
224	233.19	5	9191	5	0.0005	28	41	53	66	25	36	38	48	22	31	35	44		
250	260.10	5	9191	4	0.0005	28	41	53	66	25	35	38	48	21	30	35	44		
280	295.13	4	9191	4	0.0005	28	41	53	66	25	35	38	48	20	29	35	44		
315	326.47	4	8844	3	0.0005	28	41	53	66	22	31	38	48	19	27	35	44		
n₁ = 1800 rpm	25	25.41	71	9366	69	0.0072	42	73	67	100	39	64	64	83	25	49	49	71	E3C
	28	28.34	64	9366	62	0.0069	42	71	67	100	42	63	63	81	28	50	50	69	
	31.5	32.16	56	9366	55	0.0066	41	69	67	100	42	62	61	79	28	51	50	66	
	35.5	35.39	51	9366	50	0.0041	35	68	67	100	35	54	53	72	29	48	47	66	
	40	39.48	46	9366	45	0.0040	35	68	67	100	36	51	51	72	29	46	45	66	
	45	44.80	40	9366	39	0.0038	35	68	67	100	35	50	50	72	29	45	44	66	
	50	50.82	35	9366	35	0.0022	35	68	67	100	30	49	48	72	26	45	44	66	
	56	56.69	32	9366	31	0.0022	35	68	67	100	29	49	48	72	26	45	44	66	
	63	64.32	28	9366	27	0.0021	35	68	67	100	28	49	48	72	26	45	44	66	
	71	71.15	25	9016	24	0.0020	35	68	67	100	27	49	48	72	24	45	44	66	
	80	81.20	22	9191	21	0.0032	30	54	53	80	31	44	44	58	23	36	35	53	
	90	90.57	20	9191	19	0.0031	29	54	53	80	30	42	42	58	21	36	35	53	
	100	102.77	18	9191	17	0.0031	30	54	53	80	30	43	42	58	20	36	35	53	
	112	116.60	15	9191	15	0.0016	28	54	53	80	29	41	40	58	22	36	35	53	
	125	130.05	14	9191	13	0.0015	28	54	53	80	28	39	39	58	21	36	35	53	
140	147.57	12	9191	12	0.0015	28	54	53	80	28	40	39	58	20	36	35	53		
160	162.40	11	9191	11	0.0009	28	54	53	80	26	39	38	58	21	36	35	53		
180	181.14	10	9191	10	0.0009	28	54	53	80	25	39	38	58	20	36	35	53		
200	205.54	9	9191	8	0.0009	28	54	53	80	25	39	38	58	19	36	35	53		
224	233.19	8	9191	7	0.0005	28	54	53	80	23	39	38	58	19	36	35	53		
250	260.10	7	9191	7	0.0005	28	54	53	80	22	39	38	58	18	36	35	53		
280	295.13	6	9191	6	0.0005	28	54	53	80	22	39	38	58	18	36	35	53		
315	326.47	6	8844	5	0.0005	28	54	53	80	20	39	38	58	18	36	35	53		



E3C / E4C ...19

50 Hz

13 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P_{t0} [kW]				P_{t0} [kW]				P_{t0} [kW]				
																			
$n_1 = 1000 \text{ rpm}$	31.5	31.53	32	12301	41	0.0074	45	68	98	116	52	78	72	98	46	70	65	88	E3C 
	35.5	35.17	28	12301	37	0.0071	40	58	98	116	44	66	70	84	41	62	64	78	
	40	39.90	25	11858	31	0.0067	40	58	98	116	43	65	70	83	40	60	64	77	
	45	43.92	23	12078	29	0.0043	40	58	98	116	43	64	70	83	39	59	64	76	
	50	48.98	20	12078	26	0.0041	40	58	98	116	36	53	70	83	34	51	64	76	
	56	55.58	18	11858	22	0.0039	40	58	98	116	35	53	70	83	33	49	64	76	
	63	63.06	16	12078	20	0.0023	40	58	98	116	34	52	70	83	32	48	64	76	
	71	70.33	14	12078	18	0.0022	40	58	98	116	32	48	70	83	30	45	64	76	
	80	79.81	13	11639	15	0.0021	40	58	98	116	35	53	70	83	33	50	64	76	
	90	88.28	11	11208	13	0.0021	40	58	98	116	35	52	70	83	33	49	64	76	
	100	100.75	10	12078	13	0.0032	34	50	78	92	38	57	56	72	30	45	51	61	E4C 
	112	112.37	9	12078	11	0.0031	32	46	78	92	34	52	56	67	30	45	51	61	
	125	127.51	8	11639	10	0.0031	32	46	78	92	34	51	56	67	29	43	51	61	
	140	144.66	7	11858	9	0.0016	32	46	78	92	34	52	56	67	29	43	51	61	
	160	161.36	6	11858	8	0.0015	32	46	78	92	31	46	56	67	27	41	51	61	
	180	183.09	5	11639	7	0.0015	32	46	78	92	30	45	56	67	26	40	51	61	
	200	201.50	5	11858	6	0.0009	32	46	78	92	31	46	56	67	26	40	51	61	
	224	224.75	4	11858	6	0.0009	32	46	78	92	27	41	56	67	25	37	51	61	
	250	255.02	4	11423	5	0.0009	32	46	78	92	27	40	56	67	24	36	51	61	
	280	289.33	3	11858	4	0.0005	32	46	78	92	27	40	56	67	24	36	51	61	
315	322.71	3	11858	4	0.0005	32	46	78	92	24	36	56	67	21	32	51	61		
355	366.18	3	11423	3	0.0005	32	46	78	92	27	40	56	67	24	37	51	61		
400	405.06	2	10996	3	0.0005	32	46	78	92	27	41	56	67	24	37	51	61		
$n_1 = 1500 \text{ rpm}$	31.5	31.53	48	12301	61	0.0074	44	78	98	135	49	73	70	97	41	62	64	89	E3C 
	35.5	35.17	43	12301	55	0.0071	40	77	98	135	42	64	70	97	37	57	64	89	
	40	39.90	38	11858	47	0.0067	40	77	98	135	41	61	70	97	36	54	64	89	
	45	43.92	34	12078	43	0.0043	40	77	98	135	40	60	70	97	35	53	64	89	
	50	48.98	31	12078	39	0.0041	40	77	98	135	34	55	70	97	31	51	64	89	
	56	55.58	27	11858	34	0.0039	40	77	98	135	33	55	70	97	30	51	64	89	
	63	63.06	24	12078	30	0.0023	40	77	98	135	32	55	70	97	29	51	64	89	
	71	70.33	21	12078	27	0.0022	40	77	98	135	30	55	70	97	27	51	64	89	
	80	79.81	19	11639	23	0.0021	40	77	98	135	33	55	70	97	30	51	64	89	
	90	88.28	17	11208	20	0.0021	40	77	98	135	32	55	70	97	30	51	64	89	
	100	100.75	15	12078	19	0.0032	32	62	78	108	35	52	56	78	24	41	51	71	E4C 
	112	112.37	13	12078	17	0.0031	32	62	78	108	32	49	56	78	26	41	51	71	
	125	127.51	12	11639	14	0.0031	32	62	78	108	31	47	56	78	25	41	51	71	
	140	144.66	10	11858	13	0.0016	32	62	78	108	32	47	56	78	24	41	51	71	
	160	161.36	9	11858	12	0.0015	32	62	78	108	29	44	56	78	24	41	51	71	
	180	183.09	8	11639	10	0.0015	32	62	78	108	28	44	56	78	23	41	51	71	
	200	201.50	7	11858	9	0.0009	32	62	78	108	28	44	56	78	22	41	51	71	
	224	224.75	7	11858	8	0.0009	32	62	78	108	26	44	56	78	22	41	51	71	
	250	255.02	6	11423	7	0.0009	32	62	78	108	25	44	56	78	21	41	51	71	
	280	289.33	5	11858	6	0.0005	32	62	78	108	25	44	56	78	21	41	51	71	
315	322.71	5	11858	6	0.0005	32	62	78	108	23	44	56	78	21	41	51	71		
355	366.18	4	11423	5	0.0005	32	62	78	108	25	44	56	78	22	41	51	71		
400	405.06	4	10996	4	0.0005	32	62	78	108	25	44	56	78	22	41	51	71		

E3C / E4C ...20

50 Hz

15 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P_{t0} [kW]				P_{t0} [kW]				P_{t0} [kW]				
								80	128	148		92	119	147		85	110	136	
1000 rpm	35.5	36.71	27	13961	40	0.0076	55	80	128	148	64	92	119	147	59	85	110	136	E3C
	40	40.94	24	13961	36	0.0072	53	78	128	148	63	90	117	145	58	83	107	132	
	45	46.46	22	13961	31	0.0068	53	78	128	148	62	90	116	143	57	82	106	130	
	50	51.13	20	13961	29	0.0043	45	66	128	148	53	76	98	121	49	71	92	113	
	56	57.03	18	13961	26	0.0042	45	65	128	148	52	75	97	119	48	70	90	111	
	63	64.71	15	13961	23	0.0039	44	65	128	148	51	74	96	118	48	69	89	110	
	71	73.41	14	13689	20	0.0023	44	64	128	148	42	61	92	107	40	58	84	98	
	80	81.88	12	13689	18	0.0022	44	64	128	148	42	60	92	107	39	57	84	98	
	90	92.91	11	13689	15	0.0021	44	64	128	148	41	59	92	107	39	56	84	98	
	100	102.78	10	13152	13	0.0021	44	64	128	148	38	55	92	107	36	52	84	98	
1000 rpm	112	117.29	9	13689	12	0.0032	39	57	103	118	46	65	85	105	39	56	72	89	E4C
	125	130.82	8	13689	11	0.0032	39	57	103	118	45	65	84	104	38	54	70	87	
	140	148.44	7	13689	10	0.0031	39	58	103	118	46	66	86	106	38	55	71	87	
	160	168.42	6	13689	9	0.0016	36	52	103	118	41	59	77	95	36	52	68	83	
	180	187.85	5	13689	8	0.0016	36	52	103	118	41	58	76	94	35	51	68	81	
	200	213.15	5	13689	7	0.0015	36	52	103	118	42	60	77	96	36	51	68	82	
	224	234.58	4	13689	6	0.0009	36	51	103	118	37	53	74	86	33	48	68	78	
	250	261.65	4	13689	5	0.0009	36	51	103	118	36	52	74	86	32	47	68	78	
	280	296.89	3	13419	5	0.0009	36	51	103	118	37	53	74	87	33	47	68	78	
	315	336.83	3	13689	4	0.0005	36	51	103	118	33	47	74	85	30	43	68	78	
1500 rpm	35.5	36.71	41	13961	60	0.0076	54	91	128	170	55	88	114	141	54	78	100	124	E3C
	40	40.94	37	13961	54	0.0072	53	89	128	170	55	86	112	138	52	75	97	120	
	45	46.46	32	13961	47	0.0068	52	88	128	170	55	85	110	136	51	73	95	117	
	50	51.13	29	13961	43	0.0043	45	86	128	170	50	72	94	122	46	66	86	112	
	56	57.03	26	13961	38	0.0042	44	86	128	170	49	71	93	122	44	64	85	112	
	63	64.71	23	13961	34	0.0039	44	86	128	170	48	69	93	122	43	62	84	112	
	71	73.41	20	13689	29	0.0023	44	86	128	170	40	62	92	122	37	57	84	112	
	80	81.88	18	13689	26	0.0022	44	86	128	170	39	62	92	122	36	57	84	112	
	90	92.91	16	13689	23	0.0021	44	86	128	170	39	62	92	122	35	57	84	112	
	100	102.78	15	13152	20	0.0021	44	86	128	170	36	62	92	122	33	57	84	112	
1500 rpm	112	117.29	13	13689	18	0.0032	38	69	103	136	43	62	80	99	33	48	68	90	E4C
	125	130.82	11	13689	16	0.0032	37	69	103	136	42	60	78	98	32	46	68	90	
	140	148.44	10	13689	14	0.0031	38	69	103	136	43	61	79	99	31	46	68	90	
	160	168.42	9	13689	13	0.0016	36	69	103	136	39	56	74	98	32	46	68	90	
	180	187.85	8	13689	11	0.0016	36	69	103	136	38	55	74	98	31	45	68	90	
	200	213.15	7	13689	10	0.0015	36	69	103	136	39	55	74	98	31	45	68	90	
	224	234.58	6	13689	9	0.0009	36	69	103	136	35	50	74	98	30	45	68	90	
	250	261.65	6	13689	8	0.0009	36	69	103	136	34	50	74	98	29	45	68	90	
	280	296.89	5	13419	7	0.0009	36	69	103	136	34	50	74	98	28	45	68	90	
	315	336.83	4	13689	6	0.0005	36	69	103	136	31	50	74	98	27	45	68	90	

E3C / E4C ...20

60 Hz

15 kNm

							R1				S5				T6				Type	
i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	P_{t0} [kW]					P_{t0} [kW]					P_{t0} [kW]				
$n_1 = 1200$ rpm	35.5	36.71	33	13961	48	0.0076	55	82	128	148	63	91	117	145	57	81	105	130	E3C 	
	40	40.94	29	13961	43	0.0072	53	80	128	148	62	88	115	142	55	79	102	126		
	45	46.46	26	13961	38	0.0068	53	79	128	148	61	88	114	140	54	77	100	124		
	50	51.13	23	13961	34	0.0043	45	67	128	148	52	74	96	119	48	69	89	110		
	56	57.03	21	13961	31	0.0042	44	65	128	148	51	73	95	117	46	67	86	107		
	63	64.71	19	13961	27	0.0039	44	65	128	148	50	72	94	115	46	66	86	105		
	71	73.41	16	13689	23	0.0023	44	64	128	148	41	60	92	107	39	56	84	98		
	80	81.88	15	13689	21	0.0022	44	64	128	148	41	59	92	107	38	55	84	98		
	90	92.91	13	13689	19	0.0021	44	64	128	148	40	58	92	107	37	54	84	98		
	100	102.78	12	13152	16	0.0021	44	64	128	148	37	54	92	107	35	50	84	98		
	112	117.29	10	13689	15	0.0032	39	58	103	118	44	64	83	102	36	51	68	82		
	125	130.82	9	13689	13	0.0032	38	57	103	118	44	63	81	100	35	50	68	79		
	140	148.44	8	13689	12	0.0031	39	58	103	118	44	64	83	102	34	49	68	79		
	160	168.42	7	13689	10	0.0016	36	52	103	118	40	58	75	92	34	49	68	79		
	180	187.85	6	13689	9	0.0016	36	52	103	118	39	57	75	91	33	47	68	78		
200	213.15	6	13689	8	0.0015	36	52	103	118	40	58	75	92	33	47	68	78			
224	234.58	5	13689	7	0.0009	36	51	103	118	36	52	74	85	31	45	68	78			
250	261.65	5	13689	7	0.0009	36	51	103	118	35	51	74	85	30	44	68	78			
280	296.89	4	13419	6	0.0009	36	51	103	118	36	51	74	85	30	44	68	78			
315	336.83	4	13689	5	0.0005	36	51	103	118	32	46	74	85	28	41	68	78			
355	375.70	3	13689	5	0.0005	36	51	103	118	31	45	74	85	27	39	68	78			
400	426.30	3	13419	4	0.0005	36	51	103	118	31	45	74	85	27	39	68	78			
450	471.56	3	12888	3	0.0005	49	72	108	137	49	71	102	123	38	54	81	97			
$n_1 = 1800$ rpm	35.5	36.71	49	13961	72	0.0076	52	91	128	170	41	82	106	131	45	72	93	115	E3C 	
	40	40.94	44	13961	64	0.0072	52	89	128	170	41	80	104	129	46	70	90	113		
	45	46.46	39	13961	57	0.0068	51	88	128	170	41	79	103	127	46	68	88	112		
	50	51.13	35	13961	51	0.0043	44	86	128	170	41	68	92	122	42	62	84	112		
	56	57.03	32	13961	46	0.0042	44	86	128	170	41	66	92	122	42	60	84	112		
	63	64.71	28	13961	41	0.0039	44	86	128	170	41	65	92	122	41	58	84	112		
	71	73.41	25	13689	35	0.0023	44	86	128	170	38	62	92	122	36	57	84	112		
	80	81.88	22	13689	32	0.0022	44	86	128	170	37	62	92	122	34	57	84	112		
	90	92.91	19	13689	28	0.0021	44	86	128	170	36	62	92	122	33	57	84	112		
	100	102.78	18	13152	24	0.0021	44	86	128	170	34	62	92	122	31	57	84	112		
	112	117.29	15	13689	22	0.0032	38	69	103	136	40	57	75	98	30	45	68	90		
	125	130.82	14	13689	20	0.0032	37	69	103	136	38	55	74	98	28	45	68	90		
	140	148.44	12	13689	17	0.0031	37	69	103	136	39	56	74	98	28	45	68	90		
	160	168.42	11	13689	15	0.0016	36	69	103	136	36	52	74	98	29	45	68	90		
	180	187.85	10	13689	14	0.0016	36	69	103	136	35	51	74	98	28	45	68	90		
200	213.15	8	13689	12	0.0015	36	69	103	136	36	51	74	98	27	45	68	90			
224	234.58	8	13689	11	0.0009	36	69	103	136	32	50	74	98	27	45	68	90			
250	261.65	7	13689	10	0.0009	36	69	103	136	31	50	74	98	26	45	68	90			
280	296.89	6	13419	9	0.0009	36	69	103	136	32	50	74	98	26	45	68	90			
315	336.83	5	13689	8	0.0005	36	69	103	136	28	50	74	98	25	45	68	90			
355	375.70	5	13689	7	0.0005	36	69	103	136	28	50	74	98	24	45	68	90			
400	426.30	4	13419	6	0.0005	36	69	103	136	28	50	74	98	24	45	68	90			
450	471.56	4	12888	5	0.0005	48	85	110	149	42	66	91	115	32	51	71	91			

E3C / E4C ...22

50 Hz

20 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kg·m ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O			P _{t0} [kW]	H ₂ O			P _{t0} [kW]	H ₂ O			
								67	100	138		67	115	134		171	72	105	
n₁ = 1000 rpm	25	25.14	40	19413	81	0.0264	67	100	138	162	78	115	134	171	72	105	123	157	E3C
	28	28.04	36	19413	73	0.0258	66	100	138	162	78	114	134	170	71	104	122	155	
	31.5	31.43	32	18837	63	0.0248	62	94	138	162	73	107	125	160	66	98	114	145	
	35.5	35.02	29	19413	58	0.0151	55	83	138	162	65	95	112	142	61	89	104	133	
	40	39.06	26	19413	52	0.0148	54	123	138	192	39	83	127	162	36	135	158	201	
	45	43.78	23	18837	45	0.0143	54	79	138	162	61	89	104	133	56	83	97	123	
	50	50.29	20	19038	40	0.0081	54	78	138	162	53	78	99	117	50	73	91	109	
	56	56.09	18	19038	36	0.0080	54	78	138	162	53	78	99	118	50	73	91	109	
	63	62.86	16	18837	31	0.0077	54	78	138	162	49	72	99	117	46	68	91	107	
	71	69.14	14	19038	29	0.0076	54	78	138	162	47	70	99	117	44	65	91	107	
	80	75.43	13	19038	26	0.0134	46	69	92	130	53	78	92	117	45	66	78	99	
	90	84.13	12	19038	24	0.0133	46	69	92	130	54	79	92	117	44	65	76	97	
	100	94.29	11	18667	21	0.0132	43	65	92	130	50	73	86	109	41	60	71	90	
	112	108.31	9	19038	18	0.0069	43	63	92	130	48	71	83	105	42	62	73	93	
125	120.80	8	19038	17	0.0069	43	63	92	130	48	71	83	106	42	62	72	92		
140	135.38	7	18667	14	0.0068	43	62	92	130	45	66	77	98	39	57	67	86		
160	150.86	7	19038	13	0.0040	43	62	92	130	42	62	73	94	38	56	66	86		
180	168.26	6	18667	12	0.0040	43	62	92	130	42	62	73	94	38	55	65	86		
200	188.57	5	18667	10	0.0040	43	62	92	130	39	58	68	93	35	51	61	86		
224	216.62	5	18667	9	0.0022	43	62	92	130	37	55	66	93	34	50	61	86		
250	241.61	4	18667	8	0.0021	43	62	92	130	37	54	66	93	33	49	61	86		
280	270.77	4	18667	7	0.0021	43	62	92	130	34	50	66	93	31	46	61	86		
315	297.85	3	18299	6	0.0021	43	62	92	130	33	48	66	93	29	43	61	86		
n₁ = 1500 rpm	25	25.14	60	19413	121	0.0264	61	112	138	189	62	106	125	159	46	89	110	140	E3C
	28	28.04	53	19413	109	0.0258	64	112	138	189	68	107	125	159	54	91	108	138	
	31.5	31.43	48	18837	94	0.0248	57	105	138	189	61	99	116	148	48	86	100	128	
	35.5	35.02	43	19413	87	0.0151	54	105	138	189	57	90	105	136	50	81	95	125	
	40	39.06	38	19413	78	0.0148	54	105	138	229	39	76	99	176	36	69	129	207	
	45	43.78	34	18837	68	0.0143	54	105	138	189	56	83	99	136	48	74	91	125	
	50	50.29	30	19038	59	0.0081	54	105	138	189	48	76	99	136	44	69	91	125	
	56	56.09	27	19038	53	0.0080	54	105	138	189	49	76	99	136	44	69	91	125	
	63	62.86	24	18837	47	0.0077	54	105	138	189	46	76	99	136	42	69	91	125	
	71	69.14	22	19038	43	0.0076	54	105	138	189	44	76	99	136	40	69	91	125	
	80	75.43	20	19038	40	0.0134	44	84	92	151	49	71	84	109	37	55	64	100	
	90	84.13	18	19038	36	0.0133	43	84	92	151	48	70	82	109	36	55	62	100	
	100	94.29	16	18667	31	0.0132	43	84	92	151	45	66	77	109	33	55	61	100	
	112	108.31	14	19038	28	0.0069	43	84	92	151	44	65	76	109	36	55	62	100	
125	120.80	12	19038	25	0.0069	43	84	92	151	43	64	75	109	35	55	61	100		
140	135.38	11	18667	22	0.0068	43	84	92	151	41	60	70	109	33	55	61	100		
160	150.86	10	19038	20	0.0040	43	84	92	151	39	60	67	109	33	55	61	100		
180	168.26	9	18667	17	0.0040	43	84	92	151	38	60	66	109	32	55	61	100		
200	188.57	8	18667	16	0.0040	43	84	92	151	35	60	66	109	30	55	61	100		
224	216.62	7	18667	14	0.0022	43	84	92	151	33	60	66	109	29	55	61	100		
250	241.61	6	18667	12	0.0021	43	84	92	151	33	60	66	109	29	55	61	100		
280	270.77	6	18667	11	0.0021	43	84	92	151	31	60	66	109	28	55	61	100		
315	297.85	5	18299	10	0.0021	43	84	92	151	31	60	66	109	28	55	61	100		

E3C / E4C ...22

60 Hz

20 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P_{t0} [kW]	H ₂ O		P_{t0} [kW]	H ₂ O		P_{t0} [kW]	H ₂ O					
								1st	2nd		1st	2nd		1st	2nd				
$n_1 = 1200$ rpm	25	25.14	48	19413	97	0.0264	65	101	138	162	73	111	130	166	63	100	117	148	E3C
	28	28.04	43	19413	87	0.0258	65	101	138	162	75	111	130	165	64	98	115	146	
	31.5	31.43	38	18837	75	0.0248	61	94	138	162	71	104	121	154	61	92	107	137	
	35.5	35.02	34	19413	70	0.0151	55	84	138	162	63	93	109	138	57	85	100	127	
	40	39.06	31	19413	62	0.0148	54	105	140	200	39	56	116	167	36	136	159	202	
	45	43.78	27	18837	54	0.0143	54	79	138	162	59	87	101	129	54	79	93	117	
	50	50.29	24	19038	48	0.0081	54	78	138	162	51	75	99	117	48	70	91	107	
	56	56.09	21	19038	43	0.0080	54	78	138	162	51	75	99	117	47	70	91	107	
	63	62.86	19	18837	38	0.0077	54	78	138	162	48	70	99	117	44	65	91	107	
	71	69.14	17	19038	35	0.0076	54	78	138	162	46	67	99	117	42	62	91	107	
	80	75.43	16	19038	32	0.0134	45	69	92	130	51	75	88	112	41	60	70	90	
	90	84.13	14	19038	28	0.0133	45	69	92	130	51	75	87	111	40	59	69	87	
	100	94.29	13	18667	25	0.0132	43	64	92	130	47	70	82	104	37	54	63	86	
	112	108.31	11	19038	22	0.0069	43	63	92	130	46	68	79	101	39	57	67	86	
	125	120.80	10	19038	20	0.0069	43	63	92	130	46	68	79	101	38	56	66	86	
	140	135.38	9	18667	17	0.0068	43	62	92	130	43	63	74	94	35	52	61	86	
160	150.86	8	19038	16	0.0040	43	62	92	130	41	60	70	93	35	52	61	86		
180	168.26	7	18667	14	0.0040	43	62	92	130	40	59	69	93	35	51	61	86		
200	188.57	6	18667	12	0.0040	43	62	92	130	37	55	66	93	32	47	61	86		
224	216.62	6	18667	11	0.0022	43	62	92	130	35	52	66	93	32	46	61	86		
250	241.61	5	18667	10	0.0021	43	62	92	130	35	51	66	93	31	46	61	86		
280	270.77	4	18667	9	0.0021	43	62	92	130	32	48	66	93	29	42	61	86		
315	297.85	4	18299	8	0.0021	43	62	92	130	31	46	66	93	28	41	61	86		
$n_1 = 1800$ rpm	25	25.14	72	19413	146	0.0264	55	109	138	189	44	91	113	147	36	69	91	127	E3C
	28	28.04	64	19413	131	0.0258	59	112	138	189	54	96	116	148	36	73	94	127	
	31.5	31.43	57	18837	113	0.0248	54	105	138	189	47	88	107	137	36	69	91	125	
	35.5	35.02	51	19413	104	0.0151	54	105	138	189	44	83	99	136	37	71	91	125	
	40	39.06	46	19413	94	0.0148	54	105	138	240	39	76	99	136	36	69	91	207	
	45	43.78	41	18837	81	0.0143	54	105	138	189	47	77	99	136	36	70	91	125	
	50	50.29	36	19038	71	0.0081	54	105	138	189	42	76	99	136	37	69	91	125	
	56	56.09	32	19038	64	0.0080	54	105	138	189	42	76	99	136	38	69	91	125	
	63	62.86	29	18837	56	0.0077	54	105	138	189	41	76	99	136	36	69	91	125	
	71	69.14	26	19038	52	0.0076	54	105	138	189	40	76	99	136	36	69	91	125	
	80	75.43	24	19038	48	0.0134	43	84	92	151	44	65	76	109	28	55	61	100	
	90	84.13	21	19038	43	0.0133	43	84	92	151	43	64	74	109	28	55	61	100	
	100	94.29	19	18667	37	0.0132	43	84	92	151	41	60	70	109	28	55	61	100	
	112	108.31	17	19038	33	0.0069	43	84	92	151	40	60	69	109	33	55	61	100	
	125	120.80	15	19038	30	0.0069	43	84	92	151	40	60	68	109	32	55	61	100	
	140	135.38	13	18667	26	0.0068	43	84	92	151	37	60	66	109	29	55	61	100	
160	150.86	12	19038	24	0.0040	43	84	92	151	35	60	66	109	30	55	61	100		
180	168.26	11	18667	21	0.0040	43	84	92	151	35	60	66	109	29	55	61	100		
200	188.57	10	18667	19	0.0040	43	84	92	151	32	60	66	109	28	55	61	100		
224	216.62	8	18667	16	0.0022	43	84	92	151	31	60	66	109	28	55	61	100		
250	241.61	7	18667	15	0.0021	43	84	92	151	31	60	66	109	28	55	61	100		
280	270.77	7	18667	13	0.0021	43	84	92	151	31	60	66	109	28	55	61	100		
315	297.85	6	18299	12	0.0021	43	84	92	151	31	60	66	109	28	55	61	100		

E3C / E4C ...26

50 Hz

36 kNm

	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O					
								+	-		+	-		+	-	+	-		
n ₁ = 1000 rpm	25	25.60	39	35672	146	0.0659	103	160	195	250	118	183	210	271	109	169	195	252	E3C
	28	28.55	35	35672	131	0.0639	97	151	195	236	113	173	199	257	104	160	184	237	
	31.5	32.46	31	35672	115	0.0605	95	149	195	232	113	169	195	252	102	156	180	232	
	35.5	35.66	28	35672	105	0.0380	85	133	195	229	101	153	176	227	95	143	166	213	
	40	39.77	25	35672	94	0.0370	81	126	195	229	96	145	167	215	91	136	157	202	
	45	45.21	22	35672	83	0.0352	79	124	195	229	94	142	163	210	88	133	153	197	
	50	51.20	20	35672	73	0.0204	77	111	195	229	83	125	144	185	79	118	137	176	
	56	57.11	18	35027	64	0.0199	77	111	195	229	79	119	140	177	75	113	131	168	
	63	64.91	15	35027	57	0.0190	77	111	195	229	77	116	140	172	73	110	129	163	
	71	72.86	14	35027	50	0.0187	77	111	195	229	73	109	140	165	69	103	129	154	
	80	80.82	12	35027	45	0.0164	72	112	156	183	86	129	148	191	77	115	133	171	
	90	90.15	11	35027	41	0.0162	68	106	156	183	81	122	141	181	73	109	126	162	
	100	102.47	10	35027	36	0.0159	67	105	156	183	80	120	138	178	70	106	122	157	
112	116.05	9	35027	32	0.0084	65	102	156	183	78	117	135	174	71	107	124	159		
125	129.44	8	35027	28	0.0083	62	97	156	183	74	111	128	165	68	102	117	151		
140	147.14	7	35027	25	0.0081	61	95	156	183	73	109	126	162	66	99	114	147		
160	161.65	6	35027	23	0.0048	61	91	156	183	70	105	121	156	65	97	112	145		
180	180.30	6	35027	20	0.0047	61	89	156	183	66	100	115	148	61	92	106	137		
200	204.94	5	35027	18	0.0046	61	89	156	183	65	97	113	145	60	89	104	133		
224	232.11	4	34387	16	0.0025	61	89	156	183	62	93	112	138	58	87	103	129		
250	258.60	4	34387	14	0.0025	61	89	156	183	59	88	112	133	55	83	103	123		
280	294.28	3	34387	12	0.0025	61	89	156	183	57	86	112	132	53	80	103	121		
315	330.31	3	34387	11	0.0024	61	89	156	183	54	81	112	132	50	75	103	121		
n ₁ = 1500 rpm	25	25.60	59	35672	219	0.0659	91	181	195	271	84	159	191	255	67	136	165	226	E3C
	28	28.55	53	35672	196	0.0639	85	170	195	267	83	152	182	240	63	130	158	213	
	31.5	32.46	46	35672	173	0.0605	84	167	195	267	86	156	182	234	66	131	157	205	
	35.5	35.66	42	35672	157	0.0380	79	152	195	267	84	142	167	215	72	128	153	197	
	40	39.77	38	35672	141	0.0370	79	149	195	267	83	137	158	204	70	123	144	186	
	45	45.21	33	35672	124	0.0352	77	149	195	267	82	133	154	198	72	121	140	180	
	50	51.20	29	35672	109	0.0204	77	149	195	267	73	119	140	192	69	111	130	176	
	56	57.11	26	35027	96	0.0199	77	149	195	267	70	113	140	192	66	105	129	176	
	63	64.91	23	35027	85	0.0190	77	149	195	267	71	110	140	192	64	102	129	176	
	71	72.86	21	35027	76	0.0187	77	149	195	267	67	107	140	192	62	98	129	176	
	80	80.82	19	35027	68	0.0164	70	125	156	214	80	119	137	177	67	101	117	150	
	90	90.15	17	35027	61	0.0162	66	119	156	214	75	113	130	168	63	95	109	141	
	100	102.47	15	35027	54	0.0159	65	119	156	214	73	110	127	164	61	91	105	141	
112	116.05	13	35027	47	0.0084	63	119	156	214	73	110	126	163	64	96	111	143		
125	129.44	12	35027	43	0.0083	61	119	156	214	69	104	120	155	61	91	105	141		
140	147.14	10	35027	37	0.0081	61	119	156	214	67	101	116	154	58	87	103	141		
160	161.65	9	35027	34	0.0048	61	119	156	214	65	98	113	154	59	88	103	141		
180	180.30	8	35027	31	0.0047	61	119	156	214	62	93	112	154	55	83	103	141		
200	204.94	7	35027	27	0.0046	61	119	156	214	60	90	112	154	53	80	103	141		
224	232.11	6	34387	23	0.0025	61	119	156	214	57	87	112	154	53	79	103	141		
250	258.60	6	34387	22	0.0025	61	119	156	214	54	86	112	154	50	79	103	141		
280	294.28	5	34387	18	0.0025	61	119	156	214	53	86	112	154	48	79	103	141		
315	330.31	5	34387	16	0.0024	61	119	156	214	49	86	112	154	44	79	103	141		

E3C / E4C ...26

60 Hz

36 kNm

	i_N	i_{eff}	n_2 [rpm]	T_{N2} [Nm]	P_N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P_{t0} [kW]			P_{t0} [kW]			P_{t0} [kW]						
								162	195		178	204		158	186				
n ₁ = 1200 rpm	25	25.60	47	35672	175	0.0659	100	162	195	252	108	178	204	264	94	158	186	239	
	28	28.55	42	35672	157	0.0639	95	153	195	237	104	168	193	249	90	150	175	225	
	31.5	32.46	37	35672	138	0.0605	92	150	195	233	105	164	189	244	89	147	170	218	
	35.5	35.66	34	35672	126	0.0380	84	135	195	229	95	149	172	221	88	138	159	205	
	40	39.77	30	35672	113	0.0370	79	128	195	229	91	141	163	210	84	131	151	194	
	45	45.21	27	35672	99	0.0352	78	125	195	229	92	138	159	205	83	127	146	189	
	50	51.20	23	35672	88	0.0204	77	111	195	229	80	122	142	181	75	115	132	171	
	56	57.11	21	35027	77	0.0199	77	111	195	229	77	116	140	172	72	109	129	162	
	63	64.91	18	35027	68	0.0190	77	111	195	229	75	113	140	169	71	106	129	157	
	71	72.86	16	35027	60	0.0187	77	111	195	229	71	107	140	165	66	99	129	151	
	80	80.82	15	35027	54	0.0164	71	113	156	183	83	124	143	185	72	108	125	160	
	90	90.15	13	35027	49	0.0162	67	107	156	183	79	118	136	175	68	102	117	151	
	100	102.47	12	35027	43	0.0159	66	105	156	183	77	115	133	171	65	98	113	145	
	112	116.05	10	35027	38	0.0084	65	103	156	183	76	114	131	169	68	102	117	151	
	125	129.44	9	35027	34	0.0083	61	97	156	183	72	108	124	161	64	96	111	143	
	140	147.14	8	35027	30	0.0081	61	96	156	183	70	106	122	157	62	93	107	138	
	160	161.65	7	35027	27	0.0048	61	92	156	183	68	102	117	151	62	93	107	138	
180	180.30	7	35027	24	0.0047	61	89	156	183	64	97	113	144	58	88	103	130		
200	204.94	6	35027	21	0.0046	61	89	156	183	63	94	112	140	56	85	103	126		
224	232.11	5	34387	19	0.0025	61	89	156	183	60	90	112	134	55	83	103	123		
250	258.60	5	34387	17	0.0025	61	89	156	183	57	85	112	132	52	79	103	121		
280	294.28	4	34387	15	0.0025	61	89	156	183	55	83	112	132	50	76	103	121		
315	330.31	4	34387	13	0.0024	61	89	156	183	52	78	112	132	47	71	103	121		
n ₁ = 1800 rpm	25	25.60	70	35672	263	0.0659	86	179	195	271	56	124	163	230	51	98	129	188	
	28	28.55	63	35672	236	0.0639	80	168	195	267	63	129	158	221	51	98	129	182	
	31.5	32.46	55	35672	207	0.0605	79	163	195	267	64	131	160	216	51	98	129	182	
	35.5	35.66	50	35672	189	0.0380	77	152	195	267	63	124	151	201	54	106	133	186	
	40	39.77	45	35672	169	0.0370	77	149	195	267	63	120	146	193	52	104	130	177	
	45	45.21	40	35672	149	0.0352	77	149	195	267	65	122	144	192	53	105	130	176	
	50	51.20	35	35672	131	0.0204	77	149	195	267	61	110	140	192	54	101	129	176	
	56	57.11	32	35027	116	0.0199	77	149	195	267	60	108	140	192	54	99	129	176	
	63	64.91	28	35027	102	0.0190	77	149	195	267	62	107	140	192	55	99	129	176	
	71	72.86	25	35027	91	0.0187	77	149	195	267	59	107	140	192	53	98	129	176	
	80	80.82	22	35027	82	0.0164	68	125	156	214	73	110	127	163	52	92	106	141	
	90	90.15	20	35027	73	0.0162	65	119	156	214	69	104	120	154	51	86	103	141	
	100	102.47	18	35027	64	0.0159	63	119	156	214	67	101	116	154	50	82	103	141	
	112	116.05	16	35027	57	0.0084	62	119	156	214	68	101	117	154	60	89	103	141	
	125	129.44	14	35027	51	0.0083	61	119	156	214	64	96	112	154	56	84	103	141	
	140	147.14	12	35027	45	0.0081	61	119	156	214	62	93	112	154	53	80	103	141	
	160	161.65	11	35027	41	0.0048	61	119	156	214	61	91	112	154	55	82	103	141	
180	180.30	10	35027	37	0.0047	61	119	156	214	57	87	112	154	52	79	103	141		
200	204.94	9	35027	32	0.0046	61	119	156	214	56	86	112	154	49	79	103	141		
224	232.11	8	34387	28	0.0025	61	119	156	214	53	86	112	154	49	79	103	141		
250	258.60	7	34387	26	0.0025	61	119	156	214	51	86	112	154	46	79	103	141		
280	294.28	6	34387	22	0.0025	61	119	156	214	49	86	112	154	44	79	103	141		
315	330.31	5	34387	20	0.0024	61	119	156	214	46	86	112	154	41	79	103	141		

E3C / E4C ...28

50 Hz

39 kNm

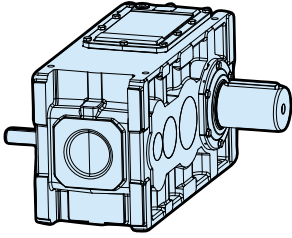
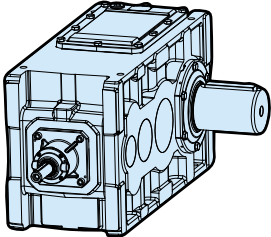
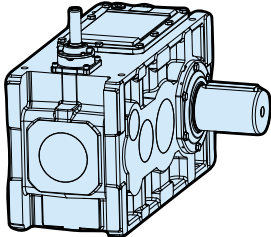
	i _N	i _{eff}	n ₂ [rpm]	T _{N2} [Nm]	P _N [kW]	J [Kgm ²]	R1				S5				T6				Type
							P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O		P _{t0} [kW]	H ₂ O					
								1	2		1	2		1	2				
n₁ = 1000 rpm	25	25.60	39	38076	156	0.0654	103	160	195	250	118	183	210	271	109	169	195	252	E3C
	28	28.55	35	38076	140	0.0635	97	151	195	236	113	173	199	257	104	160	184	237	
	31.5	32.46	31	36598	118	0.0602	95	149	195	232	113	169	195	252	102	156	180	232	
	35.5	35.66	28	37333	110	0.0378	85	133	195	229	101	153	176	227	95	143	166	213	
	40	39.77	25	37333	98	0.0368	81	126	195	229	96	145	167	215	91	136	157	202	
	45	45.21	22	35869	83	0.0351	79	124	195	229	94	142	163	210	88	133	153	197	
	50	51.20	20	37333	76	0.0203	77	111	195	229	83	125	144	185	79	118	137	176	
	56	57.11	18	37333	68	0.0198	77	111	195	229	79	119	140	177	75	113	131	168	
	63	64.91	15	35869	58	0.0190	77	111	195	229	77	116	140	172	73	110	129	163	
	71	72.86	14	37333	54	0.0187	77	111	195	229	73	109	140	165	69	103	129	154	
	80	80.82	12	37333	48	0.0163	72	112	156	183	86	129	148	191	77	115	133	171	
	90	90.15	11	36598	43	0.0162	68	106	156	183	81	122	141	181	73	109	126	162	
	100	102.47	10	35148	36	0.0158	67	105	156	183	80	120	138	178	70	106	122	157	
	112	116.05	9	36598	33	0.0084	65	102	156	183	78	117	135	174	71	107	124	159	
125	129.44	8	36598	30	0.0083	62	97	156	183	74	111	128	165	68	102	117	151		
140	147.14	7	35148	25	0.0081	61	95	156	183	73	109	126	162	66	99	114	147		
160	161.65	6	36598	24	0.0047	61	91	156	183	70	105	121	156	65	97	112	145		
180	180.30	6	36598	21	0.0047	61	89	156	183	66	100	115	148	61	92	106	137		
200	205.05	5	36598	19	0.0047	61	89	156	183	65	97	113	145	60	89	104	133		
224	232.11	4	36598	17	0.0025	61	89	156	183	62	93	112	138	58	87	103	129		
250	258.89	4	36598	15	0.0025	61	89	156	183	59	88	112	133	55	83	103	123		
280	294.28	3	35148	13	0.0025	61	89	156	183	57	86	112	132	53	80	103	121		
315	330.31	3	36598	12	0.0024	61	89	156	183	54	81	112	132	50	75	103	121		
n₁ = 1500 rpm	25	25.60	59	38076	234	0.0654	91	181	195	271	84	159	191	255	67	136	165	226	E3C
	28	28.55	53	38076	209	0.0635	85	170	195	267	83	152	182	240	63	130	158	213	
	31.5	32.46	46	36598	177	0.0602	84	167	195	267	86	156	182	234	66	131	157	205	
	35.5	35.66	42	37333	164	0.0378	79	152	195	267	84	142	167	215	72	128	153	197	
	40	39.77	38	37333	147	0.0368	79	149	195	267	83	137	158	204	70	123	144	186	
	45	45.21	33	35869	125	0.0351	77	149	195	267	82	133	154	198	72	121	140	180	
	50	51.20	29	37333	115	0.0203	77	149	195	267	73	119	140	192	69	111	130	176	
	56	57.11	26	37333	103	0.0198	77	149	195	267	70	113	140	192	66	105	129	176	
	63	64.91	23	35869	87	0.0190	77	149	195	267	71	110	140	192	64	102	129	176	
	71	72.86	21	37333	80	0.0187	77	149	195	267	67	107	140	192	62	98	129	176	
	80	80.82	19	37333	73	0.0163	70	125	156	214	80	119	137	177	67	101	117	150	
	90	90.15	17	36598	64	0.0162	66	119	156	214	75	113	130	168	63	95	109	141	
	100	102.47	15	35148	54	0.0158	65	119	156	214	73	110	127	164	61	91	105	141	
	112	116.05	13	36598	50	0.0084	63	119	156	214	73	110	126	163	64	96	111	143	
125	129.44	12	36598	44	0.0083	61	119	156	214	69	104	120	155	61	91	105	141		
140	147.14	10	35148	38	0.0081	61	119	156	214	67	101	116	154	58	87	103	141		
160	161.65	9	36598	36	0.0047	61	119	156	214	65	98	113	154	59	88	103	141		
180	180.30	8	36598	32	0.0047	61	119	156	214	62	93	112	154	55	83	103	141		
200	205.05	8	36598	29	0.0047	61	119	156	214	60	90	112	154	53	80	103	141		
224	232.11	6	36598	25	0.0025	61	119	156	214	57	87	112	154	53	79	103	141		
250	258.89	6	36598	22	0.0025	61	119	156	214	54	86	112	154	50	79	103	141		
280	294.28	5	35148	19	0.0025	61	119	156	214	53	86	112	154	48	79	103	141		
315	330.31	5	36598	17	0.0024	61	119	156	214	49	86	112	154	44	79	103	141		



BREVINI[®]

Motion Systems

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Type		Mounting position	Pag.
 <p>Helical gear units</p>	E2H	R1	113
		S5	114
		T6	115
	E3H	R1	117
		S5	118
		T6	119
	E4H	R1	121
		S5	122
		T6	123
 <p>Bevel-helical gear units</p>	E3B	R1	125
		S5	126
		T6	127
	E4B	R1	129
		S5	130
		T6	131
 <p>Compact drives</p>	E3C	R1	133
		S5	134
		T6	135
	E4C	R1	137
		S5	138
		T6	139

R1 : Horizontal, output shaft horizontal

S5 : Vertical, output shaft below

T6 : Vertical, output shaft above



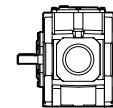
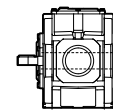
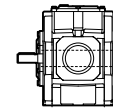
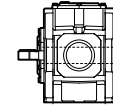
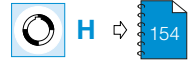
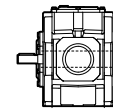
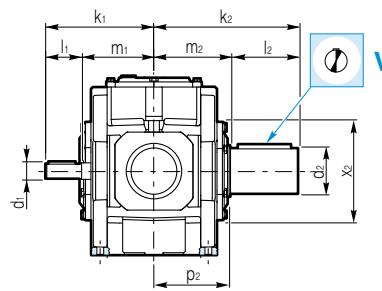
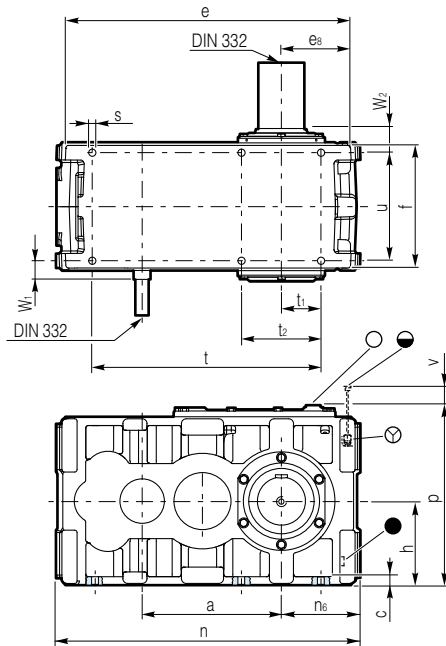
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Motion Systems

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E2H ... -R1

MONOBLOCK HOUSING



	Input shaft				Output shaft				
	Ø d ₁	k ₁	l ₁	m ₁	Ø d ₂	k ₂	l ₂	m ₂	Ø x ₂
E2H 18	45 k6	275	120	155	95 m6	350	170	180	-
E2H 19	45 k6	275	120	155	95 m6	350	170	180	-
E2H 20	45 k6	275	120	155	120 m6	370	190	180	-
E2H 22	60 m6	337	140	197	130 m6	405	190	215	-
E2H 25	60 m6	337	140	197	145 m6	450	230	220	296
E2H 26	70 m6	369	140	229	145 m6	480	230	250	296
E2H 28	70 m6	369	140	229	160 m6	480	230	250	328
E2H 31	70 m6	369	140	229	175 m6	540	290	250	348

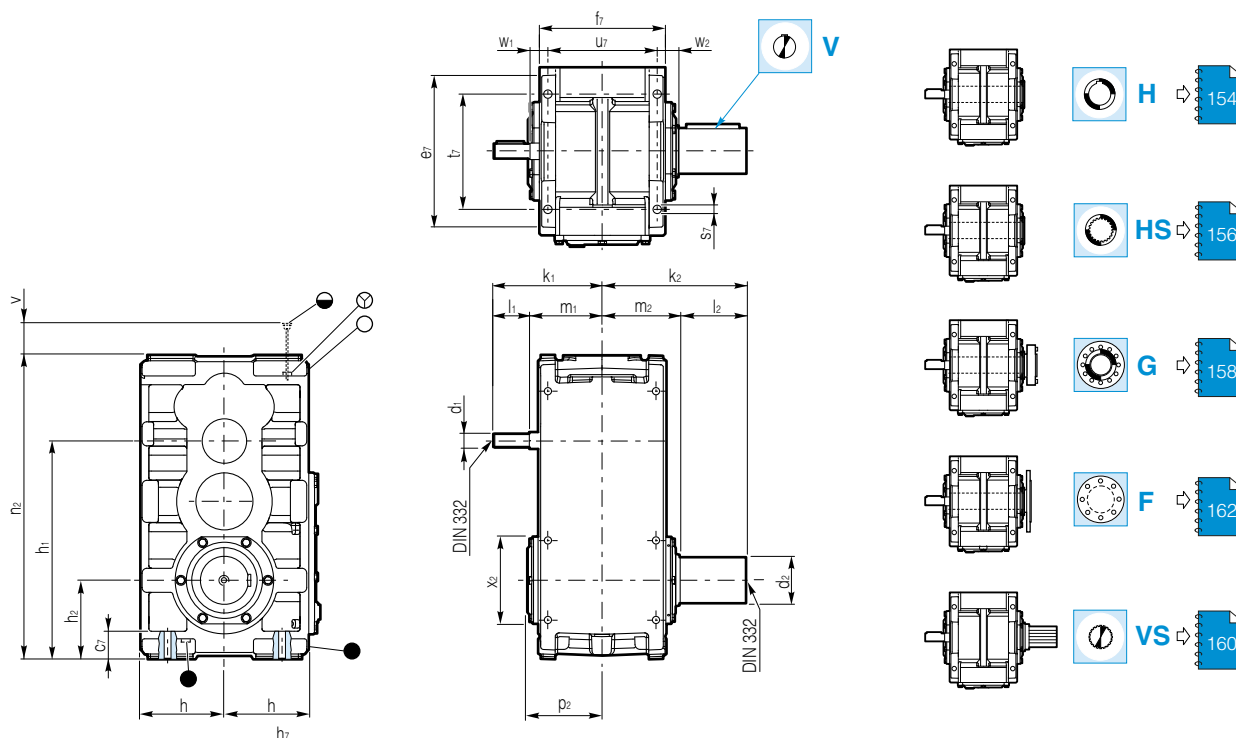
	Housing									
	a	c	e	e ₈	f	h -0.2	n	n ₆	p	p ₂
E2H 18	293	18	622	155	284	190	654	171	419	-
E2H 19	324	18	687	186	284	202	716	202	443	-
E2H 20	347	18	732	211	284	225	764	227	489	-
E2H 22	376	24	782	193	346	235	826	215	513	-
E2H 25	434	24	896	249	346	265	940	271	573	204
E2H 26	464	28	948	230	408	280	1000	256	610	246
E2H 28	464	28	948	230	408	280	1000	256	610	246
E2H 31	532	28	1085	299	408	315	1137	325	680	239

	Fitting									OIL [l]	Kg*
	Ø s	d _s x l _{max}	t	t ₁	t ₂	u	w ₁	w ₂	v		
E2H 18	14.5	M12x55	486	87	175	248	31	56	45	15	250
E2H 19	14.5	M12x55	548	118	237	248	31	56	65	17	290
E2H 20	14.5	M12x90	596	143	285	248	31	56	70	20	340
E2H 22	18.5	M16x65	622	113	226	306	44	62	60	28	455
E2H 25	18.5	M16x90	736	169	340	306	44	67	100	37	605
E2H 26	24	M20x80	752	132	265	360	49	70	80	49	745
E2H 28	24	M20x80	752	132	265	360	49	70	80	48	755
E2H 31	24	M20x110	889	201	402	360	49	70	90	66	1075

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l, m. and w. for grease lubricated labyrinth seals, on request.

E2H ... -S5

MONOBLOCK HOUSING



	Input shaft				Output shaft				
	Ø d ₁	k ₁	l ₁	m ₁	Ø d ₂	k ₂	l ₂	m ₂	Ø x ₂
E2H 18	45 k6	275	120	155	95 m6	350	170	180	–
E2H 19	45 k6	275	120	155	95 m6	350	170	180	–
E2H 20	45 k6	275	120	155	120 m6	370	190	180	–
E2H 22	60 m6	337	140	197	130 m6	405	190	215	–
E2H 25	60 m6	337	140	197	145 m6	450	230	220	296
E2H 26	70 m6	369	140	229	145 m6	480	230	250	296
E2H 28	70 m6	369	140	229	160 m6	480	230	250	328
E2H 31	70 m6	369	140	229	175 m6	540	290	250	348

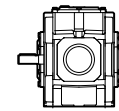
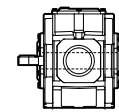
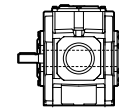
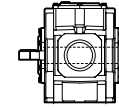
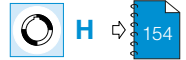
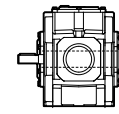
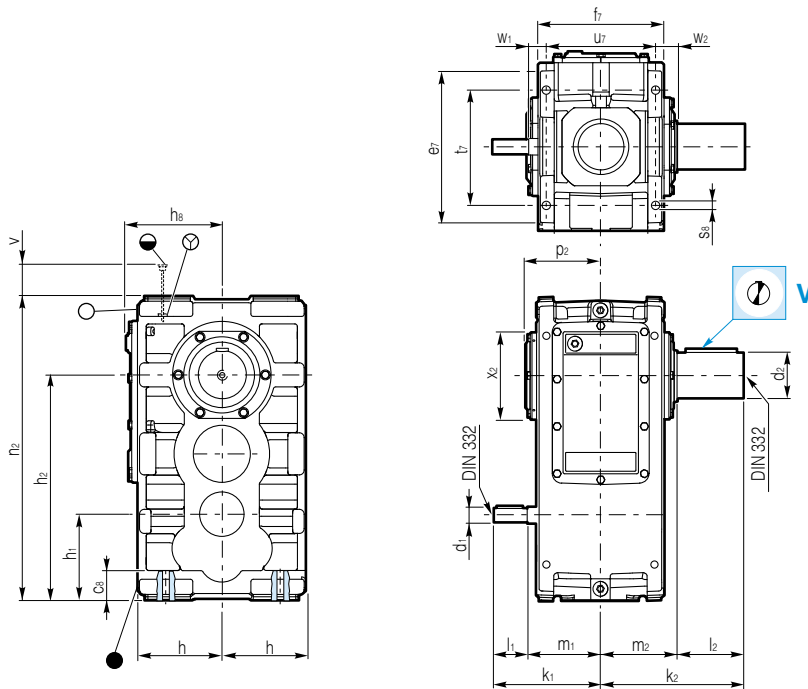
	Housing							
	c ₇	e ₇	f ₇	h -0.2	h ₁	h ₂ -0.2	n ₂	p ₂
E2H 18	62	348	284	190	464	171	654	–
E2H 19	62	373	284	202	526	202	716	–
E2H 20	62	414	284	225	574	227	764	–
E2H 22	76	426	346	235	591	215	826	–
E2H 25	77	486	346	265	705	271	940	204
E2H 26	86	504	408	280	720	256	1000	246
E2H 28	86	504	408	280	720	256	1000	246
E2H 31	95	574	408	315	857	325	1137	239

	Fitting							OIL [l]	Kg*
	Ø s ₇	d _s x l _{max}	t ₇	u ₇	w ₁	w ₂	v		
E2H 18	16.5	M14x100	260	258	26	51	160	26	250
E2H 19	16.5	M14x100	284	258	26	51	160	30	290
E2H 20	16.5	M14x100	330	258	26	51	160	35	340
E2H 22	24	M20x130	326	312	41	59	195	46	455
E2H 25	24	M20x130	384	312	41	64	195	63	605
E2H 26	28	M24x150	386	366	46	67	215	80	745
E2H 28	28	M24x150	386	366	46	67	215	78	755
E2H 31	28	M24x160	456	366	46	67	215	113	1075

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l₁, m₁ and w₁ for grease lubricated labyrinth seals, on request.

E2H ... -T6

MONOBLOCK HOUSING



	Input shaft				Output shaft				
	Ø d ₁	k ₁	l ₁	m ₁	Ø d ₂	k ₂	l ₂	m ₂	Ø x ₂
E2H 18	45 k6	275	120	155	95 m6	350	170	180	–
E2H 19	45 k6	275	120	155	95 m6	350	170	180	–
E2H 20	45 k6	275	120	155	120 m6	370	190	180	–
E2H 22	60 m6	337	140	197	130 m6	405	190	215	–
E2H 25	60 m6	337	140	197	145 m6	450	230	220	296
E2H 26	70 m6	369	140	229	145 m6	480	230	250	296
E2H 28	70 m6	369	140	229	160 m6	480	230	250	328
E2H 31	70 m6	369	140	229	175 m6	540	290	250	348

	Housing								
	c ₈	e ₇	f ₇	h -0.2	h ₁	h _{2 -0.2}	h ₈	n ₂	p ₂
E2H 18	64	348	284	190	190	483	229	654	–
E2H 19	64	373	284	202	190	514	241	716	–
E2H 20	64	414	284	225	190	537	264	764	–
E2H 22	76	426	346	235	235	611	278	826	–
E2H 25	77	486	346	265	235	669	308	940	204
E2H 26	92	504	408	280	280	744	330	1000	246
E2H 28	92	504	408	280	280	744	330	1000	246
E2H 31	95	574	408	315	280	812	365	1137	239

	Fitting						v	OIL [l]	Kg*
	Ø s ₈	d _s x l _{max}	t ₇	u ₇	w ₁	w ₂			
E2H 18	16.5	M14x100	260	258	26	51	150	26	250
E2H 19	16.5	M14x100	284	258	26	51	200	28	290
E2H 20	16.5	M14x100	330	258	26	51	220	33	340
E2H 22	24	M20x130	326	312	41	59	190	48	455
E2H 25	24	M20x130	384	312	41	64	260	61	605
E2H 26	28	M24x150	386	366	46	67	230	84	745
E2H 28	28	M24x150	386	366	46	67	230	83	755
E2H 31	28	M24x160	456	366	46	67	290	129	1075

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l, m. and w. for grease lubricated labyrinth seals, on request.



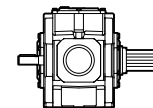
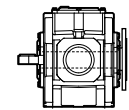
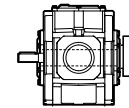
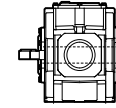
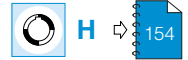
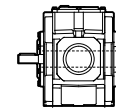
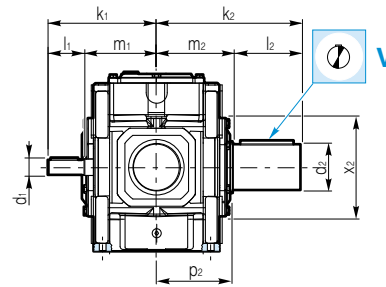
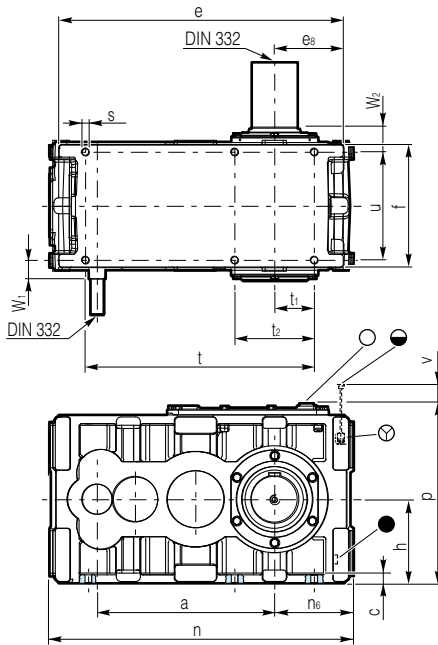
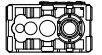
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Motion Systems

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E3H ... -R1

MONOBLOCK HOUSING



	Input shaft										Output shaft				
	i_N	$\varnothing d_1$	k_1	l_1	i_N	$\varnothing d_1$	k_1	l_1	m_1	$\varnothing d_2$	k_2	l_2	m_2	$\varnothing x_2$	
E3H 18	16...45	35 k6	283	100	50...100	30 k6	283	100	183	95 m6	350	170	180	-	
E3H 19	20...56	35 k6	283	100	63...125	30 k6	283	100	183	95 m6	350	170	180	-	
E3H 20	224...63	35 k6	283	100	71...140	30 k6	283	100	183	120 m6	370	190	180	-	
E3H 22	20...45	50 k6	347	120	50...71	40 k6	347	120	227	130 m6	405	190	215	-	
E3H 25	25...56	50 k6	347	120	63...90	40 k6	347	120	227	145 m6	450	230	220	296	
E3H 26	16...45	50 k6	362	120	50...100	40 k6	362	120	242	145 m6	480	230	250	296	
E3H 28	16...45	50 k6	362	120	50...100	40 k6	362	120	242	160 m6	480	230	250	328	
E3H 31	224...63	50 k6	362	120	71...140	40 k6	362	120	242	175 m6	540	290	250	348	

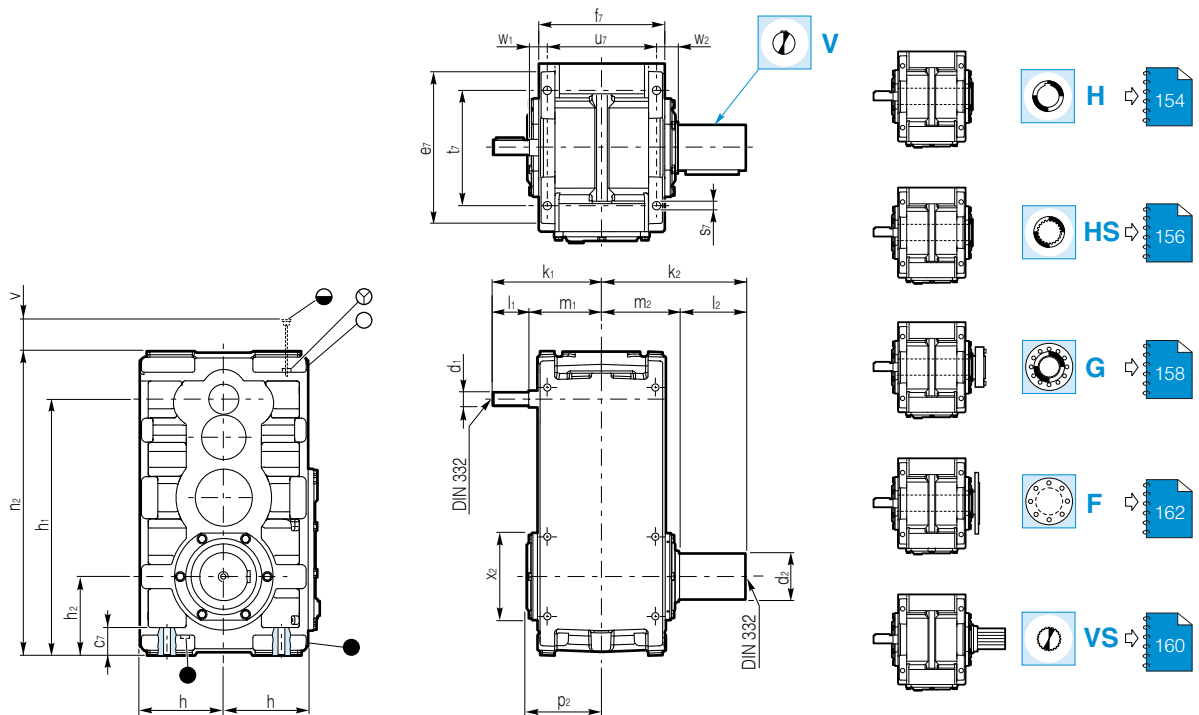
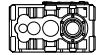
	Housing										
	a	c	e	e_8	f	h -0.2	n	n_6	p	p_2	
E3H 18	387	18	622	155	284	190	654	171	419	-	
E3H 19	418	18	687	186	284	202	716	202	443	-	
E3H 20	441	18	732	211	284	225	764	227	489	-	
E3H 22	492	24	782	193	346	235	826	215	513	-	
E3H 25	550	24	896	249	346	265	940	271	573	204	
E3H 26	591	28	949	230	408	280	1000	256	610	246	
E3H 28	591	28	949	230	408	280	1000	256	610	246	
E3H 31	659	28	1085	299	408	315	1137	325	680	239	

	Fitting										OIL [l]	Kg*
	$\varnothing s$	$d_s \times l_{max}$	t	t_1	t_2	u	w_1	w_2	v			
E3H 18	14.5	M12x55	486	87	175	248	59	56	40	15	255	
E3H 19	14.5	M12x55	548	118	237	248	59	56	60	18	295	
E3H 20	14.5	M12x90	596	143	285	248	59	56	65	21	350	
E3H 22	18.5	M16x65	622	113	226	306	74	62	55	28	475	
E3H 25	18.5	M16x90	736	169	340	306	74	67	95	37	625	
E3H 26	24	M20x80	752	132	265	360	62	70	65	50	770	
E3H 28	24	M20x80	752	132	265	360	62	70	65	49	780	
E3H 31	24	M20x110	889	201	402	360	62	70	75	67	1095	

*Provided weight values are without oil filling and may differ slightly according to specific product configuration.
Dimensions l, m. and w. for grease lubricated labyrinth seals, on request.

E3H ... -S5

MONOBLOCK HOUSING



	Input shaft					Output shaft								
	i_N	$\varnothing d_1$	k_1	l_1	i_N	$\varnothing d_1$	k_1	l_1	m_1	$\varnothing d_2$	k_2	l_2	m_2	$\varnothing x_2$
E3H 18	16...45	35 k6	283	100	50...100	30 k6	283	100	183	95 m6	350	170	180	-
E3H 19	20...56	35 k6	283	100	63...125	30 k6	283	100	183	95 m6	350	170	180	-
E3H 20	22.4...63	35 k6	283	100	71...140	30 k6	283	100	183	120 m6	370	190	180	-
E3H 22	20...45	50 k6	347	120	50...71	40 k6	347	120	227	130 m6	405	190	215	-
E3H 25	25...56	50 k6	347	120	63...90	40 k6	347	120	227	145 m6	450	230	220	296
E3H 26	16...45	50 k6	362	120	50...100	40 k6	362	120	242	145 m6	480	230	250	296
E3H 28	16...45	50 k6	362	120	50...100	40 k6	362	120	242	160 m6	480	230	250	328
E3H 31	22.4...63	50 k6	362	120	71...140	40 k6	362	120	242	175 m6	540	290	250	348

	Housing							
	c_7	e_7	f_7	h -0.2	h_1	h_2 -0.2	n_2	p_2
E3H 18	62	348	284	190	558	171	654	-
E3H 19	62	373	284	202	620	202	716	-
E3H 20	62	414	284	225	668	227	764	-
E3H 22	76	426	346	235	707	215	826	-
E3H 25	77	486	346	265	821	271	940	204
E3H 26	86	504	408	280	847	256	1000	246
E3H 28	86	504	408	280	847	256	1000	246
E3H 31	95	574	408	315	984	325	1137	239

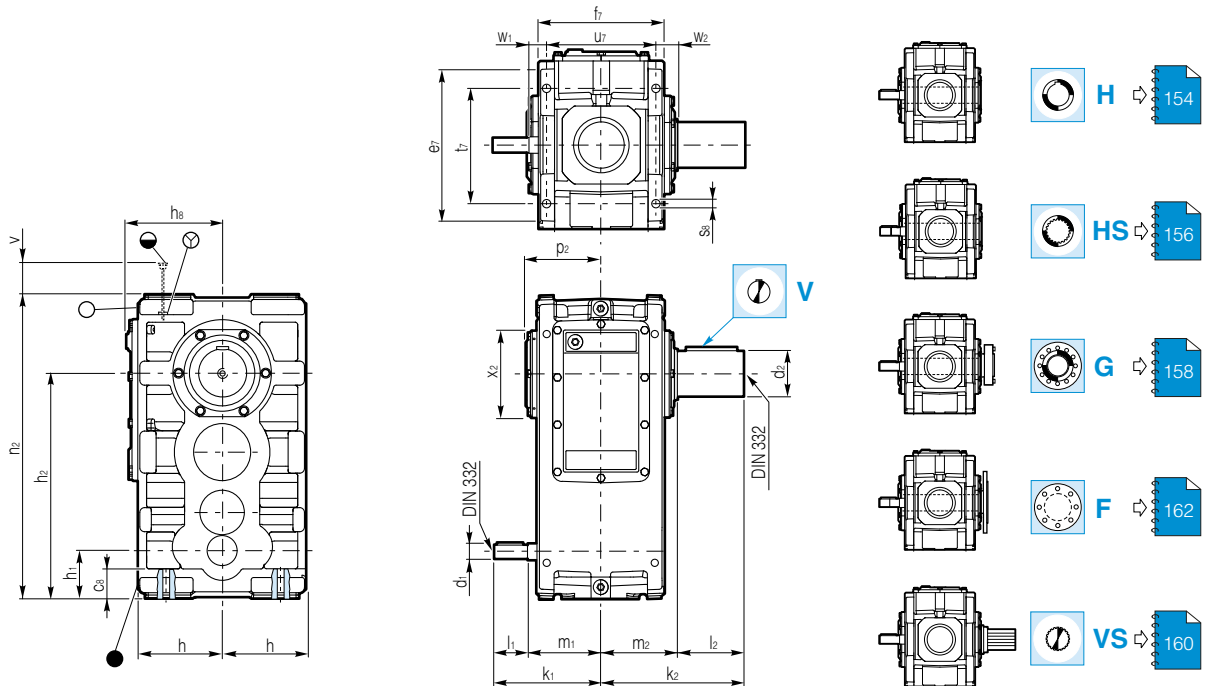
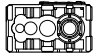
	Fitting							OIL [l]	Kg*
	$\varnothing s_7$	$d_s \times l_{max}$	t_7	u_7	w_1	w_2	v		
E3H 18	16.5	M14x100	260	258	54	51	55	31	255
E3H 19	16.5	M14x100	284	258	54	51	55	35	295
E3H 20	16.5	M14x100	330	258	54	51	55	42	350
E3H 22	24	M20x130	326	312	71	59	65	56	475
E3H 25	24	M20x130	384	312	71	64	65	77	625
E3H 26	28	M24x150	386	366	59	67	70	97	770
E3H 28	28	M24x150	386	366	59	67	70	95	780
E3H 31	28	M24x160	456	366	59	67	70	135	1095

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l , m . and w . for grease lubricated labyrinth seals, on request.



E3H ... -T6

MONOBLOCK HOUSING



	Input shaft										Output shaft				
	i_N	$\varnothing d_1$	k_1	l_1	i_N	$\varnothing d_1$	k_1	l_1	m_1	$\varnothing d_2$	k_2	l_2	m_2	$\varnothing x_2$	
E3H 18	16...45	35 k6	283	100	50...100	30 k6	283	100	183	95 m6	350	170	180	-	
E3H 19	20...56	35 k6	283	100	63...125	30 k6	283	100	183	95 m6	350	170	180	-	
E3H 20	22.4...63	35 k6	283	100	71...140	30 k6	283	100	183	120 m6	370	190	180	-	
E3H 22	20...45	50 k6	347	120	50...71	40 k6	347	120	227	130 m6	405	190	215	-	
E3H 25	25...56	50 k6	347	120	63...90	40 k6	347	120	227	145 m6	450	230	220	296	
E3H 26	16...45	50 k6	362	120	50...100	40 k6	362	120	242	145 m6	480	230	250	296	
E3H 28	16...45	50 k6	362	120	50...100	40 k6	362	120	242	160 m6	480	230	250	328	
E3H 31	22.4...63	50 k6	362	120	71...140	40 k6	362	120	242	175 m6	540	290	250	348	

	Housing									
	c_8	e_7	f_7	h	h_1	h_2	h_8	n_2	p_2	
E3H 18	64	348	284	190	96	483	229	654	-	
E3H 19	64	373	284	202	96	514	241	716	-	
E3H 20	64	414	284	225	96	537	264	764	-	
E3H 22	76	426	346	235	119	611	278	826	-	
E3H 25	77	486	346	265	119	669	308	940	204	
E3H 26	92	504	408	280	153	744	330	1000	246	
E3H 28	92	504	408	280	153	744	330	1000	246	
E3H 31	94	574	408	315	153	812	365	1137	239	

	Fitting							v	OIL [I]	Kg*
	$\varnothing s_8$	$d_s \times l_{max}$	t_7	u_7	w_1	w_2				
E3H 18	16.5	M14x100	260	258	54	51	150	25	255	
E3H 19	16.5	M14x100	284	258	54	51	200	27	295	
E3H 20	16.5	M14x100	330	258	54	51	220	32	350	
E3H 22	24	M20x130	326	312	71	59	190	47	475	
E3H 25	24	M20x130	384	312	71	64	260	59	625	
E3H 26	28	M24x150	386	366	59	67	230	81	770	
E3H 28	28	M24x150	386	366	59	67	230	80	780	
E3H 31	28	M24x160	456	366	59	67	290	104	1095	

*Provided weight values are without oil filling and may differ slightly according to specific product configuration.
Dimensions l , m , and w for grease lubricated labyrinth seals, on request.



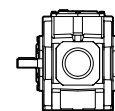
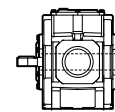
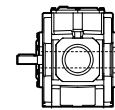
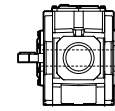
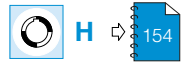
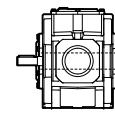
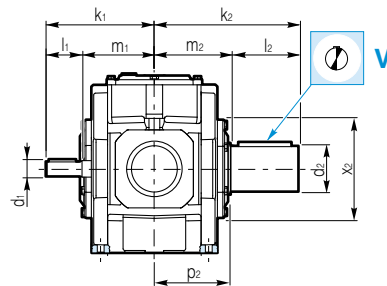
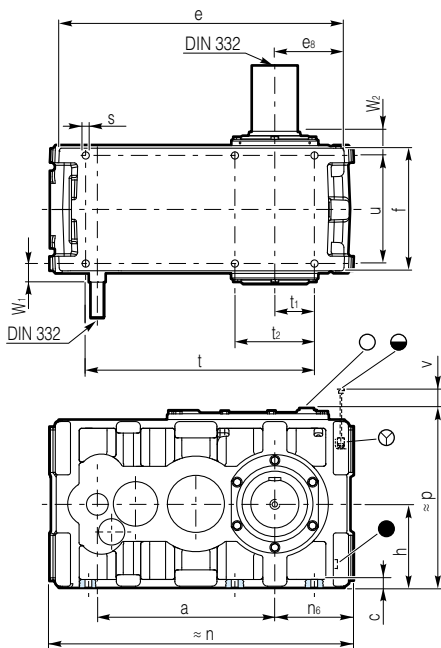
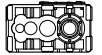
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Motion Systems

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E4H ...-R1

MONOBLOCK HOUSING



	Input shaft										Output shaft			
	i_N	$\varnothing d_1$	k_1	l_1	i_N	$\varnothing d_1$	k_1	l_1	m_1	$\varnothing d_2$	k_2	l_2	m_2	$\varnothing x_2$
E4H 18	90...315	25 k6	227	72	-	-	-	-	155	95 m6	350	170	180	-
E4H 19	112...400	25 k6	227	72	-	-	-	-	155	95 m6	350	170	180	-
E4H 20	125...450	25 k6	227	72	-	-	-	-	155	120 m6	370	190	180	-
E4H 22	71...200	35 k6	307	100	224...450	30 k6	307	100	207	130 m6	405	190	215	-
E4H 25	90...250	35 k6	307	100	280...560	30 k6	307	100	207	145 m6	450	230	220	296
E4H 26	71...450	35 k6	319	100	-	-	-	-	219	145 m6	480	230	250	296
E4H 28	71...450	35 k6	319	100	-	-	-	-	219	160 m6	480	230	250	328
E4H 31	100...630	35 k6	319	100	-	-	-	-	219	175 m6	540	290	250	348

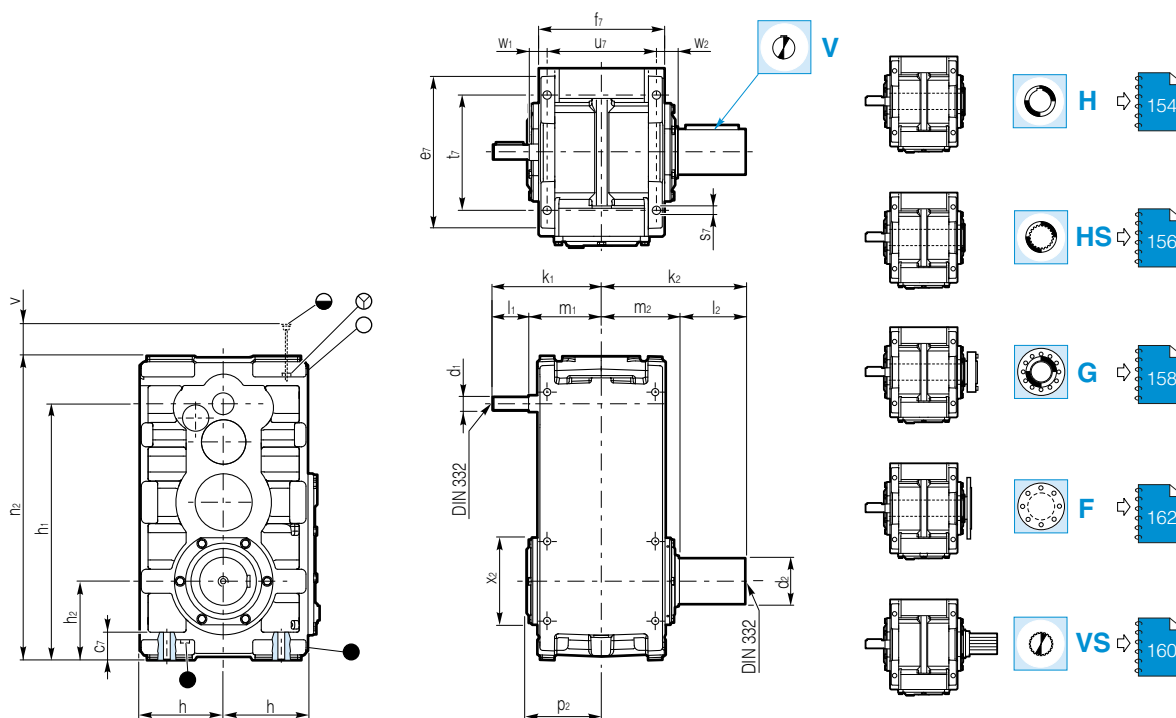
	Housing										
	a	c	e	e_8	f	h -0.2	n	n_6	p	p_2	
E4H 18	387	18	622	155	284	190	654	171	419	-	
E4H 19	418	18	687	186	284	202	716	202	443	-	
E4H 20	441	18	732	211	284	225	764	227	489	-	
E4H 22	492	24	782	193	346	235	826	215	513	-	
E4H 25	550	24	896	249	346	265	940	271	573	204	
E4H 26	591	28	948	230	408	280	1000	256	610	246	
E4H 28	591	28	948	230	408	280	1000	256	610	246	
E4H 31	659	28	1085	299	408	315	1137	325	680	239	

	Fitting										Oil [l]	Kg*
	$\varnothing s$	$d_s \times l_{max}$	t	t_1	t_2	u	w_1	w_2	v			
E4H 18	14.5	M12x55	486	87	175	248	31	56	30	16	260	
E4H 19	14.5	M12x55	548	118	237	248	31	56	50	18	300	
E4H 20	14.5	M12x90	596	143	285	248	31	56	55	21	355	
E4H 22	18.5	M16x65	622	113	226	306	54	62	45	29	480	
E4H 25	18.5	M16x90	736	169	340	306	54	67	85	38	630	
E4H 26	24	M20x80	752	132	265	360	39	70	50	51	785	
E4H 28	24	M20x80	752	132	265	360	39	70	50	50	795	
E4H 31	24	M20x110	889	201	402	360	39	70	60	69	1115	

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l, m. and w. for grease lubricated labyrinth seals, on request.

E4H... -S5

MONOBLOCK HOUSING



	Input shaft					Output shaft									
	i_N	$\varnothing d_1$	k_1	l_1		i_N	$\varnothing d_1$	k_1	l_1	m_1	$\varnothing d_2$	k_2	l_2	m_2	$\varnothing x_2$
E4H 18	90...315	25 k6	227	72	-	-	-	-	-	155	95 m6	350	170	180	-
E4H 19	112...400	25 k6	227	72	-	-	-	-	-	155	95 m6	350	170	180	-
E4H 20	125...450	25 k6	227	72	-	-	-	-	-	155	120 m6	370	190	180	-
E4H 22	71...200	35 k6	307	100	224...450	30 k6	307	100	207	130 m6	405	190	215	-	
E4H 25	90...250	35 k6	307	100	280...560	30 k6	307	100	207	145 m6	450	230	220	296	
E4H 26	71...450	35 k6	319	100	-	-	-	-	219	145 m6	480	230	250	296	
E4H 28	71...450	35 k6	319	100	-	-	-	-	219	160 m6	480	230	250	328	
E4H 31	100...630	35 k6	319	100	-	-	-	-	219	175 m6	540	290	250	348	

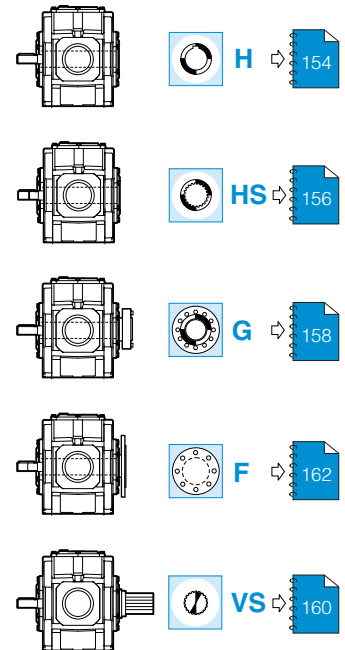
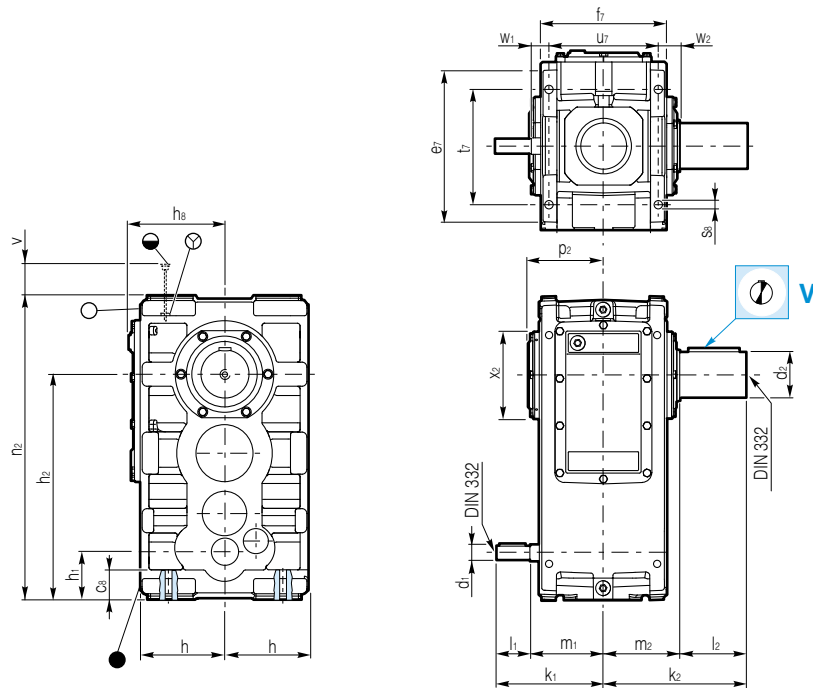
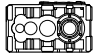
	Housing								
	c_7	e_7	f_7	h -0.2	h_1	h_2 -0.2	n_2	p_2	
E4H 18	62	348	284	190	558	171	654	-	
E4H 19	62	373	284	202	620	202	716	-	
E4H 20	62	414	284	225	668	227	764	-	
E4H 22	76	426	346	235	707	215	826	-	
E4H 25	77	486	346	265	821	271	940	204	
E4H 26	86	504	408	280	847	256	1000	246	
E4H 28	86	504	408	280	847	256	1000	246	
E4H 31	95	574	408	315	984	325	1137	239	

	Fitting							v	OIL [l]	Kg*
	$\varnothing s_7$	$d_s \times l_{max}$	t_7	u_7	w_1	w_2				
E4H 18	16.5	M14x100	260	258	26	51	50	32	260	
E4H 19	16.5	M14x100	284	258	26	51	50	36	300	
E4H 20	16.5	M14x100	330	258	26	51	50	43	355	
E4H 22	24	M20x130	326	312	51	59	60	58	480	
E4H 25	24	M20x130	384	312	51	64	60	77	630	
E4H 26	28	M24x150	386	366	36	67	60	101	785	
E4H 28	28	M24x150	386	366	36	67	60	99	795	
E4H 31	28	M24x160	456	366	36	67	60	139	1115	

*Provided weight values are without oil filling and may differ slightly according to specific product configuration.
Dimensions l , m , and w for grease lubricated labyrinth seals, on request.

E4H... -T6

MONOBLOCK HOUSING



	Input shaft					Output shaft				
	i_N	$\varnothing d_1$	k_1	l_1	m_1	$\varnothing d_2$	k_2	l_2	m_2	$\varnothing x_2$
E4H 18	90...315	25 k6	227	72	–	95 m6	350	170	180	–
E4H 19	112...400	25 k6	227	72	–	95 m6	350	170	180	–
E4H 20	125...450	25 k6	227	72	–	120 m6	370	190	180	–
E4H 22	71...200	35 k6	307	100	224...450	130 m6	405	190	215	–
E4H 25	90...250	35 k6	307	100	280...560	145 m6	450	230	220	296
E4H 26	71...450	35 k6	319	100	–	145 m6	480	230	250	296
E4H 28	71...450	35 k6	319	100	–	160 m6	480	230	250	328
E4H 31	100...630	35 k6	319	100	–	175 m6	540	290	250	348

	Housing								
	c_8	e_7	f_7	h -0.2	h_1	h_2 -0.2	h_8	n_2	p_2
E4H 18	64	348	284	190	96	483	229	654	–
E4H 19	64	373	284	202	96	514	241	716	–
E4H 20	64	414	284	225	96	537	264	764	–
E4H 22	76	426	346	235	119	611	278	826	–
E4H 25	77	486	346	265	119	669	308	940	204
E4H 26	92	504	408	280	153	744	330	1000	246
E4H 28	92	504	408	280	153	744	330	1000	246
E4H 31	94	574	408	315	153	812	365	1137	239

	Fitting						v	OIL [l]	Kg*
	$\varnothing s_8$	$d_s \times l_{max}$	t_7	u_7	w_1	w_2			
E4H 18	16.5	M14x100	260	258	26	51	150	24	260
E4H 19	16.5	M14x100	284	258	26	51	200	27	300
E4H 20	16.5	M14x100	330	258	26	51	220	32	355
E4H 22	24	M20x130	326	312	51	59	190	46	480
E4H 25	24	M20x130	384	312	51	64	260	58	630
E4H 26	28	M24x150	386	366	36	67	230	80	785
E4H 28	28	M24x150	386	366	36	67	230	79	795
E4H 31	28	M24x160	456	366	36	67	290	104	1115

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l, m. and w. for grease lubricated labyrinth seals, on request.



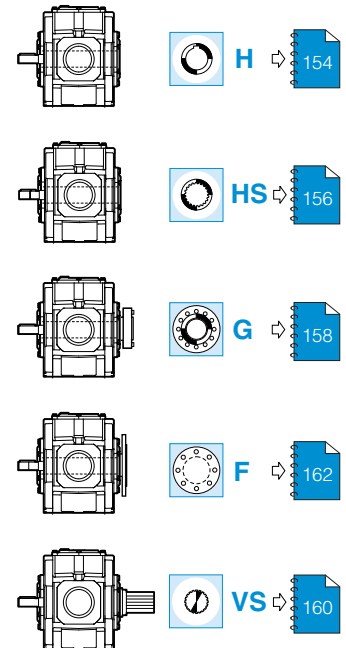
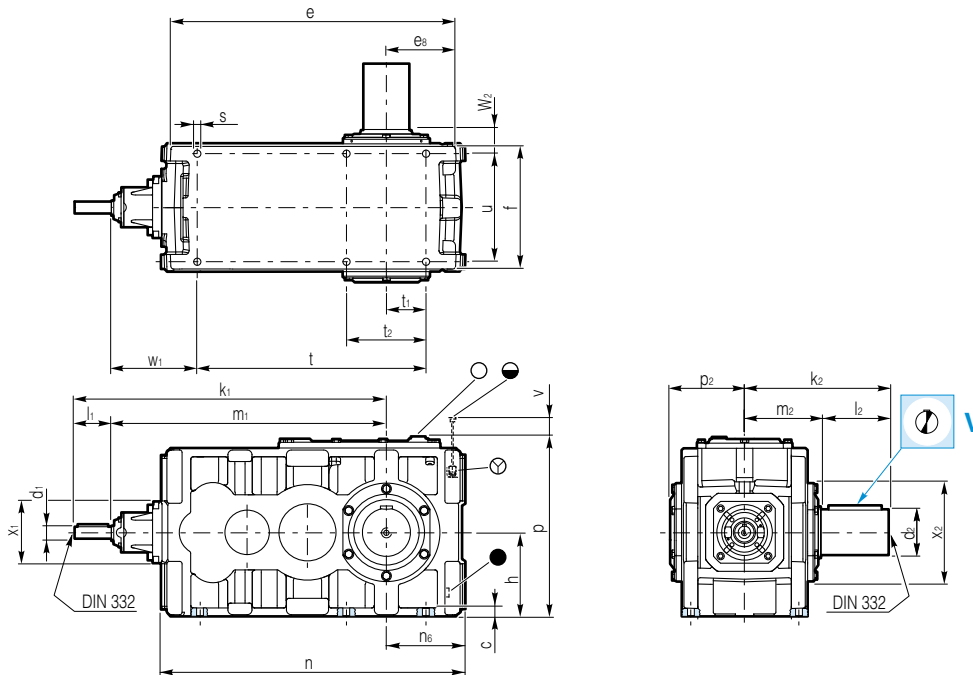
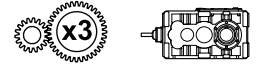
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Motion Systems

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E3B... -R1

MONOBLOCK HOUSING



	Input shaft					Output shaft				
	$\varnothing d_1$	k_1	l_1	m_1	$\varnothing x_1$	$\varnothing d_2$	k_2	l_2	m_2	$\varnothing x_2$
E3B 18	40 k6	699	120	579	190	95 m6	350	170	180	–
E3B 19	40 k6	730	120	610	190	95 m6	350	170	180	–
E3B 20	40 k6	753	120	633	190	120 m6	370	190	180	–
E3B 22	50 k6	823	120	703	225	130 m6	405	190	215	–
E3B 25	50 k6	881	120	761	225	145 m6	450	230	220	296
E3B 26	60 m6	986	145	841	255	145 m6	480	230	250	296
E3B 28	60 m6	986	145	841	255	160 m6	480	230	250	328
E3B 31	60 m6	1054	145	909	255	175 m6	540	290	250	348

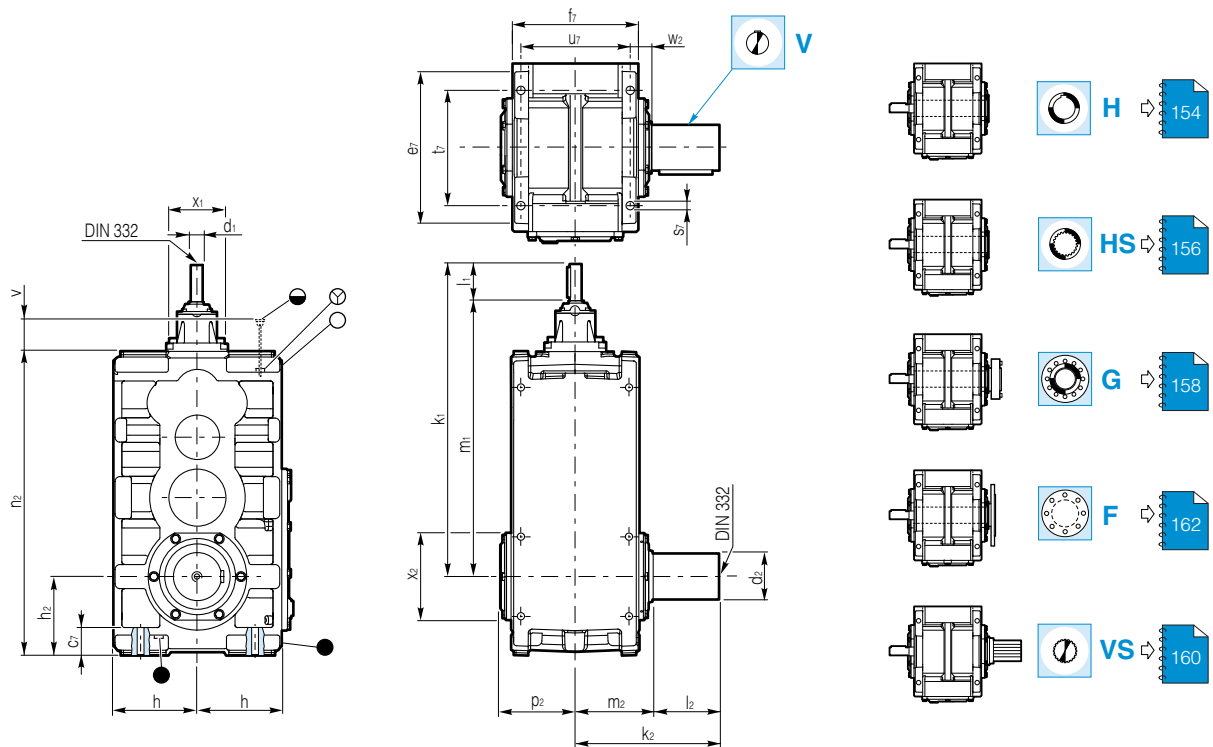
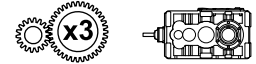
	Housing									
	c	e	e_8	f	h -0.2	n	n_6	p	p_2	
E3B 18	18	622	155	284	190	654	171	419	–	
E3B 19	18	687	186	284	202	716	202	443	–	
E3B 20	18	732	211	284	225	764	227	489	–	
E3B 22	24	782	193	346	235	826	215	513	–	
E3B 25	24	896	249	346	265	940	271	573	204	
E3B 26	28	948	230	408	280	1000	256	610	246	
E3B 28	28	948	230	408	280	1000	256	610	246	
E3B 31	28	1085	299	408	315	1137	325	680	239	

	Fitting									OIL [l]	Kg*
	$\varnothing s$	$d_s \times l_{max}$	t	t_1	t_2	u	w_1	w_2	v		
E3B 18	14.5	M12x55	486	87	175	248	180	56	45	15	270
E3B 19	14.5	M12x55	548	118	237	248	180	56	65	17	315
E3B 20	14.5	M12x90	596	143	285	248	180	56	70	20	370
E3B 22	18.5	M16x65	622	113	226	306	194	62	60	28	495
E3B 25	18.5	M16x90	736	169	340	306	194	67	100	36	645
E3B 26	24	M20x80	752	132	265	360	221	70	80	49	820
E3B 28	24	M20x80	752	132	265	360	221	70	80	48	830
E3B 31	24	M20x110	889	201	402	360	221	70	90	65	1145

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l , m , and w for grease lubricated labyrinth seals, on request.

E3B... -S5

MONOBLOCK HOUSING



	Input shaft					Output shaft				
	Ø d ₁	k ₁	l ₁	m ₁	Ø x ₁	Ø d ₂	k ₂	l ₂	m ₂	Ø x ₂
E3B 18	40 k6	699	120	579	190	95 m6	350	170	180	-
E3B 19	40 k6	730	120	610	190	95 m6	350	170	180	-
E3B 20	40 k6	753	120	633	190	120 m6	370	190	180	-
E3B 22	50 k6	823	120	703	225	130 m6	405	190	215	-
E3B 25	50 k6	881	120	761	225	145 m6	450	230	220	296
E3B 26	60 m6	986	145	841	255	145 m6	480	230	250	296
E3B 28	60 m6	986	145	841	255	160 m6	480	230	250	328
E3B 31	60 m6	1054	145	909	255	175 m6	540	290	250	348

	Housing							
	c ₇	e ₇	f ₇	h -0.2	h ₂ -0.2	n ₂	p ₂	
E3B 18	62	348	284	190	171	654	-	
E3B 19	62	373	284	202	202	716	-	
E3B 20	62	414	284	225	227	764	-	
E3B 22	76	426	346	235	215	826	-	
E3B 25	77	486	346	265	271	940	204	
E3B 26	86	504	408	280	256	1000	246	
E3B 28	86	504	408	280	256	1000	246	
E3B 31	95	574	408	315	325	1137	239	

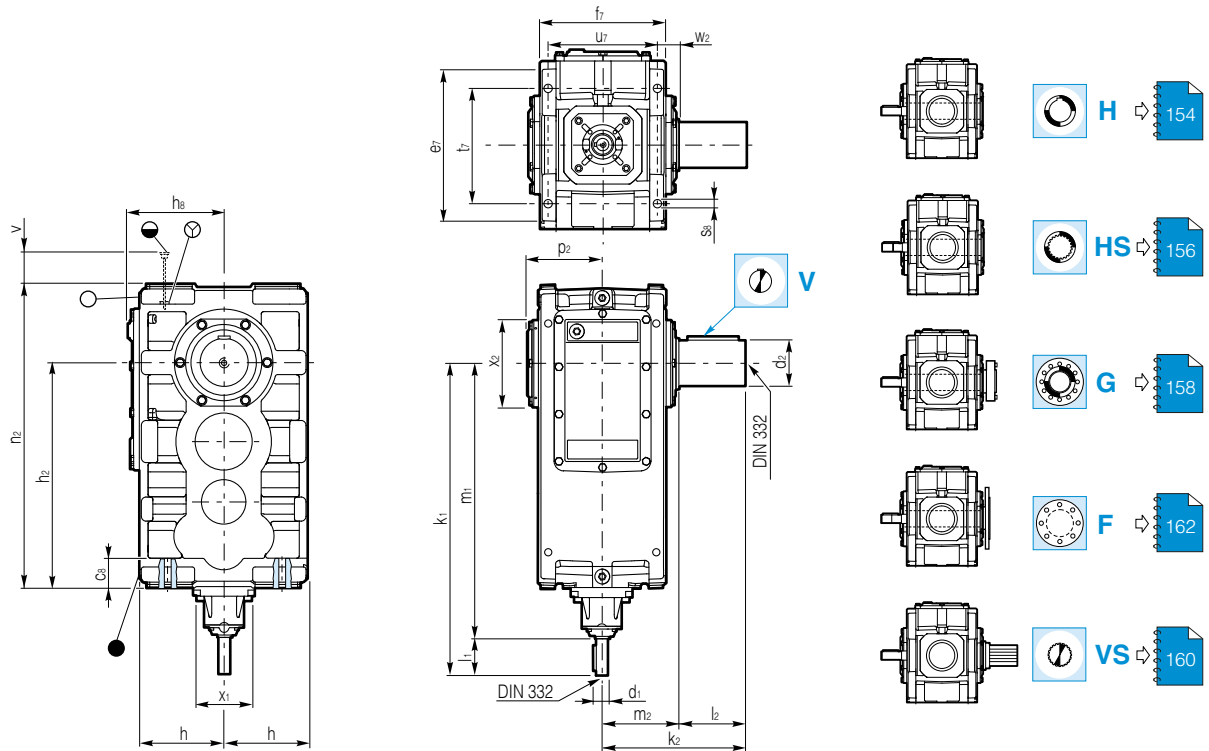
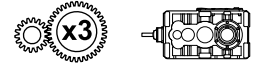
	Fitting						OIL [U]	Kg*
	Ø s ₇	d _s x l _{max}	t ₇	u ₇	w ₂	v		
E3B 18	16.5	M14x100	260	258	51	160	25	270
E3B 19	16.5	M14x100	284	258	51	160	30	315
E3B 20	16.5	M14x100	330	258	51	160	35	370
E3B 22	24	M20x130	326	312	59	195	45	495
E3B 25	24	M20x130	384	312	64	195	62	645
E3B 26	28	M24x150	386	366	67	215	79	820
E3B 28	28	M24x150	386	366	67	215	77	830
E3B 31	28	M24x160	456	366	67	215	112	1145

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l₁, m₁ and w₂ for grease lubricated labyrinth seals, on request. Additional lubrication required, please check back.



E3B... -T6

MONOBLOCK HOUSING



	Input shaft					Output shaft				
	$\varnothing d_1$	k_1	l_1	m_1	$\varnothing x_1$	$\varnothing d_2$	k_2	l_2	m_2	$\varnothing x_2$
E3B 18	40 k6	699	120	579	190	95 m6	350	170	180	–
E3B 19	40 k6	730	120	610	190	95 m6	350	170	180	–
E3B 20	40 k6	753	120	633	190	120 m6	370	190	180	–
E3B 22	50 k6	823	120	703	225	130 m6	405	190	215	–
E3B 25	50 k6	881	120	761	225	145 m6	450	230	220	296
E3B 26	60 m6	986	145	841	255	145 m6	480	230	250	296
E3B 28	60 m6	986	145	841	255	160 m6	480	230	250	328
E3B 31	60 m6	1054	145	909	255	175 m6	540	290	250	348

	Housing								
	c_8	e_7	f_7	h -0.2	h_2 -0.2	h_8	n_2	p_2	
E3B 18	64	348	284	190	483	229	654	–	
E3B 19	64	373	284	202	514	241	716	–	
E3B 20	64	414	284	225	537	264	764	–	
E3B 22	76	426	346	235	611	278	826	–	
E3B 25	77	486	346	265	669	308	940	204	
E3B 26	92	504	408	280	744	330	1000	246	
E3B 28	92	504	408	280	744	330	1000	246	
E3B 31	95	574	408	315	812	365	1137	239	

	Fitting						OIL []	Kg *
	$\varnothing s_8$	$d_s \times l_{max}$	t_7	u_7	w_2	v		
E3B 18	16.5	M14x100	260	258	51	150	25	270
E3B 19	16.5	M14x100	284	258	51	200	27	315
E3B 20	16.5	M14x100	330	258	51	220	32	370
E3B 22	24	M20x130	326	312	59	190	46	495
E3B 25	24	M20x130	384	312	64	260	59	645
E3B 26	28	M24x150	386	366	67	230	80	820
E3B 28	28	M24x150	386	366	67	230	79	830
E3B 31	28	M24x160	456	366	67	290	104	1145

*Provided weight values are without oil filling and may differ slightly according to specific product configuration.
Dimensions l, m. and w. for grease lubricated labyrinth seals, on request. Additional lubrication required, please check back.



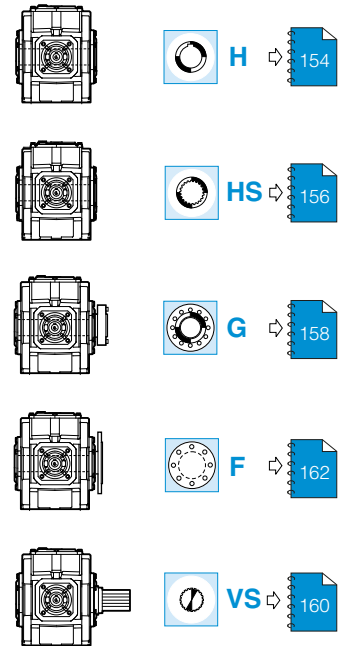
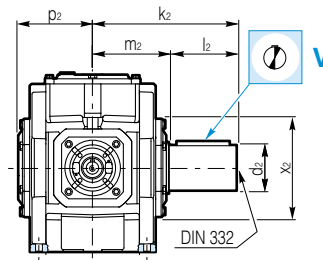
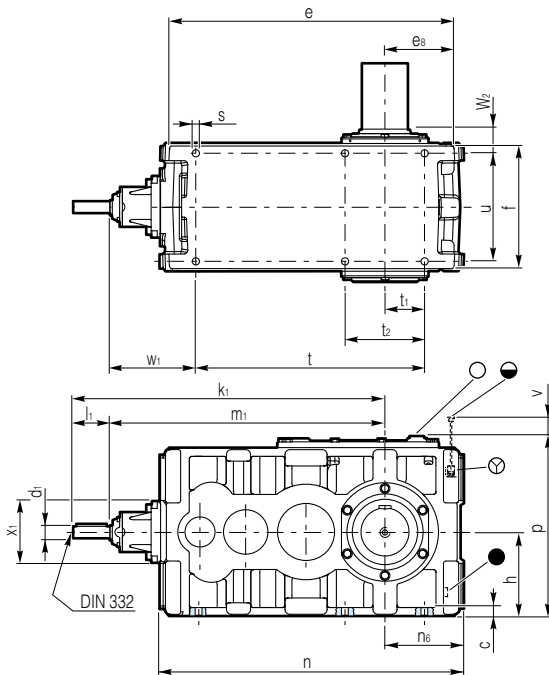
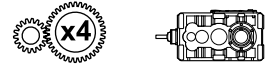
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Motion Systems

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E4B ...R1

MONOBLOCK HOUSING



	Input shaft					Output shaft				
	Ø d ₁	k ₁	l ₁	m ₁	Ø x ₁	Ø d ₂	k ₂	l ₂	m ₂	Ø x ₂
E4B 18	25 k6	703	85	618	190	95 m6	350	170	180	–
E4B 19	25 k6	734	85	649	190	95 m6	350	170	180	–
E4B 20	25 k6	757	85	672	190	120 m6	370	190	180	–
E4B 22	40 k6	908	120	788	225	130 m6	405	190	215	–
E4B 25	40 k6	966	120	846	225	145 m6	450	230	220	296
E4B 26	40 k6	1021	120	901	255	145 m6	480	230	250	296
E4B 28	40 k6	1021	120	901	255	160 m6	480	230	250	328
E4B 31	40 k6	1089	120	969	255	175 m6	540	290	250	348

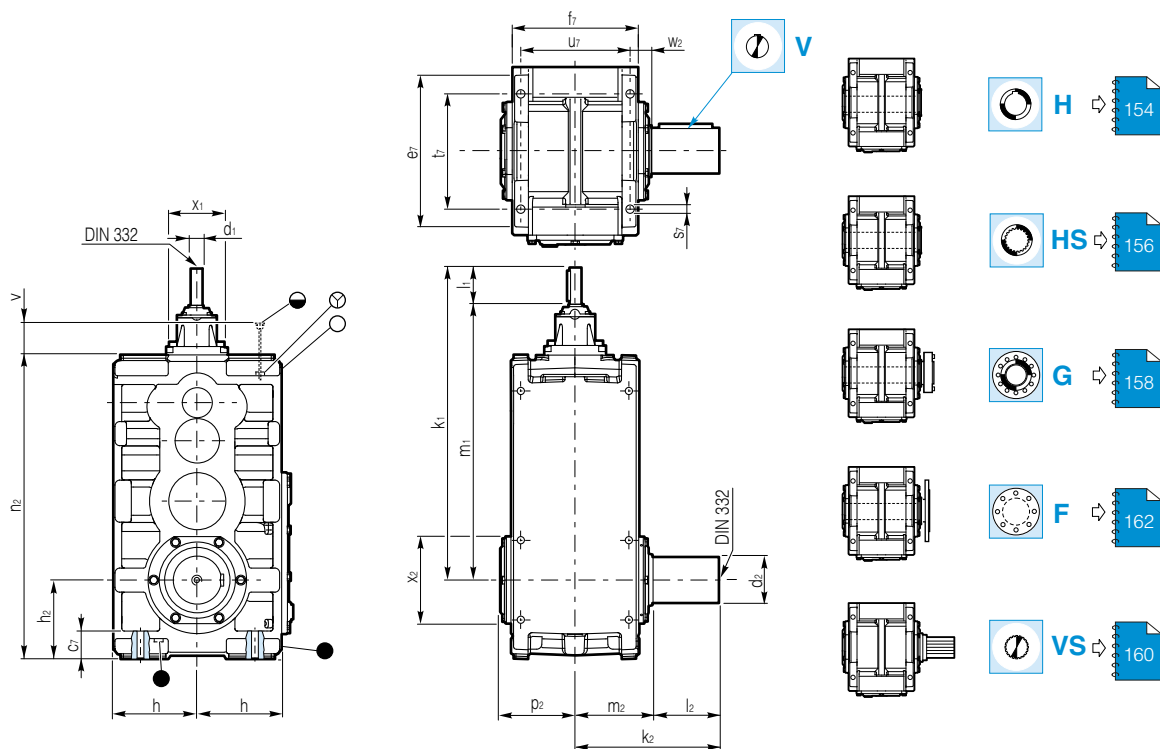
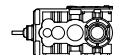
	Housing									
	c	e	e ₈	f	h -0.2	n	n ₆	p	p ₂	
E4B 18	18	622	155	284	190	654	171	419	–	
E4B 19	18	687	186	284	202	716	202	443	–	
E4B 20	18	732	211	284	225	764	227	489	–	
E4B 22	24	782	193	346	235	826	215	513	–	
E4B 25	24	896	249	346	265	940	271	573	204	
E4B 26	28	948	230	408	280	1000	256	610	246	
E4B 28	28	948	230	408	280	1000	256	640	246	
E4B 31	28	1085	299	408	315	1137	325	680	239	

	Fitting									OIL [l]	Kg*
	Ø s	d _s x l _{max}	t	t ₁	t ₂	u	w ₁	w ₂	v		
E4B 18	14.5	M12x55	486	87	175	248	219	56	35	16	270
E4B 19	14.5	M12x55	548	118	237	248	219	56	55	19	315
E4B 20	14.5	M12x90	596	143	285	248	219	56	60	22	370
E4B 22	18.5	M16x65	622	113	226	306	279	62	50	30	500
E4B 25	18.5	M16x90	736	169	340	306	279	67	90	38	650
E4B 26	24	M20x80	752	132	265	360	281	70	60	53	815
E4B 28	24	M20x80	752	132	265	360	281	70	60	52	825
E4B 31	24	M20x110	889	201	402	360	281	70	70	66	1140

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l, m. and w. for grease lubricated labyrinth seals, on request.

E4B...-S5

MONOBLOCK HOUSING



	Input shaft					Output shaft				
	Ø d ₁	k ₁	l ₁	m ₁	Ø x ₁	Ø d ₂	k ₂	l ₂	m ₂	Ø x ₂
E4B 18	25 k6	703	85	618	190	95 m6	350	170	180	-
E4B 19	25 k6	734	85	649	190	95 m6	350	170	180	-
E4B 20	25 k6	757	85	672	190	120 m6	370	190	180	-
E4B 22	40 k6	908	120	788	225	130 m6	405	190	215	-
E4B 25	40 k6	966	120	846	225	145 m6	450	230	220	296
E4B 26	40 k6	1021	120	901	255	145 m6	480	230	250	296
E4B 28	40 k6	1021	120	901	255	160 m6	480	230	250	328
E4B 31	40 k6	1089	120	969	255	175 m6	540	290	250	348

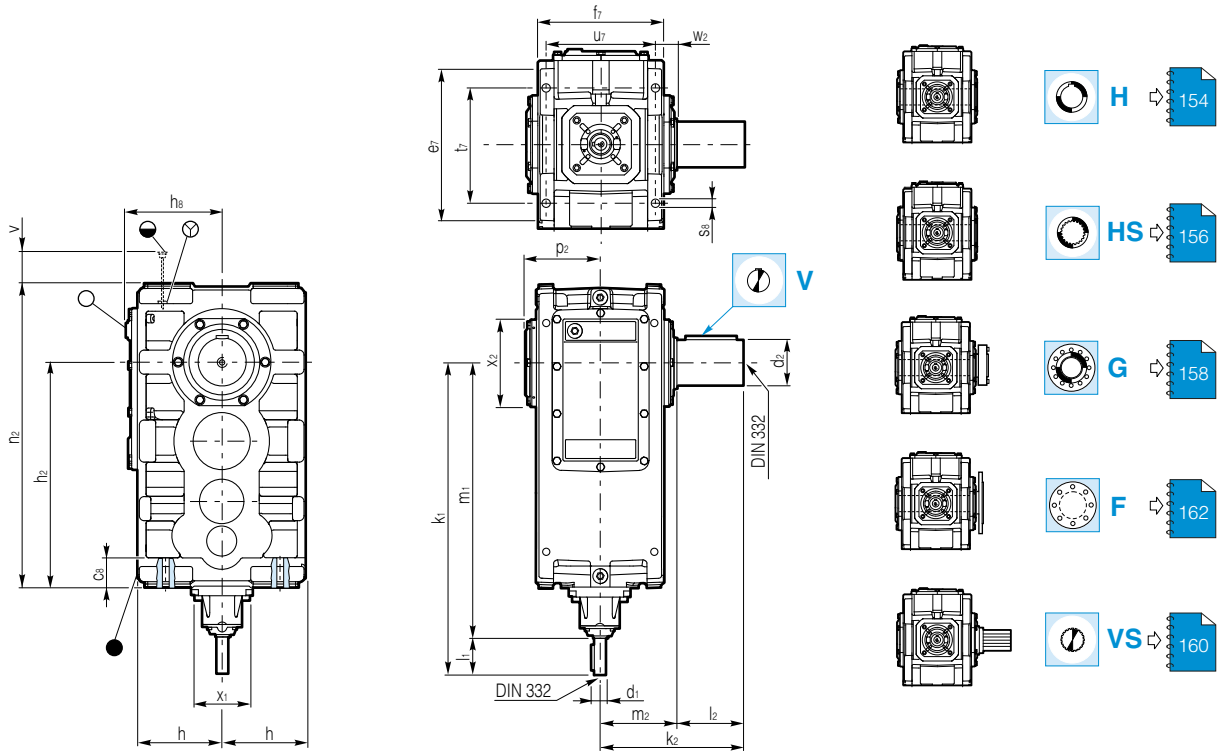
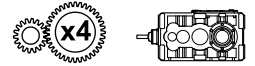
	Housing						
	c ₇	e ₇	f ₇	h -0.2	h ₂ -0.2	n ₂	p ₂
E4B 18	62	348	284	190	171	654	-
E4B 19	62	373	284	202	202	716	-
E4B 20	62	414	284	225	227	764	-
E4B 22	76	426	346	235	215	826	-
E4B 25	77	486	346	265	271	940	204
E4B 26	86	504	408	280	256	1000	246
E4B 28	86	504	408	280	256	1000	246
E4B 31	95	574	408	315	325	1137	239

	Fitting						Oil [l]	Kg*
	Ø s ₇	d _s x l _{max}	t ₇	u ₇	w ₂	v		
E4B 18	16.5	M14x100	260	258	51	55	33	270
E4B 19	16.5	M14x100	284	258	51	55	36	315
E4B 20	16.5	M14x100	330	258	51	55	43	370
E4B 22	24	M20x130	326	312	59	65	59	500
E4B 25	24	M20x130	384	312	64	65	78	650
E4B 26	28	M24x150	386	366	67	70	103	815
E4B 28	28	M24x150	386	366	67	70	101	825
E4B 31	28	M24x160	456	366	67	70	140	1140

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l₁, m₁ and w₂ for grease lubricated labyrinth seals, on request. Additional lubrication required, please check back.

E4B ...-T6

MONOBLOCK HOUSING



	Input shaft					Output shaft				
	Ø d ₁	k ₁	l ₁	m ₁	Ø x ₁	Ø d ₂	k ₂	l ₂	m ₂	Ø x ₂
E4B 18	25 k6	703	85	618	190	95 m6	350	170	180	–
E4B 19	25 k6	734	85	649	190	95 m6	350	170	180	–
E4B 20	25 k6	757	85	672	190	120 m6	370	190	180	–
E4B 22	40 k6	908	120	788	225	130 m6	405	190	215	–
E4B 25	40 k6	966	120	846	225	145 m6	450	230	220	296
E4B 26	40 k6	1021	120	901	255	145 m6	480	230	250	296
E4B 28	40 k6	1021	120	901	255	160 m6	480	230	250	328
E4B 31	40 k6	1089	120	969	255	175 m6	540	290	250	348

	Housing								
	c ₈	e ₇	f ₇	h -0.2	h ₂ -02	h ₈	n ₂	p ₂	
E4B 18	64	348	284	190	483	229	654	–	
E4B 19	64	373	284	202	514	241	716	–	
E4B 20	64	414	284	225	537	264	764	–	
E4B 22	76	426	346	235	611	278	826	–	
E4B 25	77	486	346	265	669	308	940	204	
E4B 26	92	504	408	280	744	330	1000	246	
E4B 28	92	504	408	280	744	330	1000	246	
E4B 31	95	574	408	315	812	365	1137	239	

	Fitting						OIL []	Kg*
	Ø s ₈	d _s x l _{max}	t ₇	u ₇	w ₂	v		
E4B 18	16.5	M14x100	260	258	51	150	24	270
E4B 19	16.5	M14x100	284	258	51	200	27	315
E4B 20	16.5	M14x100	330	258	51	220	32	370
E4B 22	24	M20x130	326	312	59	190	46	500
E4B 25	24	M20x130	384	312	64	260	58	650
E4B 26	28	M24x150	386	366	67	230	80	815
E4B 28	28	M24x150	386	366	67	230	79	825
E4B 31	28	M24x160	456	366	67	290	104	1140

*Provided weight values are without oil filling and may differ slightly according to specific product configuration.
Dimensions l, m, and w for grease lubricated labyrinth seals, on request. Additional lubrication required, please check back.



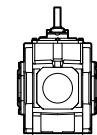
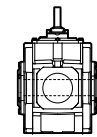
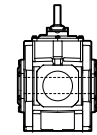
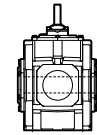
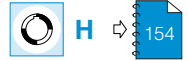
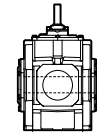
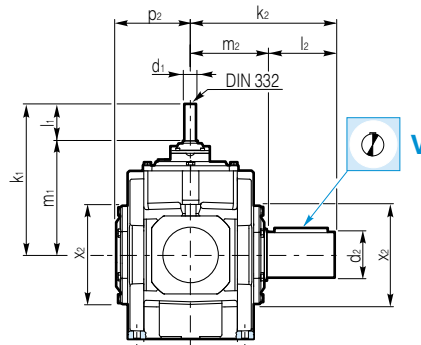
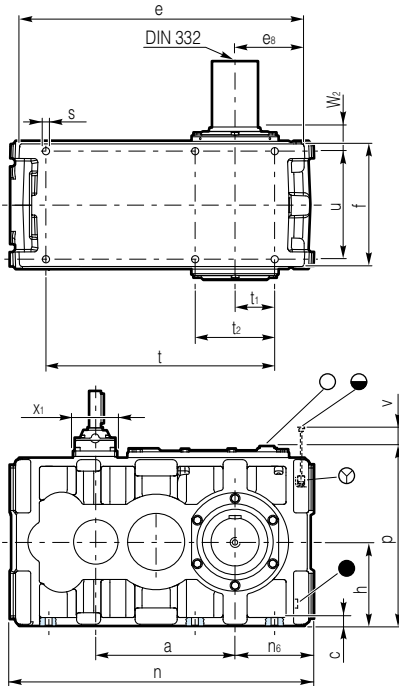
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Motion Systems

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E3C ... -R1

MONOBLOCK HOUSING



	Input shaft					Output shaft				
	Ø d ₁	k ₁	l ₁	m ₁	Ø x ₁	Ø d ₂	k ₂	l ₂	m ₂	Ø x ₂
E3C 18	40 k6	406	120	286	190	95 m6	350	170	180	-
E3C 19	40 k6	406	120	286	190	95 m6	350	170	180	-
E3C 20	40 k6	406	120	286	190	120 m6	370	190	180	-
E3C 22	50 k6	447	120	327	225	130 m6	405	190	215	-
E3C 25	50 k6	447	120	327	225	145 m6	450	230	220	296
E3C 26	60 m6	522	145	377	255	145 m6	480	230	250	296
E3C 28	60 m6	522	145	377	255	160 m6	480	230	250	328
E3C 31	60 m6	522	145	377	255	175 m6	540	290	250	348

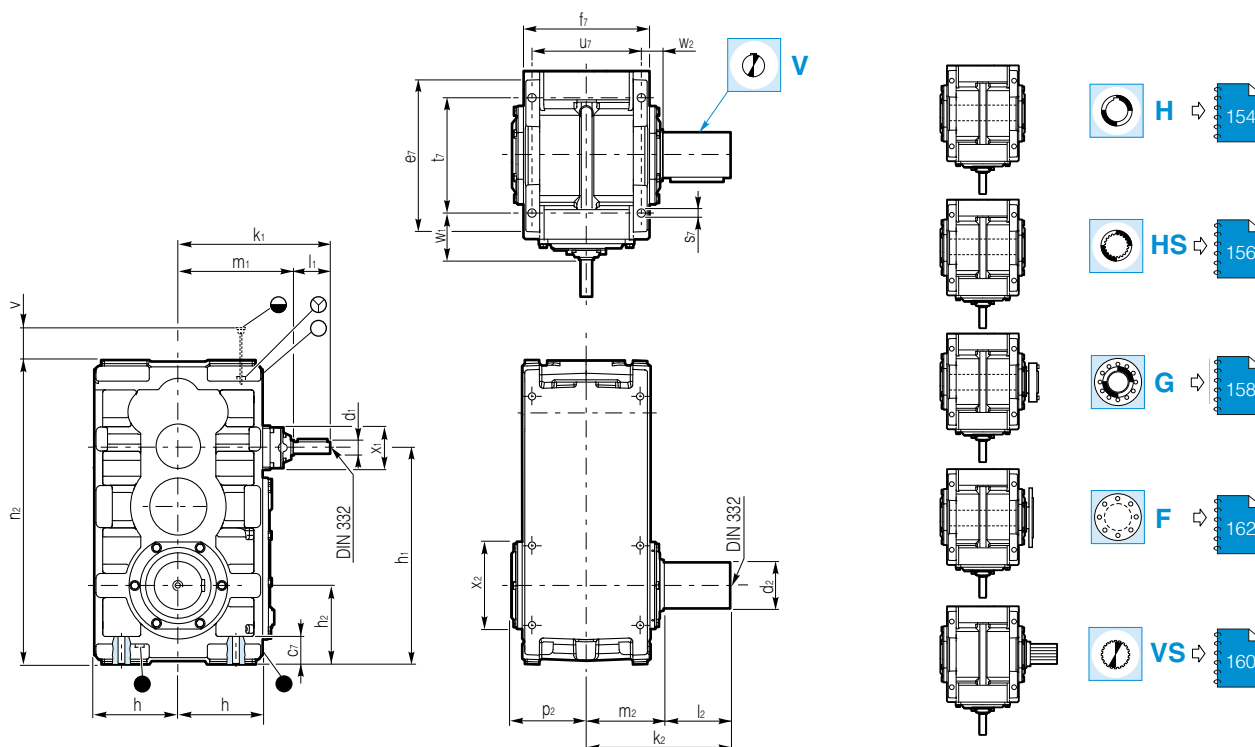
	Housing									
	a	c	e	e ₈	f	h -0.2	n	n ₆	p	p ₂
E3C 18	293	18	622	155	284	190	654	171	419	-
E3C 19	324	18	687	186	284	202	716	202	443	-
E3C 20	347	18	732	211	284	225	764	227	489	-
E3C 22	376	24	782	193	346	235	826	215	513	-
E3C 25	434	24	896	249	346	265	940	271	573	204
E3C 26	464	28	948	230	408	280	1000	256	610	246
E3C 28	464	28	948	230	408	280	1000	256	610	246
E3C 31	532	28	1085	299	408	315	1137	325	680	239

	Fitting								v	OIL [l]	Kg*
	Ø s	d _s x l _{max}	t	t ₁	t ₂	u	w ₂				
E3C 18	14.5	M12x55	486	87	175	248	56	45	15	270	
E3C 19	14.5	M12x55	548	118	237	248	56	65	17	315	
E3C 20	14.5	M12x90	596	143	285	248	56	70	20	370	
E3C 22	18.5	M16x65	622	113	226	306	62	60	28	495	
E3C 25	18.5	M16x90	736	169	340	306	67	100	36	645	
E3C 26	24	M20x80	752	132	265	360	70	80	49	820	
E3C 28	24	M20x80	752	132	265	360	70	80	48	830	
E3C 31	24	M20x110	889	201	402	360	70	90	65	1145	

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l, m. and w. for grease lubricated labyrinth seals, on request. Additional lubrication required, please check back.

E3C ... -S5

MONOBLOCK HOUSING



	Input shaft					Output shaft				
	Ø d ₁	k ₁	l ₁	m ₁	Ø x ₁	Ø d ₂	k ₂	l ₂	m ₂	Ø x ₂
E3C 18	40 k6	406	120	286	190	95 m6	350	170	180	-
E3C 19	40 k6	406	120	286	190	95 m6	350	170	180	-
E3C 20	40 k6	406	120	286	190	120 m6	370	190	180	-
E3C 22	50 k6	447	120	327	225	130 m6	405	190	215	-
E3C 25	50 k6	447	120	327	225	145 m6	450	230	220	296
E3C 26	60m6	522	145	377	255	145 m6	480	230	250	296
E3C 28	60m6	522	145	377	255	160 m6	480	230	250	328
E3C 31	60m6	522	145	377	255	175 m6	540	290	250	348

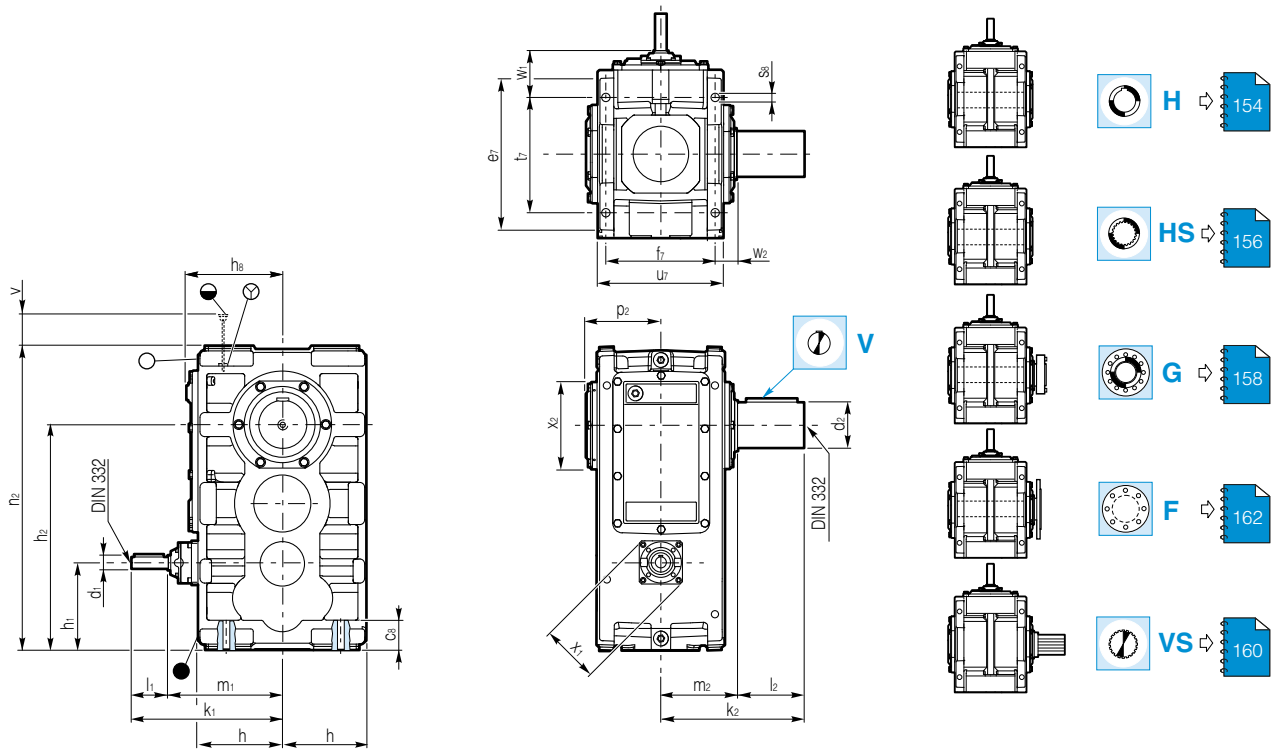
	Housing								
	c ₇	e ₇	f ₇	h	h ₁	h ₂	n ₂	p ₂	
E3C 18	62	348	284	190	464	171	654	-	
E3C 19	62	373	284	202	526	202	716	-	
E3C 20	62	414	284	225	574	227	764	-	
E3C 22	76	426	346	235	591	215	826	-	
E3C 25	77	486	346	265	705	271	940	204	
E3C 26	86	504	408	280	720	256	1000	246	
E3C 28	86	504	408	280	720	256	1000	246	
E3C 31	95	574	408	315	857	325	1137	239	

	Fitting							v	OIL [l]	Kg*
	Ø s ₇	d _s x l _{max}	t ₇	u ₇	w ₁	w ₂				
E3C 18	16.5	M14x100	260	258	156	51	160	25	270	
E3C 19	16.5	M14x100	284	258	144	51	160	30	315	
E3C 20	16.5	M14x100	330	258	121	51	160	35	370	
E3C 22	24	M20x130	326	312	164	59	195	45	495	
E3C 25	24	M20x130	384	312	135	64	195	62	645	
E3C 26	28	M24x150	386	366	184	67	215	79	820	
E3C 28	28	M24x150	386	366	184	67	215	77	830	
E3C 31	28	M24x160	456	366	149	67	211	112	1145	

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l, m. and w. for grease lubricated labyrinth seals, on request.

E3C ... -T6

MONOBLOCK HOUSING



	Input shaft					Output shaft				
	$\varnothing d_1$	k_1	l_1	m_1	$\varnothing x_1$	$\varnothing d_2$	k_2	l_2	m_2	$\varnothing x_2$
E3C 18	40 k6	406	120	286	190	95 m6	350	170	180	–
E3C 19	40 k6	406	120	286	190	95 m6	350	170	180	–
E3C 20	40 k6	406	120	286	190	120 m6	370	190	180	–
E3C 22	50 k6	447	120	327	225	130 m6	405	190	215	–
E3C 25	50 k6	447	120	327	225	145 m6	450	230	220	296
E3C 26	60m6	522	145	377	255	145 m6	480	230	250	296
E3C 28	60m6	522	145	377	255	160 m6	480	230	250	328
E3C 31	60m6	522	145	377	255	175 m6	540	290	250	348

	Housing									
	c_8	e_7	f_7	h	h_1	h_2	h_8	n_2	p_2	
E3C 18	64	348	284	190	190	483	229	654	–	
E3C 19	64	373	284	202	190	514	241	716	–	
E3C 20	64	414	284	225	190	537	264	764	–	
E3C 22	76	426	346	235	235	611	278	826	–	
E3C 25	77	486	346	265	235	669	308	940	204	
E3C 26	92	504	408	280	280	744	330	1000	246	
E3C 28	92	504	408	280	280	744	330	1000	246	
E3C 31	95	574	408	315	280	812	365	1137	239	

	Fitting							v	Oil [l]	Kg*
	$\varnothing s_8$	$d_s \times l_{max}$	t_7	u_7	w_1	w_2				
E3C 18	16.5	M14x100	260	258	156	51	150	24	270	
E3C 19	16.5	M14x100	284	258	144	51	200	26	315	
E3C 20	16.5	M14x100	330	258	121	51	220	31	370	
E3C 22	24	M20x130	326	312	164	59	190	46	495	
E3C 25	24	M20x130	384	312	135	64	260	57	645	
E3C 26	28	M24x150	386	366	184	67	230	79	820	
E3C 28	28	M24x150	386	366	184	67	230	78	830	
E3C 31	28	M24x160	456	366	149	67	290	101	1145	

*Provided weight values are without oil filling and may differ slightly according to specific product configuration.
Dimensions l, m. and w. for grease lubricated labyrinth seals, on request.



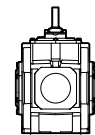
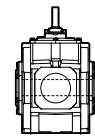
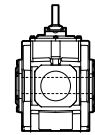
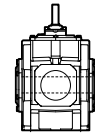
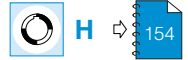
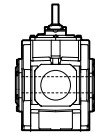
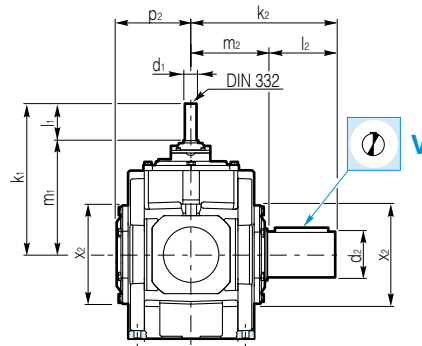
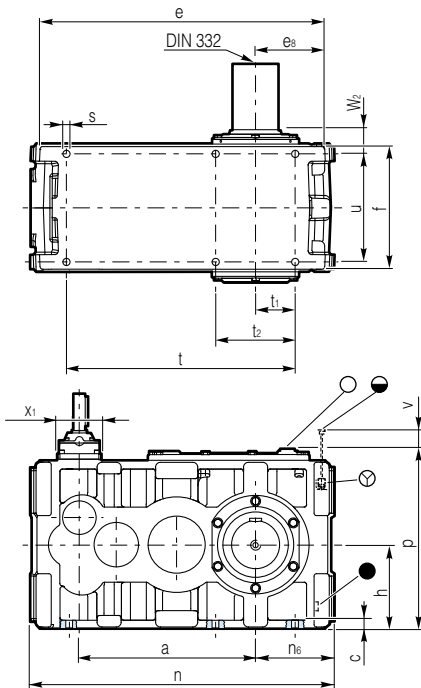
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Motion Systems

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E4C ...-R1

MONOBLOCK HOUSING



	Input shaft					Output shaft				
	Ø d ₁	k ₁	l ₁	m ₁	Ø x ₁	Ø d ₂	k ₂	l ₂	m ₂	Ø x ₂
E4C 18	25 k6	378	85	293	148	95 m6	350	170	180	-
E4C 19	25 k6	387	85	302	150	95 m6	350	170	180	-
E4C 20	25 k6	387	85	302	148	120 m6	370	190	180	-
E4C 22	40 k6	497	120	377	190	130 m6	405	190	215	-
E4C 25	40 k6	482	120	362	190	145 m6	450	230	220	296
E4C 26	40 k6	497	120	377	190	145 m6	480	230	250	296
E4C 28	40 k6	497	120	377	190	160 m6	480	230	250	328
E4C 31	40 k6	497	120	377	190	175 m6	540	290	250	348

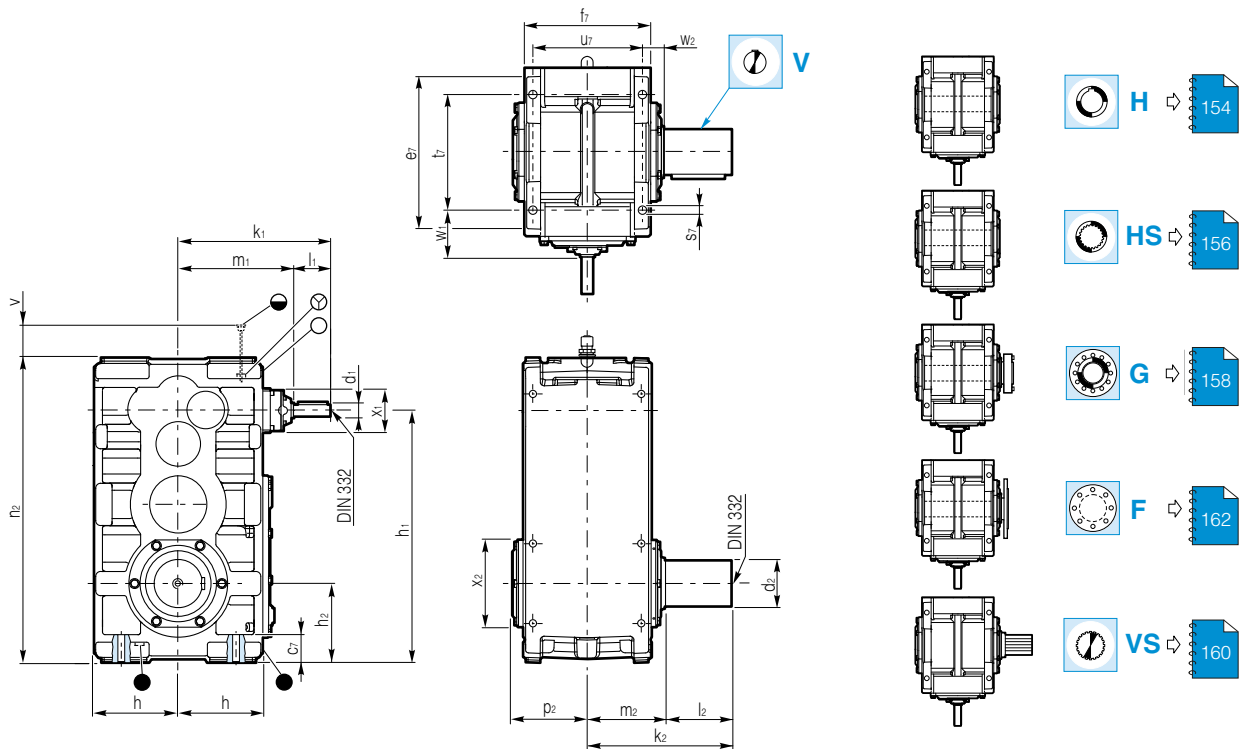
	Housing									
	a	c	e	e ₈	f	h -0.2	n	n ₆	p	p ₂
E4C 18	366	18	622	155	284	190	654	171	419	-
E4C 19	387	18	687	186	284	202	716	202	443	-
E4C 20	410	18	732	211	284	225	764	227	489	-
E4C 22	464	24	782	193	346	235	826	215	513	-
E4C 25	535	24	896	249	346	265	940	271	573	204
E4C 26	585	28	948	230	408	280	1000	256	610	246
E4C 28	585	28	948	230	408	280	1000	256	610	246
E4C 31	653	28	1085	299	408	315	1137	325	680	239

	Fitting								Oil [l]	Kg*
	Ø s	d _s x l _{max}	t	t ₁	t ₂	u	w ₂	v		
E4C 18	14.5	M12x55	486	87	175	248	56	75	23	270
E4C 19	14.5	M12x55	548	118	237	248	56	85	24	315
E4C 20	14.5	M12x90	596	143	285	248	56	90	28	370
E4C 22	18.5	M16x65	622	113	226	306	62	85	42	500
E4C 25	18.5	M16x90	736	169	340	306	67	135	53	650
E4C 26	24	M20x80	752	132	265	360	70	125	74	815
E4C 28	24	M20x80	752	132	265	360	70	125	73	825
E4C 31	24	M20x110	889	201	402	360	70	145	96	1140

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l, m, and w for grease lubricated labyrinth seals, on request. Additional lubrication required, please check back.

E4C ...-S5

MONOBLOCK HOUSING



	Input shaft					Output shaft				
	Ø d ₁	k ₁	l ₁	m ₁	Ø x ₁	Ø d ₂	k ₂	l ₂	m ₂	Ø x ₂
E4C 18	25 k6	378	85	293	148	95 m6	350	170	180	-
E4C 19	25 k6	387	85	302	150	95 m6	350	170	180	-
E4C 20	25 k6	387	85	302	148	120 m6	370	190	180	-
E4C 22	40 k6	497	120	377	190	130 m6	405	190	215	-
E4C 25	40 k6	482	120	362	190	145 m6	450	230	220	296
E4C 26	40 k6	497	120	377	190	145 m6	480	230	250	296
E4C 28	40 k6	497	120	377	190	160 m6	480	230	250	328
E4C 31	40 k6	497	120	377	190	175 m6	540	290	250	348

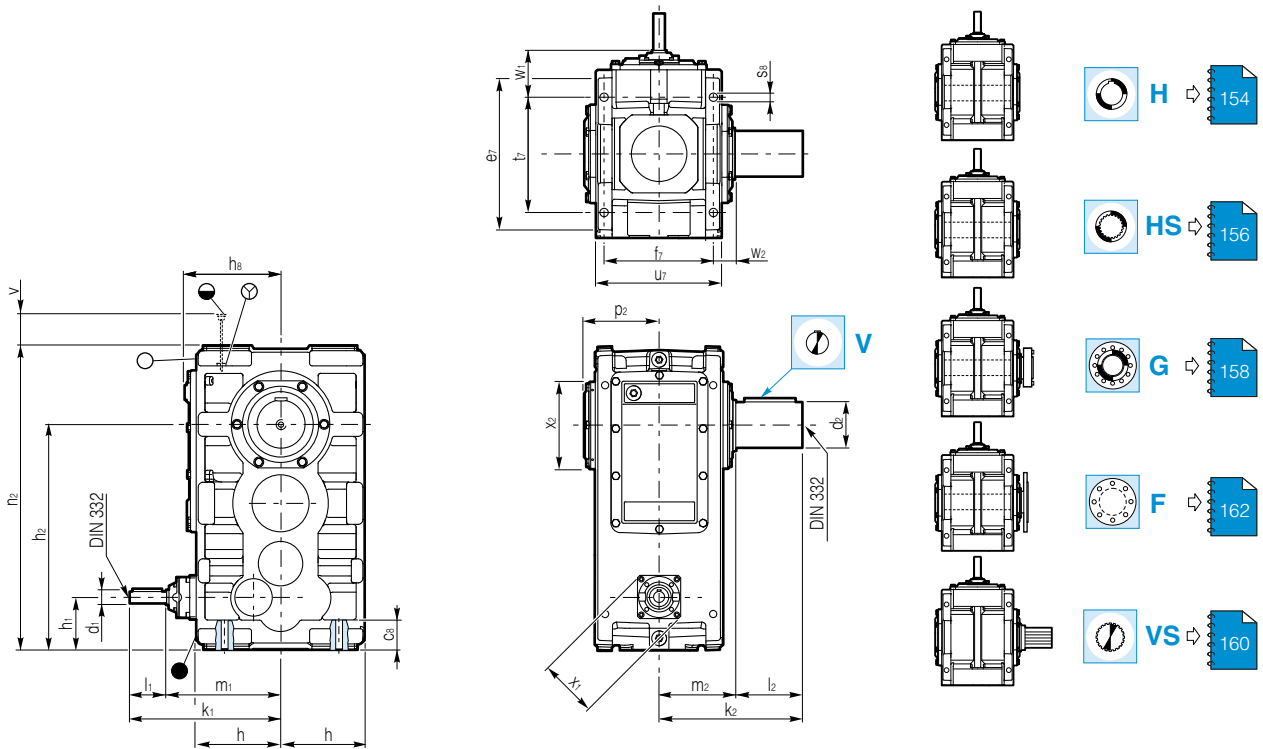
	Housing								
	c ₇	e ₇	f ₇	h -0.2	h ₁	h _{2 -0.2}	n ₂	p ₂	
E4C 18	62	348	284	190	537	171	654	-	
E4C 19	62	373	284	202	589	202	716	-	
E4C 20	62	414	284	225	637	227	764	-	
E4C 22	76	426	346	235	679	215	826	-	
E4C 25	77	486	346	265	806	271	940	204	
E4C 26	86	504	408	280	841	256	1000	246	
E4C 28	86	504	408	280	841	256	1000	246	
E4C 31	95	574	408	315	978	325	1137	239	

	Fitting							OIL [l]	Kg*
	Ø s ₇	d _s x l _{max}	t ₇	u ₇	w ₁	w ₂	v		
E4C 18	16.5	M14x100	260	258	163	51	75	31	270
E4C 19	16.5	M14x100	284	258	160	51	85	34	315
E4C 20	16.5	M14x100	330	258	137	51	85	40	370
E4C 22	24	M20x130	326	312	214	59	90	55	500
E4C 25	24	M20x130	384	312	170	64	80	75	650
E4C 26	28	M24x150	386	366	184	67	75	96	815
E4C 28	28	M24x150	386	366	184	67	75	94	825
E4C 31	28	M24x160	456	366	149	67	75	135	1140

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l, m. and w. for grease lubricated labyrinth seals, on request.

E4C ...-T6

MONOBLOCK HOUSING



	Input shaft					Output shaft				
	Ø d ₁	k ₁	l ₁	m ₁	Ø x ₁	Ø d ₂	k ₂	l ₂	m ₂	Ø x ₂
E4C 18	25 k6	378	85	293	148	95 m6	350	170	180	–
E4C 19	25 k6	387	85	302	150	95 m6	350	170	180	–
E4C 20	25 k6	387	85	302	148	120 m6	370	190	180	–
E4C 22	40 k6	497	120	377	190	130 m6	405	190	215	–
E4C 25	40 k6	482	120	362	190	145 m6	450	230	220	296
E4C 26	40 k6	497	120	377	190	145 m6	480	230	250	296
E4C 28	40 k6	497	120	377	190	160 m6	480	230	250	328
E4C 31	40 k6	497	120	377	190	175 m6	540	290	250	348

	Housing									
	c ₈	e ₇	f ₇	h	h ₁	h ₂	h ₈	n ₂	p ₂	
E4C 18	64	348	284	190	117	483	229	654	–	
E4C 19	64	373	284	202	127	514	241	716	–	
E4C 20	64	414	284	225	127	537	264	764	–	
E4C 22	76	426	346	235	147	611	278	826	–	
E4C 25	77	486	346	265	134	669	308	940	204	
E4C 26	92	504	408	280	159	744	330	1000	246	
E4C 28	92	504	408	280	159	744	330	1000	246	
E4C 31	95	574	408	315	159	812	365	1137	239	

	Fitting							Oil [l]	Kg*
	Ø s ₈	d _s x l _{max}	t ₇	u ₇	w ₁	w ₂	v		
E4C 18	16.5	M14x100	260	258	163	51	150	24	270
E4C 19	16.5	M14x100	284	258	160	51	200	27	315
E4C 20	16.5	M14x100	330	258	137	51	220	32	370
E4C 22	24	M20x130	326	312	214	59	190	46	500
E4C 25	24	M20x130	384	312	170	64	260	58	650
E4C 26	28	M24x150	386	366	184	67	230	80	815
E4C 28	28	M24x150	386	366	184	67	230	79	825
E4C 31	28	M24x160	456	366	149	67	290	103	1140

*Provided weight values are without oil filling and may differ slightly according to specific product configuration. Dimensions l, m. and w. for grease lubricated labyrinth seals, on request.



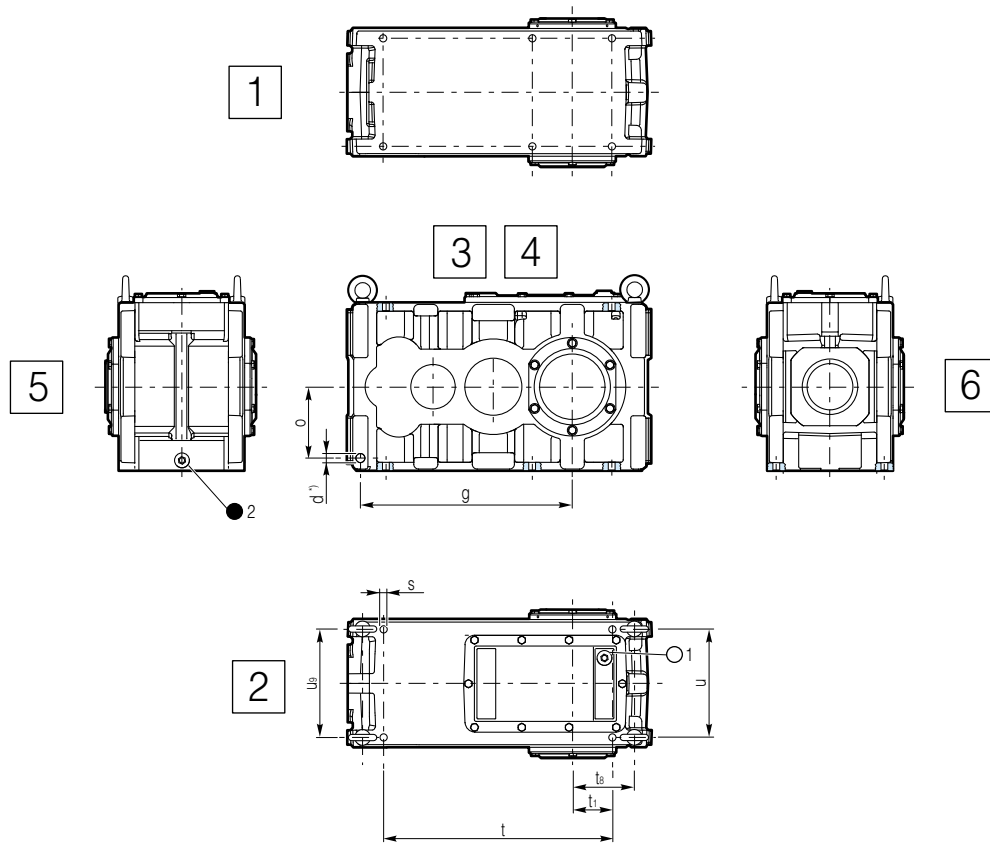
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Motion Systems

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E2H, E3H, E4H, E3B, E4B, E3C, E4C ... -R1

MONOBLOCK HOUSING



Optional housing bores only on request

		Mounting surface									
		[2]								○1	●2
		Ø s	d _s x l _{max}	t	t ₁	t ₂	t ₃	u	u ₉	G 1 1/4	G 3/4 G 1 1/4
E2H - E3H - E4H E3B - E4B	18	14.5	M12x55	486	87	131	564	248	248		
	19	14.5	M12x55	548	118	164	627	248	248		
	20	14.5	M12x55	596	143	189	675	248	248		
	22	18.5	M16x65	622	113	162	713	306	303		
	25	18.5	M16x65	736	169	221	830	306	303		
	26	24	M20x80	752	132	196	867	360	360		
	28	24	M20x80	752	132	196	867	360	360		
	31	24	M20x80	889	201	261	999	360	360		

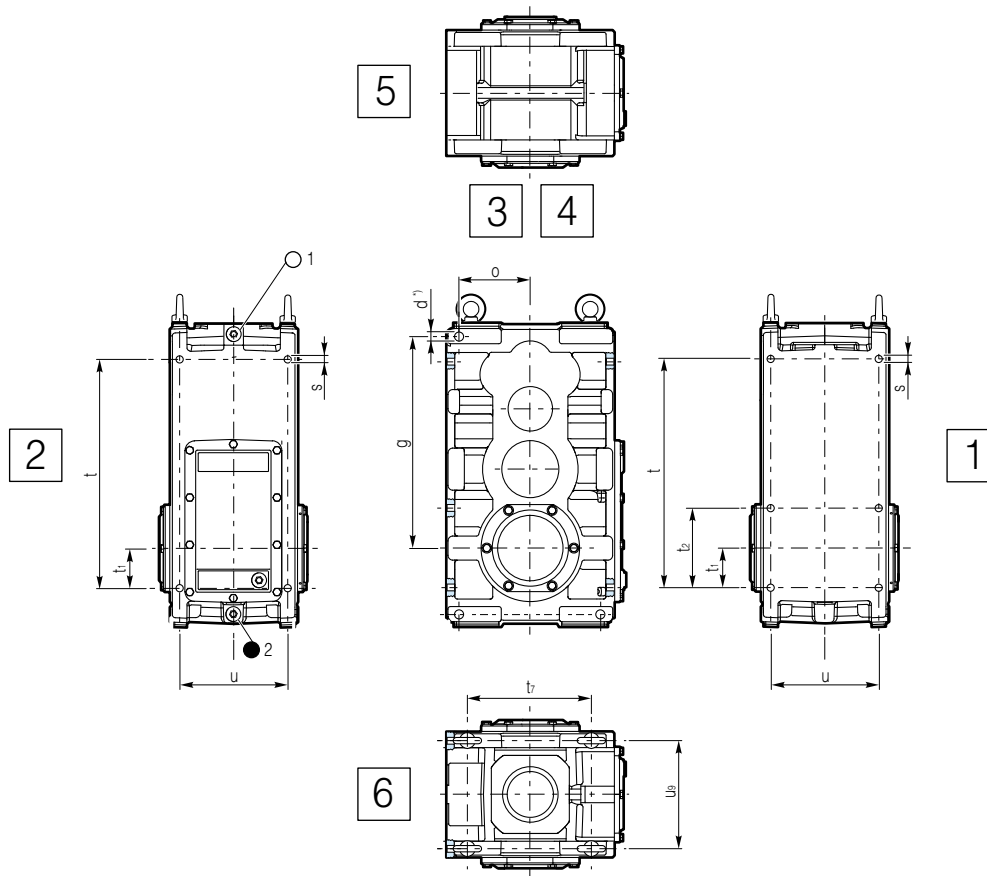
*) Threaded acc. to ISO 228

		Mounting surface			
		[3] + [4]			
		Ø d ¹⁾	T _A ¹⁾ [Nm] 10.9	g	o
E2H - E3H - E4H E3B - E4B	18	26 H9	550	457	155
	19	26 H9	550	487	167
	20	26 H9	550	510	190
	22	30 H9	950	580	190
	25	30 H9	950	638	220
	26	35 H9	1900	706	227
	28	35 H9	1900	706	227
	31	35 H9	1900	773	262

1) Necessary tightening torques T_A for shaft screws with head support according to DIN 912,934 etc., strenght category 10.9 with supposed coefficient of friction $\mu = 0,125$ for non treated, oiled screws according to the VDI directions 2230.

E2H, E3H, E4H, E3B, E4B, E3C, E4C ... -S5

MONOBLOCK HOUSING



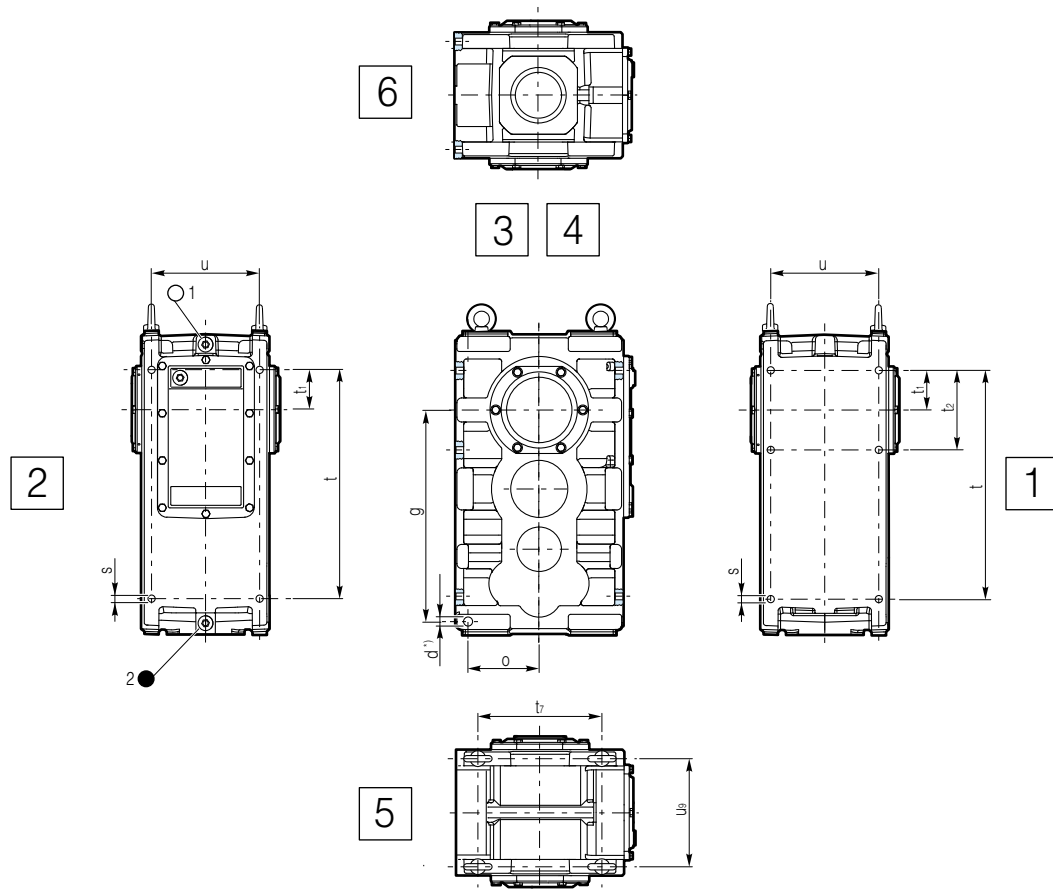
Optional housing bores only on request

		Mounting surface								*)	
		[1] + [2]				[6]					
		$\varnothing s$	$d_s \times l_{max}$	t	t_1	t_2	u	t_7	u_9	○ 1	● 2
E2H - E3H - E4H E3B - E4B E3C - E4C	18	14.5	M12x55	486	87	175	248	260	248	G 3/4	G 3/4
	19	14.5	M12x55	548	118	237	248	284	248		
	20	14.5	M12x55	596	143	285	248	330	248		
	22	18.5	M16x65	622	113	226	306	326	303		
	25	18.5	M16x65	736	169	340	306	384	303		
	26	24	M20x80	752	132	265	360	386	360	G 1 1/4	G 1 1/4
	28	24	M20x80	752	132	265	360	386	360		
31	24	M20x80	889	201	265	360	456	360			

*) Threaded acc. to ISO 228

		Mounting surface			
		[3] + [4]			
		$\varnothing d^{1)}$	$T_A^{1)}$ [Nm] 10.9	g	o
E2H - E3H - E4H E3B - E4B	18	26 H9	550	457	155
	19	26 H9	550	487	167
	20	26 H9	550	510	190
	22	30 H9	950	580	190
	25	30 H9	950	638	220
	26	35 H9	1900	706	227
	28	35 H9	1900	706	227
	31	35 H9	1900	773	262

1) Necessary tightening torques T_A for shaft screws with head support according to DIN 912,934 etc., strenght category 10.9 with supposed coefficient of friction $\mu = 0,125$ for non treated, oiled screws according to the VDI directions 2230.

E2H, E3H, E4H, E3B, E4B, E3C, E4C ... -T6
MONOBLOCK HOUSING


Optional housing bores only on request

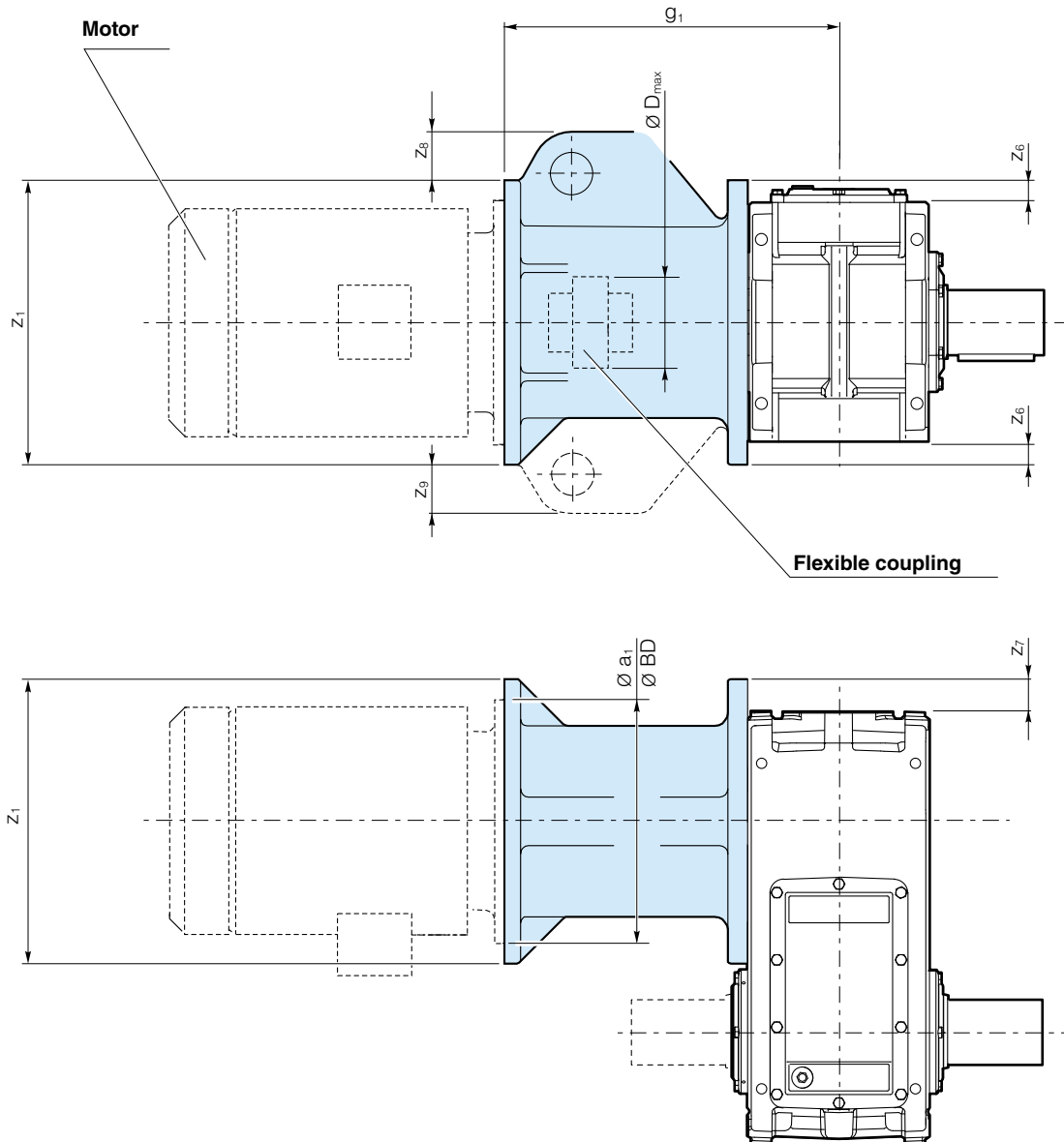
		Mounting surface								*)	
		[1] + [2]					[5]			○ 1	● 2
		Ø s	d _s x l _{max}	t	t ₁	t ₂	u	t ₇	u ₉		
E2H - E3H - E4H E3B - E4B E3C - E4C	18	14.5	M12x55	486	87	175	248	260	248	G 3/4	G 3/4
	19	14.5	M12x55	548	118	237	248	284	248		
	20	14.5	M12x55	596	143	285	248	330	248		
	22	18.5	M16x65	622	113	226	306	326	303		
	25	18.5	M16x65	736	169	340	306	384	303		
	26	24	M20x80	752	132	265	360	386	360	G 1 1/4	G 1 1/4
	28	24	M20x80	752	132	265	360	386	360		
	31	24	M20x80	889	201	265	360	456	360		

*) Threaded acc. to ISO 228

		Mounting surface			
		[3] + [4]			
		Ø d ¹⁾	T _A ¹⁾ [Nm] 10.9	g	o
E2H - E3H - E4H E3B - E4B	18	26 H9	550	457	155
	19	26 H9	550	487	167
	20	26 H9	550	510	190
	22	30 H9	950	580	190
	25	30 H9	950	638	220
	26	35 H9	1900	706	227
	28	35 H9	1900	706	227
	31	35 H9	1900	773	262

 1) Necessary tightening torques T_A for shaft screws with head support according to DIN 912,934 etc., strenght category 10.9 with supposed coefficient of friction μ = 0,125 for non treated, oiled screws according to the VDI directions 2230.

E2H...K...

**When bell housing is applied:**

- * Double output shaft available upon request
- * Gearbox mounting on motor side not feasible

Appropriate flexible coupling is part of Dana supply.

E2H...K...

E2H...K.. IEC..											
	z ₆	z ₇	Position of motor				Ø D _{max} **	g ₁	z ₁	Motor	
			3		4					IEC	Ø a ₁
			z ₈	z ₉	z ₈	z ₉					
18 19	—	—	—	—	—	—	320	467	Ø 660	315 M/S	660
			45							45	280 M/S
			—	—	—	245		419	Ø 450	250 M	450
			50							50	225 M/S
20	—	—	—	—	—	320	467	Ø 660	315 L/M	660	
			—	45	45				—	280 M/S	550
			—	—	—		245	419	Ø 450	250 M	450
			50							50	225 M/S
22	—	—	—	—	—	325	539	Ø 660	315 M/S	660	
			—	—	—				—	280 M/S	550
25	—	—	—	—	—	245	509	Ø 494	250 M	450	
			—	—	—				—	225 M	450
26 28	—	—	—	—	—	325	570	Ø 660	*	400	
			—	—	—				—	*	350
31	—	—	—	—	—	325	540	Ø 494	315 M/S	660	
			—	—	—				—	280 M/S	550
									250 M	450	
									*	450	

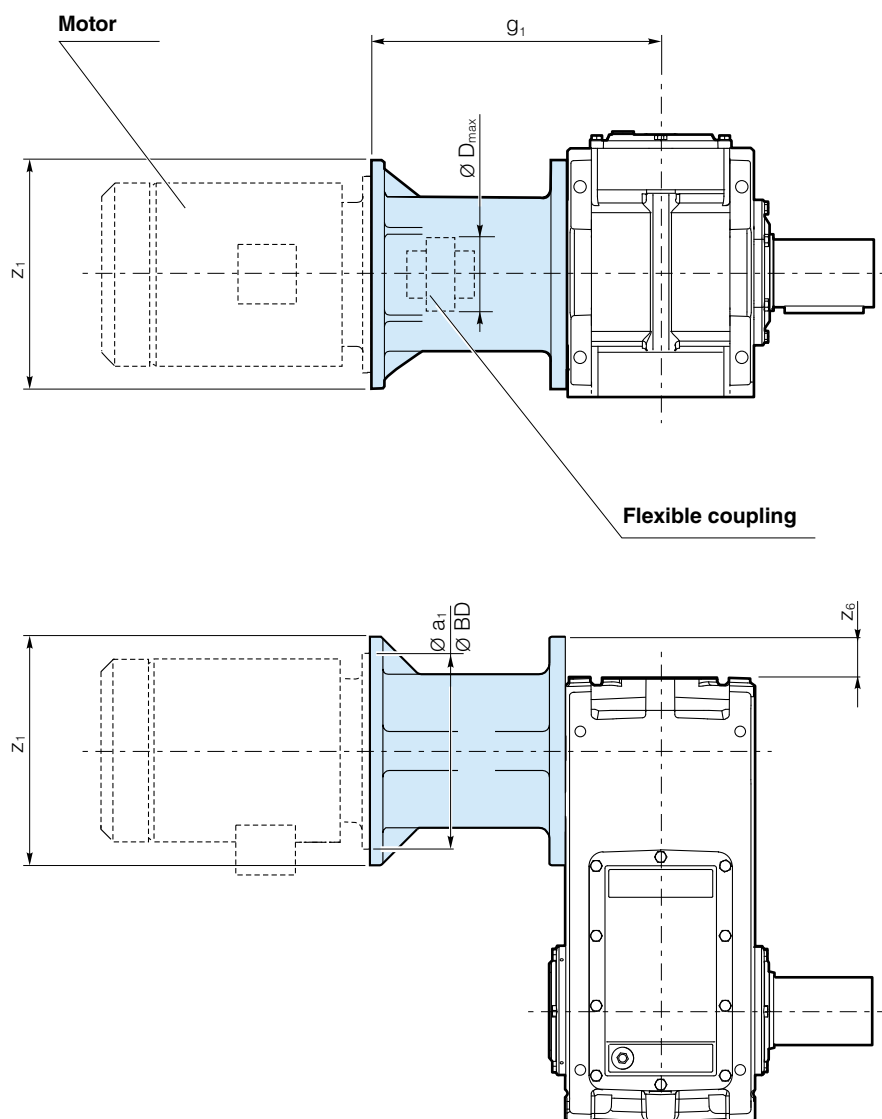
E2H...K.. NEMA..					
	Ø D _{max} **	g ₁	z ₁	Motor	
				NEMA	Ø BD
18 19	320	467	Ø 660	447T	455
		437	Ø 550	445T	455
				405T	395
20	245	419	Ø 450	326T	395
		195	Ø 350	286T	280
	320	467	Ø 660	447T	455
		437	Ø 550	445T	455
22	245	419	Ø 450	405T	395
		195	Ø 350	326T	345
	325	389	Ø 350	286T	280
		539	Ø 660	447T	455
25	245	509	Ø 494	445T	455
				405T	395
26 28	325	570	Ø 660	326T	345
				447T	455
31	325	540	Ø 494	445T	455
				405T	395

* Other motor bell housings available

** Maximum diameter of coupling

For more information please contact the Dana area contact person.

E3H...K...

**When bell housing is applied:**

- * Double output shaft available upon request
- * Gearbox mounting on motor side not feasible

Appropriate flexible coupling is part of Dana supply.

E3H...K...

E3H...K...IEC							
	z ₆	Ø D _{max} **	g ₁	z ₁	Motor		
					IEC	Ø a ₁	
18	86	325	477	Ø 494	280 S	550	
					250 M		
					225 L/M		
19	77	195	417	Ø 400	200 L	400	
20			397	Ø 350	180 L/M	350	
			367	Ø 300	160 L/M		
			345	Ø 250	112 M		250
22			63	325	539	Ø 660	315 M/S
	509	Ø 494			280 M/S	550	
	25	29	245	509	Ø 400		250 M
						225 M/S	450
						200 L	400
31	9	210	457	Ø 256	180 L/M	350	
					160 L/M		
					132 M/S	300	

E3H...K...IEC						
	z ₆	Ø D _{max} **	g ₁	z ₁	Motor	
					IEC	Ø a ₁
26	29	325	570	Ø 660	315 M/S	660
				Ø 494	280 M/S	550
					250 M/S	
28	—	245	540	Ø 400	200 L	450
					180 L/M	400
					160 L/M	350
31	210	488	*			

E3H...K...NEMA						
	Ø D _{max} **	g ₁	j ₁	Motor		
				NEMA	Ø BD	
18	325	477	Ø 494	445T	455	
				405T	395	
				326T	345	
19	195	417	Ø 400	326T	345	
20	195	397	Ø 350	286T	229	
			367	Ø 300	215T	280
			345	Ø 250	213T	225
22	325	539	Ø 660	447T	455	
			509	Ø 494	445T	455
				405T	395	
22	245	509	Ø 400	326T	345	
				286T	286	
25	210	457	Ø 256	215T	225	

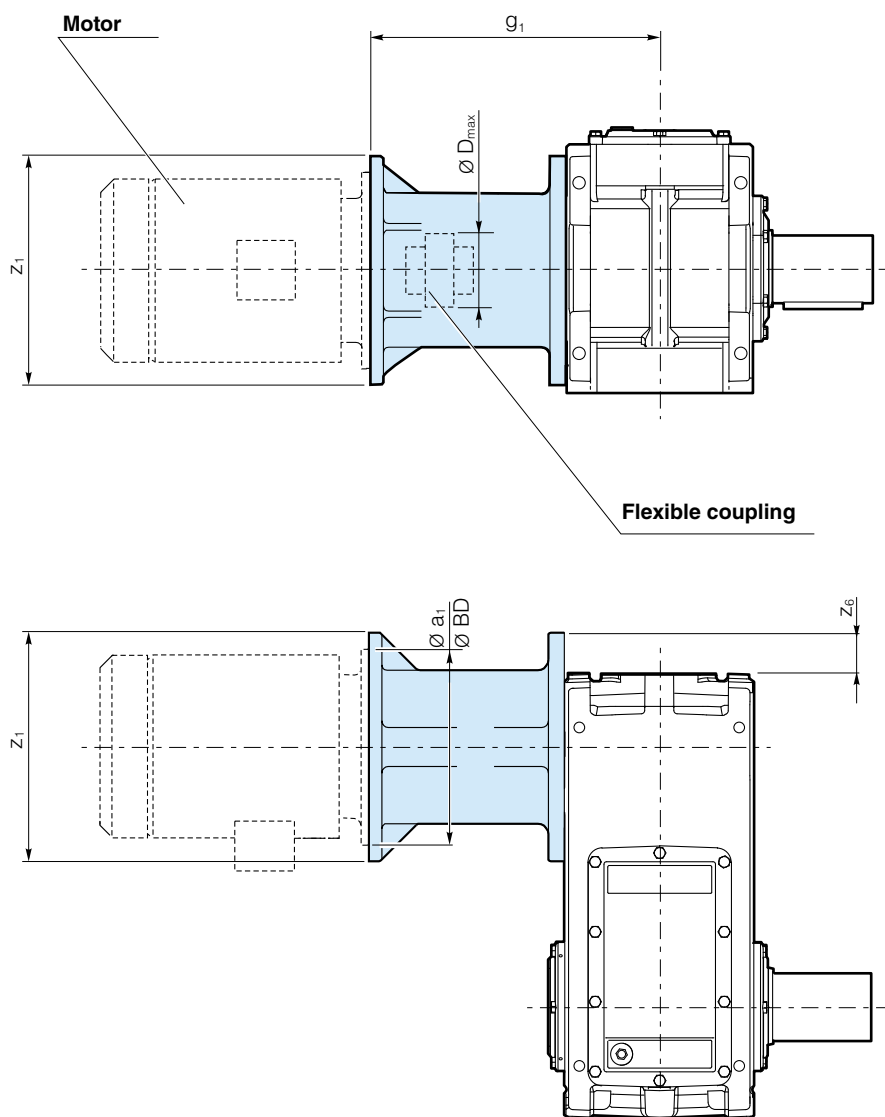
E3H...K...NEMA					
	Ø D _{max} **	g ₁	j ₁	Motor	
				NEMA	Ø BD
26	325	570	Ø 660	447T	455
			445T	455	
28	—	540	Ø 494	405T	395
			286T	286	
31	245	540	Ø 400	286T	286

* Other motor bell housings available

** Maximum diameter of coupling

For more information please contact the Dana area contact person.

E4H...K...

**When bell housing is applied:**

- * Double output shaft available upon request
- * Gearbox mounting on motor side not feasible

Appropriate flexible coupling is part of Dana supply.

E4H...K...

E4H...K...IEC						
	z ₆	Ø D _{max} **	g ₁	z ₁	Motor	
					IEC	Ø a ₁
18	58	195	353	Ø 350	180 L/M	350
					160 L/M	
19		155	319	Ø 300	132 M/S	300
			299	Ø 250	112 M	250
100 L						
20		125	289	Ø 200	90 L	200

E4H...K...IEC						
	z ₆	Ø D _{max} **	g ₁	z ₁	Motor	
					IEC	Ø a ₁
22	54	195	449	Ø 400	200 L	400
					180 L/M	
25		155	429	Ø 350	160 L/M	350
			399	Ø 300	132 M/S	
26		175			377	Ø 250
			100 L			
124	392	Ø 200	90 L	200		

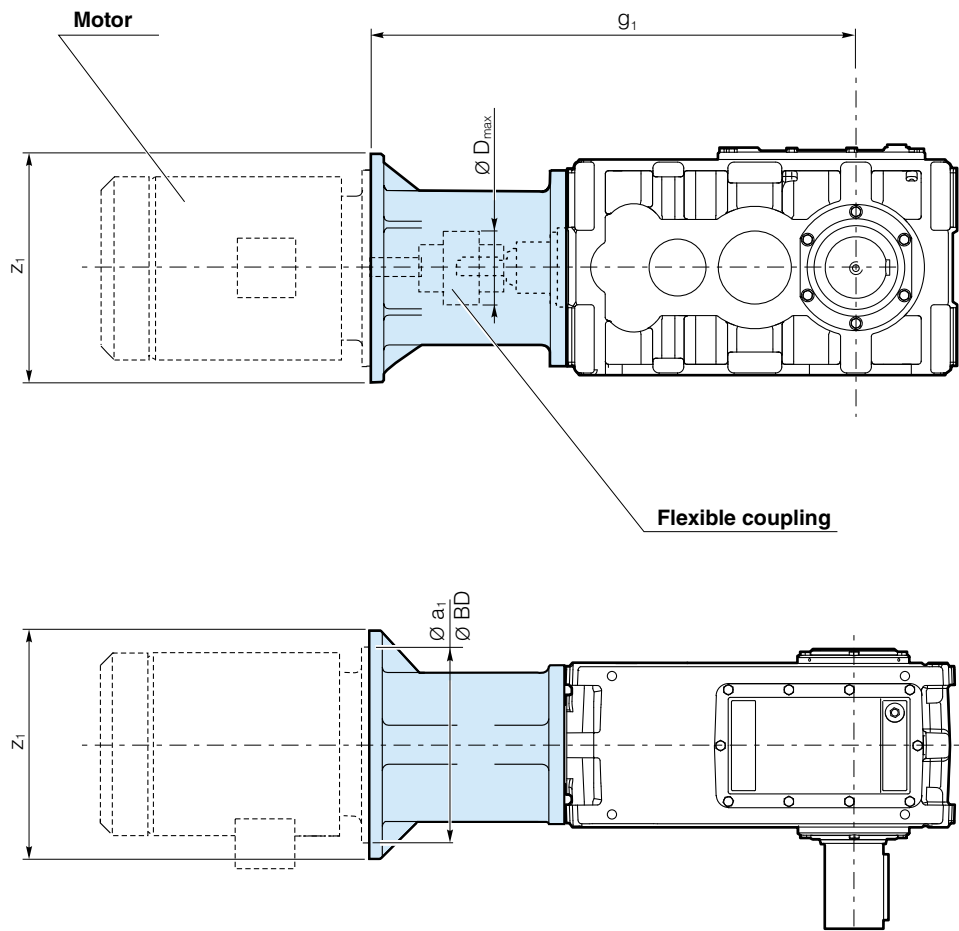
E4H...K...NEMA						
	Ø D _{max} **	g ₁	z ₁	Motor		
				NEMA	Ø BD	
18	58	195	353	Ø 350	286T	280
					215T	
19		155	319	Ø 300	213T	225
			299	Ø 250	184T	
20		125			289	Ø 200

E4H...K...NEMA						
	Ø D _{max} **	g ₁	z ₁	Motor		
				NEMA	Ø BD	
22	54	195	449	Ø 400	324T	345
					286T	
25		155	429	Ø 350	215T	225
			399	Ø 300	213T	
26		175			377	Ø 250
			182T			
124	392	Ø 200	182T	225		

** Maximum diameter of coupling

For more information please contact the Dana area contact person.

E3B...K...



Appropriate flexible coupling is part of Dana supply.

E3B...K...

E3B...K...IEC							
	Position of gear case		$\emptyset D_{max}^{**}$	g_1	z_1	Motor	
	R10	R11				IEC	$\emptyset a_1$
	z_6	z_6					
18	—	—	182	845	$\emptyset 550$	280 S	550
						250 M	
						225 M/S	
				815	$\emptyset 350$	200 L	400
						180 L/M	350
						160 L/M	
			155	765	$\emptyset 260$	132 M/S	300
						*	300
						*	250
						*	200
19	—	—	182	876	$\emptyset 550$	280 S	550
						250 M	
						225 M/S	
				846	$\emptyset 350$	200 L	400
						180 L/M	350
						160 L/M	
			155	796	$\emptyset 260$	132 M/S	300
						*	300
						*	250
						*	200
20	—	—	182	899	$\emptyset 550$	280 S	550
						250 M	
						225 M/S	
				869	$\emptyset 350$	200 L	400
						180 L/M	350
						160 L/M	
			155	819	$\emptyset 260$	132 M/S	300
						*	300
						*	250
						*	200

E3B...K...IEC								
	Position of gear case		$\emptyset D_{max}^{**}$	g_1	z_1	Motor		
	R10	R11				IEC	$\emptyset a_1$	
	z_6	z_6						
22	23	—	250	1080	$\emptyset 660$	315 M/S	660	
						280 M/S		
						250 M		
				210	935	$\emptyset 354$	225 M/S	450
							200 L	400
							180 L/M	350
			250	1108	$\emptyset 494$	160 LM	350	
						*	300	
						*	250	
						*	200	
25	—	—	250	1138	$\emptyset 660$	315 M/S	660	
						280 M/S		
						250 M		
				210	993	$\emptyset 354$	225 M/S	450
							200 L	400
							180 L/M	350
			250	1108	$\emptyset 494$	160 L/M	350	
						*	300	
						*	250	
						*	200	
26 28	—	—	250	1213	$\emptyset 660$	315 M/S	660	
						280 M/S		
						250 M		
				210	1183	$\emptyset 494$	225 M/S	450
							200 L	400
							180 L/M	350
			250	1183	$\emptyset 494$	160 L/M	350	
						*	300	
						*	250	
						*	200	
31	—	—	250	1153	$\emptyset 454$	200 L	400	
						*	350	
						*	300	
				210	1123	$\emptyset 300$	*	250
							*	250
							*	250
			250	1281	$\emptyset 494$	$\emptyset 660$	315 M/S	660
						280 M/S	550	
						250 M		
						225 M/S	450	
250	1221	$\emptyset 354$	200 L	400				
			*	350				
			*	300				
			*	250				
250	1191	$\emptyset 300$	*	300				
			*	250				
			*	250				
			*	200				

E3B...K...NEMA					
	$\emptyset D_{max}^{**}$	g_1	z_1	Motor	
				NEMA	$\emptyset BD$
18	182	845	$\emptyset 550$	444T	455
				405T	395
				326T	345
		815	$\emptyset 350$	286T	280
				215T	225
19	182	876	$\emptyset 550$	444T	455
				405T	395
				326T	345
		846	$\emptyset 350$	286T	280
				215T	225
20	182	899	$\emptyset 550$	444T	455
				405T	395
				326T	345
		869	$\emptyset 350$	286T	280
				215T	225

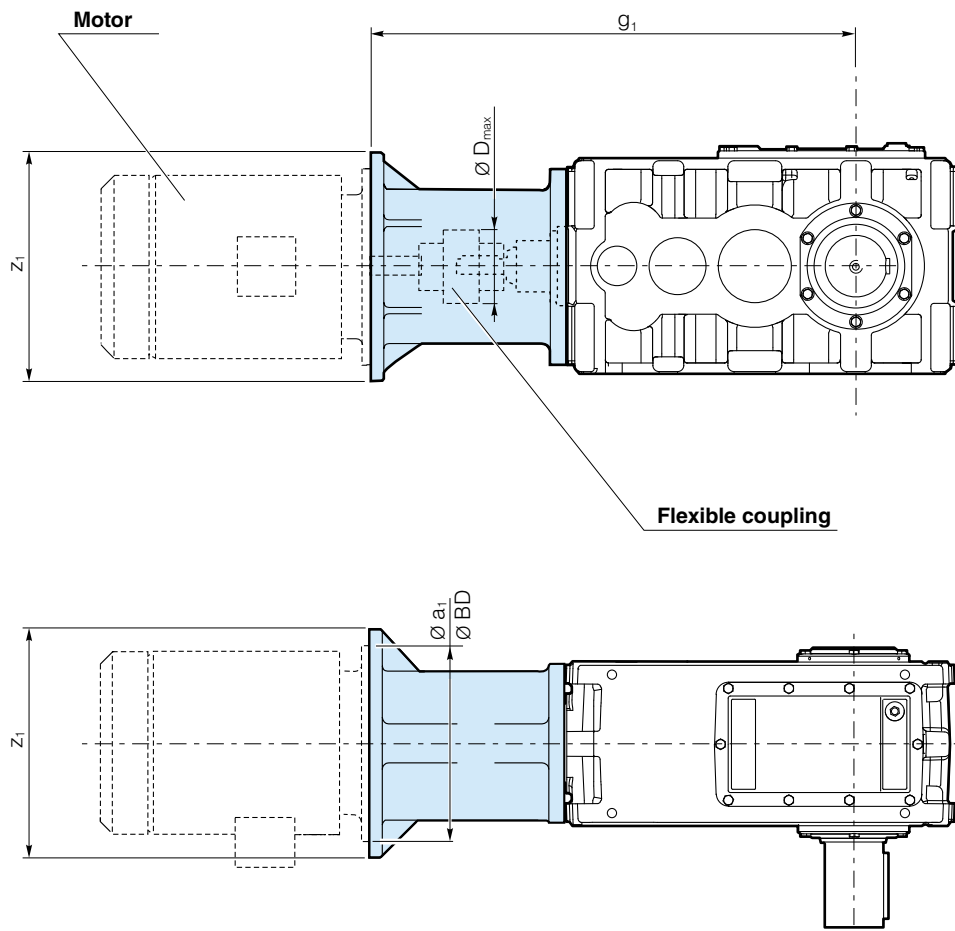
E3B...K...NEMA						
	$\emptyset D_{max}^{**}$	g_1	z_1	Motor		
				NEMA	$\emptyset BD$	
22	250	1080	$\emptyset 660$	447T	455	
				444T	455	
				405T	395	
		210	935	$\emptyset 354$	326T	345
					286T	280
25	250	1138	$\emptyset 660$	447T	455	
				444T	455	
				405T	395	
		210	993	$\emptyset 354$	326T	345
					286T	280
26 28	250	1213	$\emptyset 660$	447T	455	
				444T	455	
				405T	395	
		210	1183	$\emptyset 494$	326T	345
					286T	280
31	250	1281	$\emptyset 494$	$\emptyset 660$	447T	455
				444T	455	
				405T	395	
		250	1221	$\emptyset 354$	326T	345
					286T	280

* Other motor bell housings available

** Maximum diameter of coupling

For more information please contact the Dana area contact person.

E4B...K...



Appropriate flexible coupling is part of Dana supply.

E4B...K...

E4B...K...IEC								
	Position of gear case					Motor		
	R10	R11				IEC	Ø a ₁	
	z ₆	z ₆	Ø D _{max} **	g ₁	z ₁	IEC	Ø a ₁	
18	—	—	182	845	Ø 550	*	550	
					Ø 450	*	450	
					*		400	
				815	Ø 350	180 M		350
						160 L/M		300
						132 M/S		300
			155	765	Ø 260	112 M		250
						100 L		200
						90 L		200
						*		200
19	—	—	182	876	Ø 550	*	550	
					Ø 450	*	450	
					*		400	
				846	Ø 350	180 M		350
						160 L/M		300
						132 M/S		300
			155	796	Ø 260	112 M		250
						100 L		200
						90 L		200
						*		200
20	—	—	182	899	Ø 550	*	550	
					Ø 450	*	450	
					*		400	
				869	Ø 350	180 M		350
						160 L/M		300
						132 M/S		300
			155	819	Ø 260	*		300
						112 M		250
						100 L		200
						90 L/S		200

E4B...K...IEC										
	Position of gear case					Motor				
	R10	R11				IEC	Ø a ₁			
	z ₆	z ₆	Ø D _{max} **	g ₁	z ₁	IEC	Ø a ₁			
22	23	—	250	1050	Ø 494	*	550			
						225 S	450			
						200 L	400			
				210	1020	Ø 354	180 L/M	350		
							160 L/M	300		
							132 M/S	300		
			25	—	—	250	1108	Ø 494	*	550
									225 S	450
						210	1078	Ø 354	180 L/M	350
									160 L/M	300
26 28	—	—	250	1183	Ø 494	250 M	550			
						225 M/S	450			
						200 L	400			
				210	1153	Ø 354	180 L/M	350		
							160 L	300		
							132 M/S	300		
			31	—	—	250	1251	Ø 494	250 M	550
									225 M/S	450
						210	1221	Ø 354	180 L/M	350
									160 L/M	300
25 26 28	—	—	250	1123	Ø 300	132 M/S	300			
						*	250			
						200 L	200			
				210	1191	Ø 300	250 M	550		
							225 M/S	450		
							200 L	400		
			31	—	—	250	1221	Ø 354	180 L/M	350
									160 L/M	300
						210	1191	Ø 300	132 M/S	300
									*	250

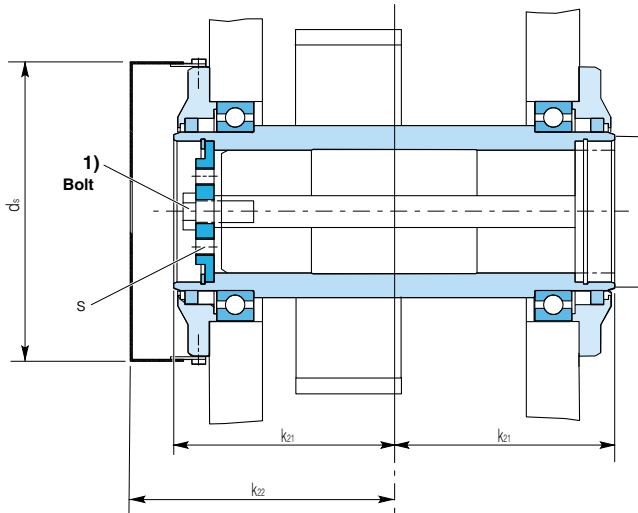
E4B...K...NEMA					
				Motor	
				NEMA	Ø BD
Ø D _{max} **	g ₁	z ₁	NEMA	Ø BD	
18	182	815	Ø 350	286T	280
				215T	225
				213T	225
	155	765	Ø 260	184T	225
				182T	225
				286T	280
19	182	846	Ø 350	215T	225
				213T	225
				184T	225
	155	796	Ø 260	182T	225
				286T	280
				215T	225
20	182	869	Ø 350	213T	225
				184T	225
				182T	225
	155	819	Ø 260	286T	280
				215T	225
				213T	225

E4B...K...NEMA						
				Motor		
				NEMA	Ø BD	
Ø D _{max} **	g ₁	z ₁	NEMA	Ø BD		
22	210	1020	Ø 354	326T	345	
				286T	280	
				215T	225	
	25	210	1078	Ø 354	213T	225
					184T	225
					326T	345
26 28	250	1183	Ø 494	286T	280	
				215T	225	
				213T	225	
	31	210	1153	Ø 354	184T	225
					405T	395
					326T	345
25 26 28	250	1123	Ø 300	286T	280	
				215T	225	
				213T	225	
	31	210	1191	Ø 300	215T	225
					405T	395
					326T	345

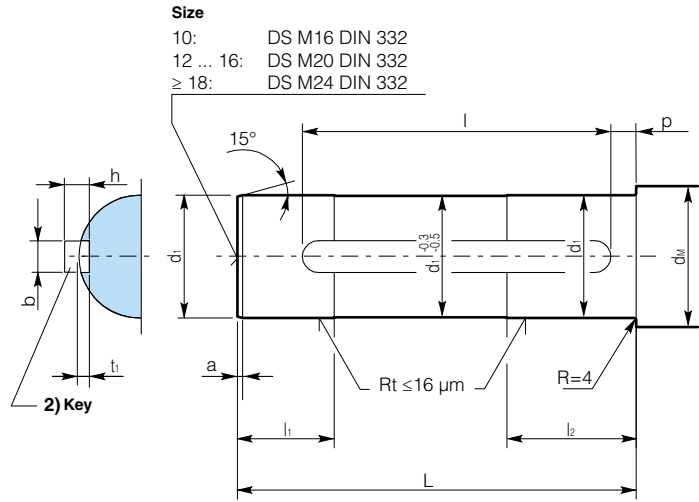
* Other motor bell housings available

** Maximum diameter of coupling

For more information please contact the Dana area contact person.



Design of hollow shaft



Design of machine shaft

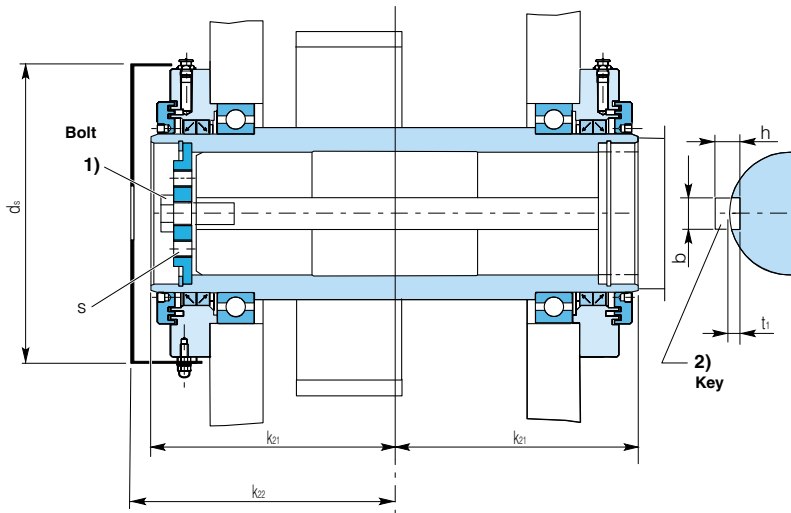
Size
 10: DS M16 DIN 332
 12 ... 16: DS M20 DIN 332
 ≥ 18 : DS M24 DIN 332

		a	$\varnothing d_1$	$\varnothing d_M$ min	$\varnothing d_s$	k_{21}	k_{22}	l_1	l_2	L	l_{min}	p	t_1	s	Bolt 1) ISO4014	Key 2) b x h
E2H - E3H - E4H E3B - E4B E3C - E4C	18	5	90 h6	107	230	157	173	70	95	279	250	18	6.2	M 12	M 24 x 60	25 x 9
	19	5	90 h6	107	230	157	173	70	95	279	250	18	6.2	M12	M 24 x 60	25 x 9
	20	5	100 h6	120	285	157	173	80	109	276	220	24	10	M 16	M 24 x 65	28 x 16
	22	5	110 h6	128	285	189	205	90	119	340	280	24	10	M 16	M 24 x 65	28 x 16
	25	6	130 h6	150	310	215	250	100	132	388	280	26	11	M 20	M 24 x 70	32 x 18
	26	6	130 h6	150	310	246	285	110	147	450	280	49	11	M 20	M 24 x 70	32 x 18
	28	6	140 h6	160	340	250	300	110	147	453	320	29	12	M 20	M 24 x 70	36 x 20
31	6	160 h6	180	365	250	300	125	162	453	320	27	13	M 20	M 24 x 70	40 x 22	

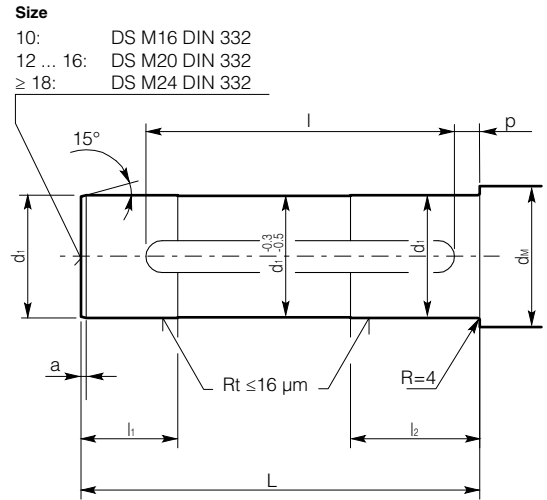
1) Key of machine shaft and secured bolt are not in scope of delivery.
 2) Type of tolerance of the keyway width in the hollow shaft: P9.



H - Labyrinth



Design of hollow shaft



Design of machine shaft

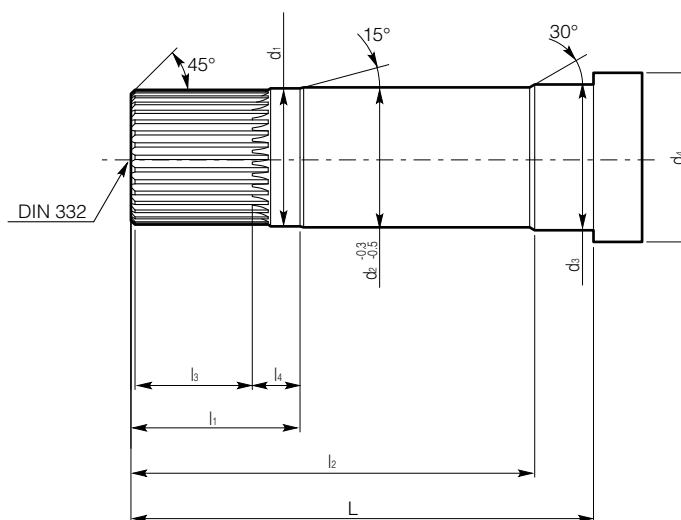
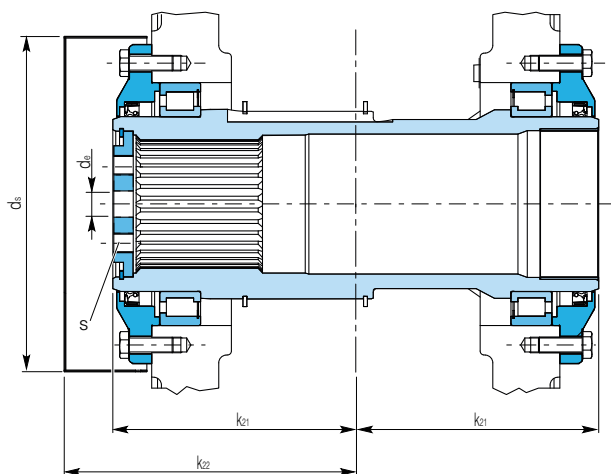
Size
 10: DS M16 DIN 332
 12 ... 16: DS M20 DIN 332
 ≥ 18: DS M24 DIN 332

		a	$\varnothing d_1$	$\varnothing d_{M \min}$	$\varnothing d_s$	k_{21}	k_{22}	l_1	l_2	L	l_{\min}	p	t_1	s	Bolt 1) ISO4014	Key 2) b x h
E2H - E3H - E4H E3B - E4B E3C - E4C	18	5	90 h6	107	200	206	280	85	110	378	250	18	6.2	M 12	M 24 x 60	25 x 9
	19	5	90 h6	107	200	206	280	85	110	378	250	18	6.2	M 12	M 24 x 60	25 x 9
	20	5	100 h6	120	250	205	285	80	110	372	220	24	10	M 16	M 24 x 65	28 x 16
	22	5	110 h6	128	310	240	335	90	120	442	280	24	10	M 16	M 24 x 65	28 x 16
	25	6	130 h6	150	310	235	250	100	132	428	280	26	11	M 20	M 24 x 70	32 x 18
	26	6	130 h6	150	310	266	280	100	148	490	320	29	11	M 20	M 24 x 70	32 x 18
	28	6	140 h6	160	340	280	315	110	148	513	320	29	12	M 20	M 24 x 70	36 x 20
31	6	160 h6	180	365	280	315	125	162	513	320	27	13	M 20	M 24 x 70	40 x 22	

1) Key of machine shaft and secured bolt are not in scope of delivery.
 2) Type of tolerance of the keyway width in the hollow shaft: P9.



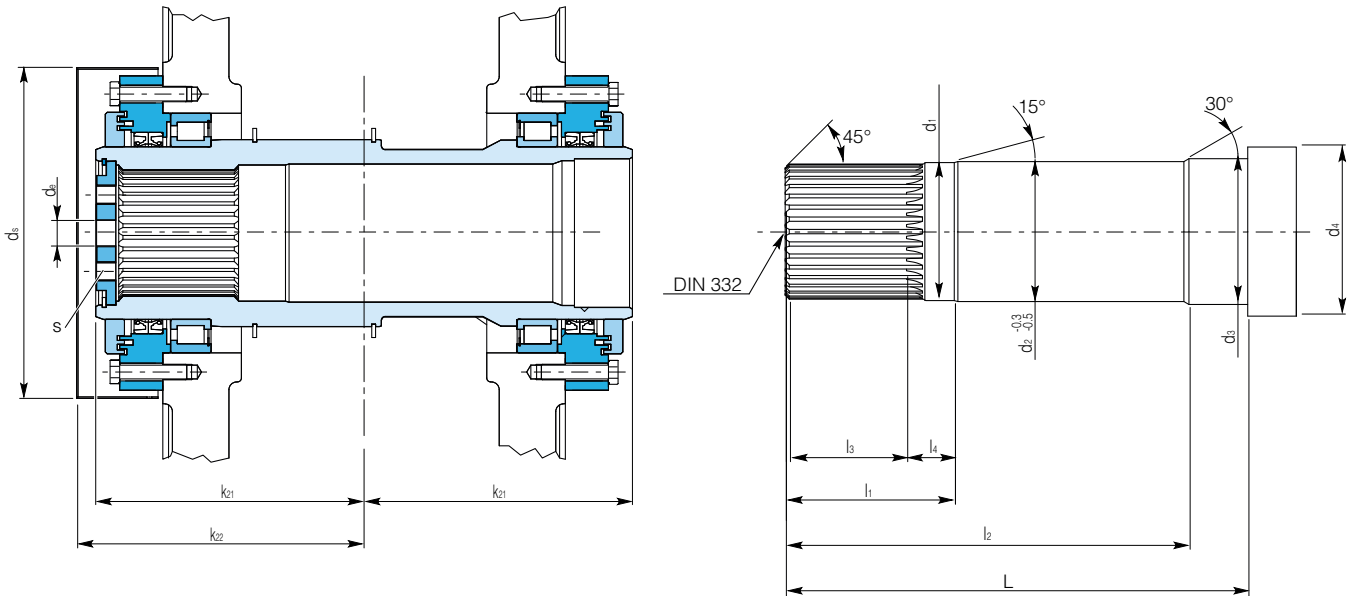
HS



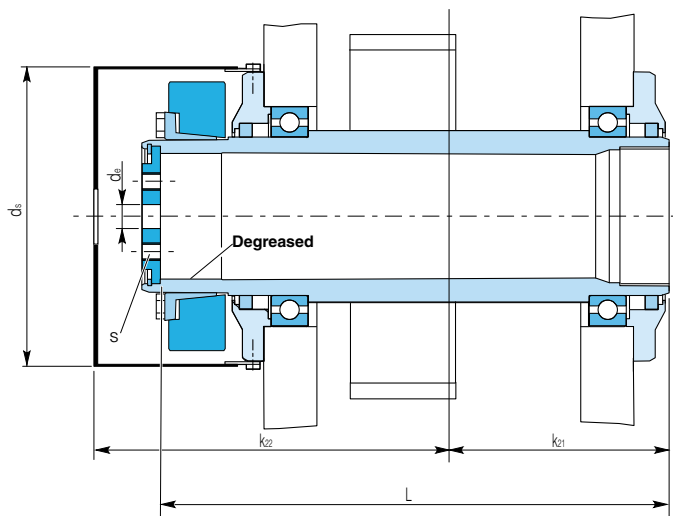
		Spline shaft DIN 5480	k_{21}	k_{22}	L	l_1	l_2	l_3	l_4	$\varnothing d_1$	$\varnothing d_2$	$\varnothing d_3$	$\varnothing d_4$	$\varnothing d_e$	$\varnothing d_s$	s	DIN 332
E2H - E3H - E4H E3B - E4B E3C - E4C	18	N88x2.5x30x34x9H W88x2.5x30x34x8f	157	173	296	132	235.5	85	44	88k6	90	90f6	108	25	230	M 12	DS M24
	19	N88x2.5x30x34x9H W88x2.5x30x34x8f	157	173	296	132	235.5	85	44	88k6	90	90f6	108	25	230	M 12	DS M24
	20	N98x2.5x30x38x9H W98x2.5x30x38x8f	157	173	292	132	231.5	85	44	98k6	100	105f6	128	27	285	M 16	DS M24
	22	N105x3x30x34x9H W105x3x30x34x8f	189	205	355	157	304.5	104	49	105k6	109	115f6	138	27	285	M 16	DS M24
	25	N130x4x30x31x9H W130x4x30x31x8f	215	250	406	157	345.5	104	49	130k6	132	135f6	164	27	310	M 20	DS M24
	26	N130x4x30x31x9H W130x4x30x31x8f	246	285	468	157	403	104	49	130k6	132	135f6	164	27	310	M 20	DS M24
	28	N140x4x30x34x9H W140x4x30x34x8f	250	300	476	178	415.5	124	49	140k6	142	150f6	174	33	340	M 20	DS M24
	31	N160x4x30x38x9H W160x4x30x38x8f	250	300	476	178	375.5	124	49	160k6	162	170f6	194	33	365	M 20	DS M24



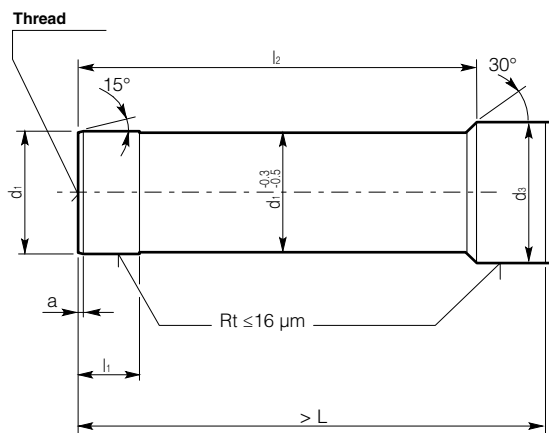
HS- Labyrinth



		Spline shaft DIN 5480	k_{21}	k_{22}	L	l_1	l_2	l_3	l_4	$\emptyset d_1$	$\emptyset d_2$	$\emptyset d_3$	$\emptyset d_4$	$\emptyset d_e$	$\emptyset d_s$	s	DIN 332
E2H - E3H - E4H E3B - E4B E3C - E4C	18	N88x2.5x30x34x9H W88x2.5x30x34x8f	206	173	394	132	333.5	85	44	88k6	90	90f6	108	25	200	M 12	DS M24
	19	N88x2.5x30x34x9H W88x2.5x30x34x8f	206	173	394	132	333.5	85	44	88k6	90	90f6	108	25	200	M 12	DS M24
	20	N98x2.5x30x38x9H W98x2.5x30x38x8f	205	173	388	132	327.5	85	44	98k6	100	105f6	128	27	250	M 16	DS M24
	22	N105x3x30x34x9H W105x3x30x34x8f	240	205	457	157	406.5	104	49	105k6	109	115f6	138	27	310	M 16	DS M24
	25	N130x4x30x31x9H W130x4x30x31x8f	235	250	446	157	385.5	104	49	130k6	132	135f6	164	27	310	M 20	DS M24
	26	N130x4x30x31x9H W130x4x30x31x8f	266	285	508	157	443	104	49	130k6	132	135f6	164	27	310	M 20	DS M24
	28	N140x4x30x34x9H W140x4x30x34x8f	280	300	536	178	475.5	124	49	140k6	142	150f6	174	33	340	M 20	DS M24
	31	N160x4x30x38x9H W160x4x30x38x8f	280	300	536	178	435.5	124	49	160k6	162	170f6	194	33	365	M 20	DS M24



Mounting of shrink disc



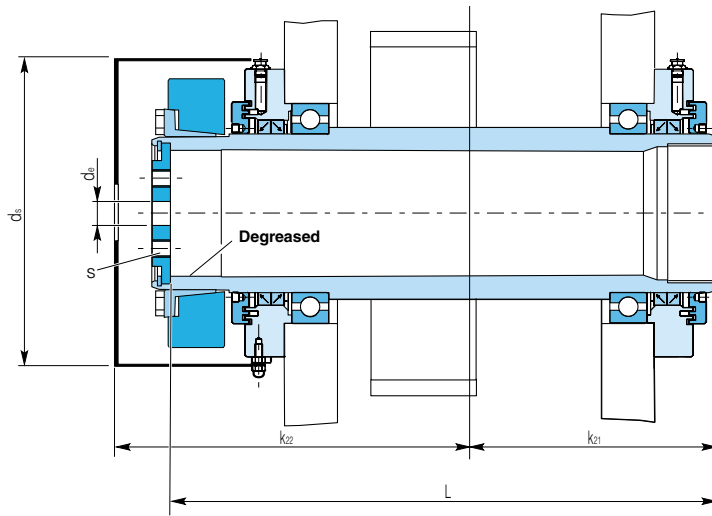
Design of machine shaft

Instructions for assembling and replacing the shrink disc are in scope of delivery.

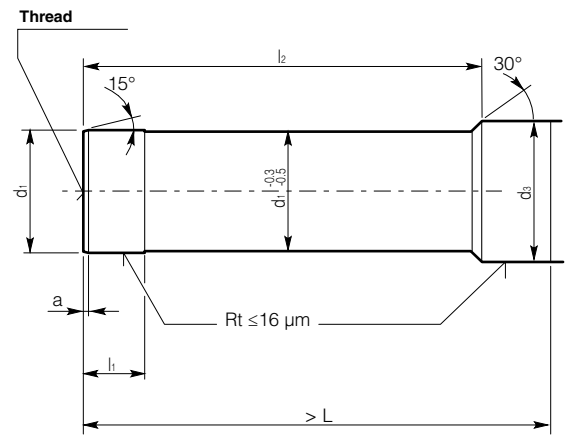
		Hollow shaft					Machine shaft					
		$\varnothing d_s$	k_{21}	k_{22}	$\varnothing d_e$	s	L	a	$\varnothing d_1$	$\varnothing d_3$	l_1	l_2
E2H - E3H - E4H E3B - E4B E3C - E4C	18	200	157	231	25	M 12	367	5	90 h6	90 f6	50	325
	19	200	157	231	25	M 12	367	5	90 h6	90 f6	50	325
	20	250	157	247	27	M 16	371	5	100 h6	105 f6	54	324
	22	250	189	279	27	M 16	443	5	110 h6	115 f6	58	392
	25	315	215	340	27	M 20	504	6	130 h6	135 f6	70	442
	26	315	246	370	27	M 20	566	6	130 h6	135 f6	70	504
	28	345	250	360	33	M 20	576	6	140 h6	150 f6	70	514
	31	365	250	375	33	M 20	594	6	160 h6	170 f6	85	517



G - Labyrinth



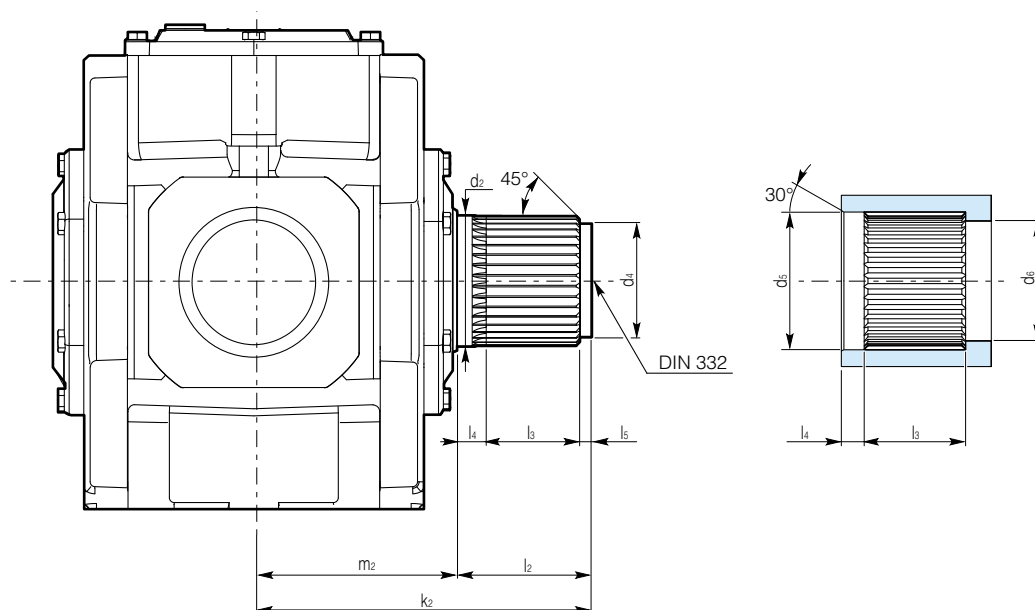
Mounting of shrink disc



Design of machine shaft

Instructions for assembling and replacing the shrink disc are in scope of delivery.

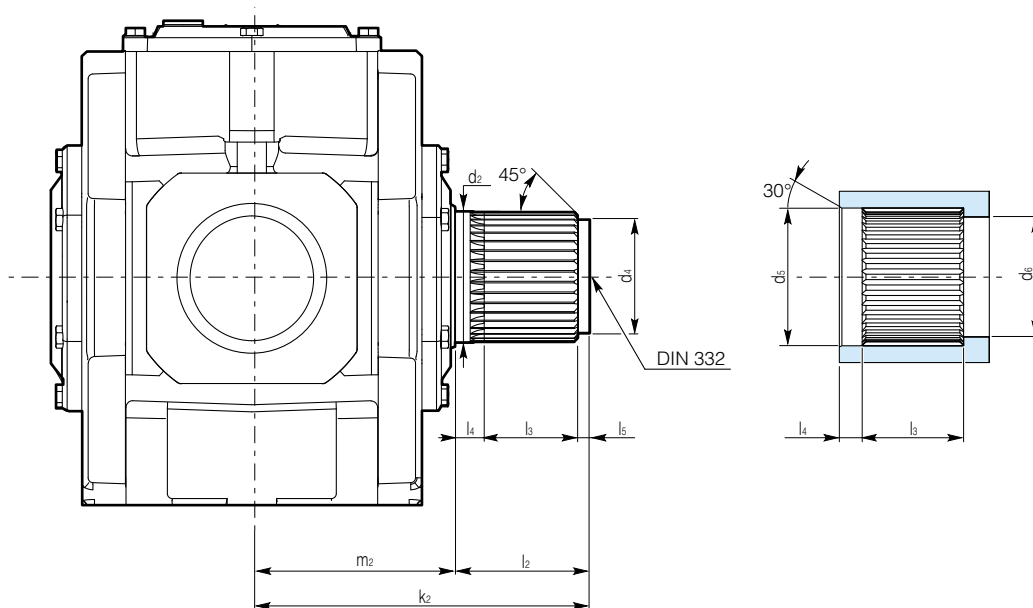
		Hollow shaft						Machine shaft				
		$\varnothing d_s$	k_{21}	k_{22}	$\varnothing d_e$	s	L	a	$\varnothing d_1$	$\varnothing d_3$	l_1	l_2
E2H - E3H - E4H E3B - E4B E3C - E4C	18	200	206	280	25	M 12	463	5	90 h6	90 f6	50	420
	19	200	206	280	25	M 12	463	5	90 h6	90 f6	50	420
	20	250	205	285	27	M 16	464	5	100 h6	105 f6	55	417
	22	250	240	335	27	M 16	546	5	110 h6	115 f6	60	495
	25	315	235	340	27	M 20	544	6	130 h6	135 f6	70	482
	26	315	266	370	27	M 20	606	6	130 h6	135 f6	70	544
	28	345	280	380	33	M 20	629	6	140 h6	150 f6	70	567
31	365	280	390	33	M 20	640	6	160 h6	170 f6	85	565	



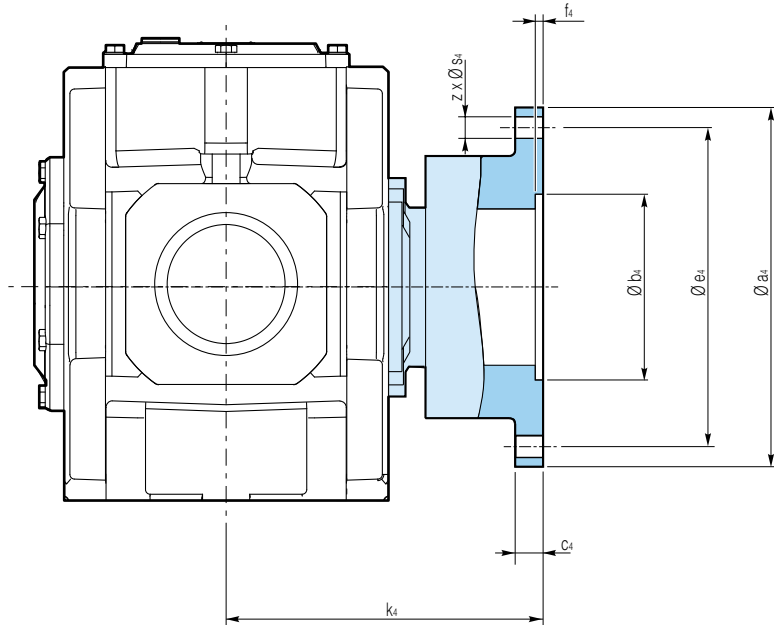
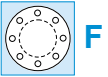
		Spline shaft DIN 5480	m_2	l_2	k_2	$\varnothing d_2$	$\varnothing d_4$	$\varnothing d_5$	$\varnothing d_6$	l_3	l_4	l_5	DIN 332
E2H - E3H - E4H E3B - E4B E3C - E4C	18	W95x2.5x30x36x8f N95x2.5x30x36x9H	180	145	325	95k6	80k6	95H7	80H7	85	45	15	DS M24
	19	W95x2.5x30x36x8f N95x2.5x30x36x9H	180	145	325	95k6	80k6	95H7	80H7	85	45	15	DS M24
	20	W120x3x30x38x8f N120x3x30x38x9H	180	155	335	120k6	105k6	120H7	105H7	86	54	15	DS M24
	22	W130x4x30x31x8f N130x4x30x31x9H	215	155	370	130k6	115k6	130H7	115H7	85	55	15	DS M24
	25	W140x4x30x34x8f N140x4x30x34x9H	220	160	380	140k6	125k6	140H7	125H7	85	60	15	DS M24
	26	W140x4x30x34x8f N140x4x30x34x9H	250	160	410	140k6	125k6	140H7	125H7	85	60	15	DS M24
	28	W160x4x30x38x8f N160x4x30x38x9H	250	185	435	160k6	140k6	160H7	140H7	114	56	15	DSM24
	31	W170x5x30x32x8f N170x5x30x32x9H	250	200	450	170k6	150k6	170H7	150H7	115	70	15	DSM24



vs- Labyrinth



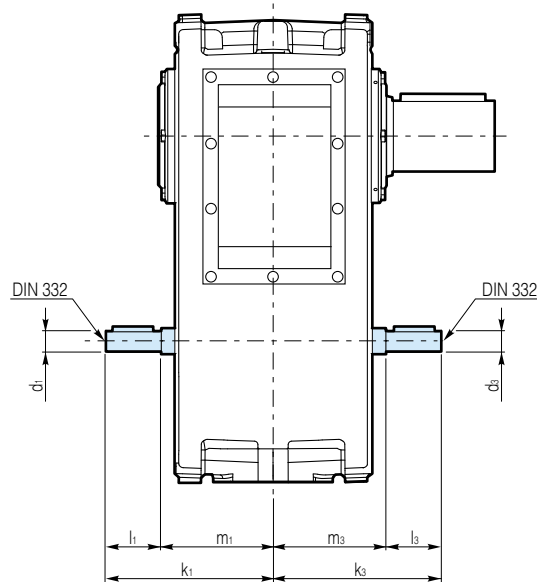
		Spline shaft DIN 5480	m_2	l_2	k_2	$\varnothing d_2$	$\varnothing d_4$	$\varnothing d_5$	$\varnothing d_6$	l_3	l_4	l_5	DIN 332
E2H - E3H - E4H E3B - E4B E3C - E4C	18	W95x2.5x30x36x8f N95x2.5x30x36x9H	200	125	325	95k6	80k6	95H7	80H7	85	25	15	DS M24
	19	W95x2.5x30x36x8f N95x2.5x30x36x9H	200	125	325	95k6	80k6	95H7	80H7	85	25	15	DS M24
	20	W120x3x30x38x8f N120x3x30x38x9H	200	135	335	120k6	105k6	120H7	105H7	86	34	15	DS M24
	22	W130x4x30x31x8f N130x4x30x31x9H	235	135	370	130k6	115k6	130H7	115H7	85	35	15	DS M24
	25	W140x4x30x34x8f N140x4x30x34x9H	240	140	380	140k6	125k6	140H7	125H7	85	40	15	DS M24
	26	W140x4x30x34x8f N140x4x30x34x9H	270	140	410	140k6	125k6	140H7	125H7	85	40	15	DS M24
	28	W160x4x30x38x8f N160x4x30x38x9H	270	165	435	160k6	140k6	160H7	140H7	114	36	15	DS M24
	31	W170x5x30x32x8f N170x5x30x32x9H	270	180	450	170k6	150k6	170H7	150H7	115	50	15	DS M24



		k_4	a_4	e_4	b_4	f_4	c_4	z	s_4	Bolt 1)
E2H - E3H - E4H E3B - E4B E3C - E4C	18	265	360	320	150 H7	10	25	16	22	M20x70
	19	275	380	340	150 H7	10	25	18	22	M20x70
	20	275	360	320	160 H7	10	25	18	22	M20x70
	22	320	370	320	180 H7	10	30	16	26	M24x90
	25	345	390	340	190 H7	10	30	18	26	M24x90
	26	355	390	340	190 H7	10	30	18	26	M24x90
	28	387	470	420	220 H7	12	38	20	26	M24x100
	31	397	500	450	240 H7	12	38	22	26	M24x100

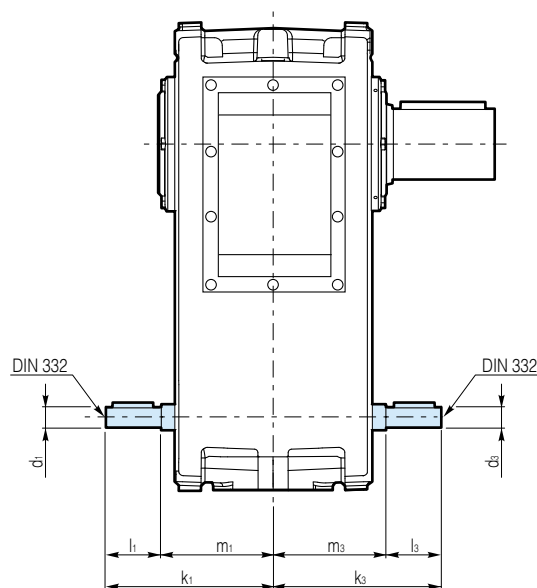
1) Minimum bolt property class 8.8 according to ISO 898.

E2H



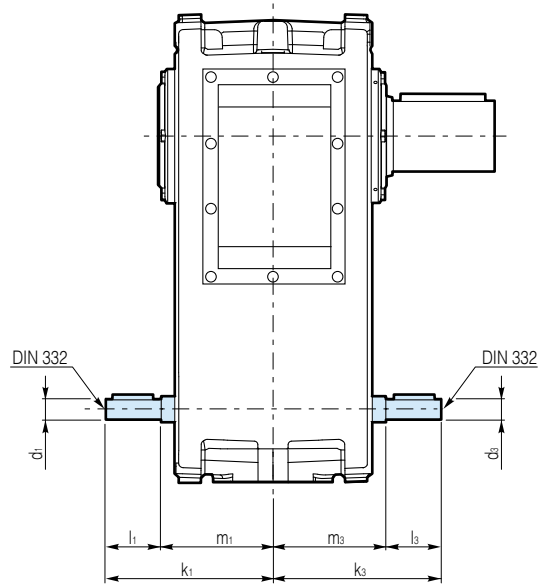
	Input shaft								
	i_N	$\varnothing d_1$	k_1	l_1	m_1	$\varnothing d_3$	k_3	l_3	m_3
E2H 18	4...14	45 k6	275	120	155	45 k6	275	120	155
	16...18					30 k6	255	100	
E2H 19	4...7.1	45 k6	275	120	155	45 k6	275	120	155
	8...18					30 k6	255	100	
E2H 20	5.6...20	45 k6	275	120	155	45 k6	275	120	155
	22.4...25					30 k6	255	100	
E2H 22	4...14	60 m6	337	140	197	60 m6	337	140	197
	16...18					40 k6	317	120	
E2H 25	5.6...20	60 m6	337	140	197	60 m6	337	140	197
	22.4...25					40 k6	317	120	
E2H 26	4...5.6	70 m6	369	140	229	70 m6	369	140	229
	7.1...18					50 k6	349	120	
E2H 28	4...14	70 m6	369	140	229	70 m6	369	140	229
	16...18					50 k6	349	120	
E2H 31	5.6...20	70 m6	369	140	229	70 m6	369	140	229
	22.4...25					50 k6	349	120	

E3H



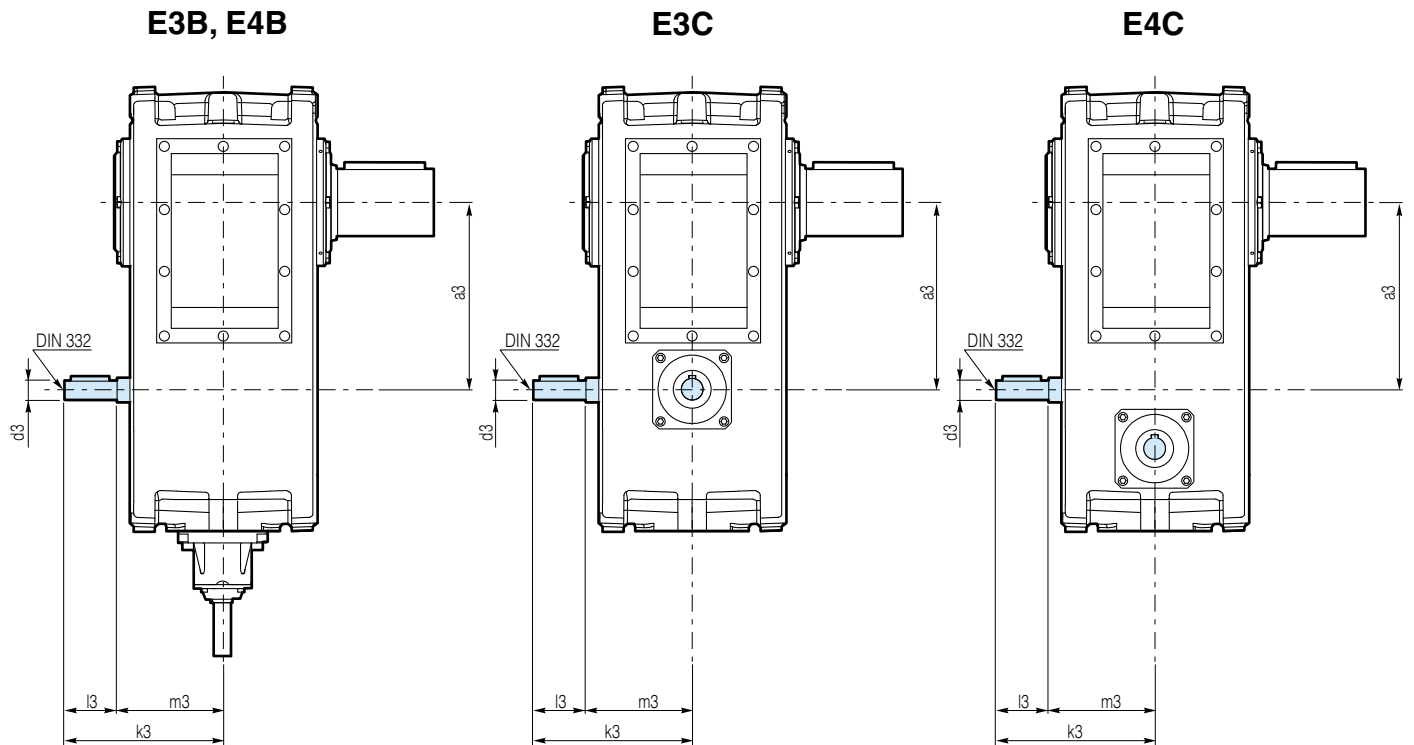
	Input shaft								
	i_N	$\varnothing d_1$	k_1	l_1	m_1	$\varnothing d_3$	k_3	l_3	m_3
E3H 18	16...45	35 k6	283	100	183	35 k6	283	100	183
	50...100	30 k6				30 k6			
E3H 19	20...56	35 k6	283	100	183	35 k6	283	100	183
	63...125	30 k6				30 k6			
E3H 20	22.4...63	35 k6	283	100	183	35 k6	283	100	183
	71...140	30 k6				30 k6			
E3H 22	20...45	50 k6	347	120	227	50 k6	320	120	200
	50...71	40 k6				40 k6			
E3H 25	25...56	50 k6	347	120	227	50 k6	320	120	200
	63...90	40 k6				40 k6			
E3H 26	16...45	50 k6	362	120	242	50 k6	362	120	242
	50...100	40 k6				40 k6			
E3H 28	16...45	50 k6	362	120	242	50 k6	362	120	242
	50...100	40 k6				40 k6			
E3H 31	22.4...63	50 k6	362	120	242	50 k6	362	120	242
	71...140	40 k6				40 k6			

E4H



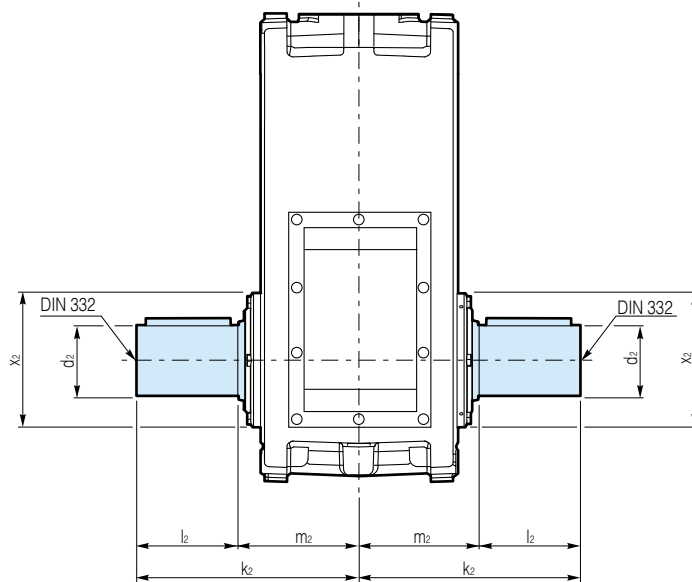
	Input shaft								
	i_N	$\varnothing d_1$	k_1	l_1	m_1	$\varnothing d_3$	k_3	l_3	m_3
E4H 18	90...315	25 k6	227	72	155	25 k6	227	72	155
E4H 19	112...400								
E4H 20	125...450								
E4H 22	71...200	35 k6	307	100	207	35 k6	307	100	207
	224...450	30 k6				30 k6			
E4H 25	90...250	35 k6	307	100	207	35 k6	307	100	207
	280...560	30 k6				30 k6			
E4H 26	71...450	35 k6	319	100	219	35 k6	319	100	219
E4H 28	71...450								
E4H 31	100...630								

E3B, E4B, E3C, E4C



		a_3	$\varnothing d_3$	k_3	l_3	m_3
E3B, - E4B - E3C - E4C	18	293	45 k6	275	120	155
	19	293	45 k6	275	120	155
	20	347	45 k6	275	120	155
	22	376	60 m6	337	140	197
	25	434	60 m6	337	140	197
	26	464	70 m6	369	140	229
	28	464	70 m6	369	140	229
	31	532	70 m6	369	140	229

E2H, E3H, E4H, E3B, E4B, E3C, E4C



		d_2	k_2	l_2	m_2	$\varnothing x_2$
E2H - E3H - E4H E3B - E4B E3C - E4C	18	95 m6	350	170	180	-
	19	95 m6	350	170	180	-
	20	120 m6	370	190	180	-
	22	130 m6	405	190	215	-
	25	145 m6	450	230	220	296
	26	145 m6	480	230	250	296
	28	160 m6	480	230	250	328
	31	175 m6	540	290	250	348



BREVINI[®]

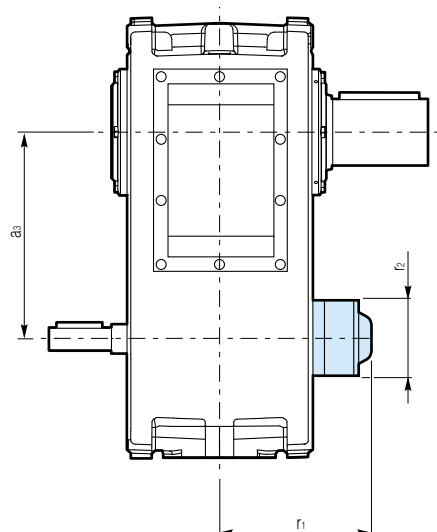
Motion Systems

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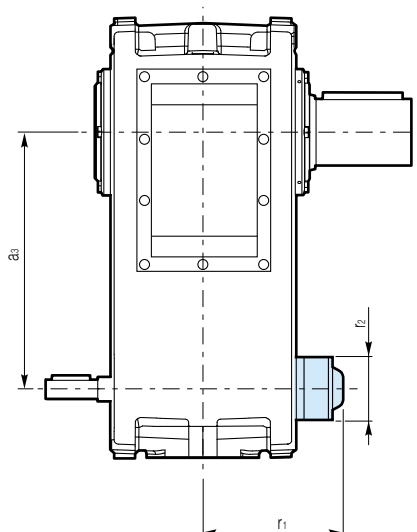
Type	Pag.
Backstop	170
Torque reaction links	172
Torque reaction arms	173
Motor attachments	174
Fan cooling	175
Electric fan	177
Cooling coils	178
Heater	179
Sealing systems	180
Lubrication	182
Auxiliary drive	185
Attachment of sensors for control of rolling bearing	186
Breather with filter	187
Breather with wet filter	187
Temperature switch	187
Pressure switch	187
P100	188
Manometer	188
Oil level switch	188
Oil drain with ball valve	188
Oil filter, single, double	189
Regulator for quantity of cooling water	189

E2H, E3H, E4H

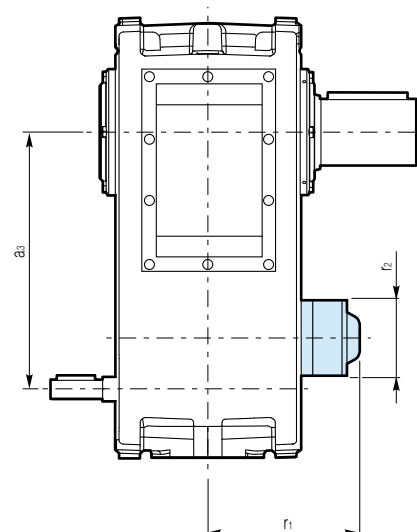
E2H



E3H



E4H



	i_N	r_1	$\varnothing r_2$	a_3
E2H 18	4...14	249	190	293
	16...18	219	132	
E2H 19	5.6...20	249	190	324
	22.4...25	219	132	
E2H 20	5.6...20	249	190	347
	22.4...25	219	132	
E2H 22	4...10	296	210	376
	11.2...18	275	175	
E2H 25	5.6...14	296	210	434
	16...25	275	175	
E2H 26	4...5.6	296	210	464
	6.3...18			
E2H 28	4...5.6	*)	250	464
	6.3...18	322	210	
E2H 31	5.6...8	*)	250	532
	9...25	322	210	

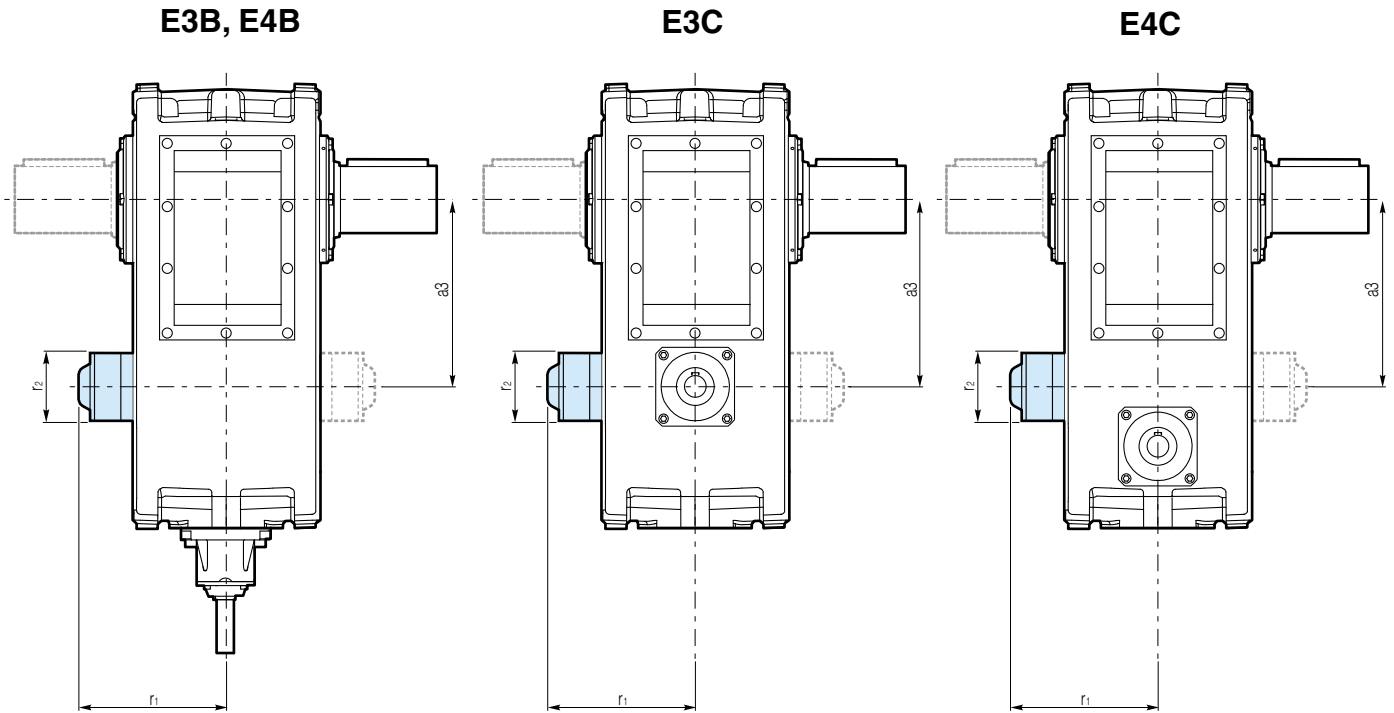
	i_N	r_1	$\varnothing r_2$	a_3
E3H 18	16...45	247	132	387
	50...100	239	115	
E3H 19	20...56	247	132	418
	63...125	239	115	
E3H 20	22.4...63	247	132	441
	71...140	239	115	
E3H 22	20...45	256	140	492
	50...71		132	
E3H 25	25...56	256	140	550
	63...90		132	
E3H 26	16...45	332	190	591
	50...100	300	150	
E3H 28	16...45	332	190	591
	50...100	300	150	
E3H 31	22.4...63	332	190	659
	71...140	300	150	

	r_1	$\varnothing r_2$	a_3
E4H 18	218	140	293
E4H 19			324
E4H 20			347
E4H 22	322	210	376
E4H 25			434
E4H 26	322	210	464
E4H 28			464
E4H 31			532

*) On request

Directions of rotation and locations of shafts see p.11.
Backstops have adequate capacities to deal with full rated torque.

E3B, E4B, E3C, E4C

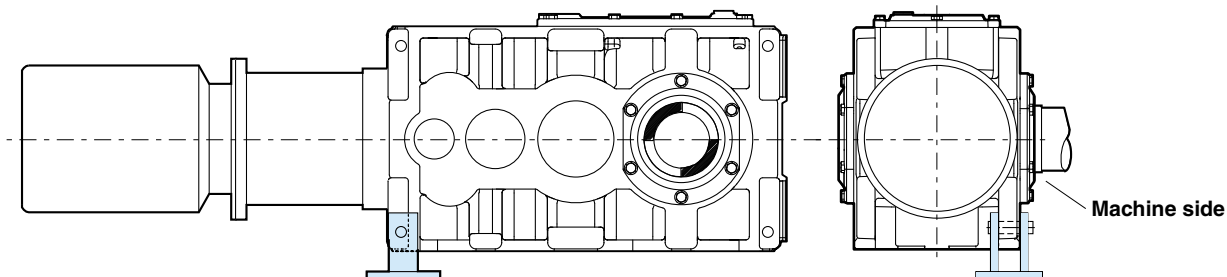


		r_1	$\varnothing r_2$	a_3
E3B - E4B - E3C - E4C	18	218	140	293
	19			324
	20			347
	22	275	175	376
	25			434
	26	322	210	464
	28			464
	31			532

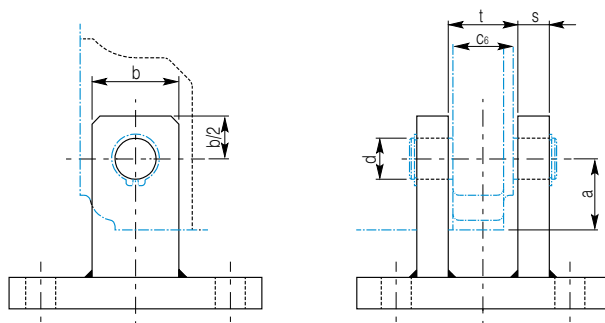
Directions of rotation and locations of shafts see p. 13.
Backstops have adequate capacities to deal with full rated torque.

E2H, E3H, E4H, E3B, E4B, E3C, E4C

Torque reaction link



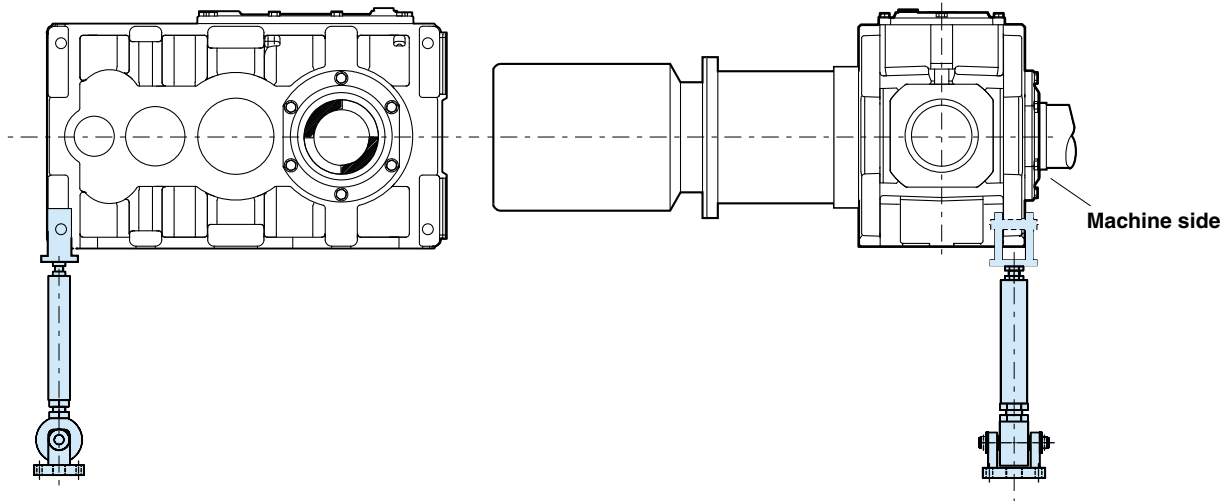
Torque reaction link on driven machine side



		a	t	c ₆	d	b	s
E2H - E3H - E4H E3B - E4B E3C - E4C	18 - 20	35	46	41	Ø 26 H9/h6	45	16
	22 - 25	45	54	49	Ø 30 H9/h6	55	20
	26 - 31	53	59	54	Ø 35 H9/h6	70	25

E2H, E3H, E4H, E3B, E4B, E3C, E4C

Torque reaction arm with 2 ball-and-socket joints

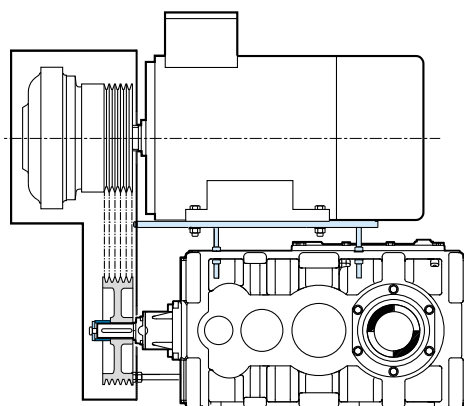


Dimensions on request

M-P..., J1-P..., J2-P...

M...

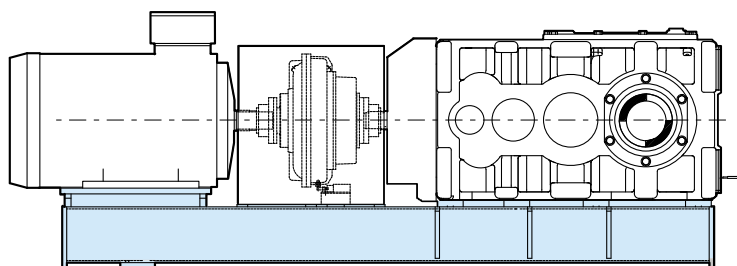
Motor base plate



Only on request.

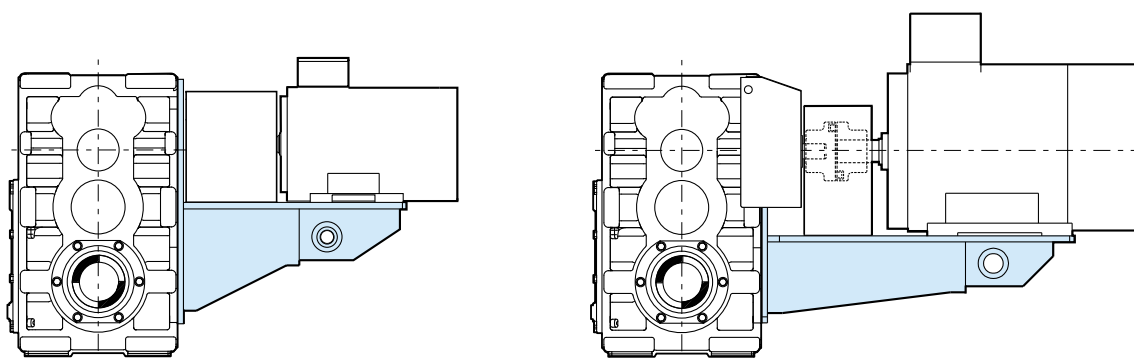
J1...

Swing base



J2...

Motor scoop

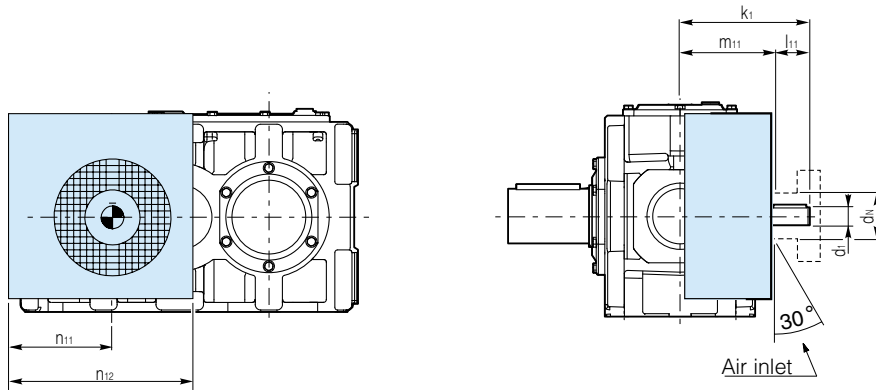


Dimensions on request

E2H, E3H.. -R11

Permissible location of shafts .1 and .2 see p. 10-11

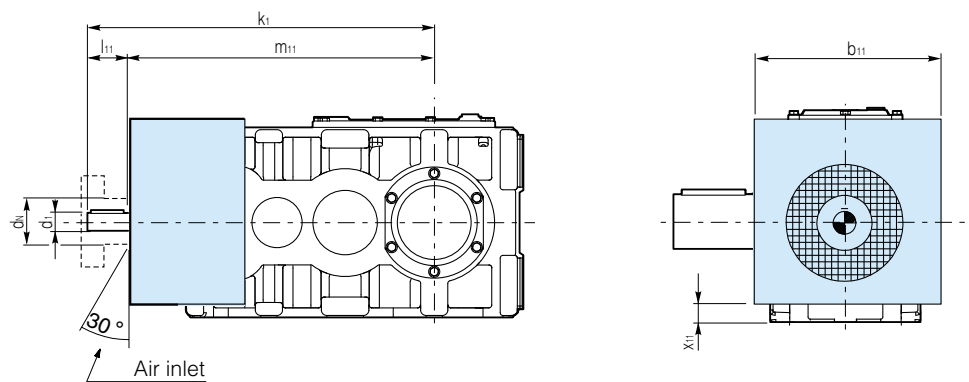
Type E2H..-R11
E3H ..-R11



	d_1 ¹⁾		$d_{N_{max}}$	k_1	l_{11}	m_{11}	n_{11}	n_{12}
E2H 18 / 19 / 20	45 k6		140	275	80	195	199	360
E2H 22 / 25	60 m6		140	337	100	237	244	460
E2H 28 / 31	70 m6		140	369	100	269	289	555
E3H 18 / 19 / 20	35 k6	30 k6	100	283	60	223	120	375
E3H 22 / 25	50 k6	40 k6	100	347	80	267	133	465
E3H 26 / 28 / 31	50 k6	40 k6	140	362	80	282	162	555

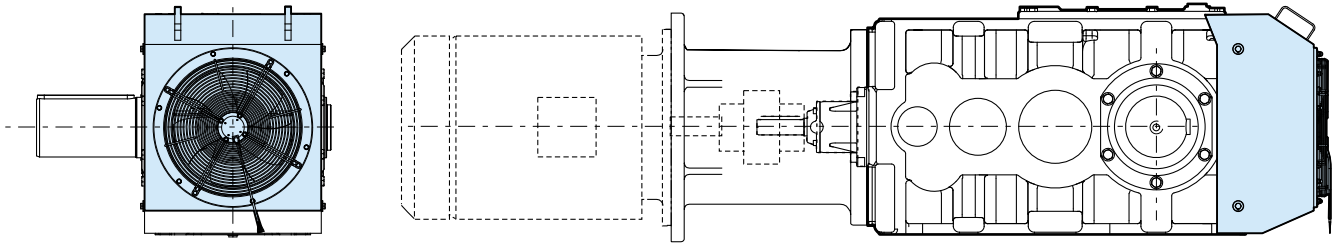
1) According to ratio for version E3H see p. 117.

E3B .. -R11



	b_{11}	d_1	$d_{N \max}$	k_1	l_{11}	m_{11}	x_{11}
E3B 18	314	40 k6	140	699	80	619	39
E3B 19				730		650	
E3B 20				753		673	
E3B 22	380	50 k6	140	823	80	743	49
E3B 25				881		801	59
E3B 26	440	60 m6	140	986	105	881	59
E3B 28				986		881	59
E3B 31				1054		949	89

E2H, E3H, E4H, E3B, E4B, E3C, E4C.. -R1

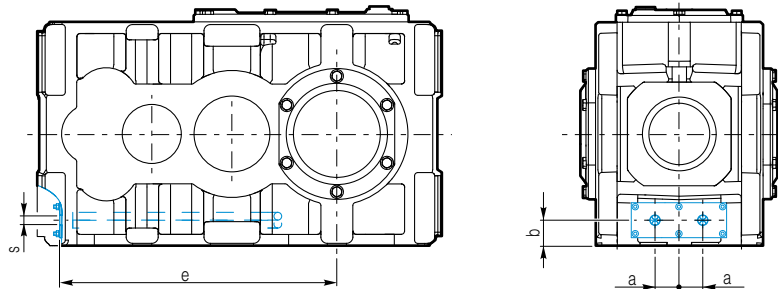


Dimension on request.

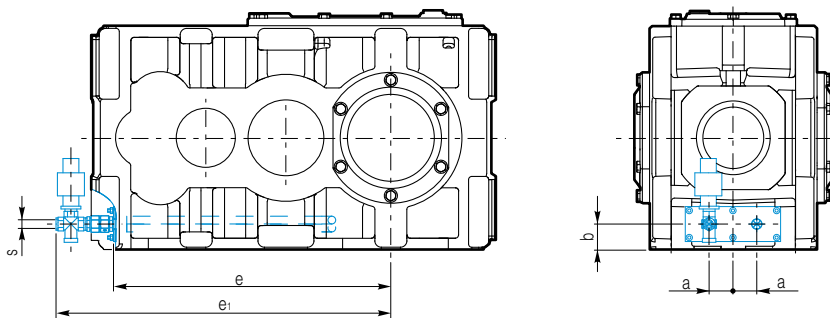
On request we can deliver an electrical fan on the output side of the gearbox if there is no possibility to install a shaft mounted fan.

E2H, E3H, E4H, E3B, E4B, E3C, E4C.. -R1

Water connection for cooling coil **without** cooling water controller

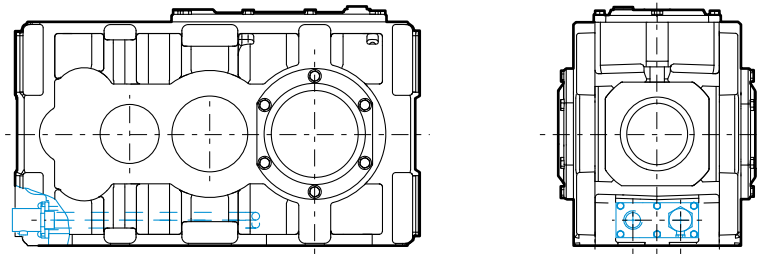


Water connection for cooling coil **with** cooling water controller



		a	b	e	e ₁	s	V Water l/min	Δ p W bar
E2H - E3H - E4H E3B - E4B E3C - E4C	18	32,5	45	462	582	G 3/4"	8	0,6
	19	32,5	40	506	626		16	
	20	32,5	50	516	636		6	
	22	42,5	55	579	699		8	
	25	42,5	55	649	769		16	
	26	55	65	696	816		8	
	28	55	65	696	816		8	
	31	55	70	760	880		16	

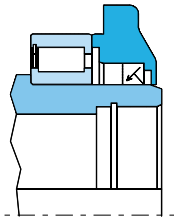
E2H, E3H, E4H, E3B, E4B, E3C, E4C.. -R1



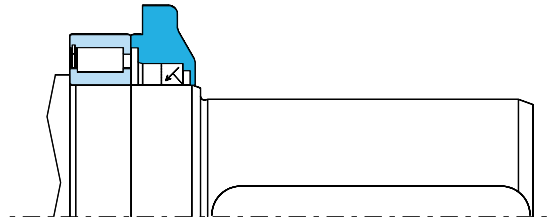
E2H, E3H, E4H, E3B, E4B, E3C, E4C

Standard sealing

Single seal with dust lip



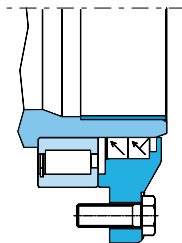
Hollow shaft



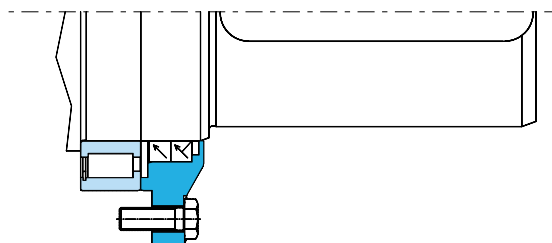
Solid shaft

Special seals according to the operating conditions

Two shaft seals outer with dust lip



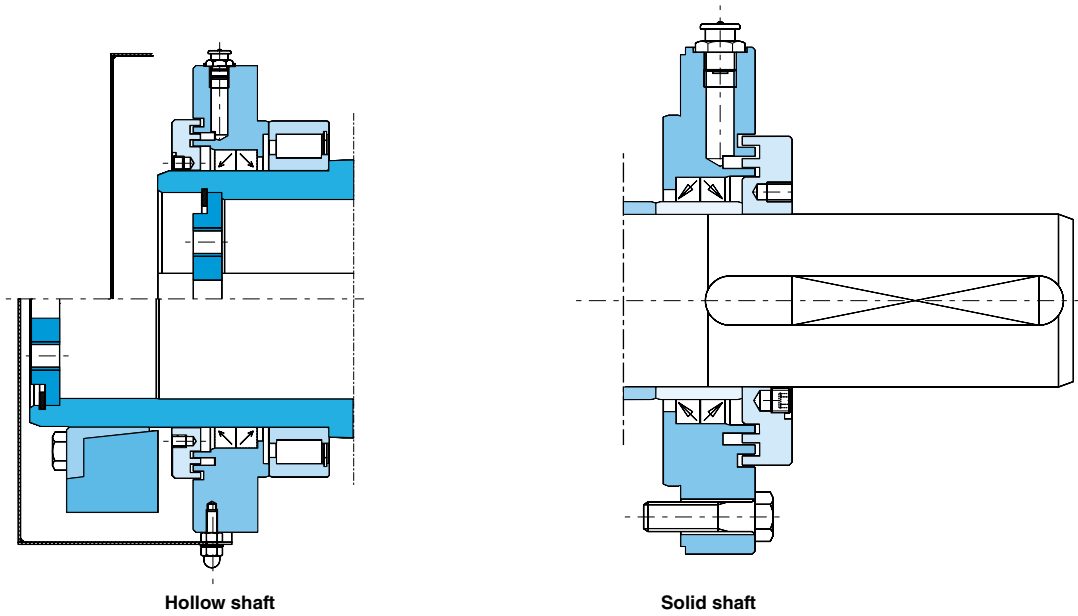
Hollow shaft



Solid shaft

E2H, E3H, E4H, E3B, E4B, E3C, E4C

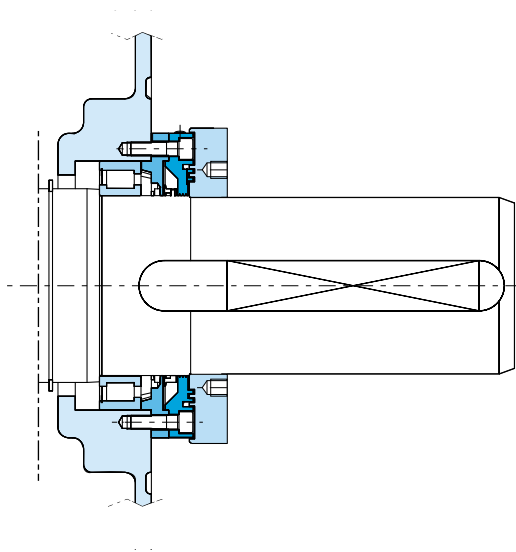
Special seals according to the operating conditions

Two shaft seals with additional refillable greased labyrinth seals (Taconite sealing)**Contact less seals**

Special seals according to the operating conditions

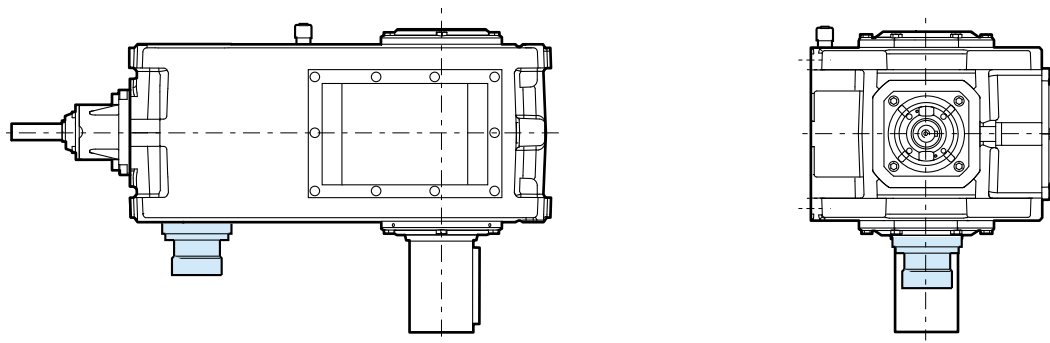
Contactless shaft seals with additional refillable greased labyrinth seals (Taconite sealing).

Available for all type of input- and output shafts.



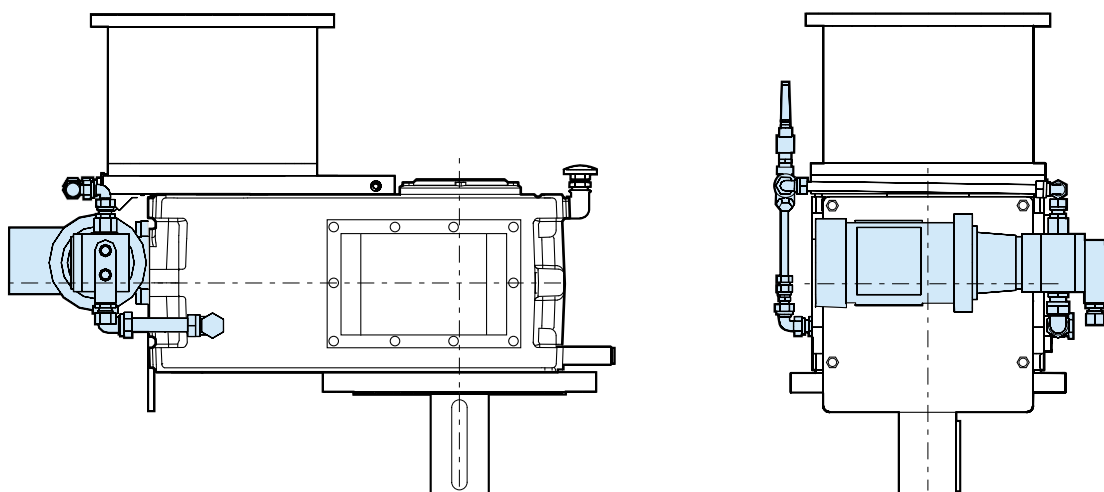
E2H, E3H, E4H, E3B, E4B, E3C, E4C .. -R1

Flange pump

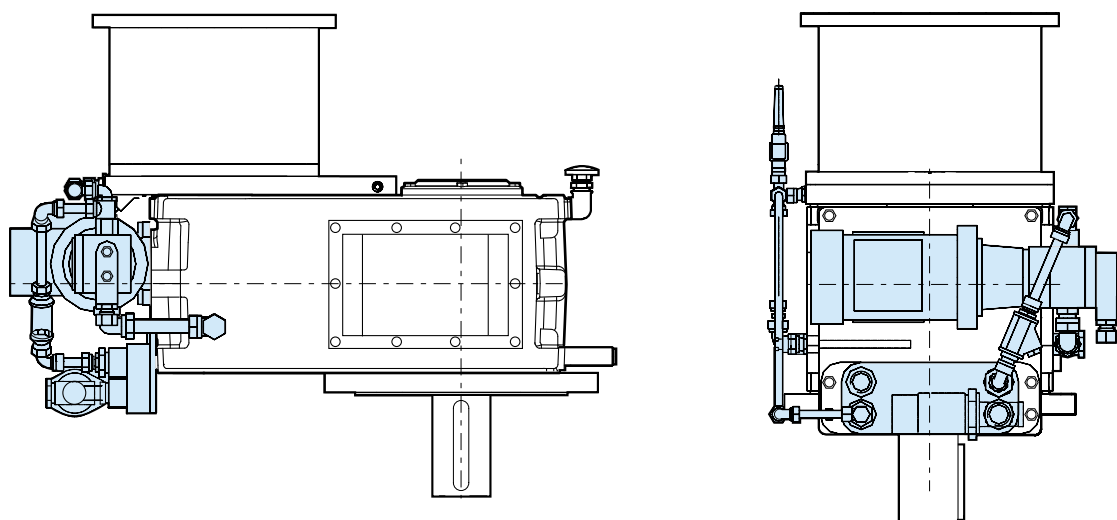


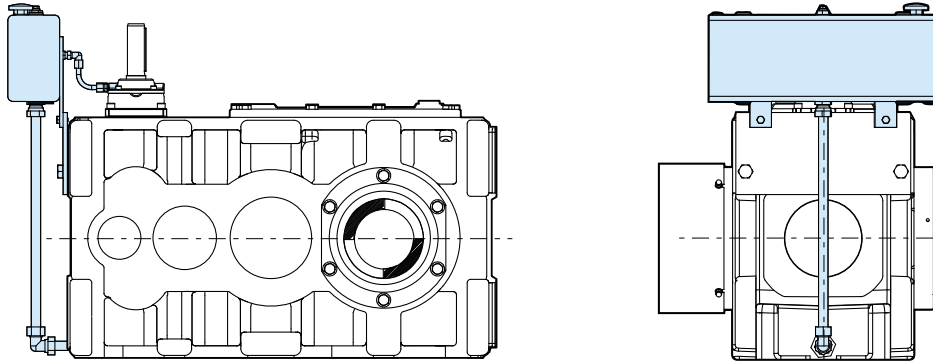
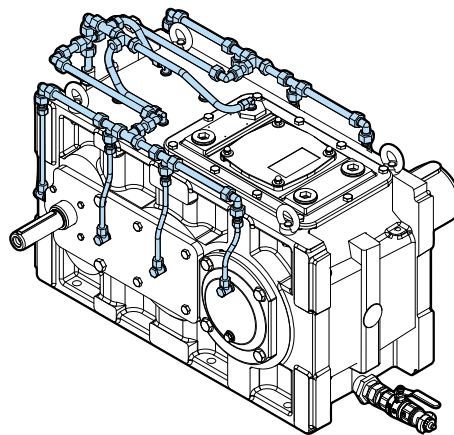
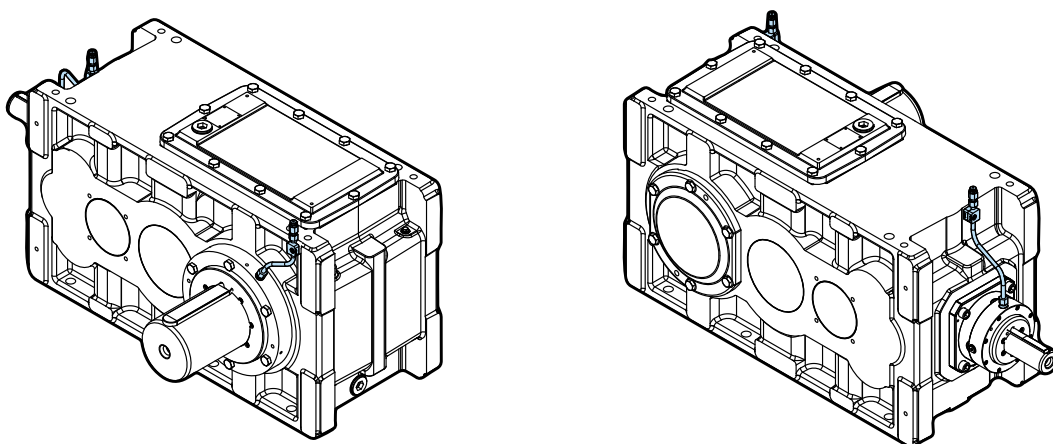
Motor pump

a) With pressure lubrication (motor pump)



b) With pressure lubrication (motor pump) and plate cooler

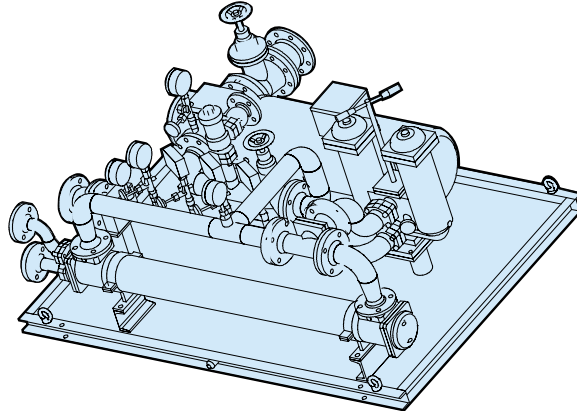


E2H, E3H, E4H, E3B, E4B, E3C, E4C .. -R1**Oil expansion tank****Piping system for forced lubrication****Greasing pipe system**

E2H, E3H, E4H, E3B, E4B, E3C, E4C .. -R1

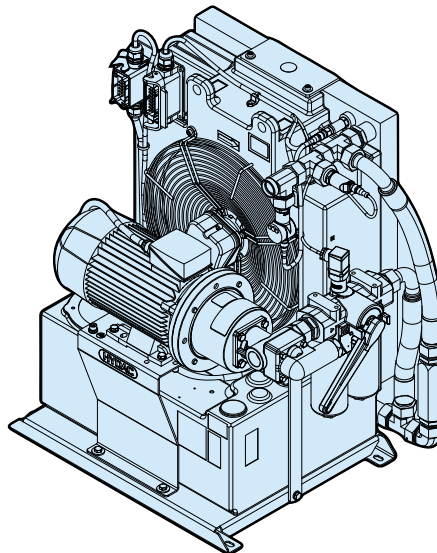
Separate cooling and lubrication system

Dimensions on request



External water cooling system

Dimensions on request



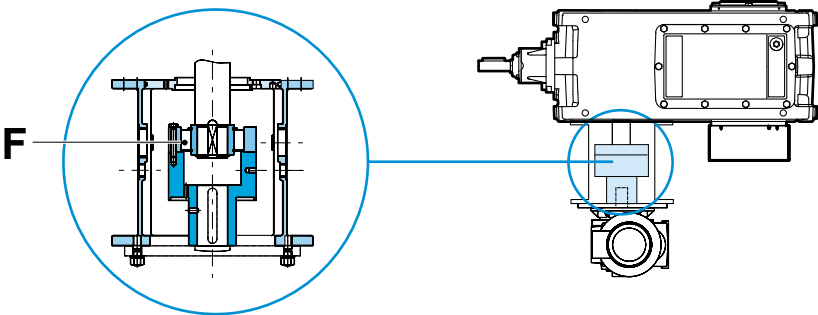
E2H, E3H, E4H, E3B, E4B, E3C, E4C

F = Free-wheel
R = Backstop

The elements R and F are located in closed Housings and are lubricated by the gearing oil

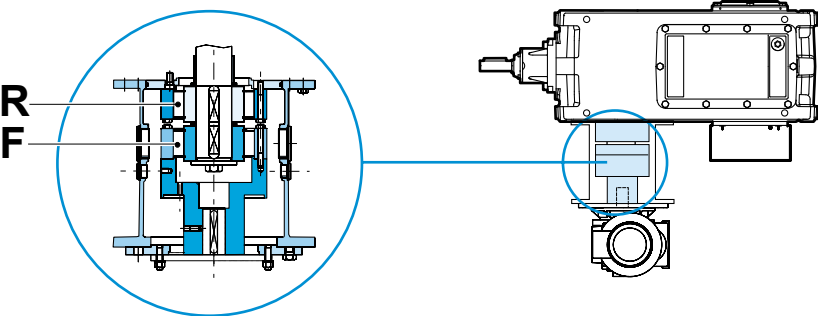
Version A

To avoid a turn back of the installation, the auxiliary drive must possess a motor-brake

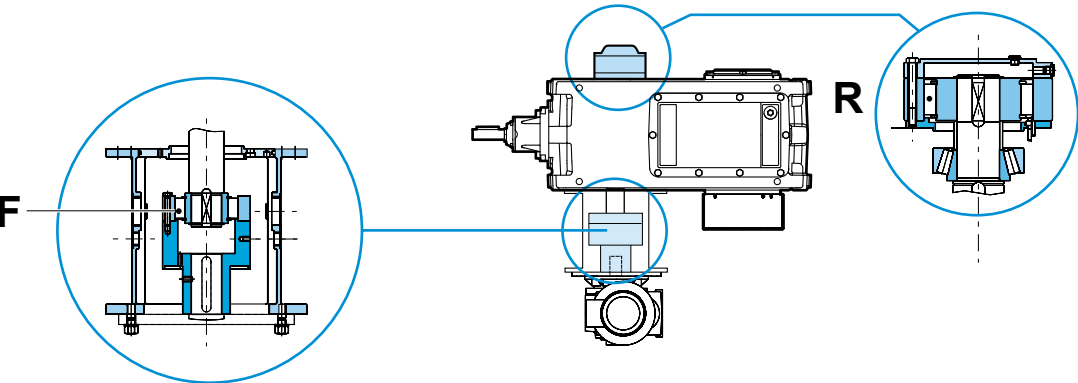


Version B

Standard execution



Version C

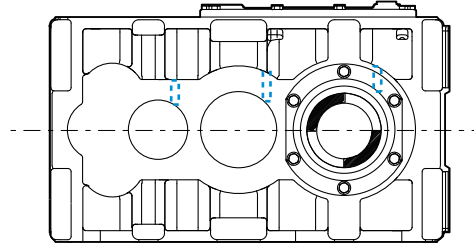


E2H, E3H, E4H, E3B, E4B, E3C, E4C .. -R1**Attachment of sensors for control of rolling bearing**

In order to avoid unplanned machine downtimes, we can offer the gearbox ready for gears and bearings condition monitoring.

Starting with the oil temperature monitoring up to the monitoring of the rolling bearings.

We supply the threaded holes for the sensors as standard feature, and we can supply the sensor on request only.

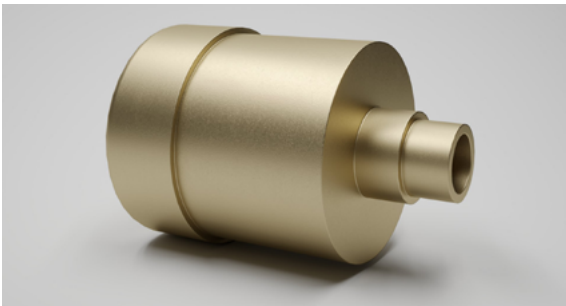


E2H, E3H, E4H, E3B, E4B, E3C, E4C



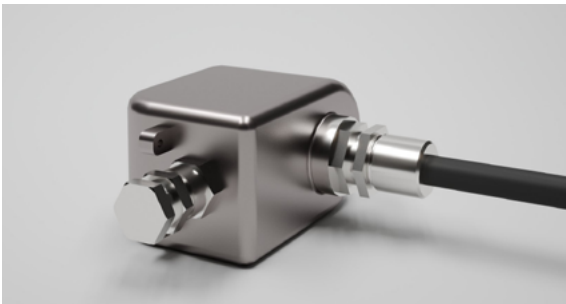
Breather with filter

A breather with a filter can be used to prevent dust from entering the gearbox while the gear unit is cooling down.



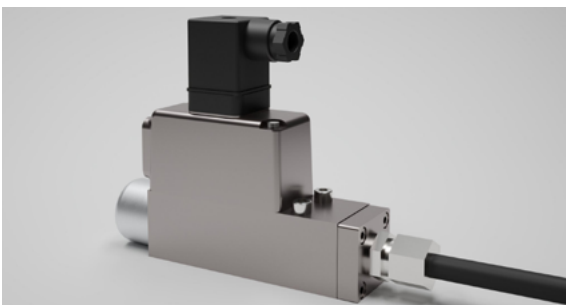
Breather with wet filter

If the humidity is high, we recommend a breather with wet filter to prevent water vapor from penetrating the gear oil.



Temperature switch

To control the max. oil temperature there is the possibility to install a Temperature switch into the oil sump and get output signal when the temperature is above certain level.



Pressure switch

In case of a force lubrication or cooling unit there is the possibility to control the oil pressure with a pressure switch. If the oil pressure is below certain pressure a signal will stop the main motor of the gearbox.

E2H, E3H, E4H, E3B, E4B, E3C, E4C

**PT100**

To monitor the oil temperatures on the gearbox, and set up different level of attention at certain temperature, for instance start, alert and stop of the gearbox.

**Manometer**

In case of a force lubrication or cooling unit there is the possibility to have visual control the oil pressure with a manometer.

**Oil level switch**

With the oil level switch is it possible to control the min. oil level of the gearbox in case you use a heater.

**Oil drain with ball valve**

For an easy, safe and clean oil drain from the gearbox, we can deliver an oil drain with a ball valve

E2H, E3H, E4H, E3B, E4B, E3C, E4C



Oil filter, single, double

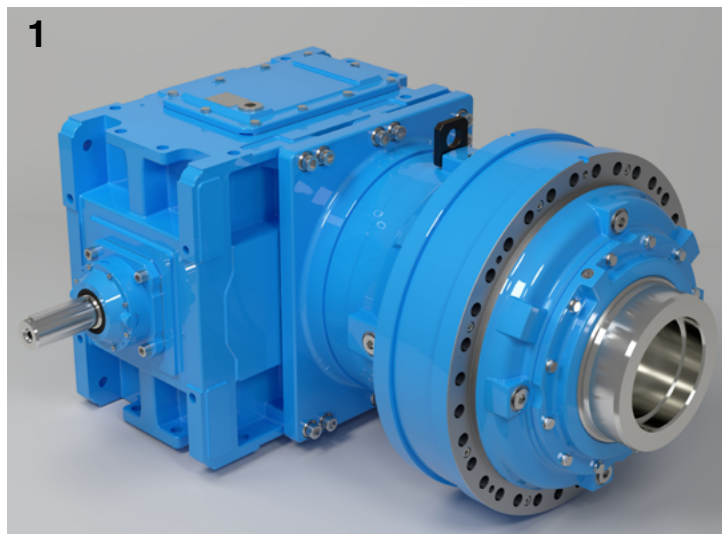
To increase the bearing lifetime is it possible in case of force lubrication / cooling to use an oil filter. We recommend a double switching filter for 24 hours operation.



Regulator for quantity of cooling water

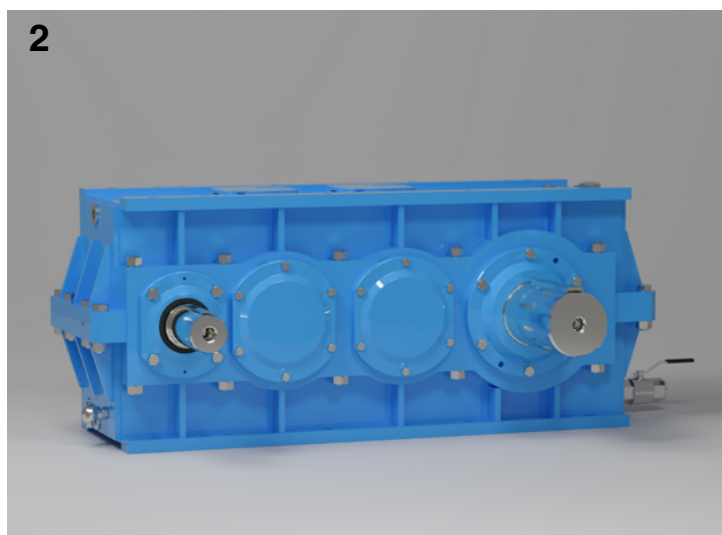
In order to have a constant gear oil temperature with water cooling, we recommend the installation of a water regulator.

The Brevini EvoMax™ gearbox is designed for rough Heavy Duty, Material Handling and Marine application. They ensure high performances in demanding applications based on their modularity and a wide range of combinations. Based of the Brevini EvoMax™ gearbox Series we deliver dedicated developed product series for special application for example steel or crane industry.



1 - High Power

The High Power is a compact bevel-helical gearbox with a planetary gearbox on the output. Torque range from 90 kNm up to 2.100 kNm Ratios up to 8.000



2 - POSIRED N

The POSIRED N is a helical gearbox with an extended center distance. Torquerange 8 kNm up to 290 kNm Ratios from 12,5 up to 500



3 - POSIRED TS

The POSIRED TS is a helical gearbox with two counter-rotating output shafts. Torquerange 1 kNm up to 110 kNm Ratios from 5 up to 100

	SI system into Imperial System	Imperial System into SI System
Power rating	kW x 1.341 = HP	HP x 0.7457 = kW
Torque	Nm x 8.851 = in-lbs Nm x 0.7375 = ft-lbs	in-lbs x 0.113 = Nm ft-lbs x 1.356 = Nm
Force	N x 0.2248 = lbs	lbs x 4.4482 = N
Stress	N/mm ² x 0.00689 = lbs/in ² (psi)	lbs/in ² x 145.04 = N/mm ²
Mass moment of inertia	kgm ² x 23.73 = lb-ft ²	lb-ft ² (psi) x 0.0421 = kgm ²
Lenght	mm x 0.03937 = inches m x 39.3701 = inches m x 3.2808 = foot µm x 0.03937 = mil (0.001 in)	inches x 25.4 = mm inches x 0.0254 = m foot x 0.3048 = m mil (0.001 in) x 25.4 = µm
Weight (mass)	kg x 2.205 = lbs	lbs x 0.4536 = kg
Volume	l x 0.264 = US gal	US gal x 3.785 = l
Volume flow rate	l/min x 0.264 = gal/min (GPM) m ³ /h x 0.2271 = gal/min (GPM)	gal/min (GPM) x 3.785 = l/min gal/min (GPM) x 4.403 = m ³ /h
Velocity	m/s x 196.85 = ft/min	ft/min x 0.0051 = m/s

Symbol	Name	Symbol	Name	Approximate temperature	
				°C	deg F
Nm	Newton-Meter	in-lbs	inch pounds	20	68
N/mm ²	Newton/Millimeter ²	ft-lbs	foot pounds	27	80
kgm ²	Kilogramm-Meter ²	lbs/in ² (psi)	pounds/inch ²	38	100
m	Meter	in	inches	-18	0
mm	Millimeter (0.001 Meter)	ft	foot	-12	10
µm	Mikrometer (0.001 Millimeter)	mil	0.001 inch	-7	20
kg	Kilogramm	lbs	pounds	0	32
kW	Kilowatt	HP	horsepower	4	40
N	Newton			15	60
l	Liter	lb-ft ²	pound foot ²	49	120
l/min	Liter/Minute	US gal	US gallons	60	140
m ³ /h	Meter ³ /Stunde	gal/min (GPM)	gallons/minute	77	170
m/s	Meter/Sekunde	ft/min	foot/minute	93	200

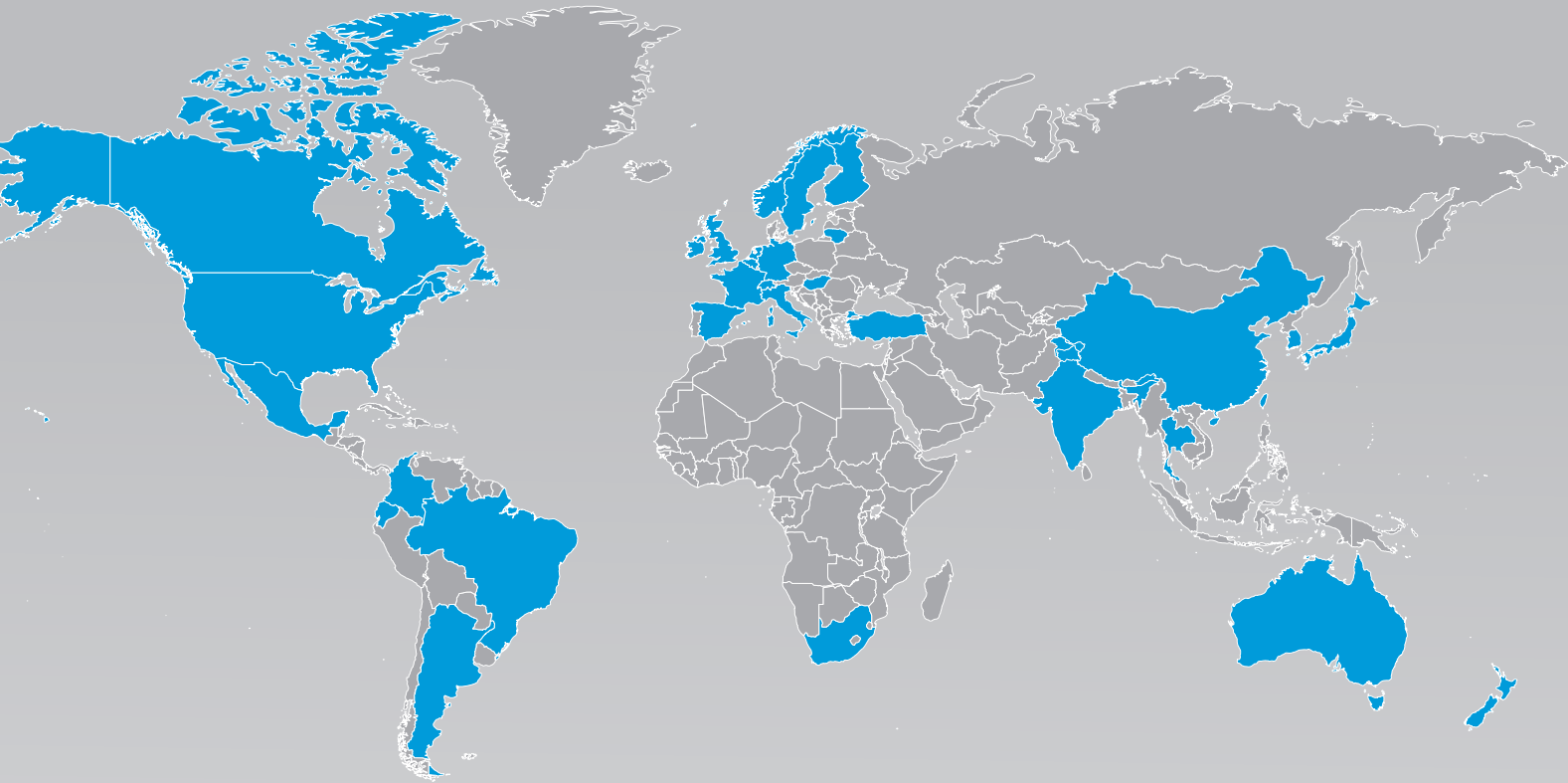
Torque calculation			
SI system		Imperial System	
$T = 9550 \times \frac{P}{n}$ [Nm]	P in kW n in min ⁻¹	$T = 5252 \times \frac{P}{n}$ [ft-lbs] $T = 63025 \times \frac{P}{n}$ [in-lbs]	P in HP n in rpm
$T = 159.2 \times \frac{P}{n}$ [Nm]	P in kW n in 1/s	$T = 87.53 \times \frac{P}{n}$ [ft-lbs] $T = 1050.42 \times \frac{P}{n}$ [in-lbs]	P in HP n in rps

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With a presence in 31 countries, Dana Incorporated boasts more than 150 engineering, manufacturing, and distribution facilities. Our worldwide network of local service centers provides assurance that each customer will benefit from the local proximity and responsiveness.

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Dana is an integral partner for virtually every major vehicle and engine manufacturer worldwide. We are a leading supplier of drivetrain, sealing, and thermal technologies to the global automotive, commercial-vehicle, and off-highway markets. Founded in 1904, we employ thousands of people across six continents.



About Dana Off-Highway Drive and Motion Technologies

Dana delivers fully optimized Spicer® drivetrain and Brevini® motion systems to customers in construction, agriculture, material-handling, mining, and industrial markets. We bring our global expertise to the local level with technologies customized to individual requirements through a network of strategically located technology centers, manufacturing locations, and distribution facilities.

Learn more about Dana's drivetrain and motion systems at dana.com/offhighway.

Dana-Industrial.com

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Capacity ratings, features, and specifications vary depending upon the model and type of service. Application approvals must be obtained from Dana; contact your representative for application approval. We reserve the right to change or modify our product specifications, configurations, or dimensions at any time without notice.



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Motion Systems