



SEW
EURODRIVE

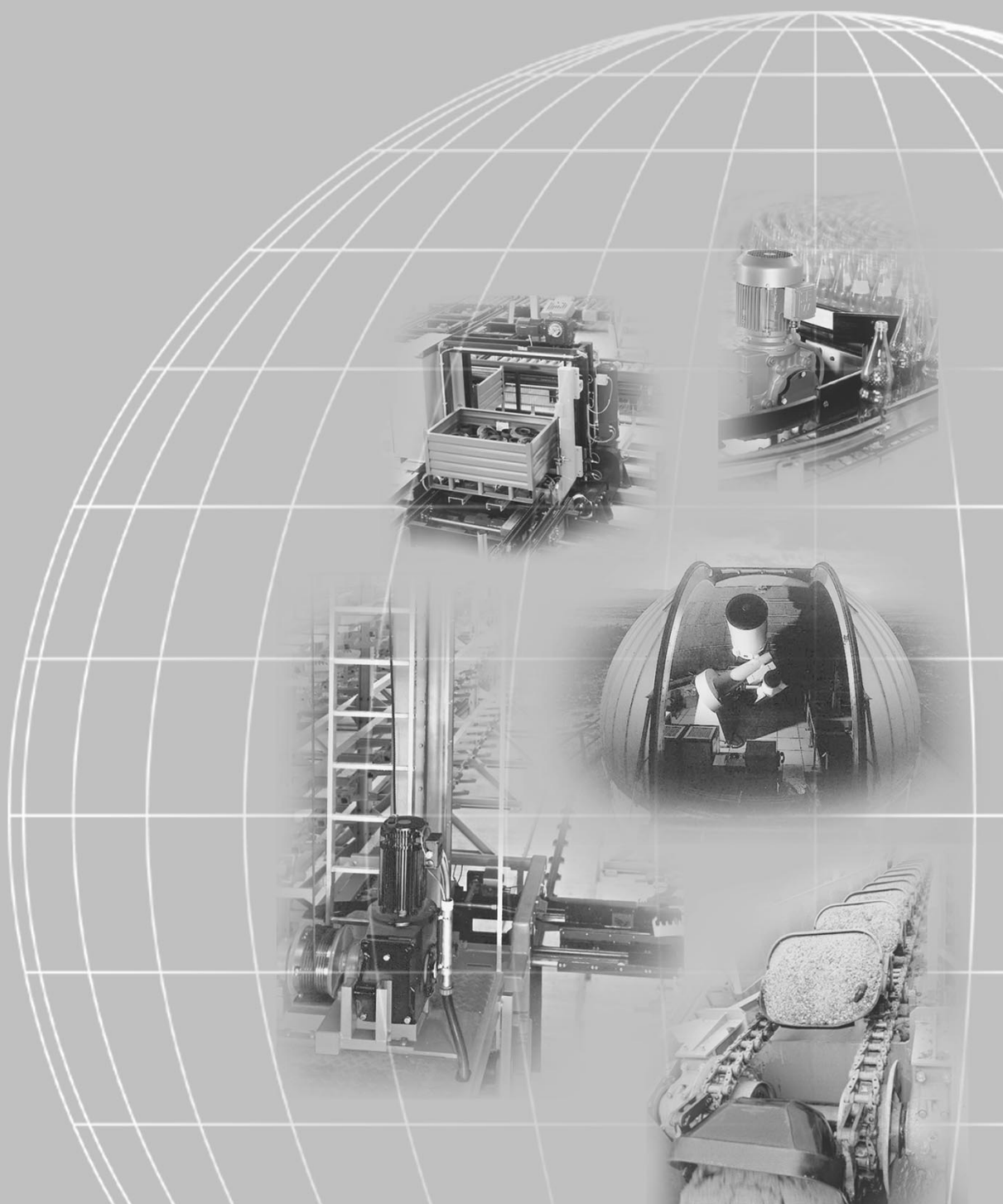
Latest News!

Spiroplan® W10 DT56 Geared Motor

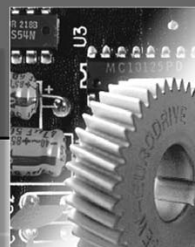
Edition

06/2001



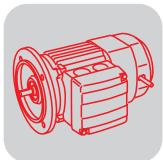


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1	The New Design	4
2	Available Types	5
3	Torques of Spiroplan® Geared Motors.....	5
4	Advantages for You	6
5	Technical Data.....	9
5.1	Type designation and options	9
5.2	W10 gear unit.....	10
5.3	50 Hz motors.....	14
5.4	60 Hz motors (NEMA/CSA)	14
5.5	BMG02 brake	14
6	Dimension Sheets	15



1 The New Design

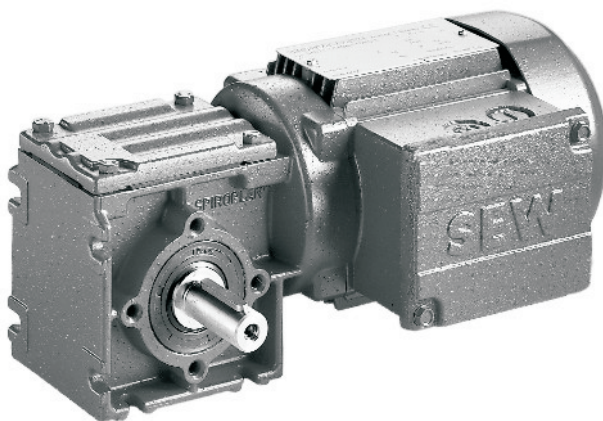


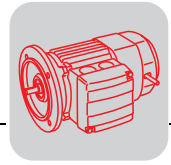
Fig. 1: Spiroplan® W10 DT56M4 geared motor

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Fig. 2: Spiroplan® WAF10 DT56L4 geared motor with size 80 output flange

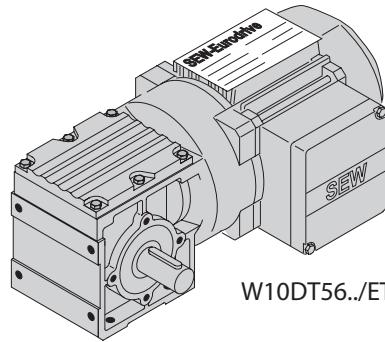
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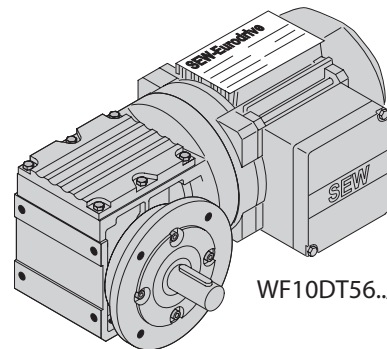
2 Available Types

All versions at a glance

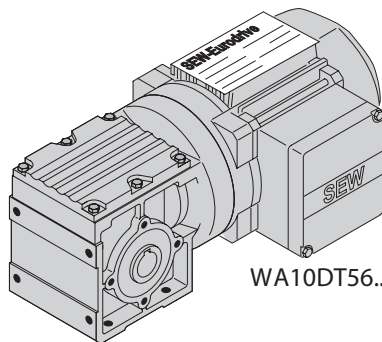
Name	Type	Variant
W10DT56../ET56..	Spiroplan® geared motor with solid shaft	
WF10DT56../ET56..	16 x 40 mm, foot-mounted version	B5 flange with Ø 80 mm and Ø 120 mm
WA10DT56../ET56..	Spiroplan® geared motor with hollow shaft	
WAF10DT56../ET56..	Ø 16 mm, shaft-mounted version	B5 flange with Ø 80 mm and Ø 120 mm



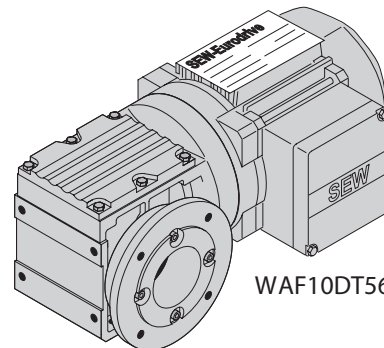
W10DT56../ET56..



WF10DT56../ET56..



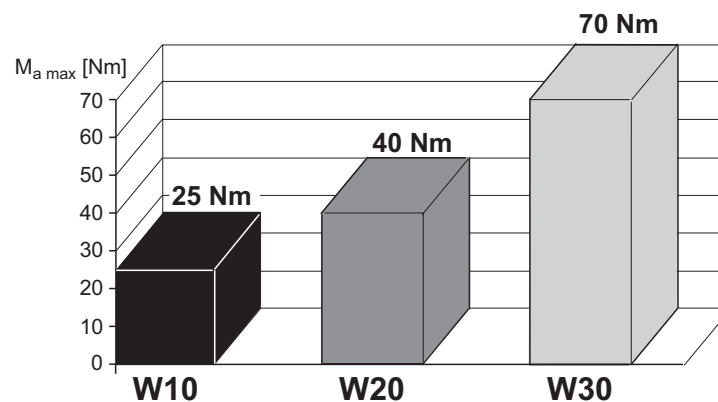
WA10DT56../ET56..



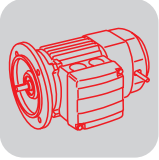
WAF10DT56../ET56..

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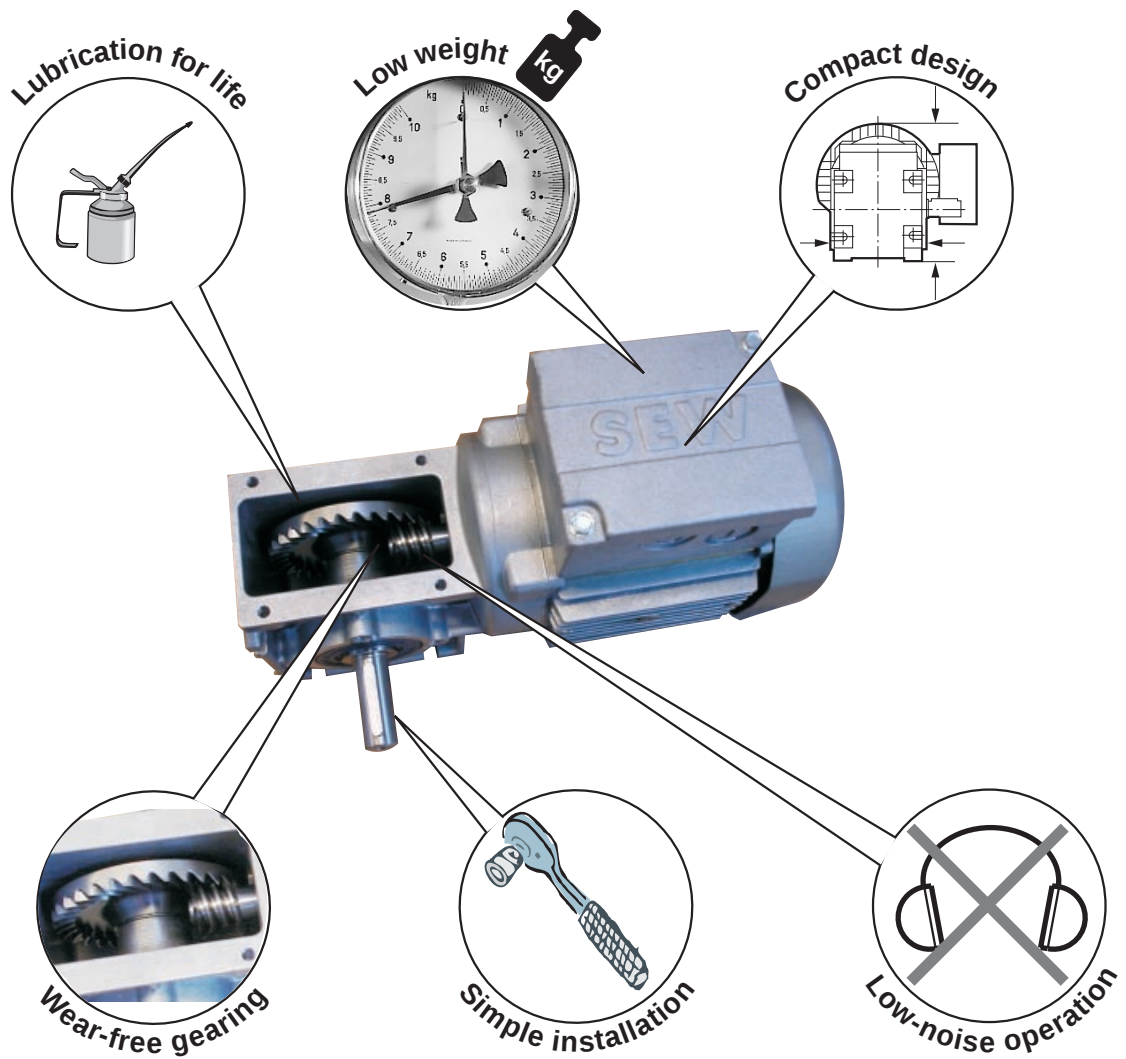
3 Torques of Spiroplan® Geared Motors



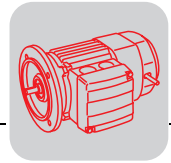
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4 Advantages for You



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Spiroplan® W10 gear units

- Wear-free and low-noise (approx. 50 dB(A))
- Aluminum die-cast housing, supplied unpainted as standard
- Maximum torque 25 Nm
- Speeds between 17 and 152 rpm
- Ratio range $i = 8.2 - 75$ with a total of 12 stages
- Wide range of versions:
 - with solid shaft $\varnothing 16$ mm, A and/or B end output
 - with solid shaft $\varnothing 16$ mm and flange $\varnothing 80$ mm or $\varnothing 120$ mm
 - with hollow shaft $\varnothing 16$ mm with or without torque arm
 - with hollow shaft $\varnothing 16$ mm and flange $\varnothing 80$ mm or $\varnothing 120$ mm
- Universal application in all mounting positions as service life lubrication is independent of the mounting position
- Wide range of attachment options:
 - Equal hole distances in side and bottom mounting surfaces
 - Equal shaft heights for side and bottom mounting surfaces

DT56 motor

- Motors with 90 W and 120 W rated power
- Terminal box (→ Fig. 4, item 1) with cable run from directions "X" (= normal position) and "2" (→ Fig. 3)

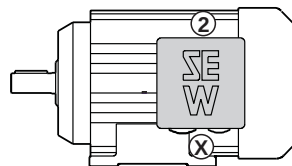


Fig. 3: Position of the cable entry

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- Simple to connect supply voltage to terminal block with spring-cage terminals (→ Fig. 4, item 2)
- Fixed connection of the star point in the winding overhang

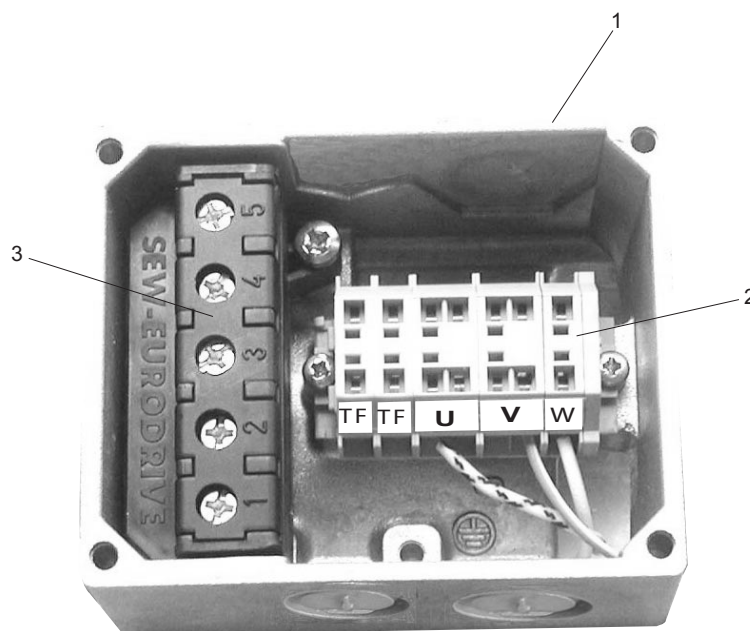
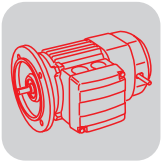


Fig. 4: Terminal box with terminal block and spring-cage terminals

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ET56 single-phase version

- The ET56 single-phase motor is available as an alternative to the three-phase version. The ET56 is supplied with a running capacitor mounted and connected.

New BMG02 brake

- The new BMG02 (→ Fig. 5) brake can be mounted on the motor as an option. The design is based on the BMG principle with noise dampening measures. Automatic manual brake disengagement (2) is available as an option for the brake (SEW unit designation HR). The electrical power supply to the brake is possible either from a brake rectifier in the terminal box (→ Fig. 4, item 3) or from the switch cabinet.

Low weight

- The brake increases the total weight of the geared motor by only 0.8 kg.

Long life, simple maintenance

- A sufficiently long service life is achieved by using a very resilient brake material, without the need to adjust the air gap.
- In the event of wear or a malfunction, the entire brake can be exchanged by unscrewing three bolts (3) and disconnecting the electrical feeder cables (1).

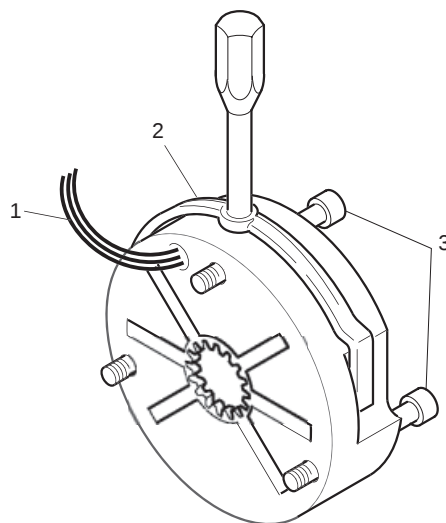
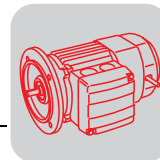


Fig. 5: BMG02 brake

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5 Technical Data

5.1 Type designation and options

Spiroplan® right-angle gear units

W10	Foot-mounted with solid shaft
WF10	B5 flange-mounted with solid shaft
WA10	Shaft-mounted with hollow shaft
WAF10	B5 flange-mounted with hollow shaft

Standard AC motors, DT56.. series

Mount-on motor for gear unit

Standard single-phase motors, ET56.. series

Mount-on motor for gear unit

Motor options

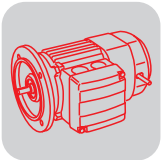
/BMG	Brake (reduced noise)
/BMG/HR	Brake with manual release, self-disengaging
/TF (DT56 only)	Thermistor sensor (PTC resistance) for thermal classification "B" or for thermal classification "F"

Other versions without type designation

- Enclosure IP54, IP55
- CSA / NEMA
- Thermal classification "F"



For detailed technical data, please refer to the Geared Motors catalog, edition 05/2001.



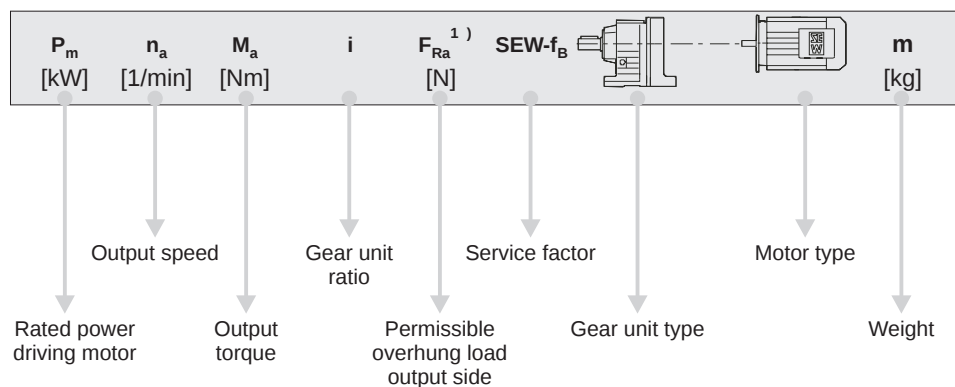
5.2 W10 gear unit

Gear unit type	$M_a \text{ max}$ [Nm]	$F_{q \text{ max}}^{1)}$ [N]	i	Oil volume [l]	Motor types which can be fitted
W10	25	1800	8.2 - 75	0.16	DT56

1) Foot-mounted gear unit

Selection table

The following figure shows the structure of the selection table for Spiroplan® geared motors W..10 DT56...

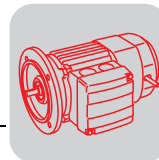


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P_m [kW]	n_a [rpm]	M_a [Nm]	i	$F_{Ra}^{1)}$ [N]	SEW f_B		m [kg]
0.09	17	20	75.00*	1800	1.25		
	21	18	60.00*	1800	1.45		
	26	16	48.00*	1800	1.55		
	32	15	39.00*	1800	1.70		
	38	13	32.50*	1800	1.90		
	45	12	27.50*	1800	2.1	W 10	DT 56M4 5.3
	51	11	24.50*	1800	2.3	WF 10	DT 56M4 5.5
	64	9.4	19.50*	1800	2.7	WA 10	DT 56M4 5.3
	76	8.4	16.50*	1800	2.4	WAF 10	DT 56M4 5.5
	87	7.6	14.33	1800	2.9		
	122	5.8	10.25*	1800	2.2		
	152	4.8	8.20*	1800	2.5		
0.12	17	27	75.00*	1800	0.95		
	21	23	60.00*	1800	1.05		
	26	21	48.00*	1800	1.15		
	32	20	39.00*	1800	1.30		
	38	18	32.50*	1800	1.40		
	45	16	27.50*	1800	1.55	W 10	DT 56L4 5.3
	51	15	24.50*	1800	1.70	WF 10	DT 56L4 5.5
	64	13	19.50*	1800	2.0	WA 10	DT 56L4 5.3
	76	11	16.50*	1800	1.80	WAF 10	DT 56L4 5.5
	87	10	14.33	1800	2.2		
	122	7.7	10.25*	1800	1.70		
	152	6.3	8.20*	1800	1.90		

* Ultimate gear unit reduction ratio

1) Overhung load specified for foot-mounted gear unit with solid shaft



Assembly/disassembly kit for hollow shaft

SEW recommends two possibilities of mounting gear units with hollow shaft and key onto the input shaft of the driven machine (= customer's shaft):

1. Assemble with the supplied fixing parts.
2. Assemble using the optional SEW assembly/disassembly kit.



- Always use the supplied NOCO® Fluid paste during the assembly procedure. This avoids contact corrosion and facilitates subsequent disassembly.
- The key dimension X is defined by the customer, however X must be $> DK$.

1. Supplied fixing parts

The following fixing parts are supplied as standard:

- Retaining screw with washer (2)
- Circlip (3)

Customer shaft

- The installation length of the customer shaft with contact shoulder (A) must be $L8 - 1$ mm.
- The installation length of the customer shaft without contact shoulder (B) must equal $L8$.

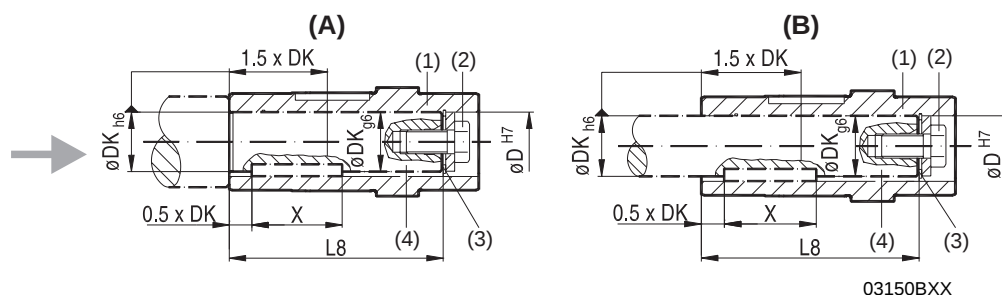


Fig. 6: Customer shaft with contact shoulder (A) and without contact shoulder (B)

(1) Hollow shaft

(2) Retaining screw with washer

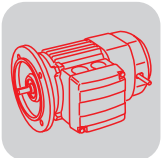
(3) Circlip

(4) Customer shaft

Dimensions and tightening torque

The retaining screw (2) must be tightened to the tightening torque MS given in the following table.

Gear unit type	D^{H7} [mm]	DK [mm]	L8 [mm]	MS [Nm]
WA..10	16	16	69	8



2. SEW assembly/ disassembly kit

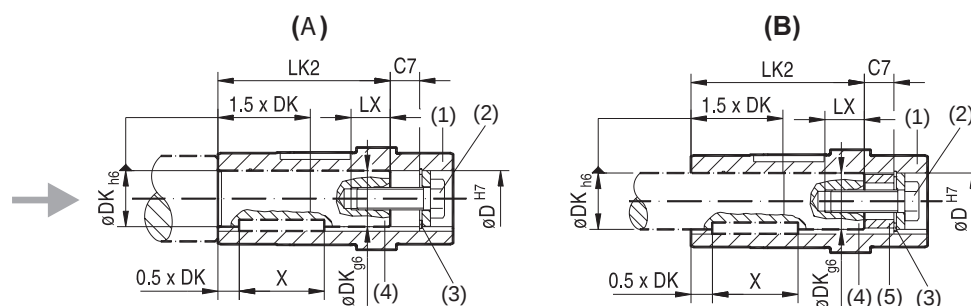
You can also use the optional SEW assembly/disassembly kit for assembly. This can be ordered for the specific gear unit types by quoting the part numbers in the table below. The scope of delivery includes:

- Distance piece for assembly without contact shoulder (5)
- Retaining screw for assembly (2)
- Forcing disk for disassembly (7)
- Fixed nut for disassembly (8)

The short retaining screw supplied as standard is not used.

Customer shaft

- The installation length of the customer shaft must be LK2. The distance piece must not be used if the customer's shaft **does have a contact shoulder (A)**.
- The installation length of the customer shaft must be LK2. The distance piece must be used if the customer shaft **does not have a contact shoulder (B)**.



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Fig. 7: Customer shaft with contact shoulder (A) and without contact shoulder (B)

(1) Hollow shaft

(2) Retaining screw with washer

(3) Circlip

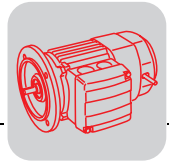
(4) Customer shaft

(5) Distance piece

Dimensions, tightening torque and part numbers

The retaining screw (2) must be tightened to the tightening torque MS given in the following table.

Type	D^{H7} [mm]	DK [mm]	LK2 [mm]	LX^{+2} [mm]	C7 [mm]	MS [Nm]	Assembly/ disassembly kit part number
WA...10	16	16	57	12.5	11	8	643 712 5



Disassembly

Only applies if the SEW assembly/disassembly kit was previously used for assembly. Proceed as follows for disassembly:

1. Loosen the retaining screw (6).
2. Remove the circlip (3) and, if used, the distance piece (5).
3. Insert the forcing disk (7) and the fixed nut (8) between the customer shaft (4) and circlip (3) according to Fig. 8.
4. Re-insert the circlip (3).
5. Re-insert the retaining screw (6). You can now push the gear unit off the shaft.

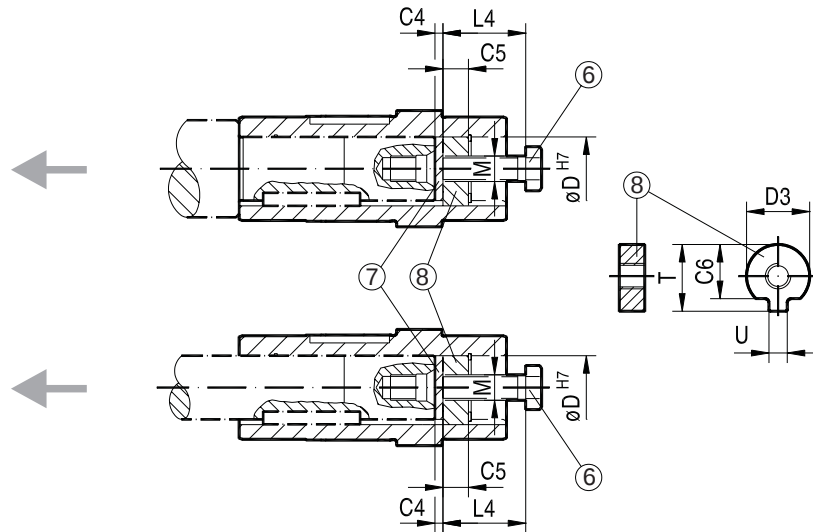
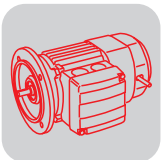


Fig. 8: Disassembly

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- (6) Retaining screw
- (7) Forcing disk
- (8) Fixed nut for disassembly

Type	D ^{H7} [mm]	M	C4 [mm]	C5 [mm]	C6 [mm]	U ^{-0.5} [mm]	T ^{-0.5} [mm]	D3 ^{-0.5} [mm]	L4 [mm]	Assembly/ disassembly kit part number
WA...10	16	M5	5	5	12	4.5	18	15.7	50	643 712 5



5.3 50 Hz motors

Motor type	P _N [kW]	n _N [rpm]	I _N 3~ 220-240V (3~ 230 V) [A]	I _N 3~ 380-415V (3~ 400 V) [A]	cos φ	I _A /I _N	M _A /M _N	M _H /M _N
DT56M4	0.09	1300	0.54 (0.50)	0.31 (0.29)	0.68	2.6	2.1	1.8
DT56L4	0.12	1300	0.80 (0.73)	0.46 (0.42)	0.68	2.6	2.2	1.9
			1~ 230 V [A]					
ET56L4	0.09	1360	0.85		0.93	2.1	0.7	0.7

Motor type	J ¹⁾ [10 ⁻⁴ kgm ²]	J ²⁾ [10 ⁻⁴ kgm ²]	Z ₀ BG [per h]	M _{Bmax} [Nm]
DT56M4	1.1	1.2	10000	0.8
DT56L4	1.1	1.2	10000	1.2
ET56L4	1.1	1.2	³⁾	0.8

- 1) Without brake
2) With brake
3) No data available at present

5.4 60 Hz motors (NEMA/CSA)

Motor type	P _N [kW]	n _N [rpm]	I _N 3~ 230V [A]	I _N 3~ 460V [A]	cos φ	I _A /I _N	M _A /M _N	M _H /M _N
DT56M4	0.11	1600	0.58	0.29	0.69	3.0	2.2	1.9
DT56L4	0.15	1600	0.82	0.41	0.70	2.8	2.2	2.0
			1~ 110 V [A]	1~ 230 V [A]				
ET56L4	0.09	1660	0.80	0.40	0.99	2.1	0.9	0.9

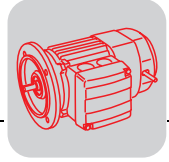
Motor type	J ¹⁾ [10 ⁻⁴ kgm ²]	J ²⁾ [10 ⁻⁴ kgm ²]	Z ₀ BG [per h]	M _{Bmax} [Nm]
DT56M4	1.1	1.2	8000	0.8
DT56L4	1.1	1.2	8000	1.2
ET56L4	1.1	1.2	³⁾	0.8

- 1) Without brake
2) With brake
3) No data available at present

5.5 BMG02 brake

Brake Type	For motor size	W [10 ⁶ J]	t ₁ [10 ⁻³ s]	t _{2I} [10 ⁻³ s]	t _{2II} ¹⁾ [10 ⁻³ s]	P _B [W]	Max. braking torque [Nm]
BMG02	DT56 ET56	30	28	100	10	27	1.2 0.8

- 1) With a BME, BMP, BMK or BMH rectifier in the switch cabinet



6 Dimension Sheets

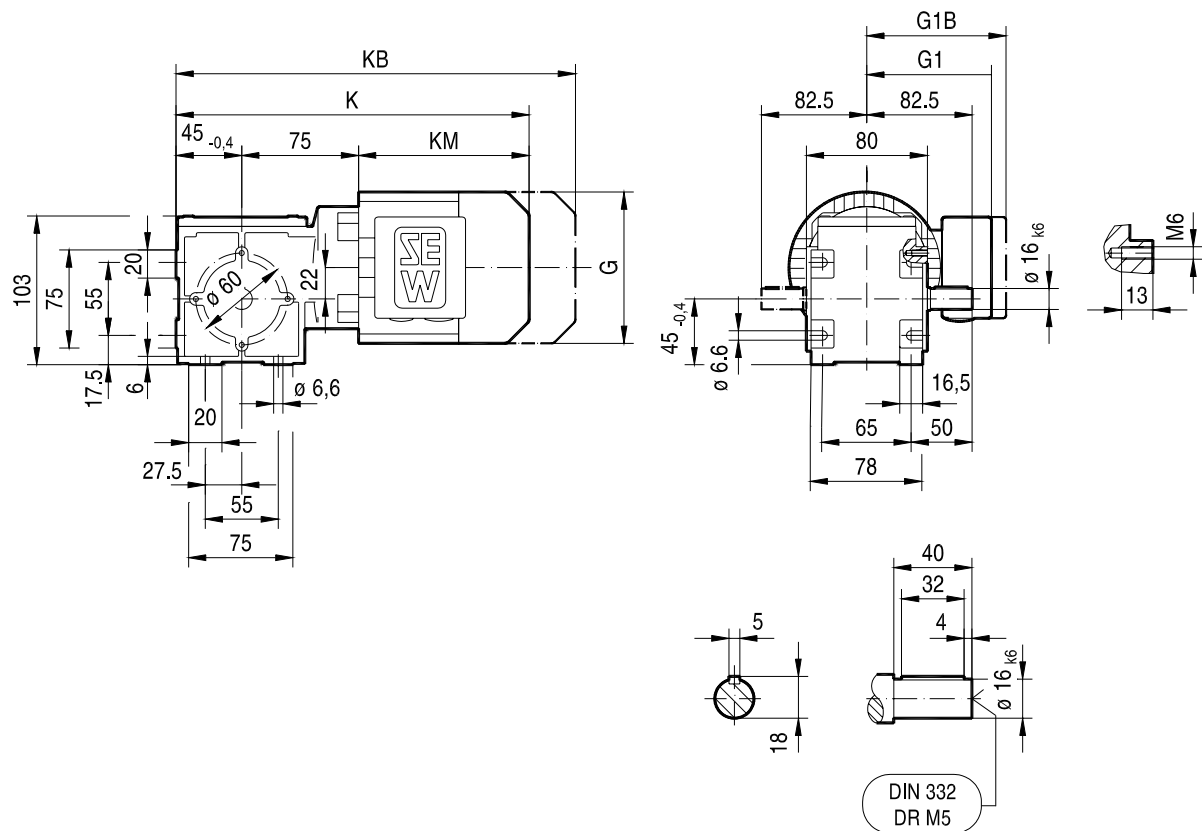
prEN 50347

The new dimension designations used in prEN 50347 / IEC 72-1 are given in brackets alongside the dimensions in question used in the dimension tables of the dimensions sheets:

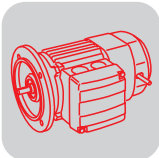
Dimension	Old designation	To prEN 50347
Diameter	G	AC
Distance from center line to outer contour of terminal box	G1	AD
Distance from flange surface to end of machine	KM	LB

W10..

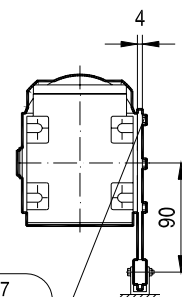
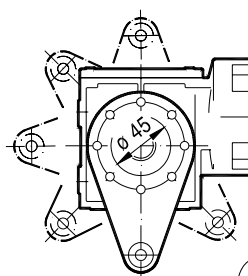
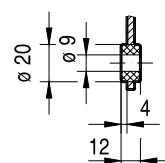
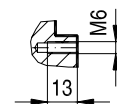
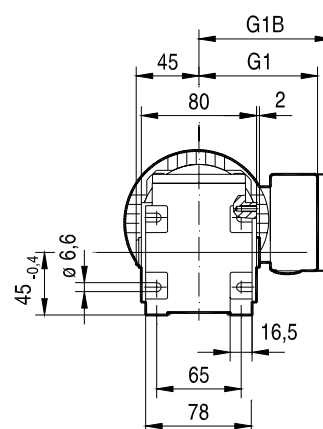
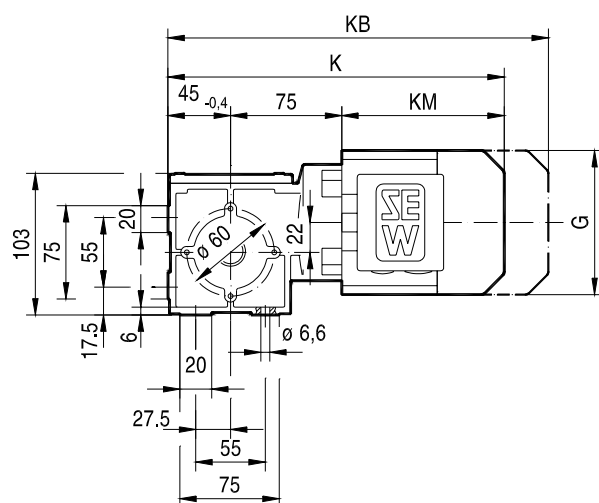
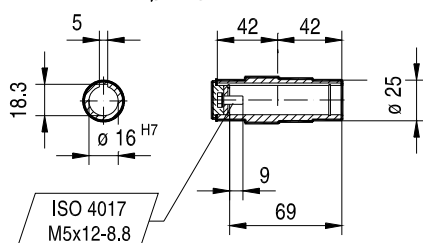
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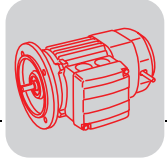
	DT56..										
G (AC)	109										
G1 (AD)	87										
G1B	87										
K	256										
KB	292										
KM (LB)	136										



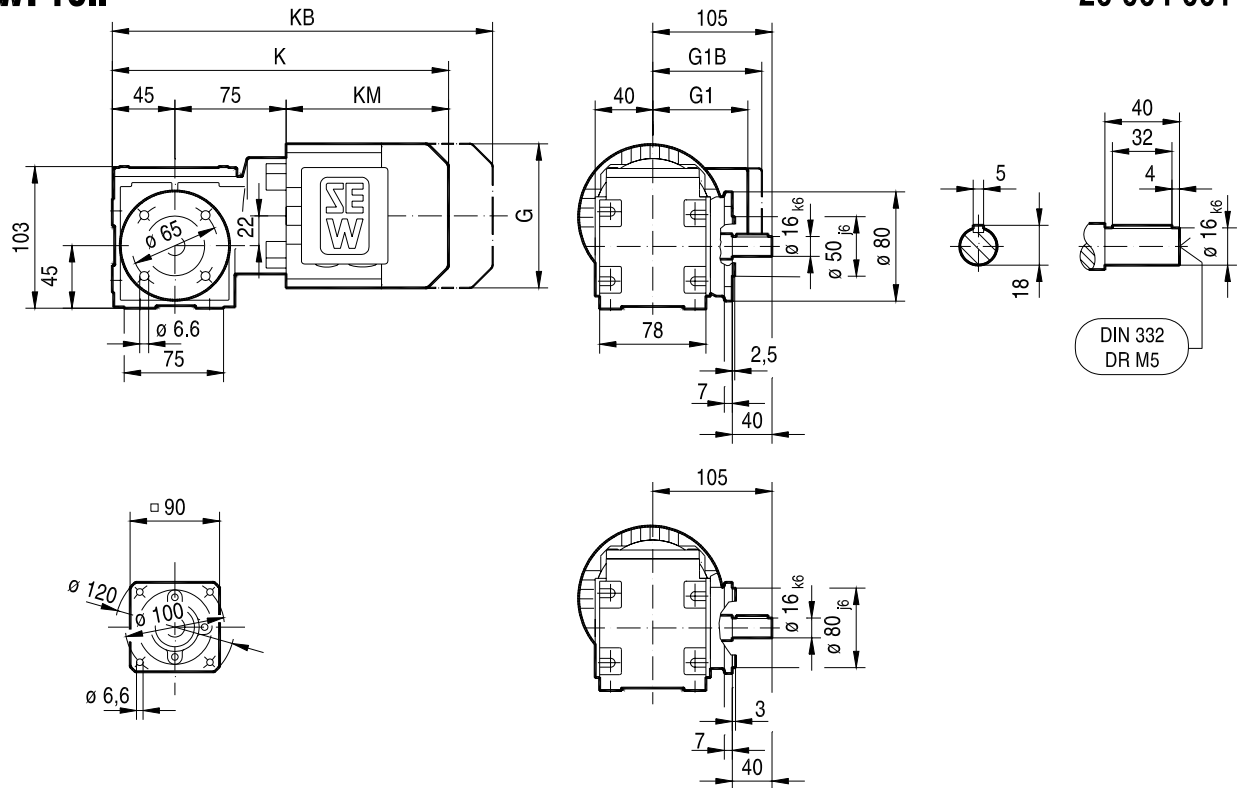
20 007 001

WA10/T..DIN 4017
M6x12-8.8**WA10..****Ø 16 H7**

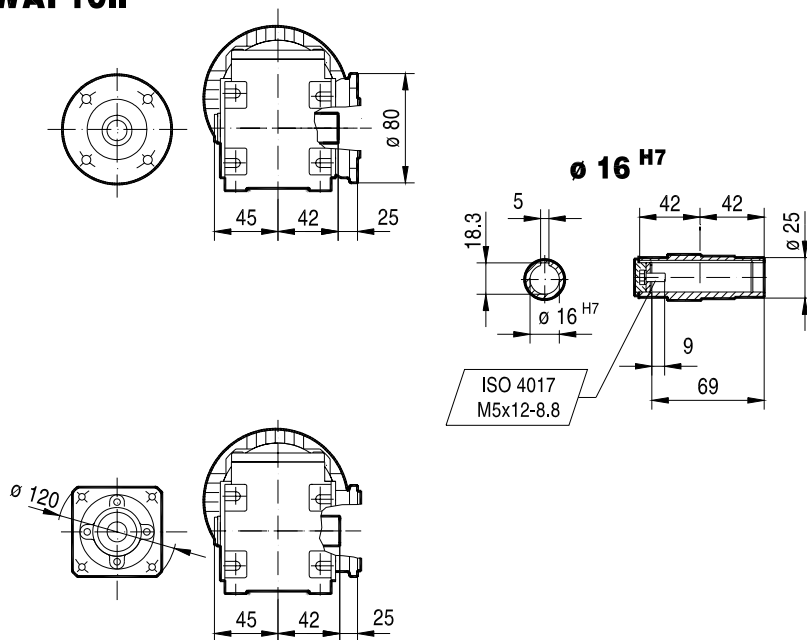
	DT56..										
G (AC)	109										
G1 (AD)	87										
G1B	87										
K	256										
KB	292										
KM (LB)	136										



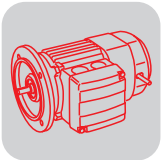
WF10..



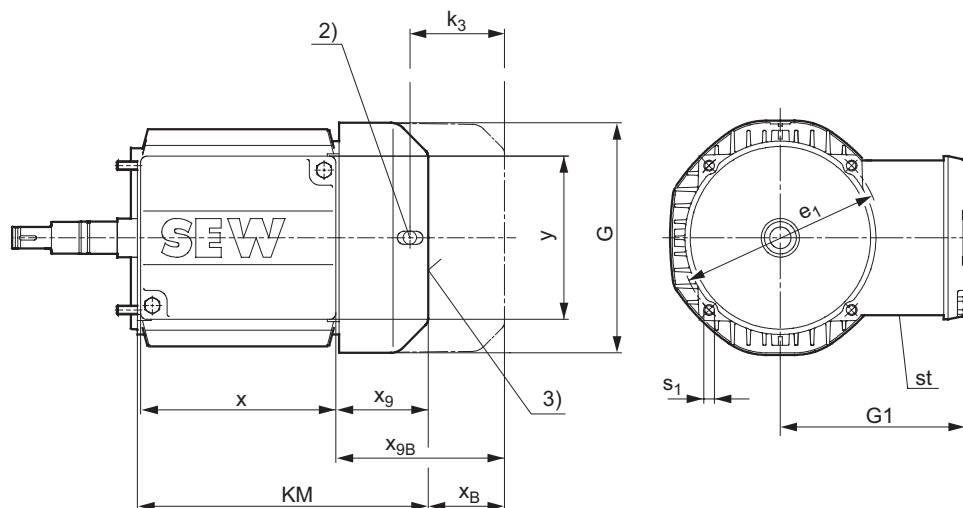
WAF10..



	DT56..										
G (AC)	109										
G1 (AD)	87										
G1B	87										
K	256										
KB	292										
KM (LB)	136										



Additional length for DT56../+BMG brake motors



50332AXX

	DT56../+BMG
G	108
G1	87
k ₃	48
st	2xØ12.5 ¹⁾ 2xØ20.5 ¹⁾
x ₉	43
x _B	36
x _{9B}	79
x	92
y	76
e ₁	100
s ₁	M4

Total length of brake motor:

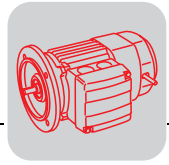
$$BM = KM + x_B$$

	DT56../+BMG
KM	136
x _B	36
BM	172

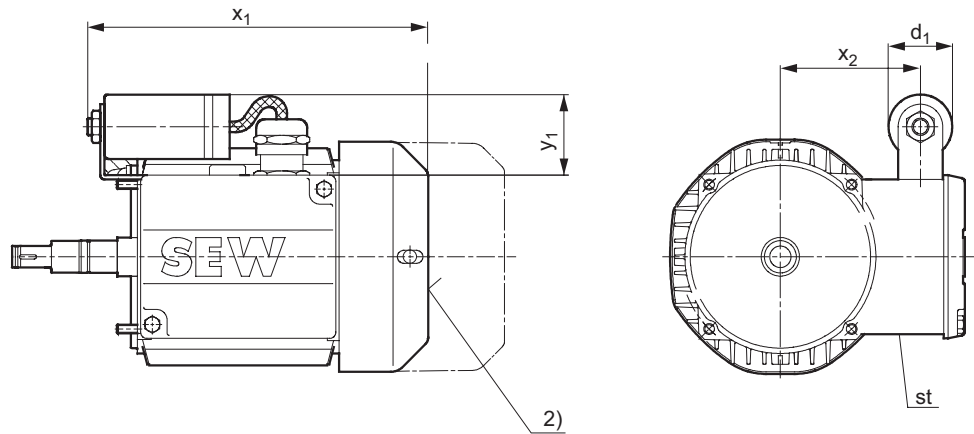
1) Knock-out for M12x1.5 and M20x1.5

2) Manual brake release and terminal box can be turned together through 90°

3) Note the space required for removing the fan guard



Additional length for ET56.. single-phase motors



50347AXX

	ET56..
st	1xØ12.5 ¹⁾ 1xØ20.5 ¹⁾
y ₁	38
x ₁	161
x ₂	66
d ₁	30

1) Knock-out for M12x1.5 and M20x1.5

2) Note the space required for removing the fan guard

SEW-EURODRIVE GmbH & Co · P.O. Box 3023 · D-76642 Bruchsal/Germany · Phone +49-7251-75-0
Fax +49-7251-75-1970 · <http://www.sew-eurodrive.com> · sew@sew-eurodrive.com

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