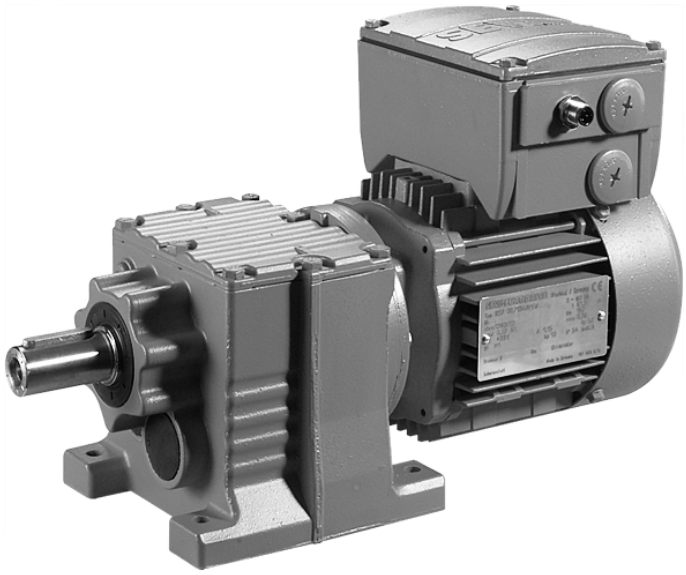
4 MOVI-SWITCH® 1E

4.1 Description of functions

	NOTES
	• This catalog describes MOVI-SWITCH® AC motors. • The selection tables for MOVI-SWITCH® gearmotors correspond to those in the gearmotor catalog for the same power rating.

The following figure shows a MOVI-SWITCH® 1E helical gearmotor:



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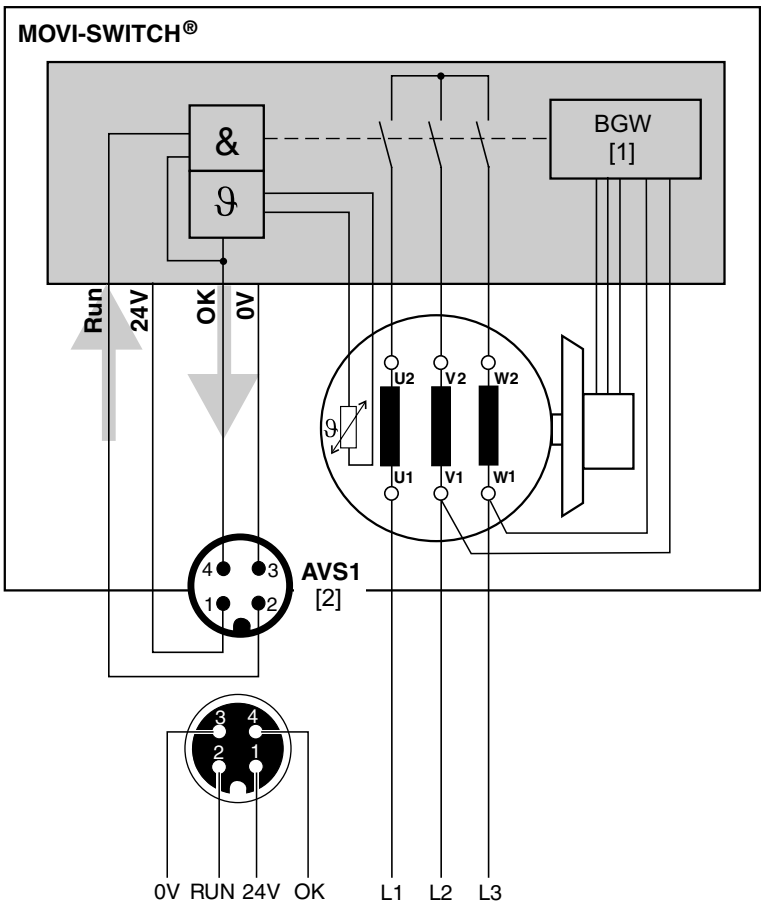
4.1.1 MOVI-SWITCH® 1E features

- MOVI-SWITCH® 1E is a gearmotor with an integrated electronic on/off switch for one direction of rotation and integrated full motor protection.
- Switching the star point with power semiconductors causes the current flow in the motor to be switched on or off.
- The brake control BGW integrated as standard allows for short response times (brake voltage = motor voltage/$\sqrt{3}$, alternative motor voltage)

4.1.2 Operating principle

The following diagram illustrates how MOVI-SWITCH® 1E operates.



[1] = Brake control
[2] = M12 plug connector (standard coding)

4.2 Available MOVI-SWITCH® motor combinations

3000 1/min - S1

Motor type	P_N M_N [kW] [Nm]	n_N [1/min]	I_N 380-415 V (400 V) [A]	cosφ	eff3	$\eta_{75\%}$ $\eta_{100\%}$ [%]	I_A/I_N	M_A/M_N M_H/M_N	J_{Mot} 1) [10^{-4} kgm^2]	J_{Mot} 2) [10^{-4} kgm^2]	M_{Bmax} [Nm]	m 1) [kg]	m 2) [kg]
DT71D2/MSW	0.55 1.9	2700	1.75 (1.65)	0.78	-	-	3.2	2.2 1.9	4.6	5.5	5	7.0	9.9
DT80K2/MSW	0.75 2.7	2700	2.35 (2.0)	0.86	-	-	3.7	2.0 1.8	6.6	7.5	10	9.9	12.7
DT80K2/MSW	1.1 3.9	2700	2.7 (2.65)	0.84	eff3	74.4 72.6	4.0	2.0 1.8	8.7	9.6	10	11.5	14.3
DT90S2/MSW	1.5 5.3	2800	3.95 (3.8)	0.82	eff3	71.4 71.7	4.2	2.3 2.1	25	31	20	16	26
DT90L2/MSW	2.2 7.5	2810	5.8 (5.1)	0.82	eff3	74.1 74.3	4.8	2.5 2.2	34	40	20	18	28
DV100M2/MSW	3 10.2	2800	6.4 (5.9)	0.94	eff3	81.0 78.6	5.0	2.0 1.8	53	59	40	27	37

1) Without brake

2) With brake

1500 1/min - S1

Motor type	P_N M_N [kW] [Nm]	n_N [1/min]	I_N 380-415 V (400 V) [A]	cosφ	eff2	$\eta_{75\%}$ $\eta_{100\%}$ [%]	I_A/I_N	M_A/M_N M_H/M_N	J_{Mot} 1) [10^{-4} kgm^2]	J_{Mot} 2) [10^{-4} kgm^2]	M_{Bmax} [Nm]	m 1) [kg]	m 2) [kg]
DT71D4/MSW	0.37 2.6	1380	1.24 (1.15)	0.76	-	-	3.0	1.8 1.7	4.6	5.5	5	7.0	9.9
DT80K4/MSW	0.55 3.9	1360	1.75 (1.75)	0.72	-	-	3.4	2.1 1.8	6.6	7.5	10	9.9	12.7
DT80N4/MSW	0.75 5.2	1380	2.15 (2.1)	0.73	-	-	3.8	2.2 2.0	8.7	9.6	10	11.5	14.3
DT90S4/MSW	1.1 7.5	1400	2.8 (2.8)	0.77	eff2	77.5 76.5	4.3	2.0 1.9	25	31	20	16	26
DT90L4/MSW	1.5 10.2	1410	3.7 (3.55)	0.78	eff2	80.2 79.0	5.3	2.6 2.3	34	40	20	18	28
DV100M4/MSW	2.2 15	1410	4.9 (4.7)	0.83	eff2	82.8 82.0	5.9	2.7 2.3	53	59	40	27	37
DV100L4/MSW	3 20.5	1400	6.5 (6.3)	0.83	eff2	84.5 83.0	5.6	2.7 2.2	65	71	40	30	40

1) Without brake

2) With brake

1000 1/min - S1

Motor type	P_N [kW]	M_N [Nm]	n_N [1/min]	I_N 380-415 V (400 V) [A]	cosφ	I_A/I_N	M_A/M_N M_H/M_N	J_{Mot} [10^{-4} kgm^2] 1)	J_{Mot} [10^{-4} kgm^2] 2)	M_{Bmax} [Nm]	m [kg] 1)	m [kg] 2)
DT71D6/MSW	0.25	2.7	880	0.9 (0.85)	0.72	2.7	1.6 1.6	8.3	9.2	5	7.0	9.9
DT80K6/MSW	0.37	3.9	900	1.44 (1.29)	0.68	3.0	1.9 1.9	10.3	11.2	10	9.9	12.7
DT80N6/MSW	0.55	5.8	900	1.78 (1.7)	0.73	3.0	1.8 1.7	14.1	15	10	11.5	14.3
DT90S6/MSW	0.75	8	900	2.4 (2.35)	0.70	3.1	2.0 1.9	25	31	20	16	26
DT90L6/MSW	1.1	11.4	920	3.35 (3.3)	0.69	3.5	2.2 2.1	34	40	20	18	28
DV100M6/MSW	1.5	15.6	920	4.1 (4.05)	0.70	4.0	2.3 2.0	53	59	40	27	37

1) Without brake

2) With brake

750 1/min - S1

Motor type	P_N [kW]	M_N [Nm]	n_N [1/min]	I_N 400 V [A]	cosφ	I_A/I_N	M_A/M_N M_H/M_N	J_{Mot} [10^{-4} kgm^2] 1)	J_{Mot} [10^{-4} kgm^2] 2)	M_{Bmax} [Nm]	m [kg] 1)	m [kg] 2)
DT71D8/MSW	0.15	2.2	650	0.69	0.72	2.2	1.4 1.4	8.3	9.2	5	7.0	9.9
DT80N8/MSW	0.25	3.5	680	1.24	0.55	2.6	1.9 1.9	14.1	15	10	11.5	14.3
DT90S8/MSW	0.37	5.2	680	1.55	0.62	2.5	1.4 1.4	25	31	20	16	26
DT90L8/MSW	0.55	7.7	680	2.3	0.60	2.5	1.5 1.5	34	40	20	18	28
DV100M8/MSW	0.75	10.3	690	2.9	0.59	2.6	2.1 2.0	53	59	40	27	37
DV100L8/MSW	1.1	15.6	670	4.1	0.60	2.8	1.9 1.7	65	71	40	30	40

1) Without brake

2) With brake

4.3 Connection technology

4.3.1 Overview

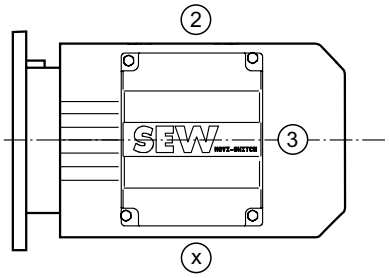
MOVI-SWITCH® 1E is supplied with AVS1 plug connector for control signals if not specified otherwise in the order. The plug connectors listed in the following table are available as standard. For other types, please contact SEW-EURODRIVE.

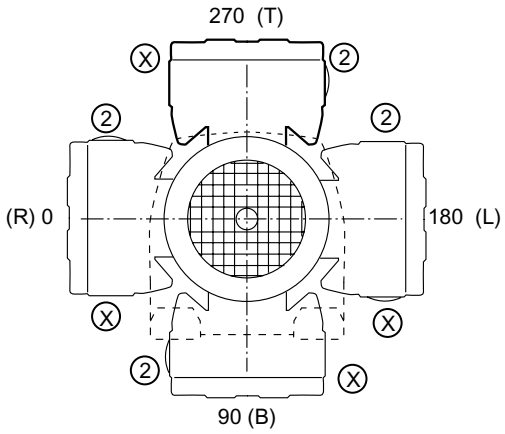
Order designation	Function	Manufacturer designation
MSW../AVS1	Control signals	1 x round plug connector M12 x 1
MSW../AVS1/ASA3	Control signals Power	1 x round plug connector M12 x 1+ Harting Han® 10 ES pin element (built-on housing with 2 clips)
MSW../ASAW	Connection to field distributor Z.3W or Z.6W	Harting Han® 10 ES pin element (built-on housing with 2 clips)

4.3.2 Possible plug connector positions

The following positions are possible for ASA3 and AVS1 plug connectors:

Plug connector	Possible positions
AVS1	X (standard)
	2
	3
ASA3 **ASAW**	X (standard)
	2
	3
AVS1/ASA3	ASA3 = X (standard) + AVS1 = X (standard)
	ASA3 = 2 + AVS1 = 2
	ASA3 = 3 + AVS1 = 3
	ASA3 = X (standard) + AVS1 = 2
	ASA3 = 2 + AVS1 = X (standard)





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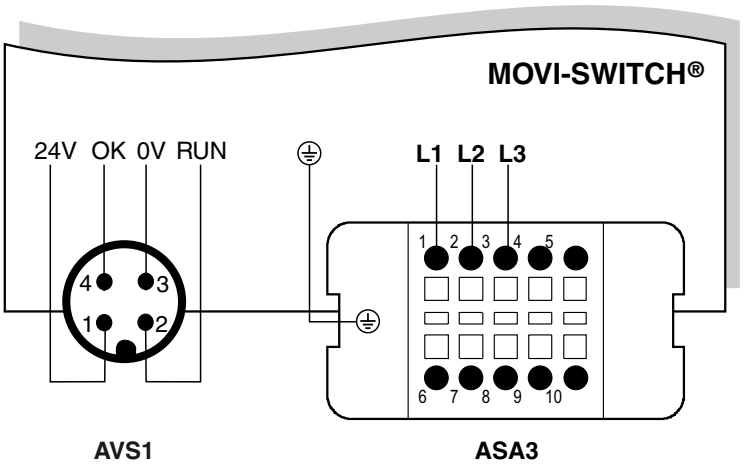
4.3.3 Pin assignments

AVS1/ASA3 pin assignment

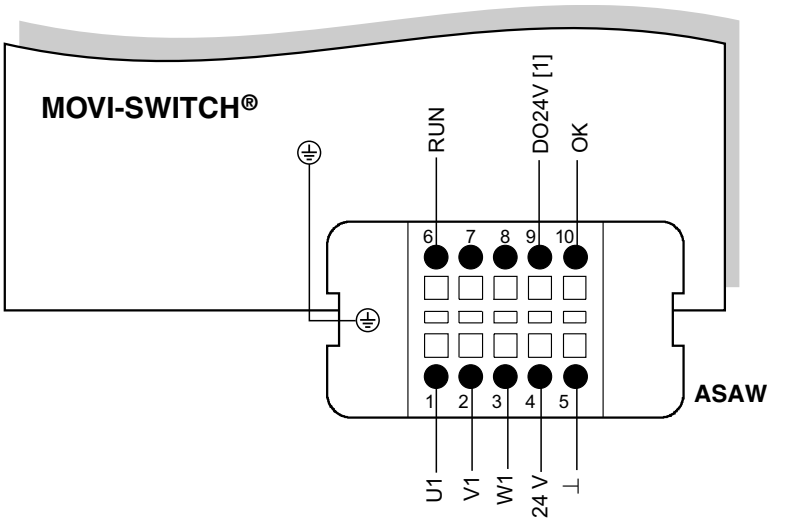
The following figure shows the assignment of the AVS1/ASA3 plug connector:



52496AXX

ASAW pin assignment

The following figure shows the assignment of the ASAW plug connector:

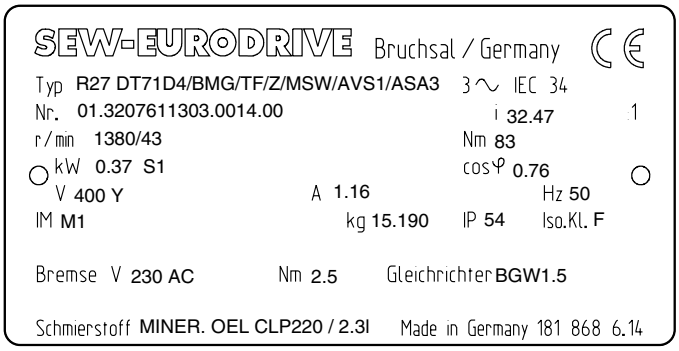


62880AXX

[1] Plug connector monitoring possible with suitable connection wiring

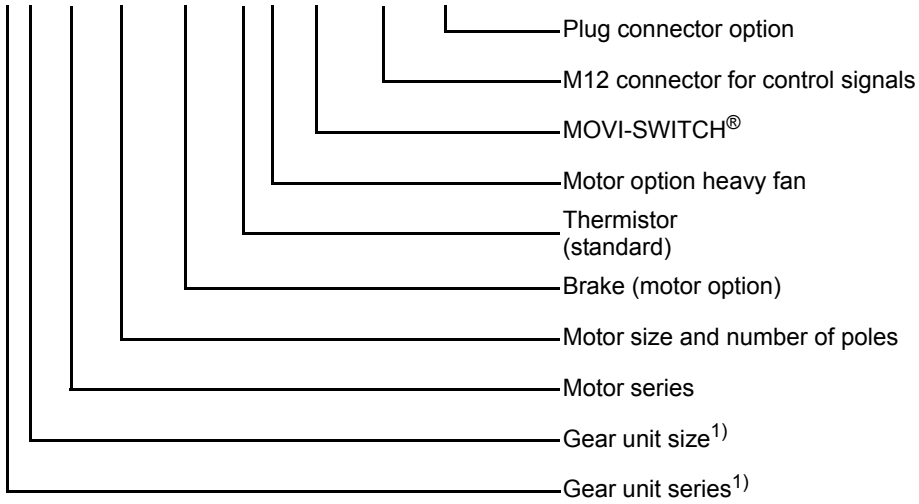
4.4 Sample unit designation

The unit designation of the MOVI-SWITCH® drive starts from the component on the output end. For example, a MOVI-SWITCH® 1E helical gearmotor with brake and AVS1 and ASA3 plug connector has the following unit designation:



52161AXX

R 27 DT 71D4 /BMG/TF/Z/MSW/AVS1/ASA3



1) Detailed information about gearmotor combinations can be found in the "Geared Motors." catalog.

4.5 Dimension sheets

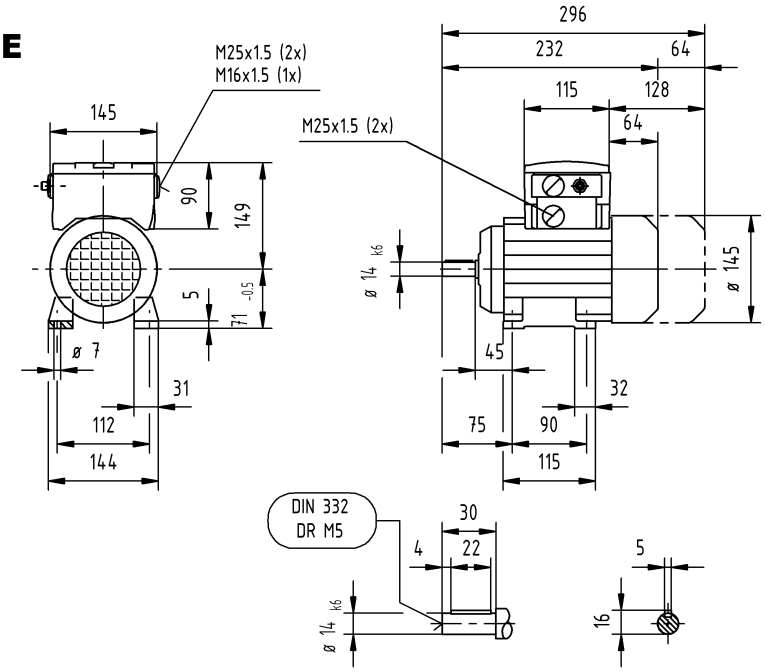
4.5.1 Dimension sheet information

Please observe the following notes regarding the dimension sheets for MOVI-SWITCH® AC motors (DT/DV):

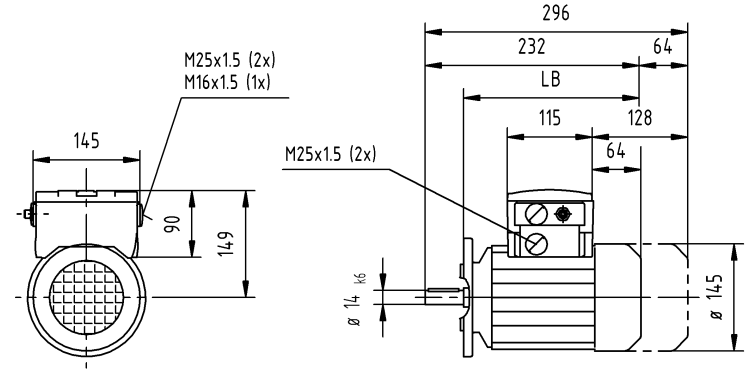
- The foot dimensions of the DT90 motor differ from IEC dimensions.
- Fan guards of DT71.., DT90.. foot-mounted motors are flat-topped.
- Manual brake release can be pivoted through 90° together with the terminal box, with the exception of DT71.., DT90.. foot-mounted motors.
- For brake motors do not forget to add the space required for removing the fan guard (= fan guard diameter).
- Leave a clearance of at least half the fan guard diameter to provide unhindered air access.

DT71D / MSW-1E

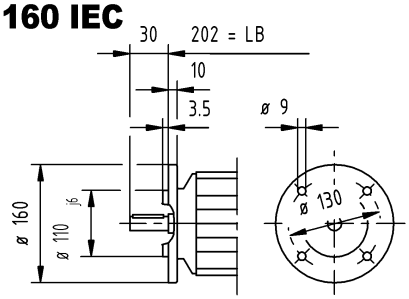
80 168 01 03
1 (2)



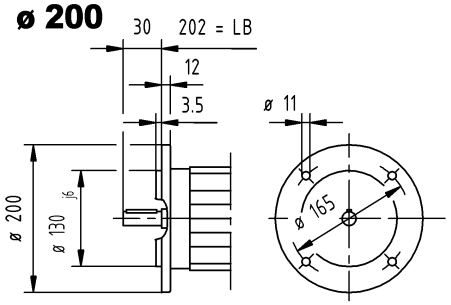
DFT71D / MSW-1E



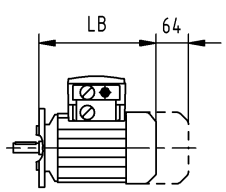
ø 160 IEC



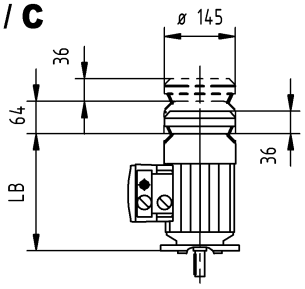
ø 200



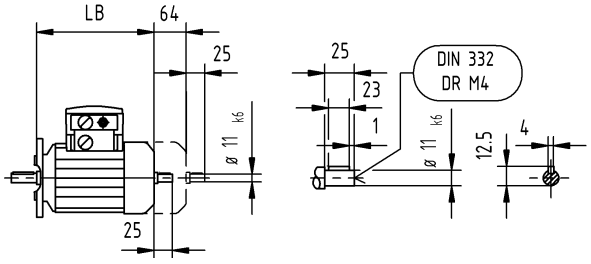
/ RS



/ C



/ 2.WE

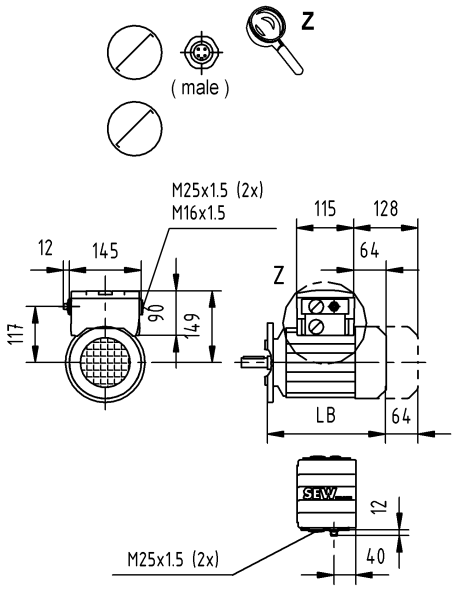


D(F)T71D / MSW-1E..

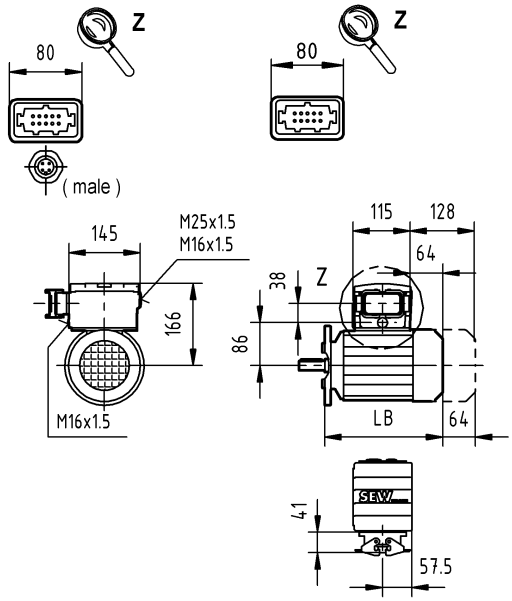
80 168 01 03
2 (2)

4

/ AVS1

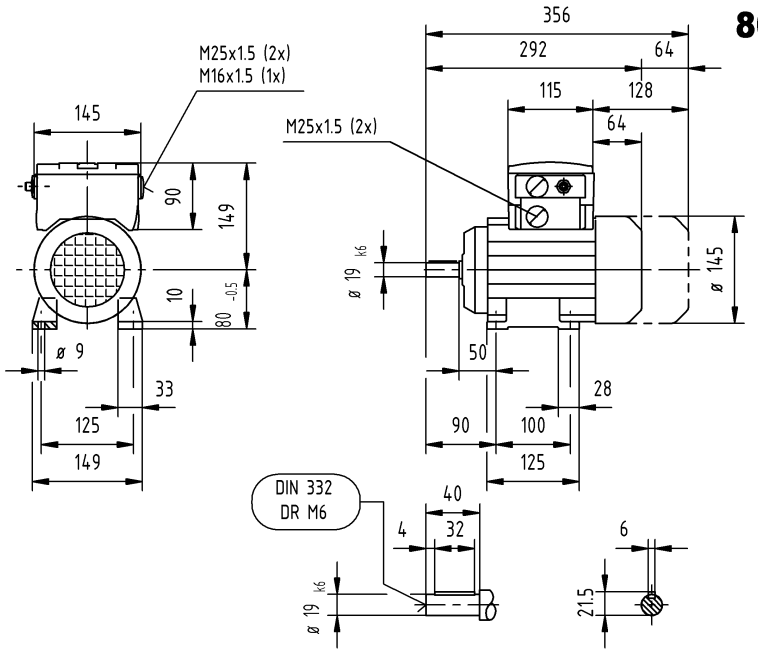


/ RE1A / ASA3 / AVS1 /RE1A / ASAW

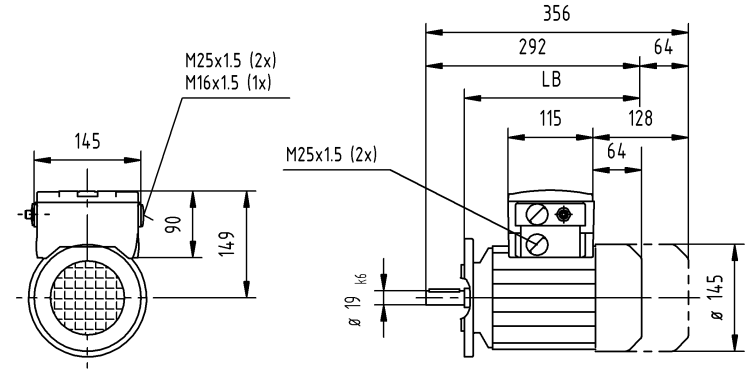


DT80.. / MSW-1E

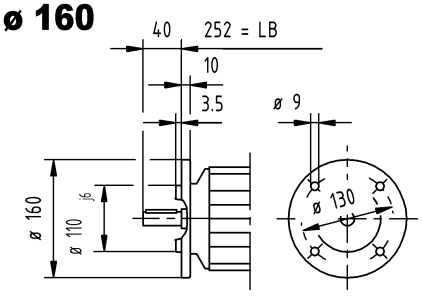
80 169 01 03
1 (2)



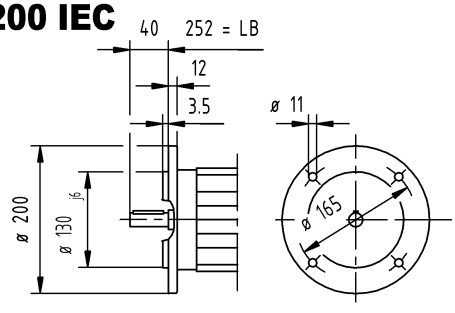
DFT80.. / MSW-1E



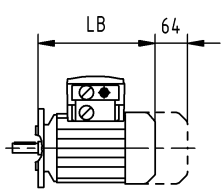
ø 160



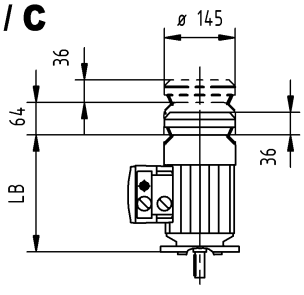
ø 200 IEC



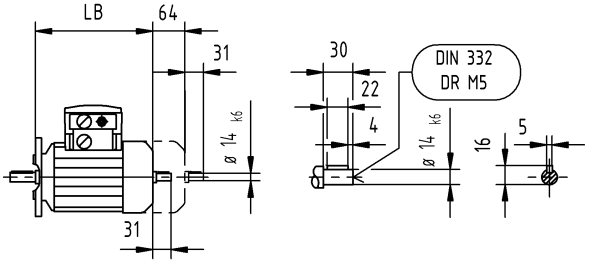
/ RS



/ C



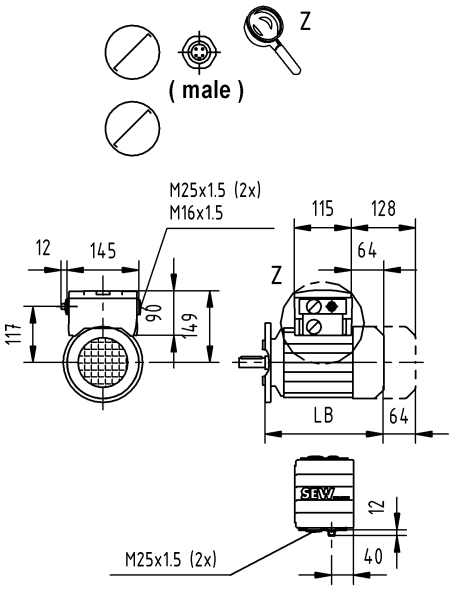
/ 2.WE



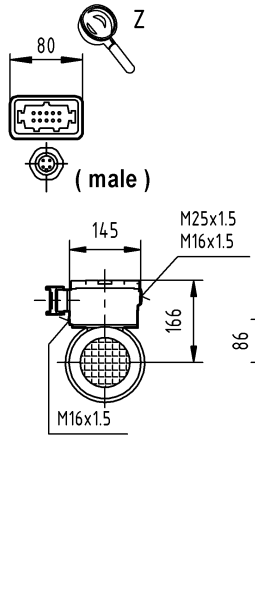
D(F)T80.. / MSW-1E..

80 169 01 03
2 (2)

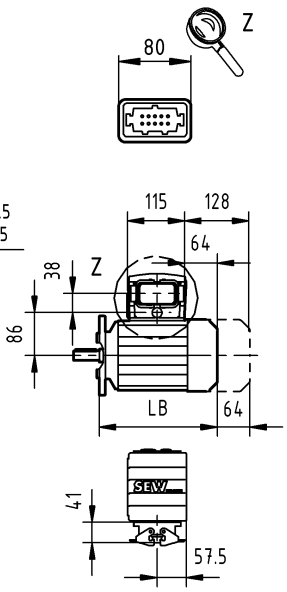
/ AVS1



/ RE1A / ASA3 / AVS1

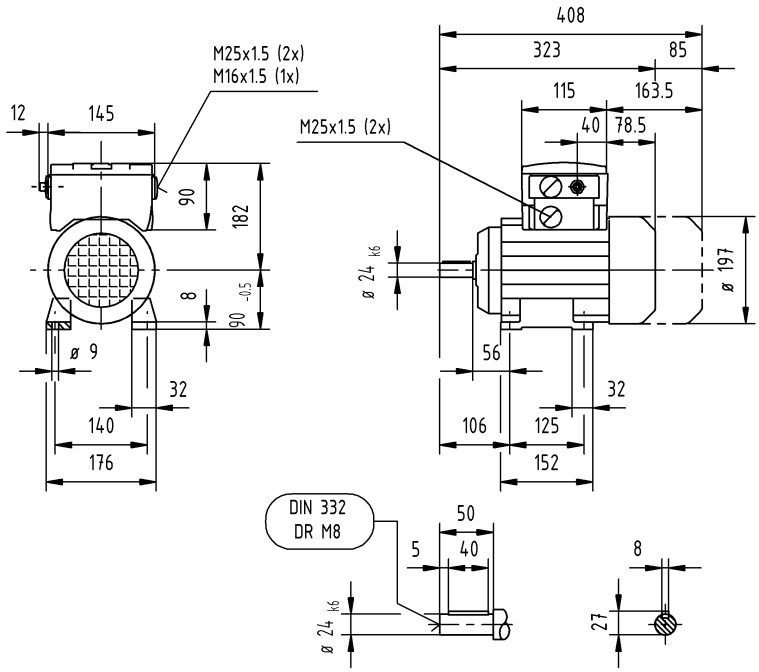


/ RE1A / ASAW

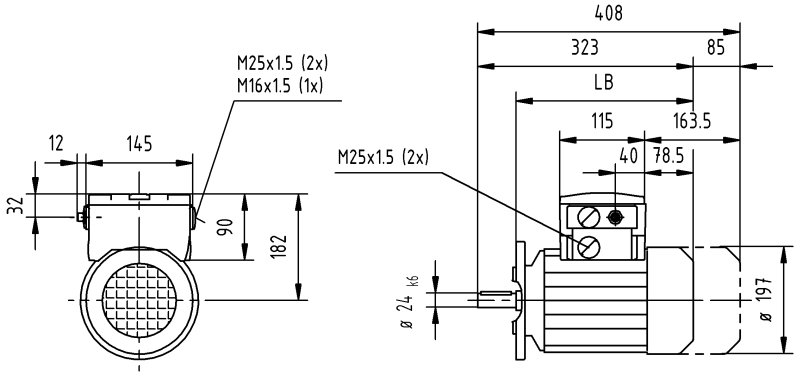


DT90.. / MSW-1E

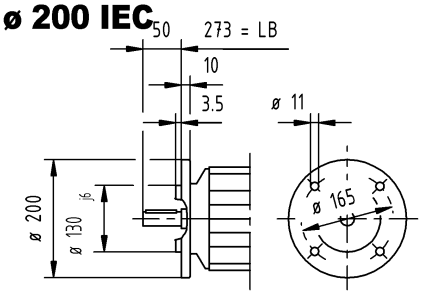
80 170 01 03
1 (2)



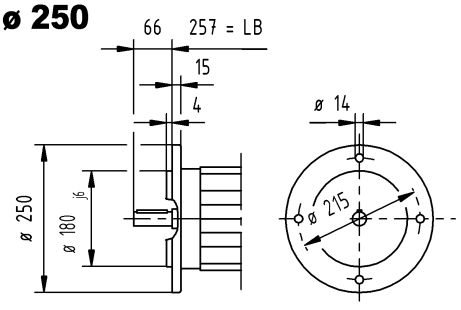
DFT90.. / MSW-1E



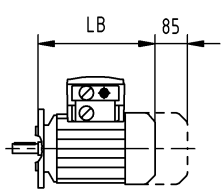
ø 200 IEC



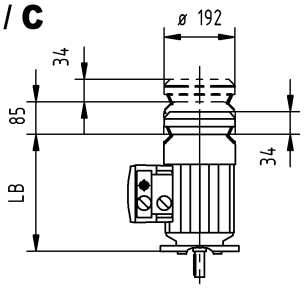
ø 250



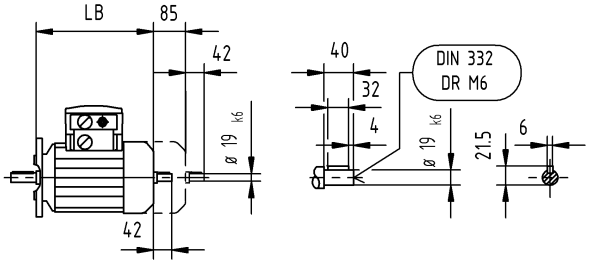
/ RS



/ C



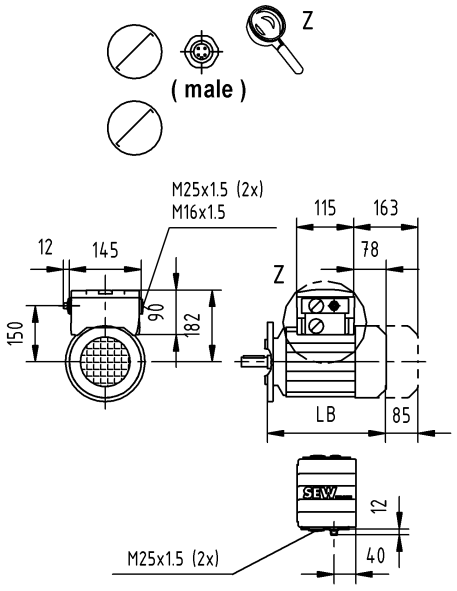
/ 2.WE



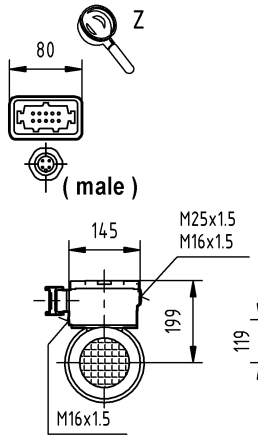
D(F)T90.. / MSW-1E..

80 170 01 03
2 (2)

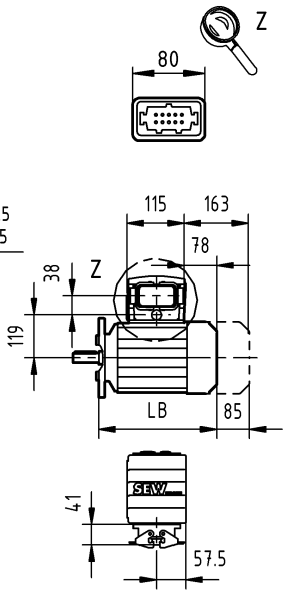
/ AVS1



/ RE1A / ASA3 / AVS1



/ RE1A / ASAW



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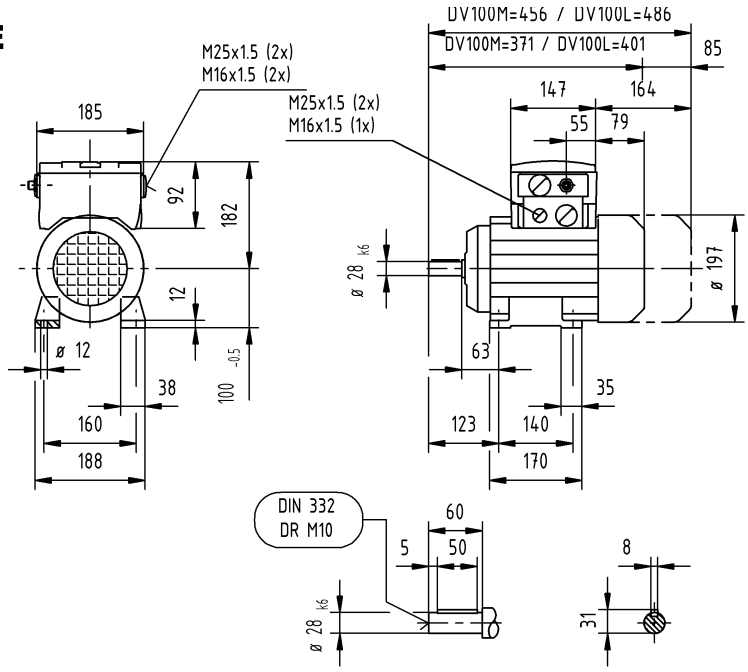

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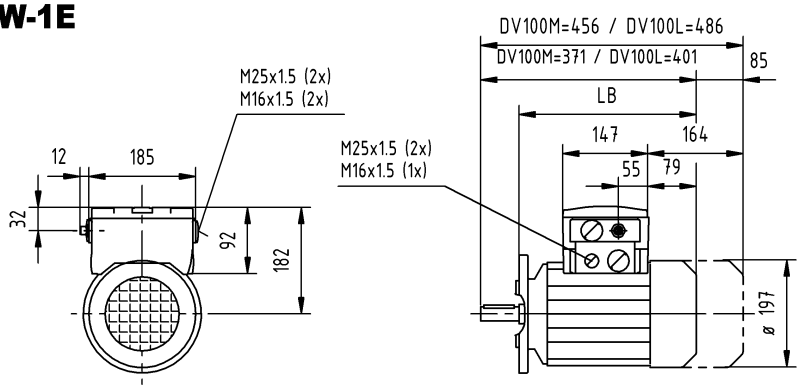

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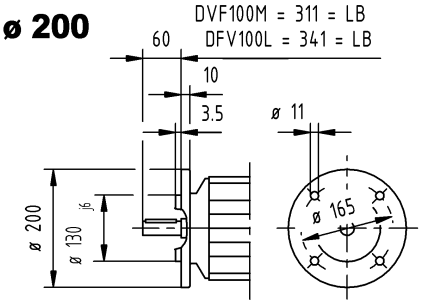

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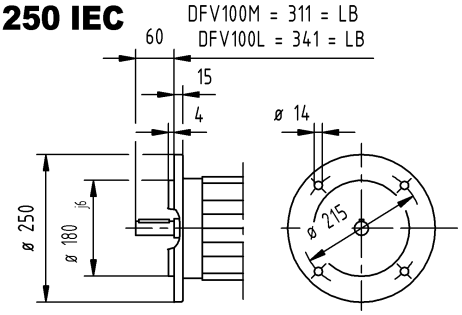

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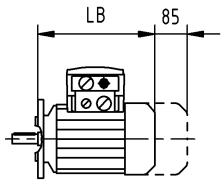

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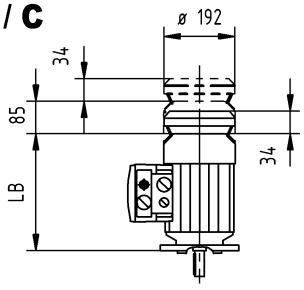

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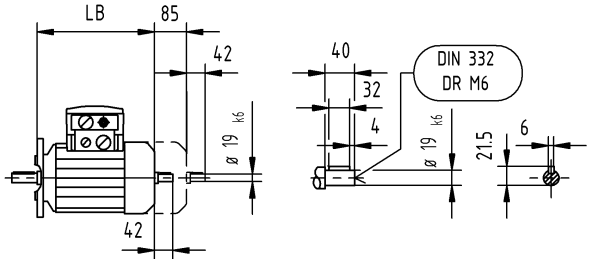

D(F)V100.. / MSW-1E..

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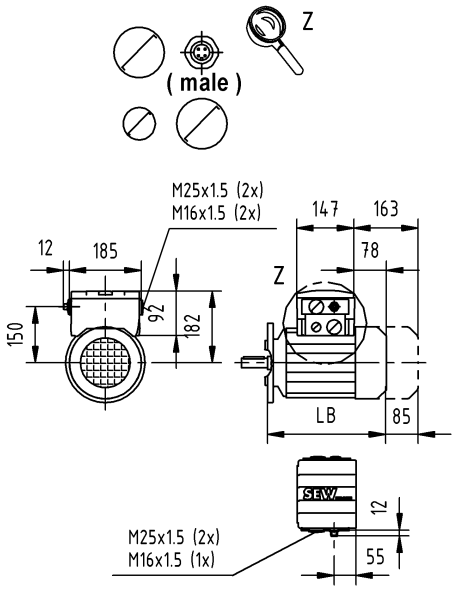

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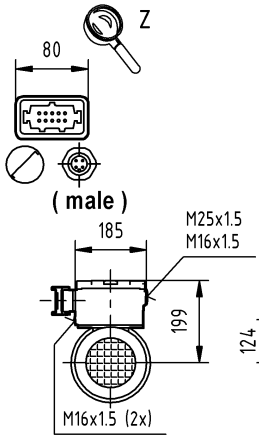

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