Size 060 - 12200 Nm

ST-060 Technical data

Stages	Ratio	$T_{2N(1.2M)}$[1]	$T_{2N(6M)}$[1]	T_{2Peak}[2]	n_{1N}[3]	n_{1Max}[4]	P_t[5]	η
	i	(Nm)	(Nm)	(Nm)	(rpm)	(rpm)	(kW)	(%)
1	3.55	12210	9200	24420	1200	2000	40	98
	4.28	10500	7910	21000	1200	2000	40	98
	5.60	8160	6150	16320	1200	2000	40	98
	6.75	6230	4690	12460	1200	2000	40	98
	8.66	4410	3320	8820	1200	2000	40	98
2	13.4	12210	9200	24420	1500	2800	23	96
	16.2	10500	7910	21000	1500	2800	23	96
	18.3	12210	9200	24420	1500	2800	23	96
	22.1	10500	7910	21000	1500	2800	23	96
	25.7	10500	7910	21000	1500	2800	23	96
	28.9	8160	6150	16320	1500	2800	23	96
	33.6	8160	6150	16320	1500	2800	23	96
	40.5	6230	4690	12460	1500	2800	23	96
	48.9	6230	4690	12460	1500	2800	23	96
3	57.5	12210	9200	24420	1500	2800	15	94
	62.8	12210	9200	24420	1500	2800	15	94
	75.2	12210	9200	24420	1500	2800	15	94
	82.1	12210	9200	24420	1500	2800	15	94
	94.8	10500	7910	21000	1500	2800	15	94
	109.2	10500	7910	21000	1500	2800	15	94
	118.4	8160	6150	16320	1500	2800	15	94
	123.9	10500	7910	21000	1500	2800	15	94
	129.3	8160	6150	16320	1500	2800	15	94
	143.9	10500	7910	21000	1500	2800	15	94
	155.9	8160	6150	16320	1500	2800	15	94
	173.5	10500	7910	21000	1500	2800	15	94
	188.1	8160	6150	16320	1500	2800	15	94
	195.3	8160	6150	16320	1500	2800	15	94
	209.7	10500	7910	21000	1500	2800	15	94
	226.8	8160	6150	16320	1500	2800	15	94
	235.4	6230	4690	12460	1500	2800	15	94
	274.0	8160	6150	16320	1500	2800	15	94
	330.3	6230	4690	12460	1500	2800	15	94
4	351.9	12210	9200	24420	1500	2800	11	92
	388.5	12210	9200	24420	1500	2800	11	92
	421.2	12210	9200	24420	1500	2800	11	92
	440.8	12210	9200	24420	1500	2800	11	92
	459.9	12210	9200	24420	1500	2800	11	92
	507.7	12210	9200	24420	1500	2800	11	92
	531.3	12210	9200	24420	1500	2800	11	92
	554.4	12210	9200	24420	1500	2800	11	92
	576.1	12210	9200	24420	1500	2800	11	92
	611.9	10500	7910	21000	1500	2800	11	92
	640.4	10500	7910	21000	1500	2800	11	92
	724.4	8160	6150	16320	1500	2800	11	92
	806.3	10500	7910	21000	1500	2800	11	92
	907.3	8160	6150	16320	1500	2800	11	92
	1008.7	10500	7910	21000	1500	2800	11	92
	1093.6	8160	6150	16320	1500	2800	11	92
	1270.1	8160	6150	16320	1500	2800	11	92
	1530.9	8160	6150	16320	1500	2800	11	92
	1849.8	8160	6150	16320	1500	2800	11	92
	2229.7	6230	4690	12460	1500	2800	11	92

SX-060 Technical data
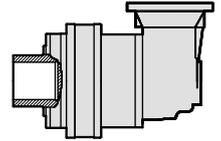
Stages	Ratio	$T_{2N(1.2M)}$ [1]	$T_{2N(6M)}$ [1]	T_{2Peak} [2]	n_{1N} [3]	n_{1Max} [4]	P_t [5]	η
	i	(Nm)	(Nm)	(Nm)	(rpm)	(rpm)	(kW)	(%)
2	9.9	12210	9200	24420	1500	2800	23	96
	11.9	10500	7910	21000	1500	2800	23	96
	15.2	12210	9200	24420	1500	2800	23	96
	18.4	10500	7910	21000	1500	2800	23	96
	24.0	8160	6150	16320	1500	2800	23	96
	28.9	6230	4690	12460	1500	2800	23	96
3	33.7	12210	9200	24420	1500	2800	15	94
	37.2	10500	7910	21000	1500	2800	15	94
	40.7	10500	7910	21000	1500	2800	15	94
	42.3	12210	9200	24420	1500	2800	15	94
	46.2	12210	9200	24420	1500	2800	15	94
	50.5	12210	9200	24420	1500	2800	15	94
	55.7	10500	7910	21000	1500	2800	15	94
	60.8	10500	7910	21000	1500	2800	15	94
	66.6	8160	6150	16320	1500	2800	15	94
	79.5	8160	6150	16320	1500	2800	15	94
	88.4	10500	7910	21000	1500	2800	15	94
	99.5	8160	6150	16320	1500	2800	15	94
	106.9	10500	7910	21000	1500	2800	15	94
	115.6	8160	6150	16320	1500	2800	15	94
	139.7	8160	6150	16320	1500	2800	15	94
4	152.8	12210	9200	24420	1500	2800	11	92
	168.6	12210	9200	24420	1500	2800	11	92
	184.1	12210	9200	24420	1500	2800	11	92
	191.4	12210	9200	24420	1500	2800	11	92
	203.2	10500	7910	21000	1500	2800	11	92
	220.4	12210	9200	24420	1500	2800	11	92
	230.6	12210	9200	24420	1500	2800	11	92
	240.6	12210	9200	24420	1500	2800	11	92
	265.7	12210	9200	24420	1500	2800	11	92
	278.0	10500	7910	21000	1500	2800	11	92
	290.1	12210	9200	24420	1500	2800	11	92
	301.4	12210	9200	24420	1500	2800	11	92
	320.2	10500	7910	21000	1500	2800	11	92
	349.6	10500	7910	21000	1500	2800	11	92
	363.3	12210	9200	24420	1500	2800	11	92
	379.0	8160	6150	16320	1500	2800	11	92
	390.0	10500	7910	21000	1500	2800	11	92
	411.1	10500	7910	21000	1500	2800	11	92
	437.9	10500	7910	21000	1500	2800	11	92
	474.7	8160	6150	16320	1500	2800	11	92
	508.5	10500	7910	21000	1500	2800	11	92
	550.7	6230	4690	12640	1500	2800	11	92
	614.4	10500	7910	21000	1500	2800	11	92
	664.5	8160	6150	16320	1500	2800	11	92
	734.7	8160	6150	16320	1500	2800	11	92
	801.0	6230	4690	12640	1500	2800	11	92
	885.6	6230	4690	12640	1500	2800	11	92
	967.9	6230	4690	12640	1500	2800	11	92

(1) T_{2N} values are calculated at $n_1=n_{1n}$, continuous duty cycle, uniform operation and KA=1 according to ISO 6336. $T_{2N(1.2M)}$ has been calculated for 1200000 of revolutions at the output shaft, and $T_{2N(6M)}$ has been calculated for 6000000 of revolutions at the output shaft. The application factor f_s must be considered for each duty cycle and machine type.

(2) T_{2Peak} is the maximum output torque the gearbox can tolerate during startups, inversions or other peaks. This value should never be used for continuous operation or for intermittent operation with frequent accelerations.

(3) n_{1n} is the rated input speed for continuous operation

(4) n_{1max} is the maximum input speed for intermittent service. For continuous operation at speeds over n1n please inquire.

(5) Pt is the thermal power rating, that is the power in kW that, at 20°C, the gearbox can transmit during continuous operation, at $n_1=n_{1n}$ and lubricated with ISO-VG-220 oil without it exceeding 90°C. It depends on ambient temperature.

Output Shaft Radial Load Capacity

Radial Load Capacity is only given for gearboxes with solid shafts (Smooth Solid Shaft with Key (P) and DIN 5480 Splined Shaft (W)) for a design life of 6 million revolutions of the output shaft ($6 \cdot 10^6$). These values can be adjusted for other number of revolutions of the output shaft applying the Output Bearing Lifetime Factor (f_{obl})

Radial Load capacity depends on gearbox version and application point. Find the value for your machine using this chart.
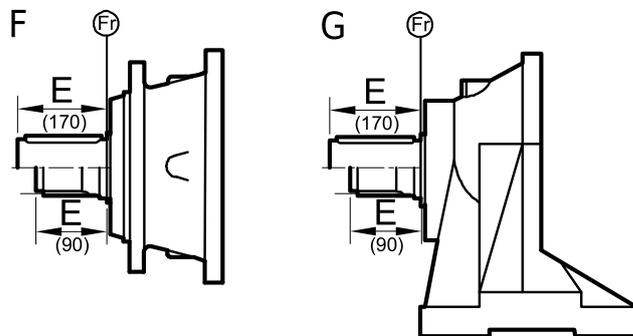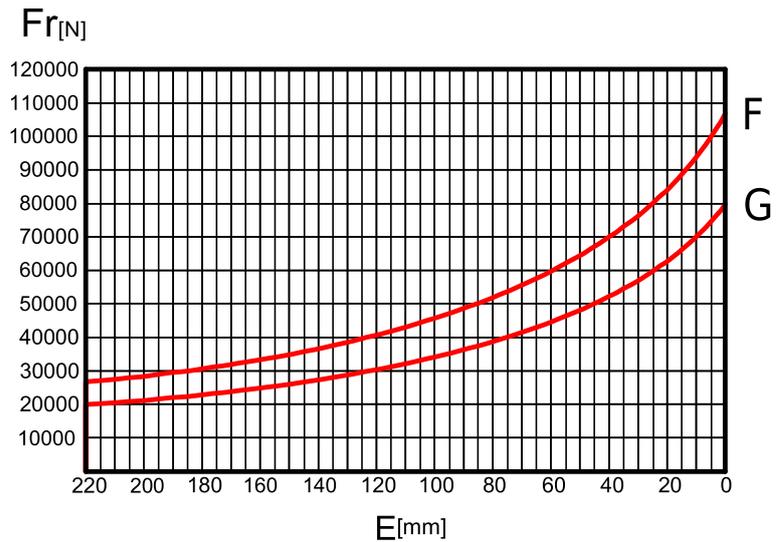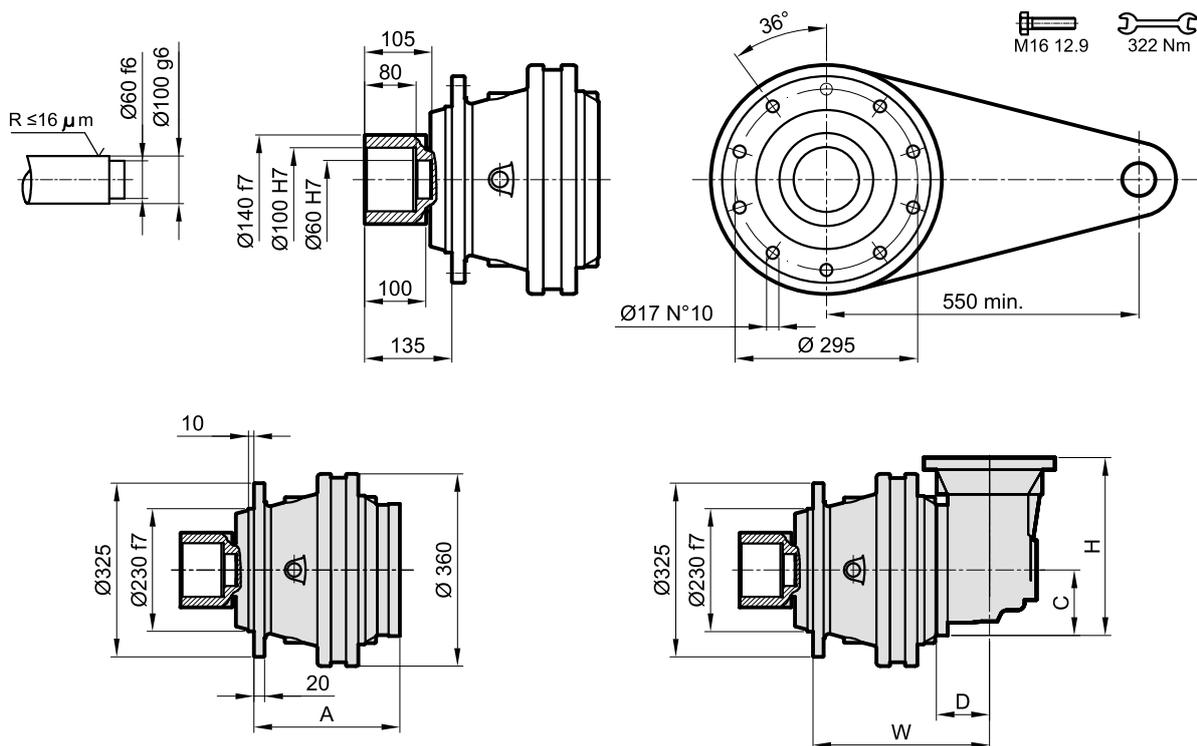

Output Shaft Axial Load Capacity

Axial Load Capacity is only given for gearboxes with solid shafts (Smooth Solid Shaft with Key (P) and DIN 5480 Splined Shaft (W)) for a design life of 6 million revolutions of the output shaft ($6 \cdot 10^6$). These values can be adjusted for other number of revolutions of the output shaft applying the Output Bearing Lifetime Factor (f_{obl})

Axial Load Capacity depends on the direction of the load:

	Push	**Pull**
F_a	65000 N	40000 N

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S 20240709-1820

Dimensions

S□-E-060-□□-N80×70

M14 12.9   205 Nm

80x74 DIN 5482
15   55
Ø85 H8
8.5
67.5   81

15°
Ø15 N° 24   Ø 314

10
Ø278 f7   Ø 360   A

Ø278 f7   H   C   D   W

Stages	A	W	D	C	H	ST Mass [1]	SX Mass [1]
1	112	-	-	-	-	60	-
2	184	184	121	172.5	457	76	121
3	245	249	103	122	319	94	104
4	293	320	75	92.5	253.5	91	102

(1) Mass in kg for gearboxes without input modules (solid input shaft, motor flange, etc) or accessories. To obtain actual mass, add the mass for your chosen input module, please inquire.

Accessories
SA-S-80×74

270
Ø79.3 h11   80x74 DIN 5482   Ø60   Ø60
10   10

S☐-F-060-☐☐-H100×105

M16 12.9   322 Nm

Stages	A	W	D	C	H	ST Mass [1]	SX Mass [1]
1	226	-	-	-	-	91	-
2	298	298	121	172.5	457	107	152
3	359	364	103	122	319	115	135
4	407	436	75	92.5	253.5	122	133

(1) Mass in kg for gearboxes without input modules (solid input shaft, motor flange, etc) or accessories. To obtain actual mass, add the mass for your chosen input module, please inquire.

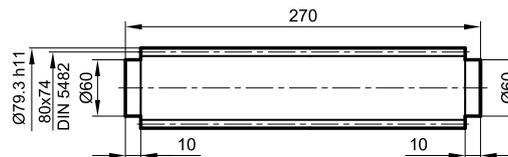| Accessories	
SA-H-140	**SA-T-☐-230-295-10×17-☐-☐**
Max. Torque: 23 kNm Screw Tightening Torque: 215 Nm	See the chapter on Torque Arms

S□-F-060-□□-N80×95

15 | 55

80x74 DIN 5482

Ø70 H8

Ø85 H8

8,5

18,5

95

36°

M16 12.9 | 322 Nm

Ø17 N°10

Ø 295

10

Ø325

Ø230 f7

Ø360

21

A

10

Ø325

Ø230 f7

H

C

21

D

W
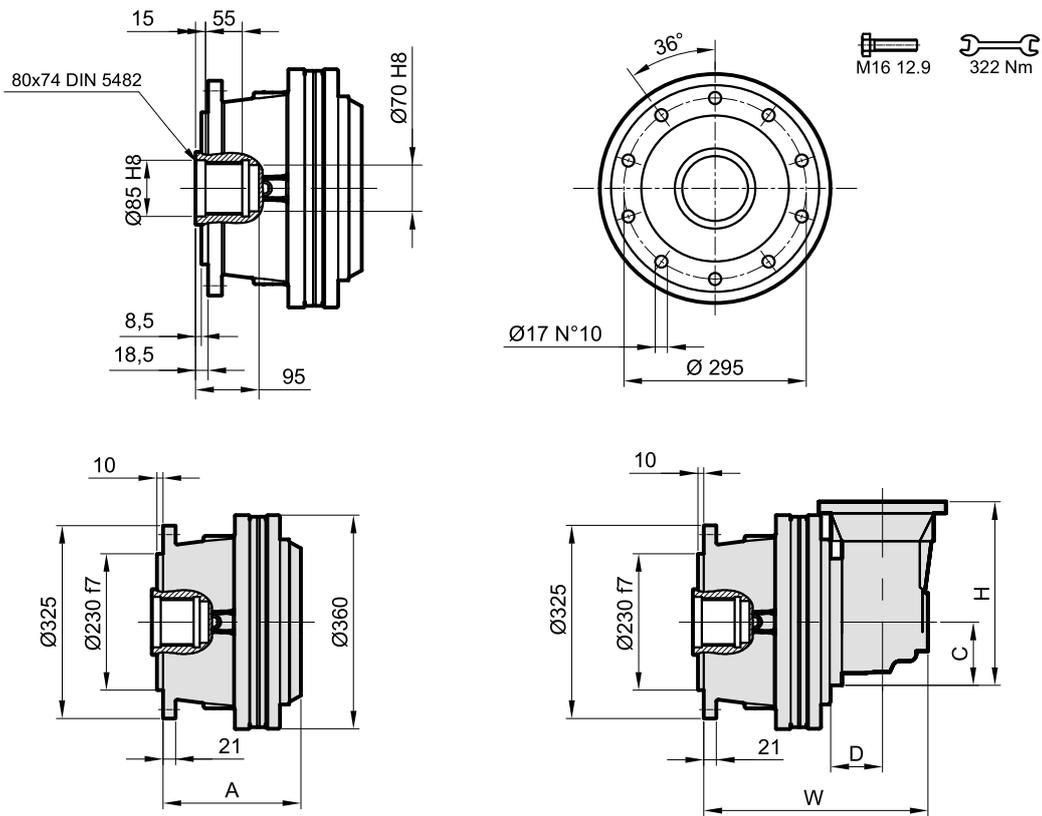
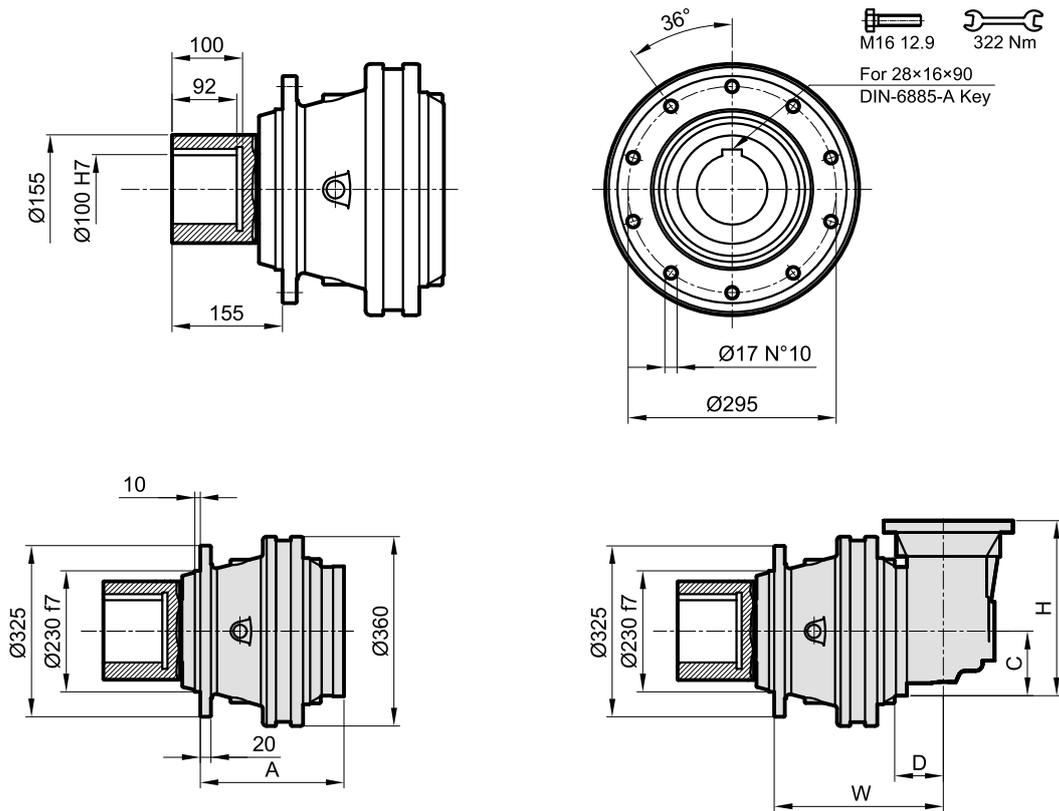| Stages	A	W	D	C	H	ST Mass [1]	SX Mass [1]
1	226.5	-	-	-	-	81	-
2	298.5	298.5	121	172.5	457	98	143
3	359.5	363.5	103	122	319	106	126
4	407.5	435	75	92.5	253.5	112	123

(1) Mass in kg for gearboxes without input modules (solid input shaft, motor flange, etc) or accessories. To obtain actual mass, add the mass for your chosen input module, please inquire.

Accessories
SA-S-80×74

270

Ø79.3 h11

80x74 DIN 5482

Ø60

Ø60

10 | 10

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S□-F-060-□□-K100×100

Stages	A	W	D	C	H	ST Mass [1]	SX Mass [1]
1	226	-	-	-	-	95	-
2	298	298	121	172.5	457	111	157
3	359	364.5	103	122	319	119	139
4	407	436	75	92.5	253.5	126	137

(1) Mass in kg for gearboxes without input modules (solid input shaft, motor flange, etc) or accessories. To obtain actual mass, add the mass for your chosen input module, please inquire.

S□-E-060-□□-P90×170
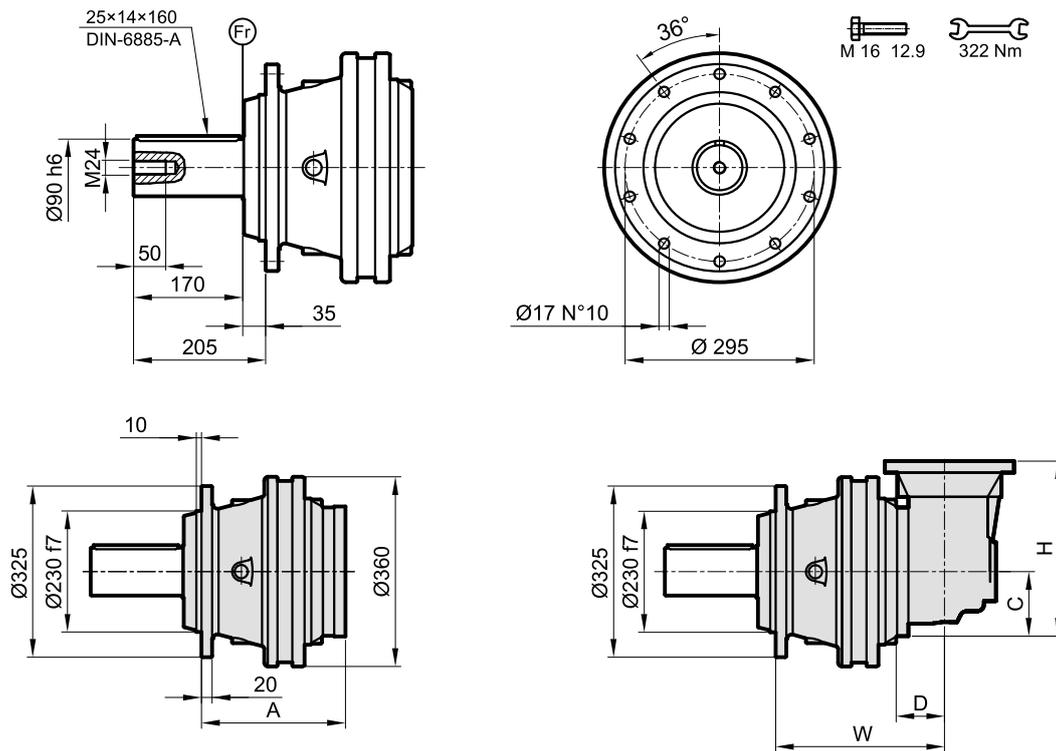

25×14×160
DIN-6885-A

Fr

Ø90 h6
M24

50
170
35
205

36°

M 16   12.9   322 Nm

Ø17 N°10
Ø 295

10
Ø325
Ø230 f7
Ø360
20
A

Ø325
Ø230 f7
H
C
D
W

Stages	A	W	D	C	H	ST Mass [1]	SX Mass [1]
1	226	-	-	-	-	96	-
2	298	298	121	172.5	457	112	157
3	359	364.5	103	122	319	121	140
4	407	436	75	92.5	253.5	127	138

(1) Mass in kg for gearboxes without input modules (solid input shaft, motor flange, etc) or accessories. To obtain actual mass, add the mass for your chosen input module, please inquire.
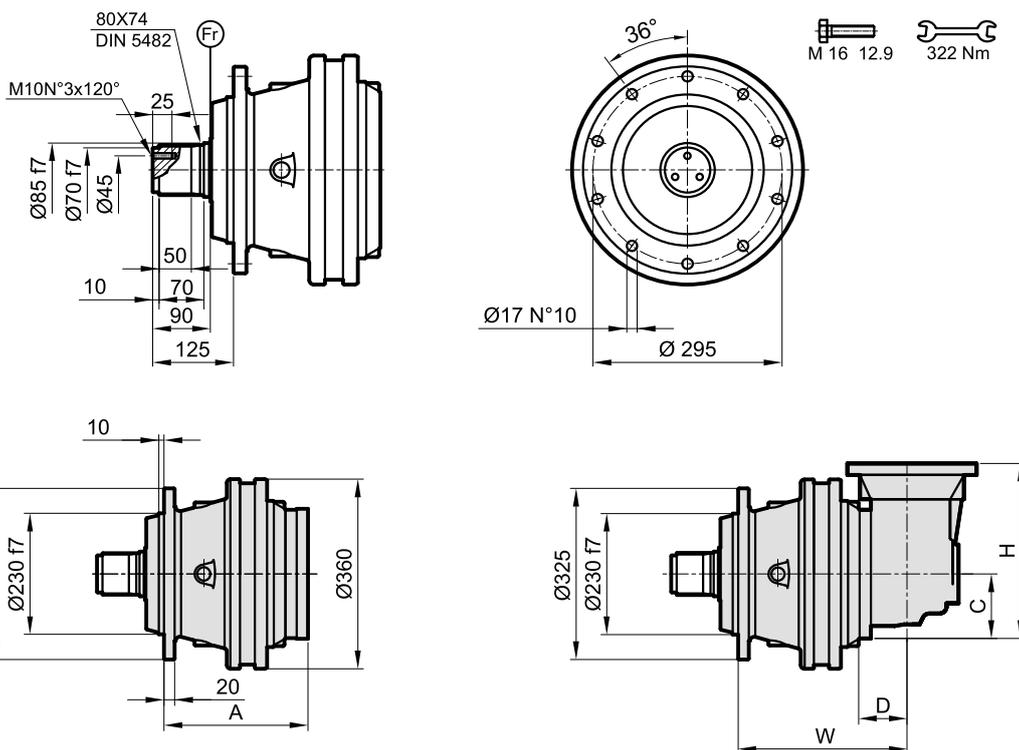
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S□-F-060-□□-W80×90

Stages	A	W	D	C	H	ST Mass [1]	SX Mass [1]
1	226	-	-	-	-	96	-
2	298	298	121	172.5	457	112	157
3	359	364.5	103	122	319	121	140
4	407	436	75	92.5	253.5	127	138

(1) Mass in kg for gearboxes without input modules (solid input shaft, motor flange, etc) or accessories. To obtain actual mass, add the mass for your chosen input module, please inquire.
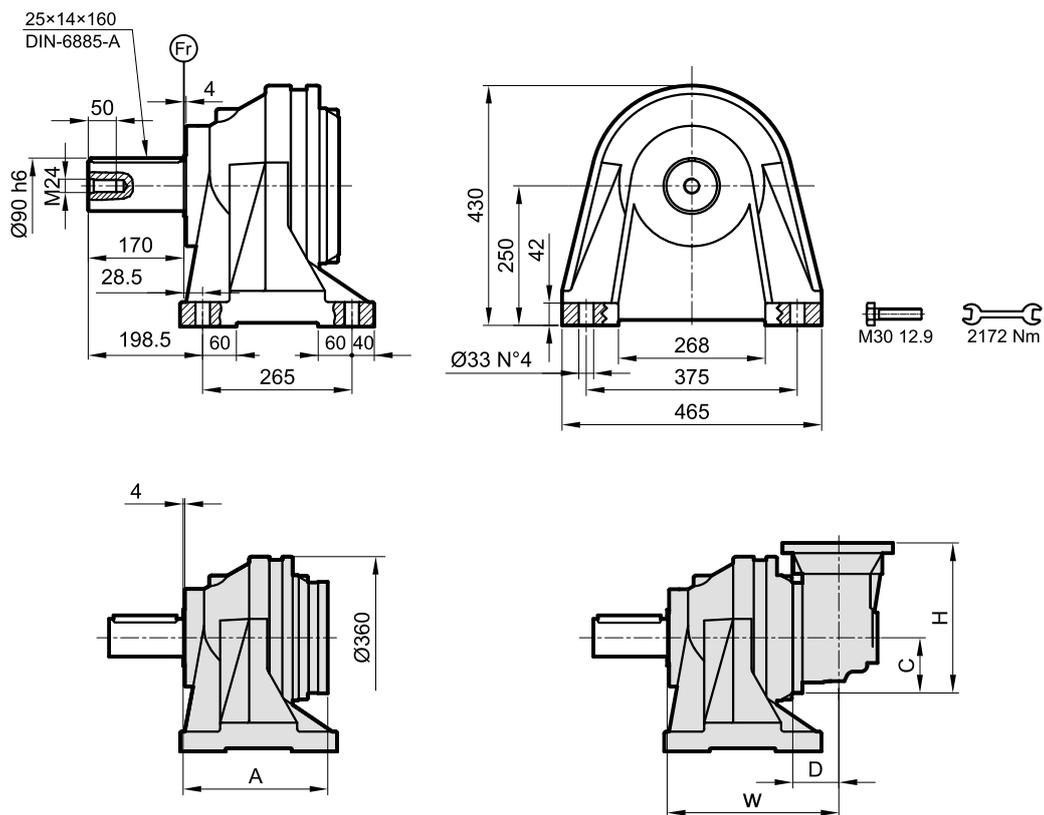
Accessories		
SA-F-80×74-S	**SA-B-80×74-S**	**SA-P-82**

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S□-G-060-□□-P90×170

Stages	A	W	D	C	H	ST Mass [1]	SX Mass [1]
1	272	-	-	-	-	152	-
2	344	344	121	172.5	457	168	213
3	405	409	103	122	319	176	196
4	453	480	75	92.5	253.5	183	194

(1) Mass in kg for gearboxes without input modules (solid input shaft, motor flange, etc) or accessories. To obtain actual mass, add the mass for your chosen input module, please inquire.
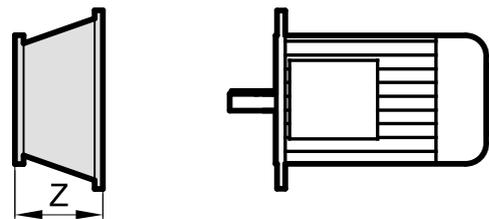
S☐-G-060-☐☐-W80×90

80x74 DIN 5482
M10 N°3x120°
Fr
4
25
Ø85 f7
Ø70 f7
Ø45
50
10
70
90
118.5
60
60
40
265

430
250
42
Ø33 N°4
268
375
465

M30 12.9
2172 Nm

4
Ø360
A

H
C
D
W

Stages	A	W	D	C	H	ST Mass [1]	SX Mass [1]
1	272	-	-	-	-	152	-
2	344	344	121	172.5	457	168	213
3	405	409	103	122	319	176	196
4	453	480	75	92.5	253.5	183	194

(1) Mass in kg for gearboxes without input modules (solid input shaft, motor flange, etc) or accessories. To obtain actual mass, add the mass for your chosen input module, please inquire.

Accessories		
SA-F-80×74-S	**SA-B-80×74-S**	**SA-P-82**

SA-F-80×74-S

15
20
DIN 5482
n°12 Ø 19
Ø 210
Ø 125 f7
Ø 82 H8
80x74
Ø 85 H8
Ø 105
Ø 175
10.5
48.5
31
90

SA-B-80×74-S

DIN 5482
Ø 82 H8
80x74
Ø 85 H8
Ø 108 +0.1
10.5
48.5
31
90

SA-P-82

9,5
45°
Ø92
Ø45
Ø11
N°3x120°
Ø70 H8
Ø82 f7
18

Inputs

IEC Motor Input

IEC	71	80	90	100	112	132	160	180	200	225	250	280
Stages	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
1	-	-	-	-	-	-	120.5	120.5	148.5	148.5	183.5	183.5
2	35.5	61.5	61.5	71	71	104	120.5	120.5	148.5	148.5	-	-
3	35.5	61.5	61.5	71	71	104	120.5	120.5	-	-	-	-
4	35.5	61.5	61.5	71	71	104	120.5	120.5	-	-	-	-

Worm Gearbox Input
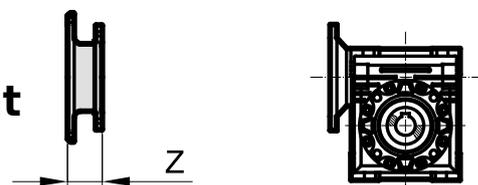
Stages	SVS-050 SQS-050	SVS-063 SQS-063	SVS-075 SQS-075	SVS-090 SQS-090	SVS-110 SQS-110
	Z	Z	Z	Z	Z
1	-	-	-	-	95
2	80	80	57	57	57
3	80	80	57	57	57
4	80	80	57	57	57

Solid Shaft Input
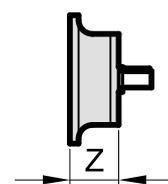
Stages	E25×50 E28×50	E35×50 E42×82	E48×82.5 E65×105	E70×120 E80×130	E90×140 E100×140
	Z		Z	Z	Z
1	-		159	185	-
2	112		159	-	-
3	112		-	-	-
4	112		-	-	-

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