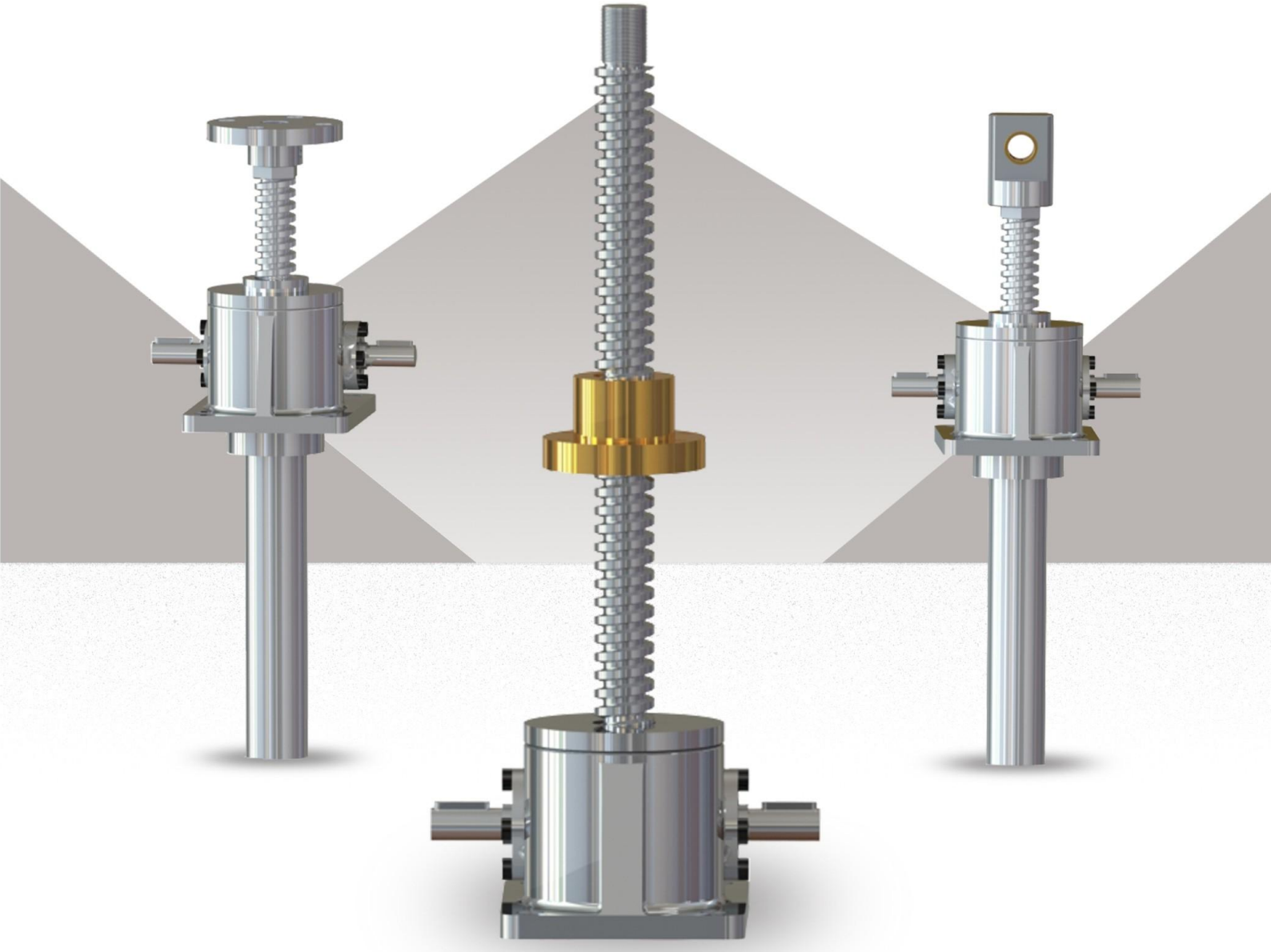
LINEAR MOTION



LUDE TRANSMISSION

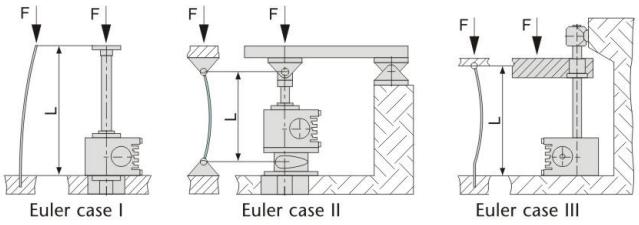
SWL Series Stainless steel screw lift

Technical information

1 Permitted buckling force

Spindle dimensioning of the screw jack elements with compression force

The permitted buckling force for trapezoidal and ball-screw spindles can be verified using the following bend diagrams.



The various installation factors are ordered by Euler value

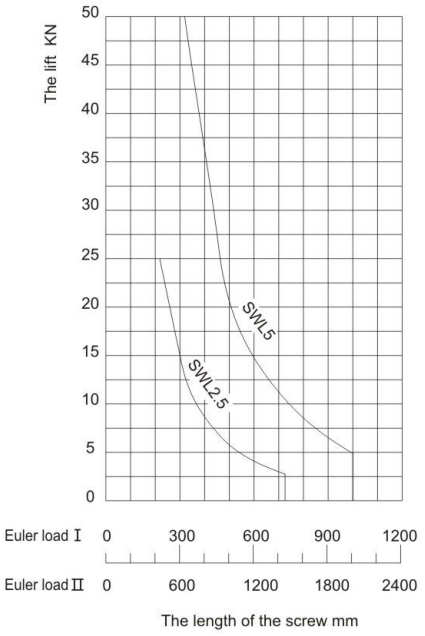


figure 1

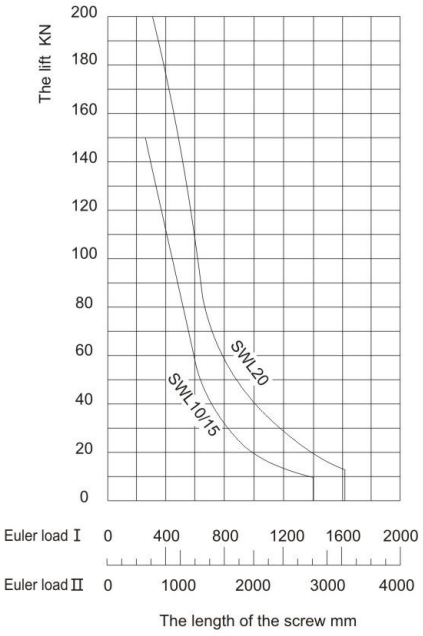


figure 2

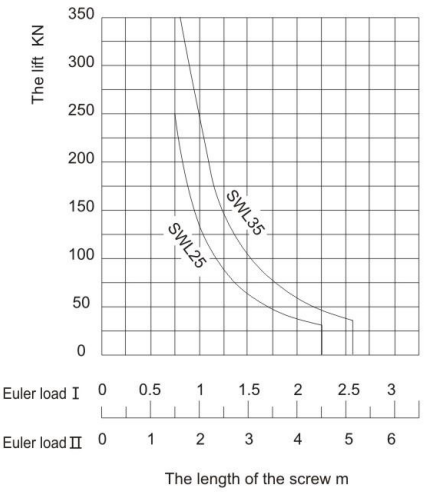


figure 3

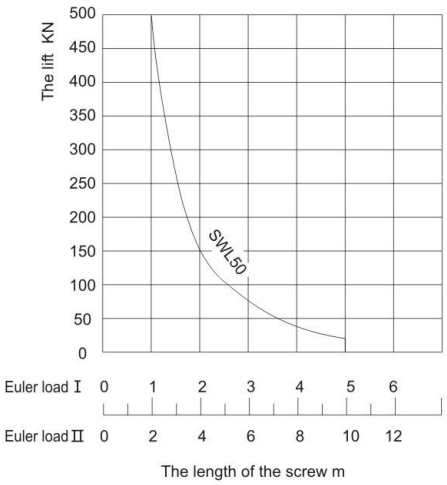


figure 4

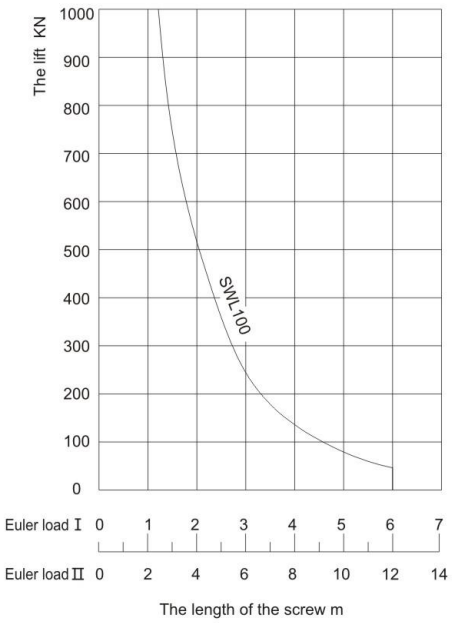


figure 5

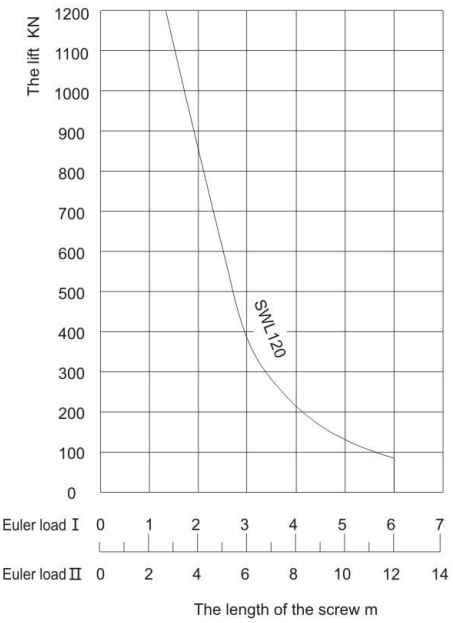


figure 6

2 Table of settings

2.1 SWL Worm gear screw jacks

Size		1	2,5	5	10
Max. lifting force	[kN]	10	25	50	100
Max. tension load	[kN]	10	25	50	99
Spindle Tr[1)]		24x4	30x6	40x7	58x12
Ratio P		6:1	6:1	6:1	8:1
Amount of lift per revolution for ratio P	[mm/per rev.]	0,67	1,0	1,167	1,5
Ratio M		24:1	24:1	24:1	24:1
Amount of lift per revolution for ratio M	[mm/per rev.]	0,17	0,25	0,292	0,50
Max. drive capacity [2)] at 20°C Ambient temp. and 20 % ED/hr	[kW]	0,35	0,65	1,15	2,7
Max. drive capacity 2) at 20°C Ambient temp. and 10 % ED/hr	[kW]	0,55	0,9	1,65	3,85
Overall efficiency of ratio P	[%]	29	27	24	27
Rendement total Rapport P	[%]	20	19	16	17
Spindle efficiency rating	[%]	35	36	30	31
Torque, capacity, turning-speed at 20 % ED/hr and 20°C		See P30-P31			
Spindle torque at max. lifting power	[Nm]	18,4	60	153	468
Max. permitted drive-shaft torque	[Nm]	29,4	46,5	92	195
Max. permitted spindle length with compression load		See P34			
Housing material	[mm]	ductile	ductile		
Weight without screw jack and protection tube	[kg]	2,5	7,3	16,2	25
Spindle weight per 100 mm of lift	[kg]	0,23	0,45	0,82	1,67
Amounts of lubricant in transmission	[kg]	0,1	0,2	0,35	0,9
Mass moment of inertia [3)] P-ratio Type 1	[kg cm^2]	0,383	0,780	2,234	5,256
Mass moment of inertia [3)] P-ratio Type 2	[kg cm^2]	0,390	0,792	2,273	5,356
Mass moment of inertia [3)] M-ratio Type 1	[kg cm^2]	0,269	0,558	1,696	4,081
Mass moment of inertia [3)] M-ratio Type 2	[kg cm^2]	0,275	0,558	1,699	4,091

[1)] Also applies to Ku spindle.
[2)] Max. permitted values for type 1 and Tr spindle. **Higher values are possible when using type 2 or Ku spindles.**
[3)] referring to 100 mm spindle length

20	25	35	50	100	120	Size
200	250	350	500	1000	1200	Max. lifting force
166	250	350	500	1000	1200	Max. tension load
65x12	90x16	100x20	120x20	160x23	180x25	Spindle Tr[1)]
8:1	10 2/3:1	10 2/3:1	10 2/3:1	12:1	12:1	Ratio P
1,50	1,50	1,69	1,87	1,91	2,08	Amount of lift per revolution for ratio P
24:1	32:1	32:1	32:1	36:1	36:1	Ratio M
0,5	0,5	0,56	0,625	0,64	0,7	Amount of lift per revolution for ratio M
3,8	5,0	6,0	7,4	12,5	18,5	Max. drive capacity [2)] at 20°C Ambient temp. and 20 % ED/hr
5,4	7,2	8,6	10,4	17,5	26	Max. drive capacity 2) at 20°C Ambient temp. and 10 % ED/hr
24	22	21	15	15	15	Overall efficiency of ratio P
17	15	14	10	9	-	Rendement total Rapport P
26	24	21	20	16	14	Spindle efficiency rating
See P30-P31						Torque, capacity, turning-speed at 20 % ED/hr and 20°C
1009	1725	2600	4235	11115	19850	Spindle torque at max. lifting power
280	480	705	840	2660	4260	Max. permitted drive-shaft torque
See P34						Max. permitted spindle length with compression load
ductile						Housing material
36	70,5	87	176	538	850	Weight without screw jack and protection tube
2,15	4,15	5,2	7,7	13,82	19,6	Spindle weight per 100 mm of lift
2	1,3	2,5	4,0	10,0	10,0	Amounts of lubricant in transmission
11,93	23,42	55,80	108,8	428,5	on request	Mass moment of inertia [3)] P-ratio Type 1
12,08	23,74	56,30	109,9	431,3	on request	Mass moment of inertia [3)] P-ratio Type 2
9,427	19,59	44,08	88,37	346,0	sur demande	Mass moment of inertia [3)] M-ratio Type 1
9,444	19,62	44,13	88,49	346,3	on request	Mass moment of inertia [3)] M-ratio Type 2

3 Performance tables (lifting elements with Tr spindle)

Turning speed, power requirement and permitted lifting speed for ratio N and L with single-threaded, lifting (Type 1) trapezoidal spindle. All performance data are expressed in terms of dynamic lifting force.

SWL 1T Tr24×4

n (1/min)	Lifting speed (m/min.)	F=10KN				F=8KN				F=6KN				F=4KN				F=3KN				F=2KN				F=1KN			
		P		M		P		M		P		M		P		M		P		M		P		M		P		M	
	P	M	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw
1500	1	0.25	5.05	0.79	2.04	0.32	4.04	0.63	1.63	0.26	3.03	0.48	1.22	0.19	2.02	0.32	0.82	0.13	1.52	0.24	0.61	0.1	1.01	0.16	0.41	0.06	0.51	0.08	0.2	0.03
1000	0.67	0.17	5.05	0.53	2.04	0.21	4.04	0.42	1.63	0.17	3.03	0.32	1.22	0.13	2.02	0.21	0.82	0.09	1.52	0.16	0.61	0.06	1.01	0.11	0.41	0.04	0.51	0.05	0.2	0.02
750	0.5	0.13	5.05	0.4	2.04	0.16	4.04	0.32	1.63	0.13	3.03	0.24	1.22	0.1	2.02	0.16	0.82	0.06	1.52	0.12	0.61	0.05	1.01	0.08	0.41	0.03	0.51	0.04	0.2	0.02
600	0.4	0.1	5.05	0.32	2.04	0.13	4.04	0.25	1.63	0.1	3.03	0.19	1.22	0.08	2.02	0.13	0.82	0.05	1.52	0.1	0.61	0.04	1.01	0.06	0.41	0.03	0.51	0.03	0.2	0.01
500	0.33	0.08	5.05	0.26	2.04	0.11	4.04	0.21	1.63	0.09	3.03	0.16	1.22	0.06	2.02	0.11	0.82	0.04	1.52	0.08	0.61	0.03	1.01	0.05	0.41	0.02	0.51	0.03	0.2	0.01
300	0.2	0.05	5.05	0.16	2.04	0.06	4.04	0.13	1.63	0.05	3.03	0.1	1.22	0.04	2.02	0.06	0.82	0.03	1.52	0.05	0.61	0.02	1.01	0.03	0.41	0.01	0.51	0.02	0.2	0.01
200	0.13	0.03	5.05	0.11	2.04	0.04	4.04	0.08	1.63	0.03	3.03	0.06	1.22	0.03	2.02	0.04	0.82	0.02	1.52	0.03	0.61	0.01	1.01	0.02	0.41	0.01	0.51	0.01	0.2	0
100	0.07	0.02	5.05	0.05	2.04	0.02	4.04	0.04	1.63	0.02	3.03	0.03	1.22	0.01	2.02	0.02	0.82	0.01	1.52	0.02	0.61	0.01	1.01	0.01	0.41	0	0.51	0.01	0.2	0
50	0.03	0.01	5.05	0.03	2.04	0.01	4.04	0.02	1.63	0.01	3.03	0.02	1.22	0.01	2.02	0.01	0.82	0	1.52	0.01	0.61	0	1.01	0.01	0.41	0	0.51	0	0.2	0

SWL2.5T Tr30×6

n (1/min)	Lifting speed (m/min.)	F=25KN				F=20KN				F=15KN				F=10KN				F=5KN				F=2.5KN				F=1KN			
		P		M		P		M		P		M		P		M		P		M		P		M		P		M	
	P	M	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw
1500	1.5	0.38	17.3	2.72	7.11	1.12	13.8	2.17	5.68	0.89	10.4	1.63	4.26	0.67	6.92	1.09	2.84	0.45	3.46	0.54	1.42	0.22	1.73	0.27	0.71	0.11	0.69	0.11	0.28	0.04
1000	1	0.25	17.3	1.81	7.11	0.74	13.8	1.45	5.68	0.6	10.4	1.09	4.26	0.45	6.92	0.72	2.84	0.3	3.46	0.36	1.42	0.15	1.73	0.18	0.71	0.07	0.69	0.07	0.28	0.03
750	0.75	0.19	17.3	1.36	7.11	0.56	13.8	1.09	5.68	0.45	10.4	0.82	4.26	0.33	6.92	0.54	2.84	0.22	3.46	0.27	1.42	0.11	1.73	0.14	0.71	0.06	0.69	0.05	0.28	0.02
600	0.6	0.15	17.3	1.09	7.11	0.45	13.8	0.87	5.68	0.36	10.4	0.65	4.26	0.27	6.92	0.43	2.84	0.18	3.46	0.22	1.42	0.09	1.73	0.11	0.71	0.05	0.69	0.04	0.28	0.02
500	0.5	0.13	17.3	0.91	7.11	0.37	13.8	0.72	5.68	0.3	10.4	0.54	4.26	0.22	6.92	0.36	2.84	0.15	3.46	0.18	1.42	0.07	1.73	0.09	0.71	0.04	0.69	0.04	0.28	0.01
300	0.3	0.08	17.3	0.54	7.11	0.22	13.8	0.43	5.68	0.18	10.4	0.33	4.26	0.13	6.92	0.22	2.84	0.09	3.46	0.11	1.42	0.04	1.73	0.05	0.71	0.02	0.69	0.02	0.28	0.01
200	0.2	0.05	17.3	0.36	7.11	0.15	13.8	0.29	5.68	0.12	10.4	0.22	4.26	0.09	6.92	0.14	2.84	0.06	3.46	0.07	1.42	0.03	1.73	0.04	0.71	0.02	0.69	0.01	0.28	0.01
100	0.1	0.03	17.3	0.18	7.11	0.07	13.8	0.14	5.68	0.06	10.4	0.11	4.26	0.04	6.92	0.07	2.84	0.03	3.46	0.04	1.42	0.01	1.73	0.02	0.71	0.01	0.69	0.01	0.28	0
50	0.05	0.01	17.3	0.09	7.11	0.04	13.8	0.07	5.68	0.03	10.4	0.05	4.26	0.02	6.92	0.04	2.84	0.01	3.46	0.02	1.42	0.01	1.73	0.01	0.71	0	0.69	0	0.28	0

SWL 5T Tr40×7

n (1/min)	Lifting speed (m/min.)	F=50KN				F=40KN				F=30KN				F=20KN				F=10KN				F=5KN				F=2.5KN			
		P		M		P		M		P		M		P		M		P		M		P		M		P		M	
	P	M	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw
1500	1.75	0.44	44.2	6.94	19.3	3.04	35.4	5.56	15.5	2.43	26.5	4.17	11.6	1.82	17.7	2.78	7.74	1.22	8.84	1.39	3.87	0.61	4.42	0.69	1.93	0.3	2.21	0.35	0.97	0.15
1000	1.17	0.29	44.2	4.63	19.3	2.03	35.4	3.7	15.5	1.62	26.5	2.78	11.6	1.22	17.7	1.85	7.74	0.81	8.84	0.93	3.87	0.41	4.42	0.46	1.93	0.2	2.21	0.23	0.97	0.1
750	0.88	0.22	44.2	3.47	19.3	1.52	35.4	2.78	15.5	1.22	26.5	2.08	11.6	0.91	17.7	1.39	7.74	0.61	8.84	0.69	3.87	0.3	4.42	0.35	1.93	0.15	2.21	0.17	0.97	0.08
600	0.7	0.18	44.2	2.78	19.3	1.22	35.4	2.22	15.5	0.97	26.5	1.67	11.6	0.73	17.7	1.11	7.74	0.49	8.84	0.56	3.87	0.24	4.42	0.28	1.93	0.12	2.21	0.14	0.97	0.06
500	0.58	0.15	44.2	2.31	19.3	1.01	35.4	1.85	15.5	0.81	26.5	1.39	11.6	0.61	17.7	0.93	7.74	0.41	8.84	0.46	3.87	0.2	4.42	0.23	1.93	0.1	2.21	0.12	0.97	0.05
300	0.35	0.09	44.2	1.39	19.3	0.61	35.4	1.11	15.5	0.49	26.5	0.83	11.6	0.36	17.7	0.56	7.74	0.24	8.84	0.28	3.87	0.12	4.42	0.14	1.93	0.06	2.21	0.07	0.97	0.03
200	0.23	0.06	44.2	0.93	19.3	0.41	35.4	0.74	15.5	0.32	26.5	0.56	11.6	0.24	17.7	0.37	7.74	0.16	8.84	0.19	3.87	0.08	4.42	0.09	1.93	0.04	2.21	0.05	0.97	0.02
100	0.12	0.03	44.2	0.46	19.3	0.2	35.4	0.37	15.5	0.16	26.5	0.28	11.6	0.12	17.7	0.19	7.74	0.08	8.84	0.09	3.87	0.04	4.42	0.05	1.93	0.02	2.21	0.02	0.97	0.01
50	0.06	0.01	44.2	0.23	19.3	0.1	35.4	0.19	15.5	0.08	26.5	0.14	11.6	0.06	17.7	0.09	7.74	0.04	8.84	0.05	3.87	0.02	4.42	0.02	1.93	0.01	2.21	0.01	0.97	0.01

SWL 10T Tr58×12

n (1/min)	Lifting speed (m/min.)	F=100KN				F=80KN				F=60KN				F=40KN				F=20KN				F=10KN				F=5KN			
		P		M		P		M		P		M		P		M		P		M		P		M		P		M	
	P	M	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw
1500	2.25	0.75	104	16.3	53.1	8.33	83	13	42.4	6.67	62.3	9.78	31.8	5	41.5	6.52	21.2	3.33	20.8	3.26	10.6	1.67	10.4	1.63	5.31	0.83	5.19	0.82	2.65	0.42
1000	1.5	0.5	104	10.9	53.1	5.56	83	8.7	42.4	4.44	62.3	6.52	31.8	3.33	41.5	4.35	21.2	2.22	20.8	2.17	10.6	1.11	10.4	1.09	5.31	0.56	5.19	0.54	2.65	0.28
750	1.13	0.38	104	8.15	53.1	4.17	83	6.52	42.4	3.33	62.3	4.89	31.8	2.5	41.5	3.26	21.2	1.67	20.8	1.63	10.6	0.83	10.4	0.82	5.31	0.42	5.19	0.41	2.65	0.21
600	0.9	0.3	104	6.52	53.1	3.33	83	5.22	42.4	2.67	62.3	3.91	31.8	2	41.5	2.61	21.2	1.33	20.8	1.3	10.6	0.67	10.4	0.65	5.31	0.33	5.19	0.33	2.65	0.17
500	0.75	0.25	104	5.43	53.1	2.78	83	4.35	42.4	2.22	62.3	3.26	31.8	1.67	41.5	2.17	21.2	1.11	20.8	1.09	10.6	0.56	10.4	0.54	5.31	0.28	5.19	0.27	2.65	0.14
300	0.45	0.15	104	3.26	53.1	1.67	83	2.61	42.4	1.33	62.3	1.96	31.8	1	41.5	1.3	21.2	0.67	20.8	0.65	10.6	0.33	10.4	0.33	5.31	0.17	5.19	0.16	2.65	0.08
200	0.3	0.1	104	2.17	53.1	1.11	83	1.74	42.4	0.89	62.3	1.3	31.8	0.67	41.5	0.87	21.2	0.44	20.8	0.43	10.6	0.22	10.4	0.22	5.31	0.11	5.19	0.11	2.65	0.06
100	0.15	0.05	104	1.09	53.1	0.56	83	0.87	42.4	0.44	62.3	0.65	31.8	0.33	41.5	0.43	21.2	0.22	20.8	0.22	10.6	0.11	10.4	0.11	5.31	0.06	5.19	0.05	2.65	0.03
50	0.08	0.03	104	0.54	53.1	0.28	83	0.43	42.4	0.22	62.3	0.33	31.8	0.17	41.5	0.22	21.2	0.11	20.8	0.11	10.6	0.05	10.4	0.05	5.31	0.03	5.19	0.03	2.65	0.01

20% ED / 1hr or 30% ED / 10min. and ambient temperature 20°C and ambient temp. 20°C

static only (dynamic not permitted)

10% ED/1hr and ambient temperature 20°C

SWL 20T Tr65×12

n (1/min)	Lifting speed (m/min.)	F=250KN				F=200KN				F=160KN				F=120KN				F=100KN				F=75KN				F=50KN			
		P		M		P		M		P		M		P		M		P		M		P		M		P		M	
	P	M	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw
1500	2.25	0.75	227	35.7	122	19.2	182	28.6	97.9	15.4	136	21.4	73.5	11.5	114	17.9	61.2	9.62	85.3	13.4	45.9	7.21	56.8	8.93	30.6	4.81	28.4	4.46	15.3	2.4
1000	1.5	0.5	227	23.8	122	12.8	182	19	97.9	10.3	136	14.3	73.5	7.69	114	11.9	61.2	6.41	85.3	8.93	45.9	4.81	56.8	5.95	30.6	3.21	28.4	2.98	15.3	1.6
750	1.13	0.38	227	17.9	122	9.62	182	14.3	97.9	7.69	136	10.7	73.5	5.77	114	8.93	61.2	4.81	85.3	6.7	45.9	3.61	56.8	4.46	30.6	2.4	28.4	2.23	15.3	1.2
600	0.9	0.3	227	14.3	122	7.69	182	11.4	97.9	6.15	136	8.57	73.5	4.62	114	7.14	61.2	3.85	85.3	5.36	45.9	2.88	56.8	3.57	30.6	1.92	28.4	1.79	15.3	0.96
500	0.75	0.25	227	11.9	122	6.41	182	9.52	97.9	5.13	136	7.14	73.5	3.85	114	5.95	61.2	3.21	85.3	4.46	45.9	2.4	56.8	2.98	30.6	1.6	28.4	1.49	15.3	0.8
300	0.45	0.15	227	7.14	122	3.85	182	5.71	97.9	3.08	136	4.29	73.5	2.31	114	3.57	61.2	1.92	85.3	2.68	45.9	1.44	56.8	1.79	30.6	0.96	28.4	0.89	15.3	0.48
200	0.3	0.1	227	4.76	122	2.56	182	3.81	97.9	2.05	136	2.86	73.5	1.54	114	2.38	61.2	1.28	85.3	1.79	45.9	0.96	56.8	1.19	30.6	0.64	28.4	0.6	15.3	0.32
100	0.15	0.05	227	2.38	122	1.28	182	1.9	97.9	1.03	136	1.43	73.5	0.77	114	1.19	61.2	0.64	85.3	0.89	45.9	0.48	56.8	0.6	30.6	0.32	28.4	0.3	15.3	0.16
50	0.08	0.03	227	1.19	122	0.64	182	0.95	97.9	0.51	136	0.71	73.5	0.38	114	0.6	61.2	0.32	85.3	0.45	45.9	0.24	56.8	0.3	30.6	0.16	28.4	0.15	15.3	0.08

SWL 25T Tr90×16

n (1/min)	Lifting speed (m/min.)	F=250KN				F=200KN				F=160KN				F=120KN				F=100KN				F=75KN				F=50KN			
		P		M		P		M		P		M		P		M		P		M		P		M		P		M	
	P	M	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw
1500	2.25	0.75	314	49.3	181	28.4	251	39.5	145	22.7	201	31.6	116	18.2	151	23.7	86.8	13.6	126	19.7	72.3	11.4	94.2	14.8	54.3	8.52	62.8	9.87	36.2	5.68
1000	1.5	0.5	314	32.9	181	18.9	251	26.3	145	15.2	201	21.1	116	12.1	151	15.8	86.8	9.09	126	13.2	72.3	7.58	94.2	9.87	54.3	5.68	62.8	6.58	36.2	3.79
750	1.13	0.38	314	24.7	181	14.2	251	19.7	145	11.4	201	15.8	116	9.09	151	11.8	86.8	6.82	126	9.87	72.3	5.68	94.2	7.4	54.3	4.26	62.8	4.93	36.2	2.84
600	0.9	0.3	314	19.7	181	11.4	251	15.8	145	9.09	201	12.6	116	7.27	151	9.47	86.8	5.45	126	7.89	72.3	4.55	94.2	5.92	54.3	3.41	62.8	3.95	36.2	2.27
500	0.75	0.25	314	16.4	181	9.47	251	13.2	145	7.58	201	10.5	116	6.06	151	7.89	86.8	4.55	126	6.58	72.3	3.79	94.2	4.93	54.3	2.84	62.8	3.29	36.2	1.89
300	0.45	0.15	314	9.87	181	5.68	251	7.89	145	4.55	201	6.32	116	3.64	151	4.74	86.8	2.73	126	3.95	72.3	2.27	94.2	2.96	54.3	1.71	62.8	1.97	36.2	1.14
200	0.3	0.1	314	6.58	181	3.79	251	5.26	145	3.03	201	4.21	116	2.42	151	3.16	86.8	1.82	126	2.63	72.3	1.52	94.2	1.97	54.3	1.14	62.8	1.32	36.2	0.76
100	0.15	0.05	314	3.29	181	1.89	251	2.63	145	1.52	201	2.11	116	1.21	151	1.58	86.8	0.91	126	1.32	72.3	0.76	94.2	0.99	54.3	0.57	62.8	0.66	36.2	0.38
50	0.08	0.03	314	1.64	181	0.95	251	1.32	145	0.76	201	1.05	116	0.61	151	0.79	86.8	0.45	126	0.66	72.3	0.38	94.2	0.49	54.3	0.28	62.8	0.33	36.2	0.19

SWL 35T Tr100×20

n (1/min)	Lifting speed (m/min.)	F=350KN				F=300KN				F=250KN				F=200KN				F=150KN				F=100KN				F=50KN			
		P		M		P		M		P		M		P		M		P		M		P		M		P		M	
	P	M	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw
1500	2.53	0.84	522	82	285	44.7	448	70.3	244	38.4	373	58.6	203	32	298	46.9	163	25.6	224	35.2	122	19.2	149	23.4	81.4	12.8	74.6	11.7	40.7	6.39
1000	1.69	0.56	522	54.7	285	29.8	448	46.9	244	25.6	373	39.1	203	21.3	298	31.3	163	17	224	23.4	122	12.8	149	15.6	81.4	8.52	74.6	7.81	40.7	4.26
750	1.27	0.42	522	41	285	22.4	448	35.2	244	19.2	373	29.3	203	16	298	23.4	163	12.8	224	17.6	122	9.59	149	11.7	81.4	6.39	74.6	5.86	40.7	3.2
600	1.01	0.34	522	32.8	285	17.9	448	28.1	244	15.3	373	23.4	203	12.8	298	18.8	163	10.2	224	14.1	122	7.67	149	9.38	81.4	5.11	74.6	4.69	40.7	2.56
500	0.84	0.28	522	27.3	285	14.9	448	23.4	244	12.8	373	19.5	203	10.7	298	15.6	163	8.52	224	11.7	122	6.39	149	7.81	81.4	4.26	74.6	3.91	40.7	2.13
300	0.51	0.17	522	16.4	285	8.95	448	14.1	244	7.67	373	11.7	203	6.39	298	9.38	163	5.11	224	7.03	122	3.84	149	4.69	81.4	2.56	74.6	2.34	40.7	1.28
200	0.34	0.11	522	10.9	285	5.97	448	9.38	244	5.11	373	7.81	203	4.26	298	6.25	163	3.41	224	4.69	122	2.56	149	3.13	81.4	1.71	74.6	1.56	40.7	0.85
100	0.17	0.06	522	5.47	285	2.98	448	4.69	244	2.56	373	3.91	203	2.13	298	3.13	163	1.7	224	2.34	122	1.28	149	1.56	81.4	0.85	74.6	0.78	40.7	0.43
50	0.08	0.03	522	2.73	285	1.49	448	2.34	244	1.28	373	1.95	203	1.07	298	1.56	163	0.85	224	1.17	122	0.64	149	0.78	81.4	0.43	74.6	0.39	40.7	0.21

SWL 50T Tr120×20

n (1/min)	Lifting speed (m/min.)	F=500KN				F=400KN				F=300KN				F=250KN				F=200KN				F=150KN				F=100KN			
		P		M		P		M		P		M		P		M		P		M		P		M		P		M	
	P	M	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw
1500	2.81	0.94	995	156	452	71	796	125	362	56.8	597	93.8	271	42.6	497	78.1	226	35.5	398	62.5	181	28.4	298	46.9	136	21.3	199	31.3	90.4	14.2
1000	1.88	0.63	995	104	452	47.3	796	83.3	362	37.9	597	62.5	271	28.4	497	52.1	226	23.7	398	41.7	181	18.9	298	31.3	136	14.2	199	20.8	90.4	9.47
750	1.41	0.47	995	78.1	452	35.5	796	62.5	362	28.4	597	46.9	271	21.3	497	39.1	226	17.8	398	31.3	181	14.2	298	23.4	136	10.7	199	15.6	90.4	7.1
600	1.13	0.38	995	62.5	452	28.4	796	50	362	22.7	597	37.5	271	17	497	31.3	226	14.2	398	25	181	11.4	298	18.8	136	8.52	199	12.5	90.4	5.68
500	0.94	0.31	995	52.1	452	23.7	796	41.7	362	18.9	597	31.3	271	14.2	497	26	226	11.8	398	20.8	181	9.47	298	15.6	136	7.1	199	10.4	90.4	4.73
300	0.56	0.19	995	31.3	452	14.2	796	25	362	11.4	597	18.8	271	8.52	497	15.6	226	7.1	398	12.5	181	5.68	298	9.38	136	4.26	199	6.25	90.4	2.84
200	0.38	0.13	995	20.8	452	9.47	796	16.7	362	7.58	597	12.5	271	5.68	497	10.4	226	4.73	398	8.33	181	3.79	298	6.25	136	2.84	199	4.17	90.4	1.89
100	0.19	0.06	995	10.4	452	4.73	796	8.33	362	3.79	597	6.25	271	2.84	497	5.21	226	2.37	398	4.17	181	1.89	298	3.13	136	1.42	199	2.08	90.4	0.95
50	0.09	0.03	995	5.21	452	2.37	796	4.17	362	1.89	597	3.13	271	1.42	497	2.6	226	1.18	398	2.08	181	0.95	298	1.56	136	0.71	199	1.04	90.4	0.47

SWL 100T Tr160×23

n (1/min)	Lifting speed (m/min.)	F=1000KN				F=800KN				F=600KN				F=500KN				F=350KN				F=200KN				F=100KN			
		P		M		P		M		P		M		P		M		P		M		P		M		P		M	
	P	M	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw
1500	2.88	0.96	2347	369	1017	160	1877	295	814	128	1408	221	610	95.8	1173	184	508	79.9	821	129	356	55.9	469	73.7	203	31.9	235	36.9	102	16
1000	1.92	0.64	2347	246	1017	106	1877	197	814	85.2	1408	147	610	63.9	1173	123	508	53.2	821	86	356	37.3	469	49.1	203	21.3	235	24.6	102	10.6
750	1.44	0.48	2347	184	1017	79.9	1877	147	814	63.9	1408	111	610	47.9	1173	92.1	508	39.9	821	64.5	356	28	469	36.9	203	16	235	18.4	102	7.99
600	1.15	0.38	2347	147	1017	63.9	1877	118	814	51.1	1408	88.5	610	38.3	1173	73.7	508	31.9	821	51.6	356	22.4	469	29.5	203	12.8	235	14.7	102	6.39
500	0.96	0.32	2347	123	1017	53.2	1877	98.3	814	42.6	1408	73.7	610	31.9	1173	61.4	508	26.6	821	43	356	18.6	469	24.6	203	10.7	235	12.3	102	5.32
300	0.58	0.19	2347	73.7	1017	31.9	1877	59	814	25.6	1408	44.2	610	19.2	1173	36.9	508	16	821	25.8	356	11.2	469	14.7	203	6.39	235	7.37	102	3.19
200	0.38	0.13	2347	49.1	1017	21.3	1877	39.3	814	17	1408	29.5	610	12.8	1173	24.6	508	10.6	821	17.2	356	7.45	469	9.83	203	4.26	235	4.91	102	2.13
100	0.19	0.06	2347	24.6	1017	10.6	1877	19.7	814	8.52	1408	14.7	610	6.39	1173	12.3	508	5.32	821	8.6	356	3.73	469	4.91	203	2.13	235	2.46	102	1.06
50	0.1	0.03	2347	12.3	1017	5.32	1877	9.83	814	4.26	1408	7.37	610	3.19	1173	6.14	508	2.66	821	4.3	356	1.86	469	2.46	203	1.07	235	1.23	102	0.53

SWL 120T Tr180×25

n (1/min)	Lifting speed (m/min.)	F=1200KN				F=1000KN				F=800KN				F=600KN				F=400KN				F=200KN				F=100KN			
		P		M		P		M		P		M		P		M		P		M		P		M		P		M	
	P	M	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw	Nm	Kw
1500	3.13	1.04	3316	521	1658	260	2763	434	1382	217	2211	347	1105	174	1658	260	829	130	1105	174	553	86.8	553	86.8	276	43.4	276	43.4	138	21.7
1000	2.08	0.69	3316	347	1658	174	2763	289	1382	145	2211	231	1105	116	1658	174	829	86.8	1105	116	553	57.9	553	57.9	276	28.9	276	28.9	138	14.5
750	1.56	0.52	3316	260	1658	130	2763	217	1382	109	2211	174	1105	86.8	1658	130	829	65.1	1105	86.8	553	43.4	553	43.4	276	21.7	276	21.7	138	10.9
600	1.25	0.42	3316	208	1658	104	2763	174	1382	86.8	2211	139	1105	69.4	1658	104	829	52.1	1105	69.4	553	34.7	553	34.7	276	17.4	276	17.4	138	8.68
500	1.04	0.35	3316	174	1658	86.8	2763	145	1382	72.3	2211	116	1105	57.9	1658	86.8	829	43.4	1105	57.9	553	28.9	553	28.9	276	14.5	276	14.5	138	7.23
300	0.63	0.21	3316	104	1658	52.1	2763	86.8	1382	43.4	2211	69.4	1105	34.7	1658	52.1	829	26	1105	34.7	553	17.4	553	17.4	276	8.68	276	8.68	138	4.34
200	0.42	0.14	3316	69.4	1658	34.7	2763	57.9	1382	28.9	2211	46.3	1105	23.1	1658	34.7	829	17.4	1105	23.1	553	11.6	553	11.6	276	5.79	276	5.79	138	2.89
100	0.21	0.07	3316	34.7	1658	17.4	2763	28.9	1382	14.5	2211	23.1	1105	11.6	1658	17.4	829	8.68	1105	11.6	553	5.79	553	5.79	276	2.89	276	2.89	138	1.45
50	0.1	0.03	3316	17.4	1658	8.68	2763	14.5	1382	7.23	2211	11.6	1105	5.79	1658	8.68	829	4.34	1105	5.79	553	2.89	553	2.89	276	1.45	276	1.45	138	0.72

☐ 20% ED / 1hr or 30% ED / 10min. and ambient temperature 20°C and ambient temp. 20°C

static only (dynamic not permitted)

10% ED/1hr and ambient temperature 20°C

3.1 Technical information

3.1.1 Lifting-element efficiency ratings " η"

Formula: $\eta_{HE} = \eta_G * \eta_{Sp}$

3.1.1.1 SWL range

Overall efficiency ratings η_{HE} of SHE gears and spindles with grease lubrication

Size	1P	2.5P	5P	10P	20P	25P	35P	50P	100P	120P
η_{HE}	0.29	0.27	0.24	0.27	0.24	0.22	0.21	0.15	0.15	0.16
Size	1M	2.5M	5M	10M	20M	25M	35M	50M	100M	120M
η_{HE}	0.20	0.19	0.16	0.17	0.17	0.15	0.14	0.10	0.09	-

Gear efficiency ratings η_G of SHE gears with grease lubrication (without spindles)

Size	1P	2.5P	5P	10P	15P	20P	25P	35P	50P	100P	120P
η_{HE}	0.68	0.68	0.66	0.66	0.66	0.64	0.61	0.62	0.5	0.53	0.56
Size	1M	2.5M	5M	10M	15M	20M	25M	35M	50M	100M	120M
η_{HE}	0.48	0.47	0.43	0.42	0.42	0.46	0.41	0.42	0.34	0.32	0.32

Overall efficiency ratings η_{HE} of type 2 gears with oil lubrication and spindles with grease lubrication

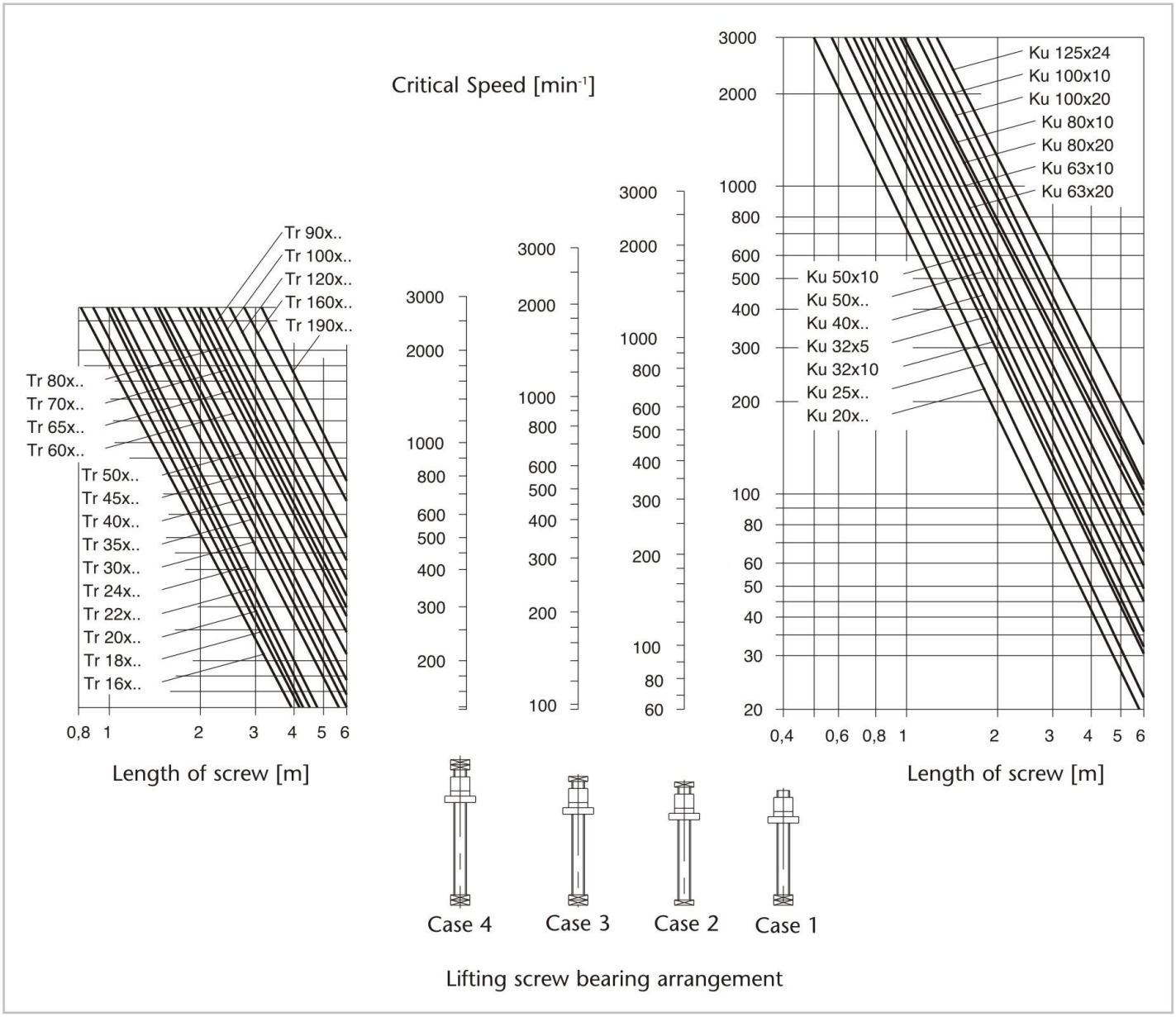
Size	1P	2.5P	5P	10P	20P	25P	35P	50P	100P	120P
Turning speed [rpm]										
1500	0.355	0.283	0.257	0.290	0.273	0.262	0.248	0.281	0.210	0.220
1000	0.347	0.279	0.252	0.285	0.268	0.257	0.243	0.215	0.206	0.215
750	0.342	0.276	0.249	0.282	0.266	0.253	0.240	0.212	0.204	0.210
500	0.334	0.272	0.245	0.277	0.262	0.249	0.236	0.208	0.200	0.205
300	0.325	0.267	0.241	0.272	0.257	0.243	0.231	0.204	0.196	0.200
100	0.373	0.257	0.231	0.261	0.247	0.233	0.222	0.195	0.187	0.195
50	0.309	0.251	0.225	0.255	0.242	0.226	0.216	0.190	0.182	0.188
Size	1M	2.5M	5M	10M	20M	25M	35M	50M	100M	120M
Turning speed [rpm]										
1500	0.260	0.214	0.188	0.236	0.225	0.210	0.204	0.181	0.176	-
1000	0.246	0.206	0.180	0.227	0.217	0.200	0.195	0.174	0.169	-
750	0.237	0.201	0.175	0.222	0.212	0.194	0.189	0.169	0.164	-
500	0.224	0.194	0.168	0.215	0.205	0.187	0.183	0.162	0.157	-
300	0.212	0.187	0.161	0.207	0.198	0.179	0.175	0.155	0.150	-
100	0.195	0.172	0.146	0.191	0.183	0.164	0.160	0.142	0.137	-
50	0.190	0.164	0.138	0.183	0.175	0.155	0.152	0.135	0.130	-

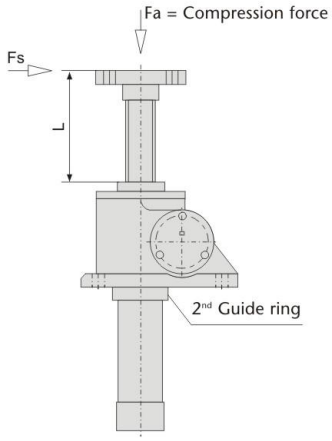
3.1.1.2 Spindle efficiency ratings Sp (steel/bronze lubricated)

Size	SWL1	SWL2. 5	SWL5	SWL10	SWL20	SWL25	SWL35	SWL50	SWL100	SWL120
Tr spindle	24×4	30×6	40×7	58×12	65×12	90×16	100×20	120×20	160×23	180×25
Spindle efficiency rating[%]	0. 35	0. 36	0. 30	0. 31	0. 26	0. 24	0. 21	0. 20	0. 16	0. 14

3.1.2 Critical spindle turning speed

The critical turning speed (only configuration type 2) is dependent on the spindle diameter, the spindle length and the spindle bearing (see case 1-4).





Type 2: Fs permitted in static configuration only

3.1.3 Permitted lateral force on spindle

The permitted lateral force (Fs) on the spindle depends on the axial force (Fa). the diameter of the spindle (d) and the length of the spindle L. As compression and buckling force exercise negative influence, these factors were taken into account when determining this permitted lateral force (Fs). The maximum length of the spindle (L) is limited by the value generally used in mechanical engineering applications: "unguided spindle length = 4x free clamping length".

Lateral force on the spindle is only permitted on screw jacks fitted with two guide rings.

Lateral forces on spindles or travelling nuts exercise a reinforced edge compression on the movement thread, leading to increased wear and a shortened service life.

The relationship between the allowable radial force Fs and the axial force Fa of the lead screw and the stroke

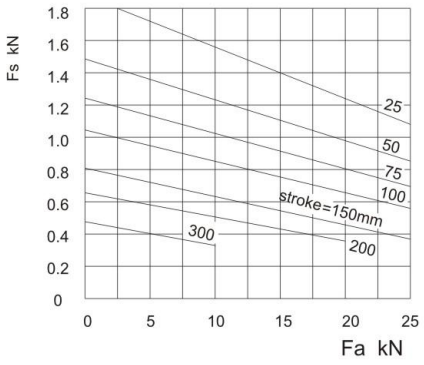


figure 5 **SWL2.5**

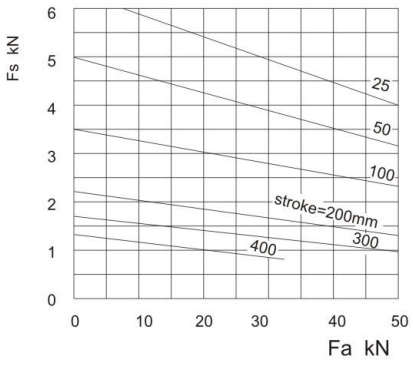


figure 6 **SWL5**

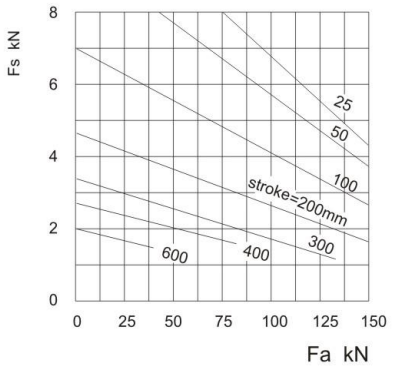


figure 7 **SWL10/15**

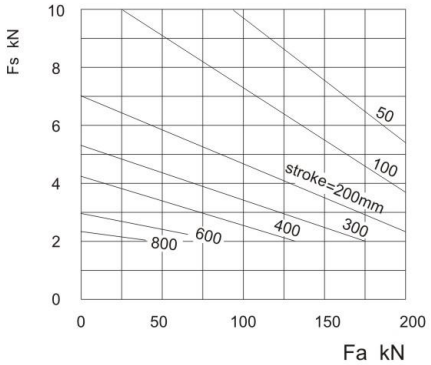


figure 8 **SWL20**

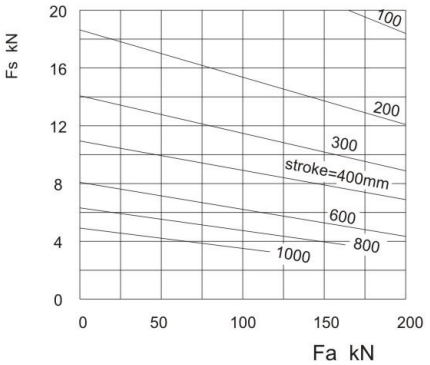


figure 9 **SWL25**

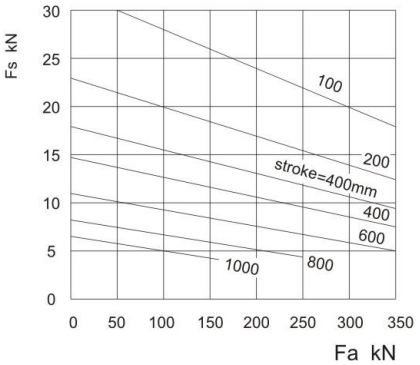
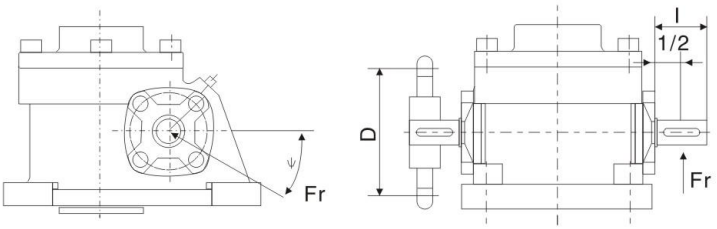


figure 10 **SWL35**

3.2 Allowable radial force of the input shaft

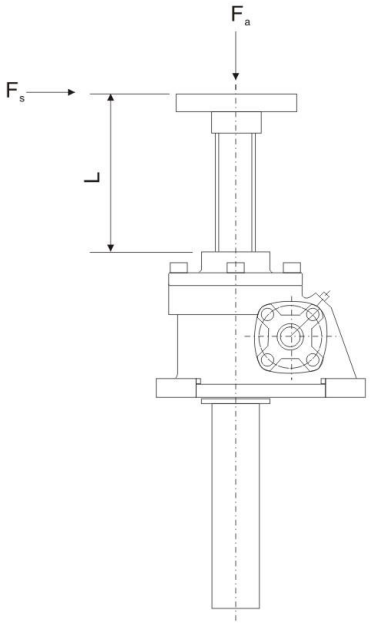
1. The worm shaft is extended. Due to the radial force Fr generated by the gear, sprocket or pulley, the maximum allowable force is related to the length and type.See the maximum radial force and torque allowed at 1/2.



Size	Frmax N	Mt max N·m
SWL1/1M	160	6.6
SWL2.5/2.5M	350	18
SWL5/5M	750	44.2
SWL10/10M/15/15M	1000	108
SWL20/20M	1300	182
SWL25/25M	2000	314
SWL35/35M	2300	398
Note: The parameters in the table are calculated as ψ≈30° or 330°.		

2. The minimum diameter of the gear or pulley:

$$D_{min}=19100\times\frac{P}{F_{max}n}=\frac{2M_1}{F_{max}}$$



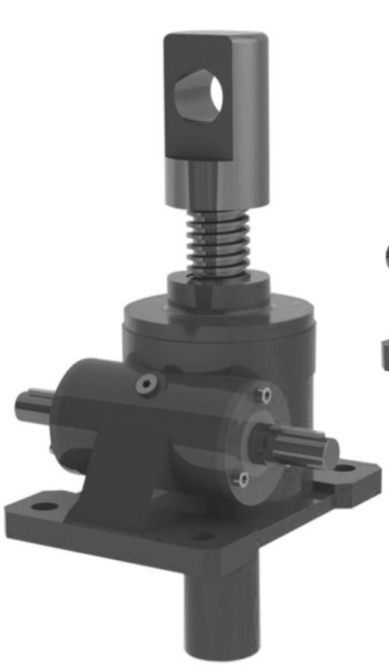
Where: D_{min}--the minimum diameter of the gear or pulley, m;

P--drive power, KW;

F_{max}--maximum radial force, N;

n--worm speed, r/min;

M_1--drive torque, N·m



SWL-1A

SWL-1B

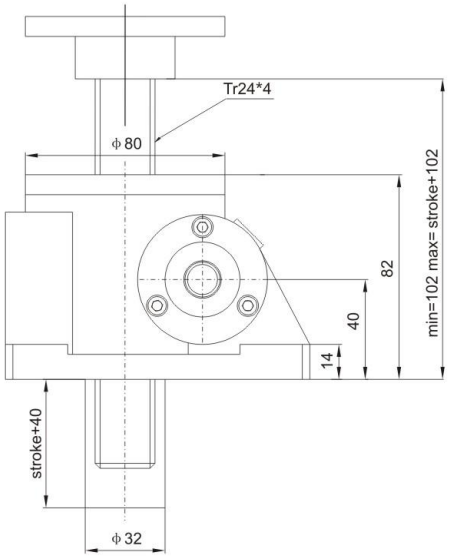
Example :

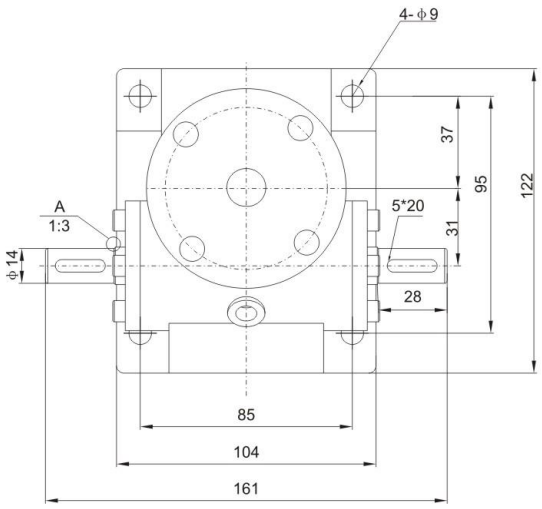
SWL	2.5	M	-	1	A	II	-	300	-	FZ	-	C
1	2	3		4	5	6		7		8		9

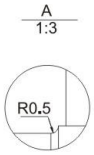
1. SWL: serial number, SWL series - worm gear + T type screw lift; SWLB worm gear + ball screw lift;
2. 2.5: model, with the static load capacity of the lift as the model; mainly: 1, 2.5, 5, 10, 20, 25, 35, 50, 100, 120;
3. M: lifting speed, mainly refers to the deceleration ratio of worm gear pair; M: slow; P: fast;
4. 1: Structural model; Type 1: nut for rotary motion, screw for axial movement (products shown on this page are type I);
   Type 2: screw for rotary motion, nut for axial movement;
5. A: assembly type; type A: the screw (or nut) moves up (mounting surface); type B: the screw (or nut) moves down (mounting surface);
6. II: screw head type: 1 type screw head is divided into I type (cylindrical type), type II (flange type), type III (thread type),
   type IV (flat head type);
   2 type screw head is divided into I type (cylindrical type) and type III (thread type);
7. 300: lifting stroke; customer customization;
8. FZ: anti-rotation and protection of the screw;
   Type 1 structure has basic type, anti-rotation type (F-key anti-rotation) and protective cover type(Z steel pipe protection - passive side, X telescopic tube protection - active side, Q both);
   Type 2 structure has basic type and protective cover type (X telescopic tube protection - active side);
9. C: the axis points to A; B; C; D; E;

SWL1 type 1 structure (screw lifting type)

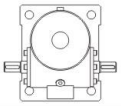
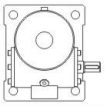
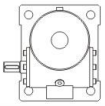
1A Upright translating screw



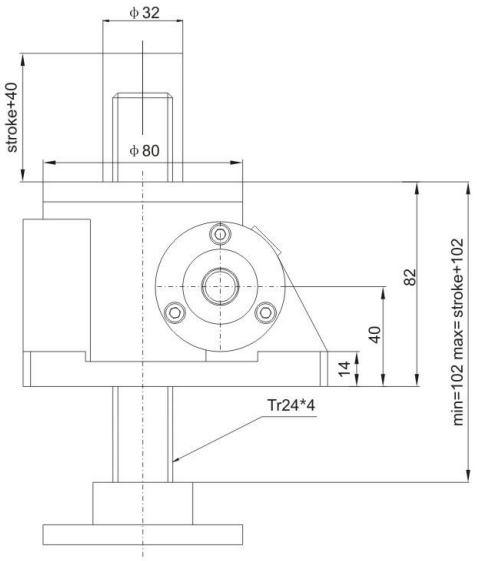




Shaft Direction

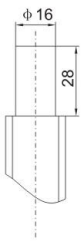
SWL Common axis pointing C	SWL Optional axis pointing B	SWL Optional axis pointing A
		

1B Inverted translating screw

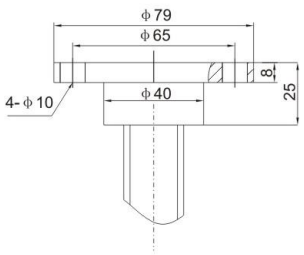


Screw head optional

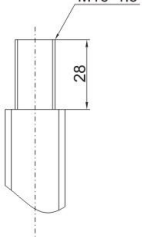
Type I



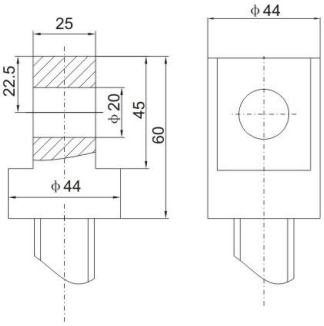
Type II



Type III

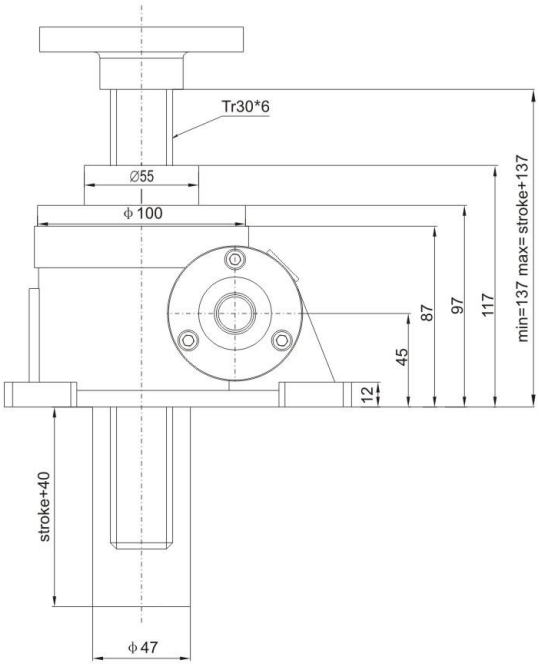


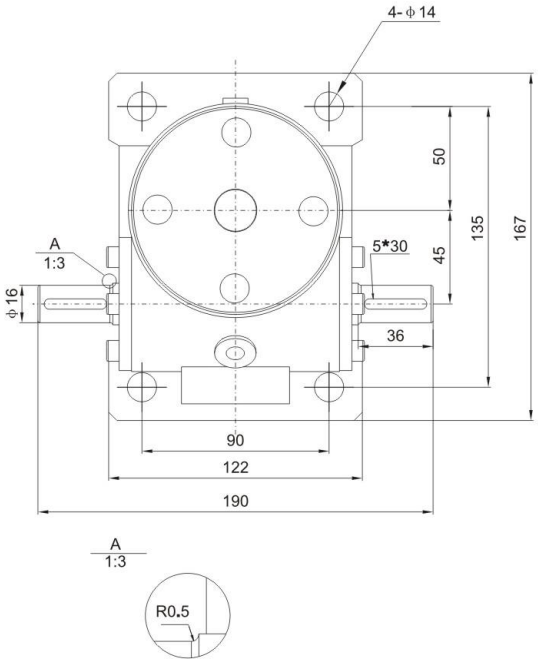
Type IV



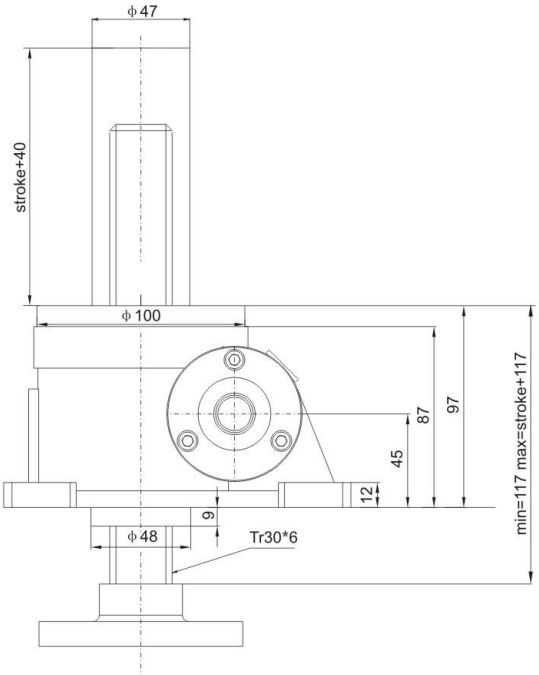
SWL2.5 type 1 structure (screw lifting type)

1A Upright translating screw



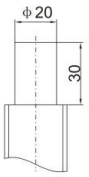


1B Inverted translating screw

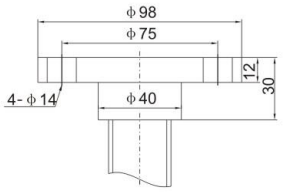


Screw head optional

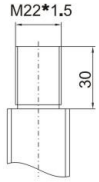
Type I



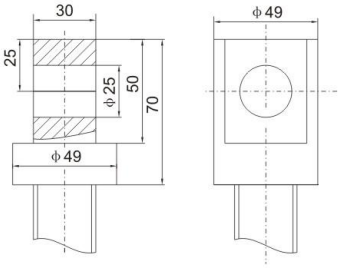
Type II



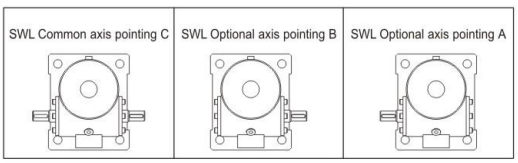
Type III



Type IV

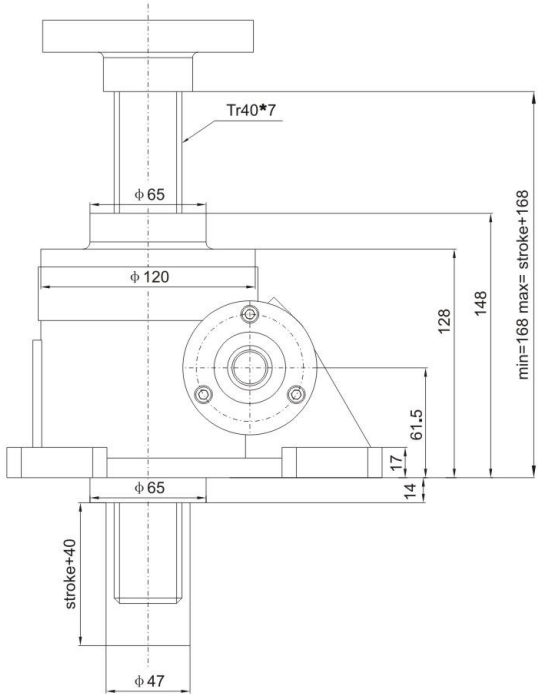


Shaft Direction

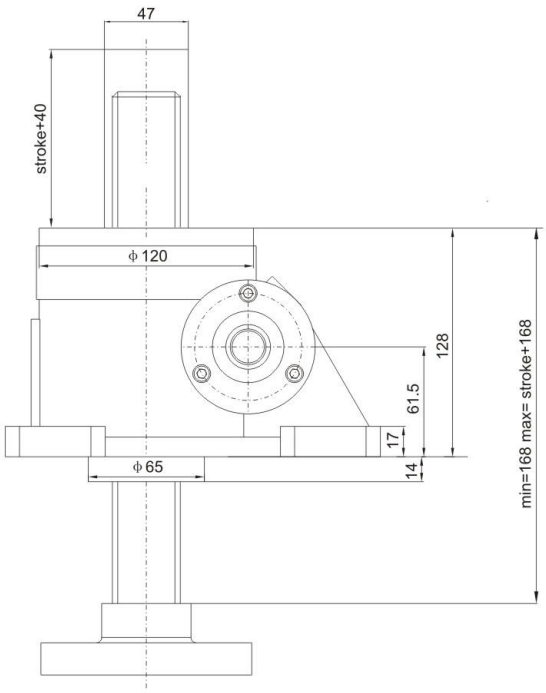


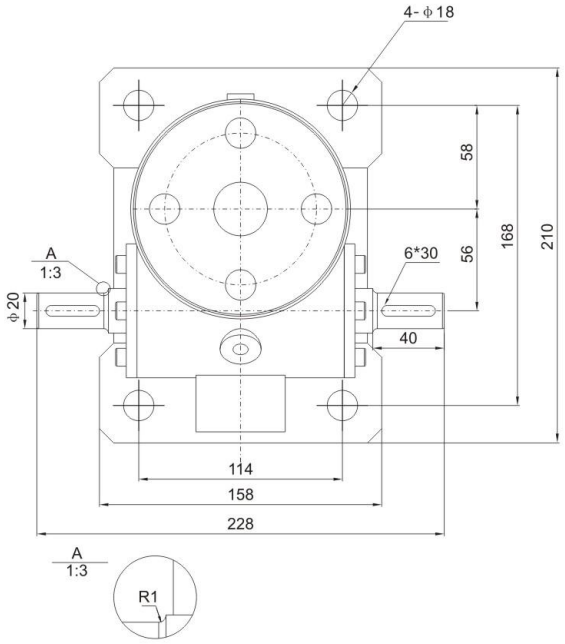
SWL5 type 1 structure (screw lifting type)

1A Upright translating screw



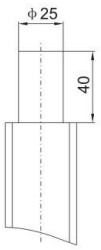
1B Inverted translating screw



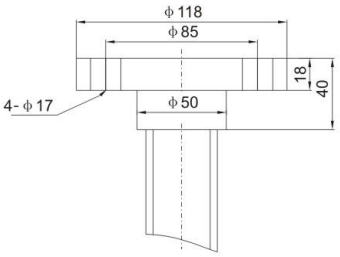


Screw head optional

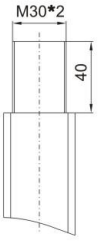
Type I



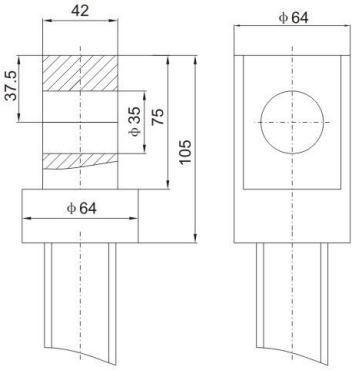
Type II



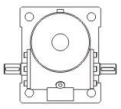
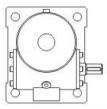
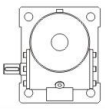
Type III



Type IV

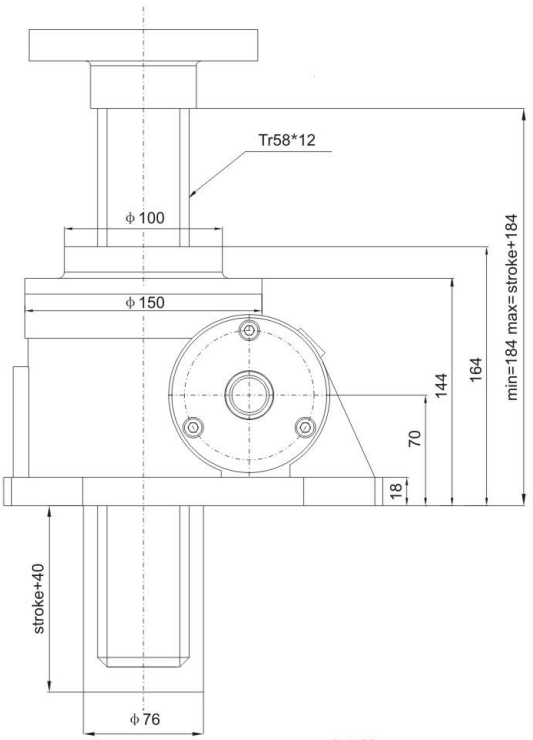


Shaft Direction

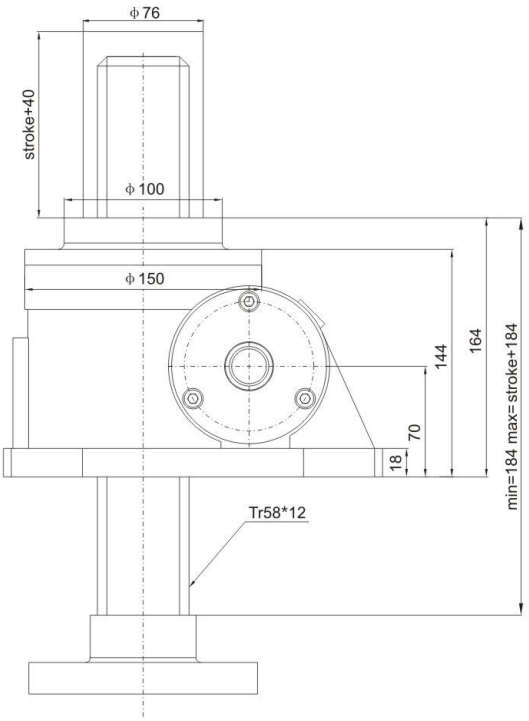
SWL Common axis pointing C	SWL Optional axis pointing B	SWL Optional axis pointing A
		

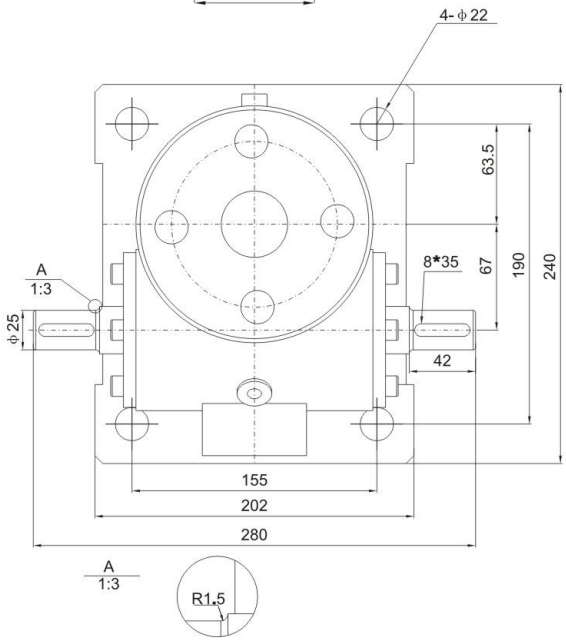
SWL10 type 1 structure (screw lifting type)

1A Upright translating screw



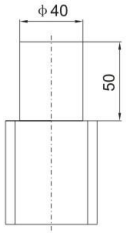
1B Inverted translating screw



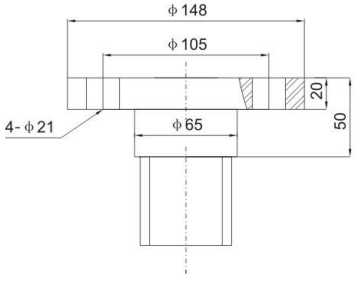


Screw head optional

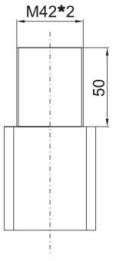
Type I



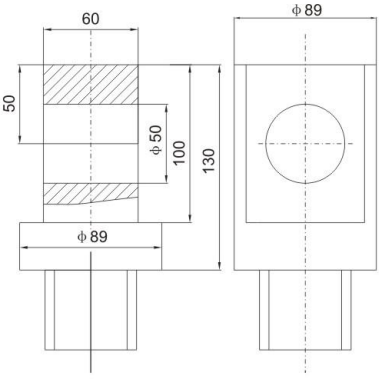
Type II



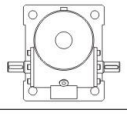
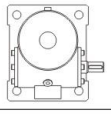
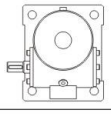
Type III



Type IV

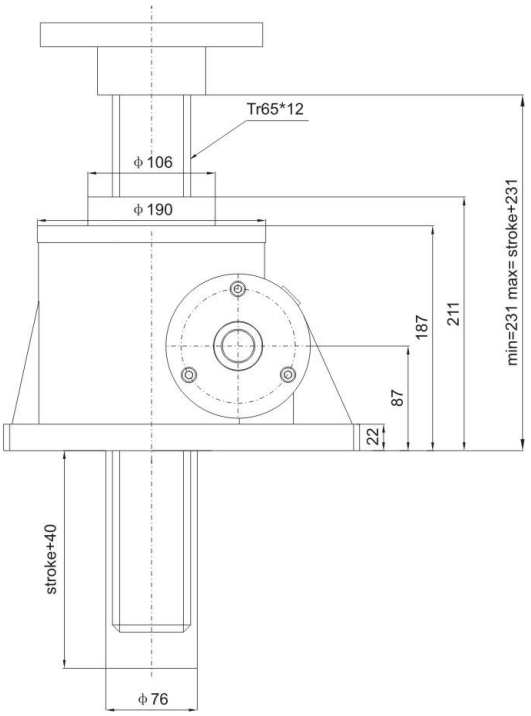


Shaft Direction

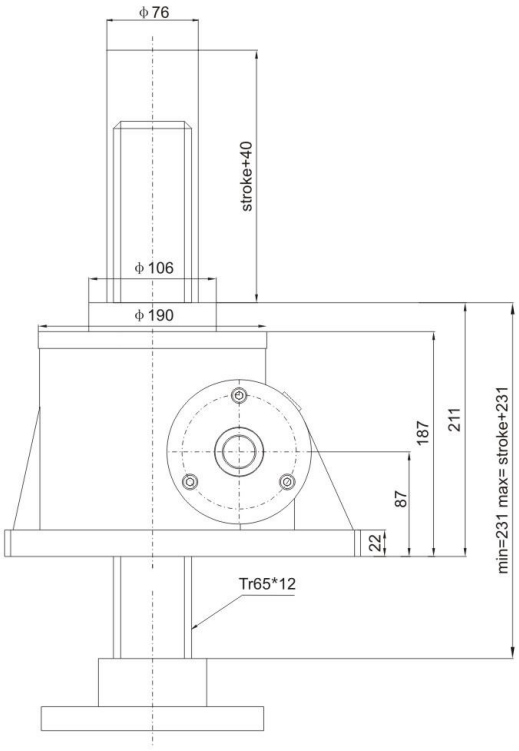
SWL Common axis pointing C	SWL Optional axis pointing B	SWL Optional axis pointing A
		

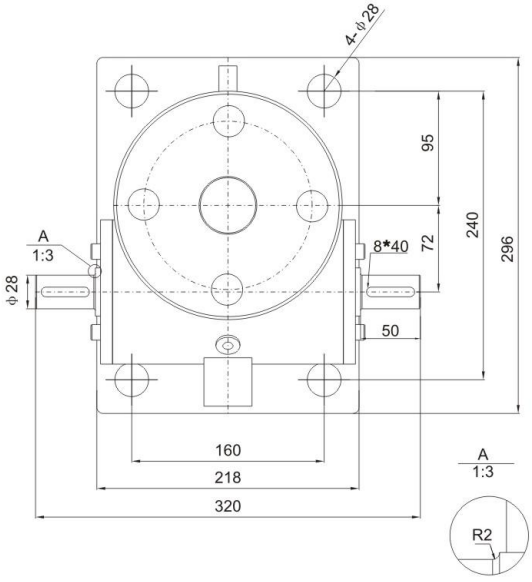
SWL20 type 1 structure (screw lifting type)

1A Upright translating screw



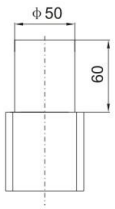
1B Inverted translating screw



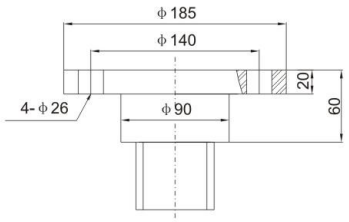


Screw head optional

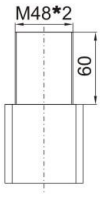
Type I



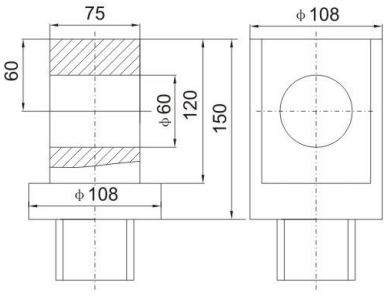
Type II



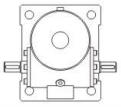
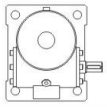
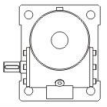
Type III

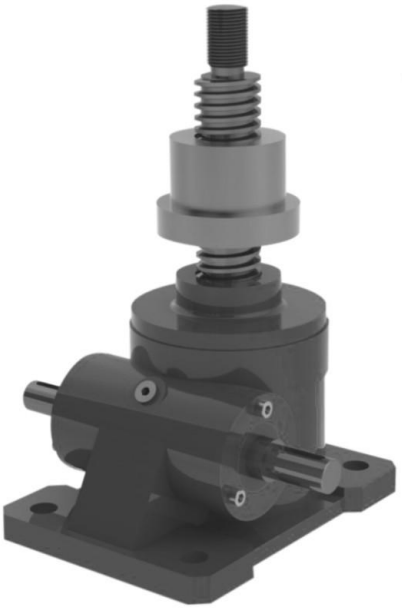


Type IV



Shaft Direction

SWL Common axis pointing C	SWL Optional axis pointing B	SWL Optional axis pointing A
		



SWL-2A

SWL-2B

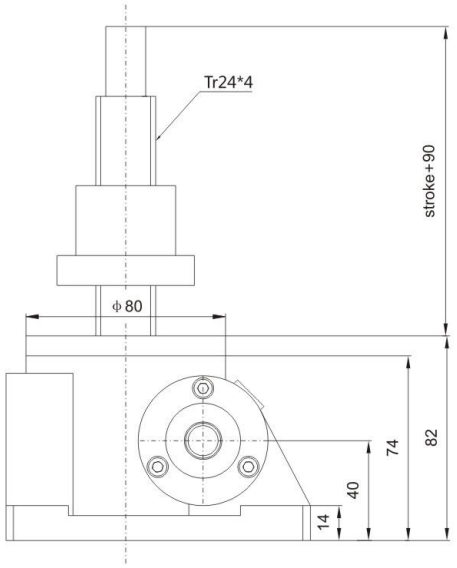
Example :

SWL	2.5	M	-	2	A	III	-	300	-	FZ	-	C
1	2	3		4	5	6		7		8		9

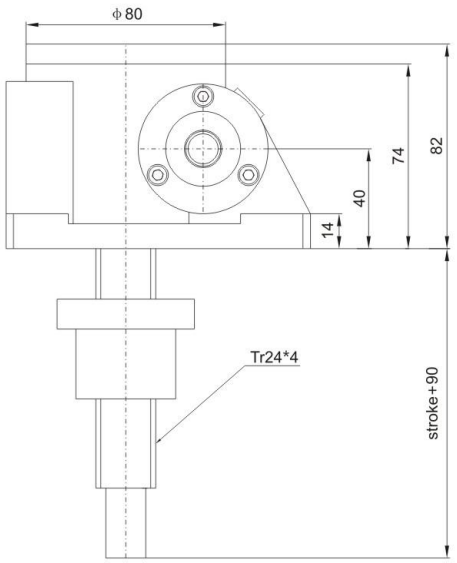
1. SWL: serial number, SWL series - worm gear + T type screw lift; SWLB worm gear + ball screw lift;
   DSWL series - worm gear +T type screw elevator, with IEC motor interface type; DSWLB worm gear + ball screw elevator with IEC motor connection type;
2. 2.5: model, with the static load capacity of the lift as the model; mainly: 1, 2.5, 5, 10, 20, 25, 35, 50, 100, 120;
3. M: lifting speed, mainly refers to the deceleration ratio of worm gear pair; M: slow; P: fast;
4. 2: Structural model; Type 1: nut for rotary motion, screw for axial movement;
   Type 2: screw for rotary motion, nut for axial movement (products shown on this page are type I);
5. A: assembly type; type A: the screw (or nut) moves up (mounting surface); type B: the screw (or nut) moves down (mounting surface);
6. III: screw head type: 1 type screw head is divided into I type (cylindrical type), type II (flange type), type III (thread type), type IV (flat head type);
   2 type screw head is divided into I type (cylindrical type) and type III (thread type);
7. 300: lifting stroke; customer customization;
8. FZ: anti-rotation and protection of the screw;
   Type 1 structure has basic type, anti-rotation type (F-key anti-rotation) and protective cover type(Z steel pipe protection - passive side, X telescopic tube protection - active side, Q both);
   Type 2 structure has basic type and protective cover type (X telescopic tube protection - active side);
9. C: the axis points to A; B; C; D; E;

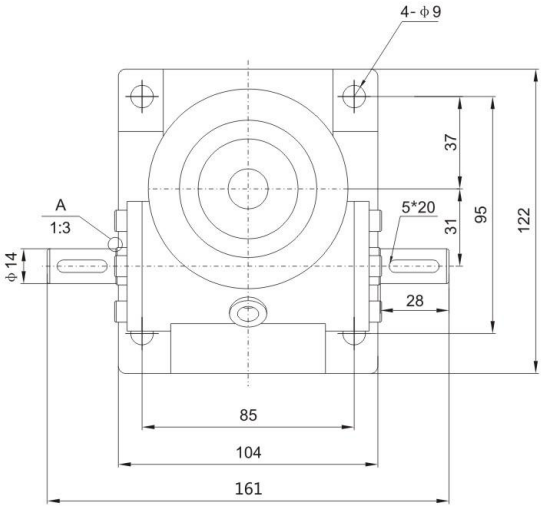
SWL1 type 2 construction (nut lifting)

2A Upright rotating screw



2B Inverted rotating screw

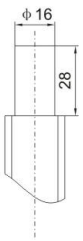




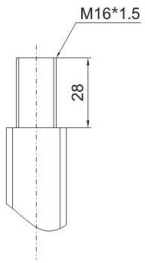
A
1:3

Screw head optional

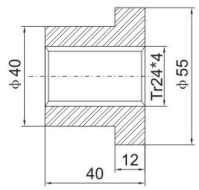
Type I



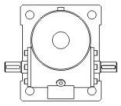
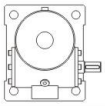
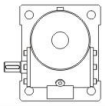
Type III



Type 2 screw nut

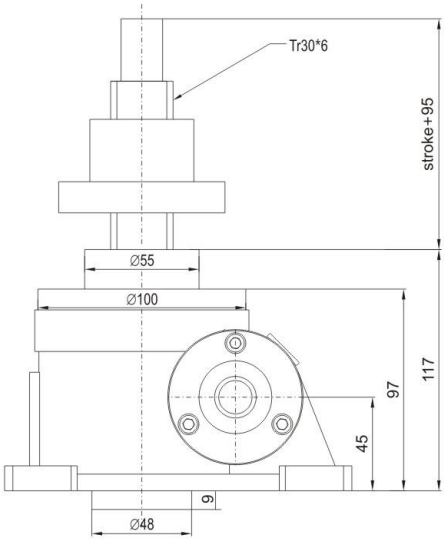


Shaft Direction

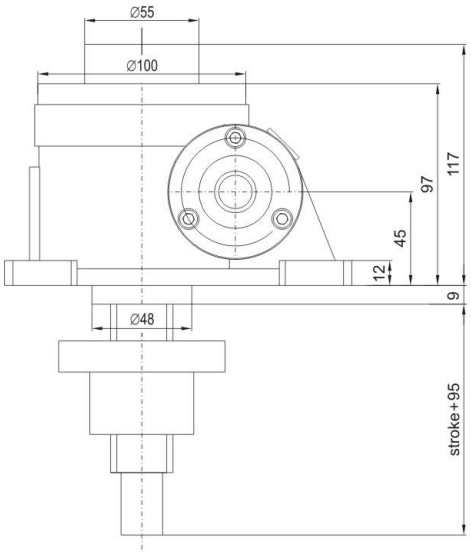
SWL Common axis pointing C	SWL Optional axis pointing B	SWL Optional axis pointing A
		

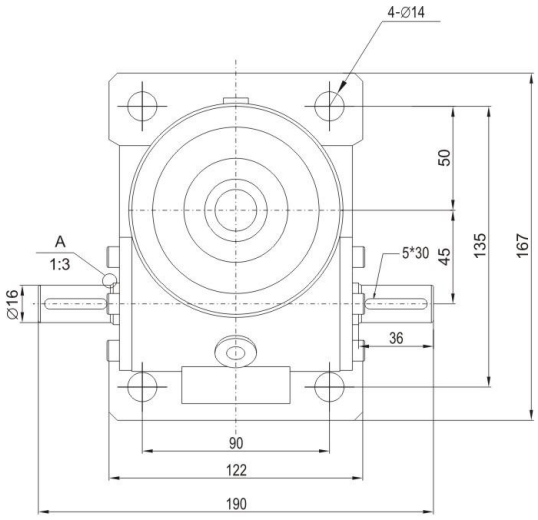
SWL2.5 type 2 construction (nut lifting)

2A Upright rotating screw



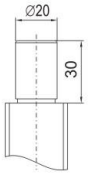
2B Inverted rotating screw



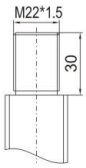


Screw head optional

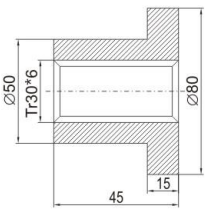
Type I



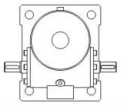
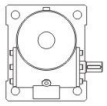
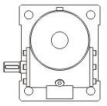
Type III



Type 2 screw nut

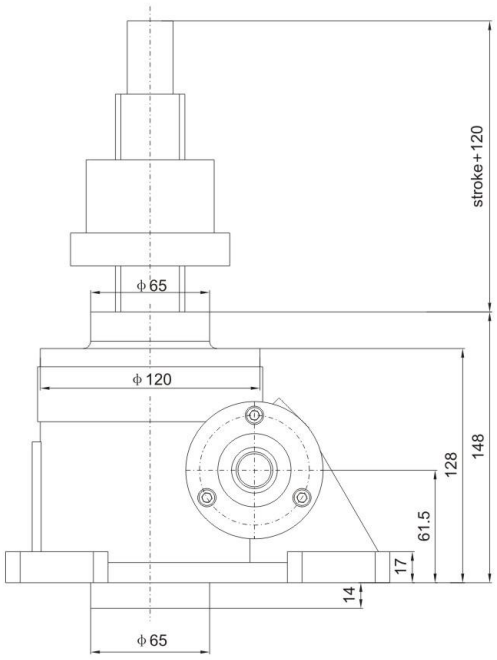


Shaft Direction

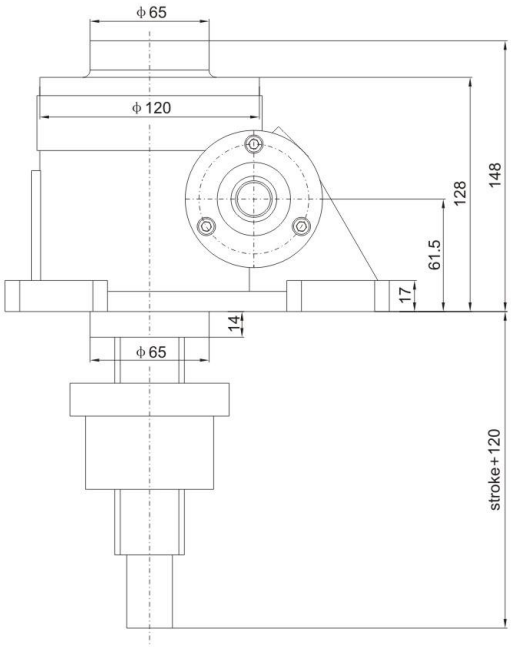
SWL Common axis pointing C	SWL Optional axis pointing B	SWL Optional axis pointing A
		

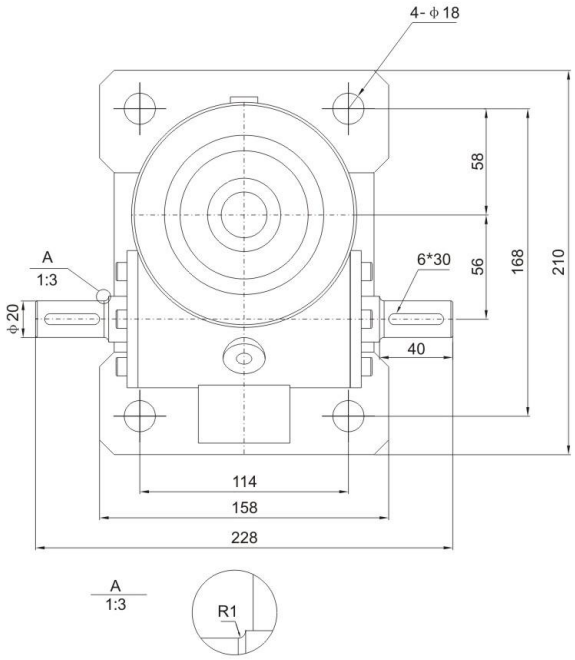
SWL5 type 2 construction (nut lifting)

2A Upright rotating screw



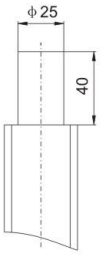
2B Inverted rotating screw



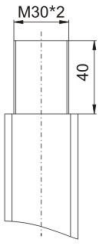


Screw head optional

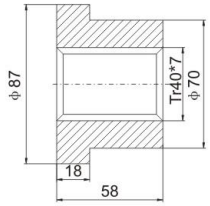
Type I



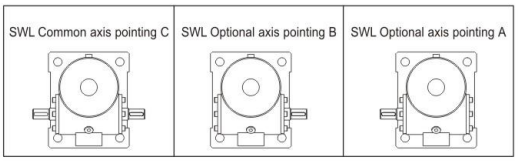
Type III



Type 2 screw nut

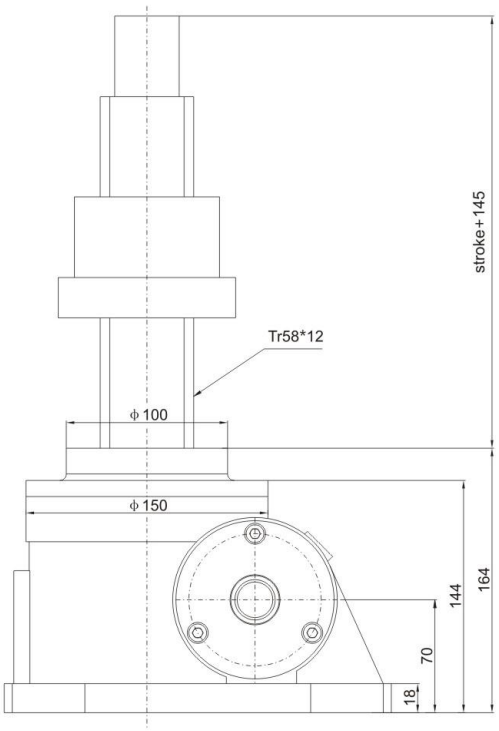


Shaft Direction

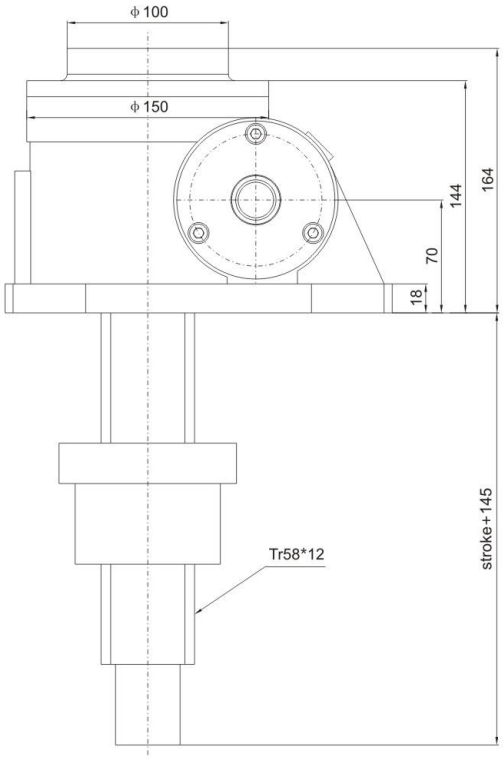


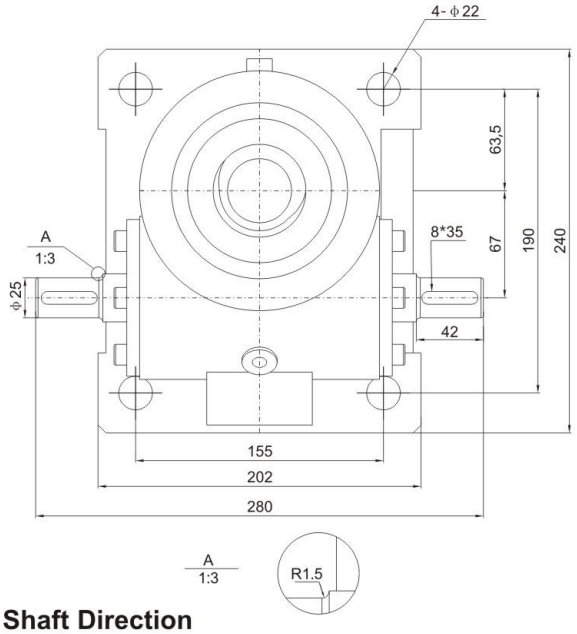
SWL10 type 2 construction (nut lifting)

2A Upright rotating screw



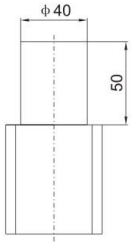
2B Inverted rotating screw



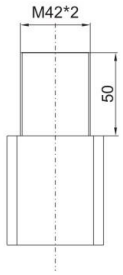


Screw head optional

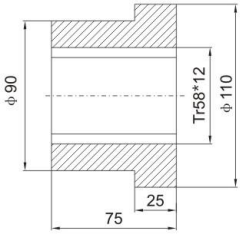
Type I



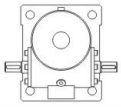
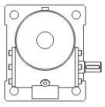
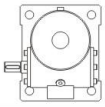
Type III



Type 2 screw nut

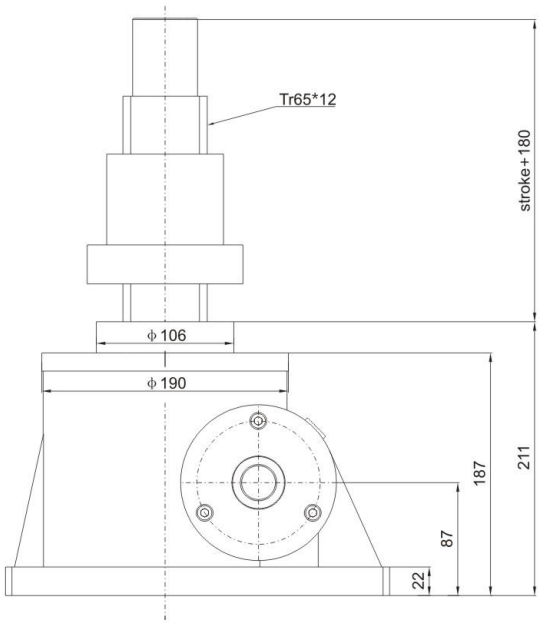


Shaft Direction

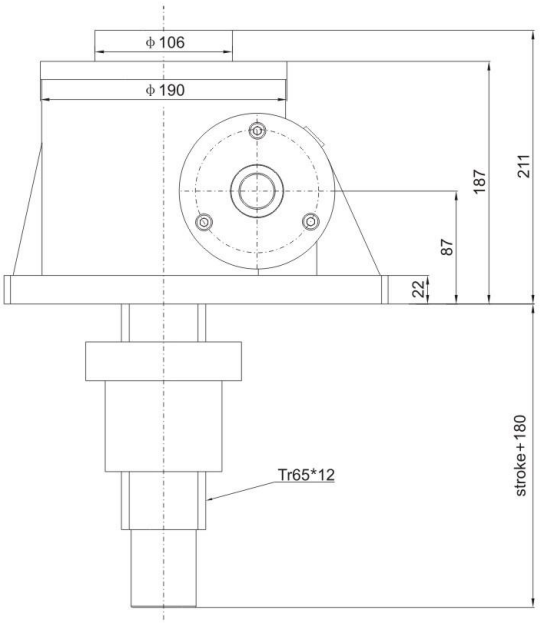
SWL Common axis pointing C	SWL Optional axis pointing B	SWL Optional axis pointing A
		

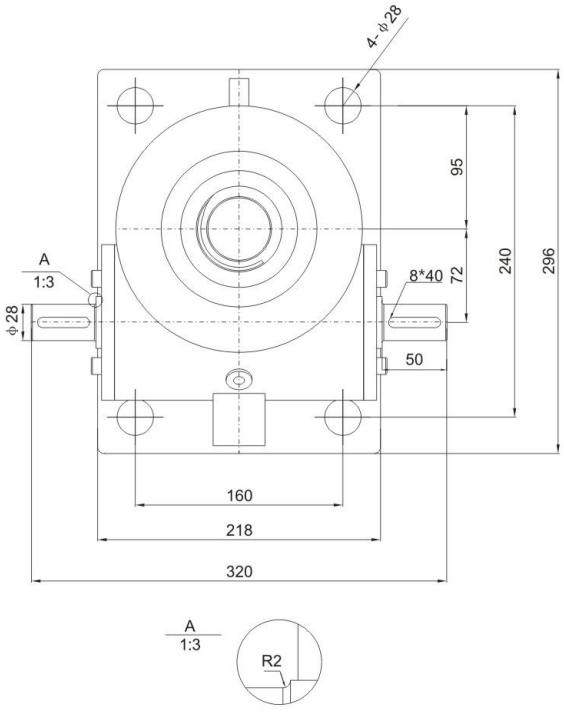
SWL20 type 2 construction (nut lifting)

2A Upright rotating screw

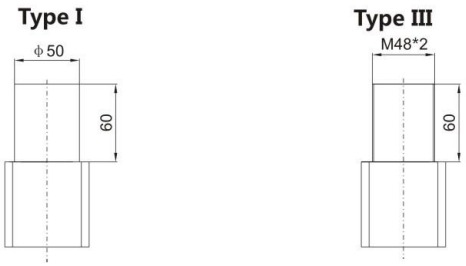


2B Inverted rotating screw

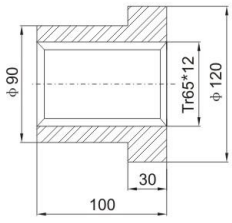




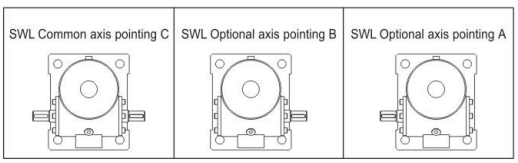
Screw head optional



Type 2 screw nut

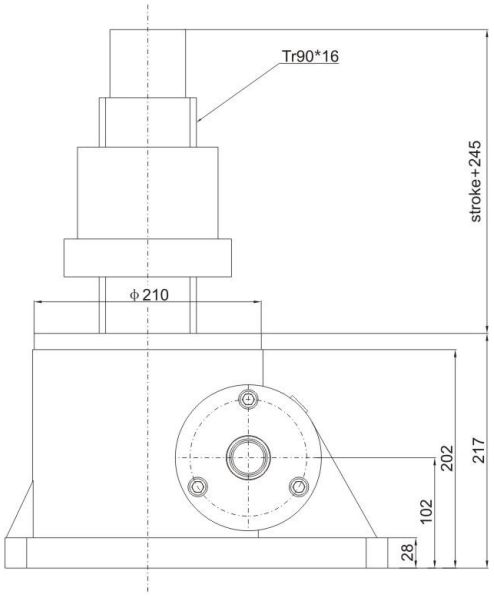


Shaft Direction

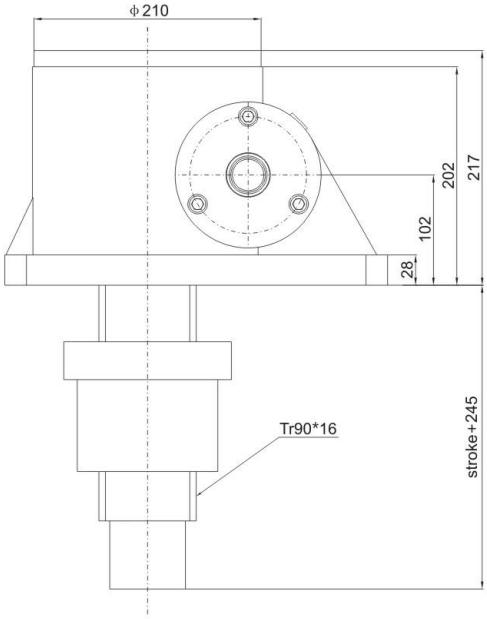


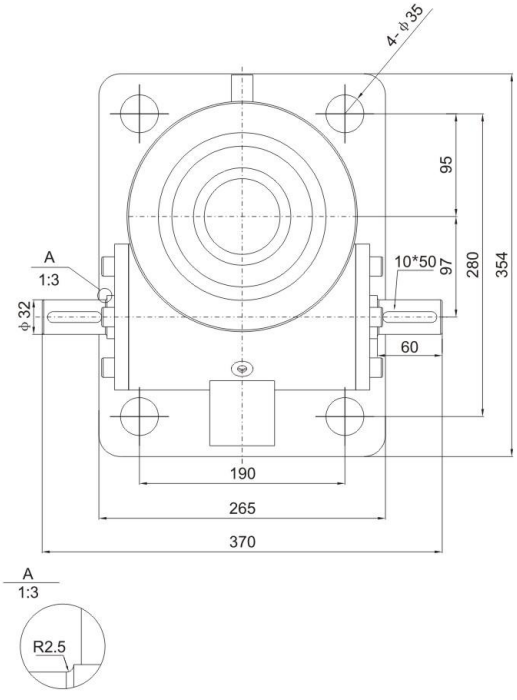
SWL25 type 2 construction (nut lifting)

2A Upright rotating screw



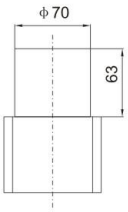
2B Inverted rotating screw



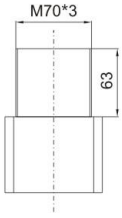


Screw head optional

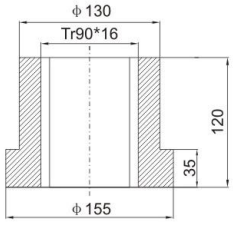
Type I



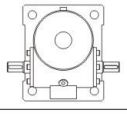
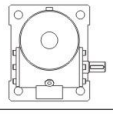
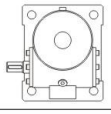
Type III



Type 2 screw nut

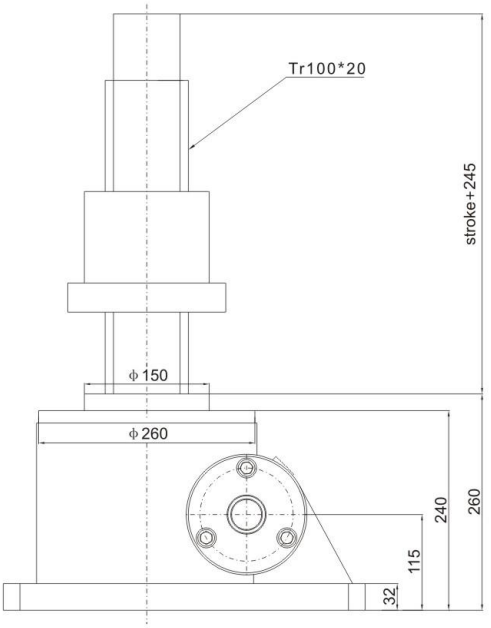


Shaft Direction

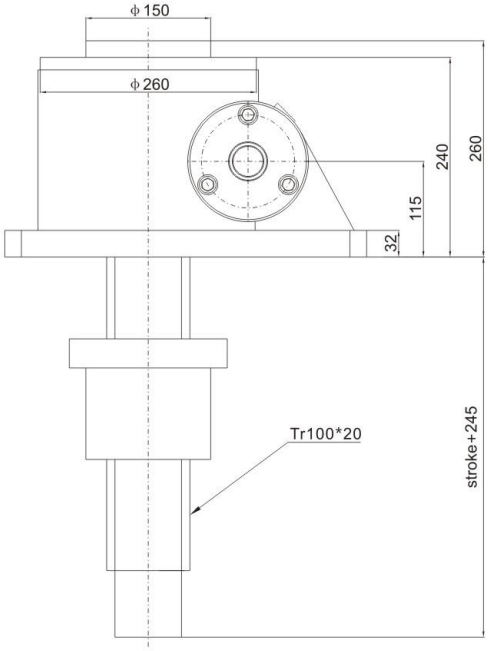
SWL Common axis pointing C	SWL Optional axis pointing B	SWL Optional axis pointing A
		

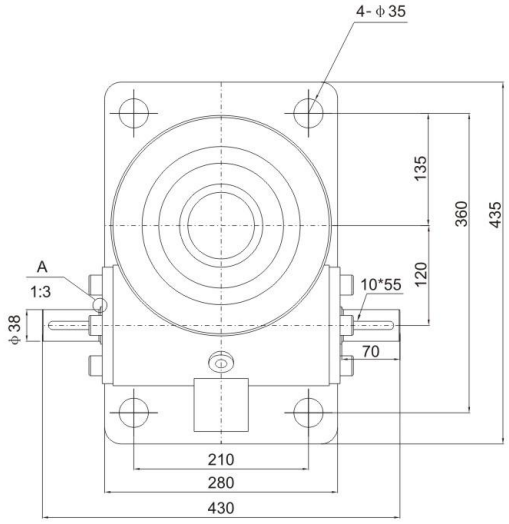
SWL35 type 2 construction (nut lifting)

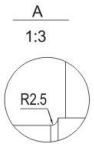
2A Upright rotating screw



2B Inverted rotating screw

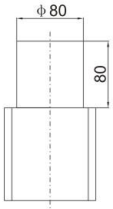




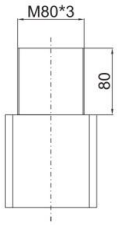


Screw head optional

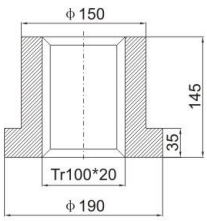
Type I



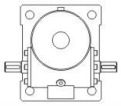
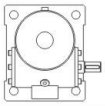
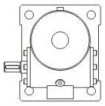
Type III



Type 2 screw nut

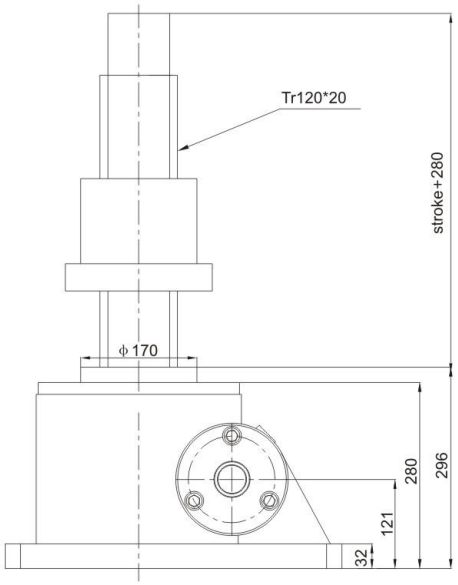


Shaft Direction

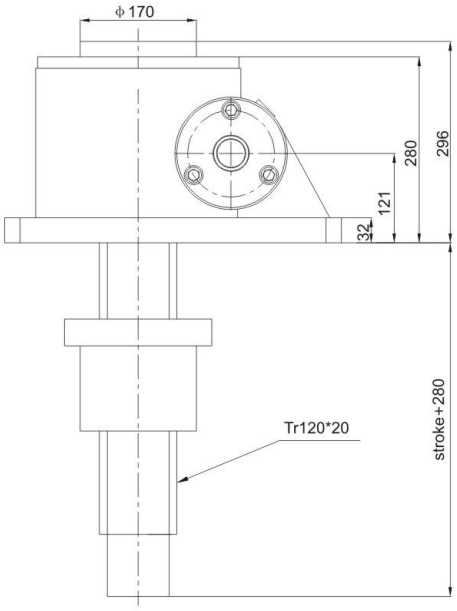
SWL Common axis pointing C	SWL Optional axis pointing B	SWL Optional axis pointing A
		

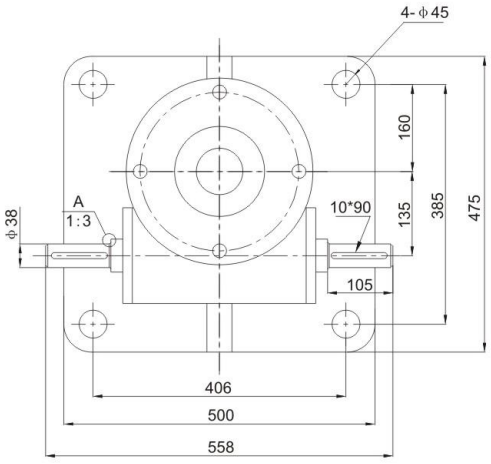
SWL50 type 2 construction (nut lifting)

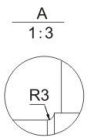
2A Upright rotating screw



2B Inverted rotating screw

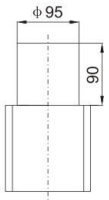




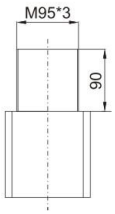


Screw head optional

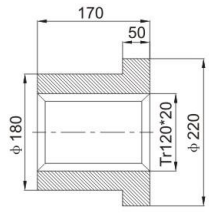
Type I



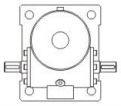
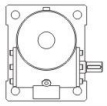
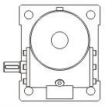
Type III



Type 2 screw nut

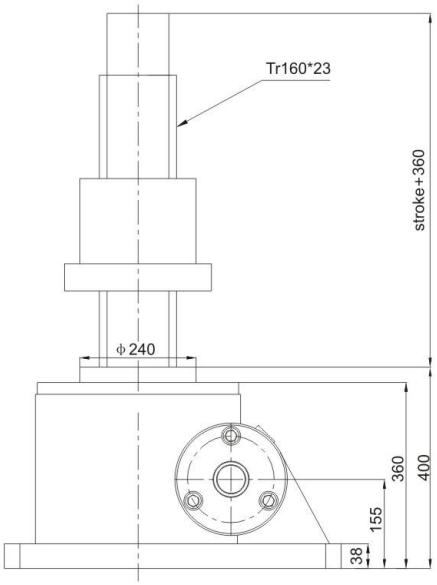


Shaft Direction

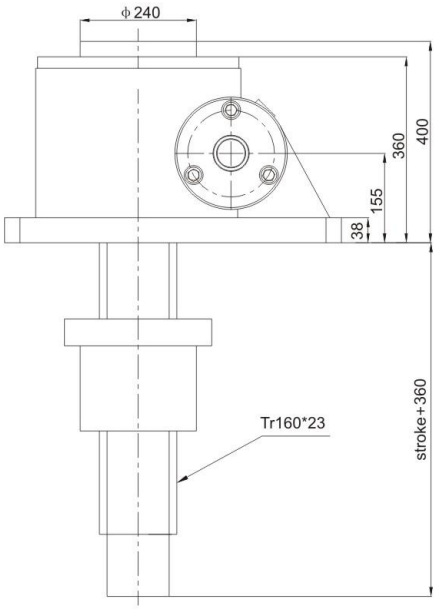
SWL Common axis pointing C	SWL Optional axis pointing B	SWL Optional axis pointing A
		

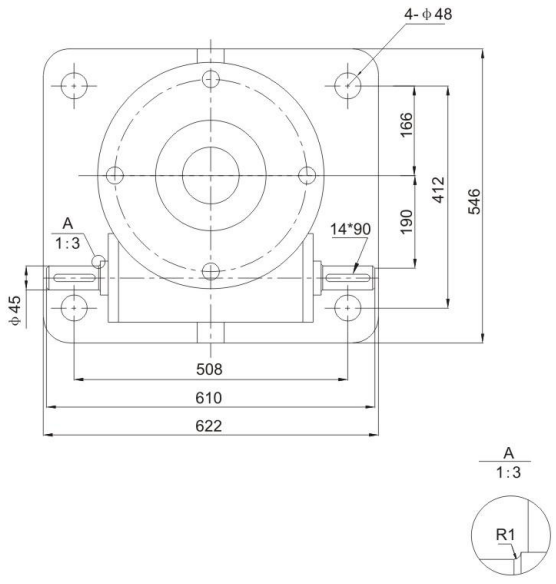
SWL100 type 2 construction (nut lifting)

2A Upright rotating screw



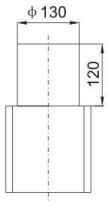
2B Inverted rotating screw



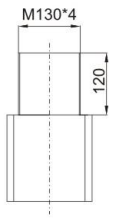


Screw head optional

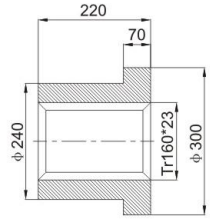
Type I



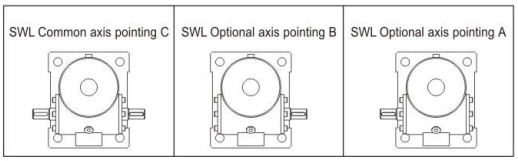
Type III



Type 2 screw nut

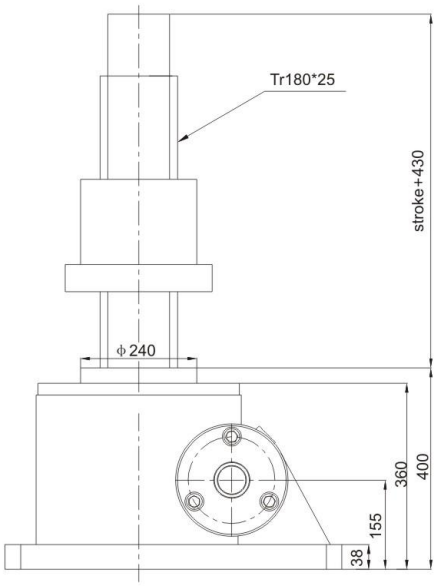


Shaft Direction

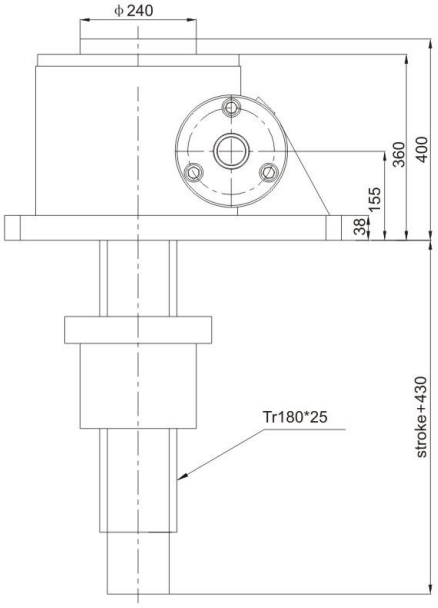


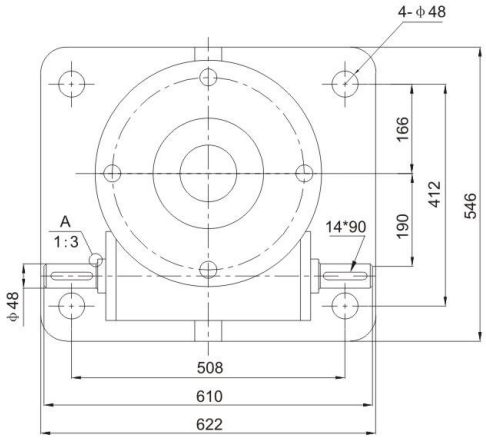
SWL120 type 2 construction (nut lifting)

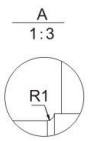
2A Upright rotating screw



2B Inverted rotating screw

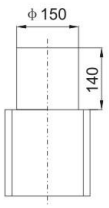




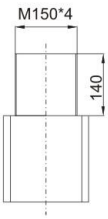


Screw head optional

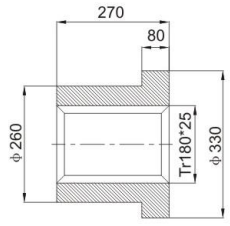
Type I



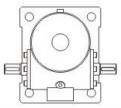
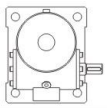
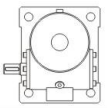
Type III



Type 2 screw nut

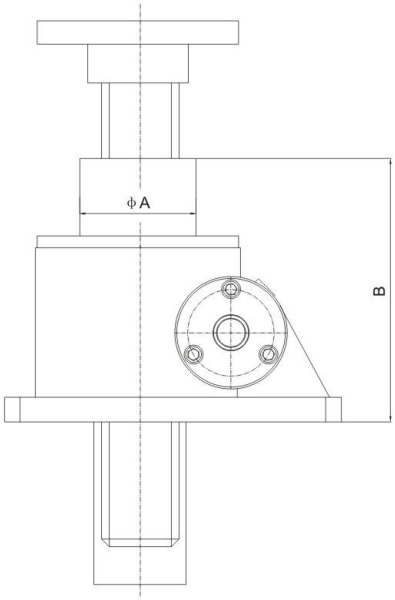


Shaft Direction

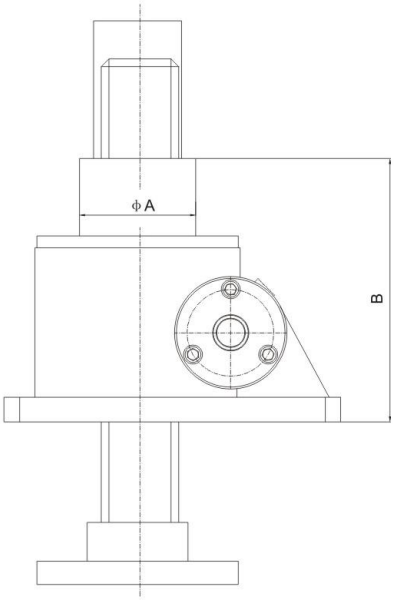
SWL Common axis pointing C	SWL Optional axis pointing B	SWL Optional axis pointing A
		

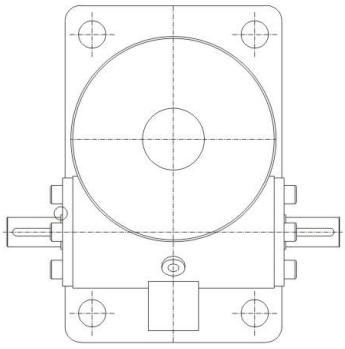
SWLB series ball screw lifting

Basic type 1A



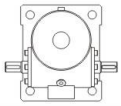
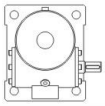
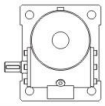
Basic type 1B





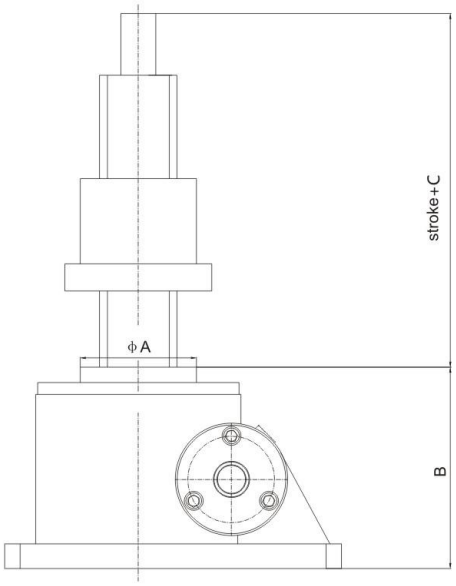
SWLB series	A	B	Shaft diameter × lead	Dynamic load	Static load
SWLB 2.5	80	123	2508	7.5kgf	22.8kgf
SWLB 5	95	210	4010	9.7kgf	22.8kgf
SWLB 10	125	226	5516	22.5kgf	70kgf
SWLB 20	135	231.5	6516	22.5kgf	70kgf

Shaft Direction

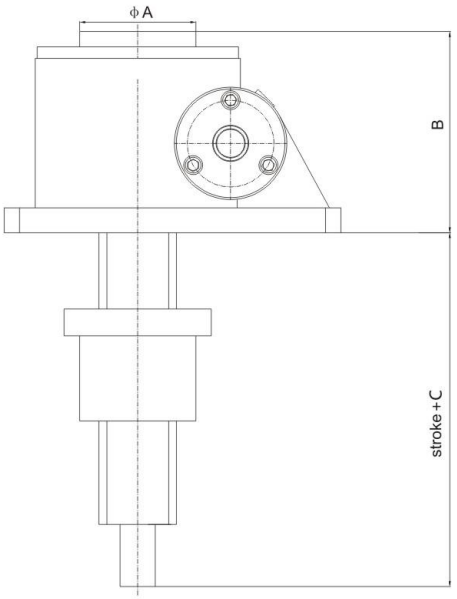
SWL Common axis pointing C	SWL Optional axis pointing B	SWL Optional axis pointing A
		

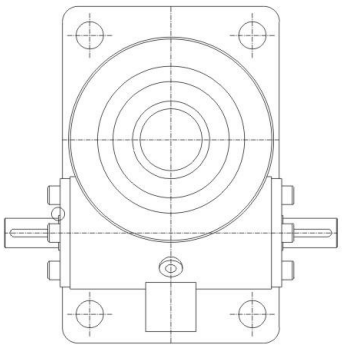
SWLB series ball screw lifting

Basic type 2A

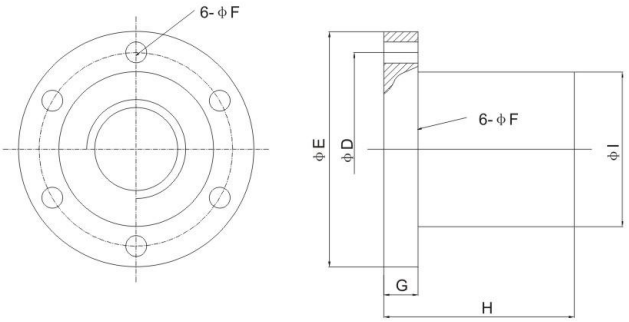


Basic type 2B



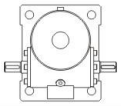
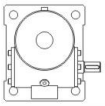
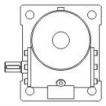


Ball screw nut

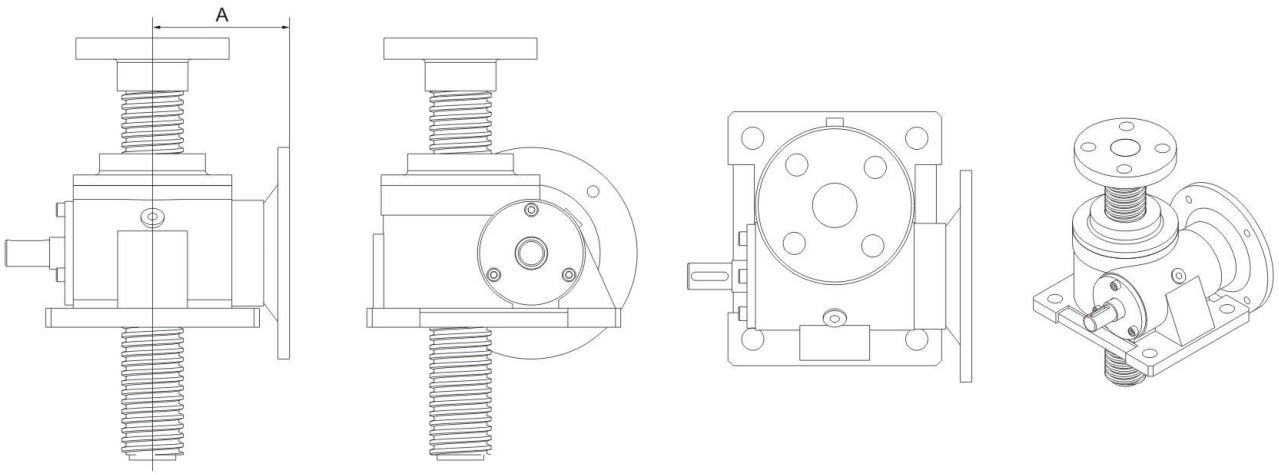


SWLB series	A	B	C	D	E	F	G	H	I	Shaft diameter × lead	Dynamic load	Static load
SWLB 2.5	55	117	128.5	77	86	7	13	80	56	2508	7.5kgf	22.8kgf
SWLB 5	65	148	128.5	105	128	11	18	103	85	4010	9.7kgf	22.8kgf
SWLB 10	100	164	128.5	125	152	13.5	22	123	100	5010	22.5kgf	70kgf
SWLB 20	106	211	128.5	140	166	13.5	22	123	118	6310	22.5kgf	70kgf

Shaft Direction

SWL Common axis pointing C	SWL Optional axis pointing B	SWL Optional axis pointing A
		

DSWL+IEC motor input flange module combination

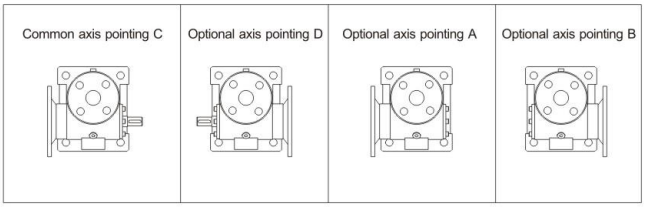


DSWL series model	+	Optional IEC motor flange type				A
DSWL1	+	63B5	63B14			70.5
DSWL2.5	+	71B5	71B14	80B5	80B14	77/85
DSWL5	+	80B5	80B14	90B5	90B14	3.99
DSWL10	+	90B5	90B14	100B5	100B14	117.5/152.5
DSWL20	+	100B5	100B14	112B5	112B14	145.5

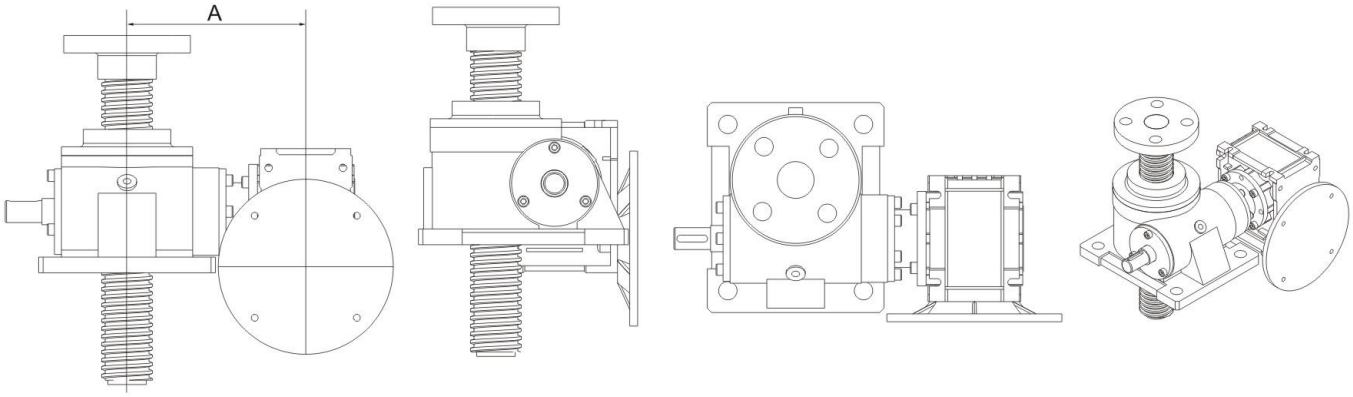
DSWL 2.5 M - 2 A III - 300 - FZ - C + 71B5
1 2 3 4 5 6 7 8 9 10

1. DSWL: DSWL series - worm gear +T type screw elevator, with IEC motor interface type; DSWLB worm gear + ball screw elevator with IEC motor connection type;
2. 2.5: model, with the static load capacity of the lift as the model; mainly: 1, 2.5, 5, 10, 20, 25, 35, 50, 100, 120;
3. M: lifting speed, mainly refers to the deceleration ratio of worm gear pair; M: slow; P: fast;
4. 2: Structural model; Type 1: nut for rotary motion, screw for axial movement;
   Type 2: screw for rotary motion, nut for axial movement (products shown on this page are type I);
5. A: assembly type; type A: the screw (or nut) moves up (mounting surface); type B: the screw (or nut) moves down (mounting surface);
6. III: screw head type: 1 type screw head is divided into I type (cylindrical type), type II (flange type), type III (thread type), type IV (flat head type);
   2 type screw head is divided into I type (cylindrical type) and type III (thread type);
7. 300: lifting stroke; customer customization;
8. FZ: anti-rotation and protection of the screw;
   Type 1 structure has basic type, anti-rotation type (F-key anti-rotation) and protective cover type(Z steel pipe protection - passive side, X telescopic tube protection - active side, Q both);
   Type 2 structure has basic type and protective cover type (X telescopic tube protection - active side);
9. C: the axis points to A; B; C; D; E;
10. 71B5: IEC input connector model;

Shaft direction



SWL+RV module combination

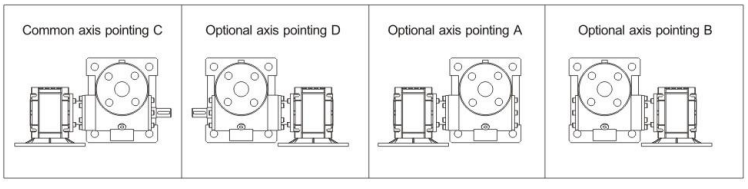


SWL series model	+	RV series model	+	Optional input flange type						A
SWL1	+	RV30	+	56B5	56B14	63B5	63B14			113.5
SWL2.5	+	RV40	+	56B5	56B14	63B5	63B14	71B5	71B14	128.5
SWL5	+	RV50	+	63B5	63B14	71B5	71B14	80B5	80B14	144.5
SWL10	+	RV63	+	71B5	71B14	80B5	80B14	90B5	90B14	198.5
SWL20	+	RV63	+	71B5	71B14	80B5	80B14	90B5	90B14	230

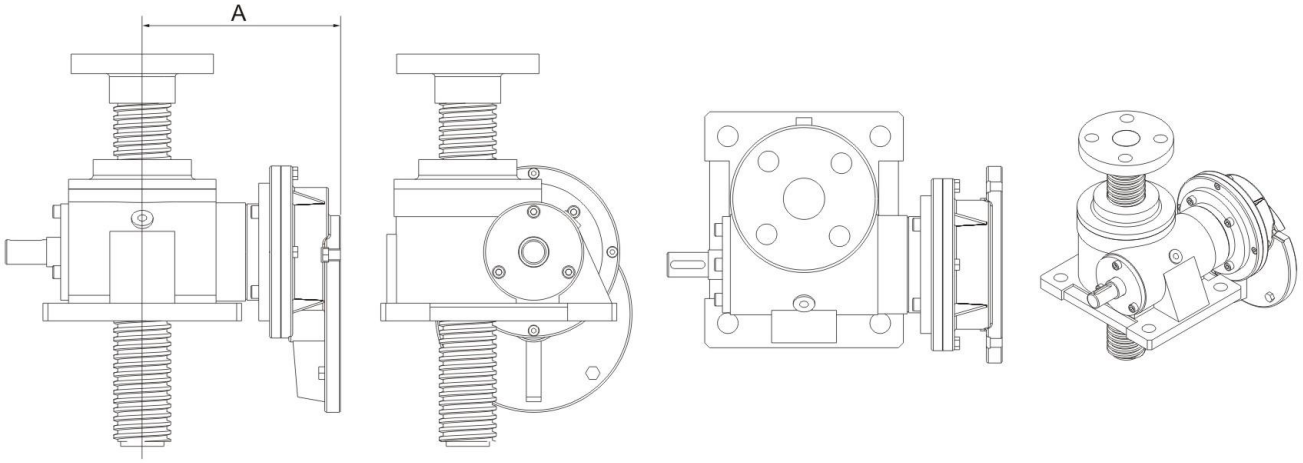
SWL 2.5 M - 1 A II - 300 - FZ - C + RV40 - 10 - 71B14
1 2 3 4 5 6 7 8 9 10 11 12

1. SWL: serial number, SWL series - worm gear + T type screw lift; SWLB worm gear + ball screw lift;
2. 2.5: model, with the static load capacity of the lift as the model; mainly: 1, 2.5, 5, 10, 20, 25, 35, 50, 100, 120;
3. M: lifting speed, mainly refers to the deceleration ratio of worm gear pair; M: slow; P: fast;
4. 1: Structural model; Type 1: nut for rotary motion, screw for axial movement (products shown on this page are type I);
   Type 2: screw for rotary motion, nut for axial movement;
5. A: assembly type; type A: the screw (or nut) moves up (mounting surface); type B: the screw (or nut) moves down (mounting surface);
6. III: screw head type: 1 type screw head is divided into I type (cylindrical type), type II (flange type), type III (thread type), type IV (flat head type);
   2 type screw head is divided into I type (cylindrical type) and type III (thread type);
7. 300: lifting stroke; customer customization;
8. FZ: anti-rotation and protection of the screw;
   Type 1 structure has basic type, anti-rotation type (F-key anti-rotation) and protective cover type(Z steel pipe protection - passive side, X telescopic tube protection - active side, Q both);
   Type 2 structure has basic type and protective cover type (X telescopic tube protection - active side);
9. C: the axis points to A; B; C; D; E;
10. RV40: input reducer with RV series;
11. 10: reduction ratio of RV series reducer;
12. 71B14: RV series reducer input contact type;

Shaft direction



SWL+PC module combination

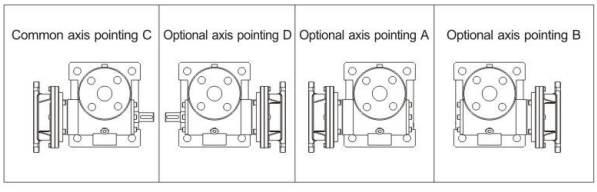


SWL series model	+	PC series model	PC reduction ratio	A
SWL1	+	PC63B5	i=2.93	128.5
SWL2.5	+	PC71B5	i=2.94	142
SWL5	+	PC80B5	i=3	175.5
SWL10	+	PC90B5	i=2.45	202
SWL20	+	PC90B5	i=2.45	223

SWL 2.5 M - 1 A II - 300 - FZ - C + PC71B5
1 2 3 4 5 6 7 8 9 10

1. SWL: serial number, SWL series - worm gear + T type screw lift; SWLB worm gear + ball screw lift;
2. 2.5: model, with the static load capacity of the lift as the model; mainly: 1, 2.5, 5, 10, 20, 25, 35, 50, 100, 120;
3. M: lifting speed, mainly refers to the deceleration ratio of worm gear pair; M: slow; P: fast;
4. 1: Structural model; Type 1: nut for rotary motion, screw for axial movement (products shown on this page are type I);
   Type 2: screw for rotary motion, nut for axial movement;
5. A: assembly type; type A: the screw (or nut) moves up (mounting surface); type B: the screw (or nut) moves down (mounting surface);
6. II: screw head type: 1 type screw head is divided into I type (cylindrical type), type II (flange type), type III (thread type), type IV (flat head type);
   2 type screw head is divided into I type (cylindrical type) and type III (thread type);
7. 300: lifting stroke; customer customization;
8. FZ: anti-rotation and protection of the screw;
   Type 1 structure has basic type, anti-rotation type (F-key anti-rotation) and protective cover type (Z steel pipe protection - passive side, X telescopic tube protection - active side, Q both);
   Type 2 structure has basic type and protective cover type (X telescopic tube protection - active side);
9. C: the axis points to A; B; C; D; E;
10. PC71B5: model of primary gear PC;

Shaft direction



LINEAR MOTION

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