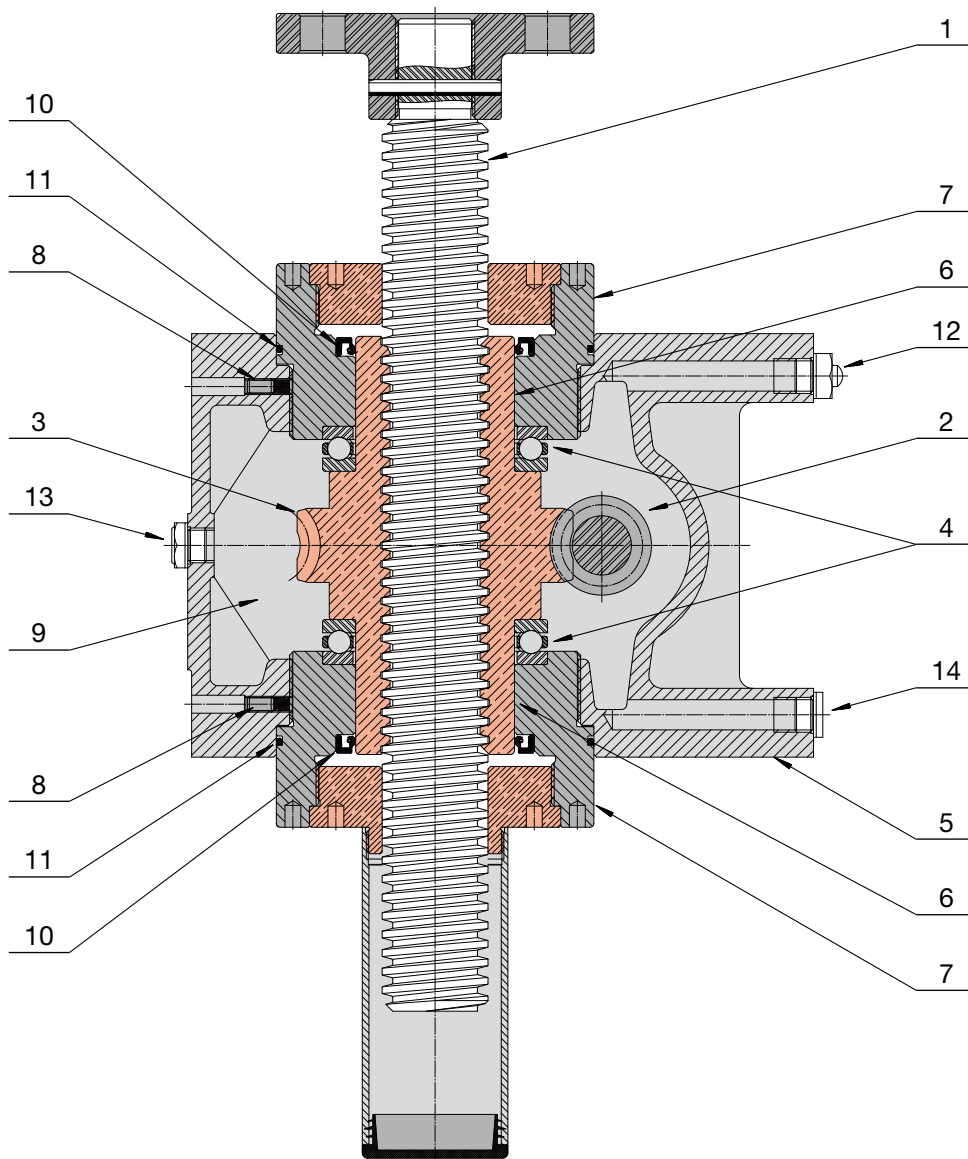


Screw jacks MA Series

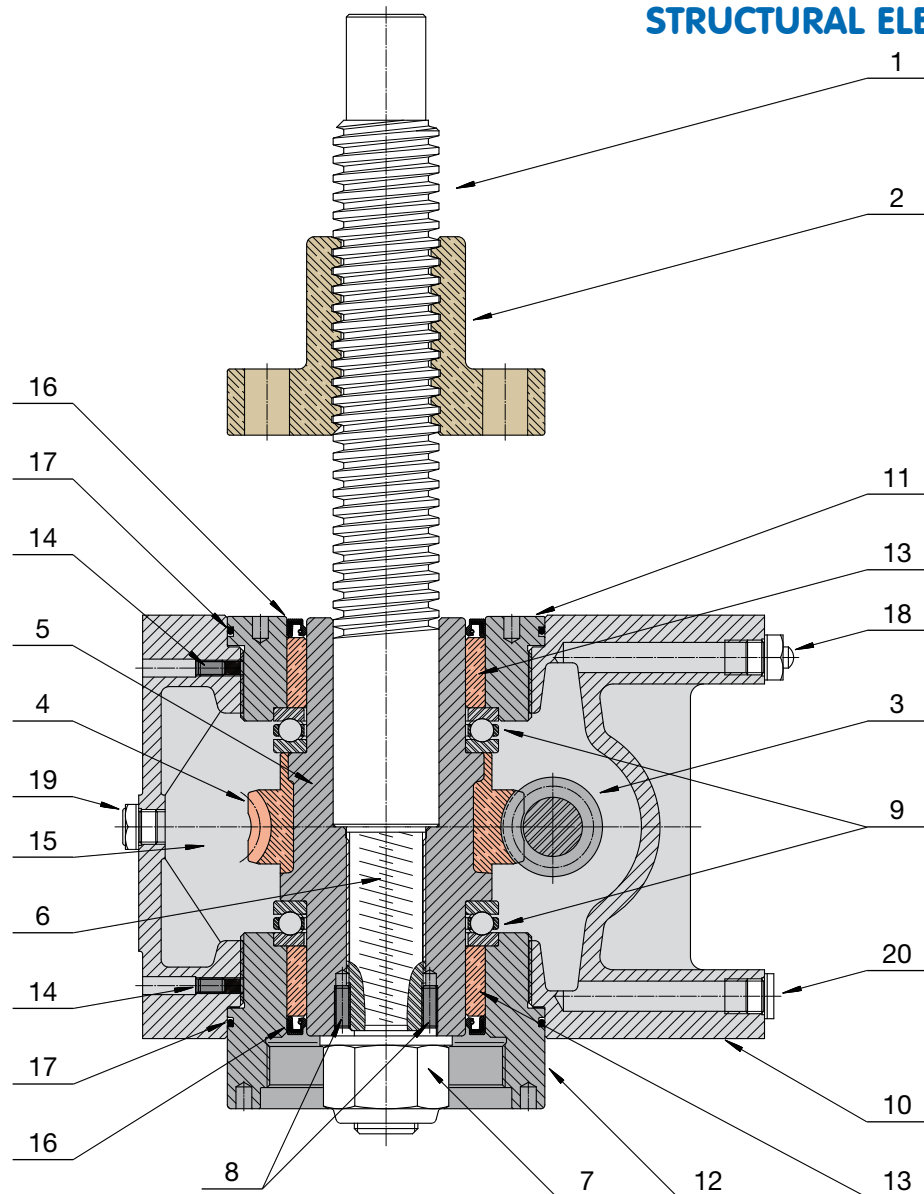
Screw jacks MA Series with travelling screw (Mod.A) STRUCTURAL ELEMENTS



- 1 - acme screw in steel C 43 (UNI 7847), whirled thread
- 2 - worm shaft with true involute, ground worm profile ZI (UNI 4760), made in steel, case-hardened
- 3 - bronze wormwheel with true involute profile ZI (UNI 4760), the length of the internal nut is double respect to SJ Series; the bigger mass of the bronze nut allows a higher duty cycle and a longer life
- 4 - thrust ball bearing for high load capacity
- 5 - gear box shape which allows effective heat dissipation giving increased duty cycle
- 6 - radial guide of the wormwheel for increased stiffness and improved efficiency
- 7 - raised cover with bronze guide against radial load for acme screw; the raised cover may also be used as a spigot diameter
- 8 - grub screw which prevents the threaded cover unscrewing
- 9 - synthetic oil lubricated worm gearbox for a better heat dissipation; this allows higher input speed, improved efficiency and longer life
- 10 - radial lubricant seal
- 11 - O-Ring as lubricant seal
- 12 - breather
- 13 - oil level plug
- 14 - oil drain plug

Screw jacks MA Series

Screw jacks MA Series with travelling nut (Mod.B) STRUCTURAL ELEMENTS



2

- 1 - acme screw in steel C 43 (UNI 7847), whirled thread
- 2 - bronze travelling nut with flange
- 3 - worm shaft with true involute, ground worm profile ZI (UNI 4760), made in steel, case-hardened
- 4 - bronze wormwheel with true involute profile ZI (UNI 4760)
- 5 - cast iron support of the wormwheel bronze rim
- 6 - acme screw fixed to the wormwheel through the cylindrical centring part and LEFT-HAND (for push load) or RIGHT-HAND (for pull load) metric thread
- 7 - lock nut with the opposite direction metric thread to ensure safe acme screw fixing
- 8 - acme screw – wormwheel pins against unscrewing
- 9 - thrust ball bearing for high load capacity
- 10 - gear box
- 11 - low cover
- 12 - raised cover; may also be used as a spigot diameter
- 13 - radial bronze guide of the wormwheel, for increased stiffness and improved efficiency
- 14 - grub screw which prevents the threaded cover unscrewing
- 15 - synthetic oil lubricated worm gearbox
- 16 - radial lubricant seal
- 17 - O-Ring as lubricant seal
- 18 - breather
- 19 - oil level plug
- 20 - oil drain plug

Screw jacks MA Series

Screw jacks MA Series with 1-start acme screw TECHNICAL SPECIFICATIONS

SCREW JACK SIZE		MA 5	MA 10	MA 25	MA 50
Load capacity [kN], (push - pull)		5	10	25	50
1-start acme screw		Tr 18x4	Tr 22x5	Tr 30x6	Tr 40x7
Worm gear centre distance [mm]		30	40	50	63
Available ratio	RV	1 : 4 (4 : 16)	1 : 5 (4 : 20)	1 : 6 (4 : 24)	1 : 7 (4 : 28)
	RN	1 : 16 (2 : 32)	1 : 20	1 : 18 (2 : 36)	1 : 14 (2 : 28)
	RL	1 : 24	1 : 25	1 : 24	1 : 28
Stroke [mm] for 1 input shaft revolution	Ratio				
	RV1	1	1	1	1
	RN1	0.25	0.25	0.33	0.5
Starting efficiency	Ratio				
	RV1	0.21	0.22	0.20	0.18
	RN1	0.16	0.15	0.16	0.15
Running efficiency at 3000 rpm ⁽¹⁾	Ratio				
	RV1	0.40	0.41	0.38	0.37
	RN1	0.31	0.30	0.30	0.32
Starting torque on input shaft at max. load [Nm]	Ratio				
	RV1	3.8	7.2	19.9	44.1
	RN1	1.2	2.6	8.3	24.8
Max. permissible operating power [kW] ⁽²⁾	Ratio				
	RV1	0.40	0.60	1.2	2.4
	RN1	0.20	0.30	0.7	1.7
Reactive torque on acme screw (nut) required at max. load [Nm]	Ratio				
	RV1	0.40	0.60	1.2	2.4
	RN1	0.20	0.30	0.7	1.7
Gear box material	Ratio				
	RV1	0.40	0.60	1.2	2.4
	RN1	0.20	0.30	0.7	1.7
Reactive torque on acme screw (nut) required at max. load [Nm]		8	20	65	165
Gear box material		casting in aluminium alloy EN 1706 - AC-AISi10Mg T6		casting in spheroidal graphite iron EN-GJS-500-7 (UNI EN 1563)	
Mass of screw jack without acme screw [kg]		2.2	4.3	13	26
Mass for every 100 mm of acme screw [kg]		0.16	0.23	0.45	0.8

⁽¹⁾ - efficiency figures at different input speed on page 36

⁽²⁾ - THERMAL limit, referred to following working conditions

duty cycle 40 % over 10 min time period (30 % over 1 hour time period) for screw jacks with travelling screw (Mod.A)

duty cycle 30 % over 10 min time period (20 % over 1 hour time period) for screw jacks with travelling nut (Mod.B)

at 25°C environment temperature

Screw jacks MA Series

Screw jacks MA Series with 1-start acme screw TECHNICAL SPECIFICATIONS

MA 80	MA 100	MA 200	MA 350	SCREW JACK SIZE		
80	100	200	350	Load capacity [kN], (push - pull)		
Tr 55x9	Tr 60x12	Tr 70x12	Tr 100x16	1-start acme screw		
63	80	100	125	Worm gear centre distance [mm]		
1 : 7 (4 : 28)	1 : 8 (4 : 32)	1 : 8 (4 : 32)	3 : 32	RV	Available ratio	
1 : 14 (2 : 28)	1 : 24	1 : 24	1 : 16 (2 : 32)	RN		
1 : 28	1 : 32	1 : 32	1 : 32	RL		
1.28	1.5	1.5	1.5	RV1	Ratio	Stroke [mm] for 1 input shaft revolution
0.64	0.5	0.5	1	RN1		
0.32	0.38	0.38	0.5	RL1		
0.18	0.20	0.17	0.16	RV1	Ratio	Starting efficiency
0.15	0.13	0.12	0.14	RN1		
0.11	0.12	0.11	0.10	RL1		
0.39	0.41	0.38	0.39	RV1	Ratio	Running efficiency at 3000 rpm ⁽¹⁾
0.33	0.32	0.31	0.34	RN1		
0.27	0.30	0.28	0.29	RL1		
77	120	282	525	RV1	Ratio	Starting torque on input shaft at max. load [Nm]
47	62	133	400	RN1		
34	50	109	280	RL1		
2.5	3.0	4.5	8.0	RV1	Ratio	Max. permissible operating power [kW] ⁽²⁾
1.8	2.6	4.0	7.0	RN1		
1.2	2.3	3.8	6.8	RL1		
368	525	1180	2880	Reactive torque on acme screw (nut) required at max. load [Nm]		
casting in spheroidal graphite iron EN-GJS-500-7 (UNI EN 1563)				Gear box material		
26	48	75	145	Mass of screw jack without acme screw [kg]		
1.6	1.8	2.5	5.2	Mass for every 100 mm of acme screw [kg]		

⁽¹⁾ - efficiency figures at different input speed on page 36

⁽²⁾ - THERMAL limit, referred to following working conditions

duty cycle 40 % over 10 min time period (30 % over 1 hour time period) for screw jacks with travelling screw (Mod.A)

duty cycle 30 % over 10 min time period (20 % over 1 hour time period) for screw jacks with travelling nut (Mod.B)

at 25°C environment temperature

Screw jacks MA Series - 1-start acme screw

Following tables show the screw jack LINEAR SPEED v [mm/s] and relative TORQUE T_1 [Nm] and POWER P_1 [kW] on input shaft, with reference to the INPUT SPEED n_1 [rpm], the RATIO (RV, RN, RL) and the LOAD [kN] applied on the screw jack.

Intermediate values for linear speed v , torque T_1 and power P_1 at different input speed can be calculated by linear interpolation of the figures stated in the table.

The figures in the tables refer to work at 25°C environment temperature and max. duty cycle of:

40 % over 10 min time period or 30 % over 1 hour time period, for screw jacks with travelling screw (Mod.A),

30 % over 10 min time period or 20 % over 1 hour time period, for screw jacks with travelling nut (Mod.B)

ATTENTION! The figures in the **red shaded area** indicate operational restrictions due to thermal limits. When the selection is made within such area, the duty cycle must be reduced or the greater size screw jack must be selected, in order to allow effective heat dissipation. For a better evaluation, please contact SERVOMECH Engineering Dpt.

MA 5				LOAD																							
n_1 [rpm]	LINEAR SPEED v [mm/s]			5 kN						4 kN						3 kN						1 kN					
	RV1	RN1	RL1	RATIO			RATIO			RATIO			RATIO			RATIO			RATIO								
				T_1 Nm	P_1 kW		T_1 Nm	P_1 kW		T_1 Nm	P_1 kW		T_1 Nm	P_1 kW		T_1 Nm	P_1 kW		T_1 Nm	P_1 kW							
3 000	50	12.5	8.3	2.0	0.63	0.7	0.20	0.5	0.15	1.6	0.50	0.5	0.16	0.4	0.12	1.2	0.38	0.4	0.12	0.3	0.09	0.4	0.13	0.1	0.04	0.1	0.03
1 500	25	6.3	4.2	2.2	0.35	0.7	0.11	0.5	0.08	1.8	0.28	0.6	0.09	0.4	0.07	1.3	0.21	0.4	0.07	0.3	0.05	0.4	0.07	0.1	0.02	0.1	0.02
1 000	16.7	4.2	2.8	2.3	0.24	0.7	0.08	0.6	0.06	1.9	0.20	0.6	0.06	0.4	0.05	1.4	0.15	0.4	0.05	0.3	0.03	0.5	0.05	0.1	0.01	0.1	0.01
750	12.5	3.1	2.1	2.4	0.19	0.7	0.05	0.6	0.05	1.9	0.15	0.6	0.05	0.5	0.04	1.4	0.11	0.4	0.04	0.3	0.03	0.5	0.04	0.1	0.01	0.1	0.01
500	8.3	2.1	1.4	2.5	0.13	0.8	0.04	0.6	0.03	2.0	0.11	0.6	0.03	0.5	0.03	1.5	0.08	0.5	0.02	0.4	0.02	0.5	0.03	0.1	0.01	0.1	0.01
300	5	1.3	0.8	2.6	0.08	0.8	0.03	0.7	0.02	2.1	0.07	0.7	0.02	0.5	0.02	1.6	0.05	0.5	0.02	0.4	0.01	0.5	0.02	0.2	0.01	0.1	0.01
100	1.7	0.4	0.3	2.8	0.03	0.9	0.01	0.8	0.01	2.2	0.02	0.7	0.01	0.6	0.01	1.7	0.02	0.5	0.01	0.5	0.01	0.6	0.01	0.2	0.01	0.1	0.01

MA 10				LOAD																							
n_1 [rpm]	LINEAR SPEED v [mm/s]			10 kN						8 kN						6 kN						2 kN					
	RV1	RN1	RL1	RATIO			RATIO			RATIO			RATIO			RATIO											
				T_1 Nm	P_1 kW		T_1 Nm	P_1 kW		T_1 Nm	P_1 kW		T_1 Nm	P_1 kW		T_1 Nm	P_1 kW										
3 000	50	12.5	10	3.9	1.22	1.3	0.42	1.1	0.36	3.1	0.89	1.1	0.33	0.9	0.29	2.3	0.73	0.8	0.25	0.7	0.21	0.8	0.24	0.3	0.08	0.2	0.07
1 500	25	6.3	5	4.4	0.68	1.4	0.23	1.2	0.19	3.5	0.55	1.1	0.18	0.9	0.15	2.6	0.41	0.9	0.13	0.7	0.11	0.9	0.14	0.3	0.04	0.2	0.04
1 000	16.7	4.2	3.3	4.6	0.48	1.5	0.16	1.2	0.13	3.6	0.38	1.2	0.13	1.0	0.10	2.7	0.29	0.9	0.09	0.7	0.08	0.9	0.10	0.3	0.03	0.2	0.03
750	12.5	3.1	2.5	4.7	0.37	1.6	0.12	1.3	0.10	3.8	0.30	1.2	0.10	1.0	0.08	2.8	0.22	0.9	0.07	0.8	0.06	0.9	0.07	0.3	0.02	0.2	0.02
500	8.3	2.1	1.7	5.0	0.26	1.6	0.09	1.4	0.07	4.0	0.21	1.3	0.07	1.1	0.06	3.0	0.16	1.0	0.05	0.8	0.04	1.0	0.05	0.3	0.02	0.3	0.01
300	5	1.3	1	5.1	0.16	1.8	0.05	1.5	0.05	4.1	0.13	1.4	0.04	1.2	0.04	3.1	0.10	1.1	0.03	0.9	0.03	1.0	0.03	0.3	0.01	0.3	0.01
100	1.7	0.4	0.3	5.5	0.06	2.0	0.02	1.6	0.02	4.4	0.05	1.6	0.02	1.3	0.01	3.3	0.03	1.2	0.01	1.0	0.01	1.1	0.01	0.4	0.01	0.3	0.01

MA 25				LOAD																							
n_1 [rpm]	LINEAR SPEED v [mm/s]			25 kN						20 kN						15 kN						10 kN					
	RV1	RN1	RL1	RATIO			RATIO			RATIO			RATIO			RATIO											
				T_1 Nm	P_1 kW		T_1 Nm	P_1 kW		T_1 Nm	P_1 kW		T_1 Nm	P_1 kW		T_1 Nm	P_1 kW										
3 000	50	16.7	12.5			3.5	1.11	3.6	1.12	8.4	2.63	3.5	1.11	2.8	0.89	6.3	1.97	2.7	0.83	2.1	0.67	4.1	1.30	1.7	0.55	1.4	0.45
1 500	25	8.3	6.3	11.7	1.83	4.8	0.76	3.9	0.61	9.3	1.47	3.9	0.60	3.1	0.49	7.0	1.10	2.9	0.45	2.3	0.37	4.6	0.74	1.9	0.30	1.6	0.25
1 000	16.7	5.6	4.2	12.2	1.28	5.0	0.53	4.1	0.43	9.8	1.03	4.0	0.42	3.3	0.34	7.3	0.77	3.0	0.32	2.5	0.26	4.8	0.52	2.0	0.21	1.6	0.18
750	12.5	4.2	3.1	12.7	1.00	5.2	0.41	4.2	0.33	10.2	0.80	4.2	0.33	3.4	0.27	7.6	0.60	3.1	0.24	2.5	0.20	5.0	0.40	2.1	0.16	1.7	0.14
500	8.3	2.8	2.1	13.5	0.71	5.5	0.29	4.5	0.24	10.8	0.56	4.4	0.23	3.6	0.19	8.1	0.42	3.3	0.17	2.7	0.14	5.4	0.28	2.2	0.12	1.8	0.10
300	5	1.7	1.3	14.1	0.44	5.8	0.18	4.8	0.15	11.3	0.35	4.6	0.15	3.9	0.12	8.5	0.27	3.5	0.11	2.9	0.09	5.6	0.09	2.4	0.08	2.0	0.06
100	1.7	0.6	0.4	15.1	0.16	6.5	0.07	5.5	0.06	12.1	0.13	5.2	0.05	4.4	0.05	9.0	0.09	3.9	0.04	3.3	0.03	6.0	0.06	2.6	0.03	2.2	0.03

MA 50				LOAD																							
n_1 [rpm]	LINEAR SPEED v [mm/s]			50 kN						35 kN						25 kN						10 kN					
	RV1	RN1	RL1	RATIO			RATIO			RATIO			RATIO			RATIO											
				T_1 Nm	P_1 kW		T_1 Nm	P_1 kW		T_1 Nm	P_1 kW		T_1 Nm	P_1 kW		T_1 Nm	P_1 kW										
3 000	50	25	12.5			12.4	3.91	7.7	2.40	15.1	4.73	8.7	2.73	5.4	1.68	10.8	3.38	6.2	1.95	3.8	1.20	4.3	1.35	2.5	0.78	1.5	0.48
1 500	25	12.5	6.3	25.0	3.92	14.4	2.26	8.5	1.34	17.5	2.74	10.0	1.58	6.0	0.94	12.5	1.96	7.2	1.13	4.3	0.67	5.0	0.78	2.9	0.45	1.7	0.27
1 000	16.7	8.3	4.2	26.5	2.78	13.3	1.60	9.1	0.96	18.6	1.94	10.7	1.12	6.4	0.67	13.3	1.39	7.6	0.80	4.6	0.48	5.3	0.56	3.1	0.32	1.8	0.19
750	12.5	6.3	3.1	27.4	2.15	16.0	1.25	9.5	0.74	19.2	1.51	11.1	0.87	6.6	0.52	13.7	1.08	7.9	0.62	4.7	0.37	5.5	0.43	3.2	0.25	1.9	0.15
500	8.3	4.2	2.1	28.8	1.51	16.4	0.86	10.0	0.52	20.2	1.06	11.5	0.60	7.0	0.37	14.4	0.75	8.2	0.43	5.0	0.26	5.8	0.30	3.3	0.17	2.0	0.11
300	5	2.5	1.3	30.5	0.96	17.4	0.55	10.8	0.34	21.3	0.67	12.2	0.38	7.6	0.24	15.2	0.48	8.7	0.27	5.4	0.17	6.1	0.19	3.5	0.11	2.1	0.07
100	1.7	0.8	0.4	33.0	0.35	19.3	0.20	12.5	0.13	23.1	0.24	13.5	0.14	8.8	0.09	16.5	0.17	9.7	0.10	6.3	0.07	6.6	0.07	3.9	0.04	2.5	0.03

Screw jacks MA Series - 1-start acme screw

Following tables show the screw jack LINEAR SPEED v [mm/s] and relative TORQUE T_1 [Nm] and POWER P_1 [kW] on input shaft, with reference to the INPUT SPEED n_1 [rpm], the RATIO (RV, RN, RL) and the LOAD [kN] applied on the screw jack.

Intermediate values for linear speed v , torque T_1 and power P_1 at different input speed can be calculated by linear interpolation of the figures stated in the table.

The figures in the tables refer to work at 25°C environment temperature and max. duty cycle of:

40 % over 10 min time period or 30 % over 1 hour time period, for screw jacks with travelling screw (Mod.A),

30 % over 10 min time period or 20 % over 1 hour time period, for screw jacks with travelling nut (Mod.B)

ATTENTION! The figures in the **red shaded area** indicate operational restrictions due to thermal limits. When the selection is made within such area, the duty cycle must be reduced or the greater size screw jack must be selected, in order to allow effective heat dissipation. For a better evaluation, please contact SERVOMECH Engineering Dpt.

MA 80				LOAD																							
				80 kN				60 kN				40 kN				20 kN											
				RATIO			RATIO			RATIO			RATIO			RATIO			RATIO								
n_1 [rpm]	LINEAR SPEED v [mm/s]			RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1									
	RV1	RN1	RL1	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW						
3 000	64.3	32.1	16.1													12.7	4.00	7.6	2.39	10.6	3.33	6.4	2.00	3.8	1.20		
1 500	32.0	16.0	8.0				18.0	2.83	36.7	5.76	21.5	3.37	13.5	2.12	24.5	3.84	14.3	2.25	9.0	1.41	12.2	1.92	7.2	1.12	4.5	0.71	
1 000	21.4	10.7	5.3	52.6	5.51	31.3	3.28	20.0	2.09	39.5	4.13	23.5	2.46	15.0	1.57	26.3	2.76	15.7	1.64	10.0	1.05	13.2	1.38	7.8	0.82	5.0	0.52
750	16.1	8.0	4.0	54.7	4.30	33.8	2.65	21.0	1.65	41.0	3.22	25.3	1.99	15.8	1.24	27.4	2.15	16.9	1.32	10.5	0.82	13.7	1.07	8.4	0.66	5.3	0.41
500	10.7	5.3	2.7	58.6	3.07	35.8	1.87	22.0	1.15	44.0	2.30	26.9	1.41	16.5	0.86	29.3	1.53	17.9	0.94	11.0	0.58	14.7	0.77	9.0	0.47	5.5	0.29
300	6.4	3.2	1.6	65.9	2.07	38.1	1.20	24.5	0.77	49.4	1.55	28.6	0.90	18.4	0.58	33.0	1.03	19.1	0.60	12.3	0.38	16.5	0.52	9.5	0.30	6.1	0.19
100	2.1	1.1	0.5	73.2	0.77	44.4	0.47	28.5	0.30	54.9	0.57	33.3	0.35	21.4	0.2	36.6	0.38	22.2	0.23	14.3	0.15	18.3	0.19	11.1	0.12	7.1	0.07

MA 100				LOAD																							
				100 kN				80 kN				50 kN				20 kN											
				RATIO			RATIO			RATIO			RATIO			RATIO			RATIO								
n_1 [rpm]	LINEAR SPEED v [mm/s]			RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1									
	RV1	RN1	RL1	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW						
3 000	75	25	18.8									15.9	5.00			12.4	3.91	10.0	3.12	11.6	3.66	5.0	1.56	4.0	1.25		
1 500	37.5	12.5	9.4			28.2	4.43	22.5	3.54			22.6	3.55	18.0	2.83	33.2	5.22	14.1	2.22	11.3	1.77	13.3	2.09	5.6	0.89	4.5	0.71
1 000	25	8.3	6.3	70.8	7.42	30.0	3.14	24.1	2.52	56.7	5.93	24.0	2.52	19.2	2.02	35.4	3.71	15.0	1.57	12.0	1.26	14.2	1.48	6.0	0.63	4.8	0.50
750	18.8	6.3	4.7	73.5	5.77	31.3	2.46	25.3	1.99	58.8	4.61	25.1	1.97	20.2	1.59	36.7	2.88	15.7	1.23	12.6	0.99	14.7	1.15	6.3	0.49	5.0	0.40
500	12.5	4.2	3.1	77.0	4.03	32.9	1.72	26.6	1.39	61.6	3.23	26.3	1.38	21.3	1.12	38.5	2.02	16.4	0.86	13.5	0.70	15.4	0.81	6.6	0.34	5.3	0.28
300	7.5	2.5	1.9	82.3	2.59	35.2	1.11	28.7	0.90	65.9	2.07	28.2	0.88	22.9	0.72	41.2	1.29	17.6	0.55	14.3	0.45	16.5	0.52	7.0	0.22	5.7	0.18
100	2.5	0.8	0.6	89.1	0.93	40.0	0.42	33.0	0.34	71.3	0.75	32.0	0.33	26.4	0.28	44.5	0.47	20.0	0.21	16.5	0.17	17.8	0.19	8.0	0.08	6.6	0.07

MA 200				LOAD																							
				200 kN				150 kN				100 kN				50 kN											
				RATIO			RATIO			RATIO			RATIO			RATIO			RATIO								
n_1 [rpm]	LINEAR SPEED v [mm/s]			RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1									
	RV1	RN1	RL1	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW						
3 000	75	25	18.8												25.7	8.06	21.3	6.70			12.8	4.03	10.7	3.35			
1 500	37.5	12.5	9.4			48.9	7.68			45.4	7.13	36.7	5.76			30.3	4.75	24.5	3.84	36.1	5.66	15.1	2.38	12.2	1.92		
1 000	25	8.3	6.3			65.0	6.80	52.1	5.48			48.7	5.10	39.1	4.09	76.5	8.01	32.5	3.40	26.1	2.73	38.8	4.01	16.2	1.70	13.0	1.36
750	18.8	6.3	4.7			68.6	5.39	52.8	4.30	119	9.37	51.4	4.04	41.1	3.22	79.6	6.25	34.3	2.69	27.4	2.15	39.8	3.12	17.1	1.35	13.7	1.07
500	12.5	4.2	3.1	167	8.77	71.4	3.74	57.7	3.02	125	6.58	53.5	2.80	43.2	2.26	83.8	4.39	35.7	1.87	28.8	1.51	41.9	2.19	17.8	0.93	14.4	0.75
300	7.5	2.5	1.9	178	5.62	76.1	2.39	61.8	1.94	134	4.21	57.1	1.79	46.4	1.46	89.4	2.81	38.1	1.20	30.9	0.97	44.7	1.40	19.0	0.60	15.5	0.49
100	2.5	0.8	0.6	195	2.05	87.3	0.92	71.3	0.76	146	1.54	65.9	0.69	54.3	0.57	97.8	1.02	44.0	0.46	36.2	0.38	48.9	0.51	22.0	0.23	18.1	0.19

MA 350				LOAD																							
				350 kN				250 kN				150 kN				100 kN											
				RATIO			RATIO			RATIO			RATIO			RATIO			RATIO								
n_1 [rpm]	LINEAR SPEED v [mm/s]			RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1									
	RV1	RN1	RL1	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW						
3 000	75	50	25												41.2	12.9	61.2	19.2	46.8	14.7	27.5	8.62					
1 500	37.5	25	12.5									80.9	12.7	113	17.8	82.0	12.8	48.5	7.62	75.5	11.8	54.7	8.59	32.3	5.08		
1 000	25	16.7	8.3			120	12.6			144	15.1	86.1	9.02	120	12.6	86.5	9.00	51.7	5.41	80.4	8.42	57.7	6.04	34.4	3.61		
750	18.8	12.5	6.3			210	16.5	127	9.99	209	16.4	150	11.7	90.8	7.13	125	9.87	90.1	7.07	54.5	4.28	83.8	6.58	60.1	4.72	36.3	2.85
500	12.5	8.3	4.2	308	16.1	223	11.7	134	7.04	220	11.5	159	8.37	96.1	5.03	132	6.92	95.9	5.02	57.7	3.02	88.1	4.61	63.9	3.35	38.4	2.01
300	7.5	5	2.5	331	10.4	242	7.61	144	4.53	236	7.44	173	5.43	103	3.24	142	4.46	103	3.26	61.8	1.94	94.7	2.98	69.2	2.17	41.2	1.29
100	2.5	1.7	0.8	369	3.87	269	2.82	166	1.75	264	2.76	192	2.01	119	1.25	158	1.66	115	1.21	71.5	0.75	105	1.11	76.9	0.80	47.6	0.50

Screw jacks MA Series

Screw jacks MA Series with 2-starts acme screw TECHNICAL SPECIFICATIONS

SCREW JACK SIZE		MA 5	MA 10	MA 25	MA 50
Load capacity [kN], (push - pull)		5	10	25	50
2-starts acme screw		Tr 18x8 (P4)	Tr 22x10 (P5)	Tr 30x12 (P6)	Tr 40x14 (P7)
Worm gear centre distance [mm]		30	40	50	63
Available ratio	RV	1 : 4 (4 : 16)	1 : 5 (4 : 20)	1 : 6 (4 : 24)	1 : 7 (4 : 28)
	RN	1 : 16 (2 : 32)	1 : 20	1 : 18 (2 : 36)	1 : 14 (2 : 28)
	RL	1 : 24	1 : 25	1 : 24	1 : 28
Stroke [mm] for 1 input shaft revolution	Ratio				
	RV1	2	2	2	2
	RN1	0.50	0.50	0.67	1
Starting efficiency	Ratio				
	RV1	0.32	0.33	0.31	0.29
	RN1	0.25	0.22	0.23	0.24
Running efficiency at 3000 rpm ⁽¹⁾	Ratio				
	RV1	0.52	0.53	0.51	0.50
	RN1	0.41	0.40	0.43	0.44
Starting torque on input shaft at max. load [Nm]	Ratio				
	RV1	4.9	9.7	26	56
	RN1	1.6	3.6	12	34
Max. permissible operating power [kW] ⁽²⁾	Ratio				
	RV1	0.52	0.78	1.2	2.4
	RN1	0.26	0.40	0.7	1.7
Reactive torque on acme screw (nut) required at max. load [Nm]	Ratio				
	RV1	12	30	97	243
	RN1				
Gear box material		casting in aluminium alloy EN 1706 - AC-AISi10Mg T6		casting in spheroidal graphite iron EN-GJS-500-7 (UNI EN 1563)	
Mass of screw jack without acme screw [kg]		2.2	4.3	13	26
Mass for every 100 mm of acme screw [kg]		0.16	0.23	0.45	0.8

⁽¹⁾ - efficiency figures at different input speed on page 36

⁽²⁾ - THERMAL limit, referred to following working conditions

duty cycle 40 % over 10 min time period (30 % over 1 hour time period) for screw jacks with travelling screw (Mod.A)

duty cycle 30 % over 10 min time period (20 % over 1 hour time period) for screw jacks with travelling nut (Mod.B)

at 25°C environment temperature

Screw jacks MA Series

Screw jacks MA Series with 2-starts acme screw TECHNICAL SPECIFICATIONS

MA 80	MA 100	MA 200	MA 350	SCREW JACK SIZE		
80	100	200	350	Load capacity [kN], (push - pull)		
Tr 55x18 (P9)	Tr 60x24 (P12)	Tr 70x24 (P12)	Tr 100x32 (P16)	2-starts acme screw		
63	80	100	125	Worm gear centre distance [mm]		
1 : 7 (4 : 28)	1 : 8 (4 : 32)	1 : 8 (4 : 32)	3 : 32	RV	Available ratio	
1 : 14 (2 : 28)	1 : 24	1 : 24	1 : 16 (2 : 32)	RN		
1 : 28	1 : 32	1 : 32	1 : 32	RL		
2.57	3	3	3	RV1	Ratio	Stroke [mm] for 1 input shaft revolution
1.29	1	1	2	RN1		
0.64	0.75	0.75	1	RL1		
0.28	0.30	0.28	0.26	RV1	Ratio	Starting efficiency
0.23	0.21	0.20	0.23	RN1		
0.17	0.19	0.18	0.18	RL1		
0.51	0.54	0.52	0.51	RV1	Ratio	Running efficiency at 3000 rpm ⁽¹⁾
0.44	0.43	0.42	0.48	RN1		
0.38	0.41	0.39	0.41	RL1		
119	158	342	650	RV1	Ratio	Starting torque on input shaft at max. load [Nm]
72	76	163	480	RN1		
48	63	134	316	RL1		
3.2	4	6.2	10.5	RV1	Ratio	Max. permissible operating power [kW] ⁽²⁾
2.4	3.5	5.4	10	RN1		
1.7	3.1	5.3	9.6	RL1		
520	775	1 690	4 100	Reactive torque on acme screw (nut) required at max. load [Nm]		
casting in spheroidal graphite iron EN-GJS-500-7 (UNI EN 1563)				Gear box material		
26	48	75	145	Mass of screw jack without acme screw [kg]		
1.6	1.8	2.5	5.2	Mass for every 100 mm of acme screw [kg]		

⁽¹⁾ - efficiency figures at different input speed on page 36

⁽²⁾ - THERMAL limit, referred to following working conditions

duty cycle 40 % over 10 min time period (30 % over 1 hour time period) for screw jacks with travelling screw (Mod.A)

duty cycle 30 % over 10 min time period (20 % over 1 hour time period) for screw jacks with travelling nut (Mod.B)

at 25°C environment temperature

Screw jacks MA Series - 2-starts acme screw

Following tables show the screw jack LINEAR SPEED v [mm/s] and relative TORQUE T_1 [Nm] and POWER P_1 [kW] on input shaft, with reference to the INPUT SPEED n_1 [rpm], the RATIO (RV, RN, RL) and the LOAD [kN] applied on the screw jack.

Intermediate values for linear speed v , torque T_1 and power P_1 at different input speed can be calculated by linear interpolation of the figures stated in the table.

The figures in the tables refer to work at 25°C environment temperature and max. duty cycle of:

40 % over 10 min time period or 30 % over 1 hour time period, for screw jacks with travelling screw (Mod.A),

30 % over 10 min time period or 20 % over 1 hour time period, for screw jacks with travelling nut (Mod.B)

ATTENTION! The figures in the **red shaded area** indicate operational restrictions due to thermal limits. When the selection is made within such area, the duty cycle must be reduced or the greater size screw jack must be selected, in order to allow effective heat dissipation. For a better evaluation, please contact SERVOMECH Engineering Dpt.

MA 5				LOAD																							
				5 kN						4 kN						3 kN						1 kN					
n_1 [rpm]	LINEAR SPEED v [mm/s]			RATIO						RATIO						RATIO						RATIO					
	RV2	RN2	RL2	RV2		RN2		RL2		RV2		RN2		RL2		RV2		RN2		RL2		RV2		RN2		RL2	
				T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW
3 000	100	25	16.7	3.1	0.96	1.0	0.30	0.8	0.23	2.5	0.77	0.8	0.24	0.6	0.19	1.9	0.58	0.6	0.18	0.5	0.14	0.6	0.19	0.2	0.06	0.2	0.05
1 500	50	12.5	8.3	3.3	0.52	1.1	0.17	0.8	0.13	2.7	0.42	0.9	0.13	0.7	0.10	2.0	0.31	0.7	0.10	0.5	0.08	0.7	0.10	0.2	0.03	0.2	0.03
1 000	33.3	8.3	5.6	3.5	0.36	1.1	0.12	0.9	0.09	2.8	0.29	0.9	0.09	0.7	0.07	2.1	0.22	0.7	0.07	0.5	0.05	0.7	0.07	0.2	0.02	0.2	0.02
750	25	6.3	4.2	3.6	0.28	1.2	0.09	0.9	0.07	2.9	0.23	0.9	0.07	0.8	0.06	2.2	0.17	0.7	0.05	0.6	0.04	0.7	0.06	0.3	0.02	0.2	0.01
500	16.7	4.2	2.8	3.8	0.20	1.2	0.06	1.0	0.05	3.1	0.16	1.0	0.05	0.8	0.04	2.3	0.12	0.7	0.04	0.6	0.03	0.8	0.04	0.3	0.01	0.2	0.01
300	10	2.5	1.7	4.0	0.12	1.3	0.04	1.0	0.03	3.2	0.10	1.0	0.03	0.8	0.03	2.4	0.07	0.8	0.02	0.6	0.02	0.8	0.02	0.3	0.01	0.2	0.01
100	3.3	0.8	0.6	4.4	0.05	1.4	0.01	1.2	0.01	3.5	0.04	1.2	0.01	1.0	0.01	2.6	0.03	0.9	0.01	0.7	0.01	0.9	0.01	0.3	0.01	0.3	0.01

MA 10				LOAD																							
				10 kN						8 kN						6 kN						2 kN					
n_1 [rpm]	LINEAR SPEED v [mm/s]			RATIO						RATIO						RATIO						RATIO					
	RV2	RN2	RL2	RV2		RN2		RL2		RV2		RN2		RL2		RV2		RN2		RL2		RV2		RN2		RL2	
				T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW
3 000	100	25	20	6.1	1.90	2.0	0.62	1.7	0.52	4.9	1.52	1.6	0.49	1.3	0.41	3.7	1.14	1.2	0.37	1.0	0.31	1.2	0.38	0.4	0.12	0.4	0.10
1 500	50	12.5	10	6.6	1.03	2.2	0.34	1.9	0.29	5.3	0.82	1.8	0.27	1.5	0.23	4.0	0.62	1.3	0.21	1.1	0.17	1.3	0.21	0.5	0.07	0.4	0.05
1 000	33.3	8.3	6.7	6.9	0.72	2.3	0.24	1.9	0.20	5.5	0.57	1.9	0.19	1.6	0.16	4.1	0.43	1.4	0.14	1.2	0.12	1.4	0.14	0.5	0.05	0.4	0.04
750	25	6.3	5	7.2	0.56	2.4	0.19	2.1	0.16	5.8	0.45	1.9	0.15	1.6	0.13	4.3	0.34	1.5	0.11	1.2	0.10	1.5	0.11	0.5	0.04	0.4	0.03
500	16.7	4.2	3.3	7.5	0.39	2.6	0.13	2.2	0.11	6.0	0.31	2.1	0.11	1.7	0.09	5.5	0.24	1.6	0.08	1.3	0.07	1.5	0.08	0.5	0.03	0.5	0.02
300	10	2.5	2	7.8	0.24	2.8	0.09	2.3	0.07	6.2	0.19	2.2	0.07	1.9	0.06	4.7	0.15	1.7	0.05	1.4	0.04	1.6	0.05	0.6	0.02	0.5	0.01
100	3.3	0.8	0.7	8.6	0.09	3.2	0.03	2.7	0.03	6.9	0.07	2.5	0.03	2.2	0.02	5.2	0.05	1.9	0.02	1.6	0.02	1.7	0.02	0.7	0.01	0.6	0.01

MA 25				LOAD																							
				25 kN						20 kN						15 kN						10 kN					
n_1 [rpm]	LINEAR SPEED v [mm/s]			RATIO						RATIO						RATIO						RATIO					
	RV2	RN2	RL2	RV2		RN2		RL2		RV2		RN2		RL2		RV2		RN2		RL2		RV2		RN2		RL2	
				T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW
3 000	100	33.3	25	17.0	2.66	7.0	1.10	5.8	0.91	13.6	2.13	5.0	1.56	4.1	1.29	9.4	2.94	3.8	1.17	3.1	0.97	6.3	1.96	2.5	0.78	2.1	0.65
1 500	50	16.7	12.5	17.0	2.66	7.0	1.10	5.8	0.91	13.6	2.13	5.0	1.56	4.1	1.29	9.4	2.94	3.8	1.17	3.1	0.97	6.3	1.96	2.5	0.78	2.1	0.65
1 000	33.3	11.1	8.3	17.7	1.85	7.4	0.78	6.1	0.64	14.2	1.48	6.0	0.62	4.9	0.51	10.6	1.11	4.5	0.47	3.7	0.38	7.1	0.74	3.0	0.31	2.5	0.25
750	25	8.3	6.3	18.2	1.43	7.7	0.60	6.3	0.49	14.6	1.14	6.1	0.48	5.1	0.39	10.9	0.86	4.6	0.36	3.8	0.30	7.3	0.57	3.1	0.24	2.5	0.20
500	16.7	5.6	4.2	19.5	1.02	8.1	0.42	6.8	0.35	15.6	0.82	6.5	0.34	5.4	0.28	11.7	0.61	4.9	0.25	4.1	0.21	7.8	0.41	3.2	0.17	2.7	0.14
300	10	3.3	2.5	20.5	0.64	8.6	0.27	7.3	0.23	16.4	0.52	6.9	0.22	5.8	0.18	12.3	0.39	5.2	0.16	4.4	0.14	8.2	0.26	3.4	0.11	2.9	0.09
100	3.3	1.1	0.8	22.6	0.24	9.8	0.10	8.5	0.09	18.6	0.19	7.8	0.08	6.8	0.07	13.5	0.14	5.9	0.06	5.1	0.05	9.1	0.09	3.9	0.04	3.4	0.04

MA 50				LOAD																							
				50 kN						35 kN						25 kN						10 kN					
n_1 [rpm]	LINEAR SPEED v [mm/s]			RATIO						RATIO						RATIO						RATIO					
	RV2	RN2	RL2	RV2		RN2		RL2		RV2		RN2		RL2		RV2		RN2		RL2		RV2		RN2		RL2	
				T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW
3 000	100	50	25									12.6	3.95	7.4	2.33	16.0	5.00	9.0	2.82	5.3	1.7	6.4	2.00	3.6	1.13	2.1	0.67
1 500	50	25	12.5	34.8	5.46	20.1	3.15	12.1	1.91	24.3	3.82	14.1	2.21	8.5	1.33	17.4	2.73	10.0	1.58	6.1	0.95	7.0	1.09	4.0	0.63	2.5	0.38
1 000	33.3	16.7	8.3	37.1	3.88	21.3	2.23	13.1	1.37	26.0	2.72	14.9	1.56	9.2	0.96	18.5	1.94	10.6	1.11	6.6	0.69	7.4	0.78	4.3	0.45	2.6	0.27
750	25	12.5	6.3	38.2	3.00	22.6	1.77	13.5	1.06	26.7	2.10	15.8	1.24	9.5	0.74	19.1	1.50	11.3	0.89	6.7	0.53	7.7	0.60	4.5	0.35	2.7	0.21
500	16.7	8.3	4.2	40.6	2.13	23.5	1.23	14.4	0.75	28.4	1.49	16.4	0.86	10.1	0.53	20.3	1.06	11.7	0.61	7.2	0.38	8.1	0.43	4.7	0.25	2.9	0.15
300	10	5	2.5	43.3	1.36	24.8	0.78	15.8	0.49	30.3	0.95	17.3	0.54	11.0	0.35	21.6	0.68	12.4	0.39	7.9	0.25	8.7	0.27	5.0	0.16	3.2	0.10
100	3.3	1.7	0.8	46.7	0.49	28.0	0.29	18.2	0.19	32.7	0.34	19.6	0.20	12.7	0.13	23.3	0.24	14.0	0.15	9.1	0.10	9.4	0.10	5.6	0.06	3.7	0.04

Screw jacks MA Series - 2-starts acme screw

Following tables show the screw jack LINEAR SPEED v [mm/s] and relative TORQUE T_1 [Nm] and POWER P_1 [kW] on input shaft, with reference to the INPUT SPEED n_1 [rpm], the RATIO (RV, RN, RL) and the LOAD [kN] applied on the screw jack.

Intermediate values for linear speed v , torque T_1 and power P_1 at different input speed can be calculated by linear interpolation of the figures stated in the table.

The figures in the tables refer to work at 25°C environment temperature and max. duty cycle of:

40 % over 10 min time period or 30 % over 1 hour time period, for screw jacks with travelling screw (Mod.A),

30 % over 10 min time period or 20 % over 1 hour time period, for screw jacks with travelling nut (Mod.B)

ATTENTION! The figures in the **red shaded area** indicate operational restrictions due to thermal limits. When the selection is made within such area, the duty cycle must be reduced or the greater size screw jack must be selected, in order to allow effective heat dissipation. For a better evaluation, please contact SERVOMECH Engineering Dpt.

MA 80				LOAD																							
				80 kN				60 kN				40 kN				20 kN											
n_1 [rpm]	LINEAR SPEED v [mm/s]			RATIO				RATIO				RATIO				RATIO											
	RV2	RN2	RL2	RV2		RN2		RL2		RV2		RN2		RL2		RV2		RN2		RL2							
				T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW						
3 000	129	64.3	32.1													18.6	5.84	10.9	3.42	16.2	5.07	9.3	2.92	5.5	1.71		
1 500	64.3	32.1	16.1					25.0	3.92			30.6	4.81	18.8	2.94	35.8	5.62	20.4	3.20	12.5	1.96	17.9	2.81	10.2	1.60	6.3	0.98
1 000	42.9	21.4	10.7	76.2	7.98	43.9	4.59	27.4	2.87	57.2	5.98	32.9	3.46	20.6	2.15	38.1	3.99	22.0	2.30	13.7	1.43	19.1	1.99	11.0	1.15	6.9	0.72
750	32.1	16.1	8.0	78.1	6.13	46.7	3.67	28.6	2.24	58.5	4.60	35.0	2.75	21.5	1.68	39.0	3.06	23.4	1.83	14.3	1.12	19.5	1.53	11.7	0.92	7.2	0.56
500	21.4	10.7	5.4	82.3	4.31	49.1	2.57	30.0	1.57	61.8	3.23	36.8	1.93	22.5	1.18	41.2	2.15	24.6	1.28	15.0	0.78	20.6	1.08	12.3	0.68	7.5	0.39
300	12.9	6.4	3.2	90.5	2.84	51.9	1.63	33.0	1.03	67.9	2.13	38.9	1.22	24.7	0.78	45.3	1.42	25.9	0.81	16.5	0.52	22.7	0.71	13.0	0.41	8.3	0.26
100	4.3	2.1	1.1	98.9	1.03	59.3	0.62	37.9	0.40	74.1	0.78	44.5	0.47	28.4	0.30	49.4	0.52	29.7	0.31	19.0	0.20	24.7	0.26	14.8	0.16	9.5	0.10

MA 100				LOAD																							
				100 kN				80 kN				50 kN				20 kN											
n_1 [rpm]	LINEAR SPEED v [mm/s]			RATIO				RATIO				RATIO				RATIO											
	RV2	RN2	RL2	RV2		RN2		RL2		RV2		RN2		RL2		RV2		RN2		RL2							
				T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW				
3 000	150	50	37.5									23.3	7.31			18.4	5.76	14.6	4.57	17.8	5.58	7.4	2.30	5.8	1.83		
1 500	75	25	18.8			40.8	6.40	33.2	5.20			32.6	5.12	26.5	4.16	48.6	7.63	20.4	3.20	16.6	2.60	19.4	3.05	8.2	1.28	6.7	1.04
1 000	50	16.7	12.5			44.6	4.67	36.1	3.78	82.3	8.62	35.7	3.73	28.9	3.02	51.5	5.39	22.3	2.33	18.1	1.89	20.6	2.16	8.9	0.93	7.2	0.76
750	37.5	12.5	9.4	106	8.32	46.6	3.66	36.8	2.89	84.8	6.66	37.3	2.93	29.5	2.31	53.0	4.16	23.3	1.83	18.4	1.44	21.2	1.66	9.3	0.73	7.4	0.58
500	25	8.3	6.3	112	5.87	48.3	2.53	38.9	2.04	89.7	4.69	38.6	2.02	31.2	1.63	56.0	2.93	24.1	1.26	19.5	1.02	22.4	1.17	9.7	0.51	7.8	0.41
300	15	5	3.8	121	3.80	52.2	1.64	43.4	1.36	96.9	3.04	41.7	1.31	34.8	1.09	60.5	1.90	26.1	0.82	21.7	0.68	24.2	0.76	10.5	0.33	8.7	0.27
100	5	1.7	1.3	131	1.37	59.5	0.62	50.0	0.52	105	1.10	47.6	0.50	40.0	0.42	65.4	0.69	29.8	0.31	25.0	0.26	26.2	0.27	11.9	0.12	10.0	0.10

MA 200				LOAD																							
				200 kN				150 kN				100 kN				50 kN											
n_1 [rpm]	LINEAR SPEED v [mm/s]			RATIO				RATIO				RATIO				RATIO											
	RV2	RN2	RL2	RV2		RN2		RL2		RV2		RN2		RL2		RV2		RN2		RL2							
				T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW						
3 000	150	50	37.5													38.2	12.0	30.5	9.56	45.5	14.3	19.1	6.00	15.2	4.78		
1 500	75	25	18.8			84.2	13.3	67.8	10.7			63.2	9.92	50.9	7.99			42.1	6.61	33.9	5.32	50.3	7.89	21.1	3.31	17.0	2.66
1 000	50	16.7	12.5			90.5	9.48	74.3	7.77			67.9	7.11	55.7	5.83	107	11.2	45.3	4.74	37.1	3.89	53.5	5.61	22.6	2.37	18.6	1.94
750	37.5	12.5	9.4			96.6	7.58	78.1	6.13	166	13.0	72.4	5.69	58.6	4.60	110	8.66	48.3	3.79	39.1	3.07	55.1	4.33	24.2	1.90	19.5	1.53
500	25	8.3	6.3	235	12.3	103	5.38	81.8	4.28	177	9.23	77.1	4.04	61.4	3.21	118	6.15	51.4	2.69	40.9	2.14	58.8	3.08	25.7	1.35	20.5	1.07
300	15	5	3.8	254	7.98	110	3.45	90.1	2.83	191	5.99	82.5	2.59	67.6	2.12	127	3.99	55.0	1.73	45.0	1.41	63.5	2.00	27.5	0.86	22.5	0.71
100	5	1.7	1.3	279	2.92	127	1.33	103	1.08	210	2.19	95.1	1.00	77.3	0.81	140	1.46	63.4	0.66	51.6	0.54	69.7	0.73	31.7	0.33	25.8	0.27

MA 350				LOAD																							
				350 kN				250 kN				150 kN				100 kN											
n_1 [rpm]	LINEAR SPEED v [mm/s]			RATIO				RATIO				RATIO				RATIO											
	RV2	RN2	RL2	RV2		RN2		RL2		RV2		RN2		RL2		RV2		RN2		RL2							
				T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW						
3 000	150	100	50																								
1 500	75	50	25					154	24.2					110	17.3	155	24.3	111	17.5	66.1	10.4	103	16.2	74.0	11.6	44.1	6.92
1 000	50	33.3	16.7					168	17.6			198	20.7	120	12.5	163	17.1	119	12.4	71.8	7.51	109	11.4	79.0	8.27	47.9	5.01
750	37.5	25	12.5			289	22.7	180	14.1	286	22.4	207	16.2	128	10.1	171	13.5	124	9.73	76.8	6.03	114	8.96	82.6	6.49	51.2	4.02
500	25	16.7	8.3	423	22.2	315	16.5	191	9.98	302	15.8	225	11.8	136	7.13	181	9.49	135	7.06	81.7	4.28	121	6.32	89.9	4.70	54.5	2.85
300	15	10	5	461	14.5	337	10.6	200	6.26	330	10.4	241	7.57	143	4.47	198	6.21	145	4.54	85.5	2.68	132	4.14	96.4	3.03	57.0	1.79
100	5	3.3	1.7	496	5.19	381	4.0	242	2.53	354	3.70	272	2.85	173	1.81	212	2.22	163	1.71	104	1.08	142	1.48	109	1.14	69.0	0.72

Screw jacks MA Series

Screw jacks MA Series with 3-starts acme screw TECHNICAL SPECIFICATIONS

SCREW JACK SIZE		MA 25	MA 50	MA 80	MA 100	MA 200	MA 350	
Load capacity [kN], (push - pull)		25	50	80	100	200	350	
3-starts acme screw		Tr 30x18 (P6)	Tr 40x21 (P7)	Tr 55x27 (P9)	Tr 60x36 (P12)	Tr 70x36 (P12)	Tr 100x48 (P16)	
Worm gear centre distance [mm]		50	63	63	80	100	125	
Available ratio	RV	1 : 6 (4 : 24)	1 : 7 (4 : 28)	1 : 7 (4 : 28)	1 : 8 (4 : 32)	1 : 8 (4 : 32)	3 : 32	
	RN	1 : 18 (2 : 36)	1 : 14 (2 : 28)	1 : 14 (2 : 28)	1 : 24	1 : 24	1 : 16 (2 : 32)	
	RL	1 : 24	1 : 28	1 : 28	1 : 32	1 : 32	1 : 32	
Stroke [mm] for 1 input shaft revolution	Ratio							
	RV3	3	3	3.86	4.5	4.5	4.5	
	RN3	1	1.5	1.93	1.5	1.5	3	
Starting efficiency	Ratio							
	RV3	0.36	0.34	0.33	0.36	0.34	0.31	
	RN3	0.28	0.29	0.28	0.27	0.24	0.28	
Running efficiency at 3000 rpm ⁽¹⁾	Ratio							
	RV3	0.57	0.56	0.57	0.59	0.58	0.57	
	RN3	0.48	0.50	0.50	0.52	0.48	0.54	
Starting torque on input shaft at max. load [Nm]	Ratio							
	RV3	33	70	148	201	427	803	
	RN3	15	42	89	88	203	594	
Max. permissible operating power [kW] ⁽²⁾	Ratio							
	RV3	1.8	3.6	3.6	4.3	6.9	11.7	
	RN3	1.1	2.6	2.6	4	6.2	11	
Reactive torque on acme screw (nut) required at max. load [Nm]	Ratio							
	RV3	123	303	642	980	2 100	5 041	
	RN3							
Gear box material		casting in spheroidal graphite iron EN-GJS-500-7 (UNI EN 1563)						
Mass of screw jack without acme screw [kg]		13	26	26	48	75	145	
Mass for every 100 mm of acme screw [kg]		0.45	0.8	1.6	1.8	2.5	5.2	

⁽¹⁾ - efficiency figures at different input speed on page 36

⁽²⁾ - THERMAL limit, referred to work with max. duty cycle 40 % over 10 min time period (30 % over 1 hour time period) at 25°C environment temperature

Screw jacks MA Series - travelling screw (Mod.A)

- 3-starts acme screw -

Following tables show the screw jack LINEAR SPEED v [mm/s] and relative TORQUE T_1 [Nm] and POWER P_1 [kW] on input shaft, with reference to the INPUT SPEED n_1 [rpm], the RATIO (RV, RN, RL) and the LOAD [kN] applied on the screw jack.

Intermediate values for linear speed v , torque T_1 and power P_1 at different input speed can be calculated by linear interpolation of the figures stated in the table.

The figures in the tables refer to work with max. duty cycle of 40 % over 10 min time period or 30 % over 1 hour time period at 25°C environment temperature.

ATTENTION! The figures in the **red shaded area** indicate operational restrictions due to thermal limits. When the selection is made within such area, the duty cycle must be reduced or the greater size screw jack must be selected, in order to allow effective heat dissipation. For a better evaluation, please contact SERVOMECH Engineering Dpt.

MA 25				LOAD																								
				25 kN						20 kN						15 kN						10 kN						
				RATIO			RATIO			RATIO			RATIO			RATIO			RATIO			RATIO						
n_1 [rpm]	LINEAR SPEED v [mm/s]			RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3				
	RV3	RN3	RL3	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW			
3 000	150	50	37.5			8.2	2.58	6.8	2.12			6.6	2.07	5.4	1.70	12.7	3.97	5.0	1.55	4.1	1.27	8.5	2.65	3.3	1.03	2.7	0.85	
1 500	75	25	18.8	22.6	3.55	9.2	1.44	7.6	1.18	18.1	2.84	7.4	1.15	6.1	0.95	13.6	2.13	5.5	0.86	4.5	0.71	9.1	1.42	3.7	0.58	3.0	0.47	
1 000	50	16.7	12.5	23.5	2.45	9.7	1.01	7.9	0.82	18.8	1.96	7.7	0.81	6.3	0.66	14.1	1.47	5.8	0.60	4.8	0.49	9.4	0.98	3.9	0.40	3.2	0.33	
	750	37.5	12.5	24.1	1.89	9.9	0.78	8.2	0.64	19.2	1.51	8.0	0.62	6.5	0.51	14.4	1.13	6.0	0.47	4.9	0.38	9.6	0.75	4.0	0.31	3.3	0.26	
	500	25	8.3	6.3	25.5	1.33	10.5	0.55	8.7	0.46	20.4	1.07	8.4	0.44	7.0	0.36	15.3	0.80	6.3	0.33	5.3	0.27	10.2	0.53	4.2	0.22	3.5	0.18
	300	15	5	3.8	26.7	0.84	11.0	0.35	9.3	0.29	21.3	0.67	8.8	0.28	7.5	0.23	16.0	0.50	6.6	0.21	5.6	0.18	10.7	0.33	4.4	0.14	3.8	0.12
	100	5	1.7	1.3	29.1	0.30	12.5	0.13	10.8	0.11	23.3	0.24	10.0	0.10	8.5	0.09	17.4	0.18	7.5	0.08	6.5	0.07	11.6	0.12	5.0	0.05	4.3	0.04

MA 50				LOAD																								
				50 kN						35 kN						25 kN						10 kN						
				RATIO			RATIO			RATIO			RATIO			RATIO			RATIO			RATIO						
n_1 [rpm]	LINEAR SPEED v [mm/s]			RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	
	RV3	RN3	RL3	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm
3 000	150	75	37.5					12.8	4.01			16.6	5.22	9.0	2.81	21.4	6.70	11.9	3.73	6.4	2.00	8.6	2.68	4.8	1.49	2.6	0.80	
1 500	75	37.5	18.8	45.9	7.21	26.1	4.10	14.3	2.24	32.1	5.05	18.3	2.87	10.0	1.57	23.0	3.60	13.1	2.05	7.2	1.12	9.2	1.44	5.2	0.82	2.9	0.45	
1 000	50	25	12.5	48.5	5.08	27.6	2.88	15.3	1.60	34.0	3.55	19.3	2.02	10.7	1.12	24.3	2.54	13.8	1.44	7.5	0.80	9.7	1.02	5.5	0.58	3.1	0.32	
	750	37.5	18.8	49.7	3.90	29.0	2.22	15.8	1.24	34.8	2.73	20.3	1.59	11.1	0.87	24.9	1.95	14.5	1.14	7.9	0.62	10.0	0.78	5.8	0.45	3.2	0.25	
	500	25	12.5	52.4	2.74	30.0	1.57	16.7	0.87	36.7	1.92	21.0	1.10	11.7	0.61	26.2	1.37	15.0	0.78	8.4	0.44	10.5	0.55	6.0	0.31	3.4	0.17	
	300	15	7.5	55.4	1.74	31.6	0.99	18.2	0.57	38.8	1.22	22.1	0.69	12.7	0.40	27.7	0.87	15.8	0.50	9.1	0.28	11.1	0.35	6.3	0.20	3.6	0.11	
	100	5	2.5	59.4	0.62	38.8	0.37	20.7	0.22	41.6	0.44	24.7	0.26	14.5	0.15	29.7	0.31	17.7	0.18	10.4	0.11	11.9	0.12	7.1	0.07	4.2	0.04	

MA 80				LOAD																								
				80 kN						60 kN						40 kN						20 kN						
				RATIO			RATIO			RATIO			RATIO			RATIO			RATIO			RATIO						
n_1 [rpm]	LINEAR SPEED v [mm/s]			RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	
	RV3	RN3	RL3	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm
3 000	193	96.4	48.2																									
1 500	96.4	48.2	24.1									39.9	6.26	24.0	3.67	47.3	7.42	26.6	4.17	16.0	2.51	23.7	3.71	13.3	2.09	8.0	1.26	
1 000	64.3	32.1	16.1			56.7	5.93	34.9	3.65	74.4	7.69	42.5	4.45	26.1	2.74	49.6	5.19	28.3	2.97	17.6	1.82	24.8	2.60	14.2	1.48	8.7	0.91	
	750	48.2	24.1	102	7.98	59.8	4.69	36.3	2.85	76.2	5.99	44.8	3.52	27.2	2.14	50.8	3.99	29.9	2.35	18.2	1.42	25.4	2.00	15.0	1.17	9.1	0.71	
	500	32.1	16.1	107	5.50	62.4	3.27	38.0	1.99	79.8	4.18	46.8	2.45	28.5	1.49	53.2	2.78	31.2	1.63	19.0	0.99	26.6	1.39	15.6	0.82	9.5	0.50	
	300	19.3	9.6	115	3.62	65.8	2.07	41.4	1.30	86.4	2.71	49.4	1.55	31.1	0.98	57.6	1.81	32.9	1.03	20.7	0.65	28.8	0.90	16.5	0.52	10.4	0.33	
	100	6.4	3.2	125	1.31	74.4	0.78	47.4	0.50	93.8	0.98	55.8	0.58	35.6	0.37	62.5	0.65	37.2	0.39	23.7	0.25	31.3	0.33	18.6	0.19	11.9	0.12	

Screw jacks MA Series - travelling screw (Mod.A)

- 3-starts acme screw -

Following tables show the screw jack LINEAR SPEED v [mm/s] and relative TORQUE T_1 [Nm] and POWER P_1 [kW] on input shaft, with reference to the INPUT SPEED n_1 [rpm], the RATIO (RV, RN, RL) and the LOAD [kN] applied on the screw jack.

Intermediate values for linear speed v , torque T_1 and power P_1 at different input speed can be calculated by linear interpolation of the figures stated in the table.

The figures in the tables refer to work with max. duty cycle of 40 % over 10 min time period or 30 % over 1 hour time period at 25°C environment temperature.

ATTENTION! The figures in the **red shaded area** indicate operational restrictions due to thermal limits. When the selection is made within such area, the duty cycle must be reduced or the greater size screw jack must be selected, in order to allow effective heat dissipation. For a better evaluation, please contact SERVOMECH Engineering Dpt.

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MA 100				LOAD																							
				100 kN						80 kN						50 kN						20 kN					
n_1 [rpm]	LINEAR SPEED v [mm/s]			RATIO						RATIO						RATIO						RATIO					
	RV3	RN3	RL3	RV3		RN3		RL3		RV3		RN3		RL3		RV3		RN3		RL3		RV3		RN3		RL3	
				T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW
3 000	225	75	56.3											29.0	9.10			23.0	7.20	18.1	5.69	24.3	7.63	9.2	2.88	7.3	2.28
1 500	113	37.5	28.1			49.9	7.84	40.3	6.33			39.9	6.27	32.3	5.06	65.2	10.3	25.0	3.92	20.2	3.16	26.1	4.10	10.0	1.57	8.06	1.27
1 000	75	25	18.8			53.9	5.64	43.4	4.55			43.1	4.51	34.8	3.64	68.6	7.18	26.9	2.82	21.7	2.27	27.4	2.87	10.8	1.13	8.68	0.91
750	56.3	18.8	14.1			56.1	4.40	44.2	3.47	113	8.84	44.9	3.52	35.3	2.77	70.4	5.52	28.0	2.20	22.1	1.73	28.2	2.21	11.2	0.88	8.83	0.69
500	37.5	12.5	9.4	148	7.62	57.9	3.03	46.6	2.44	118	6.17	46.3	2.43	37.3	1.95	73.7	3.86	29.0	1.52	23.3	1.22	29.5	1.54	11.6	0.61	9.32	0.49
300	22.5	7.5	5.6	158	4.95	62.2	1.95	51.4	1.61	126	3.96	49.7	1.56	41.1	1.29	78.8	2.47	31.1	0.98	25.7	0.81	31.5	0.99	12.5	0.39	10.3	0.32
100	7.5	2.5	1.9	169	1.77	70.1	0.73	58.7	0.61	136	1.42	56.1	0.59	47.0	0.49	84.6	0.39	35.1	0.37	29.4	0.31	33.9	0.35	14.0	0.15	11.8	0.12

MA 200				LOAD																								
				200 kN						150 kN						100 kN						50 kN						
n_1 [rpm]	LINEAR SPEED v [mm/s]			RATIO						RATIO						RATIO						RATIO						
	RV3	RN3	RL3	RV3		RN3		RL3		RV3		RN3		RL3		RV3		RN3		RL3		RV3		RN3		RL3		
				T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	
3 000	225	75	56.3																									
1 500	113	37.5	28.1					87.4	13.8			82.0	12.9	65.6	10.3			54.7	8.58	43.7	6.87	66.7	10.5	27.3	4.29	21.9	3.43	
1 000	75	25	18.8			117	12.2	94.9	9.94			87.6	9.17	71.2	7.45	141	14.8	58.4	6.11	47.5	4.97	70.4	7.37	29.2	3.06	23.7	2.48	
750	56.3	18.8	14.1			124	9.69	99.6	7.82	217	17.0	92.6	7.27	74.7	5.86	144	11.4	61.7	4.85	49.8	3.91	72.1	5.66	30.9	2.42	24.9	1.95	
500	37.5	12.5	9.4			131	6.87	104	5.46	229	12.0	98.4	5.15	78.2	4.09	153	7.98	65.6	3.43	52.1	2.73	76.2	3.99	32.8	1.72	26.1	1.36	
300	22.5	7.5	5.6	325	10.2	140	4.39	114	3.58	244	7.66	105	3.29	85.4	2.68	163	5.11	69.9	2.20	57.0	1.79	81.3	2.55	35.0	1.10	28.5	0.89	
100	7.5	2.5	1.9	355	3.71	160	1.67	130	1.36	266	2.75	120	1.25	97.3	1.02	177	11.9	80.0	0.83	64.9	0.68	88.6	0.93	39.9	0.42	32.4	0.34	

MA 350				LOAD																								
				350 kN						250 kN						150 kN						100 kN						
n_1 [rpm]	LINEAR SPEED v [mm/s]			RATIO						RATIO						RATIO						RATIO						
	RV3	RN3	RL3	RV3		RN3		RL3		RV3		RN3		RL3		RV3		RN3		RL3		RV3		RN3		RL3		
				T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	
3 000	225	150	75																									
1 500	113	75	37.5											142	22.3			146	22.9	85.2	13.4	137	21.4	97.0	15.3	56.8	8.91	
1 000	75	50	25					214	22.4			257	26.9	153	16.0	214	22.4	154	16.1	91.6	9.59	143	15.0	103	10.8	61.1	6.39	
750	56.3	37.5	18.8					227	17.9	371	29.2	267	21.0	163	12.8	223	17.5	160	12.6	97.4	7.65	149	11.7	107	8.38	64.9	5.10	
500	37.5	25	12.5	547	28.6	401	21.0	242	12.7	390	20.5	287	15.0	173	9.03	234	12.3	172	9.00	104	5.42	156	8.17	115	6.00	69.0	3.61	
300	22.5	15	7.5	588	18.5	428	13.5	252	7.91	420	13.2	306	9.59	180	5.65	252	7.91	183	5.76	108	3.39	167	5.27	112	3.84	72.0	2.26	
100	7.5	5	2.5	626	6.55	477	4.99	302	3.16	447	4.68	341	3.57	216	2.26	268	2.81	205	2.14	129	1.35	179	1.87	137	1.43	86.2	0.90	

Screw jacks MA Series

Screw jacks MA Series with 4-starts acme screw TECHNICAL SPECIFICATIONS

SCREW JACK SIZE		MA 25	MA 50	MA 80	MA 100	MA 200	MA 350	
Load capacity [kN], (push - pull)		25	50	80	100	200	350	
3-starts acme screw		Tr 30x24 (P6)	Tr 40x28 (P7)	Tr 55x36 (P9)	Tr 60x48 (P12)	Tr 70x48 (P12)	Tr 100x64 (P16)	
Worm gear centre distance [mm]		50	63	63	80	100	125	
Available ratio	RV	1 : 6 (4 : 24)	1 : 7 (4 : 28)	1 : 7 (4 : 28)	1 : 8 (4 : 32)	1 : 8 (4 : 32)	3 : 32	
	RN	1 : 18 (2 : 36)	1 : 14 (2 : 28)	1 : 14 (2 : 28)	1 : 24	1 : 24	1 : 16 (2 : 32)	
	RL	1 : 24	1 : 28	1 : 28	1 : 32	1 : 32	1 : 32	
Stroke [mm] for 1 input shaft revolution	Ratio							
	RV4	4	4	5.14	6	6	6	
	RN4	1.33	2	2.57	2	2	4	
Starting efficiency	Ratio							
	RV4	0.40	0.40	0.37	0.39	0.37	0.35	
	RN4	0.30	0.32	0.31	0.27	0.26	0.31	
Running efficiency at 3000 rpm ⁽¹⁾	Ratio							
	RV4	0.60	0.61	0.60	0.62	0.61	0.60	
	RN4	0.52	0.54	0.54	0.52	0.51	0.57	
Starting torque on input shaft at max. load [Nm]	Ratio							
	RV4	41	81	177	245	513	960	
	RN4	18	51	107	117	244	709	
Max. permissible operating power [kW] ⁽²⁾	Ratio							
	RV4	1.9	3.9	3.9	4.5	7.2	12.3	
	RN4	1.2	2.8	2.8	4.2	6.5	11.5	
Reactive torque on acme screw (nut) required at max. load [Nm]	Ratio							
	RV4	1	2.1	2.1	3.7	6.3	11	
	RL4	1	2.1	2.1	3.7	6.3	11	
Gear box material		fusione in ghisa sferoidale EN-GJS-500-7 (UNI EN 1563)						
Mass of screw jack without acme screw [kg]		13	26	26	48	75	145	
Mass for every 100 mm of acme screw [kg]		0.45	0.8	1.6	1.8	2.5	5.2	

⁽¹⁾ - efficiency figures at different input speed on page 36

⁽²⁾ - THERMAL limit, referred to work with max. duty cycle 40 % over 10 min time period (30 % over 1 hour time period) at 25°C environment temperature

Screw jacks MA Series - travelling screw (Mod.A)

- 4-starts acme screw -

Following tables show the screw jack LINEAR SPEED v [mm/s] and relative TORQUE T_1 [Nm] and POWER P_1 [kW] on input shaft, with reference to the INPUT SPEED n_1 [rpm], the RATIO (RV, RN, RL) and the LOAD [kN] applied on the screw jack.

Intermediate values for linear speed v , torque T_1 and power P_1 at different input speed can be calculated by linear interpolation of the figures stated in the table.

The figures in the tables refer to work with max. duty cycle of 40 % over 10 min time period or 30 % over 1 hour time period at 25°C environment temperature.

ATTENTION! The figures in the **red shaded area** indicate operational restrictions due to thermal limits. When the selection is made within such area, the duty cycle must be reduced or the greater size screw jack must be selected, in order to allow effective heat dissipation. For a better evaluation, please contact SERVOMECH Engineering Dpt.

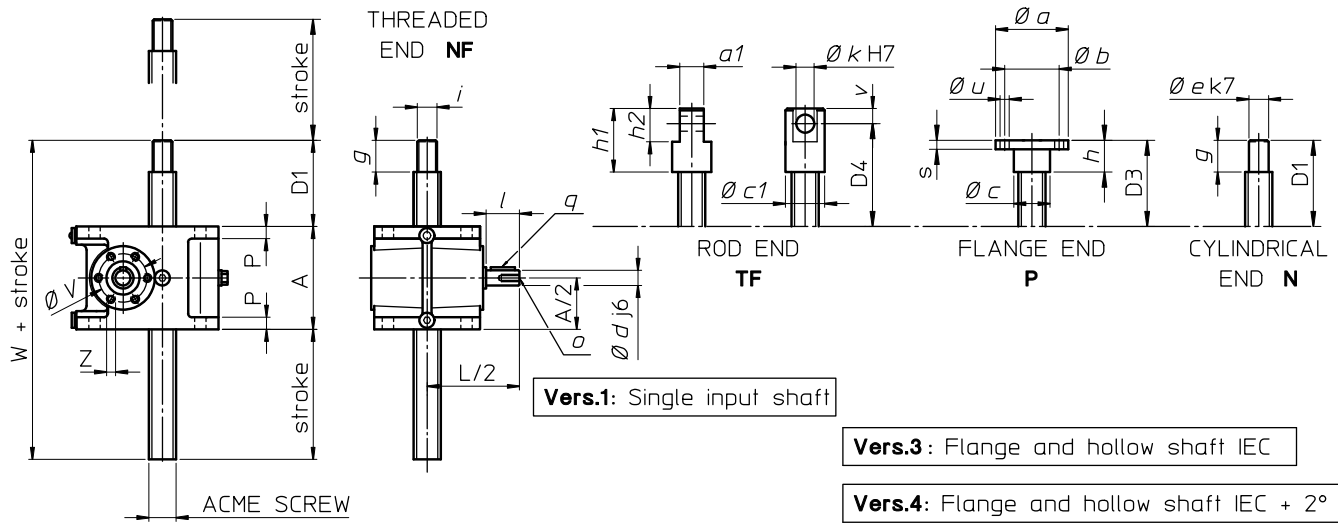
MA 25				LOAD																							
				25 kN						20 kN						15 kN				10 kN							
n_1 [rpm]	LINEAR SPEED v [mm/s]			RATIO						RATIO						RATIO				RATIO							
	RV4	RN4	RL4	RV4		RN4		RL4		RV4		RN4		RL4		RV4		RN4		RL4		RV4		RN4		RL4	
				T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW
3 000	200	66.7	50									8.2	2.58	6.7	2.11			6.16	1.94	5.1	1.58	10.7	3.34	4.1	1.29	3.4	1.05
1 500	100	33.3	25	28.3	4.44	11.4	1.78	9.3	1.46	22.7	3.56	9.1	1.42	7.5	1.17	17.0	2.67	6.80	1.07	5.6	0.88	11.3	1.78	4.6	0.71	3.7	0.58
1 000	66.7	22.2	16.7	29.3	3.06	11.9	1.24	9.7	1.02	23.4	2.45	9.5	1.00	7.8	0.81	17.6	1.84	7.13	0.75	5.8	0.61	11.7	1.23	4.8	0.50	3.9	0.41
750	50	16.7	12.5	30.0	2.35	12.3	0.96	10.1	0.79	24.0	1.88	9.8	0.77	8.1	0.63	18.0	1.41	7.34	0.58	6.0	0.47	12.0	0.94	4.9	0.38	4.0	0.32
500	33.3	11.1	8.3	31.6	1.65	12.9	0.67	10.7	0.56	25.3	1.32	10.3	0.54	8.6	0.45	19.0	0.99	7.70	0.40	6.5	0.34	12.6	0.66	5.2	0.27	4.3	0.22
300	20	6.7	5	32.8	1.03	13.5	0.42	11.4	0.36	26.3	0.82	10.8	0.34	9.2	0.29	19.7	0.62	8.10	0.25	6.9	0.22	13.1	0.41	5.4	0.17	4.6	0.14
100	6.7	2.2	1.7	35.6	0.37	15.2	0.16	13.1	0.14	28.5	0.30	12.2	0.13	10.5	0.11	21.4	0.22	9.12	0.10	7.9	0.08	14.3	0.15	6.1	0.06	5.3	0.05

MA 50				LOAD																							
				50 kN						35 kN						25 kN				10 kN							
n_1 [rpm]	LINEAR SPEED v [mm/s]			RATIO						RATIO						RATIO				RATIO							
	RV4	RN4	RL4	RV4		RN4		RL4		RV4		RN4		RL4		RV4		RN4		RL4		RV4		RN4		RL4	
				T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW
3 000	200	100	50									20.7	6.49	11.9	3.74	26.1	8.21	14.8	4.63	8.5	2.67	10.5	3.28	5.9	1.85	3.4	1.07
1 500	100	50	25	55.6	8.73	32.2	5.05	19.1	2.99	38.9	6.11	22.5	3.53	13.4	2.09	27.8	4.36	16.1	2.52	9.5	1.50	11.1	1.75	6.5	1.01	3.8	0.60
1 000	66.7	33.3	16.7	58.2	6.09	33.8	3.54	20.4	2.14	40.7	4.26	23.7	2.48	14.3	1.50	29.1	3.05	16.9	1.77	10.2	1.07	11.7	1.22	6.8	0.71	4.1	0.43
750	50	25	12.5	59.4	4.66	35.4	2.78	21.1	1.65	41.6	3.26	24.8	1.95	14.8	1.16	29.7	2.33	17.7	1.39	10.5	0.83	11.9	0.93	7.1	0.56	4.2	0.33
500	33.3	16.7	8.3	62.0	3.25	36.6	1.91	22.3	1.16	43.4	2.27	25.6	1.34	15.6	0.81	31.0	1.62	18.3	0.96	11.1	0.58	12.4	0.65	7.3	0.38	4.5	0.23
300	20	10	5	65.2	2.05	38.5	1.21	24.2	0.76	45.6	1.43	27.0	0.85	16.9	0.53	32.6	1.02	19.3	0.60	12.1	0.38	13.1	0.41	7.7	0.24	4.9	0.15
100	6.7	3.3	1.7	69.5	0.73	42.8	0.45	27.6	0.29	48.7	0.51	29.9	0.31	19.9	0.20	34.8	0.36	21.4	0.22	13.8	0.14	13.9	0.15	8.6	0.09	5.5	0.06

MA 80				LOAD																								
				80 kN						60 kN						40 kN				20 kN								
n_1 [rpm]	LINEAR SPEED v [mm/s]			RATIO						RATIO						RATIO				RATIO								
	RV4	RN4	RL4	RV4		RN4		RL4		RV4		RN4		RL4		RV4		RN4		RL4		RV4		RN4		RL4		
				T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	T_1 Nm	P_1 kW	
3 000	257	129	64.3																									
1 500	129	64.3	32.1											29.3	4.60	58.8	9.23	32.7	5.14	19.6	3.07	29.4	4.62	16.4	2.57	9.8	1.53	
1 000	85.7	42.9	21.4					42.4	4.44	92.0	9.63	52.1	5.45	31.8	3.33	61.3	6.42	34.7	3.64	21.2	2.22	30.7	3.21	17.4	1.82	10.6	1.11	
750	64.3	32.1	16.1	126	9.84	73.0	5.73	44.0	3.46	94.0	7.38	54.7	4.30	33.0	2.59	62.7	4.92	36.5	2.86	22.0	1.73	31.3	2.46	18.3	1.43	11.0	0.86	
500	42.9	21.4	10.7	131	6.84	76.0	3.98	46.1	2.41	98.0	5.13	57.0	2.98	34.6	1.81	65.3	3.42	38.0	1.99	23.0	1.21	32.7	1.71	19.0	0.99	11.5	0.60	
300	25.7	12.9	6.4	141	4.41	79.9	2.51	50.1	1.57	106	3.31	59.9	1.88	37.6	1.18	70.2	2.20	39.9	1.25	25.0	0.79	35.1	1.10	20.0	0.63	12.5	0.39	
100	4.3	4.3	2.1	152	1.58	89.6	0.94	57.0	0.60	114	1.19	67.2	0.70	42.8	0.45	75.6	0.79	44.8	0.47	28.5	0.30	37.8	0.40	22.4	0.23	14.3	0.15	

Screw jacks MA Series - overall dimensions

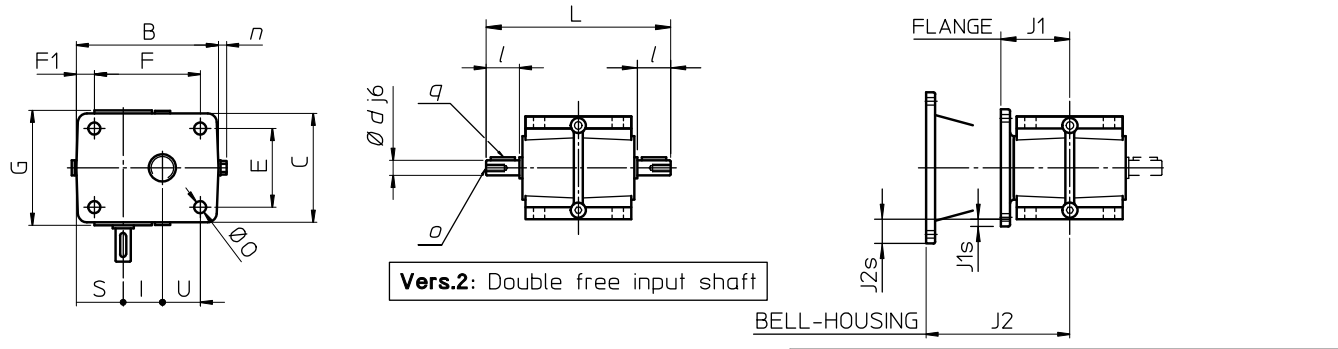
Model A - TRAVELLING SCREW



Vers.1: Single input shaft

Vers.3: Flange and hollow shaft IEC

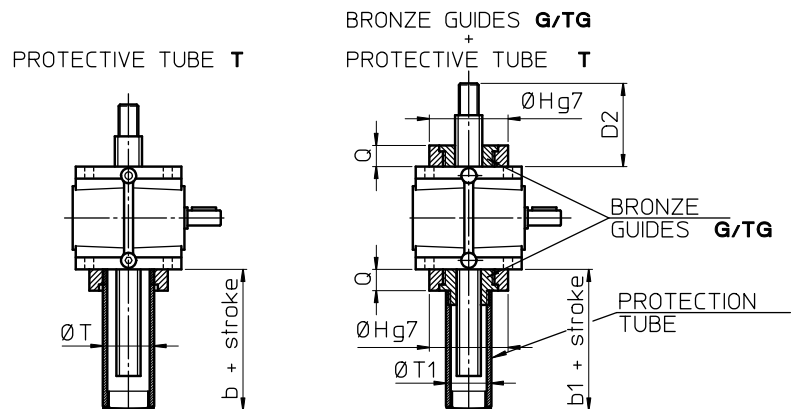
Vers.4: Flange and hollow shaft IEC + 2° shaft



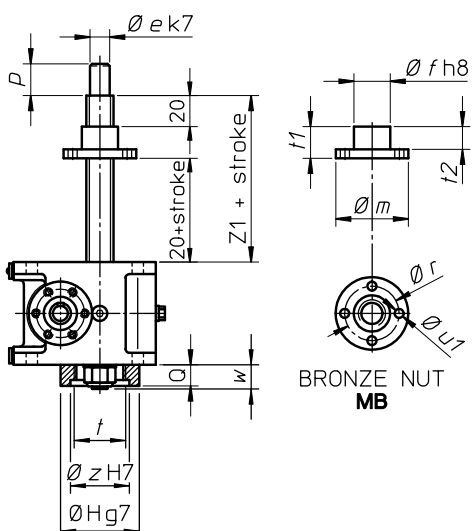
Vers.2: Double free input shaft

Vers.5: Vers.1 + bell-housing and coupling IEC

Vers.6: Vers.2 + bell-housing and coupling IEC



Model B - TRAVELLING NUT



SIZE	MA 5	MA 10	MA 25	MA 50	MA 80	MA 100	MA 200	MA 350
ØT	50 (*)	55	70	90	90	110	150	180
b	exec. T	25	25	25	25	35	35	35
	exec. T + SN	75	75	105	105	105	115	135
	exec. T + AR	80	85	95	95	95	90	100
	exec. T + FCM	82	86	-	-	-	-	-
	exec. T + FCP	85	86	94	96	96	100	105
	exec. T+AR+FCP	90	96	115	117	117	115	120
ØT1	40 (*)	50 (*)	60 (*)	60 (*)	100 (*)	100 (*)	100 (*)	160
b1	exec. TG	50	51	59	61	61	65	90
	exec. TG + FCM	100	101	115	117	-	-	-
	exec. TG + FCP	100	101	109	111	111	115	140

* - for executions WITHOUT FCP: the actual value will be smaller

Screw jacks MA Series - overall dimensions

SIZE	MA 5	MA 10	MA 25	MA 50	MA 80	MA 100	MA 200	MA 350
ACME SCREW	Tr 18x4	Tr 22x 5	Tr 30x6	Tr 40x7	Tr 55x9	Tr 60x12	Tr 70x12	Tr 100x16
A	80	100	126	160	160	200	230	280
B	124	140	175	235	235	276	330	415
C	80	105	130	160	160	200	230	300
D1 (min.)	39	44	58	58	68	68	78	98
D2 (min.)	54	60	82	84	94	98	113	138
D3 (min.)	40	45	60	60	70	70	80	100
D4 (min.)	65	75	95	105	120	150	170	220
E	62	80	100	120	120	150	175	230
F	95	110	140	190	190	220	270	330
F1	12.5	14	17.5	23	23	26	30	42
G	100	114	136	165	165	205	256	326
∅ H	65	80	100	120	120	160	190	240
I	30	40	50	63	63	80	100	125
L	149	179	221.5	269	269	330	378	490
∅ O	9	9	13	17	17	21	28	34
P	10	12	15	19	19	22	26	30
Q	15	16	24	26	26	30	35	40
S	46.5	46	57.5	80	80	91	113	121
U	31	38	50	70	70	75	87	126
∅ V	42	46	64	63	63	74	110	118
W	119	144	184	218	228	268	308	378
Z	M5, depth 10	M5, depth 12	M5, depth 10	M6, depth 14	M6, depth 14	M6, depth 14	M10, depth 20	M10, depth 25
Z1	80	85	90	115	140	140	170	200
∅ a	68	75	100	120	150	150	180	250
a1	20	25	30	40	50	60	75	100
∅ b	45	55	75	85	110	110	130	180
∅ c	25	30	40	50	70	70	85	115
∅ c1	32	38	48	68	78	90	108	138
∅ d	10	14	19	24	24	28	32	38
∅ e	12	15	20	30	40	40	50	70
∅ f	30	40	50	60	75	80	100	150
g	19	24	38	38	48	48	58	78
h	20	25	40	40	50	50	60	80
h1	60	75	100	120	140	180	210	280
h2	30	40	50	70	80	100	120	160
i	M12x1.75	M16x1.5	M20x1.5	M30x2	M42x3	M42x3	M56x3	M80x3
∅ k	14	20	25	35	40	50	60	80
l	22	30	40	50	50	60	60	80
∅ m	68	75	100	120	130	150	180	250
n	—	—	10	10	10	12	10	10
o	M5, depth. 10	M6, depth 14	M8, depth 16	M8, depth 16	M8, depth 16	M8, depth 16	M10, depth 24	M12, depth 32
p	19	24	40	40	45	50	60	65
q	3x3x15	5x5x20	6x6x30	8x7x40	8x7x40	8x7x40	10x8x40	10x8x60
∅ r	50	56	75	90	105	120	140	200
s	8	10	12	15	20	20	25	35
t	M45x1.5	M55x1.5	M70x2	M90x2	M90x2	M110x2	M150x3	M180x3
t1	40	45	50	75	100	100	130	160
t2	28	33	35	50	80	70	95	115
∅ u, n° holes	∅ 7, 4 holes	∅ 9, 4 holes	∅ 11, 4 holes	∅ 17, 4 holes	∅ 21, 4 holes	∅ 21, 4 holes	∅ 26, 6 holes	∅ 30, 6 holes
∅ u1, n° holes	∅ 7, 4 holes	∅ 9, 4 holes	∅ 11, 4 holes	∅ 17, 4 holes	∅ 17, 4 holes	∅ 21, 4 holes	∅ 26, 6 holes	∅ 30, 6 holes
v	15	20	25	35	40	50	60	80
w	15	17	25	36	38	41	42	45
∅ z	50	60	77	95	95	120	160	200
J1	63 B5/B14: 62	63 B5/B14: 69	63/71 B5: 102	80 B5: 100	80 B5: 100	80/90 B5: 120	90 B5: 142 100/112 B5: 142	—
J1s	63 B5: 30 63 B14: 5	63 B5: 20 63 B14: —	63 B5: 7 71 B5: 17	80 B5: 20	80 B5: 20	80/90 B5: —	90 B5: — 100/112 B5: 10	—
J2	71 B5: 122 71 B14: 131	71 B5: 129 71 B14: 138	80 B5: 182 80 B14: 176 90 B5: 182 90 B14: 182	90 B5: 200 90 B14: 200 100 B5: 220 100 B14: 220	90 B5: 200 90 B14: 200 100/112 B5: 220 100/112 B14: 220	100/112 B5 240 100/112 B14: 240	132 B5: 297	132 B5: 353 160 B5: 365
J2s	71 B5: 40 71 B14: 12.5	71 B5: 30 71 B14: 3	80 B5: 37 80 B14: — 90 B5: 37 90 B14: 7	90 B5: 20 90 B14: — 100 B5: 45 100 B14: —	90 B5: 20 90 B14: — 100/112 B5: 45 100/112 B14: —	100/112 B5 25 100/112 B14: —	132 B5: 35	132 B5: 10 160 B5: 35

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Screw jacks MA Series

Total efficiency of screw jack with 1-start acme screw

η	MA 5			MA 10			MA 25			MA 50			MA 80			MA 100			MA 200			MA 350					
	RATIO			RATIO			RATIO			RATIO			RATIO			RATIO			RATIO			RATIO					
n_1 [rpm]	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1	RV1	RN1	RL1
3 000	0.40	0.31	0.27	0.41	0.30	0.28	0.38	0.30	0.28	0.37	0.32	0.26	0.39	0.33	0.27	0.41	0.32	0.30	0.38	0.31	0.28	0.39	0.34	0.29			
1 500	0.36	0.28	0.25	0.37	0.28	0.27	0.34	0.27	0.25	0.32	0.28	0.23	0.34	0.28	0.23	0.36	0.29	0.26	0.33	0.26	0.24	0.32	0.29	0.24			
1 000	0.34	0.27	0.24	0.35	0.26	0.25	0.32	0.26	0.24	0.30	0.26	0.22	0.31	0.26	0.21	0.34	0.26	0.25	0.31	0.24	0.23	0.29	0.27	0.23			
750	0.33	0.26	0.23	0.34	0.25	0.25	0.31	0.25	0.23	0.29	0.25	0.21	0.30	0.25	0.20	0.32	0.25	0.24	0.30	0.23	0.22	0.28	0.26	0.22			
500	0.31	0.25	0.21	0.32	0.24	0.23	0.29	0.24	0.22	0.28	0.24	0.20	0.27	0.23	0.19	0.31	0.24	0.22	0.28	0.22	0.21	0.27	0.25	0.21			
300	0.30	0.24	0.20	0.31	0.23	0.22	0.28	0.23	0.20	0.26	0.23	0.18	0.25	0.22	0.17	0.29	0.23	0.21	0.27	0.21	0.19	0.25	0.23	0.19			
100	0.28	0.22	0.17	0.29	0.20	0.19	0.26	0.20	0.18	0.24	0.21	0.16	0.24	0.20	0.15	0.27	0.20	0.18	0.24	0.18	0.16	0.22	0.21	0.17			
AT START	0.21	0.16	0.13	0.22	0.15	0.14	0.20	0.16	0.13	0.18	0.15	0.11	0.18	0.15	0.11	0.20	0.13	0.12	0.17	0.12	0.11	0.16	0.14	0.10			

Total efficiency of screw jack with 2-starts acme screw

η	MA 5			MA 10			MA 25			MA 50			MA 80			MA 100			MA 200			MA 350					
	RATIO			RATIO			RATIO			RATIO			RATIO			RATIO			RATIO			RATIO					
n_1 [rpm]	RV2	RN2	RL2	RV2	RN2	RL2	RV2	RN2	RL2	RV2	RN2	RL2	RV2	RN2	RL2	RV2	RN2	RL2	RV2	RN2	RL2	RV2	RN2	RL2	RV2	RN2	RL2
3 000	0.52	0.41	0.36	0.53	0.40	0.39	0.51	0.43	0.39	0.50	0.44	0.38	0.51	0.44	0.38	0.54	0.43	0.41	0.52	0.42	0.39	0.51	0.48	0.41			
1 500	0.48	0.38	0.33	0.49	0.36	0.35	0.47	0.38	0.34	0.46	0.40	0.33	0.46	0.40	0.33	0.49	0.39	0.36	0.48	0.38	0.35	0.46	0.43	0.36			
1 000	0.46	0.36	0.31	0.46	0.35	0.33	0.45	0.36	0.33	0.43	0.37	0.30	0.43	0.37	0.30	0.46	0.36	0.33	0.45	0.35	0.32	0.44	0.40	0.33			
750	0.44	0.35	0.29	0.44	0.33	0.31	0.44	0.35	0.32	0.42	0.35	0.29	0.42	0.35	0.29	0.45	0.34	0.32	0.43	0.33	0.31	0.42	0.39	0.31			
500	0.42	0.33	0.28	0.42	0.31	0.30	0.41	0.33	0.30	0.39	0.34	0.28	0.40	0.33	0.27	0.43	0.33	0.31	0.41	0.31	0.29	0.40	0.35	0.29			
300	0.40	0.31	0.26	0.41	0.29	0.28	0.39	0.31	0.27	0.37	0.32	0.25	0.36	0.32	0.25	0.39	0.31	0.27	0.38	0.29	0.27	0.36	0.33	0.28			
100	0.37	0.28	0.22	0.37	0.25	0.24	0.35	0.27	0.24	0.34	0.28	0.22	0.33	0.28	0.22	0.36	0.27	0.24	0.34	0.25	0.23	0.34	0.29	0.23			
AT START	0.32	0.25	0.20	0.33	0.22	0.21	0.31	0.23	0.20	0.29	0.24	0.18	0.28	0.23	0.17	0.30	0.21	0.19	0.28	0.20	0.18	0.26	0.23	0.18			

Total efficiency of screw jack with 3-starts acme screw

η	MA 25			MA 50			MA 80			MA 100			MA 200			MA 350		
	RATIO			RATIO			RATIO			RATIO			RATIO			RATIO		
n_1 [rpm]	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3	RV3	RN3	RL3
3 000	0.57	0.48	0.44	0.56	0.50	0.47	0.57	0.50	0.43	0.59	0.52	0.49	0.58	0.48	0.45	0.57	0.54	0.46
1 500	0.53	0.43	0.40	0.52	0.46	0.42	0.52	0.46	0.38	0.55	0.48	0.44	0.54	0.44	0.41	0.53	0.49	0.42
1 000	0.51	0.41	0.38	0.49	0.43	0.39	0.50	0.43	0.35	0.52	0.44	0.41	0.51	0.41	0.38	0.50	0.47	0.39
750	0.50	0.40	0.37	0.48	0.41	0.38	0.48	0.41	0.34	0.51	0.43	0.41	0.50	0.39	0.36	0.48	0.45	0.37
500	0.47	0.38	0.34	0.46	0.40	0.36	0.46	0.39	0.32	0.49	0.41	0.38	0.47	0.36	0.34	0.46	0.42	0.35
300	0.45	0.36	0.32	0.43	0.38	0.33	0.43	0.37	0.30	0.45	0.38	0.35	0.44	0.34	0.31	0.43	0.39	0.33
100	0.41	0.32	0.28	0.40	0.34	0.29	0.39	0.33	0.26	0.42	0.34	0.31	0.40	0.30	0.28	0.40	0.35	0.28
AT START	0.36	0.28	0.24	0.34	0.29	0.24	0.33	0.28	0.21	0.36	0.27	0.25	0.34	0.24	0.21	0.31	0.28	0.21

Total efficiency of screw jack with 4-starts acme screw

η	MA 25			MA 50			MA 80			MA 100			MA 200			MA 350		
	RATIO			RATIO			RATIO			RATIO			RATIO			RATIO		
n_1 [rpm]	RV4	RN4	RL4	RV4	RN4	RL4	RV4	RN4	RL4	RV4	RN4	RL4	RV4	RN4	RL4	RV4	RN4	RL4
3 000	0.60	0.52	0.47	0.61	0.54	0.47	0.60	0.54	0.47	0.62	0.52	0.49	0.61	0.51	0.48	0.60	0.57	0.50
1 500	0.56	0.47	0.43	0.57	0.50	0.42	0.56	0.50	0.42	0.58	0.48	0.44	0.57	0.47	0.44	0.56	0.53	0.46
1 000	0.54	0.45	0.41	0.55	0.47	0.39	0.53	0.47	0.39	0.56	0.44	0.41	0.55	0.44	0.41	0.54	0.50	0.43
750	0.53	0.43	0.40	0.54	0.45	0.38	0.52	0.45	0.37	0.54	0.43	0.41	0.53	0.42	0.39	0.52	0.49	0.40
500	0.50	0.41	0.37	0.51	0.44	0.36	0.50	0.43	0.36	0.52	0.41	0.38	0.51	0.40	0.38	0.50	0.46	0.38
300	0.49	0.39	0.35	0.49	0.41	0.33	0.47	0.41	0.33	0.49	0.38	0.35	0.48	0.38	0.35	0.47	0.43	0.36
100	0.45	0.35	0.30	0.46	0.37	0.29	0.43	0.37	0.29	0.46	0.34	0.31	0.44	0.33	0.30	0.44	0.39	0.31
AT START	0.40	0.30	0.26	0.40	0.32	0.24	0.37	0.31	0.23	0.39	0.27	0.25	0.37	0.26	0.24	0.35	0.31	0.24