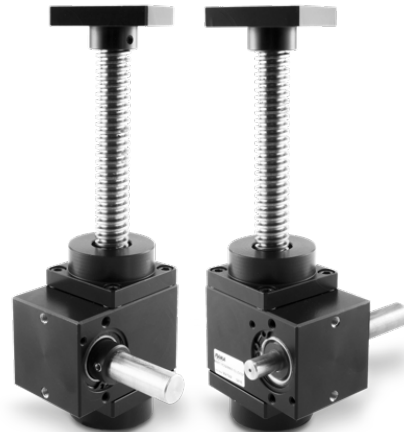


Datasheet

Our modular system for a complete and flexible solution. The screw jack **MAR50** allows the transformation of rotary movements into linear "push/pull" movements.

Features at a glance

- Screw jack for lifting and actuation systems
- For conversion of rotary movements into linear "push/pull" movements
- For motorised or manually adjustable rotary movements
- Trapezoidal threaded spindle in stainless steel (AISI 304), **TPN Ø18 - 4 mm pitch**
- Housing in anodised aluminium, bevel gear and shaft in steel, surface-hardened
- High wear and fatigue resistance
- Maintenance-free: lubricated with Klüber long-life grease
- Standard stroke lengths of the threaded spindle in mm: **100 - 200 - 300 - 400 - 700 - 1000**
- Can be used individually or combined with flexible shafts, couplings, and gearboxes
- Screw jack for lifting and actuation systems



Optional available on request:

- Version supplied complete with flange and extension shaft; compatible for mounting a spindle position indicator **OP3, OP7** or **EP3, EP7** for manual adjustment and direct reading of a measured value (see dimensions MAR50 FL-OP3 and MAR50 FL-OP7/EP7).
- Protective aluminium cover (optionally in stainless steel) with spiral spring in stainless steel (AISI 301) for lengths up to 400 mm.

Technical characteristics

Rotation direction	Clockwise (clockwise rotation)
Radial load	50 N (10 N \cong 1 kg)
Axial load (push/pull)	1.000 N (10 N \cong 1 kg)
Screw load	<u>not allowed</u>
Revolution	max. 1500 rpm
Backlash	0,75° up to 1.5° max.
Dimensions	
Spindle	TPN Ø18 – 4 mm pitch
Stroke length	100 - 200 - 300 - 400 - 700 - 1.000 mm
Protective cover length	< 400 mm
Material	
Spindle	Stainless steel (AISI 304)
Housing	Aluminium, black anodised
Bevel gearbox and shaft	Steel, surface-hardened
Spiral spring	Stainless steel (AISI 301)
Protective cover	Aluminium (optionally in stainless steel AISI 303)
Weight	
Spindle/meter	900 g/m
Housing gearbox	500 g
Transmission ratio	1:1 - 1:2,5 - 1:5 - 1:7,5 - 1:10 - 1:12,5 - 1:15 - 1:25 - 1:30
Input torque	see performance table
Output torque	10 Nm
Operating temperature	-20 ... +80 °C
Life	10.000 h
Lubrication	Klüber AG 11-462 (grease)

Datasheet

Installation



The main cause of breakage on the trapezoidal threaded spindle is radial loads caused by eccentricity. It is necessary to align the spindle and mounting surface of the gearbox orthogonally.

When mounting multiple screw jacks (also connected by shafts), it is essential that the couplings are perfectly aligned to distribute the load evenly. In this case, the use of flexible couplings is recommended to compensate for misalignments.

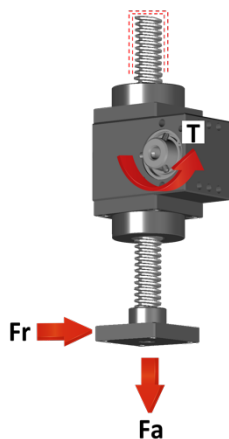
Radial and axial load

The loads acting on the shafts can be:
Radial '**FR**' (radial force) and axial '**FA**' (axial force), related to the axis of the shaft.
The axial load can be in push or pull.

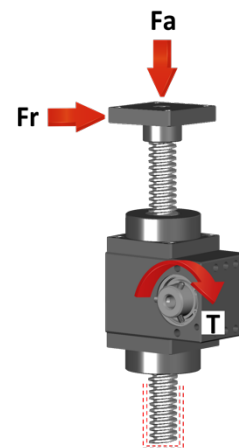
FR - force / radial load acts vertically on the shaft / axle

FA - force / axial load acts horizontally on the shaft / axle

Push



Pull

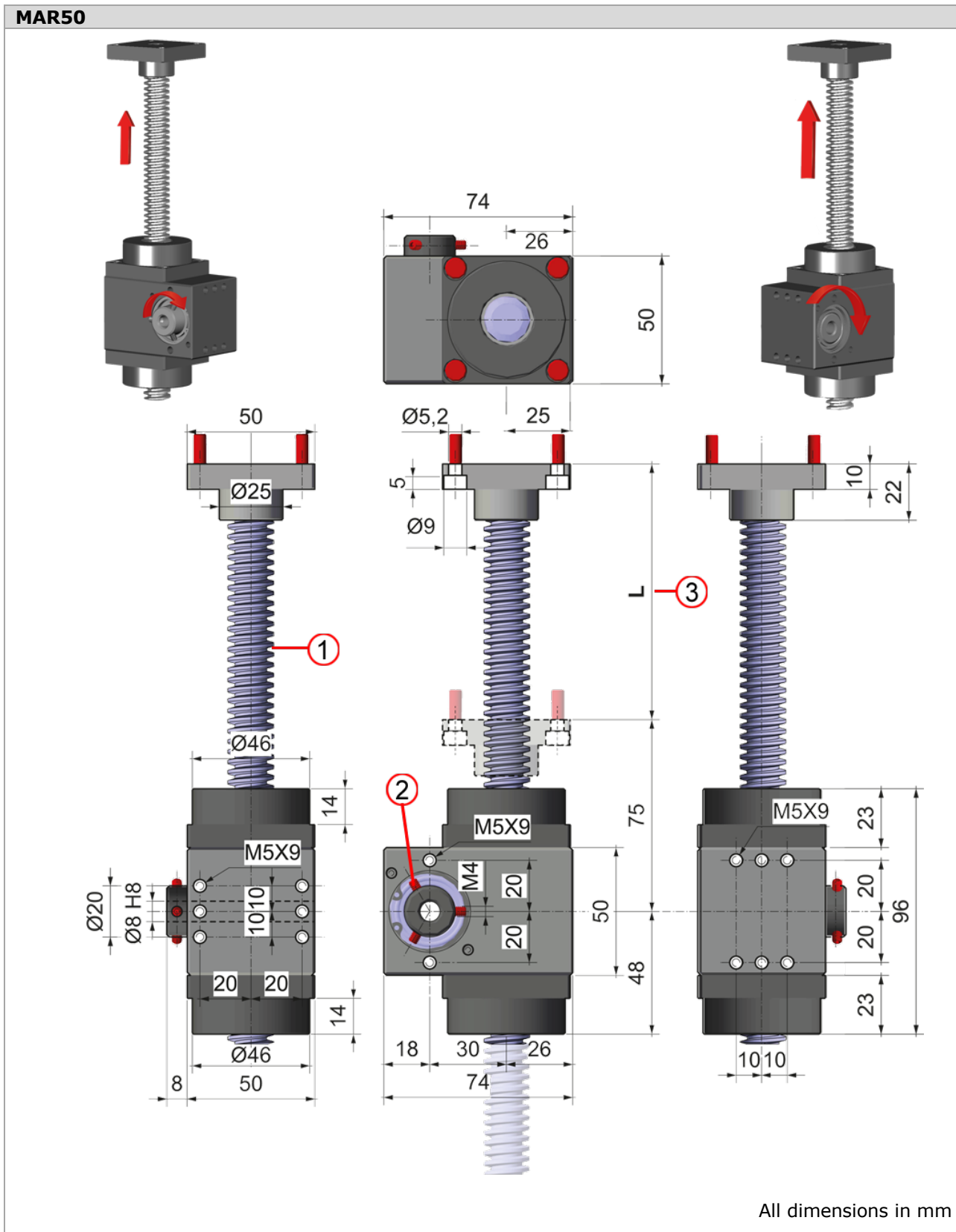


Sizing verification

- Load (kg) = the force which is applied to the threaded spindle of the screw jack.
- Linear speed (mm/s) = the desired linear speed of load handling; it is recommended to limit the input rotatory speed to a maximum of 1500 rpm.
- Stroke length (mm) = the linear distance the load must be moved, generally equal to the total length of the threaded spindle.
- Protective cover (optional on request) = to protect the threaded spindle in case of contamination, dust, foreign objects and/or oscillating installation and movements.
- Torque (Nm) = torque required to the load handling.

Datasheet

Dimensions

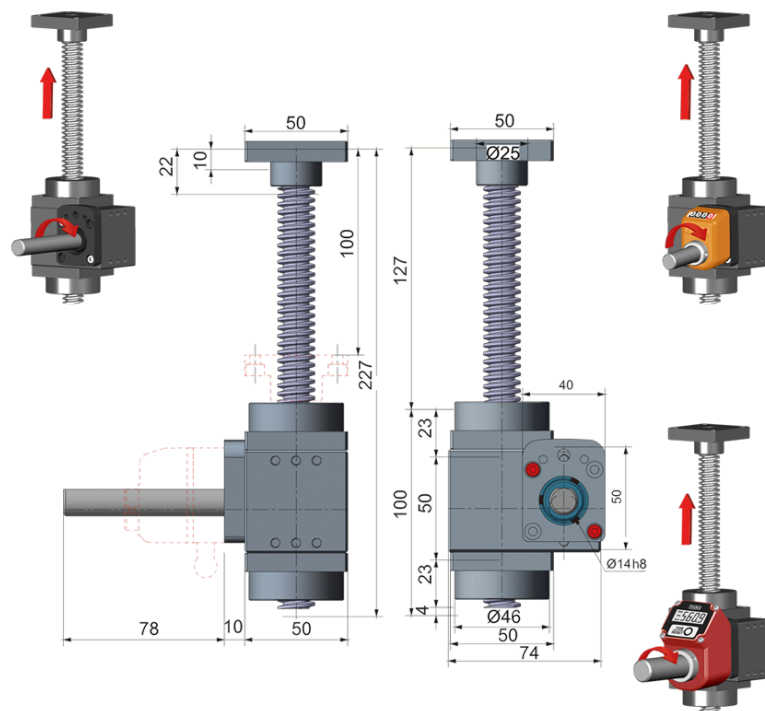


Datasheet



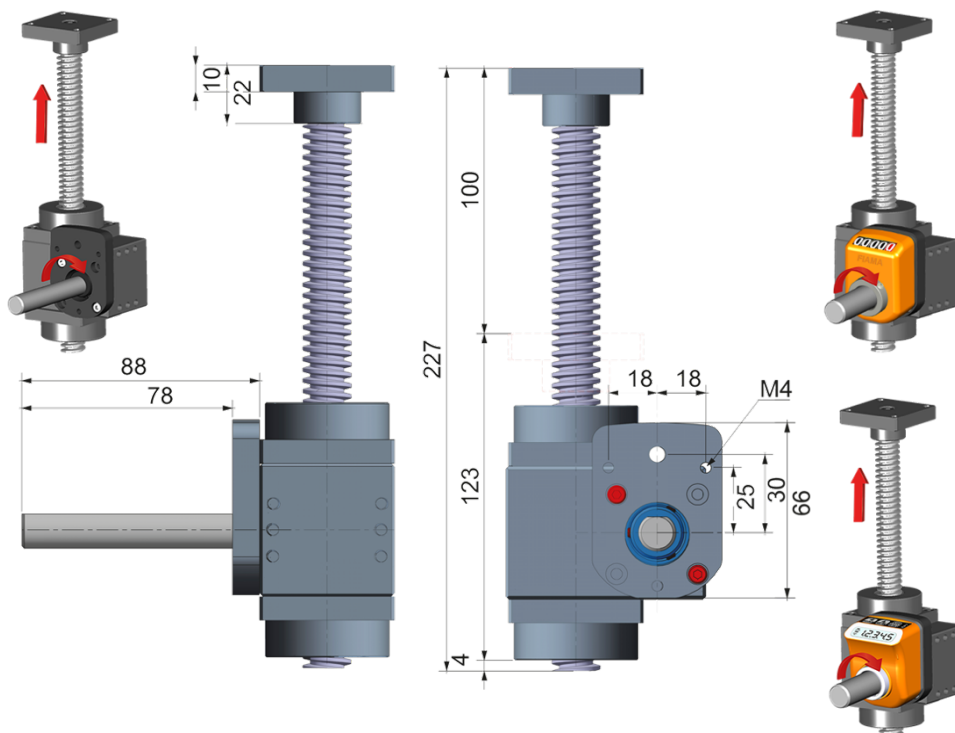
MAR50 FL-OP3/EP3

Complete with mounting flanges and extension shaft for visualization with position indicator OP3 or EP3



MAR50 FL-OP7/EP7

Complete with mounting flanges and extension shaft for visualization with position indicator OP7 or EP7

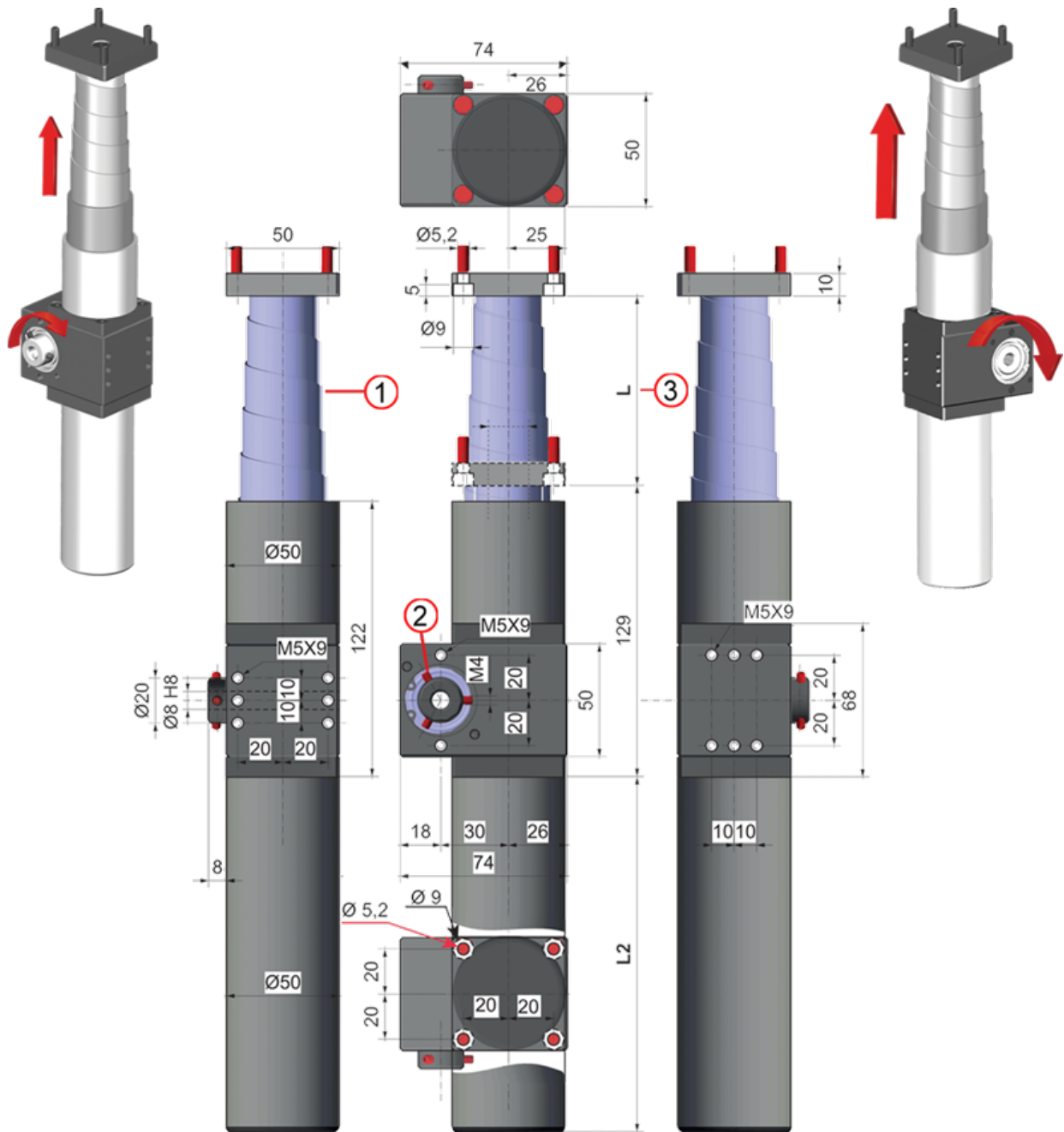


All dimensions in mm

Datasheet

MAR50-PROT

Version with trapezoidal spindle guard and spiral spring for lengths up to 400 mm (optional)

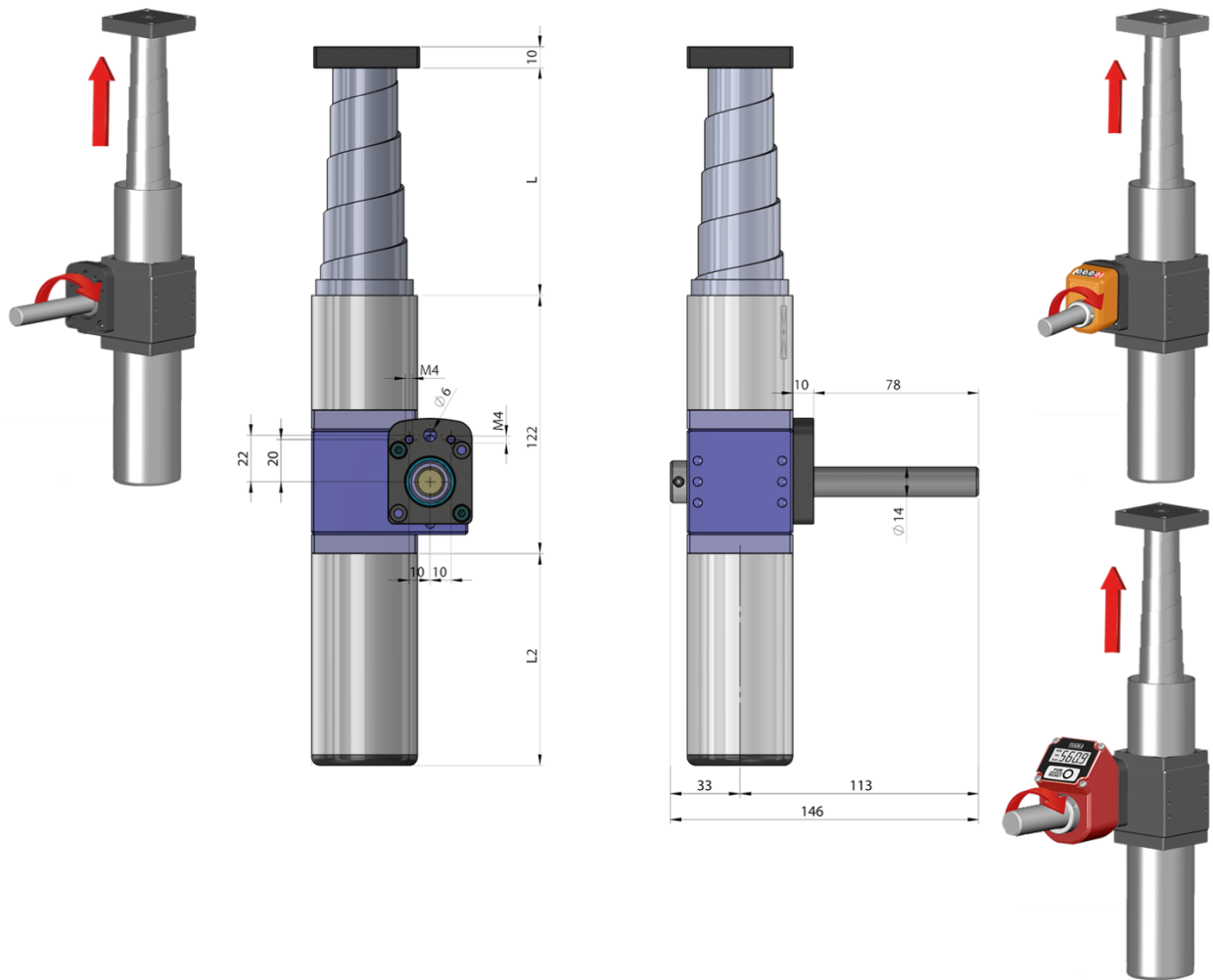


All dimensions in mm

Datasheet

MAR50 FL-OP3/EP3

Complete with mounting flange and extension shaft; compatible for mounting a spindle position indicator OP3 or programmable indicator EP3, for manual setting and direct reading of a measured value

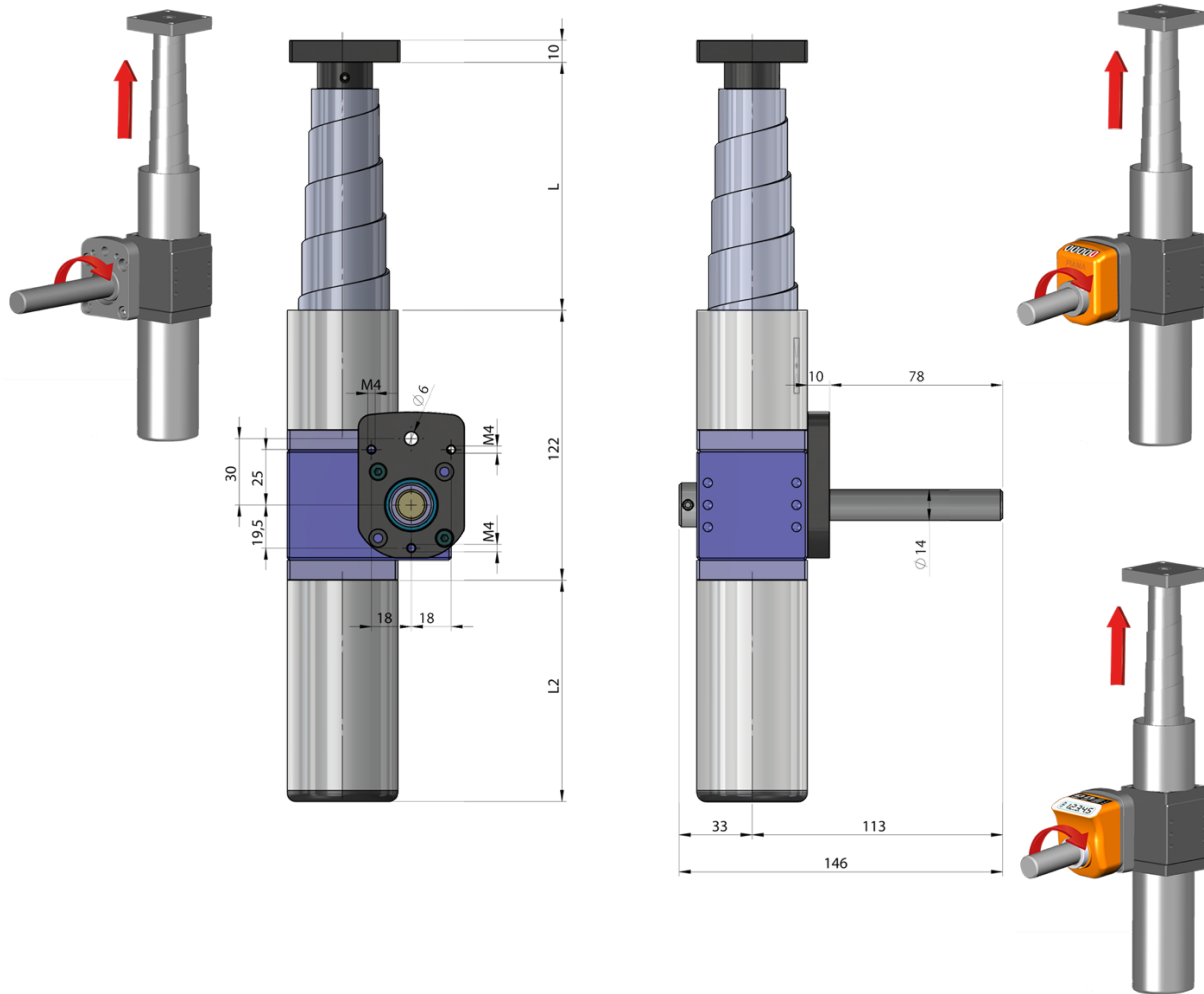


All dimensions in mm

Datasheet

MAR50 FL-OP7/EP7

Complete with mounting flange and extension shaft; compatible for mounting a spindle position indicator OP7 or programmable indicator EP7, for manual setting and direct reading of a measured value



All dimensions in mm

Datasheet

Performance table

Tab. 1 =	Handling of loads according to the input torque
Tab. 2 =	Handling of loads according to the trapezoidal spindle (with guides)
Tab. 3 =	Spindle travel speed according to input speed
i =	Gear ratio [/]
T =	Torque [Nm]
C =	Handling of loads [kg]
s =	Measuring path [mm]
ω =	Rotational speed [rpm]
v =	Traversing speed [mm/s]

i [/]	Tab. 1		Tab. 2		Tab. 3	
	T [Nm]	C [kg]	s [mm]	C [kg] (T max)	ω [rpm]	v [mm/s]
1/1	1	32,0	100	448,3	250	16,67
	3	96,1	200	448,3	500	33,33
	5	160,1	300	448,3	750	50,00
	7	224,2	400	448,3	1000	66,67
	9	288,2	500	448,3	1250	83,33
	11	352,3	600	448,3	1500	100,00
	13	416,3	700	431,8		
	14	448,3	800	330,6		
				900	261,2	
			1000	211,6		
1/2,5	0,5	40,0	100	448,3	250	6,67
	1	80,1	200	448,3	500	13,33
	1,5	120,1	300	448,3	750	20,00
	2	160,1	400	448,3	1000	26,67
	2,5	200,2	500	448,3	1250	33,33
	3	240,2	600	448,3	1500	40,00
	3,5	280,2	700	431,8		
	4	320,2	800	330,6		
	4,5	360,3	900	261,2		
	5	400,3	1000	211,6		
	5,5	440,3				
1/5	0,5	72,1	100	448,3	250	3,33
	1	144,1	200	448,3	500	6,67
	1,5	216,2	300	448,3	750	10,00
	2	288,2	400	448,3	1000	13,33
	2,5	360,3	500	448,3	1250	16,67
	3	432,3	600	448,3	1500	20,00
	3,5	504,4	700	431,8		

Datasheet

			800	330,6		
			900	261,2		
			1000	211,6		
1/7,5	0,2	44,0	100	448,3	250	2,22
	0,4	87,9	200	448,3	500	4,44
	0,6	131,9	300	448,3	750	6,67
	0,8	175,8	400	448,3	1000	8,89
	1	219,8	500	448,3	1250	11,11
	1,2	263,7	600	448,3	1500	13,33
	1,4	307,7	700	431,8		
	1,6	351,6	800	330,6		
	1,8	395,6	900	261,2		
	2	439,5	1000	211,6		
	2,2	483,5				
1/10	0,2	51,9	100	448,3	250	1,67
	0,4	103,8	200	448,3	500	3,33
	0,6	155,6	300	448,3	750	5,00
	0,8	207,5	400	448,3	1000	6,67
	1	259,4	500	448,3	1250	8,33
	1,2	311,3	600	448,3	1500	10,00
	1,4	363,2	700	431,8		
	1,6	415,0	800	330,6		
	1,8	466,9	900	261,2		
			1000	211,6		
1/12,5	0,2	46,8	100	448,3	250	1,33
	0,4	93,7	200	448,3	500	2,67
	0,6	140,5	300	448,3	750	4,00
	0,8	187,3	400	448,3	1000	5,33
	1	234,2	500	448,3	1250	6,67
	1,2	281,0	600	448,3	1500	8,00
	1,4	327,8	700	431,8		
	1,6	374,7	800	330,6		
	1,8	421,5	900	261,2		
	2	468,4	1000	211,6		

Datasheet

1/15	0,2	63,4	100	448,3	250	1,11
	0,4	126,8	200	448,3	500	2,22
	0,6	190,2	300	448,3	750	3,33
	0,8	253,6	400	448,3	1000	4,44
	1	317,0	500	448,3	1250	5,56
	1,2	380,4	600	448,3	1500	6,67
	1,4	443,9	700	431,8		
	1,5	475,6	800	330,6		
			900	261,2		
		1000	211,6			
1/25	0,2	60,0	100	448,3	250	0,67
	0,4	120,1	200	448,3	500	1,33
	0,6	180,1	300	448,3	750	2,00
	0,8	240,2	400	448,3	1000	2,67
	1	300,2	500	448,3	1250	3,33
	1,2	360,3	600	448,3	1500	4,00
	1,4	420,3	700	431,8		
	1,6	480,4	800	330,6		
			900	261,2		
		1000	211,6			
1/30	0,1	41,8	100	448,3	250	0,56
	0,2	83,6	200	448,3	500	1,11
	0,3	125,4	300	448,3	750	1,67
	0,4	167,2	400	448,3	1000	2,22
	0,5	209,0	500	448,3	1250	2,78
	0,6	250,8	600	448,3	1500	3,33
	0,7	292,5	700	431,8		
	0,8	334,3	800	330,6		
	0,9	376,1	900	261,2		
	1	417,9	1000	211,6		
	1,1	459,7				

Datasheet

Order example

Typ **MAR50** - **1:1** - **200** - **PROT** -

Transmission ratios

1:1 - 1:2,5 - 1:5 - 1:7,5 - 1:10 - 1:12,5 - 1:15 - 1:25 - 1:30

Stroke length (mm)

100 - **200** - 300 - 400 - 700 - 1.000

Protection tube (optional)

= Not specified (standard)

PROT = with protective tube, aluminum

PROT-IN = with protective tube, stainless steel (AISI 303)

Coupling flange (optional)

= Not specified (standard)

FL-OP3/EP3 = for Spindle position indicator

FL-OP7/EP7 = for Spindle position indicator

Position indicator (optional) please order separately

= Not specified (standard)

OP3 = Spindle position indicator OP3

EP3 = Spindle position indicator EP3

OP7 = Spindle position indicator OP7

EP7 = Spindle position indicator EP7










Our **MAR50** spindle position indicator are available in combination with the spindle position indicator **OP3/EP3** or **OP7/EP7**. Please order spindle position indicator separately. Further information on our spindle position indicators can be found on the corresponding data sheet.

Other versions that cannot be generated from the order code may be available as special versions on request.

Datasheet

Accessory

<p>Hand wheels</p> 	<p>Reversible handles</p> 	<p>Bearing brackets</p> 	<p>Flanges</p> 
<p>Cardan joints</p> 	<p>Coupling shafts</p> 	<p>Clamping flanges</p> 	

System components

<p>Digital position indicator</p> 	<p>Programmable electronic-digital spindle position indicator</p> 	<p>Angular gearboxes</p> 	<p>Axle modules</p> 
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Datasheet

Combination / application options



You can find more information on our homepage www.willtec.de

Manufacturer: **FIAMA** since 1913

The manufacturer reserves the right to make changes to the products that it deems necessary for their improvement without prior notice.