Datasheet

Our modular system for a complete and flexible solution. The screw jack **MAR60** gear allows rotations to be converted into linear adjustment.

Features at a glance

- Modular system, complete and ready for installation
- Constant synchronization and precision during movement
- Lifting and drive with self-supporting load, no additional external guides required
- Suitable for single or multiple applications
- Connections via couplings, shafts, and bevel gears
- Semi-automatic versions with digital or programmable displays
- Automatic versions with integrated servomotors
- Axial load: 1500 kg
- Standard stroke lengths of the threaded spindle in mm:
  50 - 100 - 200 – 300

Optional on request:
Complete with coupling flanges and extension shaft for visualization with digital OP7 and programmable EP7 position indicator (see dimensions MAR60G FL-)

Technical properties

Direction of rotation	Clockwise (clockwise rotation)
Axial load	1.500 kg (500 kg with side support)
Input speed	max. 1500 rpm
Gearbox backlash tolerance	0,75° bis 1.5° max.
Dimensions Threaded spindle Stroke length	 TPN Ø 25 – 5 mm Gradient 50 - 100 - 200 - 300 mm
Material Threaded spindle Housing Gearing and shaft Hexagonal support	 Stainless steel (AISI 304) Aluminum, black anodized Steel, surface-hardened (PRONOX) Aluminum, grey anodized
Weight	2 – 3 kg max.
Input torque	See performance tables
Operating temperature	-20 … +80 °C
Service life	10.000 h
Lubrication	Castrol Optigear 1.100 / 100 (> 200 U/min) (Oil) Saneg LX EP 2 (Grease)

Assembly

- The main cause of fractures on the trapezoidal threaded spindle is radial loads, caused by eccentricity.
- It is therefore necessary to align the spindle and mounting surface of the gearbox orthogonally and to check the alignment between the load and the spindle to avoid eccentricity.
- For the installation of several 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 connections is recommended to compensate for misalignment.

Willtec Messtechnik GmbH & Co. KG, Eschenweg 4, 79232 March-Hugstetten, Phone: +497665/93465-0 • Fax: +497665/93465-22
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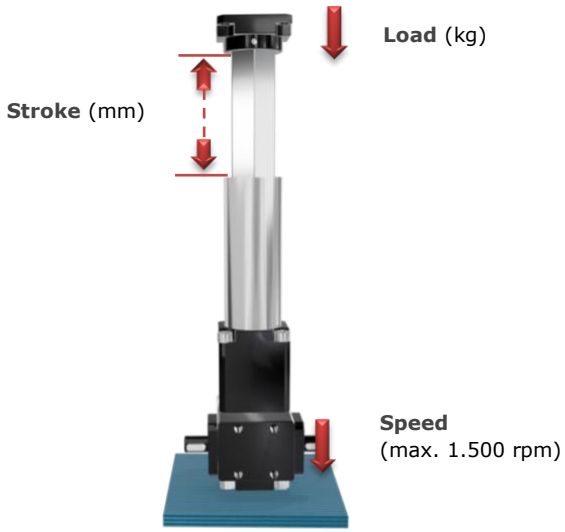
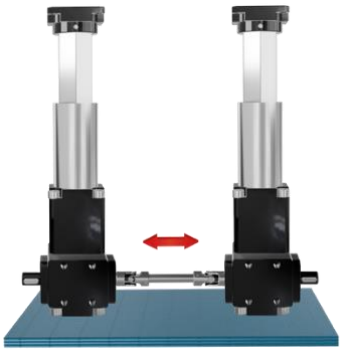
Sizing verification	Support and mounting
Load (kg) – Mass on screw jack **Speed (rpm)** – Required max. 1.500 rpm **Stroke (mm)** – Useful linear travel **Protection (opt.)** – Screw shielding  	The unit must be firmly secured to the machine structure using a flat, rigid base (supports not included in the supply). **Bottom support**  Plate/bracket under housing for **optimal mounting** **Lateral support**  The side support allows a max. load of **500 kg**

Assembly

 Avoid radial/lateral loads on threaded bar, main cause of failure.	 Threaded bar and reducer plane orthogonal; ensure load/bar coaxial, avoid eccentricity.	 Multiple screw jacks: terminals aligned for uniform load; use couplings to compensate misalignments.

Sizing verification

- Load (kg) = the force applied to the spindle.
- Spindle speed (mm/min) = the desired load handling speed. Note the maximum drive speed of the spindle of 1500 rpm.
- Stroke length (mm) = the linear distance that the load must be moved, generally corresponding to the total length of the threaded spindle.
- Torque (Nm) = torque required to handle the load.

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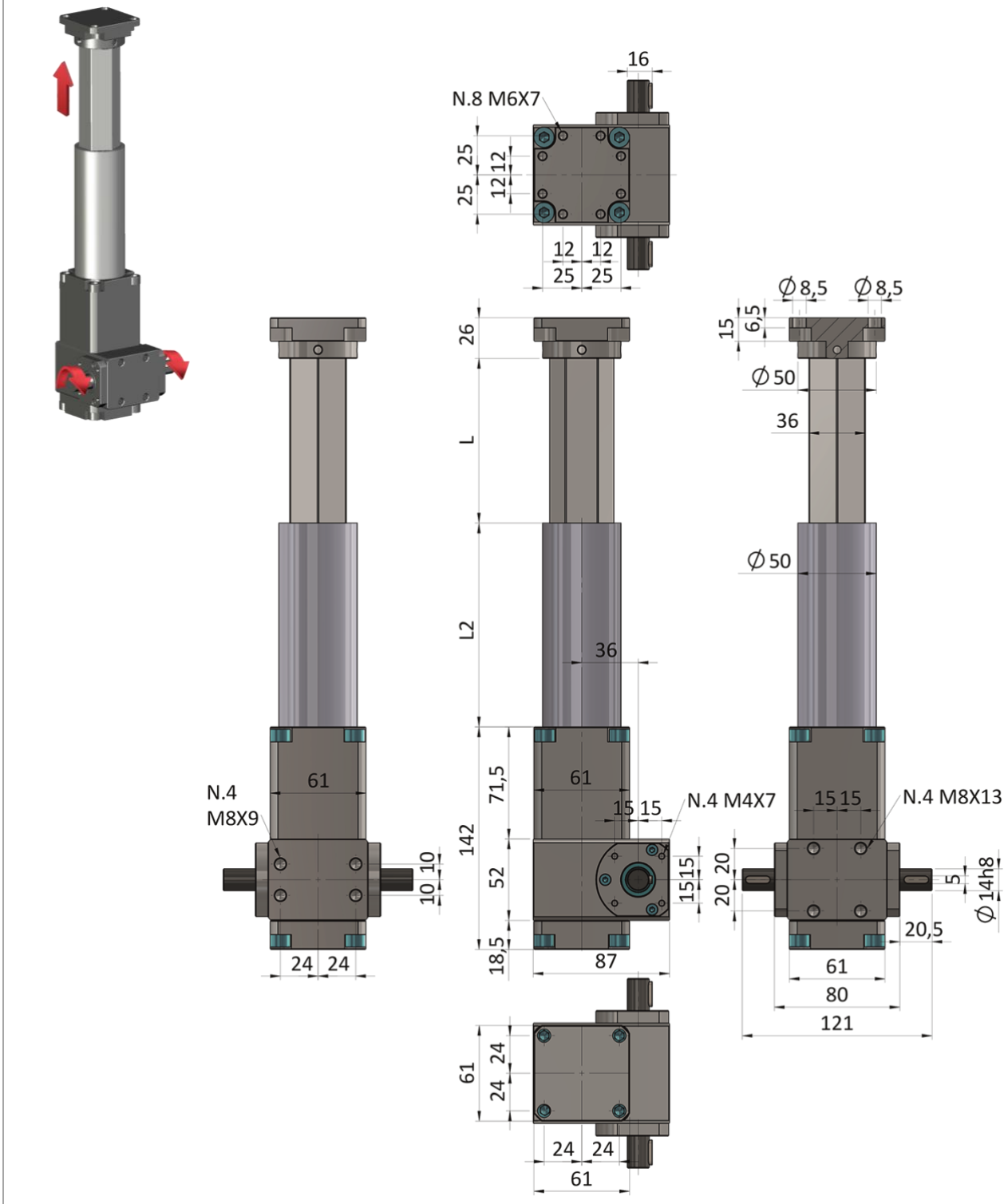
Datasheet

Dimensions

MAR60G



All dimensions in mm

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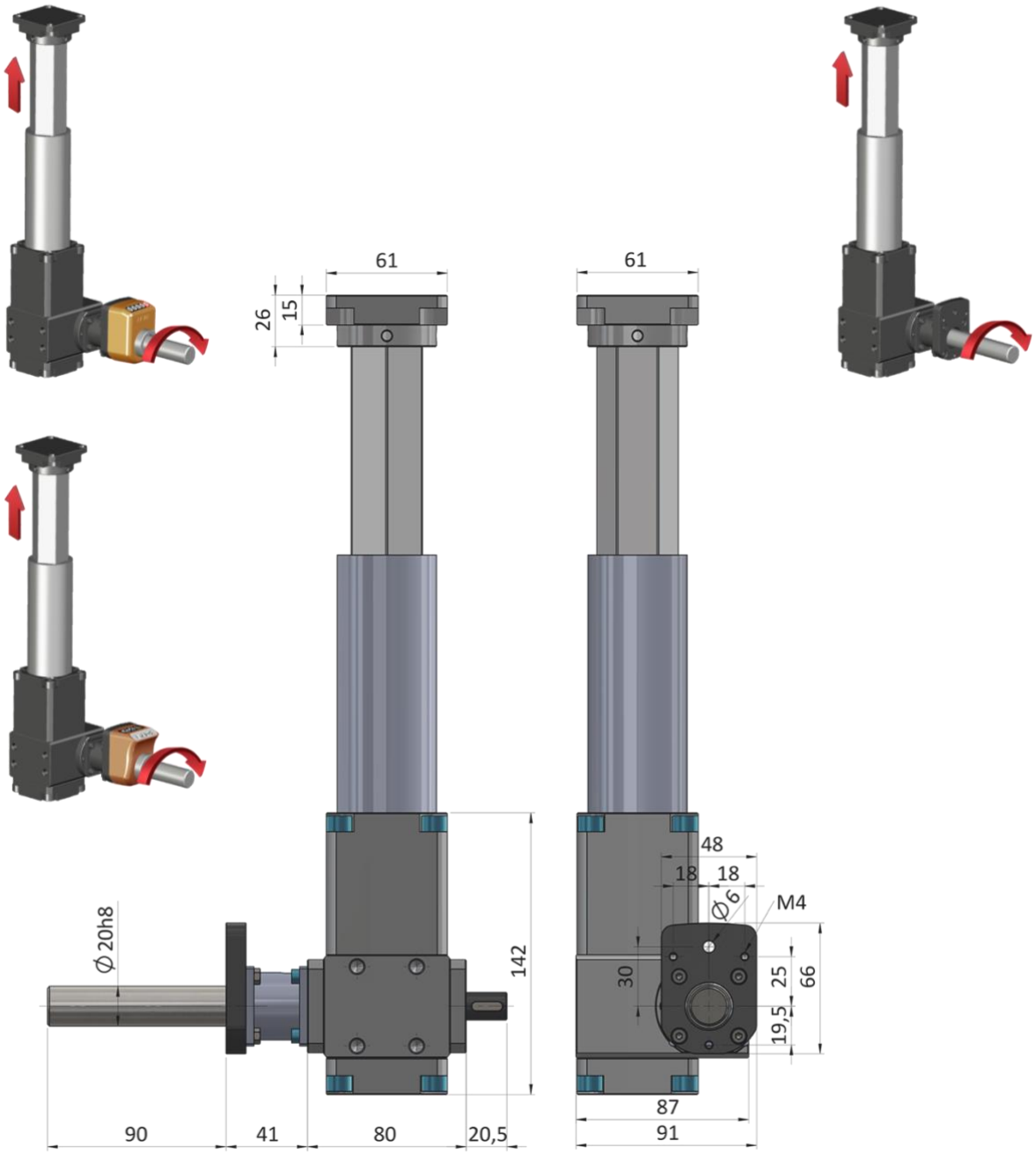
MAR60G FL-OP7/EP7

Version complete with 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

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Datasheet

Performance tables

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

i [/]	Tab.1		Tab. 2		Tab. 3	
	T [Nm]	C [kg]	s [mm]	C [kg] (T=27 Nm)	ω [rpm]	v [mm/s]
1/1	1	25,6	50	691,7	250	20,83
	5	128,1	100	691,7	500	41,67
	10	256,2	150	691,7	750	62,50
	15	384,3	200	691,7	1000	83,33
	20	512,4	250	691,7	1250	104,17
	27	691,7	300	691,7	1500	125,00
	T [Nm]	C [kg]	s [mm]	C [kg] (T=8 Nm)	ω [rpm]	v [mm/s]
1/5	1	128,1	50	1024,8	250	4,17
	3	384,3	100	1024,8	500	8,33
	5	640,5	150	1024,8	750	12,50
	6	768,6	200	1024,8	1000	16,67
	7	896,7	250	1024,8	1250	20,83
	8	1024,8	300	1024,8	1500	25,00
	T [Nm]	C [kg]	s [mm]	C [kg] (T=6 Nm)	ω [rpm]	v [mm/s]
1/12,5	0,8	205,0	50	1537,2	250	1,67
	1,6	409,9	100	1537,2	500	3,33
	2,4	614,9	150	1537,2	750	5,00
	3,2	819,8	200	1537,2	1000	6,67
	4,8	1229,7	250	1537,2	1250	8,33
	6	1537,2	300	1537,2	1500	10,00
	T [Nm]	C [kg]	s [mm]	C [kg] (T=4 Nm)	ω [rpm]	v [mm/s]
1/25	0,5	192,1	50	1537,2	250	0,83
	1	384,3	100	1537,2	500	1,67
	2	768,6	150	1537,2	750	2,50
	3	1152,9	200	1537,2	1000	3,33
	3,5	1345,0	250	1537,2	1250	4,17
	4	1537,2	300	1537,2	1500	5,00

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Order example

Type	**MAR60G**	-	**1:1**	-	**200**	-
MAR60G						

Translations
1:1 - 1:5 - 1:12,5 – 1:25

Stroke length (mm)
50 – 100 – **200** – 300

Coupling flange (optional)
= no information (standard)
FL-OP7/EP7 = for spindle position indicator

Position indicator (optional) please order separately
= no information (standard)
OP7 = Spindle position indicator OP7
EP7 = Spindle position indicator EP7

Our **MAR60G** worm gear screw jacks are available in combination with the **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.

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Accessories

Handwheels 	Folding handles 	Bearing blocks 	Flanges 
Cardan joints 	Clutch shafts 	Clamping flanges 	

System components

Digital position indicators 	Programmable displays 	Angular gearbox 	Axle modules 

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Possible applications

Further information can be found on our homepage: www.willtec.de

Manufacturer: FIAMA

The manufacturer reserves the right to make any changes to the products that it deems necessary to improve them without prior notice.

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