

# Actuator MD120



MD120 is a quiet and powerful actuator, which can push up to 12,000N. It's designed for use in a variety of medical and home care applications, such as patient hoist and medical bed.

## Features and Options

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- Main applications: Home care, medical
- Input voltage: 24V DC
- Stroke: 100 ~ 400 mm
- Max. load: 12,000N (push) / 6,000N (pull)
- Typical speed and current: Refer to Performance Data
- Noise level:  $\leq 50\text{dB}$
- IP level: IPX4 (static, non-action)
- Safety nut (in push direction)
- Preset limit switches
- Aluminum outer tube
- Stainless extension tube
- Color: Light gray RAL 7035
- Duty cycle: 10%, max. 2 min. continuous operation in 20 min.
- Operating ambient temperature:  $+5^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$
- Transport and storage temperature:  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$
- Relative humidity: 20% to 85%
- Atmospheric pressure: 71 kPa to 101.3 kPa
- Height above mean sea level: Max. 3,000 meters
- Certified: CE Marking, EN60601-1-2, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-8
- Safety options: mechanical push only extension tube, electrical push only function
- IPX6 level option (static, non-action)
- Optional MR3 manual release (Fig. 1): To retract actuator slowly and put down the patient safely by turning the MR3 knob with hand when losing power in the application of patient hoist )
- Optional Pivot orientation  $90^{\circ}$  turned for rear connector

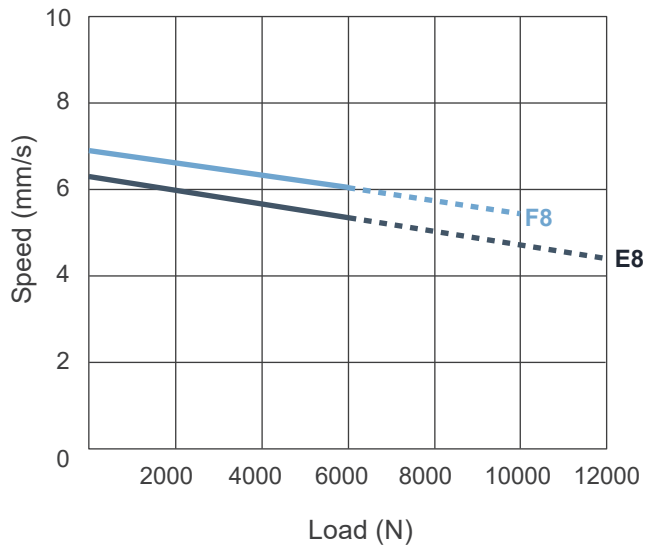


(Fig. 1)

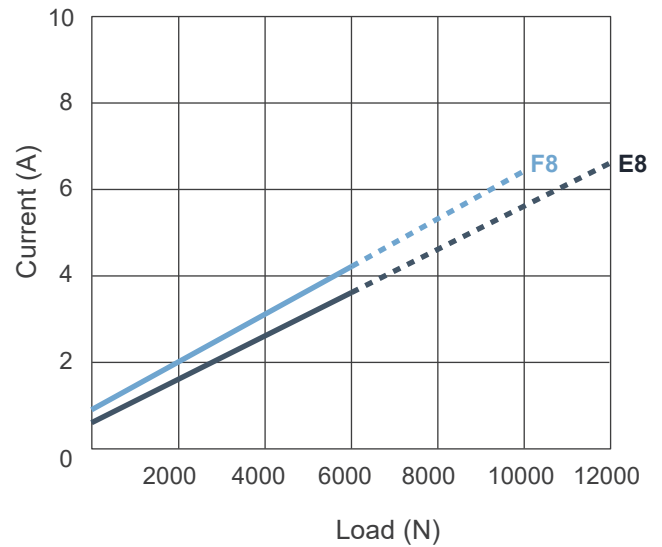
## Performance Data

Model No.	Push Max. (N)	Pull Max. (N)	*Typical speed (mm/s)		*Typical current (A) @ 24V	
			No load	Full load	No load	Full load
MD120-24 <b>E8</b> -XXX.XXX	12,000	6,000	6.3	4.4	0.6	6.6
MD120-24 <b>F8</b> -XXX.XXX	10,000	6,000	6.9	5.5	0.9	6.5

Speed vs. Load



Current vs. Load



Push / Pull Load — Push Load - - -

**\* Remarks:**

The typical speed or typical current means the average value neither upper limit nor lower limit. The performance curves are made with typical values.

## Dimensions

- Available stroke (S) range: 100 ~ 400 mm
- Retracted length (A)  $\geq$  Stroke (S) + 215 + L1 + L2
- Extended length: Retracted length (A) + Stroke (S)
- L1:

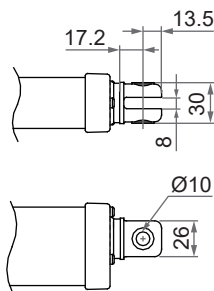
Unit: mm

Motor and Spindle type	Max load (N)	Stroke (mm)		
		100~300	301~350	351~400
F8	10000	+0	+10	+20
E8	12000	+20	+30	+40

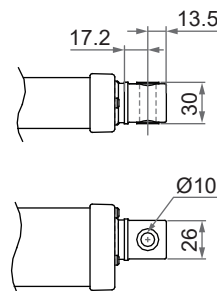
- L2:

Front Connector	L2
1, 2, 3, 4	+0
5, 6, 7, 8	+105

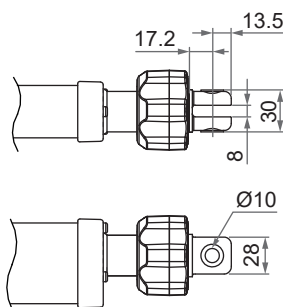
- Front Connector



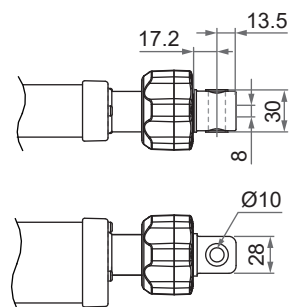
- 1: Slot type Zinc alloy, bushing Ø10  
2: Without bushing Ø12 (For Push load only)



- 3: Solid type Zinc alloy, bushing Ø10  
4: Without bushing Ø12

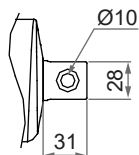
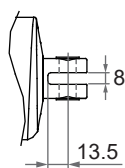


- 5: Slot type Zinc alloy with MR3, bushing Ø10  
6: Without bushing Ø12 (For Push load only)

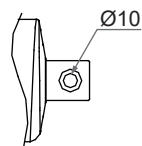
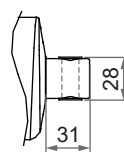


- 7: Solid type Zinc alloy with MR3, bushing Ø10  
8: Without bushing Ø12 (For Push load only)

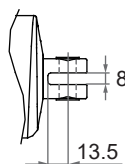
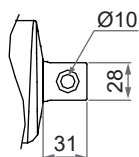
## • Rear Connector



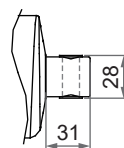
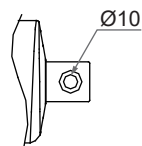
- 1: Slot type Zinc alloy, bushing Ø10, 0° pivot  
2: Without bushing Ø12, 0° pivot (For Push load only)



- 3: Solid type Zinc alloy, bushing Ø10, 0° pivot  
4: Without bushing Ø12, 0° pivot

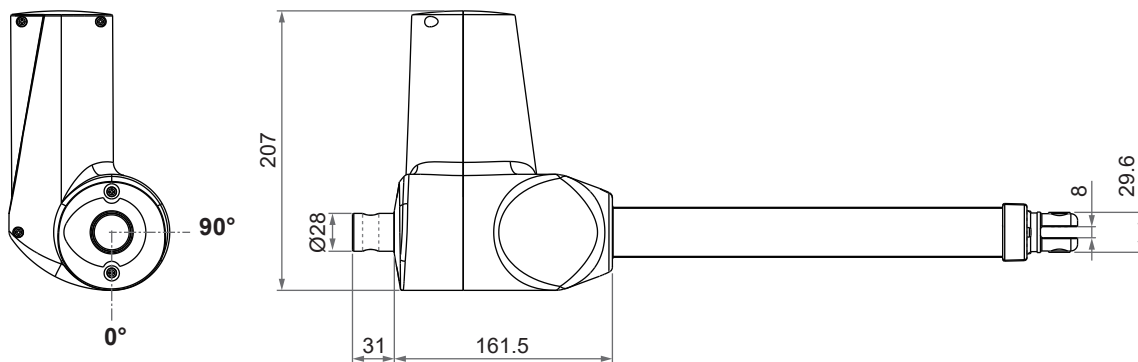
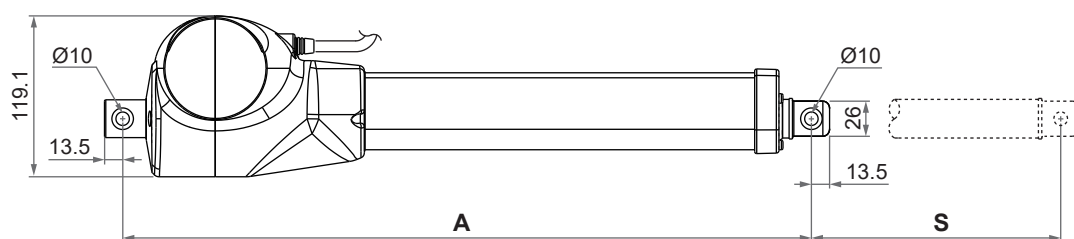


- 5: Slot type Zinc alloy, bushing Ø10, 90° pivot  
6: Without bushing Ø12, 90° pivot (For Push load only)



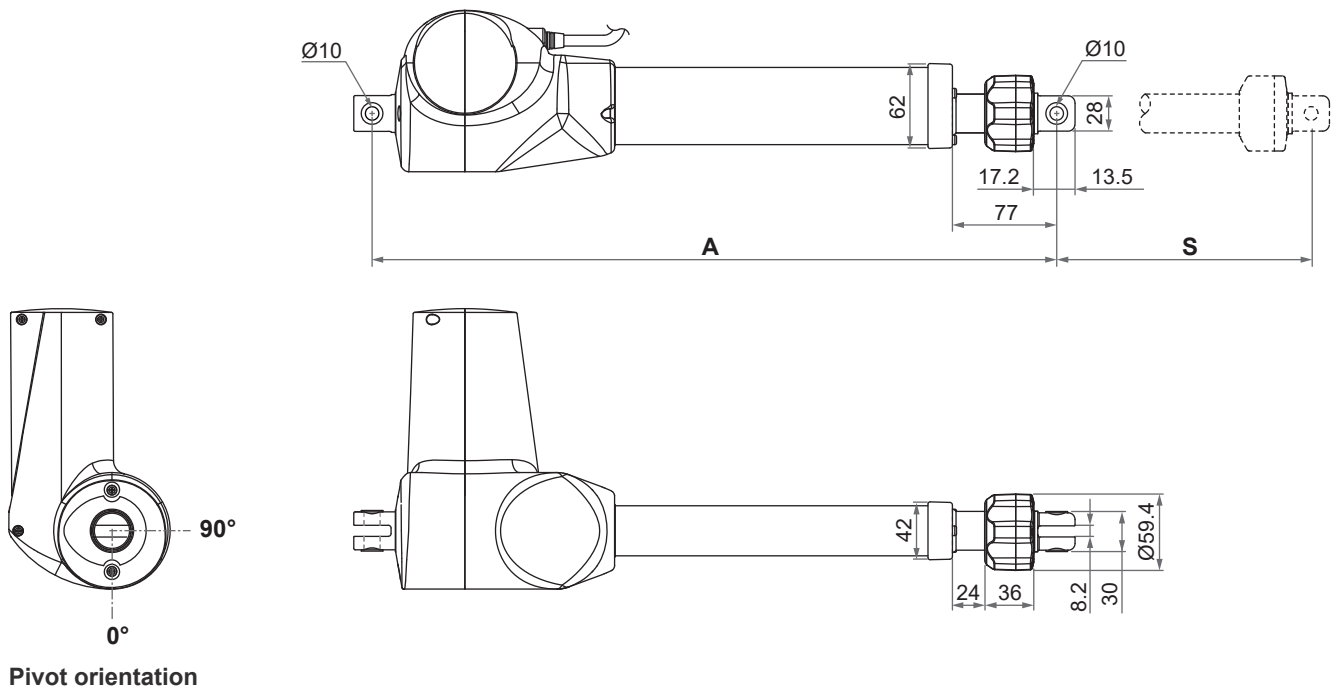
- 7: Solid type Zinc alloy, bushing Ø10, 90° pivot  
8: Without bushing Ø12, 90° pivot

## • Standard (without manual release)



Pivot orientation

- With MR3 manual release

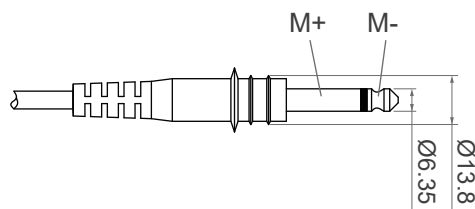


## Compatibility

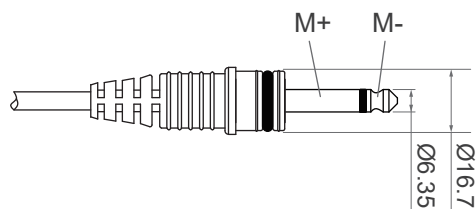
Product	Model	MD120 spec
Control box	CM42	With Moteck J1-type phone jack
	CB4P-HP, CM43	With Moteck J2-type phone jack
	CBP2, CBP3	With Moteck J1-type or J2-type phone jack

## Cable Plug

### • Moteck J1-type phone jack



### • Moteck J2-type phone jack



#### \* Remarks:

Connect Pin (M+) to “+” & Pin (M-) to “-” of DC power, the actuator will extend.



J1-type



J2-type

## Ordering Key

		<b>MD120 - 24 E8 - 330 - 430 - 1 1 E 0 G 4 1</b>										
<b>Input voltage</b>	<b>24:</b> 24V DC											
<b>Motor and Spindle type</b>	<b>E8:</b> 3000rpm / 8mm pitch <b>F8:</b> 3600rpm / 8mm pitch											
<b>Retracted length</b>	<b>XXX</b> (Refer to Dimensions)											
<b>Extended length</b>	<b>XXX</b> (Refer to Dimensions)											
<b>Front connector*</b>	1: Slot with bushing, Ø10mm 2: Slot w/o bushing, Ø12mm 3: Solid with bushing, Ø10mm 4: Solid w/o bushing, Ø12mm 5: Type 1 with MR3 6: Type 2 with MR3 7: Type 3 with MR3 8: Type 4 with MR3											
<b>Rear connector</b>	1: Slot with bushing, Ø10mm, 0° pivot 2: Slot w/o bushing, Ø12mm, 0° pivot 3: Solid with bushing, Ø10mm, 0° pivot 4: Solid w/o bushing, Ø12mm, 0° pivot 5: Type 1 turn 90° 6: Type 2 turn 90° 7: Type 3 turn 90° 8: Type 4 turn 90°											
<b>Safety option*</b>	0: None E: Electrical push only function P: Mechanical push only extension tube											
<b>Reserved</b>	0: No meaning											
<b>Color</b>	G: Light gray RAL 7035											
<b>IP level</b>	4: IPX4 (standard) 6: IPX6											
<b>Cable length</b>	1: 300mm straight 2: 1000mm straight 3: 400mm coiled											

### \* Remarks:

The safety option "E" must be selected, if MR3 manual release is chosen in front connector.

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