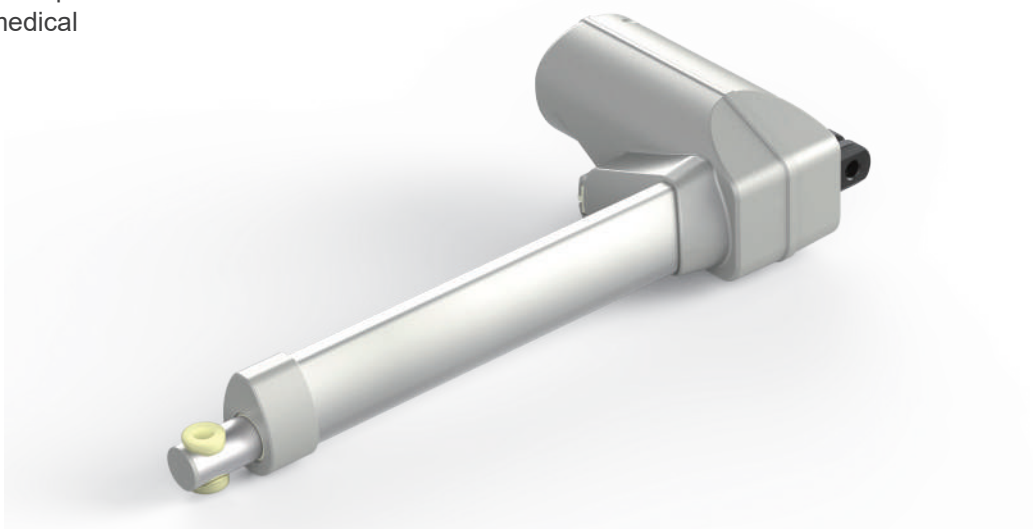


# Actuator MK31

MK31 is a quiet and powerful actuator up to 6000N thrust, designed for use in medical bed application.



## Features and Options

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**Main applications:** Medical, home care

**Standard features:**

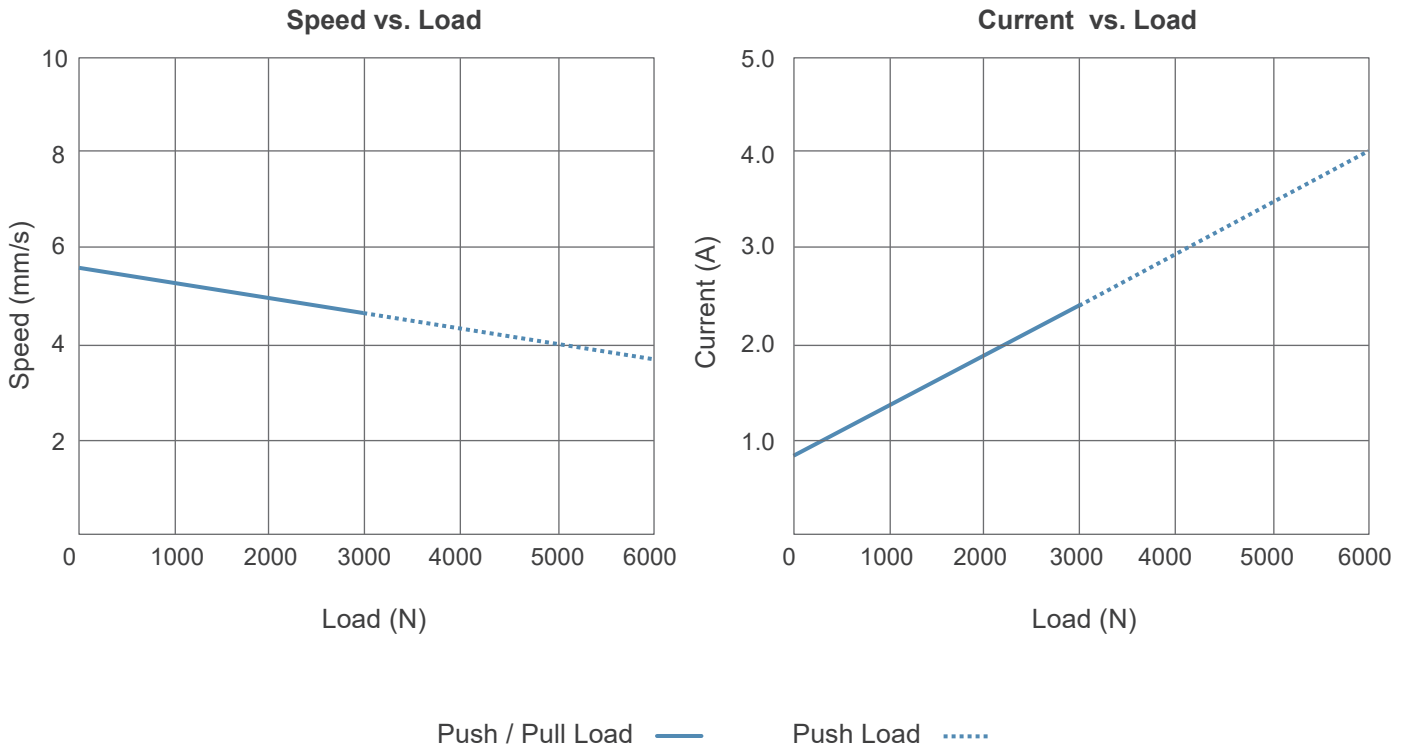
- Input voltage: 24V DC
- Max. load: 6000N (Push) / 3000N (Pull)
- Self-locking ability: 6000N
- Typical speed at no load: 5.5mm/sec
- Typical speed at full load: 3.8mm/sec (6000N load)
- Stroke: 50 ~ 400mm
- Noise level:  $\leq 50$ dB
- IP level: IPX6 (static, non-action)
- Preset limit switches
- Aluminum outer tube
- Detachable cable plug (Refer to p.7)
- Color: Light gray RAL 7035
- Duty cycle: 10%, max. 2 min. continuous operation in 20 min.
- Operating ambient temperature: +5°C ~ +40°C

**Options:**

- Positioning signal feedback with Hall effect sensor x 2
- Safety nut (in push direction)
- Mechanical push only extension tube

## Performance Data

Model No.	Push Max.(N)	Pull Max.(N)	Self-locking ability (N)	**Typical Speed (mm/s)		**Typical Current (A)	
				No load	Full load	No load	Full load
MK31-24F4-XXX.XXX	6000	3000	6000	5.5	3.8	0.8	4.0



### Remarks:

\* The self-locking ability is performed by short circuit the motor terminals when the actuator is stopped. All MOTECK compatible control boxes are designed with this feature.

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

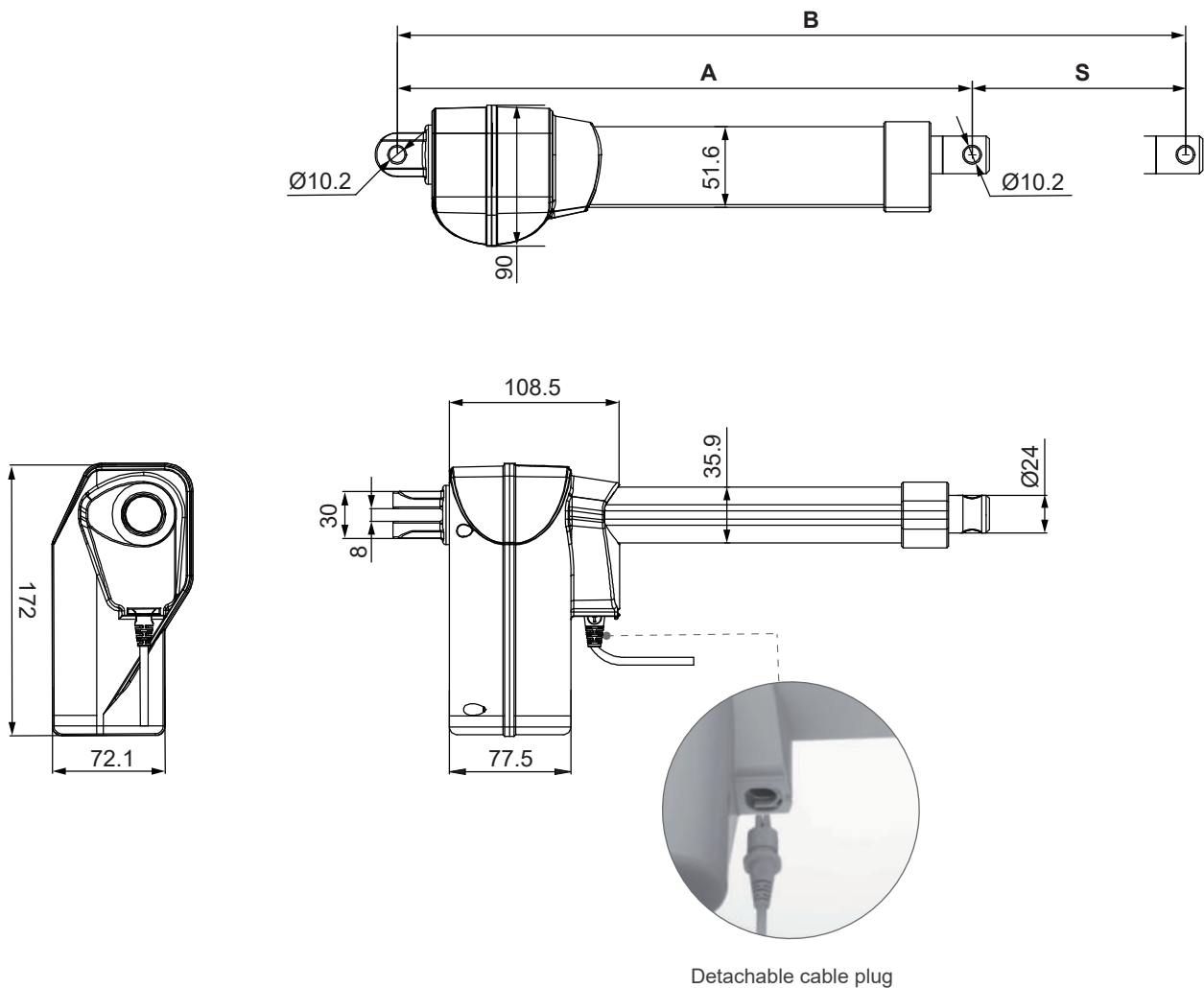
## Dimensions

- Available stroke (S) range = 50 ~ 400mm
- Retracted length (A)  $\geq 170+S+L+D$  (mm)

Unit: mm

Stroke	L
$50 \leq S \leq 300$	0
$301 \leq S \leq 350$	20
$351 \leq S \leq 400$	35
Safety option	D
0, P	0
S, A	8

- $S \geq 401$ mm, Please consult MOTECK sales representative for feasibility and the available retracted length.
- Extended length (B) = Retracted length (A) + Stroke (S)



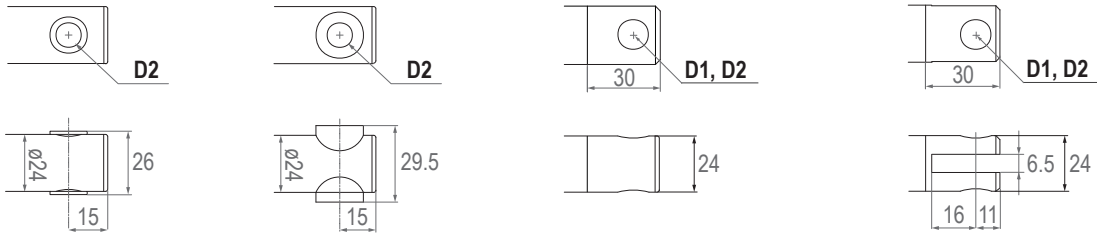
● **Front connector**

**3** : Drilled hole

**7** : Plastic bushing

**C** : Metal solid

**D** : Metal slot



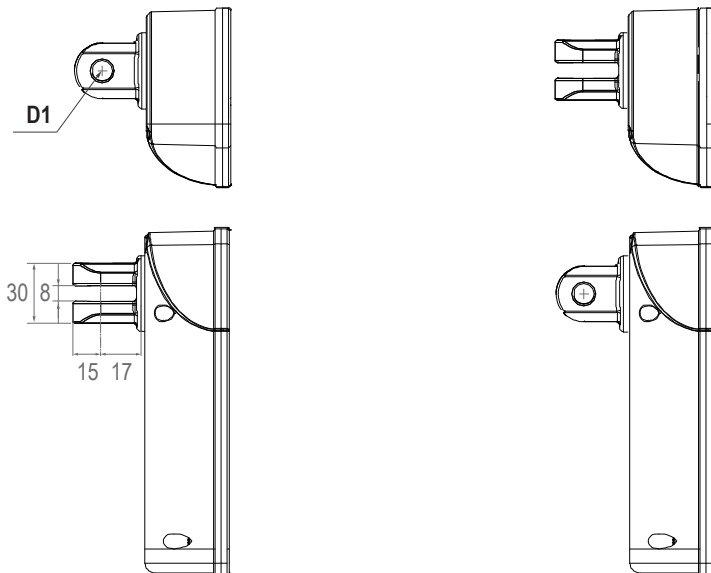
Front connector code	Diameter of pivot without bushing (D1)	Diameter of pivot with bushing (D2)
<b>3</b>	N/A	ø8, ø10
<b>7</b>	N/A	ø10
<b>C</b>	ø12	ø10
<b>D</b>	ø12	ø10

● **Rear connector**

**1** : Plastic

**0** : 0° (standard)

**9** : 90°



Rear connector code	Diameter of pivot without bushing (D1)	Diameter of pivot with bushing (D2)
<b>1</b>	ø10	N/A

## Compatibility

Product	Model	MK31 spec
Control box	MD6C-M	<ul style="list-style-type: none"><li>• With dual Hall effect sensors for positioning</li><li>• MOTECK H-type or V-type DIN plug</li></ul>
	CM45	<ul style="list-style-type: none"><li>• MOTECK H-type DIN plug</li></ul>
	CM41-M*, CB5P-M	<ul style="list-style-type: none"><li>• With dual Hall effect sensors for positioning</li><li>• MOTECK LR-type minifit plug</li></ul>

### Remarks:

\* CM41-M control box can be attached to MK31 actuator.

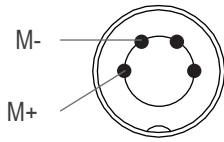


# Cable Plug (Detachable)

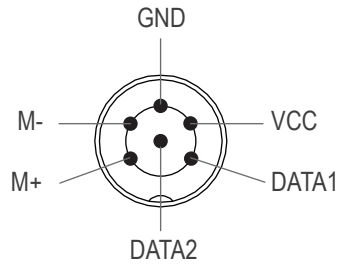
## • MOTECK H-type or V-type plug

- Without positioning feedback

- With dual Hall effect sensors for positioning

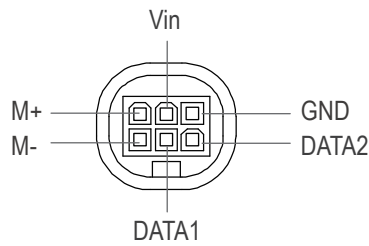


4-pin DIN plug



6-pin DIN plug

## • MOTECK LR-type plug



6-pin minifit plug



H-type



V-type



LR-type

## • Note:

	Definition	Comments
Power	M+	Connect blue wire to "Vdc +" & Brown wire to "Vdc -" of DC power to extend the actuator. Switch the polarity of DC input to retract it.
	M-	
Signal	Vin	Voltage input range (Vin): 5 ~ 20V
	Hall 1 output	High= Input - 1.2V (±0.6V) Low= GND Hall signal data:
	Hall 2 output	
	Hall effect sensor resolution: 10 pulses/mm	
	GND	

## Ordering Key

**MK31-24 F4-220-270-3 1 0 0 0 0 0**

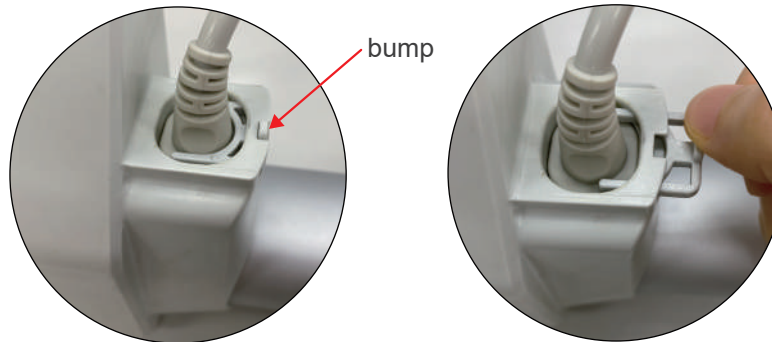
<b>Input voltage</b>	24: 24V DC
<b>Motor and Spindle type</b>	F4: 3300rpm / 4mm pitch
<b>Retracted length</b>	XXX <i>(refer to page 3)</i>
<b>Extended length</b>	XXX <i>(refer to page 3)</i>
<b>Front connector</b>	3: Drilled hole 7: Plastic bushing C: Metal solid D: Metal slot <i>(refer to page 4)</i>
<b>Rear connector</b>	1: Plastic <i>(refer to page 4)</i>
<b>Pivot orientation of rear connector</b>	0: 0° (standard) 9: 90°
<b>Positioning feedback</b>	0: None H: Hall effect sensor x 2
<b>Safety option</b>	0: None S: Safety nut P: Push only extension tube A: Safety nut + Push only
<b>Reserved</b>	0
<b>Cable</b>	0: 300mm straight 3: 1000mm straight A: 450mm with 300mm coiled

## Install/Remove Cable Plug

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- **Remove**

- Push the bump of the anti-pull clip outward to remove it

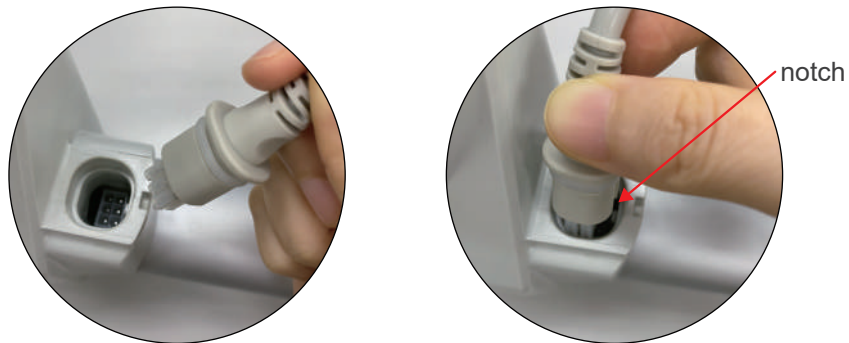


- Hold the motor and remove the cable plug



- **Install**

- Align the notch of the socket and insert the plug



- Put the anti-pull clip back to lock the plug

