

## Actuator ID10

ID10 features its heavy load capability and high speed design, which is suitable for various industrial applications requiring quick movement, such as agricultural and construction machine. The adjustable limit cam is equipped for users to fine-tune the stroke based on their needs. Ball Screw or ACME spindle is available for users to choose.



### Feature

- Main applications: Industrial
- Input voltage: 24V DC / 12V DC
- Max. rated load: 3,500N (ACME) / 7,000N (Ball Screw)
- Max. static load: 4,500N (ACME) / 13,600N (Ball Screw)
- Max. speed: 67.1 mm/sec @ no load
- Stroke: 102 ~ 610 mm
- IP Protection level: IP54
- Overload protection by clutch
- Extension tube material: Iron (ACME) or stainless steel (Ball Screw)
- Color: Black
- Power cord length: 250 mm (with tinned wires)
- Duty cycle: 25%, max. 2 min. continuous operation in 8 min.
- Ambient operation temperature: -25°C ~ +65°C
- Certified: CE marking, EMC Directive 2014/30/EU

### Option

- Positioning signal feedback with Hall effect sensor x 1
- Analog positioning feedback with Potentiometer (POT)
- Adjustable limit switches (not applicable to IP65 option, refer to User Guide)
- IP65 Protection level
- Manual drive connector (MD, can be driven by hand with a 8 mm hex bit screwdriver or electric screwdriver)
- Thermal protection

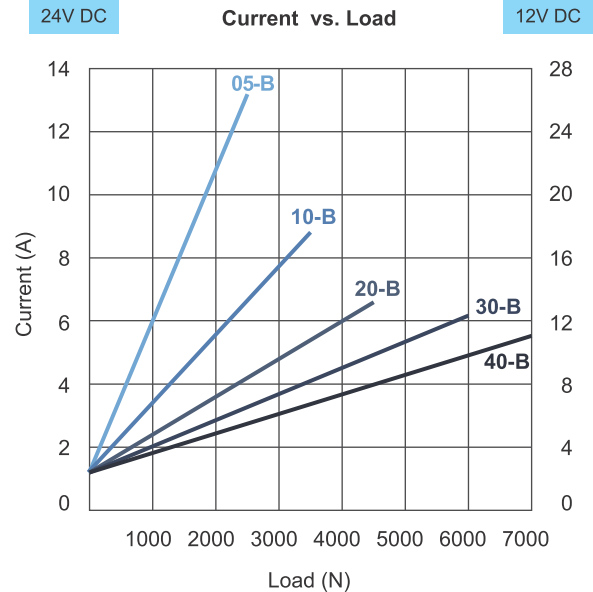
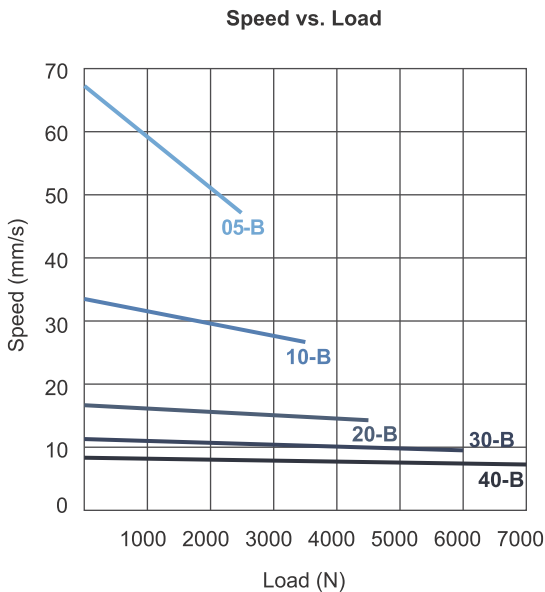
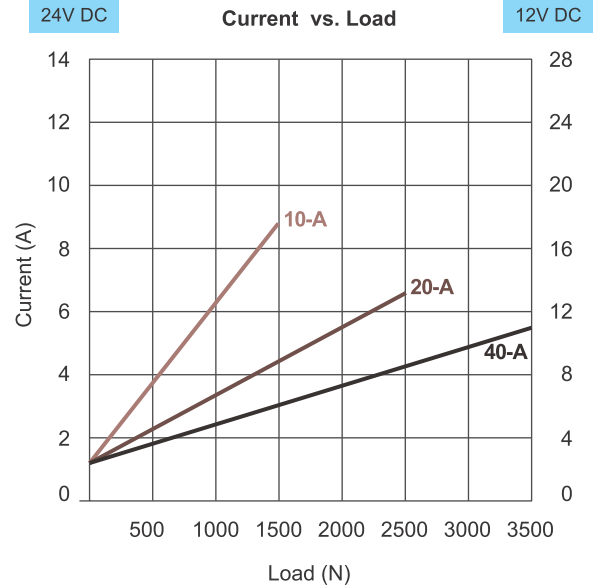
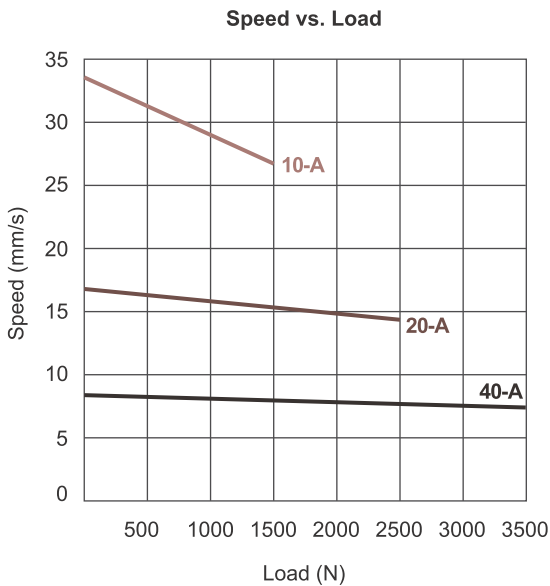
### Compatibility

Product	Model	ID10 spec
Control box	CI10	- 24V motor - Without positioning sensor feedback
	CIS3	- 24V motor - With potentiometer



## Performance Data

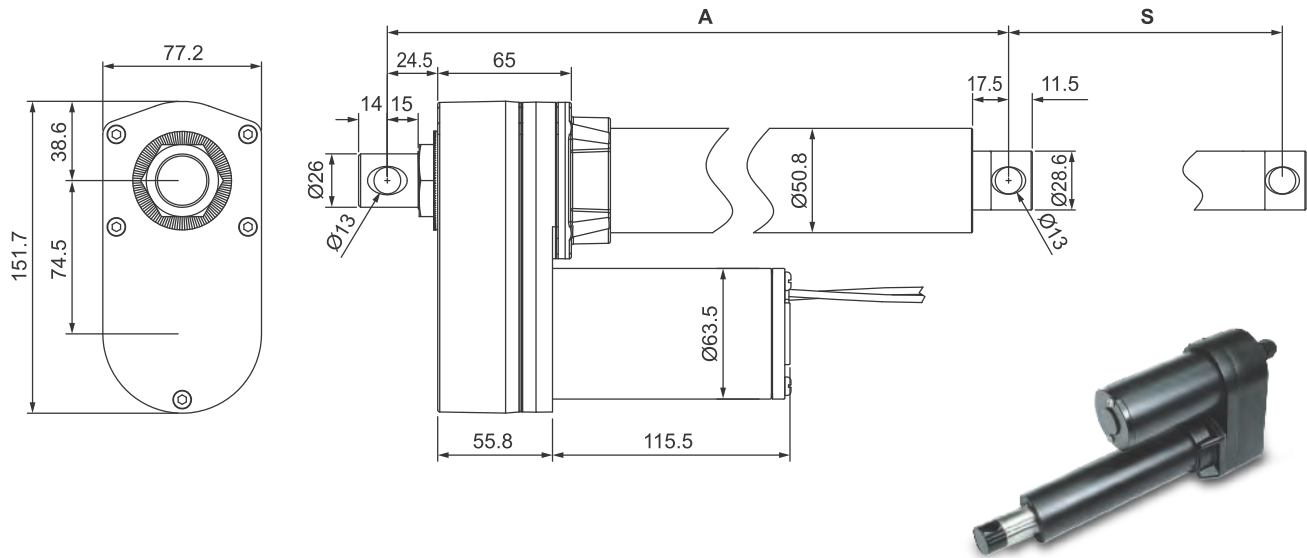
Model No.	Spindle type	Gear ratio	Push / Pull Max. (N)	Typical Speed (mm/s)		Typical Current (A)			
				No load	Full load	No load		Full load	
						12V	24V	12V	24V
ID10-XX-10-A-XXX	ACME	10:1	1500	33.5	26.7	2.4	1.2	17.6	8.8
ID10-XX-20-A-XXX	ACME	20:1	2500	16.8	14.3	2.4	1.2	13.2	6.6
ID10-XX-40-A-XXX	ACME	40:1	3500	8.4	7.4	2.4	1.2	11.0	5.5
ID10-XX-05-B-XXX	Ball Screw	5:1	2500	67.1	47.2	2.4	1.2	26.4	13.2
ID10-XX-10-B-XXX	Ball Screw	10:1	3500	33.5	26.7	2.4	1.2	17.6	8.8
ID10-XX-20-B-XXX	Ball Screw	20:1	4500	16.8	14.3	2.4	1.2	13.2	6.6
ID10-XX-30-B-XXX	Ball Screw	30:1	6000	11.2	9.8	2.4	1.2	12.1	6.1
ID10-XX-40-B-XXX	Ball Screw	40:1	7000	8.4	7.4	2.4	1.2	11.0	5.5



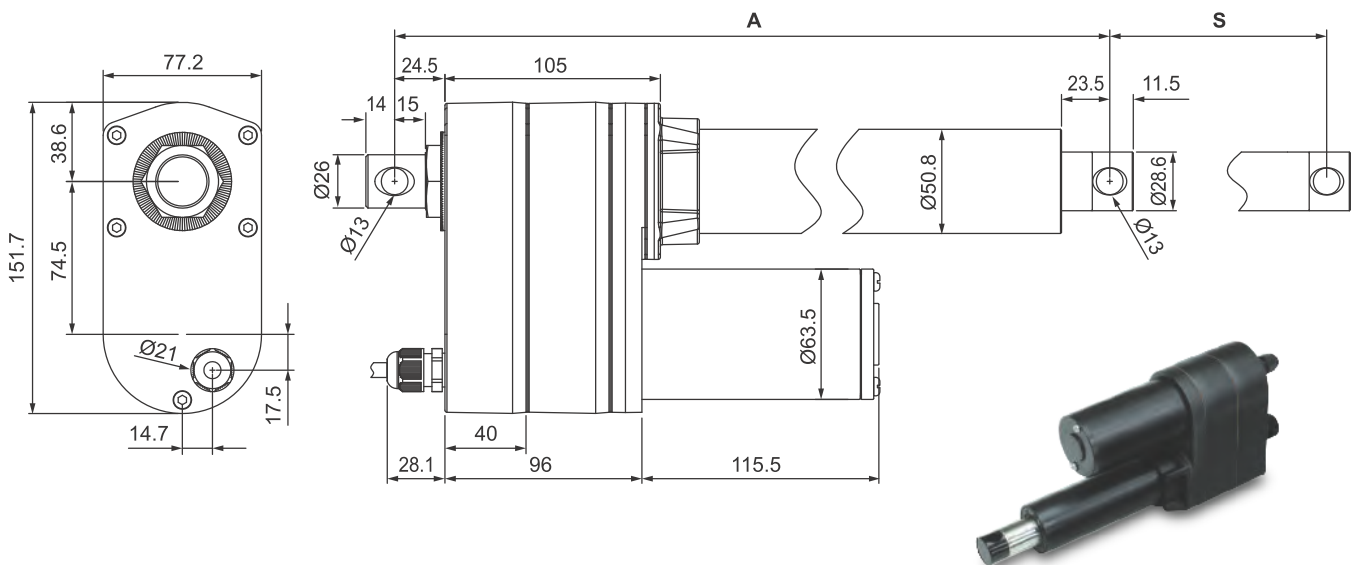
## Dimensions

### ID10 ACME

- Standard (without Limit switch nor Potentiometer)



- With Potentiometer (POT) or Limit switches (LT)



## Installation Dimension

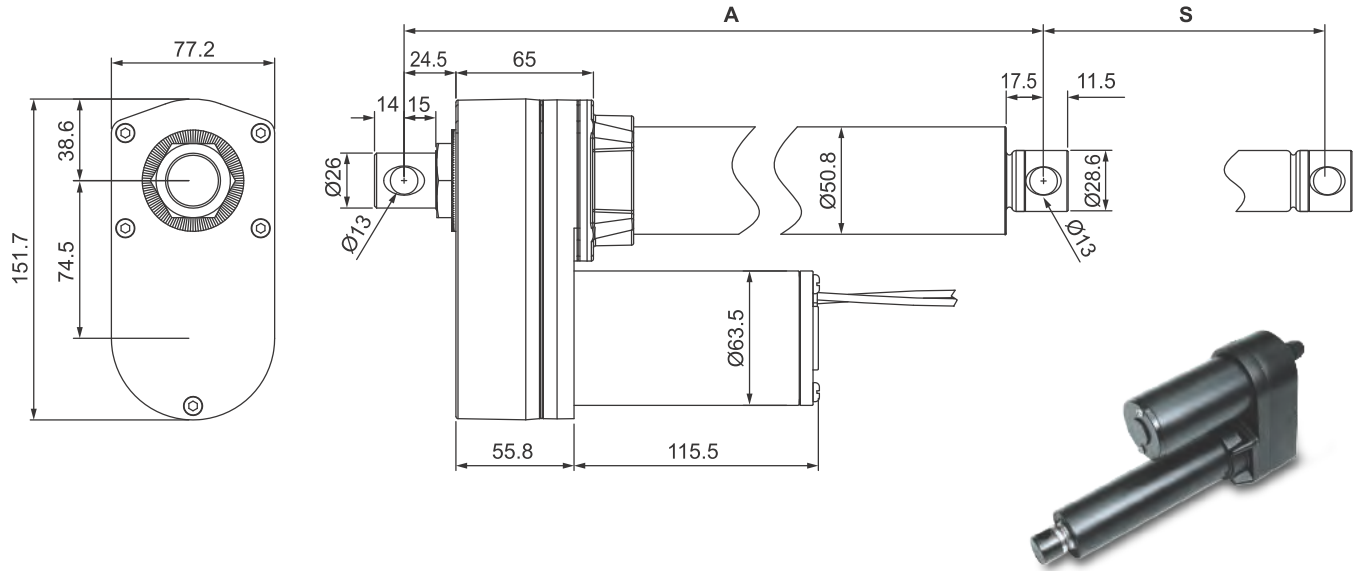
		Stroke (S)						
		102 (4")	153 (6")	203 (8")	254 (10")	305 (12")	457 (18")	610 (24")
Retracted length (A)*	Standard	262	313	364	414	465	668	821
	POT	302	353	404	454	505	708	861
	LT	359	410	460	511	613	765	918

(Tolerance: ±5mm)

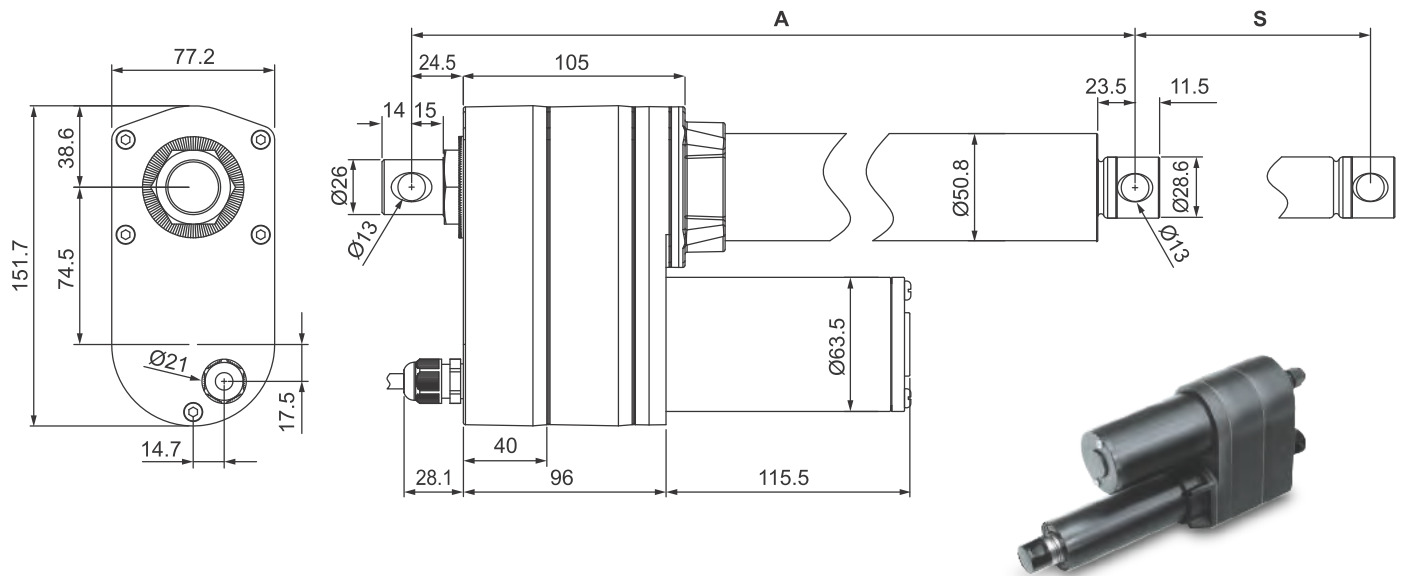


## ID10 Ball Screw

- Standard (without Limit switch nor Potentiometer)



- With Potentiometer (POT) or Limit switches (LT)



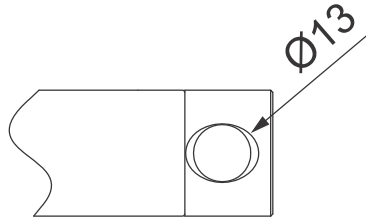
## Installation Dimension

		Stroke (S)						
Option		102 (4")	153 (6")	203 (8")	254 (10")	305 (12")	457 (18")	610 (24")
Retracted length (A)*	Standard	302	353	404	455	506	735	888
	POT	342	393	444	495	546	775	982
	LT	399	450	501	552	680	832	985

(Tolerance: ±5mm)

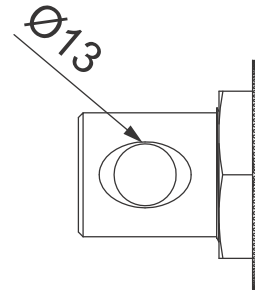


## Front connector



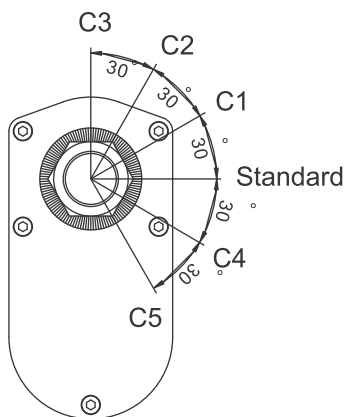
Solid type, steel

## Rear connector



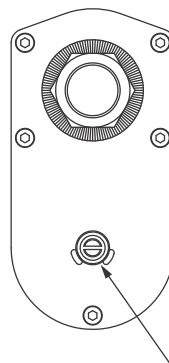
Solid type, steel

### Pivot orientation of rear connector



### Manual drive connector (MD)

- Compatible with IP54 and Gear ratio 5:1 - 10:1 or 20:1
- Not applicable to IP65, limit switches, nor potentiometer options.
- Please refer to "ID10 User Guide" for operation steps.

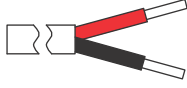


User needs 8 mm hex bit screwdriver (or electric screwdriver) to drive the motor



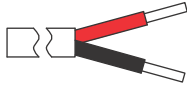
## Wiring

### Standard



Gear ratio	Power	
	Red	Black
5:1, 10:1, 20:1	M+	M-
30:1, 40:1	M-	M+

### With limit switches



Power	
Red	Black
M+	M-

### With Hall effect sensor x 1

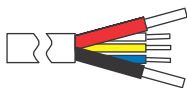
- Resolution, 20ppi, 1.27mm/pulse (0.787 pulses/mm)



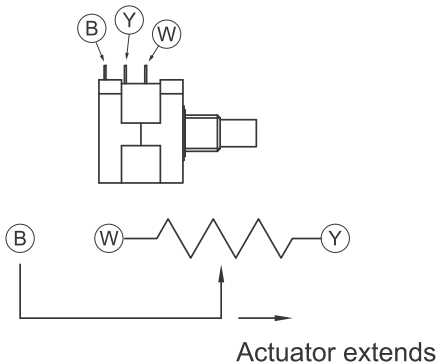
Power		Signal		
Red	Black	White	Yellow	Blue
M+	M-	VCC	Data	GND

### With potentiometer (POT)

The resistance between blue and white wires increased when the actuator extends, and decreased when it retracts.



Power		Signal		
Red	Black	White	Yellow	Blue
M+	M-	GND	VCC	Data



Stroke (mm)	Resistance (tolerance: $\pm 0.3K\Omega$ )
102	0.3 ~ 8.1K
153	0.3 ~ 8.7K
203	0.3 ~ 9.2K
254	0.3 ~ 7.4K
305	0.3 ~ 8.8K
457	0.3 ~ 9.4K
610	0.3 ~ 9.8K

### Remarks:

Connect Red (M+) to '+' & Black (M-) to '-' of DC power, the actuator will extend.



## Ordering Key

ID10 - 24 - 20 - A - 102 - POT - LT -

<b>Input voltage</b>	<b>12:</b> 12V DC <b>24:</b> 24V DC
<b>Gear ratio</b>	<b>05:</b> 5:1 (Ball Screw only) <b>10:</b> 10:1 <b>20:</b> 20:1 <b>30:</b> 30:1 (Ball Screw only) <b>40:</b> 40:1
<b>Spindle type</b>	<b>A:</b> ACME <b>B:</b> Ball screw
<b>Stroke</b>	<b>102:</b> 102 mm <b>153:</b> 153 mm <b>203:</b> 203 mm <b>254:</b> 254 mm <b>305:</b> 305 mm <b>457:</b> 457 mm <b>610:</b> 610 mm
<b>Positioning feedback</b> (alternative)	<b>POT:</b> Potentiometer <b>HS:</b> Hall effect sensor x 1 (option LT is recommended)
<b>Option</b> (multiple choice is allowed)	<b>LT:</b> Adjustable limit switches <b>IP65:</b> IP65 (not compatible with LT and MD) <b>MD:</b> Manual drive connector (alternative condition please refer to page 6) <b>TP:</b> Thermal protection (not compatible with 12V DC / gear ratio 5:1)
<b>Pivot orientation of Rear connector</b>	<b>Blank:</b> 0° (standard) <b>C1:</b> 30° counter-clockwise <b>C2:</b> 60° counter-clockwise <b>C3:</b> 90° counter-clockwise <b>C4:</b> 30° clockwise <b>C5:</b> 60° clockwise (Please refer to page 6)

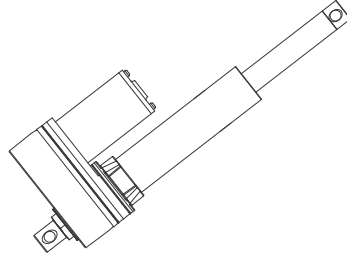


More information about usage is provided in ID10 User Guide, which can be downloaded from Moteck website.

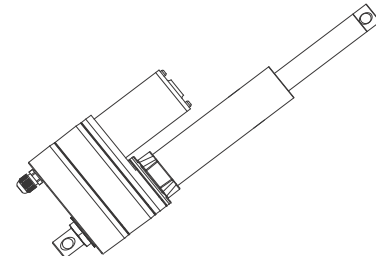


## User Guide Industrial Actuator

Model: ID10

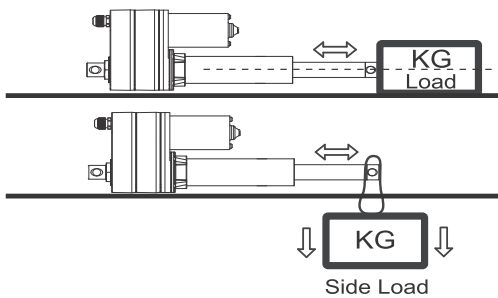


ID10 Standard or Hall Sensor Type



ID10 with Limit Switches or Potentiometer Type

### CAUTION:



The load should be centered on the operating direction.

Side Load is NO good for actuators.

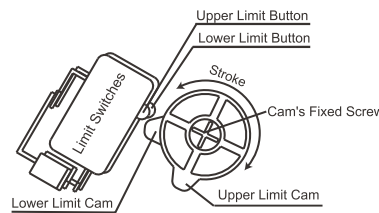
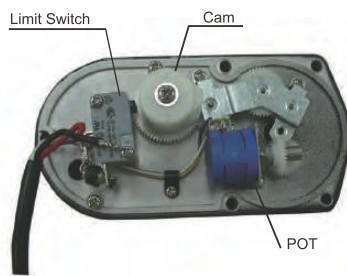
### RESET LIMIT

The most extended position is defined by the "Upper Limit Cam", and the most retracted position is defined by the "Lower Limit Cam" as well. Please set the limit positions according to the rules as follows:

- Step 1. If the actuator has been installed, uninstall it first, and then remove the gearbox cover.
- Step 2. Connect the power wire to correct DC power and let the actuator starts to retract, till the "Lower Limit Cam" presses the lower limit switch, then the motor stops immediately. If you really want to adjust the retracted position, you can turn the inner tube in CW or CCW direction only a little bit (less than a full circle on inner tube) to the demanded position. Then, the lower limit is set.
- Step 3. Let the actuator extends to the position you want, then loosen the screw and adjust the "Upper Limit Cam" to press the limit switch, and then the demanded stroke is done after you lock the screw.

### NOTICE

- Be sure that never let inner tube revolves when driving the inner tube to retract or extend during the whole process.
- Reset limit is doable only the ingress protection grade is lower than IP65.

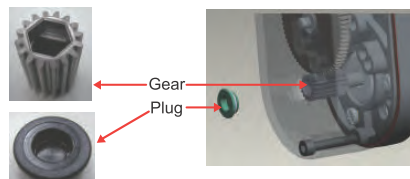


Note 1 : To avoid damaging the plastic gears under the Limit Cam, please hold Upper & Lower Limit Cam when you tighten or loosen the cam's screw.

### MANUAL DRIVE (MD) CONNECTOR

The MD (manual drive) is an alternative way to drive the motor directly, if the power is not available.

- Step 1. Remove the plug on the gearbox cover.
  - Step 2. Use a 8.0mm hex bit or electric screwdriver (recommended) to drive the gear directly.
  - Step 3. Insert the plug into the hole, and confirm the plug is installed properly.
- The Max. drive torque is 6kg-cm with 4500N load.(Ball Screw)



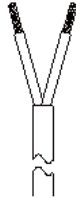


## WIRE CONNECTION

For ID10 actuators, connection rule of power wires varies according to different types and gear ratio(s). Please follow the instructions below.

### Standard Type

- Please refer to the table below to define the actuator's extension. Red and Black is the color of wires, M+ is "+" and M- is "-" of DC power.



Gear Ratio	Wiring	
	5:1, 10:1, 20:1	Red
Black		M-
30:1, 40:1	Red	M-
	Black	M+

### With Hall Sensor Type

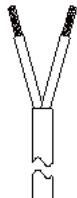
- Please refer to the table below to define the actuator's extension. When Red (M+) is connected to "+" and Black (M-) is connected to "-" of DC power the actuator will extend.
- White, Yellow & Blue are positioning signal wires as shown in table.
- The resistance between Blue and Yellow wires increases when extending, and decreases when retracting.
- Signal resolution : 20PPI, 1.27mm/pulse (0.787 pulses/mm)



Wiring	
Red	M+
Black	M-
White	VCC input
Yellow	Resist output
Blue	GND

### With Limit Switch Type

- Please refer to the table below to define the actuator's extension. When Red (M+) is connected to "+" and Black (M-) is connected to "-" of DC power the actuator will extend.

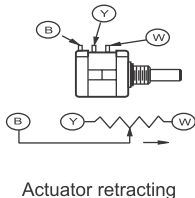


Wiring	
Red	M+
Black	M-

### With Potentiometer Type

- Please refer to the table below to define the actuator's extension. When Red (M+) is connected to "+" and Black (M-) is connected to "-" of DC power the actuator will extend.
- White, Yellow & Blue are positioning signal wires as shown in table.
- The resistance between Blue and White wires increases when extending, and decreases when retracting.

#### Value of Potentiometer



The Ohm value between blue and white wire	
Stroke(mm)	Resistance
102	0.3-8.1 K
153	0.3-8.7 K
203	0.3-9.2 K
254	0.3-7.4 K
305	0.3-8.8 K
457	0.3-9.4 K
610	0.3-9.8 K
Tolerance: $\pm 0.3$ K	



Wiring	
Red	M+
Black	M-
White	GND
Yellow	VCC input
Blue	Resist output

## SAFETY DECLARATION

This appliance cannot be used by children or persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.

