

MD50Y Intelligent Linear Actuator

The compact MD50Y is an intelligent modulating actuator that has an actuating force of 500 N. They can be used with two and three port seat valves. The actuator is typically used with RK, RF, RB, RWG and RGD range of valves.

The position of the MD50Y actuator is controlled using 0...10Vdc control signal and it is powered by 24Vac power supply. The MD50Y actuators incorporate a manual override and visual position indication. The MD50Y actuators can be equipped with a potentiometer or a limit switch for monitoring purposes.



Model Types	Model	Description
	MD50Y	MD50Y intelligent 500N linear actuator, 0..10V control signal, 24Vac power supply
Technical Data	Power Supply	24 Vac \pm 10%, 4.2VA
	Input Control Signal	0..10Vdc or 2..10Vdc, 0.5mA, direct or reverse operation External disturbances in the control signal are dynamically compensated.
	Motor	Reversible synchronous motor
	Stroke	Max 20mm, automatic adjustment during the initialization
	Actuation Time	Approx. 9 sec/mm
	Linear Thrust	500N
	Protection Class	IP 54
	Operating Temperature	0..50°C
	Weight	1.45 kg
	Limit Switches	Micro switches to switch off the motor in the end positions
	Actuator Position Indication	Sliding indicator with position markers on the actuator body
	Valve Monitoring	Automatic valve blockage monitoring program with automatic blockage removal function
	Installation Position	Vertical above the valve or horizontal
	Manual Operation	Available via switch and manual wheel to position the actuator
Maintenance Intervals	Maintenance free	

Accessories	Model	Description
	R/MC/1000	R/MC/1000 Potentiometer Card, 1000 Ohms. Provides the actuator position feedback. This unit is delivered as a complete module and can be easily installed by simply plugging it in.
Associated Products	2-Port Valves	RBx-BK 15mm to DN 50mm RKx-BF 15mm to DN 50mm RFx-BF 15mm to DN 50mm RGDx 15 mm to DN 40 mm (Steam Valves)
	3-Port Valves	RBx 15mm to DN 50mm RKx- 15mm to DN 50mm RFx 15mm to DN 50mm RWGx 15 mm to DN 40 mm (Steam Valves)

Installation Instructions **Note:** The electric installation, assembly, device connection and commissioning may only be carried out by qualified professionals!

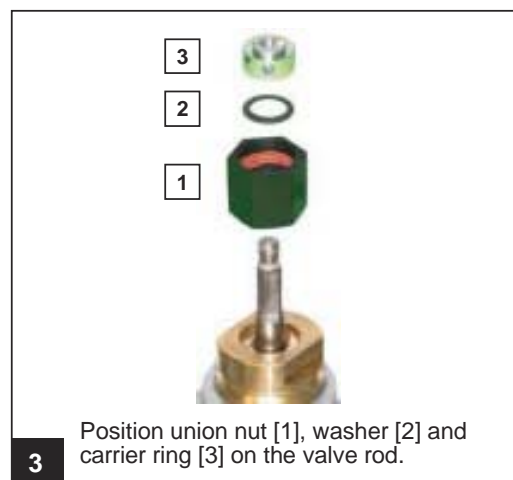
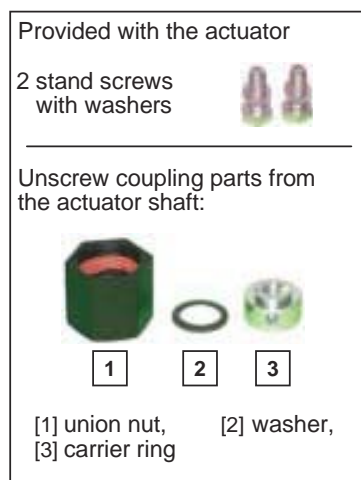
Assembly If the valve has already been installed in the plant, you must make sure that there is no pressure differential in the valve body before actuator assembly begins. If necessary, close the shut-off valves or switch off the pump.

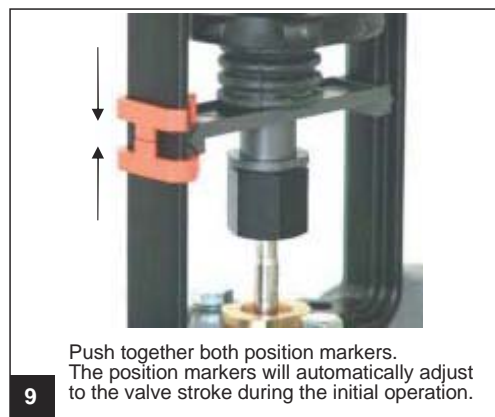
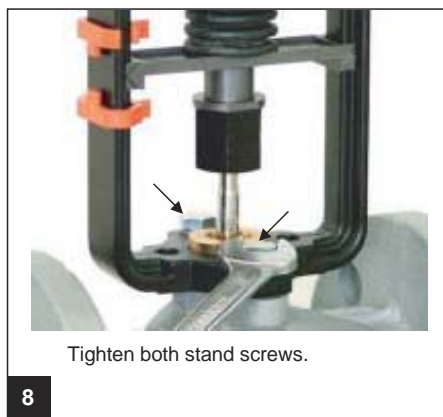
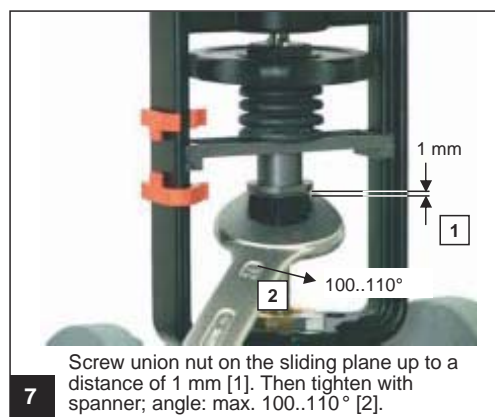
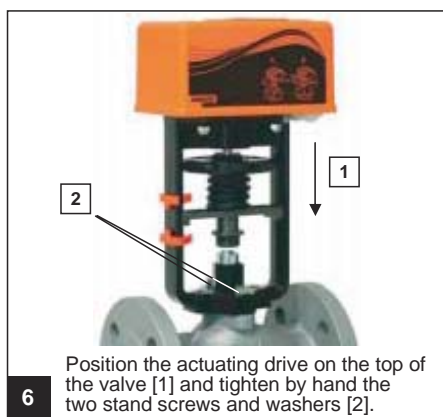
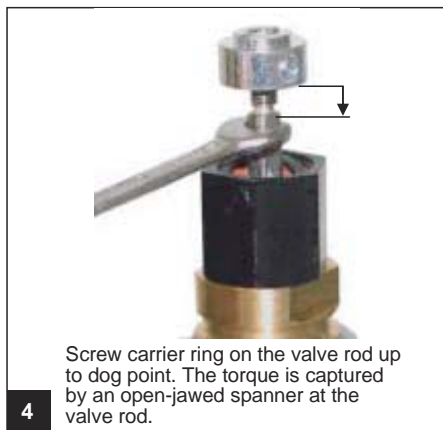
The actuator can be mounted on valve models **RK15..50(-BF), RB15..50(-BK), RF15..50(-BF), RGD15..40 and RWG15..40.**

The actuator is delivered in a medium stroke position. The installation on top of the valve is carried out in this medium stroke position. The following figures show as an example the installation of a 3-way valve RF32.

1 If the valve is installed in the plant, it shall be made sure before starting the work that there is no differential pressure in the valve body. If necessary, close the stop valve and switch off the pumps.

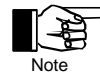
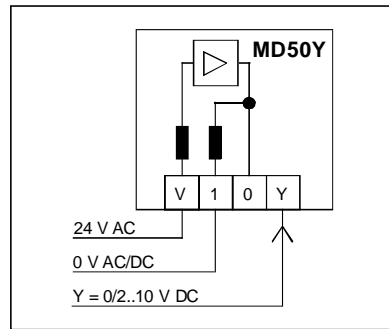
2 The actuator installation can start once the pipe work has cooled down.





Wiring Terminals

The device must be installed according to the local electrical wiring regulations.



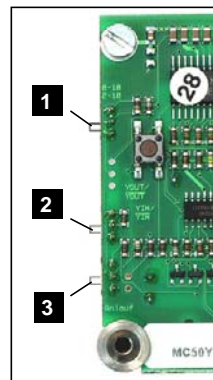
Note

For safety reasons, the actuator automatically switches to manual operation when the housing is removed.

Commissioning

Check that the valve has been correctly installed and the electrical connections have been properly completed.

The operation of the actuator is selected using three switches on the PCB of the actuator. The switches can be accessed once the actuator housing has been removed.



1 Actuator Voltage Range

(Y = 0..10Vdc or 2..10Vdc)
Select the control voltage range using this switch.



2 Direction Switch

Select the actuator operation direction using switch 2. The below diagram illustrates the actuator operation with different switch positions.

Direction of Operation		2-port valves		3-port valves	
Switch Position	Control Voltage	RFH.. RGD..	RK..BF RB..BK RF..BF	RK.. RB.. RF.. RWG..	
	Y = 10V DC	open	AB A = closed B	AB A = closed B = open	
	Y = 10V DC	closed	AB A = open B	AB A = open B = closed	
		= open	= closed	= mixing port	

3 Partial Initialization Direction Switch

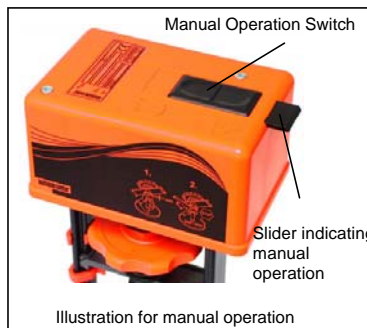
After power failure or use of manual operation, the actuator carries out a partial initialization routine to synchronize the stroke length. Use the switch to select whether the partial initialization is carried out against the upper end or the lower end. This setting should depend on the plant type.

Direction of Initialization	
Switch Position	Direction of Initialization

Other Information

Manual / Automatic Operation

Use the switch on the actuator housing to select if the actuator is in automatic operation mode or in manual operation. When in manual operation, use the wheel underneath the housing to manually position the valve.



Automatic Blockage Monitoring Programme

If the actuator detects blockages in the valve, it will automatically open momentarily the valve in order to remove the blockage.

Automatic Control Signal Noise Filtering

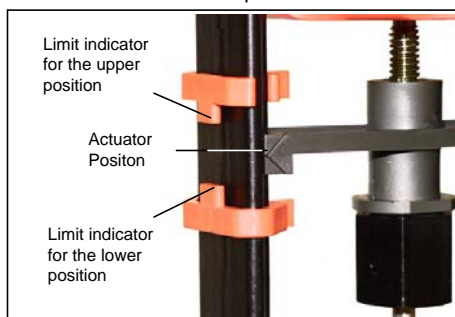
If the actuator detects uncharacteristic disturbances in the control signal, the actuator electronics will automatically compensate on these. Thereby oscillating control valve position is prevented avoiding unnecessary wear and tear, and variations in temperature.

Zero Cross-Over for Long Conduits

In order to minimize errors in the control signal Y by the voltage drop with very large conduit lengths, control drive electronics processes the control signal Y only with a zero crossover of the alternating voltage.

Actuator Position Indication

Two position markers on the actuator frame identify the upper and lower valve end position. The sliding indicator between the two position markers shows the current stroke position of the valve.



Dimensions

