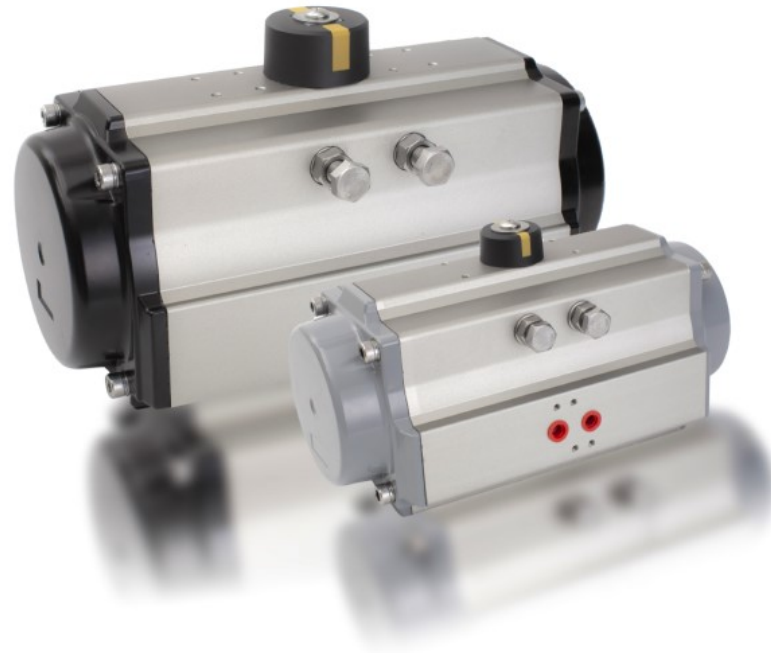




THE VALVE SPECIALISTS  
OF SCANDINAVIA

# INSTALLATIONS AND OPERATIONS MANUAL

## PNEUMATIC SINGLE & DOUBLE ACTING ACTUATORS





## PNEUMATIC ACTUATOR USER MANUAL

### GENERAL PRODUCT INFORMATION

Name:	Pneumatic actuator, single & double acting
Material (Housing & Cover):	Aluminium Alloy, coating options available
Material (Sealing):	NBR (Standard)
Working temperature:	-18°C to +80°C (Standard) -35°C to +80°C (Low temperature) -18°C to +150°C (High temperature)
Enclosure rating:	IP65
Fluid	Air, inert gas, less than 40µm filtered and dried
Max. operating pressure	8 Bar
Min. operating pressure	2 Bar
Port size	¼ (½ or 1/8 upon request and depending on size)
Rotation	Clockwise (Standard )
Safety factor	20-30% recommended

### SINGLE ACTING VALVE INFORMATION

Model designation:

VTN	50	SA	S10
Model	Size	Single acting	10 Springs

Per standard Meson provides actuators with 10 springs, torque as per below table 1, if other option is needed please contact Meson.

### DOUBLE ACTING VALVE INFORMATION

Model designation:

VTN	50	DA
Model	Size	Double acting

Per standard Meson provides actuator solution based on pneumatic air supply of 6 bar, if other air supply is needed please contact Meson for proper dimensioning of actuator size.

Table 1

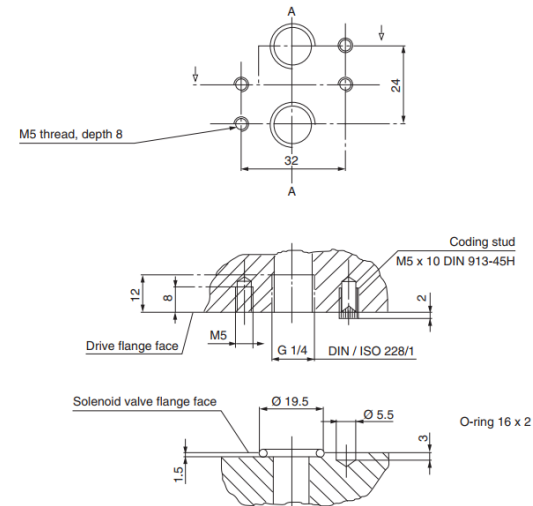
Model	ISO Top	☒	↑	Torque		Air dm <sup>3</sup> Open	Air dm <sup>3</sup> Close
				DA@6bar	SA@S10		
32	F03	9	10	7,1	7	0,03	0,04
40	F03/F05/F07	11	12	14,3	5,7	0,08	0,11
50	F03/F05/F07	11	12	22,6	7,2	0,1	0,15
65	F05/F07	14	16	45,9	14,4	0,22	0,26
75	F05/F07	14	16	60,4	18,4	0,25	0,41
85	F05/F07	17	19	98,1	30	0,45	0,61
95	F05/F07	17	19	147	49	0,95	0,98
110	F07/F10	17	19	199,5	69,2	1,07	1,24
125	F07/F10	22	25	318,1	108	1,47	1,86
140	F10/F12	27	31	526,4	171	2,13	3,08
160	F10/F12	27	31	802,2	288,6	3,89	4,7
190	F10/F14/F12	36	40	1212	392	6,16	8,59
210	F14/F12	36	40	1579,4	556	8,22	10,95
240	F16/F12/F14	46	50	2320,7	748	12,26	16,1
270	F16/F14	46	50	3524,6	1231	15,8	18,8
300	F16	46	50	4128,8	1382	17,35	24,83
350	F16/F25	46	50	6127,5	1989	27,65	44,1
400	F25	55	60	9337,1	3152	42,81	62,05



Table 2

Model	Operating time				Weight DA	Weight SA
	DA 0°-90°	DA 90°-0°	SA 0°-90°	SA 90°-0°		
32	0,3	0,4	0,3	0,4	0,47	0,59
40	0,2	0,3	0,6	0,8	1	1,1
50	0,3	0,4	0,9	0,7	1,08	1,2
65	0,4	0,4	0,9	0,8	1,91	2,15
75	0,4	0,4	0,9	0,9	2,41	2,8
85	0,9	0,9	1	1,2	3,32	3,95
95	0,9	1	1,4	1,4	4,98	5,8
110	0,9	1	1,4	1,6	6,53	7,95
125	1,3	1,4	2,4	2,4	10,24	12,1
140	1,3	1,4	2,8	3	15,1	15,93
160	2	2,4	4,8	4,9	21,3	25,6
190	2,2	2,6	2,4	3	29,3	33,81
210	2,9	3,8	3,4	4,1	37,7	48,43
240	3,2	3,7	3,8	4	54,2	77,76
270	4,4	4,9	5	5,5	82	90,6
300	5	6	6	6,8	108	135,6
350	6,2	7,2	7,4	8,4	146,7	188,1
400	7,5	8,5	9,6	10,6	220,5	283,5

## MOUNTING PATTERN SOLENOID VALVE



The solenoid valve can be attached with 2 mounting bolts.  
The positioning of the coding stud hole is left up to the manufacturer and thus also determines the location of the coding stud.

## PIPING

If piping is connected directly onto the actuator.

### **1. Preparation before piping**

Before piping is connected, inspect thoroughly and if needed flush out with air or wash to remove chips, cutting oil and other debris from inside the pipe.

### **2. Wrapping of sealant tape**

When screwing piping or fittings into ports, ensure that chips from the pipe threads or sealing material do not enter the piping. Also, if sealant tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.

### **3. Connection of fittings**

When attaching fittings to valves, tighten with ¼ thread size – 12-14 Nm



### INSPECTION

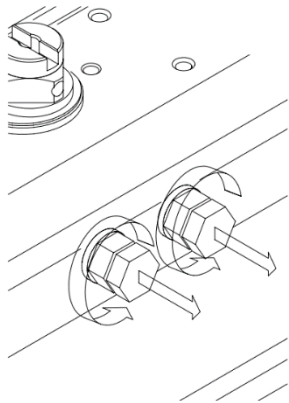
Upon receipt of the actuator, the user should inspect the condition of the product and ensure that the product specification stated on the name plate matches with the order sheet.

- Remove the packing carefully.
- Inspect the product for any physical damage that may have occurred during shipment.
- Verify the product specification of the received product.  
If a wrong product has been supplied, please immediately report this to the distributing company.

### STORAGE

Actuators must be stored in a clean, cool and dry area. The unit should be stored with the ports covered and the conduit openings sealed. Storage must be off the floor, covered with a sealed dust protector.

### TRAVEL ADJUSTMENT



#### **Valve and actuator assembly in closed position**

With the assembly in closed position, screw or unscrew the right (from top view) stop cap screw until the desired stop position is achieved. Then tighten the stop adjustment nut to lock it in place.

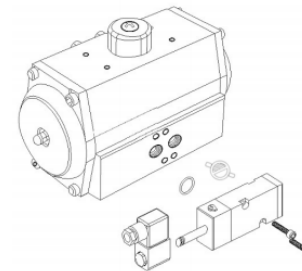
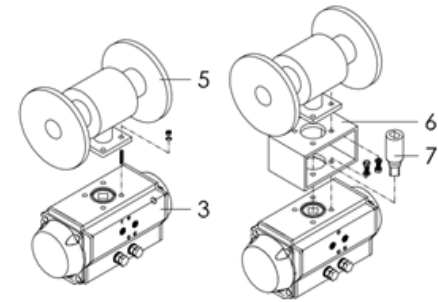
#### **Valve and actuator assembly in open position**

With the assembly in closed position, screw or unscrew the left (from top view) stop cap screw until the desired stop position is achieved. Then tighten the stop adjustment nut to lock it in place.

For spring return actuators, it could be necessary to make rotation tests to verify the correct stroke adjustment in open position.

### ASSEMBLY INSTRUCTIONS

1. Remove any manual opening device from the valve, leaving the valve stem clear.
2. Make sure that the shape of the stem fit the actuator output and that the rotation is not hindered in any way. Use adaptors (square or diamond) if needed to achieve the correct size integration between shaft and output hole of the actuator. Also verify that correct rotation is achieved.
3. Mount the actuator onto the valve.  
Verify correct placement and integration on the stem.  
There are 2 types of valve assembly onto actuator:  
Direct mount: fit the valve directly onto the top flange of the valve  
Bracket mount: The bracket is bolted onto the valve, the actuator is then bolted onto the bracket with coupling/adaptor to drive the shaft.  
Tightening bolts to torque as per 8.1
4. Make sure that the rotation direction is correct, in any case do not insert your hands inside the valve.
5. Verify stop screw adjustments, if needed adjust screws so that valve is correctly aligned in the open and closed positions.
6. We strongly suggest checking the cleanness of the air-supply pipes, especially when the plant is not provided with filter.
7. Verify assembly as per specific model and make.
8. Installation of solenoid valve, if required adjust the orings, align the solenoid valve towards the actuator and assemble the bolts.





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### **OPERATING ENVIRONMENT**

Caution, do not use in an atmosphere having corrosive gases, chemicals, sea water, water, water steam, or where there is direct contact with any of these.

In locations where there is contact with spatter from water, oil, solder, etc., take suitable protective measures.

Do not use in explosive atmospheres unless proper equipment is used.

Do not use in a place subject to heavy vibration and/or impact.

The assembly should not be exposed to prolonged sunlight. Use a protective cover.

Use dry clean air, if needed install filter upstream to remove residual particles, 40µm filtered and dried air.

Caution, if media of high temperature is used it may be needed to have a spacer between valve and actuator to lower the heat dispersion.

### **CONTACT INFORMATION**

You may get technical and commercial support through Meson AB with head office in Sweden

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SWEDEN

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