

Fisher™ 1080 Declutchable Manual Actuator

The Fisher 1080 manual actuator is a Declutchable Actuator for manual operation of Fisher valves with double D or square shaft control valves that use a rack and pinion power actuator. As shown in the following figure, the 1080 manual actuator mounts directly on the FieldQ actuator. It can be engaged to allow manual operation of the valve when the power actuator is not in use or disengaged to allow automatic operation of the valve by the power actuator.

Features

- **Direct Attachment to the Power Actuator**— Direct mounting to the actuator housing simplifies installation and eliminates the need for additional mounting parts.
- **Engage Manual Actuator At Any Point of Rotation**— A lever-operated eccentric bearing support on the input shaft allows engagement of the worm gear with the sector at any point of rotation.
- **Simplified Selection**— Each size of the 1080 corresponds to the capabilities of a size of the FieldQ. So you need only calculate the size of the FieldQ, when ordering both a FieldQ and 1080 (see table 1).



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**Fisher 1080 Manual Actuator
Mounted on a FieldQ Actuator**

- **Positive Operation**— The disengagement lever is held in both the engaged and disengaged positions by a spring-loaded pin, which must be released before the lever can be moved. This reduces the possibility of inadvertent or accidental operation. In addition, stop-pins at the fully engaged and fully disengaged positions provide positive limits for lever travel.

Specifications

Available Configurations

Direct acting; see Handwheel Rotation

Manual Actuator Sizes

See table 1

Power Actuator Compatibility

Compatible with the FieldQ actuator; see table 1

Maximum Torque Output

See table 1, Wheel-Rim Force

Handwheel Rotation

Clockwise handwheel rotation closes valve (produces clockwise valve shaft rotation)

Construction Materials

Housing and Cover: Cast iron
Drive Sleeve/Gear (Sector): Low-carbon steel/bronze
Worm Gear: Heat-treated steel
Input Shaft and Eccentric: Low-carbon steel/bronze
Pin Detent: 300 Series stainless steel
Shaft Bearings: Bronze

Mounting Positions (see figure 1)

■ Standard mounting is with the input shaft perpendicular to the FieldQ actuator piston travel, with the handwheel opposite the actuator supply connections; ■ optional mounting is with the handwheel on the same side as the FieldQ actuator supply connections

Dimensions

See figure 2

Approximate Weight without Handwheel

Size AAA: 5.4 kg (12 lb)
Size AA: 10 kg (22 lb)
Size A: 14 kg (31 lb)
Size B: 22 kg (49 lb)
Size C: 34 kg (76 lb)
Size D: 52 kg (115 lb)
Size F: 68 kg (150 lb)

Handwheel Weight

8-inch: 2.0 kg (4.50 lb)
12-inch: 4.0 kg (6.75 lb)
16-inch: 6.8 kg (15.00 lb)
24-inch: 5.4 kg (12.00 lb)
30-inch: 6.8 kg (15.00 lb)
36-inch: 7.8 kg (17.25 lb)

Ordering Information

Each size of the 1080 corresponds to a specific size of FieldQ as shown in table 1. The torque output of the 1080 actuator is matched to the capabilities of the FieldQ power actuator.

The 1080 actuator can handle the Spring Return FieldQ actuator torques as well as the Double Acting FieldQ actuator, because the Double Acting torque at 100

psig is approximately equal to the sum of both the Spring Return spring start torque and the Spring Return air end torque at 100 psig.

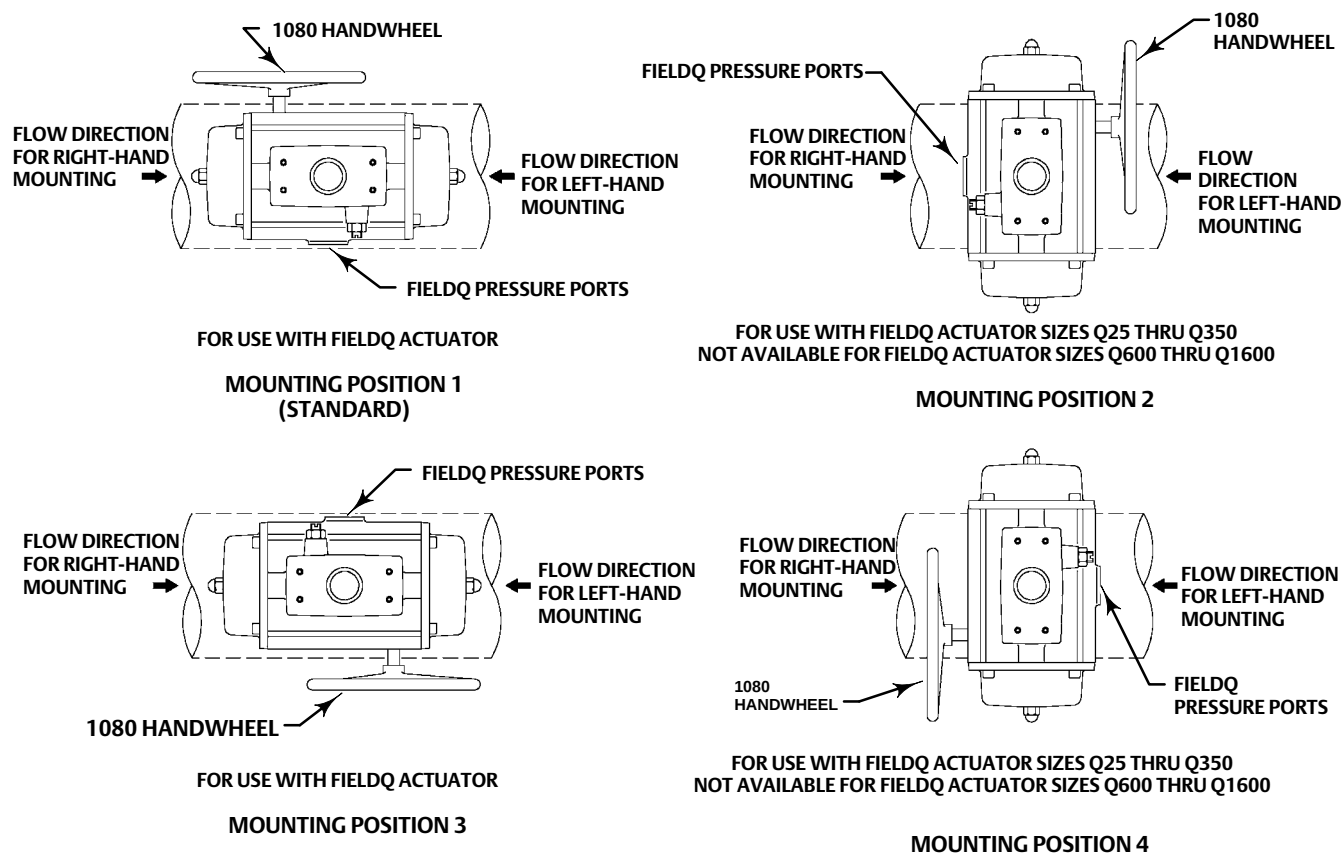
An optional bypass valve should be ordered for use on a FieldQ actuator if you plan to engage the manual actuator while the power actuator has air pressure applied to it. For activation of the 1080, air pressure must not be trapped in the FieldQ or must be equalized between the pistons by a bypass valve.

Table 1. Actuator Size Selection and Specifications⁽¹⁾

ACTUATOR SIZE	FIELDQ ACTUATOR SIZE	GEAR RATIO	NUMBER OF TURNS TO CLOSE	HANDWHEEL DIAMETER		1080 MAXIMUM TORQUE ⁽²⁾		FIELDQ TORQUE ⁽³⁾		WHEEL RIM FORCE FOR MAXIMUM TORQUE ⁽⁴⁾	
				mm	Inches	N•m	lb•in	N•m	lb•in	N	lbf
AAA/S2	Q40 Q65	24:1	6	203	8	271	2,400	58 89	513 788	93 147	21 33
AAA/S3	Q100							132	1,168	218	49
AA/S4	Q200 Q350	34:1	8.5	305	12	542	4,800	289 502	2,558 4,443	222 387	50 87
A/S4	Q600	32:1	8	610	24	926	8,200	866	7,550	276	62
B/S5	Q950	40:1	10			1,356	12,000	1,290	11,300	271	61
C/S6	Q1600	54:1	13.5	762	30	2,034	18,000	2,140	18,600	298	67

1. Only the 1080/FieldQ combinations shown are available.
 2. Maximum torque output of the 1080 actuator only.
 3. Torque output of the FieldQ actuator at 100 psig and required 1080 torque output for use with the FieldQ.
 4. Amount of force necessary at rim of the handwheel to match torque output of the FieldQ at 100 psig.

Figure 1. Fisher 1080 Actuator Mounting Positions



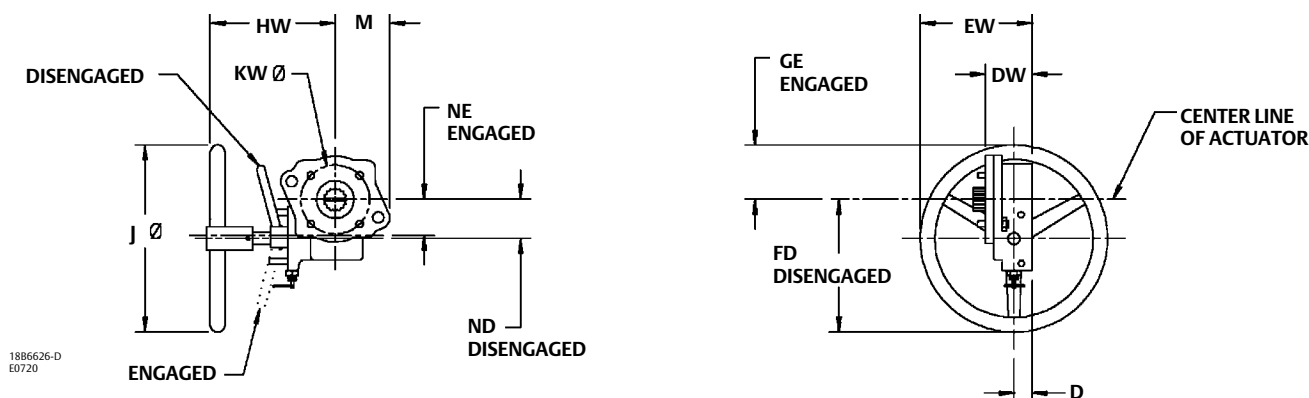
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Note:
Right- and left-hand mounting is based on the 8580 valve drive shaft being mounted in the recommended horizontal position.

Table 2. Dimensions

1080 Actuator Size	FIELDQ Actuator Size	JØ	HW	M	D	DW	EW	FD	GE	NE	ND	KW Bolt Circle Diameter
mm												
AAA/S2	Q40, Q65	203	191	68	30	73	132	153	55	46	51	70
AAA/S3	Q100	203	191	68	30	73	132	153	55	46	51	70
AA/S4	Q200, Q350	305	210	89	29	83	181	216	94	59	64	102
A/S4	Q600	610	381	105	32	89	337	378	238	67	73	125
B/S5	Q950	610	381	114	41	105	346	394	222	83	89	140
C/S6	Q1600	762	406	143	44	117	425	492	276	105	111	165
Inches												
AAA/S2	Q40, Q65	8	7.50	2.69	1.188	2.88	5.19	6.03	2.18	1.83	2.03	2.756
AAA/S3	Q100	8	7.50	2.69	1.188	2.88	5.19	6.03	2.18	1.83	2.03	2.756
AA/S4	Q200, Q350	12	8.25	3.50	1.126	3.25	7.13	8.50	3.69	2.31	2.50	4.016
A/S4	Q600	24	15.00	4.13	1.253	3.50	13.25	14.88	9.38	2.63	2.88	4.921
B/S5	Q950	24	15.00	4.50	1.625	4.12	13.62	15.50	8.75	3.25	3.50	5.512
C/S6	Q1600	30	16.00	5.62	1.750	4.62	16.75	19.38	10.88	4.12	4.38	6.496

Figure 2. Dimensions (also see table 2)



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