

Fisher™ 1079 Declutchable Manual Actuator

The 1079 manual actuator is a declutchable unit for manual operation of keyed or square shaft control valves and equipment that use a Hytork™ actuator. The 1079 manual actuator mounts directly on the Hytork actuator and 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. The mechanism used allows manual actuator engagement at any point of power actuator rotation.



W6214

Fisher 1079 Manual Actuator Mounted on a Hytork Actuator and A41 Valve

Features

- **Direct Attachment to the Power Actuator--** Direct mounting to the actuator housing simplifies installation and eliminates the need for yokes and other brackets.
- **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.
- **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 tables 1, 2, and 3

Power Actuator Compatibility

Compatible with all sizes of Hytork actuator; see tables 1, 2, and 3

Maximum Torque Output

See tables 1, 2, and 3

Wheel-Rim Force

See tables 1, 2, and 3

Handwheel Rotation

Clockwise handwheel rotation closes valve (produces clockwise valve shaft rotation, as viewed from the actuator end of the shaft)

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
Pin Detent: 300 Series stainless steel
Shaft Bearings: Bronze

Standard Mounting Positions (see figure 1)

- Standard mounting is with the input shaft perpendicular to the Hytork piston travel, with the handwheel opposite the actuator supply connections;
- Optional mounting is with the handwheel on the same side as the Hytork actuator supply connections

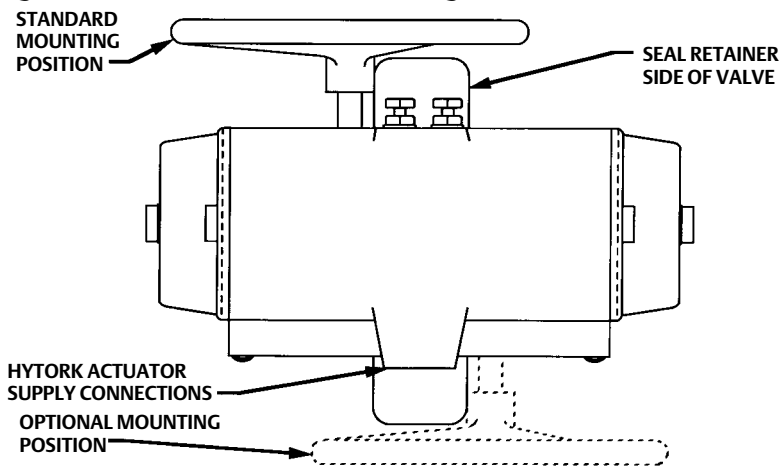
Approximate Weight without Handwheel

- Size AAA: 7.3 kg (16 lb)
- Size AA: 10 kg (22 lb)
- Size A: 14 kg (31 lb)
- Size B: 16 kg (35 lb)
- Size C: 24 kg (52 lb)
- Size D: 33 kg (72 lb)

Handwheel Weight

- 6-inch: 1.0 kg (2.25 lb)
- 8-inch: 2.0 kg (4.50 lb)
- 12-inch: 4.0 kg (8.75 lb)
- 24-inch: 5.4 kg (12.00 lb)
- 30-inch: 6.7 kg (14.75 lb)
- 36-inch: 7.8 kg (17.25 lb)

Figure 1. Fisher 1079 Actuator Mounting Positions



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Table 1. Actuator Size Selection and Specifications for Keyed Shaft Valves (Fisher A31A)

ACTUATOR SIZE	HYTORK ACTUATOR SIZE	GEAR RATIO	HANDWHEEL DIAMETER		VALVE SHAFT DIAMETER ⁽¹⁾		MAXIMUM ALLOWABLE TORQUE ⁽²⁾		WHEEL-RIM FORCE FOR MAXIMUM TORQUE	
			mm	Inches	mm	Inches	N•m	lbf•in	N	lbf
AAA	70 thru 280	24:1	203	8	14.3	0.5625	129	1145	214	48
			305	12	17.5 23.8	0.6875 0.9375	245 271	2165 2400 ⁽³⁾	267 298	60 67
AA	70 thru 280	24:1	203	8	14.3	0.5625	129	1145	151	34
					17.5	0.6875	245	2165	298	64
			305	12	23.8	0.9375	542	4800 ⁽³⁾	418	94
					28.6	1.125	542	4800 ⁽³⁾	418	94
					30.2	1.1875	542	4800 ⁽³⁾	418	94
31.8	1.25 ⁽⁴⁾	542	4800 ⁽³⁾	418	94					
41.3	1.625	542	4800 ⁽³⁾	418	94					
A	680A	40:1	610	24	14.3	0.5625	129	1145	44	10
					17.5	0.6875	245	2165	80	18
					23.8	0.9375	671	5941	222	50
					28.6	1.125	834	7383	276	62
					30.2	1.1875	926	8200 ⁽³⁾	302	68
					31.8	1.25 ⁽⁴⁾⁽⁵⁾	926	8200 ⁽³⁾	302	68
					41.3	1.625	926	8200 ⁽³⁾	302	68
B	1125	40:1	610	24	23.8	0.9375	671	5941	182	41
					28.6	1.125	834	7383	227	51
					31.8	1.25 ⁽⁴⁾	927	8205	254	57
					30.2	1.1875	1171	10,360	320	72
					31.8	1.25 ⁽⁵⁾	1233	10,911	338	76
					38.1	1.5	1582	14,000 ⁽³⁾	431	97
					41.3	1.625	1582	14,000 ⁽³⁾	431	97
					44.5	1.75	1582	14,000 ⁽³⁾	431	97
					47.6	1.875	1582	14,000 ⁽³⁾	431	97
C	1370	54:1	610	24	23.8	0.9375	671	5941	138	31
					28.6	1.125	834	7383	169	38
					31.8	1.25 ⁽⁴⁾	927	8205	187	42
					30.2	1.1875	1171	10,360	236	53
					31.8	1.25 ⁽⁵⁾	1233	10,911	249	56
					38.1	1.5	2203	19,494	445	100
			762	30	41.3	1.625	2530	22,396	409	92
					44.5	1.75	2568	22,728	418	94
					47.6	1.875	2712	24,000 ⁽³⁾	440	99
D	2585 & 4580	64:1	610	24	31.8	1.25 ⁽⁴⁾	927	8205	160	36
					30.2	1.1875	1171	10,360	200	45
					31.8	1.25 ⁽⁵⁾	1233	10,911	209	47
					38.1	1.5	2203	19,494	378	85
			762	30	41.3	1.625	2530	22,396	347	78
					44.5	1.75	2568	22,728	351	79
			914	36	47.6	1.875	4067	36,000 ⁽³⁾	463	104
					57.2	2.25	4067	36,000 ⁽³⁾	463	104

1. Shaft diameter at the keyway.
2. Unless otherwise noted, torque is limited by S17400 stainless steel (17-4PH H1025) shaft material at 38°C (100°F). For other shaft materials, consult your [Emerson sales office](#) or Local Business Partner.
3. Maximum manual actuator output.
4. NPS 12 CL150 A31A and NPS 8 CL300 A31A.

Table 2. Actuator Size Selection and Specifications for Valves (Fisher A41)

ACTUATOR SIZE	HYTORK ACTUATOR SIZE	GEAR RATIO	HANDWHEEL DIAMETER		VALVE SHAFT DIAMETER ⁽¹⁾		MAXIMUM ALLOWABLE TORQUE ⁽²⁾		WHEEL-RIM FORCE FOR MAXIMUM TORQUE	
			mm	Inches	mm	Inches	N•m	lbf•in	N	lbf
AAA	70 thru 280	24:1	152	6	12.7	0.500	58	515	127	29
					15.9	0.625	138	1225	305	69
			203	8	15.9	0.625	138	1225	229	51
			305	12	15.9	0.625	138	1225	152	34
					12.7	0.500	58	515	127	29
		15.9	0.625	138	1225	305	69			
		19.1	0.750	240	2120	392	88			
AA	70 thru 280	24:1	19.1	0.750	240	2120	280	63		
			203	8	25.4	1.000	468	4140	546	123
			31.8	1.250	542	4800 ⁽³⁾	629	141		
			305	12	31.8	1.250	542	4800 ⁽³⁾	418	94
					38.1	1.500	542	4800 ⁽³⁾	418	94
A	680A	40:1	610	24	19.1	0.750	240	2120	78	18
					25.4	1.000	468	4140	153	34
					31.8	1.250	926	8200 ⁽³⁾	303	68
					38.1	1.500	926	8200 ⁽³⁾	303	68
B	1125	40:1	610	24	31.8	1.250	1110	9820	303	68
					38.1	1.500	1356	12000	371	83
					44.5	1.750	1582	14,000 ⁽³⁾	431	97
C	1370	54:1	610	24	31.8	1.250	1110	9820	227	51
					38.1	1.500	1356	12000	278	63
			762	30	44.5	1.750	2658	23524	433	97
D	2585 & 4580	64:1	610	24	31.8	1.250	1110	9820	190	43
					38.1	1.500	1356	12000	231	52
			762	30	44.5	1.750	2658	23524	365	82

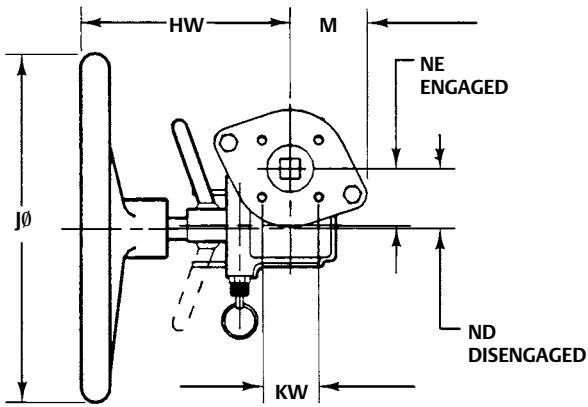
1. Shaft diameter at packing box.
 2. Unless otherwise noted, torque is limited by S17400 (17-4 PH H1025) stainless steel shaft. For other shaft materials, contact your [Emerson sales office](#).
 3. Maximum manual actuator output. For AAA, C, and D, the maximum output is 2400, 24000, and 36000 in-lb, respectively.

Table 3. Actuator Size Selection and Specifications for Square Shaft Valves (Fisher A11)

ACTUATOR SIZE	HYTORK ACTUATOR SIZE	GEAR RATIO	HANDWHEEL DIAMETER		VALVE SHAFT DIAMETER ⁽¹⁾		MAXIMUM ALLOWABLE TORQUE ⁽²⁾		WHEEL-RIM FORCE FOR MAXIMUM TORQUE	
			mm	Inches	mm	Inches	N•m	lbf•in	N	lbf
AAA	70 thru 280	24:1	203	8	10.3	0.40625	89	790	147	33
			305	12	15.9	0.625	271	2400 ⁽³⁾	298	67
AA	70 thru 280	24:1	203	8	10.3	0.40625	89	790	102	23
			305	12	15.9 22.2	0.625 0.875	318 542	2813 4800 ⁽³⁾	245 418	55 94
A	680A	40:1	610	24	15.9	0.625	318	2813	102	23
					22.2 25.4	0.875 1	782 926	6922 8200 ⁽³⁾	254 302	57 68
B	1125	40:1	610	24	15.9	0.625	318	2813	85	19
					22.2	0.875	782	6922	214	48
					25.4	1	1351	11,956	369	83
					34.9	1.375	1582	14,000 ⁽³⁾	431	97
				34.9	1.375	1582	14,000 ⁽³⁾	431	97	
C	1370	54:1	610	24	15.9	0.625	318	2813	67	15
					22.2	0.875	782	6922	160	36
					25.4	1	1351	11,956	276	62
					34.9	1.375	2712	24,000 ⁽³⁾	440	99
				34.9	1.375	2712	24,000 ⁽³⁾	440	99	
D	2585 & 4580	64:1	610	24	15.9	0.625	318	2813	53	12
					22.2	0.875	782	6922	133	30
					25.4	1	1351	11,956	231	52
					34.9	1.375	3520	31,157	400	90
				34.9	1.375	3520	31,157	400	90	

1. Shaft diameter at square connection.
2. Unless otherwise noted, torque is limited by S17400 stainless steel (17-4 PH H1025) shaft material at 38°C (100°F). For other shaft materials, consult your [Emerson sales office](#).
3. Maximum manual actuator output.

Figure 2. Dimensions (also see table 4)



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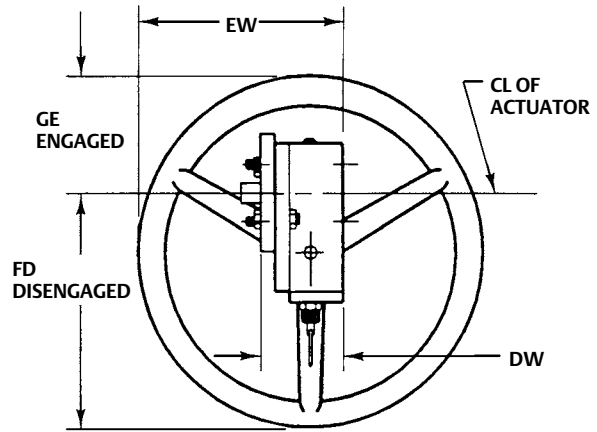


Table 4. Dimensions (also see figure 2)

1079 Actuator Size	1032 Actuator Size	JØ	HW	M	DW	EW	FD	GE	NE	ND	KW Bolt Pattern
mm											
AAA	45	152	184	67	73	106	128	30	46	52	35 SQ
AAA	45	203	184	67	73	132	153	55	46	52	35 SQ
AAA	45	305	184	67	73	183	204	106	46	52	35 SQ
AAA	70-280	152	184	67	73	106	128	30	46	52	50 SQ
AAA	70-280	203	184	67	73	132	153	55	46	52	50 SQ
AAA	70-280	305	184	67	73	183	204	106	46	52	50 SQ
AA	425A	203	203	90	78	130	165	43	59	64	72 SQ
AA	425A	305	203	90	78	181	216	94	59	64	72 SQ
A	680A	610	381	105	89	337	378	238	67	73	72 SQ
B	1125	610	381	108	105	346	394	222	83	89	88 SQ
C	1370	610	406	143	117	349	416	200	105	111	88 SQ
C	1370	762	406	143	117	425	492	276	105	111	88 SQ
D	2585 & 4580	610	406	152	162	371	430	186	119	125	117 SQ
D	2585 & 4580	762	406	152	162	448	506	262	119	125	117 SQ
D	2585 & 4580	914	406	152	162	524	583	338	119	125	117 SQ
Inches											
AAA	45	6.00	7.25	2.62	2.88	4.19	5.03	1.17	1.83	2.03	1.39 SQ
AAA	45	8.00	7.25	2.62	2.88	5.19	6.03	2.17	1.83	2.03	1.39 SQ
AAA	45	12.00	7.25	2.62	2.88	7.19	8.03	4.17	1.83	2.03	1.39 SQ
AAA	70-280	6.00	7.25	2.62	2.88	4.19	5.03	1.17	1.83	2.03	1.95 SQ
AAA	70-280	8.00	7.25	2.62	2.88	5.19	6.03	2.17	1.83	2.03	1.95 SQ
AAA	70-280	12.00	7.25	2.62	2.88	7.19	8.03	4.17	1.83	2.03	1.95 SQ
AA	425A	8.00	8.00	3.56	3.06	5.12	6.50	1.69	2.31	2.50	2.84 SQ
AA	425A	12.00	8.00	3.56	3.06	7.12	8.50	3.69	2.31	2.50	2.84 SQ
A	680A	24.00	15.00	4.12	3.50	13.25	14.88	9.38	2.62	2.88	2.84 SQ
B	1125	24.00	15.00	4.25	4.12	13.62	15.50	8.75	3.25	3.50	3.48 SQ
C	1370	24.00	16.00	5.62	4.62	13.75	16.38	7.88	4.12	4.38	3.48 SQ
C	1370	30.00	16.00	5.62	4.62	16.75	19.38	10.88	4.12	4.38	3.48 SQ
D	2585 & 4580	24.00	16.00	5.97	6.38	14.62	16.94	7.31	4.69	4.94	4.60 SQ
D	2585 & 4580	30.00	16.00	5.97	6.38	17.62	19.94	10.31	4.69	4.94	4.60 SQ
D	2585 & 4580	36.00	16.00	5.97	6.38	20.62	22.94	13.31	4.69	4.94	4.60 SQ

Ordering Information

When ordering, specify:

1. Manual actuator size
2. Handwheel size
3. Standard or optional mounting

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