

Type 1079 Declutchable Manual Actuator

The Type 1079 manual actuator is a declutchable actuator for manual operation of keyed or square shaft control valves and equipment that use a Type 1032 power actuator. As shown in figure 1, the Type 1079 manual actuator mounts directly on the Type 1032 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.

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.



Figure 1. Type 1079 Manual Actuator Mounted on a Type 1032 Actuator and Model B21A Valve



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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 Type 1032 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

Mounting Positions (see figure 2)

■ Standard mounting is with the input shaft perpendicular to the Type 1032 actuator piston travel, with the handwheel opposite the actuator supply connections; ■ optional mounting is with the handwheel on the same side as the Type 1032 actuator supply connections

Approximate Weight without Handwheel

Size AAA: 16 lb. (7.3 kg)

Size AA: 22 lb. (10 kg)

Size A: 31 lb. (14 kg)

Size B: 35 lb. (16 kg)

Size C: 52 lb. (24 kg)

Size D: 72 lb. (33 kg)

Handwheel Weight

6-inch: 2.25 lb. (1.0 kg)

8-inch: 4.50 lb. (2.0 kg)

12-inch: 6.75 lb. (4.0 kg)

24-inch: 12.00 lb. (5.4 kg)

30-inch: 14.75 lb. (6.7 kg)

36-inch: 17.25 lb. (7.8 kg)

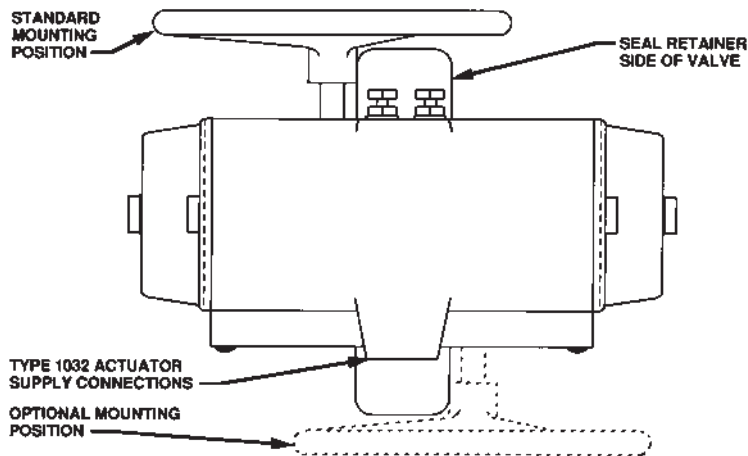


Figure 2. Type 1079 Actuator Mounting Positions

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

ACTUATOR SIZE	TYPE 1032 ACTUATOR SIZE	GEAR RATIO	HANDWHEEL DIAMETER		VALVE SHAFT SIZE ⁽²⁾		MAXIMUM ALLOWABLE TORQUE ⁽³⁾		WHEEL-RIM FORCE FOR MAXIMUM TORQUE	
			Inches	mm	Inches	mm	lbf•in	N•m	lbf	N
AAA	70 thru 280	24:1	8	203	9/16	14.3	1145	129	48	214
			12	305	11/16 15/16	17.5 23.8	2165 2400 ⁽³⁾	245 271	60 67	267 298
AA	425A	34:1	8	203	9/16	14.3	1145	129	34	151
					11/16	17.5	2165	245	64	298
			12	305	15/16	23.8	4800 ⁽⁴⁾	542	94	418
					1-1/8	28.6	4800 ⁽⁴⁾	542	94	418
					1-3/16	30.2	4800 ⁽⁴⁾	542	94	418
1-1/4 ⁽⁵⁾	31.8	4800 ⁽⁴⁾	542	94	418					
1-5/8	41.3	4800 ⁽⁴⁾	542	94	418					
A	680A	40:1	24	610	9/16	14.3	1145	129	10	44
					11/16	17.5	2165	245	18	80
					15/16	23.8	5941	671	50	222
					1-1/8	28.6	7383	834	62	276
					1-3/16	30.2	8200 ⁽⁴⁾	926	68	302
					1-1/4 ⁽⁵⁾⁽⁶⁾	31.8	8200 ⁽⁴⁾	926	68	302
1-5/8	41.3	8200 ⁽⁴⁾	926	68	302					
B	1125	40:1	24	610	1-5/16	23.8	5941	671	41	182
					1-1/8	28.6	7383	834	51	227
					1-1/4 ⁽⁵⁾	31.8	8205	927	57	254
					1-3/16	30.2	10,360	1171	72	320
					1-1/4 ⁽⁶⁾	31.8	10,911	1233	76	338
					1-1/2	38.1	14,000 ⁽⁴⁾	1582	97	431
					1-5/8	41.3	14,000 ⁽⁴⁾	1582	97	431
					1-3/4	44.5	14,000 ⁽⁴⁾	1582	97	431
					1-7/8	47.6	14,000 ⁽⁴⁾	1582	97	431
C	1370	54:1	24	610	15/16	23.8	5941	671	31	138
					1-1/8	28.6	7383	834	38	169
					1-1/4 ⁽⁵⁾	31.8	8205	927	42	187
					1-3/16	30.2	10,360	1171	53	236
					1-1/4 ⁽⁶⁾	31.8	10,911	1233	56	249
			1-1/2	38.1	19,494	2203	100	445		
			30	762	1-5/8	41.3	22,396	2530	92	409
1-3/4	44.5	22,728	2568	94	418					
1-7/8	47.6	24,000 ⁽⁴⁾	2712	99	440					
D	2585 & 4580	64:1	24	610	1-1/4 ⁽⁵⁾	31.8	8205	927	36	160
					1-3/16	30.2	10,360	1171	45	200
					1-1/4 ⁽⁶⁾	31.8	10,911	1233	47	209
					1-1/2	38.1	19,494	2203	85	378
			30	762	1-5/8	41.3	22,396	2530	78	347
					1-3/4	44.5	22,728	2568	79	351
			36	914	1-7/8	47.6	36,000 ⁽⁴⁾	4067	104	463
					2-1/4	57.2	36,000 ⁽⁴⁾	4067	104	463

1. Only the 1079/1032 combinations shown are available.
 2. Shaft diameter at the keyway.
 3. Unless otherwise noted, torque is limited by S17400 stainless steel (17-4PH H1025) shaft material at 100°F (38°C). For other shaft materials, consult your Fisher Controls sales office or representative.

4. Maximum manual actuator output.
 5. 12-inch Class 150 Model A31A and 8-inch Class 300 Model A31A.
 6. 16-inch Class 150 Model A31A.

Bulletin 22.2:1079

Table 2. Actuator Size Selection and Specifications for Square Shaft Valves (Model B21A)⁽¹⁾

ACTUATOR SIZE	TYPE 1032 ACTUATOR SIZE	GEAR RATIO	HANDWHEEL DIAMETER		VALVE SHAFT SIZE ⁽²⁾		MAXIMUM ALLOWABLE TORQUE ⁽³⁾		WHEEL-RIM FORCE FOR MAXIMUM TORQUE			
			Inches	mm	Inches	mm	lbf•in	N•m	lbf	N		
AAA	45	24:1	6	152	1/2	12.7	180	20	10	44		
					5/8	15.9	286	32	16	71		
			8	203	5/8	15.9	286	32	12	53		
	12		305	5/8	15.9	286	32	8	36			
	70 thru 280		6	152	1/2	12.7	180	20	10	44		
8		203	5/8	15.9	286	32	16	71				
AA	425A	34:1	8	203	7/8	22.2	841	95	25	111		
							1-1/8	28.6	1451	164	43	191
							1-3/8 ⁽⁵⁾	34.9	2309	261	68	302
			12	305	1-1/2 ⁽⁶⁾	38.1	3453	390	68	302		
					1-3/8 ⁽⁷⁾	34.9	4800 ⁽⁴⁾	542	94	418		
		1-1/2 ⁽⁸⁾	38.1	4800 ⁽⁴⁾	542	94	418					
A	680A	40:1	24	610	7/8	22.2	841	95	7	31		
							1-1/8	28.6	1451	164	12	53
							1-3/8 ⁽⁵⁾	34.9	2309	261	19	85
							1-1/2 ⁽⁶⁾	38.1	3453	390	29	129
							1-3/8 ⁽⁷⁾	34.9	8200 ⁽⁴⁾	926	68	302
		1-1/2 ⁽⁸⁾	38.1	8200 ⁽⁴⁾	926	68	302					
B	1125	40:1	24	610	1-3/8 ⁽⁵⁾	34.9	2309	261	16	71		
							1-1/2 ⁽⁶⁾	38.1	3453	390	24	107
							1-3/8 ⁽⁷⁾	34.9	9830	1111	68	302
							1-1/2 ⁽⁸⁾	38.1	14,000 ⁽⁴⁾	1582	97	431
							1-3/4	44.5	14,000 ⁽⁴⁾	1582	97	431
		2	50.8	14,000 ⁽⁴⁾	1582	97	431					
C	1370	54:1	24	610	1-3/8 ⁽⁵⁾	34.9	2309	261	12	53		
							1-1/2 ⁽⁶⁾	38.1	3453	390	18	80
							1-3/8 ⁽⁶⁾	34.9	9830	1111	51	227
			30	762	1-1/2 ⁽⁸⁾	38.1	14,328	1619	74	329		
					1-3/4	44.5	20,073	2268	83	369		
		2	50.8	24,000 ⁽⁴⁾	2712	99	440					
D	2585 & 4580	64:1	24	510	1-1/2 ⁽⁶⁾	38.1	3453	390	15	67		
							1-3/8 ⁽⁷⁾	34.9	9830	1111	43	191
							1-1/2 ⁽⁸⁾	38.1	14,328	1619	62	276
			30	762	1-3/4	44.5	20,073	2268	70	311		
			36	914	2	50.8	36,000 ⁽⁴⁾	4067	104	463		
		2-1/2	63.5	36,000 ⁽⁴⁾	4067	104	463					

1. Only the 1079/1032 combinations shown are available.
 2. Shaft diameter at packing box.
 3. Unless otherwise noted, torque is limited by 316 stainless steel shaft for 3 through 12-inch valves and S17400 stainless steel (17-4PH H1025) for 14 through 24-inch valves at 100°F (38°C). For other shaft materials, consult your Fisher Controls sales office or representative.

4. Maximum manual actuator output.
 5. 10-inch Class 150 Model B21A.
 6. 12-inch Class 150 Model B21A.
 7. 14-inch Class 150 Model B21A.
 8. 16-inch Class 150 Model B21A.

Table 3. Actuator Size Selection and Specifications for Square Shaft Valves (Model A11)⁽¹⁾

ACTUATOR SIZE	TYPE 1032 ACTUATOR SIZE	GEAR RATIO	HANDWHEEL DIAMETER		VALVE SHAFT SIZE ⁽²⁾		MAXIMUM ALLOWABLE TORQUE ⁽³⁾		WHEEL-RIM FORCE FOR MAXIMUM TORQUE	
			Inches	mm	Inches	mm	lbf•in	N•m	lbf	N
AAA	70 thru 280	24:1	8	203	13/32	10.3	790	89	33	147
			12	305	5/8	15.9	2400 ⁽⁴⁾	271	67	298
AA	425A	34:1	8	203	13/32	10.3	790	89	23	102
			12	305	5/8 7/8	15.9 22.2	2813 4800 ⁽⁴⁾	318 542	55 94	245 418
A	680A	40:1	24	610	5/8	15.9	2813	318	23	102
					7/8	22.2	6922	782	57	254
					1	25.4	8200 ⁽⁴⁾	926	68	302
B	1125	40:1	24	610	5/8	15.9	2813	318	19	85
					7/8	22.2	6922	782	48	214
					1	25.4	11,956	1351	83	369
					1-3/8	34.9	14,000 ⁽⁴⁾	1582	97	431
C	1370	54:1	24	610	5/8	15.9	2813	318	15	67
					7/8	22.2	6922	782	36	160
					1	25.4	11,956	1351	62	276
					1-3/8	34.9	24,000 ⁽⁴⁾	2712	99	440
D	2585 and 4580	64:1	24	610	5/8	15.9	2813	318	12	53
					7/8	22.2	6922	782	30	133
					1	25.4	11,956	1351	52	231
					1-3/8	34.9	31,157	3520	90	400
D	2585 and 4580	64:1	36	914	1-3/8	34.9	31,157	3520	90	400
					1-3/8	34.9	31,157	3520	90	400

1. Only the 1079/1032 combinations shown are available.

2. Shaft dimension at square connection.

3. Unless otherwise noted, torque is limited by S17400 stainless steel

(17-4PH H1025) shaft material at 100°F (38°C). For other shaft materials, consult your Fisher Controls sales office or representative.

4. Maximum manual actuator output.

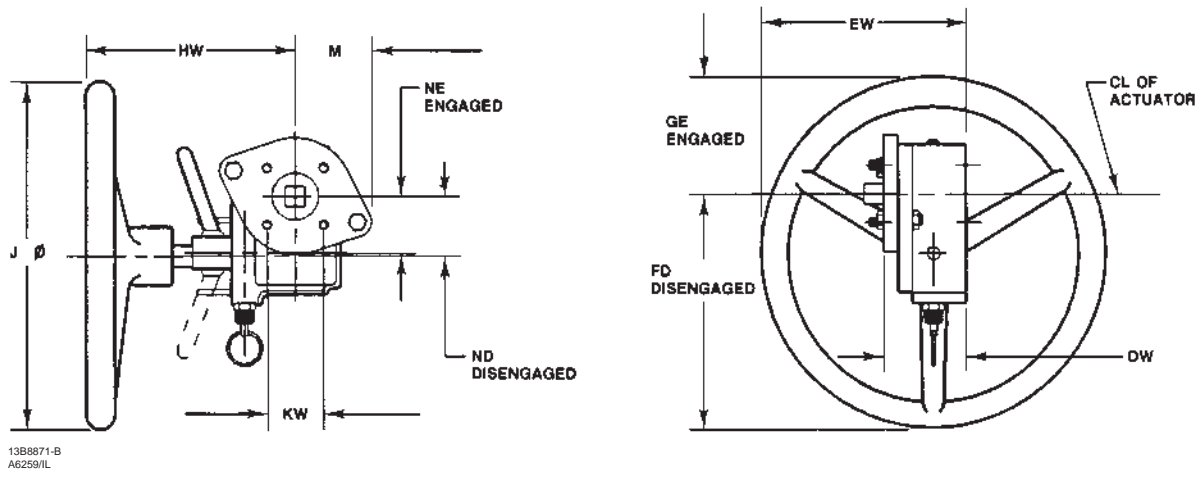


Figure 3. Dimensions

Dimensions

Type 1079 Actuator Size	Type 1032 Actuator Size	JØ	HW	M	DW	EW	FD	GE	NE	ND	KW Bolt Pattern
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
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

Ordering Information

When ordering, specify:

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

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