

Fisher® 657 Diaphragm Actuator Sizes 30-70 and 87

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Figure 1. Fisher 657 or 657-4 Actuator Mounted on an easy-e™ Valve



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Introduction

Scope of Manual

This instruction manual provides information on installation, adjustment, maintenance, and parts ordering for the Fisher 657 actuator in sizes 30 through 70 and size 87. The 657-4 actuator in sizes 70 and 87 is also covered. Refer to separate instruction manuals for information about the valve positioner and other accessories used with these actuators.

Do not install, operate, or maintain a 657 actuator without being fully trained and qualified in valve, actuator, and accessory installation, operation, and maintenance. **To avoid personal injury or property damage, it is important to carefully read, understand, and follow all the contents of this manual, including all safety cautions and warnings.** If you have any questions about these instructions, contact your Emerson Process Management sales office before proceeding.



Parts List

Note

Part numbers are shown for recommended spares only. For part numbers not shown, contact your Emerson Process Management sales office.

Actuator Assembly (figures 6, 7, or 8)

Key	Description	Part Number
1	Upper Diaphragm Casing	
2*	Diaphragm	
	Molded nitrile/nylon	
	Standard construction	
	Size 30	2E791902202
	Sizes 34 & 40	2E670002202
	Sizes 45 & 50	2E859502202
	Sizes 46 & 60	2E859702202
	Sizes 70 & 87	2N126902202
	With down travel stop (style 2)	
	Size 30	2E800002202
	Sizes 34 & 40	2E669902202
	Sizes 45 & 50	2E859602202
	Sizes 46 & 60	2E859802202
	Sizes 70 & 87	2N130902202
	Molded silicone/polyester	
	Standard Construction	
	Size 30	18B2713X082
	Sizes 34 & 40	18B2713X092
	Sizes 45 & 50	18B2713X102
	Sizes 46 & 60	18B2713X112
	Sizes 70 & 87	18B2713X122
3	Cap Screw	
4	Diaphragm Plate	
5	Lower Diaphragm Casing	
6	Actuator Spring	See following table
7	Travel Stop Cap Screw	
8	Cap Screw	
9	Yoke	
10	Actuator Stem	
11	Spring Seat	
12	Spring Adjuster	
13	Lower Diaphragm Plate	
14	Travel Indicator Disk, SST	
15	Stem Nut	
16	Stem Jam Nut	
17	Self-Tapping Screw	
18	Travel Indicator Scale	
19	Nameplate, SST	12B6508X0A2
20	Drive Screw	
22	Cap Screw	
23	Hex Nut	
24	Twin Speed Nut	
25	Washer	

Key	Description	Part Number
26	Stem Connector Assy, Steel Zn Pl	
	Sizes 30 & 34	18A1243X012
	Size 34 with side mtd handwheel	1F659225142
	Size 40	18A1668X012
	Size 40 with side mtd handwheel	1F659125142
	Sizes 45 & 46	18A1671X012
	Sizes 45 & 46 w/ side mtd handwheel (SST,Stl)	2F1678000A2
	Sizes 50 & 60	18A1672X012
	Sizes 50 & 60 w/ side mtd handwheel (SST,Stl)	2F1672000A2
	Size 70	18A1685X012
	with side mtd handwheel	18A1678X012
	with PMV positioner	18A1845X012
	657-4 with 4 in. max. travel (SST,Stl)	21A8254X012
	Size 87 (SST,Stl)	21A7469X012
	Size 87 with side mtd handwheel	18A1825X012
28	Screw	
29	Yoke Extension	
30	Indicator Adaptor	
31	Machine Screw	
32	Washer	
33	Pipe Bushing	
61	Nameplate	
73	Cap Screw	
238	Warning label	
241	Lubricant, Lithium Grease (not furnished with the actuator)	
249	Caution nameplate	

Top Mounted Handwheel (figure 9 or 10)

51	Handwheel	
54	Stop Nut	
133	Handwheel Stem, brass	
134	Washer	
135	Pusher Plate	
137	Casing-Mounted Travel Stop Locknut	
138*	O-Ring, nitrile	
	Sizes 30, 34, & 40	1D237506992
	Sizes 45, 46, 50, & 60	1B885506992
	Sizes 70 & 87	1C415706992
139*	O-Ring, nitrile	
	Sizes 30, 34, & 40	1D267306992
	Sizes 45, 46, 50, & 60	1D547106992
	Sizes 70 & 87	1D269106992
140	Groove Pin	
141	Cap Screw	
142	Body	
169	Grease Fitting	
174	Retaining Screw	
175	Thrust Bearing	
176	Thrust Race	
241	Lubricant, Lithium Grease (not furnished with actuator)	
242	Sealant, Thread-Locking (not furnished with handwheel)	
244	Lubricant, Anti-Seize (not furnished with handwheel)	
246	Spacer	
247	Cotter Pin	

*Recommended spare parts

Fisher® 667 Diaphragm Actuator Sizes 30-76 and 87

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Figure 1. Fisher 667 or 667-4 Actuator Mounted on easy-e™ Valve



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Introduction

Scope of Manual

This instruction manual provides information on installation, adjustment, maintenance, and parts ordering for the Fisher 667 actuator in sizes 30 through 76 and size 87. The 667-4 actuator in sizes 70 and 87 is also covered. Refer to separate instruction manuals for information about the valve positioner and other accessories used with these actuators.

Do not install, operate, or maintain a 667 actuator (see figure 1) without being fully trained and qualified in valve, actuator, and accessory installation, operation, and maintenance. **To avoid personal injury or property damage, it is important to carefully read, understand, and follow all the contents of this manual, including all safety cautions and warnings.** If you have any questions about these instructions, contact your Emerson Process Management sales office before proceeding.



Parts Kits

Actuator Repair Kits

Parts kit includes keys 8, 9, and 70. O-ring material is nitrile, and gasket material is composition.

Key	Description	Part Number
	Size 30	R667X000302
	Sizes 34 & 40	R667X000402
	Sizes 45 through 60	R667X000502
	Sizes 70 & 87	R667X000702
	Size 76	R667X000762

Side-Mounted Handwheels Retrofit Kits

Key	Description	Part Number
	Retrofit Kit includes parts to add a Side-Mounted Handwheel.	
	Size 34 Push-Down-To-Close	30A8778X0E2
	Size 34 Push-Down-To-Open	30A8778X0F2
	Size 40 Push-Down-To-Close	30A8778X0G2
	Size 40 Push-Down-To-Open	30A8778X0H2
	Size 45 & 46 Push-Down-To-Close	40A8779X0A2
	Size 45 & 46 Push-Down-To-Open	40A8779X0B2
	Size 50 & 60 Push-Down-To-Close	40A8779X0C2
	Size 50 & 60 Push-Down-To-Open	40A8779X0D2

Top-Mounted Handwheels Retrofit Kits

Retrofit Kit includes parts to add a Top-Mounted Handwheel. Kit number 1 includes the handwheel assembly only. Kit number 2 includes Kit number 1 and a new diaphragm case that is required to mount the handwheel assembly.

Key	Description	Part Number
	Kit 1	
	Size 30	30B3940X102
	Sizes 34	30B3940X022
	Size 40	30B3940X042
	Sizes 45 & 50	33B9224X012
	Sizes 46, 60, & 76	33B9224X012
	Sizes 70 & 87	CV8060X0012
	Kit 2	
	Size 30	30B3940X052
	Size 34	30B3940X062
	Size 40	30B3940X092
	Sizes 45 & 50	33B9224X022
	Sizes 46, 60, & 76	33B9224X032
	Sizes 70 & 87	CV8060X0022

Parts List

Note

Part numbers are shown for recommended spares only. For part numbers not shown, contact your Emerson Process Management sales office.

Actuator Assembly

Key	Description	Part Number	Qty
1	Upper Diaphragm Casing		
2	Travel Stop Spacer		
3*	Diaphragm		
	Molded Nitrile/Nylon		
	Size 30	2E800002202	1
	Sizes 34 & 40	2E669902202	1
	Sizes 45 & 50	2E859602202	1
	Sizes 46, 60 & 76	2E859802202	1
	Sizes 70 & 87	2N130902202	1
	Molded Silicone/Polyester		
	Size 30	18B2713X012	1
	Sizes 34 & 40	18B2713X022	1
	Sizes 45 & 50	18B2713X032	1
	Sizes 46, 60 & 76	18B2713X042	1
	Sizes 70 & 87	18B2713X052	1
4	Upper Diaphragm Plate		
7*	Bushing, Seal		
	Brass		
	Size 30	1E791214012	1
	Sizes 34 & 40	1E682814012	1
	Sizes 45 through 60	1E845714012	1
	Sizes 70, 76 & 87	1N1316X0052	1
	S41600 [416 stainless steel (SST)]		
	Size 30	1E7912X0012	1
	Sizes 34 & 40	1E6828X0012	1
	Sizes 45 through 60	1E8457X0012	1
	PTFE w/25% Glass		
	Sizes 70, 76 & 87	1N1316X0042	1
8*	O-Ring		
	Nitrile		
	Size 30	1E5914X0052	2
	Sizes 34 & 40	1D237506992	2
	Sizes 45 through 60	1C5622X0022	2
	Sizes 70, 76 & 87	1E736906992	2
	Fluorocarbon		
	Size 30	1E5914X0062	2
	Sizes 34 & 40	1D237506382	2
	Sizes 45 through 60	1N285406382	2
	Sizes 70, 76, & 87	1N1633X0012	2
9*	O-Ring		
	Nitrile		
	Sizes 30 through 40	1C415706992	1
	Sizes 45 through 87	1E845806992	1
	Fluorocarbon		
	Sizes 30 through 40	1C4157X0032	1
	Sizes 45 through 87	1E8458X0022	1
12	Screw, Cap, hex hd		
13	Hex hd Cap Screw		
14	Hex Nut		