

Fisher™ 785C Piston Actuators

The 785C is a piston actuator that provides accurate, high thrust output for a wide range of travel applications. This actuator can be single-acting or double-acting and spring-return with a selection of spring-fail options available or springless.

The 785C series piston actuator is designed for use with a variety of Fisher sliding-stem control valves. It is available in several configurations to cover a wide range of application requirements. Typical travels range from 16 to 610 mm (0.625 to 24 inches) and cylinder diameters range from 280 to 685 mm (11 to 27 inches). Thrust capabilities extend to 1600 kN (359,000 lbf) for double-acting springless and 442 kN (99,366 lbf) for spring-return.

The 785C can be used with the FIELDVUE™ DVC6200 digital valve controller for throttling applications, or with switching valves for on/off control. This actuator can also be fitted with volume boosters for fast stroking requirements.

Features

- **High Thrust Capability**—Thrusts of up to 1600 kN (359,000 lbf) for double-acting springless and 442 kN (99,366 lbf) for spring-return can be produced. Consult your [Emerson sales office](#) for other thrust capability.
- **Broad Application Coverage**—Standard constructions offer travels up to 610 mm (24 in) and cylinder diameters from 280mm (11 in) to 685 mm (27 in). Consult your Emerson sales office for travels greater than 610 mm (24 in).
- **Single-Acting Spring Return Construction**—Allows for full ANSI/FCI 70-2 CL V shutoff and higher fail mode thrust upon loss of air without use of a volume tank.

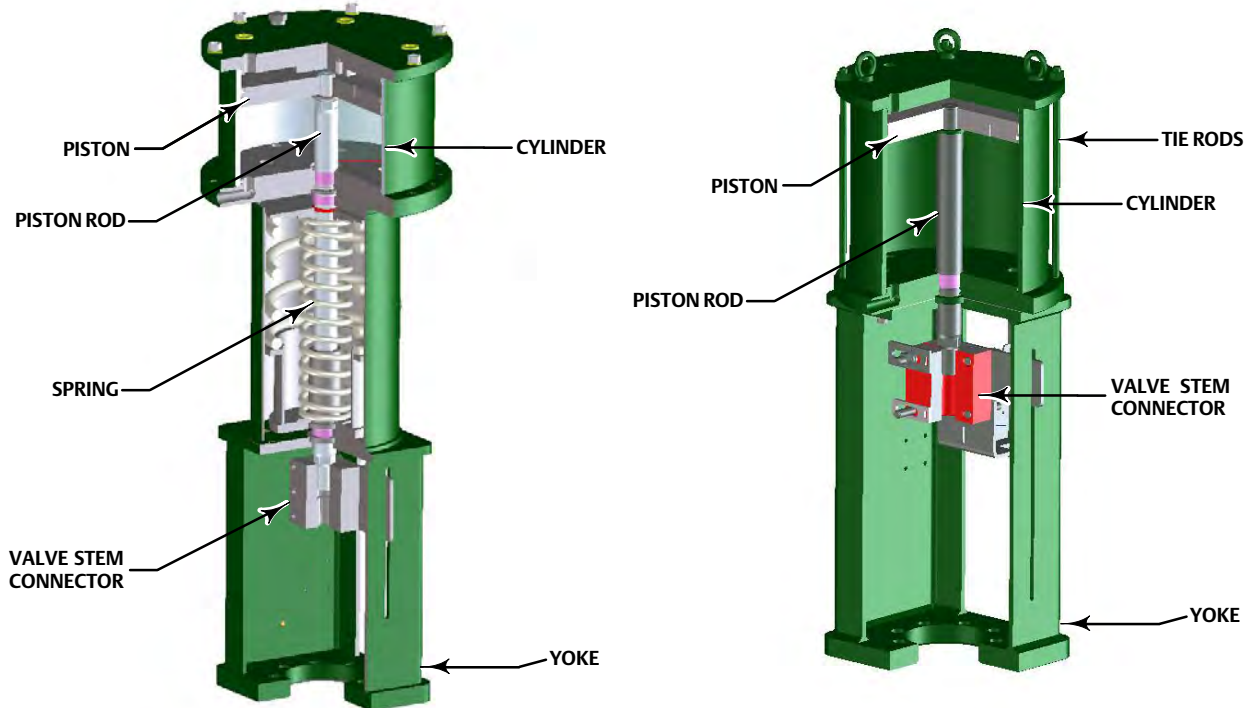


785C SINGLE-ACTING SPRING RETURN
WITH HANDPUMP

X1851

- **Double-Acting Spring Return Construction**—Reduces actuator cylinder size comparing to Single-Acting Spring Return, while achieving precise and fast control with higher actuator stiffness.
- **Double-Acting Springless Construction**—Pressure on both sides of the piston results in stiff, precise positioning.
- **SIL3 Capable**—Optional SIL certification to IEC 61508 standard for Safety Instrumented System (SIS) applications.
- **Long Operating Life**—Low friction piston seals and support bushing with both polished nickel plated cylinder and hard chromium plated piston provide minimum friction, great corrosion resistance and long cycle life.
- **Energy Efficiency**—Designed and tested to maintain great sealing after high cycles, thereby minimizing compressed air consumption.

Figure 1. Fisher 785C Actuator



- **Wide Temperature Range**—Standard constructions offer a temperature range of -20 to 100°C (-4 to 212°F), however lower and higher temperatures are possible. Low temperature constructions offer ranges of -40 to 100°C (-40 to 212°F) or -60 to 100°C (-76 to 212°F) and high temperature constructions offer ranges of -20 to 200°C (-4 to 392°F).
- **Mechanical Fail Mode**—Depending on construction, an internal bias spring will force the piston rod to retract or extend upon a loss of supply pressure.
- **Manual Override**—An optional top-mounted handwheel or side-mounted handpump is capable of extending or retracting the actuator manually.

- **Actuation System Integration**—An integrated platform for state-of-the art digital valve controller, discrete valve controller, pneumatic accessories and other instrumentation sensors.
- **High Performance**—An optional high performance yoke and mounting kit is available for travel above 203 mm (8 inch) in anti-surge, high vibration, and other severe service applications requiring precise valve control.

Specifications

Operating Pressure⁽¹⁾

Minimum: 2.7 bar (40 psig)
Maximum Allowable: 10.3 bar (150 psig)

Consult your [Emerson sales office](#) for supply pressures outside the range listed above

Travel⁽²⁾

16 mm (0.625 inch) through 610 mm (24 inch)
See table 1 and 3

Thrust Capabilities

See table 2, 5, and 6

Stroking Speeds

Varies with actuator size, spring, travel, and supply pressure. When using a manual handpump and the stroking speed is critical, consult your Emerson sales office for details.

Piston Diameter and Area⁽²⁾

Available diameters range from 280 to 685 mm (11 to 27 inches).

See table 1, 3, and 4

For additional sizes, contact your Emerson sales office.

Operative Temperature Limits⁽³⁾

Standard: -20 to 100°C (-4 to 212°F)

Low Temperature Options:

-40 to 100°C (-40 to 212°F) or
-60 to 100°C (-76 to 212°F)

High Temperature Option:

-20 to 200°C (-4 to 392°F)

Yoke Boss and Valve Stem Diameter

Standard: ■ 90 mm (3-9/16 inch) yoke boss with 19 mm (3/4 inch) stem ■ 127 mm (5 inch) yoke boss with 25.4 mm (1 inch) stem ■ 127 mm (5H) yoke boss with 32 mm (1-1/4 inch) stem ■ 178 mm (7 inch) yoke boss with 51 mm (2 inch) stem

High Performance: ■ 127 mm (5H) yoke boss with 32 mm (1-1/4 inch) stem ■ 178 mm (7 inch) yoke boss with 51 mm (2 inch) stem

Instrument Mounting

Standard mounting kits are available for use with FIELDVUE DVC6200 Series digital valve controllers up to 610 mm (24 inch) travel. High performance mounting kits are available for travel above 203 mm (8 inch). See figure 2 for example.

Pressure Connections

Standard: 3/4 NPT
Optional: 1 and 1-1/4 NPT

See figure 8 and table 7

Construction Materials⁽⁴⁾

Part	Material
Yoke	Carbon Steel
Piston	
Cylinder	
Upper/Lower Heads	
Tie Rod	Carbon Steel or Stainless Steel
Piston Rod	Stainless Steel
Stem Connector	Carbon Steel or Stainless Steel
Nameplate and Travel Scale	Stainless Steel

Dimensions

See figure 9, 10, 11, 12, 13, and 14
and table 8, 9, 10, 11, 12, 13, and 14

Weights

See table 15, 16, 17, and 18

Options

- Top mounted handwheel
- Side mounted handpump
- Pneumatic fail mode via Fisher 377 trip valve
- Volume Boosters

Optional Certifications⁽⁵⁾

- Pressure Equipment Directive (PED) 2014/68/EU and Machinery Directive 2006/42/EC
- ATEX Group II Category 2 Gas and Dust
- Customs Union Technical Regulations (CUTR) 010/2011 and 012/2011
- Safety Instrumented System, SIL 3 Capable
- Inspection Documents EN 10204 3.1 Certificate

1. The pressure/temperature limits in this bulletin and any other applicable standard or code should not be exceeded.
2. Consult your Emerson sales office for longer travels or larger cylinder diameters. The Fisher 585C family of actuators can be used for smaller travels or cylinder diameters.
3. Standard temperature -20 to 100°C (-4 to 212°F) and -40 to 100°C (-40 to 212°F) are PED 2014/68/EU and 2006/42/EC compliant. The low ambient temperature option, -60 to 100°C (-76 to 212°F) is not PED compliant. The high temperature option, if used in conjunction with ATEX, is limited to 135°C (275°F).
4. Full stainless steel constructions are available upon request.
5. Refer to the product nameplates to determine which certifications each actuator construction possesses

Principle of Operation

785C piston actuators utilize a pneumatically controlled piston that moves inside of a cylinder to generate thrust. A seal contained on the circumference of the piston provides a seal between the piston and the cylinder, preventing supply pressure leakage.

785C single-acting or double-acting spring-return piston actuators utilize a spring below the piston (outside the pressurized chamber) that will drive the piston rod upon a loss of supply pressure. This fail action will result in forcing an attached control valve to either fail-open or fail-closed (see figure 3 and 4 examples). The fail action of 785C double-acting springless piston actuators relies on pneumatic systems such as the Fisher 377 trip valve (see figure 5 and 6 examples).

From an equilibrium state, the actuator operates by reacting to a force unbalance that is created by a change of supply pressure on one side of the piston for single-acting, or a change of differential pressure between each side of the piston for double-acting. This moves the piston up or down, and results in a repositioning of the attached control valve. Travel can be adjusted using travel limits within a valve positioner, which limit the travel range of the actuator. A hard travel stop option is also available, consult your [Emerson sales office](#) for details. The optional manual override does not have the ability to act as a hard travel stop.

An optional manual override (top mounted handwheel or side mounted handpump) is capable of extending or retracting the actuator manually and can be engaged at any position from full open to full close. The top-mounted handwheel utilizes an engagement lever that couples the handwheel and piston rod. The handpump has a hydraulic cylinder attached to the piston rod. This enables the handpump to operate the actuator manually unless the handpump is set to bypass position.

Instrument Selection

An excellent selection of sensitive and accurate instruments are available for 785C piston actuators. These include FIELDVUE DVC6200 digital valve controllers, as well as trip valves and volume boosters.

Integrated mounting interfaces are offered for DVC6200 digital valve controller, Topworx™ DXP Valve Controller, and Topworx 70 Series GO Switch.

DVC6200 Digital Valve Controller

FIELDVUE DVC6200 digital valve controllers are communicating, microprocessor-based current-to-pneumatic instruments. In addition to the traditional function of converting an electric signal to a pressure signal, DVC6200 digital valve controllers, using HART®, FOUNDATION™ Fieldbus or PROFIBUS communications protocol, give easy access to information critical to process operation.

For additional information, refer to Fisher bulletin 62.1:DVC6200 ([D103415X012](#)), 62.1:DVC6200p ([D103564X012](#)) or 62.1:DVC6200f ([D103399X012](#)), available at [Fisher.com](#) or from your Emerson sales office.

Installation

The 785C spring return actuator may be installed in single-acting or double-acting applications (see figure 3 and 4 examples). A 785C spring return actuator would not be switchable between single-acting or double-acting unless actuator sizing for the application has been verified. The 785C springless actuator will be installed in double-acting applications (see figure 5 and 6 examples).

The actuator may be installed in any orientation, but normal installation is with the actuator vertical above the valve.

If using a manual override in double-acting application, a bypass valve should be furnished, allowing balance the pressure within both sides of the piston before operating the manual override.

If using a manual handpump, the handpump must be installed vertical above the valve, see figure 7.

If the supply source is capable of exceeding the maximum actuator operating pressure or instrument supply pressure, appropriate steps must be taken during installation to protect the instrument and all connected equipment against overpressure.

Figure 2. Fisher 785C Standard and High Performance DVC6200 Mounting Kits

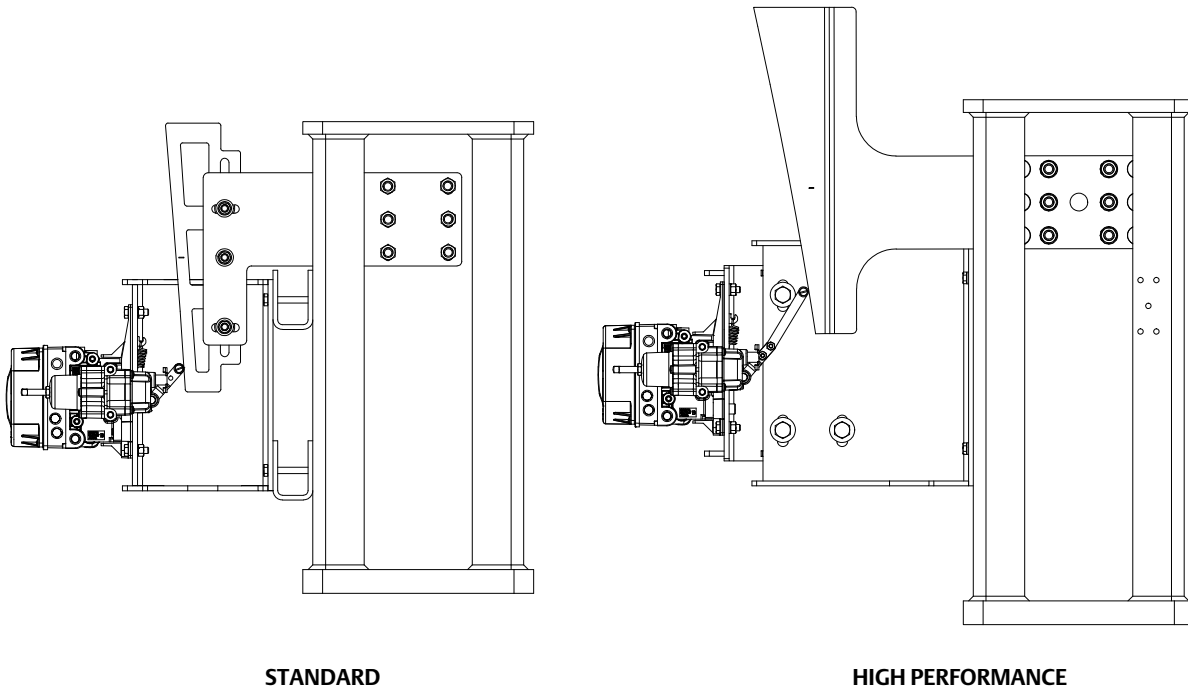


Figure 3. Fisher 785C Single-Acting Spring Return Installation Example

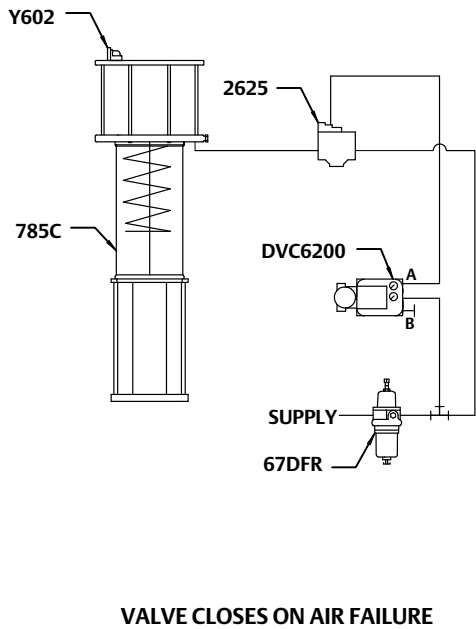
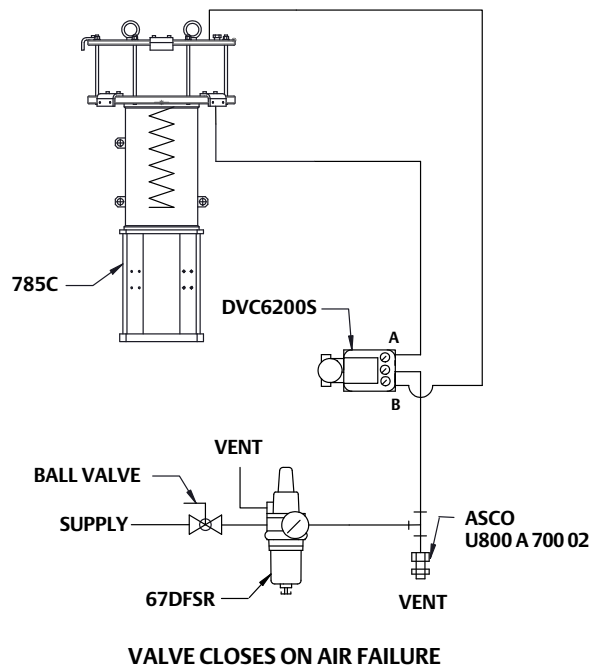


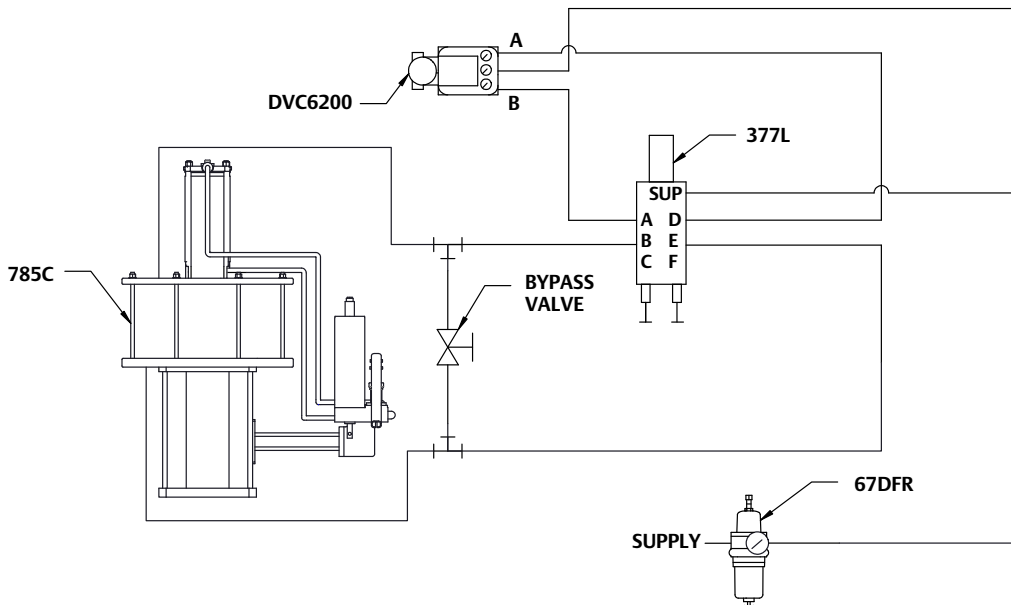
Figure 4. Fisher 785C Double-Acting Spring Return Installation Example



Note: Vent is required on actuator non-pressurized side for single-acting, Y602 for example.

Note: Ball valve and ASCO vent are optional. A different valve positioner and regulator may be used instead of the DVC6200S and 67DFSR, depending on the application.

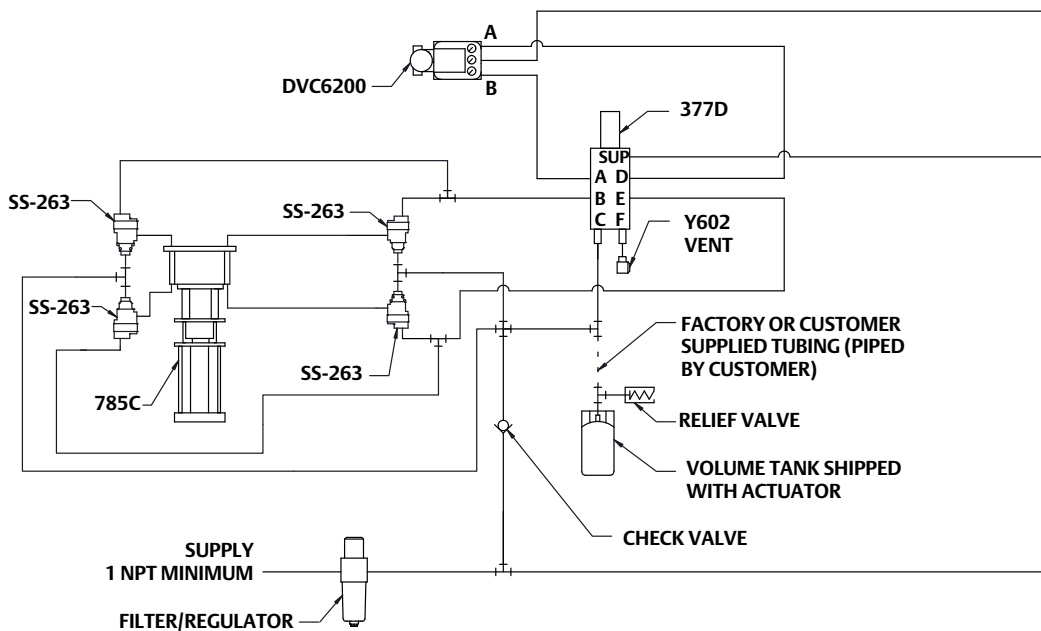
Figure 5. Fisher 785C Double-Acting Springless with Manual Override Installation Example



**VALVE PLUG LOCK IN LAST POSITION ON AIR FAILURE
ACTUATOR STEM RETRACTS WHEN THE POSITIONER INPUT SIGNAL INCREASES**

Note: A bypass valve is required for all double-acting (springless or spring return) actuators with manual override.

Figure 6. Fisher 785C Double-Acting Springless Installation Example with Boosters and Trip Valve



**VALVE CLOSES ON AIR FAILURE
ACTUATOR STEM RETRACTS WHEN INPUT SIGNAL INCREASES**

Note: Minimum supply size varies depending on application.

Figure 7. Handpump Orientation - Style 1

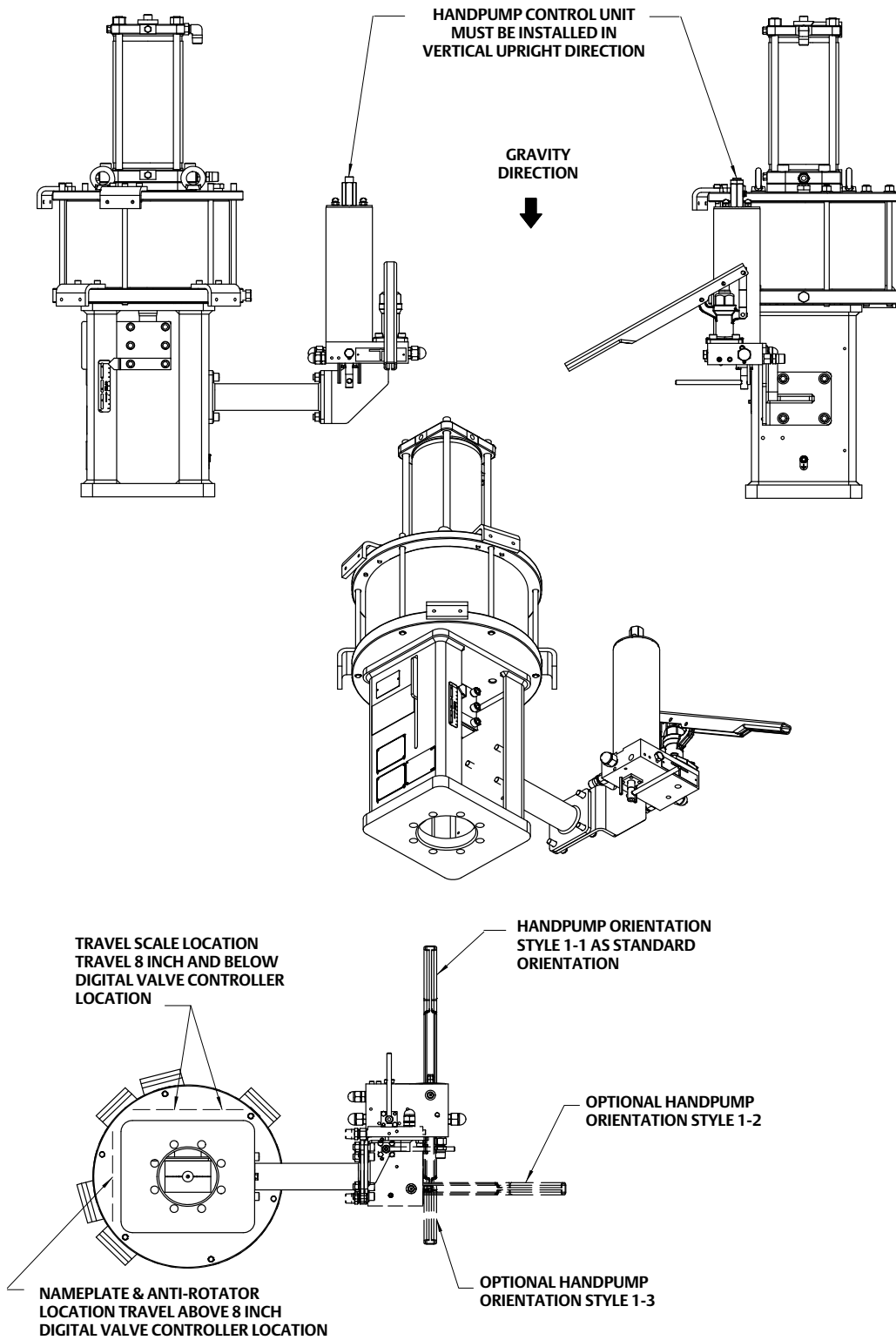


Figure 7. Handpump Orientation - Style 2 (continued)

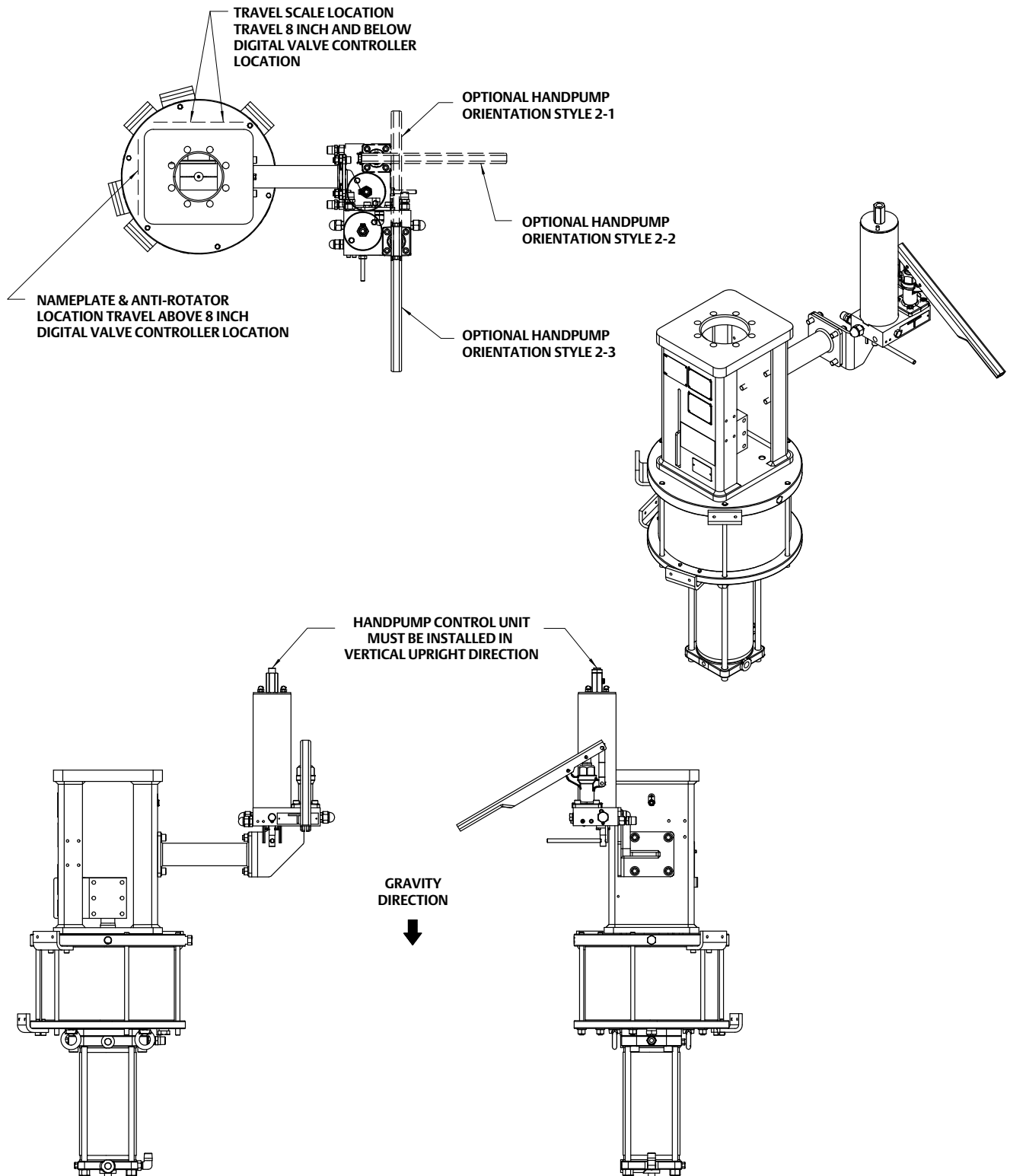


Figure 7. Handpump Orientation - Style 3 (continued)

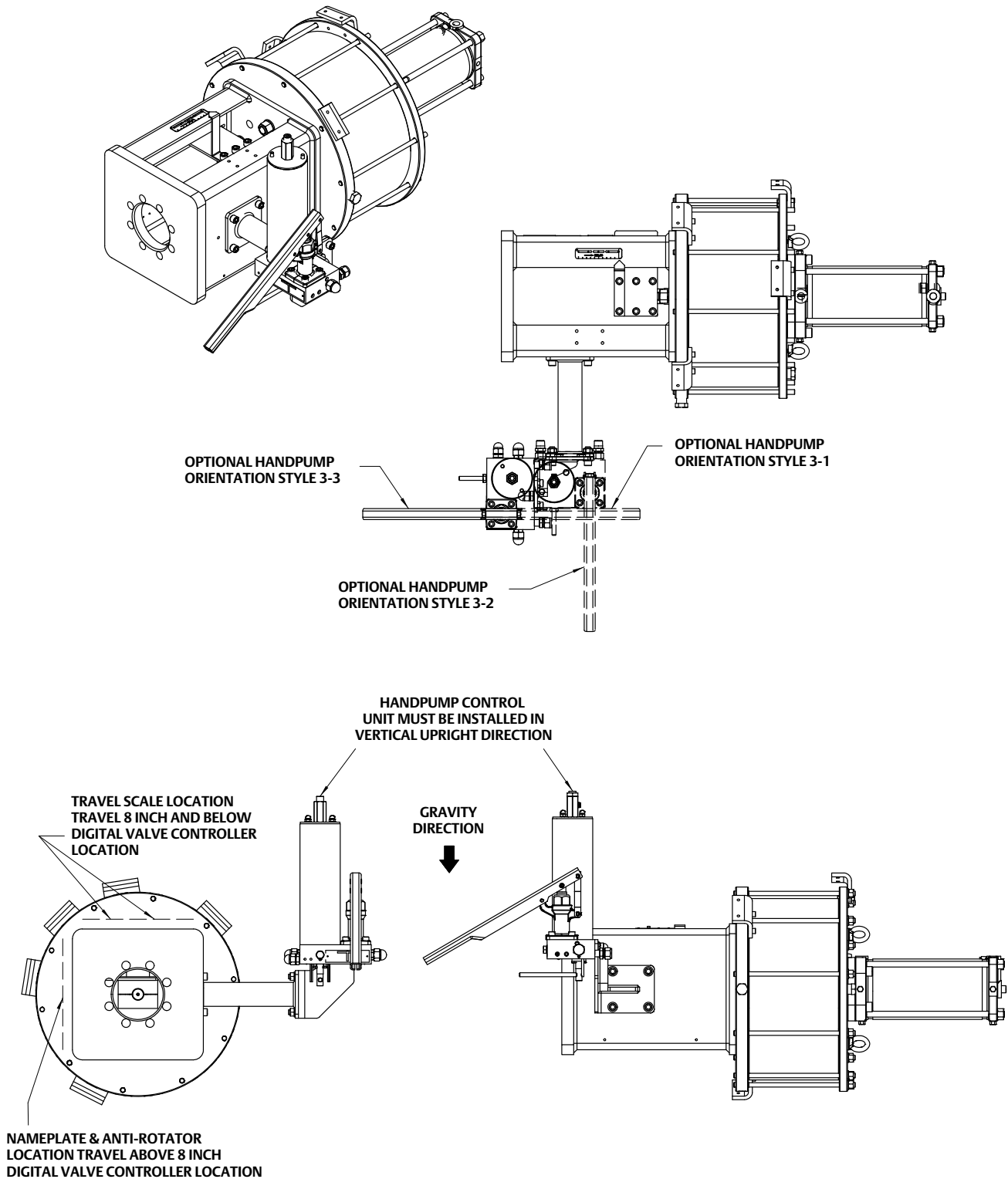


Figure 7. Handpump Orientation - Style 4 (continued)

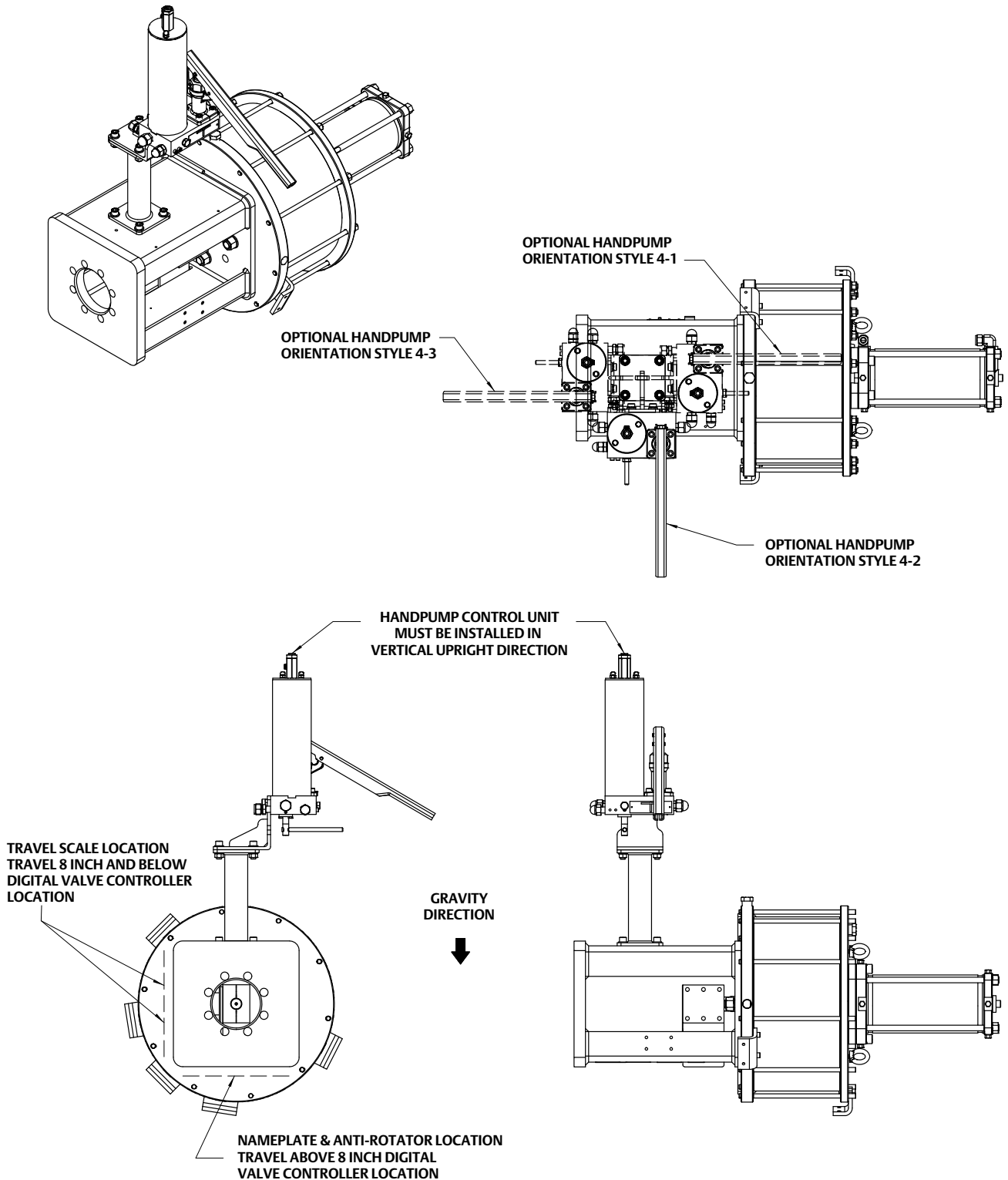


Figure 7. Handpump Orientation - Style 5 (continued)

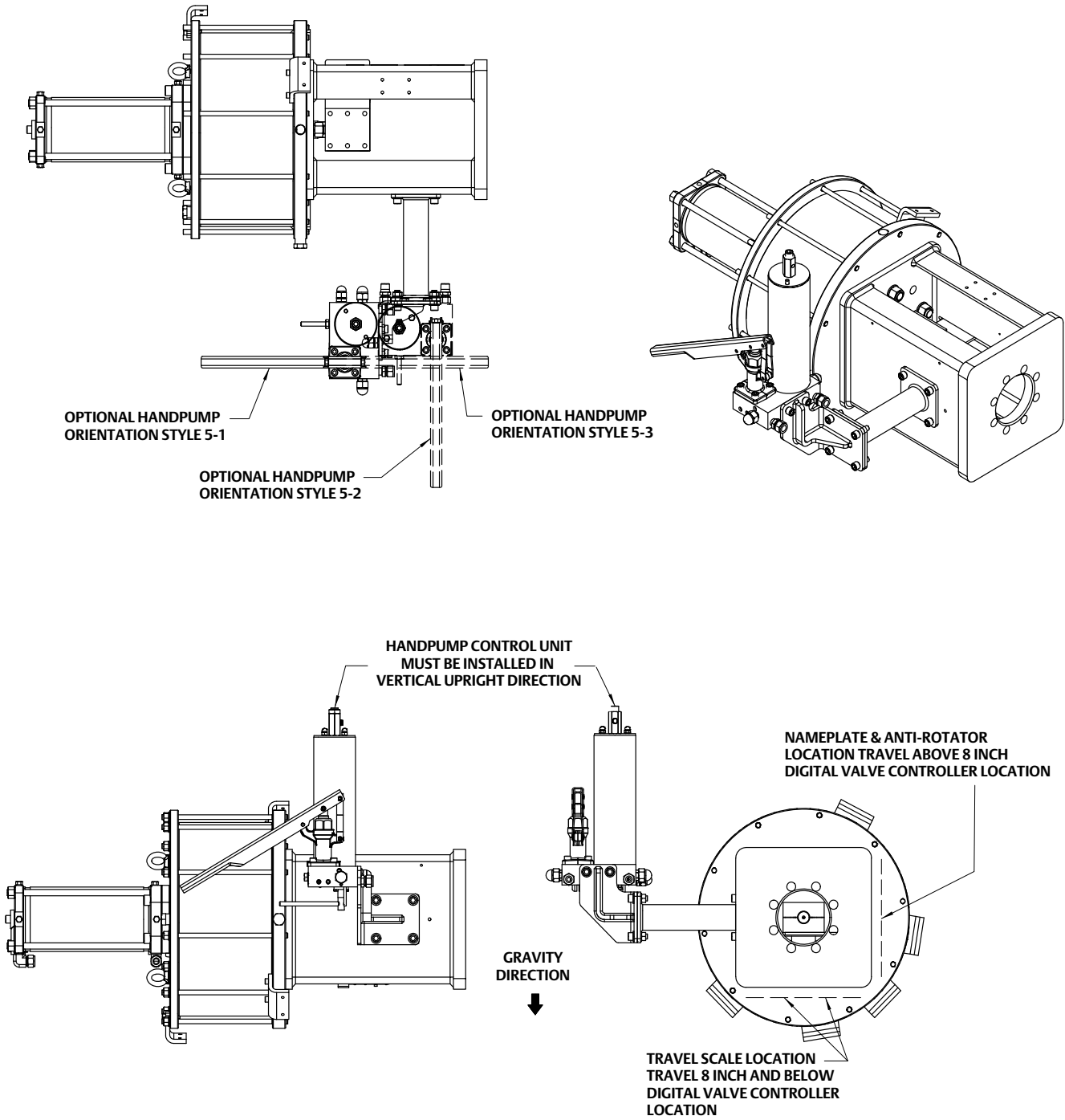


Table 1. 785C Double-Acting Springless Standard Constructions⁽¹⁾

ACTUATOR SIZE	PISTON AREA				VALVE STEM CONNECTOR SIZE		YOKE BOSS DIAMETER		HIGH PERFORMANCE YOKE ⁽³⁾	MAX TRAVEL	
	Without Manual Override		With Manual Override ⁽²⁾		mm	Inch	mm	Inch		mm	Inch
	cm ²	Inch ²	cm ²	Inch ²							
280	616	95	616	95	19	3/4	90	3-9/16	---	203	8
					25	1	127	5	---		
					32	1-1/4	127	5H	X		
335	881	137	881	137	19	3/4	90	3-9/16	---	203	8
					25	1	127	5	---		
					32	1-1/4	127	5H	X		
385	1164	180	1164	180	19	3/4	90	3-9/16	---	203	8
					25	1	127	5	---		
					32	1-1/4	127	5H	X		
435	1486	230	1474	228	25	1	127	5	---	203	8
					32	1-1/4	127	5H	X		
					51	2	178	7	X		
485	1847	286	1828	283	25	1	127	5	---	203	8
					32	1-1/4	127	5H	X		
					51	2	178	7	X		
535	2248	348	2228	345	25	1	127	5	---	203	8
					32	1-1/4	127	5H	X		
					51	2	178	7	X		
585	2688	417	2660	412	32	1-1/4	127	5H	X	610	24
					51	2	178	7	X		
635	3167	491	3139	487	32	1-1/4	127	5H	X	610	24
					51	2	178	7	X		
685	3685	571	3657	567	32	1-1/4	127	5H	X	610	24
					51	2	178	7	X		

1. Consult your [Emerson sales office](#) for additional sizes.
 2. Actuator size 280-385 are available with a top mounted handwheel. Size 435-685 are available with a side-mounted manual handpump.
 3. Required for ODV Packages with travel greater than 8 inches. Optional for use in high vibration or fast stroke package. When ordering a high performance yoke boss you will need to order a high performance mounting kit as well.
 X – Availability for product

Table 2. 785C Double-Acting Springless Available Thrust

ACTUATOR SIZE	MAXIMUM ALLOWABLE CYLINDER PRESSURE		MAXIMUM ALLOWABLE THRUST			
	barg	psig	Without Manual Override		With Manual Override ⁽¹⁾	
			N	lb	N	lb
280	10.3	150	63682	14316	32635	7337
335			91157	20493	46715	10502
385			120399	27067	61700	13871
435			153702	34554	78726	17698
485			191066	42953	132291	29740
535			232492	52266	132291	29740
585			277979	62492	172788	38844
635			327527	73631	172788	38844
685			381137	85683	238555	53629

1. Actuator size 280-385 are available with a top mounted handwheel. Size 435-685 are available with a side-mounted handpump.

Table 3. 785C Single-Acting Spring Return Standard Constructions⁽¹⁾

ACTUATOR SIZE	PISTON AREA								VALVE STEM CONNECTOR SIZE		YOKE BOSS DIAMETER		MAX TRAVEL	
	Without Manual Override				With Manual Override ⁽²⁾									
	Spring Extends		Spring Retracts		Spring Extends		Spring Retracts		mm	Inch	mm	Inch	mm	Inch
	cm ²	Inch ²	cm ²	Inch ²	cm ²	Inch ²	cm ²	Inch ²						
335	881.4	136.6	868.9	134.7	881.4	136.6	868.9	134.7	19	3/4	90	3-9/16	203	8
									25	1	127	5		
									32	1-1/4	127	5H		
385	1164	180.4	1152	178.5	1164	180.4	1152	178.5	19	3/4	90	3-9/16	203	8
									25	1	127	5		
									32	1-1/4	127	5H	318	12
									51	2	178	7		
435	1486	230.4	1474	228.4	1474	228.4	1474	228.4	25	1	127	5	203	8
									32	1-1/4	127	5H	420	16
									51	2	178	7		
485	1847	286.4	1835	284.4	1828	283.3	1835	284.4	25	1	127	5	203	8
									32	1-1/4	127	5H	420	16
									51	2	178	7		
535	2248	348.4	2235	346.5	2228	345.4	2235	346.5	25	1	127	5	203	8
									32	1-1/4	127	5H	420	16
									51	2	178	7		
585	2688	416.6	2660	412.2	2660	412.2	2660	412.2	32	1-1/4	127	5H	420	16
									51	2	178	7		
635	3167	490.9	3139	486.5	3139	486.5	3139	486.5	32	1-1/4	127	5H	420	16
									51	2	178	7		
685	3685	571.2	3657	566.8	3657	566.8	3657	566.8	32	1-1/4	127	5H	420	16
									51	2	178	7		

1. Consult your [Emerson sales office](#) for additional sizes.

2. Actuator size 335-385 are available with a top mounted handwheel. Size 435-685 are available with a side-mounted manual handpump.

Table 4. 785C Double-Acting Spring Return Standard Constructions⁽¹⁾

ACTUATOR SIZE	PISTON AREA								VALVE STEM CONNECTOR SIZE		YOKE BOSS DIAMETER		MAX TRAVEL	
	Without Manual Override				With Manual Override ⁽²⁾									
	Rod Extends		Rod Retracts		Rod Extends		Rod Retracts							
	cm ²	Inch ²	cm ²	Inch ²	cm ²	Inch ²	cm ²	Inch ²	mm	Inch	mm	Inch	mm	Inch
280	615.8	95.4	603.2	93.5	615.8	95.4	603.2	93.5	19	3/4	90	3-9/16	203	8
									25	1	127	5		
									32	1-1/4	127	5H		
335	881.4	136.6	868.9	134.7	881.4	136.6	868.9	134.7	19	3/4	90	3-9/16	203	8
									25	1	127	5		
									32	1-1/4	127	5H		
385	1164.16	180.4	1152	178.5	1164	180.4	1152	178.5	19	3/4	90	3-9/16	203	8
									25	1	127	5		
									32	1-1/4	127	5H	318	12
									51	2	178	7		
435	1486.17	230.4	1474	228.4	1474	228.4	1474	228.4	25	1	127	5	203	8
									32	1-1/4	127	5H		
									51	2	178	7	420	16
485	1847.45	286.4	1835	284.4	1828	283.3	1835	284.4	25	1	127	5	203	16
									32	1-1/4	127	5H		
									51	2	178	7	420	16
535	2248.01	348.4	2235	346.5	2228	345.4	2235	346.5	25	1	127	5	203	16
									32	1-1/4	127	5H		
									51	2	178	7	420	16
585	2687.83	416.6	2660	412.2	2660	412.2	2660	412.2	32	1-1/4	127	5H	420	16
									51	2	178	7		
635	3166.92	490.9	3139	486.5	3139	486.5	3139	486.5	32	1-1/4	127	5H	420	16
									51	2	178	7		
685	3685.28	571.2	3657	566.8	3657	566.8	3657	566.8	32	1-1/4	127	5H	420	16
									51	2	178	7		

1. Consult your [Emerson sales office](#) for additional sizes.
2. Actuator size 280-385 are available with a top mounted handwheel. Size 435-685 are available with a side-mounted manual handpump.

Table 5. Handwheel Specification

ACTUATOR SIZE	OUTPUT THRUST		TURNS PER mm OF TRAVEL	TURNS PER INCH OF TRAVEL	MAXIMUM RIM FORCE REQUIRED	
	N	lbs			N	lbs
280	32635	7337	0.2	4.2	437	98
335	46715	10502	0.2	4.2	435	98
385	61700	13871	0.2	4.2	489	110

Table 6. Handpump Specification

ACTUATOR SIZE	HYDRAULIC CYLINDER		OUTPUT THRUST	
	mm	Inch	N	lbf
435	135	5.3	78726	17698
485	175	6.9	132291	29740
535	175	6.9	132291	29740
585	200	7.9	172788	38844
635	200	7.9	172788	38844
685	235	9.3	238555	53629

Table 7. Pressure Connections

ACTUATOR SIZE	STANDARD, NPT		OPTION 1, NPT		OPTION 2, NPT		PORT TYPE		QUANTITY	
	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
280	3/4	3/4	-	-	1 1/4	1 1/4	Face tapped ⁽²⁾⁽³⁾	Side tapped	3 ⁽¹⁾	3 ⁽¹⁾
335	3/4	3/4	1	3/4	1 1/4	1 1/4	Face tapped ⁽²⁾⁽³⁾	Side tapped		
385	3/4	3/4	1 1/4	3/4	1 1/4	1 1/4	Face tapped	Side tapped		
435	3/4	3/4	1 1/4	3/4	1 1/4	1 1/4	Face tapped	Side tapped		
485 to 685	3/4	3/4	1 1/4	1 1/4	NA	NA	Face tapped	Side tapped		

1. Supplied with two metal plugs as standard in case of unused pneumatic port.
 2. MHW construction is side tapped.
 3. Option 2 is side tapped.

Figure 8. Position of Pressure Connections

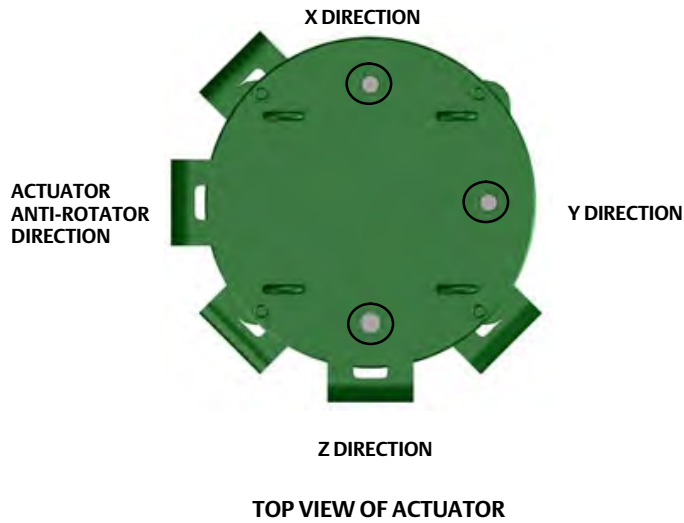
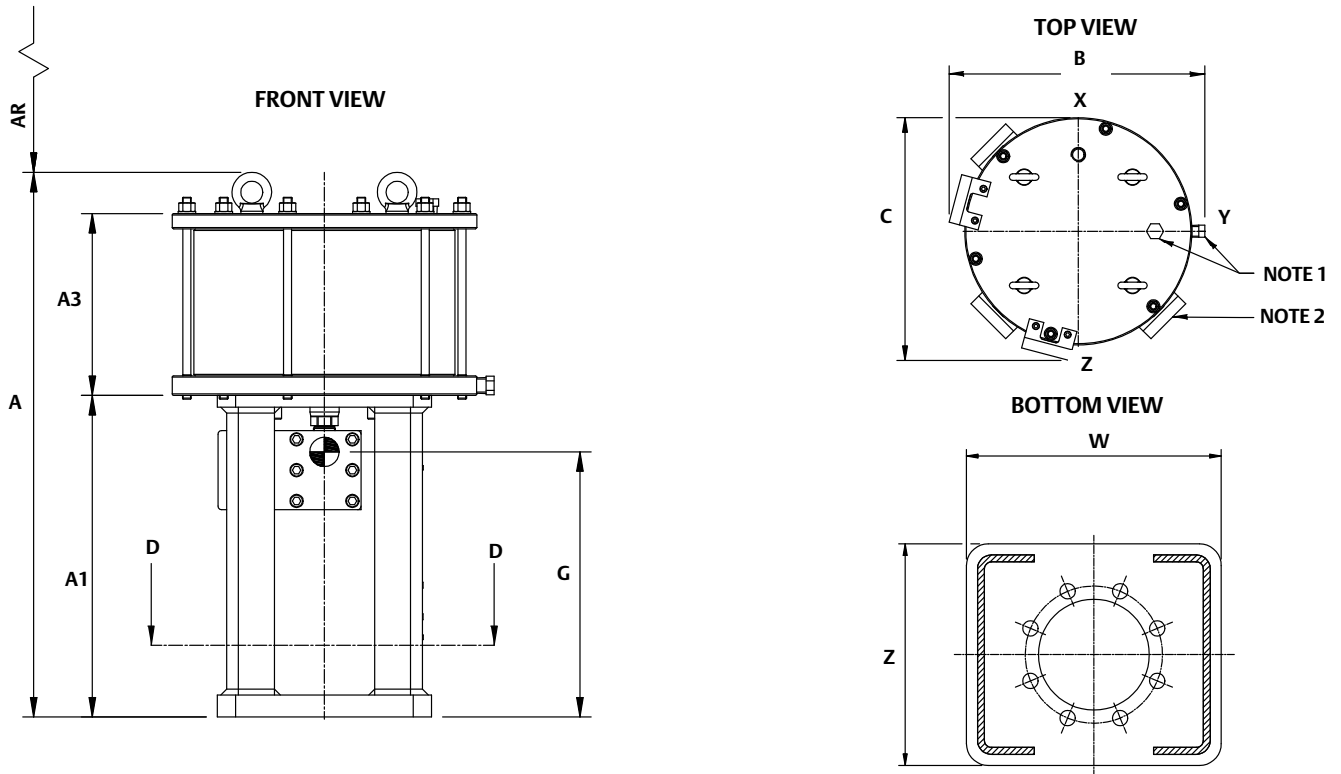


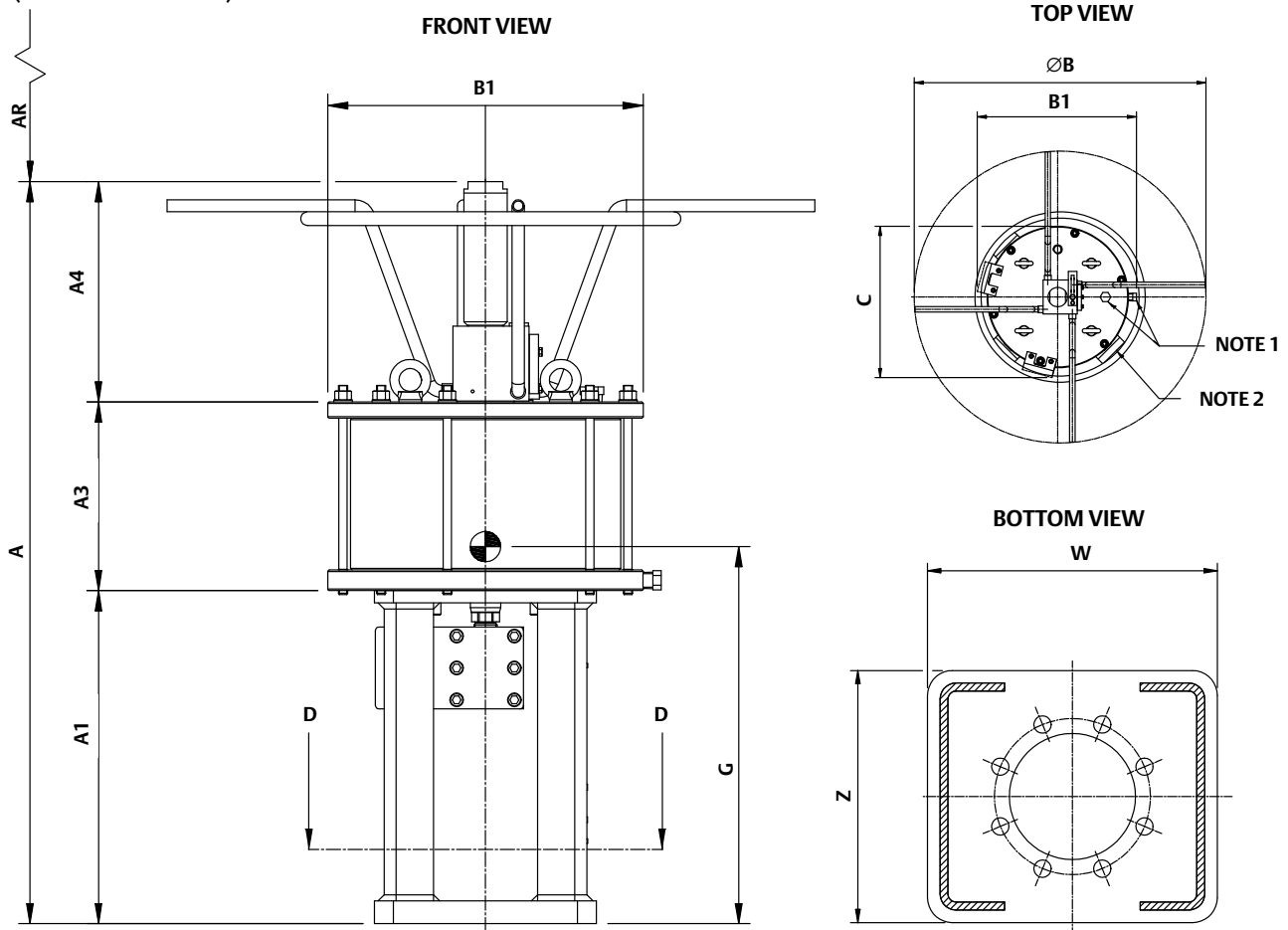
Figure 9. Fisher 785C Double-Acting Springless Piston Actuator (see table 8 and 10)



Notes:

1. Two pneumatic ports on top and bottom flanges. One plug supplied as standard for both pneumatic port on top and bottom flange.
 2. Two brackets for pneumatic device support on top flange. Three brackets for pneumatic device support on bottom flange.
- ⊕ Estimated position of center of gravity.

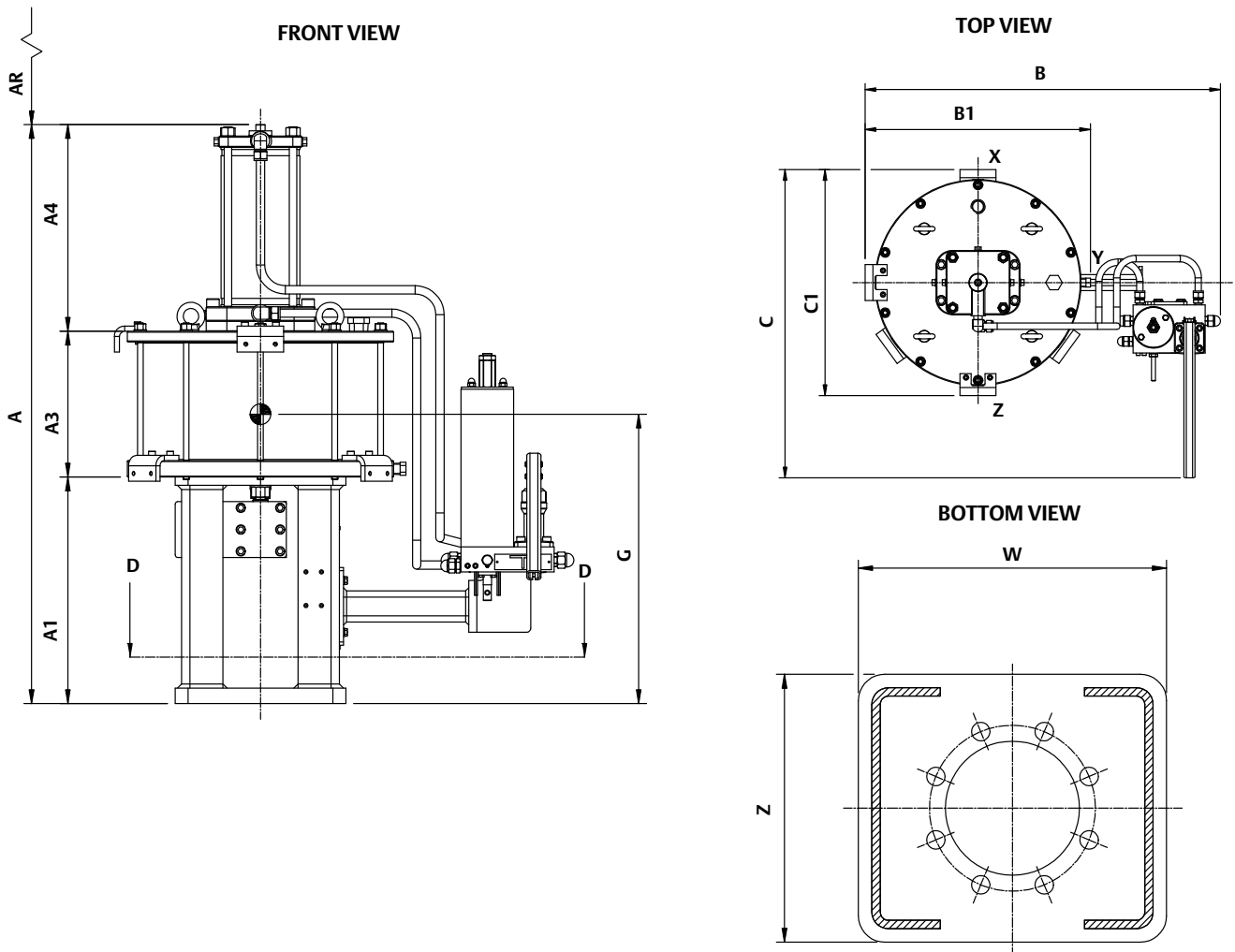
Figure 10. Fisher 785C Double-Acting Springless Piston Actuator with Manual Hand Wheel (MHW)
(see table 9 and 10)



Notes:

1. Two pneumatic ports on top and bottom flanges. One plug supplied as standard for both pneumatic port on top and bottom flange.
 2. Two brackets for pneumatic device support on top flange. Three brackets for pneumatic device support on bottom flange.
- ☉ Estimated position of center of gravity.

Figure 11. Fisher 785C Double-Acting Springless Piston Actuator with Manual Hand Pump (MHP) (see table 9 and 10)



⦿ Estimated position of center of gravity.

Table 8. 785C Double-Acting Springless Dimensions A, A1, A3, G, B, and C⁽¹⁾

ACTUATOR SIZE	YOKE BOSS, Inch	MAXIMUM TRAVEL		A		A1		A3		G		B		C	
		mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
280	3-9/16	115	4	717	28.2	416	16.4	245	9.6	359	14.1	419	16.5	419	16.5
		216	8	926	36.5	524	20.6	346	13.6	463	18.2	419	16.5	419	16.5
	5 or 5H	115	4	739	29.1	438	17.2	245	9.6	370	14.5	419	16.5	419	16.5
		216	8	926	36.5	524	20.6	346	13.6	463	18.2	419	16.5	419	16.5
		318	12	1168	46.0	664	26.1	448	17.6	584	23.0	419	16.5	419	16.5
		420	16	1372	54.0	766	30.2	550	21.7	686	27.0	419	16.5	419	16.5
		521	20	1574	62.0	867	34.1	651	25.6	787	31.0	419	16.5	419	16.5
		623	24	1778	70.0	969	38.1	753	29.6	889	35.0	419	16.5	419	16.5
335	3-9/16	115	4	720	28.3	416	16.4	248	9.8	360	14.2	472	18.6	472	18.6
		216	8	929	36.6	524	20.6	349	13.7	465	18.3	472	18.6	472	18.6
	5 or 5H	115	4	742	29.2	438	17.2	248	9.8	371	14.6	472	18.6	472	18.6
		216	8	929	36.6	524	20.6	349	13.7	465	18.3	472	18.6	472	18.6
		318	12	1171	46.1	664	26.1	451	17.8	586	23.1	472	18.6	472	18.6
		420	16	1375	54.1	766	30.2	553	21.8	688	27.1	472	18.6	472	18.6
		521	20	1577	62.1	867	34.1	654	25.7	789	31.0	472	18.6	472	18.6
		623	24	1781	70.1	969	38.1	756	29.8	891	35.1	472	18.6	472	18.6
385	3-9/16	115	4	720	28.3	416	16.4	248	9.8	360	14.2	519	20.4	519	20.4
		216	8	929	36.6	524	20.6	349	13.7	465	18.3	519	20.4	519	20.4
	5 or 5H	115	4	742	29.2	438	17.2	248	9.8	371	14.6	519	20.4	519	20.4
		216	8	929	36.6	524	20.6	349	13.7	465	18.3	519	20.4	519	20.4
		318	12	1171	46.1	664	26.1	451	17.8	586	23.1	519	20.4	519	20.4
		420	16	1375	54.1	766	30.2	553	21.8	688	27.1	519	20.4	519	20.4
		521	20	1577	62.1	867	34.1	654	25.7	789	31.0	519	20.4	519	20.4
		623	24	1782	70.2	970	38.2	756	29.8	891	35.1	519	20.4	519	20.4
	7	115	4	774	30.5	470	18.5	248	9.8	387	15.2	519	20.4	519	20.4
		216	8	1005	39.6	600	23.6	349	13.7	503	19.8	519	20.4	519	20.4
		318	12	1171	46.1	664	26.1	451	17.8	586	23.1	519	20.4	519	20.4
		420	16	1375	54.1	766	30.2	553	21.8	688	27.1	519	20.4	519	20.4
		521	20	1577	62.1	867	34.1	654	25.7	789	31.0	519	20.4	519	20.4
		623	24	1780	70.1	968	38.1	756	29.8	890	35.0	519	20.4	519	20.4
435	5 or 5H	115	4	742	29.2	438	17.2	248	9.8	371	14.6	572	22.5	572	22.5
		216	8	929	36.6	524	20.6	349	13.7	465	18.3	572	22.5	572	22.5
		318	12	1171	46.1	664	26.1	451	17.8	586	23.1	572	22.5	572	22.5
		420	16	1375	54.1	766	30.2	553	21.8	688	27.1	572	22.5	572	22.5
		521	20	1577	62.1	867	34.1	654	25.7	789	31.0	572	22.5	572	22.5
		623	24	1782	70.2	970	38.2	756	29.8	891	35.1	572	22.5	572	22.5
	7	115	4	774	30.5	470	18.5	248	9.8	387	15.2	572	22.5	572	22.5
		216	8	1005	39.6	600	23.6	349	13.7	503	19.8	572	22.5	572	22.5
		318	12	1171	46.1	664	26.1	451	17.8	586	23.1	572	22.5	572	22.5
		420	16	1375	54.1	766	30.2	553	21.8	688	27.1	572	22.5	572	22.5
		521	20	1577	62.1	867	34.1	654	25.7	789	31.0	572	22.5	572	22.5
		623	24	1780	70.1	968	38.1	756	29.8	890	35.0	572	22.5	572	22.5

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Table 8. 785C Double-Acting Springless Dimensions A, A1, A3, G, B, and C⁽¹⁾ (cont.)

ACTUATOR SIZE	YOKE BOSS, Inch	MAXIMUM TRAVEL		A		A1		A3		G		B		C	
		mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
485	5 or 5H	115	4	790	31.1	438	17.2	276	10.9	395	15.6	636	25.0	636	25.0
		216	8	977	38.5	524	20.6	377	14.8	489	19.2	636	25.0	636	25.0
		318	12	1219	48.0	664	26.1	479	18.9	610	24.0	636	25.0	636	25.0
		420	16	1423	56.0	766	30.2	581	22.9	712	28.0	636	25.0	636	25.0
		521	20	1625	64.0	867	34.1	682	26.9	813	32.0	636	25.0	636	25.0
		623	24	1830	72.0	970	38.2	784	30.9	915	36.0	636	25.0	636	25.0
	7	115	4	822	32.4	470	18.5	276	10.9	411	16.2	636	25.0	636	25.0
		216	8	1053	41.5	600	23.6	377	14.8	527	20.7	636	25.0	636	25.0
		318	12	1219	48.0	664	26.1	479	18.9	610	24.0	636	25.0	636	25.0
		420	16	1423	56.0	766	30.2	581	22.9	712	28.0	636	25.0	636	25.0
		521	20	1625	64.0	867	34.1	682	26.9	813	32.0	636	25.0	636	25.0
		623	24	1828	72.0	968	38.1	784	30.9	914	36.0	636	25.0	636	25.0
535	5 or 5H	115	4	792	31.2	438	17.2	278	10.9	396	15.6	684	26.9	694	27.3
		216	8	979	38.5	524	20.6	379	14.9	490	19.3	684	26.9	694	27.3
		318	12	1221	48.1	664	26.1	481	18.9	611	24.0	684	26.9	694	27.3
		420	16	1425	56.1	766	30.2	583	23.0	713	28.1	684	26.9	694	27.3
		521	20	1627	64.1	867	34.1	684	26.9	814	32.0	684	26.9	694	27.3
		623	24	1832	72.1	970	38.2	786	30.9	916	36.1	684	26.9	694	27.3
	7	115	4	824	32.4	470	18.5	278	10.9	412	16.2	684	26.9	694	27.3
		216	8	1055	41.5	600	23.6	379	14.9	528	20.8	684	26.9	694	27.3
		318	12	1221	48.1	664	26.1	481	18.9	611	24.0	684	26.9	694	27.3
		420	16	1425	56.1	766	30.2	583	23.0	713	28.1	684	26.9	694	27.3
		521	20	1627	64.1	867	34.1	684	26.9	814	32.0	684	26.9	694	27.3
		623	24	1830	72.0	968	38.1	786	30.9	915	36.0	684	26.9	694	27.3
585	5H	115	4	833	32.8	461	18.1	296	11.7	417	16.4	737	29.0	750	29.5
		216	8	1020	40.2	547	21.5	397	15.6	510	20.1	737	29.0	750	29.5
		318	12	1262	49.7	687	27.0	499	19.6	631	24.8	737	29.0	750	29.5
		420	16	1466	57.7	789	31.1	601	23.7	733	28.9	737	29.0	750	29.5
		521	20	1668	65.7	890	35.0	702	27.6	834	32.8	737	29.0	750	29.5
		623	24	1872	73.7	992	39.1	804	31.7	936	36.9	737	29.0	750	29.5
	7	115	4	862	33.9	490	19.3	296	11.7	431	17.0	737	29.0	750	29.5
		216	8	1093	43.0	620	24.4	397	15.6	547	21.5	737	29.0	750	29.5
		318	12	1259	49.6	684	26.9	499	19.6	630	24.8	737	29.0	750	29.5
		420	16	1462	57.6	785	30.9	601	23.7	731	28.8	737	29.0	750	29.5
		521	20	1665	65.6	887	34.9	702	27.6	833	32.8	737	29.0	750	29.5
		623	24	1869	73.6	989	38.9	804	31.7	935	36.8	737	29.0	750	29.5
635	5H	115	4	833	32.8	461	18.1	296	11.7	417	16.4	779	30.7	799	31.5
		216	8	1020	40.2	547	21.5	397	15.6	510	20.1	779	30.7	799	31.5
		318	12	1262	49.7	687	27.0	499	19.6	631	24.8	779	30.7	799	31.5
		420	16	1466	57.7	789	31.1	601	23.7	733	28.9	779	30.7	799	31.5
		521	20	1668	65.7	890	35.0	702	27.6	834	32.8	779	30.7	799	31.5
		623	24	1872	73.7	992	39.1	804	31.7	936	36.9	779	30.7	799	31.5
	7	115	4	862	33.9	490	19.3	296	11.7	431	17.0	779	30.7	799	31.5
		216	8	1093	43.0	620	24.4	397	15.6	547	21.5	779	30.7	799	31.5
		318	12	1259	49.6	684	26.9	499	19.6	630	24.8	779	30.7	799	31.5
		420	16	1462	57.6	785	30.9	601	23.7	731	28.8	779	30.7	799	31.5
		521	20	1665	65.6	887	34.9	702	27.6	833	32.8	779	30.7	799	31.5
		623	24	1869	73.6	989	38.9	804	31.7	935	36.8	779	30.7	799	31.5

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Table 8. 785C Double-Acting Springless Dimensions A, A1, A3, G, B, and C⁽¹⁾ (cont.)

ACTUATOR SIZE	YOKE BOSS, Inch	MAXIMUM TRAVEL		A		A1		A3		G		B		C	
		mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
685	5H	115	4	868	34.2	486	19.1	306	12.0	434	17.1	832	32.8	855	33.7
		216	8	1055	41.5	572	22.5	407	16.0	528	20.8	832	32.8	855	33.7
		318	12	1297	51.1	712	28.0	509	20.0	649	25.5	832	32.8	855	33.7
		420	16	1501	59.1	814	32.0	611	24.1	751	29.5	832	32.8	855	33.7
		521	20	1703	67.0	915	36.0	712	28.0	852	33.5	832	32.8	855	33.7
		623	24	1907	75.1	1017	40.0	814	32.0	954	37.5	832	32.8	855	33.7
	7	115	4	897	35.3	515	20.3	306	12.0	449	17.7	832	32.8	855	33.7
		216	8	1128	44.4	645	25.4	407	16.0	564	22.2	832	32.8	855	33.7
		318	12	1294	50.9	709	27.9	509	20.0	647	25.5	832	32.8	855	33.7
		420	16	1497	58.9	810	31.9	611	24.1	749	29.5	832	32.8	855	33.7
		521	20	1700	66.9	912	35.9	712	28.0	850	33.5	832	32.8	855	33.7
		623	24	1904	75.0	1014	39.9	814	32.0	952	37.5	832	32.8	855	33.7

1. Dimensions of A, A1, A3, B, C and G (Center of Gravity) are the max value of each travel. Contact your [Emerson sales office](#) for details.

Table 9. 785C Double-Acting Springless with Manual Override Dimensions A, A1, A3, A4, G, B, and C⁽¹⁾

ACTUATOR SIZE	YOKE BOSS, Inch	MANUAL OVERRIDE	MAXIMUM TRAVEL		A		A1		A3		A4	
			mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
280	3-9/16	MHW	115	4	1002	39.4	416	16.4	296	11.7	290	11.4
			216	8	1312	51.7	524	20.6	397	15.6	391	15.4
	5 or 5H		115	4	1024	40.3	438	17.2	296	11.7	290	11.4
			216	8	1312	51.7	524	20.6	397	15.6	391	15.4
			318	12	1655	65.2	664	26.1	499	19.6	492	19.4
			420	16	1960	77.2	766	30.2	601	23.7	593	23.3
			521	20	2263	89.1	867	34.1	702	27.6	694	27.3
			623	24	2568	101.1	969	38.1	804	31.7	795	31.3
335	3-9/16		115	4	1009	39.7	416	16.4	302.5	11.9	290	11.4
			216	8	1319	51.9	524	20.6	403.5	15.9	391	15.4
	5 or 5H		115	4	1031	40.6	438	17.2	302.5	11.9	290	11.4
			216	8	1319	51.9	524	20.6	403.5	15.9	391	15.4
			318	12	1662	65.4	664	26.1	505.5	19.9	492	19.4
			420	16	1967	77.4	766	30.2	607.5	23.9	593	23.3
			521	20	2270	89.4	867	34.1	708.5	27.9	694	27.3
			623	24	2575	101.4	969	38.1	810.5	31.9	795	31.3
385	3-9/16	115	4	991	39.0	416	16.4	285	11.2	290	11.4	
		216	8	1301	51.2	524	20.6	386	15.2	391	15.4	
	5 or 5H	115	4	1013	39.9	438	17.2	285	11.2	290	11.4	
		216	8	1301	51.2	524	20.6	386	15.2	391	15.4	
		318	12	1644	64.7	664	26.1	488	19.2	492	19.4	
		420	16	1949	76.7	766	30.2	590	23.2	593	23.3	
		521	20	2252	88.7	867	34.1	691	27.2	694	27.3	
		623	24	2558	100.7	970	38.2	793	31.2	795	31.3	
	7	115	4	1045	41.1	470	18.5	285	11.2	290	11.4	
		216	8	1377	54.2	600	23.6	386	15.2	391	15.4	
		318	12	1644	64.7	664	26.1	488	19.2	492	19.4	
		420	16	1949	76.7	766	30.2	590	23.2	593	23.3	
		521	20	2252	88.7	867	34.1	691	27.2	694	27.3	
		623	24	2556	100.6	968	38.1	793	31.2	795	31.3	
435	5 or 5H	115	4	1095	43.1	438	17.2	282	11.1	375	14.8	
		216	8	1403	55.2	524	20.6	383	15.1	496	19.5	
		318	12	1746	68.7	664	26.1	485	19.1	597	23.5	
		420	16	2051	80.7	766	30.2	587	23.1	698	27.5	
		521	20	2354	92.7	867	34.1	688	27.1	799	31.5	
		623	24	2660	104.7	970	38.2	790	31.1	900	35.4	
	7	115	4	1127	44.4	470	18.5	282	11.1	375	14.8	
		216	8	1479	58.2	600	23.6	383	15.1	496	19.5	
		318	12	1746	68.7	664	26.1	485	19.1	597	23.5	
		420	16	2051	80.7	766	30.2	587	23.1	698	27.5	
		521	20	2354	92.7	867	34.1	688	27.1	799	31.5	
		623	24	2658	104.6	968	38.1	790	31.1	900	35.4	
	485	5 or 5H	115	4	1126	44.3	438	17.2	313	12.3	375	14.8
			216	8	1434	56.5	524	20.6	414	16.3	496	19.5
318			12	1777	70.0	664	26.1	516	20.3	597	23.5	
420			16	2082	82.0	766	30.2	618	24.3	698	27.5	
521			20	2385	93.9	867	34.1	719	28.3	799	31.5	
623			24	2691	105.9	970	38.2	821	32.3	900	35.4	
7		115	4	1158	45.6	470	18.5	313	12.3	375	14.8	
		216	8	1510	59.4	600	23.6	414	16.3	496	19.5	
		318	12	1777	70.0	664	26.1	516	20.3	597	23.5	
		420	16	2082	82.0	766	30.2	618	24.3	698	27.5	
		521	20	2385	93.9	867	34.1	719	28.3	799	31.5	
		623	24	2689	105.9	968	38.1	821	32.3	900	35.4	

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Table 9. 785C Double-Acting Springless with Manual Override Dimensions A, A1, A3, A4, G, B, and C⁽¹⁾ (cont.)

ACTUATOR SIZE	YOKE BOSS, Inch	MANUAL OVERRIDE	MAXIMUM TRAVEL		A		A1		A3		A4	
			mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
535	5 or 5H	MHP	115	4	1130	44.5	438	17.2	317	12.5	375	14.8
			216	8	1438	56.6	524	20.6	418	16.5	496	19.5
			318	12	1781	70.1	664	26.1	520	20.5	597	23.5
			420	16	2086	82.1	766	30.2	622	24.5	698	27.5
			521	20	2389	94.1	867	34.1	723	28.5	799	31.5
	623		24	2695	106.1	970	38.2	825	32.5	900	35.4	
	7		115	4	1162	45.7	470	18.5	317	12.5	375	14.8
			216	8	1514	59.6	600	23.6	418	16.5	496	19.5
			318	12	1781	70.1	664	26.1	520	20.5	597	23.5
			420	16	2086	82.1	766	30.2	622	24.5	698	27.5
521			20	2389	94.1	867	34.1	723	28.5	799	31.5	
585	5H		623	24	2693	106.0	968	38.1	825	32.5	900	35.4
			115	4	1201	47.3	461	18.1	348	13.7	392	15.4
			216	8	1509	59.4	547	21.5	449	17.7	513	20.2
			318	12	1852	72.9	687	27.0	551	21.7	614	24.2
			420	16	2157	84.9	789	31.1	653	25.7	715	28.1
	7		521	20	2460	96.9	890	35.0	754	29.7	816	32.1
			623	24	2765	108.9	992	39.1	856	33.7	917	36.1
			115	4	1230	48.4	490	19.3	348	13.7	392	15.4
			216	8	1582	62.3	620	24.4	449	17.7	513	20.2
		318	12	1849	72.8	684	26.9	551	21.7	614	24.2	
635	5H	420	16	2153	84.8	785	30.9	653	25.7	715	28.1	
		521	20	2457	96.7	887	34.9	754	29.7	816	32.1	
		623	24	2762	108.7	989	38.9	856	33.7	917	36.1	
		115	4	1202	47.3	461	18.1	349	13.7	392	15.4	
		216	8	1510	59.4	547	21.5	450	17.7	513	20.2	
	7	318	12	1853	73.0	687	27.0	552	21.7	614	24.2	
		420	16	2158	85.0	789	31.1	654	25.7	715	28.1	
		521	20	2461	96.9	890	35.0	755	29.7	816	32.1	
		623	24	2766	108.9	992	39.1	857	33.7	917	36.1	
		115	4	1231	48.5	490	19.3	349	13.7	392	15.4	
685	5H	216	8	1583	62.3	620	24.4	450	17.7	513	20.2	
		318	12	1850	72.8	684	26.9	552	21.7	614	24.2	
		420	16	2154	84.8	785	30.9	654	25.7	715	28.1	
		521	20	2458	96.8	887	34.9	755	29.7	816	32.1	
		623	24	2763	108.8	989	38.9	857	33.7	917	36.1	
	7	115	4	1251	49.3	486	19.1	373	14.7	392	15.4	
		216	8	1559	61.4	572	22.5	474	18.7	513	20.2	
		318	12	1902	74.9	712	28.0	576	22.7	614	24.2	
		420	16	2207	86.9	814	32.0	678	26.7	715	28.1	
		521	20	2510	98.8	915	36.0	779	30.7	816	32.1	
7	623	24	2815	110.8	1017	40.0	881	34.7	917	36.1		
	115	4	1280	50.4	515	20.3	373	14.7	392	15.4		
	216	8	1632	64.3	645	25.4	474	18.7	513	20.2		
	318	12	1899	74.8	709	27.9	576	22.7	614	24.2		
	420	16	2203	86.7	810	31.9	678	26.7	715	28.1		
521	20	2507	98.7	912	35.9	779	30.7	816	32.1			
623	24	2812	110.7	1014	39.9	881	34.7	917	36.1			

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Table 9. 785C Double-Acting Springless with Manual Override Dimensions A, A1, A3, A4, G, B, and C⁽¹⁾ (cont.)

ACTUATOR SIZE	YOKE BOSS, Inch	MANUAL OVERRIDE	MAXIMUM TRAVEL		G		ØB / B		B1		C		C1		
			mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	
280	3-9/16	MHW	115	4	501	19.7	850	33.5	419	16.5	464	18	---	---	
			216	8	656	25.8	850	33.5	419	16.5	464	18	---	---	
	5 or 5H		115	4	512	20.2	850	33.5	419	16.5	464	18	---	---	
			216	8	656	25.8	850	33.5	419	16.5	464	18	---	---	
			318	12	828	32.6	850	33.5	419	16.5	464	18	---	---	
			420	16	980	38.6	850	33.5	419	16.5	464	18	---	---	
			521	20	1132	44.5	850	33.5	419	16.5	464	18	---	---	
623	24		1284	50.6	850	33.5	419	16.5	464	18	---	---			
335	3-9/16		MHW	115	4	504	19.9	1250	49.2	472	18.6	517	20	---	---
				216	8	659	26.0	1250	49.2	472	18.6	517	20	---	---
	5 or 5H			115	4	515	20.3	1250	49.2	472	18.6	517	20	---	---
				216	8	659	26.0	1250	49.2	472	18.6	517	20	---	---
				318	12	831	32.7	1250	49.2	472	18.6	517	20	---	---
				420	16	983	38.7	1250	49.2	472	18.6	517	20	---	---
		521		20	1135	44.7	1250	49.2	472	18.6	517	20	---	---	
623	24	1287		50.7	1250	49.2	472	18.6	517	20	---	---			
385	3-9/16	MHW		115	4	496	19.5	1400	55.1	519	20.4	564	22	---	---
				216	8	651	25.6	1400	55.1	519	20.4	564	22	---	---
	5 or 5H			115	4	507	19.9	1400	55.1	519	20.4	564	22	---	---
				216	8	651	25.6	1400	55.1	519	20.4	564	22	---	---
				318	12	822	32.4	1400	55.1	519	20.4	564	22	---	---
				420	16	975	38.4	1400	55.1	519	20.4	564	22	---	---
			521	20	1126	44.3	1400	55.1	519	20.4	564	22	---	---	
	623		24	1279	50.4	1400	55.1	519	20.4	564	22	---	---		
	7		115	4	523	20.6	1400	55.1	519	20.4	564	22	---	---	
			216	8	689	27.1	1400	55.1	519	20.4	564	22	---	---	
			318	12	822	32.4	1400	55.1	519	20.4	564	22	---	---	
			420	16	975	38.4	1400	55.1	519	20.4	564	22	---	---	
			521	20	1126	44.3	1400	55.1	519	20.4	564	22	---	---	
			623	24	1278	50.3	1400	55.1	519	20.4	564	22	---	---	
435		5 or 5H	MHP	115	4	548	21.6	908	35.7	572	22.5	846	33	565	22.2
216	8			702	27.6	908	35.7	572	22.5	846	33	565	22.2		
318	12			873	34.4	908	35.7	572	22.5	846	33	565	22.2		
420	16			1026	40.4	908	35.7	572	22.5	846	33	565	22.2		
521	20			1177	46.3	908	35.7	572	22.5	846	33	565	22.2		
623	24			1330	52.4	908	35.7	572	22.5	846	33	565	22.2		
7	115			4	564	22.2	908	35.7	572	22.5	846	33	565	22.2	
	216	8		740	29.1	908	35.7	572	22.5	846	33	565	22.2		
	318	12		873	34.4	908	35.7	572	22.5	846	33	565	22.2		
	420	16		1026	40.4	908	35.7	572	22.5	846	33	565	22.2		
	521	20		1177	46.3	908	35.7	572	22.5	846	33	565	22.2		
	623	24		1329	52.3	908	35.7	572	22.5	846	33	565	22.2		
	485	5 or 5H		115	4	563	22.2	940	37.0	636	25.0	858	34	630	24.8
216				8	717	28.2	940	37.0	636	25.0	858	34	630	24.8	
318			12	889	35.0	940	37.0	636	25.0	858	34	630	24.8		
420			16	1041	41.0	940	37.0	636	25.0	858	34	630	24.8		
521			20	1193	46.9	940	37.0	636	25.0	858	34	630	24.8		
623			24	1346	53.0	940	37.0	636	25.0	858	34	630	24.8		
7			115	4	579	22.8	940	37.0	636	25.0	858	34	630	24.8	
		216	8	755	29.7	940	37.0	636	25.0	858	34	630	24.8		
		318	12	889	35.0	940	37.0	636	25.0	858	34	630	24.8		
		420	16	1041	41.0	940	37.0	636	25.0	858	34	630	24.8		
		521	20	1193	46.9	940	37.0	636	25.0	858	34	630	24.8		
		623	24	1345	52.9	940	37.0	636	25.0	858	34	630	24.8		

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Table 9. 785C Double-Acting Springless with Manual Override Dimensions A, A1, A3, A4, G, B, and C⁽¹⁾ (cont.)

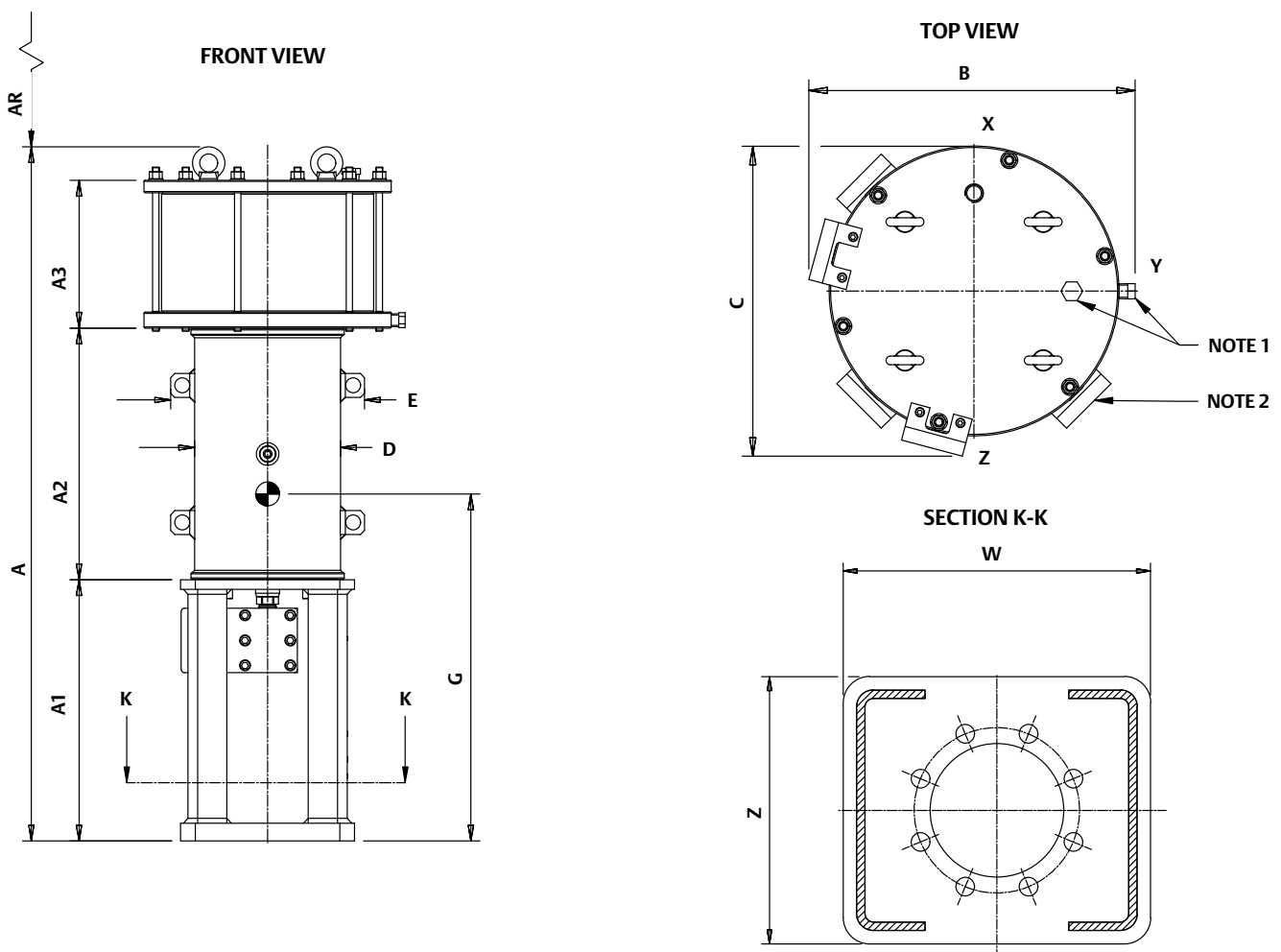
ACTUATOR SIZE	YOKE BOSS, Inch	MANUAL OVERRIDE	MAXIMUM TRAVEL		G		ØB / B		B1		C		C1			
			mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch		
535	5 or 5H	MHP	115	4	565	22.2	962	37.9	684	26.9	915	36	680	26.8		
			216	8	719	28.3	962	37.9	684	26.9	915	36	680	26.8		
			318	12	891	35.1	962	37.9	684	26.9	915	36	680	26.8		
			420	16	1043	41.1	962	37.9	684	26.9	915	36	680	26.8		
			521	20	1195	47.0	962	37.9	684	26.9	915	36	680	26.8		
			623	24	1348	53.1	962	37.9	684	26.9	915	36	680	26.8		
	7		115	4	581	22.9	962	37.9	684	26.9	915	36	680	26.8		
			216	8	757	29.8	962	37.9	684	26.9	915	36	680	26.8		
			318	12	891	35.1	962	37.9	684	26.9	915	36	680	26.8		
			420	16	1043	41.1	962	37.9	684	26.9	915	36	680	26.8		
			521	20	1195	47.0	962	37.9	684	26.9	915	36	680	26.8		
			623	24	1347	53.0	962	37.9	684	26.9	983	36	680	26.8		
			585	5H	115	4	601	23.6	1102	43.4	737	29.0	983	39	730	28.7
					216	8	755	29.7	1102	43.4	737	29.0	983	39	730	28.7
318	12	926			36.5	1102	43.4	737	29.0	983	39	730	28.7			
420	16	1079			42.5	1102	43.4	737	29.0	983	39	730	28.7			
521	20	1230			48.4	1102	43.4	737	29.0	983	39	730	28.7			
623	24	1383			54.4	1102	43.4	737	29.0	983	39	730	28.7			
7	115	4		615	24.2	1102	43.4	737	29.0	983	39	730	28.7			
	216	8		791	31.1	1102	43.4	737	29.0	983	39	730	28.7			
	318	12		925	36.4	1102	43.4	737	29.0	983	39	730	28.7			
	420	16		1077	42.4	1102	43.4	737	29.0	983	39	730	28.7			
	521	20		1229	48.4	1102	43.4	737	29.0	983	39	730	28.7			
	623	24		1381	54.4	1102	43.4	737	29.0	983	39	730	28.7			
	635	5H		115	4	601	23.7	1127	44.4	779	30.7	1007	40	785	30.9	
				216	8	755	29.7	1127	44.4	779	30.7	1007	40	785	30.9	
318			12	927	36.5	1127	44.4	779	30.7	1007	40	785	30.9			
420			16	1079	42.5	1127	44.4	779	30.7	1007	40	785	30.9			
521			20	1231	48.4	1127	44.4	779	30.7	1007	40	785	30.9			
623			24	1383	54.4	1127	44.4	779	30.7	1007	40	785	30.9			
7		115	4	616	24.2	1127	44.4	779	30.7	1007	40	785	30.9			
		216	8	792	31.2	1127	44.4	779	30.7	1007	40	785	30.9			
		318	12	925	36.4	1127	44.4	779	30.7	1007	40	785	30.9			
		420	16	1077	42.4	1127	44.4	779	30.7	1007	40	785	30.9			
		521	20	1229	48.4	1127	44.4	779	30.7	1007	40	785	30.9			
		623	24	1382	54.4	1127	44.4	779	30.7	1007	40	785	30.9			
		685	5H	115	4	626	24.6	1153	45.4	832	32.8	1035	41	840	33.1	
				216	8	780	30.7	1153	45.4	832	32.8	1035	41	840	33.1	
318	12			951	37.4	1153	45.4	832	32.8	1035	41	840	33.1			
420	16			1104	43.4	1153	45.4	832	32.8	1035	41	840	33.1			
521	20			1255	49.4	1153	45.4	832	32.8	1035	41	840	33.1			
623	24			1408	55.4	1153	45.4	832	32.8	1035	41	840	33.1			
7	115		4	640	25.2	1153	45.4	832	32.8	1035	41	840	33.1			
	216		8	816	32.1	1153	45.4	832	32.8	1035	41	840	33.1			
	318		12	950	37.4	1153	45.4	832	32.8	1035	41	840	33.1			
	420		16	1102	43.4	1153	45.4	832	32.8	1035	41	840	33.1			
	521		20	1254	49.4	1153	45.4	832	32.8	1035	41	840	33.1			
	623		24	1406	55.4	1153	45.4	832	32.8	1035	41	840	33.1			

1. Dimensions of A, A1, A3, A4, ØB/B, B1, C, and G (Center of Gravity) are the max value of each travel. Contact your [Emerson sales office](#) for details.

Table 10. 785C Double-Acting Springless Dimension Z and W

ACTUATOR SIZE	WITHOUT MANUAL OVERRIDE				WITH MANUAL OVERRIDE			
	Z		W		Z		W	
	3-9/16, 5, 5H, or 7 Inch Yoke Boss				3-9/16, 5, 5H, or 7 Inch Yoke Boss			
	mm	Inch	mm	Inch	mm	Inch	mm	Inch
280	254	10	292	11.5	254	10	292	11.5
335	254	10	292	11.5	254	10	292	11.5
385	330	13	330	13	330	13	330	13
435	330	13	330	13	330	13	330	13
485	330	13	330	13	330	13	330	13
535	330	13	330	13	330	13	330	13
585	487	19.2	436	17.2	487	19.2	436	17.2
635	487	19.2	436	17.2	487	19.2	436	17.2
685	487	19.2	436	17.2	487	19.2	436	17.2

Figure 12. Fisher 785C Single-Acting Spring Return Piston Actuator (see table 11 and 13)



Notes:

1. Two pneumatic ports on top and bottom flanges. One plug supplied as standard for both pneumatic port on top and bottom flange.
2. Two brackets for pneumatic device support on top flange. Three brackets for pneumatic device support on bottom flange.

● Estimated position of center of gravity.

Table 11. 785C Spring Return (Single-Acting and Double-Acting)
Dimensions A, A1, A2, A3, G, B, C⁽¹⁾, D, E

ACTUATOR SIZE	YOKE BOSS, Inch	MAX TRAVEL		A		A1		A2		A3			
		mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch		
280	3 9/16	115	4	1456	57.3	416	16.4	739	29.1	245	9.6		
		216	8	1849	72.8	524	20.6	923	36.3	346	13.6		
	5 or 5H	115	4	1478	58.2	438	17.2	739	29.1	245	9.6		
		216	8	1849	72.8	524	20.6	923	36.3	346	13.6		
335	3 9/16	64	2	1183	46.6	416	16.4	463	18.2	248	9.8		
		115	4	1425	56.1	416	16.4	705	27.8	248	9.8		
		216	8	1844	72.6	524	20.6	915	36.0	349	13.7		
	5 or 5H	64	2	1205	47.4	438	17.2	463	18.2	248	9.8		
		115	4	1447	57.0	438	17.2	705	27.8	248	9.8		
		216	8	1844	72.6	524	20.6	915	36.0	349	13.7		
385	3 9/16	64	2	1196	47.1	416	16.4	476	18.7	248	9.8		
		115	4	1425	56.1	416	16.4	705	27.8	248	9.8		
		216	8	1892	74.5	524	20.6	963	37.9	349	13.7		
	5 or 5H	64	3	1218	48.0	438	17.2	476	18.7	248	9.8		
		115	4	1447	57.0	438	17.2	705	27.8	248	9.8		
		216	8	1892	74.5	524	20.6	963	37.9	349	13.7		
	7	318	12	2281	89.8	664	26.1	1110	43.7	451	17.8		
		64	3	1250	49.2	470	18.5	476	18.7	248	9.8		
		115	4	1479	58.2	470	18.5	705	27.8	248	9.8		
	435	5 or 5H	216	8	1968	77.5	600	23.6	963	37.9	349	13.7	
			318	12	2281	89.8	664	26.1	1110	43.7	451	17.8	
			64	2	1251	49.3	438	17.2	509	20.0	248	9.8	
115			4	1617	63.7	438	17.2	875	34.4	248	9.8		
216			8	1827	71.9	524	20.6	898	35.4	349	13.7		
7		318	12	2254	88.7	664	26.1	1083	42.6	451	17.8		
		420	16	2507	98.7	766	30.2	1132	44.6	553	21.8		
		64	2	1283	50.5	470	18.5	509	20.0	248	9.8		
		115	4	1649	64.9	470	18.5	875	34.4	248	9.8		
		216	8	1903	74.9	600	23.6	898	35.4	349	13.7		
		318	12	2254	88.7	664	26.1	1083	42.6	451	17.8		
		420	16	2507	98.7	766	30.2	1132	44.6	553	21.8		
485	5 or 5H	64	2	1437	56.6	438	17.2	647	25.5	276	10.9		
		115	4	1543	60.7	438	17.2	753	29.6	276	10.9		
		216	8	1817	71.5	524	20.6	840	33.1	377	14.8		
		318	12	2254	88.7	664	26.1	1035	40.7	479	18.9		
		420	16	2555	100.6	766	30.2	1132	44.6	581	22.9		
	7	64	2	1469	57.8	470	18.5	647	25.5	276	10.9		
		115	4	1575	62.0	470	18.5	753	29.6	276	10.9		
		216	8	1893	74.5	600	23.6	840	33.1	377	14.8		
		318	12	2254	88.7	664	26.1	1035	40.7	479	18.9		
		420	16	2555	100.6	766	30.2	1132	44.6	581	22.9		
		535	5 or 5H	58	2	1189	46.8	438	17.2	397	15.6	278	10.9
				64	2	1187	46.7	438	17.2	395	15.6	278	10.9
115	4			1567	61.7	438	17.2	775	30.5	278	10.9		
216	8			2014	79.3	524	20.6	1035	40.7	379	14.9		
318	12			2223	87.5	664	26.1	1002	39.4	481	18.9		
420	16			2476	97.5	766	30.2	1051	41.4	583	23.0		
7	58		2	1221	48.1	470	18.5	397	15.6	278	10.9		
	64		2	1219	48.0	470	18.5	395	15.6	278	10.9		
	115		4	1599	63.0	470	18.5	775	30.5	278	10.9		
	216		8	2090	82.3	600	23.6	1035	40.7	379	14.9		
	318		12	2223	87.5	664	26.1	1002	39.4	481	18.9		
	420		16	2476	97.5	766	30.2	1051	41.4	583	23.0		

- continued -

Table 11. 785C Single-Acting and Double-Acting Spring Return (Spring Retracts) (Cont.)
Dimensions A, A1, A2, A3, G, B, C⁽¹⁾, D, E

ACTUATOR SIZE	YOKE BOSS, Inch	MAX TRAVEL		A		A1		A2		A3																																																																																																																																																																																																																																																																																																			
		mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch																																																																																																																																																																																																																																																																																																		
585	5H	64	2	1238	48.7	461	18.1	405	15.9	296	11.7																																																																																																																																																																																																																																																																																																		
		115	4	1804	71.0	461	18.1	971	38.2	296	11.7																																																																																																																																																																																																																																																																																																		
		216	8	1824	71.8	547	21.5	804	31.7	397	15.6																																																																																																																																																																																																																																																																																																		
		318	12	2284	89.9	687	27.0	1022	40.2	499	19.6																																																																																																																																																																																																																																																																																																		
		420	16	2555	100.6	789	31.1	1089	42.9	601	23.7																																																																																																																																																																																																																																																																																																		
	7	64	3	1267	49.9	490	19.3	405	15.9	296	11.7																																																																																																																																																																																																																																																																																																		
		115	4	1833	72.2	490	19.3	971	38.2	296	11.7																																																																																																																																																																																																																																																																																																		
		216	8	1897	74.7	620	24.4	804	31.7	397	15.6																																																																																																																																																																																																																																																																																																		
		318	12	2281	89.8	684	26.9	1022	40.2	499	19.6																																																																																																																																																																																																																																																																																																		
		420	16	2551	100.4	785	30.9	1089	42.9	601	23.7																																																																																																																																																																																																																																																																																																		
635	5H	64	2	1210	47.6	461	18.1	377	14.8	296	11.7																																																																																																																																																																																																																																																																																																		
		115	4	1579	62.2	461	18.1	746	29.4	296	11.7																																																																																																																																																																																																																																																																																																		
		216	8	2226	87.6	547	21.5	1206	47.5	397	15.6																																																																																																																																																																																																																																																																																																		
		318	12	2274	89.5	687	27.0	1012	39.8	499	19.6																																																																																																																																																																																																																																																																																																		
		420	16	2458	96.8	789	31.1	992	39.1	601	23.7																																																																																																																																																																																																																																																																																																		
	7	64	2	1239	48.8	490	19.3	377	14.8	296	11.7																																																																																																																																																																																																																																																																																																		
		115	4	1608	63.3	490	19.3	746	29.4	296	11.7																																																																																																																																																																																																																																																																																																		
		216	8	2299	90.5	620	24.4	1206	47.5	397	15.6																																																																																																																																																																																																																																																																																																		
		318	12	2271	89.4	684	26.9	1012	39.8	499	19.6																																																																																																																																																																																																																																																																																																		
		420	16	2454	96.6	785	30.9	992	39.1	601	23.7																																																																																																																																																																																																																																																																																																		
685	5H	115	4	1628	64.1	486	19.1	760	29.9	306	12.0																																																																																																																																																																																																																																																																																																		
		216	8	2109	83.0	572	22.5	1054	41.5	407	16.0																																																																																																																																																																																																																																																																																																		
		318	12	2299	90.5	712	28.0	1002	39.4	509	20.0																																																																																																																																																																																																																																																																																																		
		420	16	2493	98.1	814	32.0	992	39.1	611	24.1																																																																																																																																																																																																																																																																																																		
	7	115	4	1657	65.2	515	20.3	760	29.9	306	12.0																																																																																																																																																																																																																																																																																																		
		216	8	2182	85.9	645	25.4	1054	41.5	407	16.0																																																																																																																																																																																																																																																																																																		
		318	12	2296	90.4	709	27.9	1002	39.4	509	20.0																																																																																																																																																																																																																																																																																																		
		420	16	2489	98.0	810	31.9	992	39.1	611	24.1																																																																																																																																																																																																																																																																																																		
		<table border="1"> <thead> <tr> <th rowspan="2">ACTUATOR SIZE</th> <th rowspan="2">YOKE BOSS, Inch</th> <th colspan="2">MAX TRAVEL</th> <th colspan="2">G</th> <th colspan="2">B</th> <th colspan="2">C</th> <th colspan="2">D</th> <th colspan="2">E</th> </tr> <tr> <th>mm</th> <th>Inch</th> <th>mm</th> <th>Inch</th> <th>mm</th> <th>Inch</th> <th>mm</th> <th>Inch</th> <th>mm</th> <th>Inch</th> <th>mm</th> <th>Inch</th> </tr> </thead> <tbody> <tr> <td rowspan="4">280</td> <td rowspan="2">3 9/16</td> <td>115</td> <td>4</td> <td>728</td> <td>28.7</td> <td>419</td> <td>16.5</td> <td>464</td> <td>18.3</td> <td>324</td> <td>12.8</td> <td>464</td> <td>18.3</td> </tr> <tr> <td>216</td> <td>8</td> <td>925</td> <td>36.4</td> <td>419</td> <td>16.5</td> <td>464</td> <td>18.3</td> <td>245</td> <td>9.6</td> <td>325</td> <td>12.8</td> </tr> <tr> <td rowspan="2">5 or 5H</td> <td>115</td> <td>4</td> <td>739</td> <td>29.1</td> <td>419</td> <td>16.5</td> <td>464</td> <td>18.3</td> <td>324</td> <td>12.8</td> <td>464</td> <td>18.3</td> </tr> <tr> <td>216</td> <td>8</td> <td>925</td> <td>36.4</td> <td>419</td> <td>16.5</td> <td>464</td> <td>18.3</td> <td>245</td> <td>9.6</td> <td>325</td> <td>12.8</td> </tr> <tr> <td rowspan="6">335</td> <td rowspan="3">3 9/16</td> <td>64</td> <td>2</td> <td>592</td> <td>23.3</td> <td>472</td> <td>18.6</td> <td>517</td> <td>20.4</td> <td>324</td> <td>12.8</td> <td>464</td> <td>18.3</td> </tr> <tr> <td>115</td> <td>4</td> <td>713</td> <td>28.1</td> <td>472</td> <td>18.6</td> <td>517</td> <td>20.4</td> <td>324</td> <td>12.8</td> <td>464</td> <td>18.3</td> </tr> <tr> <td>216</td> <td>8</td> <td>922</td> <td>36.3</td> <td>472</td> <td>18.6</td> <td>517</td> <td>20.4</td> <td>324</td> <td>12.8</td> <td>464</td> <td>18.3</td> </tr> <tr> <td rowspan="3">5 or 5H</td> <td>64</td> <td>2</td> <td>603</td> <td>23.7</td> <td>472</td> <td>18.6</td> <td>517</td> <td>20.4</td> <td>324</td> <td>12.8</td> <td>464</td> <td>18.3</td> </tr> <tr> <td>115</td> <td>4</td> <td>724</td> <td>28.5</td> <td>472</td> <td>18.6</td> <td>517</td> <td>20.4</td> <td>324</td> <td>12.8</td> <td>464</td> <td>18.3</td> </tr> <tr> <td>216</td> <td>8</td> <td>922</td> <td>36.3</td> <td>472</td> <td>18.6</td> <td>517</td> <td>20.4</td> <td>324</td> <td>12.8</td> <td>464</td> <td>18.3</td> </tr> <tr> <td rowspan="10">385</td> <td rowspan="3">3 9/16</td> <td>64</td> <td>2</td> <td>598</td> <td>23.5</td> <td>519</td> <td>20.4</td> <td>564</td> <td>22.2</td> <td>360</td> <td>14.2</td> <td>500</td> <td>19.7</td> </tr> <tr> <td>115</td> <td>4</td> <td>713</td> <td>28.1</td> <td>519</td> <td>20.4</td> <td>564</td> <td>22.2</td> <td>324</td> <td>12.8</td> <td>464</td> <td>18.3</td> </tr> <tr> <td>216</td> <td>8</td> <td>946</td> <td>37.2</td> <td>519</td> <td>20.4</td> <td>564</td> <td>22.2</td> <td>360</td> <td>14.2</td> <td>500</td> <td>19.7</td> </tr> <tr> <td rowspan="5">5 or 5H</td> <td>64</td> <td>3</td> <td>609</td> <td>24.0</td> <td>519</td> <td>20.4</td> <td>564</td> <td>22.2</td> <td>360</td> <td>14.2</td> <td>500</td> <td>19.7</td> </tr> <tr> <td>115</td> <td>4</td> <td>724</td> <td>28.5</td> <td>519</td> <td>20.4</td> <td>564</td> <td>22.2</td> <td>324</td> <td>12.8</td> <td>464</td> <td>18.3</td> </tr> <tr> <td>216</td> <td>8</td> <td>946</td> <td>37.2</td> <td>519</td> <td>20.4</td> <td>564</td> <td>22.2</td> <td>360</td> <td>14.2</td> <td>500</td> <td>19.7</td> </tr> <tr> <td>318</td> <td>12</td> <td>1141</td> <td>44.9</td> <td>519</td> <td>20.4</td> <td>564</td> <td>22.2</td> <td>360</td> <td>14.2</td> <td>500</td> <td>19.7</td> </tr> <tr> <td>64</td> <td>3</td> <td>625</td> <td>24.6</td> <td>519</td> <td>20.4</td> <td>564</td> <td>22.2</td> <td>360</td> <td>14.2</td> <td>500</td> <td>19.7</td> </tr> <tr> <td rowspan="3">7</td> <td>115</td> <td>4</td> <td>740</td> <td>29.1</td> <td>519</td> <td>20.4</td> <td>564</td> <td>22.2</td> <td>324</td> <td>12.8</td> <td>464</td> <td>18.3</td> </tr> <tr> <td>216</td> <td>8</td> <td>984</td> <td>38.7</td> <td>519</td> <td>20.4</td> <td>564</td> <td>22.2</td> <td>360</td> <td>14.2</td> <td>500</td> <td>19.7</td> </tr> <tr> <td>318</td> <td>12</td> <td>1141</td> <td>44.9</td> <td>519</td> <td>20.4</td> <td>564</td> <td>22.2</td> <td>360</td> <td>14.2</td> <td>500</td> <td>19.7</td> </tr> </tbody> </table>												ACTUATOR SIZE	YOKE BOSS, Inch	MAX TRAVEL		G		B		C		D		E		mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	280	3 9/16	115	4	728	28.7	419	16.5	464	18.3	324	12.8	464	18.3	216	8	925	36.4	419	16.5	464	18.3	245	9.6	325	12.8	5 or 5H	115	4	739	29.1	419	16.5	464	18.3	324	12.8	464	18.3	216	8	925	36.4	419	16.5	464	18.3	245	9.6	325	12.8	335	3 9/16	64	2	592	23.3	472	18.6	517	20.4	324	12.8	464	18.3	115	4	713	28.1	472	18.6	517	20.4	324	12.8	464	18.3	216	8	922	36.3	472	18.6	517	20.4	324	12.8	464	18.3	5 or 5H	64	2	603	23.7	472	18.6	517	20.4	324	12.8	464	18.3	115	4	724	28.5	472	18.6	517	20.4	324	12.8	464	18.3	216	8	922	36.3	472	18.6	517	20.4	324	12.8	464	18.3	385	3 9/16	64	2	598	23.5	519	20.4	564	22.2	360	14.2	500	19.7	115	4	713	28.1	519	20.4	564	22.2	324	12.8	464	18.3	216	8	946	37.2	519	20.4	564	22.2	360	14.2	500	19.7	5 or 5H	64	3	609	24.0	519	20.4	564	22.2	360	14.2	500	19.7	115	4	724	28.5	519	20.4	564	22.2	324	12.8	464	18.3	216	8	946	37.2	519	20.4	564	22.2	360	14.2	500	19.7	318	12	1141	44.9	519	20.4	564	22.2	360	14.2	500	19.7	64	3	625	24.6	519	20.4	564	22.2	360	14.2	500	19.7	7	115	4	740	29.1	519	20.4	564	22.2	324	12.8	464	18.3	216	8	984	38.7	519	20.4	564	22.2	360	14.2	500	19.7	318	12	1141	44.9	519	20.4	564	22.2	360	14.2	500	19.7
		ACTUATOR SIZE	YOKE BOSS, Inch	MAX TRAVEL		G		B		C		D				E																																																																																																																																																																																																																																																																																													
mm	Inch			mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch																																																																																																																																																																																																																																																																																																
280	3 9/16	115	4	728	28.7	419	16.5	464	18.3	324	12.8	464	18.3																																																																																																																																																																																																																																																																																																
		216	8	925	36.4	419	16.5	464	18.3	245	9.6	325	12.8																																																																																																																																																																																																																																																																																																
	5 or 5H	115	4	739	29.1	419	16.5	464	18.3	324	12.8	464	18.3																																																																																																																																																																																																																																																																																																
		216	8	925	36.4	419	16.5	464	18.3	245	9.6	325	12.8																																																																																																																																																																																																																																																																																																
335	3 9/16	64	2	592	23.3	472	18.6	517	20.4	324	12.8	464	18.3																																																																																																																																																																																																																																																																																																
		115	4	713	28.1	472	18.6	517	20.4	324	12.8	464	18.3																																																																																																																																																																																																																																																																																																
		216	8	922	36.3	472	18.6	517	20.4	324	12.8	464	18.3																																																																																																																																																																																																																																																																																																
	5 or 5H	64	2	603	23.7	472	18.6	517	20.4	324	12.8	464	18.3																																																																																																																																																																																																																																																																																																
		115	4	724	28.5	472	18.6	517	20.4	324	12.8	464	18.3																																																																																																																																																																																																																																																																																																
		216	8	922	36.3	472	18.6	517	20.4	324	12.8	464	18.3																																																																																																																																																																																																																																																																																																
385	3 9/16	64	2	598	23.5	519	20.4	564	22.2	360	14.2	500	19.7																																																																																																																																																																																																																																																																																																
		115	4	713	28.1	519	20.4	564	22.2	324	12.8	464	18.3																																																																																																																																																																																																																																																																																																
		216	8	946	37.2	519	20.4	564	22.2	360	14.2	500	19.7																																																																																																																																																																																																																																																																																																
	5 or 5H	64	3	609	24.0	519	20.4	564	22.2	360	14.2	500	19.7																																																																																																																																																																																																																																																																																																
		115	4	724	28.5	519	20.4	564	22.2	324	12.8	464	18.3																																																																																																																																																																																																																																																																																																
		216	8	946	37.2	519	20.4	564	22.2	360	14.2	500	19.7																																																																																																																																																																																																																																																																																																
		318	12	1141	44.9	519	20.4	564	22.2	360	14.2	500	19.7																																																																																																																																																																																																																																																																																																
		64	3	625	24.6	519	20.4	564	22.2	360	14.2	500	19.7																																																																																																																																																																																																																																																																																																
	7	115	4	740	29.1	519	20.4	564	22.2	324	12.8	464	18.3																																																																																																																																																																																																																																																																																																
		216	8	984	38.7	519	20.4	564	22.2	360	14.2	500	19.7																																																																																																																																																																																																																																																																																																
318		12	1141	44.9	519	20.4	564	22.2	360	14.2	500	19.7																																																																																																																																																																																																																																																																																																	

- continued -

Table 11. 785C Single-Acting and Double-Acting Spring Return (Spring Retracts) (Cont.)
Dimensions A, A1, A2, A3, G, B, C⁽¹⁾, D, E

ACTUATOR SIZE	YOKE BOSS, Inch	MAX TRAVEL		G		B		C		D		E	
435	5 or 5H	64	2	626	24.6	572	22.5	846	33.3	360	14.2	500	19.7
		115	4	809	31.9	572	22.5	846	33.3	398	15.7	538	21.2
		216	8	914	36.0	572	22.5	846	33.3	360	14.2	500	19.7
		318	12	1127	44.4	572	22.5	846	33.3	360	14.2	500	19.7
		420	16	1254	49.4	572	22.5	846	33.3	360	14.2	500	19.7
	7	64	2	642	25.3	572	22.5	846	33.3	360	14.2	500	19.7
		115	4	825	32.5	572	22.5	846	33.3	398	15.7	538	21.2
		216	8	952	37.5	572	22.5	846	33.3	360	14.2	500	19.7
		318	12	1127	44.4	572	22.5	846	33.3	360	14.2	500	19.7
		420	16	1254	49.4	572	22.5	846	33.3	360	14.2	500	19.7
485	5 or 5H	64	2	719	28.3	636	25.0	858	33.8	324	12.8	464	18.3
		115	4	772	30.4	636	25.0	858	33.8	398	15.7	538	21.2
		216	8	909	35.8	636	25.0	858	33.8	360	14.2	500	19.7
		318	12	1127	44.4	636	25.0	858	33.8	360	14.2	500	19.7
		420	16	1278	50.3	636	25.0	858	33.8	360	14.2	500	19.7
	7	64	2	735	28.9	636	25.0	858	33.8	324	12.8	464	18.3
		115	4	788	31.0	636	25.0	858	33.8	398	15.7	538	21.2
		216	8	947	37.3	636	25.0	858	33.8	360	14.2	500	19.7
		318	12	1127	44.4	636	25.0	858	33.8	360	14.2	500	19.7
		420	16	1278	50.3	636	25.0	858	33.8	360	14.2	500	19.7
535	5 or 5H	58	2	595	23.4	684	26.9	915	36.0	360	14.2	464	18.3
		64	2	594	23.4	684	26.9	915	36.0	360	14.2	500	19.7
		115	4	784	30.9	684	26.9	915	36.0	549	21.6	689	27.1
		216	8	1007	39.6	684	26.9	915	36.0	502	19.8	642	25.3
		318	12	1112	43.8	684	26.9	915	36.0	549	21.6	689	27.1
	7	420	16	1238	48.7	684	26.9	915	36.0	549	21.6	689	27.1
		58	2	611	24.1	684	26.9	915	36.0	360	14.2	464	18.3
		64	2	610	24.0	684	26.9	915	36.0	360	14.2	500	19.7
		115	4	800	31.5	684	26.9	915	36.0	549	21.6	689	27.1
		216	8	1045	41.1	684	26.9	915	36.0	502	19.8	642	25.3
585	5H	318	12	1112	43.8	684	26.9	915	36.0	549	21.6	689	27.1
		420	16	1238	48.7	684	26.9	915	36.0	549	21.6	689	27.1
		64	2	619	24.4	737	29.0	983	38.7	398	15.7	538	21.2
		115	4	902	35.5	737	29.0	983	38.7	398	15.7	538	21.2
		216	8	912	35.9	737	29.0	983	38.7	465	18.3	605	23.8
	7	318	12	1142	45.0	737	29.0	983	38.7	465	18.3	605	23.8
		420	16	1278	50.3	737	29.0	983	38.7	465	18.3	605	23.8
		64	3	634	25.0	737	29.0	983	38.7	398	15.7	538	21.2
		115	4	917	36.1	737	29.0	983	38.7	398	15.7	538	21.2
		216	8	949	37.3	737	29.0	983	38.7	465	18.3	605	23.8
635	5H	318	12	1141	44.9	737	29.0	983	38.7	465	18.3	605	23.8
		420	16	1276	50.2	737	29.0	983	38.7	465	18.3	605	23.8
		64	2	605	23.8	779	30.7	1007	39.6	398	15.7	538	21.2
		115	4	790	31.1	779	30.7	1007	39.6	398	15.7	538	21.2
		216	8	1113	43.8	779	30.7	1007	39.6	502	19.8	642	25.3
	7	318	12	1137	44.8	779	30.7	1007	39.6	502	19.8	642	25.3
		420	16	1229	48.4	779	30.7	1007	39.6	549	21.6	689	27.1
		64	2	620	24.4	779	30.7	1007	39.6	398	15.7	538	21.2
		115	4	804	31.7	779	30.7	1007	39.6	398	15.7	538	21.2
		216	8	1150	45.3	779	30.7	1007	39.6	502	19.8	642	25.3
		318	12	1136	44.7	779	30.7	1007	39.6	502	19.8	642	25.3
		420	16	1227	48.3	779	30.7	1007	39.6	549	21.6	689	27.1

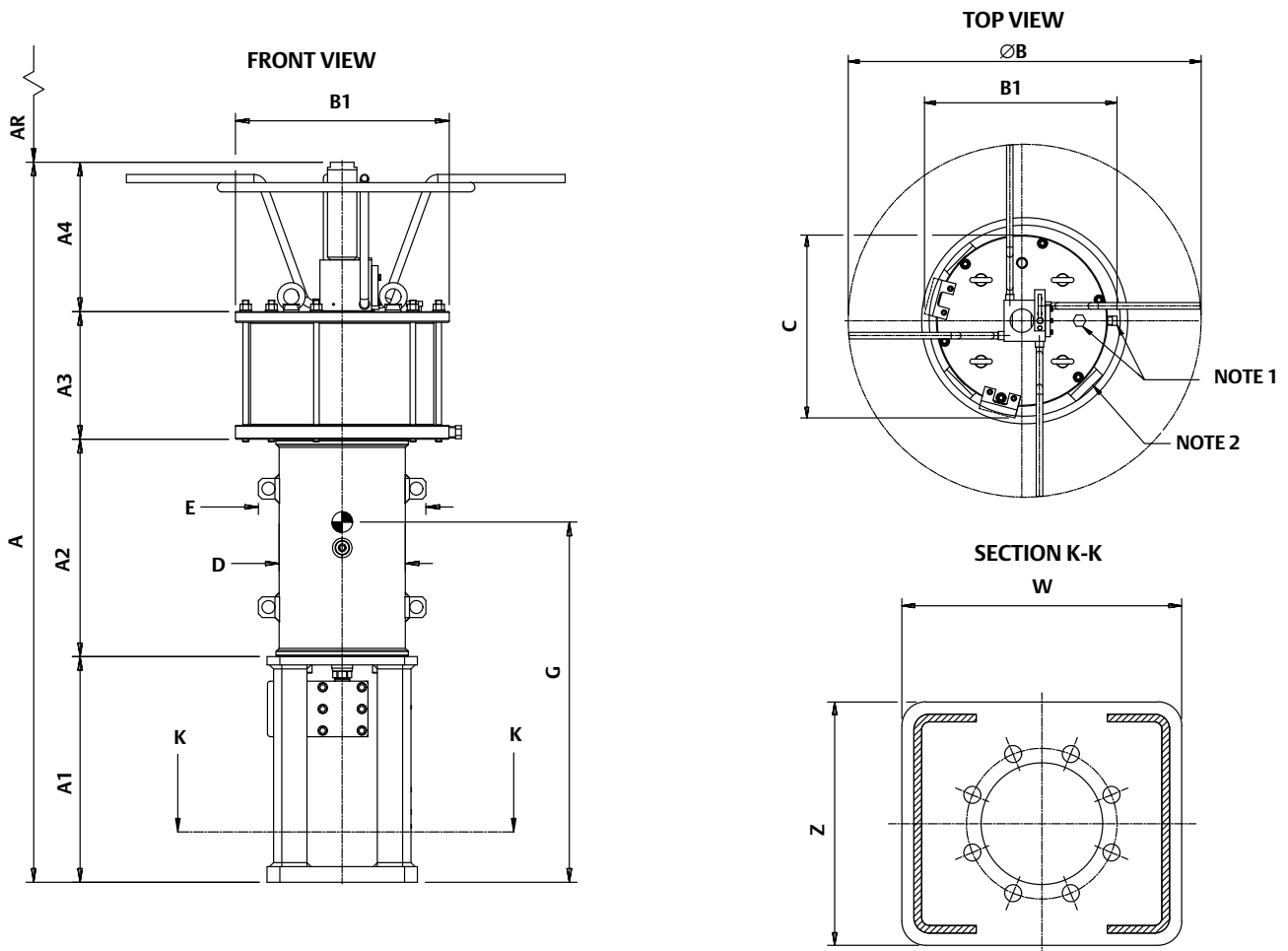
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Table 11. 785C Single-Acting and Double-Acting Spring Return (Spring Retracts) (Cont.)
Dimensions A, A1, A2, A3, G, B, C⁽¹⁾, D, E

ACTUATOR SIZE	YOKE BOSS, Inch	MAX TRAVEL		G		B		C		D		E	
685	5H	115	4	814	32.0	832	32.8	1035	40.7	398	15.7	538	21.2
		216	8	1055	41.5	832	32.8	1035	40.7	502	19.8	642	25.3
		318	12	1150	45.3	832	32.8	1035	40.7	465	18.3	605	23.8
		420	16	1247	49.1	832	32.8	1035	40.7	549	21.6	689	27.1
	7	115	4	829	32.6	832	32.8	1035	40.7	398	15.7	538	21.2
		216	8	1091	43.0	832	32.8	1035	40.7	502	19.8	642	25.3
		318	12	1148	45.2	832	32.8	1035	40.7	465	18.3	605	23.8
		420	16	1245	49.0	832	32.8	1035	40.7	549	21.6	689	27.1

1. Dimensions of A, A1, A2, A3, B, C, D, E and G (Center of Gravity) are the max value of each travel. Contact your Emerson sales office for details

Figure 13. Fisher 785C Single-Acting Spring Return Piston Actuator with Manual Hand Wheel (MHW)
(see table 12 and 13)

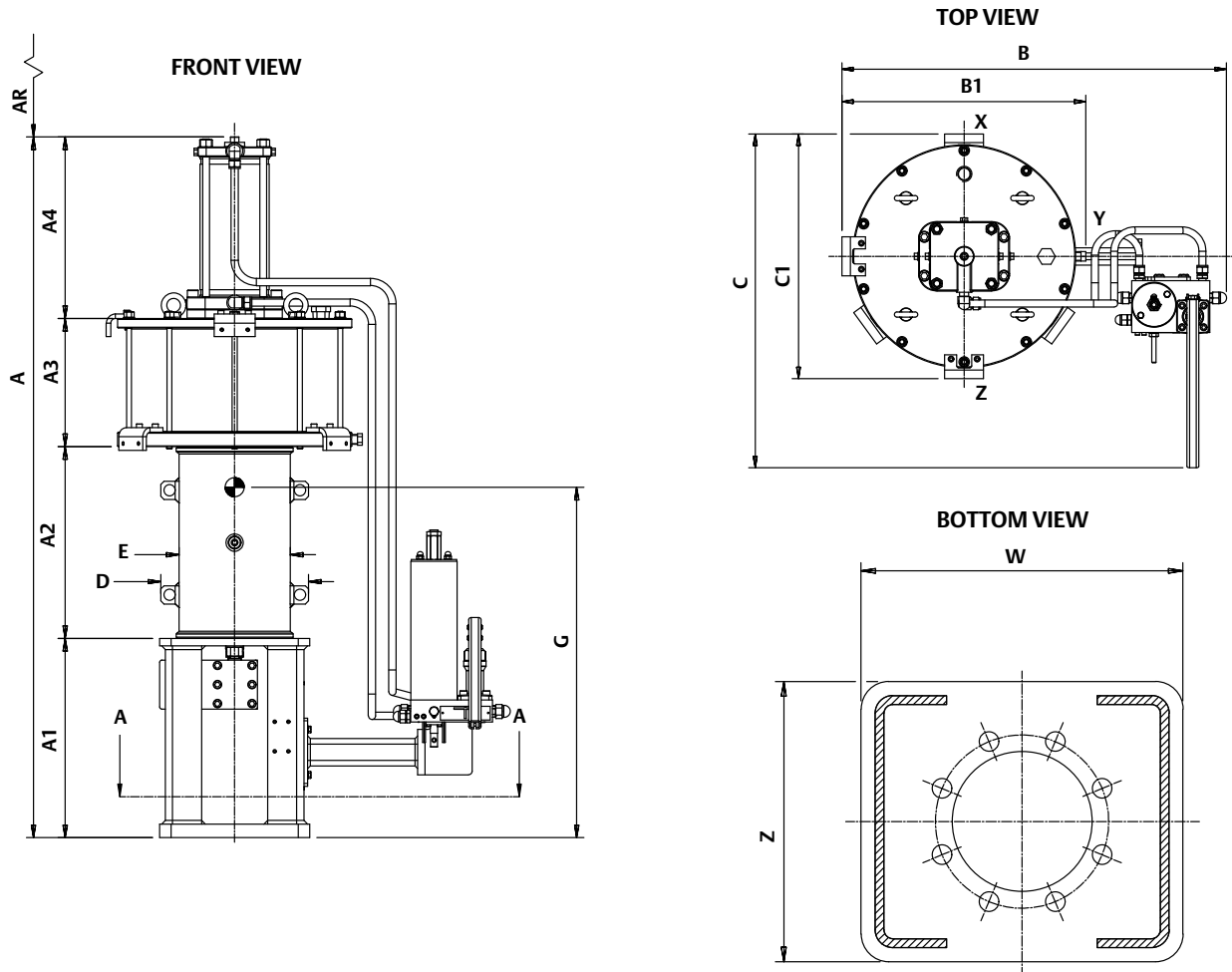


Notes:

- Two pneumatic ports on top and bottom flanges. One plug supplied as standard for both pneumatic port on top and bottom flange.
- Two brackets for pneumatic device support on top flange. Three brackets for pneumatic device support on bottom flange.

● Estimated position of center of gravity.

Figure 14. Fisher 785C Single-Acting Spring Return Piston Actuator with Manual Hand Pump (MHP)
(see table 12 and 13)



☉ Estimated position of center of gravity.

Table 12. 785C Spring Return (Double-Acting and Single-Acting) with Manual Override
Dimensions A, A1, A2, A3, A4, G, ØB/B, B1, C, C1⁽¹⁾, D, E

ACTUATOR SIZE	YOKE BOSS, Inch	MAXIMUM TRAVEL		MANUAL OVER-RIDE	A		A1		A2		A3		A4		G	
		mm	inch		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
280	3.56	115	4	MHW	1741	68.5	416	16.4	739	29.1	296	11.7	290	11.4	871	34.3
		216	8	MHW	2235	88.0	524	20.6	923	36.3	397	15.6	391	15.4	1118	44.0
	5 or 5H	115	4	MHW	1763	69.4	438	17.2	739	29.1	296	11.7	290	11.4	882	34.7
		216	8	MHW	2235	88.0	524	20.6	923	36.3	397	15.6	391	15.4	1118	44.0
335	3.56	64	2	MHW	1472	58.0	416	16.4	463	18.2	303	11.9	290	11.4	736	29.0
		115	4	MHW	1714	67.5	416	16.4	705	27.8	302.5	11.9	290	11.4	857	33.7
		216	8	MHW	2234	88.0	524	20.6	915	36.0	403.5	15.9	391	15.4	1117	44.0
	5 or 5H	64	2	MHW	1494	58.8	438	17.2	463	18.2	303	11.9	290	11.4	747	29.4
		115	4	MHW	1736	68.3	438	17.2	705	27.8	302.5	11.9	290	11.4	868	34.2
		216	8	MHW	2234	88.0	524	20.6	915	36.0	403.5	15.9	391	15.4	1117	44.0
385	3.56	64	2	MHW	1467	57.8	416	16.4	476	18.7	285	11.2	290	11.4	734	28.9
		115	4	MHW	1696	66.8	416	16.4	705	27.8	285	11.2	290	11.4	848	33.4
		216	8	MHW	2264	89.1	524	20.6	963	37.9	386	15.2	391	15.4	1132	44.6
	5 or 5H	64	2	MHW	1489	58.6	438	17.2	476	18.7	285	11.2	290	11.4	745	29.3
		115	4	MHW	1718	67.6	438	17.2	705	27.8	285	11.2	290	11.4	859	33.8
		216	8	MHW	2264	89.1	524	20.6	963	37.9	386	15.2	391	15.4	1132	44.6
		318	12	MHW	2754	108.4	664	26.1	1110	43.7	488	19.2	492	19.4	1377	54.2
	7	64	3	MHW	1521	59.9	470	18.5	476	18.7	285	11.2	290	11.4	761	30.0
		115	4	MHW	1750	68.9	470	18.5	705	27.8	285	11.2	290	11.4	875	34.4
		216	8	MHW	2340	92.1	600	23.6	963	37.9	386	15.2	391	15.4	1170	46.1
		318	12	MHW	2754	108.4	664	26.1	1110	43.7	488	19.2	492	19.4	1377	54.2
		420	16	MHW	3183	125.3	766	30.2	1132	44.6	587	23.1	698	27.5	1592	62.7
435	5 or 5H	64	2	MHP	1604	63.1	438	17.2	509	20.0	282	11.1	375	14.8	802	31.6
		115	4	MHP	1970	77.6	438	17.2	875	34.4	282	11.1	375	14.8	985	38.8
		216	8	MHP	2301	90.6	524	20.6	898	35.4	383	15.1	496	19.5	1151	45.3
		318	12	MHP	2829	111.4	664	26.1	1083	42.6	485	19.1	597	23.5	1415	55.7
		420	16	MHP	3183	125.3	766	30.2	1132	44.6	587	23.1	698	27.5	1592	62.7
	7	64	2	MHP	1636	64.4	470	18.5	509	20.0	282	11.1	375	14.8	818	32.2
		115	4	MHP	2002	78.8	470	18.5	875	34.4	282	11.1	375	14.8	1001	39.4
		216	8	MHP	2377	93.6	600	23.6	898	35.4	383	15.1	496	19.5	1189	46.8
		318	12	MHP	2829	111.4	664	26.1	1083	42.6	485	19.1	597	23.5	1415	55.7
		420	16	MHP	3183	125.3	766	30.2	1132	44.6	587	23.1	698	27.5	1592	62.7
485	5 or 5H	64	2	MHP	1773	69.8	438	17.2	647	25.5	313	12.3	375	14.8	887	34.9
		115	4	MHP	1879	74.0	438	17.2	753	29.6	313	12.3	375	14.8	940	37.0
		216	8	MHP	2274	89.5	524	20.6	840	33.1	414	16.3	496	19.5	1137	44.8
		318	12	MHP	2812	110.7	664	26.1	1035	40.7	516	20.3	597	23.5	1406	55.4
		420	16	MHP	3214	126.5	766	30.2	1132	44.6	618	24.3	698	27.5	1607	63.3
	7	64	2	MHP	1805	71.1	470	18.5	647	25.5	313	12.3	375	14.8	903	35.6
		115	4	MHP	1911	75.2	470	18.5	753	29.6	313	12.3	375	14.8	956	37.6
		216	8	MHP	2350	92.5	600	23.6	840	33.1	414	16.3	496	19.5	1175	46.3
		318	12	MHP	2812	110.7	664	26.1	1035	40.7	516	20.3	597	23.5	1406	55.4
		420	16	MHP	3214	126.5	766	30.2	1132	44.6	618	24.3	698	27.5	1607	63.3

- Continued -

Table 12. 785C Spring Return (Double-Acting and Single-Acting) with Manual Override (Cont.)
Dimensions A, A1, A2, A3, A4, G, ØB/B, B1, C, C1⁽¹⁾, D, E

ACTUATOR SIZE	YOKE BOSS, Inch	MAXIMUM TRAVEL		MANUAL OVER-RIDE	A		A1		A2		A3		A4		G					
		mm	inch		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch				
535	5 or 5H	58	2	MHP	1527	60.1	438	17.2	397	15.6	317	12.5	375	14.8	764	30.1				
		64	2	MHP	1525	60.0	438	17.2	395	15.6	317	12.5	375	14.8	763	30.0				
		115	4	MHP	1905	75.0	438	17.2	775	30.5	317	12.5	375	14.8	953	37.5				
		216	8	MHP	2473	97.4	524	20.6	1035	40.7	418	16.5	496	19.5	1237	48.7				
		318	12	MHP	2783	109.6	664	26.1	1002	39.4	520	20.5	597	23.5	1392	54.8				
		420	16	MHP	3137	123.5	766	30.2	1051	41.4	622	24.5	698	27.5	1569	61.8				
	7	58	2	MHP	1559	61.4	470	18.5	397	15.6	317	12.5	375	14.8	780	30.7				
		64	2	MHP	1557	61.3	470	18.5	395	15.6	317	12.5	375	14.8	779	30.7				
		115	4	MHP	1937	76.3	470	18.5	775	30.5	317	12.5	375	14.8	969	38.1				
		216	8	MHP	2549	100.4	600	23.6	1035	40.7	418	16.5	496	19.5	1275	50.2				
		318	12	MHP	2783	109.6	664	26.1	1002	39.4	520	20.5	597	23.5	1392	54.8				
		420	16	MHP	3137	123.5	766	30.2	1051	41.4	622	24.5	698	27.5	1569	61.8				
	585	5H	64	2	MHP	1606	63.2	461	18.1	405	15.9	348	13.7	392	15.4	803	31.6			
			115	4	MHP	2172	85.5	461	18.1	971	38.2	348	13.7	392	15.4	1086	42.8			
216			8	MHP	2313	91.1	547	21.5	804	31.7	449	17.7	513	20.2	1157	45.5				
318			12	MHP	2874	113.1	687	27.0	1022	40.2	551	21.7	614	24.2	1437	56.6				
420			16	MHP	3246	127.8	789	31.1	1089	42.9	653	25.7	715	28.1	1623	63.9				
7		64	2	MHP	1635	64.4	490	19.3	405	15.9	348	13.7	392	15.4	818	32.2				
		115	4	MHP	2201	86.7	490	19.3	971	38.2	348	13.7	392	15.4	1101	43.3				
		216	8	MHP	2386	93.9	620	24.4	804	31.7	449	17.7	513	20.2	1193	47.0				
		318	12	MHP	2871	113.0	684	26.9	1022	40.2	551	21.7	614	24.2	1436	56.5				
		420	16	MHP	3242	127.6	785	30.9	1089	42.9	653	25.7	715	28.1	1621	63.8				
635		5H	64	2	MHP	1579	62.2	461	18.1	377	14.8	349	13.7	392	15.4	790	31.1			
			115	4	MHP	1948	76.7	461	18.1	746	29.4	392	15.4	392	15.4	974	38.3			
			216	8	MHP	2716	106.9	547	21.5	1206	47.5	450	17.7	513	20.2	1358	53.5			
			318	12	MHP	2865	112.8	687	27.0	1012	39.8	552	21.7	614	24.2	1433	56.4			
	420		16	MHP	3150	124.0	789	31.1	992	39.1	654	25.7	715	28.1	1575	62.0				
	7	64	2	MHP	1608	63.3	490	19.3	377	14.8	349	13.7	392	15.4	804	31.7				
		115	4	MHP	1977	77.8	490	19.3	746	29.4	349	13.7	392	15.4	989	38.9				
		216	8	MHP	2789	109.8	620	24.4	1206	47.5	450	17.7	513	20.2	1395	54.9				
		318	12	MHP	2862	112.7	684	26.9	1012	39.8	552	21.7	614	24.2	1431	56.3				
		420	16	MHP	3146	123.9	785	30.9	992	39.1	654	25.7	715	28.1	1573	61.9				
	685	5H	115	4	MHP	2011	79.2	486	19.1	760	29.9	373	14.7	392	15.4	1006	39.6			
			216	8	MHP	2613	102.9	572	22.5	1054	41.5	474	18.7	513	20.2	1307	51.5			
			318	12	MHP	2904	114.3	712	28.0	1002	39.4	576	22.7	614	24.2	1452	57.2			
			420	16	MHP	3199	125.9	814	32.0	992	39.1	678	26.7	715	28.1	1600	63.0			
7		115	4	MHP	2040	80.3	515	20.3	760	29.9	373	14.7	392	15.4	1020	40.2				
		216	8	MHP	2686	105.7	645	25.4	1054	41.5	474	18.7	513	20.2	1343	52.9				
		318	12	MHP	2901	114.2	709	27.9	1002	39.4	576	22.7	614	24.2	1451	57.1				
		420	16	MHP	3195	125.8	810	31.9	992	39.1	678	26.7	715	28.1	1598	62.9				
		ACTUATOR SIZE		YOKE BOSS, Inch	MAXIMUM TRAVEL		MANUAL OVER-RIDE		ØB/B		B1		C		C1		D		E	
		280	3.56	115	4	MHW	850	33.5	419	16.5	464	18.3	-	-	324	12.8	464	18.3		
216	8			MHW	850	33.5	419	16.5	464	18.3	-	-	245	9.6	325	12.8				
5 or 5H	115		4	MHW	850	33.5	419	16.5	464	18.3	-	-	324	12.8	464	18.3				
	216		8	MHW	850	33.5	419	16.5	464	18.3	-	-	245	9.6	325	12.8				

- Continued -

Table 12. 785C Spring Return (Double-Acting and Single-Acting) with Manual Override (Cont.)
Dimensions A, A1, A2, A3, A4, G, ØB/B, B1, C, C1⁽¹⁾, D, E

ACTUATOR SIZE	YOKE BOSS, Inch	MAXIMUM TRAVEL		MANUAL OVER-RIDE	ØB/B		B1		C		C1		D		E		
		mm	inch		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
335	3.56	64	2	MHW	1250	49.2	472	18.6	517	20.4	-	-	324	12.8	464	18.3	
		115	4	MHW	1250	49.2	472	18.6	517	20.4	-	-	324	12.8	464	18.3	
		216	8	MHW	1250	49.2	472	18.6	517	20.4	-	-	324	12.8	464	18.3	
	5 or 5H	64	2	MHW	1250	49.2	472	18.6	517	20.4	-	-	324	12.8	464	18.3	
		115	4	MHW	1250	49.2	472	18.6	517	20.4	-	-	324	12.8	464	18.3	
		216	8	MHW	1250	49.2	472	18.6	517	20.4	-	-	324	12.8	464	18.3	
385	3.56	64	2	MHW	1400	55.1	519	20.4	564	564	-	-	360	14.2	500	19.7	
		115	4	MHW	1400	55.1	519	20.4	564	22.2	-	-	324	12.8	464	18.3	
		216	8	MHW	1400	55.1	519	20.4	564	564	-	-	360	14.2	500	19.7	
	5 or 5H	64	2	MHW	1400	55.1	519	20.4	564	564	-	-	360	14.2	500	19.7	
		115	4	MHW	1400	55.1	519	20.4	564	22.2	-	-	324	12.8	464	18.3	
		216	8	MHW	1400	55.1	519	20.4	564	564	-	-	360	14.2	500	19.7	
	7	318	12	MHW	1400	55.1	519	20.4	564	22.2	-	-	360	14.2	500	19.7	
		64	3	MHW	1400	55.1	519	20.4	564	564	-	-	360	14.2	500	19.7	
		115	4	MHW	1400	55.1	519	20.4	564	22.2	-	-	324	12.8	464	18.3	
	435	5 or 5H	216	8	MHW	1400	55.1	519	20.4	564	564	-	-	360	14.2	500	19.7
			318	12	MHW	1400	55.1	519	20.4	564	22.2	-	-	360	14.2	500	19.7
			64	2	MHP	908	35.7	572	22.5	846	33.3	565	22.2	360	14.2	500	19.7
115			4	MHP	908	35.7	572	22.5	846	33.3	565	22.2	398	15.7	538	21.2	
216			8	MHP	908	35.7	572	22.5	846	33.3	565	22.2	360	14.2	500	19.7	
7		420	16	MHP	908	35.7	572	22.5	846	33.3	565	22.2	360	14.2	500	19.7	
485	5 or 5H	64	2	MHP	908	35.7	572	22.5	846	33.3	565	22.2	360	14.2	500	19.7	
		115	4	MHP	908	35.7	572	22.5	846	33.3	565	22.2	398	15.7	538	21.2	
		216	8	MHP	908	35.7	572	22.5	846	33.3	565	22.2	360	14.2	500	19.7	
		318	12	MHP	908	35.7	572	22.5	846	33.3	565	22.2	360	14.2	500	19.7	
		420	16	MHP	908	35.7	572	22.5	846	33.3	565	22.2	360	14.2	500	19.7	
	7	64	2	MHP	940	37.0	636	25.0	858	33.8	630	24.8	360	14.2	500	19.7	
		115	4	MHP	940	37.0	636	25.0	858	33.8	630	24.8	398	15.7	538	21.2	
		216	8	MHP	940	37.0	636	25.0	858	33.8	630	24.8	360	14.2	500	19.7	
		318	12	MHP	940	37.0	636	25.0	858	33.8	630	24.8	360	14.2	500	19.7	
		420	16	MHP	940	37.0	636	25.0	858	33.8	630	24.8	360	14.2	500	19.7	
		64	2	MHP	940	37.0	636	25.0	858	33.8	630	24.8	324	12.8	464	18.3	
		115	4	MHP	940	37.0	636	25.0	858	33.8	630	24.8	398	15.7	538	21.2	
535	5 or 5H	216	8	MHP	940	37.0	636	25.0	858	33.8	630	24.8	360	14.2	500	19.7	
		318	12	MHP	940	37.0	636	25.0	858	33.8	630	24.8	360	14.2	500	19.7	
		420	16	MHP	940	37.0	636	25.0	858	33.8	630	24.8	360	14.2	500	19.7	
		58	2	MHP	962	37.9	684	26.9	915	36.0	680	26.8	360	14.2	464	18.3	
		64	2	MHP	962	37.9	684	26.9	915	36.0	680	26.8	360	14.2	500	19.7	
		115	4	MHP	962	37.9	684	26.9	915	36.0	680	26.8	549	21.6	689	27.1	
	7	216	8	MHP	962	37.9	684	26.9	915	36.0	680	26.8	502	19.8	642	25.3	
		318	12	MHP	962	37.9	684	26.9	915	36.0	680	26.8	549	21.6	689	27.1	
		420	16	MHP	962	37.9	684	26.9	915	36.0	680	26.8	549	21.6	689	27.1	
		58	2	MHP	962	37.9	684	26.9	915	36.0	680	26.8	360	14.2	464	18.3	
		64	2	MHP	962	37.9	684	26.9	915	36.0	680	26.8	360	14.2	500	19.7	
		115	4	MHP	962	37.9	684	26.9	915	36.0	680	26.8	549	21.6	689	27.1	
7	216	8	MHP	962	37.9	684	26.9	915	36.0	680	26.8	502	19.8	642	25.3		
	318	12	MHP	962	37.9	684	26.9	915	36.0	680	26.8	549	21.6	689	27.1		
	420	16	MHP	962	37.9	684	26.9	915	36.0	680	26.8	549	21.6	689	27.1		
	58	2	MHP	962	37.9	684	26.9	915	36.0	680	26.8	360	14.2	464	18.3		
	64	2	MHP	962	37.9	684	26.9	915	36.0	680	26.8	360	14.2	500	19.7		
	115	4	MHP	962	37.9	684	26.9	915	36.0	680	26.8	549	21.6	689	27.1		

- Continued -

Table 12. 785C Spring Return (Double-Acting and Single-Acting) with Manual Override (Cont.)
Dimensions A, A1, A2, A3, A4, G, ØB/B, B1, C, C1⁽¹⁾, D, E

ACTUATOR SIZE	YOKE BOSS, Inch	MAXIMUM TRAVEL		MANUAL OVERRIDE	ØB/B		B1		C		C1		D		E	
		mm	inch		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
585	5H	64	2	MHP	1102	43.4	737	29.0	983	38.7	730	28.7	398	15.7	538	21.2
		115	4	MHP	1102	43.4	737	29.0	983	38.7	730	28.7	398	15.7	538	21.2
		216	8	MHP	1102	43.4	737	29.0	983	38.7	730	28.7	465	18.3	605	23.8
		318	12	MHP	1102	43.4	737	29.0	983	38.7	730	28.7	465	18.3	605	23.8
		420	16	MHP	1102	43.4	737	29.0	983	38.7	730	28.7	465	18.3	605	23.8
	7	64	2	MHP	1102	43.4	737	29.0	983	38.7	730	28.7	398	15.7	538	21.2
		115	4	MHP	1102	43.4	737	29.0	983	38.7	730	28.7	398	15.7	538	21.2
		216	8	MHP	1102	43.4	737	29.0	983	38.7	730	28.7	465	18.3	605	23.8
		318	12	MHP	1102	43.4	737	29.0	983	38.7	730	28.7	465	18.3	605	23.8
		420	16	MHP	1102	43.4	737	29.0	983	38.7	730	28.7	465	18.3	605	23.8
635	5H	64	2	MHP	1127	44.4	779	30.7	1007	39.6	785	30.9	398	15.7	538	21.2
		115	4	MHP	1127	44.4	779	30.7	1007	39.6	785	30.9	398	15.7	538	21.2
		216	8	MHP	1127	44.4	779	30.7	1007	39.6	785	30.9	502	19.8	642	25.3
		318	12	MHP	1127	44.4	779	30.7	1007	39.6	785	30.9	502	19.8	642	25.3
		420	16	MHP	1127	44.4	779	30.7	1007	39.6	785	30.9	549	21.6	689	27.1
	7	64	2	MHP	1127	44.4	779	30.7	1007	39.6	785	30.9	398	15.7	538	21.2
		115	4	MHP	1127	44.4	779	30.7	1007	39.6	785	30.9	398	15.7	538	21.2
		216	8	MHP	1127	44.4	779	30.7	1007	39.6	785	30.9	502	19.8	642	25.3
		318	12	MHP	1127	44.4	779	30.7	1007	39.6	785	30.9	502	19.8	642	25.3
		420	16	MHP	1127	44.4	779	30.7	1007	39.6	785	30.9	549	21.6	689	27.1
685	5H	115	4	MHP	1153	45.4	832	32.8	1035	40.7	840	33.1	398	15.7	538	21.2
		216	8	MHP	1153	45.4	832	32.8	1035	40.7	840	33.1	502	19.8	642	25.3
		318	12	MHP	1153	45.4	832	32.8	1035	40.7	840	33.1	465	18.3	605	23.8
		420	16	MHP	1153	45.4	832	32.8	1035	40.7	840	33.1	549	21.6	689	27.1
	7	115	4	MHP	1153	45.4	832	32.8	1035	40.7	840	33.1	398	15.7	538	21.2
		216	8	MHP	1153	45.4	832	32.8	1035	40.7	840	33.1	502	19.8	642	25.3
		318	12	MHP	1153	45.4	832	32.8	1035	40.7	840	33.1	465	18.3	605	23.8
		420	16	MHP	1153	45.4	832	32.8	1035	40.7	840	33.1	549	21.6	689	27.1

1. Dimensions of A, A1, A2, A3, A4, ØB/B, B1, C, C1 and G (Center of Gravity) are the max value of each travel. Contact your Emerson sales office for details.

Table 13. 785C Spring Return (Double-Acting and Single-Acting) Dimensions Z and W

ACTUATOR SIZE	WITHOUT MANUAL OVERRIDE				WITH MANUAL OVERRIDE			
	Z		W		Z		W	
	3-9/16, 5, 5H, or 7 Inch Yoke Boss							
	mm	Inch	mm	Inch	mm	Inch	mm	Inch
280	254	10	292	11.5	254	10	292	11.5
335	254	10	292	11.5	254	10	292	11.5
385	330	13	330	13	330	13	330	13
435	330	13	330	13	330	13	330	13
485	330	13	330	13	330	13	330	13
535	330	13	330	13	330	13	330	13
585	487	19.2	436	17.2	487	19.2	436	17.2
635	487	19.2	436	17.2	487	19.2	436	17.2
685	487	19.2	436	17.2	487	19.2	436	17.2

Table 14. 785C Springless and Spring Return Max Dimension AR for all Cylinder Sizes

MAXIMUM TRAVEL		YOKE BOSS, INCH			
mm	Inch	3-9/16	5	5H	7
102	4	9.13	12.63	12.63	13.88
203	8	11.13	12.00	12.00	15.00
305	12	---	---	13.50	13.50
406	16	---	---	13.50	13.50
508	20	---	---	13.50	13.50
610	24	---	---	13.50	13.50

Table 15. 785C Double-Acting Springless Approximate Weights for Constructions without Manual Override

MAXIMUM TRAVEL	APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)								
	280		335		385			435	
mm (inches)	3-9/16 Yoke Boss	5 or 5H Yoke Boss	3-9/16 Yoke Boss	5 or 5H Yoke Boss	3-9/16 Yoke Boss	5 or 5H Yoke Boss	7 Yoke Boss	5 or 5H Yoke Boss	7 Yoke Boss
102 (4)	129 (285)	126 (277)	160 (353)	157 (345)	209 (461)	205 (451)	203 (449)	238 (524)	237 (522)
203 (8)	142 (312)	137 (302)	175 (386)	171 (376)	227 (500)	221 (488)	222 (490)	257 (566)	258 (568)
305 (12)	---	151 (333)	---	187 (411)	---	240 (530)	237 (523)	278 (613)	275 (606)
406 (16)	---	163 (360)	---	201 (443)	---	258 (568)	255 (561)	298 (657)	295 (650)
508 (20)	---	175 (386)	---	216 (475)	---	275 (606)	272 (600)	317 (699)	314 (693)
610 (24)	---	188 (413)	---	230 (507)	---	292 (644)	289 (637)	337 (742)	334 (736)

MAXIMUM TRAVEL	APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)									
	485		535		585		635		685	
mm (inches)	5 or 5H Yoke Boss	5 or 5H Yoke Boss	5 or 5H Yoke Boss	7 Yoke Boss	5H Yoke Boss	7 Yoke Boss	5H Yoke Boss	7 Yoke Boss	5H Yoke Boss	7 Yoke Boss
102 (4)	327 (720)	325 (717)	382 (842)	381 (839)	513 (1130)	512 (1128)	590 (1300)	589 (1298)	697 (1536)	696 (1534)
203 (8)	348 (766)	349 (769)	405 (894)	406 (896)	541 (1193)	543 (1198)	624 (1376)	624 (1381)	733 (1615)	735 (1621)
305 (12)	371 (819)	368 (812)	431 (951)	428 (944)	573 (1263)	570 (1257)	662 (1460)	659 (1454)	772 (1703)	769 (1696)
406 (16)	393 (867)	390 (860)	456 (1005)	453 (998)	602 (1328)	599 (1321)	698 (1539)	695 (1532)	809 (1784)	806 (1777)
508 (20)	415 (915)	412 (908)	480 (1058)	477 (1051)	632 (1393)	628 (1386)	734 (1617)	731 (1611)	846 (1866)	843 (1859)
610 (24)	437 (963)	433 (956)	504 (1111)	501 (1104)	661 (1458)	658 (1451)	769 (1696)	766 (1689)	883 (1947)	880 (1940)

Table 16. 785C Double-Acting Springless Approximate Weights for Constructions with Manual Override

MAXIMUM TRAVEL	APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)								
	280		335		385			435	
mm (inches)	3-9/16 Yoke Boss	5 or 5H Yoke Boss	3-9/16 Yoke Boss	5 or 5H Yoke Boss	3-9/16 Yoke Boss	5 or 5H Yoke Boss	7 Yoke Boss	5 or 5H Yoke Boss	7 Yoke Boss
102 (4)	156 (344)	152 (335)	196 (432)	193 (425)	229 (505)	224 (494)	223 (492)	313 (690)	311 (686)
203 (8)	171 (377)	166 (366)	213 (470)	209 (461)	249 (549)	243 (536)	244 (538)	337 (743)	338 (745)
305 (12)	---	183 (403)	---	230 (507)	---	265 (584)	262 (578)	365 (805)	362 (798)
406 (16)	---	197 (434)	---	249 (549)	---	284 (626)	284 (626)	391 (862)	388 (855)
508 (20)	---	212 (467)	---	268 (591)	---	304 (670)	301 (664)	416 (917)	413 (910)
610 (24)	---	226 (498)	---	287 (633)	---	324 (714)	321 (708)	442 (974)	442 (974)

MAXIMUM TRAVEL	APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)									
	485		535		585		635		685	
mm (inches)	5 or 5H Yoke Boss	7 Yoke Boss	5 or 5H Yoke Boss	7 Yoke Boss	5H Yoke Boss	7 Yoke Boss	5H Yoke Boss	7 Yoke Boss	5H Yoke Boss	7 Yoke Boss
102 (4)	425 (937)	424 (935)	481 (1060)	479 (1056)	624 (1375)	623 (1373)	701 (1545)	700 (1543)	855 (1884)	854 (1882)
203 (8)	454 (1001)	455 (1003)	512 (1129)	513 (1131)	663 (1462)	665 (1467)	746 (1645)	749 (1650)	903 (1990)	905 (1996)
305 (12)	487 (1074)	483 (1065)	547 (1206)	544 (1199)	706 (1557)	703 (1550)	794 (1750)	791 (1744)	955 (2105)	952 (2098)
406 (16)	517 (1140)	514 (1133)	579 (1276)	576 (1270)	747 (1646)	743 (1639)	842 (1857)	839 (1850)	1004 (2214)	1001 (2207)
508 (20)	547 (1206)	544 (1199)	612 (1349)	609 (1343)	787 (1735)	784 (1728)	889 (1959)	886 (1953)	1054 (2323)	1051 (2316)
610 (24)	577 (1272)	574 (1265)	644 (1420)	641 (1413)	827 (1824)	824 (1817)	935 (2062)	932 (2055)	1103 (2432)	1100 (2425)

Table 17. 785C Spring Return (Double-Acting and Single-Acting) Approximate Weight for Constructions without Manual Override

MAXIMUM TRAVEL	APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)									
	280		335		385			435		
mm (inches)	3-9/16 Yoke Boss	5 or 5H Yoke Boss	3-9/16 Yoke Boss	5 or 5H Yoke Boss	3-9/16 Yoke Boss	5 or 5H Yoke Boss	7 Yoke Boss	5 or 5H Yoke Boss	7 Yoke Boss	
51 (2)	---	---	255 (562)	251 (553)	349 (769)	345 (761)	343 (756)	394 (869)	392 (864)	
102 (4)	253 (558)	249 (549)	288 (635)	285 (628)	435 (959)	430 (948)	429 (946)	498 (1098)	497 (1096)	
203 (8)	347 (765)	343 (756)	331 (730)	327 (721)	451 (994)	445 (981)	447 (985)	496 (1093)	497 (1096)	
305 (12)	---	---	---	---	---	452 (996)	449 (990)	487 (1074)	484 (1067)	
406 (16)	---	---	---	---	---	---	---	527 (1162)	524 (1155)	

MAXIMUM TRAVEL	APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)									
	485		535		585		635		685	
mm (inches)	5 or 5H Yoke Boss	7 Yoke Boss	5 or 5H Yoke Boss	7 Yoke Boss	5H Yoke Boss	7 Yoke Boss	5H Yoke Boss	7 Yoke Boss	5H Yoke Boss	7 Yoke Boss
51 (2)	472 (1041)	471 (1038)	526 (1160)	527 (1162)	665 (1466)	665 (1466)	726 (1601)	726 (1601)	---	---
102 (4)	558 (1230)	556 (1226)	808 (1781)	806 (1777)	1008 (2222)	1008 (2222)	944 (2081)	943 (2079)	1171 (2582)	1171 (2582)
203 (8)	588 (1296)	589 (1299)	858 (1892)	859 (1894)	892 (1967)	894 (1971)	1213 (2674)	1215 (2679)	1301 (2868)	1301 (2868)
305 (12)	574 (1265)	571 (1259)	888 (1958)	885 (1951)	949 (2092)	945 (2083)	1167 (2573)	1164 (2566)	1272 (2804)	1269 (2798)
406 (16)	623 (1373)	620 (1367)	920 (2028)	917 (2022)	996 (2196)	993 (2189)	1172 (2584)	1169 (2577)	1284 (2831)	1281 (2824)

Table 18. 785C Spring Return (Double-Acting and Single-Acting) Approximate Weights for Construction with Manual Override

MAXIMUM TRAVEL	APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)									
	280		335		385			435		
mm (inches)	3-9/16 Yoke Boss	5 or 5H Yoke Boss	3-9/16 Yoke Boss	5 or 5H Yoke Boss	3-9/16 Yoke Boss	5 or 5H Yoke Boss	7 Yoke Boss	5 or 5H Yoke Boss	7 Yoke Boss	
51 (2)	---	---	290 (639)	287 (633)	368 (811)	363 (800)	362 (798)	468 (1032)	466 (1027)	
102 (4)	279 (615)	276 (608)	324 (714)	320 (705)	453 (999)	449 (990)	448 (988)	572 (1261)	571 (1259)	
203 (8)	376 (829)	371 (818)	369 (813)	364 (802)	472 (1041)	467 (1030)	468 (1032)	576 (1270)	578 (1274)	
305 (12)	---	---	---	---	---	476 (1049)	473 (1043)	572 (1261)	569 (1254)	
406 (16)	---	---	---	---	---	---	---	619 (1365)	616 (1358)	

MAXIMUM TRAVEL	APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)									
	485		535		585		635		685	
mm (inches)	5 or 5H Yoke Boss	7 Yoke Boss	5 or 5H Yoke Boss	7 Yoke Boss	5H Yoke Boss	7 Yoke Boss	5H Yoke Boss	7 Yoke Boss	5H Yoke Boss	7 Yoke Boss
51 (2)	570 (1257)	569 (1254)	624 (1376)	623 (1373)	775 (1709)	774 (1706)	836 (1843)	835 (1841)	---	---
102 (4)	656 (1446)	654 (1442)	905 (1995)	904 (1993)	1118 (2465)	1117 (2463)	1053 (2321)	1052 (2319)	1328 (2928)	1327 (2926)
203 (8)	694 (1530)	695 (1532)	966 (2130)	964 (2125)	1012 (2231)	1015 (2238)	1333 (2939)	1336 (2945)	1470 (3241)	1472 (3245)
305 (12)	688 (1517)	685 (1510)	1002 (2209)	999 (2202)	1080 (2381)	1077 (2374)	1297 (2859)	1294 (2853)	1454 (3205)	1450 (3197)
406 (16)	745 (1642)	742 (1636)	1042 (2297)	1039 (2291)	1139 (2511)	1136 (2504)	1315 (2899)	1312 (2892)	1478 (3258)	1475 (3252)

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