

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- or double-acting and spring-return or springless with a selection of spring-fail options available.

The 785C family 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 25 to 610 mm (1 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 540 kN (121,000 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.



785C DOUBLE-ACTING SPRINGLESS

Features

- **High Thrust Capability**—Thrusts of up to 1600 kN (359,000 lbf) for double acting springless and 540 kN (121,000 lbf) for spring-return can be produced. Consult your [Emerson sales office](#).
- **Broad Application Coverage**—Standard constructions offer travels of up to 609.5 mm (24 inches) and cylinder diameters of up to 685 mm (27 inches). For travels greater than 610 mm (24 inches) consult your Emerson sales office.
- **Double-Acting Springless Construction**—Pressure on both sides of the piston results in stiff, precise positioning.
- **Single-Acting Spring Return**—Allows for full ANSI/FCI 70-2 CL V shutoff upon loss of air without use of a volume tank.
- **Low Friction**—Low friction piston seals and electroless nickel plated cylinders reduce sliding friction and wear.
- **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°C to 200°C (-4°F 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.

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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 up to 2.7 bar (40 psig)

Travel⁽²⁾

25 mm (1 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. If stroking speed is critical, consult your Emerson sales office.

Piston Diameter and Area⁽²⁾

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

See table 1 and 3

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

■ 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 (5 inch) yoke boss with 32 mm (1-1/4 inch) stem or

■ 178 mm (7 inch) yoke boss with 51 mm (2 inch) stem

Instrument Mounting

Mounting kits are available for use with FIELDVUE DVC6200 Series digital valve controllers

Pressure Connections

Standard: 3/4 NPT

Optional: 1 and 1-1/4 NPT

See figure 2 and table 7

Construction Materials⁽⁴⁾

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

Weights

See table 16, 17, 18, and 19

Lifting Point Load Ratings

See table 20 and figure 9 and 10

Options

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

Dimensions

See figure 3 and 6 and table 8, 10, 11, 13, and 15

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

1. The pressure/temperature limits in this bulletin and any other applicable standard or code should not be exceeded.

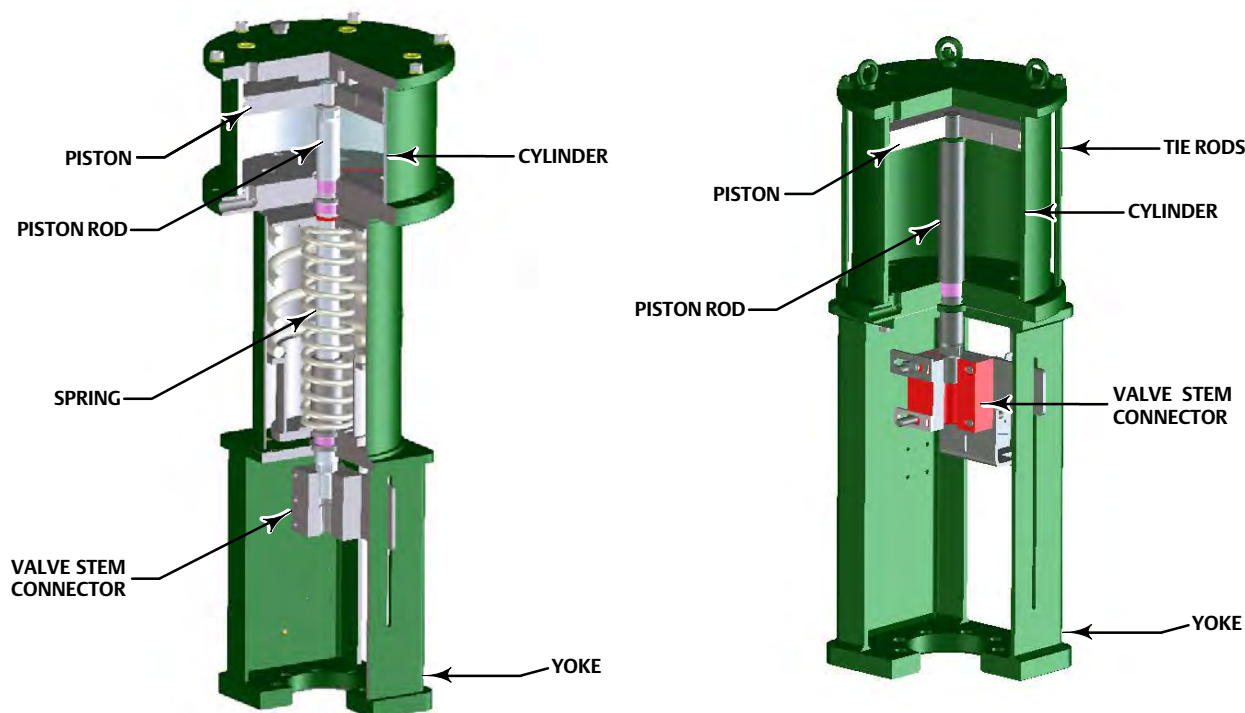
2. Consult your Emerson sales office for longer travels or larger cylinder diameters. The Fisher 585C family of actuators can be used for smaller travels or cylinder diameters.

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

Figure 1. Fisher 785C Actuator



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.

From an equilibrium state, the actuator operates by reacting to a force unbalance that is created by increasing supply pressure on one side of the piston, and decreasing it on the other. 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. 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 actuator may be installed in any orientation, but normal installation is with the actuator vertical above the valve.

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

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.

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

ACTUATOR SIZE	PISTON AREA				VALVE STEM CONNECTOR SIZE		YOKE BOSS DIAMETER		AVAILABLE 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	25 - 203	1 - 8
					25	1	127	5	25 - 609	1 - 24
					32	1 1/4	127	5H		
335	881	137	881	137	19	3/4	90	3-9/16	25 - 203	1 - 8
					25	1	127	5	25 - 609	1 - 24
					32	1 1/4	127	5H		
385	1164	180	1164	180	19	3/4	90	3-9/16	25 - 203	1 - 8
					25	1	127	5	25 - 609	1 - 24
					32	1 1/4	127	5H		
435	1486	230	1474	228	25	1	127	5		
					32	1 1/4	127	5H		
					51	2	178	7		
485	1847	286	1828	283	25	1	127	5		
					32	1 1/4	127	5H		
					51	2	178	7		
535	2248	348	2228	345	25	1	127	5		
					32	1 1/4	127	5H		
					51	2	178	7		
585	2688	417	2660	412	32	1 1/4	127	5H		
					51	2	178	7		
					32	1 1/4	127	5H		
635	3167	491	3139	487	51	2	178	7		
					32	1 1/4	127	5H		
					51	2	178	7		
685	3685	571	3657	567	32	1 1/4	127	5H		
					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 manual handpump.

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 manual handpump.

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

ACTUATOR SIZE	PISTON AREA								VALVE STEM CONNECTOR SIZE		YOKE BOSS DIAMETER		AVAILABLE TRAVEL	
	Without Manual Override				With Manual Override ⁽²⁾									
	Spring Extends		Spring Retracts		Spring Extends		Spring Retracts							
	cm ²	Inch ²	cm ²	Inch ²	cm ²	Inch ²	cm ²	Inch ²	mm	Inch	mm	Inch	mm	Inch
335	881	137	869	135	881	137	869	135	19	3/4	90	3-9/16	25 - 203	1 - 8
									25	1	127	5		
									32	1 1/4	127	5H		
385	1164	180	1152	179	1164	180	1152	179	19	3/4	90	3-9/16		
									25	1	127	5		
									32	1 1/4	127	5H		
435	1486	230	1474	228	1474	228	1474	228	25	1	127	5		
									32	1 1/4	127	5H		
									51	2	178	7		
485	1847	286	1835	284	1828	283	1835	284	25	1	127	5		
									32	1 1/4	127	5H		
									51	2	178	7		
535	2248	348	2235	347	2228	345	2235	347	25	1	127	5		
									32	1 1/4	127	5H		
									51	2	178	7		
585	2688	417	2660	412	2660	412	2660	412	32	1 1/4	127	5H		
									51	2	178	7		
635	3167	491	3139	487	3139	487	3139	487	32	1 1/4	127	5H		
									51	2	178	7		
685	3685	571	3657	567	3657	567	3657	567	32	1 1/4	127	5H		
									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 manual handpump.

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

ACTUATOR SIZE	PISTON AREA								VALVE STEM CONNECTOR SIZE		YOKE BOSS DIAMETER		AVAILABLE 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	615.75	95.44	603.19	93.49	615.75	95.44	603.19	93.49	19	3/4	90	3-9/16	25 - 203	1 - 8		
									25	1	127	5				
									32	1 1/4	127	5H				
335	881.41	136.62	868.85	134.67	881.41	136.62	868.85	134.67	19	3/4	90	3-9/16			0-305	0-12
									25	1	127	5				
									32	1 1/4	127	5H				
385	1164.16	180.45	1151.59	178.5	1164.16	180.45	1151.59	178.5	19	3/4	90	3-9/16	25-406	1-16		
									25	1	127	5				
									32	1 1/4	127	5H				
435	1486.17	230.36	1473.6	228.41	1473.6	228.41	1473.6	228.41	51	2	178	7			25-406	1-16
									25	1	127	5				
									32	1 1/4	127	5H				
485	1847.45	286.36	1834.89	284.41	1827.82	283.31	1834.89	284.41	51	2	178	7	25-406	1-16		
									25	1	127	5				
									32	1 1/4	127	5H				
535	2248.01	348.44	2235.44	346.49	2228.37	345.4	2235.44	346.49	51	2	178	7			25-406	1-16
									25	1	127	5				
									32	1 1/4	127	5H				
585	2687.83	416.61	2659.55	412.23	2659.55	412.23	2659.55	412.23	51	2	178	7	25-406	1-16		
									32	1 1/4	127	5H				
									51	2	178	7				
635	3166.92	490.87	3138.65	486.49	3138.65	486.49	3138.65	486.49	32	1 1/4	127	5H			25-406	1-16
									51	2	178	7				
									32	1 1/4	127	5H				
685	3685.28	571.22	3657.01	566.84	3657.01	566.84	3657.01	566.84	32	1 1/4	127	5H	25-406	1-16		
									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 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

Figure 2. Position of Pressure Connections

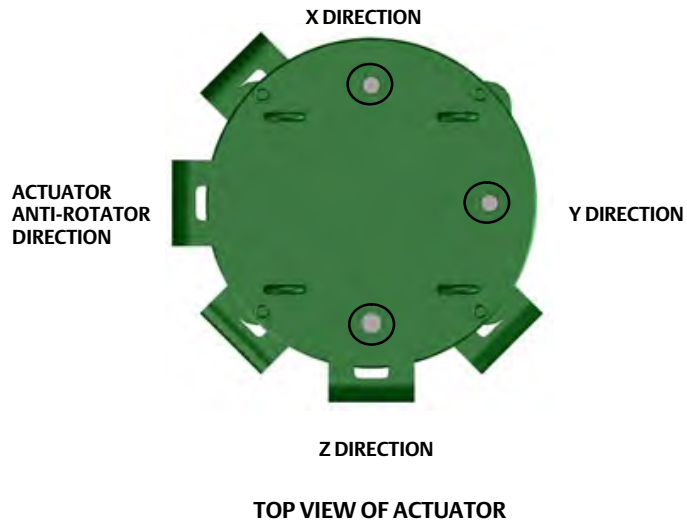


Table 7. Pressure Connections

ACTUATOR SIZE	STANDARD PRESSURE CONNECTION SIZE, NPT (Top)/(Bottom)	OPTIONAL PRESSURE CONNECTION SIZE, NPT (Top)/(Bottom)	PORT TYPE (Top)/(Bottom)	QUANTITY (Top/Bottom)
280	3/4 (T) - 3/4 (B)	3/4 (T) - 3/4 (B)	Face tapped ⁽²⁾ / Side tapped	3 ⁽¹⁾ / 3 ⁽¹⁾
335	3/4 (T) - 3/4 (B)	1 (T) - 3/4 (B)	Face tapped ⁽²⁾ / Side tapped	
385	3/4 (T) - 3/4 (B)	1 1/4 (T) - 3/4 (B)	Face tapped / Side tapped	
435	3/4 (T) - 3/4 (B)	1 1/4 (T) - 3/4 (B)	Face tapped / Side tapped	
485 to 685	3/4 (T) - 3/4 (B)	1 1/4 (T) - 1 1/4 (B)	Face tapped / Side tapped	
1. With use of top mounted handwheel, pressure connection size is 1/2 NPT. 2. Manual handwheel execution is side tapped.				

Figure 3. Fisher 785C Double-Acting Springless Piston Actuator (see table 8 and 10)

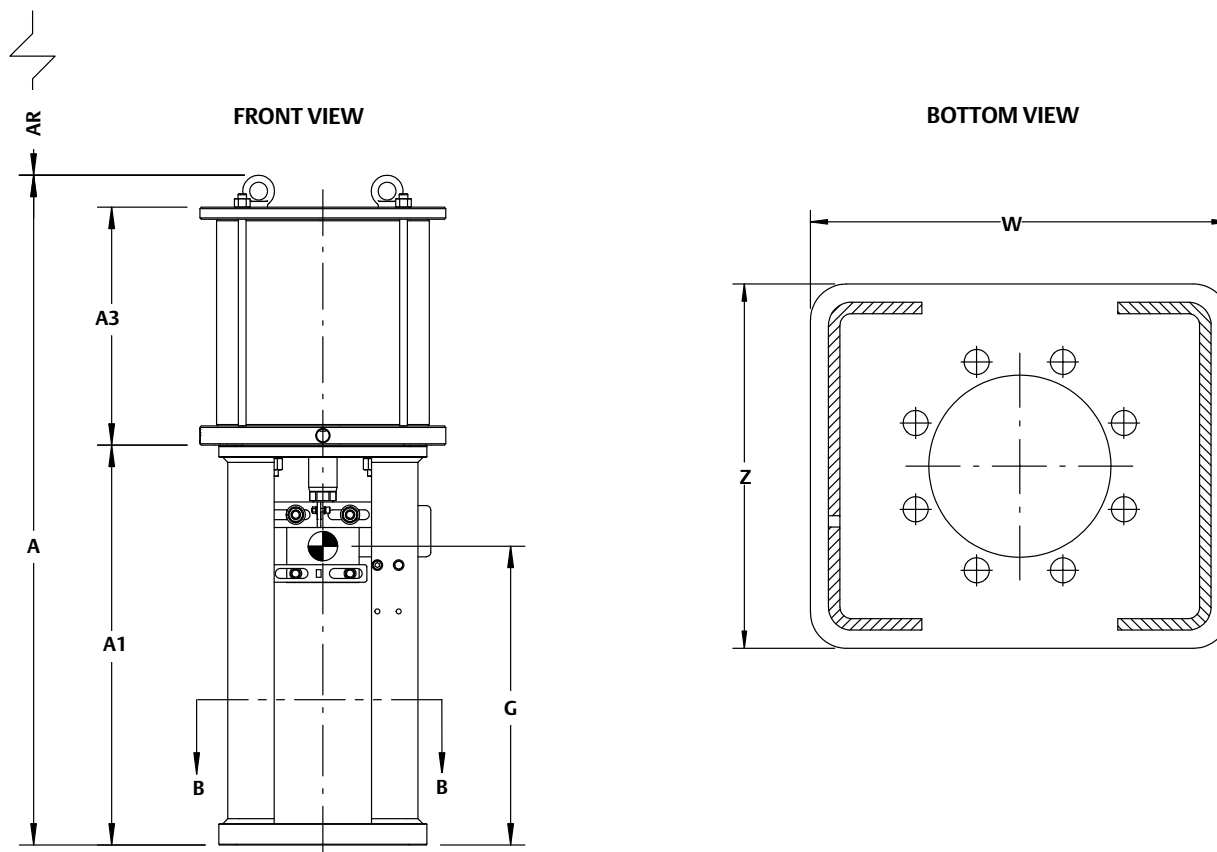


Table 8. 785C Double-Acting Springless Dimensions A, A1, A3, G, B, and C⁽¹⁾

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	4.5	717	28.2	416	16.4	245	9.6	359	14.1	419	16.5	419	16.5
		216	8.5	926	36.5	524	20.6	346	13.6	463	18.2	419	16.5	419	16.5
	5 or 5H	115	4.5	739	29.1	438	17.2	245	9.6	370	14.5	419	16.5	419	16.5
		216	8.5	926	36.5	524	20.6	346	13.6	463	18.2	419	16.5	419	16.5
		318	12.5	1168	46.0	664	26.1	448	17.6	584	23.0	419	16.5	419	16.5
		420	16.5	1372	54.0	766	30.2	550	21.7	686	27.0	419	16.5	419	16.5
		521	20.5	1574	62.0	867	34.1	651	25.6	787	31.0	419	16.5	419	16.5
335	3-9/16	115	4.5	720	28.3	416	16.4	248	9.8	360	14.2	472	18.6	472	18.6
		216	8.5	929	36.6	524	20.6	349	13.7	465	18.3	472	18.6	472	18.6
	5 or 5H	115	4.5	742	29.2	438	17.2	248	9.8	371	14.6	472	18.6	472	18.6
		216	8.5	929	36.6	524	20.6	349	13.7	465	18.3	472	18.6	472	18.6
		318	12.5	1171	46.1	664	26.1	451	17.8	586	23.1	472	18.6	472	18.6
		420	16.5	1375	54.1	766	30.2	553	21.8	688	27.1	472	18.6	472	18.6
		521	20.5	1577	62.1	867	34.1	654	25.7	789	31.0	472	18.6	472	18.6
		623	24.5	1781	70.1	969	38.1	756	29.8	891	35.1	472	18.6	472	18.6

-continued-

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
385	3-9/16	115	4.5	720	28.3	416	16.4	248	9.8	360	14.2	519	20.4	519	20.4
		216	8.5	929	36.6	524	20.6	349	13.7	465	18.3	519	20.4	519	20.4
	5 or 5H	115	4.5	742	29.2	438	17.2	248	9.8	371	14.6	519	20.4	519	20.4
		216	8.5	929	36.6	524	20.6	349	13.7	465	18.3	519	20.4	519	20.4
		318	12.5	1171	46.1	664	26.1	451	17.8	586	23.1	519	20.4	519	20.4
		420	16.5	1375	54.1	766	30.2	553	21.8	688	27.1	519	20.4	519	20.4
		521	20.5	1577	62.1	867	34.1	654	25.7	789	31.0	519	20.4	519	20.4
		623	24.5	1782	70.2	970	38.2	756	29.8	891	35.1	519	20.4	519	20.4
	7	115	4.5	774	30.5	470	18.5	248	9.8	387	15.2	519	20.4	519	20.4
		216	8.5	1005	39.6	600	23.6	349	13.7	503	19.8	519	20.4	519	20.4
		318	12.5	1171	46.1	664	26.1	451	17.8	586	23.1	519	20.4	519	20.4
		420	16.5	1375	54.1	766	30.2	553	21.8	688	27.1	519	20.4	519	20.4
		521	20.5	1577	62.1	867	34.1	654	25.7	789	31.0	519	20.4	519	20.4
		623	24.5	1780	70.1	968	38.1	756	29.8	890	35.0	519	20.4	519	20.4
435	5 or 5H	115	4.5	742	29.2	438	17.2	248	9.8	371	14.6	572	22.5	572	22.5
		216	8.5	929	36.6	524	20.6	349	13.7	465	18.3	572	22.5	572	22.5
		318	12.5	1171	46.1	664	26.1	451	17.8	586	23.1	572	22.5	572	22.5
		420	16.5	1375	54.1	766	30.2	553	21.8	688	27.1	572	22.5	572	22.5
		521	20.5	1577	62.1	867	34.1	654	25.7	789	31.0	572	22.5	572	22.5
		623	24.5	1782	70.2	970	38.2	756	29.8	891	35.1	572	22.5	572	22.5
	7	115	4.5	774	30.5	470	18.5	248	9.8	387	15.2	572	22.5	572	22.5
		216	8.5	1005	39.6	600	23.6	349	13.7	503	19.8	572	22.5	572	22.5
		318	12.5	1171	46.1	664	26.1	451	17.8	586	23.1	572	22.5	572	22.5
		420	16.5	1375	54.1	766	30.2	553	21.8	688	27.1	572	22.5	572	22.5
		521	20.5	1577	62.1	867	34.1	654	25.7	789	31.0	572	22.5	572	22.5
		623	24.5	1780	70.1	968	38.1	756	29.8	890	35.0	572	22.5	572	22.5
485	5 or 5H	115	4.5	790	31.1	438	17.2	276	10.9	395	15.6	636	25.0	636	25.0
		216	8.5	977	38.5	524	20.6	377	14.8	489	19.2	636	25.0	636	25.0
		318	12.5	1219	48.0	664	26.1	479	18.9	610	24.0	636	25.0	636	25.0
		420	16.5	1423	56.0	766	30.2	581	22.9	712	28.0	636	25.0	636	25.0
		521	20.5	1625	64.0	867	34.1	682	26.9	813	32.0	636	25.0	636	25.0
		623	24.5	1830	72.0	970	38.2	784	30.9	915	36.0	636	25.0	636	25.0
	7	115	4.5	822	32.4	470	18.5	276	10.9	411	16.2	636	25.0	636	25.0
		216	8.5	1053	41.5	600	23.6	377	14.8	527	20.7	636	25.0	636	25.0
		318	12.5	1219	48.0	664	26.1	479	18.9	610	24.0	636	25.0	636	25.0
		420	16.5	1423	56.0	766	30.2	581	22.9	712	28.0	636	25.0	636	25.0
		521	20.5	1625	64.0	867	34.1	682	26.9	813	32.0	636	25.0	636	25.0
		623	24.5	1828	72.0	968	38.1	784	30.9	914	36.0	636	25.0	636	25.0
535	5 or 5H	115	4.5	792	31.2	438	17.2	278	10.9	396	15.6	684	26.9	694	27.3
		216	8.5	979	38.5	524	20.6	379	14.9	490	19.3	684	26.9	694	27.3
		318	12.5	1221	48.1	664	26.1	481	18.9	611	24.0	684	26.9	694	27.3
		420	16.5	1425	56.1	766	30.2	583	23.0	713	28.1	684	26.9	694	27.3
		521	20.5	1627	64.1	867	34.1	684	26.9	814	32.0	684	26.9	694	27.3
		623	24.5	1832	72.1	970	38.2	786	30.9	916	36.1	684	26.9	694	27.3
	7	115	4.5	824	32.4	470	18.5	278	10.9	412	16.2	684	26.9	694	27.3
		216	8.5	1055	41.5	600	23.6	379	14.9	528	20.8	684	26.9	694	27.3
		318	12.5	1221	48.1	664	26.1	481	18.9	611	24.0	684	26.9	694	27.3
		420	16.5	1425	56.1	766	30.2	583	23.0	713	28.1	684	26.9	694	27.3
		521	20.5	1627	64.1	867	34.1	684	26.9	814	32.0	684	26.9	694	27.3
		623	24.5	1830	72.0	968	38.1	786	30.9	915	36.0	684	26.9	694	27.3

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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
585	5H	115	4.5	833	32.8	461	18.1	296	11.7	417	16.4	737	29.0	750	29.5
		216	8.5	1020	40.2	547	21.5	397	15.6	510	20.1	737	29.0	750	29.5
		318	12.5	1262	49.7	687	27.0	499	19.6	631	24.8	737	29.0	750	29.5
		420	16.5	1466	57.7	789	31.1	601	23.7	733	28.9	737	29.0	750	29.5
		521	20.5	1668	65.7	890	35.0	702	27.6	834	32.8	737	29.0	750	29.5
		623	24.5	1872	73.7	992	39.1	804	31.7	936	36.9	737	29.0	750	29.5
	7	115	4.5	862	33.9	490	19.3	296	11.7	431	17.0	737	29.0	750	29.5
		216	8.5	1093	43.0	620	24.4	397	15.6	547	21.5	737	29.0	750	29.5
		318	12.5	1259	49.6	684	26.9	499	19.6	630	24.8	737	29.0	750	29.5
		420	16.5	1462	57.6	785	30.9	601	23.7	731	28.8	737	29.0	750	29.5
		521	20.5	1665	65.6	887	34.9	702	27.6	833	32.8	737	29.0	750	29.5
		623	24.5	1869	73.6	989	38.9	804	31.7	935	36.8	737	29.0	750	29.5
635	5H	115	4.5	833	32.8	461	18.1	296	11.7	417	16.4	779	30.7	799	31.5
		216	8.5	1020	40.2	547	21.5	397	15.6	510	20.1	779	30.7	799	31.5
		318	12.5	1262	49.7	687	27.0	499	19.6	631	24.8	779	30.7	799	31.5
		420	16.5	1466	57.7	789	31.1	601	23.7	733	28.9	779	30.7	799	31.5
		521	20.5	1668	65.7	890	35.0	702	27.6	834	32.8	779	30.7	799	31.5
		623	24.5	1872	73.7	992	39.1	804	31.7	936	36.9	779	30.7	799	31.5
	7	115	4.5	862	33.9	490	19.3	296	11.7	431	17.0	779	30.7	799	31.5
		216	8.5	1093	43.0	620	24.4	397	15.6	547	21.5	779	30.7	799	31.5
		318	12.5	1259	49.6	684	26.9	499	19.6	630	24.8	779	30.7	799	31.5
		420	16.5	1462	57.6	785	30.9	601	23.7	731	28.8	779	30.7	799	31.5
		521	20.5	1665	65.6	887	34.9	702	27.6	833	32.8	779	30.7	799	31.5
		623	24.5	1869	73.6	989	38.9	804	31.7	935	36.8	779	30.7	799	31.5
685	5H	115	4.5	868	34.2	486	19.1	306	12.0	434	17.1	832	32.8	855	33.7
		216	8.5	1055	41.5	572	22.5	407	16.0	528	20.8	832	32.8	855	33.7
		318	12.5	1297	51.1	712	28.0	509	20.0	649	25.5	832	32.8	855	33.7
		420	16.5	1501	59.1	814	32.0	611	24.1	751	29.5	832	32.8	855	33.7
		521	20.5	1703	67.0	915	36.0	712	28.0	852	33.5	832	32.8	855	33.7
		623	24.5	1907	75.1	1017	40.0	814	32.0	954	37.5	832	32.8	855	33.7
	7	115	4.5	897	35.3	515	20.3	306	12.0	449	17.7	832	32.8	855	33.7
		216	8.5	1128	44.4	645	25.4	407	16.0	564	22.2	832	32.8	855	33.7
		318	12.5	1294	50.9	709	27.9	509	20.0	647	25.5	832	32.8	855	33.7
		420	16.5	1497	58.9	810	31.9	611	24.1	749	29.5	832	32.8	855	33.7
		521	20.5	1700	66.9	912	35.9	712	28.0	850	33.5	832	32.8	855	33.7
		623	24.5	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, AR, 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	4.5	1002	39.4	416	16.4	296	11.7	290	11.4
	5 or 5H		216	8.5	1312	51.7	524	20.6	397	15.6	391	15.4
			115	4.5	1024	40.3	438	17.2	296	11.7	290	11.4
			216	8.5	1312	51.7	524	20.6	397	15.6	391	15.4
			318	12.5	1655	65.2	664	26.1	499	19.6	492	19.4
			420	16.5	1960	77.2	766	30.2	601	23.7	593	23.3
			521	20.5	2263	89.1	867	34.1	702	27.6	694	27.3
			623	24.5	2568	101.1	969	38.1	804	31.7	795	31.3
335	3-9/16		115	4.5	1009	39.7	416	16.4	302.5	11.9	290	11.4
	5 or 5H		216	8.5	1319	51.9	524	20.6	403.5	15.9	391	15.4
			115	4.5	1031	40.6	438	17.2	302.5	11.9	290	11.4
			216	8.5	1319	51.9	524	20.6	403.5	15.9	391	15.4
			318	12.5	1662	65.4	664	26.1	505.5	19.9	492	19.4
			420	16.5	1967	77.4	766	30.2	607.5	23.9	593	23.3
			521	20.5	2270	89.4	867	34.1	708.5	27.9	694	27.3
			623	24.5	2575	101.4	969	38.1	810.5	31.9	795	31.3
385	3-9/16		115	4.5	991	39.0	416	16.4	285	11.2	290	11.4
	5 or 5H		216	8.5	1301	51.2	524	20.6	386	15.2	391	15.4
			115	4.5	1013	39.9	438	17.2	285	11.2	290	11.4
			216	8.5	1301	51.2	524	20.6	386	15.2	391	15.4
			318	12.5	1644	64.7	664	26.1	488	19.2	492	19.4
			420	16.5	1949	76.7	766	30.2	590	23.2	593	23.3
			521	20.5	2252	88.7	867	34.1	691	27.2	694	27.3
			623	24.5	2558	100.7	970	38.2	793	31.2	795	31.3
	7		115	4.5	1045	41.1	470	18.5	285	11.2	290	11.4
			216	8.5	1377	54.2	600	23.6	386	15.2	391	15.4
			318	12.5	1644	64.7	664	26.1	488	19.2	492	19.4
			420	16.5	1949	76.7	766	30.2	590	23.2	593	23.3
			521	20.5	2252	88.7	867	34.1	691	27.2	694	27.3
			623	24.5	2556	100.6	968	38.1	793	31.2	795	31.3
435		5 or 5H	115	4.5	1095	43.1	438	17.2	282	11.1	375	14.8
	216		8.5	1403	55.2	524	20.6	383	15.1	496	19.5	
	318		12.5	1746	68.7	664	26.1	485	19.1	597	23.5	
	420		16.5	2051	80.7	766	30.2	587	23.1	698	27.5	
	521		20.5	2354	92.7	867	34.1	688	27.1	799	31.5	
	623		24.5	2660	104.7	970	38.2	790	31.1	900	35.4	
	7	115	4.5	1127	44.4	470	18.5	282	11.1	375	14.8	
		216	8.5	1479	58.2	600	23.6	383	15.1	496	19.5	
		318	12.5	1746	68.7	664	26.1	485	19.1	597	23.5	
		420	16.5	2051	80.7	766	30.2	587	23.1	698	27.5	
		521	20.5	2354	92.7	867	34.1	688	27.1	799	31.5	
		623	24.5	2658	104.6	968	38.1	790	31.1	900	35.4	
485	5 or 5H	115	4.5	1126	44.3	438	17.2	313	12.3	375	14.8	
		216	8.5	1434	56.5	524	20.6	414	16.3	496	19.5	
		318	12.5	1777	70.0	664	26.1	516	20.3	597	23.5	
		420	16.5	2082	82.0	766	30.2	618	24.3	698	27.5	
		521	20.5	2385	93.9	867	34.1	719	28.3	799	31.5	
		623	24.5	2691	105.9	970	38.2	821	32.3	900	35.4	
	7	115	4.5	1158	45.6	470	18.5	313	12.3	375	14.8	
		216	8.5	1510	59.4	600	23.6	414	16.3	496	19.5	
		318	12.5	1777	70.0	664	26.1	516	20.3	597	23.5	
		420	16.5	2082	82.0	766	30.2	618	24.3	698	27.5	
		521	20.5	2385	93.9	867	34.1	719	28.3	799	31.5	
		623	24.5	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, AR, 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	4.5	1130	44.5	438	17.2	317	12.5	375	14.8	
			216	8.5	1438	56.6	524	20.6	418	16.5	496	19.5	
			318	12.5	1781	70.1	664	26.1	520	20.5	597	23.5	
			420	16.5	2086	82.1	766	30.2	622	24.5	698	27.5	
			521	20.5	2389	94.1	867	34.1	723	28.5	799	31.5	
			623	24.5	2695	106.1	970	38.2	825	32.5	900	35.4	
	7		115	4.5	1162	45.7	470	18.5	317	12.5	375	14.8	
			216	8.5	1514	59.6	600	23.6	418	16.5	496	19.5	
			318	12.5	1781	70.1	664	26.1	520	20.5	597	23.5	
			420	16.5	2086	82.1	766	30.2	622	24.5	698	27.5	
585	5H		521	20.5	2389	94.1	867	34.1	723	28.5	799	31.5	
			623	24.5	2693	106.0	968	38.1	825	32.5	900	35.4	
			115	4.5	1201	47.3	461	18.1	348	13.7	392	15.4	
			216	8.5	1509	59.4	547	21.5	449	17.7	513	20.2	
			318	12.5	1852	72.9	687	27.0	551	21.7	614	24.2	
			420	16.5	2157	84.9	789	31.1	653	25.7	715	28.1	
	7		521	20.5	2460	96.9	890	35.0	754	29.7	816	32.1	
			623	24.5	2765	108.9	992	39.1	856	33.7	917	36.1	
			115	4.5	1230	48.4	490	19.3	348	13.7	392	15.4	
			216	8.5	1582	62.3	620	24.4	449	17.7	513	20.2	
635	5H		318	12.5	1849	72.8	684	26.9	551	21.7	614	24.2	
			420	16.5	2153	84.8	785	30.9	653	25.7	715	28.1	
			521	20.5	2457	96.7	887	34.9	754	29.7	816	32.1	
			623	24.5	2762	108.7	989	38.9	856	33.7	917	36.1	
			115	4.5	1202	47.3	461	18.1	349	13.7	392	15.4	
			216	8.5	1510	59.4	547	21.5	450	17.7	513	20.2	
	7		318	12.5	1853	73.0	687	27.0	552	21.7	614	24.2	
			420	16.5	2158	85.0	789	31.1	654	25.7	715	28.1	
			521	20.5	2461	96.9	890	35.0	755	29.7	816	32.1	
			623	24.5	2766	108.9	992	39.1	857	33.7	917	36.1	
685	5H		115	4.5	1231	48.5	490	19.3	349	13.7	392	15.4	
			216	8.5	1583	62.3	620	24.4	450	17.7	513	20.2	
			318	12.5	1850	72.8	684	26.9	552	21.7	614	24.2	
			420	16.5	2154	84.8	785	30.9	654	25.7	715	28.1	
			521	20.5	2458	96.8	887	34.9	755	29.7	816	32.1	
			623	24.5	2763	108.8	989	38.9	857	33.7	917	36.1	
	7		115	4.5	1251	49.3	486	19.1	373	14.7	392	15.4	
			216	8.5	1559	61.4	572	22.5	474	18.7	513	20.2	
			318	12.5	1902	74.9	712	28.0	576	22.7	614	24.2	
			420	16.5	2207	86.9	814	32.0	678	26.7	715	28.1	
	5H		521	20.5	2510	98.8	915	36.0	779	30.7	816	32.1	
			623	24.5	2815	110.8	1017	40.0	881	34.7	917	36.1	
			7	115	4.5	1280	50.4	515	20.3	373	14.7	392	15.4
				216	8.5	1632	64.3	645	25.4	474	18.7	513	20.2
				318	12.5	1899	74.8	709	27.9	576	22.7	614	24.2
				420	16.5	2203	86.7	810	31.9	678	26.7	715	28.1
	7		521	20.5	2507	98.7	912	35.9	779	30.7	816	32.1	
			623	24.5	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, AR, 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	4.5	501	19.7	850	33.5	419	16.5	464	18	---	---	
	5 or 5H		216	8.5	656	25.8	850	33.5	419	16.5	464	18	---	---	
			115	4.5	512	20.2	850	33.5	419	16.5	464	18	---	---	
			216	8.5	656	25.8	850	33.5	419	16.5	464	18	---	---	
			318	12.5	828	32.6	850	33.5	419	16.5	464	18	---	---	
			420	16.5	980	38.6	850	33.5	419	16.5	464	18	---	---	
			521	20.5	1132	44.5	850	33.5	419	16.5	464	18	---	---	
			623	24.5	1284	50.6	850	33.5	419	16.5	464	18	---	---	
335	3-9/16		115	4.5	504	19.9	1250	49.2	472	18.6	517	20	---	---	
	5 or 5H		216	8.5	659	26.0	1250	49.2	472	18.6	517	20	---	---	
			115	4.5	515	20.3	1250	49.2	472	18.6	517	20	---	---	
			216	8.5	659	26.0	1250	49.2	472	18.6	517	20	---	---	
			318	12.5	831	32.7	1250	49.2	472	18.6	517	20	---	---	
			420	16.5	983	38.7	1250	49.2	472	18.6	517	20	---	---	
			521	20.5	1135	44.7	1250	49.2	472	18.6	517	20	---	---	
385	3-9/16		623	24.5	1287	50.7	1250	49.2	472	18.6	517	20	---	---	
			5 or 5H	115	4.5	496	19.5	1400	55.1	519	20.4	564	22	---	---
				216	8.5	651	25.6	1400	55.1	519	20.4	564	22	---	---
				115	4.5	507	19.9	1400	55.1	519	20.4	564	22	---	---
				216	8.5	651	25.6	1400	55.1	519	20.4	564	22	---	---
				318	12.5	822	32.4	1400	55.1	519	20.4	564	22	---	---
				420	16.5	975	38.4	1400	55.1	519	20.4	564	22	---	---
	7		521	20.5	1126	44.3	1400	55.1	519	20.4	564	22	---	---	
			623	24.5	1279	50.4	1400	55.1	519	20.4	564	22	---	---	
			115	4.5	523	20.6	1400	55.1	519	20.4	564	22	---	---	
			216	8.5	689	27.1	1400	55.1	519	20.4	564	22	---	---	
			318	12.5	822	32.4	1400	55.1	519	20.4	564	22	---	---	
			420	16.5	975	38.4	1400	55.1	519	20.4	564	22	---	---	
435	5 or 5H		521	20.5	1126	44.3	1400	55.1	519	20.4	564	22	---	---	
			623	24.5	1278	50.3	1400	55.1	519	20.4	564	22	---	---	
			7	115	4.5	548	21.6	908	35.7	572	22.5	846	33	565	22.2
				216	8.5	702	27.6	908	35.7	572	22.5	846	33	565	22.2
				318	12.5	873	34.4	908	35.7	572	22.5	846	33	565	22.2
				420	16.5	1026	40.4	908	35.7	572	22.5	846	33	565	22.2
				521	20.5	1177	46.3	908	35.7	572	22.5	846	33	565	22.2
				623	24.5	1330	52.4	908	35.7	572	22.5	846	33	565	22.2
				115	4.5	564	22.2	908	35.7	572	22.5	846	33	565	22.2
				216	8.5	740	29.1	908	35.7	572	22.5	846	33	565	22.2
	318		12.5	873	34.4	908	35.7	572	22.5	846	33	565	22.2		
	420		16.5	1026	40.4	908	35.7	572	22.5	846	33	565	22.2		
	5 or 5H		521	20.5	1177	46.3	908	35.7	572	22.5	846	33	565	22.2	
			623	24.5	1329	52.3	908	35.7	572	22.5	846	33	565	22.2	
			7	115	4.5	563	22.2	940	37.0	636	25.0	858	34	630	24.8
				216	8.5	717	28.2	940	37.0	636	25.0	858	34	630	24.8
				318	12.5	889	35.0	940	37.0	636	25.0	858	34	630	24.8
				420	16.5	1041	41.0	940	37.0	636	25.0	858	34	630	24.8
521				20.5	1193	46.9	940	37.0	636	25.0	858	34	630	24.8	
623				24.5	1346	53.0	940	37.0	636	25.0	858	34	630	24.8	
115				4.5	579	22.8	940	37.0	636	25.0	858	34	630	24.8	
216				8.5	755	29.7	940	37.0	636	25.0	858	34	630	24.8	
318	12.5		889	35.0	940	37.0	636	25.0	858	34	630	24.8			
420	16.5		1041	41.0	940	37.0	636	25.0	858	34	630	24.8			
521	20.5		1193	46.9	940	37.0	636	25.0	858	34	630	24.8			
623	24.5		1345	52.9	940	37.0	636	25.0	858	34	630	24.8			

-continued-

Table 9. 785C Double-Acting Springless with Manual Override Dimensions A, A1, A3, A4, AR, 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	4.5	565	22.2	962	37.9	684	26.9	915	36	680	26.8
			216	8.5	719	28.3	962	37.9	684	26.9	915	36	680	26.8
			318	12.5	891	35.1	962	37.9	684	26.9	915	36	680	26.8
			420	16.5	1043	41.1	962	37.9	684	26.9	915	36	680	26.8
			521	20.5	1195	47.0	962	37.9	684	26.9	915	36	680	26.8
			623	24.5	1348	53.1	962	37.9	684	26.9	915	36	680	26.8
	7		115	4.5	581	22.9	962	37.9	684	26.9	915	36	680	26.8
			216	8.5	757	29.8	962	37.9	684	26.9	915	36	680	26.8
			318	12.5	891	35.1	962	37.9	684	26.9	915	36	680	26.8
			420	16.5	1043	41.1	962	37.9	684	26.9	915	36	680	26.8
			521	20.5	1195	47.0	962	37.9	684	26.9	915	36	680	26.8
			623	24.5	1347	53.0	962	37.9	684	26.9	983	36	680	26.8
585	5H		115	4.5	601	23.6	1102	43.4	737	29.0	983	39	730	28.7
			216	8.5	755	29.7	1102	43.4	737	29.0	983	39	730	28.7
			318	12.5	926	36.5	1102	43.4	737	29.0	983	39	730	28.7
			420	16.5	1079	42.5	1102	43.4	737	29.0	983	39	730	28.7
			521	20.5	1230	48.4	1102	43.4	737	29.0	983	39	730	28.7
			623	24.5	1383	54.4	1102	43.4	737	29.0	983	39	730	28.7
	7		115	4.5	615	24.2	1102	43.4	737	29.0	983	39	730	28.7
			216	8.5	791	31.1	1102	43.4	737	29.0	983	39	730	28.7
			318	12.5	925	36.4	1102	43.4	737	29.0	983	39	730	28.7
			420	16.5	1077	42.4	1102	43.4	737	29.0	983	39	730	28.7
			521	20.5	1229	48.4	1102	43.4	737	29.0	983	39	730	28.7
			623	24.5	1381	54.4	1102	43.4	737	29.0	983	39	730	28.7
635	5H		115	4.5	601	23.7	1127	44.4	779	30.7	1007	40	785	30.9
			216	8.5	755	29.7	1127	44.4	779	30.7	1007	40	785	30.9
			318	12.5	927	36.5	1127	44.4	779	30.7	1007	40	785	30.9
			420	16.5	1079	42.5	1127	44.4	779	30.7	1007	40	785	30.9
			521	20.5	1231	48.4	1127	44.4	779	30.7	1007	40	785	30.9
			623	24.5	1383	54.4	1127	44.4	779	30.7	1007	40	785	30.9
	7		115	4.5	616	24.2	1127	44.4	779	30.7	1007	40	785	30.9
			216	8.5	792	31.2	1127	44.4	779	30.7	1007	40	785	30.9
			318	12.5	925	36.4	1127	44.4	779	30.7	1007	40	785	30.9
			420	16.5	1077	42.4	1127	44.4	779	30.7	1007	40	785	30.9
			521	20.5	1229	48.4	1127	44.4	779	30.7	1007	40	785	30.9
			623	24.5	1382	54.4	1127	44.4	779	30.7	1007	40	785	30.9
685	5H		115	4.5	626	24.6	1153	45.4	832	32.8	1035	41	840	33.1
			216	8.5	780	30.7	1153	45.4	832	32.8	1035	41	840	33.1
			318	12.5	951	37.4	1153	45.4	832	32.8	1035	41	840	33.1
			420	16.5	1104	43.4	1153	45.4	832	32.8	1035	41	840	33.1
			521	20.5	1255	49.4	1153	45.4	832	32.8	1035	41	840	33.1
			623	24.5	1408	55.4	1153	45.4	832	32.8	1035	41	840	33.1
	7		115	4.5	640	25.2	1153	45.4	832	32.8	1035	41	840	33.1
			216	8.5	816	32.1	1153	45.4	832	32.8	1035	41	840	33.1
			318	12.5	950	37.4	1153	45.4	832	32.8	1035	41	840	33.1
			420	16.5	1102	43.4	1153	45.4	832	32.8	1035	41	840	33.1
			521	20.5	1254	49.4	1153	45.4	832	32.8	1035	41	840	33.1
			623	24.5	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.														

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

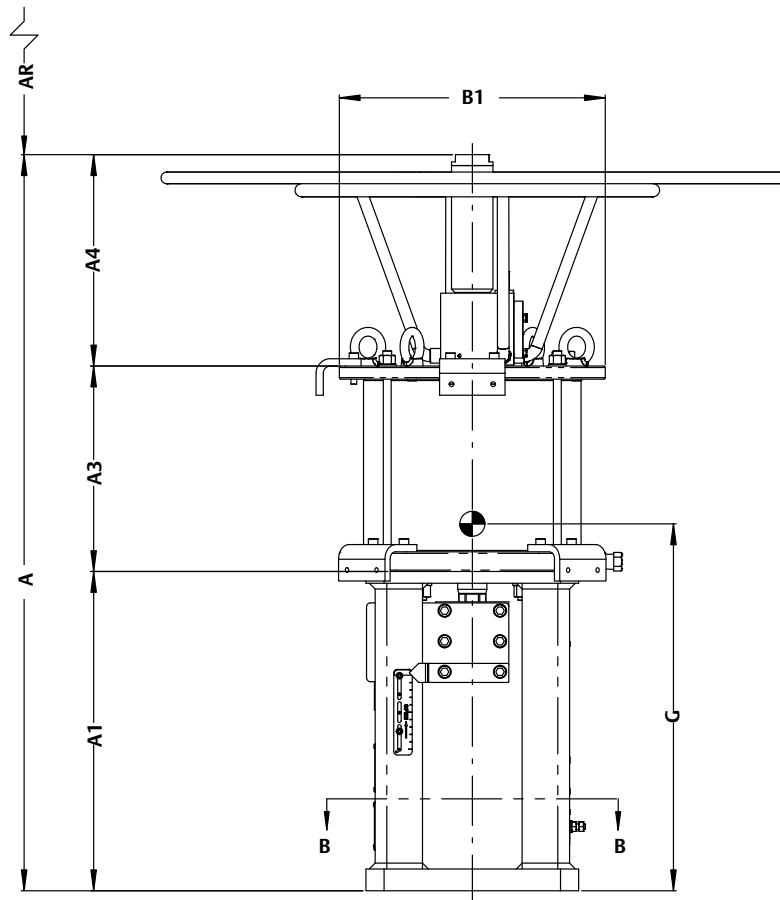


Figure 5. Fisher 785C Double-Acting Springless Piston Actuator with Manual Hand Pump (MHP) (see table 9 and 10)

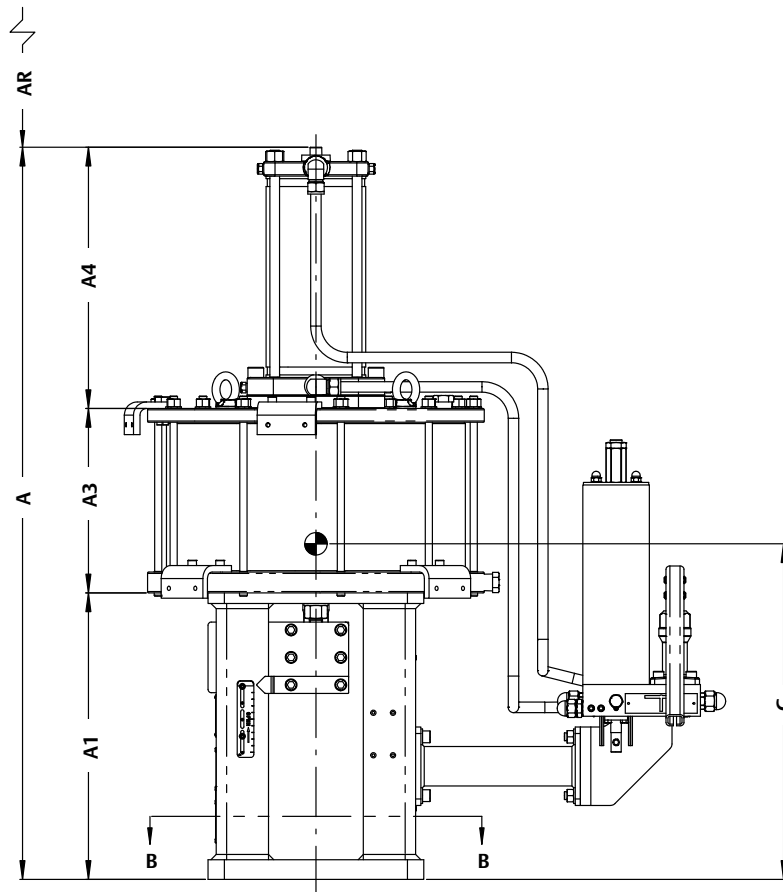


Figure 6. Fisher 785C Single-Acting Spring Return Piston Actuator (see table 11, 12, 13, 14, and 15)

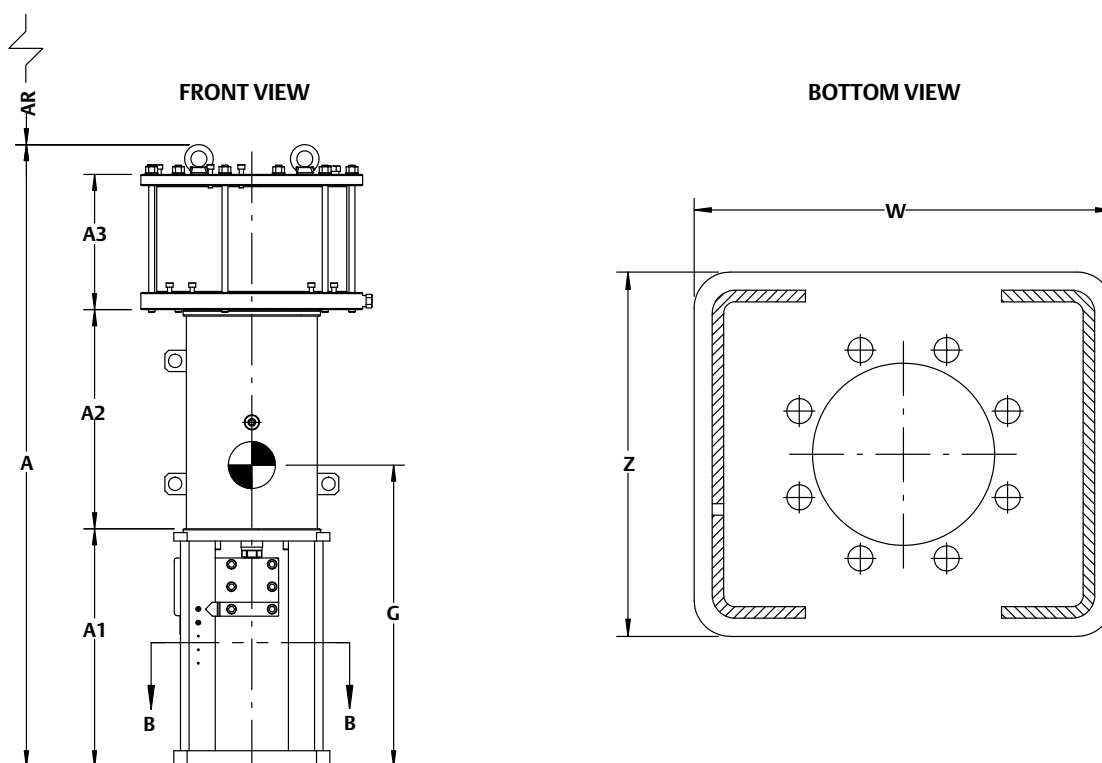


Table 11. 785C Single-Acting Spring Return (Spring Retracts) Dimensions A, A1, A2, A3, G, B and C⁽¹⁾

ACTU- ATOR SIZE	YOKE BOSS Inch (mm)	Maximum Travel		Spring	A		A1		A2		A3		G		B		C	
		mm	Inch		mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
280	3-9/16	115	4.5	F1	1360	53.5	416	16.4	643	25.3	245	9.6	680	26.8	419	16.5	419	16.5
		216	8.5	F1	1849	72.8	524	20.6	923	36.3	346	13.6	925	36.4	419	16.5	419	16.5
	5 or 5H	115	4.5	F1	1382	54.4	438	17.2	643	25.3	245	9.6	691	27.2	419	16.5	419	16.5
		216	8.5	F1	1849	72.8	524	20.6	923	36.3	346	13.6	925	36.4	419	16.5	419	16.5
335	3-9/16	115	4.5	F1	1425	56.1	416	16.4	705	27.8	248	9.8	713	28.1	472	18.6	472	18.6
		216	8.5	F2	1700	66.9	524	20.6	771	30.4	349	13.7	850	33.5	472	18.6	472	18.6
	5 or 5H	115	4.5	F1	1447	57.0	438	17.2	705	27.8	248	9.8	724	28.5	472	18.6	472	18.6
		216	8.5	F2	1700	66.9	524	20.6	771	30.4	349	13.7	850	33.5	472	18.6	472	18.6
385	3-9/16	115	4.5	F2	1425	56.1	416	16.4	705	27.8	248	9.8	713	28.1	519	20.4	519	20.4
		216	8.5	F1	1860	73.2	524	20.6	931	36.7	349	13.7	930	36.6	519	20.4	519	20.4
	5 or 5H	115	4.5	F2	1447	57.0	438	17.2	705	27.8	248	9.8	724	28.5	519	20.4	519	20.4
		216	8.5	F1	1860	73.2	524	20.6	931	36.7	349	13.7	930	36.6	519	20.4	519	20.4
		318	12.5	F1	2281	89.8	664	26.1	1110	43.7	451	17.8	1141	44.9	519	20.4	519	20.4
	7	115	4.5	F2	1479	58.2	470	18.5	705	27.8	248	9.8	740	29.1	519	20.4	519	20.4
		216	8.5	F1	1936	76.2	600	23.6	931	36.7	349	13.7	968	38.1	519	20.4	519	20.4
		318	12.5	F1	2281	89.8	664	26.1	1110	43.7	451	17.8	1141	44.9	519	20.4	519	20.4
435	5 or 5H	115	4.5	F1	1447	57.0	438	17.2	705	27.8	248	9.8	724	28.5	572	22.5	572	22.5
		216	8.5	F1	1769	69.6	524	20.6	840	33.1	349	13.7	885	34.8	572	22.5	572	22.5
		318	12.5	F1	2206	86.9	664	26.1	1035	40.7	451	17.8	1103	43.4	572	22.5	572	22.5
		420	16.5	F1	2507	98.7	766	30.2	1132	44.6	553	21.8	1254	49.4	572	22.5	572	22.5
	7	115	4.5	F1	1479	58.2	470	18.5	705	27.8	248	9.8	740	29.1	572	22.5	572	22.5
		216	8.5	F1	1845	72.6	600	23.6	840	33.1	349	13.7	923	36.3	572	22.5	572	22.5
		318	12.5	F1	2206	86.9	664	26.1	1035	40.7	451	17.8	1103	43.4	572	22.5	572	22.5
		420	16.5	F1	2507	98.7	766	30.2	1132	44.6	553	21.8	1254	49.4	572	22.5	572	22.5
485	5 or 5H	115	4.5	F1	1428	56.2	438	17.2	638	25.1	276	10.9	714	28.1	636	25.0	636	25.0
		216	8.5	F1	1817	71.5	524	20.6	840	33.1	377	14.8	909	35.8	636	25.0	636	25.0
		318	12.5	F1	2252	88.7	664	26.1	1033	40.7	479	18.9	1126	44.3	636	25.0	636	25.0
		420	16.5	F1	2548	100.3	766	30.2	1125	44.3	581	22.9	1274	50.2	636	25.0	636	25.0
	7	115	4.5	F1	1460	57.5	470	18.5	638	25.1	276	10.9	730	28.7	636	25.0	636	25.0
		216	8.5	F1	1893	74.5	600	23.6	840	33.1	377	14.8	947	37.3	636	25.0	636	25.0
		318	12.5	F1	2252	88.7	664	26.1	1033	40.7	479	18.9	1126	44.3	636	25.0	636	25.0
		420	16.5	F1	2548	100.3	766	30.2	1125	44.3	581	22.9	1274	50.2	636	25.0	636	25.0
535	5 or 5H	115	4.5	F1	1563	61.5	438	17.2	771	30.4	278	10.9	782	30.8	684	26.9	694	27.3
		216	8.5	F2	1772	69.8	524	20.6	793	31.2	379	14.9	886	34.9	684	26.9	694	27.3
		318	12.5	F1	2216	87.2	664	26.1	995	39.2	481	18.9	1108	43.6	684	26.9	694	27.3
		420	16.5	F1	2469	97.2	766	30.2	1044	41.1	583	23.0	1235	48.6	684	26.9	694	27.3
	7	115	4.5	F1	1595	62.8	470	18.5	771	30.4	278	10.9	798	31.4	684	26.9	694	27.3
		216	8.5	F2	1848	72.8	600	23.6	793	31.2	379	14.9	924	36.4	684	26.9	694	27.3
		318	12.5	F1	2216	87.2	664	26.1	995	39.2	481	18.9	1108	43.6	684	26.9	694	27.3
		420	16.5	F1	2469	97.2	766	30.2	1044	41.1	583	23.0	1235	48.6	684	26.9	694	27.3

-continued-

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

ACTU- ATOR SIZE	YOKE BOSS Inch (mm)	Maximum Travel		Spring	A		A1		A2		A3		G		B		C	
		mm	Inch		mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
585	5H	115	4.5	F1	1613	63.5	461	18.1	780	30.7	296	11.7	807	31.8	737	29.0	750	29.5
		216	8.5	F1	1824	71.8	547	21.5	804	31.7	397	15.6	912	35.9	737	29.0	750	29.5
		318	12.5	F1	2284	89.9	687	27.0	1022	40.2	499	19.6	1142	45.0	737	29.0	750	29.5
		420	16.5	F1	2555	100.6	789	31.1	1089	42.9	601	23.7	1278	50.3	737	29.0	750	29.5
	7	115	4.5	F1	1642	64.6	490	19.3	780	30.7	296	11.7	821	32.3	737	29.0	750	29.5
		216	8.5	F1	1897	74.7	620	24.4	804	31.7	397	15.6	949	37.3	737	29.0	750	29.5
		318	12.5	F1	2281	89.8	684	26.9	1022	40.2	499	19.6	1141	44.9	737	29.0	750	29.5
		420	16.5	F1	2551	100.4	785	30.9	1089	42.9	601	23.7	1276	50.2	737	29.0	750	29.5
635	5H	115	4.5	F2	1355	53.3	461	18.1	522	20.6	296	11.7	678	26.7	779	30.7	799	31.5
		216	8.5	F1	1824	71.8	547	21.5	804	31.7	397	15.6	912	35.9	779	30.7	799	31.5
	7	115	4.5	F2	1384	54.5	490	19.3	522	20.6	296	11.7	692	27.2	779	30.7	799	31.5
		216	8.5	F1	1897	74.7	620	24.4	804	31.7	397	15.6	949	37.3	779	30.7	799	31.5
685	5H	115	4.5	F1	1628	64.1	486	19.1	760	29.9	306	12.0	814	32.0	832	32.8	855	33.7
		216	8.5	F1	1864	73.4	572	22.5	809	31.9	407	16.0	932	36.7	832	32.8	855	33.7
	7	115	4.5	F1	1657	65.2	515	20.3	760	29.9	306	12.0	829	32.6	832	32.8	855	33.7
		216	8.5	F1	1937	76.3	645	25.4	809	31.9	407	16.0	969	38.1	832	32.8	855	33.7

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

Figure 7. Fisher 785C Single-Acting Spring Return Piston Actuator with Manual Hand Wheel (MHW)
(see table 11, 12, 13, 14, and 15)

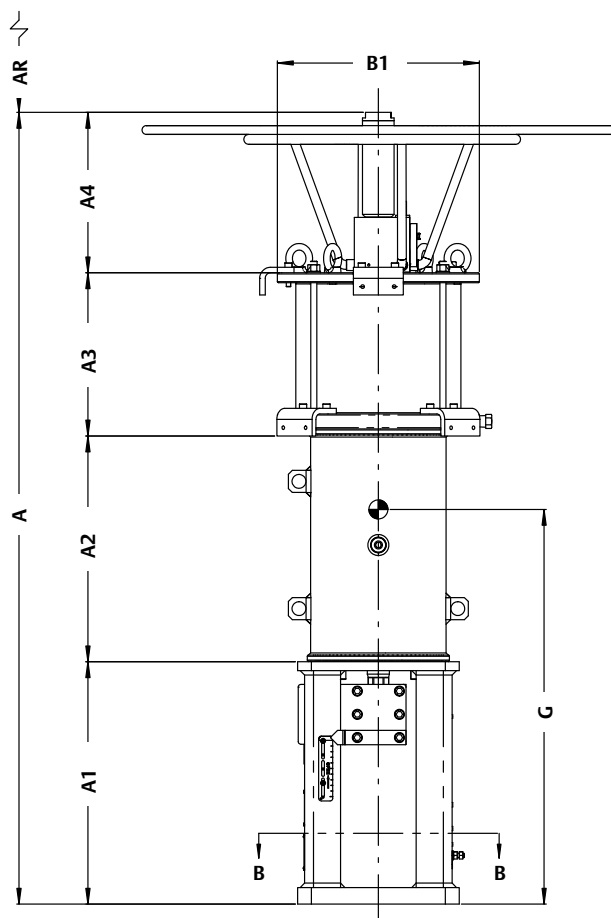


Figure 8. Fisher 785C Single-Acting Spring Return Piston Actuator with Manual Hand Pump (MHP)
(see table 11, 12, 13, 14, and 15)

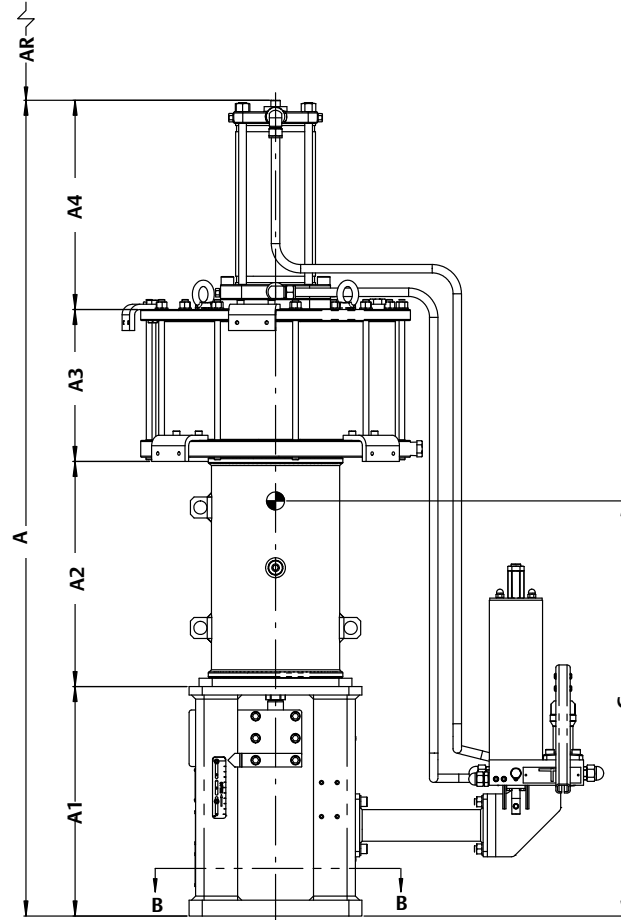


Table 12. 785C Single-Acting Spring Return (Spring Retracts) with Manual Override
Dimensions A, A1, A2, A3, A4, G, B, and C⁽¹⁾

ACTUATOR SIZE	YOKE BOSS	Maximum Travel		Spring	Manual Override	A		A1		A2		A3		A4	
	Inch (mm)	mm	Inch			mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
280	3-9/16	115	4.5	F1	MHW	1645	65	416	16	643	25.3	296	11.7	290	11.4
		216	8.5	F1		2235	88	524	21	923	36.3	397	15.6	391	15.4
	5 or 5H	115	4.5	F1		1667	66	438	17	643	25.3	296	11.7	290	11.4
		216	8.5	F1		2235	88	524	21	923	36.3	397	15.6	391	15.4
335	3-9/16	115	4.5	F1		1714	67	416	16	705	27.8	302.5	11.9	290	11.4
		216	8.5	F2		2090	82	524	21	771	30.4	403.5	15.9	391	15.4
	5 or 5H	115	4.5	F1		1736	68	438	17	705	27.8	302.5	11.9	290	11.4
		216	8.5	F2		2090	82	524	21	771	30.4	403.5	15.9	391	15.4
385	3-9/16	115	4.5	F2		1696	67	416	16	705	27.8	285	11.2	290	11.4
		216	8.5	F1		2232	88	524	21	931	36.7	386	15.2	391	15.4
	5 or 5H	115	4.5	F2		1718	68	438	17	705	27.8	285	11.2	290	11.4
		216	8.5	F1		2232	88	524	21	931	36.7	386	15.2	391	15.4
		318	12.5	F1		2754	108	664	26	1110	43.7	488	19.2	492	19.4
		115	4.5	F2		1750	69	470	19	705	27.8	285	11.2	290	11.4
	7	216	8.5	F1		2308	91	600	24	931	36.7	386	15.2	391	15.4
		318	12.5	F1		2754	108	664	26	1110	43.7	488	19.2	492	19.4
435	5 or 5H	115	4.5	F1	MHP	1800	71	438	17	705	27.8	282	11.1	375	14.8
		216	8.5	F1		2243	88	524	21	840	33.1	383	15.1	496	19.5
		318	12.5	F1		2781	109	664	26	1035	40.7	485	19.1	597	23.5
		420	16.5	F1		3183	125	766	30	1132	44.6	587	23.1	698	27.5
	7	115	4.5	F1		1832	72	470	19	705	27.8	282	11.1	375	14.8
		216	8.5	F1		2319	91	600	24	840	33.1	383	15.1	496	19.5
		318	12.5	F1		2781	109	664	26	1035	40.7	485	19.1	597	23.5
		420	16.5	F1		3183	125	766	30	1132	44.6	587	23.1	698	27.5
485	5 or 5H	115	4.5	F1		1764	69	438	17	638	25.1	313	12.3	375	14.8
		216	8.5	F1		2274	90	524	21	840	33.1	414	16.3	496	19.5
		318	12.5	F1		2810	111	664	26	1033	40.7	516	20.3	597	23.5
		420	16.5	F1		3207	126	766	30	1125	44.3	618	24.3	698	27.5
	7	115	4.5	F1		1796	71	470	19	638	25.1	313	12.3	375	14.8
		216	8.5	F1		2350	93	600	24	840	33.1	414	16.3	496	19.5
		318	12.5	F1		2810	111	664	26	1033	40.7	516	20.3	597	23.5
		420	16.5	F1		3207	126	766	30	1125	44.3	618	24.3	698	27.5
535	5 or 5H	115	4.5	F1		1901	75	438	17	771	30.4	317	12.5	375	14.8
		216	8.5	F1		2265	89	524	21	827	32.6	418	16.5	496	19.5
		318	12.5	F1		2776	109	664	26	995	39.2	520	20.5	597	23.5
		420	16.5	F1		3130	123	766	30	1044	41.1	622	24.5	698	27.5
	7	115	4.5	F1		1933	76	470	19	771	30.4	317	12.5	375	14.8
		216	8.5	F1		2341	92	600	24	827	32.6	418	16.5	496	19.5
		318	12.5	F1		2776	109	664	26	995	39.2	520	20.5	597	23.5
		420	16.5	F1		3130	123	766	30	1044	41.1	622	24.5	698	27.5
585	5H	115	4.5	F1		1981	78	461	18	780	30.7	348	13.7	392	15.4
		216	8.5	F1		2313	91	547	22	804	31.7	449	17.7	513	20.2
		318	12.5	F1		2874	113	687	27	1022	40.2	551	21.7	614	24.2
		420	16.5	F1		3246	128	789	31	1089	42.9	653	25.7	715	28.1
	7	115	4.5	F1		2010	79	490	19	780	30.7	348	13.7	392	15.4
		216	8.5	F1		2386	94	620	24	804	31.7	449	17.7	513	20.2
		318	12.5	F1		2871	113	684	27	1022	40.2	551	21.7	614	24.2
		420	16.5	F1		3242	128	785	31	1089	42.9	653	25.7	715	28.1

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Table 12. 785C Single-Acting Spring Return (Spring Retracts) with Manual Override
Dimensions A, A1, A2, A3, A4, G, B, and C⁽¹⁾ (cont.)

ACTUATOR SIZE	YOKE BOSS	Maximum Travel		Spring	Manual Override	A		A1		A2		A3		A4	
	Inch (mm)	mm	Inch			mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
635	5H	115	4.5	F2	MHP	1724	68	461	18	522	20.6	349	13.7	392	15.4
		216	8.5	F1		2314	91	547	22	804	31.7	450	17.7	513	20.2
	7	115	4.5	F2		1753	69	490	19	522	20.6	349	13.7	392	15.4
		216	8.5	F1		2387	94	620	24	804	31.7	450	17.7	513	20.2
685	5H	115	4.5	F1		2011	79	486	19	760	29.9	373	14.7	392	15.4
		216	8.5	F1		2368	93	572	23	809	31.9	474	18.7	513	20.2
	7	115	4.5	F1		2040	80	515	20	760	29.9	373	14.7	392	15.4
		216	8.5	F1		2441	96	645	25	809	31.9	474	18.7	513	20.2
ACTUATOR SIZE	YOKE BOSS	Maximum Travel		Spring	Manual Override	G		ØB / B		B1		C		C1	
	Inch (mm)	mm	Inch			mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
280	3-9/16	115	4.5	F1	MHW	823	32	850	33.5	419	16.5	464	18.3	---	---
		216	8.5	F1		1118	44	850	33.5	419	16.5	464	18.3	---	---
	5 or 5H	115	4.5	F1		834	33	850	33.5	419	16.5	464	18.3	---	---
		216	8.5	F1		1118	44	850	33.5	419	16.5	464	18.3	---	---
335	3-9/16	115	4.5	F1		857	34	1250	49.2	472	18.6	517	20.4	---	---
		216	8.5	F2		1045	41	1250	49.2	472	18.6	517	20.4	---	---
	5 or 5H	115	4.5	F1		868	34	1250	49.2	472	18.6	517	20.4	---	---
		216	8.5	F2		1045	41	1250	49.2	472	18.6	517	20.4	---	---
385	3-9/16	115	4.5	F2		848	33	1400	55.1	519	20.4	564	22.2	---	---
		216	8.5	F1		1116	44	1400	55.1	519	20.4	564	22.2	---	---
	5 or 5H	115	4.5	F2		859	34	1400	55.1	519	20.4	564	22.2	---	---
		216	8.5	F1		1116	44	1400	55.1	519	20.4	564	22.2	---	---
		318	12.5	F1		1377	54	1400	55.1	519	20.4	564	22.2	---	---
		115	4.5	F2		875	34	1400	55.1	519	20.4	564	22.2	---	---
	7	216	8.5	F1		1154	45	1400	55.1	519	20.4	564	22.2	---	---
		318	12.5	F1		1377	54	1400	55.1	519	20.4	564	22.2	---	---
435	5 or 5H	115	4.5	F1	MHP	900	35	908	35.7	572	22.5	846	33.3	565	22.2
		216	8.5	F1		1122	44	908	35.7	572	22.5	846	33.3	565	22.2
		318	12.5	F1		1391	55	908	35.7	572	22.5	846	33.3	565	22.2
		420	16.5	F1		1592	63	908	35.7	572	22.5	846	33.3	565	22.2
	7	115	4.5	F1		916	36	908	35.7	572	22.5	846	33.3	565	22.2
		216	8.5	F1		1160	46	908	35.7	572	22.5	846	33.3	565	22.2
		318	12.5	F1		1391	55	908	35.7	572	22.5	846	33.3	565	22.2
		420	16.5	F1		1592	63	908	35.7	572	22.5	846	33.3	565	22.2
485	5 or 5H	115	4.5	F1		882	35	940	37.0	636	25.0	858	33.8	630	24.8
		216	8.5	F1		1137	45	940	37.0	636	25.0	858	33.8	630	24.8
		318	12.5	F1		1405	55	940	37.0	636	25.0	858	33.8	630	24.8
		420	16.5	F1		1604	63	940	37.0	636	25.0	858	33.8	630	24.8
	7	115	4.5	F1		898	35	940	37.0	636	25.0	858	33.8	630	24.8
		216	8.5	F1		1175	46	940	37.0	636	25.0	858	33.8	630	24.8
		318	12.5	F1		1405	55	940	37.0	636	25.0	858	33.8	630	24.8
		420	16.5	F1		1604	63	940	37.0	636	25.0	858	33.8	630	24.8

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Table 12. 785C Single-Acting Spring Return (Spring Retracts) with Manual Override
Dimensions A, A1, A2, A3, A4, G, B, and C⁽¹⁾ (cont.)

ACTUATOR SIZE	YOKE BOSS Inch (mm)	Maximum Travel		Spring	Manual Override	G		ØB / B		B1		C		C1	
		mm	Inch			mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
535	5 or 5H	115	4.5	F1	MHP	951	37	962	37.9	684	26.9	915	36.0	680	26.8
		216	8.5	F1		1133	45	962	37.9	684	26.9	915	36.0	680	26.8
		318	12.5	F1		1388	55	962	37.9	684	26.9	915	36.0	680	26.8
		420	16.5	F1		1565	62	962	37.9	684	26.9	915	36.0	680	26.8
	7	115	4.5	F1		967	38	962	37.9	684	26.9	915	36.0	680	26.8
		216	8.5	F1		1171	46	962	37.9	684	26.9	915	36.0	680	26.8
		318	12.5	F1		1388	55	962	37.9	684	26.9	915	36.0	680	26.8
		420	16.5	F1		1565	62	962	37.9	684	26.9	915	36.0	680	26.8
585	5H	115	4.5	F1		991	39	1102	43.4	737	29.0	983	38.7	730	28.7
		216	8.5	F1		1157	46	1102	43.4	737	29.0	983	38.7	730	28.7
		318	12.5	F1		1437	57	1102	43.4	737	29.0	983	38.7	730	28.7
		420	16.5	F1		1623	64	1102	43.4	737	29.0	983	38.7	730	28.7
	7	115	4.5	F1		1005	40	1102	43.4	737	29.0	983	38.7	730	28.7
		216	8.5	F1		1193	47	1102	43.4	737	29.0	983	38.7	730	28.7
		318	12.5	F1		1436	57	1102	43.4	737	29.0	983	38.7	730	28.7
		420	16.5	F1		1621	64	1102	43.4	737	29.0	983	38.7	730	28.7
635	5H	115	4.5	F2		862	34	1127	44.4	779	30.7	1007	39.6	785	30.9
		216	8.5	F1		1157	46	1127	44.4	779	30.7	1007	39.6	785	30.9
	7	115	4.5	F2		877	35	1127	44.4	779	30.7	1007	39.6	785	30.9
		216	8.5	F1		1194	47	1127	44.4	779	30.7	1007	39.6	785	30.9
685	5H	115	4.5	F1		1006	40	1153	45.4	832	32.8	1035	40.7	840	33.1
		216	8.5	F1		1184	47	1153	45.4	832	32.8	1035	40.7	840	33.1
	7	115	4.5	F1		1020	40	1153	45.4	832	32.8	1035	40.7	840	33.1
		216	8.5	F1		1221	48	1153	45.4	832	32.8	1035	40.7	840	33.1

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 Single-Acting Spring Return (Spring Extends) Dimensions A, A1, A2, A3, G, B, and C⁽¹⁾

ACTU- ATOR SIZE	YOKE BOSS Inch (mm)	Maximum Travel		Spring	A		A1		A2		A3		G		B		C	
		mm	Inch		mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
280	3-9/16	115	4.5	F1	1360	53.5	416	16.4	643	25.3	245	9.6	680	26.8	419	16.5	419	16.5
		216	8.5	F1	1849	72.8	524	20.6	923	36.3	346	13.6	925	36.4	419	16.5	419	16.5
	5 or 5H	115	4.5	F1	1382	54.4	438	17.2	643	25.3	245	9.6	691	27.2	419	16.5	419	16.5
		216	8.5	F1	1849	72.8	524	20.6	923	36.3	346	13.6	925	36.4	419	16.5	419	16.5
335	3-9/16	115	4.5	F1	1425	56.1	416	16.4	705	27.8	248	9.8	713	28.1	472	18.6	472	18.6
		216	8.5	F2	1700	66.9	524	20.6	771	30.4	349	13.7	850	33.5	472	18.6	472	18.6
	5 or 5H	115	4.5	F1	1447	57.0	438	17.2	705	27.8	248	9.8	724	28.5	472	18.6	472	18.6
		216	8.5	F2	1700	66.9	524	20.6	771	30.4	349	13.7	850	33.5	472	18.6	472	18.6
385	3-9/16	115	4.5	F2	1425	56.1	416	16.4	705	27.8	248	9.8	713	28.1	519	20.4	519	20.4
		216	8.5	F1	1860	73.2	524	20.6	931	36.7	349	13.7	930	36.6	519	20.4	519	20.4
	5 or 5H	115	4.5	F2	1447	57.0	438	17.2	705	27.8	248	9.8	724	28.5	519	20.4	519	20.4
		216	8.5	F1	1860	73.2	524	20.6	931	36.7	349	13.7	930	36.6	519	20.4	519	20.4
		318	12.5	F1	2281	89.8	664	26.1	1110	43.7	451	17.8	1141	44.9	519	20.4	519	20.4
	7	115	4.5	F2	1479	58.2	470	18.5	705	27.8	248	9.8	740	29.1	519	20.4	519	20.4
		216	8.5	F1	1936	76.2	600	23.6	931	36.7	349	13.7	968	38.1	519	20.4	519	20.4
		318	12.5	F1	2281	89.8	664	26.1	1110	43.7	451	17.8	1141	44.9	519	20.4	519	20.4
435	5 or 5H	115	4.5	F1	1447	57.0	438	17.2	705	27.8	248	9.8	724	28.5	572	22.5	572	22.5
		216	8.5	F1	1769	69.6	524	20.6	840	33.1	349	13.7	885	34.8	572	22.5	572	22.5
		318	12.5	F1	2206	86.9	664	26.1	1035	40.7	451	17.8	1103	43.4	572	22.5	572	22.5
		420	16.5	F1	2507	98.7	766	30.2	1132	44.6	553	21.8	1254	49.4	572	22.5	572	22.5
	7	115	4.5	F1	1479	58.2	470	18.5	705	27.8	248	9.8	740	29.1	572	22.5	572	22.5
		216	8.5	F1	1845	72.6	600	23.6	840	33.1	349	13.7	923	36.3	572	22.5	572	22.5
		318	12.5	F1	2206	86.9	664	26.1	1035	40.7	451	17.8	1103	43.4	572	22.5	572	22.5
		420	16.5	F1	2507	98.7	766	30.2	1132	44.6	553	21.8	1254	49.4	572	22.5	572	22.5
485	5 or 5H	115	4.5	F1	1428	56.2	438	17.2	638	25.1	276	10.9	714	28.1	636	25.0	636	25.0
		216	8.5	F1	1817	71.5	524	20.6	840	33.1	377	14.8	909	35.8	636	25.0	636	25.0
		318	12.5	F1	2254	88.7	664	26.1	1035	40.7	479	18.9	1127	44.4	636	25.0	636	25.0
		420	16.5	F1	2555	100.6	766	30.2	1132	44.6	581	22.9	1278	50.3	636	25.0	636	25.0
	7	115	4.5	F1	1460	57.5	470	18.5	638	25.1	276	10.9	730	28.7	636	25.0	636	25.0
		216	8.5	F1	1893	74.5	600	23.6	840	33.1	377	14.8	947	37.3	636	25.0	636	25.0
		318	12.5	F1	2254	88.7	664	26.1	1035	40.7	479	18.9	1127	44.4	636	25.0	636	25.0
		420	16.5	F1	2555	100.6	766	30.2	1132	44.6	581	22.9	1278	50.3	636	25.0	636	25.0
535	5 or 5H	115	4.5	F1	1563	61.5	438	17.2	771	30.4	278	10.9	782	30.8	684	26.9	694	27.3
		216	8.5	F1	1778	70.0	524	20.6	799	31.5	379	14.9	889	35.0	684	26.9	694	27.3
		318	12.5	F1	2223	87.5	664	26.1	1002	39.4	481	18.9	1112	43.8	684	26.9	694	27.3
		420	16.5	F1	2476	97.5	766	30.2	1051	41.4	583	23.0	1238	48.7	684	26.9	694	27.3
	7	115	4.5	F1	1595	62.8	470	18.5	771	30.4	278	10.9	798	31.4	684	26.9	694	27.3
		216	8.5	F1	1854	73.0	600	23.6	799	31.5	379	14.9	927	36.5	684	26.9	694	27.3
		318	12.5	F1	2223	87.5	664	26.1	1002	39.4	481	18.9	1112	43.8	684	26.9	694	27.3
		420	16.5	F1	2476	97.5	766	30.2	1051	41.4	583	23.0	1238	48.7	684	26.9	694	27.3

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Table 13. 785C Single-Acting Spring Return (Spring Extends) Dimensions A, A1, A2, A3, G, B, and C⁽¹⁾ (cont.)

ACTU- ATOR SIZE	YOKE BOSS Inch (mm)	Maximum Travel		Spring	A		A1		A2		A3		G		B		C	
		mm	Inch		mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
585	5H	115	4.5	F1	1613	63.5	461	18.1	780	30.7	296	11.7	807	31.8	737	29.0	750	29.5
		216	8.5	F1	1820	71.7	547	21.5	800	31.5	397	15.6	910	35.8	737	29.0	750	29.5
		318	12.5	F1	2284	89.9	687	27.0	1022	40.2	499	19.6	1142	45.0	737	29.0	750	29.5
		420	16.5	F1	2555	100.6	789	31.1	1089	42.9	601	23.7	1278	50.3	737	29.0	750	29.5
	7	115	4.5	F1	1642	64.6	490	19.3	780	30.7	296	11.7	821	32.3	737	29.0	750	29.5
		216	8.5	F1	1893	74.5	620	24.4	800	31.5	397	15.6	947	37.3	737	29.0	750	29.5
		318	12.5	F1	2281	89.8	684	26.9	1022	40.2	499	19.6	1141	44.9	737	29.0	750	29.5
		420	16.5	F1	2551	100.4	785	30.9	1089	42.9	601	23.7	1276	50.2	737	29.0	750	29.5
635	5H	115	4.5	F1	1579	62.2	461	18.1	746	29.4	296	11.7	790	31.1	779	30.7	799	31.5
		216	8.5	F1	1830	72.0	547	21.5	810	31.9	397	15.6	915	36.0	779	30.7	799	31.5
		318	12.5	F1	2264	89.1	687	27.0	1002	39.4	499	19.6	1132	44.6	779	30.7	799	31.5
		420	16.5	F1	2458	96.8	789	31.1	992	39.1	601	23.7	1229	48.4	779	30.7	799	31.5
	7	115	4.5	F1	1608	63.3	490	19.3	746	29.4	296	11.7	804	31.7	779	30.7	799	31.5
		216	8.5	F1	1903	74.9	620	24.4	810	31.9	397	15.6	952	37.5	779	30.7	799	31.5
		318	12.5	F1	2261	89.0	684	26.9	1002	39.4	499	19.6	1131	44.5	779	30.7	799	31.5
		420	16.5	F1	2454	96.6	785	30.9	992	39.1	601	23.7	1227	48.3	779	30.7	799	31.5
685	5H	115	4.5	F3	1622	63.9	486	19.1	754	29.7	306	12.0	811	31.9	832	32.8	855	33.7
		216	8.5	F3	1840	72.4	572	22.5	785	30.9	407	16.0	920	36.2	832	32.8	855	33.7
		318	12.5	F1	2299	90.5	712	28.0	1002	39.4	509	20.0	1150	45.3	832	32.8	855	33.7
		420	16.5	F1	2493	98.1	814	32.0	992	39.1	611	24.1	1247	49.1	832	32.8	855	33.7
	7	115	4.5	F3	1651	65.0	515	20.3	754	29.7	306	12.0	826	32.5	832	32.8	855	33.7
		216	8.5	F3	1913	75.3	645	25.4	785	30.9	407	16.0	957	37.7	832	32.8	855	33.7
		318	12.5	F1	2296	90.4	709	27.9	1002	39.4	509	20.0	1148	45.2	832	32.8	855	33.7
		420	16.5	F1	2489	98.0	810	31.9	992	39.1	611	24.1	1245	49.0	832	32.8	855	33.7

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

Table 14. 785C Single-Acting Spring Return (Spring Extends) with Manual Override
Dimensions A, A1, A2, A3, A4, G, B, and C⁽¹⁾

ACTUATOR SIZE	YOKE BOSS Inch (mm)	Maximum Travel		Spring	Manual Override	A		A1		A2		A3		A4	
		mm	Inch			mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
280	3-9/16	115	4.5	F1	MHW	1645	65	416	16	643	25.3	296	11.7	290	11.4
		216	8.5	F1		2235	88	524	21	923	36.3	397	15.6	391	15.4
	5 or 5H	115	4.5	F1		1667	66	438	17	643	25.3	296	11.7	290	11.4
		216	8.5	F1		2235	88	524	21	923	36.3	397	15.6	391	15.4
335	3-9/16	115	4.5	F1		1714	67	416	16	705	27.8	302.5	11.9	290	11.4
		216	8.5	F2		2090	82	524	21	771	30.4	403.5	15.9	391	15.4
	5 or 5H	115	4.5	F1		1736	68	438	17	705	27.8	302.5	11.9	290	11.4
		216	8.5	F2		2090	82	524	21	771	30.4	403.5	15.9	391	15.4
385	3-9/16	115	4.5	F2		1696	67	416	16	705	27.8	285	11.2	290	11.4
		216	8.5	F1		2232	88	524	21	931	36.7	386	15.2	391	15.4
	5 or 5H	115	4.5	F2		1718	68	438	17	705	27.8	285	11.2	290	11.4
		216	8.5	F1		2232	88	524	21	931	36.7	386	15.2	391	15.4
		318	12.5	F1		2754	108	664	26	1110	43.7	488	19.2	492	19.4
	7	115	4.5	F2		1750	69	470	19	705	27.8	285	11.2	290	11.4
		216	8.5	F1		2308	91	600	24	931	36.7	386	15.2	391	15.4
		318	12.5	F1		2754	108	664	26	1110	43.7	488	19.2	492	19.4
435	5 or 5H	115	4.5	F1	MHP	1800	71	438	17	705	27.8	282	11.1	375	14.8
		216	8.5	F1		2243	88	524	21	840	33.1	383	15.1	496	19.5
		318	12.5	F1		2781	109	664	26	1035	40.7	485	19.1	597	23.5
		420	16.5	F1		3183	125	766	30	1132	44.6	587	23.1	698	27.5
	7	115	4.5	F1		1832	72	470	19	705	27.8	282	11.1	375	14.8
		216	8.5	F1		2319	91	600	24	840	33.1	383	15.1	496	19.5
		318	12.5	F1		2781	109	664	26	1035	40.7	485	19.1	597	23.5
		420	16.5	F1		3183	125	766	30	1132	44.6	587	23.1	698	27.5
485	5 or 5H	115	4.5	F1		1764	69	438	17	638	25.1	313	12.3	375	14.8
		216	8.5	F1		2274	90	524	21	840	33.1	414	16.3	496	19.5
		318	12.5	F1		2812	111	664	26	1035	40.7	516	20.3	597	23.5
		420	16.5	F1		3214	127	766	30	1132	44.6	618	24.3	698	27.5
	7	115	4.5	F1		1796	71	470	19	638	25.1	313	12.3	375	14.8
		216	8.5	F1		2350	93	600	24	840	33.1	414	16.3	496	19.5
		318	12.5	F1		2812	111	664	26	1035	40.7	516	20.3	597	23.5
		420	16.5	F1		3214	127	766	30	1132	44.6	618	24.3	698	27.5
535	5 or 5H	115	4.5	F1		1901	75	438	17	771	30.4	317	12.5	375	14.8
		216	8.5	F1		2237	88	524	21	799	31.5	418	16.5	496	19.5
		318	12.5	F1		2783	110	664	26	1002	39.4	520	20.5	597	23.5
		420	16.5	F1		3137	124	766	30	1051	41.4	622	24.5	698	27.5
	7	115	4.5	F1		1933	76	470	19	771	30.4	317	12.5	375	14.8
		216	8.5	F1		2313	91	600	24	799	31.5	418	16.5	496	19.5
		318	12.5	F1		2783	110	664	26	1002	39.4	520	20.5	597	23.5
		420	16.5	F1		3137	124	766	30	1051	41.4	622	24.5	698	27.5
585	5H	115	4.5	F1		1981	78	461	18	780	30.7	348	13.7	392	15.4
		216	8.5	F1		2309	91	547	22	800	31.5	449	17.7	513	20.2
		318	12.5	F1		2874	113	687	27	1022	40.2	551	21.7	614	24.2
		420	16.5	F1		3246	128	789	31	1089	42.9	653	25.7	715	28.1
	7	115	4.5	F1		2010	79	490	19	780	30.7	348	13.7	392	15.4
		216	8.5	F1		2382	94	620	24	800	31.5	449	17.7	513	20.2
		318	12.5	F1		2871	113	684	27	1022	40.2	551	21.7	614	24.2
		420	16.5	F1		3242	128	785	31	1089	42.9	653	25.7	715	28.1

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Table 14. 785C Single-Acting Spring Return (Spring Extends) with Manual Override
Dimensions A, A1, A2, A3, A4, G, B, and C⁽¹⁾ (cont.)

ACTUATOR SIZE	YOKE BOSS Inch (mm)	Maximum Travel		Spring	Manual Override	A		A1		A2		A3		A4	
		mm	Inch			mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
635	5H	115	4.5	F1	MHP	1948	77	461	18	746	29.4	349	13.7	392	15.4
		216	8.5	F1		2320	91	547	22	810	31.9	450	17.7	513	20.2
		318	12.5	F1		2855	112	687	27	1002	39.4	552	21.7	614	24.2
		420	16.5	F1		3150	124	789	31	992	39.1	654	25.7	715	28.1
	7	115	4.5	F1		1977	78	490	19	746	29.4	349	13.7	392	15.4
		216	8.5	F1		2393	94	620	24	810	31.9	450	17.7	513	20.2
		318	12.5	F1		2852	112	684	27	1002	39.4	552	21.7	614	24.2
		420	16.5	F1		3146	124	785	31	992	39.1	654	25.7	715	28.1
685	5H	115	4.5	F3		2005	79	486	19	754	29.7	373	14.7	392	15.4
		216	8.5	F3		2344	92	572	23	785	30.9	474	18.7	513	20.2
		318	12.5	F1		2904	114	712	28	1002	39.4	576	22.7	614	24.2
		420	16.5	F1		3199	126	814	32	992	39.1	678	26.7	715	28.1
	7	115	4.5	F3		2034	80	515	20	754	29.7	373	14.7	392	15.4
		216	8.5	F3		2417	95	645	25	785	30.9	474	18.7	513	20.2
		318	12.5	F1		2901	114	709	28	1002	39.4	576	22.7	614	24.2
		420	16.5	F1		3195	126	810	32	992	39.1	678	26.7	715	28.1
ACTUATOR SIZE	YOKE BOSS Inch (mm)	Maximum Travel		Spring	Manual Override	G		ØB/B		B1		C		C1	
		mm	Inch			mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
280	3-9/16	115	4.5	F1	MHW	823	32	850	33.5	419	16.5	464	18.3	---	---
		216	8.5	F1		1118	44	850	33.5	419	16.5	464	18.3	---	---
	5 or 5H	115	4.5	F1		834	33	850	33.5	419	16.5	464	18.3	---	---
		216	8.5	F1		1118	44	850	33.5	419	16.5	464	18.3	---	---
335	3-9/16	115	4.5	F1		857	34	1250	49.2	472	18.6	517	20.4	---	---
		216	8.5	F2		1045	41	1250	49.2	472	18.6	517	20.4	---	---
	5 or 5H	115	4.5	F1		868	34	1250	49.2	472	18.6	517	20.4	---	---
		216	8.5	F2		1045	41	1250	49.2	472	18.6	517	20.4	---	---
385	3-9/16	115	4.5	F2		848	33	1400	55.1	519	20.4	564	22.2	---	---
		216	8.5	F1		1116	44	1400	55.1	519	20.4	564	22.2	---	---
	5 or 5H	115	4.5	F2		859	34	1400	55.1	519	20.4	564	22.2	---	---
		216	8.5	F1		1116	44	1400	55.1	519	20.4	564	22.2	---	---
		318	12.5	F1		1377	54	1400	55.1	519	20.4	564	22.2	---	---
		115	4.5	F2		875	34	1400	55.1	519	20.4	564	22.2	---	---
	7	216	8.5	F1		1154	45	1400	55.1	519	20.4	564	22.2	---	---
		318	12.5	F1		1377	54	1400	55.1	519	20.4	564	22.2	---	---
435	5 or 5H	115	4.5	F1	MHP	900	35	908	35.7	572	22.5	846	33.3	565	22.2
		216	8.5	F1		1121.5	44	908	35.7	572	22.5	846	33.3	565	22.2
		318	12.5	F1		1391	55	908	35.7	572	22.5	846	33.3	565	22.2
		420	16.5	F1		1592	63	908	35.7	572	22.5	846	33.3	565	22.2
	7	115	4.5	F1		916	36	908	35.7	572	22.5	846	33.3	565	22.2
		216	8.5	F1		1160	46	908	35.7	572	22.5	846	33.3	565	22.2
		318	12.5	F1		1391	55	908	35.7	572	22.5	846	33.3	565	22.2
		420	16.5	F1		1592	63	908	35.7	572	22.5	846	33.3	565	22.2
485	5 or 5H	115	4.5	F1		882	35	940	37.0	636	25.0	858	33.8	630	24.8
		216	8.5	F1		1137	45	940	37.0	636	25.0	858	33.8	630	24.8
		318	12.5	F1		1406	55	940	37.0	636	25.0	858	33.8	630	24.8
		420	16.5	F1		1607	63	940	37.0	636	25.0	858	33.8	630	24.8
	7	115	4.5	F1		898	35	940	37.0	636	25.0	858	33.8	630	24.8
		216	8.5	F1		1175	46	940	37.0	636	25.0	858	33.8	630	24.8
		318	12.5	F1		1406	55	940	37.0	636	25.0	858	33.8	630	24.8
		420	16.5	F1		1607	63	940	37.0	636	25.0	858	33.8	630	24.8

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Table 14. 785C Single-Acting Spring Return (Spring Extends) with Manual Override
Dimensions A, A1, A2, A3, A4, G, B, and C⁽¹⁾ (cont.)

ACTUATOR SIZE	YOKE BOSS Inch (mm)	Maximum Travel		Spring	Manual Override	G		ØB/B		B1		C		C1	
		mm	Inch			mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
535	5 or 5H	115	4.5	F1	MHP	951	37	962	37.9	684	26.9	915	36.0	680	26.8
		216	8.5	F1		1119	44	962	37.9	684	26.9	915	36.0	680	26.8
		318	12.5	F1		1392	55	962	37.9	684	26.9	915	36.0	680	26.8
		420	16.5	F1		1569	62	962	37.9	684	26.9	915	36.0	680	26.8
	7	115	4.5	F1		967	38	962	37.9	684	26.9	915	36.0	680	26.8
		216	8.5	F1		1157	46	962	37.9	684	26.9	915	36.0	680	26.8
		318	12.5	F1		1392	55	962	37.9	684	26.9	915	36.0	680	26.8
		420	16.5	F1		1569	62	962	37.9	684	26.9	915	36.0	680	26.8
585	5H	115	4.5	F1		991	39	1102	43.4	737	29.0	983	38.7	730	28.7
		216	8.5	F1		1155	45	1102	43.4	737	29.0	983	38.7	730	28.7
		318	12.5	F1		1437	57	1102	43.4	737	29.0	983	38.7	730	28.7
		420	16.5	F1		1623	64	1102	43.4	737	29.0	983	38.7	730	28.7
	7	115	4.5	F1		1005	40	1102	43.4	737	29.0	983	38.7	730	28.7
		216	8.5	F1		1191	47	1102	43.4	737	29.0	983	38.7	730	28.7
		318	12.5	F1		1436	57	1102	43.4	737	29.0	983	38.7	730	28.7
		420	16.5	F1		1621	64	1102	43.4	737	29.0	983	38.7	730	28.7
635	5H	115	4.5	F1		974	38	1127	44.4	779	30.7	1007	39.6	785	30.9
		216	8.5	F1		1160	46	1127	44.4	779	30.7	1007	39.6	785	30.9
		318	12.5	F1		1428	56	1127	44.4	779	30.7	1007	39.6	785	30.9
		420	16.5	F1		1575	62	1127	44.4	779	30.7	1007	39.6	785	30.9
	7	115	4.5	F1		989	39	1127	44.4	779	30.7	1007	39.6	785	30.9
		216	8.5	F1		1197	47	1127	44.4	779	30.7	1007	39.6	785	30.9
		318	12.5	F1		1426	56	1127	44.4	779	30.7	1007	39.6	785	30.9
		420	16.5	F1		1573	62	1127	44.4	779	30.7	1007	39.6	785	30.9
685	5H	115	4.5	F3		1003	39	1153	45.4	832	32.8	1035	40.7	840	33.1
		216	8.5	F3		1172	46	1153	45.4	832	32.8	1035	40.7	840	33.1
		318	12.5	F1		1452	57	1153	45.4	832	32.8	1035	40.7	840	33.1
		420	16.5	F1		1600	63	1153	45.4	832	32.8	1035	40.7	840	33.1
	7	115	4.5	F3		1017	40	1153	45.4	832	32.8	1035	40.7	840	33.1
		216	8.5	F3		1209	48	1153	45.4	832	32.8	1035	40.7	840	33.1
		318	12.5	F1		1451	57	1153	45.4	832	32.8	1035	40.7	840	33.1
		420	16.5	F1		1598	63	1153	45.4	832	32.8	1035	40.7	840	33.1

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 15. 785C Single Acting Spring Return (Spring Retracts or Spring Extends) 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				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 16. 785C Double-Acting Springless Approximate Weights for Constructions without Manual Override

MAXIMUM VALVE 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 5 Yoke Boss	7 Yoke Boss
115 (4.5)	129 (284)	125 (275)	160 (352)	156 (343)	209 (460)	204 (451)	203 (448)	237 (524)	236 (521)
216 (8.5)	141 (312)	137 (302)	174 (383)	170 (374)	226 (498)	221 (487)	222 (490)	256 (565)	257 (568)
318 (12.5)	---	151 (332)	---	186 (410)	---	240 (530)	237 (523)	278 (613)	275 (606)
420 (16.5)	---	163 (359)	---	201 (443)	---	257 (568)	254 (561)	297 (656)	294 (649)
521 (20.5)	---	175 (385)	---	215 (473)	---	274 (606)	271 (599)	317 (699)	314 (692)
623 (24.5)	---	187 (412)	---	230 (507)	---	292 (644)	289 (637)	336 (742)	333 (735)

MAXIMUM VALVE TRAVEL	APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)									
	485		535		585		635		685	
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 5 Yoke Boss	5 or 5 Yoke Boss	7 Yoke Boss
115 (4.5)	326 (720)	325 (717)	381 (842)	380 (839)	512 (1130)	511 (1128)	589 (1299)	588 (1298)	696 (1535)	695 (1534)
216 (8.5)	347 (766)	348 (768)	405 (893)	406 (895)	540 (1192)	543 (1197)	624 (1376)	626 (1381)	732 (1615)	735 (1620)
318 (12.5)	371 (818)	368 (811)	431 (951)	428 (944)	573 (1263)	569 (1256)	662 (1460)	659 (1453)	772 (1702)	769 (1695)
420 (16.5)	393 (866)	390 (859)	455 (1004)	452 (997)	602 (1328)	599 (1321)	698 (1538)	694 (1531)	809 (1784)	806 (1777)
521 (20.5)	414 (914)	411 (908)	479 (1057)	476 (1051)	631 (1392)	628 (1386)	733 (1617)	730 (1610)	846 (1865)	843 (1858)
623 (24.5)	436 (962)	433 (955)	503 (1110)	500 (1104)	661 (1457)	658 (1450)	769 (1695)	766 (1688)	883 (1947)	880 (1940)

Table 17. 785C Double-Acting Springless Approximate Weights for Constructions with Manual Override

MAXIMUM VALVE 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 5 Yoke Boss	7 Yoke Boss
115 (4.5)	129 (284)	125 (275)	160 (352)	156 (343)	209 (460)	204 (451)	203 (448)	237 (524)	236 (521)
216 (8.5)	141 (312)	137 (302)	174 (383)	170 (374)	226 (498)	221 (487)	222 (490)	256 (565)	257 (568)
318 (12.5)	---	151 (332)	---	186 (410)	---	240 (530)	237 (523)	278 (613)	275 (606)
420 (16.5)	---	163 (359)	---	201 (443)	---	257 (568)	254 (561)	297 (656)	294 (649)
521 (20.5)	---	175 (385)	---	215 (473)	---	274 (606)	271 (599)	317 (699)	314 (692)
623 (24.5)	---	187 (412)	---	230 (507)	---	292 (644)	289 (637)	336 (742)	333 (735)

MAXIMUM VALVE TRAVEL	APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)									
	485		535		585		635		685	
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 5 Yoke Boss	5 or 5 Yoke Boss	7 Yoke Boss
115 (4.5)	326 (720)	325 (717)	381 (842)	380 (839)	512 (1130)	511 (1128)	589 (1299)	588 (1298)	696 (1535)	695 (1534)
216 (8.5)	347 (766)	348 (768)	405 (893)	406 (895)	540 (1192)	543 (1197)	624 (1376)	626 (1381)	732 (1615)	735 (1620)
318 (12.5)	371 (818)	368 (811)	431 (951)	428 (944)	573 (1263)	569 (1256)	662 (1460)	659 (1453)	772 (1702)	769 (1695)
420 (16.5)	393 (866)	390 (859)	455 (1004)	452 (997)	602 (1328)	599 (1321)	698 (1538)	694 (1531)	809 (1784)	806 (1777)
521 (20.5)	414 (914)	411 (908)	479 (1057)	476 (1051)	631 (1392)	628 (1386)	733 (1617)	730 (1610)	846 (1865)	843 (1858)
623 (24.5)	436 (962)	433 (955)	503 (1110)	500 (1104)	661 (1457)	658 (1450)	769 (1695)	766 (1688)	883 (1947)	880 (1940)

Table 18. 785C Single-Acting Spring Approximate Weights for Constructions without Manual Override

MAXIMUM VALVE 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 5 Yoke Boss	7 Yoke Boss
115 (4.5)	232 (511)	229 (504)	288 (634)	285 (628)	376 (828)	372 (820)	371 (817)	394 (868)	393 (866)
216 (8.5)	344 (758)	340 (749)	315 (694)	310 (683)	415 (914)	409 (901)	410 (903)	493 (1086)	494 (1089)
318 (12.5)	---	---	---	---	---	452 (996)	449 (989)	480 (1058)	477 (1051)
420 (16.5)	---	---	---	---	---	---	---	527 (1161)	524 (1155)

MAXIMUM VALVE TRAVEL	APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)									
	485		535		585		635		685	
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 5 Yoke Boss	5 or 5 Yoke Boss	7 Yoke Boss
115 (4.5)	496 (1093)	494 (1089)	646 (1424)	645 (1421)	794 (1750)	793 (1748)	944 (2081)	943 (2078)	1171 (2581)	1171 (2581)
216 (8.5)	588 (1296)	589 (1298)	675 (1488)	676 (1490)	892 (1966)	894 (1970)	1095 (2414)	1097 (2418)	1195 (2634)	1197 (2638)
318 (12.5)	574 (1265)	571 (1258)	888 (1957)	885 (1951)	949 (2092)	945 (2083)	1045 (2303)	1042 (2297)	1155 (2546)	1152 (2539)
420 (16.5)	623 (1373)	620 (1366)	920 (2028)	917 (2021)	996 (2195)	993 (2189)	1172 (2583)	1169 (2577)	1284 (2830)	1281 (2824)

Table 19. 785C Single-Acting Spring Approximate Weights for Constructions with Manual Override

MAXIMUM VALVE 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 5 Yoke Boss	7 Yoke Boss
115 (4.5)	258 (568)	255 (562)	324 (714)	320 (705)	395 (870)	391 (862)	389 (857)	468 (1031)	467 (1029)
216 (8.5)	373 (822)	368 (811)	352 (776)	348 (767)	436 (961)	430 (948)	431 (950)	573 (1263)	574 (1265)
318 (12.5)	---	---	---	---	---	476 (1049)	473 (1042)	566 (1247)	563 (1241)
420 (16.5)	---	---	---	---	---	---	---	619 (1364)	616 (1358)

MAXIMUM VALVE TRAVEL	APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)									
	485		535		585		635		685	
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 5 Yoke Boss	5 or 5 Yoke Boss	7 Yoke Boss
115 (4.5)	594 (1309)	592 (1305)	744 (1640)	743 (1638)	903 (1990)	903 (1990)	1053 (2321)	1052 (2319)	1328 (2927)	1327 (2925)
216 (8.5)	694 (1529)	695 (1532)	781 (1721)	782 (1723)	1012 (2231)	1015 (2237)	1215 (2678)	1217 (2682)	1364 (3007)	1366 (3011)
318 (12.5)	688 (1516)	685 (1510)	1002 (2209)	999 (2202)	1080 (2380)	1077 (2374)	1175 (2590)	1171 (2581)	1336 (2945)	1333 (2938)
420 (16.5)	745 (1642)	742 (1635)	1042 (2297)	1039 (2290)	1139 (2511)	1136 (2504)	1315 (2899)	1312 (2892)	1478 (3258)	1475 (3251)

Table 20. Lifting Point Load Ratings

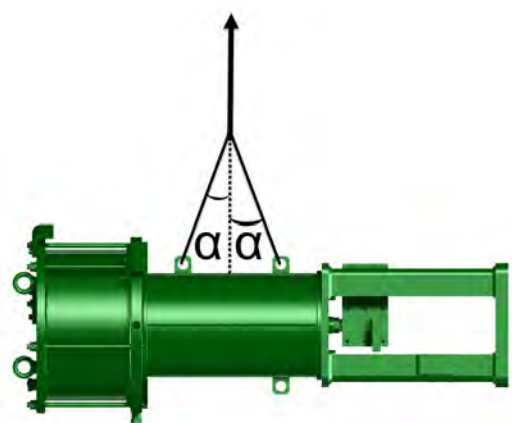
ACTUATOR SIZE	LIFTING ORIENTATION	NUMBER OF LIFTING POINTS USED	MAXIMUM LOAD AT LIFTING (SEE FIGURE 9 AND 6)	
			Kg	lbs
280	Actuator Centerline Horizontal ⁽¹⁾	2	1747	3851
335		2	1747	3851
385		2	1747	3851
435		2	1747	3851
485		2	6330	13955
535		2	6330	13955
585		2	6330	13955
635		2	6330	13955
685		2	6330	13955
ACTUATOR SIZE	LIFTING ORIENTATION	NUMBER OF LIFTING POINTS USED	MAXIMUM LOAD AT LIFTING (SEE FIGURE 9 AND 6)	
			Kg	lbs
280	Actuator Centerline Vertical ⁽²⁾	4	864	1905
335		4	864	1905
385		4	864	1905
435		4	864	1905
485		4	3096	6826
535		4	3096	6826
585		4	3096	6826
635		4	3096	6826
685		4	3096	6826

1. Welded eyelets for horizontal lifting are only available for the 785C Spring Return.
2. Vertical lifting loads are applicable to both the 785C Springless and Spring Return.

Figure 9. Lifting Angle for Welded Eyelets



Figure 10. Actuator Centerline Horizontal



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