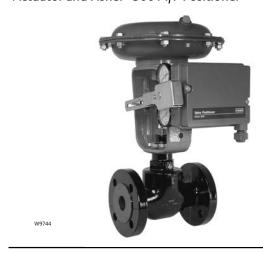
Baumann™ 24000C Carbon Steel Little Scotty™ Control Valve

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Figure 1. 24000C Control Valve with Baumann 32 Actuator and Fisher™ 3661 I/P Positioner



Introduction

Baumann 24000C carbon steel Little Scotty industrial control valves (figure 1) are intended for general utility service in pressure, flow, and temperature control applications.

Scope of Manual

This instruction manual includes installation, maintenance, and parts information for the Baumann 24000C control valve.

Do not install, operate, or maintain Baumann 24000C control valves without being fully trained and qualified in valve, actuator, and accessory installation, operation, and maintenance. To avoid personal injury or property damage, it is important to carefully read, understand, and follow all the contents of this manual, including all safety cautions and warnings. If you have any questions about these instructions, contact your Emerson sales office before proceeding.





A WARNING

Always wear protective gloves, clothing and eyewear when performing any installation operations to avoid personal injury.

Personal injury or property damage caused by sudden release of pressure or bursting of pressure retaining parts may result if service conditions exceed those for which the product was intended. To avoid injury or damage, provide a relief valve for over pressure protection as required by government or accepted industry codes and good engineering practices.

Check with your process or safety engineer for any additional measures that must be taken to protect against process media.

If installing into an existing application, also refer to the WARNING at the beginning of the Maintenance section in this instruction manual.

CAUTION

This valve is intended for a specific range of pressures, temperatures and other application specifications. Applying different pressures and temperatures to the valve could result in parts damage, malfunction of the control valve or loss of control of the process. Do not expose this product to service conditions or variables other than those for which the product was intended. If you are not sure what these conditions are you should contact your Emerson sales office for more complete specifications. Provide the product serial numbers (shown on the nameplate) and all other pertinent information.

A WARNING

If you move or work on an actuator installed on a valve with loading pressure applied, keep your hands and tools away from the stem travel path to avoid personal injury. Be especially careful when removing the stem connector to release all loading on the actuator stem whether it be from air pressure on the diaphragm or compression in the actuator springs.

Likewise take similar care when adjusting or removing any optional travel stop. Refer to the relevant actuator Maintenance Instructions.

If hoisting the valve, take care to prevent people from being injured in case the hoist or rigging slips. Be sure to use adequate sized hoists and chains or slings to handle the valve.

Personal injury could result from packing leakage. Valve packing is tightened before shipment; however, the packing might require some readjustment to meet specific service conditions.

Maintenance

A WARNING

Avoid personal injury and property damage from sudden release of process pressure or bursting of parts. Before performing any maintenance operations:

- Do not remove the actuator from the valve while the valve is still pressurized.
- Always wear protective gloves, clothing, and eyewear when performing any maintenance operations.
- Disconnect any operating lines providing air pressure, electric power, or a control signal to the actuator. Be sure the actuator cannot suddenly open or close the valve.
- Use bypass valves or completely shut off the process to isolate the valve from process pressure. Relieve process pressure on both sides of the valve. Drain the process media from both sides of the valve.
- Depending on the actuator construction, it will be necessary to manage the pneumatic actuator spring
 pre-compression. It is essential to refer to the relevant actuator instructions in this manual to perform safe removal of
 the actuator from the valve.
- Use lock-out procedures to be sure the above measures stay in effect while you work on the equipment.
- The valve packing box may contain process fluids that are pressurized, even when the valve has been removed from the
 pipeline. Process fluids may spray out under pressure when removing the packing hardware or packing rings, or when
 loosening the packing box pipe plug.
- Check with your process or safety engineer for any additional measures that must be taken to protect against process media.

Note

Whenever a gasket seal is disturbed by removing or shifting gasketed parts, install a new gasket during reassembly. This provides a good gasket seal because the used gasket may not seal properly.

A WARNING

Avoid personal injury or property damage by thoroughly cleaning the line of all dirt, welding chips, scale, oil or grease, and other foreign material. Failure to do so could result in damage to the seating and sealing surfaces of the valve and result in damage to the valve and release of process materials.

Installation

Refer to key numbers in figure 3 unless otherwise specified.

- 1. Before installing the valve in the pipeline, thoroughly clean the line of all dirt, welding chips, scale, oil or grease, and other foreign material.
- 2. Install the valve so the controlled fluid will flow through the valve body in the direction indicated by the arrow cast on the valve body.
- 3. A three-valve bypass would permit removal of the control valve from the line without shutting down the system.
- 4. In case of a heat-insulated installation, insulate the valve body only, not the bonnet.

A WARNING

To avoid personal injury or property damage, do not attempt to do any work on a valve while the system is in operation. The valve must be isolated 100% from the active system and the isolated line voided of pressure and/or hazardous fluids.

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Air Piping

- 1. For an air-to-extend actuator (air-to-close action), connect the actuating air pressure line to the 1/4 NPT opening in the upper diaphragm case. For an air-to-retract actuator (air-to-open action) connect the actuating air pressure line to the 1/4 NPT opening in the lower diaphragm case.
- 2. Use 6.4 mm (1/4 inch) O.D. tubing or equivalent for all air lines. If air line exceeds 8 m (25 ft) in length, 9.5 mm (3/8 inch) tubing is preferred. Air pressure should not exceed 2.5 barg (35 psig).

CAUTION

- When assembling or disassembling the valve, do not turn the valve stem while the plug is touching the valve seat. This will damage the valve's seating surfaces.
- When adjusting the valve stem do not grip the stem directly with pliers or a wrench. This will damage the surface of the stem, and cause damage to the packing in the valve. Instead, counter-tighten the two locknuts (key 27) on the stem (key 5). This will allow you to turn the stem by turning the locknuts (key 27) with a wrench.
- When placing valve in a vise, clamp the flat end faces of the valve. Do not clamp the rounded sides of the valve. This will distort the shape of the casting, and will ruin the valve.

Disassembly

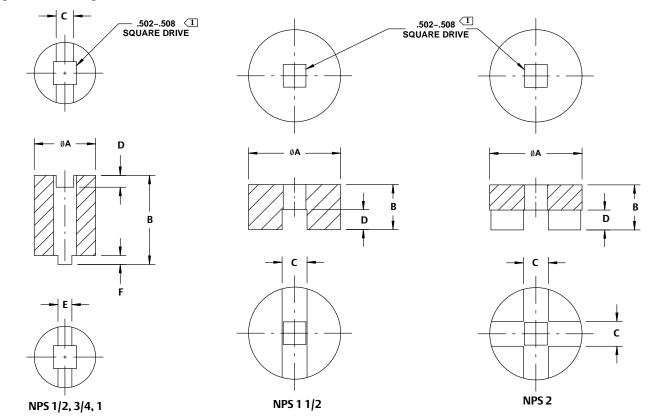
- 1. Mount the valve in a vise by clamping flat end faces of the valve (figure 3). Caution must be taken not to damage the serrated flange faces.
- 2. Remove the actuator, stem locknuts (key 27), travel indicator (key 58)) and voke drive nut (key 9).
- Turn the bonnet (key 8) in a counter-clockwise direction from the valve body (key 1). Remove the O-ring (key 12) and remove and discard the valve body gasket (key 49). A new gasket should be installed each time the valve is disassembled.
- 4. Pull the plug and stem assembly (keys 4 and 5) out through the bottom of the bonnet. Rotate the assembly to prevent damage to the packing. Wipe the parts with a clean soft cloth and examine for signs of wear.

CAUTION

Handle the parts carefully to avoid damaging the seating and guiding surfaces.

- 5. Use a seat ring tool made according to the dimensions in figure 2 and table 1 to remove the seat ring (key 2) as follows:
 - a. Insert the tool into the valve body. Be certain the tool lugs are engaged in the corresponding recesses in the seat ring.
 - b. Use a 1/2 inch drive breaker bar or impact wrench having sufficient torque capability to remove the seat ring. Seat ring installation torque is provided in table 2 for reference. Connect the breaker bar or impact wrench, and if needed, a impact-rated extension bar, to the square drive of the seat ring tool.
 - c. Remove the seat ring (key 2) from the valve body. Make sure the seat ring tool is held at a right angle to the seat ring during removal to prevent the tool from disengaging from the lugs of the seat ring.
 - d. Inspect parts for wear or damage that would prevent proper operation of the valve body.

Figure 2. Seat Ring Tool Dimensions



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Table 1. Seat Ring Tool Dimensions (see figure 2)

Dant Number	Part Number DN		Α	В	С	D	E	F	
Part Nulliber	DN	NPS	Inch						
GE96219X012	15 20	1/2 3/4	1.32	2.0	0.38	0.26	0.29	0.19	
GE96219X022	25	1	1.52	2.3	0.40	0.25	0.35	0.20	
GE96219X032	40	1-1/2	2.06	0.9	0.55	0.30			
GE96219X042	50	2	2.74	1.0	0.55	0.44			

Table 2.	Seat Ring	Assembly	and Torq	ue Tool

24000C		VALVE SIZE NPS (Inch) (DN)									
		1/2 (15)	3/4 (20)	1 (25)	1-1/2 (40)	2 (50)					
	0.25 ⁽¹⁾	GE96219X012	GE96219X012	GE96219X022							
	0.375 ⁽¹⁾	GE96219X012	GE96219X012	GE96219X022							
	0.8125 ⁽²⁾	GE96219X012	GE96219X012	GE96219X022							
Port Diameter	1.0625 ⁽²⁾			GE96219X022							
	1.25				GE96219X032						
	1.5				GE96219X032	GE96219X042					
	2					GE96219X042					
Installation Torque (lb•ft)		60	60	80	100	130					

Lapping the Metal Seat

If valve seat leakage becomes excessive, it may be necessary to lap the valve seat.

Lapping is the process of mating the valve plug to the seat ring, with an abrasive to produce a close fit. When valve seat leakage becomes excessive, lapping becomes necessary. The plug and seat ring seating surfaces should be free of large scratches or dents and the contact surface of the seats should be as narrow as possible.

- 1. Use a good quality lapping compound with a mixture that contains 280 to 600 grit. Apply at several spots around the plug seating surface. Replace the plug (key 4) in the bonnet (key 8).
- 2. Place the bonnet (key 8) loosely into the valve body (key 1) to serve as a guide during the lapping operation.
- 3. Lap the valve by applying a slight pressure on the stem and rotate the stem in short oscillating strokes approximately 8 to 10 times or until you see an even and complete lap line. The plug should be intermittently lifted and turned 90 degrees while lapping to keep the plug and seat ring concentric.
- 4. Clean the valve seat and plug (key 4) thoroughly when the lapping is complete, removing all traces of lapping compound.

Replacing Packing

Refer to the standard packing construction and the optional packing shown in figures 3, 4, and 5 to determine the packing that has been preinstalled in your valve.

- 1. Disassemble the valve as directed earlier. Remove the locknuts (key 27) and indicator disk (key 58), and turn the plug and stem (keys 4 and 5) out through the packing box. Remove the packing follower (key 10). Push out the old packing (key 14) by working from the underside of the bonnet (key 8).
- 2. Standard spring loaded PTFE V-ring packing (figures 3 and 4): Insert each piece in exact order shown in figures 3 and 4. Hand tighten the packing follower (key 10) until it shoulders on the bonnet (key 8). This will compress the packing spring (key 6), to enable constant stem sealing throughout the packing life.
- 3. Molded graphite (flexible graphite) packing (figure 5): Insert each piece in exact order shown in the figure 5. Hand tighten the packing follower (key 10). Use a wrench to increase tightness by turning the nut an additional 60 degrees.

Actuator and Valve Body Reassembly

1. Before installing seat ring in valve body, thoroughly clean the threads in the valve body port. Apply suitable lubricate to the threads and tighten to torque specified in table 2. Remove all excess lubricant after tightening.

2. Insert a new valve body gasket (key 49) and install the bonnet assembly (key 8) with the plug and stem assembly in the valve. The O-ring (key 12) must be reinstalled by gently stretching over the bonnet and snapping into the gap between the top of the valve body (key 1) and the bonnet (key 8). This O-ring acts as a dust/moisture seat.

3. Place the actuator yoke over the stem (key 5). While tilting the actuator back, drop the yoke drive nut (key 9) over the stem (key 5). Run the locknuts (key 27), and travel indicator (key 58) down as far as possible and counter tighten the locknuts (key 27) to lock.

See the Baumann Pneumatic Actuator Instruction Manual (<u>D103352X012</u>) for reassembly and bench range adjustment.

CAUTION

When assembling or disassembling the valve, do not turn the valve stem while the plug is in contact with the valve seat. This can damage the seating surface very quickly.

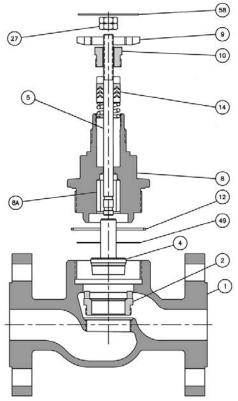
Parts Ordering

When corresponding with your <u>Emerson sales office</u> about this equipment, always mention the valve serial number. When ordering replacement parts, also specify the key number, part name, and desired material using the following parts tables.

A WARNING

Use only genuine Fisher replacement parts. Components that are not supplied by Emerson Automation Solutions should not, under any circumstances, be used in any Fisher valve, because they may void your warranty, might adversely affect the performance of the valve, and could cause personal injury and property damage.

Figure 3. Baumann 24000C Valve Body Assembly with Standard PTFE Spring-Loaded Packing



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Table 3. Baumann 24000C Common Parts

	5: Dadinami 24000C Common atts						
KEY				VALVE SIZE			
NO.	DESCRIPTION	DN15 (NPS 1/2)	DN20 (NPS 3/4)	DN25 (NPS 1)	DN40 (NPS1-1/2)	DN50 (NPS 2)	
1	Valve Body, Carbon Steel, EN PN10-40	24000-111W	24000-211W	24000-311W	24000-511W	24000-611W	
ı	Valve Body, Carbon Steel, ASME CL150 RF	24000-113W	24000-213W	24000-313W	24000-513W	24000-613W	
8	Bonnet	24000-121	24000-121	24000-321	24000-521	24000-621	
8A	Bonnet Bushing	24000-124					
9	Drive Nut (Yoke)	011757-003-153					
10	Packing Follower	24490-1					
12	O-Ring	24000-151	24000-151	24000-351	24000-551	24000-651	
14*	Packing Kit, Spring Loaded PTFE V-Ring (standard)						
	Packing Kit, Molded Graphite (optional)			24492T001			
27	Locknuts, qty 2			971514-002-250			
	Valve Body Gasket, Copper (standard)	24000-131	24000-131	24000-331	24000-531	24000-631	
49*	Valve Body Gasket, S31600 reinforced Graphite (optional)	24000-132	24000-132	24000-332	24000-532	24000-632	
58	Travel Indicator	24299					

*Recommended spare parts 9

Table 4. Plug for NPS 1/2, 3/4, and 1 Valves - Metal Seat

KEY NO. DESCRI	RIPTION	Metal Seat, Micro Trim (Linear) Metal Seat (Equal %)	PLUG NO. 102 548 (S41600)	DIAMETER mm (Inch) 6.3 (0.25) 6.3 (0.25) 9.5 (0.375) 20.6 (0.8125) 26.9 (1.0625)	0.2(1) 0.2A 0.5(1) 1.0(1) 1.5(1) 2.5(1) 4 7.7	0.17 ⁽¹) 0.17A 0.43 ⁽¹) 0.86 ⁽¹) 1.29 ⁽¹) 3.4	GE4638 GE4639 GE4639 GE4639	03X092 04X092 02X092 24634-6-101-548 24171-12-101-548	DN 25 (NPS 1) GE46388X092 GE46393X052 GE46394X052 GE46392X052
		Micro Trim (Linear) Metal Seat	548	6.3 (0.25) 9.5 (0.375) 20.6 (0.8125)	0.2A 0.5(1) 1.0(1) 1.5(1) 2.5(1) 4	0.17A 0.43 ⁽¹) 0.86 ⁽¹) 1.29 ⁽¹) 2.15 ⁽¹	GE4639 GE4639	03X092 04X092 02X092 24634-6-101-548 24171-12-101-548	GE46393X052 GE46394X052
				9.5 (0.375) 20.6 (0.8125)	0.5 ⁽¹⁾ 1.0 ⁽¹⁾ 1.5 ⁽¹⁾ 2.5 ⁽¹⁾ 4	0.43 ⁽¹) 0.86 ⁽¹) 1.29 ⁽¹) 2.15 ⁽¹)	GE4639	24634-6-101-548 24171-12-101-548	GE46394X052
				9.5 (0.375) 20.6 (0.8125)	1.0 ⁽¹⁾ 1.5 ⁽¹⁾ 2.5 ⁽¹⁾ 4	0.86 ⁽¹) 1.29 ⁽¹) 2.15 ⁽¹		22X092 24634-6-101-548 24171-12-101-548	
				20.6 (0.8125)	1.5 ⁽¹⁾ 2.5 ⁽¹⁾ 4) 1.29 ⁽¹) 2.15 ⁽¹	GE4639	24634-6-101-548 24171-12-101-548	GE46392X052
				20.6 (0.8125)	2.5 ⁽¹⁾) 2.15 ⁽¹)		24171-12-101-548	
		(Equal %)	(\$41600)	20.6 (0.8125)	4)			
						3.4			
	_				7.7			24185-6-101-548	
	_			26.9 (1.0625)		6.6	24061-5-101-548		
	_			26.9 (1.0625)	10.1	8.7		24061-5-	-101-548
				20.5 (1.0025)	13.6	11.7			24062-1-101-548
					0.2	0.17	GE46390X052		GE46390X092
				6.3 (0.25)	0.5	0.43	GE4639	91X052	GE46391X092
		Metal Seat (Equal %)			1.0	0.86	GE4638	39X052	GE46389X092
				9.5 (0.375)	1.5 ⁽¹⁾	1.29 ⁽¹)		24634-101-588	
	0.61				2.5 ⁽¹⁾	2.15 ⁽¹)		24171-101-588	
7.3				20.6 (0.8125)	4	3.4		24185-101-588	
	1339				7.7	6.6	24061-101-588		
					10.1	8.7		24061-1	101-588
				26.9 (1.0625)	13.6	11.7			24062-101-588
				6.2 (0.25)	0.5	0.43	GE4639	98X052	GE46398X092
				6.3 (0.25)	1.0	0.86	GE4639	97X052	GE46397X092
				9.5 (0.375)	1.5	1.29		24669-1-101-648	
		MatalCast	640	9.5 (0.575)	2.5	2.15		24671-2-101-648	
		Metal Seat (Linear)	648 (S41600)		4	3.4		24757-5-101-648	
		(2ea.)	(511000)	20.6 (0.8125)	6	5.16	24717-3-101-648		
				20.0 (0.0123)	8	6.88		24717-3-101-648	
					9	7.74			24717-3-101-648
				26.9 (1.0625)	13	11.18			24791-1-101-648
				6.3 (0.25)	0.5	0.43	GE4639	96X052	GE46396X092
				0.5 (0.25)	1.0	0.86	GE4639	95X062	GE46395X102
				9.5 (0.375)	1.5	1.29		24669-101-688	
		Metal Seat		3.3 (0.373)	2.5	2.15		24671-101-688	
		(Linear)	688		4	3.4		24757-101-688	T
		. ,		20.6 (0.8125)	6	5.16	24717-101-688		
				20.0 (0.0123)	8	6.88		24717-101-688	
					9	7.74			24717-101-688
1. A matching se				26.9 (1.0625)	13	11.18			24791-101-688

Table 5. Seat Ring for NPS 1/2, 3/4, and 1 Valves - Metal Seat

KEY NO.	DESCRIPTION	ORIFICE DIAMETER		VALVE SIZE		
KET NO.	DESCRIPTION	mm (Inch)	DN 15 (NPS 1/2)	DN 20 (NPS 3/4)	DN 25 (NPS 1)	
		6.3 (0.25 inch)	007635-001-163		24000-341	
	Seat Ring S31600 ⁽¹⁾	Seat Ring S31600 ⁽¹⁾ 9.5 (0.375 inch) 20.6 (0.8125 inch)		007635-	002-163	24000-342
				007635-	24000-343	
2*		26.9 (1.0625 inch)			24000-344	
2		6.3 (0.25 inch)	007635-	24000-341-1		
	Cart Bin = C41C00(1)	9.5 (0.375 inch)	007635-	002-416	24000-342-1	
	Seat Ring S41600 ⁽¹⁾	20.6 (0.8125 inch)	007635-	005-416	24000-343-1	
		26.9 (1.0625 inch)			24000-344-1	
1. A match	ning seat ring (key 2) must be furni	shed with replacement plug orders. See table 4	1.			

Table 6. Plug and Seat Ring for NPS 1/2, 3/4, and 1 Valves - Soft Seat

KEY			PLUG	ORIFICE	_	.,		VALVE SIZE		
NO.	DESCRIPTION	PLUG TYPE	NO.	DIAMETER mm (Inch)	C _v	K _v	DN 15 (NPS 1/2)	DN 20 (NPS 3/4)	DN 25 (NPS 1)	
					1.0	0.86	24893-101-577			
				9.5 (0.375)	1.5	1.29	24796-101-577			
					2.5	2.15		24609-101-577		
		PTFE Seat	577	20.6 (0.8125)	4	3.44		24010-2-101-577		
		(Equal %)	5//		6	5.16	24010-101-577			
					7.5	6.45		24010-101-577		
4*	Plug and Stem				8.5	7.31			24010-101-577	
4	Assy			26.9 (1.0625)	13	11.2			24011-101-577	
		PTFE Seat	677	9.5 (0.375)	0.1	0.086	24660-101-677			
					0.2	0.172	24625-101-677			
					0.5	0.43	24617-101-677			
		(Linear)	677		1.0	0.86		24631-101-677		
					2.5	2.15		24656-101-677		
				20.6 (0.8125)	5	4.3		24010-1-101-677		
		6.3	3 mm (0.25 i	nch) Orifice Diame	eter		007635-	001-163	24000-341	
2*	Coat Ding	9.5	mm (0.375	inch) Orifice Diam	eter	•	007635-	002-163	24000-342	
2	Seat Ring	20.6	mm (0.812!	5 inch) Orifice Diar	neter		007635-	005-163	24000-343	
		26.9	mm (1.062!	5 inch) Orifice Diar	neter				24000-344	

*Recommended spare parts 11

Table 7. Plug and Seat Ring for NPS 1-1/2 and 2 Valves

KEY	J	at King for NP3 1-1/	PLUG	ORIFICE DIAMETER	_		VALVI	SIZE
NO.	DESCRIPTION	PLUG TYPE	NO.	mm (Inch)	C _v	Κ _ν	DN 40 (NPS 1-1/2)	DN 50 (NPS 2)
				31.8 (1.25)	20	17.2	24411-102-577	
					10	8.6	24884-1	02-577
		PTFE Seat (Equal %)	577	38.1 (1.50)	17	14.62	24774-1	02-577
					28	24.08	24254-1	02-577
				50.8 (2.0)	30	25.8	24882-102-5	
				20 1 /1 E0\	10	8.6	24799-1	02-677
		PTFE Seat (Linear)	677	38.1 (1.50)	17	14.62	24798-1	02-677
		FIFE Seat (Lillear)	077	50.8 (2.0)	30	25.8		24891-102-677
				30.8 (2.0)	50	43		24070-102-677
				31.8 (1.25)	10	8.6	24421-2-102-548	
				31.8 (1.23)	20	17.2	24401-2-102-548	
			548		10	8.6	24635-2-	
		Metal Seat (Equal %)	(S41600)	38.1 (1.50)	17	14.62	24710-2-	
					32.9	28.3	24038-2-	
				50.8 (2.0)	30	25.8		24905-3-102-548
				30.0 (2.0)	52.9	45.5		24039-1-102-548
				31.8 (1.25)	10	8.6	24421-102-588	
	4* Plug and Stem Assy			31.0 (1.23)	20	17.2	24401-102-588	
4*					10	8.6	24635-1	
	,	Metal Seat (Equal %)	588	38.1 (1.50)	17	14.62	24710-1	
					32.9	28.3	24038-1	
				50.8 (2.0)	30	25.8		24905-102-588
					52.9	45.5		24039-102-588
				31.8 (1.25)	10	8.6	24425-1-102-648	
				31.8 (1.23)	20	17.2	24424-1-102-648	
			648		10	8.6	24761-2-102-648	
		Metal Seat (Linear)	(S41600)	38.1 (1.50)	17	14.62	24899-2-102-648	
					28	24.08	24760-1-	
				50.8 (2.0)	30	25.8		24887-1-102-648
				· · · /	50	43		24762-1-102-648
				31.8 (1.25)	10	8.6	24425-102-688	
				. ,	20	17.2	24424-102-688	
		M . 16	600	20.1 (1.50)	10	8.6	24761-1	
		Metal Seat (Linear)	688	38.1 (1.50)	17	14.62	24899-1 24760-1	
					28 30	24.08 25.8	24/60-1	1
				50.8 (2.0)	50	43		24887-102-688 24762-102-688
		20 1	m /1 25 in ch	Orifice Diameter, \$31600	50	43	24000 542	24/02-102-088
			, ,	Orifice Diameter, \$31600			24000-542 24000-541	24000-642
			, ,	Orifice Diameter, \$31600				24000-642
2*	Seat Ring		, ,	Orifice Diameter, S41600			24000-542-1	24000-641
			, ,	Orifice Diameter, \$41600			24000-542-1	24000-642-1
				Orifice Diameter, \$41600			24000-541-1	24000-642-1
		50.811	1111 (2.0 IIICII)	Office Diameter, 34 1000			24000-041-1	

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Figure 4. Spring Loaded PTFE V-Ring Packing Kit P/N 24494T001

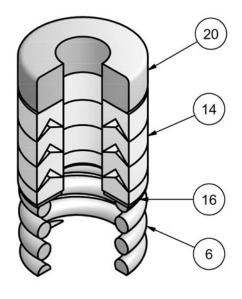


Figure 5. Molded Graphite (Flexible Graphite)
Packing Kit P/N 24492T001 (Optional)

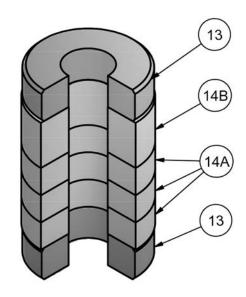


Table 8. Spring Loaded PTFE V-Ring Packing Kit P/N 24494T001

Key No.	Description	Material			
6	Spring	ASTM A313 S30200			
14	Packing Set	PTFE (Polytetrafluoroethylene)/ 25% carbon filled PTFE			
16	Washer	ASTM A240 S31600			
20	Spacer	J-2000 (filled Polytetrafluoroethylene)			

E1241

Table 9. Molded Graphite (Flexible Graphite) Packing Kit P/N 24492T001 (Optional)

Key No.	Description	Material		
13	Bushing, Qty 2	Carbon-Graphite		
14A	Packing Ring, Qty 3	acking Ring, Qty 3 Graphite		
14B	Packing Ring	Graphite		

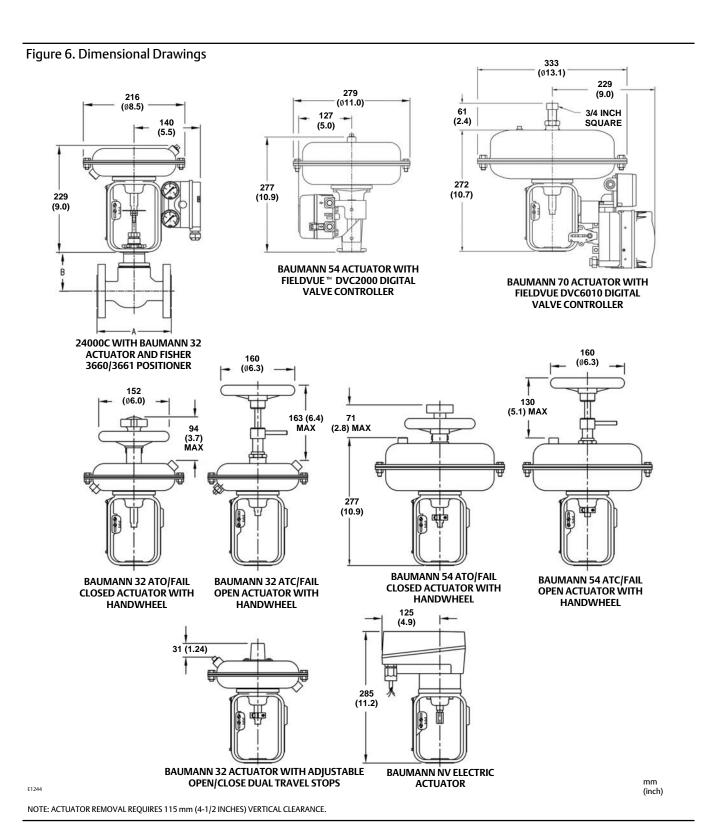


Table 10. Valve Dimensions

VALVE SIZE			A FACE-	B BONNET			
EN	ASME	EN 10-40 CL150			VIVLI		
DN	NPS	mm	in	mm	in	in	mm
15	1/2	130	5.1	184	7.25	3.2	80
20	3/4	150	5.9	184	7.25	3.2	80
25	1	160	6.3	184	7.25	3.3	83
40	1-1/2	200	7.9	222	8.75	3.9	99
50	2	230	9.1	254	10.00	4.2	107

Table 11. Valve Assembly Weights

VALVE SIZE		WEIGHT	
EN	ASME	WEIGHT	
DN	NPS	kg	lb
15	1/2	3.9	9
20	3/4	4.8	11
25	1	6.4	14
40	1-1/2	10	22
50	2	15	33

Table 12. Actuator Weights

WEIGHT		
kg	lb	
4.5	10	
11.3	25	
15.4	34	
8.3	18	
11.5	25	
1.3	3	
1.6	4	
	kg 4.5 11.3 15.4 8.3 11.5 1.3	

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