

November 2021

Spence Type E Main Valve



WARNING

Failure to follow these instructions or to properly install and maintain this equipment could result property damage and personal injury or death.

Type E main valve must be installed, operated and maintained in accordance with federal, state and local codes, rules and regulations and Emerson instructions.

If the valve vents gas or a leak develops in the system, service to the unit may be required. Failure to correct issue could result in a hazardous condition.

Installation, operation and maintenance procedures performed by unqualified personnel may result in improper adjustment and unsafe operation. Either condition may result in equipment damage or personal injury. Only a qualified person shall install or service the Type E main valve.

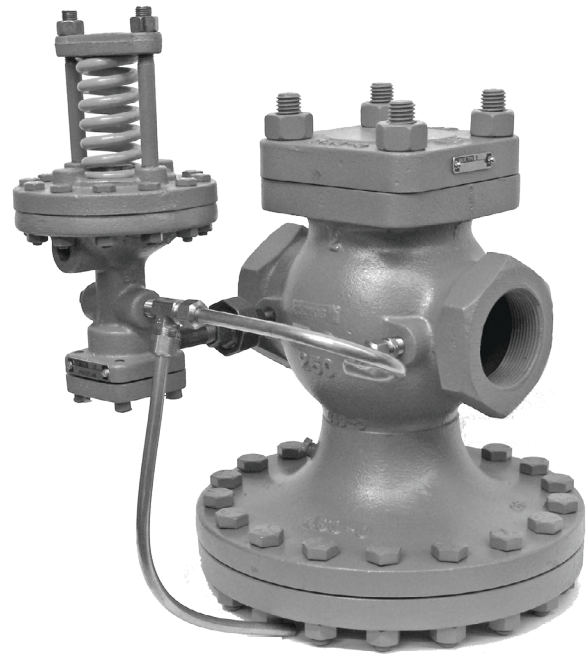


Figure 1. Type ED Valve

Introduction

Scope of the Manual

This manual provides instructions for the installation, troubleshooting, maintenance, valve setting and parts ordering for Type E main valve regulator.

Product Description

The Type E Main Valve is pilot-operated normally closed, single seat design featuring packless construction, balanced metal, diaphragms and protected main spring.

One or more pilot regulators are mounted to Type E main valve to fit with the specifications defined by the pressure regulating system.

Type E

Specifications

This section lists the specifications for the Type E main valve. Factory specifications are stamped on the nameplate fastened on the regulator at the factory.

<p>Valve Sizes NPS 3/8, 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12 / DN 10, 15, 20, 25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250 and 300</p> <p>End Connection Styles NPT, CL125, CL150, CL250, CL300, CL600</p> <p>Pressure Rating⁽¹⁾ See Table 1</p>	<p>Temperature Rating⁽¹⁾ See Table 1</p> <p>Rated Flow Coefficient See Table 2</p> <p>Main Valve Material Cast Iron and Cast Steel</p> <p>Approximate Weight See Table 3</p>
---	---

1. The pressure/temperature limits in this Instruction Manual and any applicable standard or code limitation should not be exceeded.

Table 1. Type E Main Valve Pressure and Temperature Rating⁽¹⁾

MAIN VALVE MATERIAL	END CONNECTION	PRESSURE RATING		TEMPERATURE RATING	
		psig	bar	°F	°C
Cast Iron	250 NPT	250	17.2	406	207
	CL125	125	8.62	450	232
	CL250	250	17.2	450	232
Cast Steel	300 NPT	300	20.7	600	315
	CL150	150	10.3	500	260
	CL300	300	20.7	600	315
	CL600	600	41.4	600	315

1. Ratings based on maximum inlet conditions.

Table 2. Type E Main Valve Rated Flow Coefficients

SEAT FACTOR	VALVE SIZE, NPS / DN														
	3/8 / 10	1/2 / 15	3/4 / 20	1 / 25	1-1/4 / 32	1-1/2 / 40	2 / 50	2-1/2 / 65	3 / 80	4 / 100	5 / 125	6 / 150	8 / 200	10 / 250	12 / 300
Full	1.5	2.8	5.4	8.8	14.1	19.8	31	44	74	109	169	248	444	706	1113
Full 75%	----	2.1	4.0	6.6	10.6	14.8	23.3	33	56	82	127	186	333	530	835
Full 50%	----	1.4	2.7	4.4	7.0	9.9	15.5	22	37	55	85	124	222	353	557
Normal	0.65	1.5	4.8	7.5	10.4	14.6	17.6	24	43	78	115	151	249	377	631
Normal 75%	----	----	----	----	----	----	----	18	33	59	87	114	187	283	474
Normal 50%	----	----	----	----	----	----	----	12	22	39	58	76	125	189	316

Table 3. Type E Main Valve Approximate Weight

VALVE SIZE		END CONNECTION STYLE											
NPS	DN	NPT		CL125		CL150		CL250		CL300		CL600	
		lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg
3/8	10	14	6.35	----	----	----	----	----	----	----	----	----	----
1/2	15	14	6.35	----	----	----	----	----	----	----	----	20	9.07
3/4	20	18	8.16	----	----	----	----	----	----	----	----	28	12.7
1	25	23	10.4	24	10.9	26	11.8	27	12.2	31	14.1	32	14.5
1-1/4	32	33	15.0	36	16.3	37	16.8	40	18.1	41	18.6	45	20.4
1-1/2	40	43	19.5	45	20.4	47	21.3	51	23.1	55	24.9	58	26.3
2	50	62	28.1	67	30.4	73	33.1	72	32.7	78	35.4	83	37.6
2-1/2	65	----	----	82	37.2	95	43.1	100	45.4	100	45.4	130	59.0
3	80	----	----	110	49.9	125	56.7	130	59.0	140	63.5	175	79.4
4	100	----	----	200	90.7	210	95.3	235	107	230	104	310	141
5	125	----	----	280	127	295	134	315	143	310	141	490	222
6	150	----	----	385	175	420	191	455	206	470	213	655	297
8	200	----	----	657	298	700	318	735	333	710	322	1070	485
10	250	----	----	1260	572	1240	562	1430	649	1300	590	----	----
12	300	----	----	2070	939	2060	934	2145	973	2140	971	----	----

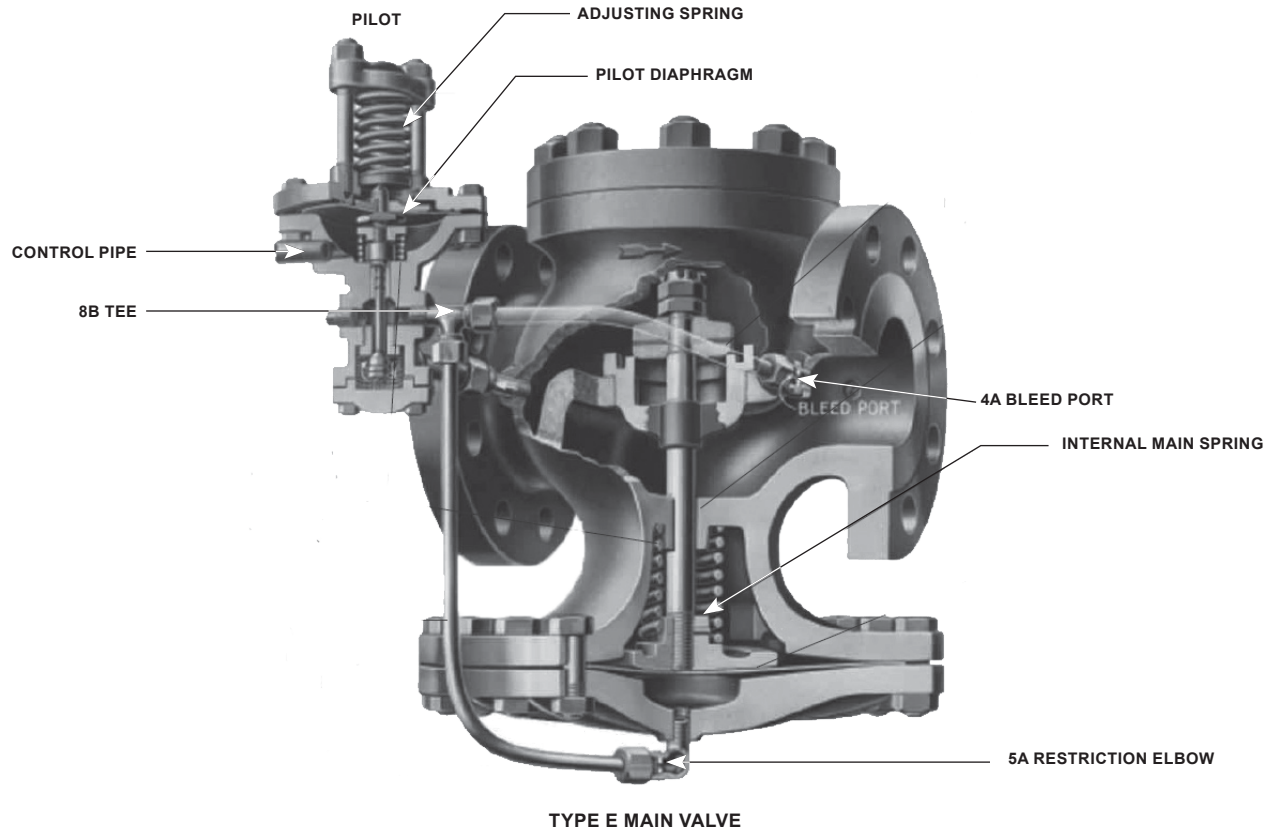


Figure 2. Type E Main Valve Operational Schematic

Principle of Operation

The regulator is operated by initial steam or fluid pressure. It is normally closed, being held so by initial pressure on the disc and by an internal main spring, see Figure 2. When the pilot is opened (see pilot instructions), initial pressure flows through the pilot to the 8B tee. 4A bleed port restricts the flow and pressure builds under the diaphragm and opens the main valve. The 5A restriction elbow steadies the operation of the regulator.

Delivery pressure feeds back through the control pipe to the pilot diaphragm. As this pressure approaches a balance with the thrust of the adjusting spring, the pilot throttles the loading pressure. In turn, the main valve takes a position established by the loading pressure where just enough steam flows to maintain the set delivery pressure.

Installation

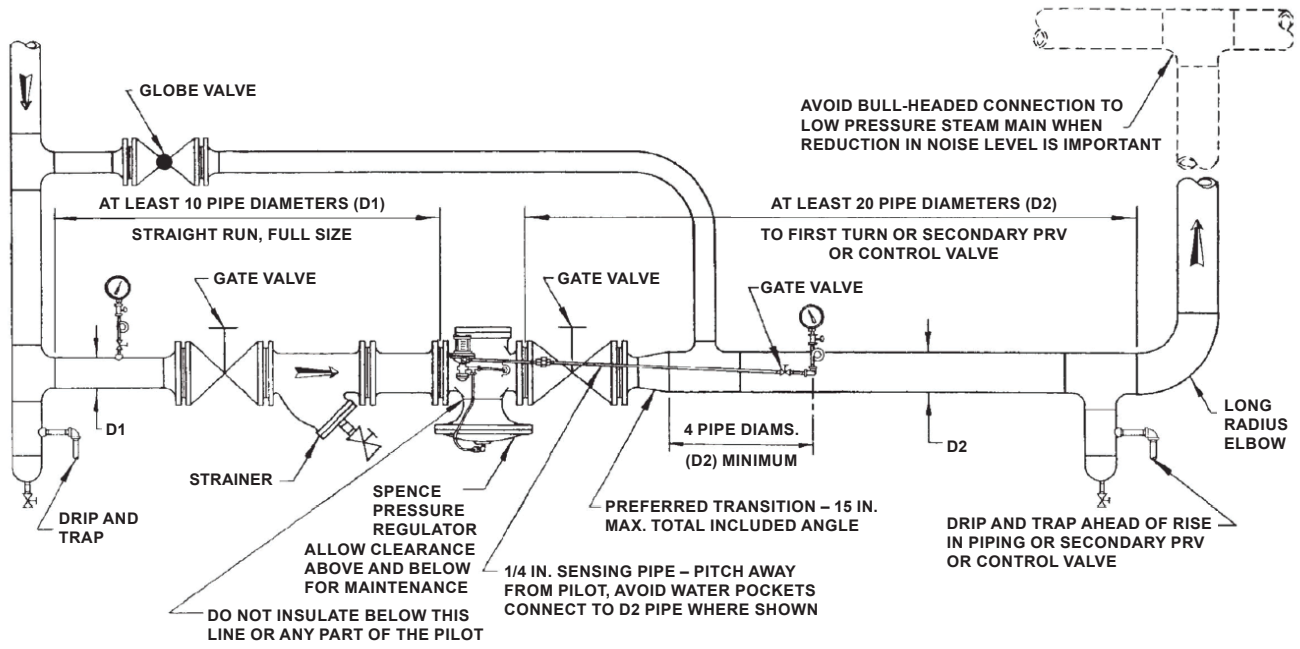
WARNING

Personal injury or system damage may result if this regulator is installed, without appropriate overpressure protection, where service conditions could exceed the limits given in the Specifications section and/or regulator nameplate.

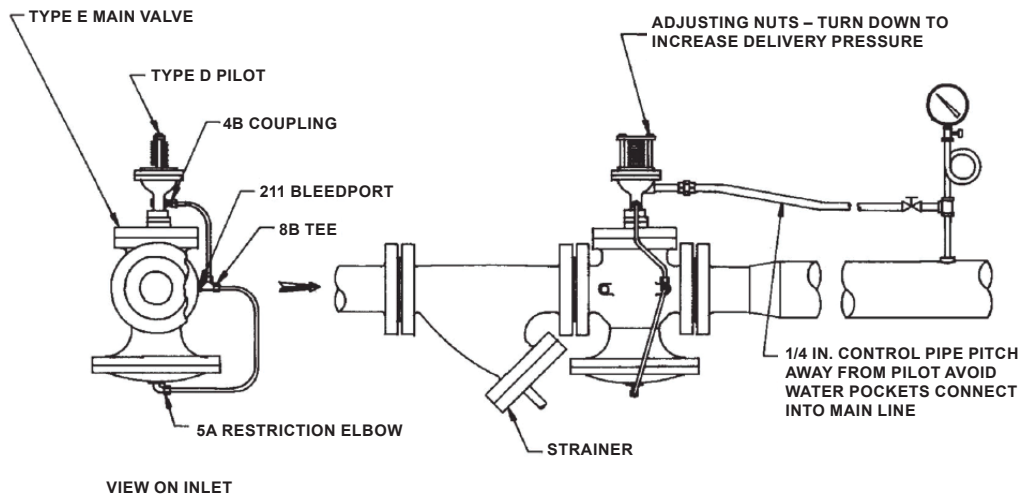
Additionally, physical damage to the regulator may result in personal injury or property damage due to escaping of accumulated gas. To avoid such injury and damage, install the regulator in a safe location.

Under enclosed conditions or indoors, escaping gas may accumulate and be an explosion hazard. In this case, the vent should be piped outdoors.

Type E



TYPICAL INSTALLATION



INSTALLATION OF INTEGRALLY MOUNTED PILOT

Figure 3. Type E Main Valve Installation

For regulator constructions with a spring case vent, the vent should be kept open to permit free flow of gas to the atmosphere. Protect openings against entrance of rain, snow, insects or any other foreign material that may plug the spring case vent or vent line.

All pressure equipment should be installed in a non-seismic area; should not be exposed to fire; and should be protected from thunderbolt (lightning) strikes.

Planning

- Locate the valve in a straight run of horizontal pipe.
- Allow headroom above the valve for access through the blind flange.
- Provide clearance for stem withdrawal underneath.
- Prevent water hammer and erratic operation by installing traps to provide proper drainage before and after the valve and before secondary pressure relief valve or control valve.
- Avoid damaging effects of scale and dirt in the pipe lines by using a strainer as shown in Figure 3.
- Provide a 3-valve by-pass to facilitate inspection without interrupting service.
- To eliminate excessive noise and erratic regulation with steam and other compressible fluids, enlarge the delivery pipe size to effect a reasonable flow velocity at the reduced pressure. A tapered transition is recommended.
- If possible, avoid a sharp turn close to the regulator outlet and a bull-headed tee connection to the low pressure main.
- Install initial and delivery pressure gages to indicate performance.
- If the pressure rating of the delivery system or connected equipment is less than the initial steam pressure, provide a safety valve.

Main Valve

- Flush the piping system thoroughly to clear it of welding beads, scale, sand, etc.
- Mount the main valve with diaphragm chamber down and arrow on body pointing in the direction of flow. Screwed end valves should be mounted in unions.

Pilot

For Side Mount Construction

1. Mount the pilot on either side of the main valve by means of 1/4 in. nipple and union provided.
2. Make this connection on the 1/4 in. pipe tap at the inlet of the main valve as shown in Figure 4.

For Integral Mount Construction

1. Remove blind flange on pilot and mount on blind flange of main valve using provided bolt.
2. Screw 4A bleed port fitting into the 1/8 in. pipe tap at the outlet of the main valve body. Note bleed orifice in this fitting is vital to operation of regulator.

Note

As a general rule of thumb, tighten 1.5 to 3 turns past hand tight all NPT connection and use thread sealant with a temperature range up to 450°F / 232°C.

3. Screw 8B tee into 1/8 in. pipe tap in pilot. Select tap facing downstream.
4. Screw 5A restriction elbow containing restriction orifice into 1/8 in. pipe tap on the underside of main valve diaphragm chamber. If the initial pressure or pressure drop is less than 15 psi / 1.03 bar, use 5B open elbow.
5. Connect tubing bends as illustrated in Figure 4. Valves with condensation chamber are fitted up according to Figure 4.

Control Pipe

1. Use 1/4 in. pipe for this line which connect the pilot diaphragm chamber to the desired point of pressure control.
2. Take the control at a point of minimum turbulence. Avoid control immediately at the valve outlet or after a turn.
3. When the delivery pipe expands in size, select a spot at least 4 pipe diameters beyond the point of enlargement.
4. Pitch away from pilot to avoid erratic operation and excessive fouling.
5. Eliminate water pockets.
6. Locate delivery pressure gage in control pipe to show pressure actually reaching pilot diaphragm

Type E

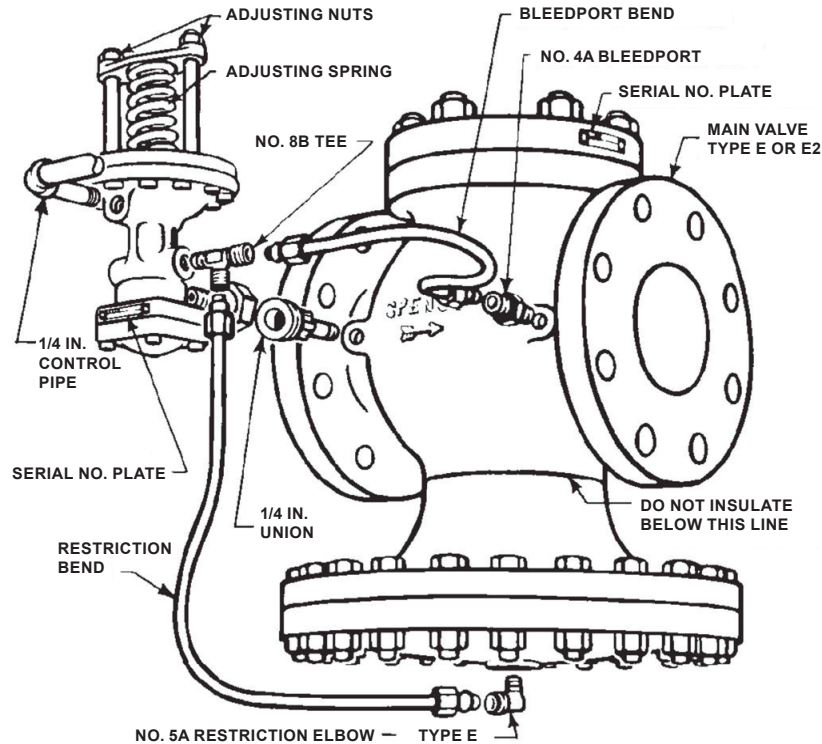


Figure 4. Mounting Pilot on Type E Main Valve

Start-up and Setting

CAUTION

Never open a reducing valve without positive indication that the high side is clear of condensate.

1. On pressure reducing valves like Type E, use by-pass to fill the delivery system and raise pressure to slightly below normal required.
2. Close pilot by releasing compression on adjusting spring. See Figure 4.
3. Open 1/4 in. control pipe valve.
4. Crack outlet stop valve.
5. Crack inlet stop valve.
6. Blow down strainer.
7. Open inlet stop valve and gradually compress adjusting spring until the valve opens and takes control at desired pressure.
8. Alternately choke down on the by-pass and open outlet stop valve until the regulator is on the line. See individual instructions for other pilots.

Valve Setting

Valve setting is gaged at K to establish correct stem length and diaphragm position. Dimension K is supplied with each replacement stem. See Table 4 for K values. For metal diaphragm valves, K is cast on the upper face of pressure plate (key 17, Figure 7).

1. To install new stem (key 11), fasten disc (key 7) firmly on stem with stem nut.
2. Insert stem and disc assembly in valve and screw on pressure plate (key 17). Omit spring (13) for this operation.
3. Hold disc on seat and adjust position of pressure plate until valve setting K is reached.
4. Push pressure plate against stops in base (key 16).
5. Remove disc, drop out pressure plate and stem, drill and insert dowel pin (key 14) to lock the joint.

Grind off stem projection flush with face of pressure plate.

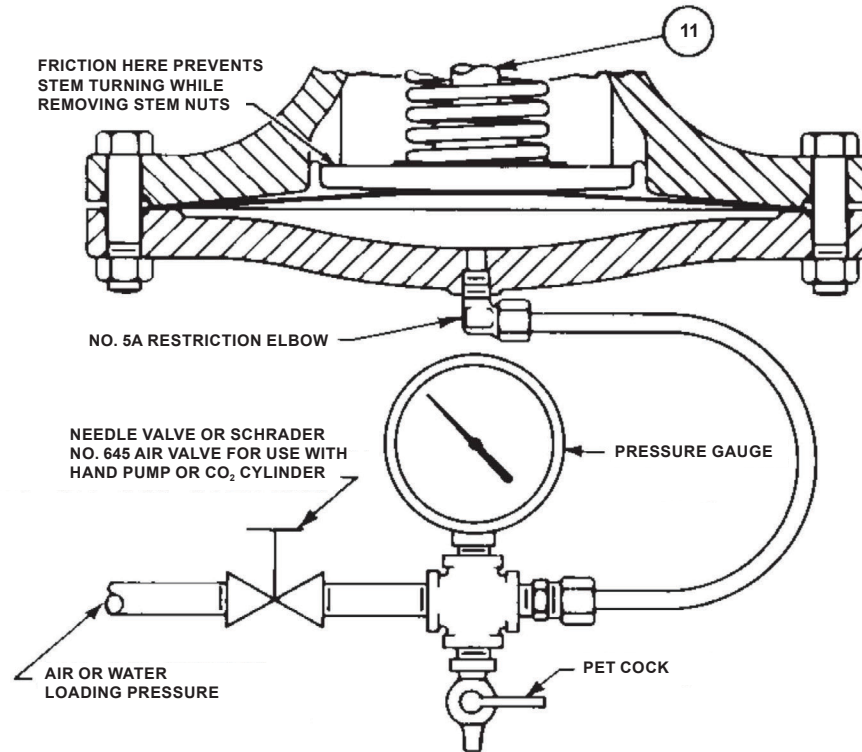


Figure 5. Dismantling Main Valve

Troubleshooting

Failure to Open

If the main valve failed to open check the following possible causes to properly correct the problem.

- Adjusting spring on pilot may have been tampered with.
- Initial pressure may be down due to partially closed supply valve, clogged strainer or other obstruction.
- Orifice in No. 5A restriction elbow may be plugged. No. 4A bleed port fitting may have been omitted and an open coupling substituted.
- Control pipe may be plugged. Most likely points of obstruction are at shutoff valve and entrance to delivery main.
- Main diaphragm may be broken. Test with air or water before dismantling.

Failure to Close

If the main valve failed to close check the following possible causes to properly correct the problem.

- Adjusting spring on pilot may have been tampered with.
- Orifice in bleed port No. 4A may be plugged.

- By-pass valve may be leaking.
- On pressure regulators like Type E, the main valve or pilot may be held open by foreign matter in seat.

To determine which valve leaks, follow these steps. Close stop valve and 1/4 in. control pipe valve.

1. Remove bleed port bend so pilot will exhaust to atmosphere.
2. Crack inlet stop valve. Steam will issue from 8B tee.
3. Release compression on adjusting spring to see if pilot closes tight.
4. Open and close several times to wash seat. Steam blowing back from bleed port means main valve disc is held open by foreign matter. Steam may wash the obstruction from the seat if the valve is made to open wide. This can be accomplished, even at light loads, if the control point is beyond the outlet stop valve.
5. Reassemble bleed port bend and place regulator in operation.
6. Slowly open and close outlet stop valve.

Type E

Maintenance



WARNING

To avoid personal injury or property damage from sudden release of pressure, isolate the regulator from the pressure system and release all pressure from the pilot and main valve before performing maintenance operations.

Inspection

Under normal conditions, complete dismantling is not recommended.

Check the following after operation. Then, schedule an inspection as required.

1. Inspect for dirt collected at 4A bleed port and 5A restriction elbow.
2. Inspect all joints for leakage. Keep bolts tight to avoid any leaks

Main Valve Maintenance (See Figure 5)

1. Connect a source of air or water pressure which can be adjusted by hand to the No. 5A restriction below.
2. Apply 50 to 60 psi / 3.45 to 4.14 bar to jack valve open and prevent stem from turning while removing stem nuts.
3. Use penetrating oil on the threads.

Seat Ring Maintenance

Note

These joints should be made up with high temperature gasket compound.

1. Remove old compound from body and seat ring with a wire brush.
2. Apply new compound sparingly to both parts, threads and shoulders. Let stand until tacky before assembling.

Grinding In



CAUTION

Seats and discs should never require more than the lightest touch up with very fine (400 grit) grinding compound. Heavy

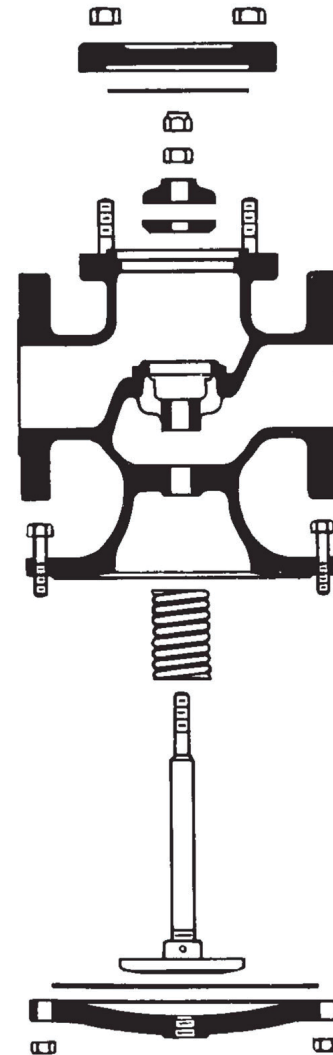


Figure 6. Type E Main Valve Reassembly

grinding will produce galling, wider seating surface and a groove in the disc, all of which tend to cause leakage.

3. Reface a damaged surface before attempting to grind it in.
4. Grind sparingly.
5. Main stem (key 11, Figure 7) is slotted for rotation with a screwdriver, valve spring (key 13) is omitted from the assembly during grinding.
6. Slip the stem into its normal position.
7. Apply compound to the disc. Place it on the stem and tighten with one stem nut.

Table 4. Type E Main Valve K Values

VALVE SIZE		TYPE E	
NPS	DN	Hood (k)	Total
3/8	10	1/32	3/32
1/2	15	3/64	7/64
3/4	20	3/64	1/8
1	25	1/16	5/32
1-1/4	32	5/64	3/16
1-1/2	40	3/32	7/32
2	50	7/64	1/4
2-1/2	65	1/8	9/32
3	80	9/64	3/8
4	100	3/16	13/32
5	125	7/32	1/2
6	150	9/32	19/32
8	200	11/32	3/4
10	250	7/16	31/32
12	300	9/16	1-1/4

Table 5. Seat Ring Tools Part Numbers

VALVE SIZE		DESCRIPTION: PORT	PART NUMBER OF COMPLETE WRENCH
NPS	DN		
2	50	New: Full and Normal	WAL08-05691-00
2 1/2	65	New: Full and Normal	WAL08-10111-00
3	80	New: Full and Normal	WAL08-09715-00
4	100	New: Full and Normal	WAL08-10113-00
5	125	New: Full and Normal	WAL08-10304-00
5	125	Old: Full	WAL08-00575-00
5	125	Old: Normal	WAL08-00587-00
6	150	New/Old: Full	WAL08-03948-00
6	150	New/Old: Normal	WAL08-00567-00
8	200	New/Old: Full	WAL08-00518-00
8	200	New/Old: Normal	WAL08-03949-00

Note: Old denotes to seat ring tools used on any valve made before 1984.

Table 6. Number of Diaphragm Required

INITIAL PRESSURE		NUMBER OF DIAPHRAGMS PER SET
psig	bar	
10 to 250	0.69 to 17.2	2
251 to 400	17.3 to 27.6	3
401 to 600	27.6 to 41.4	4

Table 7. Type E Main Valve Repair Kits⁽¹⁾

PORT TYPE	VALVE SIZE		MATERIAL	
	NPS	DN	Cast Iron	Cast Steel
Full Port	3/8	10	WAL07-07746-00	WAL24140
	1/2	15	WAL07-07747-00	WAL24141
	3/4	20	WAL07-07748-00	WAL24142
	1	25	WAL07-07749-00	WAL24144
	1-1/4	32	WAL07-07750-00	WAL24146
	1-1/2	40	WAL07-07751-00	WAL24148
	2	50	WAL07-07752-01	WAL24150
	2-1/2	65	WAL08-08148-01	WAL24152
	3	80	WAL08-08567-01	WAL24158
	4	100	WAL08-08568-01	WAL08-08567-00
	5	125	WAL08-09738-01	WAL58613
	6	150	WAL08-09720-00	WAL24157
Normal Port	1/2	15	WAL07-17637-00	WAL24140
	3/4	20	WAL08-10709-00	WAL24143
	1	25	WAL08-10386-00	WAL24145
	1-1/4	32	WAL08-10134-00	WAL24147
	1-1/2	40	WAL08-10710-00	WAL24149
	2	50	WAL08-10313-01	WAL24151
	2-1/2	65	WAL08-10325-00	WAL24153
	3	80	WAL08-09732-01	WAL24154
	4	100	WAL08-10387-01	WAL08-10941-00
	5	125	WAL08-10940-01	WAL08-10942-00
	6	150	WAL08-10981-00	WAL08-10943-00

Note: Contact factory for parabolic disc kits.
 1. Keys 4, 5, 7, 8, 11, 13, 14, 17 and 20 are included in repair kits.

Type E

Parts Ordering

When corresponding with your local Sales Office about Type E Main Valve, always reference the assembly number. When ordering replacement parts, specify the complete character part number from the following parts list.

Parts List

Cast Iron Valve

Key	Description	Part Number
	Repair Kit	See Table 7
1	Stud, Steel	
	NPS 3/8 / DN 10	WAL05-05518-00
	NPS 1/2 and 3/4 / DN 15 and 20	WAL04-05518-00
	NPS 1 / DN 25	WAL04-10118-00
	NPS 1-1/4 / DN 32	WAL05-05507-00
	NPS 1-1/2 / DN 40	WAL04-05443-00
	NPS 2 / DN 50	WAL04-10119-00
	NPS 2-1/2 / DN 65	
	CL125	WAL04-10119-00
	CL250	WAL04-05448-00
	NPS 3 / DN 80	
	CL125	WAL04-05443-00
	CL250	WAL04-10119-00
	NPS 4 / DN 100	
	CL125	WAL04-10119-00
	CL250	WAL04-05448-00
	NPS 5 / DN 125	
	CL125	WAL04-10120-00
	CL250	WAL04-05449-00
	NPS 6 / DN 150	
	CL125	WAL04-10120-00
	CL250	WAL04-05449-00
	NPS 8 / DN 200	
	CL125	WAL04-10120-00
	CL250	WAL04-10120-00
2	Nut, Steel	
	NPS 3/8, 1/2 and 3/4 / DN 10, 15 and 20	WAL05-02847-00
	NPS 1 / DN 25	WAL05-02851-00
	NPS 1-1/4 / DN 32	WAL05-02854-00
	NPS 1-1/2 / DN 40	WAL05-02856-00
	NPS 2 / DN 50	WAL05-02860-00
	NPS 2-1/2 / DN 65	
	CL125	WAL05-02860-00
	CL250	WAL05-02862-00
	NPS 3 / DN 80	
	CL125	WAL05-02856-00
	CL250	WAL05-02860-00
	NPS 4 / DN 100	
	CL125	WAL05-02860-00
	CL250	WAL05-02862-00
	NPS 5 / DN 125	
	CL125	WAL05-02877-00
	CL250	WAL05-02862-00
	NPS 6 and 8 / DN 150 and 200	
	CL125	WAL05-02860-00
	CL250	WAL05-02862-00

Key	Description	Part Number
3	Blind Flange	
	NPS 3/8 and 1/2 / DN 10 and 15	WAL04-02213-01
	NPS 3/4 / DN 20	WAL04-02171-01
	NPS 1 / DN 25	WAL04-02173-00
	NPS 1-1/4 / DN 32	WAL04-02176-00
	NPS 1-1/2 / DN 40	WAL04-02178-00
	NPS 2 / DN 50	WAL04-02180-00
	NPS 2-1/2 / DN 65	
	CL125	WAL04-02185-00
	CL250	WAL04-02183-00
	NPS 3 / DN 80	
	CL125	WAL04-02157-00
	CL250	WAL04-02186-00
	NPS 4 / DN 100	
	CL125	WAL04-02158-00
	CL250	WAL04-02159-00
	NPS 5 / DN 125	
	CL125	WAL04-02160-00
	CL250	WAL04-02161-00
	NPS 6 / DN 150	
	CL125	WAL04-02165-00
	CL250	WAL04-02163-00
	NPS 8 / DN 200	
	CL125	WAL04-02167-00
	CL250	WAL05-02166-00
4*	Gasket, Non-Asbestos	
	NPS 3/8 and 1/2 / DN 10 and 15	WAL05-02361-01
	NPS 3/4 / DN 20	WAL05-02381-01
	NPS 1 / DN 25	WAL05-02362-01
	NPS 1-1/4 / DN 32	WAL05-02382-01
	NPS 1-1/2 / DN 40	WAL05-02365-01
	NPS 2 / DN 50	WAL05-02366-01
	NPS 2-1/2 / DN 65	WAL05-02367-01
	NPS 3 / DN 80	WAL05-02369-01
	NPS 4 / DN 100	WAL05-02371-01
	NPS 5 / DN 125	WAL05-02372-01
	NPS 6 / DN 150	WAL05-02374-01
	NPS 8 / DN 200	WAL05-02375-01
5*	Stem Nut, Steel	
	NPS 3/8 and 1/2 / DN 10 and 15	WAL05-02968-00
	NPS 3/4 / DN 20	WAL05-02969-00
	NPS 1 and 1-1/4 / DN 25 and 32	WAL05-02970-00
	NPS 1-1/2 and 2 / DN 40 and 50	WAL05-02971-00
	NPS 2-1/2 / DN 65	WAL05-02972-00
	NPS 3 / DN 80	WAL05-02973-00
	NPS 4 / DN 100	WAL05-02974-00
	NPS 5 / DN 125	WAL04-02975-00
	NPS 6 / DN 150	WAL04-02976-00
	NPS 8 / DN 200	WAL04-02977-00
6	Muffling Plate, Cast Iron	
	NPS 2 / DN 50	WAL04-03550-01
	NPS 2-1/2 / DN 65	WAL04-03515-00
	NPS 3 / DN 80	WAL04-03516-00
	NPS 4 / DN 100	WAL04-03518-00
	NPS 5 / DN 125	WAL04-03519-00
	NPS 6 / DN 150	WAL04-03520-00
	NPS 8 / DN 200	WAL04-03524-00

*Included in repair kit

Cast Iron Valve (continued)

Key	Description	Part Number	Key	Description	Part Number
7*	Disc, Stainless Steel		13*	Spring (continued)	
	NPS 3/8 / DN 10	WAL04-01790-02		NPS 1-1/4 and 1-1/2 / DN 32 and 40, Steel	
	NPS 1/2 / DN 15	WAL04-01800-02		High Pressure	WAL05-09110-00
	NPS 3/4 / DN 20	WAL04-01813-02		Low Pressure, Steel	WAL05-05010-01
	NPS 1 / DN 25	WAL04-01832-02		NPS 2 / DN 50	
	NPS 1-1/4 / DN 32	WAL04-01850-02		High Pressure, Steel	WAL05-09368-02
	NPS 1-1/2 / DN 40	WAL04-01870-02		Low Pressure, Stainless Steel	WAL05-04989-01
	NPS 2 / DN 50	WAL04-01888-02		NPS 2-1/2 / DN 65	
	NPS 2-1/2 / DN 65	WAL04-01906-01		High Pressure, Steel	WAL05-08257-02
	NPS 3 / DN 80	WAL04-01918-00		Low Pressure, Stainless Steel	WAL05-05021-01
	NPS 4 / DN 100	WAL04-01931-00		NPS 3 / DN 80	
	NPS 5 / DN 125	WAL04-01938-00		High Pressure, Steel	WAL05-09112-02
	NPS 6 / DN 150	WAL04-01995-00		Low Pressure, Stainless Steel	WAL05-05057-01
	NPS 8 / DN 200	WAL04-01691-00		NPS 4 / DN 100	
8*	Seat Ring, Stainless Steel			High Pressure, Steel	WAL05-09114-02
	NPS 3/8 / DN 10	WAL04-04109-01		Low Pressure, Stainless Steel	WAL05-12267-00
	NPS 1/2 / DN 15	WAL04-04066-01		NPS 5 / DN 125	
	NPS 3/4 / DN 20	WAL04-04075-01		High Pressure, Steel	WAL05-09115-02
	NPS 1 / DN 25	WAL04-04084-01		Low Pressure, Stainless Steel	WAL05-12268-00
	NPS 1-1/4 / DN 32	WAL04-04092-01		NPS 6 / DN 150	
	NPS 1-1/2 / DN 40	WAL04-04496-01		High Pressure, Steel	WAL05-09116-01
	NPS 2 / DN 50	WAL04-11544-00		Low Pressure, Stainless Steel	WAL05-12269-00
	NPS 2-1/2 / DN 65	WAL04-11539-00		NPS 8 / DN 200	
	NPS 3 / DN 80	WAL04-11484-00		High Pressure, Steel	WAL05-09118-01
	NPS 4 / DN 100	WAL04-11565-00		Low Pressure, Stainless Steel	WAL05-12270-00
	NPS 5 / DN 125	WAL04-11700-01	14*	Dowel Pin, Steel	
	NPS 6 / DN 150	WAL04-15142-00		NPS 3/8 and 1/2 / DN 10 and 15	WAL05-03243-00
	NPS 8 / DN 200	WAL04-15144-00		NPS 3/4 and 1 / DN 20 and 25	WAL05-03245-00
9	Pipe Plug, 1/4 in., Steel	WAL04-03772-00		NPS 1-1/4, 1-1/2 and 2 / DN 32, 40 and 50	WAL05-03248-00
10	Pipe Plug 1/8 in., Steel	WAL04-03769-00		NPS 2-1/2 / DN 65	WAL05-03252-00
11*	Stem, Stainless Steel			NPS 3 and 4 / DN 80 and 100	WAL05-03254-00
	NPS 3/8 and 1/2 / DN 10 and 15	WAL04-05306-01		NPS 5 and 6 / DN 125 and 150	WAL05-03258-00
	NPS 3/4 / DN 20	WAL04-05233-01		NPS 8 / DN 200	WAL05-03261-00
	NPS 1 / DN 25	WAL04-05237-02	15	Diaphragm Bolt, Steel	
	NPS 1-1/4 / DN 32	WAL04-05248-01		NPS 3/8 and 1/2 / DN 10 and 15	WAL05-04771-00
	NPS 1-1/2 / DN 40	WAL04-05251-02		NPS 3/4, 1, 1-1/4 / DN 20, 25 and 32	WAL05-04774-00
	NPS 2 / DN 50	WAL04-05262-01		NPS 1-1/2 / DN 40	WAL05-04775-00
	NPS 2-1/2 / DN 65	WAL04-05260-02		NPS 2 / DN 50	WAL05-04780-00
	NPS 3 / DN 80	WAL04-05279-01		NPS 2-1/2 / DN 65	WAL05-04779-00
	NPS 4 / DN 100	WAL04-05282-02		NPS 3 / DN 80	WAL05-04780-00
	NPS 5 / DN 125	WAL04-05285-01		NPS 4 and 5 / DN 100 and 125	WAL05-04782-00
	NPS 6 / DN 150	WAL04-05288-01		NPS 6 / DN 150	WAL05-04786-00
	NPS 8 / DN 200	WAL04-05292-01		NPS 8 / DN 200	WAL05-04788-00
12	Body	-----	16	Base, Cast Iron	
13*	Spring			NPS 3/8 and 1/2 / DN 10 and 15	WAL04-00475-00
	NPS 3/8 and 1/2 / DN 10 and 15, Steel			NPS 3/4 / DN 20	WAL04-00467-00
	High Pressure	WAL05-09106-00		NPS 1 / DN 25	WAL04-00476-00
	Low Pressure	WAL05-05000-01		NPS 1-1/4 / DN 32	WAL04-00468-00
	NPS 3/4 / DN 20, Steel			NPS 1-1/2 / DN 40	WAL04-00472-00
	High Pressure	WAL05-09107-00		NPS 2 / DN 50	WAL04-00469-00
	Low Pressure	WAL05-04987-01		NPS 2-1/2 / DN 65	WAL04-00471-00
	NPS 1 / DN 25, Steel			NPS 3 / DN 80	WAL04-00470-00
	High Pressure	WAL05-09108-01		NPS 4 / DN 100	WAL04-00473-01
	Low Pressure	WAL05-04979-01		NPS 5 / DN 125	WAL04-00478-00
				NPS 6 / DN 150	WAL04-00479-00
				NPS 8 / DN 200	WAL04-00474-00

*Included in repair kit

Type E

Cast Iron Valve (continued)

Key	Description	Part Number
17*	Pressure Plate, Cast Iron	
	NPS 3/8 and 1/2 / DN 10 and 15	WAL04-03695-00
	NPS 3/4 / DN 20	WAL04-03579-00
	NPS 1 / DN 25	WAL04-03580-00
	NPS 1-1/4 / DN 32	WAL04-03582-00
	NPS 1-1/2 / DN 40	WAL04-03581-00
	NPS 2 / DN 50	WAL04-03584-01
	NPS 2-1/2 / DN 65	WAL04-03583-00
	NPS 3 / DN 80	WAL04-03585-01
	NPS 4 / DN 100	WAL04-03587-00
	NPS 5 / DN 125	WAL04-03588-01
	NPS 6 / DN 150	WAL04-03589-02
	NPS 8 / DN 200	WAL04-03591-00
18	Diaphragm Nut, Steel	
	NPS 3/8 and 1/2 / DN 10 and 15	WAL05-02872-00
	NPS 3/4, 1, 1-1/4 and 1-1/2 / DN 20, 25, 32 and 40	WAL05-02874-00
	NPS 2 / DN 50	WAL05-02877-00
	NPS 2-1/2, 3, 4 and 5 / DN 65, 80, 100 and 125	WAL05-02877-00
	NPS 6 and 8 / DN 150 and 200	WAL05-02881-00
19	Hood, Cast Iron	
	NPS 3/8 and 1/2 / DN 10 and 15	WAL04-02569-00
	NPS 3/4 / DN 20	WAL04-02572-00
	NPS 1 / DN 25	WAL04-02573-00
	NPS 1-1/4 / DN 32	WAL04-02576-00
	NPS 1-1/2 / DN 40	WAL04-02577-00
	NPS 2 / DN 50	WAL04-02580-01
	NPS 2-1/2 / DN 65	WAL04-02581-00
	NPS 3 / DN 80	WAL04-02584-00
	NPS 4 / DN 100	WAL04-02588-01
	NPS 5 / DN 125	WAL04-02591-00
	NPS 6 / DN 150	WAL04-02593-00
	NPS 8 / DN 200	WAL04-02595-00
20*	Diaphragm, Stainless Steel	
	NPS 3/8 / DN 10	WAL04-01629-01
	NPS 1/2 / DN 15	WAL04-01629-00
	NPS 3/4 / DN 20	WAL04-01662-00
	NPS 1 / DN 25	WAL04-01632-00
	NPS 1-1/4 / DN 32	WAL04-01664-00
	NPS 1-1/2 / DN 40	WAL04-01635-00
	NPS 2 / DN 50	WAL04-01638-00
	NPS 2-1/2 / DN 65	WAL04-01641-00
	NPS 3 / DN 80	WAL05-02038-00
	NPS 4 / DN 100	WAL05-01647-00
	NPS 5 / DN 125	WAL05-01649-00
	NPS 6 / DN 150	WAL05-01651-00
	NPS 8 / DN 200	WAL05-01653-00
	Repair Kit	See Table 7

Cast Steel Valve

Key	Description	Part Number
1	Stud, Steel	
	NPS 3/8 / DN 10	
	CL150 and CL300	WAL05-05518-00
	NPS 1/2 / DN 15	
	CL150 and CL300	WAL05-05518-00
	NPS 3/4 / DN 20	
	CL150 and CL300	WAL05-05518-00
	CL600	WAL05-05507-00
	NPS 1 / DN 25	
	CL150 and CL300	WAL05-05506-00
	CL600	WAL05-05507-00
	NPS 1-1/4 / DN 32	
	CL150 and CL300	WAL05-05507-00
	CL600	WAL05-05464-00
	NPS 1-1/2 / DN 40	
	CL150 and CL300	WAL05-05509-00
	CL600	WAL05-05501-00
	NPS 2 / DN 50	
	CL150 and CL300	WAL05-05510-00
	CL600	WAL05-05113-00
	NPS 2-1/2 / DN 65	
	CL150 and CL300	WAL05-05510-00
	CL600	WAL05-05478-00
	NPS 3 / DN 80	
	CL150 and CL300	WAL05-05509-00
	CL600	WAL05-05478-00
	NPS 4 / DN 100	
	CL150 and CL300	WAL05-05509-00
	CL600	WAL05-05485-00
	NPS 5 / DN 125	
	CL150 and CL300	WAL05-05511-00
	CL600	WAL05-05475-00
	NPS 6 / DN 150	
	CL150 and CL300	WAL05-05519-00
	CL600	WAL05-05475-00
	NPS 8 / DN 200	
	CL150 and CL300	WAL05-05519-00
	CL600	WAL05-05476-00
2	Nut, Steel	
	NPS 3/8 / DN 10	
	CL150 and CL300	WAL05-02848-00
	NPS 1/2 / DN 15	
	CL150 and CL300	WAL05-02848-00
	NPS 3/4 / DN 20	
	CL150 and CL300	WAL05-02848-00
	CL600	WAL05-02855-00
	NPS 1 / DN 25	
	CL150 and CL300	WAL05-02852-00
	CL600	WAL05-02855-01
	NPS 1-1/4 / DN 32	
	CL150 and CL300	WAL05-02855-00
	CL600	WAL05-02859-00
	NPS 1-1/2 / DN 40	
	CL150 and CL300	WAL05-02857-00
	CL600	WAL05-02859-00

*Included in repair kit

Cast Steel Valve (continued)

Key	Description	Part Number	Key	Description	Part Number
			4*	Gasket, Non-Asbestos	
				NPS 3/8 and 1/2 / DN 10 and 15	WAL05-02361-01
				NPS 3/4 / DN 20	WAL05-02381-01
				NPS 1 / DN 25	WAL05-02362-01
				NPS 1-1/4 / DN 32	WAL05-02382-01
				NPS 1-1/2 / DN 40	WAL05-02365-01
				NPS 2 / DN 50	WAL05-02366-01
				NPS 2-1/2 / DN 65	WAL05-02367-01
				NPS 3 / DN 80	WAL05-02369-01
				NPS 4 / DN 100	
				CL300	WAL05-02371-00
				CL600	WAL05-02396-00
				NPS 5 / DN 125	
				CL150 and CL300	WAL05-02372-01
				CL600	WAL05-02379-01
				NPS 6 / DN 150	
				CL150 and CL300	WAL05-02374-01
				CL600	WAL04-04628-01
				NPS 8 / DN 200	
				CL150 and CL300	WAL05-02375-01
				CL600	WAL04-04630-01
2	Nut, Steel (continued)		5*	Stem Nut, Steel	
	NPS 2 / DN 50			NPS 3/8 and 1/2 / DN 10 and 15	WAL05-02968-00
	CL150 and CL300	WAL05-02861-00		NPS 3/4 / DN 20	WAL05-02969-00
	CL600	WAL05-02863-00		NPS 1 and 1-1/4 / DN 25 and 32	WAL05-02970-00
	NPS 2-1/2 / DN 65			NPS 1-1/2 and 2 / DN 40 and 50	WAL05-02971-00
	CL150 and CL300	WAL05-02861-00		NPS 2-1/2 / DN 65	WAL05-02972-00
	CL600	WAL05-02861-00		NPS 3 / DN 80	WAL05-02973-00
	NPS 3 / DN 80			NPS 4 / DN 100	WAL05-02974-00
	CL150 and CL300	WAL05-02857-00		NPS 5 / DN 125	WAL05-02975-00
	CL600	WAL05-02861-00		NPS 6 / DN 150	WAL05-02976-00
	NPS 4 / DN 100			NPS 8 / DN 200	WAL05-02977-00
	CL150 and CL300	WAL05-02857-00	6	Muffling Plate, Cast Iron	
	CL600	WAL05-02863-00		NPS 2 / DN 50	WAL04-03550-01
	NPS 5, 6 and 8 / DN 125, 150 and 200			NPS 2-1/2 / DN 65	WAL04-03515-00
	CL150 and CL300	WAL05-02861-00		NPS 3 / DN 80	WAL04-03516-00
	CL600	WAL05-02865-00		NPS 4 / DN 100	WAL04-03518-00
3	Blind Flange, Cast Iron			NPS 5 / DN 125	WAL04-03519-00
	NPS 3/8 / DN 10			NPS 6 / DN 150	WAL04-03520-00
	CL150 and CL300	WAL04-02188-00		NPS 8 / DN 200	WAL04-03524-00
	NPS 1/2 / DN 15				
	CL150 and CL300	WAL04-02188-00	7*	Disc, Stainless Steel	
	NPS 3/4 / DN 20			NPS 3/8 / DN 10	WAL04-01790-02
	CL150 and CL300	WAL04-02190-00		NPS 1/2 / DN 15	WAL04-01800-02
	CL600	WAL04-02191-00		NPS 3/4 / DN 20	WAL04-01813-02
	NPS 1 / DN 25			NPS 1 / DN 25	WAL04-01832-00
	CL150 and CL300	WAL04-02192-00		NPS 1-1/4 / DN 32	WAL04-01850-02
	CL600	WAL04-02193-00		NPS 1-1/2 / DN 40	WAL04-01870-02
	NPS 1-1/4 / DN 32			NPS 2 / DN 50	WAL04-01888-02
	CL150 and CL300	WAL04-02194-00		NPS 2-1/2 / DN 65	WAL04-01906-00
	CL600	WAL05-02195-00		NPS 3 / DN 80	WAL04-01918-00
	NPS 1-1/2 / DN 40			NPS 4 / DN 100	WAL04-01931-00
	CL150 and CL300	WAL04-02196-00		NPS 5 / DN 125	WAL04-01938-00
	CL600	WAL04-02196-00		NPS 6 / DN 150	WAL04-01995-00
	NPS 2 / DN 50			NPS 8 / DN 200	WAL04-01691-00
	CL150 and CL300	WAL04-02198-00			
	CL600	WAL04-02199-00			
	NPS 2-1/2 / DN 65				
	CL150 and CL300	WAL04-02184-00			
	CL600	WAL04-02200-00			
	NPS 3 / DN 80				
	CL150 and CL300	WAL04-02201-00			
	CL600	WAL04-02202-00			
	NPS 4 / DN 100				
	CL150 and CL300	WAL04-02204-00			
	CL600	WAL04-02205-00			
	NPS 5 / DN 125				
	CL150 and CL300	WAL04-02207-00			
	CL600	WAL04-02208-00			
	NPS 6 / DN 150				
	CL150 and CL300	WAL04-02209-00			
	CL600	WAL04-02210-00			
	NPS 8 / DN 200				
	CL150 and CL300	WAL04-02211-00			
	CL600	WAL04-02212-00			

*Included in repair kit

Type E

Cast Steel Valve (continued)

Key	Description	Part Number	Key	Description	Part Number
8*	Seat Ring, Stainless Steel		16	Base, Cast Iron	
	NPS 3/8 / DN 10	WAL04-04109-01		NPS 2-1/2 / DN 65	WAL04-00488-00
	NPS 1/2 / DN 15	WAL04-04066-01		NPS 3 / DN 80	WAL04-00487-00
	NPS 3/4 / DN 20	WAL04-04075-01		NPS 4 / DN 100	WAL04-00490-00
	NPS 1 / DN 25	WAL04-04084-01		NPS 5 / DN 125	WAL04-00495-00
	NPS 1-1/4 / DN 32	WAL04-04092-01		NPS 6 / DN 150	WAL04-00496-00
	NPS 1-1/2 / DN 40	WAL04-04496-01		NPS 8 / DN 200	WAL04-00491-00
	NPS 2 / DN 50	WAL04-11544-00	17*	Pressure Plate, Cast Iron	
	NPS 2-1/2 / DN 65	WAL04-11539-00		NPS 3/8 and 1/2 / DN 10 and 15	WAL04-03695-00
	NPS 3 / DN 80	WAL04-11484-00		NPS 3/4 / DN 20	WAL04-03579-00
	NPS 4 / DN 100	WAL04-11565-00		NPS 1 / DN 25	WAL04-03580-00
	NPS 5 / DN 125	WAL04-11700-01		NPS 1-1/4 / DN 32	WAL04-03582-00
	NPS 6 / DN 150	WAL04-15142-00		NPS 1-1/2 / DN 40	WAL04-03581-00
	NPS 8 / DN 200	WAL04-15144-00		NPS 2 / DN 50	WAL04-03584-01
9	Pipe Plug, 1/4 in., Steel	WAL04-03772-00		NPS 2-1/2 / DN 65	WAL04-03583-00
10	Pipe Plug 1/8 in., Steel	WAL04-03769-00		NPS 3 / DN 80	WAL04-03585-01
11*	Stem, Stainless Steel			NPS 4 / DN 100	WAL04-03587-00
	NPS 3/8 and 1/2 / DN 10 and 15	WAL04-05306-01		NPS 5 / DN 125	WAL04-03588-01
	NPS 3/4 / DN 20	WAL04-05233-01		NPS 6 / DN 150	WAL04-03589-02
	NPS 1 / DN 25	WAL04-05237-02		NPS 8 / DN 200	WAL04-03591-00
	NPS 1-1/4 / DN 32	WAL04-05248-01	18	Diaphragm Nut, Steel	
	NPS 1-1/2 / DN 40	WAL04-05251-02		NPS 3/8 and 1/2 / DN 10 and 15	WAL05-02848-00
	NPS 2 / DN 50	WAL04-05262-01		NPS 3/4, 1, 1-1/4 and 1-1/2 /	
	NPS 2-1/2 / DN 65	WAL04-05260-02		DN 20, 25, 32 and 40	WAL05-02852-00
	NPS 3 / DN 80	WAL04-05279-01		NPS 2 / DN 50	WAL05-02857-00
	NPS 4 / DN 100	WAL04-05282-02		NPS 2-1/2, 3, 4 and 5 /	
	NPS 5 / DN 125	WAL04-05285-01		DN 65, 80, 100 and 125	WAL05-02857-00
	NPS 6 / DN 150	WAL04-05288-01		NPS 6 and 8 / DN 150 and 200	WAL05-02861-00
	NPS 8 / DN 200	WAL04-05292-01	19	Hood, Cast Iron	
12	Body	-----		NPS 3/8 and 1/2 / DN 10 and 15	WAL04-02570-00
13*	Spring			NPS 3/4 / DN 20	WAL04-02574-00
	NPS 3/8 and 1/2 / DN 10 and 15	WAL05-09106-00		NPS 1 / DN 25	WAL04-02575-00
	NPS 3/4 / DN 20	WAL05-09107-00		NPS 1-1/4 / DN 32	WAL04-02578-00
	NPS 1 / DN 25	WAL05-09108-01		NPS 1-1/2 / DN 40	WAL04-02579-00
	NPS 1-1/4 and 1-1/2 / DN 32 and 40	WAL05-09110-00		NPS 2 / DN 50	WAL04-02582-00
	NPS 2 / DN 50	WAL05-09368-02		NPS 2-1/2 / DN 65	WAL04-02646-00
	NPS 2-1/2 / DN 65	WAL05-08257-02		NPS 3 / DN 80	WAL04-02586-00
	NPS 3 / DN 80	WAL05-09112-02		NPS 4 / DN 100	WAL04-02589-00
	NPS 4 / DN 100	WAL05-09114-02		NPS 5 / DN 125	WAL04-02592-00
	NPS 5 / DN 125	WAL05-09115-02		NPS 6 / DN 150	WAL04-02594-00
	NPS 6 / DN 150	WAL05-09116-01		NPS 8 / DN 200	WAL04-02596-00
	NPS 8 / DN 200	WAL05-09118-01	20*	Diaphragm, Stainless Steel	
14*	Dowel Pin, Steel			NPS 3/8 and 1/2 / DN 10 and 15	WAL04-01629-01
	NPS 3/8 and 1/2 / DN 10 and 15	WAL05-03244-00		NPS 3/4 / DN 20	WAL04-01662-00
	NPS 3/4 and 1/ DN 20 and 25	WAL05-03245-00		NPS 1 / DN 25	WAL04-01632-00
	NPS 1-1/4, 1-1/2 and 2 / DN 32, 40 and 50	WAL05-03248-00		NPS 1-1/4 / DN 32	WAL04-01664-00
	NPS 2-1/2 / DN 65	WAL05-03252-00		NPS 1-1/2 / DN 40	WAL04-01635-00
	NPS 3 and 4 / DN 80 and 100	WAL05-03254-00		NPS 2 / DN 50	WAL04-01638-00
	NPS 5 and 6 / DN 125 and 150	WAL05-03258-00		NPS 2-1/2 / DN 65	WAL04-01641-00
	NPS 8 / DN 200	WAL05-03261-00		NPS 3 / DN 80	WAL05-02038-00
15	Diaphragm Bolt, Steel			NPS 4 / DN 100	WAL05-01647-00
	NPS 3/8 and 1/2 / DN 10 and 15	WAL05-05480-00		NPS 5 / DN 125	WAL05-01649-00
	NPS 3/4, 1, 1-1/4 and 1-1/2 /			NPS 6 / DN 150	WAL05-01651-00
	DN 20, 25, 32 and 40	WAL05-05481-00		NPS 8 / DN 200	WAL05-01653-00
	NPS 2, 2-1/2 and 3 / DN 50, 65 and 80	WAL05-05486-00			
	NPS 4 and 5 / DN 100 and 125	WAL05-05487-00			
	NPS 6 and 8 / DN 150 and 200	WAL05-05483-00			

*Included in repair kit

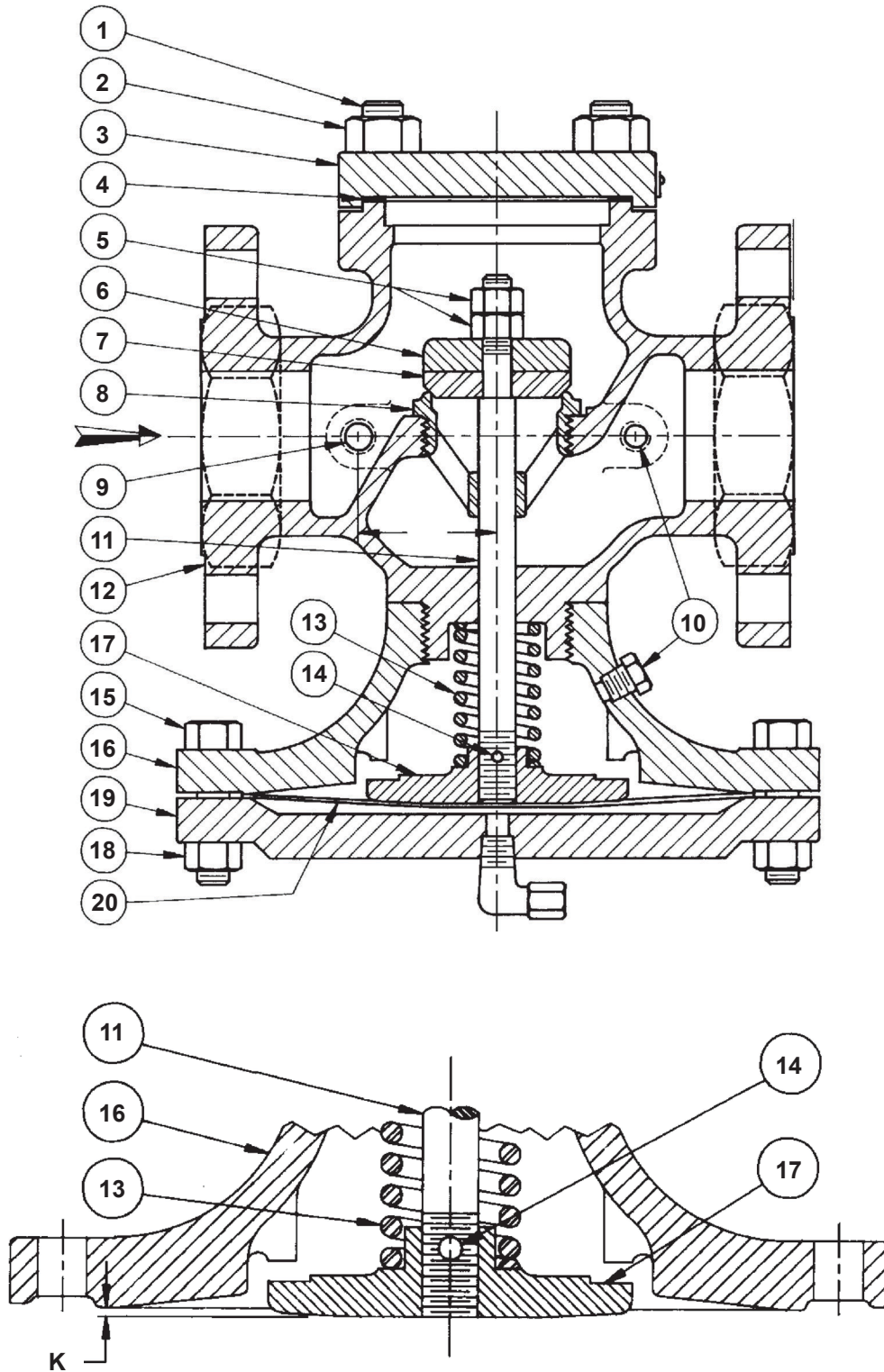


Figure 7. Type E Main Valve Assembly Drawing

Type E

 SpenceValve.com

Emerson Automation Solutions

Americas

McKinney, Texas 75070 USA
T +1 800 558 5853
+1 972 548 3574

Europe

Bologna 40013, Italy
T +39 051 419 0611

Asia Pacific

Singapore 128461, Singapore
T +65 6777 8211

Middle East and Africa

Dubai, United Arab Emirates
T +971 4 811 8100

VCIMD-14961 © 2021 Emerson Electric Co. All rights reserved 11/21.
Spence is a mark owned by one of the companies in the Emerson Automation Solutions business unit of Emerson Electric Co. The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are property of their prospective owners.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available upon request. We reserve the right to modify or improve the designs or specifications of such products at any time without notice.

Emerson Electric Co. does not assume responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use and maintenance of any Emerson Electric Co. product remains solely with the purchaser.

SD3001F

