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T205VB Series Vacuum Breakers

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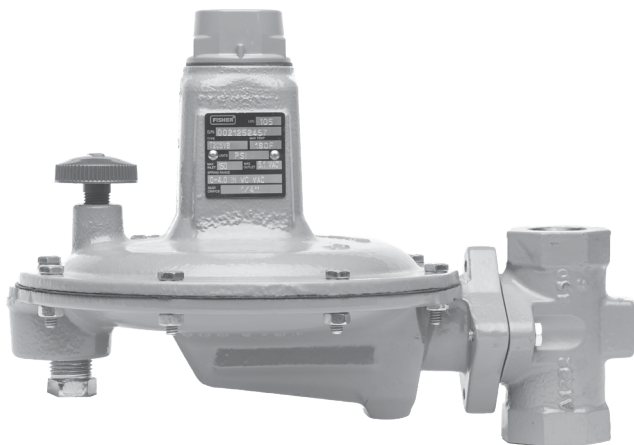


Figure 1. Typical Type T205VB Vacuum Breaker

Introduction

Scope of the Manual

This Instruction Manual provides instruction for installation, startup, maintenance and parts lists for Types T205VB and T205VBM vacuum breakers. Instructions and parts lists for other equipment used with these breakers are found in separate manuals.

Product Description

The T205VB Series vacuum breakers (Figure 1) are used for precise control of small capacity, low-pressure service applications where an increase in vacuum must be limited. These direct-operated vacuum breakers are available in 3/4 and 1 in. / DN 20 and 25 body sizes and have 1/4 or 1/2 in. / 6.4 or 13 mm orifice.

The T205VB Series is available in two configurations: Type T205VB for internal pressure registration requiring no control line and Type T205VBM which has a blocked throat and a control line connection for external pressure registration.



WARNING

Failure to follow these instructions or to properly install and maintain this equipment could result in an explosion, fire and/or chemical contamination causing property damage and personal injury or death.

Fisher™ vacuum breakers must be installed, operated and maintained in accordance with federal, state and local codes, rules and regulations and Emerson Process Management Regulator Technologies, Inc. (Emerson) instructions.

T205VB Series

Specifications

The Specifications section on this page provides the ratings and other specifications for the T205VB Series. Factory specification such as type, maximum inlet pressure, maximum temperature, maximum outlet pressure, spring range and orifice size are stamped on the nameplate fastened on the vacuum breaker at the factory.

Available Configurations

Type T205VB: Direct-operated vacuum breaker with internal pressure registration.

Type T205VBM: Direct-operated vacuum breaker equipped with a blocked throat and control line connection for external pressure registration.

Body Sizes

NPS 3/4 / DN 20

NPS 1 / DN 25

End Connection Styles

BODY SIZE		BODY MATERIAL	END CONNECTION STYLE ⁽¹⁾
NPS	DN		
3/4 or 1	20 or 25	Gray cast iron	NPT
		WCC/LCC Carbon steel, CF8M/CF3M Stainless steel	NPT
3/4 or 3/4 x 1 ⁽²⁾	20 or 20 x 25 ⁽²⁾	WCC/LCC Carbon steel, CF8M/CF3M Stainless steel	CL150 RF

1. All flanges are welded. Weld-on flange dimension is 14 in. / 356 mm face-to-face.
2. 3/4 x 1 in. / DN 20 x 25 flanged construction uses 3/4 in. / DN 20 body.

Maximum Operating Inlet Pressure⁽¹⁾

150 psig / 10.3 bar

Maximum Outlet (Casing) Pressure⁽¹⁾

Gray Cast Iron: 35 psig / 2.41 bar

WCC Carbon Steel, LCC Carbon Steel or

CF8M/CF3M Stainless Steel: 75 psig / 5.17 bar

Maximum Emergency Outlet (Casing) Pressure to Avoid Internal Parts Damage⁽¹⁾

35 psig / 2.41 bar

Maximum Set Points for Achieving Wide-Open Flow

See Table 2

Maximum Vacuum Pressure

Full Vacuum

Vacuum Control Pressure Ranges⁽¹⁾

See Table 1

Temperature Capabilities⁽¹⁾

Nitrile (NBR)

Gray Cast Iron, WCC Carbon Steel Body:

-20 to 180°F / 29 to 82°C

LCC Carbon Steel, CF8M/CF3M Stainless Steel

Body: -40 to 180°F / -40 to 82°C

Fluorocarbon (FKM): 40 to 300°F / 4 to 149°C

Spring Case Connection

1/4 NPT

Diaphragm Case Connection

1/2 NPT

Orifice Size

1/4 in. / 6.4 mm

1/2 in. / 13 mm

Pressure Registration

Type T205VB: Internal

Type T205VBM: External

Approximate Weight

18.7 lbs / 8.5 kg

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

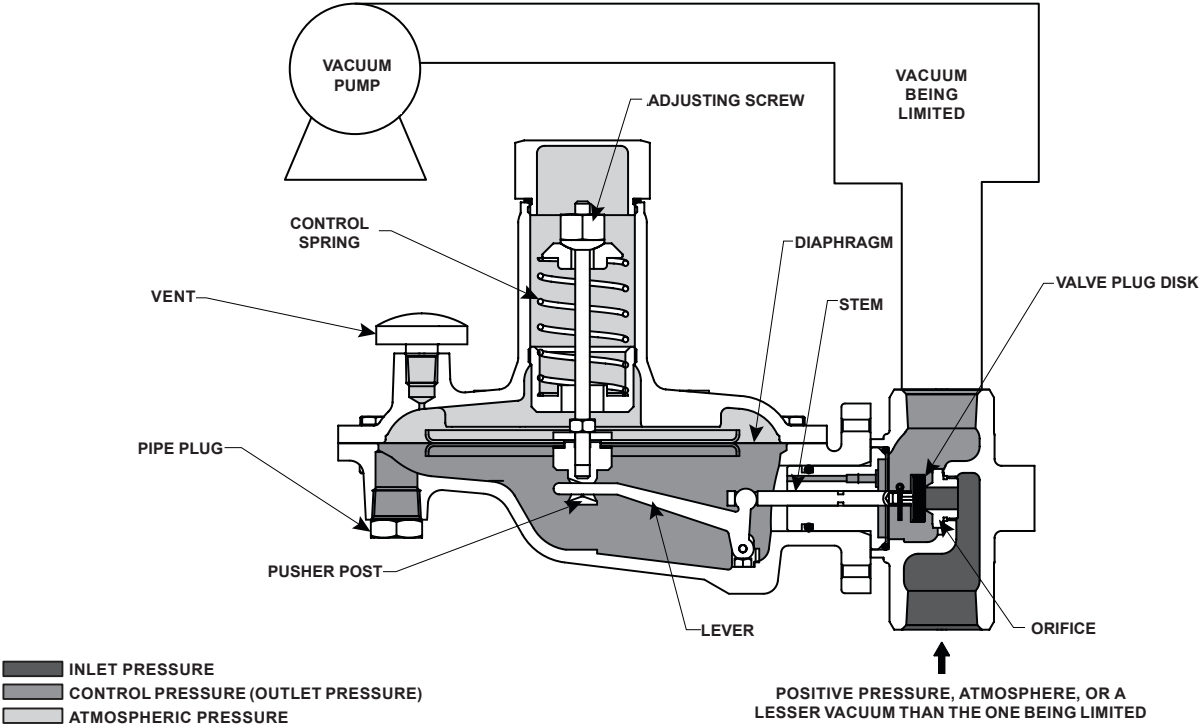
If the vacuum breaker discharges process fluid or a leak develops in the system, service to the unit may be required. Failure to correct trouble could result in a hazardous condition.

Call a qualified service person to service the unit. Installation, operation and maintenance procedures performed by unqualified person 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 T205VB Series vacuum breakers.

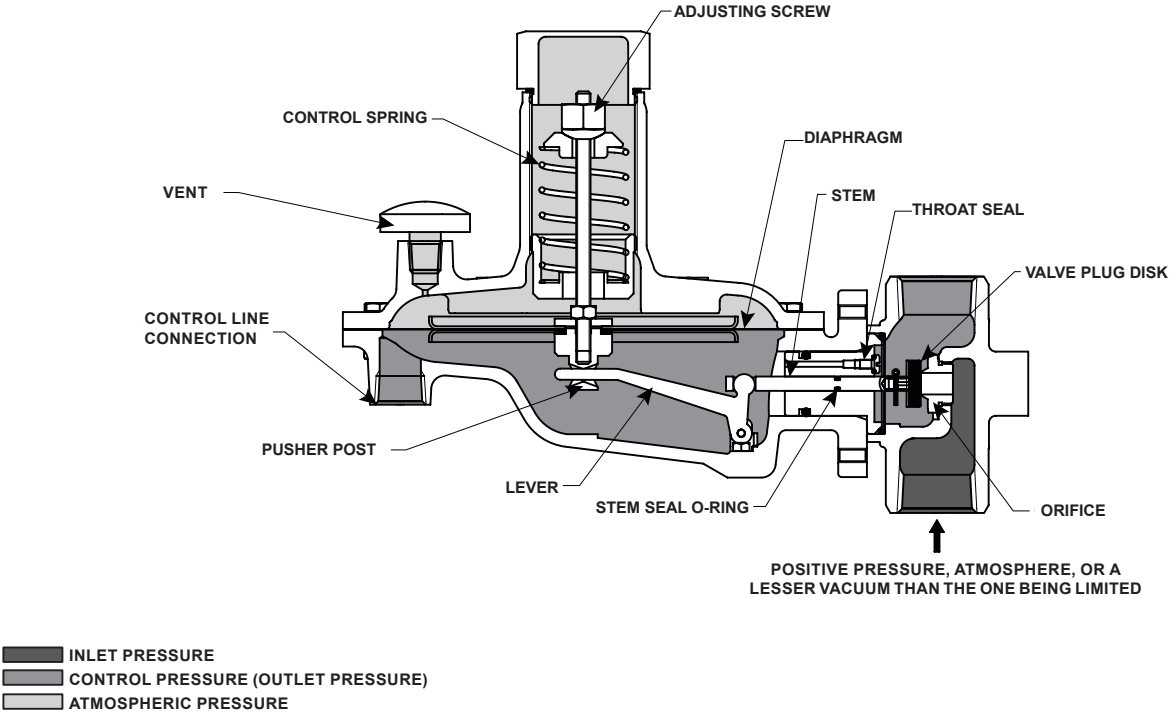
Principle of Operation

The T205VB Series vacuum breakers are used in applications where an increase in vacuum must be limited, see Figure 2. An increase in vacuum (decrease in absolute pressure) is sensed on the under side of the diaphragm, opening the disk assembly. This permits positive pressure, atmosphere or an upstream vacuum that has higher absolute pressure than the downstream vacuum to enter the system and restore the controlled vacuum to its original pressure setting.

On the Type T205VB, the pressure registers internally underneath the diaphragm. The Type T205VBM has a control line connecting the diaphragm casing to the vacuum line and a throat seal allowing for registration only through the control line connection.



TYPE T205VB WITH INTERNAL PRESSURE REGISTRATION



TYPE T205VBM WITH EXTERNAL PRESSURE REGISTRATION

Figure 2. T205VB Series Operational Schematic

T205VB Series

Table 1. Vacuum Control Pressure Ranges

VACUUM CONTROL PRESSURE RANGE ⁽¹⁾⁽²⁾		SPRING PART NUMBER	SPRING COLOR	SPRING WIRE DIAMETER		SPRING FREE LENGTH	
psig	mbar			In.	mm	In.	mm
0 to 4 in. w.c.	0 to 10	0N039427222	Unpainted	0.062	1.6	3.06	78
0 to 1.0	0 to 69	0N086127022	Unpainted	0.125	3.2	2.50	64
0 to 2.1	0 to 145	0N004327022	Yellow	0.162	4.1	2.50	64
0 to 5	0 to 0.34 bar	1D141827012	Blue	0.207	5.3	2.50	64

1. Spring ranges based on atmospheric inlet pressure.
2. To convert to in. Hg, multiply psig value by 2.04.

Table 2. Maximum Setpoints for Achieving Wide-Open Flow

SPRING RANGE, PART NUMBER AND COLOR CODE ⁽¹⁾⁽²⁾	ORIFICE SIZE		MAXIMUM SETPOINTS FOR ACHIEVING WIDE-OPEN FLOW AT SPECIFIC INLET PRESSURES											
			0 psi / 0 bar		25 psi / 1.7 bar		50 psi / 3.4 bar		75 psi / 5.2 bar		100 psi / 6.9 bar		125 psi / 8.6 bar	
	In.	mm	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar
0 to 4 in. w.c. / 0 to 10 mbar 0N039427222 Unpainted	1/4	6.4	4 in. w.c.	10 mbar	4 in. w.c.	10 mbar	3.5 in. w.c.	8.7 mbar	3 in. w.c.	7.5 mbar	2.5 in. w.c.	6.2 mbar	2 in. w.c.	5 mbar
	1/2	13	4 in. w.c.	10 mbar	3 in. w.c.	7.5	1.5 in. w.c.	3.7 mbar						
0 to 1.0 psig / 0 to 69 mbar 0N086127022 Unpainted	1/4	6.4	1	0.07	1	0.07	1	0.07	1	0.07	0.96	0.07	0.92	0.06
	1/2	13	1	0.07	0.95	0.07	0.9	0.06	0.85	0.06	0.8	0.05	0.75	0.05
0 to 2.1 psig / 0 to 145 mbar 0N004327022 Yellow	1/4	6.4	2.1	0.14	2.1	0.14	2.1	0.4	2.1	0.14	2.05	0.14	2.0	0.14
	1/2	13	2.1	0.14	2.1	0.14	2.05	0.14	1.98	0.14	1.92	0.13	1.86	0.13
0 to 5 psig / 0 to 0.34 bar 1D141827012 Blue	1/4	6.4	5.0	0.34	5.0	0.34	5.0	0.34	5.0	0.34	5.0	0.34	5.0	0.34
	1/2	13	5.0	0.34	5.0	0.34	5.0	0.34	5.0	0.34	5.0	0.34	5.0	0.34

■ - Not applicable.
1. Spring ranges based on atmospheric inlet pressure.
2. To convert to in. Hg, multiply psig value by 2.04.

Installation



WARNING

Personal injury, property damage, equipment damage or leakage due to escaping gas or bursting of pressure-containing parts may result if this equipment is overpressured or is installed where service conditions could exceed the limits given in Specifications section or where conditions exceed any ratings of the adjacent piping or piping connections. To avoid such injury or damage, provide pressure-relieving or pressure-limiting devices (as required by the appropriate code, regulation or standard) to prevent service conditions from exceeding those limits.

Additionally, physical damage to this equipment could cause personal injury or property damage due to escaping gas. To avoid such injury or damage, install the equipment in a safe and well ventilated location.

Note

If this equipment is shipped mounted on another unit, install that unit according to the appropriate instruction manual.

1. Only personnel qualified through training and experience shall install, operate and maintain this equipment. For T205VB Series equipment that is shipped separately, make sure that there is no damage to or foreign material in it. Also ensure that all tubing and piping are clean and unobstructed.



WARNING

This equipment may vent some gas to the atmosphere. In hazardous or flammable gas service, vented gas may accumulate and cause personal injury, death or property damage due to fire or explosion. Vent equipment in hazardous gas service to a remote, safe location away from air intakes or any hazardous area. The vent line or stack opening must be protected against condensation or clogging.

2. This equipment may be installed in any position as long as the flow through the body is in the direction indicated by the arrow on the body. If continuous operation is required during inspection or maintenance, install a three-way bypass valve around the equipment.
3. To keep the spring case vent (key 26, Figure 3 or 4) from being plugged or the spring case from collecting moisture, corrosive chemicals or other foreign material, point the vent down or otherwise protect it. The diaphragm casing (key 4) may be rotated in order to obtain desired positioning.
4. To remotely vent the vacuum breaker, remove the vent (key 26, Figure 3 or 4) and install obstruction-free tubing or piping into the 1/4 NPT vent tapping. Provide protection on a remote vent by installing a screened vent cap into the remote end of the vent pipe.
5. The Type T205VBM requires a control line. Be sure to install the control line before putting the vacuum breaker into operation. Make the control line as short and straight as possible and do not install it in a location where flow may be turbulent. Restrictions in the control line can prevent proper pressure registration. When using a hand valve, it should be a full flow valve, such as a full port ball valve. Install the control line sloping downward toward the tank to prevent condensation buildup and avoid low points (or traps) that could catch liquid. The sensing line must enter the tank above the liquid level at a point that senses the vapor space pressure and is free from turbulence associated with tank nozzles or vents. The control line pipe should be at least 1/2 in. / 13 mm in diameter and increase 1 pipe size for every 10 ft / 3.05 m of control line, with setpoint less than 5 in. w.c. / 12 mbar.
6. An upstream shutoff valve is recommended to simplify maintenance to the vacuum breaker. It is advisable to install a pressure gauge between the upstream shutoff valve and the breaker.

Startup, Adjustment and Shutdown

Note

The Specifications section provides the maximum pressure capabilities for each vacuum breaker construction. Use pressure gauges to monitor inlet pressure and outlet pressure during startup and adjustment procedures.

T205VB Series

Startup

1. Close any vent valves.
2. For Type T205VB, slowly open the upstream (inlet) shutoff valve. For Type T205VBM, open the control line shutoff valve first followed by the upstream shutoff valve.
3. Use gauges to monitor pressure.

Adjustment

1. Remove the closing cap (key 22) and turn the adjusting nut (key 20) clockwise to increase the pressure setting or counterclockwise to decrease the setting. Use gauges to monitor pressure.
2. Replace the closing cap (key 22) after making this adjustment.
3. If desired, the closing cap (key 22) may be wired to the hole provided in the spring case (key 3) to discourage tampering.

Shutdown

1. Close the nearest upstream shutoff valve.
2. Close the nearest downstream shutoff valve.
3. Open the vent valve between the equipment and the downstream shutoff valve nearest to it. All pressure between these shutoff valves is released through the open vent valve.

Maintenance

Equipment parts are subject to normal wear and must be inspected and replaced as necessary. The frequency of inspection and replacement of parts depends upon the severity of service conditions or the requirements of local, state and federal regulations. Due to the care Emerson takes in meeting all manufacturing requirements (heat treating, dimensional tolerances, etc.), use only replacement parts manufactured or furnished by Emerson.



WARNING

To avoid personal injury, property damage or equipment damage caused by sudden release of pressure or explosion of accumulated gas, do

not attempt any maintenance or disassembly without first isolating the vacuum breaker from system pressure and relieving all internal pressure from the equipment.

Vacuum breakers that have been disassembled for repair must be tested for proper operation before being returned to service. Only parts manufactured by Emerson should be used for repairing Fisher™ vacuum breaker. Restart gas utilization equipment according to normal startup procedures.

General Maintenance

1. Visually inspect the vacuum breaker and its parts for any damage.
2. Ensure tight connections, tight seals and safe operation. If there is an evidence of leakage or unstable internal motion, a rebuild with seal replacement and relubrication may be necessary.
3. Observe the vacuum pressure.
4. Verify the application inlet pressure is less than the maximum operating inlet pressure.

Body Area

Perform the following procedure to gain access to the disk assembly, orifice and body seal O-ring. Release all pressure from the vacuum breaker before performing the following steps. Key numbers are referenced in Figures 3 and 4.

1. To inspect and replace the disk assembly (key 13) or orifice (key 5), remove the cap screws (key 2), and separate the diaphragm casing (key 4) from the body (key 1).
2. Remove and inspect the body seal O-ring (key 11) and the backup ring (key 49); replace if necessary.
3. Inspect the orifice (key 5) by carefully running your finger along the edges to check for nicks or dents; replace if necessary. Lightly lubricate the threads of the replacement orifice with a good grade of anti-seize lubricant and tighten using 340 to 470 in-lbs / 38.5 to 53.1 N•m of torque.

4. Remove the cotter pin (key 15) if it is necessary to replace the disk holder assembly (key 13). For Type T205VBM, also inspect the throat seal O-ring (key 31) by removing the machine screw (key 34); replace if necessary. To install a throat seal, place the O-ring on the machine screw and thread into guide insert (key 18) to seal.

Note

The disk holder assembly (key 13) is comprised of the disk and disk holder.

5. Install the disk holder assembly (key 13) and secure it to the valve stem (key 14) with the cotter pin (key 15).
6. Install the backup ring (key 49) and body seal O-ring (key 11) into the body (key 1).
7. Replace the diaphragm casing (key 4) on the body (key 1) and secure with the cap screws (key 2) using 90 to 126 in-lbs / 10.2 to 14.2 N•m of torque.

Diaphragm and Spring Case Area

Perform the following procedures to gain access to the control spring, diaphragm assembly, valve stem and stem O-ring. All pressure must be released from the diaphragm case before performing the following steps.

Type T205VB

Key numbers are referenced in Figure 3.

1. Remove the closing cap (key 22) and turn the adjusting nut (key 20) counterclockwise until all compression is removed from the control spring (key 6). If the only further maintenance is to change the control spring, skip to step 11.
2. Remove the spring case cap screws (key 24) and hex nuts (key 23) and lift off the spring case assembly (key 3).
3. Remove the diaphragm (key 10) and attached parts by tilting it so that the pusher post (key 8) slips off the lever assembly (key 16). To separate the diaphragm from the attached parts, unscrew the diaphragm hex nut (key 21). If the only further maintenance is to replace the diaphragm parts, skip to step 8.

4. To replace the lever assembly (key 16), remove the machine screws (key 17).

5. To replace the valve stem (key 14), also perform Body Area maintenance procedure steps 1 through 4 and pull the valve stem out of the guide insert (key 18).

6. Install the valve stem (key 14) into the guide insert (key 18) and perform Body Area maintenance procedure steps 5 through 7.

7. Install the lever assembly (key 16) into the valve stem (key 14) and secure the lever assembly with the machine screws (key 17) using 14 to 19 in-lbs / 1.6 to 2.1 N•m of torque.

8. Reassemble the diaphragm assembly in the following order:

- Pusher post (key 8)
- Diaphragm head gasket (key 45)
- Lower diaphragm head (key 7)
- Diaphragm (key 10)
- Upper diaphragm head (key 7)
- Washer (key 36)

Secure with diaphragm hex nut (key 21) using 60 to 72 in-lbs / 6.8 to 8.1 N•m of torque.

9. Install the pusher post (key 8) plus attached diaphragm parts onto the lever assembly (key 16).

10. Install the spring case assembly (key 3) and control spring (key 6) on the diaphragm casing (key 4) so that the vent assembly is correctly oriented and secure them with the spring case cap screws (key 24) and hex nuts (key 23) to finger tightness only.

11. Install the upper spring seat (key 19) and the adjusting nut (key 20). Turn adjusting nut clockwise until there is enough control spring (key 6) force to provide proper slack to the diaphragm (key 10) and attached parts. Using a crisscross pattern, finish tightening the spring case cap screws (key 24) and hex nuts (key 23) to 90 to 126 in-lbs / 10.2 to 14.2 N•m of torque. Finish turning the adjusting nut to the desired outlet pressure setting according to Adjustment procedure.

12. Install a replacement closing cap gasket (key 25) if necessary, and then install the closing cap (key 22).

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Type T205VBM

Key numbers are referenced in Figure 4.

1. Remove the closing cap (key 22) and turn the adjusting nut (key 20) counterclockwise until all compression is removed from the control spring (key 6). If the only further maintenance is to change the control spring, skip to step 11.
2. Remove the spring case cap screws (key 24) and hex nuts (key 23) and lift off the spring case assembly (key 3).
3. Remove the diaphragm (key 10) and attached parts by tilting it so that the pusher post (key 8) slips off the lever assembly (key 16). To separate the diaphragm from the attached parts, unscrew the diaphragm hex nut (key 21). If the only further maintenance is to replace the diaphragm parts, skip to step 8.
4. To replace the lever assembly (key 16), remove the machine screws (key 17).
5. To replace the valve stem (key 14) or stem seal O-ring (key 30), perform Body Area maintenance procedure steps 1 through 4 and pull the valve stem out of the guide insert (key 18).
6. Lightly grease the replacement stem seal O-ring (key 30) and install on the valve stem (key 14). Install the valve stem by pushing it into the guide insert (key 18) and perform Body Area maintenance procedure steps 5 through 7.
7. Install the lever assembly (key 16) into the valve stem (key 14) and secure the lever assembly with the machine screws (key 17) using 14 to 19 in-lbs / 1.6 to 2.1 N•m of torque.
8. Reassemble the diaphragm assembly in the following order:
 - Pusher post (key 8)
 - Diaphragm head gasket (key 45)
 - Lower diaphragm head (key 7)
 - Diaphragm (key 10)
 - Upper diaphragm head (key 7)
 - Washer (key 36)Secure with diaphragm hex nut (key 21) using 60 to 72 in-lbs / 6.8 to 8.1 N•m of torque.
9. Install the pusher post (key 8) plus attached diaphragm parts onto the lever assembly (key 16).
10. Install the spring case assembly (key 3) and control spring (key 6) on the diaphragm casing (key 4) so that the vent assembly (key 26) is

correctly oriented, and secure them with the spring case cap screws (key 24) and hex nuts (key 23) to finger tightness only.

11. Install the upper spring seat (key 19) and adjusting nut (key 20). Turn adjusting nut clockwise until there is enough control spring (key 6) force to provide proper slack to the diaphragm (key 10) and attached parts. Using a crisscross pattern, finish tightening the spring case cap screws (key 24) and hex nuts (key 23) to 90 to 126 in-lbs / 10.2 to 14.2 N•m of torque. Finish turning the adjusting nut to the desired outlet pressure setting according to Adjustment procedure.
12. Install a replacement closing cap gasket (key 25) if necessary, and then install the closing cap (key 22).

To Convert Constructions

Type T205VB to Type T205VBM:

New parts required: keys 30, 31 and 34

1. Remove pipe plug (key 27, Figure 3) from the diaphragm casing (key 4).
2. Perform steps 1 and 3 in the Body Area maintenance section.
3. Insert the throat seal O-ring (key 31, Figure 4) and one machine screw (key 34).
4. Insert the stem seal O-ring (key 30, Figure 4) by following steps 1 through 7 and 9 through 12 in the Diaphragm and Spring Case Area maintenance procedure under Type T205VBM section.

Type T205VBM to Type T205VB:

New parts required: key 27

1. Insert pipe plug (key 27, Figure 3) in the diaphragm casing (key 4).
2. Follow steps 1 through 7 in the Diaphragm and Spring Case Area maintenance procedure under Type T205VB section. Make sure to remove the stem seal O-ring (key 30, Figure 4) right after step 5. After removing the stem seal O-ring, continue steps 9 through 12.
3. Follow steps 1 through 7 of Body Area maintenance section making sure to remove the throat seal (key 31, Figure 4) and machine screw (key 34, Figure 4) in step 4.

Parts Ordering

When corresponding with the local Sales Office about this vacuum breaker include the type number and all other pertinent information stamped on the nameplate.

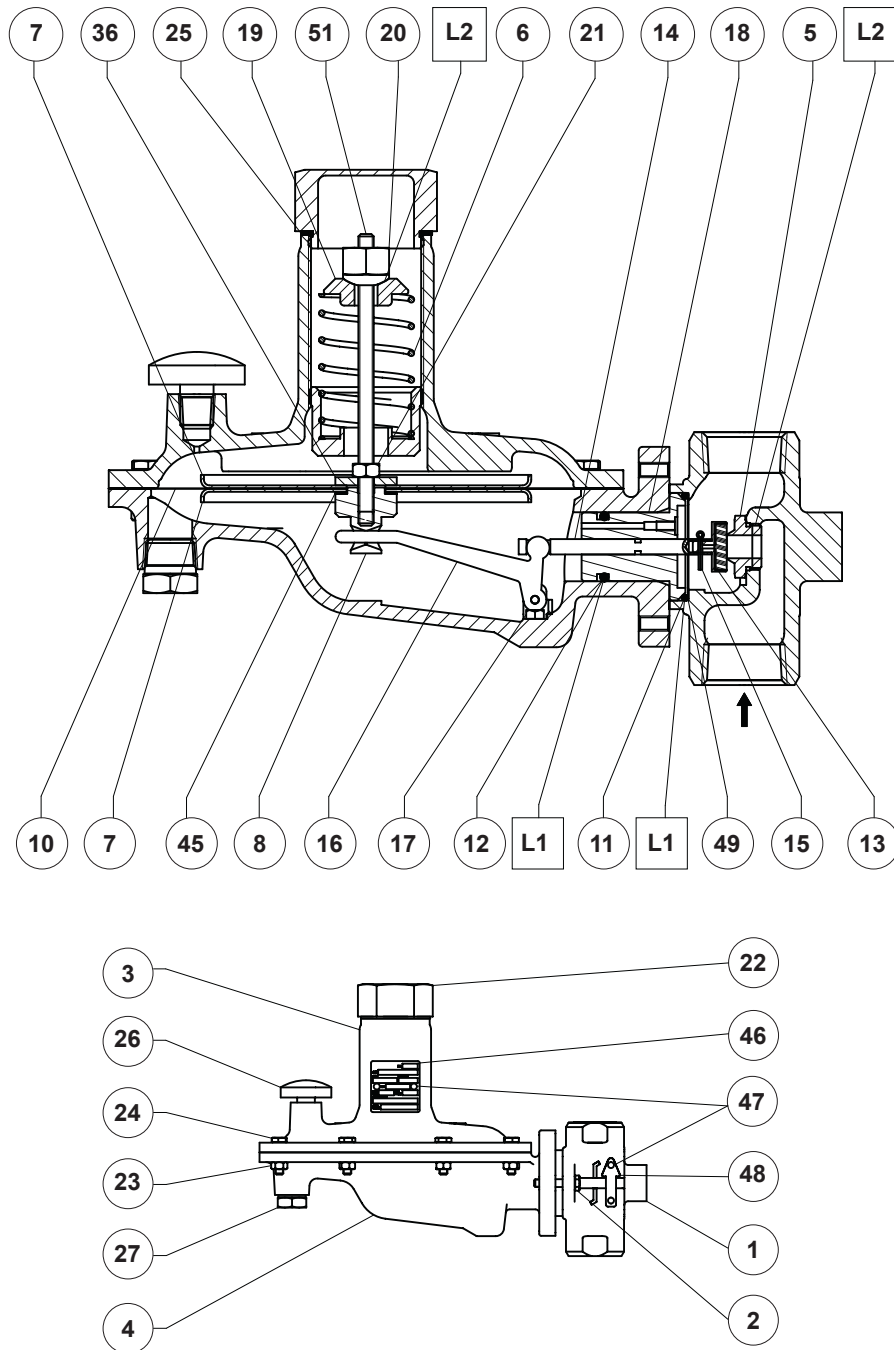
Specify the eleven-character part number when ordering new parts from the following parts list.

Parts List

Key	Description	Part Number	Key	Description	Part Number
	Spare Parts Kit (includes keys 10, 11, 12, 15, 25 and 45)				
	Nitrile (NBR)	RT205XXDD12			
	Fluorocarbon (FKM)	RT205XXVV12			
1	Body	See Table 3	17	Machine Screw, Stainless steel Type T205VB (6 required) Type T205VBM (2 required)	19A7151X022 19A7151X022
2	Cap Screw (2 required) For WCC Carbon steel or Gray cast iron casing For LCC Carbon steel or CF8M/CF3M Stainless steel casing	1C856228992 18B3456X012	18	Guide Insert, Stainless steel	27B4028X022
3	Spring Case Assembly WCC Carbon steel LCC Carbon steel Gray Cast Iron CF8M/CF3M Stainless steel	ERSA01074A2 ERSA01074A3 ERSA01074A1 ERSA01074A0	19	Upper Spring Seat, Steel	1A201824092
4	Lower Casing WCC Carbon steel LCC Carbon steel Gray Cast Iron CF8M/CF3M Stainless steel	ERSA00196A1 ERSA00196C3 47B2271X012 ERSA00196A0	20	Adjusting Nut, Brass	17B9740X012
5	Orifice, Stainless steel 1/4 in. / 6.4 mm (standard) 1/2 in. / 13 mm	1B815135032 1A928835032	21	Hex Nut, Steel	1A345724122
6	Spring, Steel	See Table 1	22	Closing Cap Zinc (standard) Steel	1B541644012 1K797024092
7	Diaphragm Head, Stainless steel (2 required)	17B9723X032	23	Hex Nut (8 required) For WCC Carbon steel or Gray Cast iron casing, Steel For LCC Carbon steel or CF8M/CF3M Stainless steel casing, Stainless steel	1A345724122 1A3457K0012
8	Pusher Post 303 Stainless steel (standard) 316 Stainless steel	18B3462X032 18B3462X012	24	Cap Screw (8 required) For WCC Carbon steel or Gray Cast iron casing, Steel For LCC Carbon steel or CF8M/CF3M Stainless steel casing, Stainless steel	1A579724052 1A5797T0012 1P753306992
10*	Diaphragm Nitrile (NBR) (standard) Fluorocarbon (FKM)	17B9726X012 23B0101X052	25*	Closing Cap Gasket	1P753306992
11*	Body Seal O-ring Nitrile (NBR) (standard) Fluorocarbon (FKM)	1H993806992 1H9938X0012	26	Vent Assembly Spring Case Up (Type Y602-11) (standard) Spring Case Down (Type Y602-2)	17A5515X012 17A6571X012
12*	Insert Seal Nitrile (NBR) (standard) Fluorocarbon (FKM)	1B885506992 1B8855X0012	27	Pipe Plug (Type T205VB only) For WCC Carbon steel or Gray Cast iron casing, Steel For LCC Carbon steel or CF8M/CF3M Stainless steel casing, Stainless steel	1A369224492 1A369235072
13*	Disk Holder Assembly 303 Stainless steel with Nitrile (NBR) (standard) Fluorocarbon (FKM) 316 Stainless steel with Nitrile (NBR) Fluorocarbon (FKM)	1C4248X0202 1C4248X0052 1C4248X0252 1C4248X0192	30*	Stem Seal (Type T205VBM only) Nitrile (NBR) (standard) Fluorocarbon (FKM)	1H2926G0012 1H2926X0022
14	Stem 303 Stainless steel (standard) 316 Stainless steel	17B3423X012 17B3423X022	31*	Throat Seal (Type T205VBM only) Nitrile (NBR) (standard) Fluorocarbon (FKM)	1D682506992 1D6825X0012
15*	Cotter Pin, Stainless steel	1A866537022	34	Machine Screw (Type T205VBM only), Stainless steel	18A0703X022
16	Lever Assembly, Stainless steel	1B5375000B2	36	Washer, Steel	18B3440X012
			45*	Diaphragm Head Gasket, Composition	18B3450X012
			46	Nameplate	-----
			47	Drive Screw (4 required), Stainless steel	1A368228982
			48	Flow Arrow	-----
			49	Backup Ring, Stainless steel	18B3446X012
			51	Connector Thread Stud, Steel	17B9741X012

*Recommended spare part

T205VB Series



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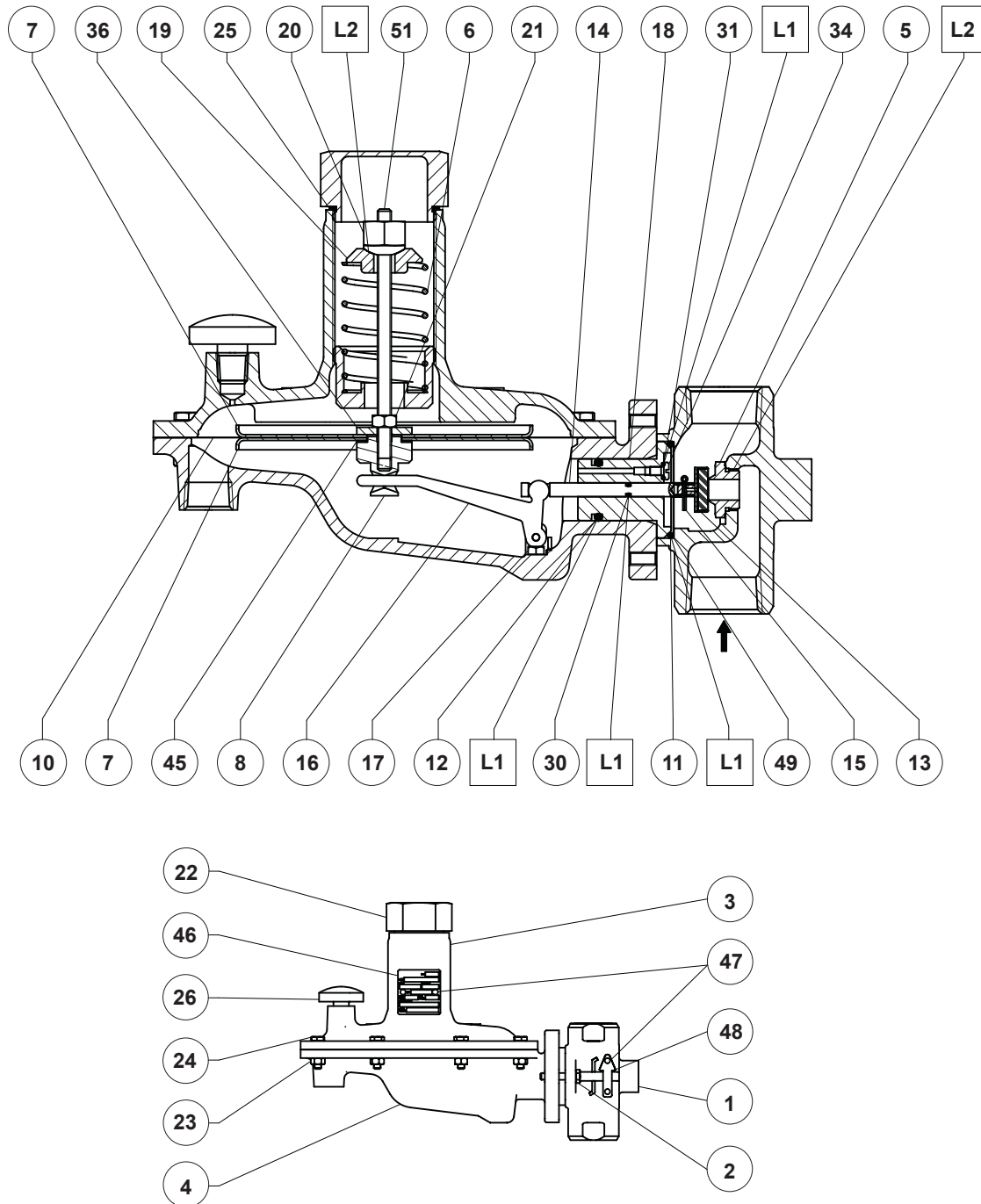
□ **APPLY LUBRICANT⁽¹⁾:**

L1 = SILICONE GREASE

L2 = ANTI-SEIZE LUBRICANT

1. Lubricants must be selected such that they meet the temperature requirements.

Figure 3. Type T205VB Assembly



ERSA02740

□ **APPLY LUBRICANT⁽¹⁾:**

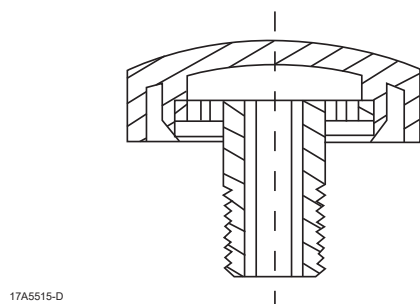
L1 = SILICONE GREASE

L2 = ANTI-SEIZE LUBRICANT

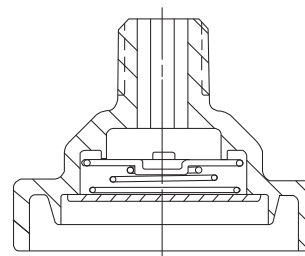
1. Lubricants must be selected such that they meet the temperature requirements.

Figure 4. Type T205VBM Assembly

T205VB Series



TYPE Y602-11



TYPE Y602-2

Figure 5. Vent Assembly (Key 26)

Table 3. Body Materials and Part Numbers (Key 1)

BODY MATERIAL	END CONNECTION STYLE ⁽¹⁾	PART NUMBER		
		NPS 3/4 / DN 20 Body	NPS 3/4 x 1 / DN 20 x 25 Body	NPS 1 / DN 25 Body
Gray cast iron	NPT	ERSA01588A0	-----	ERSA01755A0
WCC Carbon steel	NPT	ERSA00230A1	-----	ERSA00194A1
	CL150 RF	ERSA01469A0	ERSA01469A1	-----
LCC Carbon steel	NPT	ERSA00230A8	-----	ERSA00194A5
CF8M/CF3M Stainless steel	NPT (Standard)	ERSA00230A0	-----	ERSA00194A0
	CL150 RF	ERSA01469A6	ERSA01469A7	-----

1. All flanges are welded. Weld-on flange dimension is 14 in. / 356 mm face-to-face.

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