

INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

TYPE 200
VACUUM BREAKER



**WARREN
CONTROLS**

TABLE OF CONTENTS

Overview	COVER
General Information	COVER
Installation	4
Operation	4
Maintenance	4
Seat Inspection & Cleaning Procedures	5
Opening Force Test & Adjustment Procedures	6
Overhaul	6
Information Present on Vacuum Breaker	7
Type 200 Vacuum Breaker Specifications	8-10
Type 200 Vacuum Breaker Parts/Overhaul..	11
Parts Kits	12-13
Construction Drawing & Dimensions.....	14

200_IOM_RevD_0222

PRODUCT OVERVIEW

This document covers the installation, operation and maintenance of Type 200 presented in the "Level Controls and Accessories", Product Specification.

GENERAL INFORMATION

The instructions given herein cover generally the operation and maintenance of subject equipment. Should any questions arise which may not be answered specifically by these instructions, they should be referred to Warren Controls Inc. for further detailed information and technical assistance. This manual cannot possibly cover every situation connected with the operation, adjustment, inspection, test, overhaul and maintenance of the equipment furnished. Every effort is made to prepare the text of this manual so that engineering and design data is transformed into the most easily understood wording. Warren Controls Inc., in furnishing this equipment and this manual, must presume that the operation and maintenance personnel assigned thereto have sufficient technical knowledge and experience

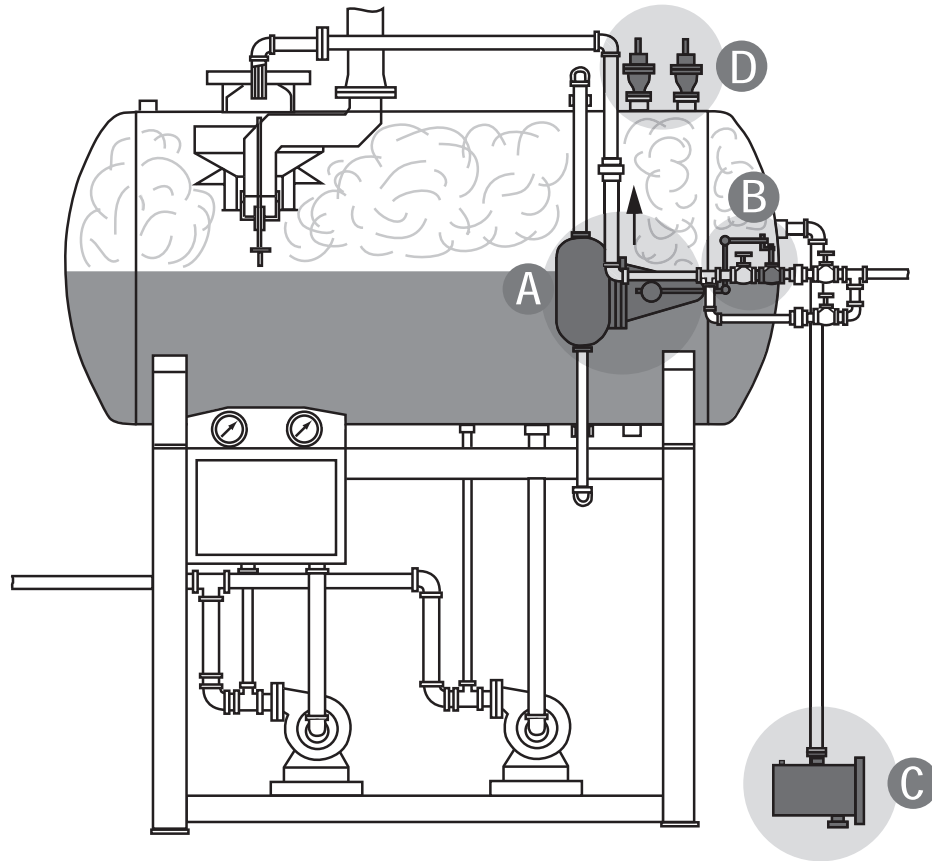
to apply sound safety and operational practices which may not be covered herein. In applications where Warren Controls Inc. furnished equipment is to be integrated with a process or other machinery, these instructions should be thoroughly reviewed to determine the proper integration of the equipment into the overall plant operational procedures. **Warren Controls does not assume responsibility for the selection, use, or maintenance of any product. Responsibility for proper selection, use, and maintenance of any Warren Controls product remains solely with the purchaser and end-user**



WARNING!

**CHECK VACUUM BREAKER FOR ANY
DAMAGE DUE TO IMPROPER STORAGE
OR TRANSPORTATION. IMMEDIATELY
NOTIFY YOUR SALES ORGANIZATION OF
ANY DAMAGED GOODS UPON RECEIPT.
DO NOT ATTEMPT TO MOVE OR DISTURB
THE VACUUM BREAKER FURTHER SO
PHOTOS MAY BE TAKEN. IF THE SHIPPING
CONTAINER IS NOTICEABLY DAMAGED
REFUSE RECEIPT, AS THE SHIPPING
COMPANY SHOULD BE HELD LIABLE
UNTIL A SHIPPING REPRESENTATIVE IS
AVAILABLE TO TAKE PHOTOS.**

WARREN CONTROLS LEVEL CONTROLS AT WORK...



The following is a typical example of a tank filling/deaerator application using properly sized, selected, and maintained Warren Controls Level Controls. Demand for water reduces the liquid level in the tank. The [A] **377 Float Cage** opens the [B] **322L or 326L Lever Valve** to supply intake water to the tank. When the water reaches the desired level the float cage closes the lever valve to accurately maintain the liquid at the desired level. Deaerators, tanks with steam blankets, produce additional liquid as the steam condenses. The [C] **313 Overflow Trap** traps and relieves this condensate through its internal pilot without the steam blanket escaping. Overflow can occur if the water entering the tank exceeds its capacity. The 313 Overflow Trap relieves the overflow through its internal single seated main stage valve. Falling liquid levels and condensing steam can cause a vacuum that can damage the tank. The [D] **Type 200 Vacuum Breaker** opens to admit outside air to relieve the vacuum in the tank. Warren Controls Level Controls are also used on boiler make-up water tanks and many other storage tank applications.

INSTALLATION – TYPE 200 VACUUM BREAKER

- To determine which Type 200 Vacuum Breaker you have, locate the part number on the factory serial number label (See [Information Present on Type 200](#) section for location of important information on vacuum breaker). Then see [Type 200 Specifications](#) section to determine the performance and physical characteristics of the vacuum breaker).
- The vacuum breaker must be installed in the vertical position with its mounting connection downward. A flanged vessel mounting connection must be a flat surface to prevent distortion of surfaces when the connection is tight. A warped vessel mounting flange may cause a leaky joint or break a cast iron Type 200 mounting flange.
- Eliminate vibration. Type 200 are not suitable in installations where vibration exists.
- Before installing, be sure vacuum breaker and piping are clean inside and free of scale, chips, welding spatter, and foreign material. Thoroughly blow out or flush pipe lines.
- Do not obscure factory serial number label with paint.

OPERATION – TYPE 200 VACUUM BREAKER

- When no vacuum is present the vessel pressure acts on the vacuum breaker's discholder pressing the disc into the seat sealing the tank's/ pipeline's contents inside. When the vessel pressure drops below atmospheric pressure a vacuum forms. The atmospheric pressure then acts on the discholder to overcome the force of the vacuum breaker's spring. The seat and disc separate admitting outside air. The Type 200 Vacuum Breaker opens gradually to admit outside air to relieve the vacuum in the tank/ pipeline. The Type 200 Vacuum Breaker cannot be preset to open at a particular setpoint.

MAINTENANCE – TYPE 200 VACUUM BREAKER

- Type 200 for the most part are maintenance free when sized and chosen properly for the application. Maintain the fluid pressure and temperature within the limits of the vacuum breaker (See [Information Present on Type 200](#) section for location of important information on vacuum breaker and [Type 200 Specifications](#) section for additional details).
- Openings in adapter body must be kept unblocked. The disc must be kept free of dirt and debris. The disc must return freely to the closed position if pushed away from the valve body.
- Perform Seat Inspection during scheduled maintenance periods. If necessary clean seat.
- Perform Opening Force Test during scheduled maintenance periods. If necessary adjust opening force.

SEAT INSPECTION AND CLEANING PROCEDURE

- 1) Remove line or tank pressure and isolate vacuum breaker. (It is recommended that the vacuum breaker be removed from the piping or tank for the seat inspection and cleaning procedure. It is recommended that you have an Inspection Kit on hand before beginning the procedure.)
- 2) Remove nuts and bolts fastening valve body to adapter body.
- 3) Remove valve body from adapter body.
- 4) Remove capscrews from spring chamber.
- 5) Remove spring chamber from valve body.
- 6) Remove jamnuts from stem. Be careful, spring is preloaded.
- 7) Remove spring button.
- 8) **For vacuum breakers with single spring** remove spring. **For vacuum breakers with dual springs** remove outer and inner springs.
- 9) Remove disc and stem assembly from valve body.
- 10) Clean gasket surfaces on valve body and adapter body.
- 11) Inspect the integral seat or seat ring in the valve body. The integral seat or seat ring must be clean and free from deposits, scratches, or other damage. If deposits are present clean the seat with red (fine) crocus cloth and a general purpose degreasing solvent. Cloths or pads containing ultra fine silicon carbide such as a Scotch-Brite Ultra Fine Hand Pad or Norton Bear-Tex Clean & Finish Pad are also suitable for cleaning the seat. Clean the seat with a circumferential motion around its diameter not with a longitudinal motion across its length. For vacuum breakers with an integral seat, if after polishing the seat, you can still detect deposits, scratches, or other damage with your fingernail, then replace the vacuum breaker. For vacuum breakers with a replaceable seat ring, if after polishing the seat, you can still detect deposits, scratches, or other damage with your fingernail, then replace the seat ring. For vacuum breakers with an integral seat, after cleaning, a light coat of primer may be applied to protect the seat.
- 12) Install disc and stem assembly in valve body.
- 13) **For vacuum breakers with single spring**, install spring over stem and center spring over pilot on valve body. **For vacuum breakers with dual springs**, install inner spring over stem. Install outer spring over stem and inner spring. Center outer spring over pilot on valve body.
- 14) Install spring button on stem. Watch orientation. Center spring(s) over pilot(s) on spring button.
- 15) Install jamnuts on stem. **DO NOT** tighten until opening force is adjusted see following page.
- 16) Install new gasket on adapter body.
- 17) Install valve body on adapter body.
- 18) Install bolts through holes in adapter body and valve body. Install nuts on bolts. Tighten nuts and bolts in increments in an alternating pattern.
- 19) Complete steps 4 thru 10 of Opening Force Adjustment Procedure.

OPENING FORCE TEST PROCEDURE

- 1) Remove line or tank pressure and isolate vacuum breaker.
(It is recommended that the vacuum breaker be removed from the piping or tank for the test procedure)
- 2) Remove capscrews from spring chamber.
- 3) Remove spring chamber from valve body.
- 4) Apply water to cover top of disc.
- 5) Refer to table below. Apply opening force to end of stem using dead weights. The seat must open enough that it will not hold water applied above the disc retainer. The disc must return to contact the seat when the weight is removed.

SIZE	OPENING FORCE
2	2 POUNDS
4	5 POUNDS
6	15 POUNDS
8	15 POUNDS
10	20 POUNDS
12	30 POUNDS

OPENING FORCE ADJUSTMENT PROCEDURE

- 1) Remove line or tank pressure and isolate vacuum breaker.
(It is recommended that the vacuum breaker be removed from the piping or tank for the adjustment procedure)
- 2) Remove capscrews from spring chamber.
- 3) Remove spring chamber from valve body.
- 4) Loosen jamnuts on stem until disc is not in contact with seat.
- 5) Tighten lower jamnut against spring button until disc remains in contact with seat.
- 6) Apply water to cover top of disc.
- 7) Set spring opening force. Refer to table in Opening Force Test Procedure. Apply opening force to end of stem using dead weights. Adjust the position of the lower jamnut on the stem so the seat opens enough that it will not hold water applied above the disc retainer; and the disc returns to contact the seat when the weight is removed.
- 8) Tighten upper jamnut against lower jamnut.
- 9) Install spring chamber on valve body.
- 10) Install capscrews through holes in spring chamber. Tighten capscrews to secure spring chamber to valve body.

OVERHAUL

Rebuilding of the vacuum breaker should not be necessary under normal operating conditions. Should the vacuum breaker become worn or damaged, parts kits are available. See Parts/ Overhaul.

INFORMATION PRESENT ON TYPE 200 VACUUM BREAKER

There is information present on each vacuum breaker ranging in importance from the part number and serial number to the color of the paint and casting numbers. This information is important for identifying the vacuum breaker, installing it correctly, and obtaining parts. **An example of the current factory serial number label used on Type 200 vacuum breakers is shown here.** The accompanying table identifies the information present and where to find it on the vacuum breaker. There may also be other casting numbers and foundry marks present that do not provide useful information. Customer specific tagging may also present. The labels or plates used, and information present, on Warren Controls other product lines or older vacuum breakers may be different, contact the factory for details.

FACTORY SERIAL NUMBER LABEL

Warren Controls, Inc.
2600 Emrick Blvd
 Bethlehem, PA 18020-8010
 PH: (610) 317-0800
 FAX: (610) 317-2989
 www.warrencontrols.com

200 VACUUM BREAKER

SERIAL NO.

P/N

SERVICE: Maximum Pressure:
 Maximum Temperature:

INFORMATION PRESENT ON TYPE 200

PART NUMBER & SERIAL NUMBER			
Information	Symbol(s)	Location	Notes
Part number	P/N	On spring chamber	• On Factory Serial Number Label attached to spring chamber.
Serial Number	SERIAL NO.	On spring chamber and valve body	• On Factory Serial Number Label attached to spring chamber. • Sales order number only stamped on valve body end connection.* * Number stamped using approximately 1/8 inch tall characters
SERVICE			
Information	Symbol(s)	Location	Notes
Maximum pressure rating	Maximum Pressure	On spring chamber	• On Factory Serial Number Label attached to spring chamber.
Maximum temp. rating	Maximum Temperature	On spring chamber	• On Factory Serial Number Label attached to spring chamber.
VALVE ATTRIBUTES			
Information	Symbol(s)	Location	Notes
Body material		On vacuum breaker	• If the factory applied paint is black and the adapter body is cast in one piece the body material is iron. • If the factory applied paint is black and the adapter body is made of three sections welded together the body material is steel. • If there is no factory applied paint present and the adapter body is made of three sections welded together the body material is stainless steel.

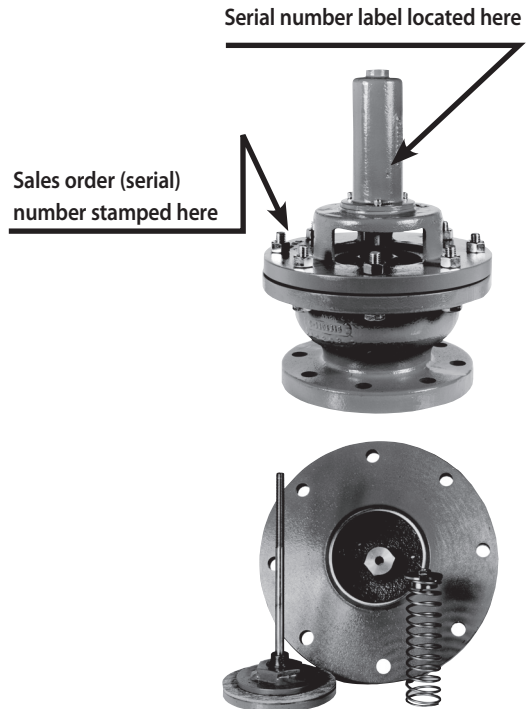
TYPE 200 VACUUM BREAKER SPECIFICATIONS

VACUUM BREAKERS WITH NON-ASBESTOS DISC

200	WITH STANDARD TRIM (INTEGRAL SEAT, NON-ASBESTOS DISC AND STEEL DISCHOLDER)		
Body Material	Size	End Connection	Part Number
IRON	2*	125FLG	020009EXX000
	2*	NPT	020009IXX000
	4	125FLG	020013EXX000
	6	125FLG	020015EXX000
	8	125FLG	020017EXX000
	10	125FLG	020019EXX007
STEEL	12	125FLG	020020EXX000
	2*	150FLG	020009GXX000
	4	150FLG	020013GXX000
	6	150FLG	020015GXX000
	8	150FLG	020017GXX000
	10	150FLG	020019GXX000
STEEL	12	150FLG	020020GXX000
	2*	300FLG	020009HXX000
	4	300FLG	020013HXX000
	6	300FLG	020015HXX000
	8	300FLG	020017HXX000
	10	300FLG	020019HXX000
	12	300FLG	020020HXX000

* 2" Type 200 has stainless steel discholder - standard

200	WITH NON-ASBESTOS DISC AND STAINLESS STEEL TRIM (SS DISCHOLDER AND SS REPLACEABLE SEAT)		
Body Material	Size	End Connection	Part Number
IRON	2	125FLG	020009EXX006
	2	NPT	020009IXX006
	4	125FLG	020013EXX006
	6	125FLG	020015EXX006
	8	125FLG	020017EXX006
	10	125FLG	020019EXX010
STEEL	12	125FLG	020020EXX006
	2	150FLG	020009GXX006
	4	150FLG	020013GXX006
	6	150FLG	020015GXX006
	8	150FLG	020017GXX006
	10	150FLG	020019GXX006
STEEL	12	150FLG	020020GXX007
	2	300FLG	020009HXX006
	4	300FLG	020013HXX006
	6	300FLG	020015HXX006
	8	300FLG	020017HXX006
	10	300FLG	020019HXX006
	12	300FLG	020020HXX006



4" Iron Type 200

Stainless steel stem and non-asbestos disc assembly, Iron body with seat and brass guide, and stainless steel spring assembly shown separately

VACUUM BREAKERS WITH TEFLON DISC

200	WITH INTEGRAL SEAT, TEFLON DISC AND STEEL DISCHOLDER		
Body Material	Size	End Connection	Part Number
IRON	2*	125FLG	020009EXX001
	2*	NPT	020009IXX001
	4	125FLG	020013EXX001
	6	125FLG	020015EXX001
	8	125FLG	020017EXX001
	10	125FLG	020019EXX008
	12	125FLG	020020EXX001
STEEL	2*	150FLG	020009GXX001
	4	150FLG	020013GXX001
	6	150FLG	020015GXX001
	8	150FLG	020017GXX001
	10	150FLG	020019GXX001
	12	150FLG	020020GXX001
STEEL	2*	300FLG	020009HXX001
	4	300FLG	020013HXX001
	6	300FLG	020015HXX001
	8	300FLG	020017HXX001
	10	300FLG	020019HXX001
	12	300FLG	020020HXX001

* 2" Type 200 has stainless steel discholder - standard

200	WITH TEFLON DISC AND STAINLESS STEEL TRIM (SS DISCHOLDER AND SS REPLACEABLE SEAT)		
Body Material	Size	End Connection	Part Number
IRON	2	125FLG	020009EXX004
	2	NPT	020009IXX004
	4	125FLG	020013EXX004
	6	125FLG	020015EXX004
	8	125FLG	020017EXX004
	10	125FLG	020019EXX009
	12	125FLG	020020EXX004
STEEL	2	150FLG	020009GXX004
	4	150FLG	020013GXX004
	6	150FLG	020015GXX004
	8	150FLG	020017GXX004
	10	150FLG	020019GXX004
	12	150FLG	020020GXX004
STEEL	2	300FLG	020009HXX004
	4	300FLG	020013HXX004
	6	300FLG	020015HXX004
	8	300FLG	020017HXX004
	10	300FLG	020019HXX004
	12	300FLG	020020HXX004

TYPE 200 VACUUM BREAKER SPECIFICATIONS

APPLICATION:

Falling liquid levels and condensing steam can cause a vacuum that can damage a tank. The Type 200 Vacuum Breaker opens gradually to admit outside air to relieve the vacuum in the tank. The unit must be installed vertically with its mounting connection downward.

FEATURES:

Iron, steel, or stainless steel body; Iron, steel, or stainless steel seat; Non-asbestos or TFE disc;
Size 2" iron with NPT or 125FLG connections,
2" steel and stainless steel with 150 or 300FLG;
4" through 12" iron with 125FLG,
4" through 12" steel and stainless steel with 150 or 300FLG
Air relief capacities to 14,280 CFM
See What's Available Chart for Features

PRESSURE-TEMPERATURE RATINGS:

Body: Iron
End Connection: 125THD (NPT) and 125FLG
Disc: Non-asbestos
Maximum Pressure: 50 PSIG
Maximum Temperature: 300F

Body: Steel or Stainless Steel
End Connection: 150FLG
Disc: Non-asbestos
Maximum Pressure: 150 PSIG
Maximum Temperature: 500F

Body: Steel or Stainless Steel
End Connection: 300FLG
Disc: Non-asbestos
Maximum Pressure: 300 PSIG
Maximum Temperature: 500F

WHAT'S AVAILABLE 200

Features		Size (IN)					
		2	4	6	8	10	12
Body/Seat	125 THD (NPT) IRON/ IRON	●					
	125 FLG IRON/ IRON	●	●	●	●	●	●
	150 FLG STL/ STL	●	●	●	●	●	●
	300 FLG STL/ STL	●	●	●	●	●	●
	150 FLG ST STL/ ST STL	○	○	○	○	○	○
	300 FLG ST STL/ ST STL	○	○	○	○	○	○
Disc	NON-ASBESTOS	●	●	●	●	●	●
	TFE (TO 200 °F)	○	○	○	○	○	○
Disc-holder	STEEL		●	●	●	●	●
	ST STEEL	●	○	○	○	○	○
	REPLACEABLE SEAT ST STEEL	○	○	○	○	○	○
	BIRDSCREEN	○	○	○	○	○	○
	LIFT RINGS	○	○	○	○	○	○

- STANDARD
- OPTION

AIR RELIEF CAPACITIES:

VACUUM INCHES OF MERCURY	CFM OF FREE AIR ADMITTED AT 60F SIZE (IN) 200					
	2	4	6	8	10	12
0.75	88	352	792	1408	2200	3300
0.80	94	376	846	1504	2350	3525
0.85	106	424	934	1696	2650	3975
1.15	126	504	1128	2016	3150	4725
1.25	148	592	1332	2298	3700	5550
1.65	162	648	1458	2592	4050	6780
2.30	188	752	1692	3008	4700	7050
4.00	226	904	2034	3616	5650	8475
4.45	236	944	2124	3776	5900	8850
6.05	268	1072	2412	4288	6700	10050
6.30	276	1104	2484	4416	6900	10350
8.10	300	1200	2700	4800	7500	11250
8.65	314	1256	2826	5024	7850	11775
11.30	334	1336	3006	5344	8350	12525
12.05	348	1392	3132	5568	8700	13050
16.05	370	1480	3330	5920	9250	13875
16.65	372	1488	3348	5952	9300	13950
18.50	386	1541	3481	6189	9670	14505
19.10	381	1523	3427	6093	9520	14280

The Type 200 cannot be set to open at a particular vacuum.
The vacuum values presented in the table are for reference only.

WEIGHTS:

VALVE SIZE (IN)						
	2	4	6	8	10	12
Weight (lb)	26	68	102	180	230	375

For dimensions see drawing 0200020422.

TYPE 200 VACUUM BREAKER PARTS/ OVERHAUL

Damaged or worn parts can decrease performance and shorten the life of the vacuum breaker.

A damaged or worn **gasket** can cause external leakage and damage to surrounding equipment.

A damaged or worn **spring** can result in a vacuum breaker that does not close when the vacuum in a tank is relieved allowing the tank's contents to escape and damage surrounding equipment, and can also cause damage to the stem.

A damaged or worn **stem** can result in a vacuum breaker that does not open to relieve a vacuum in a tank or close when the vacuum is relieved allowing the contents to escape and damage surrounding equipment, and can also cause damage to the stem guide.

A damaged or worn **stem guide** can result in a vacuum breaker that does not open to relieve a vacuum in a tank or close when the vacuum is relieved allowing the contents to escape and damage surrounding equipment, and can also cause damage to the stem.

A damaged or worn **connecting pin, disc, disc retainer, or disc holder** can cause external leakage resulting in the loss of the contents from the tank and damage to surrounding equipment, and can also cause damage to surrounding parts inside the vacuum breaker.

A damaged or worn **integral seat or seat ring** can cause external leakage resulting in the loss of the contents from the tank and damage to surrounding equipment, and can also cause damage to the disc and disc holder.

Two different parts kits are available. An Inspection kit is available to allow a vacuum breaker to be opened to inspect its internal parts. A rebuild kit is available to allow a vacuum breaker to be overhauled. **Please provide serial number to get the correct kit part numbers.**

TYPE 200 VACUUM BREAKER PARTS KITS

The inspection kit allows a vacuum breaker to be opened so the condition of its internal parts may be inspected. The rebuild kits allow a vacuum breaker to be overhauled.

(Provide vacuum breaker serial number to get kit part numbers)

**INSPECTION KIT FOR TYPE 200 VACUUM BREAKER
SIZE 2 THRU 12 INCH
SEE DWG 0200020422**

ITEM	QTY	DESCRIPTION
12	1	GASKET

**INSPECTION KIT INSTRUCTION DOCUMENT
NUMBER: TBD. CONSULT FACTORY**

**REBUILD KIT
FOR TYPE 200 VACUUM BREAKER WITH INTEGRAL SEAT AND SINGLE SPRING
SIZE 2 THRU 12 INCH
SEE DWG 0200020422**

ITEM	QTY	DESCRIPTION	ITEM	QTY	DESCRIPTION
1	2	JAMNUT	9	1	CONNECTING PIN
2	1	SPRING BUTTON	10	1	DISC RETAINER
3	1	SPRING	12	1	GASKET
5	1	STEM	14	1	DISC HOLDER
7	1	STEM GUIDE	15	1	DISC

REBUILD KIT INSTRUCTION DOCUMENT NUMBER: 92500036

**REBUILD KIT
FOR TYPE 200 VACUUM BREAKER WITH INTEGRAL SEAT AND DUAL SPRING
SIZE 10 & 12 INCH EFFECTIVE DATE: 9/26/2008
SEE DWG 0200020422**

ITEM	QTY	DESCRIPTION	ITEM	QTY	DESCRIPTION
1	2	JAMNUT	10	1	DISC RETAINER
2	1	SPRING BUTTON	12	1	GASKET
3	1	OUTER SPRING	14	1	DISC HOLDER
5	1	STEM	15	1	DISC
7	1	STEM GUIDE	18	1	INNER SPRING
9	1	CONNECTING PIN			

REBUILD KIT INSTRUCTION DOCUMENT NUMBER: 92500036

TYPE 200 VACUUM BREAKER PARTS KITS

**REBUILD KIT
FOR TYPE 200 VACUUM BREAKER WITH REPLACEABLE SEAT AND SINGLE SPRING
SIZE 2 THRU 12 INCH
SEE DWG 0200020422**

ITEM	QTY	DESCRIPTION	ITEM	QTY	DESCRIPTION
1	2	JAMNUT	10	1	DISC RETAINER
2	1	SPRING BUTTON	12	1	GASKET
3	1	SPRING	14	1	DISC HOLDER
5	1	STEM	15	1	DISC
7	1	STEM GUIDE	17	1	SEAT RING
9	1	CONNECTING PIN			

REBUILD KIT INSTRUCTION DOCUMENT NUMBER: 92500036

**REBUILD KIT
FOR TYPE 200 VACUUM BREAKER WITH REPLACEABLE SEAT AND DUAL SPRING
SIZE 10 & 12 INCH EFFECTIVE DATE: 9/26/2008
SEE DWG 0200020422**

ITEM	QTY	DESCRIPTION	ITEM	QTY	DESCRIPTION
1	2	JAMNUT	10	1	DISC RETAINER
2	1	SPRING BUTTON	12	1	GASKET
3	1	OUTER SPRING	14	1	DISC HOLDER
5	1	STEM	15	1	DISC
7	1	STEM GUIDE	17	1	SEAT RING
9	1	CONNECTING PIN	18	1	INNER SPRING

REBUILD KIT INSTRUCTION DOCUMENT NUMBER: 92500036

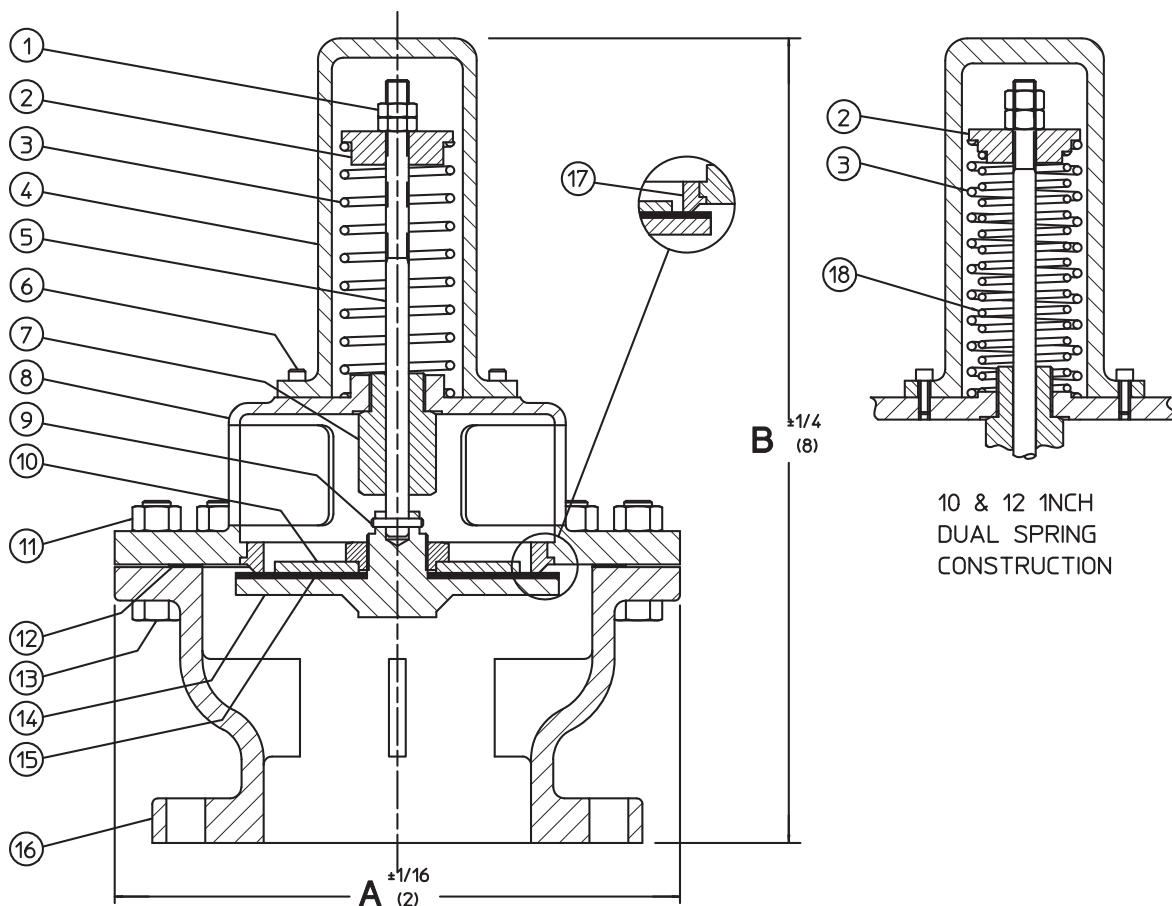
DRAWING 0200020422

SIZE		A	B
2 (50)	125THD&FLG	7-1/2 (191)	11 15/16 (304)
	150FLG		13 1/8 (334)
	300FLG		
4 (100)	125FLG	10-3/4 (273)	14 1/2 (369)
	150FLG	10-1/2 (267)	14 7/8 (378)
	300FLG	11-1/4 (286)	15 1/4 (388)
6 (150)	125FLG	12-11/16 (323)	18 1/8 (461)
	150FLG	15-1/2 (394)	19 3/16 (488)
	300FLG	15-1/8 (385)	19 11/16 (500)
8 (200)	125FLG	16 (407)	19 9/16 (497)
	150FLG	17-1/2 (445)	20 5/16 (516)
	300FLG	TBA	TBA
10 (250)	125FLG	18-3/4 (477)	21 1/8 (537)
	150FLG	21-1/8 (537)	27 3/4 (705)
	300FLG	21-1/8 (537)	29 1/8 (740)
12 (300)	125FLG	22-5/8 (575)	23 3/8 (594)
	150FLG	23 (585)	28 1/2 (724)
	300FLG	23-1/8 (587)	30-7/16 (763)

BILL OF MATERIAL		
ITEM	DESCRIPTION	MATL SPEC
1	JAMNUT	ST STL
2	SPRING BUTTON	STL PLTD/ST STL
3	SPRING	ST STL
4	SPRING CHAMBER	IRON/ST STL
5	STEM	ST STL
6	CAPSCREW	STL PLTD/ST STL
7	STEM GUIDE	BRASS/ST STL
8	VALVE BODY	IRON/STEEL/ST STL/BRZ
9	CONNECTING PIN	ST STL
10	DISC RETAINER	STEEL/ST STL
11	NUT	STL PLTD/ST STL
12	GASKET	NONASBESTOS
13	BOLT	STL PLTD/ST STL
14	DISC HOLDER	STEEL/ST STL
15	DISC	NONASBESTOS/TEFLON/EPDM
16	ADAPTER BODY	IRON/STEEL/ST STL/BRZ
17	SEAT RING	ST STL -OPTIONAL
18	INNER SPRING	ST STL

NOTES:

- 1) SCREWED BODY (2" SIZE ONLY) HAS SAME "B" DIMENSION AS 125# UNIT.
- 2) DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.



NOTES



200_IOM_RevD_0222

WARREN CONTROLS

2600 EMRICK BLVD • BETHLEHEM, PA 18020 • USA • 800-922-0085 • WWW.WARRENCONTROLS.COM
DEPENDABLE, RUGGED, PRECISION CONTROL VALVES AND ACCESSORIES