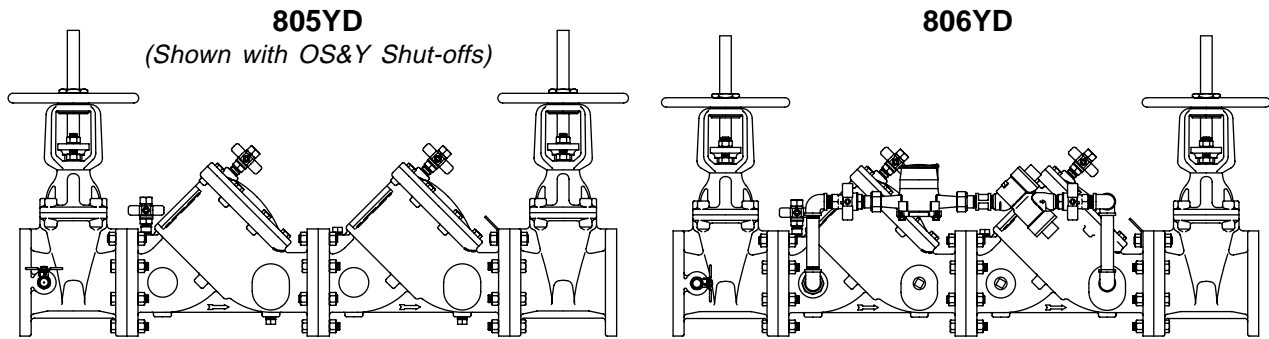


FEBCO Operation and Maintenance

805YD / 806YD

Double Check and Double Check Detector Assembly (2½" – 10")



FEATURES AND OPERATING PROCEDURES

This device consists of two independently operating poppet type check valves. Each check valve is spring loaded to maintain a minimum of 1 PSIG differential pressure across the check in a no-flow condition. In a normal flow condition the checks open an amount corresponding to the flow rate. During a backflow (backpressure) situation the seat discs close and seal to prevent any flow reversal. Sizes 2½" through 10" (805YD) include two spring loaded Y-pattern check valves with epoxy coated ductile iron bodies and bronze trim, two cast iron shut-off valves and four testcocks for field testing. All valves are flanged type and the unit is shipped completely assembled.

The Model 806YD device consists of a mainline double check valve with a metered ¾" by-pass double check valve connected around the mainline checks. The mainline pressure drop is slightly higher than the by-pass, thus all small flow up to the crossover point (approx. 9 GPM) is through the by-pass. Above the crossover point flow is through the mainline and the by-pass.

The FEBCO 806YD Device main line unit consists of two independent, spring loaded, Y-pattern check valves, two shutoff valves and four testcocks. The spring loaded poppets in conjunction with soft elastomer discs provide drip tight closure against backflow. The Y-pattern valve design provides low pressure loss at the high flow rates. The shutoff valves are OS&Y type, UL listed for fireline service. The by-pass line assembly consists of a water meter in series with a Model 805YB ¾" double check valve. The meter is the total type with accurate registration between 1 and 20 gpm flow rates. The static pressure drop across both checks is approximately 2 PSI less than the mainline check valves.

Consult local codes before installing any Backflow Prevention assembly.

GENERAL SERVICE PROCEDURES (General service instructions applicable to all sizes.)

1. Rinse all parts with clean water prior to assembly.
2. DO NOT USE ANY PIPE DOPE, OIL, GREASE OR SOLVENT ON ANY PARTS unless instructed to do so.
4. Do not force parts. Parts should fit freely together. Excess force may cause damage and render the device inoperable.
5. Carefully inspect seals, seating surfaces, etc. for damage or debris.
5. Test unit after servicing to insure proper operations.
6. Refer to applicable parts list and figures for more information.
7. A table on the back page provides size and material information for standard parts (non-special design). These parts can usually be purchased locally from parts distributors, rather than special order from the factory.
8. Some water conditions can cause a buildup of calcium or similar material deposits on some moving parts. Normally this condition would not occur on devices used in systems with varying flow rates. The scraping action of moving parts helps to remove any deposits. However, with devices used on static systems such as firelines, any deposits would not be scraped away and could interfere with the check valve operation. Devices in these applications should be disassembled and inspected on a periodic basis depending on water quality. Any deposits should be removed from the center guiding stem and bushings. Use care to avoid damage to guiding surfaces.

TESTING

All mechanical devices should be inspected on a regular basis to ensure they are working correctly. The assembly should be tested at time of initial installation, after servicing or maintenance, and at least annually thereafter. Acceptable test procedures are published by Foundation for Cross Connection Control and Hydraulic Research at the University of Southern California (USC), The American Water Works Association (AWWA), The American Society of Sanitary Engineering (ASSE Series 5000) and the Canadian Standards Association (CAN/CSA B64•10). Please consult the regulatory authority in your area for more specific information.

TROUBLE SHOOTING GUIDE

Symptom #1	Cause:	Solution:
Check fails to hold 1.0 PSID min.	A. Debris on sealing surfaces	Disassemble and clean
	B. Leaking shut-off valve	Disassemble and clean or repair
	C. Damaged seat disc or seat ring	Disassemble and replace
	D. Damaged guide holding check open	Disassemble and replace guide pin and/or sleeve bushing
	E. Weak or broken spring	Disassemble and replace spring

Symptom #2	Cause:	Solution:
Chatter during flow conditions.	A. Worn or damaged guide	Disassemble & repair or replace guide

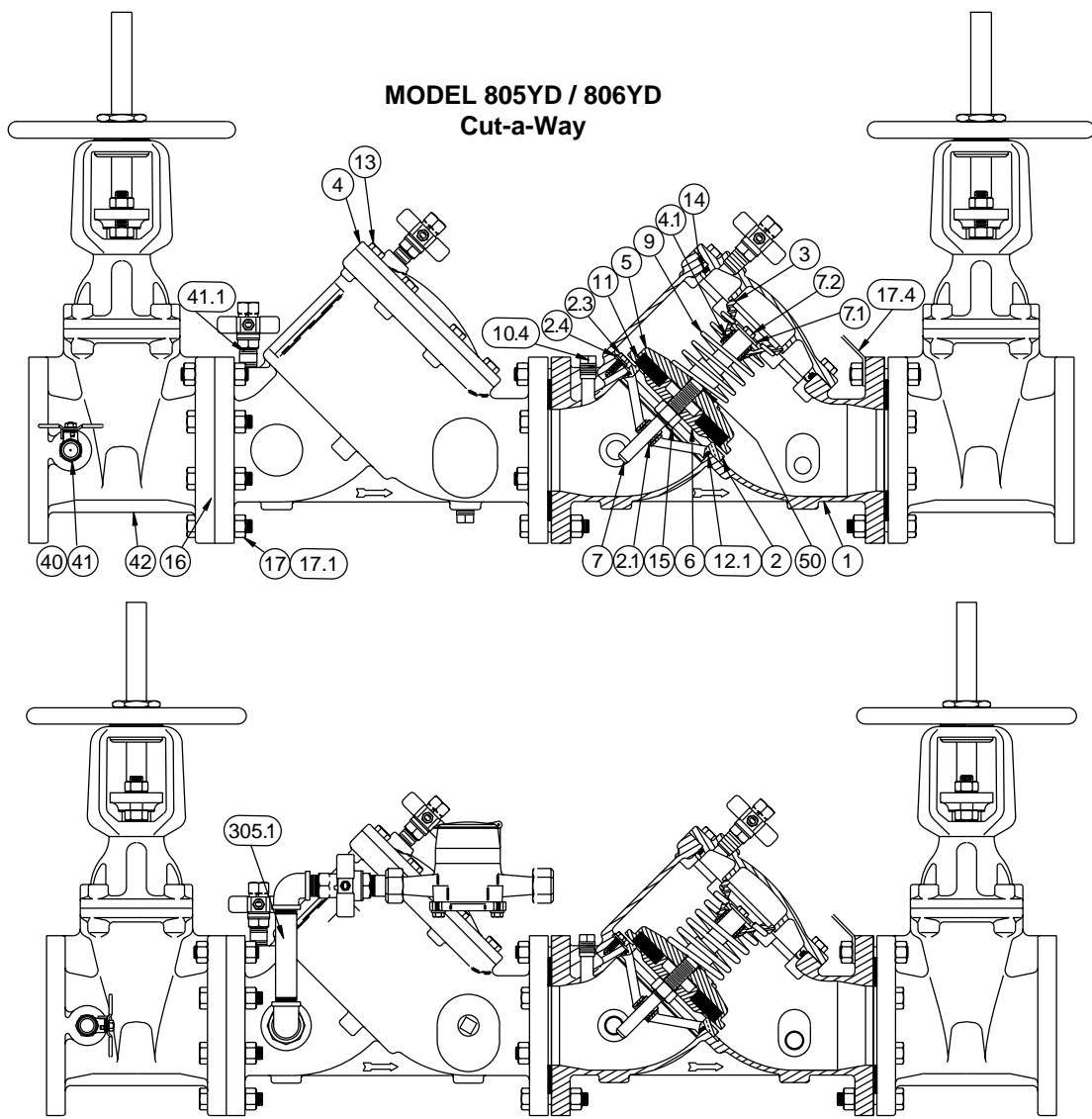
Symptom #3	Cause:	Solution:
Low flows passing through the mainline valve (806YD only).	A. Mainline check fouled	Disassemble and clean
	B. Meter strainer plugged	Disassemble and clean
	C. Damaged mainline seat disc or seat	Disassemble and replace
	D. Broken mainline spring	Disassemble and replace

HOW TO ORDER REPAIR KITS

1. Locate item number and kit number in this maintenance manual.
2. Verify the size of the valve the parts are to be used for.
3. Provide full model number located on I.D. plate.
4. Record kit number.
5. A serial number (located on the I.D. plate) will assist in ordering the proper kits.
6. Contact your local FEBCO Parts Distributor.

REPAIR KITS

Description	805YD/806YD Assemblies/Kits					
	2½"	3"	4"	6"	8"	10"
Model 805YD Spring Assembly (Items: 3, 4.1, 5, 6, 7, 7.1, 7.2, 9, 11, 15, 50)	905-086	905-088	905-467	902-469	902-471	902-473
Model 805YD/806YD Rubber Parts (Items: 11, 14, 50)	905-059	905-060	905-061	905062	905-063	905-064
Model 805YD/806YD Seat Kit (Items: 2, 2.1, 2.2, 12)	902-386YD	902-385YD	902-384YD	902-383YD	902-382YD	902-381YD
Model 805YD/806YD Lg. Mounting Kit (Items: 16, 17, 17.1; Both Ends)	905-036	905-037	905-038	905-039	905-040	905-041
Model 805YD/806YD Cover Assembly (Items: 4, 4.1, 14, Aircock (not shown))	902-497	902-498	902-499	902-500	902-501	902-502
Model 806YD Spring Assembly (Items: 3, 4.1, 5, 6, 7, 7.1, 7.2, 9, 11, 15, 50)	-	-	902-514	902-515	902-516	902-517
Model 806YD By-Pass Kit (without meter) (Items: 301 through 313)	-	905-138	905-138	905-138	905-138	905-138



MODEL 805YD/806YD PARTS

Fig No.	Description (QTY)	Fig No.	Description (QTY)	Fig No.	Description (QTY)
1	Body (1)	12.1	O-Ring (2)	300**	Meter
2	Seat Ring (1)	13	Capscrew (16)	301**	Nipple
2.1	Bushing (1)	14	O-Ring (2)	302**	Ball Valve
2.3	Washer (6)	15	Hex Nut (2)	303**	Ball Valve
2.4	Capscrew (6)	16	Gasket (1)	301.1**	Testcock
3	Guide (2)	17	Capscrew (4)	304**	Elbow
4	Cover (4)	17.1	Hex Nut (12)	305**	Nipple
4.1	Bushing (2)	17.4	Lift Strap (2)	306**	Nipple
5	Disc Holder (2)	40	Ball Valve (3)	307.1**	Tailpiece
6	Disc Washer (2)	41	Nipple (1)	308**	Coupling Nut
7	Stem (2)	41.1	Nipple (2)	309**	Meter Washer
7.1	Screw (2)	50	O-Ring (2)	311**	Nipple
7.2	Washer (2)	42	NRS Gate Valve	312**	805Y (Less Shutoff's)
9	Spring (2)	42	OS&Y Gate Valve	313**	Coupling
11	Seat Disc (2)				

** Used in the Model 806YD only.

MODEL 805YD/806YD COMMERCIAL PARTS

Item	Description	Material	2 1/2"	3"	4"	6"	8"	10"
7.1	Screw	Brass	-	-	3/8-16 x 1 1/2	3/8-16 x 2	3/8-16 x 2	3/8-16 x 2
12	O-Ring	Buna-N	568-238 3 1/2 x 3 3/4 x 1/8	568-246 4 1/2 x 4 3/4 x 1/8	568-254 5 1/2 x 5 3/4 x 1/8	568-264 7 1/2 x 7 3/4 x 1/8	568-273 9 1/2 x 10 x 1/8	10 5/16 x 10 9/16 x 1/8
13	Cap Screw	SS	7/16-14 x 1	7/16-14 x 1	1/2-13 x 1 1/4	5/8-11 x 1 1/2	3/4-10 x 1 1/2	3/4-10 x 1 3/4
14	O-Ring	Buna-N	568-244 4 1/4 x 4 1/2 x 1/8	568-252 5 1/4 x 5 1/2 x 1/8	568-263 7 1/4 x 7 1/2 x 1/8	568-272 9 1/2 x 9 3/4 x 1/8	568-451 11 x 11 1/2 x 1/4	12 3/4 x 13 x 1/8
15	Lock-Nut	Brass	3/8-24 Elastic	3/8-24 Elastic	3/4-16 Elastic	3/4-16 Elastic	7/8-14 Elastic	7/8-14 Elastic
17	Bolt & Nut	Steel	5/8-11 x 2 1/4	5/8-11 x 2 1/2	5/8-11 x 2 3/4	3/4-10 x 3	3/4-10 x 3 1/4	7/8-9 x 3 1/2
40	Ball Valve	Brass	1/2 IPS 200#	1/2 IPS 200#	1/2 IPS 200#	3/4 IPS 200#	3/4 IPS 200#	3/4 IPS 200#
51	O-Ring	Buna-N	568-014 1 1/2 x 5/8 x 1/16	568-014 1 1/2 x 5/8 x 1/16	568-116 3/4 x 15/16 x 1/16	568-116 3/4 x 15/16 x 1/16	568-118 7/8 x 1 1/16 x 3/32	568-118 7/8 x 1 1/16 x 3/32
41**	Nipple	Bronze	-	-	1/2 x Close	3/4 x Close	3/4 x Close	3/4 x Close
62**	90° Elbow	Bronze	-	-	1/2	1/2	1/2	3/4
63**	Tee	Bronze	-	-	1/2 x 1/2 x 1/2	3/4 x 3/4 x 3/4	3/4 x 3/4 x 3/4	-
64**	Nipple	Bronze	-	-	1/2 x 5	3/4 x 6	3/4 x 6	3/4 x 6
65**	Bushing	Bronze	-	-	1/2 x 3/4	-	-	-
66**	Nipple	Bronze	-	-	-	3/4 x 2 1/2	3/4 x 2 1/2	3/4 x 2 1/2

** Used in the Model 806YD only.

These parts are commercially available through most hardware distributors or retailers. Shut-off valves, testcocks, flange gaskets, etc., are also commercially available but not listed. The water meter is a 5/8 x 3/4 size. Several brands are USC approved for use on the Model 806YD. Contact the factory for additional information.

WARRANTY

All products manufactured and sold by CMB Industries, Inc. carry with them the following warranty: CMB Industries, Inc. warrants to the original purchaser (who is the end user) all products manufactured by it will be free from defects in workmanship and material for a period of one (1) year from the date of original shipment.

CMB Industries, Inc. also warrants that all internal components of 1/2" through 2" Model 850/860 and 1/2" through 1" Model 766 products, will be free from defects in workmanship and material for a period of five (5) years from the date of original shipment and also that the body only of the 1/2" through 1 1/4" Model 765 will be subject to a lifetime warranty against damage by freezing.

This warranty is applicable provided such products are used under normal conditions within the recognized pressure, flow and temperature limits and are given normal service and care. CMB INDUSTRIES, INC. MAKES NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, IN FACT OR IN LAW, AND EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, INCLUDING WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE. In the event of a defect in material or workmanship of a product covered by this warranty, CMB Industries, Inc. shall, at its sole option, repair or replace such defective product. CMB Industries, Inc. shall not be liable for any labor required to repair or replace any product covered by this warranty. This warranty is void with respect to any such product which is altered or tampered with by anyone without prior consent of CMB Industries, Inc. CMB Industries, Inc. shall not be liable under any circumstances for damages caused by accident, misuse or abuse of the product or for failure to follow the installation, maintenance or operating instructions. IN NO EVENT SHALL CMB INDUSTRIES BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, INDIRECT, PERSONAL INJURY, PROPERTY OR PUNITIVE DAMAGES.

To make a claim under this warranty, the buyer must notify the factory in writing within ten (10) days of discovery of any claimed defects or workmanship, and if authorized by the factory, shall return the product in the same condition as when received by the buyer, transportation prepaid, to the factory or to such other location as directed by the factory. If said returned product is found by the factory to be defective in workmanship or materials, it shall be repaired or replaced without charge, pursuant to the terms of this warranty. This warranty excludes component parts or appurtenances not manufactured by CMB Industries, Inc. Any claims with respect to such equipment must be made to the manufacturer thereof in accordance with the terms of the warranty, if any, given by such manufacturer, or pursuant to such warranties as may exist by law. The physical or chemical properties of CMB Industries, Inc. products represent typical, average values obtained in accordance with test methods and are subject to normal manufacturing variations. This information is supplied as a technical service and is subject to change without notice.

SERVICE PROCEDURES FOR MODELS 805YD (2½"– 3)

1. Disassembly-Check Valves

- a. Close inlet and outlet shut-off valves. Bleed residual pressure by opening #2, #3 and #4 testcocks.
- b. Remove cover bolts uniformly while holding cover in place. Remove cover. CAUTION: Spring is retained in body by cover.
- c. Lift spring and check assembly from body.
- d. Unscrew bushing (Item 4.1) from cover.

2. Check Assembly Repair

- a. Unscrew nut on stem and remove disc washer and seat disc.

3. Valve Seat Removal

- a. Remove seat ring by unscrewing in counterclockwise direction.
- b. Remove bushing and bushing nut.
- c. Remove O-Ring.

4. Assembly - Check Valve

- a. Use reverse procedure for assembly.
- b. NOTE: On older valves the disc holder is sealed to the stem with permatex. If seal is broken, the stem and holder must be cleaned and new sealant applied. Newer valves use an O-Ring and permatex is not required.
- c. Do not apply any grease or oil on the rubber seat disc.
- d. Do not damage epoxy coating.
- e. Test unit to insure proper operation.

SERVICE PROCEDURES FOR MODELS 805YD (4" -10")

1. Disassembly-Check Valves

- a. Close inlet and outlet shut-off valves. Bleed residual pressure by opening #2, #3 and #4 testcocks.
- b. Remove cover bolts and cover. Unscrew bolts uniformly to avoid binding of the cover. The spring will push the cover approximately ½" off the top of the valve body.

2. Check Assembly Repair

- a. Leave check assembly in body.
- b. Install long studs in body 180° apart. See Spring Removal Tool on page 5.
- c. Place spring removal tool over stud and retain with nuts. See Spring Removal Tool on page 5.

CAUTION: To avoid possible injury, do not attempt to remove spring tension without the use of this tool.
NOTE: Newer devices have the disc holder threaded on the stem. Therefore, the seat disc can be removed without releasing spring tension. Threaded disc holders have four (4) cast lugs, (6 lugs on 10 devices), ½" high located on back side, outside the spring diameter. If the device being serviced does not have these lugs, spring tension must be released before further disassembly.

- d. Unscrew capscrew (7.1) using 9/16" hex socket.
- e. Release spring tension by unscrewing nuts on long studs. Use alternating turns to keep tool parallel to valve body.
- f. Remove spring guide and stem assembly.
- g. Remove seat disc by unscrewing nut on stem.
- h. Remove guide bushing by unscrewing.

3. Valve Seat Removal

- a. Disassemble check valve.
- b. Remove seat disc ring by unscrewing in counterclockwise direction. See Seat Removal Tool on page 5 for the design of a tool that will simplify this process.
- c. Remove bushing and bushing nut.
- c. Remove O-ring.

4. Assembly - Check Valve

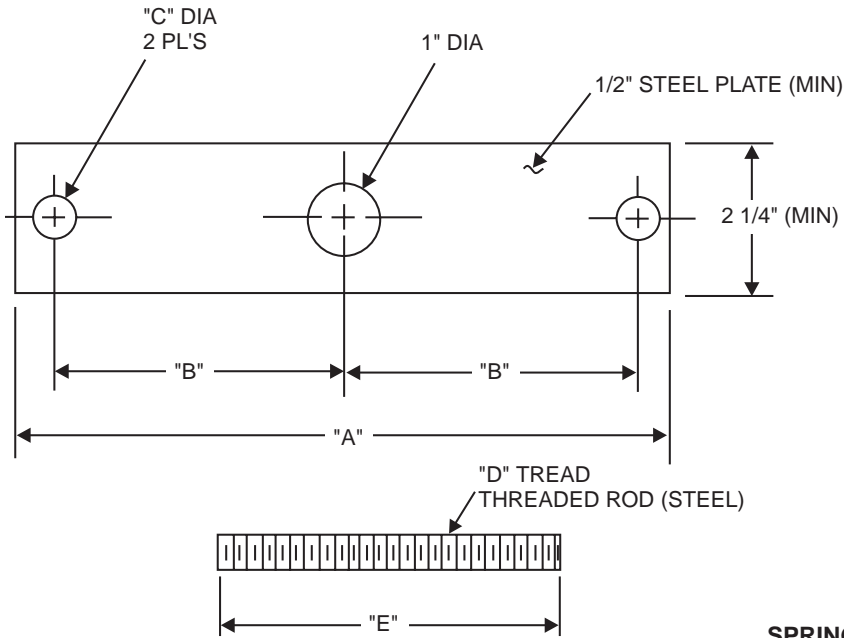
- a. Use reverse procedure for assembly.
- b. Do not damage epoxy coating.
- c. Test unit to insure proper operation.

SERVICE PROCEDURES FOR MODELS 806YD

This device is serviced using the same procedures as the Model 805Y with the following exceptions:

- a. Mainline springs are retained on the disc holder with a clamp.
- b. For bypass Model 805YB service and repair consult maintenance manual 980116/mm805sm for more information.
- b. The meter is removed by loosening the two union nuts. For specific meter service information contact the manufacturer or their representative directly.
- c. Remove and clean in-line strainer mounted in the meter inlet port.
- d. Test unit after reassemble to insure proper operation.

SPRING REMOVAL TOOL



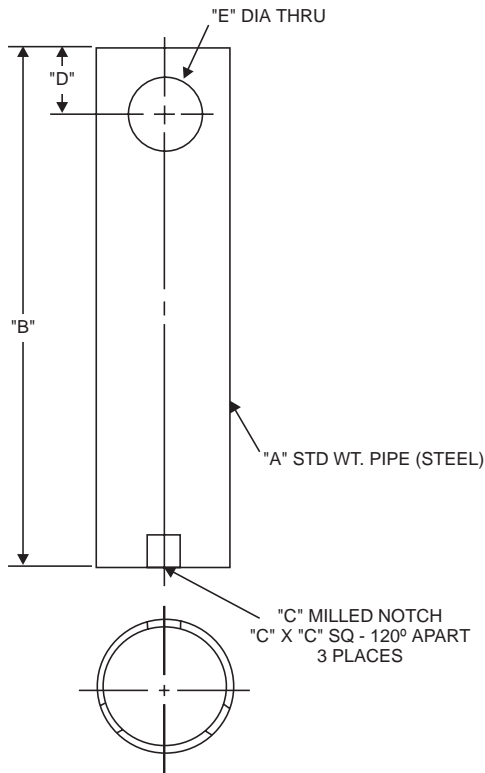
NOTE: This information is provided to expedite servicing of FEBCO products. One tool may be fabricated for use on all required sizes by drilling all holes at appropriate dimensions in a single steel plate of maximum required length.

CAUTION: To avoid possible injury during use, do not fabricate tool from lesser strength material or to smaller dimensions than minimums shown.

SPRING REMOVAL TOOL DIMENSIONS

Size	A	B	C	D	E
4"	9 ¹ / ₂	4 ¹ / ₄	⁵ / ₈	¹ / ₂ -13	5 ¹ / ₂
6"	12 ¹ / ₂	5 ⁵ / ₈	³ / ₄	⁵ / ₈ -11	5 ¹ / ₂
8"	14 ¹ / ₄	6 ³ / ₈	⁷ / ₈	³ / ₄ -10	7
10"	16 ¹ / ₂	7 ¹ / ₂	⁷ / ₈	³ / ₄ -10	7

SEAT RING TOOL



SEAT RING TOOL DIMENSIONS

Size	A	B	C	D	E
2 ¹ / ₂ "	2 ¹ / ₂	8	¹ / ₂	1	1
3"	3	8	¹ / ₅	1	1
4"	4	9	¹ / ₂	1	1
6"	6	10	⁵ / ₈	1	1
8"	8	12	⁵ / ₈	1	1
10"	10	15	⁵ / ₈	1	1