

SS40

Surge Suppressor

Operation / Maintenance Manual

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1 INSTALLATION

1.1 UNPACKING

After unpacking, the surge suppressor should be checked for any damage that may have occurred during shipment. Damage should be reported to the carrier immediately.

The following items should be included within the shipping container:

<u>Qty</u>	<u>Item</u>	<u>Description</u>
1	SS40	SS40 Surge Suppressor
1	Fitting	3/8" Male Branch Tee
2'	Tubing	3/8" PE Tubing
1	**	Seal, Port

**Dependent upon type of pump option selected.

1.2 LOCATING / MOUNTING SURGE

- Remove port plug from pump.
- Install new port seal.
- Hand tighten surge suppressor into port. **Do not** over tighten. Refer to the pump manual, port plug torque for the specific torque.

ATTENTION: Over-tightening adapter into pump will result in pump damage.

- Run a line from the EXH port to a drain. In the event of a diaphragm failure fluid may flow through the tube to the drain.
- Connect air supply using 3/8" or larger line. Air supply to Surge Suppressor must be equal to or greater than pump supply pressure.

NOTE: When connecting the SS40 to an externally controlled pump, do not connect the SS40 air supply via a tee from the pump. Connect to a separate continuous supply.

1.2.a Port Mounted

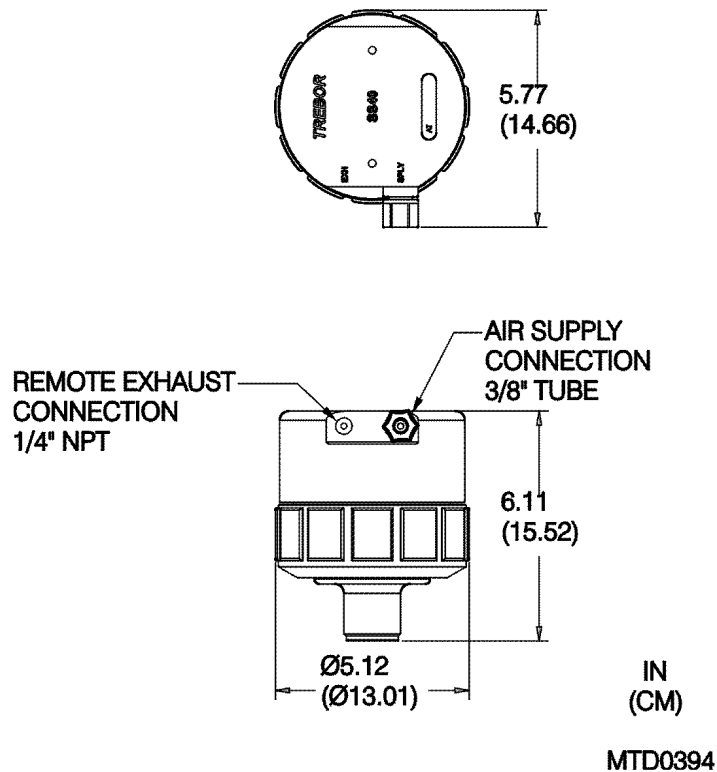


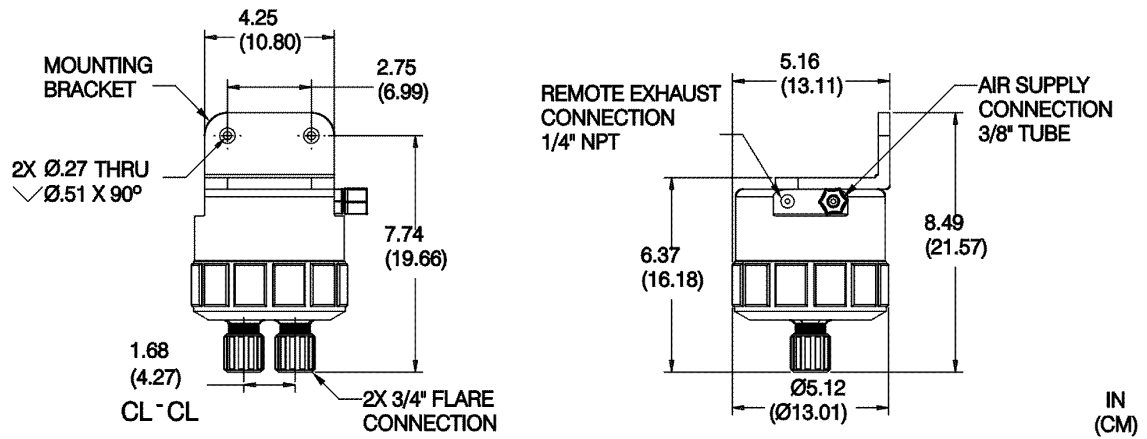
Figure 1-1

<u>Pump</u>	<u>Assembled Height: IN (CM)</u>
MODEL 110	11.03 (28.02)
MAGNUM 610	12.37 (31.43)
MAGNUM 620	12.63 (32.08)
TECHNOLOGY SERIES 25	11.4 (28.9)

NOTE: Install the branch tee in the pump air supply port to replace the pump air connector fitting and then use the supplied tubing to connect between the pump and the "SUP" port suppressor fitting.

NOTE: When connecting the SS40 to an externally controlled pump, do not connect the SS40 air supply via a tee from the pump. Connect to a separate continuous supply.

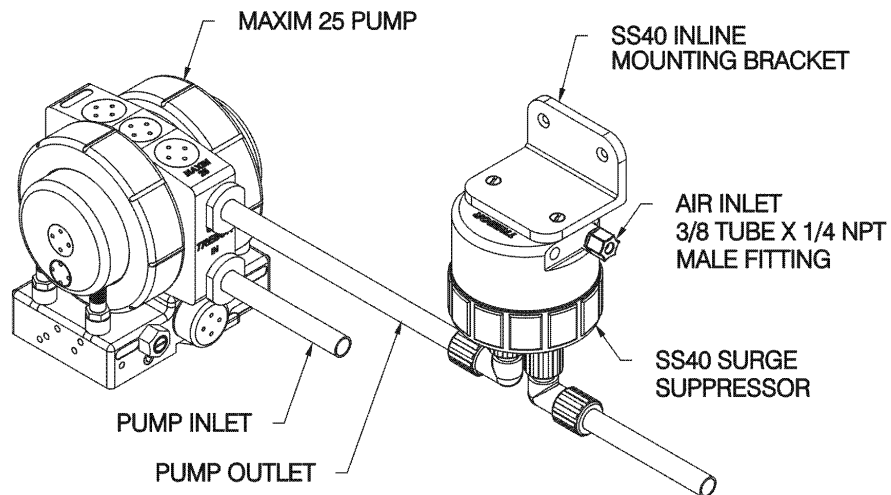
1.2.b Inline



MTD0395

Figure 1-2

The SS40 Inline must be mounted in an upright position. See Figure 1-3: Maxim 25.



MTD0235

Figure 1-3: Maxim 25

2 MAINTENANCE

2.1 PREVENTIVE MAINTENANCE SCHEDULE

SS40 Surge Suppressor

Replacement			Inspection			Component / Comments
1 Year	2 Year	4 Year	6 Month	1 Year	2 Year	
		X				Pilot Valve
		X			X	Diaphragm
				X		Union Nut Retorque

2.2 RECOMMENDED SPARE PARTS

KRSS40-00-A Spares Rebuild Kit, which includes:

<u>Part No</u>	<u>Qty</u>	<u>Description</u>
AT002	1	.020 Thick PTFE Diaphragms
AT013	1	Pilot Valve Assembly

2.3 TOOLS

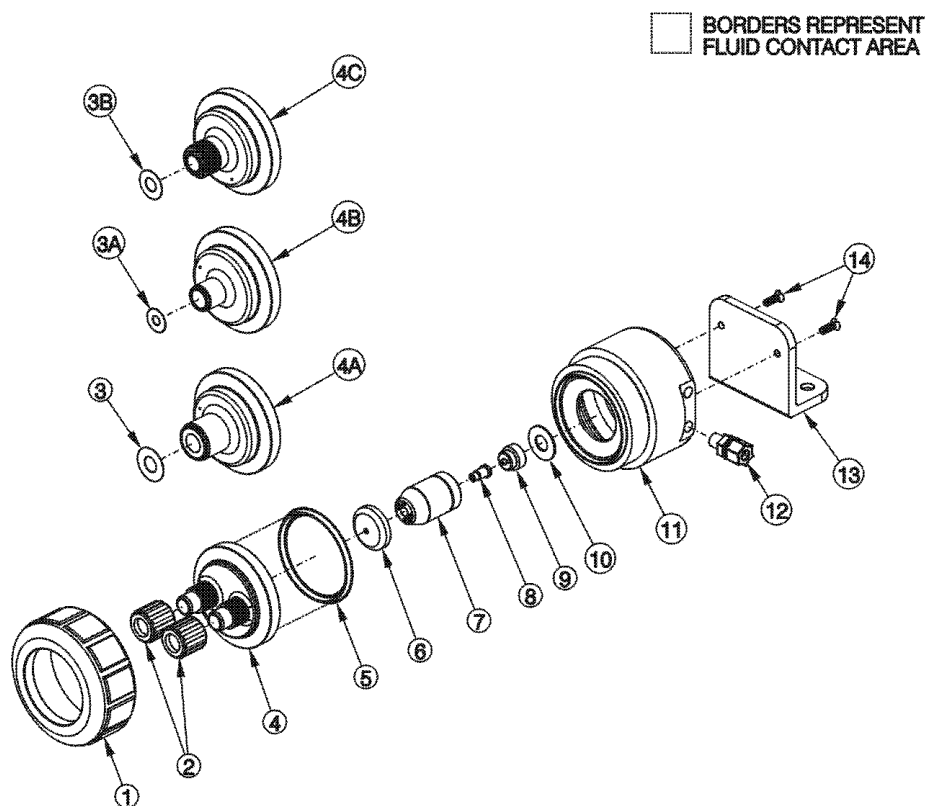
The following tool kit is recommended as standard service equipment.

KTSS40-00-A Tool Kit, which includes:

<u>Part No</u>	<u>Qty</u>	<u>Description</u>
98003108	1	Torque Wrench, 30-150 Ft. Lb.
98003305	1	1/4" Drive Handle
T0129	1	Strap Wrench
T0146	1	3/4" Pin Tool

<u>Additional Equip.</u>	1	Bench Vise (5" minimum opening)
	1	Set Vise Jaw Liners

2.4 PARTS ILLUSTRATION



MTD0341

2.5 PARTS LIST

ILL NO	PART NO	QTY	DESCRIPTION	MATERIAL
1	AT021	1	Union Nut	PP
2	98002915 or 98003335	2	3/4" Flare Nut (Inline Only) (PVDF) or NUT;PFA;FLRLK;3/4T (PFA)	PP
3	AM084	1	Seal, 1.380x.63x.02	PTFE
3a	J0100	1	Seal, .97x.38x.02	PTFE
3b	AW017	1	Seal, 1.180x.55x.02	PTFE
4	AT004	1	Fluid Chamber, Inline	PTFE
4a	AT017	1	Fluid Chamber, 610/Maxim	PTFE
4b	AT012	1	Fluid Chamber, 110	PTFE
4c	AT015	1	Fluid Chamber, 620	PTFE
5	AT002	1	Diaphragm	PTFE
6	AT006	1	Push Plate	PTFE
7	AT005	1	Pilot Boss	PP
8	AT007	1	Shaft	PFA
9	AT013	1	Pilot Valve Assembly	PTFE / PFA
10	C0082	1	Seal	PTFE
11	AT003	1	Air Chamber	PP
12	98003396	1	3/8" Male Connector	PP
13	AT019	1	Mounting Bracket	PP
14	98003207	2	Screw	PP

2.6 CLEAN-UP

To help remove potentially dangerous chemicals prior to service or shipment, the surge Suppressor should be flushed with DI water or disassembled and thoroughly cleaned. Allow DI water to flush in and out to prevent pressure build up. Surge Suppressor can also be submerged in a rinse tank for clean-up.

NOTE: When handling Surge Suppressor, wear appropriate personal protection gear, including safety glasses.

2.7 DISASSEMBLY

During the life of the Surge Suppressor it may be necessary to perform certain preventative maintenance procedures to ensure its continued high performance. This Section and Section 2.8 Assembly are provided for the user's convenience in disassembling and re-assembling the Surge Suppressor.

- Disconnect suppressor air supply line and exhaust line from the surge suppressor.
- Remove Surge Suppressor, from Pump or fluid line.
- Thoroughly clean/flush the Surge Suppressor using DI water (See Section 2.6 Clean-Up).
- Remove any air fittings from supply and exhaust ports of the suppressor body.
- Secure the Surge Suppressor in a bench mounted vise with jaw liners across the flats on the air chamber to hold the body with fluid connection pointing up.
- Remove union nut using the strap wrench (T0129), turning it counter clockwise to loosen.
- Remove union nut carefully. Watch threads for possible entrapment of spilled chemical.
- Remove the fluid chamber, noting clocked position of 1/16" diameter locating mark on head for reassembly.
- Remove the diaphragm for inspection.
- Remove the air chamber from the vise.
- To test the pilot valve:

With the air chamber opening facing down, connect a 20 psi air supply to the SPLY port.

Turn the air chamber over and listen for air leakage. There should be no leakage.

Press the push plate and listen for air discharge. Air should flow past the valve when the push plate is pressed.

Replace the pilot valve if either of the above tests fail.

- Insert small flat blade screwdriver in center hole of push plate to prevent the shaft from turning. Remove push plate by rotating it counter clockwise.

- Remove pilot valve boss using the 3/4" pin tool (T0146) to rotate boss counter clockwise. Remove the seal
- Remove the pilot assembly using the 3/4" pin tool (T0146) and remove the shaft from the pilot boss. Replace pilot assembly or other worn parts as needed.
- Check .020 diameter air bleed port in back wall of suppressor for possible blockage.

NOTE: Following disassembly, parts should be thoroughly washed and free from chemical residue for handling purposes.

2.8 ASSEMBLY

Prior to beginning assembly, inspect all parts to ensure they are clean and dry. Damaged or worn parts should be replaced, along with all air and fluid seals. Wear clean protective gloves. Precautions should be exercised to prevent contaminating any of the air chamber surfaces with chemicals during handling.

- Assemble the shaft into the pilot boss. Insert the pilot assembly and hand tighten with the 3/4" pin tool. Do not overtighten as damage will occur. (15 in-lb)
- Secure the air chamber into a vise with jaw liners, opening side up.
- Install a new seal in the pilot boss hole and install the pilot boss. Tighten with the 3/4" pin tool.
- Place the push plate onto the shaft. While holding the shaft with a small flat screw driver, hand tighten the push plate.
- Before reinstalling the diaphragm, check diaphragms for white colored creases or other signs of wear or damage. Replace if necessary.
- Install the diaphragm with the dimpled edge up, matching the V-ridge on the air chamber.
- Install the fluid chamber, re-clocking 1/16" diameter mark in head to the original position. (Failure to do so will result in air fitting misalignment after mounting suppressor.)
- If the Teflon tape was removed from the union nut threads on the air chamber, cover the union nut threads with two layers of Teflon tape. (Lack of tape can result in under torquing.)
- Install the union nut hand tight, checking that the fluid chamber has not rotated out of position.
- Using Strap Wrench (T0129) and Torque Wrench (98003108), set the torque wrench to 50 ft·lbs (acceptable range: 43–56 ft·lbs). This achieves an applied union nut torque of 57 ft·lbs (acceptable range: 50–65 ft·lbs). Confirm the position of the fluid chamber for inline suppressors.
- Reinstall suppressor on pump to hand tight plus 1/4 turn. If connection leaks, increase an additional 1/8 turn only. If leaking cannot be stopped, remove suppressor, replace disk seal and check mating surfaces for scratches or depressions.

3 WARRANTY



SS40 SURGE SUPPRESSOR

TREBOR International, Inc. warrants to the purchaser of new equipment manufactured by TREBOR to be free from defects in material and workmanship when used for its intended purpose under normal operating conditions, and maintained according to the Operation/Maintenance Manual.

TREBOR's obligation under this warranty is limited to repairing or replacing, at TREBOR's option and at the TREBOR factory, any part or parts thereof which shall, within 1 year after delivery thereof to the original purchaser, be demonstrated to TREBOR's satisfaction to have been defective. This warranty may be transferred to subsequent owners. The warranty period is based on the original ship date from the factory. All warranty related freight costs shall be borne by the customer.

Excessive wear to pump components caused by pumping abrasive solutions or chemicals, as well as damage caused by ingesting foreign objects shall not be covered by this warranty.

This warranty shall not apply to any equipment which, in the judgment of TREBOR, shall have been repaired or altered outside TREBOR's factory in any way, so as to affect its performance or reliability; subjected to misuse, negligence or accident; or used other than in accordance with TREBOR's printed instructions.

There are no terms, conditions or warranties, expressed, implied or statutory, of merchantability, fitness, capacity, or otherwise, of the goods ordered, other than, or different from, the warranty set forth above. This warranty takes precedence over any other warranty, expressed or implied.

TREBOR neither assumes, nor authorizes any other party to assume for it, any liability in connection with said equipment except as set forth above.

4 CONTACT INFORMATION

4.1 GENERAL CONTACT INFORMATION

Web: www.treborintl.com
Phone Number: (801) 561-0303
Toll Free Number: (800) 669-1303
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treborsales@idexcorp.com
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West Jordan, Utah 84088 U.S.A.

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Phone Number: (801) 561-0303

4.3 REGIONAL REPRESENTATIVES

Web: <http://www.treborintl.com/distributors>