



SCS² BLACK SHADOW SERIES 3.1 DISPENSER

- **ALWAYS OBSERVE PRODUCT SAFETY AND HANDLING INSTRUCTIONS.**
- **ALWAYS DIRECT DISCHARGE AWAY FROM YOU** or other persons.
- **ALWAYS DISPENSE CLEANERS AND CHEMICALS AS DIRECTED ON THE LABEL.**
- **ALWAYS DISPENSE INTO APPROVED CONTAINERS**
- **EXERCISE CAUTION:** Turn off water supply when maintaining or servicing your equipment.
- **KEEP EQUIPMENT CLEAN** to maintain proper operation.
- **WEAR PROTECTIVE CLOTHING AND EYE WEAR** when working in the vicinity of all chemicals, filling, dispensing, emptying equipment or changing metering tips.
- **ALWAYS RE-ASSEMBLE EQUIPMENT ACCORDING TO INSTRUCTION PROCEDURES.** Be sure all components are firmly screwed or latched into position.
- **NOTE:** If the unit is used to fill a sink or the dispensing hose can be placed into a sink, the unit must be mounted so that the bottom of the cabinet is above the overflow rim of the sink.
- **INSTALLATION MUST MEET LOCAL PLUMBING CODES**
- **NOTE:** All installations must conform to local plumbing codes and use approved backflow prevention devices.
A pressure indicating tee is to be installed with existing faucets according to local plumbing codes in the state of Wisconsin and any other state that requires the use of a pressure indicating tee.
For installation within the state of Massachusetts:
 - 1.) These dispensers shall be installed by Massachusetts licensed plumber.
 - 2.) The installation shall be hard piped using Product Approved materials.
 - 3.) The Public Water Supplier shall be contacted regarding the proper backflow prevention device to be installed.
- **ASSE Standard 1055 Type B Approved Components** "Action Gap" backflow prevention devices is ASSE Standard 1055 Type B approved.
- **SCS² 3.1 Dispenser Water Pressure Requirement**
Water supply pressure should be in the 20-125 psi range. Use cold water only

TURN OFF WATER TO DISPENSER WHEN NOT IN USE.

Tools Needed for Mounting SCS² 3.1 Dispenser

- Hammer
- Drill with 1/4", 1/8", 9/32" and 5/32" Diameter Bits
- Pliers
- Medium Phillips Screwdriver
- Tape Measure
- Straight Edge/Level

This package should contain:

- This instruction manual
- Proportioner unit w/ 7ft. gas pump dispensing gun
- (1) length of chemical inlet tubing, 7/32" I.D. x 15' long
- Metering tip kit
- Screw & anchor Kit
- (2) "T" hose barbs
- (4) Cap adaptors
- SCS² Clean by Color Sticker Sheet
- Water proof, pressure sensitive Trouble Shooting Chart
- Color tip chart

Basic Operation

Warning: Use care when handling hazardous chemicals. BRULIN RECOMMENDS INSTALLATION OF CUSTOM WALL CHART AT DISPENSER SITE FOR DETAILED USE INSTRUCTIONS.

- 1) **WEAR PPE** – When handling concentrate, wear protective goggles & gloves
- 2) **CAUTION: USE COLD WATER ONLY** - DO NOT use hot water.
- 3) **SELECT PRODUCT** - Turn selector valve arrow to desired product.
- 4) **FILL** with "Gas Pump" Dispensing Hose
 - A. **BUCKET OR AUTO SCRUBBER:**
 - Place dispensing hose into bucket or auto scrubber.
 - Squeeze trigger. The proper ratio of chemical and water will flow into bucket or automatic scrubber.
 - Engage "lock-on" trigger feature if desired—depress trigger and slide lock lever to right.
 - Release trigger when filled. (If using "lock-on" feature, depress trigger to automatically release.)
 - B. **SPRAY BOTTLES:**
 - Insert dispensing hose to bottom of bottle—minimizes filling foam.
 - Squeeze trigger. The proper ratio of chemical and water will flow into spray bottle.
 - Release trigger when ¾ filled.
 - Note: Approximately 4 oz. of diluted product remains in hose. When switching products, gravity drain hose – simply lower gun head to lowest point (drain/sink) for 3-4 seconds.
 - B. **RINSE OPTION:** • Select Water. • Place dispensing hose into container. • Squeeze trigger. • Engage lock-on trigger feature if desired. Clear water will flow. • Release handle when done.
- 5) **WATER OFF!** – Turn off water to dispenser when not in use.

SCS² Black Shadow Series – 3.1 Dispenser

General Description

1. **Cover:** The cover is easily snapped into place for assembly and removed for serviceability. Insert the two lower tabs on the cover into the lower base pocket features. Rotate the upper cover towards the base making sure the selector valve alignment pin is aligned with the corresponding hole in the cover. Continue to rotate the cover towards the base until it snaps into place. Push down on upper cover snap-in lever feature and pull forward on cover for removal.
2. **Base:** The base is used to mount the unit to the wall and to support the valve body mechanism.
3. **Water Inlet Connection:** A female $\frac{3}{4}$ - 11 $\frac{1}{2}$ hose swivel coupling with strainer washer is used to connect the dispenser to the water supply line.
4. **Selector Control Knob:** Selector knob allows the operator to choose either a desired chemical or amount of chemical dilution.
5. **Backflow Prevention Device:** The backflow prevention device prevents any chemical solution from flowing back into the water supply. The "Action Gap" backflow prevention device is ASSE Standard 1055 Type B approved.
6. **Proportioner:** The 4 GPM proportioner is white.
7. **Valve Subassembly:** The valve assembly is a watertight valve utilizing high pressure "O-Rings". The various components are held together when the valve subassembly is slid into the retaining blades (forks) on the base itself. (Note: The complete valve assembly must be sub assembled then slid into the base or bases as "one" component.)
8. **Base Keyhole Mounting Bosses:** Each unit has two keyhole bosses for mounting the unit to the wall.
9. ***Selector Body:** One or more chemical supply and cap adaptor assemblies are connected to the selector body for drawing concentrated chemical out of one or more containers.
10. **Chemical Supply Hose Access Feature:** The two bottom slot features in the base are used when the dispenser is mounted to the wall.
11. **Gas Pump Dispensing Hose/Handle Assembly:** The Gas Pump Dispensing Hose is used to fill containers (buckets or trigger spray bottles) away from the unit by means of depressing the trigger. The outlet extends 11 inches past the base of the gun and is angled for minimal foaming. The container being filled must be positioned lower than the dispenser.
12. **Hook Feature:** The gas pump handle (gun) has a hook feature capable of sliding into the cover pocket feature for storage.
13. **Gas Pump Dispensing Hose Pocket Features:** A pocket feature on either side of the cover is used to hang the gas pump dispensing gun onto the dispenser. The hose must be unhooked prior to removing the cover.
14. **Trigger:** The trigger controls the flow of chemical/water solution through the outlet hose by depressing it.
15. **Trigger Lock:** The trigger can be locked for continuous flow by depressing the trigger and sliding the lock lever to the right. Slowly release the trigger and it will stay in the "Lock" position. To "Unlock" the trigger, depress the trigger to automatically release the locking mechanism.

*The selector body hose barb features are threaded to accept various size metering tips for controlling the desired chemical induction flow rate (See section labeled "Install Metering Tips" on page 4 for detailed information.)

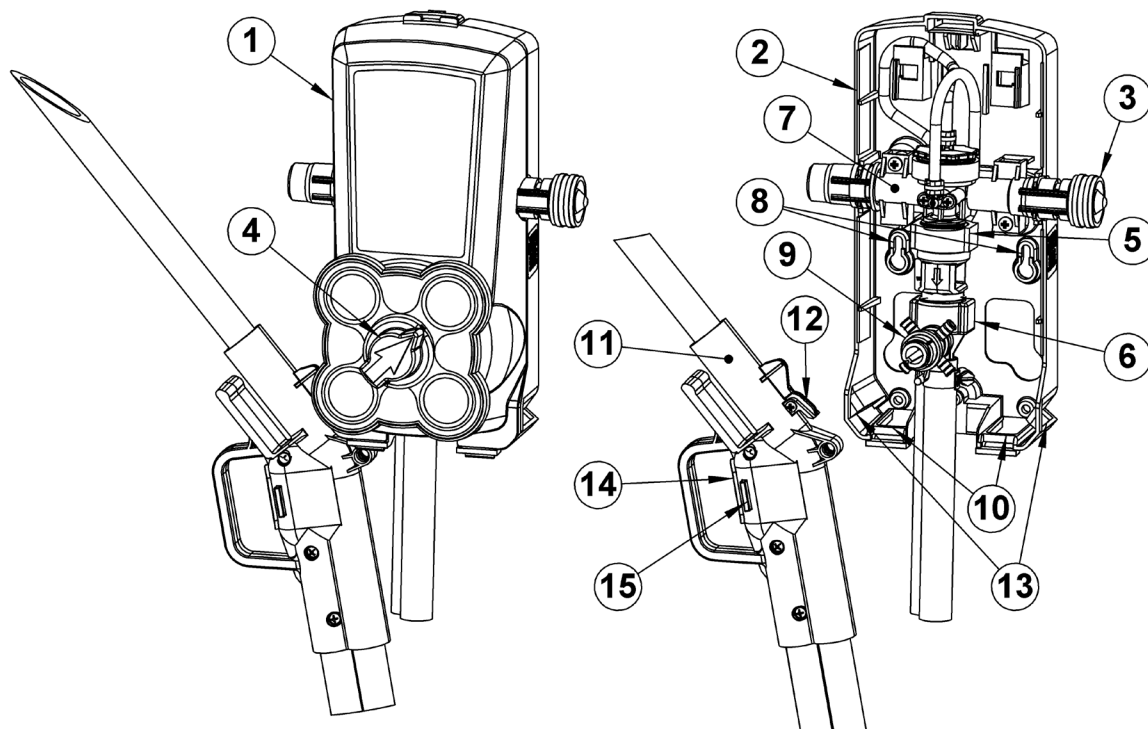
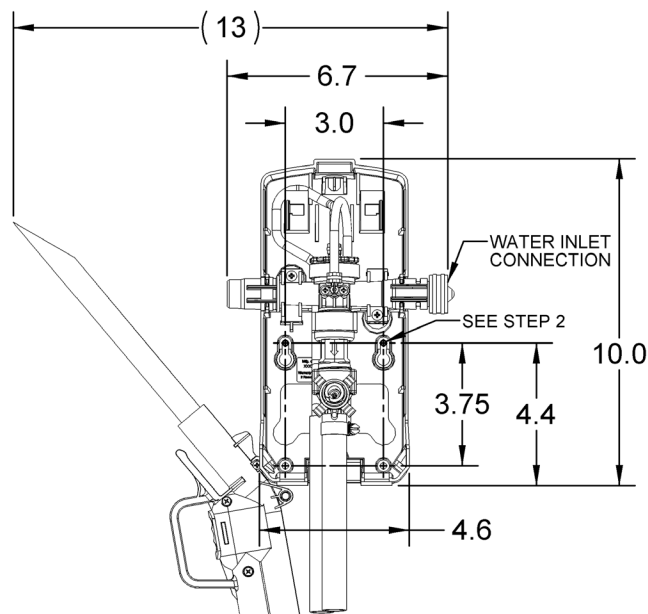


Table of Contents

• Operation & Installation Requirements	pg.1	• Maintaining and Servicing Dispenser	pg.5
• Tools Needed for Mounting SCS ² Dispenser	pg.1	• Gas pump hose assembly/disassembly	pg.5
• Package Contents	pg.1	• Checking backflow prevention device/ proportioner, metering tip(s), and/or foot valve(s)	pg.6
• Basic Operation	pg.1	• Parts List	pg.6
• General Description	pg.2	• Remote Fill Basic Unit	pg.6
• Table of Contents	pg.3	• Remote Fill Valve Subassembly	pg.6
• Installation	pg.3	• Remote Fill Hose Assembly	pg.6
1. Evaluate Wall Space	pg.3	• “Action Gap”/Proportioner	pg.7
2. Lay Out & Drill Holes	pg.3	• Selector Assembly	pg.7
3. Prepare Water Supply & Dispenser	pg.3	• Cover, labels, stickers, selector	pg.7
4. Mount Dispenser & Connect Water Supply	pg.3	• Trouble Shooting Chart	pg.8
5. Concentrate Holder Installation	pg.3		
6. Install Metering Tips	pg.4		
7. Tubing Installation	pg.4		
8. Connect Water Supply Hose	pg.4		
9. Install Dispenser Cover	pg.4		
• SCS ² Clean by Color Stickers	pg.4		

Installation

- 1. Evaluate wall space:** Choose a suitable place within six feet (connector hose length) of water source. Consider the location of the Concentrate Holder(s). Wall space must be closely laid out to make sure there is adequate room. Be sure to allow a minimum of 12 inches on both the left and right hand sides of the dispenser. The added space will be used for hanging the gas pump dispensing gun and for attaching the water supply to the dispenser.
- 2. Lay out and drill holes in the wall:** Carefully layout the proper mounting holes on the wall based on the information in step 1 using a tape measure and straight edge/level for hanging the dispenser on the wall. (Drill all of the holes into the drywall using a 1/4" diameter bit for use with the included #10 x 1" long screw and anchor set. If mounting the dispenser to wood and you do not plan to use the included anchors, drill 1/8" diameter holes.)
- 3. Get water supply line and dispenser ready so it can be mounted on the wall:** Remove selector knobs and cover. (Save all removed components in a safe place for re-assembly.) A water supply line must be plumbed up to the right hand side of the dispenser using a male 3/4 - 1 1/2 N.H. hose coupling fitting.
- 4. Mount dispenser to wall and connect water supply line:** Insert the anchors into drilled holes and hammer them into the wall until they are flush with face of wall. Assemble two #10 x 1" long screws with a phillips screwdriver into the upper anchors so the screw heads are sticking out of the wall approximately 1/2". Carefully align the large section of the keyhole slots in the dispenser base(s) over the screw heads. Once positioned properly, push dispenser against the wall over the screw heads and slide it down until the keyhole slots are resting on the screws. Tighten the screws against the keyhole bosses in each base. Now install two #10 X 1" long screws in the lower anchors and tighten. Connect the water supply line to the female swivel garden hose coupling on the dispenser and tighten by hand. (Note: May need to tighten hose coupling another 1/4 turn with pliers but DO NOT OVERTIGHTEN.) *Water supply pressure should be in the 20-125 psi range and water temperature must not exceed 150°F.* Slowly turn on the water supply and check for any leaks. (Note: See section labeled “Trouble Shooting” on page 8 if any continual leaks are visible.) Mount water supply line to wall with proper clamp(s) to avoid any damage to the dispenser.
- 5. Concentrate Holder Installation: IMPORTANT:** The concentrate bottle top, (with the caps in place), should be below the bottom of the dispenser. Position accordingly, while also placing as near as possible to the dispenser to insure proper flow. **Caution:** *Avoid mounting concentrate above the height of the dispenser.*



NOTE: (All dimensions are in inches)

6. Install Metering Tips:

- A. Consult the Dilution Tip Chart to determine the correct tip color for the proper delivered dilution from each concentrate.
- B. Screw tips into selector valves. Use charcoal gray tip to plug any ports that are not connected to chemical.
- C. HINT: Simultaneously apply product labels to the dispenser cover to match the metering tip locations.

7. Tubing Installation - To avoid mistakes plumb the tubing one product at a time. Hint: Label each chemical tube to identify desired product to be dispensed.

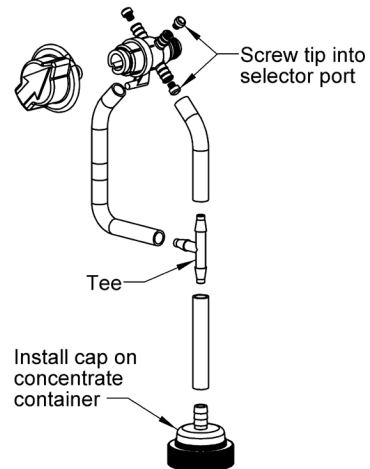
- A. Feed short tubing through holes in dispenser base, to the desired port. Slide tubing over color tip and on selector barb.
- B. Run tubing to the cap that fits the concentrate bottle

Repeat until all of the concentrate bottles are plumbed to the dispenser.

8. Connect Water Supply Hose to water inlet swivel.

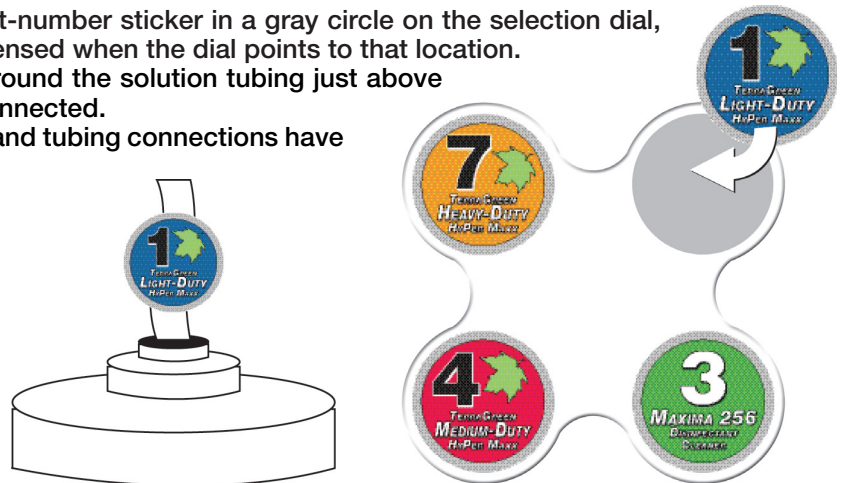
(NOTE: Water supply pressure should be in the 20-125 psi range. Use cold water only.) Turn on water supply.

9. Install Dispenser Cover. Insert lower tabs on the cover into the lower base. Rotate upper cover towards the base and snap into place. Align & slide the knob into the selector valve system until it snaps in place. Be sure the Product ID stickers correctly identify the product being dispensed.



SCS² Clean by Color Product Identification Stickers

- For each product you will use, place a product-number sticker in a gray circle on the selection dial, indicating which SCS² product should be dispensed when the dial points to that location.
- Place the matching product-number sticker around the solution tubing just above the fill cap. This identifies the product to be connected.
- Continue this procedure until all dial locations and tubing connections have the appropriate stickers.



Maintaining and Servicing the SCS² 3.1 Dispenser

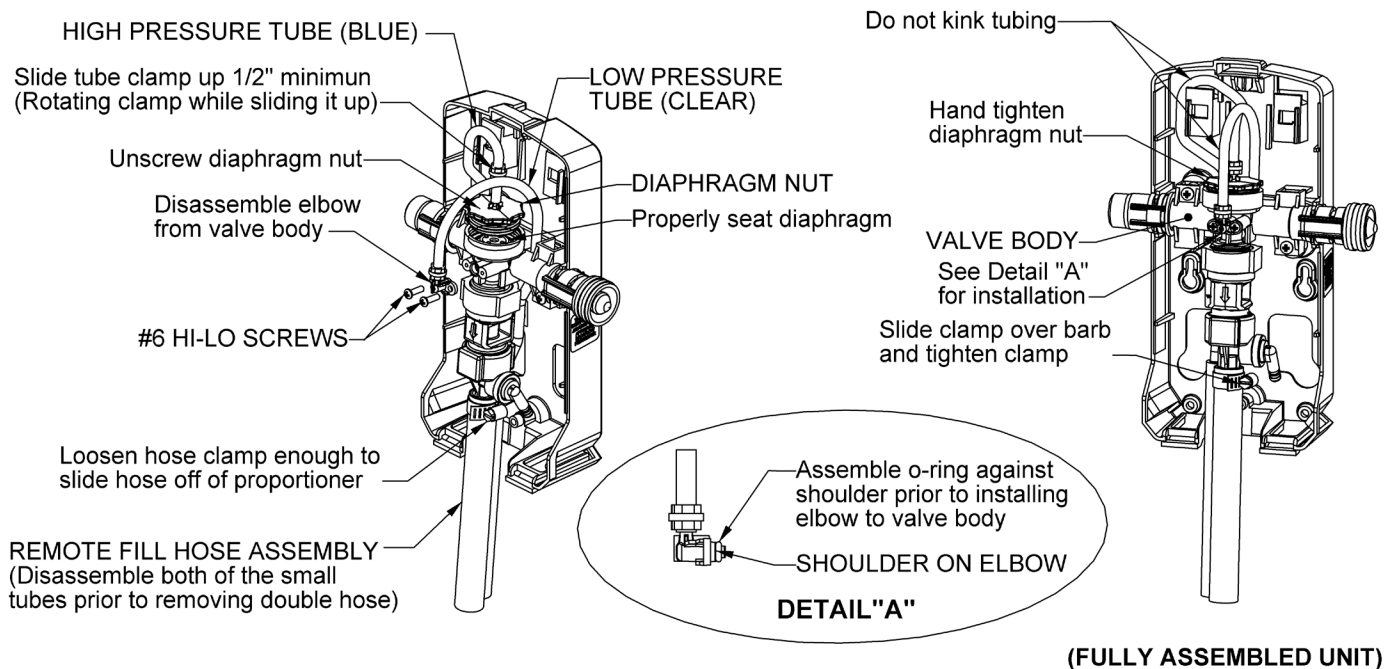
Caution: Turn off water supply before doing maintenance or servicing.

Warning: Use care when handling hazardous chemicals and use protective clothing/eye wear as recommended on the product label. This includes handling of chemical supply and outlet tubes.

Note: Water supply pressure should be in the 20-125 psi range. Use cold water only.

Disassembling & reassembling the gas pump dispensing hose assembly:

1. Remove cover and selector knobs as necessary.
2. Removal of the double hose from the proportioner also involves the disconnection of both the clear and blue 1/8" I.D. tubes. (Note: The 1/8" I.D. tubing is fairly stiff and the hose barbs can be damaged if not handled carefully.)
3. Slide the upper hose clamp on the blue high pressure tubing up above the hose barb. (Note: It is helpful to use a rotational motion when sliding the hose clamp up.)
4. Unscrew the diaphragm nut in the direction shown on the sketch. (Note: The hose barb on the diaphragm nut will need to rotate inside the 1/8" I.D. tubing to remove the nut.)
5. Disassemble the elbow from the front of the valve body using a phillips screwdriver. (Note: The elbow is sealed to the valve body via an O-ring. Be careful not to loose the O-ring.)
6. Loosen the hose clamp holding the double hose to the proportioner. Remove the double hose off of the proportioner using a steady pulling and rotational motion. Now you can get to the backflow prevention device/proportioner.
7. Repeat the same steps above in reverse order to reassemble the gas pump dispensing hose assembly. Pay special attention to push the double hose far enough on the proportioner so it lines up with the flat surface of the top hose barb. Also see Detail "A" for proper installation of the O-ring onto the elbow before reassembling the elbow to the valve body. (Note: Check to see that the diaphragm is properly seated then hand-tighten the diaphragm nut.)
8. Reassemble cover and selector knob with screw if so equipped. (Do not overtighten.)



Checking backflow prevention device/proportioner and/or metering tip(s):

1. Remove cover and selector knob as necessary. Remove dispensing hoses and chemical supply tubes as necessary. See section labeled "Disassembling & reassembling the gas pump dispensing hose assembly" for removing the gas pump dispensing hose assembly.
2. Inspect metering tip(s) for clogging and for build up of dried chemical.
3. If clogged, remove the items and soak in hot water. Use cleaner to remove hard water deposits. Clean clogged passageways with soft brush or other acceptable tools as necessary. (Note: Selector valve needs to be disassembled from proportioner before the proportioner can be removed).
4. Replace with clean or new parts as needed.
5. Connect all outlet and chemical supply tubes.
6. Reassemble cover and selector knob.

Parts List For SCS² Black Shadow Series 3.1 Dispenser (Gas Pump Dispensing Hose Assembly Application)

FIGURE 1: REMOTE FILL UNIT		
NO.	PART NO.	DESCRIPTION
1	89-1-	Base
2	98-9-1	Cap
3	619-15	O-Ring (EPDM) (2 Req'd)
4	98-12-1	Hose Clamp (2 Req'd)
5	44-116-1	#8 Hi-Lo Screw X 1/2" Lg. (2 Req'd)
6	65-10	Hose Coupling
7	98-10-1	Water Inlet Stem
8	100-38	Strainer Washer
9	98-40-1	#10 Screw & Anchor Set (Qty-2 Each/Set)
10	76-2-15	Hose Clamp

FIGURE 1

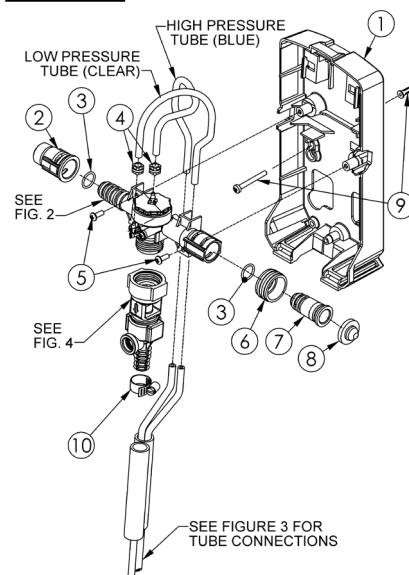


FIGURE 2: REMOTE VALVE ASSEMBLY		
NO.	PART NO.	DESCRIPTION
1	98-5-2	Nut, Diaphragm
2	98-26-1	Diaphragm without center hole (EPDM)
3	98-11-2	Valve Body for Remote Fill
4	26-35	O-Ring (EPDM)
5	98-15-1	Elbow
6	58-60	#6 Hi-Lo Screw X 1/2" Lg. (2 Req'd)

FIGURE 2

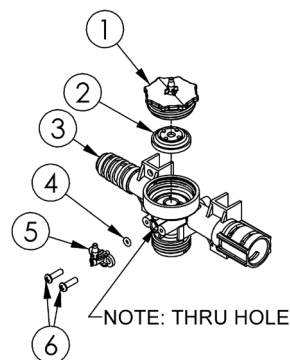


FIGURE 3: GAS PUMP HOSE ASSEMBLY		
NO.	PART NO.	DESCRIPTION
1	98-30-1	Remote Gun Handle (Right Hand)
2	98-31-1	Remote Gun Handle (Left Hand)
3	98-38	Valve Assembly (On-Off)
4	98-51	Trigger Lock Return Spring
5	98-37-1	Hose Clamp (2 Req'd)
6	58-60	#6 Hi-Lo Screw X 1/2" Lg. (1 Req'd)
7	58-102	#6 Hi-Lo Screw X 3/4" Lg. (3 Req'd)
8	98-50	Remote Hose & Gun Assembly

FIGURE 3

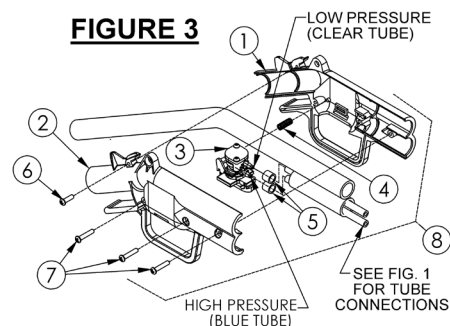


FIGURE 4: ACTION GAP/PROPORTIONER		
NO.	PART NO.	DESCRIPTION
1	16-30	Action Gap Assembly
2	150-6	Rubber Washer
3	61-22GAP-3	Proportioner Assembly (4 GPM)

FIGURE 4

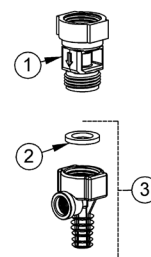


FIGURE 5

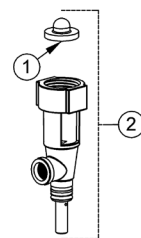


FIGURE 5: AIR GAP PROPORTIONER		
NO.	PART NO.	DESCRIPTION
1	100-59	Strainer Washer
2	61-126-AG-4	Air Gap Proportioner Assembly (4 GPM)

FIGURE 6: SELECTORY ASSEMBLY		
NO.	PART NO.	DESCRIPTION
1	63-111-2N	Selector Knob
2	63-96-2V-CK	Selector Assembly
3	100-15K-BRU1GAP	Metering Tip Kit
4	63-78	O-Ring (EPDM)
5	100-12-29	Tube, 15 Ft. Long
6	98-189-3	Tee
7	98-8-9	R&D Cap

FIGURE 6

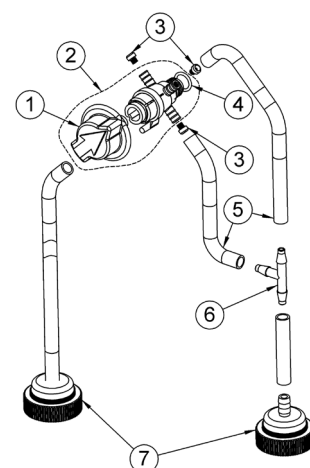
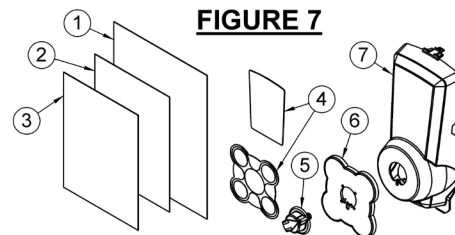


FIGURE 7: CHARTS, LABELS & COVERS		
NO.	PART NO.	DESCRIPTION
1	L1172	Product Sticker Label
2	89-23-1	Tip Opening Chart
3	89-24-1	Dilution Tip Chart
4	L1174	Unit & Selector Labels
5	63-111-2N	Selector Knob
6	89-22-1	Cover Grille
7	89-2-2BLK	Cover

FIGURE 7



TROUBLE SHOOTING CHART

Trouble	Probable Cause	Remedy
Proportioner fails to draw chemical properly.	1. Insufficient water supply pressure. 2. Proportioner metering tip clogged with dried chemical. 3. Bottle improperly connected 4. Clogged water inlet strainer 5. Air leak in chemical pickup tube	1. 20 PSI is the minimum allowable pressure. Seek plumber if necessary to increase water pressure. 2. * Soak in hot water to clean interior passages. 3. Check cap and sipper tube 4. Disconnect water inlet and clean strainer 5. Replace tube
Water valve is leaking.	1. Enclosing tube nut is too loose. 2. One or more of the valve O-ring connections are out-of-position. Clearly identify each leak prior to disassembly.	1. Shut water supply off first. Hand-tighten the enclosing hose nut. Do not overtighten w/tool. 2. "O-ring" seals may be pushed out of place or missing when sub assembling valve together. Reassemble – refer to installation guide.
Threaded connections are leaking water.	1. The connection between the dispenser and water supply line is too loose or rubber washer is missing. 2. Backflow prevention devices and/or proportioners are too loose.	1. Shut water supply off first. Carefully tighten the female hose coupling on the dispenser to the inlet water supply line. Do not overtighten. 2. Tighten loose connection(s) with tools if necessary. Do not overtighten if using tools.
Proportioner continues to draw chemical after water valve is closed.	1. Concentrated chemical is positioned higher than the proportioner.	1. Move the concentrated chemical so it is lower than the proportioner.
Can't pull the Gas Pump Dispensing Hose Assembly off of the proportioner	1. Hose Clamp is not loose enough. 2. Both 1/8" I.D. tubes must be removed prior to removing the double hose.	1. Loosen clamp more. 2. Remove 1/8" I.D. tubes. See section labeled "Disassembling & reassembling the gas pump hose assembly" in installation guide.
Trigger on gas pump dispensing Gun is very hard to squeeze.	1. High pressure and low pressure (blue and clear) hoses are crossed.	1. Install the blue and clear hoses. See installation guide for instructions.
Excess concentrate draw	1. Metering tip not in place 2. Wrong metering tip in place	1. Screw correct tip firmly in place 2. Replace tip
Chemical will not hold prime	1. Chemical cap is not connected properly 2. Check valve (if used) failure 3. Check valve (if used) installed backward.	1. Ensure cap is straight & tight 2. Replace with new valve. 3. Ensure that valve flow is toward the dispenser.
Gas pump quart fill – 1st fill when switching to different product dispenses previous product	1. Approximately 4 oz. of previously dispensed product remains in hose line.	1. Gravity drain hose by lowering head to lowest point (sink/drain) for 3-4 seconds.
Front Cover of unit won't stay on or doesn't fit correctly	1. Incorrect installation of the front cover of the unit	1. Install dispenser cover by inserting lower tabs on the cover into the lower base. Rotate upper cover towards the base and snap into place. Align & slide the knob into the selector valve system until it snaps in place. Be sure the Product ID stickers correctly identify the product being dispensed.
Proportioner is dispensing a different product than the one selected	1. Mismatched tubing 2. Plastic selector knob improperly aligned.	1. Follow tubing from concentrate bottle to dispenser referring to chemical locations on cover to ensure tubing is installed on correct selector valve. When troubleshooting the unit, only remove mismatched tubing to ensure that the tubing is reinstalled back on the selector assembly on the correct valve. 2. Confirm that plastic barb on Selector Assembly is correctly lined up with slot in front cover.

* See section labeled "Checking backflow prevention device/proportioner, metering tip(s), and/or foot valve(s)" for more information.



Scan code for
troubleshooting videos