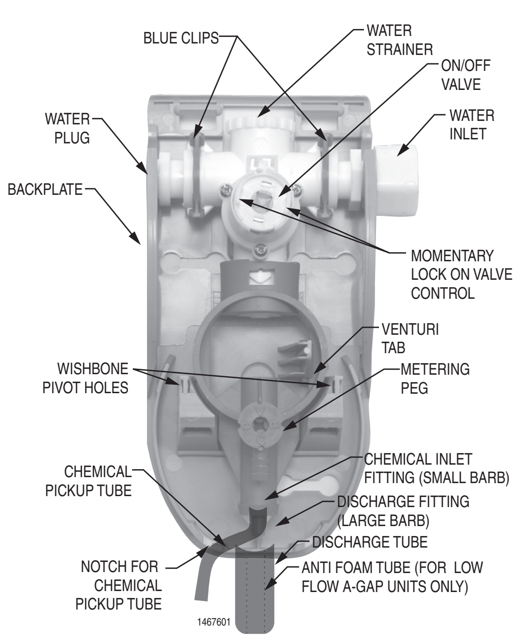
BetaJet

Installation, Maintenance & Trouble Shooting

Safety Procedure

Safety clothing, including gloves and eye protection, must be worn before performing an installation. Observe specific advice on the Material Safety Data Sheet (MSDS).

Installation



Water Requirements

Air Gap	R-Gap
H_2O = 1.0 - 5.5 bar	H_2O = 2.0 - 5.5 bar
H_2O = 14 - 28 PSI	H_2O = 28 - 78 PSI
$H_2O \le 65°C$	$H_2O \le 65°$

1 Remove Cover

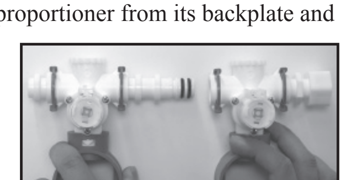
- Push metal C-clip fully into unit
- Lift up on cover
- Whenever replacing cover, first remove C-clip. Always be careful to line up the hinges at the top and attach them before lowering the cover

2 Mounting the Unit

Maximum height from chemical to BetaJet: 1.5 meters (5 feet). Horizontal distance can be somewhat greater.

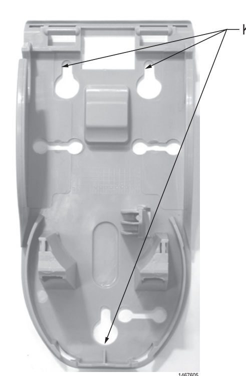
A. If you are installing more than one BetaJet, connect them together before proceeding. If installing a single unit, proceed to **Step B**.

- The order in which you hang the units is important. Ensure that the high-flow units are always on the side closest to the water supply to prevent leakage.
- Squeeze the venturi tab in to release each proportioner from its backplate and lift it out.
- Position the backplates next to each other on a flat surface.
- Pull blue clips out slightly.
- Remove adjoining units' water plugs and water inlet fittings and use the interconnect (1202026) to link them together.
- Ensure that the units are pressed together firmly so the blue clips fit completely back in place.



2 Mounting the Unit - Continued

- Put connected BetaJets into the backplates all at once, and use the whole assembly for marking holes on the wall to ensure exact spacing between the units.



Mounting Holes

Putting backplates against the wall without the units interconnected in them can result in incorrect hole spacing and re-drilling.

B. Put the backplate(s) against the wall and mark where the holes need to be drilled, as shown by the arrows.

Hold a level on top of the backplate to ensure the unit won't be at an angle. Note that the bottom drill hole should be at the bottom of the keyhole, and the top drill holes at the top of the keyholes.

C. Drill ¼" (6 mm) holes in the wall. For drywall use the anchors provided. For concrete use concrete screws.

D. Put the top two keyhole screws in.

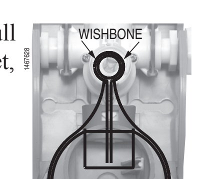
E. Hang the backplate(s).

F. Screw in the bottom keyhole screw at the bottom of the hole so the backplates can't be lifted up out of position. If the wall is uneven, make sure it's not so tight that the backplate warps. All servicing can be done with the backplate in place.

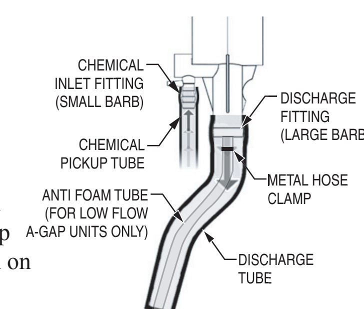
G. Connect water supply to water inlet (often it's fastest to pull the blue clip, unplug the water inlet fitting from the BetaJet, screw it onto the hose, and plug it back in place).

H. Hang the valve/venturi assembly in the backplate, making sure it clicks into place under the venturi tab.

I. Reattach wishbone to wishbone pivot holes.



3 Tubing



A. For low-flow units where product foaming is an issue: Connect the translucent anti-foam tube to the plastic spigot protruding from the bottom of the venturi. Use diagonal side cutters to cinch the metal clamp to the tube so that it will be secured on the spigot. Secure with hose clamp.

B. For bucket-fill applications: Route large discharge tube over the large barb. Secure discharge tube to large barb with tie wrap and attach bucket spring hook to other end of tube so it can be hung on bucket.

C. For bottle-fill applications: Pull the white vinyl bottle-fill tube over the large barb, ensuring molded indent on tube fits snuggly onto the larger barb.

D. Connect chemical pickup tube to the small barb and secure in place with tie wrap. Route chemical pickup tube into chemical pickup tube notch in backplate. If you need a high dilution such as 516:1 or 1000:1, an ultradilution capillary tube may need to be installed in the chemical supply line. If your chemical is thick, it may not be required

E. Water Supply: Connect garden hose water supply to water inlet. If you want to switch the water inlet to the other side of the unit, simply pull the blue clips out a bit and you'll be able to swap the water inlet fitting and water plug. Twist the water inlet fitting to screw it onto a garden hose water supply or an adapter fitting for copper tubing. Be sure the blue clips are pushed back into position before turning on the water supply.

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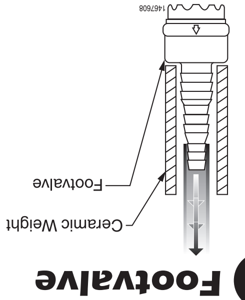
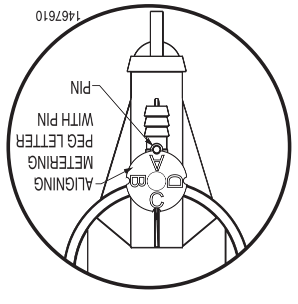
4 Footvalve



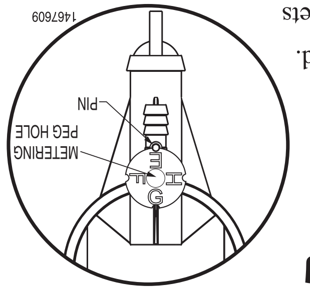
Place ceramic weight over the end of the chemical pickup tube. Insert footvalve at the end of the chemical pickup tube. Ceramic weight will fall into place over the top of the footvalve. It is important to add the footvalve because without it the tube will lose prime.

5 Prime



- Insert metering peg so the A is aligned with pin as shown.
- Turn on the water supply.
- Put wishbone on unit, attaching the two ends to the wishbone pivot holes (ref picture of unit at beginning of this sheet)
- Push on wishbone to turn unit on and prime the chemical suction line, collecting water in container. Discard water. Note the wishbone is designed to work under the cover rather than directly with hands. It is easy to dislodge it with your hands but it will work fine with the cover on.

6 Select Dilution Setting



A. Select the metering peg that offers the desired dilution. Insert metering peg into metering peg hole as shown and align letter with pin. In the sample on the right, the "E" dilution setting is being used.

B. Calibrate the dilution ratio to ensure it meets your requirements as follows:
- Fill a measuring/graduated cylinder with chemical.
- Write down the amount of chemical that is in the cylinder.
- Turn on the proportioner, filling a gallon/2 liter jug (high flow) or a 16-oz/500 ml measuring cup (low flow).
- Write down the amount of **water : chemical** to calculate the dilution.
- If necessary, repeat with a different peg setting to get the dilution you need.

Dilution Charts

	HF A-G & R-G (Blue Eductor)			LF A-G (Grey Eductor)			LF R-G (Grey Eductor)		
Peg Setting	Percent	Ratio	oz/gal	Percent	Ratio	oz/gal	Percent	Ratio	oz/gal
A	16.7%	5:1	25.6	23.8%	3:1	42.7	27.0%	2.7:1	47.4
B	15.2%	6:1	21.3	23.3%	3:1	42.7	25.6%	2.9:1	44.1
C	13.3%	7:1	18.3	21.3%	4:1	32	23.8%	3.2:1	40.0
D	5.3%	18:1	7.1	10.8%	8:1	16	12.5%	7:1	18.3
E	4.5%	21:1	6.1	9.1%	9:1	14.2	10.5%	8.5:1	15.1
F	3.8%	27:1	4.7	7.1%	12:1	10.7	8.3%	11:1	11.6
G	3.2%	32:1	4	5.9%	15:1	8.5	6.9%	13:1	9.8
H	2.8%	36:1	3.6	5.3%	17:1	7.5	5.9%	17:1	7.5
I	2.4%	41:1	3.1	4.5%	20:1	6.4	5.3%	19:1	6.7
J	1.9%	52:1	2.5	3.6%	25:1	5.1	4.2%	23:1	5.6
K	1.3%	76:1	1.7	2.4%	37:1	3.5	2.9%	34:1	3.8
L	1.0%	97:1	1.3	2.0%	47:1	2.7	2.3%	42:1	3.0
M	0.8%	120:1	1.1	1.4%	64:1	2	1.6%	63:1	2.0
N	0.5%	180:1	0.7	1.3%	93:1	1.4	1.4%	71:1	1.8
O	0.3%	315:1	0.4	1.2%	170:1	0.8	1.3%	76:1	1.7
P	0.1%	800:1	0.2	0.8%	525:1	0.2	0.9%	110:1	1.2

Ultradilution kit (LF A-G or R-G) using peg A with capillary	
Cut length	Ratio
10cm	250:1
20cm	450:1
30cm	650:1
40cm	850:1
50cm	1050:1
60cm	1250:1

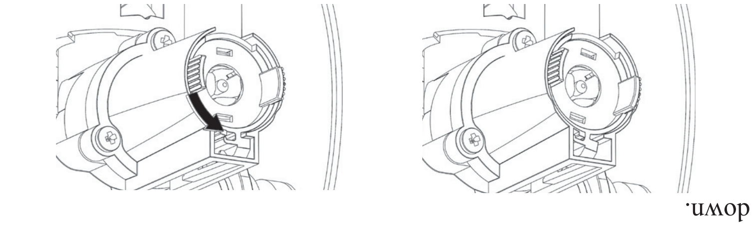
NOTES:
Values @ 2.5bar (40psi) pressure, 3.5GPM thru unit and water-thin viscosity

Ratios shown are for reference only. Actual dilution will depend on water pressure, chemical viscosity and dispenser height above chemical. For higher dilutions, order an ultradilution kit.

When using thick products it may be necessary to use a larger inner diameter product tubing to ensure adequate product can be drawn through.

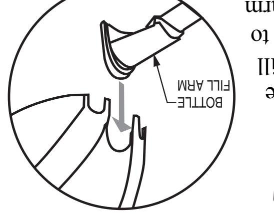
7 Sink Applications: Change from Momentary "Hold-On" to "Lock-On" Activation

For sink fill applications, users will typically want to be able to press the cover once and have the unit stay on without having to hold the cover down.



Non-Latch Position *Latch-On Position*

8 Attach Bottle Fill Arm (Optional)



If using a bottle-fill tube and you want to use the bottle-fill arm, remove BetaJet cover and align the bottom of the BetaJet cover opening with bottle fill arm and push into place as shown. You may need to gently tap the cover on a table surface to get the arm fully into place. Insert bottle-fill tube into bottle-fill arm by squeezing tube between your fingers and inserting tube up into arm.

9 Replacing Cover

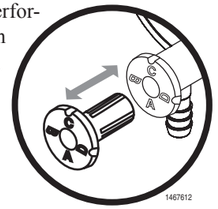
Replace the cover, taking care to position it correctly so the plastic tabs that connect it to the backplate aren't damaged. If a low flow unit, wedge bottle fill tube into bottle fill arm.

Unit Operation

Press front cover to dispense chemical.

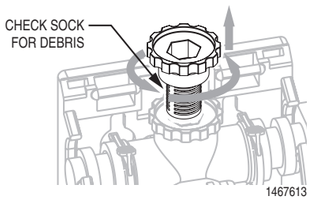
Maintenance

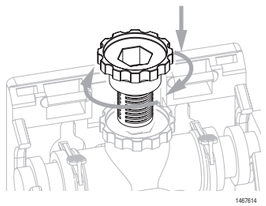
Wear gloves and safety glasses and turn off water before servicing.



Periodic maintenance can improve system performance and prevent service calls, especially in hard-water areas where air gaps are required, old buildings or locations with debris in the water supply. We recommend the following procedure be performed about once a year, depending on the water supply:

- Check dilution rate.
- Wipe or rinse metering peg clean if chemical residue has accumulated in the groove.
- Verify footvalve screen is neither clogged nor damaged.
- Check water filter sock and air gap nozzle screen for debris.



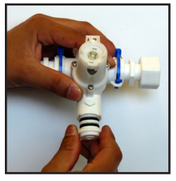


Removing venturi to Check Air Gap Nozzle

1. Push in venturi tab.

4. Remove venturi.

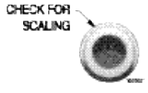
2. Lift venturi forward



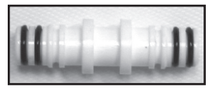
5. Pull out nozzle

3. Twist venturi to the left to loosen.

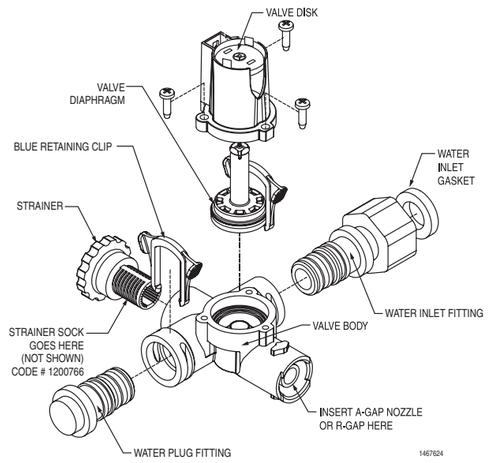
6. If the nozzle screen is dirty, rinse. If scaled, remove o-ring and soak in acid for 30 min.

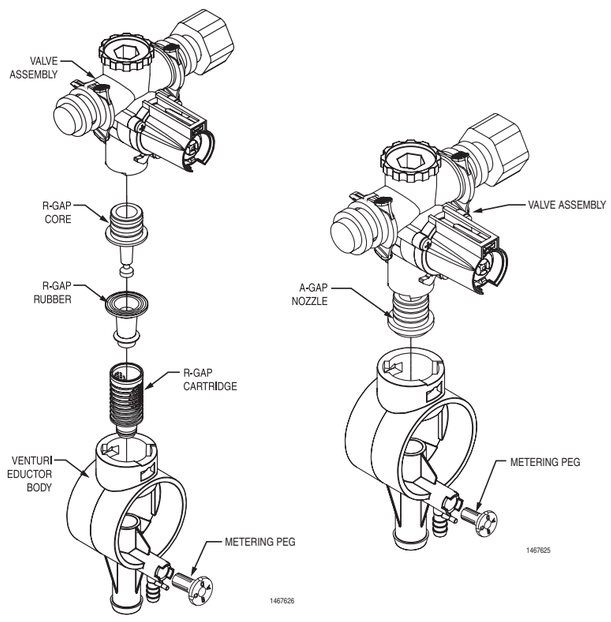


Spare Parts

Description	Item No.
 Interconnection	1202026
Bucket fill tube hook	1202067
Hose fitting assy (with washer)	1202027
Backplate	1204098
Cover, BetaJet, grey	1204102
Strainer sock	1200766
Cover removal c-clip	1204103
Wire rack, 1 x 1 gallon	1203104
Wire rack, 4 x 1 gallon	1203105

All spares include lubed o-rings.





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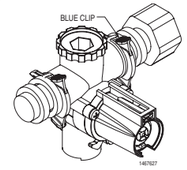
Troubleshooting

Problem	Cause	Solution
1. No discharge.	a. No water.	a. Open water supply.
	b. Magnetic valve not functioning.	b. Install new valve.
	c. Excessive water pressure.	c. Install regulator if water pressure exceeds 5.5 bar (78 psi).
	d. Eductor clogged.	d. Clean (descale) or replace.
2. No concentrate drawn up.	a. Blocked foot valve.	a. Clean or replace
	b. Metering peg or eductor has scale buildup.	b. Clean (descale) or replace
	c. Low water pressure.	c. Ensure water pressure meets minimum requirements. If using an R-Gap, and the water pressure is insufficient for an R-Gap but sufficient for A-Gap, switch out the A-Gap nozzles for R-Gaps. If using a high flow unit and the water pressure is insufficient, switch to a low flow unit. Another option is to move the chemical container up on the wall (in a wire rack) closer to the proportioner. To prevent siphoning, the chemical must be lower than the proportioner's chemical inlet fitting.
	d. Concentrate container empty.	d. Replace with full container.
	e. Inlet hose threads not screwed into eductor tightly.	e. Tighten, but do not overtighten. If using NPT fitting adapter, use Teflon pipe tape.
	f. Clogged inlet strainer.	f. Turn off water supply, remove strainer and clean or replace mesh sock that fits over strainer.
	g. Water inlet gasket missing.	g. Insert new gasket
	h. Wrong eductor.	h. If high-flow nozzle/R-Gap, verify that eductor is blue. If low-flow, verify eductor is grey.
	i. Chemical supply goes through "Y" fitting.	i. Have a separate chemical supply tube and foot valve for each unit because one unit will pull air from another if they are both connected to a "Y" fitting.
	j. Water temp. too high.	j. If the water temp. is over 70° -75°C, the water could boil when under vacuum in the venturi, which will prevent the unit from drawing chemical. Lower water temp. if you suspect this is a problem.
3. Excessive concentrate draw.	a. Wrong metering peg setting selected.	a. Check dilution chart and recalibrate with lower dilution setting.
4. Failure of unit to turn off.	a. Water valve parts dirty or defective.	a. Clean or replace with valve parts kit.
	b. Valve disk magnet does not fully return.	b. Make sure valve disk moves freely.
	c. Cabinet cover stuck.	c. Realign cabinet.
	d. Excessive water pressure.	d. Install regulator if pressure exceeds 5.5 bar (78 psi).
	e. Unit is set to latch on/off.	e. Turn the valve disk around to disable this feature per the Installation section.
5. Excess foam in discharge.	a. Air leak in pickup tube.	a. Tighten inlet hose barb and/or secure pickup tube with tie wrap or hose clamp on hose barb.
	b. Inner discharge tube not in place.	b. Reinstall inner discharge tube (the tube inside the discharge tube).
	c. Inner discharge anti-foam tube not long enough	c. Use 4mm bulk tubing to make the tube longer by a few inches.
6. Splashing from A-Gap or water discharge from R-Gap vents.	a. Restricted discharge hose.	a. Ensure discharge hose is not kinked, immersed or elevated, and that no solution is trapped in the discharge tube when dispensing begins.
	b. High water pressure.	b. Install pressure regulator if pressure exceeds 5.5 bar (78 psi) with unit operating.
	c. Dirty A-Gap nozzle.	c. Replace nozzle.
	d. Nozzle loose.	d. Push nozzle firmly up into valve body.
7. Cover doesn't fit on dispenser.	a. Valve/venturi assemblies are not properly locked into place.	a. Push on each valve/venturi assembly to ensure it is locked in place with the venturi tab. The tab makes a "click" sound when the proportioner is snapped into place.
8. Water inlet fitting is leaking.	a. Fitting is not fully inserted into valve assembly.	a. Ensure fitting is fully inserted into valve assembly, and blue retaining clip is in place as shown below.  *Inserting Inlet Fitting into Valve Assembly.*
	b. Water inlet/garden hose not connected properly.	b. Tighten water inlet fitting/garden hose thread connection. Do not overtighten, as this can damage the threads. If using a garden hose to NPT adapter, tighten NPT connection. Add Teflon pipe tape to male NPT threads if still leaks.
	c. Water inlet fitting threads damaged.	c. Replace fitting.
	d. No gasket in water inlet fitting.	d. Insert gasket.
	e. O-rings not assembled properly.	e. Check that o-rings are on the innermost two grooves on the water inlet fitting. If they aren't, reposition fitting. The third groove is for the blue clip; if the o-ring from the second groove has shifted or moved to the third groove, lift it up with a screwdriver and move it back to the middle groove.
	e. R-Gap rubber problems.	e. Disassemble R-Gap, checking rubber for damage. If damaged, replace. If not, put rubber on plastic cone, cartridge over rubber and insert into valve assembly. Attach eductor last. Note that having rubber misaligned/askew between the plastic cone and outer cartridge can cause leaks.
	f. Wrong eductor.	f. If high flow nozzle/R-gap, verify that eductor is blue. If low flow, verify eductor is gray.
9. Water leak from water strainer	a. Strainer not fully screwed in.	a. Tighten strainer.
	b. O-ring sticking out	b. Remove strainer. Reposition o-ring and replace strainer. If o-ring is damaged, replace strainer assembly.
	c. Valve threads stripped	c. Replace valve.
10. Inconsistent dilution	a. Fluctuating water pressure	a. Install pressure regulator or flow washer to reduce pressure fluctuation.
11. Wishbone doesn't fit into place properly	a. Valve/venturi assemblies are not properly locked into place.	a. Push on each valve/venturi assembly to ensure it is locked in place with the venturi tab. The tab makes a "click" sound when the proportioner is snapped into place.
	b. Backplate installed on an uneven wall.	b. Loosen screws so they don't bend the backplate. For the bottom screw, be sure to use the center keyhole behind the chemical discharge fitting instead of the slot on the right. The slot on the right can increase warpage on an uneven surface.
12. Lost key	a. Use two small screwdrivers	
13. Can't turn on unit	a. Valve/venturi assemblies are not properly locked into place.	a. Push on each valve/venturi assembly to ensure it is locked in place with the venturi tab. The tab makes a "click" when the proportioner is snapped in place. Once venturi is in place, the top of the wishbone should be positioned over the valve disk so that pushing on the wishbone easily compresses the valve disk in the shaft, turning the unit on/off.

TECH NOTE

BetaJet o-rings aren't all interchangeable. Do not replace damaged o-rings with o-rings from a different part.