

Instruction Manual for GEA Top Flow Z Goat Milker



**Covers Series- 4902, 4964w, 4966w, 4968w, 4912w, 1255, 1256, 1257, 1258,
1259, 1260, 1578, 1579, 1631, 1632, 1633, 1634, 1635, 1636**

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HAMBY DAIRY SUPPLY

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1-800-306-8937 ● www.hambydairysupply.com

Instructions for assembly of Goat Bucket Milker

1. Unpack all items

Do not throw away packing materials as you may find small items in packaging materials.

2. Vacuum Pump

The only assembly required is to attach the handle. Tighten the union on the bottom of the handle with a small pipe wrench. Now, the unit should be ready to plug into 110 volts and run. This unit has a long life vapor oil vane vacuum pump. Check oil level upon arrival, and before each use. The oil level gauge is on the side of the pump. Oil must always be visible in this tube while pump is running. To add oil simply pop out the black plastic plug on top of oil tank. Refill with high quality *10w40 motor oil*. Press the plug back into place once oil level is full. Do not fill above the oil wick outlet.



As the oil runs through the vacuum pump it is discharged into the exhaust chamber in the back portion of the tank. The oil will settle to the bottom and the air will be exhausted thru the 3/4" pipe elbow toward the top of the chamber. If the pump is run for a long period of time in the same position, a small amount of oil may accumulate on the floor directly below the elbow. This is normal as it is the vapor of oil. If this creates a problem a small piece of cardboard can be placed under the exhaust elbow. The metal tank under the pump is a moisture trap and vacuum storage tank. Milk or water that gets drawn into the tank should drain out the duckbill drain in the bottom of the tank after pump is shut down. If too much water or milk enters the tank, the pump will need to be flushed.



Duckbill Drain
SKU: 18037

The 7100 Vacuum system runs on 115 volts. It comes on when plugged in. For everyday use in your barn, or for remote mounting of vacuum pump, we recommend installing a 15 amp switched plug on your barn wall. This will allow you to turn it on and off with a switch instead of unplugging.

Switched plug-ins are available at most hardware stores.



7100 Electric Vacuum System

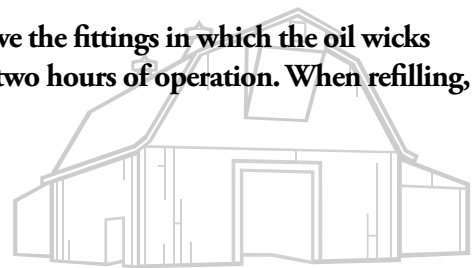


7400 Gas Powered Vacuum System

Instructions for assembly of Bucket Milker *(continued)*

3. Use a high detergency 10w-40 motor oil for all Conde Vapor Oil Vacuum Pumps. Synthetic oil, like Mobil 1, is recommended by Conde. This includes the LWVS portable, HD portable, or Model 6 stationary pump sold by Hamby Dairy Supply.

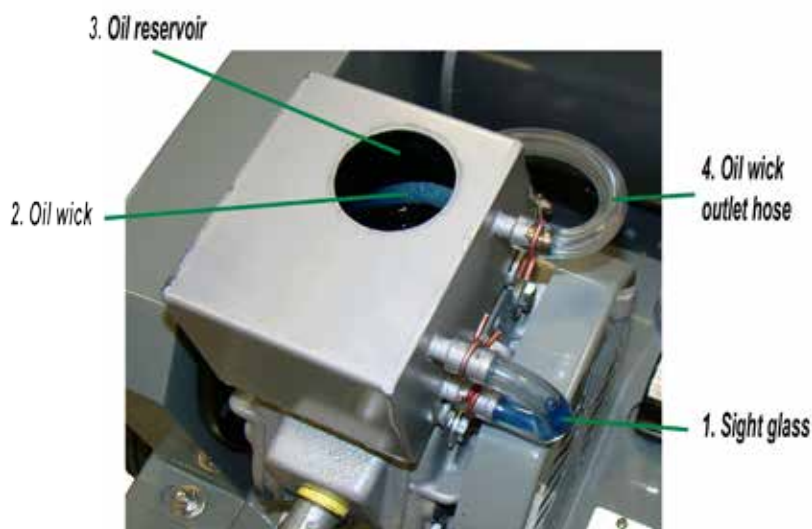
When starting a new vapor oil pump, fill oil reservoir above the fittings in which the oil wicks are inserted. This will give the pump extra oil for the first two hours of operation. When refilling, fill to just below oil wicks.



Supply

Note!

By looking in the sight glass you'll know when you need oil, because it will be low. It's best if the oil level inside the sight glass is 1/2 to 3/4 full.



Adding oil to the oil reservoir.

Instructions for assembly of Bucket Milker *(continued)*

4. Assemble Bucket

Put lid on bucket and snap handle into place.



5. Connect long blue stripe hose from the stallcock (1/4 turn valve) on the handle to the grey plastic hose port "Y" at the bucket lid. The 2 goat lid comes with pulsator and milking unit installed. Plugs are installed for milking 1 at a time. This is handy for the beginning and end of the milking season when only milking a few. Save the plugs when adding the second milking unit.



Stall cock



Hose port

6. The GEA Vacupuls pulsator is factory preset for goat milking. There are no adjustable parts to it.



Filters and Repair Kit for GEA Westfalia Vacupuls Constant Pulsator on page 14.

7. Plug vacuum system in to a 115 volt 15 amp circuit. Unit comes on immediately when plugged in.

8. How to control vacuum level

The ideal vacuum level for milking goats is between 10.5 and 11.0 inches of vacuum. To adjust level, loosen the nut on top of the regulator and turn the main body to adjust. Turn the body clockwise to increase and counterclockwise to decrease vacuum level. Tighten the nut when the desired vacuum level is reached.



Gauge



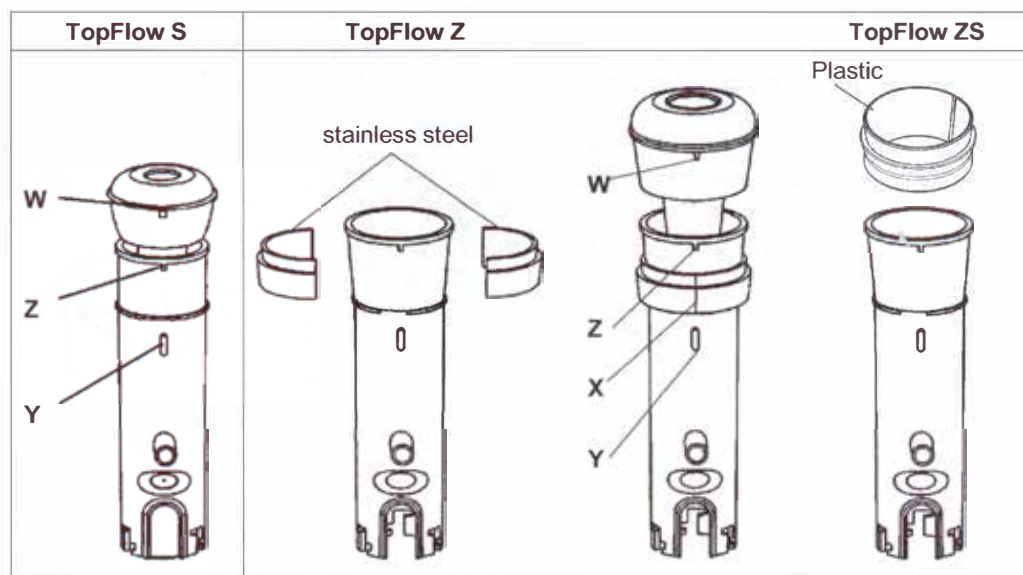
Regulator

9. Wash the bucket milker prior to 1st use and immediatly after each milking.

Top Flow Z Assembling the Teat Cup

Assembling the teat cup

- Position teat liner in the internal shell.



Place and fasten the half-cases (weights) around the internal shell so that the joint (X) between the half-cases is flush with the stop (Y) on the internal shell.

Position the head of the liner so that the stabiliser (W) is in line with the locking device (Y) in the inner tube and the second stabiliser (Z) has latched into position.

Also make sure that the lower edge of the top of the teat liner encompasses the shoulders of the half shells and sits continuously around the surface.

Top Flow Z Assembling the Teat Cup

- Finally, secure the liner head in position once again so that any trapped air can escape beneath the contact surface.

Attention!

Because of the risk of cracking do not try to knock the silicon liner into position.

When assembling use only the rod intended for that purpose (part no. 7036-9826-000).

- Push the introducing rod into the shaft of the liner until it comes to rest.



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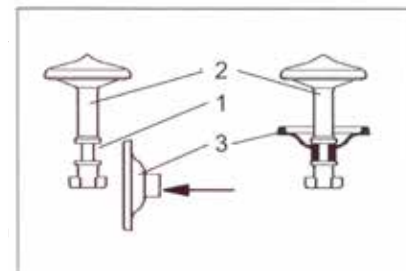
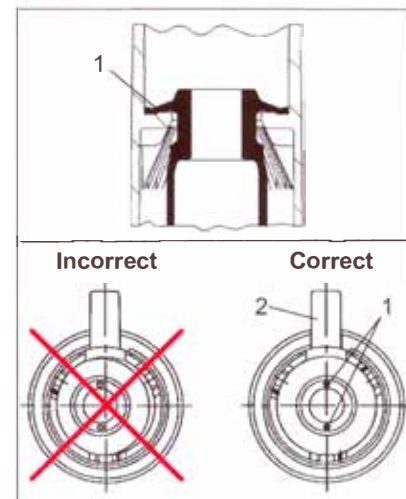
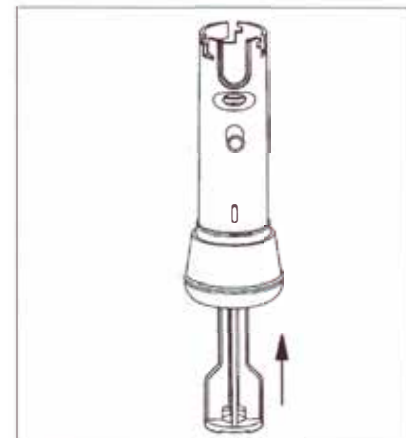
- Now exert an even amount of pressure until the plate (1) at the end of the shaft is fixed in the end position.

Make sure that the plate is in the centre of the shell and that the fitting mark (1) is in line with the centre line of the pulsation nozzle (2).

If this does not happen the liner has not been correctly fitted.

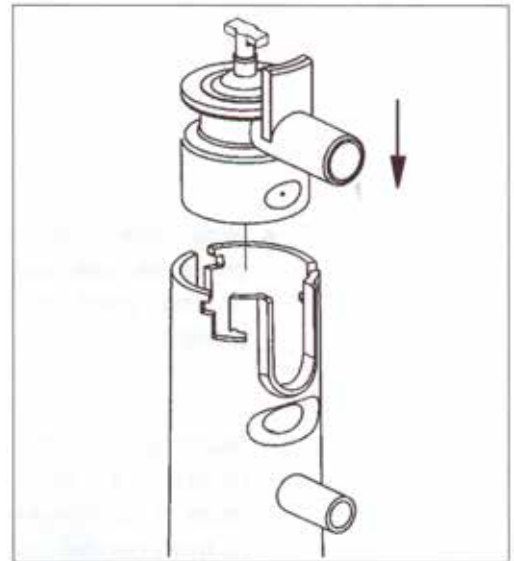
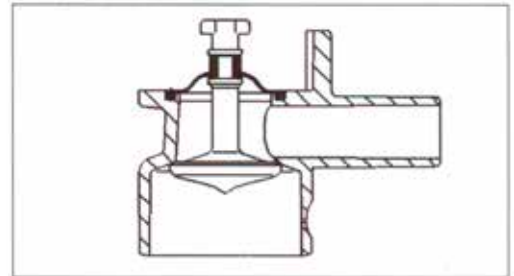
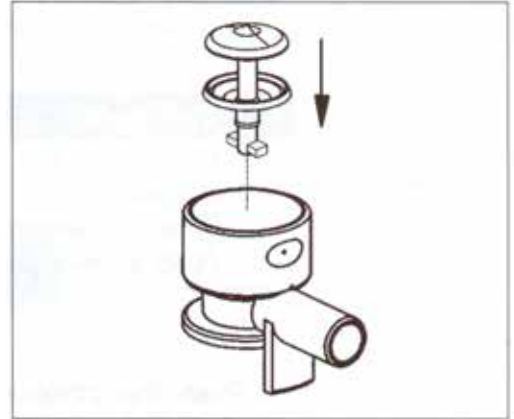
If necessary, align the liner plate by turning it an appropriate distance.

- To make it easier to fit the diaphragm (3) it is advisable to wet the shaft of the valve body (2) with a soapy solution.
- Now push the diaphragm in the correct position until it is level with the groove (1). Do not over-stretch the membrane in the process.



Top Flow Z Assembling the Teat Cup

- Now press the valve body membrane completely through the large diameter hole in the valve housing.
- Press the beading around the membrane into the annular groove in the valve housing as shown in the illustration on the left.
- Push the entire valve housing into the opening of the inner shell until it is resting on the bottom.



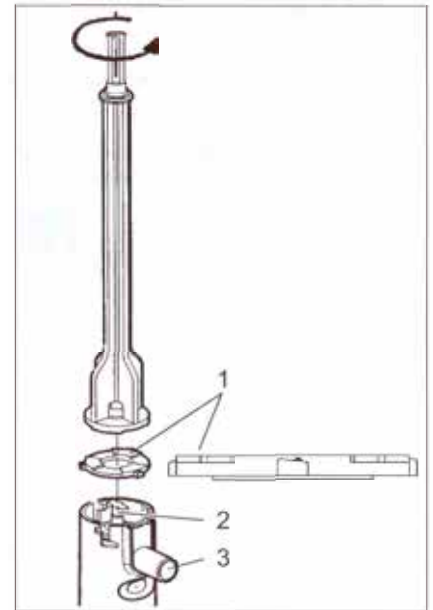
Hamby Dairy



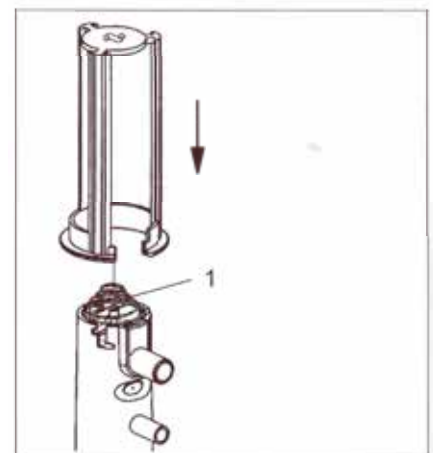
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Top Flow Z Assembling the Teat Cup

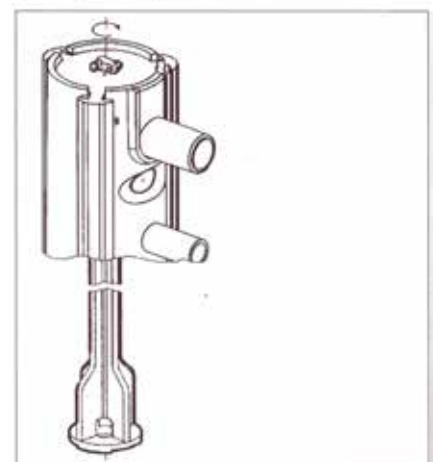
- Lay the clamping ring (1) in the internal shell as shown.
- Engage the introducing rod with the teeth on the disk and then twist in an anti-clockwise direction to engage.
- Check that the connection made is secure!
- Now turn the valve body until the lugs (2) at the end of the shaft align with the connector (3) on the valve housing.



- First of all insert the large-diameter conical wire spring (1) into the opening in the inner shell, until it rests on the bottom.
- Then push the outer shell over the inner shell.



- To keep the valve body clamped in position when the outer sleeve is fitted, it will be necessary to use the rod to hold it in position when fitting the outer sleeve.
- Then turn the valve body 90 degrees until the lugs are at the stop on the outer shell.



Instructions for Machine Milking Goats

**Milk Goats like consistency.
Milk at the same time each day.
Follow the same routine each milking.**

1. Wash your hands. Dirty hands spread disease.
2. Wear Nitrile Milking Gloves to reduce the spread of mastitis causing germs from your hands. The small cracks and crevices in human hands harbor a lot of bacteria including contagious Staph Aureus.
3. Sanitize your milking machine with a sanitizing solution just before you milk.
4. Entrance. Bring the Goat into a calm, stress free milking environment. Stress, such as loud noise, inhibits milk let down.
5. Warm hands first and then fore strip. Hand milk 1 or 2 squirts from each teat onto the black screen of a strip cup. Look for clots, clumps, blood, or signs of abnormal milk. Fore stripping promotes milk let down & faster milkout.
6. Teat Prep & Sanitation. The purpose of this step is to reduce the amount of bacteria on teat skin and promote milk let down.
 - Teat Wipes:* Wipe and massage each teat for 15 seconds. Use one wipe per goat or one per teat if they are visibly dirty. Teats will dry in a few seconds due to the alcohol in the wipes.
 - Pre Dipping:* (optional) Predip with Teat Kote 10/111. Wait 30 seconds, then dry off with a paper or cloth towel. Use one clean towel per goat. Do not reuse the towel as this may spread diseases from one goat to the next.



Supply

Instructions for Machine Milking Goats *continued*

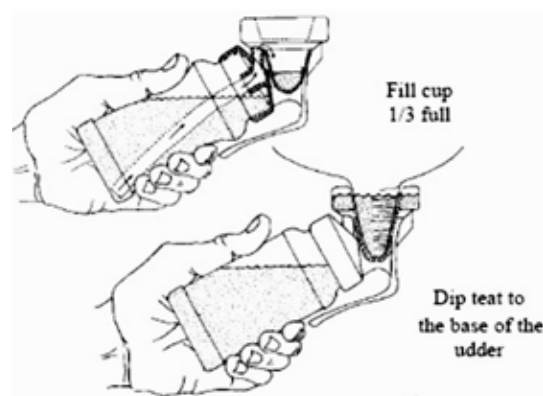
7. The goal is to milk clean, dry teats. Wet udders are a good conduit for bad bacteria and mastitis (udder infection). Wet udders may drip down to the top of the liner, and if the liner slips it will suck in the dirty water. Limit water use on the udder.
8. Apply the milker within one minute of the beginning of teat preparation. This maximizes the animals natural milk let down (oxytocin), speeds up milk flow, and reduces the machine on time. Let the vacuum pull the milker onto the teat.

DO NOT force the teat into the liner. It only needs to go in about 1/2 inch.

9. Adjust milking unit so it hangs square with out twisting the teats. A little forward tension will provide faster milkout.
10. The goat is finished milking when the large volume of milk flow drops off to a trickle. Milk out time should be 3 to 5 minutes on most goats. Pinch off the rubber milk tubes on the bottom of the inflations, then gently pull the inflation down off the teats.

11. Animals that were hard to milk by hand will take longer to milk with a machine. Most healthy udders will shrink significantly when milked out...*Except for the first few days post kidding when the udder has a lot of swelling (edema).* Usually the swelling leaves within a few days and then the udder should shrink when milked out. Dynamint udder cream will help reduce swelling if used in the first few days after kidding.

12. Should you post strip? No! Research has shown that post stripping may cause more harm than benefit. It may train the goat to hold back some milk and your hands will contaminate the teat end at a vulnerable time when the Keratin teat end seal is open. If the goat is not milking out properly, then you may need to adjust the way the milker is hanging, vacuum level, or have your milking machine checked for proper operation.



Instructions for Machine Milking Goats *continued*

13. Post dip **IMMEDIATELY** for Teat disinfection. Post dipping sanitizes the teat skin including the opening at the bottom of the teat. Post dipping has been proven to dramatically reduce cases of udder infections. Post Dip with AstroTek, Teat Kote 10/111, or DermaSept protocol tested teat dips. Use the Hamby Dairy Supply dip cup provided with your milking machine. This non-return style dip cup provides a fresh dose of teat dip for each teat. For temperatures below 25 degrees, DermaSept is recommended because it will not freeze.
14. It is important to keep the dairy goat standing for a while after milking. This will give some time for the wax-like seal of the teat orifice to seal back up. A good solution is to have a rack of fresh hay and fresh water available when they exit the milking parlor.

Hamby Dairy

Milking Goats with Top Flow Milking Units (Clusters)

Vacuum level

GEA, the manufacturer, recommends the following vacuum levels:

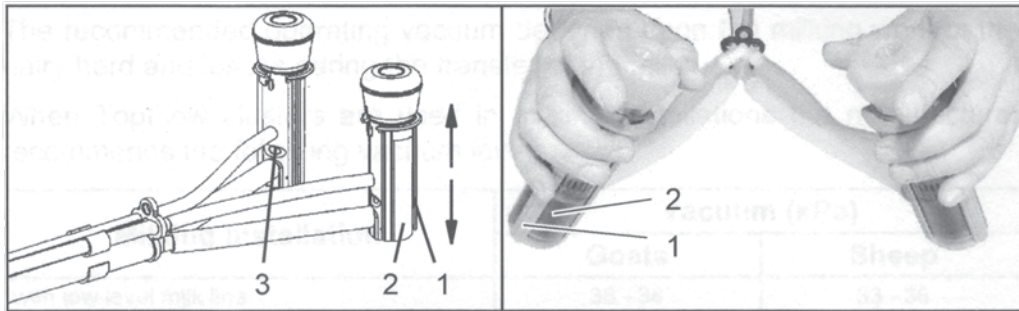
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Milking Installation	Vacuum (Hq)	
	Goats	Sheep
with low level milk line	10-11	10-11
with high level milk line	11-12	10.5-11
Bucket milking installations	10-11	10

Instructions for Machine Milking Goats *continued*

Application / Removal

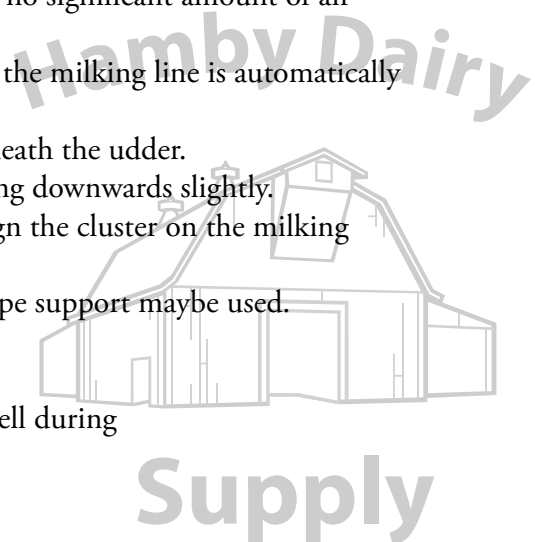
The built-in shut-off valves open and close with the attaching and take-off movement.



- When placing the teat cup on the teats, the operator holds the green outer cage (1).
- As soon as the teat is in the opening of the liner and the top of the teat liner is pressing against the udder, the green outer cage pushes up relative to the inner shell (2).
- This opens the shut-off valve and milking begins.
- When removing, the green outer cage is drawn gently downwards, closing the valve and breaking the vacuum connection to the milking line.
- A small hole (3) allows air into the inside of the teat liner. This takes place so quickly that the teat cup can be removed gently from the teat.
- The incoming air also means rapid transport of the milk during milking.
- When the teat cup is being applied or removed, there is no significant amount of air leaks so the vacuum remains stable.
- If the teat cup is knocked off the teat the connection to the milking line is automatically broken.
- The cluster must be well positioned and hang freely beneath the udder.
 - The outlet from the short milk tube will then be sloping downwards slightly.
 - Position the long milk tube so that it does not mis-align the cluster on the milking cups.
 - To ensure optimal guidance of the long milk tube a rope support maybe used.

Twisted teat liners mean defective milking.

A twisted teat liner is easy to see through the transparent shell during pulsation.



4 steps to Cleaning Your Bucket

Your milking machine must be kept clean and sanitary in order to have healthy milk that will keep without spoiling. Cleaning should be done immediately after milking. Don't let the milking machine sit dirty as the milk residues may dry on and then they will be much harder to clean. Your new milking machine will come with cleaning chemicals (Pfanzone) and 3 brushes for cleaning.



pic. 1



pic. 2



pic. 3

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- Step 1: WARM RINSE with 2-3 gallon warm water. Draw the warm water (100 degrees) from a bucket through the inflations and hoses (vacuum pump on) into the bucket of your milker. Discard water.
- Step 2: HOT WASH with 2-3 gallon hot water (140 degree) and 1/4 cup of powder Pfanzone dairy detergent. Draw this wash solution through the inflations and hoses and into the bucket. Repeat this step at least 3 times with the hot wash solution.
- Step 3: WARM RINSE with 2 gallon warm water. Draw through milker. Hang all components so that they drip dry in a clean sanitary place. Store your pail upside down on an open shelf rack or use bucket hanger so that it may drip dry.
- Step 4: Remove lid, then remove lid gasket and brush lid with swiss pail brush (pic.2) DO NOT GET PULSATOR WET!

ACID RINSING OPTION

Acid rinsing is very important for removing milkstone. Milkstone is made primarily of calcium residues from the milk and from hard water. Milkstone likes to stick to stainless steel and glass. Other milk residues, such as protein and fat like to stick to milkstone. This will result in a buildup that will leave your shiny stainless steel looking dull. That buildup can contaminate your milk affecting flavor and quality. It also provides a good medium for bad bacteria to grow on.

If your milking machine gets a dull look, then prepare a solution of 1 gallon hot (140 degree) water along with 1 ounce of Citrophos. Draw that through the milker 4 or 5 times, then brush wash the outside with this solution.

- Step 5: COLD SANITIZE with a chlorine solution 15 minutes prior to milking.



Washing Accessories & Supplies

Pfanzone powder detergent	25lbs.	7751-0041-033
Duophan	45 lbs. pail	7751-0041-074
Citrophos acid detergent	4 gallon	7751-0240-184
Long handle brush	(pic 1. above)	C-363FO
Swiss pail brush	(pic 2. above)	C-456FO
Inflation brush	(pic 3. above)	1150-003
Hose brush kit		1150-120K
Auto Bucket washer		56200
Small stainless steel sink		56195
Large 29 gallon SS sink	(38 inches x 20 inches)	1070-604
Wall mount or legs for large sink		1053SSWB
Mixing faucet - wall mount		1071-571

Top Flow Z Scheduled Maintenance

Teat cup

- The air inlet hole should be inspected regularly, using the pin supplied, to make sure it is not blocked (use part no. 7041-2688-000 / 0.5 mm diameter). Cleaning must be performed immediately if it is found that milk is backing up in the teat cup.
- The teat cups must also be regularly cleaned from the outside - preferably using an alkaline solution and a soft cloth or brush.

Attention!

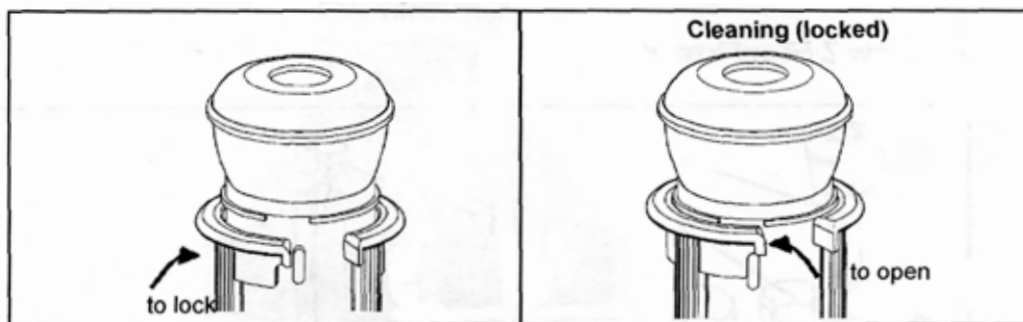
Hard brushes can cause damage to the silicone teat liner!

- Under no circumstances may the teat cup sleeves be cleaned using high-pressure equipment as this could allow liquid to get into the pulsing chamber and form a liquid film between the liner and the sleeve, causing the liner to twist very easily.
- Using the finger, check regularly to see if there is any milk residue on the inside of the liner head. Make sure that they are cleaned completely. They should be as clean as when they were first purchased.

Cleaning in bucket/wash sink

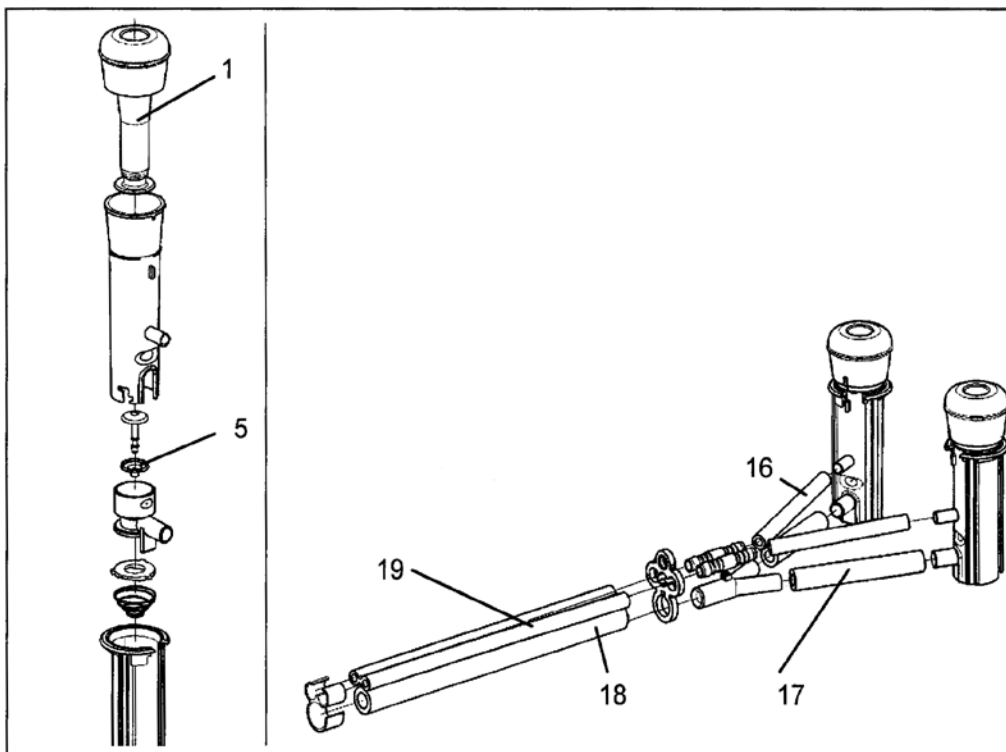
Note!

When the teat liners are placed in a trough for cleaning, the outer shell must be locked by lifting and rotating it in order to prevent the valve from closing automatically.



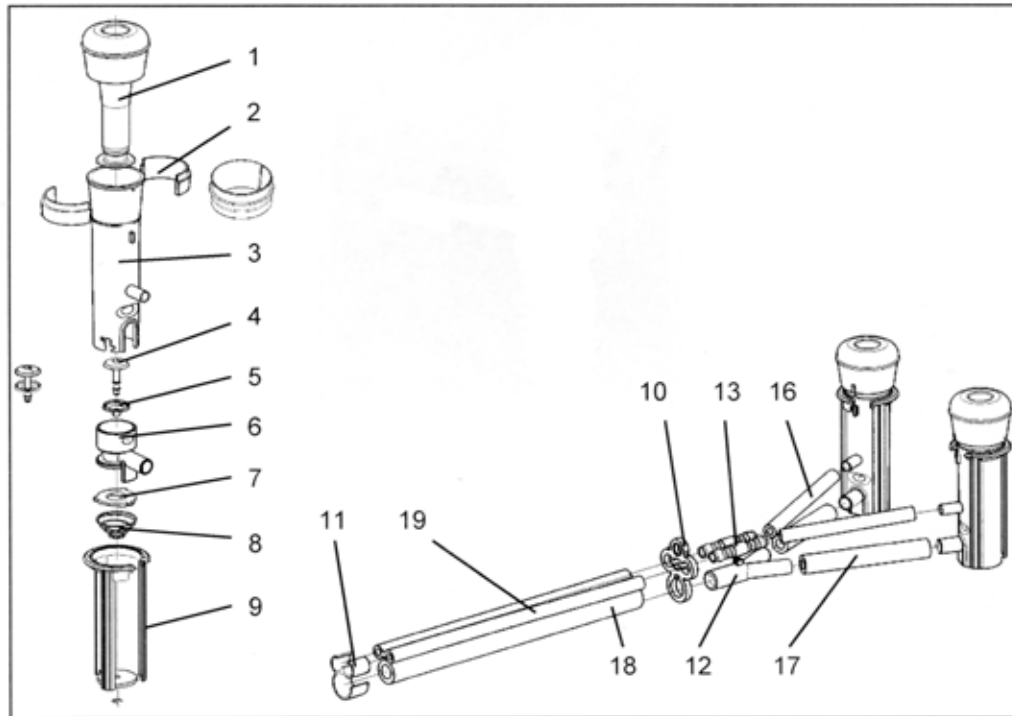
Top Flow Z Scheduled Maintenance

Interval	Pos.	Part No.	Description	Action
Before every milking			Teat cup Air inlet hole	Inspect/ clean
After every milking				
			Wash	Wash All parts
1500 operating hours	1	7036-2725-170	Liner TopFlow Z / Goat	replace / exchange
	1	7036-2725-140	Liner TopFlow S / Sheep	
	5	7036-1702-010	Diaphragm	
	17	9716	Short milk tube	
	18	1090-096	Long milk tube	
	16, 19	4716	Pulse tube	Inspect/ replace if necessary

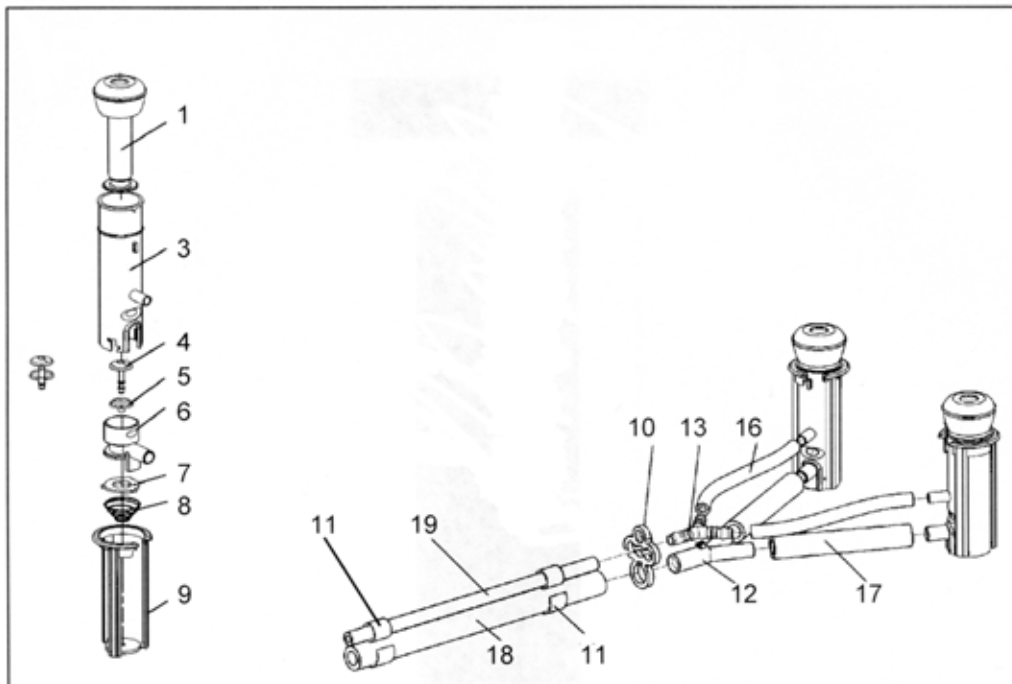


Spare Parts

Top Flow Z Goats



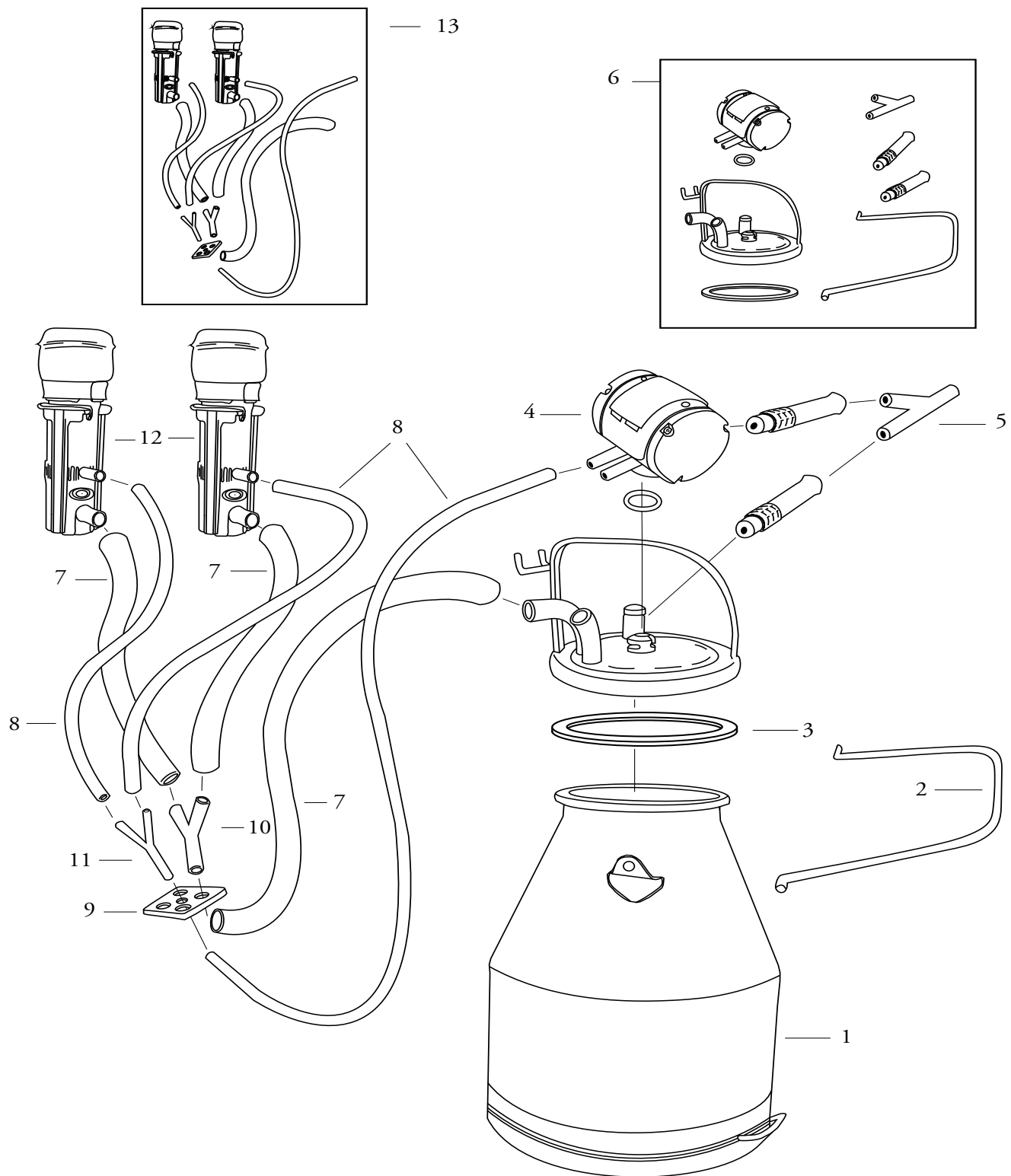
Top Flow S Sheep



Spare Parts

Pos.	Part No.	Description	
Cluster, complete			
For milking parlour with receiver (high level milk line)			
-	7036-2600-260	Cluster, complete	TopFlow Z
-	7036-2720-020	Teat cup, complete	
-	7036-2600-280	Cluster, complete	TopFlow S
-	7036-2720-010	Teat cup, complete	
1	7036-2725-170	Silicone Inflation for GEA TopFlo Z Goat	TopFlow Z
1	7036-2725-140	Silicone Liner for GEA TopFlo Z Sheep / Nigerian Dwarf	TopFlow S
3	7036-2722-100	Shell for GEA Goat Milker	TopFlow Z
3	7036-2722-060	Shell for GEA TopFlo Z Sheep / Nigerian Dwarf	TopFlow S
4	7036-1731-000	Valve body	
5	7036-1702-010	Valve for GEA Goat & Sheep Milking assy	
6	7036-2731-000	Valve housing	
7	7036-2556-000	Clamping ring	
8	0006-3878-300	Wire spring	35x20x0,9x13,5
9	7036-2722-110	Green Cage Switch Valve for GEA Goat & Sheep Milking assy	
10	7036-2804-000	Hose Clip	
12	7932	Milk Y	9/32 x 9/32 x 9/32
16	4716	Clear Pulsation Hose	
17	9716	7/16 Silicone Milk Hose	
19	4716	Clear Pulsation Hose	TopFlow S
Cluster, complete			
for milking parlour (low level milk line)			
-	7036-2600-270	Cluster, complete Items 13 not required. All other parts as 7036-2600-260	TopFlow Z
-	7036-2600-290	Cluster, complete Items 13 not required. All other parts as 7036-2600-280	TopFlow S
Cluster, complete			
for bucket milking installations			
	Items 13 not required. All other parts as 7036-2600-260		TopFlow Z
	Items 13 not required. All other parts as 7036-2600-280		TopFlow S

Replacement Parts for Goat Milkers



Replacement Parts for Goat Milkers

1. SKU: 30155	55# Stainless Steel Bucket
2. SKU: 30152	Stainless Steel Bucket Handle – Long
3. SKU: 1041	Gasket for stainless steel bucket lids
4. SKU: 7041-2700-570	GEA Westfalia Vacupuls Constant pulsator 60/40 for Goats only
- SKU: 7041-9905-000 - SKU: 7315-4107-000	Repair Kit for Westfalia Vacupuls Constant pulsator Air Filters for GEA Westfalia Vacupuls Constant pulsator
5. SKU: 7021-2627-020	Vacuum Air Y for Westfalia Bucket Milker
6. SKU: 3570	Lid & Pulsator Retro Kit for 2 Goat Bucket Milker with 2 milk inlets
7. SKU: 1090-096FT	5/8 I.D. Silicone Milk Hose / Tubing
8. SKU: 4716	9/32 ID Single Clear Pulsation Hose / Tubing
9. SKU: ITP2040010	Plastic Bracket
10. SKU: ITP2020009	Clear Milk Y for goats 5/8 x 1/2 x 1/2 Grade A
11. SKU: 7932	Small pulsation Y for Goat Milking 9/32 x 9/32 x 9/32
12. SKU: 7036-2720-020	TopFlo Z Full Size Goat Liner assy
12. SKU: 7036-2720-010	TopFlo Z Mini Goat/Sheep Liner assy
13. SKU: 4876	TopFlo Z Goat Milking assy * Low Line by GEA WestfaliaSurge

Accessories



Pos.	Part No.	Description
1	7036-2208-020	Protective bracket

Bucket Washer for Goat Milkers

6 UNIT NEW STYLE KLEEN-Flo® WASHER PARTS BREAKDOWN

THIS WASHER IS SHIPPED FULLY ASSEMBLED AND READY TO HOOK UP. DESIGNED FOR CLEANING MILKING UNITS ON A VACUUM OPERATED SYSTEM.

KLEEN FLO NEW STYLE CLAW WASHER INSTALLATION GUIDE

1. Claw washers should be installed on the wall, 12 to 16 inches above the top of the tub, where the milker units will be in to wash.
2. The drain hose on the bottom of the washer with a check ball, should be about 3" from the bottom of the tub. The elbow on top of the washer is a vacuum inlet; install a valve or lever stall cock to shut off vacuum supply when not in use.
3. Performance of the claw washers may vary from one installation to the next, as some vacuum systems may run at a higher or lower vacuum level.



- | | |
|----------|---|
| 56200 | - Complete 10" claw washer assembly , 6 unit |
| 56202 | - Stainless wall bracket for 10" washer |
| 56209 | - Weight (3 required) |
| 56210 | - Clip pin (2 required) |
| 56211 | - Rod spring |
| 56212 | - Stainless steel float |
| 56213 | - Gasket for clear sight tube (2 required) |
| 56214 | - Clear sight tube, 10" |
| 56216 | - Bottom dome with 6 - 5/8" ports |
| 56217 | - Bracket gasket (under bottom dome) |
| 56218 | - Drain hose |
| 56219 | - Check valve assembly for drain hose |
| 56220 | - Ball only for drain assembly |
| 56221 | - Clip pin for drain assembly |
| 56222 | - Rubber plug for ports |
| 1060-219 | - Inlet closure caps 5/8 |
| 56259 | - Stainless e-clip for washer rod |
| 56245 | - Valve guide block without bushing |
| 56252 | - New style stainless dome with 23/32" hole |
| 56269 | - 10" rod assembly for new style washer, with valve head and rod seal |
| 56256 | - New style valve head |
| 56263 | - New style 10" rod ONLY |
| 38215 | - Blue elbow, with 3/8 thread |
| 38211 | - Rubber seal for releaser rod |
| 7857 | - Stall cock |

To see a video about installing the bucket washer go to:
<https://www.youtube.com/watch?v=yLp4F5eyn84&feature=youtu.be>