Installation & Operation Manual for

P/N’s #10173NP, 10179NP, 10180NP, 10181NP, 10197NP, 41000NP & 41010NP

1/4 HP & 3/4 HP Mini Milker
IMPORTANT
READ FIRST

BEFORE USING PUMP, PLEASE NOTE IT IS CRITICAL NOT TO ALLOW THE MILK BUCKET TO OVERFLOW DURING MILKING OR WASHING AS LIQUID MAY GET INTO THE PUMP.

INTERNAL DAMAGE TO THE PUMP DUE TO ANY LIQUID IS NOT COVERED UNDER WARRANTY, BUT IS REPAIRABLE AT A COST TO THE CUSTOMER.

WHEN PUMP IS NOT IN USE, WE RECOMMEND COVERING OR STORING IN AN AREA FREE FROM DUST, DIRT, GRASS/STRAW OR MOISTURE. PLEASE SEE INSTRUCTIONS INSIDE MANUAL FOR PREPARING YOUR UNIT BEFORE STORING.

A 1-YEAR MANUFACTURER’S WARRANTY COMES WITH THIS PUMP. NOTE THE WARRANTY DOES NOT COVER NEGLIGENCE OR MISUSE OF PUMP WHICH INCLUDES MILK, WATER, CHEMICAL, DUST, DIRT OR ANY OTHER ENVIRONMENT-RELATED ITEMS GETTING INSIDE THE PUMP. COST OF REPAIRS TO CLEAN AND CORRECT DAMAGE WILL BE CUSTOMER’S RESPONSIBILITY.
1. Assemble vacuum pump onto the vacuum tank by placing pump on top of the tank so the inlet and outlet ports of the pump are over the vacuum tank inlets. Next place the carrying handle around the pump so that the mounting holes line up with the motor mounting holes at the pump end of the motor. The carrying handle may have to be bent slightly to get the holes to line up. Use the longer bolts at the handle mounting point. Use a flat washer under the head of the bolt and insert the bolt so the threads face up. Use a flat washer, lock washer and nut to secure the four mounting bolts.

2. Assemble the manifold to the right hand port.

3. Put the manifold assembly into the right hand port on top of the pump (across from the muffler). Thread the manifold assembly so the hose port is located over and facing the same way as the ports on the vacuum tank.

4. Connect the pump to the vacuum tank by slipping the short length of tubing over the copper adapter on the pump and the top inlet of the vacuum tank.

5. Assemble the milker unit by inserting the inflations into the shells. Pull the inflation through the end cap of the shell until the ring at the bottom of the inflation barrel is on the outside of the shell.

**BE CAREFUL NOT TO TWIST THE INFLATION WHILE PULLING IT THROUGH THE SHELL.**
6. Attach the short rubber air tubes to the nipple on the shell (warming the tubes in hot water will make assembly easier). Next slip the inflations onto the claw base inlets and the short air tubes on the middle section inlets.

7. Slide the snap clamp onto the 5/8" I.D. rubber milk hose and position it approximately 8" from the end. Place that end of the hose on the claw outlet.

8. Place the rubber gasket in the bottom side of the lid and place the lid on the pail and lock it in place with the pail handle. Attach the free end of the rubber milk hose from the claw to one of the pail lid inlets.

9. Repeat steps 5 - 8 if a second pail unit was ordered and attach the second unit's vacuum hose to the remaining inlet of the vacuum tank.

   **If using only one unit, place flip-up rubber closure on unused nipple on pump canister.**

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If these milker units are being used for Grade A milking, you may need to use a Check Valve Assembly in the vacuum line. Please see Page 13 for description and part number.
1. Close the Snap Clamp on the milk hose to shut the vacuum off to the milker unit.

2. Plug the vacuum pump power cord into a 110V outlet. The vacuum pump should start running.

IF THE PUMP FAILS TO START, REFER TO THE VACUUM PUMP OPERATION AND MAINTENANCE INSTRUCTIONS.

3. Within approximately **10 seconds**, the pump should build up a vacuum in the tank and the vacuum regulator should open to admit air. This will be indicated by an audible hiss. The vacuum gauge should read between **10** and **15** inches of mercury. If the pump is running, but the above doesn't happen, check the following:

(a) Plexi cover on end of vacuum tank is not sealed. Push cover firmly against tank.

(b) Pail lid not sealing properly. Check lid gasket and positioning on pail.

(c) Vacuum not turned off to milker units. Close snap clamps.

(d) Vacuum regulator open too far. Turn adjusting nut inward while holding the adjusting screw with a screwdriver.

(e) Air leaks. Check all hose connections on vacuum pump, etc., to be sure of tight fit with no air leaks.

(f) Motor RPM too low. Refer to vacuum pump operating and maintenance instructions.
4. With vacuum pump operating properly, adjust the vacuum regulator to obtain a gauge reading of 12-1/2 inches of mercury for Cows. (NOTE: For Goats and Sheep, vacuum regulator should read 10-1/2 inches of mercury.) To adjust, hold the regulator screw rigid with a screwdriver and loosen the lock nut. To increase the vacuum level turn the inner adjusting nut clockwise. To decrease the vacuum level turn the inner nut counter-clockwise. When the desired vacuum setting is attained, tighten the lock nut against the adjusting nut - this will prevent the setting from changing due to vibration.

5. With the vacuum level set at 12-1/2 (Cows), or 10-1/2 (Goats/Sheep), open the snap clamp to turn on the vacuum to the milker unit. Place red inflation plug in each of the inflations and check the pulsation rate. The recommended pulsation rate with the unit in the non-milking (static) condition is:
   - Cows: 54-56 pulsations per minute
   - Goats: 75-85 pulsations per minute
   - Sheep: 120 pulsations per minute

The pulsation rate on the NuPulse Milker Claw is adjusted by means of the adjusting cam on the pulsator diaphragm. To speed up the pulsation rate, turn the cam counter-clockwise which raises the adjusting pin. To slow down the pulsation rate, turn the cam clockwise.

6. If you have two milker units, repeat Step #5 for the second unit.

7. Disconnect power to the vacuum pump to shut it off.

CAUTION

THIS IS A DRY, OIL-LESS VACUUM PUMP—NEVER LUBRICATE IT.
The carbon vanes and grease-packed motor bearings DO NOT require oil.
1. All milk contact surfaces should be washed and sanitized in an approved solution. Washing should be done immediately after milking is completed. Sanitizing should be done just prior to milking.

2. After the pump is turned on and before milking is begun, the operator should check the following:

   (a) Vacuum gauge reads: 12-1/2 (Cows) or 10-1/2 (Goats/Sheep).
   (b) Pulsation rate is approximately:

       Cows:  54-56 per minute  
       Goats:  75-85 per minute  
       Sheep:  120 per minute

   (c) Insert thumb into one inflation on each unit and check that it is opening and closing.
   (d) Inspect short air tubes for holes, tears, splits, etc. and replace if any faults are found.

3. Prepare a cow by washing her udder with an approved udder washing solution and dry udder thoroughly with individual paper towels.

4. Attach milker unit to udder being careful not to admit excessive air while attaching teat cups.

5. Pulsation rate will change during milking as the claw adjusts to the milk flow. This is normal.

6. Shut vacuum off by means of the snap clamp and remove milker units as soon as cow is milked out. Do not leave units on for long periods of time as over milking can injure delicate teat tissue.

7. Dip teats in an approved teat dip.

8. Repeat Steps 3, 4, 5, 6 and 7 for all cows in herd.

9. Wash milking equipment with an approved solution. Rinse thoroughly and allow both milker unit and bucket to dry.

EACH DAY AFTER USE, RUN PUMP A FEW MINUTES WITH THE CLEAR HOSE DISCONNECTED TO HELP DRY OUT ANY MOISTURE LEFT INSIDE. DO NOT STORE PUMP WITHOUT DOING THIS AS RUST MAY FORM AND VOID YOUR WARRANTY.
MAINTENANCE

NOTE
The normal recommendation for replacement of NuPulse Inflations, Milk Hose and Repair Kits is based on number of milkings. However, for family farms with just a few animals, we recommend changing the Rubberware and Repair Kits annually to ensure optimal performance of your milker units.

1. Change NuPulse inflations at approximately 3000 cow milkings or more often if cracked or split.
2. Change short air tubes as needed when holes, splits, etc. are detected.
3. Change milk hoses at approximately 3 years or more often if cracked or split.
4. Install NuPulse pulsator repair kits at approximately 6000 cow milkings or more often if components are deteriorated.
5. Transparent claw body - replace if broken, as necessary.
6. All other rubber gaskets, hoses, etc. - replace when cracks or splits are detected.
7. Vacuum pump - refer to vacuum pump operating and maintenance instructions.
CONSTRUCTION

The outer end plate, body, rotor and mounting bracket are all cast iron. Consequently any moisture that accumulates in the pump will tend to corrode the interior - especially if it stands idle.

The vanes are made of hard carbon and are precision ground. The vanes should last between 5,000 and 10,000 hours depending upon the degree of vacuum at which the pump is run.

NEW PUMP START-UP

If the motor fails to start or hums, pull the plug and check the current rating shown on the motor nameplate. If the pump is extremely cold, bring to room temperature before starting. If anything appears to be wrong with the motor, contact your Dealer. DO NOT disassemble the pump and motor as that will void any warranty that remains.

All dual voltage motors shipped from E-Zee/NuPulse are set for LOW voltage—UNLESS OTHERWISE SPECIFIED AT THE TIME OF THE ORDER.
MAINTENANCE

WARNING!!
MOTORS ARE THERMALLY PROTECTED AND CAN AUTOMATICALLY RESTART WHEN THE PROTECTOR RESETS. ALWAYS DISCONNECT POWER SOURCE BEFORE SERVICING.

FLUSHING

Flushing is necessary to remove foreign particles, moisture or milk vapor deposits that could collect on the vanes causing them to break prematurely. Flushing the pump should remove these materials.

Flushing is accomplished by removing the two End Caps with O Rings and the Filter Felts (See Page 16) and then re-install the two End Caps with the O Rings. Remove the Muffler and also the clear hose from the Vacuum Gauge Manifold Assembly. Place a rag over the exhaust hole in the Pump. With the Pump still running, spray Flushing Solvent into the Manifold Hose Barb, while continuing to hold the rag over the exhaust Muffler hole. Keep spraying off and on until it looks clean on the rag.

You can purchase Flushing Solvent (E-Zee NuPulse #P00111NP) from your Dealer or purchase a can of non-flammable/non-combustible brake pad cleaner* from an auto parts store. (NOTE: DO NOT spray an oil-based product such as WD40 or Liquid Wrench into the pump as these products will damage the Pump and is not covered under warranty.) The solvents we recommend are quick dissolving and leave no residue in the Pump. *Brake Pad Cleaner may not be available in CA or NJ.

The Flushing procedure is recommended if you are going to store the Pump and not use it for a while. However, running the Pump a few minutes with the clear hose disconnected will also help dry out any moisture that’s left inside the Pump before storage and should be done daily after use.

WEAR EYE PROTECTION AND FLUSH IN A WELL VENTILATED AREA

CAUTION!!
DO NOT USE KEROSENE OR OTHER COMBUSTIBLE SOLVENTS OR OPERATE PUMP IN EXPLOSIVE AMBIENCE.
FILTERS

Dirty filters restrict air flow and, if not corrected, could lead to possible motor overload, poor performance and early pump failure. Check filters periodically and clean when necessary by removing felts and washing in Flushing Solvent. Dry with compressed air and replace.

DISASSEMBLY

Please be sure to look over the Troubleshooting Guide on Page 12 for options before beginning any disassembly. If flushing does not eliminate the problem, remove the six bolts holding the end plate to the body. Now remove the end plate and the four vanes. Do not remove the rotor or loosen electric motor through bolts. The vanes could be worn or require further cleaning. The top clearance (between rotor and body) may be adjusted by LIGHTLY tapping on the pump body while turning the rotor to assure that all points on the rotor clear the body.

DANGER!!

TO PREVENT EXPLOSIVE HAZARD, DO NOT PUMP COMBUSTIBLE LIQUIDS OR VAPORS WITH THESE UNITS.
# TROUBLESHOOTING GUIDE

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>SOLUTION</th>
</tr>
</thead>
</table>
| Pump runs, but overheats and shuts down several minutes after startup. | • Remove the Muffler and turn Pump on to see if it runs normal. If yes, clean any debris from Muffler that may be blocking airflow and reinstall. Muffler may need to be replaced if it cannot be cleaned.  
• Remove the black End Caps & check the Filter Felts according to Page 11 under Filters. |
| Pump runs, but does not produce vacuum. | Check and set the Regulator (Brass Relief Valve) as shown in Step #4 on Page 5. |
| Pump hums but will not turn over when powered on. Two things will cause unit to hum:  
1. Is Fan locked up?  
2. Has debris gotten onto starter contacts? | • With Pump turned off, check to see if Pump Fan is locked up by inserting flat screwdriver in side ventilation slots where fan is and push on fan blades to see if it rotates freely (see Illustration #1 below). If YES, move to Step #2. If locked up, see Page 11 for Disassembly instructions. **BEFORE DISASSEMBLING, PLEASE NOTE WARNING REGARDING WARRANTY.**  
• Starter contacts are mounted on a white plate inside the electric motor and can be seen and accessed through the vent slots on side of pump to right of power cord (see Illustration #2 below). Take a can of compressed air and direct air to try to blow any debris off those contact points. Note if you have “stickier deposits” on the contacts, you can also use a quick-dissolving electronic spray obtained from an electronics store which will help remove those types of deposits. |

See Pages 17 & 18 for Troubleshooting tips

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**Illustration #1**  
Insert flat screwdriver into side ventilation slots and push fan blades to see if fan rotates freely.

**Illustration #2**  
Spray compressed air at the contact points inside pump to clear any debris from them.
## MINI MILKER SYSTEM BREAKDOWN (FOR COW)

<table>
<thead>
<tr>
<th>NO.</th>
<th>PART</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>MZ10057NP</td>
<td>Super Inflations</td>
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<tr>
<td>2</td>
<td>MZ20705NP</td>
<td>Stainless Heavy Shells</td>
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<td>3</td>
<td>MZ10045NP</td>
<td>Short Air Tubes</td>
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<tr>
<td>4</td>
<td>10001NP</td>
<td>Standard Claw</td>
</tr>
<tr>
<td>5</td>
<td>MZ10051NP</td>
<td>Shut Off Clamp</td>
</tr>
<tr>
<td>6</td>
<td>MZ13162NP</td>
<td>Premium Milk Hose (3 feet)</td>
</tr>
<tr>
<td>7</td>
<td>M10260NP</td>
<td>60 lb. Stainless Milk Pail</td>
</tr>
<tr>
<td>9</td>
<td>P41015NP</td>
<td>Mini Vacuum Tank</td>
</tr>
<tr>
<td>10</td>
<td>R30176NP</td>
<td>Gasket for Plexi Lid</td>
</tr>
<tr>
<td>11</td>
<td>P41016NP</td>
<td>Plexi Lid</td>
</tr>
<tr>
<td>12</td>
<td>A35210NP</td>
<td>5/8” Clear Tubing</td>
</tr>
<tr>
<td>13</td>
<td>P01199NP</td>
<td>3/4 HP Mini Pump &amp; Motor</td>
</tr>
<tr>
<td></td>
<td>P01195NP</td>
<td>1/4 HP Mini Pump &amp; Motor</td>
</tr>
<tr>
<td>14</td>
<td>P01236NP</td>
<td>Cord with 3 prong plug</td>
</tr>
<tr>
<td>15</td>
<td>P41010NP</td>
<td>Vacuum Gauge</td>
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<tr>
<td>16</td>
<td>A40519NP</td>
<td>Brush for Pail Lid Inlet</td>
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<tr>
<td>17</td>
<td>M10215NP</td>
<td>Lid &amp; Gasket for SS Lid</td>
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<tr>
<td></td>
<td>M10213NP</td>
<td>Replacement Gasket for SS Lid</td>
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<tr>
<td>Optional</td>
<td>10217NP</td>
<td>Vacuum Check Valve</td>
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# Pump & Motor Breakdown

<table>
<thead>
<tr>
<th>NO.</th>
<th>PART No. 3/4 HP Pump</th>
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<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P41021NP</td>
<td>P41021NP</td>
<td>End Cap for Mini Pump</td>
</tr>
<tr>
<td>2</td>
<td>P41022NP</td>
<td>P41022NP</td>
<td>Filter Felt for Mini Pump</td>
</tr>
<tr>
<td>3</td>
<td>P41050NP</td>
<td>P41051NP</td>
<td>New Style Black Muffler for Mini Pump</td>
</tr>
<tr>
<td></td>
<td>P41023NP</td>
<td>A03171NP</td>
<td>Old Style Brass Muffler for Mini Pump</td>
</tr>
<tr>
<td>4</td>
<td>P41028NP</td>
<td>P41038NP</td>
<td>Housing Gasket for Mini Pump</td>
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<tr>
<td>5</td>
<td>P41025NP</td>
<td>P41025NP</td>
<td>'O' Ring for Mini Pump</td>
</tr>
<tr>
<td>6</td>
<td>P41020NP</td>
<td>P41030NP</td>
<td>Vane for Mini Pump</td>
</tr>
</tbody>
</table>

Also available:
- P41026NP
- P41029NP
- P41031NP

Also available:
- P41026NP
- P41029NP
- P41031NP

Also available:
- P41024NP
- P41034NP

Service Kit—includes 4 x Vanes, 1 x Gasket, 2 x O Ring, 2 Filter Felts
## 1/4HP & 3/4HP MINI PUMP COMPLETE

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<tr>
<td>1</td>
<td>P41015NP</td>
<td>Mini Vacuum Tank Complete with lid, gasket, clip &amp; handle</td>
</tr>
<tr>
<td>2</td>
<td>R30176NP</td>
<td>Gasket for Plexi Lid—10”</td>
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<td>P41016NP</td>
<td>Plexi Lid</td>
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<td>4</td>
<td>25235</td>
<td>5/8” Clear Tubing (2 ft)</td>
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<td>3/4 HP Mini Pump &amp; Motor Only</td>
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<td>6</td>
<td>P41011NP</td>
<td>Brass Relief Valve</td>
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<td>7</td>
<td>67224</td>
<td>Vacuum Gauge</td>
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<td>8</td>
<td>56375</td>
<td>5/8” Flip Up Rubber Closure</td>
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<td></td>
<td>10217NP</td>
<td>Vacuum Check Valve (Used on 1/4HP Units)</td>
</tr>
<tr>
<td>N/S</td>
<td>P01236NP</td>
<td>Cord with 3 prong plug</td>
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</tbody>
</table>

**Optional**

- **10217NP** Vacuum Check Valve (Used on 1/4HP Units)
# MINI PUMP & MOTOR

## 1/4 HP Pump & Motor
**P01195NP**

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<td>7</td>
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## 3/4 HP Pump & Motor
**P01199NP**

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To obtain the maximum performance from your NuPulse Milker, here are some helpful points.

1. Recommended vacuum levels are:
   a) High Line: Standard Unit - 14" Hg - MLX Unit 14" to 15" Hg
   b) Medium Lines and Weight Jars: 13" to 13.5" Hg
   c) Low Lines and Bucket Milkers: 12" to 12.5" Hg

   NOTE: Add 1" when using tube type milk meters.

2. Pulsation rate should be set at 54 - 56 pulsations per minute for Standard Units and 56 - 60 pulsations per minute for MLX Units in static mode (non-milking). To increase the pulsation rate, turn the cam counterclockwise. To decrease the pulsation rate, turn the cam clockwise.

   NOTE: There is a (+) and a (-) molded into the top of the cam knob for reference.

3. Clean the air filter regularly.

4. Use hose hangers in stanchion barns to properly position the milker under the cow.

5. Keep the milk hose as short as possible.

6. Check the diaphragm, bobbin valve, bobbin ‘O’ ring and bobbin vacuum hole regularly for cleanliness and proper operation.

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**OPERATION**

**CLEANING**

Wash water temperature should not drop below 110°F during recirculation cycle, and should have a Ph of 11.5 or higher.

C.I.P. Cleaning using Jetters
1. Put teat cups on Jetters.
2. Insert jetter tube adapters into claw wash port.
3. Manually clean the pulsator parts weekly or as needed.
4. For maximum MLX diaphragm life, it is recommended the units pulsate while washing.

**CAUTION**

Do not over tighten the claw parts when reassembling. Let the ‘O’ rings do their job.

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**TROUBLESHOOTING**

**Units Falling Off**
1) Over milking
2) Wet, soapy teats
3) Worn rubberware
4) Vacuum level too low
5) Line flooding

**Cows Kicking**
1) Vacuum set too high
2) Pulsator malfunction
3) Stray voltage
4) Over milking
5) Sore teats

**Pulsators Slow Down or Stop**
1) Milk or vacuum hose kinked
2) Air leaks in claw
3) Bobbin hole plugged
4) Dirty air filter
5) Damaged or missing ‘O’ ring
6) Damaged diaphragm rubber

**Units Speed Up**
1) This is normal during heavy milk flow
2) Vacuum too low
3) Worn inflations
4) Vacuum leaks
5) Clogged bowl vent (MLX)
6) Over milking
7) Milk hose or inlet valve undersized
8) Pulssator rubberware worn out
9) Line flooding—too many units per slope, milk inlets lower 2/3 of pipeline

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**NO.** | **PART** | **DESCRIPTION**
--- | --- | ---
1 | MZ10006NP | Dome
2 | MZ10007NP | Pulsator Spring
3 | MZ10005NP | Diaphragm Complete
4 | MZ10022NP | Bobbin Only
5 | MZ10009NP | Bobbin ‘O’ Ring
6 | MZ10010NP | Bobbin Housing
7 | MZ10028NP | Air Filter
8 | MZ10015NP | Bobbin Housing Seal
9 | MZ10011NP | Bobbin Valve
10 | MZ10012NP | Bobbin Clip
11 | MZ10014NP | Middle ‘O’ Ring
12 | MZ10002NP | Wash Plug
13 | MZ10016NP | Standard Middle
MZ10068NP | MLX Middle (shown)
14 | MZ10030NP | Claw Protector Seal
15 | MZ10017NP | Base ‘O’ Ring
16 | MZ10069NP | MLX Diaphragm
17 | MZ10013NP | Standard Super Bowl
MZ10070NP | MLX Super Bowl
GOAT CLAW

<table>
<thead>
<tr>
<th>NO.</th>
<th>PART</th>
<th>DESCRIPTION</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>MZ10006NP</td>
<td>Dome</td>
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<tr>
<td>2</td>
<td>MZ10007NP</td>
<td>Pulsator Spring</td>
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<td>3</td>
<td>MZ10005NP</td>
<td>Diaphragm Complete</td>
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<td>4</td>
<td>MZ10022NP</td>
<td>Bobbin Only</td>
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<tr>
<td>5</td>
<td>MZ10009NP</td>
<td>Bobbin ‘O’ Ring</td>
</tr>
<tr>
<td>6</td>
<td>MZ10010NP</td>
<td>Bobbin Housing</td>
</tr>
<tr>
<td>7</td>
<td>MZ10028NP</td>
<td>Air Filter</td>
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<td>8</td>
<td>MZ10015NP</td>
<td>Bobbin Housing Seal</td>
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<td>9</td>
<td>MZ10011NP</td>
<td>Bobbin Valve</td>
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<td>MZ10012NP</td>
<td>Bobbin Clip</td>
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<td>11</td>
<td>MZ10014NP</td>
<td>Middle ‘O’ Ring</td>
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<tr>
<td>12</td>
<td>MZ10002NP</td>
<td>Wash Plug</td>
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<tr>
<td>13</td>
<td>MZ10100NP</td>
<td>Goat Middle</td>
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<td>MZ10030NP</td>
<td>Claw Protector Seal</td>
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<td>15</td>
<td>MZ10017NP</td>
<td>Base ‘O’ Ring</td>
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<tr>
<td>16</td>
<td>MZ10106NP</td>
<td>Goat Base</td>
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</tbody>
</table>

**OPERATION**

To obtain the maximum performance from your NuPulse Milker, here are some helpful points.

1. Recommended vacuum levels are:
   a) High Line: Standard Unit—12.5" Hg
   b) Medium Lines and Weight Jars: 11.5" Hg
   c) Low Lines and Bucket Milkers: 10.5" Hg

   **NOTE:** Add 1” when using tube type milk meters.

2. Pulsation rate should be set at 75-85 pulsations per minute for Goat Units in static mode (non-milking). To increase the pulsation rate, turn the cam counterclockwise. To decrease the pulsation rate, turn the cam clockwise.

   **NOTE:** There is a (+) and a (−) molded into the top of the cam knob for reference.

3. Clean the air filter regularly.
4. Use hose hangers in stanchion barns to properly position the milker under the goat.
5. Keep the milk hose as short as possible.
6. Check the diaphragm, bobbin valve, bobbin ‘O’ ring and bobbin vacuum hole regularly for cleanliness and proper operation.

**CLEANING**

Wash water temperature should not drop below 110°F during recirculation cycle, and should have a Ph of 11.5 or higher.

**C.I.P. Cleaning using Jetters**

1. Put teat cups on Jetters.
2. Insert jetter tube adapters into claw wash port.
3. Manually clean the pulsator parts weekly or as needed.

**CAUTION**

Do not over tighten the claw parts when reassembling. Let the ‘O’ rings do their job.

**TROUBLESHOOTING**

**Units Falling Off**
1) Over milking
2) Wet, soapy teats
3) Worn rubberware
4) Vacuum level too low
5) Line flooding

**Goats Kicking**
1) Vacuum set too high
2) Pulsator malfunction
3) Stray voltage
4) Over milking
5) Sore teats

**Pulsators Slow Down or Stop**
1) Milk hose kinked
2) Air leaks in claw
3) Bobbin hole plugged
4) Dirty air filter
5) Damaged or missing ‘O’ ring
6) Damaged diaphragm rubber

**Units Speed Up**
1) This is normal during heavy milk flow

**Slow Milking**
1) Vacuum too low
2) Worn inflations
3) Vacuum leaks
4) Clogged bowl vent (MLX)
5) Over milking
6) Milk hose or inlet valve undersized
7) Pulsator rubberware worn out
8) Line flooding—too many units per slope, milk inlets lower 2/3 of pipeline
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