



BOB WHITE SYSTEMS

THE COMPLETE COW MILKING SYSTEM

NUPULSE



Attention: Please read instructions thoroughly before using equipment. This Manual is designed to accompany the E-Zee NuPulse Installation and Operation Manual you will also receive.

Upon receiving the unit, please check IMMEDIATELY to see whether there is any visible damage to the bucket milker, vacuum pump, or other items. If there is any damage do not attempt to run the unit!

Call or email Bob White Systems. (802) 763-2777



YOUR SYSTEM INCLUDES:

NOTE: THIS PACKAGE GENERALLY SHIPS IN 3-4 PACKAGES. SOME OF THE ITEMS IN THIS PACKAGE MAY SHIP BY FREIGHT. THEY MAY ARRIVE AT YOUR DESTINATION AT DIFFERENT TIMES.

Milking System:					
Vacuum Pump	¾ HP	or	1 HP		
Claw Style	NuPulse				Inflation# MZ10057
Bucket Size	35lb S.S.	or	55lb S.S.	or	75lb S.S.
Package Size	One Cow	or	Two Cows		

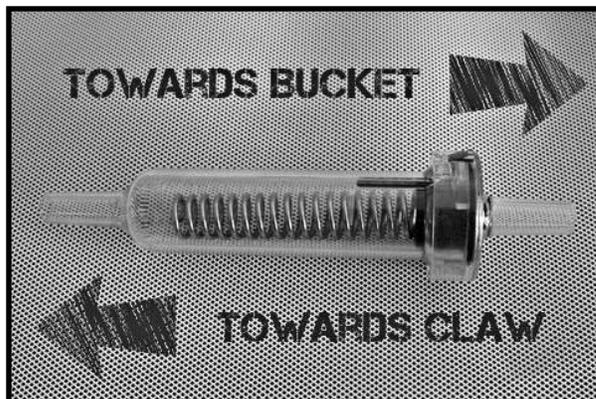
Equipment Care Package:	Udder Care Package:	Filter System:
10lb Dairy Equipment Cleaner	Iodine Teat Dip	In-Line Filter*
Long Equipment Brush	Plastic Strip Cup	6" Paper Sock Filters*
Inflation Bore Brush	Teat Dip Cup	
5/8 th Hose Cleaning Kit		
Lightweight Stainless Pail		

* A Two Cow package size will include 2 in-line filters and 2 boxes of 6" Paper Sock Filters.

ASSEMBLING YOUR MILKING SYSTEM

STEPS OF OPERATION:

- 1) COLLECT ALL OF YOUR PACKAGES IN ONE PLACE. BE SURE TO READ ALL LABELS AND DIRECTIONS OF THE INDIVIDUAL PRODUCTS BEFORE STARTING.
- 2) PREPARE YOUR TEAT DIP CUP BY FILLING IT WITH 6-8 OUNCES OF THE IODINE TEAT DIP.
- 3) **IN-LINE FILTER:** TO INSTALL THE IN-LINE FILTER. CUT THE SILICONE HOSE ABOUT **10-12 INCHES** FROM WHERE IT IS CONNECTED TO THE LID PORT. YOU WANT TO BE SURE THAT IT ISN'T COMPROMISING THE FLOW OF THE MILK, AND FAR ENOUGH AWAY FROM THE CLAW THAT A COW CANNOT STEP ON IT DURING MILKING. INSERT THE IN-LINE FILTER WHERE YOU HAVE MADE THE CUT. THE LARGER END GOES TOWARDS THE BUCKET AND THE SMALLER END TOWARDS THE CLAW.



BE SURE TO INSERT A FILTER BEFORE MILKING! GENTLY TWIST OFF THE CAP AND REMOVE THE SPRING. SLIDE THE SOCK FILTER ONTO THE SPRING, DOWN TO THE RUBBER GROMMET. PUT THE SPRING ASSEMBLY BACK IN THE FILTER CASE, AND TWIST THE CAP BACK INTO PLACE. THE CAP ONLY NEEDS TO BE TWISTED TO "FINGER TIGHT" PRESSURE IN ORDER FOR IT TO WORK PROPERLY. **DO NOT OVER-TIGHTEN!**



OPERATING YOUR NEW BUCKET MILKER

THE FOLLOWING GUIDELINES WILL ASSIST THE FIRST TIME USER IN PROPERLY OPERATING A BUCKET TYPE MILKER SYSTEM.

PLEASE NOTE: COW SIDE PRACTICE AND PRE AND POST CARE OF THE ANIMAL IS LEFT SOLELY UP TO THE DAIRYMAN. BOB-WHITE SYSTEMS RECOGNIZES ONLY THE PRACTICES PUBLISHED BY THE NATIONAL MASTITIS COUNCIL, MILKING MACHINE MANUFACTURES COUNCIL, AND ESTABLISHED 3A GUIDELINES. BOB-WHITE SYSTEMS MAKES NO CLAIM AS TO THE RIGHT OR WRONG WAY OF USING THE ABOVE TYPE OF MILKING SYSTEMS, BOB-WHITE SYSTEMS ONLY DESCRIBES THE FUNCTION OF HOW THE PIECE OF EQUIPMENT WAS DESIGNED TO WORK AND HAS BEEN PROVEN TO WORK IN PRACTICAL FIELD APPLICATIONS. **BOB-WHITE SYSTEMS WILL NOT BE HELD ACCOUNTABLE FOR ANY CLAIMS OR DAMAGES.**

STEPS OF OPERATION CONTINUED:

4) PLACE YOUR VACUUM PUMP IN A CENTRAL LOCATION NEAR AN 110V OUTLET. REVIEW THE VACUUM PUMP PAGES BEFORE OPERATING. WHEN PLUGGING IN THE PUMP **DO NOT USE AN EXTENSION CORD! YOU CAN USE UP TO A 100 FOOT LONG VACUUM LINE TO GET PRESSURE TO YOUR BUCKET SYSTEM.**

VACUUM LEVELS TO OPERATE THE BUCKET MILKER CAN BE BETWEEN 11" TO 15" OF MERCURY. RECOMMENDED LEVEL IS 13" HG FOR COWS. BUCKET SYSTEMS REQUIRE A LARGE VOLUME OF VACUUM TO COMPLETELY SATISFY THEIR REQUIREMENTS, IF VACUUM LEVELS ARE TOO LOW IT WILL BE HARDER TO APPLY THE MILKING UNIT.

USING THE 1/2" VACUUM HOSE SUPPLIED, CONNECT THE ADAPTER ON THE BUCKET LID TO THE VACUUM SYSTEM. THE VACUUM SUPPLIED TO THE ADAPTER ON THE LID SUPPLIES VACUUM TO BOTH THE BUCKET AND THE PULSATOR.

TO ADJUST THE VACUUM PRESSURE: WHILE THE WHOLE SYSTEM IS RUNNING, READ THE GAUGE. IF IT IS NOT WITHIN THE 13 INCH RANGE, YOU WILL NEED TO ADJUST THE PRESSURE USING THE REGULATOR VALVE. IT IS LOCATED NEXT TO THE VACUUM GAUGE.

FOR THE **3/4 HP VACUUM PUMP**, HOLD THE REGULATOR SCREW RIGID WITH A SCREW DRIVER 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 SEEING IS ATTAINED, TIGHTEN THE LOCK NUT AGAINST THE ADJUSTING NUT– THIS WILL PREVENT THE SETTING FROM CHANGING DUE TO VIBRATION.

FOR THE **1HP VACUUM PUMP**, ADJUST LEVEL BY LOOSENING THE NUT ON TOP OF THE REGULATOR AND TURNING THE MAIN BODY TO ADJUST. TO INCREASE THE VACUUM LEVEL TURN THE BODY CLOCKWISE. TO DECREASE THE VACUUM LEVEL TURN THE BODY COUNTER-CLOCKWISE. TIGHTEN THE NUT WHEN THE DESIRED VACUUM LEVEL IS REACHED– THIS WILL PREVENT THE SETTING FROM CHANGING DUE TO VIBRATION.



FOR MORE INFORMATION ABOUT THE CARE AND MAINTENANCE OF YOUR VACUUM PUMP, SEE THE ATTACHED VACUUM PUMP MANUAL.



STEPS OF OPERATION CONTINUED:

6)CHECKING THE CLAW: GET TO KNOW YOUR CLAW AND HOW ALL OF THE PIECES FIT TOGETHER. AN IMPORTANT ‘JOINING’ TO LOOK AT IS WHERE THE INFLATION JOINS THE PORT AT THE TOP OF THE CLAW. THE INFLATIONS SHOULD BE ON THE PORT JUST ENOUGH TO COVER THE OPENING. IF IT IS TOO FAR DOWN THE PORT, THE INFLATION WILL NOT “SELF-KINK” WHEN ALL TEAT CUPS ARE ALLOWED TO HANG TOWARDS THE GROUND.

WHEN APPLYING THE MILKER UNIT (CLAW) THE SHUT OFF ON THE CLAW MUST BE OPENED(PUSH SHUT OFF UP) TO ALLOW VACUUM TO BE SUPPLIED TO THE UNIT. MAKE SURE THE VACUUM PUMP IS RUNNING AND YOU CAN HEAR AIR BEING DRAWN INTO THE OPENING OF THE INFLATIONS. WHILE HOLDING THE CLAW IN YOUR LEFT HAND, THE SHELLS AND INFLATIONS WILL HANG DOWN TOWARDS THE GROUND SO THAT THE INFLATIONS "KINK" AND CUT THE VACUUM OFF TO THE INFLATION.



Left: When Shut-Off Button is pushed UP the claw is open, and vacuum is allowed through the claw and inflations.

Right: As the inflations hang towards the floor (photo below), the weight will ‘kink’ the line and prevent vacuum from that teat. As you apply to the cow’s teat, kink the line as shown at the right, until the teat is in place. Failure to do this will allow vacuum to escape through the open inflation.

ONCE ALL 4 OF THE INFLATIONS ARE "KINKED" AND NO AIR IS ABLE TO ENTER THE INFLATIONS THROUGH THE INFLATIONS’ OPENINGS THE PULSATOR WILL START PULSATING, THIS WILL INDICATE YOU ARE NOW READY TO APPLY THE MILKER UNIT. BEGIN PLACING THE INFLATIONS ON THE ANIMAL ONE AT A TIME STARTING WITH THE FURTHEST TEAT FROM YOU. WHILE SUPPORTING THE CLAW AND APPLYING SLIGHT UPWARD PRESSURE ON THE INFLATIONS ALREADY PLACED ON THE ANIMAL TO HELP MAINTAIN THEIR POSITION UNTIL ALL 4 INFLATIONS ARE ATTACHED. PRACTICE HANDLING THE CLAW BEFORE PLACING ON COWS.

7) TO STOP VACUUM TO THE INFLATIONS AND REMOVE THE UNITS FROM THE ANIMAL CLOSE THE SHUT OFF ON THE CLAW, (PULL SHUT OFF DOWN).





CLEANING AND MAINTENANCE

CLEANING:

ONCE MILKING IS FINISHED, PULL OUT THE PAPER SOCK FILTER OF THE IN-LINE FILTER AND DISPOSE OF IT PROPERLY.

TIP: THE FILTER CAN BE A GOOD INDICATOR OF YOUR COW'S HEALTH. BECOME FAMILIAR WITH WHAT HER "NORMAL" LOOKS LIKE, ALWAYS KEEPING AN EYE OUT FOR LARGE CLUMPS, BLOOD CLOTS, ETC.

RINSE: DIRECTLY AFTER MILKING, RINSE THE ENTIRE MILKING UNIT WITH WATER (90° -120°F). THE CLAW CAN BE RINSED IN PLACE BY SUBMERGING IN A SINK/PAIL AND DRAWING THE WATER THROUGH THE UNIT. THE SHUT-OFF BUTTON SHOULD BE PRESSED DOWN AND LOCKED IN PLACE UNDER THE SMALL PLASTIC NOTCHES. BE SURE TO MAKE A DIPPING MOTION WHILE IT SUCKS UP WATER TO INCREASE TURBIDITY AND SCRUBBING ACTION. THIS WILL ALSO CLEAN THE MILK HOSE FROM THE CLAW TO THE BUCKET.

IT IS IMPORTANT TO NOT OVERFILL YOUR BUCKET USING THIS METHOD. BE SURE THAT YOUR SINK/PAIL IS FILLED APPROPRIATELY FOR THE SIZE OF YOUR MILKING BUCKET. OVERFILLING THE MILK BUCKET CAN SEND SUDS AND FLUIDS INTO THE VACUUM LINE.

WASH: TO CLEAN THE CLAW IN PLACE (CIP) SUBMERGE IN A SINK/PAIL WITH 1 OZ OF CLEANING POWDER FOR EVERY TWO GALLONS OF WARM WATER (125°F). TAKE A MOMENT TO SCRUB THE INSIDE OF EACH INFLATION WITH THE BORE BRUSH. MAKE A DIPPING MOTION AS THE CLAW RUNS THE CLEANING SOLUTION INTO THE BUCKET. ONCE THE SOLUTION HAS BEEN TRANSFERRED TO THE MILKING BUCKET SEPARATE THE PULSATOR (WITH OR WITHOUT THE ADAPTOR) AND SET IT ASIDE. CLEAN THE LID WITH A BRUSH, PAYING SPECIAL ATTENTION TO THE PORTS. SEPARATE THE LID GASKET AND CLEAN THOROUGHLY.

FINAL RINSE: THERE ARE TWO WAYS YOU CAN PROCEED WITH A FINAL RINSE.

WARM WATER RINSE: RINSE THE SOLUTION OFF OF THE CLAW, BUCKET, AND REMAINING PARTS WITH WARM WATER (125°F).

ACID RINSE: AFTER RINSING THE EQUIPMENT CLEANER OFF OF ALL THE SURFACES, RINSE IN TEPID WATER THAT HAS BEEN ACIDIFIED. CHOOSE A DAIRY ACID CLEANER THAT IS RIGHT FOR YOU. THIS WILL REMOVE TRACES OF ALKALINE CLEANER AND PREVENT MINERAL DEPOSITS (MILK STONE) FROM BUILDING UP, EVEN ON STAINLESS STEEL. DO NOT RINSE AGAIN, SET TO DRY.

STORAGE: AFTER THE CLEANING PROCEDURE IS ACCOMPLISHED, THE CLAW SHOULD BE POSITIONED SO THAT IT WILL DRAIN ANY RESIDUAL CLEANING SOLUTION AND THE BUCKET SHOULD BE TURNED UPSIDE DOWN TO ENSURE COMPLETE DRAINING.

SANITIZE: JUST BEFORE EACH MILKING, RE-ASSEMBLE THE MILKING MACHINE. THE PULSATOR AND ADAPTER WILL NEED TO BE RETURNED TO THE LID, WITH THE PULSATOR SLID FULLY ONTO THE ADAPTOR AND THE LID NUT TIGHTENED TO A "FINGER TIGHT" PRESSURE. THE MILK LINE WILL ATTACH TO THE PORT THAT HAS A STAINLESS STEEL GUARD AROUND IT ON THE UNDERSIDE OF THE LID. THE VACUUM LINE IS ATTACHED TO THE PORT WITH NO GUARD AROUND IT. FLUSH WITH A DAIRY SANITIZER BY FOLLOWING THE DIRECTIONS ON THE SANITIZER LABEL FOR PROPER CONCENTRATION, CONTACT TIME AND WATER TEMPERATURE.



FAQ:

MY COW HAS A LOW UDDER AND THE TEAT CUPS DRAG ON THE GROUND WHEN ALLOWED TO “SELF-KINK” AS THEY DROP TOWARD THE GROUND. HOW CAN I MILK MY COW WITH TWO HANDS WHEN I NEED EIGHT HANDS?

WE HAVE OPTIONS FOR YOU! THEY ARE AS FOLLOWS:

- BUILD UP A PLATFORM FOR THE COW TO STAND HER BACK FEET ON.
- DIG A LARGE DEPRESSION IN THE GROUND UNDER HER UDDER.
- PLUG A TEAT CUP OR TWO WITH THE **PLASTIC INFLATION PLUG-IT** UNTIL YOU ARE READY FOR THAT TEAT.
- HOLD TWO OF THE INFLATIONS IN THE HAND THAT HOLDS THE CLAW. SLIDE THE CLAW UNDER THE UDDER AT AN ANGLE AS YOU ATTACH THE FURTHEST TEAT. THE “SHUT OFF” BUTTON WILL BE PULLED OUT WHILE YOU GET A HOLD. ONCE UNDER THE COW, SLIDE A SPARE FINGER OVER TO THE BUTTON AND DEPRESS IT AS YOU PUT THE FIRST TEAT CUP ON THE FURTHEST TEAT FROM YOU. THIS IS A JUGGLING ACT BUT CAN BE DONE! PICTURES SHOWN BELOW.
- ACQUIRE A NEW COW WITH A HIGHER UDDER



TROUBLESHOOTING

UNITS FALLING OFF

- OVERMILKING
- WET, SOAPY TEATS
- WORN RUBBERWARE
- VACUUM LEVEL TOO LOW
- LINE FLOODING
- LEAK IN THE VACUUM LINE
- SHUT-OFF BUTTON IS ‘OPEN’

COW/GOAT/SHEEP KICKING

- VACUUM SET TOO HIGH
- PULSATOR MALFUNCTION
- STRAY VOLTAGE
- OVER MILKING
- TEAT END ABRATIONS/SORE TEATS

UNIT SPEEDS UP

- THIS IS NORMAL FOR A NUPULSE CLAW DURING HEAVY MILK FLOW
- CHECK THE PULSATION RATE FOR THE PULSATORS ON THE LID OF THE BUCKETS. ADJUST TO THE RECOMMENDED PULSES PER MINUTE FOR YOUR SPECIES.

TROUBLESHOOTING CONTINUED ON NEXT PAGE...



TROUBLESHOOTING CONTINUED:

SLOW MILKING

- VACUUM TOO LOW
- WORN INFLATIONS
- VACUUM LEAKS
- CLOGGED BOWL VENT (NUPULSE)
- OVER MILKING
- MILK HOSE OR INLET VALVE UNDERSIZED
- PULSATOR RUBBERWARE WORN OUT
- PIPELINE FLOODING-TOO MANY UNITS PER SLOPE, MILK INLETS LOWER 2/3 OF PIPELINE

PULSATOR SLOW DOWN OR STOP

- MILK HOSE KINKED (NUPULSE)
- AIR LEAKS IN CLAW
- BOBBIN HOLE PLUGGED
- DIRTY AIR FILTER
- DAMAGED OR MISSING “O” RING (NUPULSE)
- DAMAGED DIAPHRAGM RUBBER (NUPULSE)
- CHECK THE PULSATION RATE FOR THE PULSATORS ON THE LID OF THE BUCKETS. ADJUST TO THE RECOMMENDED PULSES PER MINUTE FOR YOUR SPECIES.

CARING FOR YOUR STAINLESS STEEL

- WHEN WASHING YOUR STAINLESS STEEL EQUIPMENT IT IS CRUCIAL TO USE THE CORRECT AMOUNT OF DETERGENT. SEE PACKAGING ON YOUR DETERGENT FOR CORRECT DILUTION.
- IT IS IMPORTANT TO USE AN ACID RINSE (“DAIRY” ACID, ACID SANITIZER, ETC.) TO NEUTRALIZE THE DETERGENT.
- OVERUSE OF CHLORINE-BASED CLEANSERS WITHOUT AN ACID RINSE CAN CAUSE YOUR STAINLESS STEEL EQUIPMENT TO “PIT” OR RUST. YOU MAY NEED TO PASSIVATE YOUR STAINLESS STEEL EQUIPMENT. PASSIVATION IS REQUIRED TO MAXIMIZE THE NATURAL CORROSION RESISTANCE OF THE STAINLESS.

- TO PASSIVATE

DAIRY ACID

CITRIC ACID (4-10%)

AFTER WASHING YOUR STAINLESS STEEL, SPRAY ON ACID OF CHOICE, LET SIT FOR 2-5 MINUTES THEN RINSE OFF.





1 HP PORTABLE VACUUM PUMP



THIS VACUUM PUMP SYSTEM SHIPS VIA TRUCK FREIGHT. SINCE THERE IS MINIMAL ASSEMBLY REQUIRED, IT SHOULD BE READY TO PLUG INTO 110 VOLTS UPON ARRIVAL. IN MOST CASES THE UNIT IS SHIPPED WITH THE HANDLE DETACHED. TO ASSEMBLE HANDLE TO UNIT, TIGHTEN THE UNION ON BOTTOM OF HANDLE WITH A SMALL PIPE WRENCH

THIS UNIT HAS A VAPOR OIL VANE VACUUM PUMP. CHECK OIL LEVEL UPON ARRIVAL, AND BEFORE EACH USE. THE OIL LEVEL GAUGE IS THE SMALL PIECE OF CLEAR HOSE IN A U-SHAPE 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.

AS THE OIL RUNS THRU 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 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 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.

FLUSHING THE PUMP AFTER FLUID HAS ENTERED THE TANK:

If too much water or milk gets into the tank, it will be drawn into the vacuum pump. If this occurs, it will need to be flushed out.

- 1) Locate the oil tube and remove at the oil reservoir.
- 2) Remove the plug on the bottom of exhaust chamber. This is to drain chamber after flushing process is complete.
- 3) Kerosene or fuel oil works best for the flushing process. **DO NOT** use gasoline or any other highly flammable liquid to flush the vacuum pump. Start the pump and insert the tube into the cleaning fluid. Allow the pump to draw the fluid in. Periodically let air enter the tube along with the fluid. You may need up to a gallon of fluid to fully clean the pump.
- 4) Once the cleaning fluid is gone, use the same method to draw about 5 ounces of 10w40 motor oil into the pump to complete the flushing process.
- 5) Put plug back in exhaust chamber and allow pump to run at normal vacuum level for 15 to 30 minute to flush out.



3/4 HP VACUUM PUMP



PLEASE REFER TO THE INSTALLATION AND OPERATION MANUAL INCLUDED. THIS WILL GUIDE YOU THROUGH THE ASSEMBLY AND USE OF YOUR NEW 3/4 HP VACUUM PUMP. BE AWARE THAT SOME OF THE INSTRUCTIONS ARE FOR A NUPULSE CLAW, WHICH HAS THE PULSATION ON THE CLAW. YOUR UNIT DIFFERS IN EVERY WAY EXCEPT FOR INSTRUCTIONS SPECIFICALLY FOR THE 3/4 HP VACUUM PUMP.

FEEL FREE TO CALL **(802) 763-2777** IF YOU HAVE ANY QUESTIONS.