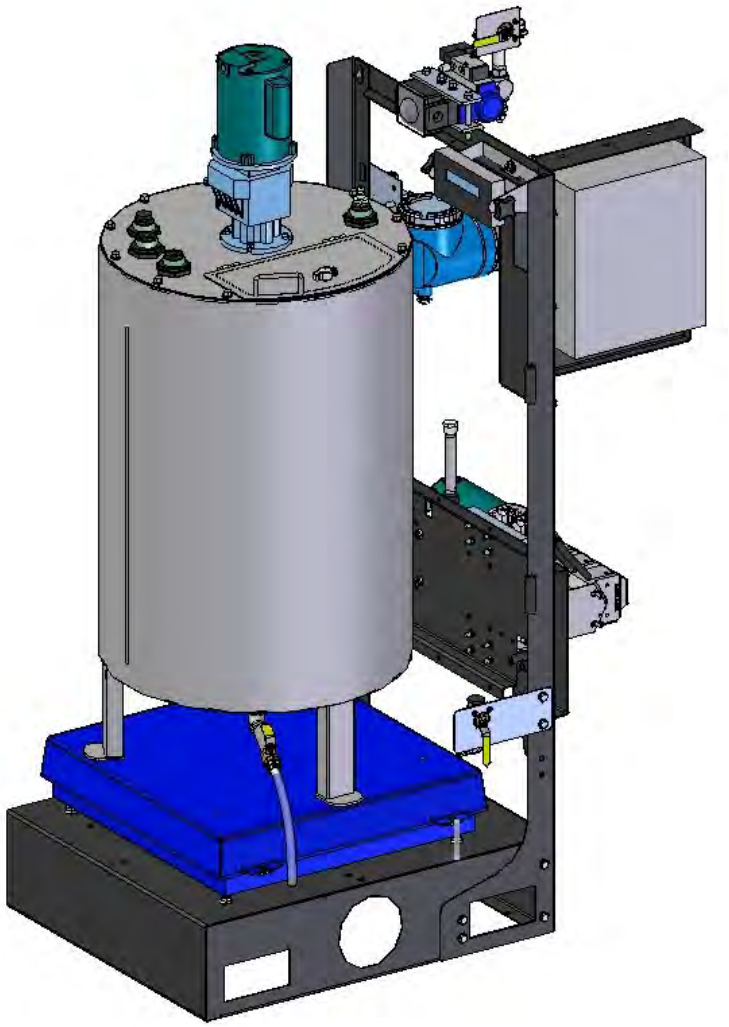
LX MX 2ND PUMP STAND

Operators Manual



Document: TD-09-06-1011 **Revision: A**






2320 124th Road Sabetha, Kansas 66534 PH: (785) 431-7900 FAX: (785) 431-7950 www.uscllc.com

Revision Effective 10 JULY 2014

INTRODUCTION

Thank you for choosing USC, LLC for your equipment needs. We appreciate your business and will work diligently to ensure that you are satisfied with your choice.

OVERVIEW

The purpose of this manual is to provide you with the basic information needed to operate and maintain the LX / MX Pump Stand. It does not hold USC, LLC liable for any accidents or injuries that may occur.

OPERATOR RESPONSIBILITIES

As the purchaser/owner/operator of this equipment and control system, you have an obligation to install, operate, and maintain the equipment in a manner that minimizes the exposure of people in your care to any potential hazards inherent in using this equipment. It is critical that the owner of this equipment:

- Has a clear and documented understanding of the process this machine is being used in and of any resulting hazards or special requirements arising from this specific application.
- Allow only properly trained and instructed personnel to install, operate, or service this equipment.
- Maintain a comprehensive safety program involving all who work with this machine and other associated process equipment.
- Establish clear areas of staff responsibility (e.g. operation, setup, sanitation, maintenance, and repairs).
- Provide all personnel with necessary safety equipment.
- Periodically inspect the equipment to insure that the doors, covers, guards, and safety devices are in place and functioning, that all safety instructions and warning labels are intact and legible, and that the equipment is in good working order.
- In addition to the operating instructions, observe and enforce the applicable legal and other binding regulations, national and local codes.

As the person with the most to gain or loose from working safely, it is important that you work responsibly and stay alert. By following a few simple rules, you can prevent an accident that could injure or kill you or a co-worker.

- Do not operate, clean, or service this equipment until you have read and understood the contents of this manual. If you do not understand the information in this manual, bring it to the attention of your supervisor, or call USC at (785) 431-7900 for assistance.
- Any operator who is known or suspected to be under the influence of alcohol or drugs should not be allowed to operate the equipment.
- Understand and follow the safety practices required by your employer and this manual.
- **PAY ATTENTION** to what you and other personnel are doing and how these activities may affect your safety.
- **Failure to follow these instructions may result in serious personal injury or death.**

RECEIVING YOUR EQUIPMENT

As soon as the equipment is received, it should be carefully inspected to make certain that it has sustained no damage during shipment and that all items listed on the packing list are accounted for. If there is any damage or shortages, the purchaser must immediately notify USC, LLC. Ownership passes to purchaser when the unit leaves the USC, LLC. premises. The purchaser is responsible for unloading and mounting all components of the equipment.

Document the serial number of the machine for future reference. The serial number is located on the frame next to the pump stand control panel.

SERIAL NUMBER:_____

Table of Contents

SAFETY INSTRUCTIONS

SECTION A

Every year accidents in the work place maim, kill and injure people. Although it may be impossible to prevent all accidents, with the right combination of training, operating practices, safety devices, and operator vigilance, the number of accidents can be significantly reduced. The purpose of this section is to educate equipment users about hazards, unsafe practices, and recommended hazard avoidance techniques.

SAFETY WORDS AND SYMBOLS

It is very important that operators and maintenance personnel understand the words and symbols that are used to communicate safety information. Safety words, their meaning and format, have been standardized for U.S. manufacturers and published by the American National Standards Institute (ANSI). The European Community (E.C.) has adopted a different format based on the International Standards Organization (I.S.O.) and applicable machinery directives. Both formats are presented below. Graphic symbols are not standardized, but most manufacturers will use some variation of the ones seen in this manual.

Indicates an imminently hazardous situation which, if not avoided, **will** result in death or serious injury.

Indicates a potentially hazardous situation which, if not avoided, **could** result in death or serious injury.

Indicates a potentially hazardous situation which, if not avoided, **may** result in minor or moderate injury and/or property damage.

Provides additional information that the operator needs to be aware of to avoid a potentially hazardous situation.

Mandatory Lockout Power Symbol. Disconnect, lockout and tagout electrical and other energy sources before inspecting, cleaning or performing maintenance on this panel.

International Safety Alert Symbol. The exclamation point (!) surrounded by a yellow triangle indicates that an injury hazard exists. However, it does not indicate the seriousness of potential injury. The exclamation point (!) is also used with the DANGER, WARNING and CAUTION symbols so the potential injury is indicated.

Electrocution Hazard Symbol. This symbol indicates that an electrocution hazard exists. Serious injury or death could result from contacting high voltage.

International Electrocution Hazard. This symbol indicates that an electrocution hazard exists. Serious injury or death could result from contacting high voltage.

Mandatory Read Manual Action Symbol. (I.S.O. format) This symbol instructs personnel to read the Operators Manual before servicing or operating the equipment.

Mandatory Read Manual Action Symbol. This symbol instructs personnel to read the Operators Manual before servicing or operating the equipment.

Notice is used to notify people of important installation, operation or maintenance information which is not hazard related.

LOCKOUT / TAGOUT PROCEDURES

Lockout/Tagout is the placement of a lock/tag on an energy isolating device in accordance with an established procedure. When taking equipment out of service to perform maintenance or repair work, always follow the lockout/tagout procedures as outlined in ANSI Z344.1 and/or OSHA Standard 1910.147. This standard "requires employers to establish a program and utilize procedures for affixing appropriate lockout devices or tagout devices to energy isolating devices and to otherwise disable machines or equipment to prevent unexpected energizing, start-up, or release of stored energy in order to prevent injury to employees."

HAZARD REVIEW

Electrocution Hazard

Electrocution accidents are most likely to occur during maintenance of the electrical system or when working on or near exposed high voltage wiring. This hazard does not exist when the electrical power has been disconnected, properly locked, and tagged out.

Automatic Start Hazard

The equipment may be controlled by an automated system and may start without warning. Failure to properly disconnect, lockout, and tagout all energy sources of remotely controlled equipment creates a very hazardous situation and could cause injury or even death. PLEASE STAY CLEAR AND BE ALERT.

YOU are responsible for the **SAFE** operation and maintenance of your USC, LLC equipment . **YOU** must ensure that you and anyone else who is going to operate, maintain, or work around the treater be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual will take you step-by-step through your working day and alert you to good safety practices that should be adhered to while operating the treater.

Remember, **YOU** are the key to safety. Good safety practices not only protect you, but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Equipment owners must give operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter per OSHA (Occupational Safety and Health Administration) regulation 1928.57.
- The most important safety device on this equipment is a **SAFE** operator. It is the operator's responsibility to read and understand **ALL** Safety and Operating instructions in the manual and to follow them. All accidents can be avoided.
- A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

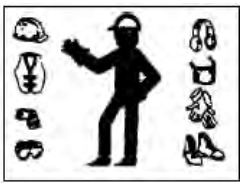
GENERAL SAFETY

1. Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or unplugging the seed treater .
2. Only trained persons shall operate the seed treater. An untrained operator is not qualified to operate the machine.

3. Have a first-aid kit available for use should the need arise, and know how to use it.

4. Provide a fire extinguisher for use in case of an accident. Store in a highly visible place.

5. Do not allow children, spectators or bystanders within hazard area of machine.
6. Wear appropriate protective gear. This includes but is not limited to:



   - A hard hat
   - Protective shoes with slip resistant soles
   - Protective goggles
   - Heavy gloves
   - Hearing protection
   - Respirator or filter mask

7. Place all controls in neutral or off, stop motor, and wait for all moving parts to stop. Then disable power source before servicing, adjusting, repairing, or unplugging.

8. Review safety related items annually with all personnel who will be operating or maintaining the Equipment.

OPERATING SAFETY:

1. Read and understand the Operator's Manual and all safety signs before using.
2. Disconnect and disable electrical supply completely and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Clear the area of bystanders, especially children, before starting.
4. Be familiar with the machine hazard area. If anyone enters hazard area, shut down machine immediately. Clear the area before restarting.
5. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
6. Stay away from overhead obstructions and power lines during operation and transporting. Electrocution can occur without direct contact.
7. Do not operate machine when any guards are removed.
8. Inspect welds and repair if needed.

PLACEMENT SAFETY

1. Move only with the appropriate equipment
2. Stay away from overhead power lines when moving the treater. Electrocution can occur without direct contact.
3. Be familiar with machine hazard area. If anyone enters hazard areas, shut down machine immediately. Clear the area before restarting.
4. Operate the treater on level ground free of debris. Anchor the treater to prevent tipping or upending.

Before placement of the pump stand, be sure that ground is reasonably level. The pump stand may topple or work improperly if the ground is too uneven, damaging the equipment and/or causing personal injury.

MAINTENANCE SAFETY

1. Review the Operator's Manual and all safety items before working with, maintaining or operating the Equipment .
2. Place all controls in neutral or off, stop motors, disable power source, and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
3. Follow good shop practices:

   Keep service area clean and dry.
   Be sure electrical outlets and tools are properly grounded.
   Use adequate light for the job at hand.
4. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
5. Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments.
6. Before resuming work, install and secure all guards when maintenance work is completed.
7. Keep safety signs clean. Replace any sign that is damaged or not clearly visible.

SAFETY SIGNS

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Replacement safety signs are available. Contact USC at (785) 431-7900 .

How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Be sure temperature is above 50°F (10°C).
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

Located on the USC equipment you will find safety labels. Always be sure to read and follow all directions on the labels.

Part # 09-02-0001

Part # 09-02-0002

Guards provided with USC LPX Automated Treater are to remain in place during operation.

SECTION B INSTALLATION

HIGH VOLTAGE ~ Always disconnect the power source before working on or near the control panel or lead wires.

HIGH VOLTAGE ~ Use insulated tools when making adjustments while the controls are under power.

Permanent installation may require additional electrical cords, chemical tubing, and air lines, since each installation is unique.

PUMP STAND SET - UP

The following steps outline the initial set-up of your LX MX Pump Stand:

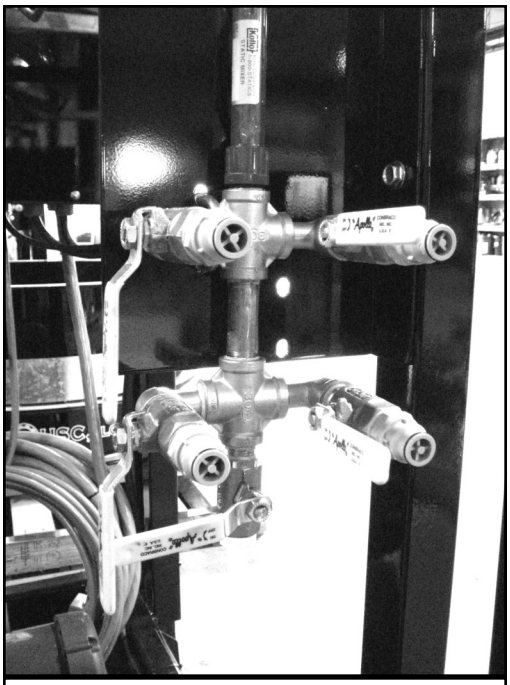
1. Clear the area of bystanders, especially small children, before moving.
2. Be sure there is enough clearance from overhead obstructions and power lines or other equipment to move the pump stand(s) into its working position.
3. Using a forklift, place the pump stand in the desired position on a level surface.

USC highly recommends that the pump stand be set up inside a building or any covered structure to protect the machine from weathering.

4. Inspect machine thoroughly for screws, bolts, fittings, etc. which may have come loose during shipping.
5. The pump stand(s) should be placed on level ground close to the seed treater.

PUMP STAND SET - UP

6. Attach the chemical tubing from the pump stand(s) to the atomizer plumbing on the seed treater (right). Additional tubing can be added or removed to accommodate your set-up.



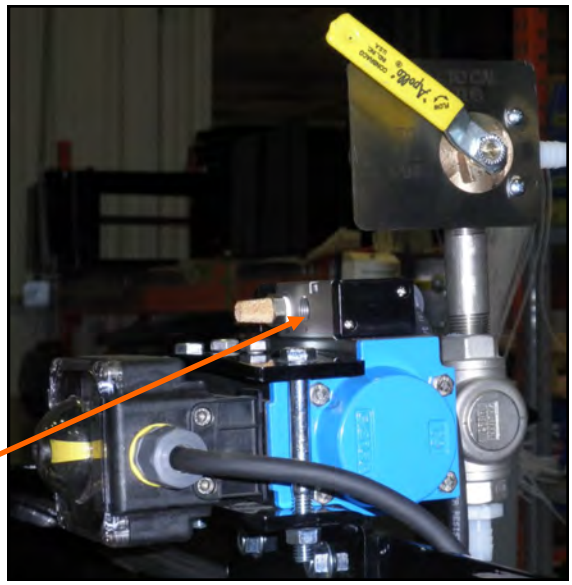
Plumbing to Atomizer

7. Connect the cables from the seed treater junction box to the main control panel. The receptacles are found on the bottom of the main control panel. (below)

Main Control Panel Cable Connections

PUMP STAND SET - UP

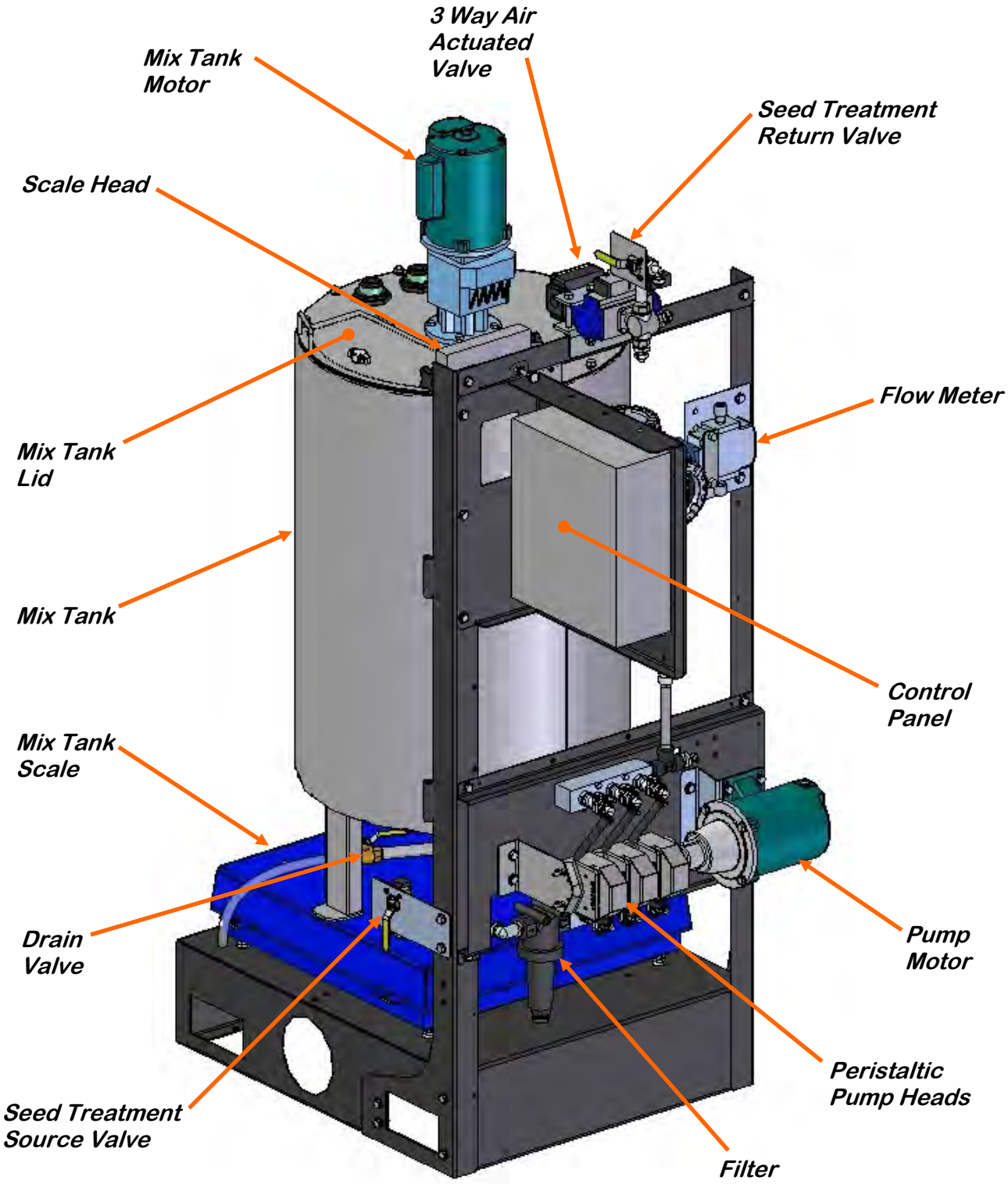
8. It is required that the air supply have an in-line customer supplied air dryer to protect the air system from contamination. Supply approximately 100 - 110 pounds of air pressure from the dryer to the port on the air actuated 3-way valve located on the pump stand frame behind the electric control panel.



MECHANICAL OPERATION

SECTION C

LX MX PUMP STAND OVERVIEW

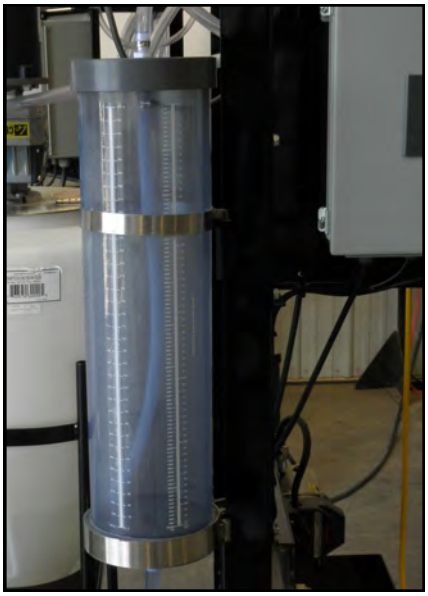


MIX TANK

The LX MX Pump Stand is equipped with a fully modular control panel that is controlled from the Main Control Panel HMI screen. This pump stand will include a 60 gallon stainless steel mix tank. This chemical mix tank will have electric drive agitation that is turned on or off at the HMI touch screen. The agitator should be running at all times when treatment is present in the mix tank to keep the chemical mixed and in a suspended state. The tank is equipped with a shut-off, drain plug, and drain valve located on the bottom. The top of the tank also includes 3 extra ports which the operator can use to direct fill into the tank (see below).

CALIBRATION TUBE

The LX MX Pump Stand is equipped with an optional calibration tube which is used to check the liquid flow rate. The calibration tube measures in ounces, on a 0-340 scale and millimeters on a 0-10000 scale. Manual valves direct liquid from different areas to keep all liquid contained. This creates a closed chemical system so that the operator can manually check the calibration of the chemical flow rate without handling any of the chemical.

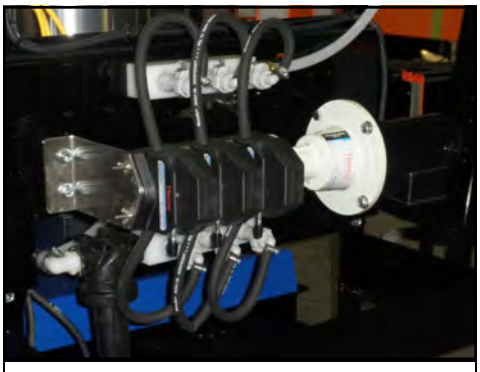


PERISTALTIC PUMP HEADS AND MOTOR

The LX MX Pump Stand utilizes a variable speed pump motor and special norprene pump tubing for liquid metering. The pump comes equipped with 3 peristaltic pump heads. Liquid will only come into contact with the inside diameter of the pump tubing and not the pump. This allows for easy cleanup and less maintenance of the pump.

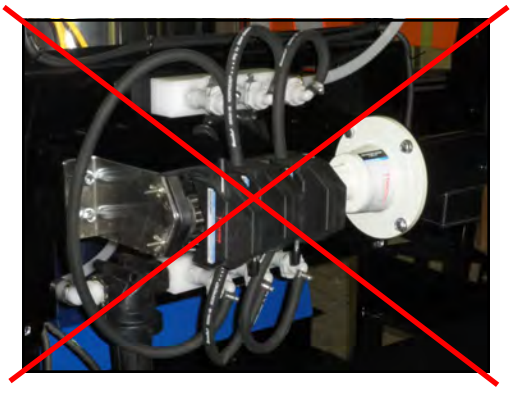
To open the pump head, lift the lever upward. Place the pump tubing inside the pump head so it fits inside the notches and above the rollers. Lower the lever back down to close the pump head, clamping the hose inside the head. Wear or fatiguing of the tubing within the pump head due to compression is normal. When tubing becomes worn or chemical rates begin to slow down, open the pump head and move the tubing to a different position. If the entire piece of tubing becomes worn, simply replace with a new section. When not using the pump stand for several days or when storing, open the pump head and remove the tubing to prevent any extra compression.

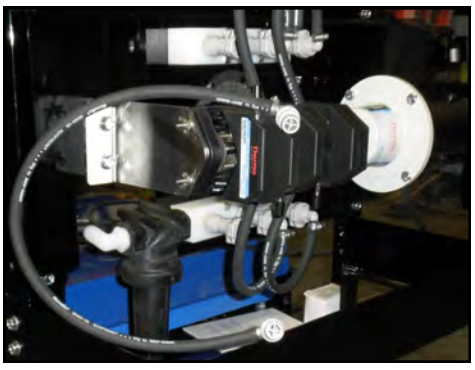
Pump Head Open



Pump Head Closed

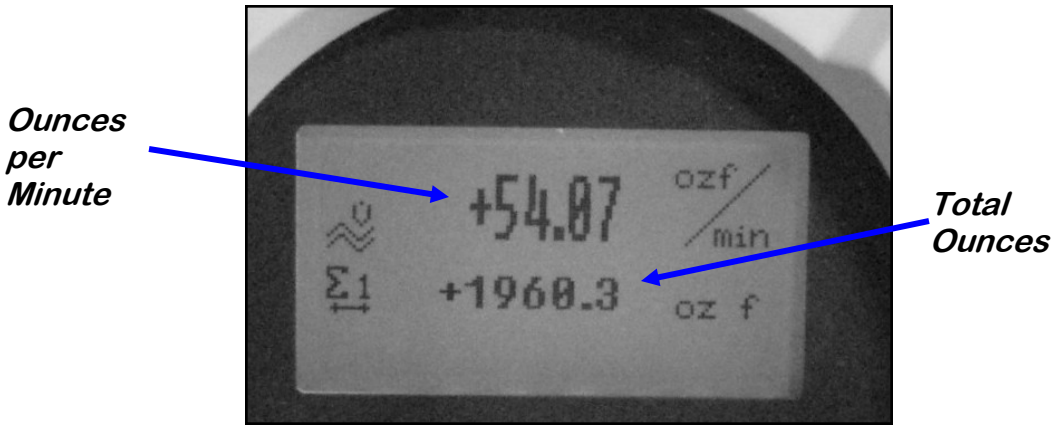
If a very low rate is needed, a section of tubing can be removed to force the pump motor to run at a higher speed. This allows for a more consistent flow rate. When removing the tubing, uncouple it from the manifold (below, right). If the tubing is unclamped from the pump head but left coupled in the manifold (below, left), the pump will suck air and cause flow rates to be very inconsistent.





FLOW METER

LX MX Pump Stand comes with a volumetric flow meter. A flow meter that is used to perform real-time chemical flow adjustments and monitoring without the operator having to handle the chemical. The flow meter reading will be displayed on the HMI touch screen and can be set to read in oz/min or ml/min.



PUMP STAND VALVES

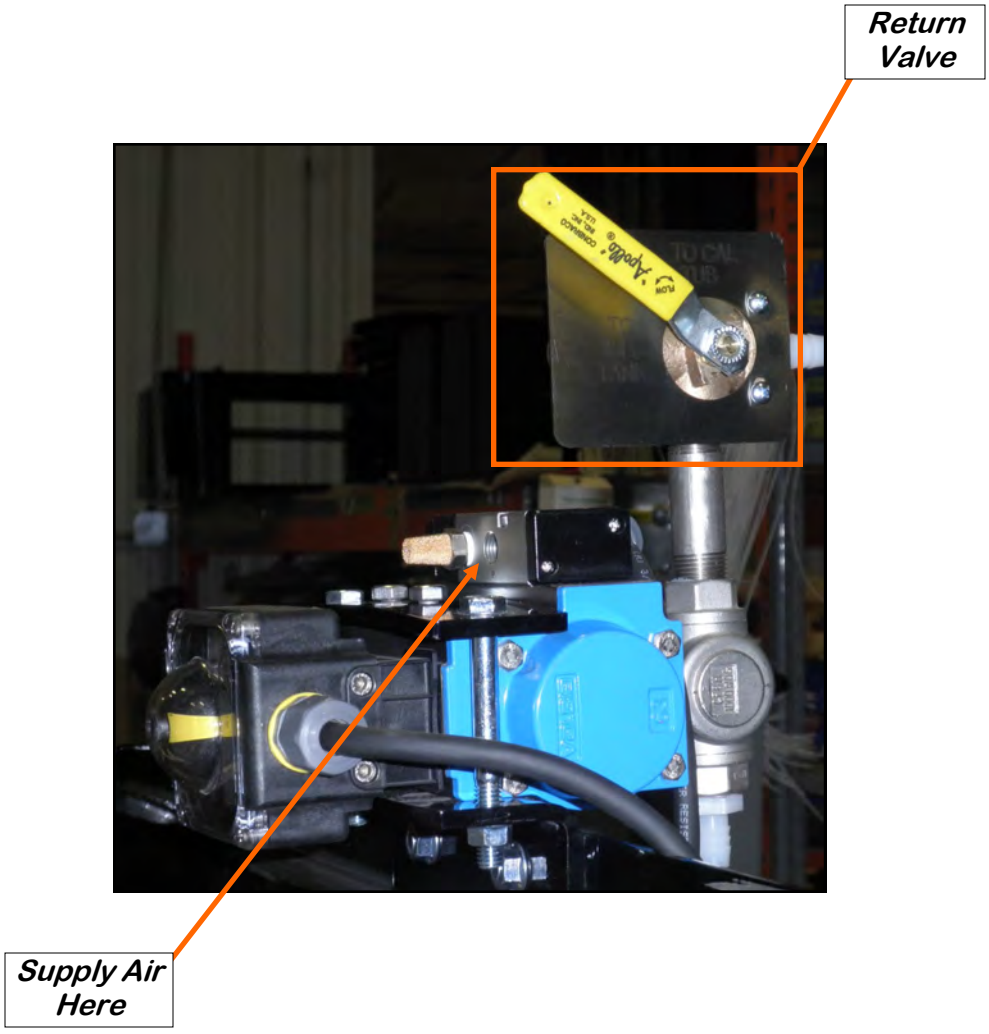
SEED TREATMENT SOURCE VALVE: This valve controls where the pump is drawing liquid from. It allows liquid to be pulled from either the bottom of the mix tank or the calibration tube.

Drawing chemical from the bottom of the Mix Tank

Drawing chemical from the bottom of the Calibration Tube

PUMP STAND VALVES

SEED TREATMENT RETURN VALVE: This valve directs the liquid coming from the recirculation side of the Air Actuated 3-Way Valve to either fill the Calibration Tube or return to the Mix Tank.



AIR ACTUATED 3-WAY VALVE: This valve is controlled from the touch screen and will automatically actuate during normal operation. An internal spring holds the valve in the recirculation position so that when the valve is not actuated, the chemical will be directed to flow back to the Mix Tank. When the valve is actuated, the supplied air pressure will override the spring and move the valve to the PROCESS position. Chemical flow will then be directed towards the treater's atomizer chamber.

PUMP STAND VALVES

Proper calibration of the liquid system is critical to achieve a proper granular/chemical mixture. For information on pump calibration and flow meter calibration to determine liquid flow rate see document number: **TD-09-06-1041, U-Treat v3.0.00 Automation.**

Emptying the remaining liquid can be done by using the reverse function on the control panel. This will pump liquid back into the mix tank. Then drain the remaining liquid into a suitable container. Clean water should be pumped through the calibration tube and mix tank when finished.

Always dispose of chemical or diluted chemical according to your local, state, and federal regulations.

Only you, the operator, can determine the length of time required to completely rinse all chemical residue from the tank and plumbing system.

ELECTRICAL OPERATION

SECTION D

HIGH VOLTAGE ~ Always disconnect the power source before working on or near the control panel or lead wires.

HIGH VOLTAGE ~ Use insulated tools when making adjustments while the controls are under power.

AUTHORIZED PERSONNEL only shall work on the control panel. Never allow anyone who has not read and familiarized themselves with the owner's manual to open or work on the control panels.

This section provides a general overview and description of the operator controls for the LX / MX Pump Stand.

For information on pump calibration, flow meter calibration and all other HMI screen functions, see document number: **TD-09-06-1041, U-Treat v3.0.00 Automation.**

General Panel Descriptions

This system consists of three plug connected panels, one hard wired panel and two more optional plug connected panels:

- The LX / MX Pump Stand Panel is a plug connected enclosure that is located on each pump stand frame. This panel connects the pump stand electrical components to the treater or Automated Main Control Panel.

TROUBLESHOOTING

Below is a table describing the most frequent problems and solutions with the USC LX / MX Pump Stand. For further assistance, contact USC at (785) 431-7900.

Problem	Possible Cause	Solution
Pump is fluctuating.	1. Restriction in tubing 2. Filter is plugged or missing gasket.	1. Flush tubing and check filter for any restrictions. 2. Clean filter and check for gasket.

SECTION E MAINTENANCE

Proper maintenance of the LX / MX Pump Stand is critical for peak performance, reliability and accuracy of this system. The following is a guideline for the type of maintenance and servicing that should be performed on this unit. Your environment and uses may require additional maintenance and service beyond this list to assure a reliable and safe unit. The operator of this unit has ultimate responsibility to identify areas of concern and rectify them before they become a hazard or safety issue. There is no substitute for a trained, alert operator.

Do not put this unit into operation with any questionably maintained parts. Poor performance or a hazard may occur.

ELECTRICAL PANEL

- Check and tighten wire connections.
- Check quick connects on bottom of control panel.
- Check starters and overloads.
- Check relays and breakers.
- Check and set the proximity switches.
- Check VFD's.

MIX TANK

- Check motor.
- Check motor for any play in the mix tank shaft.
- Check valves, fittings, and plug on bottom of tank for leaks.
- Check chemical line tubing for abnormal wear.

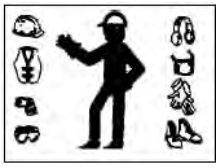
PUMPS AND PLUMBING

- Check pump in forward and reverse.
- Make sure pump heads open and close smoothly.
- Inspect tubing and for uneven wear. Replace pump tubing often to ensure high flow rates can be met.
- Check air actuated 3-way valve. Clean brass filter if necessary.
- Tighten hose clamps and check filter. Clean filter frequently to avoid blockages
- Flush flow meter with clean water frequently to avoid chemical buildup.

STORAGE

SECTION F

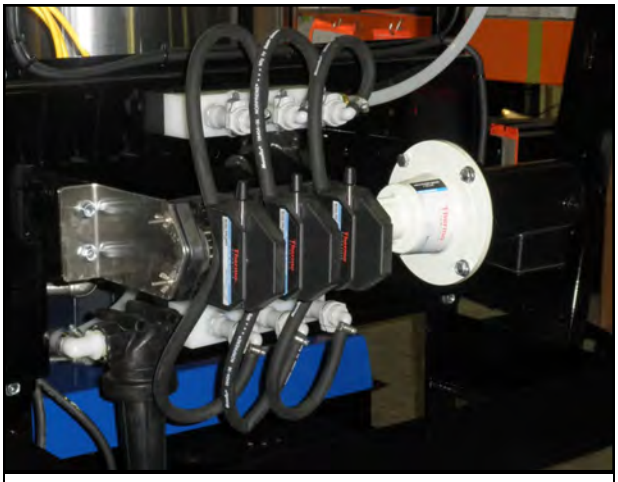
When storing the LX MX Pump Stand for long periods of time, the following procedure must be followed to reduce the chance of rust, corrosion and fatigue of the treater. You can also use these steps when storing the machine for the winter.



A dust mask and protective rubber gloves shall be used when cleaning the machine.

LIQUID SYSTEM

1. Make certain the inside of the tank is completely drained of chemical residue and thoroughly flush the inside of the tank with clean water.
2. Remove and clean the filter.
3. Pump clean water through all areas of the plumbing including the mix tank, flow meter, and valves. It may be necessary to move the position of the air actuated 3-way valve from recirc to process in order to clean the chemical lines that run to the seed treater.
4. Open all drain points, valves, and filter to let as much of the liquid drain as possible.
5. If the seed treater will be exposed to possible freezing temperatures, the final flush of the system should be made with an non freezable liquid. Or use compressed air to blow the lines out from any moisture.
6. Release pump heads (right) and remove tubing to prevent any unnecessary wear.



Pump Head Open

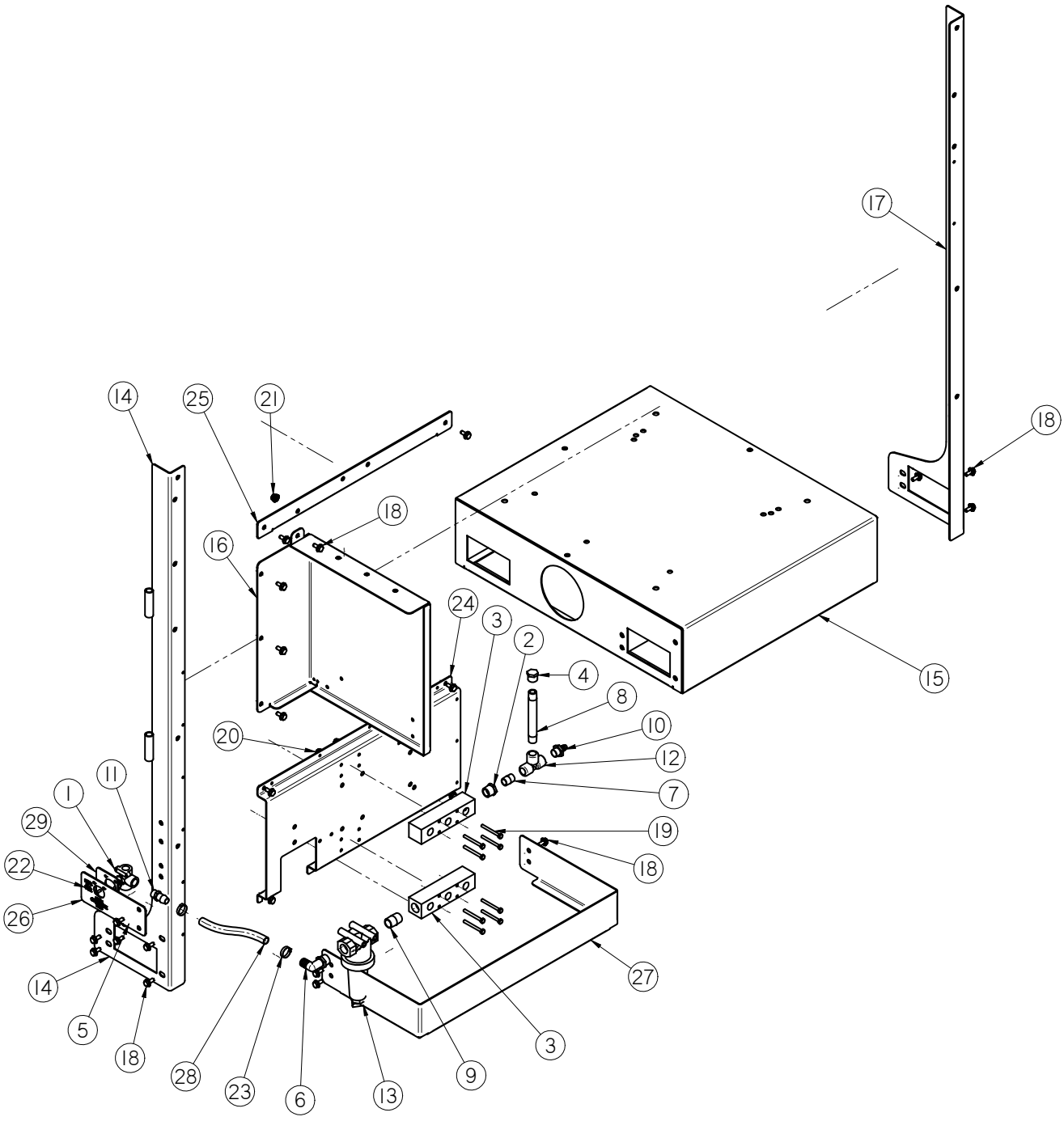
FINAL

1. Store the machine inside a protective building to keep it from being exposed to the weather.
2. Disconnect power to the machine.
3. Ensure all guards and safety signs are in place.

SECTION G MECHANICAL DRAWINGS

The following pages show the parts of the LX MX Pump Stand. Please have the part number ready when ordering parts.

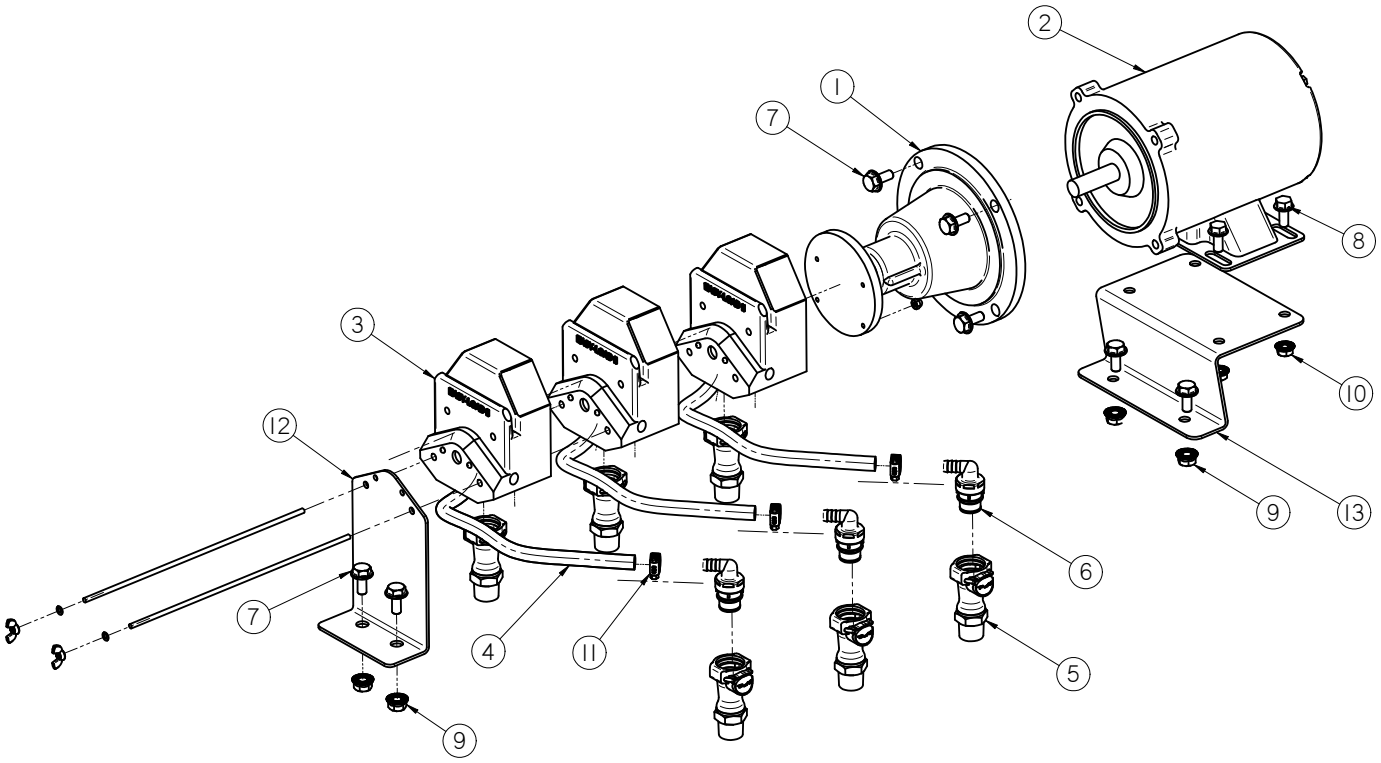
PUMP STAND BASE FRAME ASSEMBLY (05-03-1066)



PUMP STAND BASE FRAME ASSEMBLY (05-03-1066)

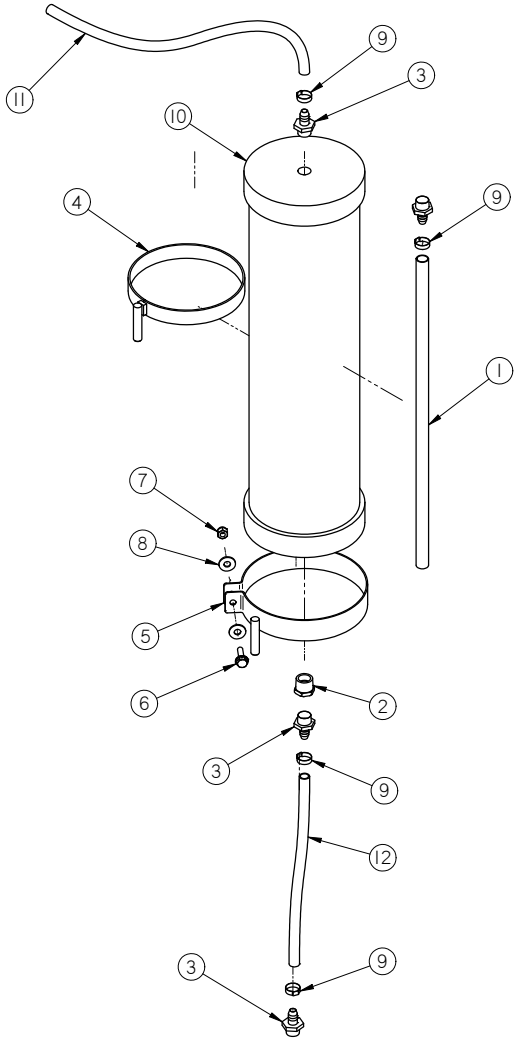
Item #	Part #	Description	Qty
1	02-02-0007	VLV BALL .500 NPT 3WAY BRSS	1
2	02-04-0008	BUSHING .750-14 NPT, REDUCER .500-14 NPT	1
3	02-05-0043	FTTG MANIFOLD UHMW 1 IN 3 OUT	2
4	02-05-0086	FTTG END CAP .500 NPT BP	1
5	02-06-0014	1/2-14 NPT, 3/4 BARB, 90 DEG. WP	1
6	02-06-0015	BARB, .750-14 NPT X .750 90DEG WP	1
7	02-07-0008	FTTG NIP .500 NPT X 1.125 TBE BLK	1
8	02-07-0060	FTTG NIP .500 NPT X 6.00 TBE PVC	1
9	02-07-0070	FTTG NIP .750 NPT X 1.50 TBE SS	1
10	02-08-0007	FTTG STGHT .500HB X .500NPT ML NYL	1
11	02-08-0011	1/2-14 NPT, 3/4 BARB, STRAIGHT BP	1
12	02-09-0005	FTTG TEE .500 NPT PPE	1
13	02-12-0011	FLTR TEE PPE .750 NPT 16 MESH BANJO	1
14	05-03-1052	WDMT SMALL PUMPSTAND LH UPRIGHT	1
15	05-03-1053	WDMT SMALL PUMPSTAND BASE BOX	1
16	05-03-1064	WDMT PANEL MNT PUMPSTD	1
17	05-03-1074	WDMT SMALL PUMPSTAND RH UPRIGHT	1
18	06-01-0124	BOLT, FLG .375-16 UNC ZP GRADE 5; 3/4" LG	24
19	06-01-0192	BOLT .250-20 X 2.50 ZP GR5	8
20	06-03-0013	NUT,LOCK, FLG .250-20 ZP SERRATTED	8
21	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	1
22	06-06-0020	SRCW, PAN HD, 10-24 X .500 ZP	2
23	06-07-0030	HOSE CLAMP ONE EAR 1.004-1.126	2
24	102200	BRKT PUMP ALL HEADS PUMPSTD	1
25	10220E	PLT XBEAM SUPP VLV PUMPSTD	1
26	102290	PLT LABEL SOURCE PUMPSTD	1
27	1022AA	BRKT FORKLIFT GUARD PUMPSTD	1
28	1022AB	1022AB 02-03-0006 8.25IN LONG	1
29	1022AC	PLT SPACER VLV SOURCE MOUNT	1

PERISTALTIC PUMP HEAD & MOTOR ASSEMBLY - TRIPLE HEAD (13-04-0144)



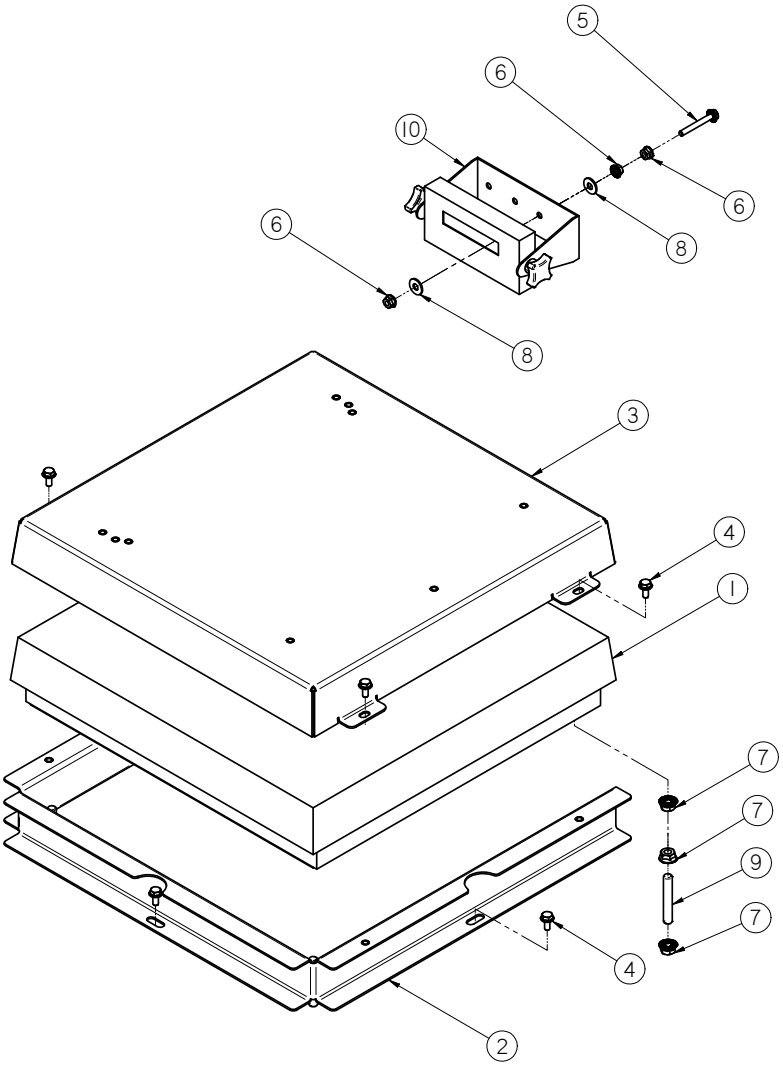
Item #	Part #	Description	Qty
1	01-01-0066	SPEED REDUCER, 3.7 TO 1	1
2	01-01-0111	MTR .33 HP 1725 RPM S56C 3PH TENV*	1
3	02-01-0005	PUMP HEAD PRST MF LS 115V 600RPM	3
4	02-03-0001	HOSE MF .375 NPRN BLK - LS35 .31 ID	6
5	02-15-0016	FTTG CPLG .500 NPT QCK DISC BODY	6
6	02-15-0022	FTTG CPLG .375 HB X 90 QCK DISC INSERT	6
7	06-01-0124	BOLT, FLG .375-16 UNC ZP GRADE 5; 3/4" LG	8
8	06-01-0138	BOLT, FLG .315-18 UNC ZP GRADE 5; 3/4" LG	4
9	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	4
10	06-03-0019	NUT LOCK FLG .3125-18 ZP GR5	4
11	06-07-0005	CLMP HOSE .219 TO .625 X .313W ZP	6
12	102213	BRKT 3PUMPHEAD MNT PUMPSTD	1
13	102E60	PUMP MTR MNT LX ADD ON PUMPSTD	1

PUMP STAND CALIBRATION TUBE ASSEMBLY (13-04-0106)



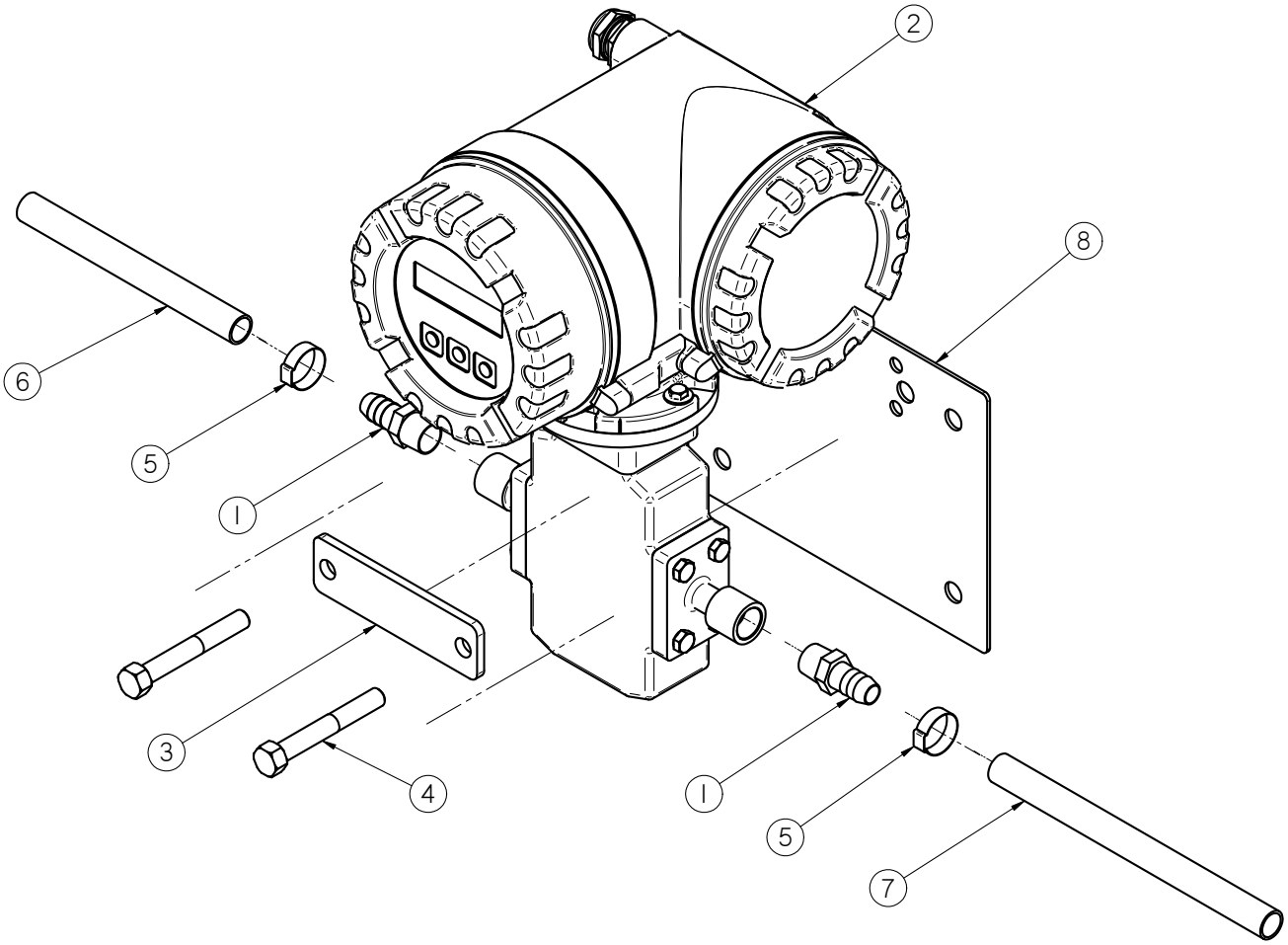
Item #	Part #	Description	Qty
1	02-03-0005	TUBE,CALIBRATION TUBE INSIDE	1
2	02-04-0008	BUSHING .750-14 NPT, REDUCER .500-14 NPT	1
3	02-08-0007	FTTG STGHT .500HB X .500NPT ML NYL	4
4	05-08-0006	WDMT,INOC.BRK,SM	1
5	05-08-0007	WDMT,BRK,INOC LG	1
6	06-01-0189	BOLT, FLG .375-16 UNC ZP GRADE 5; 1-1/4" LG	1
7	06-03-0003	NUT NYL LOCK .375-16 ZP GR5	1
8	06-05-0004	WSHR FLAT .375 ZP	2
9	06-07-0029	HOSE CLAMP ONE EAR, .716-.827	4
10	07-02-0006	CALIBRATION TUBE,10K ML - 2005	1
11	102A39	TUBE SOL VLV TO CAL TUBE PUMPSTD	1
12	102A3A	TUBE CAL TUBE TO VLV PUMPSTD	1

PUMP STAND SCALE ASSEMBLY (05-03-1069)



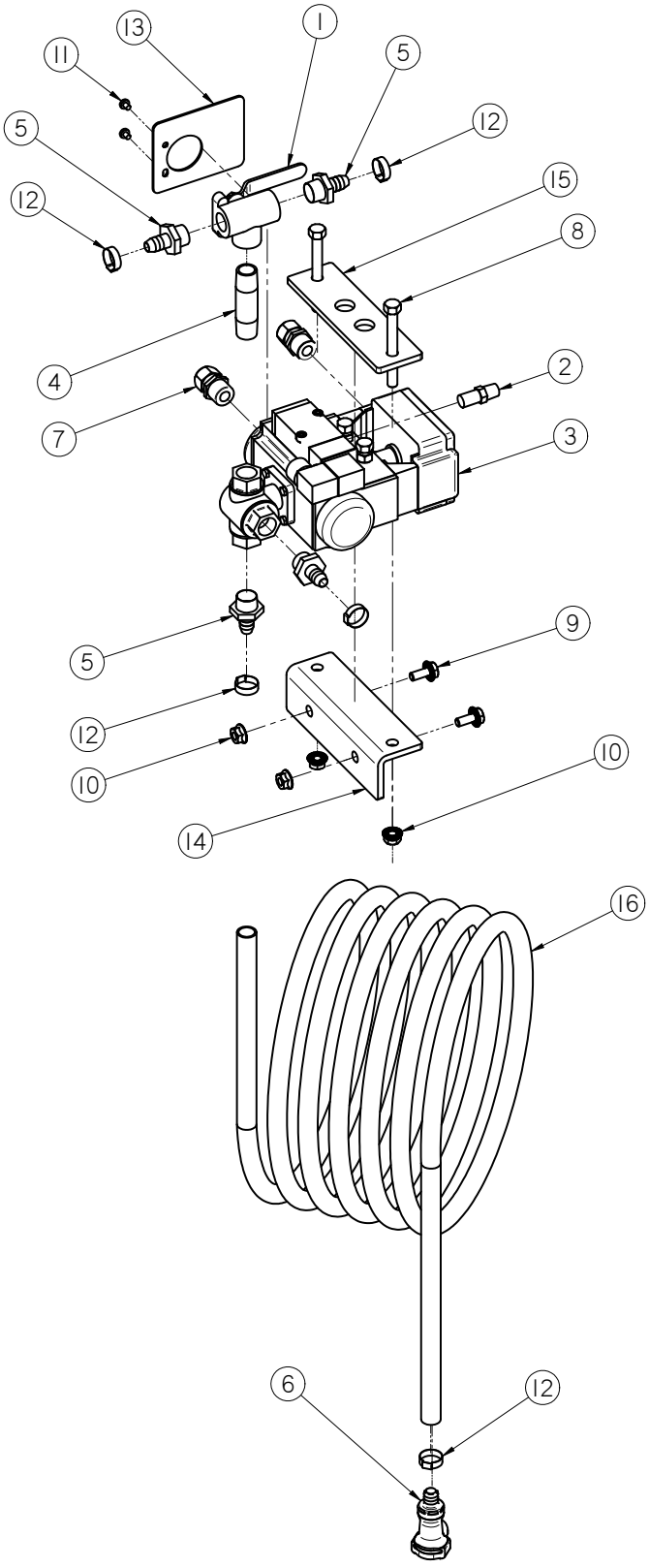
Item #	Part #	Description	Qty
1	03-19-0055	SCL CARDINAL EB-1024 24 X 24 X 1000	1
2	05-03-1072	WDMT SPACER PUMPSTD	1
3	05-03-1073	WDMT SCALE LID PUMPSTD	1
4	06-01-0124	BOLT, FLG .375-16 UNC ZP GRADE 5; 3/4" LG	7
5	06-01-0204	BOLT FLG .375-16 X 2.50 ZP GR5 FTH	1
6	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	3
7	06-03-0015	NUT LOCK FLG .500-13 ZP GR5	12
8	06-05-0004	WSHR FLAT .375 ZP	2
9	06-14-0018	.500-13 THD RD CS 3IN LONG	4
10	PART OF 03-19-0055	SCALE DISPLAY	1

VOLUMETRIC FLOW METER ASSEMBLY (05-03-1358)



Item #	Part #	Description	Qty
1	02-08-0006	FTTG STGHT .500HB X .375NPT ML NYL	2
2	03-18-0008	ASSY FLMT PROMAG 53H DN W/MODBUS	1
3	05-10-2038	BRKT FLMT MNT PROMAG 53H	1
4	06-01-0116	BOLT .375-16 X 2.75 ZP GR5	2
5	06-07-0029	HOSE CLAMP ONE EAR, .716-.827	2
6	1022AE	MASS FLMT TO PUMPS	1
7	102342	MASS FLMT TO CNTLS	1
8	1029CF	BRKT MNT	1

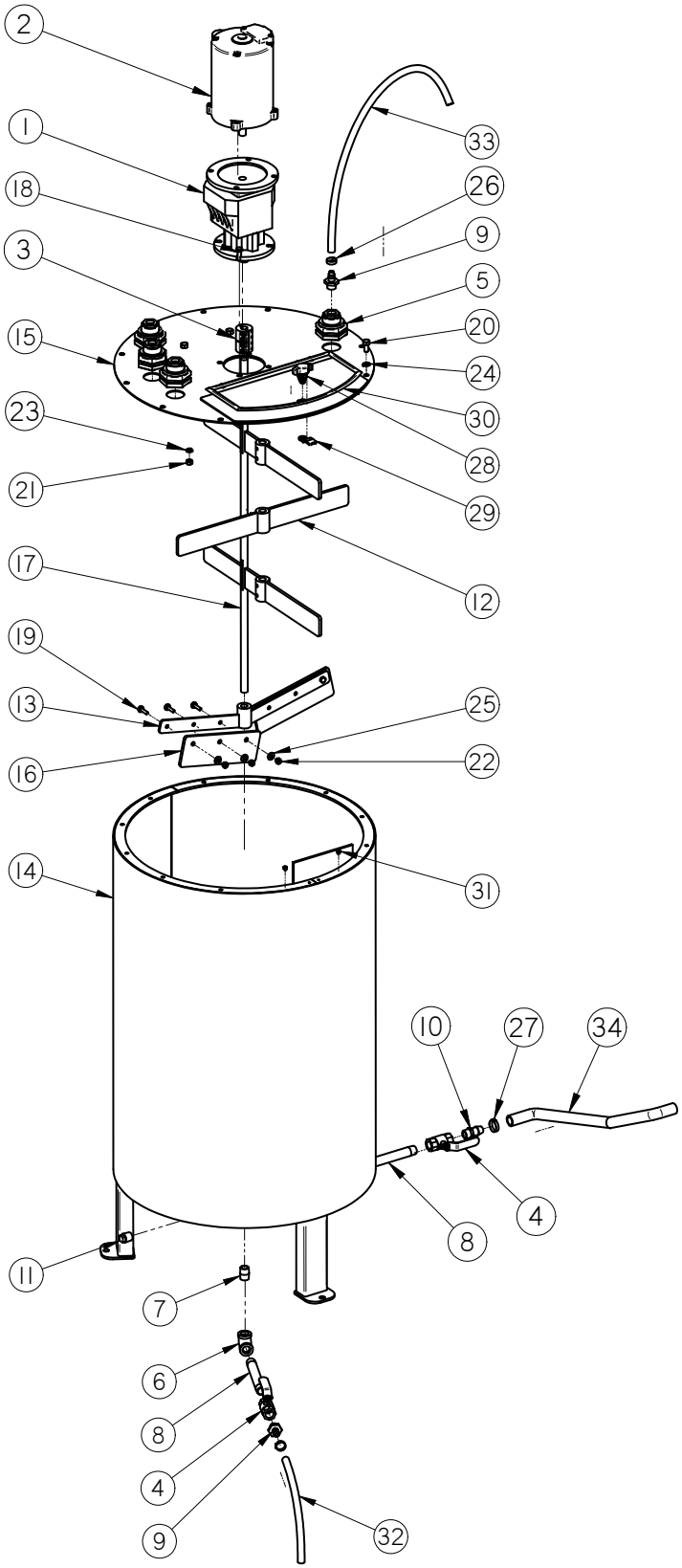
PUMP STAND 3 WAY VALVE ASSEMBLY (13-04-0108)



PUMP STAND 3 WAY VALVE ASSEMBLY (13-04-0108)

Item #	Part #	Description	Qty
1	02-02-0007	VLV BALL .500 NPT 3WAY BRSS	1
2	02-02-0050	FLTR EXHAUST BRZ .250 NPT ML	1
3	02-02-0063	VALVE SS BALL .500 NPT 3-WAY AIR ACTUATED	1
4	02-07-0019	NIPPLE, .500-14 NPT, 3.0"LG 304SS TBE	1
5	02-08-0007	FTTG STGHT .500HB X .500NPT ML NYL	4
6	02-15-0013	FTTG CPLG .500 HB QCK DISC BODY	1
7	03-08-0064	CONN CG PLASTIC 0.5NPT .200-.472	2
8	06-01-0022	BOLT, .375-16 X 3 1/2" UNC ZP GRADE 5	2
9	06-01-0124	BOLT, FLG .375-16 UNC ZP GRADE 5; 3/4" LG	2
10	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	4
11	06-06-0008	SCRW MACH 10-24 X .250 PHLP PHD ZP	2
12	06-07-0029	HOSE CLAMP ONE EAR, .716-.827	5
13	102231	PLT SOL VLV LABEL PUMPSTD	1
14	1029EA	BRKT MNT CLMP	1
15	1029EB	PLT CLMP	1
16	102A89	TUBE - 25 FOOT	1

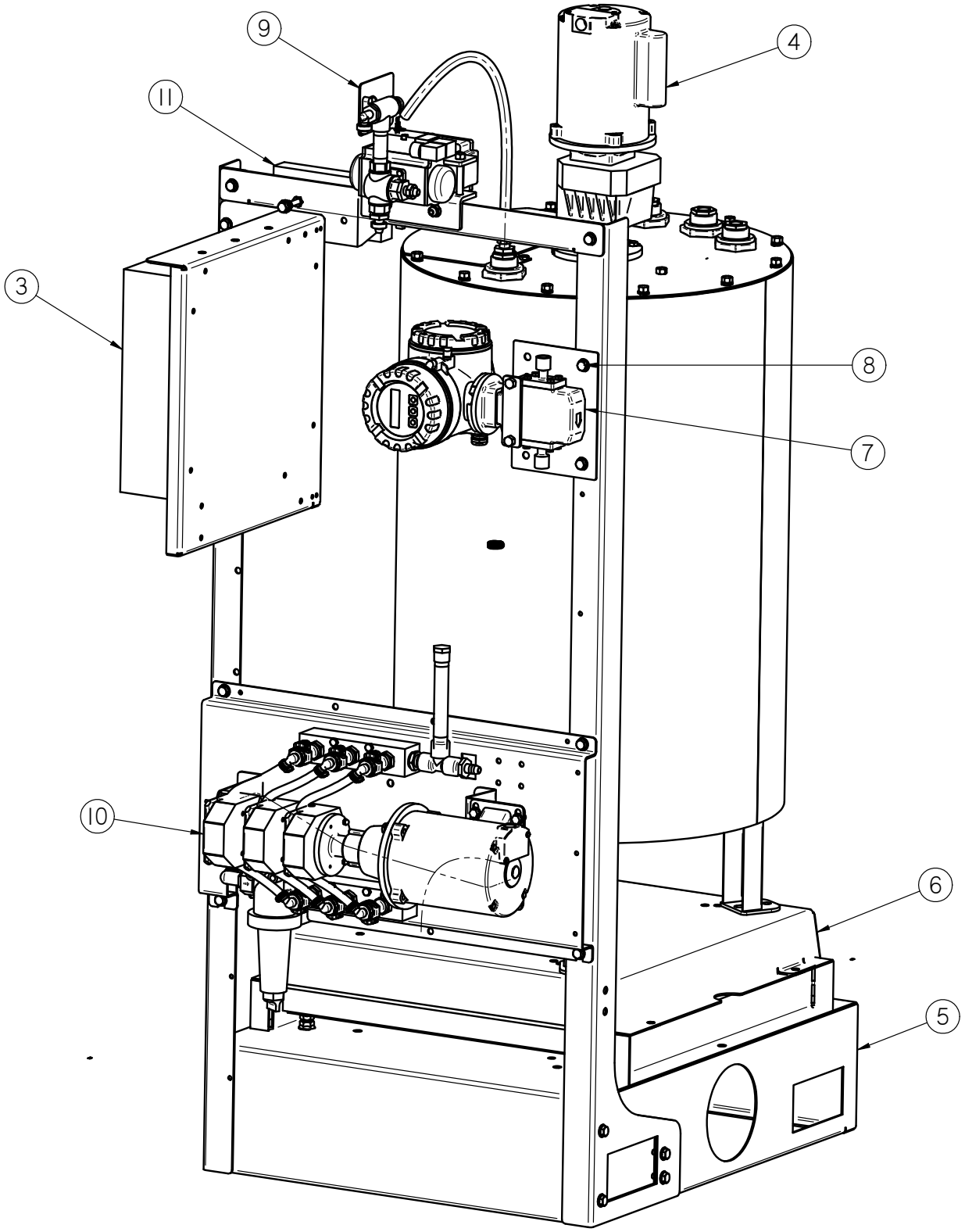
STAINLESS STEEL MIX TANK - 60 GALLON (04-03-0173)



STAINLESS STEEL MIX TANK - 60 GALLON (04-03-0173)

Item #	Part #	Description	Qty
1	01-01-0039	GBOX IL 61.8:1 56C OTP 56C INP	1
2	01-01-0080	MTR .33HP 1725RPM 56C 1PH TEFC	1
3	01-07-0015	CPLG CLPN .625 X .750 X 1.50OD SS	1
4	02-02-0006	VLV BALL .500 NPT 2WAY BRSS	2
5	02-05-0028	FTTG .500 NPT DBL THD PPE BULKHEAD	4
6	02-06-0012	ELBOW, .500-14 NPT, 90 DEG. SS	1
7	02-07-0007	FTTG NIP .500 NPT X 1.125 TBE SS	1
8	02-07-0015	FTTG NIP .500 NPT X 6.00 TBE SS	2
9	02-08-0007	FTTG STGHT .500HB X .500NPT ML NYL	2
10	02-08-0011	1/2-14 NPT, 3/4 BARB, STRAIGHT BP	1
11	02-14-0001	FTTG PLUG SQHD .500 NPT SS	1
12	05-03-0069	WDMT 50GAL MIDDLE STIR ARM	3
13	05-03-0070	WDMT 50GAL LOWER STIR ARM	1
14	05-03-1078	WDMT BASE 60GAL TANK	1
15	05-03-1079	ASSY SS TANK LID 30-60 GAL	1
16	05-10-0878	PDL 50GAL WIPER	2
17	05-11-0341	ROD 60GAL DRV	1
18	06-01-0083	BOLT .313-18 X 1.00 SS 18-8	4
19	06-01-00XX	BOLT .250-20 X 1.00 SS 316	6
20	06-01-00XX	BOLT, .375-16 X .750 18-8 SS	11
21	06-02-0017	NUT FULL .313-18 SS 18-8	4
22	06-03-0007	NUT NYL LOCK .250-20 SS 18-8	6
23	06-04-0010	WSHR LOCK SPLT .313 SS 18-8	4
24	06-04-00XX	WSHR LOCK SPLT .375 SS 18-8	11
25	06-05-0002	WSHR FLAT .250 X .625OD SS 18-8	6
26	06-07-0029	HOSE CLAMP ONE EAR, .716-.827	2
27	06-07-0030	HOSE CLAMP ONE EAR 1.004-1.126	1
28	06-09-0075	KNOB WING LATCH	1
29	06-09-0076	KNOB WING CAM	1
30	06-10-0001	SEAL RBBR BULBS CHAR .500 X .250	1
31	06-12-0011	RIVET POP .188 X .750 GRIP SS	2
32	1022B2	DRAIN HOSE PUMP STAND	1
33	1022C0	HOSE SOL VLV TO TANK	1
34	102C1C	HOSE TANK TO VLV	1

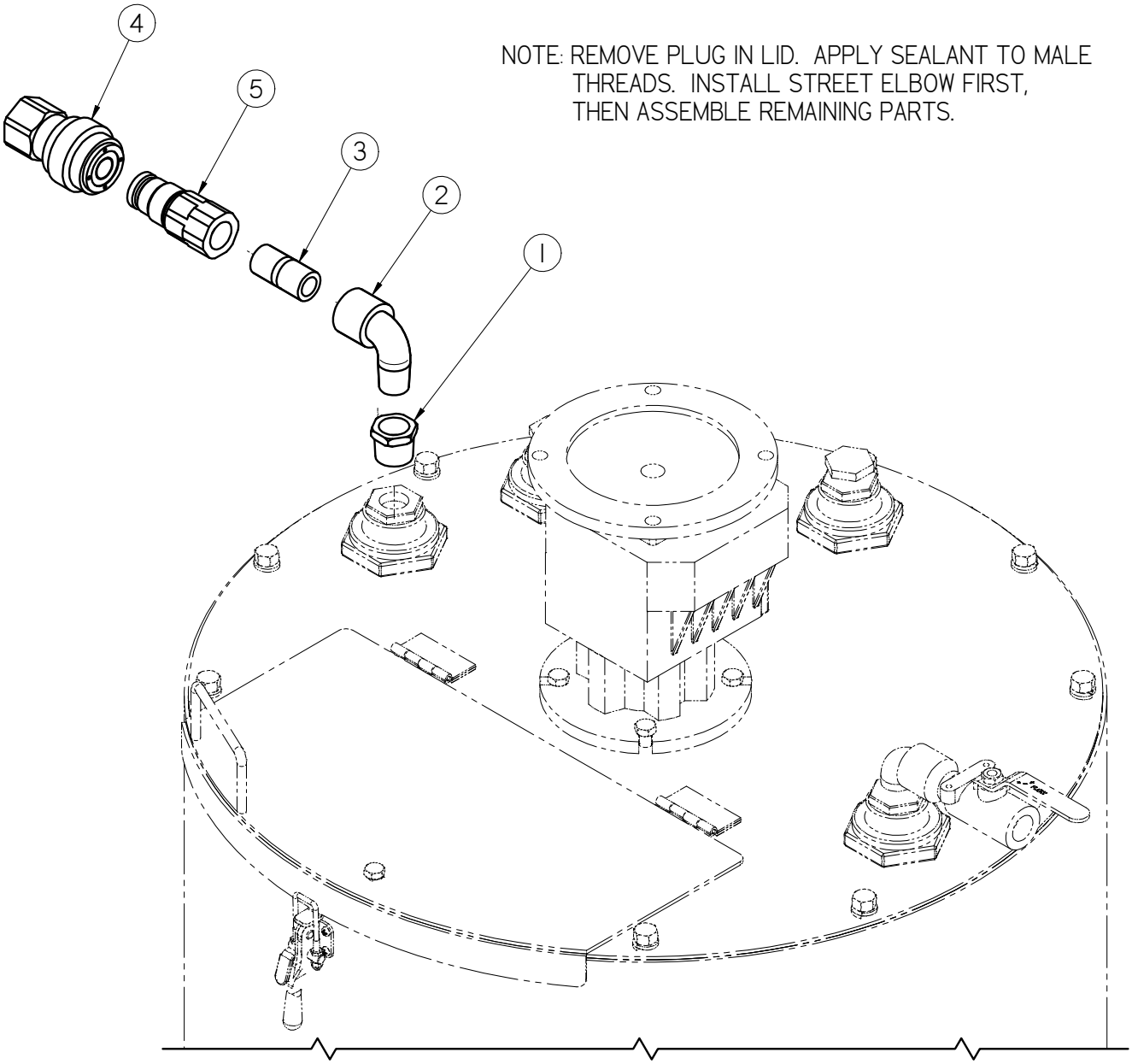
PUMP STAND ASSEMBLY (04-03-0096)



PUMP STAND ASSEMBLY (04-03-0096)

Item #	Part #	Description	Qty
1	02-03-0034	TBG .625 OD POLYE COMP	1
2	02-14-0002	1/2-14 NPT,PLUG BP	1
3	03-12-0086	PNL CNTL PLC LX800-2000 JBOX	1
4	04-03-0173	ASSY SS 60GAL TANK PUMPSTD AC MOTOR	1
5	05-03-1066	ASSY PUMPSTD FRAME BASE	1
6	05-03-1069	ASSY SCL PUMPSTD	1
7	05-03-1358	ASSY VLMTC FLMT LX ADD ON PUMPSTD	1
8	06-01-0124	BOLT, FLG .375-16 UNC ZP GRADE 5; 3/4" LG	2
9	13-04-0108	KIT AUTO CONTROL PUMPSTAND	1
10	13-04-0144	KIT LS HEAD X3 ASSY LX ADD ON PUMPSTD	1
11	PART OF 05-03-1069	SCALE DISPLAY	1

MIX TANK DRY LOCK FITTINGS (13-10-0017)



NOTE: REMOVE PLUG IN LID. APPLY SEALANT TO MALE THREADS. INSTALL STREET ELBOW FIRST, THEN ASSEMBLE REMAINING PARTS.

Item #	Part #	Description	Qty
1	02-04-0024	BUSH .750-14 NPT .500-14 NPT BP	1
2	02-06-0017	1/2-14 NPT,SL 90 DEG. BP	1
3	02-07-0009	FTTG NIP .500 NPT X 1.75 TBE BLK	1
4	02-15-0035	FTTG CPLG 0.50 NPT FM PARKER POLY	1
5	02-15-0036	FTTG CPLG 0.50 NPT ML PARKER POLY	1

USC Limited Warranty

USC, LLC, (Manufacturer) warrants its seed treating equipment as follows:

1. **Limited Warranty:** Manufacturer warrants that the Products sold hereunder will be free from defects in material and workmanship for a period of 18 months from date of shipment. If the Products do not conform to this Limited Warranty during the warranty period, Buyer shall notify Manufacturer in writing of the claimed defects and demonstrate to Manufacturer satisfaction that said defects are covered by this Limited Warranty. If the defects are properly reported to Manufacturer within the warranty period, and the defects are of such type and nature as to be covered by this warranty, Manufacturer shall, at its expense, furnish replacement Products or, at Manufacturer's option, replacement parts for the defective products. Shipping and installation of the replacement Products or replacement parts shall be at the Buyer's expense.

2. **Other Limits:** THE FOREGOING IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Manufacturer does not warrant against damages or defects arising from improper installation (where installation is by persons other than Manufacturer), against defects in products or components not manufactured by Manufacturer, or against damages resulting from such non-Manufacturer made products or components. Manufacturer passes on to the Buyer the warranty it received (if any) from the maker of such non-Manufacturer made products or components. This warranty also does not apply to Products upon which repairs and/or modifications have been effected or attempted by persons other than pursuant to written authorization by Manufacturer. Manufacturer does not warrant against casualties or damages resulting from misuse and/or abuse of product(s), acts of nature, effects of weather, including effects of weather due to outside storage, accidents, or damages incurred during transportation by common carrier.

3. **Exclusive Obligation:** THIS WARRANTY IS EXCLUSIVE. The sole and exclusive obligation of Manufacturer shall be to repair or replace the defective Products in the manner and for the period provided above. Manufacturer shall not have any other obligation with respect to the Products or any part thereof, whether based on contract, tort, strict liability or otherwise. Under no circumstances, whether based on this Limited Warranty or otherwise, shall Manufacturer be liable for incidental, special, or consequential damages.

4. **Other Statements:** Manufacturer's employees or representatives' oral or other written statements do not constitute warranties, shall not be relied upon by Buyer, and are not a part of the contract for sale or this limited warranty.

5. **Return Policy:** Approval is required prior to returning goods to USC, LLC. A restocking fee will apply.

6. **Entire Obligation:** This Limited Warranty states the entire obligation of Manufacturer with respect to the Products. If any part of this Limited Warranty is determined to be void or illegal, the remainder shall remain in full force and effect.

USC, LLC

2320 124th road

Sabetha, Ks 66534

PHONE: (785) 431-7900

FAX: (785) 431-7950

EMAIL: sales-team@uscllc.com

WEB: www.uscllc.com