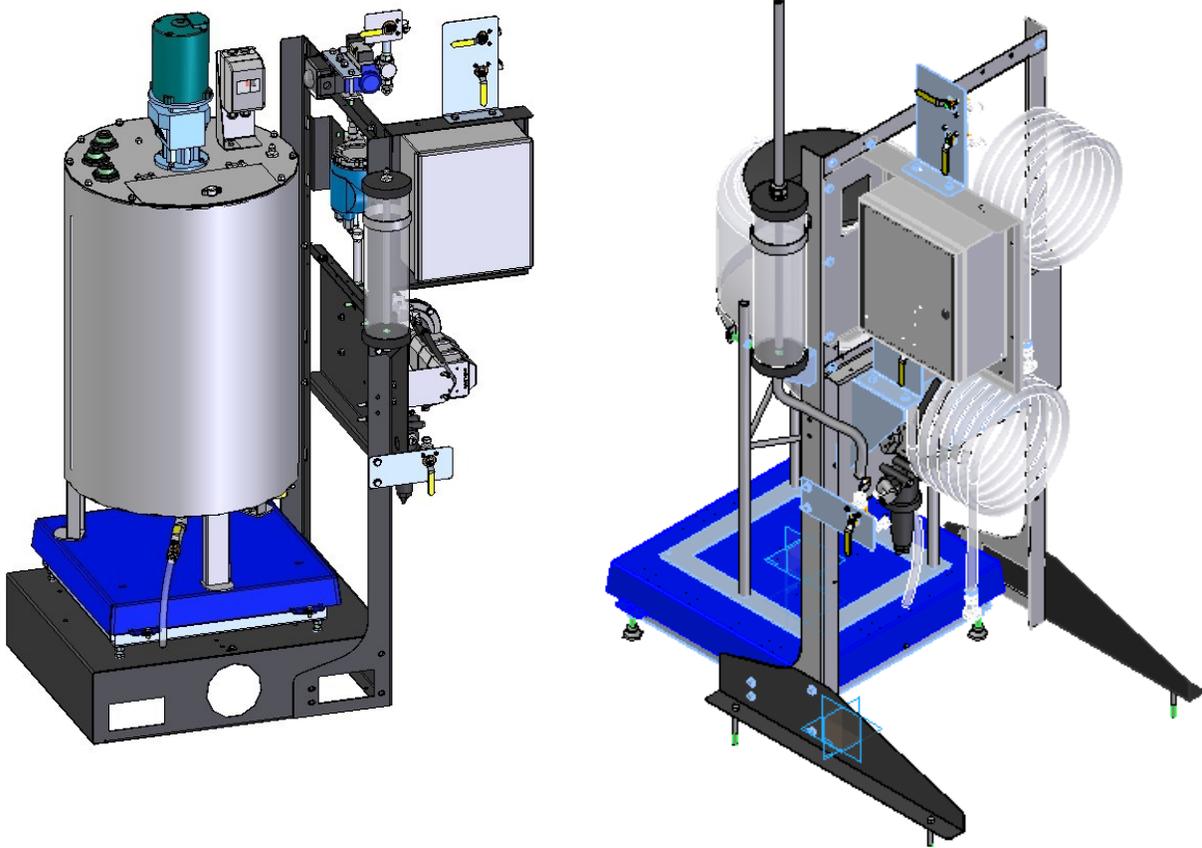


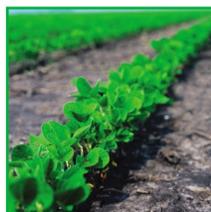
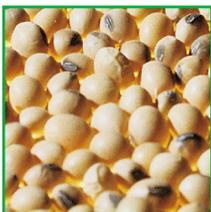
# PS2, PS3, PS4, PS6 PUMP STANDS

## Operators Manual



**Document: TD-09-06-1048**

**Revision: F**



# 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

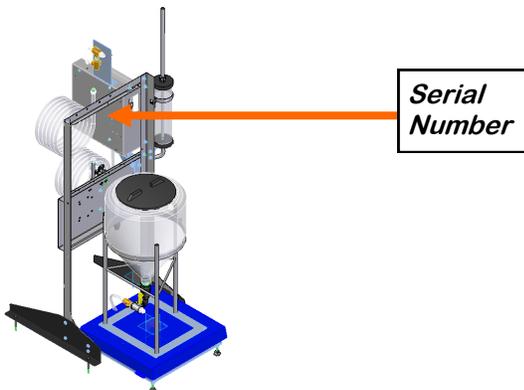
The purpose of this manual is to provide you with the basic information needed to operate and maintain the Pump Stands. It does not hold USC, LLC liable for any accidents or injuries that may occur.

The technical information provided in this document is based on extensive testing under controlled conditions at the USC research and development facility. This information is given without guarantee as the conditions of operation and storage of the equipment are beyond our control. Variables such as temperature, humidity, viscosity of chemical products and changes in seed size or variety may all effect the accuracy of application and seed coverage. Periodically check the equipment calibration while treating and make adjustments as required. This will insure the optimum seed coverage.

## 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 back of the control panel mounting bracket.



**SERIAL NUMBER:** \_\_\_\_\_

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## SECTION **SAFETY INSTRUCTIONS** 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.

If any of the required regularly scheduled maintenance is located above the reach of the operator, they should follow the companies normal safe practices of reaching that particular height, utilizing the companies specified equipment and following normal safety precautions.

When working with treatment chemicals, operators should always wear protective gloves, safety glasses, and follow the companies safety precautions in the case of any spillage or operator contamination.

### **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.

### **MOTS ET SYMBOLES SÉCURITÉ**

Il est très important que les opérateurs et le personnel d'entretien à comprendre les mots et les symboles qui sont utilisés pour communiquer des informations de sécurité. Mots de sécurité, de leur signification et le format, ont été normalisés pour les fabricants américains et publié par l' American National Standards Institute ( ANSI ). La Communauté européenne (CE ) a adopté un format différent sur la base de l'Organisation internationale de normalisation ( ISO ) et des directives de machines applicables. Les deux formats sont présentés ci-dessous. Les symboles graphiques ne sont pas standardisés, mais la plupart des fabricants utilisent une variante de ceux observés dans ce manuel.

## PUMP STANDS



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



Indique une situation extrêmement dangereuse qui, si pas évitée, entraînera la mort ou des blessures graves.



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



Indique une situation potentiellement dangereuse qui, si pas évitée, pourrait entraîner la mort ou des blessures graves.



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



Indique une situation potentiellement dangereuse qui, si pas évitée, peut entraîner des blessures mineures ou modérées et / ou des dommages.



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



Fournit des informations supplémentaires que l'opérateur doit être conscient de d'éviter une situation potentiellement dangereuse.



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



Avis est utilisé pour informer les gens des informations de maintenance qui ne est pas danger lié importante installation, l'exploitation ou.



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

**Symbole de puissance verrouillage obligatoire.** Débranchez, de verrouillage et de déconsignation énergie électrique et d'autres sources avant d'inspecter, de nettoyage ou de la maintenance de ce panneau.



**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.

**Sécurité Symbole International Alert .** Le point d'exclamation ( ! ) Entouré par un triangle jaune indique que un risque de blessure existe . Cependant, il ne indique pas la gravité des blessures potentielles. Le point d'exclamation ( ! ) Est également utilisé avec les symboles DANGER, AVERTISSEMENT et ATTENTION de sorte que le risque de blessure est indiqué.



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

**Symbole de danger d'électrocution .** Ce symbole indique qu'un danger d'électrocution existe. Des blessures graves ou la mort pourraient résulter de contact haute tension.



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

**Danger d'électrocution international.** Ce symbole indique qu'un danger d'électrocution existe. Des blessures graves ou la mort pourraient résulter de contact haute tension.



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

**Obligatoire Lire Symbole d'action Manuel.** ( Format ISO )  
Ce symbole indique le personnel de lire le manuel de l'opérateur avant de réparer ou d'utiliser l'équipement.



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

**Obligatoire Lire Symbole d'action Manuel .** Ce symbole indique le personnel de lire le manuel de l'opérateur avant de réparer ou d'utiliser l'équipement.

### **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.”

## **LES PROCEDURES DE VERROUILLAGE / ETIQUETAGE**

Verrouillage / étiquetage est le placement d'un verrouillage / tag sur un dispositif d'isolement de l'énergie conformément à une procédure établie. Lors de la prise hors service des équipements pour effectuer la maintenance ou de réparation, toujours suivre les procédures de verrouillage / débranchement comme indiqué dans la norme ANSI Z344.1 et / ou la norme OSHA 1910.147. Cette norme "oblige les employeurs à établir un programme et appliquer des procédures pour la fixation des dispositifs de verrouillage appropriés ou des dispositifs déconsignation à l'énergie dispositifs d'isolement et d' autre machines ou équipements désactiver pour éviter énergisant inattendu, start-up, ou la libération de l'énergie stockée dans le but de prévenir les blessures aux employés."

### **HAZARD REVIEW**

#### **RISQUE EXAMEN**

##### **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.

##### **Risque d'électrocution**

Les accidents d'électrocution sont les plus susceptibles de se produire lors de la maintenance du système électrique ou pour travailler sur ou à proximité du câblage haute tension exposé. Ne existe pas ce danger lorsque l'alimentation électrique a été déconnecté, bien verrouillé et étiquetés sur.

##### **Automatic Start Hazard**



This 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.

**! WARNING**

##### **Démarrer danger automatique**

Cet équipement peut être contrôlé par un système automatisé et peut démarrer sans avertissement. Sources de l'équipement contrôlé à distance non débranché correctement, lock-out, et tous déconsignation énergie crée une situation très dangereuse et pourrait causer des blessures ou même la mort. Se IL VOUS PLAÎT rester à l'écart et d'être vigilant.

**! AVERTISSEMENT**

## PUMP STANDS

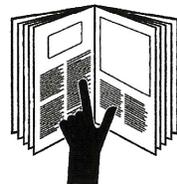
**YOU** are responsible for the **SAFE** operation and maintenance of your USC, LLC equipment . **YOU** must ensure that you and anyone else who is going to operate, maintain, or work around the treater be familiar with the operating and maintenance procedures and related **SAFETY** information contained 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!

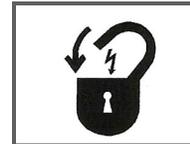
## GENERAL SAFETY

1. Read and understand the Operator's Manual and all safety labels 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.



## PUMP STANDS

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 labels 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. Electrocutation 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 equipment. Electrocu-  
tion 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 equipment on level ground free of debris. Anchor the equipment to  
prevent tipping or upending.



#### **! WARNING**

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

#### **! AVERTISSEMENT**

Avant de placement de l'équipement, assurez-vous que sol est relativement plat. L'équipement peut tomber ou mal fonctionner si le sol est trop inégale, endommager l'équipement et / ou causer des blessures.

### **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 labels clean. Replace any sign that is damaged or not clearly visible.



### **SAFETY LABELS**

1. Keep safety labels clean and legible at all times.
2. Replace safety labels that are missing or have become illegible.
3. Replaced parts that displayed a safety label should also display the current label.
4. Replacement safety labels are available. Contact your authorized dealer.

#### **How to Install Safety Labels:**

- 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.



Situé sur l'équipement USC vous trouverez des étiquettes de sécurité. Veuillez à toujours lire et suivre toutes les instructions sur les étiquettes.



Guards provided with USC equipment are to remain in place during operation.



Gardes fournis avec des équipements USC doivent rester en place pendant le fonctionnement.

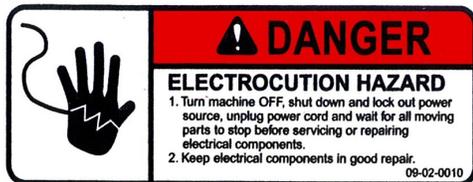
PUMP STANDS

Think **SAFETY!** Work **SAFELY!**

REMEMBER—If Safety Labels have been damaged, removed, become illegible, or parts replaced without safety labels, new labels must be applied. New safety labels are available from your authorized dealer



Part # 09-02-0001



Part # 09-02-0010



PUMP STANDS

**C2D2 SPECIFICATIONS AND LABELS**

If any of the panels are located in the hazardous area described in the installation section (see page 15), the following criteria must be met.

1. All 120VAC connections must be hard wired to a listed IP65 rated enclosure in accordance with local electrical codes.
2. The C2D2 certifications are only valid for equipment operating at 60 HZ.
3. The approved operating temperature for this equipment is between 0°C (32°F) and 40°C (104°F).
4. All RJ45 and USB pass-through connector caps must remain closed to achieve a C2D2 rating. Hard wire these connections in accordance with local electrical codes.

The following labels and certification plates must be mounted to the outside of the control panel so that they are in plain view.

MFG. By:  USC  
Seed Treating Solutions®  
Max Voltage: 120V, 1PH, 60Hz  
Total FLA: 5.2  
Largest Motor: 5.2 Amps  
Equipment Model: PS41-5121-0100  
Suitable to be used in Class II, Div 2, Group G, T4A Hazardous Locations

**!!WARNING!!**  
DISCONNECT POWER BEFORE REMOVING COVERS. KEEP COVERS/  
CONNECTIONS CLOSED WHILE CIRCUITS ARE LIVE. SEE INSTRUCTION MANUAL  
**!!AVERTISSEMENT!!**  
DÉBRANCHER L'ALIMENTATION AVANT DE RETIRER LES COUVERCLES. GARDEZ  
LES COUVERCLES / CONNEXIONS FERMÉS PENDANT QUE LES CIRCUITS SONT EN  
CIRCUIT. VOIR LE MANUEL D'INSTRUCTIONS

**!!WARNING!!**  
EXPLOSION HAZARD. DO NOT REMOVE OR REPLACE CONNECT OR DISCONNECT  
WHILE CIRCUIT IS LIVE UNLESS THE AREA IS FREE OF IGNITIBLE  
CONCENTRATIONS.  
**!!AVERTISSEMENT!!**  
RISQUE D'EXPLOSION. NE PAS ENLEVER OU REMPLACER LA CONNEXION OU LA  
DÉCONNEXION TANT QUE LE CIRCUIT EST EN CIRCUIT SAUF SI LA ZONE EST  
EXEMPTÉ DE CONCENTRATIONS IGNITIABLES.

  
Certified to  
CSA Std C22.2  
No. 213 & 68  
Intertek  
4010806  
INDUSTRIAL CONTROL PANEL  
Seed Treating Systems For Use In  
Class II Div 2 Group G,  
T4A Location

  
Intertek  
4010806  
INDUSTRIAL CONTROL PANEL

# INSTALLATION SECTION B



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



**HAUTE TENSION** ~ Toujours débrancher la source d'alimentation avant de travailler sur ou près du panneau de commande ou les câbles.



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



**HAUTE TENSION** ~ Utilisez des outils isolés lors des réglages, tandis que les commandes sont sous tension.



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



Installation permanente peut exiger cordons électriques, des tubes supplémentaires chimique, et les conduites d'air, puisque chaque installation est.

USC equipment may operate within a Group II, Division 2, Class G hazardous area which contains seed dust. If so, the equipment must be certified for use in this area. To avoid the possibility of an explosion ignited by static electricity, all USC equipment should be grounded by attaching a bonding strip to the metal frame and securing that strip to the factory ground point.

If labeled accordingly, USC products are designed to comply with CSA 22.1 for use in a Class II, Division 2, Group G environment. When connecting the USC system power cord into a power supply, first determine if the supply is also within the hazardous area where the USC system is located. If so, we recommend that the power be hard wired into the source. Do not use a standard electrical plug for this purpose. For other acceptable methods of connecting to a power source, or any other additional miscellaneous equipment to the USC system within a hazardous location, please consult CSA 22.1, Section 18-200 and 18-274. Review the appropriate section and ensure compliance with one of the options given.

When connecting to USC equipment from a remote location, and the USC equipment is in a hazardous Class II, Group G environment, customers are advised to follow the requirements within CSA 22.2 no. 25. More details may also be found in CSA 22.1 18-252 (wiring methods). There are various options covered within this section for wiring in a Class II, Group G (dust) environment. Select the best method suited for your specific location.

## PUMP STANDS

équipements USC peut fonctionner dans un Groupe II, Division 2, Classe G zone dangereuse qui contient la poussière des semences. Si oui, l'équipement doit être certifié pour une utilisation dans ce domaine. Pour éviter la possibilité d'une explosion enflammé par l'électricité statique, tous les équipements USC doit être mis à la terre en attachant une bande de liaison à la structure métallique et la sécurisation cette bande au point de masse du fabricant.

Si étiquetés en conséquence, les produits USC sont conçus pour être conformes à la norme CSA 22.1 pour une utilisation dans une Classe II, Division 2, Groupe G environnement. Lors du raccordement du USC alimentation du système cordon dans une alimentation, d'abord déterminer si l'offre est également dans la zone dangereuse où se trouve le système USC. Si oui, nous recommandons que le pouvoir soit câblé dans la source. Ne pas utiliser une prise électrique standard à cet effet. Pour les autres méthodes acceptables de se connecter à une source d'alimentation, ou tout autre matériel divers supplémentaire au système USC dans un endroit dangereux, se il vous plaît consulter la norme CSA 22.1, Section 18-200 et 18-274. Consultez la section appropriée et assurer la conformité avec l'une des options proposées.

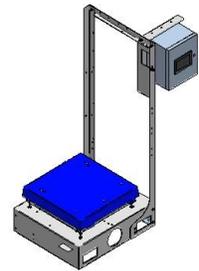
Lors de la connexion à l'équipement USC depuis un emplacement distant et l'équipement USC est dans une classe dangereuse II, Groupe G environnement, les clients sont invités à suivre les exigences dans CSA 22.2 no. 25. Plus de détails peuvent également être trouvés dans 22,1 CSA 18-252 ( Les méthodes de câblage). Il existe diverses options couvertes dans cette section pour le câblage dans une Classe II, Groupe G (poussière ) environnement. Sélectionnez la meilleure méthode adaptée pour votre emplacement spécifique.

### **BOX MOUNTED TANK PUMP STAND SET - UP**

The following steps outline the initial set-up of your 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.

#### **NOTICE**

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

#### **AVIS**

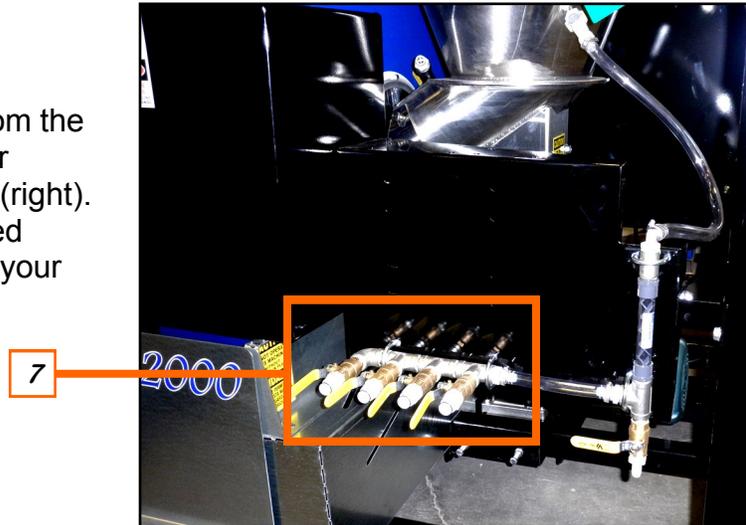
USC recommande fortement que le support de pompe sera installée à l'intérieur d'un bâtiment ou d'une structure couverte pour protéger la machine des intempéries.

## PUMP STANDS

### **BOX MOUNTED TANK PUMP STAND SET - UP**

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

7. 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.

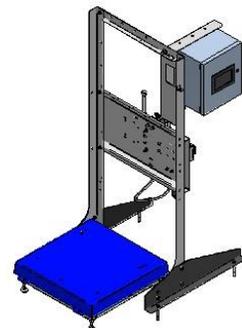


8. The scale is attached at the factory and scale supports (Blue Braces) are placed to support the lid. Remove and store these for future use if the scale is moved.
9. Refer to page 19 for instructions on leveling and grounding the scale on LIW pump stands. After leveling, locate the ground (green) wire on the scale base (see page 19).
10. Place the lid on the scale base and attach the ground (green) wire to the lid.

### **FLOOR MOUNTED TANK PUMP STAND SET - UP**

The following steps outline the initial set-up of your 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.



**FLOOR MOUNTED TANK PUMP STAND SET - UP**

- Using a forklift, place the pump stand in the desired position on a level surface.

**NOTICE**

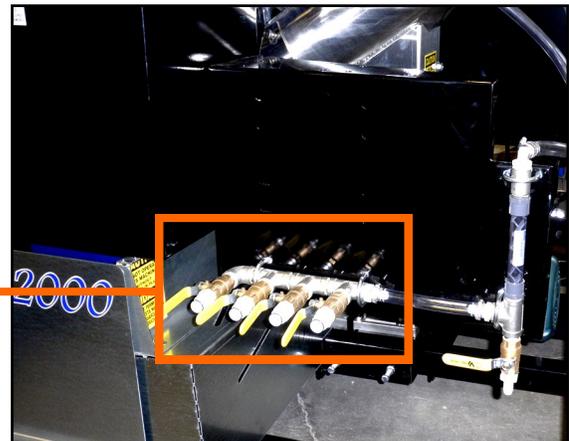
USC highly recommends that the pump stand be set up inside a building or any covered structure to protect the machine from weathering.

**AVIS**

USC recommande fortement que le support de pompe sera installée à l'intérieur d'un bâtiment ou d'une structure couverte pour protéger la machine des intempéries.

- Inspect machine thoroughly for screws, bolts, fittings, etc. which may have come loose during shipping.
- The floor mounted stand must be anchored to the floor
- The pump stand(s) should be placed on level ground close to the seed treater.
- Attach feet to scale. If applicable.
- Place scale on floor between the legs of the stand opposite the pump.
- Refer to page 19 for leveling scale.
- Place scale lid weldment on scale base.
- 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.

11

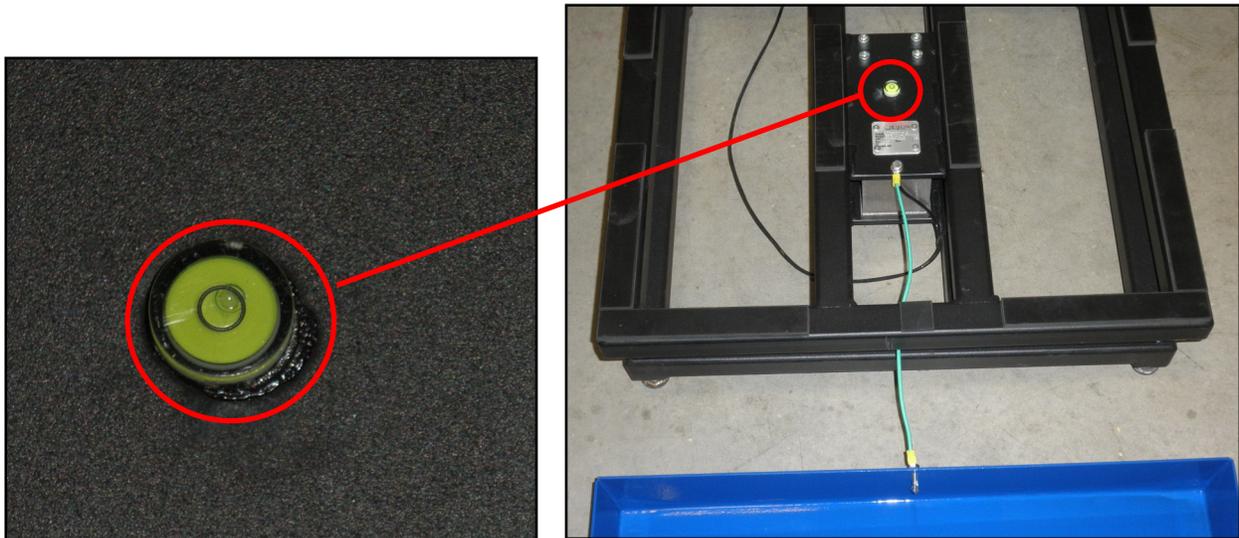


- Refer to page 19 for instructions on leveling and grounding the scale on LIW pump stands. After leveling, locate the ground (green) wire on the scale base (see page 19).
- Place the lid on the scale base and attach the ground (green) wire to the lid.
- Place tank, if applicable, on the scale lid and bolt down to the lid.

## PUMP STANDS

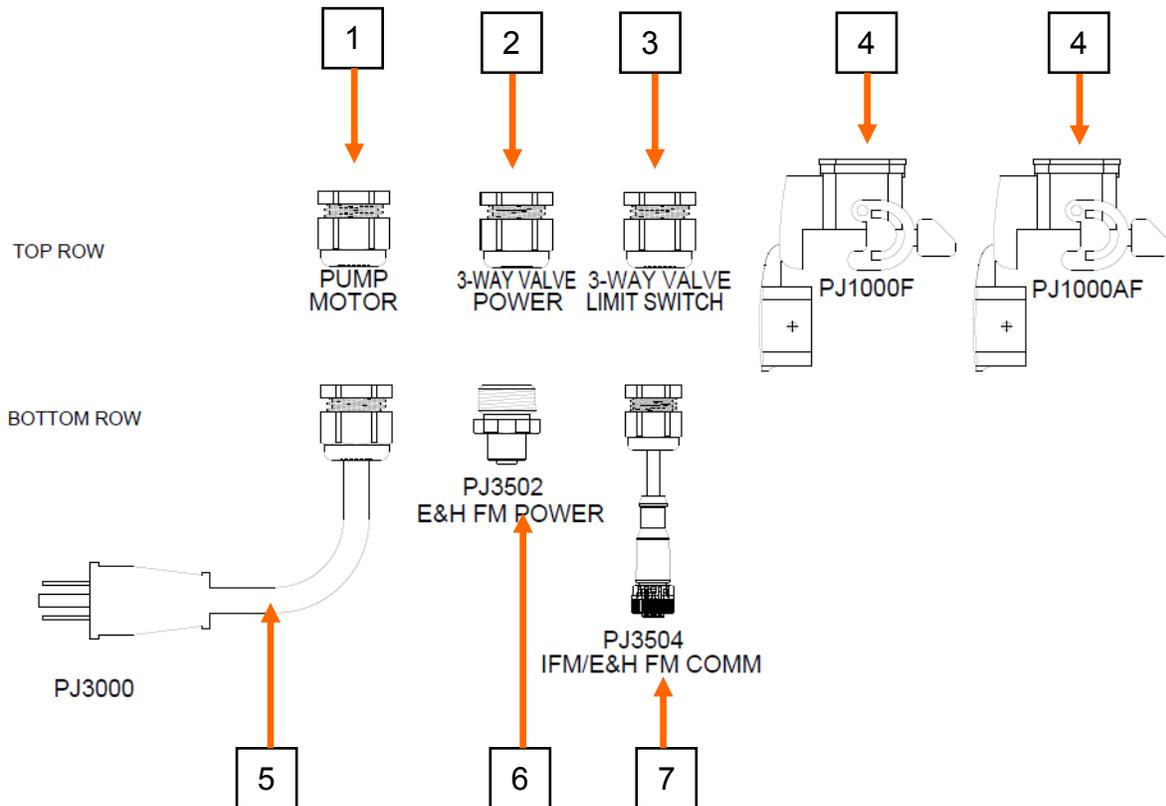
### LEVELING THE SCALE

1. Set the scale on either the floor or box stand, dependent on type of stand.
2. Using a 9/16 inch open end wrench adjust the legs or nuts to level the scale base. Until the bubble is centered in the center ring.
3. Example below is not balanced.
4. Attach the ground strap (green wire) to the scale base as shown below.
5. Extend the ground strap out between the scale base frames.
6. After placing the scale lid weldment on the scale base, remove the screw on the side of the weldment.
7. Put the screw through the ring on the end of the ground strap.
8. Reinstall the screw in the weldment.



PUMP STANDS

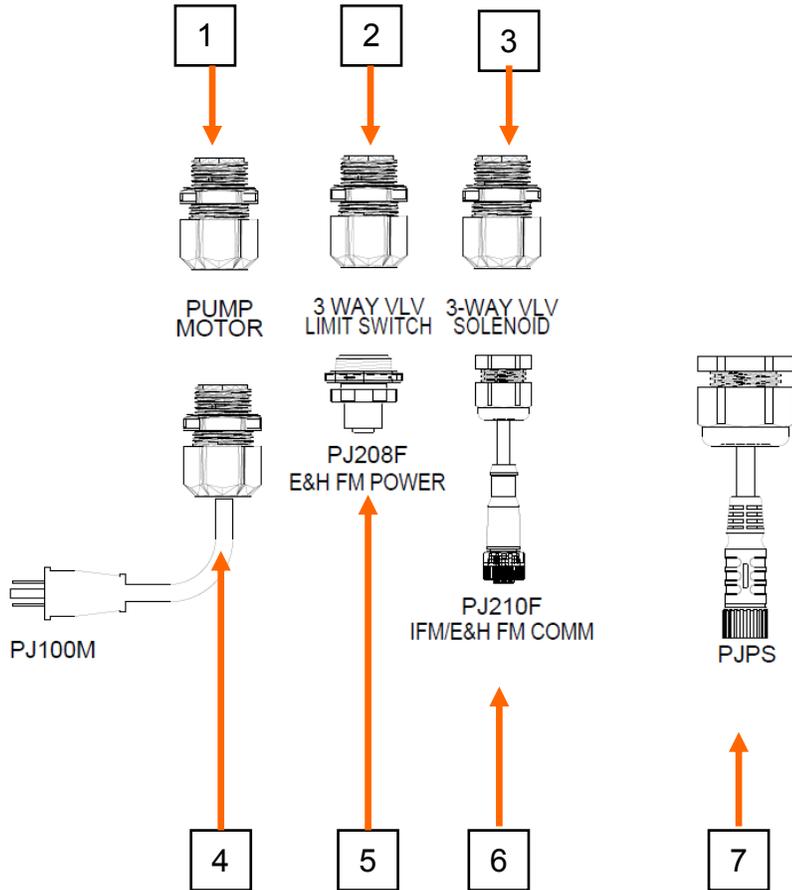
**PS2X VERSION 1 PUMP STAND CONTROL PANEL**



1. Cable from pump motor connects to this connector . Prewired at the manufacturing plant.
2. Cable from 3-way valve power connects to this connector. Prewired at the manufacturing plant.
3. Cable from 3-way valve limit switch connects to this connector. Prewired at the manufacturing plant.
4. These two connectors daisy chain all the automated equipment panels together for communications. One is shipped with each item of equipment.
5. Have a certified electrician provide power to the seed treating system. Provide convenient shutdown switches, comply with local electrical codes and ensure that the system is properly grounded and bonded. The USC system must be connected to the same electrical requirements as specified in the main control panel on the power requirement tag, or the electrical schematic shipped with the piece of equipment.
6. Flow meter power. Prewired at the manufacturing plant.
7. Flow meter communications. Prewired at the manufacturing plant.

PUMP STANDS

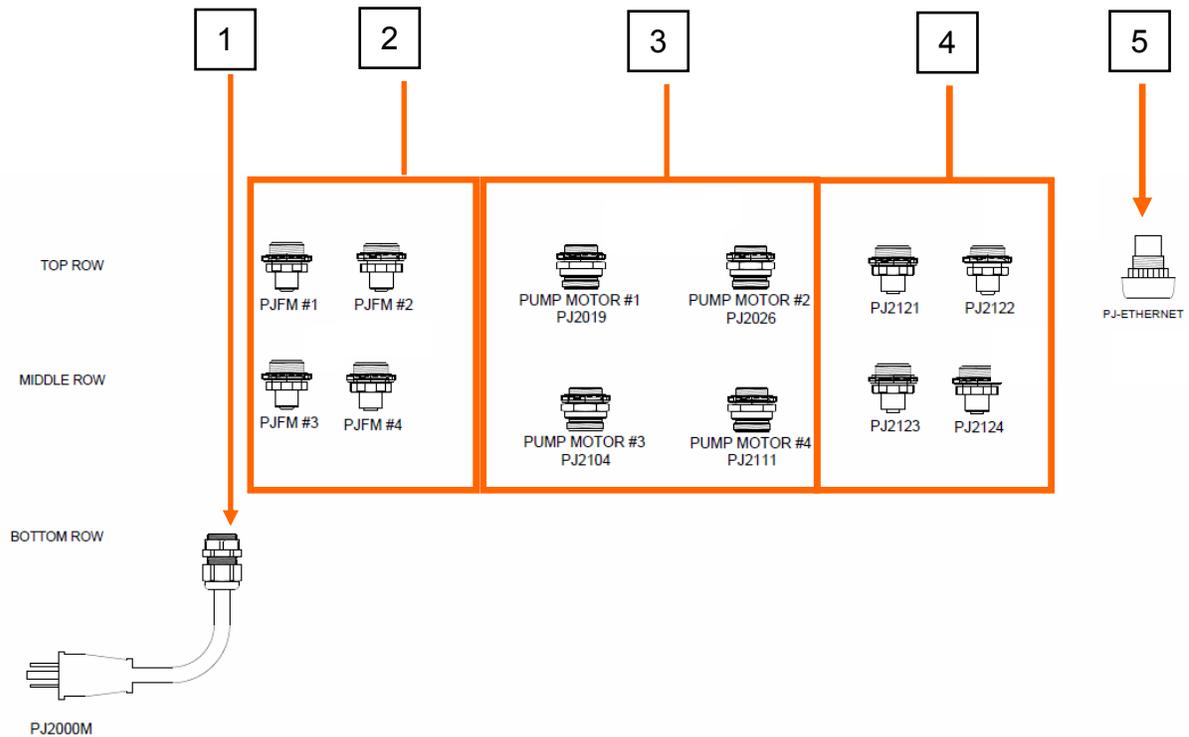
**PS3X VERSION 2 OR 3 PUMP STAND CONTROL PANEL**



1. This terminal is for the pump motor power. Prewired at the manufacturing plant.
2. This terminal is for the 3-way valve power. Prewired at the manufacturing plant.
3. This terminal is for the 3-way valve limit switch. Prewired at the manufacturing plant.
4. Have a certified electrician provide power to the seed treating system. Provide convenient shutdown switches, comply with local electrical codes and ensure that the system is properly grounded and bonded. The USC system must be connected to the same electrical requirements as specified in the main control panel on the power requirement tag, or the electrical schematic shipped with the piece of equipment.
5. This is the power for the flow meter. Prewired at the manufacturing plant.
6. This is the communications with the flow meter. Prewired at the manufacturing plant.
7. This cord connects to the PJPS terminal (there are 4) on the Automated Main Control Panel. (AMCP).

## PUMP STANDS

### **PS4x PUMP STAND ELECTRICAL CONNECTIONS 4 PUMP CONTROL PANEL**



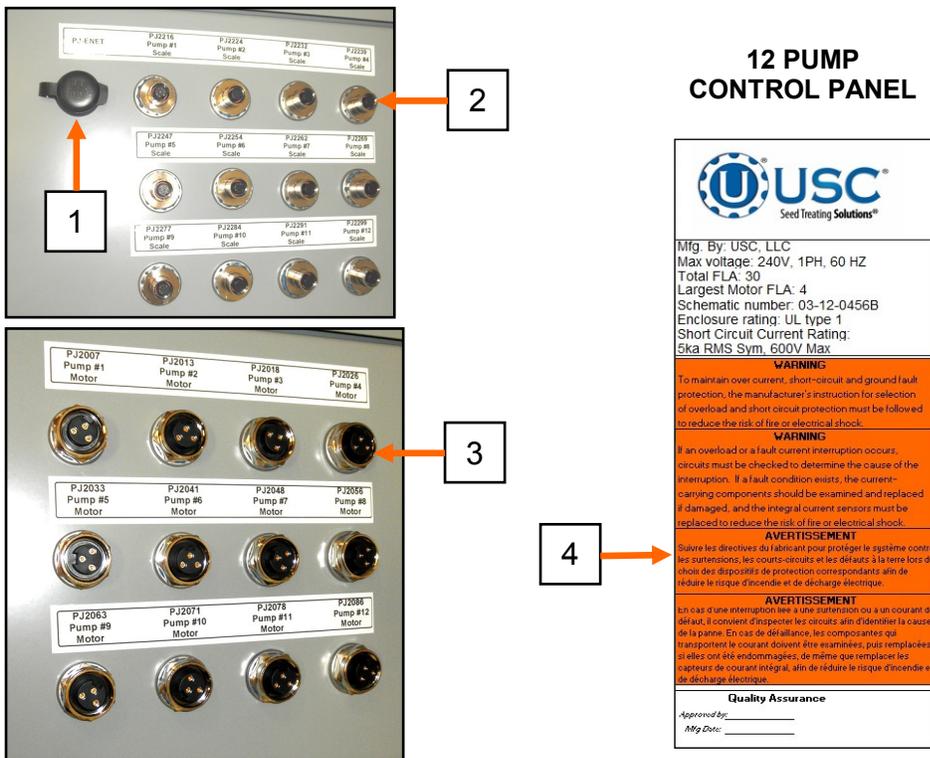
1. Have a certified electrician provide power to the seed treating system. Provide convenient shutdown switches, comply with local electrical codes and ensure that the system is properly grounded and bonded. The USC system must be connected to the same electrical requirements as specified in the main control panel on the power requirement tag, or the electrical schematic shipped with the piece of equipment.
2. Connect flowmeters from each pump stand.
3. Connect pump motor cables from each pump stand.
4. Connect cables from 3-way valves.
5. Connect to Automated Main Control Panel (AMPC).



## PUMP STANDS

### PS4x PUMP STAND ELECTRICAL CONNECTIONS 12 PUMP CONTROL PANEL

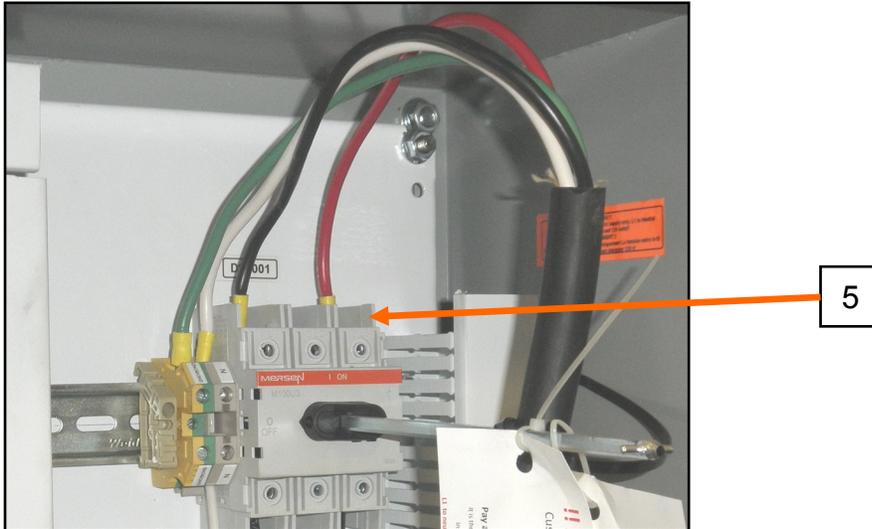
1. Plug the 50 foot Ethernet cable into the PJ\_ENET connector on the left side next to the scale connectors. Then plug the other end into any available Ethernet port on the main control panel.
2. Connect the 8 pin connector on the cable coming from the scale to the appropriate connector on the bottom left side of the control panel (top, left). They are numbered 1 - 12. Make sure you plug in the cable from pump stand to the number you want to assign to each pump stand.
3. Connect the 3 pin connector on the cable coming from the pump motor to the appropriate connector on the bottom right side of the control panel (bottom, left). They are numbered 1 - 12. Make sure you plug in the cable for each pump stand to the same number you used for the scale cable for each pump stand.
4. Below right are samples of the name plates found inside the 12 pump control panel. The one located inside the control panel provides electrical information for that item of equipment. Always rely on the information on the name plate inside the control panel.



## PUMP STANDS

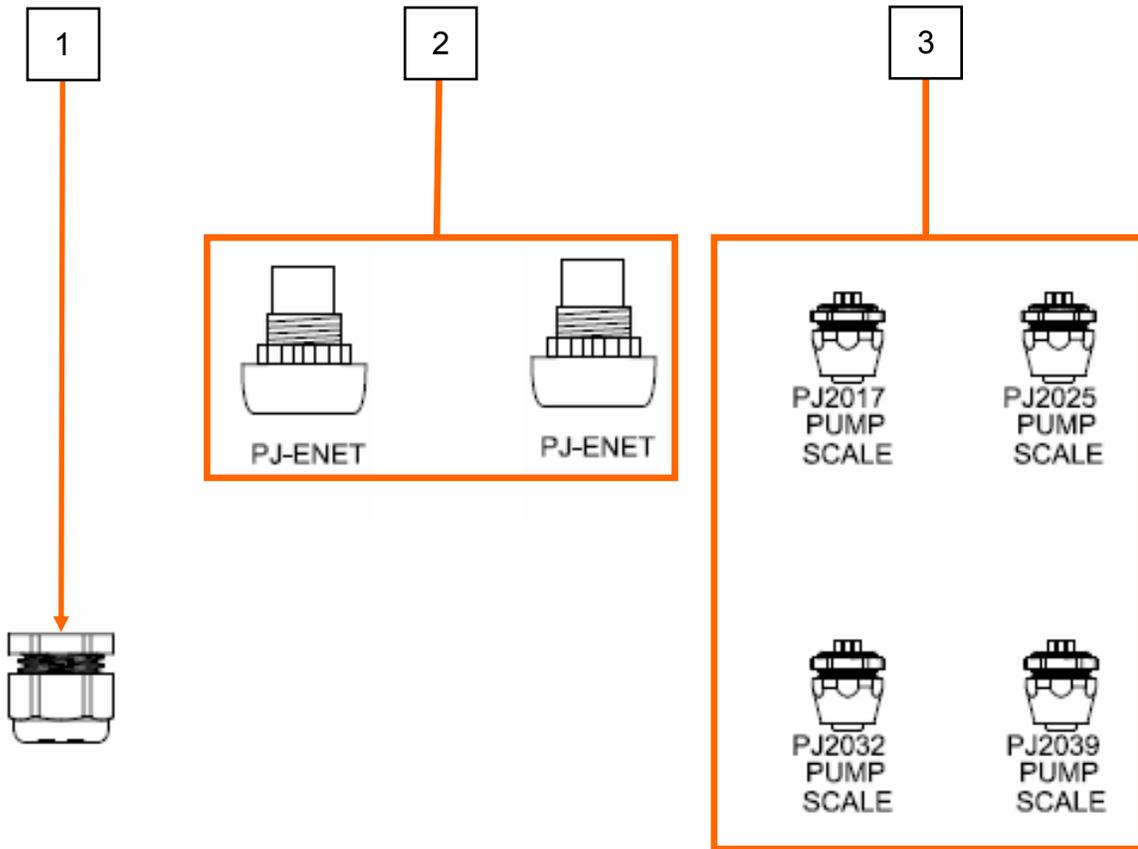
### **PS4x PUMP STAND ELECTRICAL CONNECTIONS 12 PUMP CONTROL PANEL**

5. Have a certified electrician provide power to the seed treating system. Provide convenient shutdown switches, comply with local electrical codes and ensure that the system is properly grounded and bonded. The USC system must be connected to the same electrical requirements as specified in the main control panel on the power requirement tag, or the electrical schematic shipped with the piece of equipment.



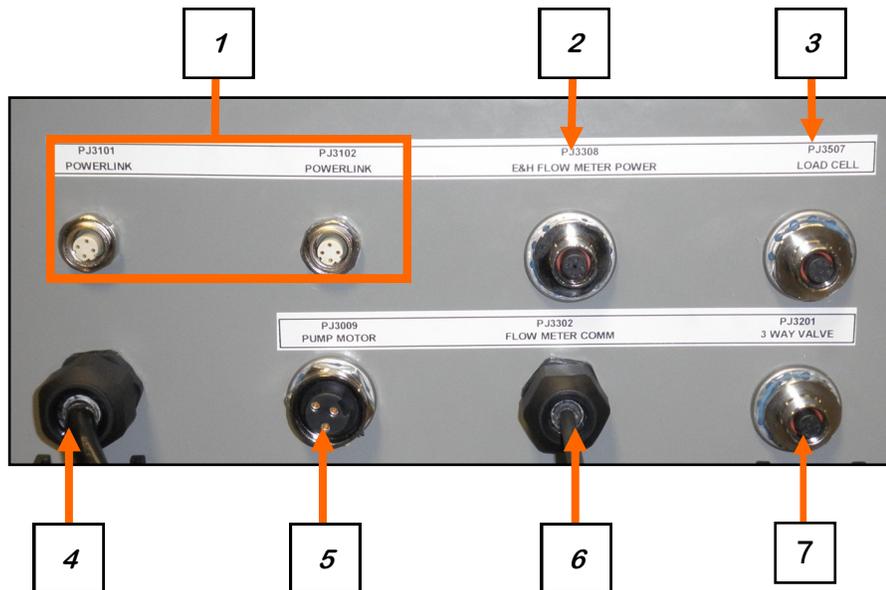
PUMP STANDS

**LIW ADD-ON-PANEL**



1. Have a certified electrician provide power to the seed treating system. Provide convenient shutdown switches, comply with local electrical codes and ensure that the system is properly grounded and bonded. The USC system must be connected to the same electrical requirements as specified in the main control panel on the power requirement tag, or the electrical schematic shipped with the piece of equipment.
2. Connect to ethernet connectors on closest equipment.
3. Connect up to 4 pump stand scales.

**PS6X VERSION 4 AUTOMATED PUMP STAND PANEL**

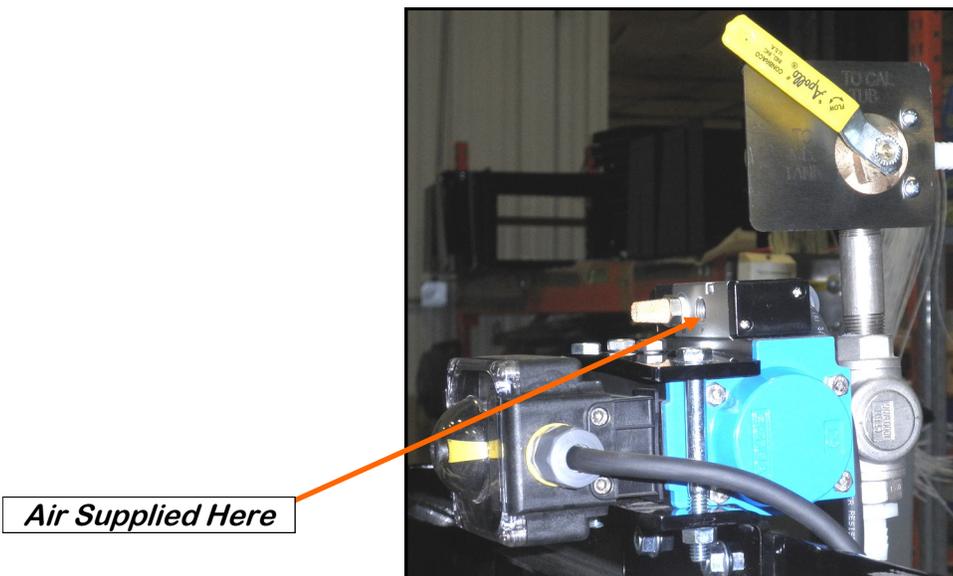


1. Connect a cable with four pin connector to one of the two Powerlink connectors. Connect the other end to the Powerlink connector on the closest control panel. Repeat this process until all control panels are connected. It may be Treater to Tri-Flo® to Bin Site panel etc. The order or number of devices is not important. It is important that all panel are connected. All pump stand control panels will need to be connected in a similar configuration.
2. If equipped with a mass flow meter, plug the cable from the flow meter in the PJ3308 connector. Prewired at the manufacturing plant.
3. For loss in weight pump stands, plug the cable from the load cell in the scale base unit to the PJ3507 connector. Prewired at the manufacturing plant. Unless the scale is floor mounted then this will need to be connected in the field.
4. Have a certified electrician provide power to the seed treating system. Provide convenient shutdown switches, comply with local electrical codes and ensure that the system is properly grounded and bonded. The USC system must be connected to the same electrical requirements as specified in the main control panel on the power requirement tag, or the electrical schematic shipped with the piece of equipment.
5. Connect the cable from the peristaltic pump motor to the PJ3009 connector. Prewired at the manufacturing plant.
6. If equipped with a volumetric flow meter, plug the cable from the PJ3302 connector into the flow meter. Prewired at the manufacturing plant.
7. If the pump stand is equipped with an automated 3-Way recirculation valve, plug the cable from the valve in the PJ3201 connector. Prewired at the manufacturing plant.

PUMP STANDS

**PS6X VERSION 4 AUTOMATED PUMP STAND PANEL**

- 8. For automated pump stands with an automated recirculation valve, an air supply with an in-line customer supplied air dryer, to protect the air system from contamination, is required. 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.



- 9. Below are samples of the name plate found inside the pump stand control panel. The one located inside the control panel provides electrical information for that item of equipment. Always rely on the information on the name plate inside the control panel.



# MECHANICAL OPERATION

## SECTION C

### MIX TANKS

The pump stand includes a choice of 15, 30, 55 gallon poly or 30, 60 gallon stainless steel chemical mix tank. The chemical mix tank will have electric drive agitation that is turned on or off at the pump stand with a manual switch. The agitator should be running at all times when treatment is present in the 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 may use to direct fill into the tank.



Agitator Switch Box

### CALIBRATION TUBES

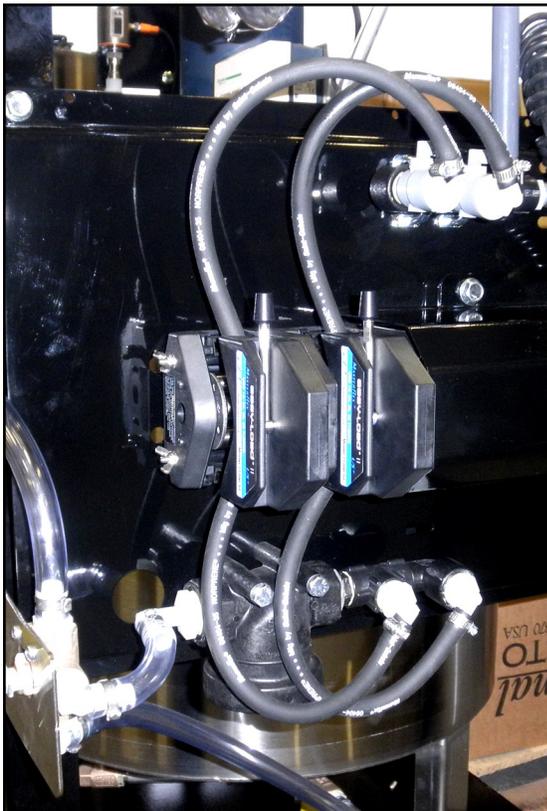
The pump stand may be equipped with a optional calibration tube which is used to check the liquid flow rate. The calibration tubes are available in 100 OZ and 340 OZ ounce sizes. The system valves direct liquid from different areas to keep all liquid contained. This creates a closed chemical system so that the operator may manually check the calibration of the chemical flow rate without handling any of the chemical.



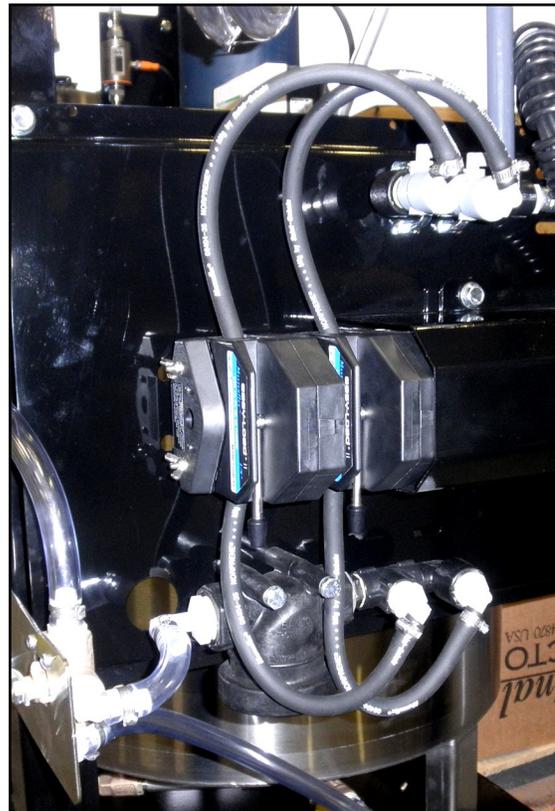
## **PERISTALTIC PUMP HEADS AND MOTOR**

The pump stand utilizes a variable speed pump motor and special norprene pump tubing for liquid metering. The pump comes equipped with 1, 2 or 3 peristaltic pump heads. A Low Volume and High Volume configuration are also available. 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*

**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. This valve is only present when a Calibration tube is mounted on the pump stand.



*Drawing chemical from the bottom of the Mix Tank*



*Drawing chemical from the bottom of the Calibration Tube*

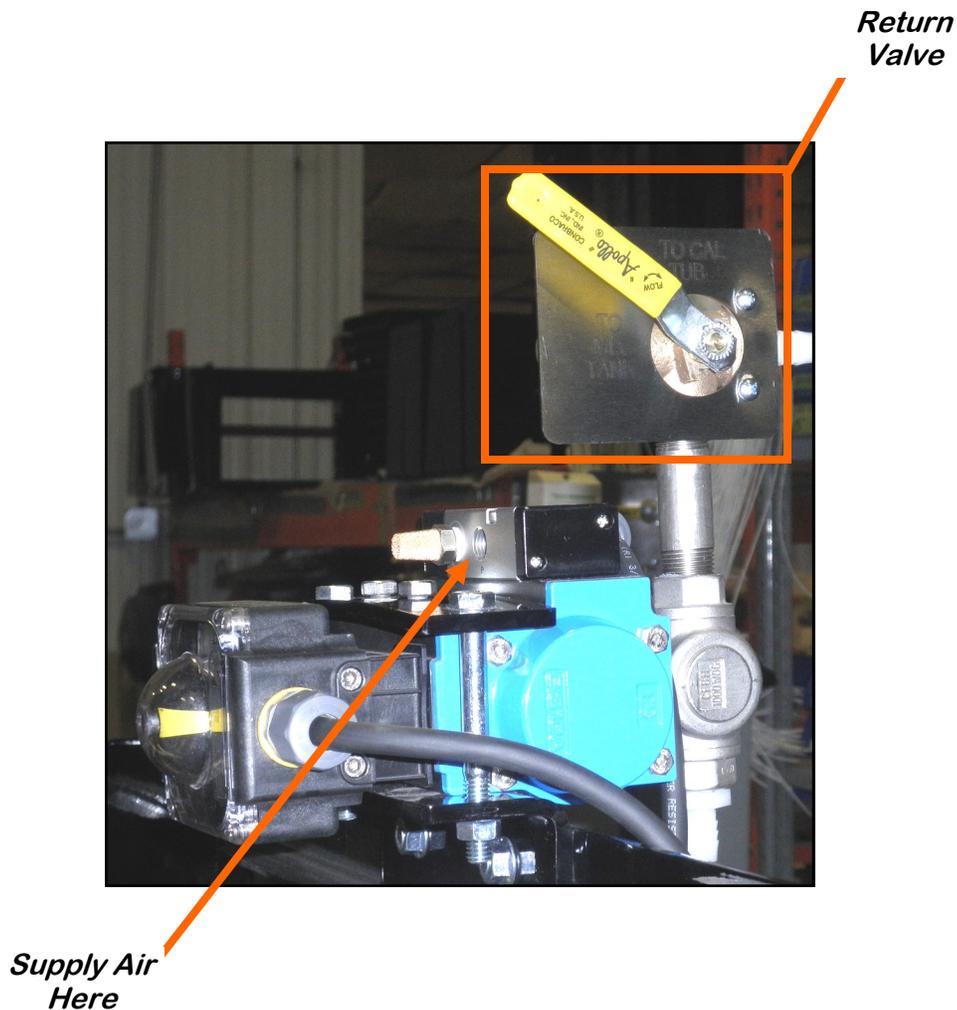
**MANUAL SEED TREATMENT RETURN VALVE:** The bottom valve directs the liquid to the top valve or to the seed treater. The top valve directs the liquid coming from the mix tank or calibration tube or back to the calibration tube or mix tank for re-circulation.



## PUMP STANDS

### PUMP STAND VALVES

**AUTOMATED 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.

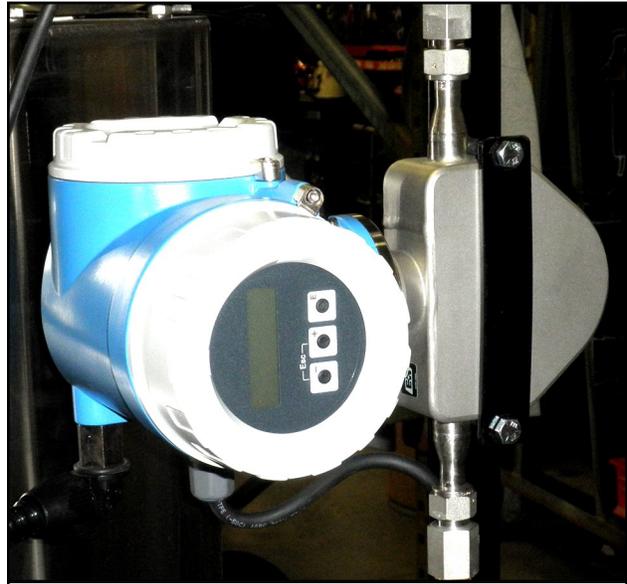
## PUMP STANDS

### **FLOW METERS**

The pump stand may be equipped with an optional volumetric or mass flow meter. A flow meter 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.



*Volumetric Flow Meter*



*Mass Flow Meter*

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 the appropriate U-Treat Automation manual.

Emptying the remaining liquid may 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.

#### **⚠ WARNING**

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

#### **! AVERTISSEMENT**

Toujours disposer chimique ou diluée selon votre local, étatique et règlements fédéraux.

#### **NOTICE**

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

#### **AVIS**

Seulement vous, l'opérateur, permet de déterminer la longueur du temps nécessaire pour rincer complètement tous les résidus de produits chimiques du système de réservoir et la plomberie.

## SECTION D ELECTRICAL OPERATION



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



**HAUTE TENSION** ~ Toujours débrancher la source d'alimentation avant de travailler sur ou près du panneau de commande ou les câbles.



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



**HAUTE TENSION** ~ Utilisez des outils isolés lors des réglages, tandis que les commandes sont sous tension.



**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.



Seules personnes autorisées doivent travailler sur le panneau de commande. Ne jamais laisser quelqu'un qui n'a pas lu et se sont familiarisés avec le manuel d'ouvrir ou de travail du propriétaire sur les panneaux de contrôle.

This section provides a general overview and description of the operator controls for the pump stands.

For information on pump calibration, flow meter calibration and all other HMI screen functions, see the appropriate U-Treat Automation manual.

### General Panel Descriptions

The pump stand control panels are plug connected enclosures that are located on each pump stand frame. This panel connects the pump stand electrical components to the treater or automated main control panel. Each pump stand has two standard 120V plugs. One for the manual ON/OFF switch controlling the connected to motor starter box which controls the agitator only and one for the pump stand control panel.

# TROUBLESHOOTING SECTION E

Below is a table describing the most frequent problems and solutions with the Manual Pump Stand. For further assistance, contact your authorized dealer.

Problem	Possible Cause	Solution
Pump is fluctuating.	<ol style="list-style-type: none"> <li>1. Restriction in tubing</li> <li>2. Filter is plugged or missing gasket.</li> <li>3. Hoses are worn out.</li> </ol>	<ol style="list-style-type: none"> <li>1. Flush tubing and check filter for any restrictions.</li> <li>2. Clean filter and check for gasket.</li> <li>3. Replace hoses.</li> </ol>
Pump will not turn off in AUTO when seed runs out.	<ol style="list-style-type: none"> <li>1. Proximity switch on treater is dirty.</li> <li>2. Proximity switch on treater is set too sensitive.</li> </ol>	Refer to treater manual for proximity switch malfunction and adjustment.
Pump will not turn on in AUTO.	<ol style="list-style-type: none"> <li>1. Proximity switch on treater is not staying covered.</li> <li>2. Proximity switch on treater is not sensitive enough.</li> <li>3. HMI screen not set to AUTO.</li> <li>4. Auxiliary cable not connected.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the proximity switches on the treater.</li> <li>2. Adjust proximity switches on the treater.</li> <li>3. Set HMI screen to AUTO.</li> <li>4. Attach Auxiliary cable from control panel to treater control panel.</li> </ol>
Mix Motor will not start	<ol style="list-style-type: none"> <li>1. Power cord not plugged in or not powered.</li> <li>2. Motor starter tripped</li> </ol>	<ol style="list-style-type: none"> <li>1. Plug in power cord.</li> <li>2. Check motor starter, viscosity of chemical, overload dial set incorrectly, low voltage, loose connections, bad motor. Press red stop button, lockout-tagout power. Then black start button after clearing problem.</li> </ol>

## SECTION MAINTENANCE F

Proper maintenance of the 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.



Ne pas mettre cet appareil en service avec des pièces douteuse entretenus. La mauvaise performance ou un danger peut survenir.



Do not use compressed air or water under pressure to clean any of the components of the USC equipment.



Ne pas utiliser d'air comprimé ou de l'eau sous pression pour nettoyer l'un des composants de l'équipement USC.

### 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.
- Wipe down the motor casing with a damp cloth making sure to remove all dust that may have collected since the last maintenance date. Record the cleaning on the company required documents. If operating in a CSA 22.1, Class II, Division 2, Group G hazardous area, USC recommends this step be performed on a daily basis.
- Essuyez le carter moteur avec un chiffon humide en veillant à éliminer toutes les poussières qui peuvent avoir perçu depuis la dernière date de maintenance. Enregistrez le nettoyage sur la société les documents requis. Si opérant dans un CSA 22.1, Classe II, Division 2, Groupe G zone dangereuse, USC recommande cette étape être effectuée sur une base quotidienne.



See Page 6

## PUMP STANDS

### **PUMP STANDS WITH STANDARD MIX TANKS** **PUMPS - PLUMBING - FLOW METER**

1. Check pump in forward and reverse.
2. Make sure pump heads open and close smoothly.
3. Inspect tubing for uneven wear. Replace pump tubing often to ensure high flow rates can be achieved.
4. Make certain the inside of the mix tank is completely drained of chemical. Use clean water to rinse out all chemical residue, then fill the tank with clean water.

**⚠ WARNING** Always wear protective gloves and other personal protective equipment when there is a potential contact with chemicals.

5. Disconnect the discharge process lines from the treater static mixer assembly and direct them to a receptacle large enough to hold all of the water from the mix tank.
6. Pump clean water through all areas of the plumbing including the calibration tube and flow meter if applicable. Opening and closing the valves during this process helps to remove residue from the ball valves.
7. Remove and clean the filter.
8. Open all drain points, valves, and filter to let as much of the water drain as possible.
9. Disconnect power to the flow meter.
10. If your pump stand is equipped with a volumetric flow meter, remove it from the machine for additional cleaning.

A. Pre - Mix a solution of 90% water and 10% distilled white vinegar.

**NOTICE** Only use the vinegar and water solution mixed in these proportions to clean the flow meter. Use of any other cleaners, especially cleaners containing harsh chemicals may permanently damage the sensors and seals inside the flow meter.

**AVIS** Utilisez uniquement la solution de vinaigre et d'eau mélangés dans ces proportions pour nettoyer le débitmètre. L'utilisation d'autres produits de nettoyage, en particulier les produits nettoyants contenant des produits chimiques agressifs peuvent endommager de façon permanente les capteurs et les phoques à l'intérieur du débitmètre.

**PUMP STANDS WITH STANDARD MIX TANKS**  
**PUMPS - PLUMBING - FLOW METER**

- B. Use a size - matched circular brush with soft plastic bristles. Dip the brush in the solution and gently move it up and down in the measuring pipe to avoid damaging the measuring pipe and sensor electrodes.
- C. Re-repeat brushing with fresh fluid until measuring pipe is visually clean.
- D. Flush the flow meter inside and out with clean water to remove any of the cleaning solution residue.



- Wipe down the motor casing with a damp cloth making sure to remove all dust that may have collected since the last maintenance date. Record the cleaning on the company required documents. If operating in a CSA 22.1, Class II, Division 2, Group G hazardous area, USC recommends this step be performed on a daily basis.
- Essuyez le carter moteur avec un chiffon humide en veillant à éliminer toutes les poussières qui peuvent avoir perçu depuis la dernière date de maintenance. Enregistrez le nettoyage sur la société les documents requis. Si opérant dans un CSA 22.1, Classe II, Division 2, Groupe G zone dangereuse, USC recommande cette étape être effectuée sur une base quotidienne.

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**ELECTRICAL PANEL**

1. Check and tighten wire connections.
2. Check quick connects on bottom of control panel.
3. Check to see if starters and/or overloads are tripped.
4. Check to see if relays, timers and/or breakers are tripped.
5. Check quick connects on end of Auxiliary cord.
6. Check and tighten wire connections.
7. Check relay and fuse holder.
8. Check power cords for cuts or frays and ensure ground is present.



See Page 6

## PUMP STANDS

### PUMP STANDS WITH CHEMICAL TOTES

#### PUMPS - PLUMBING - LIW SCALES

 **WARNING** Always wear protective gloves and other personal protective equipment when there is a potential contact with chemicals.

1. Run the pumps in reverse until all chemical has been drained from the process lines and the calibration tube back into the tote.
2. Make sure pump heads open and close smoothly.
3. Inspect tubing for uneven wear. Replace pump tubing often to ensure high flow rates can be achieved.
4. Fill two five gallon buckets with clean water. Disconnect the return line from Micro Matic valve and place it in one of the buckets. Place the Micro Matic valve in the other bucket of water.
5. Disconnect the discharge process lines from the treater static mixer assembly and direct them to a receptacle large enough to hold all of the water from the buckets.
6. Pump clean water through all areas of the plumbing including the calibration tube. Opening and closing the valves during this process helps to remove residue from the ball valves.
7. Remove and clean the filter.
8. Open all drain points, valves, and filter to let as much of the water drain as possible.
  - Wipe down the motor casing with a damp cloth making sure to remove all dust that may have collected since the last maintenance date. Record the cleaning on the company required documents. If operating in a CSA 22.1, Class II, Division 2, Group G hazardous area, USC recommends this step be performed on a daily basis.
  - Essuyez le carter moteur avec un chiffon humide en veillant à éliminer toutes les poussières qui peuvent avoir perçu depuis la dernière date de maintenance. Enregistrez le nettoyage sur la société les documents requis. Si opérant dans un CSA 22.1, Classe II, Division 2, Groupe G zone dangereuse, USC recommande cette étape être effectuée sur une base quotidienne.

## SECTION G STORAGE

Proper Storage of the pump stand for long periods of time is critical to reduce the chance of rust, corrosion and fatigue of the equipment. This is especially true when storing the pump stand in below freezing temperatures.

The following is a guideline for the type of cleaning and maintenance that should be performed on this unit prior to storage. Your environment and uses may require additional cleaning and preparation to assure that when the equipment is returned to production, it performs in a safe, accurate and reliable manor.



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

### LIQUID SYSTEMS WITH STANDARD MIX TANKS PUMPS - PLUMBING - FLOW METERS

1. Perform steps 1 through 8 on page 37 in the maintenance section to clean the chemical residue from each individual pump stand in the system.

#### NOTICE

If the pump stand(s) will be exposed to possible freezing temperatures, the final flush of the system should be made with a non freezable liquid like recreational vehicle antifreeze.

#### AVIS

Si le stand (s) de la pompe sera exposé à des températures de congélation possibles, le rinçage final du système doit être faite avec un liquide non congelable comme antigel récréatif du véhicule.

2. Open all drain points, valves, and filter to let as much of the water drain as possible.
3. Release pump heads and remove tubing to prevent any unnecessary wear (see page 30).
4. If the pump stand is equipped with a volumetric flow meter, disconnect power and perform steps 10A through 10D on page 37 in the maintenance section. If equipped with a mass flow meter, remove the flow meter from the pump stand and rinse with clean water.
5. Stand the flow meter upright allowing enough time for measuring pipe to air dry. After it is dry, cover both openings.

## PUMP STANDS

6. Store flow meters in a location with the following conditions:
    - Ambient temperature of 50 to 80 degrees Fahrenheit.
    - Protection from direct sunlight to avoid unacceptable high surface temperatures.
    - Where moisture does not collect in or on the flow meter. This will help prevent fungus or bacteria infestation which can damage the liner.
    - Store in a manner so that the inlet and outlet are as much in an up and down position as possible.
-

PUMP STANDS

**NOTES:**

# USC LIMITED WARRANTY SECTION I

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. This includes any welding on equipment which could damage electrical components. Manufacturer does not warrant against casualties or damages resulting from misuse and / or abuse of Products, improper storage or handling, 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 lost profits, lost revenue, lost sales (whether direct or indirect damages), incidental, special, punitive, indirect or consequential damages.

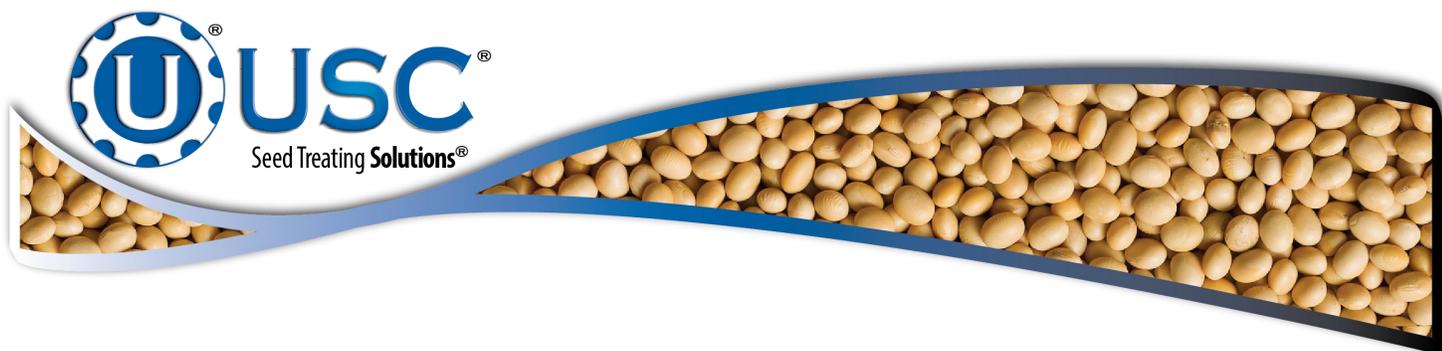
4. **Other Statements:** Manufacturer's employees or representatives' oral or other written statements do not constitute warranties, shall not be relied upon by Buyer, and are not a part of the contract for sale or this limited warranty.

5. **Return Policy:** Approval is required prior to returning goods to Manufacturer. 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.

US / Canada Non-Exclusive 2016





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