

LPX SEED TREATER

Operators Manual



Software Release: USC - Manual - Treater v2.2

Document: TD-09-06-1035

Revision: C



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 LPX Seed Treater. 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.

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.

LPX SEED TREATER

As the person with the most to gain or lose 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.

- Disconnect, lockout, and tagout electrical and all other energy sources before inspecting, cleaning, servicing, repairing, or any other activity that would expose you to the hazards of electrical shock.
- 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 upper right corner of the main panel mounting bracket.



SERIAL NUMBER: _____

TABLE OF CONTENTS

<u>Section</u>	<u>Contents</u>	<u>Page #</u>
Section A	Safety Instructions.....	5
Section B	Installation	17
	LPX Manual and Automated Treater Set-up	18
	LPX Manual Treater Set-up.....	20
	LPX Automated Treater Set-up	22
Section C	Mechanical Operation.....	26
	LPX Treater Overview	26
	LPX2000 Seed Wheel Overview	27
	LPX300 Seed Wheel Overview	28
	Atomizer Chamber Overview	29
	Rotating Drum Overview.....	30
Section D	Electrical Operation	32
	Startup Screen	34
	Main Screen	35
	Product Screen	37
	Product Editing Screen	38
	Calibration Calculator Screen	39
	Pump Rate Calculator Screen.....	40
	Overview Screen	41
	H-O-A Screen.....	42
	Utilities Screen	44
	Security Screen	45
	Setpoints Screen	46
Section E	Calibration	47
	Determining Seed Cup Weight	47
	Adjusting Seed Flow Gate	49
	Flow Meter Calibration	50
	Treating Seed	52
Section F	Troubleshooting.....	55
	Troubleshooting	55
	Proximity Switch Adjustment Guide	57
Section G	Maintenance	58
Section H	Storage.....	63
Section I	Mechanical Drawings	66
Section J	Limited Warranty.....	125

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.

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.



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 tagout 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."

EMERGENCY STOP



There is an Emergency Stop push button on all LPX Seed Treaters which is located on the Treater Control Panel. The LPX Automated Treater has an additional Emergency Stop pushbutton on the Main Control Panel. Actuators of emergency stop shall be colored RED. The background immediately around the device actuator shall be colored YELLOW. The actuator pushbutton operated device shall be of the palm or mushroom head type.

ARRET D'URGENCE

Il ya un bouton-poussoir d'arrêt d'urgence sur tous les traiteurs de semences LPX qui est situé sur le Panneau de configuration Traiteur. Le LPX automatisé Traiteur dispose d'une autre arrêt d'urgence bouton poussoir sur le panneau de commande principal. Actionneurs de freinage d'urgence doivent être de couleur rouge. Le fond immédiatement autour de l'actionneur de l'appareil doit être de couleur JAUNE. Le dispositif actionné actionneur de bouton-poussoir doit être de la paume ou champignons type de tête.

CONTROLLED STOP

This is the stopping of machine motion by reducing the electrical command signal to 0 (zero) once the stop signal has been recognized.

ARRET CONTROLÉ

Ce est l'arrêt du mouvement de la machine en réduisant le signal de commande électrique à 0 (zéro) dès que le signal d'arrêt a été reconnu.

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



! WARNING

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.

Démarrer danger automatique

! AVERTISSEMENT

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.

LPX SEED TREATER

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 equipment 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 equipment

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 equipment .
2. Only trained persons shall operate the equipment . 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.



LPX SEED TREATER

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. 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 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 USC at (785) 431-7900 .

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.

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 USC at (785) 431-7900.




Part # 09-02-0001



Part # 09-02-0003

LPX SEED TREATER



 <p>USC Seed Treating Solutions®</p>
<p>Mfg. By: USC, LLC Max voltage: 230V, 1PH, 60 HZ Total FLA: 125 Largest Motor FLA: 40 LPX Treater: L2081C11112 MOD Suitable to be used in Class II, Div 2, Group G, T4A Hazardous locations</p>
<p>!!WARNING!! Disconnect power before removing covers. Keep covers/connections closed while circuits are alive. "See Instructions Manual"</p>
<p>!!AVERTISSEMENT!! Coupez l'alimentation avant de retirer les couvercles. Gardez couvertures / connexions fermées tandis que les circuits sont vivants "Voir le manuel d'instructions"</p>

CAUTION

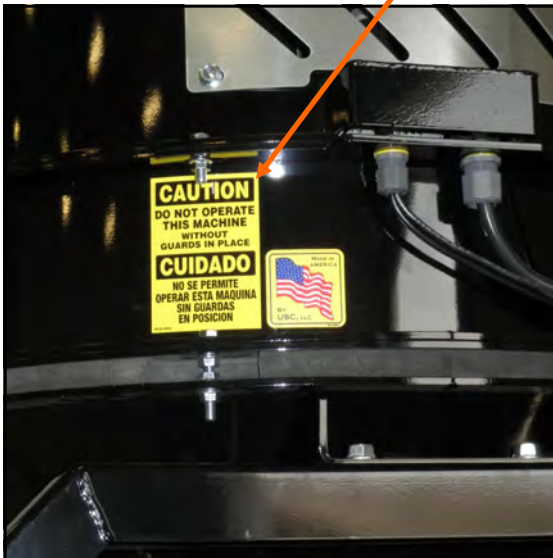
**DO NOT OPERATE
THIS MACHINE
WITHOUT
GUARDS IN PLACE**

CUIDADO

**NO SE PERMITE
OPERAR ESTA MAQUINA
SIN GUARDAS
EN POSICION**

09-02-0002

Part # 09-02-0002



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.

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.

LPX MANUAL AND AUTOMATED TREATER SET - UP

The following steps outline the initial set-up of your USC Seed Treating system:

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 machine into its working position.
3. Using a forklift, place the seed treater in the desired position on a level surface.

NOTICE

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

AVIS

USC recommande fortement que le traitement de semences être mis en place à l'intérieur d'un bâtiment ou d'une structure couverte pour protéger la machine des intempéries.

LPX MANUAL AND AUTOMATED TREATER SET - UP

4. Remove any boxes and cords from the drum of the treater.
5. Install the four provided legs and set up on a level surface, preferably concrete. When all four legs are mounted in the same pin hole, the seed treater has a slight slope to allow seed to travel through the machine. The pin holes are approximately 2” apart.

NOTICE If more slope is desired, the rear legs can be dropped an additional pin hole.

AVIS Si plus la pente est souhaitée, les pattes arrière peuvent être déposés un trou de broche supplémentaire.

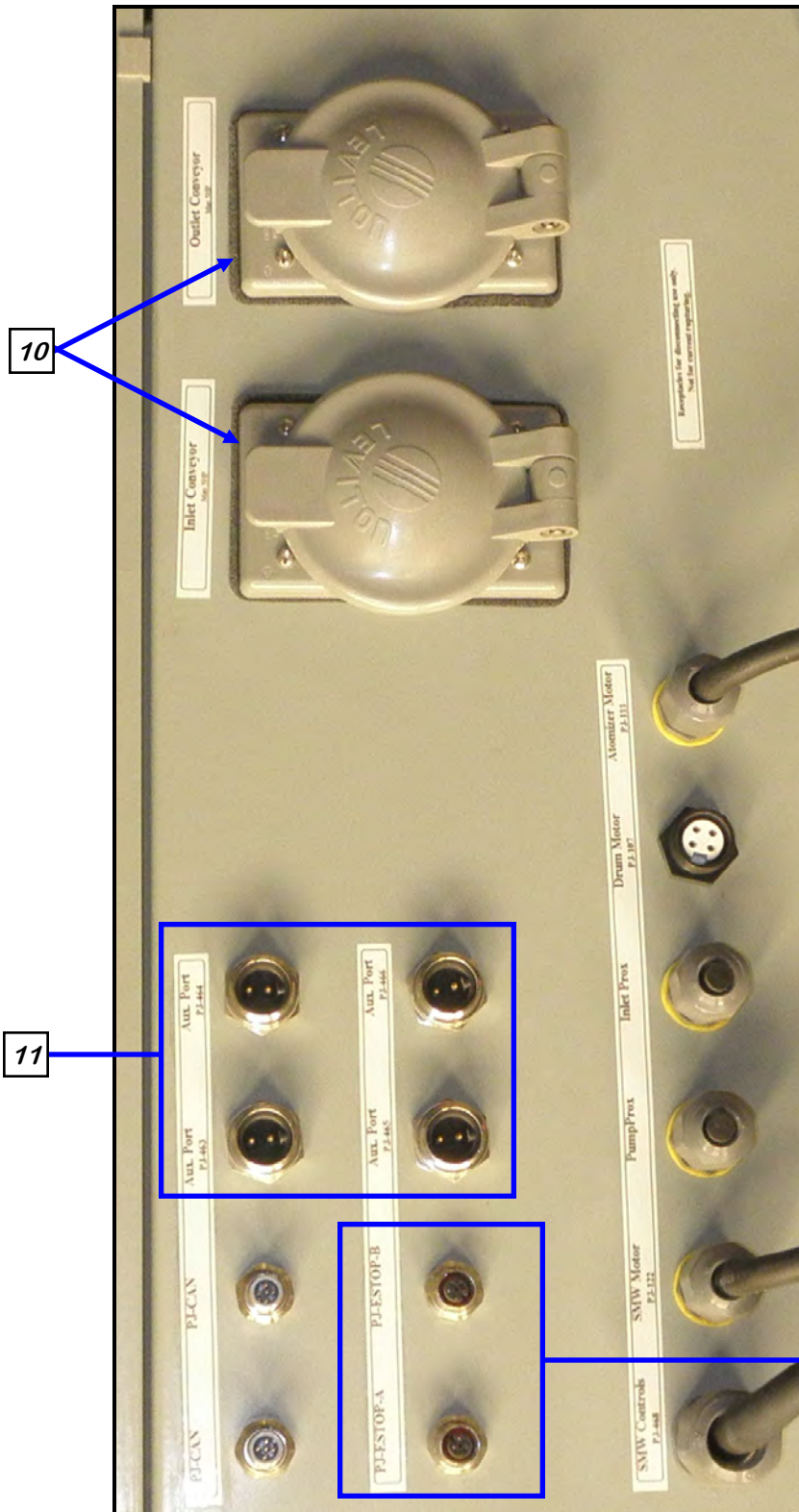
6. Anchor the seed treater in position to prevent the machine from moving during operation.
7. Inspect machine thoroughly for screws, bolts, fittings, etc. which may have come loose during shipping.
8. The pump stand(s) should be placed on level ground close to the seed treater.
9. Attach the chemical 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.

See pages 20 and 21 for steps
10 - 15 for LPX Manual Treater

See pages 22 through 25 for steps
10 - 20 for LPX Automated Treater



LPX MANUAL TREATER SET - UP



10. Connect any conveyors that need to be controlled through the touch screen to the bottom of the treater control panel.

11. Connect the communication cable from the pump stand(s) to any of the four two-wire connectors on the bottom of the main treater panel.

12. Ensure the two included red plugs are inserted into the PLESTOPA and PLESTOPB connectors.

LPX MANUAL TREATER SET - UP

13. 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.

All USC control panels must be connected adhering to the same electrical requirements as specified in the main control panel on the power requirement tag (right), or the electrical schematic shipped with the piece of equipment. This will power the USC LPX Manual seed treater and any attached conveyors.

NOTICE Flexible conduit is recommended for main power supply.

AVIS Conduit flexible est recommandé pour l'alimentation principale.

14. Provide 110V single phase power to both the treater control panel and the pump stand(s).

15. Reverse the previous steps when removing the machine from its working position.

Incoming power connected to these terminals in the Treater Control Panel

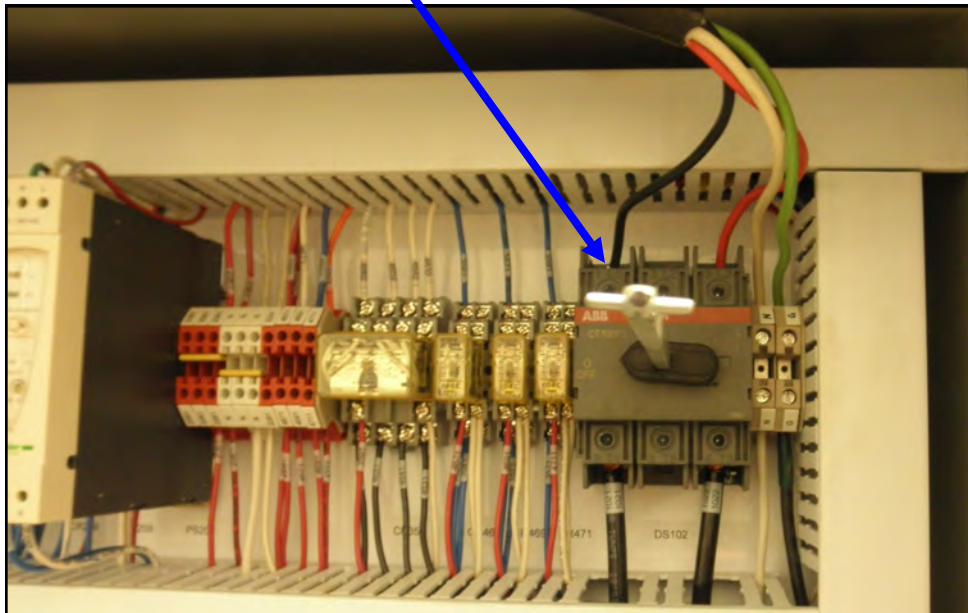
Mfg. By: USC, LLC
 Max voltage: 230V, 1PH, 60 HZ
 Total FLA: 80.5
 Largest Motor FLA: 28
 Schematic number: 03-12-0199B
 Enclosure rating: UL type 1
 Short Circuit Current Rating:
 5ka RMS Sym, 600V Max

WARNING
 To maintain over current, short-circuit and ground fault protection, the manufacturer's instruction for selection of overload and short circuit protection must be followed to reduce the risk of fire or electrical shock.

WARNING
 If an overload or a fault current interruption occurs, circuits must be checked to determine the cause of the interruption. If a fault condition exists, the current-carrying components should be examined and replaced if damaged, and the integral current sensors must be replaced to reduce the risk of fire or electrical shock.

TREATER CONTROL PANEL
 See schematic number: 03-12-0199B for interconnections.

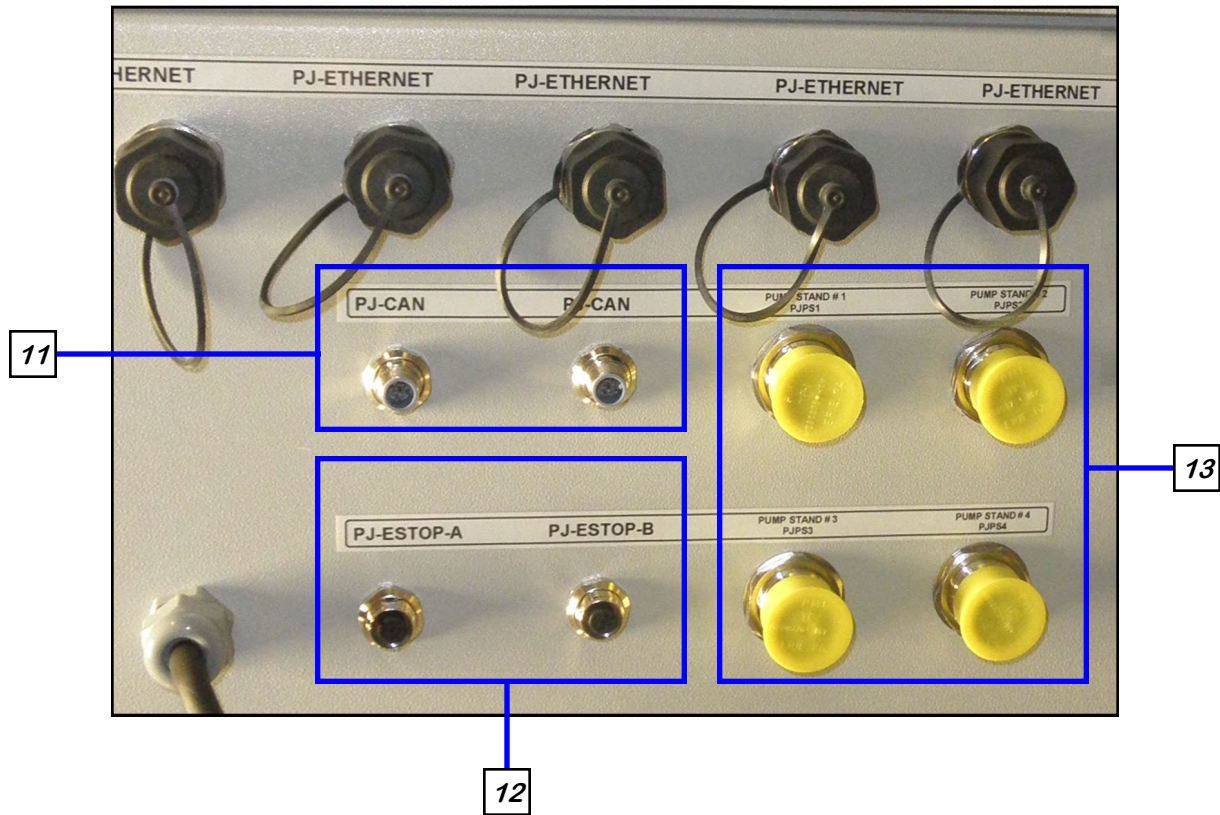
Replacement Fuse Chart			
Fuse	Line	Size	Type
FU107	107/109	20A	CLASS CC 600V TD FS
FU111	111/113	10A	CLASS CC 600V TD FS
FU122	122/124	10A	CLASS CC 600V TD FS



LPX AUTOMATED TREATER SET - UP

10. Setup the Automated Main Control panel at a place that is convenient to the operator. This may include attaching the automated main control panel to the seed treater, to the wall, or to the control panel stand that will require anchoring.
11. Connect the gray cable with light blue ends to one of PJCAN connections on the bottoms of both the treater and automated control panels. Connect the two light blue plugs into each of the remaining open PJCAN connections.
12. Connect the red cable to the PJESTOPA on the treater control panel and then to the PJESTOPB on the automated control panel. This cable must run from an A connection to a B connection (never A to A or B to B). Connect the two red plugs into each of the remaining open PJESTOP connections.
13. Connect the cables from Pump Stand(s) to applicable port on the Main Control Panel.

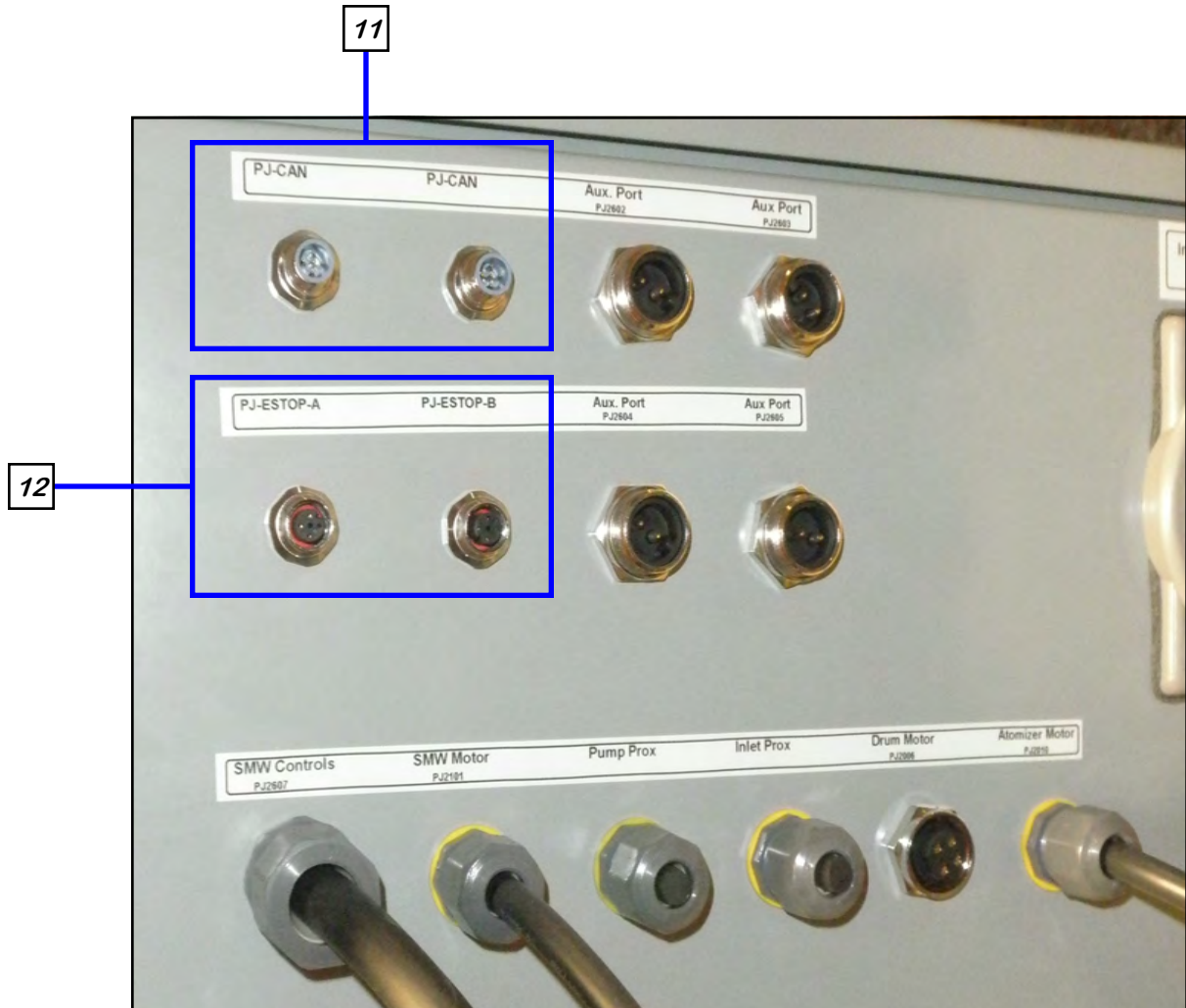
MAIN CONTROL PANEL



LPX SEED TREATER

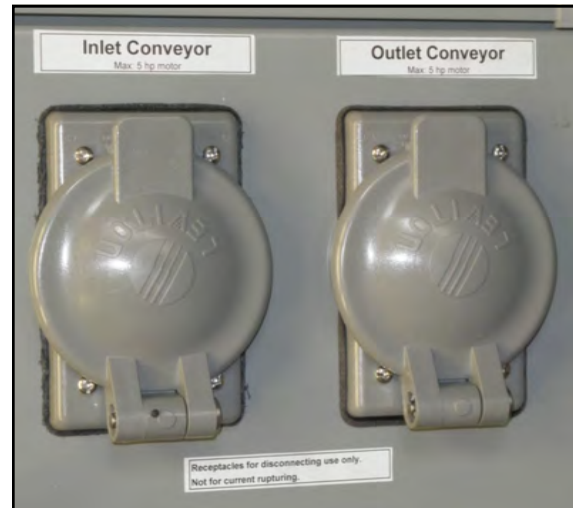
LPX AUTOMATED TREATER SET - UP

TREATER CONTROL PANEL



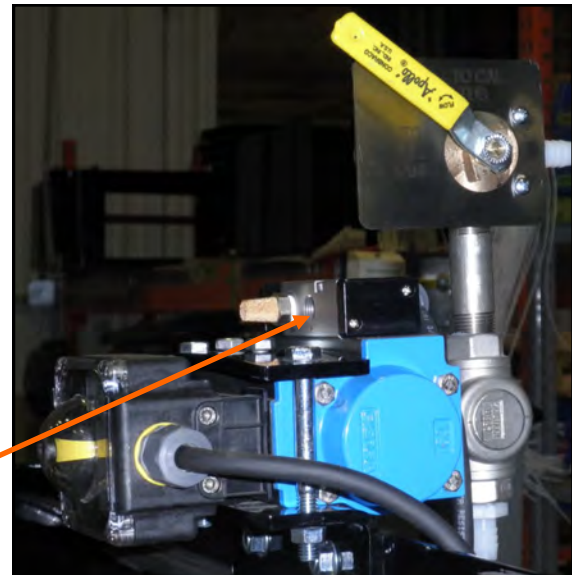
LPX AUTOMATED TREATER SET - UP

14. Connect any conveyors that need to be controlled through the touch screen control panel to the bottom of the treater control panel.



15. 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.

Air Supplied Here



16. Two 110V (3 Amp) plugs are located on the left side of the Main Control Panel to allow the operator to plug in a printer to print reports directly from the HMI screen (top). The second plug can be used to power a laptop computer.



LPX AUTOMATED TREATER SET - UP


17. 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. This will power the USC LPX seed treater and any attached conveyors.

NOTICE

Flexible conduit is recommended for main power supply.

AVIS

Conduit flexible est recommandé pour l'alimentation principale.



Mfg. By: USC, LLC
 Max voltage: 240V, 1PH, 60 HZ
 Total FLA: 91
 Largest Motor FLA: 33.6
 Schematic number: 03-12-0462A
 Enclosure rating: type 1
 Short Circuit Current Rating:
 5ka RMS Sym, 600V Max

WARNING
 To maintain over current, short-circuit and ground fault protection, the manufacturer's instruction for selection of overload and short circuit protection must be followed to reduce the risk of fire or electrical shock.

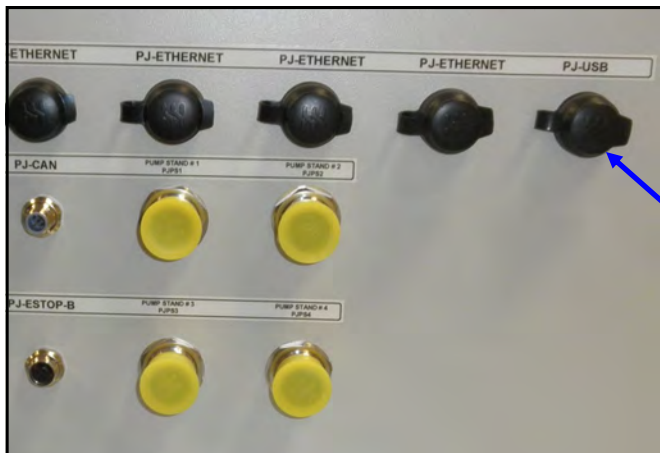
WARNING
 If an overload or a fault current interruption occurs, circuits must be checked to determine the cause of the interruption. If a fault condition exists, the current-carrying components should be examined and replaced if damaged, and the integral current sensors must be replaced to reduce the risk of fire or electrical shock.

AVERTISSEMENT
 Suivre les directives du fabricant pour protéger le système contre les surtensions, les courts-circuits et les défauts à la terre lors du choix des dispositifs de protection correspondants afin de réduire le risque d'incendie et de décharge électrique.

AVERTISSEMENT
 En cas d'une interruption liée à une surtension ou à un courant de défaut, il convient d'inspecter les circuits afin d'identifier la cause de la panne. En cas de défaillance, les composants qui transportent le courant doivent être examinés, puis remplacés si elles ont été endommagées, de même que remplacer les capteurs de courant intégral, afin de réduire le risque d'incendie et de décharge électrique.

Replacement Fuse Chart			
Fuse	Line	Size	Type
FU2006	2006 & 2008	20A	CLASS CC 600V
FU2010	2010 & 2012	10A	CLASS CC 600V
FU2101	2101 & 2103	10A	CLASS CC 600V

Quality Assurance
 Approved by: _____
 Mfg Date: _____



18. There is a USB port located on the bottom of the panel that may be used to download reports to a compact flash device. The flash device must be in FAT 32 format.

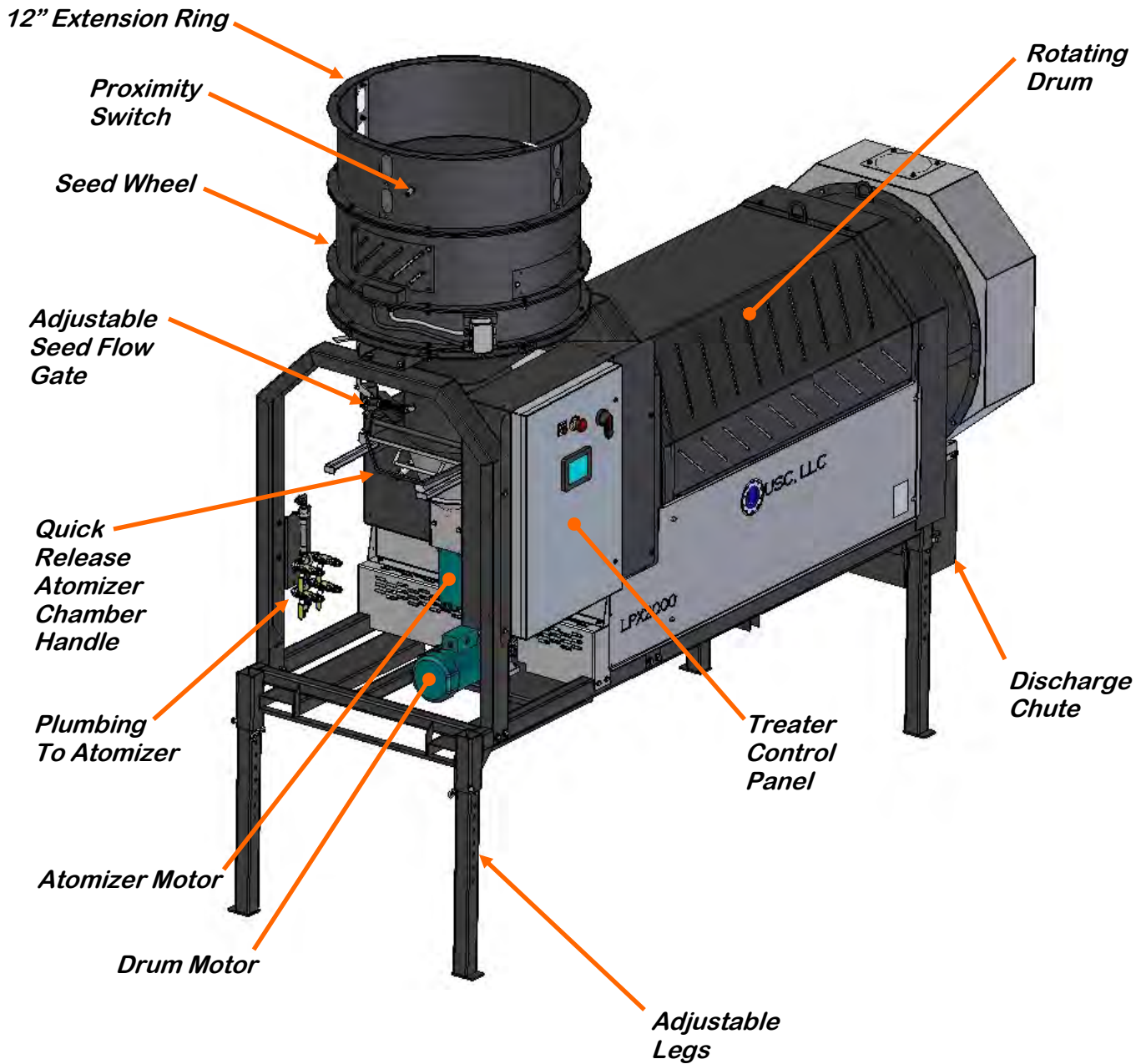
USB Port

19. Attach the communication cable from the pump stand(s) control panel(s) to the bottom of the treater control panel for an automated pump stand or to the auxiliary connection plug on the bottom of the treater control panel for a manual pump stand.

20. Provide 110V single phase power to both the main control panel and the pump stand(s).

SECTION C **MECHANICAL OPERATION**

LPX TREATER OVERVIEW



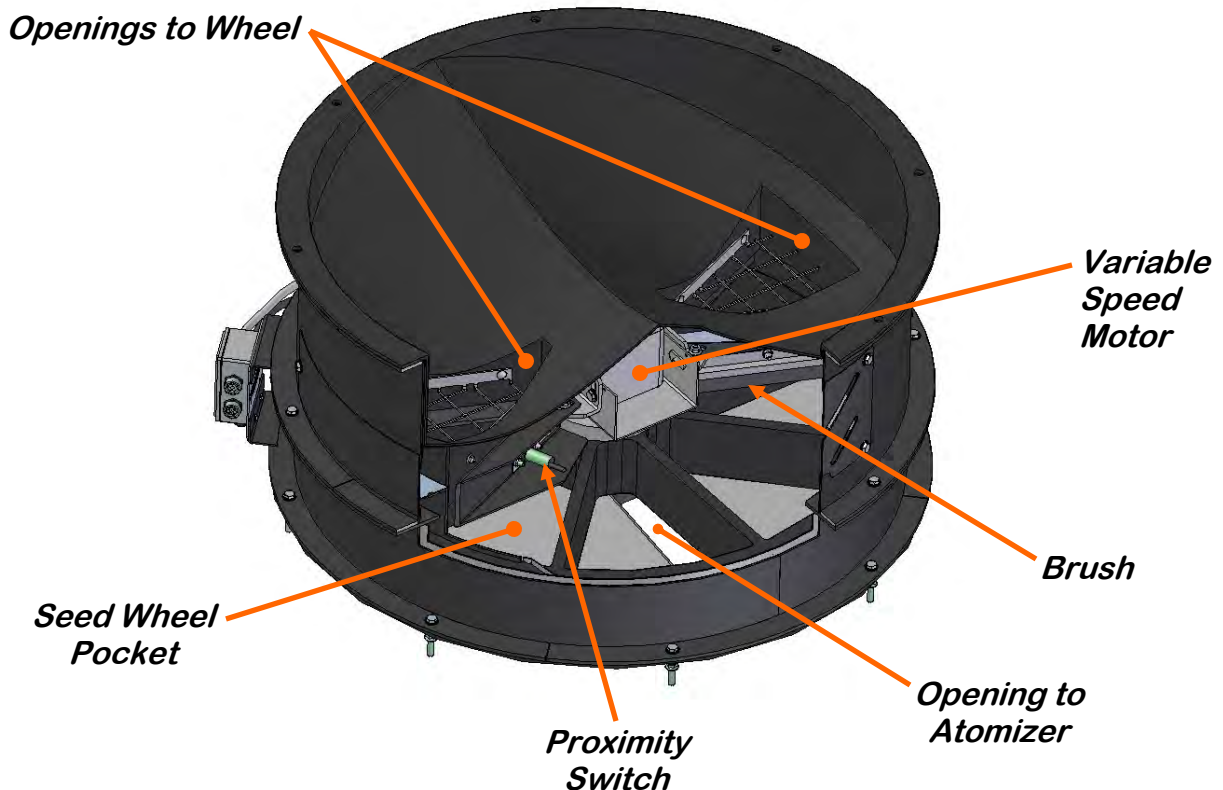
LPX2000 SEED WHEEL

The hopper is equipped with three proximity switches. The top switch controls the inlet conveyor and the lower switches, located in the seed wheel, control the pump(s). Refer to H-O-A Screen in section D. See the Proximity Switch Adjustment Guide in Section F for more in-depth information on these switches.

The Seed Wheel is designed to simplify and increase seed flow calibration accuracy. A rotating wheel is driven by a variable speed motor, which is set prior to treating the seed. This is mounted above the atomizer. The wheel consists of 8 identical pockets approximately 4 inches deep. As it rotates, the wheel captures a certain amount of seed in each pocket. After the seed is caught, the wheel continues rotation and dispenses the seed into the atomizer chamber. With the constant turn of the wheel, there is a consistent amount of seed always sent through the atomizer.

A cup is used to represent a certain percentage of one of the wheels pockets. To calibrate the seed flow, take a sample of the seed to be treated using the cup and weigh it (see page 47). By entering the cup weight of the seed sample the system will automatically adjust the RPM of the Seed Wheel according to the entered target weight.

The purpose of the seed wheel is to simplify calibration and make seed flow calibration more accurate. The seed wheel saves time when switching to different seed sizes and seed types.



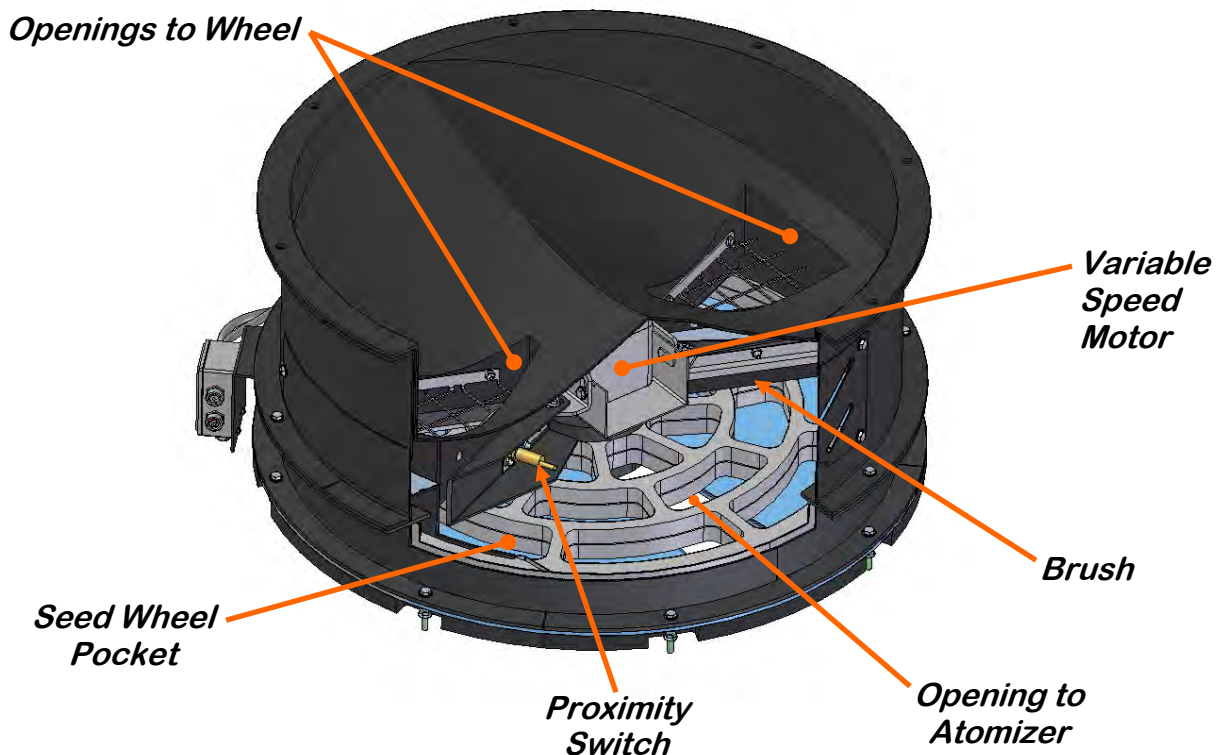
LPX300 SEED WHEEL OVERVIEW

The hopper is equipped with three proximity switches. The top switch controls the inlet conveyor and the lower switches, located in the seed wheel, control the pump(s). Refer to H-O-A Screen in section D and Section G: Troubleshooting; Proximity Switch Adjustment Guide for more in-depth information on these switches.

The Seed Wheel is designed to simplify and increase seed flow calibration accuracy. A rotating wheel is driven by a variable speed motor, which is set prior to treating the seed. This is mounted above the atomizer. The wheel consists of 24 pockets (8 small, 8 medium and 8 large) approximately 2 inches deep. As it rotates, the wheel captures a certain amount of seed in each pocket. After the seed is caught, the wheel continues rotation and dispenses the seed into the atomizer chamber. With the constant turn of the wheel, there is a consistent amount of seed always sent through the atomizer.

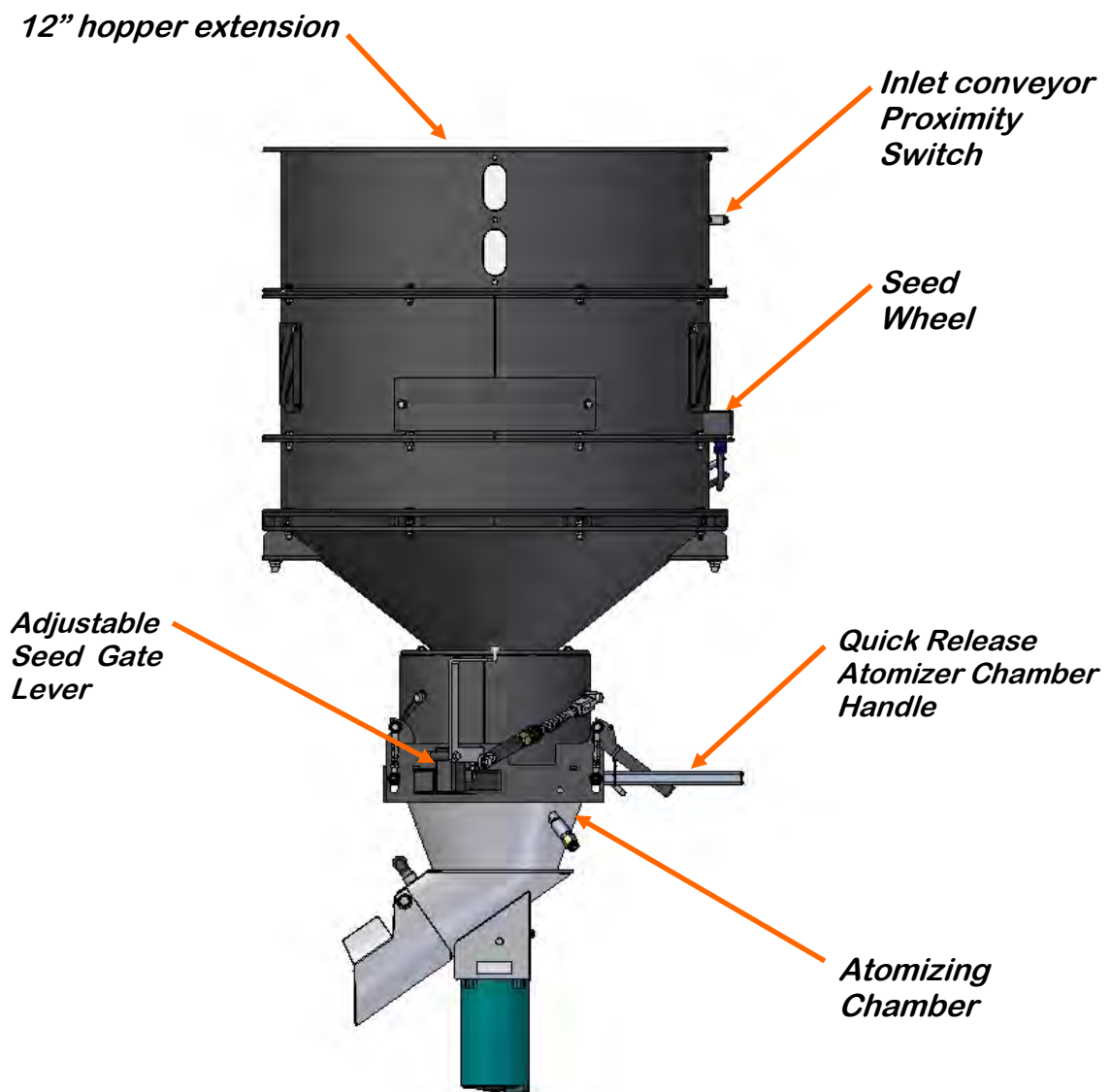
A cup is used to represent a certain percentage of the wheels pockets. To calibrate the seed flow, take a sample of the seed to be treated using the cup and weigh it (see page 47). By entering the cup weight of the seed sample the system will automatically adjust the RPM of the Seed Wheel according to the entered target weight.

The purpose of the seed wheel is to simplify calibration and make seed flow calibration more accurate. The seed wheel saves time when switching to different seed sizes and seed types.



ATOMIZER CHAMBER OVERVIEW

The atomizer chamber consists of a patented design which disperses treatment evenly to each seed. A motor drives the atomizer head at approximately 1725 RPM's. As treatment is being pumped into the atomizer chamber, it drops into the atomizer head. The centrifugal force of the spinning head forces the treatment to be sprayed out through a screen covering in all 360 degrees. Meanwhile, seed flows down out of the seed wheel and down on top of the distribution cone which disperses the seed down around the atomizer head. The atomizer can be easily accessed for cleaning and maintenance by pulling down on the quick release handle and sliding the atomizer away from the treater body (see page 60).



ROTATING DRUM

The rotating drum comes in options of 6, 8, and 10 feet and accepts treated seed through the opening on the hopper end. As seed passes through the length of the drum it is tumbled, producing accurate and uniform seed coating. The seed then exits the seed treater out the discharge end of the machine.



Never allow exposure of persons or clothing to the drive shaft, idler wheels, or the drum during operation. Always have the safety shields in place during operation.



Ne jamais laisser l'exposition des personnes ou des vêtements à l'arbre d'entraînement, roues libres, ou le tambour pendant le fonctionnement. Toujours avoir les boucliers de sécurité en place pendant le.

The time it takes for seed to move through the drum both during and at the end of the run can be changed by lowering or raising the pins on the legs of the discharge end of the treater. When the pins are in the same hole on all of the treater legs, the treater has a natural downward tilt towards the discharge end of the treater. Lowering the pins on the discharge end's legs will give the treater more tilt during operation which will allow seed to travel through the drum at a faster rate. Vice versa, raising those pins will cause seed to stay in the drum longer.



It is not recommended to lower the discharge end's pins more than one hole setting different from the inlet end's pins. If this is done, a loss in seed coverage and chemical coating may occur.



Il est déconseillé de faire baisser les broches de la gamme de décharge plus d'un trou réglage différent de broches de la gamme d'entrée. Si cela est fait, une perte de la couverture de la graine et le revêtement chimique peut se produire.

On the 6 and 8 foot drum options the LPX Treater will also come standard with telescoping fork lift pockets. These pockets may be slid out from underneath the treater to allow a fork lift to pick up the treater from it's discharge end.



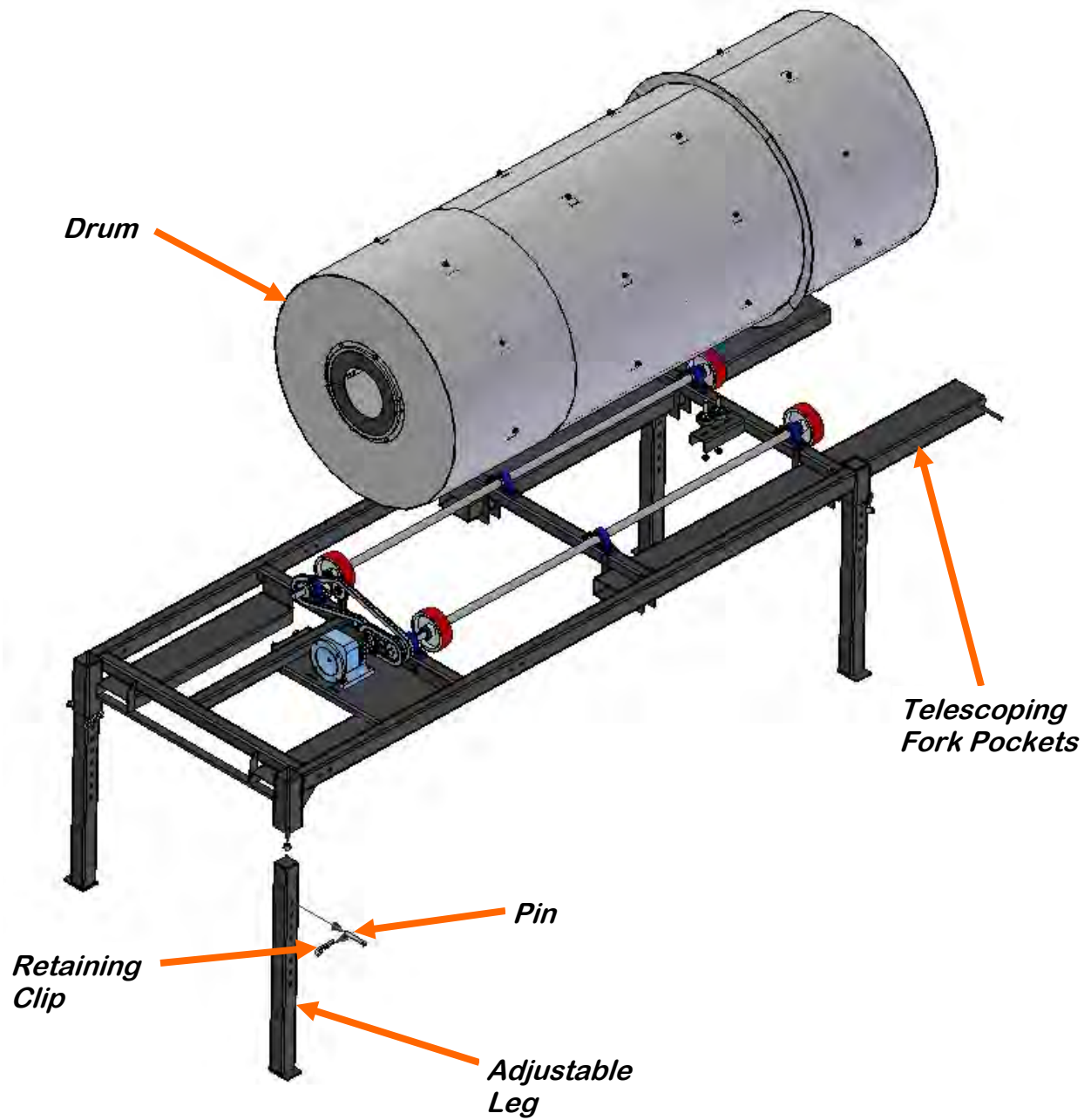
The rotating drum is grounded to the equipment structure at the factory, to avoid the possibility of generating static electricity, this bonding mechanism should not be tampered with or removed.



Le tambour rotatif est ancré à la structure de l'équipement en usine, afin d'éviter la possibilité de générer de l'électricité statique, ce mécanisme de liaison ne doit pas être altéré ou enlevé.

LPX SEED TREATER

ROTATING DRUM



**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

This section provides a general overview and description of the operator control panels for the LPX Seed Treater. If any of the panels are located in the hazardous area described in the installation section (see page 17), all 110VAC connections must be hard wired to a listed type 4 rated enclosure.



USC recommends the use of a surge protection device with a minimum rating of 400 Joules for all automated main control panels.



USC recommande l'utilisation d'un dispositif de protection contre les surtensions avec une cote minimale de 400 joules pour tous les principaux panneaux de contrôle automatisés.

General Panel Descriptions

- The LPX Treater Main Panel is an enclosure that is attached to the side of the treater and contains the electrical components required to actuate the seed treater. This includes the VFDs for the seed wheel and atomizer. Power for the treater is supplied here. Power to this panel is hard wired.
- The Automated Main Control Panel is a plug connected enclosure that contains the PLC (Programmable Logic Controller) as well as the HMI (Human Machine Interface) touch screen. The operator is able to control the entire system through the HMI. **AUTOMATED TREATERS ONLY.**
- The Main Control Panel Remote Panel is an OPTIONAL plug connected enclosure that is connected to the Main Treater Panel with a CAT5 Ethernet cable and can be located up to 50 feet from the Treater Main Panel. These panels are serialized to the treater they are connected to.
LPX Manual Treater Remote HMI Panel (see page 117).
LPX Automated Treater Remote HMI Panel (see page 118).

LPX MANUAL TREATER HMI TOUCH SCREENS

The following pages explain the function of the touch screen controls for the USC - Manual - Treater Ver 2.2 program.

For the LPX Automated Treater, see document number:
TD-09-06-1041E = U-Treat v3.6 Automation.

USC STARTUP SCREEN

While the system is booting up, the touch screen will display a timer bar at the bottom of the Start Up Screen. Once the timer bar reaches the end it will disappear and be replaced with flashing line of text that reads CLICK TO CONTINUE. Select any where on the screen and it will advance to the Main screen.

This screen also displays the version of the software currently installed.

NOTICE

The E-Stop Reset push button must be pressed after every power cycle and every time the E-Stop is activated or the system will not operate.

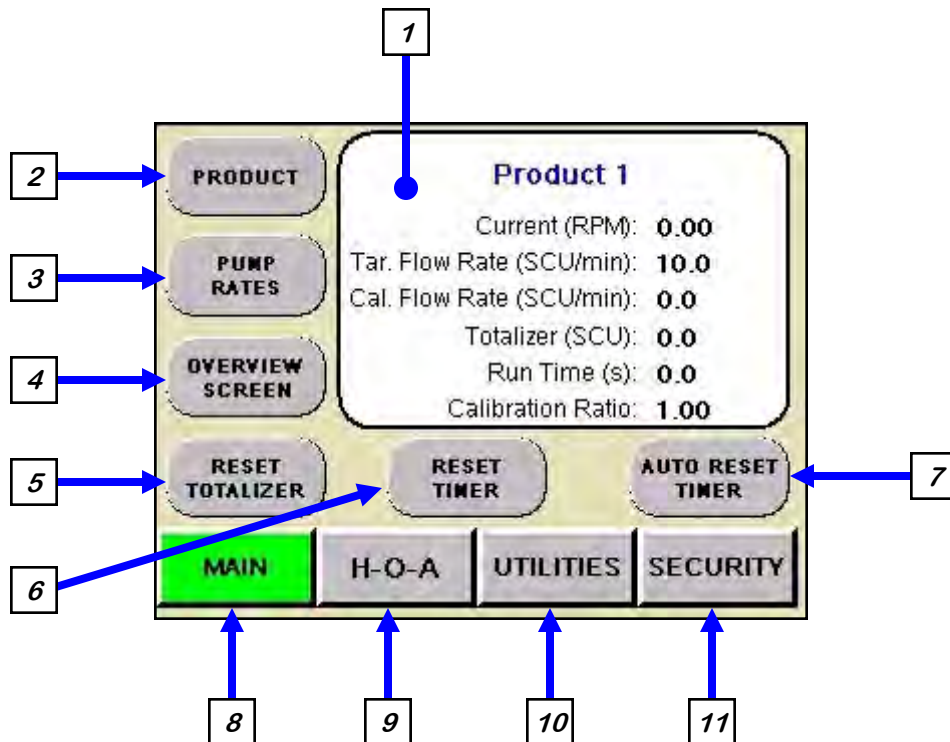
AVIS

Le bouton-poussoir de réinitialisation E-Stop doit être enfoncée après chaque cycle de puissance et chaque fois que le E-Stop est activé ou le système ne fonctionnera pas.



LPX SEED TREATER

MAIN SCREEN



1. PRODUCT STATUS BOX: Displays the name of the active product at the top of the display, as well as the current RPM of the seed wheel, target flow rate and the calculated flow rate. The totalizer displays the amount of material used. Run time displays the amount of elapsed time since the current run was started and the calibration ratio for the product being used.

2. PRODUCT: Pressing this button advances the operator to the Product screen (see page 37).

3. PUMP RATES: Pressing this button advances the operator to the Pump Rates screen (see page 40).

4. OVERVIEW SCREEN: Pressing this button advances the operator to the Overview screen (see page 41).

5. RESET TOTALIZER: Pressing this button will manually reset the totalizer display after a run is complete.

MAIN SCREEN

6. RESET TIMER: Pressing this button will manually reset the Run Time display after a run is complete.

7. AUTO RESET: When this button is active it will automatically resets the timer and run time after each run is completed. If it is active, it will be green.

8. MAIN: This button returns the operator to the main screen (see page 35).

9. H-O-A: This button advances the operator to the H-O-A screen (see page 42).

10. UTILITIES: This button advances the operator to the Utilities screen (see page 44).

11. SECURITY: This button advances the operator to the Security screen (see page 45).

NOTICE

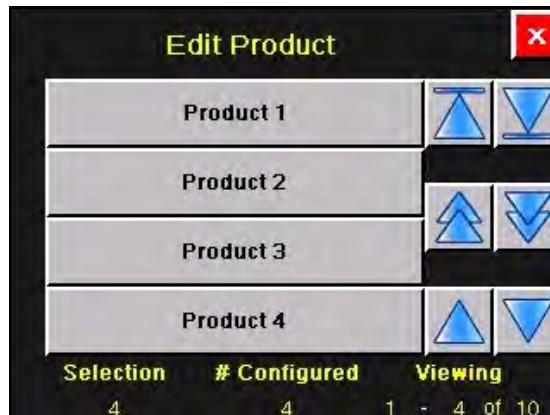
Some of the screens have a round blue button with a question mark in the upper left corner of the screen. Selecting this button will bring up a help screen covering the functions of that screen.

PRODUCT SCREEN



1. PRODUCT SELECTION: Pressing this button advances the operator to the Product Selection screen (bottom, left). Use the arrows to scroll through the list to find the product you wish to use. The system can store up to 10 different product entries. Each product type will have its own name and calibration ratio. Selecting an existing product will return you to the main screen.

2. PRODUCT EDITING: Pressing this button advances the operator to the Product Editing screen (bottom, right). Select a product from the list to modify or an unused box to create a new product entry. The Product Editing screen will appear (see page 38).



PRODUCT EDITING SCREEN



1. PRODUCT NAME: When this button is pushed an alpha numeric keypad appears allowing the operator to change an existing product name. If an unused box was selected from the list, the name will be blank and the Calibration Ratio will be 1.0, allowing the operator to enter a new product into the system. Once saved, it will be added to the list.

2. SCU BUTTONS: The first button is used to enter the seed count per pound, the second is used to enter the seed count per unit, and the third defines how many units per minute to run for this product. The Units Per Minute drives the flow rate when the Measure By button is set to SCU. Notice when you change the units it also updates the seed flow rate number even though the button is inactive.

3. SEED FLOW RATE: Pressing this button brings up a numeric keypad to enter the seed flow rate to run for this product. The Seed Flow Rate drives the flow rate when the Measure By button is set to CWT. Notice when you change the flow rate it also updates the units per minute number even though the button is inactive. This number must match the seed flow rate of the treater.

4. CUP WEIGHT: This button is used to enter the weight from the cup sample taken from this product (see page 47). This button will only be present if the Cup Weight Option is enabled on the Setpoints screen. If it is not, the system defaults will be used (see page 46).

5. SCREEN EXIT: This button is used to return to the previous screen. It's functionality is the same throughout all of the HMI screens.

6. CALIB.: Pressing this button takes the operator to the Calibration Calculator screen (see page 39).

7. CLEAR: This button deletes the name and resets the Calibration Factor to 1.00. After a new name and calibration factor has been entered, press the save button. This is another way to enter a new product name in the system.

PRODUCT EDITING SCREEN

8. MEASURE BY: Pressing this button toggles between the SCU and CWT measurement options.

9. SAVE: Saves any changes to the chemical profile.

10. CALIBRATION FACTOR: This button displays the calibration ratio from the Calibration Calculator. Pressing this button brings up a numeric keyboard allowing the operator to manually enter a value.

CALIBRATION CALCULATOR SCREEN



1. ACTUAL WEIGHT: Pressing this button brings up a numeric keypad used to enter the actual weight applied during the calibration procedure (see page 47).

2. TOTALIZER WEIGHT: Pressing this button brings up a keypad to enter the number from the Totalizer display below it.

3. TOTALIZER: This display indicates the amount of product the program estimates it weighed on the last run.

4. APPLY: After the actual weight and target weight have been entered, the calculated ratio will be updated. Pressing this button returns the operator to the product editing screen and updates the calibration ratio.

5. SCREEN EXIT: Pressing this button returns the operator to the product editing screen.

6. SELECTED RECIPE: This display indicates the name of the product for this calibration.

CALIBRATION CALCULATOR SCREEN

7. CALCULATED RATIO: This display indicates the amount the current calibration will be adjusted when the apply button is pressed.

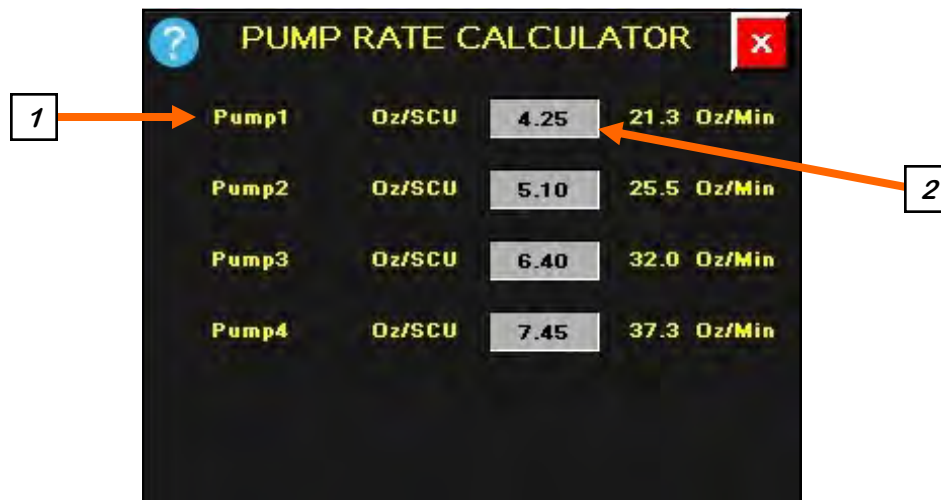
8. CURRENT RATIO: This display indicates the current calibration.

9. DEFAULT: Pressing this button returns all values to the default setting of one.

NOTICE

The actual weight will always be the amount weighed by the scale. The target weight is the amount that should have been weighed by the scale. The totalizer amount is the programs estimation of what the scale should have received.

PUMP RATE CALCULATOR SCREEN

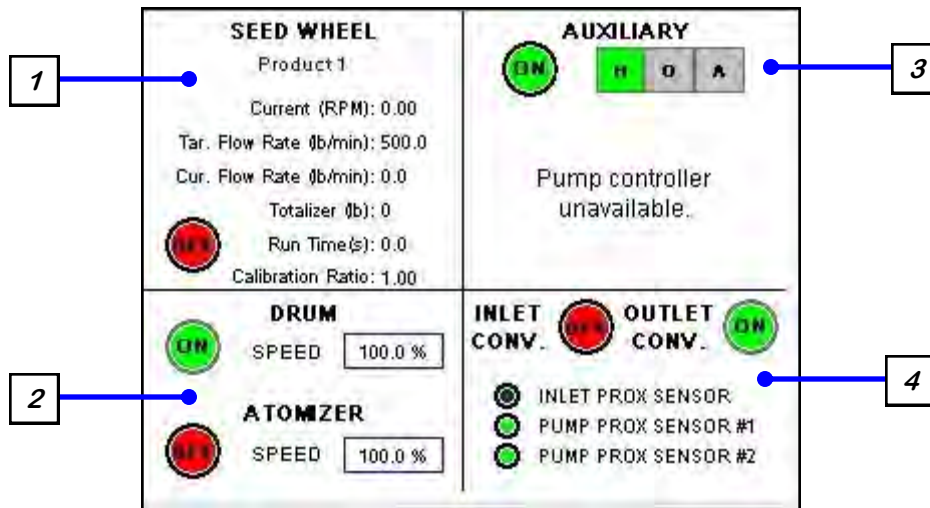


1. PUMP NAME: Pressing this button brings up a numeric keypad allowing the operator to change the pump name.

2. PUMP RATE: Pressing this button brings up a numeric keypad allowing the operator change the value of the amount of chemical per seed count unit or cut weight being applied. This is only a calculator. The number to the right will give the operator the ounces per minute required based on the current flow rate. Manually adjust your flow meter to reflect the change. If not using a flow meter, make the adjustment on the liquid adjustment dial on the pump stand control panel.

LPX SEED TREATER

OVERVIEW SCREEN



1. SEED WHEEL STATUS BOX: Displays the name of the active product at the top of the box, as well as the current RPM of the seed wheel, target flow rate and the calculated flow rate. The totalizer displays the amount of material used. Run time displays the amount of elapsed time since the current run was started and the calibration ratio for the product being used. The Seed Wheel motor status indicator displays On or OFF.

2. DRUM & ATOMIZER STATUS BOX: Displays the ON or OFF status of the drum and Atomizer motors as well as the percent of maximum speed they are running at.

3. AUXILIARY STATUS BOX: If an auxiliary device is connected to the treater, this displays the current motor status and what H-O-A mode of operation the auxiliary device is in .

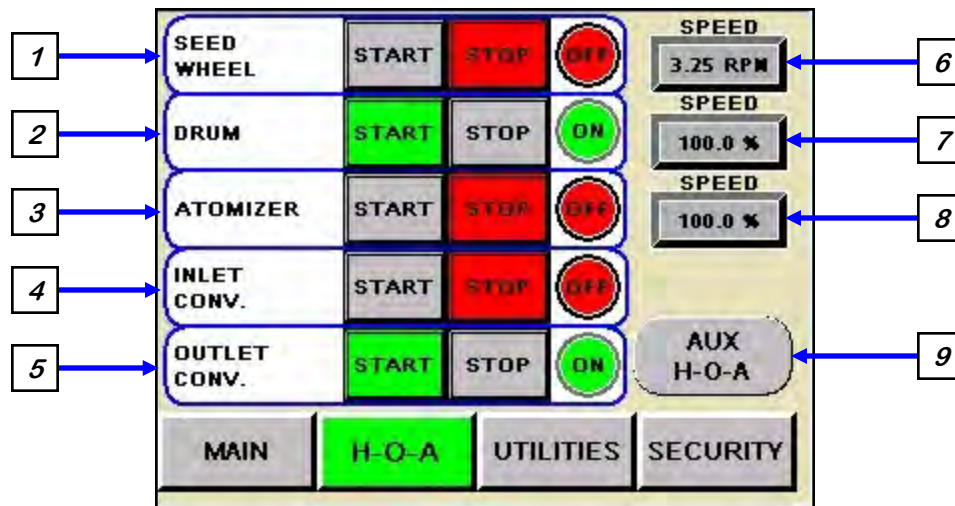
4. CONVEYOR STATUS BOX: Displays the motor status of the inlet and outlet conveyors as well as the active or inactive state of the proximity sensors.

H-O-A (HAND-OFF-AUTO) SCREEN**NOTICE**

The E-Stop Reset push button must be pressed after every power cycle. After the E-Stop button has been pressed to stop a run, the E-Stop button must be pulled out and the E-Stop RESET button pressed. If both these conditions are not met, the START, HAND and AUTO buttons will display diagonal lines through them and the system will not function.

AVIS

Le bouton-poussoir de réinitialisation E-Stop doit être enfoncée après chaque cycle de puissance. Après que le bouton d'arrêt d'urgence a été pressé d'arrêter une course, le bouton d'arrêt d'urgence doit être retiré et le bouton RESET E-Stop enfoncée. Si ces deux conditions ne sont pas remplies, la touche START, la main et les boutons de Auto affiche des lignes diagonales à travers eux et le système ne fonctionnera pas.



1. SEED WHEEL CONTROL: This module controls the seed wheel motor. Pressing the START button will turn the seed wheel motor on and the button will turn green. Pressing the STOP button will turn the seed wheel motor off and the button will turn red. The round indicator displays the motor status. This module is only available if the treater is utilizing a Seed Wheel.

2. DRUM CONTROL: This module controls the drum motor. Pressing the START button will turn the drum motor on and the button will turn green. Pressing the STOP button will turn the drum motor off and the button will turn red. The round indicator displays the motor status.

3. ATOMIZER CONTROL: This module controls the atomizer motor. Pressing the START button will turn the atomizer motor on and the button will turn green. Pressing the STOP button will turn the atomizer motor off and the button will turn red. The round indicator displays the motor status.

H-O-A (HAND-OFF-AUTO) SCREEN

4. INLET CONVEYOR: This module controls the inlet conveyor motor. Pressing the START button will turn the conveyor motor on and the button will turn green. Pressing the STOP button will turn the conveyor motor off and the button will turn red. The round indicator displays the motor status.

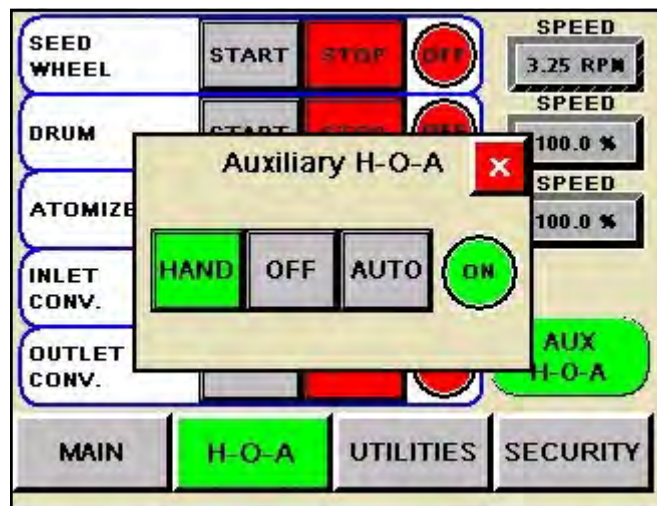
5. OUTLET CONVEYOR: This module controls the outlet conveyor motor. Pressing the START button will turn the conveyor motor on and the button will turn green. Pressing the STOP button will turn the conveyor motor off and the button will turn red. The round indicator displays the motor status.

6. SEED WHEEL RPM: This button displays the RPM the seed wheel is running at. This button will be inactive if the Auto SMW Speed button on the Utilities screen has been activated. If that button is active the RPM will be automatically calculated based on the seed flow rate defined on the Product Editing page. If the Auto SMW Speed button is inactive, the operator must manually define the RPM here. Pushing this button brings up a numeric keypad allowing the operator to manually set the RPM.

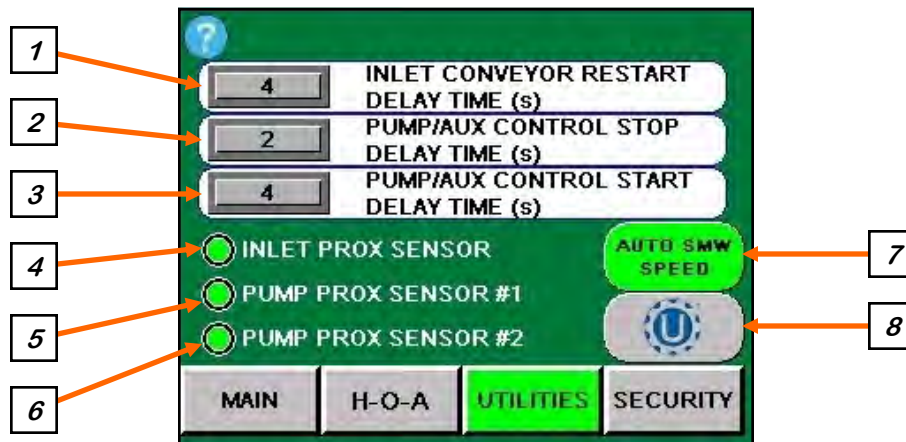
7. DRUM PERCENT SPEED: When this button is pressed, a numeric keypad will appear to allow the operator to manually adjust the speed of the drum.

8. ATOMIZER PERCENT SPEED: When this button is pressed, a numeric keypad will appear to allow the operator to manually adjust the speed of the atomizer.

9. AUXILIARY CONTROL: Pressing this button brings up the Auxiliary H-O-A popup screen allowing the operator to control any external device which is plugged into the auxiliary port located on the bottom of the treater main control panel. The HAND button will allow the user to operate the unit in the manual mode of operation. The OFF button will disconnect control to the auxiliary port. The AUTO button will place the unit in the automatic mode of operation and will send a signal to turn on the associated device when seed is present.



UTILITIES SCREEN



1. INLET CONVEYOR RESTART DELAY TIME(S): Pressing this button brings up a numeric keypad allowing the operator to adjust the delay time in one second increments. This will determine how long after the inlet hoppers proximity sensor detects seed and shuts down the inlet conveyor, to turn it back on. This prevents the hopper from overflowing.

2. PUMP / AUX CONTROL STOP DELAY TIME(S): Pressing this button brings up a numeric keypad allowing the operator to adjust the delay time in one second increments. This will determine how long after the proximity sensor in the treater cone or seed wheel no longer detects seed to leave the pump motor on.

3. PUMP / AUX CONTROL START DELAY TIME(S): Pressing this button brings up a numeric keypad allowing the operator to adjust the delay time in one second increments. This will delay turning on the pump after the seed wheel proximity sensor detects seed. **This is only used for portable treaters because the seed wheel is over a conveyor that conveys the seed up to the atomizer. Due to this delay, an adjustable start signal is required to accurately time the start of the pump.**

4. INLET PROXIMITY SENSOR INDICATOR: Informs the operator when the proximity switch located in the supply hopper above the treater is detecting seed.

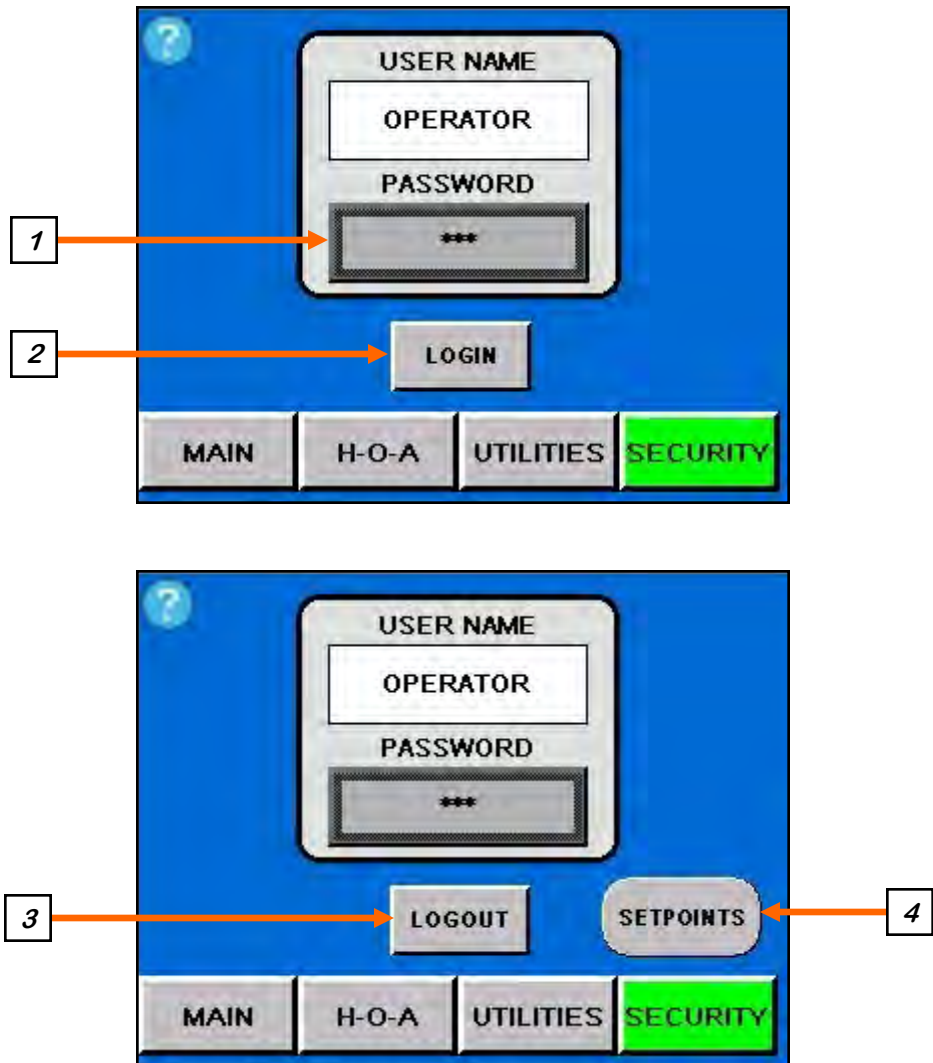
5. PUMP PROXIMITY SENSOR #1 INDICATOR: Informs the operator when the pump proximity switch #1, which is located in the cone of the treater or the seed wheel, is not detecting seed.

6. PUMP PROXIMITY SENSOR #2 INDICATOR: Informs the operator when the pump proximity switch #2, which is located in the seed wheel, is not detecting seed. This display is only visible if the treater is utilizing a seed wheel.

7. AUTO SMW SPEED: When this button is active it is green and the calculated RPM from the current product will automatically be used. When it is inactive, the operator must manually set the RPM on the HOA screen.

8. START-UP SCREEN: This button returns the operator to the starter screen (see page 34).

SECURITY SCREEN



1. PASSWORD ENTRY: The operator uses this input to obtain access to the Setpoints screen. When this button is pressed an alpha numeric keypad will appear. The password is **USC** and should only be made accessible to personnel qualified to operate the system.

2. LOGIN: Pressing this button **after** the password has been entered will activate the SETPOINTS button.

3. LOGOUT: Pressing this button will de-activate the Setpoint button.

4. SETPOINTS: Pressing this button advances the operator to the Setpoints screen (see page 46).

SETPOINTS SCREEN

1. CUP WEIGHT OPTION: Pressing this button activates the Cup Weight button on the Product Editing screen (see page 38). Entering a cup weight will make the system more accurate on the first run without a calibration.

2. SIMULATE SEED PROX SENSOR: Pressing this button simulates the signal from the proximity sensor when it detects seed when no seed is actually present. This is used for troubleshooting purposes.

3. SIMULATE INLET PROX SENSOR: Pressing this button simulates the signal from the proximity sensor when it detects seed when no seed is actually present. This is used for troubleshooting purposes.

4. AUTO RESET TIME: Pressing this button brings up a numeric keyboard to allow the operator to enter a delay time in seconds for how long the system will wait to reset the Totalizer and Run Time after the end of a run. The Auto Reset Timer button on the main screen must be active for this delay to be used.

CALIBRATION

SECTION E

DETERMINING SEED CUP WEIGHT

The following is a list of steps to use when calibrating the seed wheel. A seed calibration cup, funnel, stand, and scale are used to calibrate the seed wheel.

1. Set the empty seed calibration cup on the scale and zero out the weight of the cup.
2. Place the funnel and stand in the seed to be treated or a separate container (see page 48, figure 1). This will help to avoid any unnecessary clean-up while filling and leveling the top of the seed calibration cup.
3. Place your hand under the bottom of the funnel and fill the funnel up with seed.
4. Place the calibration cup under the funnel stand and remove your hand from the bottom of the funnel, and allow the cup to be filled (see page 48, figure 1).
5. After the cup has been filled, strike off the top of the calibration cup with a straight edge (see page 48, figure 2).

**NOTICE**

Do not shake the cup.

AVIS

Ne secouez pas la tasse.

6. Weigh the sample of seed (see page 48, figure 3).

NOTICE

A typical weight of the sample of seed will be anywhere between 2.8 to 4.0 lbs. Anything over or under this range could be caused by not zeroing out the weight of the cup, or the scale may be set on the wrong units.

AVIS

Un poids typique de l'échantillon de semences sera ne importe où entre 2,8 à 4,0 livres. Tout sur ou sous cette fourchette pourrait être causée par la réduction à zéro ne pas le poids de la tasse, ou la balance peut être réglé sur les mauvaises unités.

LPX SEED TREATER

DETERMINING SEED CUP WEIGHT

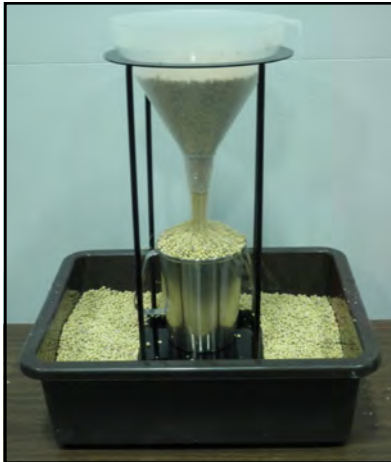


Figure 1



Figure 2

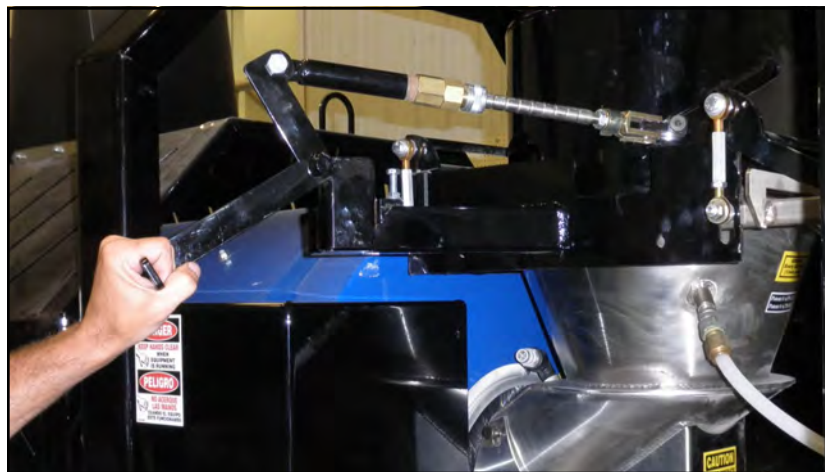


Figure 3

ADJUSTING THE LPX TREATER SEED FLOW GATE

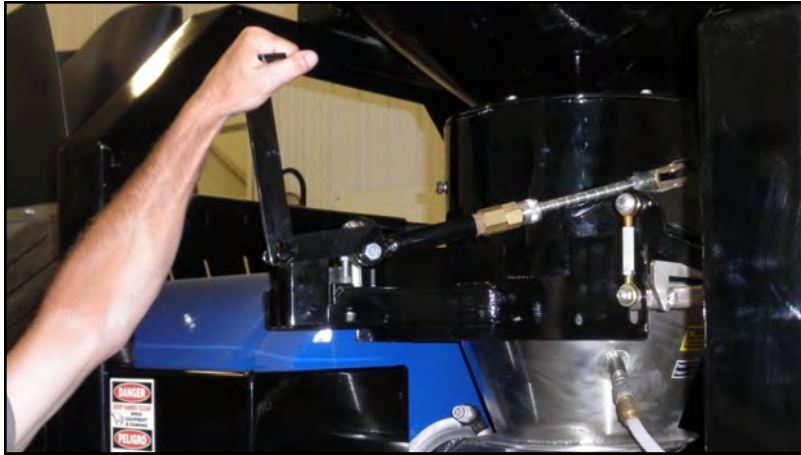
The following pictures illustrate how to open, close, and adjust the opening of the seed flow gate.

When the black lever is pulled down, the seed gate is in the CLOSED position, and will not allow seed to flow through.

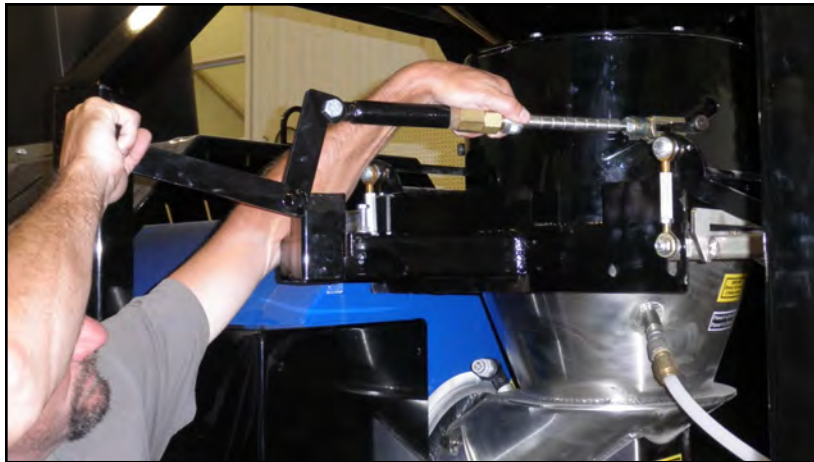


ADJUSTING THE LPX TREATER SEED FLOW GATE

When the black lever is pushed up, the seed gate is in the OPEN position, and seed will flow through.



Regulate the amount of seed flowing through the seed treater by using the spring-loaded coupler and moving it to a different notch. The more notches exposed, the higher the seed flow.



NOTICE

If the seed treater is equipped with a seed wheel, the adjustable seed flow gate should always be left in the most wide open position. If the seed gate is not open fully, seed flow will be diminished and may even cause seed to back up into the seed wheel.

AVIS

Si le traitement de semences est équipé d'une roue de semences, la porte de flux des semences réglable doit toujours être laissée dans la plus grande position ouverte. Si la porte de semences est pas complètement ouvert, écoulement des semences sera diminuée et peut même causer des semences pour sauvegarder dans la roue de semences.

FLOW METER CALIBRATION

The following steps illustrate how to calibrate a flow meter on an LPX manual series seed treater. You will need a stopwatch for this calibration

1. Determine a desired flow rate

EXAMPLE: The seed treatment slurry rate is 5 ounces per cwt.
Seed Flow Rate = 10.8 cwt/min. x 5 oz./cwt. = 54 oz./min.
54 oz. is the rate the pump should be pumping in one minute.

2. Set the Liquid Flow Rate. Make sure the chemical is diverted back into the mix tank, then using the Liquid Adj. dial, increase or decrease the pump speed until the liquid flow rate has been matched.
3. Begin the calibration process by pumping chemical into the calibration tube or a measuring cup and using the stop watch to start timing once the liquid reaches the zero mark on the calibration tube.
4. Note the rate that the flow meter display on the pump stand is currently reading.

EXAMPLE: Flow meter reading = 54 Oz./min

5. After approximately one minute, simultaneously stop timing and shut down the flow of liquid to the calibration tube or measuring cup.
6. Note the total ounces of liquid in the calibration tube or measuring cup and the total amount of time that it took to fill the tube to that level in seconds. Divide those two numbers to find the ounces per second (Oz./Sec) of liquid application rate. Now multiply the ounces per second of liquid application rate by 60 to get the ounces per minute (Oz./Min) liquid application rate. This number is the actual amount of ounces per minute that the pump is currently pumping.

EXAMPLE: Total ounces of liquid in the calibration tube = 57 ounces.

Total amount of time to fill calibration tube = 62 seconds.

Oz./Sec liquid application rate = 57 ounces / 62 seconds = 0.9194

Oz./Min liquid application rate = 0.9194 x 60 seconds = 55.16

The actual liquid application rate is 55.16 Oz./min

FLOW METER CALIBRATION

7. Take the flow meter reading that was previously noted and divide it by the actual liquid application rate. This number will give you the calibration factor that the flow meter reading will need to be adjusted by.

EXAMPLE: Flow meter reading = 54 Oz./min
Actual liquid application rate = 55.16 Oz./min
Calibration factor = $54 / 55.16 = 0.9790$

The calibration factor is 0.9790

8. In order to find the flow meter reading that is needed for accurate application of the liquid, you must now multiply the calibration factor by the desired application rate.

EXAMPLE: Calibration factor = 0.9790
Desired flow rate = 54 Oz./min
Flow meter reading for accurate application = $0.9790 \times 54 = 52.87$

52.87 Oz./min is the rate that the flow meter should read to ensure proper flow is being achieved.

9. Now you can set the pump dial so that the flow meter will read the rate that is needed to ensure the accurate flow of liquids being applied to the seed.

TREATING SEED

1. Prime the line going to the atomizer by turning the Atomizer switch to ON and turn the SEED TREATMENT valve to PROCESS. Next turn the pump direction switch to FORWARD and the Hand / Off / Auto switch to Hand. Liquid should begin pumping up to the atomizer. After the line has been primed, turn the Hand / Off / Auto switch to Auto. Additional liquid can be pumped up into the atomizer and into the drum to guarantee coverage of the first seed that passes through the machine.

⚠ WARNING

Do NOT pump liquid into the atomizing chamber when the atomizer is OFF.

! AVERTISSEMENT

Ne pas pomper de liquide dans la chambre d'atomisation lorsque le pulvérisateur est OFF.

2. Position the SEED TREATMENT SOURCE valve to MIX TANK.

NOTICE

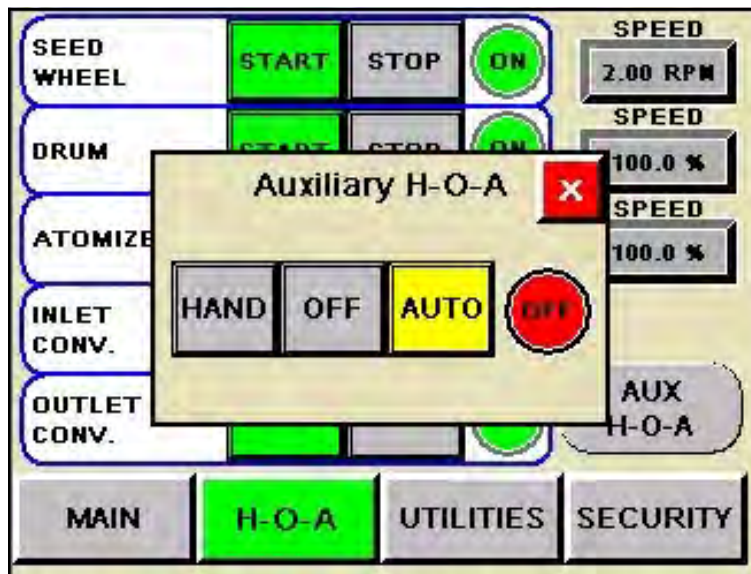
If you desire to check the total ounces used per batch of seed. Fill the calibration tube with the amount needed for the batch of seed (about 10 ounces extra is a good practice). Then position the SEED TREATMENT SOURCE valve to CALIBRATION TUBE and go on to step 3.

AVIS

Si vous désirez vérifier les totaux once utilisés par lot de semences. Remplir le tube d'étalonnage avec la quantité nécessaire pour le lot de semences (environ 10 onces supplémentaires est une bonne pratique). Ensuite, positionner le TRAITEMENT DES SEMENCES SOURCE vanne CALIBRATION tube et passez à l'étape 3.

3. Begin feeding seed into the Seed Wheel until the supply hopper is full. This will ensure that the first pockets are full when the wheel is turned on. At this time, ensure the seed gate on the seed treater is wide open. If there is no Seed Wheel, position conveyors, overhead hopper or seed box so the first seed coming into the seed treater lands on the lower proximity switch which automatically turns on the pump(s).
4. Turn the switches to ON for the Drum, Atomizer and any Conveyors being used. Also turn the Auxiliary Hand / Off / Auto switch to AUTO. The pumps will not start until the Seed Wheel proximity switch detects seed and the motor is turned on. (top of page 53).

TREATING SEED



5. Turn the Seed Wheel to ON. The Seed Wheel will speed up to the dialed-in RPM. The pumps will also begin pumping liquid into the atomizer, this will start the seed treating process.

NOTICE You may notice the RPM will run at a lower RPM under the load of seed. Do not adjust the RPM back up. The program already has figured in the factor for the drop in RPM.

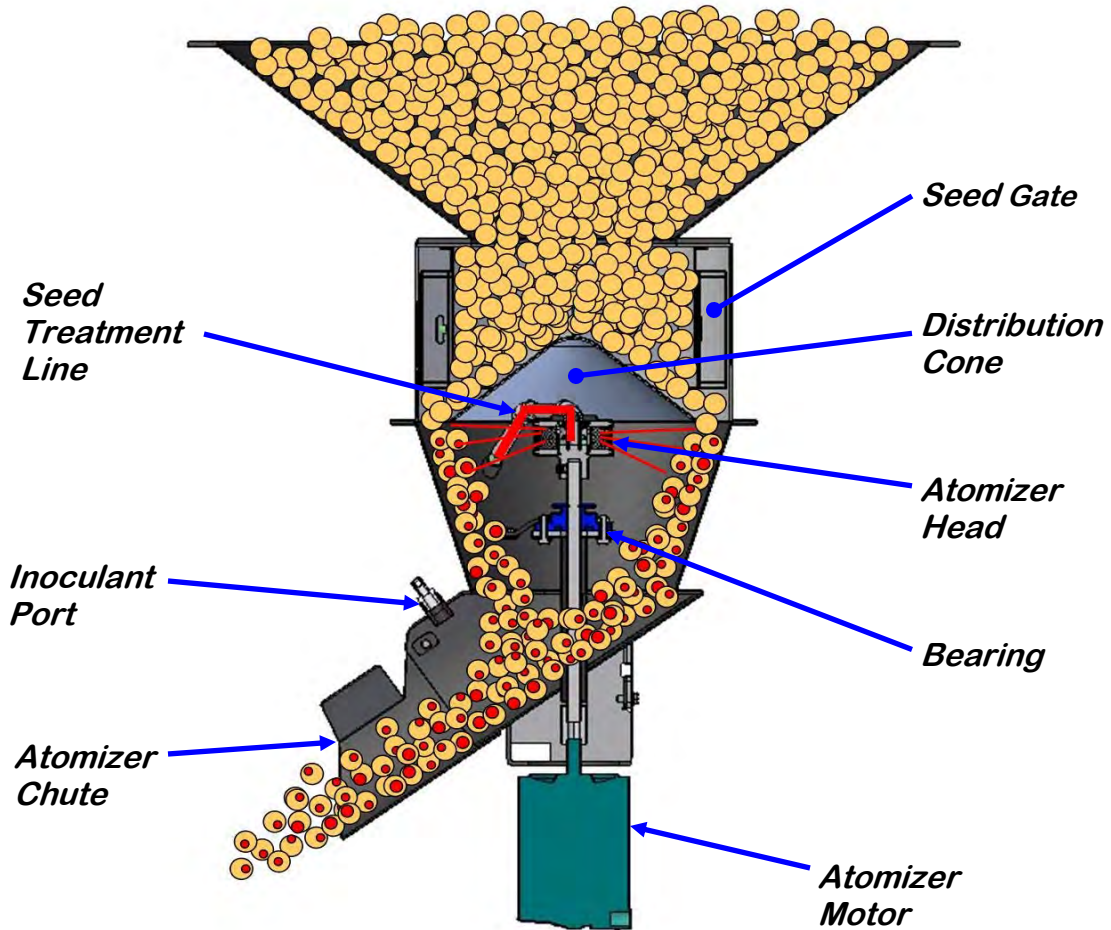
AVIS Vous pouvez remarquer le RPM fonctionne à une vitesse de rotation inférieure sous la charge de semences. Ne pas régler le RPM sauvegarde. Le programme a déjà figuré dans le facteur de la baisse de régime.

6. As you are treating the first batch of seed, time the seed as it is begins flowing out the atomizer chute into the drum.
7. Once all the seed has passed through the seed wheel and atomizer, stop timing. The pump(s) will automatically shut off.

LPX SEED TREATER

TREATING SEED

The Illustration below shows how seed passes through the atomizing chamber. The red represents treatment being dispensed to the seed as it passes through the chamber. After the seed passes through the atomizer, it goes into the drum where the coating process is completed.



TROUBLESHOOTING **SECTION F**

Below is a table describing the most frequent mechanical problems and solutions with the USC LPX Seed Treater. For further assistance, contact USC at (785) 431-7900.

Problem	Possible Cause	Solution
Inlet Conveyor will not turn on.	<ol style="list-style-type: none"> 1. Inlet conveyor proximity switch is activated. 2. Inlet conveyor proximity switch is too sensitive. 3. Overload is tripped. 4. Conveyor is plugged into wrong outlet on seed treater panel. 	<ol style="list-style-type: none"> 1. Clean proximity switch 2. Adjust the inlet conveyor proximity switch sensitivity by turning the adjustment screw counter-clockwise (page 57). 3. Reset inlet conveyor overload. 4. Check to make sure the inlet conveyor is plugged into the inlet conveyor receptacle.
Pump will not turn off in AUTO when seed runs out.	<ol style="list-style-type: none"> 1. Proximity switch is dirty. 2. Proximity switch is set too sensitive. 	<ol style="list-style-type: none"> 1. Clean proximity switch. 2. Adjust the pump proximity switch sensitivity by turning adjustment screw counter-clockwise (page 57).
Pump will not turn on in AUTO	<ol style="list-style-type: none"> 1. Proximity switch is not staying covered. 2. Atomizer is not on. 3. Proximity switch is not sensitive enough. 4. Pump stand two-wire cord is not plugged into to treater main panel. 5. Both the Chemical Pump switch on the Pump Stand and the Pump/Aux Control on the HMI screen need to be set to AUTO. 	<ol style="list-style-type: none"> 1. Make sure proximity switch is staying covered with seed 2. Turn on atomizer. Atomizer must be on to run the pump in Auto. 3. Adjust pump proximity switch sensitivity by turning the adjustment screw clockwise (page 57). 4. Plug the pump stand two-wire cord into the main treater panel. 5. Set both the Pump Stand switch and Pump/Aux on the HOA screen to AUTO.
Inlet conveyor won't shut off when hopper is full.	<ol style="list-style-type: none"> 1. Seed is not hitting proximity switch. 2. Proximity switch is not set sensitive enough. 3. Inlet conveyor is plugged into wrong receptacle. 	<ol style="list-style-type: none"> 1. Make sure seed is hitting proximity switch. 2. Adjust the inlet conveyor proximity switch by turning the adjustment screw clockwise (page 57). 3. Make sure inlet conveyor is plugged inlet conveyor receptacle.

LPX SEED TREATER

Problem	Possible Cause	Solution
Pump is fluctuating.	<ol style="list-style-type: none"> 1. Restriction in tubing 2. Filter is plugged or missing gasket. 	<ol style="list-style-type: none"> 1. Flush tubing and check filter for any restrictions. 2. Clean filter and check for gasket.
Seed calibration is fluctuating.	<ol style="list-style-type: none"> 1. Seed treater supply hopper is not staying full. 2. Restriction in the supply hopper or seed wheel. 3. Build-up in the atomizing chamber. 	<ol style="list-style-type: none"> 1. Make sure the supply hopper and seed wheel are staying full. May have to lower seed flow rate in order to have a consistent flow of seed. 2. Check supply hopper and seed wheel for any debris, and remove. 3. Remove atomizing housing and clean out any build-up of material.
Drum is slipping and seed is coming out the inlet side of the drum.	<ol style="list-style-type: none"> 1. Drum is wet. 2. The seed treater is set too level. 3. Chains are too loose. 	<ol style="list-style-type: none"> 1. Dry off any moisture that may have collected on the outside of the drum. 2. Adjust the slope of the seed treater to at least a 3" drop from front to back. If desired, more slope can be applied. 3. Check and tighten the drive chains. Also check the chain alignment.
None of the motors will turn to ON in HAND mode.	<ol style="list-style-type: none"> 1. Processor is faulted. 2. Emergency Stop button is activated. 3. The Emergency Stop RESET button has not been pressed after the Emergency Stop button has been pulled out. 	<ol style="list-style-type: none"> 1. Disconnect power and wait 30 seconds before reconnecting power. 2. Pull out the Emergency Stop button. 3. After the Emergency Stop button has been pulled out, press the Emergency Stop RESET button.
E-stop is flashing.	<ol style="list-style-type: none"> 1. An E-stop may be depressed. 2. Power may not be on to the control panels. 3. One of the control panels may not be connected to all of the others. 	<ol style="list-style-type: none"> 1. Ensure all E-stops are not depressed. 2. Check incoming power to each control panel. 3. Check the wiring and connections to each control panel.

PROXIMITY SWITCH ADJUSTMENT GUIDE

The proximity switches mounted in the extension ring and the seed wheel detect when seed is present.

The proximity switch located in the extension ring is used to automatically shut off the inlet conveyor when the surge hopper is full. This proximity switch is not present on tower systems.

The proximity switches located in the seed wheel automatically shut off the pump when all seed has left the hopper.

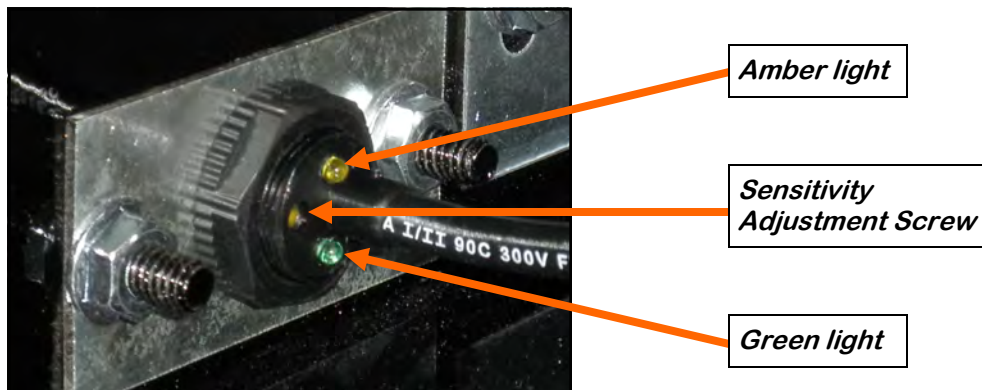
If the proximity switch is not working properly, this can be caused by wear, dust, or even moisture. The first step is to clean the lens of the proximity switch. If this does not solve the problem, the next step would be to adjust the sensitivity of the proximity switch.

The green light indicates the power status. If it is active the device is powered.

The amber light indicates when seed is being detected. If it is active it detects seed, if inactive it does not detect seed.

Using the small screwdriver provided inside the control panel, you can adjust the proximity switch by turning the adjusting screw on the back of the proximity switch.

- Turn Clockwise to make the proximity switch more sensitive.
- Turn Counterclockwise to make the proximity switch less sensitive.



Proximity Switch Screwdriver

SECTION
G**MAINTENANCE**

Proper maintenance of the LPX Seed Treater 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.

GREASING

Use an SAE multipurpose high temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multipurpose lithium-based grease.

- Use a Maintenance Checklist to keep record of all scheduled maintenance.
- Use a hand-held grease gun for all greasing.
- Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
- Replace and repair broken fittings immediately.



If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.



Si les raccords ne prendront pas la graisse, enlever et nettoyer. Aussi propre passage de lubrifiant. Remplacer approprié si nécessaire .

SEED WHEEL

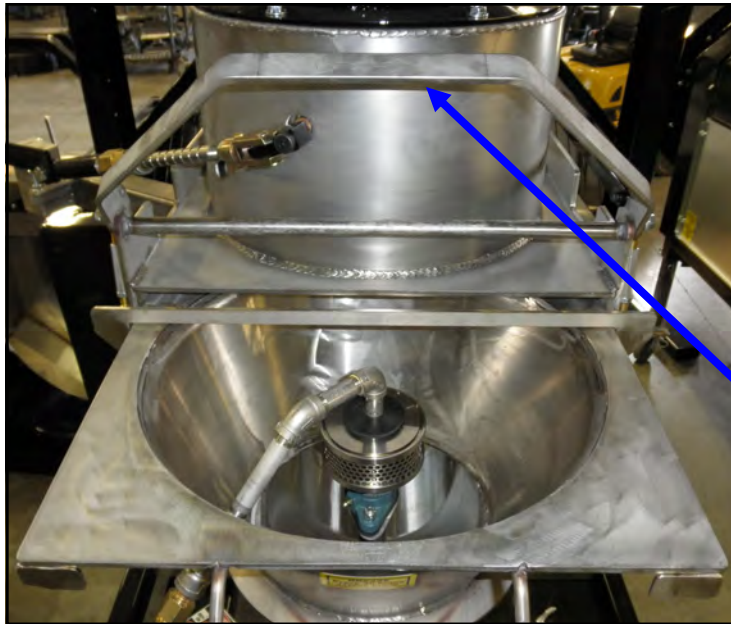
- Inspect all welds and structural components for bends, cracks and damage.
- Remove the front and rear shields with the vent slots to inspect wheel, brushes and proximity switches.
- Use a vacuum to clean out any seeds and excess build-up that may have occurred during operation. Wipe down the motor 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.
- Utilisez un aspirateur pour nettoyer les graines ou accumulation excès qui ont pu se produire pendant le fonctionnement. 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 .

DRIVE AND DRUM

- Remove drum guards and inspect all welds and structural components on the frame and drum for bends, cracks and damage.
- Inspect pillow block bearings and grease every 40 hours of operation.
- Inspect drive wheels for unordinary wear and set screws for tightness.
- Inspect the Neoprene idler wheels for unordinary wear and adjust if necessary.
- Remove drive guards, tighten and lubricate chain every 40 hours of operation.
- 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.

ATOMIZER

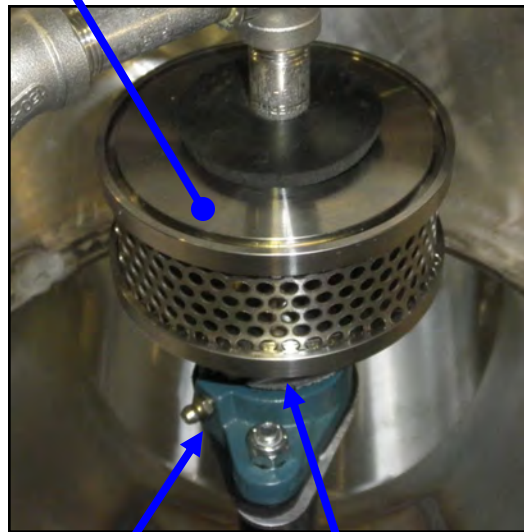
To access the inside of the atomizer housing, disconnect the motor power cable from the atomizer motor, push up on the quick release handle and slide out the atomizer. After completing maintenance, slide the atomizer back into the operating position, pull down quick release handle to lock it in place and reconnect the motor power cord.



Quick-Release Handle

Atomizer Head

1. Slide out atomizer housing and grease bearing inside. Bearing needs just one pump of grease every 40 hours of operation (right).
2. Clean any build up inside the housing and the atomizer head. To remove the atomizer head, loosen the set screw located on the bottom of the head.
3. Check for any play in the atomizer shaft.
4. Make sure the atomizer spins smoothly.
5. Ensure the adjustable chute is fitting completely into the drum opening. Adjust if necessary.



Bearing

Set Screw

ATOMIZER MOTOR

- 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.

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.
- Tighten hose clamps and check filter. Clean filter frequently to avoid blockages
- Flush flow meter with clean water frequently to avoid chemical buildup.
- 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.

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.

ELECTRICAL PANEL

- Check and tighten wire connections.
- Check quick connects on bottom of control panel.
- Check to see if starters and/or overloads are tripped.
- Check to see if relays, timers and/or breakers are tripped.
- Check and set the proximity switches (page 57).
- Check quick connects on end of Auxiliary cord.
- Check and tighten wire connections.
- Check relay and fuse holder.
- Check power cords for cuts or frays and ensure ground is present.

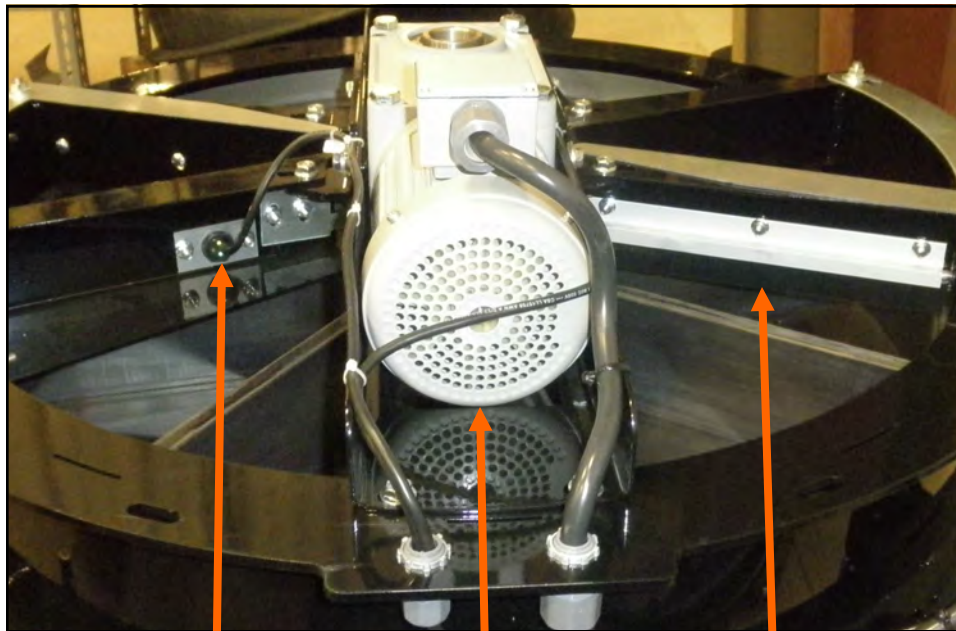
When storing the LPX Seed Treater for long periods of time, the following procedure must be followed to reduce the chance of rust, corrosion and fatigue of the treater. You can also use these steps when storing the machine for the winter.



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

SEEDWHEEL & SUPPLY HOPPER

1. Turn power off to the treater and treater components.
2. Remove shields from the seed wheel and remove any debris or build-up. Compressed air can be used to blow out any foreign material.
3. Turn power back on to the treater and run seed wheel to help remove any additional debris. Compressed air can be used to blow out any foreign material.
4. Check brushes for wear (below).
5. Wipe off and clean the lens of the proximity switches (below).
6. Disconnect power and mount all guard back in place.
7. Tarp or cover the supply hopper and seed wheel to keep out any dirt or unwanted pests.



Proximity Switch

Motor

Brush

ATOMIZER CHAMBER

1. Remove and clean the atomizer housing.
2. Remove the atomizer head and stainless steel plumbing. The atomizer head can be disassembled (right), for easier cleaning. It is threaded together and can simply be unscrewed.
3. Reinstall the atomizer head and plumbing. Grease the bearing and spin the atomizer head a few times to ensure all grease has been worked into the bearings.



ROTATING DRUM

1. Remove the shields and clean out any seed that may have fallen underneath the drum.
2. Clean out any residue left on the inside of the drum and around the seed lifters.
3. Lubricate the chain to keep from corroding in storage.

FINAL

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

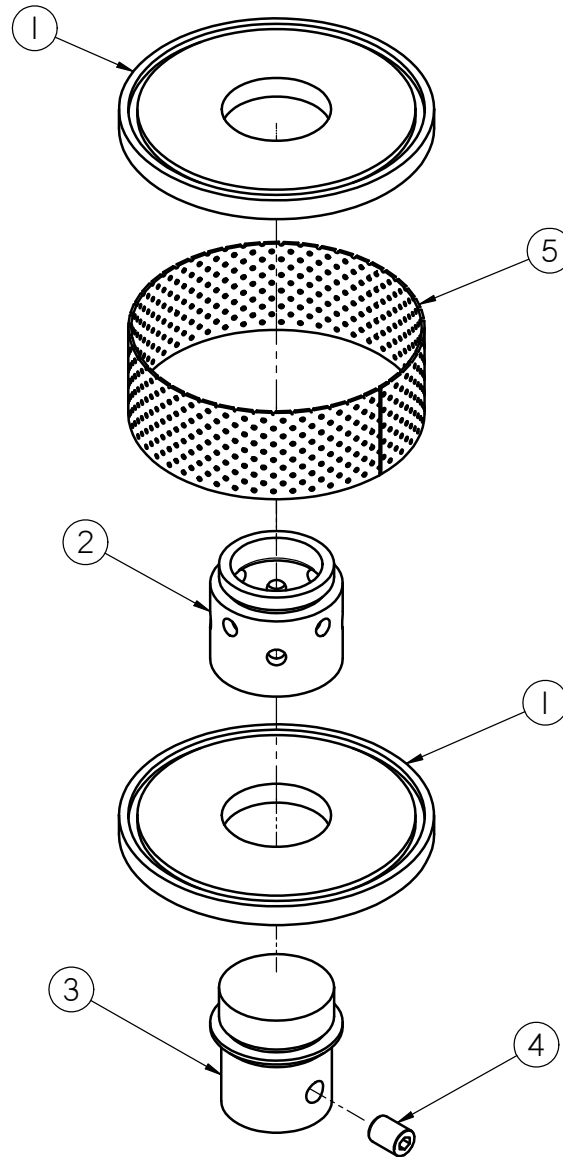
LPX SEED TREATER

NOTES:

SECTION
I

MECHANICAL DRAWINGS

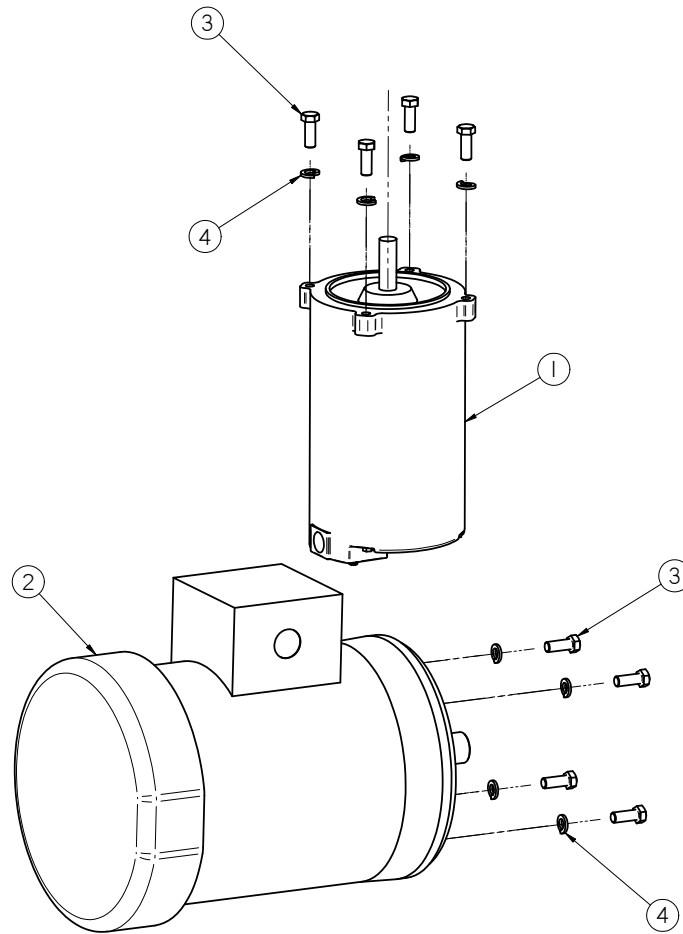
ATOMIZER HEAD ASSEMBLY (04-02-0004)



Item #	Part #	Description	Qty
1	05-11-0014	PLT ATMZR CAP	2
2	05-11-0015	ATOMIZER SPACER	1
3	05-11-0016	DRIVE SPUD, BOTTOM	1
4	06-06-0003	SET SCRW, CP, .375-16 18-8 SS .50	1
5	13-05-0032	PERFORATED SCREEN, STD.	1

LPX SEED TREATER

DRUM & ATOMIZER 3HP MOTOR KIT (03-20-0101)



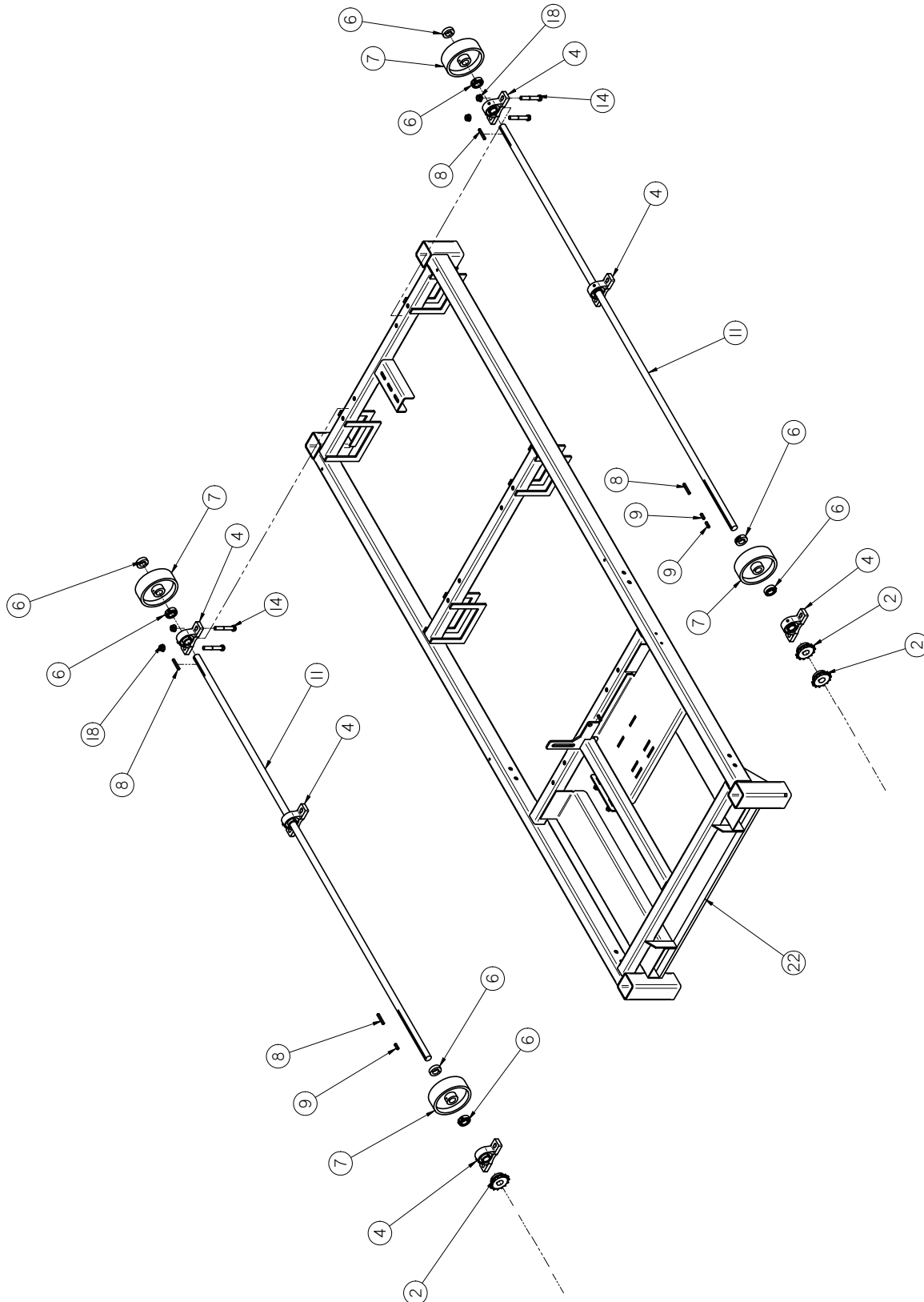
Item #	Part #	Description	Qty
1	01-01-0105	MTR .33HP 1725RPM 56C 3PH TENV	1
2	01-01-0166	MTR 3HP 1740RPM 182TC TEFC 3PH	1
3	06-01-0016	BOLT .375-16 X 1.00 ZP GR5	8
4	06-04-0003	WSHR LOCK SPLT .375 ZP	8

NOTICE The following parts are in the motor kit but do not appear in the drawing view

Item #	Part #	Description	Qty
5	03-06-0101	PLUG TURCK RSF 44-0.5M/NPT	1
6	03-08-0022	CNDT .500 FTTG HUB CONN	1
7	03-08-0283	CONN TURCK RSM 44-2M/S4000	1
8	03-08-0299	CONN CG 0.5 NPT .170-.450 3232LTF	1

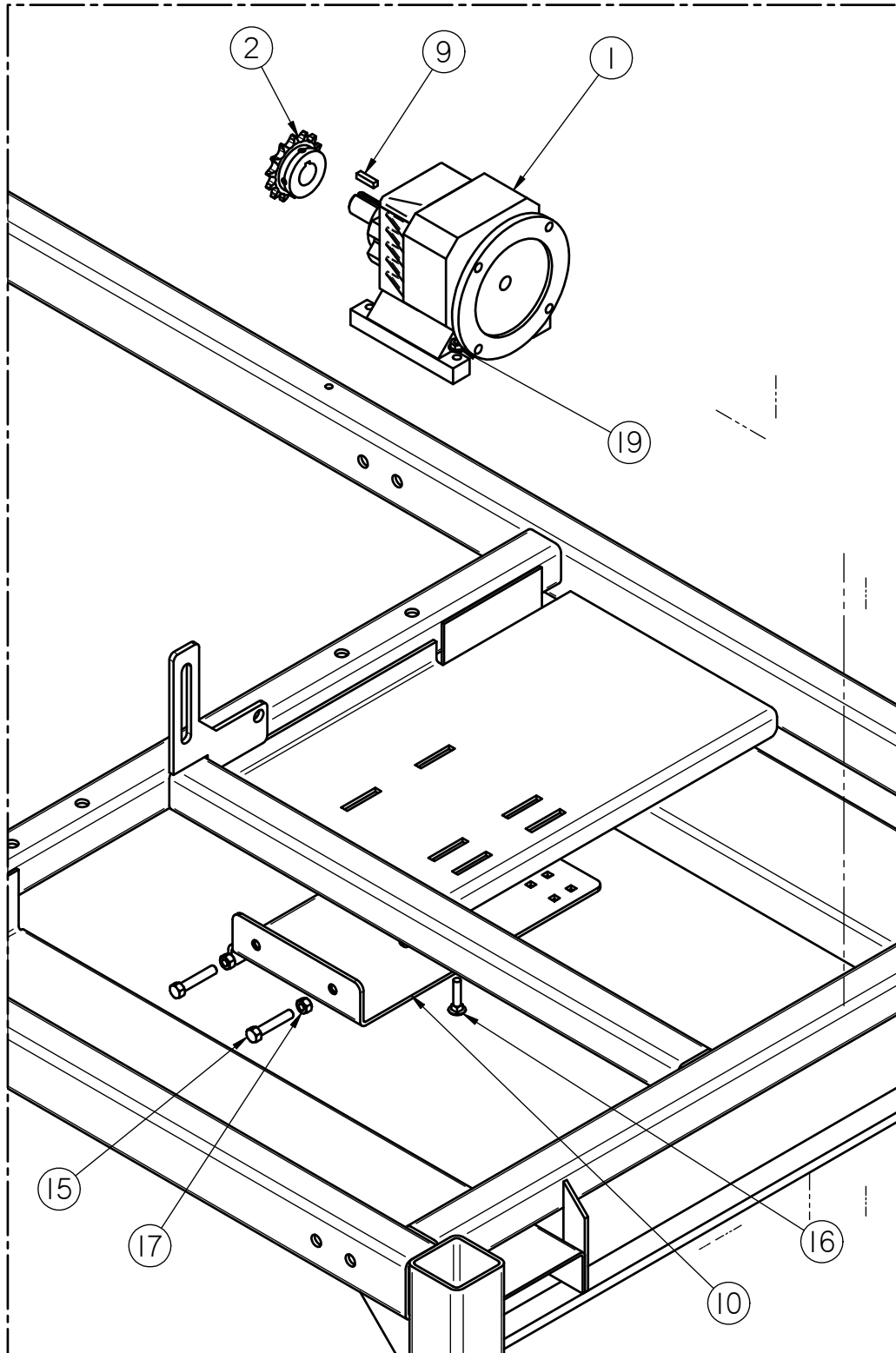
LPX SEED TREATER

LPX BASE FRAME ASSEMBLY (18-01-0011 & 18-01-0012)



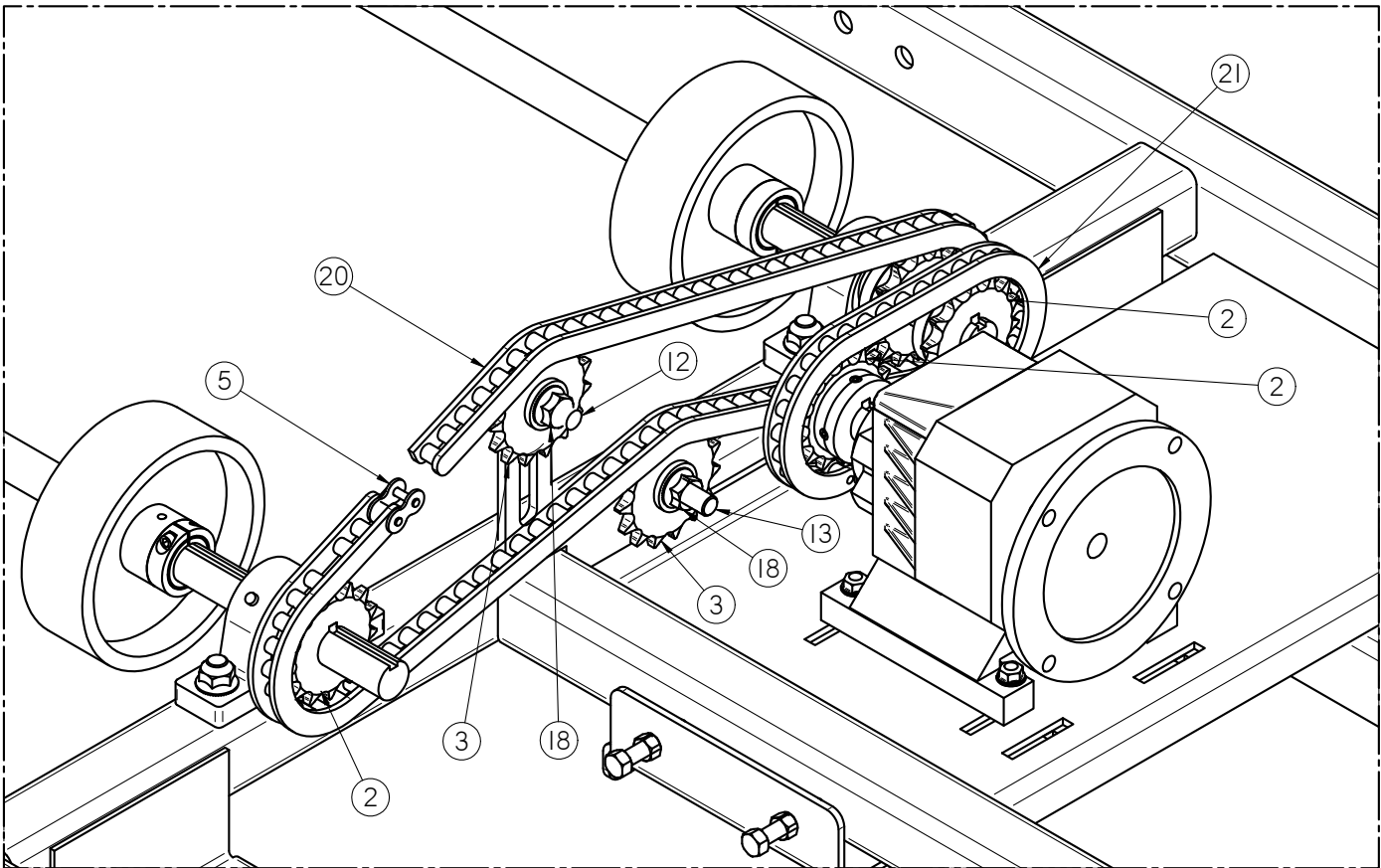
LPX SEED TREATER

LPX BASE FRAME ASSEMBLY (18-01-0011 & 18-01-0012)



LPX SEED TREATER

LPX BASE FRAME ASSEMBLY (18-01-0011 & 18-01-0012)

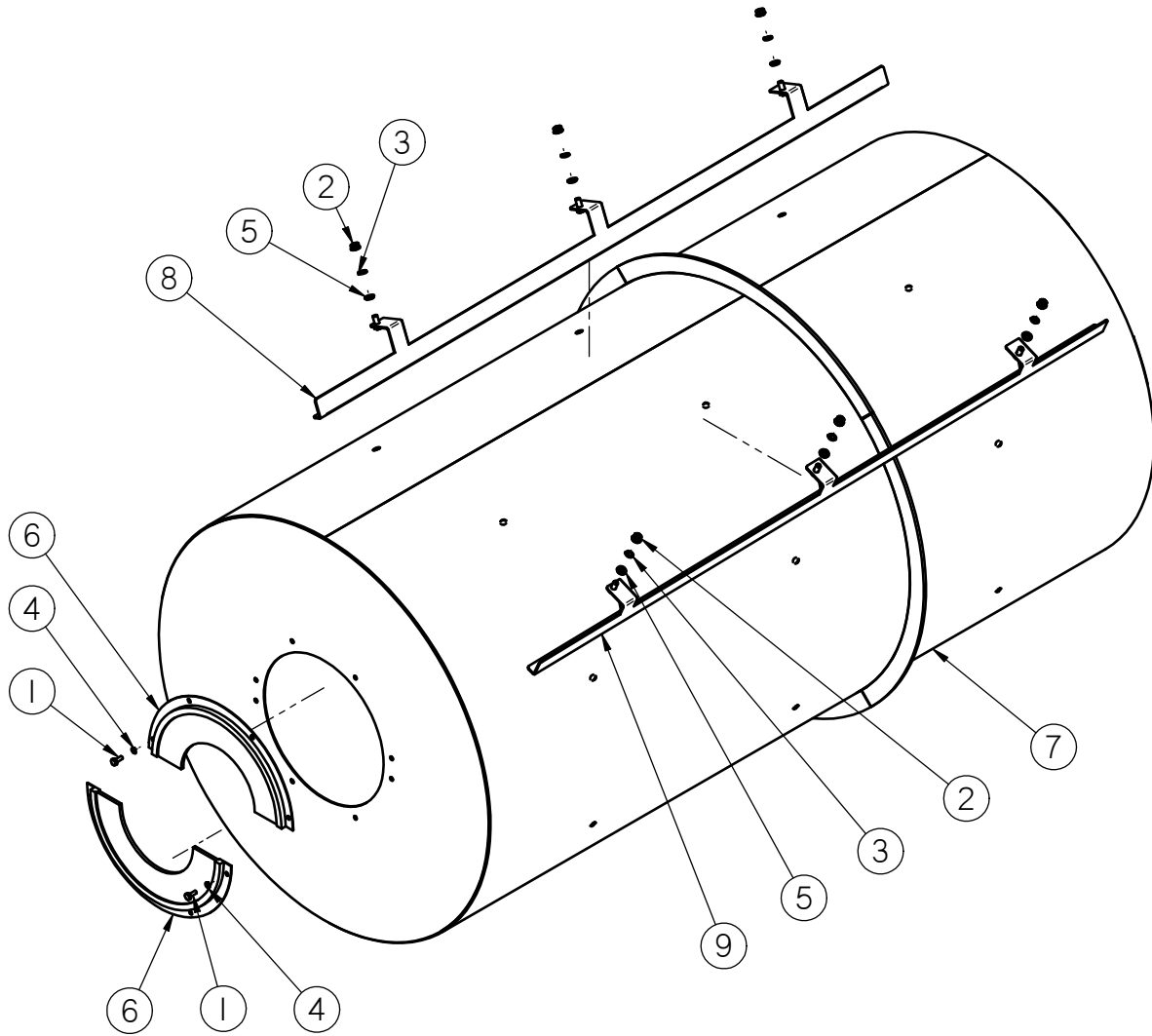


LPX SEED TREATER

LPX BASE FRAME ASSEMBLY (18-01-0011 & 18-01-0012)

LPX BASE FRAME ASSEMBLY		LPX 6 FT		LPX 8 FT	
		18-01-0011		18-01-0012	
Item #	Description	Part #	Qty	Part #	Qty
1	GBOX IL 56C 16.2:1 GR B1 FOOT MNT	01-01-0101	1	01-01-0101	1
2	SPROCKET # 50 14T 1.00 IN BORE TYPE B	01-02-0093	4	01-02-0093	4
3	SPKT 17 T 50P .500 ID IDLER	01-02-0095	2	01-02-0095	2
4	BRG PLW 1.00ID STSC SEALED	01-03-0036	6	01-03-0036	6
5	#50 CNTG LINK	01-04-0005	2	01-04-0005	2
6	SHAFT CLR 1.00ID SPLIT	01-05-0008	8	01-05-0008	8
7	WHL DRV 6 X 2 X 1.00ID .250KWY	01-06-0002	4	01-06-0002	4
8	KEY .250 X 2.00 CS	01-10-0003	4	01-10-0003	4
9	KEY .250 X 1.00 CS	01-10-0004	4	01-10-0004	4
10	WDMT DRUM DRV ADJ PLT	05-04-0067	1	05-04-0067	1
11	DRUM DRIVE SHAFT LPX	05-11-0003	2	05-11-0348	2
12	BOLT CRG .500-13 X 2.00 ZP GR5	06-01-0026	1	06-01-0026	1
13	BOLT .500-13 X 2.00 ZP GR5	06-01-0027	1	06-01-0027	1
14	BOLT .500-13 X 3.25 ZP GR5	06-01-0029	12	06-01-0029	12
15	BOLT .375-16 X 2.00 ZP GR5 FULL THRD	06-01-0137	2	06-01-0137	2
16	BOLT CRG .313-18 X 1.75 ZP GR5	06-01-0172	4	06-01-0172	4
17	NUT FULL .375-16 ZP GR5	06-02-0003	2	06-02-0003	2
18	NUT LOCK FLG .500-13 ZP GR5	06-03-0015	14	06-03-0015	14
19	NUT, FLG .3125-18 UNC ZP GRADE 5	06-03-0019	4	06-03-0019	4
20	#50 CHAIN 84LINKS	13-05-0156	1	13-05-0156	1
21	#50 CHAIN -- 32 LINKS	13-05-0157	1	13-05-0157	1
22	WDMT BASE FRAME LPX	18-01-0007	1	18-01-0008	1

LPX SEED TREATER
LPX800 & LPX2000 6 FOOT DRUM ASSEMBLYS



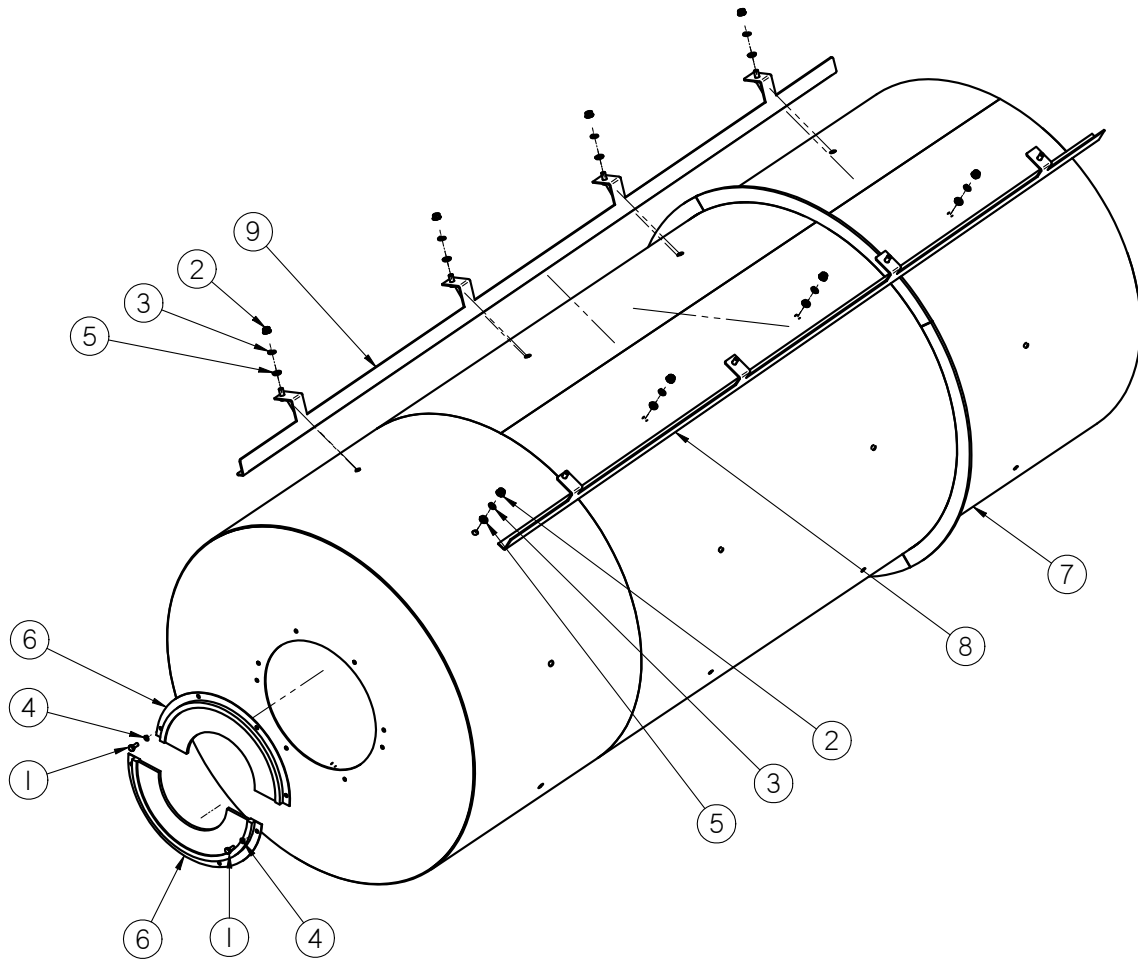
LPX SEED TREATER

LPX800 & LP2000 6 FOOT DRUM ASSEMBLYS

LPX800 DRUM ASSEMBLY		LPX800 6FT CS		LPX800 6FT SS	
		18-01-0042		18-01-0043	
Item #	Description	Part #	Qty	Part #	Qty
1	BOLT .250-20 X .75 UNC	----	—	----	—
2	NUT .375-16	06-03-0014	24	06-02-0010	24
3	WASHER, LOCK, SPLIT .375 SS	----	—	06-04-0008	24
4	WASHER, LOCK, SPLIT .250	----	—	----	—
5	WASHER, SS, BONDED, SEALING .375 ID	06-04-0013	24	06-04-0013	24
6	SEAL, BRUSH, 180 DEG 7.80 OR X 4.00 IR	----	—	----	—
7	WELDMENT, DRUM	18-01-0016	1	18-01-0129	1
8	WELDMENT, DRUM PADDLE, TALL	18-01-0026	4	18-01-0027	4
9	WELDMENT, DRUM PADDLE, SHORT	18-01-0034	4	18-01-0035	4

LPX2000 DRUM ASSEMBLY		LPX2000 6FT CS		LPX2000 6FT SS	
		18-01-0044		18-01-0045	
Item #	Description	Part #	Qty	Part #	Qty
1	BOLT .250-20 X .75 UNC	06-01-0006	8	06-01-0006	8
2	NUT .375-16	06-03-0014	24	06-02-0010	24
3	WASHER, LOCK, SPLIT .375 SS	----	—	06-04-0008	24
4	WASHER, LOCK, SPLIT .250	06-04-0001	8	06-04-0009	8
5	WASHER, SS, BONDED, SEALING .375 ID	06-04-0013	24	06-04-0013	24
6	SEAL, BRUSH, 180 DEG 7.80 OR X 4.00 IR	06-10-0018	2	06-10-0018	2
7	WELDMENT, DRUM	18-01-0018	1	18-01-0019	1
8	WELDMENT, DRUM PADDLE, TALL	18-01-0026	4	18-01-0027	4
9	WELDMENT, DRUM PADDLE, SHORT	18-01-0034	4	18-01-0035	4

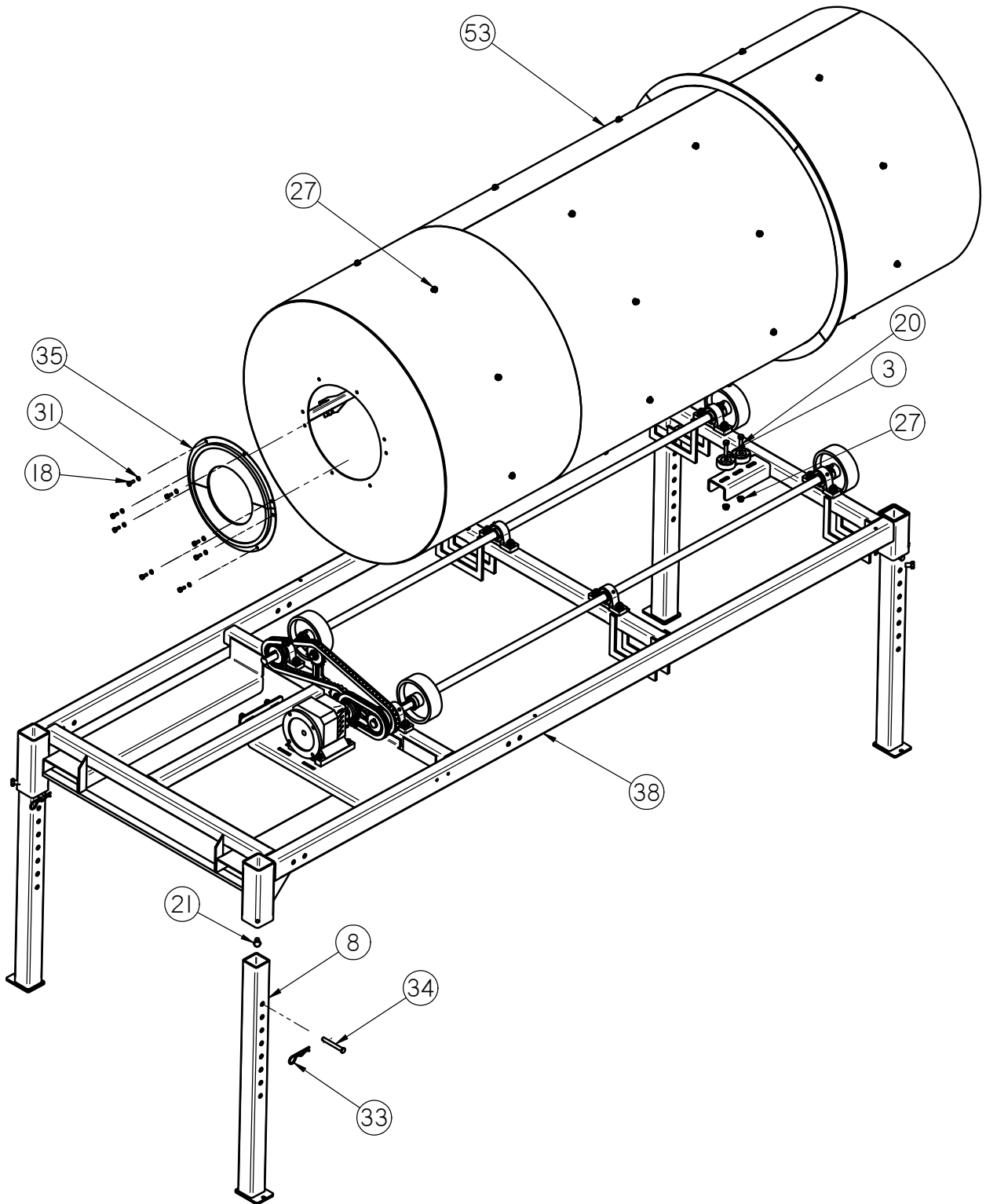
LPX SEED TREATER
LPX2000 8 FOOT DRUM ASSEMBLY



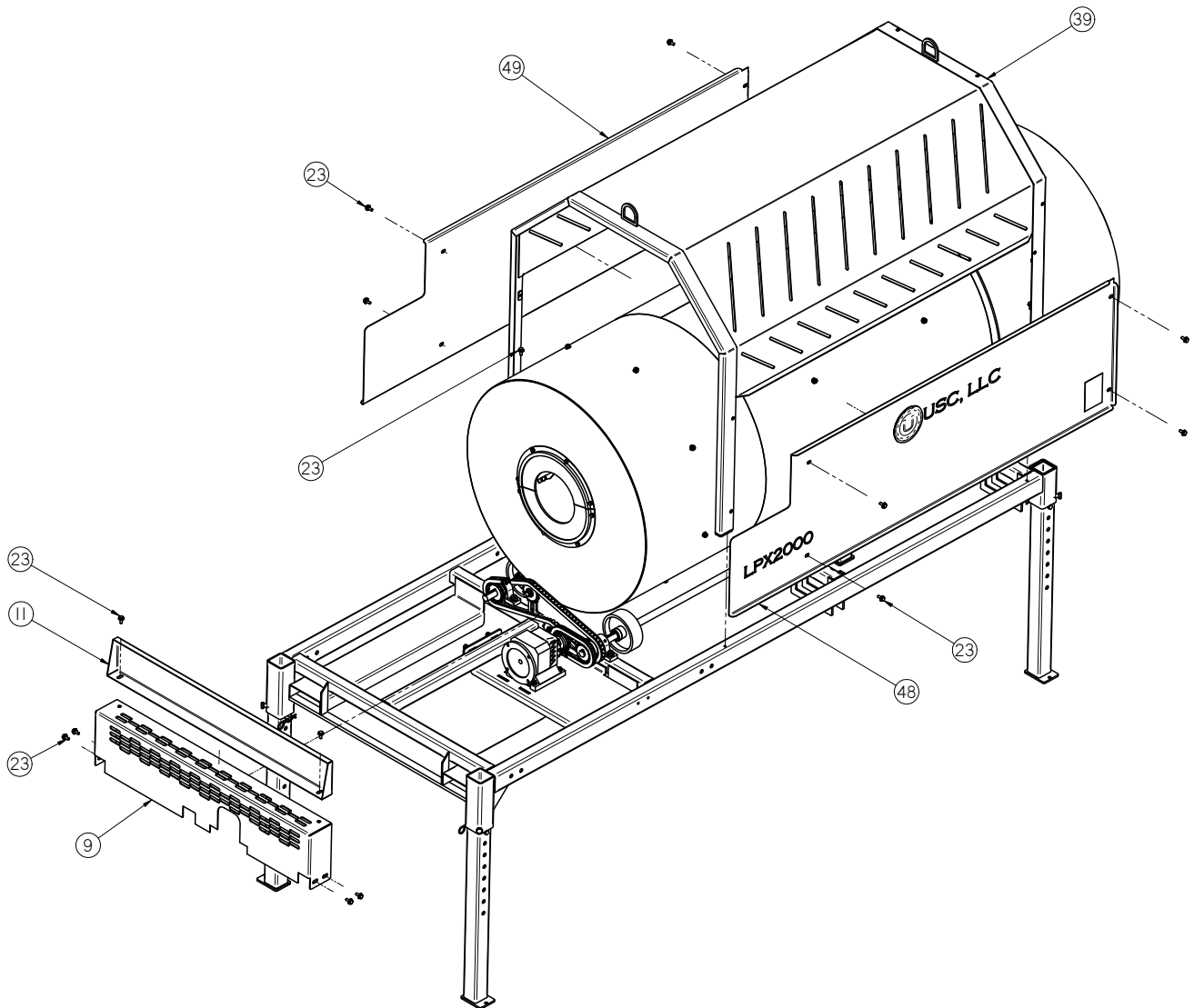
LPX DRUM ASSEMBLY		LPX2000 8FT CS		LPX2000 8FT SS	
		18-01-0046		18-01-0047	
Item #	Description	Part #	Qty	Part #	Qty
1	BOLT .250-20 X .75 UNC	06-01-0006	8	06-01-0006	8
2	NUT .375-16	06-03-0014	32	06-02-0010	32
3	WASHER, LOCK, SPLIT .375 SS	---	—	06-04-0008	32
4	WASHER, LOCK, SPLIT .250	06-04-0001	8	06-04-0009	8
5	WASHER, SS, BONDED, SEALING .375 ID	06-04-0013	32	06-04-0013	32
6	SEAL, BRUSH, 180 DEG 7.80 OR X 4.00 IR	06-10-0018	2	06-10-0018	2
7	WELDMENT, DRUM	18-01-0187	1	18-01-0186	1
8	WELDMENT, DRUM PADDLE, SHORT	18-01-0192	4	18-01-0193	4
9	WELDMENT, DRUM PADDLE, TALL	18-01-0194	4	18-01-0195	4

LPX SEED TREATER

LPX SEED TREATER (Drum and Legs)

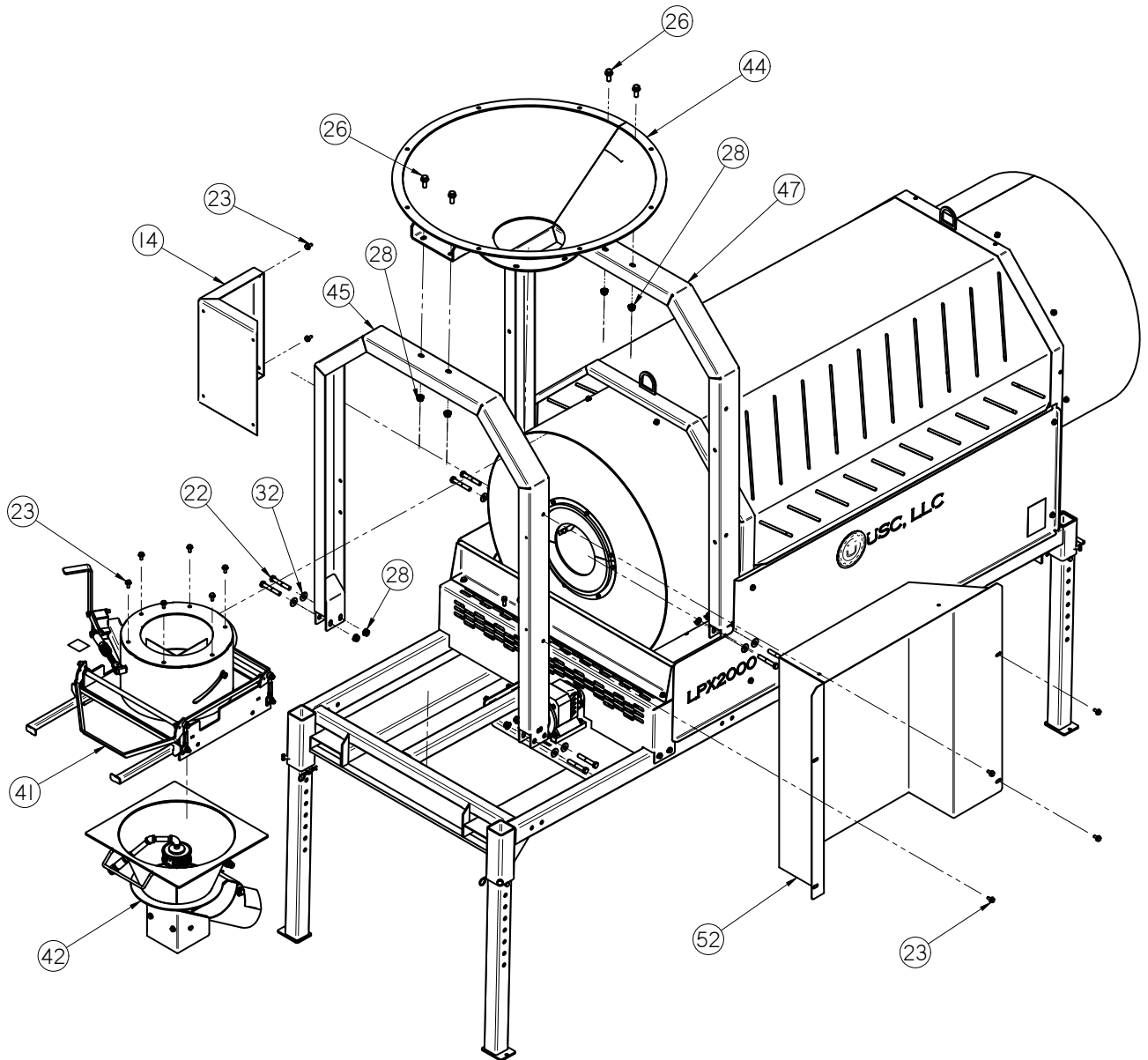


LPX SEED TREATER
LPX SEED TREATER (Drum and Drive Guards)

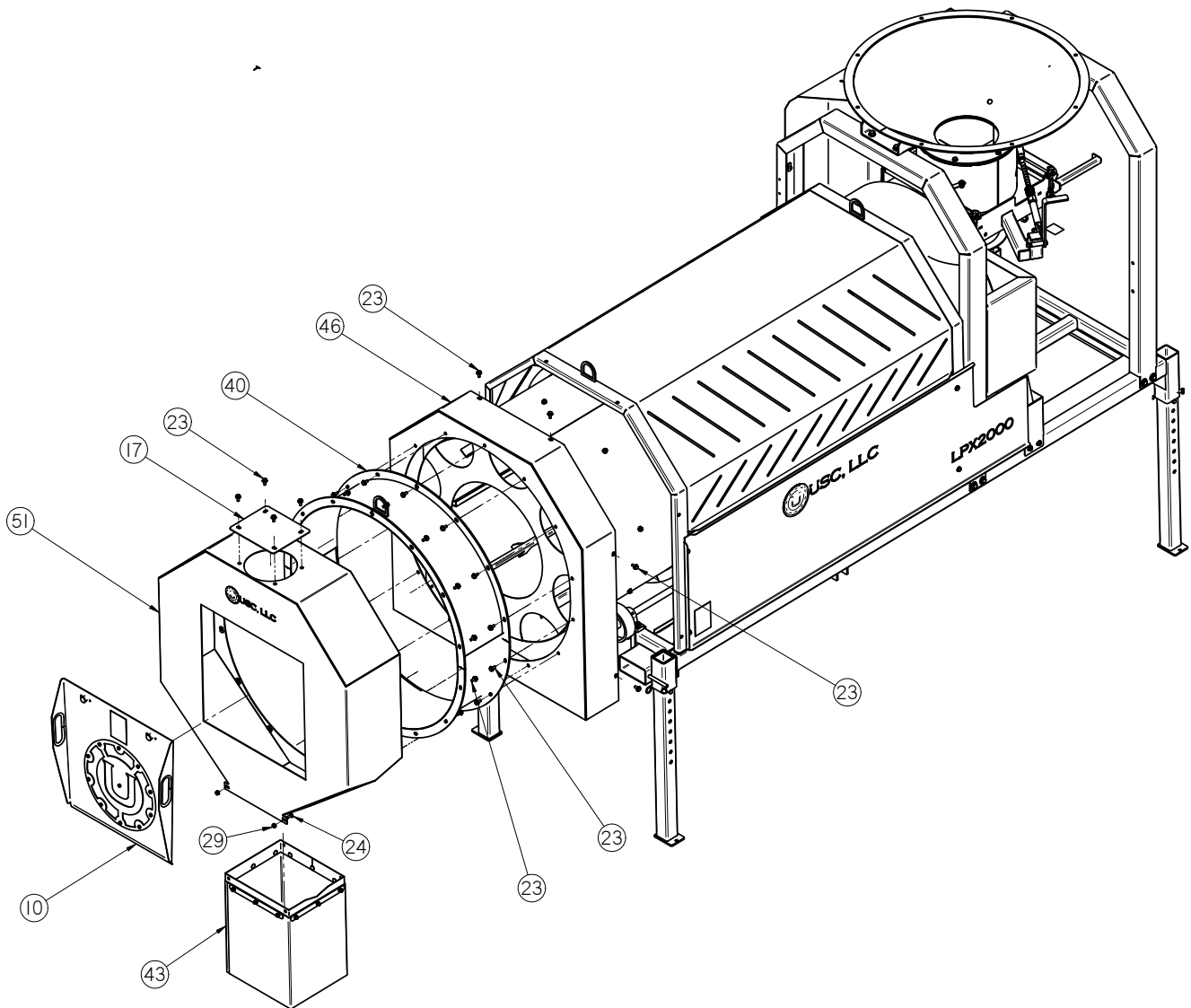


LPX SEED TREATER

LPX SEED TREATER (Inlet and Atomizer Chamber)

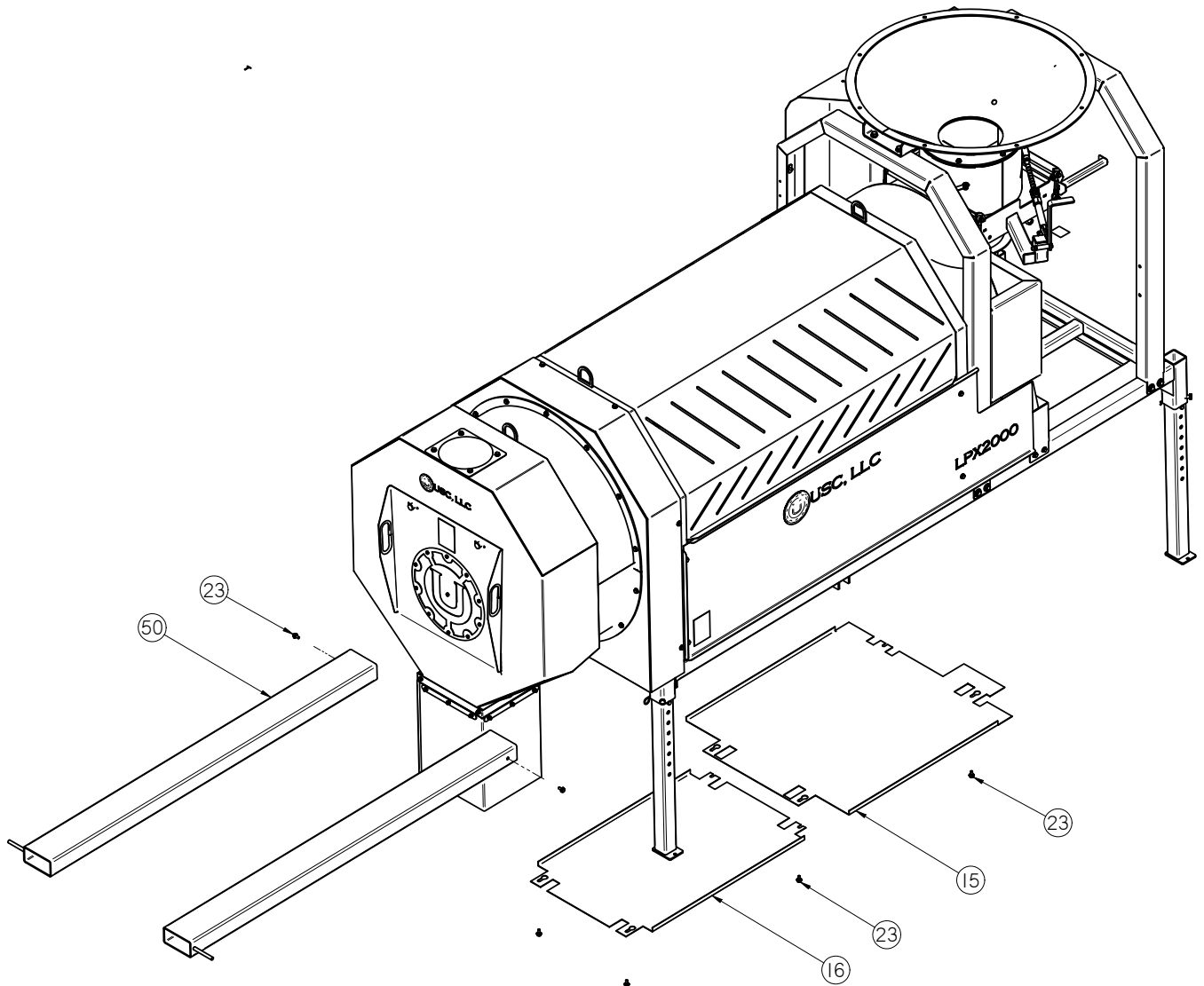


LPX SEED TREATER
LPX SEED TREATER (Discharge End)

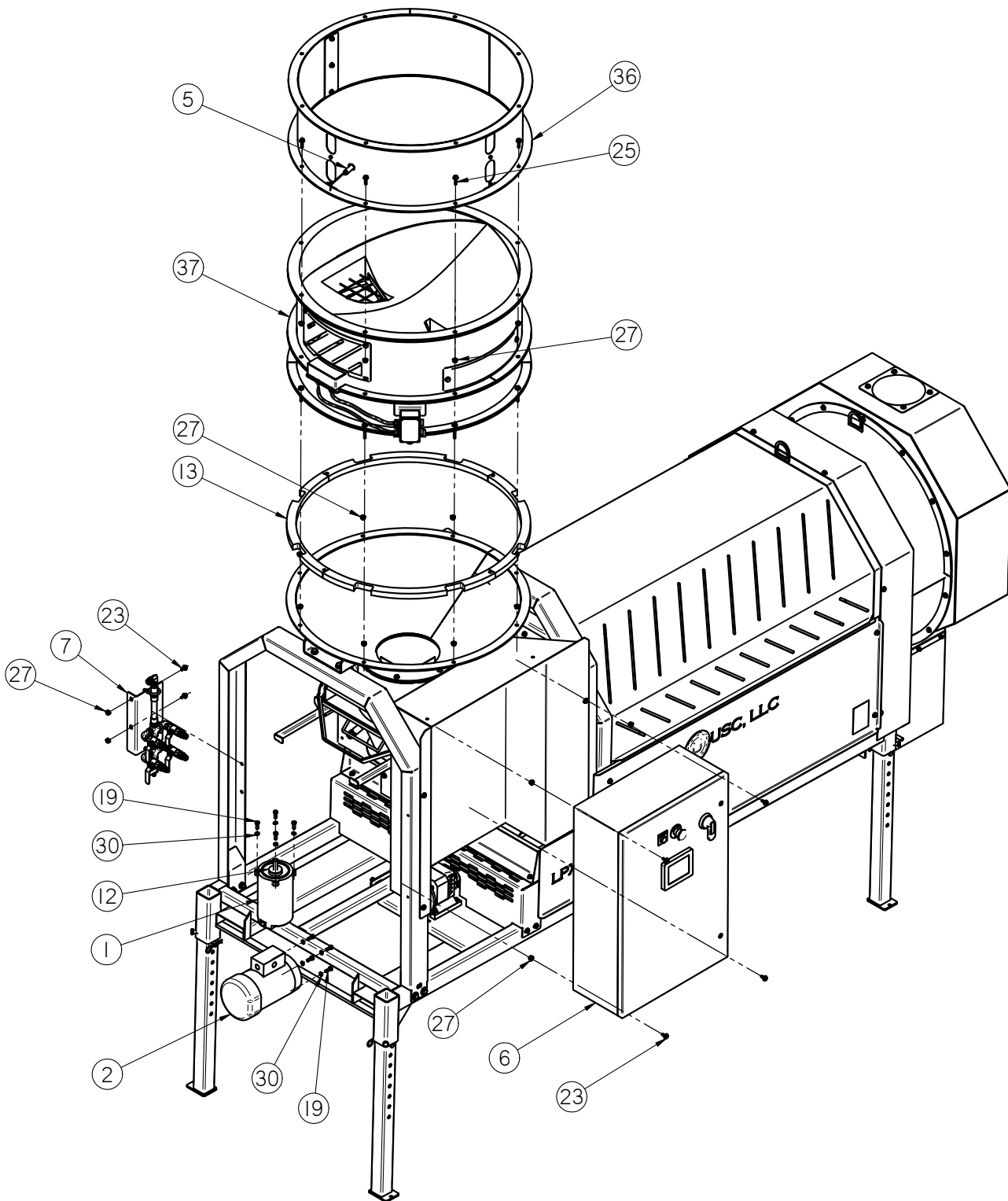


LPX SEED TREATER

LPX SEED TREATER (Forklift Pockets and Bottom Guards)



LPX SEED TREATER
LPX SEED TREATER (Final Assembly)



LPX SEED TREATER

LPX SEED TREATER

TREATER		LPX 800		LPX 2000	
		6 FOOT		6 FOOT	
Item #	Description	Part #	Qty	Part #	Qty
1	ATOMIZER MOTOR	SEE TABLE 1	1	SEE TABLE 1	1
2	DRUM MOTOR	SEE TABLE 2	1	SEE TABLE 2	1
3	WHL GUIDE .375ID X 2.50 X .875 NPRN	01-06-0004	2	01-06-0004	2
4	PLUG STEEL 22MM	03-08-0130	1	03-08-0130	1
5	SENS PROX 24VDC AB QC 875CPN8NP18P3	03-10-0147	1	03-10-0147	1
6	PANEL CONTROL LPX TREATER (6 & 8 FOOT DRUMS)	SEE TABLE 3	1	SEE TABLE 3	1
7	ASSY STATIC MIXER LPX TREATER	04-03-0255	1	04-03-0255	1
8	WDMT ADJ TREATER LEG	05-05-0001	4	05-05-0001	4
9	WDMT CHAIN GRD LPX	05-06-0001	1	05-06-0001	1
10	ASSY END CHUTE DOOR	05-07-0198	1	05-07-0198	1
11	GRD DRUM INLET LOWER	05-10-0150	1	05-10-0150	1
12	DISK ATOMIZER MOTOR	05-10-0805	1	05-10-0805	1
13	SEAL BETWEEN FLANGES SMW TO TRTR	05-10-2463	4	05-10-2463	4
14	GRD DRUM INLET LPX BOLTED	05-10-3931	1	05-10-3931	1
15	GRD DRUM BTM FRNT HALF LPX	05-10-3950	1	05-10-3950	1
16	GRD DRUM BTM REAR HALF LPX	05-10-3951	1	05-10-3951	1
17	PLT CVR TREATER DSCHG	05-10-3800	1	05-10-3800	1
18	BOLT, .250-20 X .750 UNC 18-8	06-01-0006	8	06-01-0006	8
18*	BOLT, .250-20 X .750 UNC 18-8 (STAINLESS STEEL)	06-01-0003	8	06-01-0003	8
19	BOLT .375-16 X 1.00 ZP GR5	06-01-0016	16	06-01-0016	16
20	BOLT .375-16 X 1.75 ZP GR5	06-01-0019	2	06-01-0019	2
21	BOLT .500-13 X .750 ZP GR5	06-01-0024	4	06-01-0024	4
22	BOLT .500-13 X 3.25 ZP GR5	06-01-0029	8	06-01-0029	8
23	BOLT, FLG .375-16 UNC ZP GRADE 5; 3/4" LG	06-01-0124	82	06-01-0124	82
24	BOLT CRG .3125-18X.750 ZP SHORT NECK	06-01-0171	4	06-01-0171	4
25	BOLT, FLG .375-16 UNC ZP GRADE 5; 1-1/4" LG	06-01-0189	8	06-01-0189	8
26	BOLT FLG .500-13 X 1.250 ZP GR5	06-01-0232	4	06-01-0232	4
27	NUT LOCK FLG .375-16 ZP GR5	06-03-0014	62	06-03-0014	62
28	NUT LOCK FLG .500-13 ZP GR5	06-03-0015	12	06-03-0015	12
29	NUT LOCK FLG .3125-18 ZP GR5	06-03-0019	4	06-03-0019	4

LPX SEED TREATER

LPX SEED TREATER

TREATER		LPX 800		LPX 2000	
		6 FOOT		6 FOOT	
Item #	Description	Part #	Qty	Part #	Qty
30	WSHR LOCK SPLT .375 ZP	06-04-0003	16	06-04-0003	16
31	WASHER, .250 LOCK 316	06-04-0001	8	06-04-0001	8
31*	WASHER, .250 LOCK 316 (STAINLESS STEEL)	06-04-0009	8	06-04-0009	8
32	WSHR FLAT .500 ZP	06-05-0005	8	06-05-0005	8
33	PIN CLIP HITCH 3.063 SIZE 9 ZP	06-09-0002	4	06-09-0002	4
34	PIN CLVS .500 X 3.50 PLN	06-09-0005	4	06-09-0005	4
35	SEAL BRSH 180 DEG 7.81 OR X 4.00 IR	06-10-0018	2	06-10-0018	2
36	ASSY EXTENSION HOPPER	SEE TABLE 4	1	SEE TABLE 4	1
37	ASSY SEED METER WHEEL	SEE TABLE 5	1	SEE TABLE 5	1
38	ASSY BASE FRAME LPX (SEE PAGES 68-71)	18-01-0011	1	18-01-0011	1
39	WDMT DRUM GRD LPX	18-01-0050	1	18-01-0050	1
40	WDMT DRUM EXT GRD LPX	18-01-0054	1	18-01-0054	1
41	ASSY ADJ CHMBR LPX	18-01-0061	1	18-01-0062	1
42	ASSY ATOMIZER LPX	18-01-0067	1	18-01-0069	1
42*	ASSY ATOMIZER LPX (STAINLESS STEEL)	18-01-0068	1	18-01-0070	1
43	ASSY END CHUTE EXTENSION LPX	18-01-0072	1	18-01-0072	1
44	WDMT INLET HOPPER LPX	18-01-0080	1	18-01-0080	1
45	WDMT HEADACHE RACK SHORT	18-01-0081	1	18-01-0081	1
46	WDMT DRUM EXT GRD MNT LPX	18-01-0082	1	18-01-0082	1
47	WDMT HEADACHE RACK TALL	18-01-0083	1	18-01-0083	1
48	ASSY GRD DRUM LPX RT GALV	18-01-0091	1	18-01-0091	1
49	ASSY GRD DRUM LPX LT GALV	18-01-0094	1	18-01-0094	1
50	WDMT FORKLIFT POCKET EXT	18-01-0106	2	18-01-0106	2
51	WDMT END CHUTE LPX	18-01-0057	1	18-01-0057	1
52	WDMT ENCL MNT LPX LARGE PNL	18-01-0155	1	18-01-0155	1
53	ASSY DRUM LPX (SEE PAGES 72-73)	18-01-0042	1	18-01-0044	1
53*	ASSY DRUM LPX-STAINLESS STEEL (SEE PAGES 72-73)	18-01-0043	1	18-01-0045	1

LPX SEED TREATER

LPX SEED TREATER

TREATER		LPX 2000	
		8 FOOT	
Item #	Description	Part #	Qty
1	ATOMIZER MOTOR	SEE TABLE 1	1
2	DRUM MOTOR	SEE TABLE 2	1
3	WHL GUIDE .375ID X 2.50 X .875 NPRN	01-06-0004	2
4	PLUG STEEL 22MM	03-08-0130	1
5	SENS PROX 24VDC AB QC 875CPN8NP18P3	03-10-0147	1
6	PANEL CONTROL LPX TREATER (6 & 8 FOOT DRUMS)	SEE TABLE 3	1
7	ASSY STATIC MIXER LPX TREATER	04-03-0255	1
8	WDMT ADJ TREATER LEG	05-05-0001	4
9	WDMT CHAIN GRD LPX	05-06-0001	1
10	ASSY END CHUTE DOOR	05-07-0198	1
11	GRD DRUM INLET LOWER	05-10-0150	1
12	DISK ATOMIZER MOTOR	05-10-0805	1
13	SEAL BETWEEN FLANGES SMW TO TRTR	05-10-2463	4
14	GRD DRUM INLET LPX BOLTED	05-10-3931	1
15	GRD DRUM BTM FRNT HALF LPX	05-10-3993	1
16	GRD DRUM BTM REAR HALF LPX	05-10-3994	1
17	PLT CVR TREATER DSCHG	05-10-3800	1
18	BOLT, .250-20 X .750 UNC 18-8	06-01-0006	8
18*	BOLT, .250-20 X .750 UNC 18-8 (STAINLESS STEEL)	06-01-0003	8
19	BOLT .375-16 X 1.00 ZP GR5	06-01-0016	16
20	BOLT .375-16 X 1.75 ZP GR5	06-01-0019	2
21	BOLT .500-13 X .750 ZP GR5	06-01-0024	4
22	BOLT .500-13 X 3.25 ZP GR5	06-01-0029	8
23	BOLT, FLG .375-16 UNC ZP GRADE 5; 3/4" LG	06-01-0124	82
24	BOLT CRG .3125-18X.750 ZP SHORT NECK	06-01-0171	4
25	BOLT, FLG .375-16 UNC ZP GRADE 5; 1-1/4" LG	06-01-0189	8
26	BOLT FLG .500-13 X 1.250 ZP GR5	06-01-0232	4
27	NUT LOCK FLG .375-16 ZP GR5	06-03-0014	62
28	NUT LOCK FLG .500-13 ZP GR5	06-03-0015	12
29	NUT LOCK FLG .3125-18 ZP GR5	06-03-0019	4

LPX SEED TREATER

LPX SEED TREATER

TREATER		LPX 2000	
		8 FOOT	
Item #	Description	Part #	Qty
30	WSHR LOCK SPLT .375 ZP	06-04-0003	16
31	WASHER, .250 LOCK 316	06-04-0001	8
31*	WASHER, .250 LOCK 316 (STAINLESS STEEL)	06-04-0009	8
32	WSHR FLAT .500 ZP	06-05-0005	8
33	PIN CLIP HITCH 3.063 SIZE 9 ZP	06-09-0002	4
34	PIN CLVS .500 X 3.50 PLN	06-09-0005	4
35	SEAL BRSH 180 DEG 7.81 OR X 4.00 IR	06-10-0018	2
36	ASSY EXTENSION HOPPER	SEE TABLE 4	1
37	ASSY SEED METER WHEEL	SEE TABLE 5	1
38	ASSY BASE FRAME LPX (SEE PAGES 68-71)	18-01-0012	1
39	WDMT DRUM GRD LPX	18-01-0051	1
40	WDMT DRUM EXT GRD LPX	18-01-0054	1
41	ASSY ADJ CHMBR LPX	18-01-0062	1
42	ASSY ATOMIZER LPX	18-01-0069	1
42*	ASSY ATOMIZER LPX (STAINLESS STEEL)	18-01-0070	1
43	ASSY END CHUTE EXTENSION LPX	18-01-0072	1
44	WDMT INLET HOPPER LPX	18-01-0080	1
45	WDMT HEADACHE RACK SHORT	18-01-0081	1
46	WDMT DRUM EXT GRD MNT LPX	18-01-0082	1
47	WDMT HEADACHE RACK TALL	18-01-0083	1
48	ASSY GRD DRUM LPX RT GALV	18-01-0092	1
49	ASSY GRD DRUM LPX LT GALV	18-01-0095	1
50	WDMT FORKLIFT POCKET EXT	18-01-0107	2
51	WDMT END CHUTE LPX	18-01-0057	1
52	WDMT ENCL MNT LPX LARGE PNL	18-01-0155	1
53	ASSY DRUM LPX (SEE PAGE 74)	18-01-0046	1
53*	ASSY DRUM LPX-STAINLESS STEEL (SEE PAGE 74)	18-01-0047	1

LPX SEED TREATER

LPX SEED TREATER

TABLE 1	
Part #	Description
01-01-0105	MTR .33 HP 1725 RPM 56C 3PH TENV
01-01-0144	MTR .50 HP 1725 RPM 56C 575V TENV

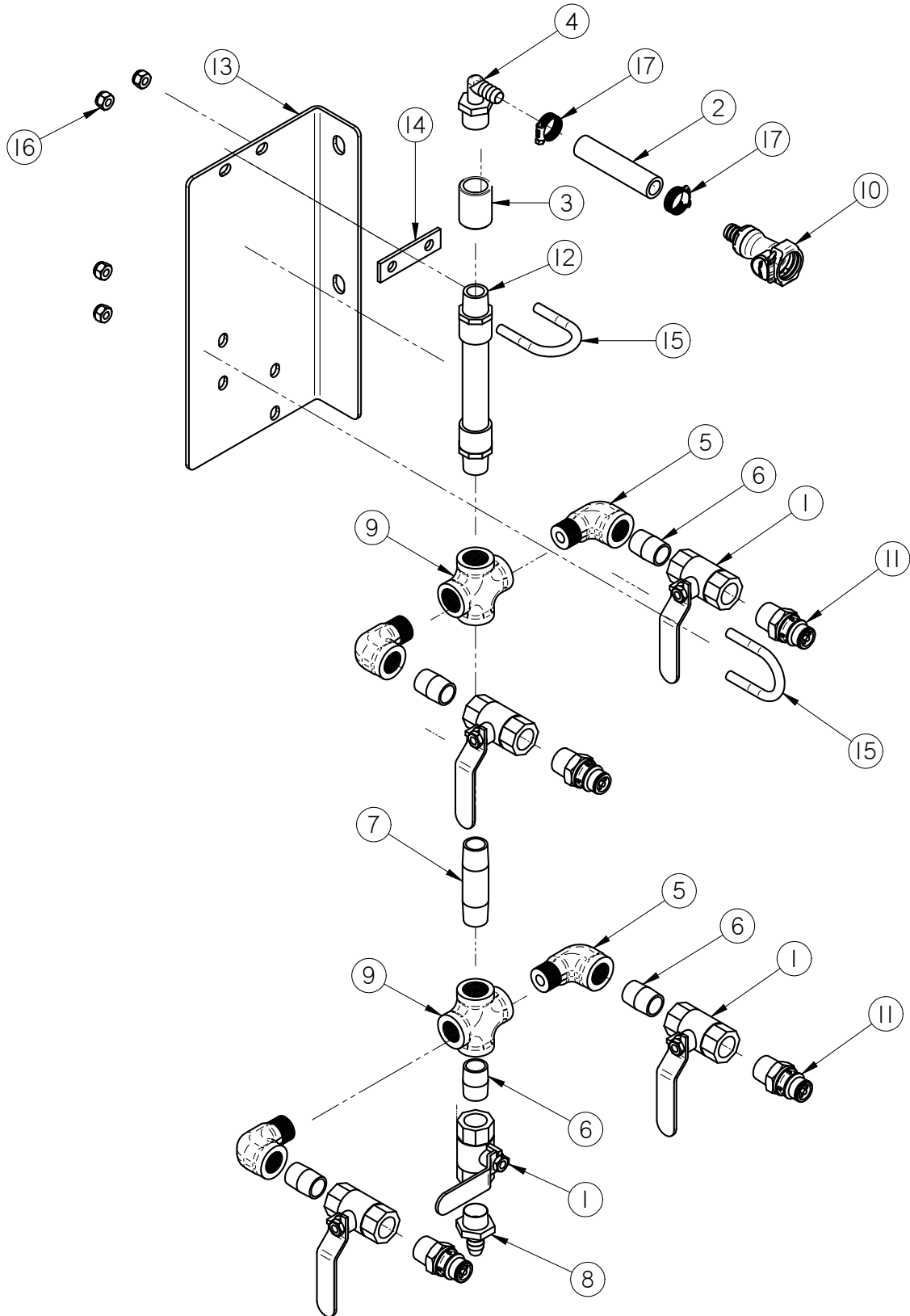
TABLE 2	
Part #	Description
01-01-0106	MTR 1.5 HP 1725 RPM TEFC 3PH
01-01-0146	MTR 1.5 HP 1740 RPM TEFC 56C 575V
01-01-0166	MTR 3.0 HP 1740 RPM 182TC TEFC 3PH
01-01-0175	MTR 3.0 HP 1800 RPM 182TC TEFC 575V

TABLE 3 (6 and 8 foot drums)	
Part #	Description
03-12-0462	PNL CNTL LPX TRTR AUTO 230V 1PH 1.5HP DRUM MTR (C2D2)
03-12-0464	PNL CNTL LPX TRTR AUTO 230V 3PH 1.5HP DRUM MTR (C2D2)
03-12-0466	PNL CNTL LPX TRTR AUTO 460V 3PH 1.5HP DRUM MTR (C2D2)
03-12-0468	PNL CNTL LPX TRTR AUTO 575V 3PH 1.5HP DRUM MTR (C2D2)
03-12-0470	PNL CNTL LPX TRTR MNL 230V 1PH 1.5HP DRUM MTR
03-12-0472	PNL CNTL LPX TRTR MNL 230V 3PH 1.5HP DRUM MTR
03-12-0474	PNL CNTL LPX TRTR MNL 460V 3PH 1.5HP DRUM MTR
03-12-0476	PNL CNTL LPX TRTR MNL 575V 3PH 1.5HP DRUM MTR
03-12-0480	PNL CNTL LPX TRTR AUTO 380V 3PH 1.5HP DRUM MTR
03-12-0482	PNL CNTL LPX TRTR MNL 380V 3PH 1.5HP DRUM MTR
03-12-0485	PNL CNTL LPX TRTR AUTO 230V 1PH 1.5HP DRUM MTR

TABLE 4	
Part #	Description
13-04-0043	INLET EXTENSION HOPPER - 12 INCH
13-04-0121	INLET EXTENSION HOPPER - 6 INCH

TABLE 5	
Part #	Description
13-04-0201	ASSY SEED METER WHL LPX /LPV 2000 230V 1PH
13-04-0222	ASSY SEED METER WHL LPX /LPV 2000 575V 3PH
13-04-0226	ASSY SEED METER WHL LPX /LPV 300 230V 1PH
13-04-0227	ASSY SEED METER WHL LPX /LPV 300 575V 3PH
13-04-0231	ASSY SEED METER WHL LPX /LPV 2000 380/460V 3PH
13-04-0232	ASSY SEED METER WHL LPX /LPV 300 380/460V 3PH

LPX SEED TREATER
LPX STATIC MIXER (04-03-0255)

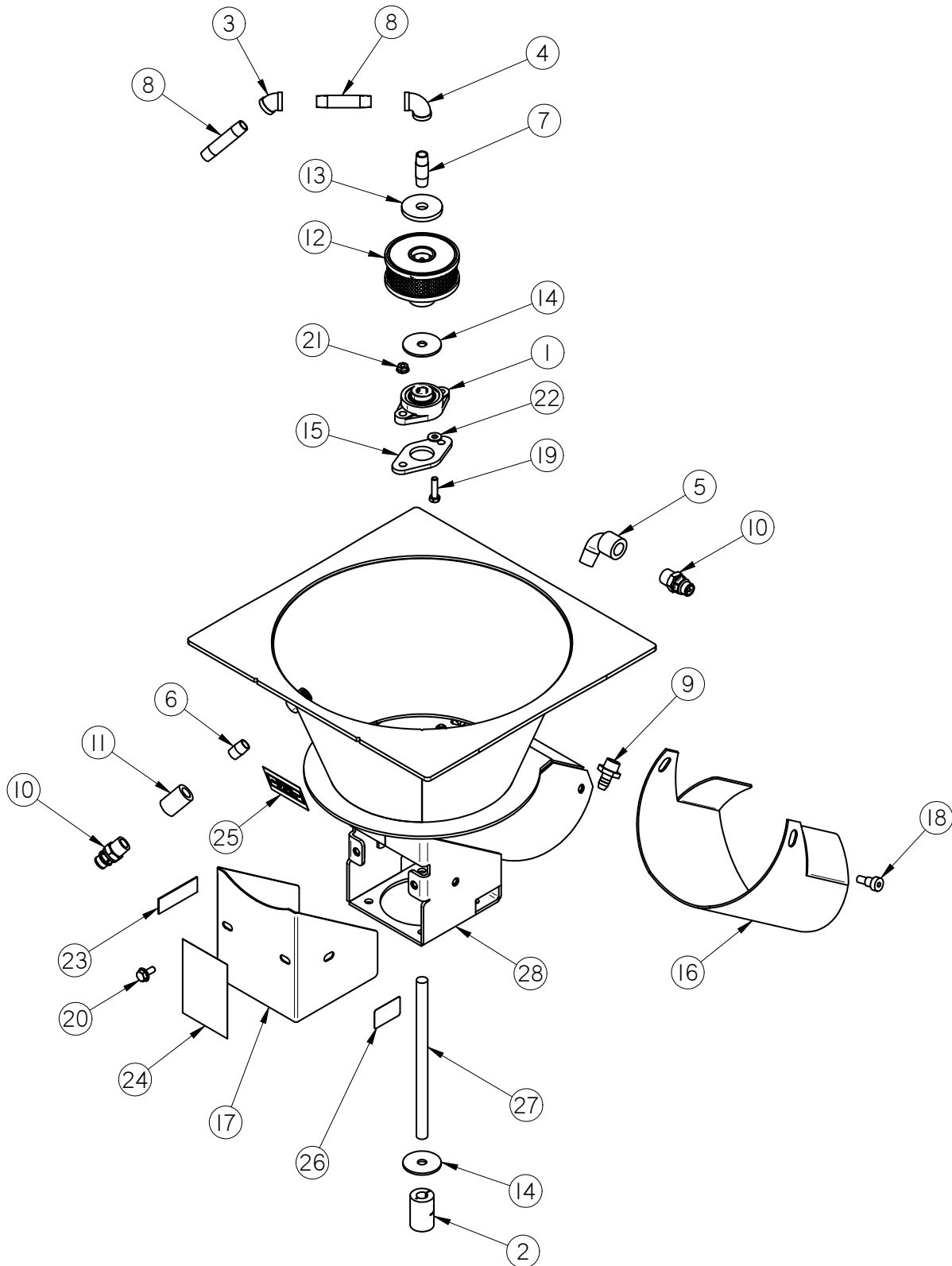


LPX SEED TREATER

LPX STATIC MIXER (04-03-0255)

Item #	Part #	Description	Qty
1	02-02-0006	.500-14 NPT X 2-WAY VALVE	5
2	02-03-0005	STTC MIXER TO ATMZR HOSE	1
3	02-05-0005	FTTG CPLG .500 NPT FM SS	1
4	02-06-0010	FTTG 90 DEG .500HB X .500NPT ML NYL	1
5	02-06-0020	FTTG 90 DEG STRT.500NPTX .500NPT SS	4
6	02-07-0007	FTTG NIP .500NPTX1.125 TBE SS CLOSE	5
7	02-07-0019	FTTG NIP .500 NPT X 3.00 TBE SS	1
8	02-08-0007	FTTG STGHT .500HB X .500NPT ML NYL	1
9	02-11-0001	FTTG CROSS .500 NPT FM SS	2
10	02-15-0013	FTTG CPLG .500 HB QCK DISC BODY	1
11	02-15-0014	FTTG CPLG .500 NPT QCK DISC INSERT	4
12	04-03-0030	MXR IL PVC 6ELEMENT .500PIPE X 7.00	1
13	05-10-2891	STATIC MIXER & MNFLD MNT BRKT	1
14	05-10-4277	SPCR STTC MXR MNT	1
15	06-01-0037	BOLT U .313-18 X 1.38 X 2.188 ZP	2
16	06-03-0002	NUT NYL LOCK .313-18 ZP GR5	4
17	06-07-0006	CLMP HOSE .500 TO .906 X .313W ZP	2

LPX SEED TREATER
LPX2000 ATOMIZER ASSEMBLY



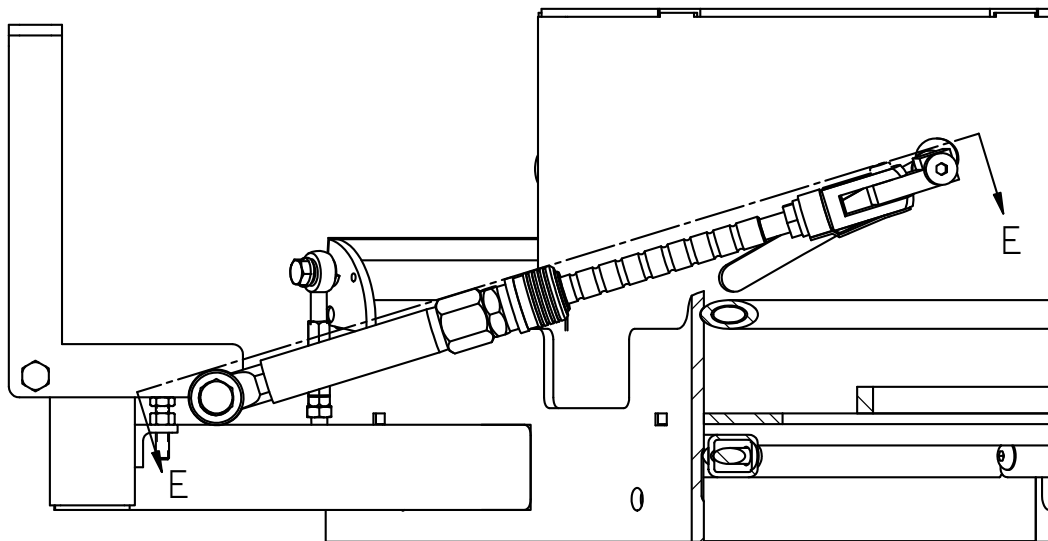
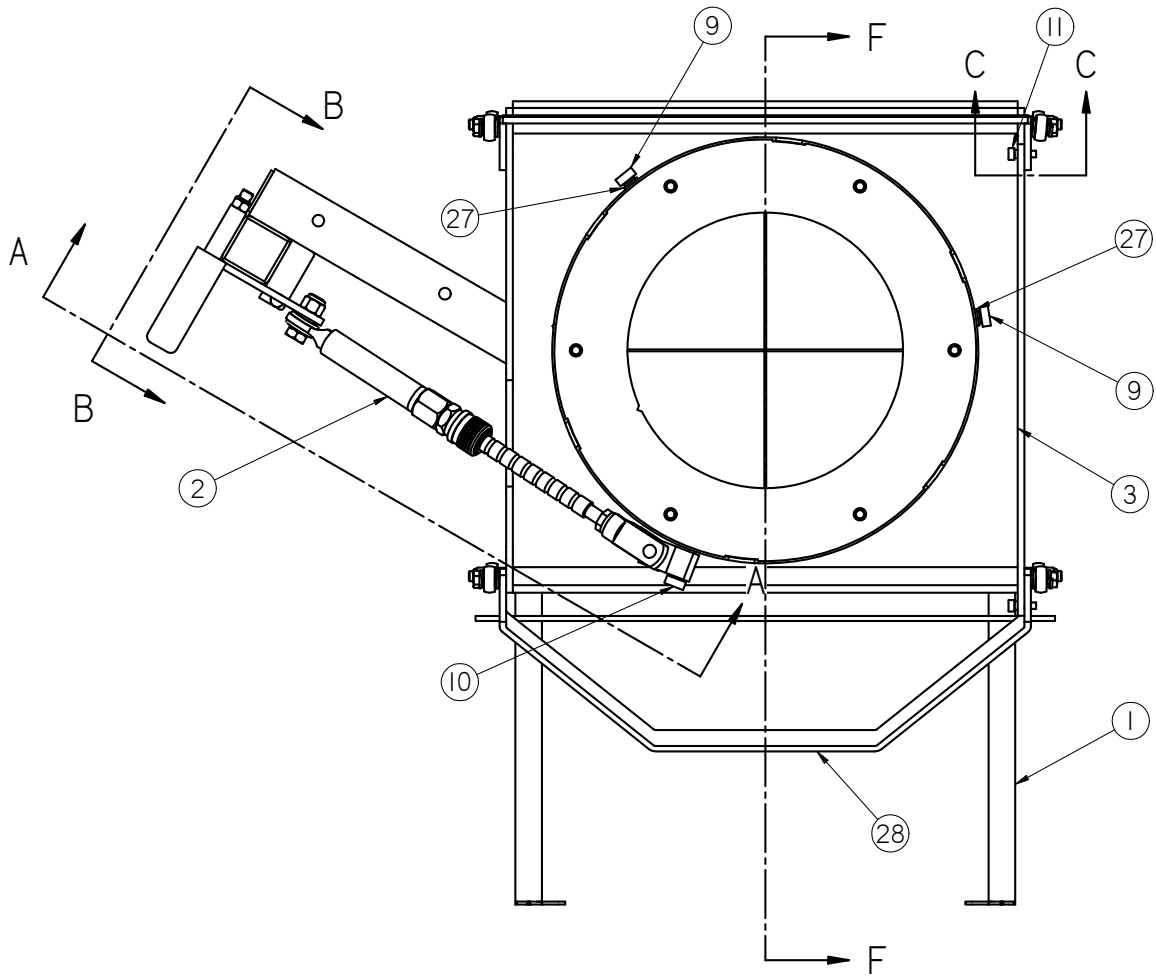
LPX SEED TREATER

LPX2000 ATOMIZER ASSEMBLY

LPX2000 ATOMIZER		18-01-0069		18-01-0070	
		CARBON STEEL		STAINLESS STEEL	
Item #	Description	Part #	Qty	Part #	Qty
1	BRG FLG MNT .625ID 3.875 BASE	01-03-0002	1	01-03-0002	1
2	CPLG CLPN .625 X .625 SPLT CS	01-07-0027	1	01-07-0027	1
3	ELBOW, .375-18 NPT, 45 DEG. SS	02-06-0007	1	02-06-0007	1
4	FTTG 90 DEG .375NPT FM SS	02-06-0008	1	02-06-0008	1
5	1/2-14 NPT,SL 90 DEG. BP	02-06-0017	1	02-06-0017	1
6	NIPPLE, .375 NPT SCH. 40 304 SS	02-07-0001	1	02-07-0001	1
7	FTTG NIP .375 NPT X 2.00 TBE SS	02-07-0003	1	02-07-0003	1
8	NIPPLE, 3/8-18 NPT X 3.00 SS	02-07-0020	2	02-07-0020	2
9	FTTG STGHT .500HB X .500NPT ML NYL	02-08-0007	1	02-08-0007	1
10	FTTG CPLG .500 NPT QCK DISC INSERT	02-15-0014	2	02-15-0014	2
11	FTTG CPLG RDCG .500NPT X .375NPT SS	02-16-0052	1	02-16-0052	1
12	ASSY,ATOMIZER HEAD,4" COTTON	04-02-0004	1	04-02-0004	1
13	DISC STD ATMZR HEAD CVR	05-10-0360	1	05-10-0360	1
14	LP2000 ATMZR EXT CHUTE FOR BRUSH	05-10-0366	1	05-10-2889	1
15	DISK ATOMIZER MOTOR	05-10-0805	2	05-10-0805	2
16	SEAL RBBR .625 FLG BRG	05-10-2462	1	05-10-2462	1
17	LP2000 MTR GUARD FLEX CPLG	05-10-2816	1	05-10-4029	1
18	BOLT SHLD .500SHX.375-16X.500 GR5	06-01-0056	2	06-01-0056	2
19	BOLT .313-18 X 1.25 ZP GR5	06-01-0102	2	06-01-0102	2
20	BOLT, FLG .375-16 UNC ZP GRADE 5; 3/4" LG	06-01-0124	4	06-01-0124	4
21	NUT LOCK FLG .3125-18 ZP GR5	06-03-0019	2	06-03-0019	2
22	WASHER, FLAT .250	06-05-0001	2	06-05-0001	2
23	LBL ATWK PATENT DECAL-ATMZR	09-01-0107	1	09-01-0107	1
24	ATWK LBL DANGER GUARDS	09-02-0002	1	09-02-0002	1
25	ATWK LBL GRS 40HRS	09-02-0004	1	09-02-0004	1
26	ATWK LBL ROTATION ARROW	09-02-0013	1	09-02-0013	1
27	SHAFT DRV ATMZR LPX2000	101FAF	1	101FAF	1
28	WDMT ATMZR LPX2000 CS	18-01-0065	1	18-01-0066	1

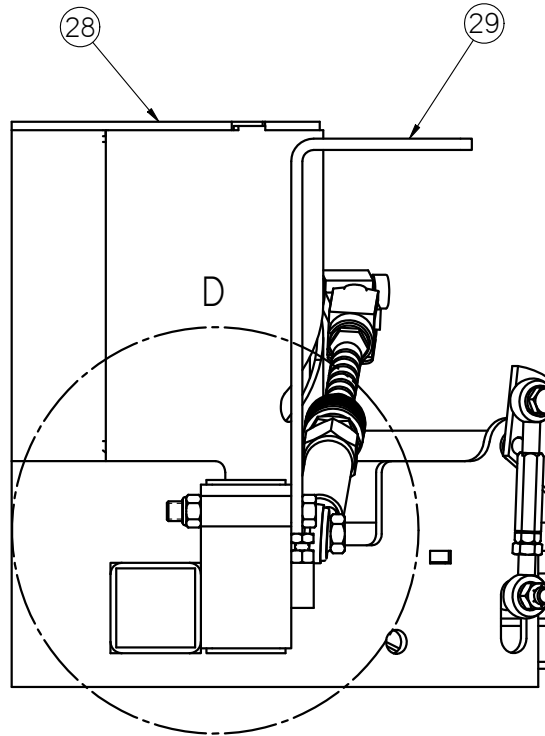
LPX SEED TREATER

LPX2000 ADJUSTABLE CHAMBER ASSEMBLY

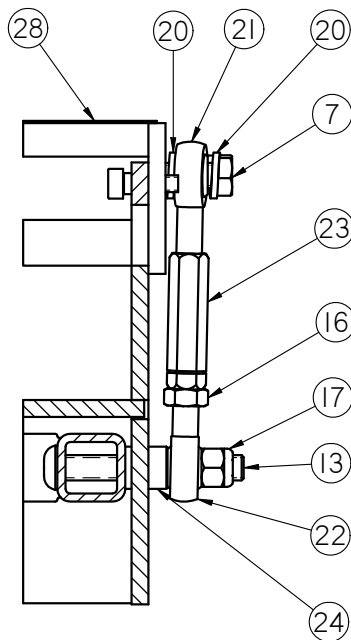


SECTION A-A

LPX SEED TREATER
LPX2000 ADJUSTABLE CHAMBER ASSEMBLY

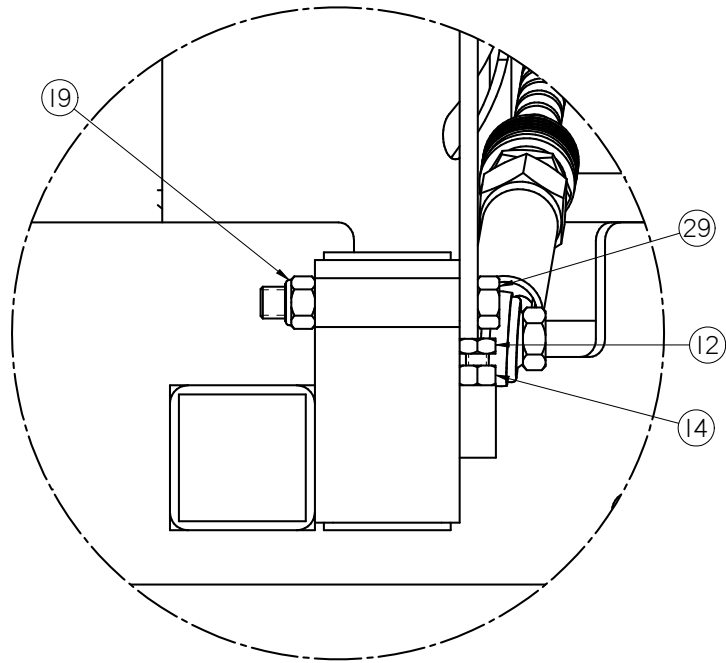


SECTION B-B

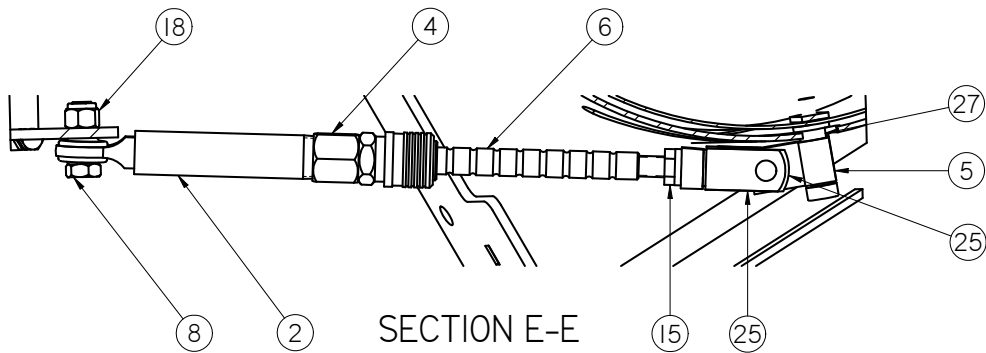


SECTION C-C

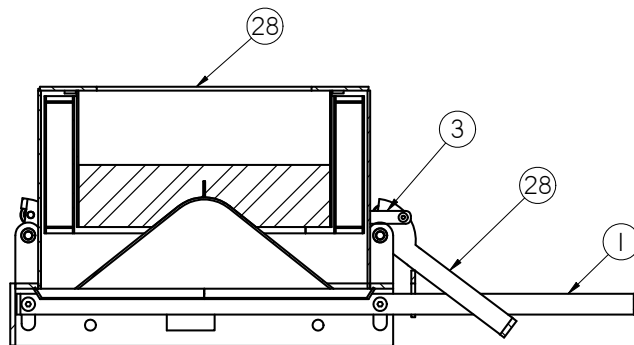
LPX SEED TREATER
LPX2000 ADJUSTABLE CHAMBER ASSEMBLY



DETAIL D



SECTION E-E



SECTION F-F

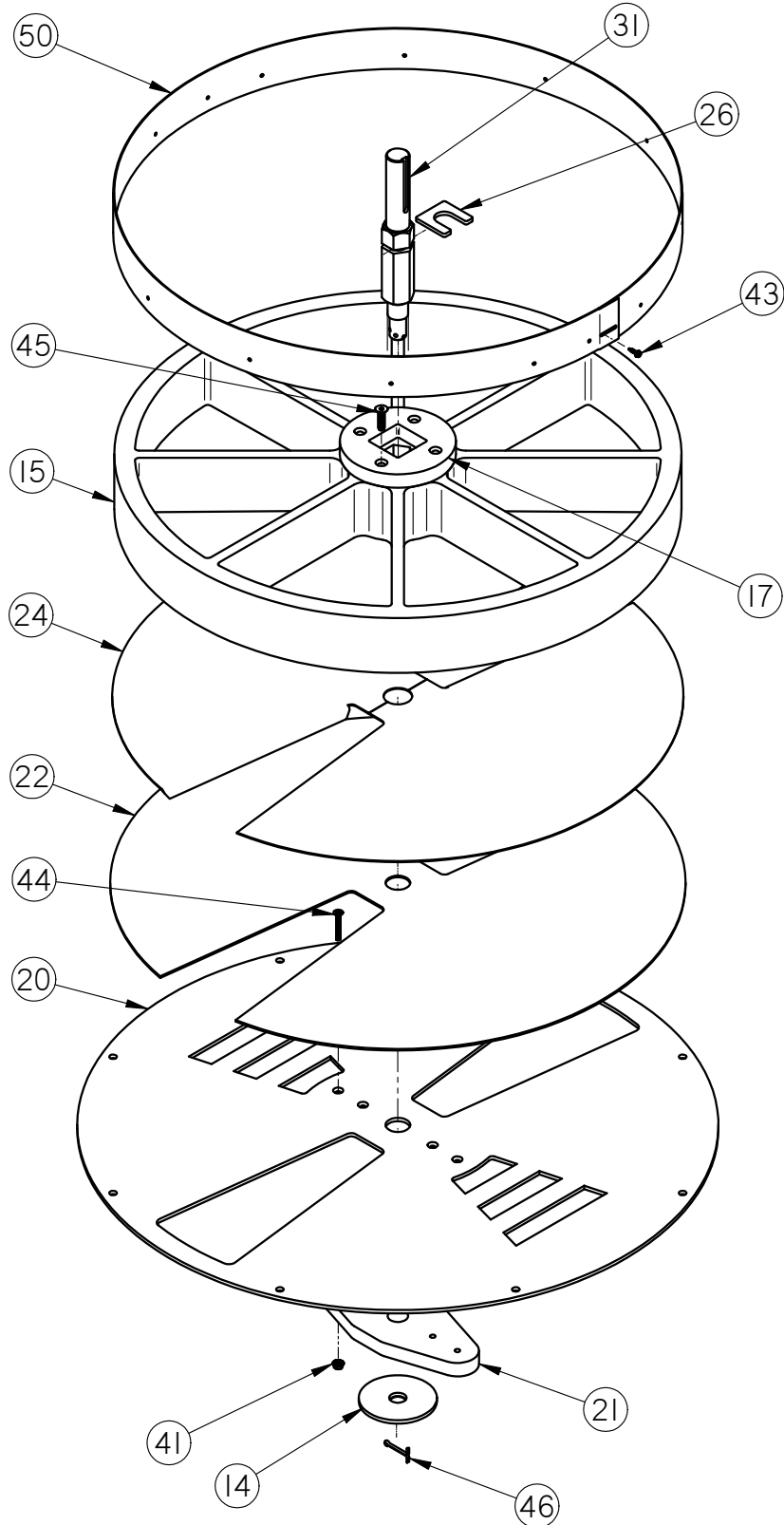
LPX SEED TREATER

LPX2000 ADJUSTABLE CHAMBER ASSEMBLY

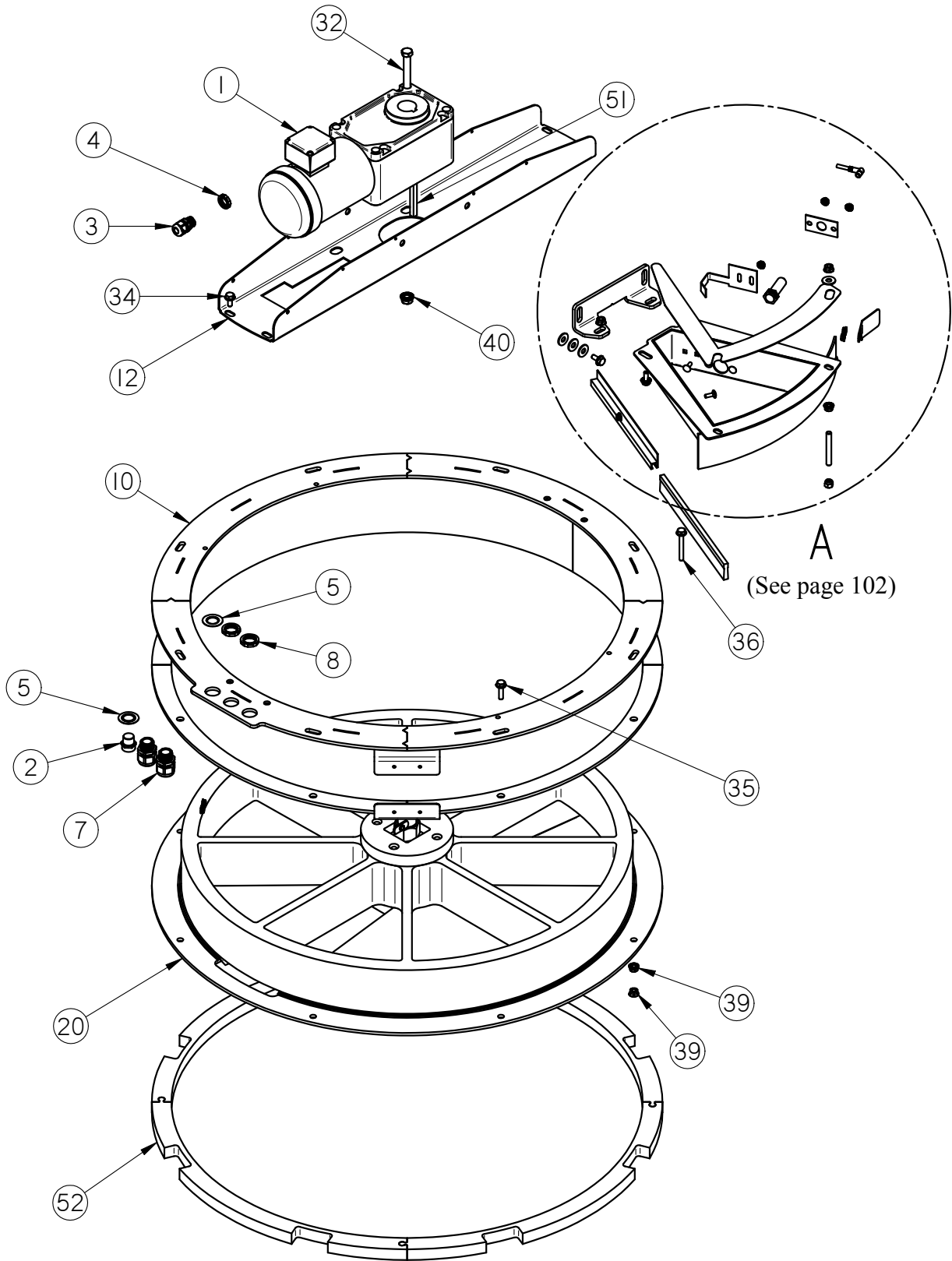
LPX2000 ADJUSTABLE CHAMBER		18-01-0062		18-01-0139	
		CARBON STEEL		STAINLESS STEEL	
Item #	Description	Part #	Qty	Part #	Qty
1	WDMT,CHAMBER SUPPORT BRK SS	05-03-0336	1	05-03-0336	1
2	WDMT FLOW SLV ROD END TUBE	05-04-0012	1	05-04-0012	1
3	BAR ECNTRC CONNECTING CS	05-10-2062	1	05-10-2062	1
4	CPLG QCK CONNECT MACH	05-11-0029	1	05-11-0029	1
5	BRKT FLOW CNTL CLEVIS	05-11-0030	1	05-11-0030	1
6	ROD FLOW STOP ADJ	05-11-0034	1	05-11-0034	1
7	BOLT .375-16 X 1.00 ZP GR5	06-01-0016	4	06-01-0016	4
8	BOLT .500-13 X 1.50 ZP GR5	06-01-0025	1	06-01-0025	1
9	BOLT SHLD .500SHX.375-16X.500 GR5	06-01-0056	2	06-01-0056	2
10	BOLT SHLD .500SHX.375-16X1.50 GR5	06-01-0057	1	06-01-0057	1
11	BOLT SHLD .313SHX.250-20X.375 GR5	06-01-0081	2	06-01-0081	2
12	BOLT .313-18 X 1.25 ZP GR5	06-01-0102	1	06-01-0102	1
13	BOLT .375-16 X 2.75 ZP GR5	06-02-0002	4	06-02-0002	4
14	NUT FULL .313-18 ZP GR5	06-02-0015	1	06-02-0015	1
15	NUT JAM .500-20 ZP GR5	06-02-0035	1	06-02-0035	1
16	NUT, .375-24 UNF ZP GRADE 5	06-03-0003	4	06-03-0003	4
17	NUT NYL LOCK .375-16 ZP GR5	06-03-0004	4	06-03-0004	4
18	NUT NYL LOCK .500-13 ZP GR5	06-03-0006	1	06-03-0006	1
19	NUT NYL LOCK .438-14 ZP GR5	06-04-0003	1	06-04-0003	1
20	WSHR LOCK SPLT .375 ZP	06-06-0087	8	06-06-0087	8
21	REND .375-24 BALL RH	06-12-0002	4	06-12-0002	4
22	REND .375-24 BALL RH	06-12-0003	4	06-12-0003	4
23	NUT, .375-24 x 2,ALUM RH_LH CONNECT	06-12-0006	4	06-12-0006	4
24	BUSH DRILL.375ID X .625OD X .625	06-12-0007	4	06-12-0007	4
25	CLVS .500-20 X .500	06-12-0008	1	06-12-0008	1
26	PIN CLIP SPRING .500	06-12-0009	1	06-12-0009	1
27	BUSH FLG BRZ .500ID X .625OD X .375	06-12-0012	3	06-12-0012	3
28	WDMT ADJ CHMBR LPX2000	18-01-0060	1	18-01-0141	1
29	WDMT FLOW SLV HNDL LPX	18-01-0108	1	18-01-0108	1

LPX SEED TREATER

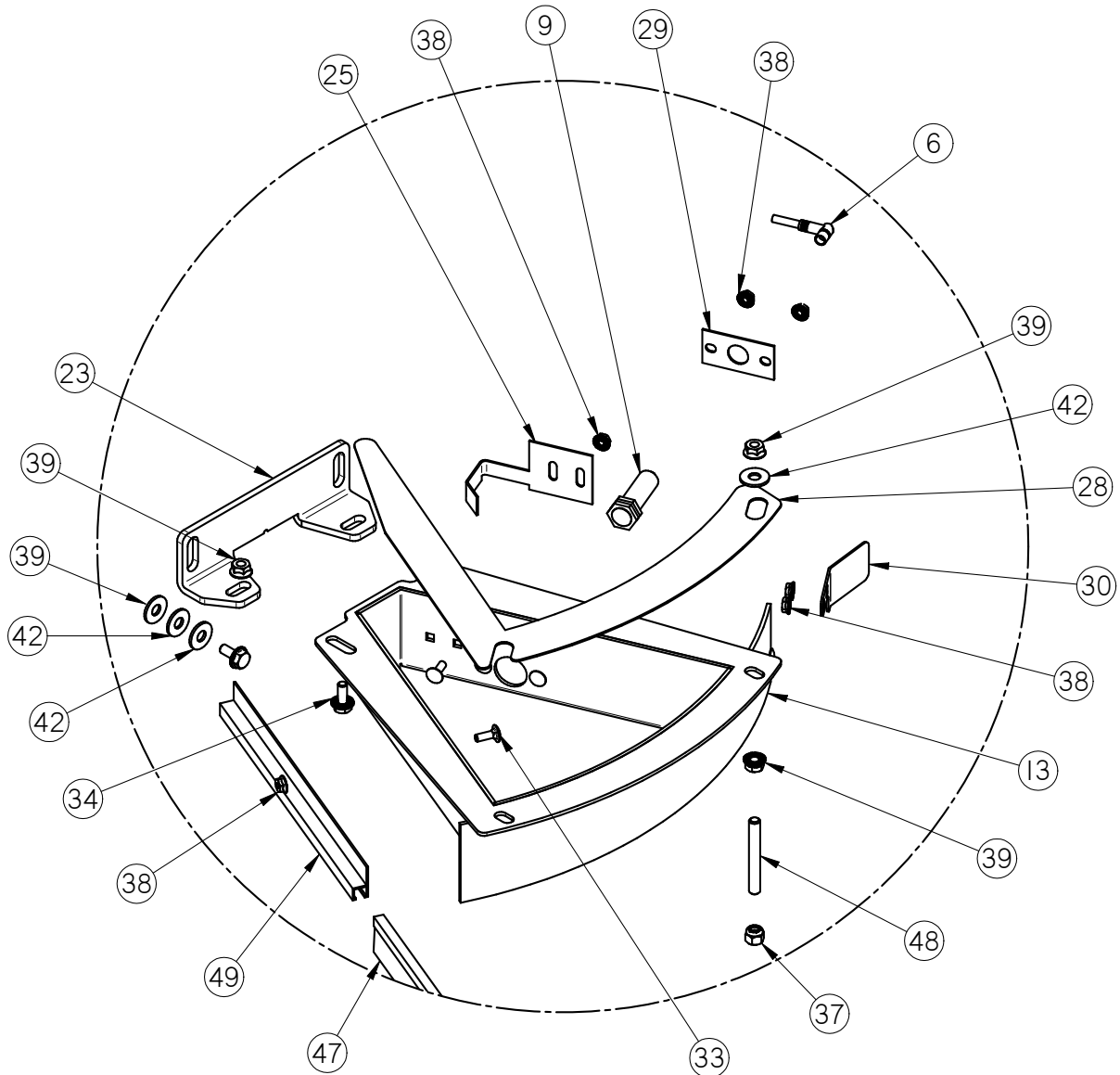
LPX2000 SEED WHEEL ASSEMBLY (13-04-0201)



LPX SEED TREATER
LPX2000 SEED WHEEL ASSEMBLY (13-04-0201)

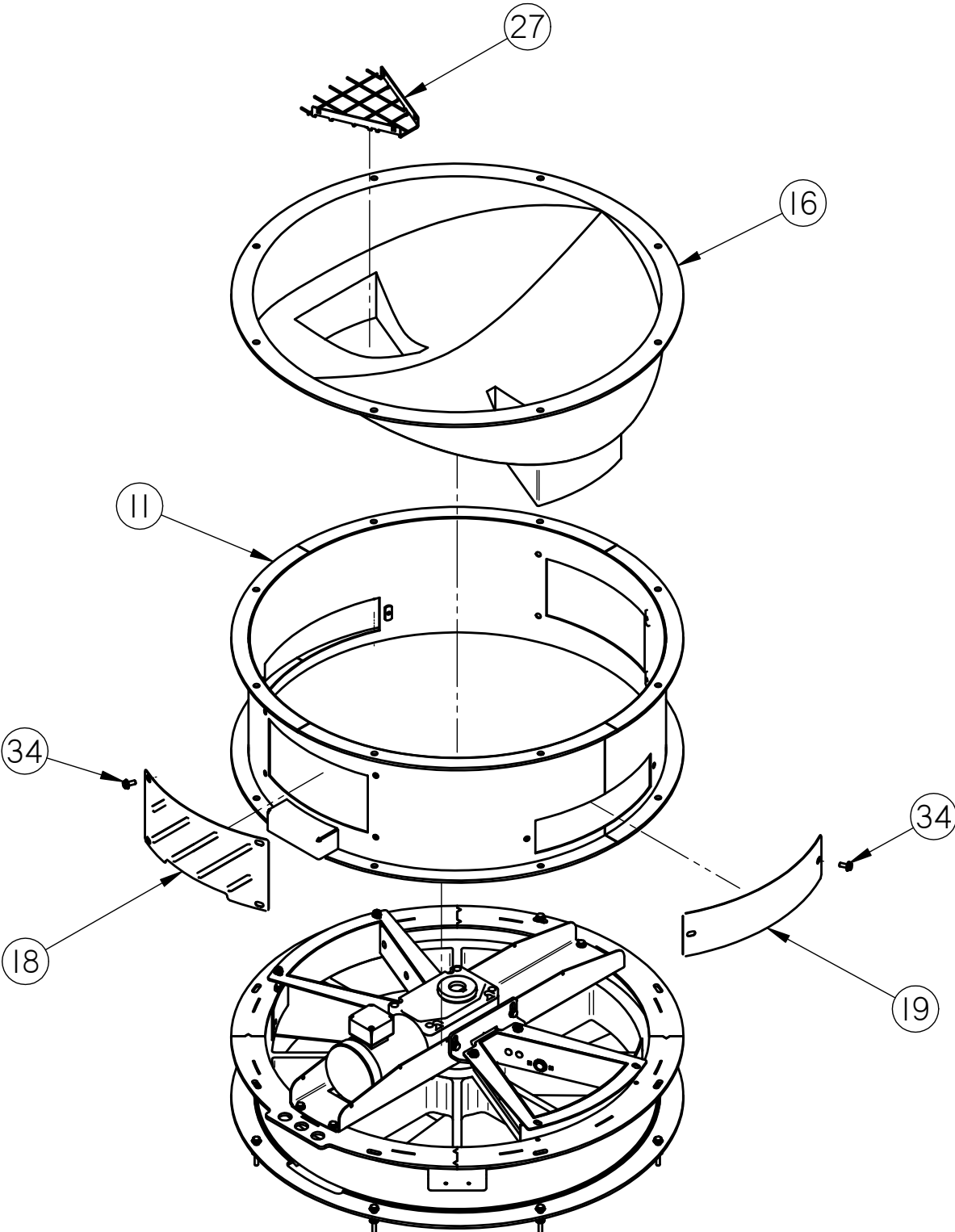


LPX SEED TREATER
LPX2000 SEED WHEEL ASSEMBLY (13-04-0201)

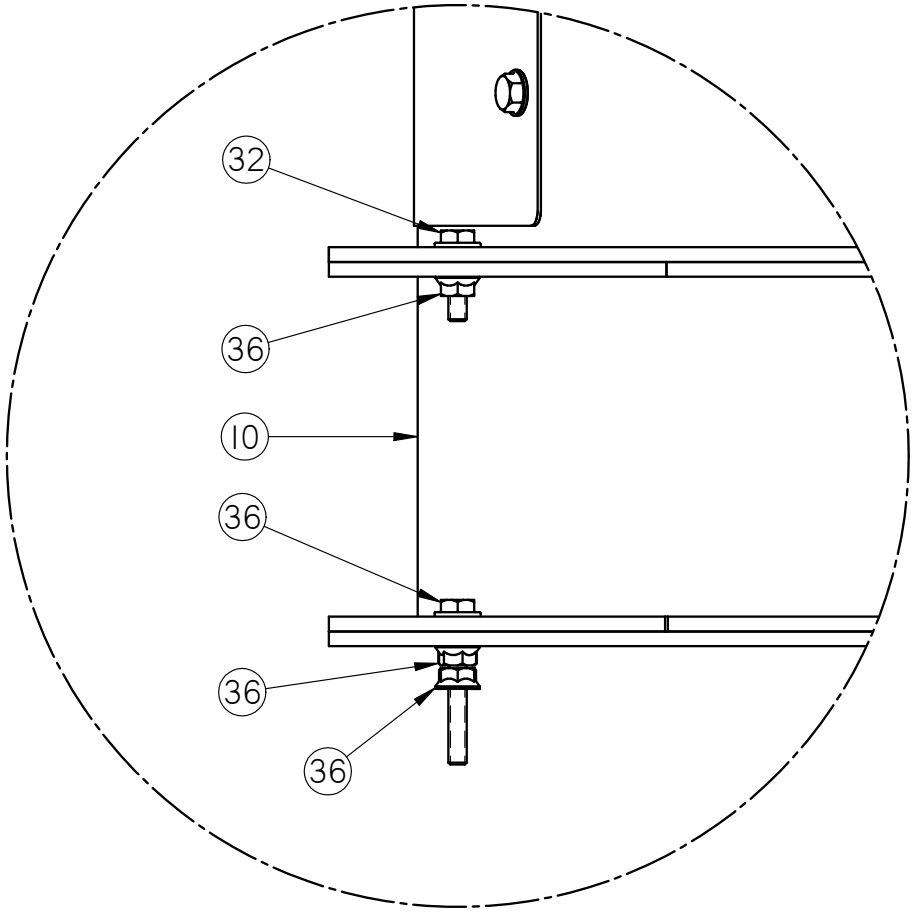
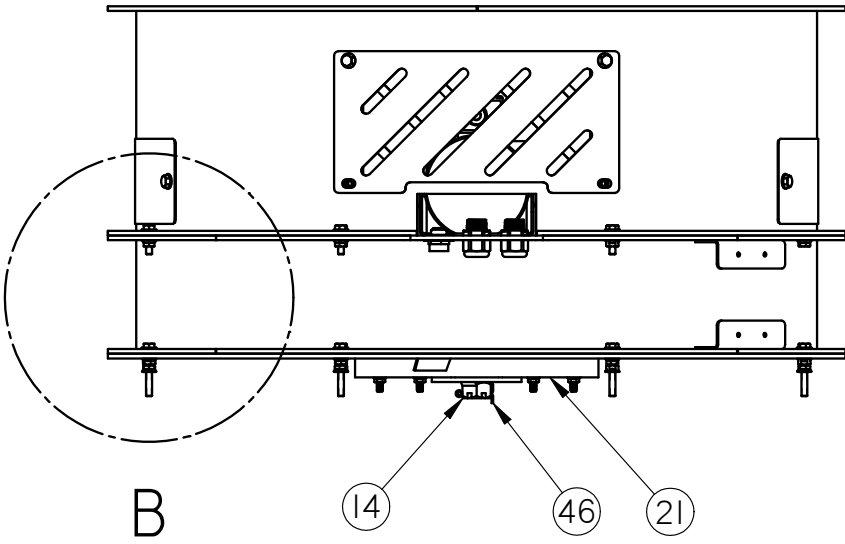


DETAIL A

LPX SEED TREATER
LPX2000 SEED WHEEL ASSEMBLY (13-04-0201)



LPX SEED TREATER
LPX2000 SEED WHEEL ASSEMBLY (13-04-0201)



DETAIL B

LPX SEED TREATER

LPX2000 SEED WHEEL ASSEMBLY (13-04-0201)

Item #	Part #	Description	Qty
1	01-01-0229	GMTR RA .50 HP 11RPM 3PH HLLW SHAFT	1
2	03-06-0111	RECP TURCK RSF 44-1/M20/S717/S4000	1
3	03-08-0299	CONN CG 0.5NPT .170-.450 3232LTF	1
4	03-08-0308	NUT NYLOC .500 NPT 8464	1
5	03-08-0348	WSHR RDCG CNDT .75 X .5	2
6	03-08-0355	CONN TRCK PKW 3M-5-RS 4/S760/S771	2
7	03-08-0356	CONN CG .75 NPT M3234GBJ LTCG	2
8	03-08-0357	NUT NYLON.75 NPT 8465	2
9	03-10-0147	SENS PROX 24VDC AB QC 875CPN8NP18P3	2
10	05-03-0164	WDMT SEED METER BODY EXTEN	1
11	05-03-0169	WDMT SEED METER EXTENSION	1
12	05-03-0232	WDMT SMW UPPER BRG BRKT	1
13	05-03-0240	WDMT SMW BRSH PCKT	2
14	05-04-0049	WDMT SEED WHEEL SHAFT NUT	1
15	05-07-0196	MOLDED SEED WHEEL INSERT	1
16	05-07-0197	HPPR SMW DUAL DSCHG ROTO-MLDD	1
17	05-07-0203	MOLDED SEED WHEEL INSERT TOP	1
18	05-10-0890	CVR #1 SEED METER	2
19	05-10-0891	CVR #2 SEED METER	2
20	05-10-0893	PLATE SUPPORT SEED METER STEEL	1
21	05-10-1213	SUPP BTM BRG UHMW SEED METER	1
22	05-10-1306	PAD SEED WHL FOAM RBBR FLOATING	1
23	05-10-1392	BRKT SMW BRSH PCKT HLDR	2
24	05-10-1426	14GA WEAR SPLATE HALF	2
25	05-10-1449	PLT SMW CTR HUB WIPER	2
26	05-10-1588	PLT SHAFT CLIP SMW	1
27	05-10-1872	GRD SMW INLET HOPP PCKT	2
28	05-10-2166	CVR TEST	2
29	05-10-3316	SMW PROX SW HOLDER	2
30	05-10-4192	PLT SMW POCKET SCRAPER	2
31	05-11-0075	DRIVE SHAFT 1.4375 SHAFT	1
32	06-01-0106	BOLT .500-13 X 5.50 ZP GR5	1
33	06-01-0122	BOLT, CARRIAGE, .250-20x.75 G5 ZP	18
34	06-01-0124	BOLT FLG .375-16 X .750 ZP GR5	18
35	06-01-0189	BOLT FLG .375-16 X 1.250 ZP GR5	1

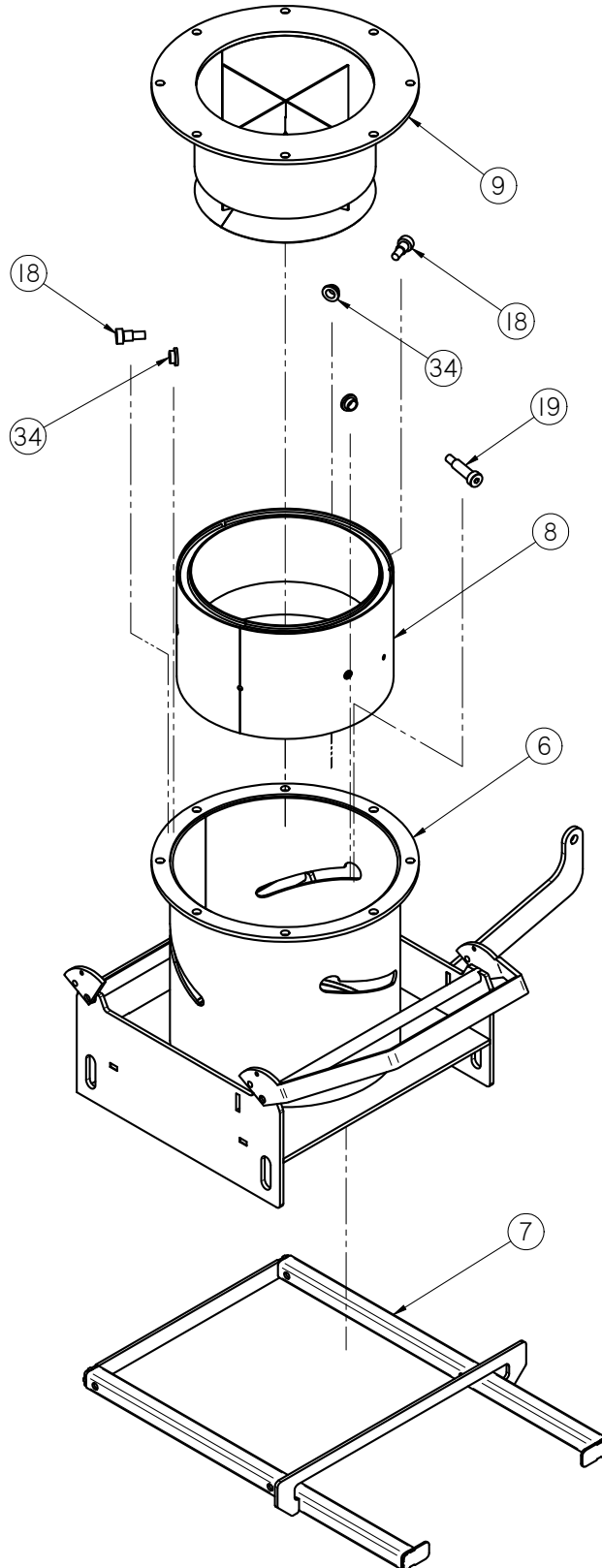
LPX SEED TREATER

LPX2000 SEED WHEEL ASSEMBLY (13-04-0201)

Item #	Part #	Description	Qty
36	06-01-0204	BOLT FLG .375-16 X 2.50 ZP GR5 FTH	8
37	06-03-0003	NUT NYL LOCK .375-16 ZP GR5	3
38	06-03-0013	NUT,LOCK, FLG .250-20 ZP SERRATTED	26
39	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	12
40	06-03-0015	NUT LOCK FLG .500-13 ZP GR5	1
41	06-03-0019	NUT LOCK FLG .3125-18 ZP GR5	1
42	06-05-0004	WSHR FLAT .375 ZP	10
43	06-06-0023	SCRW, SELF TAPPING, 10-16 ZP X .750	14
44	06-06-0046	SCRW .313-18 X 2.0 ZP FLAT HD PHLP	1
45	06-06-0070	SCRW MACH .375-16 X 1.50 SH FLHD BO	1
46	06-09-0023	PIN CTTR .188 X 2.00 ZP	1
47	06-10-0019	SEAL BRSH 12.75 OAL 1IN EXP LG	2
48	06-14-0013	STUD .375-16 ZP X 3 IN LG ZP	3
49	100118	HOLDER BRUSH SMW	2
50	101BC9	PSM SMW GALV RING	1
51	11-13-0004	KEYSTOCK 3/8 X 3/8 CS	1
52	13-04-0058	KIT SMW SCL CALB	1

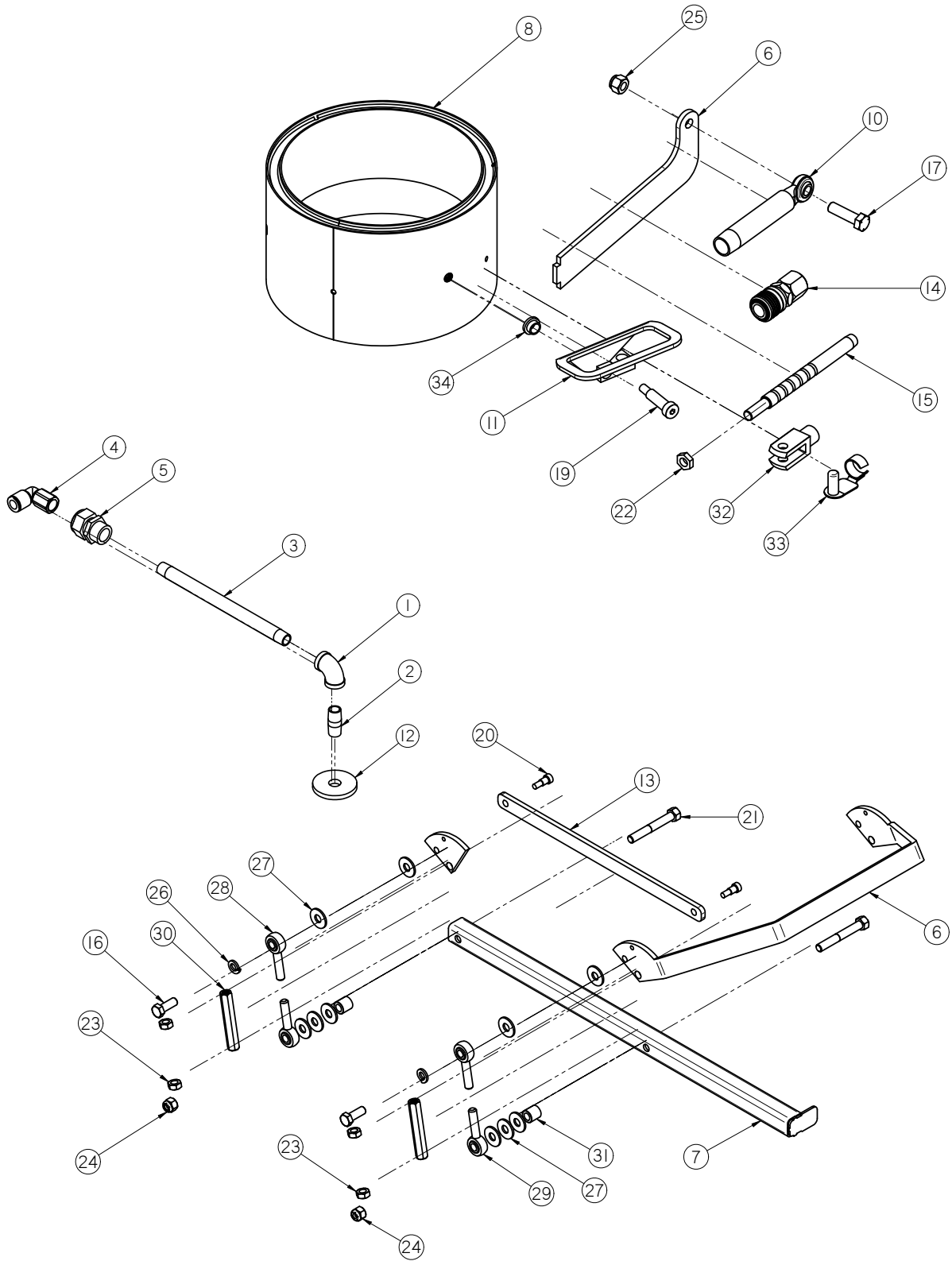
LPX SEED TREATER

LPX300 ADJUSTABLE CHAMBER ASSEMBLY (04-01-0038)



LPX SEED TREATER

LPX300 ADJUSTABLE CHAMBER ASSEMBLY (04-01-0038)

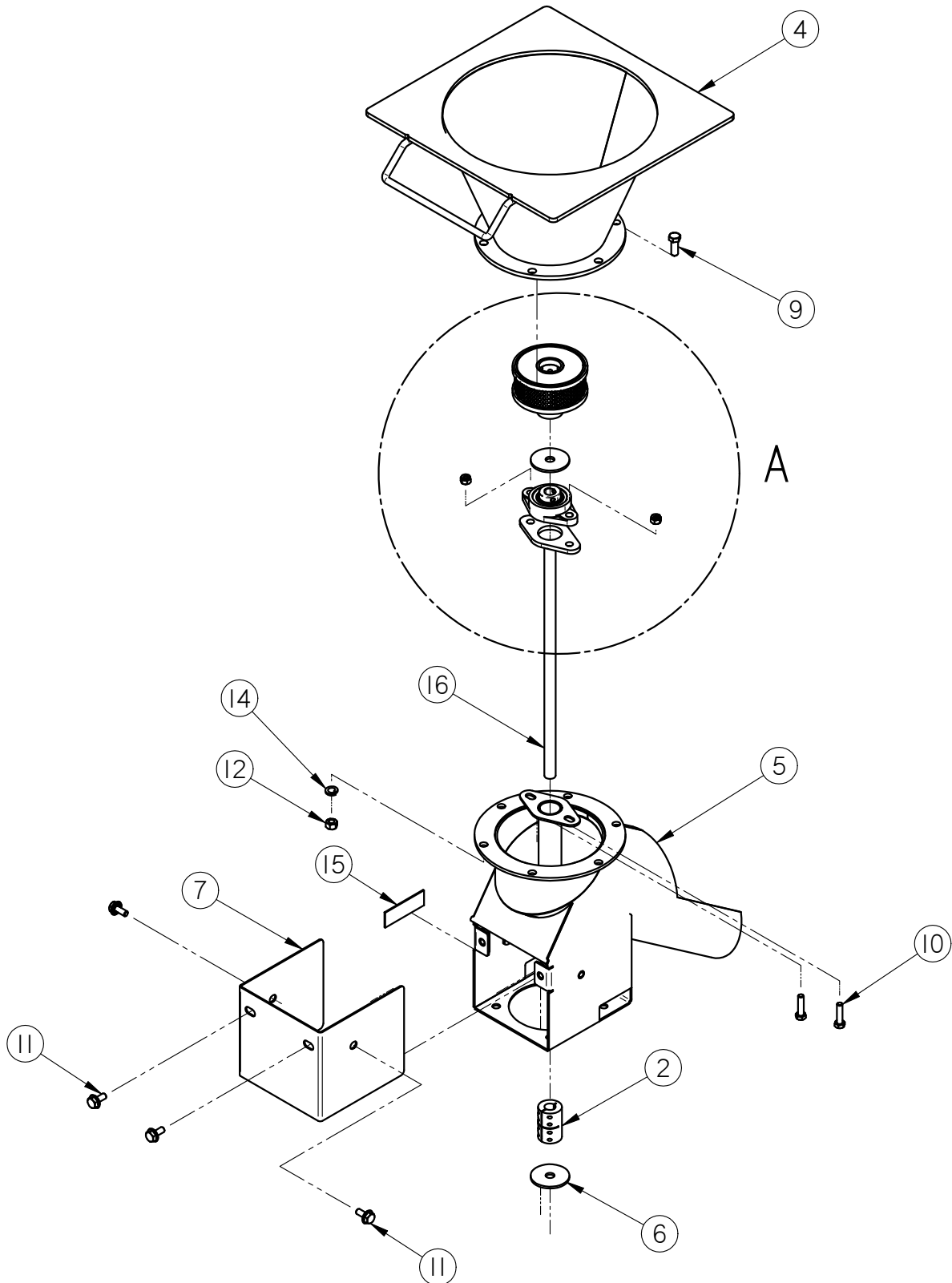


LPX SEED TREATER

LPX300 ADJUSTABLE CHAMBER ASSEMBLY (04-01-0038)

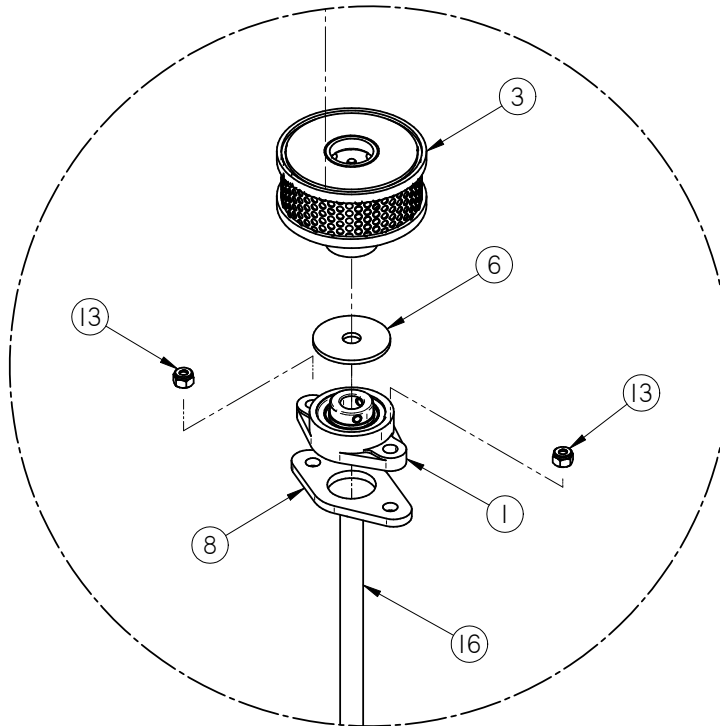
Item #	Part #	Description	Qty
1	02-06-0008	FTTG 90 DEG .375NPT FM SS	1
2	02-07-0002	FTTG NIP .375 NPT X 1.50 TBE SS	1
3	02-07-0056	NIPPLE, .375-14 NPT X 9 304SS	1
4	02-16-0025	FTTG PUSH 90 DEG .500OD X .375 FPT	1
5	03-08-0035	CONN CG BL NYL .750NPT .675-.750 RA	1
6	05-03-0833	WDMT ADJ CHMBR LP300	1
7	05-03-0836	WDMT ATMZR SUPP BRKT LP300	1
8	05-03-0837	WDMT FLOW SLV LP300	1
9	05-03-0838	WDMT FLOW CONE LP300	1
10	05-04-0012	WDMT FLOW SLV ROD END TUBE	1
11	05-04-0037	WDMT ADJ CHMBR PULL	1
12	05-10-0360	DISC STD ATMZR HEAD CVR	1
13	05-10-3608	BRKT ECCENTRIC CONN LP300	2
14	05-11-0029	CPLG QCK CONNECT MACH	1
15	05-11-0286	ROD FLOW STOP ADJ LP300	1
16	06-01-0016	BOLT .375-16 X 1.00 ZP GR5	4
17	06-01-0054	BOLT .500-13 X 1.75 ZP GR5	1
18	06-01-0056	BOLT SHLD .500SHX.375-16X.500 GR5	2
19	06-01-0057	BOLT SHLD .500SHX.375-16X1.50 GR5	1
20	06-01-0081	BOLT SHLD .313SHX.250-20X.375 GR5	4
21	06-01-0116	BOLT .375-16 X 2.75 ZP GR5	4
22	06-02-0015	NUT JAM .500-20 ZP GR5	1
23	06-02-0035	NUT, .375-24 UNF ZP GRADE 5	8
24	06-03-0003	NUT NYL LOCK .375-16 ZP GR5	4
25	06-03-0004	NUT NYL LOCK .500-13 ZP GR5	1
26	06-04-0003	WSHR LOCK SPLT .375 ZP	4
27	06-05-0004	WSHR FLAT .375 ZP	20
28	06-12-0002	REND .375-24 BALL RH	4
29	06-12-0003	REND .375-24 BALL RH	4
30	06-12-0004	ROD CTNG .375-24 X 3.00 LR RH FM	4
31	06-12-0007	BUSH DRILL.375ID X .625OD X .625	4
32	06-12-0008	CLVS .500-20 X .500	1
33	06-12-0009	PIN CLIP SPRING .500	1
34	06-12-0012	BUSH FLG BRZ .500ID X .625OD X .375	3

LPX SEED TREATER
LPX300 CS ATOMIZER ASSEMBLY (04-01-0037)



LPX SEED TREATER

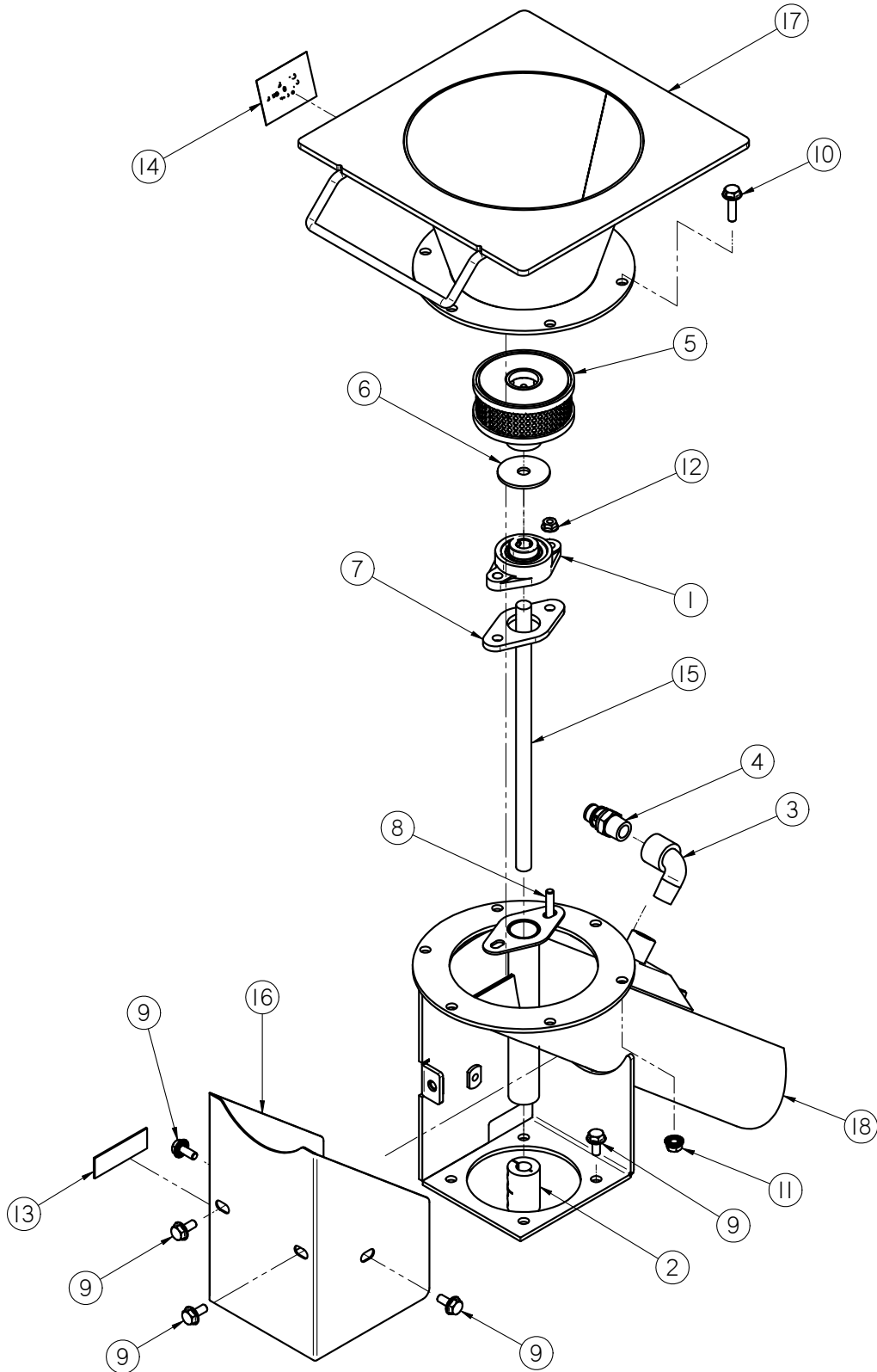
LPX300 CS ATOMIZER ASSEMBLY (04-01-0037)



DETAIL A

Item #	Part #	Description	Qty
1	01-03-0002	BRG FLG MNT .625ID 3.875 BASE	1
2	01-07-0027	CPLG CLPN .625 X .625 SPLT CS	1
3	04-02-0004	ASSY,ATOMIZER HEAD,4" COTTON	1
4	05-03-0834	WDMT,ATOMIZER CHAMBER CS	1
5	05-07-0148	WDMT,OUTLET CHUTE CS	1
6	05-10-0805	DISK ATOMIZER MOTOR	2
7	05-10-1904	ATOMIZER MTR GUARD LP300	1
8	05-10-2462	SEAL RBBR .625 FLG BRG	1
9	06-01-0016	BOLT .375-16 X 1.00 ZP GR5	10
10	06-01-0102	BOLT .313-18 X 1.25 ZP GR5	2
11	06-01-0124	BOLT, FLG .375-16 UNC ZP GRADE 5; 3/4" LG	4
12	06-02-0003	NUT FULL .375-16 ZP GR5	6
13	06-03-0002	NUT NYL LOCK .313-18 ZP GR5	2
14	06-04-0003	WSHR LOCK SPLT .375 ZP	10
15	09-01-0107	LBL ATWK PATENT DECAL-ATMZR	1
16	11-07-0077	101383	1

LPX SEED TREATER
LPX300 SS ATOMIZER ASSEMBLY (18-01-0202)

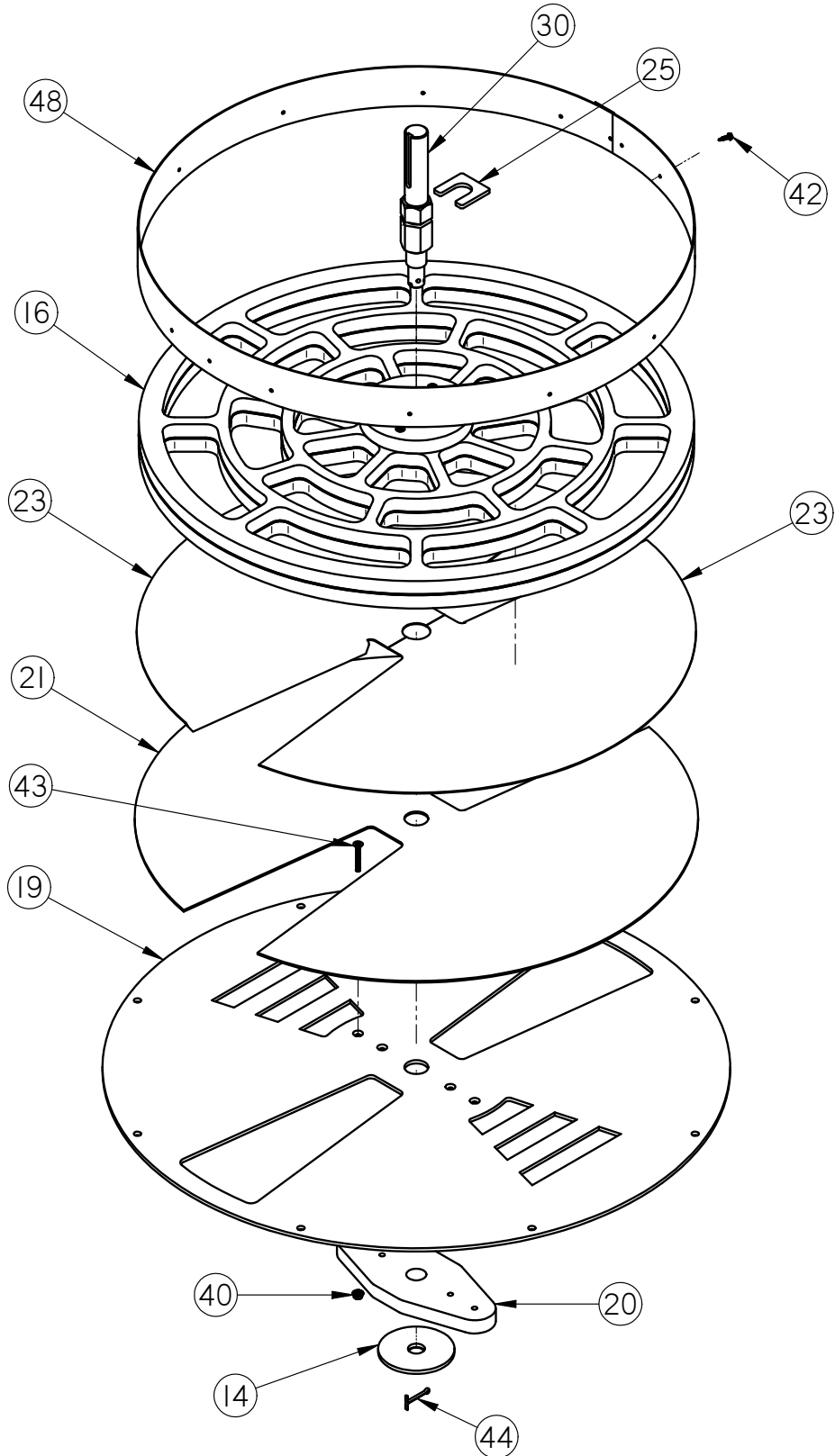


LPX SEED TREATER

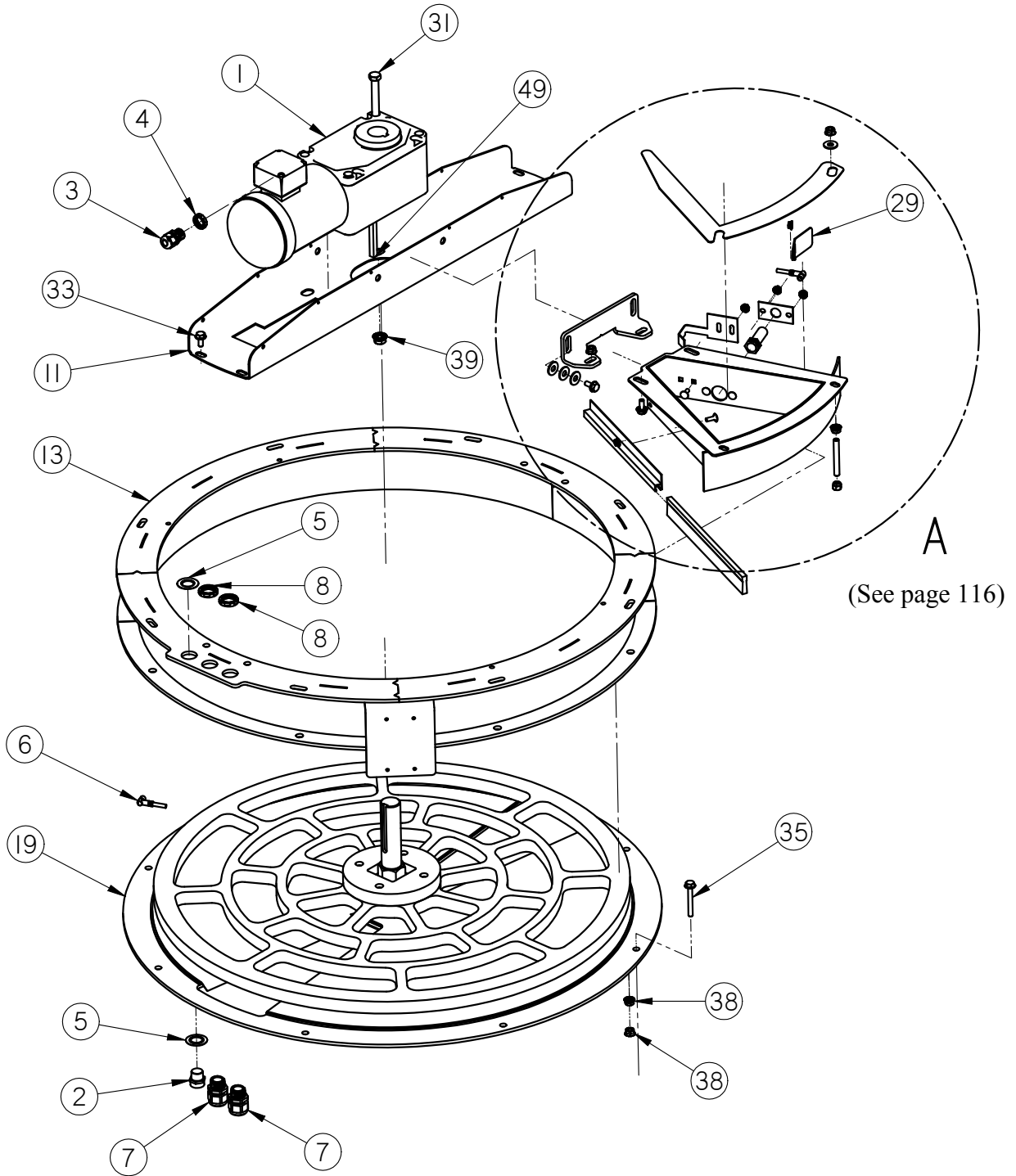
LPX300 SS ATOMIZER ASSEMBLY (18-01-0202)

Item #	Part #	Description	Qty
1	01-03-0002	BRG FLG MNT .625ID 3.875 BASE	1
2	01-07-0027	CPLG CLPN .625 X .625 SPLT CS	1
3	02-06-0017	FTTG 90 DEG STRT .500NPT PPE BLK	1
4	02-15-0014	FTTG CPLG .500 NPT QCK DISC INSERT	1
5	04-02-0004	ASSY,ATOMIZER HEAD,4" COTTON	1
6	05-10-0805	DISK ATOMIZER MOTOR	1
7	05-10-2462	SEAL RBBR .625 FLG BRG	1
8	06-01-0102	BOLT .313-18 X 1.25 ZP GR5	2
9	06-01-0124	BOLT, FLG .375-16 UNC ZP GRADE 5; 3/4" LG	8
10	06-01-0189	BOLT, FLG .375-16 UNC ZP GRADE 5; 1-1/4" LG	6
11	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	6
12	06-03-0019	NUT LOCK FLG .3125-18 ZP GR5	2
13	09-01-0107	LBL ATWK PATENT DECAL-ATMZR	1
14	09-02-0004	ATWK LBL GRS 40HRS	1
15	1008F2	SHAFT DRV ATMZR LPX300	1
16	1027B9	PLT CVR ATMZR DRV LPX300	1
17	18-01-0203	WDMT ATMZR CONE LPX300 SS	1
18	18-01-0204	WDMT ATMZR CHUTE LPX300 SS	1

LPX SEED TREATER
LPX300 SEED WHEEL ASSEMBLY (13-04-0226)

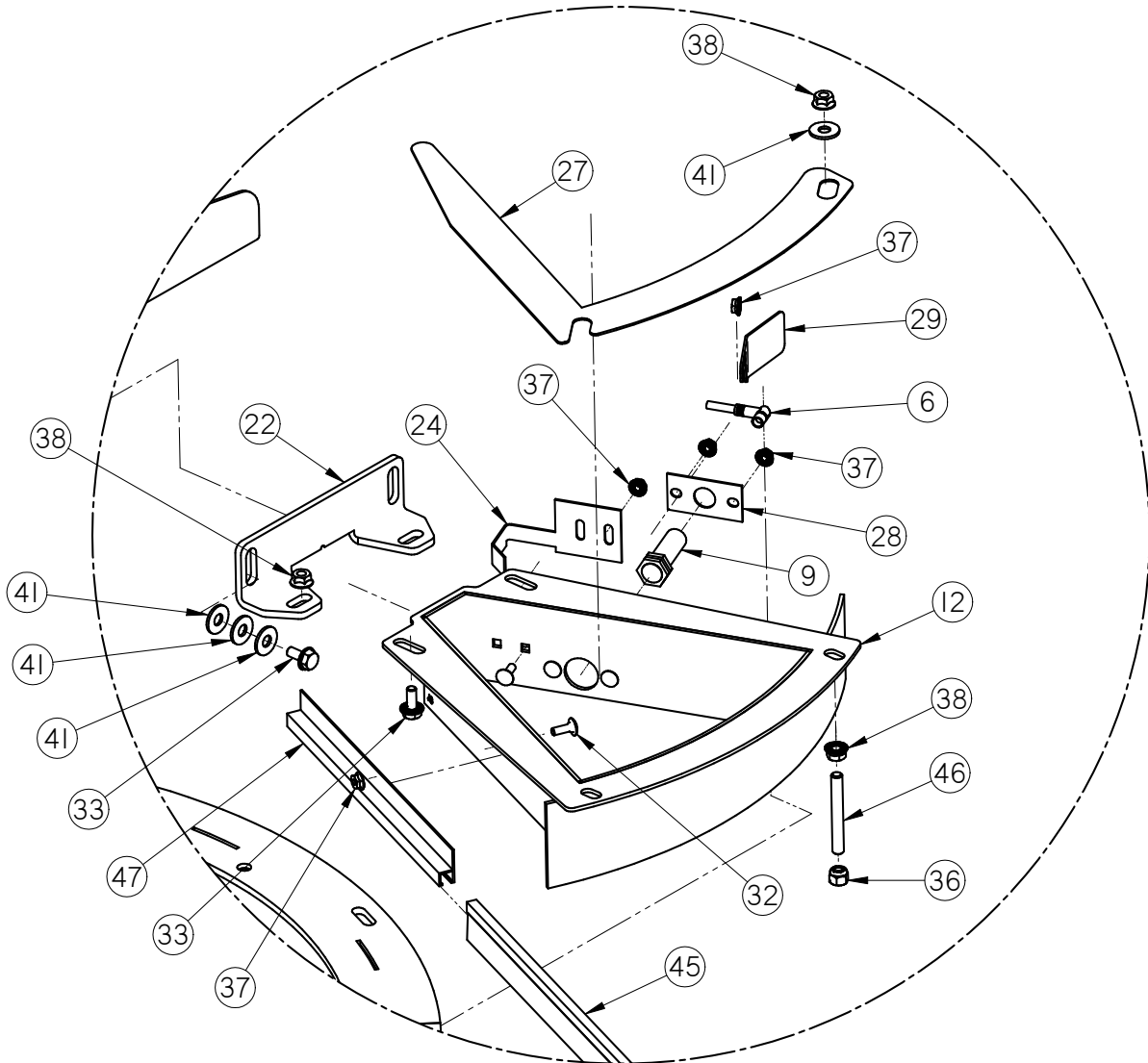


LPX SEED TREATER
LPX300 SEED WHEEL ASSEMBLY (13-04-0226)



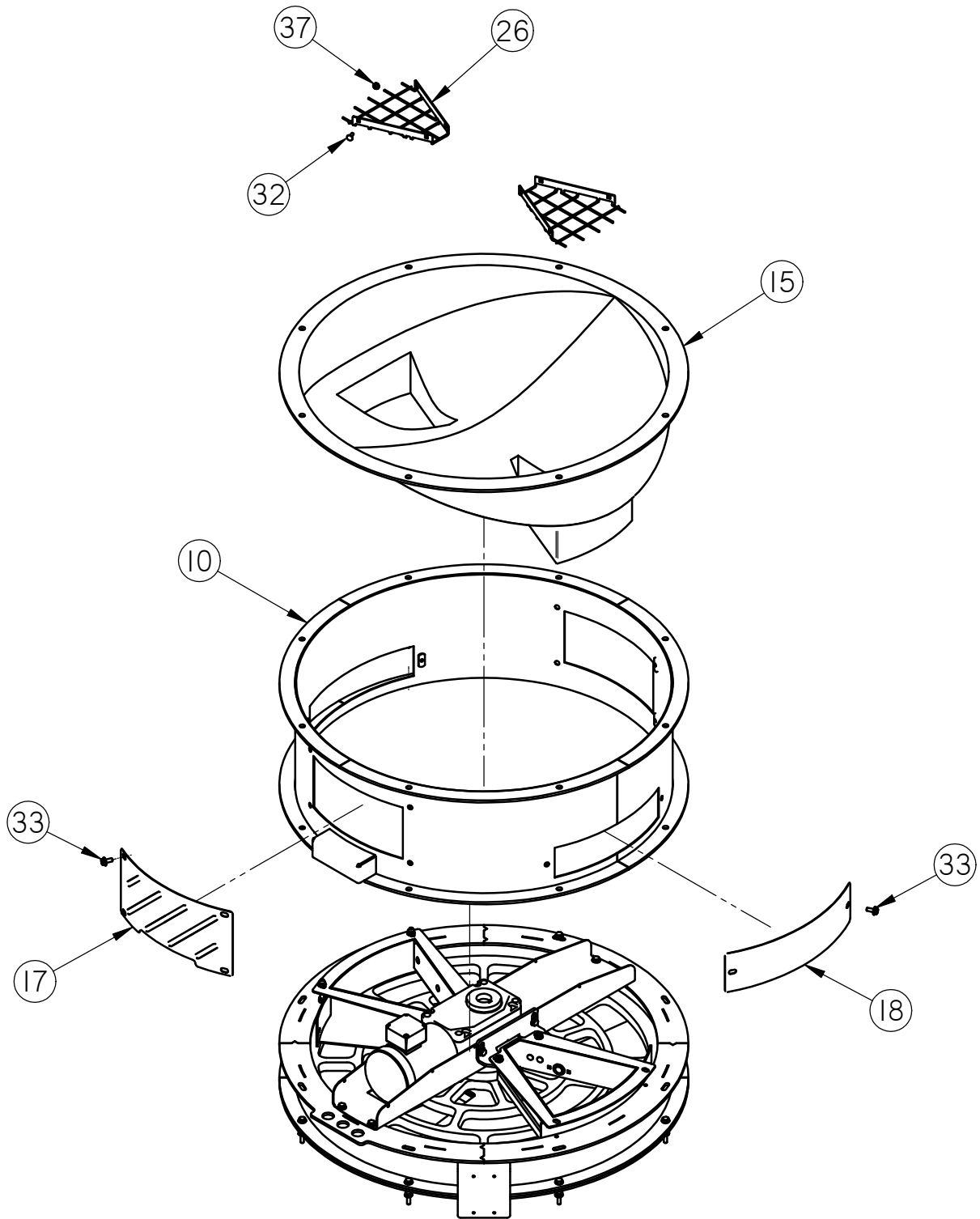
(See page 116)

LPX SEED TREATER
LPX300 SEED WHEEL ASSEMBLY (13-04-0226)

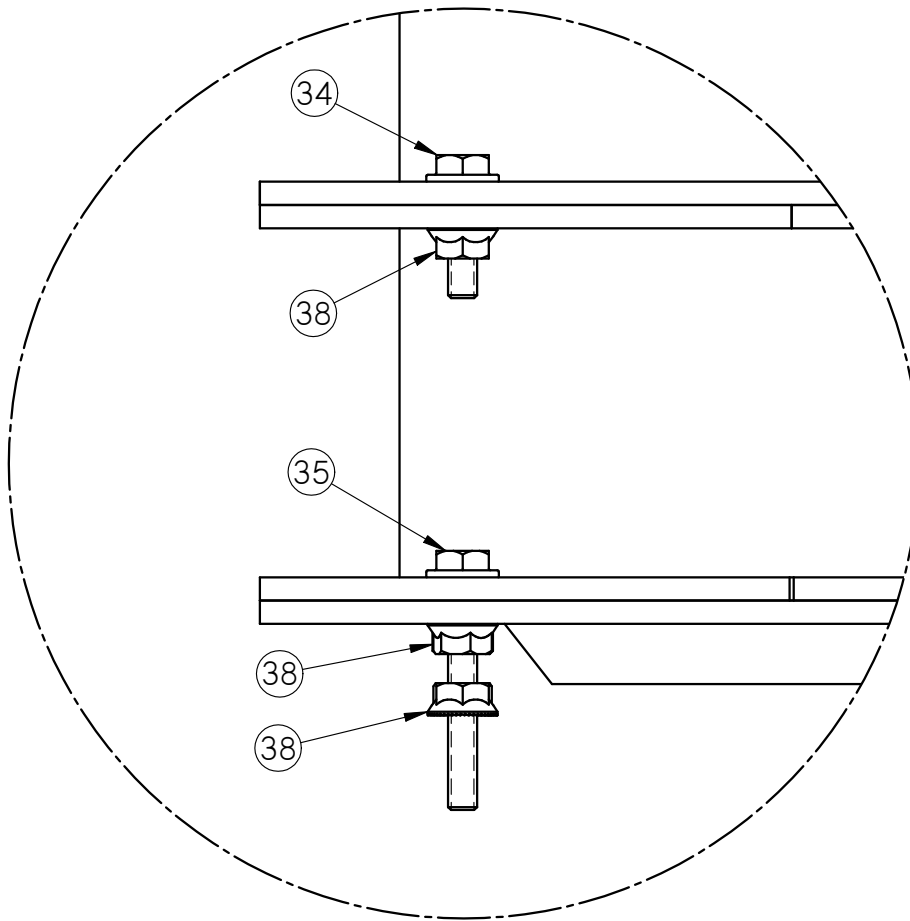
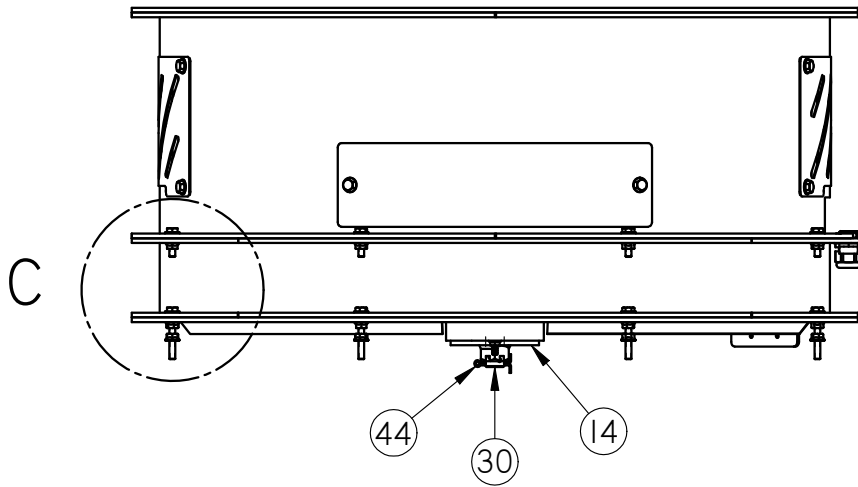


DETAIL A

LPX SEED TREATER



LPX SEED TREATER
LPX300 SEED WHEEL ASSEMBLY (13-04-0226)



DETAIL C

LPX SEED TREATER

LPX300 SEED WHEEL ASSEMBLY (13-04-0226)

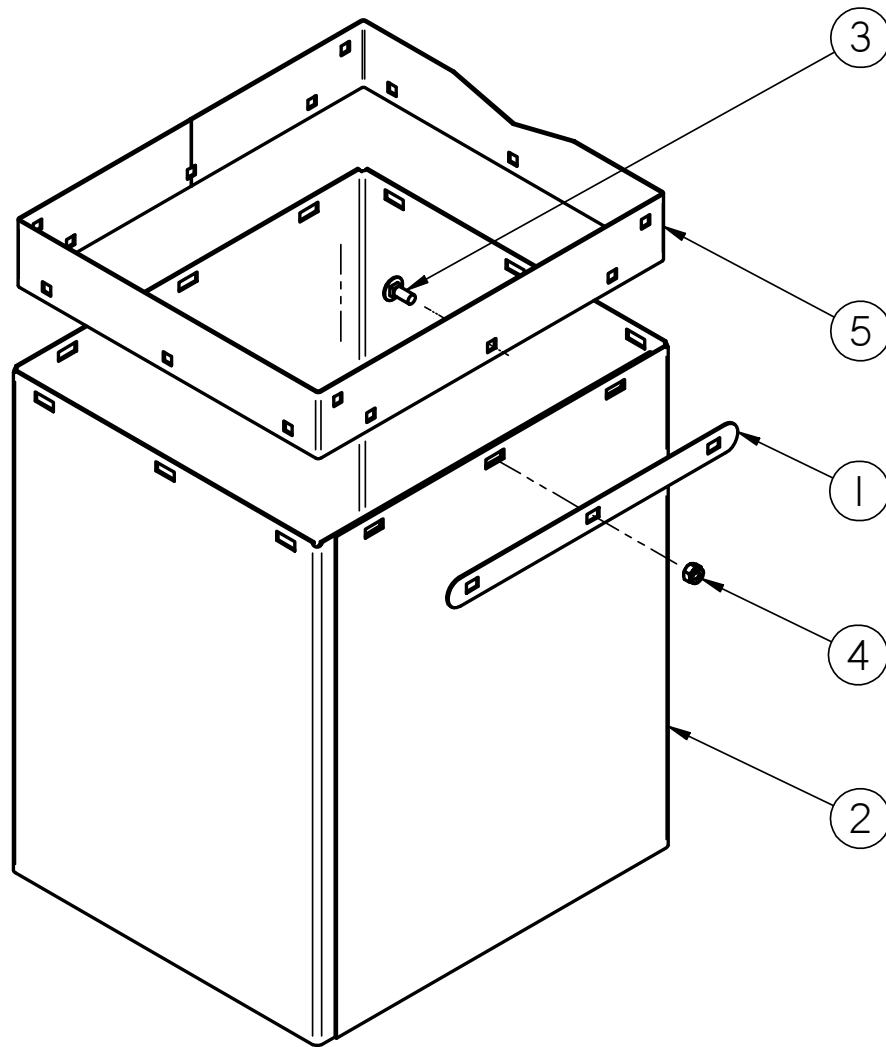
Item #	Part #	Description	Qty
1	01-01-0229	GMTR RA .50 HP 11RPM 3PH HLLW SHAFT	1
2	03-06-0111	RECP TURCK RSF 44-1/M20/S717/S4000	1
3	03-08-0299	CONN CG 0.5NPT .170-.450 3232LTF	1
4	03-08-0308	NUT NYLOC .500 NPT 8464	1
5	03-08-0348	WSHR RDCG CNDT .75 X .5	2
6	03-08-0355	CONN TRCK PKW 3M-5-RS 4/S760/S771	2
7	03-08-0356	CONN CG .75 NPT M3234GBJ LTCG	2
8	03-08-0357	NUT NYLON.75 NPT 8465	2
9	03-10-0147	SENS PROX 24VDC AB QC 875CPN8NP18P3	2
10	05-03-0169	WDMT SEED METER EXTENSION	1
11	05-03-0232	WDMT SMW UPPER BRG BRKT	1
12	05-03-0240	WDMT SMW BRSH PCKT	2
13	05-03-0608	WDMT SEED METER BODY EXTEN	1
14	05-04-0049	WDMT SEED WHEEL SHAFT NUT	1
15	05-07-0197	HPPR SMW DUAL DSCHG ROTO-MLDD	1
16	05-07-0590	ASSY SMW 1.75 HEX DRV 2IN TALL	1
17	05-10-0890	CVR #1 SEED METER	2
18	05-10-0891	CVR #2 SEED METER	2
19	05-10-0893	PLATE SUPPORT SEED METER STEEL	1
20	05-10-1213	SUPP BTM BRG UHMW SEED METER	1
21	05-10-1306	PAD SEED WHL FOAM RBBR FLOATING	1
22	05-10-1392	BRKT SMW BRSH PCKT HLDR	2
23	05-10-1426	14GA WEAR SPLATE HALF	2
24	05-10-1449	PLT SMW CTR HUB WIPER	2
25	05-10-1588	PLT SHAFT CLIP SMW	1
26	05-10-1872	GRD SMW INLET HOPP PCKT	2
27	05-10-2166	CVR TEST	2
28	05-10-3316	SMW PROX SW HOLDER	2
29	05-10-4192	PLT SMW POCKET SCRAPER	2
30	05-11-0224	DRIVE SHAFT 1.4375 SHAFT	1
31	06-01-0106	BOLT .500-13 X 5.50 ZP GR5	4
32	06-01-0122	BOLT, CARRIAGE, .250-20x.75 G5 ZP	18
33	06-01-0124	BOLT FLG .375-16 X .750 ZP GR5	24
34	06-01-0189	BOLT FLG .375-16 X 1.250 ZP GR5	8
35	06-01-0204	BOLT FLG .375-16 X 2.50 ZP GR5 FTH	8

LPX SEED TREATER

LPX300 SEED WHEEL ASSEMBLY (13-04-0226)

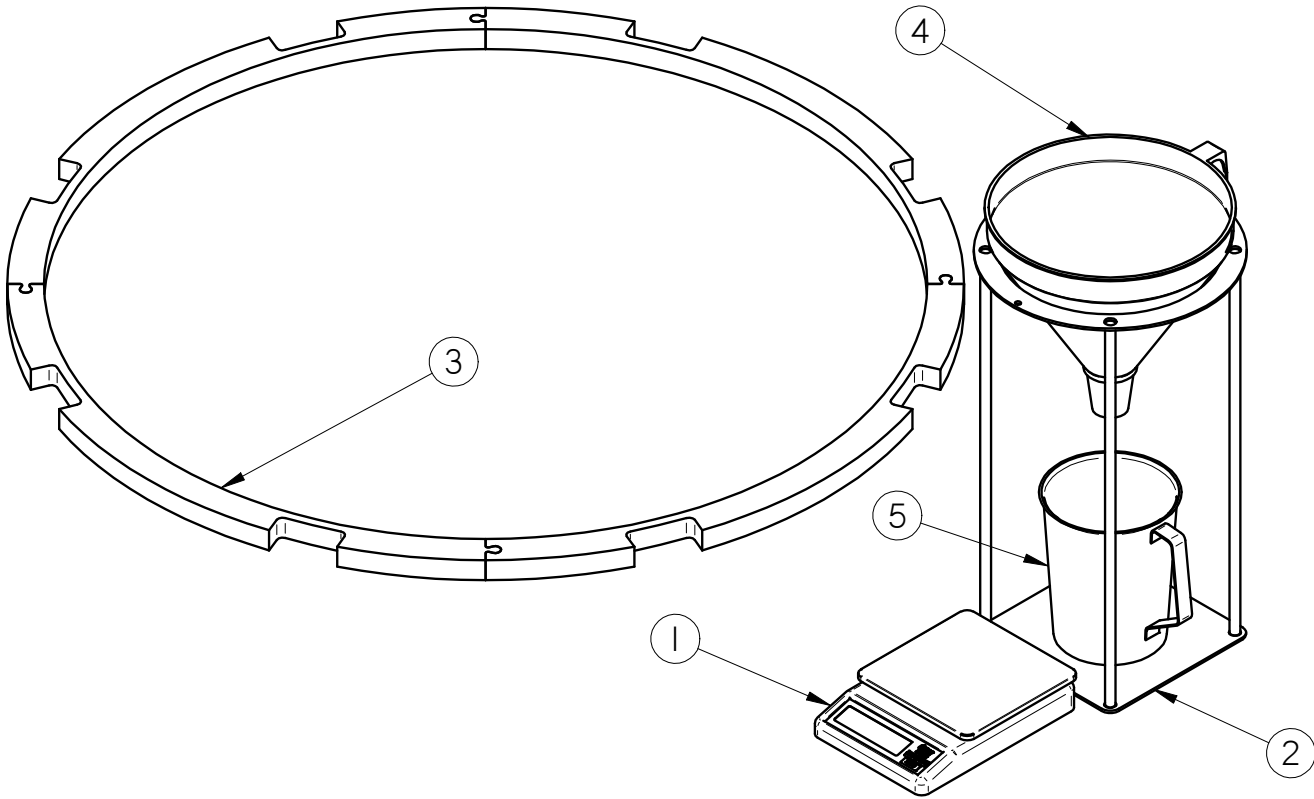
Item #	Part #	Description	Qty
36	06-03-0003	NUT NYL LOCK .375-16 ZP GR5	3
37	06-03-0013	NUT,LOCK, FLG .250-20 ZP SERRATTED	26
38	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	37
39	06-03-0015	NUT LOCK FLG .500-13 ZP GR5	4
40	06-03-0019	NUT LOCK FLG .3125-18 ZP GR5	4
41	06-05-0004	WSHR FLAT .375 ZP	10
42	06-06-0023	SCRW, SELF TAPPING, 10-16 ZP X .750	14
43	06-06-0046	SCRW .313-18 X 2.0 ZP FLAT HD PHLP	4
44	06-09-0023	PIN CTTR .188 X 2.00 ZP	1
45	06-10-0019	SEAL BRSH 12.75 OAL 1IN EXP LG	2
46	06-14-0013	STUD .375-16 ZP X 3 IN LG ZP	4
47	100118	HOLDER BRUSH SMW	2
48	101BC9	PSM SMW GALV RING	1
49	11-13-0004	KEYSTOCK 3/8 X 3/8 CS	1
50	13-04-0058	KIT SMW SCL CALB	1

LPX SEED TREATER
LPX END CHUTE (18-01-0072)



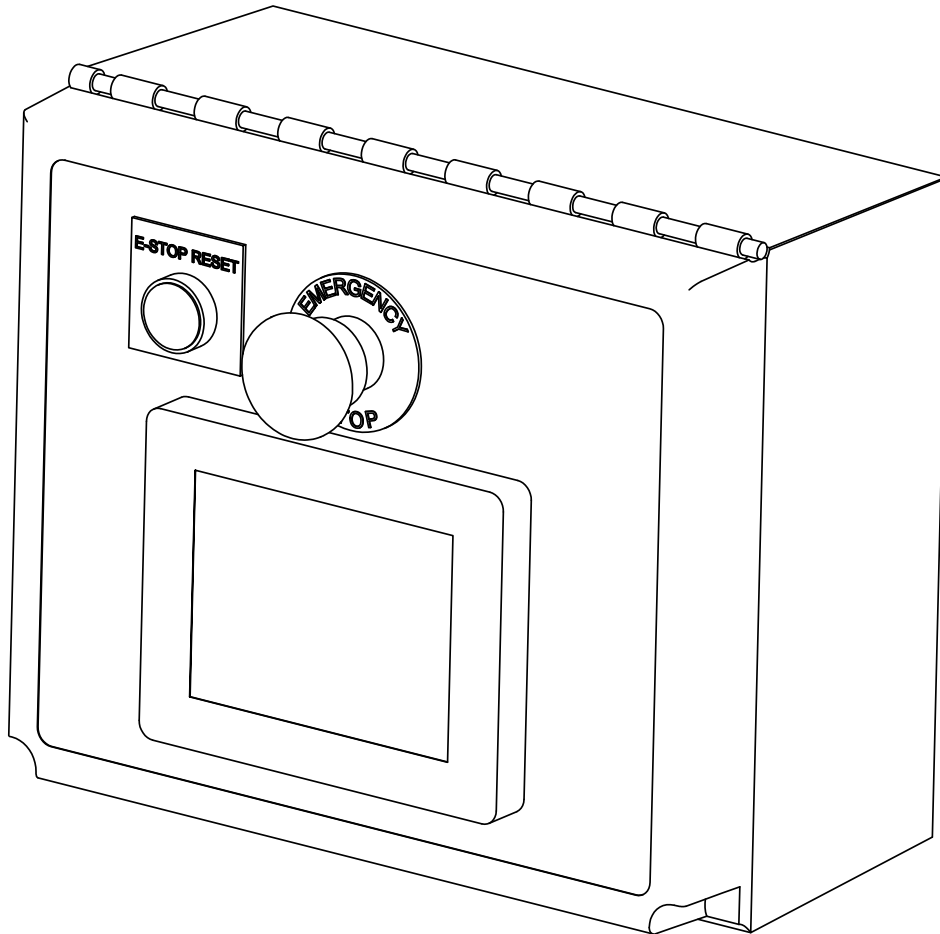
Item #	Part #	Description	Qty
1	05-10-3400	PLT DSCHG TRTR	4
2	05-10-3886	SKIRT DSCHG TRTR LPX2000	1
3	06-01-0171	BOLT CRG .3125-18X.750 ZP SHORT NECK	12
4	06-03-0002	NUT NYL LOCK .313-18 ZP GR5	12
5	101FB5	ADPT END CHUTE EXT LPX2000	1

LPX SEED TREATER
SEED WHEEL SCALE KIT (13-04-0058)



Item #	Part #	Description	Qty
1	03-19-0051	SCALE, CARDINAL 6.89 X 6.5 11 LBS	1
2	05-03-0248	WDMT CAL CUP FILL FR	1
3	05-10-2463	SEAL BETWEEN FLANGES SMW TO TRTR	4
4	05-11-0123	FUNNEL SMW CALB CUP FILL	1
5	07-02-0008	CUP MEASURE 64OZ SS GRADUATED	1

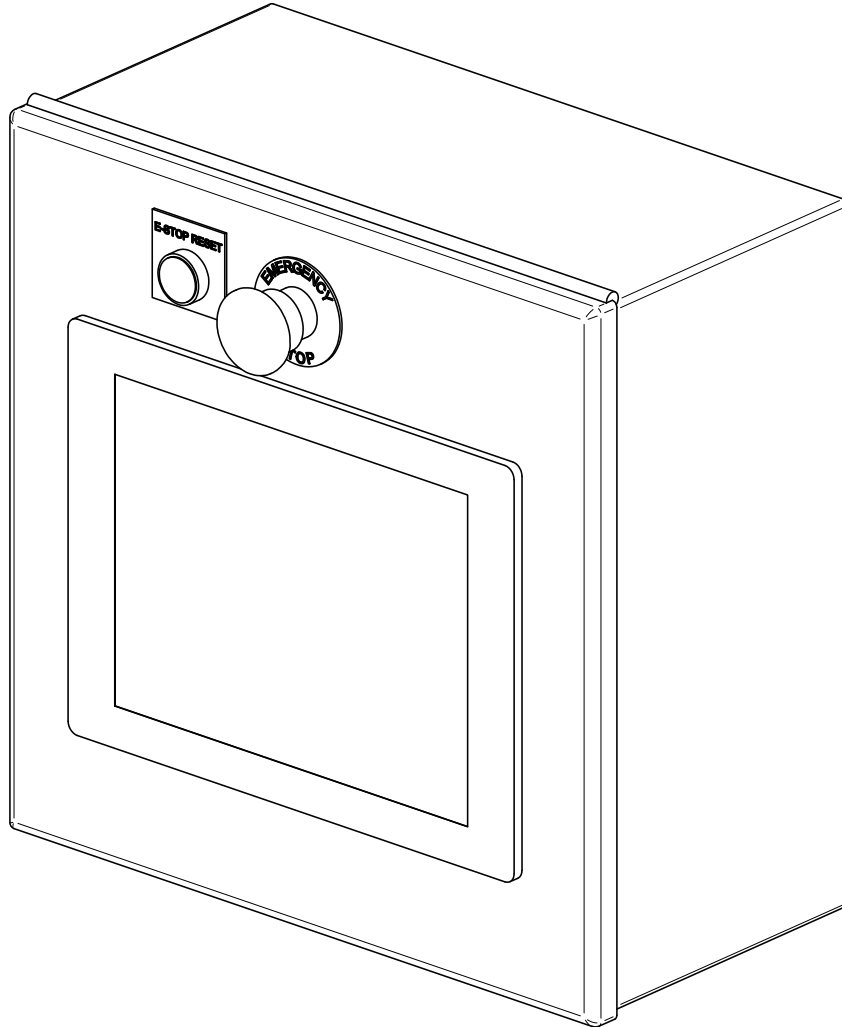
OPTIONAL REMOTE MANUAL HMI PANEL ASSEMBLY (03-12-0225)



There is an optional remote LPX Manual Treater Control Panel. It allows the operator to run the treater from up to 25 feet away. If it is ordered with the treater, it will come with the HMI operation screen already installed. If it is added later as an upgrade, the HMI will be removed from the original Control Panel and installed in the remote panel. A plug is included in the kit to plug the hole in the main panel after the HMI is removed. The remote panel comes with a 10 foot power cord.

LPX SEED TREATER

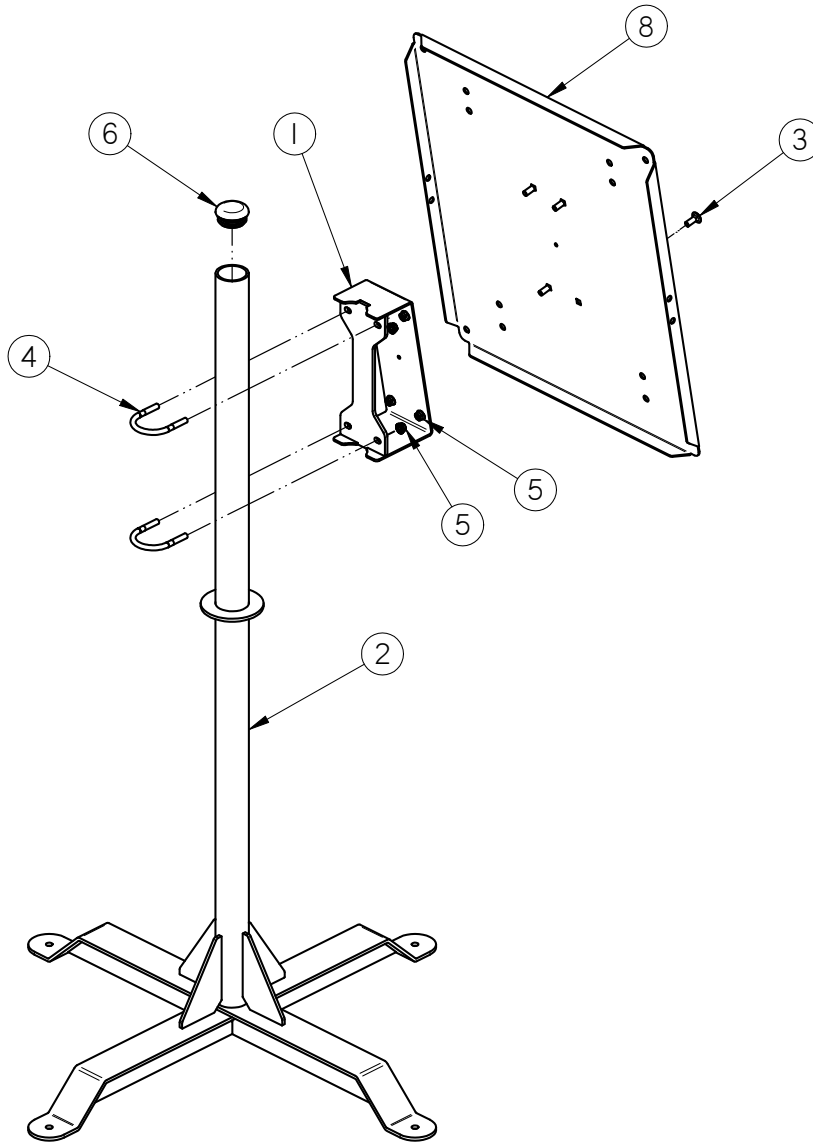
OPTIONAL REMOTE AUTOMATED HMI PANEL ASSEMBLY (03-12-0340)



There is an optional remote LPX Automated Treater Control Panel. It allows the operator to run the treater from up to 25 feet away. If it is ordered with the treater, it will come with the HMI operation screen already installed. If it is added later as an upgrade, the HMI will be removed from the original Control Panel and installed in the remote panel. A plug is included in the kit to plug the hole in the main panel after the HMI is removed. The remote panel comes with a 10 foot power cord.

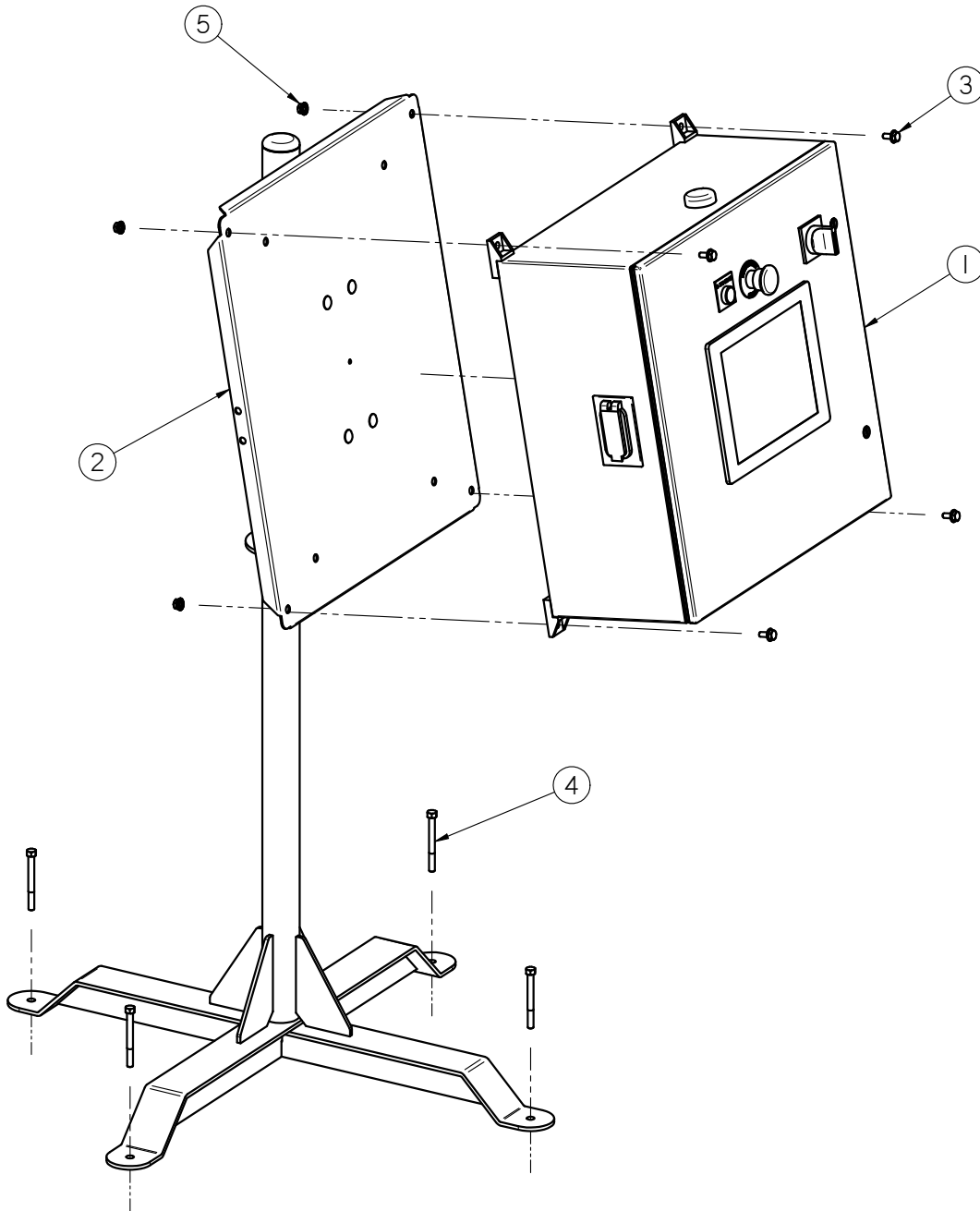
LPX SEED TREATER

ADJUSTABLE STAND - MAIN CONTROL PANEL ASSEMBLY (05-03-1471)



Item #	Part #	Description	Qty
1	05-03-1479	WDMT PNL ADJ	1
2	05-03-1545	WDMT PANEL STAND	1
3	06-01-0153	BOLT CRG .375-16X.750 ZP SHORT NECK	4
4	06-01-0287	BOLT U .375-16 X 2.50 X 3.125 ZP	2
5	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	7
6	06-10-0056	PLUG TBG RD RIB POLY 2.38 X .156W	1
7	103651	PLT PNL MT	1

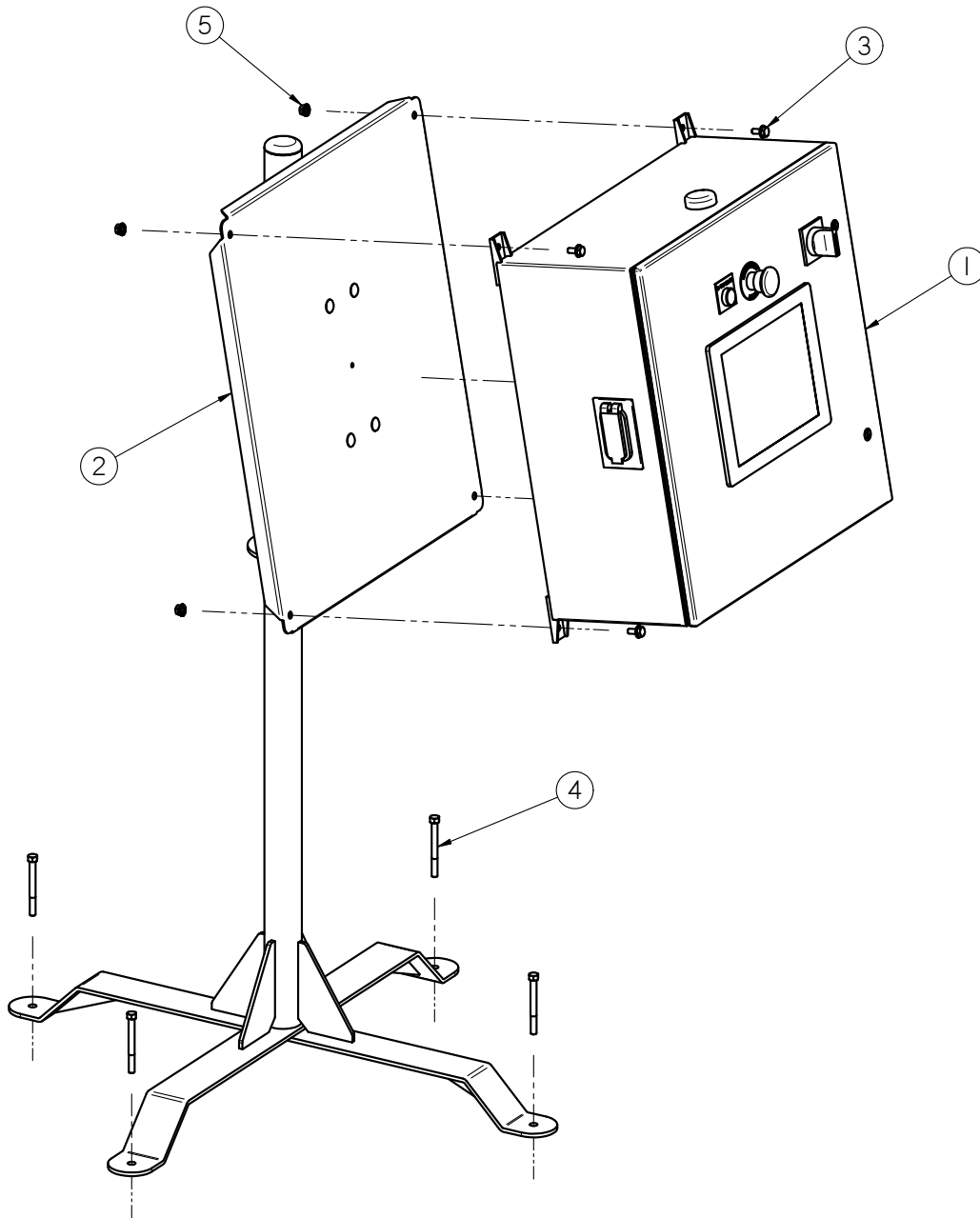
LPX SEED TREATER
MAIN CONTROL PANEL ASSEMBLY (13-12-0118)



Item #	Part #	Description	Qty
1	03-12-0366	MAIN CONTROL PANEL U-TREAT	1
2	05-03-1471	ASSY PNL FRM 4PUMP SAP	1
3	06-01-0124	BOLT, FLG .375-16 UNC ZP GRADE 5; 3/4" LG	4
4	06-01-0220	BOLT .375-16 X 3.75 CONCRETE ZP	4
5	06-03-0033	NUT LOCK FLG .375-16 GR8	4

LPX SEED TREATER

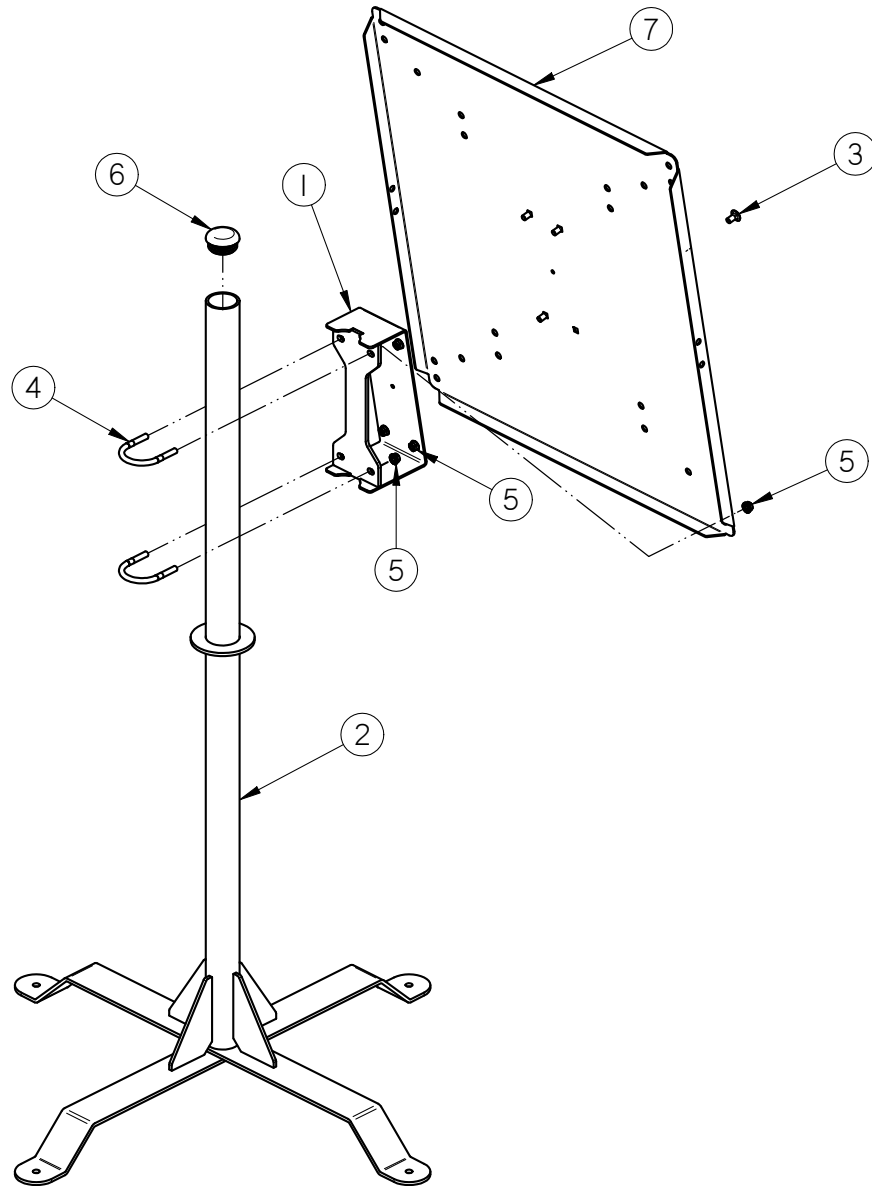
C2D2 COMPLIANT MAIN CONTROL PANEL ASSEMBLY (13-12-0119)



Item #	Part #	Description	Qty
1	03-12-0367	MAIN CONTROL PANEL U-TREAT	1
2	05-03-1471	ASSY PNL FRM 4PUMP SAP	1
3	06-01-0124	BOLT, FLG .375-16 UNC ZP GRADE 5; 3/4" LG	4
4	06-01-0220	BOLT .375-16 X 3.75 CONCRETE ZP	4
5	06-03-0033	NUT LOCK FLG .375-16 GR8	4

LPX SEED TREATER

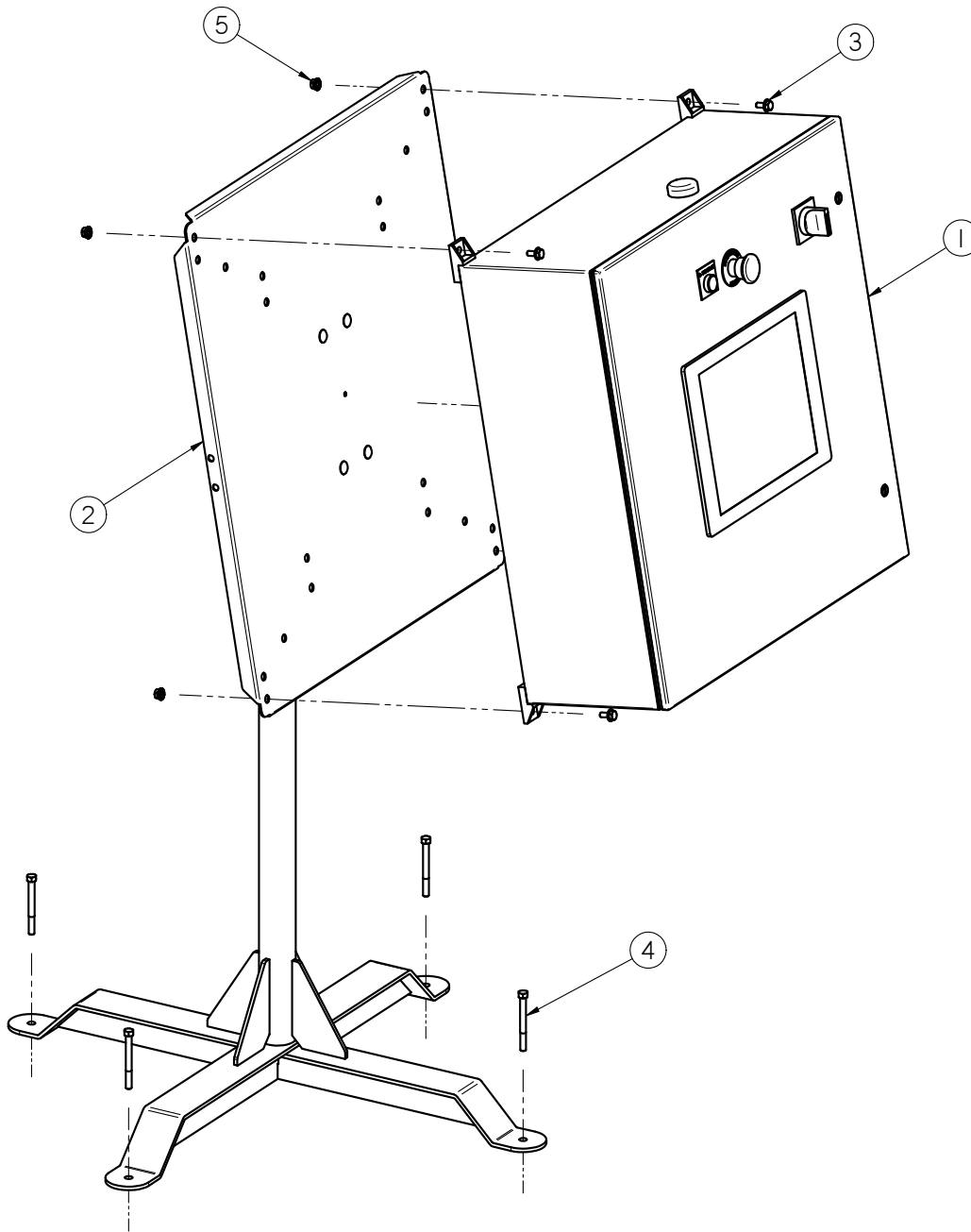
ADJUSTABLE STAND - MAIN CONTROL PANEL ASSEMBLY (05-03-1658)



Item #	Part #	Description	Qty
1	05-03-1479	WDMT PNL ADJ	1
2	05-03-1545	WDMT PANEL STAND	1
3	06-01-0153	BOLT CRG .375-16X.750 ZP SHORT NECK	4
4	06-01-0287	BOLT U .375-16 X 2.50 X 3.125 ZP	2
5	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	8
6	06-10-0056	PLUG TBG RD RIB POLY 2.38 X .156W	1
7	104D39	PLT PNL MT	1

LPX SEED TREATER

MAIN CONTROL PANEL WITH 4 PUMP CONTROLLER ASSEMBLY (13-12-0144)



Item #	Part #	Description	Qty
1	03-12-0517	MAIN CONTROL PANEL WITH 4PC 120V	1
2	05-03-1658	ASSY PNL FRM 4PUMP SAP	1
3	06-01-0124	BOLT FLG .375-16 X .750 ZP GR5	4
4	06-01-0220	BOLT 3/8-16 CONC ANCHOR ZP 3.75	4
5	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	4

LPX SEED TREATER

NOTES:

USC LIMITED WARRANTY**SECTION
J**

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.

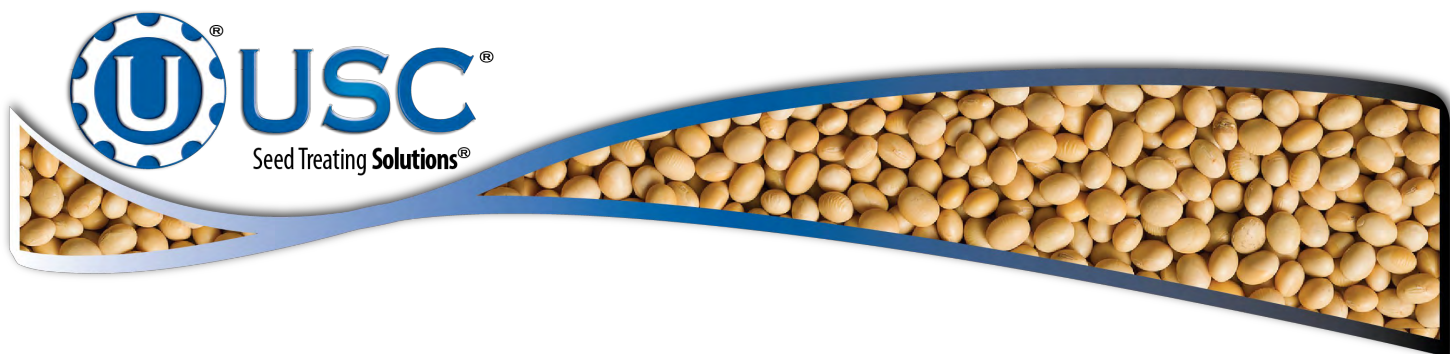
4. **Other Statements:** Manufacturer's employees or representatives' oral or other written statements do not constitute warranties, shall not be relied upon by Buyer, and are not a part of the contract for sale or this limited warranty.

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





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

