



WEIGH HOPPERS SURGE HOPPERS

Operators Manual



Document: TD-09-06-1013

Revision: A



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 Weigh Hopper and Surge Hopper. It does not hold USC, LLC liable for any accidents or injuries that may occur.

OPERATOR RESPONSIBILITIES

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

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

As the person with the most to gain or 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.

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- 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 serialization label is located on the angle bracket welded to the hopper cone.



SERIAL NUMBER: _____

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SAFETY INSTRUCTIONS

SECTION A

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

SAFETY WORDS AND SYMBOLS

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



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



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



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



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



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



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



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



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



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



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

NOTICE

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

LOCKOUT / TAGOUT PROCEDURES

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

HAZARD REVIEW

Electrocution Hazard



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

WEIGH HOPPERS & SURGE HOPPERS

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.



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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. Electrocutation 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.



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.

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.



INSTALLATION

SECTION B



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



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

NOTICE

Permanent installation may require additional electrical cables and air lines, since each installation is unique.

SET-UP

The following steps outline the initial set-up of your USC seed hopper :

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 hopper in the desired position on a level surface.

NOTICE

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

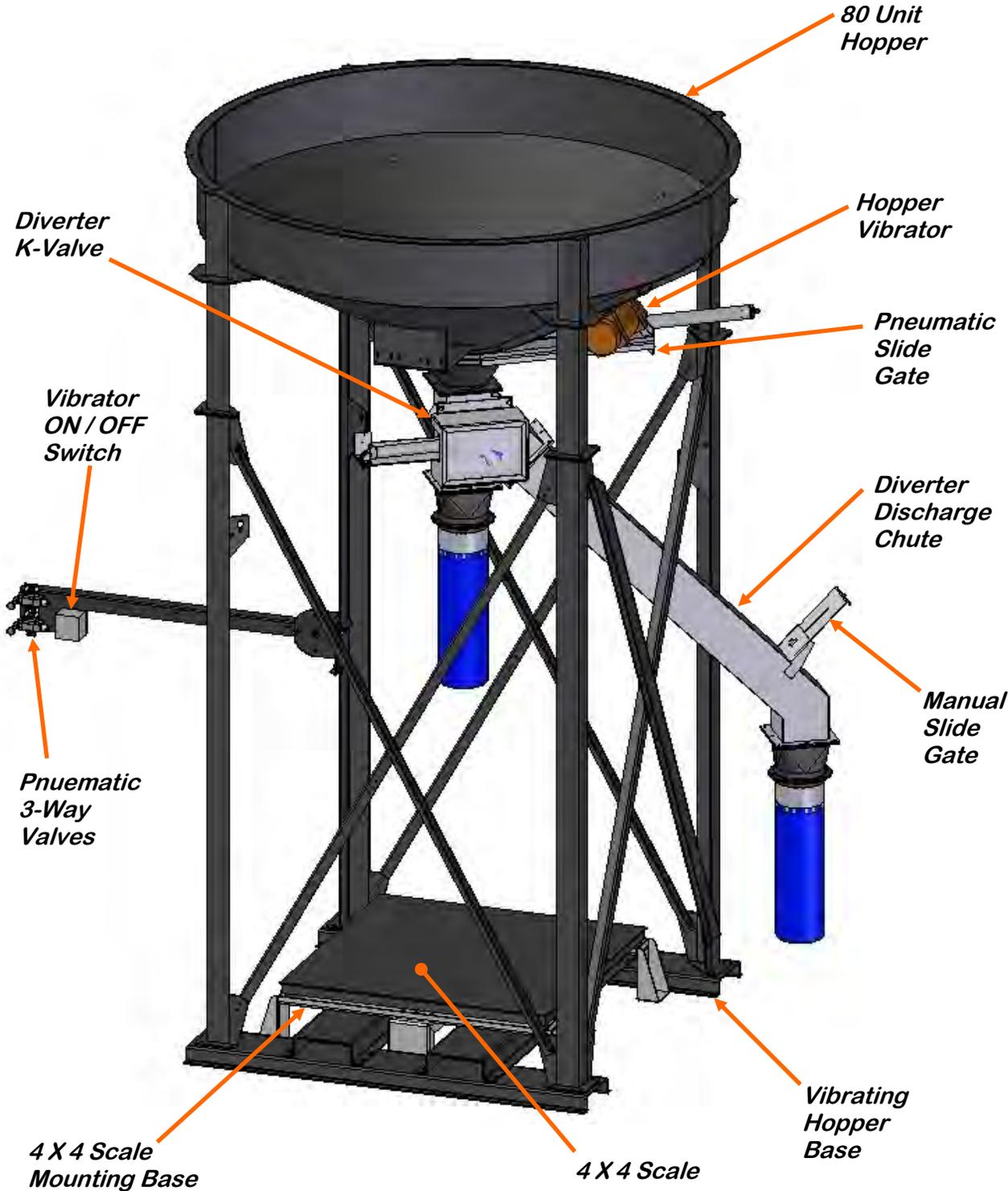
4. Inspect seed hopper thoroughly for screws, bolts, fittings, etc. which may have come loose during shipping.
5. The seed hopper should be placed on level ground.
6. After you are sure the hopper is located in the correct position, anchor the hopper to the floor to prevent the machine from moving during operation.
7. If the hopper is equipped with a vibrator, use the provided hardware to mount the ON / OFF switch to the bracket mounted to the hopper leg. Once the switch is secured, plug the power cable into a properly grounded 115V outlet.
8. If the hopper is equipped with an air gate or discharge diverter, attach the pneumatic tubing provided from the 3-Way air valve to the air gate and or diverter. The customer must provide a clean, dry air supply at a rate of 100-110 PSI to the top of each valve.

SECTION C **MECHANICAL OPERATION**

SURGE HOPPER OVERVIEW



WEIGH HOPPER OVERVIEW



**SECTION
D**

ELECTRICAL OPERATION



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



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

CHANGING VIBRATOR OUTPUT SETTINGS

11 CHANGING OUTPUT SETTINGS

MODELS: 2P-75, 100, 150, 200; 4P-350

Maximum Force
Intermittent Duty Only

Factory Setting
Maximum Setting for Continuous Duty

Minimum Force
Optimum Setting for Long Life of Vibrator

To change the force:

1. Disconnect from power.
2. Remove both end covers.
3. Remove the cap screw that holds the outer eccentric to the inner eccentric and turn the outer eccentric so that the numbered hole aligns with the threaded hole in the inner eccentric. **NOTE: You must set both ends of the vibrator to the same setting.**
4. Replace the cap screw.
5. Replace both end covers.

NOTE: If you INCREASE force of vibrator, you **MUST** take a new amperage draw reading to ensure vibrator is still operating within specified limits.

NOTE: ONLY RUN INTERMITTENTLY when set to higher than factory set output forces (maximum running time of 30 min in any one hour period).

MODELS: 2P-450, 800, 1700, 2500; 4P-600, 700, 1000, 1400, 2000, 3000, 5000, 10000
6P - ALL MODELS; 8P - ALL MODELS

To adjust eccentric settings:

1. Remove both end covers from vibrator.
2. Loosen the bolt that holds the outer, labeled eccentric to the shaft. **NOTE: some models have only one eccentric per side.**
3. Turn the eccentric on the shaft to adjust force output. Align the arrow on the shaft to the desired setting. The higher the number, the greater the force.
NOTE: You must set both ends of the vibrator to the same setting.
4. Tighten eccentric bolts and reinstall end covers.

NOTE: These vibrators are set to Setting #3 (Factory Setting).

LEFT
Settings 1 - 3 are continuous duty rated

RIGHT
Settings 4 - 6 are intermittent duty rated only

For vibrators mounted in tandem (side to side, not end-to-end) to produce linear motion on table & feeder applications:

To produce linear motion you must make sure vibrators rotate opposite from one another. Force output labels should be opposite to one another when viewed from the same side (one increases clockwise, the other counter-clockwise as in picture above). Follow instructions as above, & be sure you set both vibrators & both ends to the same setting. Consult VIBCO for more details.

NOTE: If you INCREASE force of vibrator, you **MUST** take a new amperage draw reading to ensure vibrator is still operating within specified limits.

NOTE: Only run intermittently when set to higher than factory set output forces (maximum running time of 30 min in any one hour period).

TROUBLESHOOTING**SECTION
E****TROUBLESHOOTING**

Below is a table describing the most frequent problems and solutions with the USC seed hoppers . For further assistance, contact the USC Service department at (785) 431-7900.

Problem	Possible Cause	Solution
Weight display not reading steady (Bouncing)	<ol style="list-style-type: none"> 1. Bad load cell. 2. Wind Drafts. 	<ol style="list-style-type: none"> 1. Replace load cell. 2. Close doors.
No scale reading on the weigh hopper indicator on the touch screen.	<ol style="list-style-type: none"> 1. Serial cable is disconnected. 2. Scale head is unplugged. 	<ol style="list-style-type: none"> 1. Check cables for connectivity and damage. 2. Ensure that the scale head has power and is turned on.
Scale is reading incorrect weight.	<ol style="list-style-type: none"> 1. Something is touching the scale. 2. Scale needs recalibrated. 	<ol style="list-style-type: none"> 1. Ensure that nothing is leaning on or resting on the scale. 2. Zero scale. If still incorrect, have a professional scale technician recalibrate the scale.
Air gate will not close fully.	<ol style="list-style-type: none"> 1. Something is obstructing the air gate from closing. 2. Air pressure to the gate is not strong enough. 	<ol style="list-style-type: none"> 1. Remove obstruction. 2. Ensure that the bin slide gate has at least 100 psi of air being supplied to it.
Air gate is opening when it should be closing and vice versa.	<ol style="list-style-type: none"> 1. Air lines to the air gate are reversed. 	<ol style="list-style-type: none"> 1. Switch the hoses to the front and the back of the air cylinder.
Diverter is leaking seed through bypass side while in TREAT mode of operation.	<ol style="list-style-type: none"> 1. Insufficient air pressure to actuate the diverter K-Valve. 2. An obstruction in the diverter is stopping correct placement of the diverter plate. 	<ol style="list-style-type: none"> 1. Ensure that at least 100 psi of air pressure is present at the diverter. 2. Remove obstruction.
Vibrator will not start.	<ol style="list-style-type: none"> 1. Not getting proper voltage. 2. Thermal overload protection has tripped. 	<ol style="list-style-type: none"> 1. Check power supply to unit. 2. Wait at least two minutes, then reset by switching firmly off then on again.
Vibrator stops running.	<ol style="list-style-type: none"> 1. Power is disconnected. 2. Thermal overload protection has tripped. 	<ol style="list-style-type: none"> 1. Check power supply to unit. 2. Wait at least two minutes, then reset by switching firmly off then on again.

**SECTION
F****MAINTENANCE**

Proper maintenance of the seed hopper 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.

DIVERTER K-VALVE BEARING GREASE

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.

NOTICE

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

HOPPER VIBRATOR GREASE

Use Lubriko M21 general purpose grease or equivalent Sodium Calcium based NLGI grade 2 grease. Minimum temperature range 0 - 225 degrees Fahrenheit. Minimum viscosity 70 - 80 SUS at 212 degrees Fahrenheit. Apply 2.2 - 3.0 grams (two pumps with standard manual grease gun). Do not over grease!

- INTERMITTENT DUTY = Every 400-500 hours.
- CONTINUOUS DUTY = Every 2 weeks.

HOPPER

- Inspect all welds and structural components for bends, cracks, and damage.
 - Clean out any build up of debris.
-

SLIDE GATE & AIR SYSTEM

- Test slide gate for proper actuation with 3-Way valve.
 - Drain water from compressor daily.
 - Drain air dryer every 40 hours of operation.
-

DIVERTER

- Inspect all welds and structural components for bends, cracks, and damage.
 - Test diverter K-Valve for proper actuation with 3-Way valve.
 - Clean diverter of any obstructions.
 - Grease both K-Valve bearings.
-

SCALE & SCALE HEAD

- Inspect all welds and structural components for bends, cracks and damage.
- Check for binding on scale components.
- Check wiring from scale to scale head for any damage or kinks.
- Have scale professionally re-calibrated as necessary.

SECTION
G**STORAGE**

When storing the seed hopper for long periods of time, the following procedure must be followed to reduce the chance of rust, corrosion and fatigue of the conveyor. 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.

1. Clear the area of bystanders, especially small children.
2. Disconnect power to the machine.
3. Thoroughly wash the entire machine to remove all dirt, mud, debris or residue.
4. Lubricate all grease fittings. Make sure that all grease cavities have been filled with grease to remove any water residue from the washing. This also protects the bearing seals.
5. Lubricate the hopper vibrator as defined in the Maintenance Section.
6. Touch up all paint nicks and scratches to prevent rusting.
7. Store the machine inside a protective building to keep it from being exposed to the weather. Select an area that is dry, level and free of debris. If storing outside, cover with a waterproof tarpaulin.

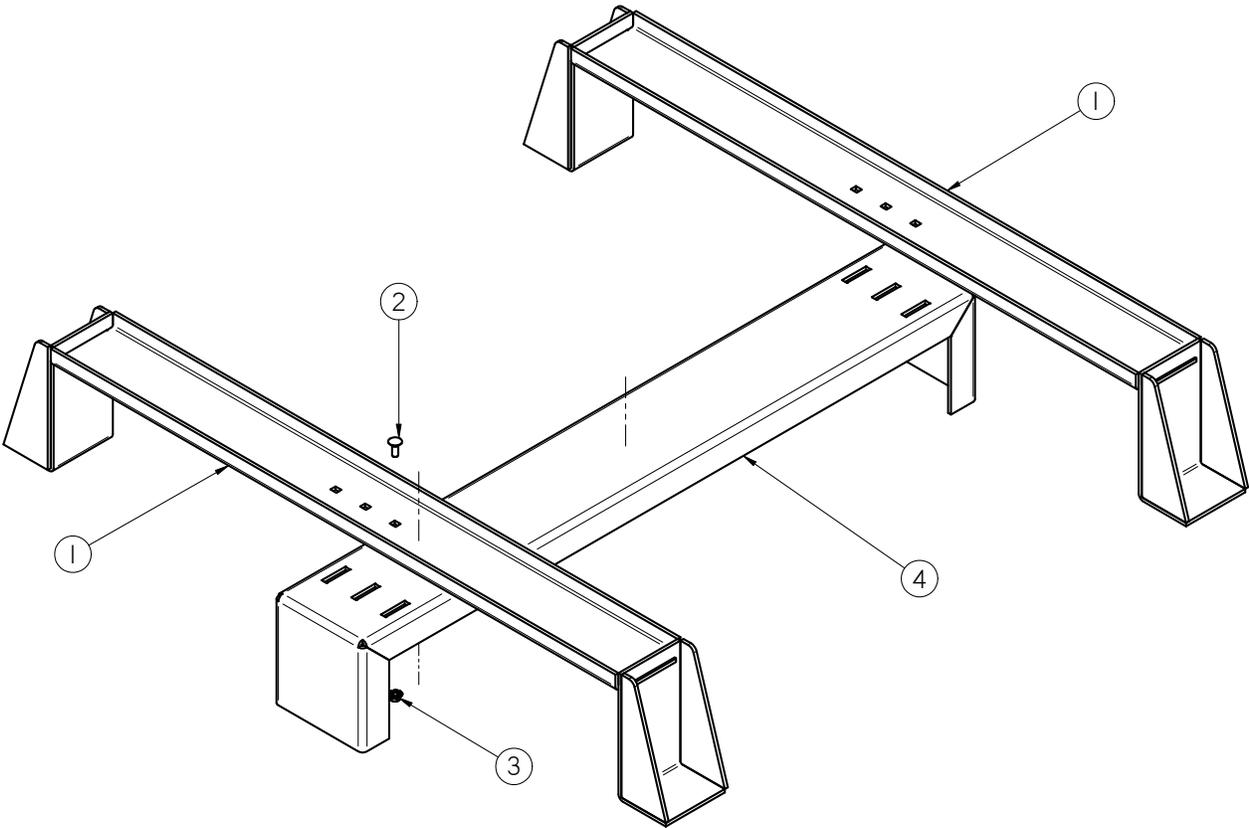
WEIGH HOPPERS & SURGE HOPPERS

NOTES:

SECTION
H

MECHANICAL DRAWINGS

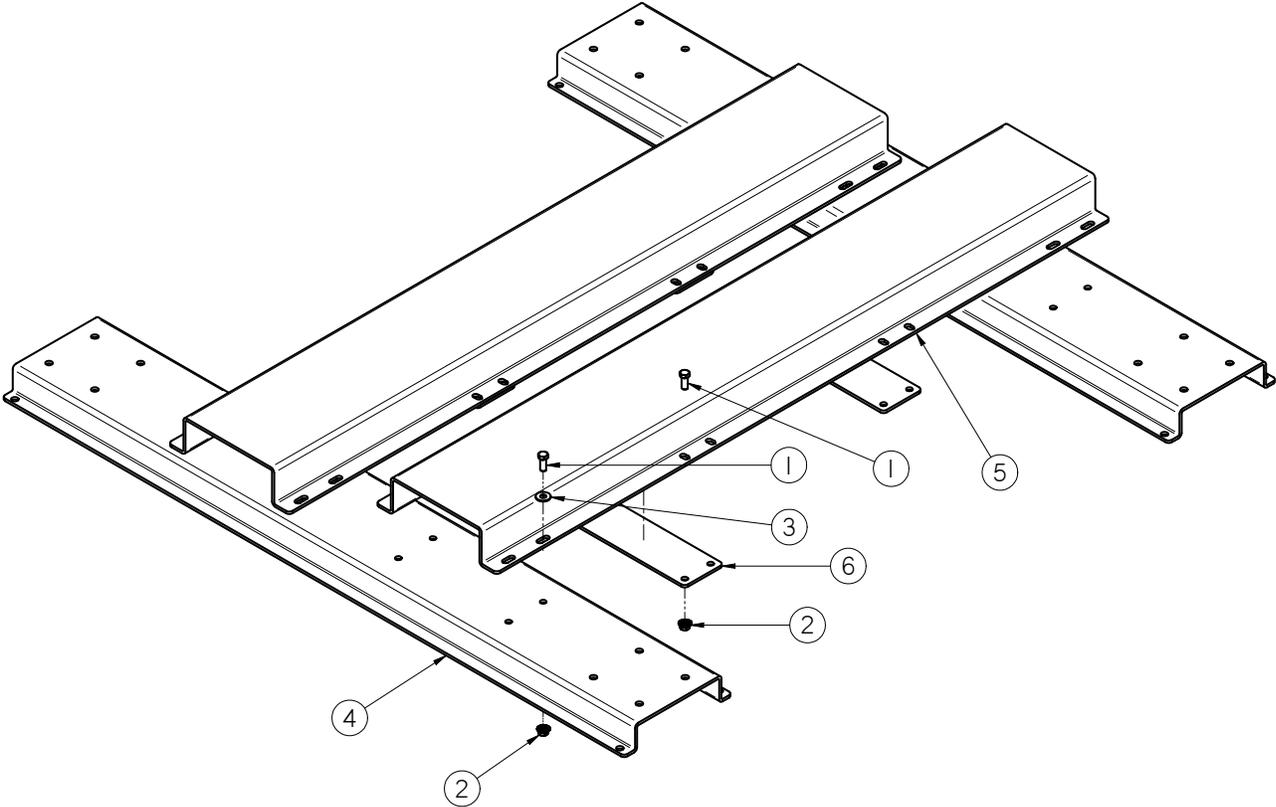
SCALE BASE ASSEMBLY (05-07-0663)



Item #	Part #	Description	Qty
1	05-03-1393	WDMT SCL STAND	2
2	06-01-0115	BOLT CRG .375-16 X 1.00 ZP GR5	6
3	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	6
4	10302D	PLT SCL STAND 4	1

WEIGH HOPPERS & SURGE HOPPERS

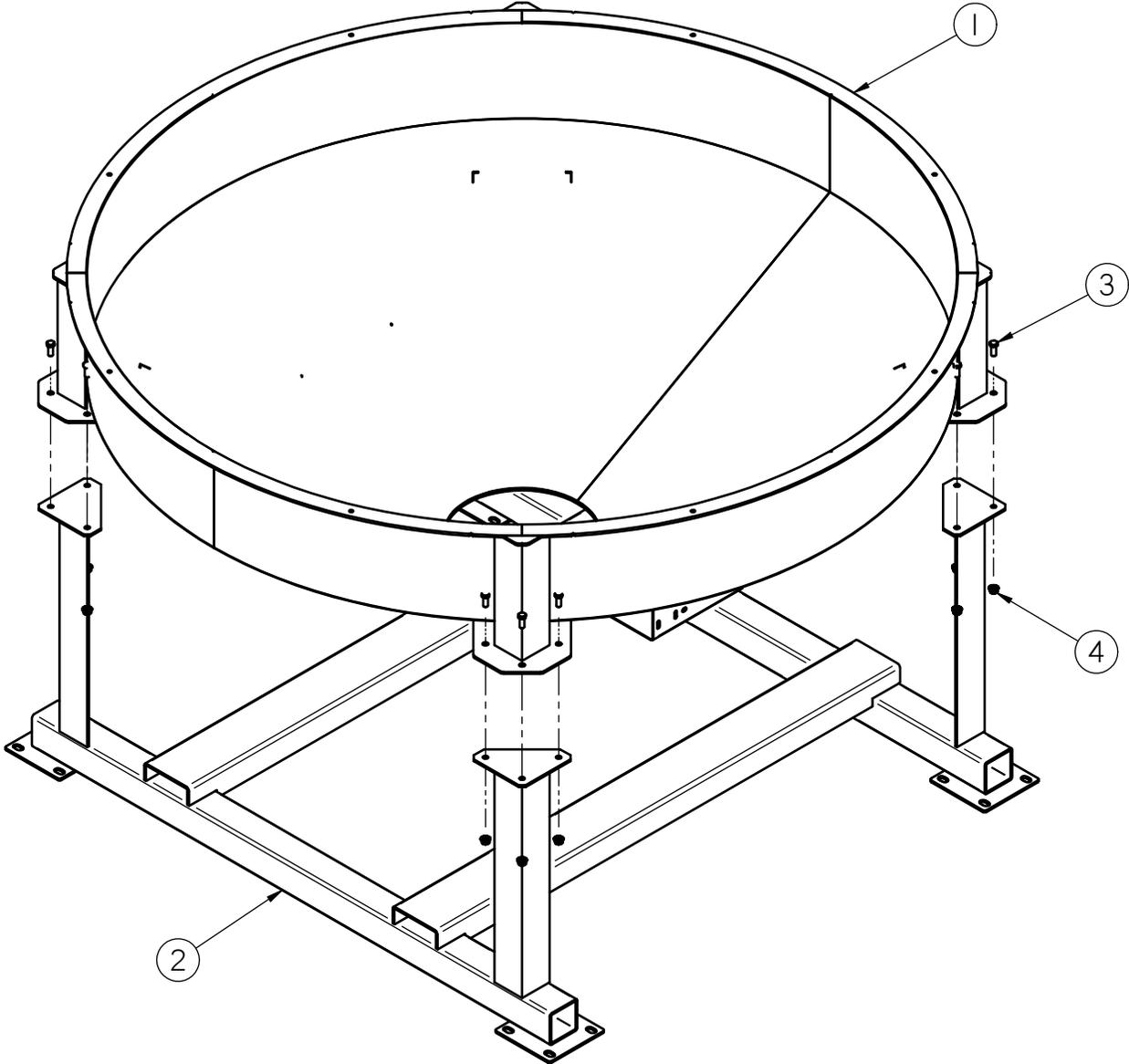
VIBRATION HOPPER BASE ASSEMBLY (05-07-0653)



Item #	Part #	Description	Qty
1	06-01-0193	BOLT .500-13 X 1.25 ZP GR8	44
2	06-03-0015	NUT LOCK FLG .500-13 ZP GR5	44
3	06-05-0005	WSHR FLAT .500 ZP	16
4	10275D	80 UNIT VIB HOPP FLR MNT	2
5	10275E	80 UNIT VIB HOPP FORK PKT	2
6	10275F	80 UNIT VIB HOPP FORK SUPP	4

WEIGH HOPPERS & SURGE HOPPERS

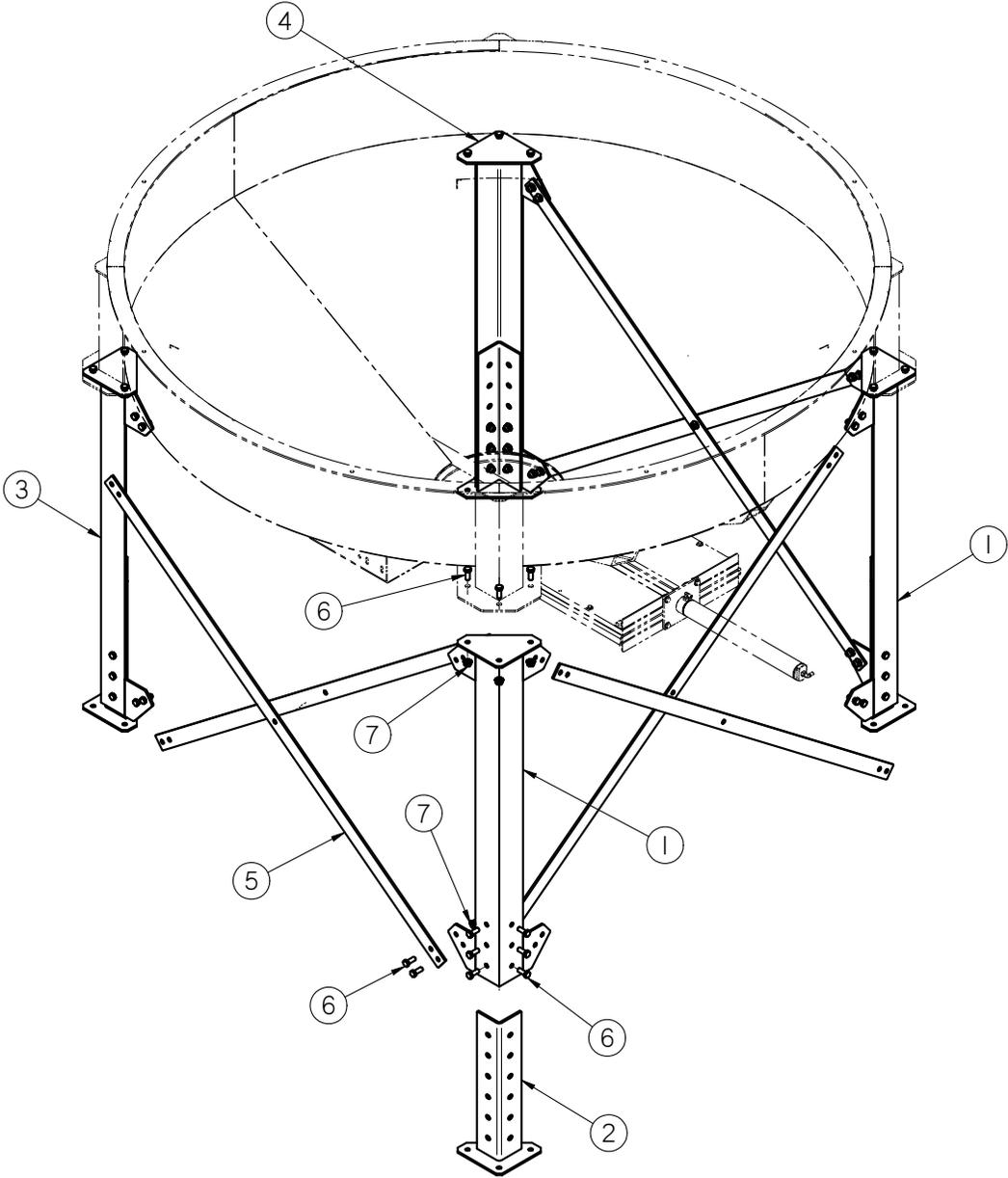
80 UNIT HOPPER FRAME ASSEMBLY (05-07-0803)



Item #	Part #	Description	Qty
1	05-03-0081	WDMT HOPP CONE 80 UNIT	1
2	05-03-1573	WDMT BASE FR WEIGH HPR 80	1
3	06-01-0193	BOLT .500-13 X 1.25 ZP GR8	12
4	06-03-0015	NUT LOCK FLG .500-13 ZP GR5	12

WEIGH HOPPERS & SURGE HOPPERS

80 UNIT ADJUSTABLE LEG ASSEMBLY (13-05-0330)

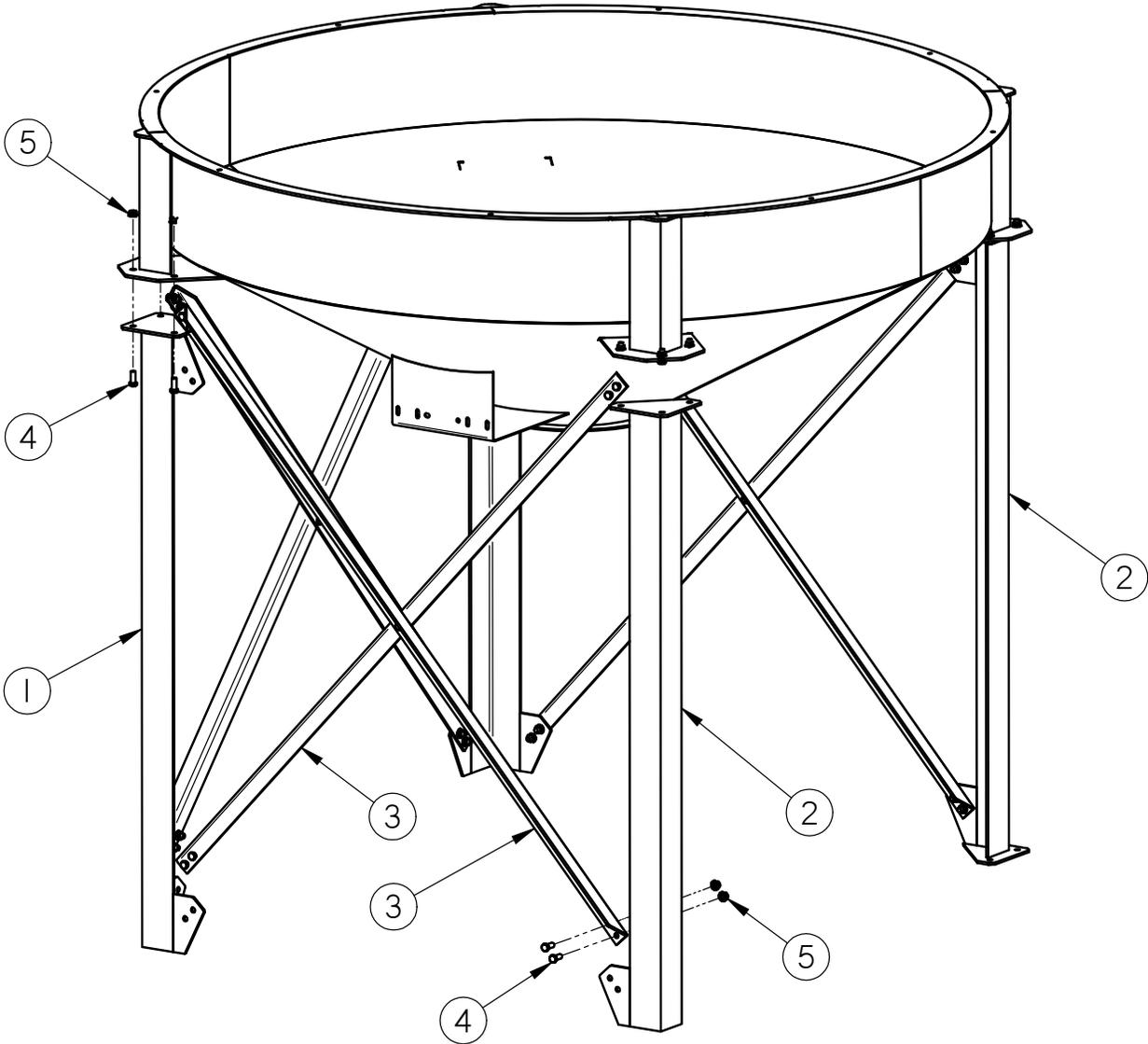


Item #	Part #	Description	Qty
1	05-03-1496	WDMT COLUMN	2
2	05-03-1497	WDMT ADJ COLUMN	4
3	05-03-1498	WDMT COLUMN	1
4	05-03-1499	WDMT COLUMN	1
5	05-10-4302	X-BRACE	6
6	06-01-0193	BOLT .500-13 X 1.25 ZP GR8	63
7	06-03-0015	NUT LOCK FLG .500-13 ZP GR5	63



WEIGH HOPPERS & SURGE HOPPERS

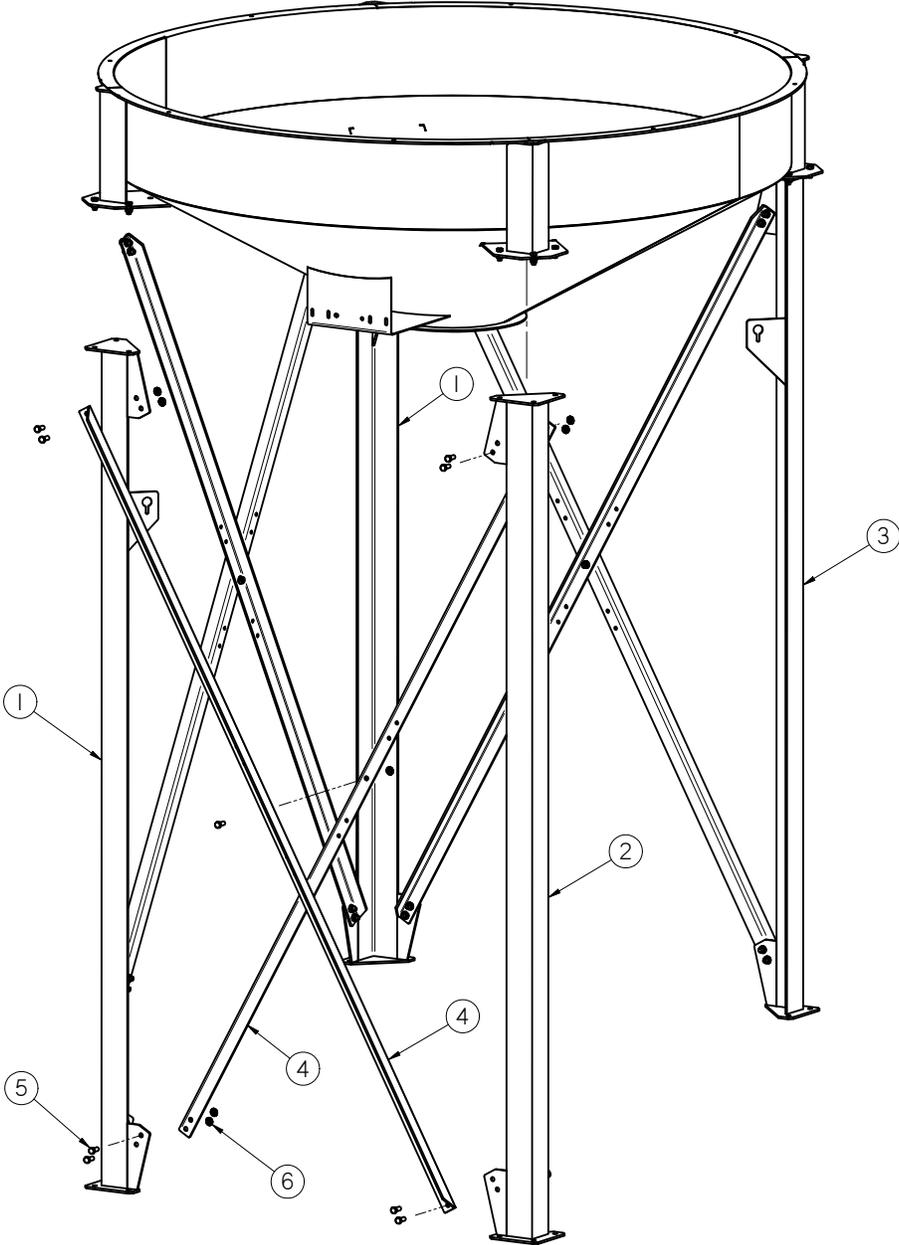
80 UNIT ADJUSTABLE MEDIUM LEG ASSEMBLY (13-05-0341)



Item #	Part #	Description	Qty
1	05-03-1532	WDMT LEG 80 MID	2
2	05-03-1533	WDMT LEG 80 MID ANGLE OPEN SIDE	2
3	05-10-4217	X-BRACE 84IN 80 UNIT SHORT VIB	6
4	06-01-0193	BOLT .500-13 X 1.25 ZP GR8	39
5	06-03-0015	NUT LOCK FLG .500-13 ZP GR5	39

WEIGH HOPPERS & SURGE HOPPERS

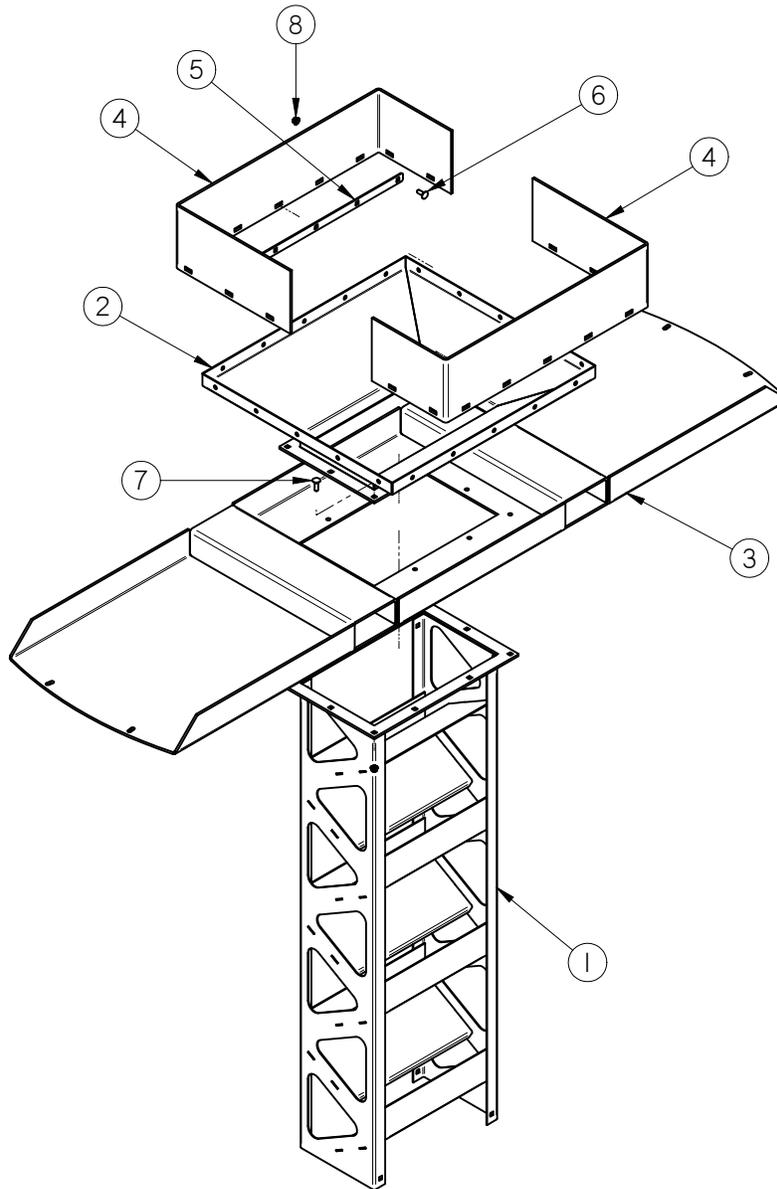
80 UNIT ADJUSTABLE TALL LEG ASSEMBLY (13-05-0334)



Item #	Part #	Description	Qty
1	05-03-1524	WDMT COLUMN	2
2	05-03-1525	WDMT COLUMN	1
3	05-03-1526	WDMT COLUMN	1
4	05-10-4308	X-BRACE	6
5	06-01-0193	BOLT .500-13 X 1.25 ZP GR8	39
6	06-03-0015	NUT LOCK FLG .500-13 ZP GR5	39

WEIGH HOPPERS & SURGE HOPPERS

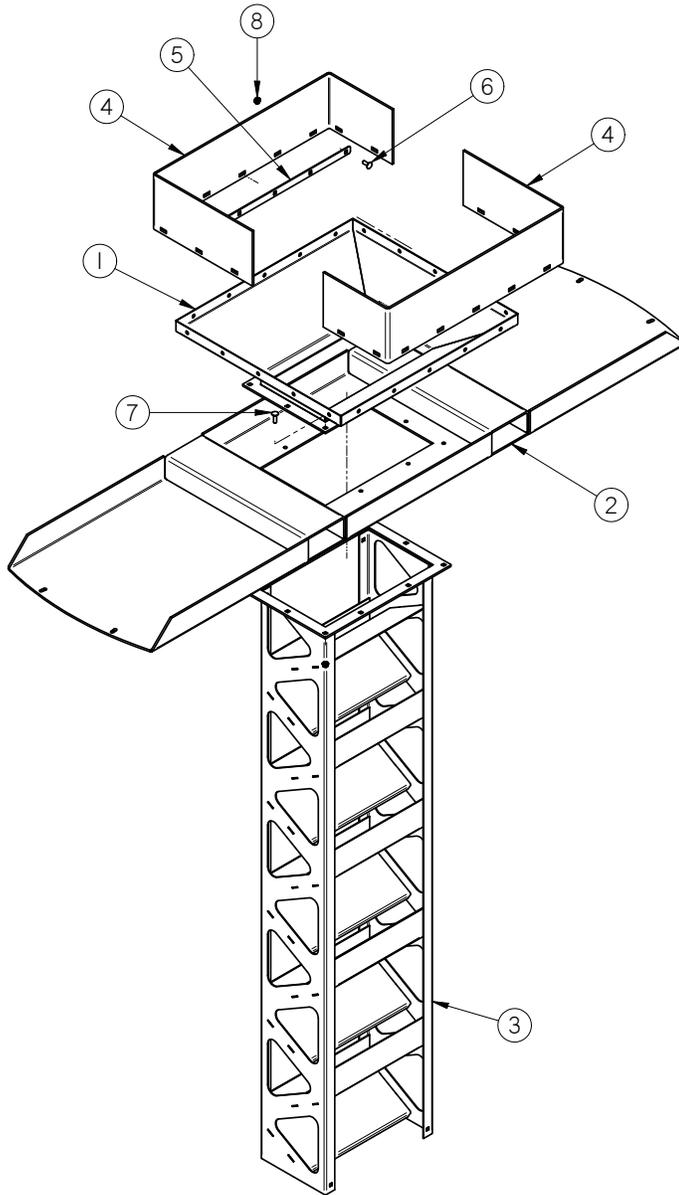
44 INCH SEED LADDER ASSEMBLY (05-03-1396)



Item #	Part #	Description	Qty
1	05-03-0662	WDMT SEED LADDER 59 TALL	1
2	05-03-0668	WDMT REMV SEED LADDER HOPP	1
3	05-03-1382	WDMT MNT PLT REMV SEED LADDER 89 DI	1
4	05-10-3296	PLT REMV SEED LADDER HOPP EXT RBBR	2
5	05-10-3308	PLT REMV SEED LADDER HOPP EXT HLDR	4
6	06-01-0115	BOLT CRG .375-16 X 1.00 ZP GR5	20
7	06-01-0127	BOLT CRG .375-16 X 1.25 ZP GR5	10
8	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	30

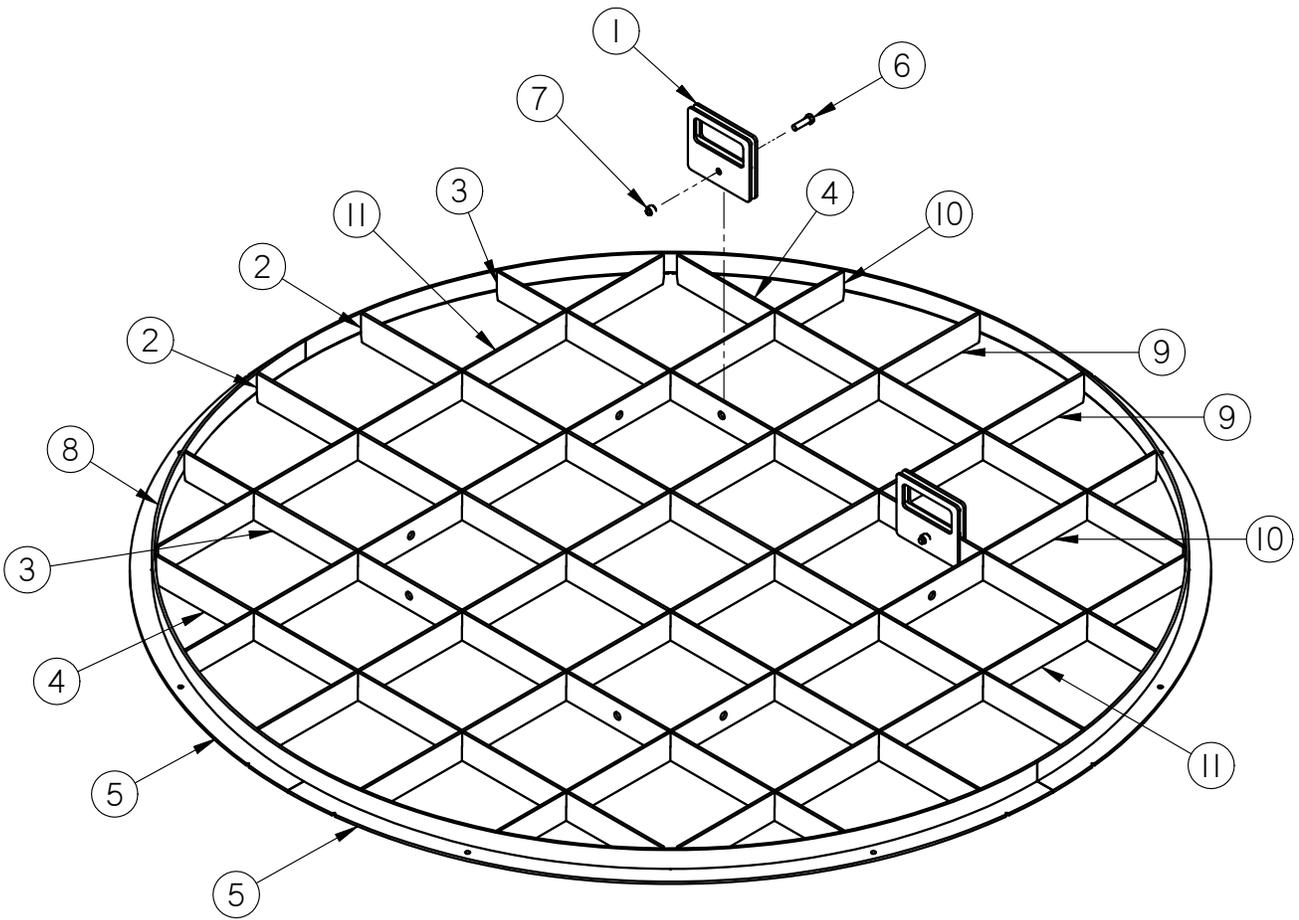
WEIGH HOPPERS & SURGE HOPPERS

71 INCH SEED LADDER ASSEMBLY (05-03-1394)



Item #	Part #	Description	Qty
1	05-03-0668	WDMT REMV SEED LADDER HOPP	1
2	05-03-1382	WDMT MNT PLT REMV SEED LADDER 89 DI	1
3	05-03-1395	WDMT SEED LADDER 89 DIA 71 EXT	1
4	05-10-3296	PLT REMV SEED LADDER HOPP EXT RBBR	2
5	05-10-3308	PLT REMV SEED LADDER HOPP EXT HLDR	4
6	06-01-0115	BOLT CRG .375-16 X 1.00 ZP GR5	20
7	06-01-0127	BOLT CRG .375-16 X 1.25 ZP GR5	10
8	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	30

HOPPER GRATE ASSEMBLY (05-07-0052)



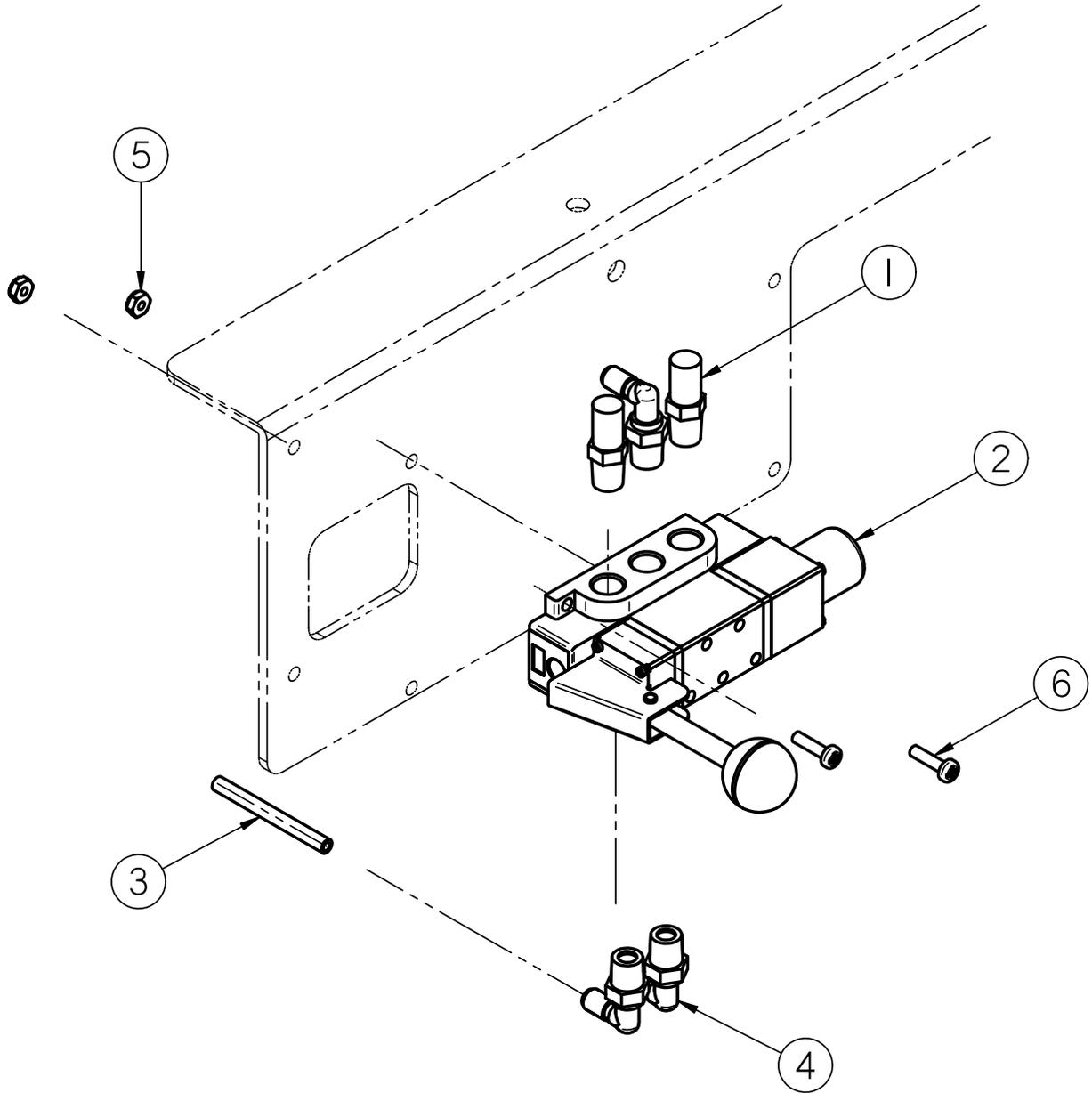
WEIGH HOPPERS & SURGE HOPPERS

HOPPER GRATE ASSEMBLY (05-07-0052)

Item #	Part #	Description	Qty
1	05-03-1366	WDMT BRKT LIFTING	2
2	05-10-0931	LONG GRATE BAR	2
3	05-10-0932	MED GRATE BAR	2
4	05-10-0933	SHORT GRATE BAR	2
5	05-10-2435	FLG .25 SECT 80 UNIT HOPP	4
6	06-01-0054	BOLT .500-13 X 1.75 ZP GR5	2
7	06-03-0004	NUT NYL LOCK .500-13 ZP GR5	2
8	100CF0	RING 80UNIT HOPP GRATE	2
9	103379	LONG GRATE BAR	2
10	10337A	MED GRATE BAR	2
11	10337B	SHORT GRATE BAR	2

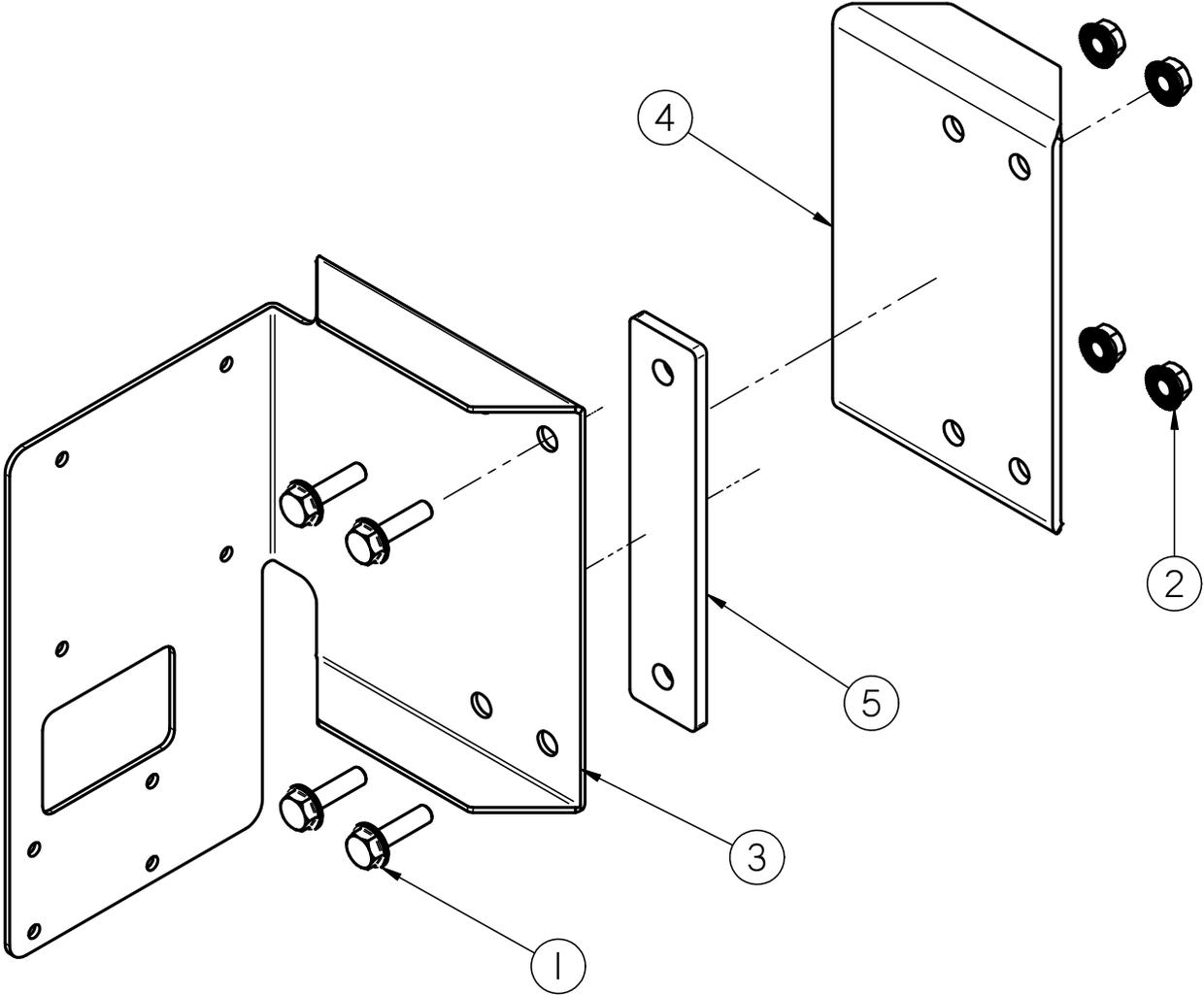
WEIGH HOPPERS & SURGE HOPPERS

3-WAY AIR VALVE ASSEMBLY (13-05-0303)



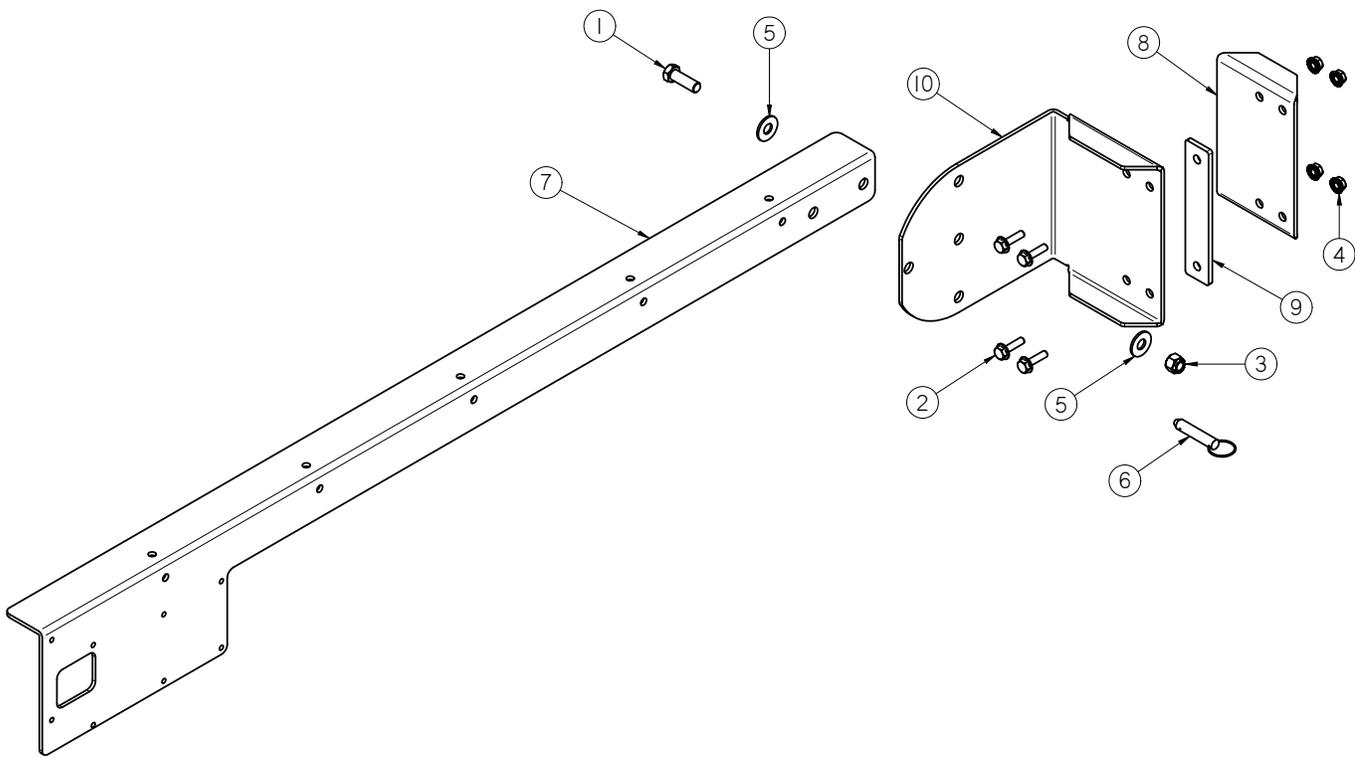
Item #	Part #	Description	Qty
1	02-02-0050	FLTR EXHAUST BRZ .250 NPT ML	2
2	02-02-0064	3-WAY AIR VALVE 1-4NPT BIMBA	1
3	02-03-0051	TBG .250 OD NYL BLK	50
4	02-16-0044	FTTG PUSH 90 DEG .250OD X .250 NPT	3
5	06-02-0043	NUT,LOCK, #10-24 ZP NYLON INSERT	2
6	06-06-0009	SCRW MACH 10-24 X .750 ZP PHLP RND	2

SHORT LEG CONTROL MOUNT ASSEMBLY (05-07-0767)



Item #	Part #	Description	Qty
1	06-01-0189	BOLT FLG .375-16 X 1.250 ZP GR5	4
2	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	4
3	103794	AIR CNTRL ARM MNT 80U VIB	1
4	103795	AIR CNTRL ARM MNT 80U VIB	1
5	103796	SPACER	1

TALL LEG CONTROL MOUNT ASSEMBLY (05-07-0769)



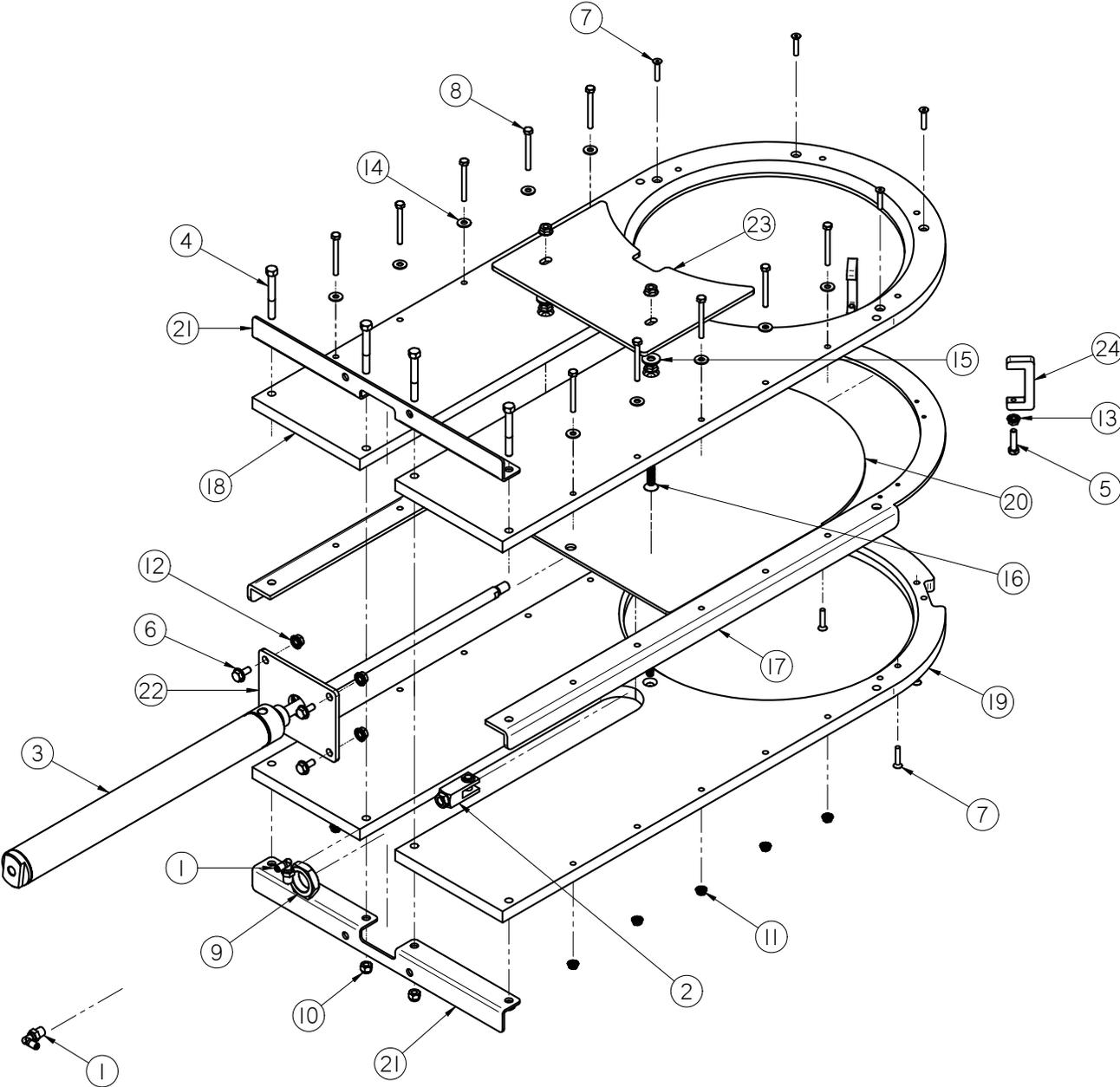
WEIGH HOPPERS & SURGE HOPPERS

TALL LEG CONTROL MOUNT ASSEMBLY (05-07-0769)

Item #	Part #	Description	Qty
1	06-01-0025	BOLT .500-13 X 1.50 ZP GR5	1
2	06-01-0189	BOLT FLG .375-16 X 1.250 ZP GR5	4
3	06-03-0004	NUT NYL LOCK .500-13 ZP GR5	1
4	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	4
5	06-05-0005	WSHR FLAT .500 ZP	2
6	06-09-0070	PIN SPGLD QCK REL RING GRIP 0.5DIA	1
7	102AC8	AIR CNTRL MNT 80U VIB	1
8	103795	AIR CNTRL ARM MNT 80U VIB	1
9	103796	SPACER	1
10	103AAA	AIR CNTRL ARM MNT 80U VIB	1

WEIGH HOPPERS & SURGE HOPPERS

AIR GATE ASSEMBLY (05-07-0603)

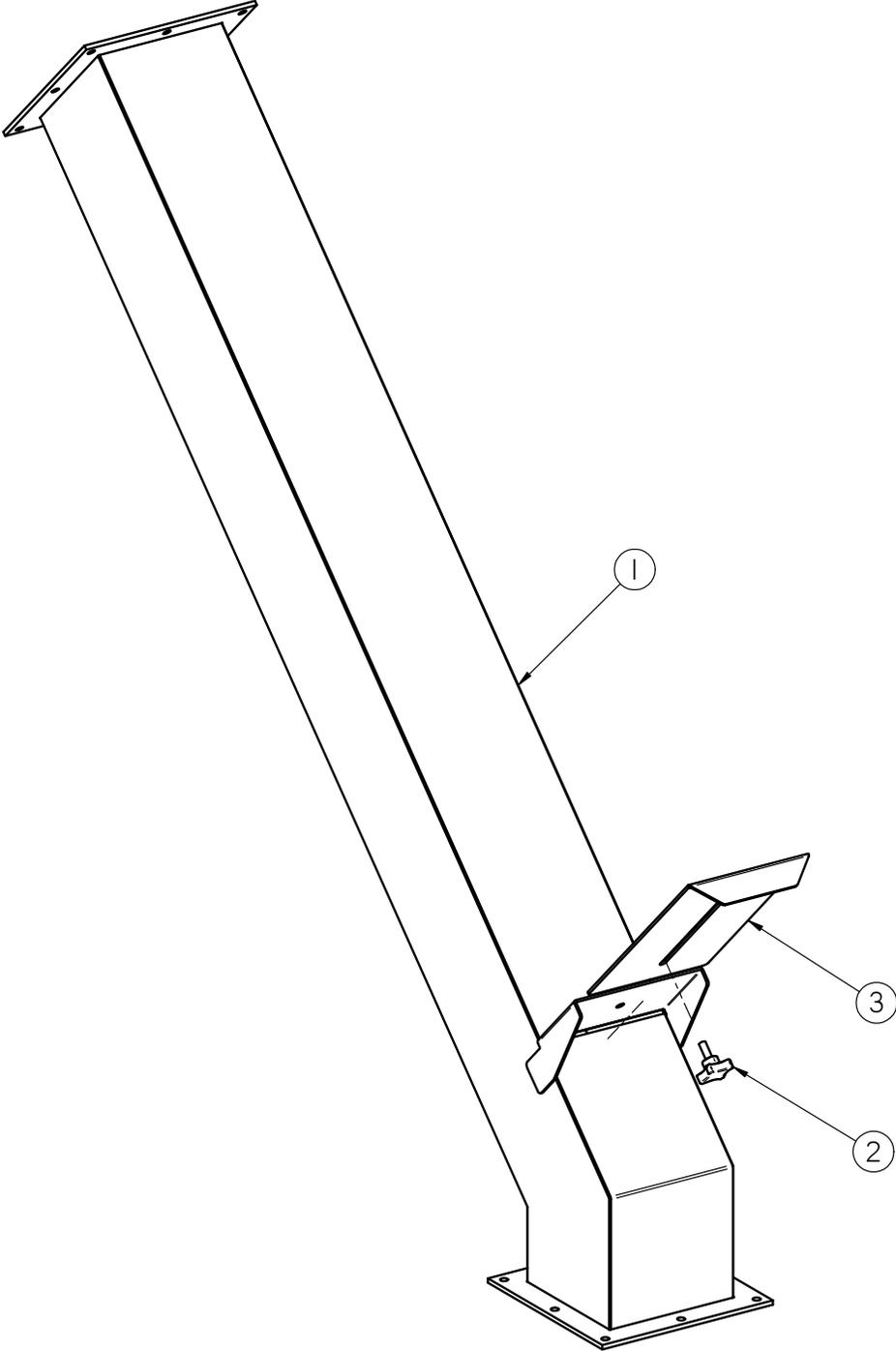


WEIGH HOPPERS & SURGE HOPPERS

AIR GATE ASSEMBLY (05-07-0603)

Item #	Part #	Description	Qty
1	02-16-0044	FTTG PUSH 90 DEG .250OD X .250 NPT	2
2	03-17-0041	CLEVIS ASSY BIMBA D-8313-A	1
3	03-17-0092	BIMBA CYL 2" BORE 16.5" STROKE	1
4	06-01-0021	BOLT .375-16 X 3.00 ZP GR5	4
5	06-01-0102	BOLT .313-18 X 1.25 ZP GR5	2
6	06-01-0124	BOLT FLG .375-16 X .750 ZP GR5	4
7	06-01-0155	SCRW MACH .250-20 X 1.25 SH FLHD	8
8	06-01-0192	BOLT .250-20 X 2.50 ZP GR5	10
9	06-02-0064	06-02-0064 BINBA D-508 NUT	1
10	06-03-0003	NUT NYL LOCK .375-16 ZP GR5	2
11	06-03-0013	NUT,LOCK, FLG .250-20 ZP SERRATTED	10
12	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	11
13	06-03-0019	NUT, FLG .3125-18 UNC ZP GRADE 5	2
14	06-05-0001	WASHER, FLAT .250	10
15	06-05-0004	WSHR FLAT .375 ZP	2
16	06-06-0070	SCRW MACH .375-16 X 1.50 SH FLHD BO	3
17	102ABC	SLD GATE SPCR 80U	1
18	102ABD	SLD GATE TOP FLG 80U	1
19	102ABE	SLD GATE BTM FLG 80U	1
20	102ABF	SLD GATE SLD 80U	1
21	102AC0	SLD GATE POWER ANGLE 80U	2
22	102AC1	SLD GATE POWER PLT 80U	1
23	102AC3	SLD GATE FLG RET 80U	1
24	103CAE	CLIP	2

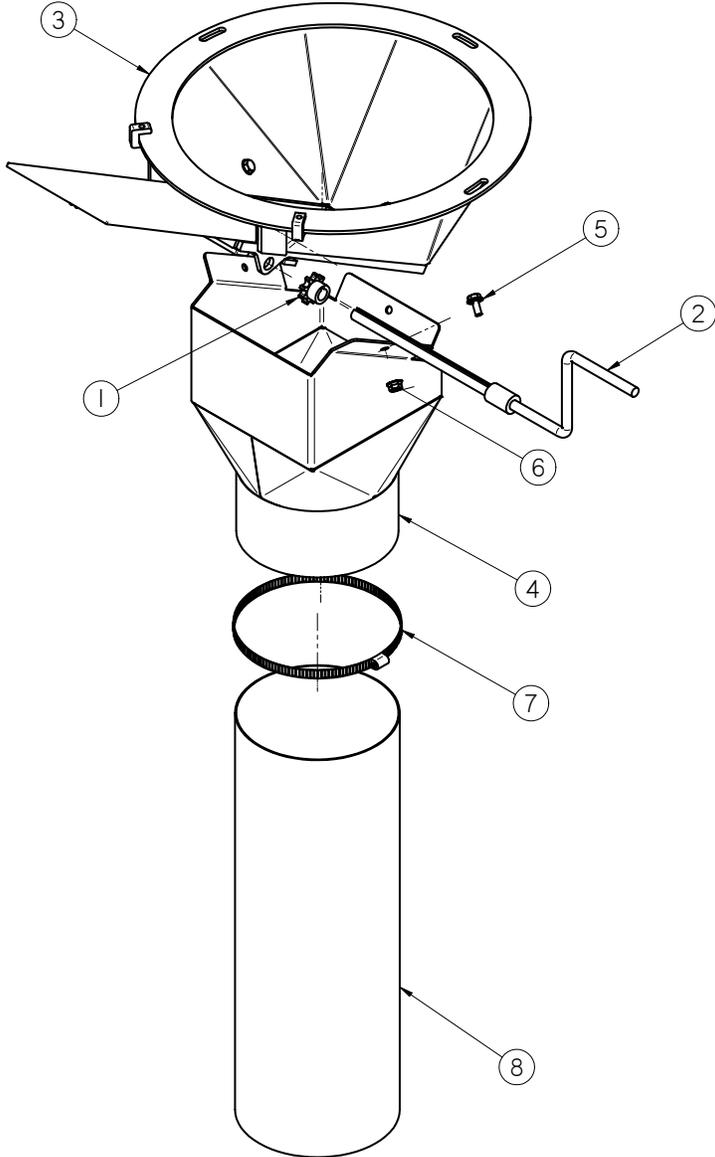
DIVERTER DISCHARGE CHUTE ASSEMBLY (05-07-0672)



Item #	Part #	Description	Qty
1	05-03-1397	WDMT DISCH CHUTE 80U DVTR W SLDGT	1
2	06-09-0066	KNOB .375 -16 X 1. 4 LUG PLASTIC	1
3	103045	GATE	1

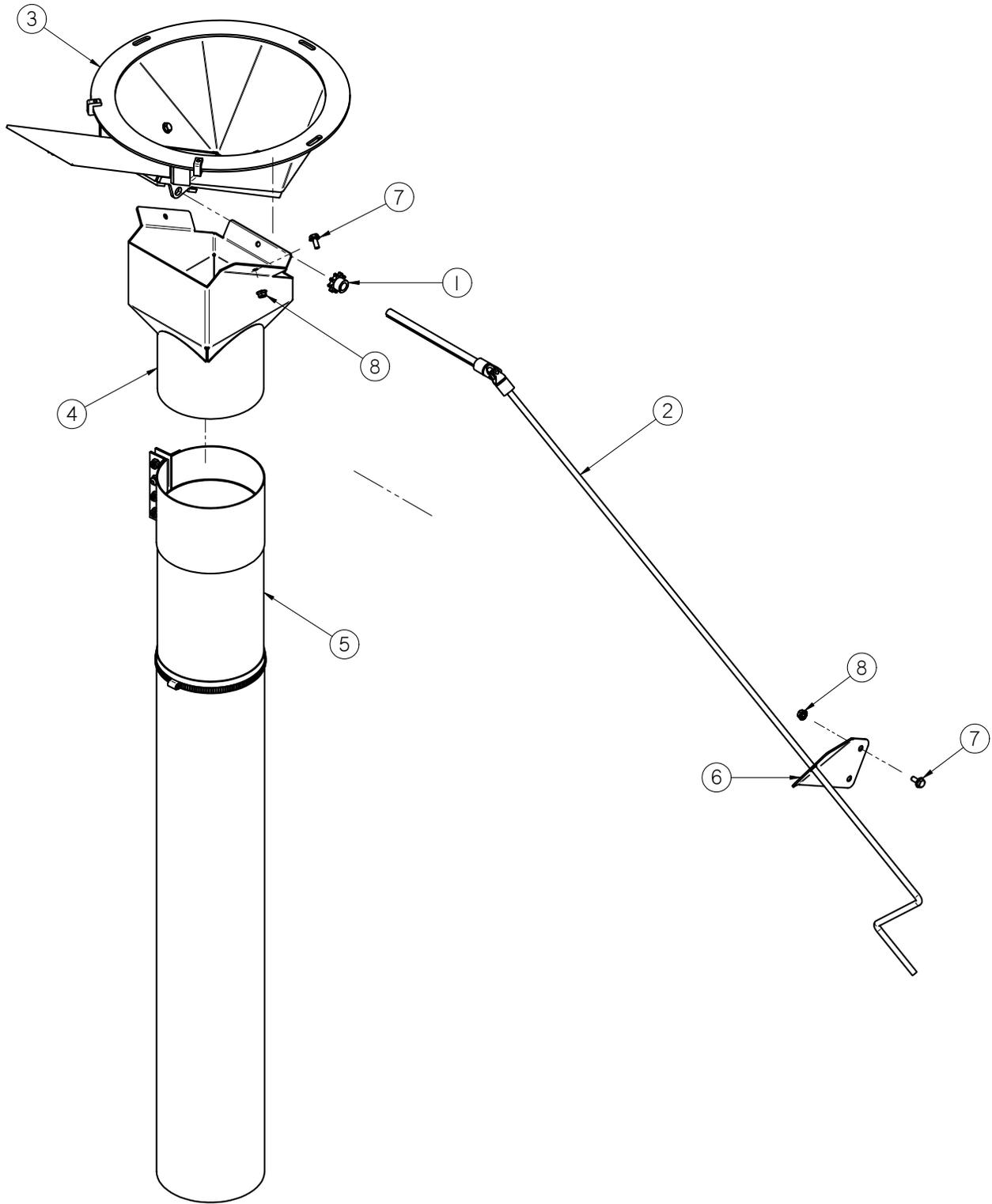
WEIGH HOPPERS & SURGE HOPPERS

SHORT HOPPER DISCHARGE GATE ASSEMBLY (05-07-0661)



Item #	Part #	Description	Qty
1	01-02-0084	SPROCKET #40 9T 0.6250 in Bore Type B	1
2	05-04-0170	WDMT CRANK 80 UNIT WEIGH HOPP	1
3	05-07-0024	WDMT,END GATE W/ SLIDE DOOR	1
4	05-07-0037	WDMT REBAGGING SPOUT 5 IN	1
5	06-01-0124	BOLT FLG .375-16 X .750 ZP GR5	3
6	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	3
7	06-07-0024	CLMP HOSE 7.125 TO 10 X 9/16 SS	1
8	102248	CNVR DSCHG SPOUT EXT 8ID	1

TALL HOPPER DISCHARGE GATE ASSEMBLY (05-07-0771)

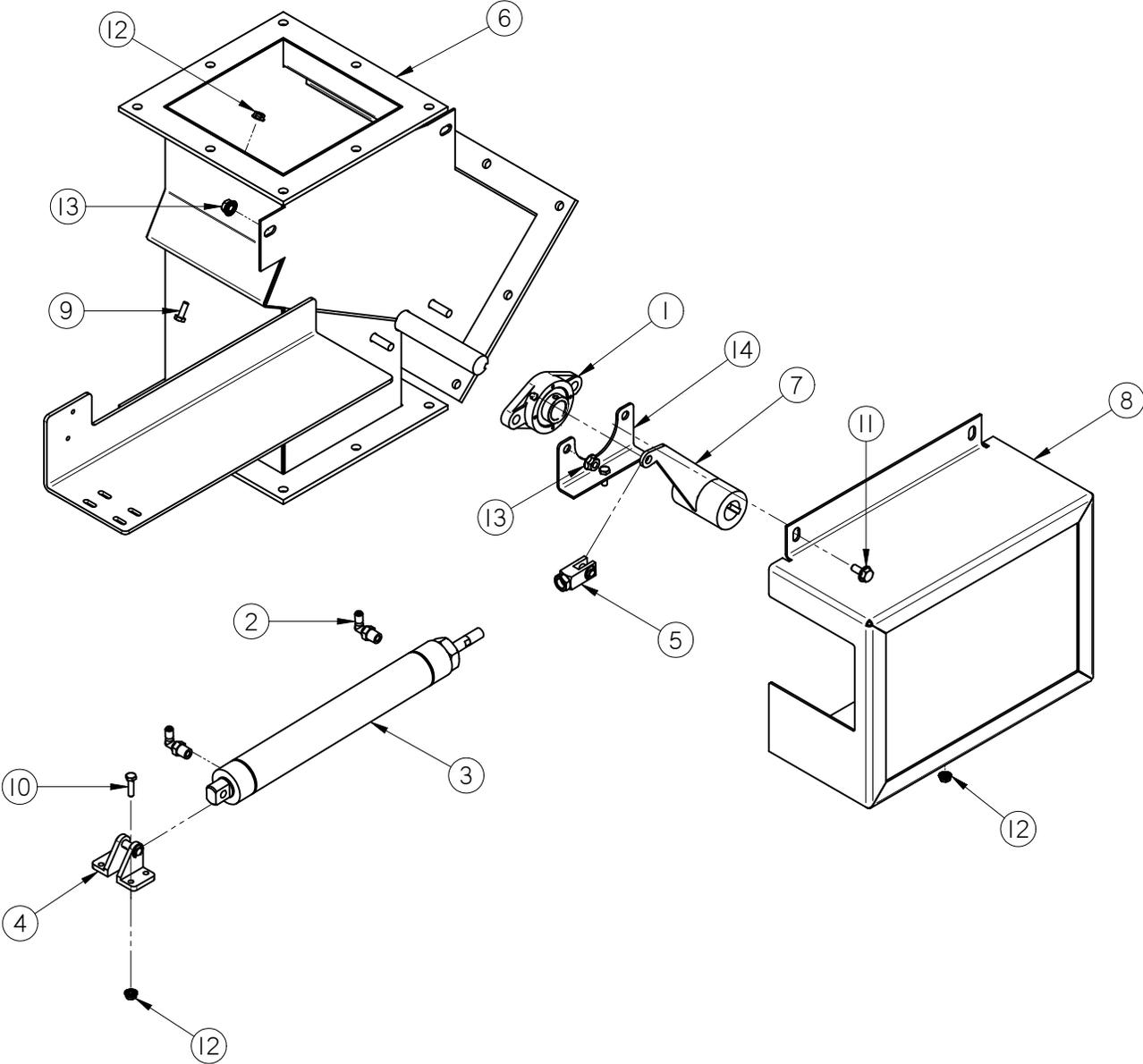


WEIGH HOPPERS & SURGE HOPPERS

TALL HOPPER DISCHARGE GATE ASSEMBLY (05-07-0771)

Item #	Part #	Description	Qty
1	01-02-0084	SPROCKET #40 9T 0.6250 in Bore Type B	1
2	05-04-0176	WDMT,CRANK ASSY	1
3	05-07-0024	WDMT,END GATE W/ SLIDE DOOR	1
4	05-07-0037	WDMT REBAGGING SPOUT 5 IN	1
5	05-07-0662	ASSY CLAMPED SPOUT EXT 8OD	1
6	05-10-4319	BRKT HOPP CRANK HNDL SUPP W BEND	1
7	06-01-0124	BOLT FLG .375-16 X .750 ZP GR5	5
8	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	5

DIVERTER "K" VALVE ASSEMBLY (13-05-0166)

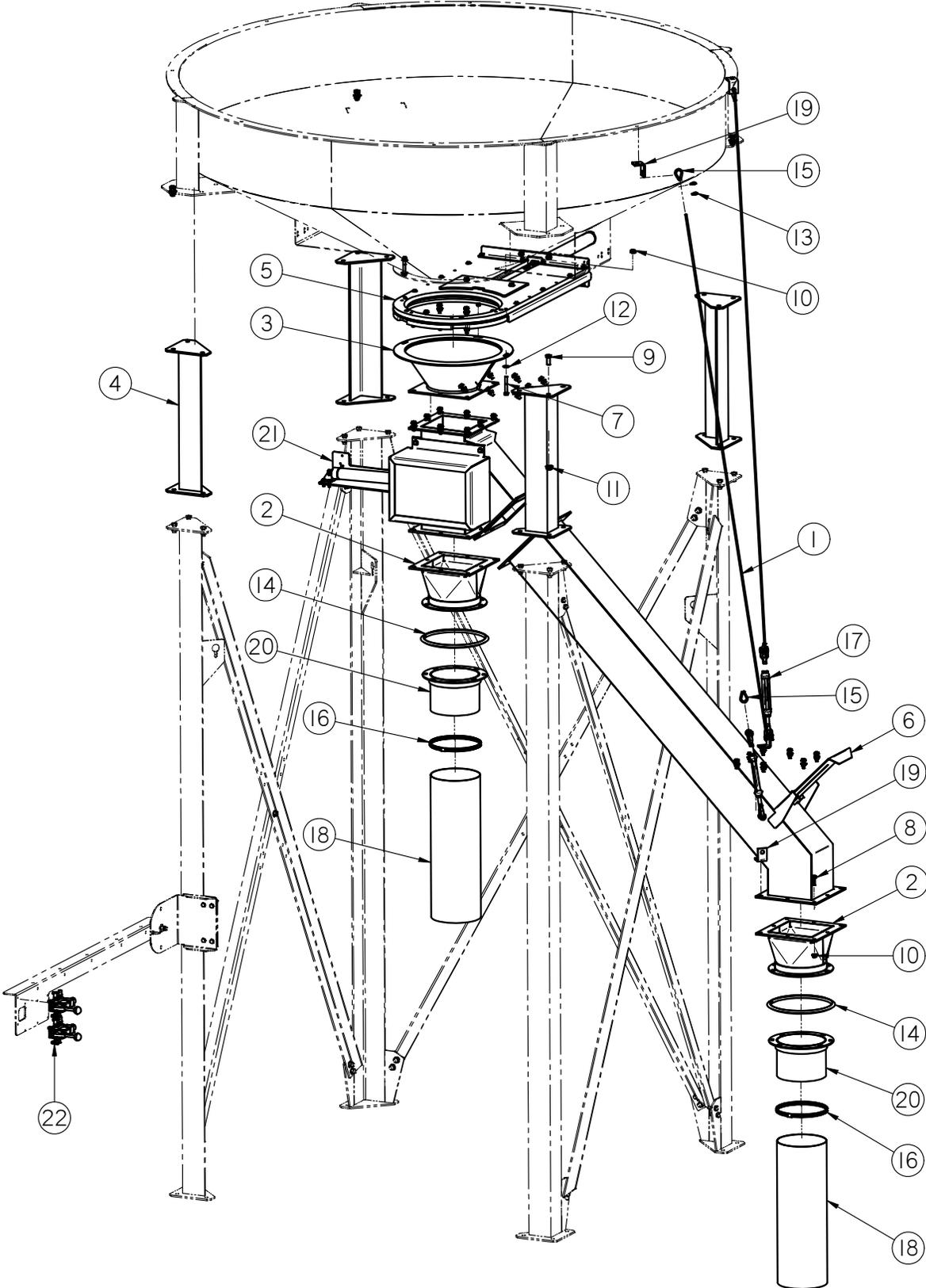


WEIGH HOPPERS & SURGE HOPPERS

DIVERTER "K" VALVE ASSEMBLY (13-05-0166)

Item #	Part #	Description	Qty
1	01-03-0003	BRG FLG MNT 1.000ID 2BOLT	2
2	02-16-0044	FTTG PUSH 90 DEG .250OD X .250 NPT	2
3	03-17-0005	AIR CYLINDER, DOUBLE ACTION M-2410-DP	1
4	03-17-0006	BIMBA PIVOT BRKT W PIN D-620-1	1
5	03-17-0007	CLEVIS 1/2-20 D-231-3	1
6	05-03-0642	WDMT SPOUT BY-PASS VLV HSG	1
7	05-03-0643	WDMT,FLAPPER VALVE PIVOT	1
8	05-06-0065	WDMT GRD TRTR BY-PASS VLV	1
9	06-01-0006	BOLT, .250-20 X .75 UNC ZP GRADE 5	4
10	06-01-0007	BOLT, .250-20 X 1 UNC ZP GRADE 5	4
11	06-01-0124	BOLT FLG .375-16 X .750 ZP GR5	2
12	06-03-0013	NUT,LOCK, FLG .250-20 ZP SERRATED	9
13	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	6
14	2201-498	WDMT Y-VALVE GRD MNT CMRCL TWR	1

DIVERTER "K" VALVE AND SLIDE GATE ASSEMBLY (05-07-0772)



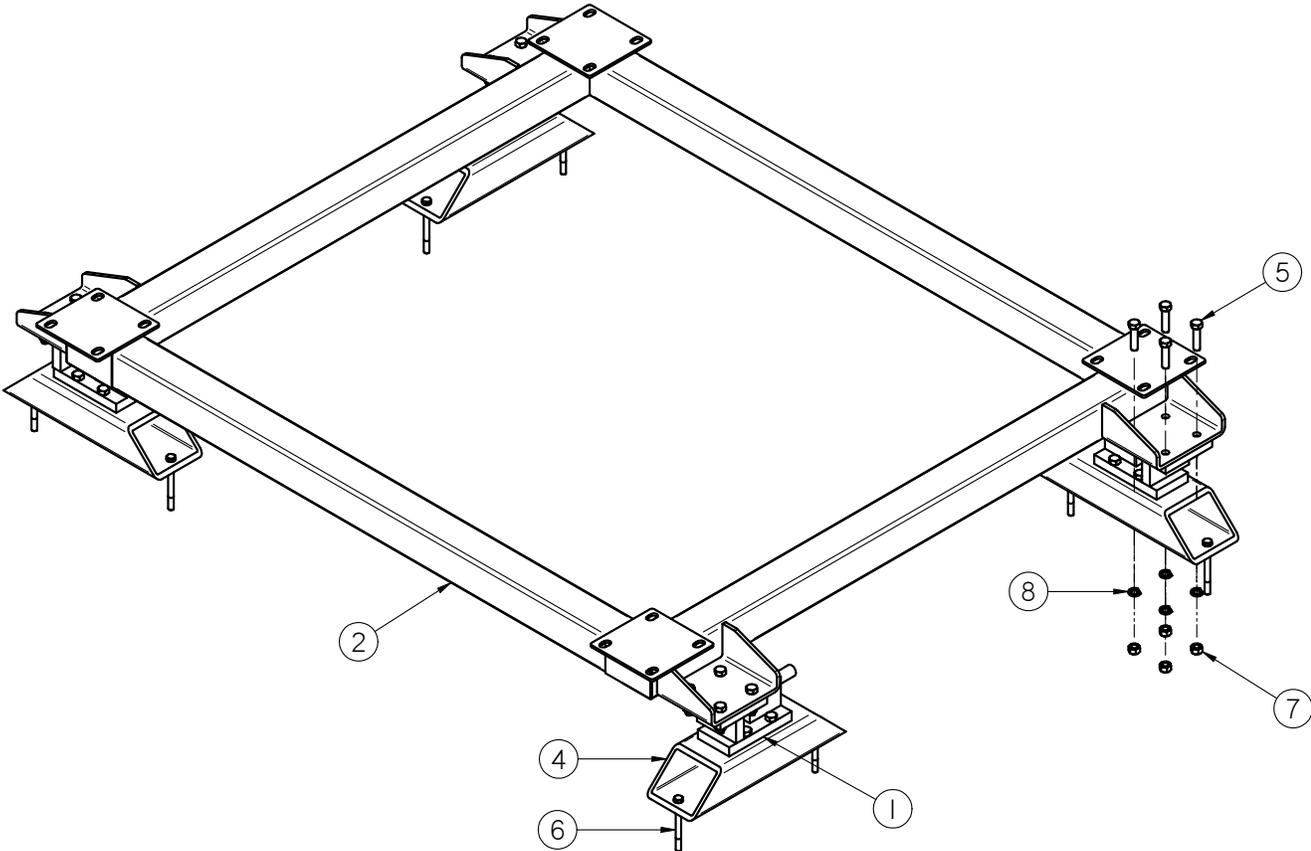
WEIGH HOPPERS & SURGE HOPPERS

DIVERTER "K" VALVE AND SLIDE GATE ASSEMBLY (05-07-0772)

Item #	Part #	Description	Qty
1	01-04-0031	WIRE ROPE .250 DIA 102" LG	2
2	05-03-0644	TRANS 8IN SQ TO 8IN RND SPOUT BYPAS	2
3	05-03-1349	CONE TRANSITION	1
4	05-03-1487	WDMT LEG EXTENSION 24 IN	4
5	05-07-0603	ASSY AIR GATE 80U	1
6	05-07-0672	ASSY DISCH CHUTE 80U DVTR W SLDGT	1
7	06-01-0116	BOLT .375-16 X 2.75 ZP GR5	2
8	06-01-0189	BOLT FLG .375-16 X 1.250 ZP GR5	32
9	06-01-0193	BOLT .500-13 X 1.25 ZP GR8	12
10	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	35
11	06-03-0015	NUT LOCK FLG .500-13 ZP GR5	12
12	06-05-0004	WSHR FLAT .375 ZP	2
13	06-07-0001	CLIP .25 WIRE ROPE	8
14	06-07-0022	8IN BAND CLAMP	2
15	06-07-0023	THIMBLE .250 WIRE ROPE HD	4
16	06-07-0024	CLMP HOSE 7.125 TO 10 X 9/16 SS	2
17	06-09-0056	TURNBUCKLE 1/2-13 JAW JAW 6IN ADJ	2
18	102248	CNVR DSCHG SPOUT EXT 8ID	2
19	103080	BRKT	4
20	10373-1700	SPOUT 6IN	2
21	13-05-0166	ASSY Y-VLV SPOUT BY-PASS	1
22	13-05-0303	KIT AIR CONTROL FOR DA CYLINDERS	2

WEIGH HOPPERS & SURGE HOPPERS

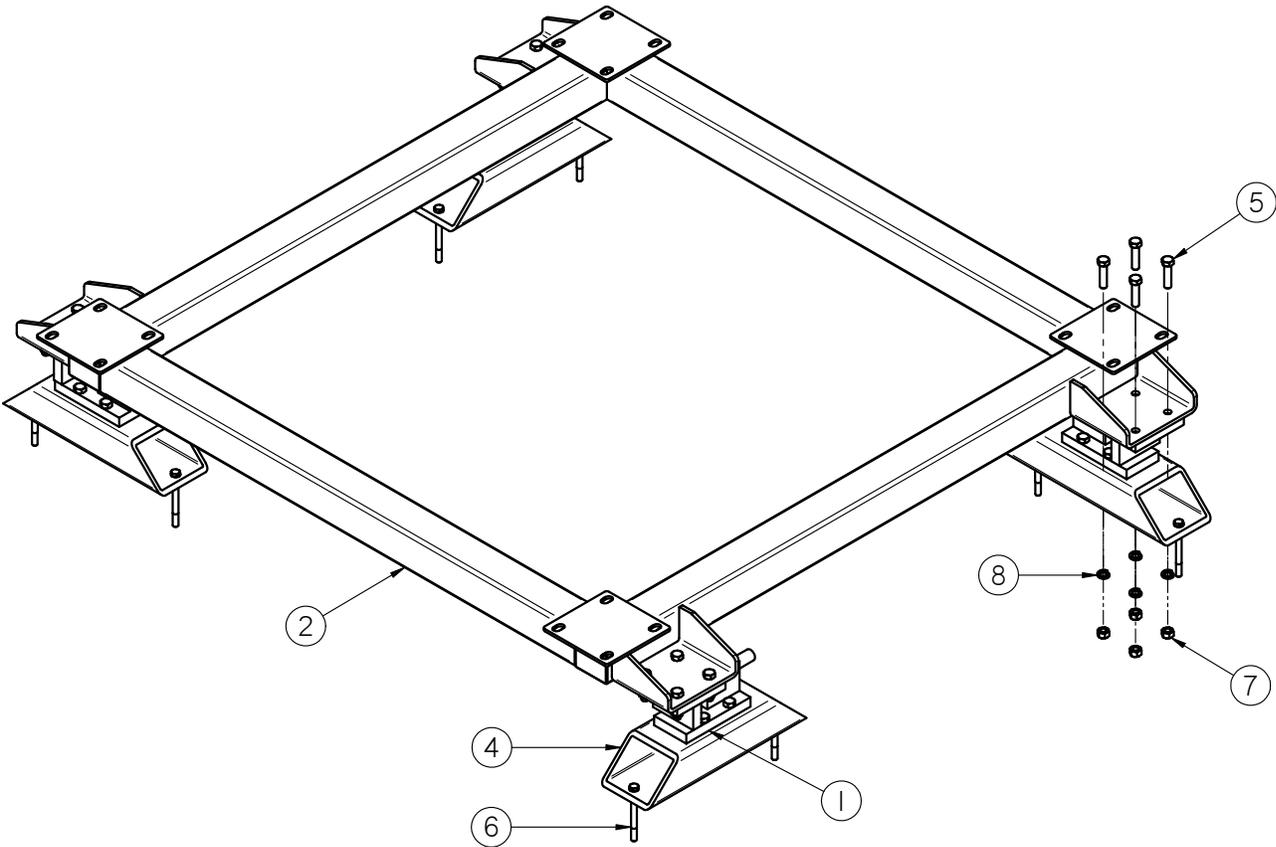
63 x 71 WEIGH HOPPER FRAME SCALE ASSEMBLY (05-07-0802)



Item #	Part #	Description	Qty
1	03-19-0036	LDCL 5000LB X4 KIT	1
2	05-03-1572	WDMT BASE FR LDCL MNT 63X71 CTRS	1
3	05-08-0153	SHIM KIT WEIGH HOPPER LDCL	1
4	05-11-0285	BASE MNT LDCL WGH HOPP FR	4
5	06-01-0075	BOLT, .625 X 11 X 2.50" UNC ZP GRADE 5	32
6	06-01-0179	BOLT,.500-13 CONC ANCHOR ZP 5.5 LONG	8
7	06-02-0005	NUT, .625-11 UNC ZP GRADE 5	32
8	06-04-0005	WASHER, .625 LOCK ZP	32

WEIGH HOPPERS & SURGE HOPPERS

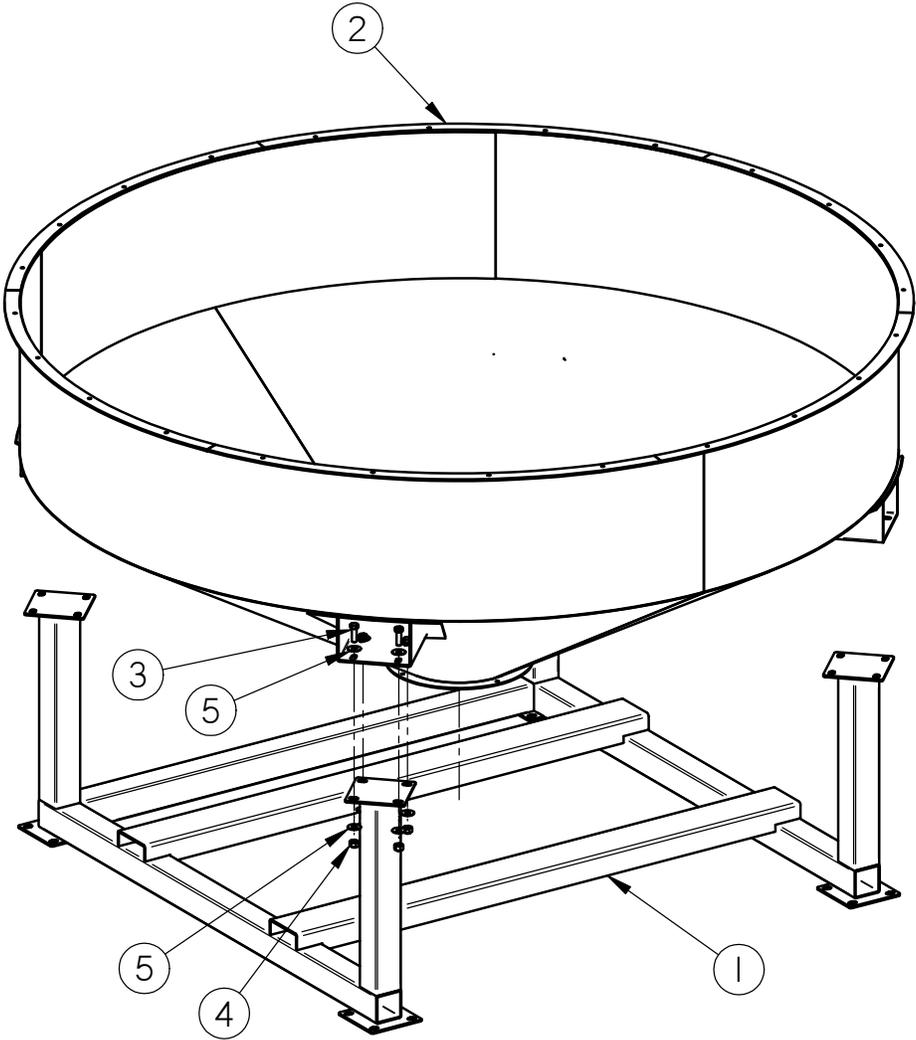
63 x 63 WEIGH HOPPER FRAME SCALE ASSEMBLY (05-07-0658)



Item #	Part #	Description	Qty
1	03-19-0036	LDCL 5000LB X4 KIT	1
2	05-03-1380	WDMT BASE FR LDCL MNT 63IN CTRS	1
3	05-08-0153	SHIM KIT WEIGH HOPPER LDCL	1
4	05-11-0285	BASE MNT LDCL WGH HOPP FR	4
5	06-01-0075	BOLT, .625 X 11 X 2.50" UNC ZP GRADE 5	32
6	06-01-0179	BOLT,.500-13 CONC ANCHOR ZP 5.5 LONG	8
7	06-02-0005	NUT, .625-11 UNC ZP GRADE 5	32
8	06-04-0005	WASHER, .625 LOCK ZP	32

WEIGH HOPPERS & SURGE HOPPERS

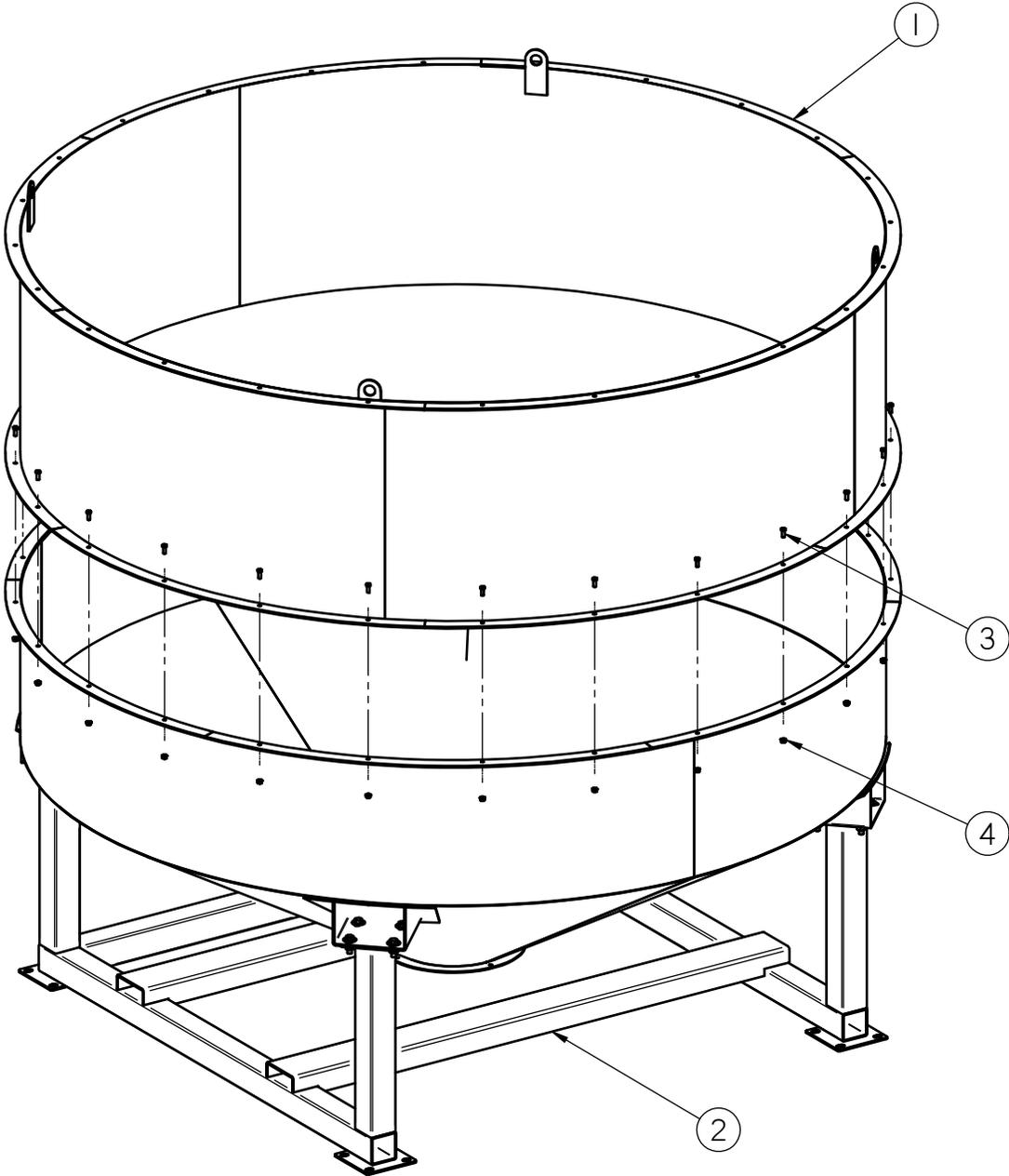
100 - 200 UNIT WEIGH HOPPER BASE ASSEMBLY (05-07-0296)



Item #	Part #	Description	Qty
1	05-03-0577	WDMT BASE FR WEIGH HPR 300 1 SD OPN	1
2	05-03-0794	WDMT WEIGHT HOPP 8 OTLT	1
3	06-01-0032	BOLT, .625 X 11 X 2" UNC ZP GRADE 5	16
4	06-03-0005	NUT NYL LOCK .625-11 ZP	16
5	06-05-0006	WASHER, .625 FLAT ZP	32

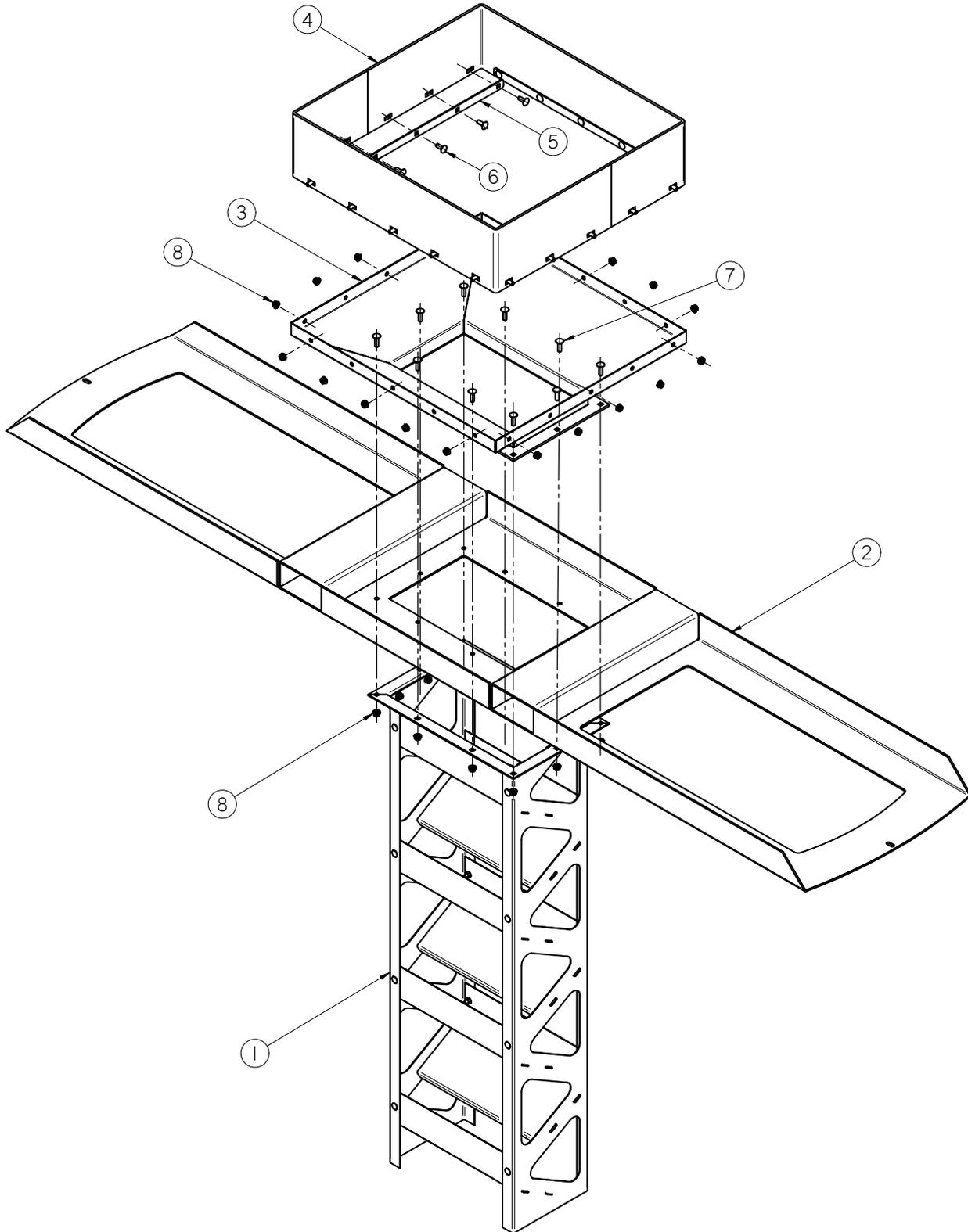
WEIGH HOPPERS & SURGE HOPPERS

300 UNIT WEIGH HOPPER BASE ASSEMBLY (05-07-0297)



Item #	Part #	Description	Qty
1	05-03-0656	WDMT WEIGHT HOPR 300 UNIT	1
2	05-07-0296	ASSY WEIGHT HOPP 100-200 UNIT SLGT	1
3	06-01-0016	BOLT .375-16 X 1.00 ZP GR5	24
4	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	24

300 UNIT SEED LADDER ASSEMBLY (05-03-0613)

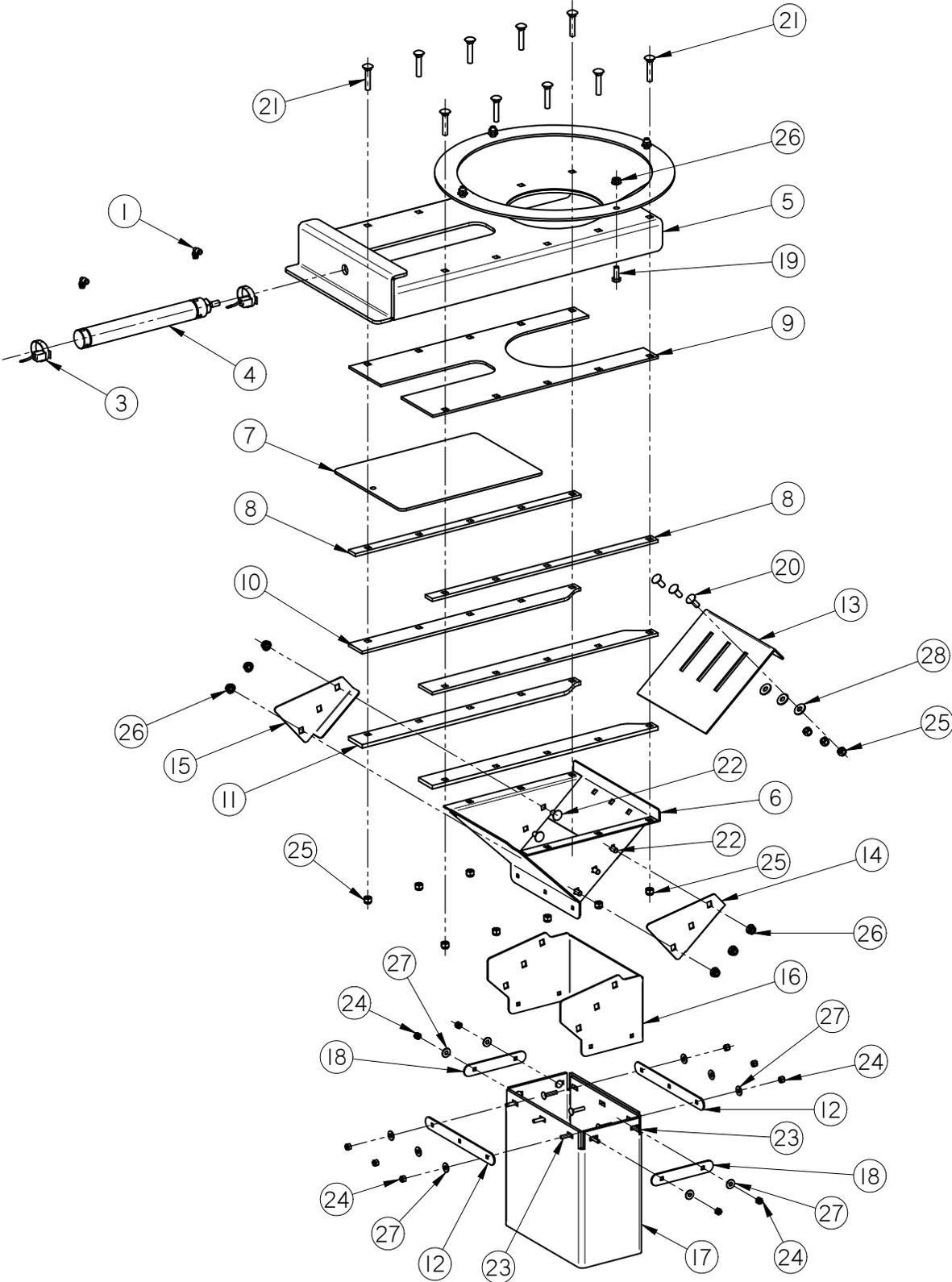


WEIGH HOPPERS & SURGE HOPPERS

300 UNIT SEED LADDER ASSEMBLY (05-03-0613)

Item #	Part #	Description	Qty
1	05-03-0662	ASSY SEED LADDER 300UNIT	1
2	05-03-0667	WDMT MNT PLT REMV SEED LADDER	1
3	05-03-0668	WDMT REMV SEED LADDER HOPP	1
4	05-10-3296	PLT REMV SEED LADDER HOPP EXT RBBR	2
5	05-10-3308	PLT REMV SEED LADDER HOPP EXT HLDR	4
6	06-01-0115	BOLT CRG .375-16 X 1.00 ZP GR5	20
7	06-01-0127	BOLT, CARRIAGE, .375-16 X 1 1/4 ZP G5	10
8	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	30

300 UNIT WEIGH HOPPER SLIDE GATE ASSEMBLY (12-04-0017)

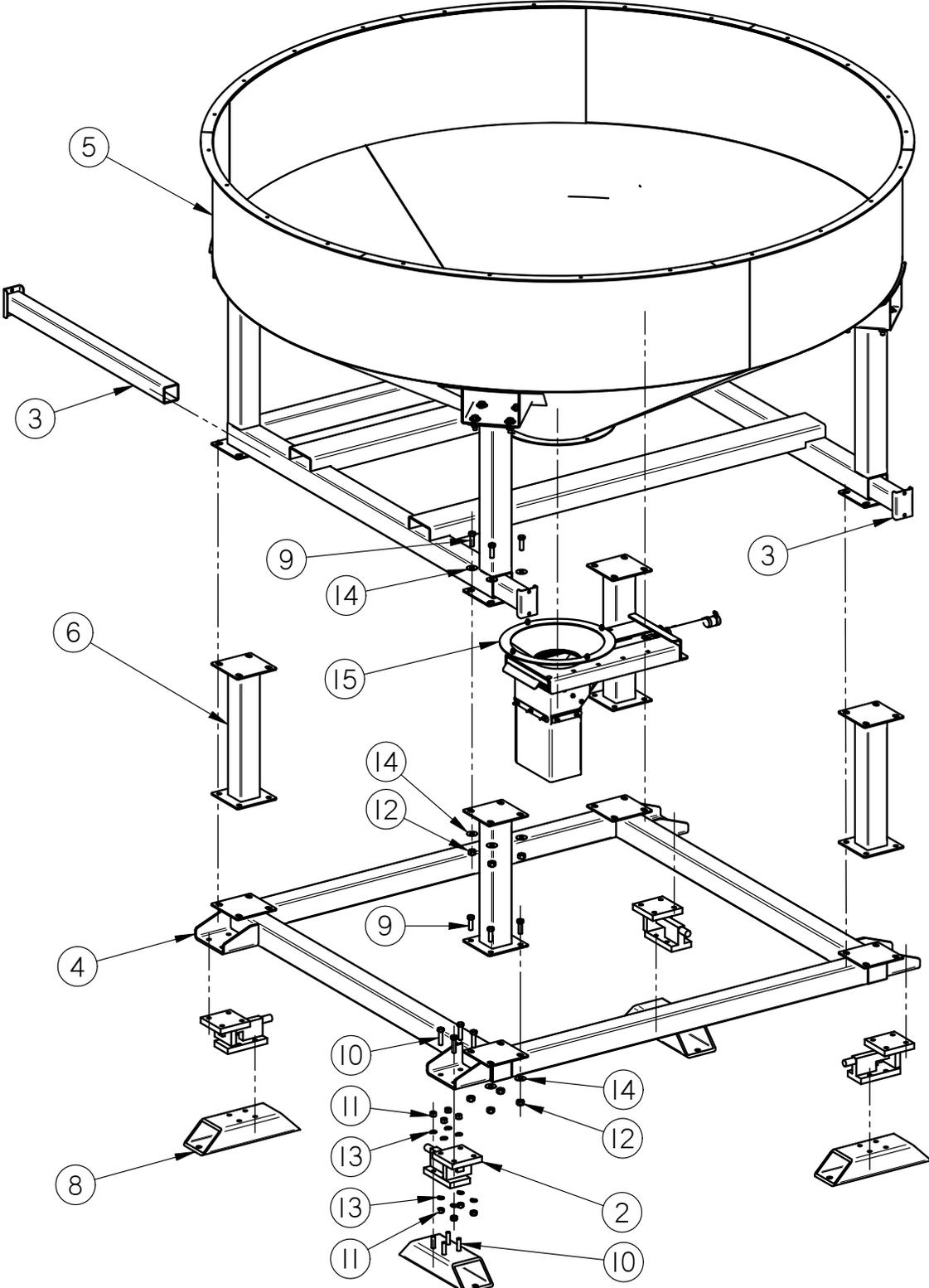


WEIGH HOPPERS & SURGE HOPPERS

300 UNIT WEIGH HOPPER SLIDE GATE ASSEMBLY (12-04-0017)

Item #	Part #	Description	Qty
1	02-16-0046	FTTG PUSH 90 DEG .250 OD X .125 NPT	2
2	03-17-0046	CLEVIS ASSY BIMBA D-8311-A	1
3	03-17-0047	SW MAG REED MRS-.087-PBL-17	2
4	03-17-0067	CYL AIR 9"STROKE 1.5 IN BORE DBL	1
5	05-03-0776	WDMT SLIDE GATE WEIGH HOPP 8 OPEN	1
6	05-07-0295	ASSY SLIDE GATE CS CHUTE 8.00	1
7	05-10-3456	PLT SLIDE 8 SLIDE GATE	1
8	05-10-3457	PLT UHMW 8 SLIDE GATE SIDE	2
9	05-10-3458	PLT UHMW STRIPPER SLIDE GATE 8.00	1
10	05-10-3459	PLT UHMW BRG SLIDE GATE 8.00	2
11	05-10-3460	PLT CS BRG SUPT SLIDE GATE 8.00	2
12	05-10-3474	PLT SLIDEGATE CLAMP 2 12-04-0012	2
13	05-10-3479	PLT DUMP HOPP SLIDE CS 2	1
14	05-10-3480	PLT DUMP HOPP SLIDE 8 CS	1
15	05-10-3481	PLT DUMP HOPP SLIDE 8 CS	1
16	05-10-3482	PLT SLIDEGATE CHUTE HANGER	1
17	05-10-3483	PLT SLIDEGATE CHUTE	1
18	05-10-3484	PLT SLIDEGATE CLAMP 2 12-04-0012	2
19	06-01-0016	BOLT .375-16 X 1.00 ZP GR5	4
20	06-01-0115	BOLT CRG .375-16 X 1.00 ZP GR5	3
21	06-01-0136	BOLT CRG .375-16 X 2.00 ZP GR5	10
22	06-01-0153	BOLT CRG .375-16X.750 ZP SHORT NECK	6
23	06-01-0159	BOLT CRG .25-20 X 1.25 ZP GR5	10
24	06-03-0001	NUT,LOCK, .250-20 ZP G5 NYLON INSERT	10
25	06-03-0003	NUT NYL LOCK .375-16 ZP GR5	13
26	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	10
27	06-05-0001	WASHER, FLAT .250	10
28	06-05-0004	WSHR FLAT .375 ZP	3

100 - 200 UNIT WEIGH HOPPER FINAL ASSEMBLY (05-07-0456)

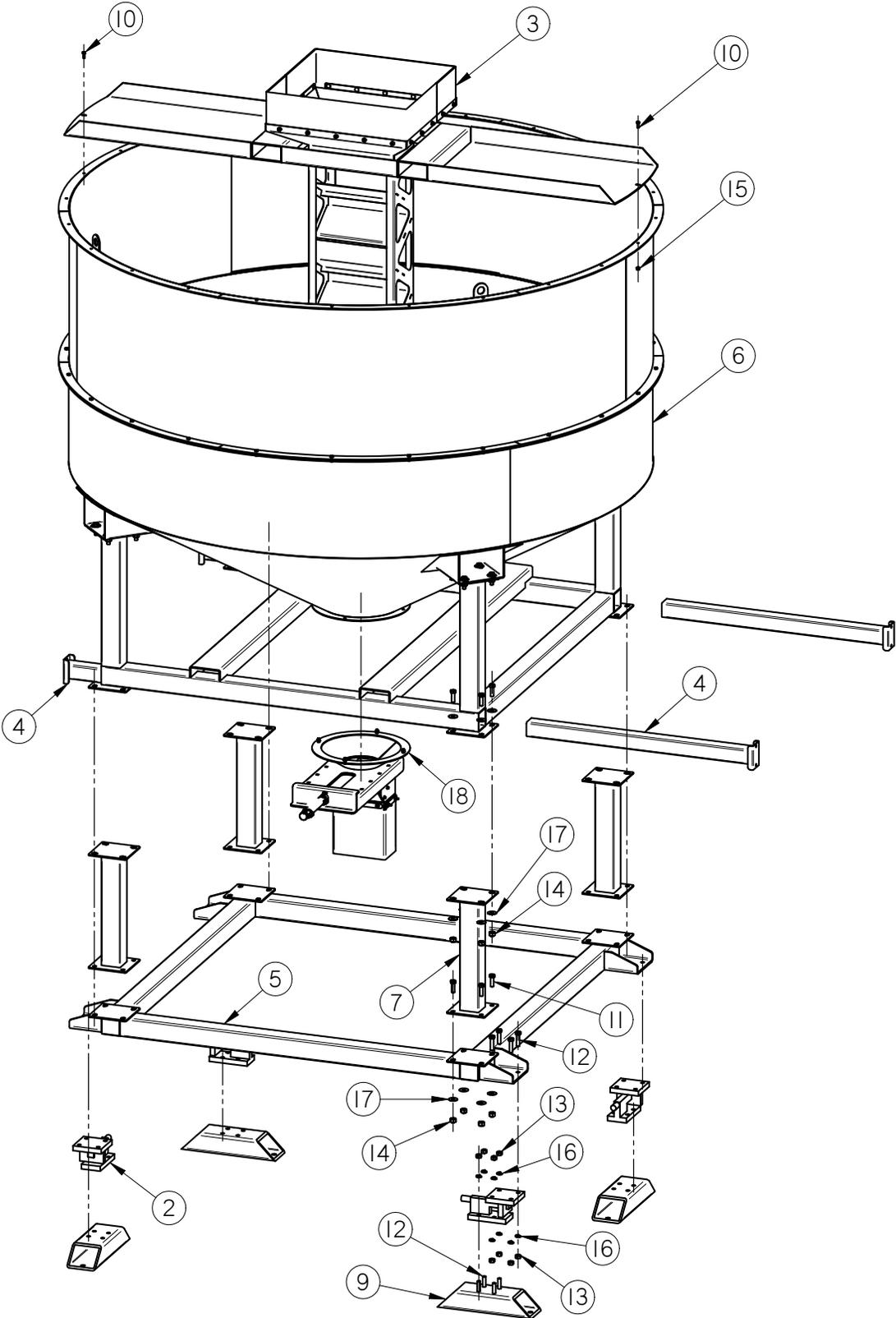


WEIGH HOPPERS & SURGE HOPPERS

100 - 200 UNIT WEIGH HOPPER FINAL ASSEMBLY (05-07-0456)

Item #	Part #	Description	Qty
1	03-19-0030	DIGITAL INDICATOR CARDINAL 205	1
2	03-19-0036	LDCL 5000LB X4 KIT	1
3	05-03-0810	WDMT SCL WEIGHT HANGER	4
4	05-03-0870	WDMT BASE FR LDCL MNT 76IN CTRS	1
5	05-07-0296	ASSY WEIGHT HOPP 100-200 UNIT SLGT	1
6	05-07-0307	ASSY WEIGH HOPP FR 24 OAL FS-3	1
7	05-08-0153	SHIM KIT WEIGH HOPPER LDCL	1
8	05-11-0285	BASE MNT LDCL WGH HOPP FR	4
9	06-01-0032	BOLT, .625 X 11 X 2" UNC ZP GRADE 5	32
10	06-01-0075	BOLT, .625 X 11 X 2.50" UNC ZP GRADE 5	32
11	06-02-0005	NUT, .625-11 UNC ZP GRADE 5	32
12	06-03-0005	NUT NYL LOCK .625-11 ZP	32
13	06-04-0005	WASHER, .625 LOCK ZP	32
14	06-05-0006	WASHER, .625 FLAT ZP	48
15	12-04-0017	SLIDE GATE WEIGHT HOPP 8.00	1

300 UNIT WEIGH HOPPER FINAL ASSEMBLY (05-07-455)



WEIGH HOPPERS & SURGE HOPPERS

300 UNIT WEIGH HOPPER FINAL ASSEMBLY (05-07-0455)

Item #	Part #	Description	Qty
1	03-19-0030	DIGITAL INDICATOR CARDINAL 205	1
2	03-19-0036	LDCL 5000LB X4 KIT	1
3	05-03-0613	ASSY SEED LADDER FORKLIFT REMOVABLE	1
4	05-03-0810	WDMT SCL WEIGHT HANGER	4
5	05-03-0870	WDMT BASE FR LDCL MNT 76IN CTRS	1
6	05-07-0297	ASSY WEIGHT HOPP 300 UNIT SLGT	1
7	05-07-0307	ASSY WEIGH HOPP FR 24 OAL FS-3	1
8	05-08-0153	SHIM KIT WEIGH HOPPER LDCL	1
9	05-11-0285	BASE MNT LDCL WGH HOPP FR	4
10	06-01-0016	BOLT .375-16 X 1.00 ZP GR5	2
11	06-01-0032	BOLT, .625 X 11 X 2" UNC ZP GRADE 5	32
12	06-01-0075	BOLT, .625 X 11 X 2.50" UNC ZP GRADE 5	32
13	06-02-0005	NUT, .625-11 UNC ZP GRADE 5	32
14	06-03-0005	NUT NYL LOCK .625-11 ZP	32
15	06-03-0014	NUT LOCK FLG .375-16 ZP GR5	2
16	06-04-0005	WASHER, .625 LOCK ZP	32
17	06-05-0006	WASHER, .625 FLAT ZP	48
18	12-04-0017	SLIDE GATE WEIGHT HOPP 8.00	1

WEIGH HOPPERS & SURGE HOPPERS

NOTES:

USC LIMITED WARRANTY

SECTION I

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

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

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

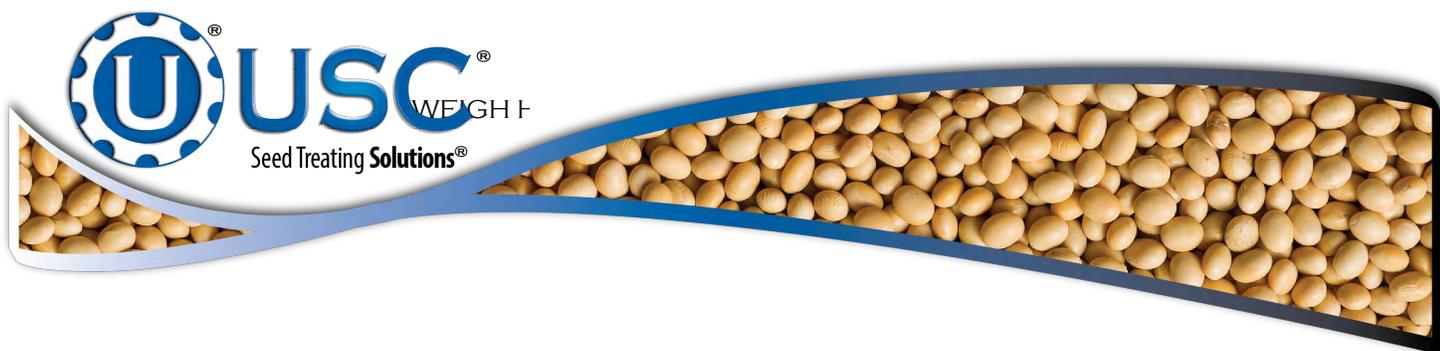
3. **Exclusive Obligation:** THIS WARRANTY IS EXCLUSIVE. The sole and exclusive obligation of Manufacturer shall be to repair or replace the defective Products in the manner and for the period provided above. Manufacturer shall not have any other obligation with respect to the Products or any part thereof,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

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

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

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





USC, LLC

2320 124th road

Sabetha, KS 66534

PHONE: (785) 431-7900

FAX: (785) 431-7950

EMAIL: sales-team@uscllc.com

WEB: www.uscllc.com

