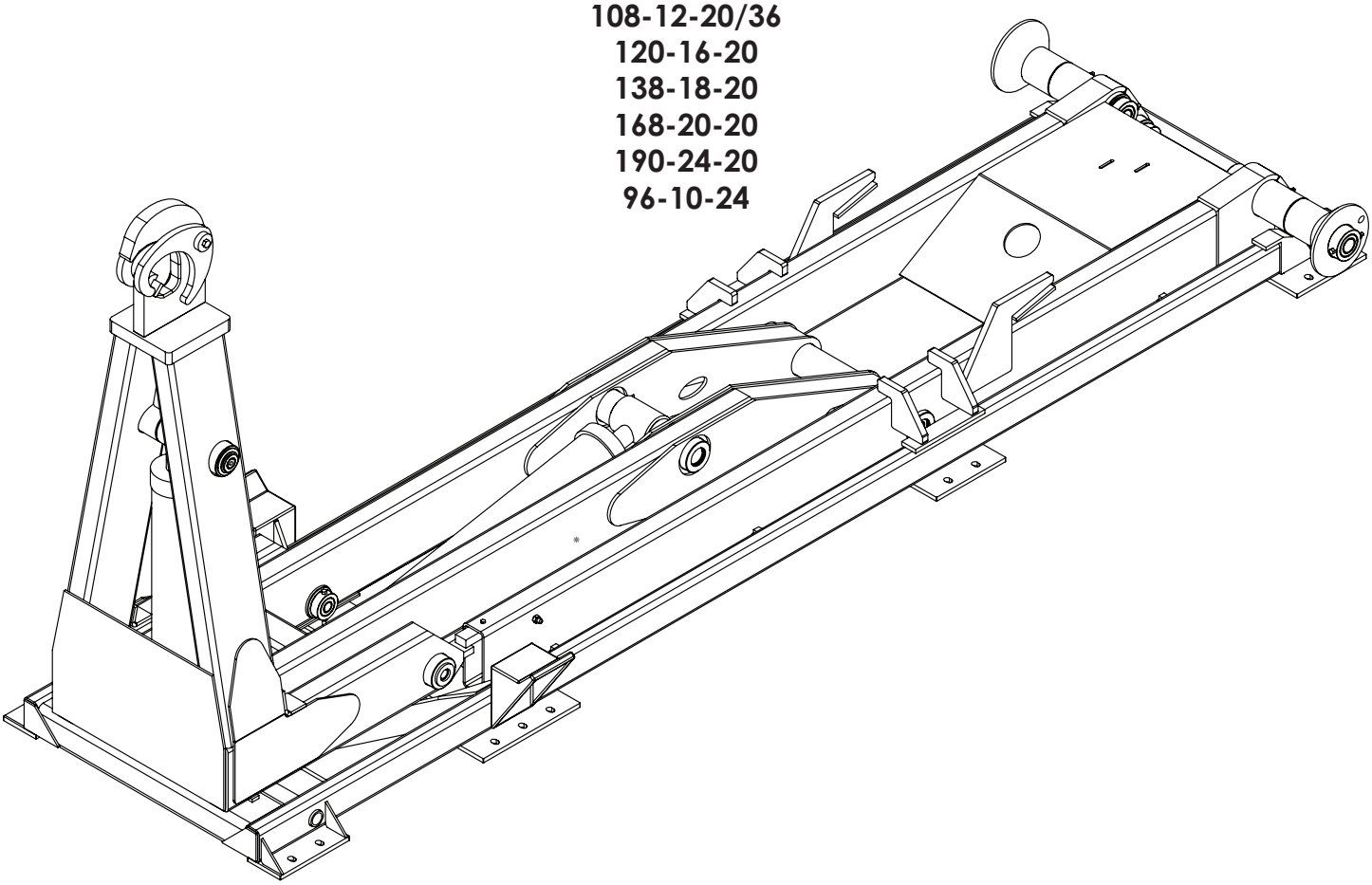
Shuttle Hooklift
Owners' Manual

Safety • Operation • Installation • Maintenance

Models
108-11-20
108-12-20/36
120-16-20
138-18-20
168-20-20
190-24-20
96-10-24



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Hooklift Manual Revisions

Date of Revision	Section Revised	Description of Revision
May 14, 2008	Chapter 7 - Assembly Drawings	Updatted Dump assembly drawings to reflect engineering changes.
January 14, 2010	Chapter 6 - Installation Chapter 7 - Assembly Drawings	Updated Dump assembly and Controller assembly drawings to reflect engineering changes.
March 10, 2010	Chapter 6 - Installation	Updated Reservoir assembly drawing to reflect engineering changes.
March 16, 2011	Chapter 7 - Assembly Drawings	Updated Base assembly drawings to reflect engineering changes.

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AN OVERVIEW TO OWNER, OPERATOR AND SERVICE PERSONNEL ABOUT SAFETY

As the owner or employer, it is your responsibility to instruct the operator in the safe operation of this equipment and to provide the operator with properly maintained equipment.

FAILURE TO READ THIS MANUAL BY ANYONE WHO WILL OPERATE, SERVICE, OR WORK AROUND THIS HOOKLIFT IS A MISUSE OF THE EQUIPMENT. DEATH OR SERIOUS INJURY WILL RESULT FROM IMPROPER USE OR MAINTENANCE OF THIS MACHINE.

Occupational safety is a prime concern of Stellar Industries in the design and production of this hooklift. Our goal in writing this manual was the safety of the operator and others who work around this equipment.

It is your responsibility to know the specific requirements, governmental regulations, precautions and work hazards that exist in the operation and maintenance of this hooklift. You shall make these available and known to all personnel working with and around the equipment, so that all of you will take the necessary and required safety precautions. **FAILURE TO HEED THESE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.**

It is also your responsibility to operate and maintain your hooklift with caution, skill, and good judgment. Following the recognized safety procedures will help you avoid accidents. Modification to any part of his hooklift can create a safety hazard and therefore shall not be made without the manufacturer's written approval. Use only factory approved accessories, options, and parts on this equipment. The rebuilding or remounting of this equipment requires the mounting procedures and retesting to be in accordance with factory instructions. Safety covers and devices must remain installed and maintained in proper working condition. Safety decals must be maintained, be completely legible, and be properly located. If safety covers, devices, or decals are missing, they must be replaced with the proper designated Stellar part.

Be capable, careful, and concerned! Make safety your everyday business!

Attention!

According to Federal Law (49 cfr part 571), each final-stage manufacturer shall complete the vehicle in such a manner that it conforms to the standards in effect on the date of manufacture of the incomplete vehicle, the date of final completion, or a date between those two dates. This requirement shall, however, be superseded by any conflicting provisions of a standard that applies by its terms to vehicles manufactured in two or more stages.

Therefore, the installer of Stellar hooklifts is considered one of the manufacturers of the vehicle. As such a manufacturer, the installer is responsible for compliance with all applicable federal and state regulations. They are required to certify that the vehicle is in compliance with the Federal Motor Vehicle Safety Standards and other regulations issued under the National Traffic and Motor Vehicle Safety Act.

Please reference the Code of Federal Regulations, title 49 - Transportation, Volume 5 (400-999), for further information, or visit www.gpoaccess.gov/nara/index.html for the full text of Code of Federal Regulations.

Introduction

Stellar Hooklifts are designed to provide safe and dependable service for a variety of operations. With proper use and maintenance, these hooklifts will operate at peak performance for many years.

To promote this longevity, carefully study the information contained in this manual before putting the equipment into service. Though it is not intended to be a training manual for beginners, this manual should provide solid guidelines for the safe and proper usage of the hooklift.

Once you feel comfortable with the material contained in this manual, strive to exercise your knowledge as you safely operate and maintain the hooklift. This process is vital to the proper use of the unit.

A few notes on this manual:
A copy of this manual is provided with every hooklift and shall remain with the hooklift at all times. Information contained within this manual does not cover all maintenance, operating, or repair instructions pertinent to all possible situations.

Please be aware that some sections of this manual contain information pertaining to Stellar manufactured hooklifts in general and may or may not apply to your specific model.

This manual is not binding. Stellar Industries, Inc. reserves the right to change, at any time, any or all of the items, components, and parts deemed necessary for product improvement or commercial/production purposes. This right is kept with no requirement or obligation for immediate mandatory updating of this manual.

In closing:
If more information is required or technical assistance is needed, or if you feel that any part of this manual is unclear or incorrect, please contact the Stellar Customer Service Department by phone at 800-321-3741 or email at service@stellarindustries.com.

ATTENTION

Failure to adhere to the instructions could result in property damage or even serious bodily injury to the operator or others close to the hooklift.

For Technical Questions, Information, Parts, or Warranty, Call Toll-Free at

800-321-3741

Hours: Monday - Friday, 8:00 a.m. - 5:00 p.m. CST

Or email at the following addresses:

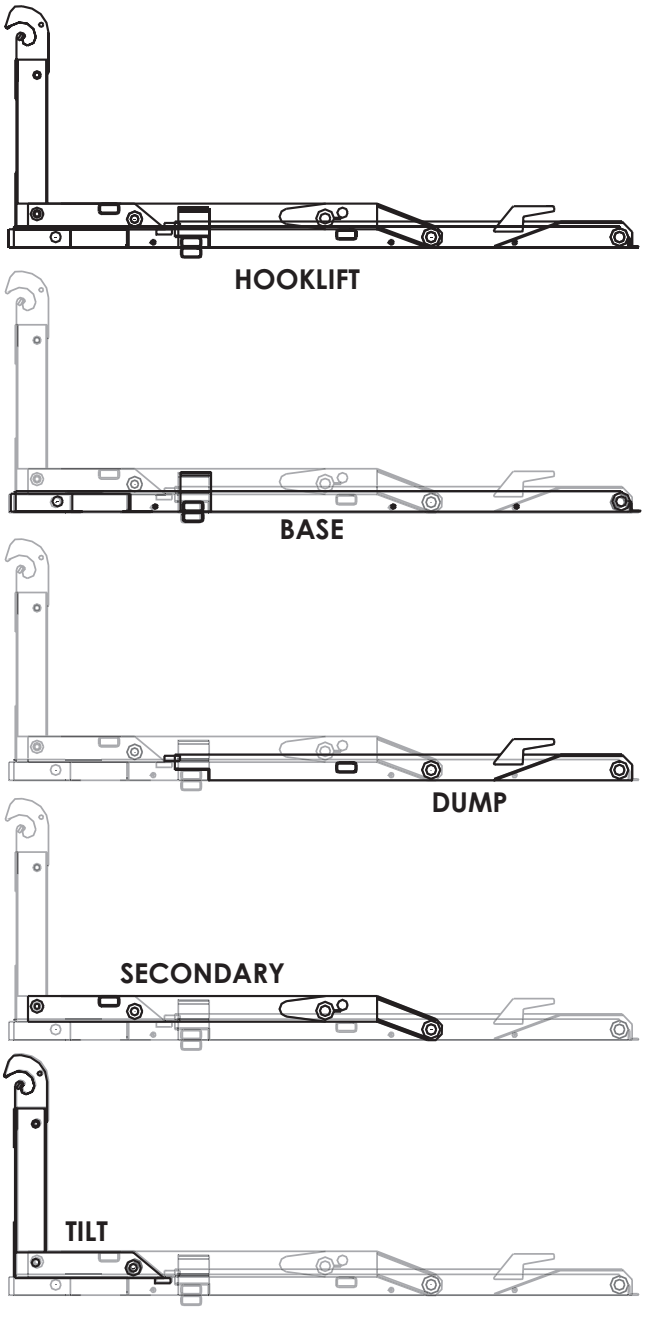
Technical Questions, and Information	service@stellarindustries.com
Order Parts	parts@stellarindustries.com
Warranty Information	warranty@stellarindustries.com

Stellar Shuttle Hooklift Nomenclature

The Stellar Shuttle is a hydraulic, body-loading device when mounted on a truck chassis. When mounted, the Stellar Shuttle can handle a variety of bodies ranging from flatbeds to recycling containers to dump bodies.

Two independently controlled cylinders operate all the functions of the Stellar Shuttle. By varying the cylinder operation, the Stellar Flex can be used to dump or unload a body.

The Stellar Shuttle consists of four basic parts: The base, dump, secondary, and tilt sections. Familiarize yourself with the various components of this hooklift and the names of those components. Knowing the proper terminology is necessary to get full benefit from this manual



Chapter 1 - Safety

Please Read the Following Carefully! This portion of the manual contains information regarding all Stellar manufactured hooklifts. Some items contained within this chapter may not apply to your specific equipment.

Safety should be the number one thought on every operator's mind. Three factors should exist for safe operation: a qualified operator, well-maintained equipment, and the proper use of this equipment. The following information should be read and understood completely by everyone working with or near the hooklift before putting the unit into operation.

Please take note that Stellar Industries, Inc. is not liable for accidents incurred by the hooklift because of non-fulfillment from the operator's side of current rules, laws, and regulations.

General Safety
It is the responsibility of the owner to instruct the operator in the safe operation of your equipment and to provide the operator with properly maintained equipment.

Trainees or untrained persons shall be under the direct supervision of qualified persons.

Do not operate equipment under the adverse influence of alcohol, drugs, or medication.

Read all Danger and Caution decals on the equipment and understand their meaning.

Personal Safety
Keep clear of all moving parts.

Always wear the prescribed personal safety devices.

Always wear approved accident-prevention clothing such as: protective helmets, anti-slip shoes with steel toes, protective gloves, anti-noise headphones, protective glasses, breathing apparatus, and reflective jackets. Consult your employer regarding current safety regulations and accident-prevention equipment.

Do not wear rings, wristwatch, jewelry, loose-fitting or hanging clothing such as ties, torn garments, scarves, unbuttoned jackets or unzipped overalls, which could get caught up in the moving parts of the hooklift.

Keep a first-aid box and a fire extinguisher readily available on the truck. Regularly check to make sure the fire extinguisher is fully charged and the first-aid kit is stocked.

Do not use controls and hoses as handholds. These parts move and cannot provide stable support.

Do not allow unauthorized personnel or equipment to enter within 10 feet of hooklift operating area.

Never allow anyone to ride the hooklift or load.

Maintenance Safety
Never modify or alter any of the equipment, whether mechanical, electrical, or hydraulic, without Stellar Industries' approval.

Do not perform any maintenance or repair work on the hooklift unless authorized and trained to do so.
Release system pressure before attempting to make adjustments or repairs.

Do not attempt service or repair when PTO is engaged.

Decals are considered safety equipment. They must be maintained, as would other safety devices. Do not remove any decals.

Replace any decals that are missing, damaged, or not
legible.

The safety instruction plates, notices, load charts and any other sticker applied to the hooklift must be kept legible and in good condition. If necessary, replace them.

Keep all surfaces of the hooklift free of oil and grease to avoid slippery surfaces and aid in
inspections.

Stability
Know the hooklift components and their capabilities and limitations. Overloading the hooklift may result in serious damage of self, others, equipment or the surroundings.

Never exceed manufacturer's load ratings. These ratings are based on the machine's hydraulic, mechanical, and structural design rather than stability.

Load Safety
Full rated dump capacity assumes load will decrease as dump angle increases. Do not take full rated capacity to full dump angle without some unloading of weight as it may cause damage to the chassis and/or the hooklift.

Move the control lever slow and smooth for steady oil flow.

Avoid jerky or sudden movement of the controls.

Be constantly aware of the hooklift position when operating the controls.

Do not attempt to lift fixed loads.
Know the weight of your load to avoid overloading the equipment.

Deduct the weight of the body from the maximum load rating to determine how much
weight can be lifted.

Keep everyone clear when loading, unloading, and dumping.

Do not push on fixed objects or bodies without rollers with the hooklift.

Do not permit loose objects on the hooklift.

Use a qualified person to assist in loading when the load is not visible to the operator.

Do not leave hooklift unattended with suspended load.

Take care when operating in areas supported by vehicle tires, because of the cushioning effect of springs and tires.

Never use the drivetrain of the chassis to assist the hydraulics in loading

Environment
Do not operate the hooklift during electrical storms.

In extreme cold, allow adequate time to warm the truck before engaging the PTO. Do not rev the truck engine and over speed the hydraulic pumps as permanent damage to the pumps may occur. Follow the vehicle owner's manual regarding operating the vehicle in such adverse conditions.

In extreme cold, operate the controls slowly to allow for viscosity changes.

ATTENTION

Stellar Industries, Inc. is not liable for accidents incurred by the hooklift because of the operator's non-fulfillment of current rules, laws and regulations.

Chapter 2 - Operation

Job-Site Set-Up

Thoroughly plan the lift before positioning the vehicle. Consider the following:

1. The vehicle should be positioned in an area free from overhead obstructions to eliminate the need for repositioning.

2. Position the vehicle so that it is impossible for any portion of the equipment to come within the minimum required safe distance of any power line. Maintain a clearance in accordance with ANSI Z245.

3. The vehicle should also be positioned on a firm and level surface that will provide adequate support for the body.

4. The parking brake should be removed to allow the truck to roll under the body while loading.

In some situations, the foot brake may be used to position the body. **If the container will experience a significant restriction to movement during unloading, the foot brake must not be used.**

Operator Requirements

Operation is limited to the following people:

A. Qualified individual.
B. Trainees under direct supervision of the qualified individual.
C. Test or maintenance individual.
D. Hooklift Inspector.

Operators must:

A. Demonstrate the ability to understand all decals, the owner's manual, and any other information required for safe operation of the hooklift.
B. Be able to demonstrate the ability to safely control the hooklift.
C. Know all safety regulations.
D. Be responsible for maintenance requirements.
E. Understand and be fully capable of implementing all emergency procedures.
F. Understand the operating procedures as outlined by this manual, ANSI Z245 and Federal/State Laws.

Operator Conduct

1. Operators will not engage in any operation that would cause them to divert attention away from the operation of the hooklift.

2. Operators are responsible for all operations under their direct control.

3. Operators will not leave a suspended load unattended.

4. Operators will be familiar with the equipment and the maintenance required for proper care.

Hooklift Controls

1. Be familiar with the sequence and operation of the hooklift controls.

2. Each individual hooklift function should have control function decals. Replace them immediately if they are missing or illegible.

3. Keep hands, feet and control levers free from mud, grease and oil.

4. Be familiar with the control levers and how they operate before attempting to operate the hooklift.

5. Be prepared before beginning operation of the hooklift:
   - All protective guards must be in place.
   - Be aware of the surroundings: low branches, power lines, unstable ground.
   - Be sure all safety devices provided are in place and in good operating condition.
   - Be prepared for all situations. Keep fire extinguisher and first aid kit near.
   - Be sure all regular maintenance has been performed.
   - Visually inspect all aspects of the hooklift for physical damage.
   - Check for fluid leaks.

NOTE: The controller assembly pictured in this chapter may differ from model to model.

Operation Overview

Unloading Operation

1. Stop the truck at the location you wish to unload.

2. Put the truck in neutral and engage the PTO. Run RPM as needed.

3. Locate the black control lever labeled tilt.

4. Pull the tilt lever until the cylinder is fully extended, thus releasing tabs.

5. Locate the red lever labeled lift.

6. Pull lift lever until the body is on the ground and can be detached. Return the hooklift to the stored position and disengage the PTO.

Loading Operation

1. Position the truck in line with the body you intent to pick up.

2. Engage the hook to the body by maneuvering the hooklift with the red(lift) lever. Run RPM as needed.

3. Push the red(lift) lever until the main cylinder is fully retracted.

4. Push the black(tilt) lever until the tilt is fully extended.

5. Disengage the PTO.

Dumping Operation

1. Stop the truck at the location you wish to dump the load.

2. Put the truck in neutral and engage the PTO. Run RPM as needed.

3. Locate the red lever labeled lift.

4. Pull the lever to dump the body.

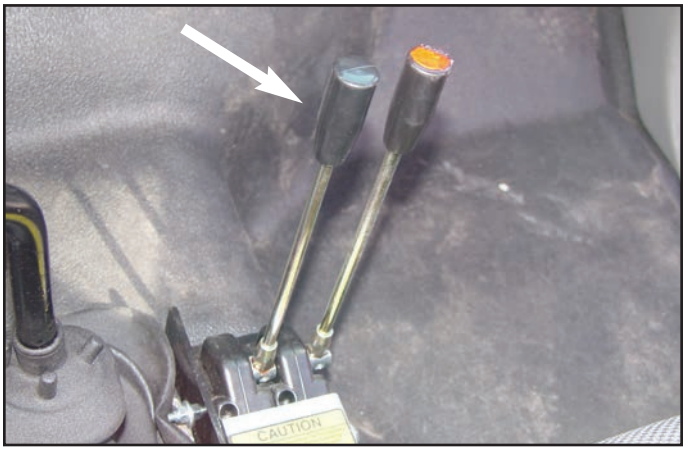
5. Wait until dumping is complete, then push the red(lift) lever until the main cylinder fully retracts.

6. Disengage the PTO.

Unloading Operation

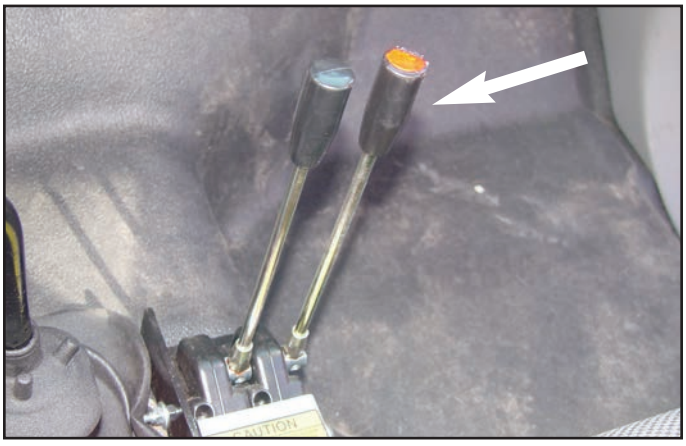
1. Stop the truck at the location you wish to unload.

2. Put the truck in **neutral** and engage the PTO.



3. Locate the black control lever labeled tilt.

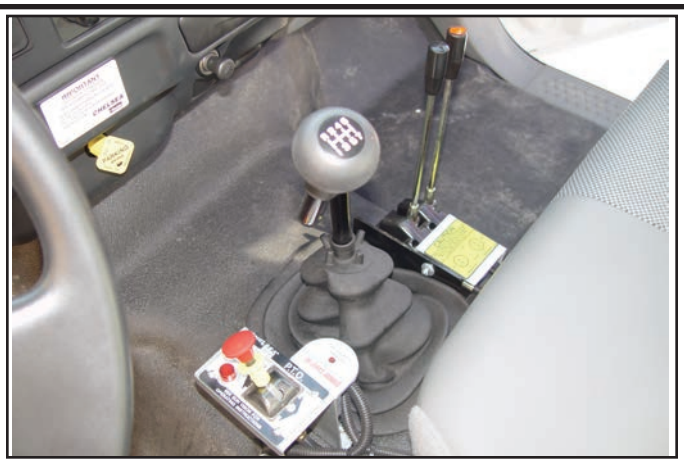
4. Pull tilt lever until full stroke is reached, thus releasing tabs.



5. Locate the red lever labeled lift.

6. Pull lift lever until the body is on the ground and can be detached. Return the hooklift to the stored position and disengage the PTO.

Loading Operation

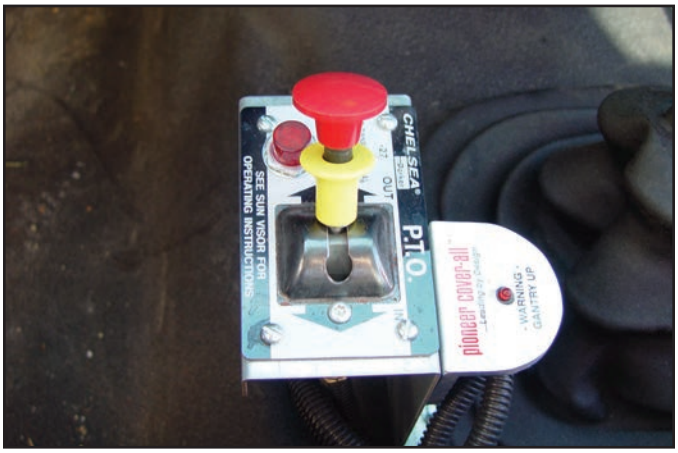


1. Perform the steps for unloading a container.

2. Engage the hook to the body by maneuvering the hooklift with the red(lift) lever and the black (tilt) lever..

3. Push the red(lift) lever until the main cylinder is fully retracted.

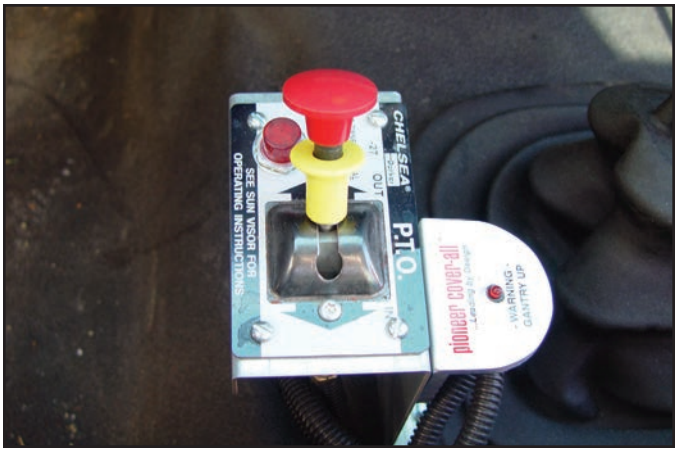
4. Push the black(tilt) lever until the tilt is fully retracted.



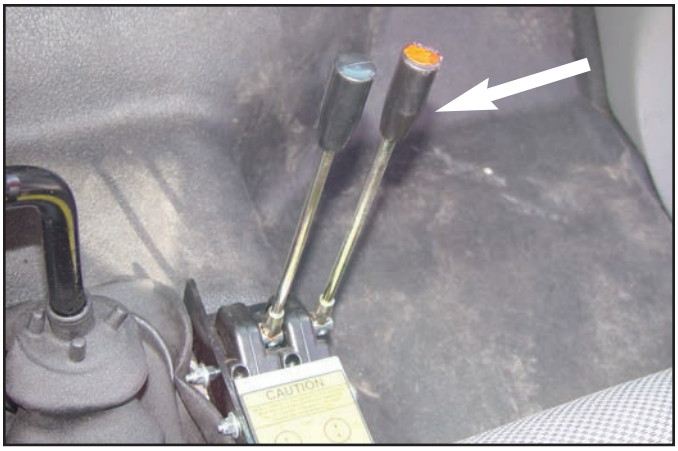
5. Disengage the PTO.

Dumping Operation

1. Stop the truck at the location you wish to dump the load.



2. Put the truck in **neutral** and engage the PTO.



3. Locate the red lever labeled lift.

4. Pull the lift lever to dump the body.

5. Wait until dumping is complete, then push the red(lift) lever until the main cylinder fully retracts.

6. Disengage the PTO.

Chapter 3 - Maintenance

Please read the following before performing any maintenance on the hooklift.

1. Only authorized service personnel are to perform maintenance on the hooklift.
2. Disengage the PTO before any service or repair is performed.
3. Do not disconnect hydraulic hoses while there is still pressure in those components.
4. Before disconnecting hydraulic components, shut off the engine, release any air pressure on the hydraulic reservoir, and move control levers repeatedly through their operating positions to relieve all pressures.
5. Keep the hooklift clean and free from grease build-up, oil and dirt to prevent slippery conditions.
6. Perform all safety and maintenance checks before each period of use.
7. Replace parts with Stellar Industries, Inc. approved parts only.
8. Immediately repair or have repaired any components found to be inadequate.

Maintenance Procedures

1. Position the hooklift where it will be out of the way of other operations or vehicles in the area.
2. Place all controls in the off position and secure operating features from inadvertent motion.
3. Relieve hydraulic oil pressure from all hydraulic circuits before loosening or removing hydraulic components.
4. Label or tag parts when disassembling.

Daily Inspection

Daily Inspection should occur each day before the hooklift is put into use. Each day, inspect the hooklift for all of the following:

1. Hydraulic oil level.
2. Loose parts or damage to structures or weld.
3. Cylinder movement due to leakage.
4. Hoses for evidence of oil leaks.
5. Controls for malfunction or adjustment.
6. Parking brake operation.
7. All securing hardware such as cotter pins, snap rings, hairpins, and pin keepers for proper installation.
8. All safety covers for proper installation.
9. Cylinder holding valves for proper operation.
10. Equipment for missing, illegible, or defaced operating decals and safety signs.

Periodic Inspection

Periodic Inspection should occur while the hooklift is in use. For the duration of the usage, inspect the hooklift for all of the following:

1. Loose bolts and fasteners.
2. All pins, bushings, shafts, and gears for wear, cracks, or distortion to include all pivot points, and bushings.
3. Hydraulic systems for proper operating pressure.
4. Main frame mount bolts.
5. Cylinders for:
   A. Damaged rods.
   B. Dented barrels.
   C. Drift from oil leaking internally.
   D. Leaks at rod seals or holding valves.
6. PTO and hydraulic pump(s) for leaks.
7. Hydraulic hose and tubing for evidence of damage such as blistering, crushing, or abrasion.
8. Presence of this owner's manual.

Monthly Inspection

Monthly Inspection should occur at the beginning of every work month. Each month, inspect the hooklift for all of the following:

1. Frame bolt tightness - turn barrel nuts and mounting bolts during the first month of operation on new machines and then quarterly thereafter.
2. Cylinders and valves for leaks.
3. Lubrication.
4. Tilt hook for cracks.
5. Structural weldments for bends, cracks, or breaks.
6. All pins and keepers for proper installation.
7. All control, safety, and capacity placards for readability and secure attachment.
8. Inspect all electrical wires and connections for worn, cut, or deteriorated insulationand bare wire. Replace or repair wires as required.
10. Lubrication of all points requiring lubrication.

Service

The following general suggestions should be helpful in analyzing and servicing your hooklift. Using the following systematic approach should be helpful in finding and fixing problems:

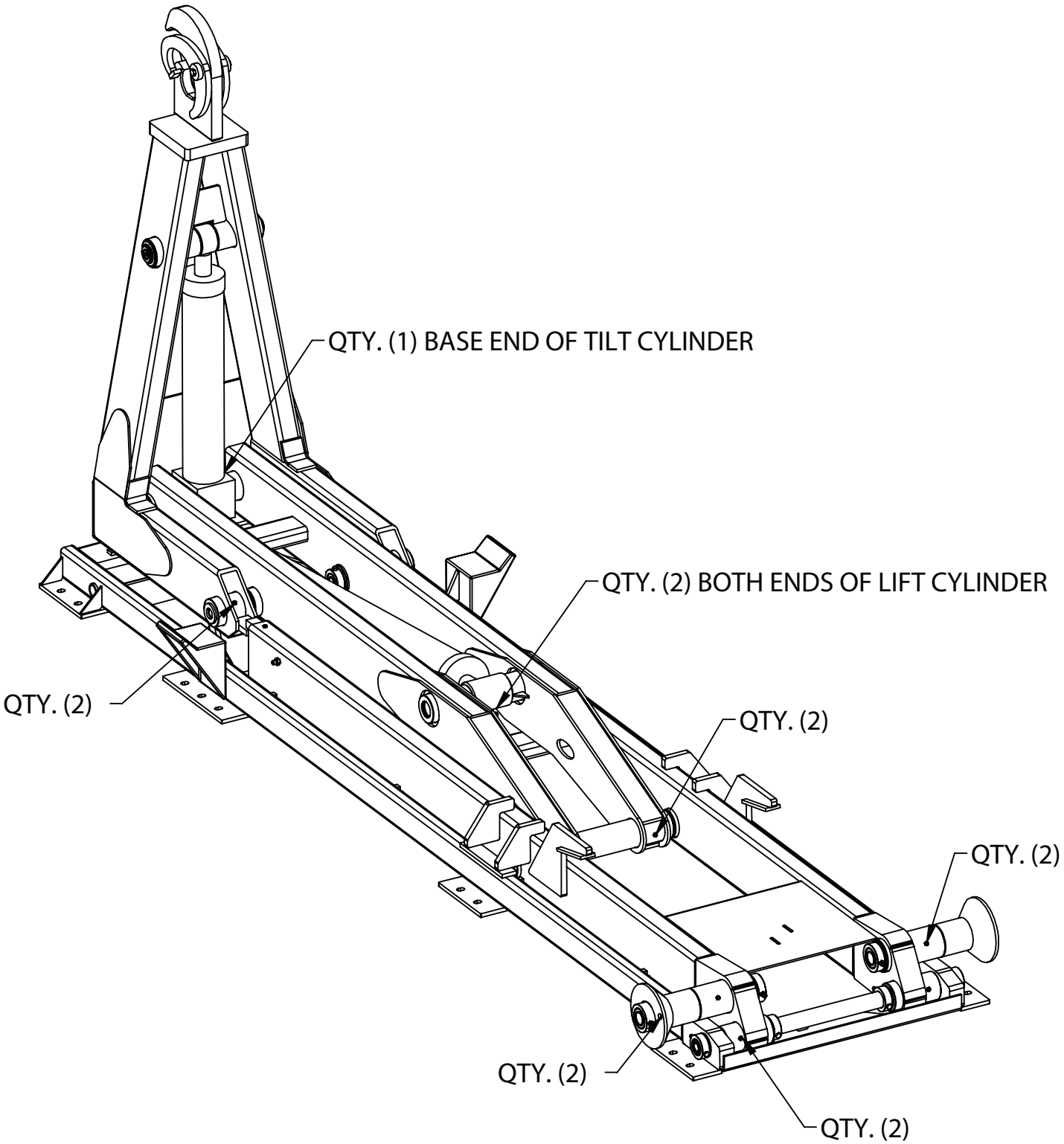
1. Determine the problem.
2. List and record possible causes.
3. Devise checks.
4. Conduct checks in a logical order to determine the cause.
5. Consider the remaining service life of components against the cost of parts and labor necessary to replace them.
6. Make the necessary repair.
7. Recheck to ensure that nothing has been overlooked.
8. Functionally test the new part in its system.

Stellar Industries recommends the first filter change to occur after the first 250 hours of service.* The second, and every subsequent change, should occur after every 1,000 hours of service. By following these guidelines, the hydraulic oil should last up to 6,500 hours.

***Note: These recommendations are based on normal working parameters. If operating in less than favorable conditions (excessive dust, moisture, etc.), be sure to check the filter gauge often for filter change notice.**

Grease Zerk Locations

Shuttle Class 1



Note: Grease After Every 100 Cycles.

Choice Lubricants for DX Bearings

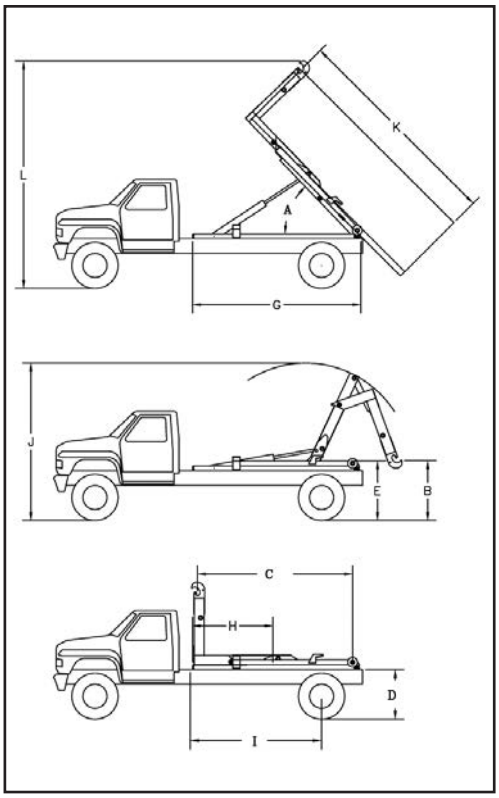
Greases Recommended

Type of Grease	Description
Premium Quality Multi-Purpose	Stabilized, Anti-Oxidant Lithium Base Lithium Base with 3% Molybdenum Disulfide High Drop Point
Multi-Purpose	Calcium Based, for General Automotive and Industrial Use Calcium Grease, Water Stabilized, High Drop Point
Anti-Friction Bearing	Calcium Based with EP Additives Lithium Based Sodium Based
Extreme Pressure (EP)	Lithium Based with EP Additives Calcium Based with EP Additives
High Temperature	Modified Sodium Based, High Drop Point
Transmission	Semi-Fluid, Calcium Based
Molybdenum Filled	Lithium Based with 2% Molybdenum Disulfide
Graphite Filled	Sodium Based with 2% Graphite
Block Grease	Sodium Based Solid Grease
White Grease	Aluminum Complex Based with Anti-Oxidant & Rust Inhibitors & Zinc Oxide Additives
Silicone	Lithium Based with Silicone Oil Lubricant

Greases Not Recommended

Type of Grease	Description
Cup Grease	Light Service Calcium or Sodium Based Grease
Graphite Filled	Greases with More than 10% Graphite
Molybdenum Filled	Greases with More than 10% Molybdenum Disulfide
Fluorocarbon	Low Molecular Weight Chlorofluoroethylene Polymer with Inert Thickeners
White Grease	Calcium Based, Zinc Oxide Filled

Chapter 4 - Specifications



- Will accommodate bodies from 11-feet up to 21.5-feet long and still attain the maximum rated dump angle on a 41-inch high frame truck. Longer bodies may be accommodated with reduced dumping capabilities.
- Transmission-mounted PTO and hydraulic pump required to power the Hooklift.
- Standard in-cab manual controls which allow for precise metering of the manual hydraulic valve. Solenoid-activated hydraulic control valve with electric remote control pendant is optional.
- Ten (10) gallon frame-mounted oil tank.
- Operating pressure is 4,200 psi.
- Hydraulic flow required is 15-gallons per minute.
- Patented dump/load interface on double pivot models.
- Hydraulic locks to prevent cylinder collapse in case of hose failure.
- Hook latch to prevent body from becoming detached prematurely.
- Mechanical rear body tie-down latches.
- Resettable dump/tilt tabs.
- Hydraulic rotary valve to prevent front tilt movement when the dump frame is raised.
- Permanently lubricated bushings used throughout.
- Grease zerks at all pin points to allow purging of contaminants.
- Carbon steel and zinc plated or type 17-4 stainless steel pins used throughout.
- All weldments painted with two-part polyurethane enamel.

		108-12-20/36	108-11-20	120-16-20	138-18-20	168-20-20	190-24-20	96-10-24
	Lifting/Dumping Capacity	20,000	20,000	20,000	20,000	20,000	20,000	24,000
A	Dump Angle	53°	45°	48°	52°	50°	45°	54°
B	Lowest Hook Height	30"	44"	44"	44"	43"	51"	44"
C	Effective Length	126"	127"	146"	171"	195"	222"	115"
D	Truck Frame Height	39"	41"	41"	41"	41"	41"	41"
E	Hooklift Height	47.38"	49.38"	49.38"	50.13"	50.13"	50.13"	49.38"
G	Hooklift Length	138"	139"	159"	183"	207"	234"	128"
H	Hooklift Center of Gravity	62"	55"	61"	71"	79"	91"	52"
I	Chassis Cab to Axle	102" to 108"	102" to 108"	114" to 130"	130" to 144"	168" to 180"	190" to 200"	84" to 102"
J	Max. Height when Loading	133"	134"	143"	162"	173"	185"	134"
K	Longest Body to Dump	183"	186"	204"	228"	252"	288"	174"
L	Max. Height when Dumping	177"	187"	204"	227"	248"	259"	183"
	Shipping Weight	2,400	2,570	2,625	3,175	3,660	3,900	2,500
	Hook Height (from bottom of hook bar)	35.63"	54"	54"	54"	61.75"	61.75"	54"
	Shipping Dimensions	138"x52"x47"	139"x74"x47"	159"x74"x47"	183"x74"x47"	207"x82"x47"	234"x82"x47"	128"x74"x47"
	Min. Truck GVWR	25,000	25,000	25,000	25,000	25,000	25,000	25,000
	Load Angle w/ SBL	46°	37°	35°	38°	30°	29°	45°
	Rec. Body Lengths*	12' to 13.5'	11' to 13.5'	12.5' to 15'	14.5' to 17'	16.5' to 19'	18.5' to 21.5'	10' to 12.5'
	Rec. Body Lengths**	To 15.5'	To 15.5'	To 17'	To 19'	To 21'	To 23.5'	To 14.5'

*(Assumes 3ft. overhang from center of rear roller pin)
(Bumper typically 12" from center of roller pin)

**(Assumes 5ft. overhang from center of rear roller pin)
(May require bumper and latch options)

Model 108-12-20/36 Specifications

Lifting Capacity:	20,000 pounds gross weight evenly distributed in, or on, body.
Container Length:	12-foot through 13.5-foot from front A-frame to rear of skid rails. Longer bodies up to 15.5-feet may be accommodated if full dump angle is not required (may require special body-mounted or extendable truck-mounted bumper and additional latches to meet the Federal Motor Carrier Safety Administration (FMCSA) Rear End Protection regulation 393.86 and Securing Hooklift Containers regulation 393.134).
Maximum Dump Angle:	53°
Operating Pressure:	4,200 PSI maximum.
Weight of Hooklift:	Hooklift weight not to exceed 2,400 pounds.
Height of Hooklift:	Hooklift height not to exceed 8.38" as measured from top of truck frame to top of hooklift rollers.
Hook Height:	35.63-inches from bottom of skid rails to bottom of hook bar. Hooklift must be able to pick up body 6-inches below grade, when mounted on a 39" truck frame height.
Hydraulic Pump:	Direct-coupled high-pressure piston pump.
Hydraulic Control Valve:	Hydraulic valve mounted directly onto the oil reservoir.
Controls:	Dual manual levers with sealed cable actuators mounted in the truck cab to allow full feathering of all hooklift functions.
Tilting Hook Assembly:	Hooklift must have pivoting type front tilt section (jib) to provide a low degree loading/unloading angle. Hook to include automatic mechanical safety latch which disengages only when the container/body is in proper position to be picked up or dropped off.
Tilt Cylinder:	Single 3-inch bore with 1.5-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure. Cylinder must be fully retracted when in the transport mode to prevent exposure of cylinder rod to corrosive road salts.
Tilt Section Operation:	Hooklift must include a hydraulic lock-out device to prevent operation of the tilt section while hooklift is in the dumping mode.
Lift/Dump Cylinder:	Single 6-inch bore with 2.5-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure.
Dump/Tilt Interlock:	Dumping must be accomplished through a rear pivot. Tilt and lift sections must lock into a rigid full length 25" wide frame to provide support for the container while in the dump mode. These sections form this frame without the use of mechanical latches which rely on gravity, springs, or container/body mounted latches. The system must be protected from out of sequence operation.
Rear Body Hold-downs:	Dual fixed-position hold down devices mounted to the dump frame to secure the body to the hooklift through all ranges of the dump mode. This must be accomplished without the use of steel springs and/or hydraulic/air cylinders.
Rear Dump Hinge Pin:	2.5-inch diameter carbon steel and zinc plated or type 17-4 stainless steel.
Pins:	All pins to be carbon steel and zinc plated or type 17-4 stainless steel.
Bushings:	All bushings to be of the DX pre-lubricated variety, used with grease fittings. Bronze bushings not allowed due to survivability in heavy containment and corrosive environments.
Hoses & Hyd. Fittings:	All hoses and fittings are to be SAE; metrics are not to be allowed. O-ring face seal fittings to be utilized wherever possible.
Origin of Manufacture:	Hooklift to be designed and manufactured in the United States of America.

Model 108-11-20 Specifications

Lifting Capacity:	20,000 pounds gross weight evenly distributed in, or on, body.
Container Length:	11-foot through 13.5-foot from front A-frame to rear of skid rails. Longer bodies up to 15.5-feet may be accommodated if full dump angle is not required (May require special body-mounted or extendable truck-mounted bumper and additional latches to meet the Federal Motor Carrier Safety Administration (FMCSA) Rear End Protection regulation 393.86 and Securing Hooklift Containers regulation 393.134).
Maximum Dump Angle:	45°
Operating Pressure:	4200 PSI maximum.
Weight of Hooklift:	Hooklift weight not to exceed 2,570 pounds.
Height of Hooklift:	Hooklift height not to exceed 8.38" as measured from top of truck frame to top of hooklift rollers.
Hook Height:	54-inches from bottom of skid rails to bottom of hook bar. Hooklift must be able to pick up body 10-inches below grade, when mounted on a 41" truck frame height.
Hydraulic Pump:	Direct-coupled high-pressure piston pump.
Hydraulic Control Valve:	Hydraulic valve mounted directly onto the oil reservoir.
Controls:	Dual manual levers with sealed cable actuators mounted in the truck cab to allow full feathering of all hooklift functions.
Tilting Hook Assembly:	Hooklift must have pivoting type front tilt section (jib) to provide a low degree loading/unloading angle. Hook to include automatic mechanical safety latch which disengages only when the container/body is in proper position to be picked up or dropped off.
Tilt Cylinder:	Single 4-inch bore with 2-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure. Cylinder must be fully retracted when in the transport mode to prevent exposure of cylinder rod to corrosive road salts.
Tilt Section Operation:	Hooklift must include a hydraulic lock-out device to prevent operation of the tilt section while hooklift is in the dumping mode.
Lift/Dump Cylinder:	Single 5-inch bore with 2-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure.
Dump/Tilt Interlock:	Dumping must be accomplished through a rear pivot. Tilt and lift sections must lock into a rigid full length 25" wide frame to provide support for the container while in the dump mode. These sections form this frame without the use of mechanical latches which rely on gravity, springs, or container/body mounted latches. The system must be protected from out of sequence operation.
Rear Body Hold-downs:	Dual fixed-position hold down devices mounted to the dump frame to secure the body to the hooklift through all ranges of the dump mode. This must be accomplished without the use of steel springs and/or hydraulic/air cylinders. Hooklift must be compatible with containers manufactured to ANSI Z245.60 recommended standard for waste containers.
Rear Dump Hinge Pin:	2-inch diameter carbon steel and zinc plated or type 17-4 stainless steel.
Pins:	All pins to be carbon steel and zinc plated or type 17-4 stainless steel.
Bushings:	All bushings to be of the DX pre-lubricated variety, used with grease fittings. Bronze bushings not allowed due to survivability in heavy containment and corrosive environments.
Hoses & Hyd. Fittings:	All hoses and fittings are to be SAE; metrics are not to be allowed. O-ring face seal fittings to be utilized wherever possible.
Origin of Manufacture:	Hooklift to be designed and manufactured in the United States of America.

Model 120-16-20 Specifications

Lifting Capacity:	20,000 pounds gross weight evenly distributed in, or on, body.
Container Length:	12.5-foot through 15-foot from front A-frame to rear of skid rails. Longer bodies up to 17-feet may be accommodated if full dump angle is not required (may require special body-mounted or extendable truck-mounted bumper and additional latches to meet the Federal Motor Carrier Safety Administration (FMCSA) Rear End Protection regulation 393.86 and Securing Hooklift Containers regulation 393.134).
Maximum Dump Angle:	48˚
Operating Pressure:	4200 PSI maximum.
Weight of Hooklift:	Hooklift weight not to exceed 2,625 pounds.
Height of Hooklift:	Hooklift height not to exceed 8.38" as measured from top of truck frame to top of hooklift rollers.
Hook Height:	54-inches from bottom of skid rails to bottom of hook bar. Hooklift must be able to pick up body 10-inches below grade, when mounted on a 41" truck frame height.
Hydraulic Pump:	Direct-coupled high-pressure piston pump.
Hydraulic Control Valve:	Hydraulic valve mounted directly onto the oil reservoir.
Controls:	Dual manual levers with sealed cable actuators mounted in the truck cab to allow full feathering of all hooklift functions.
Tilting Hook Assembly:	Hooklift must have pivoting type front tilt section (jib) to provide a low degree loading/unloading angle. Hook to include automatic mechanical safety latch which disengages only when the container/body is in proper position to be picked up or dropped off.
Tilt Cylinder:	Single 4-inch bore with 2-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure. Cylinder must be fully retracted when in the transport mode to prevent exposure of cylinder rod to corrosive road salts.
Tilt Section Operation:	Hooklift must include a hydraulic lock-out device to prevent operation of the tilt section while hooklift is in the dumping mode.
Lift/Dump Cylinder:	Single 5-inch bore with 2-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure.
Dump/Tilt Interlock:	Dumping must be accomplished through a rear pivot. Tilt and lift sections must lock into a rigid full length 25" wide frame to provide support for the container while in the dump mode. These sections form this frame without the use of mechanical latches which rely on gravity, springs, or container/body mounted latches. The system must be protected from out of sequence operation.
Rear Body Hold-downs:	Dual fixed-position hold down devices mounted to the dump frame to secure the body to the hooklift through all ranges of the dump mode. This must be accomplished without the use of steel springs and/or hydraulic/air cylinders. Hooklift must be compatible with containers manufactured to ANSI Z245.60 recommended standard for waste containers.
Rear Dump Hinge Pin:	2-inch diameter carbon steel and zinc plated or type 17-4 stainless steel.
Pins:	All pins to be carbon steel and zinc plated or type 17-4 stainless steel.
Bushings:	All bushings to be of the DX pre-lubricated variety, used with grease fittings. Bronze bushings not allowed due to survivability in heavy containment and corrosive environments.
Hoses & Hyd. Fittings:	All hoses and fittings are to be SAE; metrics are not to be allowed. O-ring face seal fittings to be utilized wherever possible.
Origin of Manufacture:	Hooklift to be designed and manufactured in the United States of America.

Model 138-18-20 Specifications

Lifting Capacity:	20,000 pounds gross weight evenly distributed in, or on, body.
Container Length:	14.5-foot through 17-foot from front A-frame to rear of skid rails. Longer bodies up to 19-feet may be accommodated if full dump angle is not required (may require special body-mounted or extendable truck-mounted bumper and additional latches to meet the Federal Motor Carrier Safety Administration (FMCSA) Rear End Protection regulation 393.86 and Securing Hooklift Containers regulation 393.134).
Maximum Dump Angle:	52°
Operating Pressure:	4,200 PSI maximum.
Weight of Hooklift:	Hooklift weight not to exceed 3,175 pounds.
Height of Hooklift:	Hooklift height not to exceed 9.13" as measured from top of truck frame to top of hooklift rollers.
Hook Height:	54-inches from bottom of skid rails to bottom of hook bar. Hooklift must be able to pick up body 10-inches below grade, when mounted on a 41" truck frame height.
Hydraulic Pump:	Direct-coupled high-pressure piston pump.
Hydraulic Control Valve:	Hydraulic valve mounted directly onto the oil reservoir.
Controls:	Dual manual levers with sealed cable actuators mounted in the truck cab to allow full feathering of all hooklift functions.
Tilting Hook Assembly:	Hooklift must have pivoting type front tilt section (jib) to provide a low degree loading/unloading angle. Hook to include automatic mechanical safety latch which disengages only when the container/body is in proper position to be picked up or dropped off.
Tilt Cylinder:	Single 4-inch bore with 2-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure. Cylinder must be fully retracted when in the transport mode to prevent exposure of cylinder rod to corrosive road salts.
Tilt Section Operation:	Hooklift must include a hydraulic lock-out device to prevent operation of the tilt section while hooklift is in the dumping mode.
Lift/Dump Cylinder:	Single 5-inch bore with 2-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure.
Dump/Tilt Interlock:	Dumping must be accomplished through a rear pivot. Tilt and lift sections must lock into a rigid full length 25" wide frame to provide support for the container while in the dump mode. These sections form this frame without the use of mechanical latches which rely on gravity, springs, or container/body mounted latches. The system must be protected from out of sequence operation.
Rear Body Hold-downs:	Dual fixed-position hold down devices mounted to the dump frame to secure the body to the hooklift through all ranges of the dump mode. This must be accomplished without the use of steel springs and/or hydraulic/air cylinders. Hooklift must be compatible with containers manufactured to ANSI Z245.60 recommended standard for waste containers.
Rear Dump Hinge Pin:	2-inch diameter carbon steel and zinc plated or type 17-4 stainless steel.
Pins:	All pins to be carbon steel and zinc plated or type 17-4 stainless steel.
Bushings:	All bushings to be of the DX pre-lubricated variety, used with grease fittings. Bronze bushings not allowed due to survivability in heavy containment and corrosive environments.
Hoses & Hyd. Fittings:	All hoses and fittings are to be SAE; metrics are not to be allowed. O-ring face seal fittings to be utilized wherever possible.
Origin of Manufacture:	Hooklift to be designed and manufactured in the United States of America.

Model 138-18-20/61 Specifications

Lifting Capacity:	20,000 pounds gross weight evenly distributed in, or on, body.
Container Length:	14.5-foot through 17-foot from front A-frame to rear of skid rails. Longer bodies up to 19-feet may be accommodated if full dump angle is not required (may require special body-mounted or extendable truck-mounted bumper and additional latches to meet the Federal Motor Carrier Safety Administration (FMCSA) Rear End Protection regulation 393.86 and Securing Hooklift Containers regulation 393.134).
Maximum Dump Angle:	52°
Operating Pressure:	4,200 PSI maximum.
Weight of Hooklift:	Hooklift weight not to exceed 3,270 pounds.
Height of Hooklift:	Hooklift height not to exceed 9.13" as measured from top of truck frame to top of hooklift rollers.
Hook Height:	61.75-inches from bottom of skid rails to bottom of hook bar. Hooklift must be able to pick up body 10-inches below grade, when mounted on a 41" truck frame height.
Hydraulic Pump:	Direct-coupled high-pressure piston pump.
Hydraulic Control Valve:	Hydraulic valve mounted directly onto the oil reservoir.
Controls:	Dual manual levers with sealed cable actuators mounted in the truck cab to allow full feathering of all hooklift functions.
Tilting Hook Assembly:	Hooklift must have pivoting type front tilt section (jib) to provide a low degree loading/unloading angle. Hook to include automatic mechanical safety latch which disengages only when the container/body is in proper position to be picked up or dropped off.
Tilt Cylinder:	Single 4-inch bore with 2-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure. Cylinder must be fully retracted when in the transport mode to prevent exposure of cylinder rod to corrosive road salts.
Tilt Section Operation:	Hooklift must include a hydraulic lock-out device to prevent operation of the tilt section while hooklift is in the dumping mode.
Lift/Dump Cylinder:	Single 5-inch bore with 2-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure.
Dump/Tilt Interlock:	Dumping must be accomplished through a rear pivot. Tilt and lift sections must lock into a rigid full length 25" wide frame to provide support for the container while in the dump mode. These sections form this frame without the use of mechanical latches which rely on gravity, springs, or container/body mounted latches. The system must be protected from out of sequence operation.
Rear Body Hold-downs:	Dual fixed-position hold down devices mounted to the dump frame to secure the body to the hooklift through all ranges of the dump mode. This must be accomplished without the use of steel springs and/or hydraulic/air cylinders. Hooklift must be compatible with containers manufactured to ANSI Z245.60 recommended standard for waste containers.
Rear Dump Hinge Pin:	2-inch diameter carbon steel and zinc plated or type 17-4 stainless steel.
Pins:	All pins to be carbon steel and zinc plated or type 17-4 stainless steel.
Bushings:	All bushings to be of the DX pre-lubricated variety, used with grease fittings. Bronze bushings not allowed due to survivability in heavy containment and corrosive environments.
Hoses & Hyd. Fittings:	All hoses and fittings are to be SAE; metrics are not to be allowed. O-ring face seal fittings to be utilized wherever possible.
Origin of Manufacture:	Hooklift to be designed and manufactured in the United States of America.

Model 168-20-20 Specifications

Lifting Capacity:	20,000 pounds gross weight evenly distributed in, or on, body.
Container Length:	16.5-foot through 19-foot from front A-frame to rear of skid rails. Longer bodies up to 21-feet may be accommodated if full dump angle is not required (may require special body-mounted or extendable truck-mounted bumper and additional latches to meet the Federal Motor Carrier Safety Administration (FMCSA) Rear End Protection regulation 393.86 and Securing Hooklift Containers regulation 393.134).
Maximum Dump Angle:	50°
Operating Pressure:	4200 PSI maximum.
Weight of Hooklift:	Hooklift weight not to exceed 3,660 pounds.
Height of Hooklift:	Hooklift height not to exceed 9.13" as measured from top of truck frame to top of hooklift rollers.
Hook Height:	61.75-inches from bottom of skid rails to bottom of hook bar. Hooklift must be able to pick up body 10-inches below grade, when mounted on a 41" truck frame height.
Hydraulic Pump:	Direct-coupled high-pressure piston pump.
Hydraulic Control Valve:	Hydraulic valve mounted directly onto the oil reservoir.
Controls:	Dual manual levers with sealed cable actuators mounted in the truck cab to allow full feathering of all hooklift functions.
Tilting Hook Assembly:	Hooklift must have pivoting type front tilt section (jib) to provide a low degree loading/unloading angle. Hook to include automatic mechanical safety latch which disengages only when the container/body is in proper position to be picked up or dropped off.
Tilt Cylinder:	Single 4-inch bore with 2-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure. Cylinder must be fully retracted when in the transport mode to prevent exposure of cylinder rod to corrosive road salts.
Tilt Section Operation:	Hooklift must include a hydraulic lock-out device to prevent operation of the tilt section while hooklift is in the dumping mode.
Lift/Dump Cylinder:	Single 5-inch bore with 2.5-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure.
Dump/Tilt Interlock:	Dumping must be accomplished through a rear pivot. Tilt and lift sections must lock into a rigid full length 25" wide frame to provide support for the container while in the dump mode. These sections form this frame without the use of mechanical latches which rely on gravity, springs, or container/body mounted latches. The system must be protected from out of sequence operation.
Rear Body Hold-downs:	Dual fixed-position hold down devices mounted to the dump frame to secure the body to the hooklift through all ranges of the dump mode. This must be accomplished without the use of steel springs and/or hydraulic/air cylinders. Hooklift must be compatible with containers manufactured to ANSI Z245.60 recommended standard for waste containers.
Rear Dump Hinge Pin:	2-inch diameter carbon steel and zinc plated or type 17-4 stainless steel.
Pins:	All pins to be carbon steel and zinc plated or type 17-4 stainless steel.
Bushings:	All bushings to be of the DX pre-lubricated variety, used with grease fittings. Bronze bushings not allowed due to survivability in heavy containment and corrosive environments.
Hoses & Hyd. Fittings:	All hoses and fittings are to be SAE; metrics are not to be allowed. O-ring face seal fittings to be utilized wherever possible.
Origin of Manufacture:	Hooklift to be designed and manufactured in the United States of America.

Model 190-24-20 Specifications

Lifting Capacity:	20,000 pounds gross weight evenly distributed in, or on, body
Container Length:	18.5-foot through 21.5-foot from front A-frame to rear of skid rails. Longer bodies up to 23.5-feet may be accommodated if full dump angle is not required (may require special body-mounted or extendable truck-mounted bumper and additional latches to meet the Federal Motor Carrier Safety Administration (FMCSA) Rear End Protection regulation 393.86 and Securing Hooklift Containers regulation 393.134).
Maximum Dump Angle:	45°
Operating Pressure:	4200 PSI maximum
Weight of Hooklift:	Hooklift weight not to exceed 3,900 pounds
Height of Hooklift:	Hooklift height not to exceed 9.13" as measured from top of truck frame to top of hooklift rollers.
Hook Height:	61.75-inches from bottom of skid rails to bottom of hook bar. Hooklift must be able to pick up body 10-inches below grade, when mounted on a 41" truck frame height.
Hydraulic Pump:	Direct-coupled high-pressure piston pump.
Hydraulic Control Valve:	Hydraulic valve mounted directly onto the oil reservoir.
Controls:	Dual manual levers with sealed cable actuators mounted in the truck cab to allow full feathering of all hooklift functions.
Tilting Hook Assembly:	Hooklift must have pivoting type front tilt section (jib) to provide a low degree loading/unloading angle. Hook to include automatic mechanical safety latch which disengages only when the container/body is in proper position to be picked up or dropped off.
Tilt Cylinder:	Single 4-inch bore with 2-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure. Cylinder must be fully retracted when in the transport mode to prevent exposure of cylinder rod to corrosive road salts.
Tilt Section Operation:	Hooklift must include a hydraulic lock-out device to prevent operation of the tilt section while hooklift is in the dumping mode.
Lift/Dump Cylinder:	Single 5-inch bore with 2.5-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure.
Dump/Tilt Interlock:	Dumping must be accomplished through a rear pivot. Tilt and lift sections must lock into a rigid full length 25" wide frame to provide support for the container while in the dump mode. These sections form this frame without the use of mechanical latches which rely on gravity, springs, or container/body mounted latches. The system must be protected from out of sequence operation.
Rear Body Hold-downs:	Dual fixed-position hold down devices mounted to the dump frame to secure the body to the hooklift through all ranges of the dump mode. This must be accomplished without the use of steel springs and/or hydraulic/air cylinders. Hooklift must be compatible with containers manufactured to ANSI Z245.60 recommended standard for waste containers.
Rear Dump Hinge Pin:	2-inch diameter carbon steel and zinc plated or type 17-4 stainless steel.
Pins:	All pins to be carbon steel and zinc plated or type 17-4 stainless steel.
Bushings:	All bushings to be of the DX pre-lubricated variety, used with grease fittings. Bronze bushings not allowed due to survivability in heavy containment and corrosive environments.
Hoses & Hyd. Fittings:	All hoses and fittings are to be SAE; metrics are not to be allowed. O-ring face seal fittings to be utilized wherever possible.
Origin of Manufacture:	Hooklift to be designed and manufactured in the United States of America.

Model 96-10-24 Specifications

Lifting Capacity:	24,000 pounds gross weight evenly distributed in, or on, body.
Container Length:	10-foot through 12.5-foot from front A-frame to rear of skid rails. Longer bodies up to 14.5-feet may be accommodated if full dump angle is not required (may require special body-mounted or extendable truck-mounted bumper and additional latches to meet the Federal Motor Carrier Safety Administration (FMCSA) Rear End Protection regulation 393.86 and Securing Hooklift Containers regulation 393.134).
Maximum Dump Angle:	54°
Operating Pressure:	4200 PSI maximum.
Weight of Hooklift:	Hooklift weight not to exceed 2,500 pounds.
Height of Hooklift:	Hooklift height not to exceed 8.38" as measured from top of truck frame to top of hooklift rollers.
Hook Height:	54-inches from bottom of skid rails to bottom of hook bar. Hooklift must be able to pick up body 10-inches below grade, when mounted on a 41" truck frame height.
Hydraulic Pump:	Direct-coupled high-pressure piston pump.
Hydraulic Control Valve:	Hydraulic valve mounted directly onto the oil reservoir.
Controls:	Dual manual levers with sealed cable actuators mounted in the truck cab to allow full feathering of all hooklift functions.
Tilting Hook Assembly:	Hooklift must have pivoting type front tilt section (jib) to provide a low degree loading/unloading angle. Hook to include automatic mechanical safety latch which disengages only when the container/body is in proper position to be picked up or dropped off.
Tilt Cylinder:	Single 4-inch bore with 2-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure. Cylinder must be fully retracted when in the transport mode to prevent exposure of cylinder rod to corrosive road salts.
Tilt Section Operation:	Hooklift must include a hydraulic lock-out device to prevent operation of the tilt section while hooklift is in the dumping mode.
Lift/Dump Cylinder:	Single 5.5-inch bore with 2.5-inch diameter rod cylinder. Cylinder must be double acting and include dual integral pilot-operated counterbalance valves to prevent cylinder collapse in case of hose failure.
Dump/Tilt Interlock:	Dumping must be accomplished through a rear pivot. Tilt and lift sections must lock into a rigid full length 25" wide frame to provide support for the container while in the dump mode. These sections form this frame without the use of mechanical latches which rely on gravity, springs, or container/body mounted latches. The system must be protected from out of sequence operation.
Rear Body Hold-downs:	Dual fixed-position hold down devices mounted to the dump frame to secure the body to the hooklift through all ranges of the dump mode. This must be accomplished without the use of steel springs and/or hydraulic/air cylinders. Hooklift must be compatible with containers manufactured to ANSI Z245.60 recommended standard for waste containers.
Rear Dump Hinge Pin:	2-inch diameter carbon steel and zinc plated or type 17-4 stainless steel.
Pins:	All pins to be carbon steel and zinc plated or type 17-4 stainless steel.
Bushings:	All bushings to be of the DX pre-lubricated variety, used with grease fittings. Bronze bushings not allowed due to survivability in heavy containment and corrosive environments.
Hoses & Hyd. Fittings:	All hoses and fittings are to be SAE; metrics are not to be allowed. O-ring face seal fittings to be utilized wherever possible.
Origin of Manufacture:	Hooklift to be designed and manufactured in the United States of America.

Chapter 5 - Decals

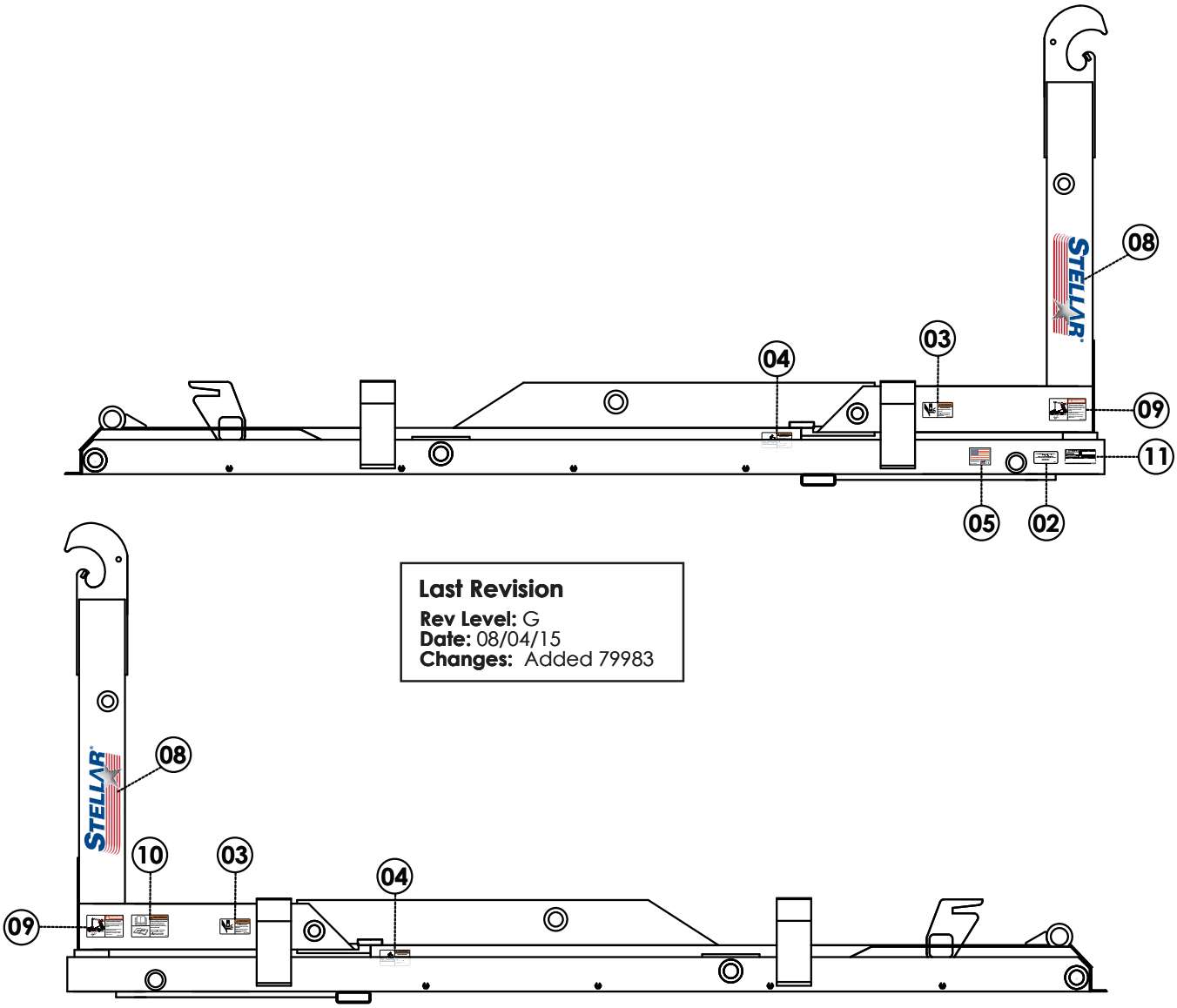
Decals of Note

Moving Tilt Hazard Decal
Location: On each side of the tilt.
Function: To inform the operator of the hazard associated with tilt operation, the possible consequences should the hazard occur, and how to avoid the hazard.
PN: C0865

Electrocution Hazard Decal
Location: Bottom of tilt.
Function: To inform the operator of the hazard associated with electrocution, the possible consequences should the hazard occur, and how to avoid the hazard.
PN: C1179

Misuse Hazard Decal
Location: Sides of the Breakaway Tabs.
Function: To inform the operator of the hazard associated with improper use of the dump tabs, the possible consequences should the hazard occur, and how to avoid the hazard. PN: 26134

Decal Kit Placement - PN D0779



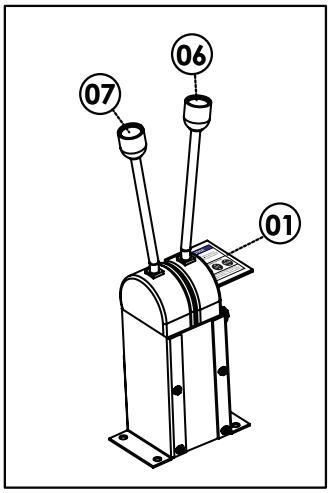
Last Revision
Rev Level: G
Date: 08/04/15
Changes: Added 79983

PN D0779

ITEM	PART NUM	DESCRIPTION	QTY
01	0651	DECAL SHUTTLE CONTROLS	1
02	4214	DECAL CONTACT STELLAR	1
03	25627	DECAL WARNING CRUSH	2
04	26134	DECAL WARNING MISUSE TABS	2
05	35234	DECAL STELLAR MADE IN THE USA	1
06	39211	DECAL HOOKLIFT LEVER LIFT	2
07	39212	DECAL HOOKLIFT LEVER TILT	2
08*	52681	DECAL STELLAR LOGO 6.00X16.50	3
09	55832	DECAL DANGER ELECTROCUTION HOOK	2
10	68024	DECAL WARNING UNTRAINED OPERATOR	1
11**	C5942	PLATE STELLAR SERIAL	1
12***	79983	DECAL DANGER ELECTROCUTION FRONT BUMPER	1

* Extra QTY 1 shipped loose.
** This item not included in decal kit.
*** This decal not shown.

CONTROL ASSEMBLY



Chapter 6 - Installation

Every hooklift installation is unique. However, certain guidelines exist that apply to every model. Listed below is a general set of chronological steps that may be followed when installing a Stellar Hooklift. If any questions arise during the installation process, feel free to contact your local dealer or Stellar Customer Service at 800-321-3741.

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Basic Installation Overview

1. **Clear the truck frame.**
2. **Set the hooklift on the truck frame.**
3. **Shorten the truck frame to within 2" from the rear of the loader.**
4. **Install bumper.**
5. **Install tie down channels. (See corresponding Mounting Kit Drawing in this chapter)**
6. **Install tarper tower (If applicable).**
7. **Install cab and PTO controls.**
8. **Mount hydraulic reservoir tank and valve bank.**
9. **Mount PTO and Pump.**
10. **Run hydraulic hoses.**
11. **Connect suction and pressure to the reservoir tank and valve bank.**
12. **Install mud flaps and fenders.**
13. **Run hooklift.**

Installation Steps - Basic Guidelines

1. **Clear the truck frame.**

2. **Set the hooklift on the truck frame.**
   a. The front of the hooklift needs to be at least 2" behind the cab or any equipment mounted behind the cab.
   b. Be sure to square the hooklift on the truck frame.
   c. Take a survey of the chassis frame and look for any potential issues. For example: Clearance problems, cross members extending too high, insufficient room in front of the hooklift for tarpers, exhaust manifolds, etc, or insufficient room in the rear to allow for bumper selection. Feel free to space up if needed.

3. **Shorten the truck frame to within 2" from the rear of the loader.**

4. **Install bumper.**
   a. See Government Regulations for acceptable placement.

5. **Install tie down channels. (See corresponding Mounting Kit Drawing in this chapter)**
   a. Move anything on the truck frame that may be in the way of the tie down channels.
   b. Place a tie down channel on both sides of the base, **within 2" of the front plate.**
   c. Place a tie down channel on both sides of the base, underneath the tabs at the rear.
   d. The final channels should be placed in the approximate position shown in the corresponding mounting diagram. The top of the lower channel should be flush with the top of the chassis frame rail.
   e. Using the channels as a guide, drill ten (10) 11⁄16" holes through the truck frame. (Note: For Models 96-10-24, 108-11-20, 108-12-20/36, and 120-16-20 you only need to drill eight (8) holes.) Also, drill a 11⁄16" hole in the rear tab to allow bolting of the rear mount.
   f. Using 5/8" bolts, washers, and nuts, secure all tie down channels to the truck frame. All bolts should be torqued to 160 ft-lbs.
   g. Weld the upper tie down channels to the hooklift base. Use 5/8" washers to space the channels up. Remove washers when finished.
   h. Using 5/8" bolts, washers, and nuts, fasten two (2) tie-down channels together with the narrow faces toward each other. Do this with all of the channels.

Note: Do not weld or drill holes into the side wall of the base tubes.

6. **Install tarper tower (If applicable).**
   a. See brand specific installation instructions.

7. Install cab and PTO controls.
   a. Use PTO brand specific installation instructions.
   b. See Controller Assembly Drawing (PN 38841) for details.
   c. See Dump Light Kit Installation

8. Mount hydraulic reservoir tank and valve bank.
   a. Make sure the tank isn't too far away if cables are being used.
   b. Don't raise the tank above the frame height.
   c. See Power Beyond Installation guide for valve bank details.
   d. See Reservoir Assembly Drawing PN 25629 for details.

9. Mount PTO and Pump.
   a. Be sure to check the rotation of the pump to ensure proper installation.
   b. Use brand specific installation instructions.

10. Run hydraulic hoses.
   a. Run hoses between the pump and reservoir tank.
   b. Run hoses between the valve bank and hooklift.
   c. Protect these lines with hose wrap when necessary.
   d. Keep these lines away from sharp edges.
   e. Keep these lines away from the exhaust or other temperature extreme items.
   f. Keep these lines away from the driveshaft or other moving items.
   g. See hydraulic schematics for details.

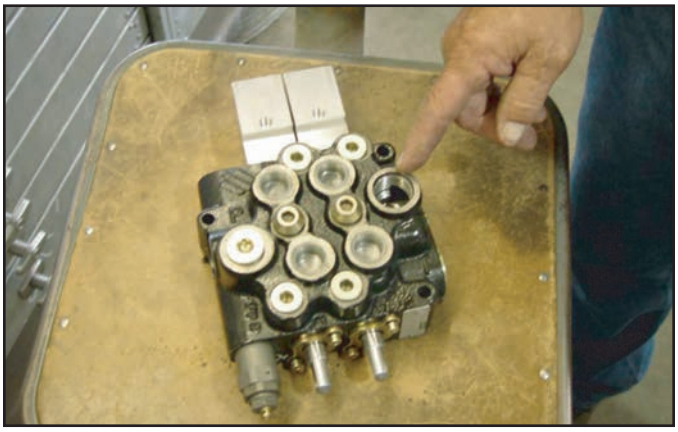
11. Connect suction and pressure to the reservoir tank and valve bank.
   a. Fittings on the valve bank should be 3" lower than the long sills.
   b. Fill reservoir to site gauge, within 3" from the top (Roughly 10 Gallons).
   c. Petro-Canada Hydrex 32 (ISO 32) hydraulic oil is recommended.
   d. When connections are secure, turn reservoir on.

12. Install mud flaps and fenders.

13. Run Hooklift.
   a. Bleed the air out of the hydraulic system.
   b. Check the oil level and add oil if needed.
   c. Calibrate rotary valve.
   d. Calibrate dump light system.
   e. Be sure to check all clearances.

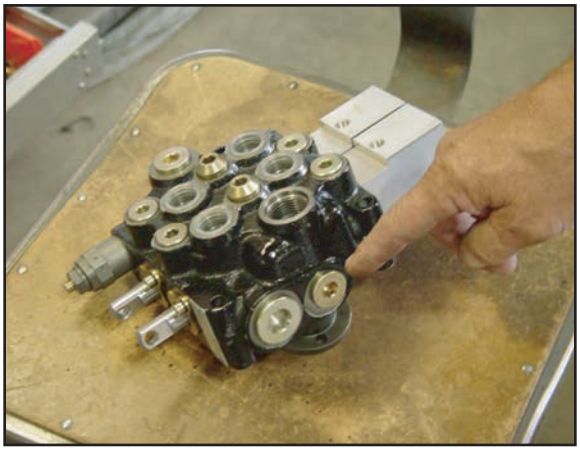
Power Beyond VDM8 Valve

These instructions ar intended for correct installation of power beyond on a Salami VDM8 valve bank. If any hydraulic component is integrated after this valve the power beyond must be installed correctly, or serious damage may incur to the hydraulic system.



1. Remove cover/access plug to reveal the power beyond access point. Can also be used as the Return/Tank port.

2. Install a 3/8" straight thread pipe plug into lower portion of cavity to activate the power beyond feature. Use thread sealer (tape sealers not recommended.

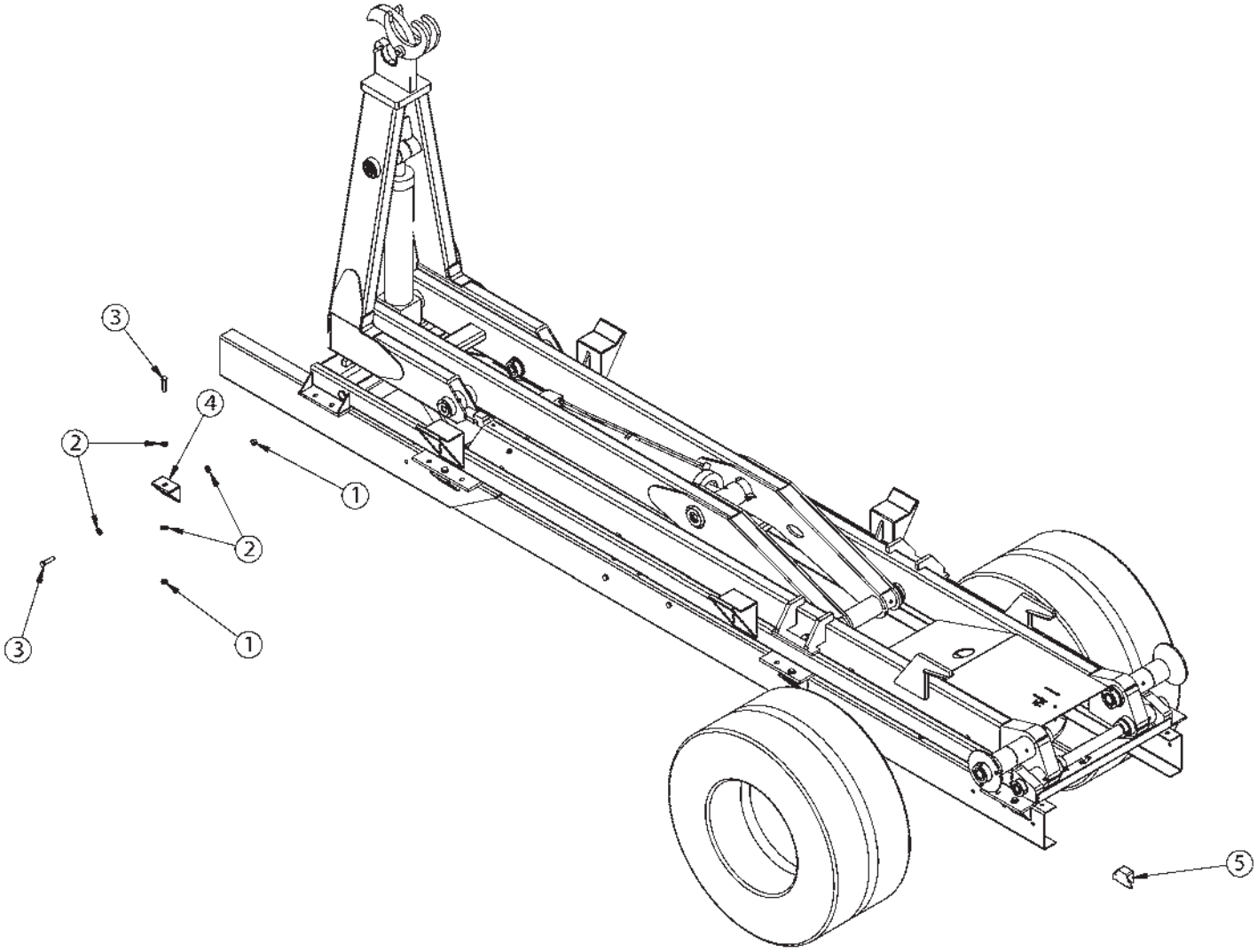


3. The Power Beyond feature is now activated and will divert oil to alternate system via the port shown.

Note:

1. *The return/tank line must be connected to the top or the side port, labeled "T".*
2. *Using the return line to run auxillary equipment will directly result in a failure and will not in any circumstance be covered under warranty.*
3. *A standard Stellar hooklift will have 6 hydraulic lines attached to the valve. A Stellar hooklift with Power Beyond will have 7 hydraulic lines attached to the valve.*

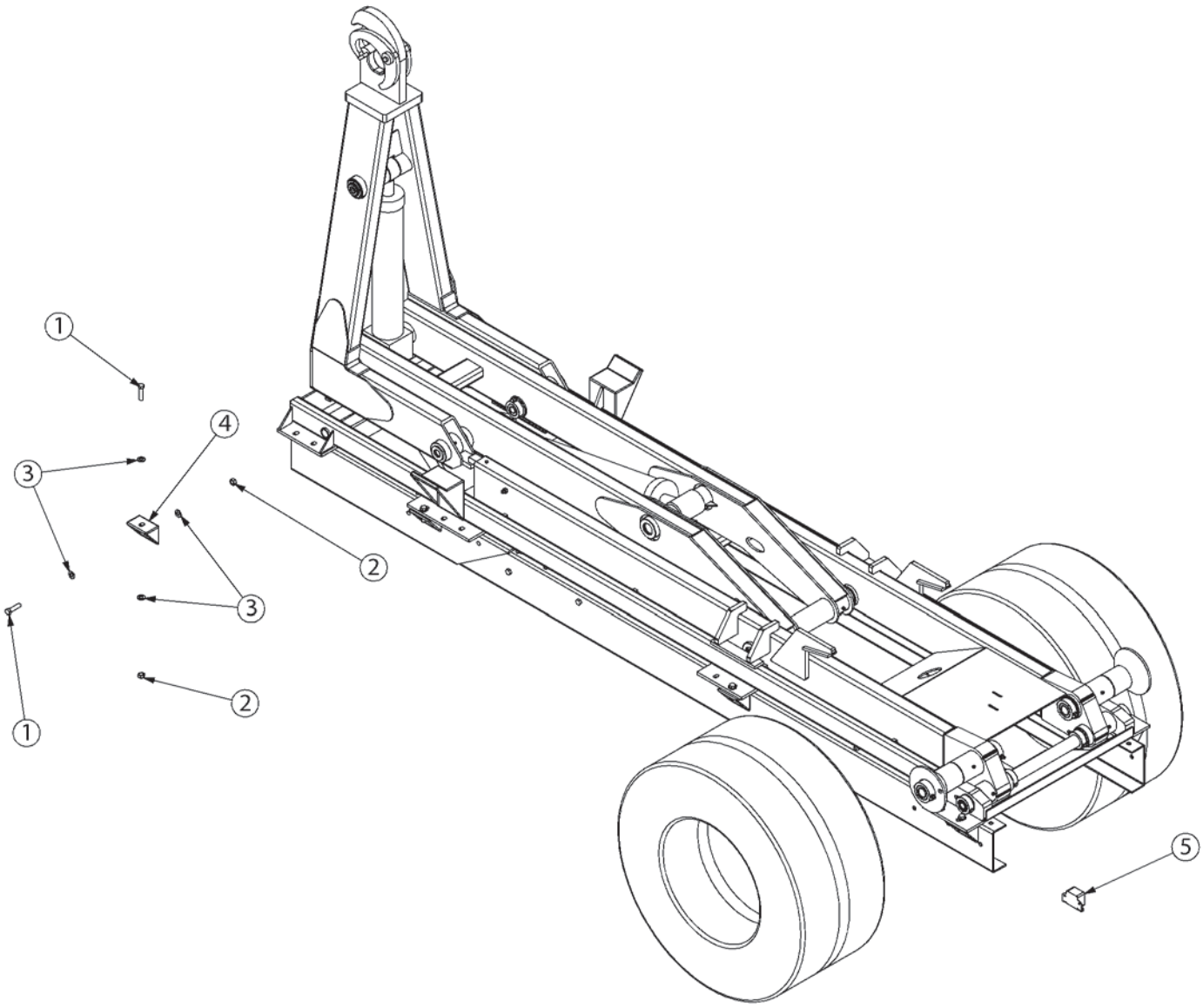
Mounting Kit (*138-18-20, 168-20-20, 190-24-20*) - PN 1022



PN 1022

ITEM	PART	DESCRIPTION	QTY.
1	24868	NUT 0.63-11 HHGR8 NYLOCK ZY	16
2	C5902	WASHER 0.63 SAE FLAT YELLOW GR8	32
3	C1026	CAP SCR 0.63-11X2.50 HHGR8 ZY	16
4	D0143	TIE DOWN CHANNEL	8
5	D0045	BACKUP ALARM .97 DECIBAL	1

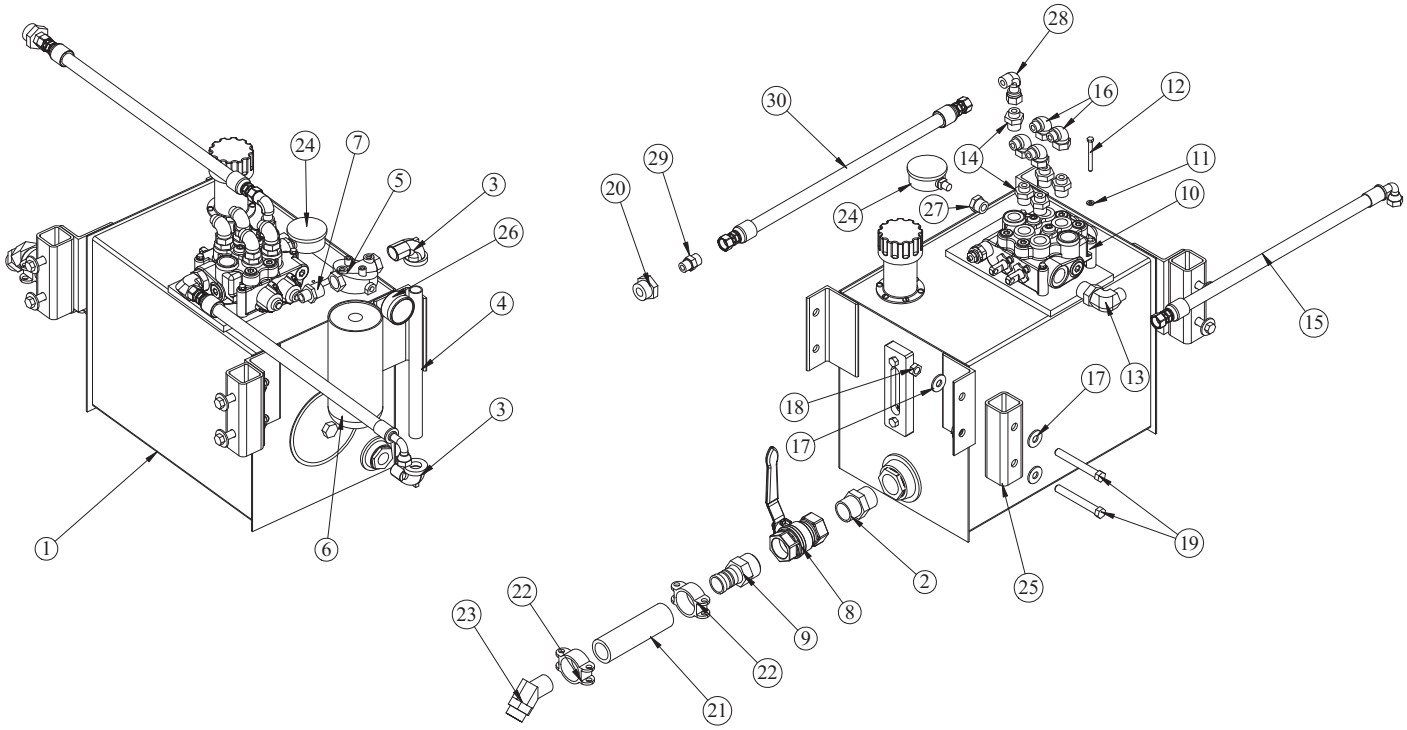
Mounting Kit (*96-10-24,108-11-20, 108-12-20/36, 120-16-20*) - PN 2966



PN 2966

ITEM	PART	DESCRIPTION	QTY.
1	C1026	CAP SCR 0.63-11X2.50 HHGR8 ZY	16
2	24868	NUT 0.63-11 HHGR8 NYLOCK ZY	16
3	C5902	WASHER 0.63 SAE FLAT YELLOW GR8	32
4	D0143	TIE DOWN CHANNEL	8
5	D0045	BACKUP ALARM .97 DECIBAL	1

Reservoir Assembly - PN 25629

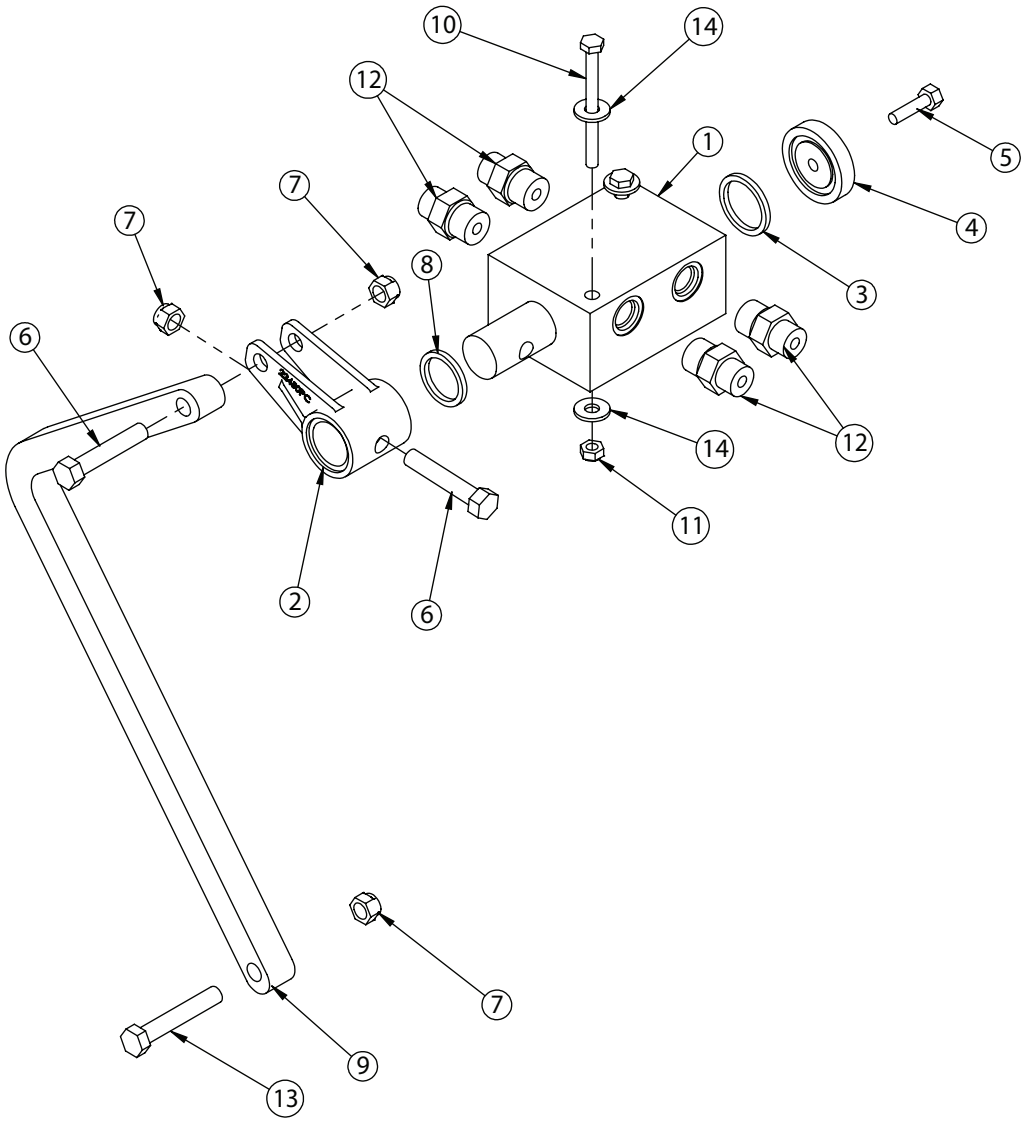


PN 25629

ITEM	PART	DESCRIPTION	QTY.	ITEM	PART	DESCRIPTION	QTY.
1	26455	RSRVR ASM 10GAL K MODEL	1	13	C4227	FTG MF/MSTR 90 8-12 C5OLO-S	1
2	1115	FTG NIPPLE HEX MALE 0101-20-20	1	14	C1855	FTG ADAPT 6-10 F5OLO-S	5
3	c2242	ST EL 0.75 90 DEG BLK	2	15	26731	HOSE 0.50(381-JC-J9-8-8-8-18-0)	1
4	3320	NIPPLE 0.75X12.00 PIPE	1	16	C2248	FTG ADAPT 6-C6LO-S	4
5	c6226	FILTER HEAD	1	17	0352	WASHER 0.50 USS FLAT ZINC	8
6	C6229	FILTER LARGE AE-10L	1	18	C6106	NUT 0.50-13 HHGR5 NYLOC	4
7	C6014	FTG ADAPT 8-12 FOLO-S	1	19	0506	CAP SCR 0.50-13X4.00 HHGR5	4
8	C5511	VALVE BALL 1.25	1	20	D0549	FTG ADAPT 16-8 F5OG5-S	1
9	C2282	FTG 1.25 NPT TO 1.25 BARB	1	21	17767	HOSE SUCT 1.25 10FT	1
10	24611	VB 2-SECTION VDM8	1	22	C1123	HOSE CLAMP 88 DB-20	2
11	0521	WASHER 0.25 LOCK	3	23	C4747	NIPPLE O'RING 45 4603-20-16	1
12	0339	CAP SCR 0.25-20X2.50 HHGR5	3	24	10094	GAUGE OIL LF 2.5" 0-500 BM	1

ITEM	PART	DESCRIPTION	QTY.
25	9892PC	SPACER TANK MOUNTING 10 GAL	2
26	16145	GAUGE PRES FILTER SERVICE CI20	1
27	25630	FTG ADAPT 10-1/4 F5OG	1
28	C2376	FTG ADAPT 8-C6LO-S	1
29	1554	FTG ADAPT 8-F5OLO-S	1
30	31676	HOSE 0.50(471TC-JC-JC-8-8-8-120)	1

Rotary Valve - PN 24040

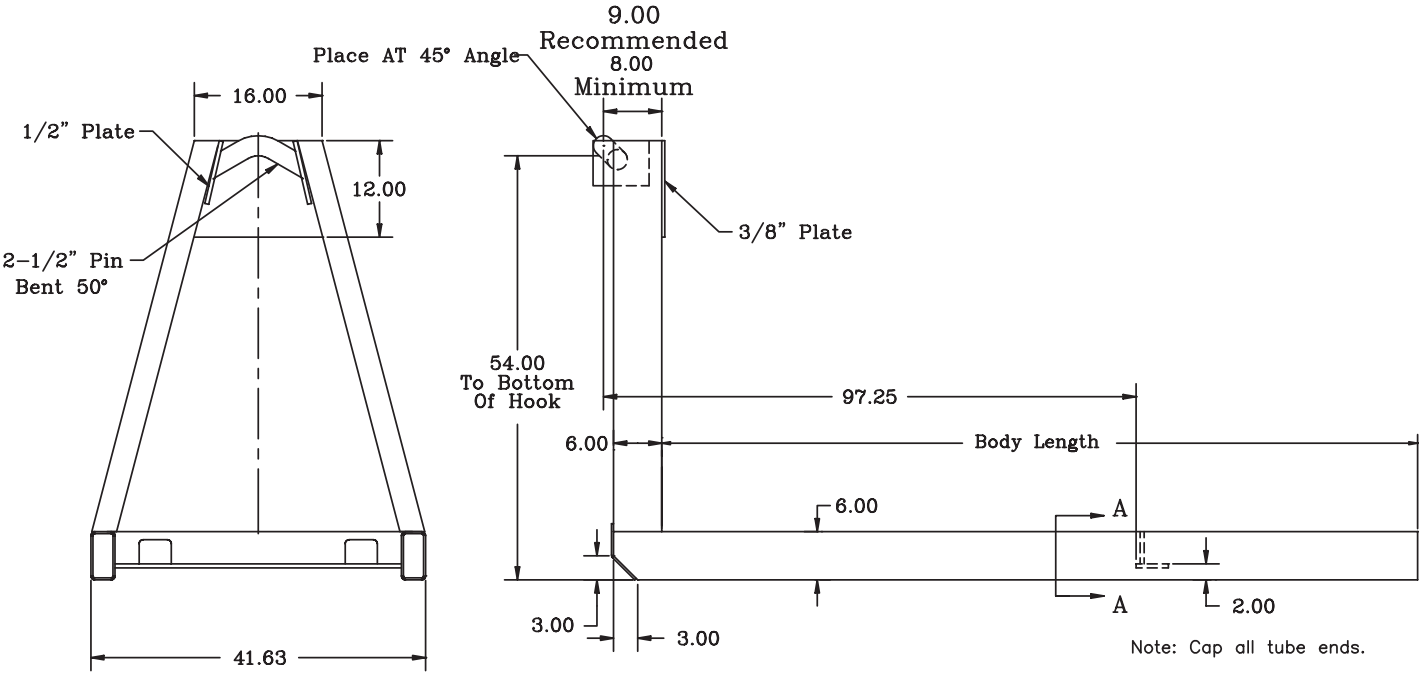


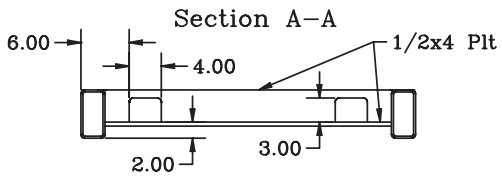
PN 24040

ITEM	PART	DESCRIPTION	Default/QTY.
1	22456	ROTARY VALVE ASM	1
2	22450PC	WLDMT ROTARY VALVE PWDRCT BLK	1
3	D1638	O'RING 1.12X1.38X0.12 568-216	1
4	3748	WASHER ROTARY VALVE	1
5	0480	CAP SCR 0.25-20X1.00 HHGR5	1
6	0353	CAP SCR 0.38-16X2.00 HHGR5	2
7	0347	NUT 0.38-16 HH NYLOC	3
8	0977	O'RING 1.00X1.25X0.12 568-214	1
9	24236PC	PLATE ROTARY VALVE ARM	1
10	0482	CAP SCR 0.25-20 X 3.00 HHGR5	2
11	0333	NUT 0.25-20 HHGR5 NYLOC	2
12	C1854	FTG 6-8 MFS-MORB STRAIGHT	4
13	C0946	CAP SCR 0.38-16X2.25 HHGR5	1
14	0340	WASHER 0.25 USS FLAT ZINC	4

To adjust rotary valve move hooklift into stowed position. Loosen the bolts that are attaching the valve block to the dump section. Adjust rotary arm so that it is in contact with the dump plate. Pull valve block towards rear of hooklift until snug. Tighten valve block bolts while making sure valve block is snug. Note: It should engage between 4 and 10 degrees.

Subframe (108-11-20) - PN 3123

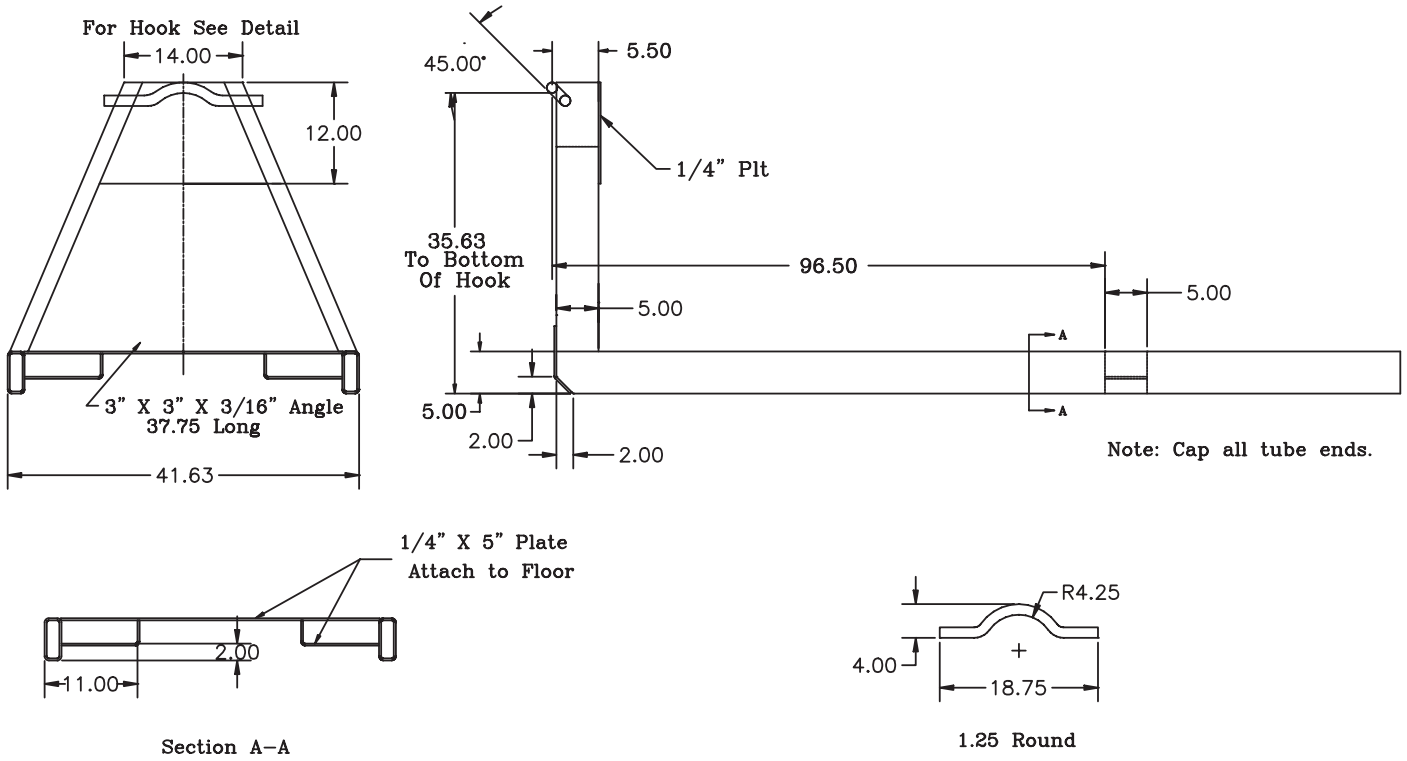




PN 3123

Minimum recommended rail construction	
108-11-20	6x2x1/4

Subframe (108-12-20/36) - PN 3126



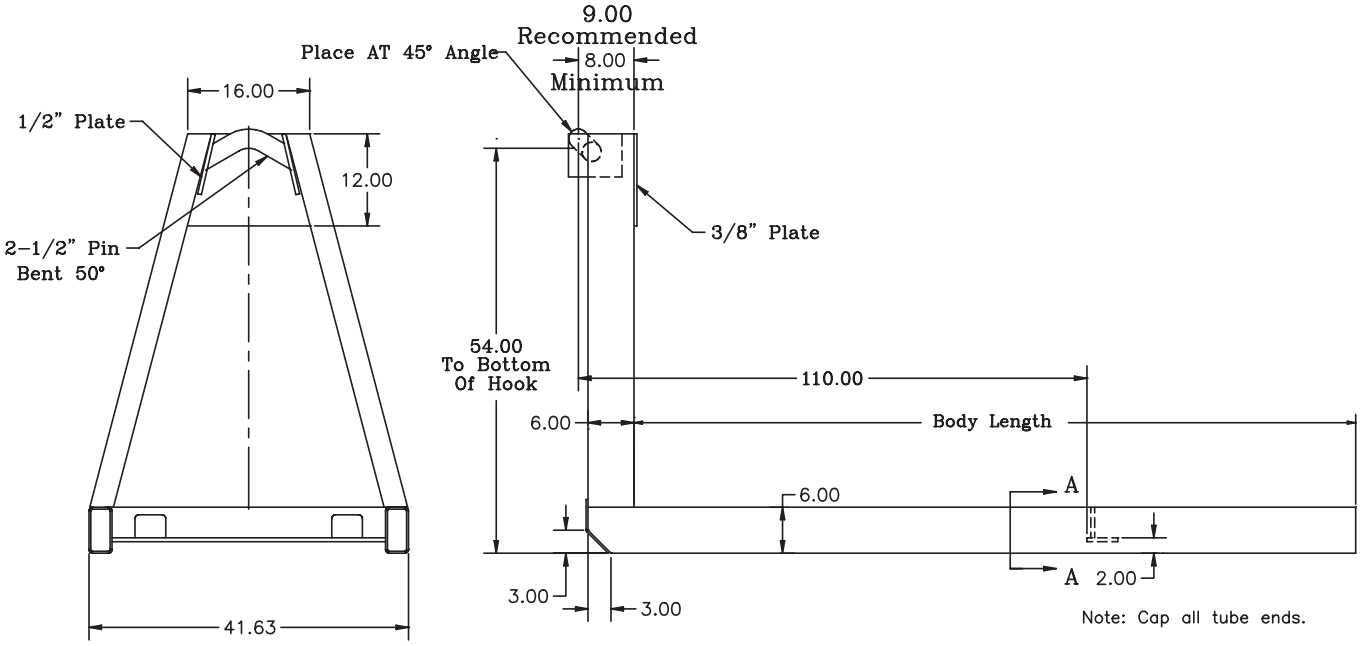
Section A–A

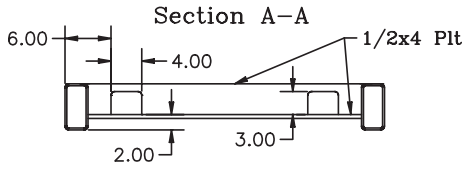
1.25 Round

PN 3126

Minimum recommended rail construction.	
108–12–20/36	5x2x1/4

Subframe (120-16-20) - PN 3122

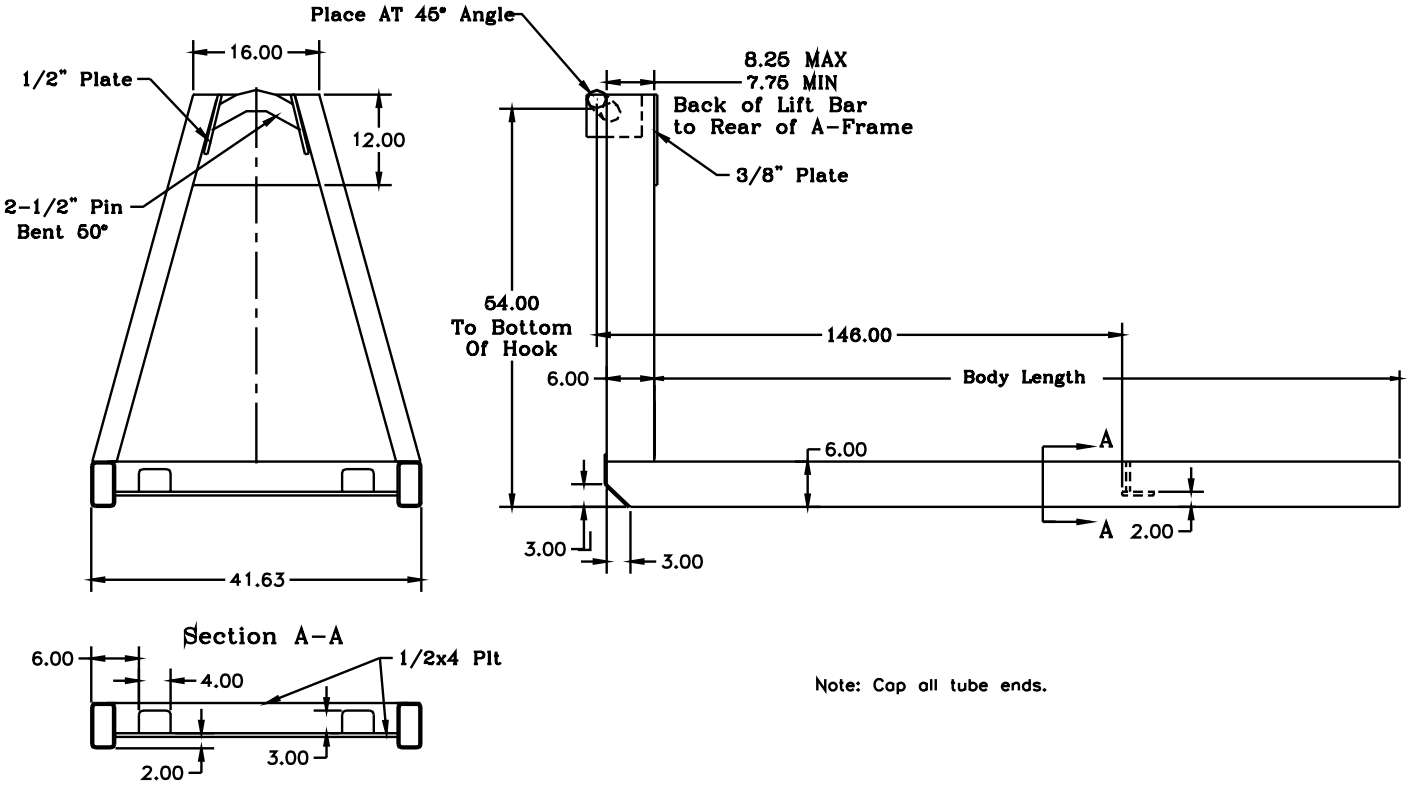




PN 3122

Minimum recommended rail construction	
120-16-20	6x2x1/4

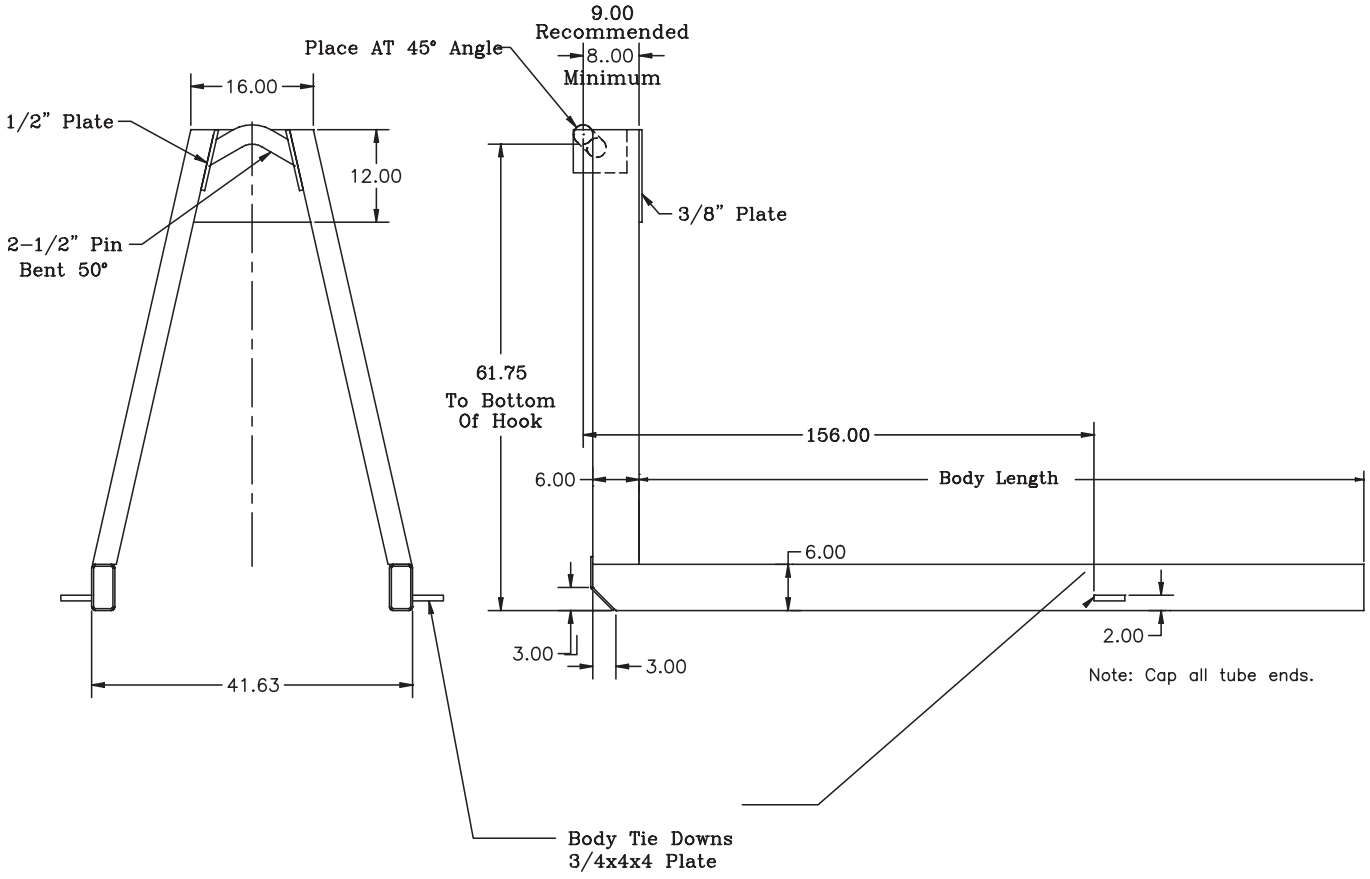
Subframe (138-18-20) - PN 3121



PN 3121

Minimum recommended rail construction	
138-18-20	6x2x1/4

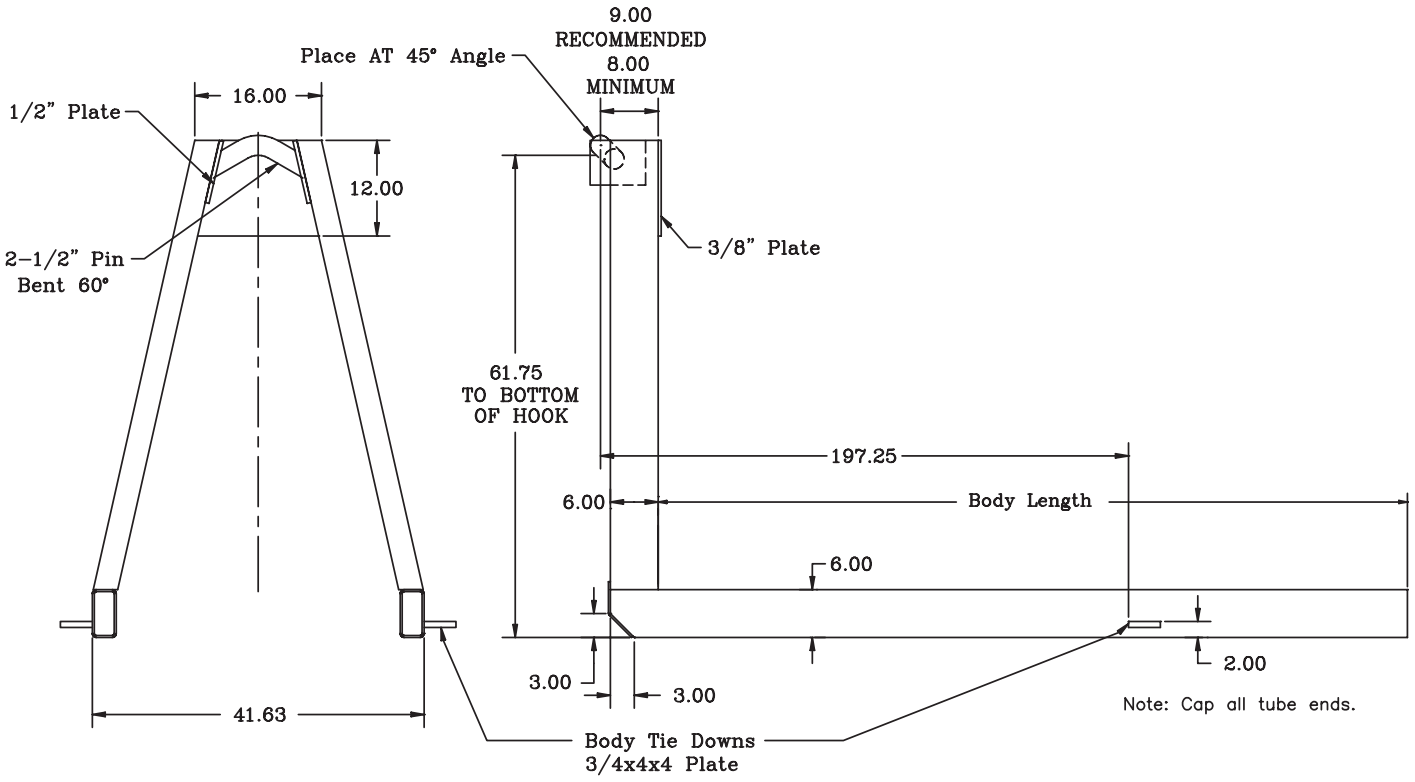
Subframe (168-20-20) - PN 3118



PN 3118

Minimum recommended rail construction per number of rear rollers on loader.		
	Single	Double
168-20-20	6x2x1/4	6x2x1/4

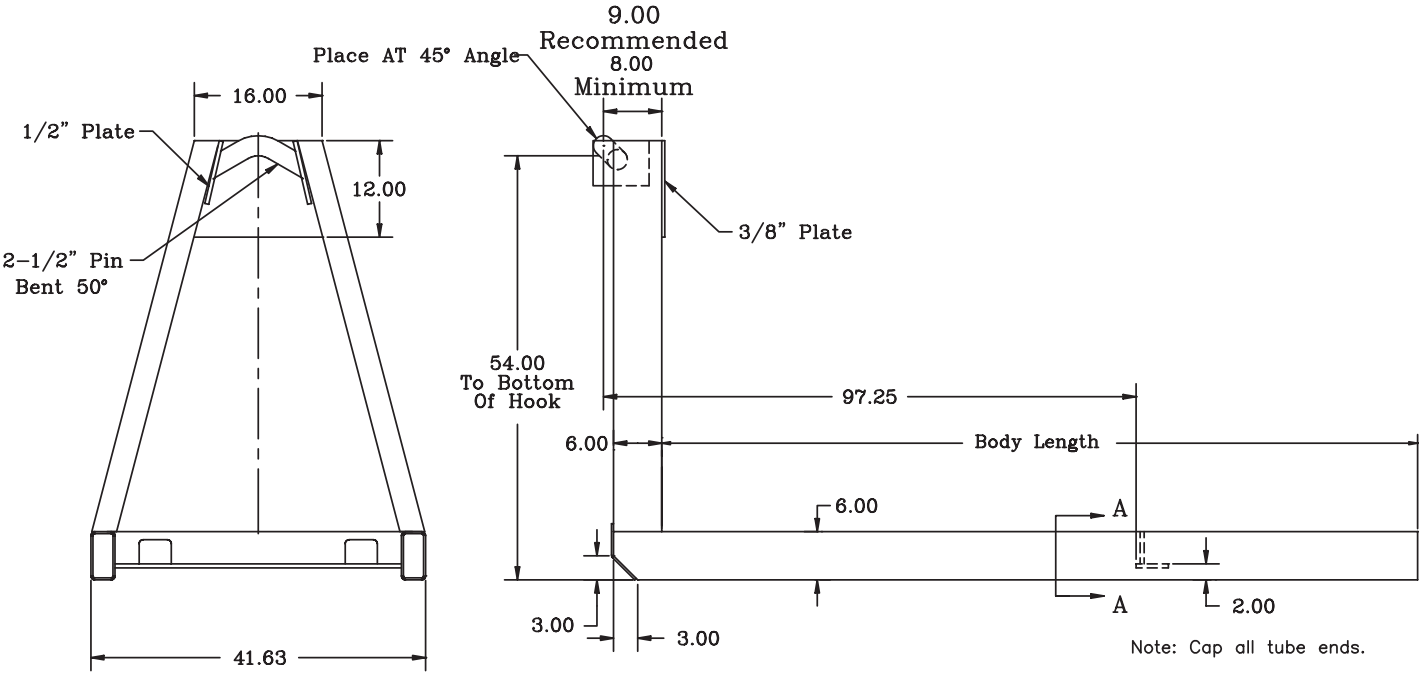
Subframe (190-24-20) - PN 3117

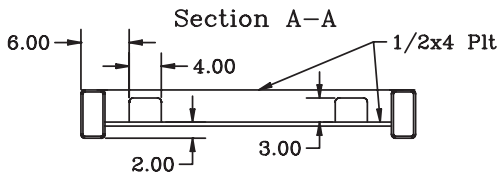


PN 3117

Minimum recommended rail construction per number of rear rollers on loader.		
	Single	Double
190-24-20	6x2x1/4 & 1/2x2 Plt	6x2x1/4

Subframe (96-10-24) - PN 3123



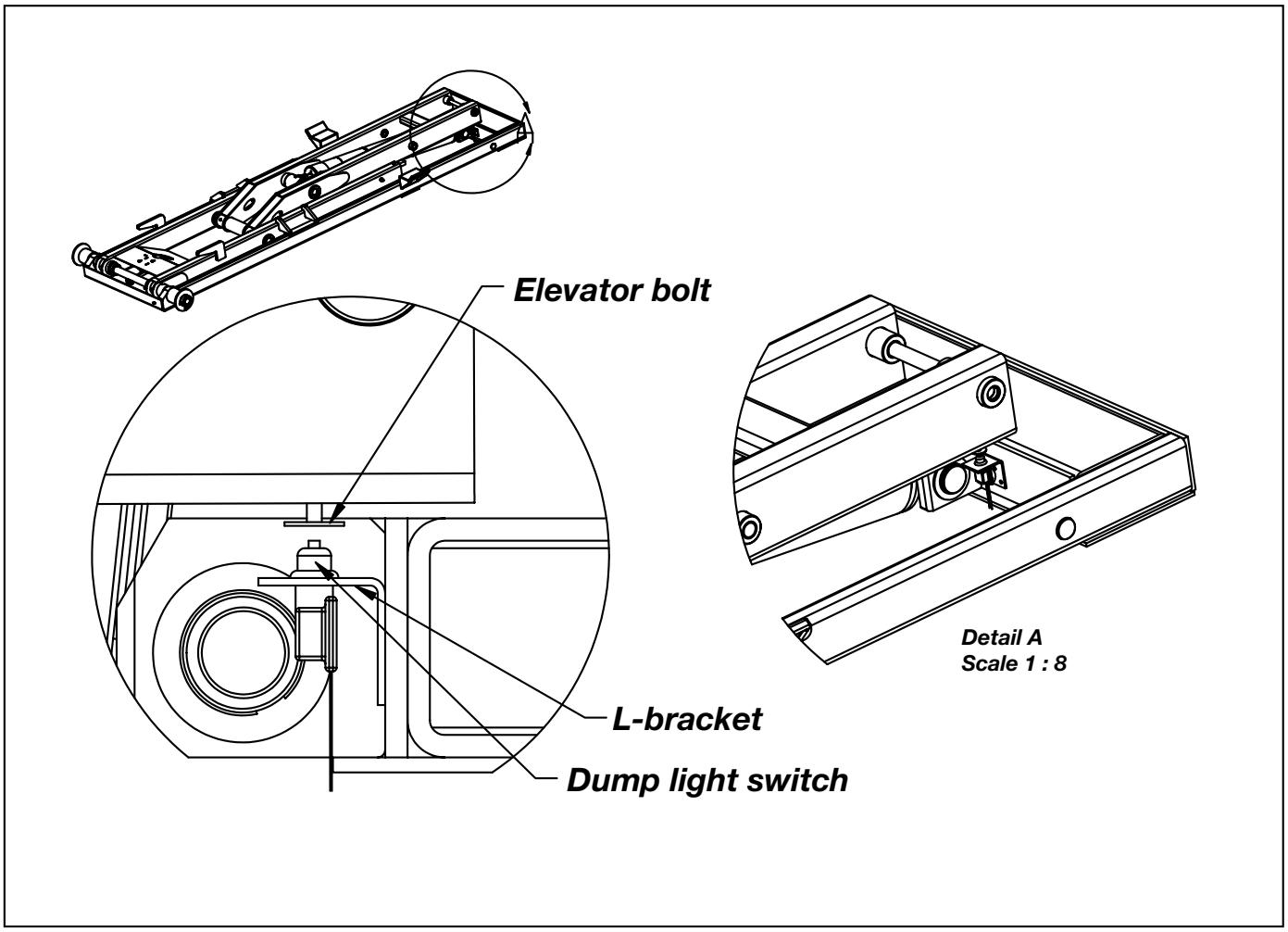


PN 3123

Minimum recommended rail construction	
108-11-20	6x2x1/4

Dump Light Kit Installation

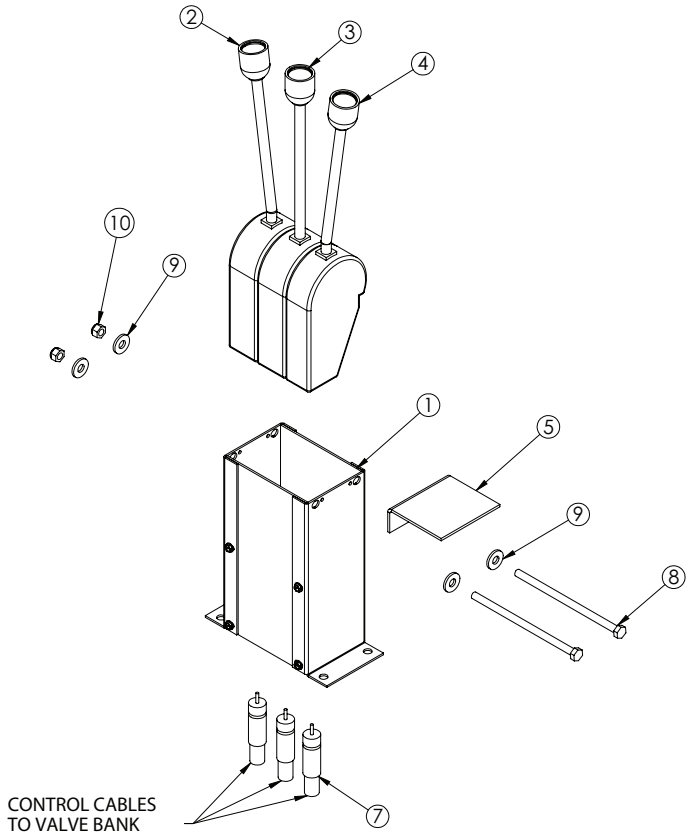
- Bolt L-bracket to front of base, drilling and tapping holes in appropriate area.
- Attach dump light switch to L-bracket.
- Drill and tap ¼-20 hole in bottom of secondary tube. Hole should be located directly above dump light switch when secondary is in lowered position.
- Screw in elevator bolt, and adjust so that switch is engaged when secondary is in lowered position.
- Install light in bracket provided with control console.
- Complete the wiring; following instructions provided with dump light kit.



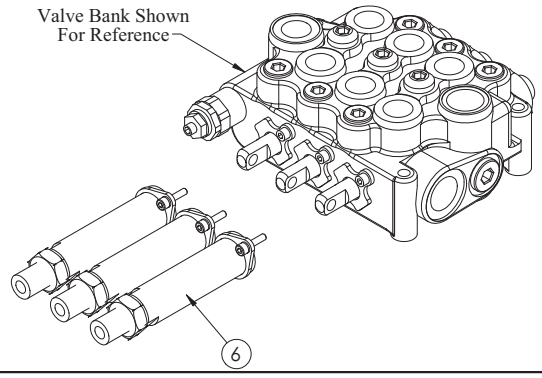
Cable Controls

	2 SECTION	3 SECTION
96 INCH	PN 50835	PN 50836
144 INCH	PN 53444	PN 53445
192 INCH	PN 50837	PN 50838

In Cab Installation



At Valve Installation



ITEM	PART	DESCRIPTION	QTY.
1	38351	VALVE CTRL CONSOLE 3LEVER RVC (3-Section)	1
1	37470	VALVE CTRL CONSOLE 2LEVER RVC (2-Section)	1
2	37475	CTRL CNTR LOCK LEFT BEND	1
3	37476	CTRL CNTR LOCK NO BEND	1
4	37474	CTRL CNTR LOCK RIGHT BEND	1
5	25933	BRKT CONTROLLER DECAL	1
6	37469	CABLE CONN. KIT FOR VD8A/VDM8	3
7	37471	CONTROL CABLE 96 IN WESCON	2/3
7	37472	CONTROL CABLE 144 IN WESCON	2/3
7	37473	CONTROL CABLE 192 IN WESCON	2/3
8	20057	CAP SCR 0.31-18X6.50 HHGR5 (3-Section)	2
8	20057	CAP SCR 0.31-18X4.00 HHGR5 (2-Section)	2
9	0343	WASHER 0.31 USS FLAT ZINC	4
10	0342	NUT 0.31-18 HHGR5 NYLOC	2

Air Controls

ITEM	PART	DESCRIPTION	QTY.
1	75868	CONTROLLER ASM 3 SECT AIR PED	1
2	D1810	TBE AIR SAEJ844 TYPE A .25 (RM)	4
3	45333	FTG .125NPT MALE / .25 TUBE QR KPAC	2
4	45687	FTG ADAPT PTC-MNPT 90 1/4-1/8 NI-PLATED BRASS	7
5	35211	PTO AIR REGULATOR 378414	1
6	C5934	NIPPLE 0.25XCLOSE BLK	1
7	C1065	BUSHING 0.50X0.25 BLK	1
8	25940	VB 2-SECTION VDM8 W/AIR ACTUATORS	1

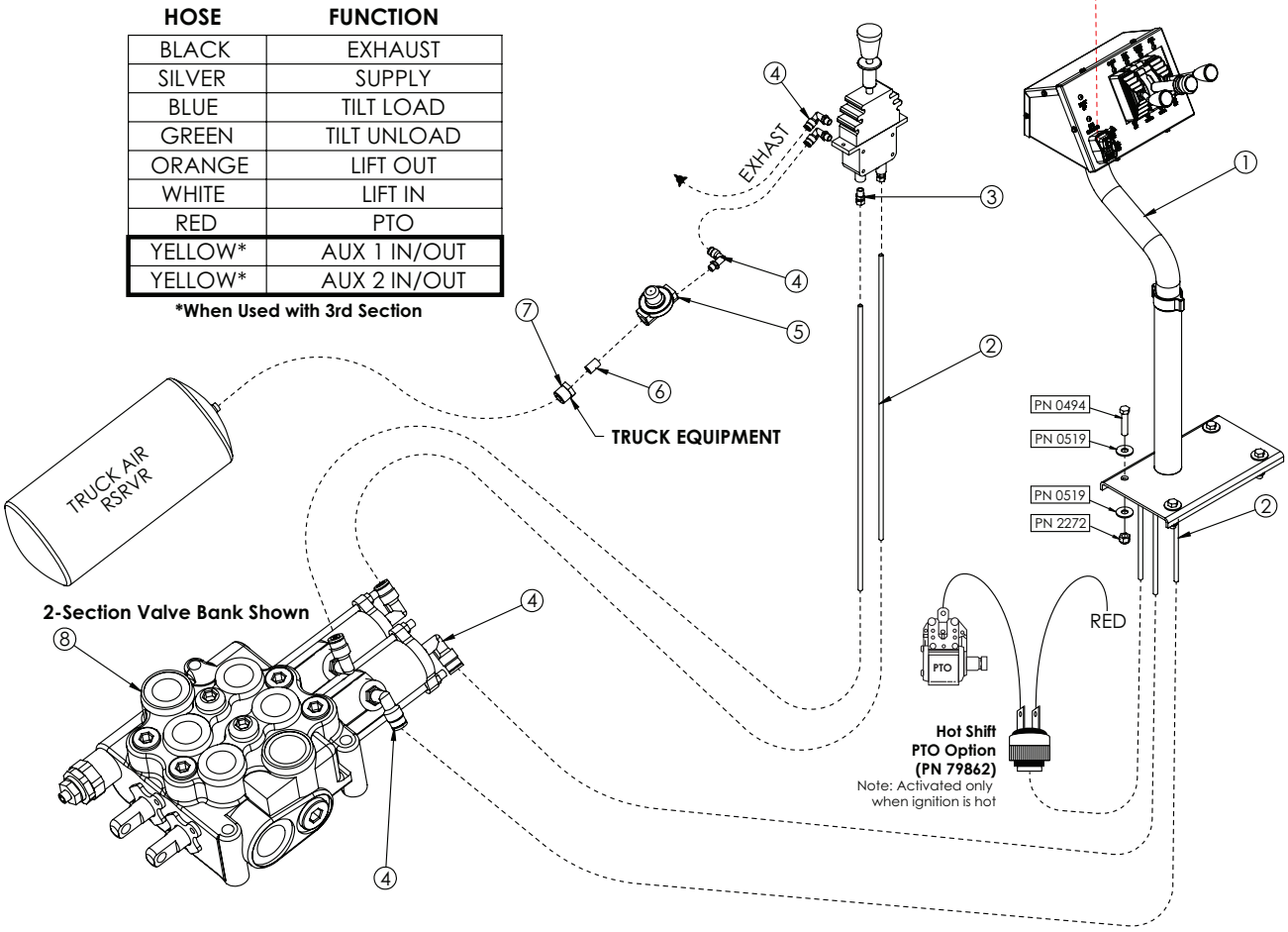
PTO SWITCH

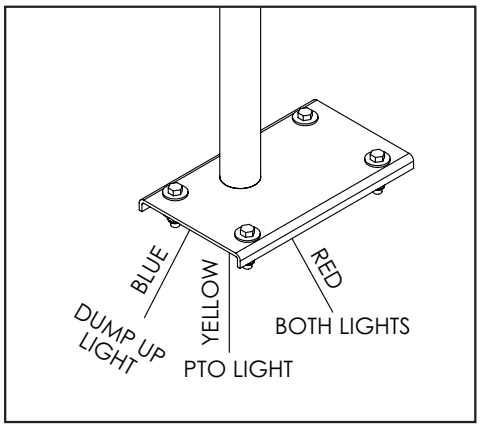
AIR - 62976 (Standard)
ELECTRIC* - PN 63142 (Optional)

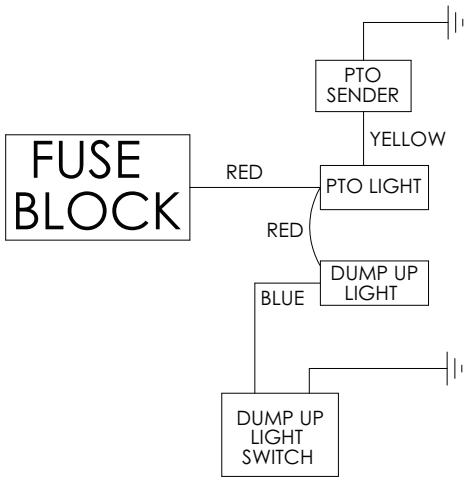
*** Note: When using PN 63142, an adapter plate (PN 63143) is required.**

HOSE	FUNCTION
BLACK	EXHAUST
SILVER	SUPPLY
BLUE	TILT LOAD
GREEN	TILT UNLOAD
ORANGE	LIFT OUT
WHITE	LIFT IN
RED	PTO
YELLOW*	AUX 1 IN/OUT
YELLOW*	AUX 2 IN/OUT

***When Used with 3rd Section**

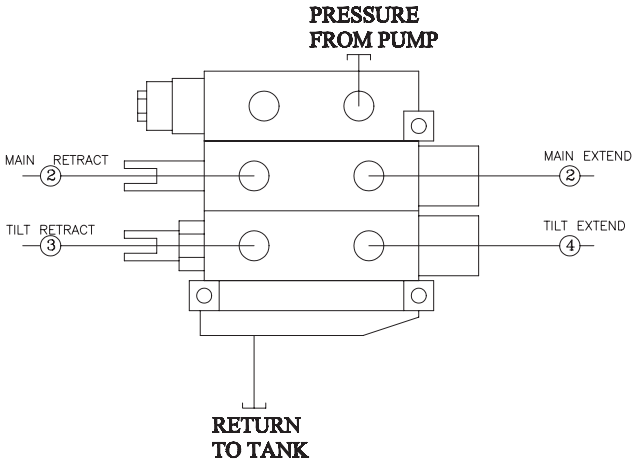




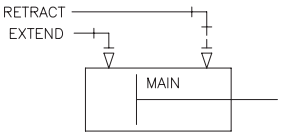


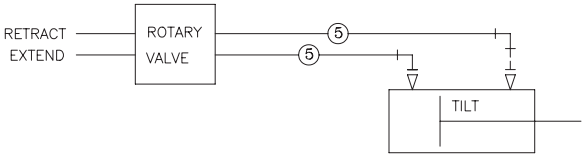
NOTE: THE HOIST UP LIGHT WILL ONLY BE ACTIVATED WHEN THE IGNITION IS HOT. IT IS RECOMMENDED TO TAP INTO THE PTO LIGHT POWERSOURCE WHEN WIRING.

Hose Kit (108-11-20) - PN 42843



NOTE: IF RESERVOIR IS MOUNTED ON CS HOSES 3 AND 4 ARE REVERSED

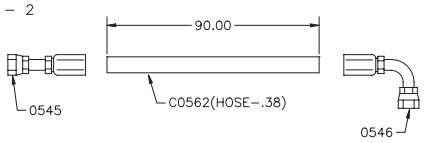




PN 42843

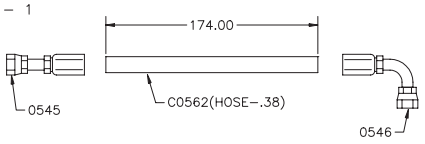
ITEM	PART No.	DESCRIPTION	QTY
05	41219	HOSE .38 X 132.00	2ref
04	42844	HOSE .38 X 174.00	1ref
03	42845	HOSE .38 X 204.00	1ref
02	42842	HOSE .38 X 90.00	2ref
01	42843	HOSE KIT 108-11-20K	1

STELLAR #42842 – (471TC-JC-J9-6-6-6-90")
QTY – 2



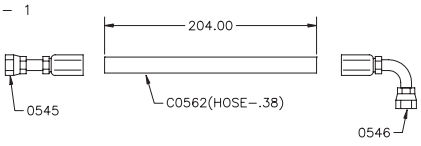
FUNCTION: MAIN CYLINDER

STELLAR #42844– (471TC-JC-J9-6-6-6-174")
QTY – 1



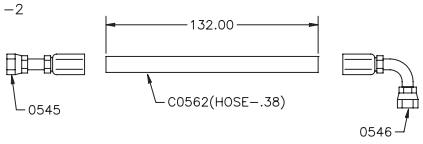
FUNCTION: TILT VB TO ROTARY VALVE

STELLAR #42845– (471TC-JC-J9-6-6-6-204")
QTY – 1



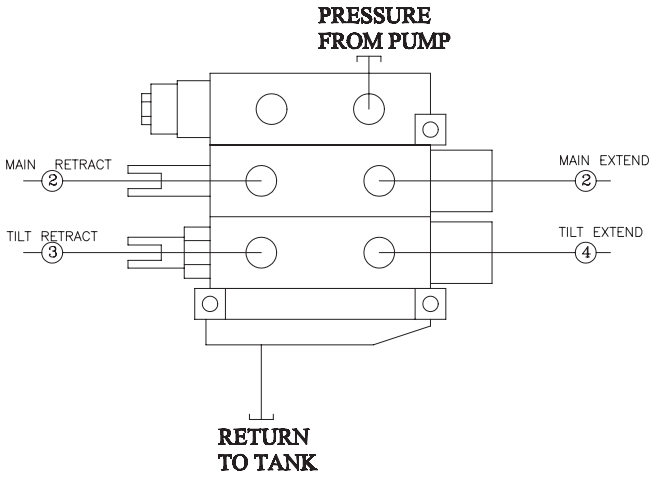
FUNCTION: TILT VB TO ROTARY VALVE

STELLAR #41219– (471TC-JC-J9-6-6-6-132")
QTY –2

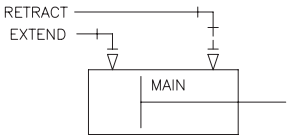


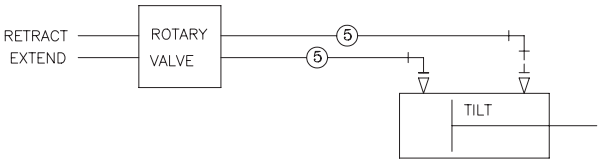
FUNCTION: TILT ROTARY VALVE TO CYLINDER

Hose Kit (108-12-20/36) - PN 42846



NOTE: IF RESERVOIR IS MOUNTED ON CS
HOSES 3 AND 4 ARE REVERSED

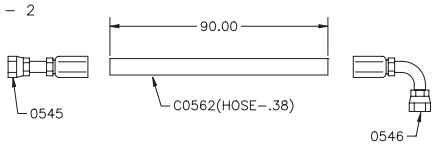




PN 42846

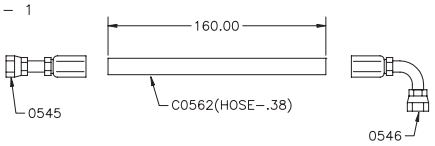
ITEM	PART No.	DESCRIPTION	QTY
05	42848	HOSE .38 X 137.00	2ref
04	42847	HOSE .38 X 160.00	1ref
03	16901	HOSE .38 X 192.00	1ref
02	42842	HOSE .38 X 90.00	2ref
01	42846	HOSE KIT 108-12-20/36K	1

STELLAR #42842 – (471TC–JC–J9–6–6–6–90")
QTY – 2



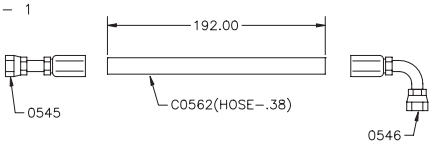
FUNCTION: MAIN CYLINDER

STELLAR #42847– (471TC–JC–J9–6–6–6–160")
QTY – 1



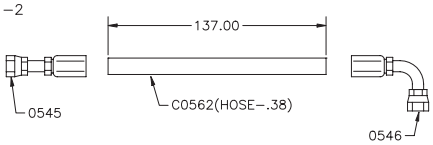
FUNCTION: TILT VB TO ROTARY VALVE

STELLAR #16901– (471TC–JC–J9–6–6–6–192")
QTY – 1



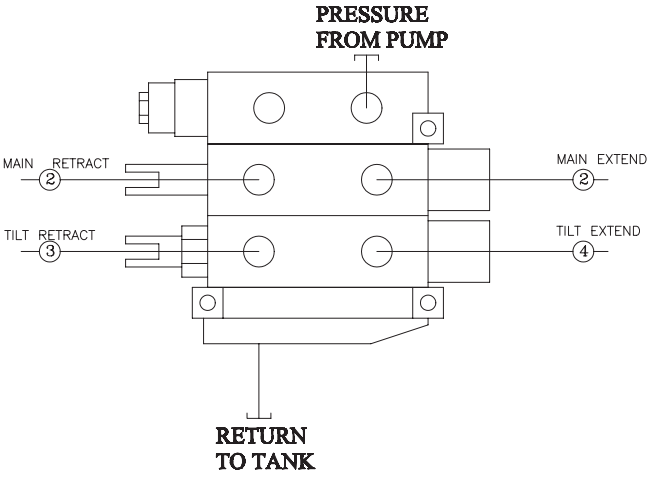
FUNCTION: TILT VB TO ROTARY VALVE

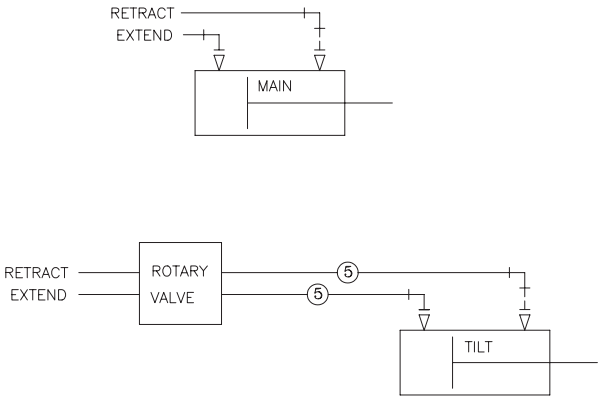
STELLAR #42848– (471TC–JC–J9–6–6–6–137")
QTY –2



FUNCTION: TILT ROTARY VAVLVE TO CYLINDER

Hose Kit (120-16-20) - PN 42849



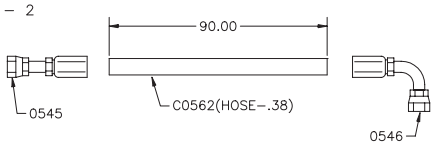


NOTE: IF RESERVOIR IS MOUNTED ON CS
HOSES 3 AND 4 ARE REVERSED

ITEM	PART No.	DESCRIPTION	QTY
05	42850	HOSE .38 X 150.00	2ref
04	16901	HOSE .38 X 192.00	1ref
03	17019	HOSE .38 X 214.00	1ref
02	42842	HOSE .38 X 90.00	2ref
01	42849	HOSE KIT 120-16-20K	1

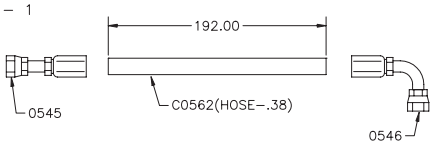
PN 42849

STELLAR #42842 – (471TC-JC-J9-6-6-6-90")
QTY – 2



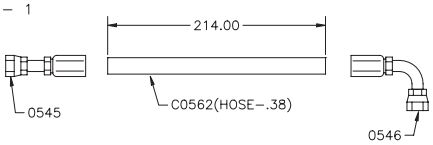
FUNCTION: MAIN CYLINDER

STELLAR #16901– (471TC-JC-J9-6-6-6-192")
QTY – 1



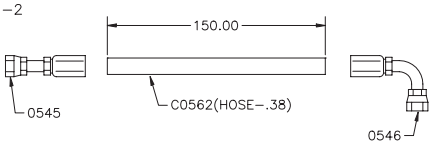
FUNCTION: TILT VB TO ROTARY VALVE

STELLAR #17019– (471TC-JC-J9-6-6-6-214")
QTY – 1



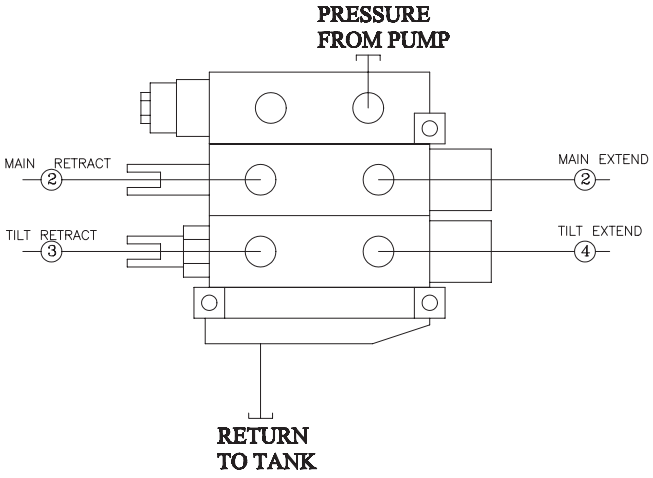
FUNCTION: TILT VB TO ROTARY VALVE

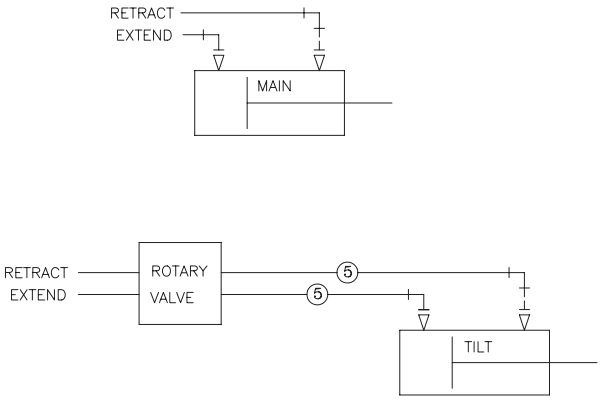
STELLAR #42850– (471TC-JC-J9-6-6-6-150")
QTY –2



FUNCTION: TILT ROTARY VAVLVE TO CYLINDER

Hose Kit (138-18-20) - PN 42851



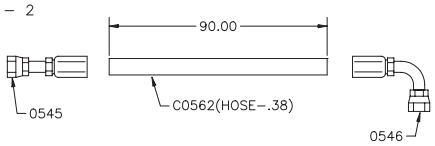


NOTE: IF RESERVOIR IS MOUNTED ON CS HOSES 3 AND 4 ARE REVERSED

PN 42851

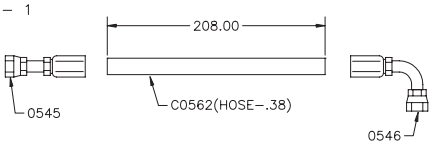
ITEM	PART No.	DESCRIPTION	QTY
05	16900	HOSE .38 X 172.00	2ref
04	32669	HOSE .38 X 208.00	1ref
03	17046	HOSE .38 X 224.00	1ref
02	42842	HOSE .38 X 90.00	2ref
01	42851	HOSE KIT 138-18-20K	1

STELLAR #42842 – (471TC–JC–J9–6–6–6–90")
QTY – 2



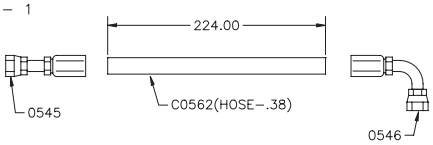
FUNCTION: MAIN CYLINDER

STELLAR #32669– (471TC–JC–J9–6–6–6–208")
QTY – 1



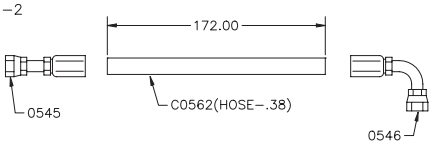
FUNCTION: TILT VB TO ROTARY VALVE

STELLAR #17046– (471TC–JC–J9–6–6–6–224")
QTY – 1



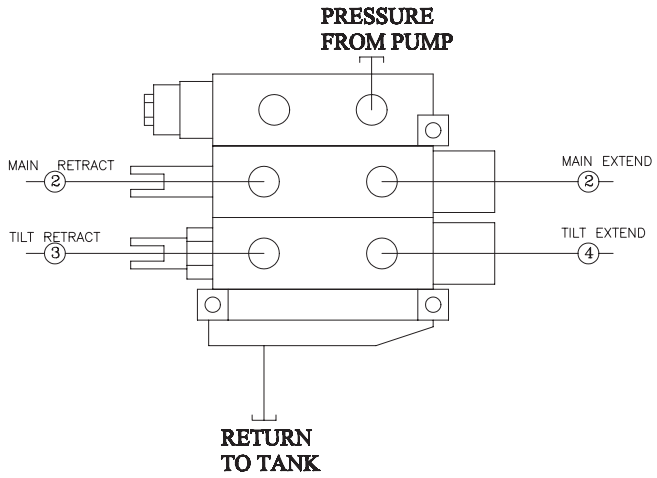
FUNCTION: TILT VB TO ROTARY VALVE

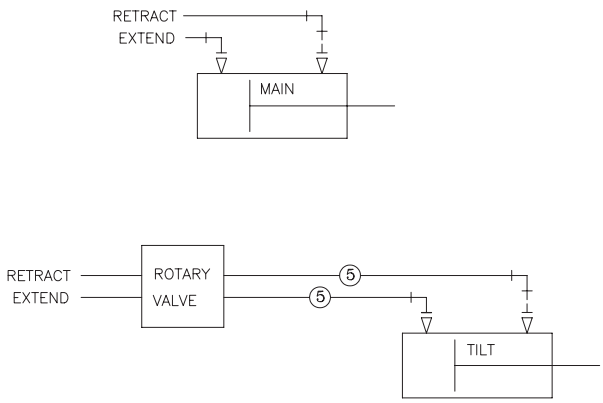
STELLAR #16900– (471TC–JC–J9–6–6–6–172")
QTY –2



FUNCTION: TILT ROTARY VAVLVE TO CYLINDER

Hose Kit (168-20-20) - PN 15728



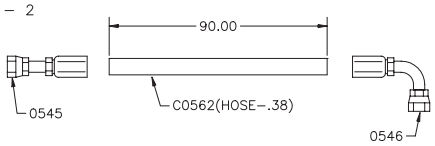


NOTE: IF RESERVOIR IS MOUNTED ON CS HOSES 3 AND 4 ARE REVERSED

PN 15728

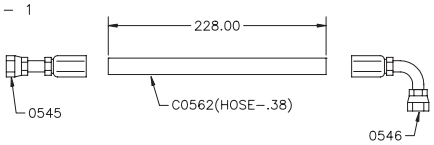
ITEM	PART No.	DESCRIPTION	QTY
05	15730	HOSE .38 X 202.00	2ref
04	15811	HOSE .38 X 228.00	1ref
03	15812	HOSE .38 X 252.00	1ref
02	42842	HOSE .38 X 90.00	2ref
01	15728	HOSE KIT 168-20-20	1

STELLAR #42842 – (471TC–JC–J9–6–6–6–90")
QTY – 2



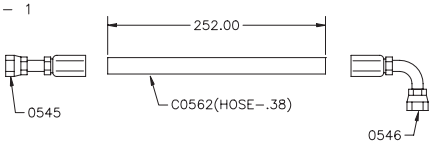
FUNCTION: MAIN CYLINDER

STELLAR #15811– (381–JC–J9–6–6–6–228")
QTY – 1



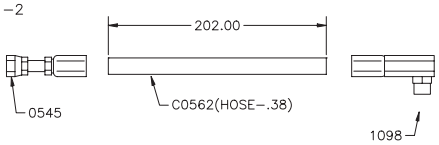
FUNCTION: TILT VB TO ROTARY VALVE

STELLAR #15812– (381–JC–J9–6–6–6–252")
QTY – 1



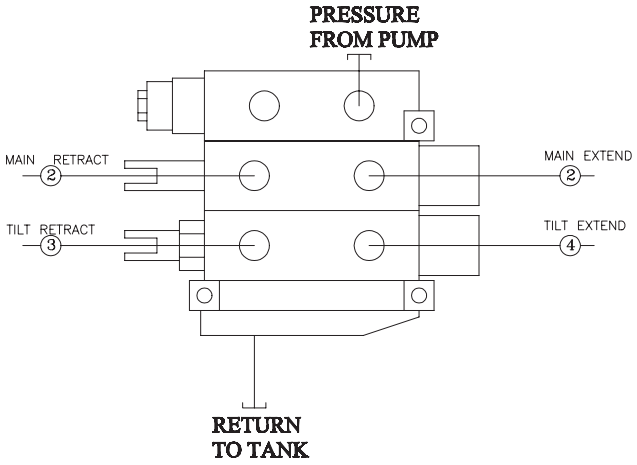
FUNCTION: TILT VB TO ROTARY VALVE

STELLAR #15730– (381–JC–0L–6–8–6–202")
QTY –2

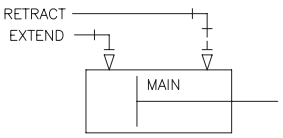


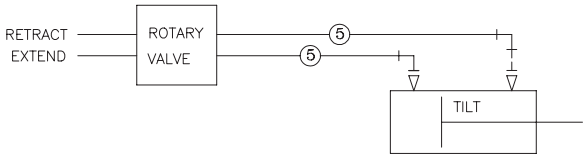
FUNCTION: TILT ROTARY VAVLVE TO CYLINDER

Hose Kit (190-24-20) - PN 15729



NOTE: IF RESERVOIR IS MOUNTED ON CS HOSES 3 AND 4 ARE REVERSED

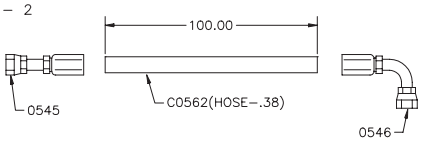




ITEM	PART No.	DESCRIPTION	QTY
05	15814	HOSE .38 X 225.00	2ref
04	15815	HOSE .38 X 240.00	1ref
03	15816	HOSE .38 X 264.00	1ref
02	15813	HOSE .38 X 74.00	2ref
01	15729	HOSE KIT 190-24-20	1

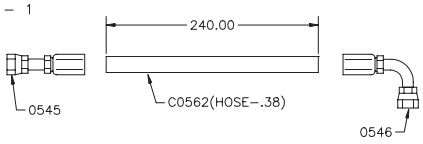
PN 15729

STELLAR #42852 – (471TC–JC–J9–6–6–6–100")
QTY – 2



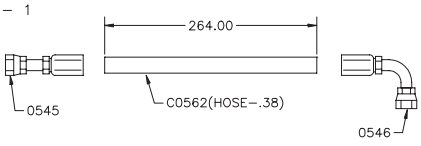
FUNCTION: MAIN CYLINDER

STELLAR #15815– (381–JC–J9–6–6–6–240")
QTY – 1



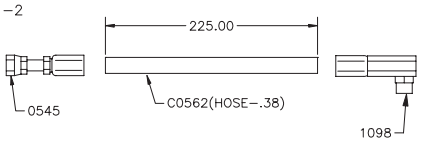
FUNCTION: TILT VB TO ROTARY VALVE

STELLAR #15816– (381–JC–J9–6–6–6–264")
QTY – 1



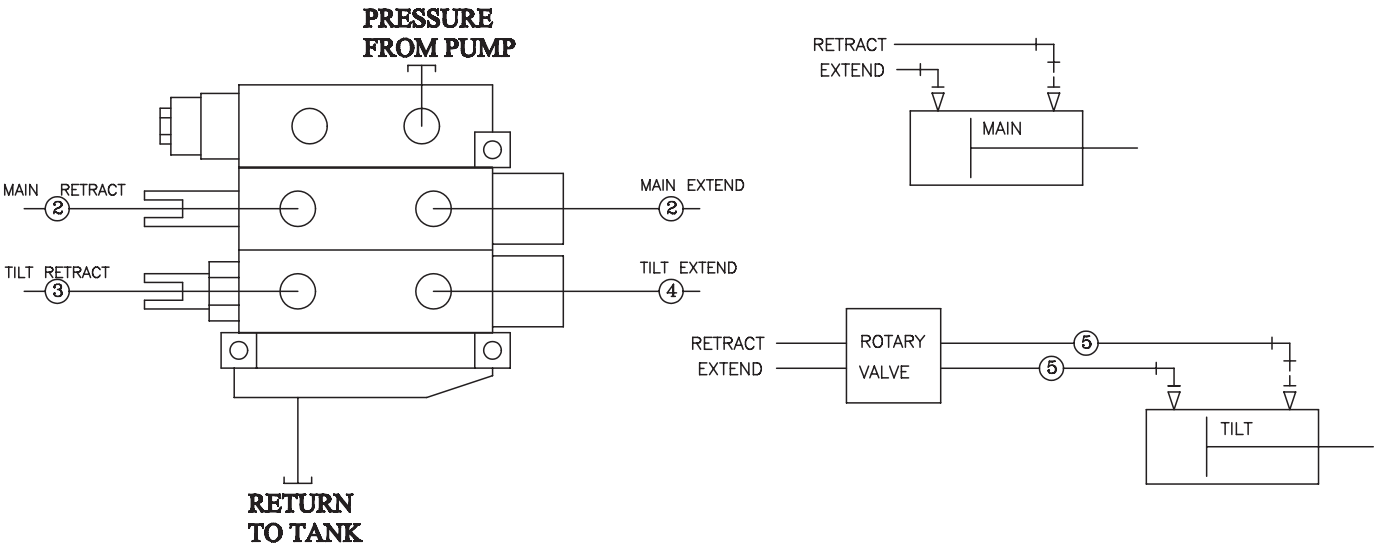
FUNCTION: TILT VB TO ROTARY VALVE

STELLAR #15814– (381–JC–0L–6–6–6–225")
QTY –2



FUNCTION: TILT ROTARY VAVLVE TO CYLINDER

Hose Kit (96-10-24) - PN 17398

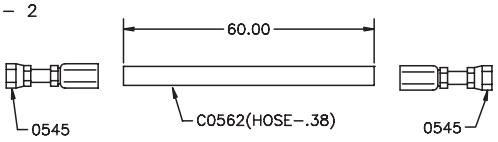


NOTE: IF RESERVOIR IS MOUNTED ON CS HOSES 3 AND 4 ARE REVERSED

PN 17398

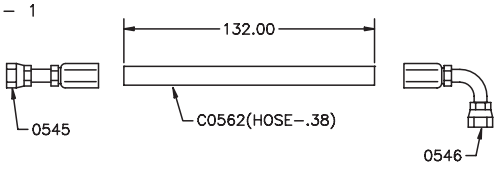
ITEM	PART No.	DESCRIPTION	QTY
05	17399	HOSE .25 X 118.00	2ref
04	17400	HOSE .25 X 132.00	1ref
03	17431	HOSE .25 X 178.00	1ref
02	43300	HOSE .38 X 60.00	2ref
01	17398	HOSE KIT 96-10-24	1

STELLAR #43300 – (471TC–JC–JC–6–6–6–60")
QTY – 2



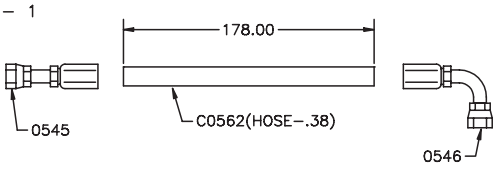
FUNCTION: MAIN CYLINDER

STELLAR #17400– (381–JC–J9–6–6–6–132")
QTY – 1



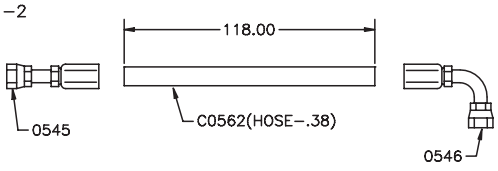
FUNCTION: TILT VB TO ROTARY VALVE

STELLAR #17431– (381–JC–J9–6–6–6–178")
QTY – 1



FUNCTION: TILT VB TO ROTARY VALVE

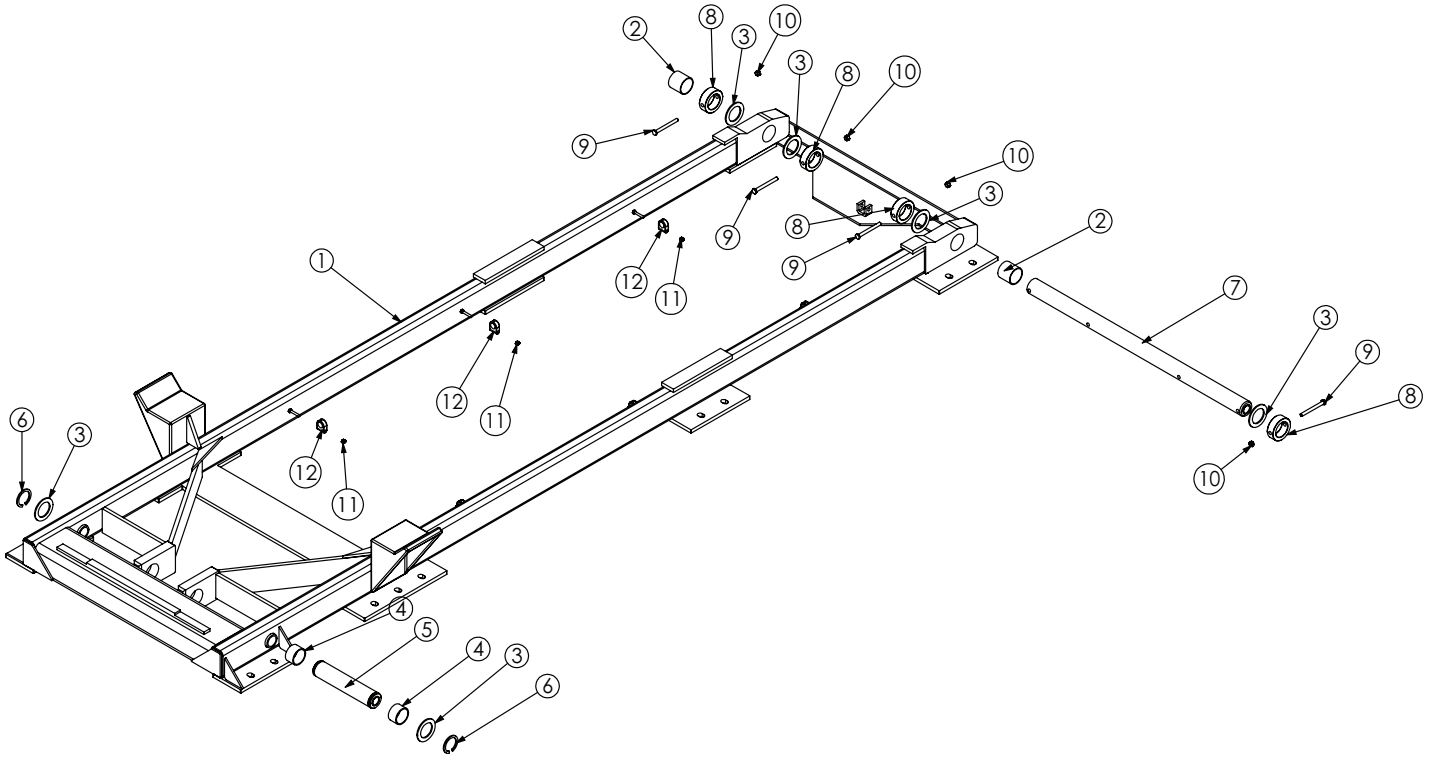
STELLAR #17399– (381–JC–J9–6–6–6–118")
QTY –2



FUNCTION: TILT ROTARY VAVLVE TO CYLINDER

Chapter 7 - Assembly Drawings

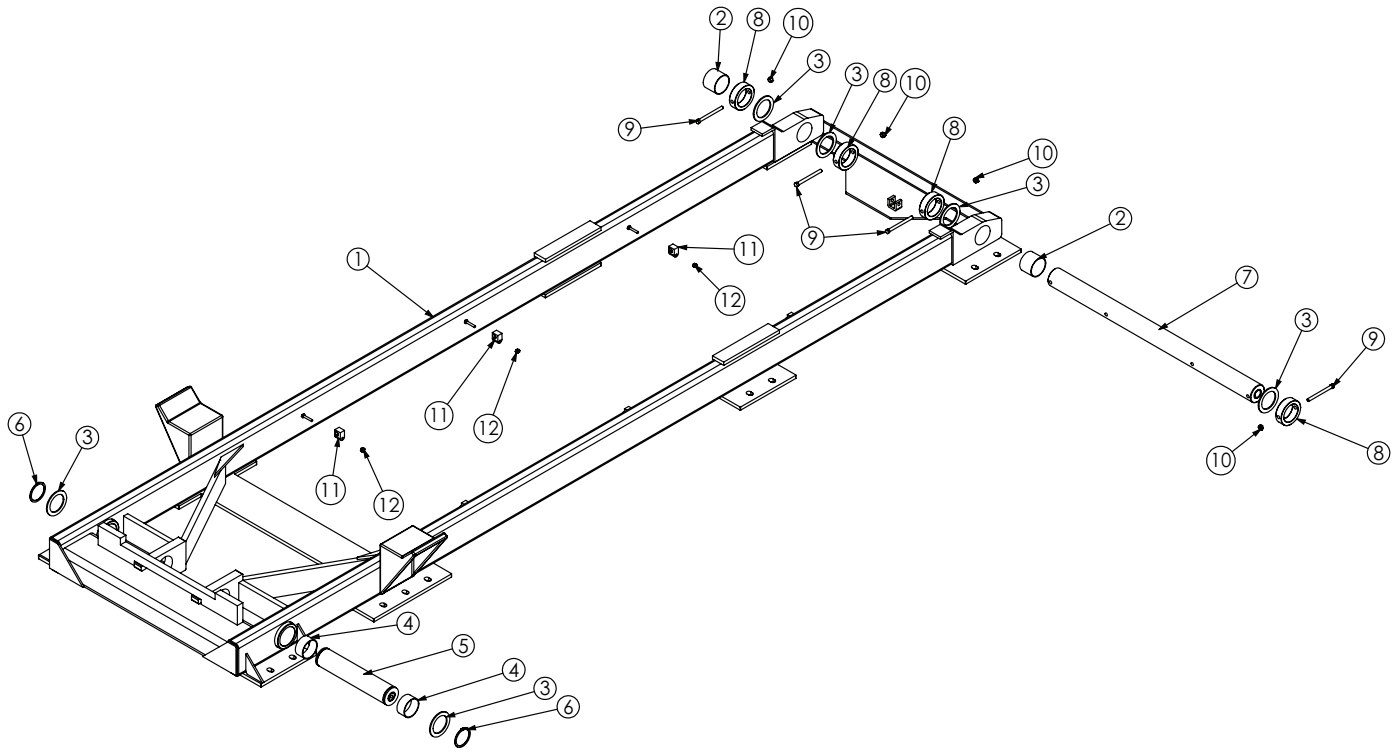
Base (108-11-20) - PN 23705



PN 23705

ITEM	PART	DESCRIPTION	QTY
1	23579	BASE 108-11-20	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	2
3	0427	MACHY WASHER 2.00ID 10GA	6
4	23699	BUSHING 32DXR20 2.00X1.25	2
5	22220ZP	PIN 2.00X9.75	1
6	0108	SNAP RING 2.00 7200-200	2
7	24617ZP	PIN 2.00X36.44	1
8	22764PC	COLLAR 2.01X3.00X1.00	4
9	0532	CAP SCR 0.38-16X3.75 HHGR5	4
10	0347	NUT 0.38-16 HH NYLOC	4
11	0333	NUT 0.25-20 HHGR5 NYLOC	6
12	0337	HOSE CLAMP LN 3160 PP	6

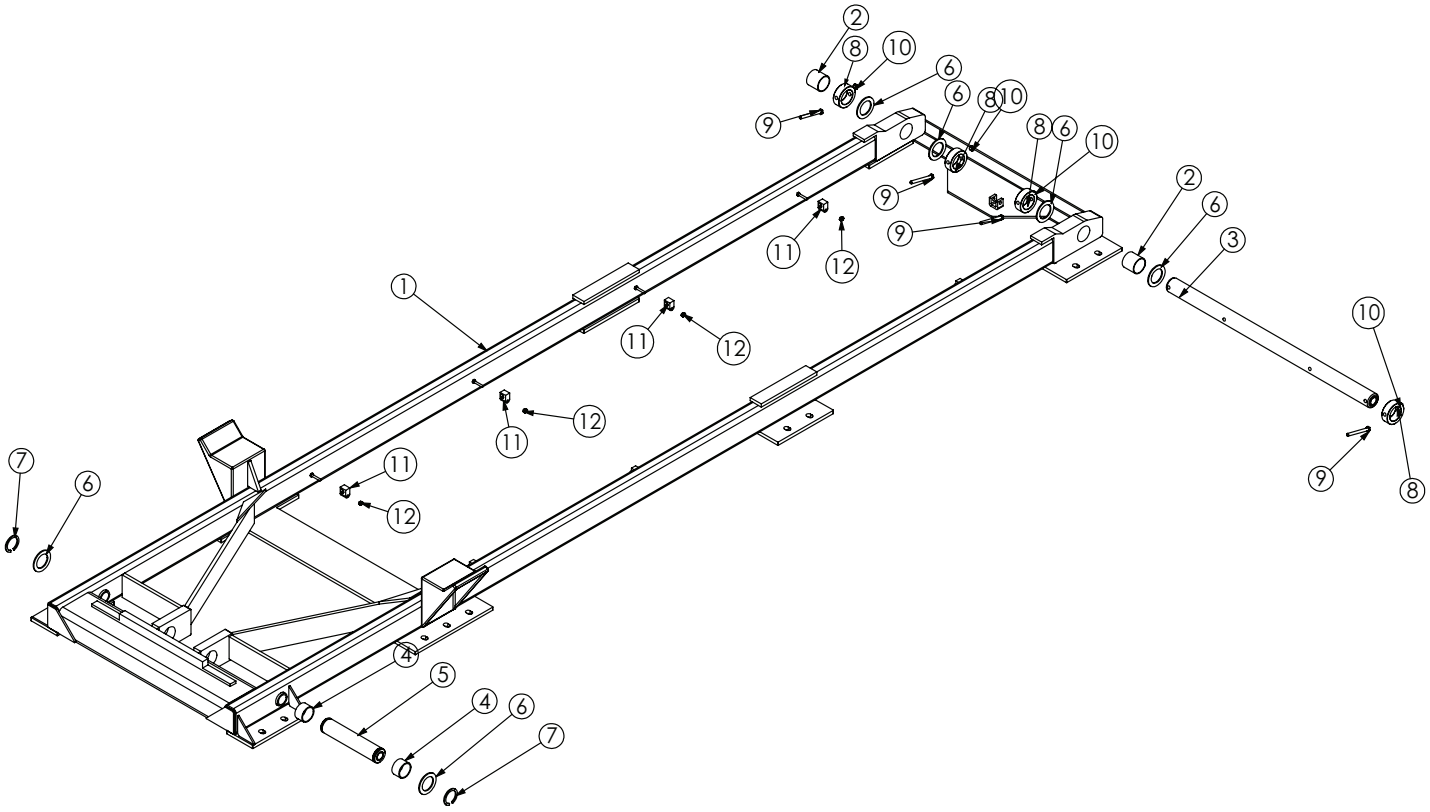
Base (108-12-20/36) - PN 25723



PN 25723

ITEM	PART	DESCRIPTION	QTY
1	25724	BASE 108-12-20/36K	1
2	0635	BUSHING 40DXR32 GARLOCK	2
3	1593	MACHY WASHER 2.50ID 10GA	6
4	25574	BUSHING 40DXR20 2.50X1.25	2
5	0857ZP	PIN 2.50X12.38 SR/D&T	1
6	0636	SNAP RING 2.50 HD	2
7	26048ZP	PIN 2.50X36.44	1
8	23930PC	COLLAR 2.51X3.50X1.00	4
9	32086	CAP SCR 0.38-16X4.25 HHGR5	4
10	0347	NUT 0.38-16 HH NYLOC	4
11	D1505	HOSE CLAMP LN3137PP	6
12	0333	NUT 0.25-20 HHGR5 NYLOC	6

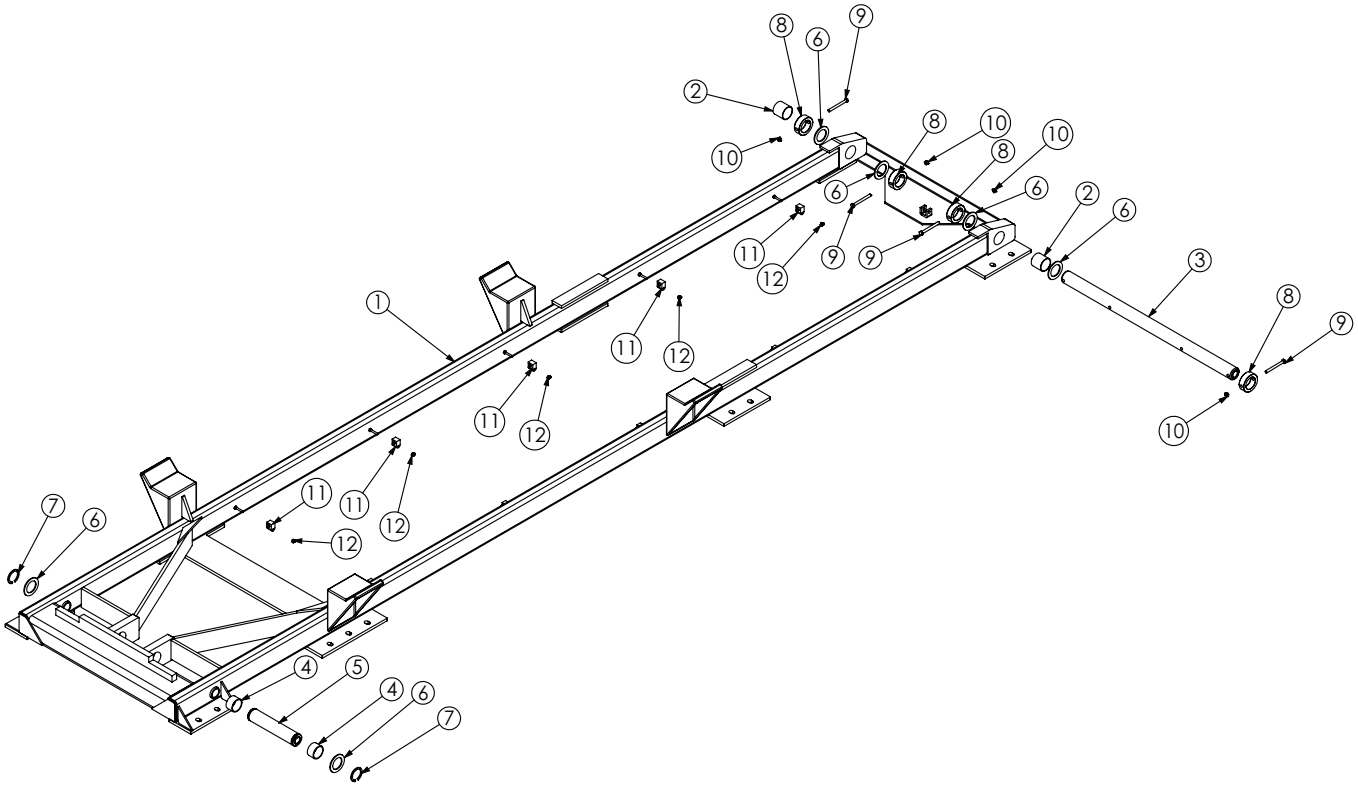
Base (120-16-20) - PN 23832



PN 23832

ITEM	PART	DESCRIPTION	QTY
1	23712	BASE 120-14-20K	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	2
3	24617ZP	PIN 2.00X36.44	1
4	23699	BUSHING 32DXR20 2.00X1.25	2
5	22220ZP	PIN 2.00X9.75	1
6	0427	MACHY WASHER 2.00ID 10GA	6
7	0108	SNAP RING 2.00 7200-200	2
8	22764PC	COLLAR 2.01X3.00X1.00	4
9	0532	CAP SCR 0.38-16X3.75 HHGR5	4
10	0347	NUT 0.38-16 HH NYLOC	4
11	D1505	HOSE CLAMP LN3137PP	8
12	0333	NUT 0.25-20 HHGR5 NYLOC	8

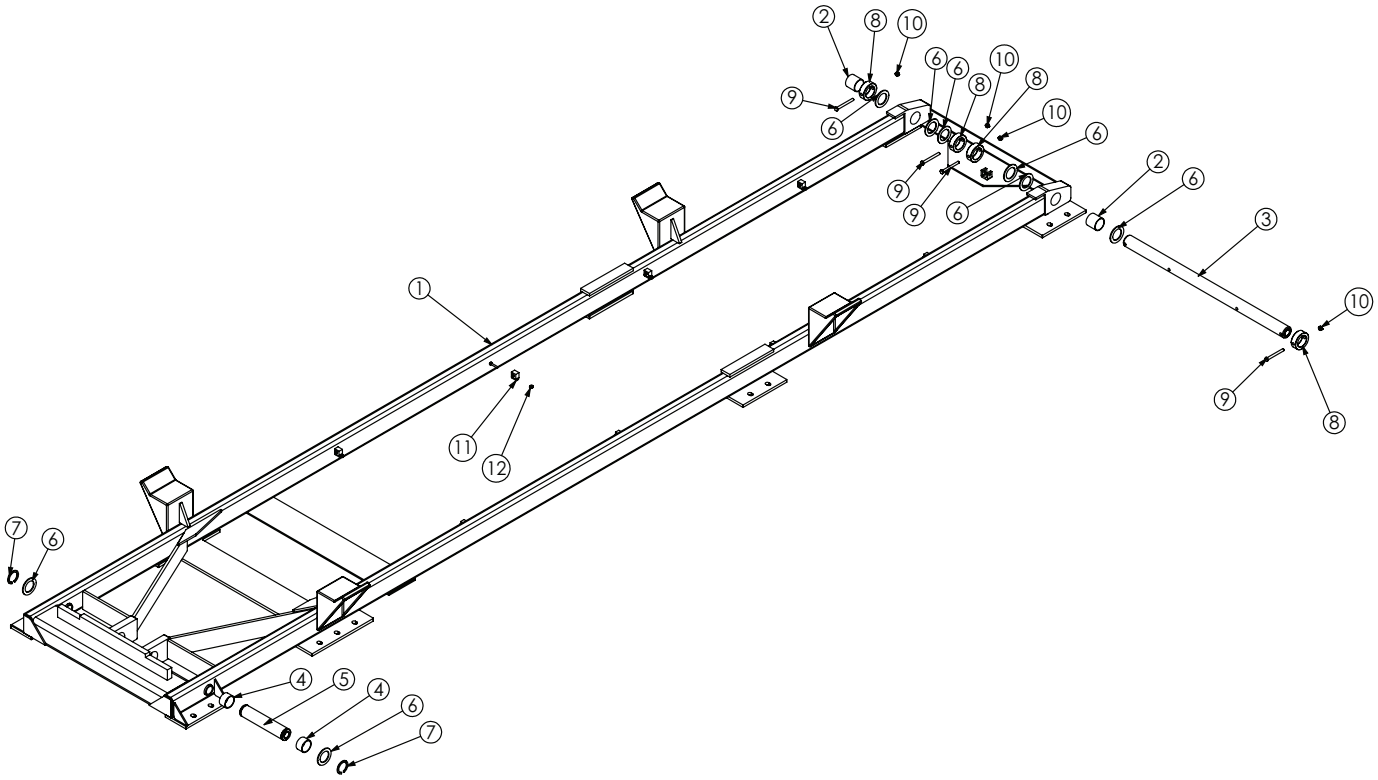
Base (138-18-20) - PN 23882



PN 23882

ITEM	PART	DESCRIPTION	QTY
1	23881	BASE 138-18-20k	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	2
3	24617ZP	PIN 2.00X36.44	1
4	23699	BUSHING 32DXR20 2.00X1.25	2
5	22220ZP	PIN 2.00X9.75	1
6	0427	MACHY WASHER 2.00ID 10GA	6
7	0108	SNAP RING 2.00 7200-200	2
8	22764PC	COLLAR 2.01X3.00X1.00	4
9	0532	CAP SCR 0.38-16X3.75 HHGR5	4
10	0347	NUT 0.38-16 HH NYLOC	4
11	D1505	HOSE CLAMP LN3137PP	10
12	0333	NUT 0.25-20 HHGR5 NYLOC	10

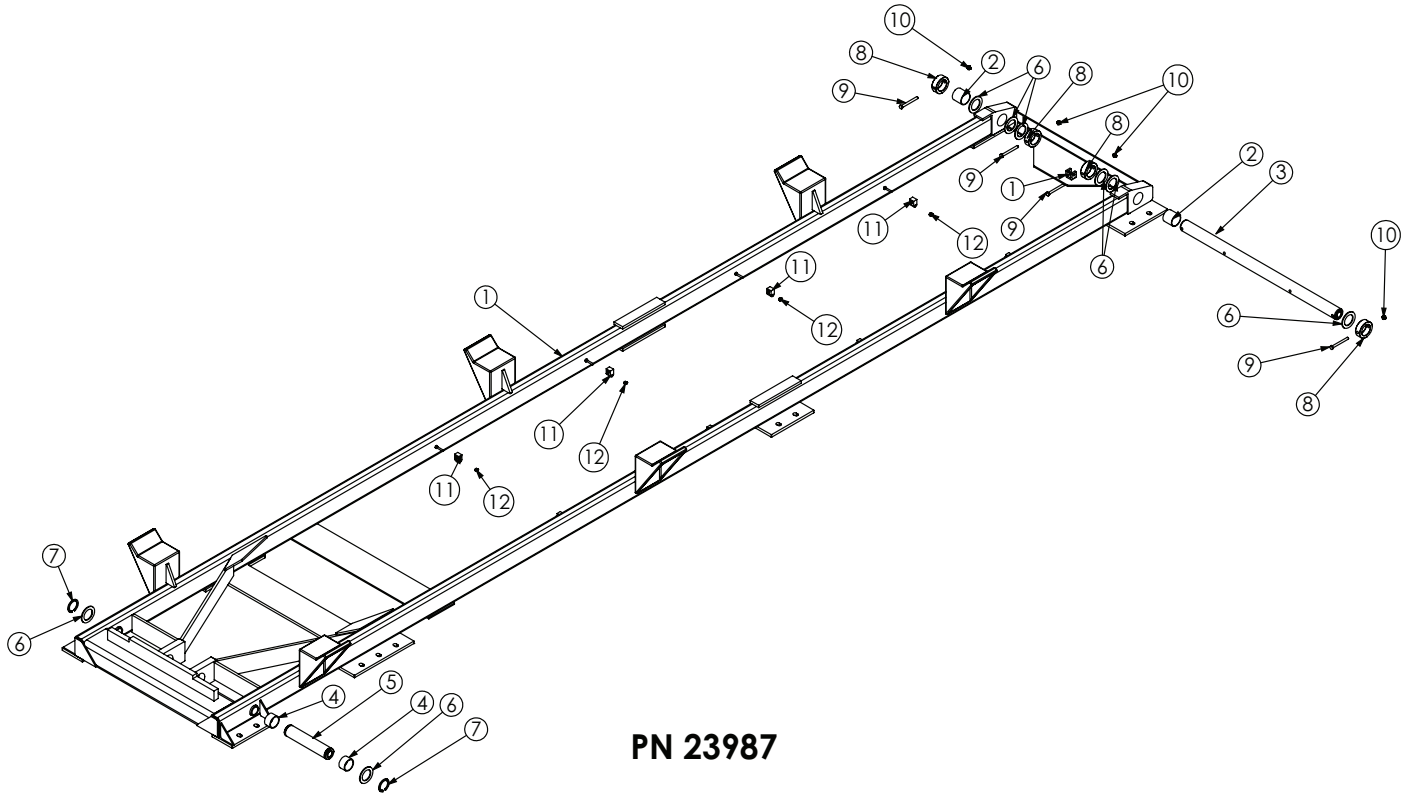
Base (168-20-20) - PN 23934



PN 23934

ITEM	PART	DESCRIPTION	QTY
1	23720	BASE 168-18-20K	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	2
3	24617ZP	PIN 2.00X36.44	1
4	23699	BUSHING 32DXR20 2.00X1.25	2
5	22220ZP	PIN 2.00X9.75	1
6	0427	MACHY WASHER 2.00ID 10GA	8
7	0108	SNAP RING 2.00 7200-200	2
8	22764PC	COLLAR 2.01X3.00X1.00	4
9	0532	CAP SCR 0.38-16X3.75 HHGR5	4
10	0347	NUT 0.38-16 HH NYLOC	4
11	D1505	HOSE CLAMP LN3137PP	8
12	0333	NUT 0.25-20 HHGR5 NYLOC	8

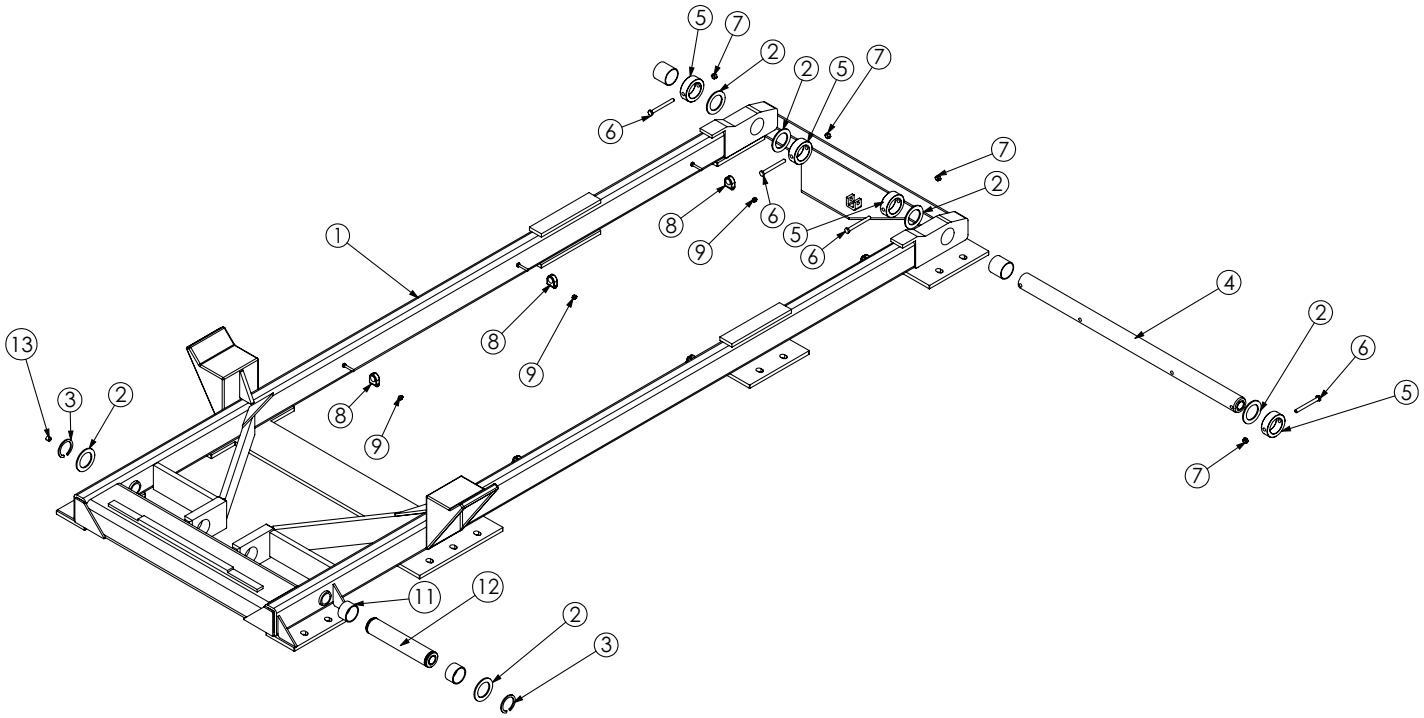
Base (190-24-20) - PN 23987



PN 23987

ITEM	PART	DESCRIPTION	QTY
1	23986	BASE 190-24-20	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	2
3	24617ZP	PIN 2.00X36.44	1
4	23699	BUSHING 32DXR20 2.00X1.25	2
5	22220ZP	PIN 2.00X9.75	1
6	0427	MACHY WASHER 2.00ID 10GA	8
7	0108	SNAP RING 2.00 7200-200	2
8	22764PC	COLLAR 2.01X3.00X1.00	4
9	0532	CAP SCR 0.38-16X3.75 HHGR5	4
10	0347	NUT 0.38-16 HH NYLOC	4
11	D1505	HOSE CLAMP LN3137PP	8
12	0333	NUT 0.25-20 HHGR5 NYLOC	8

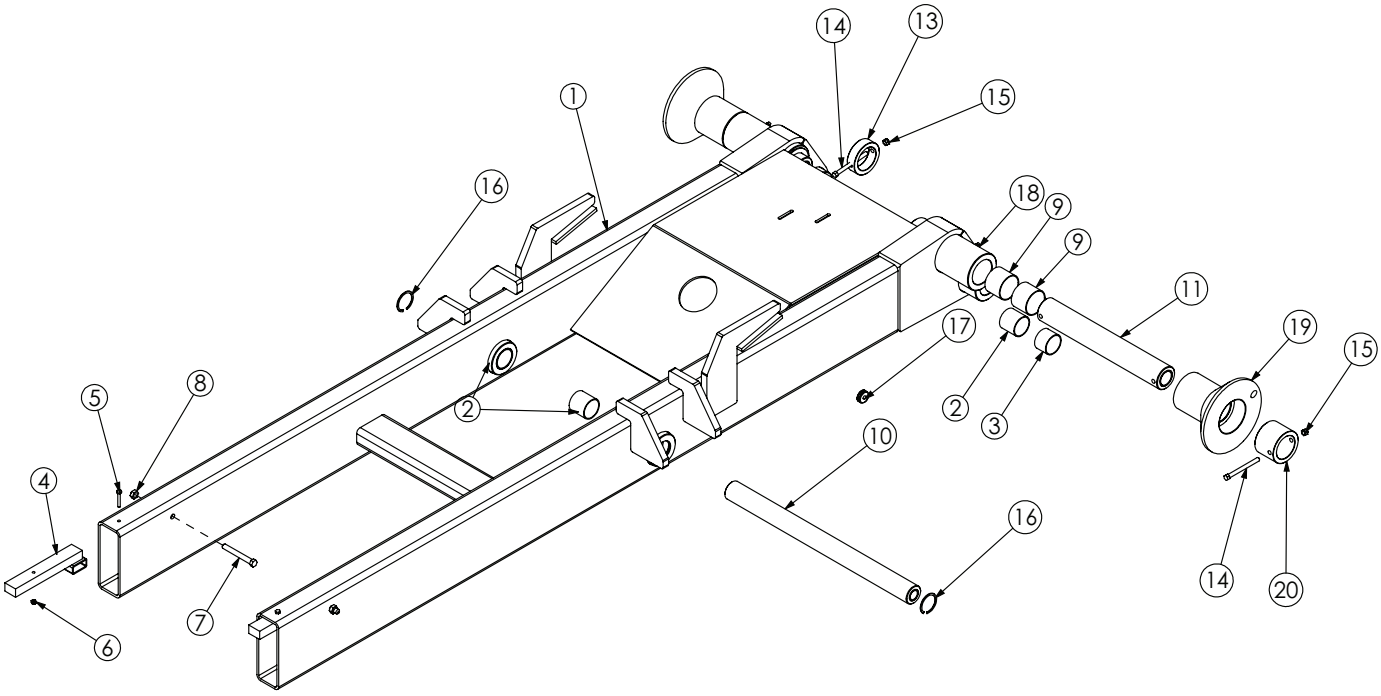
Base (96-10-24) - PN 25230



PN 25230

ITEM	PART	DESCRIPTION	QTY
1	25231	BASE 96-10-24K	1
2	0427	MACHY WASHER 2.00ID 10GA	6
3	0108	SNAP RING 2.00 7200-200	2
4	24617ZP	PIN 2.00X36.44	1
5	22764PC	COLLAR 2.01X3.00X1.00	4
6	0532	CAP SCR 0.38-16X3.75 HHGR5	4
7	0347	NUT 0.38-16 HH NYLOC	4
8	0337	HOSE CLAMP LN 3160 PP	6
9	0333	NUT 0.25-20 HHGR5 NYLOC	6
10	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	2
11	23699	BUSHING 32DXR20 2.00X1.25	2
12	33741ZP	PIN 2.00X10.19 SR	1
13	58052	SET SCREW 0.50-13X0.50 W/ RED PATCH	1

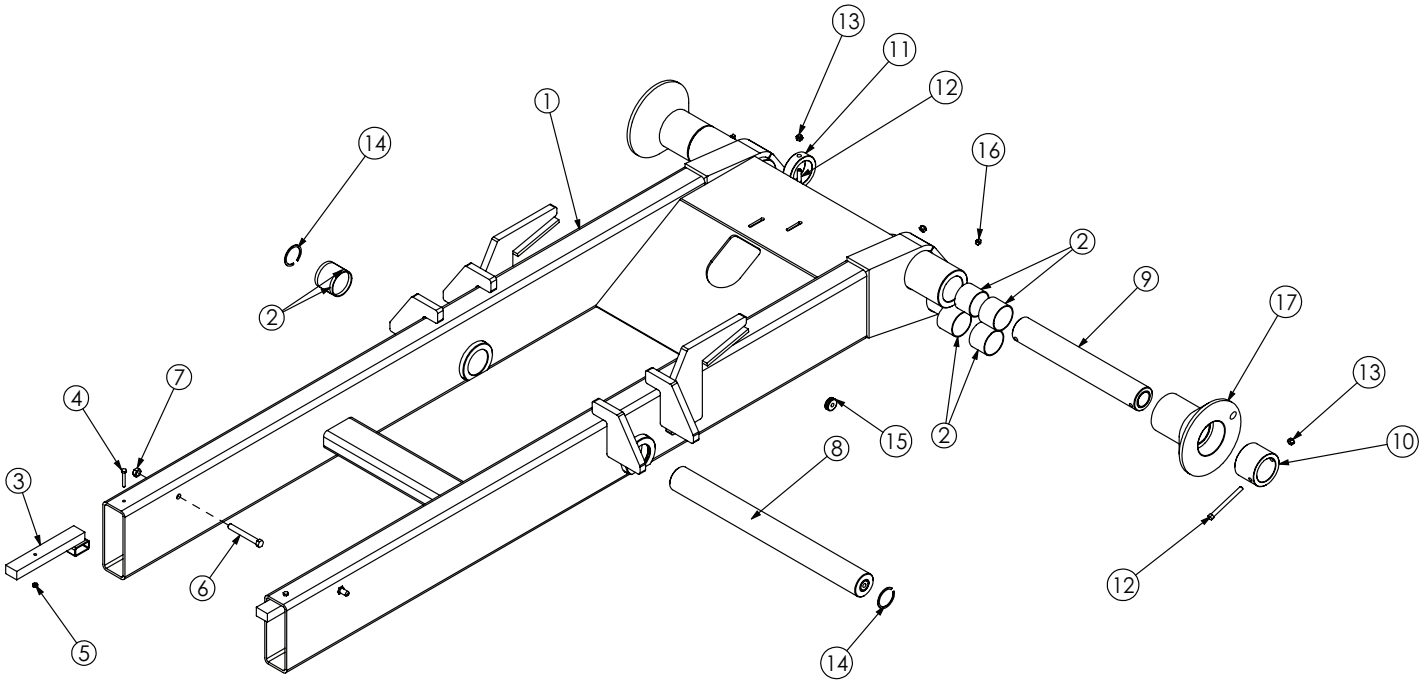
Dump (108-11-20) - PN 45258



PN 45258

ITEM	PART	DESCRIPTION	QTY
1	23581	DUMP 108-11-20K	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	4
3	4380	BUSHING 32DXR24 2.00X1.50 GARLOCK	2
4	23301PC	TAB LOADER BREAK AWAY	2
5	0332	CAP SCR 0.25-20X1.75 HHGR5	2
6	0333	NUT 0.25-20 HHGR5 NYLOC	2
7	0506	CAP SCR 0.50-13X4.00 HHGR5	2
8	C6106	NUT 0.50-13 HHGR5 NYLOC	2
9	0635	BUSHING 40DXR32 GARLOCK	4
10	22227ZP	PIN 2.00X25.25	1
11	31091ZP	PIN 2.50X16.625	2
12	1547	THRUST WASHER 2.51DIA UHMW .12THK	2
13	23930PC	COLLAR 2.51X3.50X1.00	2
14	32086	CAP SCR 0.38-16X4.25 HHGR5	4
15	0347	NUT 0.38-16 HH NYLOC	4
16	2257	SNAP RING INSIDE 2.00	2
17	26930	GROMMET 1.25ODX.25X.38ID	1
18	c1592	ZERK 1/8 NPT STRAIGHT	4
19	42229PC	ROLLER 2.50X4.00X3.81X8.00 PWDRCT YEL	2
20	44508PC	COLLAR 2.51X3.50X2.56	2

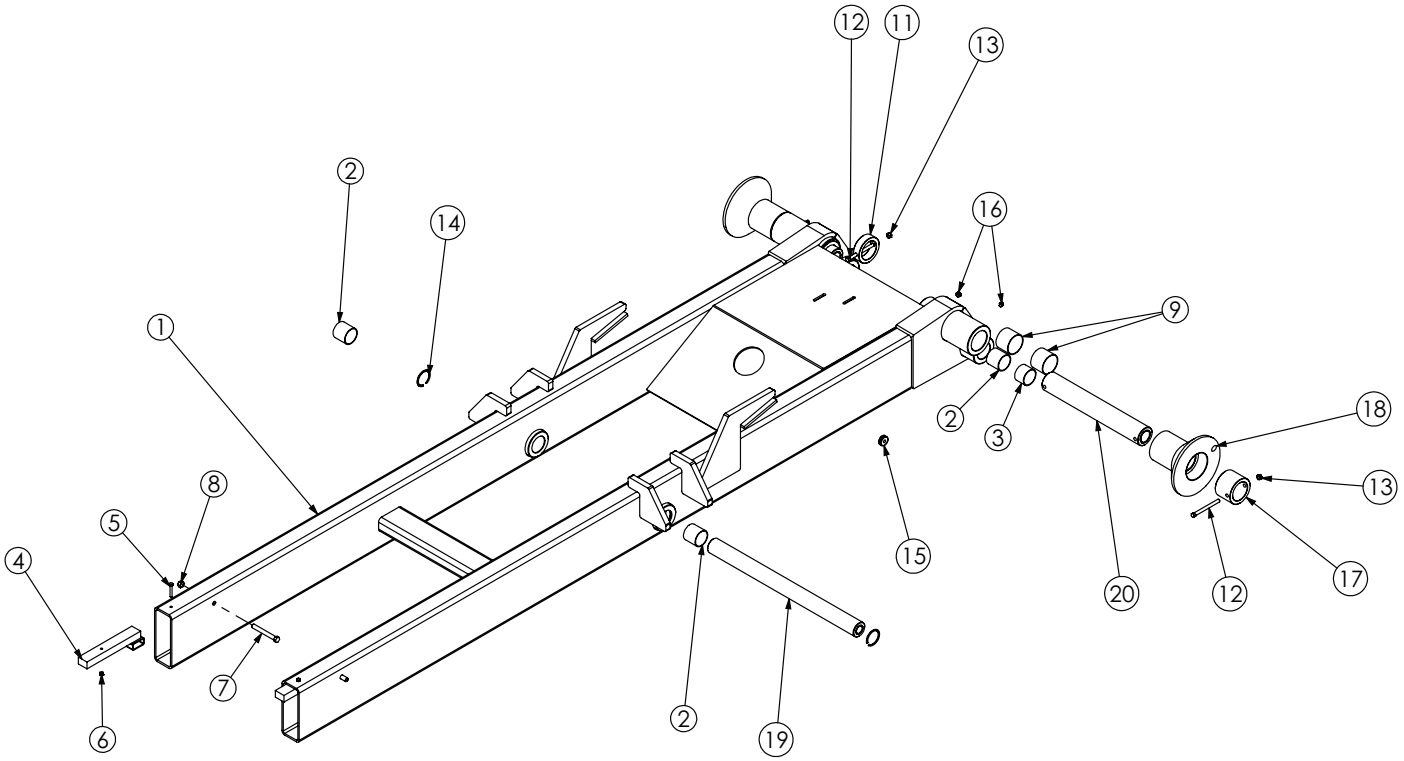
Dump (108-12-20/36) - PN 45355



PN 45355

ITEM	PART	DESCRIPTION	QTY
1	25727	DUMP 108-12-20/36K	1
2	0635	BUSHING 40DXR32 GARLOCK	10
3	23301PC	TAB LOADER BREAK AWAY	2
4	0332	CAP SCR 0.25-20X1.75 HHGR5	2
5	0333	NUT 0.25-20 HHGR5 NYLOC	2
6	0506	CAP SCR 0.50-13X4.00 HHGR5	2
7	C6106	NUT 0.50-13 HHGR5 NYLOC	2
8	25582ZP	PIN 2.50X25.25	1
9	31091ZP	PIN 2.50X16.625	2
10	44508PC	COLLAR 2.51X3.50X2.56	2
11	23930PC	COLLAR 2.51X3.50X1.00	2
12	32086	CAP SCR 0.38-16X4.25 HHGR5	4
13	0347	NUT 0.38-16 HH NYLOC	4
14	2257	SNAP RING INSIDE 2.00	2
15	26930	GROMMET 1.25ODX.25X.38ID	1
16	c1592	ZERK 1/8 NPT STRAIGHT	2
17	42229PC	ROLLER 2.50X4.00X3.81X8.00 PWDRCT YEL	2

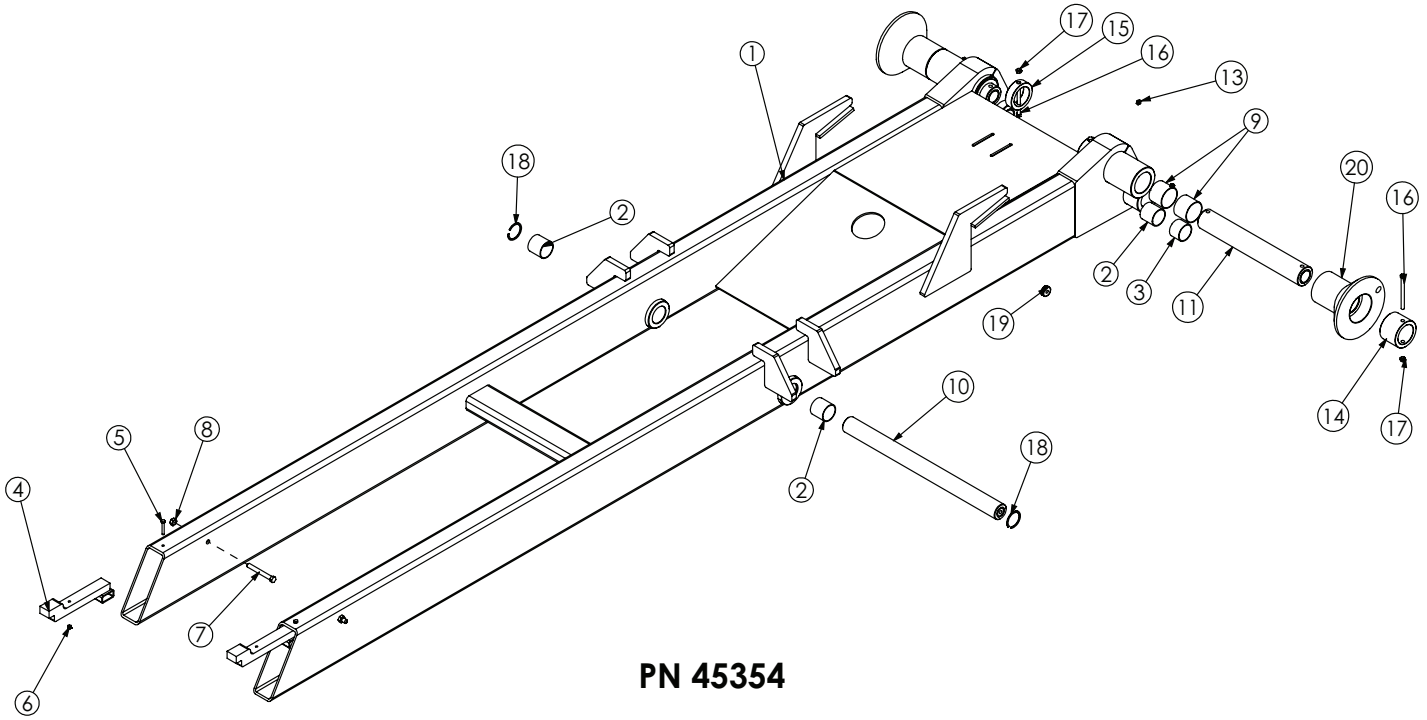
Dump (120-16-20) - PN 45259



PN 45259

ITEM	PART	DESCRIPTION	QTY
1	23714	DUMP 120-14-20K	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	4
3	4380	BUSHING 32DXR24 2.00X1.50 GARLOCK	2
4	23301PC	TAB LOADER BREAK AWAY	2
5	0332	CAP SCR 0.25-20X1.75 HHGR5	2
6	0333	NUT 0.25-20 HHGR5 NYLOC	2
7	0506	CAP SCR 0.50-13X4.00 HHGR5	2
8	C6106	NUT 0.50-13 HHGR5 NYLOC	2
9	0635	BUSHING 40DXR32 GARLOCK	4
10	1547	THRUST WASHER 2.51DIA UHMW .12THK	2
11	23930PC	COLLAR 2.51X3.50X1.00	2
12	32086	CAP SCR 0.38-16X4.25 HHGR5	4
13	0347	NUT 0.38-16 HH NYLOC	4
14	2257	SNAP RING INSIDE 2.00	2
15	26930	GROMMET 1.25ODX.25X.38ID	1
16	c1592	ZERK 1/8 NPT STRAIGHT	4
17	44508PC	COLLAR 2.51X3.50X2.56	2
18	42229PC	ROLLER 2.50X4.00X3.81X8.00 PWDRCT YEL	2
19	22227ZP	PIN 2.00X25.25	1
20	31091ZP	PIN 2.50X16.625	2

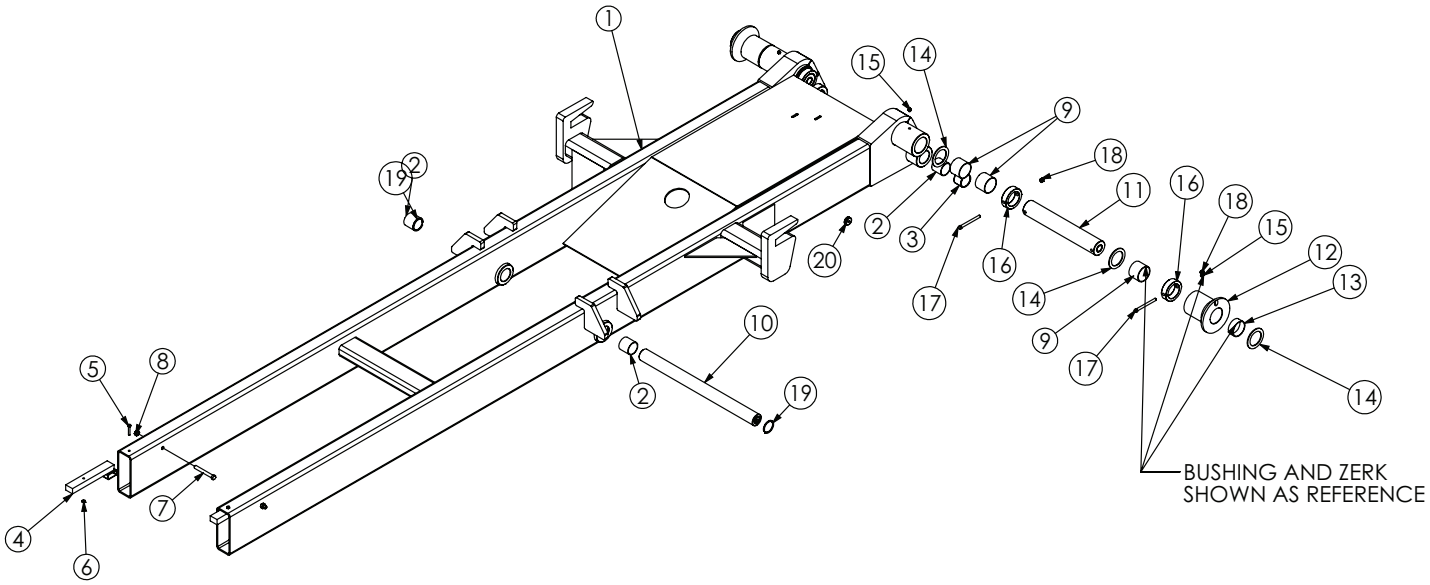
Dump (138-18-20) - PN 45354



PN 45354

ITEM	PART	DESCRIPTION	QTY.
1	23883	DUMP 138-18-20	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	4
3	4380	BUSHING 32DXR24 2.00X1.50 GARLOCK	2
4	54868PC	TAB LOADER BREAK AWAY	2
5	0332	CAP SCR 0.25-20X1.75 HHGR5	2
6	0333	NUT 0.25-20 HHGR5 NYLOC	2
7	0506	CAP SCR 0.50-13X4.00 HHGR5	2
8	C6106	NUT 0.50-13 HHGR5 NYLOC	2
9	0635	BUSHING 40DXR32 GARLOCK	4
10	22227ZP	PIN 2.00X25.25	1
11	31091ZP	PIN 2.50X16.625	2
12	1547	THRUST WASHER 2.51DIA UHMW .12THK	2
13	c1592	ZERK 1/8 NPT STRAIGHT	6
14	44508PC	COLLAR 2.51X3.50X2.56	2
15	23930PC	COLLAR 2.51X3.50X1.00	2
16	C0954	CAP SCR 0.38-16X4.50 HHGR5	4
17	0347	NUT 0.38-16 HH NYLOC	4
18	2257	SNAP RING INSIDE 2.00	2
19	26930	GROMMET 1.25ODX.25X.38ID	1
20	42229PC	ROLLER 2.50X4.00X3.81X8.00 PWDRCT YEL	2

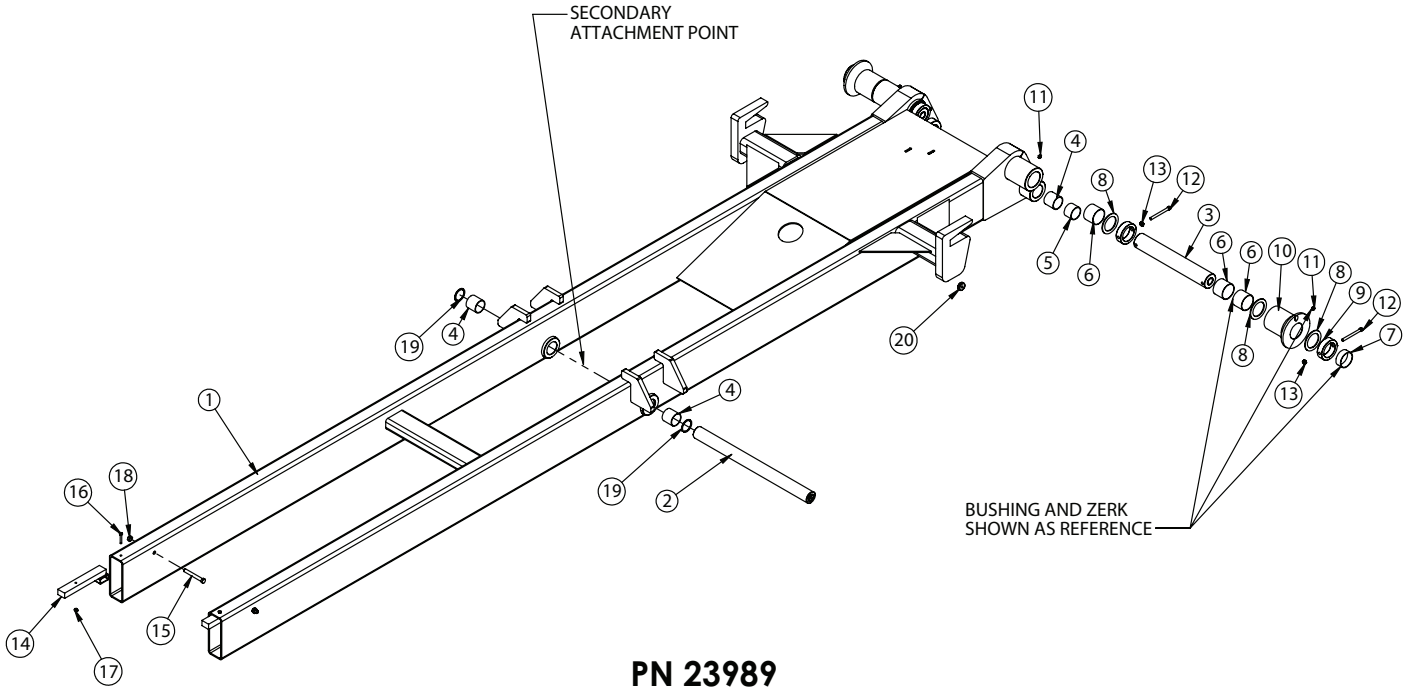
Dump (168-20-20) - PN 23939



PN 23939

ITEM	PART	DESCRIPTION	QTY
1	23936	DUMP 168-18-20	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	4
3	4380	BUSHING 32DXR24 2.00X1.50 GARLOCK	2
4	23301PC	TAB LOADER BREAK AWAY	2
5	0332	CAP SCR 0.25-20X1.75 HHGR5	2
6	0333	NUT 0.25-20 HHGR5 NYLOC	2
7	0506	CAP SCR 0.50-13X4.00 HHGR5	2
8	C6106	NUT 0.50-13 HHGR5 NYLOC	2
9	0635	BUSHING 40DXR32 GARLOCK	6
10	22227ZP	PIN 2.00X25.25	1
11	23931ZP	PIN 2.50X15.75	2
12	21496PC	ROLLER 2.50X4.00X3.81X6.00	2
13	13343	BUSHING 40DXR16 GARLOCK	2
14	1547	THRUST WASHER 2.51DIA UHMW .12THK	6
15	c1592	ZERK 1/8 NPT STRAIGHT	6
16	23930PC	COLLAR 2.51X3.50X1.00	4
17	32086	CAP SCR 0.38-16X4.25 HHGR5	4
18	0347	NUT 0.38-16 HH NYLOC	4
19	2257	SNAP RING INSIDE 2.00	2
20	26930	GROMMET 1.25ODX.25X.38ID	1

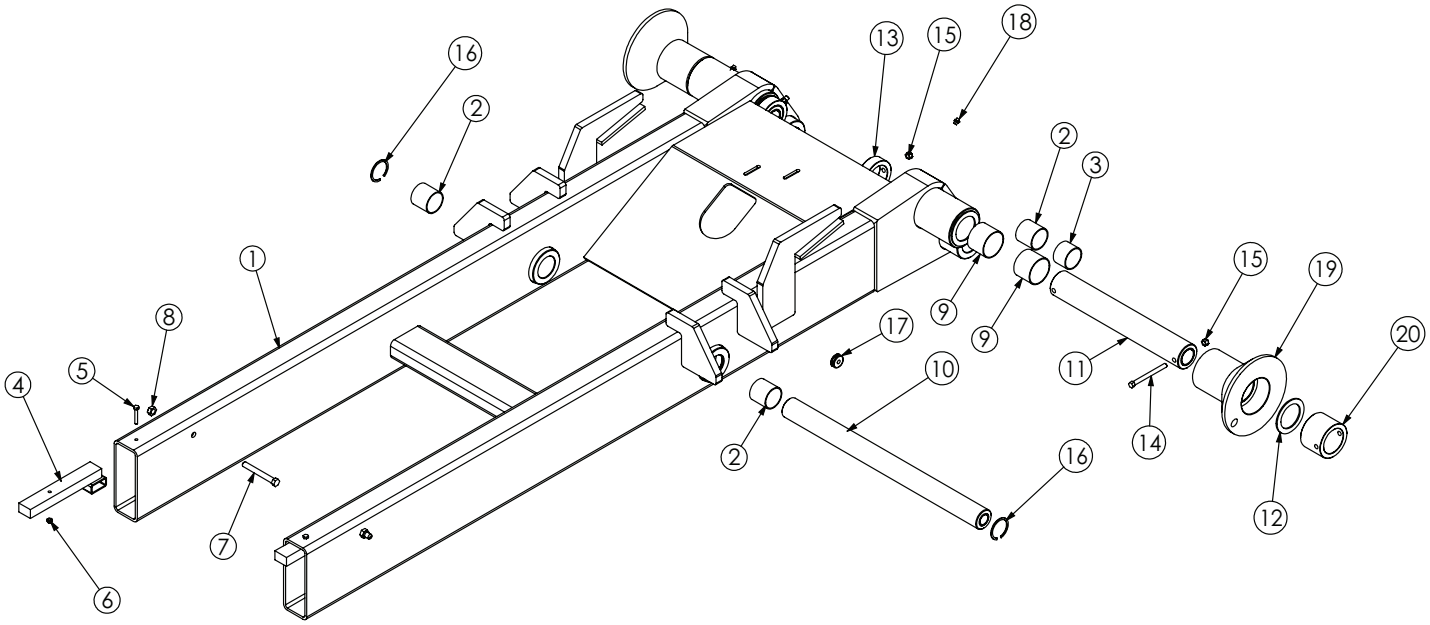
Dump (190-24-20) - PN 23989



PN 23989

ITEM	PART	DESCRIPTION	QTY.
1	23988	DUMP 190-24-20	1
2	22227ZP	PIN 2.00X25.25	1
3	23931ZP	PIN 2.50X15.75	2
4	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	4
5	4380	BUSHING 32DXR24 2.00X1.50 GARLOCK	2
6	0635	BUSHING 40DXR32 GARLOCK	6
7	13343	BUSHING 40DXR16 GARLOCK	2
8	1547	THRUST WASHER 2.51DIA UHMW .12THK	6
9	23930PC	COLLAR 2.51X3.50X1.00	4
10	21496PC	ROLLER 2.50X4.00X3.81X6.00	2
11	c1592	ZERK 1/8 NPT STRAIGHT	6
12	C0953	CAP SCR 0.38-16X4.00 HHGR5	4
13	0347	NUT 0.38-16 HH NYLOC	4
14	23301PC	TAB LOADER BREAK AWAY	2
15	0506	CAP SCR 0.50-13X4.00 HHGR5	2
16	0332	CAP SCR 0.25-20X1.75 HHGR5	2
17	0333	NUT 0.25-20 HHGR5 NYLOC	2
18	C6106	NUT 0.50-13 HHGR5 NYLOC	2
19	2257	SNAP RING INSIDE 2.00	2
20	26930	GROMMET 1.25ODX.25X.38ID	1

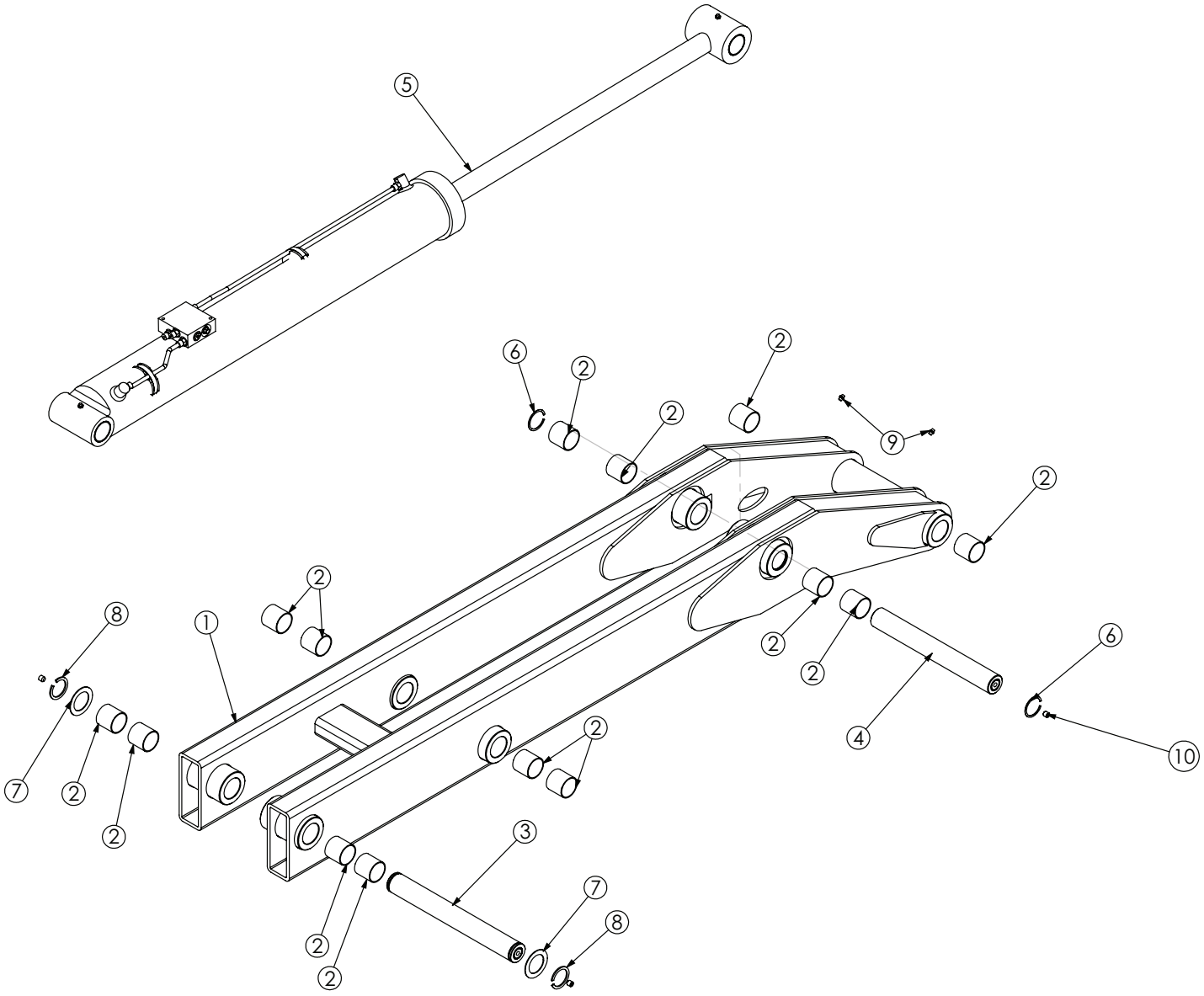
Dump (96-10-24) - PN 44509



PN 44509

ITEM	PART	DESCRIPTION	QTY.
1	25234	DUMP 96-10-24K	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	4
3	4380	BUSHING 32DXR24 2.00X1.50 GARLOCK	2
4	23301PC	TAB LOADER BREAK AWAY	2
5	0332	CAP SCR 0.25-20X1.75 HHGR5	2
6	0333	NUT 0.25-20 HHGR5 NYLOC	2
7	0506	CAP SCR 0.50-13X4.00 HHGR5	2
8	C6106	NUT 0.50-13 HHGR5 NYLOC	2
9	0635	BUSHING 40DXR32 GARLOCK	4
10	22227ZP	PIN 2.00X25.25	1
11	31091ZP	PIN 2.50X16.625	2
12	1547	THRUST WASHER 2.51DIA UHMW .12THK	6
13	23930PC	COLLAR 2.51X3.50X1.00	2
14	32086	CAP SCR 0.38-16X4.25 HHGR5	4
15	0347	NUT 0.38-16 HH NYLOC	4
16	2257	SNAP RING INSIDE 2.00	2
17	26930	GROMMET 1.25ODX.25X.38ID	1
18	c1592	ZERK 1/8 NPT STRAIGHT	4
19	42229PC	ROLLER 2.50X4.00X3.81X8.00 PWDRCT YEL	2
20	44508PC	COLLAR 2.51X3.50X2.56	2

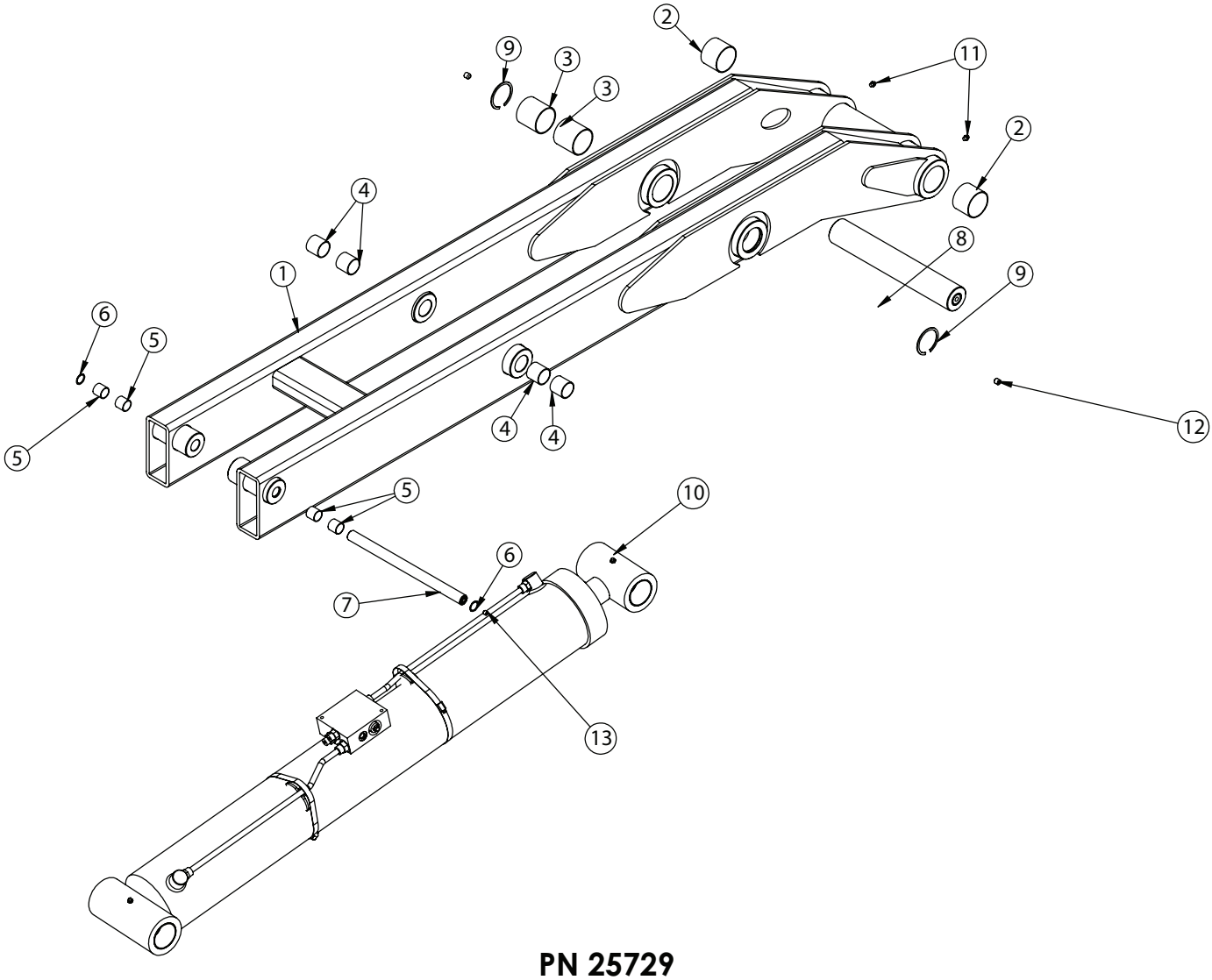
Secondary (108-11-20) - PN 23836



PN 23836

ITEM	PART	DESCRIPTION	QTY
1	23837	SECONDARY 108-11-20	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	14
3	24610ZP	PIN 2.00X16.88 SR/D&T	1
4	22286ZP	PIN 2.00X16.00	1
5	21880	CYLINDER ASM 5.00X40.38	1
6	2257	SNAP RING INSIDE 2.00	2
7	0377	MACHY WASHER 2.00ID 14GA	2
8	0108	SNAP RING 2.00 7200-200	2
9	c1592	ZERK 1/8 NPT STRAIGHT	2
10	58052	SET SCREW 0.50-13X0.50 W/ RED PATCH	3

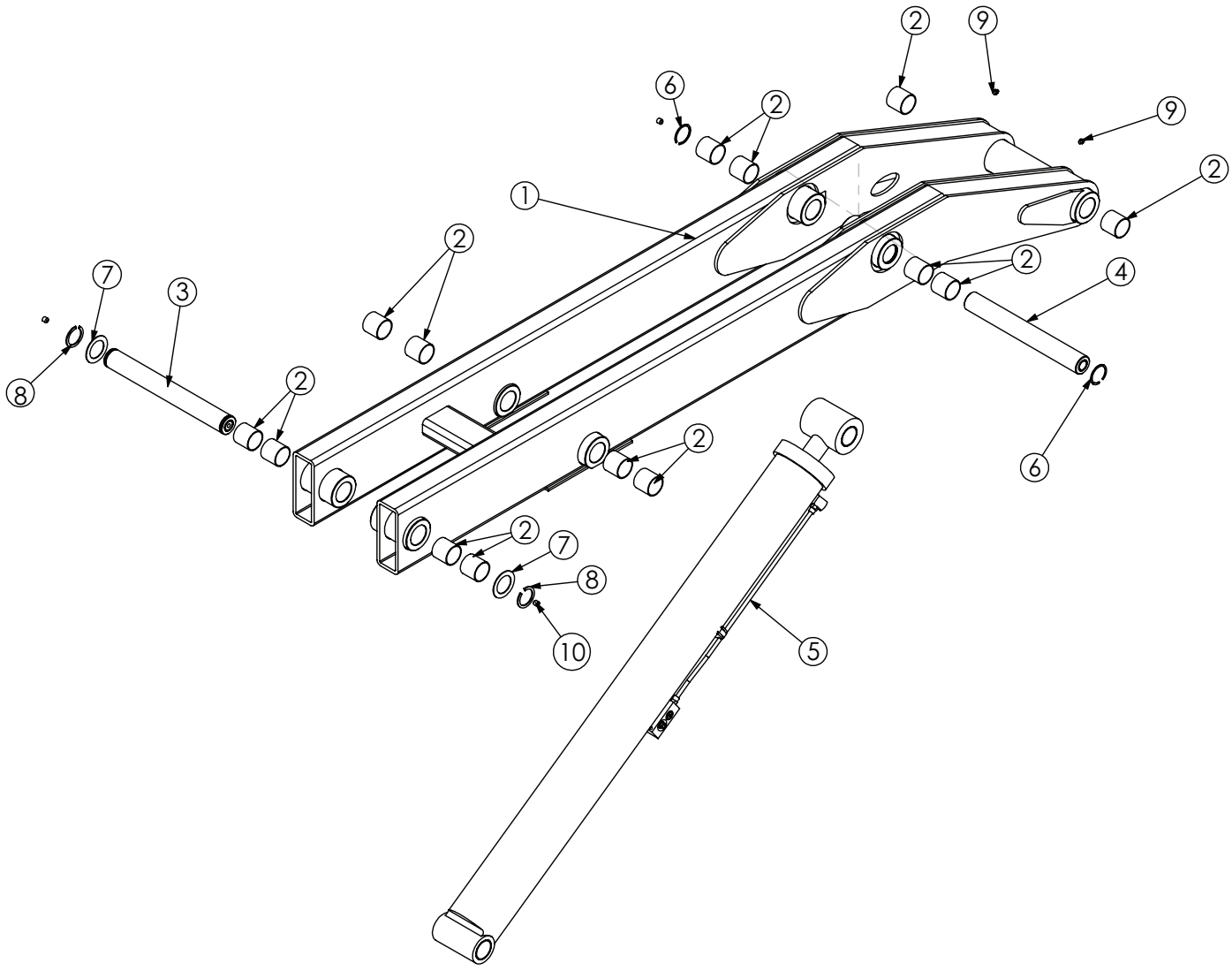
Secondary (108-12-20/36) - PN 25729



PN 25729

ITEM	PART	DESCRIPTION	QTY
1	25730	SECONDARY 108-12-20/36K	1
2	0635	BUSHING 40DXR32 GARLOCK	2
3	17320	BUSHING 40DXR40 GARLOCK	2
4	0067	BUSHING BPC-2426-24 1.50X1.50	4
5	0069	BUSHING QSI-1618-16	4
6	3875	SNAP RING 1.00 INTERNAL	2
7	22285ZP	PIN 1.00X15.00	1
8	54317ZP	PIN 2.50X15.75 D&T	1
9	22216	SNAP RING INSIDE 2.50	2
10	25734	CYLINDER ASM 25735	1
11	c1592	ZERK 1/8 NPT STRAIGHT	2
12	58052	SET SCREW 0.50-13X0.50 W/ RED PATCH	2
13	C3397	SET SCREW 0.38-16X0.38 W/ RED PATCH	1

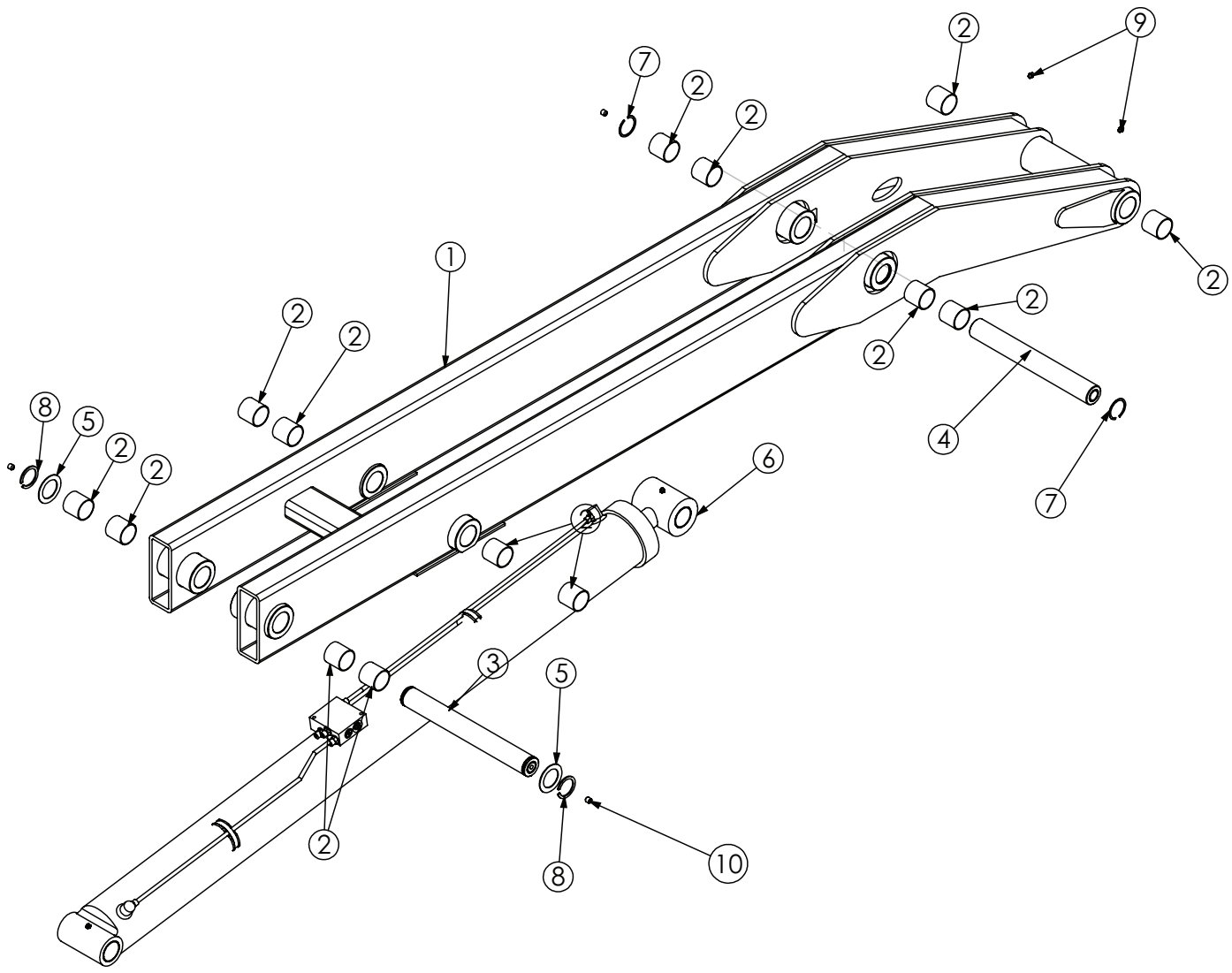
Secondary (120-16-20) - PN 23845



PN 23845

ITEM	PART	DESCRIPTION	QTY
1	23844	SECONDARY 120-14-20K	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	14
3	24610ZP	PIN 2.00X16.88 SR/D&T	1
4	22286ZP	PIN 2.00X16.00	1
5	19026	CYLINDER ASM 5 X 52.38	1
6	2257	SNAP RING INSIDE 2.00	2
7	0377	MACHY WASHER 2.00ID 14GA	2
8	0108	SNAP RING 2.00 7200-200	2
9	c1592	ZERK 1/8 NPT STRAIGHT	2
10	58052	SET SCREW 0.50-13X0.50 W/ RED PATCH	3

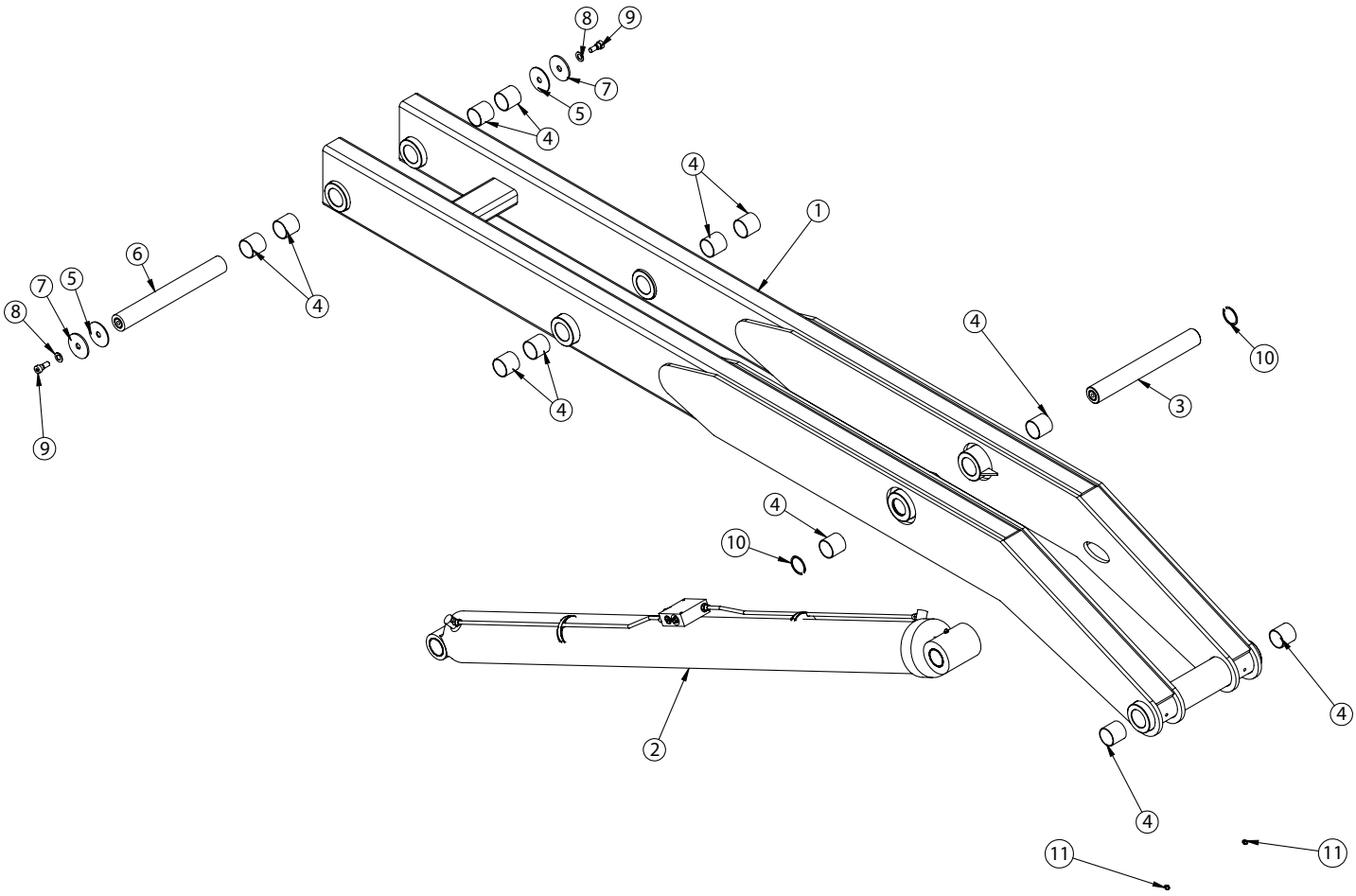
Secondary (138-18-20) - PN 23886



PN 23886

ITEM	PART	DESCRIPTION	QTY
1	23885	SECONDARY 138-18-20K	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	14
3	24610ZP	PIN 2.00X16.88 SR/D&T	1
4	22286ZP	PIN 2.00X16.00	1
5	0377	MACHY WASHER 2.00ID 14GA	2
6	21882	CYLINDER ASM 5.00X63.25	1
7	2257	SNAP RING INSIDE 2.00	2
8	0108	SNAP RING 2.00 7200-200	2
9	c1592	ZERK 1/8 NPT STRAIGHT	2
10	58052	SET SCREW 0.50-13X0.50 W/ RED PATCH	3

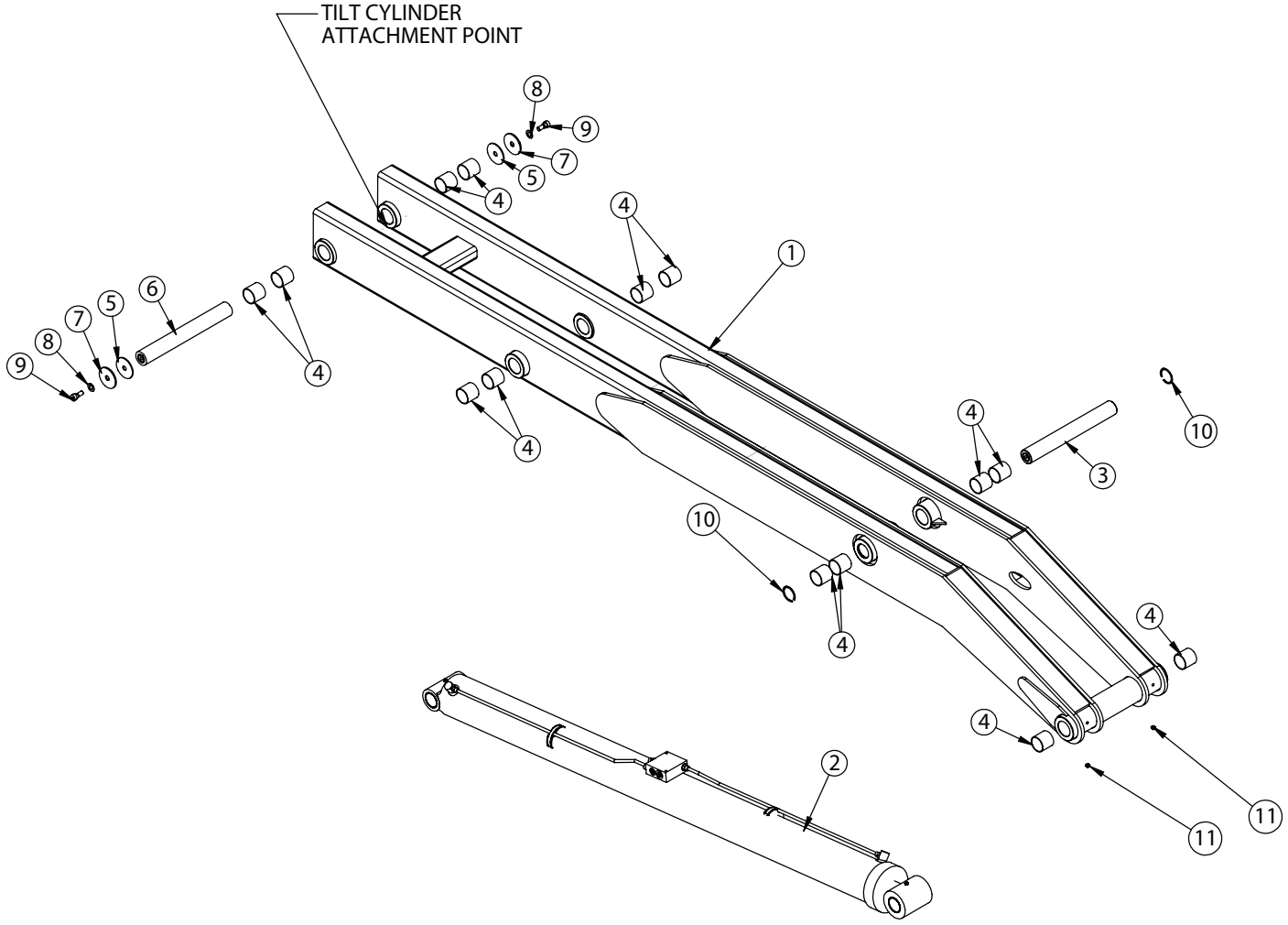
Secondary (168-20-20) - PN 23941



PN 23941

ITEM	PART	DESCRIPTION	QTY
1	23940	SECONDARY 168-20-20K	1
2	21884	CYLINDER ASM 5.00X71.00 W/2.50 ROD	1
3	22286ZP	PIN 2.00X16.00	1
4	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	12
5	12719	THRUST WASHER 0.64x3.00x0.125	2
6	9311ZP	PIN 2.00X16.00 D&T	1
7	8454	PIN CAP 0.69x3.00x0.19 SS	2
8	12711	THRUST WASHER 0.63 DIA	2
9	12673	CAP SCR 0.50-13 SHOLDR 0.63X0.38 SS	2
10	2257	SNAP RING INSIDE 2.00	2
11	c1592	ZERK 1/8 NPT STRAIGHT	2

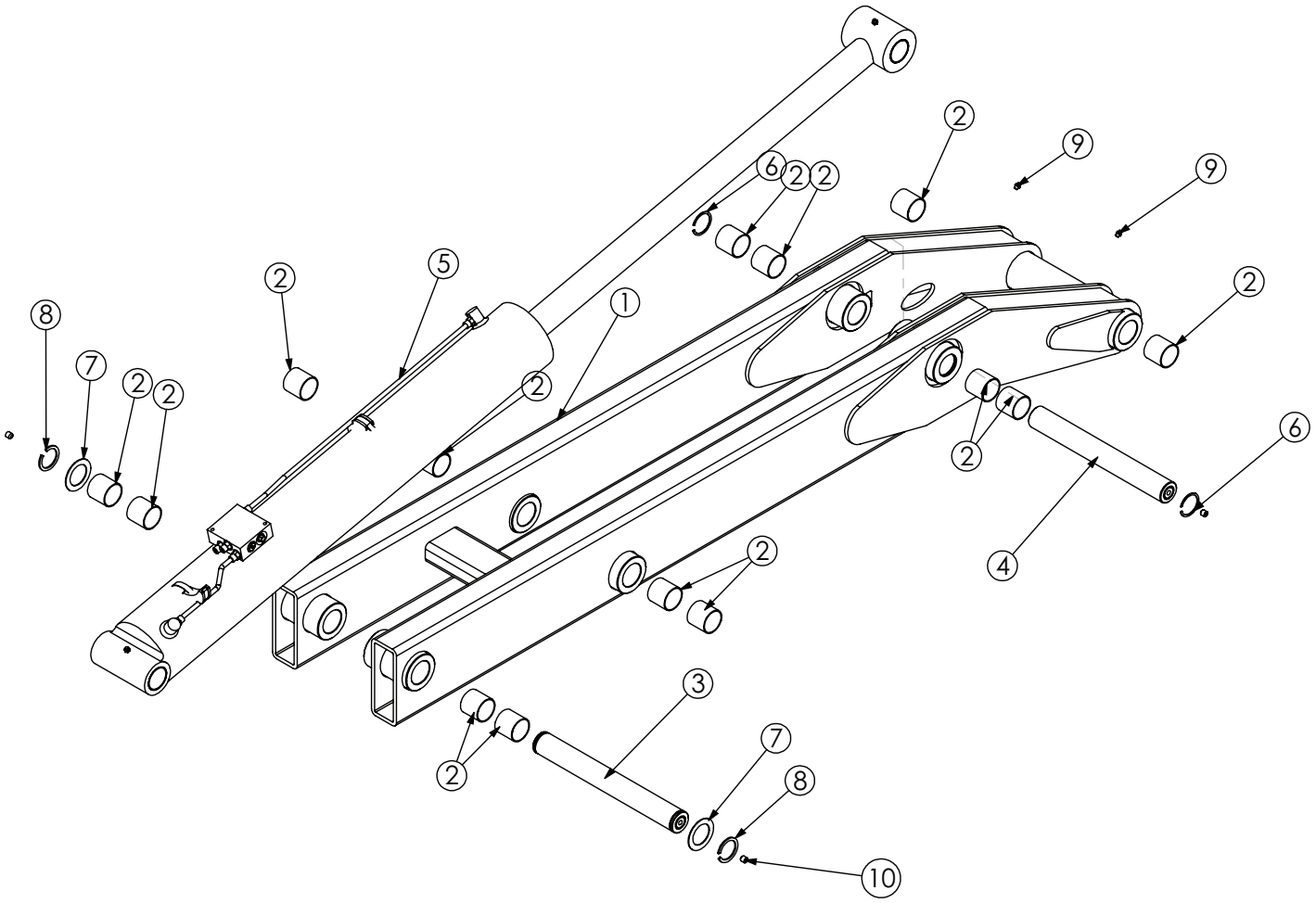
Secondary (190-24-20) - PN 23991



PN 23991

ITEM	PART	DESCRIPTION	QTY
1	23990	SECONDARY 190-24-20	1
2	21884	CYLINDER ASM 5.00X71.00 W/2.50 ROD	1
3	22286ZP	PIN 2.00X16.00	1
4	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	14
5	12719	THRUST WASHER 0.64x3.00x0.125	2
6	9311ZP	PIN 2.00X16.00 D&T	1
7	8454	PIN CAP 0.69x3.00x0.19 SS	2
8	12711	THRUST WASHER 0.63 DIA	2
9	12673	CAP SCR 0.50-13 SHOLDR 0.63X0.38 SS	2
10	2257	SNAP RING INSIDE 2.00	2
11	c1592	ZERK 1/8 NPT STRAIGHT	2

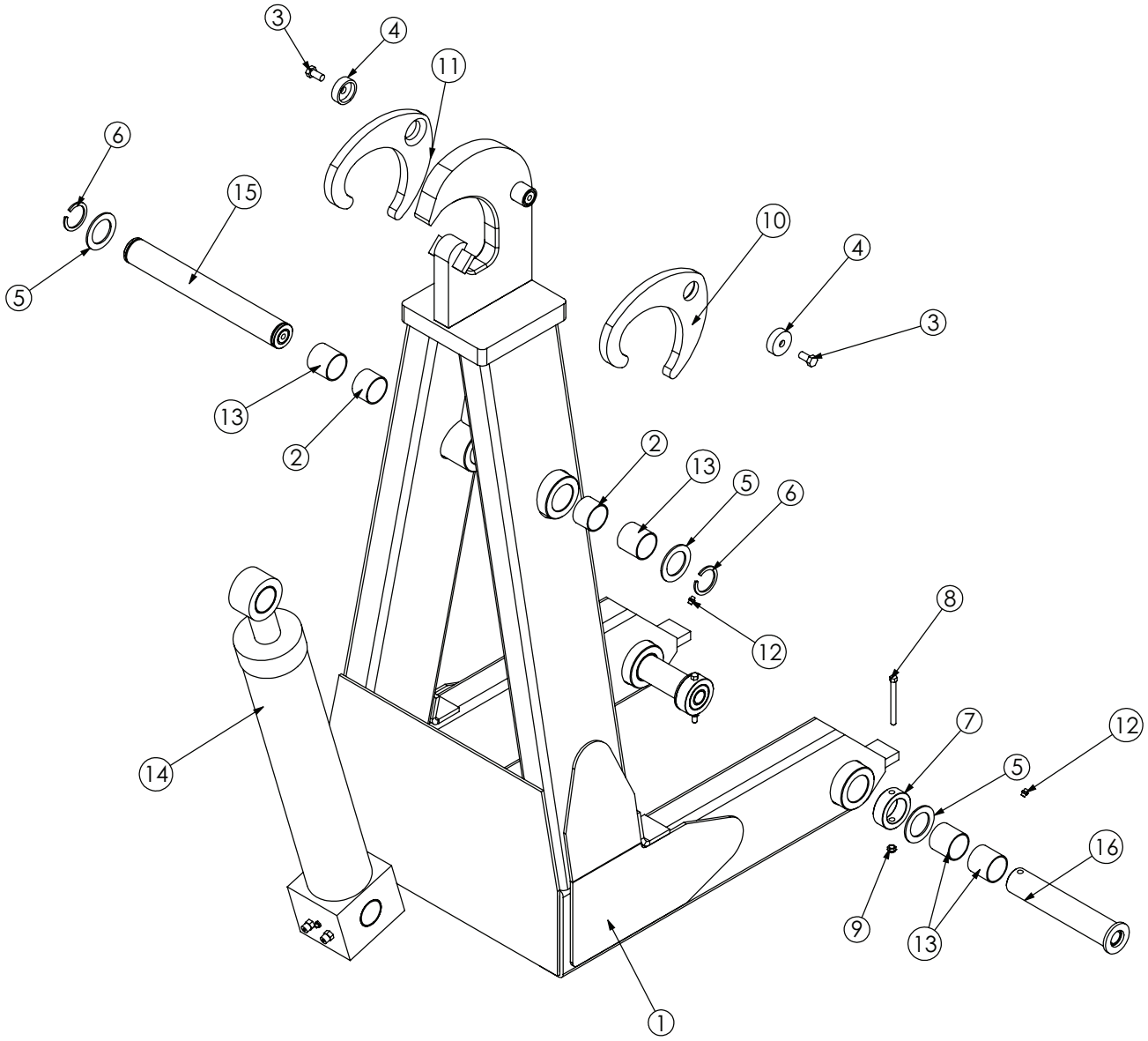
Secondary (96-10-24) - PN 25238



PN 25238

ITEM	PART	DESCRIPTION	QTY
1	23837	SECONDARY 108-11-20	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	14
3	24610ZP	PIN 2.00X16.88 SR/D&T	1
4	22286ZP	PIN 2.00X16.00	1
5	25244	CYLINDER ASM 5.00X40.38	1
6	2257	SNAP RING INSIDE 2.00	2
7	0377	MACHY WASHER 2.00ID 14GA	2
8	0108	SNAP RING 2.00 7200-200	2
9	C1592	ZERK 1/8 NPT STRAIGHT	2
10	58052	SET SCREW 0.50-13X0.50 W/ RED PATCH	3

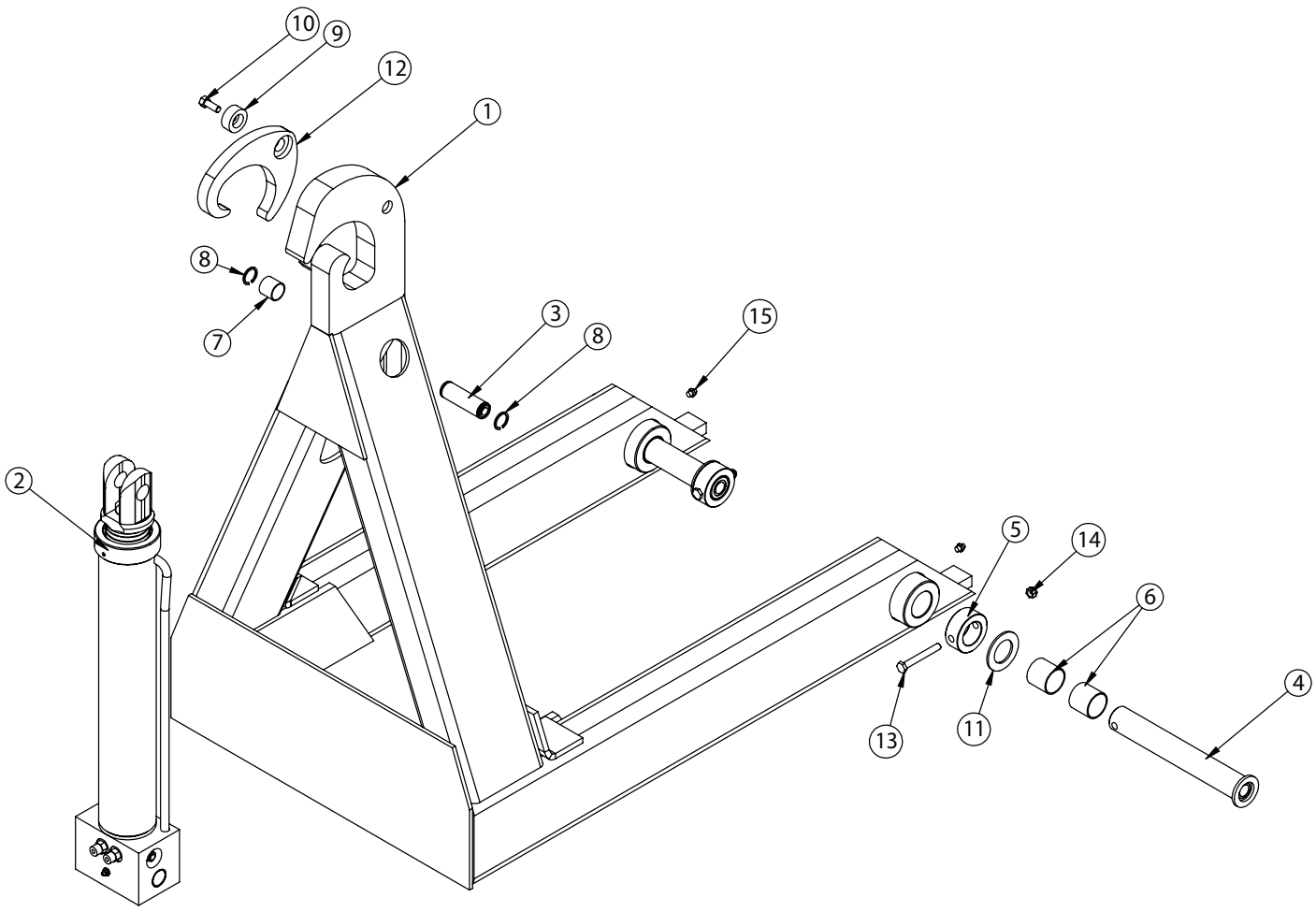
Tilt (108-11-20) - PN 23707



PN 23707

ITEM	PART	DESCRIPTION	QTY
1	23583	TILT 108-11-20K	1
2	4380	BUSHING 32DXR24 2.00X1.50 GARLOCK	2
3	8457	CAP SCR 0.50-13X1.00 SS	2
4	8818	PIN CAP 0.55X2.00X0.63	2
5	0427	MACHY WASHER 2.00ID 10GA	4
6	0108	SNAP RING 2.00 7200-200	2
7	22764PC	COLLAR 2.01X3.00X1.00	2
8	C0953	CAP SCR 0.38-16X4.00 HHGR5	2
9	0347	NUT 0.38-16 HH NYLOC	2
10	28765PC	LATCH SS 40000K	1
11	28766PC	LATCH CS 40000K	1
12	c1592	ZERK 1/8 NPT STRAIGHT	2
13	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	6
14	23159	CYLINDER ASM 4.00X14.50	1
15	24249ZP	PIN 2.00X15.88 SR	1
16	24250ZP	PIN WLDMT 2.00X10.50	2

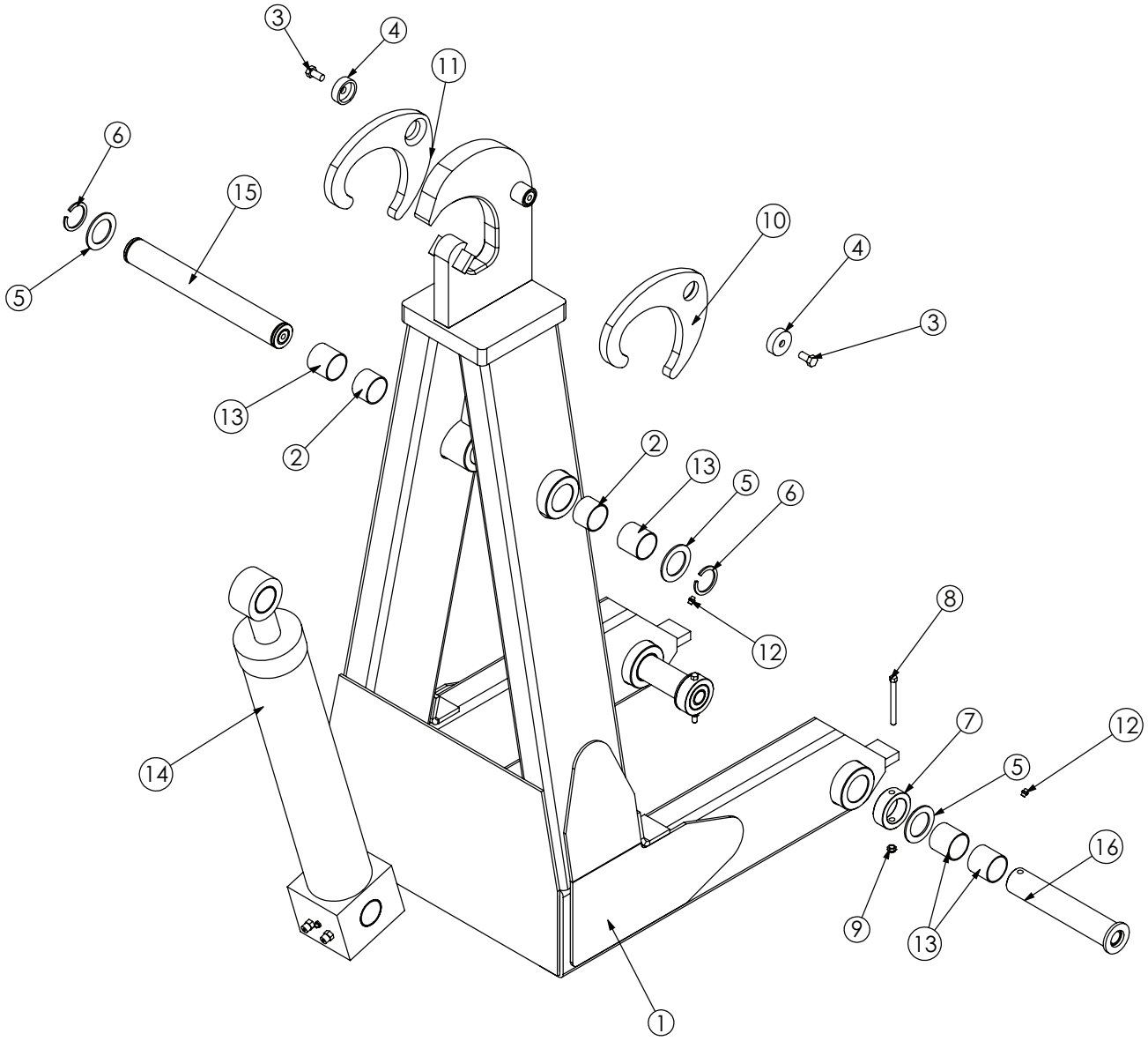
Tilt (108-12-20/36) - PN 22223



PN 22223

ITEM	PART	DESCRIPTION	QTY
1	21752	TILT 84-11-14	1
2	23460	CYLINDER ASM 3.00X17.00	1
3	4912ZP	PIN 1.00X3.25 SR	1
4	23297ZP	PIN WLDMT 1.50X10.50	2
5	24237PC	COLLAR 1.53X2.50X1.00	2
6	0067	BUSHING BPC-2426-24 1.50X1.50	4
7	0069	BUSHING QSI-1618-16	1
8	0110	SNAP RING 1.00 ID 7200-100	2
9	14672	PIN CAP 0.44X1.50X0.63	1
10	9714	CAP SCR 0.38-16X1.00 SS	1
11	D0419	THRUST WASHER	2
12	0295PC	LATCH 12,000#	1
13	C0949	CAP SCR 0.38-16X3.00 HHGR5	2
14	0347	NUT 0.38-16 HH NYLOC	2
15	c1592	ZERK 1/8 NPT STRAIGHT	2

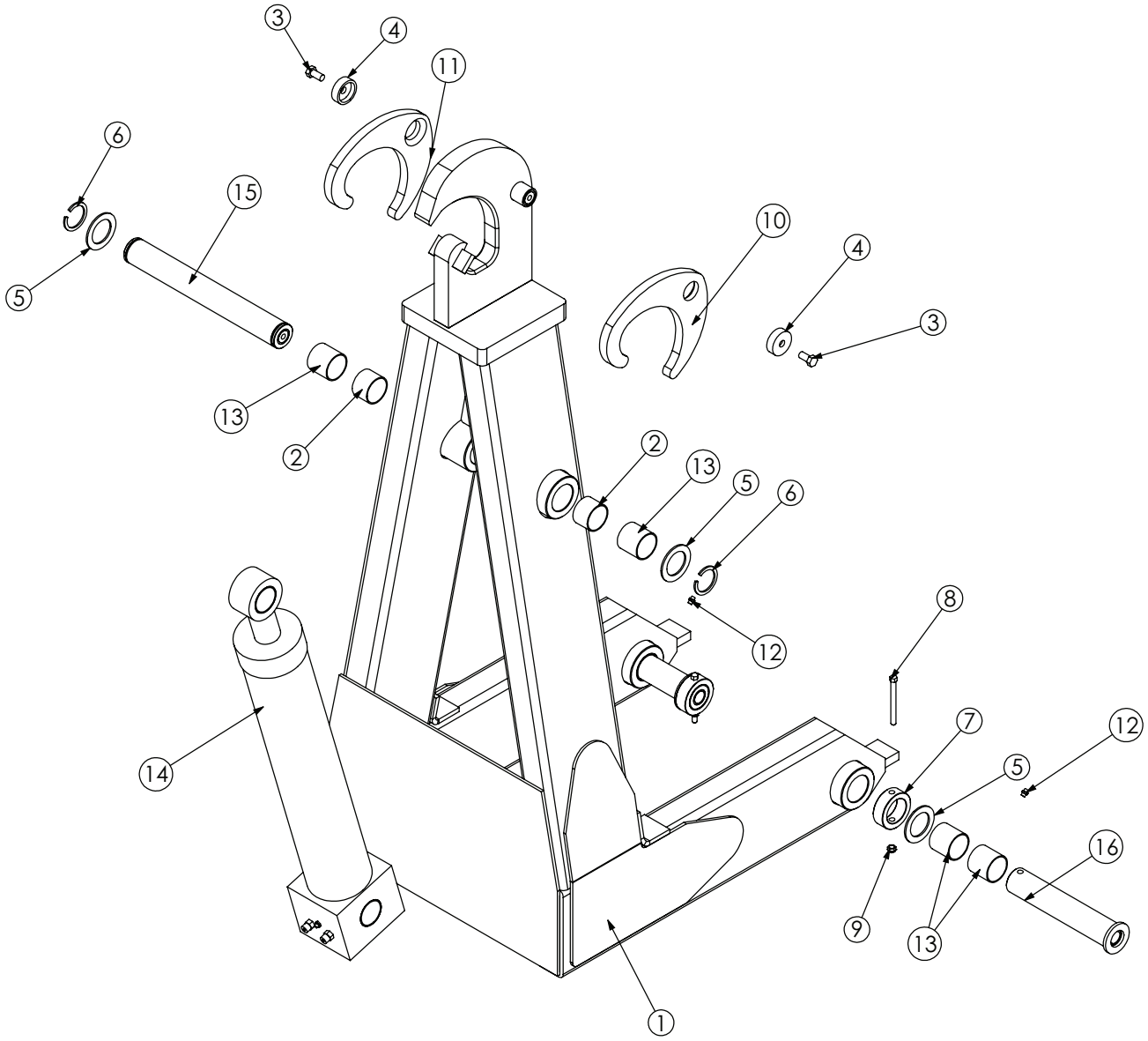
Tilt (120-16-20) - PN 23707



PN 23707

ITEM	PART	DESCRIPTION	QTY
1	23583	TILT 108-11-20K	1
2	4380	BUSHING 32DXR24 2.00X1.50 GARLOCK	2
3	8457	CAP SCR 0.50-13X1.00 SS	2
4	8818	PIN CAP 0.55X2.00X0.63	2
5	0427	MACHY WASHER 2.00ID 10GA	4
6	0108	SNAP RING 2.00 7200-200	2
7	22764PC	COLLAR 2.01X3.00X1.00	2
8	C0953	CAP SCR 0.38-16X4.00 HHGR5	2
9	0347	NUT 0.38-16 HH NYLOC	2
10	28765PC	LATCH SS 40000K	1
11	28766PC	LATCH CS 40000K	1
12	c1592	ZERK 1/8 NPT STRAIGHT	2
13	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	6
14	23159	CYLINDER ASM 4.00X14.50	1
15	24249ZP	PIN 2.00X15.88 SR	1
16	24250ZP	PIN WLDMT 2.00X10.50	2

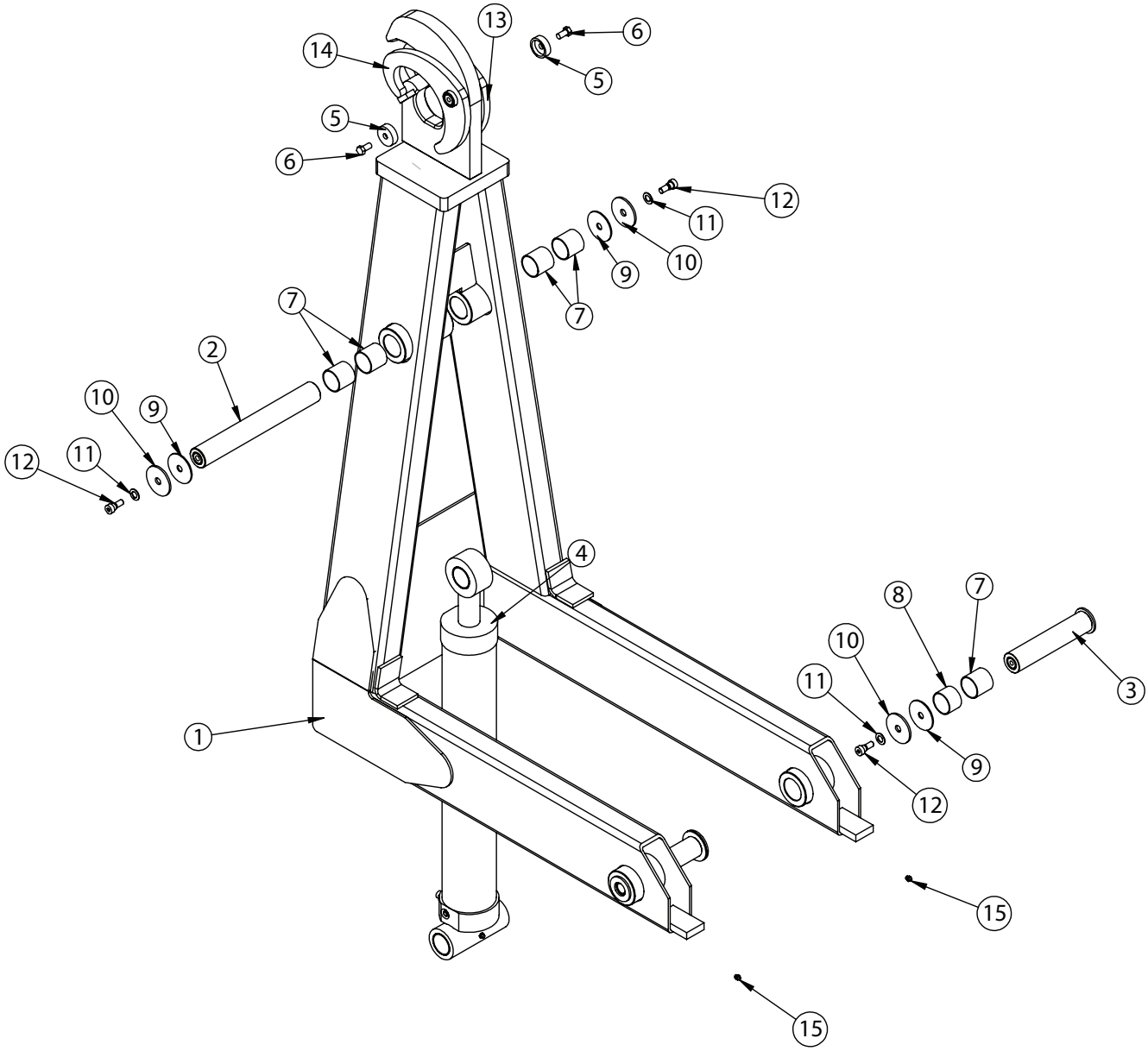
Tilt (138-18-20) - PN 23707



PN 23707

ITEM	PART	DESCRIPTION	QTY
1	23583	TILT 108-11-20K	1
2	4380	BUSHING 32DXR24 2.00X1.50 GARLOCK	2
3	8457	CAP SCR 0.50-13X1.00 SS	2
4	8818	PIN CAP 0.55X2.00X0.63	2
5	0427	MACHY WASHER 2.00ID 10GA	4
6	0108	SNAP RING 2.00 7200-200	2
7	22764PC	COLLAR 2.01X3.00X1.00	2
8	C0953	CAP SCR 0.38-16X4.00 HHGR5	2
9	0347	NUT 0.38-16 HH NYLOC	2
10	28765PC	LATCH SS 40000K	1
11	28766PC	LATCH CS 40000K	1
12	c1592	ZERK 1/8 NPT STRAIGHT	2
13	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	6
14	23159	CYLINDER ASM 4.00X14.50	1
15	24249ZP	PIN 2.00X15.88 SR	1
16	24250ZP	PIN WLDMT 2.00X10.50	2

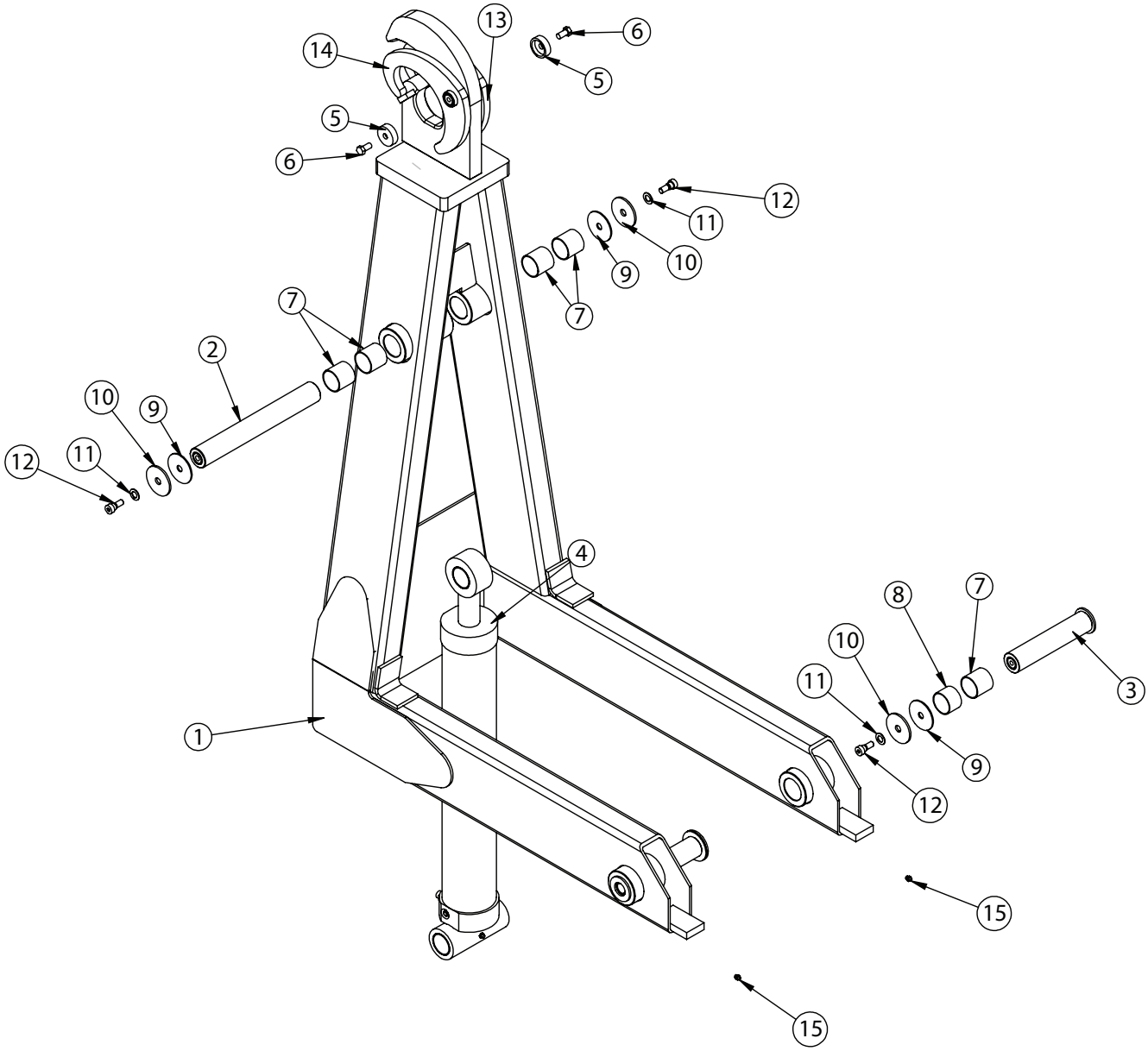
Tilt (168-20-20) - PN 23943



PN 23943

ITEM	PART	DESCRIPTION	QTY
1	23942	TILT 168-20-20	1
2	15985ZP	PIN 2.00X15.06	1
3	23745ZP	PIN WLDMT 2.00X9.50	2
4	23462	CYLINDER ASM 4.00X26.50	1
5	8818	PIN CAP 0.55X2.00X0.63	2
6	8457	CAP SCR 0.50-13X1.00 SS	2
7	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	6
8	4380	BUSHING 32DXR24 2.00X1.50 GARLOCK	2
9	12719	THRUST WASHER 0.64x3.00x0.125	4
10	8454	PIN CAP 0.69x3.00x0.19 SS	4
11	12711	THRUST WASHER 0.63 DIA	4
12	12673	CAP SCR 0.50-13 SHOLDR 0.63X0.38 SS	4
13	28766PC	LATCH CS 40000K	1
14	28765PC	LATCH SS 40000K	1
15	c1592	ZERK 1/8 NPT STRAIGHT	2

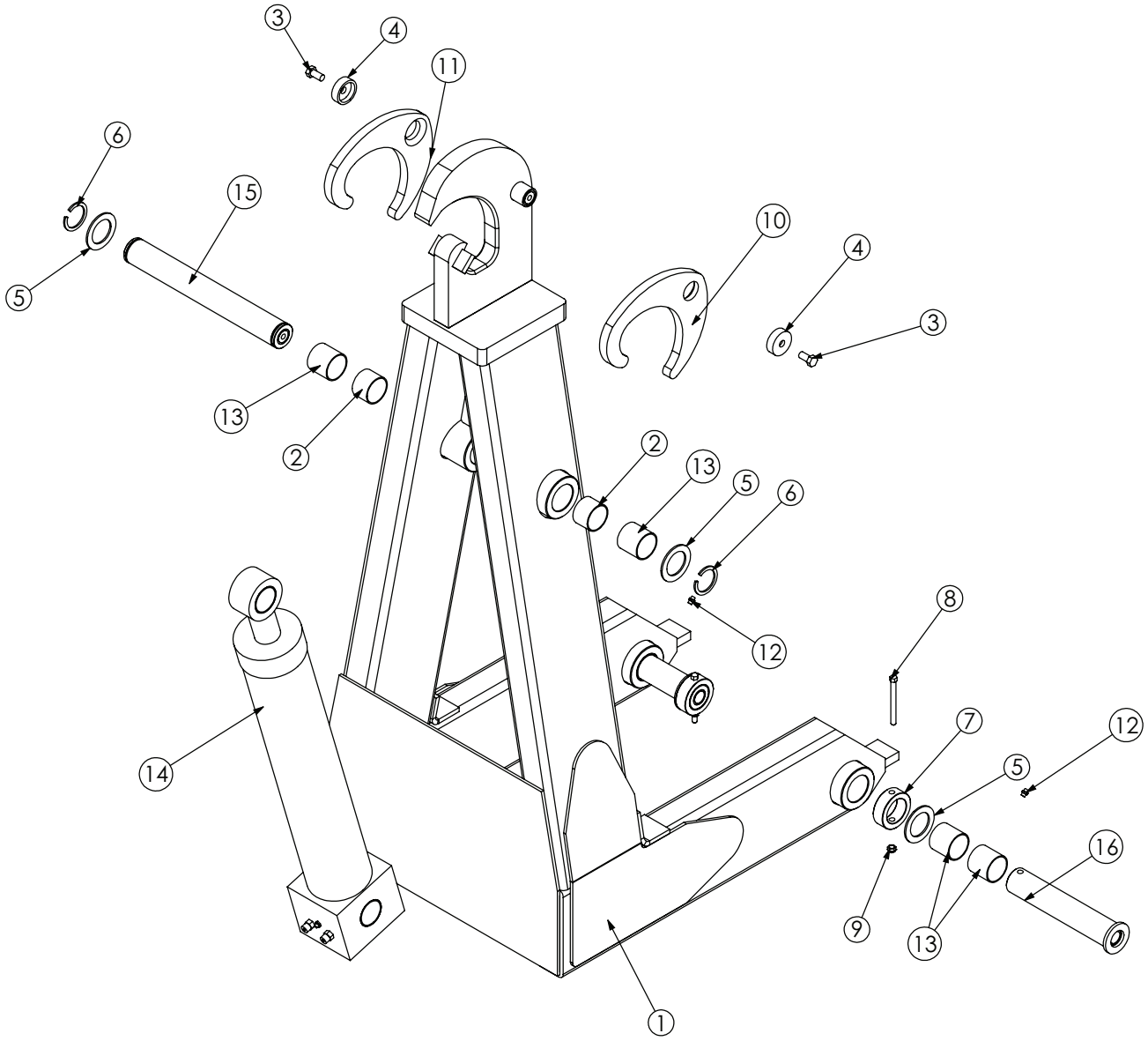
Tilt (190-24-20) - PN 23943



PN 23943

ITEM	PART	DESCRIPTION	QTY
1	23942	TILT 168-20-20	1
2	15985ZP	PIN 2.00X15.06	1
3	23745ZP	PIN WLDMT 2.00X9.50	2
4	23462	CYLINDER ASM 4.00X26.50	1
5	8818	PIN CAP 0.55X2.00X0.63	2
6	8457	CAP SCR 0.50-13X1.00 SS	2
7	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	6
8	4380	BUSHING 32DXR24 2.00X1.50 GARLOCK	2
9	12719	THRUST WASHER 0.64x3.00x0.125	4
10	8454	PIN CAP 0.69x3.00x0.19 SS	4
11	12711	THRUST WASHER 0.63 DIA	4
12	12673	CAP SCR 0.50-13 SHOLDR 0.63X0.38 SS	4
13	28766PC	LATCH CS 40000K	1
14	28765PC	LATCH SS 40000K	1
15	c1592	ZERK 1/8 NPT STRAIGHT	2

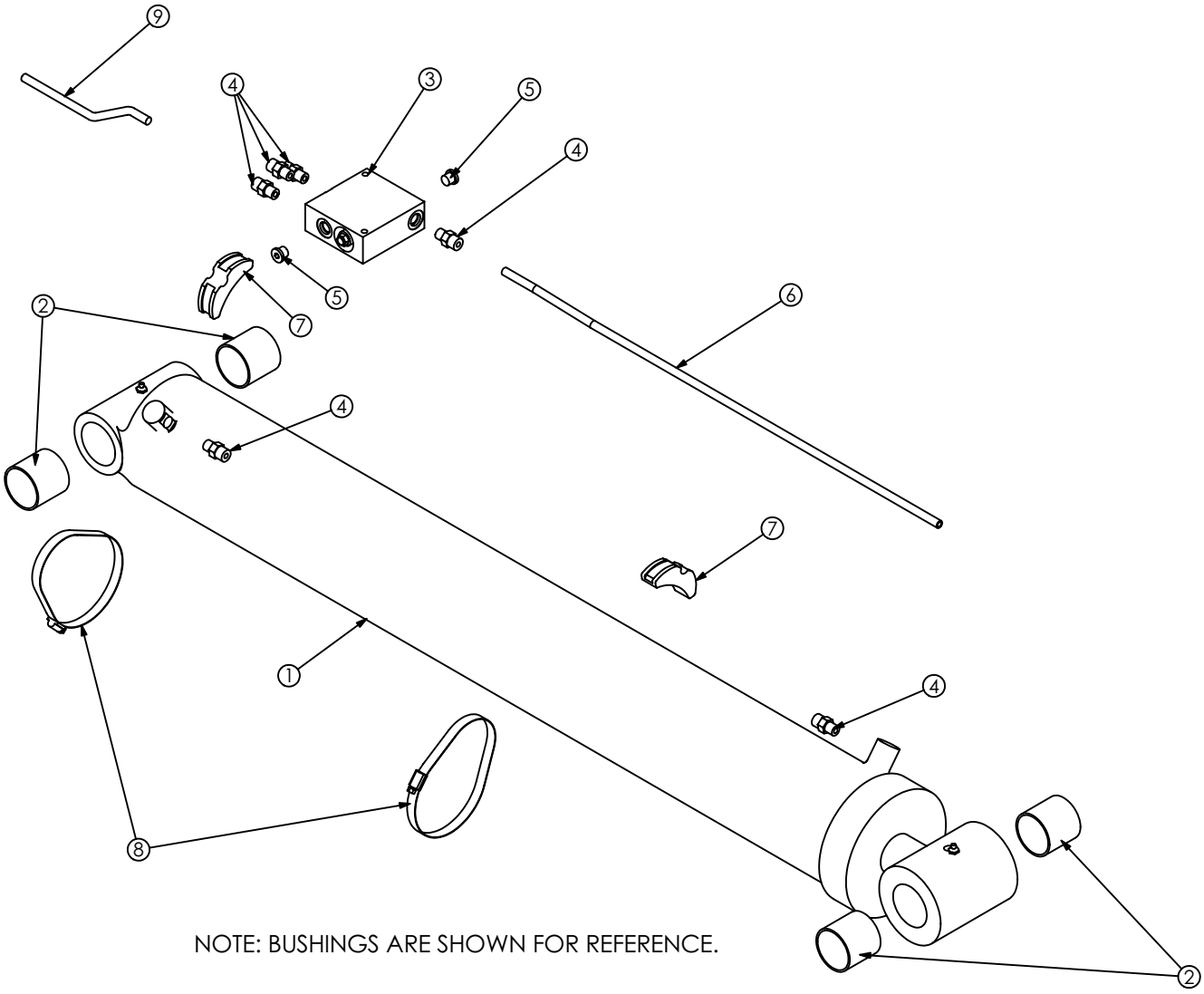
Tilt (96-10-24) - PN 23707



PN 23707

ITEM	PART	DESCRIPTION	QTY
1	23583	TILT 108-11-20K	1
2	4380	BUSHING 32DXR24 2.00X1.50 GARLOCK	2
3	8457	CAP SCR 0.50-13X1.00 SS	2
4	8818	PIN CAP 0.55X2.00X0.63	2
5	0427	MACHY WASHER 2.00ID 10GA	4
6	0108	SNAP RING 2.00 7200-200	2
7	22764PC	COLLAR 2.01X3.00X1.00	2
8	C0953	CAP SCR 0.38-16X4.00 HHGR5	2
9	0347	NUT 0.38-16 HH NYLOC	2
10	28765PC	LATCH SS 40000K	1
11	28766PC	LATCH CS 40000K	1
12	c1592	ZERK 1/8 NPT STRAIGHT	2
13	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	6
14	23159	CYLINDER ASM 4.00X14.50	1
15	24249ZP	PIN 2.00X15.88 SR	1
16	24250ZP	PIN WLDMT 2.00X10.50	2

Main Cylinder (108-11-20) - PN 21880

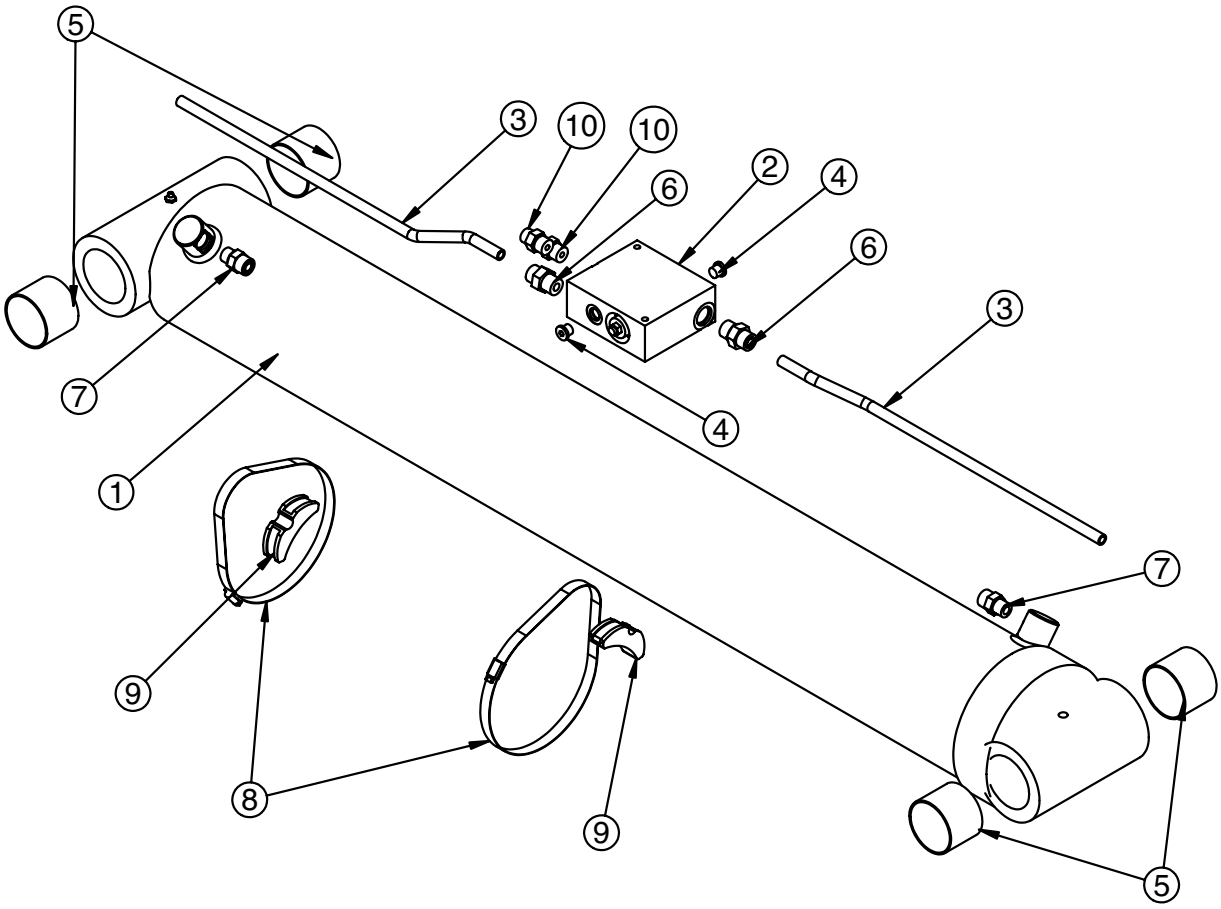


NOTE: BUSHINGS ARE SHOWN FOR REFERENCE.

PN 21880

ITEM	PART	DESCRIPTION	QTY.
1	0057	CYLINDER 5.00X40.38	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	4
3	15822	MANIFOLD DOUBLE T11A 5000 PSI	1
4	0279	FTG ADAPT 6-F5OLO-S	6
5	C4961	PLUG STR HOLLOW HEX 0.38 6-HP5ON	2
6	21881	TUBE ASM 0.38 X 27.56	1
7	18701	CLAMP PORT TUBE ZR518	2
8	19369	HOSE CLAMP 4.13-7.00 5416K38	2
9	15888	TUBE ASM 0.38X7.22 TM14160	1

Main Cylinder (108-12-20/36) - PN 25734

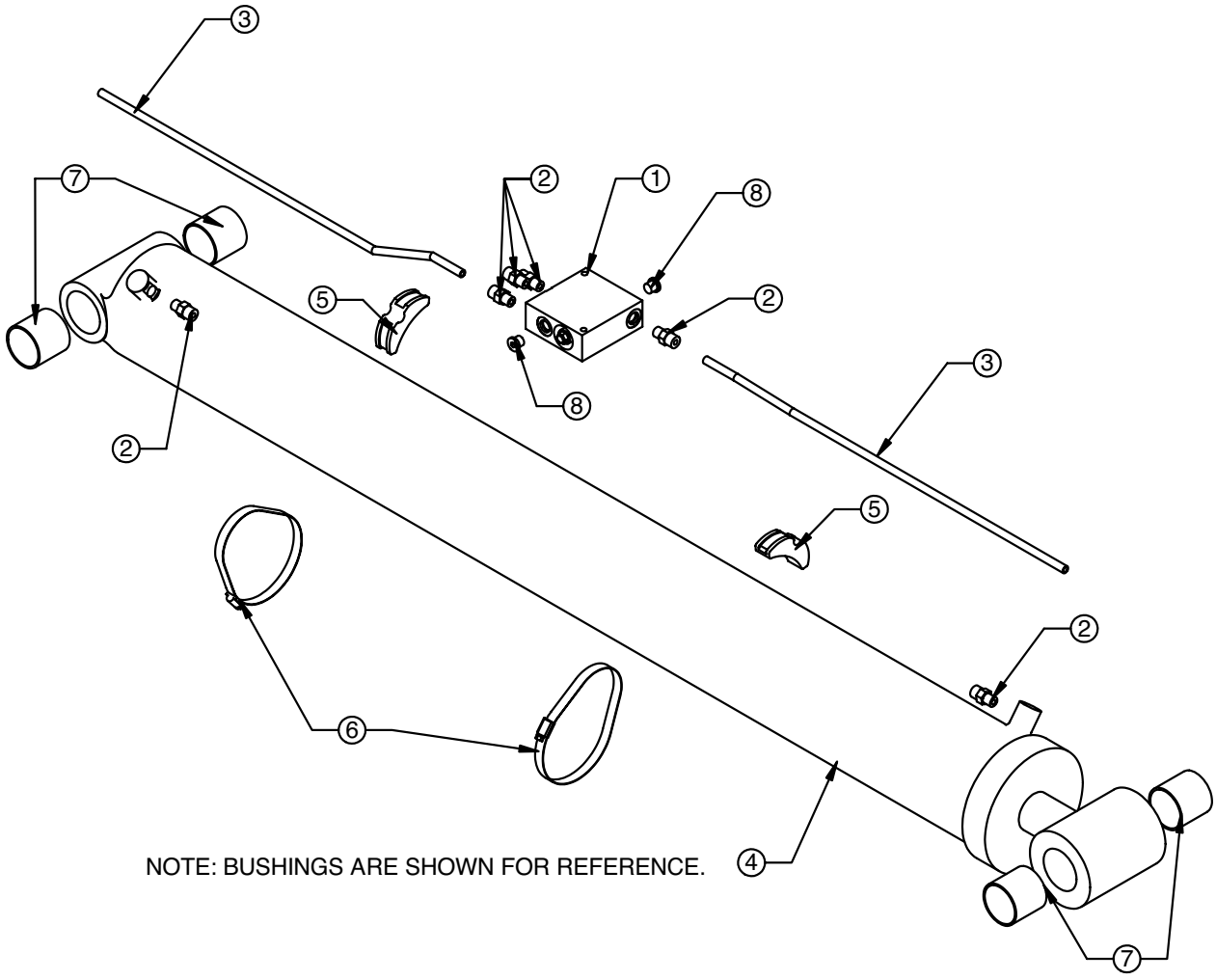


NOTE: BUSHINGS ARE SHOWN FOR REFERENCE.

PN 25734

ITEM	PART	DESCRIPTION	QTY.
1	25735	CYLINDER 6.00X46.25	1
2	15995	MANIFOLD ASM DUAL T2A 5000PSI	1
3	26548	TUBE ASM 0.50 X 19.53	2
4	C4961	PLUG STR HOLLOW HEX 0.38 6-HP5ON	2
5	0635	BUSHING 40DXR32 GARLOCK	4
6	C2252	FTG ADAPT 8-10-F5OLO-S	2
7	1554	FTG ADAPT 8-F5OLO-S	2
8	19370	HOSE CLAMP 5.63-8.50 5416K39	2
9	18701	CLAMP PORT TUBE ZR518	2
10	C1854	FTG ADAPT 6-8 F5OLO-S	2

Main Cylinder (120-16-20) - PN 19026

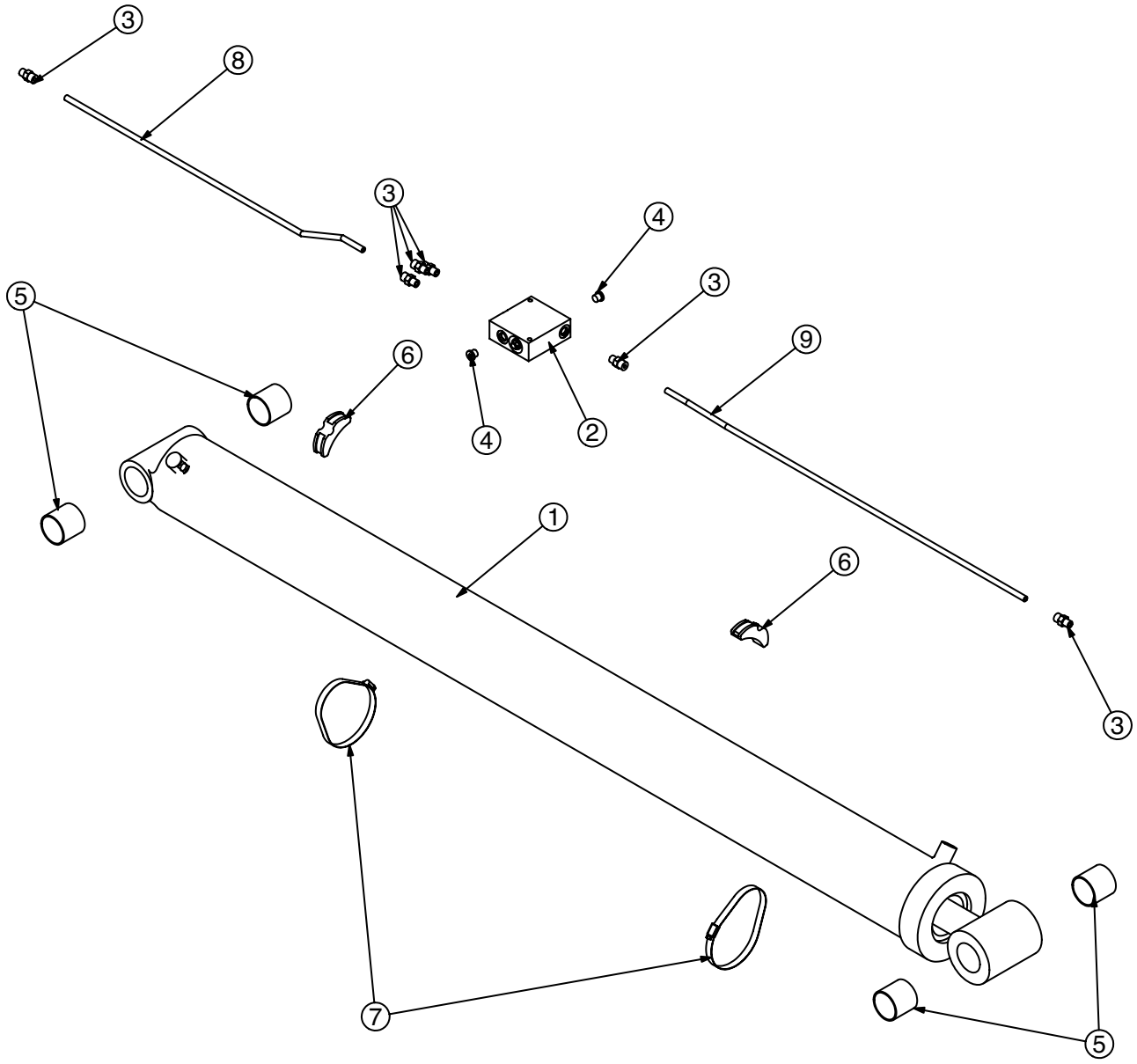


NOTE: BUSHINGS ARE SHOWN FOR REFERENCE.

PN 19026

NO.	PART NO.	DESCRIPTION	QTY.
1	15822	MANIFOLD DOUBLE T11A 5000 PSI	1
2	0279	FTG ADAPT 6-F5OLO-S	6
3	19027	TUBE ASM 0.38 X 23.25	2
4	0079	CYLINDER 5.00X52.38	1
5	18701	CLAMP PORT TUBE ZR518	2
6	19369	HOSE CLAMP 4.13-7.00 5416K38	2
7	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	4
8	C4961	PLUG STR HOLLOW HEX 0.38 6-HP5ON	2

Main Cylinder (138-18-20) - PN 21882

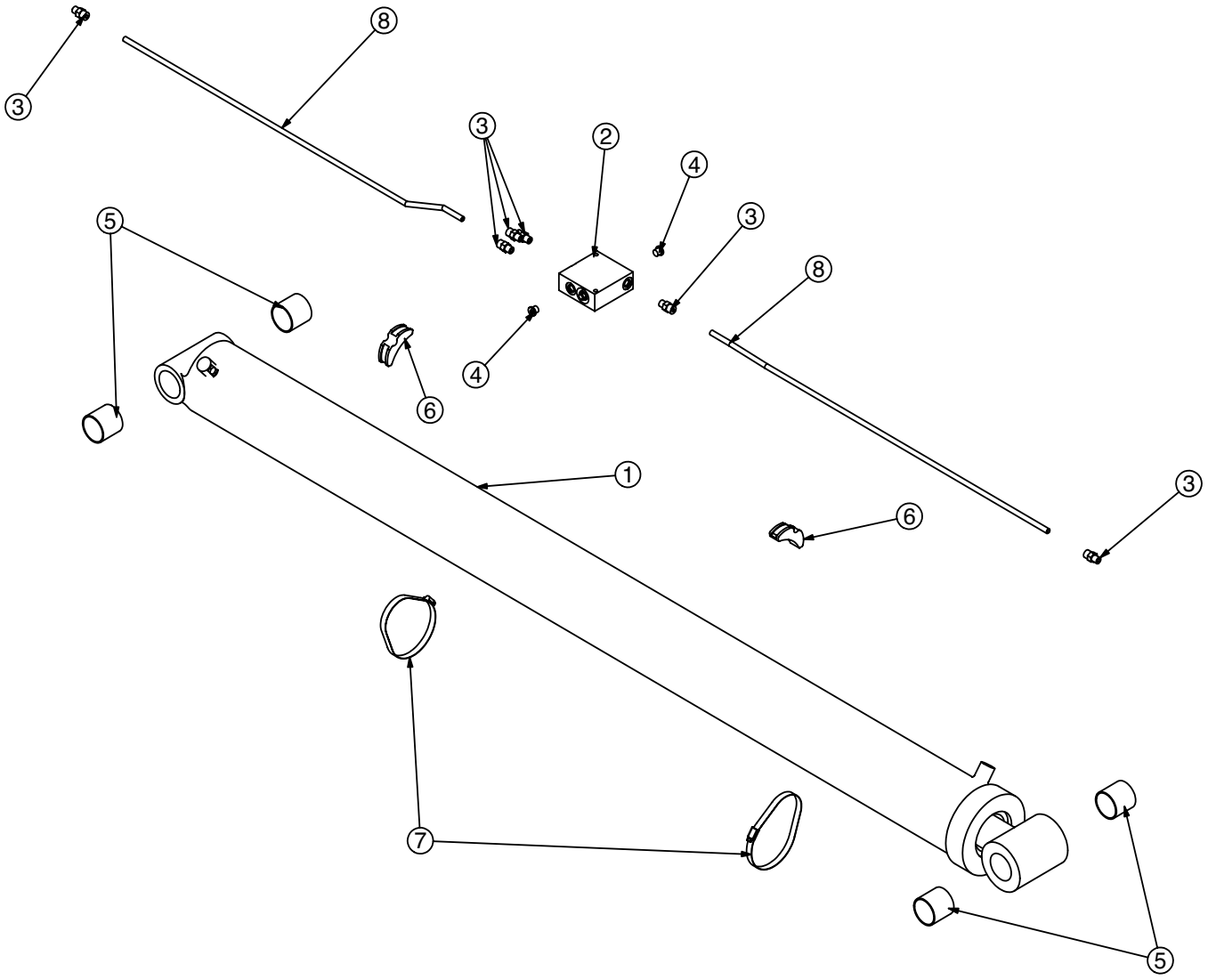


NOTE: BUSHINGS ARE SHOWN FOR REFERENCE

PN 21882

ITEM	PART	DESCRIPTION	QTY.
1	1206	CYLINDER 5.00X63.25	1
2	15822	MANIFOLD DOUBLE T11A 5000 PSI	1
3	0279	FTG ADAPT 6-F5OLO-S	6
4	C4961	PLUG STR HOLLOW HEX 0.38 6-HP5ON	2
5	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	4
6	18701	CLAMP PORT TUBE ZR518	2
7	19369	HOSE CLAMP 4.13-7.00 5416K38	2
8	21881	TUBE ASM 0.38 X 27.56	1
9	23095	TUBE ASM 0.38 X 33.59	1

Main Cylinder (168-20-20) - PN 21884

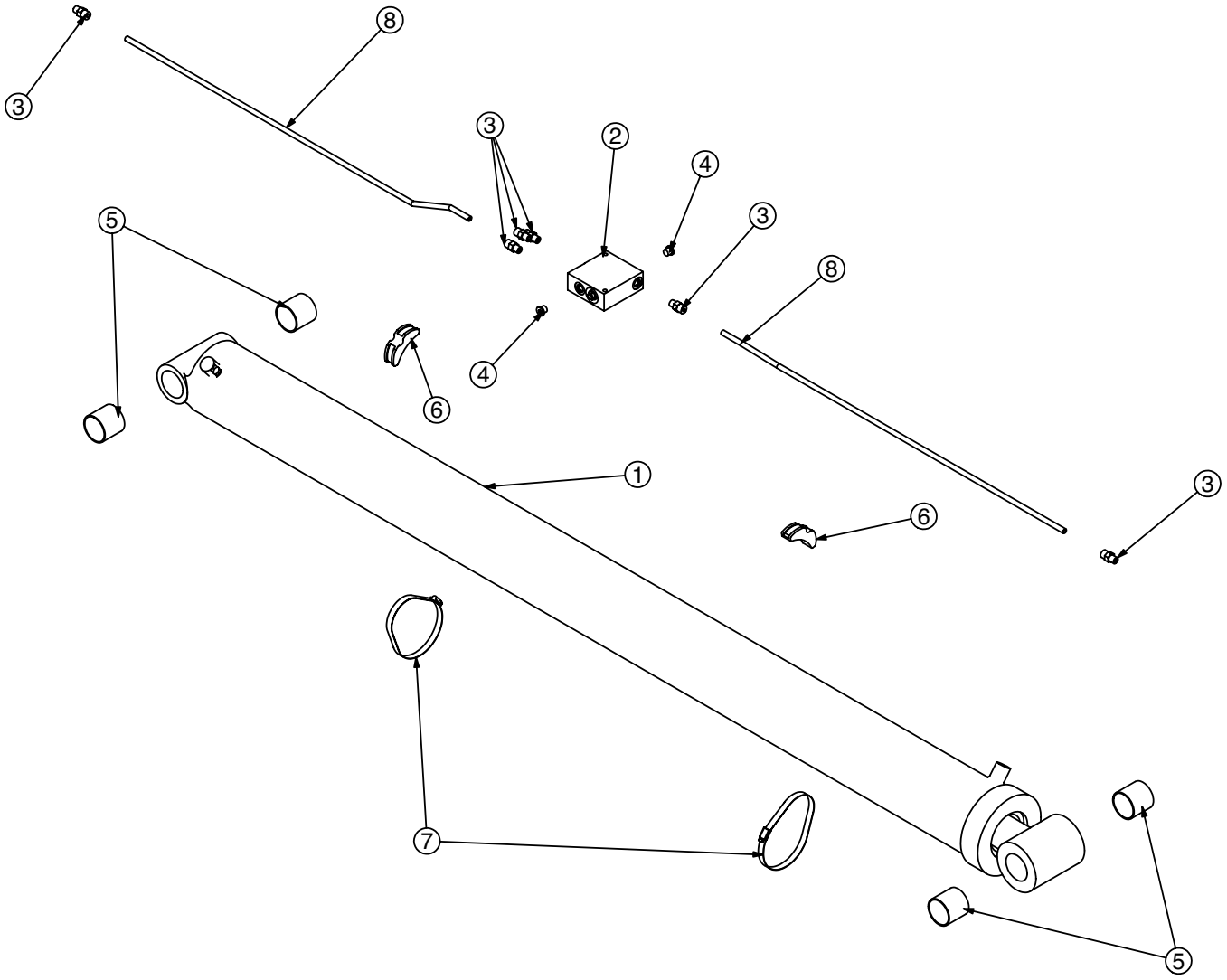


NOTE: BUSHINGS ARE SHOWN FOR REFERENCE

PN 21884

ITEM	PART	DESCRIPTION	QTY.
1	1894	CYLINDER 5.00X71.00 W/2.50 ROD	1
2	15822	MANIFOLD DOUBLE T11A 5000 PSI	1
3	0279	FTG ADAPT 6-F5OLO-S	6
4	C4961	PLUG STR HOLLOW HEX 0.38 6-HP5ON	2
5	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	4
6	18701	CLAMP PORT TUBE ZR518	2
7	19369	HOSE CLAMP 4.13-7.00 5416K38	2
8	21885	TUBE ASM 0.38 X 34.46	2

Main Cylinder (190-24-20) - PN 21884

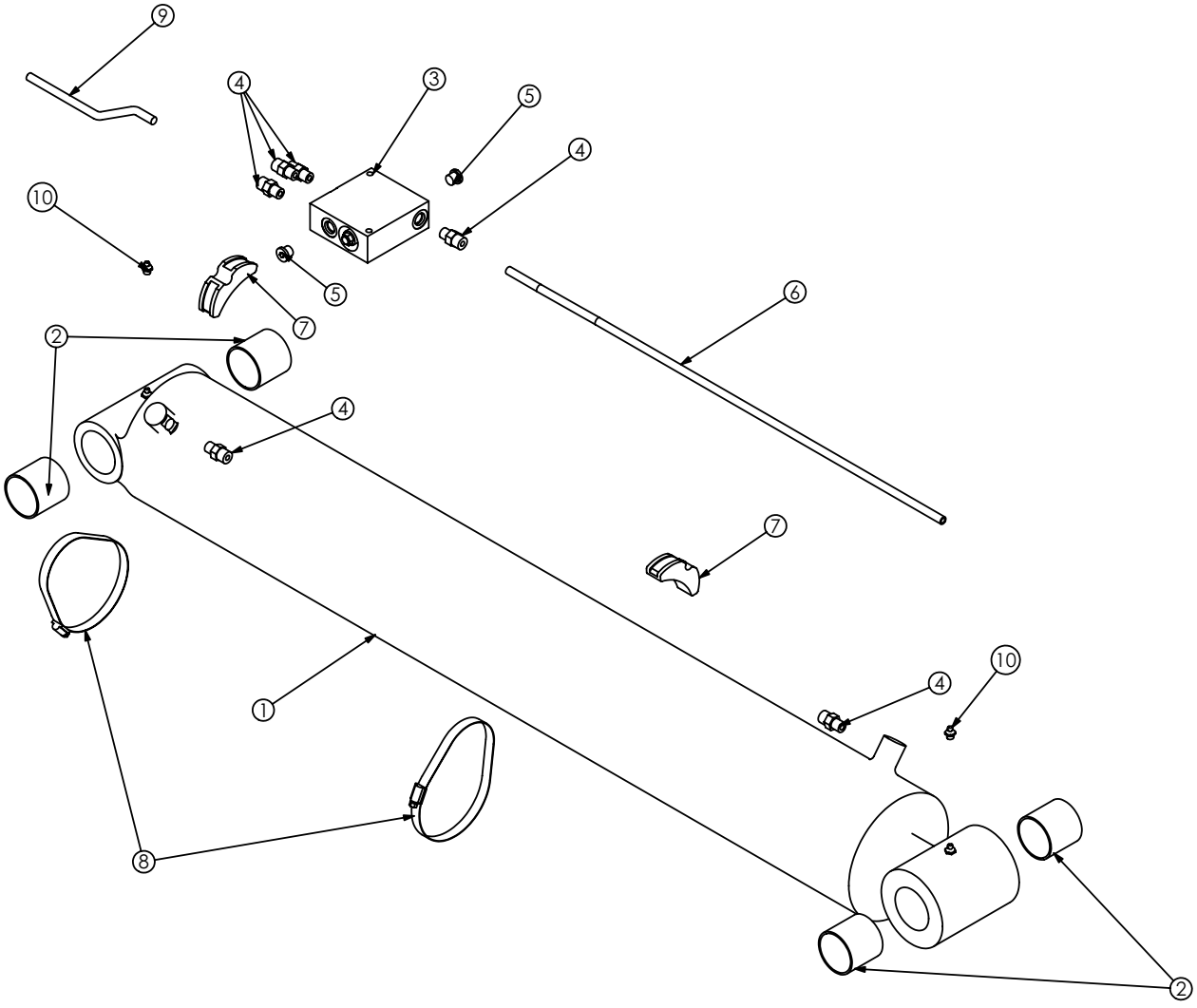


NOTE: BUSHINGS ARE SHOWN FOR REFERENCE

PN 21884

ITEM	PART	DESCRIPTION	QTY.
1	1894	CYLINDER 5.00X71.00 W/2.50 ROD	1
2	15822	MANIFOLD DOUBLE T11A 5000 PSI	1
3	0279	FTG ADAPT 6-F5OLO-S	6
4	C4961	PLUG STR HOLLOW HEX 0.38 6-HP5ON	2
5	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	4
6	18701	CLAMP PORT TUBE ZR518	2
7	19369	HOSE CLAMP 4.13-7.00 5416K38	2
8	21885	TUBE ASM 0.38 X 34.46	2

Main Cylinder (96-10-24) - PN 25244



NOTE: BUSHINGS ARE SHOWN FOR REFERENCE.

PN 25244

ITEM	PART	DESCRIPTION	QTY.
1	25243	CYLINDER 5.50X40.38	1
2	4381	BUSHING 32DXR32 2.00X2.00 GARLOCK	4
3	15822	MANIFOLD DOUBLE T11A 5000 PSI	1
4	0279	FTG ADAPT 6-F5OLO-S	6
5	C4961	PLUG STR HOLLOW HEX 0.38 6-HP5ON	2
6	21881	TUBE ASM 0.38 X 27.56	1
7	18701	CLAMP PORT TUBE ZR518	2
8	19369	HOSE CLAMP 4.13-7.00 5416K38	2
9	15888	TUBE ASM 0.38X7.22 TM14160	1
10	c1592	ZERK 1/8 NPT STRAIGHT	2

Chapter 8 - Troubleshooting

This chapter will list a number of potential problems that may occur while operating the Hooklift. Most problems are easily solved using the solutions portion of this chapter. If problems persist, please contact Customer Service at Stellar Industries 1-800-321-3741.

Problem: Hooklift will not operate or operates slow.
Solutions:
• Make sure the PTO is engaged.
• Make sure the control lever/cable assembly or air actuator are shifting the spool valves on the valve section
• Make sure that the hydraulic pump is operating at its rated flow or GPMs under load. Check the flow by using a flow meter to determine the GPMs. To find the proper flow the equipment is to operate at, see Chapter 6 of the Hooklift Owner's Manual.
• Make sure the relief pressure is properly set per the specifications page of the hooklift owners manual.
• Make sure the spool valves on the valve bank are adjusted and operating smoothly.

Problem: Lift cylinder operates, but the tilt cylinder operates slow or does not operate at all.
Solutions:
• Make sure the rotary valve arm is properly adjusted. See Rotary Valve Drawing in the Installation Chapter of this manual.
• Make sure the rotary valve arm is not damaged or has become disconnected.

Problem: Tab alarm sounds off inside chassis cab.
Solutions:
• Break away tabs on dump weldment have broken loose. Re-install break away tabs using a Grade 5 5/16" bolt.

Problem: Hydraulic system gets extremely hot.
Solutions:
• Make sure the hydraulic filter has been changed per the maintenance page of the Hooklift Owner's Manual.
• Make sure the filter strainer of the hydraulic reservoir is not plugged.
• Make sure that the hydraulic pump is operating at its rated flow or GPMs.
• Make sure the relief pressure is set properly. See Table 1.1 of Chapter 6: Installation for proper setting.

Problem: Hooklift will not lift or pickup a loaded container.
Solutions:
• Make sure the container contents are evenly distributed.
• Make sure the container and its load does not exceed the rated capacity.
• Make sure the relief pressure is properly set per Table 1.1 in the Installation Chapter of this manual.
• Make sure the hydraulic pump is operating at its rated flow or GPMs. See Chapter 4: Specifications.
• Make sure that the container is not fixed to the ground or frozen down.

Problem: Dump weldment lifts upward while picking up a container.
Solutions:
• Make sure the rear hooklift rollers spin freely and smoothly.
• Make sure the body hold down brackets are not worn or bent.

Problem: Cylinders drift upward or downward while hydraulics are dis-engaged.
Solutions:
• Make sure valve spools are shifting to three neutral position.
• Possible contamination keeping the holding valve open.
• Possible internal piston seals rolled or damaged.

Problem: Hooklift binds at pivot points.
Solutions:
• Make sure the pivot points are lubricated.
• Make sure pivot pins are not seized to the bushing.
• Make sure the weldments or pins are not misaligned or bent.

Contact Customer Service at Stellar Industries: 1-800-321-3741