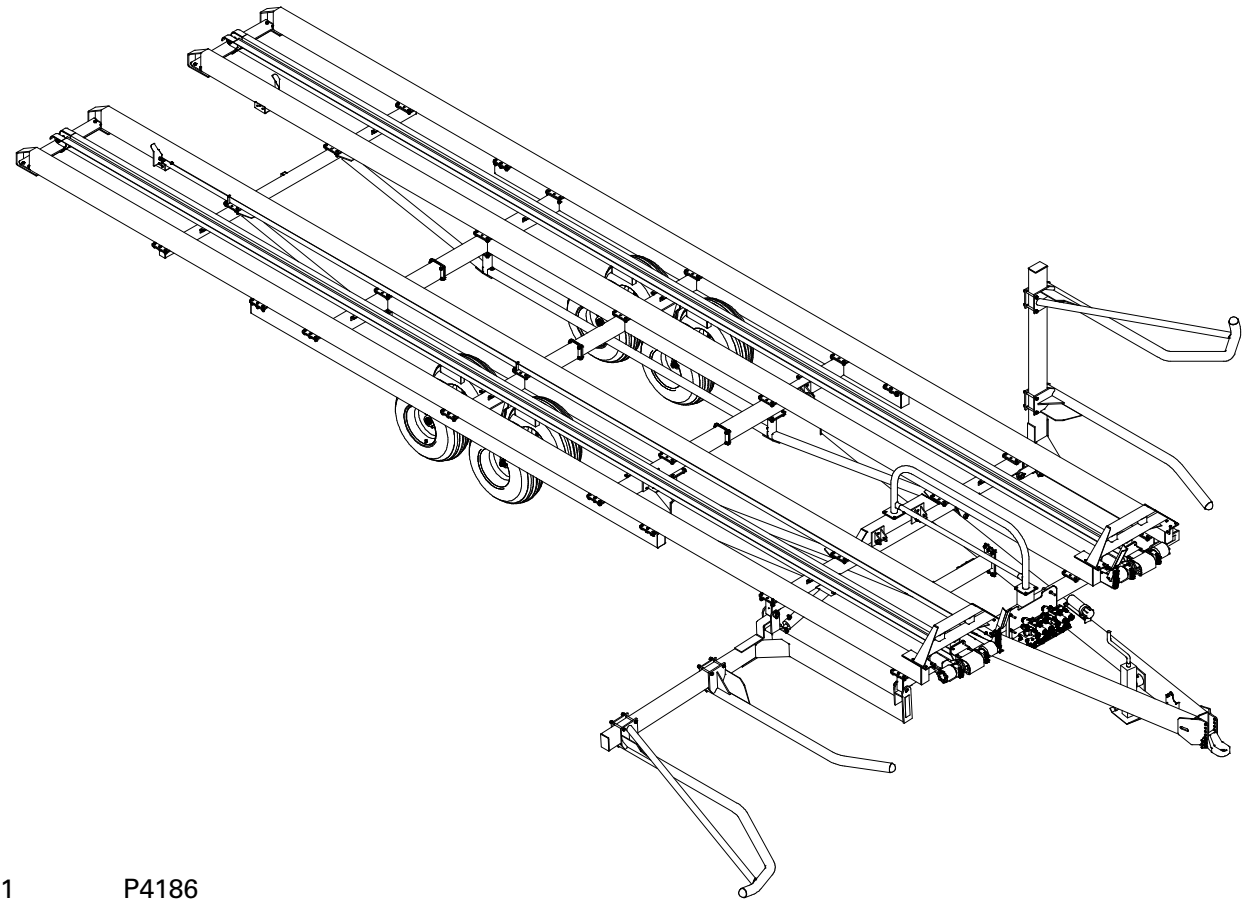
Farm King

OPERATOR AND PARTS MANUAL

Round Bale Carrier

2450



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Manufacturer's Statement: for technical reasons Buhler Industries Inc. reserves the right to modify machinery design and specifications provided herein without any preliminary notice.
Information provided herein is of descriptive nature. Performance quality may depend on soil fertility, applied agricultural techniques, weather conditions and other factors.

General Specifications

Dimensions

- Length: 45' (13.7 m)
- Deck length: 37' (11.3 m)
- Width: 12' 9" (3.9 m)
- Weight (empty): 9587 lb (4349 kg)
- Drawbar vertical load (empty): 2395 lbf (10653 n)
- GVW: 37440 lb (16983 kg)

Capacity

- Total bale payload: 28065 lb (12731 kg)
- Bales 6' (1.8 m) diameter maximum to 4' (1.2 m) diameter minimum
- Hay crop, small grains, and flax straw
- Sixteen 4' (1.2 m) wide bales
- Fourteen 5' (1.52 m) wide bales

Tires

- 8-12.5 l x 15 fl - 12 ply, Load Range F, Farm Hwy ServiceTire
- 6 bolt heavy-duty hubs with twine guards
- Walking beam axle design

Control Handle

- Power: 12v
- Fuse: 15 amp (surge protection provided on machine)

Hydraulics

- Two remote tractor hydraulics circuits required for operation
- Operates with either closed-center or open center hydraulics
- Hydraulic system selectable by rocker switch
- Two Lift cylinders with restrictor
- Two Tilt cylinder with restrictor
- Two 22.2" cu. (363.79 cu cm) hydraulic motors

Tractor

- Size: 100 hp (75kW) recommended
- Weight: As per ASAE specification ASAE S365.4 the tractor must weight 25000 lb (11340 kg) to adequately handle a GVW of 37440 lb (16983 kg)
- Maximum loaded towing speed 20 mph (32 km/h)

Introduction

This manual has been provided as information regarding the specifications, safe operation and maintenance of your agricultural 2450 bale carrier. Read and understand this manual and the tractor manual prior to operating to obtain the best use of operating your 2450 bale carrier.

Your new bale carrier is designed to retrieve, transport, and unload a wide range of round bales. Sizes that can be accommodated range from 4' (1.2 m) diameter to 6' (1.8 m) diameter in a variety of hay crops as well as small grain and flax straw.

Keep this manual handy for frequent reference. All new operators or owners must review the manual before using the equipment and at least annually thereafter. Contact your Farm King Dealer if you need assistance, information, or additional copies of the manual. Visit our website at www.buhlerindustries.com for a complete list of dealers in your area.

The directions left, right, front and rear, as mentioned throughout this manual, are as seen facing in the direction of travel of the implement.

Safety

Safety Instructions

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

The alert symbol is used throughout this manual. It indicates attention is required and identifies hazards. Follow the recommended precautions.

The safety alert symbol means...
ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

	CAUTION	The caution symbol indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
	WARNING	The Warning Symbol indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.
	DANGER	The Danger Symbol indicates an imminently hazardous situation that, if not avoided will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

General Safety Instructions

- Have a first-aid kit available for use and know how to use it.
- Have a fire extinguisher available, stored in a highly visible location, and know how to use it.
- Wear appropriate protective gear. This list may include but is not limited to:
  - hard hat
  - protective shoes with slip resistant soles
  - protective glasses or goggles
  - heavy gloves
  - wet weather gear
  - hearing protection
  - respirator or filter mask
- Read and understand the Operator's Manual and all safety signs before operating, servicing, adjusting, repairing, or unplugging the equipment.
- Do not attempt any unauthorized modifications to your Farm King product as this could affect function or safety, and could affect the life of the equipment.
- Inspect and clean the working area before operating.
- Keep hands, feet, clothing, and hair away from moving parts.
- Ensure bystanders are clear of the area before operating.

Start-up Safety

- Do not let inexperienced operators or children run this equipment.
- Place all tractor and machine controls in neutral before starting.
- Ensure all shields are in place and in good condition before operating.

Operation Safety

- Do not permit riders.
- Do not wear loose fitting clothing during operation.
- Do not load bales of sizes not out lined in the specifications section.
- Never operate with frayed or damaged hoses or leaking fittings.
- If for some reason you feel the tractor tipping immediately lower lift arms.
- Do not raise lift arms to extreme heights while tractor is on an incline. Be alert for terrain changes and adjust accordingly.

Transport Safety

- Review Transport Safety instructions in tractor manual before moving.
- Check with local authorities regarding transport on public roads. Obey all applicable laws and regulations.
- Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean, and can be seen clearly by all overtaking and oncoming traffic.
- Do not overload the GVW of 37440 lb (16983 kg) and when loaded keep the speed below 20 mph (32 km/h).
- Allow for bale carrier and tractor length when turning.
- Never have the equipment in operation during transport
- Always travel at a safe speed.

Service and Maintenance Safety

- Stop engine, set brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
- Follow good shop practices including:
  - keep service area clean and dry
  - be sure electrical outlets and tools are properly grounded
  - use adequate light for the job.
- Do not attempt to clear any blockage or reach into the bale carrier with your arm or leg unless the tractor engine is stopped.
- Never work beneath a raised lift arm unless it is securely supported.
- Use only tools, jacks, and hoists of sufficient capacity for the job.
- Replace and secure all shields removed during servicing before operating.
- Use heavy leather gloves to handle sharp objects.

Storage Safety

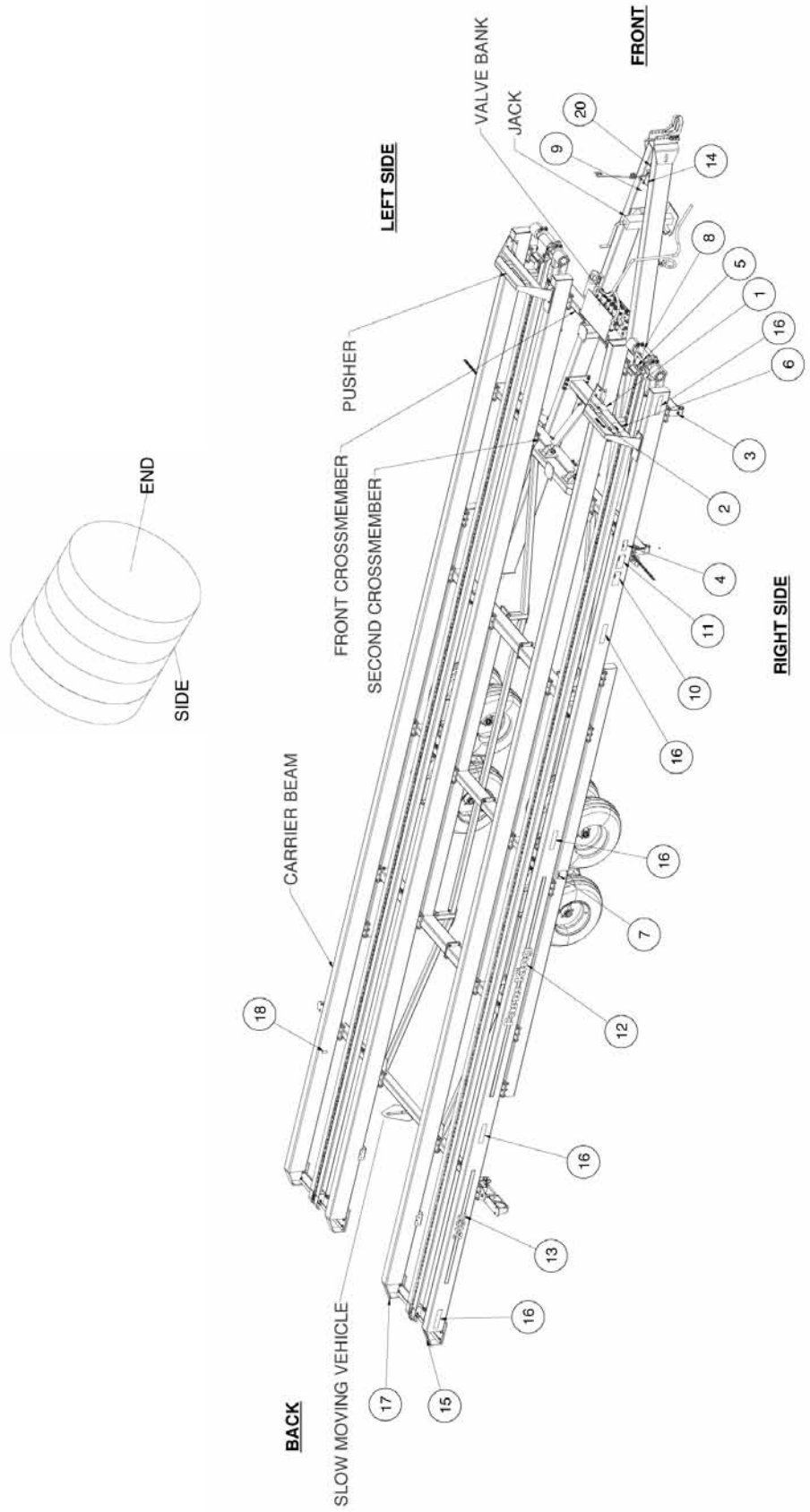
- Store the unit in an area away from human activity.
- Do not permit children to play on or around the stored machine.
- Cover sharp or extending components to prevent injury from accidental contact.

Safety Signs

- Keep all safety signs clean and legible and replace any that are damaged or missing.
- When original parts are replaced, any safety signs affixed to those parts should be replaced as well. Replacement safety signs are available from your local dealer.

Installation

- To install safety signs, ensure the installation area is clean and dry. Decide on the exact position before you remove the backing paper. Remove the smallest portion of the split backing paper and align over the specified area. Carefully press in place.
- Slowly peel back the remaining paper and smooth the remaining portion in place. Small air pockets can be pierced with a pin and smoothed out.


END
SIDE
PUSHER
FRONT CROSSMEMBER
SECOND CROSSMEMBER
CARRIER BEAM
SLOW MOVING VEHICLE
LEFT SIDE
RIGHT SIDE
FRONT
BACK
VALVE BANK
JACK
20
9
14
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Parts List - Decals

Item	Part Number	Description	Qty
1	813624	Caution - Keep all shields in place...	1
2	813625	Important - Running pusher past amber reflector...	1
3	21867	Daily	1
4	813626	Caution - Safety chain must be secured and locked...	1
5	813627	Warning - Moving part hazard...	1
6	813632	Warning - Pinching hazard...	1
7	813633	Important - Maximum recommended tire inflation...	1
8	813635	Warning - High-pressure fluid hazard	1
9	21975-02	Important - Gross vehicle weight rating...	1
10	813637	Danger - Bale lift arm can cause serious injury...	1
11	813636	Danger - Bale lift arm can cause serious pinching...	1
12	815004	Farm King	1
13	815003	2450	1
14	813952	Bale carrier 2450 snubber unit. P/N 813949	1
15	967053	Red reflective	1
16	967055	Yellow reflective	1
17	813631	Orange fluorescent	1
18	813628	Amber reflective	1
19	A7017-00	SMV sign	1
20	105420	Serial number	1

Assembly

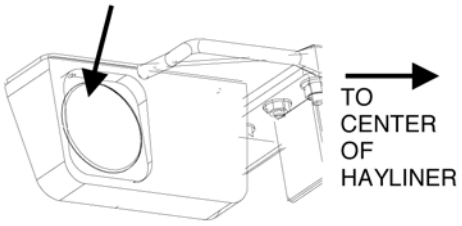
CAUTION	Make sure area is clear of obstructions, well lit, and has sufficient room for safe assembly. Do not work underneath raised assembly.

CAUTION	Ensure the carrier's tires and hitch are securely blocked. Otherwise, verify the bale carrier is properly coupled to the drawbar on a tractor with a minimum of 25000 lb (11340 kg).

Tail Light Assembly

(Refer to Carrier Bundled Assembly Drawing)

- Remove all required hardware from parts box.
- Ensure taillights are installed correctly, refer to illustration.
- Connect the tail light wiring harnesses to appropriate connections.
- Connect main lighting plug to tractor.
- Test by verifying correct lamps illuminate when signalling and braking.



VIEWED FROM THE FRONT
RIGHT HAND SIDE

Center Bale Stop

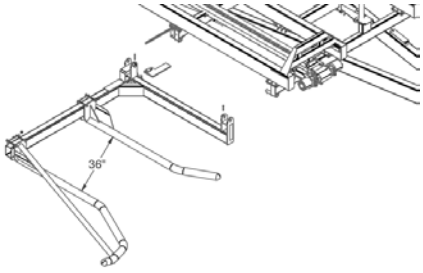
- Remove the hardware that is attached to the center bale stop and place center bale stop bar on bolt plates in the position shown at the beginning of the manual. Torque the provided hardware to the specifications listed on the bolt chart. Tie wrap the hydraulic hoses that run to the lift and tilt cylinders under the roll bar.

  NOTE: Hydraulic assembly methods and layouts are common to the right and left sides. Only one side of each component is shown in this manual.

CAUTION	Stay clear of the arms when testing a finished assembly. Ensure during assembly to keep your entire body out from underneath parts that are being attached to the main frame.

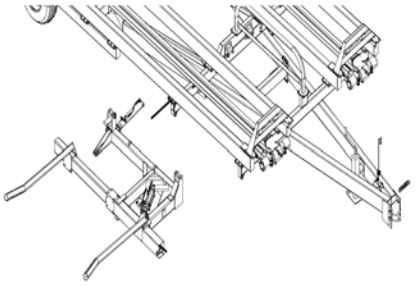
Fixed Lift Arm with Deflector

- Remove lift arm pivot pins that are installed on the bale carrier.
- Thoroughly lubricate all pins involved in the assembly with a SAE multi purpose grease.
- Align arm to pivots with open end of arm facing forward and reinstall pins with hardware provided and torque to specifications called for in the bolt chart.
- Remove the lift cylinder pin from the arm

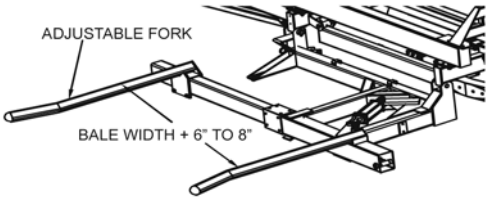


- Align the lift cylinder rod and reinstall the pin.
- Adjust the outside bale fork to be positioned at the end of the lift arm and the inner bale fork about 36" (91 cm) from the end.
- Recheck all hardware so that every bolted connection on the lift arm is torqued according to the specifications of the bolt chart.
- For first operation, cycle the lift arm slowly with a bale and inspect just before lifting bale from ground.
- Approach the bale and inspect to ensure the spacing of the forks is accurate.
- Finish the cycle and observe how the bale transits from the forks to the carrier beam. If transition is smooth with minimum bale binding assembly is completed. If not adjust the forks to a different location and try until loading is smooth.

RPU Assembly



- Remove the lift cylinder pin from the RPU arm.
- Remove lift cylinder and install pilot check assembly.
- Reinstall cylinder at base end only.
- Lubricate all pins involved in RPU attachment with a SAE multi purpose grease.
- Align arm to pivots with open end of arm facing away from the bale carrier and reinstall pins with hardware provided and torque to specifications called for in the bolt chart.
- Align the lift cylinder rod and reinstall the pin.
- Adjust the outside bale fork to be positioned at the end of the lift arm and the inner bale fork 6" (15 cm) to 8" (20 cm) bigger than the size of bale that is being loaded.



- Install the hydraulics according to the hydraulic assembly.
- Recheck all hardware so that every bolted and hydraulic connection on the lift arm is torqued according to the specifications of the torque charts.
- The RPU cycle should begin with a squeeze action, then lift and rotate. After rotation is complete the lift continues until the bale is above the carrier beams.
- Release lift arm up when bale is above the carrier beam. Depress lift arm down to release the bale and return to ground level ready for the next bale.
- For the first operation, cycle the lift arm slowly with the bale and observe the RPU operation.
- Approach the bale slowly; once the bale is captured in the forks press the lift switch. The bale is squeezed until the pressure in the sequence valve has been achieved which is preset at 1800 psi (12400 kpa).
- If bale is not held in between the forks increase the sequence valve pressure by turning the setscrew clockwise. Refer to the RPU Rotate Cylinder drawing for adjustment location of the setscrew. Verify that the fork spacing is accurate and refer to the drawing on this page for fork adjustments.
- The lift and rotate sequence won't begin until the clamp pressure is met within the sequence valve.
- When the clamp pressure is met, the lifting action should start before the rotating action to minimize bale damage from the moving ground.

- To increase lift prior to rotate turn the restrictor knob clockwise. Refer to the RPU rotate cylinder drawing for more information.
- Continue to raise the bale until it is positioned above the carrier beam.
- Release the bale by lowering the lift arm.
- Finish the cycle and observe how the bale transits from the forks to the carrier beam. If transition is smooth with minimum bale binding assembly is completed. If not adjust the forks to a different location and try until loading is smooth.

Hydraulic Assembly

NOTE: 1- Hydraulic Assembly methods and layouts are common to the right and left sides. Only one side of each component is shown in this manual. 2- Seal Kits and Service Parts are only listed in the parts lists and are not indicated on the illustrations.

Electrical Assembly

	WARNING	Read and understand the safety messages listed in the bale carrier operator manual. Shut off all power to unit before inspecting, servicing, adjusting or repairing the bale carrier.

	WARNING	For proper operation of the snubber, power must be supplied to the RED power wire from the control handle. Ensure that there is a 15-amp fuse in place to protect this circuit. Verify prior to installing snubber. Incorrect wiring will result in electrical failure.

NOTE: The snubber unit is designed to protect the momentary control switches. The snubber minimizes coil voltage discharge during the de-energizing of the valve solenoid coils. There are no serviceable parts within the unit. Ensure that all electrical connections are clean and dry. Test the bale carrier and view to see if the hydraulic system is operating correctly. If any wires are damaged or cut, the schematic on the next page will assist in repair and maintenance. All wire is 18 gage.

Start-up

Pre-operation Checklist

To ensure safe and proper operation of the bale carrier, inspect the following items prior to operation and daily thereafter. Refer to operation, lubrication and maintenance sections for detailed instructions.

- ☐ Prior to first use verify that the bale carrier has been properly assembled and that the operator understands the safety, operating, and maintenance requirements.
- ☐ Check for missing fasteners and replace if necessary. Refer to maintenance section for details.
- ☐ Check and maintain proper tire pressure of 90 psi (620 kpa).
- ☐ Check for loose wheel bolts. Bolts must be torqued to 90 ft lb (122 Nm).
- ☐ Clean bale carrier of any foreign material that may have accumulated from previous run.
- ☐ Lubricate all points requiring daily lubrication.
- ☐ Check chain tension and adjust if necessary with front sprocket adjusting bolt (approximately 6" (15 cm) of upward slack). This is verified by raising the chain by hand.
- ☐ Ensure top surface of bale carrier beams are properly coated with a graphite coating to reduce bale friction while pushing bales back.
- ☐ Ensure that the tractor used to pull the bale carrier is in working order according to the tractor manual.
- ☐ Verify the bale carrier is properly coupled to the tractor with the safety chain.
- ☐ Inspect all safety reflective decals, slow moving vehicle decals and lights where applicable.
- ☐ Inspect the hydraulic system on the bale carrier and your tractor for leaks or any other damage.
- ☐ Ensure the control handle actions reflect the movements of the bale carrier.
- ☐ Inspect all electrical connections to ensure proper function of the machine.
- ☐ Ensure transport safety chain is disengaged from bale lift arm and stored on chain lug located on second cross member. Failure to do so may cause damage to lift arm.

	CAUTION	Make sure the tractor has a 60 hp (45 kw) or greater rating and a mass of 12480 lb (5660 kg). Make sure the drawbar is capable of supporting the bale carrier empty or loaded.

	WARNING	The tractor must be equipped with an approved Roll Over Protection Structure (ROPS) and safety belts to help prevent personal injury or death caused by tractor roll over.

Operation Instructions

	CAUTION	Prior to operation ensure the operator has read and understands the safety requirements of the bale carrier. Ensure the pre-operation checks have been completed prior to operation.

Attaching Bale Carrier to Tractor

	CAUTION	Shut off tractor, engage parking brake and remove key before working around bale carrier. Refer to tractor manual for tractor parking procedures.

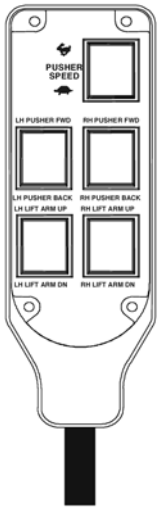
	CAUTION	Use only the drawbar to couple the bale carrier to the tractor. Ensure drawbar is capable of handling the bale carrier load. The tractor must have a minimum mass of 25000 lb (11340 kg) and recommended 100 hp (75 kw).

- Using the tongue jack, raise tongue to align with hitch pin, adjust clevis position as necessary to level the carrier beams.
- Position tractor and secure with locking type drawbar pin (not supplied). Use an approved hitch pin with a mechanical retainer.
- Route safety chain around the hitch clevis, around drawbar support and back hook. Refer to tractor manual for further drawbar instructions.
- Do not use intermediate support on drawbar as attaching point.
- Store safety chain off the ground when not in use. If safety chain is damaged in any way, contact your dealer for a replacement.

Attaching Bale Carrier Controls to Tractor

- Bale lift and push functions are controlled by the bale carrier valve. Two hoses complete with black hydraulic tip covers supply pressure and tank. The retraction hose is designated with a check valve and ensures proper flow through the valve. Connect the return hose to the retract circuit and the extend hose to opposite extend port.
- The tilt function is controlled by the tractor's remote valve. Two hoses complete with red hydraulic tip covers supply extension and retraction.
- Connect control handle harness to the machine harness. Connection is made at the snubber unit by matching the appropriate socket and plug.
- The power required to operate the bale carrier is supplied by the tractors 12-volt electrical system. Connect the red wire to the tractor positive and green to tractor ground. Connection may be made via tractor accessory plug or alternate method. The 15-amp fuse must be used on the positive wire as supplied.
- Verify bale carrier operation matches bale carrier control handle decal.
- Select your hydraulic system using the switch located behind the hydraulic manifold.
  - For tractors with open-center hydraulic systems, set the switch to open.
  - For tractors with closed-center hydraulic systems, set the switch to close.

Carrier Control Operation



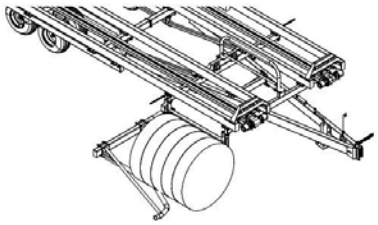
- To start bale carrier operation, engage the remote hydraulic valve in the extension position. Lock valve in detent. Valve to remain constantly on during operation.
- The control handle is fitted with one rocker switch and four momentary contact rocker switches. They function as follows:
  - Pusher Speed: Select high (rabbit) to operate pusher motors in series at high speed or low (turtle) to operate in parallel at low speed. Torque is increased at low speed and pushes bales with more force.
  - RH Pusher: Depress and hold RH pusher forward to move right forward. Depress and hold RH pusher back to move right pusher back.
  - LH Pusher: Depress and hold LH pusher forward to move left pusher forward. Depress and hold LH pusher back to move left pusher back.
  - RH Lift Arm: Depress and hold RH lift arm up to raise right lift arm. Depress and hold RH lift arm down to lower right lift arm.
  - LH Lift Arm: Depress and hold LH lift arm up to raise left lift arm. Depress and hold LH lift arm down to lower left lift arm.
- To operate raise / lower tilt function engage the remote hydraulic valve in the extension position to raise the tilt deck and engage the retract position to lower the deck.

Loading Bales

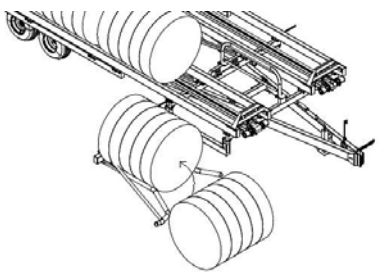
	WARNING	Make sure area is clear before lowering bale lift-arm. Failure to do so could result in injury or death.

- The right bale lift arm is used to load bales onto the right side of the carrier while the left bale lift arm is used to load bales onto the left side of the carrier.
- Align the tractor and bale carrier as indicated in the pictoral for pick up method used. Slowly approach the bale at 5 mph (8 km/h) while loading. When bale is properly captured, begin to lift bale.
- To balance the bale carrier, alternate bale picking sides.
- The bale carrier is designed to load bales with one of three options. Refer to the appropriate section for your option loading instructions.

  NOTE: Before loading bale the pusher must be at the front of the carrier deck.



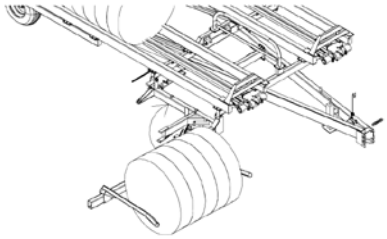
- The fixed pick up arm with bale deflector allows the bales to be picked up from either “end on” or “side on.”
  To pickup bales that are placed “end on,” drive so the inner arm of the loading fork is against the inner edge the bale. The bale will then be loaded onto the carrier in the same direction as it was picked up.



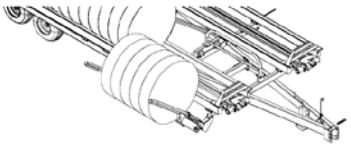
To pick up bales that placed "side on", the deflector rotates the bale 90° before it is lifted up onto the carrier. Forward travel is used to rotate the bale. Approach the bale so that the outer end of the bale rides up on the bale deflector as the loading arm moves under the bale.

The bale is loaded onto the carrier deck by depressing and holding LH or RH lift arm up until the bale rolls off the pickup arm and onto the carrier beams.

NOTE: The bale should be contacted about 12" (30 cm) from its outer end when using the bale deflector. Contacting the bale further to the inside may result in damage to the deflector, bale lift arm or bale.



- The rotating pick up arm (RPU) loads bales “side on”. The lift arm starts in the lowered position. Drive forward until the forks are positioned around the ends of the bale with the inside stationary fork as close as possible to the bale. Depress and hold lift arm up. The bale is then squeezed on end until the pressure matches the sequence valve setting that rotates and raises the bale.



When the bale is lifted above, the bale is released by depressing lift arm down. This releases the bale and returns the RPU to the ready state for the next bale. Refer to the assembly instructions for adjusting RPU’s settings.

Bale Pusher Operation

NOTE: Lower loading arm before operating the pusher.

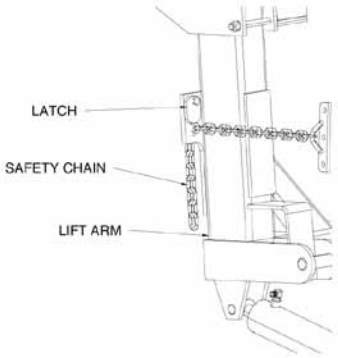
⚠	CAUTION	To avoid misbalanced loads the operator is only required to push back one bale length to prepare for the next bale.

- Depress and hold pusher back and move bales far enough to the rear to provide room to load the next bale.
- Return pusher all the way to the front by depressing and holding pusher forward.
- Hi speed / low torque mode is recommended for normal use.
- Low speed / high torque mode is for heavier payloads or situations where bales are wet or resist sliding.

Transporting Bale Carrier

WARNING	Do not tow over 20 mph (32 km/h) when loaded. Turn on flashing lights when transporting on public roadways. Obey local regulations regarding road transport. Raise bale lift arm and use the safety chain when transporting. Ensure the lift arm chain latch is used to prevent the safety chain from dislodging or loosening.

- Do not transport if end bale is overhanging beams. Beam should extend beyond last bale for a minimum of 2' (61 cm).
- Raise lift arm prior to transport. Always engage lift arm safety chains when transporting on public roadways or when not in field. Lock chain in position with latch provided.
- Monitor the condition and position of bales that are being transported
- Slow speed when transporting over bumps or rough terrain.

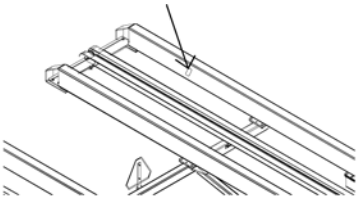


Unloading

NOTE: Left or right decks can be unloaded individually or together. However, the pusher moves faster and has more torque when operated individually. Do not run pushers all the way to the end, the resulting shock load may cause damage to chain and drive.

DANGER	Make sure area is clear before unloading. Failure to do so could result in serious injury or death.

- Extend tilt cylinder to raise carrier beam by engaging the tractor's extension hydraulics.
- Depress and hold LH and/or RH pusher back switch to push the bales off the carrier beam.
- Once the rear bale has been pushed off the carrier, slowly drive forward while pushing the bales back (unloading) to keep all bale ends in contact.



- When amber reflector on inside of the carrier beam becomes visible stop the pusher. The reflector is approximately 26" (66 cm) from the end of the beam.
- Slowly drive forward to unload the last bale. Retract the tilt cylinder to lower the beam and begin the next loading cycle.
- Return pusher to the front of the bale carrier to prepare for the next cycle.

Full Indicator

For serial numbers 09BM2500001 and later, the full indicator is a factoryinstalled feature.
The mechanism has dual-function as follows:

- When the bale carrier reaches its capacity, the rear indicator pivots backward pulling the cable so that the front indicator plate upright indicates not to load any more bales.
- At the end of the unloading process, front indicator comes down (after pushing off the last bale) warning the operator to release pusher back button, then move forward, lower beam and bring the pusher home.

Maintenance

CAUTION	Place all controls in neutral, stop engine, set parking brake and remove ignition key before inspecting, servicing, adjusting or repairing the bale carrier.

CAUTION	Ensure the bale carrier tires and hitch are securely blocked. Otherwise, verify the bale carrier is properly coupled to the drawbar on a tractor with a minimum mass of 12480 lb (5660 kg).

NOTE: Service intervals should be increased when operating in extreme or difficult conditions.

Fasteners

- Inspect all bolt torques after first use and 50 hours thereafter.
- Periodically inspect for broken or missing fasteners. Replace with fasteners of similar size and equivalent grade.

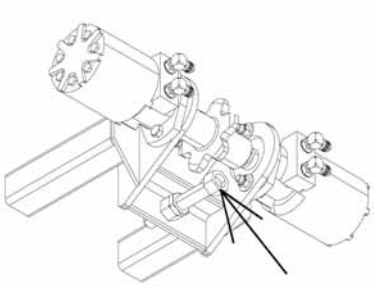
Hydraulic System

WARNING	Escaping fluid under pressure can have sufficient force to penetrate the skin, causing personal injury. Before operating, adjusting, or disconnecting lines, be sure to relieve all presure.

WARNING	Never operate the bale carrier with frayed or damaged hoses or leaking fittings. A burst would cause the lift arm to drop suddenly and result in serious injury or death and cause damage to the loader or tractor.

- Before applying pressure to the system, be sure all connections are tight and the lines, pipes, and hoses are not damaged.
- Wear proper hand and eye protection when searching for leaks. Use a piece of wood or cardboard instead of hand to check for leaks.
- Maintain all components in good working order.
- If injured by escaping fluid, see a doctor at once. Serious infection or toxic reaction can develop if proper medical treatment is not administered immediately.
- Regularly check the fluid level in the tractor reservoir and follow the maintenance procedures in the tractor Operator's Manual.
- Regularly inspect cylinders, hoses and fittings for leaks, crimps and abrasions or other signs of wear and tear or impending failure.
- Ensure hoses do not bind or stretch during operation. Always keep hoses tied or supported to prevent rubbing against sharp areas or being pinched. We suggest using tie wraps to support hoses.
- Replacement hoses must have a working pressure of 3000 psi (20685 kpa) or higher.

Chain



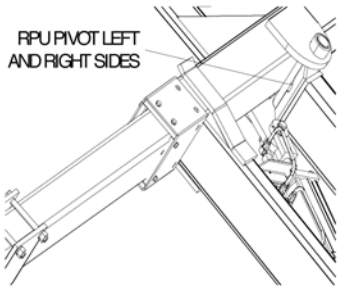
- Check for proper chain tension and sprocket alignment after first use and every 50 hours thereafter.
- Turn the front sprocket-adjusting bolt clockwise until there is approximately 6" (15 cm) of upward slack in the chain at the center of the track. Clockwise increases tension and counter clockwise reduces tension.
- Proper chain tension may be verified by raising the chain by hand.
- See lubrication section for further maintenance instructions.

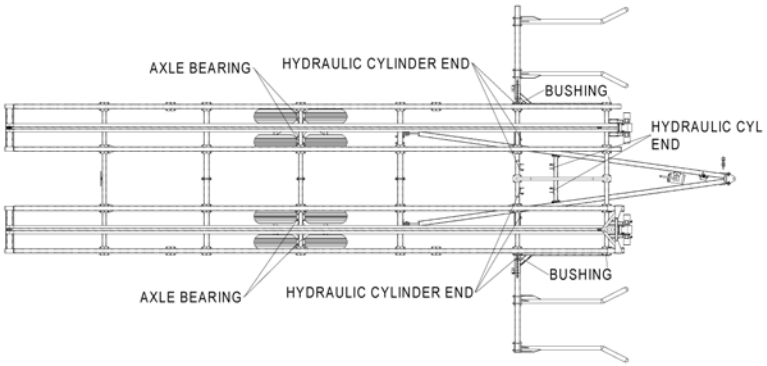
Wheels/Tires

- Inspect hub bolts after first use and 50 hrs thereafter. Hub bolts must be torqued to 90 ft-lb (122 Nm).
- Thread-locking compound such as Loctite 242 is recommended for the hub bolts.
- Ensure that dust caps are firmly in place.
- Check tires pressure regularly: 90 psi (620 kpa).
- The wheel bearings should be inspected and re-packed annually with SAE multi purpose type grease. Grease every 500hrs if hub is supplied with grease fitting.
- Air valve should face away from the hub.

Pivot Point Lubrication

- Lubricate bale carrier bushings and pivots every eight hours of average operation with high grade grease at all fitting locations. Select grease based on the expected outside temperature range. Lithium, Molybdenum and synthetic greases are preferred. Use the tractor hour meter as a guide. Increase lubrication intervals for extreme use or adverse conditions. Each pivot should be lubricated until grease is visible at pin. The fixed arm carrier has 16 lubrication points and the RPU carrier has 18 points. Refer to the illustrations below for locations.





Roller Chain Lubrication

- Manually brush SAE lubricant while chain is stationary.
- Lubricate the chain every time bolt torque maintenance is performed.

Carrier Beam Lubrication

- Apply a graphite coating such as slip plate to the carrier beams as required to ensure a smooth push back operation.
- Follow application instructions as provided by the coating manufacturer.
- At the end of the season apply a coating to prevent rust on the carrier beams.

Storage

Start of seaon

- Clean and inspect the bale carrier when taking it out of storage. Ensuring that the bale carrier is in optimum condition at the start of the season reduces the chances of a costly breakdown during the season.
- Clean and inspect chains and chain rollers for excessive wear or stiffness. Check for proper adjustment and alignment.
- Lubricate entire bale carrier. Ensure that all grease fittings are in place and taking grease properly.
- Operate the bale carrier for a short time. Check that all moving parts are operating freely. Check for hydraulic leaks.
- Inspect and repack wheel bearings with SAE multi purpose type grease.
- Replace and secure safety shields. Review safety regulations.
- Check all bolts for tightness. Replace lost or worn bolts.
- Check that tires are properly inflated.
- Review the Operator's Manual.

During the season

- At the end of each day of operation park the bale carrier in a clean, dry, sheltered area.
- Lubricate areas requiring daily lubrication.
- Remove any build up of hay or straw.

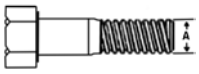
End of season

- Replace worn or damaged parts and replace if necessary. To avoid costly delays contact your dealer for replacement parts before the start of the next season.
- Store the bale carrier in a clean, dry, sheltered area.
- Replace all missing or broken bolts with bolts of similar size and grade.
- Clean the baler carrier thoroughly. Dirt draws moisture that rusts metal.
- Repaint chipped or worn areas. Paint is available from your dealer.
- Clean chains and brush with SAE light machine oil (or equivalent) to prevent rust.
- Repaint the top of the carrier beams with graphite paint such as slip plate to prevent rust.

Bolt Torque

Checking Bolt Torque

The tables shown below give correct torque values for various bolts and hex bolts. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

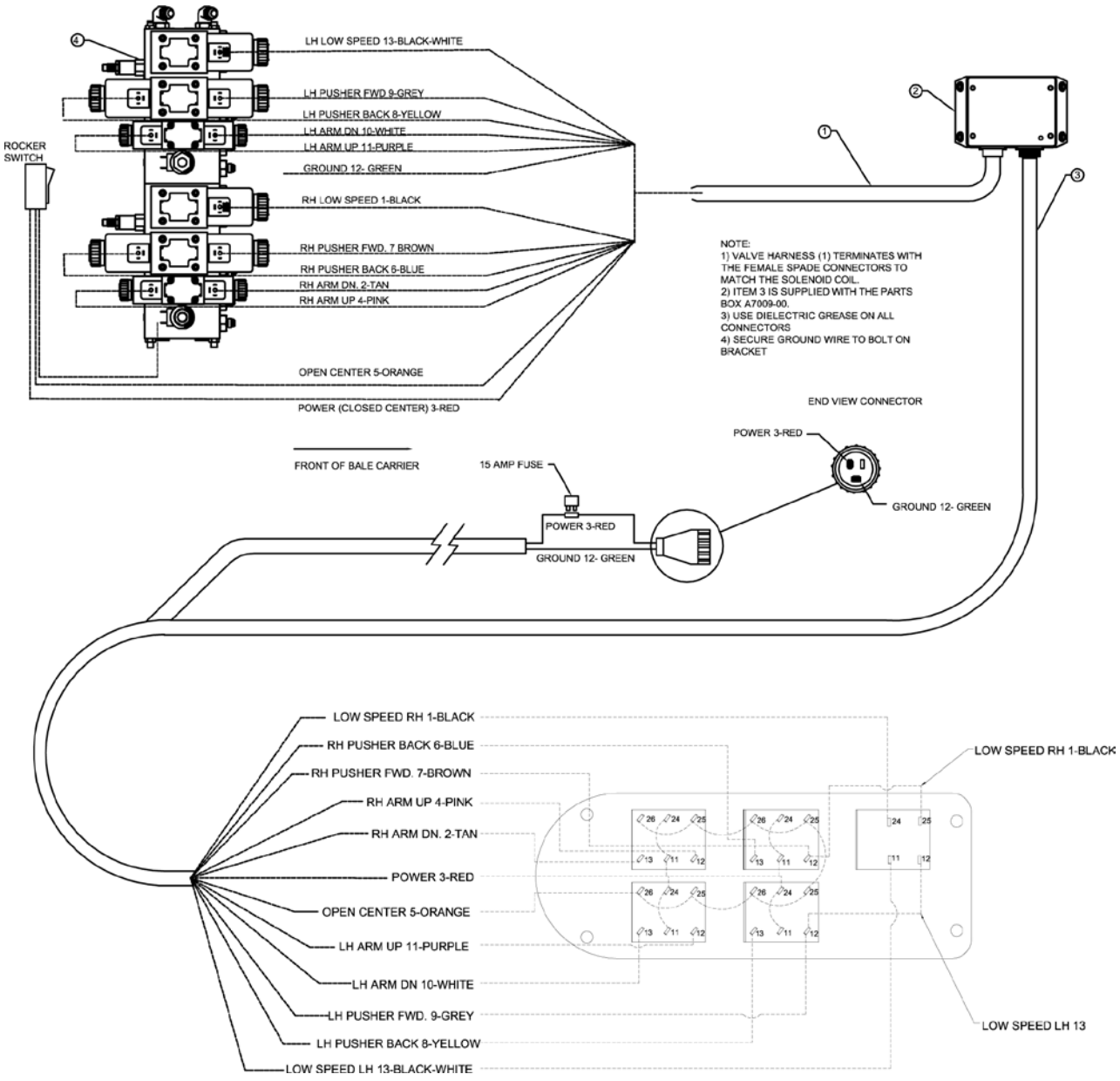
Bolt Torque*					
					
Bolt Diameter	Grade 2 Bolts		Grade 5 Bolts	Grade 8 Bolts	
(inches)	SAE 2		SAE 5	SAE 8	
"A"	(lb-ft)	(N.m)	(lb-ft)	(lb-ft)	(N.m)
0.25 (1/4)	6	8	9	12	17
0.313 (5/16)	10	13	19	27	36
0.375 (3/8)	20	27	33	45	63
0.438 (7/16)	30	42	53	75	100
0.5 (1/2)	45	61	80	115	155
0.563 (9/16)	70	95	115	165	220
0.625 (5/8)	95	128	160	220	305
.75 (3/4)	165	225	290	400	540
0.875 (7/8)	170	230	420	650	880
1	225	345	630	970	1320
		Location		(lb-ft)	(N.m)
		Wheel Hub Bolts		90	122
		All Carriage Bolts		33	45

Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or hex bolts unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

* Torque value for bolts and hex bolts are identified by their head markings.

Hydraulic Fitting Torque					
Dash Size	Thread Size	Jam Nut or Straight ORB Fitting Torque		SAE 37° (JIC) Swivel Nut Torque	
		(lb-ft)	(N.m)	(lb-ft)	(N.m)
-04	7/16-20	14-16	20-22	10-11	13-15
-05	1/2-20	18-20	24-27	13-15	18-20
-06	9/16-18	24-26	33-35	17-19	23-26
-08	3/4-16	50-60	68-78	34-38	47-52
-10	7/8-14	72-80	98-110	50-56	69-76
-12	1-1/16-12	125-135	170-183	70-78	96-106
-14	1-3/16-12	160-180	215-245	80-90	110-122
-16	1-5/16-12	200-220	270-300	94-104	127-141
-20	1-5/8-12	210-280	285-380	124-138	169-188
-24	1-7/8-12	270-360	370-490	156-173	212-235

Carrier Hydraulic Assembly Drawing - Standard Configuration - A7000-04

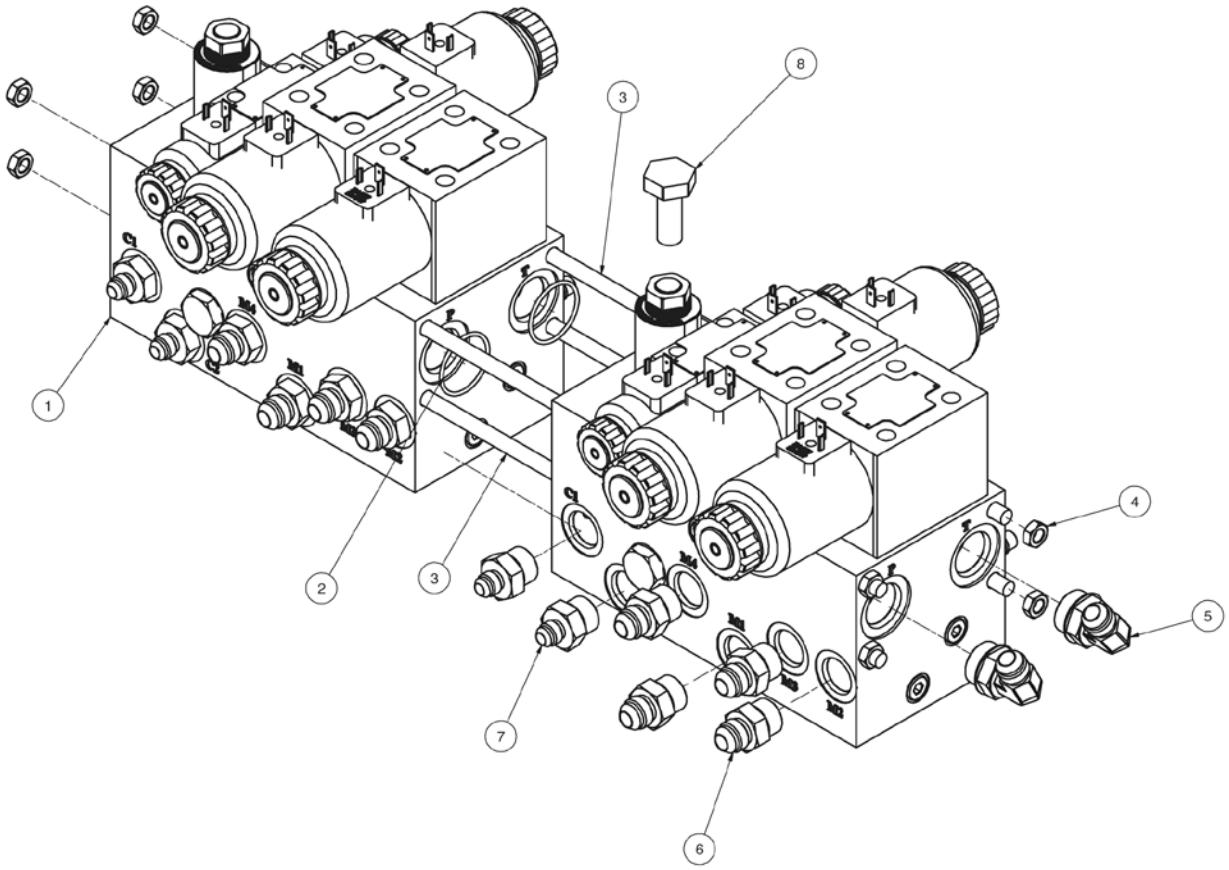


When Ordering Parts

Always give your dealer the Model, Color and Serial Number of your machine to assist him in ordering and obtaining the correct parts. Use the exploded view and tabular listing of the area of interest to exactly identify the required part.

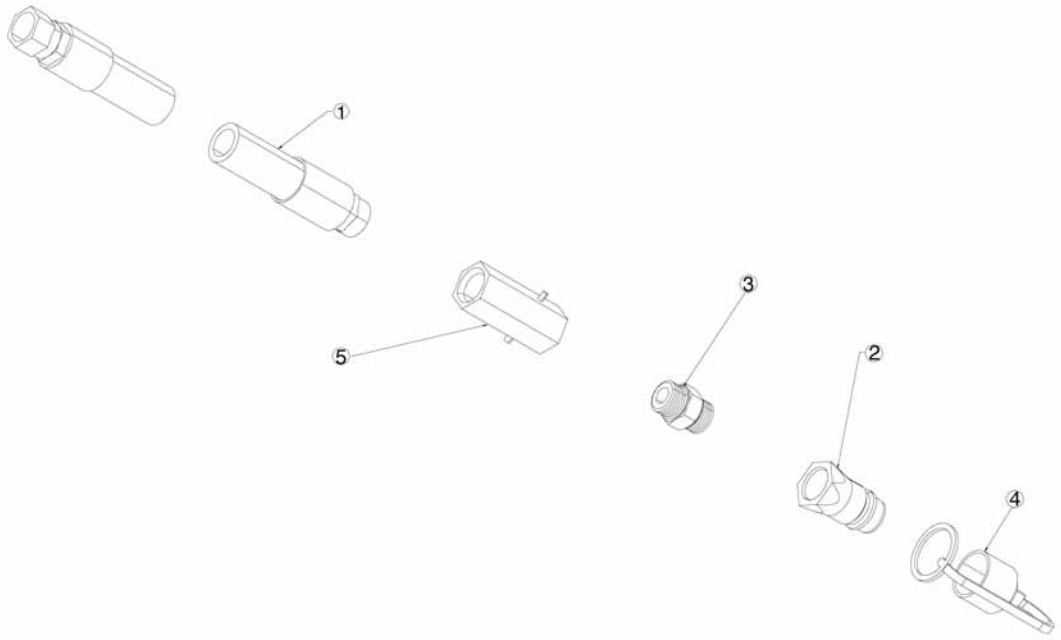
Item	Part Number	Description	Qty
1	115169	Hose 3/8 x 132 9/16 SWFJIC x SWFJIC	4
2	29108	Hose 1/2 x 16 3/4 SWFJIC x SWFJIC	4
3	29110	Hose 1/2 x 32 3/4 SWFJIC x SWFJIC	4
4	29176	Hose 1/2 x 54 3/4 SWFJIC x SWFJIC	2
5	A7005-00	Valve Bank Assembly	1
6	A7010-00	Hydraulic Assembly 1/2 x 130 Return Line	1
7	A7011-00	Hydraulic Assembly 1/2 x 130 Pressure Line	1
8	A7012-00	Tilt Assembly 3.0 x 16.0 Cylinder	1
9	A7013-00	Tilt Assembly Lift Arm Cylinder	3
10	A7014-00	Tilt Assembly Cylinder 3/8 Hydraulic Line	2
11	A7007-00	Pusher Motor Assembly	2
12	29105	Hose 1/2 x 28 3/4 SWFJIC	2
13	886704	Adaptor Str. 3/4 MJIC	1

Valve Bank Assembly Drawing - 83000056



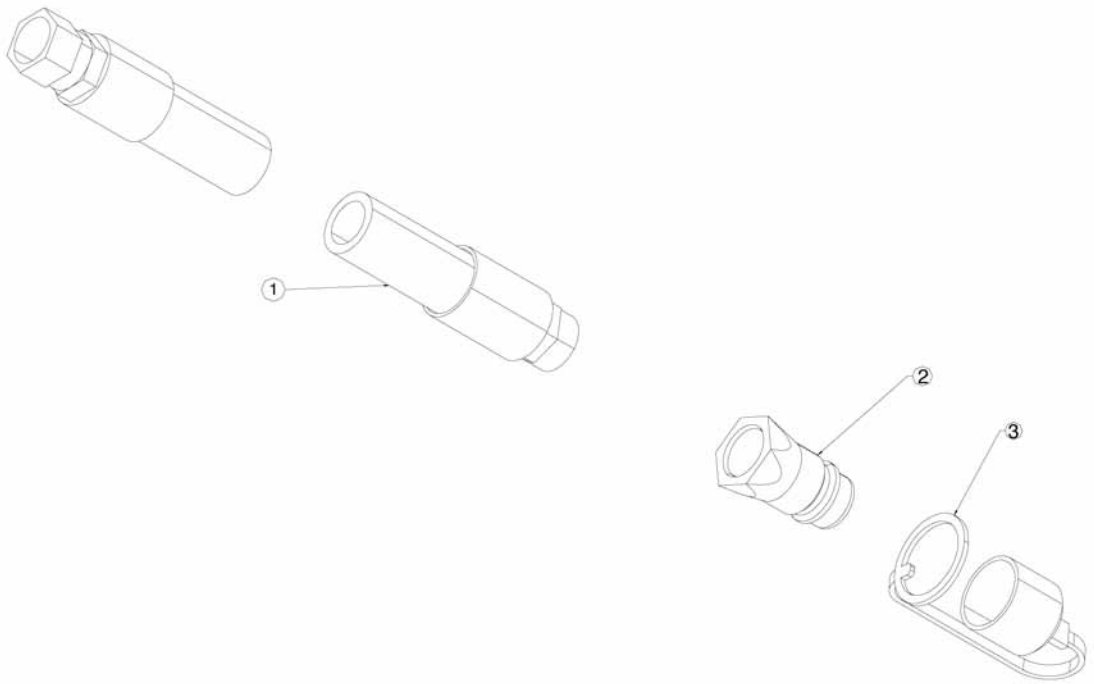
Item	Part Number	Description	Qty
1	815296	Hydraulic Manifold	2
2	83000071	O-Ring (-127) 1-7/16 ID x 1-5/8 OD	2
3	83000072	3/8" High Tensile Rod	4
4	20096	Lock Nut, 3/8"	8
5	811960	Elbow #12 MORB x #8 MJIC	2
6	886897	Adaptor Str #10 MORB x #8 MJIC	8
7	83000073	Adaptor Str #10 MORB x #6 MJIC	4
8	815298	Plug CP10-B-2-B	1

Hydraulic Return Line Assembly Drawing - A7010-00



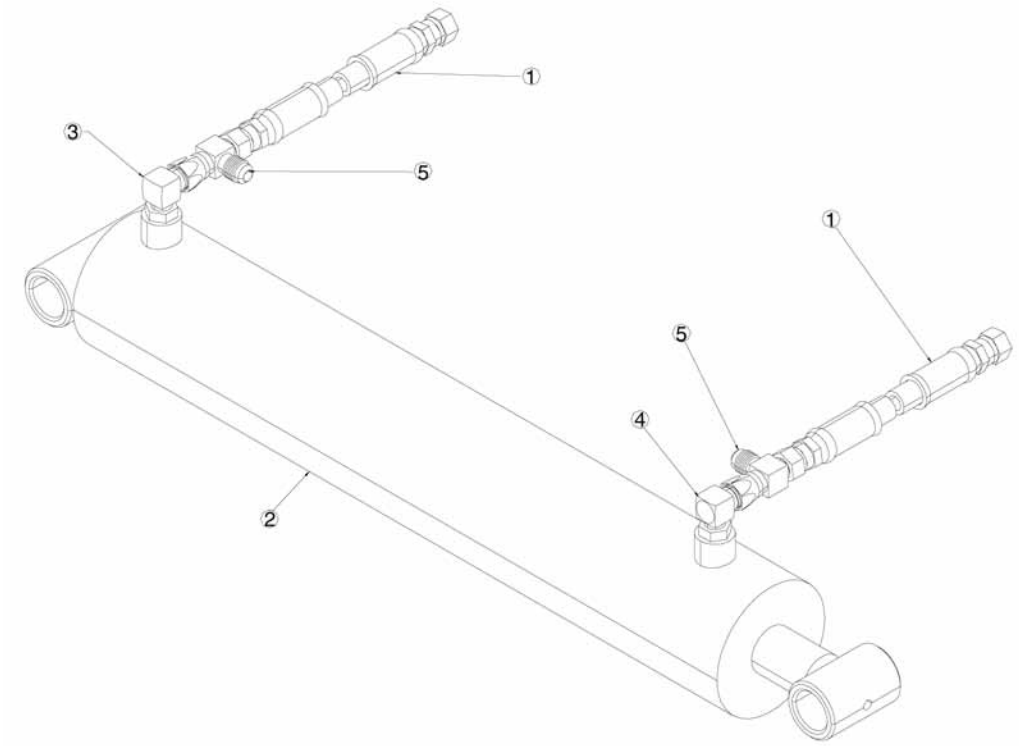
Item	Part Number	Description	Qty
1	29170	Hose 1/2 x 130 3/4 MORB x 3/4	1
2	812841	Male Tip 0.5 Body 0.75 ORB	1
3	813119	Adaptor Str 3/4 MORB x 3/4 MORB	1
4	813305	Dust Cap 0.5 Black	1
5	813666	Valve Check 3/4 ORB Line	1

Hydraulic Pressure Line Assembly Drawing - A7011-00



Item	Part Number	Description	Qty
1	29170	Hose 1/2 x 130 3/4 MORB x 3/4	1
2	812841	MaleTip 0.5 Body 0.75 ORB	1
3	813303	Dust Cap 0.5 Red	1

Carrier Tilt Assembly Drawing - A7012-00

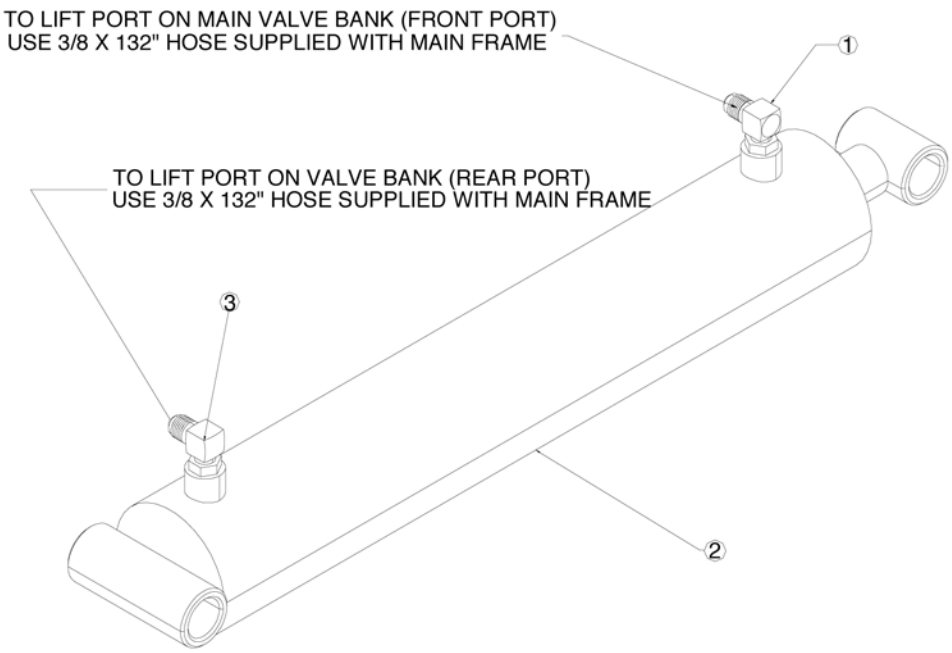


Item	Part Number	Description	Qty
1	29172	Hose 3/8 x 18 9/16 SWFJIC x SWFJIC	2
2	22510	Cylinder 3.0 Dia x 16 Inland	1
3	813640	Elbow 90 9/16 MORB Adjustable 3/8	1
4	E2872-00	Elbow Restrictor Male 90°	1
5	887572	Tee 9/16 MJIC x 9/16 SWFJIC	2

22510 Cylinder 3.0 Diameter Service Parts

	813407	Locknut 1.00 NF	1
	X2504	Seal Kit for Item 22510	1
	24957	Tube Weldment 3.0 Dia	1
	115519	Shaft Weldment 1.50 X 22.63	1
	24958	Head Plate 3.0 X 1.50	1

Fixed Pick Up Assembly Drawing - A7013-00

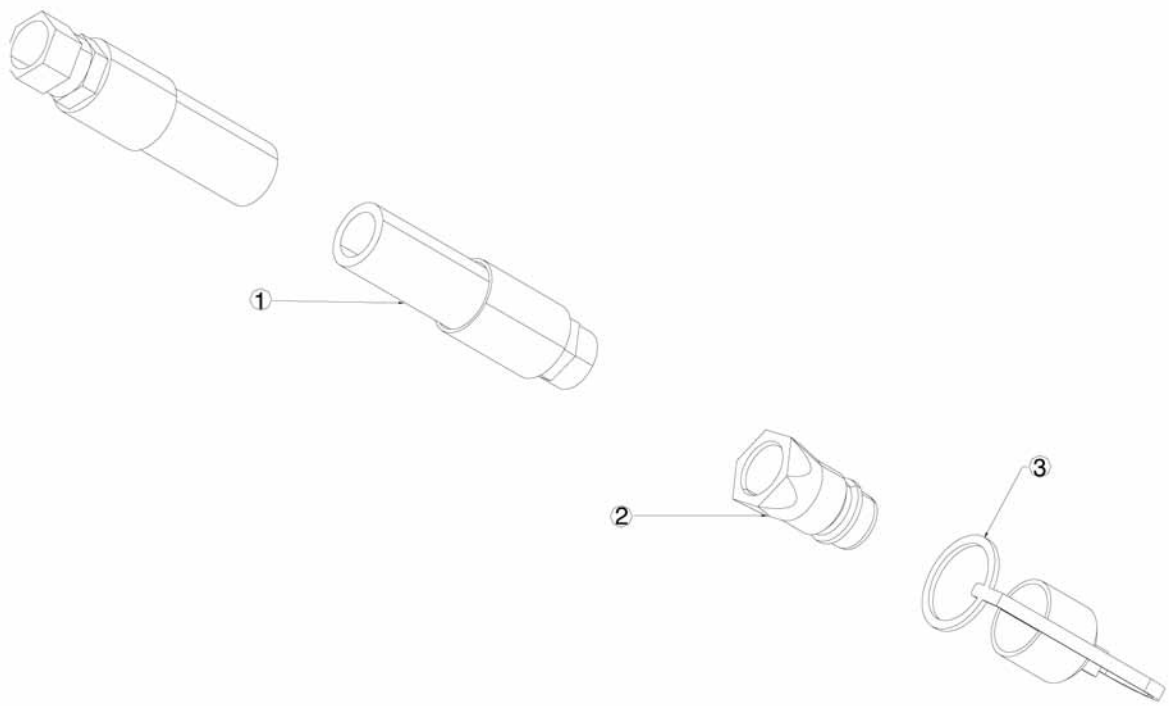


Item	Part Number	Description	Qty
1	813640	Elbow 90 9/16 MORB Adjustable x 3/8	1
2	22510	Cylinder 3.0 Dia x 16 Inland	1
3	E2872-00	Restrictor Elbow Male 90°	1

22510 Cylinder 3.0 Diameter Service Parts

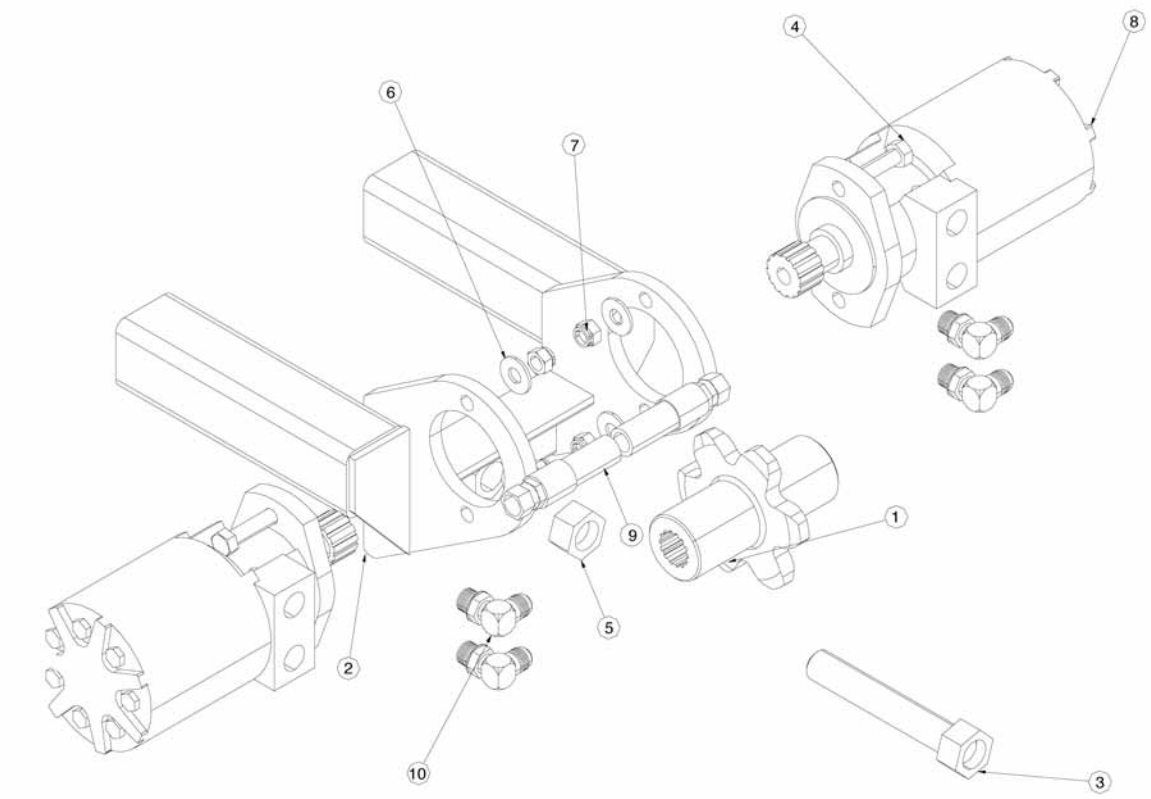
	813407	Locknut 1.00 NF	1
	X2504	Seal Kit for Item 22510	1
	24957	Tube Weldment 3.0 Dia	1
	115519	Shaft Weldment 1.50 x 22.63	1
	24958	Head Plate 3.0 x 1.50	1

Carrier Tilt Cylinders Hydraulic 3/8 Line Drawing - A7014-00



Item	Part Number	Description	Qty
1	29173	Hose 3/8 x 216 9/16 SWFJIC x 3/4 RB	1
2	812841	Male Tip 0.5 Body 0.75 ORB	1
3	813303	Dust Cap 0.5 Red	1

Pusher Motor Assembly Drawing - A7013-00

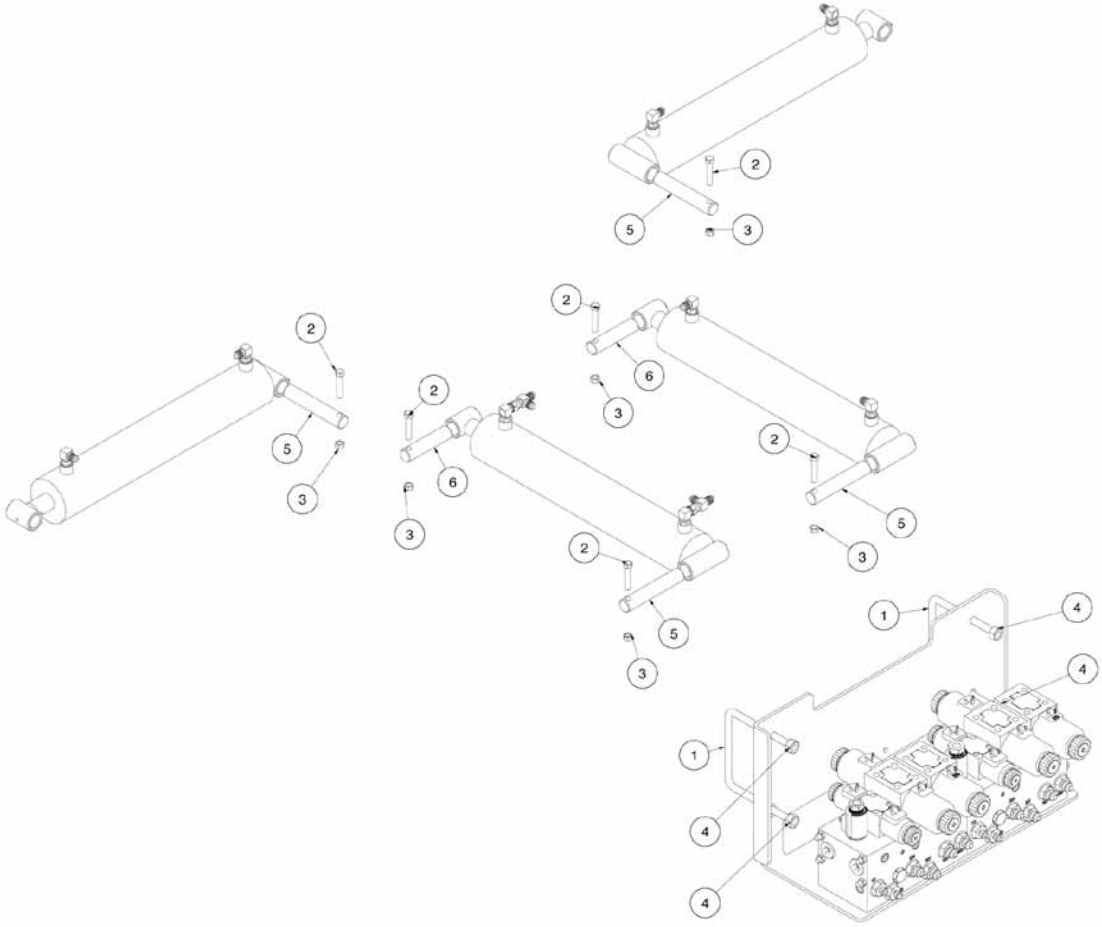


Item	Part Number	Description	Qty
1	C7031-00	Sprocket Drive Weldment	1
2	C7030-00	Motor 22.2 CU MT Weldment	1
3	C2768-00	Sprocket Adjusting Bolt Front 1 NC	1
4	967275	Bolt Hex 0.500 NC x 2.00 Gr8 Pl	4
5	84051	Nut Hex Jam 1.00 NC Gr2	1
6	84048	Washer 0.500 Flat SAE BS Pl	4
7	813663	Nut Lock (Steel) 0.500 NC Grc Pl	4
8	B2799-00	Motor 22.2 CU Paint Yellow	2
9	812270	Hose 1/2 x 48 3/4 SWFJIC x 3/4 SWFJIC	1
10	811416	Elbow 90 7/8 MORB x 3/4 MJIC	4

B2799-00 Motor Service Parts

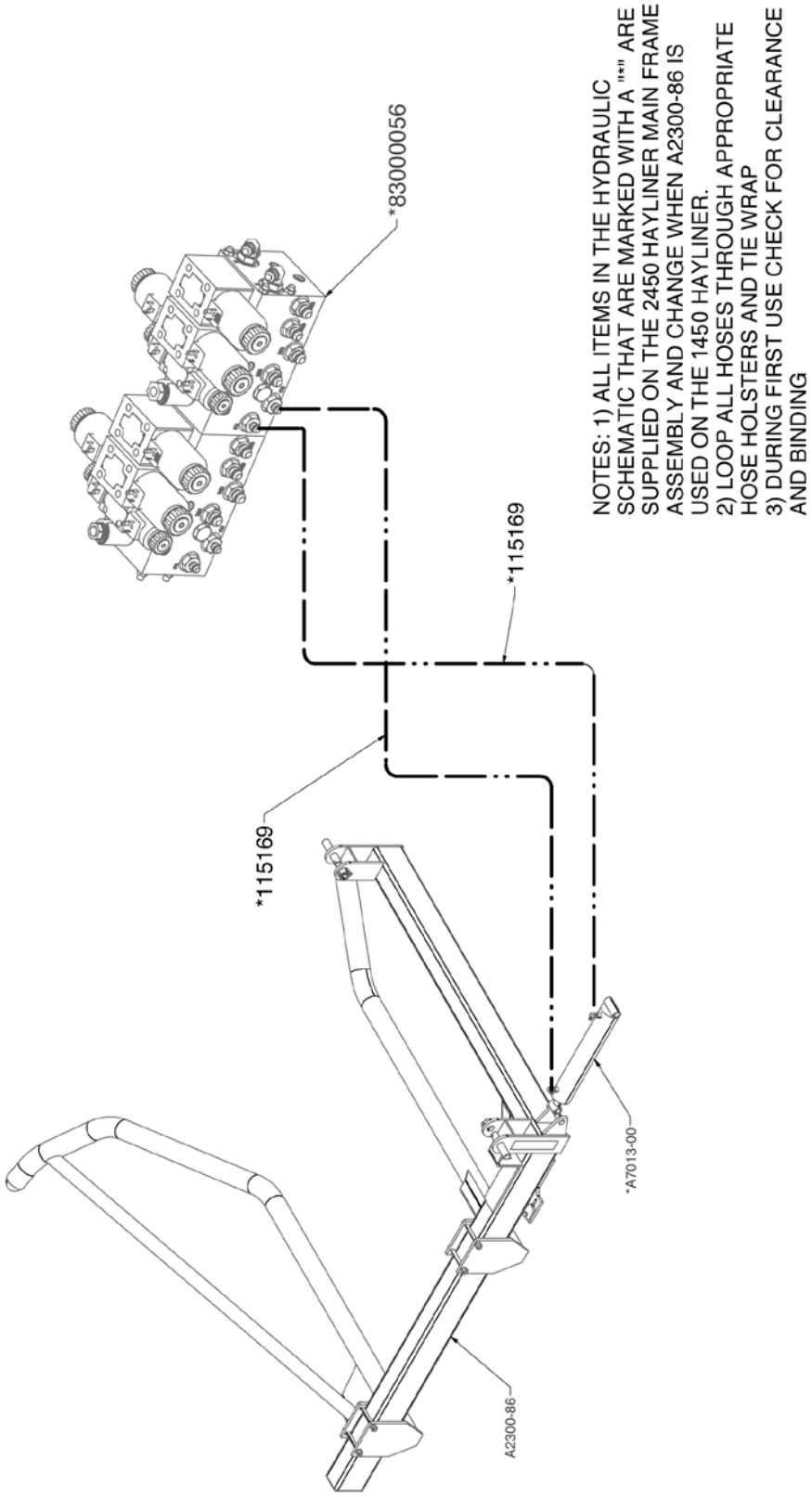
	X2725	Seal Kit for B2799-00	1

Carrier Hydraulic Assembly Hardware Drawing - A7000-04

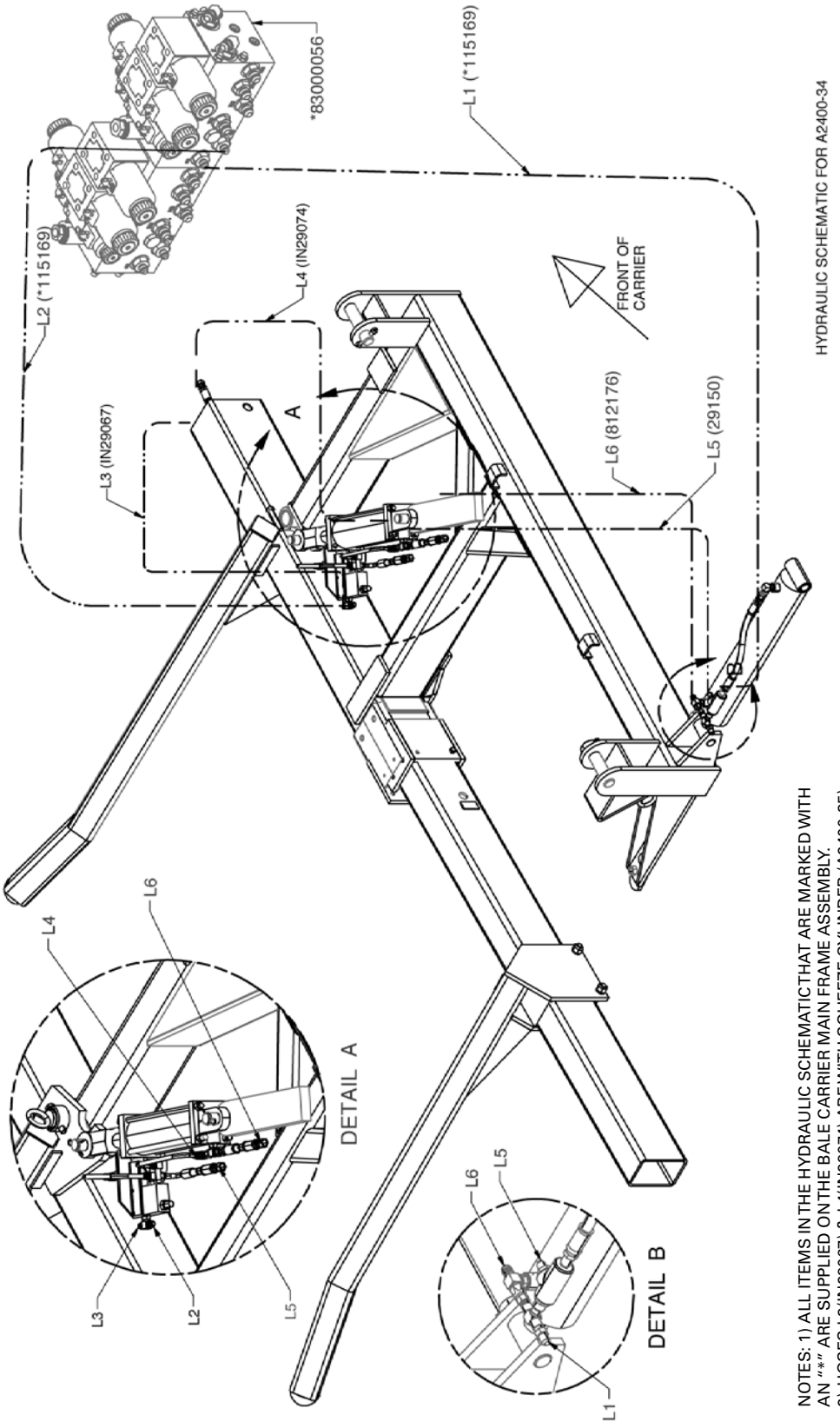


Item	Part Number	Description	Qty
1	E7049-00	Valve Mount U-Bolt 2500	2
2	811795	Bolt Hex 0.375 NC x 2.00 Gr5 Pl	6
3	812363	Nut Lock (Steel) 0.375 Grb Pl	6
4	812364	Nut Lock (Steel) 0.500 NC Grb Pl	4
5	E1932-00	Cylinder Pin 1.0 x 5 9/16	4
6	E2345-00	Pin Cylinder 1.0 Dia x 4.250	2

Fixed Pick Up Arm Hydraulic Assembly Drawing - A2300-86

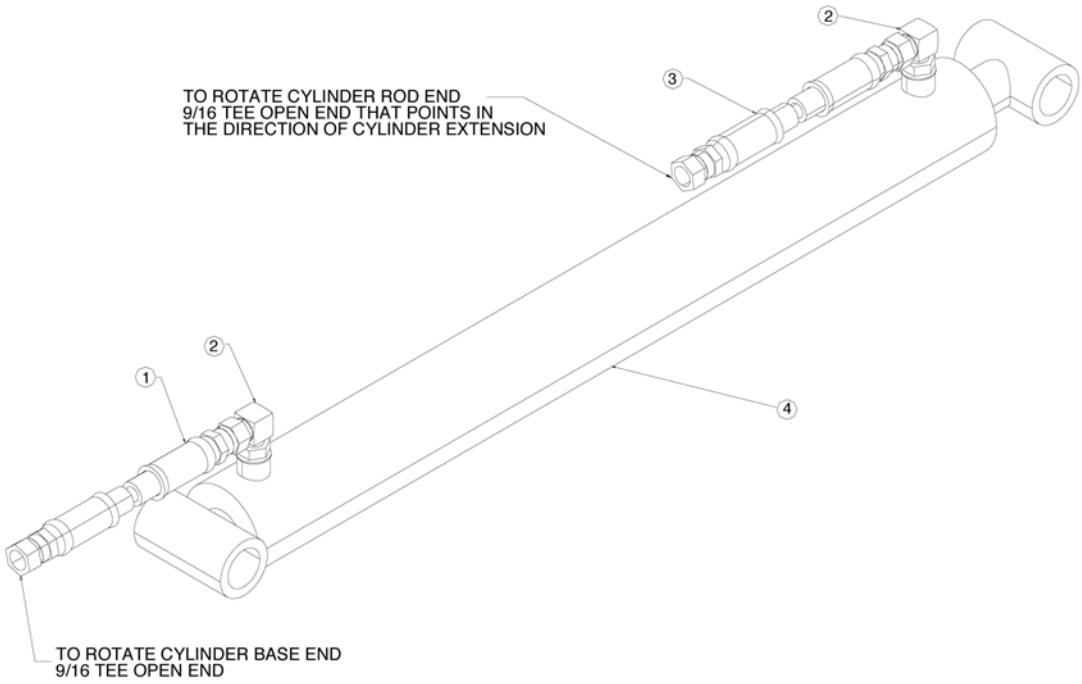


Hydraulic RPU Assembly Drawing - A2400-34 - Optional



NOTES: 1) ALL ITEMS IN THE HYDRAULIC SCHEMATIC THAT ARE MARKED WITH AN "*" ARE SUPPLIED ON THE BALE CARRIER MAIN FRAME ASSEMBLY.
2) HOSES L3(IN29067) & L4(IN29074) ARE WITH SQUEEZE CYLINDER (A2400-35). L5(29150) & L6(812176) ARE WITH ROTATE CYLINDER (LOOSE TO BE CONNECTED WITH PILOT CHECK VALVE)
3) THE LABELLED LINES IN THE SCHEMATIC CORRESPOND WITH THE PORTS IN DETAIL VIEWS A & B.
4) LOOP ALL HOSES THROUGH APPROPRIATE HOSE HOLSTERS AND TIE WRAP.
5) DURING FIRST USE CHECK FOR CLEARANCE AND BINDING.

RPU Squeeze Cylinder Drawing - A2400-35

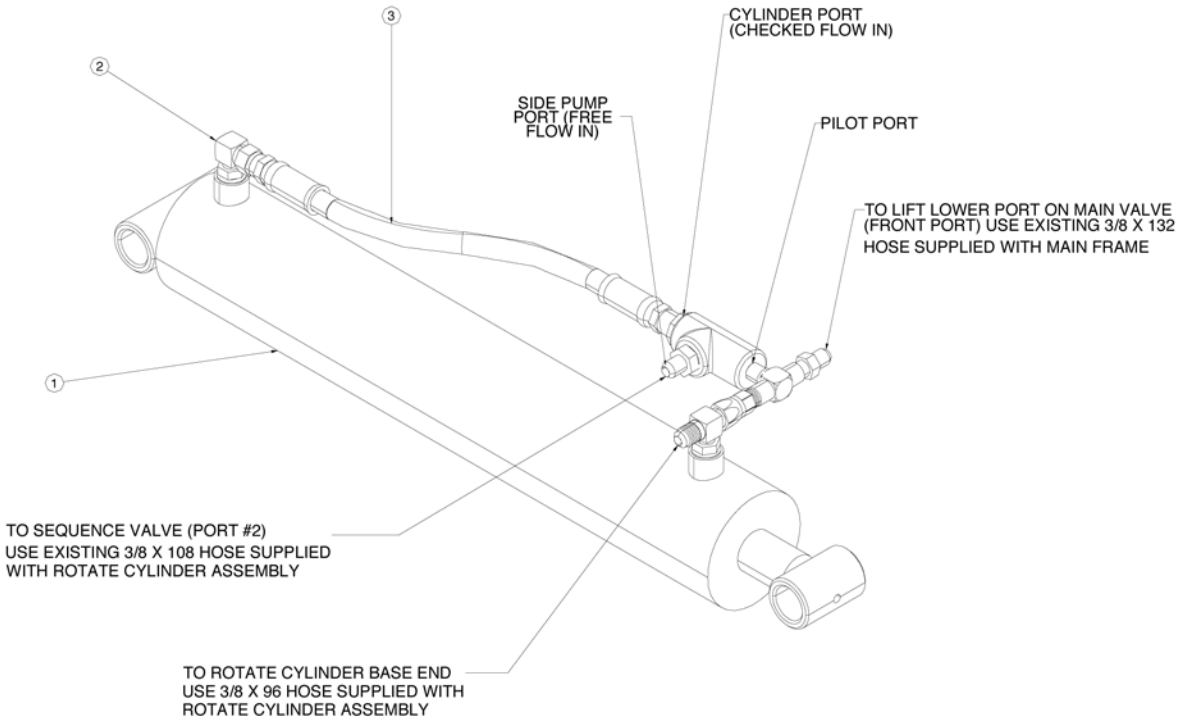


Item	Part Number	Description	Qty
1	IN29074	Hose 3/8 x 60 9/16 SWFJIC	1
2	813640	Elbow 90° 9/16 Morb Adjustable x 3/8	2
3	IN29067	Hose 3/8 x 68 9/16 SWFJIC	1
4	24367	Cylinder 2.0 X 18.0 Inland	1

24367 Cylinder 2.0 Diameter Service Parts

	811843	Not Grease Nipple 90 Degrees	1
	X1348	Seal Kit For 24367 2.0 Dia Cylinder	1
	83224	Backup Washer 1.75 ID x 2.00 OD	1
	812655	0.875 UNF Locknut	1
	144521	2.00 Dia Piston Half (Narrow)	1
	114520	2.00 Dia Piston Half (Wide)	1
	24366	2.00 Dia Tube Weldment	1
	115042	Shaft Weldment 1.25 Dia x 24.125 Lg	1
	24516	2.00 Dia Head Plate	1

RPU Lift Cylinder Drawing- A2400-37 - Assembled to Existing 22510 Cylinder

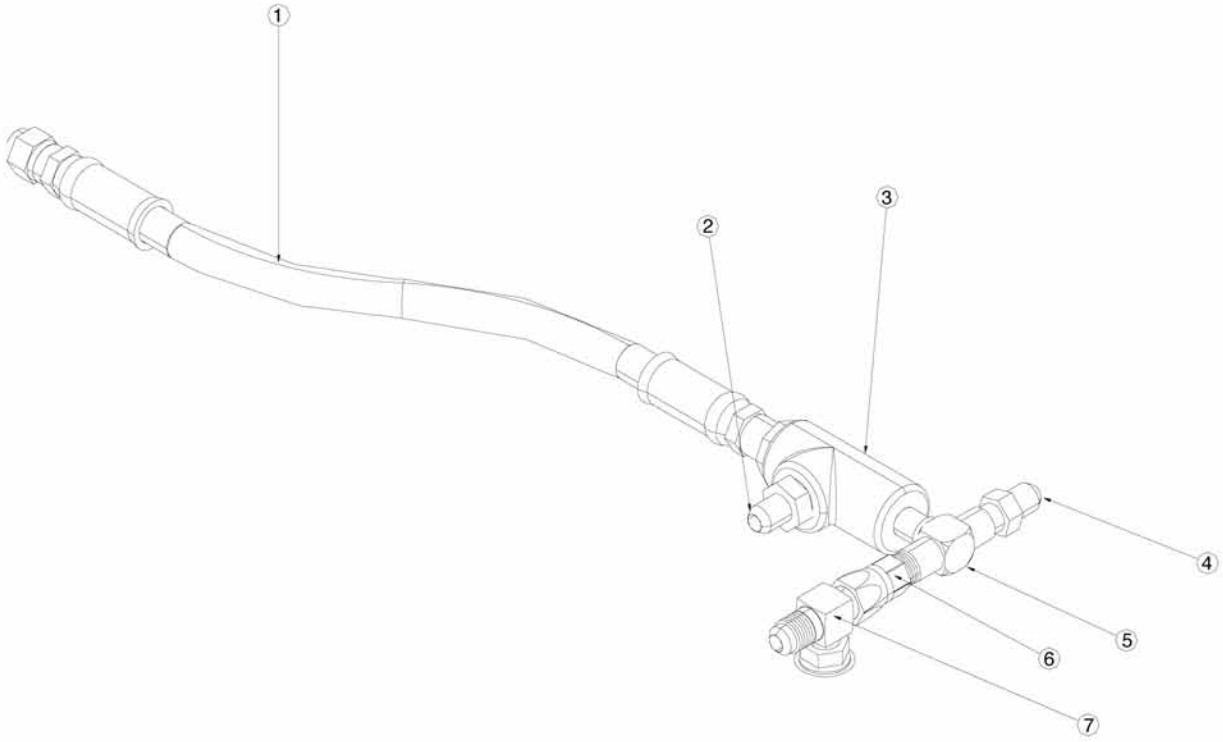


Item	Part Number	Description	Qty
1	22510	Cylinder 3.0 Dia x 16 Inland	1
2	E2872-00	Restrictor Elbow Male 90°	1
3	A2400-37	Pilot Check Valve Assembly	1

22510 Cylinder 3.0 Diameter Service Parts

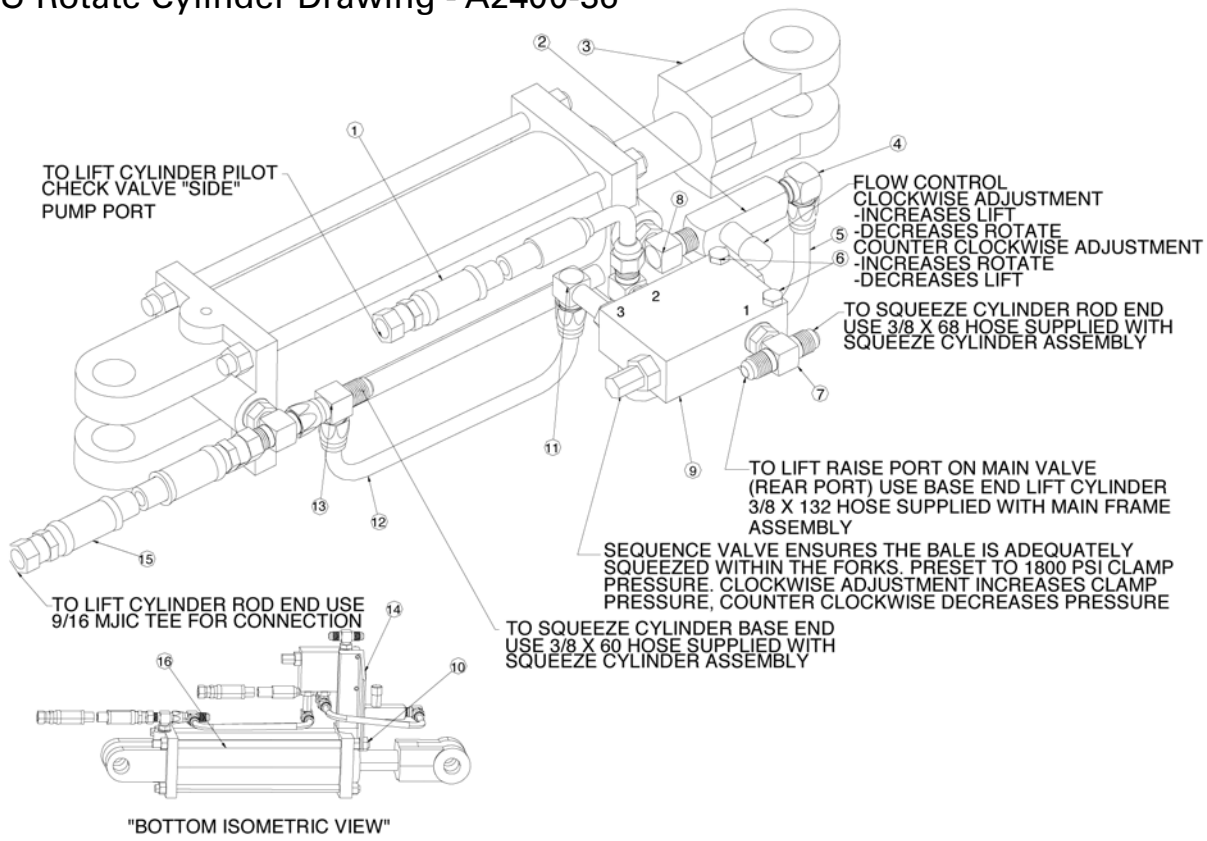
	813407	Locknut 1.00 NF	1
	X2504	Seal Kit for Item 22510	1
	24957	Tube Weldment 3.0 Dia	1
	115519	Shaft Weldment 1.50 x 22.63	1
	24598	Head Plate 3.0 x 1.50	1

Pilot Check Valve Assembly Drawing - A2400-37



Item	Part Number	Description	Qty
1	IN29098	Hose 3/8 x 14 3/8 FNPT x 9/16 SWFJIC	1
2	29043	Adaptor Str 9/16 MJIC x 3/8 MNPT	1
3	22203	Pilot Check Valve PC-37	1
4	29020	Connector 9/16 MJIC x 1/4 MNPT	1
5	29023	Tee 1/4 FNPT Run x 1/4 MNPT	1
6	29039	Adaptor Str 1/4 MNPT x 9/16 FJIC	1
7	29015	Tee 9/16 MJIC Run x 9/16 MORB	1

RPU Rotate Cylinder Drawing - A2400-36

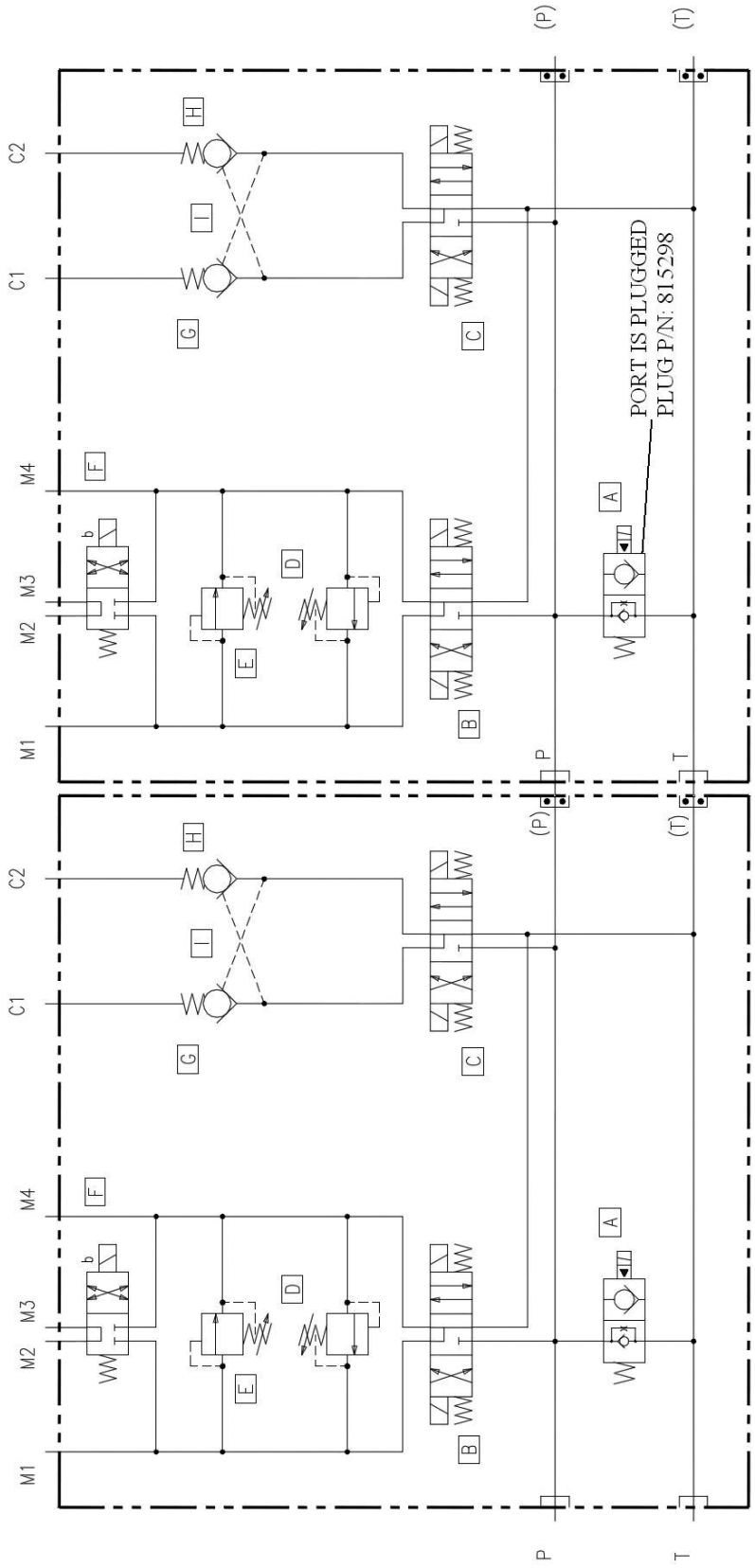


Item	Part Number	Description	Qty
1	29150	Hose 3/8 x 108 9/16 SWFJIC x 3	1
2	29149	Restrictor One Way Adjustable Parker	1
3	22060	3 x 8 Tie Rod Cylinder	1
4	29016	Elbow 90 1/4 MNPT x 9/16 MJIC	1
5	20877	Pressure Line / Sequence Tube	1
6	811631	Bolt Hex Jam 0.500 NC Gr2 Pl	2
7	29015	Tee 9/16 MJIC Run x 9/16 MJIC	3
8	29022	Elbow 90 1/4 MNPT x 9/16 MORB	1
9	22075	Sun Sequence Valve Set 1800 Psi	1
10	984077	Nut Hex Jam 0.500 NC Gr2 Pl	1
11	29047	Elbow 90 9/16 MORB x 3/8 MJIC Lg	1
12	813691	Sequence Valve Vent Tube	1
13	887572	Tee 9/16 MJIC x 9/16 SWFJIC	1
14	E2430-00	Sequence Valve Holder	1
15	812176	Hose 3/8 x 96 9/16 SWFJIC x 3	1
16	E2478-00	Hydraulic Cylinder Tie Rod	1

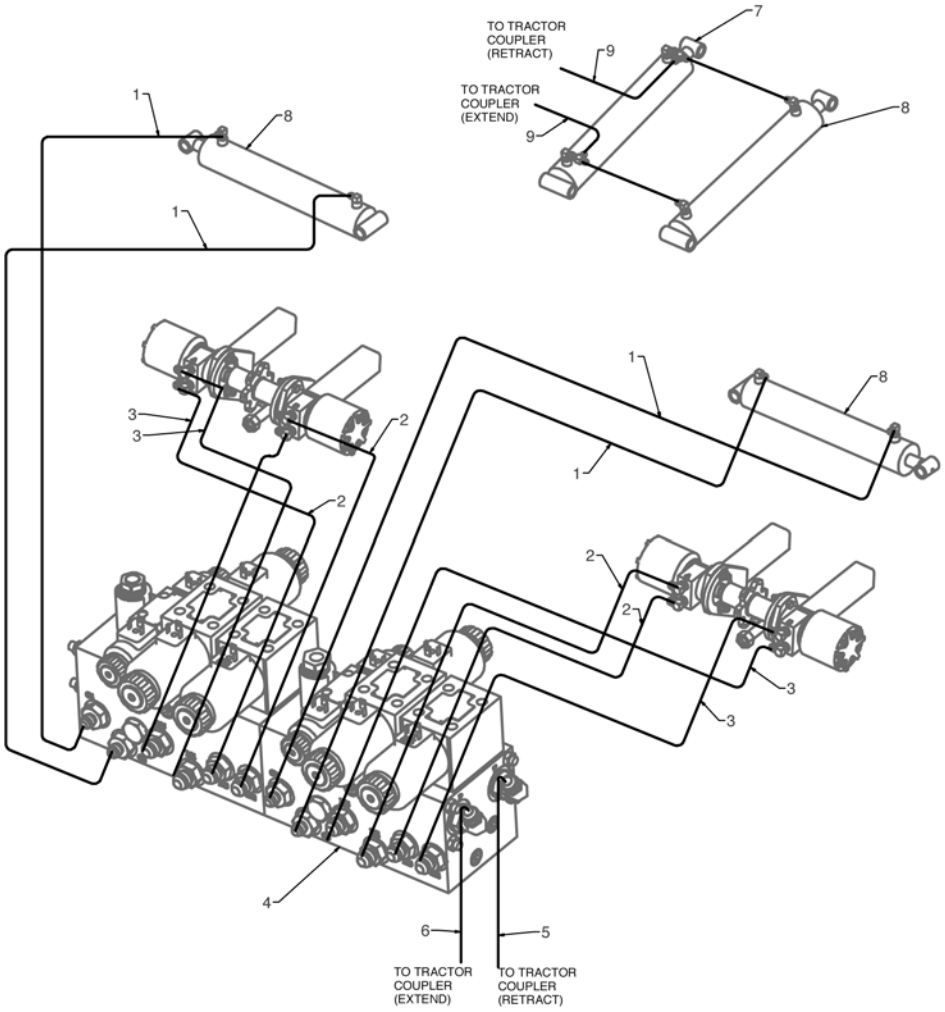
22060 Cylinder 3.0 Diameter Service Parts

	813407	Locknut 1.00 NF	1

Manifold Drawing - 83000056

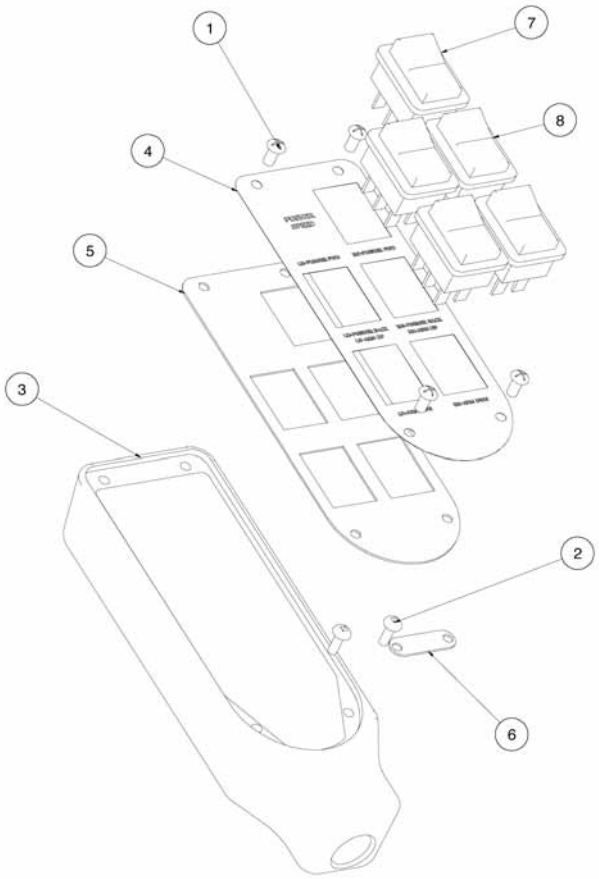


Electrical Drawing



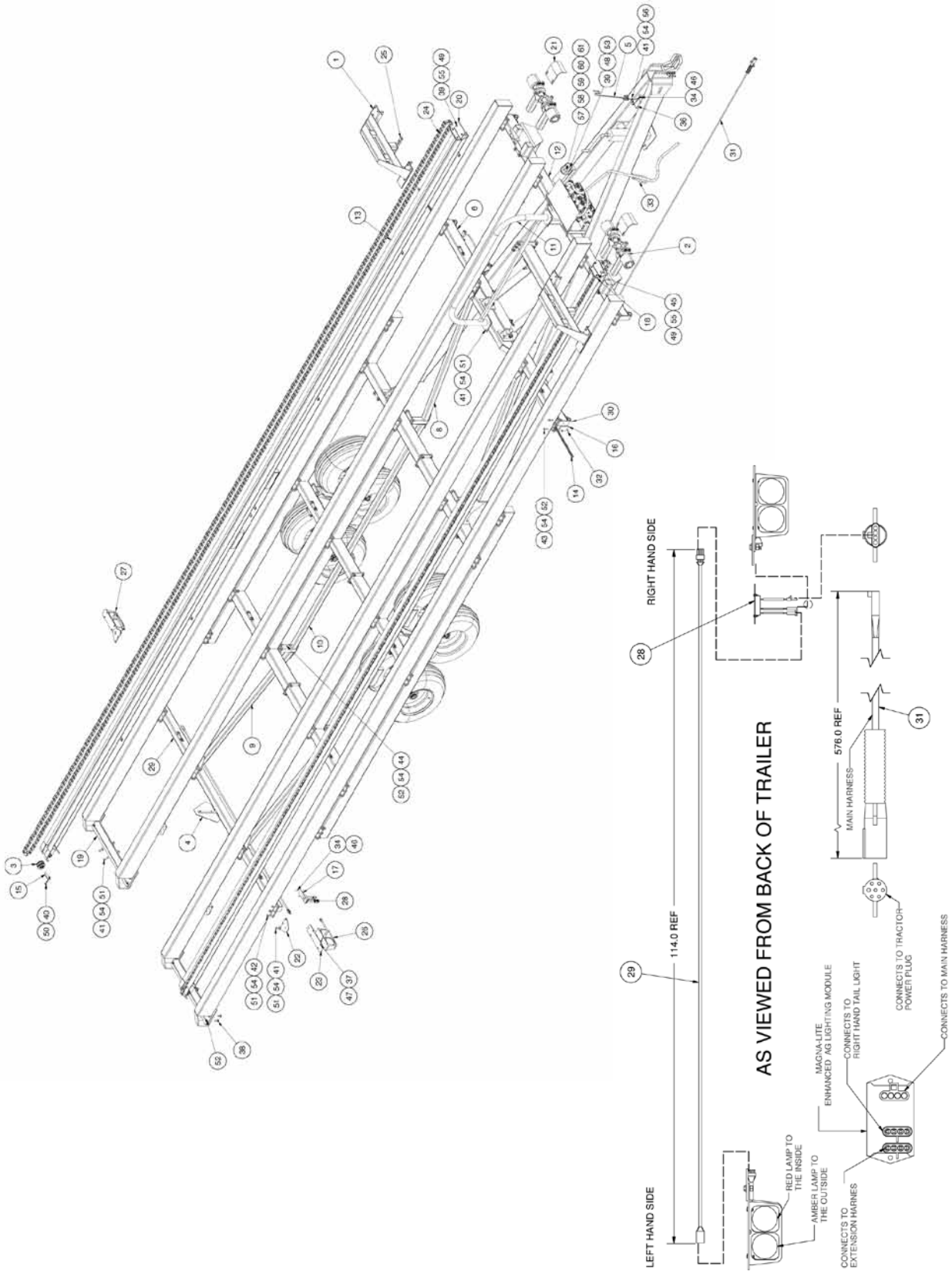
Item	Part Number	Description	Qty
1	83000058	Machine Harness 2450 Bale Carrier	1
2	813949	Snubber Unit	1
3	I20055	Control Handle Harness Assembly	1
4	83000056	Valve Bank Assembly	1

Control Handle Assembly Drawing - A7022-00



Item	Part Number	Description	Qty
1	813539	Screw MACH 8-32 x 0.375TR HD	4
2	813540	Screw MACH 8-32 x 0.50 RD HD	2
3	22105	Control Handle	1
4	814456	Decal 2500 Control Handle	1
5	I100226	Cover Plate 2500 Control Handle	1
6	INE22105-01	Wire Clamp Plate	1
7	815382	Rocker Switch On-Off	1
8	815383	Rocker Switch (On)-Off-(On)	4

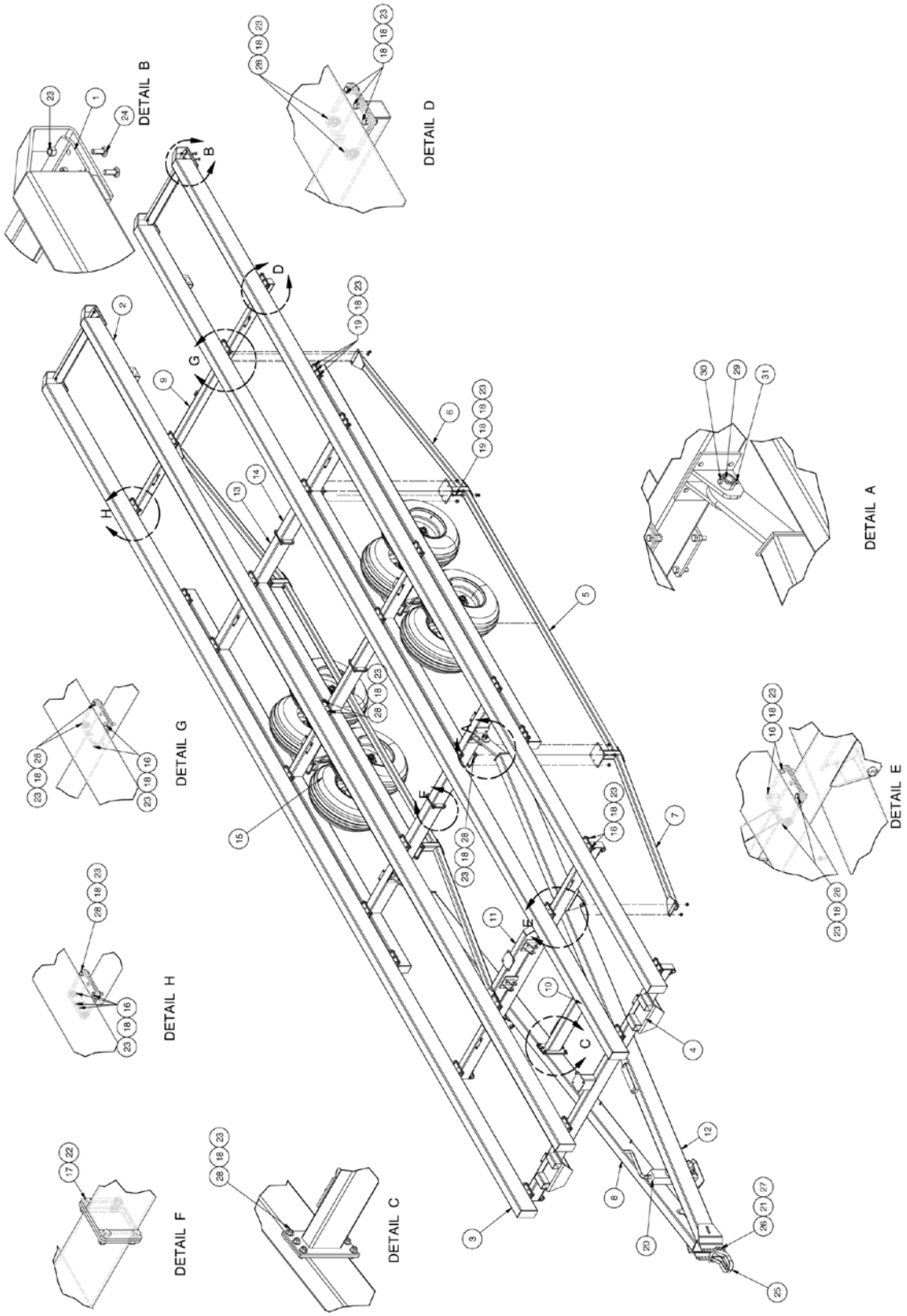
Carrier Final Assembly Drawing - A7000-04



Item	Part Number	Description	Qty
1	A7006-00	Pusher Assembly	2
2	A7007-00	Motor Mount Assembly	2
3	A7008-00	Roller / Chain Guide Assembly	2
4	A7017-00	Slow Moving Vehicle Assembly	1
5	B2363-00	Hose Holder	1
6	C7007-01	Second Crossmember Weldment	1
7	C7012-00	Rear Crossmember Weldment	1
8	C7034-00	Front Brace Weldment	2
9	C7035-00	Rear Brace Weldment	2
10	C7036-00	Center Brace Weldment	2
11	C7048-00	Center Stop	1
12	C7054-01	Front Crossmember Weldt	1
13	C7057-01	Chain Guide Weldt	2
14	C8010-00	Safety Chain Weldment	2
15	E2345-00	Cylinder Pin / 1.0" x 4 1/4"	2
16	E2413-00	Arm Cushion	2
17	E2937-00	Plate 1500 / 2500 Lighting Kit	1
18	E7040-00	Cushion / Pusher Stop	2
19	INE7003-01	Rear Chain Plate Crossmember	2
20	INE7038-00	Mounting Bracket / Shield	2
21	INE7039-00	Shield / Chain Drive	2
22	815372	Light Bracket Inner	2
23	815373	Light Bracket Outer	2
24	52955-456	C2080h Roller Chain (76' Per Pusher)	152′
25	813643	C2080h Connector Link Hd	6
26	814195	Dual Lamp w/ Brake LH/H RH/V	1
27	814196	Dual Lamp w/Brake RH/H LH/V	1
28	814193	Enhanced Ag Lighting Module	1
29	814197	Extension Harness 114" Lg	1
30	813646	Grease Fitting 1/4 NF Driven	4
31	814198	Main Harness 48Ft Long 7 Pin Plug	1
32	813602	Rivet 1/4" x 3/4" FLHD	4
33	813641	Safety Chain 30M GVW	1
34	813958	Screw MACH #8-32 x 0.75	6
35	99053	Slip Plate Beam Coating (Not Visible)	1 QT.
36	813949	Snubber Unit 1500/2500 Bale Carrier	1
37	81527	Bolt Hex 0.25 NC x 1.00 Gr5 Pl	8
38	812217	Bolt Carriage 0.500 NC x 1.25 Gr5 Pl	8
39	81549	Bolt Hex 0.313 NC x 0.75 Gr5 Pl	8
40	811795	Bolt Hex 0.375 NC x 2.00 Gr5 Pl	2
41	81620	Bolt Hex 0.500 NC x 1.25 Gr5 Pl	41

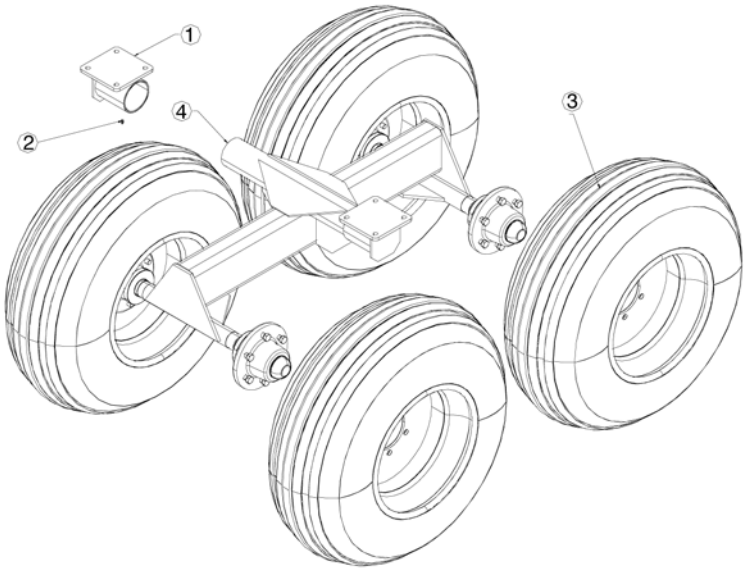
Item	Part Number	Description	Qty
42	967274	Bolt Hex 0.500 NC x 1.50 Gr8 Pl	55
43	967275	Bolt Hex 0.500 NC x 2.00 Gr8 Pl	19
44	81629	Bolt Hex 0.500 NC x 3.50 Gr5 Pl	4
45	81552	Bolt Hex 0.313 NC x 1.25 Gr5 Pl	4
46	812537	Nut Lock (Nylock) #8-32 Steel	6
47	81922	Nut Lock (Nylock) 0.25 NC Grb Pl	8
48	84541	Nut Lock (Nylon) 0.313NC Grb Pl	4
49	812362	Nut Lock (Steel) 0.313 NC Grb Pl	8
50	812363	Nut Lock (Steel) 0.375 Grb Pl	2
51	812364	Nut Lock (Steel) 0.500 NC Grb Pl	41
52	813663	Nut Lock (Steel) 0.500 NC Grc Pl	86
53	81546	Washer Flat Std 0.313 HS Pl	1
54	84048	Washer Flat SAE 0.500 BS Pl	122
55	81570	Washer Flat Std 0.375 HS Pl	8
56	813581	Washer Flat 1.5 x 0.531 x 0.25 Pl	1
57	909277	Manual Holder	1
58	P4186	Operator's & Parts Manual	1
59	814433	Warranty Registration Sheet	1
60	814449	Goodyear Tire Workmanship Warranty (700-862-905-128)	1
61	814450	Goodyear Tire Stubble Warranty (700-862-905-129)	1

Carrier Initial Assembly Drawing - A7000-04



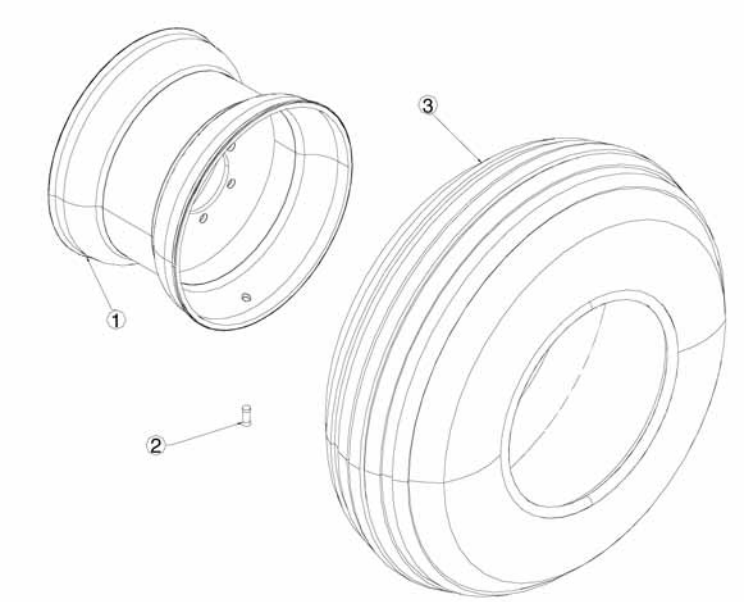
Item	Part Number	Description	Qty
1	INE7003–01	Chain Plate	2
2	C7056-00	Carrier Weldment Unit Inner Beam	2
3	C7055-00	Outer Carrier Beam	2
4	C7054-01	Crossmember Front Weldment	1
5	C7036-00	Center Brace	2
6	C7035-00	Rear Brace Weldment	2
7	C7034-00	Front Brace Weldment	2
8	C7016-00	Hitch Weldment Right Beam	1
9	C7012-01	Crossmember Rear Weldment	1
10	C7008-00	Hitch Weldment Crossmember	1
11	C7007-01	Second Crossmember	1
12	C7006-00	Hitch Weldment Left Beam	1
13	C7001-01	Subframe Right	1
14	C7000-01	Subframe Left	1
15	A7004-00	Tandem Axle Assembly	2
16	967275	Bolt Hex 0.500 NC x 2.00 Gr8 Pl	19
17	813053	Bolt Hex 0.625 NC x 1.5 Gr8 Pl	12
18	84048	Washer 0.500 Flat SAE BS Pl	100
19	81629	Bolt Hex 0.500 NC x 3.5 Gr5 Pl	4
20	815378	Screw Jack 5 Ton	1
21	813648	Nut Lock (Steel) 0.750 NC Grc Pl	3
22	85700693	Nut Lock (Steel) 0.625 NC Grc Pl	12
23	813663	Nut Lock (Steel) 0.500 NC Grc Pl	100
24	812217	Bolt Carr 0.500 NC x 1.50 Gr5 Z Pl	8
25	814352	Hitch Base PP23xL	1
26	47589	Bolt Hex 0.750 NC x 6 Long Gr8 Pl	3
27	84050	Washer 0.750 SAE Flat BS Pl	3
28	967274	Bolt Hex 0.500 NC x 1.50 Gr8 Pl	100
29	815379	Pin 1.25 Dia x 3.75 Long	2
30	81581	Bolt Hex 0.375 NC x 2.50 Gr5 Pl	2
31	812363	Nut Lock (Steel) 0.375 Grb Pl	2

Complete Tandem Axle Assembly Drawing - A7000-00



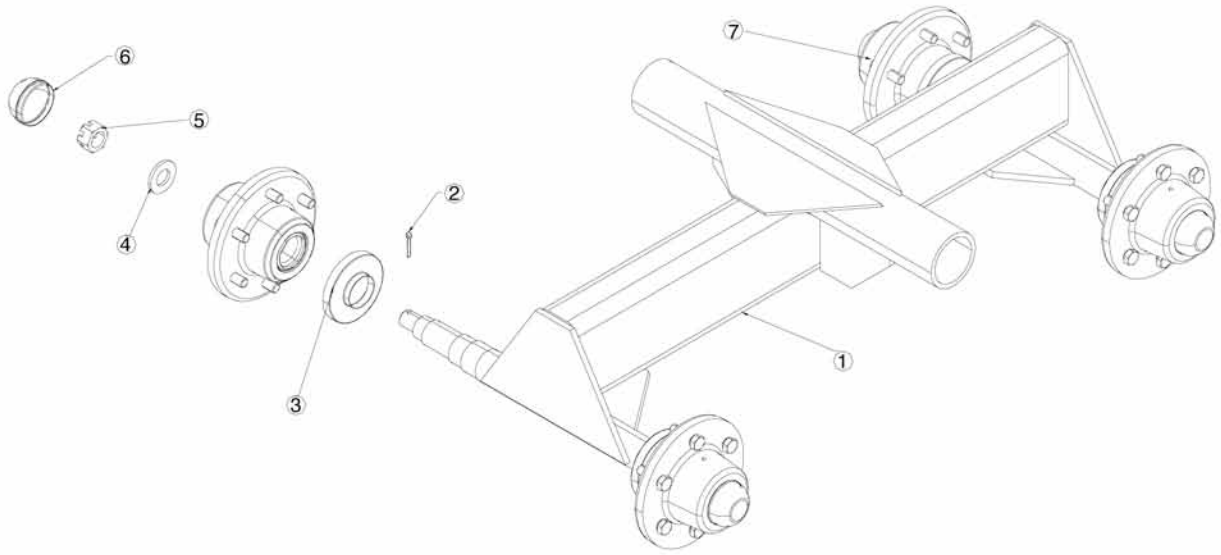
Item	Part Number	Description	Qty
1	C2322-00	Axle Bearing Weldment	2
2	813646	Grease Zerk 1/4" Self Tapping	2
3	B2700-03	Tire Assembly	4
4	B2722-00	Tandem Axle 2500/4000 Bale Carrier	1

Tire Assembly Drawing - B2700-03



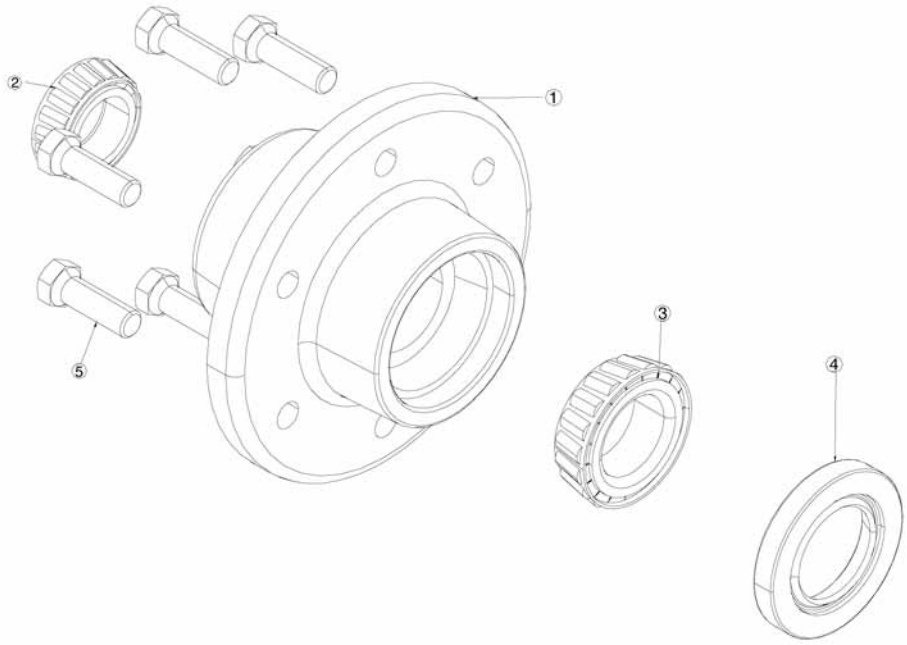
Item	Part Number	Description	Qty
1	813655	15 x 10 lb x 6 Bolt P65 Rim	4
2	813656	TR-416-MS Valve Stem w/ Cap	1
3	813657	Tire 12.5 x 15 FI 12 Ply Range F Farm Hwy Tire	1

Tandem Axle Assembly Drawing - B2722-00



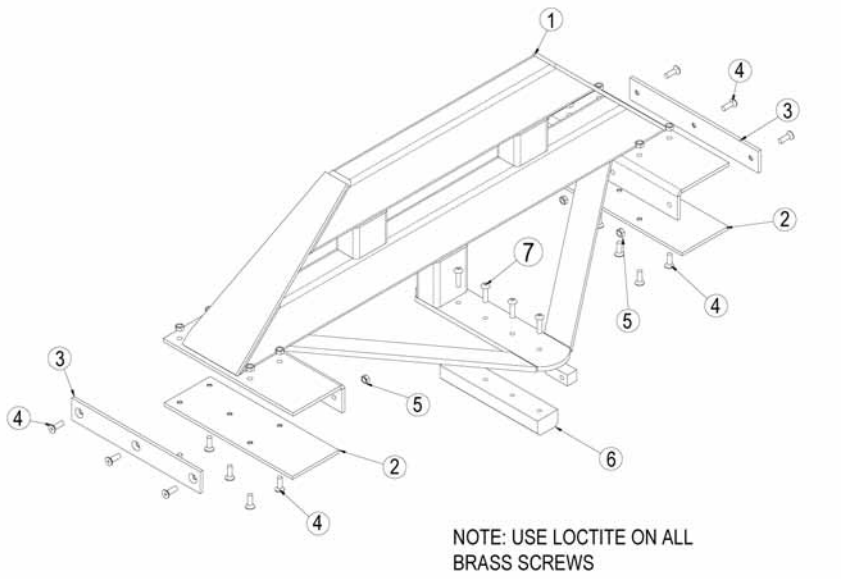
Item	Part Number	Description	Qty
1	C2722-00	Tandem Axle Weldment	1
2	81206	3/16" x 1-1/2 " Cotter Pin Black	4
3	813649	Dust Shield	4
4	813651	Washer Flat 1-1/32" x 2" x .188" BLK	4
5	813673	Nut Castle 1.00 NF	4
6	813650	Dust Cap	4
7	C2339-00	Hub Assembly	4

Hub Assembly Drawing - C2339-00



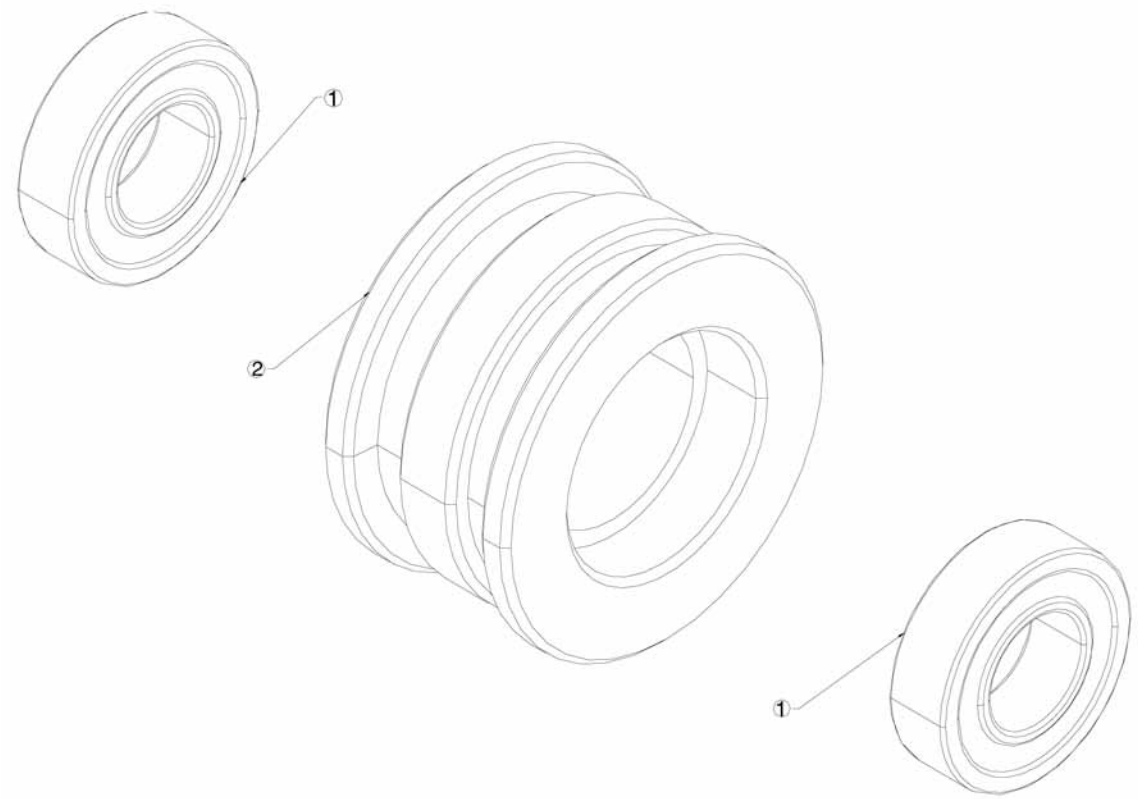
Item	Part Number	Description	Qty
1	813652	6 Bolt Wheel Hub	1
2	967205	Bearing Cone Outer	1
3	967208	Bearing Cone Inner	1
4	967204	Oil Seal SAE-30	1
5	813653	9/16" Hub Bolt	6

Pusher Assembly Drawing - A7006-00



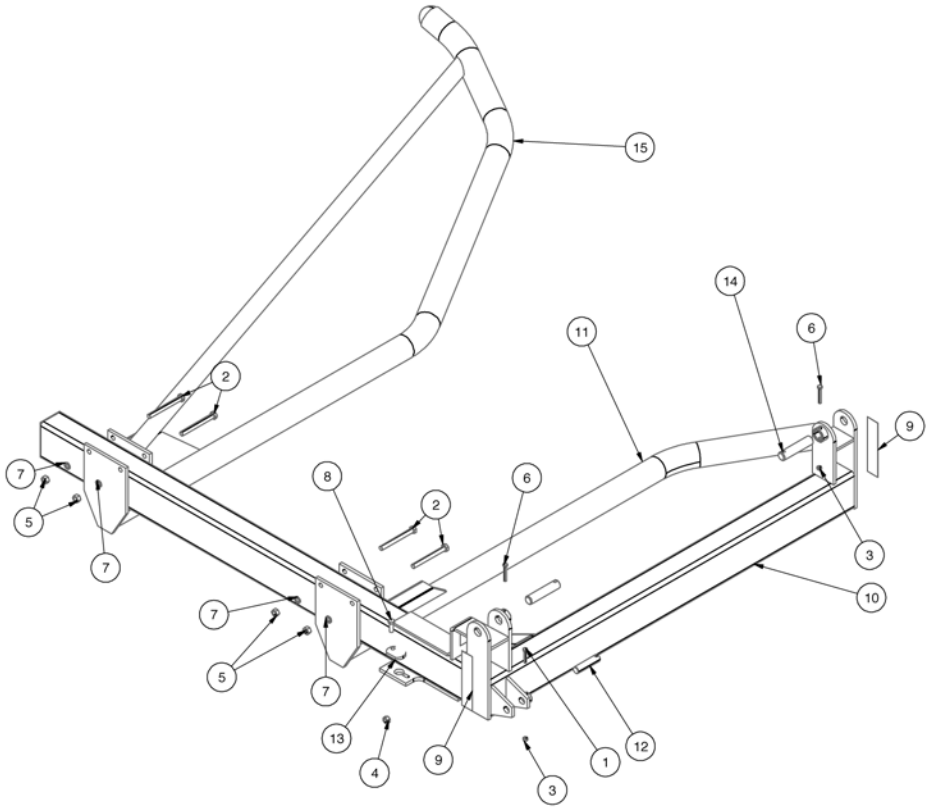
Item	Part Number	Description	Qty
1	C7027-00	Pusher	1
2	E2727-0 .	Top Slider	2
3	E2750-00	Side Slider	2
4	813558	Screw MACH M8 x 20 FLHD Brass	16
5	813561	Nut Hex M8 Brass	16
6	E7032-00	Center Slider	1
7	813644	Screw MACH 0.313 NC x 1.25 RDHD	4

Roller / Chain Guide Assembly Drawing - A7008-00



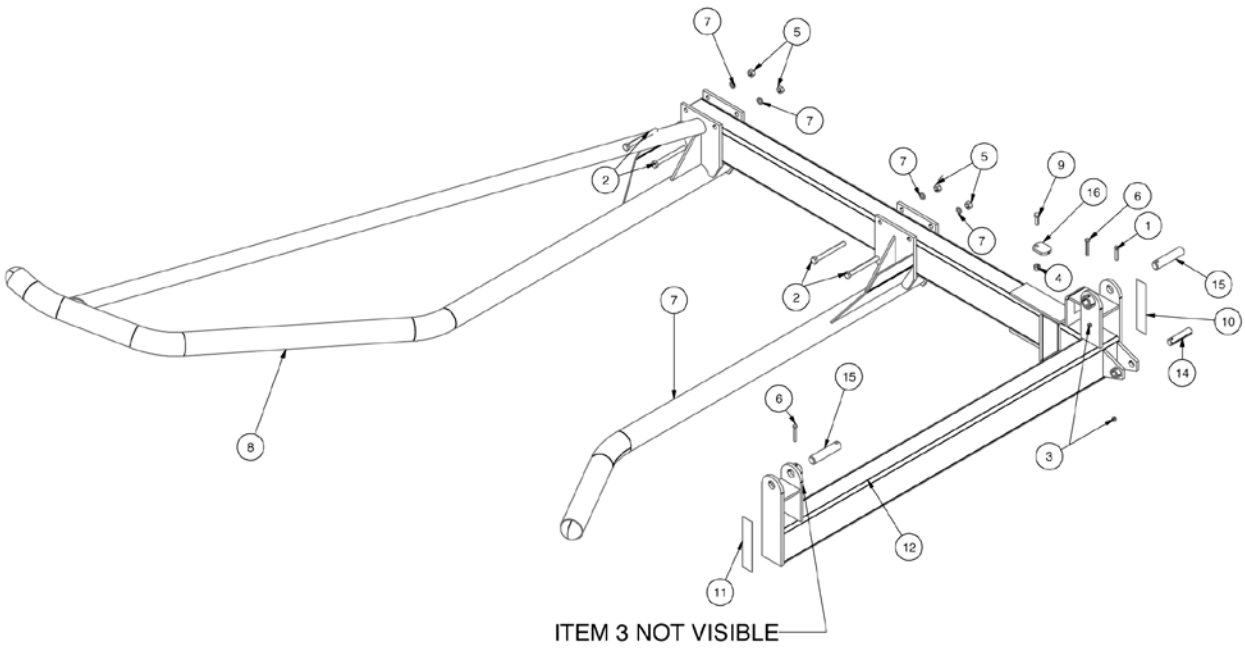
Item	Part Number	Description	Qty
1	813645	Bearing / 6205LLU/25.4/3E	2
2	INE7037-00	Roller / Chain Guide	1

Fixed Pick Up Arm LH Side Assembly Drawing - A2300-86



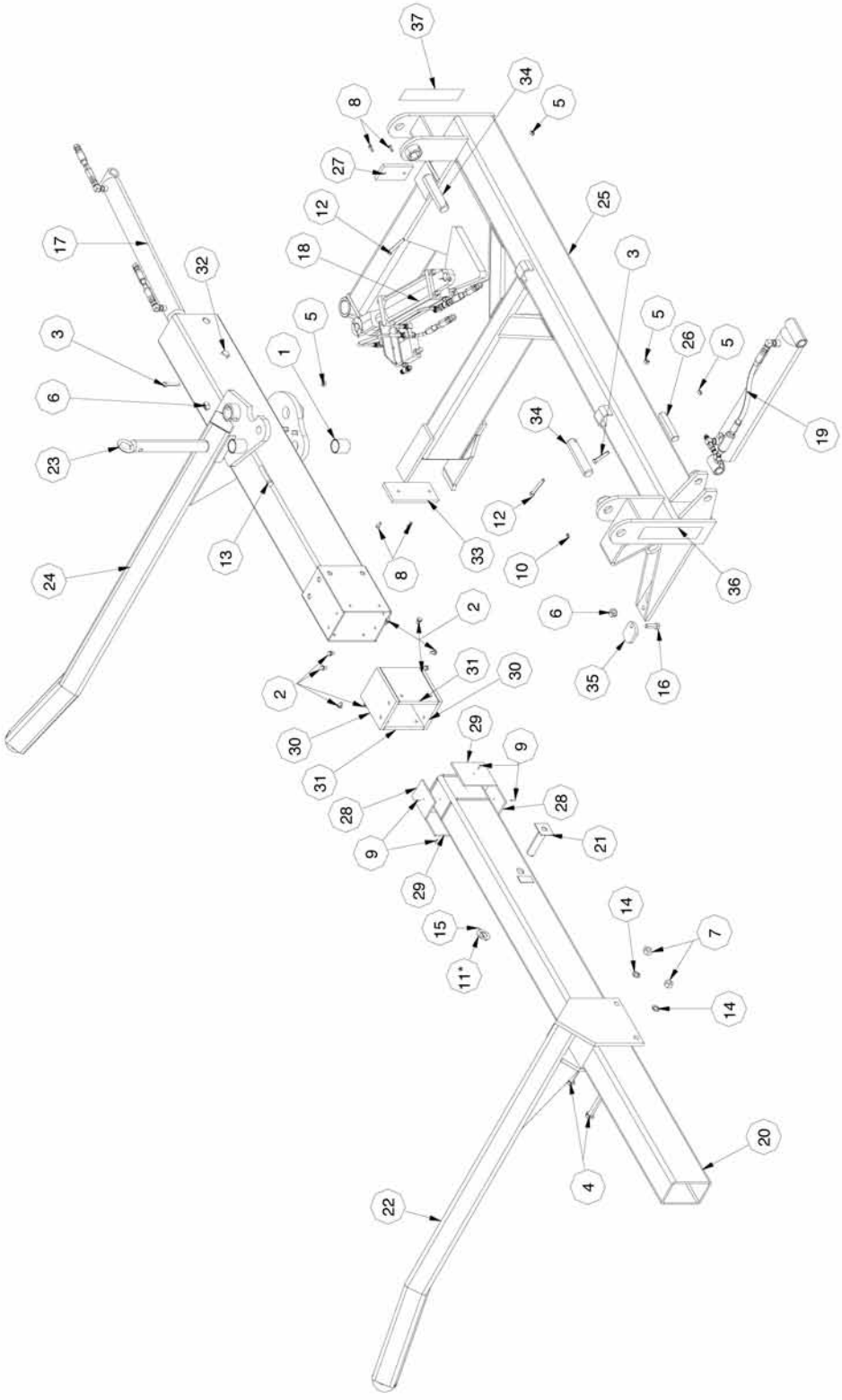
Item	Part Number	Description	Qty
1	811795	Bolt Hex 0.375 NC x 2.00 Gr5 Pl	1
2	812087	Bolt Hex 0.625 NC x 6.00 Grb Pl	4
3	812363	Nut Lock (Steel) 0.375 Grb Pl	3
4	812364	Nut Lock (Steel) 0.500 NC Grb Pl	1
5	813509	Nut Hex 0.625 NC Gr5 Pl	4
6	81581	Bolt Hex 0.375 NC x 2.50 Gr5 Pl	2
7	81677	Washer Lock 0.625 Pl	4
8	84277	Bolt Hex 0.500 NC x 1.50 Gr5 Pl	1
9	967055	Decal Reflective 2 x 9 Amber	2
10	C2315-00	Lift Arm Left Bale	1
11	C2330-00	Fork Bale Right Assembly	1
12	E2345-00	Pin Cylinder 1.0 Dia x 4.5	1
13	E2485-00	Chain Latch Lift Arm	1
14	E2445-00	Lift Arm Pin 1.25 Dia C1045CR	2
15	815175	L.H. Fork w/ Deflector	1

Fixed Pick Up Arm RH Side Assembly Drawing - A2300-87



Item	Part Number	Description	Qty
1	811795	Bolt Hex 0.375 NC x 2.00 Gr5 Pl	1
2	812087	Bolt Hex 0.625 NC x 6.00 Grb Pl	4
3	812363	Nut Lock (Steel) 0.375 Grb Pl	3
4	812364	Nut Lock (Steel) 0.500 NC Grb Pl	1
5	813509	Nut Hex 0.625 NC Gr5 Pl	4
6	81581	Bolt Hex 0.375 NC x 2.50 Gr5 Pl	2
7	81677	Washer Lock 0.625 Pl	4
8	83000050	R.H. Fork w/ Deflector Weldment	1
9	84277	Bolt Hex 0.500 NC x 1.50 Gr5 Pl	1
10	967053	Decal Reflective 2 x 9 Red	1
11	967055	Decal Reflective 2 x 9 Amber	1
12	C2316-00	Lift Arm Right Bale	1
13	C2329-00	Fork Bale Left Assembly	1
14	E2345-00	Pin Cylinder 1.0 Dia x 4.5	1
15	E2445-00	Pin Lift Arm 1.25 Dia C1045CR	2
16	E2485-00	Chain Latch Lift Arm	1

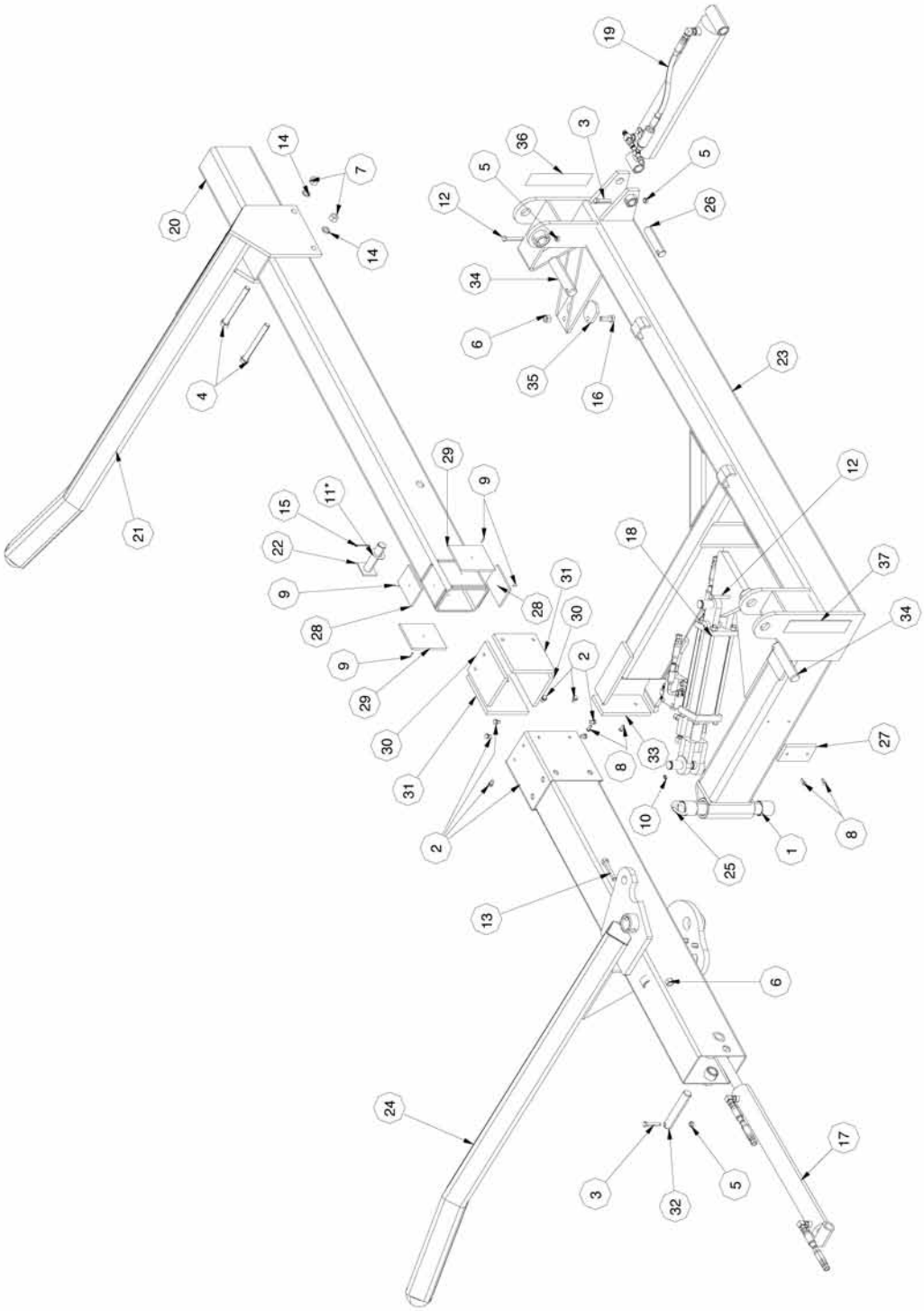
RPU LH Side Assembly Drawing - A2400-34 - Optional



Item	Part Number	Description	Qty
1	20252	Bushing 1.75 OD x 1.5 ID x 1.75	2
2	810215	Screw Self Tap 0.313 NC x 0.50	8
3	811795	Bolt Hex 0.375 NC x 2.00 Gr 5 Pl	2
4	812087	Bolt Hex 0.625 NC x 6.00 Grb Pl	2
5	812363	Nut Lock (Steel) 0.375 Grb Pl	4
6	812364	Nut Lock (Steel) 0.500 NC Grb Pl	2
7	813509	Nut Hex 0.625 NC Gr5 Pl	2
8	813602	Rivet 1/4 x 3/4 Flathead	4
9	813611	Pin Spring 0.125 Dia x 0.625 Long	4
10	813646	Grease Fitting 1/4 NF Driven	1
11*	813795	Washer Flat 1.031 x 1.75 x 0.031	1
12	81581	Bolt Hex 0.375 NC x 2.50 Gr5 Pl	2
13	81626	Bolt Hex 0.500 NC x 2.75 Gr5 Pl	1
14	81677	Washer Lock 0.625 Pl	2
15	81978	Cotter Pin 0.125 x 2.00 POL	1
16	84277	Bolt Hex 0.500 NC x 1.50 Gr5 Pl	1
17	A2400-35	Squeeze Cylinder Assembly RPU	1
18	A2400-36	Rotate Cylinder Assembly RPU	1
19*	A2400-37	Pilot Check Valve Assembly RPU	1
20	C2417-00	Sliding Arm RPU	1
21	C2423-00	Pin Squeeze Cylinder RPU	1
22	C2428-00	Fork Adjustable RPU LH	1
23	C2695-00	Pin Hinge RPU	1
24	C2696-00	LH Stationary Arm RPU	1
25	C2697-00	Lift Arm RPU, LH	1
26	E2345-00	Pin Cylinder 1.0 Dia x 4.5	1
27	E2413-00	Arm Cushion Rubber Belting	1
28	E2419-00	Arm Sliding Top & Bottom Pad	2
29	E2420-00	Arm Sliding Side Pad	2
30	E2421-00	Stationary Arm Top & Bottom RPU Pad	2
31	E2422-00	Arm Stationary Side RPU Pad	2
32	E2424-00	Pin Squeeze Cylinder Clevis	1
33	E2429-00	Arm Stationary Cushion RPU	1
34	E2445-00	Pin Lift Arm 1.25 Dia C1045CR	2
35	E2485-00	Chain Latch Lift Arm	1
36	967053	Decal Reflective 2 x 9 Red	1
37	967055	Decal Reflective 2 x 9 Amber	1

NOTE: Item #11 is used as needed. Item #19 is an existing part installed on carrier.

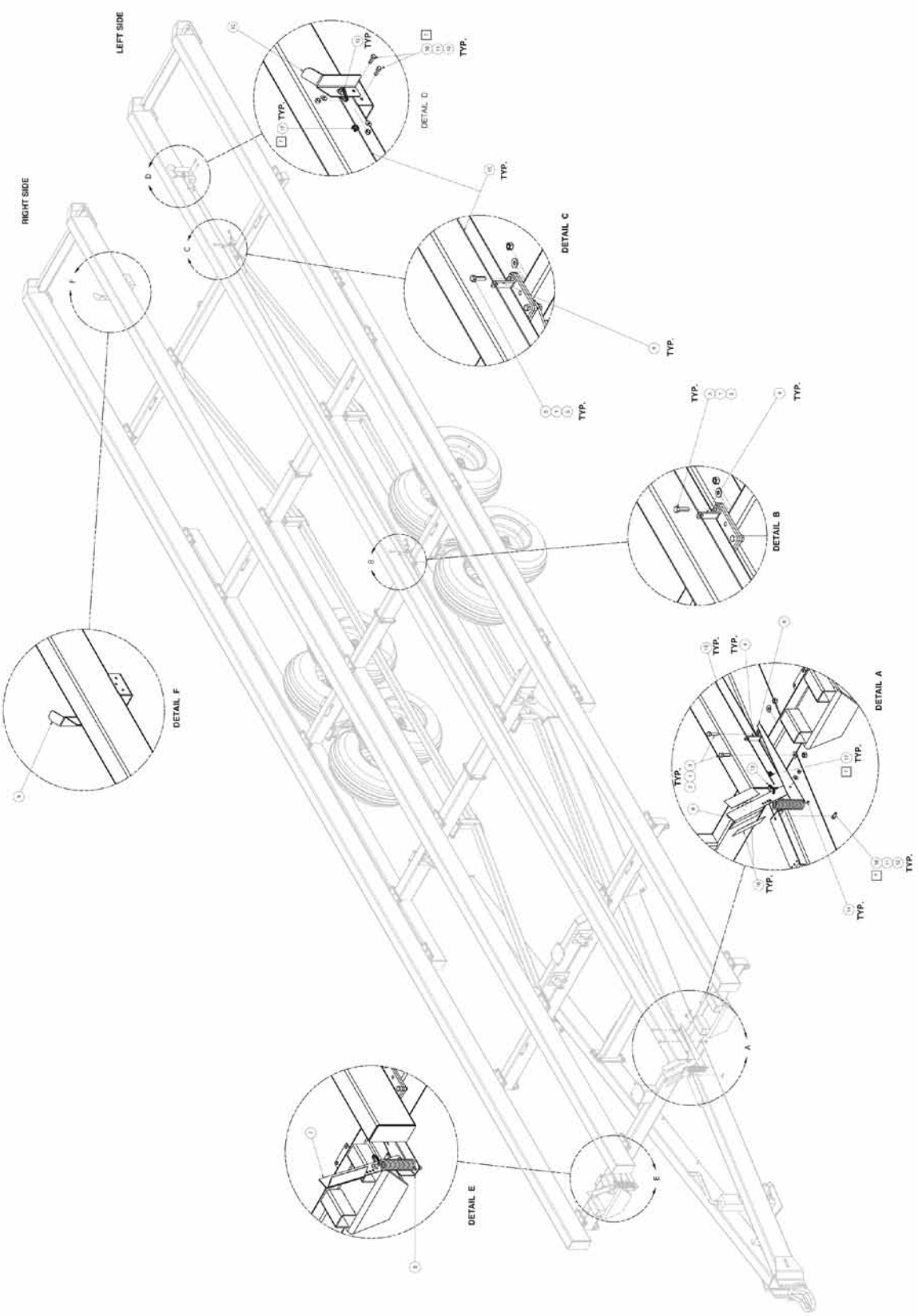
RPU RH Side Assembly Drawing - A2400-32 - Optional



Item	Part Number	Description	Qty
1	20252	Bushing 1.75 OD x 1.5 ID x 1.75	2
2	810215	Screw Self Tap 0.313 NC x 0.50	8
3	811795	Bolt Hex 0.375 NC x 2.00 Gr5 Pl	2
4	812087	Bolt Hex 0.625 NC x 6.00 Grb Pl	2
5	812363	Nut Lock (Steel) 0.375 Grb Pl	4
6	812364	Nut Lock (Steel) 0.500 NC Grb Pl	2
7	813509	Nut Hex 0.625 NC Gr5 Pl	2
8	813602	Rivet 1/4 x 3/4 Flathead	4
9	813611	Pin Spring 0.125 Dia x 0.625 Long	4
10	813646	Grease Fitting 1/4 NF Driven	1
11*	813795	Washer Flat 1.031 x 1.75 x 0.031	1
12	81581	Bolt Hex 0.375 NC x 2.50 Gr5 Pl	2
13	81626	Bolt Hex 0.500 NC x 2.75 Gr5 Pl	1
14	81677	Washer Lock 0.625 Pl	2
15	81978	Cotter Pin 0.125 x 2.00 POL	1
16	84277	Bolt Hex 0.500 NC x 1.50 Gr5 Pl	1
17	A2400-35	Squeeze Cylinder Assembly RPU	1
18	A2400-36	Rotate Cylinder Assembly RPU	1
19*	A2400-37	Pilot Check Valve Assembly RPU	1
20	C2417-00	Sliding Arm RPU	1
21	C2418-00	Fork Adjustable RH RPU	1
22	C2423-00	Pin Squeeze Cylinder RPU	1
23	C2499-00	Lift Arm Right	1
24	C2694-00	Rh Stationary Arm RPU	1
25	C2695-00	Pin Hinge RPU	1
26	E2345-00	Pin Cylinder 1.0 Dia x 4.5	1
27	E2413-00	Arm Cushion Rubber Belting	1
28	E2419-00	Arm Sliding Top & Bottom Pad	2
29	E2420-00	Arm Sliding Side Pad	2
30	E2421-00	Stationary Arm Top & Bottom RPU Pad	2
31	E2422-00	Arm Stationary Side RPU Pad	2
32	E2424-00	Pin Squeeze Cylinder Clevis	1
33	E2429-00	Arm Stationary Cushion RPU	1
34	E2445-00	Pin Lift Arm 1.25 Dia C1045CR	2
35	E2485-00	Chain Latch Lift Arm	1
36	967053	Decal Reflective 2 x 9 Red	1
37	967055	Decal Reflective 2 x 9 Amber	1

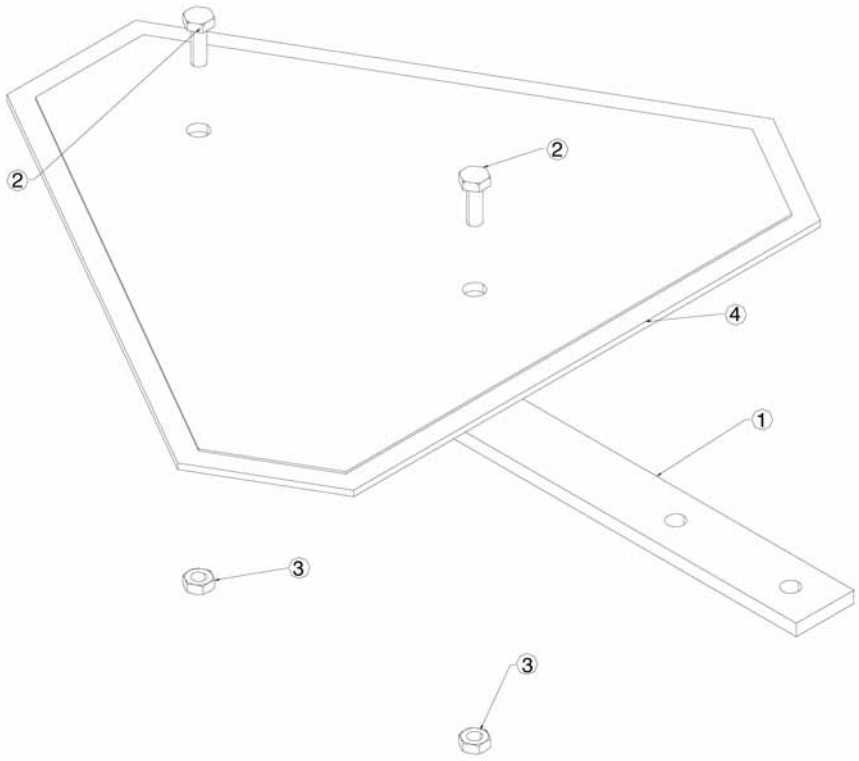
NOTE: Item #11 is used as needed. Item #19 is an existing part installed on carrier.

Full Indicator Drawing - Standard



Item	Part Number	Description	Qty
1	84048	Washer 0.500 Flat SAE BS Pl	181
2	812364	Nut Lock (Steel) 0.500 NC Grb Pl	186
3	87553	Bolt Hex 0.500 NC x 1.75 Gr5 Pl	8
4	I100236	Cable Holder	6
5	I100234	Hold Down Pl RH	1
6	I100233	Hold Down Pl LH	1
7	I100232	Front Indicator Pl RH	1
8	I100231	Front Indicator Pl LH	1
9	83000018	Rear Indicator Weldment - RH	1
10	83000020	Rear Indicator Weldment - LH	1
11	81570	Washer 0.375 Flat ST HS Pl	6
12	81344	Nut Lock 0.375 NC Grb Pl	6
13	84154	Cable Thimble 3/16	4
14	28556	Spring Safety Lock	2
15	I100237	Cable Bale Full Indicator	2
16	813631	Decal Reflective 2 x 9 Orange	4
17	21417	1/8 Cable Clamp	4
18	86170	Bolt Hex 0.375 NC x 1.00 Gr5 Pl	6

Slow Moving Vehicle Sign Assembly Drawing - A7017-00



Item	Part Number	Description	Qty
1	E2795-00	Decal Mount Slow Moving Vehicle Sign	1
2	81525	Bolt Hex 0.25 NC x 0.75 Gr5 Pl	2
3	84498	Nut Lock (Steel) 0.25 Grb Pl	2
4	967066	Slow Moving Vehicle Decal	1

Delivery Checklist

Pre-delivery

- ☐ Verify hardware torque.
- ☐ Verify rear wheel bolt torque
- ☐ Verify tire pressure
- ☐ Inspect bearing seals
- ☐ Inspect all lubrication points
- ☐ Inspect chain drives
- ☐ Inspect hydraulic hoses and electrical harnesses

Dealer Representative:

Date:

Customer Delivery

- ☐ Review safety procedures reqarding bale carrier operation and maintenance
- ☐ Review Operator's and Part's Manual
- ☐ Review proper operating procedures
- ☐ Review general adjustment and setup procedures
- ☐ Review chain tensioning procedures
- ☐ Review importance of regular lubrication
- ☐ Discuss road and highway transportation requirements and regulations
- ☐ Review front hitch height

Dealer Representative:

Date:

Farm King Limited Warranty

This document limits your warranty rights.

Base Limited Warranty

Buhler Industries Inc. provides this warranty only to original retail purchasers of its product. Buhler Industries Inc. warrants to such purchasers that all Buhler Industries Inc. manufactured parts and components used and serviced as provided for in the Operator's Manual shall be free from defects in materials and workmanship for a period following delivery to the original retail purchaser of 12 months (80 days for commercial applications). This limited warranty applies only to those parts and components manufactured by Buhler Industries Inc. Parts and components manufactured by others are subject to their manufacturer's warranties, if any.

Buhler Industries Inc. will fulfill this limited warranty by, at its option, repairing or replacing any covered part that is defective or is the result of improper workmanship, provided that the part is returned to Buhler Industries Inc. within thirty (30) days of the date that such defect or improper workmanship is, or should have been, discovered. Buhler Industries Inc. reserves the right to either inspect the product at the buyer's location or have it returned to the factory for inspection. Parts must be returned through the selling representative and the buyer must prepay transportation charges.

Buhler Industries Inc. will not be responsible for repairs or replacements that are necessitated, in whole or part, by the use of parts not manufactured by or obtained from Buhler Industries Inc. Under no circumstances are component parts warranted against normal wear and tear. There is no warranty on product pump seals, product pump bearings, rubber product hoses, pressure gauges, or other components that require replacement as part of normal maintenance. Also: Buckets and Bucket Tines carry no warranty, Bent Spears carry no warranty, Snowblower Fan Shafts carry no warranty, Mower Blades carry no warranty, Portable Auger Parts Have Two (2) Year Warranty, Loader Parts Have Two (2) Year Warranty. The purchaser is solely responsible for determining suitability of goods sold. This warranty is expressly in lieu of all other warranties expressed or implied. Buhler Industries Inc. will in no event be liable for any incidental or consequential damages whatsoever. Nor for any sum in excess of the price received for the goods for which liability is claimed.

Repair Parts Limited Warranty

Buhler Industries Inc. warrants Farm King replacement parts purchased after the expiration of the Buhler Industries Inc. Limited Warranty, and used and serviced as provided for in the Operator's Manual, to be free from defects in materials or workmanship for a period of thirty (30) days from the invoice date for the parts. Buhler Industries Inc. will fulfill this limited warranty by, at its option, repairing or replacing any covered part that is defective or is the result of improper workmanship, provided that the part is returned to Buhler Industries Inc. within thirty (30) days of the date that such defect or improper workmanship is, or should have been, discovered. Such parts must be shipped to Buhler Industries Inc. at the purchaser's expense.

What is Not Covered

Under no circumstances does this limited warranty cover any components or parts that have been subject to the following: negligence; alteration or modification not approved by Buhler Industries Inc.; misuse; improper storage; lack of reasonable and proper maintenance, service, or repair; normal wear; damage from failure to follow operating instructions; accident; and/or repairs that have been made with parts other than those manufactured, supplied, and or authorized by Buhler Industries Inc.

Authorized Dealer and Labor Costs
Repairs eligible for labor under this limited warranty must be made by Buhler Industries Inc. or an authorized Farm King dealer. Buhler Industries Inc. retains the exclusive discretion to determine whether it will pay labor costs for warranty repairs or replacements, and the amount of such costs that it will pay and the time in which the repairs will be made. If Buhler Industries Inc. determines that it will pay labor costs for warranty work, it will do so by issuing a credit to the dealer's or distributor's account. Buhler Industries Inc. will not approve or pay invoices sent for repairs that Buhler Industries Inc. has not previously approved. Warranty service does not extend the original term of this limited warranty.

Warranty Requirements
To be covered by warranty, each Farm King new product must be registered with Buhler Industries Inc. within thirty (30) days of delivery to original retail purchaser. If the customer decides to purchase replacement components before the warranty disposition of such components is determined, Buhler Industries Inc. will bill the customer for such components and then credit the replacement invoice for those components later determined to be covered by this limited warranty. Any such replacement components that are determined not be covered by this limited warranty will be subject to the terms of the invoice and shall be paid for by the purchaser.

Warranty Claims:
Warranty requests must be prepared on Buhler Industries Inc. Warranty Claim Forms with all requested information properly completed. Warranty Claims must be submitted within a thirty (30) day period from date of failure repair.

Warranty Labor:
Any labor subject to warranty must be authorized by Buhler Industries Inc. The labor rate for replacing defective parts, where applicable, will be credited at 100% of the dealer's posted shop rate. Defective parts will receive an extra 10% discount to assist with freight or other incidental costs.

Exclusive Effect of Warranty and Limitation of Liability

TO THE EXTENT PERMITTED BY LAW, BUHLER INDUSTRIES INC. DISCLAIMS ANY WARRANTIES, REPRESENTATIONS, OR PROMISES, EXPRESS OR IMPLIED, AS TO THE QUALITY, PERFORMANCE, OR FREEDOM FROM DEFECT OF THE COMPONENTS AND PARTS COVERED BY THIS WARRANTY AND NOT SPECIFICALLY PROVIDED FOR HEREIN.

TO THE EXTENT PERMITTED BY LAW, BUHLER INDUSTRIES INC. DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ON ITS PRODUCTS COVERED HEREIN, AND DISCLAIMS ANY RELIANCE BY THE PURCHASER ON BUHLER INDUSTRIES INC.'S SKILL OR JUDGMENT TO SELECT OR FURNISH GOODS FOR ANY PARTICULAR PURPOSE. THE PURCHASER'S ONLY AND EXCLUSIVE REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON PRODUCTS MANUFACTURED BY BUHLER INDUSTRIES INC. ARE THOSE SET FORTH HEREIN. IN NO EVENT SHALL BUHLER INDUSTRIES INC. BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BY WAY OF EXAMPLE ONLY AND NOT LIMITATION, LOSS OF CROPS, LOSS OF PROFITS OR REVENUE, OTHER COMMERCIAL LOSSES, INCONVENIENCE, OR COST OF REPLACEMENT OF RENTAL EQUIPMENT). IN NO EVENT SHALL FARM KING'S CONTRACT OR WARRANTY LIABILITY EXCEED THE PURCHASE PRICE OF THE PRODUCT.

(Note that some provinces or states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusion may not apply to you.) This warranty gives you specific legal rights and you may also have other rights, which vary from province to province or state to state.

Buhler Industries Inc. neither assumes nor authorizes any person or entity, including its selling representatives, to assume any other obligations or liability in connections with the sale of covered equipment, or to make any other warranties, representations, or promises, express or implied, as to the quality, performance, or freedom from defect of the components and parts covered herein. No one is authorized to alter, modify, or enlarge this limited warranty, or its exclusions, limitations and reservations.

Corrections of defects and improper workmanship in the manner, and for the applicable time periods, provided for herein shall constitute fulfillment of all responsibilities of Buhler Industries Inc. to the purchaser, and Buhler Industries Inc. shall not be liable in negligence, contract, or on any other basis with respect to the subject equipment.

This limited warranty is subject to any existing conditions of supply which may directly affect Buhler Industries Inc.'s ability to obtain materials or manufacture replacement parts.

Buhler Industries Inc. reserves the right to make improvements in design or changes in specifications to its products at anytime, without incurring any obligation to owners of units previously sold.

Government Legislation:
Warranty terms and conditions are subject to provincial or state legislation.

Important Note: This warranty does not apply to rentals.

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