

NEW LEADER[®]

MODEL L5034G4

UNIT SERIAL NUMBER _____

MANUAL NUMBER: 305438-E

EFFECTIVE 10/2011



Highway Equipment Company

Building the best since 1939.

**1330 76TH AVE SW
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G4 Spread Pattern Tab

INSERT CURRENT NEW LEADER WAR- RANTY

PREFACE**PLEASE ! ALWAYS THINK SAFETY FIRST !!**

The purpose of this manual is to familiarize the person (or persons) using this unit with the information necessary to properly install, operate, and maintain this system. The safety instructions indicated by the safety alert symbol in the following pages supersede the general safety rules and must be followed. These instructions cannot replace the following: the fundamental knowledge that must be possessed by the installer or operator, the knowledge of a qualified person, or the clear thinking necessary to install and operate this equipment. Since the life of any machine depends largely upon the care it is given, we suggest that this manual be read thoroughly and referred to frequently. If for any reason you do not understand the instructions, please call your authorized dealer or our Product Sales and Support Department at 1-888-363-8006.

It has been our experience that by following these installation instructions, and by observing the operation of the spreader, you will have sufficient understanding of the machine enabling you to troubleshoot and correct all normal problems that you may encounter. Again, we urge you to call your authorized dealer or our Product Sales and Support Department if you find the unit is not operating properly, or if you are having trouble with repairs, installation, or removal of this unit.

We urge you to protect your investment by using genuine HECO parts and our authorized dealers for all work other than routine care and adjustments.

Highway Equipment Company reserves the right to make alterations or modifications to this equipment at any time. The manufacturer shall not be obligated to make such changes to machines already in the field.

This Safety Section should be read thoroughly and referred to frequently.

ACCIDENTS HURT !!!**ACCIDENTS COST !!!****ACCIDENTS CAN BE AVOIDED !!!**



TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THAT OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

In this manual and on the safety signs placed on the unit, the words "DANGER," "WARNING," "CAUTION," and "NOTICE" are used to indicate the following:



DANGER

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 and typically for machine components that, for functional purposes, cannot be guarded.



WARNING

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.



CAUTION

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.

NOTICE!

Is used for informational purposes in areas which may involve damage or deterioration to equipment but generally would not involve the potential for personal injury.

NOTE:

Provides additional information to simplify a procedure or clarify a process.

The need for safety cannot be stressed strongly enough in this manual. At Highway Equipment Company, we urge you to make safety your top priority when operating any equipment. We firmly advise that anyone allowed to operate this machine be thoroughly trained and tested, to prove they understand the fundamentals of safe operation.

The following guidelines are intended to cover general usage and to assist you in avoiding accidents. There will be times when you will run into situations that are not covered in this section. At those times the best standard to use is common sense. If, at any time, you have a question concerning these guidelines, please call your authorized dealer or our factory at (319) 363-8281.

MAINTENANCE INSTRUCTIONS

1. Keep safety decals and signs clean and legible at all times.
2. Replace safety decals and signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety decals or signs are available from your dealer's Parts Department or our Cedar Rapids factory.

INSTALLATION INSTRUCTIONS

1. Clean Surface
Wash the installation surface with a synthetic, free-rinsing detergent. Avoid washing the surface with a soap containing creams or lotion. Allow to dry.
2. Position Safety Decal
Decide on the exact position before application. Application marks may be made on the top or side edge of the substrate with a lead pencil, marking pen, or small pieces of masking tape. NOTE: Do not use chalk line, china marker, or grease pencil. Safety decals will not adhere to these.
3. Remove the Liner
A small bend at the corner or edge will cause the liner to separate from the decal. Pull the liner away in a continuous motion at a 180-degree angle. If the liner is scored, bend at score and remove.
4. Apply Safety Decal
 - a. Tack decal in place with thumb pressure in upper corners.
 - b. Using firm initial squeegee pressure, begin at the center of the decal and work outward in all directions with overlapping strokes. NOTE: Keep squeegee blade even—nicked edges will leave application bubbles.
 - c. Pull up tack points before squeegeeing over them to avoid wrinkles.
5. Remove Pre-mask
If safety decal has a pre-mask cover remove it at this time by pulling it away from the decal at a 180 degree angle. NOTE: It is important that the pre-mask covering is removed before the decal is exposed to sunlight to avoid the pre-mask from permanently adhering to the decal.
6. Remove Air Pockets
Inspect the decal in the flat areas for bubbles. To eliminate the bubbles, puncture the decal at one end of the bubble with a pin (never a razor blade) and press out entrapped air with thumb moving toward the puncture.
7. Re-Squeegee All Edges.

SAFETY DECALS

 **DANGER**




MOVING PART HAZARD
To prevent death or serious injury:

- Stay out of box while conveyor is moving.
- Disconnect and lockout power source before adjusting or servicing.
- Do not ride on spreader.

364-C

 **DANGER**




FLYING MATERIAL & ROTATING SPINNER HAZARD
To prevent death or serious injury:

- Wear eye protection.
- Stop machine before servicing or adjusting.
- Keep bystanders at least 60 feet away.

368-C

 **WARNING**

MOVING PART HAZARD
To prevent death or serious injury:

- Close and secure guards before starting.
- Do not stand or climb on machine.
- Disconnect and lockout power source before adjusting or servicing.
- Keep hands, feet and hair away from moving parts.

55631-C

 **WARNING**



FALLING HAZARD
To prevent death, serious injury or machine damage:

- Do not stand or climb on guard.

55630-D

 **WARNING**




HIGH PRESSURE FLUID HAZARD
To prevent death or serious injury:

- Relieve pressure on system before repairing, adjusting, or disconnecting.
- Keep all lines, fittings and couplers tight and free of leaks.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Do not use hydraulic lines for hand holds or steps.
- Components may be hot.

39158-C

  **WARNING**

To prevent death or serious injury:

- Do not place objects on fenders.
- Keep off fenders. They are not intended to carry loads.

39200-D

SAFETY

 <h2 style="margin: 0;">CAUTION</h2>
<p>HAZARDOUS MATERIALS</p> <p>To avoid injury or machine damage:</p> <ul style="list-style-type: none"> • Materials to be spread can be dangerous. • Improper selection, application, use or handling may be a hazard to persons, animals, crops or other property. • Follow instructions and precautions given by the material manufacturer. <p style="text-align: right;">321-C</p>

 <h2 style="margin: 0;">CAUTION</h2>

<p>TO AVOID INJURY OR MACHINE DAMAGE:</p> <ul style="list-style-type: none"> • Do not operate or work on this machine without reading and understanding the operators manual. • Keep hands, feet, hair and clothing away from moving parts. • Do not allow riders on machine. • Avoid unsafe operation or maintenance. • Disengage power takeoff and shut off engine before removing guards, servicing or unclogging machine. • Keep unauthorized people away from machine. • Keep all guards in place when machine is in use. • If manual is missing, contact dealer for replacement. <p style="text-align: right;">150034-C</p>

<h2 style="margin: 0;">IMPORTANT</h2>
<p>Spinner assembly and material flow divider have NOT been adjusted at the factory. Before assembling unit, read and follow assembly instructions in the operation and maintenance manual for this unit.</p> <p>Before spreading material, spread pattern tests must be conducted to properly adjust the spread pattern. Refer to the "How to Check Your Spread Pattern" manual for adjustment instructions. A spread pattern test kit is available from your New Leader dealer.</p> <p>Wind, humidity, rain and other adverse weather conditions can affect spread pattern, resulting in uneven crop growth and loss of yield.</p> <p>THE MANUFACTURER OF THIS SPREADER WILL NOT BE LIABLE FOR MISAPPLIED MATERIAL DUE TO AN IMPROPERLY ADJUSTED SPREADER OR ADVERSE WEATHER CONDITIONS.</p> <p>It is recommended that spread pattern tests be conducted prior to each spreading season, after any spreader maintenance, and periodically during the spreading season. Spread pattern tests must be conducted whenever a new product is to be applied.</p> <p style="text-align: right;">71526-E</p>

 <h2 style="margin: 0;">WARNING</h2>

<p>To prevent death or serious injury:</p> <ul style="list-style-type: none"> • Do not place objects on fenders. • Keep off fenders. They are not intended to carry loads. <p style="text-align: right;">39200-D</p>

1. Before attempting to operate this unit, read and be sure you understand the operation and maintenance manual. Locate all controls and determine the use of each. Know what you are doing!



2. When leaving the unit unattended for any reason, be sure to:
 - a. Take power take-off out of gear.
 - b. Shut off conveyor and spinner drives.
 - c. Shut off vehicle engine and unit engine (if so equipped).
 - d. Place transmission of the vehicle in "neutral" or "park".
 - e. Set parking brake firmly.
 - f. Lock ignition and take keys with you.
 - g. Lock vehicle cab.
 - h. If on steep grade, block wheels.

These actions are recommended to avoid unauthorized use, runaway, vandalism, theft and unexpected operation during start-up.

3. Do not read, eat, talk on a mobile phone or take your attention away while operating the unit. Operating is a full-time job.

4. Stay out of the spreader. If it's necessary to enter the spreader, return to the shop, empty body, turn off all power, set vehicle brakes, lock engine starting switch and remove keys before entering. Tag all controls to prohibit operation. Tags should be placed, and later removed, only by person working in the body.



5. Guards and covers are provided to help avoid injury. Stop all machinery before removing them. Replace guards and covers before starting spreader operation.

6. Stay clear of any moving members, such as shafts, couplings and universal joints. Make adjustments in small steps, shutting down all motions for each adjustment.



7. Before starting unit, be sure everyone is clear and out of the way.

8. Do not climb on unit. Use the inspection ladder or a portable ladder to view the unit. Be careful in getting on and off the ladder, especially in wet, icy, snowy or muddy conditions. Clean mud, snow or ice from steps and footwear.



9. Do not allow anyone to ride on any part of unit for any reason.



10. Keep away from spinners while they are turning:
 - a. Serious injury can occur if spinners touch you.
 - b. Rocks, scrap metal or other material can be thrown off the spinner violently. Stay out of discharge area.
 - c. Make sure discharge area is clear before spreading.



11. Inspect spinner fins, spinner frame mounting and spinner fin nuts and screws every day. Look for missing fasteners, looseness, wear and cracks. Replace immediately if required. Use only new SAE grade 5 or grade 8 screws and new self-locking nuts.

12. Inspect all bolts, screws, fasteners, keys, chain drives, body mountings and other attachments periodically. Replace any missing or damaged parts with proper specification items. Tighten all bolts, nuts and screws to specified torques according to the torque chart in this manual.



13. Shut off engine before filling fuel and oil tanks. Do not allow overflow. Wipe up all spills. Do not smoke. Stay away from open flame. FIRE HAZARD!



14. Starting fluids and sprays are extremely flammable. Don't smoke. Stay away from flame or heat!



15. All vehicles should be equipped with a serviceable fire extinguisher of 5 BC rating or larger.

16. Hydraulic system and oil can get hot enough to cause burns. Before working on the system, wait until oil has cooled.



17. Wear eye protection while working around or on unit.

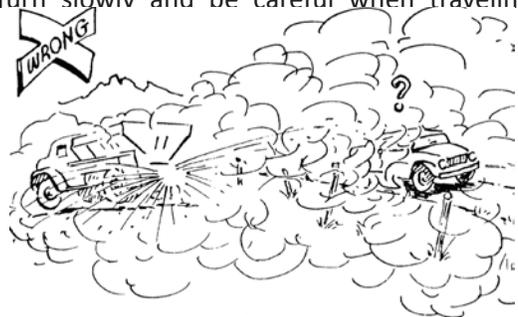
18. Read, understand and follow instructions and precautions given by the manufacturer or supplier of materials to be spread. Improper selection, application, use or handling may be hazardous to people, animals, plants, crops or other property.



CAUTION If spreader is used to transport chemicals, check with your chemical supplier regarding DOT (Department of Transportation) requirements.

19. Cover all loads that can spill or blow away. Do not spread dusty materials where dust may create pollution or a traffic visibility problem.

20. Turn slowly and be careful when traveling on



rough surfaces and side slopes, especially with a loaded spreader. Load may shift causing unit to tip.



21. Read and understand the precautionary decals on the spreader. Replace any that become defaced, damaged, lost or painted over. Replacement decals can be ordered from your dealer's parts department or from Highway Equipment Company by calling (319) 363-8281.

1. Maintenance includes all lubrication, inspection, adjustments (other than operational control adjustments such as feedgate openings, conveyor speed, etc.) part replacement, repairs and such upkeep tasks as cleaning and painting.



2. When performing any maintenance work, wear proper protective equipment—always wear eye protection—safety shoes can help save your toes—gloves will help protect your hands against cuts, bruises, abrasions and from minor burns—a hard hat is better than a sore head!

3. Use proper tools for the job required. Use of improper tools (such as a screwdriver instead of a pry bar, a pair of pliers instead of a wrench, a wrench instead of a hammer) not only can damage the equipment being worked on, but can lead to serious injuries. USE THE PROPER TOOLS.



4. Before attempting any maintenance work (including lubrication), shut off power completely. DO NOT WORK ON RUNNING MACHINERY!
5. When guards and covers are removed for any maintenance, be sure that such guards are reinstalled before unit is put back into operation.
6. Check all screws, bolts and nuts for proper torques before placing equipment back in service. Refer to torque chart in this manual.

7. Some parts and assemblies are quite heavy. Before attempting to unfasten any heavy part or assembly, arrange to support it by means of a hoist, by blocking or by use of an adequate arrangement to prevent it from falling, tipping, swinging or moving in any manner which may damage it or injure someone. Always use lifting device that is properly rated to lift the equipment. Do not lift loaded spreader. NEVER LIFT EQUIPMENT OVER PEOPLE.



8. If repairs require use of a torch or electric welder, be sure that all flammable and combustible materials are removed. Fuel or oil reservoirs must be emptied, steam cleaned and filled with water before attempting to cut or weld them. DO NOT weld or flame cut on any tank containing oil, gasoline or their fumes or other flammable material, or any container whose contents or previous contents are unknown.



9. Keep a fully charged fire extinguisher readily available at all times. It should be a Type ABC or a Type BC unit.
10. Cleaning solvents should be used with care. Petroleum based solvents are flammable and present a fire hazard. Don't use gasoline. All solvents must be used with adequate ventilation, as their vapors should not be inhaled.

11. When batteries are being charged or discharged, they generate hydrogen and oxygen gases. This combination of gases is highly explosive. DO NOT SMOKE around batteries—STAY AWAY FROM FLAME—don't check batteries by shorting terminals as the spark could cause an explosion. Connect and disconnect battery charger leads only when charger is "off". Be very careful with "jumper" cables.



12. Batteries contain strong sulfuric acid—handle with care. If acid gets on you, flush it off with large amounts of water. If it gets in your eyes, flush it out with plenty of water immediately and get medical help.

13. Hydraulic fluid under high pressure leaking from a pin hole are dangerous as they can penetrate the skin as though injected with a hypodermic needle. Such liquids have a poisonous effect and can cause serious wounds. Get medical assistance if such a wound occurs. To check for such leaks, use a piece of cardboard or wood instead of your hand. The fine spray from a small hydraulic oil leak can be highly explosive—DO NOT SMOKE—STAY AWAY FROM FLAME OR SPARKS.



1. The selection of the vehicle on which a spreader body is to be mounted has important safety aspects. To avoid overloading:
 - a. Do not mount spreader on a chassis which, when fully loaded with material to be spread, will exceed either the Gross Axle Weight Rating (GAWR) or the Gross Vehicle Weight Rating (GVWR) for the chassis.
 - b. Do install the spreader only on a vehicle with cab-to-axle dimension recommended for the spreader body length shown.



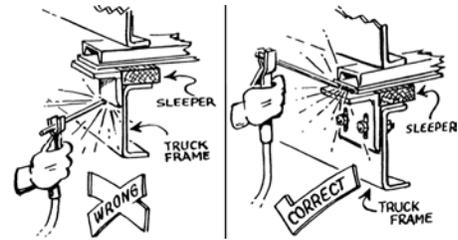
2. Follow mounting instructions in the Installation section of this manual. If mounting conditions require deviation from these instructions refer to factory.
3. When making the installation, be sure that the lighting meets Federal Motor Vehicle Safety Standard (FMVSS) No. 108, ASABE S279 and all applicable local and state regulations.
4. When selecting a PTO to drive hydraulic pump, do not use a higher percent speed drive than indicated in the Installation section of this manual. Too high a percent PTO will drive pump at excessive speed, which can ruin the pump, but more importantly, will overheat the hydraulic oil system and increase the possibility of fire.



5. When truck frame must be shortened, cut off only the portion that extends behind rear shackle in accordance with the truck manufacturer's recommendations. If a torch is used to make

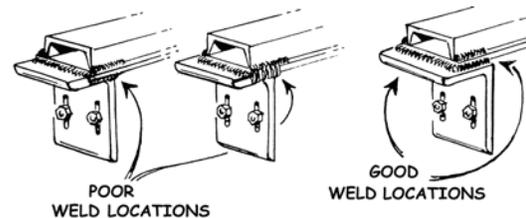
the cut, all necessary precautions should be taken to prevent fire. Cuts should not be made near fuel tanks and hydraulic oil reservoirs, fuel, brake, electric or hydraulic lines and such lines should be protected from flame, sparks or molten metal. Tires should be removed if there is any chance of their being struck by flame, sparks or molten metal. Have a fire extinguisher handy.

6. Do not weld on vehicle frame as such welding can lead to fatigue cracking and must be avoided.



When drilling holes in frame member, drill only through the vertical web portions do not put holes in top or bottom flanges. Refer to truck manufacturer's recommendations.

7. Be sure that welds between mounting bars and sill or between mounting angles and spreader cross sills are sound, full fillet welds. Center mounting angles so that good fillet welds can be made on three sides—and edge bead weld is not a satisfactory weld for this service. Use 309 rod/wire for carbon steel and 409 steel. On 304 stainless steel bodies use SAE grade 5 bolts—welding is recommended if type 308 welding rod is available.



8. Install controls so that they are located of convenient use. Position them so that they do not interfere with any vehicle control and that they do not interfere with driver or passenger or with access to or exit from the vehicle.
9. Check for vehicle visibility, especially toward the rear. Reposition or add mirrors so that adequate rearward visibility is maintained.
10. Add Caution, Warning, Danger and Instruction decals as required. Peel off any label masking which has not been removed.
11. Install all guards as required.
12. Check installation completely to be sure all fasteners are secure and that nothing has been left undone.

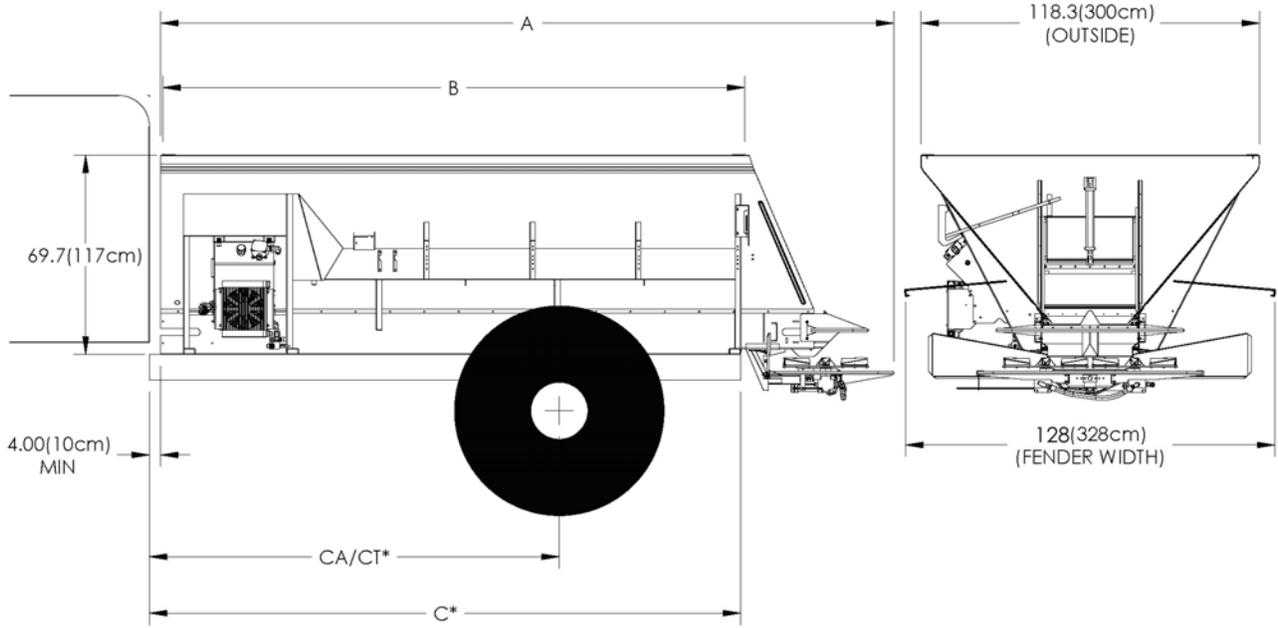
The Model L5034G4 is a hopper type spreader intended for spreading feedlot manure, waste water sludge, industrial waste, paper mill waste, compost, marl, poultry litter and fly ash. It is intended for truck chassis or flotation vehicle mounting.

The unit is powered hydraulically and provides independent variable speed control for the spinner and full automatic ground speed control for the conveyor by means of a motorized valve with shaft sensor. Tandem gear type hydraulic pumps provide the power and are driven by means of a transmission PTO.

The 34" wide (86 cm) conveyor runs the full length of the hopper bottom to deliver material to the spinners through a hydraulically adjustable metering gate at the rear of the hopper body. A feedgate sight gauge allows monitoring of the feedgate opening from the cab. The conveyor is driven by two orbital type hydraulic motors mounted to a 6 to 1 ratio spur gear case. Three conveyor options are available: pintle type chain joined by cross bars every third link (#1), every other link (#2), or every link (#3)

The distributor spinner assembly has two 30" (76cm) diameter discs. Each disc has the option of four to six formed and heat treated fins that are adjustable to radial angle. The spinner is fully adjustable by means of a rotating handle.

This product is intended for commercial use only.



Unit Size	Overall A	Inside Body Length B	Frame C
12'	184" (467 cm)	132" (335 cm)	135" (343 cm)
13'	196" (498 cm)	144" (366 cm)	147" (373 cm)
14'	208" (528 cm)	156" (396 cm)	159" (404 cm)
16'	232" (589 cm)	180" (457 cm)	183" (465 cm)
18'	256" (650 cm)	204" (518 cm)	207" (526 cm)
21'	292" (742 cm)	240" (610 cm)	243" (617 cm)

Unit Size	Struck Capacity Cu Yd (Cu M) Cu Ft	Spreader Weight Approx. Pounds (kilograms)As Shipped
12' (3.66 m)	12.0 (9.2) 330	4800 (2177)
13' (3.96 m)	13.4 (10.2) 361	5200 (2359)
14' (4.27 m)	14.5 (11.1) 392	5600 (2540)
16' (4.88 m)	16.8 (12.8) 453	6400 (2903)
18' (5.49 m)	19.0 (14.5) 515	7200 (3266)
21' (6.40 m)	22.5 (17.2) 608	8400 (3810)

DIMENSIONS & CAPACITIES



WARNING Stand clear of moving machinery.

NOTE: Do not load spreader with material.

1. Check entire unit to make sure all fasteners are in place and properly tightened per Standard Torques National Coarse (NC) Cap Screws section in this manual.
2. Make sure no other persons are in vicinity of truck or spreader.
3. Make sure no loose parts are in unit or on conveyor or spinner.
4. Open feedgate until it is completely clear of conveyor.
5. Check oil level in hydraulic reservoir; fill as necessary. Refer to Lubricant Specification section of this manual for proper oil. Completely open gate valve under reservoir.
6. Set throttle so engine runs at about 1000 RPM. Engage PTO driving pump. Allow pump to run and circulate oil for several minutes. Increase warm-up time in cold weather.
7. PWM spinner control valve: Run at 250 RPM.
Spinner should run at slow speed. Allow to run until it is operating smoothly and all air has been purged.
8. PWM spinner control valve: Run at 0 RPM.
9. Place controller in manual mode (see control manufacturer's manual) and run conveyor until it's operating smoothly.
10. PWM spinner control valve: Run at 400 RPM.
Allow both spinner and conveyor to run. Shut down system.



WARNING

Do not use one manufacturer's hose with another manufacturer's fittings! Such will void any warranty and may cause premature burst or leak of hydraulic fluids! Severe injury and/or fire could result!



WARNING

DO NOT check leaks with hands while system is operating as high pressure oil leaks can be dangerous! DO NOT check for leaks adjacent to moving parts while system is operating as there may be danger of entanglement!

11. Check all connections in hydraulic system to make sure there are no leaks.
12. Check hydraulic oil reservoir and refill to maintain level around mid-point of sight gauge.
Unit is now ready for field testing.

The following procedure is a guide:

1. Field test over any suitable course which allows vehicle to be driven at speeds to be used while spreading.
2. Make sure unit has been properly serviced, that oil reservoir is full and gate valve under reservoir is fully open. Do not load spreader.
3. Manual spinner control valve: Set to position "5".
PWM spinner control valve: Run at 550 RPM.

**DANGER**

Take proper safety precautions when observing conveyor and spinner speed while vehicle is in motion! These may include use of suitable mirrors clamped to permit observation by a safely seated observer, following the spreader in another vehicle at a safe distance, or other suitable means. Do not stand on fenders, in body or on any part of spreader as there is danger of falling off the vehicle or into moving parts! Use great care in performing this test!

4. Start truck engine. Turn control to "on" position. Engage PTO and allow to run at fast idle long enough to bring hydraulic oil up to operating temperature. Spinners should revolve at moderate speed and the conveyor should not move.
5. Set program in control console to operational mode and begin forward travel. Move conveyor switch on console to "on" position. Conveyor should start immediately when vehicle moves and should continue to run at speeds which vary directly with the vehicles field speed; the conveyor should speed up as truck speed increases and slow down as truck speed reduces. Spinner speed should remain constant when engine speed is above minimum operating range.

1. Make sure unit has been properly serviced and is in good operating condition. Field test unit prior to first use, prior to each spreading season's use, and following overhaul or repair work, to verify that all components and systems are functioning properly. See Field Testing section.
2. Fill body with material to be spread.
3. Drive to location where spreading is to be done.
4. Adjust spinner control valve for material being applied to give spread width desired. See *G4 Spread Pattern* section.
5. Adjust spinner to give spread pattern desired. See *G4 Spread Pattern* section.
6. Set feedgate opening to obtain the yield desired. Measure actual material depth.
7. Make sure shut-off valve on hydraulic reservoir is fully opened.
8. Turn on power to controller and set program to desired values.
9. Engage pump drive PTO.



CAUTION Drive only at speeds which permit good control of vehicle!

10. Drive at speeds that allow engine to turn at proper RPM.

Higher transmission gears may be used with speeds to 30 MPH (48 KMPH). If lower speeds must be used, shift transmission into lower gears so engine speed can be maintained to allow adequate hydraulic oil delivery from pump.

NOTICE!

CHANGE THE HYDRAULIC OIL FILTER AFTER THE FIRST WEEK (OR NOT MORE THAN 50 HOURS) OF OPERATION ON A UNIT.

PREVENTATIVE MAINTENANCE PAYS!

The handling and spreading of commercial fertilizers is a most severe operation with respect to metal corrosion. Establish a frequent, periodic preventative maintenance program to prevent rapid damage to spreading equipment. Proper cleaning, lubrication and maintenance will give you longer life, more satisfactory service and more economical use of your equipment.

**WARNING**

Shut off all power and allow all moving parts to come to rest before performing any maintenance operation.

HYDRAULIC SYSTEM

Proper oil in the hydraulic system is one of the most important factors for satisfactory operation. Utmost cleanliness in handling the oil cannot be stressed enough. Keep hydraulic oil in original closed containers, clean top of container before opening and pouring, and handle in extremely clean measures and funnels.

Refer to Lubricant and Hydraulic Oil Specifications section for selection of the proper hydraulic fluid for use in the hydraulic system.

Service Schedule**WARNING**

DO NOT check leaks with hands while system is operating as high pressure leaks are very dangerous! DO NOT check for leaks adjacent to moving parts while system is operating as there may be danger of entanglement!

1. Check hydraulic oil daily by means of sight gauge on reservoir. Add oil as necessary to maintain level around mid-point of sight gauge. Periodically inspect hoses and fittings for leaks.

NOTICE! 2. Change hydraulic oil filter after first week (or not more than 50 hours) of operation on a unit.

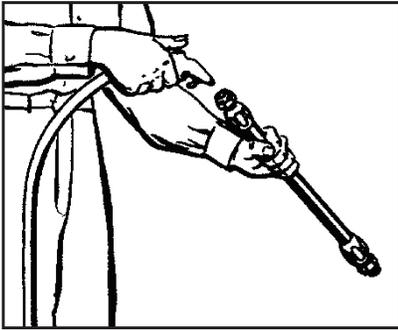
3. After first filter change, replace filter when indicator reaches Red Zone.
4. Drain reservoir through drain plug (not through suction outlet), flush, and refill and change filter element annually. Oil and filter should also be changed whenever oil shows any signs of breaking down under continued high-pressure operation. Discoloration of oil is one sign of breakdown.

HYDRAULIC HOSE

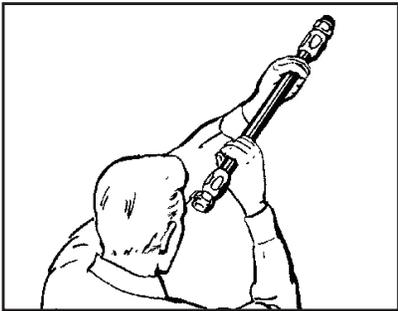
Hose assemblies in operation should be inspected frequently for leakage, kinking, abrasion, corrosion or other signs of wear or damage. Worn or damaged hose assemblies should be replaced immediately.

**WARNING**

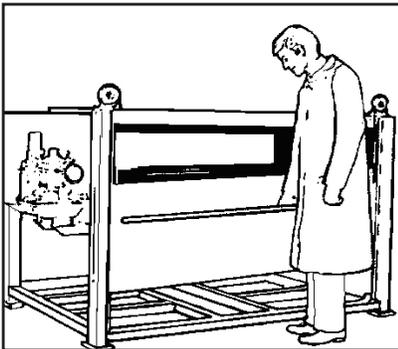
Testing should be conducted in approved test stands with adequate guards to protect the operator.

**Clean**

Clean assembly by blowing out with clean compressed air. Assemblies may be rinsed out with mineral spirits if the tube stock is compatible with oil, otherwise hot water at 150°F (66° C) maximum may be used.

**Inspect**

Examine hose assembly internally for cut or bulged tube, obstructions, and cleanliness. For segment style fittings, be sure that the hose butts up against the nipple shoulder; band and retaining ring are properly set and tight, and segments are properly spaced. Check for proper gap between nut and socket or hex and socket. Nuts should swivel freely. Check the layline of the hose to be sure the assembly is not twisted. Cap the ends of the hose with plastic covers to keep clean.

**Test**

The hose assembly should be hydrostatically tested at twice the recommended working pressure of the hose.

Test pressure should be held for not more than one minute and not less than 30 seconds. When test pressure is reached, visually inspect hose assembly for: 1. Any leaks or signs of weakness. 2. Any movement of the hose fitting in relation to the hose. Any of these defects are cause for rejection.

Storage and Handling

Hose should be stored in a dark, dry atmosphere away from electrical equipment, and the temperature should not exceed 90° F (32° C)

CONVEYOR CHAIN



WARNING

Stay out of the spreader. If it's necessary to enter the spreader, return to the shop, empty body, turn off all power, set vehicle brakes, lock engine starting switch and remove keys before entering. Tag all controls to prohibit operation. Tags should be placed, and later removed, only by person working in the body.

Hose down unit and remove any material build-up on sprockets and under chain.

NOTICE!

The conveyor will move away from the bottom panel if material accumulates under the conveyor or on the sprockets. The more material that accumulates, the closer the chain will come to the chain shields. If the conveyor should catch a chain shield, it could permanently damage the conveyor, the chain shields or the unit. Do not remove material while conveyor or spinner is running!

Lubrication

Make sure unit is clean and completely dry. Lubricate conveyor chain at the end of each day of usage using a mixture of 75% fuel oil and 25% SAE 10 oil. Shut down spinner and run conveyor at 20 RPM for two full revolutions to lubricate chain. After each unit washing, allow to dry, then lubricate.

Before filling the unit with spreading material, activate the controller or power switch to run the pump oiler. Bleed all air from the lines and adjust the two spray nozzles (Figure 1) so that the oil mixture sprays vertical onto the sprockets and chain.

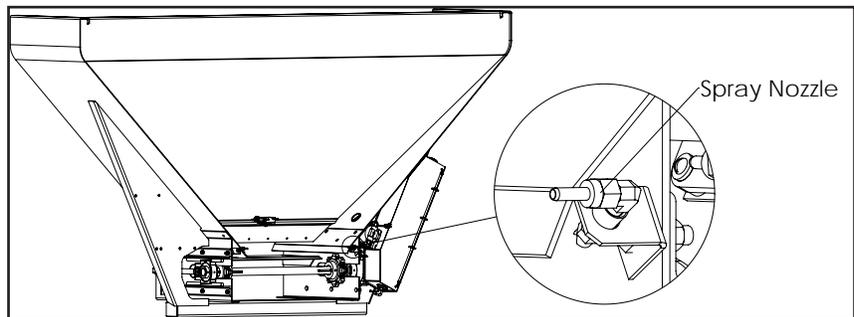


Figure 1 - Spray Nozzle

Tension

Proper chain tension is also a factor in chain and sprocket life (Figure 2). Measure from rear of unit forward to achieve proper chain tension. Make sure chain is tensioned equally on both sides. This adjustment is made on each side of the unit at the idler bearings.

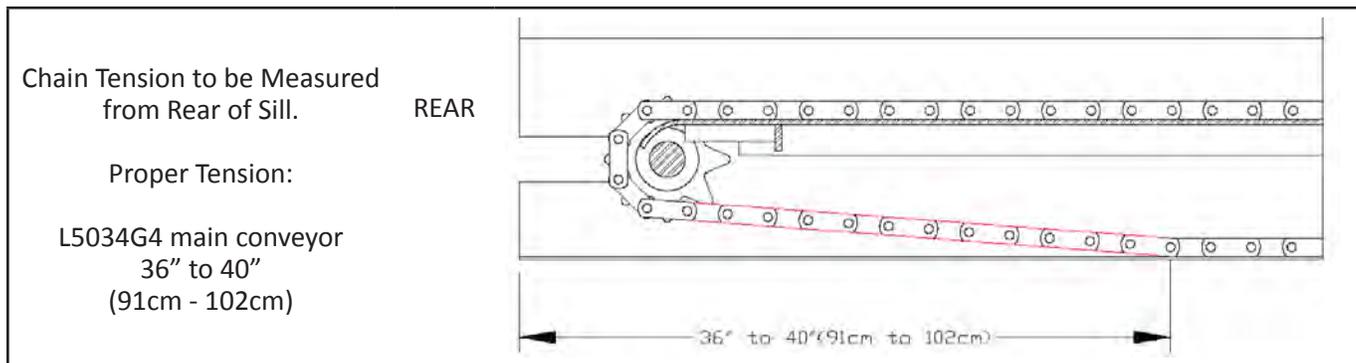


Figure 2 - Adjusting Chain Tension

LUBRICATION & MAINTENANCE

Conveyor chains that are too tight will tend to stretch, causing excess sprocket wear and eventually breakage. Excess slack presents the possibility of chain catching on sub-frame parts. Bent or distorted chain bars will cause damage as well. Straighten or replace bent or distorted chain bars immediately. It also causes fertilizer leakage with chain conveyors.

CONVEYOR GEAR CASE

Drain oil in a new unit after first two weeks (or not more than 100 hours) of operation, and flush gear case thoroughly with light oil. Refer to Lubricant and Hydraulic Oil Specifications section for proper grade oil. Refill gear case with 1-1/2 pints (.70 liters) of recommended lubricant. After initial change, oil should be changed every 2,000 hours of operation or annually, whichever occurs first.

Check gear case oil level monthly.

LUBRICATION OF BEARINGS

Grease in a bearing acts to prevent excessive wear of parts, protects ball races, and balls from corrosion and aids in preventing excessive heat within the bearing. It is very important the grease maintain its proper consistency during operation. It must not be fluid and it must not channel.

Make sure all fittings are thoroughly cleaned before grease is injected. Points to be lubricated by means of a grease gun have standard grease fittings.

Lubricate bearings by pumping grease slowly until it forms a slight bead around the seals. This bead indicates adequate lubrication and also provides additional protection against the entrance of dirt.

CLEAN UP

NOTICE! High pressure wash can inject water and/or fertilizer into control components, causing damage. Use caution when cleaning these areas.
--

Thoroughly wash unit every two to three days during the operating season to maintain minimal maintenance operation. Hose unit down under pressure to free all sticky and frozen material.

It is important the unit be thoroughly cleaned at the end of each operating season. All lubrication and maintenance instructions should be closely followed. Repaint worn spots to prevent formation of rust.

FASTENERS

Tighten all screws fasteners to recommended torque's after first week of operation and annually thereafter. If loose fasteners are found at anytime, tighten to recommended torque. Replace any lost or damaged fasteners or other parts immediately. Check body mounting hardware every week.

LUBRICANT AND HYDRAULIC OIL SPECIFICATIONS**NOTICE!**

The lubricant distributor and/or supplier is to be held responsible for results obtained from their products. Procure lubricants from distributors and/or suppliers of unquestionable integrity, supplying known and tested products. Do not jeopardize your equipment with inferior lubricants. No specific brands of oil are recommended. Use only products qualified under the following oil viscosity specifications and classification recommended by reputable oil companies.

HYDRAULIC SYSTEM

Use premium quality lubricants with 100-200 SUS or 20-43 cSt viscosity at operating temperatures. The hydraulic fluid's specifications in the table below are for normal operating conditions. Extreme environments or dirty conditions may require the use of different oils. Consult your New Leader dealer or the Product Support Department at Highway Equipment Company for systems operating outside normal conditions.

Ideal Oil Operating Temperature	115-158°F (46.11-70° C)
Recommended Premium Lubricant	Multi-Purpose Agriculture Hydraulic & Transmission Oil
Lubricant Specifications Viscosity Index Viscosity at 40°C, cst Viscosity at 100°C, cst	Greater than 130 Less than 68 Greater than 9
Acceptable Fluid Sample	John Deere Hy-Gard® J20C

GEAR CASE LUBRICANT

Lubricate these assemblies with non-corrosive type SAE 90 E.P. (extreme pressure) gear oil conforming to MIL-L2105 B multi-purpose gear lubricating oil requirements (API Service GL 4) with ambient temperatures from 40° to 100° F (4.5 to 38° C). Ambient temperatures below 40° F (4.5° C). require SAE 80 E.P. lubricant; above 100° F (38° C) use SAE 140 E.P. grade oil.

GREASE GUN LUBRICANT

Use a waterproof ball and roller bearing lithium base lubricant with a minimum melting point of 300°F (149° C). This lubricant should have a viscosity which assures easy handling in the pressure gun at prevailing atmospheric temperatures. The grease should conform to NLGI No. 2 consistency.

CHAIN OILER MIXTURE

Use a mixture of 75% No. 1 or No. 2 diesel fuel or kerosene mixed with 25% SAE 10 engine oil.

**WARNING**

Shut off all power and allow all moving parts to come to rest before performing any maintenance operation.

The spreader should be regularly lubricated with the lubricants recommended in this manual in accordance with the following chart:

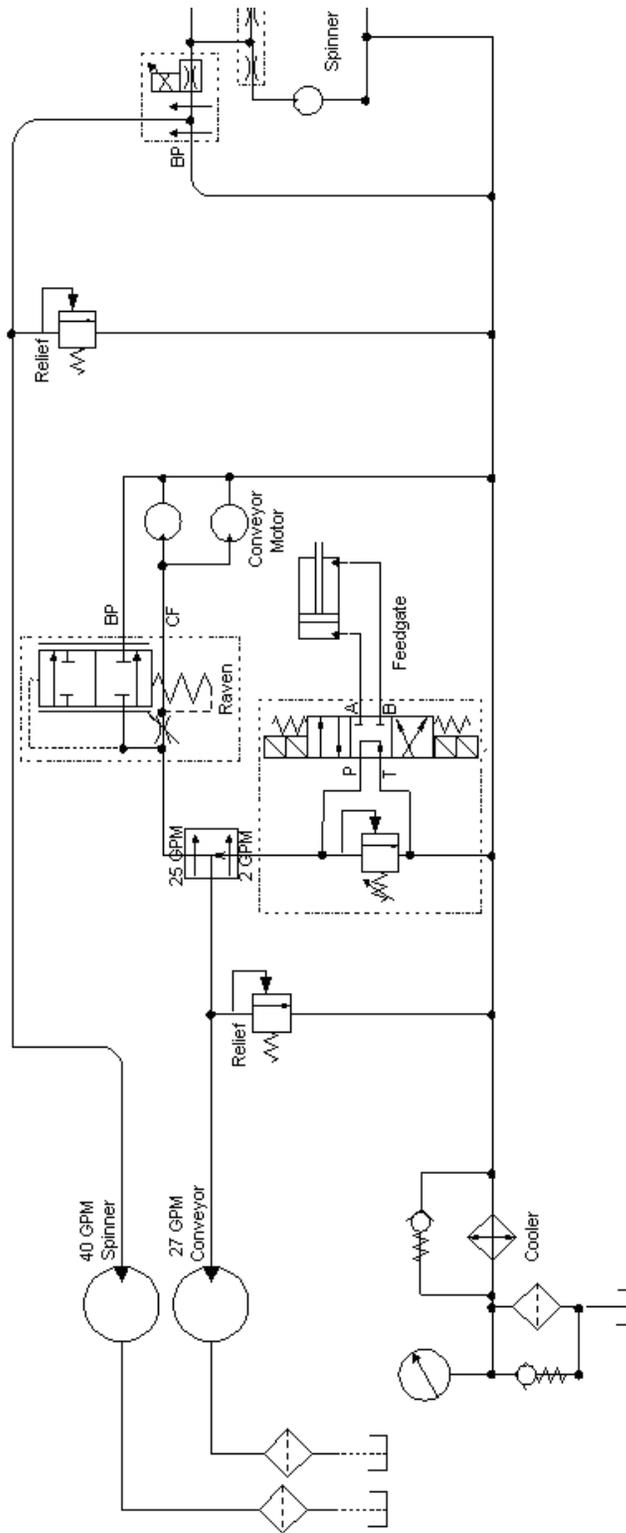
<u>LOCATION</u>	<u>PLACES</u>	<u>METHOD</u>	<u>FREQUENCY</u>
Hydraulic System			
Reservoir	1	Oil	Check Daily. Change Annually
Filter	1	Check daily; Change when indicated (Red)	
Conveyor			
Dragshaft Bearings	2	Grease Gun	Weekly
Idler Shaft Bearings	2	Grease Gun	Weekly
Take-Up Screws	2	Hand Grease	Weekly
Chain Oiler	1	Oil Mixture	Daily, After Use
Gear Case	1	Gear Oil	Check Monthly; Change Annually
Jack Assembly			
Gears	1	Grease Gun	Annually
Tube	1	Grease Gun	Weekly
Spinner			
Grease Zerks - Shaft	2	Grease Gun	Weekly
Grease Zerks - Jack	2	Grease Gun	Weekly

NOTE: Unusual conditions, such as excessive dust, temperature extremes or excessive moisture may require more frequent lubrication of specific parts.

*See *Lubricant and Hydraulic Oil Specifications* for types of lubricants and oil to be used.

TROUBLESHOOTING

HYDRAULICS SCHEMATIC



TROUBLESHOOTING

L5034G4 CONVEYOR SELECTION CHART

This chart is to help determine which conveyor is best for specific applications. Find the closest description of the type of material to be spread.

- X indicates the preferred conveyor.
- O indicates a suitable alternative conveyor.
- NR indicates the conveyor and/or spreader is not recommended for the specified application.

The density provided was used to make the conveyor recommendation. If the density of the material to be spread is outside of those in the table, contact your New Leader dealer for the best conveyor for your application.

Product (density)	#1 Chain	#2 Chain	#3 Chain*
Poultry Litter (16-54 lbs/ft3)	X	O	O
Waste Sludge (40-65 lbs/ft3)	X	O	O
Paper Pulp (approx. 42 lbs/ft3)	X	O	O
Compost Cattle Manure (36-65 lbs/ft3)	X	O	O
Gin Trash (35-50 lbs/ft3)		O	X
Fly Ash** (38-45 lbs/ft3)	NR	X	O
Gypsum** (65-80 lbs/ft3)	NR	NR	NR
Lime** (80-100 lbs/ft3)	NR	NR	NR
Sulfur** (80-100 lbs/ft3)	NR	NR	NR
Fertilizer – Not Recommended	NR	NR	NR

* - A #3 conveyor is not recommended for use with material that is greater than 25% moisture content. Wet material can slip on a #3 conveyor and may not flow to the feed gate.

** - Trial and error is necessary to determine the spreader's maximum capacity for each material so as not to exceed the system pressures of the hydraulic system and stall the conveyor.

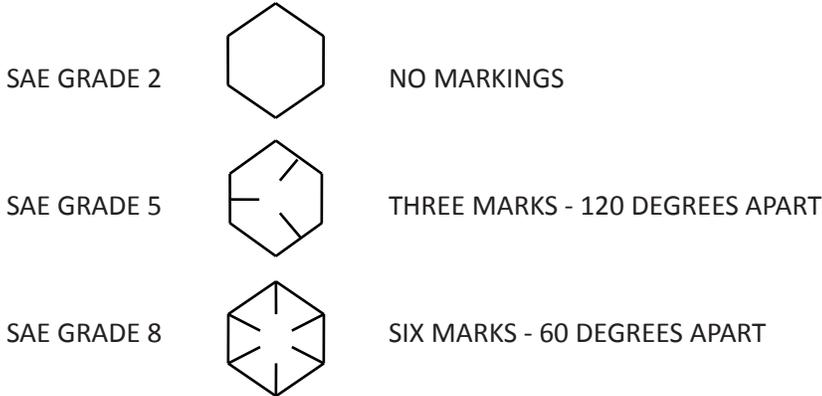
NOTE: Field experience has shown that payload capacity can be increased with the use of chain shields in some applications.

- Symptom: Spinner motors do not turn when spinner control valve is in running position or conveyor does not run when placed in "On" position. See reasons 1, 2, 3, 4, 6, 7, 8 & 9.
- Symptom: Spinners turn but conveyor does not run in manual mode. See reasons 5, 7, 9 & 10.
- Symptom: Console in operation mode, but the conveyor does not move when the machine moves. See reasons 5, 7, 9 & 10.
- Symptom: Spinner speed does not stay constant. See reasons 4, 8, 11, 12 & 13.
- Symptom: Spinners run with cab control in "Off" position. See reason 14.
- Symptom: Hydraulic oil overheats (200° F (93.33° C) or hotter). See reasons 1, 5, 8, 15, 16, 17 & 18.
- Symptom: Light flashes and buzzer sounds intermittently. Conveyor runs in jerks. See reasons 19 & 23.
- Symptom: Conveyor does not run with cab control "On", PTO engaged and vehicle driving forward. See reasons 20.
- Symptom: Conveyor runs when control switch in cab is in "Off" position. See reasons 15 & 21.
- Symptom: Conveyor starts to run when PTO is engaged. See reasons 15, 20, 21 & 22.
- Symptom: Controller application or programming. Refer to the control manual's Troubleshooting section.

<u>Reason:</u>	<u>Correction:</u>
1. Hydraulic oil level low.	Add hydraulic oil to reservoir to maintain level around mid-point of sight gauge.
2. Shut Off valve on oil reservoir not open.	Open valve fully by turning counter clockwise until it stops.
3. Hydraulic Pump is not rotating.	1. PTO is disengaged. Shift into engagement. 2. Drive line has failed. Repair or replace. 3. Key in pump shaft has failed. Replace key. 4. U-joint pin or key has failed. Replace pin or key.
4. Worn pump.	With flow meter arranged to check relief valve setting above, open load valve fully. Read flow rate with truck engine running at max RPM. Close load valve until pressure reads 1000 PSI (69 bar). Flow rate should not decrease more than three (3) GPM. If flow loss is greater, replace pump.
5. Conveyor relief valve open to return line.	Using relief valve testing adapter and flow meter, test valve for opening pressure. If not 3100 PSI (214 bar), replace relief valve.
6. Jammed or frozen spinner motors.	Free up. If not possible, replace as required.
7. Jammed or frozen conveyor.	Free up conveyor.

Reason:	Correction:
8. In line relief valve set too low.	In line relief valve pressure should be 3100 PSI (214 bar). Set spinner control valve to "0". Disconnect pressure line, coming from rear port on spinner control valve, at control. Reconnect this line to flow meter inlet port. Disconnect return line from control where it joins the return tube running to the reservoir. Connect flow meter load valve to return tube. Open load valve fully, run truck engine at max RPM. Slowly close load valve until pressure reaches 3100 PSI (214 bar). If this pressure cannot be reached, set up relief valve adjustment until gauge reads 3100 PSI (214 bar). CAUTION: Do not set pressure above 3100 PSI (214 bar).
9. Jammed or frozen conveyor hydraulic motor.	Replace motor.
10. Conveyor hydraulic motor shaft key sheared.	Replace key.
11. Pump speed is not adequate to provide sufficient flow to maintain spinner speed.	Increase engine speed or resize hydraulic pump to meet system requirements.
12. Insufficient hydraulic oil flow at normal driving speeds.	Check PTO-Pump matching. If insufficient flow results, install higher percent PTO or use larger pump (Special).
13. Defective spinner control valve.	Replace valve metering spool spring. If no improvement, replace spinner control valve.
14. Cab control is for conveyor only—spinners run anytime vehicle engine is running, PTO is engaged and spinner control valve is in a running position.	None required. This is a normal condition. To stop spinners, set spinner control valve at "O" position, disconnect PTO, or shut off vehicle engine.
15. Excessive oil is being pumped.	<ol style="list-style-type: none"> 1. PTO percentage too high. Change PTO to smaller percentage or use smaller pump. 2. Pump is too large. Do not exceed 40 GPM (151 LPM) pumping rate. Change to smaller pump or use smaller percentage PTO. 3. Pressure drop in control valve is sufficient to run lightly loaded conveyor motor. Shut off pump drive by disengaging PTO shaft.
16. Worn motor (spinner or conveyor).	Motor heats up at an excessive rate (check for this heating when system is cold). Replace motor.
17. Improper or deteriorated hydraulic oil.	Replace hydraulic oil with proper specification oil and replace filter.
18. Pinched or obstructed hose, hydraulic line or fitting.	Clear obstruction or replace part. Straighten kinked hoses.
19. Driving too fast for application rate.	Shift truck transmission to a lower gear. Will not normally occur if within maximum application rates.
20. Defective radar.	Check speed on console. Repair or replace radar as required.
21. Control processor's power is in "Off" position.	Turn on control processor.
22. Involves the controller.	Refer to control manual.

CAP SCREW GRADE IDENTIFICATION - MARKINGS ON HEAD



USE GRADE 2 TORQUES FOR STAINLESS STEEL FASTENERS AND CARRIAGE BOLTS.

CAP SCREW SIZE	TORQUE - FOOT-POUNDS					
	GRADE 2		GRADE 5		GRADE 8	
	DRY	LUBE	DRY	LUBE	DRY	LUBE
1/4"	5	4	8	6	12	9
5/16"	11	8	17	13	25	18
3/8"	20	15	30	23	45	35
7/16"	30	24	50	35	70	55
1/2"	50	35	75	55	110	80
9/16"	65	50	110	80	150	110
5/8"	90	70	150	110	220	170
3/4"	100	120	260	200	380	280
7/8"	140	110	400	300	600	460
1"	220	160	580	440	900	650

TORQUES



Order from the **AUTHORIZED DEALER** in your area.

1. Always give the pertinent model and serial number.
2. Give part name, part number and the quantity required.
3. Give the correct address to where the parts are to be shipped, and the carrier if there is a preference.

Unless claims for shortages or errors are made immediately upon receipt of goods they will not be considered. Any part returns should be directed through the dealer from which they were purchased.

When broken goods are received, a full description of the damage should be made by the carrier agent on the freight bill. If this description is insisted upon, full damage can always be collected from the transportation company.

No responsibility is assumed for delay or damage to merchandise while in transit. Our responsibility ceases upon delivery of shipment to the transportation company from whom a receipt is received showing that shipment was in good condition when delivered to them, therefore, claims (if any) should be filed with the transportation company and not with Highway Equipment Company.

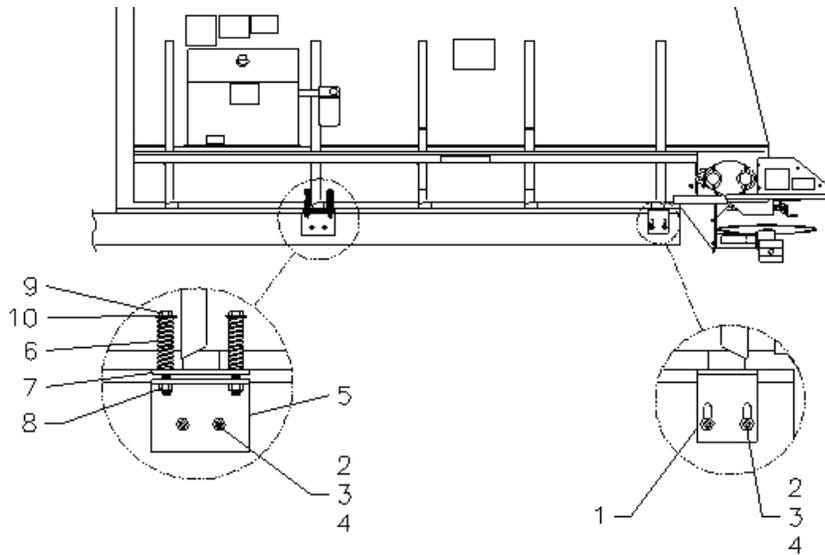
If your claims are not being handled (by the transportation company) to your satisfaction, please call the Parts Manager at Highway Equipment Company (319-363-8281) for assistance.

In the parts list the following symbols and abbreviations stand for:

- * - Not Shown
- AR – As Required
- CS – Carbon Steel
- SS – Stainless Steel

The parts listed under the different steel types (CS, 409 SS and 304 SS) are for that type of unit and do not necessarily mean the part is made of that type of steel.

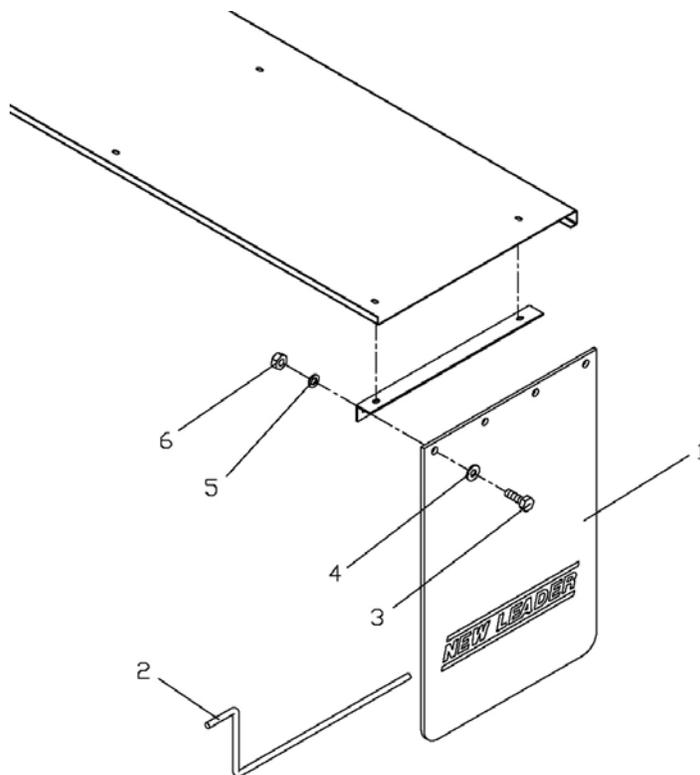
MOUNTING ANGLE



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	31856	Angle - Mounting	4
2	20131	Cap Screw - 1/2 x 2	12
3	20695	Washer – Flat 1/2	12
4	20680	Washer – Flat 1/2	12
5	81847	Angle - Tie Down	2
6	81000	Spring	4
7	81848	Mounting - Bar	2
8	41762	Nut – Lock 5/8	4
9	20195	Cap Screw - 5/8 x 6 1/2	4
10	20697	Washer – Flat 5/8	4

* - Not Shown

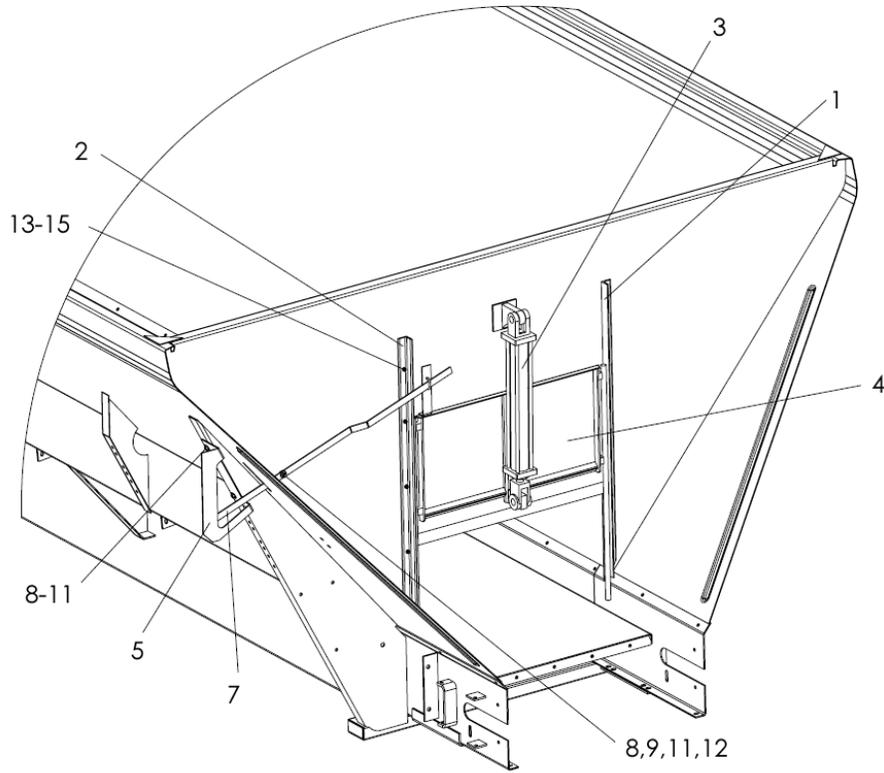
MUD FLAPS



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	55324	Mudflap – Kit (plain)	
	46474	Hardware – Kit, Includes 3-6	
1	21770	Mudflap – Plain	2
	* 304245	Mudflap – Midguard	2
2	36844	Rod – Mudflap	2
3	20067	Cap Screw – 3/8-16 x 1	8
4	20693	Washer – Flat 3/8	8
5	20712	Washer – Lock 3/8	8
6	20644	Nut – Hex 3/8-16	8

* - Not Shown

FEEDGATE

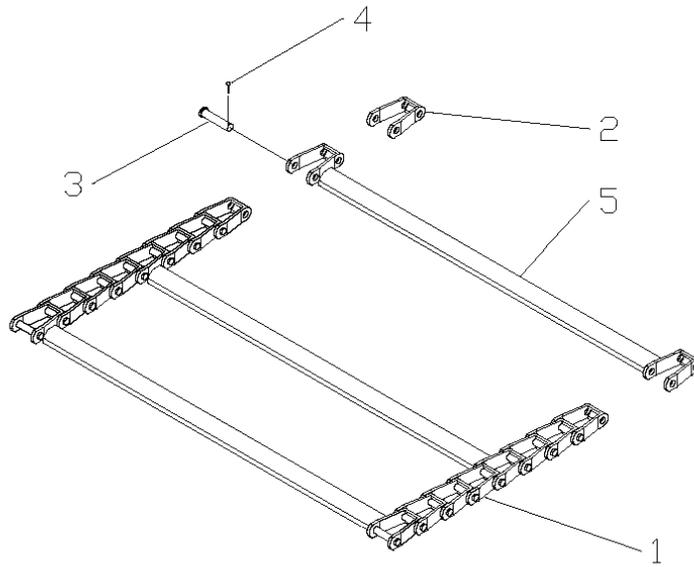


FEEDGATE CONTINUED

<u>ITEM</u>	<u>PART NO.</u>		<u>DESCRIPTION</u>	<u>QTY</u>
	CS	SS		
	304497	305496	Feedgate – Group with Shields #3, Includes 1-15	
	305479	305478	Feedgate – Group without Shields #2, Includes 1-15	
	305500	305550	Hardware - Group #2, Includes 16-18	
1	70287	70287-X1	Slide – Wldmt Feedgate RH #3	1
	70286	70286-X1	Slide – Wldmt Feedgate RH #2	1
2	70289	70289-X1	Slide – Wldmt Feedgate LH #3	1
	70288	70288-X1	Slide – Wldmt Feedgate LH #2	1
3	55377	55377	Cylinder – Hydraulic	1
4	305488	305486	Feedgate – Wldmt 34" #3	1
	305473	303298	Feedgate – Wldmt 34" #2	1
5	303379	303325	Bracket – Indicator	1
6	*55395	55395	Decal – Indicator	1
7	303324	303323	Indicator – Feedgate	1
8	304452	304451	Retainer – Belt 34" #3	1
	305474	303302	Retainer – Belt 34" #2	1
9	303118	303118	Sealer – Feedgate 34" #3	1
	303303	303303	Sealer – Feedgate 34" #2	1
8	20068	36399	Cap Screw – 3/8-16 x 1-1/4	3
9	20693	36425	Washer – Flat 3/8	6
10	20712	36420	Washer – Lock 3/8	2
11	20644	36414	Nut – Hex 3/8-16	3
12	20678	72054	Nut – Lock 3/8-16	1
13	20003	36393	Cap Screw – 1/4-20 x 3/4	11
14	20710	36418	Washer – Lock 1/4	11
15	20642	36412	Nut – Hex 1/4-20	11
16	*71829	71829	Screw - Truss Head 3/8-16 x 1 SS	AR
17	*36420	36420	Washer - Lock 3/8 SS	AR
18	*36414	36414	Nut - Hex 3/8-16 SS	AR

* - Not Shown AR - As Required

PINTLE CHAIN CONVEYOR (#1)



#1 – Cross bars every 3rd link

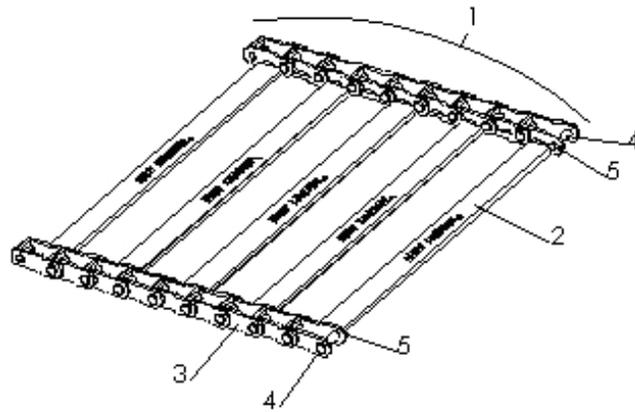
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	305774-AA	#1 Pintle Chain – 12' Unit	1
	305774-AB	#1 Pintle Chain – 13' Unit	1
	305774-AC	#1 Pintle Chain – 14' Unit	1
	305774-AD	#1 Pintle Chain – 16' Unit	1
	305774-AE	#1 Pintle Chain – 18' Unit	1
	305774-AF	#1 Pintle Chain – 21' Unit	1
2	36699	Link – Pintle	AR
3	36697	Pin – Chain	AR
4	20817	Pin – Cotter	AR
5	95850-X1	Cross Bar Wldmt	AR

AR – As required

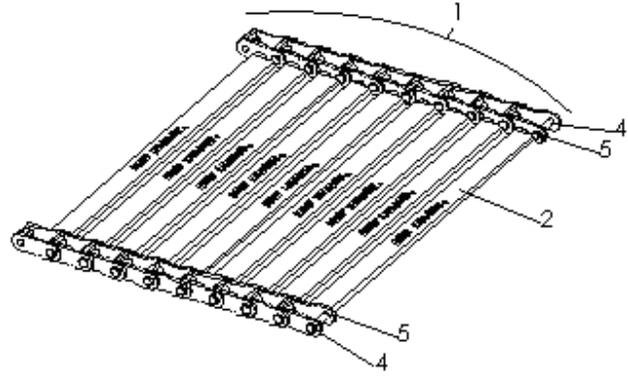
PARTS LIST



PINTLE CHAIN CONVEYOR (#2 & #3)



#2 – Cross bars every other link

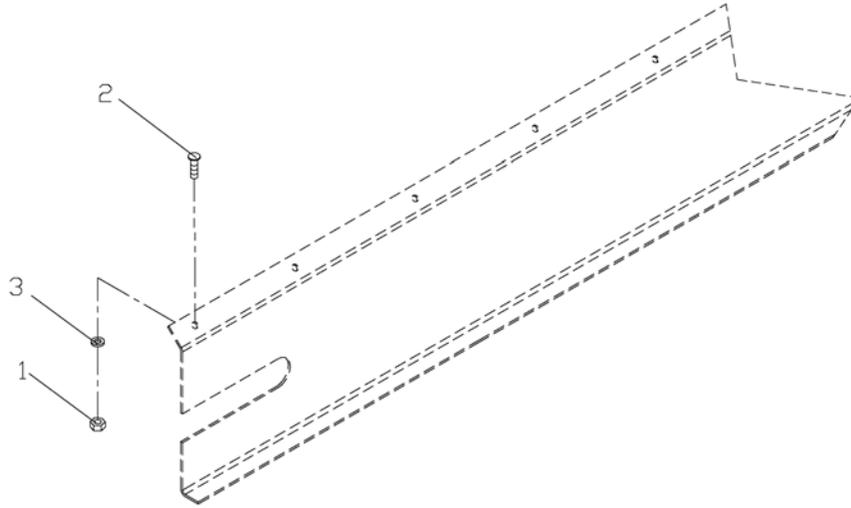


#3 – Cross bars every link

<u>ITEM</u>	<u>PART NO.</u>		<u>DESCRIPTION</u>	<u>QTY</u>
	#2	#3		
1	304465-AA	304466-AA	Chain – Assy 12' Unit	1
	304465-AB	304466-AB	13' Unit	1
	304465-AC	304466-AC	14' Unit	1
	304465-AD	304466-AD	16' Unit	1
	304465-AE	304466-AE	18' Unit	1
	304465-AF	304466-AF	21' Unit	1
2	95850	95850	Crossbar Wldmt	AR
3	36699	36699	Link – Pintle Chain	AR
4	36697	36697	Pin – Pintle Chain	AR
5	20817	20817	Pin – Cotter	AR

AR - As Required

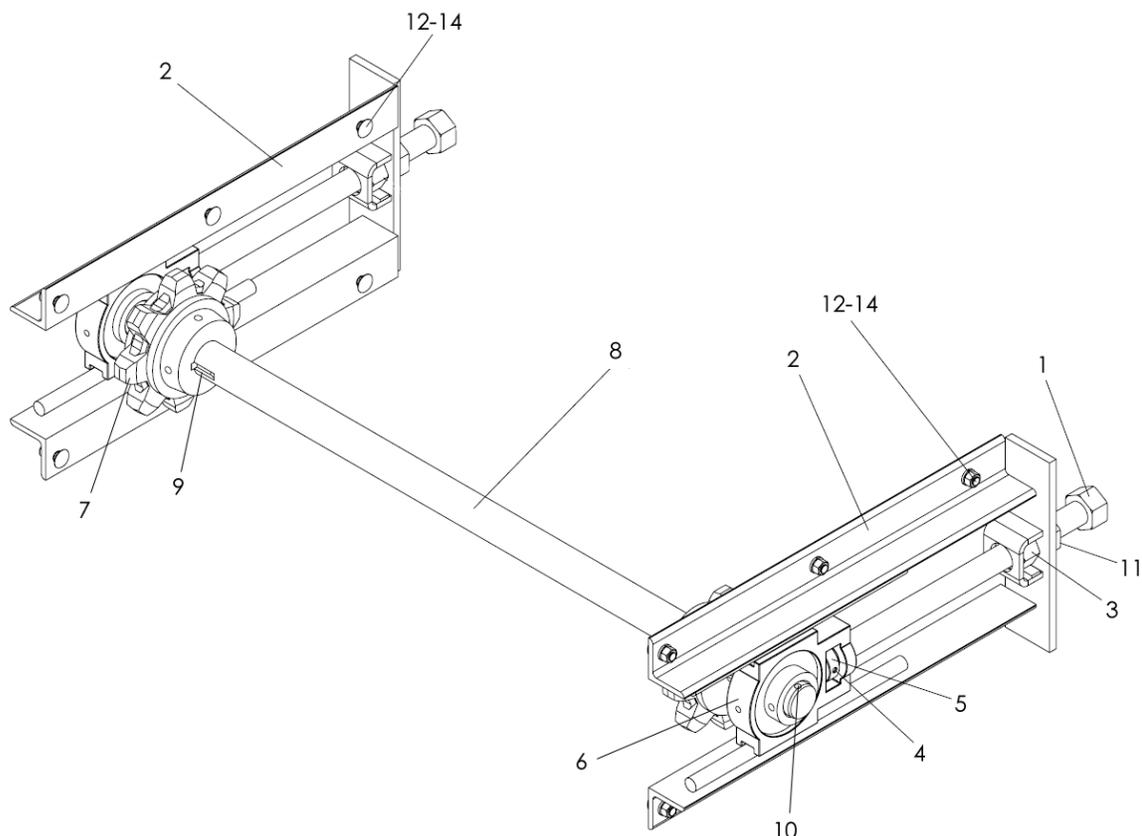
CHAIN SHIELDS



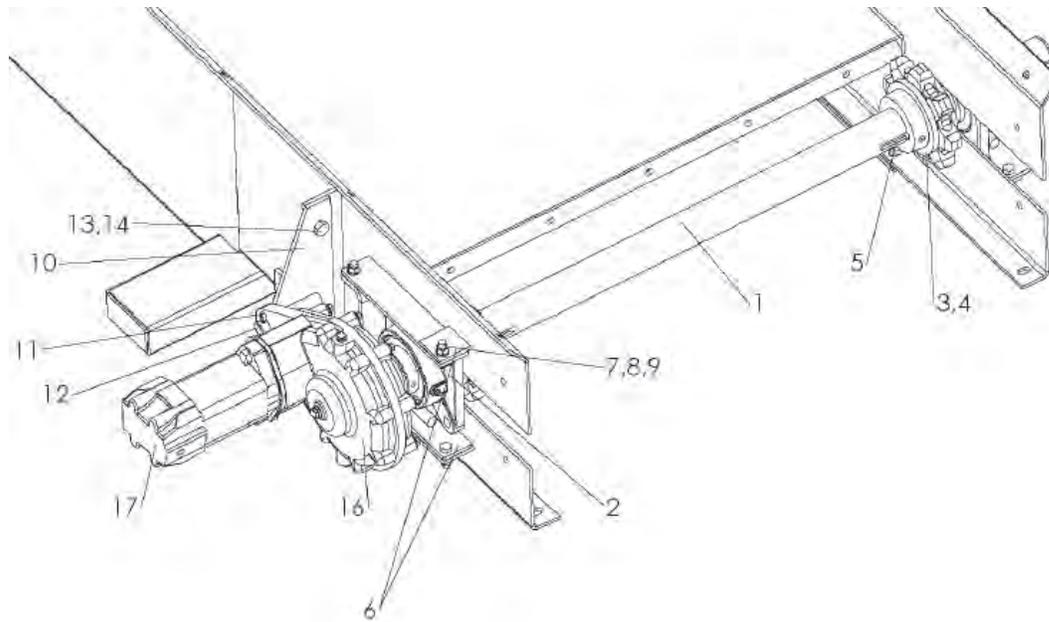
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1		Chain Shield – Chain	
	305450-AA	12' Unit	2
	305450-AB	13' Unit	2
	305450-AC	14' Unit	2
	305450-AD	16' Unit	2
	305450-AE	18' Unit	2
	305450-AF	21' Unit	2
2	71829	Bolt – Carriage 3/8 x 1	AR
3	36420	Washer – Lock 3/8	AR
4	36414	Nut – Hex 3/8	AR

AR – As Required

PARTS LIST



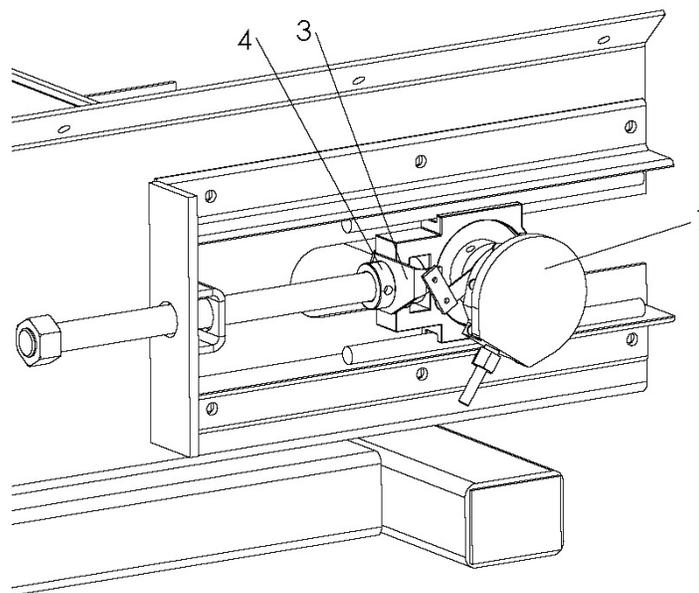
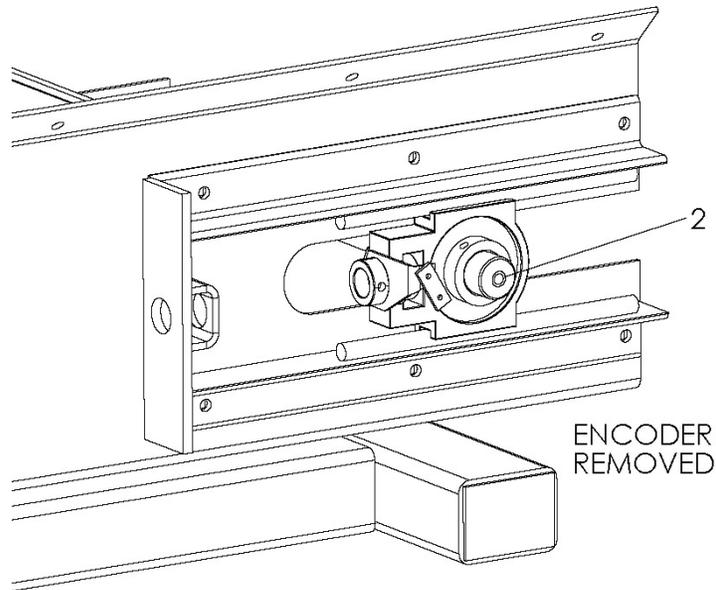
ITEM	PART NO.		DESCRIPTION	QTY
	CS	SS		
	303320	303320	Idler - Shaft Assy, Includes 6-10	
1	36508	36508	Tightener – Chain Wldmt	2
2	7895	7895	Take-up Wldmt	2
3	39110	39110	Nut Wldmt	2
4	20925	20925	Pin – Roll 1/4 x 1 1/2	2
5	30725	30725	Collar – Set 1”	2
6	22511	22511	Bearing – Take-up	2
	6070	6070	Zerk – Grease .125 45°	2
7	97051	97051	Sprocket – Idler	2
8	303305	303305	Shaft – Idler	1
9	2135	2135	Key – Square 5/16 x 2 1/2	2
10	20735	20735	Screw – Set 1/4-20 x 1/4	1
11	36509	36509	Nut – Hex 1-8NC SS	2
12	20318	36408	Bolt – Carriage 3/8 x 1	12
13	20712	36420	Washer – Lock 3/8	12
14	20644	36414	Nut – Hex 3/8	12



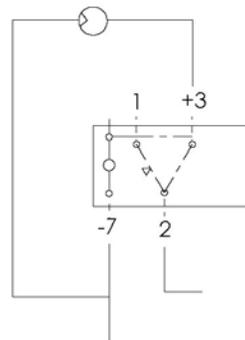
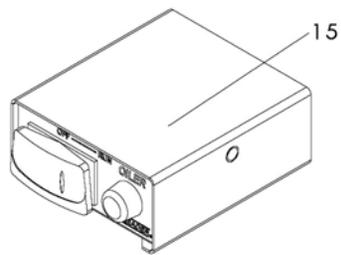
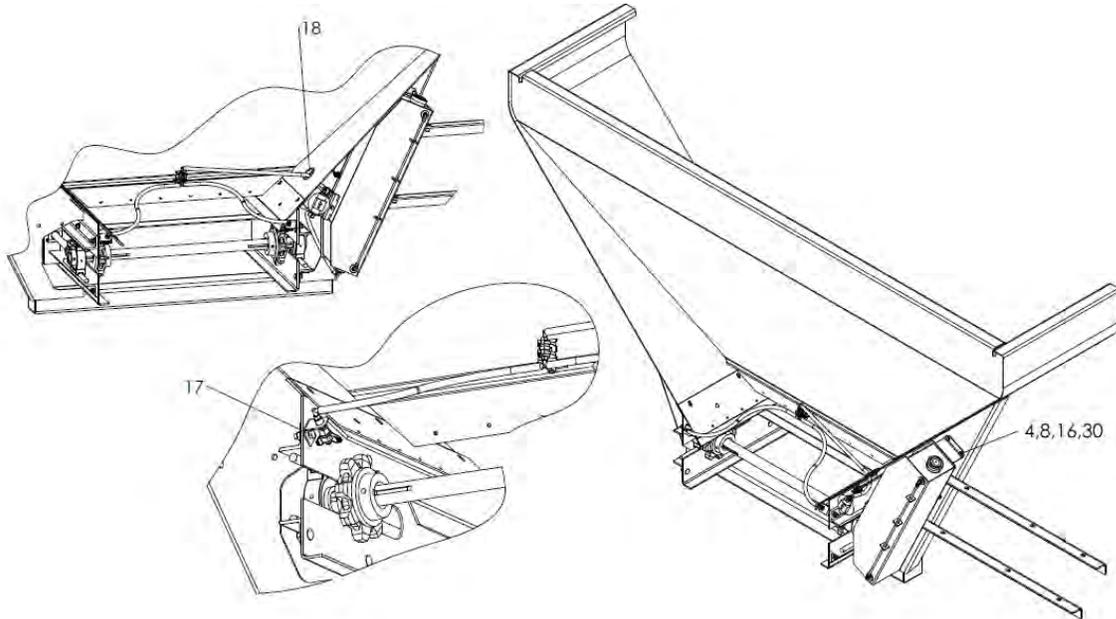
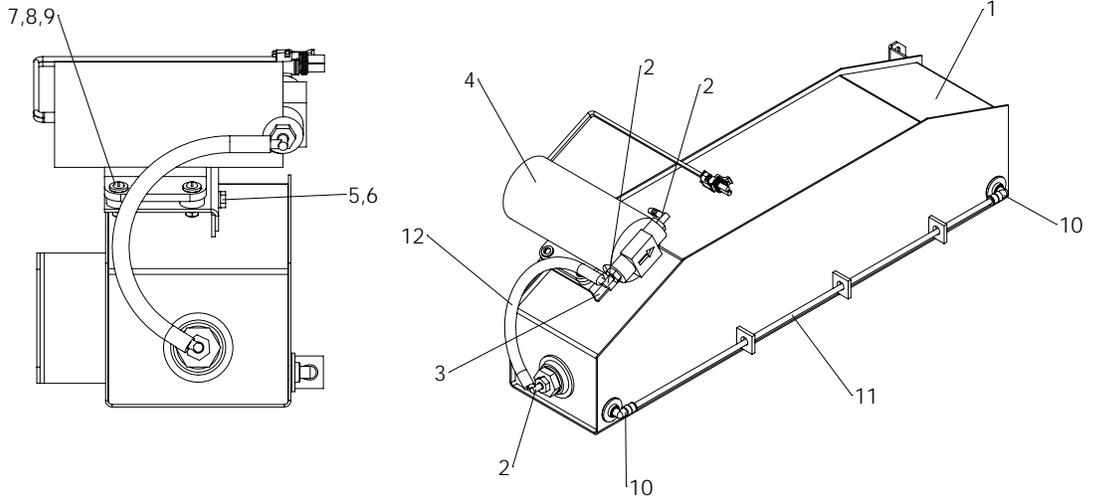
ITEM	PART NO.		DESCRIPTION	QTY
	CS	SS		
	303319	303319	Shaft - Drive Assy, Includes 1-5	
1	303304	303304	Shaft - Drive	1
2	6465	6465	Bearing	2
3	88276	88276	Sprocket	2
4	20748	20748	Screw - Set 3/8-16 x 3/8	4
5	6131	6131	Key - Square 3/8 x 1 1/2	2
6	82882	82855	Guide - Bearing	4
7	20068	36399	Cap Screw - 3/8 x 1 1/4	8
8	20712	36420	Washer - Lock 3/8	8
9	20644	36414	Nut - Hex 3/8	8
10	82550	82552	Mount - Torque Arm LH	1
11	20833	20833	Pin - Cotter 1/4 x 1 1/2	1
12	2716	2716	Washer - Flat 3/4	2
13	20128	20128	Cap Screw - 1/2 x 1 1/4	2
14	20680	20680	Nut - Lock 1/2	2
15	20644	20644	Nut - Hex 3/8	12
16	*82549	*82551	Mount - Torque Arm RH	1
17	33671	33671	Gearcase - 6:1, see <i>Gear Case</i> parts list	1
18	303838	303838	Motor - Hydraulic 2000 Series 8.0 CID	2
	56270	56270	Motor - Hydraulic 2000 Series 9.6 CID	2

* - Not Shown

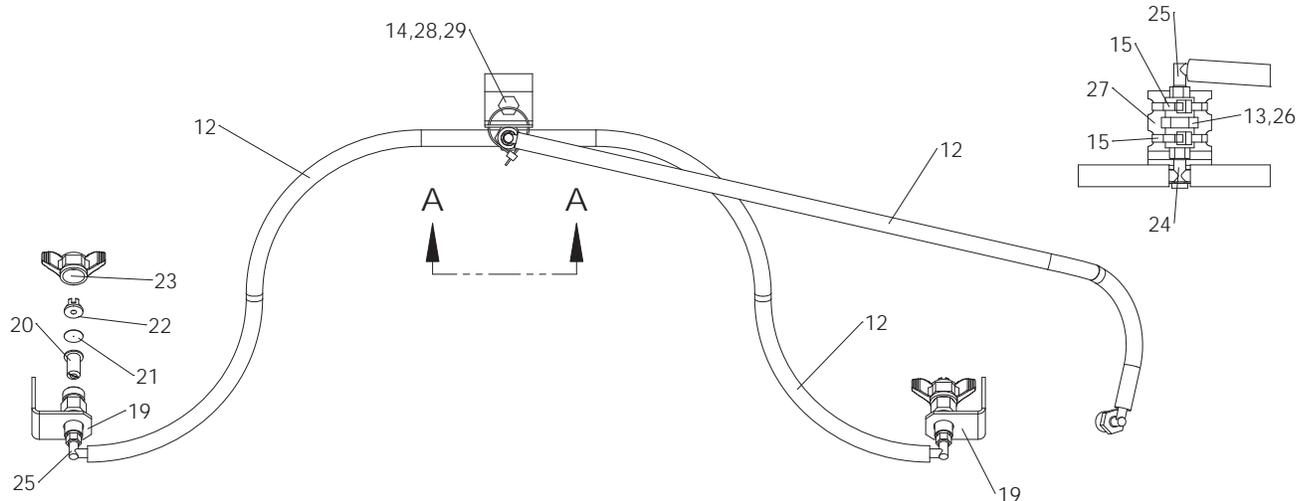
ENCODER



ITEM	PART NO.	DESCRIPTION	QTY
	304787	Mount – Kit Encoder Front, Includes 2-4	
1	303994	Encoder – 180 with Hardware	1
2	56263	Sleeve – Rate Sensor	1
3	81949	Bracket – Sensor, Idler Mount	1
4	2696	Collar – Set 1”	1
5	*304955	Cable - Jumper Encoder	1



PARTS LIST



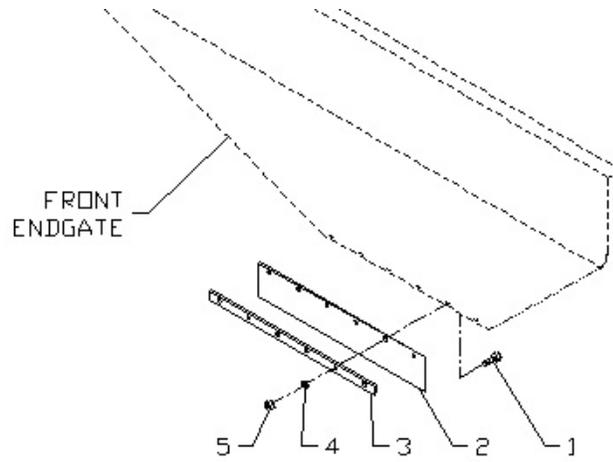
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	306062	Oiler – Assy	
	306066	Tank - Assy Chain Oiler, Includes 1-13	
	306659	Nozzle & Hose Assy, Includes 14,19-29	
1	305754	Tank – Wldmt	1
2	306657	Elbow	3
3	304409	Mount - Pump	1
4	304390	Pump - Assy with Connector	1
	304834	Pump - Diagram 1.1 GPM 30 PSI	1
	303730-AB	Connector - FEM Socket Sealed	1
	303730-CC	Terminal - FEM Sealed (Sleeve)	2
	303730-EB	Seal - Cable Lt Gray	2
5	36393	Cap Screw - 1/4 x 3/4 SS	5
6	36418	Washer - Lock 1/4 SS	5
7	44454	Screw - Socket Head #10-24 x 1 SS	4
8	171052	Washer - Flat #10 SS	8
9	56355	Nut - Lock #10-24 SS	4
10	301337	Fitting - 90 Male 1/8 NPT	2
11	306437	Tubing - Clear	2.063 ft
12	26544	Hose - Low Pressure 1/4 ID x 8	AR
13	*306670	Tape - Thread Seal w/PTFE Yellow Gas Line	AR
14	36414	Nut - Hex 3/8 SS	2
15	304391	Panel – Assy Oiler Control	1
	99676	Fuse – 10AMP Fast Acting	1
16	36412	Nut - Hex 1/4 SS	4

CONVEYOR CHAIN OILER CONTINUED

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
17	36399	Cap Screw - 3/8 x 1-1/4 SS	2
18	34129	Grommet - Rubber	1
19	306649	Nozzle - Mount Assy	2
	304839	Angle - Wldmt Nozzle Mount	1
	306650	Body - Male Nozzle Brass	1
20	306651	Strainer - Check Valve	2
21	306652	Plate - Orifice SS	2
22	306654	Nozzle - Even Flat Spray SS	2
23	306653	Cap - Nozzle	2
24	306655	Tee - Black	1
25	306656	Elbow - Black	3
26	306678	Coupling - Polypropylene	1
27	306804	Bracket - Coupling	1
28	36293	Cap Screw - 3/8 x 3/4 SS	1
29	36420	Washer - Lock 3/8 SS	1
30	36423	Washer - Flat 1/4 SS	4

* - Not Shown AR - As Required

FRONT WIPER

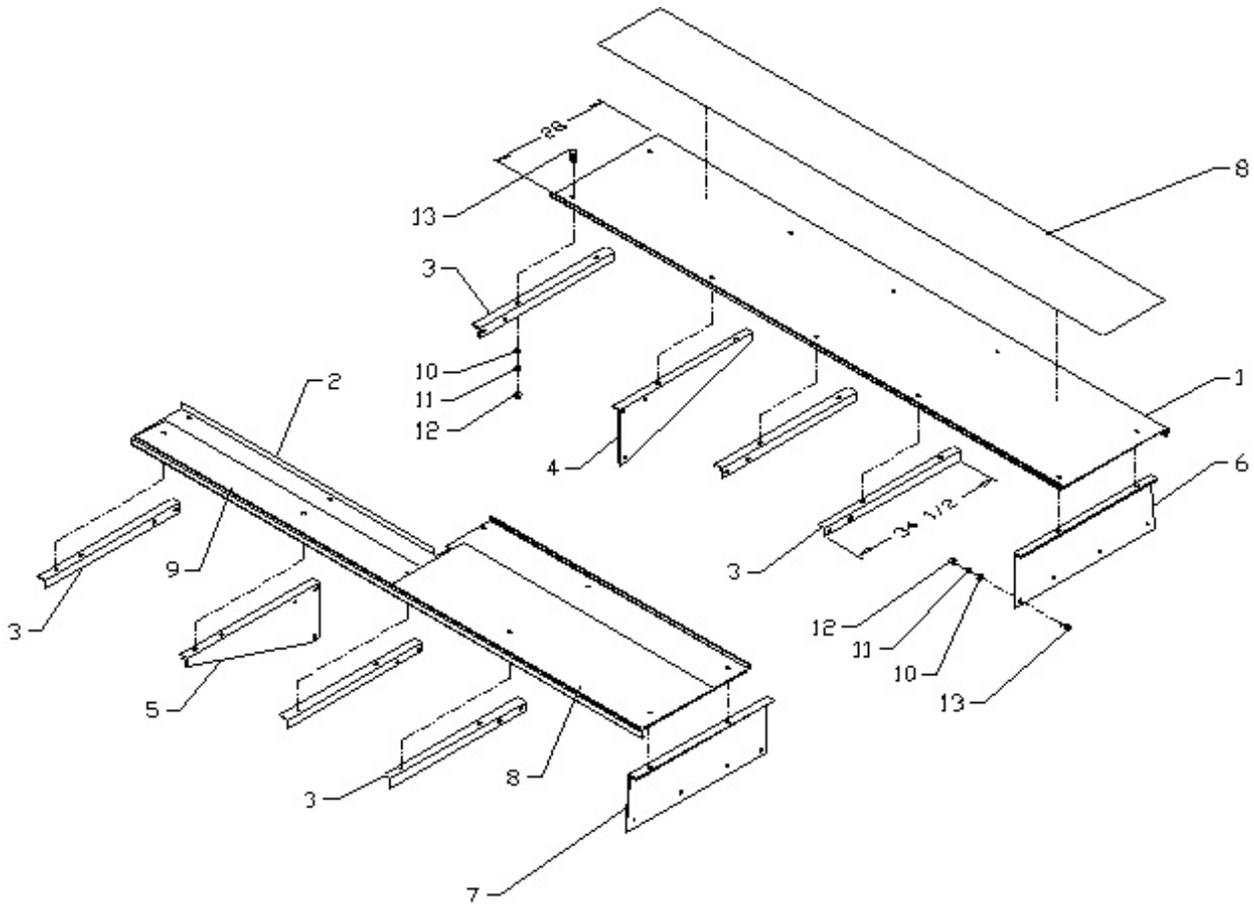


<u>ITEM</u>	<u>PART NO.</u>		<u>DESCRIPTION</u>	<u>QTY</u>
	#2	#3	Chain – Assy	
1	36393	36393	Screw – Machine 1/4 x 3/4	7
2	303314	303317	Wiper – Belt	1
3	303315	303316	Retainer – Belt	1
4	36418	36418	Washer – Lock 1/4	7
5	36412	36412	Nut – Hex 1/4	7

REAR WIPER GROUPS CONTINUED

<u>ITEM</u>	<u>PART NO.</u>		<u>DESCRIPTION</u>	<u>QTY</u>
	CS	SS		
	305326	302327	Lip – Group Rear, Includes 1-11	
	304440	305330	Lip - Rear Assy, Includes 5-8	
	304441	304442	Wiper – Assy Rear, Includes 1-4	
	304449	304449	Kit - Wiper Belt #2 & #3 Conv, Includes 12-18	
1	304444	304445	Mount - 34" Internal Wiper	1
2	304443	304443	Rubber - 34" Internal Wiper	1
3	56258	56258	Screw - Truss Head 1/4-20 x 1/2 SS	9
4	88931	88931	Nut - Tee 1/4 x 1/4	9
5	303306	305329	Wiper - 34" Rear Lip	1
6	303312	303306	Lip - Wldmt Rear 34"	1
7	20617	56400	Screw - Flathead 1/4-20 x 1/2	13
8	88931	88931	Nut - Tee 1/4 x 1/4	13
9	20068	36399	Cap Screw - 3/8-16 x 1-1/4	5
10	20712	36420	Washer - Lock 3/8	5
11	20644	36414	Nut - Hex 3/8-16	5
12	32446	32446	Screw - Truss Head 1/4-20 x 3/4 SS	2
13	36412	36412	Nut - Hex 1/4-20 SS	2
14	36418	36418	Washer - Lock 1/4 SS	2
15	304447	304447	Plate - Wiper Belt Spnr/Conv. 34"	1
16	304446	304446	Belt - Rear Wiper 34"	1
17	88931	88931	Nut - Tee 1/4 x 1/4	9
18	56258	56258	Screw - Truss Head 1/4-20 x 1/2 SS	9

FENDERS - FULL FLOATATION TIRES

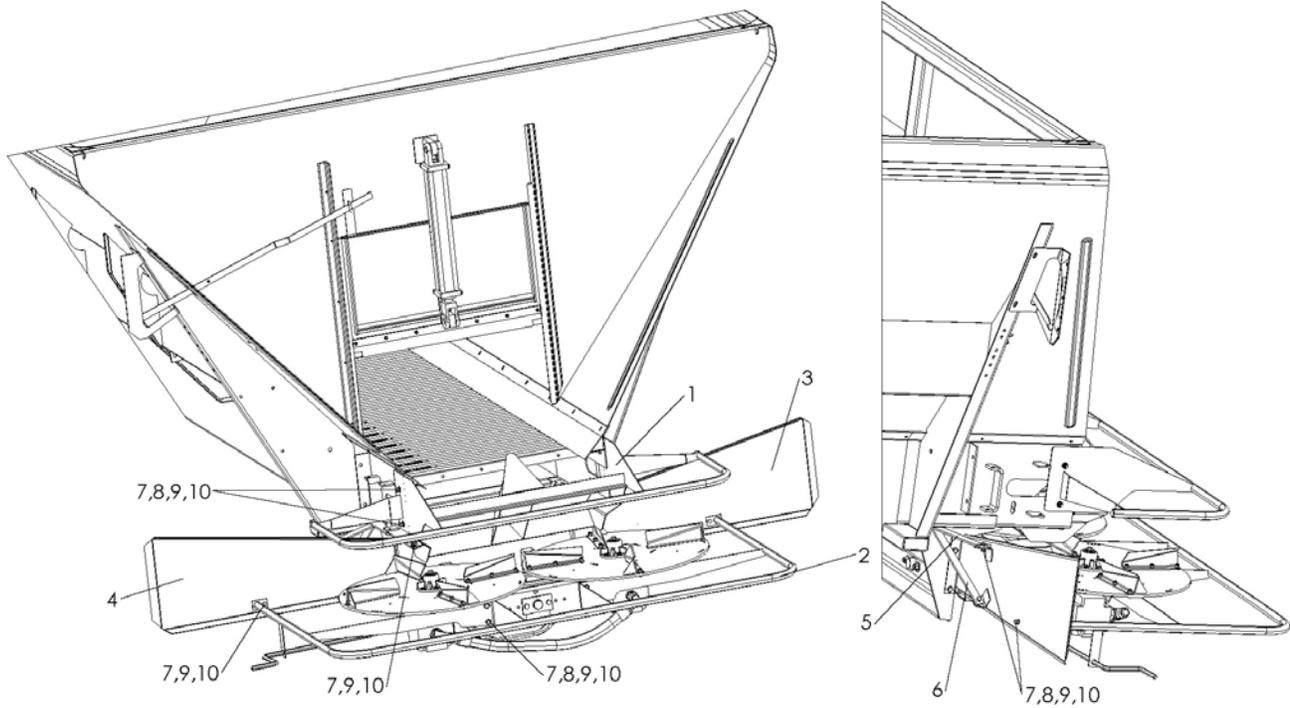


PARTS LIST



FENDERS - FULL FLOATATION TIRES CONTINUED

<u>ITEM</u>		<u>PART NO.</u>		<u>DESCRIPTION</u>	<u>QTY</u>
	CS	409 SS	304 SS		
1	83026	83042	83058	Fender – RH 12' Unit	1
	83027	83043	83059	Fender – RH 13' Unit	1
	83072	83078	83084	Fender – RH 14' Unit	1
	83074	83080	83086	Fender – RH 16' Unit	1
	303375	83080-X2	303377	Fender – RH 18' Unit	1
	304476	306256	304478	Fender – RH 21' Unit	1
2	83034	83050	83066	Fender – LH 12' Unit	1
	83035	83051	83067	Fender – LH 13' Unit	1
	83075	83081	83087	Fender – LH 14' Unit	1
	83077	83083	83089	Fender – LH 16' Unit	1
	303376	83083-X2	303378	Fender – LH 18' Unit	1
	304477	306258	304479	Fender – LH 21' Unit	1
3	83021	96969	96969	Angle – Mounting	AR
4	83017	96965	96965	Formed Angle – RH	1
5	83018	96966	96966	Formed Angle – LH	1
6	83019	96967	96967	Formed Angle – RH Rear	AR
7	83020	96968	96968	Formed Angle – LH Rear	AR
8	21699	21699	21699	Material – Non-Skid, 8" Wide Length	AR(2)
9	21699	21699	21699	Material – Non-Skid, 8" Wide Length	AR
10	20693	36425	36425	Washer – Flat 3/8	AR
11	20712	36420	36420	Washer – Lock 3/8	AR
12	20644	36414	36414	Nut – Hex 3/8	AR
13	20318	36408	36408	Bolt – Carriage 3/8 x 1	AR



WARNING

Guards are intended to reduce hazard of entanglement with machinery and injury. All guards must be installed per this drawing before spreader is put into operation.

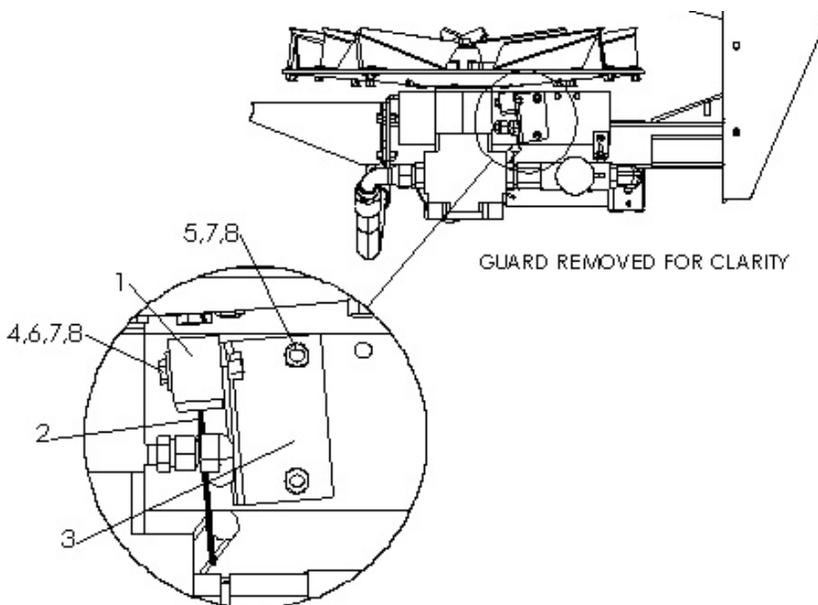
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	305318	Divider – Material Assy	
1	305309	Divider – Wldmt w/Guard 34"	1
2	304913	Guard – Wldmt 30" Spinner 304	1
3	305320	Shield – Wldmt RH 304	1
4	305321	Shield – Wldmt LH 304	1
5	87068	Bracket – Shield 304	2
6	305040	Bar – Stiffener Lower 304	2
7	36398	Cap Screw – 3/8 x 1 SS	22
8	36425	Washer – Flat 3/8 SS	20
9	36420	Washer – Lock 3/8 SS	22
10	36414	Nut – Hex 3/8 SS	20
11	*39640	Bolt – Carriage 1/2-13NC x 2 SS	4
12	*36426	Washer – Flat 1/2 SS	4
13	*36422	Washer – Lock 1/2 SS	4
14	*36416	Nut – Hex 1/2-13NC SS	4

* - Not Shown - used to mount spinner

PARTS LIST



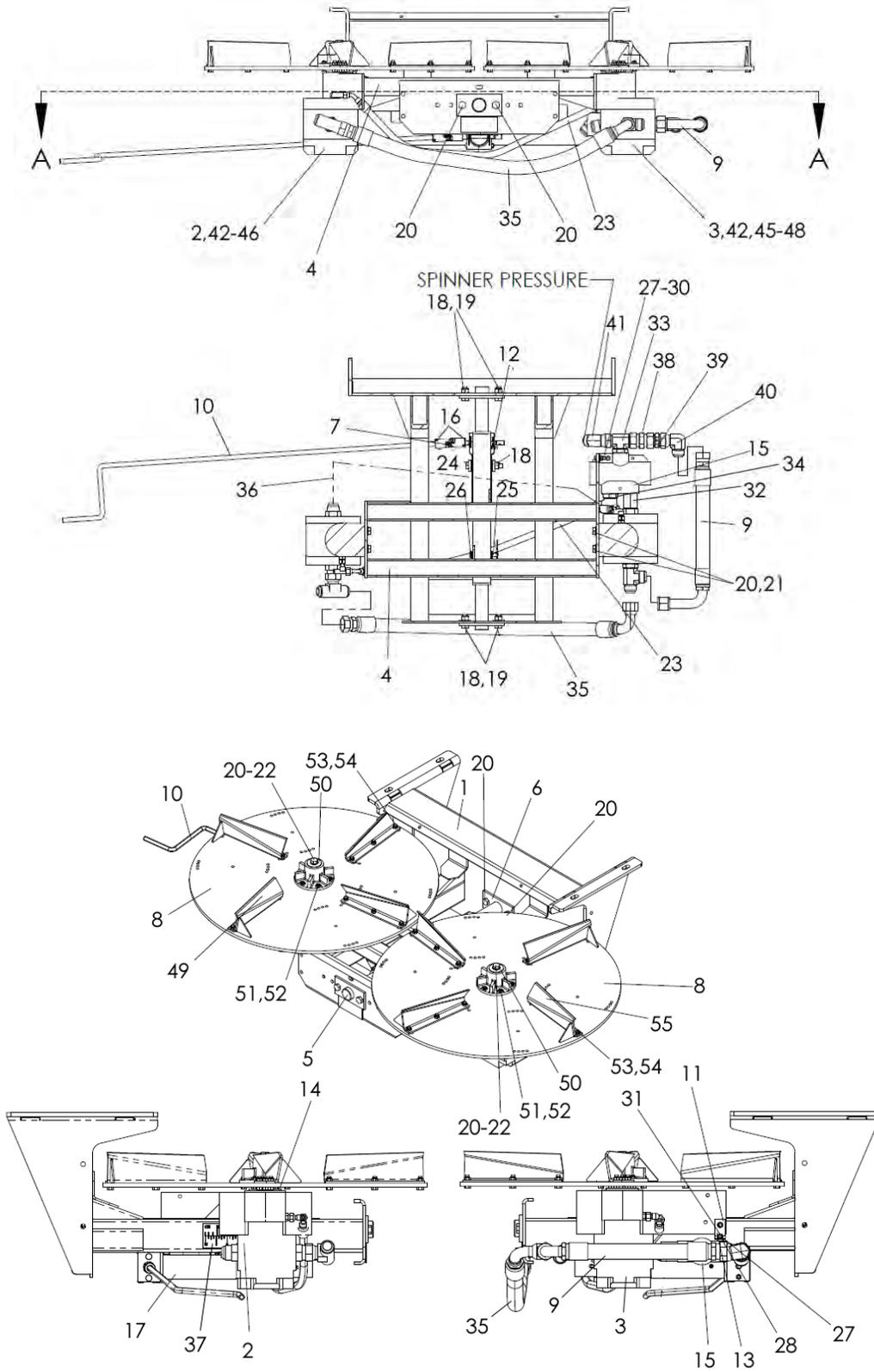
SPINNER SENSOR



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	97310	Sensor – Kit Spinner, Includes 1–8	
1	89011	Sensor – Assy	1
2	89009	Cable – Sensor Extension	1
3	86672	Bracket	1
4	42448	Cap Screw – 1/4 x 1-1/2 SS	2
5	36393	Cap Screw – 1/4 x 3/4 SS	2
6	36423	Washer – Flat 1/4 SS	2
7	36418	Washer – Lock 1/4 SS	4
8	36412	Nut – Hex 1/4 SS	4
9	* 88260	Control – Box Spinner	1

* - Not Shown

34" HYDRAULIC FANS



PARTS LIST



34" HYDRAULIC FANS CONTINUED

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	304895	34" Fan Assy, Includes 1-59	1
	304899	30" Disc – LH Assy, Includes Items 8, 49-54	1
	304900	30" Disc – RH Assy, Includes Items 8, 50-55	1
1	304911	Plate – Wldmt Back	1
2	305757	Motor – LH Style II Assy, Includes 42-46	1
3	307576	Motor - RH Style II Assy, Includes 42,45-48	1
4	304897	Mount – Wldmt 30" Disc	1
5	304898	Shaft – Wldmt 30" Disc 304	1
6	87023	Plate – Mounting Shaft	1
7	85002	U-Joint	1
8	304894	Disc – LH & RH Spinner 30"	2
9	56103-X1	Hose - Assy	1
10	14382	Handle – Jack Feedgate	1
11	87025	Angle – Mounting Valve	1
12	6072	Zerk – Grease	2
13	76825	Hinge - Pipe	1
14	305571	Washer – Rubber	2
15	71781	Valve – 50/50 Flow Divider	1
16	20918	Pin – Roll	2
17	87170	Jack – Coated Assy	1
18	39016	Nut – Lock 1/2	5
19	36426	Washer – Flat 1/2	4
20	36402	Cap Screw 1/2-13 NC x 1-1/4	14
21	36422	Washer – Lock 1/2	10
22	56397	Washer – Flat	2
23	304907	Hose - Assy	1
24	80798	Cap Screw – 1/2-13 x 3-3/4	1
25	36429	Pin – Hair	1
26	6547	Pin – Clevis	1
27	36412	Nut – Hex 1/4-20 NC x 1	2
28	36418	Washer – Lock 1/4 SS	2
29	36423	Washer – Flat 1/4 SS	1
30	36395	Cap Screw – 1/4-20 NC x 1 SS	1
31	41669	Cap Screw – 1/4-20 NC 1-3/4	1
32	34810	Adapter	1
33	34750	Fitting – 16-16-16 070429	1
34	29840	Adapter – Elbow	1
35	304905	Hose - Assy	1

NEW LEADER

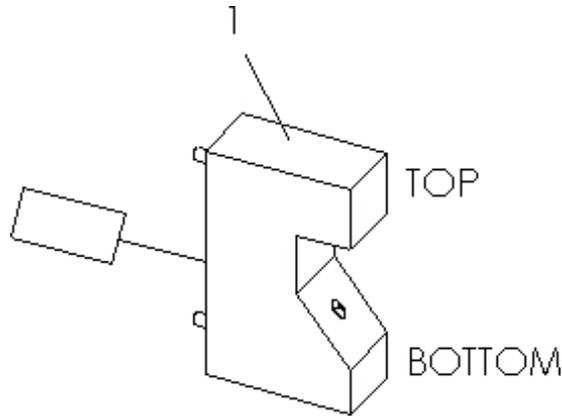
Please Give Part No., Description
& Unit Serial No.

34" HYDRAULIC FANS CONTINUED

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
36	304906	Hose - Assy	1
37	87110	Decal - Scale	1
38	302449	Fitting - 16-16 S1040-38 Non Standard	1
39	302160-AB	Valve - Check 1"	1
40	29807	Fitting - 16-16 070221	1
41	29806	Fitting - 16-16 070321	1
42	305945	Motor - Spinner	2
43	29836	Adapter - Tee Branch	1
44	29825	Tee - Swivel Nut Branch	1
45	29803	Adapter	3
46	34763	Adapter - Pipe	2
47	34816	Elbow - Hydraulic Fitting	1
48	305758	Fitting - 16-16-16 070428	1
49	307265	Fin - LH Wldmt	4
50	10877	Hub - Wldmt	2
51	20005	Cap Screw - 1/4-20 x 1	12
52	20676	Nut - Lock 1/4-20	12
53	20036-X1	Cap Screw - 5/16-18NC x 1	24
54	20677	Nut - Lock 5/16-18	24
55	307266	Fin - RH Wldmt	4
56	*36940	4 Bolt - Carriage 1/2-13NC x 2 SS	4
57	*36426	4 Washer - Flat 1/2 SS	4
58	*36422	4 Washer - Lock 1/2 SS	4
59	*36416	Nut - Hex 1/2-13NC SS	4

* - Not Shown - Used to attach spinner to sills.

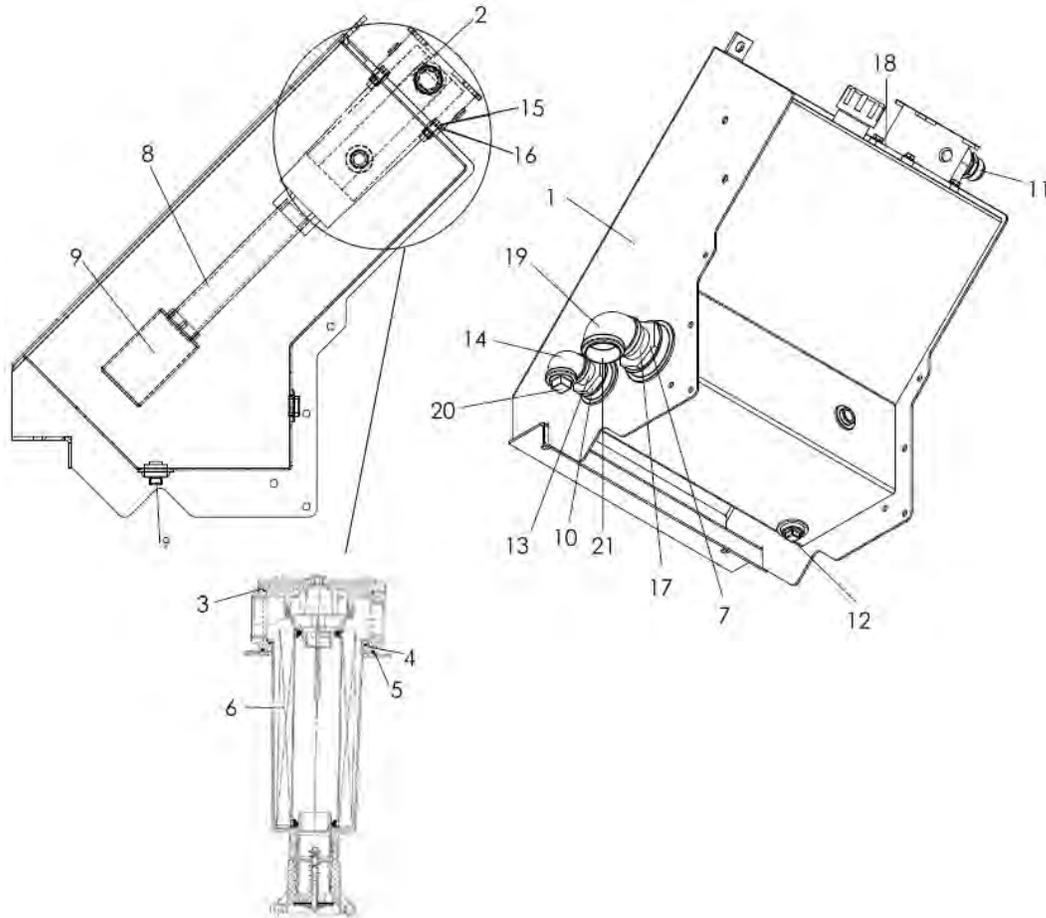
BIN SENSOR



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	98788-AA	Sensor Kit - Bin Level Single, Includes 1 & 2	
	98788-AB	Sensor Kit - Bin Level Dual, Includes 1,2,4 & 5	
	304687-AB	Sensor Kit - Bin Level 102', Includes 1,3,4 & 5	
1	98787-AB	Lead - 18" Bin Level Sensor	AR
2	*98787-AD	Cable - 27' Bin Level Sensor	AR
3	*307130	Cable - Jumper 102"	AR
4	*307124	Mount - Sensor 304	AR
5	*36393	Cap Screw - 1/4-20NC x 3/4 SS	AR

* - Not Shown

RESERVOIR TANK



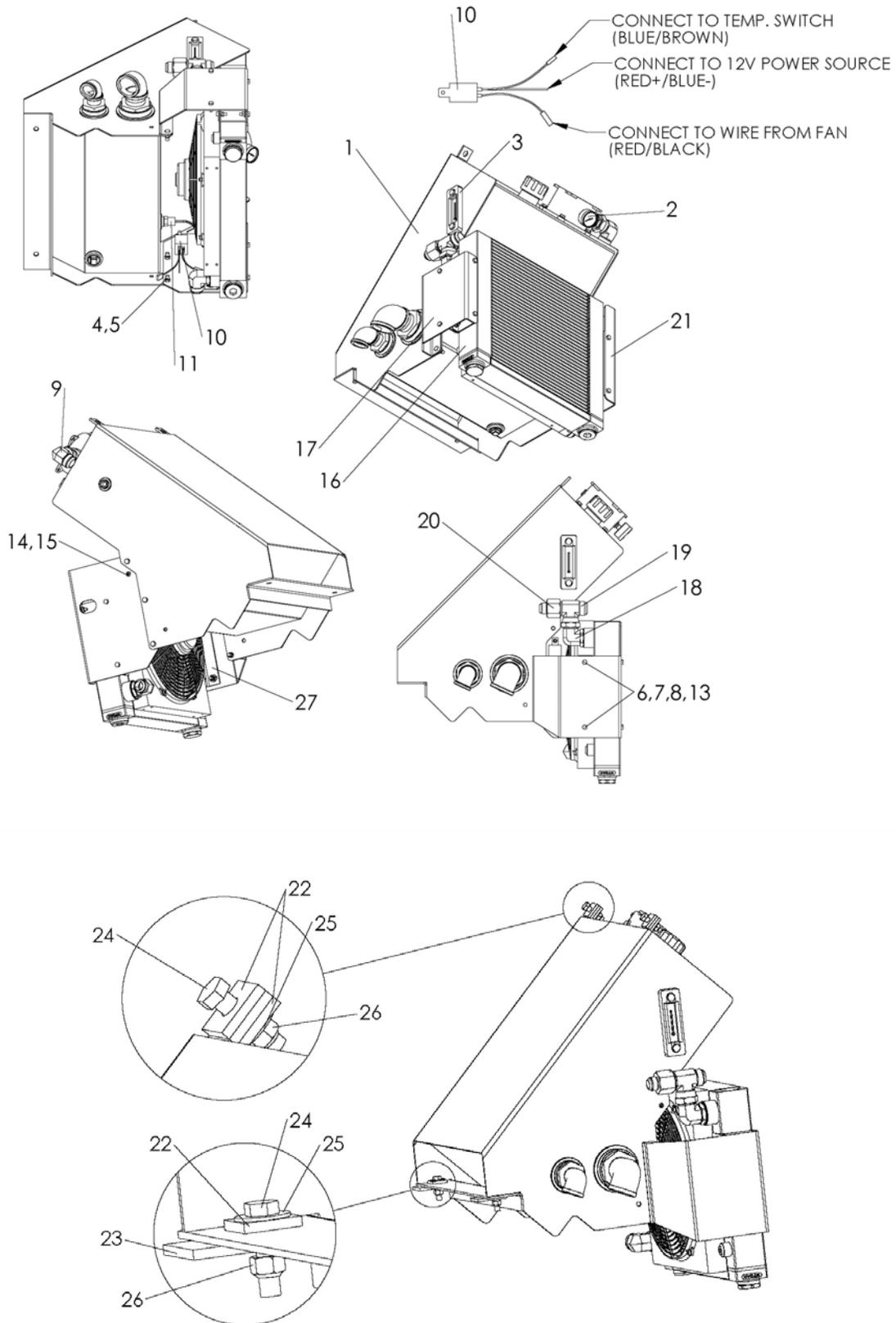
PARTS LIST



RESERVOIR TANK CONTINUED

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	305054	Hydraulic Tank Assy	
1	305050	Tank – Hydraulic Wldmt	1
2	88838	Filter – Return, Includes 3-6	1
3	306772	O-Ring - Cover Filter	1
4	306773	O - Ring - Housing Filter	1
5	306789	Seal - Filter Assy	1
6	305066	Element - Filter	1
7	305063	Strainer – 2 NPT	1
8	305058	Pipe – 1.5 SCH40 10	1
9	305057	Diffuser – Tank	1
10	305062	Strainer – 1-1/4 NPT	1
11	29768	Fitting – 20-20 070102	1
12	305061	Plug – Magnetic 1 NPT	1
13	6028	Nipple - Close 1-1/4 NPT	1
14	6011	Elbow 90° 2 NPT	1
15	20068	Cap Screw – 3/8-16 x 1-1/4	4
16	20712	Washer – Lock 3/8	4
17	22324	Nipple - Close 2 NPT STD	1
18	306186	Gasket Maker - Silicone	1
19	23703	Adapter - Elbow 90° 2 NPT	1
20	6035	Plug - Pipe 1-1/4 NPT	1
18	306301	Plug - Tapered 2 NPT	1

RESERVOIR & COOLER



PARTS LIST



RESERVOIR & COOLER CONTINUED

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	305751	Reservoir Tank – Mount Assy, Includes 1-27	1
	305533	Cooler Tank Assy, Includes 1-21,27	1
1	305054	Hydraulic Tank Assy, see <i>Reservoir Tank</i> parts list	1
2	43534	Indicator – Service	1
3	38575	Gauge – Sight & Temperature	1
4	36398	Cap Screw – 3/8-16NC x 1 SS	5
5	72054	Nut – Lock 3/8 SS	5
6	36424	Washer – Flat 5/16	8
7	34580	Cap Screw – 5/16 x 1	8
8	36413	Nut – Hex 1/3-18NC SS	8
9	98568	Fitting – 20-20 070221	1
10	96750-X1	Relay – 12VDC 40A	1
11	305074	Switch – Temperature 114°	1
12	*98662	Hose – 1-1/4 2CB x 48	1
13	36419	Washer – Lock 5/16 SS	8
14	56258	Screw – Truss Head 1/4-20 x 1/2 SS	1
15	42034	Nut – Lock 1/4-20 SS	1
16	305767	Cooler – Assy	1
17	305761	Bracket – Cooler LH	1
18	96916	Fitting – 20-20 070220	1
19	53267	Fitting – 20-20 070433	2
20	34819	Fitting – 20-16 070123	1
21	305760	Bracket – Cooler RH	1
22	39159	Belt – Spacer	6
23	39158	Belt – Flex Mount	2
24	36403	Cap Screw – 1/2-13 x 2 SS	4
25	36426	Washer – Flat 1/2 SS	4
26	39016	Nut – Lock 1/2-13NC SS	4
27	306447	Bracket – Cooler Mount	2
28	*306186	Gasket Maker – Silicone RTV	1

* - Not Shown

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	305504-AA	Tube – Assy 12'	1
	305504-AB	Tube – Assy 13'	1
	305504-AC	Tube – Assy 14'	1
	305504-AD	Tube – Assy 16'	1
	305504-AE	Tube – Assy 18'	1
	305504-AF	Tube – Assy 21'	1
2	98111-X2	Tube – Assy 12'	1
	98113	Tube – Assy 13'	1
	98115	Tube – Assy 14'	1
	98119	Tube – Assy 16'	1
	98121-X3	Tube – Assy 18'	1
	98121-X5	Tube – Assy 21'	1
3	305502-AA	Tube – Assy 12'	1
	305502-AB	Tube – Assy 13'	1
	305502-AC	Tube – Assy 14'	1
	305502-AD	Tube – Assy 16'	1
	305502-AE	Tube – Assy 18'	1
	305502-AF	Tube – Assy 21'	1
4	96925	Plate – Top 1-1/4 Tube	AR
5	96926	Clamp – Pair 1-1/4 Tube	AR
6	98649	Clamp - Pair 3/4 Tube	AR
7	86557	Clamp – Pair 1 Tube	AR
8	86556	Plate – Top 1 Tube	AR
9	34865	Cap Screw – 1/4 x 2-1/4	AR
10	36412	Nut – Hex 1/4-20NC x 2-1/4	AR
11	36418	Washer – Lock 1/4 SS	AR
12	36396	Cap Screw – 1/4 x 3 SS	AR
	306278	Valve - Assy Control 25 GPM SFP, Includes 13 & 14	
13	306279	Valve – 25 GPM Raven II	1
14	38576-X4	Valve – PWM	1
15	302097	Washer – Step	2
16	302098	Washer – Step	2
17	56396	Cap Screw – 1/4-20 x 3-1/4	2
18	36423	Washer – Flat 1/4 SS	4
19	29785	Fitting – 12-12 070201	1
20	305521	Hose – Assy 3/8 x 48-3/4" 100R1	1
21	305522	Hose - Assy 3/4 x 36" 100R12	1

NEW LEADER

Please Give Part No., Description
& Unit Serial No.

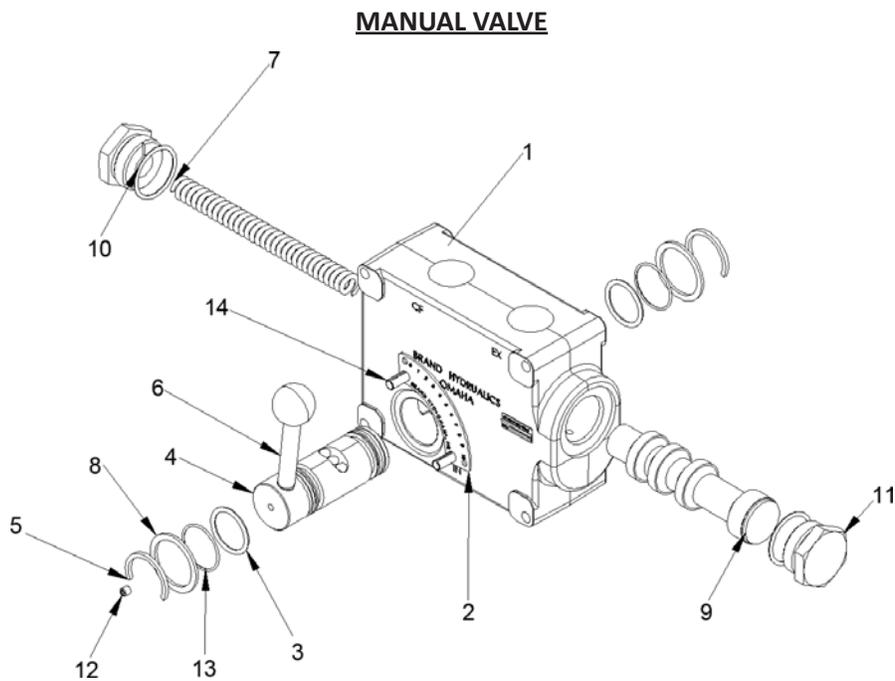
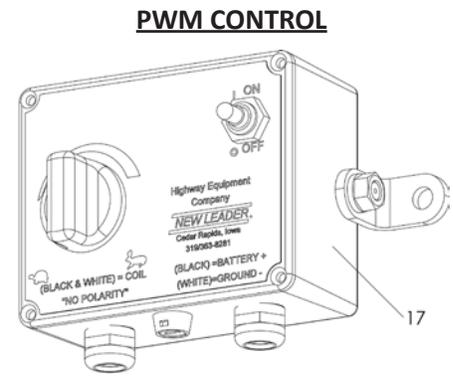
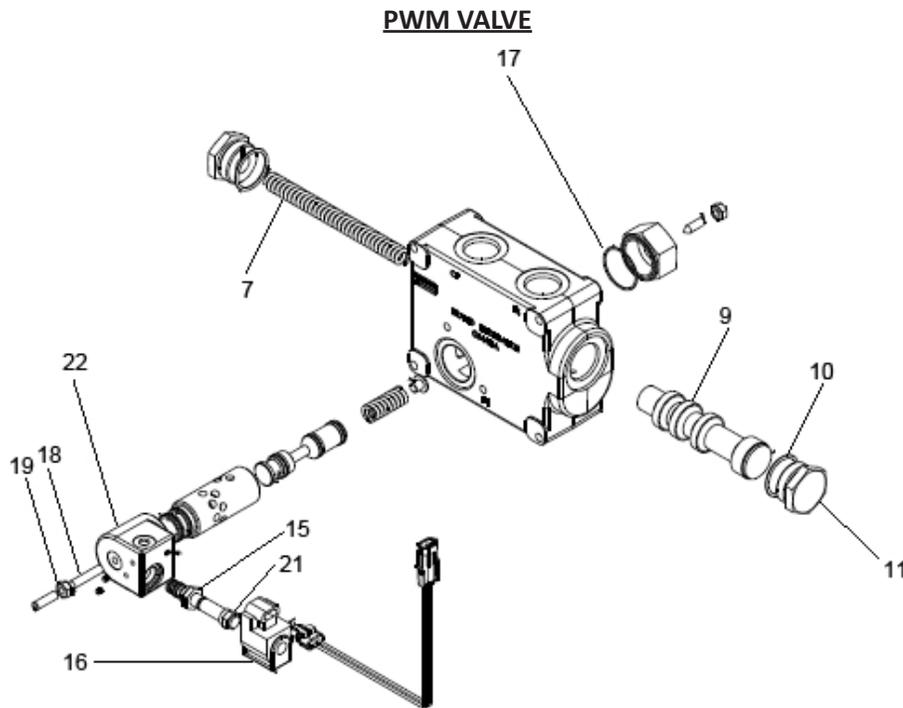
HYDRAULICS CONTINUED

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
22	305523	Hose - Assy 3/4 x 72"	1
23	304907-X1	Hose - Assy 3/8 x 30" 100R1	1
24	305752	Hose - Assy 3/4 x 71-1/2 100R12	1
25	305525	Hose - Assy 12'	1
	305526	Hose - Assy 13'	1
	305527	Hose - Assy 14'	1
	305528	Hose - Assy 16'	1
	305529	Hose - Assy 18'	1
	305530	Hose - Assy 21'	1
26	305531	Hose - Assy 3/8 x 24 100R1	1
27	98710-X2	Hose - Assy 3/4 x 33-1/2 100R12	1
28	30744	Valve - Flow Control	1
29	29764	Fitting - 12 070202	1
30	34779	Fitting - 6-6 070202	1
31	29752	Fitting - 12-12 070102	1
32	34816	Fitting - 6-6 070221	2
33	29781	Fitting - 12-12-12 070432	2
34	29809	Fitting - 12-12-12 070433	1
35	34709	Fitting - 12-12 070221	2
36	29782	Fitting - 12-12 070321	2
37	56407	Fitting 12-6 070123	1
38	305532	Valve - Directional/Relief	1
39	305520	Fitting - 6-6 S1040-58 Non Standard	2
40	29824	Fitting - 6-6 070120	3
41	84246	Fitting - 6-8 070120	2
42	305514	Fitting - 6-8 070120	1
43	98724	Fitting - 6-6-6 070432	2
44	34761	Fitting - Socketless	4
45	34757	Fitting - 6-4 070120	2
46	98662-X1	Hose - 1-1/4 2CB x 73	1
47	82377-X2	Hose - 1 x 48-5/8 2CB Return	1
48	34501	Cap Screw - 1/4-20NC x 2-1/2 SS	2
49	29766	Fitting - 6-6 070102	1
50	36414	Nut - Hex 3/8	2
51	98568	Fitting - 20-20 070221	1
52	29803	Fitting - 16-16 070120	2
53	96909	Tee - Run	1
54	34810	Fitting - 16-16 S1040-30 Non Standard	1

NEW LEADER

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
55	96912	Tee – Union	2
56	29847	Fitting – 12-12 070220	1
57	29789	Fitting – 12-12 07120	2
58	29825	Fitting – 6-6-6 070433	1
59	34719	Fitting – 16-16 070101	1
60	42794	Cap Screw – 5/16 x 3-3/4 SS	1
61	36413	Nut – Hex 5/16-18	4
62	36419	Washer – Lock 5/16	4
	305503	Valve – Assy Relief 34100 PSI, Includes 63-66	4
63	98705	Valve – Relief Soft Start	1
64	34810	Fitting – 16-16 S1040-30 Non Standard	1
65	29835	Fitting 12-16 070120	1
66	29840	Fitting – 16-16 070220	1
67	98710	Hose – 3/4 100R12 x 28 Assy	1
68	98665	Hose – 1 2CB x 29 Return	1
69	34712	Fitting – 12-16 070123	1
70	56441	Hose Assy 1 x 86 100R12	1
71	95958	Hose Assy 1 x 72.7 100R2	1
72	98669-X2	Hose Assy 3/4 x 24 2CB Return	1
73	305524	Hose Assy 1x 50 100R12	1
74	*96906	Sleeve – Abrasive	4
75	96338-X1	Hose – Assy 3/8 x 62” 100R1	1
76	306274	Manifold - 5-25 GPM SFP	1
77	34195	Hose - Drain Line	AR
78	34757	Fitting - 6-4 070120	1
79	29806	Fitting – 16-16 070321	1
80	97315	Hose - Assy 3/8 x 84” 100R1	1
81	305531	Hose - Assy 3/8 x 24” 100R1	1
82	*307399	Pigtail - 3-pin MetriPack to Flying Lead (optional)	1

AR - As Required



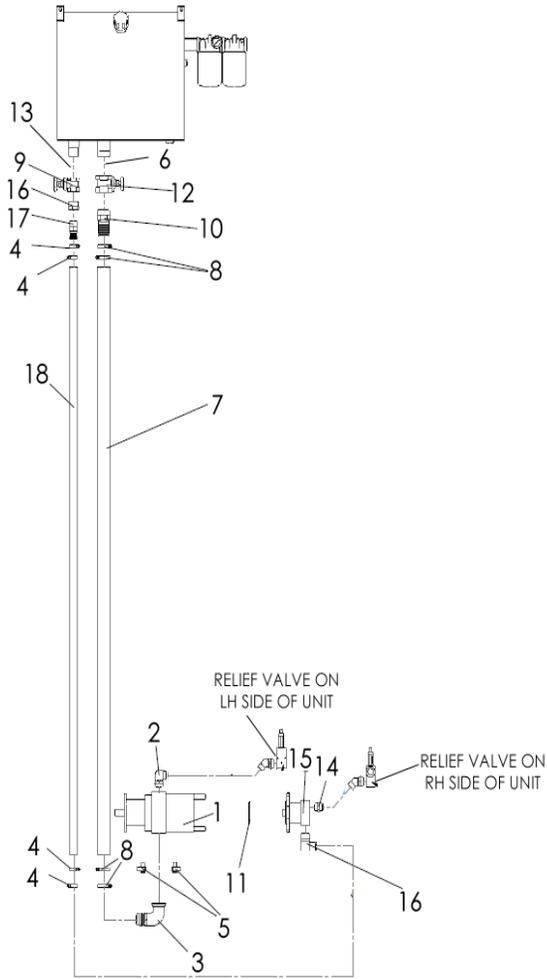
PARTS LIST



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	38576	Valve - Flow Control, Includes: 2-14	1
	38576-X4	Valve - Flow Control Electric Actuated Includes: 7, 9-22	1
2	43116	Scale	1
3	29887	O-Ring	2
4	53962	Spool - Rotary	1
5	53963	Ring - Snap	2
6	53961	Handle - Spool	1
	45950	Knob - Lever	1
7	53960	Spring	1
8	90696	Shim	2
9	90697	Spool	1
10	90698	O-Ring	1
11	90699	Plug	2
12	--	Set Screw	1
13	--	O-Ring	2
14	--	Pin - Roll	2
15	38576-AA	Cartridge	1
16	38576-AB	Coil	1
17	38576-AC	O-Ring	1
18	38576-AD	Screw - Set	1
19	38576-AE	Nut - Jam	1
20	88260	Control Box - w/27' Cable	1
21	38576-AG	Nut	1
22	38576-AF	Block - Cartridge	1

* - Not Shown

PUMP HYDRAULICS



Tandem Pump Assembly Shown

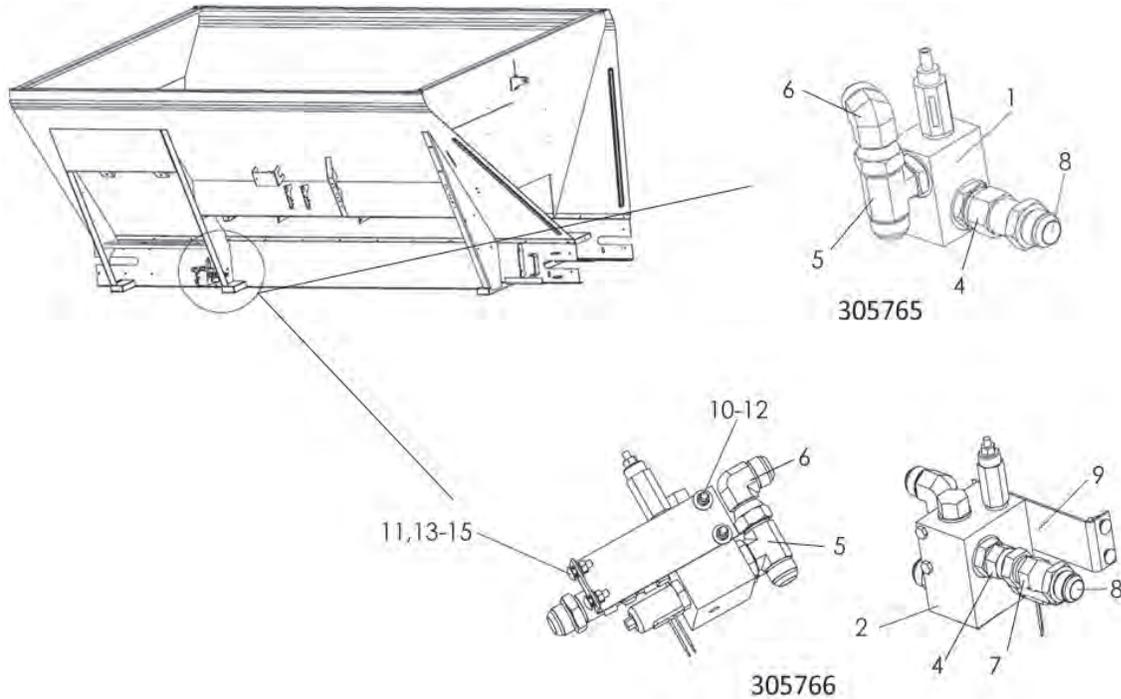
PARTS LIST



PUMP HYDRAULICS CONTINUED

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	305086	Pump - Kit 3.19CID, Includes 1-3,5,11	
	300500	Pump - Kit 2/17CID, Includes 14-16	
	305084	Hoses & Fittings - Kit DM Pump, Includes 1,6,8,10,12	
	305085	Hose & Fittings - Pump, Includes 4,9,13,17-18	
1	304428	Pump - 3.19 CID	1
2	29840	Fitting- Elbow 90°	1
3	34806	Fitting- 32-32 12151-3-E90S-L	1
4	6335	Clamp - Hose	4
5	41015	Kit - Flange Split	1
6	22324	Nipple - 2" NPT	1
7	32401-108	Hose - Suction 2" 100R4 x 108"	1
8	22380	Clamp - Hose	4
9	305059	Valve - Ball 2" NPT	1
10	29811	Fitting - Hose End 2NPT x 2 Hose	2
11	300669	O-Ring - 4" ID	1
12	305060	Valve - Ball 2" NPT	1
13	6028	Nipple - 1.25" NPT	1
14	29789	Fitting - 12-12 070120	1
15	304426	Pump - 2.17 CID	1
16	304427	Fitting - 20-20 430260	1
17	16582	Fitting - Hose Barb	1
18	23184-108	Hose - Suction 1-1/4 100R4 x 108	1

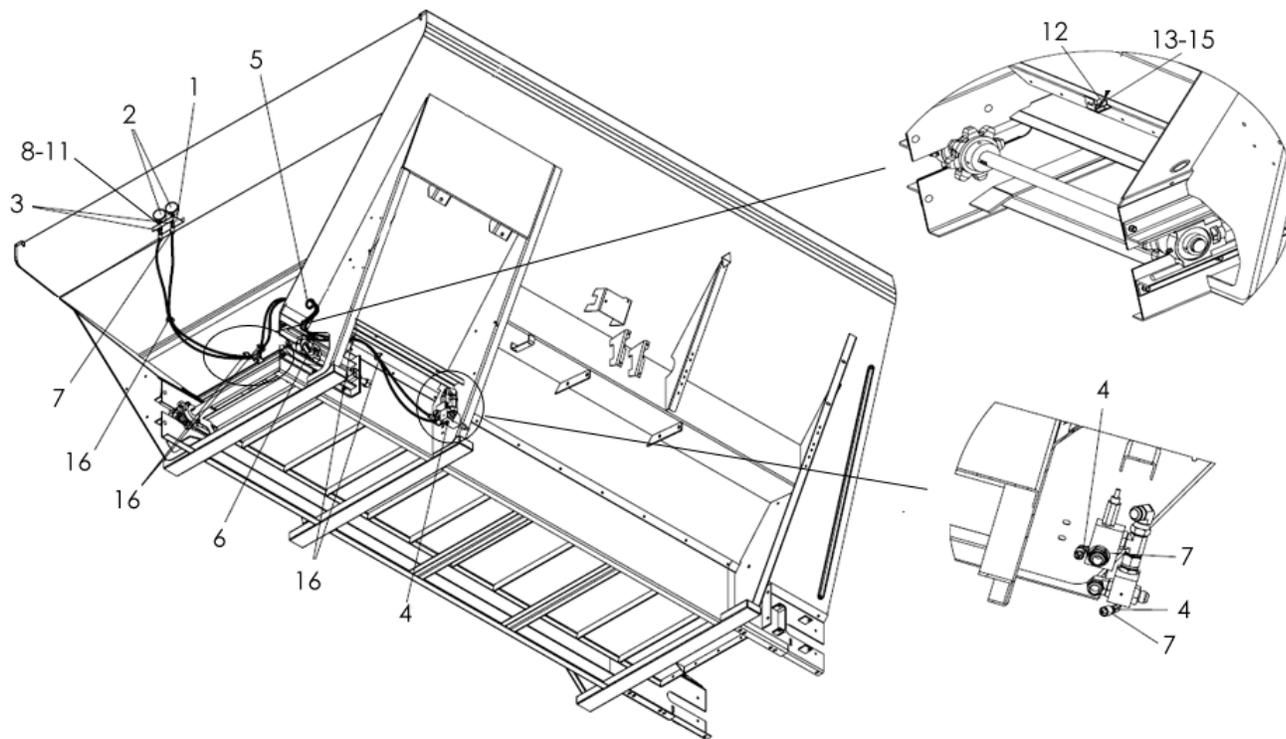
RELIEF VALVE GROUPS



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	305765	Valve - Mnt. Assy 3100 PSI, Includes 1,3-6,8	
	305766	Valve - Mnt. Assy 3100 PSI Relief/Unloader, Includes 2,3,5-15	
	305763	Valve - Assy Relief, Includes 1,3-6	
	305764	Valve - Assy Relief/Unloader, Includes 2,3,5-7	
1	98109	Valve - Relief Soft Start	1
2	56291	Valve - Relief/Unloader 3100 PSI	1
3	*29803	Fitting - 16-16 070120	2
4	34810	Fitting - 16-16 S1040-30 Non Standard	1
5	34750	Fitting - 16-16-16 070429	2
6	29807	Fitting - 16-16 070221	2
7	302449	Fitting - Union	1
8	34747	Fitting - 16-16 070601	2
9	305035	Bracket - Unloader Valve	1
10	84599	Cap Screw - 5/16-18 x 5 SS	2
11	36424	Washer - Flat 5/16	4
12	42221	Nut - Lock 5/16-18 SS	2
13	42639	Bolt - Carriage 5/16 x 1 SS	2
14	36413	Nut - Hex 5/16-18 SS	2
15	36419	Washer - Lock 5/16 SS	2

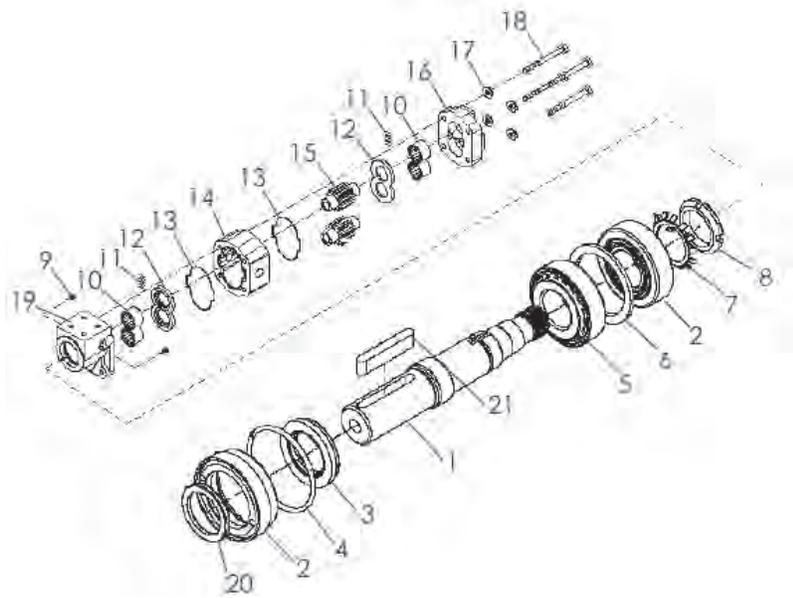
PARTS LIST





<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	304948	Bracket - Wldmt Gauge	1
2	76044	Gauge - Hyd. 5000 PSI	2
3	29765	Fitting - 4-4 070102	2
4	29795	Fitting - 4-4- 070220	2
5	34129	Grommet	1
6	89051	Clamp	1
7	306796	Hose - 1/4" dia 100\$2 x 120"	2
8	34580	Cap Screw - 5/16-18 x 1 SS	2
9	36424	Washer - Flat 5/16 SS	2
10	36419	Washer - Lock 5/16 SS	2
11	36413	Nut - Hex 5/16-18 SS	2
12	26562	Clamp - Tubing	1
13	36393	Cap Screw - 1/4-20 x 3/4 SS	1
14	36418	Washer - Lock 1/4 SS	1
15	36412	Nut - Hex 1/4-20 SS	1

SPINNER MOTOR



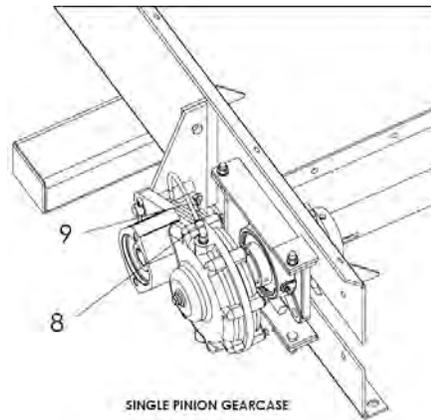
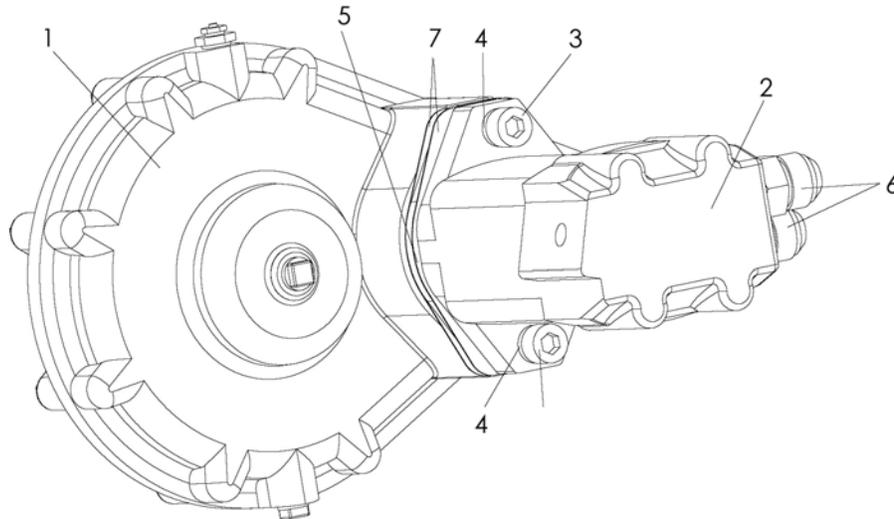
PARTS LIST



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	305945	Motor - Hydraulic	
	306093	Shaft – Assy Output, Includes: 1-8,20,21	
	72548	Kit - Seal, Includes 3,4 & 20	
	305824	Retainer – Assy w/Seals, Includes 1,3-5	
1	306088	Shaft – Output	1
2	306091	Ring – Retainer	1
3	71980	Seal	1
4	28494	O-Ring	1
5	28491	Bearing – Tapered Roller Assy	2
6	28454	Spacer	1
7	306092	Washer – Lock	1
8	306089	Nut – Lock	1
9	58797	Plug	1
10	23806	Bearing	4
11	23819	Seals - Pocket (Makes 12 Seals)	1
12	23818	Plate	2
13	23820	Gasket	2
14	34665	Housing	1
15	23826	Gear Set	1
16	23812	Cover - Port End	1
17	NA	Washer	4
18	20192	Cap Screw	4
19	306087	Cover - Shaft End	1
20	33809	Seal - Excluder	1
21	24458	Key	1
22	*306090	Sleeve – Speedi	1
	* 30723	Tool – Wrench, Spinner	
	* 24536	Tool – Seal Driver	
	* 23940	Tool – Seal Sleeve	

* - Not Shown

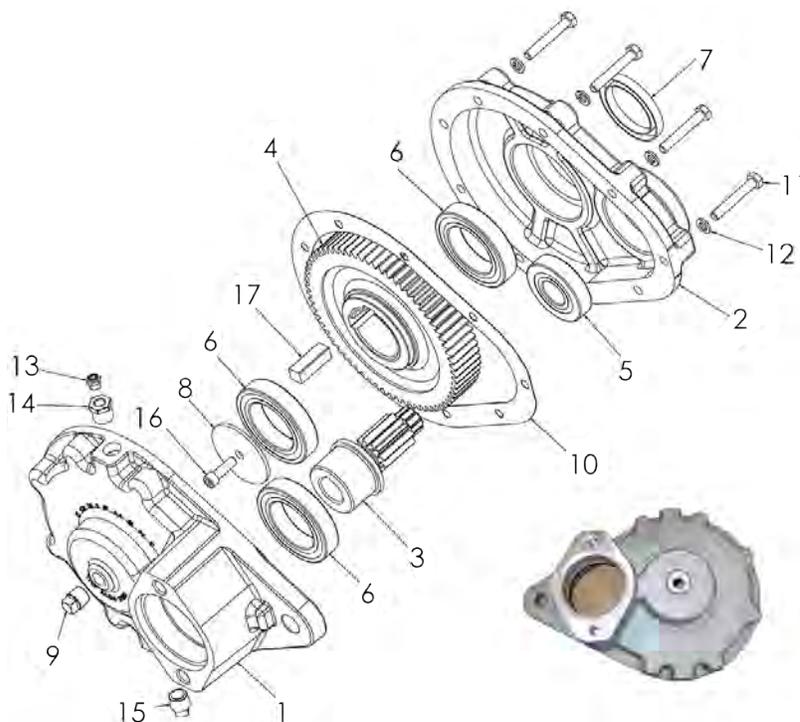
GEAR CASE & BREATHER TUBE KIT



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	305578	Gear Case Assy - 9.6 CID 2000 Series	2
	303837	Gear Case Assy – 8.0 CID 2000 Series	2
	306890	Gear Case Breather Tube Kit	2
1	36671	Gear Case 6.1	1
2	303838	Motor – Hydraulic 2000 Series 8.0 CID	1
	56270	Motor – Hydraulic 2000 Series 9.6 CID	1
3	305098	Cap Screw – 1/2-13 x 1-3/4	2
4	30227	Washer – Lock Socket HD 1/2	2
5	34650	Spacer – Gear Case Motor	1
6	29753	Fitting – 12-10 07120	2
7	74524	Gasket	2
8	306891	Fitting - 4-2 630202K	1
9	9005-0-7761	Tubing - 1/4 OD Air Brake Black	1.5 ft.

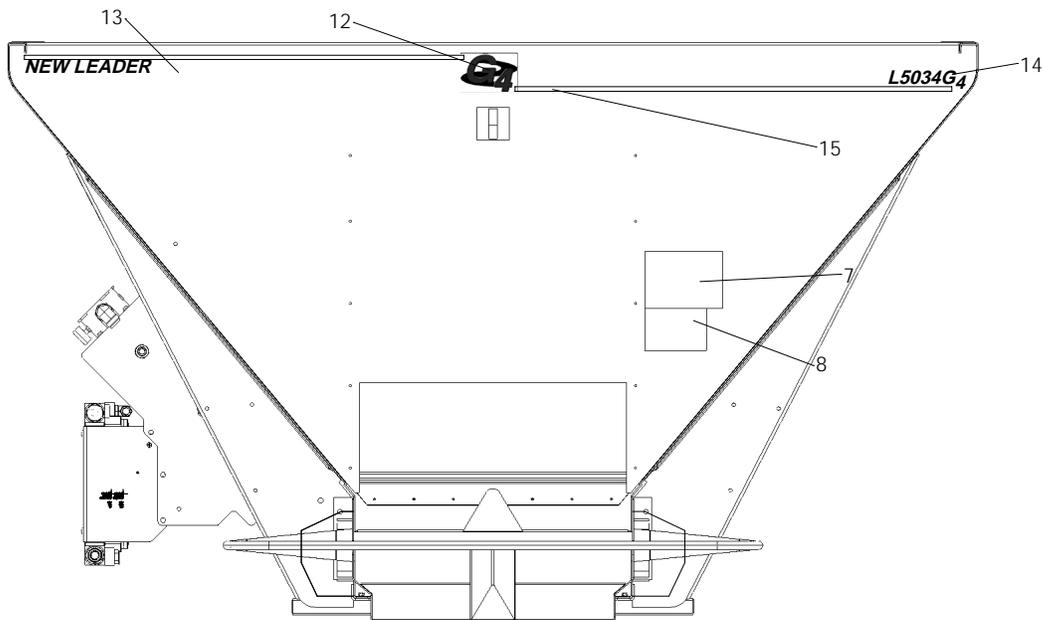
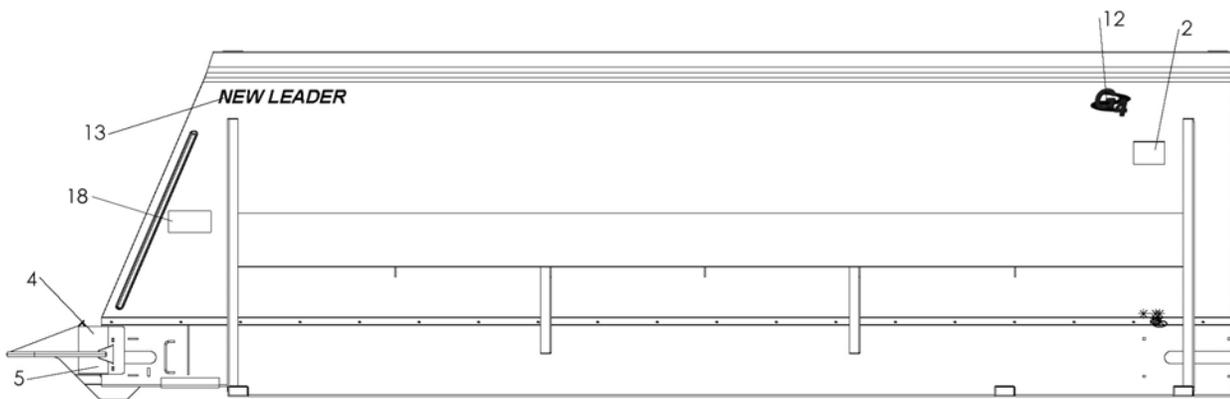
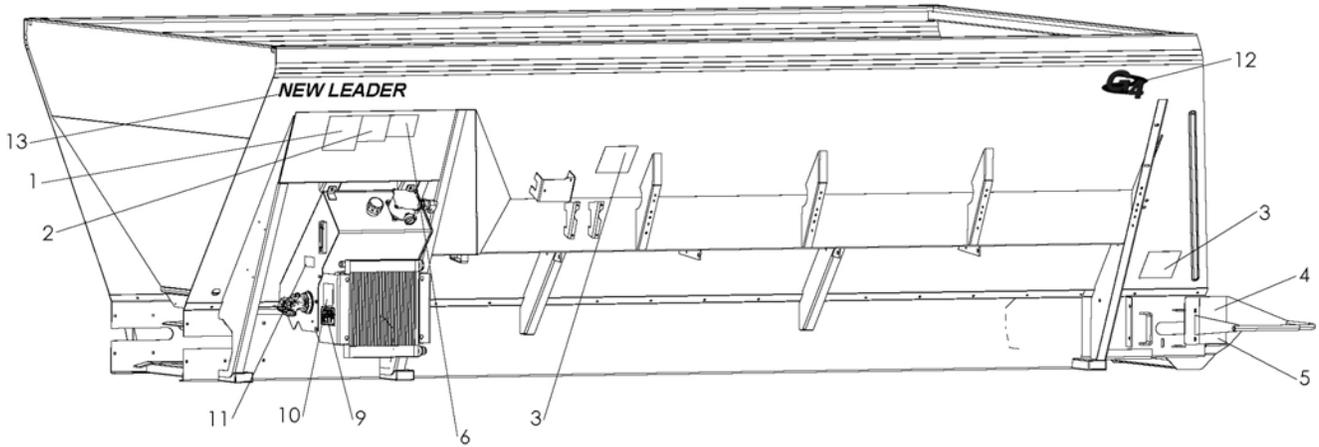
PARTS LIST

NEW LEADER



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	36671	Gear Case – Assembly Single Pinion	
	304269-AB	Parts – Service, Includes 1–17	
1	304559	Housing – Outboard	1
2	304560	Housing – Inboard	1
3	304561	Gear – Pinion 11 Tooth	2
4	304562	Gear – Driven 67 Tooth	1
5	37007	Bearing	2
6	37008	Bearing	4
7	37006	Seal – Oil	1
8	38979	Washer – Flat 2-1/2 x 11/32	2
9	6031	Plug – Pipe	1
10	304563	Gasket – Housing	1
11	20040	Cap Screw – 5/16NC x 2	10
12	20711	Washer – Lock 5/16	10
13	2564	Cap – Breather	1
14	27465	Bushing – Pipe 1/8 x 3/8	1
15	21490	Plug – Pipe Magnetic	1
16	38980	Screw – Allen Head 5/16-18 x 1	1
17	37010	Key – 1/2 x 1/2 x 1-1/2	2

DECALS



PARTS LIST

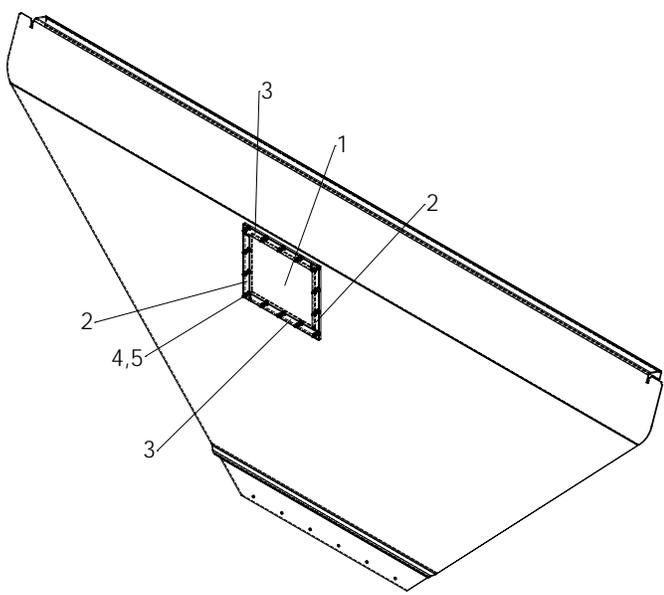


DECALS CONTINUED

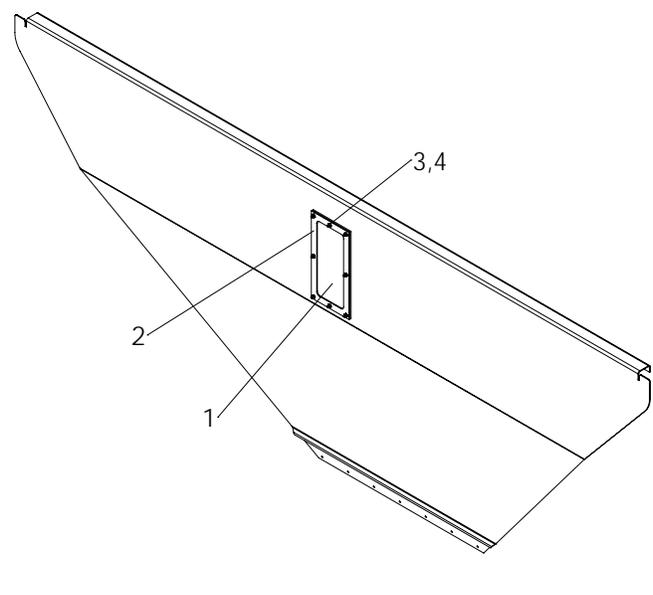
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	305513	Decal - Group Safety, Includes 1-8	
	305049	Decal - Group Hyd. Tank, Includes 9-11	
	304467	Decal - Group L5034 Black/Red, Includes 12-15	
	304468	Decal - Group L5034 Black/White, Includes 12-15	
	304469	Decal - Group L5034 White/Red , Includes 12-15	
1	150034	Caution - Operation & Maintenance	1
2	364	Danger - Moving Part	2
3	39138	Warning - High Pressure Fluid	2
4	55630	Warning - Falling Hazard	2
5	55631	Warning - Moving Part Hazard	2
6	321	Caution - Hazardous Material	1
7	368	Danger - Flying Material	1
8	71526	Notice - Spread Pattern	1
9	304264	Notice - Cooler Hyd Oil	1
10	39378	Notice - Change Filter Element	1
11	8664	Notice - Keep Valve Open	1
12	87123	G4 White/Red	3
	87122	G4 - Black/Red	3
	87129	G4 - Black/White	3
13	87165	New Leader White	3
	87164	New Leader Black	3
14	304471	L5034G4 White	1
	304470	L5034G4 Black	1
15	87163	3/4 Striping White	9
	87162	3/4 Striping Black	9
16	21699	Skid Fabric	AR
17	39200	Warning - Slipping	1
18	21476	Important - Conveyor Chain Life	1
19	*87110	Decal - Scale	1

* - Not Shown

SIGHT WINDOW



Type I



Type II

Type I

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	305778	Window - Sight	
1	80831	Window - Sight 8 x 10	1
2	80832-X1	Bar - Retainer Side 8 x 10 304	2
3	80833-X1	Bar - Retainer Top & Bottom 8 x 10	2
4	42033	Screw - Truss Head 1/4 x 1 SS	14
5	42034	Nut - Lock 1/4 SS	14

Type II

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	305577	Window - Sight	
1	302686	Window - Sight 5 x 12	1
2	305687	Window - Frame 5 x 12	2
3	42033	Screw - Truss Head 1/4 x 1 SS	8
4	42034	Nut - Lock 1/4 SS	8

PARTS LIST