ROSCO

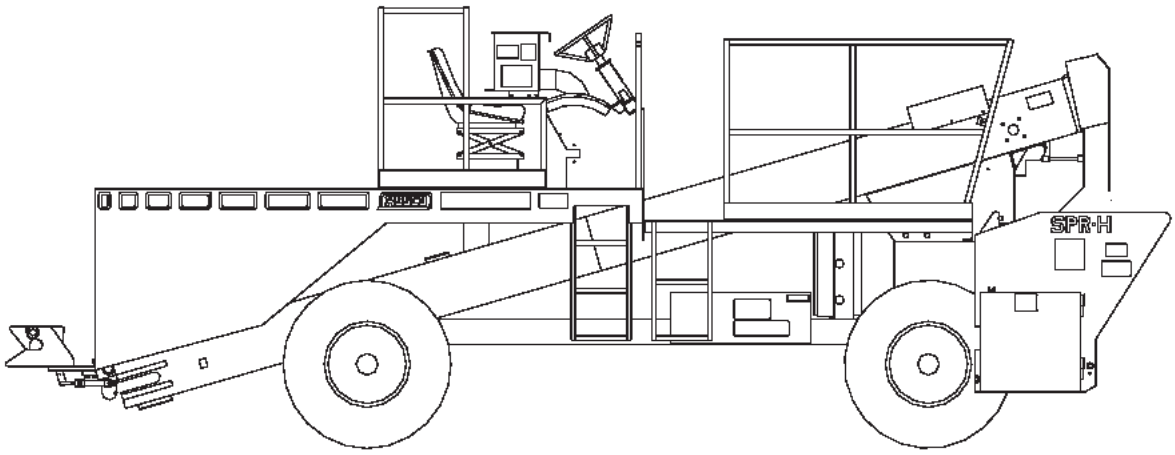
A LeeBoy Company

CHIPSPREADER SPR-H
OPERATOR'S MANUAL

ROSCO MANUAL PART NO. 34903-02

EFFECTIVE SERIAL NO. 36039 and higher

REVISED 11/05/02



NOTE: It is the responsibility of the customer or user's management to train, educate and supervise the employee in the proper operation and manintenance of this equipment.

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INTRODUCTION

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INTRODUCTION

This manual has been compiled to assist the owner and/or operator with the correct operation and routine preventive maintenance procedures for the SPRH Flaherty Chip Spreader as manufactured by ROSCO A LeeBoy Company, 688 North Highway 16, Denver, North Carolina, USA. A parts catalog is also included in this manual to allow for the accurate ordering of repair parts from Authorized Rosco Dealers/Distributors.

THIS MANUAL HAS BEEN ORGANIZED INTO SIX (6) MAJOR SECTIONS:

1. INTRODUCTION
2. SAFETY
3. OPERATION
4. MAINTENANCE
5. TROUBLESHOOTING
6. PARTS CATALOG

A general contents page is located at the beginning of this manual as a quick reference to the these sections and their major subsections. In order to receive the performance and efficiency that has been designed into the SPRH Chip Spreader, it is very important to:

A. Read this manual thoroughly before operating or servicing the Chipspreader.
B. Keep this manual in a convenient place for ready reference.
C. Not attempt to make repairs or adjustments you do not understand. If you require additional information or service, contact your Authorized Rosco Dealer/Distributor.

Throughout this manual references are made to the **LEFT SIDE** and **RIGHT SIDE** of the Chipspreader. These terms are used as the SPRH Chip Spreader is viewed from the rear of the machine.

Serial Number - It is important to know the Serial Number of this equipment. The Serial Number Plate is located on the left side of the machine below the power gate control. Record the Serial Number in the space below. Use the Serial Number in all correspondence referring to the SPRH Chip Spreader and when ordering parts.

Model _____

Serial Number _____

Production Year _____

Design Specifications - ROSCO / A LeeBoy Company reserves the right to make design or specification changes without prior notification or to make any other improvements without incurring obligations to add them to any machine in existence.

Technical Information - ROSCO / A LeeBoy Company is continuously improving its products. The technical information found in this manual was correct at the time it was approved for publication. However, if you find differences between your Chipspreader and the information contained in this manual, please contact your local Authorized ROSCO Dealer/Distributor.

INTRODUCTION

LIMITED WARRANTY POLICY & PROCEDURES

A. WARRANTY

1. If a defect in material or workmanship is found and the authorized Dealer is notified during the waranty period, ROSCO will repair or replace any part or component of the unit or part that fails to conform to the warranty during the warranty period.

2. The warranty will begin upon the completion of the warranty form by the initial customer and will expire after twelve (12) months have passed. The Warranty Card must be filled out within ten (10) days of delivery of the unit.

3. Engines and truck chassis are warranted by their manufacturers and may have warranty coverage that differs from that of ROSCO.

4. Replacement parts furnished by ROSCO are covered for the remainder of the warranty period applicable to the unit or component in which such parts are installed.

5. ROSCO has the right to repair any component or part before replacing it with a new part.

6. All new replacement parts purchased by a ROSCO dealer will carry a six (6) month warranty. Remanufactured parts purchased by a ROSCO dealer will carry a ninety (90) day warranty.

B. LIMITATIONS

ROSCO has no obligation under this warranty for:

1. Any defects caused by misuse, misapplication, negligence, accident or failure to maintain or use in accordance with the most current operating instructions.

2. Unauthorized alterations.

3. Defects or failures caused by any replacement parts or attachments not manufactured by or apporved by ROSCO.

4. Failure to conduct normal maintenance and operating service, including without limitation, providing lubricants, coolant, fuel, tune-ups, inspections or adjustments.

5. Unreasonable delay, as established by ROSCO, in making the applicable units or parts available upon notification of a service notice ordered by ROSCO.

6. The warranty responsibility on all engines and/or truck chassis rests with the respective manufacturer.

7. ROSCO may have support agreements with some engine and/or truck chassis manufacturers for warranty and parts support.

LIMITED WARRANTY POLICY & PROCEDURES

C. ITEMS NOT COVERED

ROSCO is not responsible for the following:

1. Charges for travel time, mileage or overtime.

2. Charges related to transporting the product to and from the place at which warranty work is performed.

3. Freight charges related to transporting repair parts to the place at which warranty work is performed.

4. All used units or used parts of any kind.

5. Repairs made necessary by normal wear and tear or brought about by abuse or lack of maintenance of the equipment, except for premature failures.

6. Attachments not manufactured or installed by ROSCO.

7. Liability for incidental or consequential damages of any type, including, but not limited to lost profits or expenses of acquiring replacement equipment.

8. Miscellaneous charges.

D. OTHER WARRANTIES

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESSED, STATUATORY AND IMPLIED WARRANTIES APPLICABLE TO UNITS, ENGINES OR PARTS, WITHOUT LIMITATION, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE OR PURPOSE. IN NO EVENT, WHETHER AS A RESULT OF BREACH OF CONTRACT OR WARRANTY, OR ALLEGED NEGLIGENCE OR LIABILITY WITHOUT FAULT, SHALL ROSCO BE LIABLE FOR SPECIAL, INDIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOSS OF PROFIT OR REVENUE, COST OF CAPITAL, COST OF SUBSTITUTED EQUIPMENT, FACILITIES OR SERVICES, DOWN TIME COSTS, LABOR COSTS OR CLAIMS OF CUSTOMERS, PURCHASERS OR LESSEES FOR SUCH DAMAGES.

SPECIFICATIONS: SPRH CHIPSPREADER

ROSCO / A LeeBoy Company is continuously improving its products. The information found in this manual was correct at the time it was approved for publication.

DIMENSIONS

WHEEL BASE ..... 10 feet 6 inches (320 cm)
OUTSIDE TURNING RADIUS ..... 26 feet (792.5 cm)
INSIDE TURNING RADIUS ..... 19 feet 6 inches (594 cm)
HEIGHT ..... 7 feet (213 cm)
WIDTH Without Front Hopper ..... 19 feet 6 inches (594 cm)
WIDTH With Front Hopper ..... 10 feet 6 inches to 16 feet 9 inches (320 to 511 cm)
OVERALL LENGTH ..... 23 feet (701 cm)
OVERALL LENGTH Without Front Hopper ..... 20 feet 6 inches (625 cm)
WEIGHT ..... 15,200 lbs (6,895 kg)

FRAME

Lower members are structural box channels, unit welded rear and front axle holders. Conveyor sides have welded front pyramid and cross bearings to form one sturdy unit.

POWER TRAIN

The engine, clutch, transmission, reversing unit and rear planetary axle are in a straight line to prevent power loss. The engine is mounted under the operating platform to reduce sound and heat and to improve visibility.

ENGINE

Diesel: ..... Cummins 6BT 5.9, Cummins 6BTA 5.9, Cummins 6CT 8.3
Consult factory for specifications.

ENGINE CLUTCH

Spring loaded 14 inch diameter.

TRANSMISSION

5 speeds forward, 1 speed reverse. High gear speeds to 20 MPH in forward.

REAR AXLE

26,000 lbs. 2 speed differential planetary drive puts the heavy torque in the wheel, not on the ring gear and pinion.

FRONT AXLE

16,000 lbs. capacity. Oscillating type.

STEERING

Orbital type, full hydraulic powered. Controlled through steering wheel with no mechanical linkage.

BRAKES

Front drums 16-1/2 inches X 3-1/2 inches, rear disc, four wheel hydraulic power assist.

WHEELS

Budd disc type. Single front and rear. Dual available.

TIRES

Truck type 10.00 X 20, 12 ply. Optional sizes and types are available.

TRUCK HITCH OR TOW HITCH

Positive lock, hydraulic releasing of aggregate trucks without stopping. Controlled from operator's platform.

RECEIVING HOPPER

9 feet 6 inches wide, 3-1/2 yards struck capacity. Has adjustable feed control gates and rubber skirting to prevent spillage.

CONVEYORS

Two 20 inch conveyor belts, 4-ply rated, independently controlled by electric solenoid valves and powered by two directly coupled hydraulic motors. Full length side lining, head and self-cleaning tail pulleys.

FRONT HOPPER

Standard width: ..... 10 feet (305 cm)
Optional width: ..... 11, 12, 13, 13-1/2, 14, 15 or 16 feet (335 to 488 cm)
Spreadroll and agitator bar are gear and chain driven by a hydraulic motor. Adjustable cutoff gates allow for spreading widths from 6 feet up to the full width of the hopper. Radial type gates, controlled from the operator's platform, open in increments of 1/16 inch from 0 inches to 4-1/2 inches. Power open/close cutoff gates are operated by a hydraulic cylinder.

FRONT HOPPER REJECT SCREEN

Full width rod screen (grizzly) with 1 inch openings retains any oversize aggregate or foreign object.

DRIVING OPERATOR'S CONTROL PLATFORM

One man left hand operation is standard. Optional dual seats for one-man operation, or two man stations availble.

INSTRUMENT PANEL

Volt meter, engine temperature gauge, engine oil pressure gauge, hydraulic oil temperature gauge, hour meter and tachometer.

OPTIONS

High speed reverser, ether injection system, lighting package, anti-vandalism package, hitch forward handle, warning system, strobe light, hot oil belt assembly, dual rear wheels (duplex, smooth), fire extinguishers, left hand walkway, variable speed conveyors (both one man and two man), tachometer option, fuel gauge option, coolant filter group, chevron belt assembly and stemco axle seal.

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SAFETY

SAFETY ALERT SYMBOLS

This Safety Alert symbol means
ATTENTION ! BECOME ALERT!
YOUR SAFETY IS INVOLVED!

The Safety Alert symbol identifies important safety messages on the ROSCO CHIPSPREADER SPR-H and in its manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you ?

3 Big Reasons:
- **Accidents Disable and Kill**
- **Accidents Cost**
- **Accidents Can be Avoided**

SIGNAL WORDS

Note the use of the signal words' **DANGER, WARNING** and **CAUTION** with the safety message. The appropriate signal word for each message has been selected using the following guidelines:

DANGER: An immediate and specific hazard which WILL result in severe personal injury or death if the proper precautions are not taken.

WARNING A specific hazard or unsafe practice which COULD result in severe personal injury or death if proper precautions are not taken.

CAUTION Unsafe practices which COULD result in personal injury if proper practices are not taken, or as a reminder of good safety practices.

Equipment Damage Symbol

Throughout this manual, whenever you see this “broken bolt” symbol, it means:

ATTENTION -Equipment on the machine could be damaged through improper performance of an operation, maintenance or repair procedure.

SAFETY

YOU are responsible for the safe operation and maintenance of your ROSCO Chipspreader. You must ensure that **you and anyone** else who is going to operate, maintain or work around the machine be familiar with the operating and maintenance procedures and all related safety information contained in the manual.

In accordance with OSHA regulations 1928.51 and 1928.52, operating instructions must be provided initially to operators or employees before allowing them to operate the Chipspreader, and at least annually thereafter.

The most **IMPORTANT** safety device on this equipment is a well trained and safe operator. It is his/her responsibility to read and understand all safety and operating instructions in this manual. A person who has not read and understood all operating and safety instructions is not qualified to operate the Chipspreader. An untrained operator exposes himself/herself and bystanders to possible serious injury or death. All accidents can be avoided!

DO NOT modify the Chipspreader in any way. Unauthorized modification may impair function and/ or safety and affect the working life of the equipment.

ROSCO / A LeeBoy Company assumes **NO LIABILITY** for accident or injury incurred through the improper use of this equipment.

GENERAL SAFETY PRECAUTIONS

1. Read and fully understand the Operator's Manual and the Safety Decals on the machine before trying to operate or service this equipment.

2. Have a first-aid kit available and know how to use it.

3. Keep a "charged" fire extinguisher within reach whenever you work in an area where fire may occur. Have the correct type of extinguisher for your situation:

Type A: Wood, paper, textile and rubbish
Type B: Flammable liquids
Type C: Electrical equipment

4. Wear safe work clothing. Do not wear clothing that is loose fitting or in poor repair when working on machinery. Do not wear rings or wrist watches when working on machinery. They can catch on moving parts and pull you into the machinery, causing serious injury. Wear sturdy, rough-soled work shoes, safety glasses and any other protective gear that is warranted by the work environment.

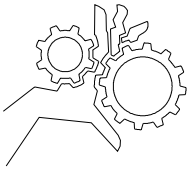
5. Keep work area organized and clean. Wipe up oil spills of any kind. Keep tools and parts off floor. Eliminate the possibility of a fall which could result in serious injury.

6. Reinstall safety devices, guards or shields after adjusting and/or servicing the machine. If a safety device, guard or shield is missing or damaged, replace the item before operating the unit.

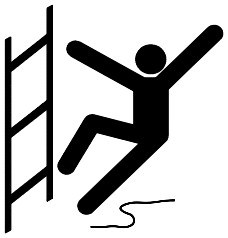
7. After servicing, be sure that all tools, parts or servicing equipment are removed from the vehicle or engine.

8. DO NOT go under the vehicle when the engine is running.

9. Stay clear of moving or rotating parts. Keep loose clothing away from conveyor area when operating the conveyor.



10. Do not hurry! Use recommended hand holds and steps with at least three points of support when getting on and off the Chip spreader. Keep steps, floor, hand holds and controls clean and free from grease. Face the machine when climbing up and down and never jump off or dismount while the machine is in motion. Falls from the machine can cause serious injury.



11. DO NOT permit riders on the Chipspreader that are not provided with a specific seat and seat belt. Death or serious injury can occur due to riders falling off or under the machine while in motion.

12. DO NOT get in or on top of the Spread Hopper when the Chipspreader is in operation and/or moving.

13. Always wear your seat belt.

14. DO NOT SMOKE around machine. Fuel,emulsion and the fumes from both can explode when exposed to flame or heat from smoking or other sources.

HOT MATERIAL PRECAUTIONS

1. Wear protective gear for face, hands, feet and body when operating the Chipspreader.

2. Allow machine to cool before repairing or maintaining working components.

3. When hot asphalt touches skin, flush area immediately with cold water. Do Not apply ice to the affected area. DO NOT ATTEMPT TO REMOVE ASPHALT CEMENT with products containing solvents or ammonia. Natural seperation will occur in about 48 - 72 hours. Get medical attention as soon as possible!

4. DO NOT remove radiator cap, drain plugs, or service grease fittings or pressure taps when engine is hot. Add coolant to the radiator and preform other service only when the engine is stopped and fully cooled.

HYDRAULIC SYSTEMS PRECAUTIONS

1. Make sure that all components are in good working condition. Replace any worn, cut abraded, flattened or crimped hoses and metal lines.

2. Do Not attempt makeshift repairs using tape, clamps or cements. The hydraulic system operates under extremely high pressure and such repairs could cause serious injury.

3. Wear proper hand and eye protection when searching for a high pressure leak. Use a piece of wood or cardboard as a back stop instead of hands to isolate and identify leaks. Escaping hydraulic fluid or oil under pressure has sufficient force to penetrate the skin which could cause serious personal injury. Insure all pressure is relieved before disconnecting lines, hoses and/or valves.

4. If injured by concentrated high pressure steam or hydraulic fluid, seek medical attention immediately. Serious infections or toxic reaction can develop from hydraulic fluid penetrating the skin surface.

REFUELING PRECAUTIONS

1. When refueling, keep the hose nozzle or the funnel and container in contact with the metal of the fuel tank to avoid the possibility of an electrical spark igniting the fuel. Maintain control of filler nozzle.

2. Do Not overfill the fuel tank as overflow creates a fire hazard when spilled on hot components.

3. Do Not smoke when refueling and never refuel when the engine is running. Handle fuel with care. It is highly flammable. Death or serious injury can occure due to explosion and/or fire.

4. Do Not fill tank to capacity. Allow room for expansion to reduce the risk of fuel expanding and spilling form the tank.

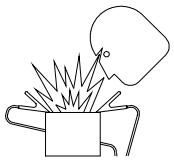
5. Tighten fuel cap securely. Should fuel cap be lost, replace it with an original manufacture's approved cap. Pressurization of the tank may result from use of non-approved cap.

6. Prevent fires by keeping the machine clean of accumulated debris, grease and spilled fuel.

7. Use the correct fuel grade for the operating season.

BATTERY PRECAUTIONS

1. Keep all sparks and flames away from batteries, as gas given off by electrolyte is explosive. Acid propelled by an explosion can cause blindness if it comes in contact with eyes. Always were safety glasses when working near batteries.

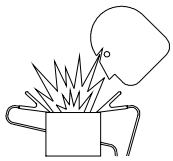


2. If you come in contact with battery electrolyte solution wash off immediately. Chemical burns can cause injury.

3. Always disconnect the battery ground cable before working on the electrical system to avoid injury from spark or short circuit. Electrical shock and burns can occur.

4. Do Not tip batteries more than 45 degrees, to avoid electrolyte loss. Chemical burns can cause injury.

5. Use jumper cables ONLY in recommended manner. Improper use can result in battery explosion or unexpected Chipspreader motion.



TIRE PRECAUTIONS

WARNING: *DO NOT mount or demount tires without proper training. A violent explosion like a bomb can occur.*

Follow all procedures and safety instructions. Wall charts containing mounting and demounting instructions for all rims are available through the United States Department of Transportation (DOT), Washington, D.C.

Note: When in doubt have a qualified tire dealer or repair service preform required tire maintenance.

1. INSPECTION

Clean rims and repaint to stop detrimental effects of corrosion and to facilitate checking and tire mounting. Be very careful to clean all dirt and rust from the lock ring and gutter. This is important to secure the lock ring in the proper position.

Check rim components periodically for cracks. Replace all cracked, badly worn, damaged and severely rusted components with new parts of the same size and type. If you are not sure about proper mating of tire and wheel parts, consult a rim and wheel expert. This may be the tire man servicing your equipment or the rim and wheel distributor in your area.

DO NOT attempt to rework, weld, heat or braze any rim components that are cracked, broken or damaged. REPLACE with like parts. Mixing parts of one type with those of another is potentially dangerous.

Do Not reinflate a tire that has been run flat without first inspecting the tire, tube, flap, rim and wheel assembly. Double check the side ring and the "O ring" for damage and make sure that they are secured in the gutter before inflation.

2. DEMOUNTING
Remove valve core to exhaust all air from tire. ALWAYS exhaust all air from tire prior to removing rim components or wheel components such as nuts or rim clamps. Check the valve stem by running a piece of wire through the stem to make sure it is not plugged.

Do not attempt to demount a tire unless you have the proper equipment and experience to do the job.

3. MOUNTING AND INFLATION
DO NOT try to seat rings or other components by hammering while tire is inflated or partially inflated. Double check all components prior to inflation.

DO NOT inflate a tire before all components are properly in place. Place in a safety cage and inflate to approximately 10 psi. Recheck components for proper assembly. If assembly is wrong, deflate and correct.

NEVER hammer on an inflated or partially inflated tire/rim assembly. If assembly is proper at 10 psi, continue to inflate to fully seat the tire beads. Then completely deflate the tire to prevent localized overstretching of the tube. Reinflate to recommended operating pressure.

NEVER sit on or stand in front of a tire/rim assembly being inflated. Use a clip-on chuck and make sure inflation hose is long enough to permit the person inflating the tire to stand to the side of the tire.

DO NOT hammer components with steel hammers. Use rubber, lead, plastic or brass faced mallets to tap components together.

4. SERVICING TIRE AND RIM ON VEHICLE
DO NOT try to drive an assembled or partially assembled tire/rim over a cast spoke wheel by hammering. STOP! DEFLATE and examine to determine the reason for the improper fit. Look for distortion or components that are not properly locked or seated.

Block the tire and wheel on opposite side of the vehicle before you place the jack in position. Always put hardwood blocks under the jack and crib up the vehicle in case the jack slips.

5. OPERATION
DO NOT inflate tires beyond the maximum recommended inflation pressure. NEVER run a vehicle on one tire of a dual assembly. The carrying capacity of the single tire and rim is dangerously exceeded and operating a vehicle in this manner can result in damage to the rim and tire.

WARNING: *Mismatched Rim Parts are dangerous and could cause SEVERE injury.*

STARTING AND STOPPING PRECAUTIONS

BEFORE STARTING:
1. Check all around the Chipspreader to make sure there are no personnel working on the machine or in the path of the machine before starting. DO NOT start until the area is clear. Death or serious injury can occur to bystanders from being crushed under a moving machine.

2. Check brakes, steering and other control devices in accordance with instructions before starting. Be sure parking brake is applied, the Forward/Reverse control is in neutral and the rigth hand arm rest is *down*. Turn off conveyor and hopper controls.

3. Adjust, secure and latch the seat belt. Only start or operate the machine from the operator's seat.

4. Start and operate the Chipspreader only from the operator's seat. DO NOT bypass the Chipspreader's neutral-start system. The system must be repaired if it malfunctions.

WARNING: *DO NOT operate the engine in an enclosed area without proper ventilation. Exhaust gases are orderless and deadly.*

WHEN PARKING:

1. Park the Chipspreader on level ground whenever possible and always apply the parking brake. On grades, park the Chipspreader with the wheels securely blocked.

2. Before leaving the operator's station, place the Forward/Reverse handle in neutral, turn off all accessories, conveyor and hopper controls, set the parking brake and shut off the engine.

3. Remove the ignition key when leaving the Chipspreader parked or unattended.

BRAKING CONSIDERATIONS

1. The operator must become accustomed to using the Hydrostatic Trammission to assist in braking. This is done by moving the Speed/ Direction Joystick into the neutral position before applying the Service Brakes with the foot pedal.

2. The Service Brakes alone are not sufficient to stop the Chipspreader if it's operating in a Forward or Reverse drive mode.

Do not engage the park brake while the machine is in motion. Instantaneous damage will occur.

3. Stopping distances must be carefully anticipated when towing a truck and/or going downhill. The larger the truck being towed or the steeper the grade, when going downhill, the longer it will take to stop the Chipspreader. In some cases the truck being towed should assist in braking (Advise the truck driver of this requirement).

4. Familiarize yourself with road conditions and road surface variables so you can anticipate when a longer stopping distance is required.

OPERATING PRECAUTIONS

1. Always comply with local regulations regarding moving equipment on public roads and highways.

2. Know and use the hand signals required for a particular job and know who has the responsibility for signaling.

3. Make sure that all lights and reflectors comply with state and local regulations. Make sure that they are clean, in good working order and can be seen clearly by all overtaking and oncoming traffic.

4. DO NOT stand between the equipment and the truck while the truck is being coupled with the Chipspreader. Death or serious injury can result from being crushed between the two machines.

5. DO NOT ride on hopper.

6. The Chipspreader is designed to operate specifically on new seal coat surfaces which may be slippery. Therefore, the Chipspreader is designed with a **reduced braking capability** in order to prevent scuffing new surfaces. In some cases, the truck should assist in stopping.

On other surfaces, stopping distances must be watched, particularly when towing a truck or going downhill. The larger the truck, the slipperier the surface, or steeper the grade the longer the stopping distance. Familiarize yourself with these variables so that you can anticipate when a longer stopping distance is required.

7. Observe all gages or warning instruments for proper operation. If malfunctions are found, shut down the machine and report the problem for resolution. If the failure causes loss of control such as steering, service brakes or engine

power, stop the Chipspreader motion as quickly as possible, apply parking brake, and keep machine securely parked until failure is corrected or the machine can be safely towed.

8. DO NOT operate unit when Warning Buzzer/ light is "ON".

9. Drive the machine with care. Make sure speed is compatible with conditions. Use caution on rough ground, slopes or when turning.

10. Be alert for hazards and obstructions such as ditches, trees, cliffs, overhead power lines or areas where there is danger of a slide. Be aware of and understand the job site traffic flow patterns and obey flagmen, road signs and signals.

11. Watch for bystanders and never allow anyone to be under or reach through the Chipspreader and it's equipment while operating.

12. When roading a Chipspreader, know and use required signaling devices. Use tail lights, slow moving vehicle signs and/or a warning beacon when traveling on public roads. Provide an escort for roading when required.

13. DO NOT tow the Chipspreader, except to remove from road or to load on a trailer.

14. When towing with the Chipspreader, ONLY use the Rear Truck Hitch.

STORAGE PRECAUTIONS

1. Store the Chipspreader in an area away from human activity.

2. Do not permit children to play on or around the stored machine! Serious injury can occur from falling from the machine.

3. Make sure the unit is stored in an area that is firm, level and free of debris.

4. Store the machine inside a building or cover securely with a weatherproof tarpaulin.

MAINTENANCE PRECAUTIONS

1. DO NOT attempt repairs unless trained. Refer to manuals and experienced repair personnel for help.

2. Always wear safety glasses and other required safety equipment when servicing or making repairs.

3. Disconnect the battery before working on the electrical system.

4. Avoid lubrication or mechanical adjustments while the Chipspreader is in motion or engine operating. If such a service is necessary, place Forward/Reverse control in neutral, apply parking brake, shut engine off, place equipment in a safe position, securely block the wheels and use extreme caution.

5. Securely block the machine or any components that may fall before working on the machine. Block any working components to prevent unexpected movement while repairs are being made.

6. Never make repairs on pressurized components, fluid, gas or mechanical items until the pressure has been relieved according to instructions.

7. When inflating tires, use a self-attaching inflation chuck with remote shut-off and stand clear of the tire.

8. Whenever servicing or replacing hardened pins etc., use a brass drift or other suitable material between the hammer and pin.

9. Keep breaks and steering systems in good operating condition.

10. Replace all missing, illegible or damaged safety signs. Keep all safety signs clean.

SIGN-OFF FORM

ROSCO / A LeeBoy Company follows the general Safety Standard specified by the Society of Automotive Engineers (SAE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or servicing the SPREADPRO Chipspreader must read and clearly understand all safety, operating and maintenance information presented in this manual. Do not operate or allow anyone to operate this equipment until such information has been reviewed. Annually review this information before the season start-up. Make these periodic reviews of SAFETY and OPERATION a standard practice for all your equipment. An untrained employee is unqualified to operate this machine.

A sign-off sheet is provided for your record keeping to show that all personnel who will be working with the Chipspreaders have read and understand the information in the Operator's Manual and have been instructed in the operation of this equipment.

Date	Employee Signature	Employer Signature

SAFETY DECAL CARE AND LOCATIONS

SAFETY DECALS

1. Keep Safety Decals and signs clean and legible at all times.

2. Become familiar with the content and the position of each Safety Decal. Important information is written on the decals. The location and description of each safety decal is described or illustrated on the following pages.

3. Replace decals and signs that are missing or become impossible to read.

4. When replacing parts that previously displayed a safety decal, be sure to replace the decal as well.

5. Obtain Safety Decals or signs from your Authorized Rosco Dealer.

DECAL INSTALLATION

1. Be sure that the installation area is clean and dry. Use hot, soapy water to clean and then dry the area thoroughly before installing decals.

2. Decide on the exact position by taking measurements and test fitting before you remove the decal paper backing.

3. For decals with no top protection paper, decide on the location for the decal and remove the smallest adhesive backing of the split backing paper.

3a. Align the decal over the specified area and carefully press the small portion with the exposed adhesive backing in place.

3b. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.

3c. Small air pockets can be pierced with a pin and smoothed out using a piece of the decal backing.

4. If the decal has a protective top paper, use hot, soapy water on the surface to which the decal is being applied. Leave wet.

4a. After deciding on the decal location, remove the backing paper and soak the decal in clean soapy water before application. This will help to alleviate air bubbles in the finished decal.

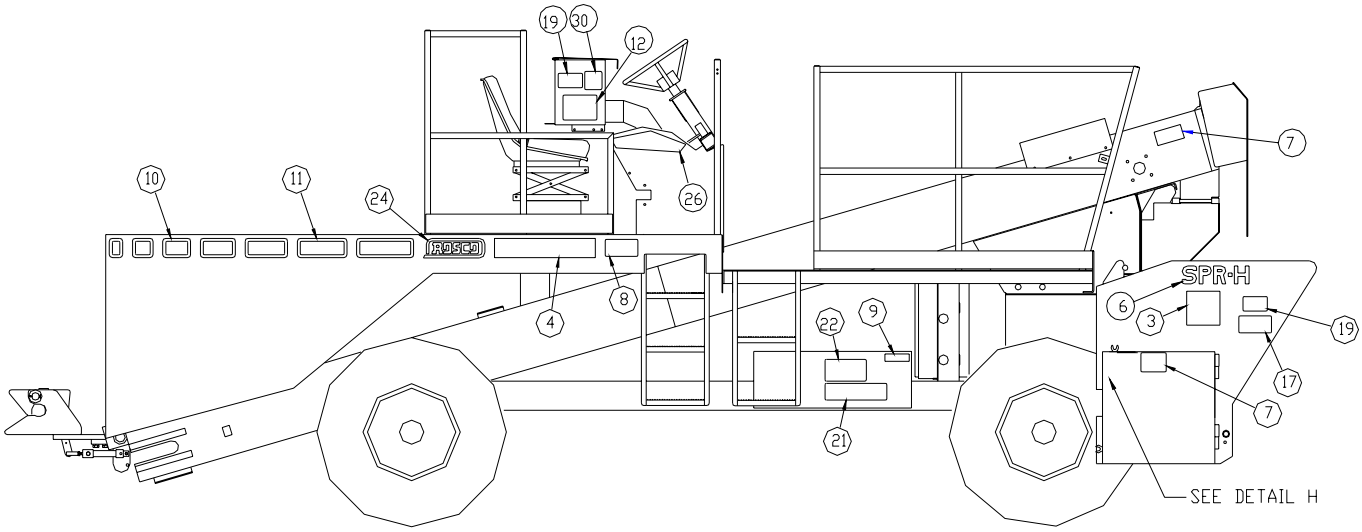
4b. Smooth the decal into place with a squeegee, and check for air bubbles. Small air pockets may be pierced with a pin and smoothed out.

4c. When the decal is completely smoothed out, carefully remove the top paper.

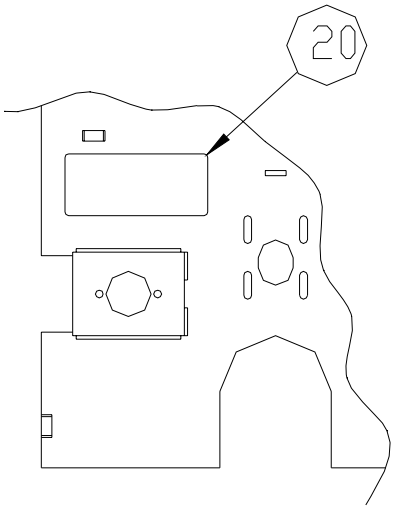
SAFETY DECAL LOCATIONS

The types of Safety Decals and their location on the Chip Spreader are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various Safety Decals, the type of warning and the area or particular function related to that area, which requires your SAFETY AWARENESS.

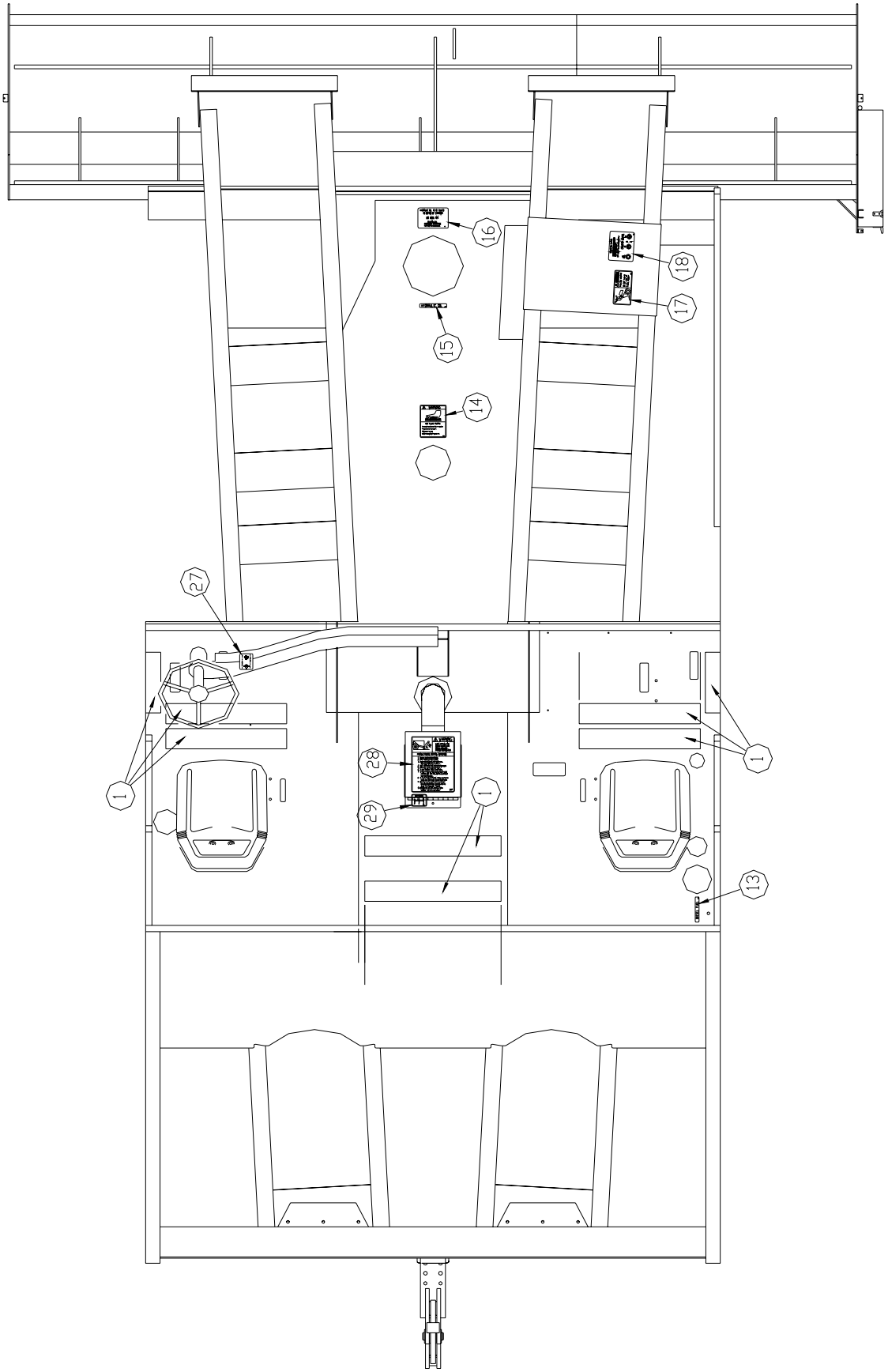
The numbers on the illustrations show the placement of all decals on the Chip Spreader and refer to the list of decal parts found in the Parts Book Section of this manual. The Safety Decals are illustrated on the following pages and use the same numbers for easy reference.



RIGHT SIDE VIEW



DETAIL H
SHOWN WITH CHAIN GUARD REMOVED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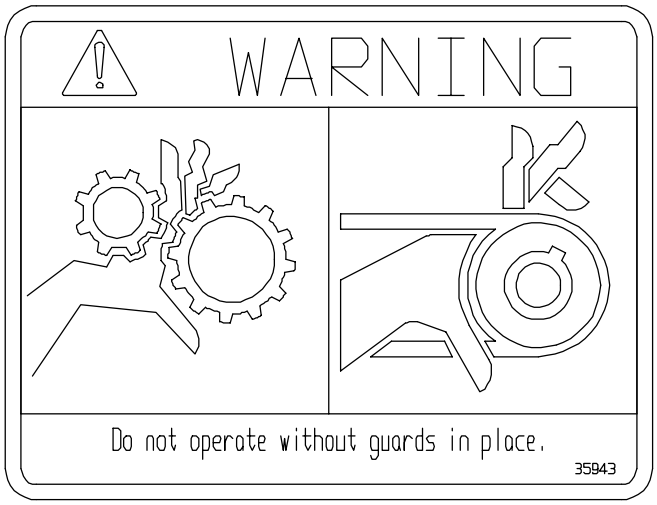
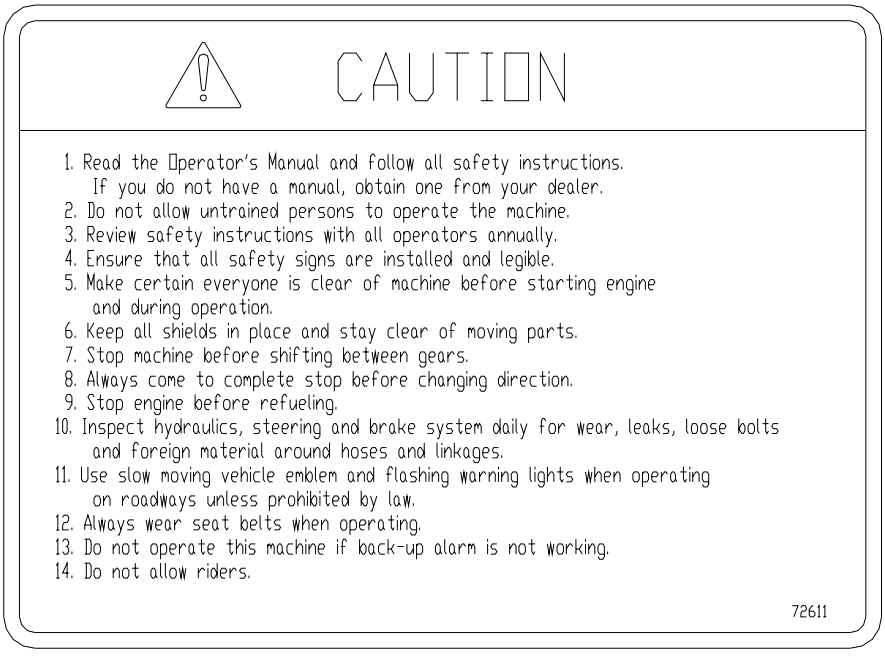
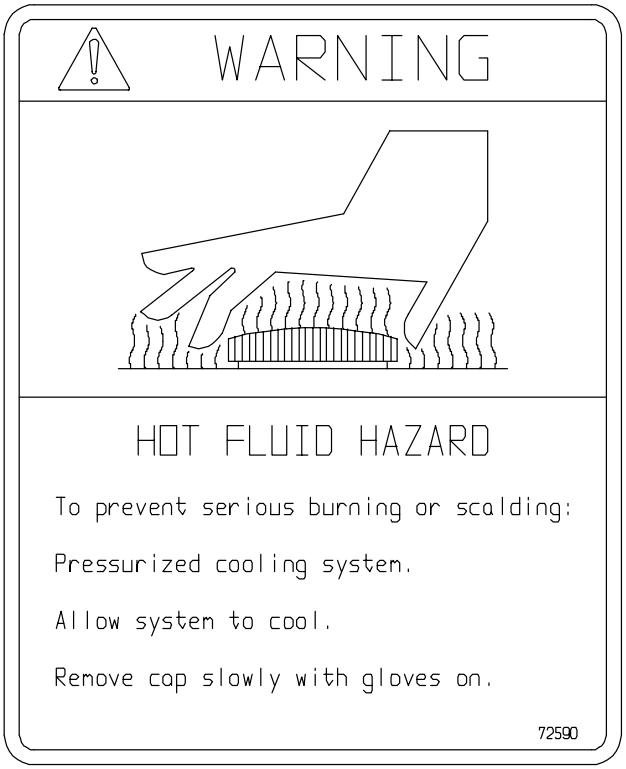


DECAL 7 --- P/N 35943

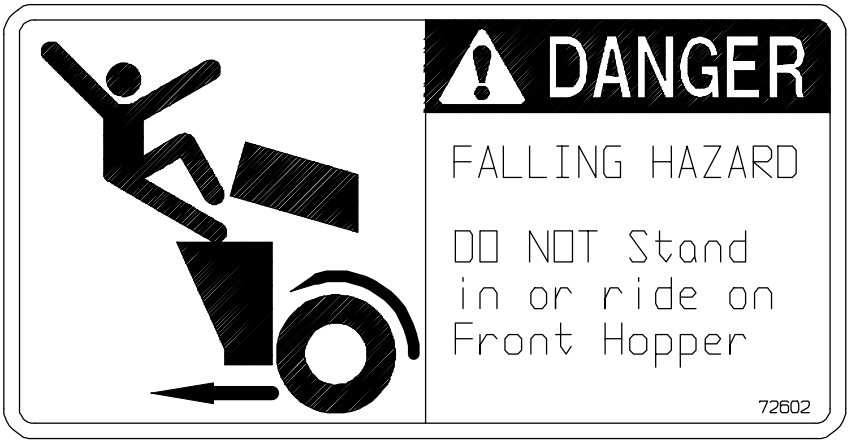
DECAL 8 --- P/N 36202



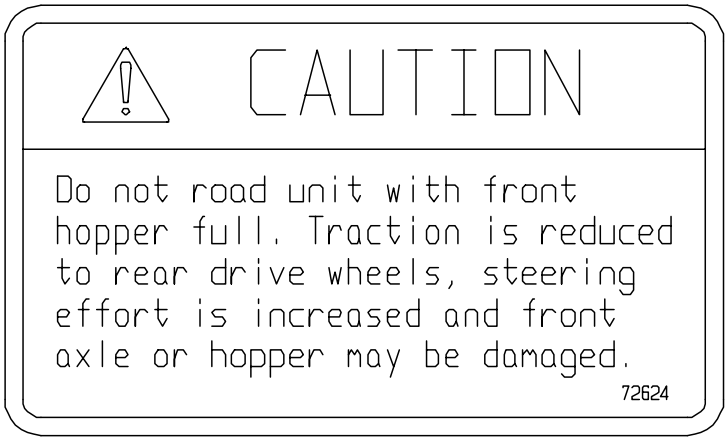
DECAL 12 --- P/N 72611



DECAL 14 --- P/N 72590

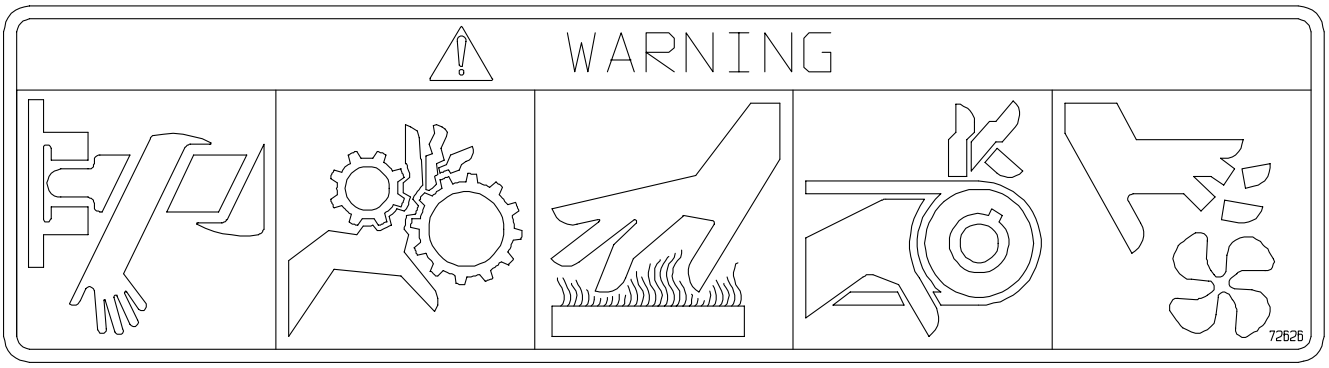


DECAL 17 --- P/N 72602

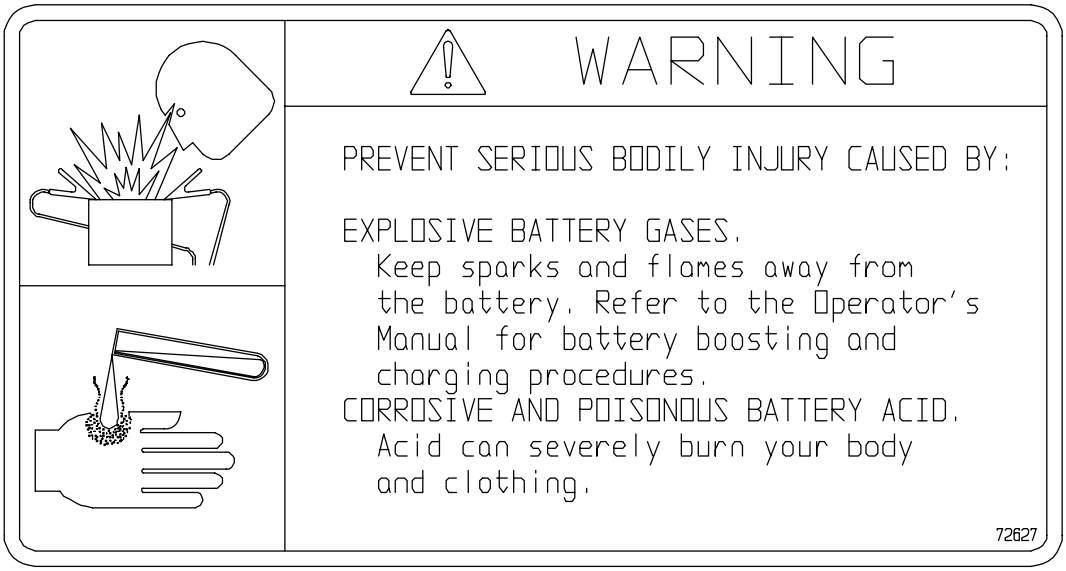


DECAL 19 --- P/N 72624

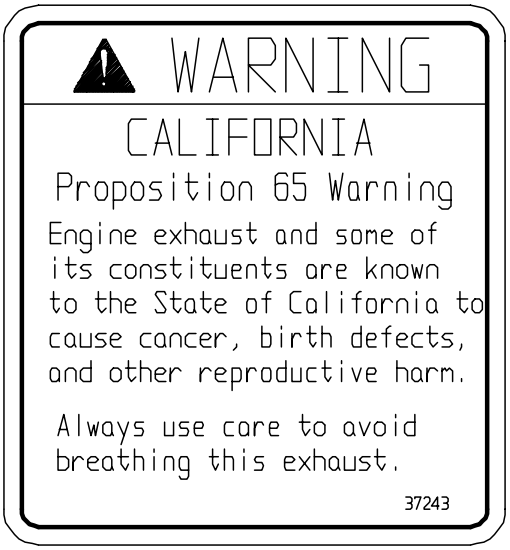
DECAL 20 --- P/N 72625



DECAL 21 --- P/N 72626



DECAL 22 --- P/N 72627



DECAL 30 --- P/N 37243

SAFETY

Safety Symbols and Safety Words 2.2

General Safety Precautions ..... 2.3 to 2.4

Hot Material Precautions 2.4

Hydraulic Safety Precautions 2.4

Refueling Precautions ..... 2.4 to 4.5

Battery Precautions 2.5

Tire Precautions ..... 2.5 to 2.6

Starting and Stopping Precautions ..... 2.6 to 2.7

Braking Considerations 2.7

Operating Precautions ..... 2.7 to 2.8

Storage Precautions 2.8

Maintenance Precautions 2.8

Sign-off Form 2.9

Safety Decal Installation, Care and Locations ..... 2.10 to 2.16

SAFETY

SAFETY ALERT SYMBOLS

This Safety Alert symbol means
ATTENTION ! BECOME ALERT!
YOUR SAFETY IS INVOLVED!

The Safety Alert symbol identifies important safety messages on the ROSCO CHIPSPREADER SPR-H and in its manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you ?

3 Big Reasons:
- **Accidents Disable and Kill**
- **Accidents Cost**
- **Accidents Can be Avoided**

SIGNAL WORDS

Note the use of the signal words' **DANGER, WARNING** and **CAUTION** with the safety message. The appropriate signal word for each message has been selected using the following guidelines:

DANGER: An immediate and specific hazard which WILL result in severe personal injury or death if the proper precautions are not taken.

WARNING A specific hazard or unsafe practice which COULD result in severe personal injury or death if proper precautions are not taken.

CAUTION Unsafe practices which COULD result in personal injury if proper practices are not taken, or as a reminder of good safety practices.

Equipment Damage Symbol

Throughout this manual, whenever you see this “broken bolt” symbol, it means:

ATTENTION -Equipment on the machine could be damaged through improper performance of an operation, maintenance or repair procedure.

SAFETY

YOU are responsible for the safe operation and maintenance of your ROSCO Chipspreader. You must ensure that **you and anyone** else who is going to operate, maintain or work around the machine be familiar with the operating and maintenance procedures and all related safety information contained in the manual.

In accordance with OSHA regulations 1928.51 and 1928.52, operating instructions must be provided initially to operators or employees before allowing them to operate the Chipspreader, and at least annually thereafter.

The most **IMPORTANT** safety device on this equipment is a well trained and safe operator. It is his/her responsibility to read and understand all safety and operating instructions in this manual. A person who has not read and understood all operating and safety instructions is not qualified to operate the Chipspreader. An untrained operator exposes himself/herself and bystanders to possible serious injury or death. All accidents can be avoided!

DO NOT modify the Chipspreader in any way. Unauthorized modification may impair function and/ or safety and affect the working life of the equipment.

ROSCO / A LeeBoy Company assumes **NO LIABILITY** for accident or injury incurred through the improper use of this equipment.

GENERAL SAFETY PRECAUTIONS

1. Read and fully understand the Operator's Manual and the Safety Decals on the machine before trying to operate or service this equipment.

2. Have a first-aid kit available and know how to use it.

3. Keep a "charged" fire extinguisher within reach whenever you work in an area where fire may occur. Have the correct type of extinguisher for your situation:

Type A: Wood, paper, textile and rubbish
Type B: Flammable liquids
Type C: Electrical equipment

4. Wear safe work clothing. Do not wear clothing that is loose fitting or in poor repair when working on machinery. Do not wear rings or wrist watches when working on machinery. They can catch on moving parts and pull you into the machinery, causing serious injury. Wear sturdy, rough-soled work shoes, safety glasses and any other protective gear that is warranted by the work environment.

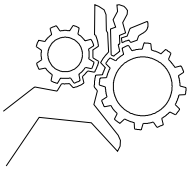
5. Keep work area organized and clean. Wipe up oil spills of any kind. Keep tools and parts off floor. Eliminate the possibility of a fall which could result in serious injury.

6. Reinstall safety devices, guards or shields after adjusting and/or servicing the machine. If a safety device, guard or shield is missing or damaged, replace the item before operating the unit.

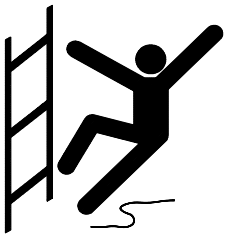
7. After servicing, be sure that all tools, parts or servicing equipment are removed from the vehicle or engine.

8. DO NOT go under the vehicle when the engine is running.

9. Stay clear of moving or rotating parts. Keep loose clothing away from conveyor area when operating the conveyor.



10. Do not hurry! Use recommended hand holds and steps with at least three points of support when getting on and off the Chip spreader. Keep steps, floor, hand holds and controls clean and free from grease. Face the machine when climbing up and down and never jump off or dismount while the machine is in motion. Falls from the machine can cause serious injury.



11. DO NOT permit riders on the Chipspreader that are not provided with a specific seat and seat belt. Death or serious injury can occur due to riders falling off or under the machine while in motion.

12. DO NOT get in or on top of the Spread Hopper when the Chipspreader is in operation and/or moving.

13. Always wear your seat belt.

14. DO NOT SMOKE around machine. Fuel,emulsion and the fumes from both can explode when exposed to flame or heat from smoking or other sources.

HOT MATERIAL PRECAUTIONS

1. Wear protective gear for face, hands, feet and body when operating the Chipspreader.

2. Allow machine to cool before repairing or maintaining working components.

3. When hot asphalt touches skin, flush area immediately with cold water. Do Not apply ice to the affected area. DO NOT ATTEMPT TO REMOVE ASPHALT CEMENT with products containing solvents or ammonia. Natural seperation will occur in about 48 - 72 hours. Get medical attention as soon as possible!

4. DO NOT remove radiator cap, drain plugs, or service grease fittings or pressure taps when engine is hot. Add coolant to the radiator and preform other service only when the engine is stopped and fully cooled.

HYDRAULIC SYSTEMS PRECAUTIONS

1. Make sure that all components are in good working condition. Replace any worn, cut abraded, flattened or crimped hoses and metal lines.

2. Do Not attempt makeshift repairs using tape, clamps or cements. The hydraulic system operates under extremely high pressure and such repairs could cause serious injury.

3. Wear proper hand and eye protection when searching for a high pressure leak. Use a piece of wood or cardboard as a back stop instead of hands to isolate and identify leaks. Escaping hydraulic fluid or oil under pressure has sufficient force to penetrate the skin which could cause serious personal injury. Insure all pressure is relieved before disconnecting lines, hoses and/or valves.

4. If injured by concentrated high pressure steam or hydraulic fluid, seek medical attention immediately. Serious infections or toxic reaction can develop from hydraulic fluid penetrating the skin surface.

REFUELING PRECAUTIONS

1. When refueling, keep the hose nozzle or the funnel and container in contact with the metal of the fuel tank to avoid the possibility of an electrical spark igniting the fuel. Maintain control of filler nozzle.

2. Do Not overfill the fuel tank as overflow creates a fire hazard when spilled on hot components.

3. Do Not smoke when refueling and never refuel when the engine is running. Handle fuel with care. It is highly flammable. Death or serious injury can occure due to explosion and/or fire.

4. Do Not fill tank to capacity. Allow room for expansion to reduce the risk of fuel expanding and spilling form the tank.

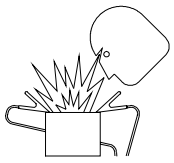
5. Tighten fuel cap securely. Should fuel cap be lost, replace it with an original manufacture's approved cap. Pressurization of the tank may result from use of non-approved cap.

6. Prevent fires by keeping the machine clean of accumulated debris, grease and spilled fuel.

7. Use the correct fuel grade for the operating season.

BATTERY PRECAUTIONS

1. Keep all sparks and flames away from batteries, as gas given off by electrolyte is explosive. Acid propelled by an explosion can cause blindness if it comes in contact with eyes. Always were safety glasses when working near batteries.

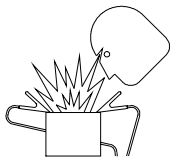


2. If you come in contact with battery electrolyte solution wash off immediately. Chemical burns can cause injury.

3. Always disconnect the battery ground cable before working on the electrical system to avoid injury from spark or short circuit. Electrical shock and burns can occur.

4. Do Not tip batteries more than 45 degrees, to avoid electrolyte loss. Chemical burns can cause injury.

5. Use jumper cables ONLY in recommended manner. Improper use can result in battery explosion or unexpected Chipspreader motion.



TIRE PRECAUTIONS

WARNING: *DO NOT mount or demount tires without proper training. A violent explosion like a bomb can occur.*

Follow all procedures and safety instructions. Wall charts containing mounting and demounting instructions for all rims are available through the United States Department of Transportation (DOT), Washington, D.C.

Note: When in doubt have a qualified tire dealer or repair service preform required tire maintenance.

1. INSPECTION

Clean rims and repaint to stop detrimental effects of corrosion and to facilitate checking and tire mounting. Be very careful to clean all dirt and rust from the lock ring and gutter. This is important to secure the lock ring in the proper position.

Check rim components periodically for cracks. Replace all cracked, badly worn, damaged and severely rusted components with new parts of the same size and type. If you are not sure about proper mating of tire and wheel parts, consult a rim and wheel expert. This may be the tire man servicing your equipment or the rim and wheel distributor in your area.

DO NOT attempt to rework, weld, heat or braze any rim components that are cracked, broken or damaged. REPLACE with like parts. Mixing parts of one type with those of another is potentially dangerous.

Do Not reinflate a tire that has been run flat without first inspecting the tire, tube, flap, rim and wheel assembly. Double check the side ring and the "O ring" for damage and make sure that they are secured in the gutter before inflation.

2. DEMOUNTING
Remove valve core to exhaust all air from tire. ALWAYS exhaust all air from tire prior to removing rim components or wheel components such as nuts or rim clamps. Check the valve stem by running a piece of wire through the stem to make sure it is not plugged.

Do not attempt to demount a tire unless you have the proper equipment and experience to do the job.

3. MOUNTING AND INFLATION
DO NOT try to seat rings or other components by hammering while tire is inflated or partially inflated. Double check all components prior to inflation.

DO NOT inflate a tire before all components are properly in place. Place in a safety cage and inflate to approximately 10 psi. Recheck components for proper assembly. If assembly is wrong, deflate and correct.

NEVER hammer on an inflated or partially inflated tire/rim assembly. If assembly is proper at 10 psi, continue to inflate to fully seat the tire beads. Then completely deflate the tire to prevent localized overstretching of the tube. Reinflate to recommended operating pressure.

NEVER sit on or stand in front of a tire/rim assembly being inflated. Use a clip-on chuck and make sure inflation hose is long enough to permit the person inflating the tire to stand to the side of the tire.

DO NOT hammer components with steel hammers. Use rubber, lead, plastic or brass faced mallets to tap components together.

4. SERVICING TIRE AND RIM ON VEHICLE
DO NOT try to drive an assembled or partially assembled tire/rim over a cast spoke wheel by hammering. STOP! DEFLATE and examine to determine the reason for the improper fit. Look for distortion or components that are not properly locked or seated.

Block the tire and wheel on opposite side of the vehicle before you place the jack in position. Always put hardwood blocks under the jack and crib up the vehicle in case the jack slips.

5. OPERATION
DO NOT inflate tires beyond the maximum recommended inflation pressure. NEVER run a vehicle on one tire of a dual assembly. The carrying capacity of the single tire and rim is dangerously exceeded and operating a vehicle in this manner can result in damage to the rim and tire.

WARNING: *Mismatched Rim Parts are dangerous and could cause SEVERE injury.*

STARTING AND STOPPING PRECAUTIONS

BEFORE STARTING:
1. Check all around the Chipspreader to make sure there are no personnel working on the machine or in the path of the machine before starting. DO NOT start until the area is clear. Death or serious injury can occur to bystanders from being crushed under a moving machine.

2. Check brakes, steering and other control devices in accordance with instructions before starting. Be sure parking brake is applied, the Forward/Reverse control is in neutral and the rigth hand arm rest is *down*. Turn off conveyor and hopper controls.

3. Adjust, secure and latch the seat belt. Only start or operate the machine from the operator's seat.

4. Start and operate the Chipspreader only from the operator's seat. DO NOT bypass the Chipspreader's neutral-start system. The system must be repaired if it malfunctions.

WARNING: *DO NOT operate the engine in an enclosed area without proper ventilation. Exhaust gases are orderless and deadly.*

WHEN PARKING:

1. Park the Chipspreader on level ground whenever possible and always apply the parking brake. On grades, park the Chipspreader with the wheels securely blocked.

2. Before leaving the operator's station, place the Forward/Reverse handle in neutral, turn off all accessories, conveyor and hopper controls, set the parking brake and shut off the engine.

3. Remove the ignition key when leaving the Chipspreader parked or unattended.

BRAKING CONSIDERATIONS

1. The operator must become accustomed to using the Hydrostatic Trammission to assist in braking. This is done by moving the Speed/ Direction Joystick into the neutral position before applying the Service Brakes with the foot pedal.

2. The Service Brakes alone are not sufficient to stop the Chipspreader if it's operating in a Forward or Reverse drive mode.

Do not engage the park brake while the machine is in motion. Instantaneous damage will occur.

3. Stopping distances must be carefully anticipated when towing a truck and/or going downhill. The larger the truck being towed or the steeper the grade, when going downhill, the longer it will take to stop the Chipspreader. In some cases the truck being towed should assist in braking (Advise the truck driver of this requirement).

4. Familiarize yourself with road conditions and road surface variables so you can anticipate when a longer stopping distance is required.

OPERATING PRECAUTIONS

1. Always comply with local regulations regarding moving equipment on public roads and highways.

2. Know and use the hand signals required for a particular job and know who has the responsibility for signaling.

3. Make sure that all lights and reflectors comply with state and local regulations. Make sure that they are clean, in good working order and can be seen clearly by all overtaking and oncoming traffic.

4. DO NOT stand between the equipment and the truck while the truck is being coupled with the Chipspreader. Death or serious injury can result from being crushed between the two machines.

5. DO NOT ride on hopper.

6. The Chipspreader is designed to operate specifically on new seal coat surfaces which may be slippery. Therefore, the Chipspreader is designed with a **reduced braking capability** in order to prevent scuffing new surfaces. In some cases, the truck should assist in stopping.

On other surfaces, stopping distances must be watched, particularly when towing a truck or going downhill. The larger the truck, the slipperier the surface, or steeper the grade the longer the stopping distance. Familiarize yourself with these variables so that you can anticipate when a longer stopping distance is required.

7. Observe all gages or warning instruments for proper operation. If malfunctions are found, shut down the machine and report the problem for resolution. If the failure causes loss of control such as steering, service brakes or engine

power, stop the Chipspreader motion as quickly as possible, apply parking brake, and keep machine securely parked until failure is corrected or the machine can be safely towed.

8. DO NOT operate unit when Warning Buzzer/ light is "ON".

9. Drive the machine with care. Make sure speed is compatible with conditions. Use caution on rough ground, slopes or when turning.

10. Be alert for hazards and obstructions such as ditches, trees, cliffs, overhead power lines or areas where there is danger of a slide. Be aware of and understand the job site traffic flow patterns and obey flagmen, road signs and signals.

11. Watch for bystanders and never allow anyone to be under or reach through the Chipspreader and it's equipment while operating.

12. When roading a Chipspreader, know and use required signaling devices. Use tail lights, slow moving vehicle signs and/or a warning beacon when traveling on public roads. Provide an escort for roading when required.

13. DO NOT tow the Chipspreader, except to remove from road or to load on a trailer.

14. When towing with the Chipspreader, ONLY use the Rear Truck Hitch.

STORAGE PRECAUTIONS

1. Store the Chipspreader in an area away from human activity.

2. Do not permit children to play on or around the stored machine! Serious injury can occur from falling from the machine.

3. Make sure the unit is stored in an area that is firm, level and free of debris.

4. Store the machine inside a building or cover securely with a weatherproof tarpaulin.

MAINTENANCE PRECAUTIONS

1. DO NOT attempt repairs unless trained. Refer to manuals and experienced repair personnel for help.

2. Always wear safety glasses and other required safety equipment when servicing or making repairs.

3. Disconnect the battery before working on the electrical system.

4. Avoid lubrication or mechanical adjustments while the Chipspreader is in motion or engine operating. If such a service is necessary, place Forward/Reverse control in neutral, apply parking brake, shut engine off, place equipment in a safe position, securely block the wheels and use extreme caution.

5. Securely block the machine or any components that may fall before working on the machine. Block any working components to prevent unexpected movement while repairs are being made.

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2. Decide on the exact position by taking measurements and test fitting before you remove the decal paper backing.

3. For decals with no top protection paper, decide on the location for the decal and remove the smallest adhesive backing of the split backing paper.

3a. Align the decal over the specified area and carefully press the small portion with the exposed adhesive backing in place.

3b. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.

3c. Small air pockets can be pierced with a pin and smoothed out using a piece of the decal backing.

4. If the decal has a protective top paper, use hot, soapy water on the surface to which the decal is being applied. Leave wet.

4a. After deciding on the decal location, remove the backing paper and soak the decal in clean soapy water before application. This will help to alleviate air bubbles in the finished decal.

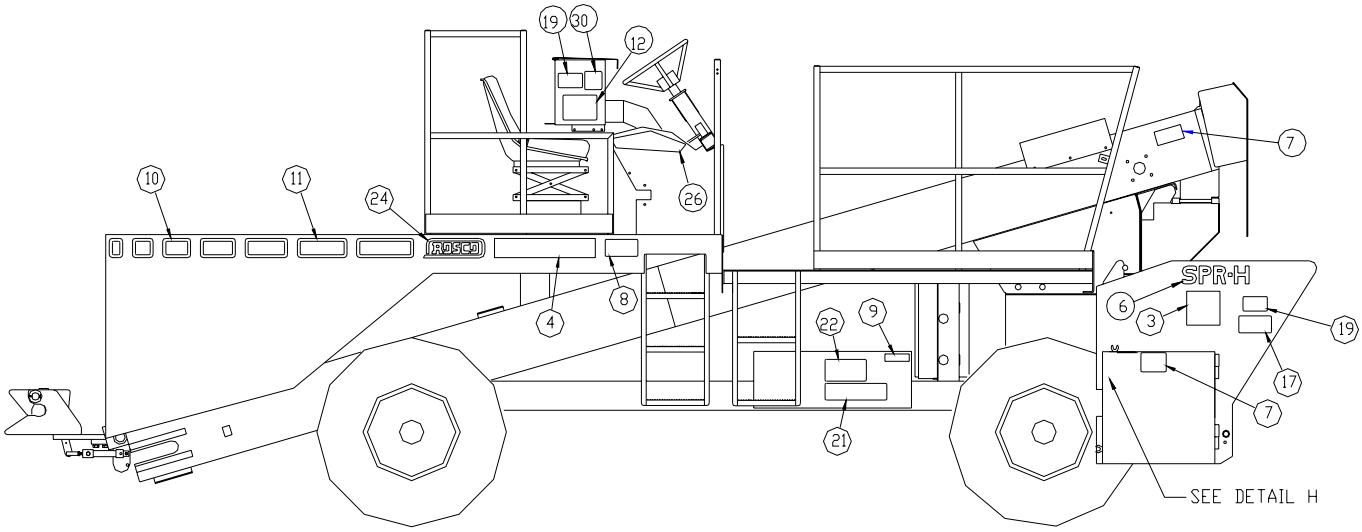
4b. Smooth the decal into place with a squeegee, and check for air bubbles. Small air pockets may be pierced with a pin and smoothed out.

4c. When the decal is completely smoothed out, carefully remove the top paper.

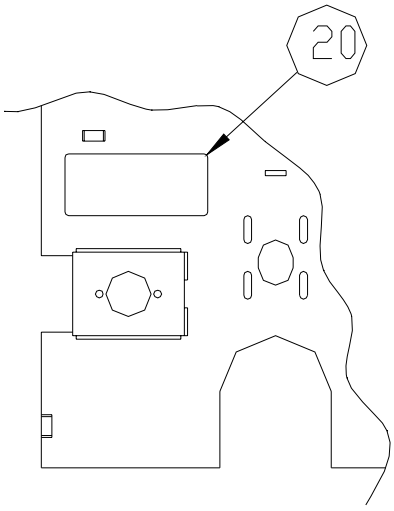
SAFETY DECAL LOCATIONS

The types of Safety Decals and their location on the Chip Spreader are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various Safety Decals, the type of warning and the area or particular function related to that area, which requires your SAFETY AWARENESS.

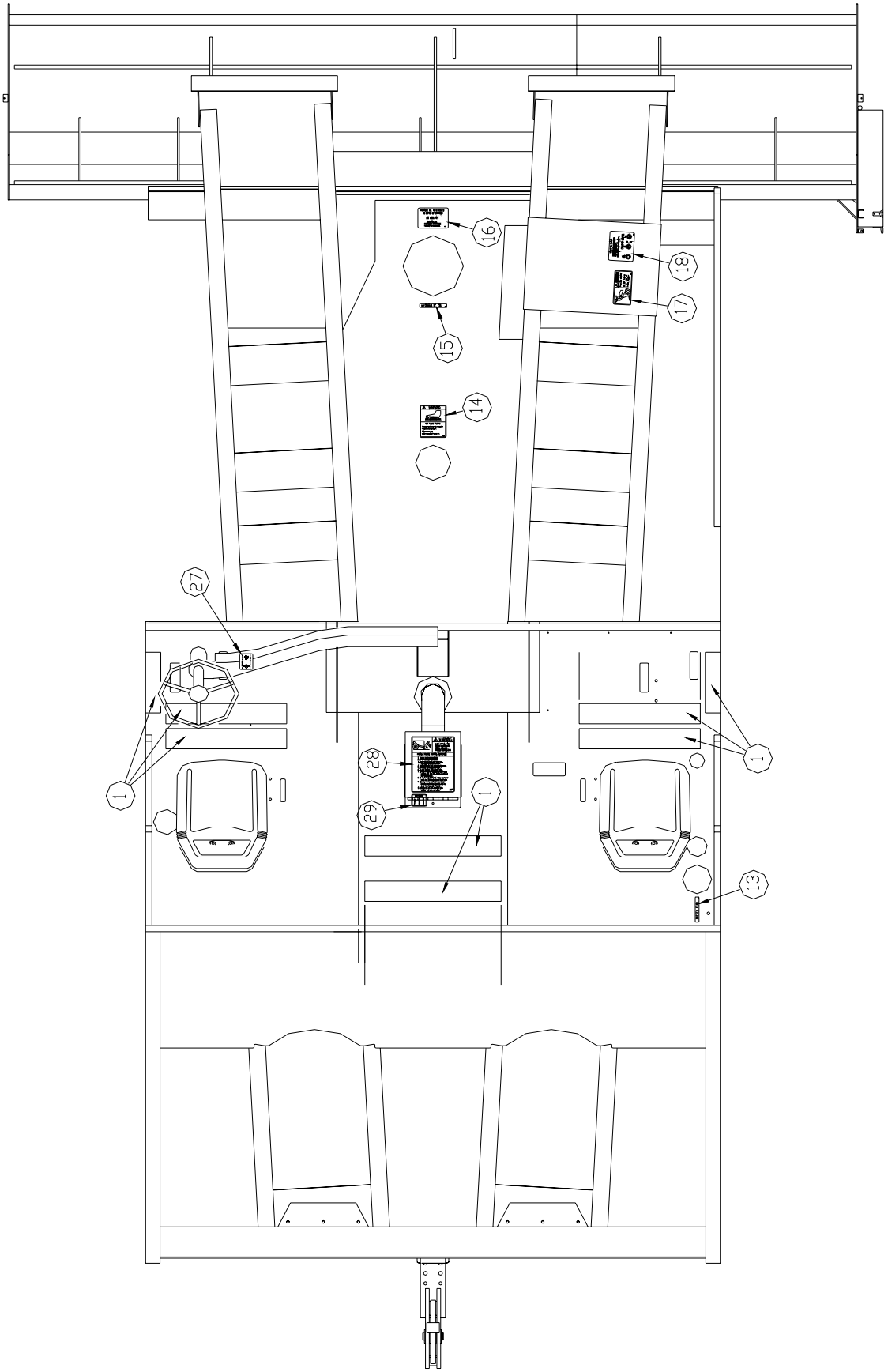
The numbers on the illustrations show the placement of all decals on the Chip Spreader and refer to the list of decal parts found in the Parts Book Section of this manual. The Safety Decals are illustrated on the following pages and use the same numbers for easy reference.



RIGHT SIDE VIEW



DETAIL H
SHOWN WITH CHAIN GUARD REMOVED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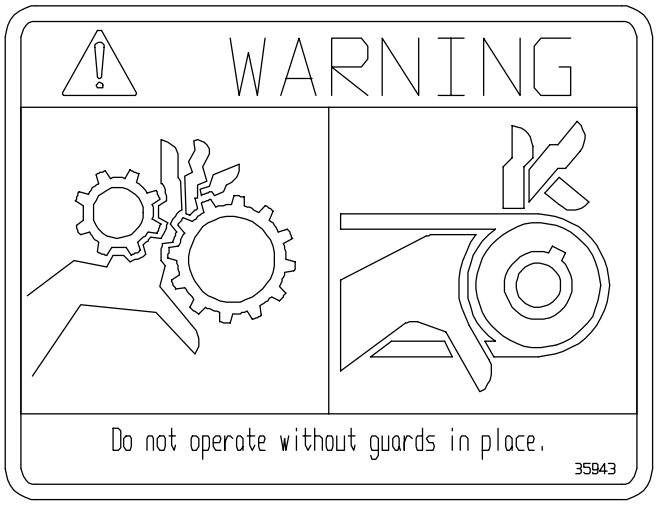
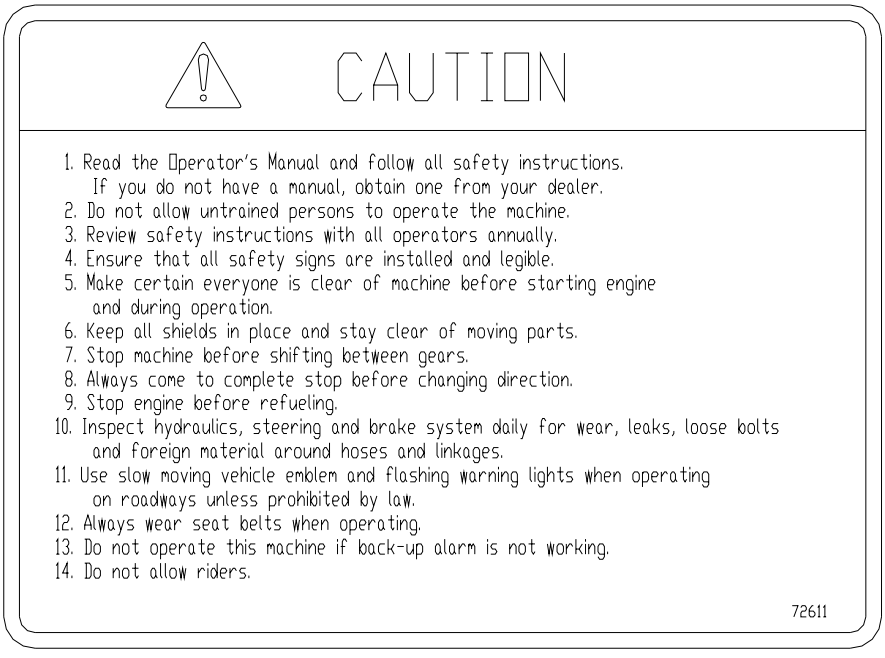
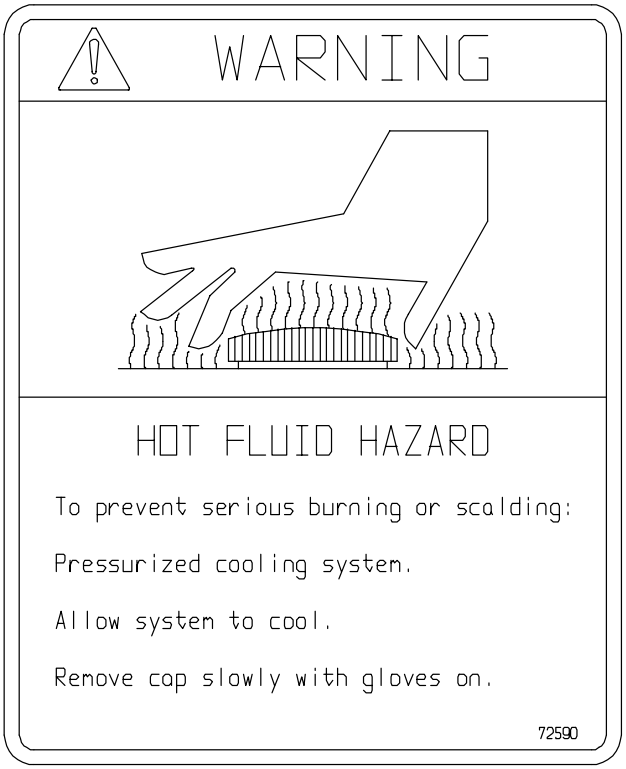


DECAL 7 --- P/N 35943

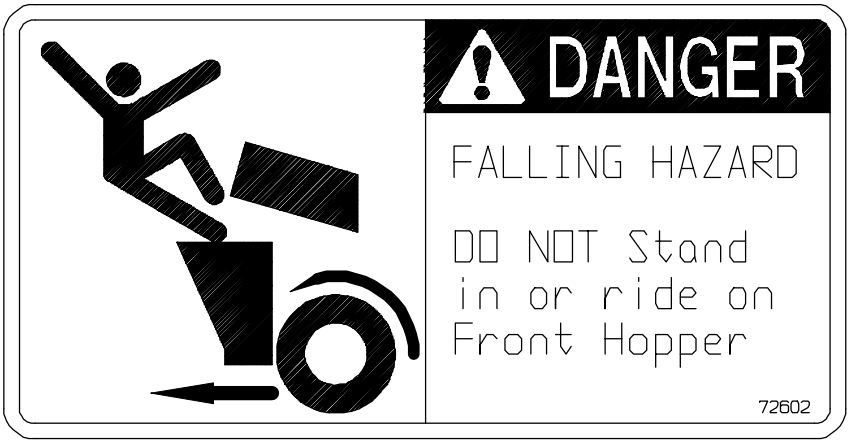
DECAL 8 --- P/N 36202



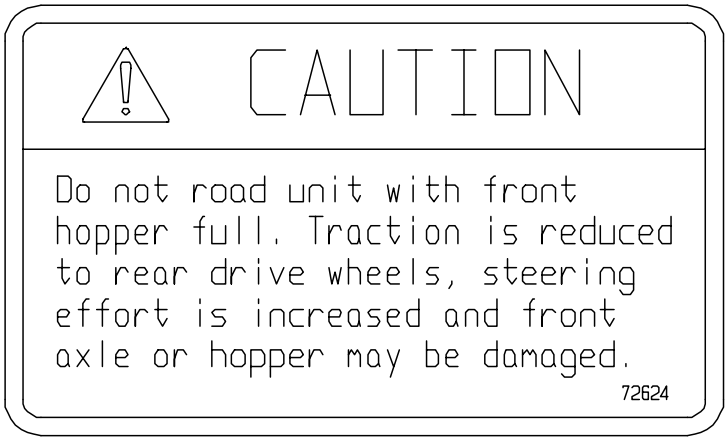
DECAL 12 --- P/N 72611



DECAL 14 --- P/N 72590

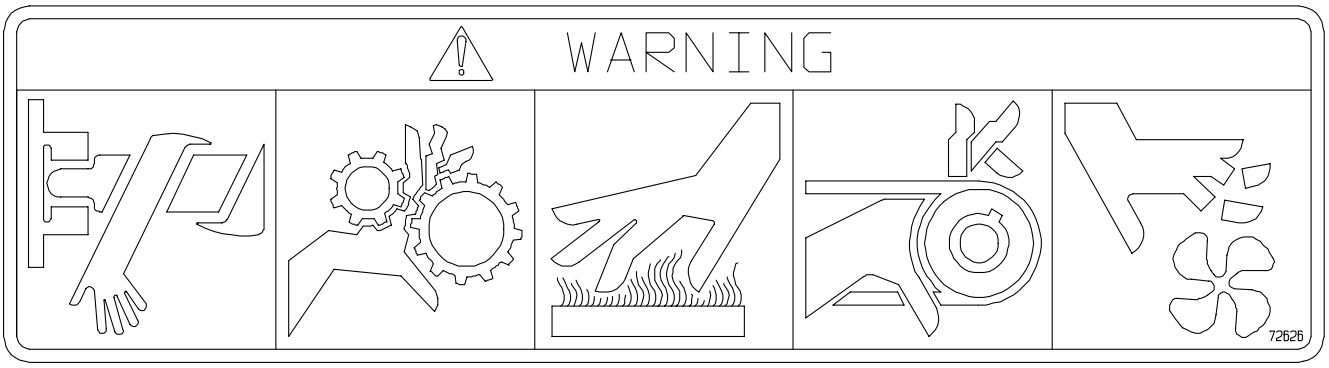


DECAL 17 --- P/N 72602

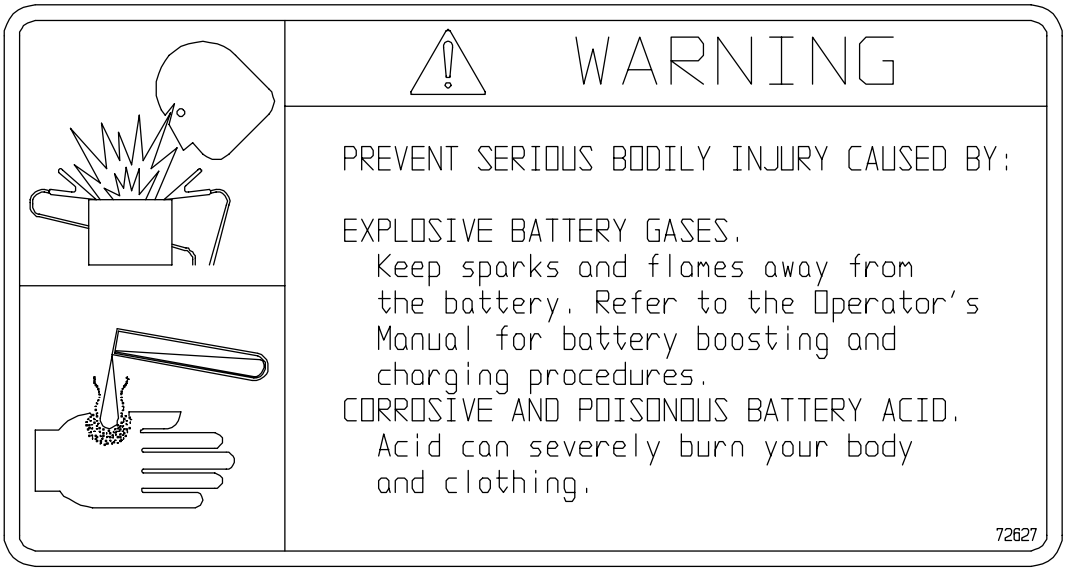


DECAL 19 --- P/N 72624

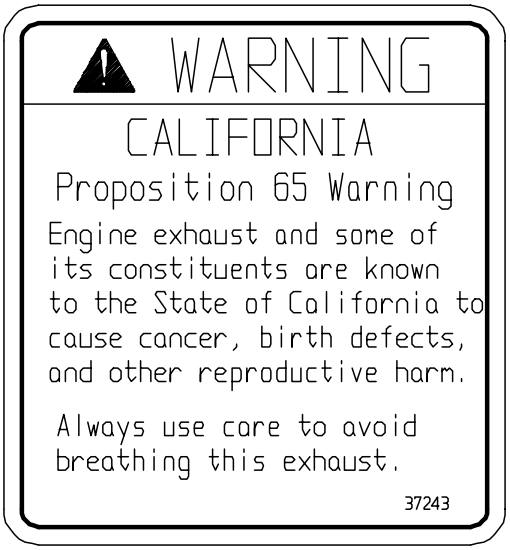
DECAL 20 --- P/N 72625



DECAL 21 --- P/N 72626



DECAL 22 --- P/N 72627



DECAL 30 --- P/N 37243

OPERATION

It is very important that the Flaherty SPR-H Chip Spreader owners and operators fully realize the overall operating simplicity of the equipment furnished. An understanding of the operating procedures will insure safe operation at a high productivity rate.

The Flaherty SPR-H Chip Spreader is designed to handle uniform types of free flowing aggregate. In addition, the SPR-H was designed to permit operation by a single person, the driver, from either side of the machine. The various features have been built into the Chip Spreader to assure proper functioning over the full range of aggregates. Full advantage of these features can only be obtained through close adherence to the following operating and maintenance instructions.

The machine's straight line drive train reduces horsepower loss. Power is transmitted in a straight line from the engine to the drive axle. This design reduces downtime and maintenance due to fewer moving parts in the drive train, and straight line components are more accessible for service.

GENERAL DESCRIPTION

AGGREGATE DELIVERY SYSTEM

Components of the Aggregate Delivery System on the Flaherty SPR-H Chip Spreader are illustrated on **Figure 1**. In the following paragraphs, except where noted, the numbers referenced refer to this figure.

1. RECEIVING HOPPER

Aggregate material is delivered by dump truck into the 3.5 cubic yard capacity rear hopper known as the receiving hopper (13). The receiving hopper is equipped with rubber sealing skirts (14) to seal the receiving hopper to the truck dump box during operation.

A feed gate (12) is provided in the receiving hopper for each conveyor to permit control over the amount of aggregate being conveyed to the spread hopper.

2. CONVEYORS

Two hydraulic motor-driven 20 inch wide conveyor belts (10) move the aggregate from the receiving hopper to the front spread hopper. The conveyor drive motors (16) are mounted on top of the conveyor assembly at the front of the Chip Spreader.

Pulleys- Drive, tension and suspension for the conveyors is provided by various pulleys attached to each conveyor frame. **Figure 2** shows the relative location of these pulleys. The head pulley (1), located at the spread hopper end, is driven by the hydraulic motors and drives the conveyor. The tail pulley (3), located at the receiving hopper end, can be used to adjust the tension of the conveyor belt. A number of troughing idlers (2), an adjustable idler (4) and two rolling pulleys (5) are located between the head and tail pulleys to provide suspension and tension adjustment for each conveyor belt.

Chute Lining- Rubber chute liners (9) seal each side of the conveyors to prevent spillage of aggregate. The chute liners are held in place by channel strips (8) bolted to the conveyor frame. The chute liners can be adjusted to maintain even contact with conveyor belts.

Deflectors- There are two types of deflectors located at the spread hopper end of each conveyor. The first, the deflector hood (1), is attached by four bolts to the conveyor frame. The deflector is used to control the distribution of aggregate into the spread hopper so that, depending on the speed of the conveyors, the aggregate lands in the center of the hopper and doesn't spill over the front edge. **Figure 3** shows adjustment of the deflector hood.

The other deflector is a vertical plate (2) used to control the stream of aggregate flow from side to side in the hopper. Reach rods (3) are provided to which will allow adjustment of both vertical plates from the right hand side of the machine. When spreading with less than the full width of the hopper, these plates can be adjusted to direct aggregate flow to the engaged (active) cut-off gates.

3. SPREAD HOPPER

The spread hopper is attached to the front of the Chip Spreader and is responsible for the accurate application of the aggregate to the road surface. Spread hoppers are available in various widths from 10 feet to 16 feet to meet the customer or job specifications.

CAUTION-*Avoid roading the machine with material in the hopper.*

Reject Screens- At the top of the spread hopper are reject screens (5), also known as grizzly screens, which prevent oversized aggregate, sticks and other debris from entering the hopper. Each grizzly is a 1.125 inch mesh and is the size required for most applications.

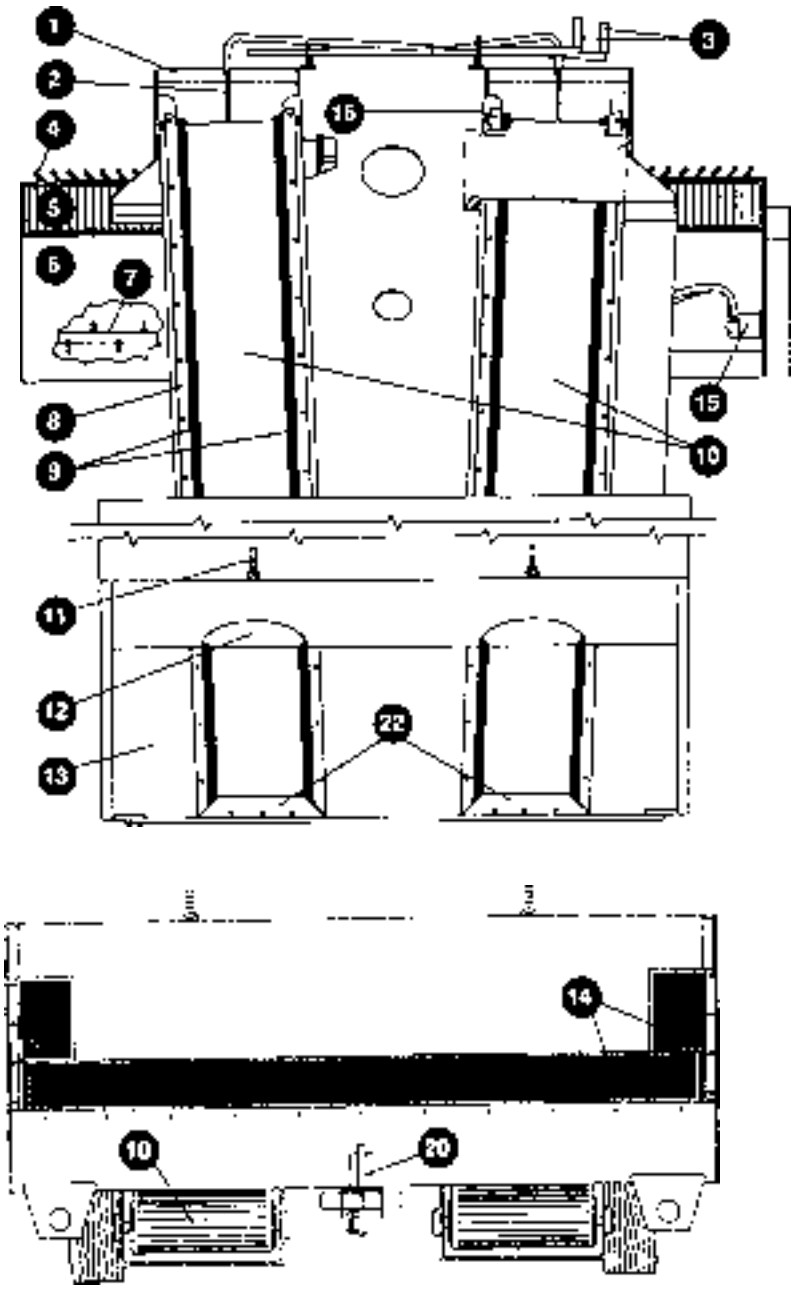
Agitator- An agitator shaft (7) is located inside the spread hopper which rotates to keep the aggregate flowing to the spreadroll and prevent "bridging". The agitator and spreadroll are driven by a hydraulic motor (15) through a sprocket, gear and chain arrangement.

Cut-off Gates- Cut-off gates (6,12 and 13.50 inches wide) above the spread roll allow spreading width adjustment from 6 inch wide to the full width of the hopper. The operator can engage or disengage individual cut-off gates with hand operated levers (4).

Control Gate Rod- The control gate is moved by means of an adjustable linkage to the control lever at the drivers seat. If at any time the deposited material is heavier on one side than the other, check the opening on each end of the hopper with the gate approximately 1/2 inch open. If this measurement indicates more than 1/32 in variation, pull the clevis pin on the reach rod on one end and adjust to the desired distance.

Spread Roll-The spread roll forms the bottom of the spread hopper. When the spread roll is rotating, it moves the aggregate out of the hopper through the cut-off gates and onto the road surface.

CAUTION - *DO NOT operate the spreadroll and agitator for prolonged periods with the gates shut. This causes high hydraulic operating pressures in the hopper drive as the agitator compacts the material in the bottom of the hopper.*



1. DEFLECTOR HOOD
2. VERTICAL PLATE DEFLECTOR
3. VERTICAL DEFLECTOR REACH RODS
4. CUTOFF GATE LEVERS
5. REJECT SCREENS
6. FRONT HOPPER
8. CHANNEL STRIP
9. CHUTE LINER
10. CONVEYOR BELT
11. CUTOFF GATE ADJUSTOR
12. CUTOFF GATE
13. RECEIVING HOPPER
14. SEALING SKIRTS
16. CONVEYOR MOTOR
20. TRUCK HITCH
22. LAGGING SKIRTS

FIGURE 1

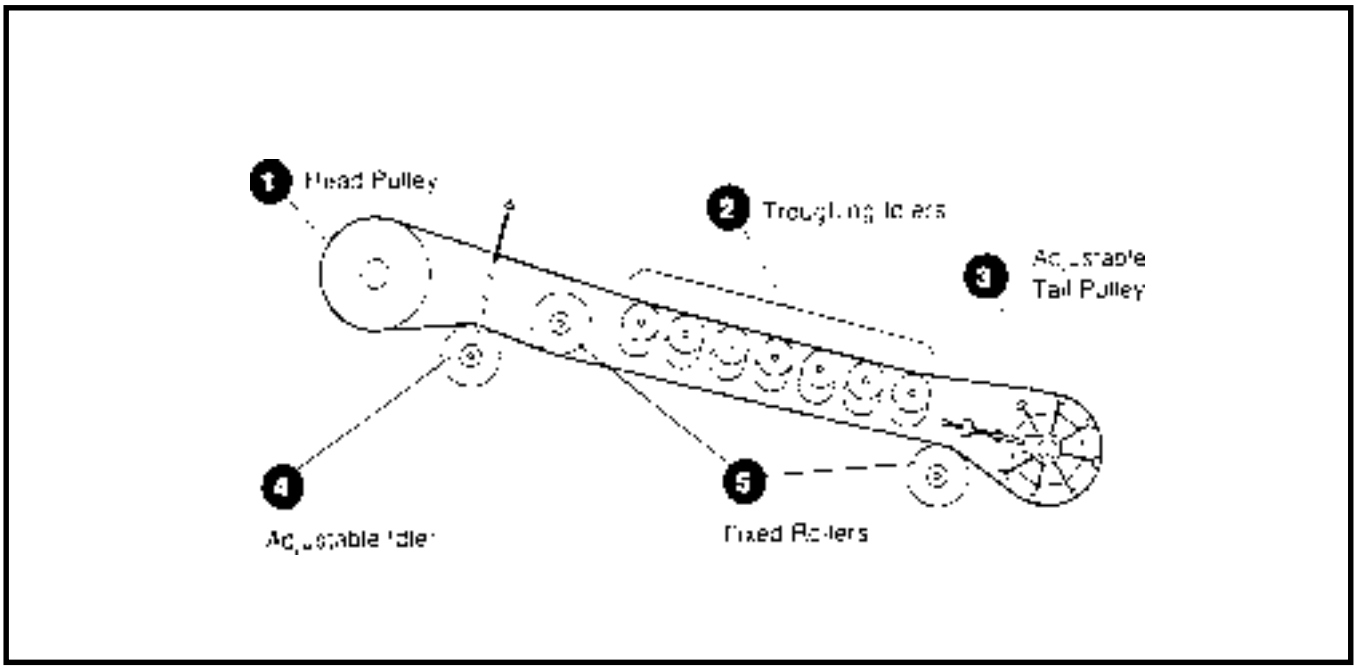


FIGURE 2
CONVEYOR PULLEY SCHEMATIC

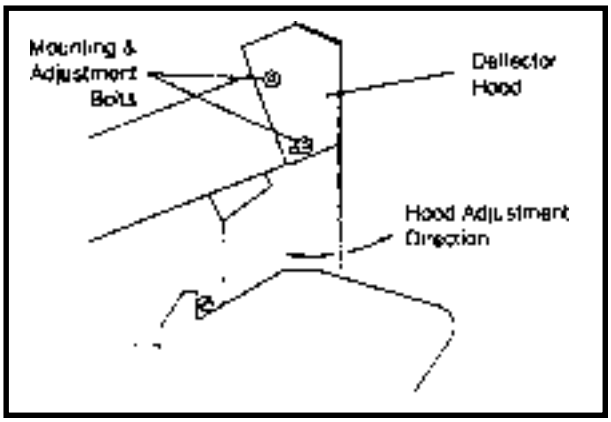


FIGURE 3
DEFLECTOR HOOD ADJUSTMENT

4. CHAIN DRIVE

Hopper drive chains are located beneath the chain guard on the right hand end of the spread hopper. They can be adjusted by moving the idler sprocket mounting plate or the agitator bearing mounting plate.

Warning- *Keep shields, covers and guards in place. Personal injury will result from contact with moving chains.*

STEERING

Steering is accomplished on the SPR-H by a fully hydraulic system. The driver's steering wheel is attached to an orbitrol hydraulic motor which in turn controls the double-acting cylinder that operates a steering arm on the front axle.

The steering wheel and hydraulic motor are mounted on the swing column attached to the Control Panel. This arrangement allows the wheel to be positioned and locked in place for operation from the left or right side of the Chip Spreader.

OPERATOR CONTROLS - GENERAL

As mentioned, the SPR-H was designed to permit operation by a single person, the driver, from either side of the machine. It is standard equipped with a left side seat .

The drivers' seat is equipped with safety belts and are two way adjustable.

In addition to steering the Chip Spreader, the drivers control station allows the driver to:

- « operate Speed/Direction Controls
- « operate Aggregate Delivery System
- « monitor Engine/Hydraulic System
- « operate Brakes
- « operate Hitch Controls
- « operate Lights, Signals and Options

The SPR-H is equipped with a walkway on the right conveyor to allow more conventional two-person operation, if desired. Optional walkway on the left and/or controls to permit other driver/operator configurations are available.

Warning- *Become familiar with all operator controls before Chip Spreader operation. Serious accidents and injury may result from operating this machine without proper knowledge of all controls and features.*

TRUCK HITCH

The SPR-H is equipped with a positive-latching, hydraulically released hitch, that secures the Chip Spreader to a pull bar on the dump truck (20).

The lever at each drivers station operates the truck hitch. A hitch control lever at the right front operators walkway is available as optional equipment. The lever controls the height of the hitch to attach to the truck pull bar. The hitch will automatically lock and can be released by the push button located on the control console and/or optional button at the right walkway.

See "Truck Hitch Installation" for further information.

CONTROL PANEL

The control panel consists of gauges to allow the operator to observe the operation of the unit as well as controls for the conveyors (68), and spreadroll (14) and axle speed (15). The control panel is shown in **Figure 4**.

1. CONVEYOR CONTROL SWITCHES

The switch marked LH controls the left hand conveyor and the switch marked RH controls the right hand conveyor. The switch has three positions.

A. Automatic - The conveyor belts automatically start and stop as needed to uniform distribution of aggregate in the spread hopper.

The conveyors will operate in this position only if the unit is equipped with the "One man auto belt" control. This includes paddle operated switches located above the spread hopper that must be adjusted to control and maintain the level of aggregate in the spreadhopper.

The conveyor deflector hoods must be adjusted properly to allow uniform distribution of aggregate in the spread hopper and proper operation of the paddle switches.

NOTE: If necessary, the auxiliary conveyor switches at the right front of the chip spreader can be used by a second operator to override control panel switches.

B. Off - This position turns the conveyor(s) OFF.

C. Manual - This position is used to turn the conveyor(s) ON/OFF manually from the driver's station.

The manual position can also be used when there is a second operator watching the level of aggregate in the spread hopper. The Auxiliary conveyor switches are used by the second operator to override the control panel switches.

2. SPREADROLL CONTROL

This switch activates the hydraulic motor that drivers the spreadroll and agitator components of the spread hopper. A green indicator light (2) will light when the spreadroll switch is on. The switch has three positions.

A. Automatic - Allows the spreadroll and agitator to automatically be actvated when the gates are opened.

B. Off - manually turns OFF the spreadroll and agitator.

C. On - Manually turns ON the spreadroll and agitator.

Caution- *DO NOT run spreadroll in the manual "ON" position for extended periods of time with gates closed. Excessive use could cause premature wear on gates and spreadroll.*

3. VARIABLE SPEED CONVEYOR CONTROLS

This optional control feature consists of hydraulic flow control valves located on a panel above the right conveyor. These control valves permit individual conveyor speed adjustment. A second operator on the Chipspreader would use this feature to provide even placement of aggregate in the spread hopper under various operating conditions. When using the Auto Belt control, this feature also allows the operator to adjust the material flow to match the distribution to prevent ON/OFF cycling of the conveyors.

There is also a one man variable speed option that allows a single operator to control from the operator's station.

4. INSTRUMENTS AND GAUGES

The chip spreader is equipped with analog gauges to monitor the engine and hydraulic functions. It is also equipped with an alarm system to alert the operator of the following conditions:

- Hydraulic Oil Temp - 210° F (98.8°C) or higher
- Engine Oil Pressure - 5 PSI or higher
- Engine Coolant Temp - 210° F (98.8°C) or higher

If an alarm point is reached, the System Warning (48) will light-up and a buzzer will sound.

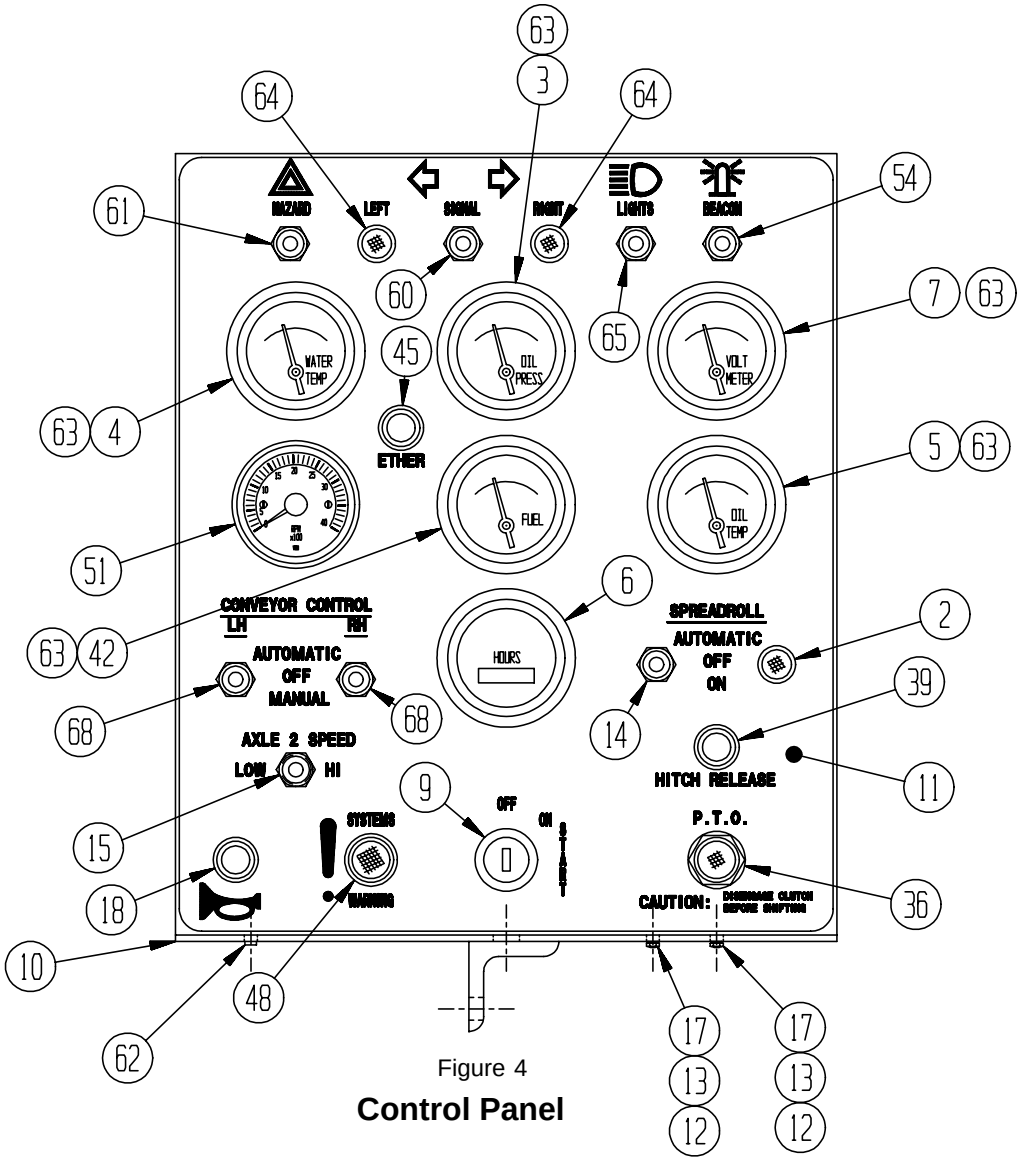


Figure 4

Control Panel

2. Green indicator light - Spreadroll
3. Oil Pressure Gauge
4. Water Temp. Gauge
5. Hydraulic Oil Temp. Gauge
6. Hour Meter Gauge
7. Volt Meter Gauge
9. Ignition Switch
10. Control Panel
11. Control Panel Decals

12.13,17 Mounting Hardware

14. Spreadroll Switch
15. Axle Speed Switch
18. Horn
39. Hitch Release
48. Warning System
68. Conveyor Control Switches
36. PTO Indicator Light (OPTIONAL)
42. Fuel Gauge (OPTIONAL)
45. Ether Starting Aid (OPTIONAL)
51. Tachometer (OPTIONAL)
54. Strobe (OPTIONAL)

60,61, 62, 63,64,65. Lighting Group (OPITONAL)

PREPARATION FOR USE

The procedures listed in this area are necessary to prepare the SPR-H chip Spreader for initial operation.

1. ATTACHING THE SPREAD HOPPER (FIGURE 5)

The gravel deflector adjustment bars must be disconnected while attaching hopper to avoid interference with lifting boom.

CAUTION: *Verify that lifting equipment is capable of easily lifting and moving the hopper into position. The lifting equipment must have a minimum capacity rating of 2 tons (4000 lbs. or 1815 kg).*

STEP A Verify that the Locking Pins (1) are removed. Lift the Front Hopper using the two lifting eyes on the hopper (2). While the front of the hopper is tipped slightly forward, engage the lip on the back of the Hopper with the hopper seat (3) on the Chip Spreader frame. A chain can be fastened between the front lifting eye (4) and the hook to prevent the Front Hopper from tipping too far forward.

STEP B Attach chain between the front lifting eye (4) of the hopper and the front of the Chip Spreader. See Figure 5, Step B. Release tension on the lifting chain.

STEP C Move the lifting chain to the front lifting eye (4) of the hopper. Then lift the boom to put tension on the lifting chain.

STEP D Make sure the extra chain attached to the front lifting eye will not interfere with moving the Front Hopper. With tension on the lifting chain, move the lifting vehicle toward the Chip Spreader which will tip the hopper back into position. Insert the Locking Pins (1) and rotate to insure the handle is behind the lug welded to the frame. This prevents the pin from moving out.

Attach the hopper drive motor hydraulic hoses and the power gate control rod. At this time it may be necessary to check for proper gate adjustment.

2. TRUCK HITCH INSTALLATION

The function of the truck hitch on the Chip Spreader is to provide a means whereby the truck can be held in close relationship with the receiving hopper. The success of the entire spreading function is directly related to this hook-up, and care should be taken to ensure the accuracy of the hook-up with every truck that will be working with the Chip Spreader.

Figure 6 illustrates the relative dimensions of the various components and shows the general relationship of the Chip Spreader and the Truck when they are hooked together. This information should be used to determine where on the truck to mount the pull bar so that a good hook up can be achieved.

NOTE: The height of the pull bar is shown with the truck loaded. As all trucks are somewhat different it is impossible for Rosco to manufacture pull bar components as stock items to send with the Chip Spreader.

The tailgate of the truck bed must be set 8 inches inside the retaining rubber skirt of the chip spreader when the bed is raised. Frame lengths vary, the overhang of the dump bed on the frame

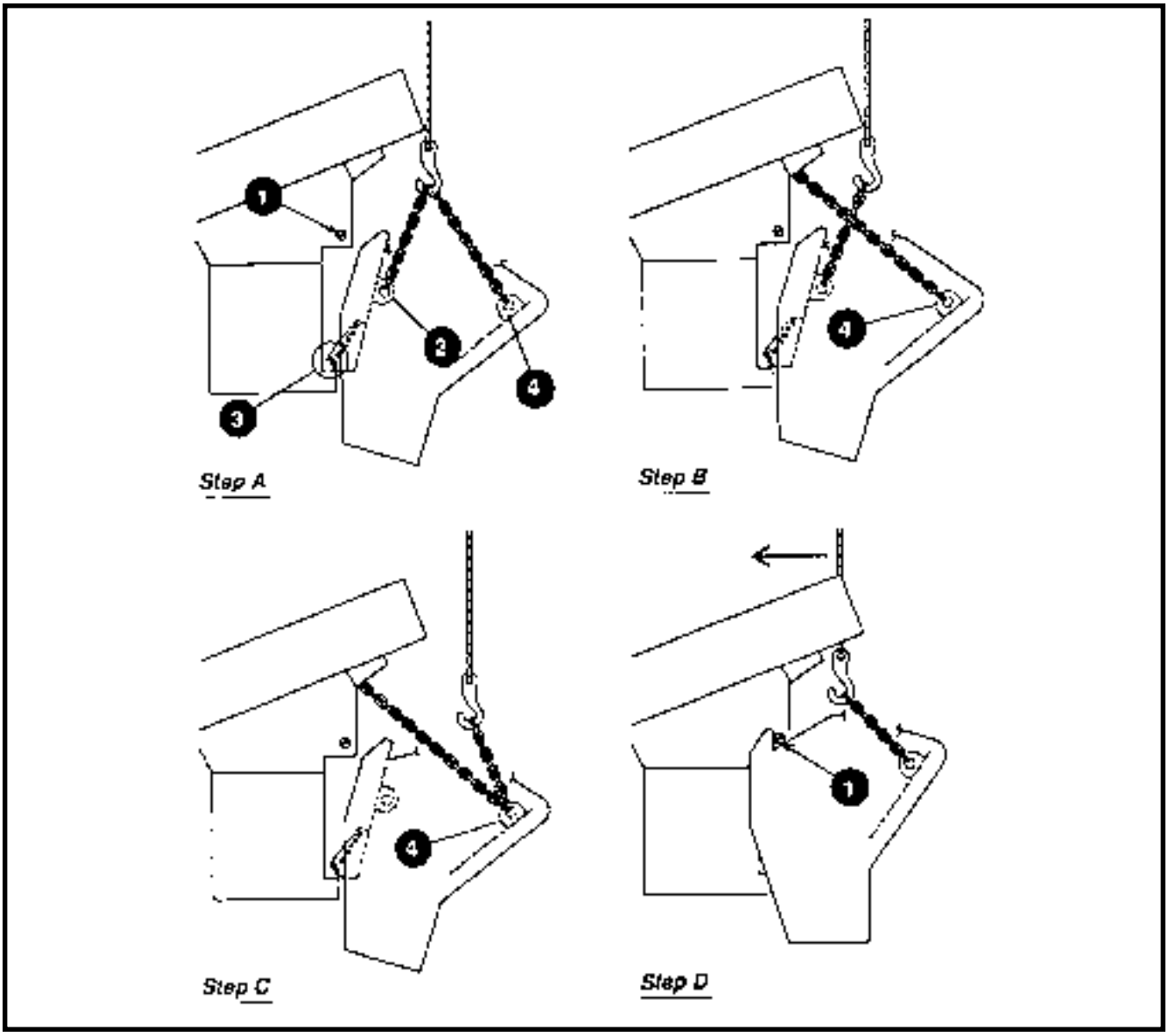


FIGURE 5

varies, and the relationship of the rear wheels to the frame varies between different trucks. Therefore, a check of each truck bed in relationship to the chip spreader receiving hopper must be made.

On large tandem axle trucks, the frame, rear wheels and often the gate of the dump bed are on the same vertical line. In such cases, it will be necessary to install extensions to the truck bed to insure a proper seal when in the dumping position. When these conditions arise, hitches should be installed/located to allow a minimum of 2 to 2-1/2 inch clearance between the rear truck tire and the bumper member of the Chip Spreader.

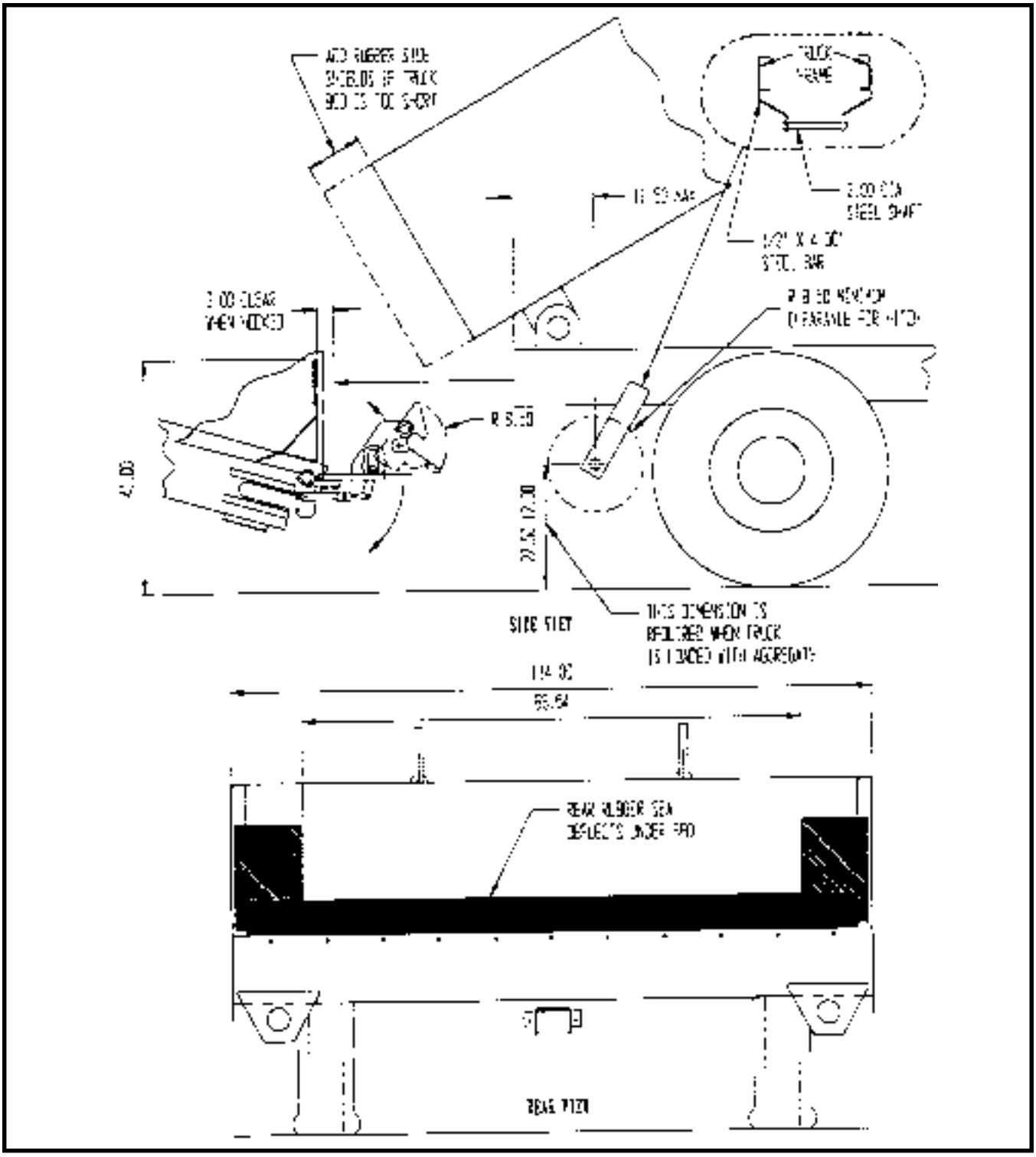


FIGURE 6

3. POSITIONING THE CONTROL PANEL AND STEERING

If your machine is equipped with the optional right hand drivers station, the control panel and steering wheel are designed to be positioned for operation from either left or right sides of the Chip Spreader.

To position :

1. Pull pin handle on the control panel boom.

2. Rotate the boom and swing the control panel boom into position.

3. Release the boom pin handle and verify that it has engaged the hole.

4. A spring pin locks the steering wheel in position. Pull this pin, rotate the steering wheel over to the desired side of the control panel, then release the pin.

NOTE: The control panel swing boom has two grease zerks that should be serviced regularly to permit smooth operation.

PRE- START INSTRUCTIONS

1. GENERAL

Prior to using the SPR-H Chip Spreader for the first time, the operator should familiarize himself with all features and controls of the Chip Spreader a described in the General Description. Also, it is essential to become familiar with the safety considerations found in this manual.

2. PROCEDURES

To assure proper performance, the following ***daily*** inspection should be preformed before putting the SPR-H into operation. Consult the maintenance section of this manual for details of these procedures.

1. Check all fluid levels, including the following, filling as necessary:

« Engine crankcase oil. Do not overfill.
« Hydraulic oil reservoir.
« Engine diesel fuel tank.
« Check engine coolant level at radiator.

2. Drain the engine fuel/water separator on the fuel filter.

3. Check the engine air filter restriction indicator. Clean or replace filter elements if indicator shows red or above 35 Hg.

4. Check tire pressure. Best performancefor most operating conditions isachieved when tire pressures are set to 50 PSI in front and 65 PSI in rear.

However, various operating speeds, road bed conditions, truck pulling

arrangements and other operating conditions may require different tire pressures.

5. Check the Chip Spreader for loose bolts or signs of leaking hoses (refer to safety section when checking for hydraulic leaks).

Know the location and function of the controls before starting the engine.

OPERATING INSTRUCTIONS

The SPR-H Chip Spreader is ready for operation after all procedures of the Preparation For Use and Pre-Start Instructions sections have been performed.

1. ENGINE START-UP

1. Engage all Spread Hopper Gate Handles as necessary to obtain the desired spreading width.

2. Mount the driver's operator station, fasten seat belt and become familiar with the location of all controls.

Caution: *Wear seat belt when operating the Chip Spreader.*

3. Verify that the conveyor control and spreadroll switches are in the OFF position. Set the gate switch to close.

4. Place transmission into neutral. Disengage clutch.

5. Engage parking brake.

6. Set engine throttle to one-half speed.

7. Turn the ignition switch key, and release as soon as engine starts.

Do Not crank the engine for more than 30 seconds at a time. Starter failure may result from continuous cranking.

NOTE: If the starter doesn't turn the engine over, shut off the ignition key and make no further attempts to start the engine until the condition is corrected. Refer to the troubleshooting section in this manual, the Cummins diesel engine manual, or your Cummins dealer for possible solutions.

Allow the starter to cool down for 2 minutes, between unsuccessful attempts to start the engine. Failure to do so may result in burning out the starter motor.

8. Move the engine throttle to an IDLE position as soon as the engine starts.

9. At this time, check the various gages on the control panel for proper readings and investigate if any mode is not functioning properly.

Be sure oil pressure is observed within 15 seconds after starting the engine. If no pressure is shown on the gauge after 15 seconds, shut down the engine and determine the cause.

Avoid idling the engine for more than 10 minutes. Long periods of idling can cause combustion chamber temperature to drop so low that fuel will not completely burn. This can, in turn, dilute the crankcase oil, reducing it's viscosity and ability to protect the engine.

2. COLD WEATHER STARTING

The direct-injected Cummins Diesel Engine starts well in cold weather. If it is necessary to use Ether as a starting aid, do it promptly. Read and follow the steps below and on the Ether manufacturer's recommendations for safe and effective use.

1. Place unit in neutral and set Parking Brake.

2. Set throttle to idle.

3. Have another person crank the engine while you spray starting fluid into the air cleaner for no more than two (2) seconds at a time. NEVER remove the air filter element and spray Ether directly into the air inlet piping or the intake manifold.

4. Be sure that engine oil pressure is indicated on the gauge within 30 seconds after starting.

Never use Ether near open flames or with pre-heater or glow-plugs. The combination can cause an explosion.

Do not breath in Ether starting fluid fumes, as they are harmful.

Do not use excessive amounts (spray for more than two (2) seconds per time) of Ether starting fluid when starting the engine. The use of too much Ether starting fluid will cause engine damage.

If the unit is equipped with an Automatic Ether Injection System, follow the described steps for starting in cold weather.

1. Put the unit in neutral and set the parking brake.

2. Set throttle at idle.

3. While cranking the engine, inject a metered amount of Ether starting fluid by pushing the Ether Injection Button.

4. Be sure the engine oil pressure is indicated on the gauge within 30 seconds after starting.

5. Never inject Ether for more than 2 seconds at a time.

3. ENGAGE AGGREGATE DELIVERY SYSTEM

1. Set gate setting dial to the proper opening for the aggregate being used. If the needed setting is not known, set the dial to the midrange position. It can be adjusted later to meet delivery requirements.

2. Switch the control to automatic which will start and stop the spreadroll at the proper time.

3. Verify the spreadroll lamp has illuminated and that the spreadroll and agitator are rotating. If they're operational, set the spreadroll switch to automatic.

4. With truck hooked to the SPR-H, fill the receiving hopper with aggregate.

5. Activate the conveyor control switches start conveying material to the spread hopper. Set the switches to automatic only if the SPR-H is equipped with the "one man auto belt control". Refer to info on "conveyor belt adjustment" that follows.

6. Verify that the material is falling into the spread hopper in an even, fan shaped cascade. If not adjust the deflector hoods in or out.

7. Adjust the vertical plate deflectors so that material is evenly distributed across the width of the spread hopper or where needed when using only part of the width.

8. Adjust the rear hopper gates so that the conveyors are not overloaded.

Release the park brake before moving the Chip Spreader.

9. To start spreading aggregate, depress the clutch peddle and shift transmission into desired gear. Increase throttle speed and release clutch peddle slowly.

10. When desired spreading speed in reached, move the spread hopper gate control lever to the appropreate opening for the aggregate size and Chip Spreader speed.

11. To stop, depress the clutch and apply the foot brakes. As the machine slows, begin closing the gates with the gate lever. Time this action so the gates close proportionally to the machine speed.

4. CONVEYOR OPERATION

The conveyor speed may be adjusted to match the spread needs of the machine. The proper conveyor speed is slightly faster than the machine spread requirements. At this speed, the conveyors will run nearly continuously, stopping infrequently to insure the aggregate does not overflow in the hoppers.

The conveyor system can be damaged by setting the conveyor speed too high. This causes the conveyors to start and stop continously which shocks the system repeatedly.

5. CONVEYOR BELT ADJUSTMENT

Proper alignment and tension adjustment of the conveyor belts is necessary to deliver proper components. Instruction for verifying correct belt alignment and tension can be found in the Maintenance section of this manual. If misalignment or slack is noticed in a conveyor belt, adjust as soon as possible to prevent premature wear of belt and related parts.

AGGREGATE SELECTION AND APPLICATION

The SPR-H Chipspreader is capable of spreading a wide variety of aggregate in the surface treatment of asphalt pavements. Such treatments are used to seal the asphalt surface from weathering problems caused by water and air permeation, and as an aid in preventing traffic wear to the pavement, thus extending the pavement life while providing a better non-skid surface.
The SPR-H Chipspreader produces a higher duration chip seal because of the aggregate separation effect of the spreadroll. The rotation of the spreadroll throws the larger aggregate ahead so they land in the asphalt before the smaller particles. The smaller particles then "chock" the larger particles in place. The effect of this system is not only a chip seal with a longer life by better bonding of all sized particles, but less chance of particles becoming loosened by traffic and causing damage to vehicles.

GENERAL INFORMATION

TYPES OF TREATMENTS

Usually, there are three types of asphalt/ aggregate surface treatments used. The three treatments are:

Single Surface Treatment - This treatment is used to prevent wear and aid in waterproofing a surface. It involves a single pass of sprayed asphalt followed at once by a single layer of aggregate.

Multiple Surface Treatment - This treatment provides greater surface protection against both traffic wear and weather. It is made by using two or more alternating layers of asphalt and aggregate. Each succeeding layer of aggregate should be no more than one half the size of the aggregate in the preceding layer.

Sand Seal - This treatment is used to provide a tight seal against the weather and to make the surface more skid resistant. It's construction is comparable to a Single Surface Treatment.

MATERIAL SELECTION

In general, the majority of **hard** aggregates can be used for aggregate/asphalt surface treatments. Aggregate for sand seal treatment may consist of sand or screenings. However, all aggregate should meet certain requirements.

1. It should be as uniform in size as is economical. Generally, the biggest particle should be no more than twice the size of the smallest particle.

2. Aggregates of 1/2 inch (13 mm) or less provide a quieter, smoother road surface. Larger aggregate will provide a more skid-resistant surface, but will create more noise so is most often used in non-populated areas.

3. The best aggregate shape is cubical. Flat or elongated shapes may be completely buried in asphalt that is needed to hold cubical shaped aggregate. The fewer flat or elongated shapes in the aggregate the better.

4. Aggregate must be clean. Coatings of dust, silt or clay prevent adhesion to the asphalt and interfere with uniform spreading. Both problems will lessen the life of the surface treatment.

5. Aggregate should be as dry as possible and warm. Dry aggregate will adhere to the asphalt better. Surface treatments are best applied when the temperature is 50°F (10°C) or above. The surface being treated should also be dry and warm.

6. Dry sand is best for most application. Sand naturally holds and attracts water which makes even application difficult. Wet sand will bridge and therefore may not flow as required.

SPREADING THE AGGREGATE

The following steps should be taken to assure a successful asphalt/aggregate surface treatment.

1. Have all aggregate on hand before starting treatment.

2. Cover sprayed asphalt with aggregate within 30 seconds of spraying.

3. Spread aggregate evenly. Aggregate will not stick more than one particle thick and excess may actually loosen adhered aggregate by the action of the traffic on the surface.

4. The gate opening should be at least 2 times (i.e. 1/2 inch aggregate needs a gate opening of 1 inch) the size of the aggregate for uniform feeding. However, the gate opening will vary with the size of aggregate used and the uniformity of the aggregate. Use the 2 times aggregate opening as a starting point and test the spreading rate (see Starting Spread Rate) before starting each job to make any adjustments needed.

STARTING SPREAD RATE

To determine an acceptable starting rate, completely cover a 3 foot by 3 foot (1 meter by 1 meter) board with the aggregate to be used in a layer one stone deep. Then remove the aggregate and weigh it. This will give you the pounds per square yard (.50 kg per square meter) required. This rate may need to be adjusted on the job, but remember not to use more aggregate than is required for the job.

CHECKING THE APPLICATION RATE

To check the application rate the Chipspreader with truck attached may be driven over a square yard (square meter) of cloth and the aggregate weighed. This will give you the rate actually being spread.

Another test is to measure the area that a weighed truckload of material covers. Divide the weight of the load in pounds (.45 kg) by the area covered in square yards (square meters). This will give you the pounds per square yard (.45 kg per square meter).

Example:
Rate required - 25 lbs/sq. yd. (11 kg/sq.m)

Truck load weight - 12,000lbs.
or (approx. 5400 kg)
Area covered - 300 ft. x 12 ft. = 3600 sq. ft. =
400 sq. yds.
or (approx. 90 m x 4 m = 360 sq. m)

Actual rate:
12000 lbs / 400 sq yds = 30 lbs / sq yd
or (5400 kg / 360 sq m = 15 kg / sq m)

The actual rate is higher than needed so adjustments must be made.

To adjust the rate the gate opening can be changed or the speed can be adjusted. Then retest for rate accuracy.

ROLLING

Chip seal treated surfaces should be rolled with pneumatic- tired rollers *only*. Pneumatic-tired rollers provide even pressure to all particles and slight depressions in the surface. Steel drum rollers will bridge over any small depressions in the surface or smaller particles of aggregate. They also crush softer particles and degrade the surface.

FINISHING A TREATED SURFACE

Light brushing with a rotary powered brush should be done to clean the surface of excess aggregate before traffic flow is restored. The sweeping process should be done after the asphalt has had sufficient time to set and bond. Early morning is a good time to do the surface treated the day before.

MAINTENANCE

GENERAL

Follow the suggestions and recommendations in this maintenance manual to obtain long life and best performance from the ROSCO SPR-H Flaherty Chip Spreader.

PROPERLY MAINTAINED EQUIPMENT IS SAFE EQUIPMENT. The operator of the SPR-H should inspect the machine daily. The operator is responsible for seeing that worn or damaged parts are replaced or repaired to prevent damage to other areas of the machine. Daily inspections should include observation for loose bolts, fluid leaks, worn or damaged hoses, debris or dirt accumulations which could cause a potential service or safety problem.

A PREVENTIVE MAINTENANCE CHART is included at the end of this section to guide the operator is setting up a Preventive Maintenance schedule for the SPR-H.

A CLEAN MACHINE. The first and most important requirement for satisfactory SPR-H performance is a clean machine. Many failures in the field are due to equipment that has become so covered with an excess amount of gravel and dirt that even ordinary adjustments and lubrication are neglected.

ENGINE MAINTENANCE

GENERAL

In addition to the suggestions in this manual for engine maintenance, consult the Cummins Diesel Engine Manufacturer's Operation and Maintenance Manual. A copy of this manual was provided with the SPR-H Chip Spreader when it was shipped from the factory. If additional copies are needed, contact your Authorized Rosco Dealer/Distributor or your local equipment dealer who services the engine you have in your Chip Spreader.

FUEL

A. In general, use only <u>clean</u>, good quality ASTM No. 2-0 or 2-D climatized diesel fuel. If the Chipspreader will be used regularly in cold temperatures (below 20° F), blended fuels or #1 diesel fuel are suggested. Engine performance will be lessened by about 10%.

B. The direct-injected Cummins Diesel Engine starts well in cold weather. If it's necessary to use Ether as a starting aid, **do it promptly**. Spray Ether into the air cleaner inlet hood only while cranking the engine. Never remove the filter element and spray directly into the air inlet piping or intake manifold. Never spray for more than 1-2 seconds.

Avoid using contaminated fuel. Fuel contaminated by water or dirt can cause severe damage to engine components. Fuel tanks contaminated with water will promote the growth of "microbes" which will form a "slime" that clogs fuel filters and lines.

FUEL FILTER

Diesel engine injection systems use fuel for lubrication of close tolerance internal engine parts. Proper maintenance of the fuel filters and tank are required to insure top performance and prevent internal engine damage.

*The following procedure **must be done daily** to prevent engine damage.*

The engine fuel filter and water separator are located on the left side of the engine. A drain valve is provided on the bottom of the water separator (**Figure 7**).

A. Before operating the engine, use the valve to drain a small quantity of fuel from the water separator into a clean, clear container.

B. If water or contaminants are found in the fuel you drained, DO NOT start engine. Continue to drain fuel until it is clear and clean.

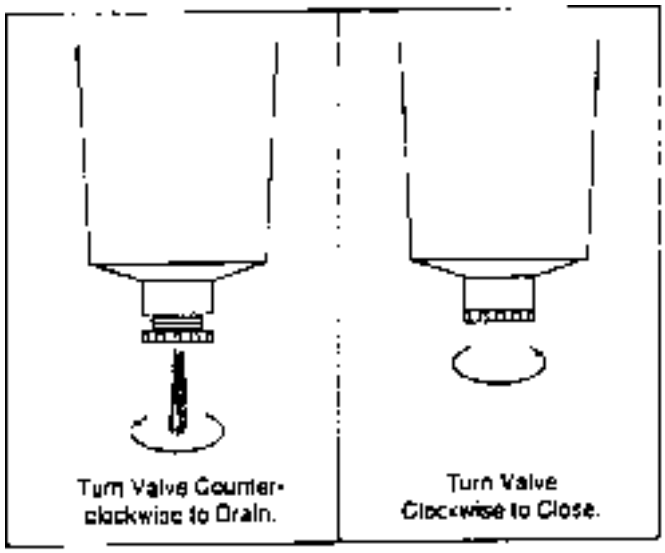


Figure 7
Engine Water Separator

C. If large amounts of contamination are found, drain the fuel tank until the lines run clear. Then, replace the filters - fill new filters with fresh, clean fuel and install.

The Cummins Diesel Engine manual provided with your Chip Spreader contains detailed information on fuel system maintenance.

CRANKCASE OIL

A. The engine crankcase oil level should be checked daily prior to each day's use. The Chip Spreader must be parked on a level surface when checking the oil to assure accurate measurements.

B. The oil dipstick is located on the left side of the engine. If the oil measures below the "L" mark, add the proper oil according the Preventive Maintenance Chart at the end of this section. After adding oil, recheck the level to be certain the oil doesn't measure above the "H" mark.

Never operate the engine with the oil level below the "L" mark or above the "H" mark.

C. Change the engine crankcase oil and filter elements after every 250 hours or 3 months of service.

Refer to the Preventive Maintenance Chart and/ or Engine Manufacturer's Manual for Engine Oil recommendations.

ENGINE MAINTENANCE

AIR INTAKE SYSTEM

Turbocharger engines are especially demanding of air filter performance, and sensitive to filter failure. The operator should be continually aware of the condition of air intake system components.

The heavy-duty engine air cleaner is mounted on top of the engine sound shield between the conveyors. A restriction indicator is mounted on the outlet side of the air cleaner assembly housing near the large inlet tube to the engine.

A. Prior to daily operation, inspect air intake system components for damage, cracked hoses, loose clamps, etc.

B. Inspect the restriction indicator several times daily during operation. If the red indicator is visible, the air cleaner element must be replaced.

Be sure to clean the inside of the air cleaner body assembly BEFORE removing the safety element.

1. Before replacing any new element in the air filter housing, wipe the inside of the housing with a damp cloth. Then, reset the restriction indicator. *Be sure Not to introduce any contaminants into the engine intake tube.*

2. When replacing body assembly or rubber adaptors, torque the T-clamp bolts to 50 inch pounds. See Bolt Torque Chart at end of section.

C. DO NOT replace the filter elements until the restriction indicator shows red or the maintenance interval has been reached.

D. Replace the primary filter element every 100 service hours. Replace the safety element during every third replacement of the primary element. Refer to the Parts Catalog or the Preventive Maintenance Chart in this manual for the correct ROSCO Part Number.

E. The air inlet hood should not require maintenance or service unless visual damage in noticed.

NEVER *operate the engine without an air cleaner. Destruction to internal engine components will occur in minutes.*

RADIATOR AND COOLANT

A. Check the engine radiator daily for rocks and /or debris. A partially blocked radiator will significantly reduce the efficiency of the radiator and could cause overheating and possible premature failure of the engine or its components.

B. Compressed air can be used to remove rocks or debris form the radiator.

Caution: *Wear eye protection when using compressed air. Flying debris can cause serious eye injury.*

C. Check radiator coolant level prior to each day's use of the Chip Spreader (when engine is cold). The coolant level when the engine is cold should cover the radiator core. If low, fill with a 50% water and 50% ethylene-glycol type antifreeze.

Warning: ***DO*** *NOT remove the radiator cap when engine is hot. Escaping coolant can cause serious burns. Add coolant only when engine is stopped and fully cooled.*

D. Seasonally, or after every 500 service hours, most engine manufacturers recommend that the cooling system be flushed. Consult the engine manufacturer's manual for recommendations on the procedure and type of cleaner to use.

E. As an option, a coolant conditioner/filter assembly may be provided and mounted on the right hand side of the engine. This assembly has two isolation/shut-off valves for easy replacement of the spin-on element. This element should be replaced every 500 hours or 6 months of service.

F. If the engine is equipped with an optional Low Coolant Level switch/ gauge, and the coolant level is OK, visually verify that the gauge pointer is in the SAFE range. The Low Coolant Level alarm can be tested with the engine running by twisting the black knob on the switch/gauge counterclockwise until the pointer makes contact with the bottom terminal stop. The system warning light on the drivers control panel should activate.

BATTERY

The SPR-H is factory equipped with two batteries that are sized to provide efficient starting for the diesel engine. Proper Maintenance of these batteries will provide years of trouble free service.

Warning: *Always wear eye protection when servicing batteries.*

A. Starting the engine depends heavily on good cranking speed. It is important that the Chip Spreader battery always be fully charged and that all terminals are cleaned and properly connected.

B. Check the level of the battery electrolyte (water) bimonthly. Add distilled water if necessary, but DO NOT overfill. Overfilling can cause poor performance. "Maintenance-free" type batteries rarely require additional electrolyte.

C. Keep the top of the battery clean. When necessary, wash with a solution of 1 part baking soda and 4 parts water and rinse with fresh water. DO NOT allow the solution to enter the battery cells.

Caution: *Always <u>disconnect</u> battery ground (-) cables first and Always <u>reconnect</u> the positive (+) cables first when servicing battery cables and when removing and replacing a battery. It is also recommended to remove the ground(-) cables when welding on the machine.*

D. Inspect the cables, clamps and hold-down brackets regularly. Clean and apply a light coating of grease when needed. Replace corroded, damaged parts if necessary.

E. If the engine is difficult to start or the batteries become discharged repeatedly, check the terminal connections and clean if needed. If the problem continues, test the battery with a battery tester for voltage and current draw.

Danger: *Explosive gas may remain around a battery several hours after it has been charged. Sparks or flame can ignite this gas causing an explosion which could shatter the battery and cause serious personal injury. Always shut off the battery charger before disconnecting cables from the battery terminals.*

F. If the SPR-H is to be stored for more than 30 days, remove the batteries and store them in a cool, dry place. During storage, keep the batteries fully charged and check the level of the electrolyte prior to charging and storing.

ENGINE BELTS

A. Check the primary diesel engine belt for excessive wear, fraying and cracking every 250 service hours. Auxiliary V-drive belts should be inspected every 100 hours.

B. Adjust engine belts as required to provide proper tension. Consult the Cummins Engine Manufacturer's manual for correct tension instructions and specifications.

Danger: *Always shut down the engine before adjusting belts. Severe injury can result if belts are adjusted on a running engine.*

C. When installing new belts, always shorten the distance between pulley centers so the belt can be installed without force. Never roll the belt over the pulley and never pry it with a tool such as a screwdriver - this will damage belts and cause early failure.

Danger: *Keep belt guards in place. Severe personal injury may result from contact with turning belts and pulleys.*

HYDRAULIC SYSTEM MAINTENANCE

GENERAL

The ROSCO SPR-H Chip Spreader Hydraulic System is an Auxiliary Hydraulic group that consists of:

★ one three-section hydraulic gear pump, directly mounted on the front of the engine.

Independent circuits are provided for:

★ left hand conveyor drive to hydraulic motor at conveyor.

★ right hand conveyor drive to hydraulic motor at conveyor.

★ hopper spreadroll and agitator to hydraulic motor on hopper.

★ steering system, power brakes and gate control.

Included in the SPR-H Hydraulic system are solenoid valves, flow control valves and dividers and other components that allow for simultaneous function and control of all hydraulic sub-systems.

A 30 gallon hydraulic reservoir with two integral return filters, along with a 30 gpm oil cooler mounted in front of the engine radiator, complete the hydraulic system.

This manual contains general system maintenance guidelines. More detailed service and maintenance information is available directly from the hydraulic component manufacturers if necessary or desired.

HYDRAULIC FLUID

The ROSCO SPR-H Chip Spreader is shipped from the factory with Conoco 68 or equivalent hydraulic fluid in the reservoir. When adding or changing hydraulic fluid, be sure to use an equivalent grade of hydraulic fluid.

The use of hydraulic fluids that DO NOT have equal characteristics to the recommended fluid could result in substandard performance or even possible failure of the hydraulic components. If you are not sure whether a specific hydraulic fluid is suitable for use with the SPR-H consult your authorized ROSCO dealer or, if necessary, ROSCO factory service department.

HYDRAULIC RESERVOIR

The hydraulic reservoir is located between the conveyor frames towards the front of the Chip Spreader. The fill cap is located on top of the reservoir, and a hole is provided in the engine shield to provide access to the reservoir filler cap.

HYDRAULIC SYSTEM MAINTENANCE

Use extreme caution when removing the filler cap to prevent any foreign matter from entering the hydraulic reservoir. Clean around the cap thoroughly before removal.

A. Check the level of hydraulic fluid prior to each day's operation of the SPR-H Chip Spreader. Hydraulic fluid should just touch the bottom of the fill inlet screen. If the fluid is low, fill with Conoco 68, or equal type.

B. The reservoir fill cap strainer (10) should be cleaned each time hydraulic fluid is added or changed. See figure 8.

C. The filler cap should be padlocked in place when practical to eliminate the possibility of tampering.

D. Condensation that may build up in the hydraulic system is capable of clogging the filter elements. This condition can lead to insufficient hydraulic fluid at the pump, which will in turn degrade the performance of and possibly damage the pump or other system components.

At the first signs of a clogged filter, the filter element (s) should be replaced using genuine ROSCO replacement parts.

FILTER ELEMENTS

For filter element change intervals, refer to the Preventive Maintenance Chart at the end of this section. In the following paragraphs, the numbers in parenthesis () refer to the item numbers in **Figure 8**.

A. The return filter housing (1) is located in the top of the hydraulic reservoir. To change the filter element, remove the six bolts (3) that secure the cover of the filter housing. Then remove the cartridge element (4) and install new element.

B. Under the filler cap is a filler strainer. This strainer keeps out large debris that could quickly damage the pump such as leaves, small sticks or gravel.

C. Other types of optional in-tank filters are available from ROSCO to meet customer specifications. However, these types of filters may require the reservoir to be drained for removal and replacement of their filter elements.

HYDRAULIC SYSTEM CHECKS

Before each day's use, inspect the SPR-H for the possibility of hydraulic leaks. A weekly check should be performed to make sure that all hose fittings are secure and tight.

Danger: *Never use the hand to locate hydraulic leaks. Hydraulic fluid under pressure will pierce the skin and is dangerous. If hydraulic fluid has pierced the skin, get immediate medical attention.*

Danger: *Always wear eye protection when inspecting for fluid leaks in the hydraulic system.*

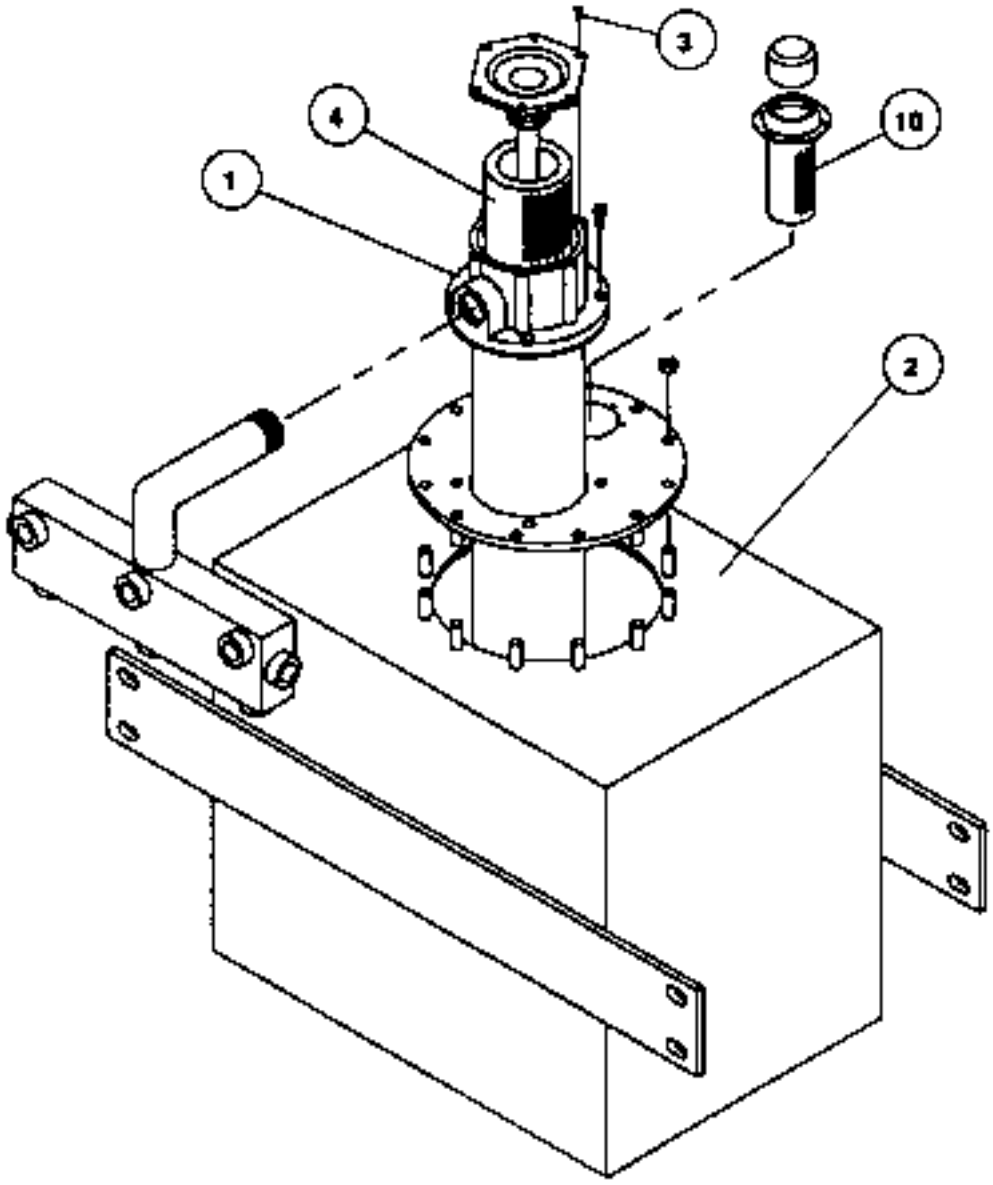


Figure 8
Hydraulic Reservoir Group

A. If leaking fluid is found, it is probably on the pressure side of the hydraulic system. Attempt to find and repair the leaking component before starting the Chip Spreader.

B. Leaks on the suction side of the hydraulic system are more difficult to find. Some symptoms of suction side leakage, which causes air and/or dirt to enter the system, are:

« Foaming of hydraulic fluid.
« Sluggish system operation.
« Unusual noises in the hydraulic pumps and motors.

This condition is serious, since air or dirt introduced into the hydraulic system causes rapid component wear and failure. If a suction side leak is suspected:

1. Make sure that all reservoir valves are fully open, and all connectors are properly tightened.

2. If the problem continues, wrap the suction side hose and the connectors with a high quality electrical tape. Start at the pump inlet and work towards the hydraulic reservoir.

3. If this technique isolates the leak, replace the defective hose assembly or fitting. Never attempt to repair hydraulic hoses.

C. An operator should inspect the machine occasionally during operation for hydraulic leaks which may only be noticeable while the unit is running.

The hydraulic pumps and motors generally require no regularly scheduled maintenance. As stated above, frequent inspection for leaks will indicate the need for possible service of these components. Instruction for the service and adjustment of hydraulic components may be found in the service section of this manual.

AGGREGATE SYSTEM MAINTENANCE

GENERAL

The components of the aggregate delivery system and their maintenance are explained in the following pages. Refer to the **Figures 9, 10 and 11** on the following pages of this manual or the parts manual for location of each item.

***Warning: Always** wear proper saftey equipment and take extra care when inspecting or adjusting moving parts. When possible make adjustments with machine off. Keep all guards in place and keep area free from by-standers.*

CONVEYOR CHUTE LINER

The sections of rubber chute liner (9) on each side of each conveyor belt are designed to prevent aggregate material from leaving the conveyor. They should be adjusted to touch the conveyor belts evenly along the entire length of the belts.

A. Periodically check for clearance between the chute liners and the conveyor belts.

B. Adjust the chute liners when necessary by loosening the channel strip bolts and moving the rubber liner to just touch the conveyor belt.

C. If a section of chute liner showes excessive wear, replace it with genuine ROSCO rubber chute liner.

Use genuine ROSCO parts for replacement of rubber conveyor components. Using hard or old rubber conveyor belting, or any other rubber containing fabric or reforcement, will cause rapid conveyor belt wear or failure.

BELT WIPERS

The conveyor belt wipers (21) are mounted immediately below the conveyor head pulleys and contact the conveyor belt. They serve to remove any material sticking to the belt as it changes direction and heads back to the receiving hopper.

A. Periodically check for clearance between the belt wipers and the conveyor belts.

B. Adjust the belt wipers when necessary by loosening the channel strip bolts and moving the rubber wiper to just touch the conveyor belt.

C. If a belt wiper shows excessive wear, replace it with genuine ROSCO belt wiper. Using hard rubber, old conveyor belting, or any other rubber containing fabric or reforcement, will cause rapid conveyor belt wear or failure.

LAGGING SKIRTS

The lagging skirts (22) are mounted at the bottom of the receiving hopper and contact the conveyor belts immediately above the tail pulley.

A. Periodically check for clearance between the lagging skirts and the conveyor belts.

B. Adjust the lagging skirts when necesssary by loosing the skirt mounting bolts and moving the rubber skirt to just touch the conveyor belt.

C. If a lagging skirt shows excessive wear, replace it with a Genuine ROSCO Lagging Skirt.

CONVEYOR BELTS

Proper alignment and tension adjustment of the conveyor belts is necessary to deliver proper system operation and maximum life from the components. In the following paragraphs, the numbers in parenthesis ( ) refer to items numbers in **Figure 12**.

If mis-alignment or slack is noticed in a conveyor belt, make adjustments as soon as possible to prevent premature wear of the belt and related components. Three pulleys in the conveyor group are adjustable:

- Adjustable Idler (4)
- Head Pulley (1)
- Tail Pulley (3)

Warning: *Keep clear of rotating shafts. Loose clothing or long hair may become entangled. Use patience and caution when adjusting conveyor belts.*

A. **Alignment Adjustment -** Stop conveyors when making adjustments. Load conveyor with material and check results after adjustment is made.

1. Special care is taken at the factory to align the head and tail pulleys. Therefore, alignment adjustments should first be made on the Adjustable Idler (4).

To adjust the conveyor belt alignment, tighten the adjuster nut (6) on the side opposite the direction you want the belt to move. For example, to move the belt to the left, tighten the right adjuster nut.

Make small initial adjustments and wait a sufficient time between changes to avoid overshooting the desired setting.

2. If the primary adjustments of the Adjustable Idler (4) fail to make the conveyor belt track properly, adjust the tail pulley (3).

Since the outside tail pulley adjusters (7) are more accessible, adjust them by extending (move the belt away from the adjuster) or retracting (move the belt towards the adjuster).

Make small initial adjustments and wait a sufficient time between changes to avoid overshooting the desired setting.

3. If the conveyor belt still doesn't track properly, the head pulley (1) can be adjusted by moving its adjuster assembly.

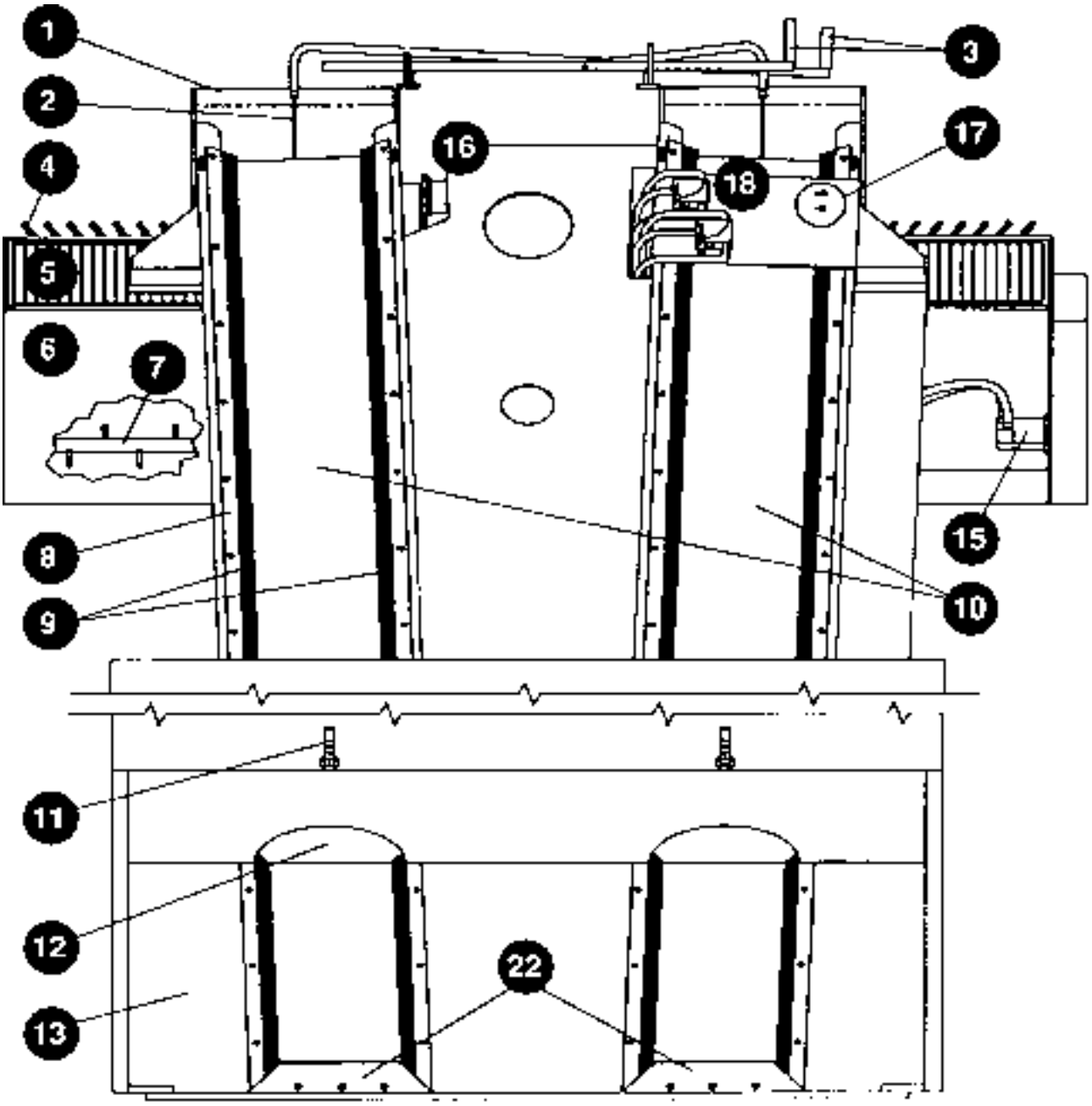


Figure 9

Chipspreader Top View

1. Deflector Hood
2. Vertical Plate Deflector
3. Vertical Deflector Reach Rods
4. Cut-Off Gate Levers
5. Reject Screens
6. Spread Hopper
7. Agitator Shaft
8. Channel Strip
9. Chute Liner
10. Conveyor Belt
11. Cutoff Gate Adjuster
12. Cutoff Gate
13. Receiving Hopper
15. Motor, Agitator/Spreadroll
16. Motor, Conveyor
17. Auxiliary Conveyor Switches
18. Variable Speed Belt Controls
22. Lagging Skirts

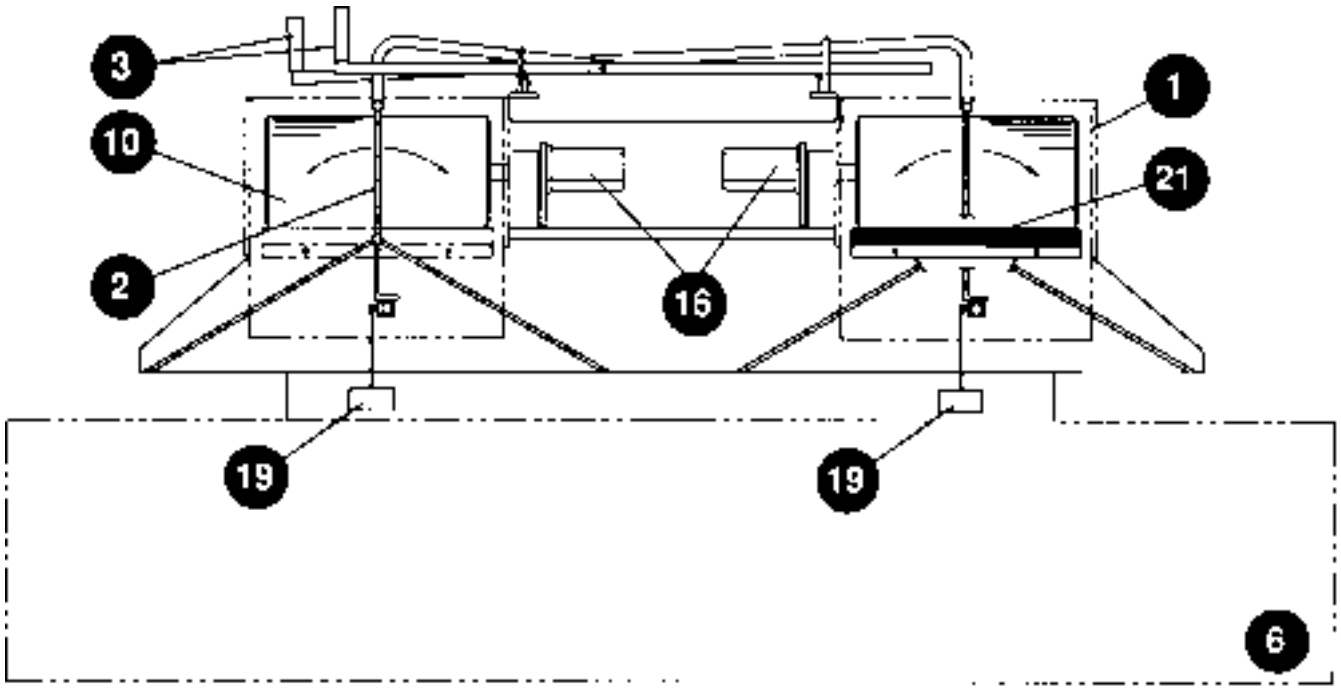


Figure 10

Chipspreader Front View

1. Deflector Hood
2. Vertical Plate Deflector
3. Vertical Deflector Reach Rods
6. Spread Hopper
10. Conveyor Belt
14. Sealing Skirts
16. Motor, Conveyor
19. Auto. Belt Switches
20. Truck Hitch
21. Belt Wiper

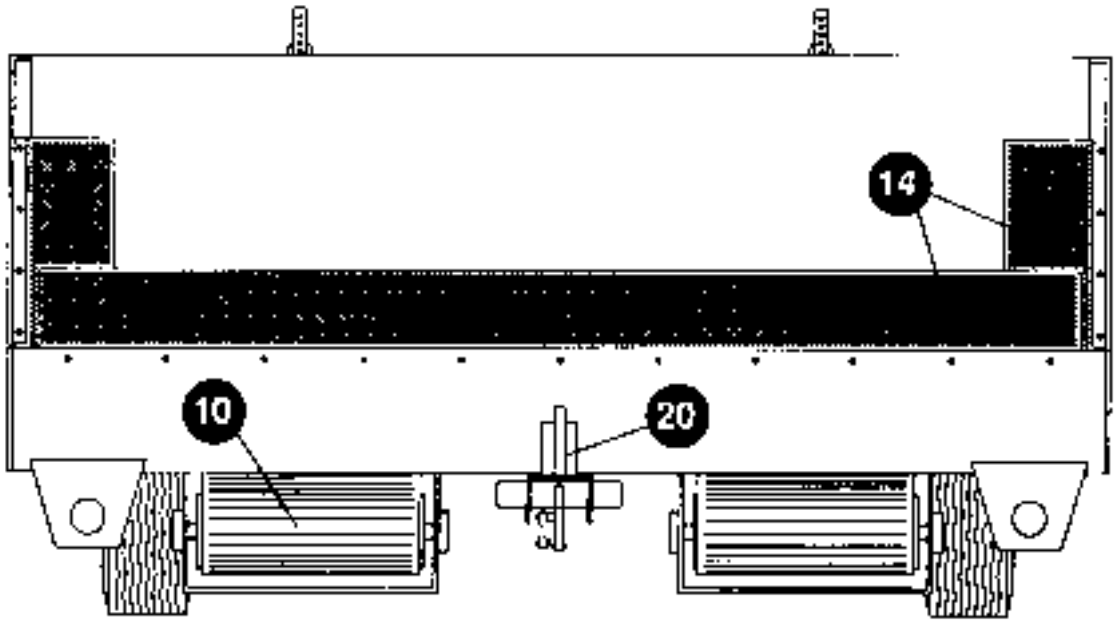


Figure 11

Chipspreader Rear View

Adjust the head pulley in a similar manner as stated above for the tail pulley adjusters. Extending the adjuster causes the belt to move away from that adjuster.

Make small initial adjustments and wait sufficient time between changes to avoid overshooting the desired setting.

B. **Tension Adjustment -** Belt tension adjustment is necessary periodically since normal working stress causes the conveyor belts to stretch. This is especially true of new belts.

1. To check for slack in a conveyor belt, examine the return side of the belt running under load. Belts with too much slack will bounce enough to contact the conveyor frame.

2. Extend <u>both</u> tail pulley adjusters (7) slowly and evenly only enough to eliminate the bouncing. DO NOT OVERTIGHTEN.

3. Observe conveyor belt alignment and make adjustments as outlined in part "A" - **Alignment Adjustment** of this section.

C. **Replacing Belts -** Adjustment range has been designed into the tail pulley assembly to allow for replacing a conveyor belt without pre-stretching.

Belt splices should be made with No. 375 x 20 plate grip fasteners. The fasteners must work on a 10" pulley radius without pulling. Too large a fastener will tear out the belt very quickly.

Note: Genuine ROSCO replacement parts for the conveyor belt group are listed in the Parts Catalog of this manual.

D. **Lubrication Points -** See Figure 16. Prior to daily operation of the Chipspreader, lubricate the following conveyor components with a high quality bearing grease:

- Þ Head Pulley Bearings, 4 places
- Þ Tail Pulley Bearings, 4 places

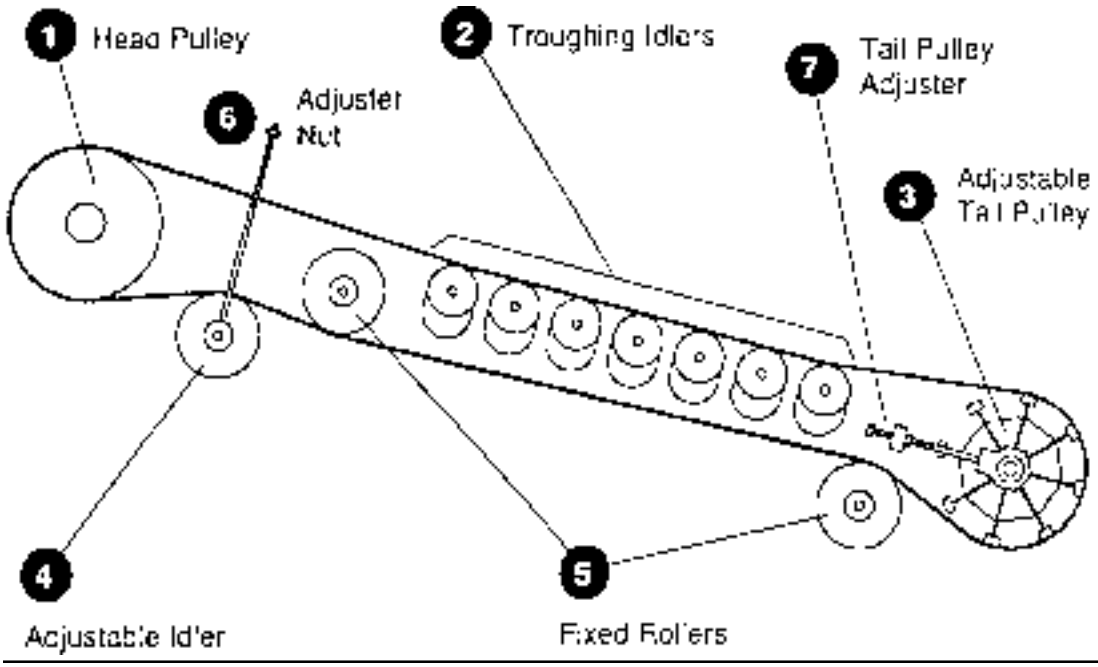


Figure 12

SPREAD HOPPER MAINTENANCE

GENERAL

All widths of spread hoppers share common components, however the quantity of these components vary with the hopper width. Components of the spread hopper are shown below. In the following paragraphs, the numbers in parenthesis () refer to item numbers in these figures.

LUBRICATION

Prior to daily operation of the chipspreader, the following items on the spread hopper should be lubricated with a high quality bearing grease:

A. **Agitator Shaft Bearings (1)**, 2 places. There ia a bearing on each end of the agitator shaft. (See **Figure 14**)

B. **Spreadroll Shaft Bearings (2)**, 2 places. There is a bearing on each end of the spreadroll shaft. (See **Figure 14**)

C. **Gate pivot points (3)**. Grease zerks are provided on each spread hopper gate. The number of gates depends on spread hopper width. (See **Figure 14**)

GATE WEAR PLATES

The spread hopper gate is shown below. The gate wear plates are adjustable and reversible. Use the gate adjusting screw with locknut to obtain an even 1/16" gap between the gate and spreadroll surface. Check this adjustment every 50 hours of service.

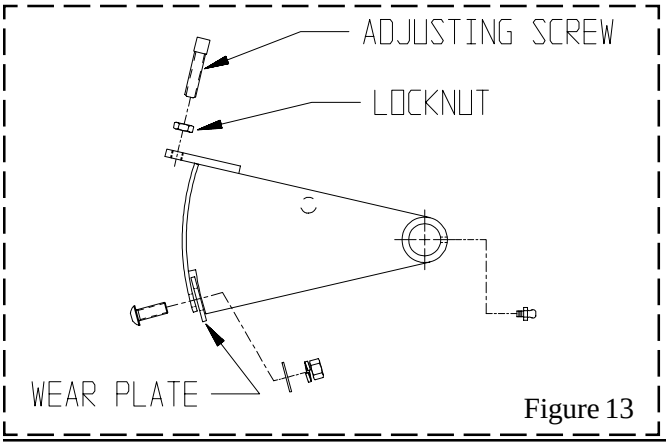


Figure 13

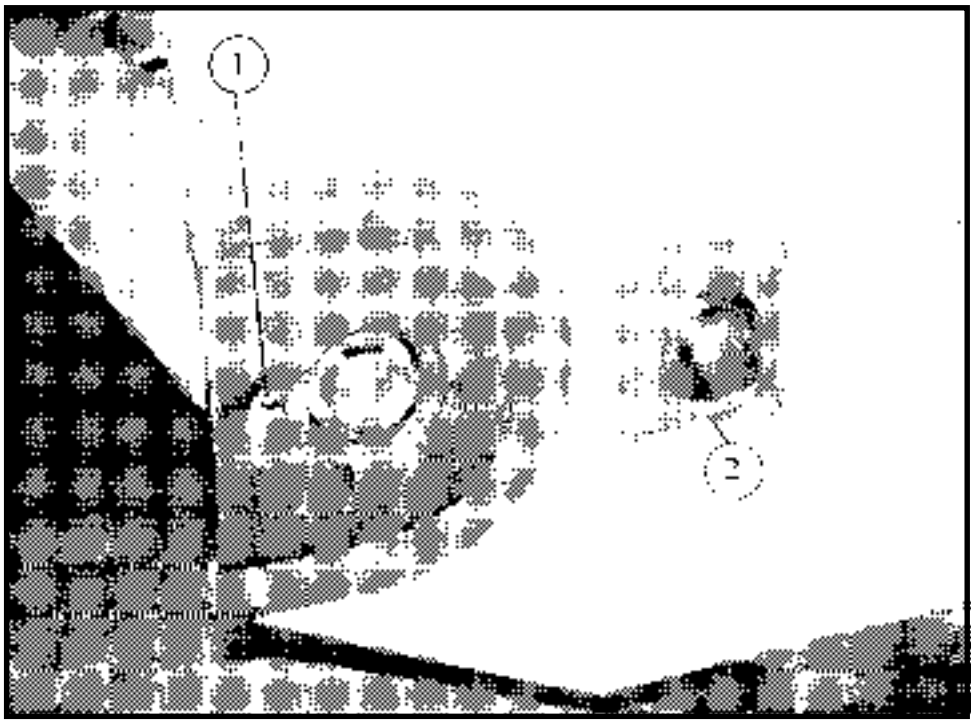
AGITATOR

Components of the spread hopper agitator are illustrated in **Figure 15**. In the following paragraphs, the items discussed are shown in that illustration.

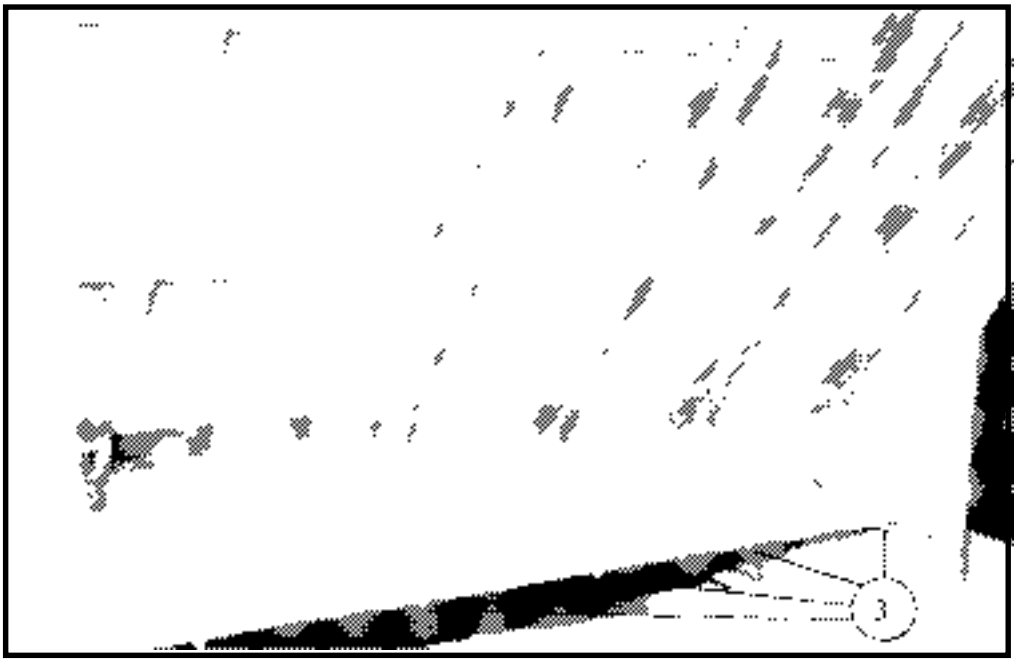
The function of the spread hopper agitator is to prevent certain aggregate materials like wet sand from bridging or arching in the hopper. By preventing material bridging, the agitator assures an even feed of aggregate to the spreadroll.

A. On each end of the agitator sections there is a ductile steel wear plate facing against a fixed wear plate. The fixed wear plates are bolted to the hopper end along with the bearing bolts - they must be replaced periodically as wear occurs. Neglect of these wear plates will cause shafts and bearings to fail.

B. The spreadroll seal in the spread hopper which runs along the length of the spreadroll should be checked every 50 hours for proper adjustment. Loosen the retaining bolts and slide the spreadroll seal to obtain an even 1/16" gap between the seal and spreadroll for the entire length of the spreadroll.



Spreadroll and Agitator Shaft Bearings



Gate Pivot Lubrication Points

Figure 14

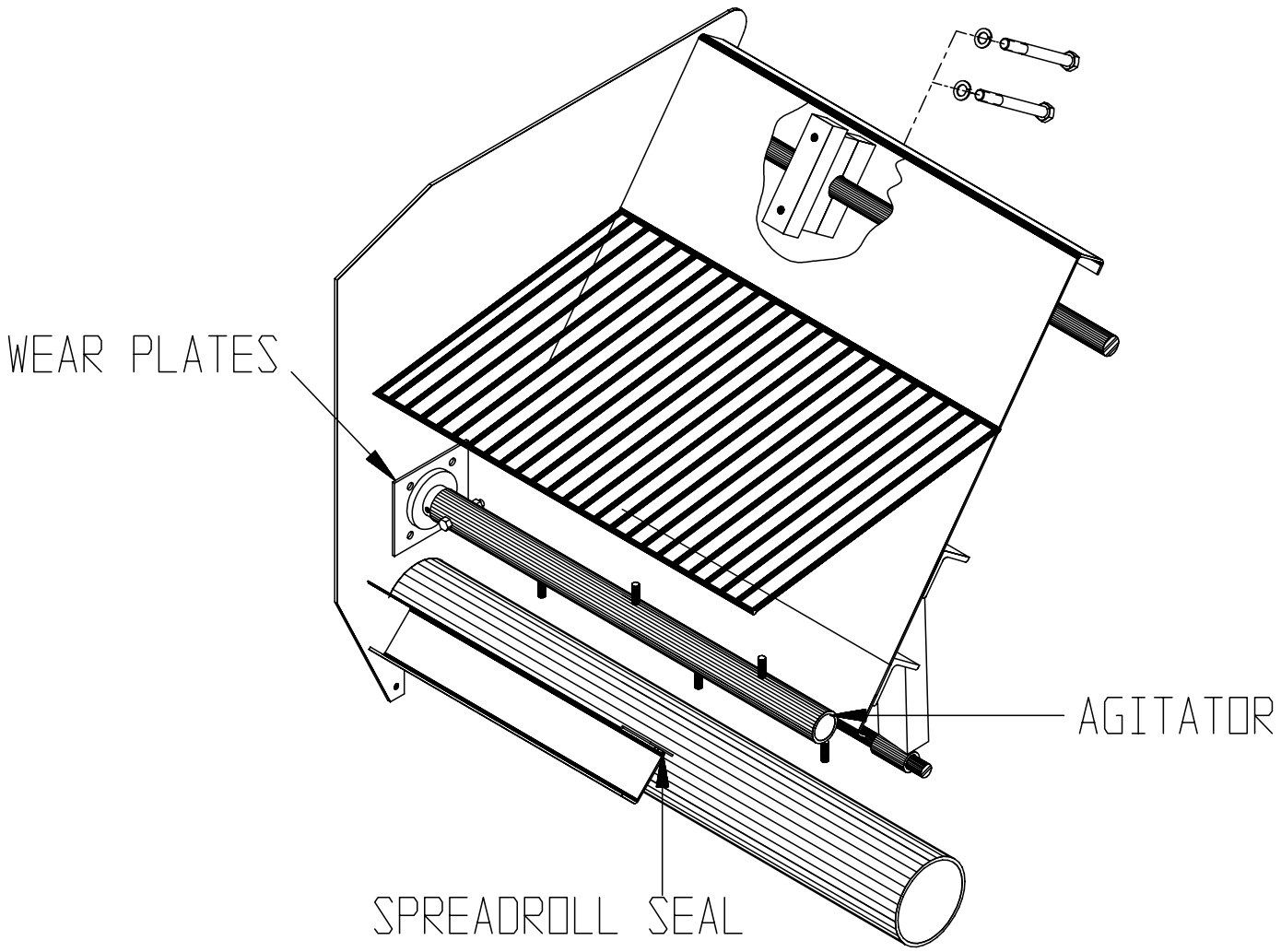


Figure 15

TIRES

A. Visually check the tires daily for damage or noticeably low pressure.

B. Inflate tires to 50 psi in front and 65 psi in rear for best preformance. However, operating speeds, road bed conditions, hopper size, truck pulling arrangements, and other conditions may require different tire pressures.

C. Protect the tires from exposure to petroleum products and other chemicals.

Never exceed the tire manufacturer's maximum recommended inflation pressure.

FRONT AXLE & STEERING

The following components of the front axle and steering group require lubrication at intervals per the Preventive Maintenance Chart at the end of this section. Refer to **Figure 16** for the location of these and all lubrication points.

A. **Front axle oscillating shaft.** No lubrication required.

B. **Tie end rods, 2 places.** There is one tie rod end on each side of the chipspreader.

C. **King Pins, 4 places.** Two grease zerks are provided on each side of the chipspreader - one on the upper and one on the lower king pin.

D. **Wheel bearings.** There are two bearings in the hub assembly of each side of the front axle. Remove and repack the bearings with high quality wheel bearing grease seasonally or after 500 service hours, whichever occurs first. The inner grease seal should be replaced each time the bearings are serviced.

E. **Stemco hub covers.** This optional hub cover includes a see-thru cap and rubber filler plug. With Stemco hub covers, the hub assemblies are filled with 90 weight gear lube to lubricate the wheel bearings (instead of wheel bearing grease). The level of the gear lube should be maintained up to the bottom of the fill plug.

TRANSMISSION CLUTCH ADJUSTMENT

(throw-out bearing)

Warning: *Be sure to block all wheels, stop engine and remove ignition key before starting this or any maintenance procedure.*

Test the clutch regularly:

1. Check and measure clutch pedal free play by using two fingers to depress the clutch pedal.

Note: If the pedal requires more force than can be applied with two fingers, remove the clutch housing inspection cover and verify the free play clearance is 1/8-inch between the release bearing and the release yoke. Check the linkages and bushings for possible binding and lube or repair as necessary.

2. The clutch will need adjusting if:

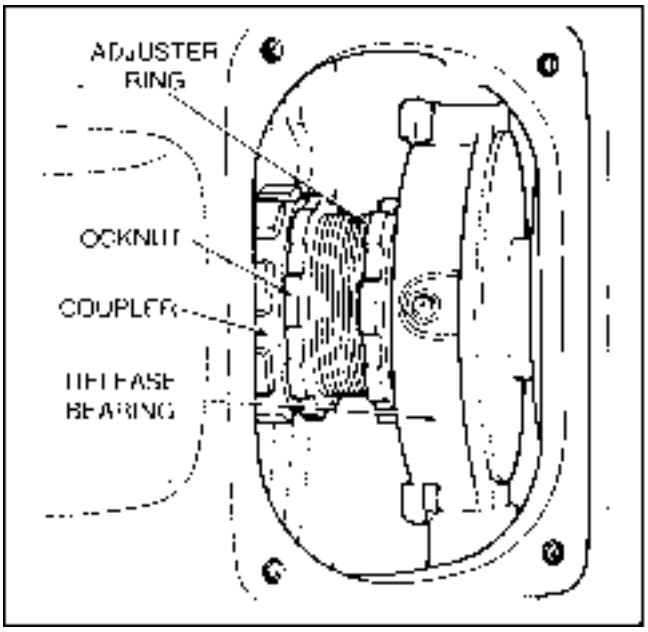
I Pedal free play is half it's original value.

I The gap between the yoke fingers and the release bearing is 1/16-inch or less.

I Pedal free play is less than 1/2-inch.

To adjust the clutch:

1. Use two spanner wrenches to loosen the release bearing locknut. Thread the nut back toward the transmission so it will not interfere with the adjustment.



Release Bearing and Coupler

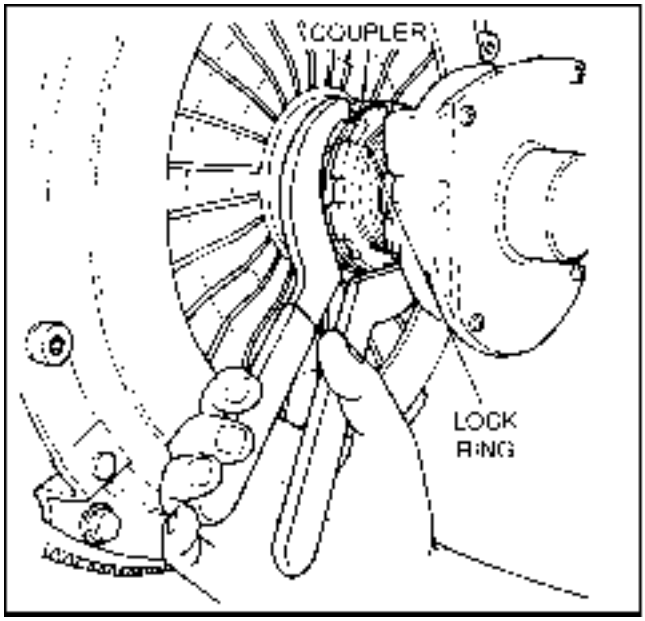
2. Using the adjuster ring, thread the release bearing sleeve into or out of the bearing coupler until the gap at the back of the release bearing is 3/4-inch. If the sleeve is difficult to turn, disconnect the external linkage to release tension on the release bearing.

3. Check the gap by using slight pressure to hold the release bearing rearward. This will remove end play in the bearing assembly.

4. Thread the release bearing locknut forward toward the coupler, by hand, as far as it will go.

5. Tighten the locknut by using the two spanner wrenches. Place one wrench on the notches of the coupler and one on the locknut. Use the wrench on the coupler to prevent the coupler from rotating. Use the wrench on the locknut, tighten the locknut against the coupler like a jamnut. For finial tightening, use both wrenches on the locknut and coupler as shown so both wrenches can be held with one hand.

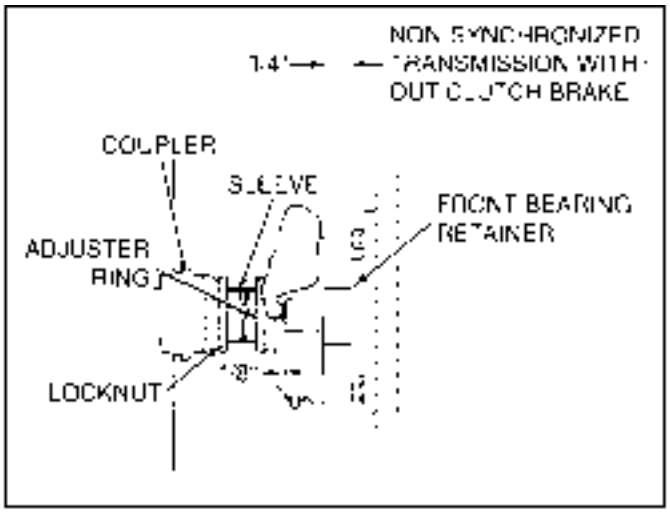
6. Recheck the gap between the release bearing and the transmission and verify it is 3/4-inch. If not, loosen the locknut and repeat the process.



7. After the rear gap has been set, check that the standard 1/8-inc gap between the release yoke tips and the bearing contact pads has been obtained. If it has not, adjust the machines external clutch release linkage to get the 1/8-inch gap.

8. Once all gaps are to specifications, make sure that the locknut and external linkages are tight and secure.

9. Verify the clutch adjustment by checking the clutch pedal travel. The pedal should have approximately 2 inches of free play.



HITCH

There are two lubrication points on the positive lock truck hitch that should be serviced prior to daily operation of the chipspreader. A grease zerk is provided on the pivot point at each side of the hitch assembly, visible at the rear of the machine. Other pivot points of the hitch linkage are mounted with sealed bearings which require no lubrication.

CONTROL CONSOLE

There are two lubrication points on the control console support tube base.

LIGHTING

A. If the chipspreader is equipped with a lighting system, inspect all lights daily for proper operation.

B. If a light does not function:

1. Check the fuse panel located inside of the control console for a blown fuse.

2. Examine all visible wiring connections, making sure that they are securely fastened.

3. If the light(s) still does not work, remove the lens from the light and inspect the bulb(s), replacing any that appear damaged or discolored.

4. If the trouble is not located, inspect the wiring harness for damage. Wiring schematics are provided in the Parts Catalog section in this manual to assist in troubleshooting the SPR-H Chipspreader electrical system and wiring harness.

C. If broken wires are found, it is recommended that they be soldered together and covered by a "shrink wrap" type of plastic covering to prevent contamination of the solder joint by moisture. If shrink wrap is not readily available, electrician's tape should be wrapped tightly around the solder joint to prevent a short circuit.

D. After making repairs to a wiring harness on the chipspreader, always replace or repair the protective loom which covers the wiring to prevent future damage to the wiring harness. Examine the routing of the harness and make sure that it is not subjected to the type of excessive movement which causes broken wiring. Always make sure that all wiring harness are securely fastened.

The charts below and on following pages may be used as a guide for proper lubrication of the chipspreader.

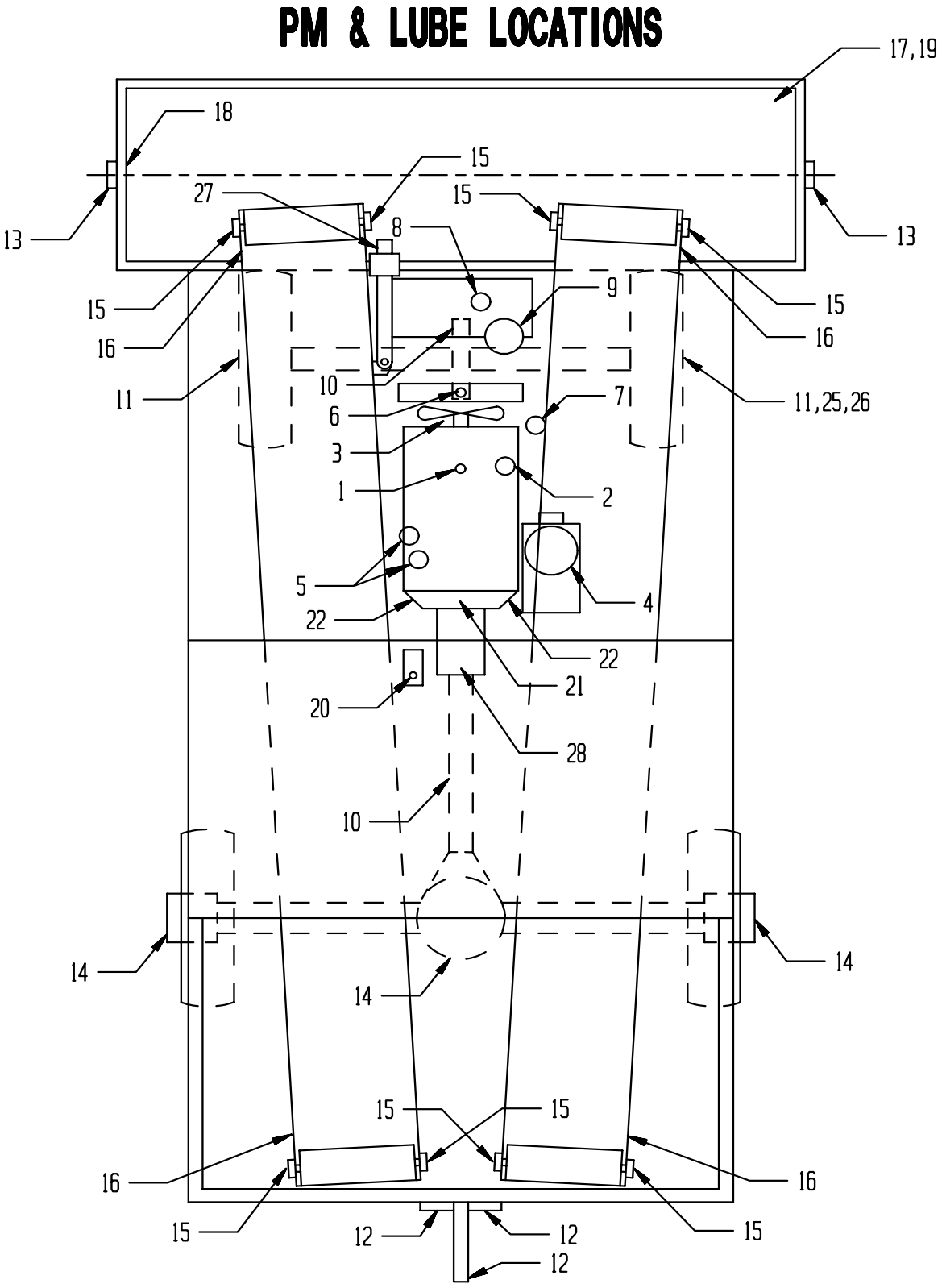


Figure 16

PREVENTIVE MAINTENANCE AND LUBRICATION KEY

ITEM	DESCRIPTION	LUBE TYPE	OPERATION	
1	ENGINE OIL LEVEL	EO	I	R2
2	ENGINE OIL FILTER	SPE	R2	-
3	ENGINE BELT	-	I	-
4	ENGINE AIR FILTERS	C	R2	-
5	ENGINE FUEL FILTERS	C	S	R5
6	ENGINE COOLANT LEVEL	-	I	R4
7	ENGINE COOLANT FILTER	-	R5	-
8	HYDRAULIC OIL LEVEL	HTF	I	R5
9	HYDRAULIC OIL FILTERS	C	R5	-
10	DRIVE SHAFT,FRONT & REAR	MPG	I	L1
11	FRONT AXLE BEARINGS	WBG	L5	-
12	TRUCK HITCH ASSEMBLY	MPG	L	-
13	SPREAD HOPPER BEARINGS	MPG	L	-
14	REAR AXLE & TORQUE HUBS	SPC	I	R5
15	CONVEYOR PULLEY BEARINGS	MPG	L	-
16	CONVEYOR BELT ALIGNMENT	-	I	A2
17	SPREAD HOPPER GATES	-	I	A2
18	SPREAD ROLL SEAL	-	I	A2
19	GATE WEAR PLATES	-	I	A2
20	BRAKE MASTER CYLINDER	BF	I	-
21	CLUTCH RELEASE BEARING	MPG	L1	A2
22	CLUTCH CROSS SHAFT	MPG	L	-
23	SHIFT SHAFT BUSHINGS	MPG	L	-
24	CONTROL CONSOLE PIVOT	MPG	L	-
25	FRONT AXLE KING PIN	MPG	L	-
26	FRONT AXLE TIE RODS	MPG	L	-
27	POWER GATE CYLINDER	MPG	L	-
28	TRANSMISSION	SPC	I	R5

LUBE TYPE:
- EO = ENGINE OIL
- C = CARTRIDGE ELEMENT
- HTF = HYDRAULIC FLUID
- MPG = MULTIPURPOSE GREASE
- WBG = WHEEL BEARING GREASE
- SPC = 80W-90
- BF = BRAKE FLUID
- SPE = SPIN ON ELEMENT

OPERATION CODE:
- I = INSPECT DAILY
- A = ADJUST DAILY
- A2 = ADJUST EVERY 250 HOURS
- L = LUBRICATE DAILY
- L1 = LUBRICATE EVERY 100 HOURS
- L5 = LUBRICATE EVERY 500 HOURS
- S = SERVICE DAILY
- R2 = REPLACE EVERY 250 HOURS
- R5 = REPLACE EVERY 500 HOURS
- R4 = REPLACE YEARLY

PREVENTIVE MAINTENANCE CHART

Identifying codes: I = Inspect L= Lubricate R = Replace
A = Adjust S = Service

Item	MAINT. INTERVAL Daily	50 Hrs.	250 Hrs.	500 Hrs.	CAPACITIES cummins 6BT 6BTA 6CT	PART NUMBER cummins 6BT	6CT	Type of Supplies Required
Engine oil	I		R		(qts) 15 15 20 (L) 14.2 14.2 18.93			Multi-Grade Oil
Engine Oil Filter			R			(C) 72082	(C) 35393	Spin-on Filter
Engine Belt	I		I/A			(C) 3903114	(C) 3905873	V- Rib Belt
Engine Air Filter	I	I	R	I	Safety >> Primary>>	853521208 72382	72396 72395	Cartridge filter
Engine Fuel Filter	S			R	Safety>> Primary >>	72079 72078	72079 72078	Spin-on filter
Engine Coolant	I		I	R	(qts) 24 26 32 (L) 22.71 24.61 30.30			50/50 Antifreeze
Engine Coolant Filter (optional)				R		35521	35521	Spin-on Filter
Hydraulic Fluid	I			R	30 gal. (113.56 L) Reservoir			Conoco 68 or equivalent
Hydraulic Fluid Filter				R	Return >>	953531158		Cartridge Filters
Front Axle Osc. Shaft/Steering	L							Multi-Serv. Grease
Front Axle Bearings				L				Wheel Bearing Grease
Truck Hitch Assembly	L							Multi-Serv. Grease
Spread Hopper Bearings	L							Multi-Serv. Grease
Rear Axle Torque Hubs	I	I	I	R	3.1 qts (2.93 L)			Gear Lube 80W-90

PREVENTIVE MAINTENANCE CHART

Identifying codes: I = Inspect L= Lubricate R = Replace
A = Adjust S = Service

Item	MAINT. INTERVAL Daily	50 Hrs.	250 Hrs.	500 Hrs.	CAPACITIES cummins 6BT	6CT	PART NUMBER cummins 6BT	6CT	Type of Supplies Required
Conveyor Pulley Bearings	L		L						Multi-Serv Grease
Conveyor Belt Alignment	I		I/A						
Spread Hopper Gate Adjustment	I		I/A						
Spreadroll Seal Adjustment	I		A						
Gate Wear Plate Adjustment	I		I/A						
Brake Master Cylinder	I								Brake Fluid
Bearing, Clutch Release	L		A						Multi-Serv Grease
Cross Shaft, Clutch	L								Multi-Serv Grease
Bushing, Shift Shaft	L								Multi-Serv Grease
Control Counsole Piviot	L								Multi-Serv Grease
Front Axle King pins & Tie Rods	L								Multi-Serv Grease
Cylinder, Power Gate	L								Multi-Serv Grease
Transmission	I			R	Approx. 10.5 pts (4.97 L).				Gear Lube 80W-90

BOLT TORQUE CHART

The table below gives the correct torque values for various **NON-LUBRICATED** bolts. **DO NOT** lubricate bolts unless otherwise specified in this manual. Check tightness of bolts periodically, using this table as a guide. **ALWAYS** replace hardware with an equal strength fastener. When using locking fasteners, increase torque values by 5%.

BOLT IDENTIFICATION BY HEAD MARKINGS:

BOLT SIZE	ENGLISH				METRIC			
	GRADE 5		GRADE 8		CLASS 8.8		CLASS 10.9	
	FT-LB	N-M	FT-LB	N-M	FT-LB	N-M	FT-LB	N-M
M6					7	10	11	15
1/4	9	12	12	17				
5/16	19	25	27	36				
M8					18	25	26	35
3/8	33	45	45	63				
M10					37	50	52	70
7/16	53	72	75	100				
M12					66	90	92	125
1/2	80	110	115	155				
M14					103	140	148	200
9/16	115	155	165	220				
5/8	160	215	220	305				
M16					166	225	229	310
3/4	290	390	400	540				
M20					321	435	450	610
7/8	420	570	650	880				
M24					553	750	774	1050
1	630	850	970	1320				
M30					1103	1495	1550	2100

HYDRAULIC FITTING TORQUE

Tightening Flare Type Tube Fittings

1. Check the flare and flare seat for defects that might cause leakage.

2. Align tube with fitting before tightening.

3. Lubricate connection and hand tighten swivel nut until snug.

4. To prevent twisting the tube(s), use two wrenches. Place one wrench on the connector body and with the second tighten the swivel nut to the torque shown.

Note: The torque values shown are based on lubricated connections as in assembly.

Tube Size OD	Nut Size Across Flats	Torque Value (see note)		Recommended Turns to Tighten (After Finger Tightening)	
(in)	(in)	(N.m)	(lb-ft)	(Flats)	(Turns)
3/16	7/16	8	6	1	1/6
1/4	9/16	12	9	1	1/6
5/16	5/8	16	12	1	1/6
3/8	11/16	24	18	1	1/6
1/2	7/8	46	34	1	1/6
5/8	1	62	46	1	1/6
3/4	1-1/4	102	75	3/4	1/8
7/8	1-3/8	122	90	3/4	1/8

TIGHTENING O-RING FITTINGS

1. Inspect O-ring and seat for dirt or obvious defects.

2. On angle fittings, back the lock nut off until washer bottoms out at top of groove.

3. Hand tighten fitting until back-up washer or washer face (if straight fitting) bottoms on face and O-ring is seated.

4. Position angle fittings by unscrewing no more than one turn.

5. Tighten straight fitting to torque shown.

6. Tighten while holding body of fitting with a wrench.

Note: The torque values shown are based on lubricated connections as in reassembly.

Tube Size OD	Nut Size Across Flats	Torque Value (see note)		Recommended Turns to Tighten (After Finger Tightening)	
(in.)	(in.)	(N.m)	(lb-ft)	(Flats)	(Turns)
3/8	1/2	8	6	2	1/3
7/16	9/16	12	9	2	1/3
1/2	5/8	16	12	2	1/3
9/16	11/16	24	18	2	1/3
3/4	7/8	46	34	2	1/3
7/8	1	62	46	1-1/2	1/4
1-1/16	1-1/4	102	75	1	1/6
1-3/16	1-3/8	122	90	1	1/6
1-5/16	1-1/2	142	105	3/4	1/8
1-5/8	1-7/8	190	140	3/4	1/8
1-7/8	2-1/8	217	160	1/2	1/12

HYDRAULIC FLUIDS

The below recommended hydraulic oils have been reviewed by Rosco and are recommended as replacements. It is best to use the heaviest weight oil that can be safely used for the temperature range of machine operation. If your machine will never be used at below 0°F temperatures, we recommend that you use a heavier weight oil.

If you are considering using an oil that is not listed, contact the Rosco factory to obtain the specifications that the hydraulic oil must meet to provide the needed lubrication and cooling for the units' hydraulic components.

HYDRAULIC OIL REQUIREMENTS AND APPROVED BRANDS FOR FIELD FILL:

DO NOT MIX manufacturers or grade weights when adding hydraulic oil.

Be sure hydraulic oil selection is compatable with your hydraulic system.
Be sure to use mineral base hydraulic oil.
Be sure hydraulic oil selection assistance is from a reputable supplier.
Be sure the hydraulic specifications meet or exceed the following specifications.

Hydraulic oil must provide anti-wear properties that meet or exceed those found in the API (American Petroleum Institute) classification SD, SE or CC crank case oil.

Hydraulic oil viscosity must not fall below 70 SUS (13 cs) in the reservior under the most adverse conditions. The best viscosity being 80-300 SUS (17 cs to 65 cs). The viscosity rating at the lowest expected start-up temperature should not exceed 10,000 SUS (2158 cs).

Hydraulic oil must have rust and oxidation inhibitors that will maintain chemical stability. When changing the hydraulic oil with oil other than the specific factory fill oil listed below, the hydraulic system must be completely drained. Be sure to purge or drain all hoses, cylinders, valves, motors and pumps of hydraulic oil. All hydraulic oil filters must also be changed at this time.

AMBIENT TEMP. --25° F TO 80° F (-32° TO 27° C)	***AMBIENT TEMP.*** -10° F TO 95° F (-23° TO 35° C)	***AMBIENT TEMP.*** 0° F TO 105° F (-18° TO 41° C)
AMOCO RYKON 32	AMOCO RYKON 46	AMOCO RYKON 68
EXXON UNIVIS N32	EXXON UNIVIS N46	EXXON UNIVIS N68
GULF HARMONY 32 AW	GULF HARMONY 46 AW	GULF HARMONY 68 AW
MOBIL DTE 13M	MOBIL DTE 15M	MOBIL DTE 16M
PHILLIPS 66 MAGNUS A32	PHILLIPS 66 MAGNUS A46	PHILLIPS 66 MAGNUS A68
SHELL TELLUS 32	SHELL TELLUS 46	SHELL TELLUS 68
TEXACO 32	TEXACO 48	TEXACO 68
CHEVRON MV ISO 32	MOBILFLUID NO. 424	CONOCO 68

TROUBLESHOOTING

GENERAL

The following Troubleshooting Guide includes some problems that an operator may encounter during the course of operating the Chip Spreader. It also includes suggested corrections to these problems. Unless otherwise noted, the problems listed here are those which an operator can diagnose and repair. See an authorized ROSCO Dealer/Distributor for diagnosis and repair of problems not listed. For specific engine and hydraulic problems not covered by this guide, please refer to the Engine or Hydraulic Pump/Motor Manufacturer's manual that came with your unit.

***Do Not** attempt to service or repair major components, such as Engine, Hydraulic Pump or Motor, etc. unless authorized to do so by your ROSCO Dealer/Distributor. Any unauthorized repair will void the warranty.*

When a problem occurs, don't overlook the simple causes. For example, a starting problem could be caused by something as simple as an empty fuel tank. After a mechanical failure has been corrected, be sure to locate and correct the cause of the problem.

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Engine cranks; But won't start 1.5.2
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Unit doesn't move 1.5.3
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TROUBLESHOOTING

Problem	Cause	Solution
Engine doesn't crank	Battery weak or dead	Charge or replace Battery
	Faulty Ignition Switch	Replace
	Faulty Start Solenoid	Replace
	Faulty Solenoid on Starter or Starter	Replace
	Faulty Wiring	Repair/Replace
	Transmission not in neutral	Put transmission in neutral
	Faulty neutral start switch	Repair/Replace
Engine Cranks, But won't Start (no smoke from exhaust)	No Fuel in tank	Add fuel to tank
	No voltage to Fuel Shutoff Solenoid	Check fuel shutoff voltage (voltage should be a minimum of 9 volts with ignition key on during cranking)
	No Fuel to Injector Pump	Check fuel supply system
	Fuel connections loose on suction side of injector pump	Tighten all fuel filter fittings and connections from fuel tank to injection pump.
	Fuel Filter plugged or restricted	Replace Fuel Filter Check for and remove restrictions
Engine difficult to start or won't start	Engine cranking speed to low (below 150 rpm)	Repair/clean battery terminal connection. Charge/Replace.
	Insufficient supply of fuel to injector nozzles	Check Fuel System. Clean/replace fuel filter.
	Fuel solenoid defective	Check/replace defective fuel solenoid. See engine manual.
	Fuel Filter Plugged	Replace fuel filter
	(continued)	(continued)

TROUBLESHOOTING

Problem	Cause	Solution
	Air in the Fuel system	Check for air leaks in the low pressure side of fuel system. Prime fuel system (see engine manual).
	Fuel Supply contaminated	Verify by operating engine with a known fuel quality.
	Intake Air System restricted	Check for and remove restrictions.
Unit doesn't move with engine running.	Parking Brake engaged "ON"	Move brake lever to "OFF"
Unit jerks when operating in forward or reverse	Parking Brake not fully disengaged	See problem "Brake won't release or partially releases.
Engine power output low.	Excessive load for engine horsepower rating	Reduce load on unit by reducing ground speed.
	Operating engine at high altitude	De-rate engine power out put for altitudes above 1000 feet
	Air-intake piping restricted or Air cleaner element dirty	Remove restrictions; clean/replace Air Cleaner elements
	Fuel return system restricted	Check/correct restricted fuel return system
	Fuel quality poor	Verify by operating with a known fuel quality
	Fuel transfer pump malfunctioning	Check/Replace fuel transfer pump. See engine manual
	Throttle lever improperly adjusted	Check/adjust throttle controls
	Injector malfunctioning	Check/Replace Injector. See engine manual.

TROUBLESHOOTING

Problem	Cause	Solution
Steering is difficult	Low hydraulic fluid	Add fluid to proper level. See Maintenance section.
	Hydraulic reservoir return filters contaminated	Check return filters and replace if necessary. See Maint. Sec.
	Hydraulic relief valve in steering circuit set incorrectly	Check relief valve setting - normal setting 1250 psi. Adjust if needed.
	Worn hydraulic pump	Check pump. Repair or Replace if needed.
	Worn steering orbitrol motor	Check for wear and repair or replace.
	Worn or damaged steering cylinder	Repair or replace cylinder
	Engine RPM's to low	Increase engine speed
Hydraulic System Overheats	Low hydraulic fluid level	Fill to correct level. Change to SAE 30 Fluid in hot weather - Reduces fluid temp up to 20° F.
	Defective gauge or sender giving wrong temp. reading - pump or motor failing.	Replace gauge or sender. Repair or replace pump or motor.
	Excessive air temp. and high duty cycle	Operate at slower ground speed and maximum engine rpm in hot weather.
	Plugged fins on Fluid Cooler	Clean and correct any other problems with cooling air flow.
	Low relief vlave settings	Check and adjust. Pump = 1500psi; Flow divider = 1200 psi.
Engine Oil Pressure Low	Electrical Power not being supplied to gauge.	Check fuse
	Incorrect oil level	Check for leaks. Add or drain engine oil. Check dipstick calibration.
	Oil filter plugged	Change full flow oil filter
	Oil diluted with fuel	Check/Replace injector, fuel transfer pump and/or injection pump.
	(continued)	(continued)

Problem	Cause	Solution
	Oil diluted with coolant	See authorized repair facility
	Incorrect Oil Specifications	Change oil and check oil specifications. See Maintenance Section and Engine manual.
	Oil pressure sender or gauge malfunctioning	Replace sender or gauge.
Engine Coolant Temperature Above Normal	Coolant level too low	Check for leaks and add coolant
	Unit operating with excessive loads	Reduce unit loading
	Radiator fins damaged or plugged	Inspect fins, Clean/repair or replace
	Collapsed or restricted radiator hose	Inspect hoses; replace if needed
	Loose fan drive belt	Check belt tension; adjust if needed
	Cooling fan shroud damaged or missing	Inspect shroud, repair, replace or install as needed
	Incorrect or malfunctioning radiator cap	Check cap and replace if necessary
	Temp. gauge or sender malfunctioning	Repair/Replace sender or gauge
	Thermostat stuck in closed position	Test thermostat, replace if necessary
	Dirt, scale or rust in cooling system	Clean cooling system. Use a rust inhibitor from Detroit Diesel. May operate the machine on a 6 degree hotter day.
	Loose wiring, Faulty connection	Repair or replace loose wiring or connector.
	Hydraulic system overheating	See "Hydraulic system overheats"
	(continued)	(conitnued)

TROUBLESHOOTING

Problem	Cause	Solution
	Fan too far in or out of the shroud.	Fan shoud be 2/3 in and 1/3 out of the shroud.
	Hot air off the engine re-entering the radiator.	Check and /or repair sheet metal. Lowers cooling capacity 15° F.
	Fan is to close to the radiator.	Check that fan is 1 1/2 times the pitch away from the radiator. Causes air to channel.
Alternator Not Charging	Diode at alternator loose or faulty	Tighten connection or replace diode
	Alternator belt loose or broken	Adjust or replace belt
	Alternator malfunctioning	Replace alternator
	Faulty gauge or sender	Check/replace wiring or connector
Instruments won't work	Alternator not charging	Repair wiring or replace alternator
	Faulty wiring	Check/replace wiring or connector
Engine Won't Shut Off	Electrical wiring faulty- supplying power to fuel solenoid when key is "OFF"	Check and repair wiring
	Injection pump fuel solenoid inoperative	Check solenoid for defect or foreign materials inhibiting proper operation
	Engine operating on fumes drawn into air intake	Locate and isolate the source of fumes
	Low idle set to high	Set idle to specification
Conveyor Belt not Running in Center of Conveyor	Conveyor belts out of adjustment	Adjust belt alignment and/or tension. See Maintenance Section of Manual.

TROUBLESHOOTING

Problem	Cause	Solution
Spread Roll Fails to Operate when Gates are Open	Spread hopper agitator or spreadroll jammed with aggregate or other materials.	Remove aggregate or other materials
	Low hydraulic fluid level	Add fluid to proper level. See Maintenance Section.
	Low engine RPM's	Increase engine speed.
	Hydraulic reservoir return filters contain contamination and/or plugged.	Check filter(s) for contamination and replace if needed.
	Hydraulic relief valve in spread hopper control circuit set incorrectly	Check valve setting - should be set at 2700 psi. Adjust if needed.
	Worn hydraulic pump and/or motor	Check for worn pump and/or motor. Repair/Replace if needed
	No power to soleniod valve	Check for 12 VDC at soleniod valve. Check wiring.
Conveyors Fail to Operate	Low hydraulic fluid level	Add fluid to proper level
	No electrical power to conveyor control solenoid valves	Check for electrical power at conveyor solenoid valves when the dash conveyor control switch is set to "MANUAL" and the auxiliary conveyor switches are "ON". If power is available, and problem is not hydraulic system related, replace solenoid cartridge. If no power at solenoid valves, proceed to next step.
		Check for power at conveyor control switch and auxiliary control switches. If power is available, switches may need replacement. If no power, check wiring to switches - look for shorts or incorrect connected wires. See Wiring schematics in parts catalog.

(continued) (continued)

TROUBLESHOOTING

Problem	Cause	Solution
	Sheared key in motor/head pulley drive coupling.	Replace key
	Faulty relief cartridge on conveyor solenoid valve.	Exchange relief cartridge with another cartridge on the machine. If problem doesn't transfer to other function, cartridge is ok. If problem transfers, replace.
	Worn hydraulic pump or motor	Check pump and/or motor. Repair/ replace if necessary.
Aggregate Material is not Distributing Evenly in Spread Hopper.	Conveyor hood deflector out of adjustment	Adjust conveyor hood deflector. See Operation Section.
Spread hopper Gates Fail to Open	Low hydraulic fluid level	Add fluid to proper level
	Hydraulic reservoir return filters contain contamination	Check filter(s) for contamination; replace if necessary. See Maint. Section.
	Gate opener jammed with aggregate or other material	Remove aggregate or materials.
	Hydraulic relief valve in gate opener circuit set incorrectly	Check valve setting - should be set at 250 psi. Adjust if needed.
	Low engine RPM"s	Increase engine speed
Aggregate Builds up behind Auto Conveyor Paddles - Fails to Shut Off Conveyors	Conveyor hood deflector out of adjustment	Adjust conveyor hood deflector.See Operation Section.
	Control paddle bent	If paddle is bent forward, bend to a position slightly to the rear of vertical.
	Conveyors operating too fast and/or spread hopper gates closed on one side of the hopper (for narrow spread width).	On units with Variable speed conveyor controls, slow down belt speed on side of spread hopper with closed gates or operate conveyor belt manually with auxiliary conveyor switch on side of spread hopper with closed gates.

TROUBLESHOOTING

Problem	Cause	Solution
Conveyors Fail to Operate with Auto Conveyor Control.	If conveyor control switch is set to "Manual", see problem "Conveyors Fail to Operate".	See Solution to "Conveyors Fail to Operate"
	If conveyor control switch is set to "Automatic", possible causes are shorts in electrical wiring, wires connected incorrectly or faulty switches.	Check for power at paddle switch in "Automatic" position. If no power, Check conveyor control switch wiring. Look for shorts and incorrectly connected wires. If conveyor control switch wiring is OK, but no power to paddle switch, replace conveyor control switch. If power is available at paddle switch, but not at solenoid, replace paddle switch.
Variable Speed Conveyor Control Fails to Change Belt Speed	Faulty belt speed control valve	Replace valve.

ROSCO

A LeeBoy Company

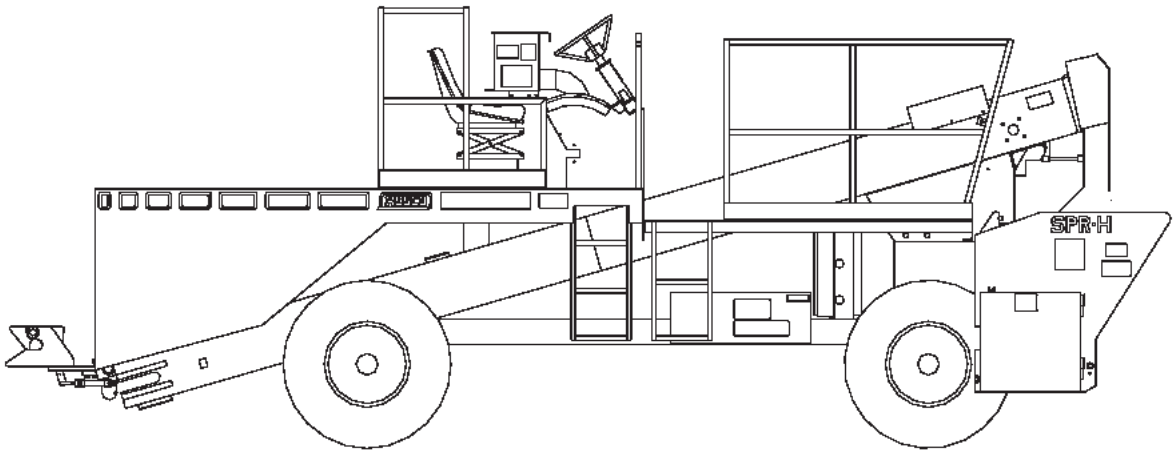
CHIPSPREADER SPR-H

SECTION 2
PARTS CATLAOG

ROSCO MANUAL PART NO. 34903-02

EFFECTIVE SERIAL NO. 36039 and higher

REVISED 11/05/02



NOTE: It is the responsibility of the customer or user's management to train, educate and supervise the employee in the proper operation and manintenance of this equipment.

688 North Highway 16
Denver, North Carolina
www.LeeBoy.com
Phone: 704-966-3300

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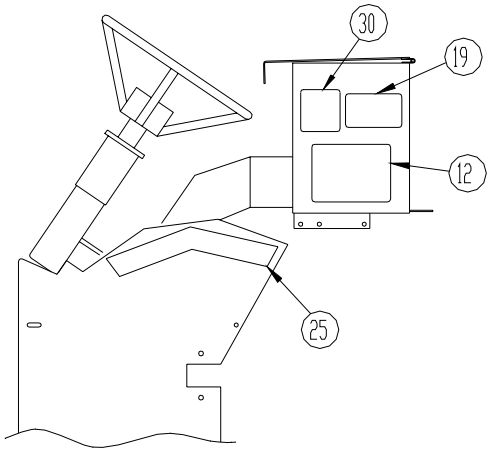
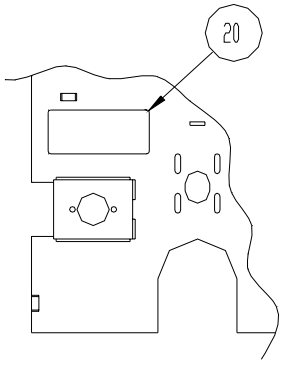
ITEM	PART NO.	QTY.	DESCRIPTION
2	106008221	3.00	DECAL,TIE DOWN
3	206002562	2.00	DECAL,SHAMROCK
4	306001152	2.00	DECAL,FLAHERTY
5	33908	2.00	DECAL,ROSCO LOGO,LARGE,BLACK
6	206002587	2.00	DECAL,SPRH
7	35943	3.00	DECAL,WARNING,GUARDS
8	36202	2.00	DECAL,WARNING,KEEP CLEAN
9	72062	2.00	DECAL,DIESEL POWER,CUMMINS
10	72292	2.00	DECAL,STROBE STRIP,SMALL,26.00
11	72293	2.00	DECAL,STROBE STRIP,LARGE,34.75
12	72611	2.00	DECAL,OPERATING CAUTION
17	72602	3.00	DECAL,DANGER,FRONT HOPPER
19	72624	4.00	DECAL,CAUTION,FULL HOPPER
20	72625	1.00	DECAL,GUARD MISSING,WARNING
21	72626	2.00	DECAL,ENGINE COMP,WARNING
22	72627	1.00	DECAL,WARNING,BATTERY INJURY
24	D50	2.00	DECAL,ROSCO LOGO,MEDIUM,BLACK
25	106008223	1.00	DECAL,POWER GATE LH
26	106008224	1.00	DECAL,POWER GATE RH
30	37243	2.00	DECAL,WARNING,ENGINE EXHAUST

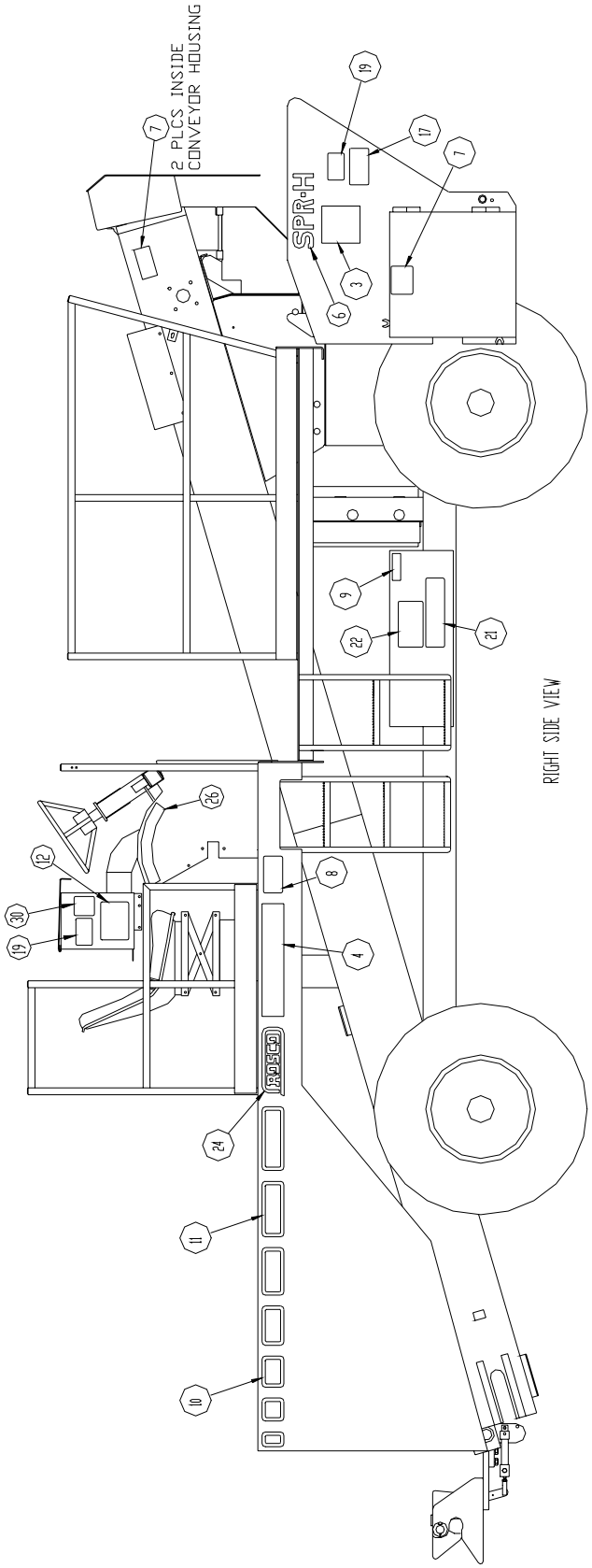
MOST DECALS ARE THE SAME ON THE RIGHT AND LEFT SIDES OF THE MACHINE. NOTE DETAIL ILLUSTRATIONS FOR DIFFERENCES.



VIEW C-C



DETAIL H
SHOWN WITH CHAIN GUARD REMOVED



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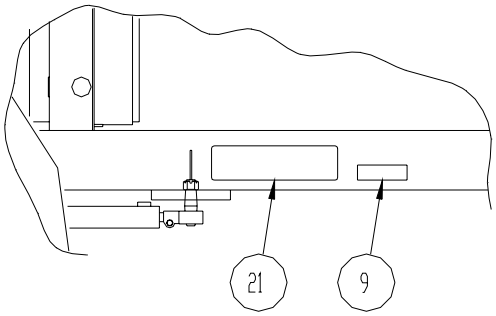
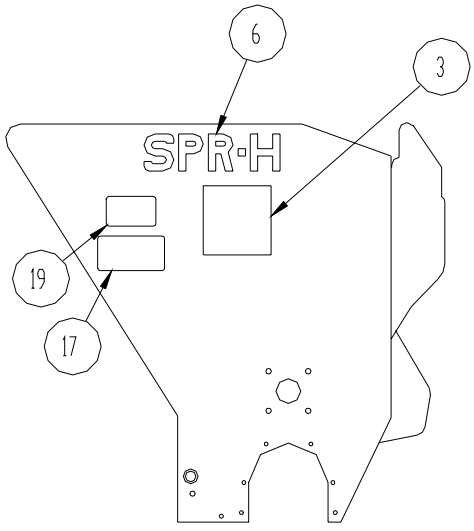
ITEM	PART NO.	QTY.	DESCRIPTION
1	004684102	14.50	STRIP,ABRASIVE,4"X60'ROLL,BLK
2	106008221	3.00	DECAL,TIE DOWN
3	206002562	2.00	DECAL,SHAMROCK
6	206002587	2.00	DECAL,SPR-H
9	72062	2.00	DECAL,DIESEL POWER, CUMMINS
13	72589	1.00	DECAL,DIESEL FUEL
14	72590	1.00	DECAL,HOT FLUID HAZARD,WARNING
15	72591	1.00	DECAL,HYDRAULIC OIL
16	72612	1.00	DECAL,OIL IN FILL STRAINER
17	72602	3.00	DECAL,DANGER,FRONT HOPPER
18	72623	1.00	DECAL,FR CONVEYOR CONTROLS
19	72624	4.00	DECAL,CAUTION,FULL HOPPER
21	72626	2.00	DECAL,ENGINE COMP,WARNING
27	72613	1.00	DECAL,THROTTLE OPERATION
28	35799	1.00	DECAL,HYDRAULIC REVERSE
29	72270	1.00	DECAL,SHIFT PATTERN



VIEW F-F



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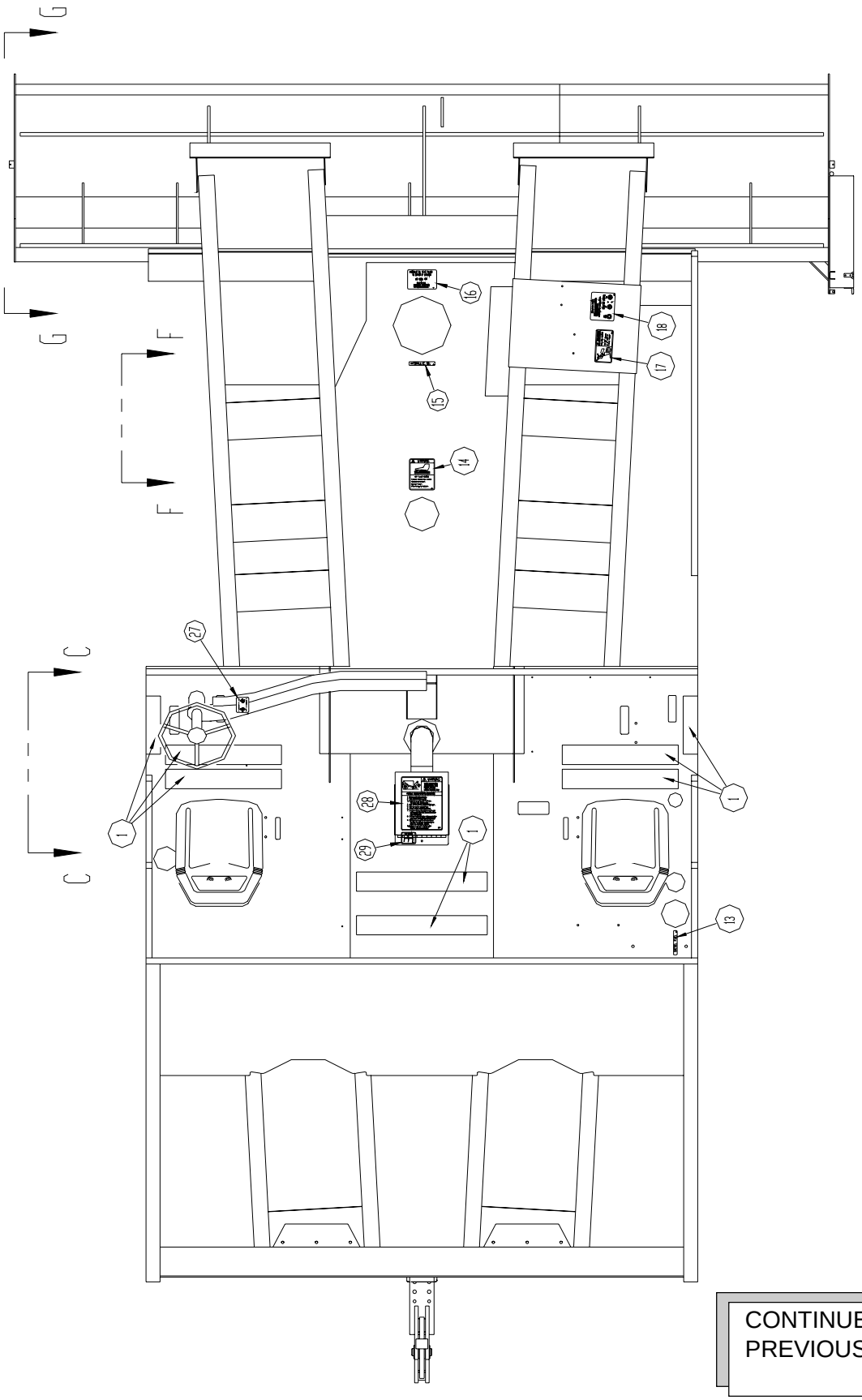

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PREVIOUS PAGES

ITEM	PART NO.	QTY.	DESCRIPTION	
4	35364	1.00	GAUGE,TEMP,WATER	
6	35385	1.00	GAUGE,HOUR METER	
8	36694	1.00	FUSE BLOCK,BLADE-TYPE,10 POS	
10	40967	1.00	CONTROL PANEL W/M,SPR-H	
11	72628	1.00	DECAL,CONTROL PANEL,SPR-H	
15	851090624	1.00	SWITCH,TOGGLE,SPDT,2-POS	
16	851201417	15.00	TIE WRAP,.094X4.00	
18	36393	2.00	SWITCH,PUSH BTN,OFF-MOM ON	
39	36393	REF	SWITCH,PUSH BTN,OFF-MOM ON (PART OF 40676,HITCH,HYD SYSTEM,MECH)	
45	34895	1REF	ETHER INJECTION KIT,3.0 CC (PUSH BUTTON SWITCH IS PART OF THIS)	
48	36150	1REF	ALARM,BUZZ/LIGHT,RED (PART OF 40999 SAFETY WARNING OPTION)	
51	72365	1REF	TACHOMETER,4000RPM,2.06 DIA (PART OF 40997,TACHOMETER OPTION GROUP)	
59	851091608	1REF	FLASHER,SIGNAL	PART OF 40998, LIGHTING GROUP OPTION, SPR-H
61	72086	1REF	SWITCH,TOGGLE,DPDT,ON/ON	
62	33596	1REF	TIE WRAP,187X7.5	
63	33435	5REF	LIGHT & SOCKET,12V,2.00 GAUGE	
68	851090613	2REF	SWITCH,TOGGLE,SPDT,ON/OFF/ON (PART OF 0012106,ONE MAN CONTROL GROUP)	
75	90803	4.00	SLEEVE,ABRASION,NYLON,1.75ID	

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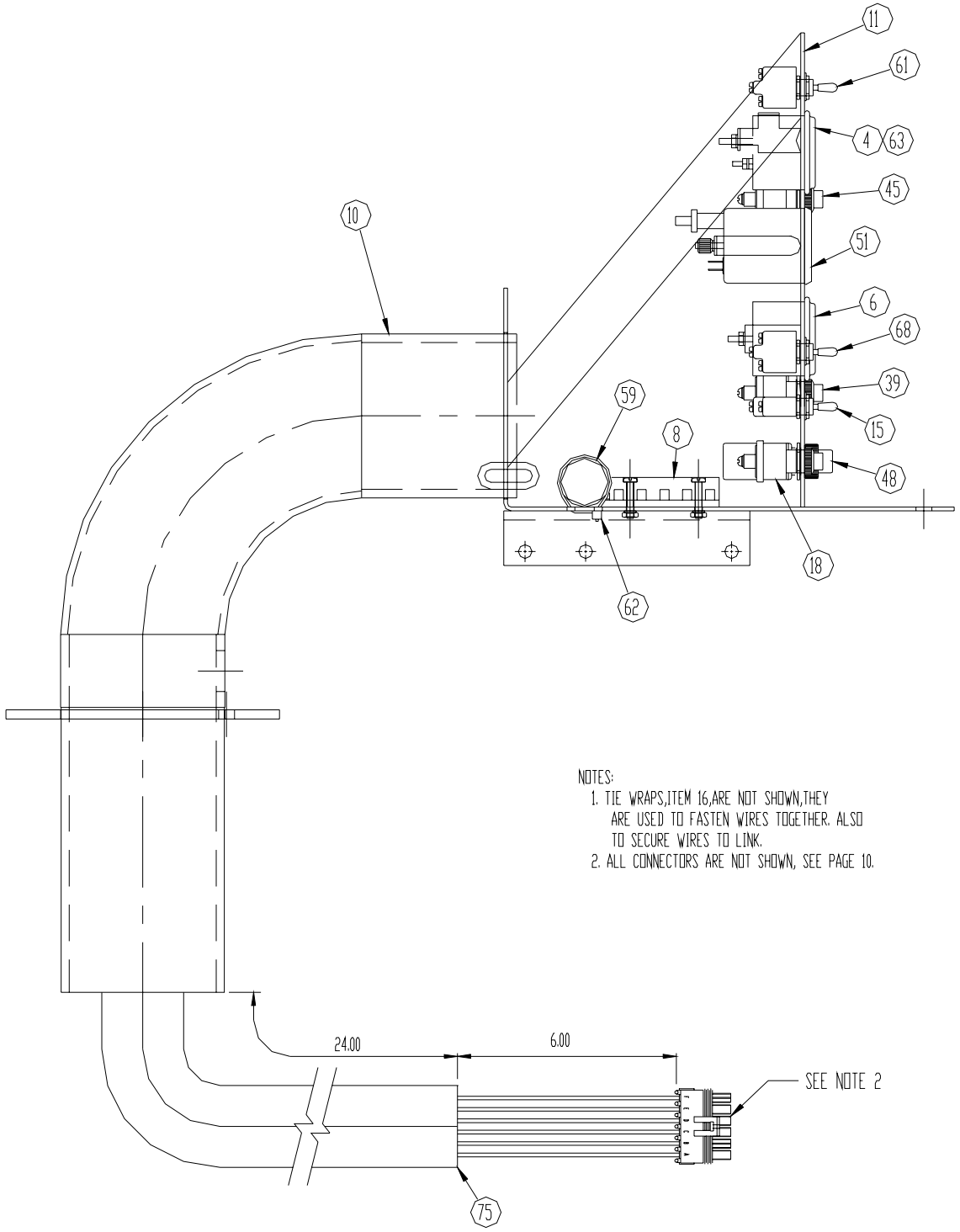
11
61
4
63
45
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51
6
68
39
59
8
15
48
18
62
NOTES:
1. TIE WRAPS,ITEM 16,ARE NOT SHOWN,THEY ARE USED TO FASTEN WIRES TOGETHER. ALSO TO SECURE WIRES TO LINK.
2. ALL CONNECTORS ARE NOT SHOWN, SEE PAGE 10.
24.00
6.00
SEE NOTE 2
75

ITEM	PART NO.	QTY.	DESCRIPTION
2	31985	1.00	LIGHT,GREEN,DASH,.50 HOLE
3	35362	1.00	GAUGE,PRESS,OIL
4	35364	1.00	GAUGE,TEMP,WATER
5	35365	1.00	GAUGE,TEMP,OIL
6	35385	1.00	GAUGE,HOUR METER
7	35668	1.00	GAUGE,VOLTMETER,8-18 V DC
8	36694	1.00	FUSE BLOCK,BLADE-TYPE,10 POS
9	36699	1.00	SWITCH,IGNITION,3 POS,30 AMP
9A	35560	1.00	KEY ONLY,IGNITION
10	40967	1.00	CONTROL PANEL W/M,SPR-H
11	72628	1.00	DECAL,CONTROL PANEL,SPR-H
12	80798	2.00	MACH SCR,PH,#10-24X1.00
13	80824	2.00	NUT,HEX,#10-24
14	851090613	1.00	SWITCH,TOGGLE,SPDT,3-POS
15	851090624	1.00	SWITCH,TOGGLE,SPDT,2-POS
16	851201417	15.00	TIE WRAP,.094X4.00
17	871071601	2.00	WASHER,SPLIT LOCK,#10
18	36393	1.00	SWITCH,PUSH BTN,OFF-MOM ON
36	34850-103	1REF	MOUNT,PTO DRIVE W/B (LIGHT IS PART OF THIS) (PART OF 40399,HYDRO REVERSER GROUP)
39	36393	1.00	SWITCH,PUSH BTN,OFF-MOM ON (PART OF 40676,HITCH,HYD SYSTEM,MECH)
42	35366	1REF	FUEL GAUGE (PART OF 108061114,GAUGE,FUEL,DASH MOUNTED)
45	34895	1REF	ETHER INJECTION KIT,3.0 CC (PUSH BUTTON SWITCH IS PART OF THIS)
48	36150	1REF	ALARM,BUZZ/LIGHT,RED (PART OF 40999 SAFETY WARNING OPTION)
51	72365	1REF	TACHOMETER,4000RPM,2.06 DIA (PART OF 40997,TACHOMETER OPTION GROUP)
54	000200190	1REF	SWITCH,TOGGLE,SPST,OFF/ON (PART OF 40657,STROBE GROUP WITH MOUNT)
59	851091608	1REF	FLASHER,SIGNAL
61	72086	1REF	SWITCH,TOGGLE,DPDT,ON/ON
62	33596	1REF	TIE WRAP,187X7.5
63	33435	5REF	LIGHT & SOCKET,12V,2.00 GAUGE
64	31985	2REF	LIGHT,GREEN
65	000200190	1REF	SWITCH,TOGGLE,SPST,OFF/ON
68	851090613	2REF	SWITCH,TOGGLE,SPDT,ON/OFF/ON (PART OF 0012106,ONE MAN CONTROL GROUP)

PART OF 40998, LIGHTING GROUP OPTION, SPR-H

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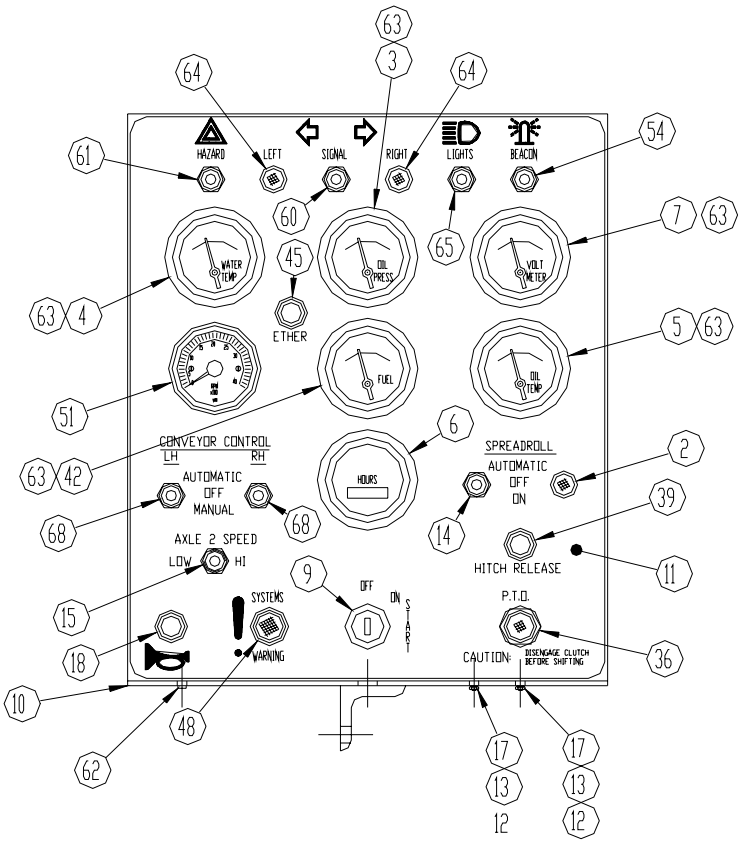
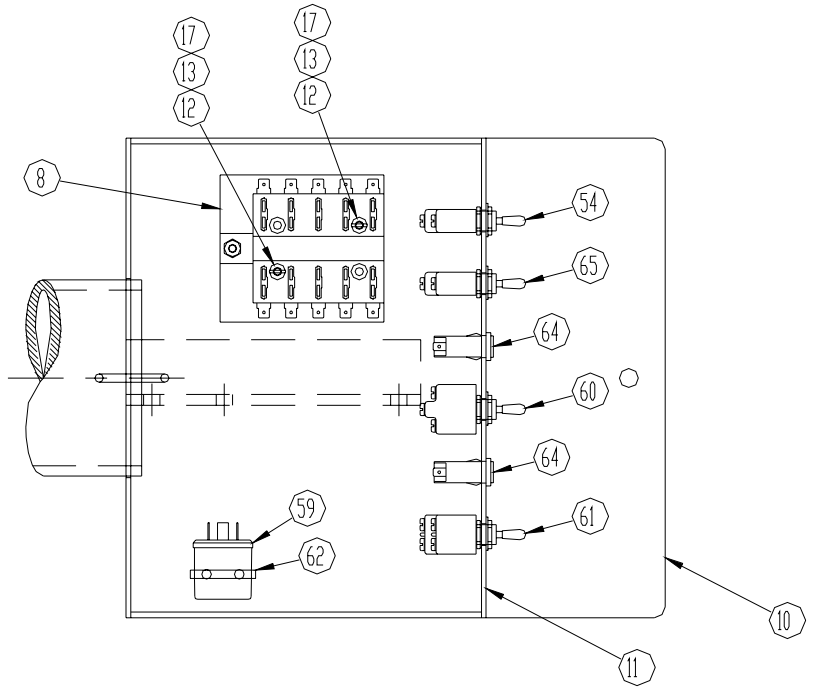


FRONT VIEW



TOP VIEW

ITEM	PART NO.	QTY.	DESCRIPTION
3	35362	1.00	GAUGE,PRESS,OIL
4	35364	1.00	GAUGE,TEMP,WATER
5	35365	1.00	GAUGE,TEMP,OIL
6	35385	1.00	GAUGE,HOUR METER
7	35668	1.00	GAUGE,VOLTMETER,8-18 V DC
8	36694	1.00	FUSE BLOCK,BLADE-TYPE,10 POS
9	36699	1.00	SWITCH,IGNITION,3 POS,30 AMP
10	40967	1.00	CONTROL PANEL W/M,SPR-H
14	851090613	1.00	SWITCH,TOGGLE,SPDT,3-POS
15	851090624	1.00	SWITCH,TOGGLE,SPDT,2-POS
18	36393	1.00	SWITCH,PUSH BTN,OFF-MOM ON
19	33271-0	8.00	WIRE,16 GA,GRAY
20	33271-1	8.00	WIRE,16 GA,BLACK
21	33271-10	8.00	WIRE,16 GA,GREEN/WHITE STRIPE
22	33271-11	8.00	WIRE,16 GA,BLUE
23	33271-12	8.00	WIRE,16 GA,RED/BLACK STRIPE
24	33271-14	8.00	WIRE,16 GA,YELLOW/RED STRIPE
25	33271-15	8.00	WIRE,16 GA,BROWN/YELLOW STRIPE
26	33271-16	8.00	WIRE,16 GA,PURPLE/WHITE STRIPE
27	33271-17	8.00	WIRE,16 GA,WHITE/BLACK STRIPE
28	33271-19	8.00	WIRE,16 GA,DK GREEN/YEL STRIPE
29	33271-21	8.00	WIRE,16 GA,ORANGE/YEL STRIPE
30	33271-4	8.00	WIRE,16 GA,GREEN
31	33271-7	8.00	WIRE,16 GA,RED
32	33602	2.00	CONN,BUTT,16-14 GA
33	33271-9	8.00	WIRE,16 GA,PURPLE
34	33600	16.00	TERM,PUSH-ON,.25,FEM,16-14 GA
36	34850-103	1REF	MOUNT,PTO DRIVE W/B (PART OF 40399)
38	33620	5.00	TERM,RING,12-10 GA,#10 STUD
39	36393	1.00	SWITCH,PUSH BTN,OFF-MOM ON
40	35163	8.00	WIRE,14 GA,PINK
41	71063	8.00	WIRE,14 GA,GREEN
42	35366	1REF	GAUGE,FUEL (PART OF 108061114)
44	71066	8.00	WIRE,14 GA,YELLOW
45	34895	1REF	ETHER INJECTION KIT (PART OF 40265)
46	71861-2	8.00	WIRE,10 GA,RED
47	72116	8.00	WIRE,14 GA,BROWN
48	36150	1REF	ALARM,BUZZ/LIGHT,RED (PART OF 40999)
49	33320	1.00	HOLDER,FUSE,12 V,20 AMP
50	35138	1.00	CONNECTOR,SEALED,SHROUD,2-PIN
51	72365	1REF	TECHOMETER,4000 RPM (PART OF 40997)
52	35139	1.00	CONNECTOR,SEALED,TOWER,2-PIN

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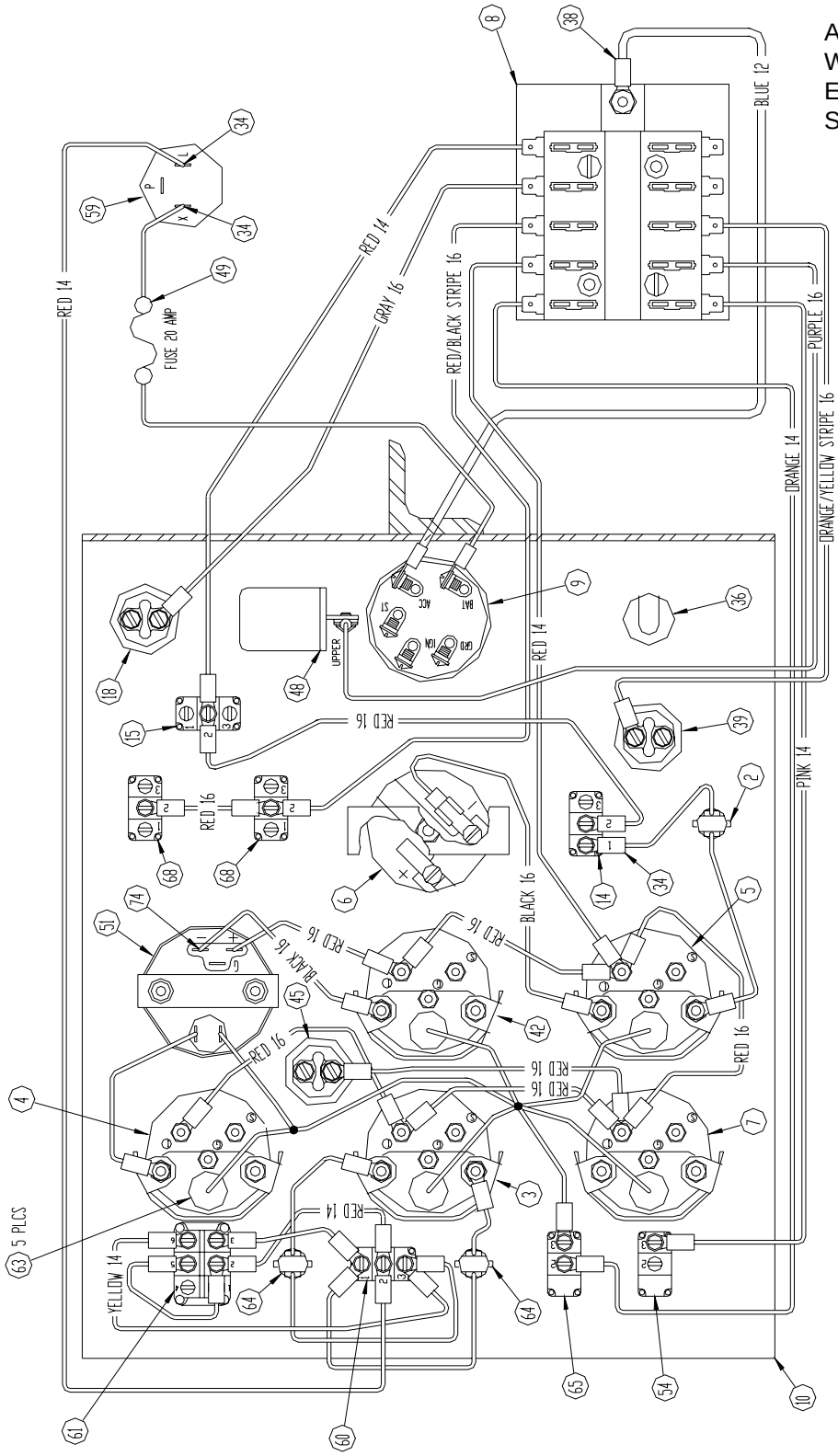
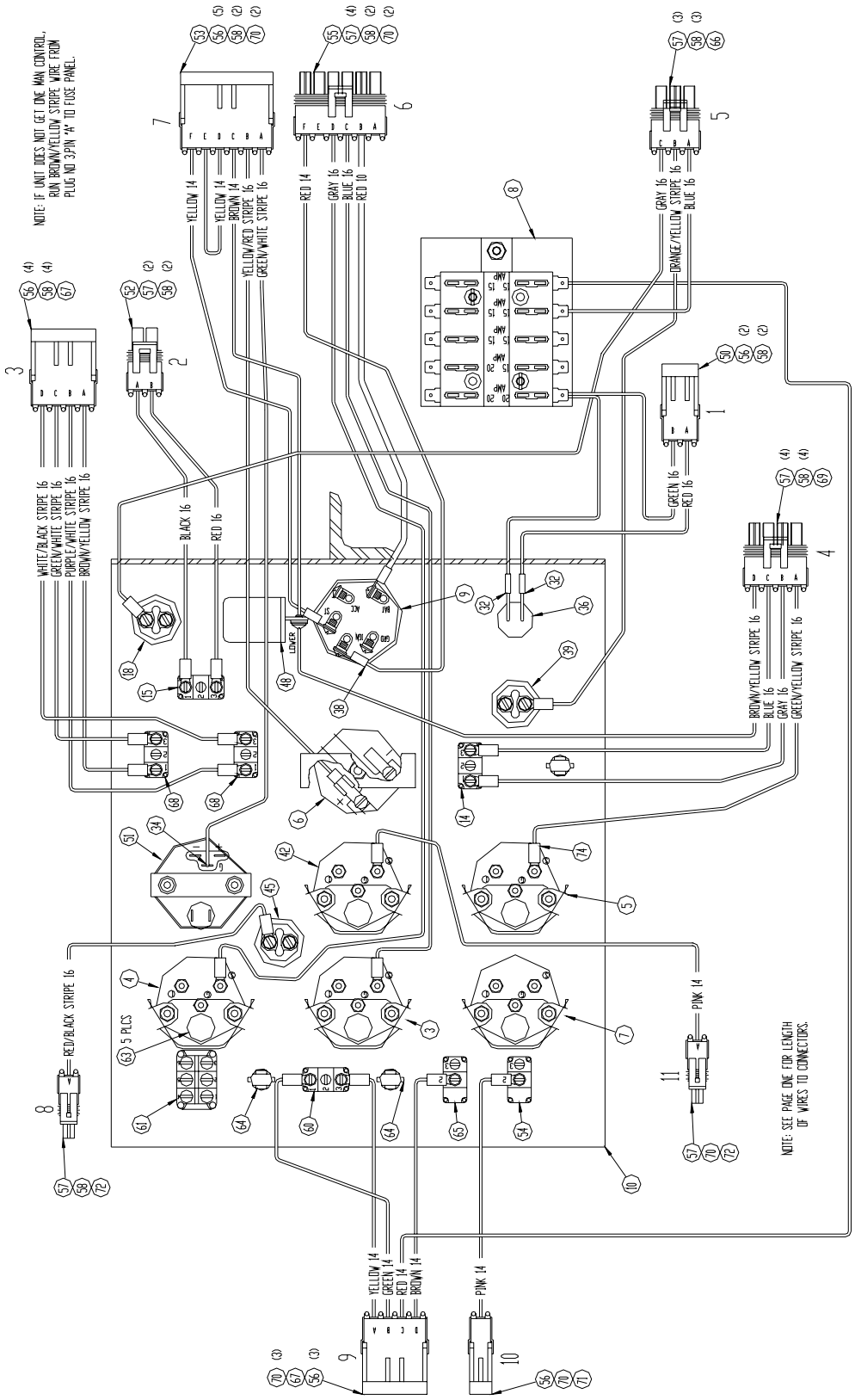
FOLLOWING PAGES

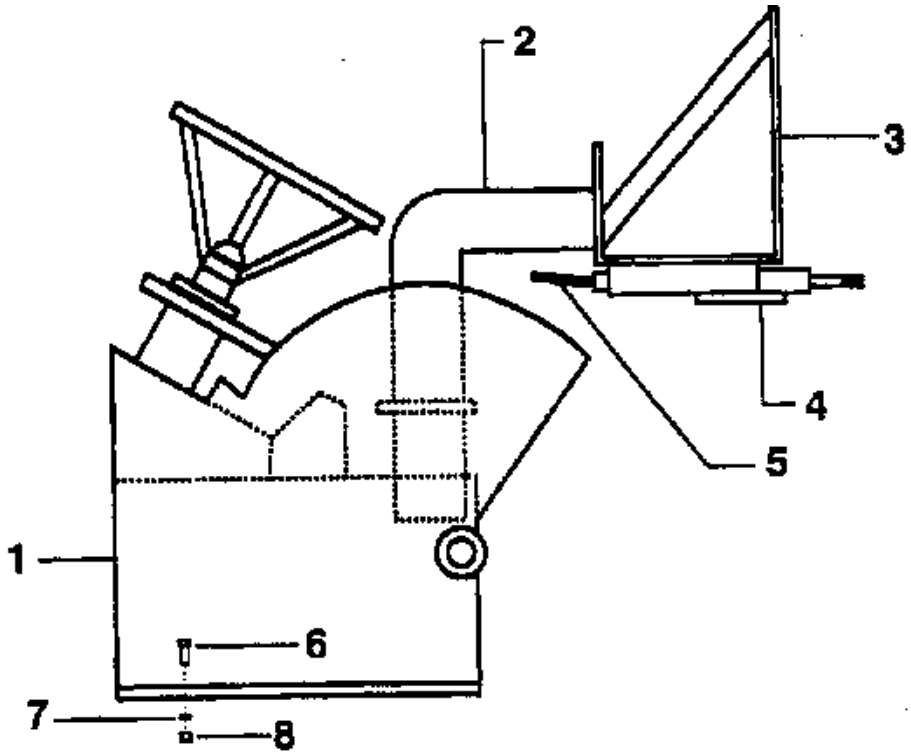


ALSO SEE FOLD OUT WIRING DIAGRAM AT THE END OF THE PARTS SECTION.

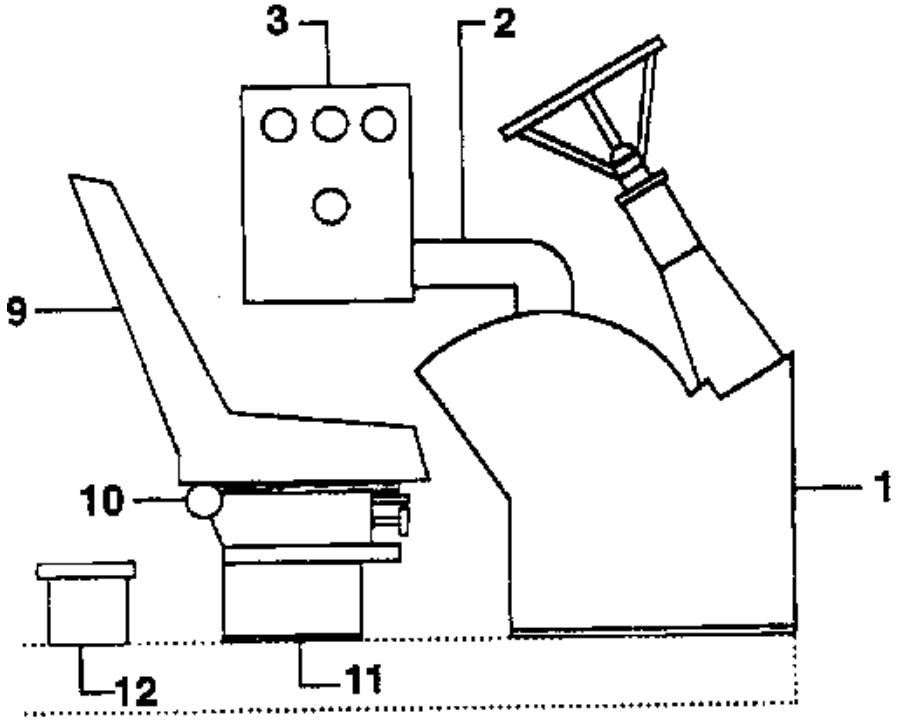
ITEM	PART NO.	QTY.	DESCRIPTION	
53	36162	1.00	CONNECTOR,SEALED,SHROUD,6-PIN	
54	000200190	1REF	SWITCH,TOGGLE,SPST,OFF/ON (PART OF 40657)	
55	36163	1.00	CONNECTOR,SEALED,TOWER,6-PIN	
56	36164	15.00	TERM,SEALED CONN,16-14 GA,MALE	
57	36165	15.00	TERM,SEALED CONN,16-14 GA,FEM	
58	36166	20.00	SEAL,CABLE,18-16 GA	
59	851091608	1REF	FLASHER,SIGNAL	PART OF 40998, LIGHTING GROUP OPTION, SPR-H
61	72086	1REF	SWITCH,TOGGLE,DPDT,ON/ON	
62	33596	1REF	TIE WRAP,187X7.5	
63	33435	5REF	LIGHT & SOCKET,12V,2.00 GAUGE	
64	31985	2REF	LIGHT,GREEN	
65	000200190	1REF	SWITCH,TOGGLE,SPST,OFF/ON	
66	36300	1.00	CONNECTOR,SEALED,TOWER,3-PIN	
67	36351	2.00	CONNECTOR,SEALED,SHROUD,4-PIN	
69	36352	1.00	CONNECTOR,SEALED,TOWER,4-PIN	
70	36623	10.00	SEAL,CABLE,14 GA	
71	37089	1.00	CONNECTOR,SEALED,SHROUD,1-PIN	
72	37090	2.00	CONNECTOR,SEALED,TOWER,1-PIN	
73	71862	8.00	WIRE,14 GA,WHITE	
74	851390204	63.00	TERM,RING,16-14 GA,#10 STUD	


NOTE: IF UNIT DOES NOT GET ONE MAN CONTROL, RUN BROWN/YELLOW STRIPE WIRE FROM PLUG NO 3 PIN "A" TO FUSE PANEL.
YELLOW 14
YELLOW 14
BROWN 14
YELLOW/RED STRIPE 16
GREEN/WHITE STRIPE 16
RED 14
GRAY 16
BLUE 16
RED 10
GRAY 16
BLUE 16
ORANGE/YELLOW STRIPE 16
WHITE/BLACK STRIPE 16
GREEN/WHITE STRIPE 16
PURPLE/WHITE STRIPE 16
BROWN/YELLOW STRIPE 16
BLACK 16
RED 16
GREEN 16
RED 16
BROWN/YELLOW STRIPE 16
BLUE 16
GRAY 16
GREEN/YELLOW STRIPE 16
RED/BLACK STRIPE 16
5 PLCS
PINK 14
YELLOW 14
GREEN 14
RED 14
BROWN 14
PINK 14
NOTE: SEE PAGE ONE FOR LENGTH OF WIRES TO CONNECTORS.

ITEM	PART NO.	QTY.	DESCRIPTION
1	40465	1.00	CONSOLE BAS W/M
2	40967	1.00	CONTROL PANEL W/M
3	40996	1.00	CONTROL PANEL
NS	40992	1.00	CONTROL PANEL COVER
4	948038497	1.00	PARKING BRAKE LEVER
5	948039601	1.00	PARKING BRAKE CABLE, 96" (CURRENT)
	848039511	1.00	PARKING BRAKE CABLE, 120"
NS	40396	1.00	PARKING BRAKE CABLE ANCHOR
6	80250	4.00	CAPSCREW,1/2-13 UNC
7	80164	4.00	LOCKWASHER,1/2
8	80040	4.00	HEX NUT,1/2-13 UNC
9	72527	1.00	SEAT
NS	36898	1.00	SEAT BELT
NS	72527-01	1.00	SEAT SLIDER
10	72048-01	1.00	LOW PROFILE SEAT SUSPENSION
11	207001201	1.00	SEAT BASE
12	33078	1.00	TOOL BOX

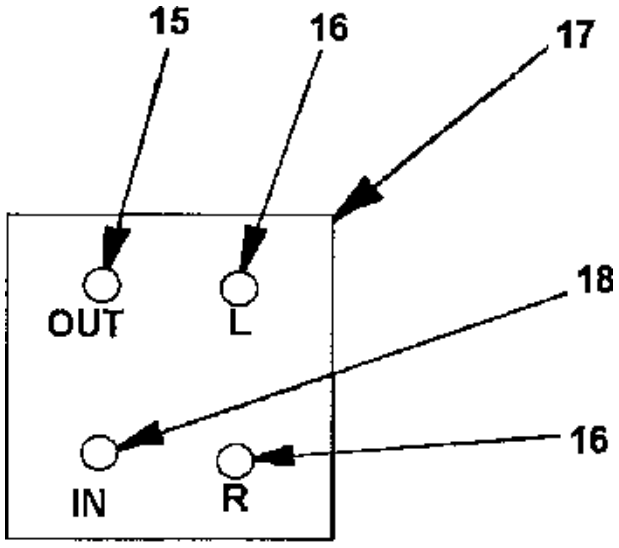


LEFT HAND SIDE OF CONSOLE



RIGHT HAND SIDE OF CONSOLE

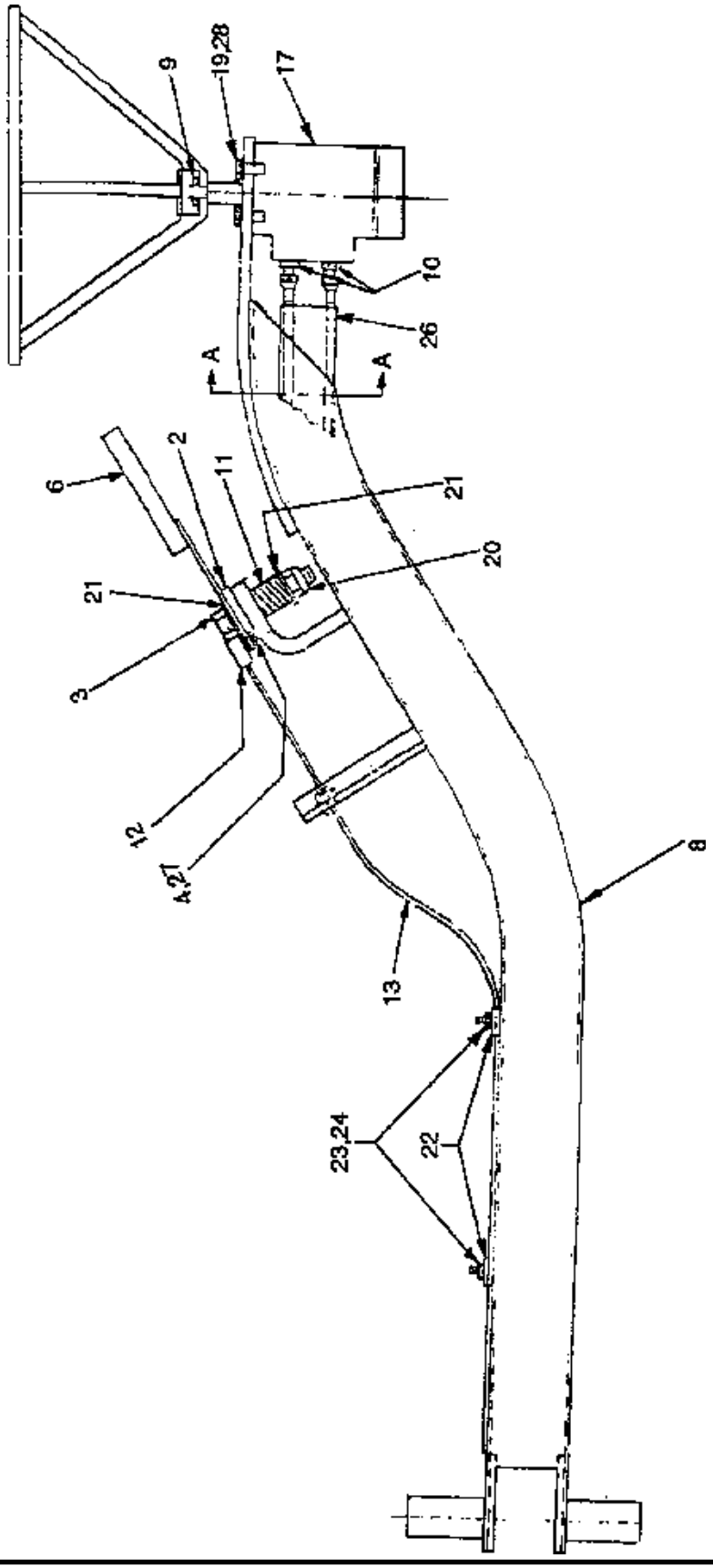
ITEM	PART NO.	QTY.	DESCRIPTION
2	106004605	1.00	DISC FRICTION
3	71629	1.00	CSHH,.500-13X3.00,GR5
4	80160	1.00	WASHER,SPLIT LOCK,.250
6	41056	1.00	LEVER W/M,THROTTLE
8	40471	1.00	STEERING ARM W/M
9	33118	1.00	NUT,HEX,.813-20
10	70062	4.00	FITT,STR 08MJ-08MB
11	8460822155	1.00	SPRING
12	848039222	1.00	ROD END,SPHER,FEM,.250-18
13	848039511	1.00	CABLE,BRAKE,3.00 TRAVELX120
15	853272031	1.00	HOSE ASSY 2000 PSI,-08X102
16	853272576	2.00	HOSE,08X188,2750,100RI
17	948050030	1.00	ORBITROL,STEERING MOTOR
18	953272079	1.00	HOSE,08X120
19	80208	4.00	CSHH,.312-18X1.00,GR5
20	80354	1.00	NUT,FLEXLOC,.500-13,FULL,LT
21	80144	2.00	WASHER,TYPE A PLAIN,.250
22	40928	2.00	CLAMP,DUAL HOSE,.75OD
23	80140	2.00	WASHER,TYPE A PLAIN,.250
24	80350	2.00	NUT,FLEXLOC,.250-20,FULL,LT
26	90803	10.00	SLEEVE, ABRASION,NYLON,1.57ID
27	80054	1.00	NUT,HEX,.250-28
28	80161	4.00	WASHER,SPLIT LOCK,.312



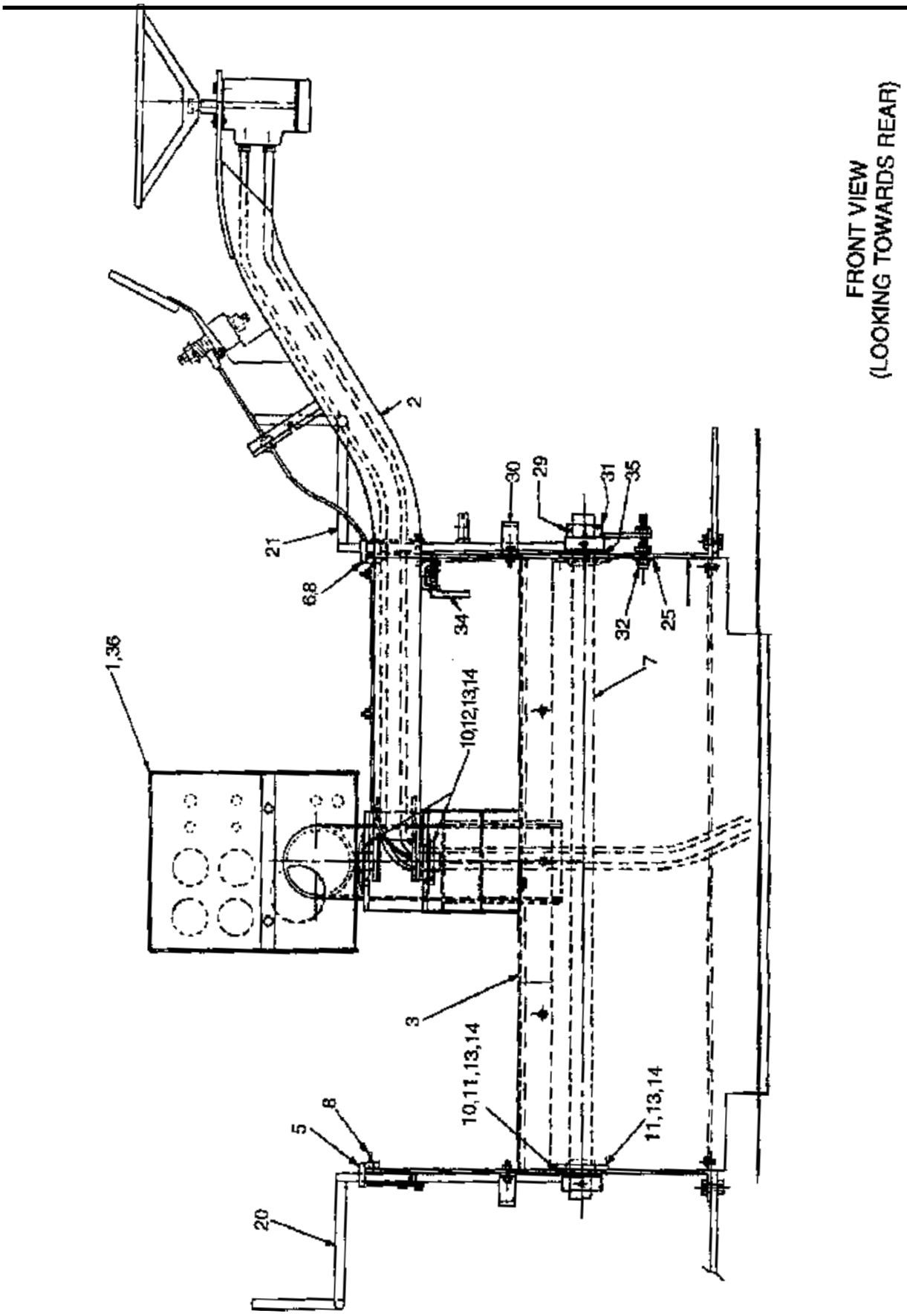
VIEW A - A

REF: 40393
REV: G

ITEM	PART NO.	QTY.	DESCRIPTION



ITEM	PART NO.	QTY.	DESCRIPTION
1	40996	1.00	CONTROL PANEL ASSEMBLY
2	40393	1.00	STEERING ARM ASSEMBLY
3	40465	1.00	CONSOLE BASE W/M
5	40563	REF	LATCH,W/M,RIGHT SIDE (OPTION)
6	40569	1.00	LATCH,W/M LH
7	206002583	1.00	SHAFT,1.438X42.75
8	107000677	1.00	T-HANDLE
10	845292019	4.00	BRG,1.44,2HOLEFL6,#BLF207-73
11	81201	4.00	CSSH,.375-16X1.50
12	80829	4.00	CRG,BOLT,.375-16X1.50,GR5
13	80038	8.00	NUT,HEX,.375-16
14	80162	8.00	WASHER,SPLITLOCK,.375
20	40432	REF	GATE CONTROL LEVER,RH (OPTION)
21	40431	1.00	GATE CONTROL LEVER,LH
25	80147	1.00	WASHER,TYPE A PLAIN,.750
29	80340	1.00	SET S,HSKT,CUP,.375-16X.375
30	206002588	1.00	HANDLE,BRKT POWER GATE
31	208412676	1.00	SWITCH AVTIVATOR ASSY
32	951091224	1.00	SWITCH,SAFETY START
34	108412950	2.00	LOCK ASSY
35	40658	1.00	WASHER,3.00 OD,1.56 ID,10GA
36	40992	1.00	COVER W/M, CONTROL PANEL


FRONT VIEW
(LOOKING TOWARDS REAR)
1,36
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6,8
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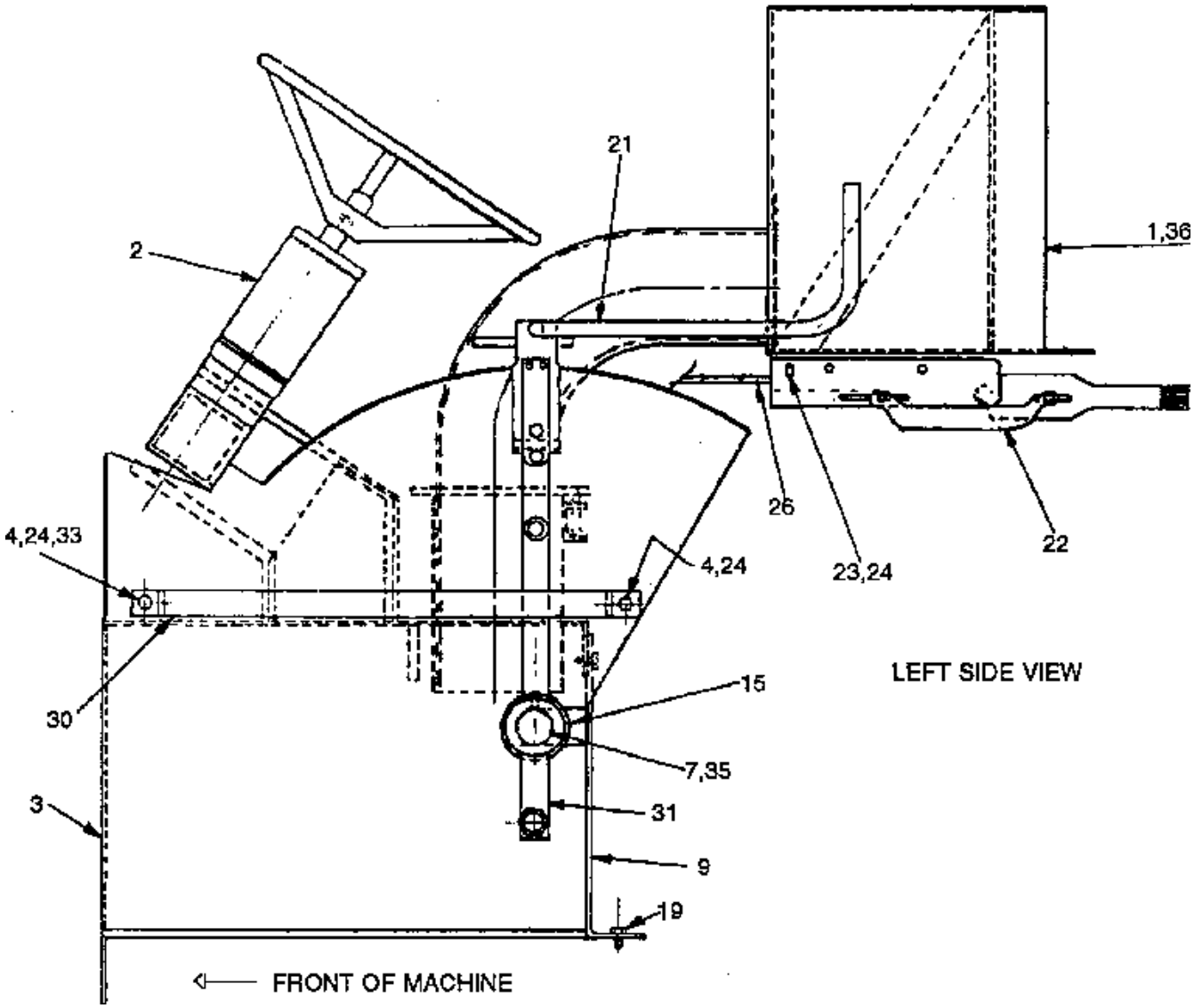
10,12,13,14
10,11,13,14
11,13,14

ITEM	PART NO.	QTY.	DESCRIPTION
1	40996	1.00	CONTROL PANEL ASSY
2	40393	1.00	STEERING ARM ASSY
3	40465	1.00	CONSOLE BASE W/M
4	80208	2.00	CSHH,312-18X1.00,GR5
7	206002583	1.00	CROSS SHAFT
9	106008281	1.00	BACK PEDESTAL
15	72152	1.00	ROLL PIN,.313X2.50,EXP TYPE
19	80324	5.00	SCR,SLFTPG,HH,.250-20X.75
21	40431	1.00	LEVER,GATE CONTROL,LH
22	948038497	1.00	BRAKE LEVER
23	80211	4.00	CSHH,.312-18X1.75,GR5
24	80351	6.00	NUT,FLEXLOC,.312-18,FULL,LT
26	948039601	1.00	CABLE,BRAKE 96 IN
30	206002588	1.00	HANDLE,BRKT POWER GATE
31	208412676	1.00	SWITCH ACTIVATOR ASSY
33	80141	1.00	WASHER,TYPE A PALIN,.312
35	40658	1.00	WASHER,3.00 OD,1.56 ID, 10 GA
36	40992	1.00	COVER W/M,CONTROL PANEL


21
2
1,36
26
22
4,24,33
4,24
23,24
LEFT SIDE VIEW
15
30
7,35
3
31
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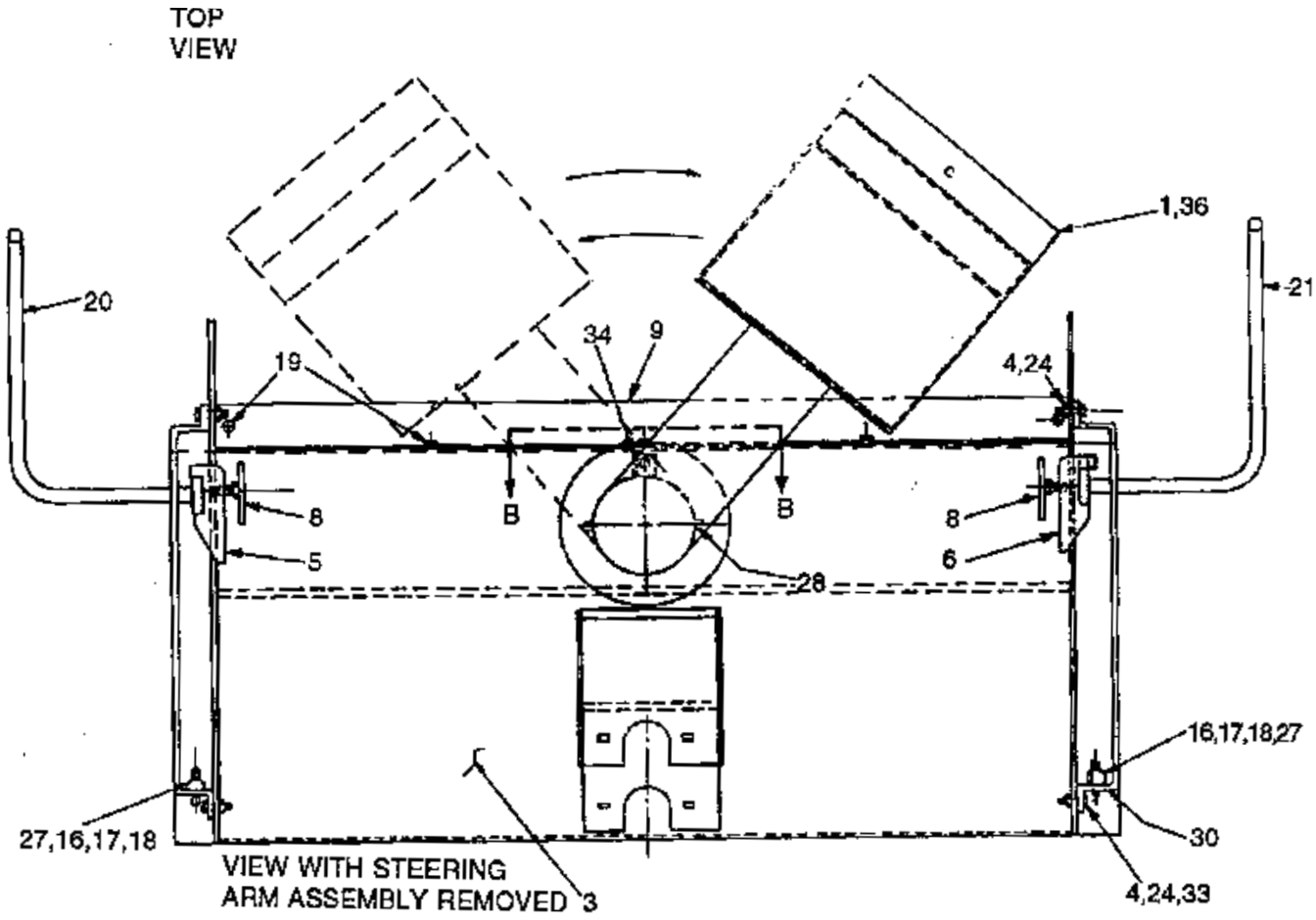
19
FRONT OF MACHINE

ITEM	PART NO.	QTY.	DESCRIPTION
1	40996	1.00	CONTROL PANEL ASSY
3	40465	1.00	CONSOLE BASE W/M
4	80208	2.00	CSHH,.312-18X1.00,GR5
5	40563	REF	LATCH,W/M,RIGHT SIDE (OPTIONAL)
6	40569	1.00	LATCH,W/M,LH
8	107000677	1.00	T-HANDLE,W/M
9	106008281	1.00	BACK PEDESTAL
16	80250	4.00	NUT,HEX,.500-13
17	80040	4.00	CSHH,.500-13X1.25,GR5
18	80164	4.00	WASHER,SPLIT LOCK,.500
19	80324	5.00	SCR,SLFTPG,HH,.250-20X.75
20	40432	REF	GATE CONTROL LEVER,RH
21	40431	1.00	LEVER,GATE CONTROL.LH
24	80351	6.00	NUT,FLEXLOC,.312-18,FULL,LT
27	80144	8.00	WASHER,TYPE A PLAIN,.500
28	32956	2.00	FITT,LUBE,STR,.188 DRIVE
30	206002588	1.00	HANDLE,BRKT POWER GATE
34	108412950	2.00	LOCK ASSY
36	40992	1.00	COVER,W/M,CONTROL PANEL


TOP
VIEW
1,36
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21
34
9
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4,24
B
B
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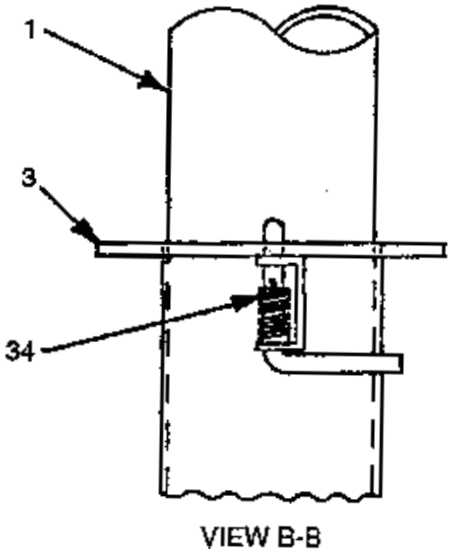
28
16,17,18,27
27,16,17,18
30
4,24,33
VIEW WITH STEERING
ARM ASSEMBLY REMOVED
3


1
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34
VIEW B-B

ITEM	PART NO.	QTY.	DESCRIPTION

COMMON ENGINE PARTS FOR CUMMINS 6BT, 6BTA & 6CT

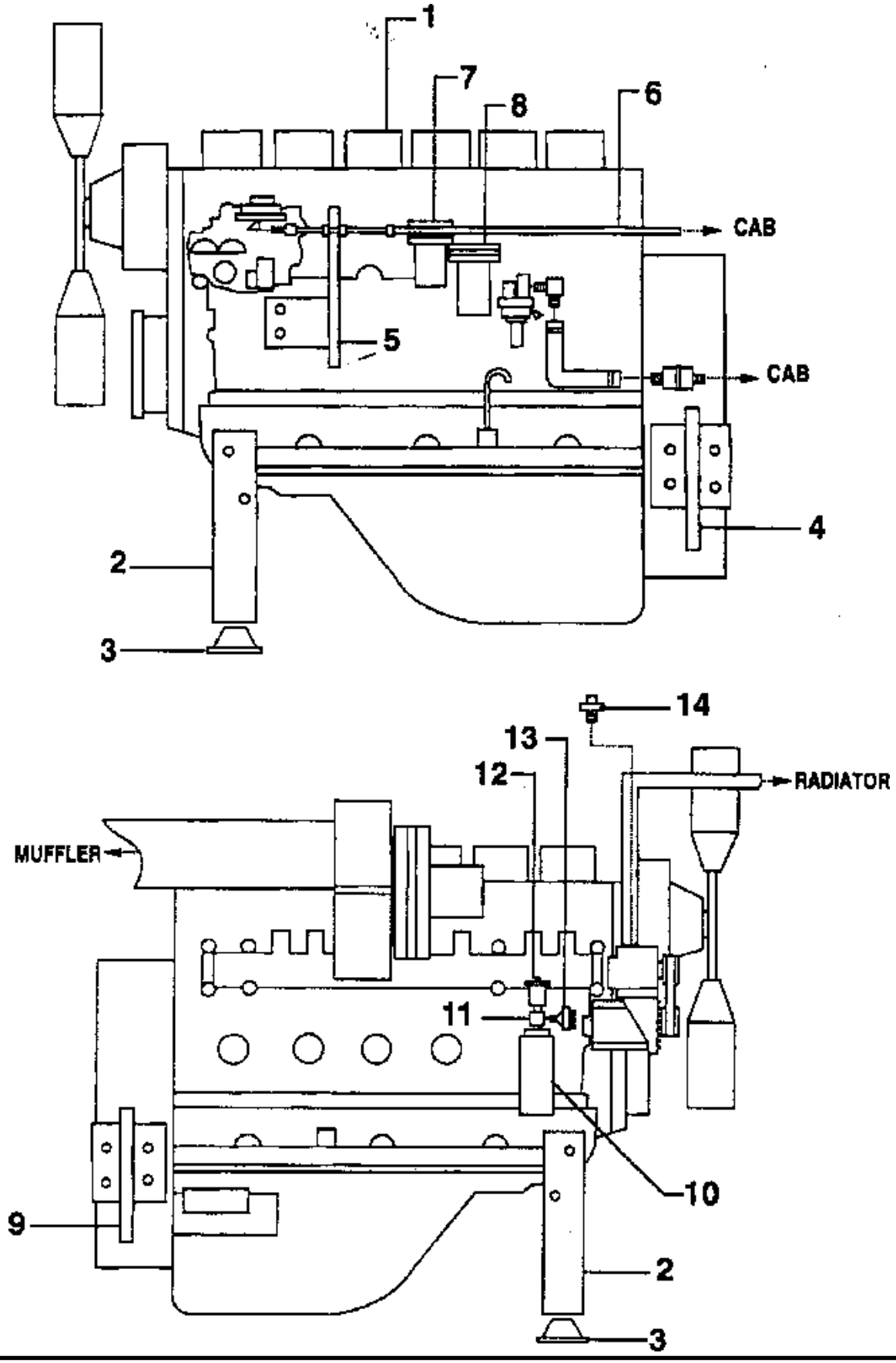
6	848039511	1.00	THROTTLE CABLE
7	72078	1.00	FILTER,FUEL,PRIMARY
8	72079	1.00	FILTER,FUEL,SECONDARY
11	36066	1.00	FITT,TEE,02MP-02FP-02FP,STL
12	35363	1.00	SENDER,PRESS,OIL,02MP
13	35571	1.00	SWITCH,PRESS,02MP,NO & NC
14	35367	1.00	SENDER,TEMP GAUGE,08MP
NS	40948	1.00	SCREEN,RH FRONT
NS	40963	1.00	ENGINE DOOR,LH,WITH MOUNTING
NS	848039922	1.00	ROD END,SPHER,FEM,.250-18

ENGINE PARTS COMMON TO 6BT AND 6BTA

1	72727	1.00	ENGINE,CUMMINS DIESEL,6BT 5.9
1	72673	1.00	ENGINE,CUMMINS DIESEL,6BTA,185 HP
2	40388	1.00	FRONT ENGINE SUPPORT W/M
3	34065	2.00	MOUNT,RUBBER,CUMMINS ENGINE
4	40391	1.00	REAR ENGINE MOUNT,RH,WITH MOUNTING
5	41121	1.00	THROTTLE BRACKET W/M,6BTA
9	40392	1.00	REAR ENGINE MOUNT, LH,WITH MOUNTING
10	72082	1.00	FILTER,OIL,CUMMINS,6B
NS	40385	1.00	TOP FRONT ENGINE SUPPORT W/M
NS	40949	1.00	SCREEN,RH FRONT
NS	40954	1.00	SCREEN,LH FRONT

PARTS FOR 6CT 8.3

1	72675	1.00	ENGINE,DIESEL 6CT,215 HP
2	307000515	1.00	FRONT ENGINE W/M
4	41291	1.00	W/M,RH REAR ENGINE MOUNT,6CT
5	40140	1.00	THROTTLE BRACKET W/M,6CT
9	41289	1.00	W/M,LH REAR ENGINE MOUNT,6CT
10	35393	1.00	FILTER,OIL,CUMMINS,6CT
NS	40071	2.00	PLATE,ENGINE MOUNT,6CT 8.3
NS	41117	1.00	SCREEN,RH FRONT
NS	41116	1.00	SCREEN,LH FRONT


1
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CAB
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CAB
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RADIATOR
MUFFLER
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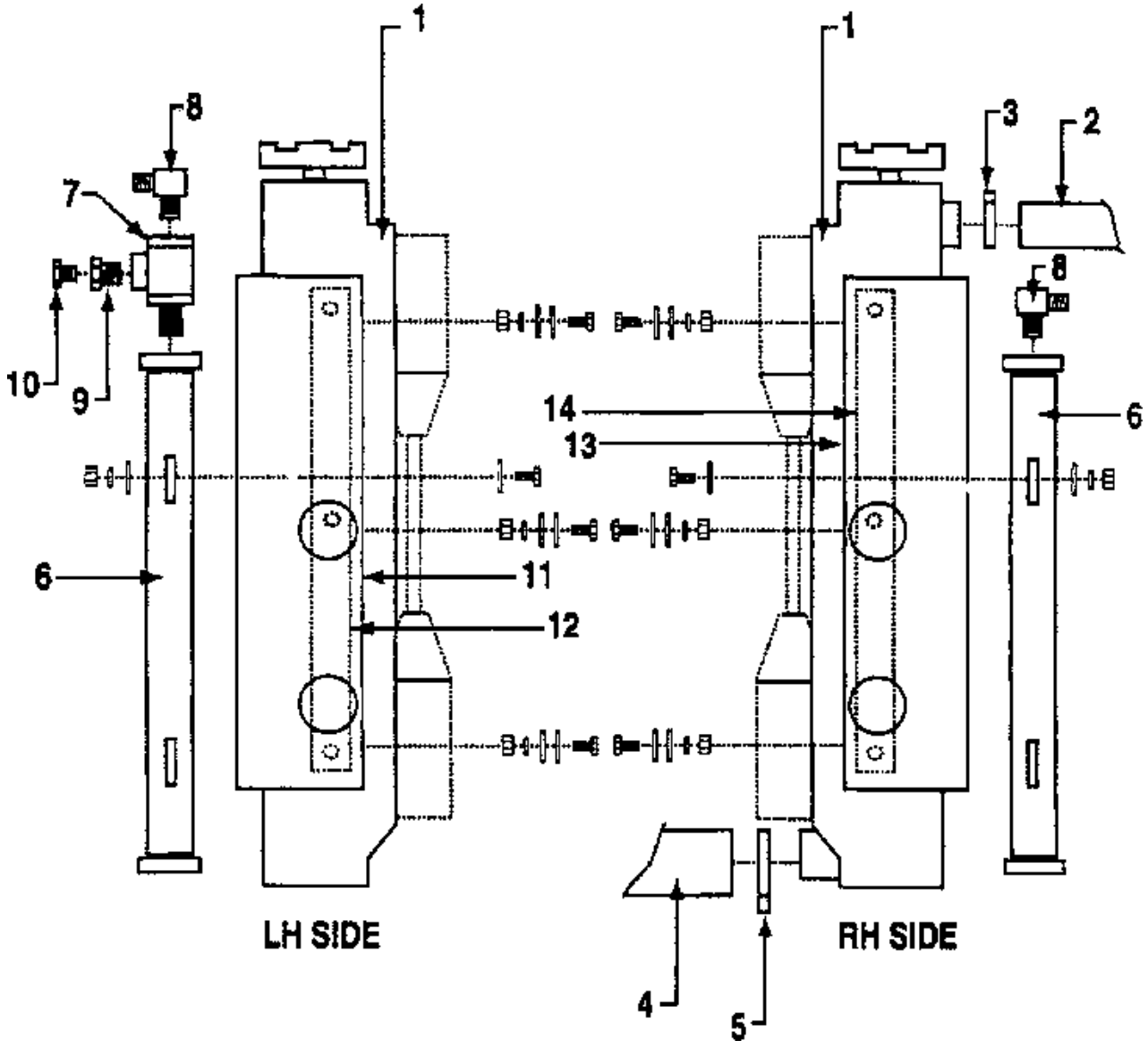
ITEM	PART NO.	QTY.	DESCRIPTION
			COMMON RADIATOR PARTS FOR CUMMINS B6T,6BTA & 6CT
6	853711008	1.00	COOLER,OIL
7	953181589	1.00	FITT,TEE,16MP-16FP-16FP
8	853180544	2.00	FITT,90,12MJ-16MP
10	853180103	1.00	FITT,STR,08MJ-12MP
			COMMON RADIATOR PARTS FOR B6T,6BTA 5.9
1	72424	1.00	RADIATOR,CUMMINS, 6B,6BT,6BTA
2	853313015	1.00	HOSE,RADITOR,1.75X23.25 (UPPER)
3	33169	2.00	CLAMP,HOSE,1.31-2,25,WORM,#28
4	72146	1.00	HOSE,RADIATOR,2.25X9.00 FLEX (LOWER)
5	33171	2.00	CLAMP,HOSE,1.81-2.75,WORM,#36
9	99457	1.00	PIPE,BUSH,16MP-12FP,MI
11	40629	1.00	SUPPORT,RADIATOR,MECH,LH
12	40617	1.00	SUPPORT,RADIATOR,LH
13	40630	1.00	SUPPORT,RADIATOR,MECH,RH
14	40616	1.00	SUPPORT,RADIATOR,RH
NS	853544007	1.00	CAP,RADIATOR,7LBS
			RADIATOR PARTS FOR 6CT 8.3
1	72109	1.00	RADIATOR,CUMMINS,6CT
2	72128	1.00	HOSE,2.25IDX24 RADIATOR, FLEX
3	33171	2.00	CLAMP,HOSE,1.81-2.75,WORM #36
4	72171	2.00	RADIATOR HOSE,2.375X6.50 SING HU (LOWER)
5	33437	2.00	CLAMP,HOSE,2.06-3.00,WORM #40
NS	99670	1.00	PIPE,NIPPLE,08X7.00
NS	91158	1.00	PIPE,90,12FP-08FP,GALV
NS	953313088	40.00"	HOSE,HEATER 1.00ID
NS	5347	2.00	HOSE,04,PUSH-ON,LOW PRESSURE
NS	33343	1.00	FITT,STR 02MP-04HB,PUSH-ON
NS	33280	1.00	FITT,STR 06MP-04HB,PUSH-ON
NS	33277	2.00	CLAMP,HOSE,.22-.62,WORM,#04
NS	33167	2.00	CLAMP,HOSE,.81-1.75,WORM,#20
NS	40629	1.00	SUPPORT,RADIATOR,MECH,LH
NS	40630	1.00	SUPPORT,RADIATOR,MECH,RH
NS	33660	1.00	CAP,RADIATOR,7LBS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LH SIDE
RH SIDE
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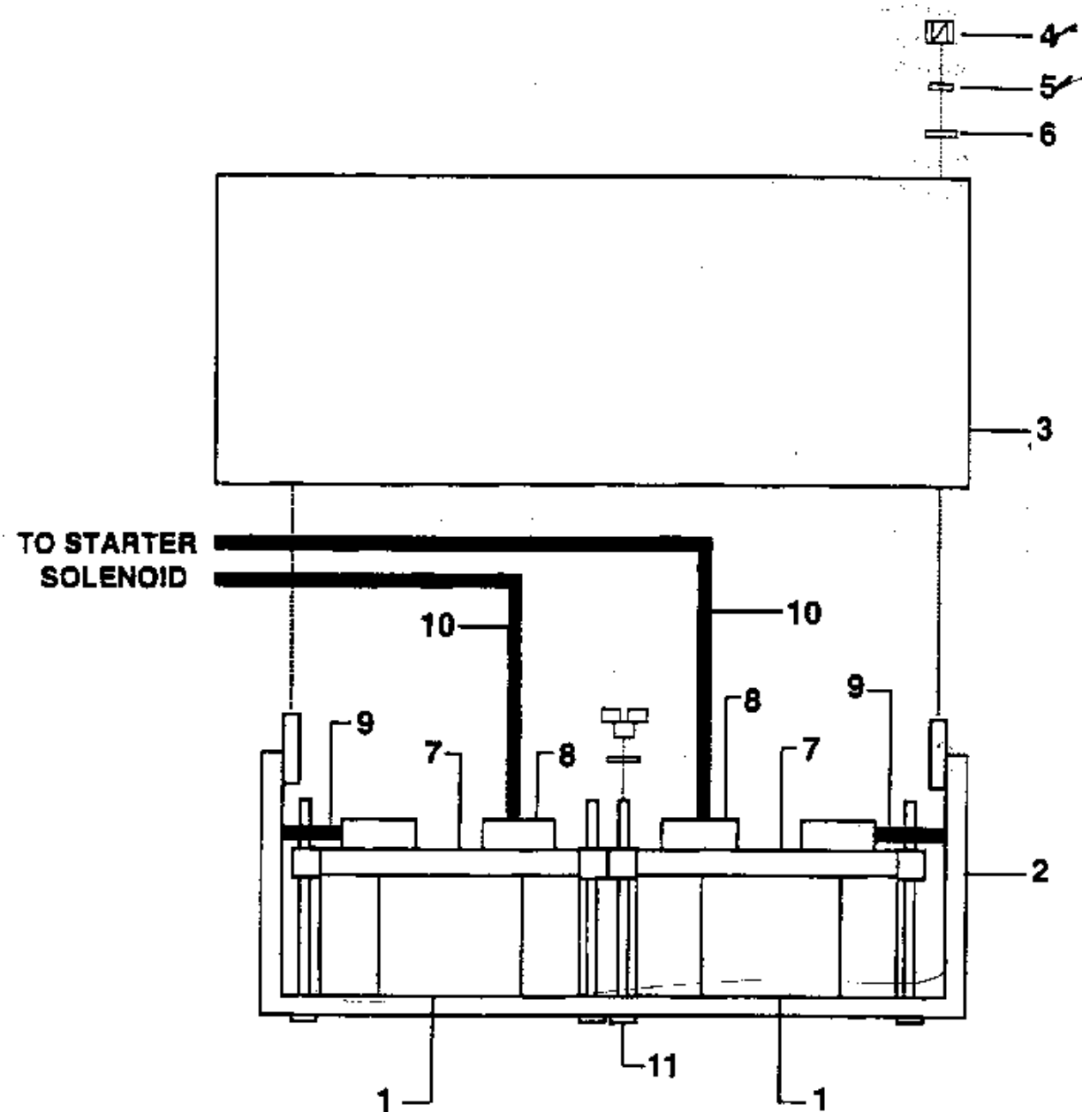
ITEM	PART NO.	QTY.	DESCRIPTION
			COMMON BATTERY PARTS FOR CUMMINS B6T,6BTA & 6CT
1	33146-6	2.00	BATTERY,12 VOLT,950 CCA
2	40182	1.00	BATTERY BOX,W/M
3	40199	1.00	BATTERY BOX COVER W/M
4	80037	2.00	NUT,HEX,.312-18
5	80161	2.00	WASHER,SPLITLOCK,.132
6	80141	2.00	WASHER,TYPE A PLAIN,.312
7	72313	2.00	BATTERY HOLD DOWN
8	70437	2.00	BATTERY BOOT,POS (RED)
9	R442	2.00	CABLE,BATTERY,NEG,14,4GA,.406
11	80955	4.00	CRG BOLT,.312-18X10.00,GR5
			PARTS FOR B6T & 6BTA
10	R443	2.00	CABLE,BATTERY,POS,28,4GA,.406
			PARTS FOR 6CT 8.3
10	72136	2.00	CABLE,BATTER,POS,16GA,.50 STUD


4
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TO STARTER
SOLENOID
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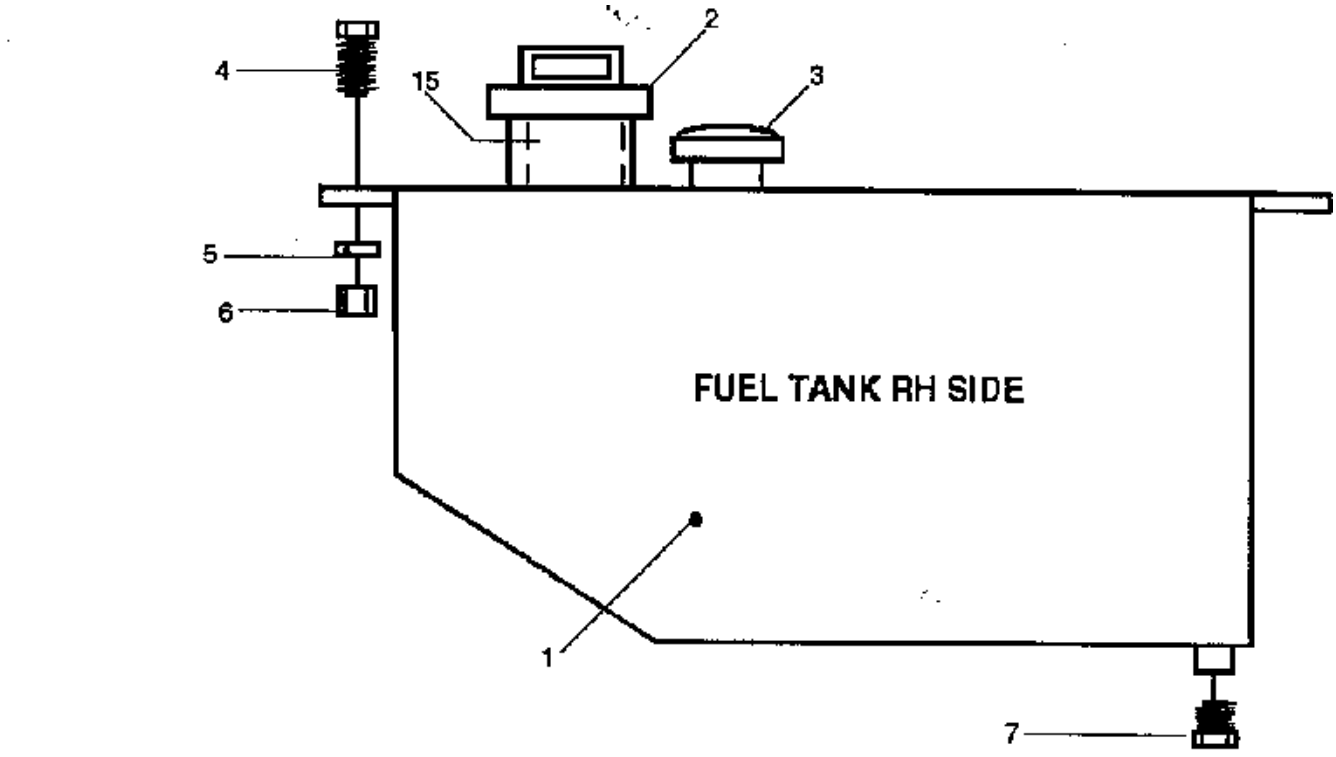
COMMON FUEL TANK PARTS FOR CUMMINS B6T,6BTA & 6CT

ITEM	PART NO.	QTY.	DESCRIPTION
1	40200	1.00	FUEL TANK, W/M,50 GAL LOCKABLE
2	34180	1.00	CAP & RING
3	72234	1.00	GAUGE,FUEL LEVEL
4	71627	6.00	CSHH,.500-13X1.50,GR5
5	80164	6.00	WASHER,SPLITLOCK,.500
6	80040	5.00	NUT,HEX,.500-13
7	99535	1.00	PIPE,PLUG,04MP,SQ HD,MI
8	99448	1.00	PIPE,BUSH,06MP-04FP,STL
9	33491	1.00	FITT,STR 04MP-05HB,CRIMPED
10	33277	2.00	CLAMP,HOSE,.22-.62,WORM,#04
11	71812	1.00	HOSE,05,PUSH-ON,250
12	33365	1.00	FITT,90,04MP-06HB,CRIMPED
14	X314	1.00	HOSE,06,PUSH-ON,250,BLUE
15	34231	1.00	STRAINER


4
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FUEL TANK RH SIDE
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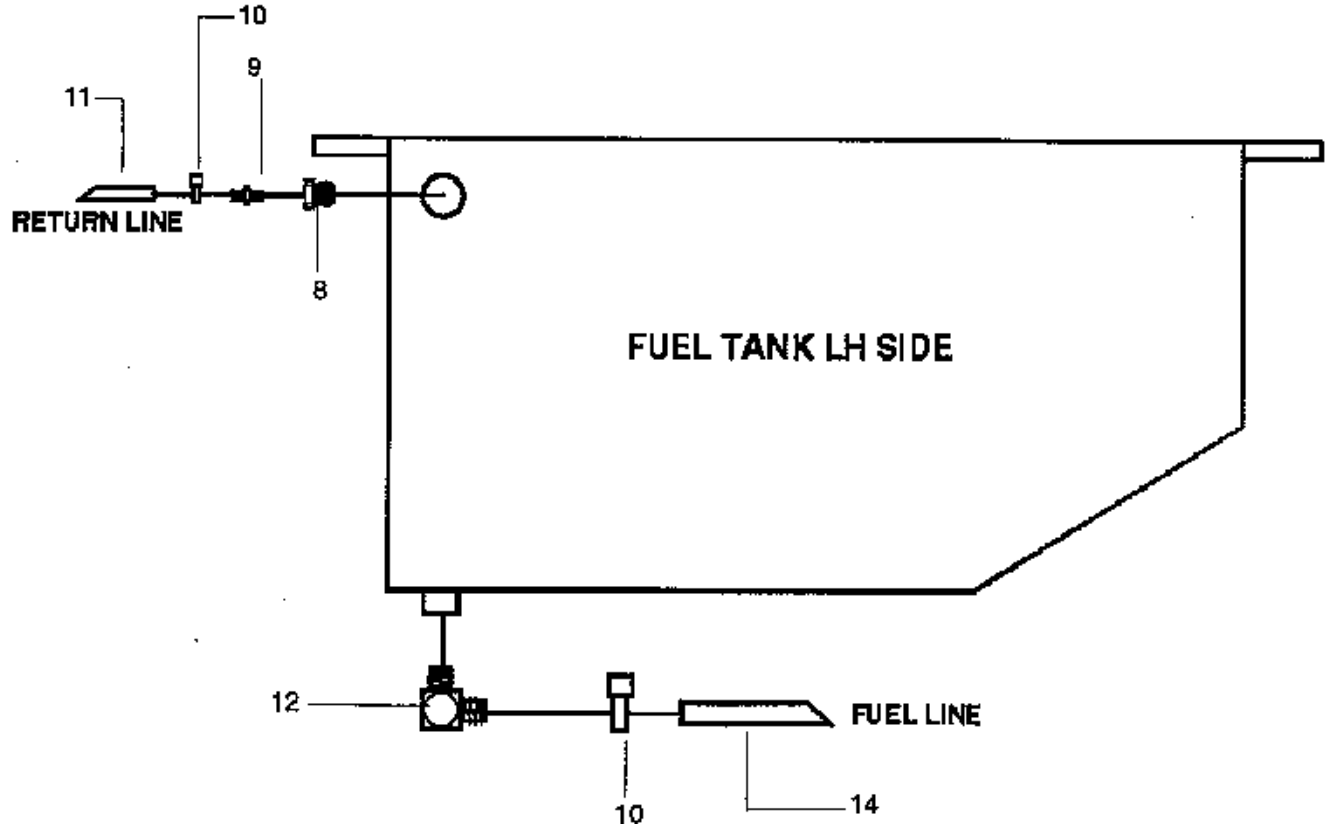
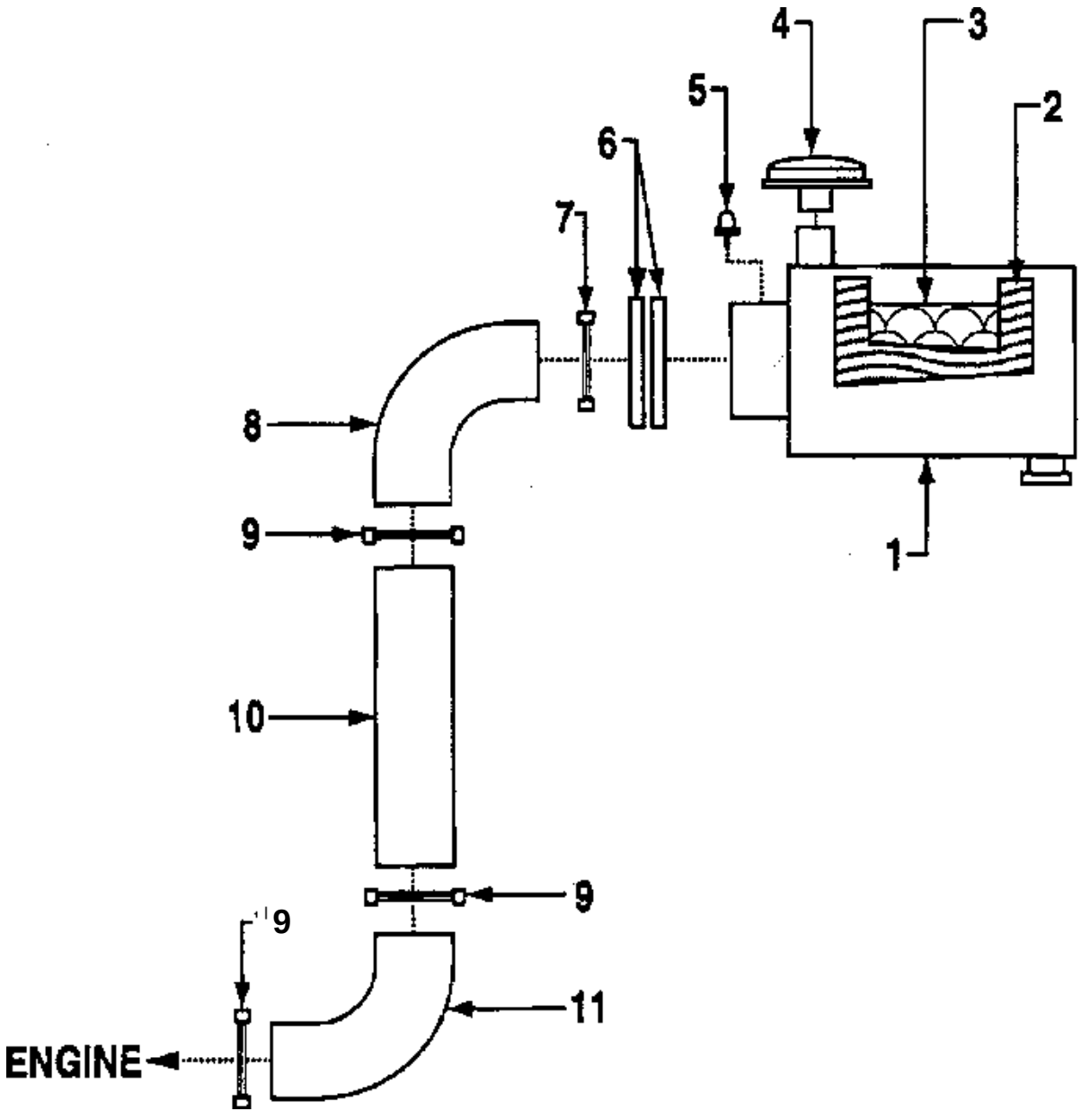

10
9
11
RETURN LINE
8
FUEL TANK LH SIDE
12
FUEL LINE
10
14

ITEM	PART NO.	QTY.	DESCRIPTION
			COMMON AIR INTAKE PARTS FOR CUMMINS B6T,6BTA
1	953521247	1.00	AIR CLEANER
2	72382	1.00	PRIMARY ELEMENT
3	853521208	1.00	SAFETY ELEMENT
4	72381	1.00	HOOD,INLET,5.00 PLASTIC
5	853521158	1.00	INDICATOR,AIR CLEANER
6	853521156	2.00	MOUNT,AIR CLEANER
7	72174	1.00	CLAMP,T-BOLT,5.34 - 5.66 ID
8	72172	1.00	ADPTR,RUBBER 90,5.00-4.00ID
9	953521243	3.00	CLAMP,T-BOLT,4.00ID HOSE
10	106008384	1.00	TUBE,AIR INTAKE
11	36919	1.00	ADPTR,RUBBER,90,4.00ID
			PARTS FOR 6CT
1	953521240	1.00	AIR CLEANER,STYLE A,605 CFM@8
2	72395	1.00	PRIMARY ELEMENT
3	72396	1.00	SAFETY ELEMENT
4	953521239	1.00	HOOD,AIR INLET,6.00 PLASTIC
5	853521158	1.00	INDICATOR,AIR CLEANER
6	953521238	1.00	BAND,MOUNTING 14.00
9	953521243	3.00	CLAMP,T-BOLT,4.00ID HOSE
10	40177	1.00	TUBE, INTAKE,5.00X2.50
NS	72174	2.00	CLAMP,T-BOLT,5.34-5.66ID
NS	72175	3.00	CLAMP,T-BOLT, 6.34-6.66ID
NS	72172	1.00	ADPTR,RUBBER 90,5.00-4.00ID
NS	72173	1.00	ADPTR,RUBBER,6.00-5.00ID
NS	953521237	1.00	ADPTR,RUBBER 90,6.00ID
NS	36919	2.00	ADPTR,RUBBER 90,4.00ID
NS	853521137	1.00	ADPTR,RUBBER HUMP,4.00ID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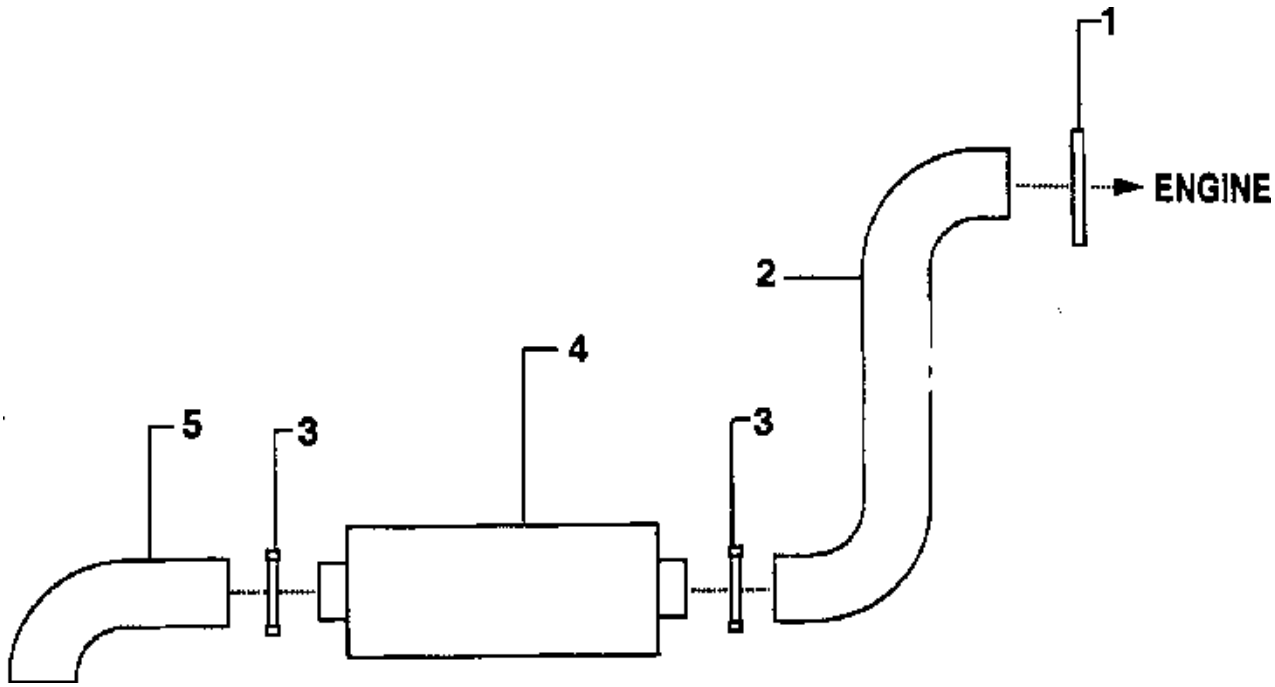
ENGINE

ITEM	PART NO.	QTY.	DESCRIPTION
			COMMON EXHAUST PARTS FOR CUMMINS 6BT,6BTA
1	72399	1.00	CLAMP,V-BAND,3.00
2	40555	1.00	EXHAUST PIPE W/M,6BT & 6BTA
3	34039	2.00	CLAMP,MUFFLER,3.00
4	846100247	1.00	MUFFLER,3.IN INLET
5	846100296	1.00	TAIL PIPE,3 IN
NS	40764	1.00	BAR,MUFFLER MOUNTING
			EXHAUST PARTS FOR CUMMINS 6CT
1	72403	1.00	CLAMP, V-BAND 4.00
2	72114	1.00	EXHAUST PIPE,4 IN,6CT
3	34040	3.00	CLAMP,MUFFLER,4.00
4	72112	1.00	MUFFLER,4 IN,4 OUTX32.25
5	72113	1.00	TAIL PIPE,4OD


1
ENGINE
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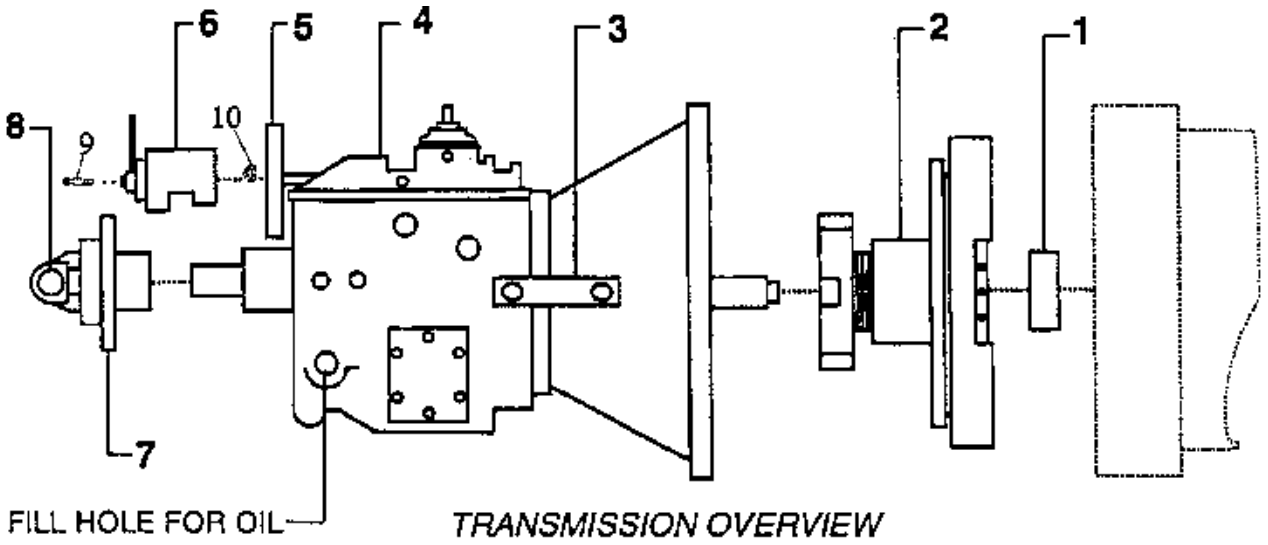
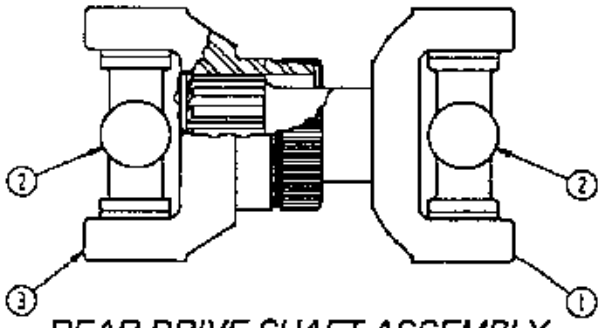
3

ITEM	PART NO.	QTY.	DESCRIPTION
6 BT ENGINE			
.....	40562	1.00	HARNESS,WIRE,ALT TO OIL SWITCH
.....	40894	1.00	HARNESS,WIRE,ALT TO STARTER
.....	40910	1.00	HARNESS,WIRE,ENGINE 6BT
.....	40895	1.00	HARNESS,WIRE,SOL TO STARTER
.....	41623	1.00	HARNESS,ENGINE,6BT & 6BTA
6 BTA ENGINE			
.....	40562	1.00	HARNESS,WIRE,ALT TO OIL SWITCH
.....	40894	1.00	HARNESS,WIRE,ALT TO STARTER
.....	41119	1.00	HARNESS,WIRE,ENGINE 6BTA
.....	40895	1.00	HARNESS,WIRE,SOL TO STARTER
.....	41623	1.00	HARNESS,ENGINE,6BT & 6BTA
6 CT ENGINE			
.....	40562	1.00	HARNESS,WIRE,ALT TO OIL SWITCH
.....	40897	1.00	HARNESS,WIRE,ALT TO STARTER
.....	40911	1.00	HARNESS,WIRE,ENGINE 6CT
.....	40286	1.00	HARNESS,WIRE,JUMP,STARTER TO ALT
.....	40898	1.00	HARNESS,WIRE,SOL TO STARTER

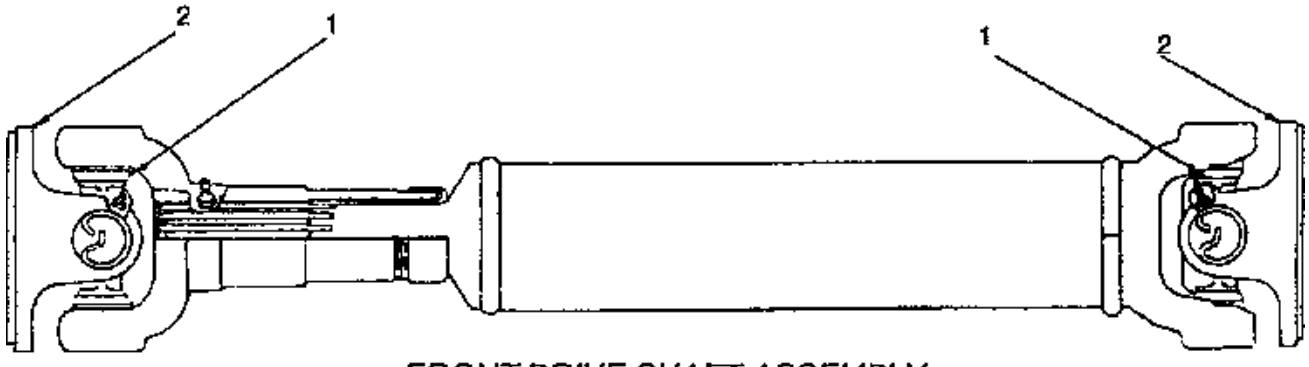
ITEM	PART NO.	QTY.	DESCRIPTION
			TRANSMISSION OVERVIEW
1	845012059	1.00	RADIAL BALL BEARING
2	72271	1.00	CLUTCH ASSEMBLY
2A	80221	A/R	CSHH,.375-16X1.00,GR5
2B	80162	A/R	WASHER,SPLIT LOCK,.375
3	40395	1.00	CLUTCH RELEASE LEVER
4	72634	1.00	5 SPEED TRANSMISSION
5	40374	1.00	PARK BRAKE MOUNT
6	72263	1.00	PARKING BRAKE
7	72268	1.00	BRAKE DISC END YOKE
8	871022302	1.00	U-BOLT
9	80722	2.00	CSHH,.50-13X4.00
10	80040	2.00	NUT,HEX,.50-13
NS	70320	1.00	SWITCH,NEUTRAL START/STOP
72269			**REAR DRIVE SHAFT ASSEMBLY FOR CUMMINS 6BT & 6BTA**
1	72269-01	1.00	END YOKE,DRIVESHAFT
2	848036515	2.00	BEARING CROSS KIT
3	72269-02	1.00	SLIP YOKE,DRIVESHAFT
72353			**REAR DRIVE SHAFT ASSEMBLY FOR CUMMINS 6CT**
1	72353-01	1.00	END YOKE,DRIVESHAFT
2	848036515	2.00	BEARING CROSS KIT
3	72353-02	1.00	SLIP YOKE,DRIVESHAFT
208465727			**FRONT DRIVE SHAFT ASSEMBLY 6BTA**
1	848036500	2.00	CROSS KIT
2	848036102	2.00	FLANGE YOKE
NS	206000886	1.00	ADAPTOR,PUMP DRIVE



TRANSMISSION OVERVIEW

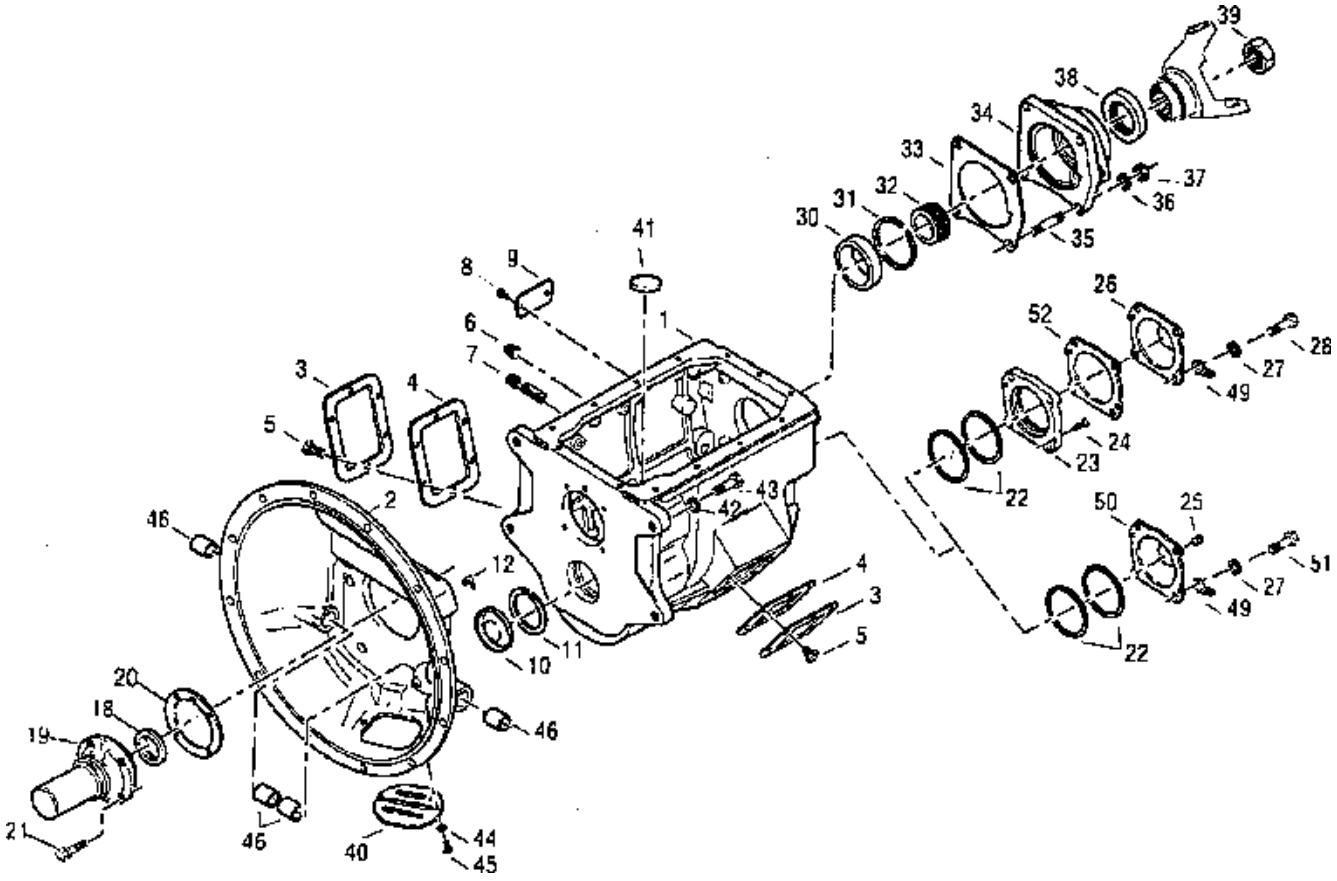


REAR DRIVE SHAFT ASSEMBLY



FRONT DRIVE SHAFT ASSEMBLY

ITEM	PART NO.	QTY.	DESCRIPTION
1	72634-03	1.00	CASE
2	72634-04	1.00	CLUTCH HOUSING ASSEMBLY
3	72261-04	1.00	PTO COVER
4	72261-05	1.00	GASKET
5	72261-06	12.00	CAPSCREW,3/8-16 UNCX5/8
6	72261-07	1.00	PIPE PLUG
7	72261-08	1.00	MAGNETIC PLUG
8	72261-09	2.00	SCREW
9	72261-10	1.00	NAME PLATE
10	72261-11	1.00	PLUG
11	72261-12	1.00	SNAP RING
12	72634-05	2.00	STRAIGHT ADAPTER
12	72634-06	2.00	45 DEGREE ELBOW ADAPTER
18	72634-07	1.00	OIL SEAL
19	72634-08	1.00	FRONT BEARING COVER - PULL
20	72261-21	AR	SHIM KIT
21	72261-22	4.00	CAPSCREW,3/8-16 UNCX3/4
22	72261-21	AR	SHIM KIT
23	72261-23	1.00	PTO ADAPTER
24	72261-24	2.00	SCREW,1/4-20 UNCX1
25	72634-09	1.00	PIPE PLUG
26	72261-26	1.00	BEARING RETAINER
27	72261-27	4.00	WASHER
28	72261-28	4.00	CAPSCREW,3/8-16 UNCX1/4
30	72261-29	1.00	BEARING ASSEMBLY (INCLUDES ITEM 31)
31	72261-30	1.00	SNAP RING
32	72261-31	1.00	SPEEDOMETER DRIVE GEAR
33	72261-32	1.00	GASKET
34	72634-10	1.00	REAR BEARING COVER
35	72261-34	4.00	STUD,1/2-20 X 2-5/16
36	72261-35	4.00	WASHER,1/2
37	72261-36	4.00	NUT 1/2-20
38	72261-37	1.00	OIL SEAL
39	72634-11	1.00	NUT,1-1/4-18
40	72261-13	1.00	HANDHOLE COVER
41	72634-12	1.00	MAGNET
42	72634-13	4.00	LOCKWASHER
43	72634-14	4.00	CAPSCREW,5/8-11 UNC
44	72261-15	2.00	LOCKWASHER
45	72261-14	2.00	CAPSCREW,1/4-20 UNC
46	72634-15	4.00	BUSHING
49	72634-16	1.00	BRACKET
50	72634-17	1.00	BEARING RETAINER
51	72634-65	4.00	CAPSCREW,3/8-24X1
52	72634-18	1.00	GASKET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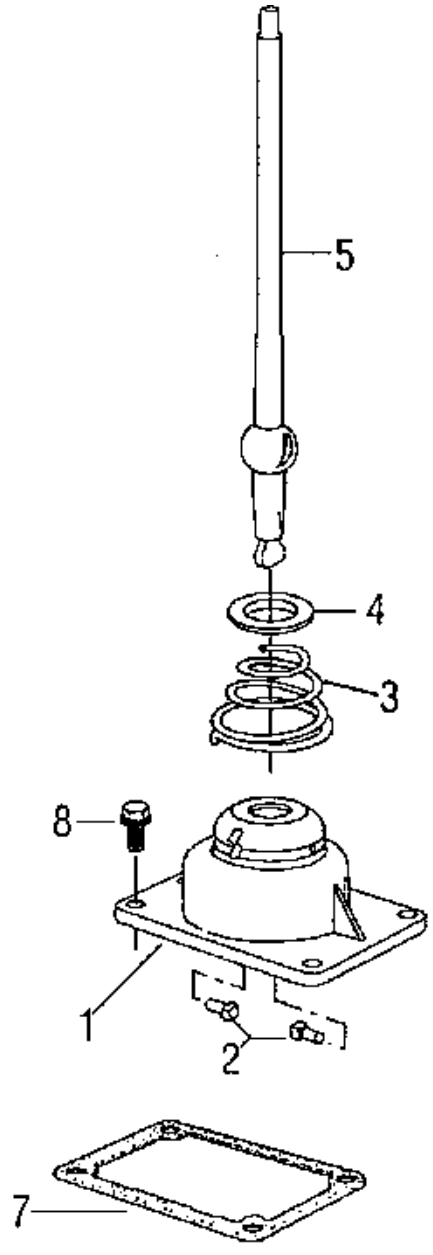
ITEM	PART NO.	QTY.	DESCRIPTION
1	72634-19	1.00	SHIFT LEVER HOUSING
2	72634-20	2.00	PIN
3	72261-43	1.00	SPRING
4	72261-44	1.00	WASHER
5	SEE NOTE	1.00	SHIFT LEVER
7	72634-22	1.00	GASKET
8	72634-23	4.00	CAPSCREW,3/8-16 UNCX1-1/4

NOTE: CONTACT ROSCO SERVICE DEPARTMENT FOR REPLACEMENT OF SHIFT LEVER. HAVE THE ENGINE SIZE AVALIBLE WHEN CONTACTING THE SERVICE DEPARTMENT FOR ORDERING OF PROPER REPLACEMENT PART.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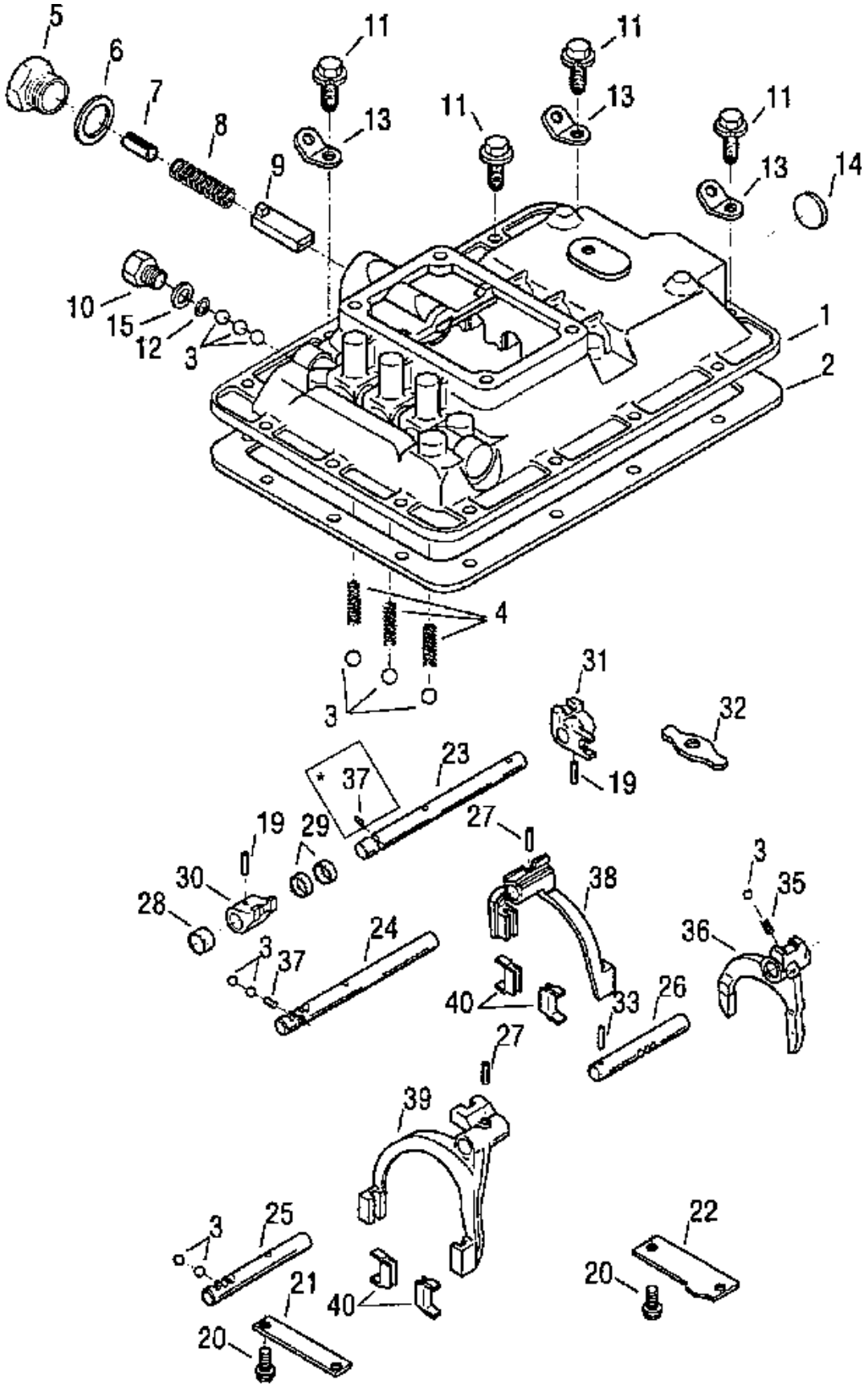
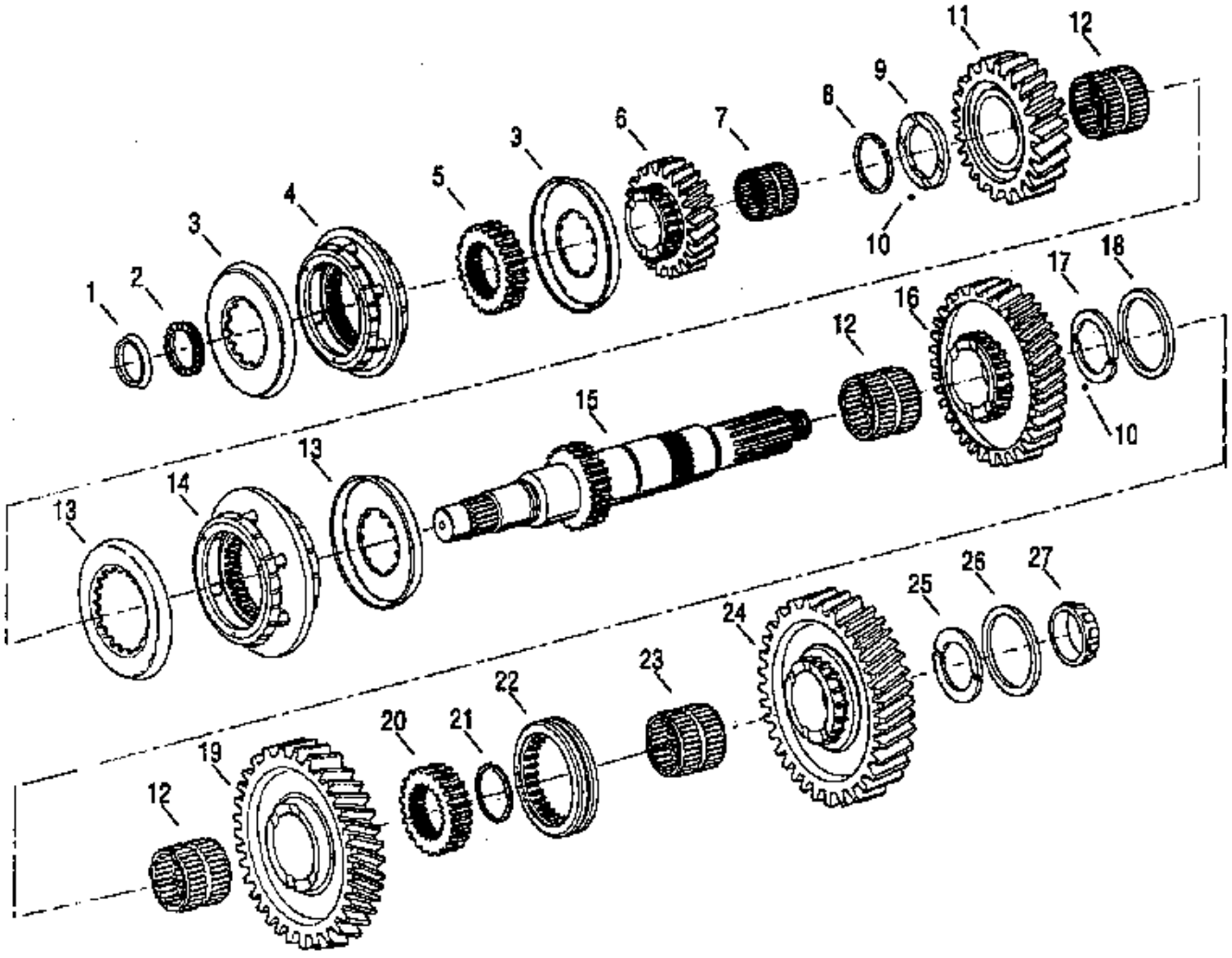
ITEM	PART NO.	QTY.	DESCRIPTION
1	72634-24	1.00	SHIFT BAR HOUSING
2	72261-50	1.00	GASKET
3	72261-51	11.00	STEEL BALL
4	72261-52	3.00	SPRING
5	72261-53	1.00	PLUG,1 INCH
6	72261-54	1.00	GASKET
7	72634-25	1.00	SPACER
8	72261-56	1.00	SPRING
9	72634-26	1.00	REVERSE PLUNGER
10	72634-27	1.00	PLUG
11	72634-28	14.00	CAPSCREW,3/8-16 UNCX1
12	72634-29	1.00	BALL RETAINER-REVERSE
13	72261-59	3.00	BRACKET
14	72634-30	1.00	PLUG
15	72634-31	1.00	GASKET
19	72634-32	2.00	PIN
20	72261-62	4.00	CAPSCREW,3/8-16 UNCX1
21	72634-33	1.00	FRONT SHIFT BAR RETAINER
22	72634-64	1.00	REAR SHIFT BAR RETAINER
23	72634-34	1.00	YOKE BAR 1ST/REV
24	72634-35	1.00	YOKE BAR 2ND/3RD
25	72634-36	1.00	YOKE BAR 4TH/5TH
26	72261-68	1.00	YOKE BAR 1ST/REV
27	72261-69	4.00	PIN
28	72261-70	1.00	FRONT SPACER
29	72261-71	2.00	REAR SPACER
30	72634-37	1.00	SHIFT BLOCK, 1ST/REV
31	72634-38	1.00	REVERSE BLOCK
32	72634-39	1.00	ACTUATOR
33	72261-75	1.00	PIN
35	72261-76	1.00	SPRING
36	72634-40	1.00	YOKE, 1ST/REV
37	72261-78	1.00	PIN
38	72634-41	1.00	YOKE,2ND/3RD
39	72634-42	1.00	YOKE,4TH/5TH
40	72261-81	4.00	BUSHING
*	72634-43	1.00	GASKIT KIT
*	72634-44	1.00	SHIFT BAR HOUSING ASSEMBLY KIT

SHIFT BAR HOUSING ASSEMBLY



ITEM	PART NO.	QTY.	DESCRIPTION
1	72261-84	2.00	BEARING RACE
2	72261-85	1.00	BEARING
3	72634-45	2.00	SYNCHRONIZER CUP
4	72634-46	1.00	SYNCHRONIZER ASSEMBLY 4/5
5	72634-47	1.00	CLUTCH HUB 4/5
6	72634-48	1.00	4TH GEAR, MAIN SHAFT
7	72634-49	1.00	BEARING
8	72634-50	1.00	SNAP RING
9	72261-92	1.00	WASHER
10	72261-93	2.00	STEEL BALL
11	72634-51	1.00	3RD GEAR,MAIN SHAFT
12	72634-52	3.00	BEARING
13	72634-53	2.00	SYNCHRONIZER CUP
14	72634-54	1.00	SYNCHRONIZER ASSEMBLY 2/3
15	72634-55	1.00	MAIN SHAFT
16	72634-56	1.00	2ND GEAR,MAIN SHAFT
17	72261-100	2.00	SPLIT WASHER
18	72261-101	1.00	RETAINER
19	72634-57	1.00	REVERSE GEAR,MAIN SHAFT
20	72634-58	1.00	CLUTCH HUB, 1/REV
21	72261-104	1.00	SNAP RING
22	72634-59	1.00	SLIDING CLUTCH
23	72634-60	1.00	BEARING
24	72634-61	1.00	1ST GEAR, MAIN SHAFT
25	72261-108	2.00	SPLIT WASHER
26	72261-109	1.00	RETAINER
27	72261-110	1.00	BEARING CONE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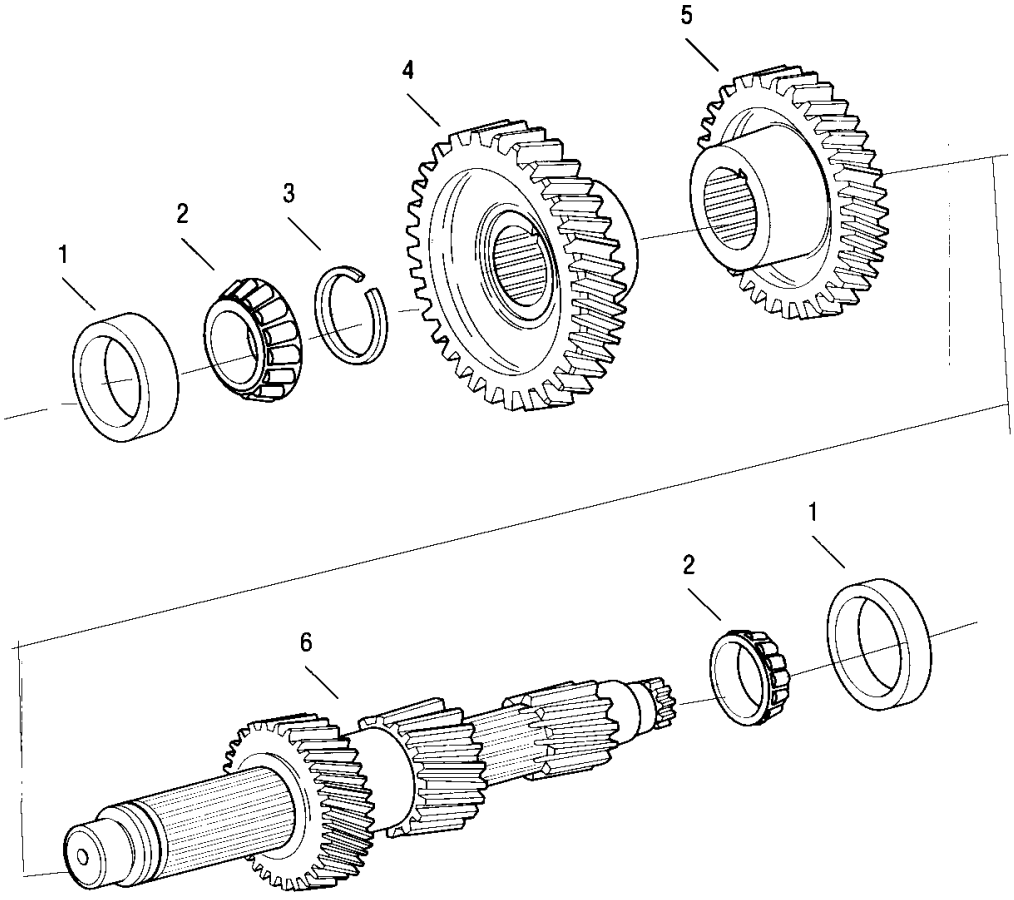
ITEM	PART NO.	QTY.	DESCRIPTION
1	72261-117	2.00	BEARING CUP
2	72261-118	2.00	BEARING CONE
3	72261-119	1.00	SNAP RING
4	72634-62	1.00	DRIVE GEAR-COUNTER SHAFT
5	72634-63	1.00	4TH GEAR-COUNTER SHAFT
6	72634-64	1.00	COUNTER SHAFT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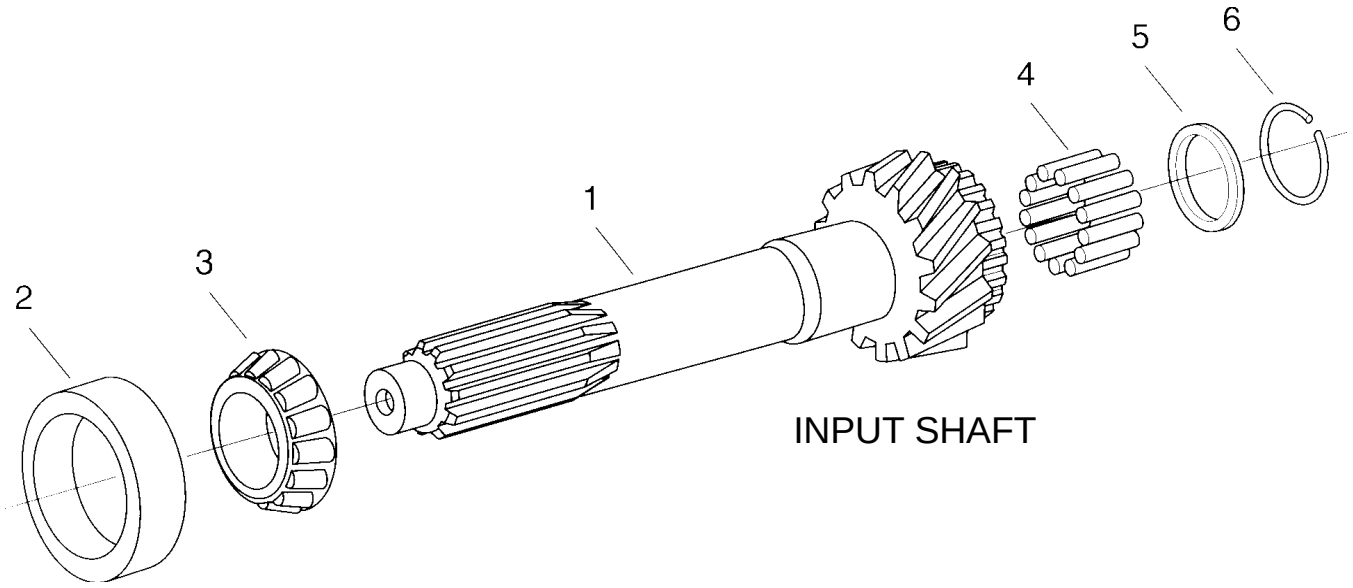
ITEM	PART NO.	QTY.	DESCRIPTION

INPUT SHAFT ASSEMBLY

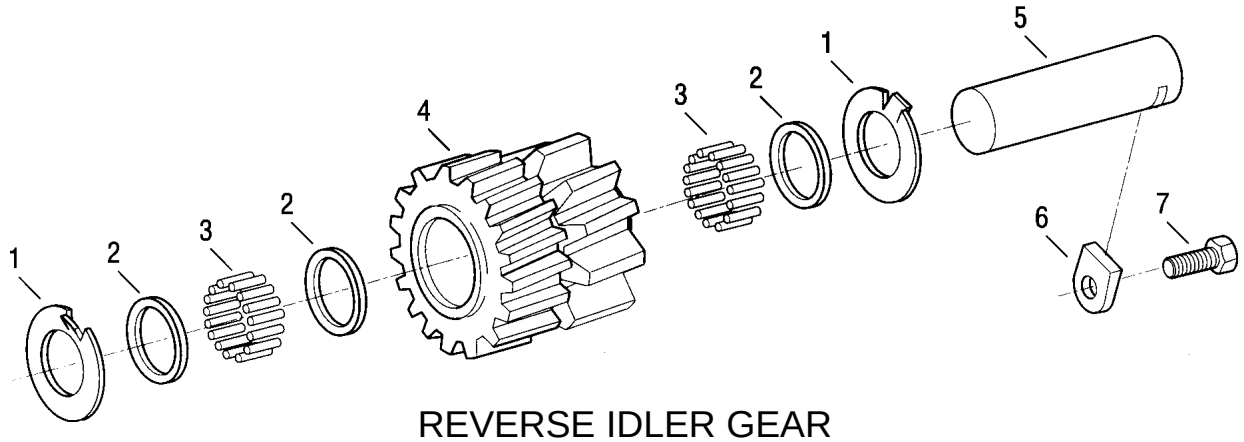
1 ..... 72634-02 ..... 1.00 ..... INPUT SHAFT - 1.75 PUSH\PULL
2 ..... 72261-125 ..... 1.00 ..... BEARING CUP
3 ..... 72261-126 ..... 1.00 ..... BEARING CONE
4 ..... 72261-127 ..... 1.00 ..... BEARING
5 ..... 72261-128 ..... 1.00 ..... WASHER
6 ..... 72261-129 ..... 1.00 ..... SNAP RING

REVERSE IDLER ASSEMBLY

1 ..... 72261-130 ..... 2.00 ..... WASHER
2 ..... 72261-131 ..... 3.00 ..... SPACER
3 ..... 72261-132 ..... 52.00 ..... BEARING
4 ..... 72261-133 ..... 1.00 ..... IDLER GEAR
5 ..... 72261-134 ..... 1.00 ..... IDLER SHAFT
6 ..... 72261-135 ..... 1.00 ..... SHAFT LOCK
7 ..... 72261-48 ..... 1.00 ..... CAPSCREW, 3/8-16 UNC X 7/8

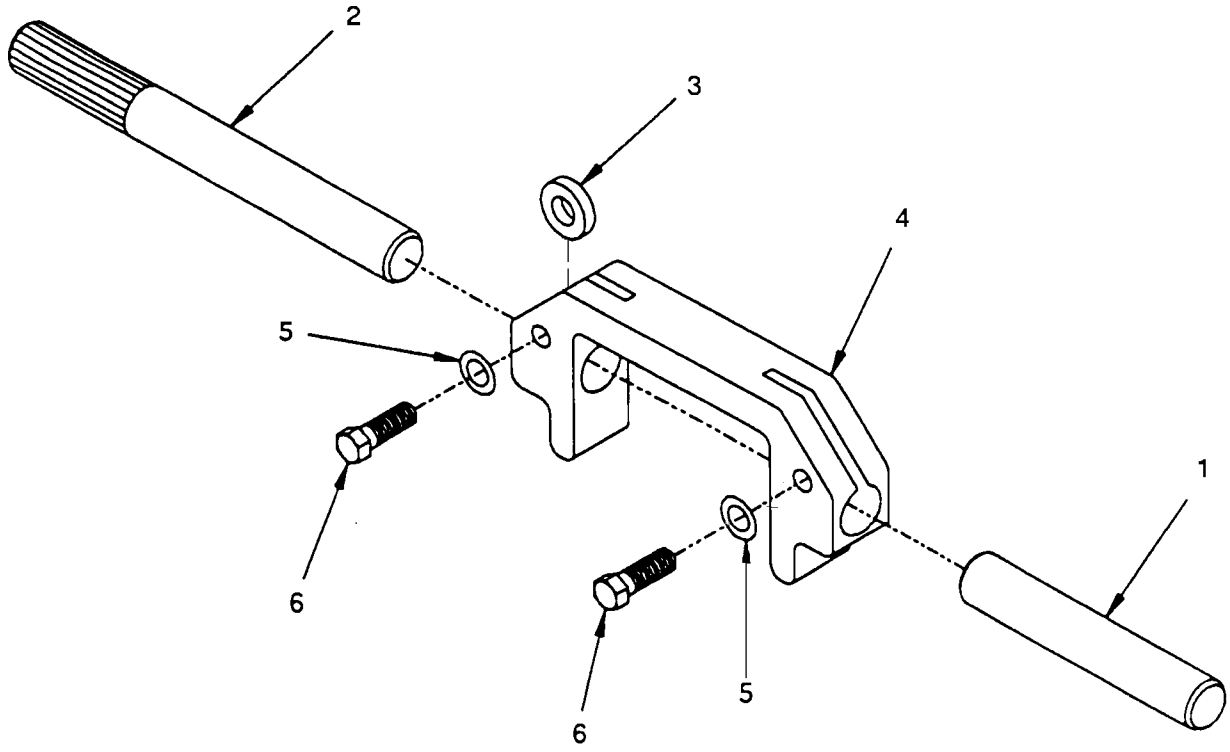


INPUT SHAFT



REVERSE IDLER GEAR ASSEMBLY

ITEM	PART NO.	QTY.	DESCRIPTION
1	72261-136	1.00	CLUTCH RELEASE SHAFT, RH
2	72261-137	1.00	CLUTCH RELEASE SHAFT, LH
3	72261-138	1.00	CLUTCH RELEASE SHAFT KEY
4	72261-139	1.00	CLUTCH RELEASE YOKE
5	72261-140	2.00	LOCKWASHER, 7//16
6	72634-01	2.00	CAPSCREW, 7/16-14 X 1-1/4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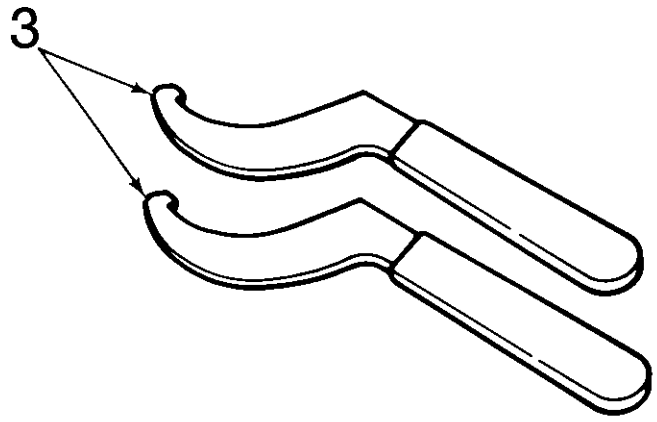
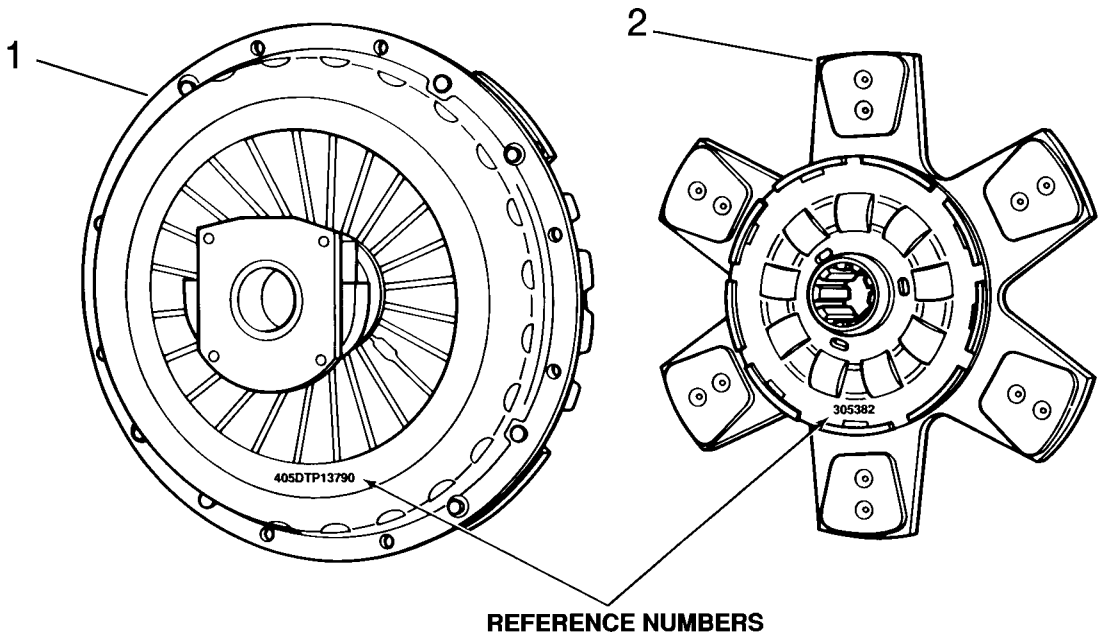
ITEM	PART NO.	QTY.	DESCRIPTION
1	72271-02	1.00	PRESSURE PLATE ASSEMBLY, 14"
2	72271-01	1.00	CLUTCH DRIVEN DISC, 14"
3	72271-03	1.00	ADJUSTING SPANNER WRENCH SET
4	72271-04	1.00	CLUTCH RELEASE BEARING ASSEMBLY

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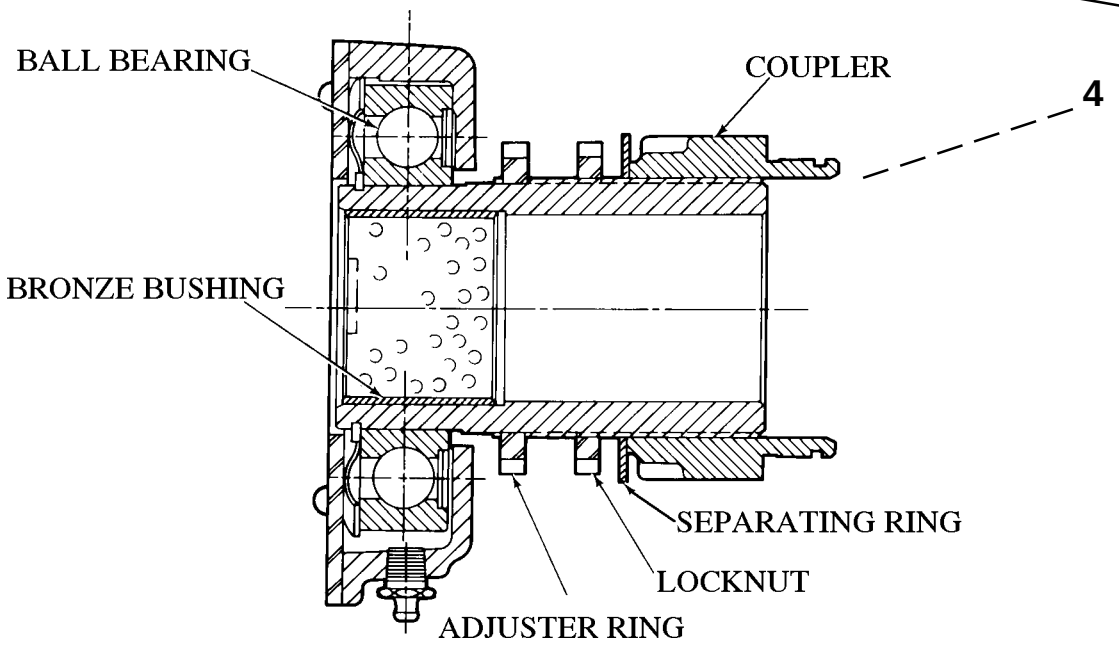
BALL BEARING
COUPLER
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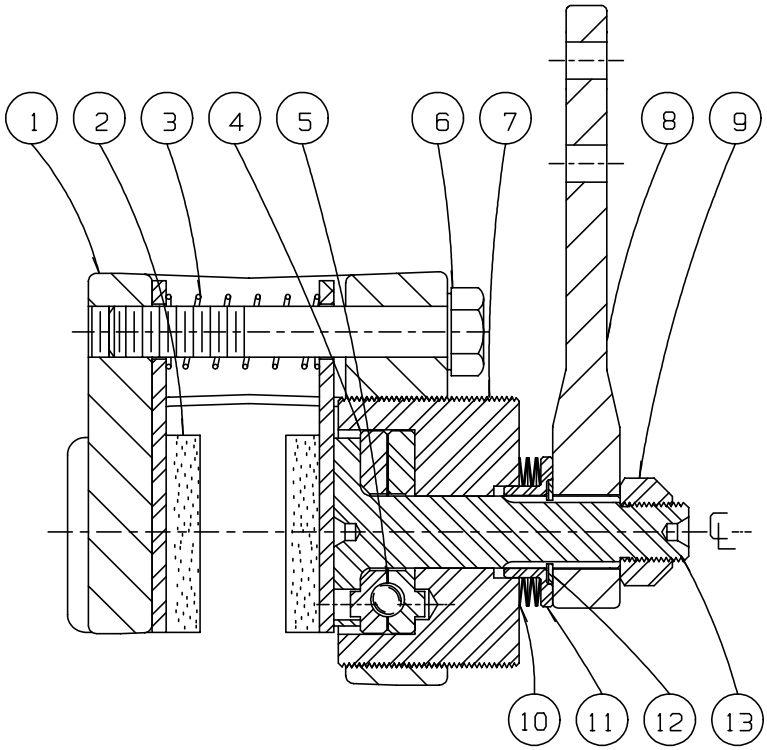
BRONZE BUSHING
SEPARATING RING
LOCKNUT
ADJUSTER RING

ITEM	PART NO.	QTY.	DESCRIPTION
1	72263-04	1.00	PARKING BRAKE HOUSING
2	72263-05	2.00	LINING ASSEMBLY
3	72263-06	1.00	LINING SPRING
4	72263-07	2.00	CAM PLATE
5	72263-08	3.00	BALL, CAM PLATE
6	72263-09	1.00	CAPSCREW, HOUSING
7	72263-10	1.00	BODY
8	72263-11	1.00	LEVER
9	72263-12	1.00	NUT, PISTON
10	72263-13	5.00	BELLEVILLE SPRING
11	72263-14	1.00	RETAINER, SPRING
12	72263-15	1.00	RETAINING RING
13	72263-16	1.00	PISTON
14	72263-17	1.00	CAPSCREW, PISTON LOCKING
NS	72263-18	1.00	LUBRICANT
NS	72263-01	1.00	PISTON & MODULE ASSEMBLY KIT
			INCLUDES ITEMS: 4, 5, 7, 8, 9, 10, 11, 12, 13 & LUBRICANT
NS	72263-02	1.00	REPAIR KIT - INCLUDES ITEMS : 2 & 3
NS	72263-03	1.00	LINING KIT - INCLUDES ITEM 2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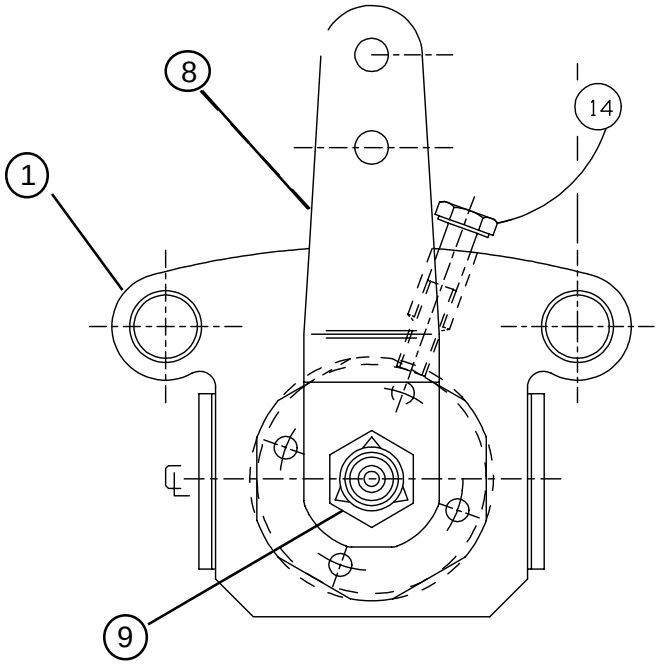
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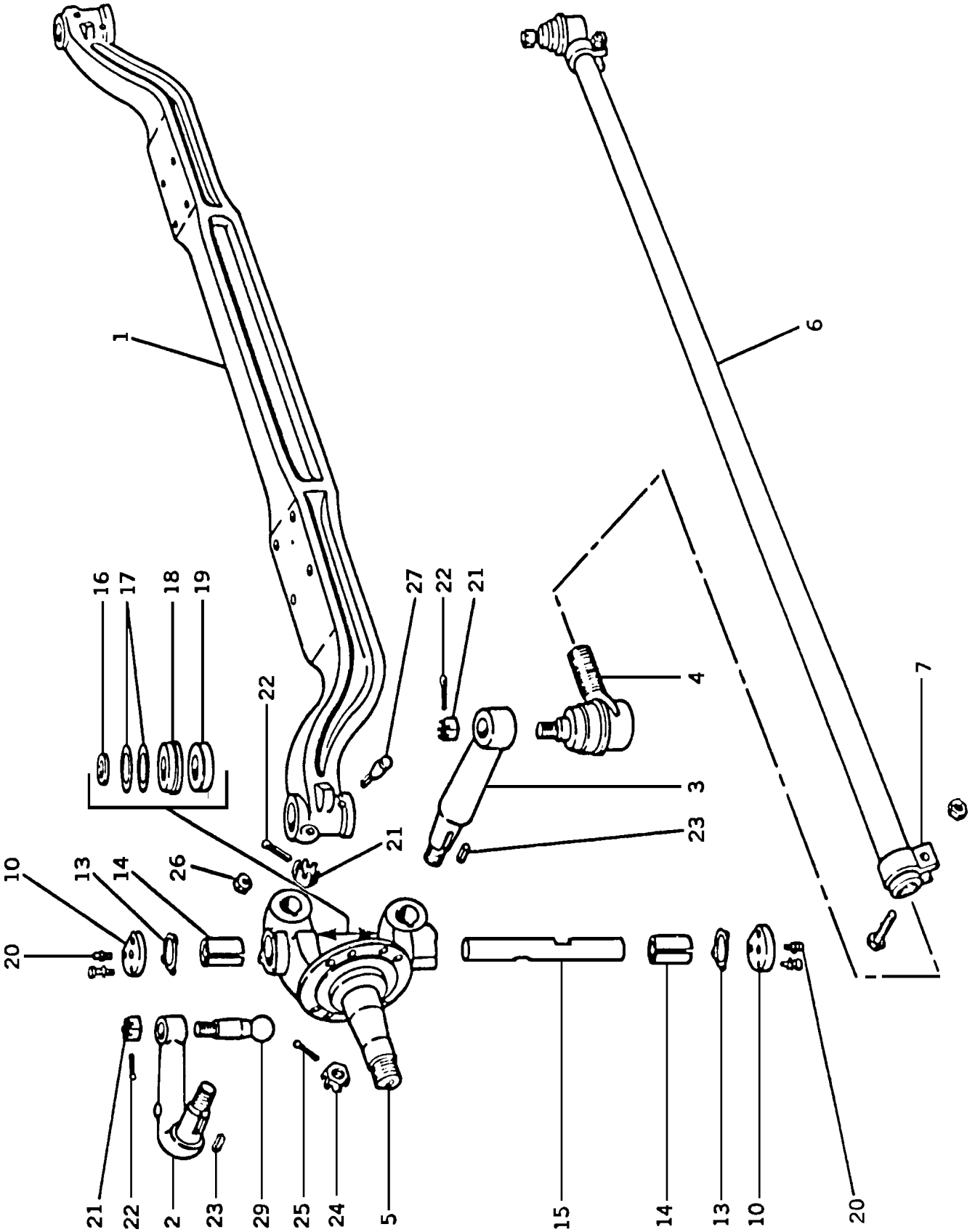
ITEM	PART NO.	QTY.	DESCRIPTION
1	946170644	1.00	CENTER AXLE
2	40324	1.00	STEERING ARM
3	94617045	1.00	TIE ROD ARM, RH
	94617046	1.00	TIE ROD ARM, LH
4	946170647	1.00	TIE ROD END ASSEMBLY, RH
	946170648	1.00	TIE ROD END ASSEMBLY, LH
5	946170649	1.00	STEERING KNUCKLE, RH
	946170650	1.00	STEERING KNUCKLE, LH
6	946170651	1.00	CROSS TUBE ASSEMBLY
7	946170652	2.00	CROSS TUBE CLAMPS
10	946170653	4.00	KNUCKLE PIN CAP
13	946170654	4.00	KNUCKLE PIN CAP GASKET
14	946170655	4.00	KNUCKLE PIN BUSHING
15	946170656	2.00	KNUCKLE STEERING PIN
16	946170657	4.00	OIL SEAL ASSY.
17	946170658	AR	SHIM, .010
	946170659	AR	SHIM, .005
18	946170660	2.00	OIL SEAL ASSY.
19	946170661	2.00	THRUST BEARING
20	946170662	2.00	GREASE FITTING
21	946170663	4.00	STEERING & CROSS TUBE ARM NUT
22	946170664	5.00	STEERING & CROSS TUBE ARM COTTER
23	846087219	4.00	KEY
24	946170665	2.00	CROSS TUBE ARM NUT
25	846087010	2.00	COTTER KEY
26	946170666	4.00	DRAW KEY NUT
26	946170667	4.00	UPPER STEERING KNUCKLE DRAW KEY
27	946170668	1.00	LOWER STEERING KNUCKLE DRAW KEY
NS	41067	1.00	FRONT AXLE LOWER PIVOT PLATE WITH MOUNTING
NS	72383	2.00	BUSHING, 2.50 ID X 3.00
NS	40467	2.00	FRONT AXLE MOUNTING PAD WITH MOUNTING
NS	106000133	1.00	FRONT AXLE PIVOT SHAFT
NS	106000134	1.00	FRONT AXLE PIVOT SHAFT RETAINER
NS	848039230	2.00	STEERING CYLINDER BALL JOINT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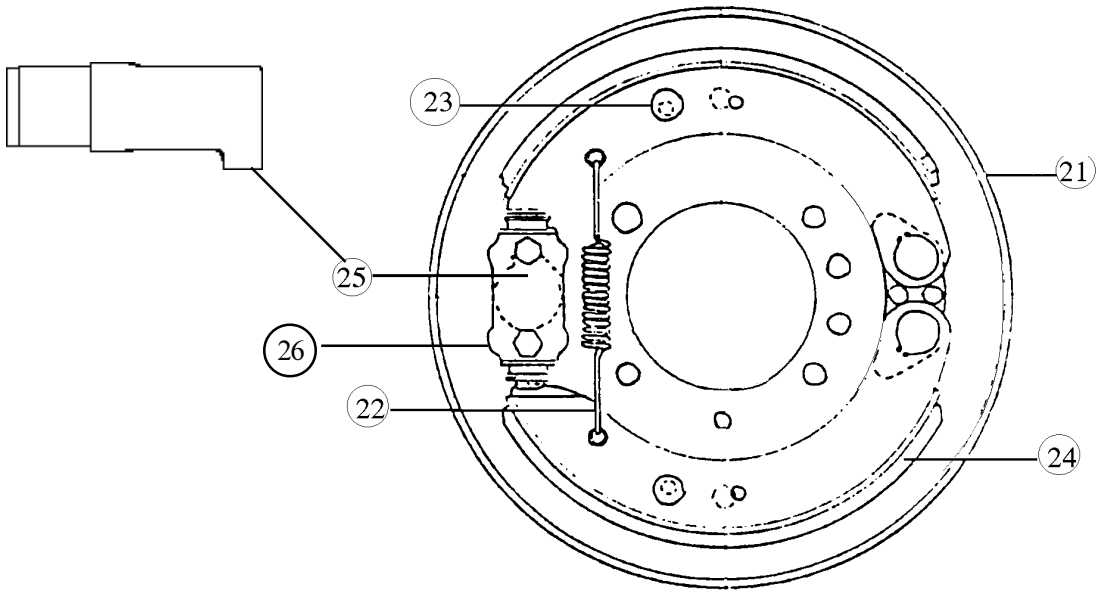
ITEM	PART NO.	QTY.	DESCRIPTION
1	946170699	2.00	HUB CAP
2	946170670	2.00	HUB CAP GASKET
3	946170671	2.00	OUTER NUT
4	946170672	2.00	LOCKWASHER
5	946170673	2.00	LOCKWASHER, PIERCED
6	946170674	2.00	INNER NUT
7	845111108	2.00	OUTER CONE
8	845111321	2.00	OUTER CUP
9	946170675	2.00	HUB & CUP ASSEMBLY
10	946170676	10.00	WHEEL STUD, LH
	946170677	10.00	WHEEL STUD, RH
11	946170678	2.00	INNER CUP
12	846087461	2.00	INNER CONE
13	946170679	2.00	OIL SEAL
	946170680	2.00	GREASE SEAL
14	946170681	12.00	HUB CAP SCREW
15	946170682	12.00	WASHER
16	946185001	10.00	STUD NUT, LH
	946185002	10.00	STUD NUT, RH
17	946170683	6.00	SCREW
19	946170684	1.00	BRAKE DRUM
20	946170685	1.00	OIL SLINGER
21	846175058	1.00	BACK PLATE, RH
	846175059	1.00	BACK PLATE, LH
22	846175061	2.00	SPRING
23	846175062	4.00	RETAINER ANCHOR
24	946170686	4.00	BRAKE SHOES 4"X15"
25	953503087	2.00	WHEEL CYLINDER ASSEMBLY
26	953503088	2.00	PLUNGER HOUSING ASSEMBLY
NS	953503096	1.00	WHEEL CYLINDER KIT
NS	72094	2.00	RIM, 8.0 X 20, 10 BOLT
NS	846172101	2.00	TIRE, 10 X 20, 12 PR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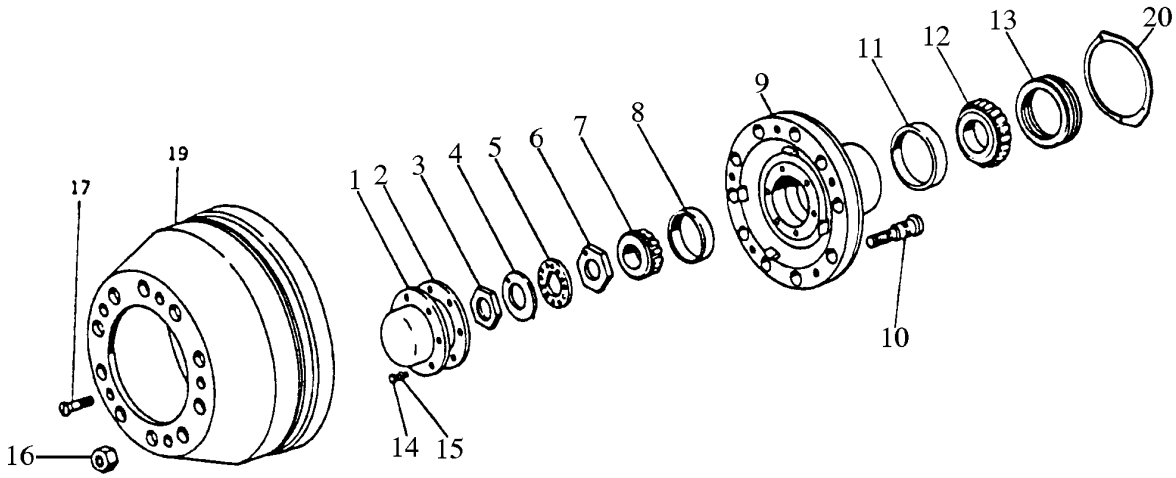
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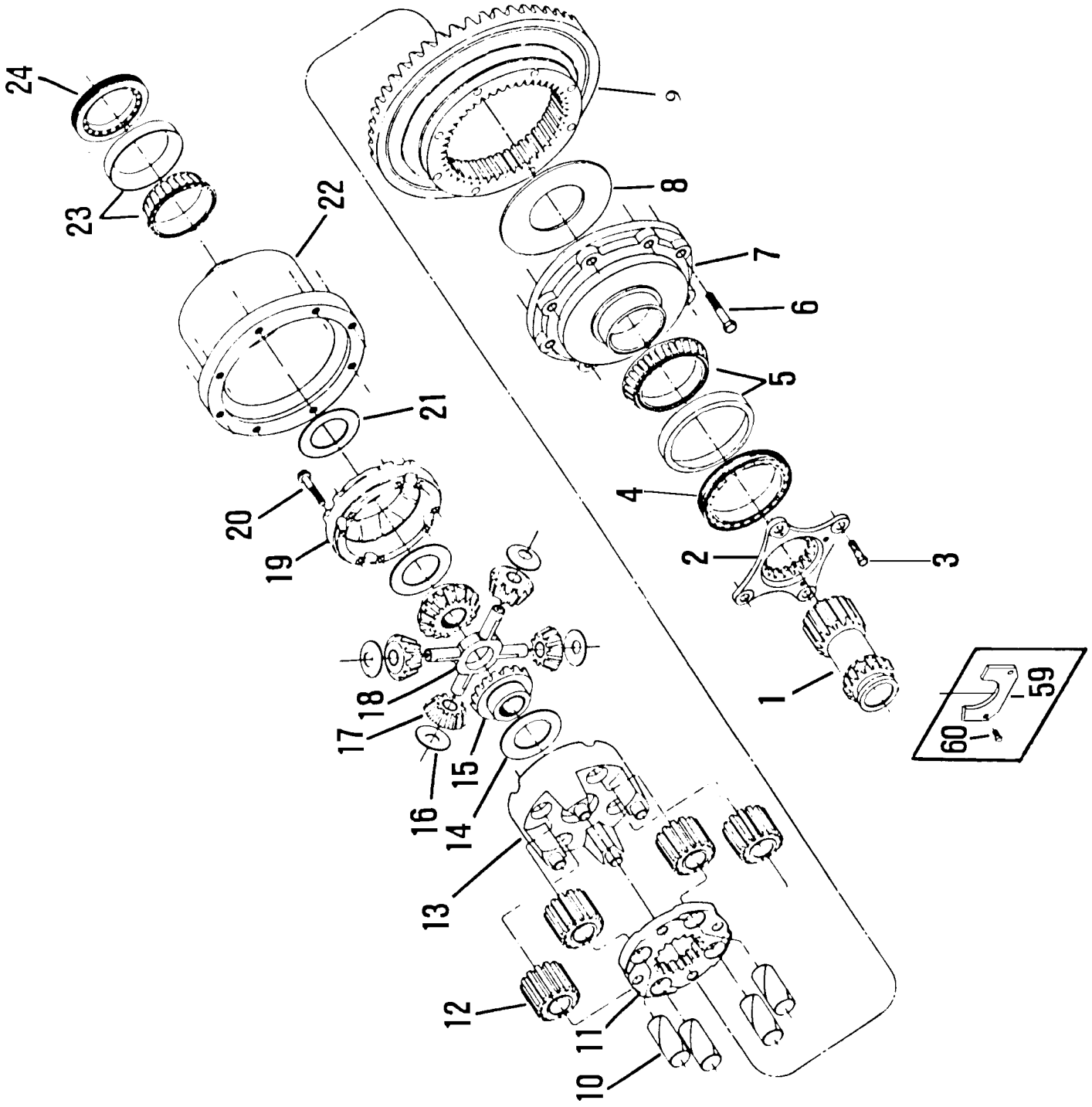
ITEM	PART NO.	QTY.	DESCRIPTION
1	946171032	1.00	SUN GEAR
2	946171033	1.00	SUN GEAR RETAINER PLATE
3	946171034	4.00	BOLT, 5/8-18 X 1-3/8, GR8
4	946171035	1.00	ADJUSTING RING, DIFFERENTIAL BEARING, (LH)
5	946171036	1.00	DIFFERENTIAL BEARING, LH
6	946171037	8.00	BOLT, 1/2-13 X 3-1/4
7	946171038	1.00	DIFFERENTIAL SUPPORT CASE, LH
8	946171039	1.00	SUPPORT CASE THRUST PLATE
9	946171059	1.00	RING GEAR AND PINION (1 SET)
10	946171040	4.00	PLANET GEAR SHAFT
11	946171041	1.00	PLANET GEAR MOUNTING PLATE
12	946171042	4.00	PLANET GEAR
*13	946171043	1.00	DIFFERENTIAL CASE (LH HALF)
*14	946171044	2.00	THRUST WASHER, DIFFERENTIAL GEAR
*15	946171045	2.00	DIFFERENTIAL GEAR
*16	946171046	4.00	THRUST WASHER, DIFFERENTIAL PINION
*17	946171047	4.00	DIFFERENTIAL PINION
*18	946171048	1.00	CROSS SHAFT, DIFFERENTIAL
*19	946171049	1.00	DIFFERENTIAL CASE (RH HALF)
NS	946171050	1.00	KIT, DIFFERENTIAL CASE INNER PARTS (INCLUDES ITEMS: 14, 15, 16, 17, 18)
20	946171051	8.00	BOLT, 7/16-14 X 3
21	946171052	1.00	THRUST WASHER, SUPPORT CASE, DIFFERENTIAL
NS	946171053	1.00	KIT, DIFFERENTIAL CASE (INCLUDES ITEMS: 8, 13, 19, 20, 21)
22	946171054	1.00	DIFFERENTIAL SUPPORT CASE (RH HALF)
23	946171055	1.00	DIFFERENTIAL BEARING, (RH)
24	946171056	1.00	ADJUSTING RING, DIFFERENTIAL BEARING (RH)
59	946171057	1.00	DOUBLE REDUCTION PLATE
60	946171058	2.00	BOLT, DOUBLE REDUCTION PLATE

* ***MARKED PARTS CANNOT BE PURCHASED SEPARATELY***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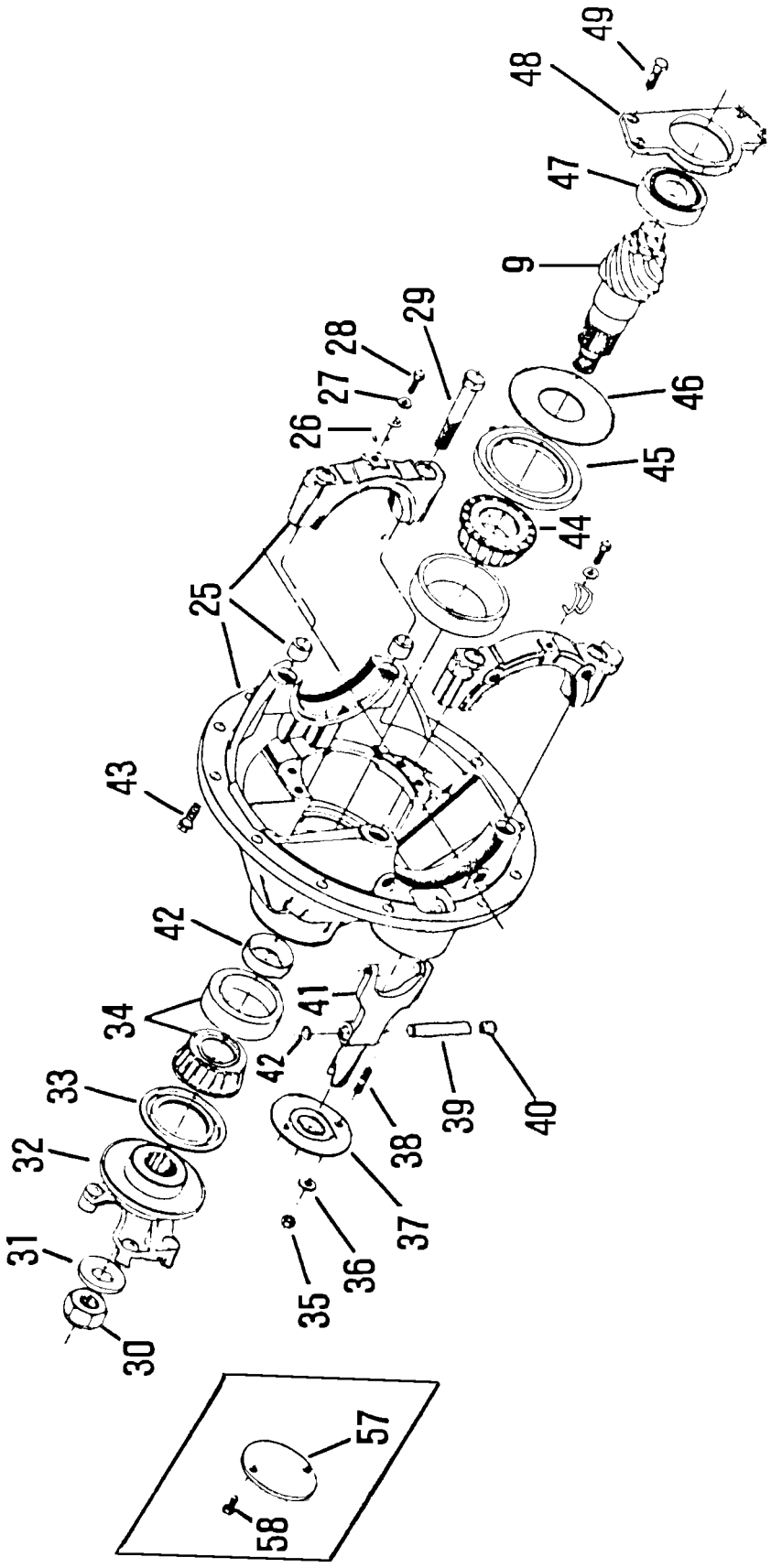
ITEM	PART NO.	QTY.	DESCRIPTION
9	946171059	1.00	RING GEAR AND PINION (1 SET)
25	946171060	1.00	CARRIER HOUSING SUB ASSEMBLY
26	946171061	2.00	ADJUSTING RING RETAINER
27	946171062	2.00	WASHER, FLAT
28	80221	2.00	BOLT, ADJUSTING RING RETAINER, 3/8-16 X 1 GR.5
29	946171063	4.00	BOLT, DIFFERENTIAL BRG CAP, 5/8-18 X 4.25, GR.8
30	946171064	1.00	TORQUE PEVAILING PINION NUT, 1-1/4 - 12
31	946171065	1.00	WASHER PINION NUT
32	946171066	1.00	END YOKE ASSEMBLY
33	946171067	1.00	OIL SEAL
34	946171068	1.00	PINION BEARING (OUTER)
35	946171069	2.00	NUT, SHIFT MOTOR,7/16 - 20
36	946171070	2.00	WASHER, SHIFT MOTOR, 7/16
37	946171071	1.00	SHIFT FORK SEAL
38	946171072	2.00	STUD, SHIFT MOTOR, 7/16-14 X 7/16-20, 8 GR.
39	946171073	1.00	SHIFT FORK SHAFT
40	946171074	1.00	SET SCREW, 3/4-16 X 1/2 5 GR.
41	946171075	1.00	SHIFT FORK SEAL
42	946171076	AR	PINION PRELOAD SPACER
43	946171077	8.00	BOLT, CARRIER MOUNTING, 1/2-13 X 1.375, 8 GR.
44	946171078	1.00	PINION BEARING (INNER)
45	946171079	1.00	SEAL, PINION, OIL SLINGER
46	946171080	AR	PINION, OIL SLINGER
47	946171081	1.00	PINION, ROLLER BEARING
48	946171082	1.00	PINION ROLLING BEARING RETAINER
49	946171083	4.00	BOLT, ROLLER BRG RETAINER, 7/16-14 X 1, 8 GR.
57	946171084	1.00	COVER, SHIFT HOUSING
58	946171085	2.00	BOLT, SHIFT HOUSING COVER
NS	72987	1.00	TWO SPEED SHIFTER ASSY

946171146	KIT	CARRIER ASSEMBLY (INCLUDES ITEMS: 25, 29, 35, 36, 37, 38, 43)
946171148	KIT	RING GEAR AND PINION ASSEMBLY (INCLUDES ITEMS: 6, 9, 30, 31, 33, 34, 44, 47)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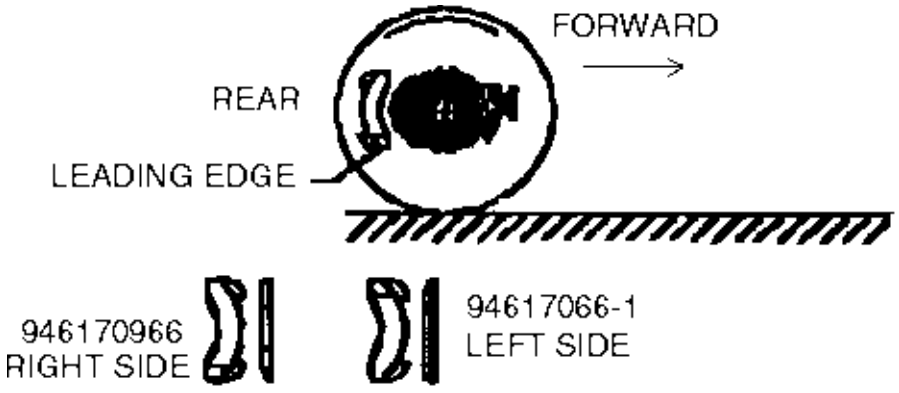
ITEM	PART NO.	QTY.	DESCRIPTION
1	946170966	1.00	BRAKE LINING, OUTER PAD, RH
1a	946170966-1	1.00	BRAKE LINING, OUTER PAD, LH
2	946170967	1.00	BRAKE LINING, INNER PAD
*3	946170968	2.00	DUST BOOT SHIELD
*4	946170969	2.00	DUST BOOT, BLACK
*5	946170971	2.00	PISTON
*6	946170972	2.00	PISTON SEAL, BLACK
*7	SEE NOTE	1.00	CALIPER HOUSING
*8	946170975	2.00	SEAT, TUBE INSERT
9	946170976	1.00	SCREW, BLEEDER
10	946170977	1.00	BRACKET, CALIPER, LH
	946170978	1.00	BRACKET, CALIPER, RH
11	946170979	1.00	SPRING, COMPRESSION
12	946170980	1.00	KEY, CALIPER SUPPORT
13	946170981	1.00	SCREW, SOCKET HEAD
15	946170983	1.00	DISC
16	946170984	9.00	HEX BOLT

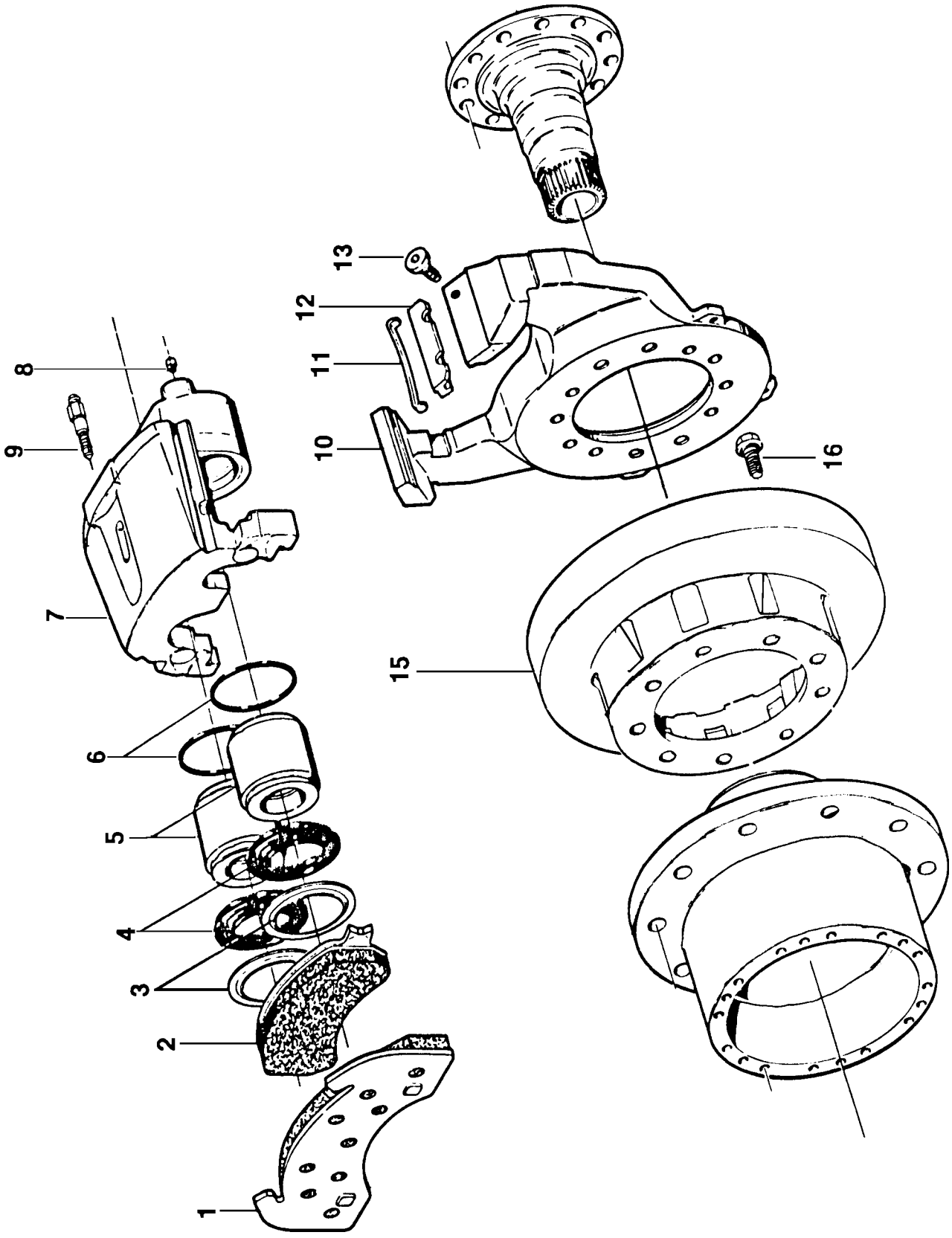
NOTE:

	72715	1.00	KIT, CALIPER ASSEMBLY (INCLUDES ITEMS : 3-8)

MARKED ITEMS CANNOT BE PURCHASED SEPARATELY.



FOR CORRECT ORIENTATION OF BRAKE PAD. THE CHAMFERED EDGE IS POSITIONED AS THE LEADING EDGE OF THE LINING DURING FORWARD MOTION OF THE VEHICLE.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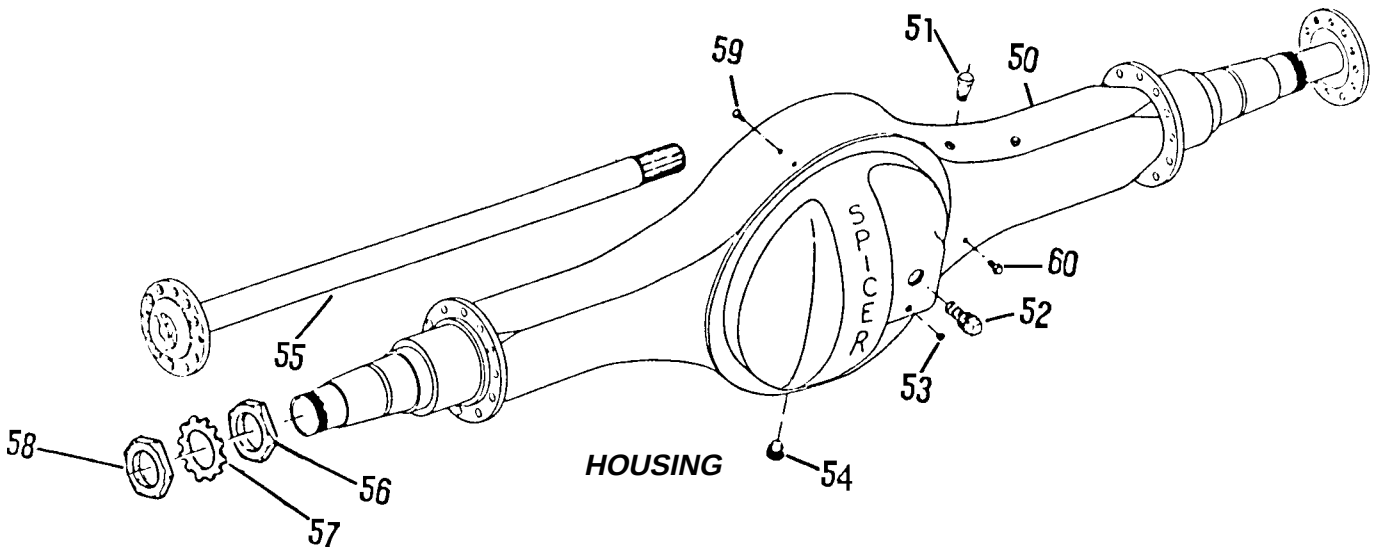
ITEM	PART NO.	QTY.	DESCRIPTION
			HOUSING
50	946171135	1.00	AXLE HOUSING
51	946171136	1.00	VENT
52	946171137	1.00	PLUG, MAGNETIC, PIPE FILL
53	946171138	1.00	PIPE PLUG, HEAT SENSOR HOLE
54	946171139	1.00	PLUG, MAGNETIC, PIPE DRAIN
55	946171140	2.00	AXLE SHAFT
56	946171141	1.00	NUT, SPINDLE, INNER
57	946171142	1.00	LOCKWASHER
58	946171143	1.00	NUT, SPINDLE, OUTER
59	946171144	4.00	BOLT, 5/16-24 X 3/4, GR8
60	946171145	1.00	BOLT, 3/8-24 X 3/4, GR8
			WHEEL END REDUCTION (PLANETARY)
REF	946171250		FLANGE ASSEMBLY, DRIVE
1	946171251	1.00	FLANGE, DRIVE PLANETARY
2	946171252	1.00	PLUG, PIPE RECESSED, DRIVE
3	946171253	1.00	PLUG, PIPE RECESSED, DRIVE
4	946171254	18.00	SELF-LOCKING HEX SCREW
5	946171255	1.00	WASHER, DRIVE FLANGE
6	946171256	1.00	BEARING, SINGLE ROLLER
7	946171257	3.00	PLANET GEAR WASHER
8	946171258	3.00	SPUR GEAR
9	946171259	3.00	ROLL PIN
10	946171260	3.00	PLANET GEAR SHAFT
11	946171261	1.00	WASHER, DRIVE FLANGE
12	946171262	1.00	SNAP RING
13	946171263	1.00	SPUR GEAR
14	946171264	1.00	FLAT SPACER
15	946171265	1.00	PLANETARY RING GEAR
16	946171266	1.00	ROLL PIN
17	946171267	1.00	LOCK NUT
18	946171268	1.00	ROLLER BEARING CONE
19	946171269	1.00	ROLLER BEARING CUP
20	946171270	10.00	WHEEL NUT
21	946171271	1.00	PLANETARY HUB
22	946171272	10.00	HEX BOLT
23	946171273	1.00	ROLLER BEARING CUP
24	946171274	1.00	ROLLERBEARING CONE
25	946171275	1.00	OIL SEAL
NS	72342	2.00	REAR RIM, 7.5 X 20, 10 BLOT
NS	846172101	2.00	TIRE, 10.00-20 X 12PR
	946171147	KIT	PLANETARY PARTS KIT (INCLUDES ITEMS: 1, 6, 10, 12)



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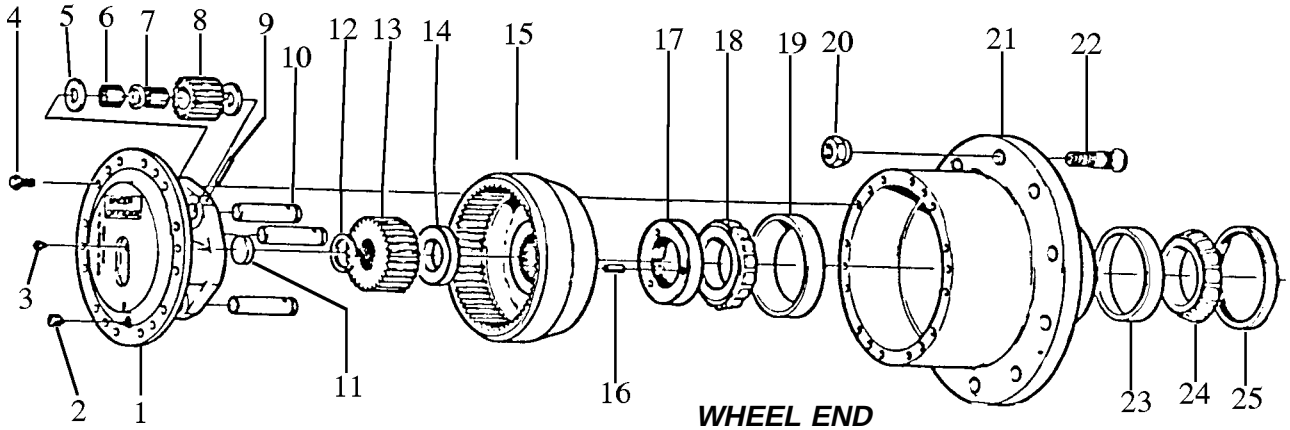
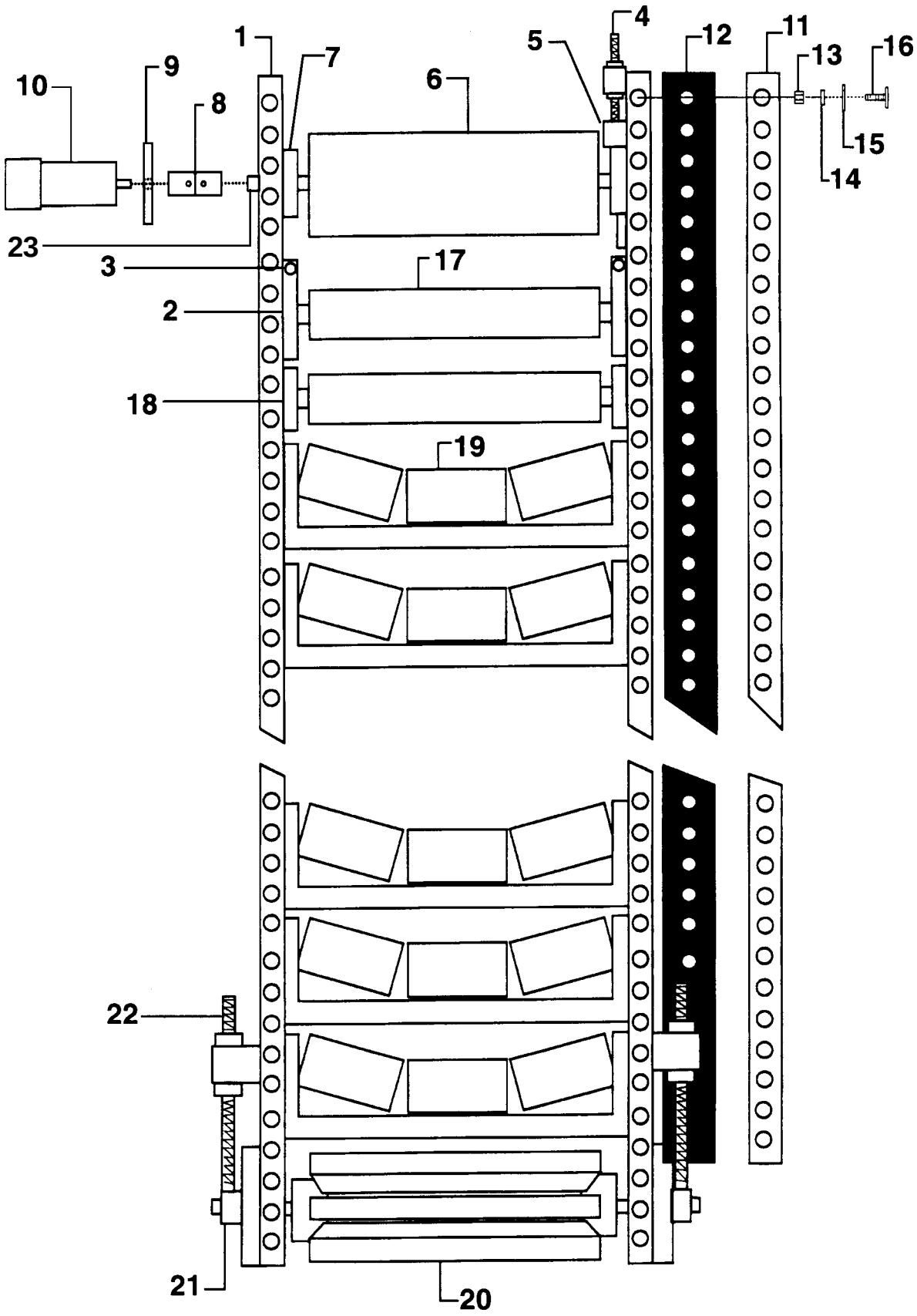


WHEEL END (PLANETARY)

ITEM	PART NO.	QTY.	DESCRIPTION
1	40343	1.00	RH CONVEYOR WITH MOUNTING
2	106003046	2.00	BELT TIGHTENER BRACKET
3	107000029	2.00	IDLER ROLLER ROD
4	106007199	1.00	ADJUSTING SCREW
5	207001095	1.00	ADJUSTING PLATE WITH MOUNTING
6	307000815	1.00	HEAD PULLEY
7	845311009	2.00	FLANGE BEARING, 4-BOLT
NS	40477	4.00	FLAT WASHER
8	207001186	1.00	COUPLING (MODIFIED)
8A	70452	1.00	KEY,SQ,.375X2 (CONVEYOR SIDE)
9	306001174	1.00	TORQUE ARM
10	953111045	1.00	HYDRAULIC MOTOR
10A	REF	1.00	KEY,SQ,.313X1.25 (MOTOR SIDE)
11	206000045	2.00	RETAINER STRIP, CONVEYOR LAGGING
12	106000110	2.00	LAGGING, CONV BELT .25 X 4.00 X 216
13	80038	36.00	HEX NUT, 3/8-16 UNC
14	80162	36.00	LOCKWASHER, 3/8
15	80142	36.00	FLAT WASHER, 3/8
16	871020102	36.00	CARRIAGE BOLT, 3/8-16 UNC X 1-1/4
17	848031703	3.00	RETURN IDLERS
17A	848039014	6.00	END SHAFT, 2.50
17B	72635	6.00	PIN,RETURN IDLER, 3" LG
18	40712	4.00	IDLER BRACKET
19	848031702	7.00	TROUGHING IDLERS
19A	848039010	2.00	ROLLERS,END,4.50 DIA X 6.25
19B	848039017	2.00	SHAFT,STUB
19C	848039011	1.00	ROLLERS,CENTER,4.50 DIA X 8
19D	848039018	1.00	BEARING,SHAFT,25/8" LG (CENTER)
19E	851500220	2.00	BEARING,CONVEYOR
20	72534	1.00	TAIL PULLEY
21	845282005	2.00	TAKE UP BEARING
22	106005801	2.00	ADJUSTING SCREW
23	106008031	1.00	SHAFT, HEAD PULLEY, 307000815
NS	871065533	2.00	LOCKNUT, 3/4-10, THIN
NS	106006161	1.00	WIPER, CONV BELT SCRAPER (HEAD PULLEY END)
NS	106008061	1.00	LINING, CHUTE .25 X 7.00 X 26.00 (TAIL PULLEY END)
NS	208262088	A/R	BELT TIGHTENER ASSEMBLY
NS	288268087	A/R	PULLEY IDLER ASSEMBLY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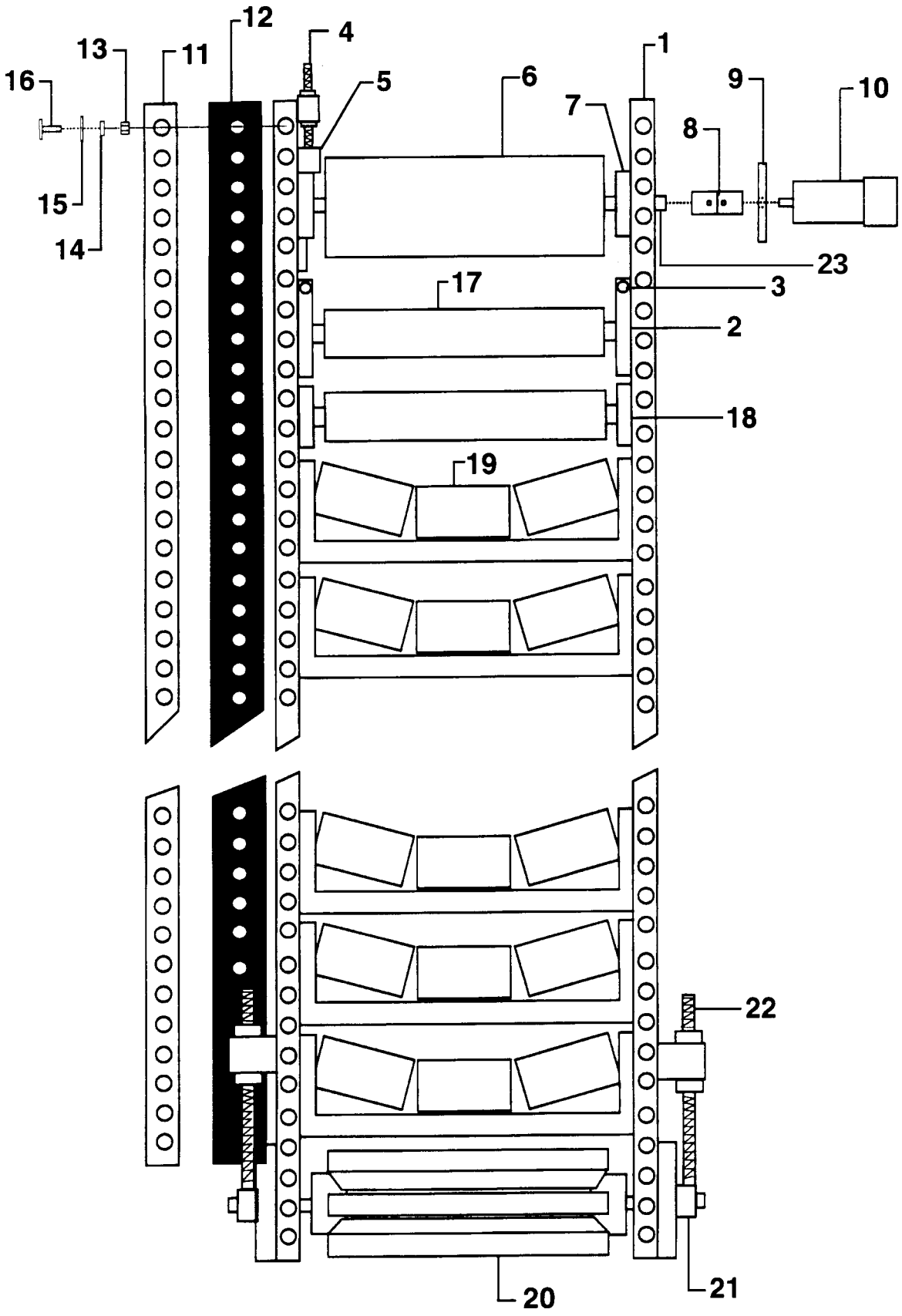
ITEM	PART NO.	QTY.	DESCRIPTION
1	40352	1.00	LH CONVEYOR WITH MOUNTING
2	106003046	2.00	BELT TIGHTENER BRACKET
3	107000029	2.00	IDLER ROLLER ROD
4	106007199	1.00	ADJUSTING SCREW
5	207001095	1.00	ADJUSTING PLATE WITH MOUNTING
6	307000815	1.00	HEAD PULLEY
7	845311009	2.00	FLANGE BEARING, 4-BOLT
NS	40477	4.00	FLAT WASHER
8	207001186	1.00	COUPLING (MODIFIED)
8A	70452	1.00	KEY,SQ,.375X2 (CONVEYOR SIDE)
9	306001174	1.00	TORQUE ARM
10	953111045	1.00	HYDRAULIC MOTOR
10A	REF	1.00	KEY,SQ,.313X1.25 (MOTOR SIDE)
11	206000045	2.00	RETAINER STRIP, CONVEYOR LAGGING
12	106000110	2.00	LAGGING, CONV BELT .25 X 4.00 X 216
13	80038	36.00	HEX NUT, 3/8-16 UNC
14	80162	36.00	LOCKWASHER, 3/8
15	80142	36.00	FLAT WASHER, 3/8
16	871020102	36.00	CARRIAGE BOLT, 3/8-16 UNC X 1-1/4
17	848031703	3.00	RETURN IDLERS
17A	848039014	6.00	END SHAFT, 2.50
17B	72635	6.00	PIN,RETURN IDLER, 3" LG
18	40712	4.00	IDLER BRACKET
19	848031702	7.00	TROUGHING IDLERS
19A	848039010	2.00	ROLLERS,END,4.50 DIA X 6.25
19B	848039017	2.00	SHAFT,STUB
19C	848039011	1.00	ROLLERS,CENTER,4.50 DIA X 8
19D	848039018	1.00	BEARING,SHAFT,25/8" LG (CENTER)
19E	851500220	2.00	BEARING,CONVEYOR
20	72534	1.00	TAIL PULLEY
21	845282005	2.00	TAKE UP BEARING
22	106005801	2.00	ADJUSTING SCREW
23	106008031	1.00	SHAFT, HEAD PULLEY, 307000815
NS	871065533	2.00	LOCKNUT, 3/4-10, THIN
NS	106006161	1.00	WIPER, CONV BELT SCRAPER (HEAD PULLEY END)
NS	106008061	1.00	LINING, CHUTE .25 X 7.00 X 26.00 (TAIL PULLEY END)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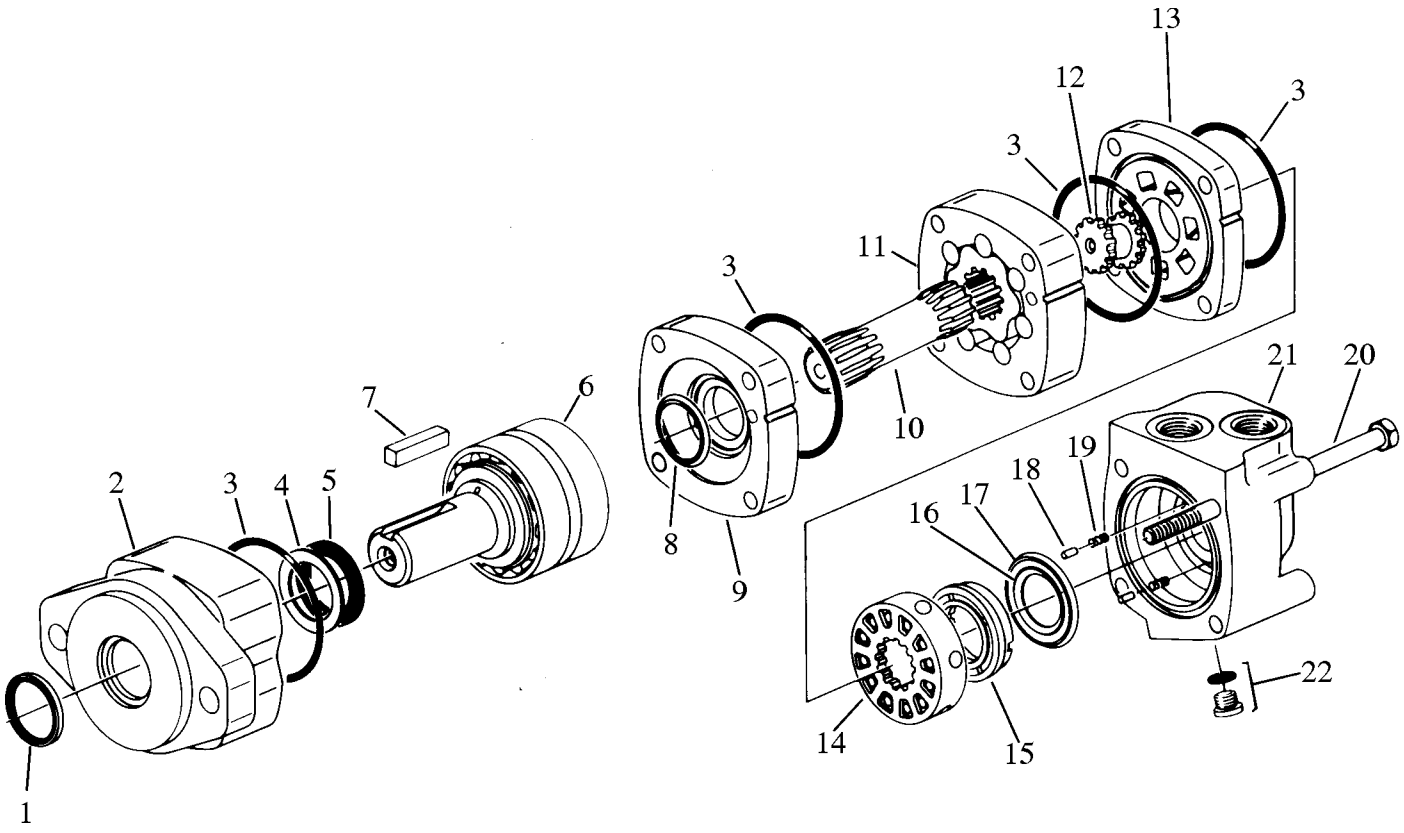
ITEM	PART NO.	QTY.	DESCRIPTION
1	36650-01	1.00	DUST SEAL
2	72725-01	1.00	BEARING HOUSING
3	36650-03	4.00	SEAL, 3" (76MM) ID
4	36650-04	1.00	RING BACKUP
5	36650-05	1.00	SHAFT SEAL
6	72725-02	1.00	SHAFT & BEARING KIT
7	72725-03	1.00	KEY (COMES WITH HYDRAULIC MOTOR)
8	32669	1.00	SHAFT FACE SEAL
9	35532-02	1.00	WEAR PLATE
10	36650-07	1.00	DRIVE
11	36650-08	1.00	GEROLER
12	32677	1.00	VALVE DRIVE
13	36650-09	1.00	VALVE PLATE
14	36650-10	1.00	VALVE
15	953119341	1.00	BALANCE RING
16	32684	1.00	INNER FACE SEAL
17	36650-11	1.00	OUTER FACE SEAL
18	32686	2.00	PIN
19	32687	2.00	SPRING
20	36650-12	4.00	BOLT, 6.47" (164.3MM)
21	72725-04	1.00	VALVE HOUSING
22	32690	1.00	PLUG ASSEMBLY, 7/16-20 UNF
NS	35200-01	KIT	HYDRAULIC MOTOR SEAL KIT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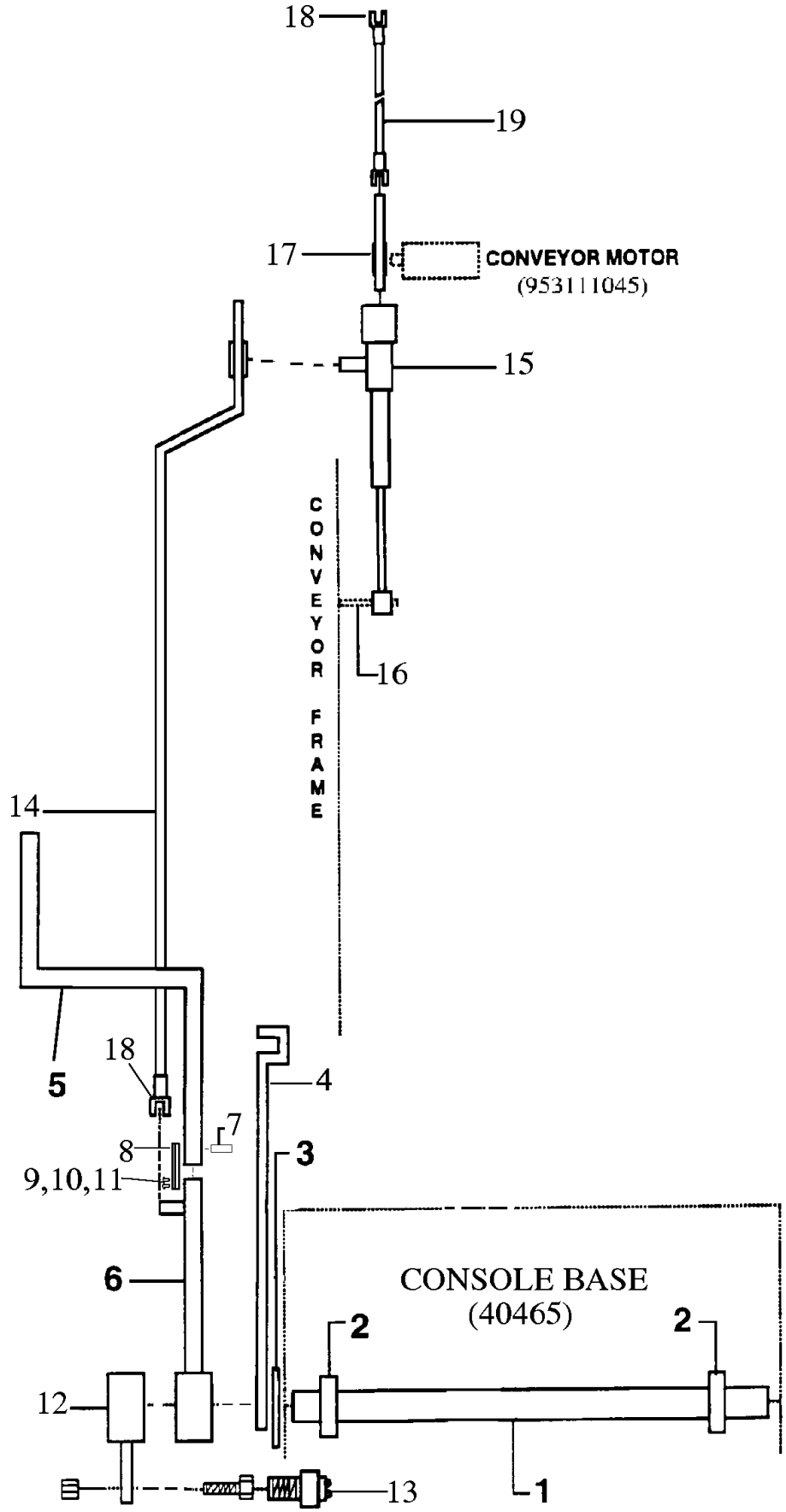
ITEM	PART NO.	QTY.	DESCRIPTION
1	206002583	1.00	SHAFT
2	845292019	2.00	BEARING
3	40658	2.00	WASHER
4	40563	1.00	GATE CONTROL LEVER LATCH
REF	40431	1.00	GATE CONTROL LEVER, LH
5	40429	1.00	UPPER LEVER , LH
6	40424	1.00	LOWER LEVER W/M, LH
7	80767	1.00	ROLLPIN, .312 X 1.75
8	9831	3.00	HANDLE, VALVE, SPRING
9	80160	2.00	WASHER, SPLIT LOCK, .250
10	80192	2.00	CSHH, .250-20 X .75, GR5
11	80140	3.00	WASHER, TYPRE A PLAIN, .250
12	207001166	1.00	SWITCH ACTUATOR ARM
13	951091224	1.00	BALL SWITCH,SAFETY START
14	40309	1.00	ROD REACH ASSEMBLY
15	953501110	1.00	HYDRAULIC CYLINDER
16	206002557	1.00	CYLINDER MOUNT
17	207001189	1.00	GATE OPENER LEVER
18	871100619	2.00	CLEVIS
19	208313106	1.00	CONTROL ROD
NS	107000677	1.00	T-HANDLE WITH MOUNT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CONVEYOR MOTOR
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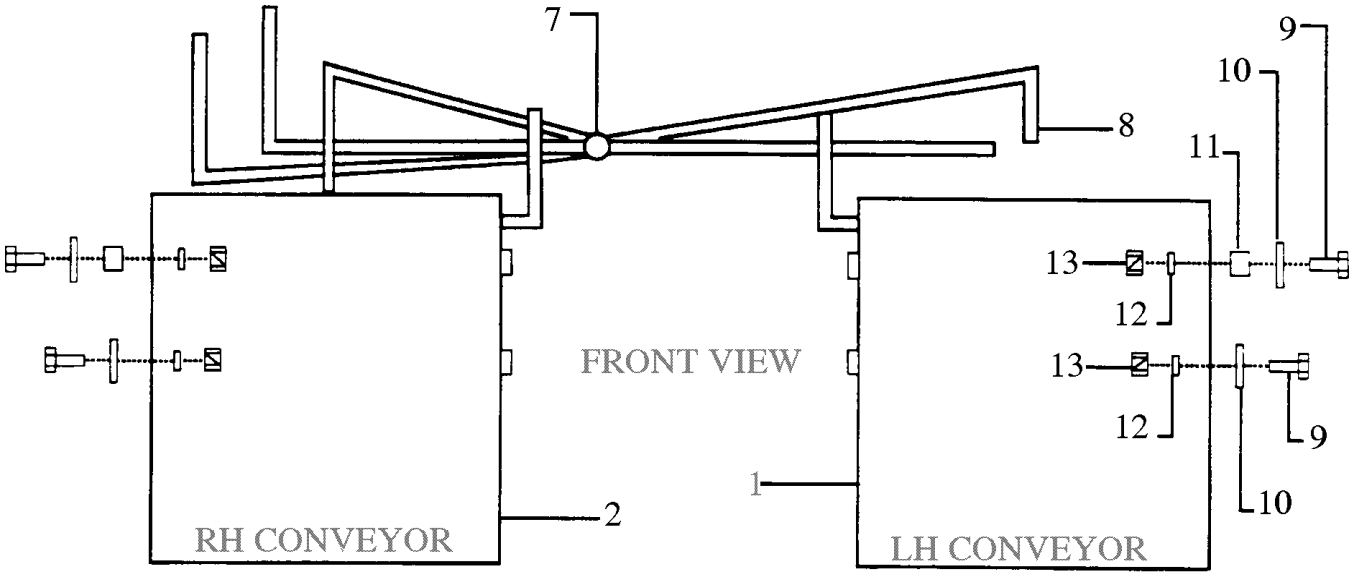
ITEM	PART NO.	QTY.	DESCRIPTION
1	40642	1.00	BAFFLE, FRONT HEAD, LH
2	40641	1.00	BAFFLE, FRONT HEAD, RH
3	107000060	1.00	ADJUSTMENT BAR, DEFLECTOR, RH
4	107000059	1.00	ADJUSTMENT BAR, DEFLECTOR, RH
5	107000058	1.00	ADJUSTMENT BAR, DEFLACTOR,LH
6	107000349	3.00	DEFLECTION GUIDE
7	80230	1.00	CAPSCREW, .375-16 UNC, FULL, LT
NS	80352	1.00	LOCKNUT, .375-16 UNC, FULL, LT
8	871081000	2.00	CLEVIS PIN WITH COTTER
9	71627	8.00	CAPSCREW, .50-13 UNC X 1.50, GR5
10	871070928	8.00	WASHER, .563 X .25 X .188
11	010101027	6.00	SPACER, .75OD X 11GA X .375 LG
12	80164	8.00	LOCKWASHER, .50
13	80040	8.00	HEX NUT, .50-13 UNC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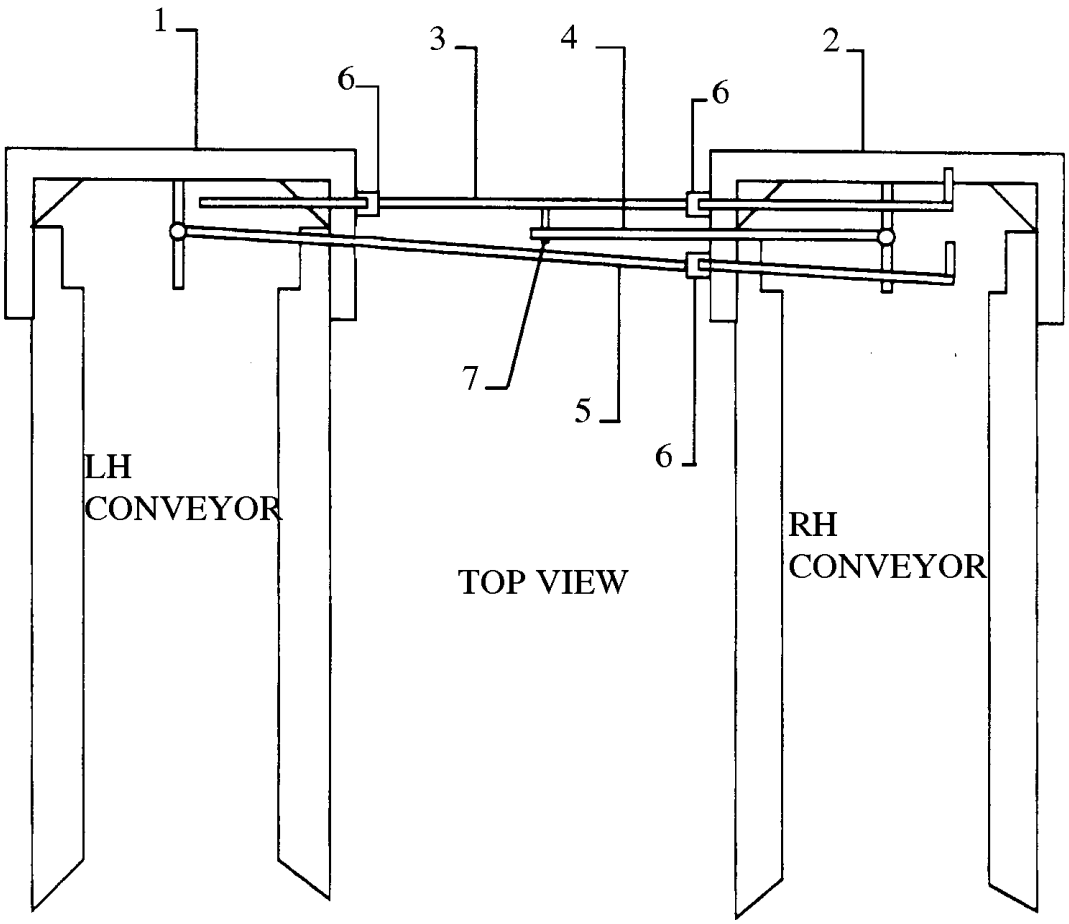
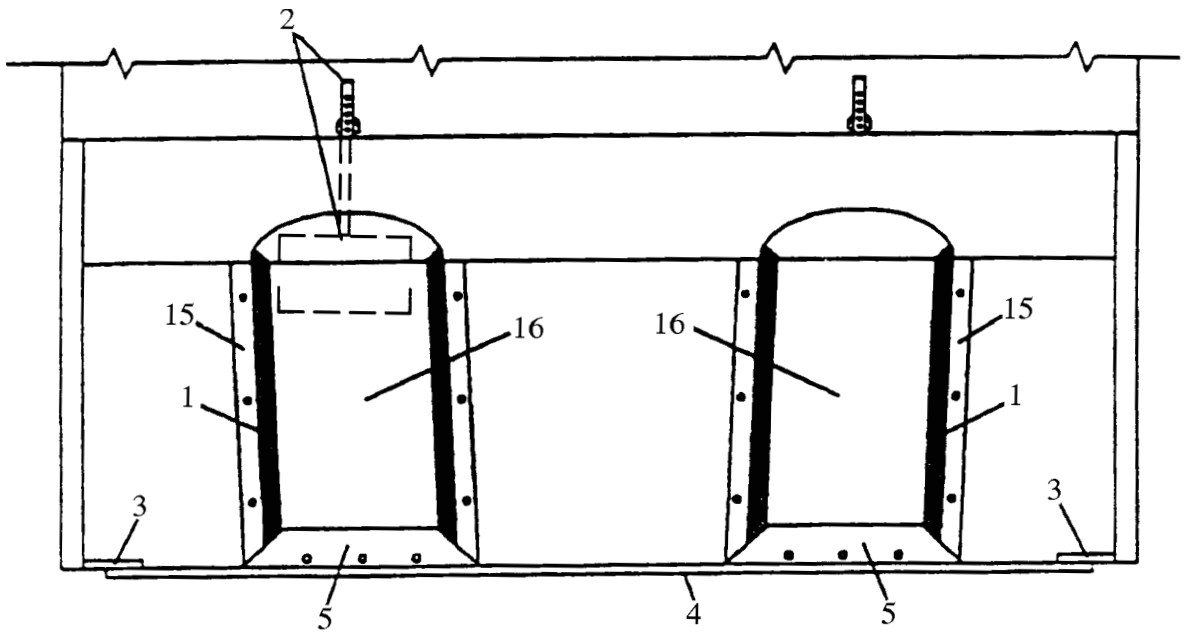
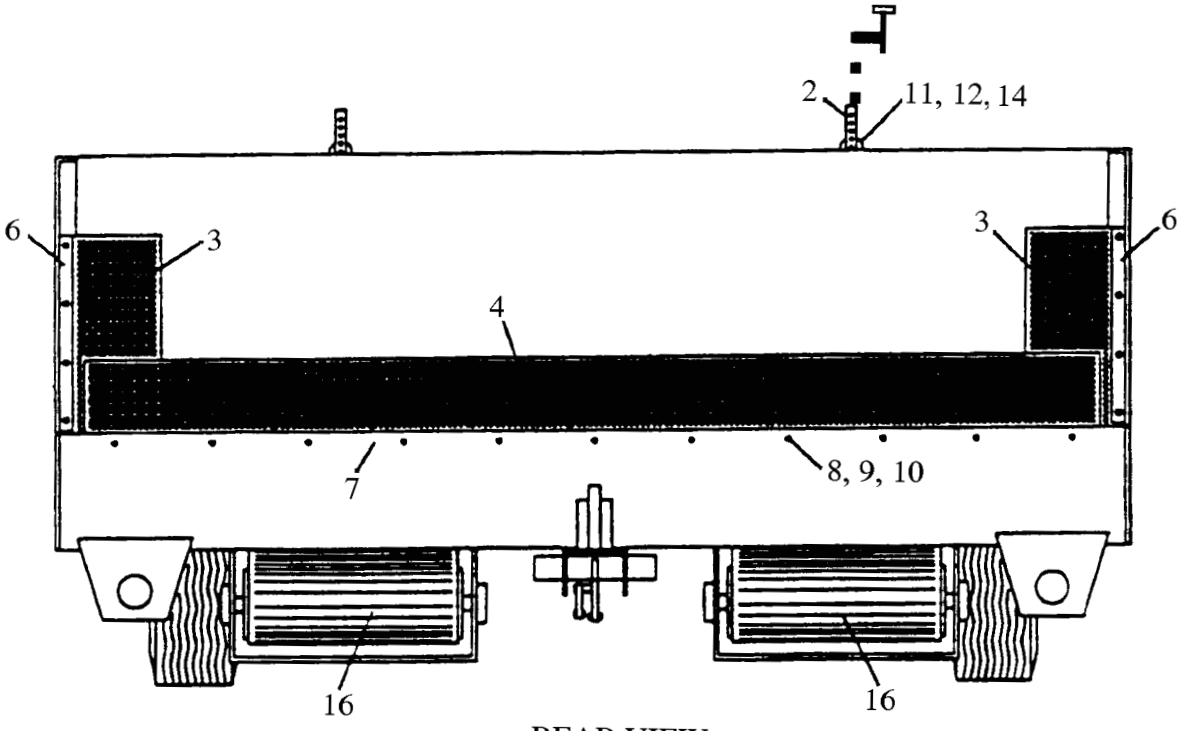
FRONT VIEW
13
12
9
1
10
2
RH CONVEYOR
LH CONVEYOR


1
3
4
2
6
6
7
5
6
LH
CONVEYOR
TOP VIEW
RH
CONVEYOR

ITEM	PART NO.	QTY.	DESCRIPTION
1	106000110	2.00	LAGGING, CONVEYOR BELT
2	40826	2.00	REAR GATE WITH MOUNTING
3	72638	2.00	SKIRT, HOPPER SIDE, 12 X 18.50
4	72376	1.00	SKIRT, HOPPER BUMPER
5	106008061	2.00	CHUTE LINING
6	106000117	2.00	STRAP, BOLTING, .250 X 1.50 X19.00
7	106000118	1.00	STRAP, BOLTING, .250 X 1.50 X 110
8	80255	17.00	CAPSCREW, .50-13 UNC X 2, GR5
9	80354	25.00	LOCKNUT, .50-13 UNC, LT
10	80144	25.00	WASHER, .50, TYPE A
11	847170503	2.00	COIL CHAIN #2
12	80845	2.00	COTTER PIN, .312 X 3.5
14	40825	2.00	GATE PIN HOLDER
15	206000045	2.00	STRIP, CONVEYOR LAGGING, RETAINER
16	209214001	2.00	CONVEYOR BELT ASSEMBLY
NS	948022317	A/R	CONVEYOR BELT SPLICE KIT (LACE KIT)

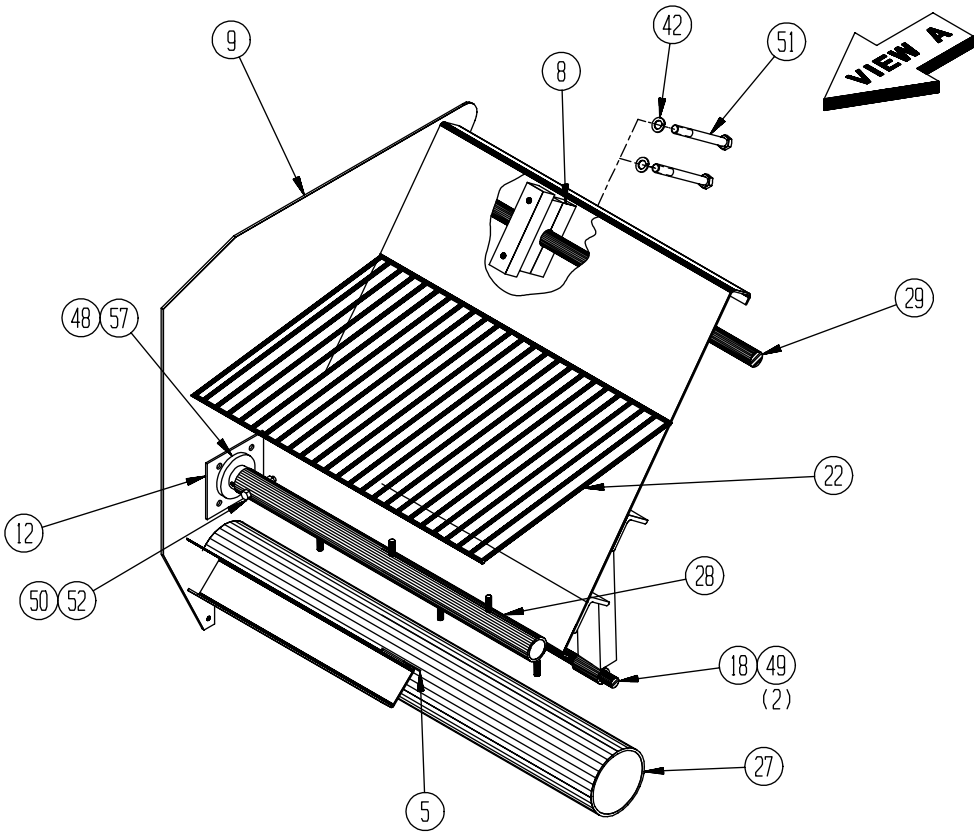


TOP VIEW

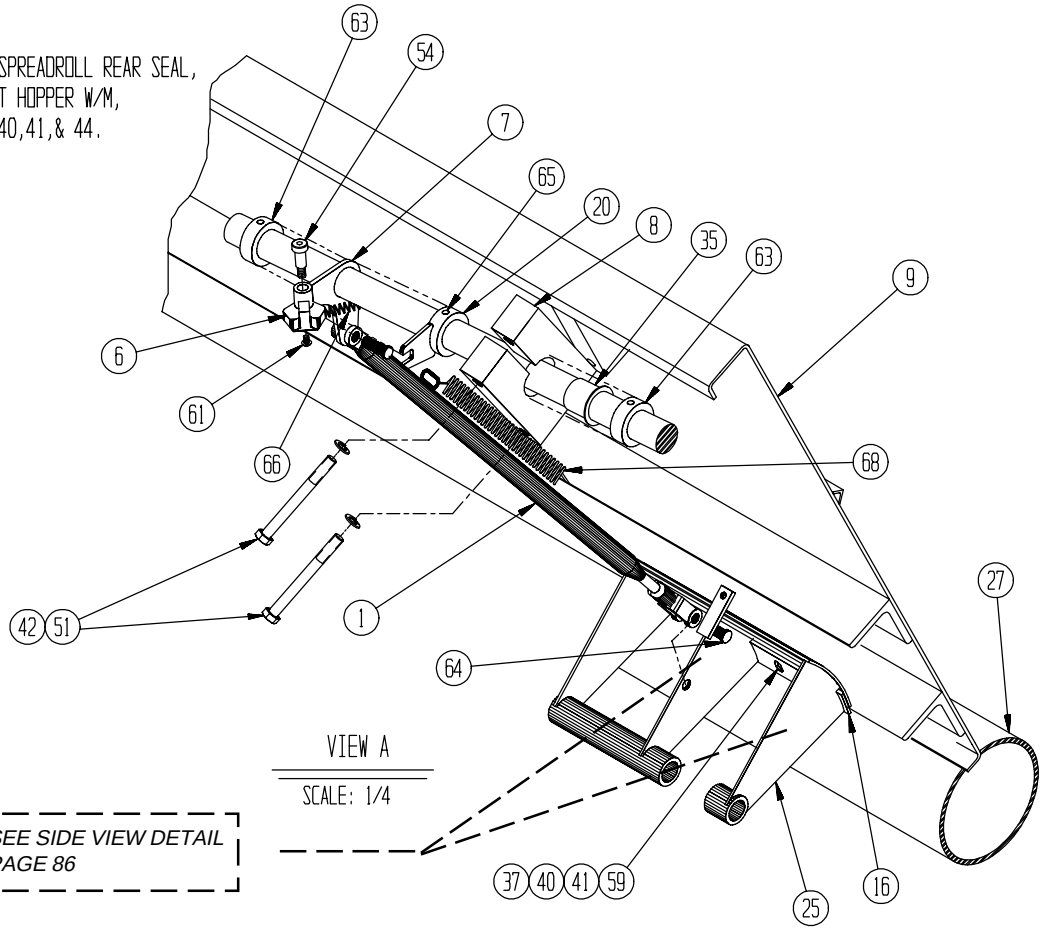


REAR VIEW

ITEM	PART NO.	QTY.	DESCRIPTION
1	107000672	14.00	ROD, W/M
5	40360	1.00	SPREADROLL REAR SEAL, 10
6	40655	14.00	HANDLE, GATE LEVER
7	40668	14.00	GATE LATCH PLATE, W/M
8	40738	3.00	BEARING BLOCK, FRONT HOPPER
9	40784-01	1.00	FRONT, HOPPER W/M, 10
12	40792	2.00	WEAR PLATE
16	40796	4.00	WEAR BAR, 12 GATE
18	40798-07	1.00	GATE HINGE ROD, 1 OD X 126.00
20	40800	14.00	GATE LATCH FLANGE W/M
22	40849-01	2.00	SEGREGATION SCREEN W/M, 10
25	40857	4.00	GATE W/M, 12, WITH PIVOT
27	40867-01	1.00	SPREAD ROLL W/M, 10
28	40870-01	1.00	AUGER W/M, 10
29	40872-01	1.00	ACTUATING SHAFT, 10
35	72414	3.00	BEARING, PLASTIC. 1.5 SHAFT
37	80038	71.00	NUT, HEX, .375-16
38	80040	10.00	NUT,HEX, .50-13
40	80142	78.00	WASHER, TYPE A PLAIN, .375
41	80162	71.00	WASHER, SPLIT LOCK, .375
42	80164	12.00	WASHER, SPLIT LOCK, .50
44	80224	31.00	CSHH, .375-16 X 1.25, GR5
48	80305	4.00	SET S, HSKT, .375-16 X .500
49	80336	2.00	COTTER PIN, .188 X 1.50
50	80354	3.00	NUT, FLEXLOC, .50-13, FULL, LT
51	80403	6.00	CSHH, .50-13 X 5.00, GR5
52	80778	2.00	CSHH, .50-13 X 3.25, GR5
54	80973	14.00	SHLDR SCR, .50 X 1.00 X .375-16
57	848019756	2.00	PLATE, WEAR
59	871020103	40.00	CRG BOLT, .375-16 X 1.00, GR5
61	871054100	14.00	DRIVE SCREW, #14 X .75
63	871075203	17.00	COLLAR, SET, 1.5 ID X 2.25 OD X .75 SST
64	871081000	28.00	PIN, CLEVIS, W/COTTER PIN
65	871081814	14.00	PIN, ROLL, .313 X 2.25
66	87090146	14.00	SPRING
68	971090337	14.00	SPR, 1.02 DIA X 11, 3.92

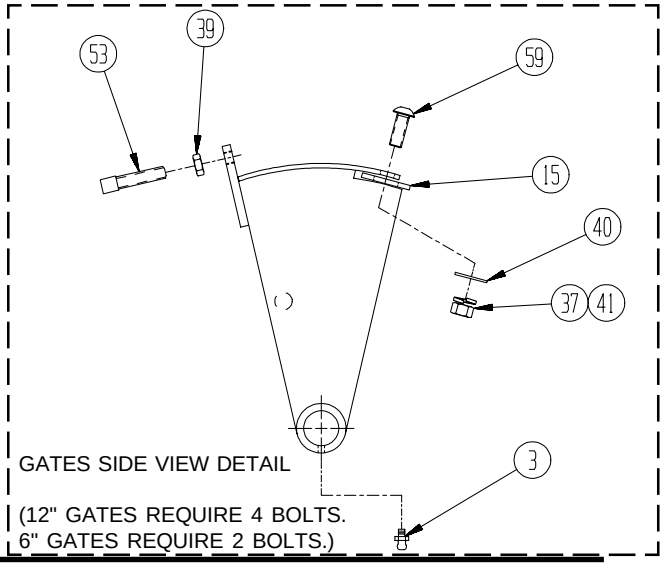


ATTACH ITEM 5, SPREADROLL REAR SEAL,
TO ITEM 9, FRONT HOPPER W/M,
USING ITEMS 37,40,41,& 44.



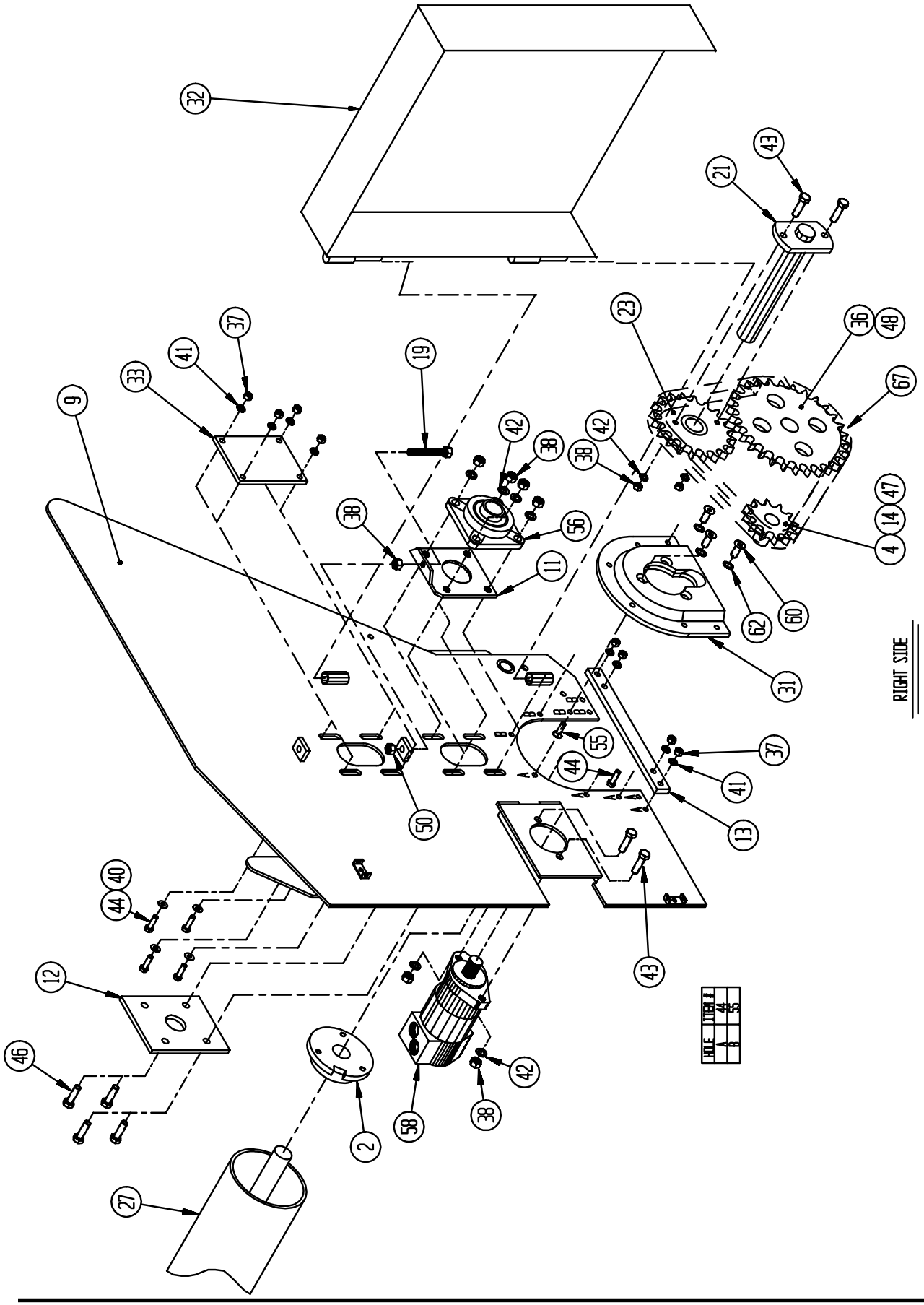
SEE SIDE VIEW DETAIL PAGE 86

ITEM	PART NO.	QTY.	DESCRIPTION
2	208712192	2.00	BEARING ASSEMBLY
3	32956	18.00	FITT, LUBE, STR, .188 DRIVE
4	40074	1.00	SPROCKET, REWORK, .313 KEYWAY
9	40784-01	1.00	FRONT HOPPER W/M, 10
11	40791	1.00	ADJUSTER PLATE
12	40792	2.00	WEAR PLATE
13	40793	1.00	BAR, .500 X 1.25 X 13.25, W/HOLES
14	40974-01	1.00	KEY, SQ, .375 X 3.25
15	40795	8.00	WEAR BAR, 6 GATE
19	40799	1.00	ADJUSTMENT ROD W/M
21	40846	1.00	AUGER SHAFT W/M, RH
23	40850	1.00	BEARING AND SPROCKET ASSEMBLY
27	40867-01	1.00	SPREADROLL W/M, 10
31	41005	1.00	SHIELD, SPREADROLL, RH
32	41031	1.00	CHAIN GUARD, W/M
33	41032	1.00	PLATE, HOLE COVER, RH
36	72530	1.00	SPROCKET, CHAIN, 80BS30
37	80038	71.00	NUT, HEX, .375-16
38	80040	10.00	NUT, HEX, .500-13
39	80074	14.00	NUT, HEX, JAM, .375-16
40	80142	78.00	WASHER, TYPE A PLAIN, .375
41	80162	71.00	WASHER, SPLIT LOCK, .375
42	80164	12.00	WASHER, SPLIT LOCK, .500
43	80186	8.00	CSHH, .500-13 X 1.75, GR5
44	80224	31.00	CSHH, .375-16 X 1.25, GR5
46	80255	4.00	CSHH, .500-13 X 2.00, GR5
47	80301	1.00	SET S, HSKT,KCUP, .250-20 X .500
48	80305	4.00	SET, S, HSKT, .375-16-.500
50	80354	3.00	NUT, FLEXLOC, .500-13, FULL, LT
53	80831	14.00	SET S, SQ, .375-16 X 2.00
55	81022	8.00	CSSFH, .375-16 X 1.25
56	845311009	2.00	BEARING, FLANGE 1.50, 4-BOLT
58	853111043	1.00	MOTOR, HYDRAULIC
59	871020103	40.00	CRG BOLT, .375-16 X 1.00, GR5
60	871032322	6.00	CSSFH, .500-13 X 1.25
62	871072703	6.00	WASHER, LOCK, EXT TOOTH CSK, .500
67	947071040	1.00	CHAIN, 80 X 53 PITCHES W CONN

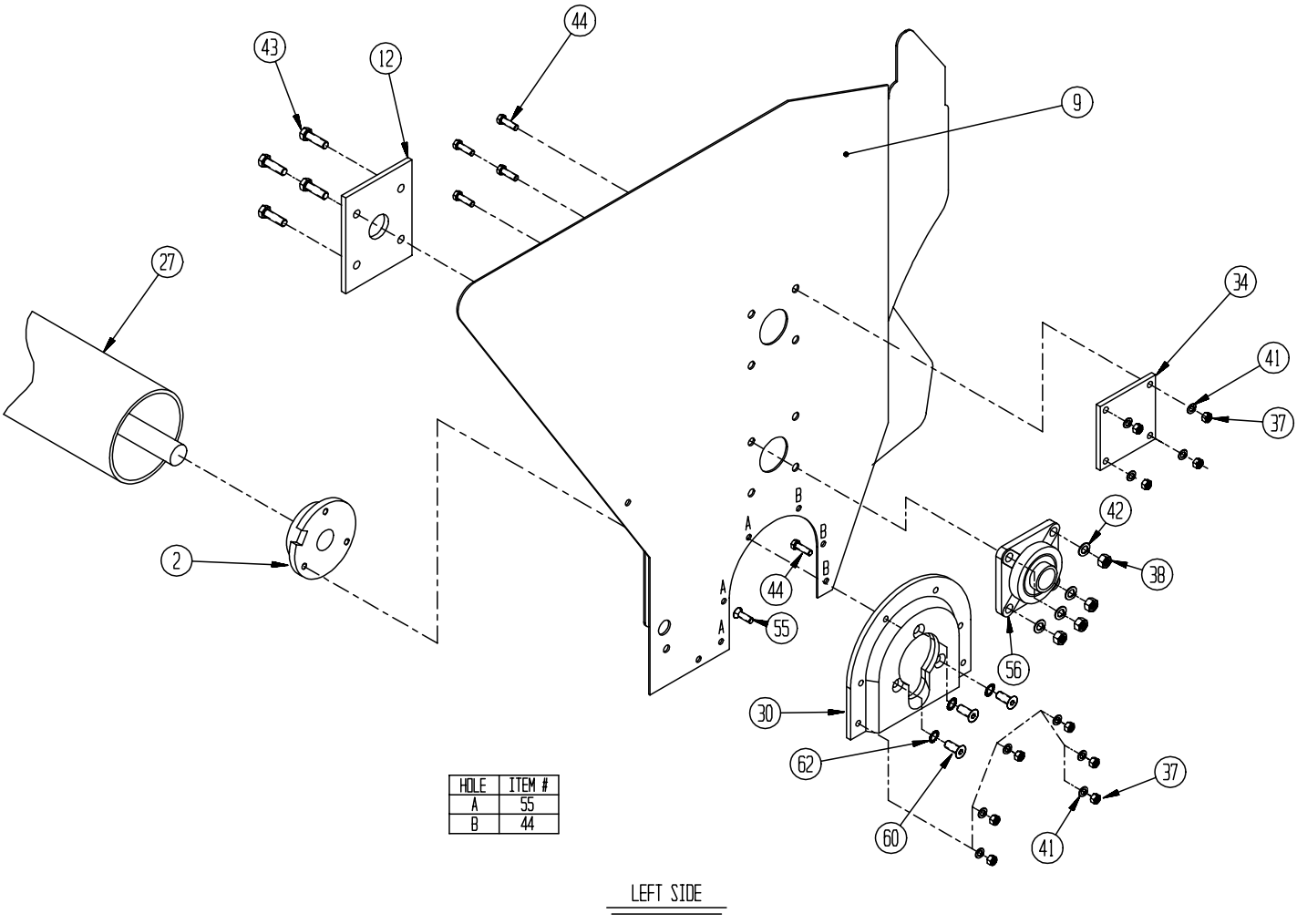


GATES SIDE VIEW DETAIL

(12" GATES REQUIRE 4 BOLTS.
6" GATES REQUIRE 2 BOLTS.)


RIGHT SIDE
HOLE ITEM #
A 44
B 55

ITEM	PART NO.	QTY.	DESCRIPTION
2	208712192	2.00	BEARING ASSEMBLY
9	40784-01	1.00	FRONT HOPPER W/M, 10
12	40792	2.00	WEAR PLATE
27	40867-01	1.00	SPREADROLL W/M, 10
30	41004	1.00	SHIELD, SPREADROLL, LH
34	41033	1.00	PLATE, HOLE COVER, LH
37	80038	71.00	NUT, HEX, .375 -16
38	80040	10.00	NUT, HEX, .500-13
41	80162	71.00	WASHER, SPLIT LOCK, .375
42	80164	12.00	WASHER, SPLIT LOCK, .500
43	80186	8.00	CSHH, .500-13 X 1.75, GR5
44	80224	31.00	CSHH, .375-16 X 1.25, GR5
55	81022	8.00	CSSH, .375-16 X 1.25
56	845311009	2.00	BEARING, FLANGE 1.50, 4-BOLT
60	871032322	6.00	CSSFH, .500-13 X 1.25
62	871072703	6.00	WASHER, LOCK, EXT TOOTH CSK, .500
NS	40797	2.00	WEAR BAR, 13.5 GATE
NS	40856	2.00	GATE, W/M, 13.5
NS	40859	8.00	GATE, W/M, 6



HOLE	ITEM #
A	55
B	44

LEFT SIDE

ITEM	PART NO.	QTY.	DESCRIPTION
1	107000672	14.00	ROD,W/M W/2 CLEVIS'S
2	208712192	2.00	BEARING ASSY
3	32956	18.00	FITT,LUBE,STR,.188 DRIVE
4	40074	1.00	SPROCKET,REWORK,.313 KEYWAY
5	40361	1.00	SPREADROLL REAR SEAL,11
6	40655	14.00	HANDLE,GATE LEVER
7	40668	14.00	GATE LATCH PLATE W/M
8	40738	3.00	BEARING BLOCK,FRONT HOPPER
9	40784-02	1.00	FRONT HOPPER W/M,11
10	40790	1.00	AUGER SHAFT,LH
11	40791	1.00	ADJUSTER PLATE
12	40792	2.00	WEAR PLATE
13	40793	1.00	BAR,.500X1.25X13.50,W/HOLES
14	40794-01	1.00	KEY,SQ,.375X3.25
15	40795	6.00	WEAR BAR,6 GATE
16	40796	8.00	WEAR BAR,12 GATE
18	40798-08	1.00	GATE HINGE ROD,1 OD X 134.50
19	40799	1.00	ADJUSTMENT ROD W/M
20	40800	14.00	GATE LATCH FLANGE W/M
21	40846	1.00	AUGER SHAFT W/M,RH
22	40849-02	2.00	SEGREGATION SCREEN W/M,11
23	40850	1.00	BEARING & SPROCKET ASSY
NS	40858	4.00	GATE W/M,12
25	40857	4.00	GATE W/M,12,WITH PIVOT
26	40859	6.00	GATE W/M,6
27	40867-02	1.00	SPREADROLL W/M,11
28	40870-02	1.00	AUGER W/M,11
29	40872-02	1.00	ACTUATING SHAFT,11
30	41004	1.00	SHIELD,SPREAD ROLL,LH
31	41005	1.00	SHIELD,SPREAD ROLL,RH
32	41031	1.00	CHAIN GUARD W/M
33	41032	1.00	PLATE,HOLE COVER,RH
34	41033	1.00	PLATE,HOLE COVER,LH

REFER TO PREVIOUS DRAWINGS ON PAGES 84-89 FOR ITEM LOCATIONS.

ITEM	PART NO.	QTY.	DESCRIPTION
35	72414	3.00	BEARING,PLASTIC,1.5 SHAFT
36	72530	1.00	SPROCKET,CHAIN,80BS30
37	80038	76.00	NUT,HEX,.375-16
38	80040	10.00	NUT,HEX,.500-13
39	80074	14.00	NUT,HEX,JAM,.375-16
40	80142	84.00	WASHER,TYPE A PLAIN,.375
41	80162	76.00	WASHER,SPLIT LOCK,.375
42	80164	12.00	WASHER,SPLIT LOCK,.500
43	80186	8.00	CSHH,.500-13X1.75,GR5
44	80224	32.00	CSHH,.375-16X1.25,GR5
46	80255	4.00	CSHH,.500-13X2.00,GR5
47	80301	1.00	SET S,HSKT,KCUP,.250-20X.500
48	80305	4.00	SET S,HSKT,.375-16X.50
49	80336	2.00	COTTER PIN,.188X1.50
50	80354	3.00	NUT,FLEXLOC,.500-13,FULL,LT
51	80403	6.00	CSHH,.500-13X5.00,GR5
52	80778	2.00	CSHH,.500-13X3.25,GR5
53	80831	14.00	SET S,SQ,.375-16X2.00
54	80973	14.00	SHLDR SCR,.500X1.00X.375-16
55	81022	8.00	CSSFH,.375-16X1.25
56	845311009	2.00	BEARING,FLANGE 1.50,4-BOLT
57	848019756	2.00	PLATE,WEAR
58	853111043	1.00	MOTOR,HYDRAULIC
59	871020103	44.00	CRG BOLT,.375-16X1.00,GR5
60	871032322	6.00	CSSFH,.500-13X1.25
61	871054100	14.00	DRIVE SCREW,#14x3/4
62	871072703	6.00	WASHER,LOCK,EXT TOOTH CSK,.500
63	871075203	17.00	COLLAR,SET,1.5IDX2.25ODX.75SST
64	871081000	28.00	PIN,CLEVIS,W/COTTER PIN
65	871081814	14.00	PIN,ROLL,.313X2.25
66	871090146	14.00	SPRING
67	947071040	1.00	CHAIN,80X53 PITCHES W CONN
68	971090337	14.00	SPR,1.02 DIA X 11,3.92 PSI

REFER TO PREVIOUS DRAWINGS ON PAGES 84-89 FOR ITEM LOCATIONS.

ITEM	PART NO.	QTY.	DESCRIPTION
1	107000672	16.00	ROD,W/M W/2 CLEVIS'S
2	208712192	2.00	BEARING ASSY
3	32956	20.00	FITT,LUBE,STR,.188 DRIVE
4	40074	1.00	SPROCKET,REWORK,.313 KEYWAY
5	40362	1.00	SPREADROLL REAR SEAL,12
6	40655	16.00	HANDLE,GATE LEVER
7	40668	16.00	GATE LATCH PLATE W/M
8	40738	5.00	BEARING BLOCK,FRONT HOPPER
9	40784-03	1.00	FRONT HOPPER W/M,12
10	40790	1.00	AUGER SHAFT,LH
11	40791	1.00	ADJUSTER PLATE
12	40792	2.00	WEAR PLATE
13	40793	1.00	BAR,.500X1.25X13.50,W/HOLES
14	40794-01	1.00	KEY,SQ,.375X3.25
15	40795	8.00	WEAR BAR,6 GATE
16	40796	8.00	WEAR BAR,12 GATE
18	40798-01	1.00	GATE HINGE ROD,1 OD X 70.00
18A	40798-02	1.00	GATE HINGE ROD,1 OD X 76.00
19	40799	1.00	ADJUSTMENT ROD W/M
20	40800	16.00	GATE LATCH FLANGE W/M
21	40846	1.00	AUGER SHAFT W/M,RH
22	40849-03	2.00	SEGREGATION SCREEN W/M,12
23	40850	1.00	BEARING & SPROCKET ASSY
NS	40858	4.00	GATE W/M,12
25	40857	4.00	GATE W/M,12,WITH PIVOT
26	40859	8.00	GATE W/M,6
27	40867-03	1.00	SPREADROLL W/M,12
28	40870-03	1.00	AUGER W/M,12
29	40872-03	1.00	ACTUATING SHAFT,12
30	41004	1.00	SHIELD,SPREAD ROLL,LH
31	41005	1.00	SHIELD,SPREAD ROLL,RH
32	41031	1.00	CHAIN GUARD W/M
33	41032	1.00	PLATE,HOLE COVER,RH
34	41033	1.00	PLATE,HOLE COVER,LH

REFER TO PREVIOUS DRAWINGS ON PAGES 84-89 FOR ITEM LOCATIONS.

ITEM	PART NO.	QTY.	DESCRIPTION
35	72414	5.00	BEARING,PLASTIC,1.5 SHAFT
36	72530	1.00	SPROCKET,CHAIN,80BS30
37	80038	81.00	NUT,HEX,.375-16
38	80040	10.00	NUT,HEX,.500-13
39	80074	16.00	NUT,HEX,JAM,.375-16
40	80142	90.00	WASHER,TYPE A PLAIN,.375
41	80162	81.00	WASHER,SPLIT LOCK,.375
42	80164	14.00	WASHER,SPLIT LOCK,.500
43	80186	8.00	CSHH,.500-13X1.75,GR5
44	80224	33.00	CSHH,.375-16X1.25,GR5
46	80255	4.00	CSHH,.500-13X2.00,GR5
47	80301	1.00	SET S,HSKT,KCUP,.250-20X.500
48	80305	4.00	SET S,HSKT,.375-16X.50
49	80336	2.00	COTTER PIN,.188X1.50
50	80354	3.00	NUT,FLEXLOC,.500-13,FULL,LT
51	80403	10.00	CSHH,.500-13X5.00,GR5
52	80778	2.00	CSHH,.500-13X3.25,GR5
53	80831	16.00	SET S,SQ,.375-16X2.00
54	80973	16.00	SHLDR SCR,.500X1.00X.375-16
55	81022	8.00	CSSFH,.375-16X1.25
56	845311009	2.00	BEARING,FLANGE 1.50,4-BOLT
57	848019756	2.00	PLATE,WEAR
58	853111043	1.00	MOTOR,HYDRAULIC
59	871020103	48.00	CRG BOLT,.375-16X1.00,GR5
60	871032322	6.00	CSSFH,.500-13X1.25
61	871054100	16.00	DRIVE SCREW,#14x3/4
62	871072703	6.00	WASHER,LOCK,EXT TOOTH CSK,.500
63	871075203	21.00	COLLAR,SET,1.5IDX2.25ODX.75SST
64	871081000	32.00	PIN,CLEVIS,W/COTTER PIN
65	871081814	16.00	PIN,ROLL,.313X2.25
66	871090146	16.00	SPRING
67	947071040	1.00	CHAIN,80X53 PITCHES W CONN
68	971090337	16.00	SPR,1.02 DIA X 11,3.92 PSI

REFER TO PREVIOUS DRAWINGS ON PAGES 84-89 FOR ITEM LOCATIONS.

ITEM	PART NO.	QTY.	DESCRIPTION
1	107000672	19.00	ROD,W/M W/2 CLEVIS'S
2	208712192	2.00	BEARING ASSY
3	32956	23.00	FITT,LUBE,STR,.188 DRIVE
4	40074	1.00	SPROCKET,REWORK,.313 KEYWAY
5	40363	1.00	SPREADROLL REAR SEAL,13.5
6	40655	19.00	HANDLE,GATE LEVER
7	40668	19.00	GATE LATCH PLATE W/M
8	40738	5.00	BEARING BLOCK,FRONT HOPPER
9	40784-04	1.00	FRONT HOPPER W/M,13.5
10	40790	1.00	AUGER SHAFT,LH
11	40791	1.00	ADJUSTER PLATE
12	40792	2.00	WEAR PLATE
13	40793	1.00	BAR,.500X1.25X13.50,W/HOLES
14	40794-01	1.00	KEY,SQ,.375X3.25
15	40795	11.00	WEAR BAR,6 GATE
16	40796	8.00	WEAR BAR,12 GATE
18	40798-02	1.00	GATE HINGE ROD,1 OD X 76.00
18A	40798-04	1.00	GATE HINGE ROD,1 OD X 88.00
19	40799	1.00	ADJUSTMENT ROD W/M
20	40800	19.00	GATE LATCH FLANGE W/M
21	40846	1.00	AUGER SHAFT W/M,RH
22	40849-04	2.00	SEGREGATION SCREEN W/M,13.5
23	40850	1.00	BEARING & SPROCKET ASSY
NS	40858	4.00	GATE W/M,12
25	40857	4.00	GATE W/M,12,WITH PIVOT
26	40859	11.00	GATE W/M,6
27	40867-04	1.00	SPREADROLL W/M,13.5
28	40870-04	1.00	AUGER W/M,13.5
29	40872-04	1.00	ACTUATING SHAFT,13.5
30	41004	1.00	SHIELD,SPREAD ROLL,LH
31	41005	1.00	SHIELD,SPREAD ROLL,RH
32	41031	1.00	CHAIN GUARD W/M
33	41032	1.00	PLATE,HOLE COVER,RH
34	41033	1.00	PLATE,HOLE COVER,LH

REFER TO PREVIOUS DRAWINGS ON PAGES 84-89 FOR ITEM LOCATIONS.

ITEM	PART NO.	QTY.	DESCRIPTION
35	72414	5.00	BEARING,PLASTIC,1.5 SHAFT
36	72530	1.00	SPROCKET,CHAIN,80BS30
37	80038	88.00	NUT,HEX,.375-16
38	80040	10.00	NUT,HEX,.500-13
39	80074	19.00	NUT,HEX,JAM,.375-16
40	80142	98.00	WASHER,TYPE A PLAIN,.375
41	80162	88.00	WASHER,SPLIT LOCK,.375
42	80164	14.00	WASHER,SPLIT LOCK,.500
43	80186	8.00	CSHH,.500-13X1.75,GR5
44	80224	34.00	CSHH,.375-16X1.25,GR5
46	80255	4.00	CSHH,.500-13X2.00,GR5
47	80301	1.00	SET S,HSKT,KCUP,.250-20X.500
48	80305	4.00	SET S,HSKT,.375-16X.50
49	80336	2.00	COTTER PIN,.188X1.50
50	80354	3.00	NUT,FLEXLOC,.500-13,FULL,LT
51	80403	10.00	CSHH,.500-13X5.00,GR5
52	80778	2.00	CSHH,.500-13X3.25,GR5
53	80831	19.00	SET S,SQ,.375-16X2.00
54	80973	19.00	SHLDR SCR,.500X1.00X.375-16
55	81022	8.00	CSSFH,.375-16X1.25
56	845311009	2.00	BEARING,FLANGE 1.50,4-BOLT
57	848019756	2.00	PLATE,WEAR
58	853111043	1.00	MOTOR,HYDRAULIC
59	871020103	54.00	CRG BOLT,.375-16X1.00,GR5
60	871032322	6.00	CSSFH,.500-13X1.25
61	871054100	19.00	DRIVE SCREW,#14x3/4
62	871072703	6.00	WASHER,LOCK,EXT TOOTH CSK,.500
63	871075203	24.00	COLLAR,SET,1.5IDX2.25ODX.75SST
64	871081000	38.00	PIN,CLEVIS,W/COTTER PIN
65	871081814	19.00	PIN,ROLL,.313X2.25
66	871090146	19.00	SPRING
67	947071040	1.00	CHAIN,80X53 PITCHES W CONN
68	971090337	19.00	SPR,1.02 DIA X 11,3.92 PSI

REFER TO PREVIOUS DRAWINGS ON PAGES 84-89 FOR ITEM LOCATIONS.

ITEM	PART NO.	QTY.	DESCRIPTION
1	107000672	20.00	ROD,W/M W/2 CLEVIS'S
2	208712192	2.00	BEARING ASSY
3	32956	24.00	FITT,LUBE,STR,.188 DRIVE
4	40074	1.00	SPROCKET,REWORK,.313 KEYWAY
5	40364	1.00	SPREADROLL REAR SEAL,14
6	40655	20.00	HANDLE,GATE LEVER
7	40668	20.00	GATE LATCH PLATE W/M
8	40738	5.00	BEARING BLOCK,FRONT HOPPER
9	40784-05	1.00	FRONT HOPPER W/M,14
10	40790	1.00	AUGER SHAFT,LH
11	40791	1.00	ADJUSTER PLATE
12	40792	2.00	WEAR PLATE
13	40793	1.00	BAR,.500X1.25X13.50,W/HOLES
14	40794-01	1.00	KEY,SQ,.375X3.25
15	40795	12.00	WEAR BAR,6 GATE
16	40796	8.00	WEAR BAR,12 GATE
18	40798-03	1.00	GATE HINGE ROD,1 OD X 82.00
18A	40798-04	1.00	GATE HINGE ROD,1 OD X 88.00
19	40799	1.00	ADJUSTMENT ROD W/M
20	40800	20.00	GATE LATCH FLANGE W/M
21	40846	1.00	AUGER SHAFT W/M,RH
22	40849-05	2.00	SEGREGATION SCREEN W/M,14
23	40850	1.00	BEARING & SPROCKET ASSY
NS	40858	4.00	GATE W/M,12
25	40857	4.00	GATE W/M,12,WITH PIVOT
26	40859	12.00	GATE W/M,6
27	40867-05	1.00	SPREADROLL W/M,14
28	40870-05	1.00	AUGER W/M,14
29	40872-05	1.00	ACTUATING SHAFT,14
30	41004	1.00	SHIELD,SPREAD ROLL,LH
31	41005	1.00	SHIELD,SPREAD ROLL,RH
32	41031	1.00	CHAIN GUARD W/M
33	41032	1.00	PLATE,HOLE COVER,RH
34	41033	1.00	PLATE,HOLE COVER,LH
35	72414	5.00	BEARING,PLASTIC,1.5 SHAFT
36	72530	1.00	SPROCKET,CHAIN,80BS30
37	80038	91.00	NUT,HEX,.375-16
38	80040	10.00	NUT,HEX,.500-13
39	80074	20.00	NUT,HEX,JAM,.375-16

REFER TO PREVIOUS DRAWINGS ON PAGES 84-89 FOR ITEM LOCATIONS.

ITEM	PART NO.	QTY.	DESCRIPTION
40	80142	102.00	WASHER,TYPE A PLAIN,.375
41	80162	91.00	WASHER,SPLIT LOCK,.375
42	80164	14.00	WASHER,SPLIT LOCK,.500
43	80186	8.00	CSHH,.500-13X1.75,GR5
44	80224	35.00	CSHH,.375-16X1.25,GR5
46	80255	4.00	CSHH,.500-13X2.00,GR5
47	80301	1.00	SET S,HSKT,KCUP,.250-20X.500
48	80305	4.00	SET S,HSKT,.375-16X.50
49	80336	2.00	COTTER PIN,.188X1.50
50	80354	3.00	NUT,FLEXLOC,.500-13,FULL,LT
51	80403	10.00	CSHH,.500-13X5.00,GR5
52	80778	2.00	CSHH,.500-13X3.25,GR5
53	80831	20.00	SET S,SQ,.375-16X2.00
54	80973	20.00	SHLDR SCR,.500X1.00X.375-16
55	81022	8.00	CSSFH,.375-16X1.25
56	845311009	2.00	BEARING,FLANGE 1.50,4-BOLT
57	848019756	2.00	PLATE,WEAR
58	853111043	1.00	MOTOR,HYDRAULIC
59	871020103	56.00	CRG BOLT,.375-16X1.00,GR5
60	871032322	6.00	CSSFH,.500-13X1.25
61	871054100	20.00	DRIVE SCREW,#14x3/4
62	871072703	6.00	WASHER,LOCK,EXT TOOTH CSK,.500
63	871075203	25.00	COLLAR,SET,1.5IDX2.25ODX.75SST
64	871081000	40.00	PIN,CLEVIS,W/COTTER PIN
65	871081814	20.00	PIN,ROLL,.313X2.25
66	871090146	20.00	SPRING
67	947071040	1.00	CHAIN,80X53 PITCHES W CONN
68	971090337	20.00	SPR,1.02 DIA X 11,3.92 PSI

40789-09 ..... REV.B ..... FRONT HOPPER ASSY, 14.5 FOOT

ALL ITEMS ARE THE SAME AS THE 14 FOOT HOPPER EXCEPT:

5	41267	1.00	SPREADROLL SEAL,14.5 HOPPER
9	40784-09	1.00	FRONT HOPPER W/M,14.5
15	40795	11.00	WEAR BAR,6 GATE
16	40769	9.00	WEAR BAR,12 GATE
18A	40798-04	2.00	GATE HINGE ROD,1 OD X 88.00
18B	40798-05	1.00	GATE HINGE ROD,1 OD X 94.00
22	40849-05	1.00	SEGREGATION SCREEN W/M 14
23	40849-06	1.00	SEGREGATION SCREEN W/M 15
25	40857	5.00	GATE W/M,12,WITH PIVOT
26	40859	11.00	GATE W/M,6
27	40867-09	1.00	SPREADROLL W/M,14.5 HOPPER
28	40870-09	1.00	AUGER W/M,14.5
29	40872-09	1.00	ACTUATING SHAFT,14.5 HOPPER

ITEM	PART NO.	QTY.	DESCRIPTION
1	107000672	21.00	ROD,W/M W/2 CLEVIS'S
2	208712192	2.00	BEARING ASSY
3	32956	26.00	FITT,LUBE,STR,.188 DRIVE
4	40074	1.00	SPROCKET,REWORK,.313 KEYWAY
5	40365	1.00	SPREADROLL REAR SEAL,15
6	40655	21.00	HANDLE,GATE LEVER
7	40668	21.00	GATE LATCH PLATE W/M
8	40738	5.00	BEARING BLOCK,FRONT HOPPER
9	40784-06	1.00	FRONT HOPPER W/M,15
10	40790	1.00	AUGER SHAFT,LH
11	40791	1.00	ADJUSTER PLATE
12	40792	2.00	WEAR PLATE
13	40793	1.00	BAR,.500X1.25X13.50,W/HOLES
14	40794-01	1.00	KEY,SQ,.375X3.25
15	40795	12.00	WEAR BAR,6 GATE
16	40796	9.00	WEAR BAR,12 GATE
18	40798-05	1.00	GATE HINGE ROD,1 OD X 94.00
18A	40798-04	1.00	GATE HINGE ROD,1 OD X 88.00
19	40799	1.00	ADJUSTMENT ROD W/M
20	40800	21.00	GATE LATCH FLANGE W/M
21	40846	1.00	AUGER SHAFT W/M,RH
22	40849-06	2.00	SEGREGATION SCREEN W/M,15
23	40850	1.00	BEARING & SPROCKET ASSY
NS	40858	4.00	GATE W/M,12
25	40857	5.00	GATE W/M,12,WITH PIVOT
26	40859	12.00	GATE W/M,6
27	40867-06	1.00	SPREADROLL W/M,15
28	40870-06	1.00	AUGER W/M,15
29	40872-06	1.00	ACTUATING SHAFT,15
30	41004	1.00	SHIELD,SPREAD ROLL,LH
31	41005	1.00	SHIELD,SPREAD ROLL,RH
32	41031	1.00	CHAIN GUARD W/M
33	41032	1.00	PLATE,HOLE COVER,RH
34	41033	1.00	PLATE,HOLE COVER,LH

REFER TO PREVIOUS DRAWINGS ON PAGES 84-89 FOR ITEM LOCATIONS.

ITEM	PART NO.	QTY.	DESCRIPTION
35	72414	5.00	BEARING,PLASTIC,1.5 SHAFT
36	72530	1.00	SPROCKET,CHAIN,80BS30
37	80038	96.00	NUT,HEX,.375-16
38	80040	10.00	NUT,HEX,.500-13
39	80074	21.00	NUT,HEX,JAM,.375-16
40	80142	108.00	WASHER,TYPE A PLAIN,.375
41	80162	96.00	WASHER,SPLIT LOCK,.375
42	80164	14.00	WASHER,SPLIT LOCK,.500
43	80186	8.00	CSHH,.500-13X1.75,GR5
44	80224	36.00	CSHH,.375-16X1.25,GR5
46	80255	4.00	CSHH,.500-13X2.00,GR5
47	80301	1.00	SET S,HSKT,KCUP,.250-20X.500
48	80305	4.00	SET S,HSKT,.375-16X.50
49	80336	2.00	COTTER PIN,.188X1.50
50	80354	3.00	NUT,FLEXLOC,.500-13,FULL,LT
51	80403	10.00	CSHH,.500-13X5.00,GR5
52	80778	2.00	CSHH,.500-13X3.25,GR5
53	80831	21.00	SET S,SQ,.375-16X2.00
54	80973	21.00	SHLDR SCR,.500X1.00X.375-16
55	81022	8.00	CSSFH,.375-16X1.25
56	845311009	2.00	BEARING,FLANGE 1.50,4-BOLT
57	848019756	2.00	PLATE,WEAR
58	853111043	1.00	MOTOR,HYDRAULIC
59	871020103	60.00	CRG BOLT,.375-16X1.00,GR5
60	871032322	6.00	CSSFH,.500-13X1.25
61	871054100	21.00	DRIVE SCREW,#14x3/4
62	871072703	6.00	WASHER,LOCK,EXT TOOTH CSK,.500
63	871075203	26.00	COLLAR,SET,1.5IDX2.25ODX.75SST
64	871081000	42.00	PIN,CLEVIS,W/COTTER PIN
65	871081814	21.00	PIN,ROLL,.313X2.25
66	871090146	21.00	SPRING
67	947071040	1.00	CHAIN,80X53 PITCHES W CONN
68	971090337	21.00	SPR,1.02 DIA X 11,3.92 PSI

REFER TO PREVIOUS DRAWINGS ON PAGES 84-89 FOR ITEM LOCATIONS.

ITEM	PART NO.	QTY.	DESCRIPTION
NS	72565-063	2.00	HOSE,12,12FJX-12FJX,2250
NS	6104	1.00	BEARING,PB,P224 1.50 B
1	107000672	23.00	ROD,W/M W/2 CLEVIS'S
2	208712192	2.00	BEARING ASSY
3	32956	28.00	FITT,LUBE,STR,.188 DRIVE
4	40074	1.00	SPROCKET,REWORK,.313 KEYWAY
5	40582	1.00	SPREADROLL REAR SEAL,16
6	40655	23.00	HANDLE,GATE LEVER
7	40668	23.00	GATE LATCH PLATE W/M
8	40738	5.00	BEARING BLOCK,FRONT HOPPER
9	40784-07	1.00	FRONT HOPPER W/M,16
10	40790	1.00	AUGER SHAFT,LH
11	40791	1.00	ADJUSTER PLATE
12	40792	2.00	WEAR PLATE
13	40793	1.00	BAR,.500X1.25X13.50,W/HOLES
14	40794-01	1.00	KEY,SQ,.375X3.25
15	40795	14.00	WEAR BAR,6 GATE
16	40796	9.00	WEAR BAR,12 GATE
18	40798-04	1.00	GATE HINGE ROD,1 OD X 88.00
18A	40798-06	1.00	GATE HINGE ROD,1 OD X 106.00
19	40799	1.00	ADJUSTMENT ROD W/M
20	40800	23.00	GATE LATCH FLANGE W/M
21	40846	1.00	AUGER SHAFT W/M,RH
22	40849-07	2.00	SEGREGATION SCREEN W/M,16
23	40850	1.00	BEARING & SPROCKET ASSY
NS	40858	4.00	GATE W/M,12
25	40857	5.00	GATE W/M,12,WITH PIVOT
26	40859	14.00	GATE W/M,6
27	40867-07	1.00	SPREADROLL W/M,16
28A	40583	1.00	AUGER W/M,RIGHT,16FT HOPPER
28B	40646	1.00	SHAFT,CENTER AUGER W/M
28C	40652	1.00	AUGER W/M,LH,16FT HOPPER
29	40872-07	1.00	ACTUATING SHAFT,16
30	41004	1.00	SHIELD,SPREAD ROLL,LH
31	41005	1.00	SHIELD,SPREAD ROLL,RH
32	41031	1.00	CHAIN GUARD W/M
33	41032	1.00	PLATE,HOLE COVER,RH
34	41033	1.00	PLATE,HOLE COVER,LH

REFER TO PREVIOUS DRAWINGS ON PAGES 84-89 FOR ITEM LOCATIONS.

ITEM	PART NO.	QTY.	DESCRIPTION
35	72414	5.00	BEARING,PLASTIC,1.5 SHAFT
36	72530	1.00	SPROCKET,CHAIN,80BS30
37	80038	101.00	NUT,HEX,.375-16
38	80040	10.00	NUT,HEX,.500-13
39	80074	23.00	NUT,HEX,JAM,.375-16
40	80142	114.00	WASHER,TYPE A PLAIN,.375
41	80162	101.00	WASHER,SPLIT LOCK,.375
42	80164	14.00	WASHER,SPLIT LOCK,.500
43	80186	8.00	CSHH,.500-13X1.75,GR5
44	80224	37.00	CSHH,.375-16X1.25,GR5
46	80255	6.00	CSHH,.500-13X2.00,GR5
47	80301	1.00	SET S,HSKT,KCUP,.250-20X.500
48	80305	4.00	SET S,HSKT,.375-16X.50
49	80336	2.00	COTTER PIN,.188X1.50
50	80354	7.00	NUT,FLEXLOC,.500-13,FULL,LT
51	80403	10.00	CSHH,.500-13X5.00,GR5
52	80778	4.00	CSHH,.500-13X3.25,GR5
53	80831	23.00	SET S,SQ,.375-16X2.00
54	80973	23.00	SHLDR SCR,.500X1.00X.375-16
55	81022	8.00	CSSFH,.375-16X1.25
56	845311009	2.00	BEARING,FLANGE 1.50,4-BOLT
57	848019756	2.00	PLATE,WEAR
58	853111043	1.00	MOTOR,HYDRAULIC
59	871020103	64.00	CRG BOLT,.375-16X1.00,GR5
60	871032322	6.00	CSSFH,.500-13X1.25
61	871054100	23.00	DRIVE SCREW,#14x3/4
62	871072703	6.00	WASHER,LOCK,EXT TOOTH CSK,.500
63	871075203	28.00	COLLAR,SET,1.5IDX2.25ODX.75SST
64	871081000	46.00	PIN,CLEVIS,W/COTTER PIN
65	871081814	23.00	PIN,ROLL,.313X2.25
66	871090146	23.00	SPRING
67	947071040	1.00	CHAIN,80X53 PITCHES W CONN
68	971090337	23.00	SPR,1.02 DIA X 11,3.92 PSI

REFER TO PREVIOUS DRAWINGS ON PAGES 84-89 FOR ITEM LOCATIONS.

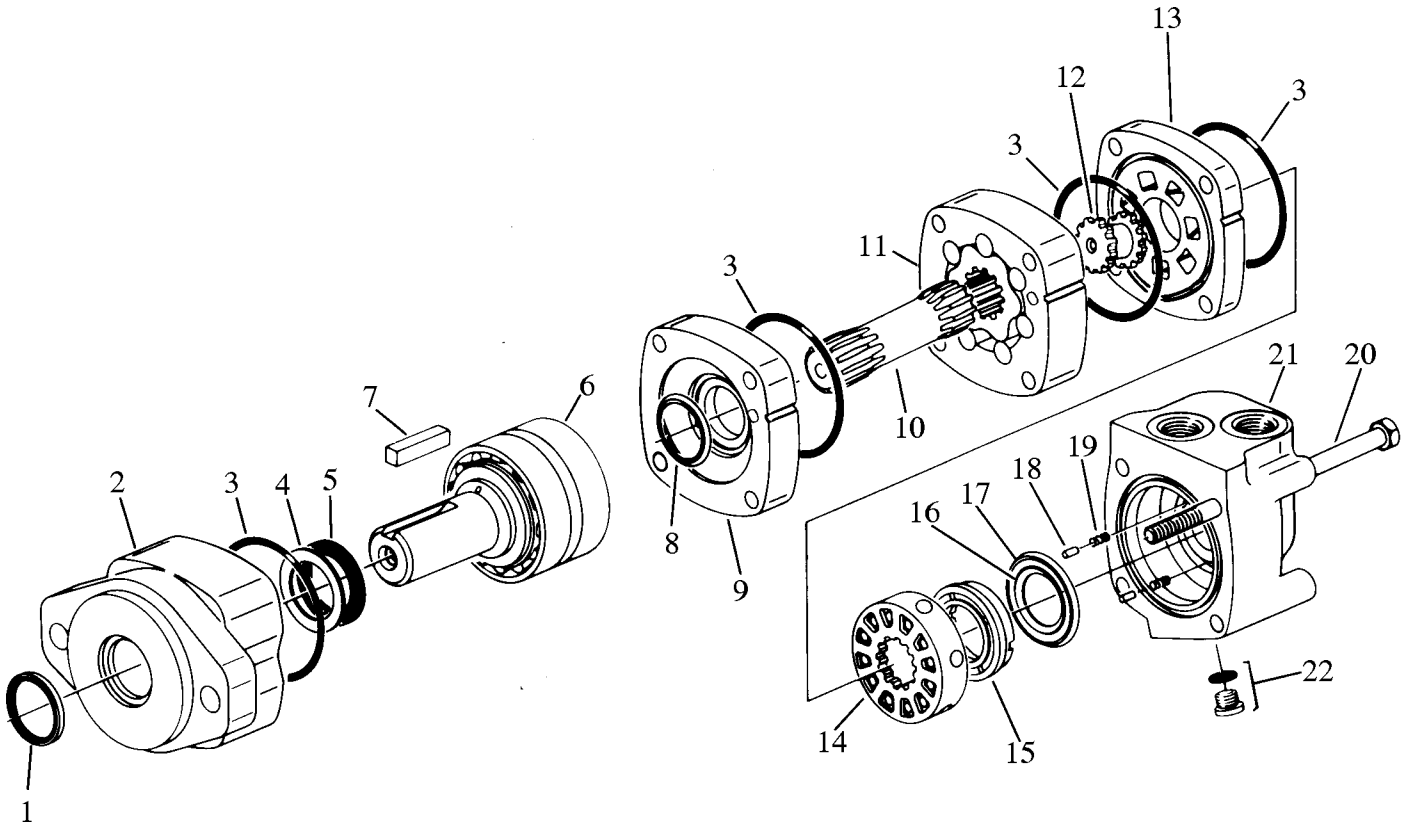
ITEM	PART NO.	QTY.	DESCRIPTION
1	107000672	18.00	ROD,W/M W/2 CLEVIS'S
2	208712192	2.00	BEARING ASSY
3	32956	22.00	FITT,LUBE,STR,.188 DRIVE
4	40074	1.00	SPROCKET,REWORK,.313 KEYWAY
5	41104	1.00	SPREADROLL REAR SEAL,13
6	40655	18.00	HANDLE,GATE LEVER
7	40668	18.00	GATE LATCH PLATE W/M
8	40738	5.00	BEARING BLOCK,FRONT HOPPER
9	40784-08	1.00	FRONT HOPPER W/M,13
10	40790	1.00	AUGER SHAFT,LH
11	40791	1.00	ADJUSTER PLATE
12	40792	2.00	WEAR PLATE
13	40793	1.00	BAR,.500X1.25X13.50,W/HOLES
14	40794-01	1.00	KEY,SQ,.375X3.25
15	40795	10.00	WEAR BAR,6 GATE
16	40796	8.00	WEAR BAR,12 GATE
18	40798-02	1.00	GATE HINGE ROD,1 OD X 76.00
18A	40798-03	1.00	GATE HINGE ROD,1 OD X 82.00
19	40799	1.00	ADJUSTMENT ROD W/M
20	40800	18.00	GATE LATCH FLANGE W/M
21	40846	1.00	AUGER SHAFT W/M,RH
22	40849-03	1.00	SEGREGATION SCREEN W/M,12
22A	40849-05	1.00	SEGREGATION SCREEN W/M,14
23	40850	1.00	BEARING & SPROCKET ASSY
24	40858	4.00	GATE W/M,12
25	40857	4.00	GATE W/M,12,WITH PIVOT
26	40859	10.00	GATE W/M,6
27	40867-08	1.00	SPREADROLL W/M,13
28	40870-08	1.00	AUGER W/M,13
29	40872-08	1.00	ACTUATING SHAFT,13
30	41004	1.00	SHIELD,SPREAD ROLL,LH
31	41005	1.00	SHIELD,SPREAD ROLL,RH
32	41031	1.00	CHAIN GUARD W/M
33	41032	1.00	PLATE,HOLE COVER,RH
34	41033	1.00	PLATE,HOLE COVER,LH

REFER TO PREVIOUS DRAWINGS ON PAGES 84-89 FOR ITEM LOCATIONS.

ITEM	PART NO.	QTY.	DESCRIPTION
35	72414	5.00	BEARING,PLASTIC,1.5 SHAFT
36	72530	1.00	SPROCKET,CHAIN,80BS30
37	80038	85.00	NUT,HEX,.375-16
38	80040	10.00	NUT,HEX,.500-13
39	80074	18.00	NUT,HEX,JAM,.375-16
40	80142	94.00	WASHER,TYPE A PLAIN,.375
41	80162	85.00	WASHER,SPLIT LOCK,.375
42	80164	14.00	WASHER,SPLIT LOCK,.500
43	80186	8.00	CSHH,.500-13X1.75,GR5
44	80224	33.00	CSHH,.375-16X1.25,GR5
46	80255	4.00	CSHH,.500-13X2.00,GR5
47	80301	1.00	SET S,HSKT,KCUP,.250-20X.500
48	80305	4.00	SET S,HSKT,.375-16X.50
49	80336	2.00	COTTER PIN,.188X1.50
50	80354	3.00	NUT,FLEXLOC,.500-13,FULL,LT
51	80403	10.00	CSHH,.500-13X5.00,GR5
52	80778	2.00	CSHH,.500-13X3.25,GR5
53	80831	18.00	SET S,SQ,.375-16X2.00
54	80973	18.00	SHLDR SCR,.500X1.00X.375-16
55	81022	8.00	CSSFH,.375-16X1.25
56	845311009	2.00	BEARING,FLANGE 1.50,4-BOLT
57	848019756	2.00	PLATE,WEAR
58	853111043	1.00	MOTOR,HYDRAULIC
59	871020103	52.00	CRG BOLT,.375-16X1.00,GR5
60	871032322	6.00	CSSFH,.500-13X1.25
61	871054100	18.00	DRIVE SCREW,#14x3/4
62	871072703	6.00	WASHER,LOCK,EXT TOOTH CSK,.500
63	871075203	23.00	COLLAR,SET,1.5IDX2.25ODX.75SST
64	871081000	32.00	PIN,CLEVIS,W/COTTER PIN
65	871081814	18.00	PIN,ROLL,.313X2.25
66	871090146	18.00	SPRING
67	947071040	1.00	CHAIN,80X53 PITCHES W CONN
68	971090337	18.00	SPR,1.02 DIA X 11,3.92 PSI

REFER TO PREVIOUS DRAWINGS ON PAGES 84-89 FOR ITEM LOCATIONS.

ITEM	PART NO.	QTY.	DESCRIPTION
1	36650-01	1.00	DUST SEAL
2	72725-01	1.00	BEARING HOUSING
3	36650-03	4.00	SEAL, 3" (76MM) ID
4	36650-04	1.00	RING BACKUP
5	36650-05	1.00	SHAFT SEAL
6	72725-02	1.00	SHAFT & BEARING KIT
7	72725-03	1.00	KEY
8	32669	1.00	SHAFT FACE SEAL
9	35532-02	1.00	WEAR PLATE
10	72725-05	1.00	DRIVE
11	72725-06	1.00	GEROLER
12	32677	1.00	VALVE DRIVE
13	36650-09	1.00	VALVE PLATE
14	36650-10	1.00	VALVE
15	953119341	1.00	BALANCE RING
16	32684	1.00	INNER FACE SEAL
17	36650-11	1.00	OUTER FACE SEAL
18	32686	2.00	PIN
19	32687	2.00	SPRING
20	72725-07	4.00	BOLT, 5.70" (144.78MM)
21	72725-04	1.00	VALVE HOUSING
22	32690	1.00	PLUG ASSEMBLY, 7/16-20 UNF
NS	35200-01	KIT	HYDRAULIC MOTOR SEAL KIT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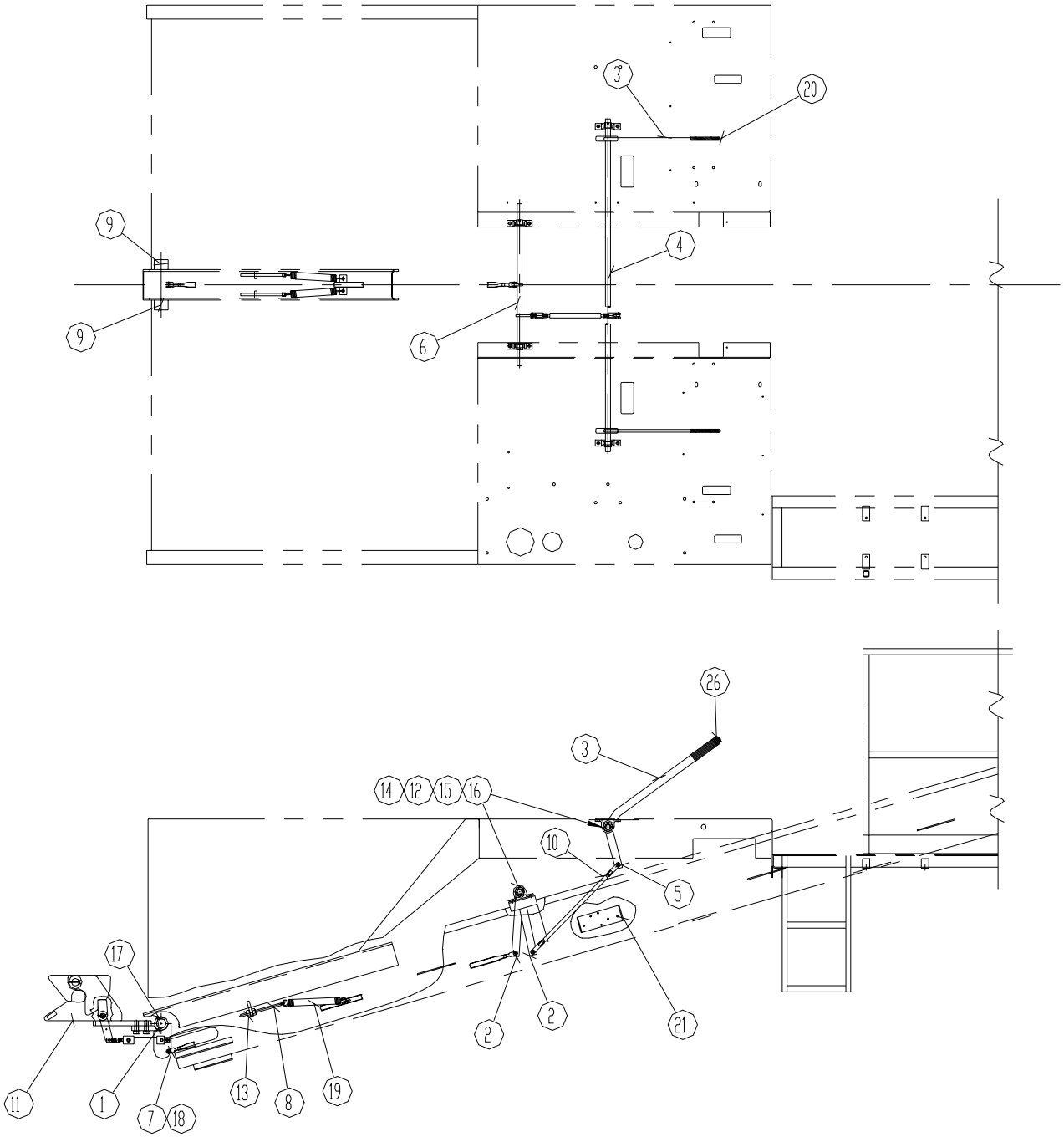
ITEM	PART NO.	QTY.	DESCRIPTION
1	106000690	1.00	SHAFT,TRUCK HOOK
2	41245	2.00	BAR,.500X1.50X13.25 W/HOLES
3	106001405	1.00	HANDLE,TRUCK HOOK
4	106008298	1.00	CROSS SHAFT
5	106008299	1.00	LINK,TRUCK HOOK
6	106008300	1.00	SHAFT,TRUCK HITCH
7	107000062	1.00	ROD,TRUCK HOOK
8	107000225	2.00	ROD,SPRING
9	33684	2.00	FITT,LUBE,STR,1/8 NPTF
10	40324	1.00	REACH ROD ASSY
11	41239	1.00	HITCH,HYD RELEASE,SMALL (SEE DETAIL)
12	80038	8.00	NUT,HEX,.375-16
13	80040	4.00	NUT,HEX,.500-13
14	80162	8.00	WASHER,SPLIT LOCK,.375
15	80221	8.00	CSHH,.375-16X1.00,GR5
16	845202026	4.00	BEARING,PILLOW BLOCK
17	871045703	1.00	SET S,.50DOG,.500-13X.50
18	871081000	2.00	PIN,CLEVIS,W/COTTER PIN
19	871090326	2.00	SPR,177WIRE,1.38OD,39CL,8.75LG
20	41064	1.00	HARNESS,WIRE,VALVE TO GROUND
21	72149	1.00	VLV,HYD,SOL,3 WAY,06 ORB PORTS
26	72244	REF	FLEX GRIP HANDLE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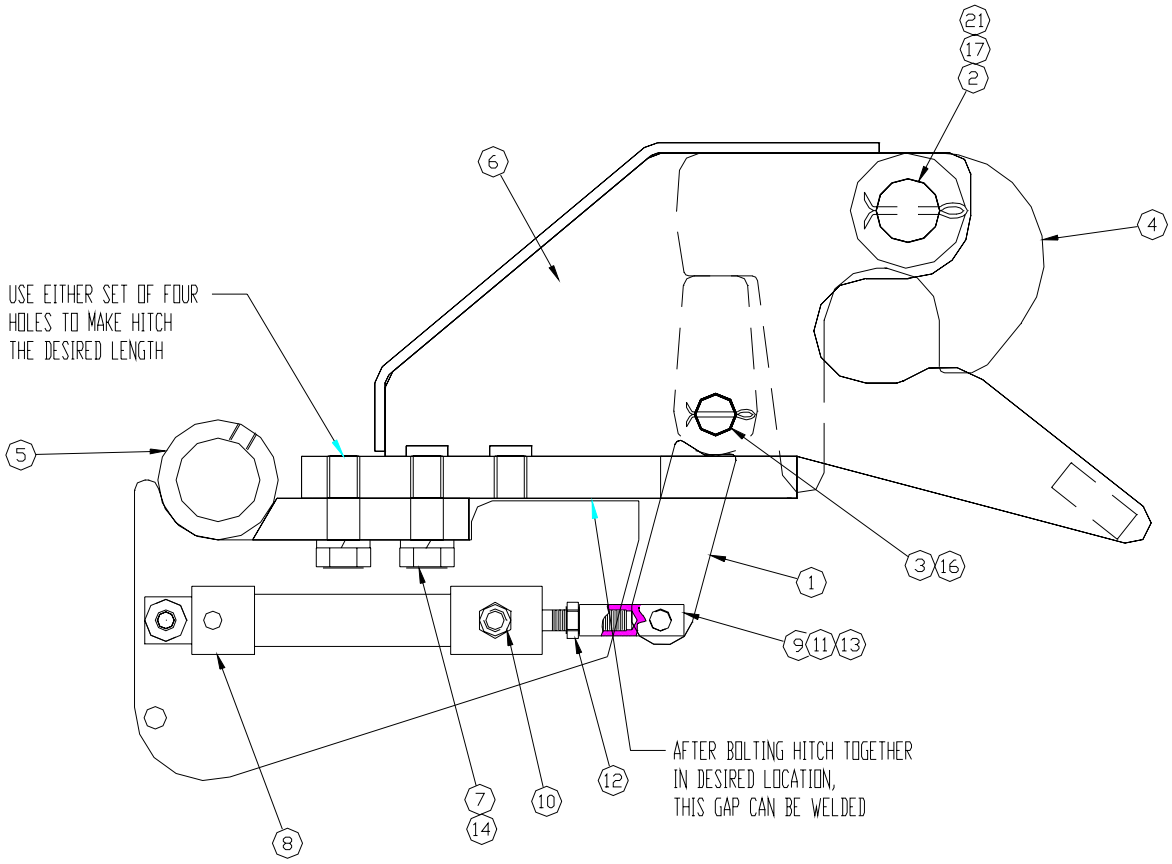
ITEM	PART NO.	QTY.	DESCRIPTION
1	40541	1.00	LATCH,HOOK
2	40543	1.00	PIN,HOOK,1.50 OD
3	40549	1.00	PIN,LATCH,1.00 OD
4	40984	1.00	HOOK,HD TRUCK HITCH
5	41178	1.00	W/M,HITCH PIVOT,HD HITCH
6	41180	1.00	W/M,BASE,HD HITCH
7	71641	4.00	CSHH,.750-10X2.25,GR5
8	72526	1.00	CYL,HYD,1.00B X 3.00S(SPRING)
9	72528	1.00	BALL JOINT,.500-20
10	72529	1.00	BREATHER,04-MP
11	80058	1.00	NUT,HEX,.500-20
12	80093	1.00	NUT,HEX,JAM,.500-20
13	80164	1.00	WASHER,SPLIT LOCK,.500
14	80168	4.00	WASHER,SPLIT LOCK,.750
15	80232	1.00	CSHH,.375-16X2.50,GR5
16	80336	2.00	COTTER PIN,.188X1.50
17	80338	2.00	COTTER PIN,.188X2.00
18	80352	1.00	NUT,FLEXLOC,.375-16,FULL,LT
19	80706	4.00	WASHER,SAE PLAIN,1.000
20	80996	1.00	WASHER,SAE PLAIN,.375
21	81089	4.00	WASHER,SAE PLAIN,1.500


21
17
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USE EITHER SET OF FOUR
HOLES TO MAKE HITCH
THE DESIRED LENGTH
5
3
16
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13
AFTER BOLTING HITCH TOGETHER
IN DESIRED LOCATION,
THIS GAP CAN BE WELDED
12
7
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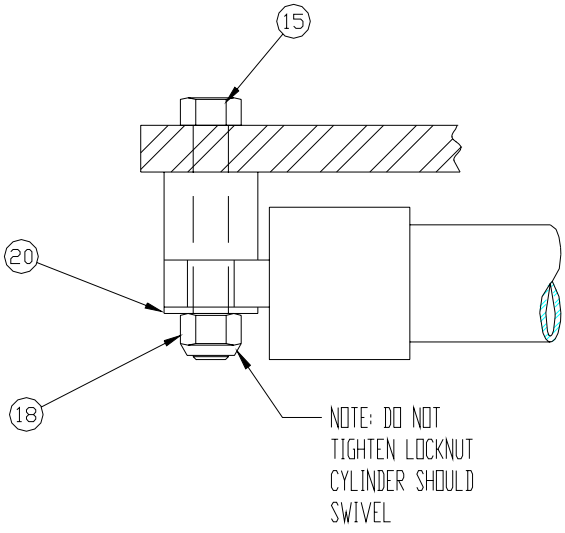
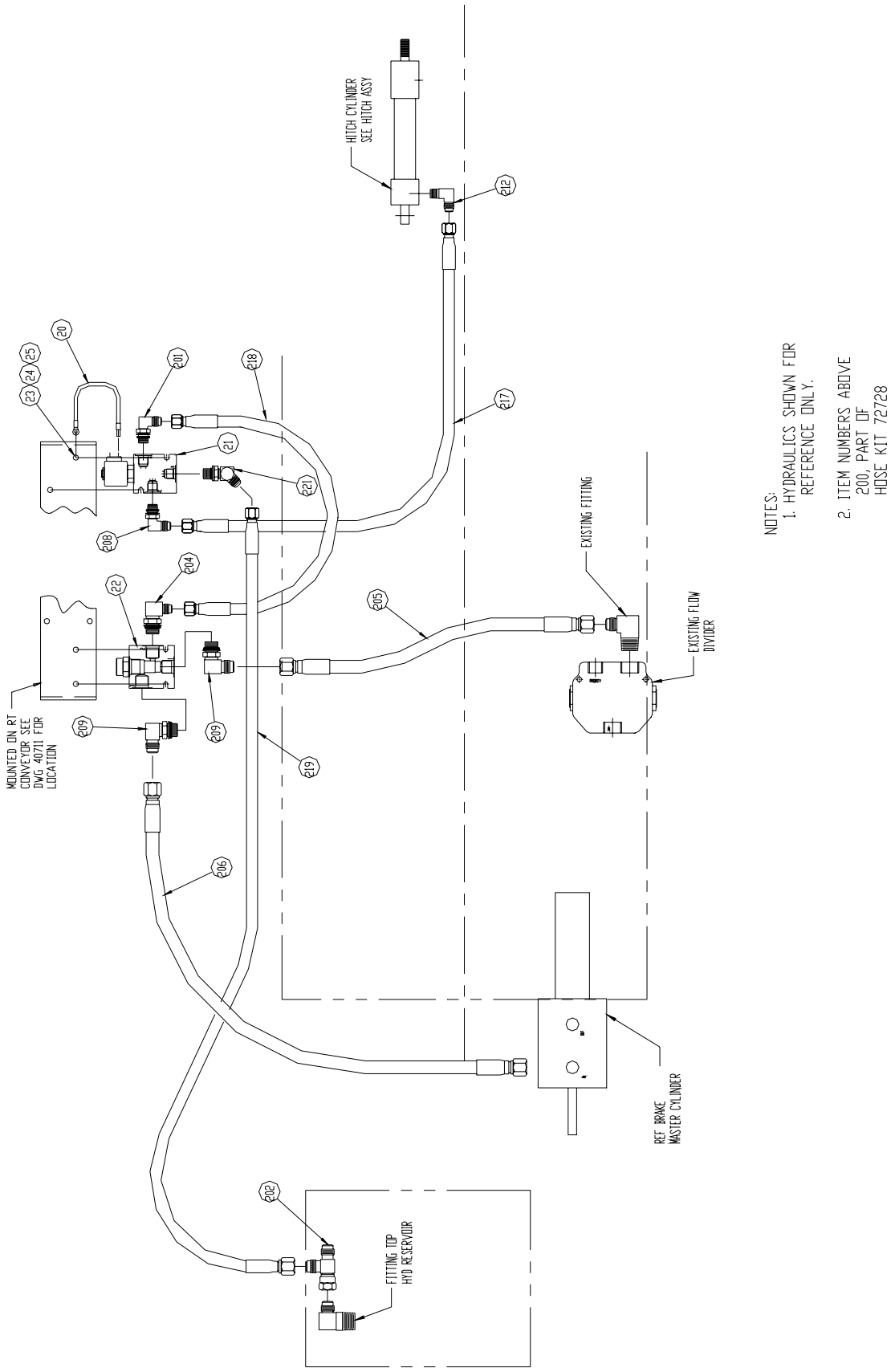

15
20
18
NOTE: DO NOT
TIGHTEN LOCKNUT
CYLINDER SHOULD
SWIVEL

ITEM	PART NO.	QTY.	DESCRIPTION
20	41064	1.00	HARNESS,WIRE,VALVE TO GROUND
21	72149	1.00	VLV,HYD,SOL,3 WAY,06 ORB PORTS
22	72525	1.00	VLV,HYD,FLW REGULATOR,4.5 GPM
23	80195	4.00	CSHH,.250-20X1.75,GR5
24	80350	4.00	NUT,FLEXLOC,.250-20,FULL,LT
25	80970	8.00	WASHER,SAE PLAIN,.250

72728 REV: A HOSE KIT

201	33892	1.00	FITT,90 06MJ-06MB
202	33898	2.00	FITT,TEE 08MJ-08FJX-08MJ
204	34535	1.00	FITT,90 06MJ-08MB
205	35059	2.00	HOSE ASSY 2500 PSI,-08 X 28
206	35060	1.00	HOSE ASSY 2500 PSI,-08 X 56
208	35562	1.00	FITT,90 04MJ-06MB
209	6410	3.00	FITT,90 08MJ-08MB
212	71822	1.00	FITT,90 04MJ-04MP
217	72531	1.00	HOSE,HYD 3000PSI,-04 X 112.0
218	72532	1.00	HOSE,HYD 3000PSI,-04 X 14.00
219	72533	1.00	HOSE,HYD 3000PSI,-06 X 132.0
221	72614	1.00	FITT,45 06MJ-06MB

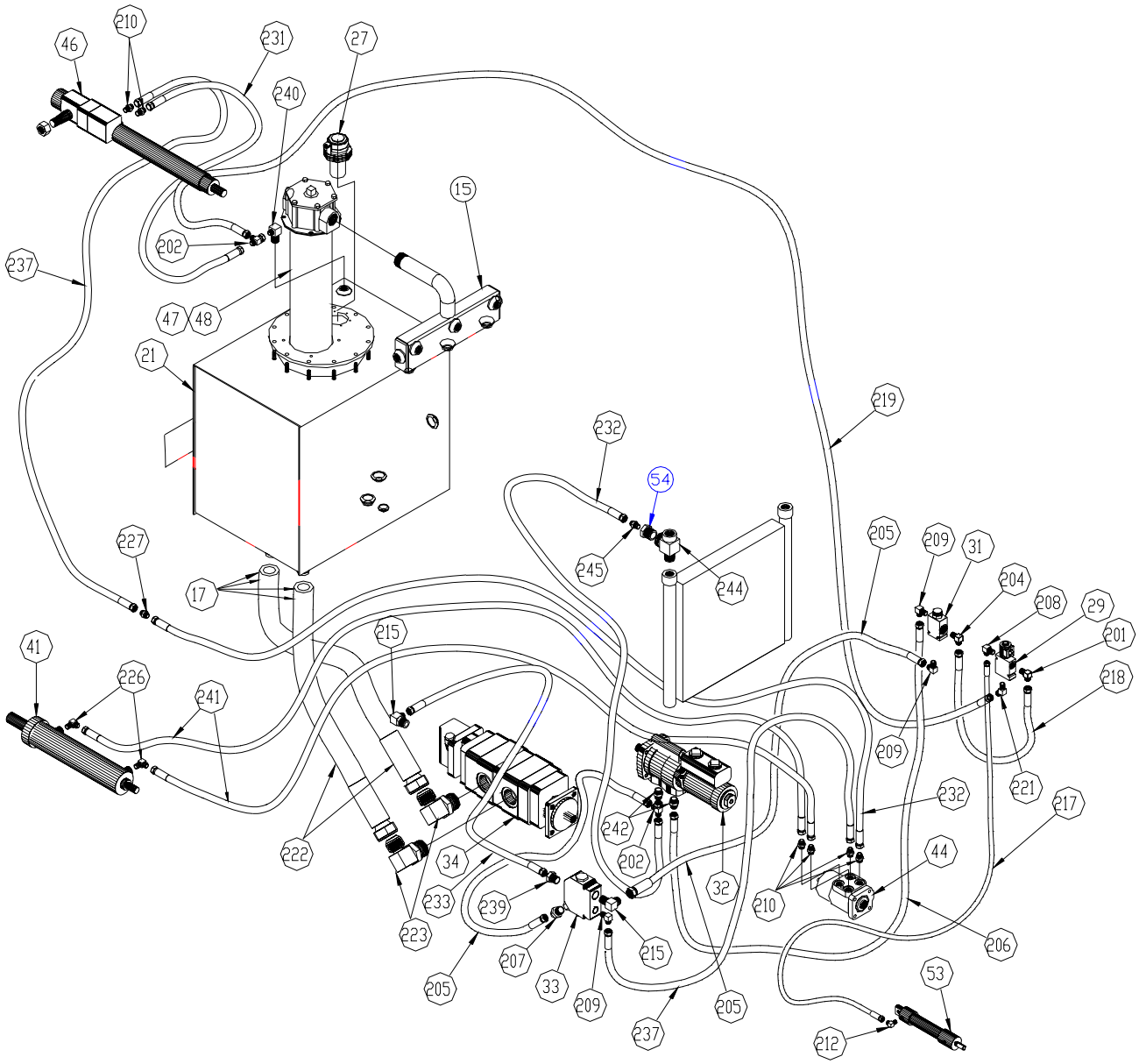

HITCH CYLINDER
SEE HITCH ASSY
212
20
25
24
23
201
218
217
21
221
208
204
22
205
EXISTING FITTING
EXISTING FLOW
DIVIDER
MOUNTED ON RT
CONVEYOR SEE
DWG 40711 FOR
LOCATION
209
209
219
206
REF BRAKE
MASTER CYLINDER
202
FITTING TOP
HYD RESERVOIR
NOTES:
1. HYDRAULICS SHOWN FOR
REFERENCE ONLY.
2. ITEM NUMBERS ABOVE
200, PART OF
HOSE KIT 72728

ITEM	PART NO.	QTY.	DESCRIPTION
NS	000200190	2.00	SWITCH,TOGGLE,SPST,2-POS
NS	106004634	1.00	U-BOLT
NS	108412720	1.00	HARNESS,WIRE,JUMPER ASSY
NS	206000886	1.00	ADAPTOR,PUMP DRIVE
NS	206002610	2.00	GUARD,COUPLING
NS	206002630	1.00	PAD
5	307000823	1.00	MANIFOLD W/M
17	33169	4.00	CLAMP,HOSE,1.31-2.25,WORM #28
21	407000423	1.00	RESERVOIR,HYDRAULIC
27	6451	1.00	FILLER,BREATHER,-3 SCREEN
29	72149	1.00	VLV,HYD,SOL,3 WAY,06 ORB PORTS
31	72525	1.00	VLV,HYD,FLW REGULATOR,4.5 GPM
32	72636	1.00	BRAKE,MASTER CYL,SINGLE STAGE
33	72651	1.00	VLV,HYD,PRI W/RELIEF, 4 GPM
34	72653	1.00	PUMP,HYD GEAR,3-STAGE W/PRI
41	853501068	1.00	CYL,HYD,2.50X10.00,2500,10.75
44	948050030	1.00	ORBITROL,STEERING MOTOR
46	953501110	1.00	CYL,12.00X8.0,2000PSI,23.13
47	953531157	1.00	CANISTER,FILTER
48	953531158	2.00	ELEMENT,FILTER,HYD
52	72728	1.00	KIT,HYD,HOSE & FITT,MECH C/S
53	72526	1.00	CYL,HYD,1.00B X 3.00S(SPRING)
54	99990	1.00	PIPE,BUSH,16MP-08FP

72728 REV: A KIT,HYD HOSE & FITT (ALL ITEMS WITH #200 AND UP)

201	33892	1.00	FITT,90 06MJ-06MB
202	33898	2.00	FITT,TEE 08MJ-08FJX-08MJ
204	34535	1.00	FITT,90 06MJ-08MB
205	35059	2.00	HOSE ASSY 2500 PSI,-08 X 28
206	35060	1.00	HOSE ASSY 2500 PSI,-08 X 56
207	35193	1.00	FITT,STR 08MJ-06MP
208	35562	1.00	FITT,90 04MJ-06MB
209	6410	3.00	FITT,90 08MJ-08MB
210	70062	6.00	FITT,STR 08MJ-08MB
212	71822	1.00	FITT,90 04MJ-04MP
215	72253	2.00	FITT,90 08MJ-12MB
217	72531	1.00	HOSE,HYD 3000PSI,-04 X 112.0
218	72532	1.00	HOSE,HYD 3000PSI,-04 X 14.00
219	72533	1.00	HOSE,HYD 3000PSI,-06 X 132.0
221	72614	1.00	FITT,45 06MJ-06MB
222	72667-030	2.00	HOSE,24,24FJX,150
223	72668	2.00	FITT,90 24MJ-24MB
226	853180573	2.00	FITT,90 08MJ-06MP
227	853180706	1.00	FITT,STR 08MJ-08MJ
231	853272003	1.00	HOSE ASSY 2000 PSI,-08X36
232	853272031	2.00	HOSE ASSY 2000 PSI,-08 X 102
233	853272034	1.00	HOSE,08X140,08FJX-08FJX,2500
237	953272079	2.00	HOSE,08X120
239	X170	1.00	FITT,STR 08MJ-12MB
240	X180	1.00	FITT,90 08MJ-12MP
241	853272576	2.00	HOSE,08x188,2750,100RI
242	853180167	2.00	FITT,STR 08MJ-10MB
244	953181589	1.00	FITT,TEE 16MP-16FP-16FP
245	853180103	1.00	FITT,STR 08MJ-12MP

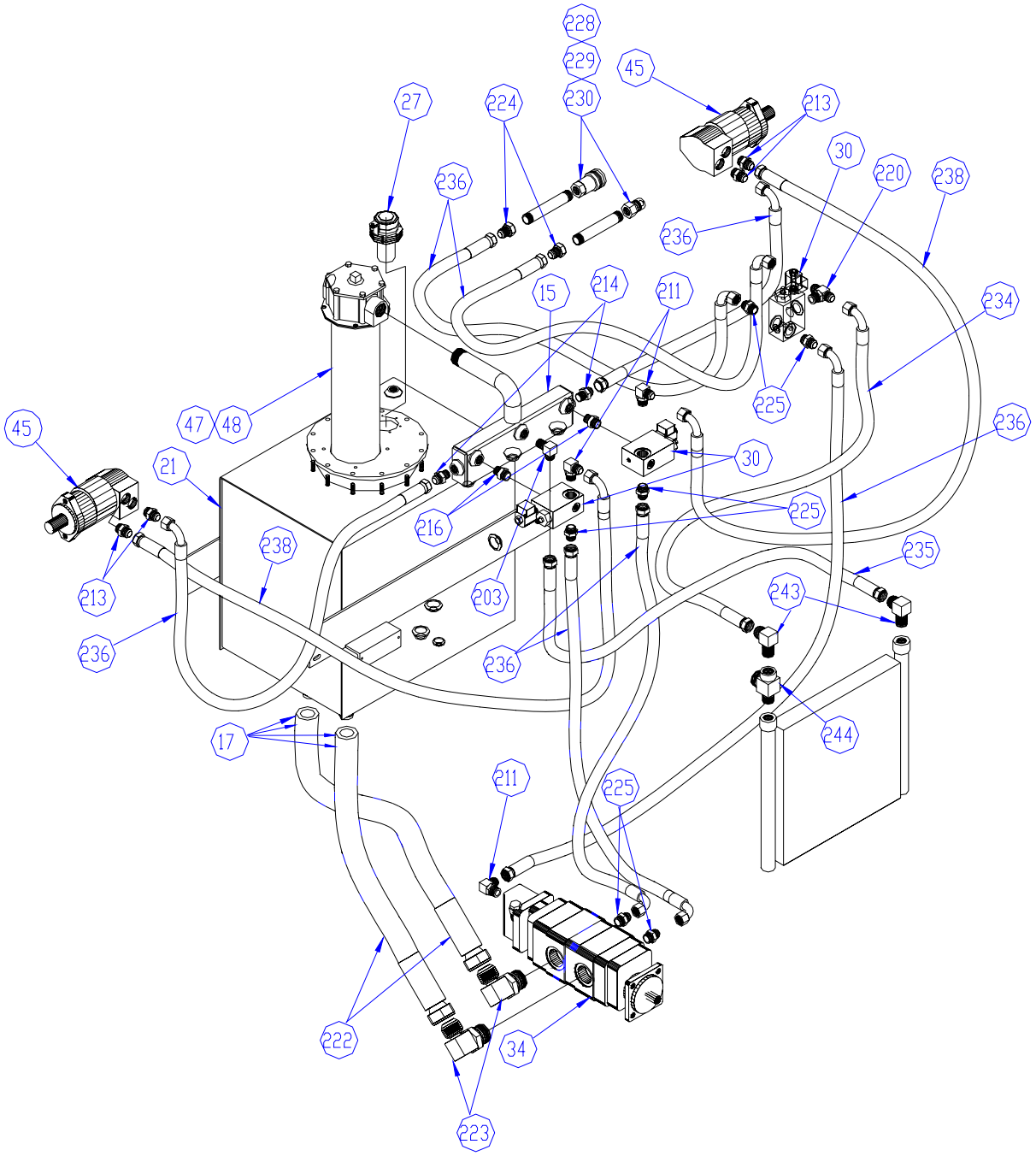
CONTINUED



SEE HYDRAULIC SCHEMATIC AT THE END OF THIS PARTS SECTION

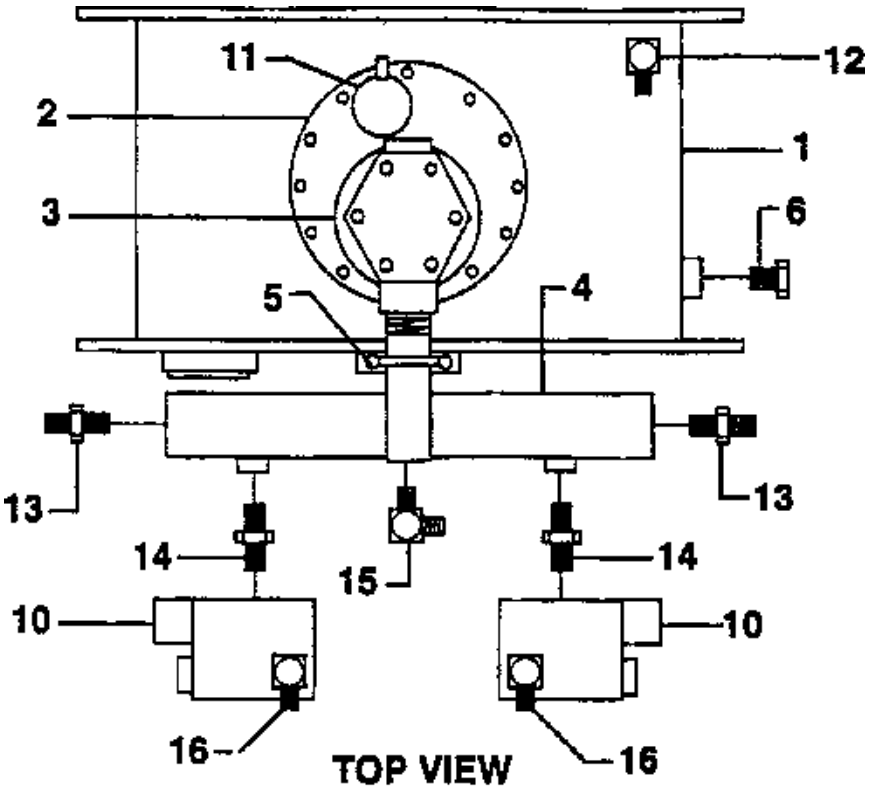
ITEM	PART NO.	QTY.	DESCRIPTION
NS	207000737	1.00	PUMP MTG PLATE,W/M
NS	207001186	2.00	COUPLING
NS	207001197	1.00	FRONT PUMP SUPPORT W/M
NS	208465727	1.00	SHAFT,DRIVE
NS	21934	1.00	BAR,.25OX1.00X3.00
NS	306001174	2.00	ARM,TORQUE
15	307000823	1.00	MANIFOLD W/M
NS	33063	2.00	U-BOLT,.250-20,1.12IW,2.00IL
17	33169	4.00	CLAMP,HOSE,1.31-2.25,WORM #28
NS	33593	3.00	LOOM,SPIRAL CUT,.25 OD,NATURAL
NS	40313	1.00	BRACKET,MANIFOLD
21	407000423	1.00	RESERVOIR,HYDRAULIC
NS	40746	1.00	HARNESS,WIRE CONV & HOPPER SOL
NS	40757	1.00	VALVE MOUNT W/M
NS	40928	7.00	CLAMP,DUAL HOSE,.75 OD
NS	41063	1.00	HARNESS,WIRE,CONVEYOR
NS	41064	1.00	HARNESS,WIRE,VALVE TO GROUND
27	6451	1.00	FILLER,BREATHER,-3 SCREEN
NS	70452	2.00	KEY,SQ,.375X2
30	72321	3.00	VLV,HYD,RELIEF,VENTABLE
34	72653	1.00	PUMP,HYD GEAR,3-STAGE W/PRI
NS	80195	4.00	CSHH,.250-20X1.75,GR5
NS	80222	4.00	CSHH,.375-24X1.00,GR5
NS	80350	4.00	NUT,FLEXLOC,.250-20,FULL,LT
NS	80970	8.00	WASHER,SAE PLAIN,.250
NS	851201417	50.00	TIE WRAP,.094X4.00
NS	871066120	2.00	SEAL,SWITCH,NUT,.469-32
NS	871111602	15.00	CLAMP,LOOP,.75 OD,PLSTC COVER
45	953111045	2.00	MOTOR,HYD
47	953531157	1.00	CANISTER,FILTER
48	953531158	2.00	ELEMENT,FILTER,HYD

	72728	**REV: A**	**KIT,HYD HOSE & FITT** (ALL ITEMS WITH #200 AND UP)
203	34072	1.00	FITT,90 12MJ-12MP
211	71775	3.00	FITT,90 12MJ-12MB
213	71882	4.00	FITT,STR 12MJ-10MB
214	72178	2.00	FITT,STR 12MJ-12MP
216	72400	2.00	FITT,STR 12MP-12MB
220	72566	1.00	FITT,TEE 12MJ-12MJ-12MB
222	72667-030	2.00	HOSE,24,24FJX,150
223	72668	2.00	FITT,90 24MJ-24MB
224	853180126	2.00	FITT,STR 12MJ-12FP
225	853180160	6.00	FITT,STR 12MJ-12MB
228	853182304	1.00	FITT,QD -12 FP,SET
229	853182305	1.00	CAP,DUST,12 QD
230	853182306	1.00	PLUG,DUST,12 QD
234	853272563	1.00	HOSE ASSY 225O PSI,-12 X 54
235	853272566	1.00	HOSE ASSY 3/4ID X 32'' 3/4JIC
236	853272569	7.00	HOSE ASSY 3/4IDX42"3/4JIC FEM
238	953272590	2.00	HOSE,12X36,12FJX90(2)
243	853180544	2.00	FITT,90 12MJ-16MP
244	953181589	1.00	FITT,TEE 16MP-16FP-16FP

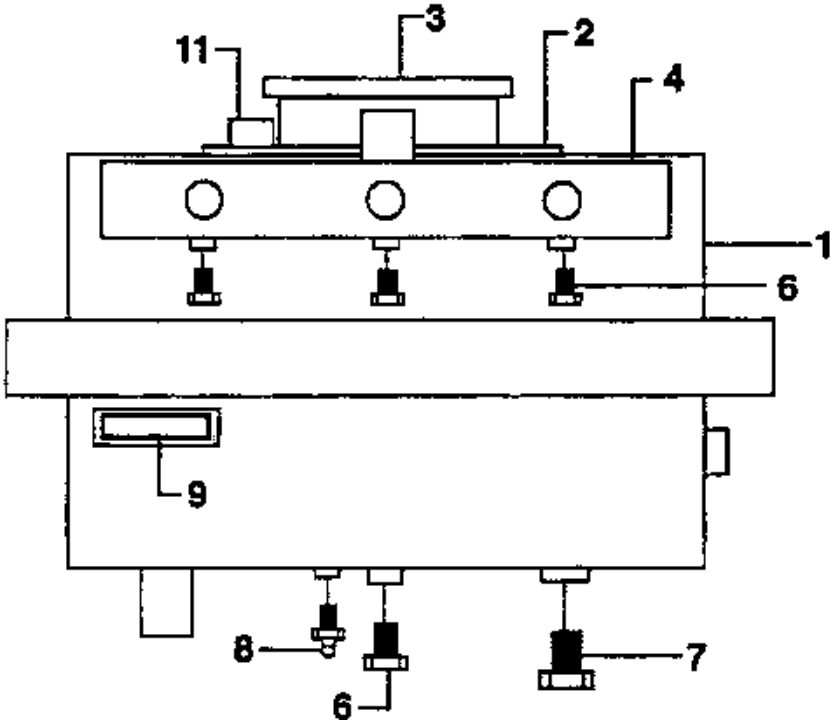


SEE HYDRAULIC SCHEMATIC AT THE END OF THIS PARTS SECTION

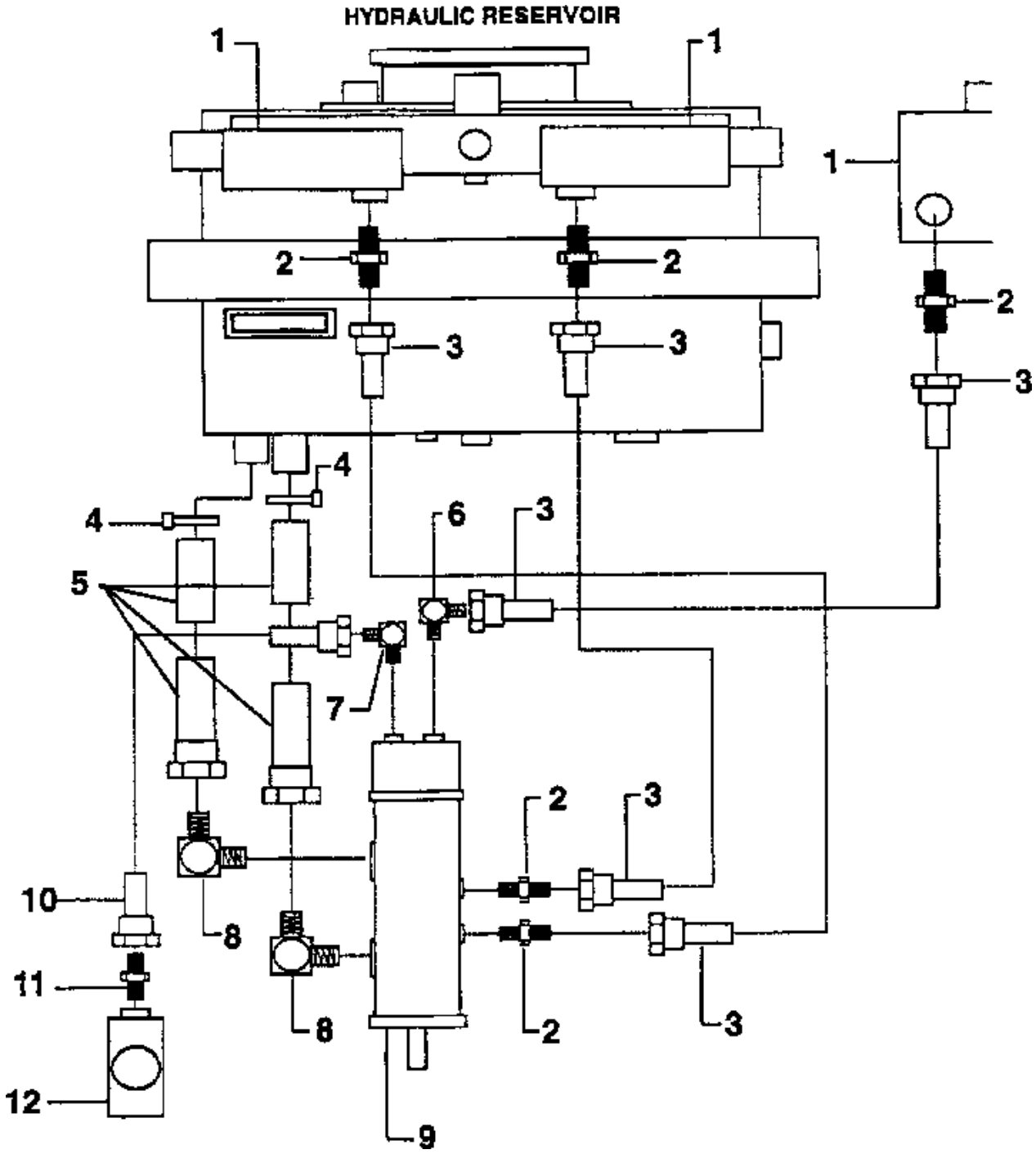
ITEM	PART NO.	QTY.	DESCRIPTION
1	407000423	1.00	RESERVOIR,HYDRAULIC
2	306001137	1.00	PLATE,COVER
NS	106002922	1.00	GASKET,COVER
3	953531157	1.00	CANISTER,FILTER
NS	953531158	2.00	ELEMENT,FILTER,HYD
NS	34231	1.00	STRAINER
4	307000823	1.00	MANIFOLD W/M
5	971022314	1.00	U-BOLT,.250-20,2.00IW,3.25IL
6	99538	5.00	PIPE,PLUG,12MP,SQ HD,MI
7	99537	1.00	PIPE,PLUG,08MP,SQ HD,MI
8	35368	1.00	SENDER,TEMP GAUGE,04 MP
9	851240145	1.00	TERMINAL BLOCK (FOR DETAIL SEE WIRING SCHEMATIC)
10	72321	3.00	VLV,HYD,RELIEF,VENTABLE
11	6451	1.00	FILLER,BREATHER,-3 SCREEN
12	X180	1.00	FITT,90 08MJ-12MP
13	72178	2.00	FITT,STR 12MJ-12MP
14	72400	2.00	FITT,STR 12MP-12MB
15	34072	1.00	FITT,90 12MJ-12MP
16	71775	3.00	FITT,90 12MJ-12MB



TOP VIEW



ITEM	PART NO.	QTY.	DESCRIPTION
1	72321	3.00	VLV,HYD,RELIEF,VENTABLE
2	853180160	6.00	FITT,STR 12MJ-12MB
3	853272576	2.00	HOSE,08x188,2750,100RI
4	33169	4.00	CLAMP,HOSE,1.31-2.25,WORM #28
5	72667-030	2.00	HOSE,24,24FJX,150
6	71775	3.00	FITT,90 12MJ-12MB
7	72253	2.00	FITT,90 08MJ-12MB
8	72668	2.00	FITT,90 24MJ-24MB
9	72653	1.00	PUMP,HYD GEAR,3-STAGE W/PRI
10	853272034	1.00	HOSE,08X140,08FJX-08FJX,2500
11	72651	1.00	VLV,HYD,PRI W/RELIEF, 4 GPM
12	X170	1.00	FITT,STR 08MJ-12MB


HYDRAULIC RESERVOIR
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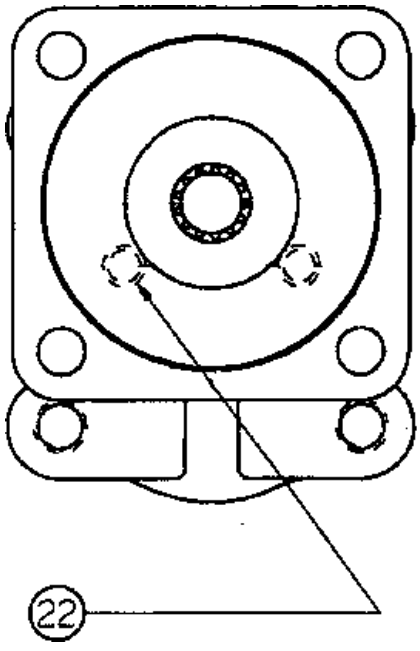
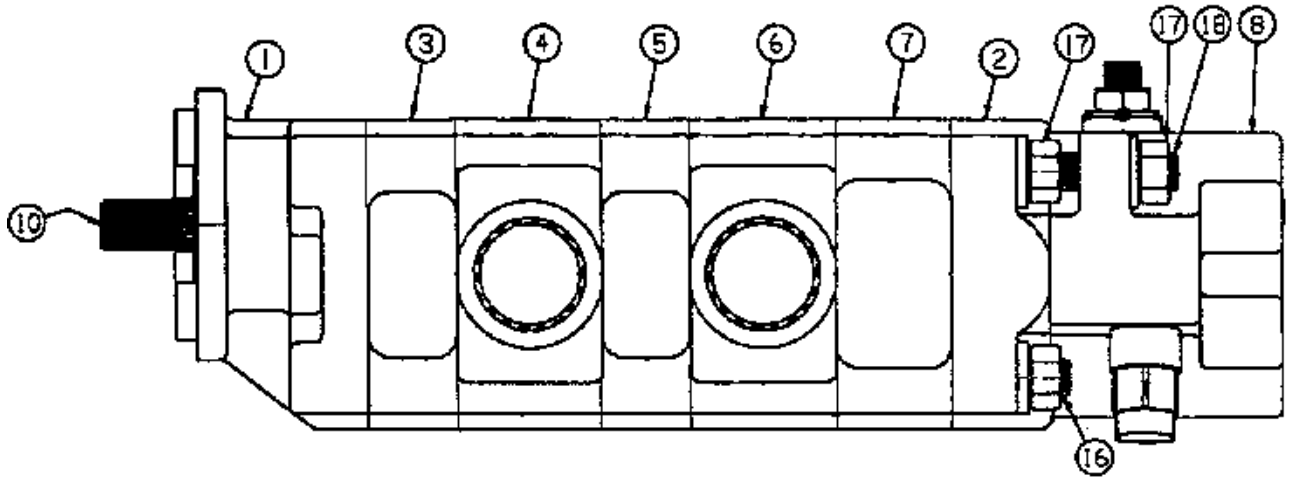
ITEM	PART NO.	QTY.	DESCRIPTION
1	72653-01	1.00	HOUSING,SEC
2	72653-02	1.00	HOUSING,PEC
3	72653-03	1.00	GEAR HOUSING
4	72653-04	1.00	BEARING CARRIER HOUSING
5	72653-03	1.00	GEAR HOUSING
6	72653-04	1.00	BEARING CARRIER HOUSING
7	853018119	1.00	GEAR HOUSING
8	72563-10	1.00	PRIORITY VALVE SUB-ASSEMBLY
10	72653-05	1.00	GEAR SHAFT SET
12	72653-06	1.00	GEAR SET
13	72653-07	1.00	GEAR SET
NS	853018124	6.00	WASHER
16	853018136	2.00	STUD
17	853018126	6.00	HEX NUT
18	853018137	2.00	STUD
21	72653-08	1.00	LIP SEAL
22	72653-11	1.00	PLUG
23	853018112	1.00	BALL BEARING
24	72653-09	1.00	SNAP RING
25	853018130	6.00	RING SEAL
26	853018114	12.00	ROLLER BEARING
27	853018118	36.00	SQ-RSTR SEAL
28	853018116	6.00	SQ-R SEAL
29	853018134	6.00	THRUST PLATE

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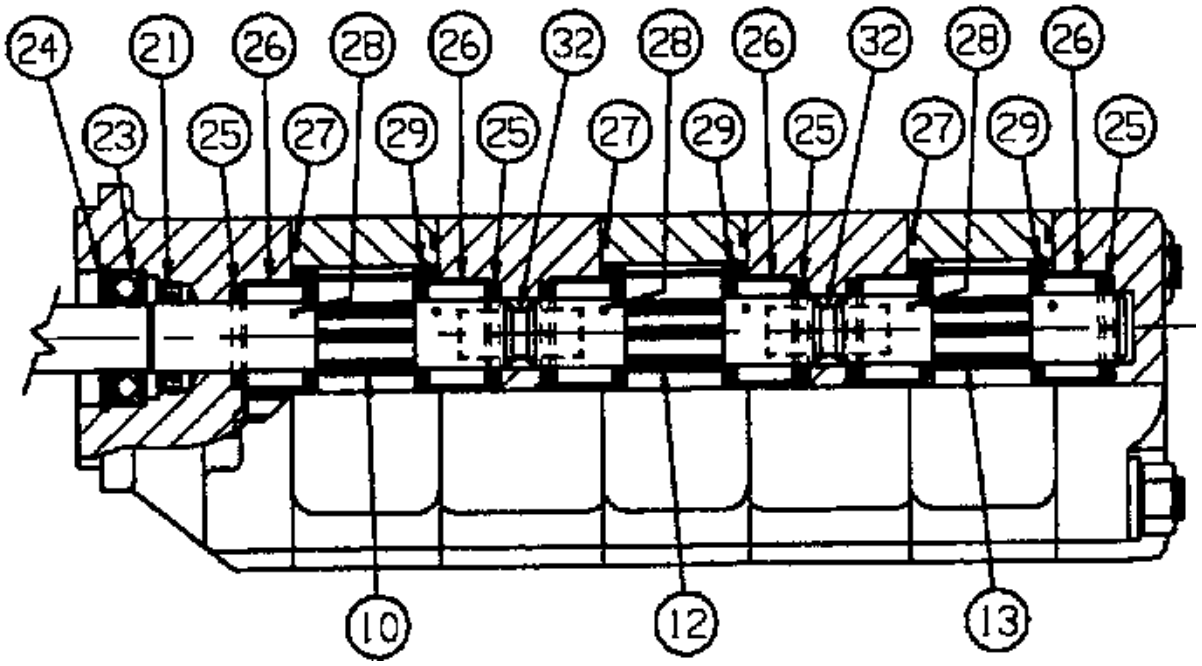
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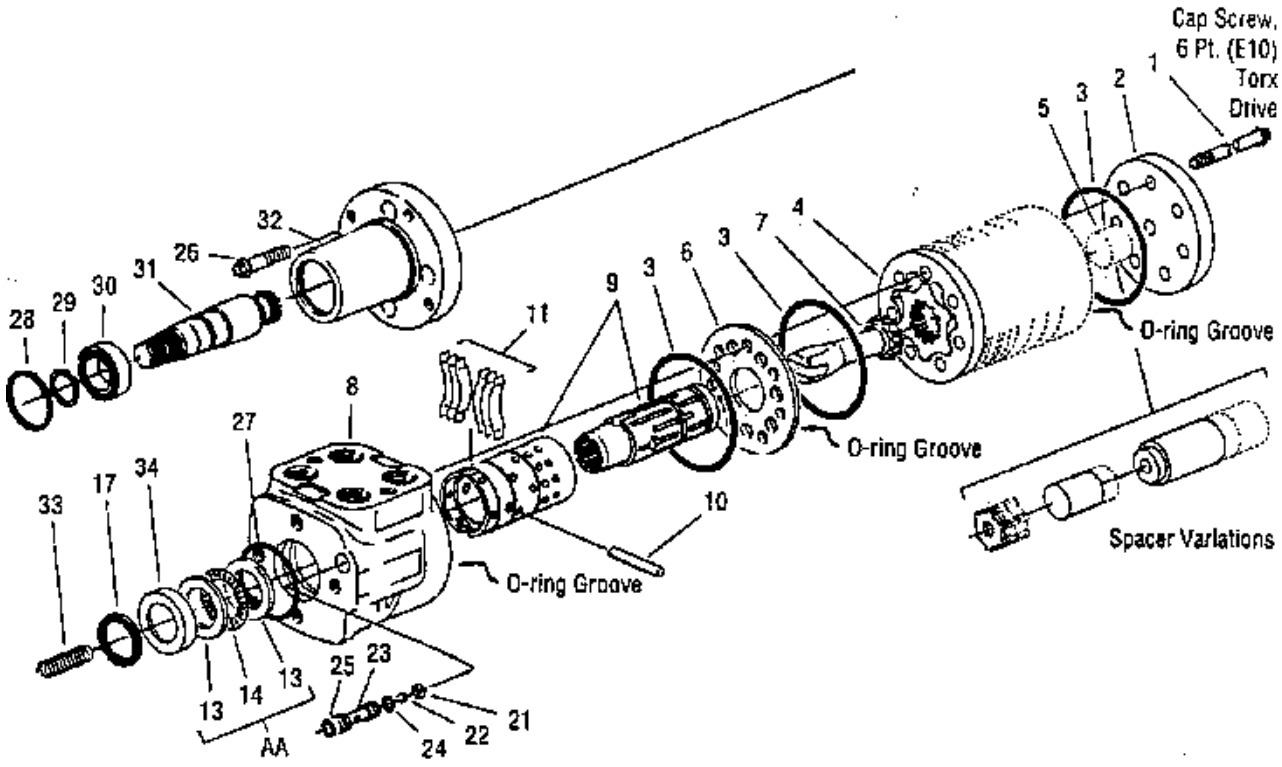
ITEM	PART NO.	QTY.	DESCRIPTION
1	37558-01	7.00	SCREW,CAP,6 POINT TORX DRIVE
2	37558-02	1.00	CAP,END
3	32728	3.00	O-RING
4	37558-03	1.00	GEROTOR
5	953119332	1.00	SPACER,.48 IN
6	37558-04	1.00	PLATE,SPACER
7	32730	1.00	DRIVE
8	NSS	1.00	HOUSING
9	NSS	1.00	SLEEVE,CONTROL
	NSS	1.00	SPOOL,CONTROL
10	32727	1.00	PIN
11	NSS	6.00	SPRING,CENTERING (SEE KIT BELOW)
13	32718	2.00	BEARING,CUP
14	32719	1.00	BEARING
15	32715	1.00	O-RING
17	32716	1.00	RING,QUAD
21	32724	1.00	RETAINER
22	32723	1.00	BALL
23	32722	1.00	SEAT
24	32674	1.00	O-RING
25	32721	1.00	O-RING
26	37558-05	4.00	SCREW,CAP,.313UNC X .625
27	31742	1.00	SEAL
28	37558-06	1.00	RING,RETAINING (BORE)
29	848038139	1.00	RING,SNAP
30	848038140	1.00	BEARING
31	36102-08	1.00	REAR ROLLER ASSEMBLY
32	37558-07	1.00	COLUMN, STEERING CONTROL
33	37558-08	1.00	SPRING
34	37558-09	1.00	BEARING LOCATOR
AA	37558-10	1.00	NEEDLE BEARING KIT
NS	37558-11	1.00	SEAL KIT (INCLDS. ITEMS 3,15,17,24,25, & 27)
NS	37558-12	1.00	CENTERINGSPRING KIT
NS	37558-13	1.00	PLATE KIT (INCLDS. 7 CAP SCREWS, 1 SPACER PLATE AND 1 END CAP)

NSS - NOT SOLD SEPERATLY
NS - NOT SHOWN


Cap Screw, 6 Pt. (E10) Torx Drive
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O-ring Groove
O-ring Groove
O-ring Groove
Spacer Variations
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AA
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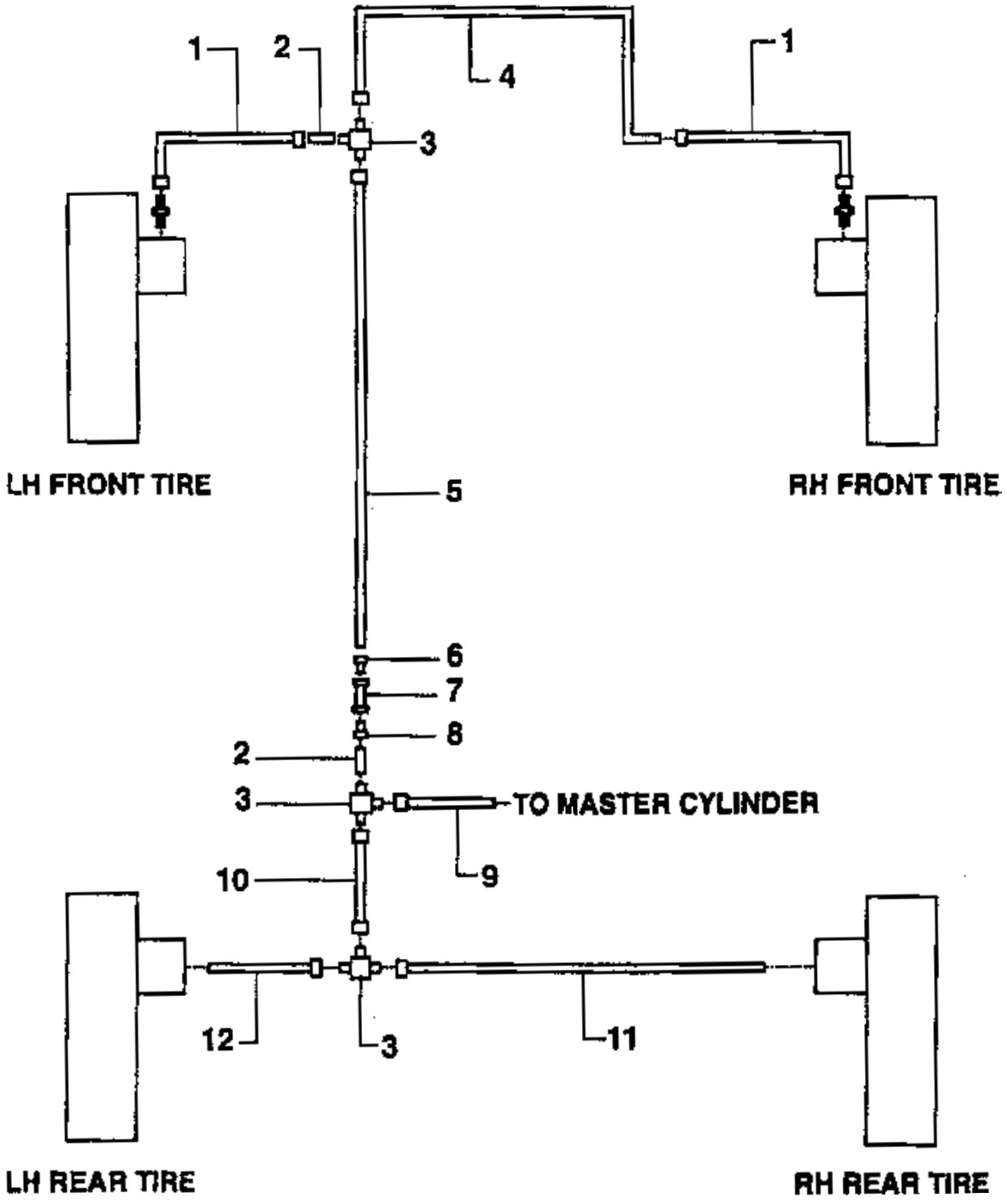
ITEM	PART NO.	QTY.	DESCRIPTION
1	953271041	2.00	HOSE,BRAKE
2	208461511	2.00	TUBE ASSY,2
3	853180618	4.00	FITT,TEE 04IFF,BRASS
4	208461512	1.00	TUBE ASSY
5	36296	1.00	BRAKE LINE,FORWARD CENTER
6	36295	1.00	FITT,STR,02MP-04IFF,BRASS
7	36294	1.00	VLV,CHECK,15 PSI
8	32103	1.00	FITT,STR,04IFF-02FP,BRASS
9	208465725	1.00	HYD TUBE ASSY
10	72251	1.00	BRAKE LINE,REAR CENTER
11	72250	1.00	BRAKE LINE,REAR AXLE,RH
12	72249	1.00	BRAKE LINE,REAR AXLE,LH
NS	33594	12.00	CLAMP,LOOP,.25 OD,REM CUSHION


1
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LH FRONT TIRE
5
RH FRONT TIRE
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TO MASTER CYLINDER
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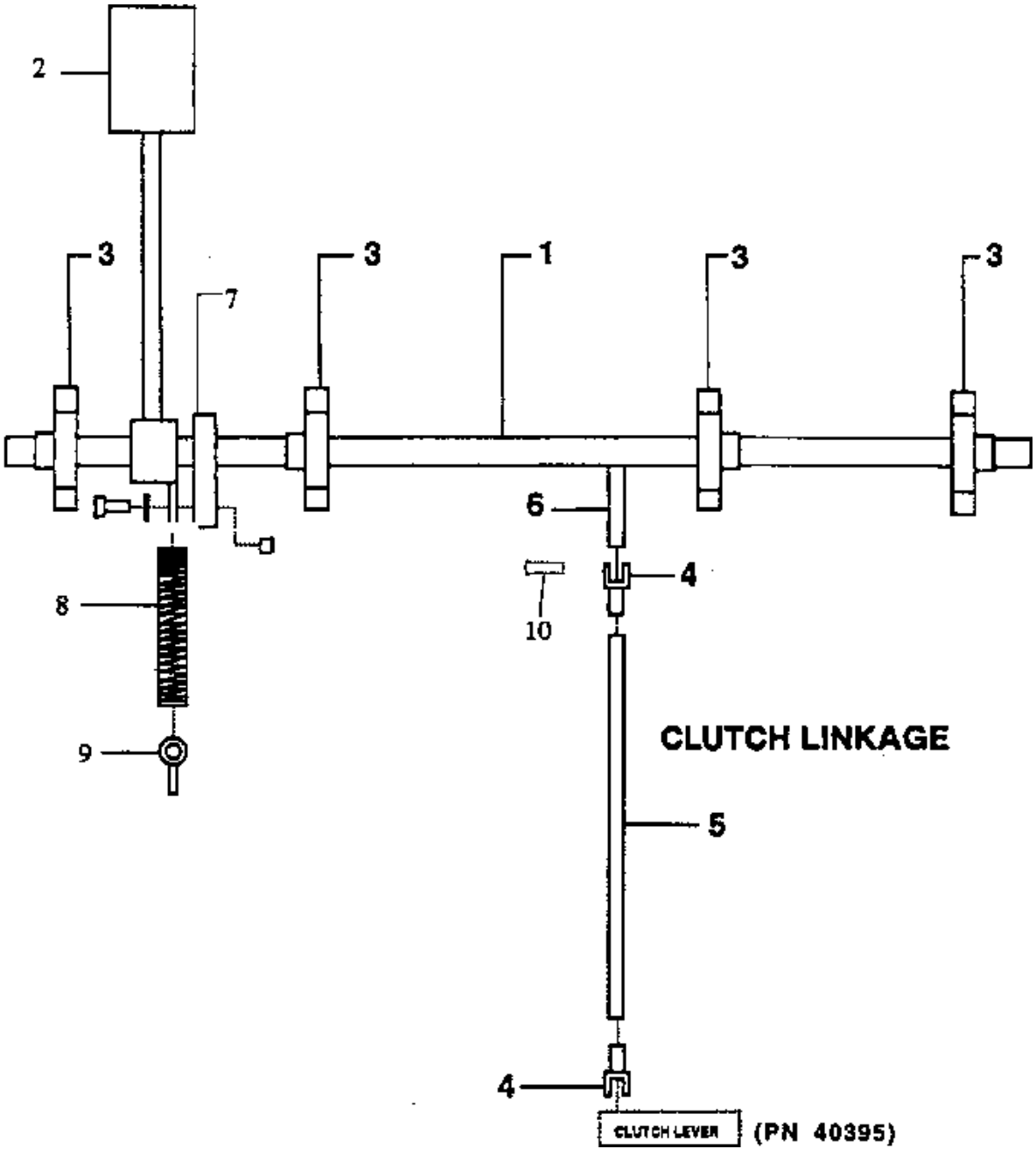
11
LH REAR TIRE
RH REAR TIRE

ITEM	PART NO.	QTY.	DESCRIPTION
1	40151	1.00	CLUTCH LINKAGE SHAFT
2	307000202	1.00	CLUTCH PEDAL
3	845202026	1.00	PILLOW BLOCK BEARING
4	871100609	2.00	CLEVIS,.500-20
5	41023	1.00	ADJUSTING ROD
6	106001519	1.00	CLUTCH SHAFT LINK
7	106008101	1.00	CONNECTOR,PEDAL LINK
8	871090324	1.00	SPRING,1.062DIAX8.24 PSI
9	31878	1.00	EYEBOLT,.375-16X2.50,.75ID
10	871081000	2.00	PIN,CLEVIS,W/COTTER PIN


2
3
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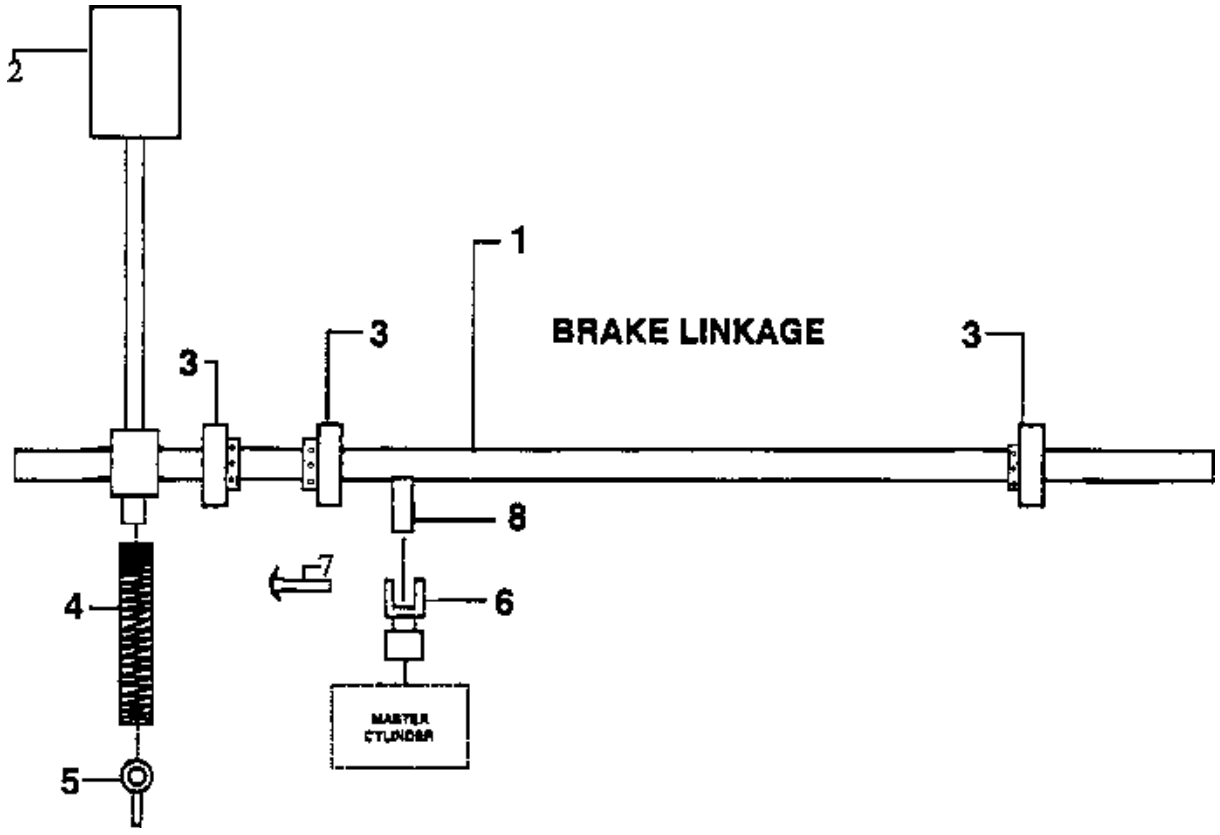
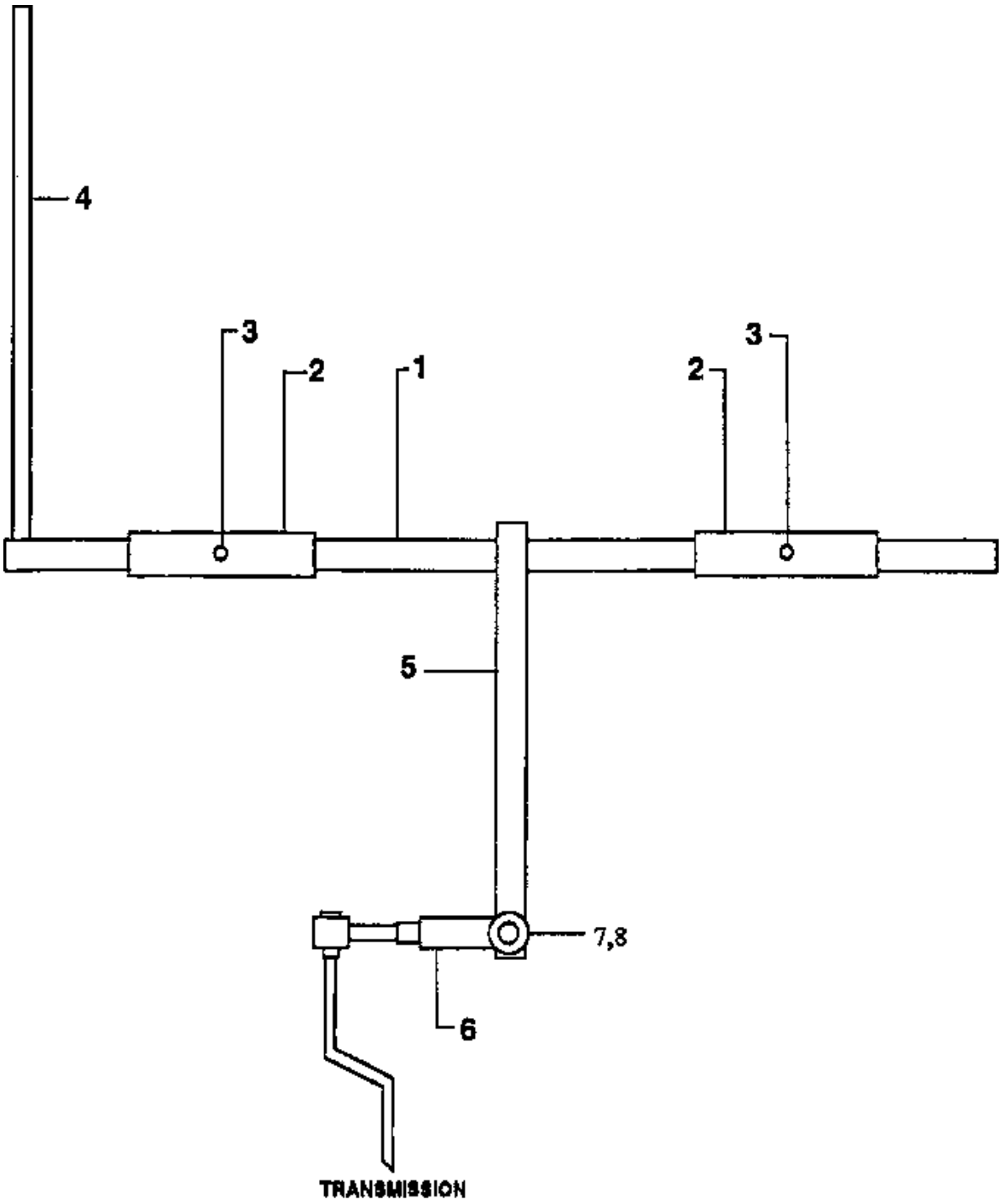
10
8
9
CLUTCH LINKAGE
5
4
CLUTCH LEVER
(PN 40395)

ITEM	PART NO.	QTY.	DESCRIPTION
1	106004790	1.00	BRAKE LINKAGE SHAFT
2	307000813	1.00	BRAKE PEDAL W/M,SPRING TAB
3	845292019	3.00	BEARING,1.44,2 HOL FL6,#BLF207-73
4	871090324	1.00	SPRING,1.06DIAX8.24PST
5	31878	1.00	EYE-BOLT,.375-16X2.50,.75ID
6	971100714	1.00	CLEVIS,VELVAC
7	871081000	1.00	PIN,CLEVIS,W/M COTTER PIN
8	106008282	1.00	BRAKE LINK
NS	106004708	1.00	KEY,SQ,.313X1.50
NS	80304	1.00	SET S,HSKT,KCUP,.375-16X.375


2
1
3
3
BRAKE LINKAGE
3
8
7
4
6
MASTER CYLINDER
5

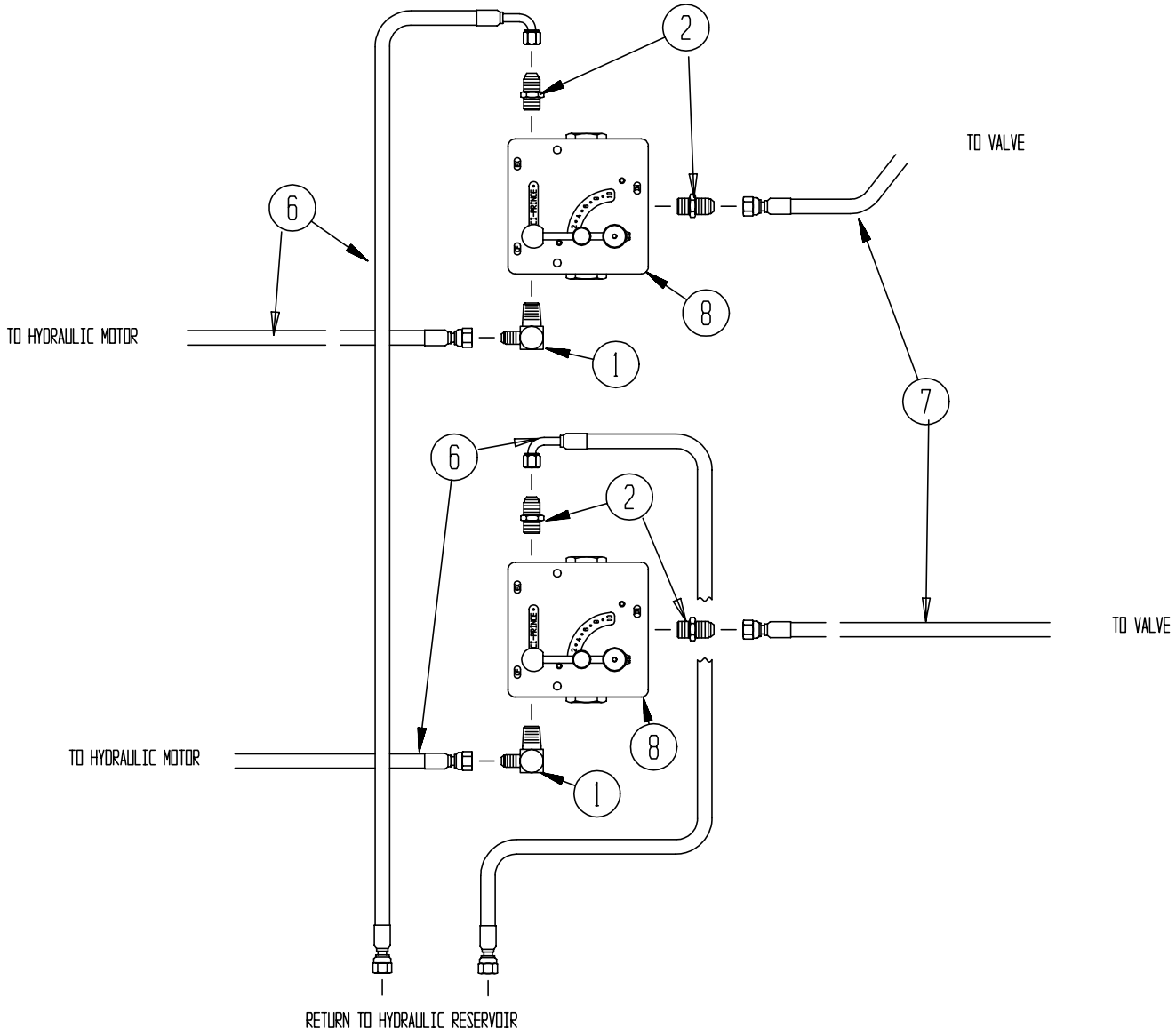
ITEM	PART NO.	QTY.	DESCRIPTION
1	010999744	1.00	SHIFT LINKAGE SHAFT
2	108712119	2.00	SHAFT SLEEVE
3	32956	2.00	FITT,LUBE,STR,.188 DRIVE
4	010999745	1.00	ROD,TRANSMISSION,SHIFT
5	106000734	1.00	GEAR SHIFT LINK
6	108712222	1.00	ROD END AND CLEVIS ASSY.
7	80710	1.00	CSHH,.625-18X2.50,GR5
8	80374	1.00	NUT,FLEXLOC,.625-18,FULL,LT



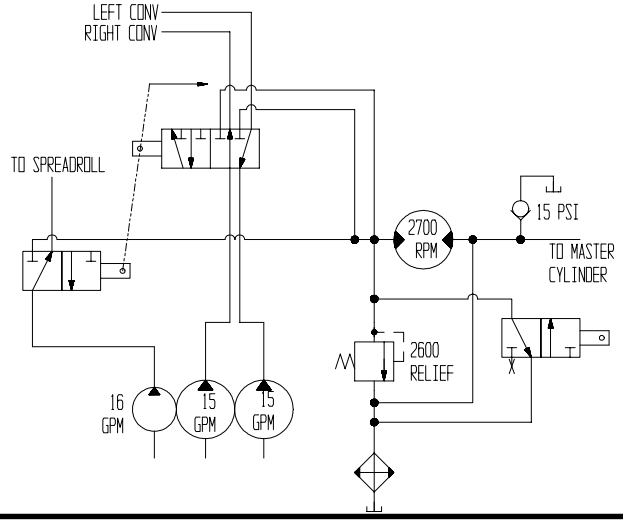
TRANSMISSION SHIFT LINKAGE

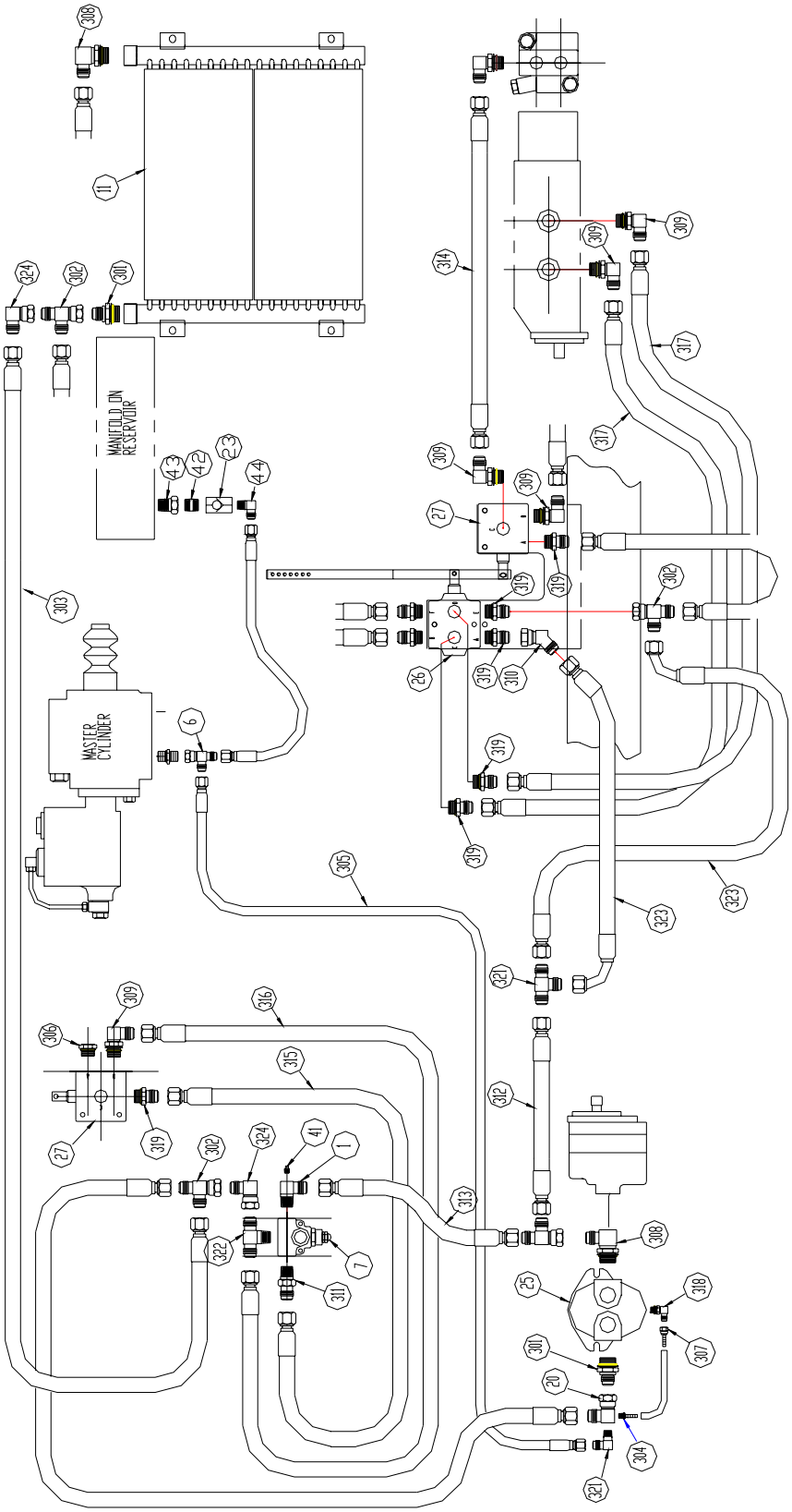
ITEM	PART NO.	QTY.	DESCRIPTION
1	108412720	1.00	HARNESS,WIRE,JUMPER ASSY
2	40746	1.00	HARNESS,WIRE,CONV & HOPPER SOL
3	41057	1.00	HARNESS,WIRE,NEUTRAL,SAFETY
4	41058	1.00	HARNESS,WIRE,2 SPEED SHIFT
5	41062	1.00	HARNESS,WIRE,HORN & HITCH RELEASE
6	41063	1.00	HARNESS,WIRE,CONVEYOR

ITEM	PART NO.	QTY.	DESCRIPTION
1	34072	2.00	FITT, 90 12MJ - 12MP
2	72178	6.00	FITT, STR 12MJ - 12MP
NS	80140	4.00	WASHER, TYPE A PLAIN, .250
NS	80350	4.00	NUT, FLEXLOC, .250-20, FULL, LT
NS	80787	4.00	CSHH, .250-20 X 2.50, GR5
6	853272563	4.00	HOSE ASSY 2250 PSI, 12 X 54
7	853272569	2.00	HOSE ASSY .750ID X 42, .750 JIC FEM
8	953183086	2.00	VLV, HYD, FLW CONT, 2500RLF, 12NPT


2
TO VALVE
6
8
TO HYDRAULIC MOTOR
1
7
6
2
TO VALVE
8
TO HYDRAULIC MOTOR
1
RETURN TO HYDRAULIC RESERVOIR

ITEM	PART NO.	QTY.	DESCRIPTION
1	14482	1.00	FITT, REWORK P/N34072
6	33898	1.00	FITT, TEE 08MJ - 08FJX - 08MJ
7	33920	1.00	VLV, HYD, RELIEF
11	35423	1.00	COOLER, OIL
20	40412	1.00	FITT, 90 MOD
23	6351	1.00	VLV, CHECK, 08 NPT, 20 PSI, CRACK
25	72277	1.00	MOTOR, GEAR, 3.3 CIR, SAE B MOUNT
26	72278	1.00	VLV, HYD, SELECT, DUAL, 2 POS 3 WAY
27	72279	2.00	VLV, HYD, SELECT SGL, 2 POS 3 WAY
42	99596	1.00	PIPE, NIPPLE, 08 X CLOSE
43	99985	1.00	PIPE, BUSH, 12MP - 08FP, STL
301	31149	2.00	FITT,STR 12MJ-16MB
302	33160	4.00	FITT,TEE 12MJ-12FJX-12MJ
303	33818	1.00	HOSE ASSY 300 PSI,-12 X 94
304	33926	1.00	FITT,STR 02MP-04HB,CRIMPED
305	35061	1.00	HOSE ASSY 2500 PSI,-08 X 65
306	35239	1.00	FITT,PLUG 12MB,HEX
307	70957	1.00	FITT,STR 04FJX-04HB,PUSH-ON
308	71771	2.00	FITT,90 12MJ-16MB
309	71775	5.00	FITT,90 12MJ-12MB
310	71776	2.00	FITT,45 12MJ-12FJX
311	72178	1.00	FITT,STR 12MJ-12MP
312	72280-1	1.00	HOSE,HFS2-12NJX12NJ-52¼
313	72280-2	1.00	HOSE,HFS2-12NJX12NJ-18
314	72280-3	1.00	HOSE,HFS-12NJX12NJ-21.25
315	72280-4	1.00	HOSE,HFS2-12NJX12NJ90T-60.75
316	72280-5	1.00	HOSE,HFS-12NJX12NJ90T-71.5
317	72280-6	4.00	HOSE,HFS-12NJX12NJ-21.5
318	72284	1.00	FITT,90 04MJ-05MB
319	853180160	6.00	FITT,STR 12MJ-12MB
320	853180573	1.00	FITT,90 08MJ-06MP
321	853180614	1.00	FITT,TEE 12MJ-12MJ-12MJ
322	853180633	1.00	FITT,TEE 12MJ-12MJ-12MP
323	853272569	2.00	HOSE ASSY 3/4IDX42"3/4JIC FEM
324	X365	2.00	FITT,90 12MJ-12FJX




MANIFOLD ON RESERVOIR
MASTER CYLINDER

ITEM	PART NO.	QTY.	DESCRIPTION
40997		**REV: Ø**	**TACHOMETER**
.....	72365	1.00	TACHOMETER, 4000RPM, 2.06 DIA
108061114		**REV: C**	**FUEL GAUGE**
.....	35366	1.00	GAUGE, FUEL
.....	35370-2	1.00	SENDER, FUEL LEVEL, 24.00 TANK
.....	41060	1.00	HARNESS, WIRE, FUEL SENDER
.....	99298	1.00	PIPE, PLUG, 1.50MP, SKT HD, MI
40999		**REV:Ø**	**WARNING SYSTEM PACKAGE**
.....	35371	1.00	SWITCH, TEMP, 06MP, 230 DEG F.
.....	36150	1.00	ALARM, BUZZ/LIGHT, RED
.....	36343	1.00	SWITCH, TEMP, 210 DEG F, -08MP
.....	40715	1.00	HARNESS, WIRE, WATER SW TO GND
.....	99450	1.00	PIPE, BUSH, 08MP - 06FP, MI
.....	99985	1.00	PIPE, BUSH, 12MP - 08FP, STL
72866		**REV: Ø**	**PRECLEANER,TURBO II,350-700CFM**

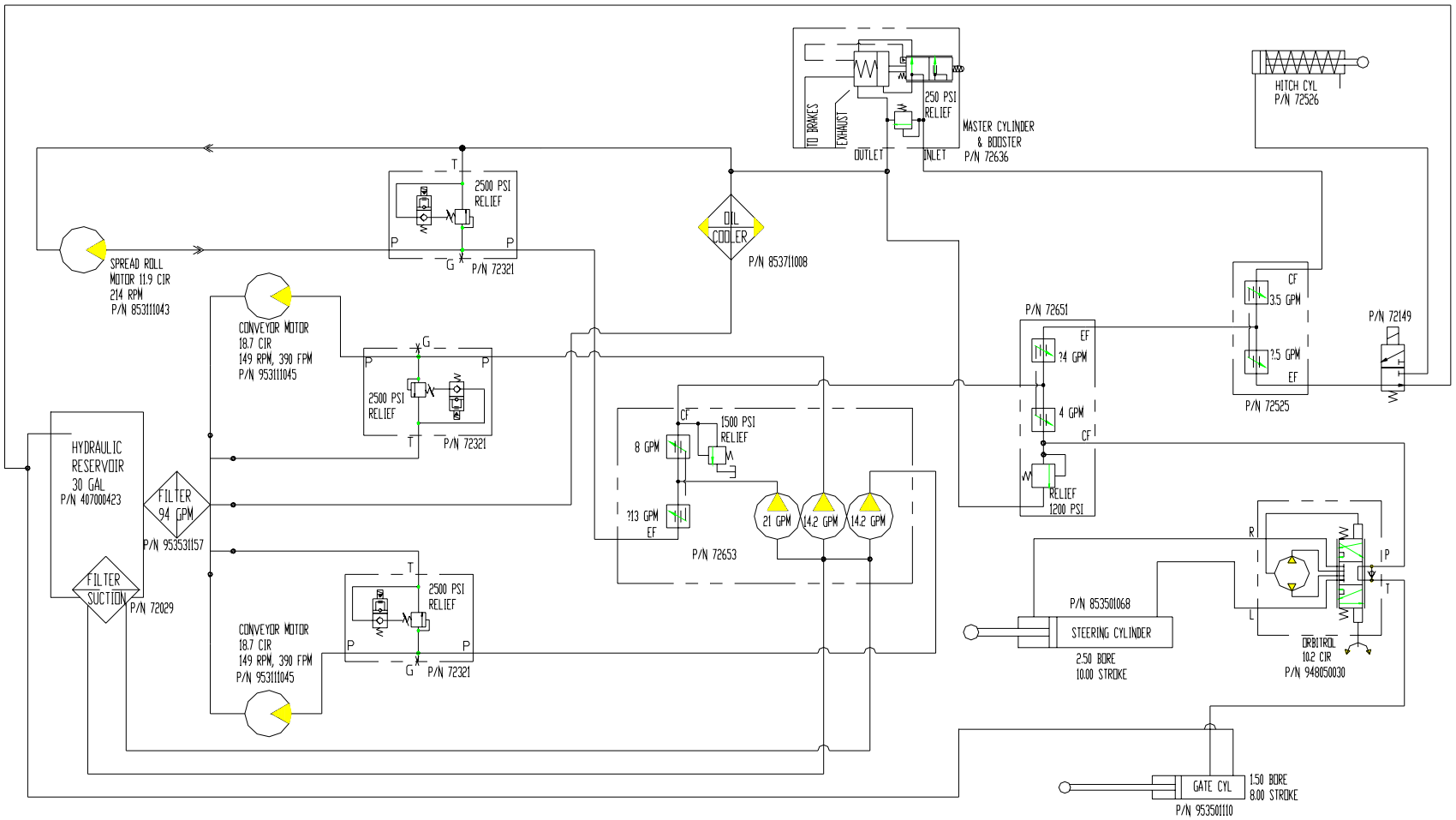
ITEM	PART NO.	QTY.	DESCRIPTION
40657		**REV: Ø**	**STROBE W/MOUNT**
.....	000200190	1.00	SWITCH, TOGGLE, SPST, 2POS
.....	33602	2.00	CONN, BUTT, 16 - 14 GA
.....	40667	1.00	STROBE MOUNT W/M
.....	71060	18.00	LOOM, SPLIT, CONVOLUTED, .250
.....	71062	18.00	WIRE, 14GA, BLUE
.....	71938	1.00	LIGHT, STROBE, AMBER
40998		**REV: A**	**LIGHTING OPTION**
.....	000200190	1.00	SWITCH, TOGGLE, SPST, 2 - POS
.....	31985	2.00	LIGHT, GREEN, DASH, .50 HOLE
.....	32131	1.00	SWITCH, STOP LAMP, HYD TYPE, NO
.....	33271-2	6.00FT	WIRE, 16 GA, YELLOW
.....	33271-3	6.00FT	WIRE, 16 GA, BROWN
.....	33271-4	6.00FT	WIRE, 16 GA, GREEN
.....	33271-7	6.00FT	WIRE, 16 GA, RED
.....	33435	5.00	LIGHT & SOCKET, 12V, 2.00 GAUGE
.....	33596	10.00	TIE WRAP, .188 X 7.5
.....	40899	2.00	BRACKET, HEAD LAMP & TURN SIGNAL
.....	41000	1.00	HARNESS, WIRE, LIGHTS AND FLASHER
.....	6161	4.00	LIGHT, TURN SIGNAL, AMBER
.....	72086	1.00	SWITCH, TOGGLE, DPDT, 2 - POS
.....	72143	16.00	TERM, RING, 22 - 16GA, #8 STUD
.....	72318	2.00	LAMP, HALOGEN, FLOOD , 80 X 30 DEG
.....	80038	4.00	NUT, HEX, .375-16
.....	80162	4.00	WASHER, SPLITLOCK, .375
.....	80221	4.00	CSHH, .375-16 X 1.00, GR5
.....	80322	28.00	SCR, SLFTPG, HH, .250-20 X .50
.....	851090613	1.00	SWITCH, TOGGLE, SPDT, 3-POS
.....	851091608	1.00	FLASHER, SIGNAL
.....	851342007	2.00	LIGHT, BRAKE, RED
.....	871111605	28.00	CLAMP, LOOP, .50 OD PLSTC COVER

ITEM	PART NO.	QTY.	DESCRIPTION
40265		**REV: Ø**	**ETHER STARTING AID**
.....	33271-5	2.00	WIRE,16 GA,WHITE
.....	33607	1.00	TERM,RING,16-14 GA,.250 STUD
.....	34340	1.00	INSUL,IN-LINE,3 WAY,MALE
.....	34341	1.00	WEDGE,IN-LINE INSUL,3 WAY,MALE
.....	34347	1.00	TERM,MINI BLADE,16-14 GA
.....	34895	1.00	ETHER INJECTION KIT,3.0 CC
.....	40269	1.00	MOUNT,ETHER INJECTION
.....	71060	2.00	LOOM,SPLIT,CONVOLUTED,.250
.....	80036	4.00	NUT,HEX,.250-20
.....	80160	4.00	WASHER,SPLIT LOCK,.250
.....	80192	4.00	CSHH,.250-20X.75,GR5
.....	851201417	3.00	TIE WRAP,.094X4.00
.....	851390204	3.00	TERM,RING,16-14 GA,#10 STUD
.....	946096028	1.00	CYLINDER,STARTING FLUID
40299		**REV: Ø**	**VANDALISM PACKAGE**
.....	16131	1.00	LOCK BAR,RADIATOR COVER
.....	40300	1.00	RADIATOR COVER W/M
.....	72011	7.00	PADLOCK,W/KEYS
0012107		**REV: M**	**DUAL CONTROL DECK**
.....	010999745	1.00	ROD,TRANSMISSION SHIFT
.....	106001405	1.00	HANDLE,TRUCK HOOK
.....	106001963	1.00	SLEEVE,1.50X.88X.75
.....	106004708	1.00	KEY,SQ,.313X1.50
.....	106008101	1.00	CONNECTOR, PEDAL LINK
.....	107000677	1.00	T HANDLE,W/M
.....	206002588	1.00	HANDLE,BRKT POWER GATE
.....	207000348	1.00	CLUTCH SHAFT,W/M
.....	207001201	1.00	SEAT BASE W/M
.....	307000202	1.00	CLUTCH PEDAL W/M
.....	307000813	1.00	BRAKE PEDAL W/M
.....	36898	1.00	SEAT BELT, 3.00 W/HARDWARE
.....	40151	1.00	SHAFT,CLUTCH & BRAKE
.....	40432	1.00	LEVER,GATE CONTROL,RH
.....	40563	1.00	LATCH W/M,RH
.....	40658	1.00	WASHER,3.00 OD,1.56 ID,10 GA
.....	72048-01	1.00	SEAT,SUSPENSION,LOW PROFILE
.....	72152	1.00	ROLL PIN,.313X2.50,EXP TYPE
.....	72244	1.00	GRIP,HANDLE,FLEX
.....	72527	1.00	SEAT,MICHIGAN,SERIES V-818
.....	72527-01	1.00	SLIDER SET,SEAT BASE
.....	845202026	1.00	BEARING,PILLOW BLOCK
.....	R135	2.00	RUBBER GRIP

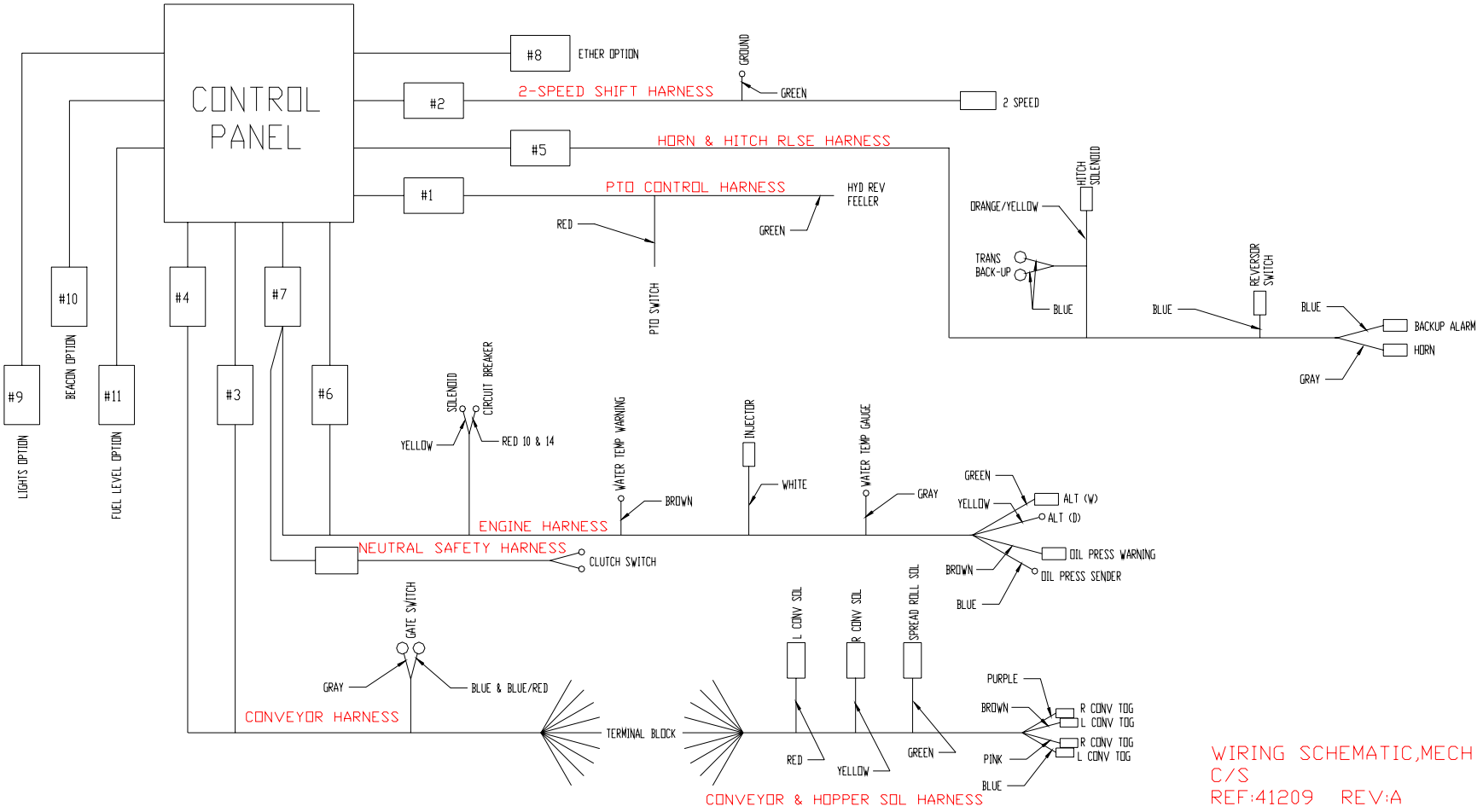
ITEM	PART NO.	QTY.	DESCRIPTION
40166		**REV: Ø**	**BELT ASSEMBLY, HOT OIL, 20 X 449**
.....	72168	1.00	CONV BELT,HOT OIL,20 X 449
.....	948022317	1.00	KIT,BELT LACING
72276		**REV: Ø**	**BELT ASSEMBLY, CHEVRON CONVEYOR**
108061105		**REV: D**	**HARDWARE, DUAL WHEELS**
.....	33469	20.00	NUT, WHEEL, OUTER, RH
.....	40178	1.00	FENDER, LEFT REAR
.....	40195	1.00	FENDER, RIGHT REAR
.....	6115	20.00	CAP NUT RH
.....	80038	10.00	NUT, HEX, .375 - 16
.....	80162	10.00	WASHER, SPLITLOCK, .375
.....	80221	10.00	CSHH, .375-16 X 1.00, GR5
.....	72762	2.00	TIRE VALVE, EXTENDER
108061115		**REV: B**	**SEAL, STEMCO AXLE**
.....	946170957	2.00	SEAL, HUB AND GASKET
.....	946170958	2.00	SEAL, HUB, AXLE RING
40021		**REV: C**	**FORWARD HANDLE, HITCH GROUP**
.....	106000692	1.00	LEVER,TH OPERATING
.....	106001295	1.00	ARM
.....	107000061	1.00	REACH ROD W/M
.....	36393	1.00	SWITCH,PUSH BTN,OFF-MOM ON
.....	40023	1.00	ROD,EXTENSION
.....	40024	1.00	CONNECTOR,ROD
.....	40025	1.00	LEVER GUIDE W/M,TRUCK HOOK
.....	41059	1.00	HARNESS,WIRE,FWD HORN & HITCH
.....	71629	1.00	CSHH,.500-13X3.00,GR5
.....	72244	1.00	GRIP,HANDLE,FLEX
.....	80038	4.00	NUT,HEX,.375-16
.....	80162	4.00	WASHER,SPLIT LOCK,.375
.....	80221	4.00	CSHH,.375-16X1.00,GR5
.....	80354	1.00	NUT,FLEXLOC,.500-13,FULL,LT
.....	845202026	1.00	BEARING,PILLOW BLOCK
.....	871081000	2.00	PIN,CLEVIS,W/COTTER PIN

ITEM	PART NO.	QTY.	DESCRIPTION
40763		**REV: B**	**LEFT HAND WALKWAY**
.....	000200190	2.00	SWITCH,TOGGLE,SPST,2-POS
.....	37053	4.00	ANCHOR,STEP GRATING
.....	40445	1.00	HARNESS,WIRE,LH CONV CONTROL
.....	40682	1.00	WALKWAY,LH,CHIP SPREADER
.....	40757	1.00	VALVE MOUNT W/M
.....	40952	1.00	HANGER,LH WALKWAY
.....	40978	1.00	FRONT WALKWAY GUARD W/M, LS
.....	72602	1.00	DECAL,DANGER,FRONT HOPPER
.....	72623	1.00	DECAL,FR CONVEYOR CONTROLS
.....	80037	4.00	NUT,HEX,.312-18
.....	80141	4.00	WASHER,TYPE A PLAIN,.312
.....	80161	4.00	WASHER,SPLIT LOCK,.312
.....	80221	6.00	CSHH,.375-16X1.00,GR5
.....	80224	9.00	CSHH,.375-16X1.25,GR5
.....	80352	15.00	NUT,FLEXLOC,.375-16,FULL,LT
.....	80996	18.00	WASHER,SAE PLAIN,.375
.....	81129	4.00	CRG BOLT,.312-18X2.50,GR5
.....	81133	4.00	CRG BOLT,.312-18 X 3.50,GR5
.....	871066120	2.00	SEAL,SWITCH,NUT,.469-32
.....	91202	1.00	DECK SPAN,GALV,11.75WX75.00 LG
41001		**REV: Q**	**COOLANT FILTER GROUP**
.....	33164	4.00	CLAMP,HOSE,.56-1.06,WORM,#10
.....	35521	1.00	ELEMENT,COOLANT FILTER
.....	35523	1.00	HEAD,COOLANT FILTER
.....	41002	1.00	MOUNT,COOLANT FILTER HEAD
.....	71104	10.00	HOSE,10,PUSH-ON,250
.....	80142	4.00	WASHER,TYPE A PLAIN,.375
.....	80162	4.00	WASHER,SPLIT LOCK,.375
.....	80221	4.00	CSHH,.375-16X1.00,GR5
.....	80484	2.00	WASHER,SPLIT LOCK,M12
.....	80914	2.00	CSHH,M12X1.75X25,CL8.8
.....	99526	1.00	PIPE,90,08MP-O8FP,MI
.....	99552	2.00	PIPE,RED,08FP-06FP,MI
.....	99569	1.00	PIPE,TEE,08FP,MI
.....	99596	1.00	PIPE,NIPPLE,08XCLOSE
.....	99638	2.00	PIPE,NIPPLE,06XCLOSE
.....	X294	4.00	FITT,STR 08MP-10HB,PUSH-ON

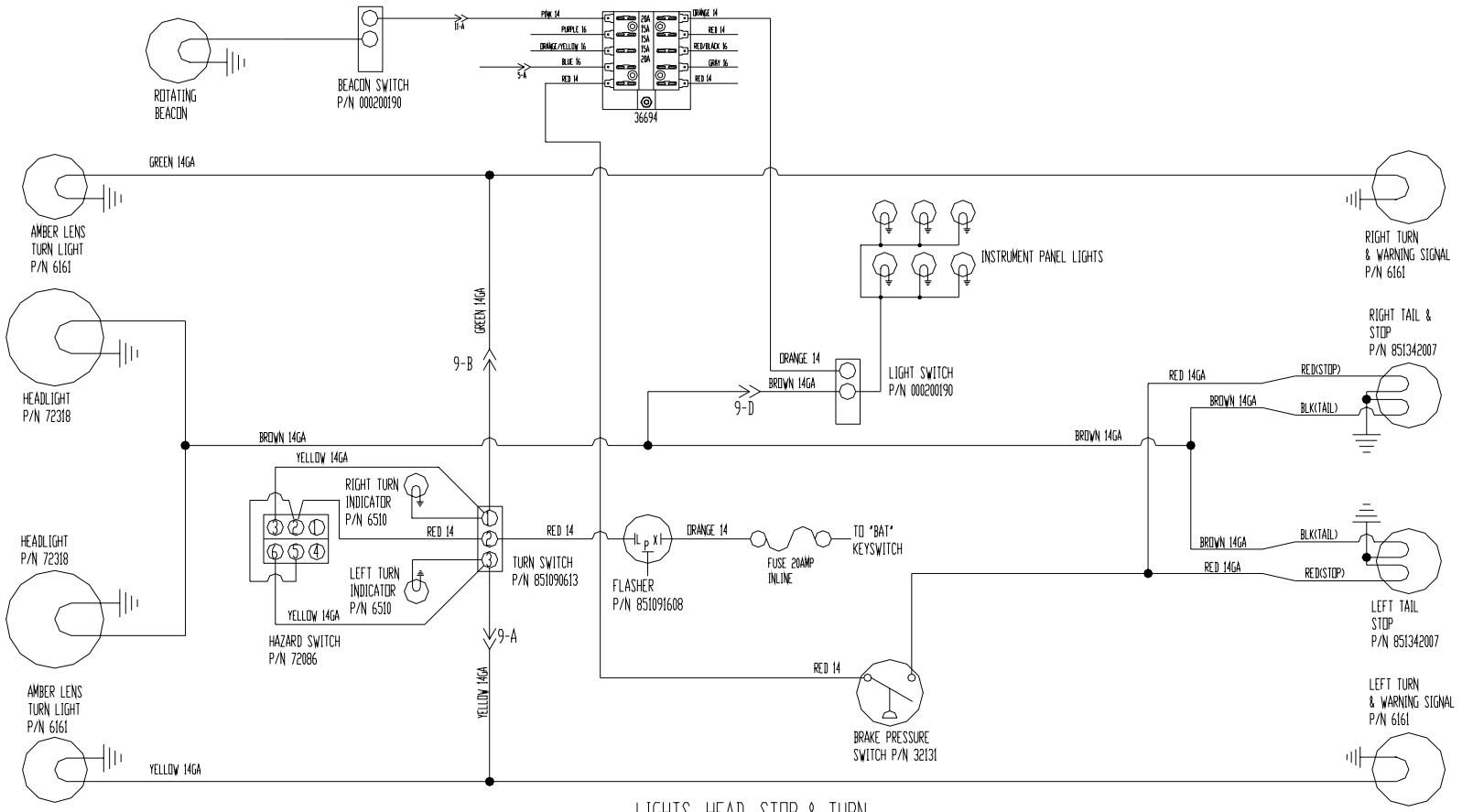
ITEM	PART NO.	QTY.	DESCRIPTION
40004		**REV: B**	**RIM, SMOOTH 9.00 X 20, FRONT**
.....	33800	1.00	CAP, VALVE, STEM, PLSTC, TRNO.VC-8
.....	72094	1.00	RIM, 80 X 20
.....	846172169	1.00	TIRE, SM COMP, 9.00 X 20, 16 PLY
40005		**REV: B**	**RIM, SMOOTH 9.00 X 20, REAR**
.....	33800	1.00	CAP, VALVE, STEM, PLSTC, TRNO.VC-8
.....	72342	1.00	RIM, 7.5 X 20, 10 BOLT, 13.188 BC
.....	846172169	1.00	TIRE, SM COMP, 9.00 X 20, 16 PLY
40006		**REV: B**	**DUPLEX TIRE GROUP, FRONT**
.....	72310	1.00	TIRE VALVE, TUBLESS, TRUCK
.....	846172236	1.00	TIRE VALVE, EXTENDER
.....	946171151	1.00	RIM, FRONT 22.5 X 12.25
.....	72758	1.00	TIRE,RADIAL,DUPLEX,22.5
40007		**REV: B**	**DUPLEX TIRE GROUP, REAR**
.....	41021	1.00	RIM W/M, 22.5 X 12.25 DUPLEX, REAR
.....	72761	1.00	TIRE VALVE, TUBLESS, 2.00 LG
.....	72758	1.00	TIRE,RADIAL,DUPLEX,22.5
41219		**REV: B**	**ENGINE ASSEMBLY,200HP**
.....	72673-01	1.00	ENGINE,DIESEL 6BTA,200 HP,MECH (All engine parts are the same as the 185 HP BTA engine in the standard parts section of this manual)
41486		**REV: Ø**	**ENGINE SHUTDOWN OPTION**
.....	33271-1	3.00'	WIRE,16 GA,BLACK
.....	35174	6.00'	WIRE,14 GA, PURPLE
.....	36085	1.00	RELAY,SPDT,40AMP,12VDC
.....	36086	1.00	BRACKET,RELAY MOUNT
.....	36118-2	4.00	TERM,CRIMP,16-14 GA
.....	36393	1.00	SWITCH,PUSH BTN,OFF-MOM ON
.....	71066	3.00'	WIRE,14 GA,YELLOW



HYDRAULIC SCHEMATIC
REF: 41082 REV: A

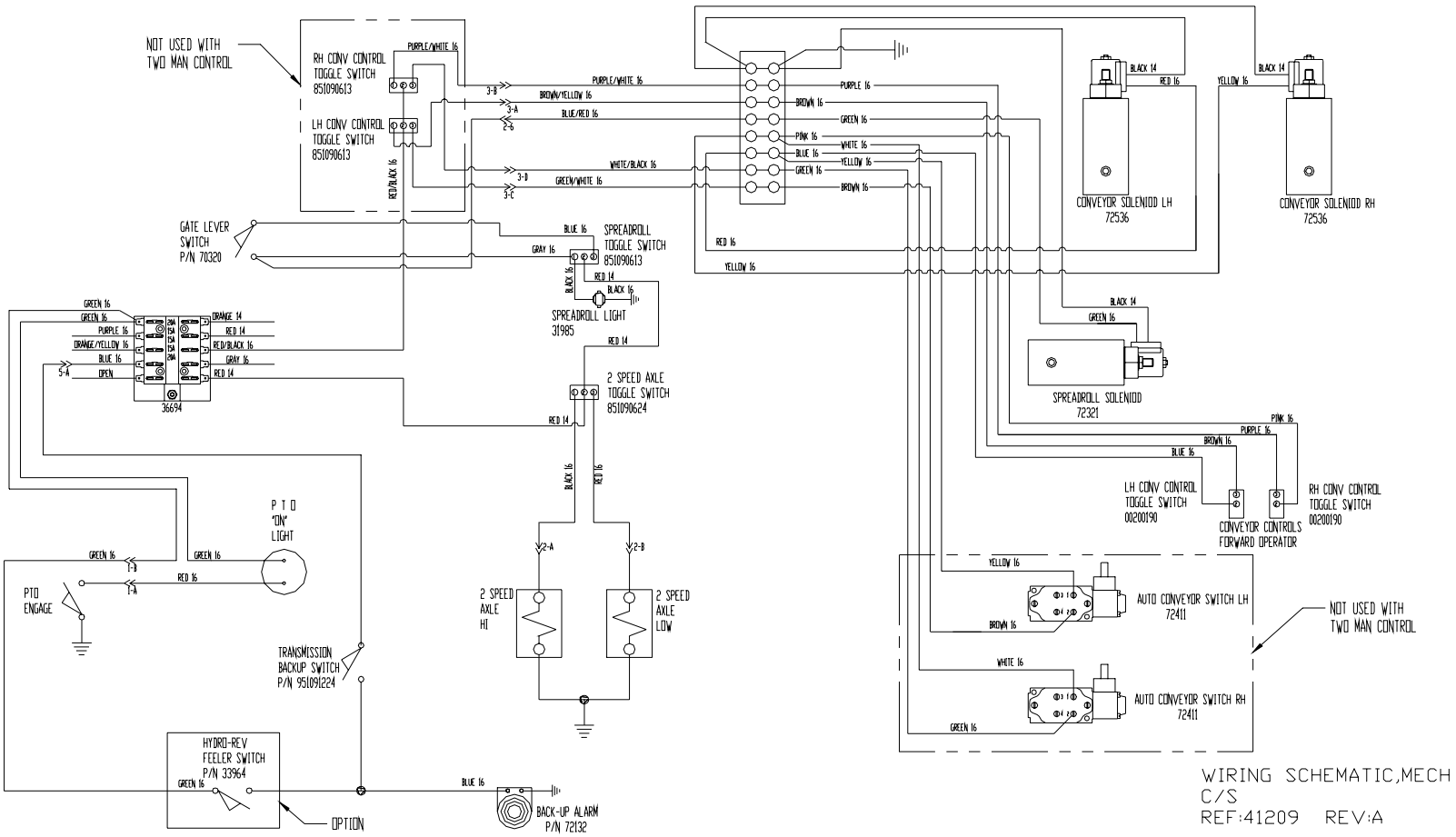


WIRING SCHEMATIC,MECH C/S
REF:41209 REV:A



LIGHTS, HEAD, STOP & TURN

WIRING SCHEMATIC,MECH
C/S
REF:41209 REV:A



WIRING SCHEMATIC,MECH
C/S
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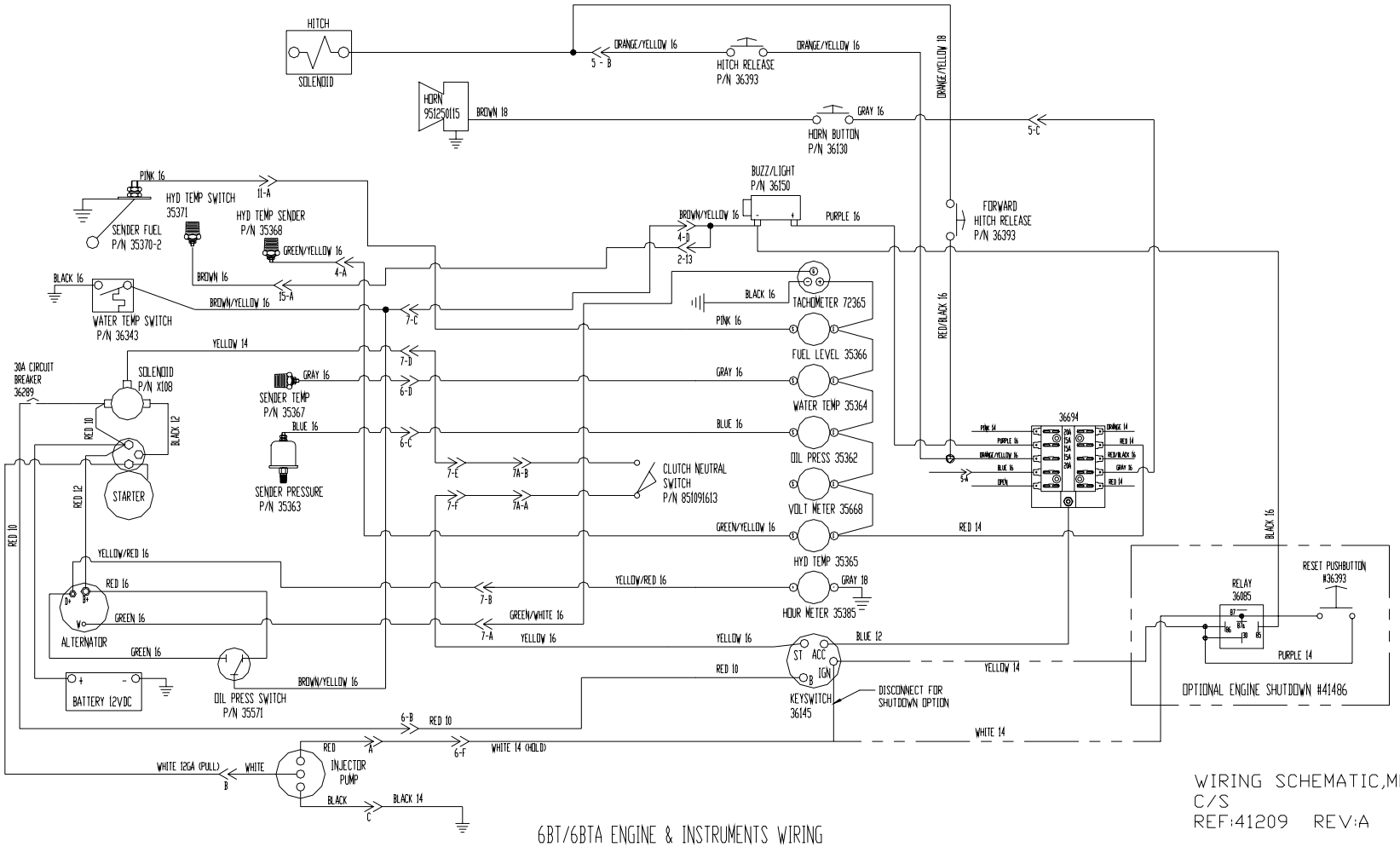

6BT/6BTA ENGINE & INSTRUMENTS WIRING

WIRING SCHEMATIC,MECH
C/S
REF:41209 REV:A

Alphabetical Parts Index

Note: The items in bold pring denote main headings.

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4TH GEAR, MAIN SHAFT 2-46
4TH GEAR-COUNTER SHAFT 2-48
5 SPEED TRANSMISSION 2-38

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