

**MODEL 370 - TRACKER MARINE
SEMITRAILER
OWNER'S MANUAL**



**1700 MAY STREET
MARYSVILLE, KANSAS 66508
(913) 562-5381**

WARRANTY

MANUFACTURER'S GUARANTEE POLICY

LANDOLL CORPORATION WARRANTY

LANDOLL warrants each new and unused LANDOLL machine, when properly assembled, adjusted, and operated, to be free of defects in material and workmanship, in normal use and when properly serviced, for a period of twelve (12) months after date of delivery by the Dealer to the original retail purchaser. LANDOLL shall repair or replace, at its option, freight on board (f.o.b.) at its factory or designated DEALER location, any part or parts of such new and unused machine which shall have been reported in writing to LANDOLL within thirty (30) days from date of failure thereof and which LANDOLL inspection shall disclose to have been defective. Defective parts must be returned to the LANDOLL factory, freight prepaid. LANDOLL will not be liable for labor, transportation, or any other charges resulting from replacement of a defective part. This warranty is void if any part not supplied by LANDOLL is used in assembly or repair, or if the machine has been altered, abused, or neglected. LANDOLL repair parts are warranted for ninety (90) days from date of replacement or for the unexpired warranty period of the applicable LANDOLL machine, whichever period is longer. LANDOLL makes no warranty, whatsoever, as to purchased component parts and other trade accessories, except to the extent that such items are warranted by the manufacturer thereof. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESSED, IMPLIED, OR STATUTORY (INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PURPOSE), AND LANDOLL SHALL NOT BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND ON ACCOUNT OF ANY LANDOLL PRODUCT.

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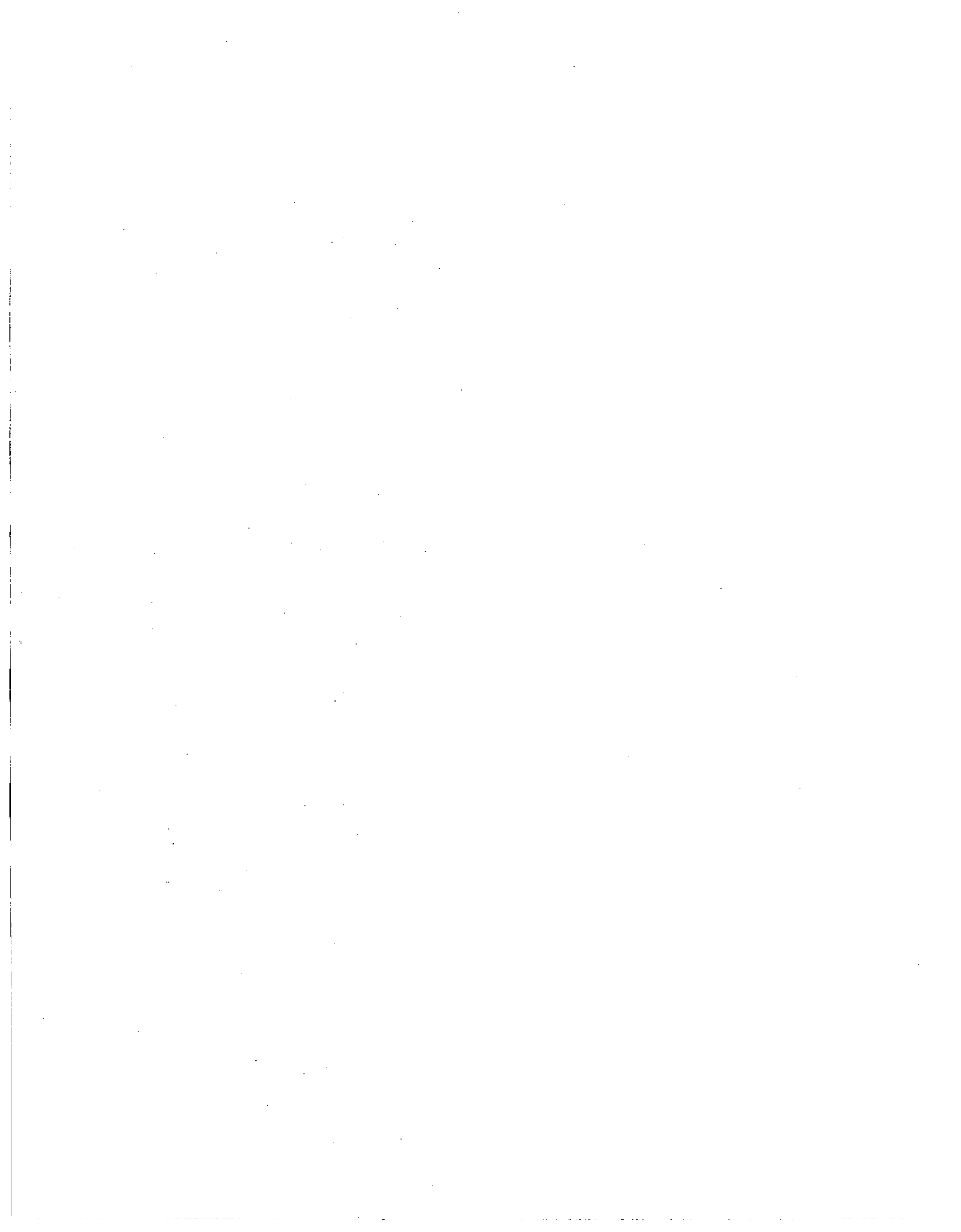


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SEMITRAILER
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PURCHASED FROM: _____ **DATE** ___ / ___ / ___

ADDRESS: _____

PHONE NO.: _____ **SERIAL NO.:** _____



REPORTING SAFETY DEFECTS

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Landoll Manufacturing.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Landoll Manufacturing.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (or 366-0123 in Washington, D.C. area) or write to: NHTSA, U.S. Department of Transportation, Washington, D.C. 20590. You can also obtain other information about motor vehicle safety from the Hotline.

In the event of a defect or problem with your LANDOLL equipment, please notify LANDOLL CORPORATION:

**LANDOLL CORPORATION
SALES AND SERVICE
1700 MAY STREET
MARYSVILLE, KANSAS 66508**

**OR PHONE:
(785)562-5381
1-800-HAULLOLL
(1-800-428- 5655)
FAX NO.: (785) 562-4893**

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SAFETY PRECAUTIONS



THIS IS THE INTERNATIONAL SAFETY ALERT SYMBOL. IT ALERTS THE OPERATOR TO IMPORTANT SAFETY MESSAGES ON THE MACHINE AND IN THIS MANUAL. CAREFULLY READ AND STUDY THESE LABELS AND MESSAGES BEFORE MACHINE ASSEMBLY AND OPERATION. THERE ARE THREE TYPES OF SAFETY ALERT MESSAGES:

DANGER

A LIFE THREATENING SITUATION EXISTS. DEATH CAN OCCUR if safety measures or instructions on this label are not properly followed.

WARNING

SERIOUS INJURY OR DEATH CAN OCCUR if safety measures or instructions on this label are not properly followed.

CAUTION

SERIOUS EQUIPMENT OR OTHER PROPERTY DAMAGE CAN OCCUR if instructions on this label are not properly followed.



INTRODUCTION

1

This manual provides operating, servicing, and maintenance instructions, with detailed parts lists for Model 370 - Tracker Marine semitrailer, manufactured by Landoll Corporation, Marysville, Kansas 66508.

- SECTION 1** gives specifications for the semitrailer, including measurements and component specifications. A Standard Bolt Torque Table is provided to give guidelines for bolt torques to be used when servicing this product.
- SECTION 2** describes the complete unit and gives instructions for the proper operation of the equipment.
- SECTION 3** gives general maintenance procedures, a maintenance schedule, and a lubrication schedule. Improper maintenance will void your warranty.

IF YOU HAVE ANY QUESTIONS CONTACT:

LANDOLL CORPORATION
1900 NORTH STREET
MARYSVILLE, KANSAS 66508
or phone:
(785) 562-5381 or
(800) 428-5655
or FAX:
(785) 562-4893

- SECTION 4** is a troubleshooting guide to aid in diagnosing and solving problems with the semitrailer.
- SECTION 5** is an illustrated parts lists of the various assemblies, subassemblies, and systems. Refer to this section when ordering Landoll replacement parts. Order parts from your Landoll dealer
- SECTION 6** covers vendor's data for overhaul and repair of components installed in the unit which were manufactured by sources other than Landoll Corporation.

COMMENTS Address comments or questions regarding this publication to:

LANDOLL CORPORATION
1700 MAY STREET
MARYSVILLE, KANSAS 66508
ATTENTION: PUBLISHING - DEPT. 73

WARRANTY The Warranty Registration Card is located inside the front cover of the manual. It is postage paid if mailed within the United States. Please fill it out and mail it within fifteen (15) days of purchase. The Warranty is printed inside the front cover. **Improper assembly, modification, or maintenance can void your warranty.**

STANDARD SPECIFICATIONS

CAPACITY* (FRAME DESIGN): 34,000 LB. DISTRIBUTED, 25,000 CONCENTRATED IN 20'

OVERALL LENGTH: 48'

OVERALL WIDTH 8'-6"

WEIGHT 12,620 LBS.

GOOSENECK:
LENGTH: 8'
DROP 27-3/4"

DECK:
LENGTH 40'
HEIGHT 31"

FIFTH WHEEL:
HEIGHT: 48"
KINGPIN: 2" Dia.

TURNING CLEARANCE:
FROM KINGPIN 64"
FORWARD SWING CLEARANCE FROM KINGPIN 52"








SPECIFIC BOLT TORQUES

AIR RIDE SUSPENSION:
EQUALIZER BEAM PIVOT BOLT: 600 FT.-LBS.
SHOCK ABSORBER MOUNTING: 150 FT.-LBS.
AXLE CLAMP U-BOLTS** 680 FT.-LBS.
AIR SPRING MOUNTING: 1/2" 25 FT.-LBS.
 3/4" 50 FT.-LBS.

WHEEL FASTENERS:
OUTER SPINDLE NUTS 250-400 FT.-LBS.
INNER WHEEL NUTS 450-500 FT.-LBS.
OUTER WHEEL NUTS 450-500 FT.-LBS.

**GENERAL TORQUE SPECIFICATIONS (REVISED 9-87)
USE THE FOLLOWING TORQUES WHEN SPECIAL TORQUES
ARE NOT GIVEN.**

NOTE: These values apply to fasteners as received from supplier, dry, or when lubricated with normal engine oil. They do not apply if special graphited, or moly-disulphide greases, or other extreme pressure lubricants are used. This applies to both UNF and UNC threads.

SAE Grade No.		2				5				8*			
Bolt head identification marks as per grade. <i>NOTE: Manufacturing Marks will vary.</i>						  				  			
		Torque				Torque				Torque			
Bolt Size		Foot Pounds		Newton-Meters		Foot Pounds		Newton-Meters		Foot Pounds		Newton-Meters	
Inches	Millimeters	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4	6.35	5	6	7	9	9	11	12	15	12	15	16	20
5/16	7.94	10	12	14	16	17	20	23	28	24	29	32	39
3/8	9.53	20	23	27	31	35	42	48	57	45	54	61	73
7/16	11.11	30	35	41	47	54	64	73	87	70	84	95	114
1/2	12.70	45	52	61	70	80	96	108	130	110	132	149	179
9/16	14.29	65	75	88	102	110	132	149	179	160	192	217	260
5/8	15.88	95	105	129	142	150	180	203	204	220	264	298	358
3/4	19.05	150	185	203	250	270	324	366	439	380	456	516	618
7/8	22.23	160	200	217	271	400	480	542	651	600	720	814	976
1	25.40	250	300	339	406	580	696	786	944	900	1080	1220	1464
1-1/8	25.58					800	880	1085	1193	1280	1440	1736	1953
1-1/4	31.75					1120	1240	1519	1681	1820	2000	2468	2712
1-3/8	34.93					1460	1680	1980	2278	2380	2720	3227	3688
1-1/2	38.10					1940	2200	2631	2983	3160	3560	4285	4827

- NOTES:**
- When hardware is plated, reduce torque values 25%.
 - When locknuts are used, increase torque value 25%.
 - When plated hardware is used w/locknuts, use torque value chart.
 - BOLT TORQUES SPECIFIED ARE FOR ZINC PLATED NUTS & BOLTS ONLY.** If other types of nut/bolt combinations are required, contact the OEM office for assistance.
- * Thick nuts must be used with Grade 8 bolts.

Table 2-1 Standard Torque Specifications

3-1 GENERAL

This section describes, locates, and supplies sufficient information for operation of the semitrailer. It includes necessary instructions for operation under unusual conditions.



WARNING

DO NOT OPERATE THE SEMITRAILER WITH ANY KNOWN FAULT THAT MIGHT ENDANGER THE OCCUPANTS, NEARBY WORKERS, OTHER TRAFFIC, THE LOAD, OR THE EQUIPMENT.

3-2 PRE-COUPLING OF SEMITRAILER AND TRACTOR

3-2.1 Slowly back the tractor/truck (towing vehicle) up to the front end of the semitrailer so the kingpin of the semitrailer is centered between the tractor fifth wheel jaws. Stop the towing vehicle just inches ahead of the semitrailer. Set tractor parking brake.

3-2.2 Check the semitrailer kingpin plate height. The kingpin plate should be the same height, to slightly

lower, than the latch area of the fifth wheel plate of the towing vehicle. If the kingpin plate height needs to be adjusted, manually raise or lower the kingpin plate by cranking the parking stands up or down until the proper height has been obtained. The parking stand gearing (low/high) may be switched by pushing the crank handle in or pulling it out before cranking.

3-2.3 Connect the service and emergency air hoses of the towing vehicle to their respective gladhand on the front of the semitrailer. The towing vehicle's air hose couplings are then attached and locked to the appropriate gladhands; red emergency line to the gladhand with the "EMERGENCY" tag, and the blue service line to the gladhand with the "SERVICE" tag (see Fig. 3-1). Check the trailer wheels before activating the semitrailer air supply valve in the towing vehicle. Set the trailer brakes.

3-2.4 Check the air brake operations of the semitrailer as follows:

- a. Apply brakes and inspect brake action on all wheels for prompt application.
- b. Release brakes. All brakes should release immediately. Air pressure should discharge quickly from the relay emergency valve.

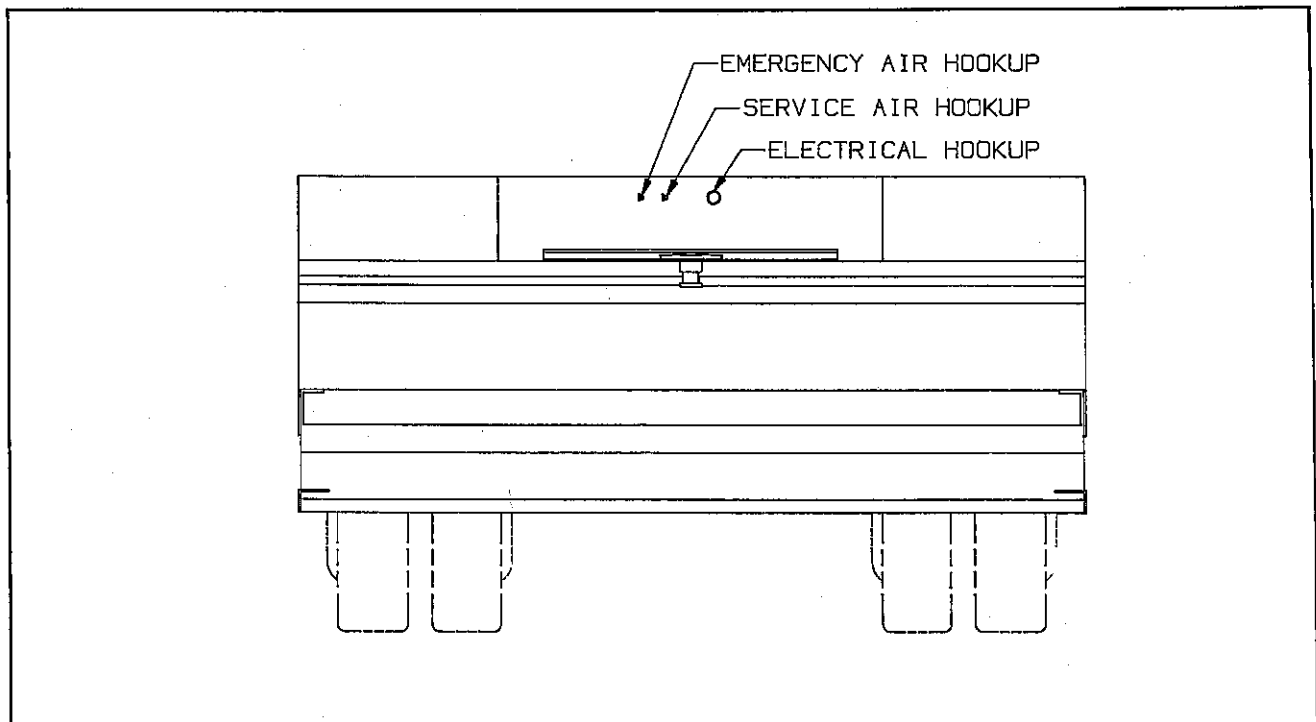


Fig. 3-1 Service Hookups (Front View)

3-3 COUPLING OF THE TRACTOR TO THE SEMITRAILER



DANGER

KEEP ALL PERSONNEL CLEAR OF FRONT, REAR, AND SIDES OF TOWING VEHICLE AND SEMITRAILER DURING COUPLING, COMPONENT OPERATIONS, AND UNCOUPLING. FAILURE TO STAY CLEAR CAN RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

3-3.1 Verify the trailer wheels are chocked and brakes function properly.

3-3.2 Make sure the towing vehicle's fifth wheel coupler is open.

3-3.3 Slowly back the towing vehicle so the fifth wheel contacts the front of the kingpin plate on the semitrailer and slips under it. Continue backing until the fifth wheel coupler locks onto the semitrailer kingpin.

3-3.4 Try to pull the tractor forward a few inches to verify the vehicle coupling is secure. If the tractor disconnects from the trailer, locate the source of the coupling failure. Repair before continuing and repeat Steps c and d.



CAUTION

PUSHING THE TRAILER BACKWARDS CAN DAMAGE PARK STANDS.

3-3.5 Check that the towing vehicle couples securely to the semitrailer before setting towing vehicle and trailer parking brakes.

NOTE: Keep brakes engaged for remainder of Hookup, Checkout Procedures, and for parking.

3-4 CONNECTING TRACTOR SERVICES TO THE SEMITRAILER

3-4.1 Connect the towing vehicle 7-way electrical plug to the electrical receptacle on the front of the semitrailer (see Fig. 3-1).

NOTE: The key on the plug and the keyway in the socket must be properly aligned before inserting the plug into the trailer socket.

3-5 TRACTOR AND SEMITRAILER HOOK-UP AND CHECK-OUT

3-5.1 Raise parking stands.

3-5.2 Check the operation of all lights on the semitrailer for proper response to switch positions and signals (stop, right turn, left turn and clearance).

3-5.3 Check tire inflation, adjust as needed to maintain pressure listed on each tire.

3-5.4 Check tractor/trailer rig for air leaks. If air leakage is found, repair the defect before transporting.

3-5.5 Check the oil in each hub for proper level and freedom from contamination. If hubs contain water, dirt, or other foreign matter, clean them before transporting.

3-5.6 Check tractor air pressure. Pressure must not fall below 80 psi, even after activating brakes a couple of times. Set emergency brake and try pulling forward. The trailer wheels must not rotate. If trailer brakes do not apply, do not transport until defect, or defects, are repaired.



WARNING

FAILURE TO PROPERLY SET AND CHECK PARKING BRAKE, AND CHOCK WHEELS WHEN PARKING AND DURING STORAGE, COULD ALLOW MOVEMENT OF THE TRACTOR/TRAILER RIG RESULTING IN SERIOUS PERSONAL INJURY, DEATH, OR DAMAGE TO PROPERTY IN ITS PATH.

3-5.7 Set parking brake and carefully remove all wheel chocks. If brakes are not properly set, the tractor/trailer may roll when removing wheel chocks.

3-6 TOWING THE SEMITRAILER

3-6.1 Driving the towing vehicle with the semitrailer coupled behind requires constant attention to the overall length of the combination. The "hinged-in-the-middle" configuration of the tractor and trailer, load, and weight effect performance. Turning, passing, acceleration, braking, stopping, and back-up require special considerations. When executing steep grades or turning tight curves, the semitrailer must not be allowed to push the towing vehicle, or jackknifing the semitrailer with the towing vehicle may result. Application of the semitrailer brakes to keep the trailer in tow will help

prevent this pushing. Braking should begin before descending a hill or attempting a curve, to assure control.

3-6.2 Make a moving test of the semitrailer brakes at low, and medium speeds *before* traveling at highway speed.

3-6.3 Monitor the air pressure gauge on the dash of the towing vehicle. Pressure should not fall below 80 psi at any time.

3-6.4 The semitrailer wheels track to the inside of the towing vehicle during turns. Thus, turning corners requires a wide swing to prevent "curb hopping", and to allow the semitrailer wheels to clear any obstacle on the inside of the corner.

3-6.5 To stop, use a gradual and smooth application of brakes. If grabbing occurs, apply less pressure. Grabbing brakes are not efficient.



DANGER

ALWAYS CHECK BEHIND AND UNDER THE TRACTOR AND SEMITRAILER FOR PERSONS OR OBJECTS BEFORE MOVING. FAILURE TO CHECK CAN LEAD TO SERIOUS PERSONAL INJURY OR DEATH TO OTHERS, OR DAMAGE TO PROPERTY.

3-6.6 Backing should be done with care. Tail overhang, trailer length, and allowable space must be taken into consideration.

3-7 PARKING THE SEMITRAILER

3-7.1 Position tractor/trailer rig on a level, solid surface.

3-7.2 Set the *PARKING BRAKE*, *not the trailer hand brake*, and check for proper brake holding.

3-7.3 Chock wheels.

3-7.4 Check for any air leaks in lines, relay valve, brake pods, or any other air system component.

3-8 UNCOUPLING TRACTOR FROM SEMITRAILER

3-8.1 Park the semitrailer according to instructions in Paragraph 2-2.6.

3-8.2 Lower the parking stands to the ground using the manual parking stand crank on the side of the semitrailer.

3-8.3 Disconnect emergency and service air lines and attach them to the tractor gladhand holders.

3-8.4 Disconnect the 7-way cable from the trailer and store with the tractor.

3-8.5 Lower parking stands to ground, turn handle five to ten rotations, pull the tractor fifth wheel plate latch release lever.

3-8.6 Attempt to pull the tractor forward. If the tractor uncouples, verify all service lines are disconnected and trailer wheels are chocked. If tractor does not disconnect, repeat Steps e and f.

3-8.7 Pull the tractor away from the trailer.

3-9 AIR RIDE OPERATION



CAUTION

IF SUSPENSION AIR LOSS SHOULD OCCUR, COMPLETELY DEFLATE SUSPENSION AND TEMPORARILY OPERATE ON THE AIR SPRINGS INTERNAL RUBBER BUMPERS. CAREFULLY PROCEED TO THE NEAREST TRAILER SERVICE FACILITY. TO DEFLATE THE AIR SUSPENSION, DISCONNECT THE LOWER CONNECTION ON THE LINKAGE OF THE AUTOMATIC AIR VALVES. ROTATE THE VALVE CONTROL ARMS DOWN ABOUT 45° TO EXHAUST THE AIR. TO RESTORE TO NORMAL OPERATION, SIMPLY REVERSE THE PROCEDURE.

Trailer air pressure must be maintained above 65 PSI before operating. This enables the Protection Valve to maintain safe air brake pressure during suspension system air loss.

3-10 COLD WEATHER OPERATION

3-10.1 Cold weather causes lubricants to congeal, insulation and rubber parts to become hard, which may lead to problems found in bearings, electrical systems, and air systems. Moisture attracted by warm parts can condense, collect and freeze to immobilize equipment. The tractor/trailer operator must always be alert for indicators of cold weather malfunctions.

3-10.2 During any extended stop period, neither the service nor parking brake should be used as they can freeze up. Use wheel chocks to secure the vehicle from moving.

3-10.3 Check all structural fastenings, air system fittings, gaskets, seals and bearings for looseness that can develop due to contraction with cold. Do not over-tighten.

3-10.4 Check tire inflation. Tire inflation decreases when the temperature decreases.

3-10.5 Periodically check drain holes in the bottom of the relay valve and storage compartments. They must be open at all times to avoid moisture entrapment.

3-11 HOT WEATHER OPERATION

3-11.1 Hot weather operation can cause expansion of parts resulting in tightening of bearings, fasteners, and moving parts failure of gaskets or seals can occur.

3-11.2 The semitrailer should be parked in the shade if possible. Long exposure to the sun will shorten service life of rubber components (i.e., tires, light and hose grommets, hoses, etc.) and paint life.

3-11.3 Check tire pressure early in the day before beginning operations while the tire is cool. Put all valve stem caps back on after checking.

3-11.4 If the area is extremely humid, protect electrical terminals with ignition insulation spray. Coat paint and bare metal surfaces with an appropriate protective sealer.

3-11.5 The use of a filter-lubricator in the towing vehicle's air delivery system is recommended.

4-1 GENERAL

This section contains instructions necessary for proper maintenance of the semitrailer.

4-1.1 Inspection



DANGER

OPERATING THE TRACTOR OR TRAILER WITH DEFECTIVE, BROKEN OR MISSING PARTS MAY RESULT IN SERIOUS INJURY OR DEATH; DAMAGE TO THE TRACTOR/TRAILER, ITS CARGO, OR PROPERTY IN ITS PATH.

Inspect the towing vehicle, the trailer, and trailer parts periodically for damage or signs of pending failure. Damaged or broken parts must be repaired or replaced at once. Determine the cause of any binding. Correct the problem before using the tractor or semitrailer.

4-1.2 Cleaning

a. Wash semitrailer to remove all accumulated dirt and grime.



WARNING

PAINT THINNER AND OTHER SOLVENTS ARE FLAMMABLE AND TOXIC TO EYES, THE SKIN, AND RESPIRATORY TRACT. AVOID SKIN AND EYE CONTACT. GOOD GENERAL VENTILATION IS NORMALLY ADEQUATE. KEEP AWAY FROM OPEN FLAMES OR OTHER COMBUSTIBLE ITEMS.

b. Use any mineral spirits paint thinner (or its equivalent) to remove grease and oil from all parts of the semitrailer. Rinse any degreasing solution off with cold water.

c. Inspect semitrailer for cause of any reported troubles (see Table 3-4).

d. Scrape, sand, prime, and repaint areas where finish is missing or where there is evidence of corrosion.

e. After disassembling any components, thoroughly clean dirt and old lubricant from all parts. Do not use a

wire brush on any bearing parts or surfaces — use a stiff bristle brush. Do not use compressed air, or spin bearing parts when cleaning. These practices can throw solvents, dirt, or metal particles into your eyes. Dry cleaned parts with lint free, clean, soft, absorbent, cloth or paper. Wash and dry hands.

f. Inspect seals, seal wiping surfaces, any bearing caps, and bearing cones for wear, pitting, chipping, or other damage.

4-2 FRAME AND DECKS

The trailer should be thoroughly checked daily for cracks or material fatigue. Cracks will normally show best under loaded conditions. If any cracks or breaks are found, return the trailer immediately to the Landoll factory for repair. Any defective parts must be replaced immediately.

4-3 ELECTRICAL SYSTEM

4-3.1 Maintenance of the electrical system consists of inspection and minor servicing. Any wire, connection or electrical component showing signs of corrosion, wear, breakage or unraveling must be repaired or replaced.

4-3.2 Frayed or unraveling wire must have the defective section removed and replaced with wire of the same color and gauge. Seal all connections and insulate.

4-3.3 Corroded terminals must have the corrosion removed, source of corrosion neutralized and the terminals resealed, protected and insulated.

4-3.4 Fuse or circuit breaker burn-out or "blow-out" usually indicates an electrical short-circuit, although a fuse can occasionally fail from vibration. Insert a second fuse or reset the breaker. If this fuse immediately burns out or the breaker trips, locate the cause of the electrical short and repair.

4-3.5 Lights with a repeated lamp burn-out usually indicates a loose connection, poor system ground, or a malfunctioning voltage regulator. Locate the source of the problem and repair. System grounds must be grounded to bare metal surfaces. Paint, grease, wax, and other coatings act as insulators. Replacement lamps must be equivalent to the factory installed lamp.

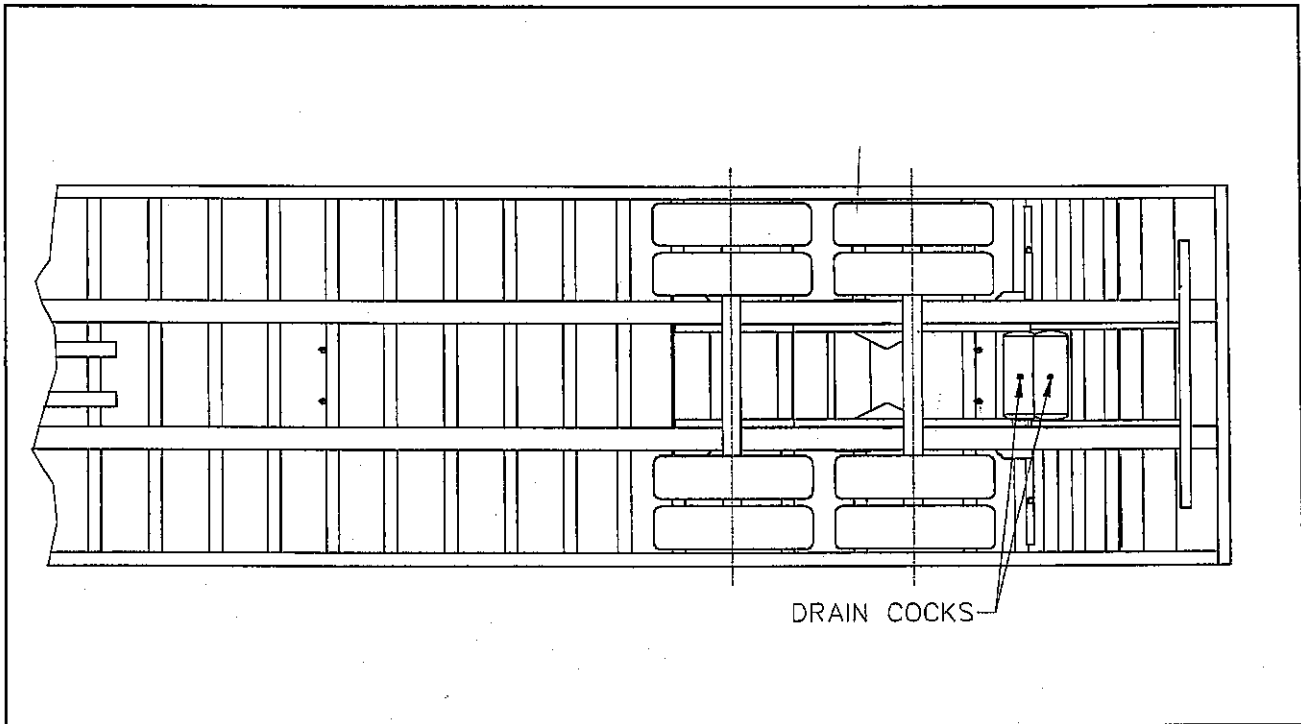


Fig. 4-1 Drain Cock Locations

4-4 BRAKE SYSTEM MAINTENANCE



WARNING

USE GREAT CARE IF WHEELS OR BRAKE DRUMS MUST BE TOUCHED OR HANDLED, THEY MAY BE VERY HOT AND CAN CAUSE SERIOUS INJURY.

4-4.1 General.

- a. Check air hoses for chafing, bends, kinks, or damaged fittings. Replace defective hoses.
- b. Check the brake system for loose, missing, deformed, or corroded fastenings. Replace and tighten defective hardware.
- c. Check brake linings for excessive wear or distortion.
- d. Drain air reservoir daily. A drain cock on the bottom of each air reservoir vents the tank to drain collected water and oil. If held open, air pressure in the tanks is relieved, causing the emergency or parking brakes to be applied (see Figure 4-1).

4-4.2 Air Brake Chamber Maintenance

The air system checks should disclose any malfunctioning brake chambers. Repair or replace faulty units. Check the condensation holes on the underside of the brake chambers to make sure they are open. The brake chambers should be disassembled and cleaned at 50,000

miles or yearly. The diaphragm and any marginal parts should be replaced. When replacing the diaphragm or hardware, replace the corresponding parts for the other chamber on the same axle (to aid in even brake application and release). Examine yoke pin for wear and replace as necessary.



DANGER

WHEN CRAWLING UNDER THE SEMITRAILER IS NECESSARY, CHOCK ALL WHEELS OF THE TRAILER AND TRACTOR. WHEN JACKING IS NECESSARY, CHOCK ALL WHEELS AND SUPPORT THE SEMITRAILER UNDERCARRIAGE WITH JACK STANDS SUFFICIENT TO WITHSTAND THE WEIGHT OF THE SEMITRAILER AND LOAD. FAILURE TO TAKE ADEQUATE SAFETY MEASURES CAN RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

COMPLETELY DRAINING THE AIR RESERVOIR WILL RELEASE THE TRAILER BRAKES. ALWAYS CHOCK WHEELS BEFORE RELEASING BRAKES TO PREVENT SERIOUS PERSONAL INJURY OR DEATH.

- a. Chock trailer wheel.
- b. Drain the semitrailer air system of all air and moisture (see Figure 4-1).

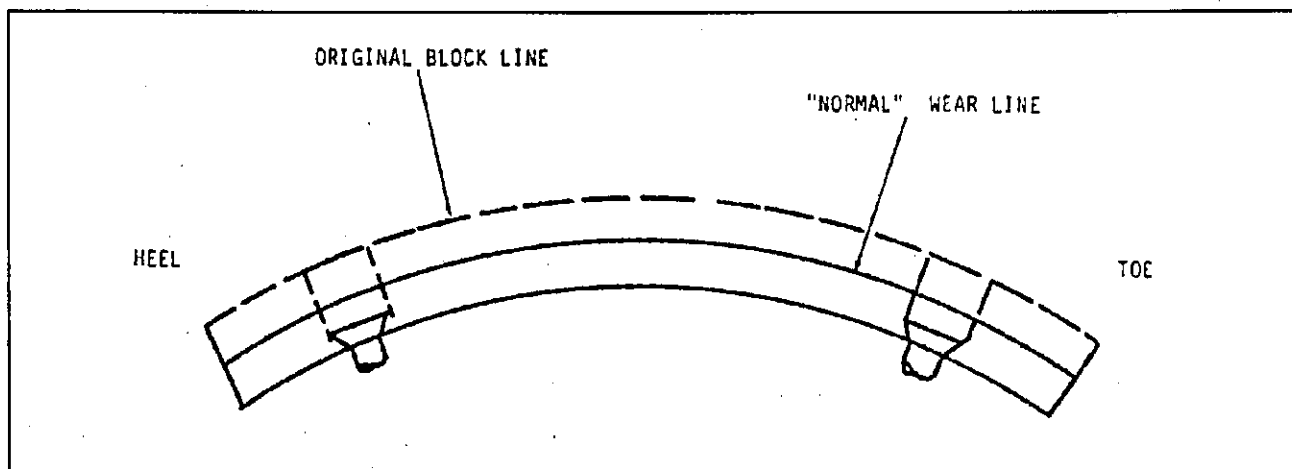


Fig. 4-2 Brake Lining Wear

c. Mark the chamber for proper reassembly alignment. Loosen the clamp bands around the chamber, and remove the chamber head.

d. Remove and replace diaphragm. Check all fasteners for defects. If defects are found, the defective part must be replaced.

e. Replace the chamber head and tighten the clamp band

f. Recharge the semitrailer air system and check the air chamber for leaks by applying soap suds to the chamber. A growing bubble or suds being blown away indicates a leak. Locate the source of the leak and repair before using the semitrailer.

4-4.3 Relay Emergency Valve



WARNING

REPAIR OR REPLACEMENT OF THE RELAY EMERGENCY VALVE IS A COMPLEX OPERATION AND SHOULD BE PERFORMED BY TRAINED SERVICE PERSONNEL IF THE RELAY OR EMERGENCY VALVE NEEDS REPAIR, CONTACT A LANDOLL AUTHORIZED SERVICE CENTER OR THE LANDOLL FACTORY FOR SERVICING.

Every 3600 operating hours, 100,000 miles (161,000 km), or yearly, depending upon operating conditions and experience, the Relay Emergency Valve should be disassembled, cleaned, and lubricated. Rubber parts and parts subject to wear should be replaced if worn or damaged.

4-4.4 Brake Assembly Maintenance.

The brake assemblies should be inspected and adjusted every 2,000 miles or monthly. Examine the brake linings visually to locate the lining showing the greatest amount of wear. The wheel and drum should be removed and the linings replaced if the thinnest portion of

the lining is 3/8 in. (9.5 mm) or less. Do not allow the linings to wear thin enough that the lining rivet contacts the drum. (see Figure 4-2).

a. Brake Adjustment

1. Grease cam bracket and spider fittings.



WARNING

CARE MUST BE EXERCISED TO PREVENT GREASE FROM COMING IN CONTACT WITH BRAKE LININGS WHICH COULD RESULT IN REDUCED BRAKING PERFORMANCE.

2. Adjust the slack adjuster until the brake lining comes into contact with the brake drum (see Figure 4-3).
 - For green brakes, there should be a slight amount of wheel drag at initial adjustment to compensated for any linings irregularities.
 - For burnished or broken-in brakes, back off the slack adjuster to achieve .010" clearance between drum and shoes.
3. Apply brakes using normal truck operating pressure. (Average line pressure should be 90 psi.)



DANGER

USE OF AIR PRESSURE IN EXCESS OF 130 PSI COULD RESULT IN FAILURE OF THE AIR CHAMBER AND RESULT IN INJURY.

4. Check the amount of push rod travel. Maximum should not exceed 2".
 - Optimum push rod travel on a green brake should be under 2".

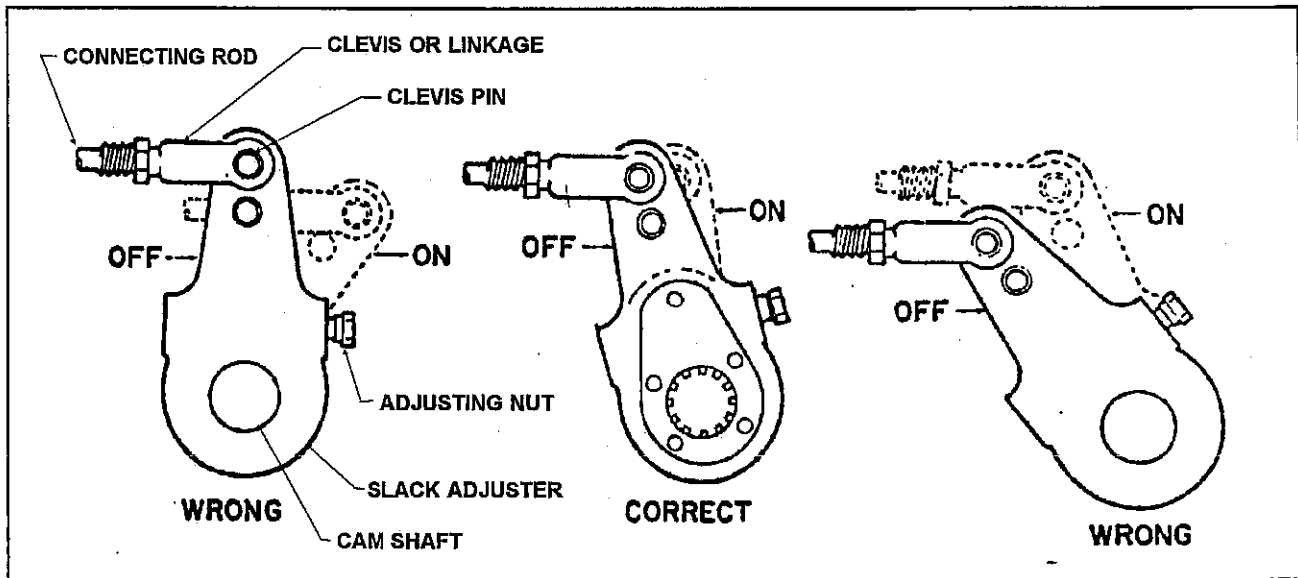


Fig. 4-3 Slack Adjuster

- Optimum push rod travel on a burnished or broken-in brake should be under 1-3/4".
- 5. Check the angle between the slack adjuster and push rod. With the brakes applied, the angle should be $90^{\circ} \pm 5^{\circ}$.
- 6. With air pressure applied to brakes, check for lining to drum contact. The contact should approach 100%. Use a .010" feeler gauge if in doubt. It should not fit between the lining and drum during brake application.
- 7. Check to ensure the lining is inside the drum during application. More than .06" hanging out of the drum is not recommended.
- 8. Release air pressure from the brakes and confirm that all brakes release to the normal relaxed position.



CAUTION

FAILURE TO PROPERLY ADJUST BRAKES
COULD CAUSE REDUCED BRAKING PER-
FORMANCE.

b. Disassembly (see Figure 4-4)

1. Release brake and back off slack adjuster.
2. Remove slack adjuster lock ring and slack adjuster.
3. Remove hub and drum assembly (see page 7).
4. Remove anchor pin anti-rotation bolt.
5. Remove anchor pin retainers and washers.
6. Remove anchor pins and brake shoes.
7. Remove brake return springs.

8. Remove camshaft lock ring, spacer washer and cam shaft.
9. Remove roller pin retainers.
10. Remove roller pins and rollers from shoes.
11. Remove camshaft bushings and seals from spider.
12. After removing the shoes, completely inspect all brake components, servicing as necessary.

c. Reassembly

1. Install new camshaft bushing and camshaft seals into the spider.

NOTE: When installing camshaft seals, the seal on the slack adjuster side is installed facing into spider. This allows grease to purge outside the brake assembly when greasing the camshaft bushing, avoiding damage to the seal lip when camshaft is installed.

2. Install cam roller assemblies onto the brake shoes.
3. Install "D" shaped camshaft washer onto the camshaft.
4. Install the camshaft into the spider. Install spacer washer and lock ring retainer on camshaft before sliding the camshaft through the camshaft support bracket. Install the slack adjuster, washer and lock ring retainer.
5. Install shoes, anchor pins and spacers onto spider. Install anchor lock rings.
6. Install brake return spring.
7. Tighten anchor pin anti-rotation bolt.
8. Connect slack adjuster to brake chamber pushrod.

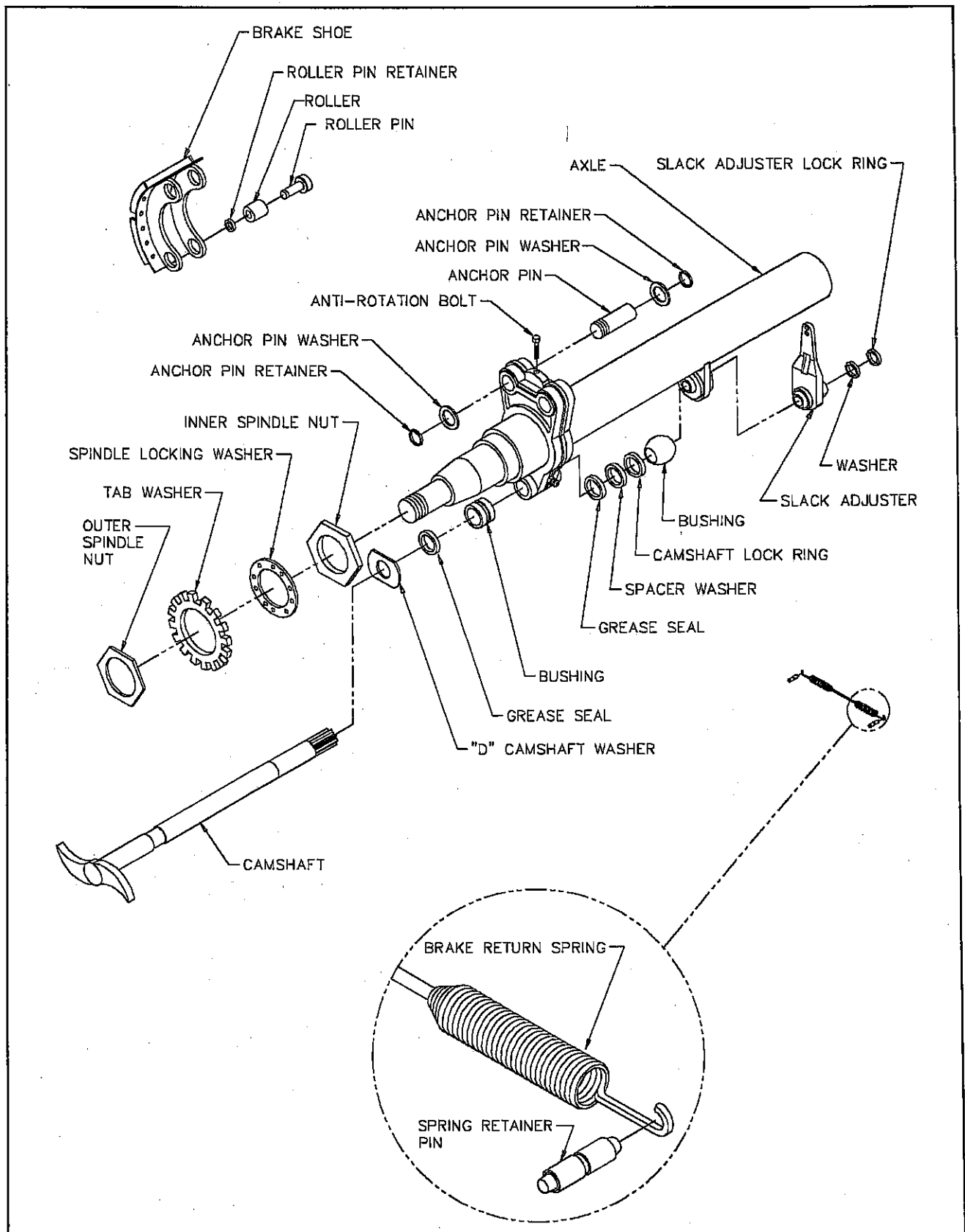


Fig. 4-4 Axle and Brake Assembly

9. Adjust brakes as outlined in brake adjustment procedures.

all new springs when servicing brakes.

4-4.5 Automatic Slack Adjusters.

The semitrailers automatic slack adjusters provide the means for routine brake adjustment to compensate for lining wear. Inspect slack adjusters every 2,000 miles to assure correct operation. Follow these procedures to replace slack adjusters (see Figure 4-3).

a. REMOVAL.

1. Remove the clevis pin.
2. Manually adjust the slack adjuster (using the slack adjuster nut) until the slack adjuster clears the clevis.
3. Remove snap ring, spacers, and old slack adjuster from camshaft.
4. Remove clevis from air chamber push rod.

b. INSTALLATION AND ADJUSTMENT.

1. Clean and inspect camshaft according to Paragraph 3-3.4 b.
2. Remove the quick assembly nut from the clevis and thread it onto the air chamber push rod about 2 inches (5.08 cm).
3. Slide the slack adjuster onto the camshaft splines using spacers to center the slack adjuster with the air chamber push rod.
4. Secure the slack adjuster with the snap ring.
5. Using the slack adjuster adjusting nut, rotate the slack adjuster until the clevis contacts the quick assembly nut on the push rod.
6. Thread the quick assembly nut into the clevis and tighten.
7. Adjust brake shoes until the proper shoe to drum clearance is reached by rotating the adjusting nut in a clockwise direction. The brake shoes should produce no drag when the tire/wheel assembly is rotated by hand.
8. After applying and releasing brakes about ten times, check the push rod stroke. The stroke should be about 1-1/2 in. (3.81 cm).
9. To increase the shoe to drum clearance, remove the clevis pin and rotate the adjusting nut counterclockwise.
10. When the proper shoe clearance has been achieved, push the push rod into the housing while rotating the adjusting nut clockwise, until the clevis pin can be re-installed in the clevis.

4-5 HUB AND DRUM

4-5.1 Clean and inspect the brake drums whenever relining the brakes. To be suitable for further service, the brake drum or rotor should pass the following checks.

- a. The brake surface should be free of scoring, excessive heat checks and free of cracks.
- b. The brake surface diameter should be within the maximum diameter cast or stamped on the drum or above the minimum diameter cast or stamped on the drum or above the minimum thickness cast on the rotor.
- c. The mounting holes and pilot must be round and true.
- d. The mounting surface must be clean and flat.



WARNING

FAILURE TO REPLACE FAULTY BRAKE DRUMS WILL RESULT IN AN UNRELIABLE BRAKING SYSTEM, AND MAY LEAD TO AN ACCIDENT.

4-5.2 It may be necessary to turn or resurface the braking surface to remove small heat checks or other surface defects resulting from normal use.

a. The maximum diameter cast into the back plate portion of the brake drum is the maximum diameter or discard diameter to which the brake drum may be turned or worn and still be usable. If any portion of the brake surface exceeds the maximum diameter it must be discarded. The maximum is .120 over the nominal new diameter unless stated otherwise on the casting. The maximum diameter cast into the brake drum supersedes all published information.

b. When resurfacing a drum, allow at least 0.040 inches under the maximum diameter for additional wear. This usually means the drum may be turned a total of 0.080 over the brake surface diameter of a new brake drum.



WARNING

TURNING A BRAKE DRUM BEYOND 0.040 INCHES UNDER THE MAXIMUM DIAMETER WILL RESULT IN A WEAKER BRAKE DRUM AND MAY RESULT IN AN ACCIDENT.

4-5.3 Replacement of the brake drum is required if any of the following conditions exist:

- a. The brake drum is cracked.
- b. The brake surface is heat checked, grooved or worn beyond the rebore limit or the maximum diameter.

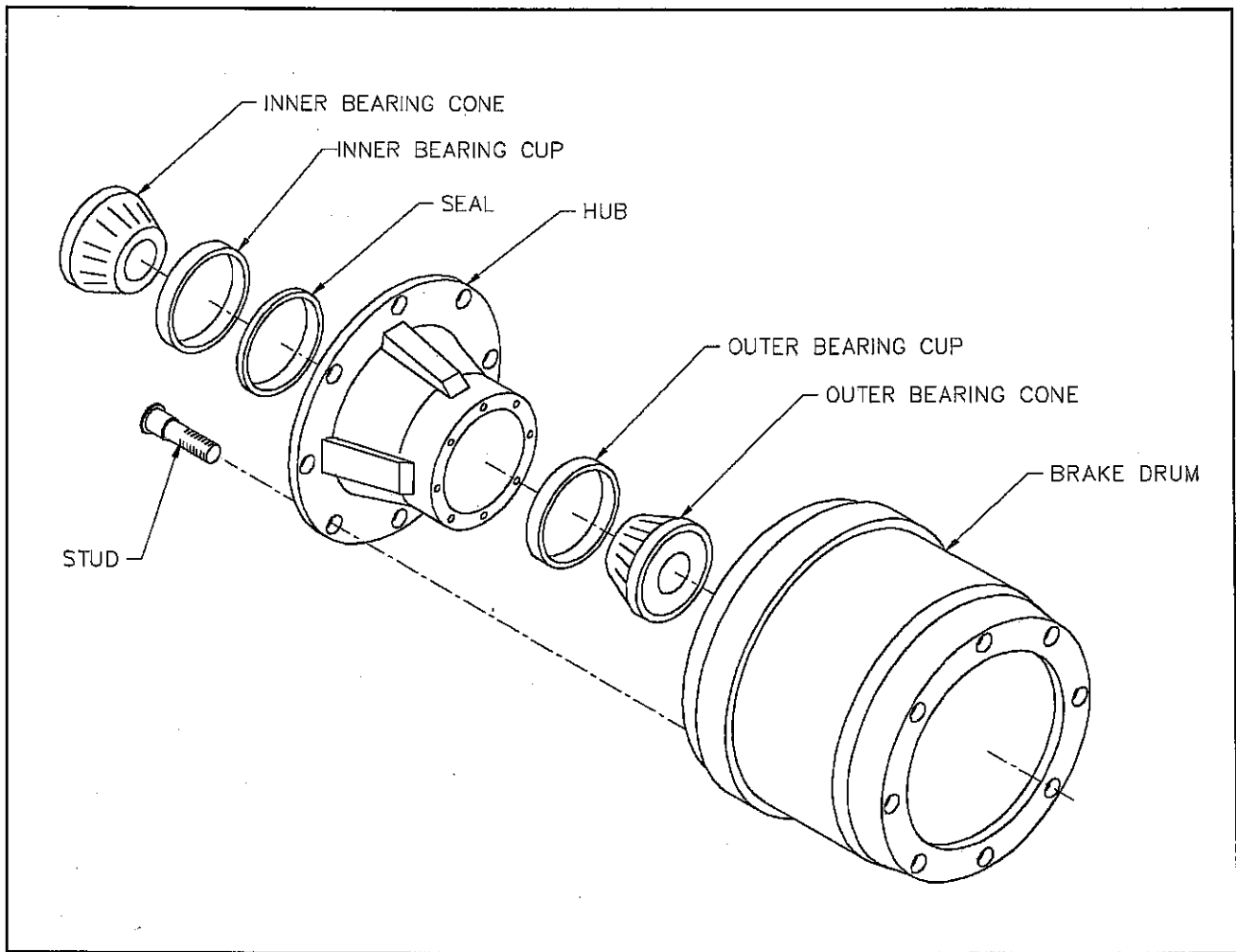


Fig. 4-5 Hub and Drum Assembly

- c. The back plate is cracked.
- d. The bolt holes are elongated.
- e. The brake drum is known to have been severely overheated.
- f. The brake drum is out-of-round.



CAUTION

REPLACE BRAKE DRUMS IN PAIRS TO ACHIEVE THE SAME BRAKING POWER ON BOTH WHEELS AND MAINTAIN AN EVEN BRAKING LOAD ON THE AXLE. FAILURE TO DO THIS MAY SIGNIFICANTLY REDUCE THE PERFORMANCE, SERVICE LIFE, AND/OR SAFETY OF YOUR VEHICLE.

4-5.4 Replace the drum as follows (see Figure 4-5):

- a. Remove the brake drum to be replaced.

b. Make sure all mounting surfaces on the hub are clean and all foreign material is removed.

c. Insert hub components (bearing cups) into hub prior to attaching the brake drum. Be sure to use the correct stud length.

d. Place the hub on a flat surface with the hub cap end down. Insert the serrated stud down through the hub. Use a press or tap with a hammer until studs are flush against the back of the hub. Support the hub flange when inserting the studs to guard against excessive flexing of the flange. Do not damage the stud or hub assembly.

e. Check that the hub cavity is clean.

f. Inspect the seal and seal surfaces in the hub and on the axle for nicks or dents that could damage the seal. Smooth the surfaces with emery cloth if such necessary.

NOTE: Do not mix new cups with old cones or new cones with old cups .

g. Clean the mounting surfaces with a good grade commercial cleaner and soft rag. Dry all component parts with a clean, absorbent cloth or paper. Lubricant will not adhere to surfaces wet with solvent.

h. Install inner bearing, cone, and seal.

i. Studs are marked "R" or "L". Right hand (R) hubs should be installed on the curbside of the vehicle. Left hand (L) hubs should be installed on the driver side.



CAUTION

FAILURE TO USE THE CORRECT STUD ON THE CORRECT SIDE MAY CAUSE LOOSENING OF THE HUB STUDS DURING OPERATION, RESULTING IN LOSS OF A WHEEL.

j. Place the hub over the axle spindle, being careful to align the hub bore with the axle. Do not damage the seal. Support the hub assembly until the outer bearing cone and spindle nut are installed, to avoid damaging the seal.

k. Install the outer bearing cone and inner spindle nut, tightening the nut until it is snug against the outer bearing cone. Remove the hub support allowing the hub to rest on the bearings.

l. Install and adjust bearings (see **Bearing Adjustment**).

m. Install the hub cap with proper gasket. Tighten the cap screws of the hub cap to 15 to 20 ft-lbs. of torque.

n. Remove the filler plug and fill the hub cavity to the recommended level with a gear type oil.

o. Place the drum over the hub and brake shoes being careful not to damage the threads on the studs. Make sure the drum seats flat against the hub flange and mates properly with the hub pilot. There should be no interference between the brake drum pilot chamfer and

the corner radius on the hub. If interference exists, the hub will not be able to function properly.

p. Adjust the brakes (see **Brake Adjustment**, page 3).

4-6 WHEEL BEARING

With trailer sitting level, the oil level must be checked daily and maintained between the "ADD" and "FULL" lines on the hub cap window. Check for cracked windows, missing filler plugs and oil leaks. Add hub oil through the "POP-IN" filler plug located in the center of the hub windows. Re-install the "POP-IN" plugs after filling each hub.

4-6.1 Adjustment

a. With a drain pan under the hub cap, remove the hub cap assembly allowing oil to drain.

b. Lift the wheel off of the ground.

c. Adjust slack adjuster to eliminate brake drag during tire/wheel rotation (see page 4).

d. Remove the outer spindle nut and locking washer (see **Figure 4-4**).

e. Rotate the tire by hand and tighten the inner nut until there is a slight bind. Back off the inner spindle nut 1/4 turn (3/8 turn max.) to allow free rotation of wheel.

f. Install lock ring. Lock ring must engage pin on inner adjusting nut. Nut must engage nearest pin hole.

g. Install tab washer and outer spindle nut. Torque outer spindle nut to 250 (min.) - 300 (max.) ft-lb. Bend 3 tabs over outer nut flats to secure.

h. Install hub cap with new gasket and fill with oil to the full mark. Use 90 weight gear oil.

i. Check hub oil level after the wheel has set level in one position for a few minutes to allow the oil to work into the bearings.

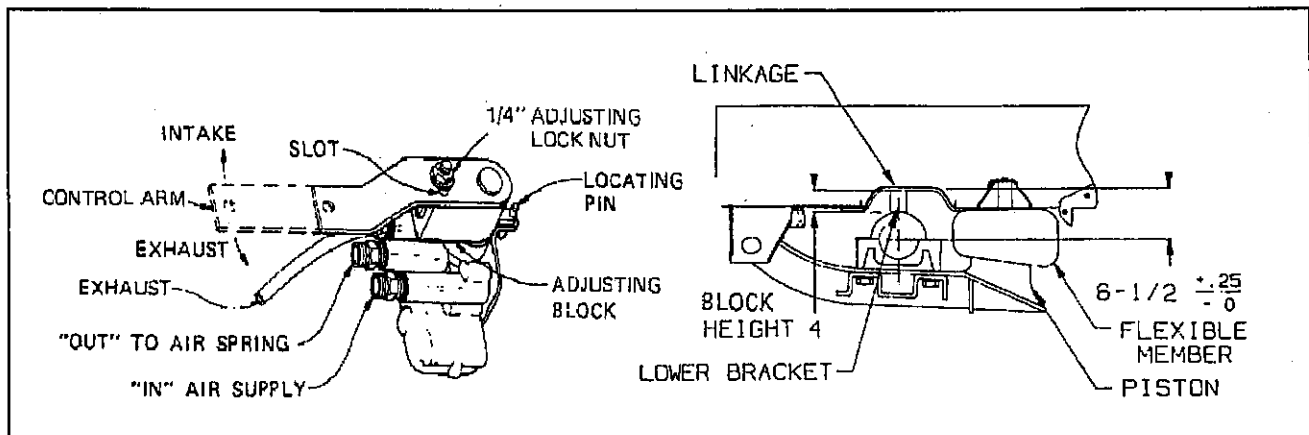


Fig. 4-6 Air Ride Adjustment

4-7 SUSPENSION MAINTENANCE

Check the shocks for excessive wear and the air bags for excessive wear and proper inflation.

4-7.1 Air Ride Height Adjustment. (See Figure 4-6 for parts identification).

a. Before adjusting, vehicle must be empty with the kingpin at operating height and air supplied to the semitrailer.

b. Disconnect linkage at the control arms and raise control arms to the "up" position, raising the trailer the full extent of suspension travel.

c. Position a 4" wood block between the axle caps and frame.

d. Lower the trailer by exhausting all air from the system. Recheck the ride height.

e. Move the control arms to the "down" position (about 45°) for 10-15 seconds. Slowly return the control arms to the center position and insert locating pins into the adjusting block and bracket on the automatic height control valves (see Figure 4-6).

f. Loosen the 1/4" adjusting lock nut located on the adjusting blocks, allowing the control arm to move approximately 1 inch.

g. Reconnect the linkage to the control arm lower brackets and re-tighten the 1/4" adjusting lock nut to 2-4 ft.lbs.

h. Repeat this procedure for the other valve.

i. Remove the locator pins, pressurize the trailer air system, and raise the trailer. The height control valves may be used as an improvised jack by disconnecting the control arms at the lower bracket and pushing the control arms to an "up" position.

j. Remove the spacers, exhaust system and reconnect the linkage. This allows the Automatic Height Control Valves to resume normal operation.

k. Check the air ride height. If necessary, go through the adjustment procedure again until the proper air ride height is achieved.

l. Check the air ride height periodically and adjust as needed.

4-8 ALIGNMENT

4-8.1 Wheel Alignment



DANGER

TO PREVENT A POTENTIALLY LIFE THREATENING ACCIDENT:

1. SUPPORT TRAILER SO TIRES ARE OFF THE GROUND.

2. SUPPORT THE TRAILER ON JACK STANDS WITH SUFFICIENT CAPACITY TO SUPPORT THE TOTAL WEIGHT OF THE TRAILER AND ANY LOAD WHICH IT MAY BE CARRYING.

When trailer tires show signs of scuffing, feathering or uneven wear, examine the semitrailer for damaged suspension (frame, shocks, linkage, etc.), axle, wheel bearings and wheels. Proper wheel alignment and wheel bearing adjustment is essential for proper tire wear. The simplest form of checking wheel alignment "toe" is by running the trailer over a "SCUFF GAUGE". A scuff gauge reading of 16 feet or less per mile is considered satisfactory. If a scuff gauge is not readily available, or edge wear on one side of a tire is occurring signifying positive or negative camber, alignment can be checked as follows:

a. Remove wheel, hub and bearing assemblies.

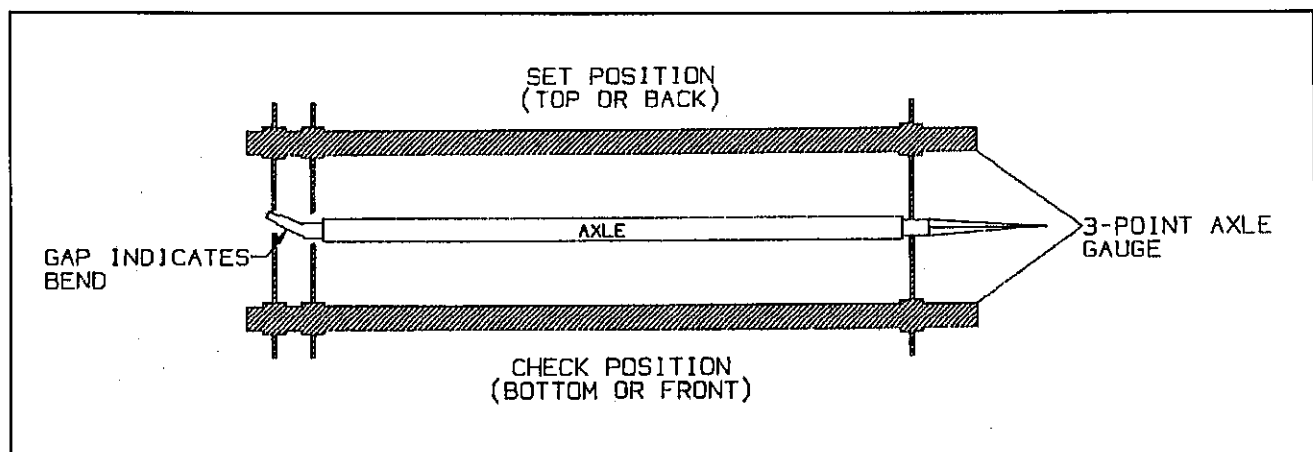


Fig. 4-7 Checking Axle for Bend

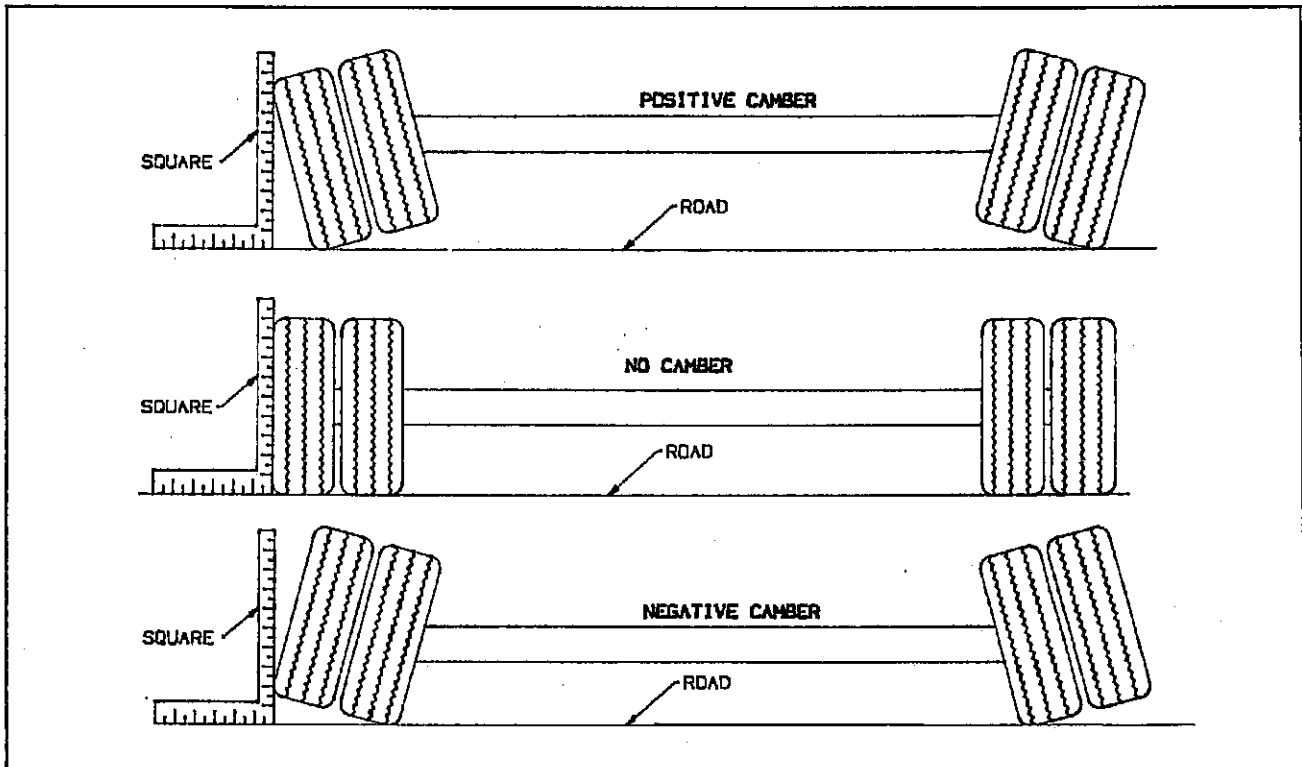


Fig. 4-9 Examples of Camber

b. Place a 3-point axle gauge against the front side of the axle, and adjust each axle gauge point to the axle. (Double point end against the inner and outer wheel bearing surfaces of the spindle being checked and the other point on the inner bearing surface on the other spindle)(see Figure 4-7).

c. Move the axle gauge and place against the back side of the axle. If either of the points of double point end fails to touch the axle surface, a bent spindle is evident. A point gap of .015" or more is considered excessive tire "toe" and the axle must be replaced (see Figure 4-7).

d. Follow the same procedures as in Paragraph 4-8.1 b and c, except place the axle gauge above and below the axle. If gauge point gap is found, the axle has positive or negative camber. The semitrailer axle has no camber from the factory, thus if it is found to have positive or negative camber, axle replacement is necessary (see Figure 4-9 for examples of camber).

4-8.2 Axle Alignment

Proper axle to king pin alignment is necessary to obtain straight tracking. If axle alignment is off, "dog-tracking" occurs. The air ride suspension is aligned and welded at the factory and the axles should not require

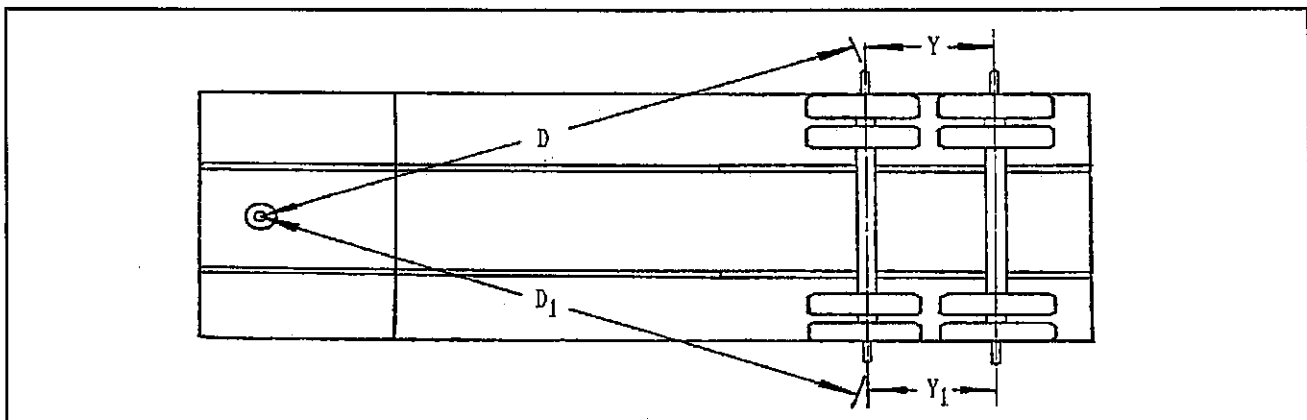


Fig. 4-8 Checking Axle Alignment

alignment. If they do require alignment use the following procedure.

a. Locate the welded washer for the front axle in front of the drivers side equalizer beam. Cut this washer loose and loosen the suspension pivot bolt.

b. Position trailer on a firm and level surface. Eliminate any suspension binding due to sharp turns or unusual maneuvers.

c. Detach tractor from the trailer and jack the trailer up sufficiently to permit measuring from the underside of the trailer.

d. Suspend a plumb bob at axle height from the center of the king pin.

e. Measure (D) from the plumb bob to the center point on one end of the axle. Record this measurement (see Figure 4-8).

f. Measure (D1) to the other end of the axle in the same manner as in Step 4. Record this measurement (see Figure 4-8).

g. Set D1 about 1/8" shorter than D to insure proper trailer tracking on slope of road.

h. All suspensions must be in good repair with no binding or other restrictions before alignment. All defective parts of the suspension or axles must be replaced immediately.

i. After proper alignment has been obtained, tighten the suspension pivot bolt nut to the torque listed in Table 2-1, and reweld the washer.

j. Align the rear axle to the front axle. The rear axle should be parallel with the front axle. The dimensions Y and Y1 should be the same.

k. Tighten the suspension pivot bolt nut to the torque listed in Table 2-1, and reweld the washer.

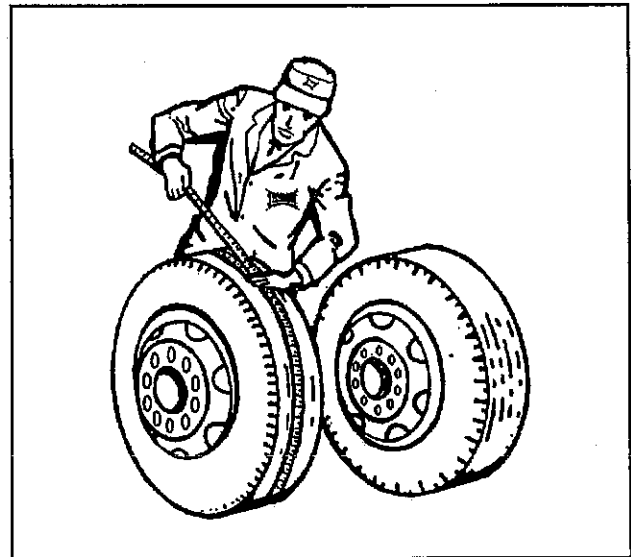


Figure 4-11 Measuring Method

4-9 TIRES AND WHEELS.

4-9.1 **Tire Inflation.** Tire inflation will cause tire to ground contact characteristics as shown in Figure 4-10. Tire inflation should be checked daily while the tire is cold, and during road stops. Checking the tire pressures while tires are hot will give a faulty increased pressure reading. Adjusting tire air pressure to the specified amount while tires are hot will produce improper tire to road contact and thus abnormal wear. Do not exceed cold inflation pressure listed on the trailer VIN plate located on the front of the semitrailer. Exceeding cold inflation pressure will result in damaged tire bodies, rims, and wheels. Replace all valve stem caps when pressure checking/adjusting has been completed. remove any foreign objects from between duals.

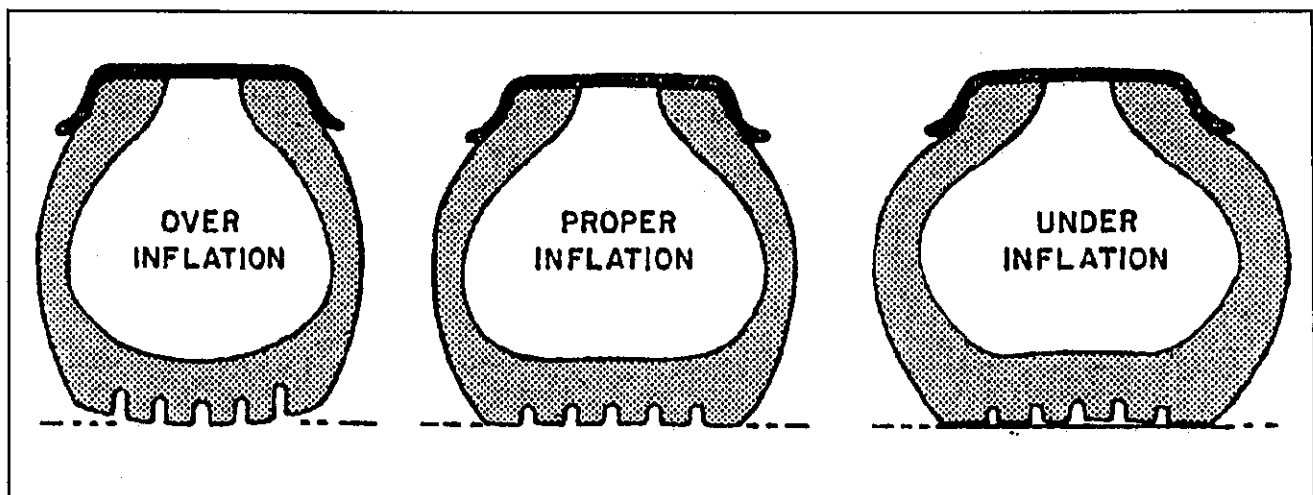


Fig. 4-10 Tire Inflation Examples

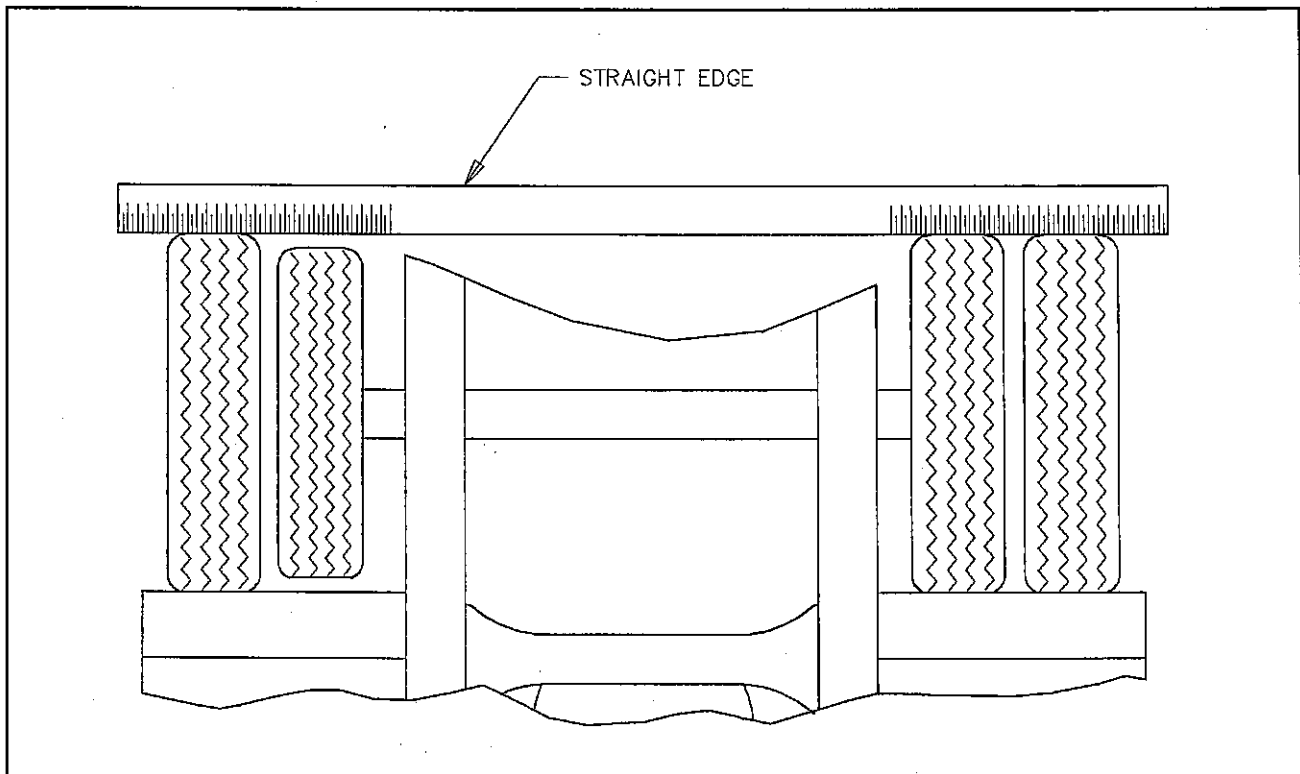


Fig. 4-12 Straight Edge Method

4-9.2 Tire Matching. Both tires on the same spindle must be the same size in order to properly distribute the load and braking forces between them. The tire must be mounted on a rim and properly inflated before measuring. If there is an allowable difference in size the smaller tire should be mounted to the inside position of the duals.

a. Tape Measuring Method. Measure around each tire on the tread surface. A maximum difference of $3/4$ " is allowed between the two mating tires of a dual (See Figure 4-11).

b. Straight Edge or String Method: (This method can not be used if tire and wheel assemblies are not mounted on the axle.) Jack trailer up until the wheels are off of the ground. Hold a straight edge against the tires of both ends of an axle. A gap at one tire indicates a smaller tire. A maximum of $1/8$ " gap is allowed (See Figure 4-12).

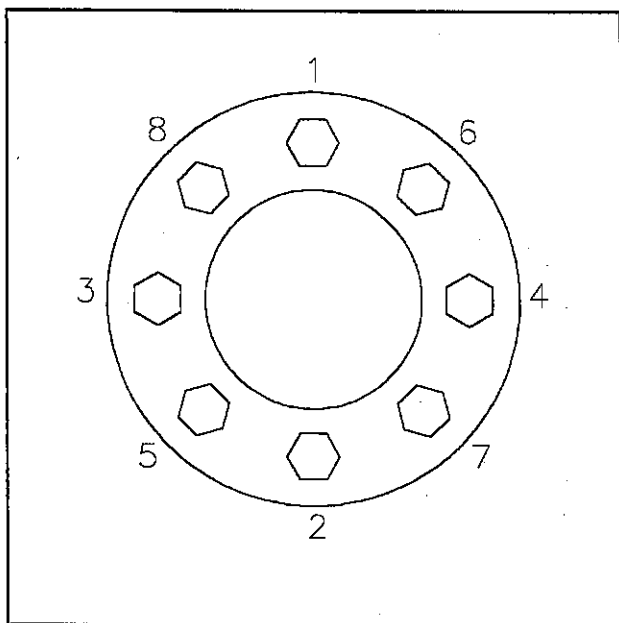


Figure 4-13 Stud Tightening Sequence

4-9.3 Mounting Tire and Wheel

a. Make sure that all mounting surfaces are clean and free of rust, dirt or paint. A wire brush may be used to clean these surfaces (see Figure 4-14).

b. Rotate the hub so that one pilot pad is at top center or at the 12:00 position.

c. Position the inner disc wheel over the studs and wheel pilot pads, being careful not to damage the stud threads. Make sure that the disc wheel is flat against the mounting surface and that there is clearance between the disc wheel taper and brake drum.

d. Position the outer disc wheel over the studs and wheel pilot pads being careful not to damage the threads. Be sure the valve stems for both the inner and outer tire are accessible.

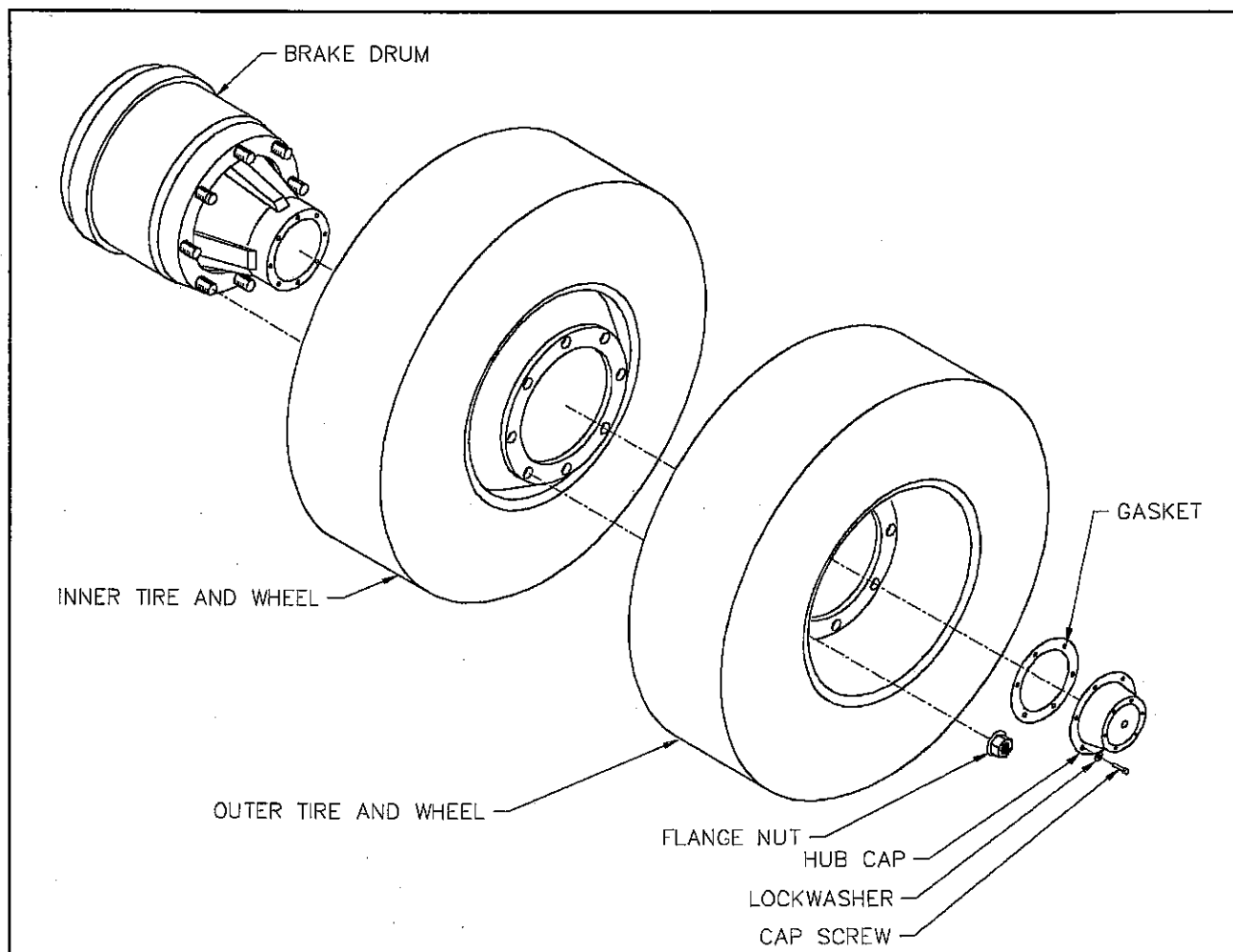


Figure 4-14 Mounting Tires and Wheels

e. Install the flange nuts and tighten to 50 ft-lbs. in the sequence shown in Figure 4-13.

f. Check both disc wheels to be sure they are properly seated on the hub assembly. If they are not, loosen the flange nuts and repeat the last step.

g. Tighten the flange nuts to full torque of 500 to 550 ft-lbs., using the same sequence illustrated in Figure 4-13.

h. Torque will drop after the first 50 to 100 miles of operation. Check the flange nuts for proper torque after this interval and retighten them.



WARNING

USE A TORQUE WRENCH TO ASSURE PROPER TORQUE. INSUFFICIENT TORQUE CAN CAUSE STUD BREAKAGE AND DAMAGE WHEEL PILOTS. OVERTORQUE CAN OVERSTRESS THE STUDS AND STRIP THE THREADS.

4-10 LUBRICATION.

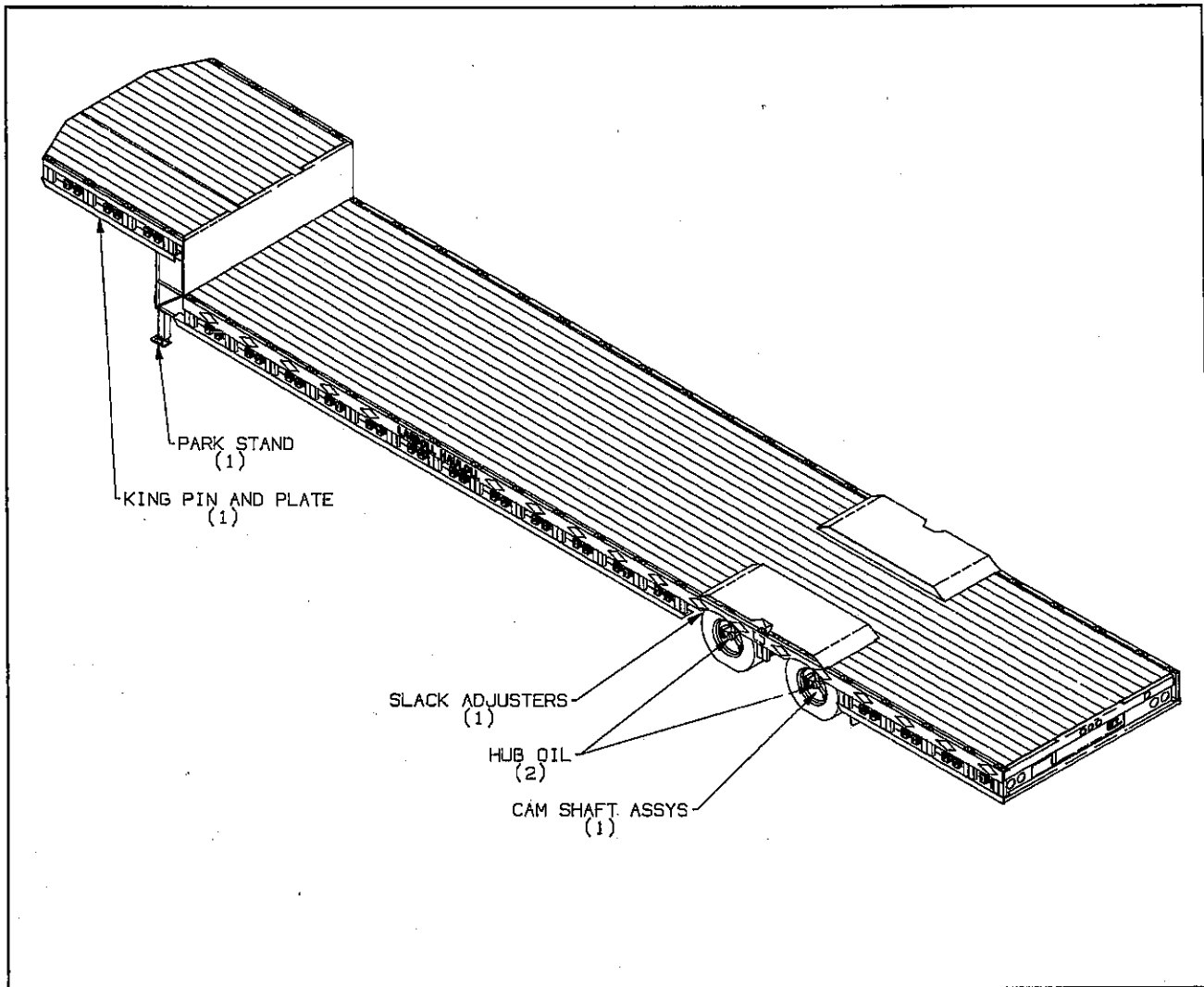


Fig. 4-15 Lubrication Points

LUBE	BRAND AND PRODUCT (WEIGHT AND/OR TYPE)			
	AMOCO	EXXON	PHILLIPS	TEXACO
1	Lit-Multi-purpose Grease	Rondex Multi-purpose Grease	Phil Lube M.W. Grease	MarFax All Purpose
2	Multi-purpose 90	Gear Oil GTX 85-140	Phil Lube All-purpose Gear SAE 90 #90501	Multi-gear EP 80W90

Table 4-1 Lubrication Specifications

NORMAL OPERATING SERVICE INTERVALS ^a								
SERVICE INTERVAL :	TIMES	1st 5 Hrs	Weekly	Monthly	6 Months	Yearly	LUBE #	NOTES
ITEM	MILES	50	500	2,000	12,000	25,000		
LIGHTS		I	I					
WIRING & CONNECTIONS		I		I				
FASTENERS		I, T		I				b
KING PIN & PLATE		I		C, I, L			1	c
BRAKE AIR SYSTEM		I	I	I				
RELAY VALVES						I, C		
BRAKE ADJ & WEAR		I		I, T				d
SLACK ADJUSTERS		I	I			L	1	c
CAMSHAFT ASSYS		I	I			L	1	c
HUB OIL		I	I, L			R	2	c
WHEEL BEARINGS		I			I, T		2	c
TIRE INFLATION & WEAR		I	I					e
WHEEL LUG NUTS		I, T	I	I, T				b
SUSPENSION ALIGNMENT		I		I				

I – Inspect, R – Replace, T– Tighten/Adjust Torque, L – Lubricate, C – Clean

NOTES:

- Perform at the time shown. Shorten service intervals when operating in severe or dirty conditions.
- See Table 2-1 (Bolt Torque Chart) for correct torque.
- See Table 4-1 (Lube Specification Chart) for recommended lubricant.
- Call Landoll Customer Services for procedures to replace.
- See Serial Number Plate on the front of the semitrailer for proper inflation requirements.

Table 4-2 Maintenance Schedule

NOTES:

Troubleshooting should be performed by a trained and competent technician. Landoll Corporation is not responsible for equipment that is improperly maintained. Contact an authorized Landoll Service center or contact the Landoll factory for servicing.

5-0.1 Electrical

Most electrical system problems show up as a burned out light or fuse, or inoperative electrical component. Wiring, grounds or components may be at fault. Locate the symptom in this section that best identifies your electrical problem. Check out each possible problem under that symptom. If the problem cannot be located, see an automotive electrical specialist. For maintenance procedures see Page 4 -1.

SYMPTOM	PROBLEM: REMEDY
NO LIGHTS	Fuse blown on tractor: Replace fuse. Loose connection at plug-in: Tighten connection. Broken or corroded wires: Replace wire. Ground wire loose: Clean and tighten ground.
LIGHTS FLICKERING	Wires shorted or loose: Locate, insulate, replace, or tighten.
LIGHTS DIM	Voltage difference between trailer & tractor: Tractor supply wire or circuit components too low capacity - enlarge wire or component, match bulbs with tractor voltage.
LIGHTS BRIGHT & BURN OUT	Ground wire disconnected: Self-explanatory. Voltage difference between trailer & tractor: Tractor supply wire or circuit components too low capacity - enlarge wire or component, match bulbs with tractor voltage.
FUSE BLOW-OUT OR CIRCUIT BREAKER TRIPPING	Vibration: Locate source of vibration and repair. Short circuit: Replace fuse and try all accessories. If fuse blows right away, locate short and repair.
LAMP BULB BURN OUT	Vibration: Locate source of vibration and repair. Short circuit: Replace fuse and try all accessories. If fuse blows right away, locate short and repair. Loose connection: Check lamp sockets and ground connections. Intermittent short: Locate short and repair. Improper voltage: Check voltage regulator output.

5-0.2 Tires - Wheels - Suspension

Most tire, wheel, and suspension related problems are due to excessive loads, extreme conditions, and improper maintenance. Tire, wheel, and suspension problems can be easily detected and solved by checking the following guide. For maintenance procedures see Pages 4-9 thru 4 -13.

SYMPTOM	PROBLEM: REMEDY
VIBRATIONS WHILE DRIVING	Improper tire inflation: Inflate to proper pressure. Tires cupped or have flat spots: Replace tires. Wheels bent or loose: Replace or tighten. Tires incorrectly mounted: Remount. Mud in wheels: Clean wheels. Tire(s) out of balance: Balance tires. Brakes dragging: Locate cause and repair. Object(s) stuck between duals: Remove object(s).
RAPID TIRE WEAR/DETERIORATION; CENTER TREAD WEAR	Over inflation: Deflate to correct inflation.

TABLE 3-4 TROUBLESHOOTING, Continued
Tires - Wheels - Suspension, Continued

SYMPTOM	PROBLEM: REMEDY
SHOULDER TREAD WEAR - BOTH SHOULDERS	Under inflation: Increase inflation to correct psi. Check axle alignment. Overload: Loads are above rated tire capacity. <i>Do not load above rated tire capacity.</i>
SHOULDER TREAD WEAR - ONE SHOULDER	Axle damage: Straighten or replace axle. Axles not parallel: Check axle alignment.
OVERALL TREAD WEAR	Overloading: Check tire load rating. High speeds: Adjust speed according to road and load conditions. Incorrect dual matching: Properly match dual tires
TIRE FLAT SPOTS	Quick stops: Adjust braking practices. Grabbing brakes: Adjust brakes properly. Worn or loose wheel bearings: Adjust or replace as needed. Out of balance wheels and tire: Balance wheels and tires.
UNEVEN WEAR	Suspension bushings worn: Replace bushings. Worn or loose wheel bearings: Adjust or replace as needed. Out of balance wheels and tires: Balance wheels and tires.
RIM FAILURE*: CRACKING	Overinflated tires: Deflate tire to proper psi. High speeds: Adjust speed according to road and load conditions. High speed cornering: Adjust cornering practices. Over loading: Check rim load rating.
*In all instances of rim failure, replace the rim immediately! BENDING OR WARPING	Curb-hopping or potholes: Adjust turning practices and adjust speed accordingly with road conditions. Improper tightening sequence: Follow proper tightening sequence.
BROKEN STUDS*	Over-tightening: Use correct torque and tightening sequence when mounting.
*Replace broken studs before using the semitrailer!, TRAILER TRACKING PROBLEMS: TRACKS TO ONE SIDE TRACKS TO EITHER SIDE	Axle alignment: Re-align axle. Broken or bent springs or equalizer bushings: Replace worn parts. Axles not parallel: Adjust axle spacing to be parallel.
AIR RIDE PROBLEMS: TOO HIGH	Axle to control valve linkage: Readjust linkage. Height Control Valve internal leak: Repair or replace valve.
TOO LOW	Axle to control valve linkage: Readjust linkage. Height Control Valve filter plugged: Clean or replace valve. Pressure Protection Valve filter plugged: Clean or replace valve. System air pressure low (65 PSI minimum required): Troubleshoot air supply.

TABLE 3-4 TROUBLESHOOTING, Continued
Tires - Wheels - Suspension, Continued

SYMPTOM	PROBLEM: REMEDY
UNEVEN FROM SIDE TO SIDE	<p>Linkage adjustment: Readjust linkage so both sides are the same.</p> <p>Exhaust port plugged: Clean or replace valve(s).</p> <p>Height control valve internal leak: Repair or replace valve.</p> <p>Supply line to one height control valve pinched, restricted, or plugged: Repair or replace line.</p> <p>Over-extending shock absorbers: Improper ride height.</p> <p>Pivot bushing worn: Replace with proper Service Repair Kit (SRK-64) and torque to proper specifications.</p> <p>Loose or worn axle connection: If loose, tighten connection. Then check axle alignment and realign if necessary. If worn, shim rear side of axle adapter or replace.</p> <p>Worn axle adapter: Shim rear side of adapter or replace. Check axle alignment.</p>
REPEATED SHOCK ABSORBER FAILURE AXLE MISALIGNED	
AXLE OFF TRACKING	
<p>5-0.3 Brakes For maintenance procedures see Page 4-2.</p>	
SYMPTOM	PROBLEM: REMEDY
NO BRAKES OR BRAKES ARE INTERMITTENT	<p>Brake air system improperly connected: Reconnect gladhands properly.</p> <p>Relay/Emergency valve plugged: Clean valve.</p> <p>Defective tractor protection valve: Repair or replace.</p> <p>Restricted tubing or hose line: Locate and eliminate restriction.</p> <p>Broken line: Locate break and repair.</p> <p>Tractor air system failure: Troubleshoot tractor air system and repair.</p> <p>Broken internal brake component: Locate and replace broken part.</p> <p>Flat spot on cam roller or cam shaft: Replace and lubricate.</p> <p>Improper adjustment: Adjust slack adjusters.</p> <p>Spider bushing or cam bracket bushing binding: Lubricate or replace bushing.</p> <p>Improper lubrication: Lubricate per Figure 4-15.</p> <p>Worn brake shoe bushing: Replace bushing.</p> <p>Brake drum distortion: Replace drum.</p> <p>Brake chamber pushrod binding: Realign brake chamber bracket.</p>
SINGLE BRAKE DRAGGING OR LOCKED	<p>Air brake line loose or broken: Tighten or repair. See "SINGLE BRAKE DRAGGING OR LOCKED"</p> <p>Restriction in hose: Locate restriction and remove.</p> <p>Worn brake linings: Reline brakes.</p> <p>Grease on linings: Reline brakes.</p> <p>Broken slack adjuster: Replace slack adjuster.</p> <p>Call Factory or see qualified Trailer/Brake Technician.</p> <p>Leaking brake chamber diaphragm: Replace diaphragm.</p>
UNEVEN BRAKES	

TABLE 3-4 TROUBLESHOOTING, Continued
Brakes, Continued

SYMPTOM	PROBLEM: REMEDY
BRAKES APPLY TOO SLOWLY	Brakes need adjusting or lubrication: Adjust or lubricate as needed. Low air pressure in brake system (below 90 psi): Check tractor air system. Restricted tubing or hose: Locate restriction and remove.
BRAKES RELEASE TOO SLOWLY	Worn or broken relay valve: Replace. Call Factory or see qualified Trailer/Brake Technician. Brakes need adjusting or lubrication: Adjust or lubricate as needed. Brake rigging binding: Align brakes or replace bent parts. Exhaust port of relay valve restricted or plugged: Replace valve.
ALL BRAKES DO NOT RELEASE	Air system improperly connected to tractor: Tighten or adjust connections. Brake valve on tractor is applied: Release brake. Relay emergency valve in emergency position: Check line pressure and check valve. Restricted tubing or line: Locate restriction and remove. Tractor protection valve failure: Troubleshoot tractor air system.
INSUFFICIENT BRAKES	Parking brakes locked: Troubleshoot air system. Moisture in air system: Check air system. Brakes need adjusting: Adjust brakes. Cams need lubricating: Lubricate cams. Brakes need relining: Reline brakes. Low air pressure: Troubleshoot air system. Relay emergency valve failure: Replace. Brakes overheated: Stop and allow brakes to cool, locate cause of overheating.
BRAKES GRABBING	Grease on brake linings: Reline brakes. Brake rigging binds: Align brakes or replace bent parts. Brake valve on tractor failed or worn: Replace valve. Relay emergency valve failed or worn: Replace valve.
EXCESSIVE LEAKAGE WITH BRAKES RELEASED	Relay emergency valve leaking: Replace valve. Leaking tube or hose: Replace part(s).
EXCESSIVE LEAKAGE WITH BRAKES APPLIED	Relay emergency valve leaking: Replace valve. Leaking brake chamber diaphragm: Replace brake chamber. Call Factory or see qualified Trailer/Brake Technician Leaking tubing or hose: Replace part(s). Relay emergency valve failure: Replace valve.
EXCESSIVE LEAKAGE WITH EMERGENCY SYSTEM ONLY APPLIED - NO LEAKAGE WITH NORMAL BRAKING	Relay emergency valve failure: Replace valve.
EXCESSIVE WATER PRESENT IN BRAKE SYSTEM	Reservoir not drained often enough: Drain reservoir daily.

TABLE 3-4 TROUBLESHOOTING, Continued
Brakes, Continued

SYMPTOM	PROBLEM: REMEDY
EXCESSIVE OIL PRESENT IN BRAKE SYSTEM	Compressor on tractor passing excessive oil: Refer to <i>Tractor Repair manual</i> .
BRAKE WILL NOT APPLY PROPERLY	Flat spot on cam roller or camshaft: Replace and lubricate.
BRAKES WILL NOT APPLY WHEN EMERGENCY LINE IS DISCONNECTED	Initial air pressure too low: Allow air system to build up to minimum 90 psi and stabilize. Relay valve failure: Replace valve. Air line leak: Locate leak and repair. Brake chamber leak: Replace brake chamber.

5-0.4 Brake Drums

For maintenance procedures see See Page 4-6.

SYMPTOM	PROBLEM: REMEDY
EXCESSIVE LOSS OF BRAKES OR FADING	Overheated brake drums: Check for defective or misadjusted brake linings, distorted or over-machined drums. Also check for operating conditions or loads that create severe or excessive brake applications.
BRAKES PULL TO EITHER SIDE	Drums of different diameters: Replace with drums of same diameter. Foreign matter in drums: Clean drums out.
ROUGH OR NOISY BRAKING ACTION	Worn drums: Pull drums and inspect for any of the following: Heat spotted drums, grease spotting, blue drums, scored drums, excessive wear at rivet holes or edges, polished drums, out of round drums, unbalanced drums, worn/damaged brake components, foreign matter in drums. Correct situation or replace worn part(s).
VIBRATION IN RIDE	Worn or out-of-round drums: Replace drums. Out-of-balance drums: Balance drums.

NOTES:

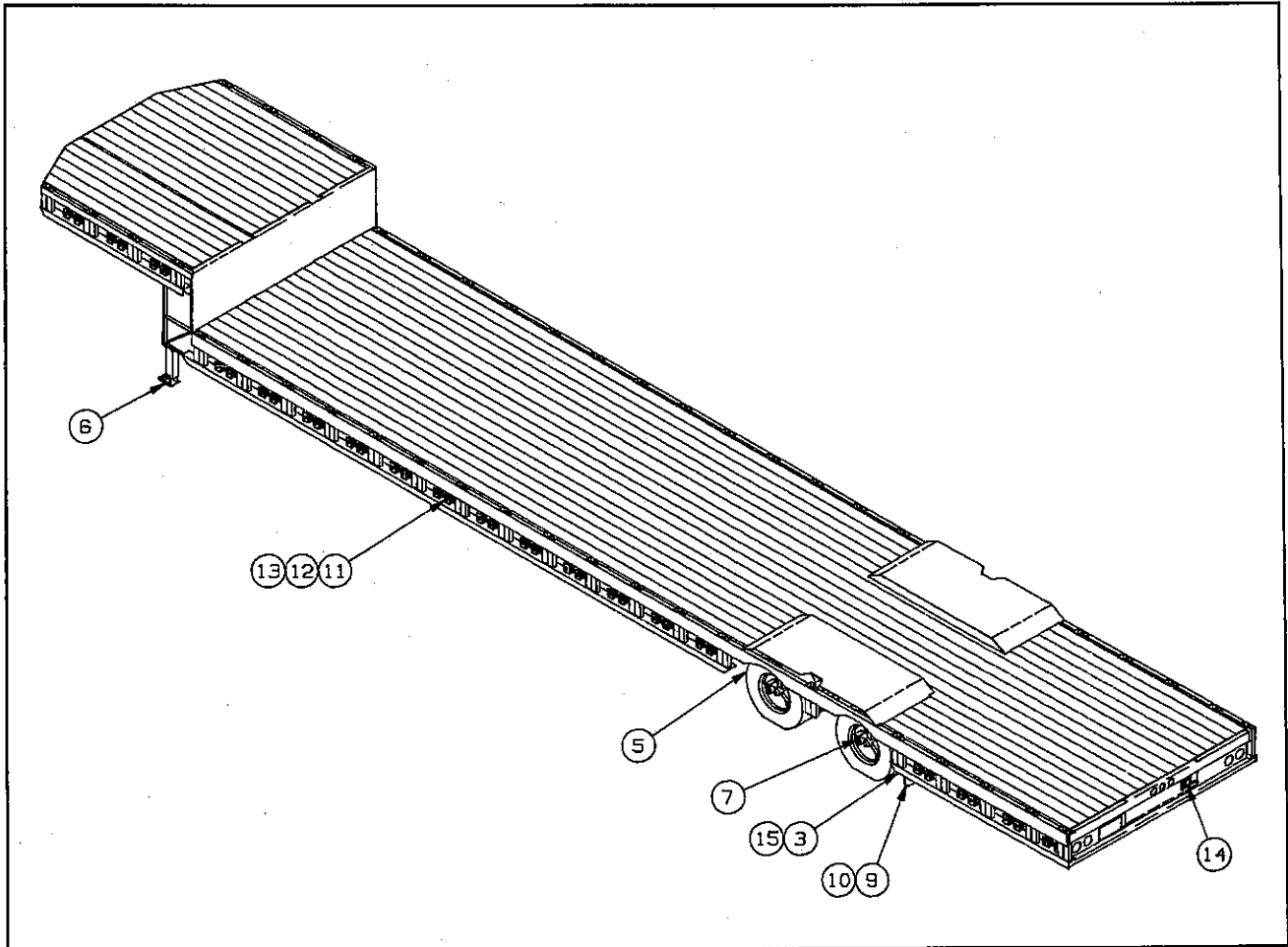


Figure 6-1 General Assembly

GENERAL ASSEMBLY

ITEM	PART NO.	DESCRIPTION	QTY.
1	REFERENCE	ELECTRICAL SYSTEM (SEE FIGURE 6-2)	1
2	REFERENCE	AIR BRAKE SYSTEM (SEE FIGURE 6-3)	1
3	REFERENCE	SUSPENSION SYSTEM (SEE FIGURE 6-4)	1
4	3-762-010554	AIR RIDE SUSPENSION (SEE FIGURE 6-5)	2
5	3-042-010039	AXLE ASSEMBLY (SEE FIGURE 6-6)	2
6	3-725-010066	PARK STAND ASSEMBLY (SEE FIGURE 6-7)	1
7	3-406-010061	HUB AND DRUM ASSEMBLY (SEE FIGURE 6-8)	4
8	REFERENCE	DECAL PLACEMENT (SEE FIGURE 6-9)	1
9	3-485-010001	MUD FLAP 21 IN.	2
10	3-762-010017	CLAMP, MUD FLAP	2
11	3-873-010139	WINCH 2" STRAP RATCHET	76
12	1/2-13X1-1/2CS	SCREW HEX HEAD CAP ZP GR5	152
13	1/2-13HFLN	NUT, HEX LOCK GRB CAD W/WAX	152
14	3-443-010010	LATCH	1
15	3-348-010032	GUARD, SHOCK ABSORBER	2

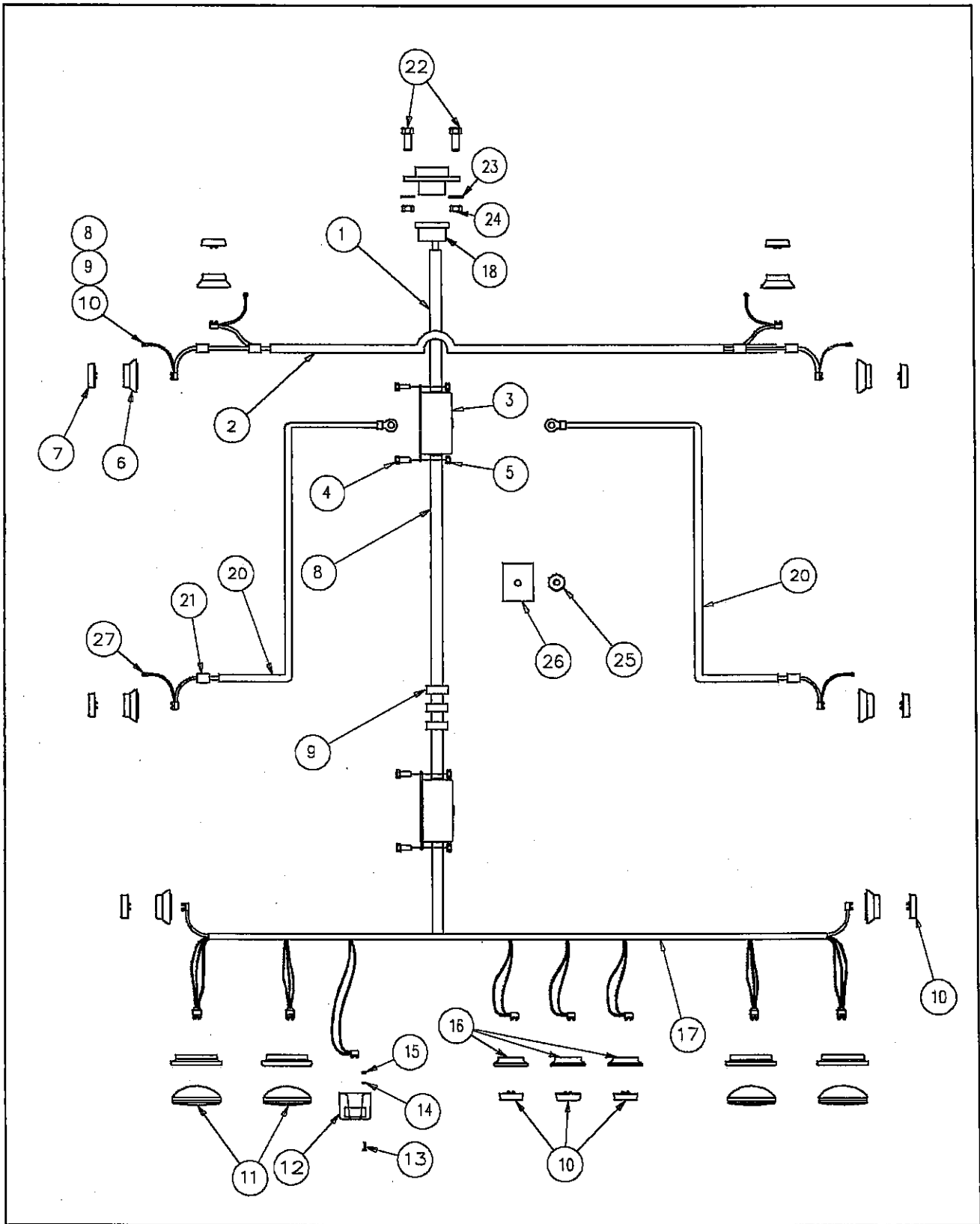


Figure 6-2 Electrical System

ELECTRICAL SYSTEM

ITEM	PART NO.	DESCRIPTION	QTY.
1	3-368-010031	HARNESS WIRING PLUG-BOX	1
2	3-368-010066	WIRE HARNESS, FRONT, G/N BED	1
3	750-029	JUNCTION BOX 7 STUD	2
4	1/4-20X3/4HHCS	SCREW ZP GR5	4
5	1/4-20HFLN	NUT HEX LOCK GRB CAD W/WAX	4
6	10403	MOUNT, GROMMET	6
7	10205Y	REFLECTOR LAMP YELLOW	6
8	3-156-010009600	CABLE MULTI CONDUCTOR 50FT	1
9	2552	GROMMET	3
10	10205R	REFLECTOR LAMP RED	5
11	40015R	LAMP, TAIL 4 IN W/REFLECTOR	4
12	15009	LICENSE LAMP	1
13	3/16X3/4RHDSTV	BOLT, STOVE ROUND HEAD	9
14	3/16SLW	WASHER, SPLIT LOCK	2
15	3/16-24HFN	NUT ZP GR2	9
16	10404	GROMMET MOUNT 3 IN	11
17	3-368-010119	MODIF., WIRE HARNESS REAR	1
18	59W-23	RUBBER BOOT	1
19	3-201-010002036	CONDUIT PLASTIC FLEX 3/8X3FT	1
20	1-879-010005	WIRE BROWN 14 AWG	9.52'
21	3-272-010021	ELECT BUTT SPLICE 16-14	4
22	5/16-18X1-1/4CS	CAPSCREW HEX GR2	2
23	5/16SLW	WASHER SPLIT LOCK ZP	2
24	5/16-18HFN	NUT ZP GR2	2
25	1-510-010001	NUT, 3/8-16 FLANGE LOCK	20
26	2-181-010001	HOSE CLAMP	20
27	32002	TERMINAL 12-10GA W/#10 RING WAY	14
28	T120R	TYTON STRAP	12

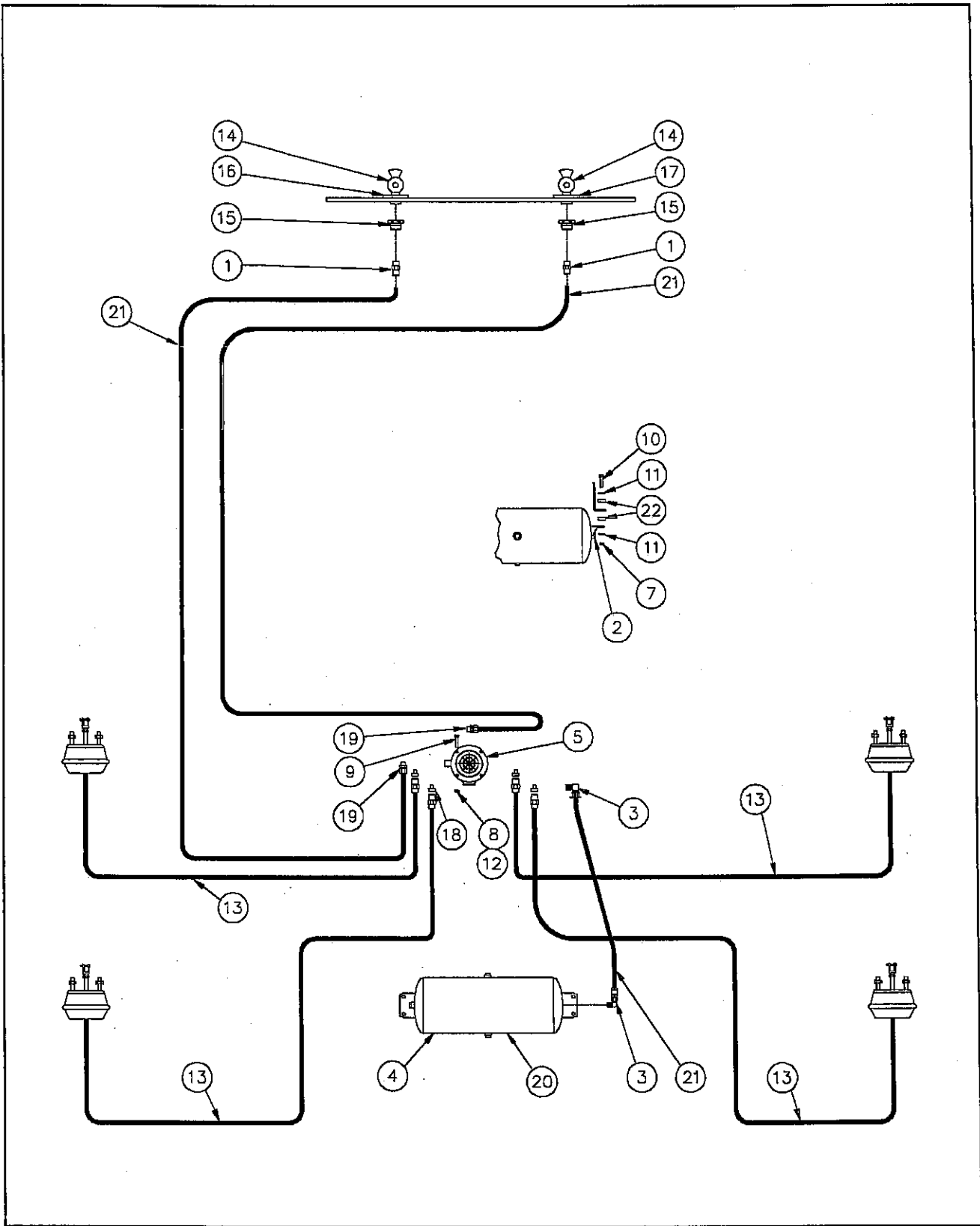


Figure 6-3 Air Brake System

AIR BRAKE SYSTEM

ITEM	PART NO.	DESCRIPTION	QTY.
1	1-297-010007-11	FITTING, AIR, 3/8 TUBE TO 1/4NPTB	4
2	1/2PIPE PLUG	BLACK PIPE PLUG	1
3	2047-8-8S	ADAPTER	2
4	3-780-010002	TANK AIR 9.5X22.5	1
5	3-843-010013	VALVE, RELAY EMERGENCY	1
6	3/4PLUG	PLUG PIPE BLACK 20FT300	2
7	3/8-16HFLN	NUT HEX LOCK GRB CAD W/WAX	4
8	3/8-16HFN	NUT ZP GR2	3
9	3/8-16X1-1/4CS	HEX HEAD CAP SCREW GR5	3
10	3/8-16X1-3/4CS	SCREW HEX HEAD CAP GR5	4
11	3/8FW	WASHER FLAT ZP	4
12	3/8SLW	WASHER LOCK	3
13	54A6X250S	HOSE AIR 3/8	18'
14	55B11	GLAD HAND	2
15	55B61	FRAME UNION	2
16	55B61-6	TAG EMER. LINE	1
17	55B61-7	TAG SERVICE LINE	1
18	55C21	HOSE FITT. 3/8	4
19	55C31	HOSE FITT. 1/4	4
20	56D4	COCK, DRAIN AIR TANK	1
21	62P6	TUBING, NYLON 3/8 OD	96'
22	805-2	BUSHINGS, STEP	8

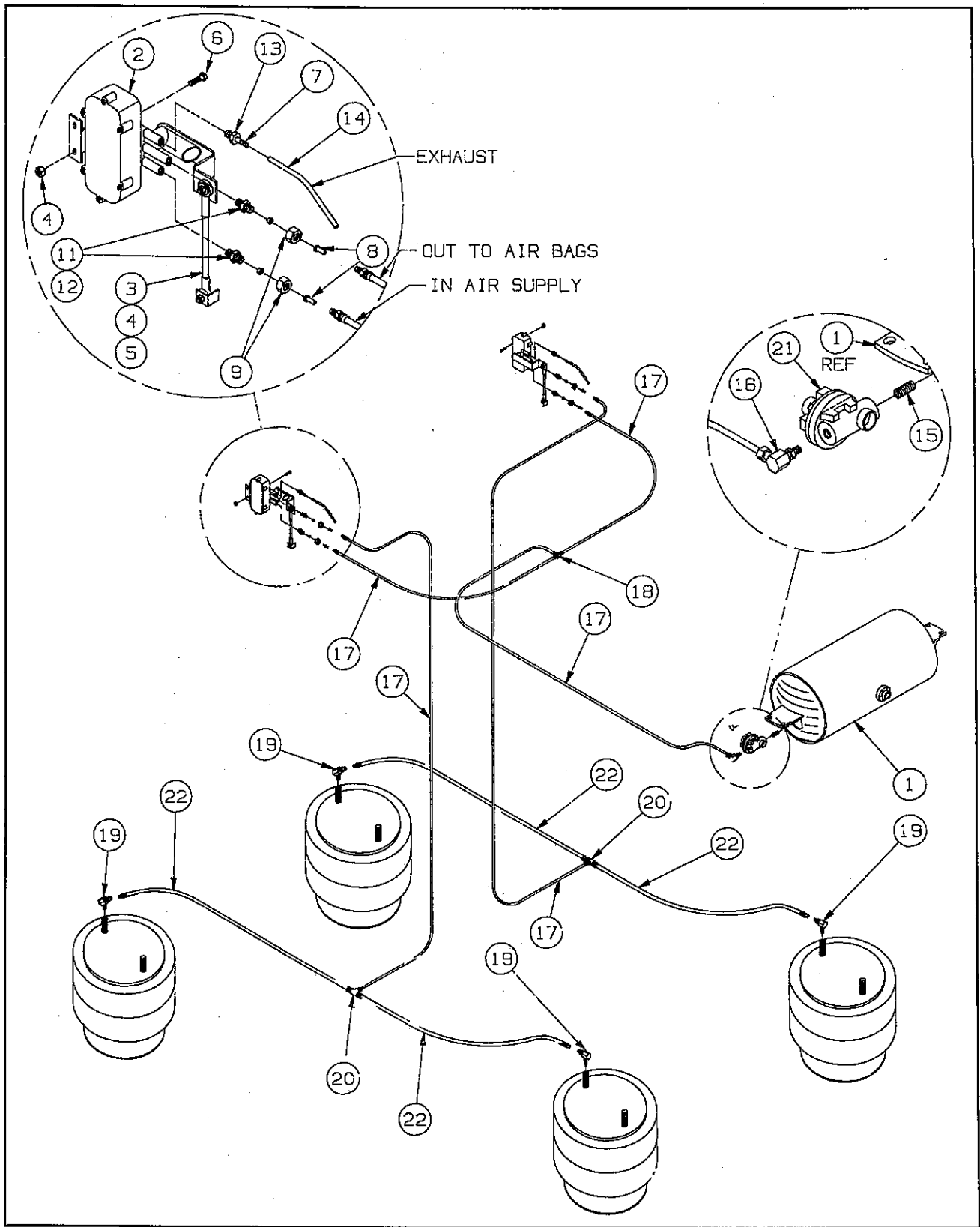


Figure 6-4 Suspension System

SUSPENSION SYSTEM

ITEM	PART NO.	DESCRIPTION	QTY.
1	3-780-010002	TANK, AIR	1
2	900-54-113	HEIGHT CONTROL VALVE	2
3	900-54-442	LINK	2
4	934-00-060	NUT, LOCKING	8
5	930-02-361	CAP SCREW	4
6	930-02-349	CAP SCREW	4
7	900-54-122	LOCATING PIN	2
8	938-00-014	INSERT	4
9	938-00-140	BRASS NUT	4
11	938-00-062	DELTRIN SLEEVE	4
12	905-54-059	FILTER	4
13	938-00-139	FITTING, EXHAUST	2
14	900-54-276	EXHAUST HOSE	2
15	2083-8-4S	NIPPLE, HEX	1
16	1-297-010008-07	FITTING, AIR, 90°	1
17	62P4	TUBING, NYLON	12'
18	1-297-010010-01	FITTING, AIR, UNION TEE	1
19	1-297-010013-11	FITTING, AIR	4
20	1-297-010010-04	FITTING, AIR, UNION TEE	2
21	900-54-001	PRESSURE PROTECTION VALVE AND FILTER	1
22	62P6	TUBING, NYLON	10'
23	941-00-119	DECAL, OPERATING (NOT SHOWN)	1

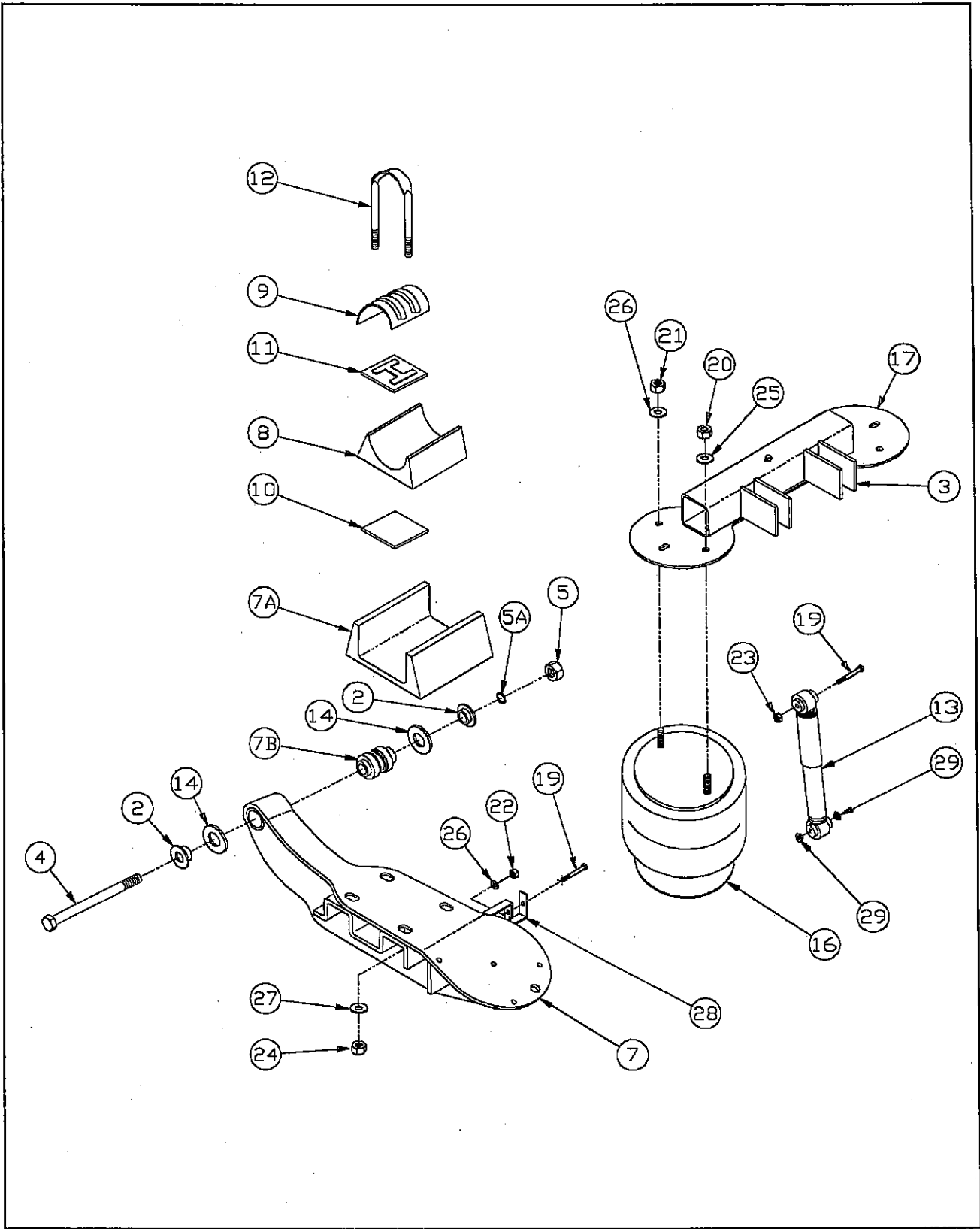


Figure 6-5 Air Ride Suspension

AIR RIDE SUSPENSION

ITEM	PART NO.	DESCRIPTION	QTY.
1	905-19-361	FRAME BRACKET - ADJ. L.H.	1
	905-19-362	FRAME BRACKET - FIXED R.H.	1
2	900-08-141	ALIGNMENT BUSHING	4
3	900-32-561	UPPER SHOCK MOUNT BRACKET	4
4	932-01-046	CAP SCREW 1-1/8" - 7	2
5	939-00-165	LOCK NUT 1-1/8" - 7	2
7	905-15-857	EQUALIZING BEAM ASSY. L.H.	1
	905-15-858	EQUALIZING BEAM ASSY. R.H.	1
7A	900-01-006	BEAM SEAT	1
7B	900-08-139	BUSHING	2
8	900-01-082	AXLE ADAPTER	2
9	900-10-032	AXLE CAP	2
10	900-28-075	STEEL/RUBBER PAD	2
11	900-28-047	RUBBER WRAPPER	2
12	900-41-878	U-BOLT	4
13	900-44-162	SHOCK ABSORBER	2
14	900-36-140	SPACER WASHER	4
15	900-23-002	ANGLE BRACE	2
16	905-57-023	AIR SPRING ASSEMBLY	4
17	905-44-573	CROSSMEMBER ASSEMBLY	1
18	900-31-443	GUSSET	2
19	930-03-595	CAP SCREW 3/4" - 10X3-1/2"	4
20	934-00-136	HEX NUT 1/2" - 13	2
21	934-00-149	HEX NUT 3/4" - 16	2
22	934-00-367	SQUARE NUT 3/4" - 10	2
23	934-00-492	LOCK NUT 3/4" - 10	4
24	934-00-502	LOCK NUT 1" - 8	8
25	936-00-072	LOCK WASHER 1/2"	2
26	936-00-077	LOCK WASHER 3/4"	4
27	939-00-027	FLAT WASHER 1"	8
28	905-19-425	LOWER SHOCK BRACKET	2
29	905-08-004	REPLACEMENT BUSHING	8

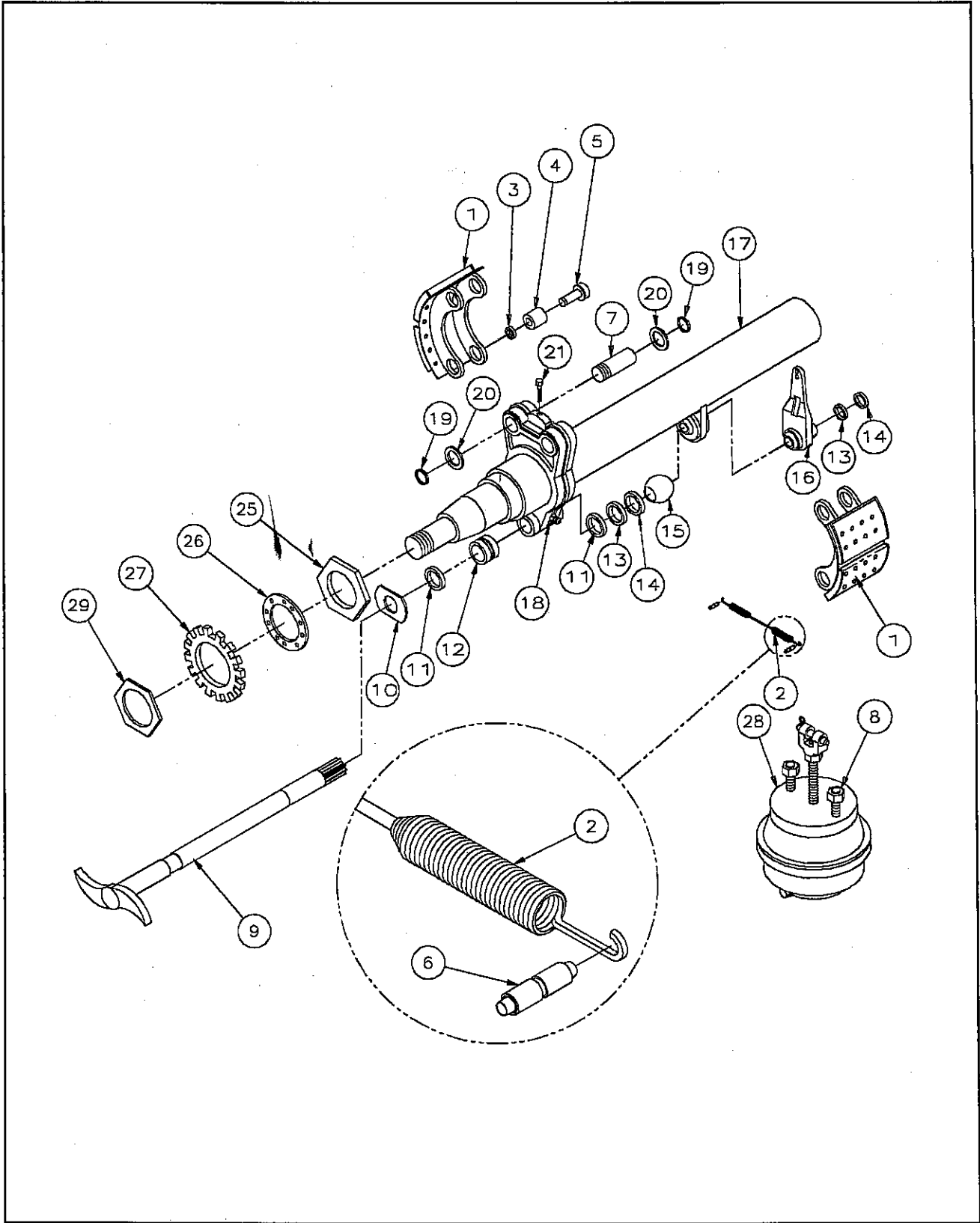


Figure 6-6 Axle Assembly

AXLE ASSEMBLY

ITEM	PART NO.	DESCRIPTION	QTY.
	3-042-010039	ASSEMBLY, COMPLETE	2
1	040-175-01	BRAKE SHOE AND LINING	4
2	046-092-00	SPRING, SHOE RETURN	2
3	069-018-00	RETAINER, ROLLER PIN	4
4	014-057-00	ROLLER, KNURLED	4
5	056-010-00	PIN, SHOE ROLLER	4
6	056-012-00	RETAINER, PIN SHOE RETURN SPRING	4
7	056-011-00	PIN, ANCHOR	4
8	061-003-00	NUT	2
9	034-014-00	CAMSHAFT, LEFT HAND	1
	034-015-00	CAMSHAFT, RIGHT HAND	1
10	005-074-00	"D" WASHER	2
11	010-052-00	SEAL, GREASE	4
12	014-056-00	BUSHING, CAMSHAFT SPIDER	2
13	005-075-00	WASHER, CAMSHAFT	4
14	069-020-00	RETAINER, CAMSHAFT	2
15	014-058-00	BUSHING, CAMSHAFT SUPPORT	2
16	3-128-010017-01	SLACK ADJUSTER, AUTOMATIC	2
17	D-2212	AXLE (5/8" WALL 22,500 LB.)	1
18	061-003-00	FITTING, GREASE, 45°	2
19	069-019-00	RETAINER, ANCHOR PIN	8
20	005-073-00	WASHER, ANCHOR PIN	8
21	007-137-00	BOLT, ANTI-ROTATION	2
25	006-114-00	NUT, INNER SPINDLE	2
26	005-098-00	WASHER, SPINDLE LOCK	2
27	005-099-00	WASHER, TABBED SPINDLE LOCK	2
28	034-057-01	CHAMBER, AIR BRAKE	2
29	006-115-00	NUT, OUTER SPINDLE	2

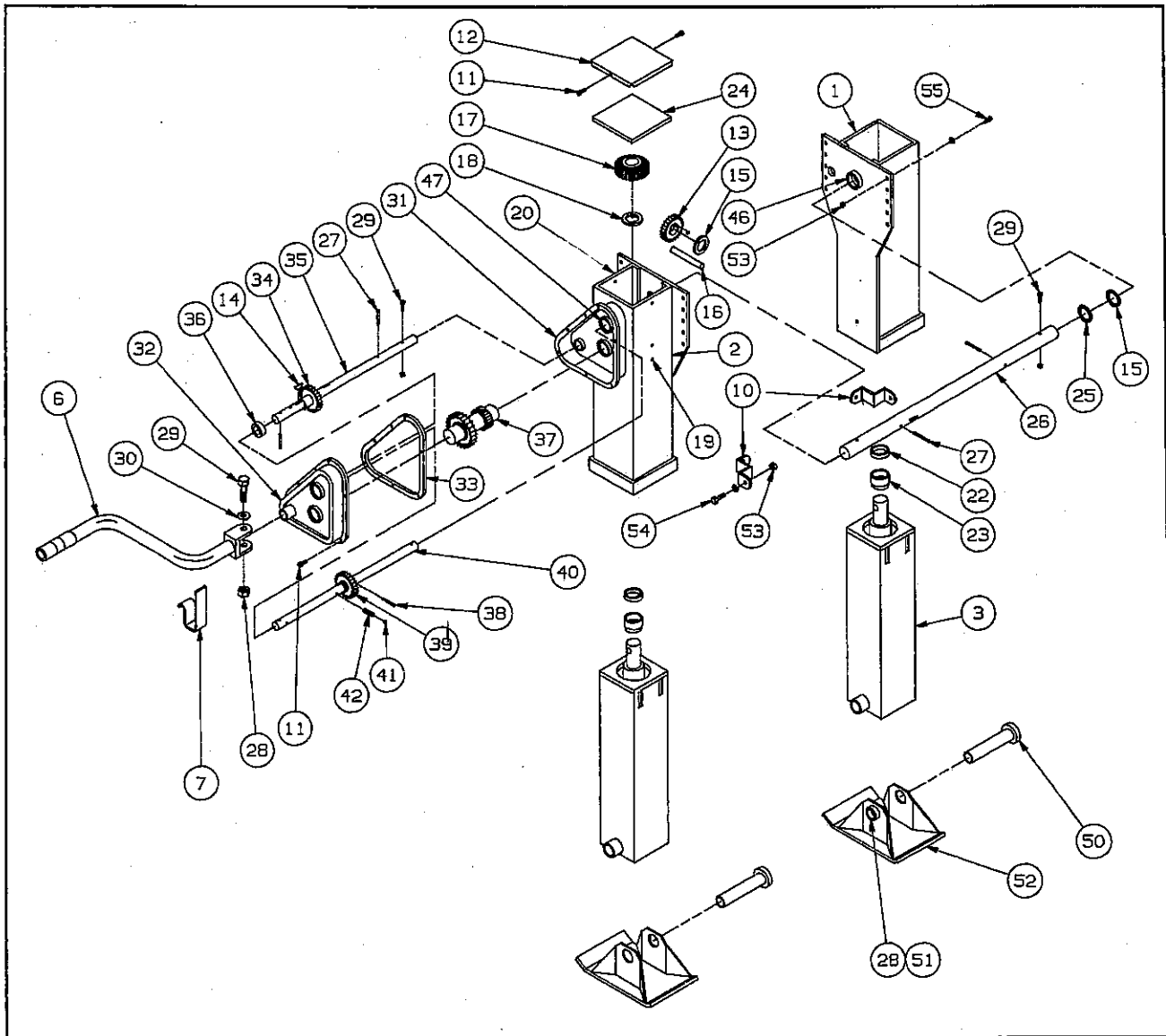


Figure 6-7 Park Stand Assembly

PARK STAND ASSEMBLY

ITEM	PART NO.	DESCRIPTION	QTY.
1	LG0229-02	UPPER HOUSING L.H.	1
2	LG0228-02	UPPER HOUSING R.H.	1
3	LG0574-02	RETRACTING TUBE ASSEMBLY	2
6	LG0083-03	UNIVERSAL CRANK	1
7	LG0085	CRANK HANGER	1
8	LG0094	CROSS DRIVE SHAFT(NOT SHOWN)	1
9	LG0091	STRUT BRACE	4
10	LG0266	STRUT BRACKET	2
11	PP0008-11	SCREW-COVER AND GEARBOX	11
12	LG0264	COVER	2

PARK STAND ASSEMBLY (CONTINUED)

ITEM	PART NO.	DESCRIPTION	QTY.
13	LG0531-02	PINION GEAR	2
14	PP0018-02	WOODRUFF KEY	3
15	PP0016-19	THRUST WASHER	2
16	PP0052-21	GROOVE PIN	2
17	LG0570-01	BEVEL GEAR	2
18	PP0016-62	WASHER	2
19	PP0022-08	GREASE FITTING	5
20	LG0364	SHIFT SHAFT SUPPORT	1
21	LG0668	RUBBER SEAL-BEHIND GEARBOX	1
22	PP0013-77	THRUST BEARING	2
23	LG0544	COLLAR	2
24	LG0413	COVER GASKET	2
25	PP0016-14	THRUST WASHER L.H.	1
26	LG0259	JACK SHAFT L.H. UNIV. MT.	1
27	PP0014-27	ROLL PIN	4
28	PP0012-04	SELF-LOCKING NUT	5
29	PP0050-42	BOLT-CRANK AND CROSS DRIVE	3
30	PP0016-03	FLAT WASHER	2
31	LG0662	GEAR BOX HALF-INSIDE	1
32	LG0663	GEAR BOX HALF-OUTSIDE	1
33	LG0428	GASKET	1
34	LG0543-01	OUTPUT GEAR	1
35	LG0260	JACK SHAFT R.H. UNIV. MT.	1
36	LG0219-01	SPACER BUSHING	1
37	LG0542-01	IDLER GEAR	1
38	PP0014-07	GROOVE PIN	1
39	LG0542-01	INPUT GEAR	1
40	LG0261-01	SHIFT SHAFT UNIV. MT.	1
41	PP0023-01	SHIFT LOCK BALL	1
42	PP0020-02	SHIFT LOCK SPRING	1
43	LG0658-01	SHIFT LOCK BOSS (PRESS FIT)	1
44	LG0559	DOUBLE STEP BOSS	1
45	LG1570	RETAINER(NOT SHOWN)	1
46	LG0219	BUSHING	2
47	LG0660	STEP BOSS G.B. TO HSG. PRESS FIT	1
48	LG0659-01	BOSS PRESS FIT-G.B. (NOT SHOWN)	4
49	LG0553	GEAR BOX ASSEMBLY	1
50	LG0070-02	SHOE AXLE	2
51	PP0001-19	HEX HEAD BOLT	2
52	LG0055	SHOE 10"X10"X4-1/2"	2
53	5/8-11HFLN	NUT NHEX LOCK GRB CAD W/WAX	22
54	5/8-11X2HHCS	HEX HEAD CAP SCREW ZP GR2	20
55	5/8-11X3-1/2CS	HEX HEAD CAP SCREW GR5 ZP	2

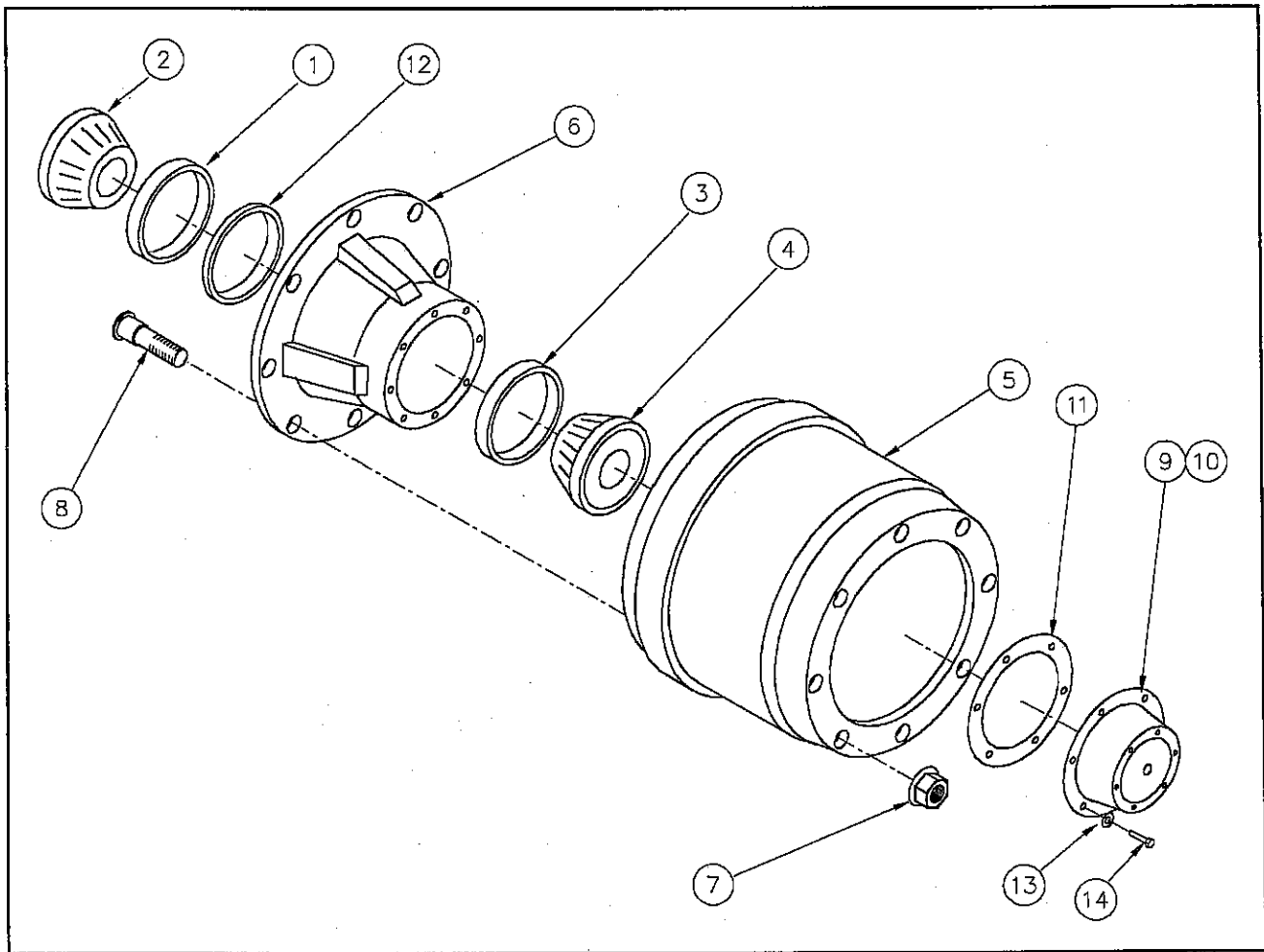


Figure 6-8 Hub and Drum Assembly

HUB AND DRUM ASSEMBLY

ITEM	PART NO.	DESCRIPTION	QTY.
1	HM218210	INNER BEARING CUP	4
2	HM218248	INNER BEARING CONE	4
3	HM212011	OUTER BEARING CUP	4
4	HM212049	OUTER BEARING CONE	4
5	63680	OUTBOARD MOUNTED BRAKE DRUM	4
6	2027	HUB	4
7	179955	FLANGE NUT	32
8	101162	STUD	32
9	3-161-010038	CAP, HUB FOR HUBODOMETER	1
	021-038-001	CAP, HUB	3
10	3-406-010062-1	HUB ODOMETER 215/75R17.5TIRE	1
11	071-124-00	GASKET, OIL CAP	3
12	010-055-01	SEAL	4
13	005-100-00	LOCKWASHER	24
14	007-157-00	CAP SCREW	24
15	3-798-010054	TIRE AND WHEEL ASSY. (NOT SHOWN)	8
	3-870-010097	WHEEL, DISC, PILOT MOUNT	

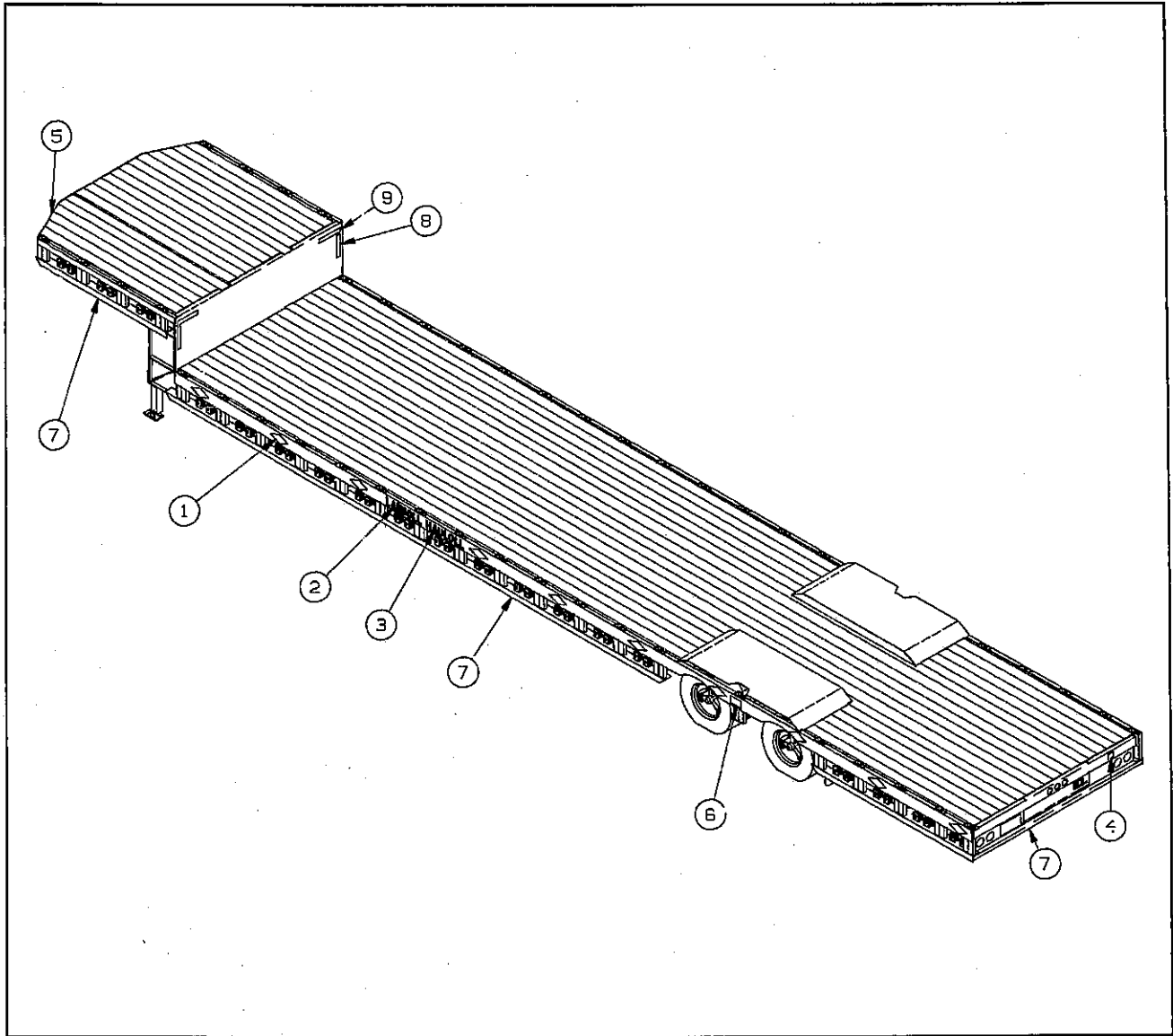


Figure 6-9 Decal Placement

DECAL PLACEMENT

ITEM	PART NO.	DESCRIPTION	QTY.
1	1-573-010014	DECAL L WHITE	20
2	1-573-010015	DECAL LANDOLL WHITE	4
3	1-573-010016	DECAL HAULLOLL WHITE	4
4	1-573-010017	DECAL LANDOLL WHITE	4
5	3-573-010020	PLATE, IDENTIFICATION	1
6	3-573-010210	DECAL, TORQUE SPEC 8-10 STUD HUB	1
7	3-573-010377900	DECAL 2X900 REFLEXITE RD/WHT (TOTAL QTY.)	1
8	3-573-010378010	DECAL, 2X10 REFLEXITE WHITE	2
9	3-573-010378012	DECAL, 2X12 REFLEXITE WHITE	2

NOTES:
