COMMODITY TRAILER

OWNER'S MANUAL

SEE WARRANTY REGISTRATION FORM ON LAST PAGE

1-800-634-3036 . 9339 BRIGHTON RD. HENDERSON, COLORADO 80640-8229

REV A
6/16/16 79-

FOREWORD

Congratulations and thank you for your purchase of a Merritt Trailers Inc. Commodity trailer. Pride fully built with American engineering and manufacturing know–how. It is designed to provide performance for years to come.

This manual is furnished to ensure that the owner\operator is aware of safe operating procedures. It also includes information about the general care and maintenance of your Commodity trailer. Also included is an operators manual located in a tube holder on the lower front of the trailer.

Carefully read the following pages. If you have any questions regarding this Commodity trailer contact a Merritt dealer. Merritt dealers have the knowledge and the facilities to provide you with the best service possible.

We also advise you to strictly follow the recommended maintenance schedule outlined. This maintenance schedule is designed to ensure that all critical components on this trailer are thoroughly inspected at various intervals.

All information in this manual is based upon the latest product data and specifications available at the time of printing. Merritt Trailers Inc. reserves the right to make product changes and improvements which may effect illustrations or explanations.

ALSO INCLUDED IS AN OPERATORS MANUAL LOCATED IN A TUBE HOLDER ON THE LOWER FRONT OF THE TRAILER.

DRIVER PRE-TRIP SECTION:

OWNERS MAINTENANCE:

SAFETY REVIEW

⚠ This safety alert symbol is used throughout this manual to indicate potential personal safety hazards. Failure to heed the warnings associated with the safety alert symbol can result in property damage, serious injury or death.

⚠ WARNING

TO PREVENT PERSONAL INJURY USE EXTREME CAUTION WHEN CLIMBING THE TRAILER LADDERS AND USING THE PLATFORM.

BEWARE OF UNPREDICTABLE WEATHER AND SLIPPERY SURFACES WHICH MAY RESULT IN PERSONAL INJURY.

NEVER USE THE TRAILER END LADDER TO ACCESS THE TOP OR INSIDE OF THE TRAILER. THE LADDER IS PROVIDED TO ACCESS THE TRAILER END PLATFORM SO THE OPERATOR CAN VISUALY INSPECT THE TOP OR INSIDE OF THE TRAILER.

IF THE OPERATOR DETERMINES HE MUST ACCESS THE TOP OR INSIDE OF THE TRAILER USE A FREE STANDING LADDER OF ADEQUATE HEIGHT AND STABILTY IN COMBINATION WITH A SAFETY HARNESS AND ROPE.

ALWAYS CONSIDER SAFETY FIRST AND USE BOTH HANDS.

79-0045 - B
4/97

⚠ WARNING

FAILURE TO USE PROPERLY MATCHED WHEELS, STUDS, BRAKE DRUMS OR CAPNUTS WILL RESULT IN EQUIPMENT DAMAGE AND COULD RESULT IN INJURY OR DEATH IF WHEEL COMES OFF.

TO SERVICE:

THE SPRING BRAKE CHAMBER MUST BE CAGED OR DE-ACTIVATED. FAILURE TO CAGE COULD CAUSE AN EXPLOSION OF PARTS. FAILURE TO FOLLOW THIS WARNING CAN CAUSE INJURY OR DEATH.

79-0043 - A
4/97

⚠ WARNING

MERRITT TRAILERS INC.WARRANTS THIS TRAILER FOR A MAXIMUM COMMODITY DENSITY OF 60 LBS PER CUBIC FOOT OR A MAXIMUM PAYLOAD OF 60,000 LBS. EXCEEDING THESE LIMITS VOIDS THE WARRANTY. EXCEEDING LAW-FUL WEIGHT LIMITS IS NOT RECOMMENDED.

79-0240
06/16 REV C

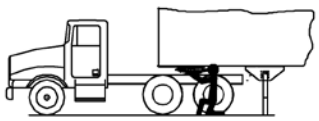
⚠ CAUTION

THIS TRAILER EQUIPPED WITH FULL AIR RIDE SUSPENSION, TO AVOID TRAILER WALK AND POSSIBLE DAMAGE OR INJURY, THE TRAILER BRAKES MUST BE RELEASED WHILE THE SUSPENSION IS BEING EXHAUSTED.

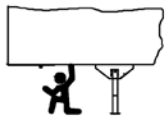
79-0265-B
1/98

⚠ WARNING

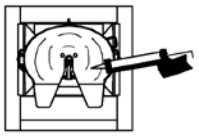
CHECK THE KING PIN TO MAKE CERTAIN THAT IT IS PROPERLY ENGAGED WITH FIFTH WHEEL.



INSPECT THE KING PIN AND THE PLATE ASSEMBLY REGULARLY FOR WEAR AND CRACKS.



KEEP THE UPPER COUPLER LUBRICATED AND FREE OF DEBRIS TO PREVENT GALLING OF THE FIFTH WHEEL PLATE.



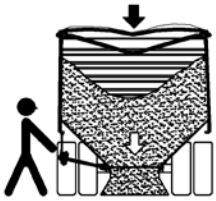
FAILURE TO FOLLOW THIS WARNING MAY RESULT IN EQUIPMENT DAMAGE OR PERSONAL INJURY.

79-0050
4/97

THINK SAFETY FIRST

⚠ CAUTION

WHEN UNLOADING, IT IS NECESSARY TO OPEN THE TARP SUFFICIENTLY TO RELIEVE THE VACUUM INSIDE THE HOPPER. FAILURE TO DO THIS CAN RESULT IN DAMAGE TO THE TRAILER.



79-0305 - A
4/97

⚠ WARNING

ABS MUST HAVE STOPLIGHT AND CONTINUOUS POWER TO FUNCTION.

CONTINUOUS POWER MUST BE PROVIDED TO CENTER POLE OF 7-WAY SOCKET.

79-0057

PRE-TRIP INSPECTION PROCEDURE

WARNING

USE CAUTION WHEN YOU HITCH TRAILER

1. Before attempting to make the couple, make a visual check to see that the fifth wheel is properly lubricated and mounting to the frame of the tractor is in good condition and not twisted.

2. Set trailer brakes and \ or place chock blocks behind trailer wheels.

3. Check to see that trailer is at proper height for coupling.

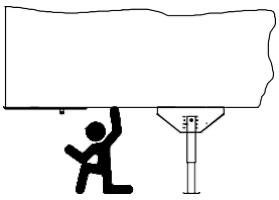
4. After the units are coupled, perform an initial pull test by setting the trailer brakes and gently tugging on it.

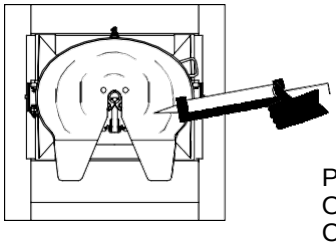
5. Upon leaving the cab to raise the landing gear, check the release lever to make sure it is in the locked position.

6. Crawl under the trailer and look into the throat of the fifth wheel and visually check to see that the jaws are fully closed.

7. Before it goes out on the road set the trailer brakes again and give it one more gentle tug.

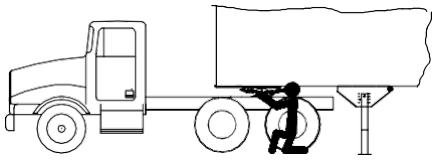
Excerpt from the February 1997 TARA NEWS & TOPICS published by the Truck-frame & Axle Repair Association.





CAUTION

PLASTIC LUBE LINERS CANNOT BE USED ON MERRITT TRAILERS. A LUBE PLATE WILL CHANGE THE DIMENSIONS REQUIRED FOR SECURE COUPLING.



WARNING

USE CAUTION WHEN MAKING ANY INSPECTIONS AND HOOK UPS. MAKE SURE BRAKES ARE LOCKED AND WHEELS ARE CHOCKED TO AVOID UNEXPECTED MOVEMENT OF TRAILER
USE CAUTION TO PREVENT INJURY.

PRE—TRIP CONTINUED:

DETERIORATION DUE TO CORROSION

Certain chemicals can cause severe corrosive damage to your aluminum commodity trailer. To prevent corrosive damage, due to unknown commodities, contact the engineering department at Merritt Trailers Inc. to verify material compatibility. Your trailer should be washed out after every load to reduce corrosion when hauling salt, fertilizer, etc.

Deterioration due to corrosion caused by incompatible materials is excluded from warranty.

BRAKE AND ELECTRICAL CONTROLS

Inspect glad hand grommets for cracking and wear, replace when necessary. Check for securement of seven way connector and check cable for fraying. Air hoses should be inspected for cracking. Check the operation of the brakes and slack adjusters for correct operation. Drain air tanks daily by opening drain cock on the air tank.

TIRES

Check tires frequently for cuts and abrasions, keep tires inflated to manufactures recommended specifications. Check for objects in the tread and between duals.

SPARE TIRE CARRIER

WARNING

SPARE TIRE CARRIER IS DESIGNED TO TRANSPORT ONLY ONE SPARE TIRE. CHECK DAILY FOR LOOSE BOLTS AND CRACKED WELDS. INSPECT CHAIN RETAINER AND FASTENER FOR WEAR, CORROSION OR FATIGUE, REPLACE ANY DAMAGED OR WORN PARTS.

WHEELS AND RIMS

Check wheel nuts for tightness after the first 100 miles of service, and make it part of your daily pre-trip routine. Check and maintain correct oil level in hubs.

Check all wheel surfaces during tire inspections and during tire changes.

THINGS TO LOOK FOR

1. Bent flanges and components
2. Rust and corrosion build up
3. Cracks in rims
4. Loose or missing nuts or clamps
5. Damaged nuts, clamps or stripped parts
6. Mismatched wheel rim parts

WARNING

CORRODED OR CRACKED RIMS ARE DANGEROUS.
DEFLATE TIRES PRIOR TO REMOVAL.
FAILURE TO FOLLOW THIS WARNING COULD RESULT IN INJURY.

CAUTION

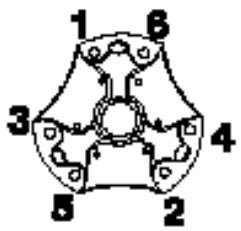
STEAM CLEANING CAN DAMAGE TIRES
AND RENDER THEM UNSERVICEABLE.
DO NOT CONCENTRATE STEAM ON TIRES.

PRE-TRIP CONTINUED:

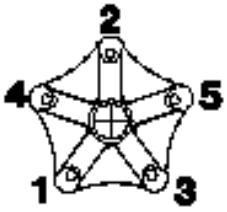
WHEEL INSTALLATION

SPOKE WHEEL INSTALLATION:

Inspect parts for damage, dirt or rust, replace any damaged or defective parts. Install rim and spacer on wheel, then install out side rim. Remember to keep valve stems in valley of wheel. Secure clamps as evenly as possible. Do not tighten completely. This will allow the inside rim to position itself on the mounting bevel of the wheel. Tighten nuts fully, using alternating sequence shown on diagram. Torque to 200 to 250 ft. lbs. Maintain this torque level through periodic checks.



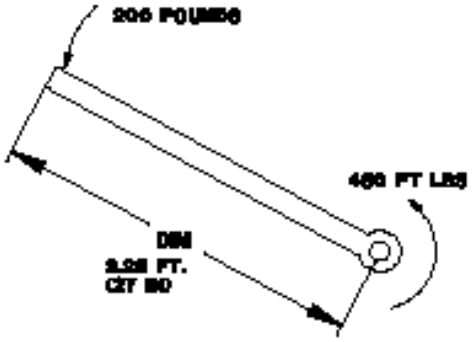
3 SPOKE

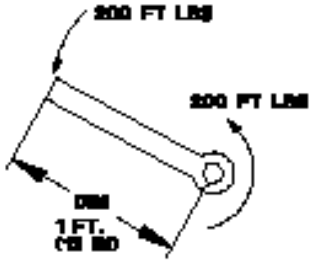


5 SPOKE

TORQUE

Torque for rim nuts or cap nuts is expressed in foot pounds, and is the force exerted in pounds multiplied by the lever arm or wrench length in feet. example - 200 pounds x 2.25 ft. = 450 foot pounds.





WARNING

RECOMMENDED TORQUE DRY: 200 TO 250 FT LBS. INSUFFICIENT MOUNTING TORQUE WILL CAUSE RIM SLIPPAGE, RESULTING IN BROKEN VALVES, WORN PARTS AND DAMAGED TIRES. EXCESSIVE TORQUE CAN CAUSE DAMAGE BY STRIPPING STUDS, CRUSHING SPACERS OR FORCING RIMS INTO AN OUT-OF-ROUND CONDITION.

DISC WHEEL INSTALLATION

BALL SEAT

Inspect all parts for damage. look at wheels and rims. Make certain that nuts, studs and face of hub and wheel are free of dirt and grease. Replace any defective parts. Slide the inner dual wheel over studs, being careful not to damage the stud threads. Snug up the inner cap nuts in sequence shown in fig1. Do not tighten them fully until all have been seated. This procedure will permit the uniform seating of nuts and ensure the even face to face contact of wheels, hub and drum. Tighten to 450-500 ft. lbs. dry, using the same criss cross pattern.
Align hand holds to allow access to the air valves. Slide the outer dual wheel over the inner cap nuts and repeat the entire procedure except, using the nut tightening sequence in fig. 2. Tighten the outer cap nuts to 450-500 ft. lbs.

NOTE:
Unless otherwise specified, ball seat stud standout from hub is 1-3/8" for aluminum or steel wheels. When broken stud is replaced. The stud on each side of the broken stud should be replaced. If more than two studs are broken, replace all studs.

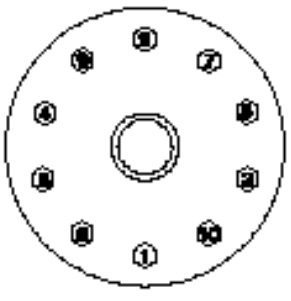


FIGURE 1
INNER DUAL

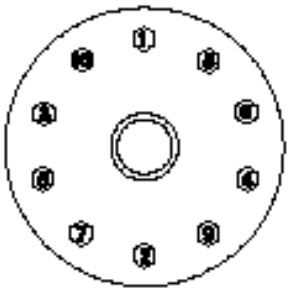


FIGURE 2
OUTER DUAL

WARNING

NUTS MUST BE KEPT TIGHT BY RETORQUING ON A ROUTINE BASIS AND USING THE PROPER NUT TORQUE AND TIGHTENING SEQUENCE. LOOSE NUTS COULD RESULT IN LOOSE WHEELS OR PREMATURE WHEEL FAILURE. THIS CAN RESULT IN AN ACCIDENT OR INJURY.

PRE-TRIP CONTINUED:

DISC WHEEL INSTALLATION

HUB-PILOTED

Hub piloted wheels are designed to center on the hub at the center hole or bore of the wheel. Because of this feature, they need a close tolerance in the center hole. Hub mount wheels are used with two-piece flange nuts (see fig 3) which contact the disc face around the bolt hole and do not rely on contacting the bolt hole chamfer to function properly. Hub mount wheels generally have straight through bolt holes with no chamfer, which provides a visual way of identifying hub mount wheels.

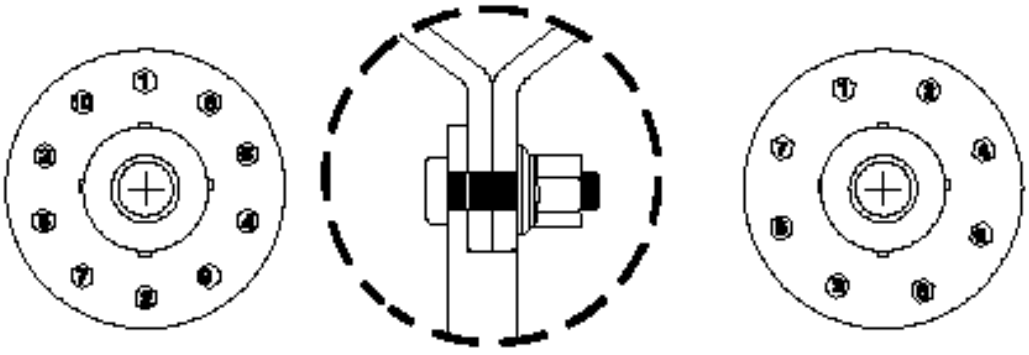


FIGURE 3
M22 X 1.5D
RIGHT HAND METRIC THREADS

- Avoid wheel binding on hub. Don't cock or tip.
- All right hand threads.
- Torque nuts to 450-500 ft. lbs.
- Retorque periodically.
- Lubricate between nut body and washer each wheel removal

WARNING

ALWAYS USE HUB MOUNT WHEELS AND FLANGE NUTS ON HUB MOUNT HUBS AND STUD MOUNT WHEELS AND CHAMFERED NUTS ON STUD MOUNT HUBS. IF DIFFERENT DESIGNS ARE MIXED OR IMPROPERLY MATCHED, PREMATURE WHEEL FAILURE WILL RESULT WHICH COULD CAUSE AN ACCIDENT OR INJURY.

PRE-TRIP CONTINUED.

LANDING GEAR OPERATION

Push crank towards trailer for low gear. Pull crank away from trailer for high gear. Turn crank counterclockwise to extend landing gear. Turn crank clockwise to retract landing gear.

MAINTENANCE

To continue desired performance it is necessary to periodically add lubricant. Use a lithium extreme pressure type grease with your specific temperature range. Lubricate gear box leg (two fittings on the leg and one on the gear box cover) and non-gear leg (two fittings) at six month intervals.

LANDING GEAR

CAUTION

FOR TRAILERS EQUIPPED WITH AIR RIDE SUSPENSION DAMAGE TO TRAILER AND OR LANDING LEGS WILL OCCUR IF AIR BAGS ARE NOT DEFLATED BEFORE UNHOOKING TRACTOR FROM TRAILER.

WARNING

ALWAYS GRIP THE CRANK HANDLE SECURELY.
ENSURE CRANKSHAFT IS IN GEAR BEFORE CRANKING.
ENSURE CRANKSHAFT IS IN GEAR WHEN NOT IN USE.
DO NOT SHIFT CRANKSHAFT WHILE UNDER LOAD.
ENSURE OPERATOR'S BODY IS WELL BALANCED ON THE GROUND WHILE CRANKING.
ALWAYS USE LOW GEAR TO LIFT OR EXTEND A LOADED TRAILER.
ENSURE CRANK IS STOWED IN CRANK HOLDER WHEN NOT IN USE.

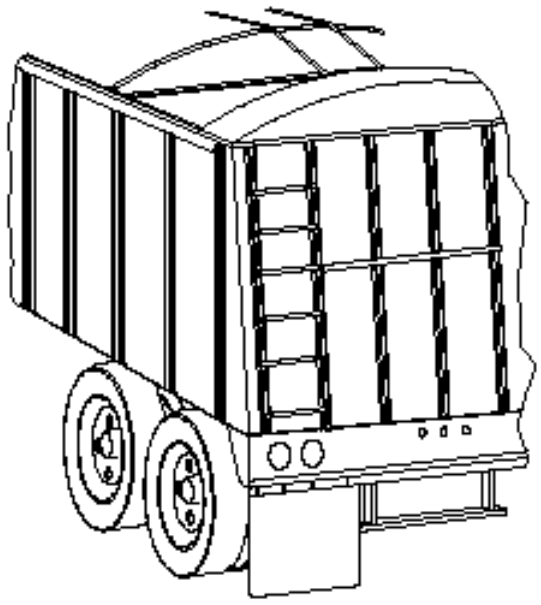
PRE—TRIP CONTINUED:

MUD FLAPS

Inspect mud flap securement and check for tears.

SIDE STRUCTURE

Inspect trailer side structure. Check upper and lower rails and side sheet for damage. Any problems should be corrected immediately. Unrepaired damage to side structure can affect safe load carrying capacity of the side structure.



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PRE—TRIP CONTINUED:

FEDERAL MOTOR VEHICLE SAFETY STANDARD 121

Your new Merritt Trailers Inc. commodity trailer is equipped with an air brake system which will meet or exceed the requirements set forth in this federal regulation.

Changes in the requirement of FMVSS 121, which became effective in October of 1992, greatly simplified the spring brake control on trailers. On many trailers, only one air tank is now required. But these changes also call for a higher glad hand pressure requirement.

Whereas the older system provided pressure protection at 60 psi, the new requirements protect the system pressure to 70 psi.This resulted in a requirement for a minimum glad hand pressure of 85 psi. The time required to fill the system after the tanks are drained increased on new trailers because of of these requirements. (Keep this in mind as you charge up your trailers air tank).In order to help, the industry standard for the compressor governor, "cut in pressure" is now 105 psi.

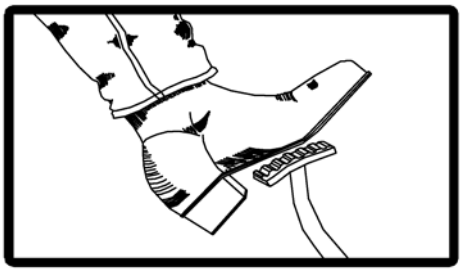
The time required to release the spring brakes on new trailers has also increased by a few seconds due to the fact that the spring brakes are now filled directly from the glad hand. The amount of delay will vary from rig to rig, depending on the tractors air system.

FEDERAL MOTOR VEHICLE SAFETY STANDARD 121 EFFECTIVE MARCH 1, 1998 (ANTI—LOCK BRAKING SYSTEM)

WHAT IS ABS?

- Prevents wheel lockup and jackknifing.
- Increased driver control and vehicle stability.

PRE-TRIP CONTINUED:



HOW TO BRAKE WITH

- **DO WHAT GOOD DRIVERS HAVE ALWAYS BEEN DOING; BRAKE JUST THE WAY YOU ALWAYS HAVE.**

  APPLY BRAKES AS NORMAL TO STOP IN TIME. WHEN YOUR ABS STARTS WORKING"" DON'T RELEASE YOUR BRAKES; MAINTAIN BRAKE PRESURE.

- **AVOID RAPID "PUMPING" OF THE BRAKES.**

  ROCKWELL WABCO ABS AUTOMATICALLY APPLIES THE BRAKES UP TO FIVE TIMES A SECONDU OBVIOUSLY MUCH FASTER THAN A DRIVER COULD DO P MPING THE BRAKE PEDAL.

- **ALWAYS REMEMBER THAT YOU ARE THE MOST IMPORT ANT ELEMENT IN THE SAFE OPERATION OF YOUR VEHICLE.**

  ABS IS NOT AN EXCUSE TO TAKE UNNECESSARY RISKS. ALWAYS DRIVE CAREFULLY AND STAY A SAFE DISTANCE AWAY FROM THE VEHICLE IN FRONT OF YOU.

- **IF DRIVING WITH SINGLE TRAILER, DOUBLES OR TRIPLES...**

  WATCH YOUR TRAILERCS) THROUGH YOUR MIRRORS AND CORRECT BRAKE PRESSURE AS NECESSARY TO KEEP IN A STRAIGHT LINE.

- **IF ONLY YOUR TRACTOR HAS ABS.**

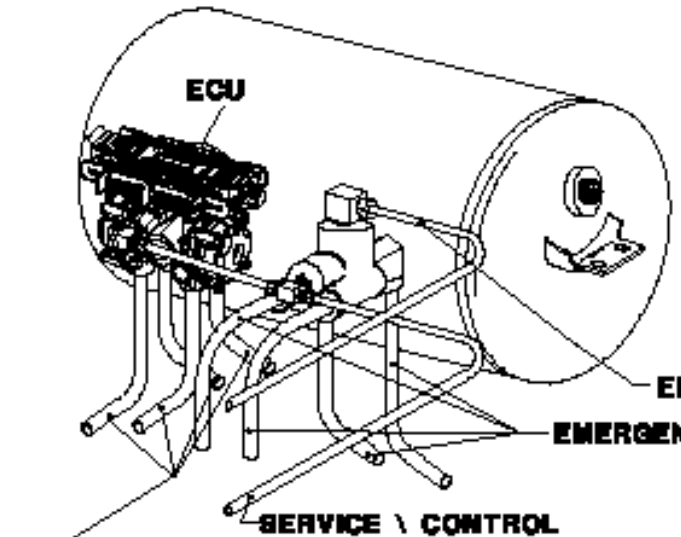
  USE YOUR RIG'S BRAKES AS NECESSARY TO STRAIGHTEN OUT YOUR TRAILER IF IT SWINGS OUT. WATCH TRAILER THROUGH YOUR MIRRORS TO MAKE SURE IT FOLLOWS YOUR TRACTOR PROPERLY.

- **IF ONLY YOUR TRAILER HAS ABS.**

  USE YOUR RIG BRAKES AS NECESSARY TO MAINTAIN CONTROL AND KEEP YOUR COMBINATION IN its LANE.

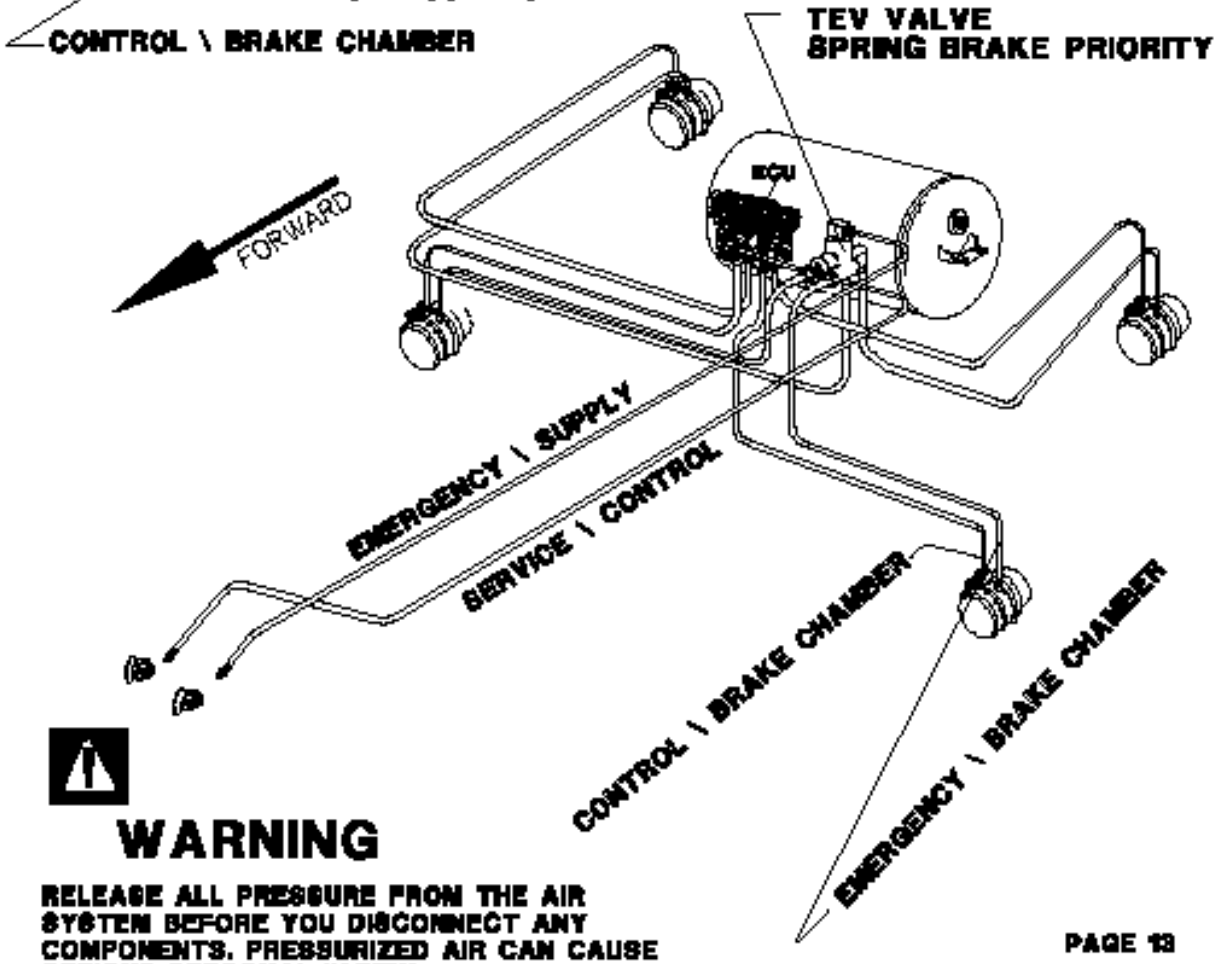
ENHANCED EASY-STOP™ TRAILER ABS

4S\2M WITH PLC



WARNING

DO NOT OPERATE THIS VEHICLE WITH ANY BRAKE DEFECTS OR WITH BRAKES OUT OF ADJUSTMENT. USE OF ADDITIVES AS ANTIFREEZE IN THE AIR BRAKE SYSTEM IS NOT RECOMMENDED. THEY MAY RESULT IN DETERIORATION OF VALVE SEALS AND PERFORMANCE OF THE BRAKE SYSTEM.



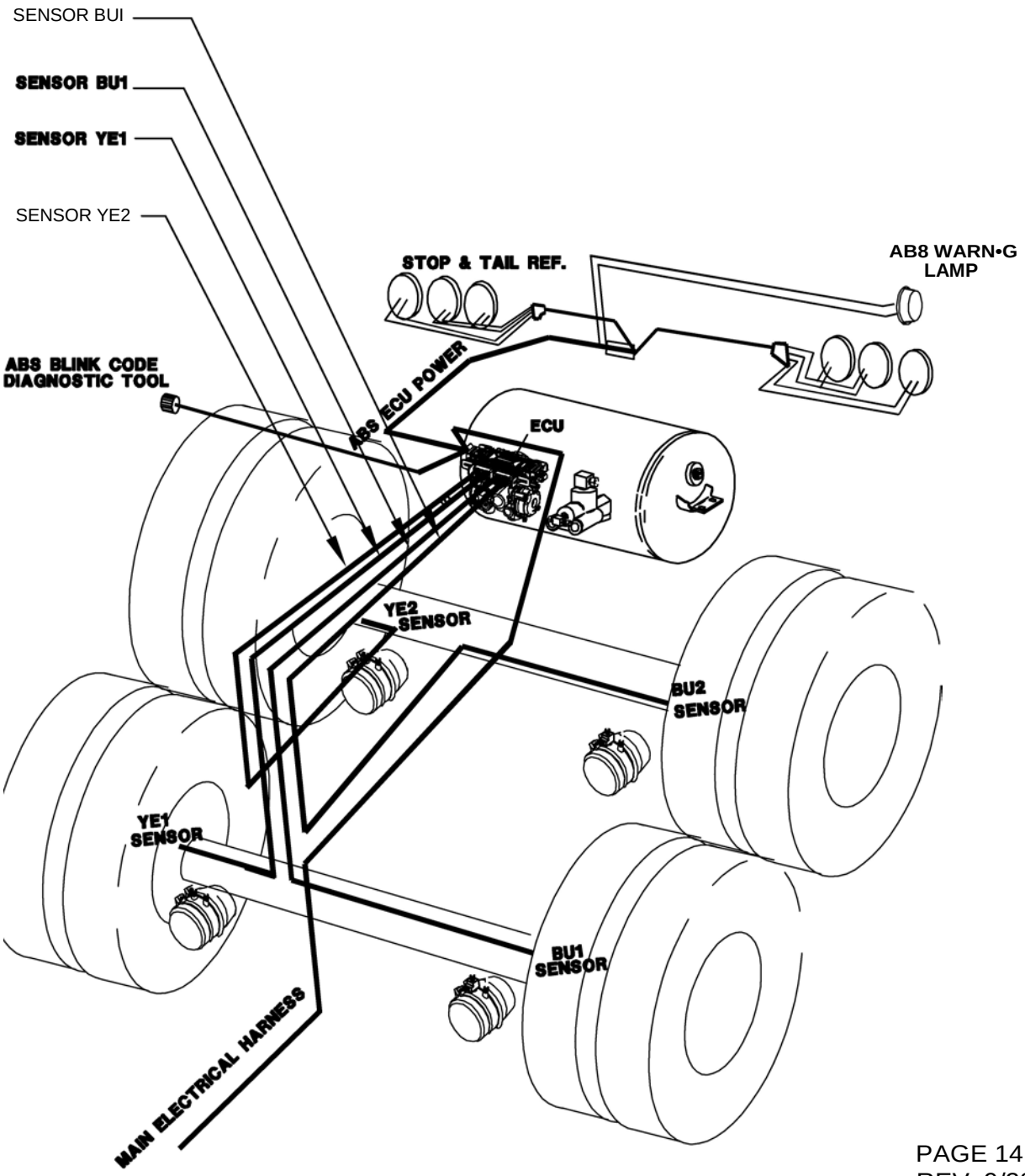
WARNING

RELEASE ALL PRESSURE FROM THE AIR SYSTEM BEFORE YOU DISCONNECT ANY COMPONENTS. PRESSURIZED AIR CAN CAUSE SERIOUS PERSONAL INJURY.

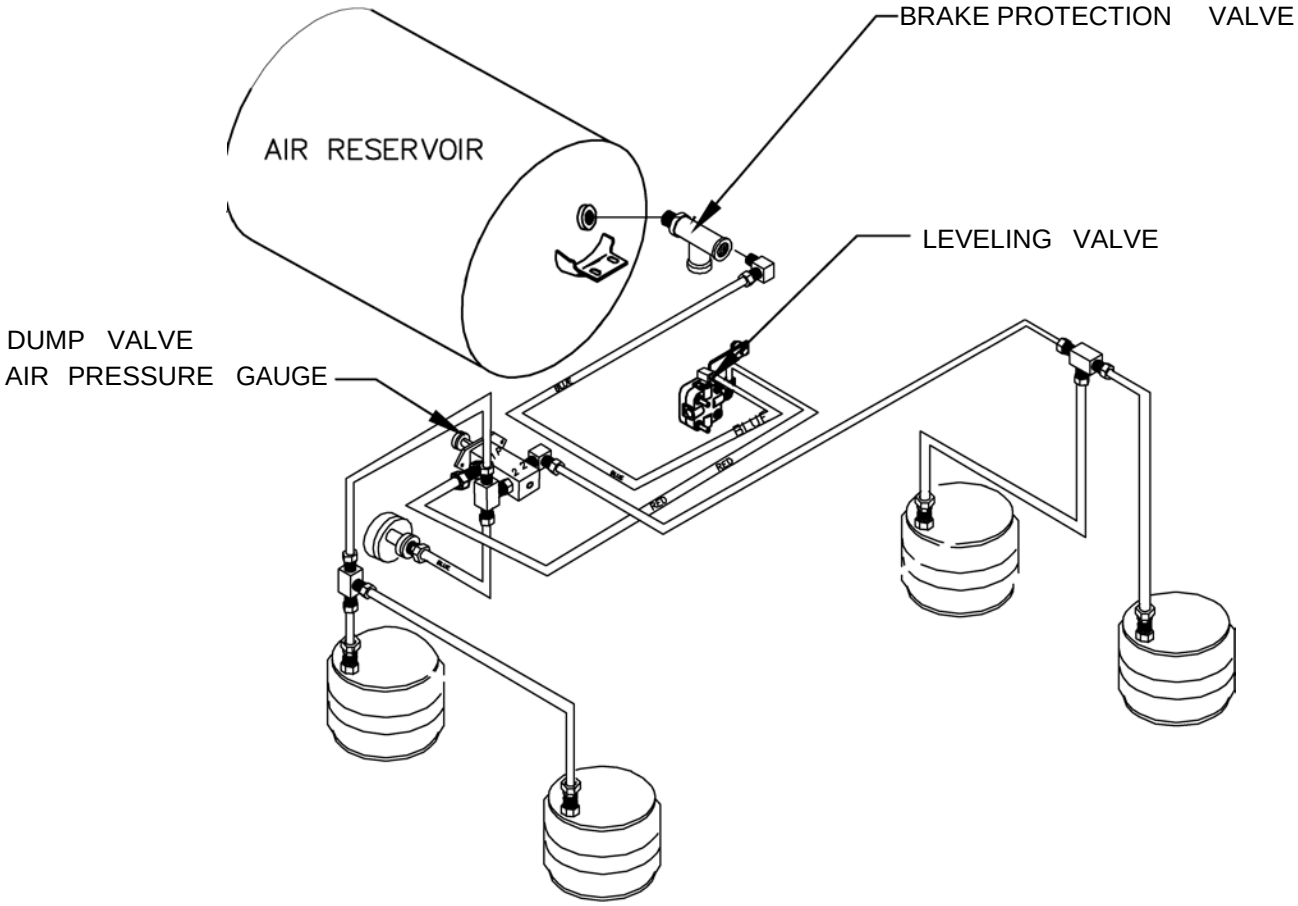
ABS ELECTRICAL AIR BRAKE SYSTEM DIAGRAM
ENHANCED EASY-STOP™ TRAILER ABS
4S\2M WITH PLC

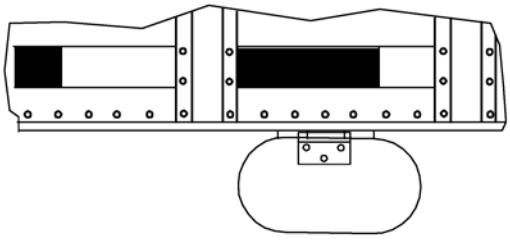
NOTE:

FOR ADDITIONAL INFORMATION PLEASE SEE
MERITOR WABCO INSTALLATION GUIDE



AIR SUSPENSION PNEUMATIC DIAGRAM



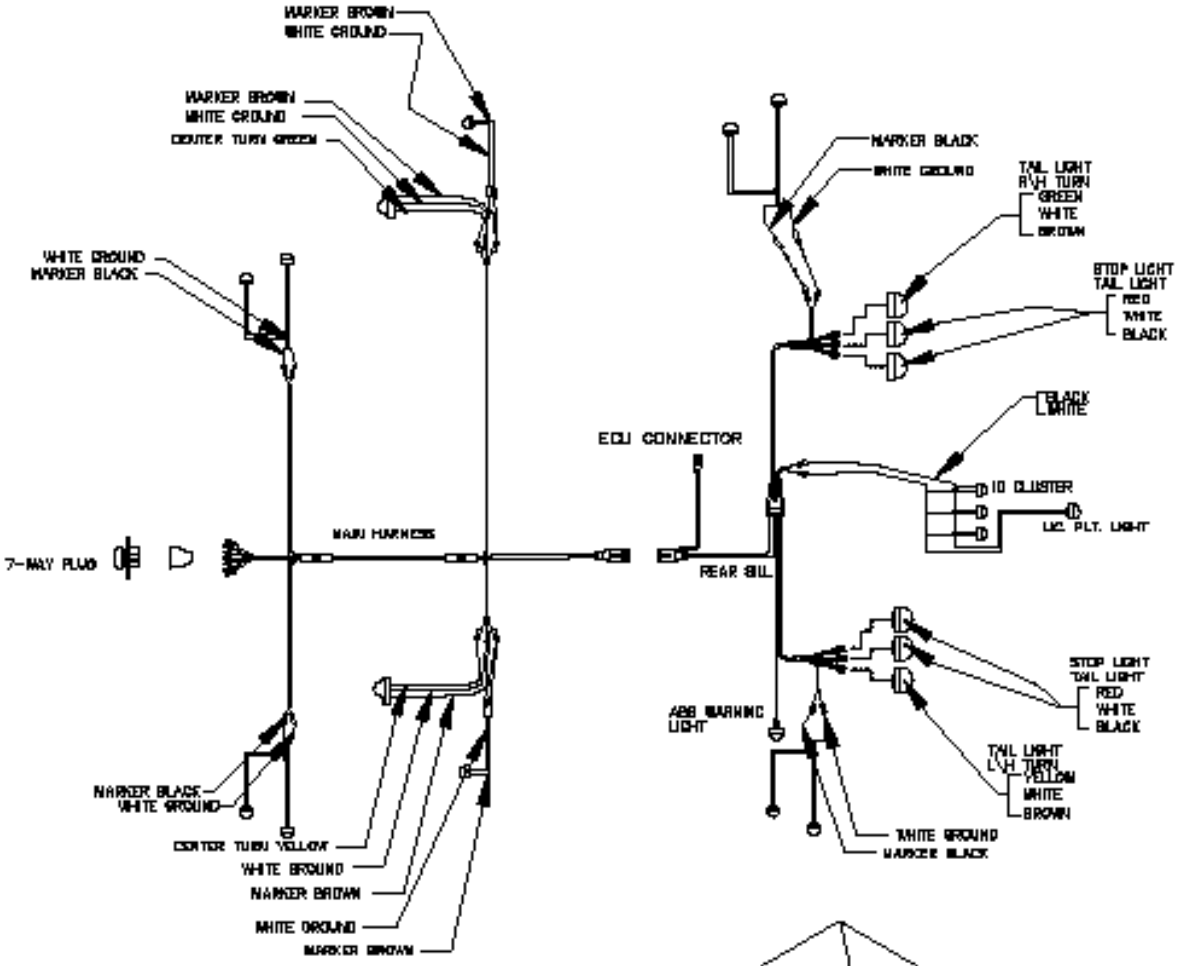


DUMP VALVE
AIR PRESSURE GAUGE LOCATION

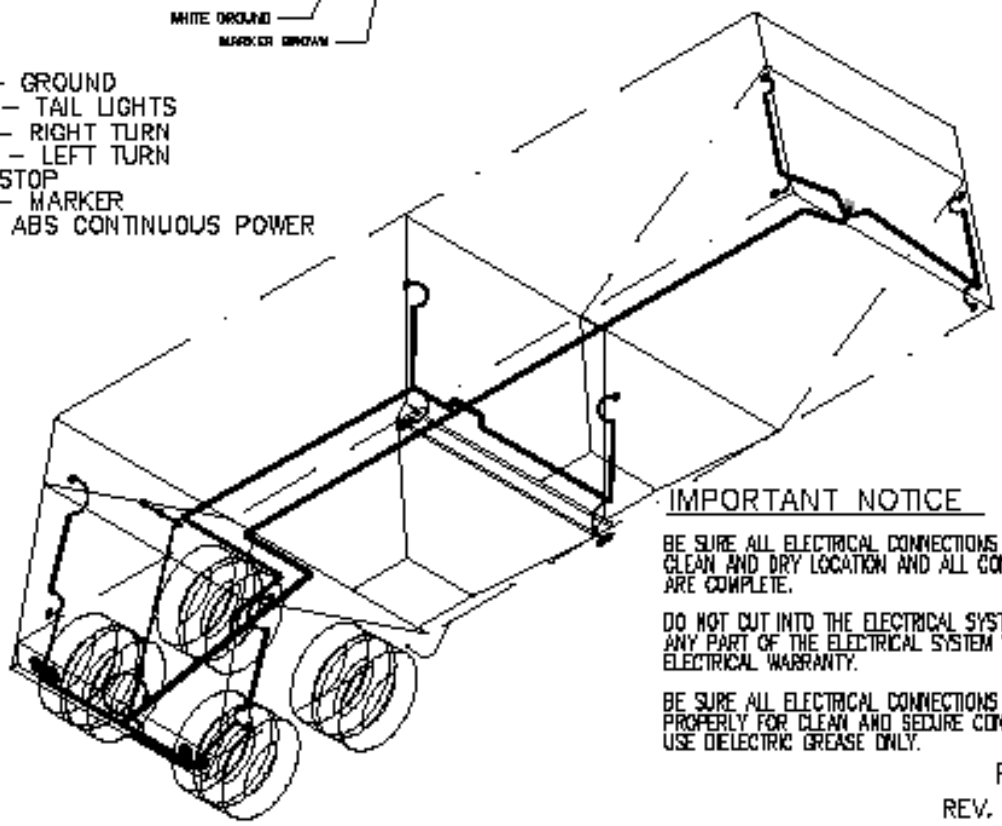
WARNING

RELEASE ALL PRESSURE FROM THE AIR SYSTEM BEFORE YOU DISCONNECT ANY COMPONENTS. PRESSURIZED AIR CAN CAUSE SERIOUS PERSONAL I N J U R Y .

ELECTRICAL DIAGRAM



WHITE – GROUND
BROWN – TAIL LIGHTS
GREEN – RIGHT TURN
YELLOW – LEFT TURN
RED – STOP
BLACK – MARKER
BLUE – ABS CONTINUOUS POWER



IMPORTANT NOTICE

BE SURE ALL ELECTRICAL CONNECTIONS ARE IN A CLEAN AND DRY LOCATION AND ALL CONNECTIONS ARE COMPLETE.

DO NOT CUT INTO THE ELECTRICAL SYSTEM. CUTTING ANY PART OF THE ELECTRICAL SYSTEM WILL VOID ELECTRICAL WARRANTY.

BE SURE ALL ELECTRICAL CONNECTIONS ARE GREASED PROPERLY FOR CLEAN AND SECURE CONNECTIONS. USE DIELECTRIC GREASE ONLY.

ELECTRICAL TROUBLESHOOTING

NOTE,

DO NOT cut Into the sealed harnese system. CUTTING OR PROBING any part of the electrlcal system wlll void the electrlcal portion of the warranty. make sure all electrlcal connections are greased and clean and connections are secure.

NO LIGHTS

1. Check **7•way** plug for **power.**

2. Check grounds for secure clean connections.

3. Inspect llghte for power. a short on one llght could cause all llghts to be out. Check for bare or pinched wires.

CLEARANCE LIGHTS NOT WORKING

1. Check 7·way plug for power.

2. Check to see lf llght le burned out.

3. Check llght plgtall for power and corrosion.

4. Check system for unplugged wires.

STOP LIGHTS NOT WORKING

1. Check for power at 7·way plug <red wire>.

2. Check to see lf llght has a clean secure ground.

3. Check atop llght pig tall for power. lf current la avallable between white and red wire, replace llght.

4. If power la not evident at rear of stop llght pig tall, unplug rear harness from main harness and check for power.

REAR TURN SIGNAL NOT WORKING

1. Check 7•way plug for power (green or yellow>.

2. Check to see lt llght has a secure clean ground.

3. Check for unplugged wires, check connections to Insure they are completely sealed.

4. If power la not evident at rear of turn algnal, unplug rear harness from main harness and check for power.

SIDE TURN SIGNAL NOT WORKING

1. Check **7·way** plug for **power (green** or yellow>.

2. Check to see lf llght has secure clean ground.

3. Check for unplugged wires. Check connections to Insure they are completely sealed.

4. Check for burned out llght.

DIM LIGHTS

1. Check 7·way plug, Is their sufficient power avallable?

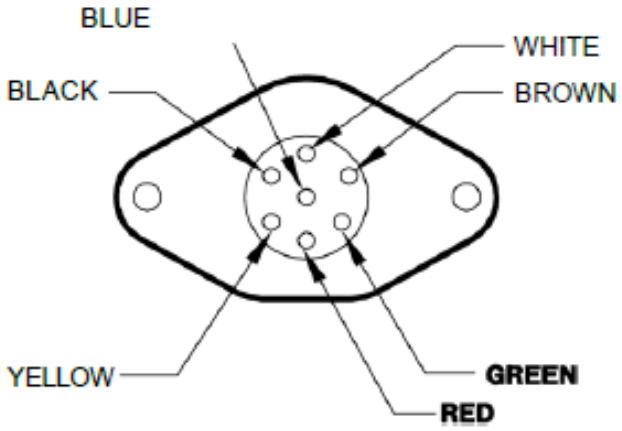
2. Disconnect wires from behind 7·way plug one at the time to Isolate which circuit Is causing a short In the system.

3. Check for corrosion and poor ground connections.

FEEDBACK

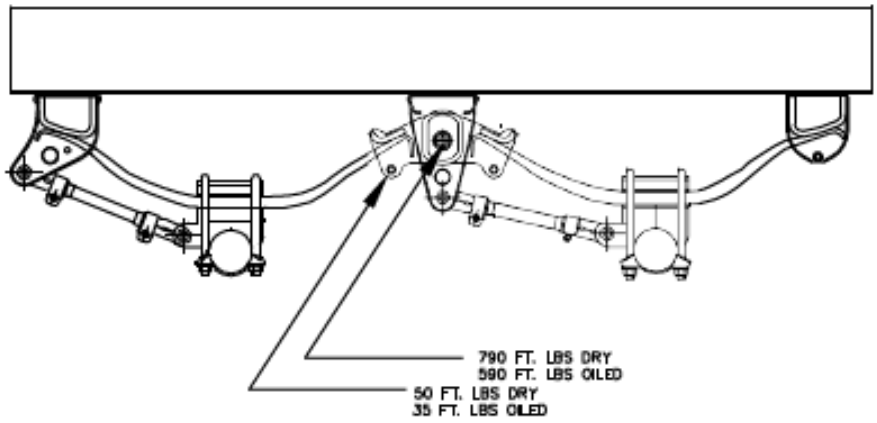
1. Check grounds on turn slgnal llghte to Insure they are free from corrosion and secure.

2. Feedback can also be caused by different circuits touching one another, check for frayed or corroding wires.



BLUE - ABS CONTINUOUS POWER
BLACK - **MARKER**
YELLOW - LEFT TURN
GREEN - RIGHT TURN
BROWN - TAIL
RED· STOP
WHITE - GROUND

HUTCHENS SUSPENSION 9700 SERIES

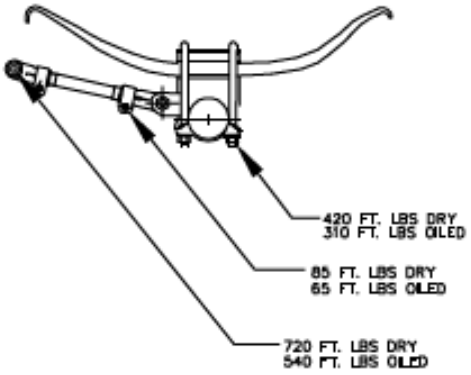


WARNING

SAFETY ALERT: (1) FOLLOW ALL TORQUE REQUIREMENTS. (2) DO NOT USE ANY COMPONENT WITH VISIBLY WORN OR DAMAGED THREADS. FAILURE TO FOLLOW THESE SAFETY ALERTS CAN LEAD TO LOSS OF VEHICLE CONTROL, PROPERTY DAMAGE, SERIOUS PERSONAL INJURY OR DEATH.

SPRING HOOK ORIENTATION

Front axle - hook to rear
Rear axle - hook to front



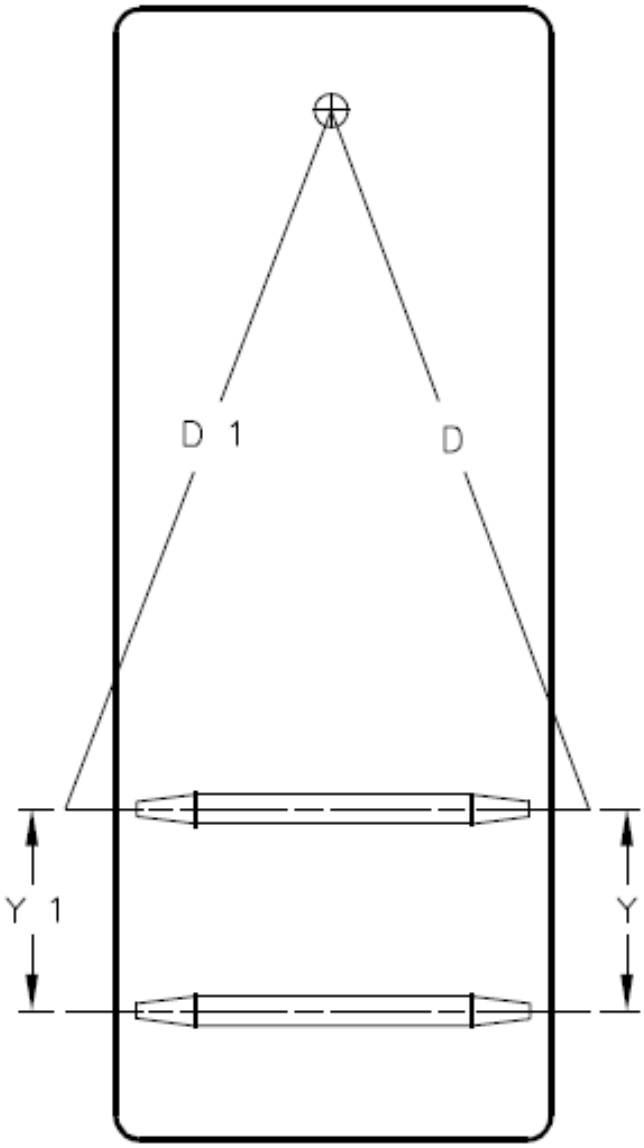
MAINTENANCE: After an initial break in period, approximately 1000 miles, and at least every 4 months periodically thereafter, ALL BOLTS AND NUTS should be checked to insure that recommended torque values are being maintained. Oiled torque values listed are for new fasteners with lubricated threads. It is recommended that new installations be performed with oiled fasteners. For dry threads which have been in service, use the higher torque values which are noted above.

ALIGNMENT - SPRING SUSPENSION

ALIGNMENT

Prior to alignment, make certain the suspension is free and loose and has not been placed in a bind due to sharp turns or unusual maneuvers. Alignment can be accomplished with an optical device designed especially for this purpose or it can be accomplished manually in the following manner: It is recommended that spindle extensions be utilized. As noted on the sketch, dimensions D&D1 must be equal. Alignment can be accomplished by loosening the torque arm clamps screws on both ends of the adjustable torque arm and turning the adjustment screw. After alignment has been accomplished on the front axle, tighten the 5/8" clamp bolt to 85 ft. lbs dry 65 ft. lbs. oiled in order to lock the alignment on the front axle.

Next, align any succeeding axles with the front axle by following the same procedure of loosening the torque arm clamp bolts, turning the adjustment screw until dimension Y & y1 are equal, and then tightening the clamp bolts to the proper torque. After alignment has been completed on all axles, all 5/8" torque arm clamp bolts should be rechecked to make certain that they are tightened to the necessary torque values listed above.



CAUTION

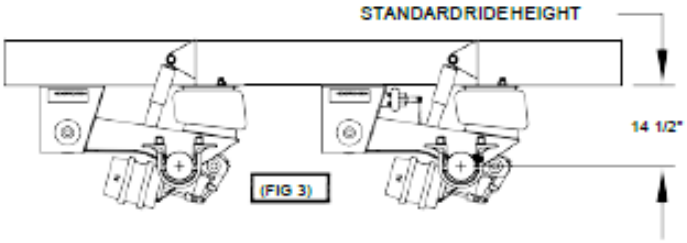
TORQUE READINGS SHOULD BE TAKEN FROM THE NUT ONLY. TORQUING BOLT HEADS WILL NOT PRODUCE THE SAME CLAMPING FORCE.

ALIGNMENT - AIR RIDE SUSPENSION

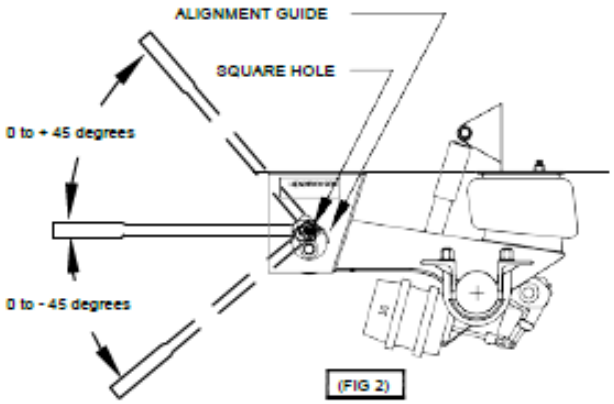
HENDRICKSON WITH QUIK-ALIGN FEATURE

THEORY OF OPERATION

The Quik-Align alignment feature incorporates two flanged washers that are inserted into slots located on each side of the frame bracket. The outboard flange washer is eccentric (figure 1). Its outside diameter is guided by an adjustment guide. Rotating the eccentric washer clockwise or counter clockwise provides fore and aft movement of the suspension's axle (figure2). The pivot connection is clamped together with a heavy hex cap screw, hardened washers and a Torq-Rite nut. The Torq-Rite nut ensures proper torque and eliminates the need for a torque wrench.



(FIG 3)



(FIG 2)

NOTE: 12 0' CLOCK SQUARE HOLE POSITION INDICATES MIDDLE OF ALIGNMENT ADJUSTMENT

AXLE ALIGNMENT

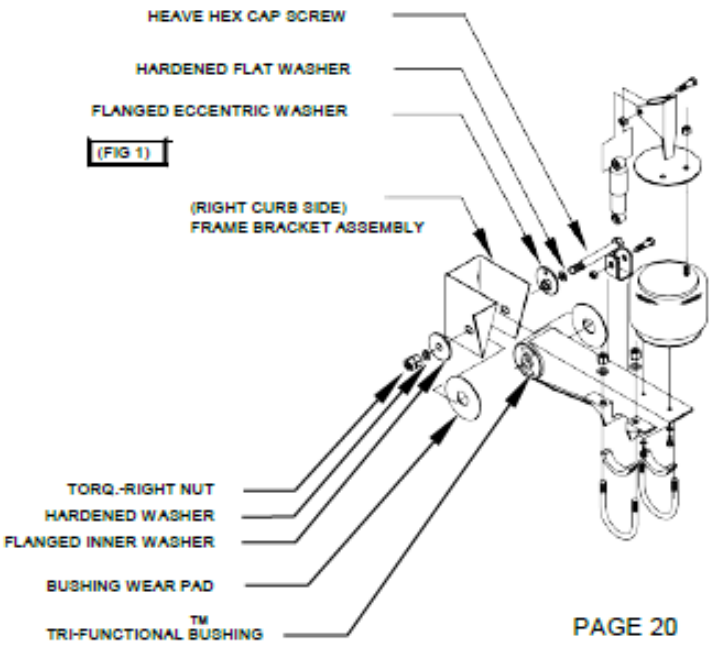
1. The axle alignment site area should be flat, level and free of debris.

NOTE: ALIGNMENT OF SLIDERS

If the suspension is mounted on a slider assembly, remove the slack in the locking pins to match the slider as closely as possible to its operation state. A recommended procedure is to lightly apply the trailer brakes and gently pull forward, thus removing all of the slack. This procedure will avoid pre-loading the Tri-Functional bushing when moving the trailer.

™

2. Set the trailer's upper coupler to its design height (49") by adjusting the landing gear. Set the suspensions ride height as shown in (fig 3).



ALIGNMENT - AIR RIDE SUSPENSION

HENDRICKSON WITH QUIK-ALIGN FEATURE

3. Inspect each tire set. Tires of each dual wheel set must be matched to a maximum of 1/8" tire radius or a maximum of 3/4" variation in tire circumference.

4. Secure trailer and release the trailer's brakes. This will allow wheel rotation while positioning the suspension fore and aft.

5. Remove and discard the pivot bolts and nuts on the forward axle connections and replace with new pivot bolts and Torq-Rite Nuts. Tighten the Torq-Rite Nuts on the pivot bolts to hold the flanged washers in place against the adjustment guide, but loose enough to permit the hardened flat washers to rotate freely.

6. On the previously mentioned pivot connection, inspect the orientation of the square hole on the eccentric flanged washer (outboard side). The square hole should be at the (12:00 twelve o'clock) position (middle of the alignment adjustment); if necessary, adjust. To adjust the eccentric, insert a 1/2" square drive breaker bar into the square hole on the eccentric washer (figure2). Rotating the eccentric flanged washer clockwise (45 degrees max.) or counterclockwise (45 degrees max.) will provide fore-and-aft axle positioning.

7. Repeat steps #5 and #6 on remaining pivot connections.

8. Measuring from the trailer's king pin, rotate the eccentric flanged washer on one side of the forward axle clockwise or counterclockwise until both ends of the axle are an equal distance from the king pin. (figure 4 "A" AND "B").

9. If additional axle movement is necessary, adjust the eccentric washer on the opposite side of the forward axle from the 12:00 position.

10. After proper alignment of the forward axle is achieved, snug the pivot connection fasteners, and recheck alignment.

11. Using a Hendrickson socket or shallow socket (B20947 for 3/4" and B21058 for 1"), apply torque to the Torq-Rite Nuts until the outer hex shears off.

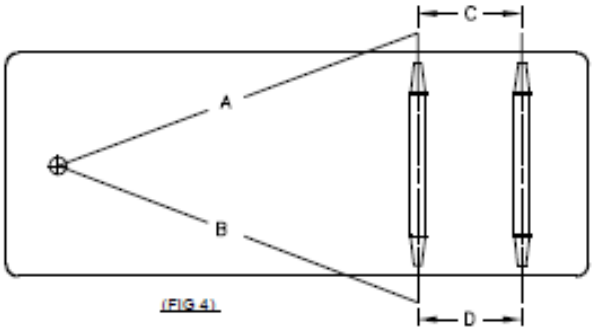
12. Align additional axles to the forward axle by rotating their eccentric flanged washer(s) until both ends of the axle are an equal distance from the front axle. Repeat steps #5 #10 and #11.

CAUTION

REUSE OF PIVOT JOINT FASTENER IS NOT RECOMMENDED. A NEW FASTENER KIT PART# S-21052, MUST BE USED TO PREVENT PIVOT CONNECTION FAILURE.

WARNING

DO NOT APPLY LUBRICANT TO PIVOT CONNECTION FASTENERS. ALWAYS WEAR EYE PROTECTION WHEN OPERATING PNEUMATIC TOOLING.



(FIG 4)

HENDRICKSON AIR RIDE TRAILER SUSPENSIONS

HT SERIES TORQUE SPECIFICATIONS:

- QUIK-ALIGN pivot bolt (7/8" dia.) 500 ft. lbs,
- Pivot bolt (1-1/8" dia) 800 ft. lbs.
- Shock bolt 150 ft. lbs.
- Upper air spring nut 45 ft. lbs.
- Lower air spring bolt 25 ft. lbs.
- Axle u-bolt 475 ft. lbs.

  USE FASTENER KIT (A21052 ON ANY QUIK-ALIGN AXLE REALIGNMENT TO ENSURE PROPER TORQUE WITHOUT USE OF A TORQUE WRENCH.
- RECOMMENDED RETORQUING SCHEDULE:
- FIRST 5000 MILES
- STANDARD P. M.'S
- EVERY BRAKE RELINING

⚠ CAUTION

TRAILER WALK

As a trailer with an air suspension is loaded, the air springs require more air pressure as the load is increased. If not connected to an air supply, the suspension ride height will decrease, causing the trailer to "walk" forward if the brakes are locked. Besides increasing the distance between the loading dock and the trailer, if the trailer is being supported by the landing gear, this movement can damage or completely collapse the landing gear legs.

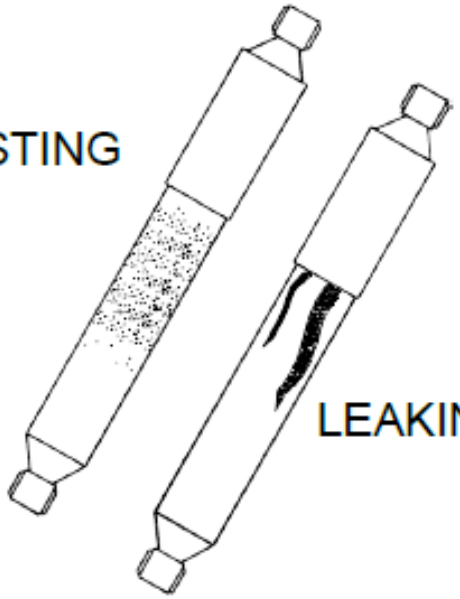
Similarly, a trailer sitting for an extended period of time can lose air pressure and allow the suspension ride height to degrease. Again, this can result in a forward movement which could damage or collapse the landing gear legs. The air must be dumped from the air bags before the brakes are locked on to avoid the forward movement of the trailer.

MISTING VS. LEAKING SHOCKS:

Misting shocks are often misdiagnosed as failures. Misting is the process whereby very small amounts of shock fluid evaporate at high operating temperatures through the upper seal of the shock. When the mist reaches the cooler outside air, it condenses and forms a film on the outside of the shock body. When mixed with road debris and dust, a grime will often coat the entire body of the shock. Misting is a perfectly normal and necessary function of the shock. The fluid which evaporates through the seal area helps to lubricate and prolong the life of the seal. Many technicians find it difficult to differentiate between a misting shock and a true leaker which needs to be replaced. A leaker will show clear signs of fluid leaking in streams from the upper seal. These streams can most easily be seen when the shock is fully extended, and one inspects as far up the main body of the shock (underneath the dust cover or tube) as possible.

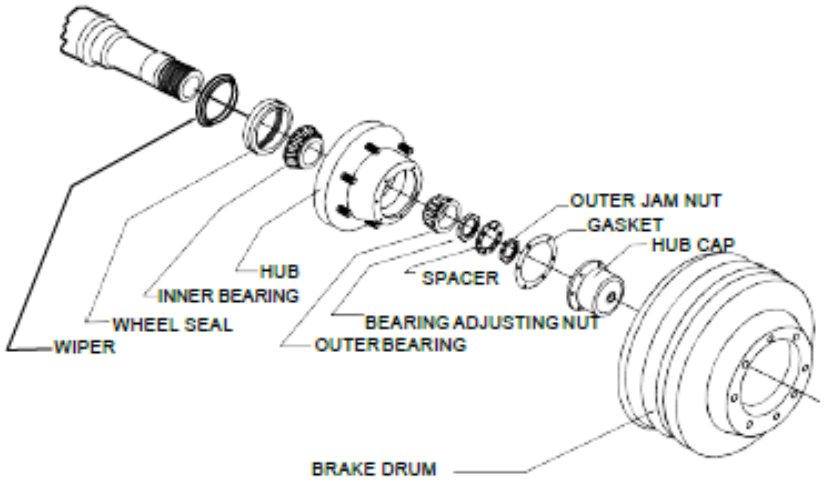
INSPECT SHOCKS FULLY EXTENDED:

MISTING



LEAKING

MANUAL WHEEL BEARING ADJUSTMENT PROCEDURE



1. Remove hub cap and gasket. Use an empty container to catch the leaking oil.

2. Remove the jam nut and spacer.

3.. Tighten the adjusting nut to 100 ft. lbs. torque while rotating the wheel to check that all bearing surfaces are in contact.

4. Loosen the nut completely and then tighten the nut to 50 ft. lbs. torque. Then loosen the nut 1/6 to 1/4 turn.

5. Install the nut lock ring and the jam nut. Tighten the jam nut to 250 to 300 ft. lbs. torque.

6. Install the set screw into the open hole in the lock washer to prevent the loosening of the jam nut. Bearing end play must be within the limits of .001" (.003 mm) to .010" (.03 mm).

7. Install hub cap and new gasket, and refill to correct level with fresh lubricant.

LUBRICATION

1. CAMSHAFT BUSHINGS: use a multipurpose chassis grease.

2. SLACK ADJUSTERS: use greases Shell Darina grease no. 1, Texaco Thermatex EP1, or Texaco Hytherm EP1.

3. OIL LUBRICATED WHEEL ENDS: Multigrade oils, such as 80w\90, should be used where vehicles operate in both warm and cold climates. For standard duty service, change oil every 100,000 miles, or after one year of service.' For heavy duty service, change oil every 30,000 miles or every 6 months.

4. CONTAMINATED LUBRICANT can quickly wear internal wheel components. It is therefore essential that clean lubricants be installed into the wheel-end on a maintenance interval which is appropriate to the application in which the axle is to be operated.

WARNING

DO NOT WORK UNDER VEHICLE SUPPORTED ONLY BY JACKS OR OTHER LIFTING EQUIPMENT. JACKS AND LIFTING EQUIPMENT CAN SLIP OR FALL OVER AND CAUSE SERIOUS PERSONAL INJURY.

PRESET HUB WHEEL BEARING INSTALLATION PROCEDURE

Spindle preparation

1.light corrosion fretting that forms on spindles is normal and should be removed with a fine abrasive. When the residue is cleaned away, the bare spindle is again subject to corrosion and must be covered with a film of grease for corrosion protection, making sure both the bearing journals and the seal journals are well coated. Standard grade 2 greases work well in normal environments. The lubricant being used in the wheel end may also be used. In severe environments, a moly-grease may provide added protection.

Caution:

Failure to apply grease to the bearing journals will result in fretting corrosion, which may result in difficulty removing the bearing. Never support the hub on the spindle with just the inner bearing and seal. This can damage the seal and cause premature failure, i.e., by cocking the seal in the bore.

Mounting the hub

2.mount the hub assembly onto the axle spindle with a smooth, firm motion while holding the outer bearing in place. Use care to maintain alignment between the bearing cones, spacer, and spindle and to avoid seal damage.

Caution:

Once the hub is on the spindle, do not remove the outer bearing. Removing the outer bearing may cause the seal to become misaligned, resulting in premature seal failure.

Spindle nut torque

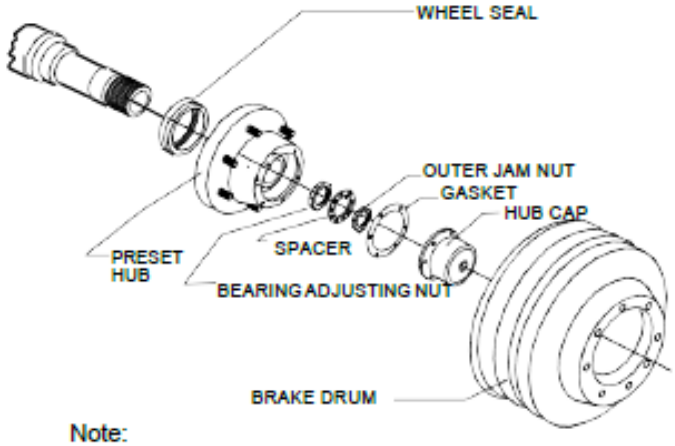
double nut or jam nut system if a double nut or jam nut system is being used, torque the inner nut to 300 ft. Lbs. **Do not back off the spindle nut** . Advance the inner nut as necessary to install the locking ring. Install the outer nut with 200ft.lbs. Of torque. **Be sure to engage any locking device** .

Note:

The hubcap bolt holes must be free of debris, such as silicone gasket sealer to ensure the bolts will tighten properly to avoid leaks. Silicone trapped in the hubcap screw holes can create hydraulic pressures during hubcap screw installation, leading to premature hub failure through the hubcap holes. The vent should also be clean and free of debris. Remove any burrs or sharp edges. Always use new gaskets.

Hub cap

Install the hubcap. A conmet preset hubcap is required for trailer hubs not equipped with tire inflation systems. Torque the hubcap bolts to 12-18 ft. Lbs., using a star pattern.



Note:

Use sae grade 5 bolts or stronger. Do not use star washers. Use only flat washers or split washers.

Lubricant1

1. Fill the hub through the hubcap or the fill hole with oil. It may be necessary to add lubricant more than once to adequately fill the hub.
2.Be certain the hubcap is properly filled to the "oil level" mark on the face of the cap (see figure 35). Allow the initial fill amount to settle for 10 minutes. Repeat the fill procedure until the oil is at the fill line on the hubcap.
3.Be sure to put the fill hole plug back into the hubcap and that the vent is working properly

Caution:

The proper installation torque for the fill plug is 20-25ft. Lbs.

LUBRICATION

1. CAMSHAFT BUSHINGS: use a multipurpose chassis grease.

2. SLACK ADJUSTERS: use greases Shell Darina grease no. 1, Texaco Thermatex EP1, or Texaco Hytherm EP1.

3. OIL LUBRICATED WHEEL ENDS: Multigrade oils, such as 80w\90, should be used where vehicles operate in both warm and cold climates. For standard duty service, change oil every 100,000 miles, or after one year of service. For heavy duty service, change oil every 30,000 miles or every 6 months.

4. CONTAMINATED LUBRICANT can quickly wear internal wheel components. It is therefore essential that clean lubricants be installed into the wheel-end on a maintenance interval which is appropriate to the application in which the axle is to be operated.

BRAKE ADJUSTMENT

MERITOR
PAYMASTER SLACK ADJUSTER

AUTOMATIC SLACK ADJUSTER

The following procedure is used to check the in service adjustment of chamber stroke length of air brakes equipped with automatic slack adjusters.

TRACTOR AND TRAILER COMBINATION

1. Check the gauges in the cab to make certain that air pressure in tanks is at least 100 psi, with engine off and spring brakes released.

2. With the brakes NOT APPLIED, measure the distance from the bottom of the air chamber to the center of the large clevis pin on all the brakes. Record this dimension at each location.

3. Have another person apply and hold one full brake application.

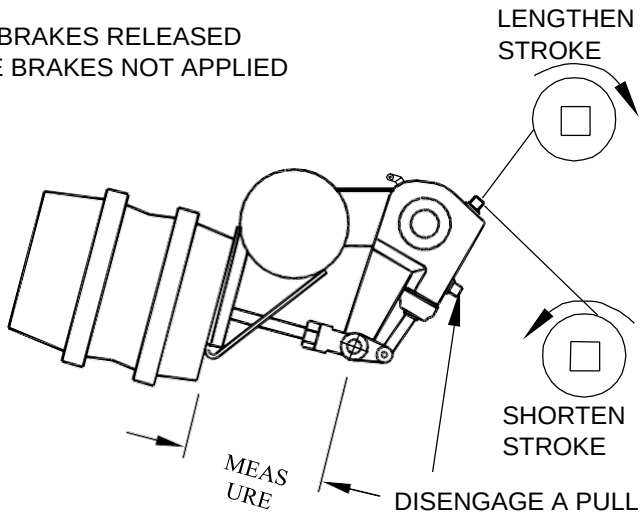
4. Repeat step 2 and measure with BRAKES APPLIED. Record each dimension.

5. Release the brakes.

6. Calculate the adjusted chamber stroke of each brake. Subtract the dimension that was measured in step 2 from the dimension measured in step 4.

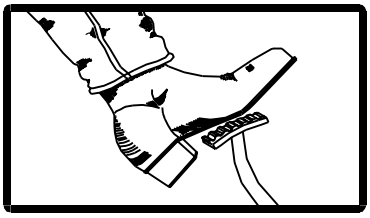
7. The difference between the two dimensions is the adjusted chamber stroke. The adjusted chamber stroke must not be greater than the stroke length shown below.

SPRING BRAKES RELEASED
SERVICE BRAKES NOT APPLIED

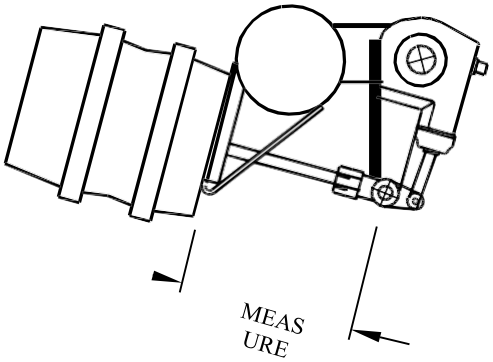


100 PSI IN AIR TANK
WITH ENGINE OFF

DISENGAGE A PULL PAWL OR REMOVE A CONVENTIONAL PAWL



SPRING BRAKES RELEASED
SERVICE BRAKES APPLIED



IF IT IS NECESSARY TO ADJUST THE STROKE, TURN THE ADJUSTING NUT 1/8 TURN IN THE DIRECTION SHOWN ABOVE.

Maximum stroke at which brakes must be adjusted, 80 psi minimum air pressure in the brake chambers.	
Chamber Size	Stroke length not to Exceed:
9	1-3/8 inches
12	1-3/8 inches
16	1-3/4 inches
20	1-3/4 inches
24	1-3/4 inches
24 long stroke	2 inches
30	2 inches
36	2-1/4 inches

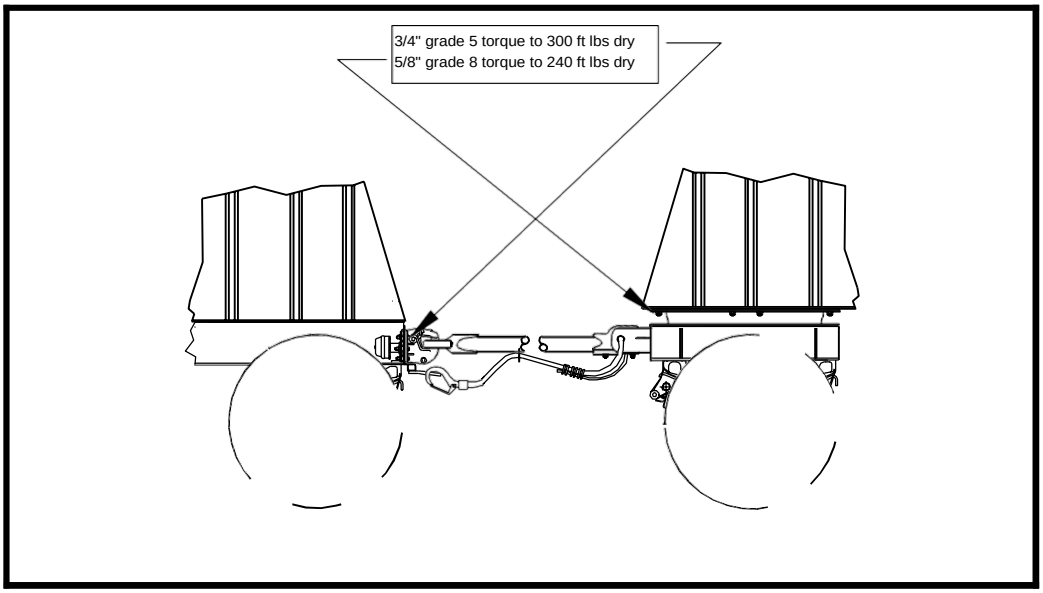
CAUTION

DO NOT SET FREE STROKE SHORTER THAN SPECIFICATIONS. IF FREE STROKE IS TOO SHORT, LINING CAN DRAG AND DAMAGE BRAKE.

FULL TRAILER CONNECTIONS

TURNTABLES require adequate fastening. Bolts must be kept tight at all times. High strength bolts, nuts, and washers are used and are required when replacement is necessary. These bolts should be torqued to 240 ft. lbs. Bolts should be checked after the first two loaded runs, and every two months thereafter. At regular intervals, check upper and lower frame work for cracking and fatigue. Turntable should also be lubricated at the grease fitting locations, when servicing the trailer on a regular basis.

DRAW BAR hinge ends are equipped with bushings. These bushings should be inspected routinely, and replaced every 50,000 miles.
Visually inspect draw bar on a monthly basis. Look for any abnormal end play at the hinge locations and at the pintle eye. Draw bars are provided with a safety cable. Inspect cable ends and cable connectors prior to every trip. Replace any worn or frayed cables.
PINTLE: Inspect pintle and supporting undercarriage for wear and cracks. Insure that bolts are tight and pintle locking mechanism is functioning correctly.



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 Merritt Trailers Inc.

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

To contact NHTSA, you may either call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153), go to http://www.safercar.gov; or write to:
Administrator
NHTSA
1200 New Jersey Avenue
S.E. Washington, DC 20590
You can also obtain other information about motor vehicle safety from http://www.safercar.gov.

TECHNICAL DATA SUPPLIED, COURTESY OF THE FOLLOWING SUPPLIERS

HENDRICKSON

HUTCHENS INDUSTRIES

ROCKWELL AUTOMOTIVE (MERITOR)

ROCKWELL WABCO (MERITOR)

HAYES LEMMERZ
FORMERLY MOTOR WHEEL

GUNITE CORPORATION

KYSOR \ WESTRAN

WEBB WHEEL PRODUCTS

TRAMEC

WALTHER EMC

CON MET

Livestock and Commodity Trailers

WARRANTY AND REMEDY LIMITATIONS

Merritt Trailers Inc. hereby warrants to the original purchaser, within the time limit and conditions prescribed herein, each new trailer and\or body unit to be free from defects in material and workmanship. Specifically excluded from this warranty are accessories and component parts manufactured or supplied by others. This warranty covers normal use, proper maintenance and service. Furthermore, except for the above warranty it is agreed and understood that no other warranty will be in effect, whether implied, expressed or statutory or be mace by Merritt Trailers Inc. or any dealer representing said company. The obligations of this warranty shall be limited to the repair or replacement, including labor at its factory authorized service center, in accordance with the WARRANTY SCHEDULE ON THE REVERSE SIDE HEREOF. All defects in material and workmanship must be brought to the attention of Merritt Trailers Inc. and \or the selling dealer by written notification within 10 days of discovery. And any repairs, replacements or adjustments must be commenced within 20 days thereafter.

Merritt Trailers Inc. shall not be liable for for injuries **to** persons or property, **or** for incidental, consequential or commercial **losses or damage except as set forth herein. The foregoing shall be the** Owner's sole and exclusive remedy whether in contract, tort or otherwise.

This warranty does not apply to component parts and accessories manufactured, supplied and\or furnished by others such as (but not limited to) tires, tubes, suspensions, axle assemblies, wheels, bearings, landing-gears, brakes, lights and fixtures, electric motors, or any non-standard feature or items specified by the purchaser. No warranty is made by Merritt Trailers Inc. except as to title of the foregoing. Nor does this warranty expand, enlarge upon, or alter in any way, the warranty provided by the makers and supoliers of such component parts and accessories.

In the judgment of Merritt Trailers Inc. this warranty shall not apply with respect to any claimed defect which has arisen from repair or alteration outside of the factory of Merritt Trailers Inc. or its authorized service center, or from misuse, negligence or accident, or from operation at a speed exceeding state laws or loading beyond the rated load established by state laws.

Merritt Trailers Inc. does not guaranty its equipment to meet local municipal or state ordinances, laws or regulations.

All repairs, replacements and adjustments **are made subject to the above terms, conditions, warranty, disclaimer of warranty and limitation of liability and** remedy, as apply to each new trailer sold.

MERRITT TRAILERS Inc. _____ **DATE** _____

SELLING DEALER _____ **DATE IN SERVICE** _____

PURCHASER: NAME _____ **SERIAL NUMBER** _____

MAILING ADDRESS _____

_____

_____

TELEPHONE # ( )

E-MAIL _____

MERRITT TRAILERS INC.

2 year limited WARRANTY

Livestock and Commodity Trailers

Covering Defects in Material and Workmanship

PERCENT ALLOWABLE	MONTHS	MONTHS	MONTHS	MONTHS
100	1 – 5	1 – 12	1 – 2	1
75				
50	6 – 12	13 – 18	3 – 5	2
40				
30				
25			6 – 12	3
20				
10		19 – 24		
0	OVER 12	OVER 24	OVER 12	OVER 3

* ALL COMPONENT PARTS ARE COVERED AS WARRANTED BY THE ORIGINAL MANUFACTURER OF THE COMPONENT

Percentage of credit allowable to original purchaser from time of delivery. For basic construction, not to include component parts or accessories.	Painting Lighting Locks and latches Hinges Hardware	Side structures Aluminum fronts Aluminum doors Aluminum crossmembers Metal or aluminum under–assemblies Aluminum gates Aluminum bows Aluminum flooring Aluminum cove Aluminum slopes King pins	Hopper doors Air tanks Tire carriers Air lines and fittings Landing gear	*Air brake valves *Electrical load box *Axles *Suspensions *Misc. running gear Nonstandard items *Wheels and rims *Tarps

* Or as warranted by original manufacturer. Contact a Merritt Trailers Inc. representative for more information.

PREVENTIVE MAINTENANCE

*U–bolts and suspension hanger bolts must be retorqued at 1,000 miles and every 4 months thereafter

*Use of tow motors or other concentrated loading in a way detrimental to the structural design of this unit

** Alignments are covered for the first 30 days from the date in service