

TIMPTE

Bulk Commodity Trailer with Combo Tender Option

OPERATOR'S MANUAL



Serving the transportation industry since 1884.

TIMPTE, INC.
1827 Industrial Drive
David City, NE 68632
402-367-3056

If you believe that this vehicle contains a safety defect you may contact Timpte Trailer Company, the National Highway Traffic Safety Administration (NHTSA) or both.

The trailer was designed and inspected to conform to industry standards and all applicable NHTSA safety standards. Timpte Trailer Co. warrants this vehicle to be free from defects in materials and workmanship when manufactured per the limited warranty agreement. If you detect a defect that could cause an accident or could cause an injury or death; or if you wish to report any such accident, injury or death, or any property damage claim or other complaint not addressed to the Timpte Trailer Warranty Department, then you should contact in writing:

Timpte Trailer Co.
Vice President of Engineering
1827 Industrial Drive
David City, NE 68632
Phone: 402-367-3056
Fax: 402-367-4340

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 Timpte Trailer Co.

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 Timpte Trailer Co.

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

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IMPORTANT

This manual has been prepared to help you operate your new Timpfe Tender trailer successfully, economically, and safely. Please read your Operator's Manual carefully and have a full understanding prior to using your trailer or performing any maintenance. We urge you to contact your Timpfe, Inc. factory representative or the Vice President of Engineering at Timpfe (402-367-3056) immediately should you have any questions or need an explanation.

Timpfe has provided several warnings in your Operator's Manual and on your trailer to help prevent personal injury. Timpfe can not foresee all use or misuse of the trailer. Always use common sense judgment while using or performing maintenance to your trailer. Your safety is our primary concern.



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.

Safety decals appear at various locations on your new tender trailer. The decals are provided for your safety and should be kept clean. Replace any decal that has become worn or damaged, painted over, or otherwise difficult to read. Replacement decals are available at no cost through Timpfe by calling 402-367-3056.

Information contained in this Operator's Manual is based on the latest information available at the time of publication. Changes are continually being made to improve our product lines.

We want to thank you for purchasing a Timpfe tender trailer and to let you know that it was built for long life and low cost of operation. However, regular and proper maintenance of the trailer and your common sense use of it are required to extend the life of the trailer.

NORMAL TRAILER OPERATION

This Timpfe trailer is designed for operation within legal posted speed limits on reasonable road surfaces for the type of service it was built to perform, in accordance with the noted weight restrictions.

“Normal Service” means the loading and transportation of uniformly distributed loads of properly secured, noncorrosive cargo, in accordance with any applicable factory instructions and in a manner which does not subject the trailer or parts of the trailer to (a) concentrated loads; (b) loads in excess of the Gross Axle Weight Rating (GAWR) or Gross Vehicle Weight Rating (GVWR) stated on the Certification Plate affixed to the trailer by Timpfe; and (c) accidental damage, or (d) stresses, impacts or shocks greater than those commensurate with normal, reasonable lawful use.

The GAWR (gross axle weight rating) is the structural capability of the lowest rated member of the running gear components: suspension system, hubs, brake drums, wheels, bearings, axles, brake linings or tires.

The GVWR (gross vehicle weight rating) is the structural capability of the trailer when supported by the kingpin and axles with the load uniformly distributed throughout the cargo space.

NOTICE:

The maximum load indicated on the identification plate may not be a legal load on the highway you plan to use. States have differing laws and regulations affecting vehicle lengths and weights on roads that are not a part of the primary interstate road system.

Modification of the Trailer – Any modification made to the trailer must comply with DOT and NHTSA regulations and must not compromise the gross vehicle weight rating (GVWR) of the trailer. Any modification made to the trailer without prior approval of Timpfe may void the warranty. Any operation of the trailer outside the limitations stated in this manual will void any responsibility of Timpfe, Inc. for any of its results.

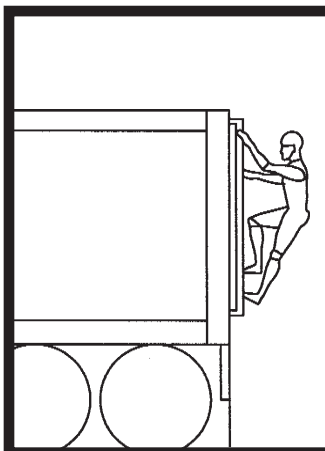
SAFETY



WARNING

PERSONAL INJURY, DEATH, AND PROPERTY DAMAGE MAY RESULT FROM IMPROPER OPERATION OR UNSAFE PRACTICES. BE SURE TO READ AND FOLLOW ALL DECALS AND EMBLEMS CAREFULLY.

The following section contains safety warnings and operational directions. Some of these are used as decals on the Timpfe Tender Trailers. Due to differences in configurations and equipment, your trailer may or may not use all the decals and emblems shown. Newer trailers may also have decals and emblems that differ from older trailers. Replace damaged or missing decals promptly. Replacement decals for this trailer are available without charge by calling Timpfe, Inc. at 402-367-3056.



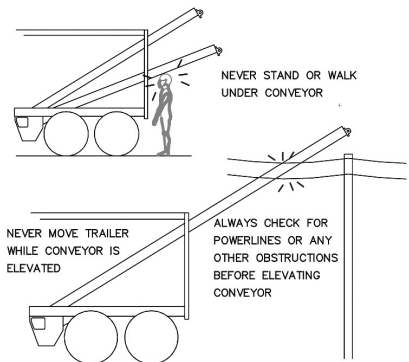
WARNING

1. EXERCISE EXTREME CAUTION WHILE CLIMBING ON ACCESS SYSTEM.
2. ALWAYS MAINTAIN 3-POINT CONTACT. (2 HANDS & 1 FOOT OR 2 FEET AND 1 HAND)
3. DO NOT WEAR RINGS OR ANYTHING THAT CAN CATCH ON LADDER.
4. USE LADDER SIDE RAIL FOR HAND HOLD, NEVER USE THE RUNG.
5. NEVER CLIMB OVER THE TOP OF THE TRAILER. NEVER ENTER THE INSIDE COMPARTMENTS ANY REASON.

FAILURE TO FOLLOW THESE WARNINGS COULD RESULT IN SERIOUS INJURY OR DEATH.



DANGER



TIMPFE P/N 035-49385



WARNING

THIS TRAILER IS EQUIPPED WITH ANTILOCK BRAKE SYSTEM (ABS).

D.O.T. REGULATION FMVSS-121 REQUIRE ABS RECEIVE CONSTANT POWER FROM THE CENTER AUXILIARY PIN ON THE 7-WAY CONNECTOR.

INSPECT YOUR TRACTOR! TRACTOR MUST SUPPLY CONTANT POWER FOR THE ABS ON THE CENTER AUXILIARY PIN WHEN THE KEY SWITCH IS ON. DEACTIVATE ANY SWITCH IN THE TRACTOR THAT WILL TURN THE AUXILIARY POWER OFF (MUST SUPPLY CONSTANT POWER).

DO NOT MODIFY THE TRAILER ELECTRICAL SYSTEM TO POWER OPTIONAL EQUIPMENT OFF THE AUXILIARY CIRCUIT. FEDERAL LAW MANDATES THIS CIRCUIT IS DEDICATED FOR ABS ONLY.

CONTACT TIMPFE ENGINEERING IF YOU HAVE ANY QUESTIONS ABOUT YOUR PRESENT WIRING OR HOW TO REWIRE FOR AUXILIARY EQUIPMENT.

FAILURE TO FOLLOW THESE WARNINGS COULD RESULT IN SERIOUS INJURY OR DEATH.



WARNING

TO PREVENT SERIOUS INJURY OR DEATH:

KEEP HANDS AND ARMS OUT OF THE WAY OF THE CONVEYOR AND THE PINCH AREA AT ALL TIMES.

MAKE SURE THE HYDRAULIC LEVER ARMS ARE IN THE NEUTRAL POSITION AND DISCONNECT THE HYDRAULIC SUPPLY LINES PRIOR TO CLEANING OR DISLODGING ANY MATERIAL ON THE BELT.

ALWAYS STAY CLEAR OF THE MOVING CONVEYOR BELT AT ALL TIMES.

TIMPFE P/N 035-49382



WARNING

THIS TRAILER IS EQUIPPED WITH TRAILING BEAM AIR RIDE SUSPENSION.

1. MANUALLY EXHAUST ALL AIR IN THE SUSPENSION SYSTEM PRIOR TO SUPPORTING A LOADED TRAILER ON THE SUPPORT LEGS. FAILURE TO COMPLY CAN CAUSE STRUCTURAL DAMAGE TO THE SUPPORT LEG BRACES.
2. DO NOT USE EXCESSIVE FORCE WHEN COUPLING THE TRACTOR TO THE TRAILER (EMPTY OR LOADED) CONTINUING TO BACK-UP A TRACTOR/TRAILER WITH THE TRAILER BRAKES LOCKED CAN ROTATE THE TRAILING BEAMS AND OVEREXTEND THE SUSPENSION. OVEREXTENSION WILL CAUSE DAMAGE TO THE SUSPENSION SYSTEM.
3. MANUALLY EXHAUST ALL AIR IN THE SUSPENSION SYSTEM PRIOR TO AND DURING UNLOADING THE TRAILER. AFTER UNLOADING THE TRAILER, IMMEDIATELY ACTUATE THE AIR AND WAIT FOR THE SUSPENSION TO RETURN TO THE NORMAL RIDE HEIGHT BEFORE MOVING THE VEHICLE.



WARNING



- DO NOT ATTEMPT TO WALK ON TOP RAILS, THEY ARE NOT AN APPROVED WALKWAY
- FAILURE TO COMPLY CAN CAUSE SERIOUS INJURY OR DEATH

WARNING

THIS TRAILER IS NOT INTERNALLY VENTED, TARP MUST BE OPEN TO PROVIDE ADEQUATE VENTING PRIOR TO AND WHILE DISCHARGING COMMODITY. FAILURE TO COMPLY CAN CAUSE STRUCTURAL DAMAGE TO THE TRAILER.

TIMPTE

P/N 035-21729

WARNING

USE KNOCK RAILS TO DISLodge COMMODITY, POUNDING ON SLOPE SHEETS VOIDS WARRANTY.

TIMPTE

P/N 035-03082



WARNING

NEVER CLIMB INSIDE THE HOPPER COMPARTMENT!

FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH.



WARNING

1. CHECK KING PIN TO ASSURE THAT IT IS PROPERLY ENGAGED WITH FIFTH WHEEL.
2. KEEP THE UPPER COUPLER LUBRICATED AND FREE OF DEBRIS TO PREVENT GALLING OF THE FIFTH WHEEL PLATE.
3. INSPECT THE KING PIN AND THE PATE ASSEMBLY DAILY FOR WEAR AND CRACKS.

FAILURE TO FOLLOW THESE WARNINGS COULD RESULT IN SERIOUS INJURY OR DEATH



WARNING

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



WARNING

CHECK WHEEL NUTS AFTER INITIAL 50 TO 100 MILES OF SERVICE. SEE OWNERS MANUAL FOR CORRECT TORQUE REQUIREMENTS. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH.



DANGER

IF SPRING BRAKES ARE CAGED, DEACTIVATED OR REMOVED, THIS VEHICLE WILL HAVE NO EMERGENCY PARKING BRAKES AND MUST NOT BE PARKED WITHOUT BLOCKING WHEELS OR DRIVEN.

NEVER STAND BETWEEN THE BACK OF THE TRAILER AND ANY STATIONARY OBJECT.

FAILURE TO FOLLOW THIS SAFETY PRECAUTION WILL RESULT IN DEATH OR SERIOUS INJURY

THIS PRODUCT IS PROTECTED BY US AND FOREIGN PATENTS AND TRADEMARKS INCLUDING:

PATENT # 6,736,297 B2 8,371,657

6,059,372

6,814,532 B1

2,255,368

REGISTRATION # 1,411,224

TIMPTE TRAILER CO.

1827 INDUSTRIAL DRIVE

DAVID CITY, NE 68632

TIMPTE P/N 035-31194




DANGER

KEEP CLEAR WHILE CONVEYOR IS OPERATING!

TIMPTE P/N 035-33596

! WARNING

- PRESSURIZED HYDRAULIC FLUID CAN PENETRATE SKIN.
 - DO NOT CHECK FOR LEAKS WITH HANDS. STAY AWAY FROM HYDRAULIC HOSES.
 - FAILURE TO COMPLY CAN CAUSE SERIOUS INJURY.



NOTICE

FRONT DISCHARGE	DOWN	CURB-SIDE
↑↓	↑↓	↑↓
REAR DISCHARGE	UP	ROAD-SIDE
CONVEYOR	VERTICAL LIFT	SWING

TMP/TE P/N 035-60418

! CAUTION

NEW FMVSS-121 REGULATIONS MANDATE HIGHER PRESSURE LEVELS IN THE SUPPLY LINE. TRAILER BRAKE PERFORMANCE WILL BE IMPAIRED IF TRACTOR COMPRESSOR ADJUSTMENT IS TOO LOW.

CHECK YOUR TRACTOR!
COMPRESSOR CUT-IN PRESSURE, ADJUST TO 105 PSI CUT-IN GOVERNOR

P/N 035-29182

CAUTION

DO NOT ATTEMPT TO HOIST TRAILER AT THIS FRAME STRUCTURE.


P/N 035-27163

! CAUTION


TO INSURE PROPER TRACTOR TO TRAILER COUPLING, THE PROPER LENGTH OF KINGPIN MUST BE MAINTAINED PER SAE J2228.

- THE POLY WEAR PLATE INSTALLED ON THIS TRAILER MUST BE MAINTAINED AND AS IT WEARS, YOU MUST PERIODICALLY CHECK KINGPIN LENGTH AND REPLACE THE WEAR PLATE AS REQUIRED BY THE STANDARD.

- NEVER OPERATE THIS TRAILER WITHOUT A PROPER THICKNESS WEAR PLATE IN PLACE.



TMP/TE P/N 035-44617



! WARNING

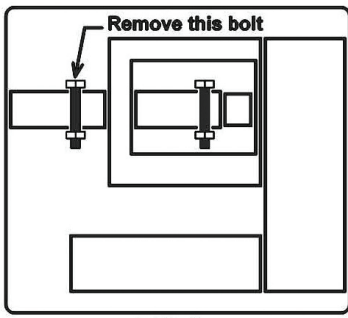
- DO NOT OPERATE TARP SYSTEMS WHILE INDIVIDUALS ARE ON ACCESS SYSTEM.
- ALWAYS MAINTAIN THREE POINT CONTACT. (2 HANDS & 1 FOOT OR 2 FEET & 1 HAND)

FAILURE TO FOLLOW THESE WARNINGS COULD RESULT IN SERIOUS INJURY OR DEATH.

TMP/TE P/N 035-51333

THUNDER ELECTRIC TARP SYSTEM, MANUAL OPERATION

- Remove the motor shaft drive bolt and nut assembly that runs through the roll tube at the nose of the trailer. (FIG A.)
- Remove the manual tarp crank handle from the retainer clips.
- Slide the tarp crank handle universal joint onto the roll tube spline shaft until it is fully engaged and locked in place. Insert loxall pin to retain crank handle in place. (FIG B.)
- Use the manual crank handle to open and close the tarp.
- Follow the instructions that are on the decal at the rear of the trailer.
- Replace the motor shaft drive bolt and nut assembly before moving the trailer to prevent the front arm from pivoting down and causing injuries while traveling.
- After system is repaired remove the manual crank handle and place it in the retainer clips for storage.



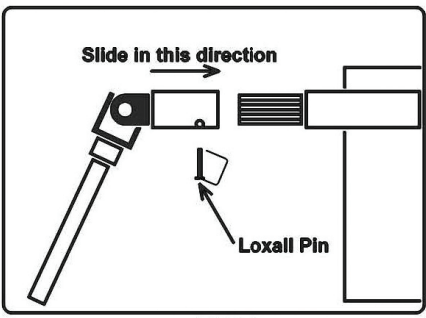
Remove this bolt

FIG A.

! CAUTION:

The front and rear arms are spring loaded and can shift when bolts are removed.

Use an OSHA approved work platform when performing any maintenance on the motor or arms.



Slide in this direction

Loxall Pin

FIG B.

035-54685

NOTICE

TO AVOID DAMAGE TO THE CONVEYOR
AND POSSIBLE OVERHEAD INTERFERENCE,
CONVEYOR MUST BE LOWERED FULLY
BEFORE TRANSPORT.

TIMPT E P/N 035-49640

DANGER

PINCH POINT

WARNING

Minimum tire clearance **MUST** be maintained between tires and nearest point of contact on the suspension or vehicle. Premature tire wear, fire or loss of vehicle control could result from contact with the tires if clearances are not maintained.



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TIRE CLEARANCE REQUIREMENTS

- **1 INCH (25.4 mm) MINIMUM VERTICAL** tire clearance is required between the top of the tire and the nearest point of contact above the tire when the air pressure is completely exhausted from the air suspension or when the axle is fully lifted if equipped with a suspension lift feature.
- **2 INCH (50.8 mm) MINIMUM LATERAL** tire clearance is required between the sides of the tire and the nearest point of contact through total travel of the air suspension. This includes when the wheels are fully turned in either direction if equipped with an SAF Self Steer Axle.

CBX / CB FIXED FRAME TRAILER AIR SUSPENSION TORQUE SPECIFICATIONS

Torques are with clean, lubricated threads.
Always apply torque to nut, if possible.

REQUIRED RE-TORQUING SCHEDULE:

- All fasteners after first three (3) months or 5,000 miles.
- At every routine preventative maintenance.
- At every brake relining.

Fastener Size	Pivot Connection	Shock	Air Spring		SwingAlign
	1-1/8"	3/4"	1/2"	3/4"	1/2"
Torque Ft.-Lbs. (N•m)	450-500 (608-676)	140-175 (190-237)	30-40 (41-54)	40-45 (54-61)	50-60 (68-81)



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XL-AR436 Rev. E

SWING ALIGN® NON-WELDED AXLE ALIGNMENT PROCEDURES

ALIGNMENT BOLT IS ON THE FRONT OF THE ROADSIDE FRAME BRACKET:

- STEP 1.** To properly align the suspension, the trailer should be pulled in a straight line for a sufficient distance to insure there are no binds in the suspension.
- STEP 2.** Check to verify trailer is empty and emergency brakes are **NOT** engaged.
- STEP 3.** Rotate bolt **CLOCKWISE** to move axle forward (A arrows); **COUNTERCLOCKWISE** to move axle rearward (B arrows).



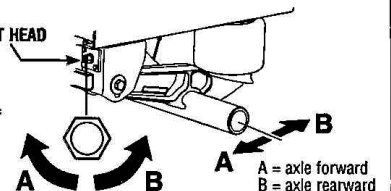
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XL-AR435 Rev. B

ALIGNMENT BOLT HEAD

NOTE: 1/2 turn of free play in either direction (A or B) is acceptable.



WARNING

1. KEEP ALL SHIELDS IN PLACE DURING OPERATION
2. DISENGAGE AND SHUT OFF ALL ENGINE AND MOTOR POWER BEFORE SERVICING OR UNCLOGGING MACHINE.
3. KEEP HANDS, FEET AND CLOTHING AWAY FROM POWER-DRIVEN PARTS.

TIMPT E P/N 035-51165

AIR BRAKE SYSTEM

Your new Tipte trailer is equipped with an air brake system which meets or exceeds the requirements of the federal regulation FMVSS-121 for grade-holding ability and emergency stopping in the event of an air supply failure in the service brake system. Air pressure is required to release the parking/emergency brake. As of 10/8/92-FMVSS 121 requires that the supply line for the air brake system be protected to 70 psi. This pressure level requires that supply line pressure levels are achieved before the pressure protection valve opens (opening pressure must be higher than the closing pressure by design).





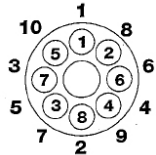
Keeping your compressor cut-in pressure at maximum levels (over 100 psi) is a clear advantage for peak operation of your entire system, we recommend using a 105 psi cut-in governor setting. Governor cut-out pressure should be at 120 psi minimum. Low compressor cut-in pressure may result in poor performance of the system, for example slow parking brake release time.

Should you still have a problem with your brake system after working through all of the inspection items and tests listed in this manual's maintenance section, contact your Tipte factory representative.

WHEEL NUT TORQUE

Proper torquing and retorquing the wheel nuts are critical to prevent the loss of wheel equipment. Wheel nuts should be torqued to 450 to 500 ft. lbs. (dry). Refer to the manufacturer's decal on the side of the trailer or manufacturer's maintenance information supplied with the trailer for proper torque specifications and tightening sequence.

Wheels must be checked and retorqued after the first 50 to 100 miles of use. This is important every time you change a wheel. Check the fastener torque on a regular on-going basis.

 WARNING	
<div><p>1. Read and understand this warning and the installation, Service and Safety Instruction Manual to understand all safety precautions, proper operation, and maintenance of your Webb hub. Failure to do so could result in death or serious injury and could result in a compromise of your vehicle's safe operation through loss or failure of a wheel or the compromise of the braking system. Copies of the installation, Service and Safety Instruction Manual are available, free of charge, from Webb Products, Inc., upon request.</p></div> <div><p>2. Always use a properly installed calibrated torque wrench to assure proper torque. Under torque and over torque can cause thread and/or nut damage and could result in the loss of a wheel. Failure to ensure proper torque could result in death or serious injury and could shorten the expected life of this product.</p></div> <div><p>3. Recheck torque after the first 50 to 100 miles of service. Parts may seat naturally, causing the torque to drop. A drop in torque could result in the loss of a wheel. Proper torque is essential to avoid damage or compromise of your vehicles safety. Failure to ensure proper torque could result in death or serious injury.</p></div>	<p>HUBS (FOR PILOT MOUNTED DISC WHEELS) 8 - 10 STUD HUBS APPLIES TO M22 X 1.5 STUDS / TWO PIECE FLANGE NUT.</p> <p>All threads are right hand metric.</p> <p>Tighten Flange Nuts to 50 ft.lb. using sequence shown.</p> <p>Check Disc-Wheels for proper positioning on pads and proper seating against flange.</p> <p>Tighten Flange Nuts to recommended torque using sequence shown.</p> <div></div>

ABS BRAKING SYSTEM

As of 3/1/98 all trailers manufactured with air braking systems are required to have an ABS (Anti-Lock Braking System).

The system used on your trailer meets or exceeds the FMVSS 121 requirement for ABS. The ABS system on your Bulk Commodity trailer is a 4S/2M system (4 wheel sensors - 2 modulator valves) or a 2S/1M (2 wheel sensors - 1 modulator valve). The intended purpose of ABS is to help maintain control and reduce the likelihood of jackknife situations.

The ABS status indicator light is located on the driver side of the trailer near the rear corner post. It indicates the system status upon initial startup by turning on and then turning off once the vehicle begins to move. If a malfunction in the ABS system occurs, the ABS system status light will come on and stay on until the problem is repaired. Anytime the system status light comes on and stays on, have the ABS system serviced as soon as possible.



WARNING! ABS (Anti-Lock Braking System) is a safety item and must be properly maintained. To operate an ABS equipped truck and trailer properly, during braking- constant pedal force must be applied. All ABS systems require clean, dry air to operate properly. Use of airline deicers or leakage of oil into the air system may diminish the performance of the system and will void the warranty.

BACKUP WARNING SYSTEM

A backup warning system consisting of an audible alarm is available as an option on your Timpco Bulk Commodity trailer. The system is intended to indicate that the vehicle is backing up.

You, the operator, have the Greatest Control over Safe Operation.

1. You, the operator, have control of the most important factors that affect safe trailer operation and vehicle stability. Trailers are a tool and, like any tool, are safe only when properly used by a conscientious, trained and qualified operator.
2. The fifth wheel should be securely mounted to the tractor frame and proper connection between the tractor and trailer verified.
3. The driver should be familiar with the characteristics of the particular trailer and of the load to be transported.
4. The driver should be familiar with the nature of the roads and traffic which may be encountered during the trip.
5. Stability – **Caution - like any other vehicle, semi-trailers can tip or slide out of control if turns are negotiated at too high a speed or when making violent maneuvers such as abrupt lane changes or other evasive actions to avoid obstacles.**
6. Within the relatively narrow confines of road laws limiting vehicle size and weight, together with the characteristics of available tires, suspensions, and other components, there is little that a manufacturer can do to affect the inherent stability of a trailer other than keeping the load as low as feasible, considering the requirements for loading space and adequate tire clearance. This means that the major factors affecting operational stability are the knowledge and skill of the driver. The predominant causes of rollover accidents are:
 - a. Excessive speed
 - b. Violent swerving or turning
 - c. Application of brakes or tractor power while turning.
 - d. Entering curves at too high a speed
7. Tire Characteristics: High pressure truck/trailer tires have different characteristics under high speed cornering conditions than do passenger car tires. Truck/trailer tires are designed for carrying high loads over long distances. Their lateral stability becomes unpredictable when lateral forces approach .04g. This means that commercial vehicles must be operated in a conservative manner when cornering.
8. Braking and Acceleration: Either braking or accelerating while cornering can significantly reduce the stability of the vehicle and should be avoided. The best driving practice is to decelerate to a safe conservative speed before entering a corner or approaching congested traffic, and then to apply only moderate power until a straight path has been re-established.



WARNING

TO INSURE PROPER ENGAGEMENT OF THE KING PIN TO THE FIFTH WHEEL COUPLER, THE KINGPIN MUST BE MAINTAINED WITHIN RECOMMENDED SAE STANDARDS. **FAILURE TO DO SO COULD CAUSE SERIOUS INJURY OR DEATH.**

TRAILER KINGPIN WEAR

Per Recommended SAE Standards, check King Pin for wear across the pin neck and also the pin shoulder. In accordance with industry standards, Timpte recommends that the kingpin and its mounting structure be inspected for wear and damage on a daily basis.

1. Measure the neck - 2"
 - A. Insert the head of the Kingpin through the large opening of the small slot. Locate the gage between the shoulder and the head of the Kingpin.
 - B. Slide the gage toward the small end. The number stamped on the gage at the center of the Kingpin indicates the dimension (see figure 1).
 - C. The Kingpin should be replaced when, at any orientation, the neck OD measures 1 7/8" diameter.
2. Measure the shoulder - 2-7/8"
 - A. Repeat the above procedure using the large slot on the shoulder of the Kingpin (see figure 2).
 - B. The Kingpin should be replaced when, at any orientation, the shoulder OD measures 2 3/4" diameter.

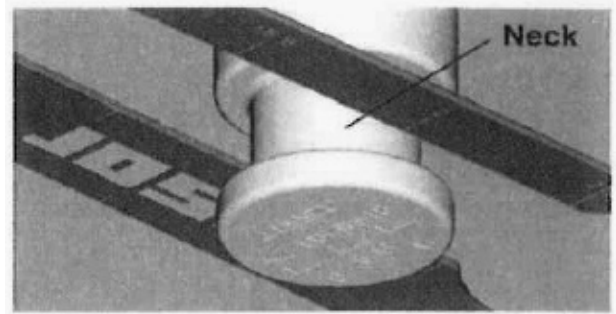


FIGURE 1

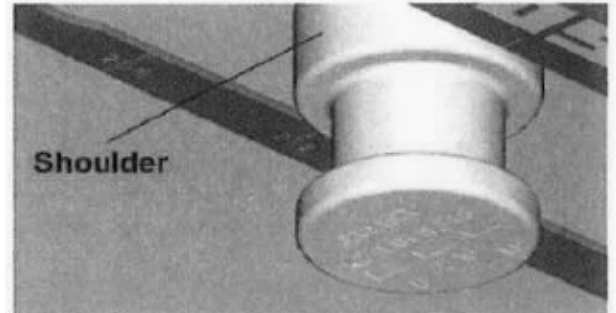


FIGURE 2

TRAILER KINGPIN TO COUPLER INTERFACE INSPECTION CRITERIA

3. Measure the Kingpin length
The Kingpin is the proper length if the "MAX" end engages and the "MIN" end does not engage as shown below.

Important: Be sure to hold the gage edge flat to the upper coupler. Check both the "MAX" end and the "MIN" end as shown in figures 3 and 4.

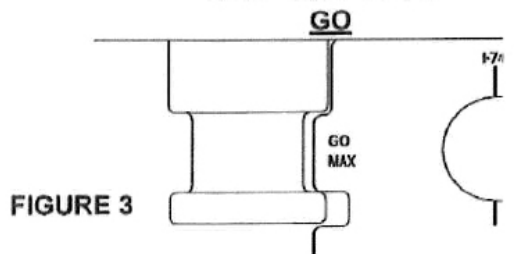


FIGURE 3

THE "MAX" END SHOULD ALWAYS ENGAGE THE KINGPIN.

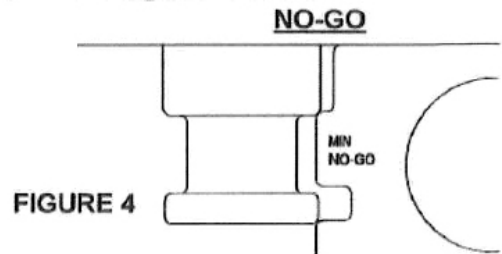


FIGURE 4

THE "MIN" END SHOULD NEVER ENGAGE THE KINGPIN.

Reference SAE J2228 standard for kingpin wear

Reference SAE J700 standard for upper coupler to kingpin interface

Inspection Procedures Before Each Trip



WARNING! Be careful when making inspections, hookups and repairs to avoid personal injury. Make sure parking brakes are properly activated or that wheel chocks are in place to avoid sudden or unexpected movement of the trailer which could result in bodily injury.

NOTICE:

It is the Operator's responsibility to conduct a safe and accurate pre-trip inspection of the vehicle. Per Federal Motor Carrier Statute 49 CFR 392.7 Equipment, Inspection and Use - No motor vehicle shall be driven unless the driver thereof shall have satisfied himself that the following parts and accessories are in good working order, nor shall any driver fail to use or make use of such parts and accessories when and as needed

- Service Brake, including trailer brake connections
- Parking Brake
- Steering Mechanism
- Lighting devices and reflectors
- Tires/Tire Pressure
- Horn
- Windshield Wiper or wipers
- Rear-vision mirror or mirrors
- Coupling devices
- Hoses and Airlines
- Fifth Wheel Plate
- Gladhand Connections
- Hub Maintenance
- Mud Flaps
- RIG (Rear Underride Guard)

Additional Federal Requirements for the Operator can be found in the Federal Motor Carrier Safety Regulations (FMCSR's) in the Code of Federal Regulations (CFR) Title 49 Parts 392, 393 and 396. These can be found on-line at <http://www.access.gpo.gov/nara/> then scroll down to (CFR Sections by Citation).

Failure to regularly inspect the trailer may also void the warranty.

While it is ultimately the operator's responsibility to properly perform and document the pre-trip inspection, TimpTe provides the following recommendations and suggestions.

LIGHTS AND REFLECTORS

The surfaces of the lights and reflectors need to be checked and cleaned. Inspect all lights to see if they are working and check all brake and signal functions.

ELECTRICAL WIRING

Inspect all visible wiring to see that it is not frayed and is properly supported and protected, and that all connections are tight. Inspect the electrical hookup for a clean and secure connection.

FIFTH WHEEL AND KING PIN ENGAGEMENT

Inspect the kingpin and its structure on the trailer for damage or unusual wear. After hook up, make a direct visual inspection to assure proper coupling, then check for positive engagement of the lower fifth wheel and king pin. Apply the trailer brakes and attempt to move the tractor forward to insure that the fifth wheel and king pin are positively locked.



CAUTION! Plastic King Pin Liners (Lube Plate) cannot be installed onto Timpfe Trailer upper coupler/king pin assemblies unless the trailer was purchased with that specification. A lube plate changes the king pin interface dimensions relative to the fifth wheel lock. This may result in coupling difficulties, premature lock wear, and a potential for a dropped trailer.

TIRES



WARNING! DO NOT OVERLOAD! Check tires frequently for cuts and abrasions. Check tire pressure daily and keep inflated as recommended by the tire manufacturer. Remove foreign objects that may be lodged in the tire treads or between dual tires.

MUD FLAPS

Be sure the mud flaps are securely in place and in good condition.

TARP SYSTEM

Check to be sure the tarp is in serviceable condition. Insure that the latching system is in good working order and that the tarp is properly secured for travel to prevent being blown about by the wind.

LANDING GEAR

Always raise the landing gear legs completely before moving the trailer. Make sure that the crank handle is properly secured. Prior to trailer transport, lock landing legs into low side gear ratio.

HUB MAINTENANCE

Check wheel studs for good condition – no stripped threads – no bent or loose studs. Replace any broken or bent studs or studs with damaged threads. When a broken stud is replaced, the stud on each side of it should be replaced at the same time. If more than two studs on the same hub are broken, replace all of the studs.

WHEELS AND RIMS

Check all wheel nuts for tightness. Wheel flange nuts should be torqued to 450 to 500 ft. lbs (dry).

Check all metal surfaces thoroughly while making tire inspections and during tire changes.

Look for:

- **Excessive rust or corrosion build-up**
- **Cracks in the metal**
- **Bent flanges or components**
- **Loose, missing, or damaged nuts**
- **Bent or stripped studs.**
- **Incorrectly matched rim parts**

Replace damaged components, making sure that replacements are made with proper sized and type parts.



HUB LUBRICANT

Check and maintain proper level of lubricant in hubs.

Hubs using oil lubricant will have clear hub windows and the oil level will be clearly visible. Be sure the oil level is at the fill line noted on the hub window.

Hubs equipped with synthetic grease will retain the grease between the bearings and no lubricant visual check is possible. Trailers equipped with this option will not have a clear hub window or a fill plug.

Do not add oil to hubs equipped with synthetic grease lubricant. If mixing of lubricants occurs, remove the lubricant and re-install the proper lubricant as soon as possible.

NOTE: Hub cap mounting bolts (6) torque 10 to 15 ft. -lbs torque per bolt.

SIDE STRUCTURES

Check the trailer sides for inconspicuous damage to the top and bottom rails as well as the side structure – cracks, contusions, sharp bends, ripples, or missing fasteners. Any problems observed in the side structure should be corrected immediately to prevent the damage from extending further. Unrepaired damage could affect the safe load carrying capacity of the side structure.

SUSPENSION AND SUSPENSION SUBFRAME

Check the suspension and suspension subframe structure for damage or unusual wear. Any type of damage, cracks in the welds or structural members or loose fasteners need to be addressed immediately. Check air ride suspensions for condition of bushings, air leaks, condition of shock absorbers, for proper operation of ride height leveling valve, and for proper inflation of the air springs.

NOTE: Never move an air ride trailer without first fully inflating the air springs – failure to do so could cause damage to the trailer and suspension and will void the warranty.

OPERATING INSTRUCTIONS

PARKING/EMERGENCY BRAKING SYSTEM

This portion of the air brake system makes provision for parking a vehicle on a grade and for emergency stopping in the event of a failure of air supply in the service brake system.

Air pressure within the parking brake chamber is required to release the spring brake. An air reservoir is provided to store enough air to release the brakes at least once by means of the tractor parking brake control, if there is an air line failure. In addition to the normal release of spring brakes using air, a built-in manual release is provided. It allows easy release of the spring brakes for relining the brakes or for moving the trailer in the absence of air pressure.



DANGER

MANUAL RELEASE OF THE PARKING BRAKE SHOULD ONLY BE USED TO MOVE THE TRAILER TO A SAFE LOCATION WHERE REPAIRS CAN BE PERFORMED. ALWAYS INSTALL WHEEL CHOCKS IN FRONT OF AND BEHIND TIRES BEFORE MANUALLY RELEASING SPRING BRAKES. FAILURE TO FOLLOW THIS SAFETY WARNING COULD RESULT IN DEATH OR SERIOUS INJURY.



WARNING

DO NOT ATTEMPT TO MOVE THE TRAILER UNTIL PARKING BRAKE IS FULLY RELEASED. FAILURE TO FOLLOW THIS SAFETY WARNING WILL RESULT IN EQUIPMENT DAMAGE AND COULD RESULT IN SERIOUS INJURY OR DEATH.



WARNING

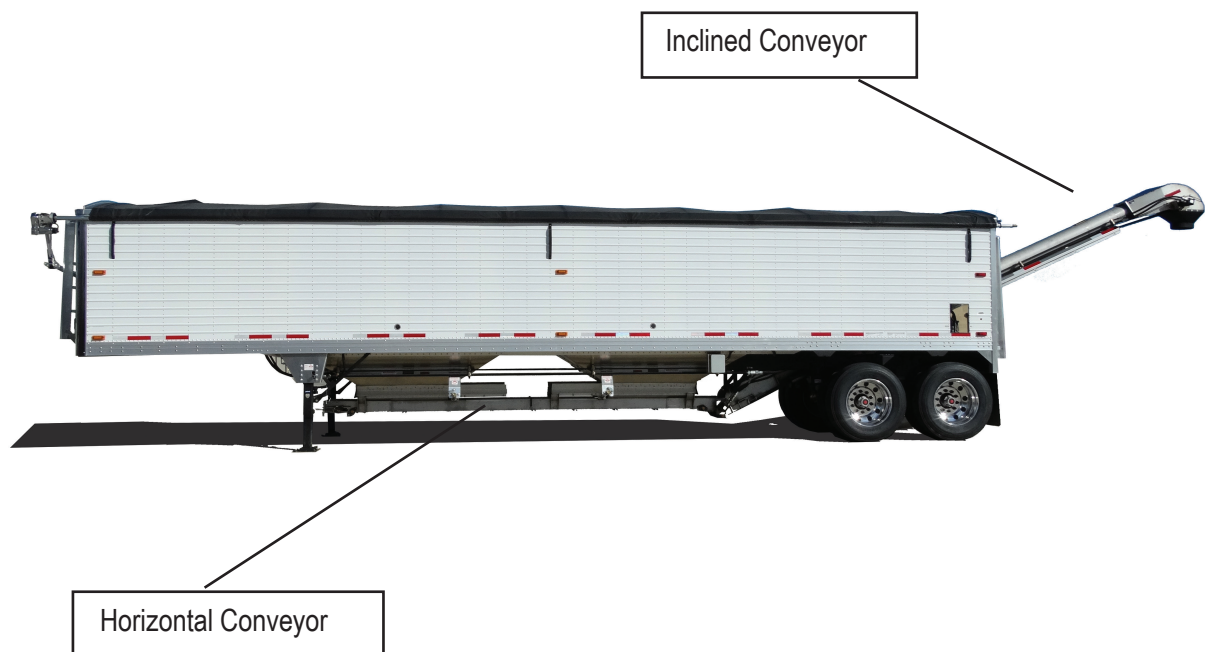
NEVER ATTEMPT TO USE THE TRAILER FOR THE MAJORITY OF THE BRAKING EFFORT BY BACKING OFF THE TRACTOR BRAKES. THIS IS ILLEGAL, UNSAFE, AND WILL CAUSE PREMATURE FAILURE OF THE TRAILER BRAKE SYSTEM. FAILURE TO FOLLOW THIS SAFETY WARNING COULD RESULT IN DEATH OR SERIOUS INJURY.

OPERATING YOUR TIMPTE TENDER



WARNING

AT NO TIME SHALL YOU TRY TO DISLODGE COMMODITY IN THE CONVEYOR WHILE THE SYSTEM IS OPERATING! DO NOT CHECK FOR OIL LEAKS WITH YOUR HANDS. NEVER WALK UNDER THE INCLINED CONVEYOR!! KEEP AWAY FROM OVERHEAD POWER LINES OR OTHER OBSTRUCTIONS WITH THE INCLINED CONVEYOR. KEEP ALL PERSONNEL CLEAR OF CONVEYOR SYSTEM DURING OPERATION, RAISING AND LOWERING OF THE CONVEYOR ETC.



TRAILER LOADING

- Roll tarp to open position and lock crank handle in place.
- Check trap doors for closure, locks and latches for proper engagement before loading.
- Position trailer to receive commodity.
- Set parking brake on the tractor prior to loading the commodity into the trailer.
- The trailer should be loaded evenly from front to rear, maintaining all state bridge laws.
DO NOT Overload the trailer as this action could void the trailer warranty.
- Use the air system air guage to determine legal load conditions. Calibrate the air gauge by comparing gauge pressure to loaded trailer scale weight.
- The tarp bows can be swung to the side to facilitate loading as needed. Be sure to use a safe, approved walkway or scaffold to reach and manipulate bows.
- Balance the load between front and rear hoppers.
- Roll the tarp closed and lock the crank handle into place before proceeding to another location.

TRAILER UNLOADING

Note: TimpTE Trailers are designed to transport free flowing commodity. Knock rails and pneumatic (air) hammer (vibrator) options are available to be installed to assist with the unloading of commodity, if needed. Speak with a TimpTE Sales Representative with any questions you may have with respect to knock rails and pneumatic (air) hammer options.

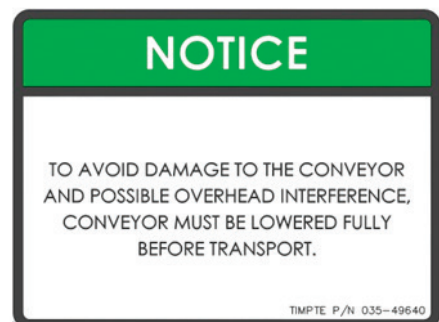
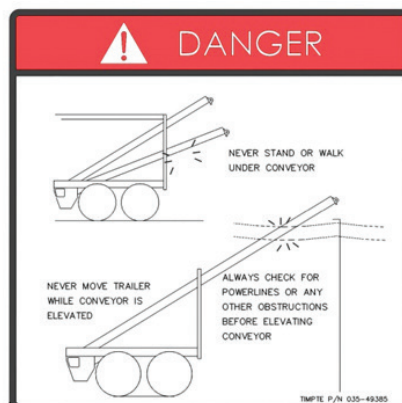
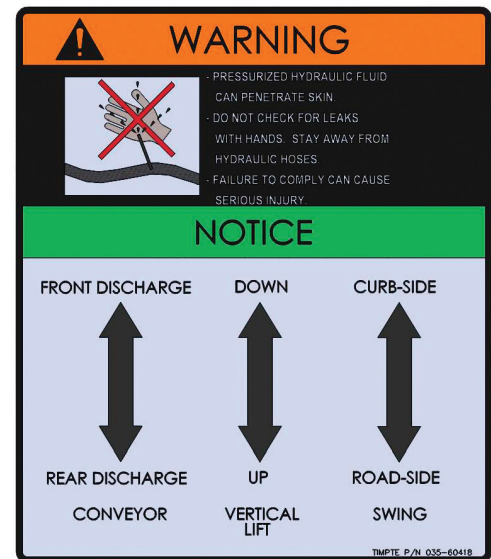
- Before positioning trailer to off load the commodity, confirm overhead clearance is adequate to prevent the auger from hitting power lines, trees, buildings, etc.
 - Trailer must be positioned to sit level.
- Open the tarp on your TimpTE trailer for ventilation.
- Verify that the hydraulic control levers are in the neutral position.
- Engage tractor wet kit, or self-contained power unit.
 - Do not exceed 30 PGM flow.
- Adjust the incline conveyor to the desired height by moving the vertical lift cylinder lever.
 - Pull out to raise the incline conveyor, and push in to lower.
 - See decal on side of trailer.
- Adjust the incline conveyor to the desired swing position, side to side by moving the swing cylinder lever.
 - Pull out to move the discharge to the road side or toward you, and push to move the discharge to the curb side or away from you.
 - See the decal on side of trailer.
- Adjust the incline conveyor to the desired position moving the appropriate lever. See decal on the side of the trailer.
- Push the lever in to discharge the commodity thru the rear incline conveyor.
- Pull the lever out to discharge the commodity out the bottom of the trailer at the front of the horizontal conveyor.
- Open the trap door for the compartment that you want discharged (see section "EZ-Flow Door Operation").
- When the trailer is unloaded, close the trap doors and stop the conveyors by returning the appropriate lever to the center or neutral position.
- Position the inclined conveyor to the lowest centered position before transporting.
- Disengage the tractor wet kit or self-contained power unit to stop the pumping of hydraulic fluid.



Conveyors On/Off

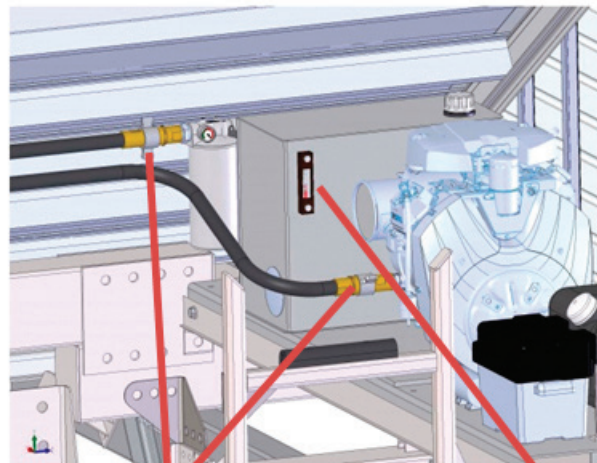
Incline Swing Side to Side

Incline Raise/Lower



SELF-CONTAINED POWER UNIT OPERATION

- At the rear of the trailer, locate the control panel for the self-contained power unit.
 - It is located on the road side of the trailer in the back above the trailer bogie.
- Verify that the hydraulic quick couplers on the self-contained power unit are fully engaged with the appropriate hoses.
- Verify that the hydraulic oil level is correct in the level indicator.
- Verify that the hydraulic control levers are in the neutral position.
- Start the self-contained power unit.
 - Verify the throttle is fully inward.
 - Pull the choke lever outward.
 - Turn the key to the "START" position, once the engine starts; allow the key to return to the "RUN" position.
 - After the engine is running, slowly press the choke lever inward until it is pressed in fully and the engine remains running.
 - Allow the engine to run for 1-2 minutes to warm up to operating temperature.
 - Pull the throttle cable fully outward to increase the RPM of the motor to operating speed.
- To pull the throttle cable, push the center red button and pull the black knob.
- Follow the procedures in the previous section "TRAILER UNLOADING" to unload the trailer.
- Once the trailer is unloaded, shut down the self-contained power supply.
 - Press the throttle cable fully inward to decrease the speed of the engine to idle position.
 - Turn the key to the "OFF" position.



Hydraulic quick couplers

Hydraulic level gauge



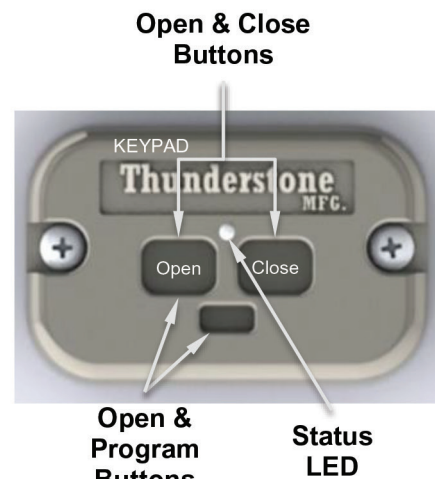
Key start

Choke

Throttle

PROGRAMMING REMOTE TO WORK WITH THE THUNDER ELECTRIC TARP SYSTEM

1. Power on the keypad controller on the front of the trailer by holding the “Open” and “Close” buttons on the keypad simultaneously for 5 seconds or until the white light illuminates to indicate the system is active.
2. Open the lid on the flip style remote and observe the buttons illuminate indicating the remote is active.
3. Repeat step 2 for each remote to be programmed. Up to four remotes can be programmed. Have all remotes ready for steps 4 & 5. Ignore if only one remote is to be programmed.
4. Press and hold the small **Program** & “Open” buttons on the keypad mounted on the trailer simultaneously until the light turns green. Release the buttons which will cause the status LED to quickly flash red/orange.
5. Press and hold the “TARP OPEN” button on the remote for 2 seconds OR until the red/orange flashing light momentarily turns white on the keypad, then release the button. Keypad light should then continue blinking red/orange.
6. Repeat step 6 for up to four remotes to be programmed. Ignore if only programming one remote.
7. Once all remotes are programmed press and release the program button to exit programming mode or keypad will also time-out after 10 seconds.
8. The keypad status LED should blink two sets of red indicating the remote(s) have been saved to memory.



Operating Remote with the Thunder Electric Tarp System

Powering on or off the electric tarp system.

- Open the lid on the remote and observe the buttons illuminate indicating the remote is active.
- Press and hold the “TARP OPEN” and “TARP CLOSE” buttons simultaneously on the remote for 3-5 seconds or until the keypad status LED on the front of the trailer has illuminated.
- Repeat the steps above to turn off the tarp system.

One Touch Operation - The one touch function is fully automated. The system will stop when fully opened or closed.

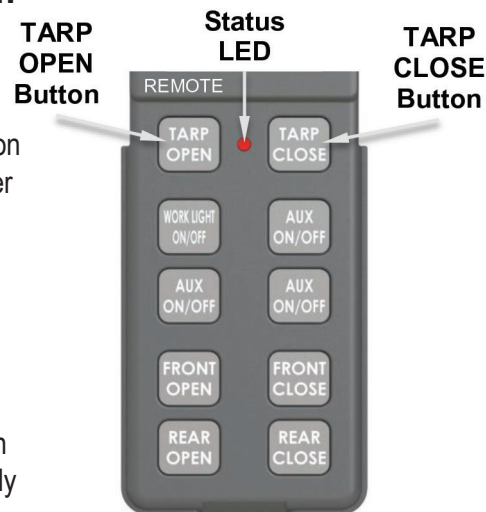
- Press and hold the desired directional button on the remote for 1 ½ seconds or until the keypad status light turns solid green on the front of the trailer. Release the button and the keypad status light will start flashing green indicating one touch operation. The tarp will travel in that direction automatically and stop when it is fully open or closed.

Incremental Operation

- To inch the tarp in either direction, press then release the desired directional button on the keypad or remote for less than 1 – 1 ½ seconds intermittently to inch the tarp in that direction.

Press and Hold operation

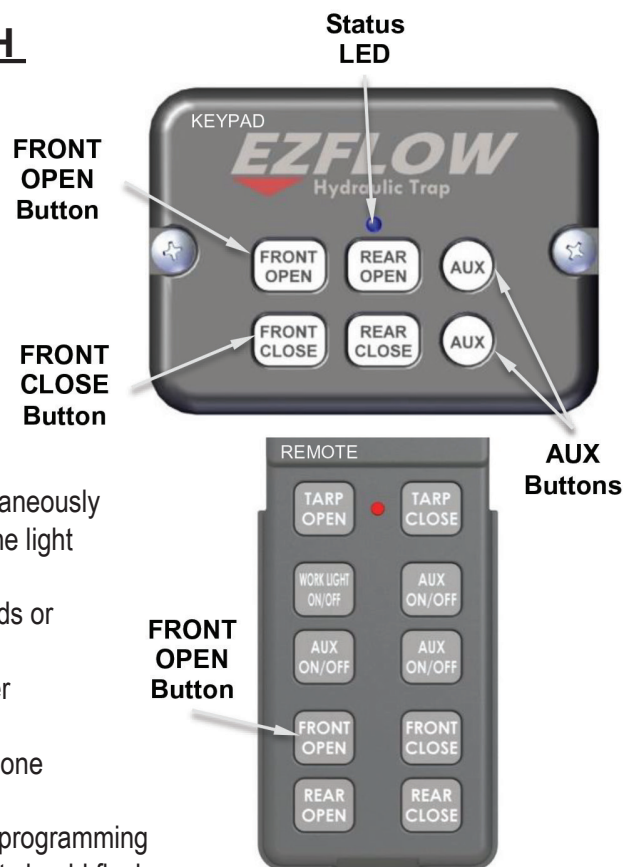
- Press and hold the desired directional button on the remote for more than 2 ½ seconds or until the status light turns from solid green to solid white on the front of the trailer. The tarp will continue to travel in that direction until you release the button.



CAUTION! - When any button on the remote is pressed, the status LED will flash rapidly indicating it is transmitting a signal. The status LED on the remote will flash continuously when the remote batteries have 25% charge left. Never travel with the tarp in a partially covered position. The trailer should always be covered when traveling. Always close the remote lid when not in use to prevent accidental button presses that can cause unwanted operation of the tarp or trap systems. When flip lid is in the closed position the remote is deactivated.

PROGRAMMING REMOTE TO WORK WITH THE EZ FLOW TRAP SYSTEM

1. Power on the keypad controller on the trailer by holding the **"FRONT OPEN"** and **"FRONT CLOSE"** buttons on the keypad simultaneously for 3-5 seconds or until the blue light illuminates to indicate the system is activated.
2. Open the flip lid on the remote and observe the illuminated buttons to indicate the remote is active.
3. Repeat step 2 for each remote to be programmed. Up to four remotes can be programmed. Have all remotes ready for steps 4 & 5. Ignore if only one remote is to be programmed.
4. Press and hold the two **"AUX"** buttons on the keypad controller simultaneously for 10 seconds until the blue flashing light stays solid then release. The light on the keypad controller should start flashing violet.
5. Press and hold the **"FRONT OPEN"** button on the remote for 2 seconds or until the blue flashing light on the keypad turns white then release the button. The keypad light on the trailer should then continue blinking violet.
6. Repeat step 5 for up to four remotes to be programmed. Ignore if only one remote is being programmed.
7. Once all remotes are programmed press the top **"AUX"** button to exit programming or let the system timeout after 10 seconds. The keypad controller light should flash two sets of red indicating the remotes have been saved.



Operating Remote with the EZ Flow Trap System

Powering up or down the system

- Open the remote flip lid and observe the buttons illuminate indicating the remote is active.
- Press and hold the **"FRONT OPEN"** and **"FRONT CLOSE"** buttons on the remote simultaneously for 3-5 seconds or until the blue light on the keypad controller illuminates to indicate the system is activated.
- Repeat the above steps to turn off the EZ Flow Trap System.

To use the front hopper doors

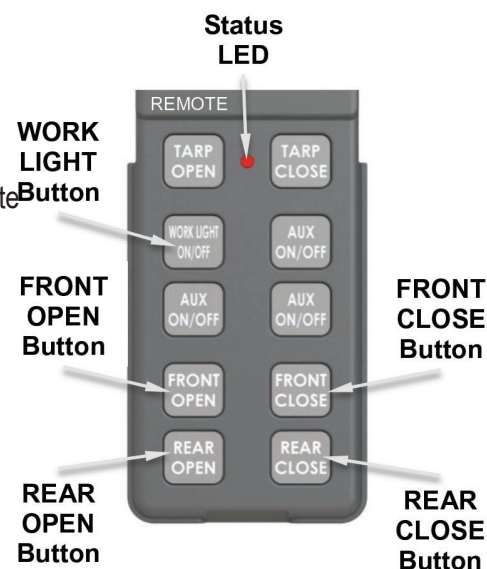
- Press and hold the desired directional button to open or close the front doors. The hopper door will travel in that direction until the button is released.

To use the rear hopper doors

- Press and hold the desired directional button to open or close the rear doors. The hopper door will travel in that direction until the button is released.

To control work lights (optional)

- On the trailer keypad press and release the top **"AUX"** button to turn on or off the worklights.
- On the remote press the **"WORKLIGHT ON/OFF"** button to turn on or off the worklights.



CAUTION! - When any button on the remote is pressed, the status LED will flash rapidly indicating it is transmitting a signal. The status LED on the remote will flash continuously when the remote batteries have 25% charge left. Always close the remote lid when not in use to prevent accidental button presses that can cause unwanted operation of the tarp or trap systems. When flip lid is in the closed position the remote is deactivated.

THUNDER ELECTRIC TARP SYSTEM.

MANUAL OPERATION

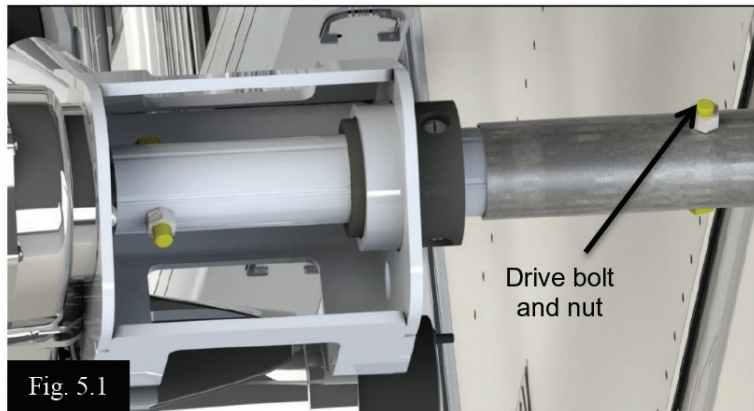
1. Remove the motor shaft drive nut and bolt assembly from the roll tube axle. See figure 5.1.
Note: Save the nut and bolt. If drive bolt will not come out due to excess tension from the drive motor, disconnect the motor leads and use jumper cables from a battery source to drive the motor in a direction that removes this tension.
2. Remove the manual tarp crank handle from the crank handle retainer on the side of the trailer as seen in figure 5.2.
3. Locate the spline on the tarp roll tube, rear of the trailer seen in figure 5.3.
4. Slide the tarp crank handle universal joint and roll tube drive spline together (rear of trailer) by pushing the universal joint in-place until fully engaged with the roll tube spline. See figure 5.4.
5. Roll the tarp open and closed with the crank handle.
6. When finished, return the handle to the tarp crank handle retainer on the side of the trailer for storage and/or transport.



CAUTION! - The front and rear arms are spring loaded and can shift when the bolts are removed. Use an OSHA approved work platform when performing any maintenance on the motor or arms.



WARNING! - Do not travel with the motor disengaged from the roll-tube as the motor may slide off and cause the arm to fall, causing trailer or tarp system damage. It is recommended that the motor and arm assembly be secured to the front ladder assembly with a bungee cord if the trailer must travel while tarp system is disengaged.



THUNDER TARP TROUBLESHOOTING GUIDE

Remote function not working.

1. Reset system by removing power trailer power connection for 15 seconds then reconnect.
2. Turn on the tarp system by pressing the (Open) & (Close) buttons simultaneously on the keypad for 3-5 seconds until the LED and buttons illuminate.
3. Test remote function.
4. If no function, reset system and reprogram remote per the remote programming instructions.
5. Also can be an indication that the trailer power connection is loose and needs reworked and tightened.

Tarp system will not power on.

1. Make sure that the 2-pole power cord is plugged into the trailer and has the proper polarity and voltage to the tarp system. Positive is on the top post.
2. Check that the tarp system circuit breaker near the tractor battery is reset, if applicable.
3. Turn on the tarp system by pressing the (Open) & (Close) buttons simultaneously on the keypad for 3-5 seconds until the LED and buttons illuminate.
4. Test the remote functions of the tarp system by pressing the (Open) & (Close) buttons simultaneously on the remote 3-5 seconds to verify keypad button failure.
5. Check for grease, dirt, and corroded connections at the battery terminals, circuit breaker and also at the trailer power receptacle plug and outlet.
6. Check for voltage on the back side of the 2-pole trailer receptacle. Also check for corrosion and looseness.
7. Check for proper connection of the communication cable between the inner control box and the RF keypad.
8. Unplug the power receptacle, wait 10 seconds, re-plug truck power and verify operation.

Tarp system powers on but does not function when pressing either (Open) or (Close), no flash codes are present.

1. Check for low voltage & loose connections.
2. Test the remote functions of the tarp system to verify keypad button failure.
3. Check for loose & corroded connections at the motor terminals and inspect the wires from the motor to the inner control box located in the nose of the trailer.
4. Unplug the power receptacle, wait 10 seconds, re-plug truck power and verify operation.

Tarp system does not function and a red/orange flashing light is present on the RF keypad, indicating an error code. See error code explanations below: (Codes will flash, pause, and repeat until problem is corrected.)

- a) **Three** flashes indicates an **Overheat Protection** issue. This typically occurs if the system has been started and stopped rapidly in a short period of time. Also, it can indicate increased drag in the tarp system causing excess amperage. Check that set screws in control box are tight. Re-check the tarp system after a cool down period.
- b) **Four** flashes indicates an **Over Voltage Protection** issue. Using a voltmeter, check the tractor batteries & alternator for voltage exceeding 15.5 volts.
- c) **Five** flashes indicates an **Under Voltage Protection** issue. Using a voltmeter, check the system for low voltage. Also check all connection points for looseness and corrosion including battery terminals, circuit breaker, power cord, and receptacle plug. Connect an alternate power source to verify.

- d) **Seven** flashes indicates there is not enough amperage or voltage to run the motor OR the drive motor windings are shorted. **MAY REQUIRE REMOVING POWER TO RESET.**
- (1) Connect an alternate power source to verify a low amperage/voltage problem.
 - (2) Make sure the battery is fully charged and the charging system on the truck or power supply is running and working properly.
- f) **Eight** flashes indicates com failure from the inner control box. Check com cable between RF keypad and inner control box for damage.

Tarp system does not make a full cycle or closes/opens intermittently.

1. **Two** flashes indicates an **overcurrent protection** issue which is normal if the tarp fully opened or closed. If not, check for obstructions in the operation of the tarp such as snow or ice buildup. This also could indicate increased drag in the tarp motor or other motor problems causing premature tarp stoppage.
2. Remove the motor terminals and connect motor to a battery source using jumper cables to determine if the motor labors or stops when direct power is applied.



WARNING! - Make sure all power supply to trailer is disconnected and the ground wire in the nose of the trailer and on the receiver box is disconnected prior to any welding on trailer. Failure to do so could result in damage to receiver control box.

EZ-FLOW HYDRAULIC DOOR TROUBLE SHOOTING GUIDELINES

EASY FLOW HYDRAULIC DOOR TROUBLE SHOOTING GUIDELINES		
Symptoms	Check List	Emergency Action
Power Unit not operating	Check Electrical connection at motor	Disconnect power wires to motor and use jumper cable to each pole on pump. Reverse cables to operate in other direction. Use manual override on blocking valve for selected door when operating power unit.
	Check Electrical connection at tractor	Remove plug on end of electric motor, insert a 6-mm hex wrench, and use a electric or cordless drill to turn power supply. While operating the pump push manual override on blocking valve for door to be opened.
	Check Electrical connection at two pole connector	
	Check electrical ground on trailer	
Pump runs but cylinders do not operate	Check to make sure hopper door switch was selected	Push manual override on blocking valve while operating power unit
	Check electrical connection to blocking valves	Replace blocking valve coil and cartridge
	Check reservoir fluid level	Fill reservoir with Biodegradable hydraulic fluid
	Check relief valve setting on power unit, relief set to low	See Operator Manual for "Adjusting Pressure Relief Valves"
Cylinders "spongy" or "Jerking" when opening	Check reservoir fluid level	Fill reservoir with Biodegradable hydraulic fluid
	Check for air present in system	Bleed system/cycle system to remove air
	Check for loose fittings	Tighten fittings and cycle system to remove air
Hose failure	Find failed hose and inspect all hoses for wear or leaks	Replace damaged hose and fill reservoir with Biodegradable hydraulic oil
		Disconnect cylinder rod ends and use a Come-A-Long or winch to pull door open
Electric circuit keeps tripping	Check Electrical connections and wiring for shorts or loose connections	Fix or tape shorting area
	Check tractor for undersize circuit breaker in electrical system	Remove circuit breaker from system. Verify circuit breaker locations in system.
	Check relief valve setting on pump, relief set to high	See Operator Manual for "Adjusting Pressure Relief Valves"
Radio Receiver not working/manual switches working	Check electrical connections and wiring for loose or corroded connections. Getting voltage drop though system	Clean or tighten connection points
	Check ground connection on trailer	Battery required to operate system
	Using battery charger without battery to test system	
	Check battery voltage	Replace or clean power source
Door Open/Close Slowly	31" Stoke Ag door operates at 15 to 17 Seconds to open/Close	Clean or tighten connection points. Check for low voltage.
	39" Stoke Standard door operates at 18 to 20 Seconds to open/Close	See Operator Manual for "Adjusting Pressure Relief Valves"
Door doesn't close all the way	Something blocking the door	Remove blockage from trap door
	Nothing blocking the door	Adjust cylinder rod
Door creeping open while sitting	Check for air present in system	Bleed system/cycle system to remove air
Wires getting hot	Check to make sure power cord is wired correctly with positive and negative connections	Rewire properly to insure positive and negative are correct
		If wires are damaged replace wiring harness

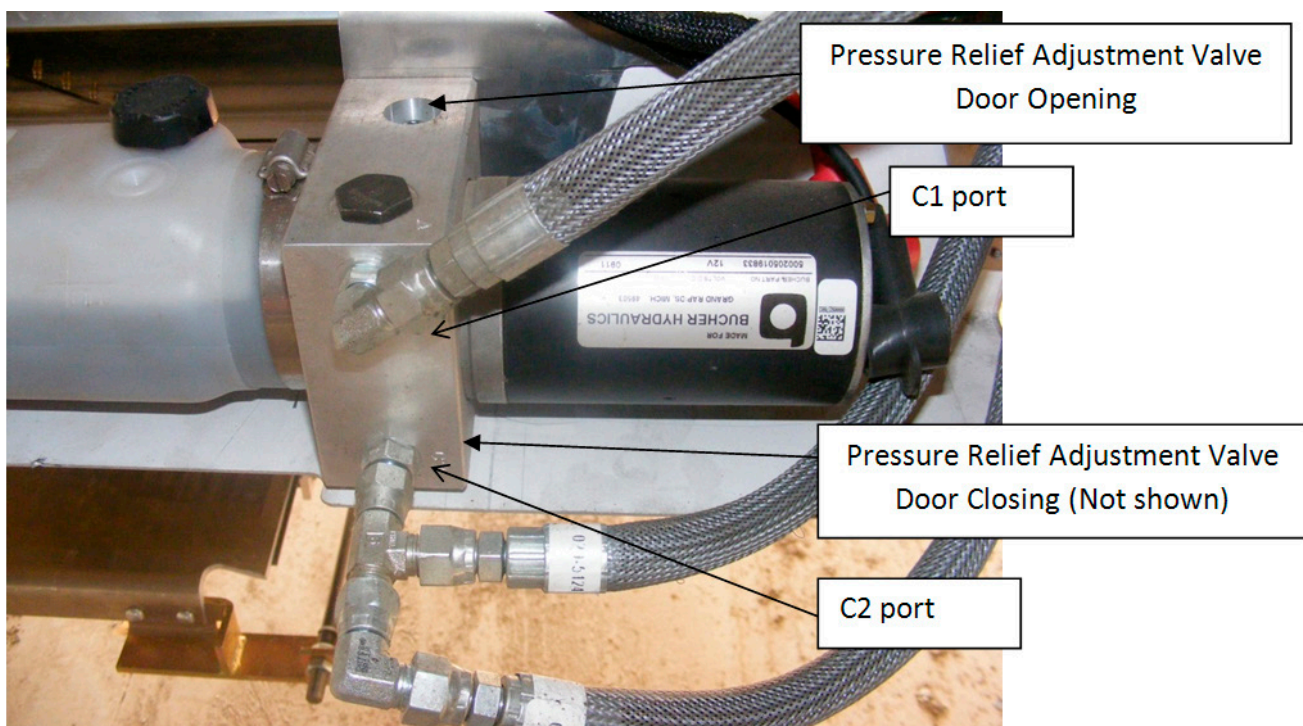
PRESSURE RELIEF ADJUSTMENT

The hydraulic power supply pump is equipped with two pressure relief valves to maximum system pressure at a safe level. These relief valves are located on each side of the pump, 180 degrees from each other. At the hose connections the ports on side of the pump are marked with "C1" and "C2". The pressure relief on the "C1" side sets the pressure for opening the doors and the relief on the "C2" side sets the pressure for closing.

When testing or making adjustments on the pressure relief valve system a gauge in both ports of the pump is required to ensure the most accurate pressure setting. To adjust pressure relief valves:

Setting Relief Valves with Pressure Gauges:

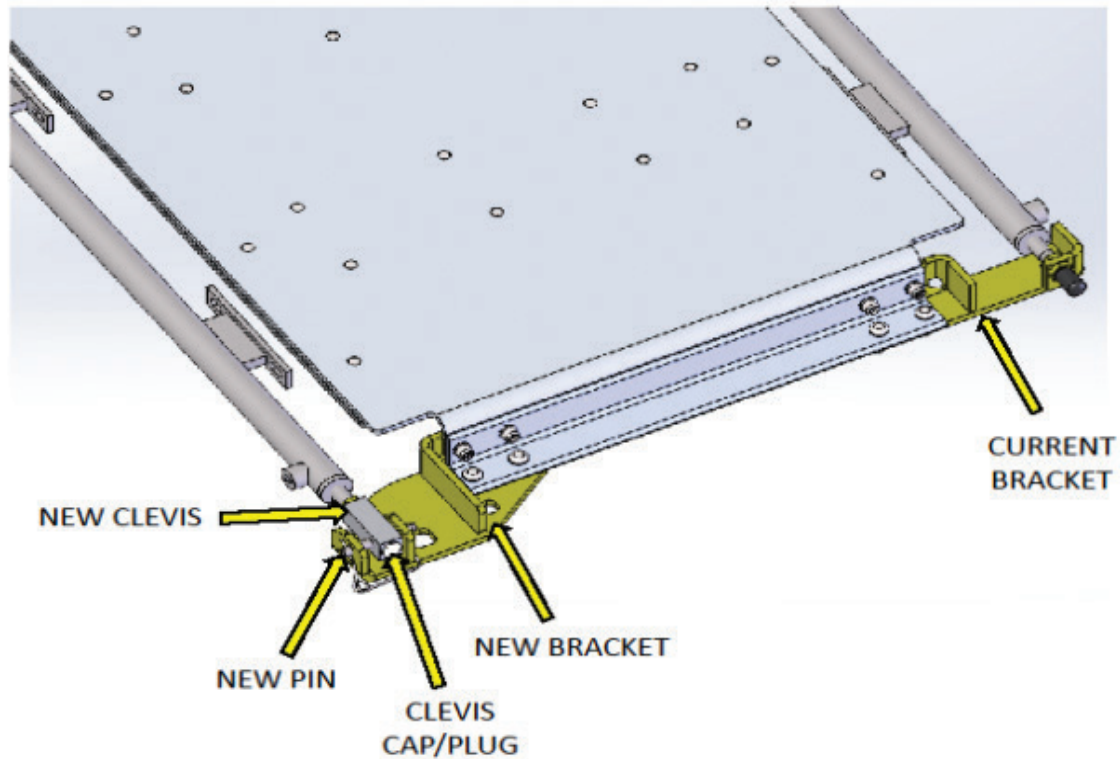
1. Insert pressure gauges in each pump port "C1" and "C2".
2. A Pressure Relief valve is located on each side of the pump. Use 9/16" socket and loosen the jamnut on each relief. Do not remove relief valve.
3. Use a 3/16" hex head wrench and turn the relief clockwise to increase pressure setting, counter clockwise to reduce the pressure. Approximately ¼ turn or 90 degrees equals 250 psi adjustments.
4. Operate the system until the cylinder is "dead headed" (cylinder at full stroke or fully retracted) and note the pressure on the gauge. Pumps from factory are preset at 2500 psi.
5. Cycle cylinders in both directions until pressure setting are achieved on both reliefs.
6. Tighten jam nuts and remove gauges.
7. Cycle system to remove any air that may have entered the lines when the gauges were removed.



Setting Reliefs Without Gauges:

1. A Pressure Relief valve is located on each side of the pump. Use 9/16" socket and loosen the jam nut on each relief. Do not remove relief valve.
2. Use a 3/16" hex head wrench and turn the relief clockwise to carefully bottom out relief valve. Do not tighten. Tightening relief valve can damage the valve seat.
3. Turn relief valve counter clockwise 2½ revolutions. Tighten jam nuts. This will set the pressure at approximately 2500 psi range. Approximately ¼ turn or 90 degrees equals 250 psi adjustment.

EZ-FLOW QUICK RELEASE SYSTEM



Quick Release Operations

1. Release pressure at poppet valve per decal (shown above)
2. Remove spring from pin (unlatch pin retainer)
3. Remove pin from clevis and free door brackets from cylinder
4. Open trap door with emergency opener system

TRACTOR PTO SYSTEM “WET KIT” SPECIFICATIONS

1. Gear pump capable at 20-28 GPM minimum for 2 hose connection system at 1000-1200 engine rpm.
 2. PTO sized at approximately 100% -130% of needed flow.
 3. Reservoir capacity of 30 gallons.
 4. Pressure capacity of 3000 PSI.
 5. Clean, filtered hydraulic oil with an ISO 32 rating. (For cold climate operation, an ISO 22 or and ISO 15 rated oil is permissible.)
 6. 1 Inch wing style connectors: Parker 6100, Aeroquip 5100, or Thompkins FB-16 series or equivalent.
- Wing Coupler, 1" Male - 029-57862
Wing Coupler, 1" Female - 029-57863

TENDER HYDRAULIC SYSTEM MAINTENANCE

It is important that the system has clean filtered oil. Make sure the system has a filter in the pressure line.

Change this element after the first 40 hours of use and then a minimum of semi-annually thereafter.

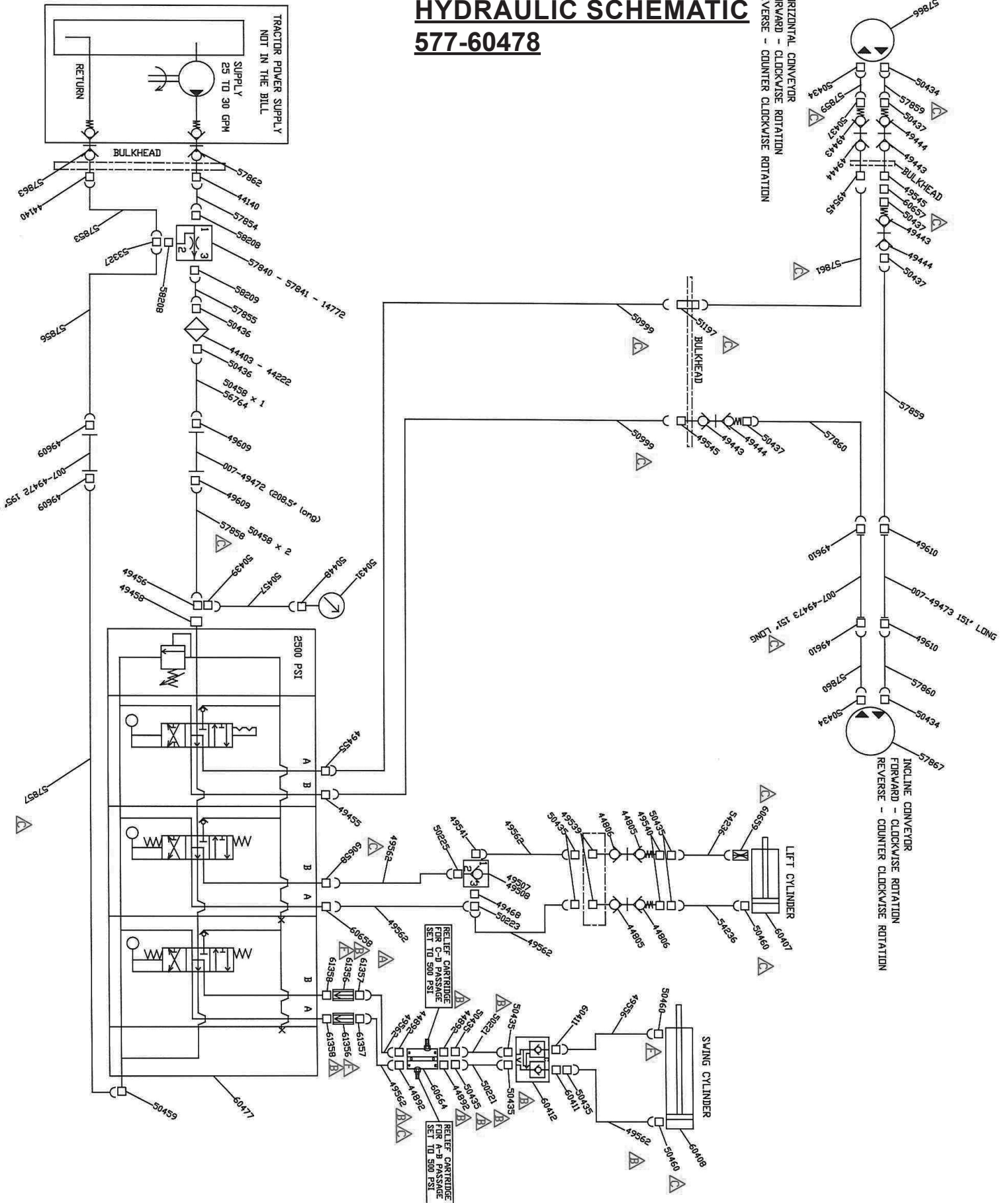


Self-Contained Hydraulic
Power Unit
Filter #: 029-53656



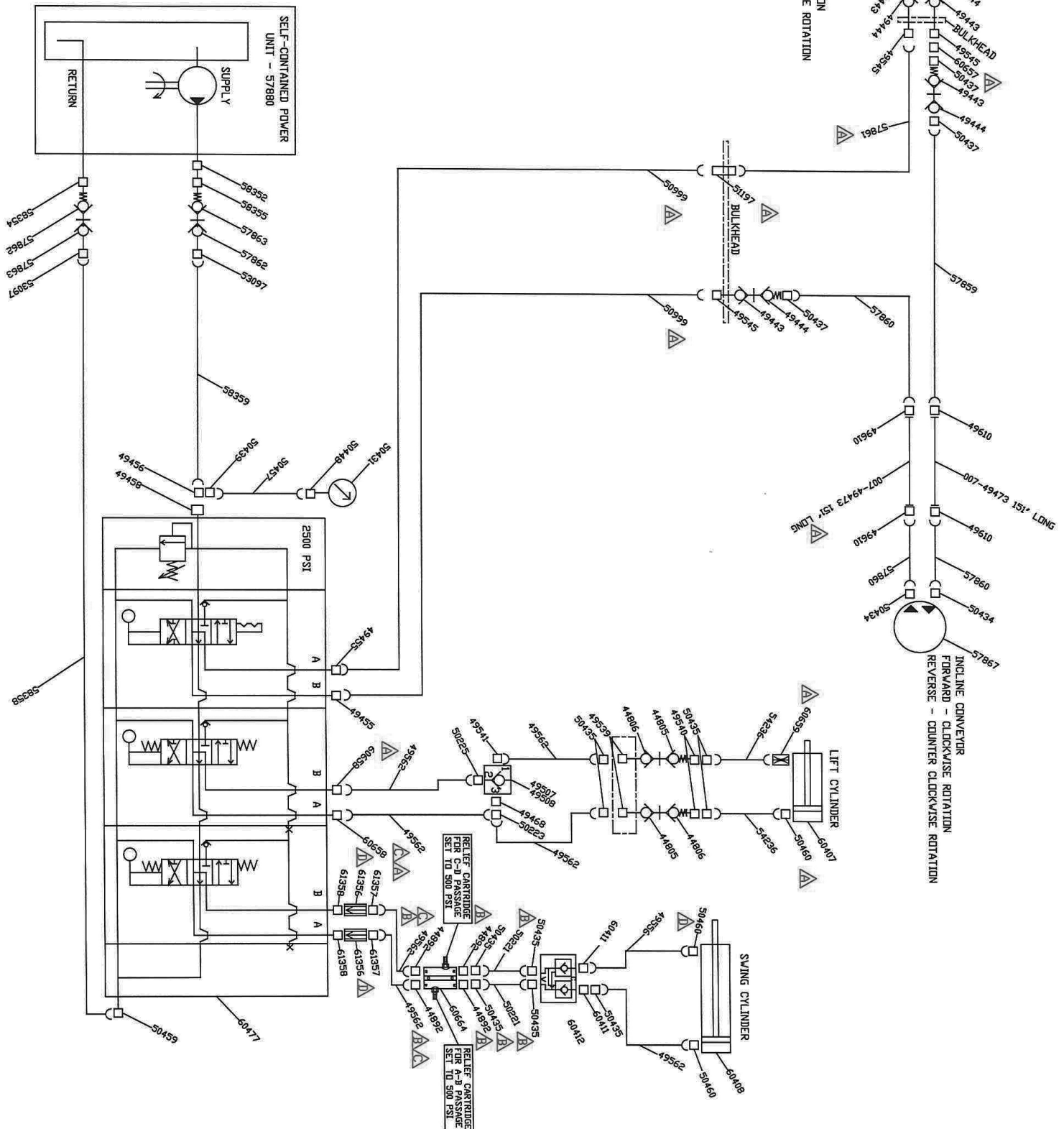
Trailer Filter for a 30
Hydraulic PTO System
Filter #: 029-45322

TIMPTTE TENDER TRAILER
HYDRAULIC SCHEMATIC
577-60478



#	Part Number	Qty	Description
1	007-49472	2	TUBE SS 1"OD X .095 WALL X 20' SS HYD TUBING ASTM A269 304 OR 316 SS TUBING
2	007-49473	2	TUBE SS 3/4"OD X.065WALL X 20' SS HYD TUBING ASTM A269 304 OR 316 SS TUBING
3	029-44140	2	BLKD FITTING HYD-VBT/VB 1" MNPT X 1" MJIC #2706LN-16-16
4	029-44403	1	PRESSURE FILTER-HYD TBF VBT/VB FILTER-HYD SYS #MFM3HC750120A4.0/12B7
5	029-44805	2	COUPLER FEMALE HYD 3/8" QUICK COUPLER
6	029-44806	2	COUPLER MALE HYD 3/8" QUICK COUPLER
7	029-44892	4	HYD FTG-STRAIGHT ADAPTER HYD PRESSURE GAUGE TO 3/8 HOSE FG-#6400-6-12 ADAPTR
8	029-49441	2	CLAMP PAIR TWIN CLAMP 3/4" HYD TUBE CLAMP PAIR
9	029-49443	4	QUICK DISCONNECT MALE 3/4" #HNV-34-NPT-M
10	029-49444	4	QUICK DISCONNECT FEMALE 3/4" VENDOR #HNV34NPTF
11	029-49455	2	ADAPTER STRAIGHT 3/4-5/8 JIC/O-RING 3/4" / 5/8" VENDOR #6400-12-10
12	029-49456	1	ADAPTER TEE 3/4"-3/4" JIC/ FJIC/JIC 3/4" / 3/4" VDR #6602-12-12
13	029-49458	1	ADAPTER STRAIGHT 3/4" / 3/4" JIC/O-RING FTGS
14	029-49468	1	ADAPTER STRAIGHT JIC/O-RING 3/8"/1/4" VENDOR #6400-6-4 DMB
15	029-49474	4	CLAMP PAIR TWIN CLAMP 1" CONVEYOR HYD TUBE SUPPORT
16	029-49507	1	CARTRIDGE PILOT OPERATED CHECK VALVE-HYD SYSTEM VENDOR #4CK30-1-S
17	029-49508	1	BODY PILOT OPERATED CHECK VALV CARTRIDGE BODY HYD SYS VENDOR B10536
18	029-49539	2	ADAPTER BULKHEAD 3/8" / 3/8" JIC/NPT FTGS VENDOR #2706LN-6-6
19	029-49540	2	ADAPTER STRAIGHT 3/8" / 3/8" JIC/NPT FTGS VENDOR #2404-6-6
20	029-49541	1	ADAPTOR ELBOW 90° 3/4" MJIC - 3/4" FJIC VENDOR #6500-12-12
21	029-49545	3	ADAPTER BULKHEAD 3/4" JIC/NPT 3/4"-3/4" VDR # 2706LN-12-12
22	029-49552	5	CLAMP PAIR TWIN CLAMP 3/8" HYD TUBE SUPPORT
23	029-49556	1	HOSE AY 3/8" 60" LONG FJIC/ FJIC FITTINGS 3/8" / 3/8" VENDOR #6M3K-6FJX-6FJX-60
24	029-49562	7	HOSE AY HYD 3/8" 3000 PSI 6JIC-6JIC 26" LG
25	029-49609	4	HYD FTG - SS TUBE END AY 1" INCLUDES NUT/SLEEVE/JIC FTG IN AY - VDR #100-16-F16
26	029-49610	4	HYD FTG - SS TUBE END AY 3/4" INCLUDES NUT/SLEEVE/JIC FTG IN AY - VDR #100-12-F12
27	029-50221	2	HOSE AY HYD 3/8" 3000 PSI 12" LG 6JIC-6JIC
28	029-50223	1	ADAPTER TEE JIC TO F SWIVEL JIC TO JIC 6602-6-6-6 DMB
29	029-50431	1	PRESSURE GAUGE HYD CFIP210E
30	029-50434	4	ADAPTER ELBOW 45 DEGREE JIC TO O-RING 6802-12-10
31	029-50435	9	ADAPTOR ELBOW 90 DEGREE JIC TO FJIC 6500-6-6 DMB
32	029-50436	2	ADAPTER STRAIGHT JIC TO O-RING 6400-16-12
33	029-50437	4	ADAPTOR STRAIGHT JIC TO NPT 2404-12-12
34	029-50439	1	ADAPTER STRAIGHT REDUCER JIC TO JIC 2406-12-4
35	029-50457	1	HOSE AY 1/4 20" LONG 1/4 JIC FEMALE ENDS 4M3K-4FJX-4FJX-20
36	029-50458	4	CLAMP PAIR HOSE 1-1/4" HYD T5125-PP-TCP-TWP
37	029-50459	1	ADAPTOR ELBOW 90° 3/4" JIC TO 3/4" O-RING
38	029-50460	3	ADAPTOR ELBOW 90 DEGREE JIC TO O-RING 6801-6-8
39	029-50999	2	HOSE AY 3/4" X 29" LONG 3/4" FJIC 3/4" 90 DEGREE FJIC VDR# 12M3K-12FJX-12FJX90M-29
40	029-51197	1	ADAPTOR BULKHEAD 3/4" STRAIGHT 12MJIC-12MJIC W/ LOCK NUT
41	029-51229	4	CLAMP PAIR TWIN CLAMP 1-1/2" DIAMETER HYD LINES
42	029-53327	1	FITTING HYD BRANCH TEE
43	029-54236	2	HOSE AY HYD 3/8 X 90 3000 PSI 3/8 FJIC TO 3/8 FJIC 6M3K-6FJX-6FJX-90
44	029-56764	1	HOSE AY HYD 1" X 126 3000 PSI 1" FJIC TO 1" FJIC 16M3K-16FJX-16FJX-126
45	029-57840	1	CARTRIDGE CONTROL PILOT OPERATED CHECK VALVE SCREW IN
46	029-57841	1	MANIFOLD BLOCK VALVE BODY #16 ORB PORTED T-17A CAVITY
47	029-57853	1	HOSE AY HYD 1" X 14" 3000 PSI 1" FJX 90° MED TO 1" FJX 16M3K-16FJX90M-16FJX-14
48	029-57854	1	HOSE AY HYD 1" X 22" 3000 PSI 1" FJX 90° MED TO 1" FJX 16M3K-16FJX90M-16FJX-22
49	029-57855	1	HOSE AY HYD 1" X 38" 3000 PSI 1" FJX TO 1" FJX 16M3K-16FJX-16FJX-38
50	029-57856	1	HOSE AY HYD 1" X 162" 3000 PSI 1" FJX TO 1" FJX 16M3K-16FJX-16FJX-162
51	029-57857	1	HOSE AY HYD 3/4 X 112 3000 PSI 1" FJX TO 3/4" FJX 90° MED 12M3K-12FJX90M-16FJX-112
52	029-57858	1	HOSE AY HYD 3/4" X 104" 1" FJX TO 3/4" FJX 12M3K-12FJX-16FJX-104
53	029-57859	3	HOSE AY HYD 3/4 X 49 3000 PSI 3/4" FJX TO 3/4" FJX 12M3K-12FJX-12FJX-49
54	029-57860	3	HOSE AY HYD 3/4 X 44 3000 PSI 3/4" FJX TO 3/4" FJX 12M3K-12FJX-12FJX-44
55	029-57861	1	HOSE AY HYD 3/4 X 76 3000 PSI 3/4" FJX TO 3/4" FJX 12M3K-12FJX-12FJX-76
56	029-57862	1	COUPLER QUICK CONNECT MALE 1" SCREW TO CONNECT BRASS
57	029-57863	1	COUPLER QUICK CONNECT FEMALE 1" SCREW TO CONNECT BRASS
58	029-57866	1	MOTOR HYD 4.9 CU-IN/REVOLUTION 2 BOLT MOUNTING 7/8" O-RING PORTS TF0080AS02AAAB
59	029-57867	1	MOTOR HYD 8.6 CU-IN/REVOLUTION 2 BOLT MOUNTING 7/8" O-RING PORTING TF0140AS02AAB
60	029-58208	2	ADAPTER STRAIT 1" TO 1" MJIC TO M 'O' RING VENDOR #6400-16-16 STRT UNION
61	029-58209	1	ADAPTER ELBOW 90 DEG 1" TO 1" MJIC TO M'O-RING 6801-16-16 90 DEGREE UNION
62	029-60407	1	CYLINDER, HYD, 3X10X1.375 DA, PRINCE 3000 PSI, B300100ABAAA07B
63	029-60408	1	CYLINDER, HYD, 2X20X1.250 DA, PRINCE 3000 PSI, B200200ABAAA07B
64	029-60411	4	ADAPTOR, STRAIGHT, 2404-6-4
65	029-60412	1	VALVE, CYLINDER LOCKING CHECK VAVLE, 2984041
66	029-60477	1	VALVE HYD 3 SPOOL-3 POSITION MONOBLOCK VALVE COMBO TENDER TRAILER W/SWING
67	029-60657	1	ADAPTER STRAIGHT JIC TO NPT 3/4 NPTM X 3/4 JICF SWIVEL 6505-12-12
68	029-60658	2	ADAPTER REDUCER PRINC HYD VALVES FTG 6400-6-10
69	029-60659	1	ADAPTOR ELBOW 90 DEGREE JIC TO O-RING 6801-6-8-R0.040
70	029-60664	1	VALVE, HYD, CUSHION, 3/4 ORING PRINCE DRV-1LL
71	029-61356	2	PM-R-19 - 0.041 FLOW RESTRICTOR/CHECK VALVE
72	029-61357	2	2404-6-8 ADAPTER 9/16"-18 TO 1/2"-14
73	029-61358	2	6401-10-8 ADAPTER 7/8"-14 TO 1/2"-14
74	032-01403	15	NUT 5/16-18 P-LOCK HXHD
75	032-13114	4	BOLT 1/4-20 X 2 GRD 5 HXHD DMB
76	032-41673	4	HUCKLOK 1/4" #7 GRIP .187-.437 HKLP-R8-7U
77	032-44653	4	NUT 1/4-20 NYLOCK SS DMB
78	032-44924	3	BOLT 5/16-18 X 3" HXHD USED W/CLAMP PAIRS -TBF STL TUBING RUN
79	038-42373	5	HYD FLUID-AW32(55GALLON) SERVICE PRO UNIVERSAL
80	089-14772	1	CHANNEL HAT 5" 96W AG
81	577-44222	1	BRACKET AY FILTER MOUNT TBF HYD

SELF-CONTAINED TIMPTE TENDER TRAILER HYDRAULIC SCHEMATIC 577-60429



#	Part Number	Qty	Description
1	007-49473	2	TUBE SS 3/4"OD X.065WALL X 20' SS HYD TUBING ASTM A269 304 OR 316 SS TUBING
2	029-44805	2	COUPLER FEMALE HYD 3/8" QUICK COUPLER
3	029-44806	2	COUPLER MALE HYD 3/8" QUICK COUPLER
4	029-44892	4	HYD FTG-STRAIGHT ADAPTER HYD PRESSURE GAUGE TO 3/8 HOSE FG-#6400-6-12 ADAPTR
5	029-49441	2	CLAMP PAIR TWIN CLAMP 3/4" HYD TUBE CLAMP PAIR
6	029-49443	4	QUICK DISCONNECT MALE 3/4" #HNV-34-NPT-M
7	029-49444	4	QUICK DISCONNECT FEMALE 3/4" VENDOR #HNV34NPTF
8	029-49455	2	ADAPTER STRAIGHT 3/4-5/8 JIC/O'RING 3/4"/ 5/8" VENDOR #6400-12-10
9	029-49456	1	ADAPTER TEE 3/4"-3/4" JIC/ FJIC/JIC 3/4" / 3/4" VDR #6602-12-12
10	029-49458	1	ADAPTER STRAIGHT 3/4" / 3/4" JIC/O-RING FTGS
11	029-49468	1	ADAPTER STRAIGHT JIC/O-RING 3/8"/1/4" VENDOR #6400-6-4 DMB
12	029-49474	4	CLAMP PAIR TWIN CLAMP 1" CONVEYOR HYD TUBE SUPPORT
13	029-49507	1	CARTRIDGE PILOT OPERATED CHECK VALVE-HYD SYSTEM VENDOR #4CK30-1-S
14	029-49508	1	BODY PILOT OPERATED CHECK VALV CARTRIDGE BODY HYD SYS VENDOR B10536
15	029-49539	2	ADAPTER BULKHEAD 3/8" / 3/8" JIC/NPT FTGS VENDOR #2706LN-6-6
16	029-49540	2	ADAPTER STRAIGHT 3/8" / 3/8" JIC/NPT FTGS VENDOR #2404-6-6
17	029-49541	1	ADAPTOR ELBOW 90° 3/4" MJIC - 3/4" FJIC VENDOR #6500-12-12
18	029-49545	3	ADAPTER BULKHEAD 3/4" JIC/NPT 3/4"-3/4" VDR # 2706LN-12-12
19	029-49552	5	CLAMP PAIR TWIN CLAMP 3/8" HYD TUBE SUPPORT
20	029-49556	1	HOSE AY 3/8" 60" LONG FJIC/ FJIC FITTINGS 3/8" / 3/8" VENDOR #6M3K-6FJX-6FJX-60
21	029-49562	5	HOSE AY HYD 3/8" 3000 PSI 6JIC-6JIC 26" LG
22	029-49610	4	HYD FTG - SS TUBE END AY 3/4" INCLUDES NUT/SLEEV/JIC FTG IN AY - VDR #100-12-F12
23	029-50221	2	HOSE AY HYD 3/8" 3000 PSI 12" LG 6JIC-6JIC
24	029-50223	1	ADAPTER TEE JIC TO F SWIVEL JIC TO JIC 6602-6-6-6 DMB
25	029-50431	1	PRESSURE GAUGE HYD CFIP210E
26	029-50434	4	ADAPTER ELBOW 45 DEGREE JIC TO O-RING 6802-12-10
27	029-50435	9	ADAPTOR ELBOW 90 DEGREE JIC TO FJIC 6500-6-6 DMB
28	029-50437	4	ADAPTOR STRAIGHT JIC TO NPT 2404-12-12
29	029-50439	1	ADAPTER STRAIGHT REDUCER JIC TO JIC 2406-12-4
30	029-50448	1	ADAPTER STRAIGHT JIC TO NPT 2405-4-4
31	029-50457	1	HOSE AY 1/4 20" LONG 1/4 JIC FEMALE ENDS 4M3K-4FJX-4FJX-20
32	029-50458	1	CLAMP PAIR HOSE 1-1/4" HYD T5125-PP-TCP-TWP
33	029-50459	1	ADAPTOR ELBOW 90° 3/4" JIC TO 3/4" O-RING
34	029-50460	3	ADAPTOR ELBOW 90 DEGREE JIC TO O-RING 6801-6-8
35	029-50999	2	HOSE AY 3/4" X 29" LONG 3/4" FJIC 3/4" 90 DEGREE FJIC VDR# 12M3K-12FJX-12FJX90M-29
36	029-51197	1	ADAPTOR BULKHEAD 3/4" STRAIGHT 12MJIC-12MJIC W/ LOCK NUT
37	029-51229	4	CLAMP PAIR TWIN CLAMP 1-1/2" DIAMETER HYD LINES
38	029-53097	2	ADAPTOR STRAIGHT JIC TO NPT 2404-16-16
39	029-54236	2	HOSE AY HYD 3/8 X 90 3000 PSI 3/8 FJIC TO 3/8 FJIC 6M3K-6FJX-6FJX-90
40	029-57859	3	HOSE AY HYD 3/4 X 49 3000 PSI 3/4" FJX TO 3/4" FJX 12M3K-12FJX-12FJX-49
41	029-57860	3	HOSE AY HYD 3/4 X 44 3000 PSI 3/4" FJX TO 3/4" FJX 12M3K-12FJX-12FJX-44
42	029-57861	1	HOSE AY HYD 3/4 X 76 3000 PSI 3/4" FJX TO 3/4" FJX 12M3K-12FJX-12FJX-76
43	029-57862	2	COUPLER QUICK CONNECT MALE 1" SCREW TO CONNECT BRASS
44	029-57863	2	COUPLER QUICK CONNECT FEMALE 1" SCREW TO CONNECT BRASS
45	029-57866	1	MOTOR HYD 4.9 CU-IN/REVOLUTION 2 BOLT MOUNTING 7/8" O-RING PORTS TF0080AS02AAAB
46	029-57867	1	MOTOR HYD 8.6 CU-IN/REVOLUTION 2 BOLT MOUNTING 7/8" O-RING PORTING TF0140AS02AAB
47	029-58352	1	ADAPTER STRAIGHT 5/8" ORM X 3/4" ORF 6410-10-12
48	029-58354	1	ADAPTER STRAIGHT 1-1/4" NPTM X 1" NPTM 5404-20-16
49	029-58355	1	ADAPTER STR 3/4 ORM X 1" NPTM 6401-12-16
50	029-58358	1	HOSE AY HYD 3/4 X 144 3000 PSI 1" FJX TO 3/4" FJX 90° MED 12M3K-12FJX90M-16FJX-144
51	029-58359	1	HOSE AY HYD 3/4 X 120 3000 PSI 1" FJX TO 3/4" FJX 12M3K-12FJX-16FJX-120
52	029-60407	1	CYLINDER, HYD, 3X10X1.375 DA, PRINCE 3000 PSI, B300100ABAAA07B
53	029-60408	1	CYLINDER, HYD, 2X20X1.250 DA, PRINCE 3000 PSI, B200200ABAAA07B
54	029-60411	4	ADAPTOR, STRAIGHT, 2404-6-4
55	029-60412	1	VALVE, CYLINDER LOCKING CHECK VAVLE, 2984041
56	029-60477	1	VALVE HYD 3 SPOOL-3 POSITION MONOBLOCK VALVE COMBO TENDER TRAILER W/SWING
57	029-60657	1	ADAPTER STRAIGHT JIC TO NPT 3/4 NPTM X 3/4 JICF SWIVEL 6505-12-12
58	029-60658	2	ADAPTER REDUCER PRINC HYD VALVES FTG 6400-6-10
59	029-60659	1	ADAPTOR ELBOW 90 DEGREE JIC TO O-RING 6801-6-8-R0.040
60	029-60664	1	VALVE, HYD, CUSHION, 3/4 ORING PRINCE DRV-1LL
61	029-61356	2	PM-R-19 - 0.041 FLOW RESTRICTOR/CHECK VALVE
62	029-61357	2	2404-6-8 ADAPTER 9/16"-18 TO 1/2"-14
63	029-61358	2	6401-10-8 ADAPTER 7/8"-14 TO 1/2"-14
64	032-01403	15	NUT 5/16-18 P-LOCK HXHD
65	032-13114	4	BOLT 1/4-20 X 2 GRD 5 HXHD DMB
66	032-44653	4	NUT 1/4-20 NYLOCK SS DMB
67	032-44924	3	BOLT 5/16-18 X 3" HXHD USED W/CLAMP PAIRS -TBF STL TUBING RUN
68	035-57880	1	POWER UNIT ASSEMBLY HYDRAULIC SELF-CONTAINED EHA
69	038-42373	30	HYD FLUID-AW32(55GALLON) SERVICE PRO UNIVERSAL

TENDER HYDRAULIC TESTING PROCEDURE

EQUIPMENT:

1. One Flow Meter Assembly with 1-Inch Quick Disconnects
2. Four tee fittings with pressure gauges:
 - a. Two each ½-inch JIC Tee for horizontal/lower conveyor
 - b. Two each ¾-inch JIC Tee for incline/upper conveyor



3. **ONE EACH OPEN END WRENCH:**
 - A. **9/16-INCH**
 - B. **7/8-INCH**
 - C. **15/16-INCH**
 - D. **1-INCH**
 - E. **1-1/4 INCH**

INSTALLATION:

Test Gauges – Horizontal/Lower Conveyor

1. Disconnect horizontal conveyor return hose from the hydraulic motor using a 15/16-inch open end wrench. Return hose is connected the top port of the hydraulic motor to upper stainless steel tube on the horizontal conveyor. Connect the female end of the ½-inch JIC test tee with gauge at the fitting on the hydraulic motor. Connect the disconnected return hose end to the male side of the test Tee. Tighten tee fitting with 7/8-inch open end wrench and hose end with a 15/16-inch open end wrench. Position gauge to be visible and tighten gauge fitting with a 9/16-inch open end wrench.

2. Repeat procedure for horizontal conveyor pressure line. Pressure hose is connected to the bottom port of the hydraulic motor to the lower stainless steel tubing on the horizontal conveyor. See Photo below for gauge position.



Test Gauges – Incline/Upper Conveyor

1. Disconnect incline conveyor pressure hose from the hydraulic motor using a 1-1/4-inch open end wrench. Pressure hose is connected to the top port of the hydraulic motor to upper stainless steel tube on the incline conveyor. Connect the female end of the 3/4 -inch JIC test tee with gauge at the fitting on the hydraulic motor. Connect pressure hose end to the male side of the test tee. Tighten tee fitting with a 1-inch open end wrench and hose end with a 1-1/4-inch open end wrench. Position gauge to be visible and tighten gauge fitting with a 9/16-inch open end wrench.
2. Repeat procedure for incline conveyor return line. Return hose is connected to the bottom port of the hydraulic motor to the lower stainless steel tubing on the incline conveyor. See Photo below for gauge position.



Flow Meter Assembly Installation

1. Install Flow Meter Assembly in pressure line at the nose of trailer by pulling collar on female disconnect back and pushing female disconnect on to male coupler on the nose of the trailer. Release collar and pull on flow meter assembly to insure the quick disconnects are connected.



2. Connect hydraulic power unit pressure hose to male quick disconnect end of the Flow Meter Assembly and return hose male quick disconnect to the trailer return line on nose of trailer. Pull on connections to insure they are connected and secure. Open the needle valve by rotating CCW before starting the hydraulic power source.



TEST PROCEDURE:



CAUTION: To test conveyor system, power unit must be equipped with pressure relief valve set below 3000 psi before proceeding.

Power Unit Relief Check:

1. Insure needle valve on Flow Meter Assembly is in open position by turning the needle valve counter clockwise.
2. Power up hydraulic power unit to provide pressure to the conveyor system. Do not activate conveyor at this time. System pressure should read 0-100 psi and 20-30 gpm at the Flow Meter Assembly.



3. Slowly turn the needle valve clockwise on Flow Meter Assembly to close off the hydraulic flow. The gauge pressure will increase and the flow meter should read constant at original flow rate. Verify the pressure maximum is 2500 psi and does not continue to build above 3000 psi. If the pressure gauge continues to climb above 3000 psi open the needle valve and verify the power unit has its own relief valve and reset to appropriate pressure if equipped.
 - a. At maximum pressure setting and needle valve fully closed the flow meter should reduce to 0 gpm and pressure reading 2500-3000 psi.
 - b. Flow Meter should read between 20 gpm minimum and 30 gpm maximum anywhere below 2500-3000 psi or power unit relief setting.
4. If the power source pressure is set at maximum of 2500-3000 psi and the flow rate is 20-30 gpm below this setting then proceed to step 4 at control handles on trailer.

Hydraulic System Check

5. Raise the incline conveyor by moving the right selector valve handle rearward to bottom out incline cylinder to check trailer relief valve setting.
6. Check gauge pressure on selector valve. Pressure should read 2500 psi on gauge when lever is being held reward. If the gauge does not read 2500 psi the pressure relief on the selector valve must be adjusted.



Repeat this step until the relief is set at 2500 psi.

- a. Setting relief pressure on selector valve.
 - i. Loosen the adjustment setscrew jam nut on relief valve using a 9/16-inch wrench.
 - ii. Use a 3/16-inch hex wrench and turn relief clockwise to increase pressure and counter clockwise to decrease pressure.
 - iii. Pull selector valve lever rearward and check pressure. Repeat adjustment until 2500 psi is obtained.
 - iv. Once pressure is obtained, tighten setscrew jam nut with 9/16-inch wrench.
7. Raise incline conveyor to maximum height by moving right lever forward. Release lever and leave incline conveyor remaining in maximum position. After testing check to see if the incline conveyor drifts down.
8. Engage operation of conveyor system by moving left selector valve forward. Both conveyors should be rotating.
9. Verify pressure readings at each gauge.
 - a. Pressure at lower conveyor pressure line should read between 500 to 1000 psi



- b. Pressure on incline conveyor pressure line should read between 500 to 1000 psi.
10. Move hydraulic selector valve back into neutral position.



11. Reverse conveyor by moving hydraulic selector valve outward. This will reverse the lower conveyor and incline conveyor.
12. Verify pressure at each gauge.
 - a. Pressure at lower conveyor return line which now is the pressure line should read between 500 to 1000 psi.



- b. Pressure on incline conveyor pressure line should read 0 psi.
13. Check rear incline conveyor to verify that the conveyor did not drift down during testing. If the incline conveyor drifts down check for air in cylinder lines. If conveyor continues to drifts down then replace check valve cartridge and repeat steps 5 and 11 to verify the conveyor does not drift down.
14. Testing is complete. Power down hydraulic power unit.
15. Remove all test gauge equipment by reversing the installation instructions and insure all fittings are tight.
16. Restart power unit and operate conveyor system in both forward and reverse direction to remove any air that might have gotten into the system.
17. Lower rear incline conveyor into stowed position.
18. Inspect all fittings and valves for leaks. Tighten as required.
19. Power down hydraulic power unit and remove Flow Meter Assembly.

CONVEYOR BELT TENSION AND TRACKING

To drive the conveyor belt without slippage and to track it in a proper way, a certain belt tension is necessary. The tension applied has to be such that there is no slippage on the driving drum when the belt is started at full load.

Belt tension or tracking needs to be done anytime the belt starts slipping on the drive pulley or the belt starts moving to one side of the conveyor. Tensioning and tracking also needs to be done when a new belt is being installed.

The belt is tensioned and tracked with the adjustment bolts as shown.



Horizontal conveyor tensioning bolts



Incline conveyor tensioning bolts

Tensioning the conveyor belt:

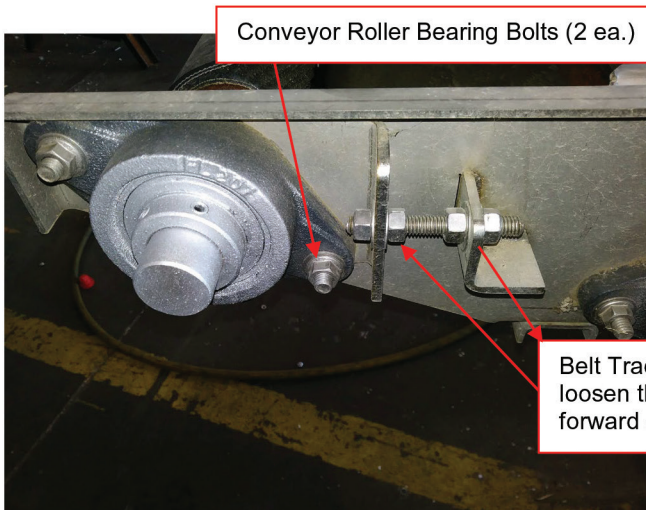
- Put marks on the un-tensioned belt exactly 100 inches apart.
- This has to be done on the left as well as the right side of the conveyor belt.
- Tension the belt and let it turn a few times to equally divide the belt tension over the belt.
- Then measure the elongation.
 - The recommended elongation for conveyor belts is 1% - 3%.
 - The marks should be 101 to 103 inches apart for the recommended elongation.
- Adjust the belt tension, if necessary, to achieve the 101" inches.
- Check the belt for slippage between the belt and the drive pulley. If the belt slips, put more tension in the belt.

CONVEYOR BELT TRACKING ADJUSTMENT:

Both the Inclined and Lower Conveyors have Belt Tracking adjustment mechanisms as part of the conveyor assemblies

To adjust belt tracking (belt centering on the conveyor) :

- Loosen the tracking mechanism lock nuts (inside nuts) to allow belt tracking adjustment (forward or backward)
- Loosen the Belt Roller Bearing Bolts slightly to allow tracking adjustment (bearing on the shaft should not be loose, just allowed to let the roller move slightly)
- Adjust the tracking bolt to increase length to track the belt towards the adjustment mechanism side of the Convey or or shorten the adjustment bolt length to adjust tracking away from the adjustment mechanism
- Allow the conveyor to operate, under load, to confirm belt tracking and adjust for best belt tracking
- Snug the belt tracking adjustment mechanism nuts once “best tracking” is achieved
- Run the conveyor to confirm tracking is consistent (some belt movement, side to side, will be normal)
- Once tracking is confirmed, lock the bearing bolts back to tight to prevent additional adjustment from occurring
- Operate the trailer, under load, to confirm consistent tracking



Lower Conveyor Belt Tracking Adjustment Mechanism



Inclined Conveyor Belt Tracking Adjustment Mechanism

GENERAL MAINTENANCE

AVOIDING CONTAMINATION

The operator has the best opportunity to avoid contamination between commodities. It is critical that the operator clean and maintain the trailer interior and trap frame areas to avoid contamination. The interior hopper, dividers, etc. should be inspected and cleaned thoroughly by the operator as required. Use a broom or a high pressure sprayer to clean the interior surfaces including the dividers, wall liners and interior tub panels. Do not use a high pressure sprayer for trap frame cleaning and washing. High pressure water could enter and damage the bearings. Access to the interior of the trailer should be from underneath through the trap door opening. Never climb over the top of the trailer into the interior. See section below for trap frame maintenance.

TRAILER WASHING

Washing the trailer is an important step in decreasing future maintenance. The trailer should be washed with soap and water using a relatively soft bristle brush. Various chemicals can cause severe corrosive damage to aluminum. The use of acid in any concentration to clean the trailer will void the warranty.

There are many different types of chemicals used today to de-ice the roadways. Many of these can cause severe damage to the steel substructure of the trailer and diminish the appearance of the aluminum and stainless steel components if not kept properly and regularly washed away.

A number of products hauled in the trailer will also lead to corrosion if the products are allowed to build up. Products that build up on the aluminum and steel members in the suspension subframe and upper coupler area should be routinely washed off.

CORROSIVE DETERIORATION

Various chemicals can cause severe corrosive damage to your aluminum grain trailer. To prevent severe damage to your trailer due to corrosion, contact Timpfe Trailer Company Product Engineering to verify that the materials you are hauling are compatible with the materials used in the construction of the trailer.

Corrosive deterioration caused by incompatible materials could void all or part of the trailer warranty.

The most important preventive maintenance step to avoid corrosion is cleaning; your trailer should be washed out after each load to minimize corrosion when hauling such items as salt, fertilizer, etc.

AIR HAMMER (VIBRATOR) MAINTENANCE

The air hammer employed to help dislodge commodity should be lubricated on a regular basis. The air hammer manufacturer recommends a SAE 10 or lighter oil for this purpose. Frequency of lubrication is directly related to volume of usage. The operator should lubricate the air hammers (vibrators) prior to each use or maintain oil in reservoir if equipped with self-lubricating system.

NOTE: The operator must confirm that all air hammers are securely located in the mounting brackets and locked into place prior to usage. Failure to locate and lock air hammers into position properly could result in serious personal injury or damage to the trailer. Do not exceed 80 P.S.I. while operating piston vibrator. Failure to follow operating instructions properly could void the warranty.

TROUBLE-SHOOTING:

1. Vibrator will not start:
 - a. Check to see that quick-opening valve is properly installed.
 - b. Vibrator should be within 5 feet of operating valve.
 - c. Be sure vibrator has adequate air pressure and volume available.
 - d. Check for broken or missing spring on horizontal mount units.
2. Vibrator is sluggish and slow to start.
 - a. Check for adequate lubrication.
 - b. Check for leaking airline or defective operating valve.
 - c. Check air supply for pressure and volume.
 - d. Scale or other contaminants may need to be removed from interior.

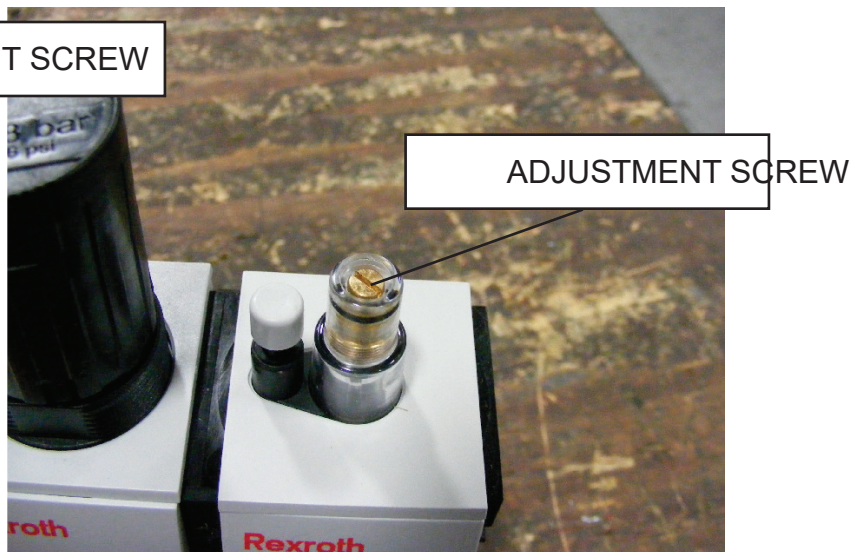


FILTER/LUBRICATOR/REGULATOR SPECIFIED OIL

- SAE 10 or lighter air tool oil

FILLING WITH OIL

- Remove the reservoir from the FLR assembly
- Fill the reservoir with specified oil until oil appears in the small window. NOTE: If filling level is too high, oil can reach the system and damage it.
- Place the reservoir on the device until it engages audibly.

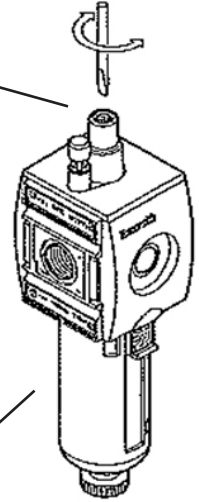


CLEAR PLASTIC NIPPLE WITH
GOLD ADJUSTMENT SCREW

SETTING THE OIL AMOUNT

- Set the oil amount using the metering screw on the standard oil-mist lubricator's drop attachment.
- Determine amounts of oil discharged by observing the number of drops in the drop attachment. Standard value: 1-2 drops/min (qv = 1000 NI/min)

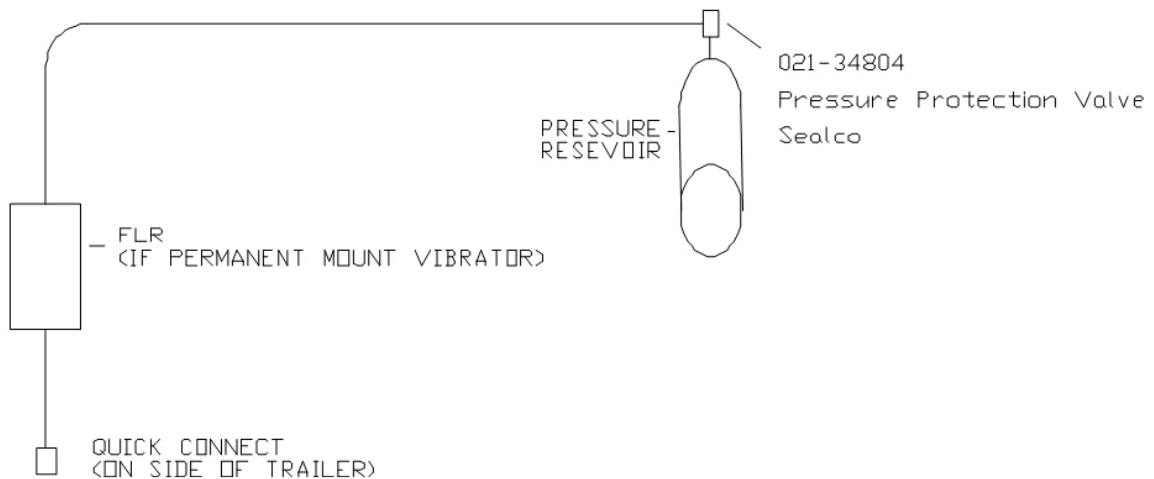
OILER SECTION ONLY SHOWN



TROUBLE-SHOOTING:

Malfunction	Possible cause	Remedy
Oil content in compressed air is too low	Oil fell below the min. filling level in the reservoir	Refill oil in the reservoir
	Dose too low	Increase number of drops
	Ambient temperature lower than at time of setting	Use oil with lower viscosity
Oil content in compressed air is too high	Oil in the reservoir was filled above max, filling level	Drain oil in reservoir, until it reaches max, filling level
	Dose too high	Decrease number of drops
	Ambient temperature higher than at time of setting	use oil with higher viscosity

VIBRATOR AIRLINE SCHEMATIC



HUB AND BEARINGS

HUB MAINTENANCE

Check wheel studs for good condition – no stripped threads – no bent or loose studs. Replace any broken or bent studs or studs with damage to the threads. When a broken stud is replaced, the stud on each side of it should be replaced at the same time. If more than two studs on the same hub are broken, replace all of the studs.

WHEEL BEARING INSPECTION

Periodic inspection of wheel bearings and lubricants as well as regular lubricant changes are necessary for good maintenance and maximum wheel bearing life. The hub and/or wheel assembly must be properly cleaned to obtain optimum bearing life. This step also applies to field service. When adding or checking oil level, make certain cap and plug are clean. This step will minimize the possibility of dirt and road grime entering the system. Wheel end-play is recommended to be confirmed annually (minimum) for all axle wheel-ends to improve wheel bearing life. Timpte recommends wheel-end play inspections every 100,000 miles of trailer use to properly maintain wheel-end play and extend wheel bearing life. A reading of 0.001-0.005" of wheel-end play is normal. Use the wheel bearing adjustment procedure directly below to confirm and adjust wheel-end play as required or contact Timpte for a Branch review.

WHEEL BEARING ADJUSTMENT

1. Install adjusting nut so that pin on nut faces away from the hub.
2. Tighten inner nut to 200 ft. lbs. while rotating the hub in both directions.
3. Completely loosen the inner nut, then retighten to 50 ft. lbs. while rotating the hub in both directions.
4. Loosen the inner nut $\frac{1}{4}$ turn. Do not include socket backlash in the $\frac{1}{4}$ turn.
5. Install the lock washer. If the hole in the lock washer is not aligned with inner nut pin, remove the washer, turn it over and reinstall. If the washer hole is still not aligned with the pin, loosen the inner nut slightly until the hole and pin are aligned.

Note: The washer may have to be reversed again with minimum loosening of the nut.

6. Install the jam nut; Torque to 300 ft-lbs.
7. Check the hub end play with a magnetic base and dial indicator.
 - a. Place the magnetic base and indicator on the end of the spindle. Touch dial indicator stem to hubcap gasket face.
 - b. Slightly rotate the hub & drum in both directions while pushing inward until the dial indicator reading does not change.
 - c. Set the dial to zero.
 - d. Slightly rotate the hub & drum in both directions while pulling outward until the dial indicator reading does not change.
 - e. Read the end play from the dial indicator.
8. End play between .001 and .005 is acceptable.
 - a. If the end play is less than .001, loosen the jam nut; Repeat steps 1 through 8, and retorque to 300 ft. lbs.
 - b. If the end play is greater than .005, increase the jam nut torque to 300 ft. lbs.
9. Repeat Steps 6 & 7 as necessary until the end play is within the acceptable range.
10. Bend tabs on lock washer over opposite flats of the jam nut.

BEARING LUBRICANT

The lubricant change interval depends on the type of lubricant used; oil or semi-fluid grease. Oil levels should be checked as part of the daily inspection. Oil should be changed whenever seals are replaced, brakes are relined, or at least every 12 months or 100,000 miles. Fill hubs with new oil to the level indicated on the hub window using HD80-90W heavy duty oil with an API rating of GL-15 or GL-4.



CAUTION! DO NOT overfill oil. Oil seal damage may occur due to excessive internal pressure.

Grease lubricated wheel ends should be changed whenever seals are replaced, brakes are relined or at least every 12 months or 100,000 miles with NLGI Grade 1 or 2 grease.

To install semi-fluid grease

1. Pack both bearings with grease by forcing grease into the cavities between rollers and cage from the large end of the cone.
2. Apply a light coat of grease to the spindle bearing journals.
3. Install the inner bearing, inner seal and hub.
4. Fill the cavity between the bearing races with grease up to the smallest diameter of the bearing cups.
5. Install the outer bearing and adjust end-play as noted in the "Wheel Bearing Adjustment Procedure" section.
6. Apply a light coat of grease to the interior of the hubcap and wheel retention hardware to indicate what lubricant is installed as well as to help prevent corrosion of these parts.

HUB/BEARING LUBRICATION OIL REQUIREMENT

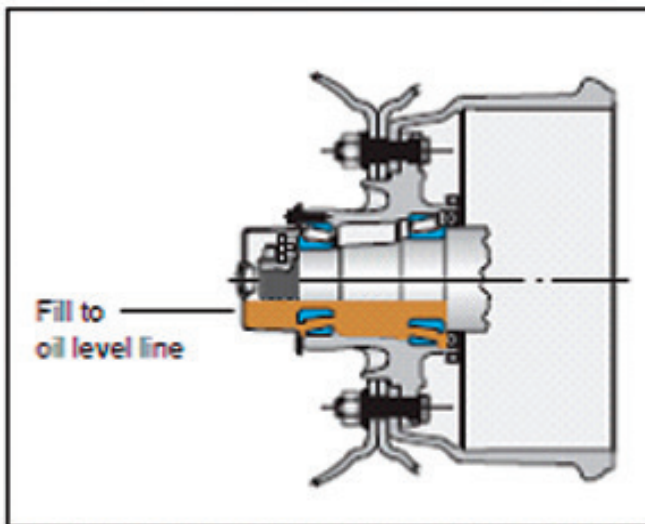


Fig. 3: Lubrication Fill Oil (Static)

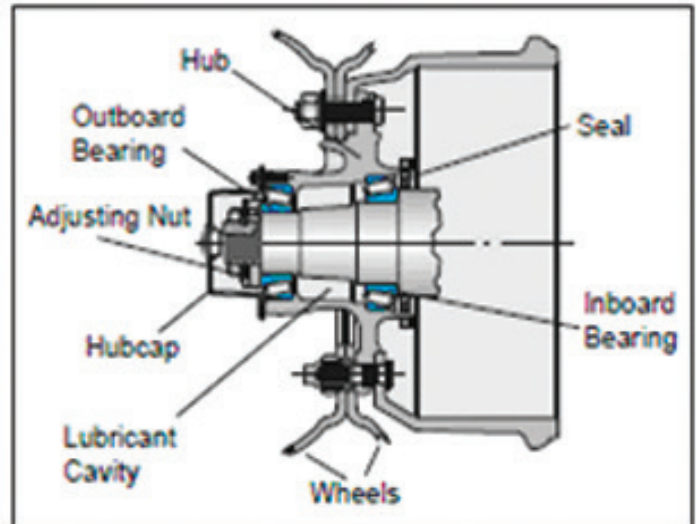


Fig. 1: Non-Drive Wheel End



BRAKES

Proper maintenance of the brakes is vitally important. This includes lining inspections and brake adjustments. A schedule for periodic adjustment, cleaning, inspection and lubrication of the brake equipment must be made according to duty cycle and type of operation.

Brakes must be adjusted as frequently as required for correct operation and safety. The adjustment must give correct clearance between the lining and drum, correct push rod travel, and correct balance between the brakes. Improper or inadequate lubrication is the leading cause of dragging brakes/premature brake wear.

Brakes must be cleaned, inspected, lubricated and adjusted every time the wheel hubs are removed.

During a major overhaul, the following parts must be carefully checked and replaced with genuine replacement parts if required.

1. Backing plates or spiders for distortion and loose bolts.
2. Anchor pins for wear and correct alignment.
3. Brake shoes for wear at anchor pins or roller slots.
4. Camshaft and camshaft bushings for wear.
5. Shoe return springs for wear and loss of strength.
6. Brake linings for grease on the lining, wear, chips, and loose rivets or bolts.
7. Drums for cracks, deep scratches, heat checking or other damage.

NOTICE:

Wheel bearings must be correctly adjusted before brake adjustments are made.

NOTICE:

Brake linings must not be permitted to wear to the point that the rivets or bolts touch the drum.

See the manufacturer's maintenance manual for more information and details on brake maintenance, repair and trouble shooting.

Air leaks at spring brake chambers, reservoir fittings, drain valves, drop hoses, and connections can cause the air system to perform less efficiently and the compressor to cycle too frequently and may eventually result in dragging brakes.

If you suspect air system problems in either service brakes or spring brakes, don't hesitate – service the brake system immediately;

Trouble shooting the air brake system:

- Use the "soap bubble" test at all connections throughout the air system to detect external leaks
 - Threaded connections at the ECU
 - Threaded connections at the pressure protection valve
 - Any and all push-in fittings
- Check for exhaust leaks at all valves to detect internal leaks.
- Check the actuator and spring brake push rod for proper movement in operational modes.

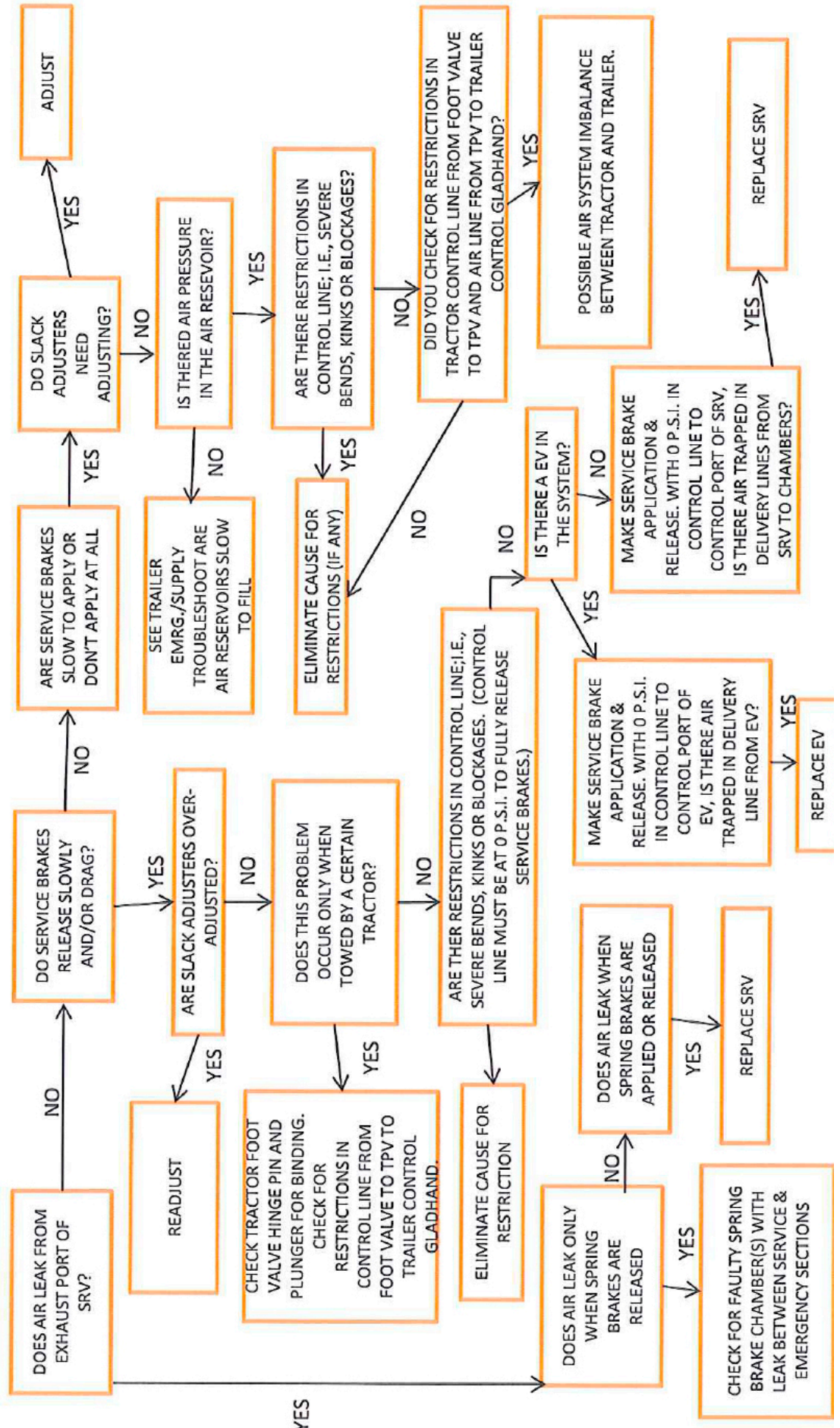
NOTE: Never splice air brake hoses within the air brake system. This action will void part or all of the trailer warranty.

AIR BRAKE SYSTEM - TROUBLESHOOTING GUIDE



CAUTION! Block wheels before servicing trailer air brake system. Drain reservoirs before removing air lines, hoses, or valves. Consult spring brake manufacturer's recommendations before working on spring brake chambers.

LEGEND
 SRV - SERVICE RELAY VALVE (REFERENCE PG 38 BUBBLE 6)
 EV - EMERGENCY VALVE (REFERENCE PG 38 BUBBLE 22)
 TPV = TRACTOR PROTECTION VALVE



BRAKE CONTROLS

Proper operation of the brake system requires a good, clean seal between the glad hands. Inspect the rubber washers for each glad hand daily. Inspect the glad hands for cracks in the metal components daily. Check the air hoses for cracking and leaking daily. Check the operation of the braking system daily. Drain any water from the brake system by opening the drain petcocks on the bottom of the air tank(s) daily. Observe the ABS system status indicator lamp for proper operation as found under the ABS heading in the Safety Section.

AIR SYSTEM COLD WEATHER OPERATION

Reservoir Draining – Daily reservoir draining is the most basic step in reducing the possibility of freeze up.

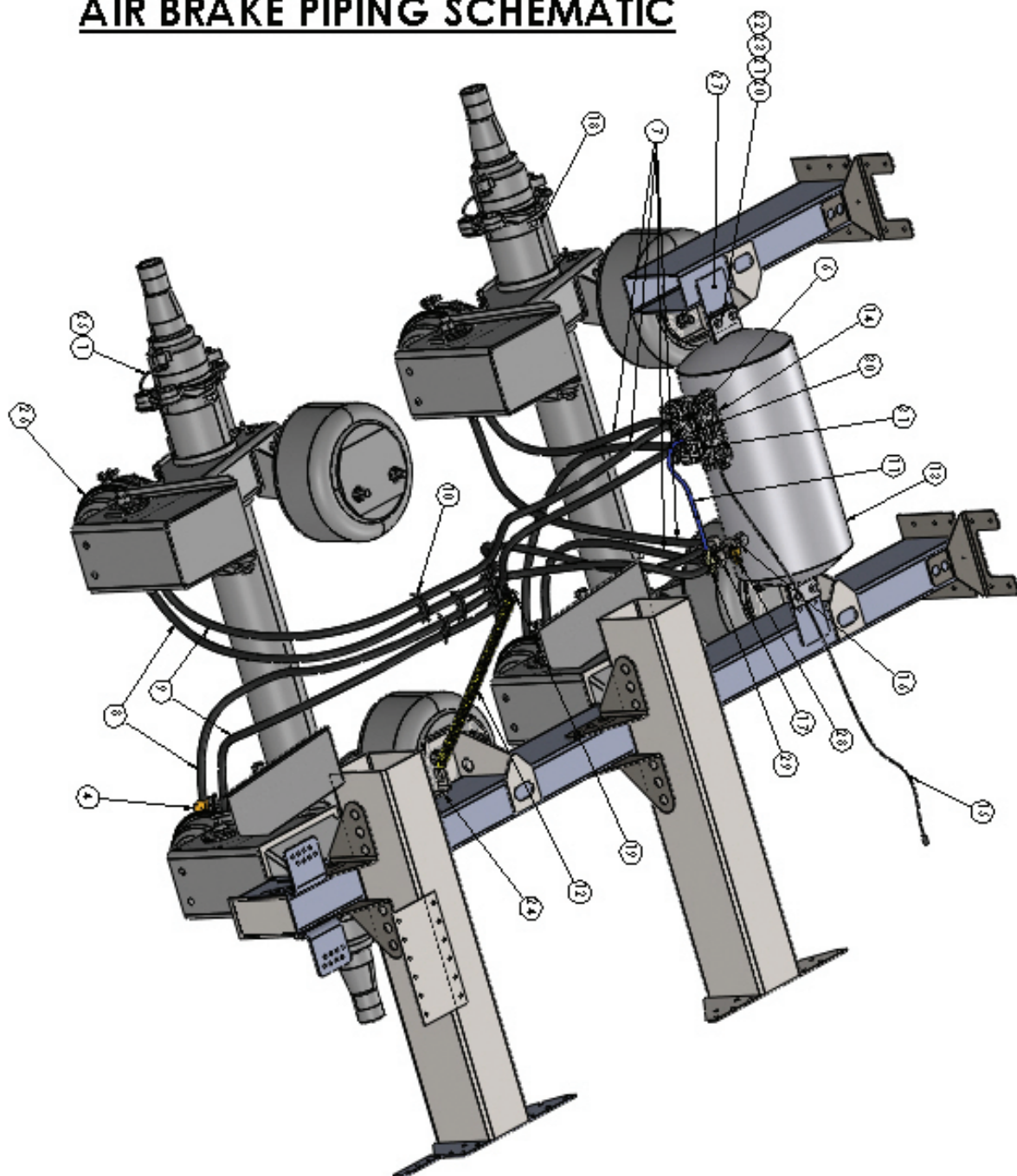
Thawing Frozen Air Lines

1. Maintain freeze prevention devices to prevent frozen air lines. Daily check evaporators or injectors. Check the air dryer for proper operation and change the desiccant when needed.
2. Thaw out frozen air lines and valves by placing vehicle in a warmed building. This is the only method for thawing that will not cause damage to the air system or its components.
3. Do not apply an open flame to air lines and valves. Beyond causing damage to the internal non-metallic parts of valves and melting or burning non-metallic air lines, THIS PRACTICE IS UNSAFE AND CAN RESULT IN VEHICLE FIRE.



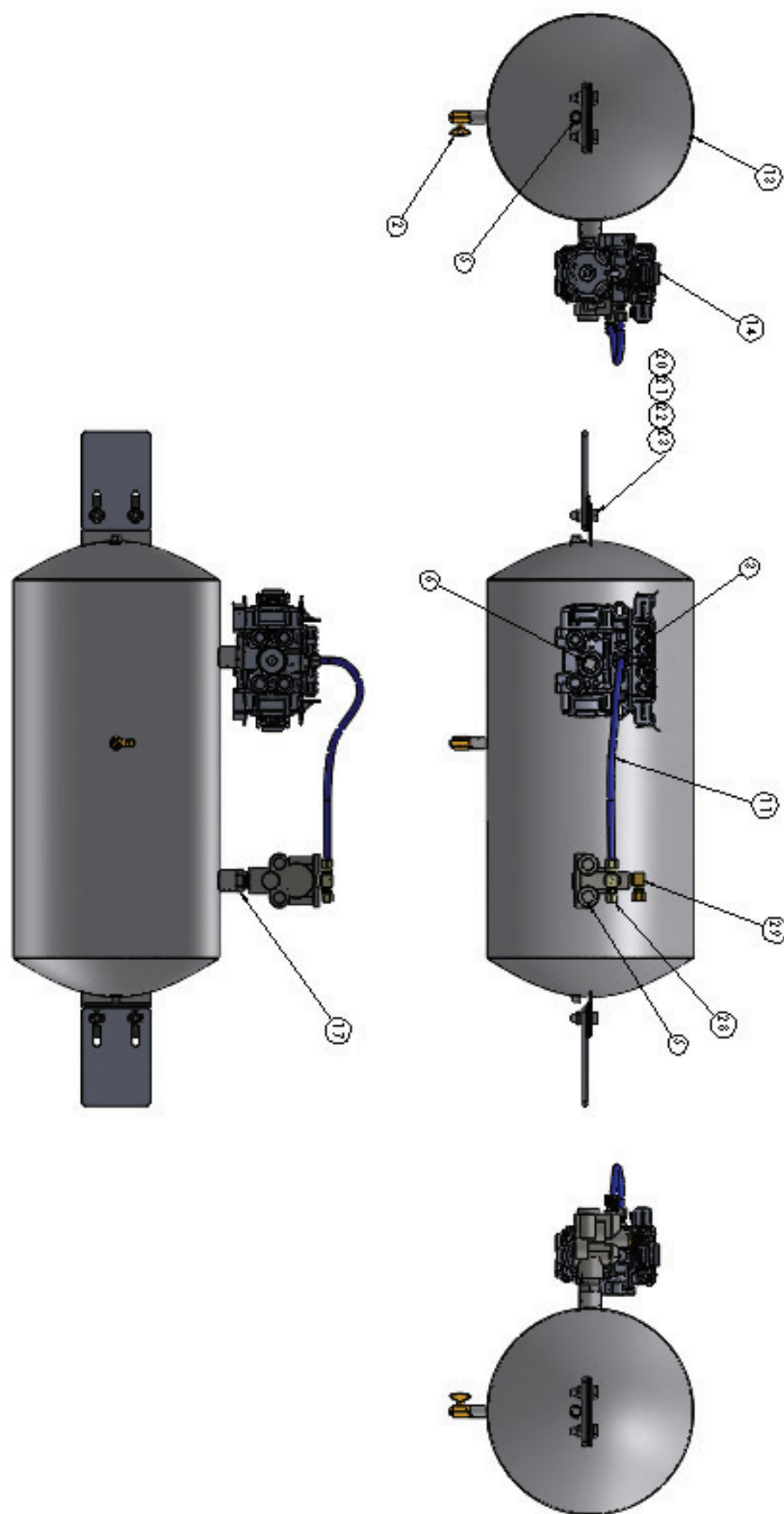
CAUTION! Do not pour any alcohol into gladhands. Doing this will result in valve failure and will void the warranty. Fluid in air lines can also cause a fluid lock and keep the brakes from fully releasing.

AIR BRAKE PIPING SCHEMATIC



ITEM NO.	PART NUMBER	DESCRIPTION
1	021-31438	BRUSH & ABS 4M
2	021-00701	FITTING 0 TAIN COCK 3/8" ANPT B 1/2"
3	021-00725	FITTING STRAIGHT 1/4" NPT X 3/8" TUBE
4	021-00735	FITTING STRAIGHT 1/4" NPT X 3/8" ANPT X 3/8" TUBE
5	021-00773	FITTING PIPE PLUG 3/8"
6	021-00777	FITTING PIPE PLUG 3/4"
7	021-02343-00440	HOSE ASSEMBLY 40"
8	021-02343-01120	HOSE ASSEMBLY 70"
9	021-02343-01200	HOSE ASSEMBLY 80"
10	021-31430	HOSE HANGER (DOG BONE)
11	021-31430	AIR BRAKE LINE 3/8" BLUE
12	021-34820	DIFFERENTIAL RING 13" LONG 1" O.D. 0.72" WIRE BOND
13	021-34932	AIR TANK 12" DIA
14	021-37200	VALVE ABS DCV 42M
15	021-37324	MANIFOLD ABS POWER PIGTAIL
16	021-37327	FITTING 90° PIPE NIPPLE 3/4" X 2"
17	021-45023	VALVE EMERGENCY 8 ANGE
18	021-45074	CLIP ABS CABLE 3/4" X 1/2"
19	021-37236	2 HOLE HOLDER 0.75" X 1/4" X 1/4"
20	021-01287	ROD 3/8" X 1/4" X 1/4" X 1/4"
21	021-01270	WASHER 3/8" X 1/4"
22	021-01403	WASHER 3/8" X 1/4" X 1/4"
23	021-04499	WASHER 3/8" X 1/4" X 1/4"
24	021-34821	2" RING HANGER
25	021-34821	2" RING HANGER
26	021-30720	2" RING HANGER
27	021-00734	FITTING 90° 1/4" NPT X 3/8" TUBE
28	021-00737	FITTING 90° 1/4" NPT X 3/8" TUBE
29	021-31470	BRUSH & ABS 1.75M
30	021-32020	BRUSH & ABS 1.75M
31	021-32020	BRUSH & ABS 1.75M

AIR BRAKE PIPING SCHEMATIC



CHECKING SPRING BRAKES

Spring breaks must be inspected on a routine basis to insure proper operation. Inspection is recommended a minimum of every 3 months or 25,000 miles.



WARNING! Always chock wheels to prevent the vehicle from rolling before performing any brake maintenance.

1. Check overall condition of the foundation brakes including drums, shoes, lining, retainers, return springs, bushings and rollers. Replace any damaged or worn components per manufacturer's specifications.
2. Check for obvious structural damage to the spring brakes, brake adjusters, or cam shafts and replace any damaged or worn components per manufacturer's specifications.
3. Hook up appropriate air supply and release parking brakes. Apply and fully release Parking Brake several times while watching for brake adjuster movement. Adjusters should apply and retract at relatively the same distance for all wheel positions.
4. To verify equal push rod movement, measure each push rod from the Face of the Air Brake Chamber to the Center of the Clevis Pin with the brakes Fully Set or Parked. Apply air to the chambers to release the parking brakes and re-measure all wheel positions. All strokes should be within 1/8" of each other.
5. Applied Stroke at 90 to 100 psi can also be used to measure in a similar way as in step #4. Apply Service Brakes instead of setting Spring (Emergency) Brakes and record before and after push rod measurements. Measured push rod stroke should not exceed the recommended maximum readjustment limit of 2" for Standard 30/30 chambers and 2 1/2" for Long Stroke 30/30 chambers.

AUTOMATIC SLACK ADJUSTERS

Effective 10/20/94 all semi-trailers with air brake systems were required to be built with automatic slack adjusters to assist in maintaining the braking system performance. The automatic slack adjusters should be periodically checked to insure that they are performing correctly and should be lubricated on a regular schedule or at least every six months.

The following procedure can be used to check the in-service adjustment of air chamber push rod travel (adjusted chamber stroke) on trailer air brakes with automatic slack adjusters.

1. Connect an adequate air supply to the SUPPLY glad hand of the trailer's air system.
2. Increase the air pressure to 100 psi minimum to release the auxiliary spring brake chambers.
3. Determine the size and type of brake chamber you are inspecting.
4. With the brakes NOT APPLIED measure the distance from the bottom of the air brake chamber to the center of the large clevis pin on all wheel positions. Record each measurement.
5. Connect a second air supply to the CONTROL glad hand of the trailer's air system.
6. Increase the air pressure of the second air supply to 85 to 90 psi to apply the service brakes.
7. With the SERVICE BRAKES APPLIED measure the distance from the bottom of the air brake chamber to the center of the large clevis pin on all wheel positions. Record each measurement.
8. Calculate the adjusted chamber stroke of each brake. Subtract the dimension that was measured in Step #3 from the dimension that was measured in Step #6. The difference between the two dimensions is the adjusted air brake chamber stroke. The adjusted air brake chamber stroke must not be greater than 2" for 30/30 chambers and 1 3/4" for 24/20 chambers. If the adjusted air brake chamber stroke is greater than the dimensions listed, inspect the automatic slack adjuster for wear or damage. See manufacturer's recommendations for repair or replacement.

WHEEL ASSEMBLIES

Inspect parts and components for damage. Replace any defective parts.

Use only correctly matched parts when assembling and installing wheels. Incorrect parts can result in separation of the wheel components which can lead to an accident.

Assembling painted, dirty, or rusty components can prevent proper mating of parts. Make sure all mounting surfaces are clean and free of rust, dirt, or excessive paint.

Make certain all tires are matched to the same rolling circumference per the tire manufacturer's instructions. Do not use tires that do not meet this criterion. Doing so may result in unstable operation that can significantly reduce service life.

All components must be correctly installed and fasteners tightened to the recommended torque to assure maximum service life in accordance with the manufacturer's instructions. Failure to do so may result in serious injury or death.

WHEEL INSTALLATION

Hub piloted disc wheels have stud holes that are drilled straight through the wheel. Pilot bosses machined on the hub fit tightly into the center of the disc wheel. This supplies the alignment of the wheel to hub. Hub Piloted wheels are secured to the hub with flanged nuts.

Installation of a Hub Piloted Wheel

1. Be sure not to mix Hub Piloted and Stud Piloted disc wheels.
2. Use the correct flange nuts to match your wheels. Failure to do so may lead to loose wheels which significantly reduce product life and may result in a crash. Before proceeding with the installation of the disc wheels make certain that you are using the proper flange nuts. The Hub Piloted mounting uses M22 x 1.5mm pitch metric thread series nuts. The stud stand out should be at least 2.16". All studs have right hand threads.
3. Rotate the hub so that one of the intermittent pilots is located at the top position.
4. Position the inner disc wheel over the studs and wheel pads being careful not to damage the stud threads or the pilot diameter of the wheel. Make sure the disc wheel is flat against the mounting surface and there is clearance between the disc wheel taper and the brake drum.
5. Position the outer disc wheel over the studs and wheel pilot pads being careful not to damage the stud threads or the pilot diameter of the wheel. Be sure the valve stems for both the inner and outer tires are accessible.
6. Install the flange nuts and tighten to 50 ft. lbs following the sequence shown. Note: On two piece flange nuts, apply a drop of oil between the nut and washer. Make sure the flange washer is not seized to the nut. Do not lubricate the mounting surface of the drum or wheel, or the stud threads.
7. Check both disc wheels for proper positioning on pilots and proper sealing against the drum/hub assembly. If they are not, loosen the flange nuts and reposition the wheels.
8. Tighten the flange nuts to 450 to 500 ft. lbs. dry thread torque following the sequence below.

Recheck the torque after the first 50 to 100 miles of service and at every pre-trip inspection.



WARNING



1. Read and understand this warning and the installation, Service and Safety Instruction Manual to understand all safety precautions, proper operation, and maintenance of your Webb hub. Failure to do so could result in death or serious injury and could result in a compromise of your vehicle's safe operation through loss or failure of a wheel or the compromise of the braking system. Copies of the installation, Service and Safety Instruction Manual are available, free of charge, from Webb Products, Inc., upon request.



2. Always use a properly installed calibrated torque wrench to assure proper torque. Under torque and over torque can cause thread and/or nut damage and could result in the loss of a wheel. Failure to ensure proper torque could result in death or serious injury and could shorten the expected life of this product.



3. Recheck torque after the first 50 to 100 miles of service. Parts may seat naturally, causing the torque to drop. A drop in torque could result in the loss of a wheel. Proper torque is essential to avoid damage or compromise of your vehicles safety. Failure to ensure proper torque could result in death or serious injury.

HUBS (FOR PILOT MOUNTED DISC WHEELS) 8 - 10 STUD HUBS

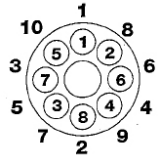
APPLIES TO M22 X 1.5 STUDS / TWO PIECE FLANGE NUT.

All threads are right hand metric.

Tighten Flange Nuts to 50 ft.lb. using sequence shown.

Check Disc-Wheels for proper positioning on pads and proper seating against flange.

Tighten Flange Nuts to recommended torque using sequence shown.



TIRE CHANGE PROCEDURE

PRECAUTIONARY NOTES:

Keep unnecessary personnel away when raising and lowering trailer and changing tires.

Do not climb under a raised trailer.

Do not leave a raised trailer unattended.

Avoid raising a loaded trailer whenever possible.

1. Position trailer on a level, hard surface capable of supporting the total vehicle weight and lifting equipment.
2. Set brakes and block wheels at other locations to prevent movement.
3. If a loaded trailer must be raised for changing tires, take appropriate precautions to reduce risk of tipping, load shifting, or structural damage. If necessary, use two lifting devices and raise both sides of the trailer evenly to prevent leaning and tipping.
4. Position the jacks or lifting devices under the axle, as close to the outer end as possible. Use care to avoid placement that will cause contact and damage to other components such as brake chambers, cam shafts, U-bolts, and slack adjusters.
5. Raise the trailer at a slow, steady rate until the tires to be removed are off the ground. If using two lifting devices, raise both sides of the trailer evenly to avoid leaning and tipping.
6. Position trailer supports under trailer frame or axle to prevent unexpected lowering of the trailer.
7. Remove the nuts securing the tires and remove the tire(s) using a tire fork or similar device to lift the tire(s).
8. Install the replacement tire(s). Refer to the appropriate section of the Owner's Manual for specific instructions for wheel installation.
9. Torque the securing nuts to 450 to 500 ft. lbs. (dry)
10. Remove trailer supports
11. Lower the trailer to the ground at a slow, steady rate. If two lifting devices are used, lower both sides evenly to avoid leaning and tipping.
Watch for pinch points to ensure no electrical or pneumatic lines will be damaged.
12. Remove lifting devices and check wheel nuts to ensure they are torqued to the specified values.
13. Inspect suspension components for damage or improper adjustment resulting from raising and lowering the trailer. Repair any damaged components as necessary.
14. Remove blocks from wheels.

AXLE ALIGNMENT

Proper axle alignment is a vital part of trailer maintenance. Failure to maintain proper alignment may cause tire scrubbing and suspension component strain. Your trailer's alignment should be checked regularly and the axles realigned when required to prevent unnecessary tire wear.

1. To properly align the suspension make sure the trailer is unloaded. Free the suspension of any "binds" by first pushing the trailer backwards and then pulling it forward a sufficient distance. Check axle alignment with the trailer on a level surface with the trailer level both side to side and front to back, with tires properly inflated, trailer securely restrained, trailer brakes (service & parking) released and with the trailer ride height valve properly set (if an air ride).
2. Check each dual tire set. Tires of each set must be matched to a maximum of 1/8" tire radius. Air pressure must be the same in all tires.
3. Using a steel measuring tape, measure from the center point on the bottom of the king pin to identical locations on each end of the front axle using a consistent amount of pressure on the tape measure.
4. If these measurements differ by more than 1/16", adjust one end of the front axle forward or rearward until identical measurements are obtained on both ends.
5. After the front axle is aligned and secured, measure from the end of the front axle to the end of the rear axle on each side.
6. If these measurements differ by more than 1/16", adjust one end of the rear axle forward or rearward until identical measurements are obtained on both ends.

Air ride suspensions are equipped with mechanisms to allow the movement of one end of the axle forward or rearward for the purpose of aligning the trailer axles.

Inspect the hanger pivot bushings as well as all other suspension components before adjusting the alignment.

The SAF Holland CBX23 suspension with the Quik Align feature uses a bolt on the front the suspension hanger to allow for adjustment for axle alignment.

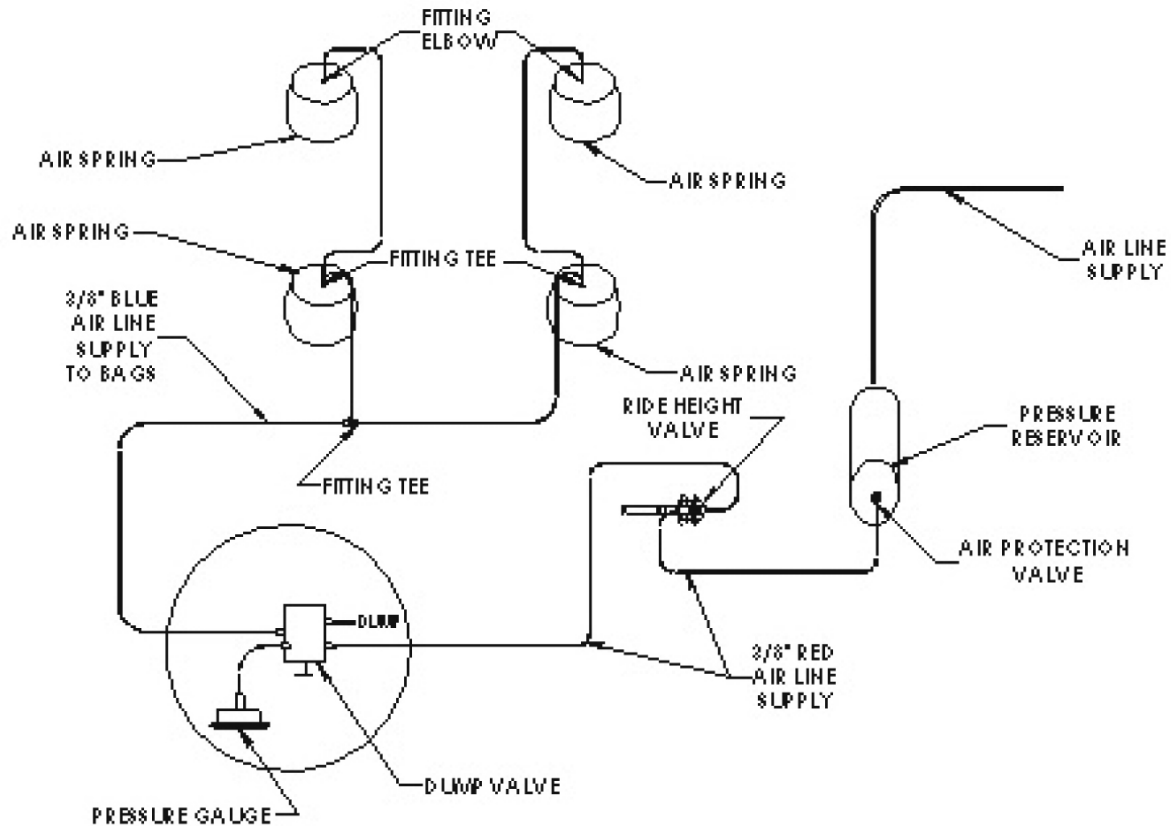
1. Using a hand wrench, rotate the Quick Align bolt clockwise to shorten the alignment measurement or counter clockwise to lengthen the alignment measurement.

AIR-RIDE SUSPENSION SYSTEMS

See suspension manufacturer's decals prominently displayed on trailer body and manufacturer literature kit supplied with trailer for details and specific instructions on the care and maintenance of the air ride suspension.

NOTE: Never move an air ride trailer without first fully inflating the air springs – failure to do so could cause damage to the trailer and suspension and will void the warranty.

AIR RIDE SUSPENSION SCHEMATIC



Trouble shooting hints for air piping systems:

- Check all push-in and T-fittings. Are they locked into place?
- Check all threaded connections to the spring brakes
- Check push-in fittings at the dump valve and/or lift box (if applicable)
- Check push-in fitting at ride height box (bottom of the box)
- Threaded connections at the gladhands on the nose of the trailer
- Check push-in fittings at top of air bags
- Check for adequate supply of air from tractor
 - Is volume and pressure great enough to open Pressure Protection Valve
- Check free travel and response of Ride Height Valve
- Check filter at the Pressure Protection Valve

Loose fasteners that are allowed to operate for any period of time will result in irreversible suspension damage and possible loss of vehicle control. **Retightening a worn fastener will not correct a situation created by loose operation!**

ELECTRICAL SYSTEM MAINTENANCE

Your Timpfe trailer utilizes an internally grounded, automotive style electrical system that meets or exceeds all of the requirements of FMVSS 108.

A 7-way plug is located on the front of your trailer. Each terminal carries current from your tractor electrical source through a circuit to the various electrical devices on the trailer. Individual circuits may be traced by the various wire colors. Listed below is a schedule of the color code of the primary electrical circuits.

Blue – ABS Constant Power

Red – Stop Lights

Black – Red and Amber Clearance Lights

Brown – Tail and License Lights

Green – Right Turn Signal

Yellow – Left Turn Signal

White – Ground

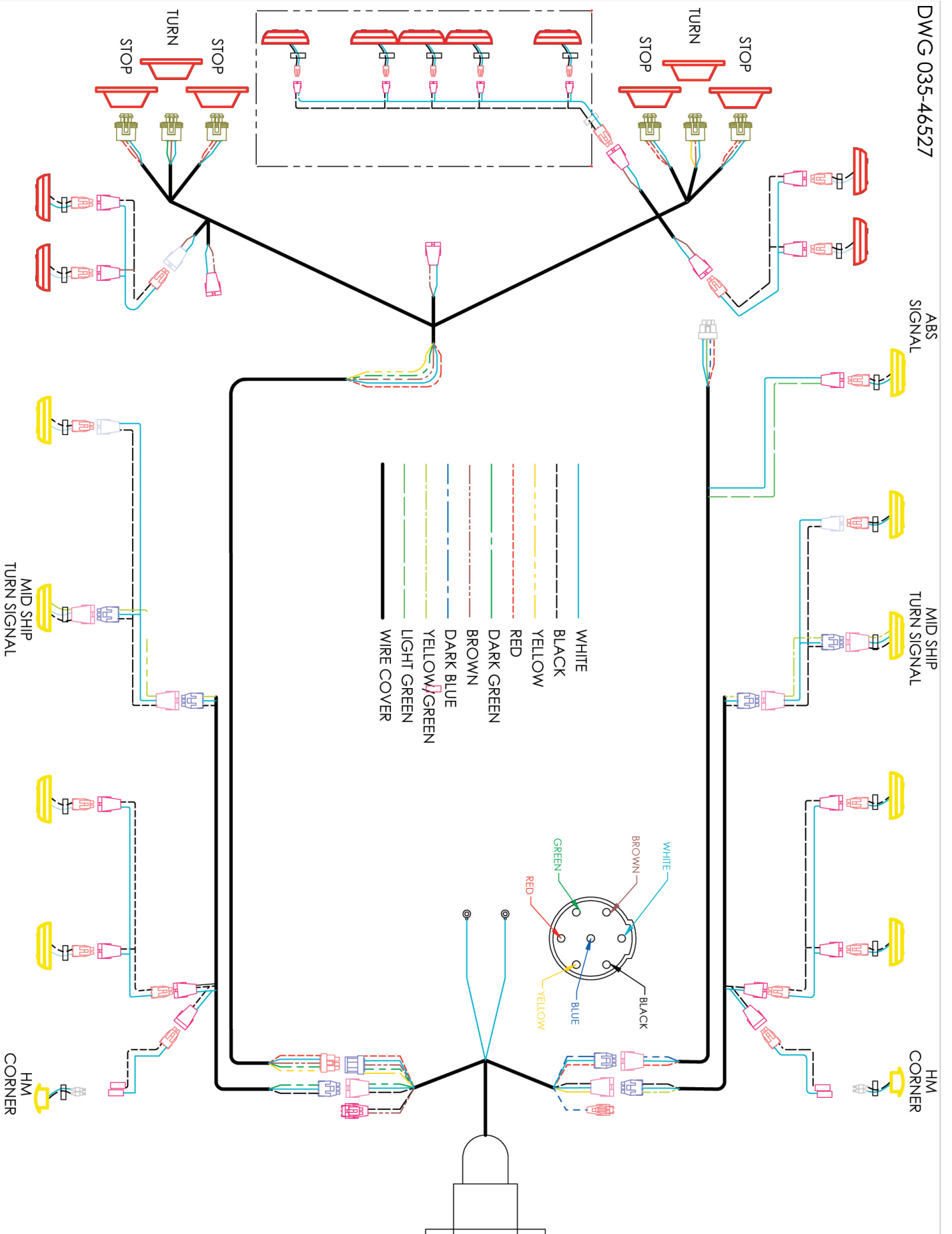
Use dielectric grease for all electrical connections to prevent corrosion between electrical junctions and to enhance electrical conductivity. (Failure to do so may void warranty.)

Do Not splice any electrical harness conductor. Splices may create open circuits or create the potential for “dead shorts” or “ground” issues within a circuit. Always replace damaged harnesses and conductors promptly. Splicing or modifying the harness may void warranty.

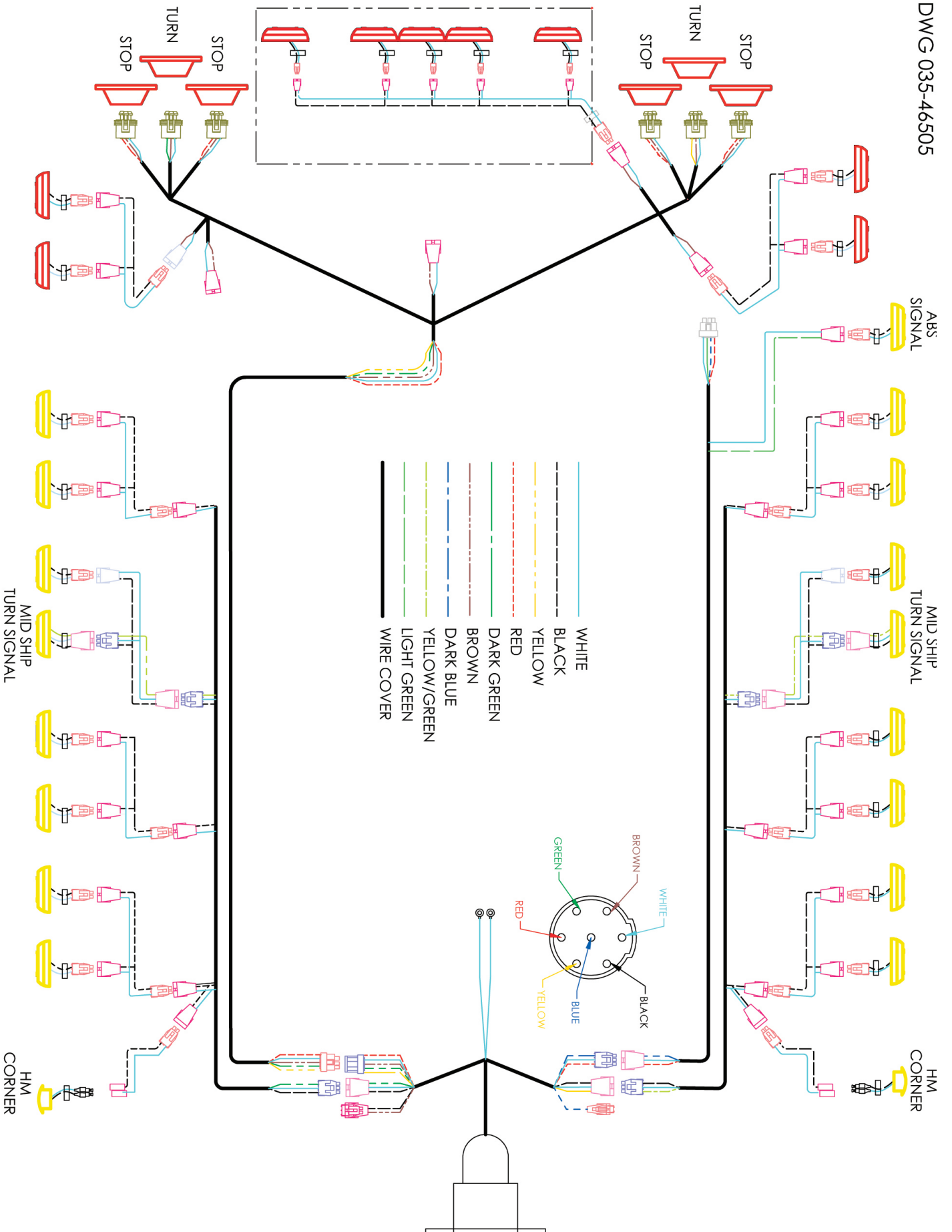


CAUTION – FMVSS #121 safety standard for Air Brake System required as of 3/1/1997 that trailers supply constant power via the blue center pin of the 7 way to the ABS system. As of 3/1/2001, all trailers were required to have an ABS system that provided for activation of the system status warning lamp inside the tractor cab.

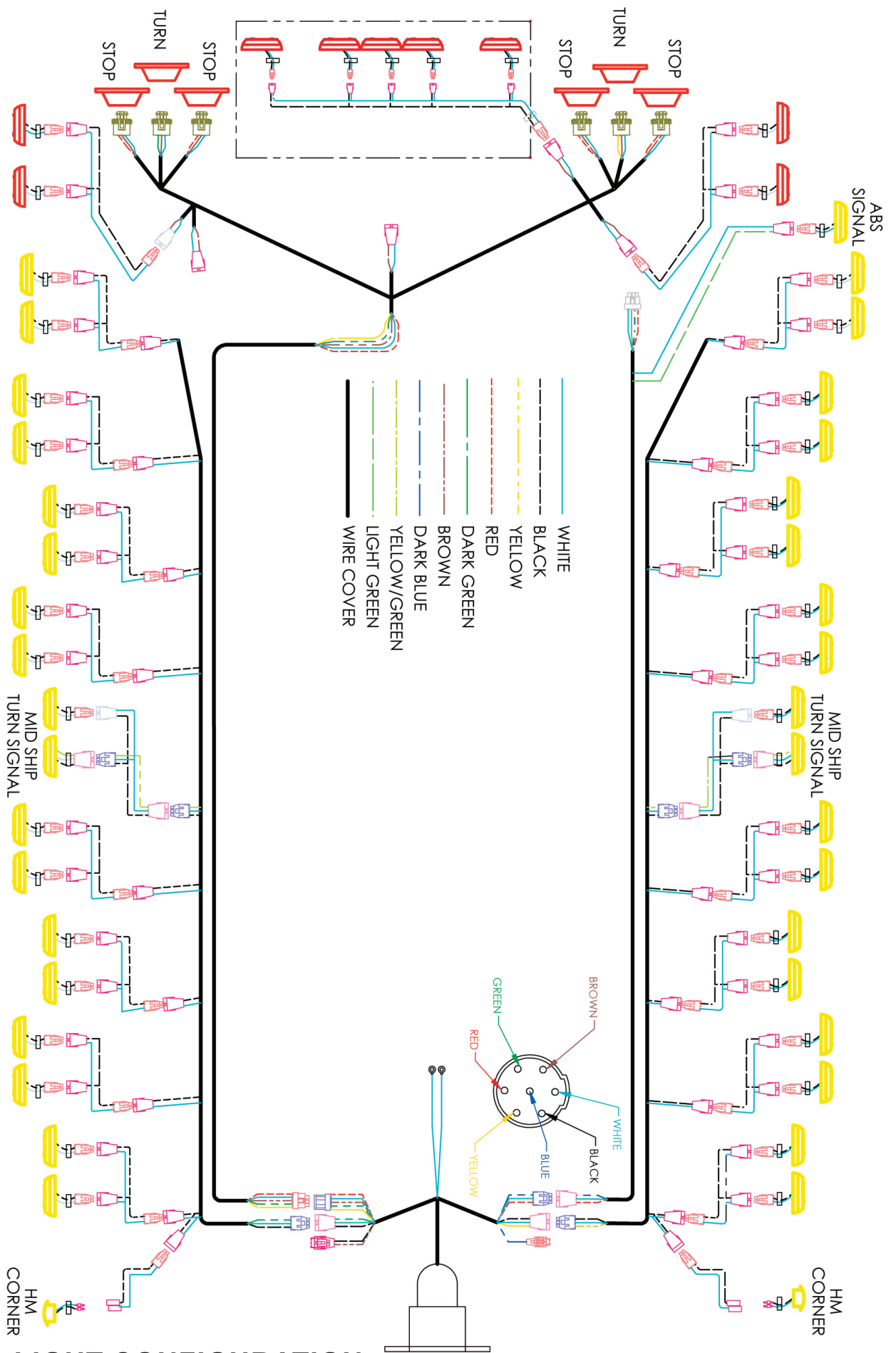
Tractors and trailers using a single 7 way electrical connector will have constant power for the ABS on the center pin when the key switch is “on” and the ABS unit will communicate to the in cab system status warning lamp.



2R3 LIGHT CONFIGURATION



2R5 LIGHT CONFIGURATION



2R9 LIGHT CONFIGURATION

LANDING LEGS

LANDING GEAR LUBRICATION IS IMPORTANT!

Your landing gear was adequately greased and packed with high quality lubricants when manufactured and will not require additional lubrication for the first five (5) year period of service and operation. Following the initial five year period, it will be necessary to periodically supplement this lubrication to maintain satisfactory performance for your particular application. Re-lubrication should be part of your preventative maintenance program and should be done every month or more often, if required.

For **low temperature operations** (under 20° F) use a lithium or an anhydrous calcium extreme pressure grease that operates down to -65°F.

For **cold weather operations**, it is also recommended to fill the gearbox approximately 3/4 full with grease. This helps minimize moisture accumulation, which can freeze, causing hard gear cranking.

For moderate temperature operations (20° F to 150° F) use a lithium or an anhydrous calcium extreme pressure grease.

Lubricate as follows: (**see FIGURE 1**)

1. Fully retract the landing gear, then using high gear, lower the leg 2-3 turns and lubricate the lift-screw assembly through grease fitting “**A**” (see landing gear legs shown below). Apply ½ lb. of grease. Distribute the lubrication by extending and retracting the leg several times.
2. Lubricate the gearbox, using grease fitting “**B**”. Apply ¼ lb. of grease
3. Lubricate the bevel gear using grease fitting “**C**”.

Apply ¼ lb. of grease.

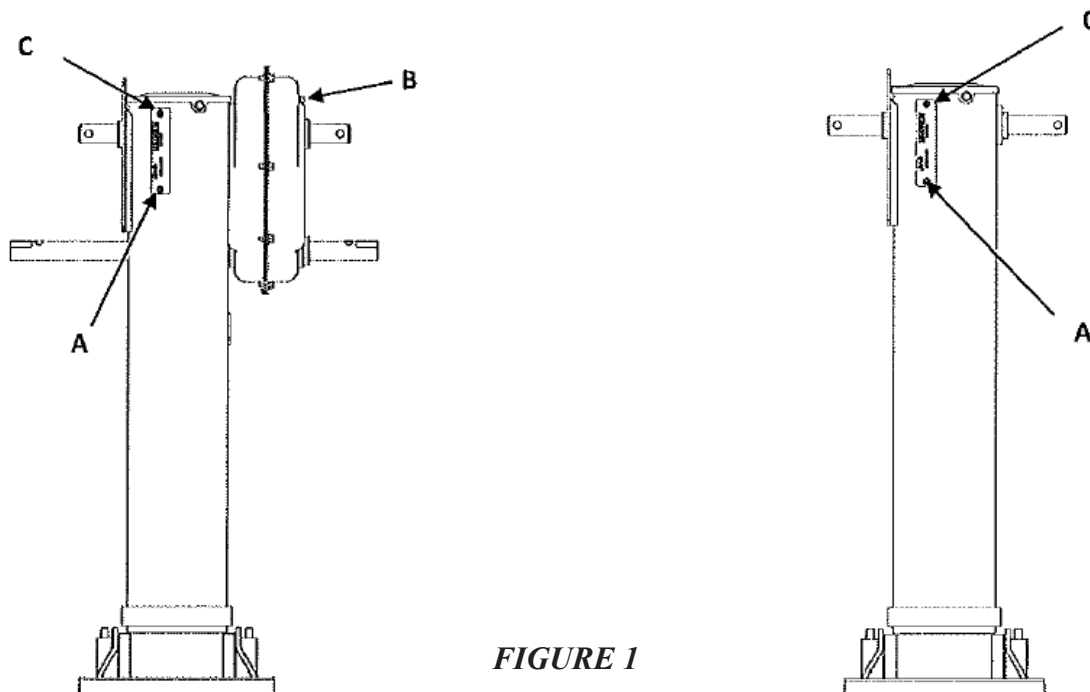


FIGURE 1

MAINTENANCE SCHEDULE - TENDER

Customer Name

In-Service Date

- DAILY
- WEEKLY
- MONTHLY
- ANNUALLY
- SEMI-ANNUALLY
- QUARTERLY
- MILEAGE/HOUR

1. Alignment and Suspension check *

- Suspension Torque Requirements (see decals on trailer or maintenance manual for specific suspension)
- Check suspension for damage (cracks, loose or missing fasteners)
- Check air-ride suspensions for conditions of bushings, air leaks and shock absorbers
- Check spring condition for free movement of equalizer, condition of bushings, torque of fasteners and any type of cracking or damage to the spring leaves.

2. Wheels, Rims, Tires *

- Check all wheel nuts for tightness, should be torqued to 450 to 500 ft-lbs (dry) after 50 to 100 miles of service - weekly thereafter.
- Check tires for cuts and abrasions.
- Check tire inflation daily. Reference Tire Manufacturer load tables for proper pressure.
 - a.) Tire Manufacturers require weekly tire inflation by gauge
 - b.) Tire rotation every 30,000 miles of trailer usage
- Check wheel stud condition for stripped & damaged threads (if damaged see owners manual)
- Confirm bearing end-play every 100,000 miles or during each annual inspection
 - * 0.001 – 0.005” range required, dial indicator measurement
 - * also confirm bearing end-play to support long tire life

3. Lights, Reflective Devices, Brakes and Electrical controls *

- Check and clean all lamps, reflectors and conspicuity tape.
- Check 7-way electrical connection for proper engagement and that it's clean and free of corrosion.
- Check air brake glad hands for cracked housing and for rubber washer damage.
- Check air hoses and air lines for cracking and chafing.
- Check the operation of brakes. Check stroke indicators on auto slacks for proper adjustment.
- Drain moisture from the air brake system by opening the drain cocks on air tanks.
- Check ABS warning lamp for system status.

4. FIFTH WHEEL AND KINGPIN *

- Inspect kingpin and its structure on the trailer for damage or unusual wear.
- Inspect coupling for positive engagement of the fifth wheel and kingpin.
- Inspect for proper lubrication of 5th wheel plate.

5. Trailer Body and Structural Components *

- Visually check trailer body, suspension, sub-frame, upper coupler, etc. for any cracking, deterioration or of any loose or missing fasteners.
- Check trailer sides for damage, sharp bends, ripples or missing fasteners.

6. Tarp System *

- Check to be sure the tarp is in serviceable condition.
- Insure that the latching system is in good working order.
- Check proper operation of electric tarp system if on trailer.
- Securing tarp prior to travel.

7. Lubrication *

- Hub Oil - Check Daily - Change every 100,000 miles (every year minimum)
- Trap operator U-Joints
- Auto slacks
- Cam Bushings (4 times during the life of brake linings - 25,000 miles)
- Two speeds, grease

Actual Reading	Time	Spec	Date	Initials
	MILEAGE/HR			
	DAILY			
	DAILY			
	DAILY			
	WEEKLY			
	DAILY			
	DAILY			
	WEEKLY			
	MILEAGE/HR			
	DAILY			
	ANNUALLY/100K MI.			
	DAILY			
	DAILY			
	DAILY			
	DAILY			
	DAILY			
	DAILY			
	DAILY			
	WEEKLY			
	DAILY			
	DAILY			
	DAILY			
	DAILY			
	DAILY			
	MONTHLY			
	SEMI-ANNUAL			
	MILEAGE/HR			
	SEMI-ANNUAL			

8. Hydraulic System Filter *

- Changing filter element (after first 40 hours)
- Check for leaks on hose connections
- Check for wear on the hydraulic hoses

	SEMI-ANNUAL			
	MONTHLY			
	MONTHLY			

9. Tractor PTO “Wet Kit” *

- Clean, filtered hydraulic oil with an ISO 32 rating. (for cold climate use ISO 22 or ISO 15)
- Check oil and hydraulic fluid cleanliness (see manufacturer’s recommendations for maintenance.)

10. Conveyors *

- Grease bearings on lower and upper conveyors at both ends of each.
- Check belting for wear.

	MONTHLY			
	MONTHLY			

Control Document: 011-46250

Revised: 08/20

IMPORTANT - READ THIS

Timpte Tender Reference Guide

Thank you for purchasing a new Timpte Tender Trailer. If you are a first time purchaser or a long time customer this guide is a starting point to better understanding of your Timpte Trailer.

- Inspect your trailer to ensure that all is correct and complete as ordered.

Maintenance Schedule – Please refer to the maintenance schedule in the trailer packet. This document contains important information about maintenance, lubrication and torque requirements. Some highlights:

- a. Check wheel torque within the first 50 to 100 miles (450 to 500 ft-lbs dry).
- b. Several Daily inspections are required of all operators. Refer to the Operators Manual for details (page 64-65).
- c. Lubrication (Refer to Operators manual).
 1. Check hub oil daily (change every 100,000 miles).
 2. Lubricate auto slacks and Cam bushings every 25,000 miles or semi-annually.
 3. If so equipped ensure that vibrators are getting properly lubricated and oil reservoir is filled. If not equipped with auto oiler, vibrators must be oiled prior to each use.
- d. Change hydraulic filter.
 1. After first 40 hours of use.
 2. At least every 6 months thereafter.

- Warranty – The Timpte Warranty Department will need to be contacted in advance for warranty repairs and a claim number issued for such repairs that are warrantable (402-367-3056).
- Hydraulic Specifications for the Tender Trailer Models:

	30 GPM SOURCE TRUCK SUPPLIED HYDRAULICS	SELF-CONTAINED HYD POWER SUPPLY
GPM	20 - 28 GPM	19 GPM
# of hose connections	1 PRESSURE 1 RETURN	1 PRESSURE 1 RETURN
PSI (at source) Pressure Relief Setting	2800 - 3000 PSI	NOT EQUIPPED
Min Hydraulic Reservoir	30 GALLON	30 GALLON
System Pressure at Valves (Max)	2500 - 2600 PSI	2500 - 2600 PSI

REPORTING SAFETY DEFECTS & OTHER CLAIMS

If you believe that this vehicle contains a safety defect you may contact Timpfe, Inc., the National Highway Traffic Safety Administration (NHTSA) or both.

The trailer was designed and inspected to conform to industry standards and all applicable NHTSA safety standards. Timpfe, Inc. warrants this vehicle to be free from defects in materials and workmanship when manufactured per the limited warranty agreement. If you detect a defect that could cause an accident or could cause an injury or death; or if you wish to report any such accident, injury or death, or any property damage claim or other complaint not addressed to the Timpfe Trailer Warranty Department, then you should contact in writing:

Timpfe, Inc.
Vice President of Engineering
1827 Industrial Drive
David City, NE 68632
Phone: 402-367-3056
Fax: 402-367-4340

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 Timpfe, Inc.

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 Timpfe, Inc.

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

TIMPTTE “PEACE OF MIND” LIMITED WARRANTY

Subject to the following paragraphs and warranty schedule, Timppte, Inc. warrants the **First Purchaser*** from Timppte, or from an authorized Timppte dealer, that a Timppte tender trailer manufactured by Timppte, used in Normal Service**, will be free from defects in materials and workmanship for the period of **THREE YEARS** from the date of delivery to the **First Purchaser*** except as listed in the exceptions below.

Tires

Timppte provides no warranty coverage on the tires. They are covered under a separate manufacturer's warranty.

1 Year Coverage - Parts & labor covered

- Tarps
- Coating on steel parts
- Pneumatic Vibrators
- Conveyor System
- ABS Sensor Adjustment

3 Year Coverage

- Wheel seals - Parts & labor

5 Year Coverage - Parts & limited labor covered

- Landing Legs
- Axles
- Wheels
- Hub & Drum
- Auto slack Brake Adjusters

7 Year Coverage

- Wiring harness (Parts and labor covered for 3 Years – parts only coverage thereafter through year 7).

10 Year Coverage

- LED lights (Parts and labor covered for 3 Years – parts only coverage thereafter through year 10).

This warranty does not cover items that need periodic adjustment as part of normal maintenance such as but not limited to; trap door adjustment, conveyor belt tension and wheel bearing end play adjustment. This warranty does not cover any goods which are not defective, but which wear out and have to be replaced during the warranty period, including for example, but not limited to tires, brake linings, brake drums, lubricants, wheel flaps, seals, grommets, oil filters, wire ties, circuit breakers, hydraulic hoses, conveyor belts, belt splices, seals, and the like.

Timpte reserves the right to change or clarify the warranty coverage at any time. Contact the Timpte Warranty Administration Group at 402-367-3056 for any specific questions on coverage.

TIMPTE BELT CONVEYOR SYSTEM WARRANTY COVERAGE & EXCLUSIONS

Subject to the following paragraphs, Timpte, Inc. warrants the **First Purchaser*** from Timpte, or from an authorized Timpte dealer, that a new Timpte belt conveyor system used in **Normal Service****, will be free from defect in materials and workman ship for a period of 12 months from the date of delivery to the **First Purchaser***.

Misuse, neglect, overloading, improper loading, insufficient or excessive hydraulic pressure or flow rate, failure to follow any recommended loading or operating instructions, failure to follow specified maintenance procedures and intervals, unauthorized repair or structural modifications or failure to provide normal maintenance, failure to stow the conveyor before transport shall void this warranty in its entirety. **Also use of the conveyor in connection with any other trailer than a Conveyor model Timpte trailer would void the warranty.**

This warranty does not cover any goods which are not defective, but which wear out and have to be replaced during the warranty period, including for example, but not limited to hydraulic hoses, hydraulic oil, conveyor belts, seals, flaps, belt splice, and the like.

WARRANTY EXCLUSIONS

Misuse, neglect, overloading, improper loading, failure to follow any recommended loading or operating instructions, failure to follow specified maintenance procedures and intervals, damage caused by insufficient or excessive hydraulic pressure or flow rate, failure to properly stow the conveyor before transport, damage caused by incorrect or contaminated hydraulic oil, unauthorized repair or structural modifications or failure to provide normal maintenance shall void this warranty in its entirety.

This warranty does not cover purchased components, attachments, or accessories, whether acquired from or provided by a Timpte dealer, Timpte branch, or any other party, that are not in accordance with the factory-level standard specifications.

All warranty work must be approved by the Timpte Warranty Department prior to any work being performed.

CUSTOMER RESPONSIBILITIES

The **First Purchaser*** shall regularly inspect and check the trailer and follow all recommended maintenance procedures and intervals.

The **First Purchaser*** shall contact the Timpfe Trailer Warranty Department immediately at 402-367-3056 upon detection of any perceived defect in the materials or workmanship. **Any continued use of the trailer after discovery of a defect that could in any way aggravate the defect or otherwise damage the trailer will void the warranty on that part of the trailer.**

Absolutely no work should be performed to the trailer prior to receiving authorization as evidenced by a valid claim number, from the Timpfe Warranty department. Any work performed prior to receiving authorization will not be covered under warranty.

The **First Purchaser*** shall comply with the instructions of the Warranty Department related to a claim within 30 days of the date of those instructions or the warranty on that part of the trailer is voided. The Timpfe Warranty Department will issue a claim number as authorization for approved warranty repair. Timpfe will not pay for any warranty work that was performed without a valid claim number. All transportation charges in connection with a warranty claim will be the sole responsibility of the **First Purchaser***.

The **First Purchaser's*** sole and exclusive remedy against Timpfe, arising from the purchase and use of the trailer, is limited to repair or replacement of defective materials and workmanship, as provided herein.

TIMPTE MAY AT ITS OPTION REQUIRE THAT THE DEFECTIVE PART OR TRAILER BE RETURNED TO A TIMPTE FACILITY OR A TIMPTE AUTHORIZED SERVICE SHOP, AS TIMPTE MAY DETERMINE.

ALL WARRANTY WORK MUST BE PERFORMED AT THE LOCATION DESIGNATED OR APPROVED IN ADVANCE BY TIMPTE AND TO THE SPECIFICATIONS DICTATED BY TIMPTE.

* **"First Purchaser"** means the first purchaser in good faith for a purpose other than resale.

** **"Normal Service"** means the loading and transportation of uniformly distributed legal loads of properly secured, noncorrosive cargo, in accordance with any applicable factory instructions and in a manner which does not subject the trailer or parts of the trailer to (a) concentrated loads; (b) loads in excess of the Gross Axle Weight Rating (GAWR) or Gross Vehicle Weight Rating (GVWR) stated on the Certification Plate affixed to the trailer by Timpfe; and (c) accidental damage, impact or shock greater than those commensurate with normal, reasonable, lawful use.

*** **"Normal and Customary Charges"** are a sum not exceeding the price charged by Timpfe for such work.

LIABILITY LIMITATIONS

TIMPTE SHALL NOT BE LIABLE TO THE FIRST PURCHASER* OR ANY OTHER PERSON FOR ANY DAMAGES, DIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR OTHERWISE FOR BREACH OF WARRANTY, FAILURE OR DELAY IN MAKING DELIVERY, OR ANY OTHER CAUSE, EXCEPT AS SPECIFICALLY SET FORTH IN THIS WARRANTY. IN NO EVENT WILL TIMPTE'S CUMULATIVE LIABILITY FOR BREACH OF THIS WARRANTY EXCEED THE PRICE CHARGED BY TIMPTE FOR ANY PART TO BE REPLACED PLUS NORMAL AND CUSTOMARY CHARGES *FOR REPAIRS TO BE MADE UNDER THIS WARRANTY.**

WITHOUT LIMITING THE FOREGOING, TIMPTE SHALL NOT BE LIABLE FOR ANY DAMAGES WHATSOEVER AS A RESULT OF CARGO LOSS, DOWNTIME, DRIVER, ROAD SERVICE, TOWING EXPENSE, TIRE REPAIR SERVICE, LOSS OF PROFIT, RENTAL OR SUBSTITUTE EQUIPMENT OR ANY OTHER TYPE OF LOSS DUE TO TRAILER PERFORMANCE. PREMIUM LABOR RATES (I.E. OVERTIME, SERVICE CALLS, ROAD SIDE/MOBILE SERVICE) WILL NOT BE PAID FOR WARRANTY REPAIRS.

THE WARRANTIES SET FORTH HEREIN ARE THE ONLY WARRANTIES APPLICABLE TO TIMPTE BULK COMMODITIES TRAILERS AND ARE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

TIMPTE'S OBLIGATION

In the event of a defect in material or workmanship covered by this warranty, Timppte Inc. in its sole discretion will:

- Correct the defective work or replace the defective parts at Timppte's factory or at a Timppte Branch or dealer assigned by Timppte.
- Or reimburse the **First Purchaser*** by paying a sum not exceeding the price charged by Timppte for such work or part,
- Or provide for repair of the defective parts by an authorized Timppte service facility,
- Or supply a replacement part to the **First Purchaser***, who will install it at his own expense.

To file a claim or if you have any questions concerning this warranty, contact the Timppte Warranty Department at:

**Timppte, Inc.
1827 Industrial Drive
David City, NE 68632
402-367-3056**

Filing a Warranty Claim

To file a warranty claim with Timppte, Inc. pursuant to the Timppte Limited Warranty - contact the Warranty Department at Timppte, Inc. at 402-367-3056 or write;

Timppte, Inc.
Warranty Department
1827 Industrial Drive
David City, NE 68632

When filing a warranty claim several steps can be taken to aid the quick response to your request.

1. **Have the Serial Number of the Trailer** - Everything is registered and logged off the serial number. (Last six of the VIN#)
2. **Know the In-Service Date** - This will help in determining what warranty coverage is available per the Timppte Limited Warranty.
3. **Have contact information available** - The correct name of the owner, address and phone numbers are important to aid in the confirmation process and timely transfer of information.

Timppte Facilities

Timppte Customer Support Centers:

Timppte of Council Bluffs
2902 23rd Avenue
Council Bluffs, IA 51501
800-654-0636

Timppte of Mankato
2225 Howard Drive West
North Mankato, MN 56003
800-334-2096

Timppte of Aurora
3416 South 16th St.
Aurora, NE 68818
888-256-4884

Timppte Trailer Co.
294 "S" Street
David City, NE 68632
833-388-1408

Timppte of Urbana
5368 Hutton Drive
Urbana, IA 52345
866-865-0992

Timppte of Princeton
160 West Progress Drive
Princeton, IL 61356
866-875-6509

Timppte of Bloomington
2312 West Market St.
Bloomington, IL 61705
309-820-1095

Timppte Trailer Co.
3945 S Indianapolis Road
Lebanon, IN 46052
833-743-2290

Timppte of Sioux Falls
25768 Cottonwood Ave.
Sioux Falls, SD 57107
605-543-5160
800-424-8099

Satellite Sales Offices:

Timppte Trailer Co.
100 Columbus-Falls River Rd
Columbus, WI 53925
608-241-4955

Timppte of Sioux City
4325 South York St.
Sioux City, IA 51106
712-389-4670

Locations for Timppte Dealers can be found on the Timppte Website - www.timppte.com

Notes:

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Notes: