



CONE BOTTOM TRAILERS

OWNERS MANUAL SAFETY AND MAINTENANCE INSTRUCTIONS

HEARTLAND AG SYSTEMS
1180 STATE HWY 7 EAST
HUTCHINSON, MN. 55350
(320) 587-4030

ISSUE
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WARRANTY REGISTRATION

TO THE DEALER:

Inspect the implement thoroughly after assembly to be certain it is functioning properly before delivering it to the customer. Check off each item as it is found satisfactory or after proper adjust is made.

PRE -DELIVERY CHECKLIST

- ____ 1. All hardware properly tightened.
- ____ 2. Lubrication of grease fittings.
- ____ 3. All decals properly located and readable.
- ____ 4. Other adjustments, "level operation", "drawbar height", etc.
- ____ 5. Proper tongue weight after all options are mounted.
Adjustments made if required.
- ____ 6. Overall condition. Touch-up paint any scratches. Clean and polish
- ____ 7. Operator's manual.

Seller Information

Date set-up _____
Signature _____
Dealer name _____
Address _____
City, state, zip _____
Phone _____

Review the operator's manual with the customer. Explain the following:

- ____ 1. Safe operation and service
- ____ 2. Correct machine installation and operation.
- ____ 3. Correct and periodic lubrication and maintenance.
- ____ 4. Daily and periodic inspection.
- ____ 5. Troubleshooting.
- ____ 6. Storing machine.
- ____ 7. Heartland AG Systems parts and service
- ____ 8. Have the customer write the machine model and serial number in the space provided in the manual introduction
- ____ 9. Give the customer the operator's manual and encourage the customer to read the manual carefully.

Customer Information

Date delivered _____
Customer name _____
Customer address _____
Signature _____
Model number _____
Serial number _____

PLEASE FILL OUT THIS SHEET AND RETURN TO HEARTLAND AG SYSTEMS

1180 State Highway 7 East Hutchinson, MN 55350

www.heartlandag.com | Heartland Agriculture, LLC dba Heartland AG Systems

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TO THE OWNER

This manual has been prepared to assist you in the assembly of your new equipment and contains information pertaining to safety, operating information and all its parts.

Our personnel in sales and service are always available to assist you when questions arise concerning the assembly and operation of your machine.

When ordering parts, please refer to part numbers and descriptions as listed throughout this book. All parts and whole goods will be shipped FOB Hutchinson, Minnesota. Always check merchandise immediately upon receipt for damage or shortage. Note any discrepancy on the carrier's bill of lading and notify Heartland AG Systems within 10 days.

Any returned goods will be subject to a 20 percent restocking charge.

Heartland AG Systems reserves the right to make improvements and modifications on equipment without obligation to change previously built equipment. All prices are subject to change without notice.

Warranty Policies and Terms

The Heartland Agriculture, LLC warranty is a limited warranty that is provided to the retail purchaser in return for consideration paid as part of the purchase price for a product. The selling dealer must review the warranty coverage with the retail purchaser and obtain a signature on the Operators Manual for warranty verification.

The warranty described here is for Heartland Agriculture, LLC doing business as Heartland AG Systems and its product line Heartland AG Systems Equipment sold and registered in the United States and Canada and normally operated in the United States and Canada.

Warranty Period

The warranty period for all coverage begins at the time that any person, dealer or agent first places the unit into service. At the latest, a unit is placed into service when purchased or delivered to a purchaser.

What's Covered

If a defect in material or workmanship is found in a unit and reported during the Warranty period, Heartland AG Systems will pay parts and labor costs to repair the defects if the services are performed by an authorized Heartland AG Systems dealer. If parts are needed during the repair, Heartland AG Systems will, at its option, use genuine Heartland AG Systems, or remanufactured parts.

Heartland AG Systems provides no warranty, express or implied, for a component or other item that is separately warranted to the purchaser by its manufacturer, such as tires. Check with your local dealer for these details.

Exclusive Remedy

The remedy of repairing a defect in material or workmanship at a Heartland AG Systems dealership under the terms of this warranty is the purchaser's exclusive remedy and is in lieu of any other remedy otherwise available.

No Modification or Extension of Warranty

The Heartland AG Systems Warranty is limited to the written terms in the warranty statement. Heartland AG Systems does not authorize any person, dealer, or agent to change or extend the terms of this warranty in any manner. Any assistance to the purchaser in the repair or operation of any Heartland AG Systems product outside the terms or limitations or exclusions of this warranty will not constitute a waiver of the terms, limitations or exclusions of this warranty, nor will such assistance extend or re-establish the warranty.

The warranty is void if the unit is used in an application for which it is not designed or the unit has been scrapped, salvaged, stolen, junked or totaled.

Limitations and Exclusions

The Heartland AG Systems warranty gives you specific legal rights and you may also have other rights, which vary from state to state. This section contains the entire Heartland AG Systems warranty. Heartland AG Systems makes no other representations or warranties, expressed or implied, and specifically excludes the implied warranties of merchantability and fitness for particular purpose. Heartland AG Systems will not be liable for incidental or consequential damages resulting from a breach of the written warranty or any implied warranty.

- These limitations and exclusions may not be allowed by some states or provinces and shall not apply to the extent such limitations or exclusions are not allowed by applicable state/provincial law.

Owner's Responsibility

The Heartland AG Systems Warranty remains in effect during the warranty period if the owner performs the required maintenance at the recommended intervals outlined in the product's operator's manual and the unit is operated within its rated capacity. Genuine Heartland AG Systems service parts or Heartland AG Systems approved service parts that meet Heartland AG Systems specifications must be used for maintenance and repairs.

What Is Not Covered

- Replacement of non-defective wear items expected to be replaced during the warranty period, including, but not limited to: lights, fuses, belts, drive sprockets and chains, hose, soil engaging tools, spray tips, fertilizer deflectors, spinner blades and accessories or items replaced due to customer demand.
- Normal maintenance parts and service, including, but not limited to lubrication, coolants, and filters.
- All travel costs associated with hauling or towing a customer's machine to and from a repair center related to any warranty repair unless specifically covered by a program or policy.
- Repairs arising from any unauthorized modification to the product.
- Repairs arising from service performed by agents not approved by Heartland AG Systems.
- Repairs arising from storage deterioration, failure to maintain the equipment, improper use of the equipment, collision or other accident, vandalism, or other casualty, or operation beyond the rated capacity or specifications.
- Repairs arising from abuse or neglect including, but not limited to operation without adequate lubricants or coolant, over-speeding, contaminated fluids, improper storage, starting, warm-up, or shutdown practices.
- Failure of the machine, its implements or attachments caused by improper field application or overloading.
- Premiums charged for over-time labor costs.
- Economic loss, including lost profits, crop loss, equipment rental or other expenses.
- Cost associated with cleaning of machine in preparation for service.
- Loss or damage during shipment.

- Cost of initial setup or installation of any optional equipment or attachments to a unit.
- Items used for repairs include, but are not limited to: solvents, cleaners, anti-seize lubricants, oil-dry, shop towels, shop supplies, special tools, etc.
- Included, but not limited to are checkups, adjustments, and shimming, tune-ups, spread pattern checks, etc.
- Unauthorized modification or field fixes.
- All costs of special tools or shop supplies incurred with repairs.
- Claims for stolen equipment or parts.
- Claims for replacing a complete assembly when the repair is less than the replacement.
- Claims involving the inspection or reconditioning of units.
- Shop comebacks: any duplicate, repeat, or comeback repair resulting from improper diagnosis, testing, or poor service work.
- Cost of removing or installing Non-Heartland AG Systems optional equipment or attachments.

Base Warranty Coverage

- Base Warranty is the factory warranty provided to the customer at no additional cost for a specific period covering the complete machine.

• Liquid Applicators, except tires	1 Year
• Spreaders and Tenders, except tires	1 Year
• Nh3 Wagons, except tires	1 Year
• Bumper Hitches	1 Year
• Disc Covers	1 Year
• Parts	90 Days
• Tandem Wagons (except tires and main frame)	1 year
o Tandem Wagon main frame	5 Years
• Nitromaster Toolbars shall carry the following pro-rated warranty:	
o Year one, all components except tires	100%
o Year two, center section and wings	80%
o Year three, center section and wings	50%
o Year four, center section and wings	25%
o Year five, center section and wings	10%

Tires

Tires installed on all Heartland AG Systems Equipment are warranted and serviced by their manufacturer's service outlets. Some manufacturers have separate service outlets for off road agricultural and construction equipment. Service is available by contacting the tire manufacturer's local representative.

Warranty Registration

All machinery items, which are invoiced by Heartland AG Systems on separate receivables, must be registered for warranty. The warranty period for all coverage begins at the time that any person, dealer, or agent first places the unit into service. New machine warranty coverage begins when the machine is registered. Registration is accomplished when a properly completed Warranty Registration is received and processed by Heartland AG Systems.

Operator's Manual/Warranty Receipt Verification

The Heartland AG Systems New Equipment Limited Warranty for Agricultural Equipment statement must be filled out and signed by the customer indicating receipt and an understanding of the operator's manual and the warranty statement,

- The original form must be mailed to the address on the form.
- Make one copy for the Dealer. This copy must be retained by your dealership the same as any other legal document.
- Make a second copy for the customer.

Heartland AG Systems Responsibility

If a defect in material or workmanship is found in a product during its warranty period, Heartland AG Systems will pay parts and labor costs to repair the defect when the service is performed by an authorized Heartland AG Systems dealer or agent. If parts are needed during the repair, Heartland AG Systems will, at its option, use genuine Heartland AG Systems new or remanufactured parts. These responsibilities include, but are not limited to:

- Costs for repairs that are the result of defects in material and workmanship
- Payment to dealers per policy in a timely manner
- Service information to dealers
- Identify product deficiencies and take corrective action by field campaigns
- Make determination of premature wear
- Provide unit that is free of defects in material & workmanship

Dealer Responsibility

Heartland AG Systems dealers are responsible for providing prompt, courteous, and willing service to all Heartland AG Systems equipment owners. These responsibilities include but are not limited to:

- Equipment set-up and pre-delivery
- Sell the right product for the intended application
- Inspect the unit and initiate recovery action on any shipping damage and or shortages
- Instruct customer on proper use, maintenance, and safety features of machine
- Advise and explain warranty coverage to customer
- Diagnose the problem, repair the unit, and submit claims in accordance with the terms and conditions of the warranty claim policies
- Take responsibility for saying "NO" to customers on non-warranty failures
- Apply failure analysis to questionable repairs
- Complete product update campaigns
- Have properly trained technicians and adequate tools for the job
- Retain proper documentation of failure repaired

Owners Responsibility

The Heartland AG Systems warranty remains in effect during the stated warranty period if the owner performs the required maintenance at the recommended times as outlined in the products operator's manual. Genuine Heartland AG Systems or Heartland AG Systems approved service parts must be used for maintenance. Additionally, the owner will pay for all transportation or travel expenses related to any warranty repair.

These responsibilities include, but are not limited to:

- Perform maintenance as indicated in the operator's manual
- Use the unit in the correct application (non-abusive)
- Notify dealer of failures and have the machine available for repair in a timely manner
- Training operators
- Travel cost, towing charges, and service calls
- Normal wear items
- Machine damage (accidental)
- Adjustments for application
- Machine inspection (daily walk-around)

Warranty Eligibility

The dealer is responsible to determine that any Heartland AG Systems equipment is covered by Heartland AG Systems warranty before performing a repair and that the repair is a warrantable failure. Any dealer who is in doubt of the equipment's warranty eligibility may call Heartland AG Systems for verification.

Warranty Repairs Made by the Customer

If a Heartland AG Systems dealer determines that the customer is capable, and the customer requests permission to perform select(warranty)repairs on his product, the Heartland AG Systems dealer is authorized to grant this customer request. The servicing dealer should provide the parts to the customer upon request, and to assure that customer is properly instructed on how to perform the repairs correctly.

The servicing dealer is responsible and accountable for claim accuracy and validity; specifically, in areas such as the parts replaced date, and assurances that the parts are installed as instructed by Heartland AG Systems. The comments section of the claim should clearly state that the customer installed the parts. The claim reimbursement will be for parts and applicable handling only. No labor is allowed! All replacement parts must be held for possible recall.

Parts Shortages on Whole-Goods

Dealers may submit a claim for parts shortages discovered during pre-delivery or during final assembly at the dealer's location. All claims for shortages must be submitted 5 days from the original ship date from the plant and before the warranty start date.

Warranty Reimbursement Policies

Heartland AG Systems provides for warranty reimbursement due to defects in material or workmanship only. Warranty does not include restoring any machine or portion thereof, which has accumulated hours of operation, to factory new condition. This includes customer owned and used equipment.

Except for only a few items not available through Heartland AG Systems, all Heartland AG Systems manufactured equipment warranty repairs must be performed using only Heartland AG Systems genuine new or remanufactured parts and accessories. Installation of non-Heartland AG Systems parts does not qualify for warranty reimbursement and can void the machine's warranty.

Parts

It is fully expected that all claims be filed using part numbers from the applicable Heartland AG Systems equipment parts book whenever such part number exists. Heartland AG Systems shall reimburse the dealer at the dealer net price (cost) in effect on the parts replaced date.

Labor

Heartland AG Systems shall reimburse the dealer at 80% of the dealer's posted retail shop labor rate. The retail shop labor rate shall be subject to verification by Heartland AG Systems from copies of actual dealer invoices to customers.

Outside Charges

Specialized repair such as that done by a machine shop will be accepted as part of a warranty claim at actual cost. Explain the parts used and the service work performed in the description section of the claim and retain a copy of the receipt. Retain a copy of the invoice with the shop work order to support the claim. Outside repairs that exceed the cost of the same repair, if performed by the dealer, will be reimbursed at a lower rate.

Freight



Heartland AG Systems will pay the freight charges when a warranty recalled part is to be returned to Heartland AG Systems.

Travel

Travel will only be reimbursed when authorized by a field campaign.

Repairing or Replacing Parts and Components

When performing a warranty repair, a complete part or component should not be replaced under warranty if the repair can be accomplished at a lower cost. If the total cost of the repair including the cost of parts, labor, and/or outside labor or materials is less than 75% of the cost of the parts, the part must be repaired.

Filters and Lubricants

Replacement of lubricants and filters do not qualify for warranty reimbursement unless damage caused by a defect in material or workmanship results in contamination or sudden loss of fluid. Lack of maintenance, operator misuse, or neglect will not qualify for warranty reimbursement.

Claim Form Guidelines

Claims Must Have

1. Product identification number (PIN) or serial number. All characters of the PIN must be used on the warranty claim.
 - Claims for parts warranty must use the word "PARTS" for the PIN. An invoice that shows date of sale or date of installation must be supplied for all parts claims.
2. Model Number
3. Date of failure – Claims must be submitted within 30 days or repair.
4. Date of repair
5. Warranty start date. Date the unit warranty starts or date the parts were sold for parts warranty.
6. Description of the problem. Describe all problems pertinent to the claim.

Comments should be as precise as possible, attach a separate sheet if necessary, to describe the problem.
7. Description of the work performed. List each significant action of the repair.
8. Itemize labor. Provide a breakdown of labor for each significant repair action in the "Describe Work Performed" column.
9. Shop order numbers. The shop order number field is used for recording your shop work order number that is related to the claim. The shop order number field can also be used to record the parts invoice number when claiming a parts warranty.
10. Customer information. Customer information includes the customer name, city, state, county, and postal code. It must match the warranty registration.
11. Warranty claim total. The total of all reimbursement costs requested.
12. Dealer signature and date. All claims must be signed and dated by the distributor to be validated.

INTRODUCTION

Read this manual carefully. It will instruct you on how to operate and service your machine safely and correctly. Failure to do so could result in personal injury and/or equipment damage.

Right hand and left hand sides of the machine are determined by (standing behind the machine) facing in the direction the machine will travel when going forward.

SAFETY INFORMATION

DANGER: This message denotes the most serious specific potential hazard. This sign will have the color combination of RED and WHITE.

WARNING: This message denotes a specific potential hazard.

CAUTION: This message denotes a reminder of safety practices.

 **NOTE:** Indicates a special point of information.

Carefully read and follow all safety signs.
Reinstall safety signs that are damaged or missing.

Warranty is provided for customers who operate and maintain their equipment as described in this manual. Warranty registration is accomplished by the dealer completing and forwarding the WARRANTY REGISTRATION FORM along with a copy of the dealer's invoice to Heartland Ag Systems. It is in your best interest to insure that this has been done.

WARRANTY does not cover the following.

- 1. Cleaning, transporting, mailing and service call charges.
- 2. Depreciation or damage caused by normal wear, accidents, improper protection or improper use.

***** See complete WARRANTY for details

Record your machine model and serial number in the space provided. Your dealer needs this information to give you prompt, efficient service when you order parts.

MODEL NUMBER _____

SERIAL NUMBER _____

DATE PURCHASED _____

SAFETY

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



THIS SYMBOL MEANS
ATTENTION
BECOME ALERT
YOUR SAFETY IS INVOLVED!

SIGNAL WORDS

Note use following signal words **DANGER**, **WARNING**, and **CAUTION** with safety messages. Appropriate signal word for each has been selected using following guidelines:

DANGER:

Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death. This signal word is to be limited to most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

WARNING:

Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION:

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



EQUIPMENT SAFETY GUIDELINES

Every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You the operator, can avoid many accidents by observing and following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or you yourself, follow them.

In order to provide a better view, certain illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace shield prior to use.

Replace any caution, warning, danger or instruction safety decal that is not readable or is missing. Location of such decals is indicated in this booklet.

Do not attempt to operate this equipment under the influence of alcohol or drugs.

Review safety instructions with all users.

Operator should be a responsible adult. **DO NOT ALLOW PERSONS TO OPERATE OR ASSEMBLE THIS UNIT UNTIL THEY HAVE DEVELOPED A THOROUGH UNDERSTANDING OF SAFETY PRECAUTIONS AND HOW IT WORKS.**

Do not paint over, remove, or deface any safety signs or warning decals on your equipment. Observe all safety signs and practice instructions on them.

Never exceed limits of a piece of machinery. If its ability to do a job, or to do so safely is in question-**DON'T TRY IT.**



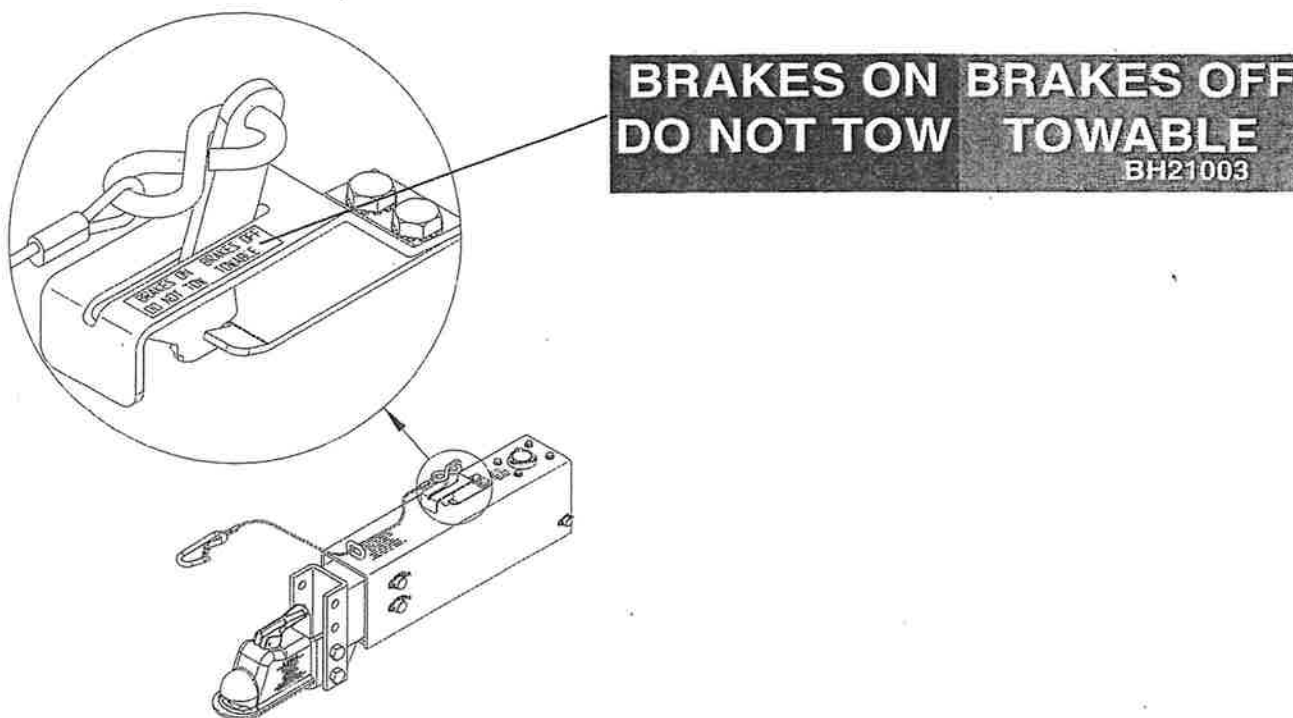
REMEMBER

Your best assurance against accidents is a careful and responsible operator. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or manufacturer.



SAFETY SIGN LOCATIONS

Types of safety sign and locations on equipment are shown in illustration below. Good safety requires that you familiarize yourself with various safety signs, type of warning, and area or particular function related to that area, that requires your SAFETY AWARENESS.



SAFETY SIGN CARE

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replacement parts that displayed a safety sign should also display safety sign.
- Safety signs are available from your distributor, dealer parts department, or factory.

How to install safety signs:

- Be sure that installation area is clean and dry.
- Decide on exact position before you remove backing paper.
- Remove smallest portion of split backing paper.
- Align decal over specified area and carefully press small portion with exposed sticky backing in place.
- Slowly peel back remaining paper and carefully smooth remaining portion of decal into place.
- Small air pockets can be pierced with a pin and smoothed out using piece of decal backing paper.



BEFORE OPERATION:

- Carefully study and understand this manual.
- Always wear protective clothing and substantial shoes.
- Give equipment a visual inspection for any loose bolts, worn parts, or cracked welds, and make necessary repairs. Follow maintenance safety instructions included in this manual.
- Be sure there are no tools lying on or in equipment.
- Do not use equipment until you are sure that area is clear, especially around children and animals.
- Don't hurry learning process or take equipment for granted. Ease into it and become familiar with your new equipment.
- Practice operation of your equipment and its attachments. Completely familiarize yourself and other operators with its operation before using.
- Make sure that brakes are evenly adjusted.
- Make sure tow rating on vehicle is high enough for what it is towing.
- Do not allow anyone to stand between tongue or hitch and towing vehicle when backing up to equipment.
- Securely attach to towing vehicle. Use appropriately sized hitch ball and/or hitch pin with a mechanical retainer and attach safety chains.



DURING OPERATION

- **SAFETY CHAINS** If equipment is going to be transported on a public highway, safety chains should be obtained and installed. Always follow state and local regulations regarding safety chains and auxiliary lighting when towing equipment on a public highway. Be sure to check with local law enforcement agencies for your own particular regulations. Only safety chains (not an elastic or nylon/plastic tow straps) should be used to retain connection between towing and towed equipment in event of separation of primary attaching system.
- Install safety chains by criss crossing chains under tongue and secure to draw bar cage, mounting loops, or bumper frame.
- **When attaching the emergency cable** Allow adequate slack to keep from activating brakes due to interference from parts of the coupler or other attachments on the towing vehicle. Each vehicle tongue configuration is different and therefore each should be handled individually to keep the routing free from entanglements and securely attached to perform as designed in case of emergency disconnection from the towing vehicle.
- Beware of bystanders, **PARTICULARLY CHILDREN!** Always look around to make sure it is safe to start engine of towing vehicle or move equipment. This is particularly important with higher noise levels, as you may not hear people shouting.
- **NO PASSENGERS ALLOWED-** Do not carry passengers anywhere on or in equipment.
- Do not clean, lubricate, or adjust your equipment while it is moving.
- When halting operation, even periodically, set towing vehicles parking brake, shut off engine, and **remove the ignition key**.
- Be extra careful when using on inclines.
- **MANEUVER TOWING UNIT AT SAFE SPEEDS.**
- Avoid loose gravel, rocks, and holes, they can be dangerous for equipment operation or movement.
- Allow for overall length when making turns.
- Keep all bystanders and pets clear of work area.
- Operate towing vehicle from operators seat only.
- Never leave running equipment attachments unattended.
- As a precaution, **always recheck hardware** on equipment following every 100 hours or 50 miles. Correct all problems. Follow maintenance safety procedures.



FOLLOWING OPERATION

- Following operation, or when unhitching, stop towing vehicle, set brakes, shut off the engine and **remove ignition key**.
- Store unit in an area away from human activity.
- Do not permit children to play on or around stored unit.
- Make sure all parked units are on a hard, level surface and engage all safety devices.
- Wheel chocks may be needed to prevent unit from rolling.



HIGHWAY AND TRANSPORT OPERATIONS

- Adopt safe driving practices:
 - Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop.
 - Reduce speed prior to turns to avoid risk of overturning.
 - Always keep towing vehicle in gear to provide engine braking when going downhill. Do not coast.
 - Do not drink and drive!
- Comply with state and local laws governing highway safety on public roads.
- Use approved accessory lighting, flags and necessary warning devices to protect operators of other vehicles on highway during transport. Various safety lights and devices are available from your dealer.
- Local laws should be checked for all highway lighting and marking requirements.
- Plan your route to avoid heavy traffic.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.
- Be observant of bridge loading ratings. Do not cross bridges rated lower than the gross weight at which you are operating.
- Watch for obstructions overhead and side to side while transporting.
- Always operate equipment in a position to provide maximum visibility at all times. Make allowances for increased length and weight of equipment when making turns and/or stopping.



PERFORMING MAINTENANCE

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Make sure there is plenty of ventilation. Never operate engine of towing vehicle in a closed building. Exhaust fumes may cause asphyxiation.
- Before working on this unit, stop towing vehicle, set parking brakes, shut off engine and **remove ignition key**.
- Be certain all moving parts and attachments have come to a complete stop before attempting to perform maintenance.
- Always use safety supports and block wheels. Never use a jack to support unit.

- Always use proper tools or equipment for job at hand.
- Use extreme caution when making adjustments.
- Follow torque chart in this manual when tightening bolts and nuts.
- Openings in skin and minor cuts are susceptible to infection from brake fluid.
Without immediate medical treatment, serious infection and reactions can occur.
- Replace **all shields** and **guards** after servicing and before moving.
- After servicing, be sure all tools, parts and service equipment are removed.
- Do not allow grease or oil to build up on the actuator.
- When replacing bolts, refer to owners manual.
- Refer to bolt torque chart for head identification marking.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. Manufacturer will not claim responsibility for use of unapproved parts or accessories and other damages as a result of their use.
- If equipment has been altered in any way from original design, manufacturer does not accept any liability for injury or warranty.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment



Torque Specifications

See pages 13 and 14 of this manual for proper tightening requirements and methods of tightening wheel bolts.

WARNING

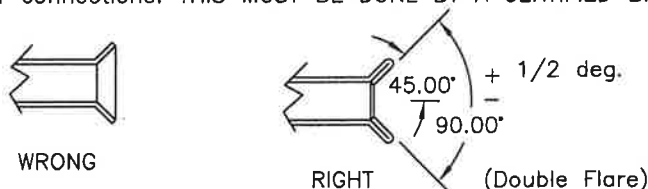
Saltwater, granular fertilizer and other corrosive materials are destructive to metal. To prolong the life of a braking system used under corrosive conditions we recommend that the actuator be flushed periodically with a high pressure water hose. Be sure to regrease bearings and oil all moving parts after the unit has dried. For "end of season" storage remove the brake drums and clean inside the brakes. Pack the wheel bearings before the drums are reinstalled.

1 INITIAL BRAKE CLUSTER SETUP & ADJUSTMENT

The brake adjustment nut is located through the slot at the bottom of the backing plate. Insert brake tool or screw driver into slotted hole with the handle up and a bit against the adjusting nut, pull down on handle and rotate the wheel tightening the nut. ALWAYS ROTATE WHEEL IN DIRECTION OF FORWARD ROTATION ONLY! When you can no longer rotate wheel, back off the tightener 33 clicks to obtain a desired gap of .030 inches between the brake shoe and the brake drum. AT ALL TIMES during the setup and adjustment the drum needs to be rotated in the forward direction of travel because Ag Systems uses free-backing type brake clusters. Check that the brakes function properly when applied and that when released, the brakes do not drag. ONLY A CERTIFIED PROFESSIONAL MECHANIC SHOULD INSTALL BRAKE CLUSTERS.

2 BRAKE LINES

Use care in forming tubing to avoid sharp bends or kinks. Use double flare steel tubing to assure leakproof connections. THIS MUST BE DONE BY A CERTIFIED BRAKE SHOP!

**3 BLEEDING THE SYSTEM**

The first requirement for safe, sure hydraulic braking is the use of quality brake fluid. Use only DOT-3 or DOT-4 brake fluid from a sealed container. If pressure bleeding equipment is available, follow the manufacture's instructions for bleeding the system. IF SYSTEM MUST BE BLED MANUALLY, PROCEED AS FOLLOWS.

Fill master cylinder with fluid. Install the bleeder hose on the first wheel cylinder to be bled. (If tandem axle trailer, bleed rear axle first.) Have the loose end of the hose submerged in brake fluid in a glass container to observe bubbling.

By loosening the bleeder screw located in the wheel cylinder one turn, the system is open to the atmosphere through the passage drilled in the screw.

Pump the actuator with long steady strokes. The bleeding operation is completed when bubbles no longer rise to the surface of the fluid.

BE SURE TO CLOSE THE BLEEDER SCREW SECURELY.

Repeat bleeding operation at each wheel cylinder. During bleeding process,

replenish the brake fluid so the level does not fall below the half full level in the master cylinder reservoir. After bleeding is completed, make sure the master cylinder reservoir is filled and the filler cap is securely in place.

After the bleeding operation is completed, apply pressure to the system and check the whole brake system for leaks.

4 ADJUSTING THE BRAKES (AFTER BLEEDING BRAKES)

On new spreaders or tandems with brakes, trip the emergency brake and check and adjust shoes accordingly to be free and that they hold properly when activated. (See initial brake cluster & adjustment section above for setup information.)

Check that brakes function properly when applied and that when released, the brakes are releasing properly and do not significantly drag.

WARNING !

FAILURE TO FOLLOW THESE INSTRUCTIONS, OR FAILURE TO PROPERLY MAINTAIN BRAKES AFTER INSTALLATION CAN RESULT IN LOSS OF BRAKING ACTION WHICH CAN CAUSE PERSONAL INJURY, DEATH, OR PROPERTY DAMAGE. ONLY A CERTIFIED PROFESSIONAL MECHANIC SHOULD INSTALL BRAKE CLUSTERS. HAVE YOUR BRAKES INSPECTED BY A CERTIFIED PROFESSIONAL MECHANIC AND ANNUALLY AFTER INSTALLATION.

GENERAL TANDEM WAGON ASS'Y

TDMWGNASY
ISSUE NOV 2010

OPERATION AND MAINTENANCE SUMMARY

1. Assemble your wagon per the appropriate parts illustration (line drawing). Make sure all hardware is securely tightened. Generously grease all the pivot points indicated on the assembled wagon illustrations.
2. Bolts securely tightened at assembly may loosen under loaded operation. Within the first hour of loaded operation check the wheel bolts for tightness. Retighten with a torque wrench as required. See bolt Torque Data on pages 29 and 30 of this manual for specific torque requirements. Then check the tire pressure with an air gauge. Inflate tires as required to the recommended level.
3. After every 100 hours of operation, check all assembly and mounting bolts for tightness.
4. Grease all pivot points shown on the assembled wagon illustrations.
If your wagon is equipped with brakes, check the brake fluid level and brake lines for leaks.
5. Visually inspect tire pressure daily. After every 100 hours check the pressure with an air gauge. See page 31 of this manual for the specific air pressure required for your specific tire size and load.
Check the wheel bolts with a torque wrench. See pages 29 & 30 of this manual for specifications.
6. **TOWING ON PUBLIC ROADS.** Do not connect two wagons together. Do not exceed 20 MPH.
It is recommended that a 3/4 ton truck or larger be used when towing wagons up to 16,000# G.V.W.R.
A one ton or larger truck should be used when towing wagons of greater than 16,000# G.V.W.R.
7. **For Winter Storage.**
Thoroughly wash the unit using a pressure washer. Grease all zerks and pivot points.
Inspect the wheel bearings and repack with grease as required.
If your wagon is equipped with brakes, check for brake shoe wear and brake fluid leaks. Make sure the brake fluid reservoir is full. Touch up all paint knicks and scratches.

SPECIFICATIONS FOR LUBRICATING AND ASSEMBLING HUBS FOR FARM IMPLEMENTS

Type of grease.

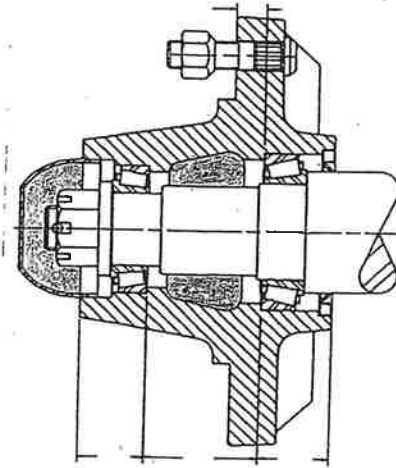
Lithium base

ASTM Worked penetration of 284

Drop point 368 degrees F

Examples:Shell Alvinia EP2

Mobilux EP2



Hub and Spindle Assembly Procedure

- Inspect the hub/cup assembly to assure the cups are seated against shoulders on the hubs.
- Grease the inner cone and place it into the cup. **MAKE SURE IT IS STRAIGHT.**
- Install the grease seal. Use a plug to place pressure evenly against the seal, **SO THAT YOU DON'T** bend the case during installation.
- Pump grease into the hub cavity as indicated above. **DO NOT OVERFILL.** Too much grease can cause the seal to fail or the dust cap to pop loose.
- Use grease to lubricate the seal lip and place the hub onto the spindle. Rotate the hub while installing to the spindle so the seal doesn't "roll under". As the spindle goes into the inner cone, try to feel that the cone is not cocked and is properly seated on the spindle.
- Grease the outer cone and place it over the spindle and into the cup.
- Assemble the washer and nut to the spindle. Using an air wrench to bring the nut down to the cone is not recommended. The washer **MUST NOT CONTACT THE CONE** under power. A torque wrench must be used to make first contact to a torque reading of 15 ft. lbs. **ROTATE THE HUB WHILE TIGHTENING THE NUT.** Then back off the nut until it just becomes loose.
- While rotating the hub, retighten the nut to finger tight. Line up the cotter pin hole in the spindle with the slot in the nut. Insert the cotter pin and bend it.
- Fill the hub cap with grease and install.
- Check the seal for a "turned under" lip. Check the hub for excessive end play. Check the hub for free rotation and any indication of roughness which may indicate misalignment. If any roughness is noted, disassemble the hub and check the inner cup for any small nicks. If a nick is found, place hub aside for rework.

BOLT TORQUE

TORQUE DATA FOR STANDARD NUTS, BOLTS, AND CAPSCREWS.

Tighten all bolts to torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt chart as guide. Replace hardware with same grade bolt.

NOTE: Unless otherwise specified, high-strength Grade 5 hex bolts are used throughout assembly of equipment.



Torque Specifications

Bolt Torque for Standard bolts *

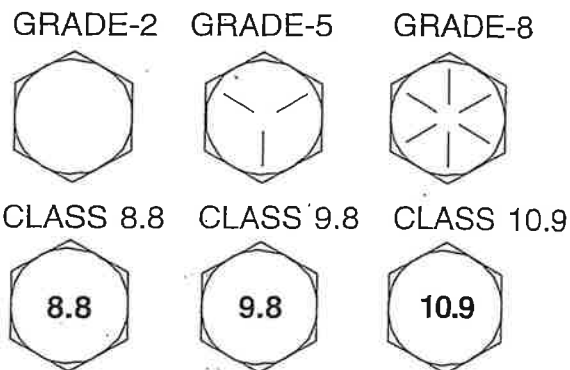
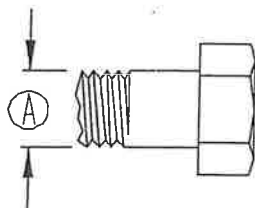
"A"	GRADE 2		GRADE 5		GRADE 8	
	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
1/4"	6	(8)	9	(12)	12	(16)
5/16"	10	(13)	18	(25)	25	(35)
3/8"	20	(27)	30	(40)	45	(60)
7/16"	30	(40)	50	(70)	80	(110)
1/2"	45	(60)	75	(100)	115	(155)
9/16"	70	(95)	115	(155)	165	(220)
5/8"	95	(130)	150	(200)	225	(300)
3/4"	165	(225)	290	(390)	400	(540)
7/8"	170	(230)	420	(570)	650	(880)
1"	225	(300)	630	(850)	970	(1310)

Bolt Torque for Metric bolts *

"A"	CLASS 8.8		CLASS 9.8		CLASS 10.9	
	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
6	9	(13)	10	(14)	13	(17)
7	15	(21)	18	(24)	21	(29)
8	23	(31)	25	(34)	31	(42)
10	45	(61)	50	(68)	61	(83)
12	78	(106)	88	(118)	106	(144)
14	125	(169)	140	(189)	170	(230)
16	194	(263)	216	(293)	263	(357)
18	268	(363)	--	--	364	(493)
20	378	(513)	--	--	515	(689)
22	516	(699)	--	--	702	(952)
24	654	(886)	--	--	890	(1206)

Torque figures indicated are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

* GRADE or CLASS value for bolts and capscrews are identified by their head markings.



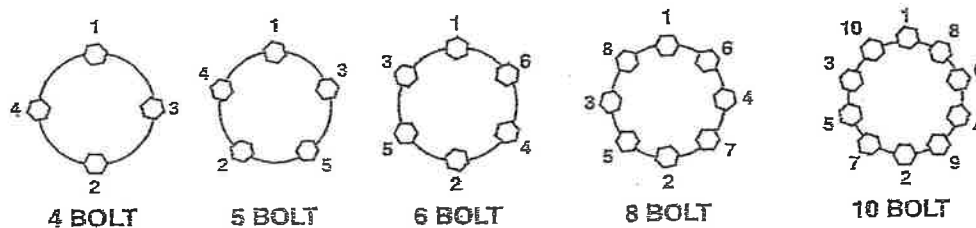
Torque Requirements

It is extremely important to apply and maintain proper wheel mounting torque on your trailer axle. Torque is a measure of the amount of tightening applied to a fastener (nut or bolt) and is expressed as length times force. For example, a force of 90 pounds applied at the end of a wrench one foot long will yield 90 lbs./ft of torque. Torque wrenches are the best method to assure the proper amount of torque is being applied to a fastener.

Note: Wheel nuts or bolts must be applied and maintained at the proper torque levels to prevent loose wheels, broken studs, and possible dangerous separation of wheels from your axle.

Be sure to use only the fasteners matched to the cone angle of your wheel (usually 60° or 90°.) The proper procedure for attaching your wheels is as follows:

1. Start all bolts or nuts by hand to prevent cross threading.
2. Tighten bolts or nuts in the following sequence.
3. The tightening of the fasteners should be done in stages. Following the recommended sequence, tighten fasteners per wheel torque requirements diagram:



4. Wheel nuts/bolts should be torqued before first road use and after each wheel removal. Check and re-torque after the first 50 miles and again at 100 miles. Check periodically there after.

Wheel & Rim Torque Requirements

Description	Application (Steel wheels)	Minimum Torque ft lbs	Maximum Torque ft lbs
1/2" Cone nut	12"-13" Wheel	50	75
1/2" Cone nut	14"-16" Wheel	90	120
9/16" Cone nut	16" Wheel	135	175
5/8" Cone nut	Flat disc Wheel	175	225
5/8" Cone nut	Clamp Ring	190	210
3/4" Hex nut	Demountable	210	260
3/4" Spherical nut	Single Wheel	450	500
3/4" Spherical nut	Inner Dual	450	500
1 1/8" Spherical nut	Outer Dual	450	500
5/8" Flange nut	Wheels	275	325

WARNING ! Check Lug Nuts For Tightness and Tire Pressure Daily

TIRE/RIM MOUNTED	WAGON & MISC TIRE CHART	WHEEL OFFSET	TIRE PRESS/ MAX SPEED	LOAD CAPACITY	TIRE PN	RIM PN	STEM P#
40000	11L X 15 (6 PLY) on 15 X 8 (6 ON 6)	1 1/8+	28 PSI / 30MPH	2100 LBS	20121114	47005589	20120012
40001	11L X 15 RIB IMP (10 PLY) on 15 X 8 (6 ON 6)	1 1/8+	44 PSI / 30MPH	2910 LBS	20111510	47005589	20120012
40002	11L X 15 BJ (12 PLY) on 15 X 8 (6 ON 6)	1 1/8+	52 PSI / 30 MPH	3200 LBS	20121115	47005589	20120012
40003	11L X 15 (8 PLY) on 15 X 8 (6 ON 6)	1 1/8+	36 PSI / 30MPH	2540 LBS	10261	47005589	20120012
40004	12.5L X 15 (10 PLY) on 10 X 15(6 ON 6)	1 1/8+	44 PSI / 30MPH	3420 LBS	20121215	47005809	20120012
40005	12.5L X 15 (12 PLY) on 10 X 15 (6 ON 6)	1 1/8+	52 PSI / 30 MPH	3860 LBS	20121212	47005809	20120012
40006	12.5L X 15 (8 PLY) on 10 X 15 (6 ON 6)	1 1/8+	36 PSI / 30MPH	3000 LBS	30530	47005809	20120012
40007	12.5L X 16 (12 PLY) on 10 X 16 (8 ON 8)	1 1/2-	52 PSI / 30 MPH	3860 LBS	339490	47001016	20120012
40008	14L X 16.1 (8 PLY) on 11C X 16.1 (6 ON 6)	1 1/8+	32 PSI / 30MPH	3820 LBS	20121416	47005819	20120012
40009	14L X 16.1 (8 PLY) on 11C X 16.1 (8 ON 8)	1 1/2-	32 PSI / 30MPH	3820 LBS	20121416	47005816	20120012
40010	16.5 X 16.1 (8 PLY) on 11C X 16.1 (6 ON 6)	1 1/8+	28 PSI / 30MPH	4400 LBS	30459	47005819	20120012
40010A	16.5 X 16.1 (10 PLY) on 11C X 16.1 (6 ON 6)	1 1/8+	36 PSI / 30MPH	5200 LBS	32297	47005819	20120012
40011	16.5 X 16.1 (8 PLY) on 11C X 16.1 (8 ON 8)	1 1/2-	28 PSI / 30MPH	4400 LBS	30459	47005816	20120012
40012	16.5L X 16.1 (10 PLY) on 11C X 16.1 (8 ON 8)	1 1/2-	36 PSI / 30MPH	5200 LBS	32297	47005816	20120012
40013	16.5L X 16.1 (10 PLY) on 14C X 16.1 (8 ON 8)	1 1/2-	36 PSI / 30MPH	5200 LBS	32297	47009814	20120012
40019	12 X 16.5 HWY (12 PLY) on 16.5 X 9.75 (6 ON 6)	1 1/8+	80 PSI / 65MPH	4045 LBS	20121216	47005919	20120022
40020	12 X 16.5 HWY (12 PLY) on 16.5 X 9.75 (8 ON 8)	1 1/8+	80 PSI	4045 LBS	20121216	47005929	20120022
40028	11 X 22.5 NYLON TRANSPORT on 22.5 X 8.25 (8 ON 8)	1 1/2-	65 PSI @ 30MPH	4206 LBS	179906	47006023	20120022
		1 1/2-	70 PSI @ 30MPH	4530 LBS	179906	47006023	20120022
		1 1/2-	80 PSI @ 30MPH	4990 LBS	179906	47006023	20120022
		1 1/2-	90 PSI @ 30MPH	5510 LBS	179906	47006023	20120022
40030	19L X 16.1 (10 PLY) ON 14C X 16.1 (8 ON 8)	1 1/2-	32 PSI @ 30 MPH	6000 LBS	20121617	47009814	20120022
40033	11 x 22.5 Nylon Trans on 22.5 X 8.25 (8 on 8) HD 8000#	1 1/2-	65 PSI @ 30MPH	4206 LBS	179906	47006026	20120022
		1 1/2-	70 PSI @ 30MPH	4530 LBS	179906	47006026	20120022
		1 1/2-	80 PSI @ 30MPH	4990LBS	179906	47006026	20120022
		1 1/2-	90 PSI @ 30MPH	5510 LBS	179906	47006026	20120022
40034	12.5L X 15 HWY ON 10 X 15 (6 on 6)	1 1/8+	60 PSI @ 30MPH	4480 LBS	364806	47005809	20120022
PROPER TIRE PRESSURE FOR AG206 & AG207 WAGON							
40039	USED 385/65R x 22.5J on 11.25 x 22.5 (8 on 8)	1 1/2-	45 PSI @ 30MPH	4100 LBS	38565225U	47009385	20120022
	Front Tires 45 PSI / 30 MPH	1 1/2-	55 PSI @ 30MPH	5013 LBS	38565225U	47009385	20120022
	Rear Tires 55 psi / 30 MPH	1 1/2-	65 PSI @ 30MPH	5925 LBS	38565225U	47009385	20120022
		1 1/2-	70 PSI @ 30MPH	6380 LBS	38565225U	47009385	20120022
		1 1/2-	90 PSI @ 30MPH	7650 LBS	38565225U	47009385	20120022
40037	USED 425/65R X on 11.25 x 22.5 L (8 ON 8)	1 1/2-	45 PSI @ 30MPH	4880 LBS	42565225U	47009385	20120022
	AVAILABLE ON AG207 WAGON ONLY!	1 1/2-	55 PSI @ 30MPH	5965 LBS	42565225U	47009385	20120022
	Front Tires 45 PSI / 30MPH	1 1/2-	70 PSI @ 30MPH	7590 LBS	42565225U	47009385	20120022
	Rear Tires 55 psi / 30 MPH	1 1/2-	90 PSI @ 30MPH	9100 LBS	42565225U	47009385	20120022

IMPROPER TIRE PRESSURES MAY LEAD TO
PREMATURE TIRE FAILURE AND WAGON FATIGUE!

TROUBLE SHOOTING:

READ THROUGH THIS TROUBLE SHOOTING PAGE.

If you have a problem that is difficult to solve, please call your local AgSystems dealer or distributor. Before you call, please have this Operator's Manual ready.

<u>PROBLEM</u>	<u>CAUSE</u>	<u>SOLUTION</u>
Wagon doesn't track through field.	Poor wheel spacing. Bent reach pole. Loose wheel strut clamp	Set wheels in center of crop row. Replace. Replace. Realign wheel and tighten.
Wagon sways on road.	Fifth wheel worn. Dry 5th wheel assembly. Tire pressure too low. Traveling too fast. Bent axle or spindle. Loose wheel bolts. Loose or worn wheel bearings Bent reach pole. Pulling more than one unit	Replace. Lubricate. Inflate to proper pressure. Slow down to 20 mph. Replace. Tighten to specified torque. Tighten or replace. Replace. Pull only one unit.
Wagon pulls to one side.	Uneven tire pressure. One brake is dragging.	Inflate to proper pressure. Adjust brakes. Replace shoes if worn.
Tire wobbles.	Bent wheel. Loose wheel bolts. Loose or worn wheel bearings. Loose spindle nut.	Replace. Tighten to specified torque. Tighten or replace. Snug appropriately and replace cotter pin.
Excessive bearing wear.	Lack of lubrication. Spindle nut too loose or too tight. Bent spindle. Dirt inside hub. Moisture inside hub.	Lubricate. Snug appropriately and replace cotter pin. Replace. Replace seal and inspect dust cap. Use lithium based grease.
Trouble stopping.	Traveling too fast. Pulling vehicle too light. Brake not working	Slow down to 20 mph. Use one ton truck or larger Adjust or replace.
Bad tire wear.	Axle bent or out of line. Bent spindle. Bent wheel. Traveling too fast.	Replace or repair. Replace. Replace. Slow down to 20 mph.

SERVICE RECORD

See Lubrication and Maintenance sections for details of service. Copy this page to continue record.

ACTION CODE: L LUBRICATE CL CLEAN R REPACK

MAINTENANCE	HOURS																
	SERVICED BY																
Weekly or 40 Hours																	
L 5th Wheel Pivot (3)																	
BI-Annually																	
R Wheel Bearings																	
CL Entire Unit																	

It is recommended that a separate service record be kept for each unit in your fleet.

See Lubrication and Maintenance sections for details of service. Copy this page to continue record.

ACTION CODE: L LUBRICATE CL CLEAN R REPACK

MAINTENANCE	HOURS																
	SERVICED BY																
Weekly or 40 Hours																	
L 5th Wheel Pivot (3)																	
BI-Annually																	
R Wheel Bearings																	
CL Entire Unit																	

It is recommended that a separate service record be kept for each unit in your fleet.

ITEM	FUNCTION REQUIRED	WEEKLY	EVERY 3 MONTHS OR 3,000 MILES	6 MONTHS OR 6,000 MILES	12 MONTHS OR 12,000 MILES
Wheel Torque	Check at 50 miles		●		
Brakes	Test that they are operational	At Every Use			
Brake Adjustment	Adjust to proper operating clearance		●		●
Brake Magnets	Inspect for wear and current draw			●	
Brake Linings	Inspect for wear or contamination				●
Brake Controller	Check for correct amperage & modulation			●	
Brake Cylinders	Check for leaks, sticking				●
Brake Lines	Inspect for cracks, leaks, kinks.				●
Trailer Brake Wiring	Inspect wiring for bare spots, fray, etc.				●
Breakaway System	Check battery charge and switch operation	After Every Use			
Hub/Drum	Inspect for abdominal wear or scoring.				●
Wheel Bearing & Cups	Inspect for corrosion or wear. Clean & repack.				●
Seals	Inspect for leakage. Replace if removed.				●
Springs	Inspect for wear, loss of arch				●
Suspension Parts	Inspect for bending, loose fasteners, wear.			●	
Hangers	Inspect welds				●
Wheel Nuts and Bolts	Tighten to specified torque values.		●		
Wheels	Inspect for cracks, dents or distortion.			●	
Tire Inflation Pressure	Inflate tires to mfg.'s specifications.	●			
Tire Condition	Inspect for cuts, wear, bulging, etc.		●		

SC1200 TRAILER PARTS ILLUSTRATION

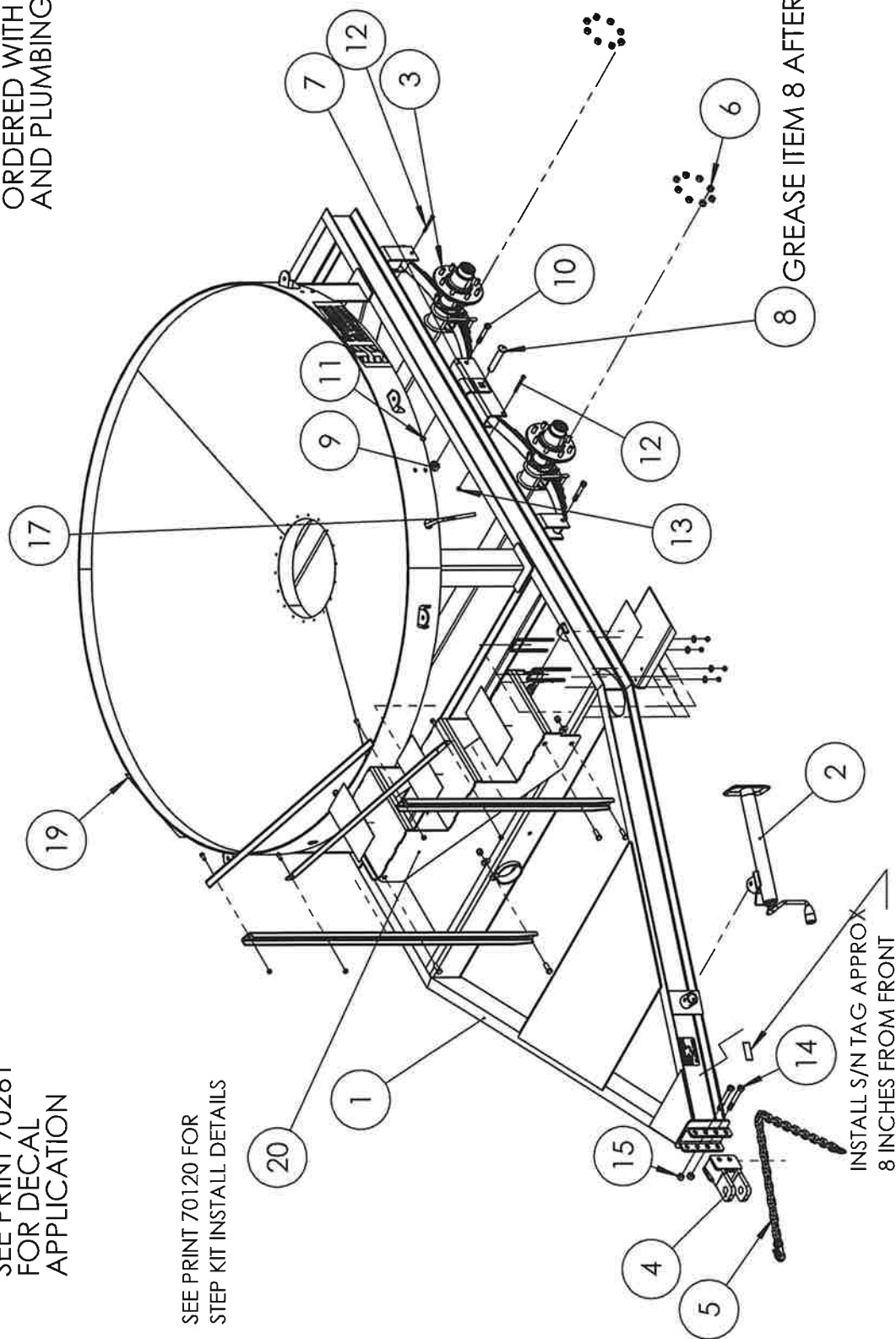
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SHOWN WITH STANDARD OPTIONS

NOTES: ITEMS 17 & 18
SHIP LOOSE UNLESS
ORDERED WITH TANK
AND PLUMBING KIT

SEE PRINT 70261
FOR DECAL
APPLICATION

SEE PRINT 70120 FOR
STEP KIT INSTALL DETAILS



8 GREASE ITEM 8 AFTER ASSEMBLY

INSTALL S/N TAG APPROX
8 INCHES FROM FRONT

SC1200 TRAILER PARTS ILLUSTRATION

P/N: 70100

ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	70915	1	SINGLE CONE TRAILER WELDT
2	600378	1	JACK, TWL 158 DTSF W/P&C
3	29-S7082006700865IS9E	2	7K IDLE AXLE, 82" HUB FACE, 67-1/16 SPRING CENTER, UNDERSLUNG, WHEELCO
4	12676-81	1	CLEVIS, 20K GVWR, BOLT ON, DEMCO
5	47000314	1	SAFETY CHAIN W/HARDWARE
6	29-S7082006700865IS9E-1	32	9/16 LUG NUT (INCLUDED WITH 29-S7082006700865IS9E)
7	70187	2	EQUALIZER
8	7-1-1	2	EQUALIZER BOLT WITH ZERK
9	6-111	2	7/8-9 LOCK NUT
10	7-17	4	9/16-18 X 3-1/2 SHACKLE BOLT
11	6-7	4	9/16-18 TOP LOCK NUT
12	7-7	4	5/16-18 X 3-1/4 BOLT
13	6-11	4	5/16-18 CENTER LOCK NUT
14	18058050	2	BOLT, 5/8 X 4-1/2 GR 8 NC ZC
15	18458451	2	NUT, TOP LOCK, 5/8-11
16	TND36W2SPRG	1	TANDEM 36" SUSPENSION ASSEMBLY (PRE-ASM TO AXLE), WHEELCO
17	70080	1	VALVE PULL HANDLE WELDT
18	70261	1	SINGLE CONE DECAL KIT
19	70120	1	STAIR KIT
21	70110	1	FENDER KIT, SC1200
22	70130	1	HOSE HOLDER KIT
30	19-4	1	SINGLE CONE REFLECTER TAPE KIT

*ITEMS 6 AND 8-13 ARE INCLUDED WITH AXLES AND SUSPENSION AND SHOWN IN BOM FOR ASSEMBLY ONLY

ADDITIONAL OPTIONS

ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
20	70140	1	HARD TANK TIE DOWN KIT, SC1200
23	1200 GAL TANK	1	1200 GALLON TANK, 91 OD, 15 DEG SLOPE
25	70195	1	INDUCTOR MOUNT PLATE KIT
26	70196	1	FRONT FORCE FILL SUPPORT PLATE KIT
27	70090	1	UNIVERSAL TANK TIE DOWN KIT, 1200-1300 GAL
28	70198	1	BALL HITCH COUPLER KIT
29	70199	1	PINTLE RING HITCH KIT
31	70204	1	WHEEL PACKAGE, SC1200
32	71456	1	SC1200 LIGHT KIT
33	70092	1	SC1200 BRAKE KIT 2 AXLES
34	70093	1	SC1200 BRAKE KIT 1 AXLE
35	70184	1	VALVE TURN HANDWHEEL ASM

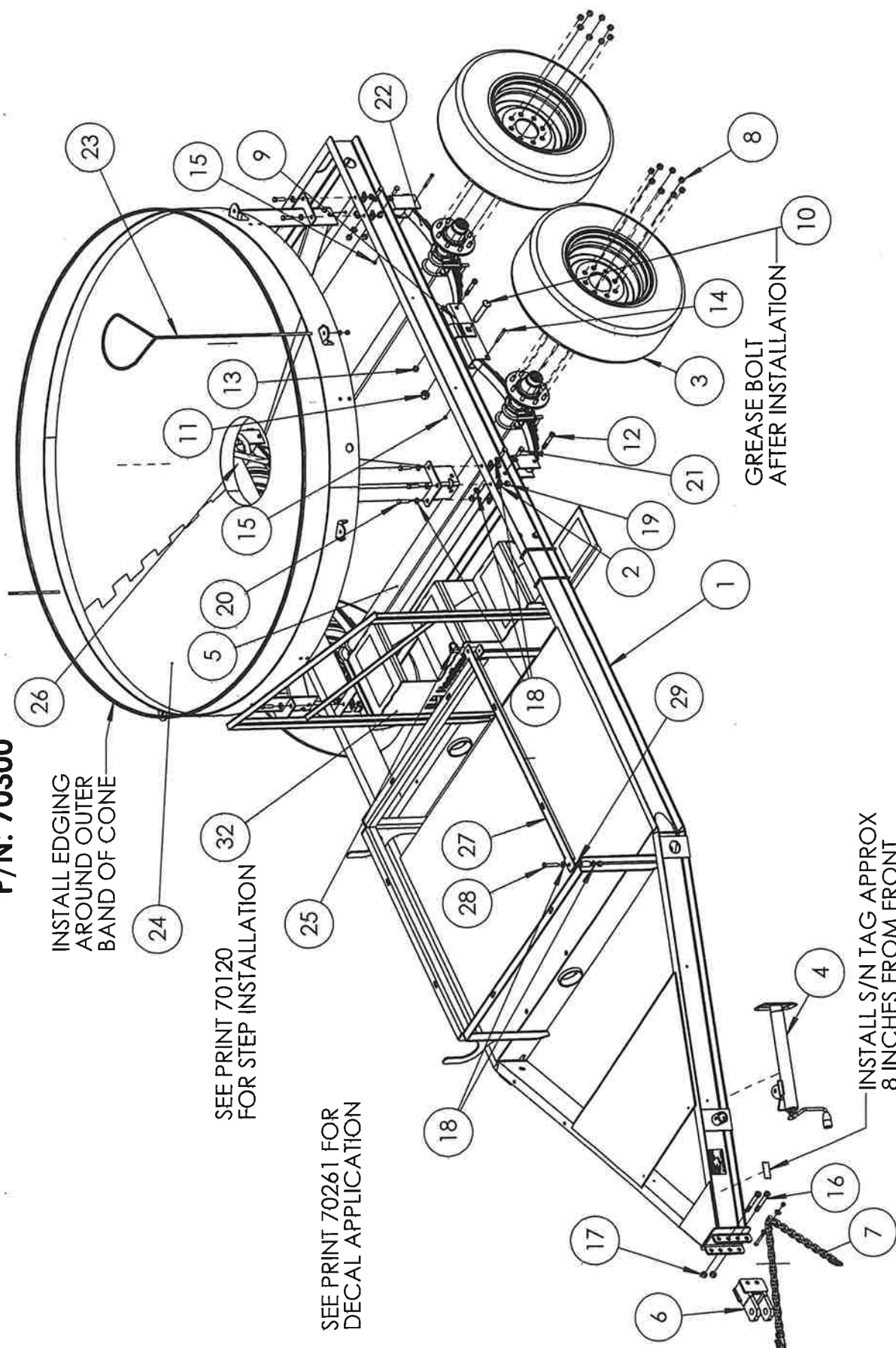
PLUMBING KITS

PART #	DESCRIPTION	PART #	DESCRIPTION
70693	2" STANDARD	70695	3" STANDARD
70171	2" INDUCTOR	70170	3" INDUCTOR
70694	2" FRONT RECIRCULATION	70696	3" FRONT RECIRCULATION

***REPLACEMENT HUB PART NUMBER K-373464-U INCLUDES BEARINGS, SEAL, DUSTCAPS & LUG NUTS**

SC1200LF TRAILER PARTS ILLUSTRATION

P/N: 70300



SC1200LF TRAILER PARTS LISTING

P/N: 70300

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	70150	CONE BOTTOM FRAME, EXTENDED	1
2	91152A033	LEVELING WASHER, 1/2 SCREW, MCMASTER CARR	12
3	40041	ST235-80R-16E WHEEL ASM	4
4	600378	JACK, TWL158 DISF W/P&C	1
5	29-S7082006700865IS9E	7K IDLE AXLE, 82" HUB FACE, 67-1/16 SPRING CENTER, UNDERSLUNG, WHEELCO	2
6	12676-81	CLEVIS, 20K GVWR, BOLT ON, DEMCO	1
7	47000314	SAFETY CHAIN W/HARDWARE	1
8	29-S7082006700865IS9E-1	9/16 LUG NUT (INCLUDED WITH 29-S7082006700865IS9E)	32
9	70187	EQUALIZER, PAINTED	2
10	7-1-1	EQUALIZER BOLT WITH ZERK (INCLUDED WITH TND36W2SPRG)	2
11	6-111	7/8-9 LOCK NUT (INCLUDED WITH TND36W2SPRG)	2
12	7-17	9/16-18 X 3-1/2 SHACKLE BOLT (INCLUDED WITH TND36W2SPRG)	4
13	6-7	9/16-18 TOP LOCK NUT (INCLUDED WITH TND36W2SPRG)	4
14	7-7	5/16-18 X 3-1/4 BOLT (INCLUDED WITH TND36W2SPRG)	4
15	6-11	5/16-18 CENTER LOCK NUT (INCLUDED WITH TND36W2SPRG)	4
16	18058050	BOLT, 5/8 X 4-1/2 GR 8 NC ZC	2
17	18458451	NUT, TOP LOCK, 5/8-11	2
18	18811400	WASHER, FLAT 1/2 ZC	46
19	18567400	NUT SS NYLOCK 1/2	28
20	18057430	BOLT, HX CAP 1/2-13 X 2 LG	12
21	18057426	BOLT, HX CAP 1/2-13 X 1 1/2 LG	16
22	TND36W2SPRG	TANDEM 36" SUSPENSION ASSEMBLY (PRE-ASM TO AXLE), WHEELCO	1
23	70140	HARD TANK TIE DOWN KIT, SC1200	1
24	70050	15 DEGREE CONE WELDMENT	1

**ITEMS 8 & 10-15 ARE SUPPLIED WITH AXLES AND SUSPENSION AND SHOWN IN BOM FOR ASSEMBLY ONLY

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
25	98480A016	WIRE LOCK CLEVIS PIN, 3/8" OD X 1-1/8" LONG	1
26	70184	VALVE TURN HANDWHEEL ASM	1
27	70159	STORAGE RACK GATE	1
28	23595742	STEEL WHEEL AXLE WITH GREASE FITTING, 1/2" OD X 2-13/16" LONG	1
29	18984800	WASHER NYLON 1/2	1
30	24175K45	HD PLASTIC EDGING, 1/4"	24 FT
31	70261	SINGLE CONE DECAL KIT	1
32	70120	STAIR KIT	1

ADDITIONAL OPTIONS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
34	1200 GAL TANK	1200 GALLON TANK, 91 OD, 15 DEG SLOPE	1
35	70110	FENDER KIT, SC1200	1
36	70195	INDUCTOR MOUNT PLATE KIT	1
37	70196	FRONT FORCE FILL SUPPORT PLATE KIT	1
38	70090	UNIVERSAL TANK TIE DOWN KIT, 1200-1300 GAL	1
39	70130	HOSE HOLDER KIT	1
40	29-4	SC1200LF REFLECTOR TAPE KIT	1
41	70198	BALL HITCH COUPLER KIT	1
42	70199	PINTLE RING HITCH KIT	1
43	70092	SC1200 BRAKE KIT, 2 AXLE	1
44	70093	SC1200 BRAKE KIT, 1 AXLE	1

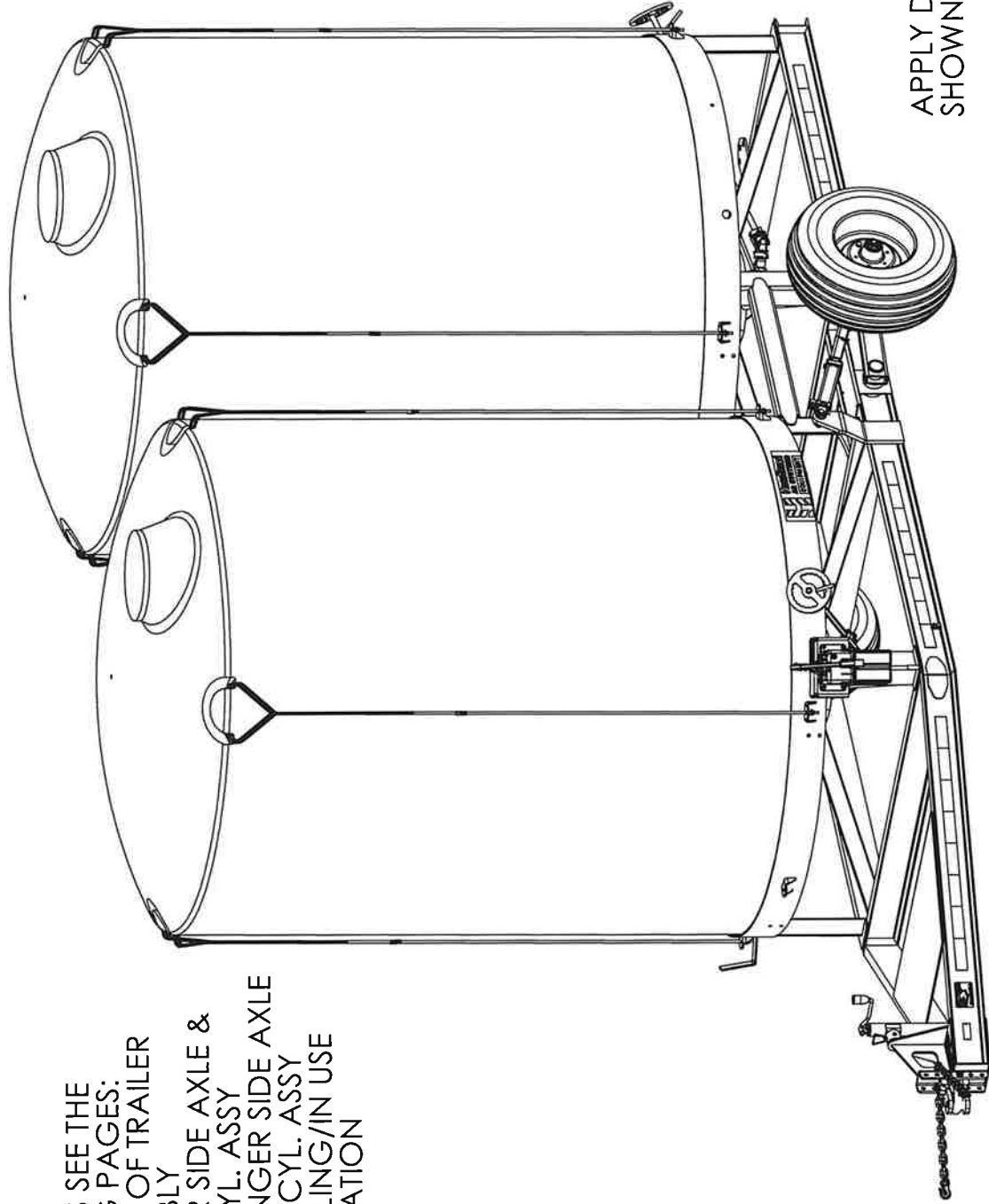
PLUMBING KIT

PART #	DESCRIPTION	PART #	DESCRIPTION
70693	2" STANDARD	70695	3" STANDARD
70171	2" INDUCTOR	70170	3" INDUCTOR
70694	2" FRONT RECIRCULATION	70696	3" FRONT RECIRCULATION

DC3000 TRAILER PARTS ILLUSTRATION

P/N: 70200

FOR DETAILS SEE THE
FOLLOWING PAGES:
-FRONT OF TRAILER
ASSEMBLY
-DRIVER SIDE AXLE &
HYD. CYL. ASSY
-PASSENGER SIDE AXLE
& HYD. CYL. ASSY
-TRAVELING/IN USE
ILLUSTRATION



APPLY DECALS AS
SHOWN ON PRINT 70260

DC3000 TRAILER PARTS LISTING

P/N: 70200

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	70902	DUAL CONE TRAILER WELDT	1
2	1131287	2.5 BORE X 8" STROKE CYLINDER, FORCE AMERICA	2
3	40003	WHEEL MTD 11X15 8PLY ON 15X8 6-6	2
4	1079938	PMS12 DOUBLE HAND PUMP ONE (106.902.00371), FORCE AMERICA	1
5	70235	CYLINDER LOCK CHANNEL	2
6	98416A401	1/4 DIA X 2 1/2 LG CLEVIS PIN, SQUARE WITH LOOP AND TAB, MCMASTER CARR	2
7	600378	JACK, TWL158 DTSF W/P&C	1
8	47000314	SAFETY CHAIN W/HARDWARE	1
9	12676-81	CLEVIS, 20K GVWR, BOLT ON, DEMCO	1
10	18058050	BOLT, 5/8 X 4-1/2 GR 8 NC ZC	2
11	18458451	NUT, TOP LOCK, 5/8-11	2
12	18901805	GREASE ZERK, 1/4-28, STRAIGHT	2
13	18051628	BOLT HX 3/8 X 1-3/4	4
14	18459200	NUT 3/8 NYLOCK	4
15	1014294	ELBOW #6 MJIC X #4 O-RING M	1
16	1143810	6 ORB BREATHER PLUG (0A009431) FORCE AMERICA	2
17	1164377	ADAPTER TEE 7/16X20 MJIC X 7/16X20 MJIC X 9/16X18 MORB (6803-04-04-06) FORCE AMERICA	1
18	47005012	WHEEL BOLT, 9/16-18NF	2
19	70247	AXLE WASHER	4
20	70243	AXLE BUSHING STOP	2
21	70201	STUB AXLE ASM, PASSENGER SIDE	1
22	18057950	BOLT, HX, 5/8 X 4-1/2	2
23	18457900	NUT, LOCK 5/8 NC	2
24	18851600	WASHER, FLAT 5/8 SAE	4
25	70202	STUB AXLE ASM, DRIVERS SIDE	1
26	70236	1/4 HYDRAULIC HOSE, 114" LONG, #4 JICFS X #4 JICFS	1
27	70239	1/4" HYDRAULIC HOSE, 96" LONG, #4 JICFS X #4 JICFS	1
28	70080	VALVE PULL HANDLE WELDT	2
29	70260	DUAL CONE TRAILER DECAL KIT	1
45	18721018	SELF TAP SCREW #10 X 3/4	6
32	41859	CLAMP VINYL COVERED 9/16 .343 HOLE	6
33	70130	HOSE HOLDER KIT	1
40	33-4	DUAL CONE TRAILER REFLECTOR TAPE KIT	1

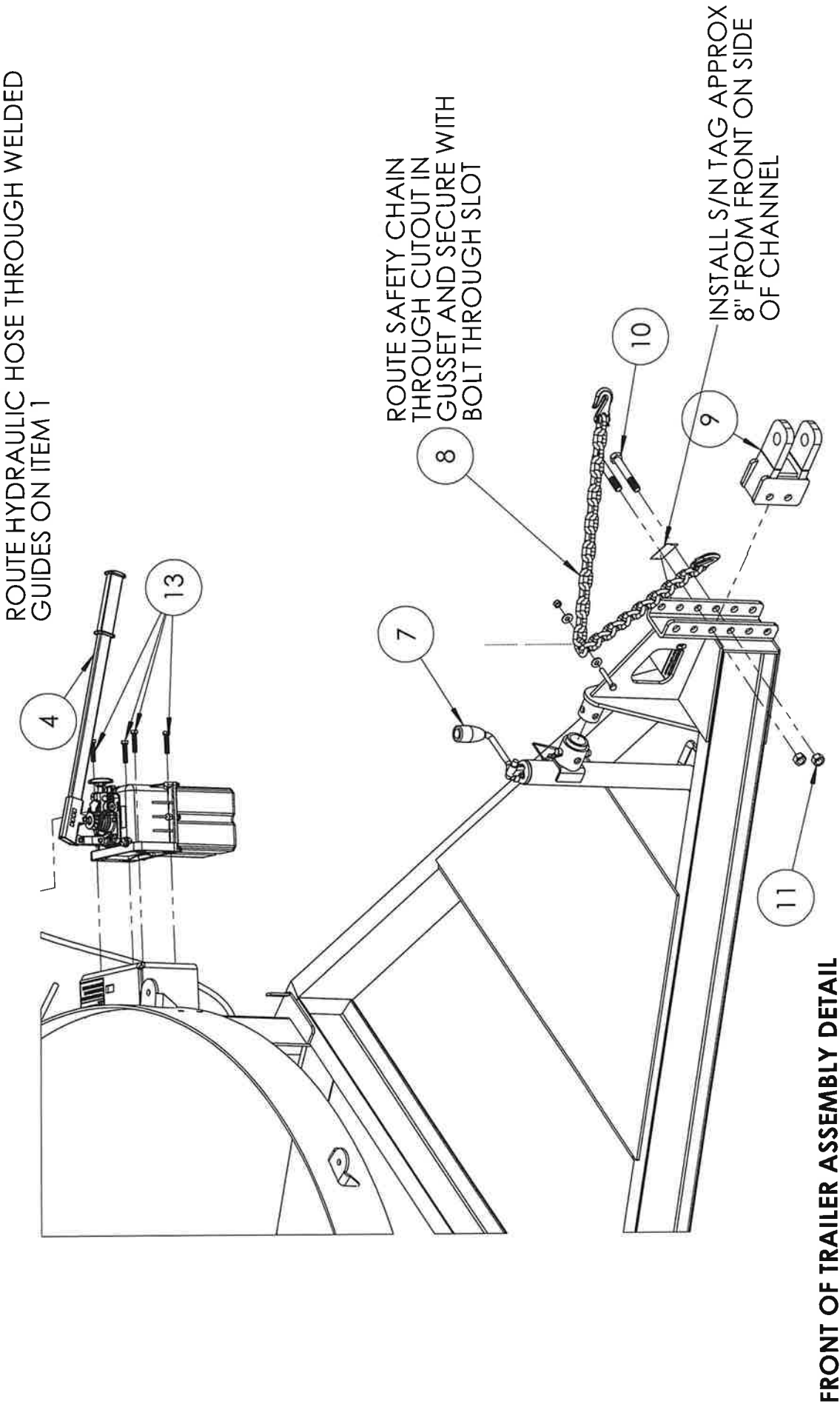
ADDITIONAL OPTIONS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
34	70195	INDUCTOR MOUNT PLATE KIT	1
35	3000 GAL TANK	3000 GAL CAPACITY, 90-91 DIAM, 15 DEG	2
36	2500 GAL TANK	2500 GAL TANK, 91" OD, 15 DEGREE SLOPE	2
37	70248	3000 GAL TANK TIE DOWN KIT	2
38	70147	2500 GAL TANK TIE DOWN KIT	2
39	70240	UNIVERSAL TANK TIE DOWN KIT, 2500-3000 GAL	2
41	71456	UNIVERSAL LIGHT KIT	1
42	70198	BALL HITCH COUPLER KIT	1
43	70199	PINTLE RING HITCH KIT	1
44	70184	VALVE TURN HANDWHEEL ASM	2

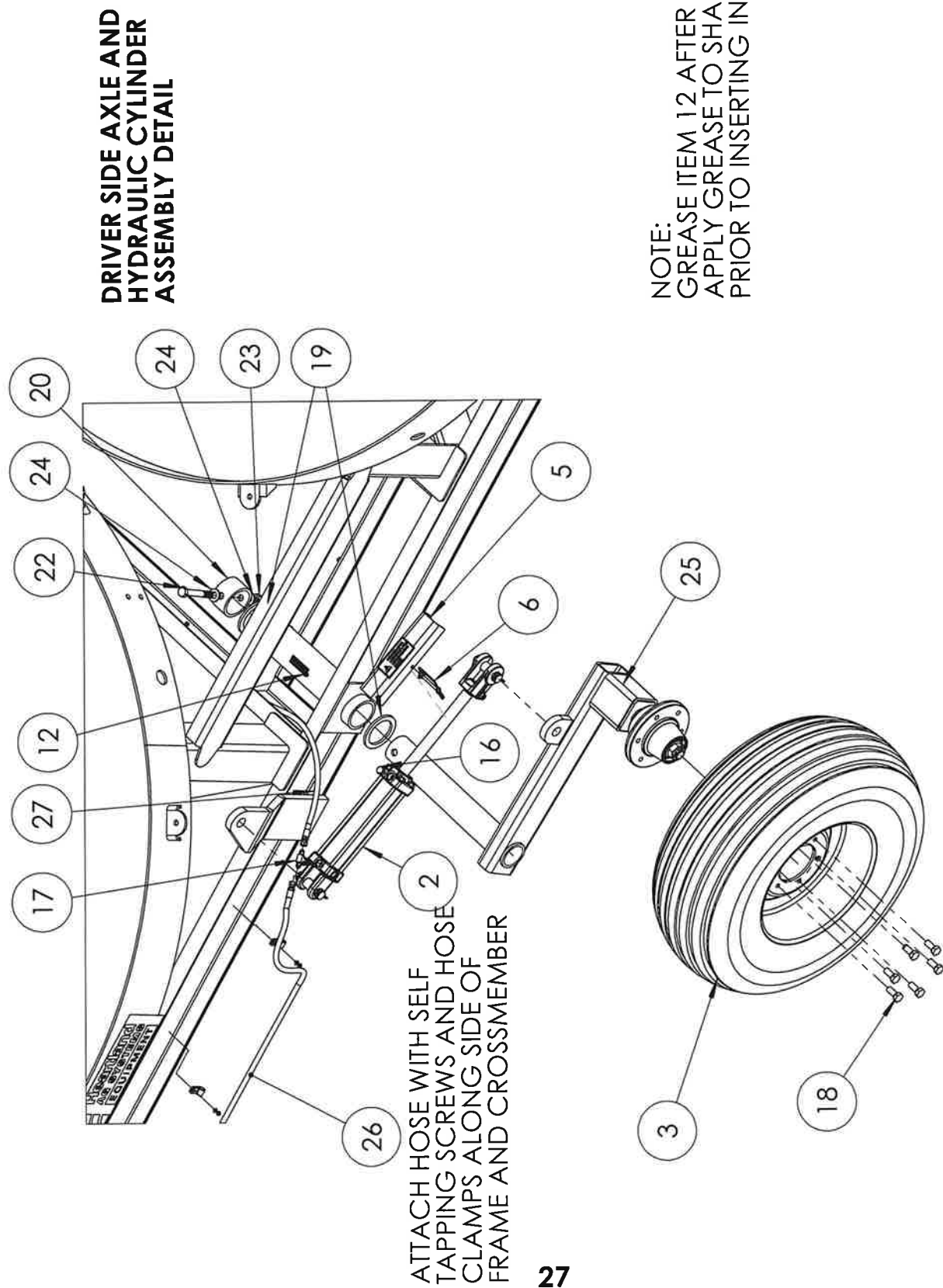
PLUMBING KITS

PART #	DESCRIPTION	PART #	DESCRIPTION
70697	2" STANDARD	70698	3" STANDARD
70171	2" INDUCTOR	70170	3" INDUCTOR
70703	2" FRONT RECIRC	70699	3" FRONT RECIRC

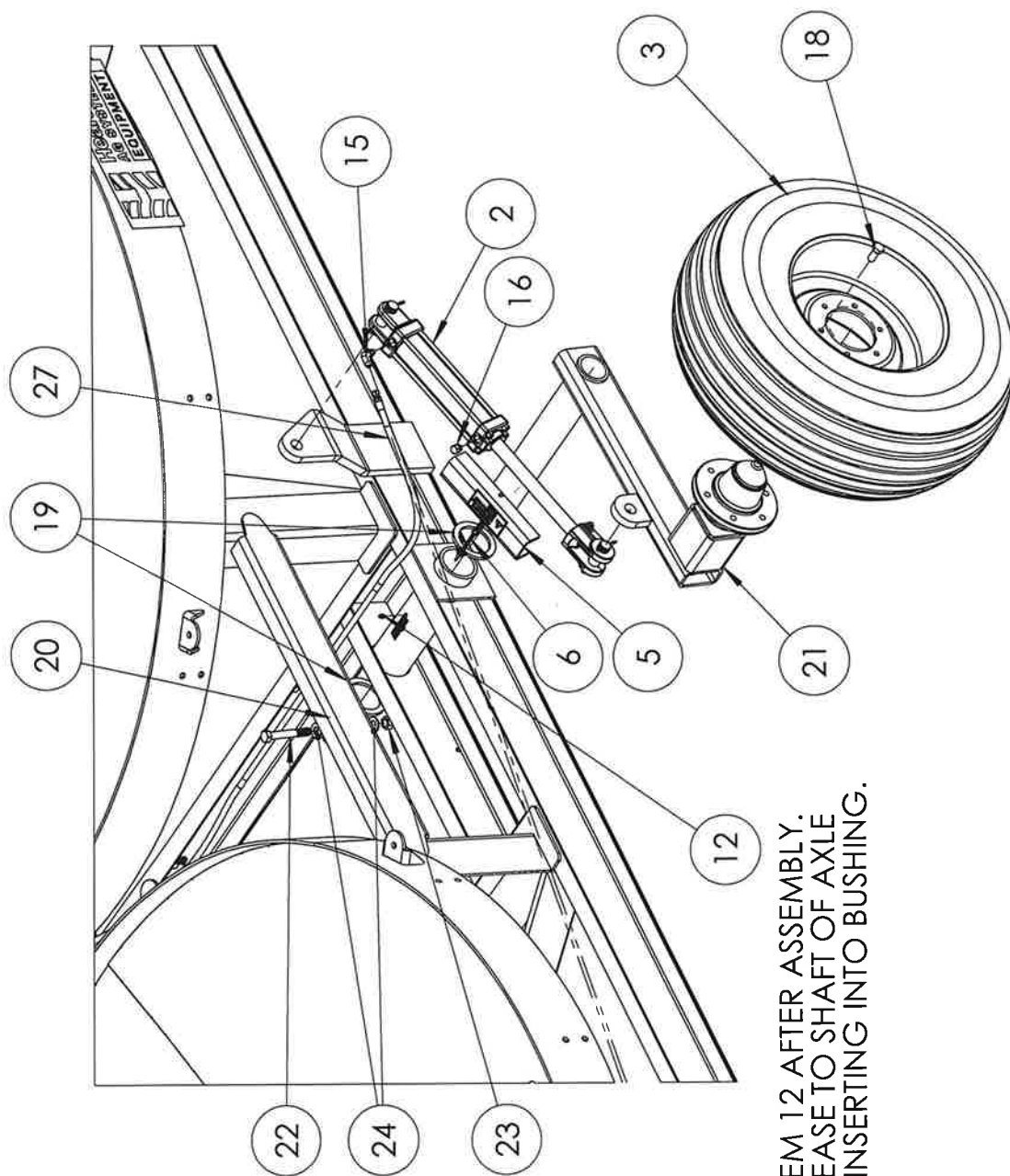
DC3000 TRAILER PARTS ILLUSTRATION
FRONT OF TRAILER ASSEMBLY DETAIL



DC3000 TRAILER PARTS ILLUSTRATION



DC3000 TRAILER PARTS ILLUSTRATION



NOTE:
GREASE ITEM 12 AFTER ASSEMBLY.
APPLY GREASE TO SHAFT OF AXLE
PRIOR TO INSERTING INTO BUSHING.

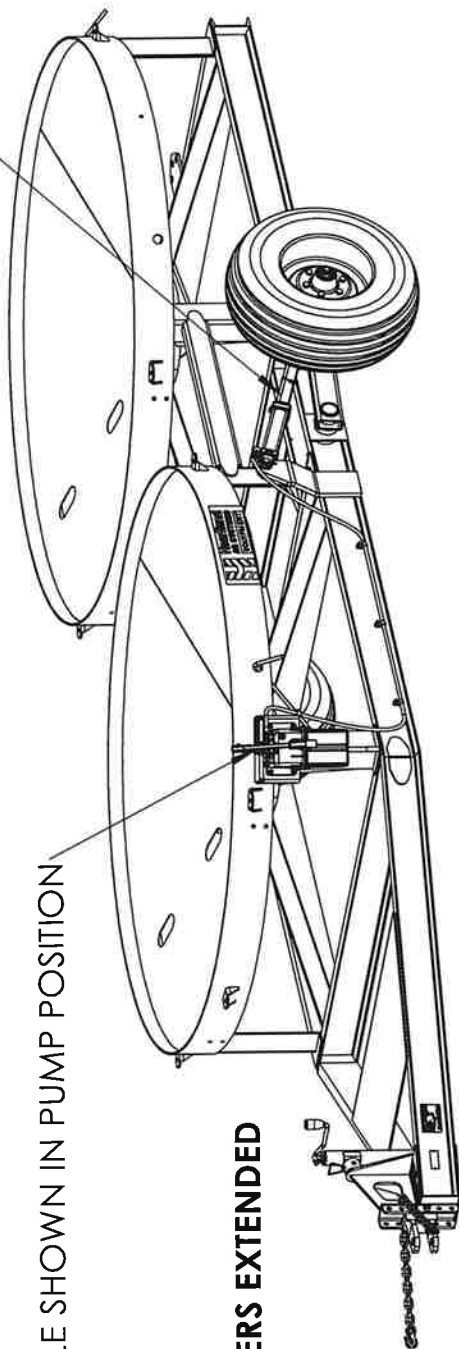
PASSENGER SIDE AXLE AND
HYDRAULIC ASSEMBLY DETAIL

DC3000 TRAILER PARTS ILLUSTRATION

CYLINDER LOCK SHOWN
IN LOCKING POSITION

HANDLE SHOWN IN PUMP POSITION

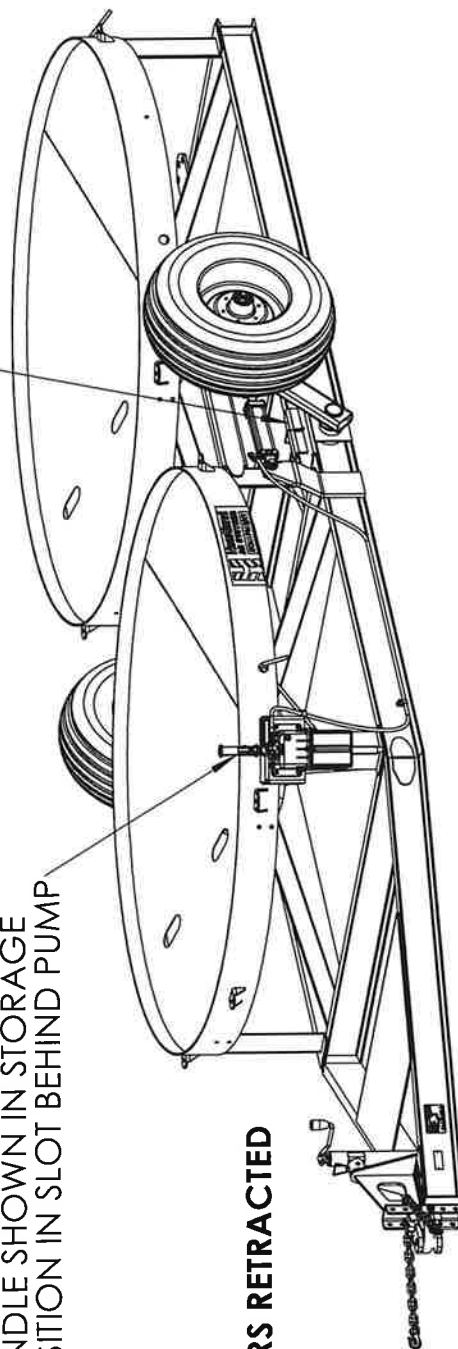
CYLINDERS EXTENDED



CYLINDER LOCK SHOWN IN STORAGE
POSITION ON AXLE CHANNEL

HANDLE SHOWN IN STORAGE
POSITION IN SLOT BEHIND PUMP

CYLINDERS RETRACTED



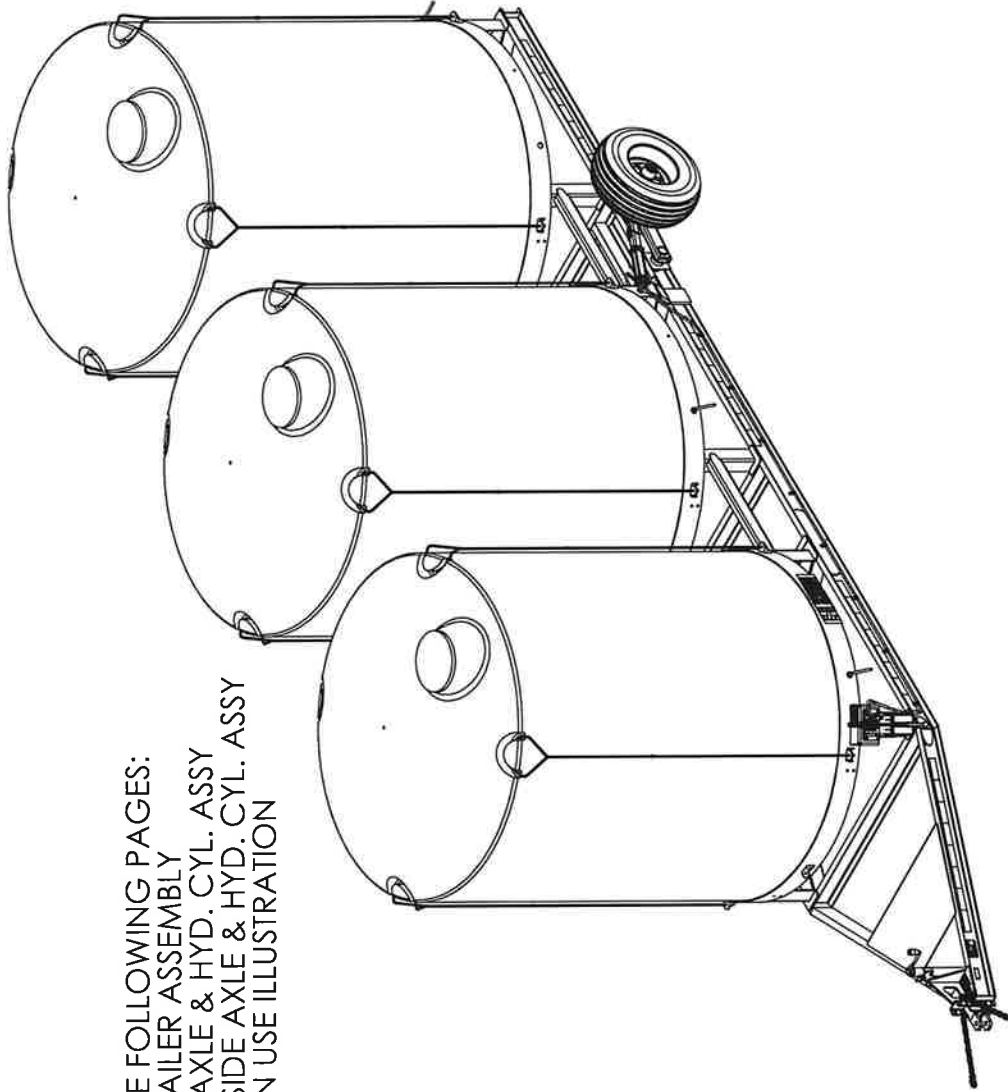
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TC3000 TRAILER PARTS ILLUSTRATION

P/N: 70400

FOR DETAILS SEE THE FOLLOWING PAGES:

- FRONT OF TRAILER ASSEMBLY
- DRIVER SIDE AXLE & HYD. CYL. ASSY
- PASSENGER SIDE AXLE & HYD. CYL. ASSY
- TRAVELING/IN USE ILLUSTRATION



TC3000 TRAILER PARTS LISTING

P/N: 70400

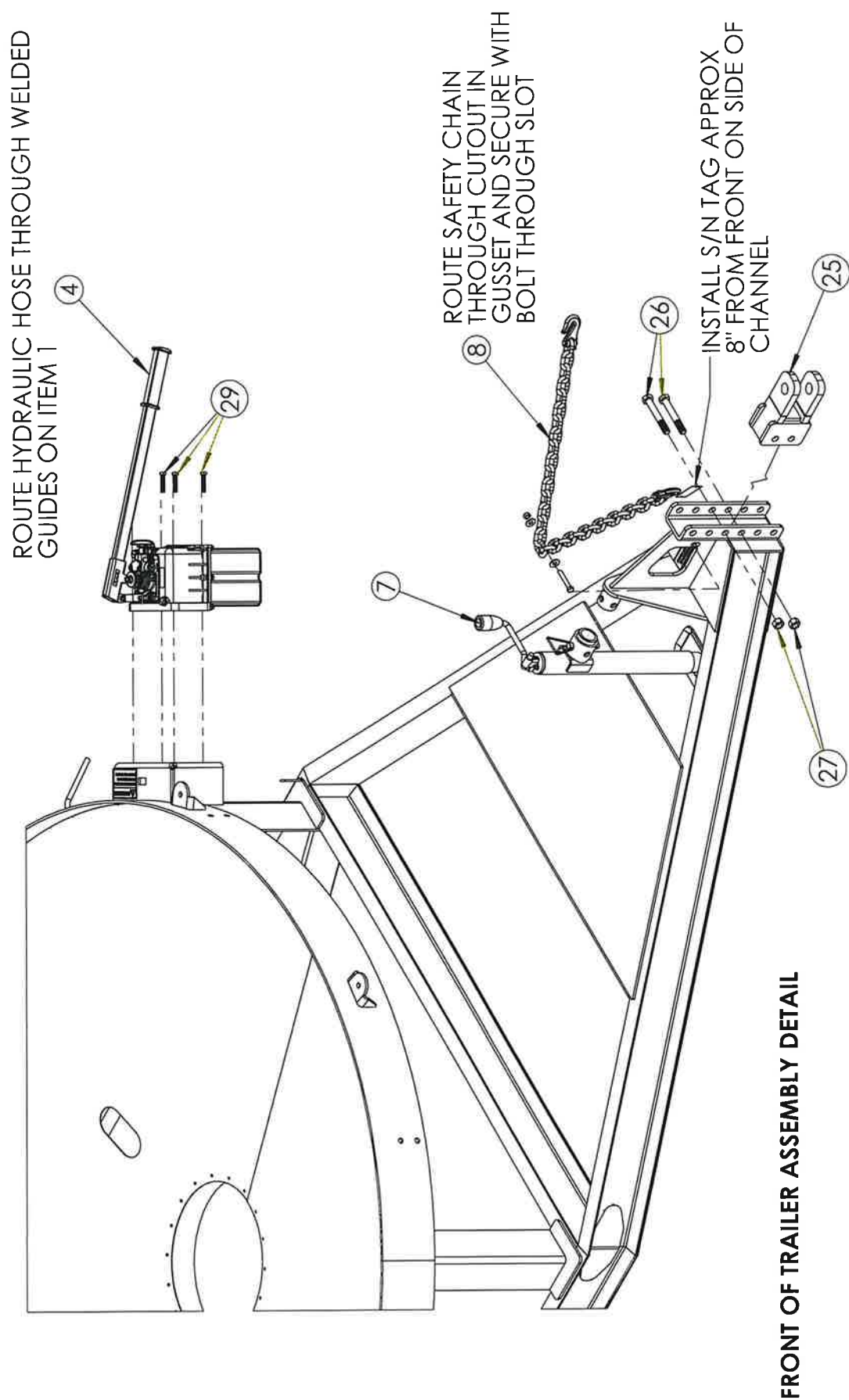
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	71053	TRIPLE CONE TRAILER WELDMENT	1
2	1131287	2.5 BORE X 8" STROKE CYLINDER, FORCE AMERICA	2
3	40003	WHEEL MTD 11X15 8PLY ON 15X8 6-6	2
4	1079938	PMS12 DOUBLE HAND PUMP ONE (106.902.00371), FORCE AMERICA	1
5	70235	CYLINDER LOCK CHANNEL	2
6	98416A401	1/4 DIA X 2 1/2 LG CLEVIS PIN, SQUARE WITH LOOP AND TAB, MCMASTER CARR	2
7	600378	JACK, TWL158 DTSF W/P&C	1
8	47000314	SAFETY CHAIN W/HARDWARE	1
9	1014294	ELBOW #6 MJIC X #4 O-RING M	1
10	1143810	6 ORB BREATHER PLUG (0A009431) FORCE AMERICA	2
11	1164377	ADAPTER TEE 7/16X20 MJIC X 7/16X20 MJIC X 9/16X18 MORB (6803-04-04-06) FORCE AMERICA	1
12	47005012	WHEEL BOLT, 9/16-18NF	12
13	SN TAG	MODEL DC3000	1
14	70247	AXLE WASHER	4
15	70243	AXLE BUSHING STOP	2
16	70201	STUB AXLE ASM, PASSENGER SIDE	1
17	18057950	BOLT, HX, 5/8 X 4-1/2	2
18	18457900	NUT, LOCK 5/8 NC	2
19	18851600	WASHER, FLAT 5/8 SAE	4
20	18901805	GREASE ZERK, 1/4-28, STRAIGHT	2
21	70202	STUB AXLE ASM, DRIVERS SIDE	1
22	71055	1/4" HYDRAULIC HOSE, 202" LG #4JICFS X #4JICFS	1
23	70239	1/4" HYDRAULIC HOSE, 96" LONG, #4 JICFS X #4 JICFS	1
24	70260	DUAL CONE TRAILER DECAL KIT	1
25	12676-81	CLEVIS, 20K GVWR, BOLT ON, DEMCO	1
26	18058050	BOLT, 5/8 X 4-1/2 GR 8 NC ZC	2
27	18458451	NUT, TOP LOCK, 5/8-11	2
28	18459200	NUT 3/8 NYLOCK	4
29	18051628	BOLT HX 3/8 X 1-3/4	4
30	70080	VALVE PULL HANDLE WELDT	3
31	41859	CLAMP VINYL COVERED 9/16 .343 HOLE	10
46	18721018	SELF TAP SCREW #10 X 3/4	10
33	70130	HOSE HOLDER KIT	1
40	40-4	TRIPLE CONE TRAILER REFLECTOR TAPE KIT	1

ADDITIONAL OPTIONS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
34	70195	INDUCTOR MOUNT PLATE KIT	1
35	2500 GAL TANK	2500 GAL TANK, 91" OD, 15 DEGREE SLOPE	3
36	3000 GAL TANK	3000 GAL CAPACITY, 90-91 DIAM, 15 DEG	3
37	70147	2500 GAL TANK TIE DOWN KIT	3
38	70248	3000 GAL TANK TIE DOWN KIT	3
39	70240	UNIVERSAL TANK TIE DOWN KIT, 2500-3000 GAL	3
41	70198	BALL HITCH COUPLER KIT	1
42	70199	PINTLE RING HITCH KIT	1
43	70184	VALVE TURN HANDWHEEL ASM	3
44	71456	UNIVERSAL LIGHT KIT	1

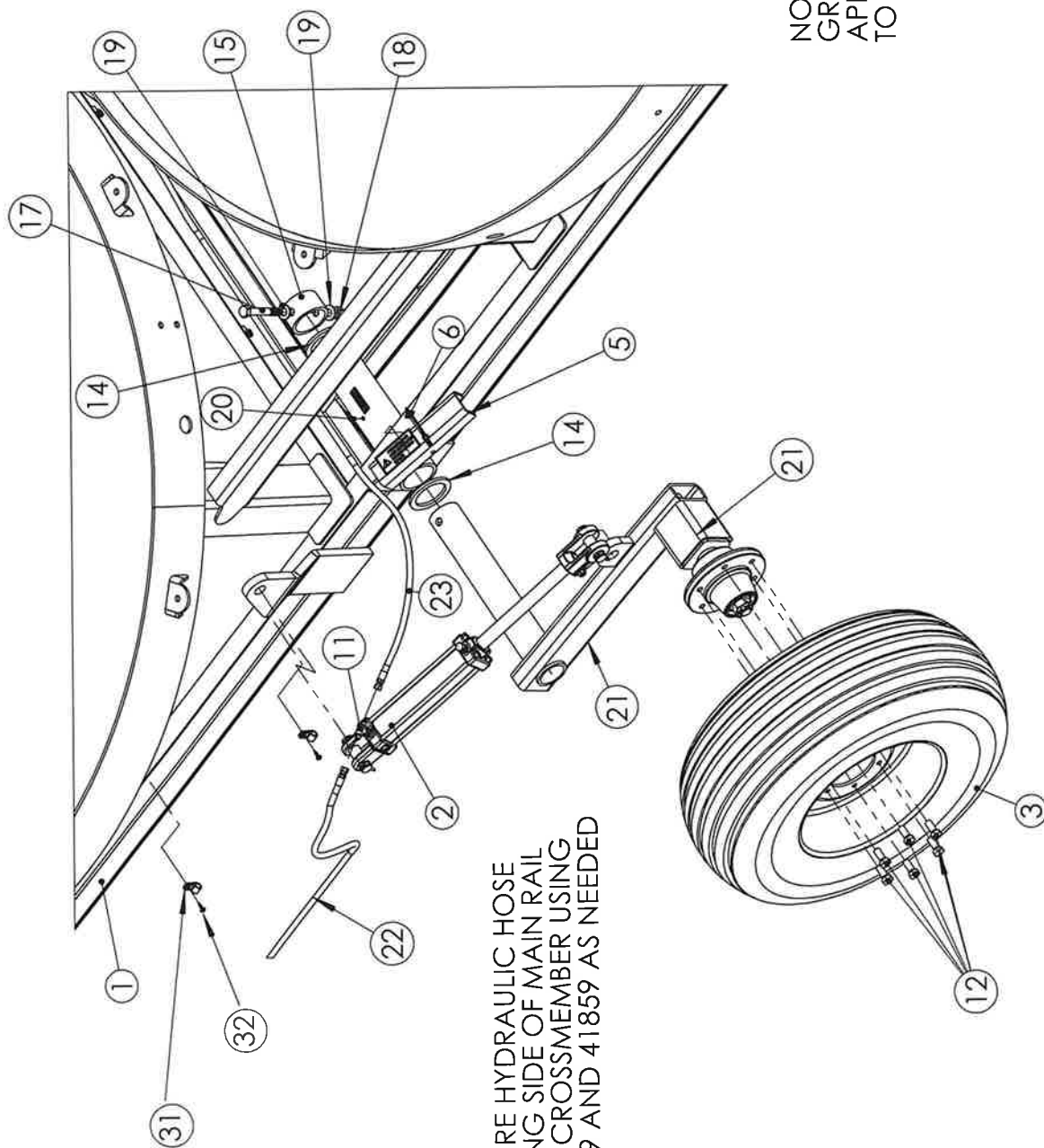
TC3000 TRAILER PARTS ILLUSTRATION

FRONT OF TRAILER ASSEMBLY DETAIL



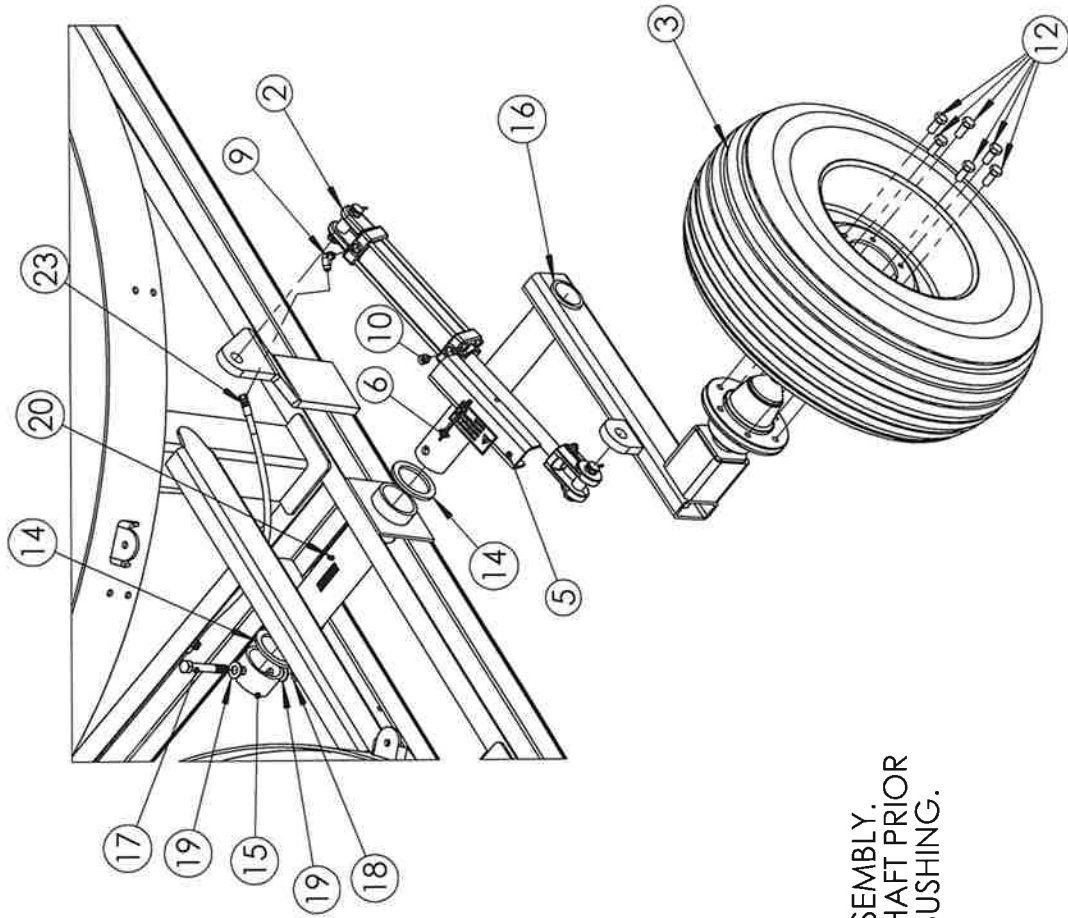
TC3000 TRAILER PARTS ILLUSTRATION

DRIVER SIDE AXLE & HYDRAULIC CYLINDER ASSEMBLY DETAIL



SECURE HYDRAULIC HOSE
ALONG SIDE OF MAIN RAIL
AND CROSSMEMBER USING
70879 AND 41859 AS NEEDED

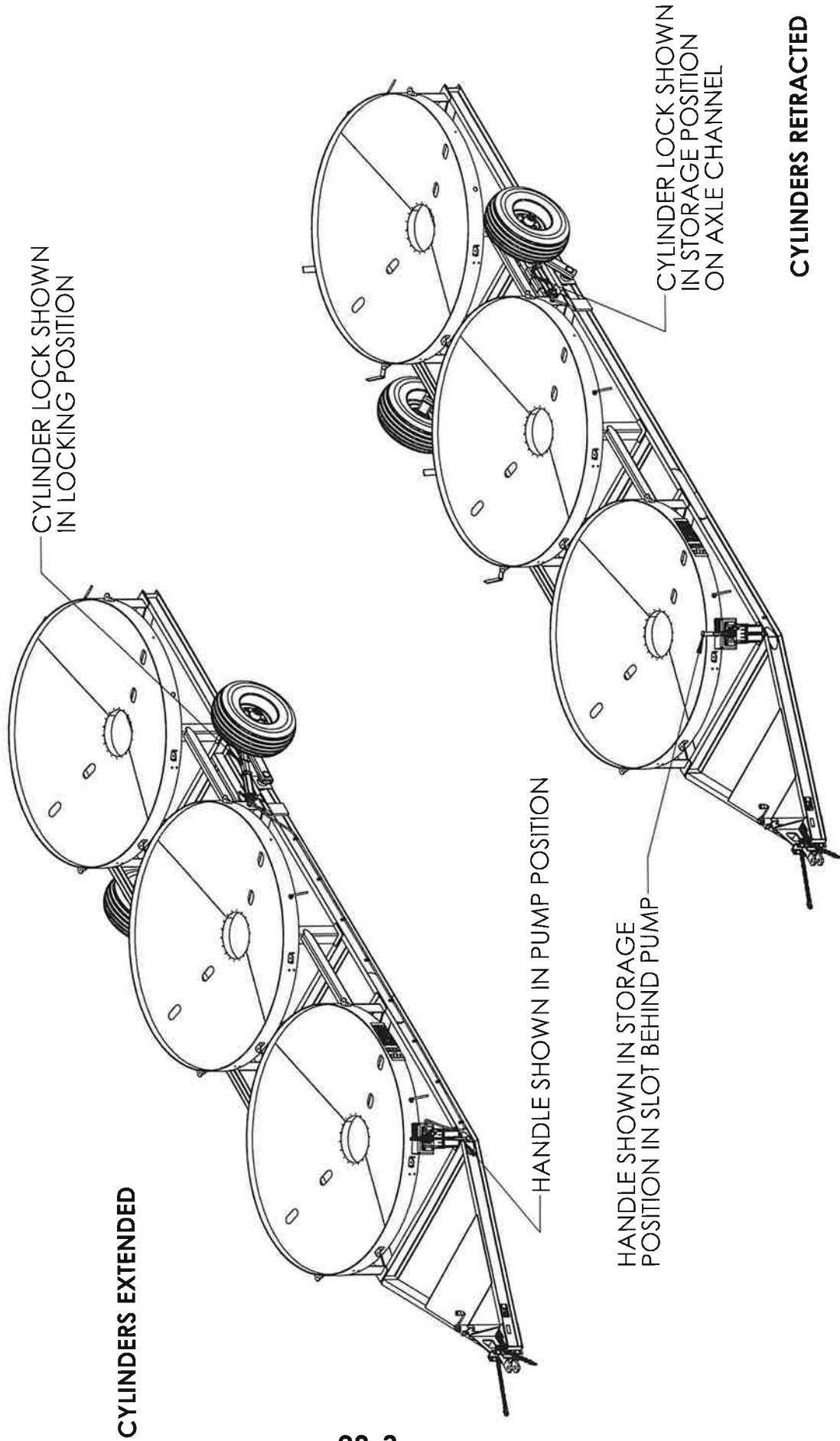
TC3000 TRAILER PARTS ILLUSTRATION **PASSENGER SIDE AXLE & HYDRAULIC CYLINDER ASSEMBLY DETAIL**



NOTE:
 GREASE ITEM 20 AFTER ASSEMBLY.
 APPLY GREASE TO AXLE SHAFT PRIOR
 TO INSERTING INTO AXLE BUSHING.

TC3000 TRAILER PARTS ILLUSTRATION

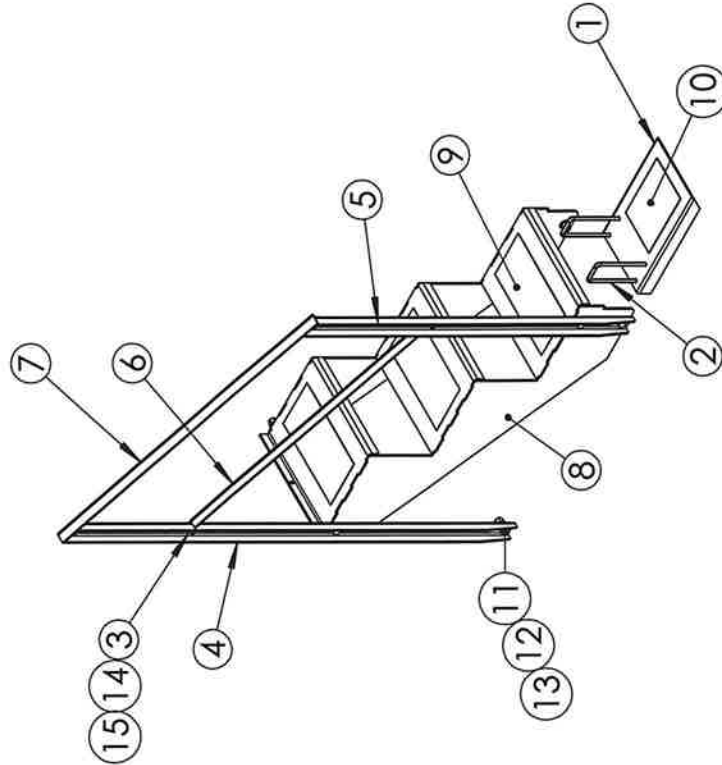
TRAVELING/IN USE VIEWS



STAIR KIT **P/N: 70120**

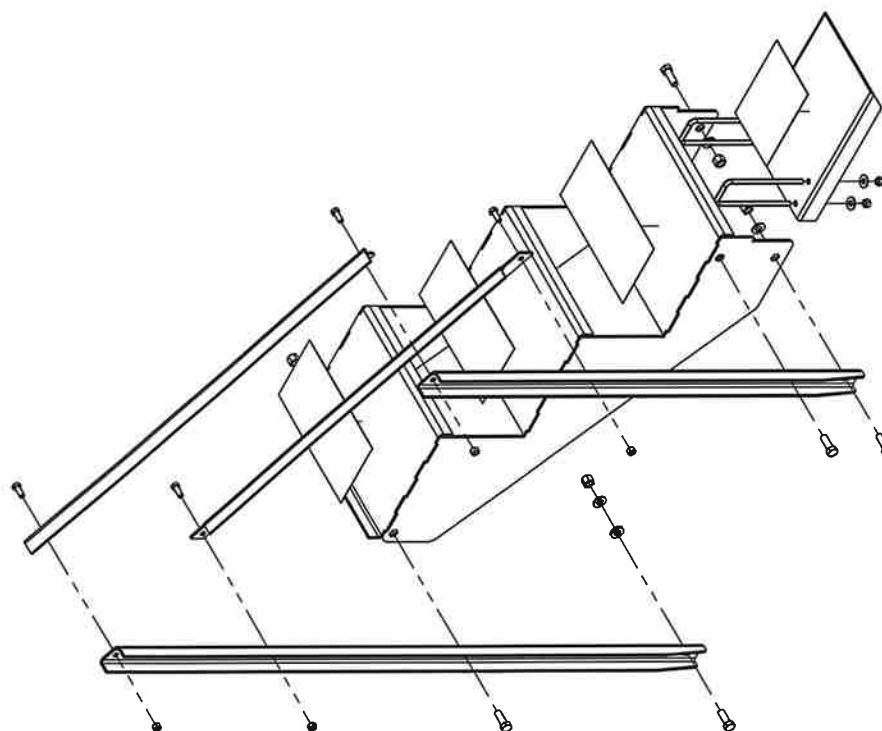
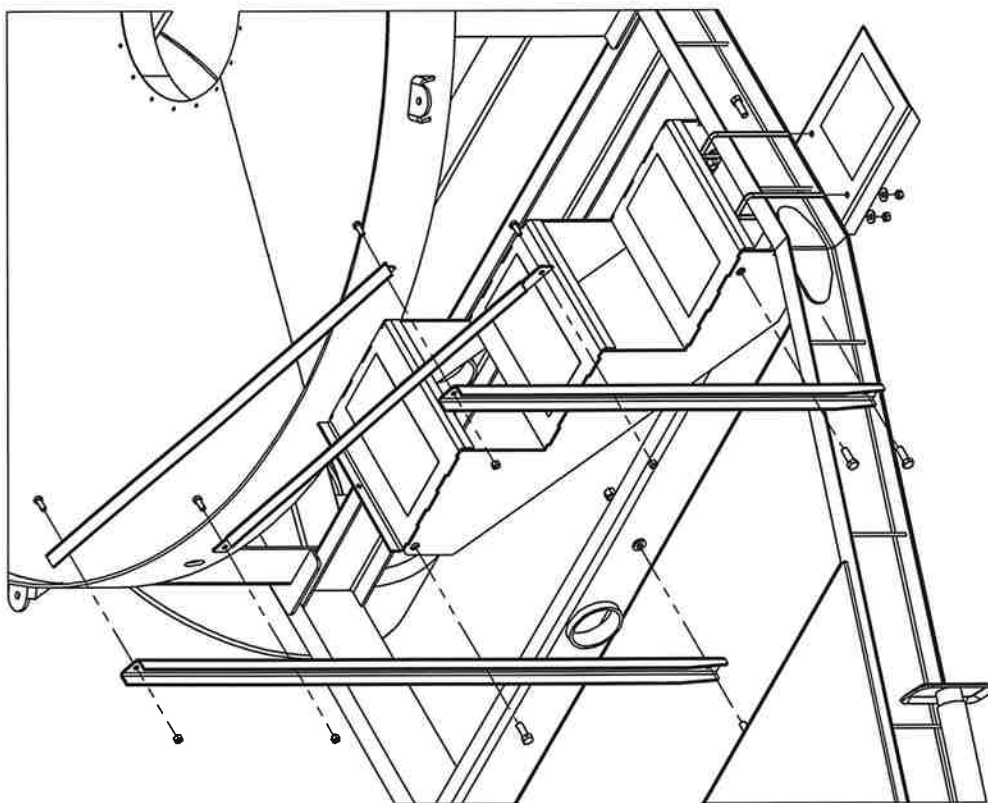
REV 08/13/20

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	70127	SERVICE STEP	1
2	9463	U-BOLT	2
3	18459200	NUT 3/8 NYLOCK	8
4	70121	HAND RAIL TOP SUPPORT	1
5	70122	HAND RAIL BOTTOM SUPPORT	1
6	70123	RAIL SUPPORT	1
7	70124	HAND RAIL	1
8	70070	STEP WELDT	1
9	70125	STEP GRIP TAPE, 12 INCH	3
10	70126	STEP GRIP TAPE, 8 INCH	1
11	18057426	BOLT, HX CAP 1/2-13 X 1 1/2 LG	6
12	18811400	WASHER, FLAT 1/2 ZC	9
13	18567400	NUT SS NYLOCK 1/2	6
14	18036822	BOLT, HEX HD 3/8 X 1 NC ZC	4
15	18811200	WASHER FLAT USS ZC 3/8	4



REV 08/13/20

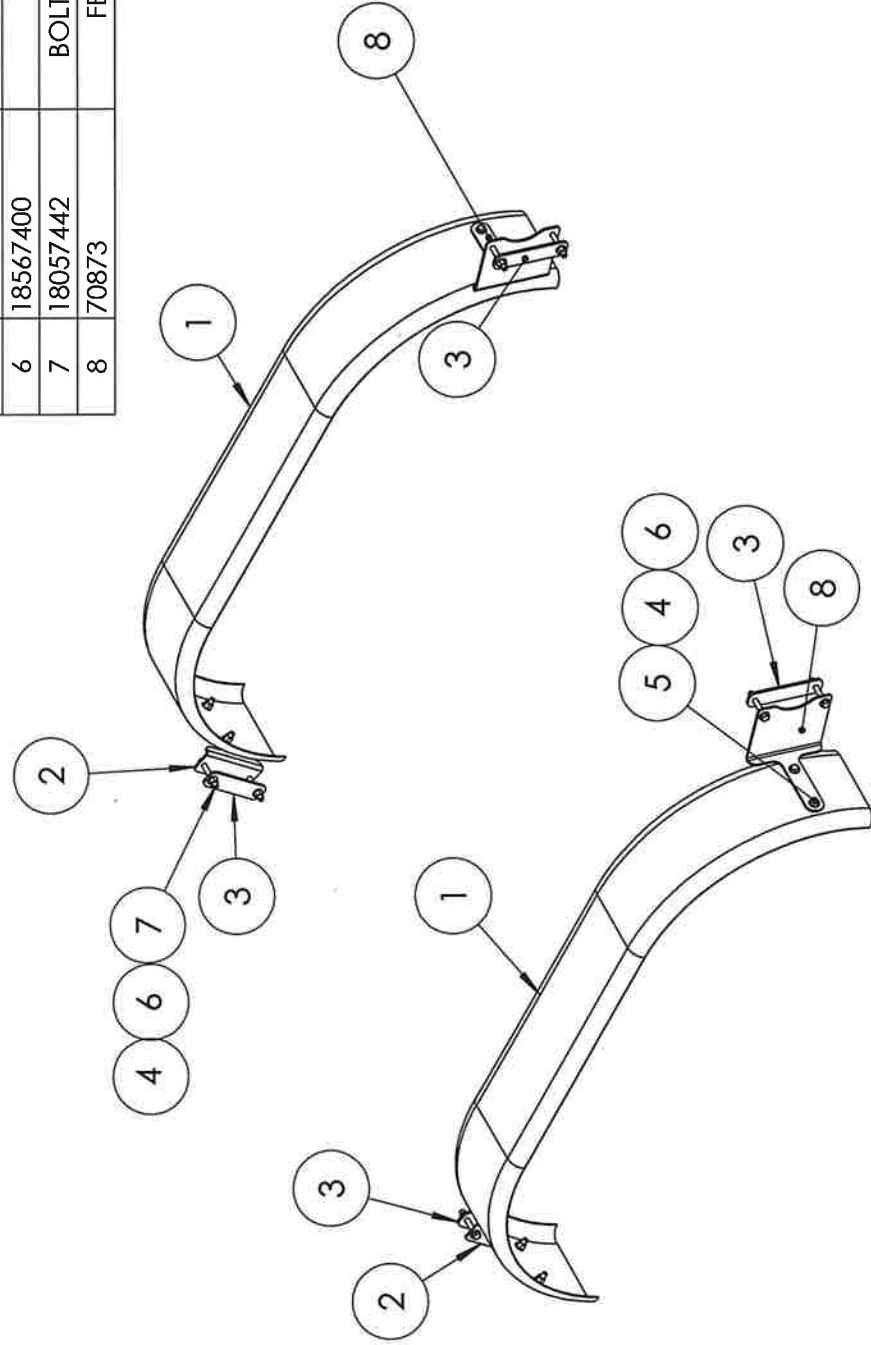
STAIR KIT
P/N: 70120



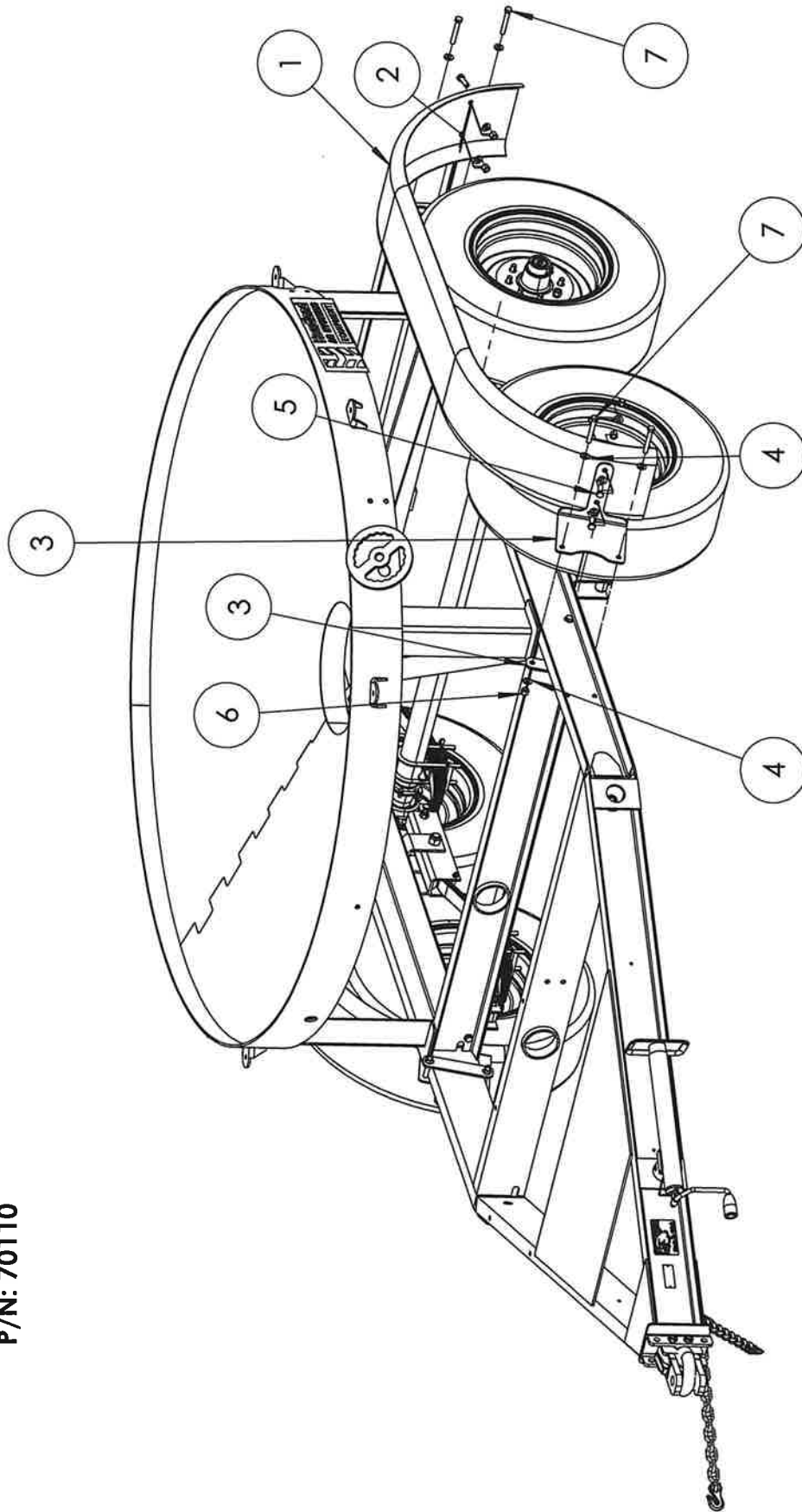
FENDER KIT, SC1200 **P/N: 70110**

REV 08/13/20

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	70113	TANDEM STRAIGHT FENDER, 10.75W X 72L X 20.5H	2
2	70111	FENDER BRACKET	2
3	70112	FENDER BRACKET BACK PLATE	4
4	18811400	WASHER, FLAT 1/2 ZC	32
5	18057426	BOLT, HX CAP 1/2-13 X 1 1/2 LG	8
6	18567400	NUT SS NYLOCK 1/2	16
7	18057442	BOLT, HEX HD 1/2-13 X 3 1/2 LG	8
8	70873	FENDER BRACKET, FRONT	2



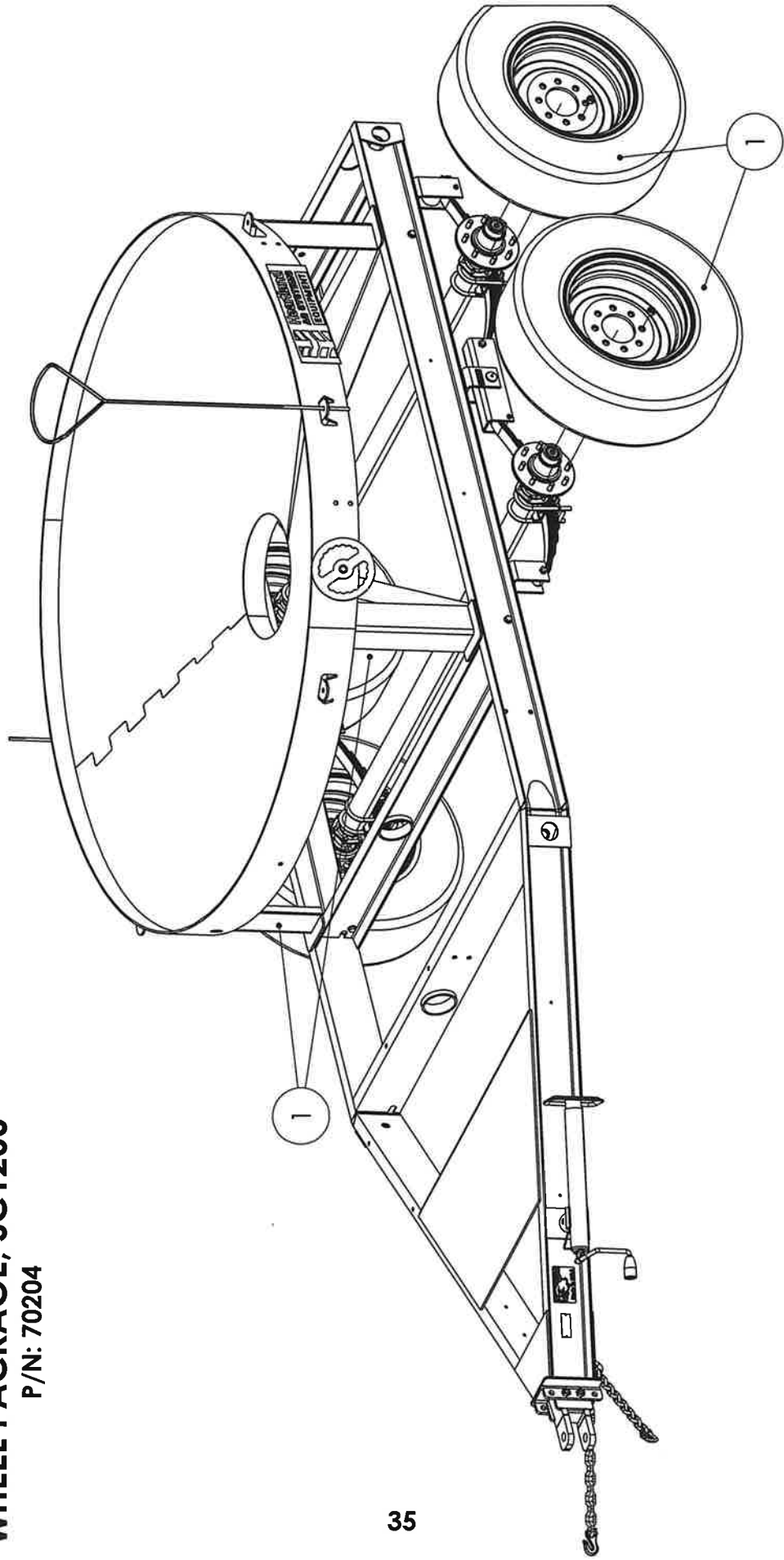
FENDER KIT, SC1200
P/N: 70110



WHEEL PACKAGE, SC1200

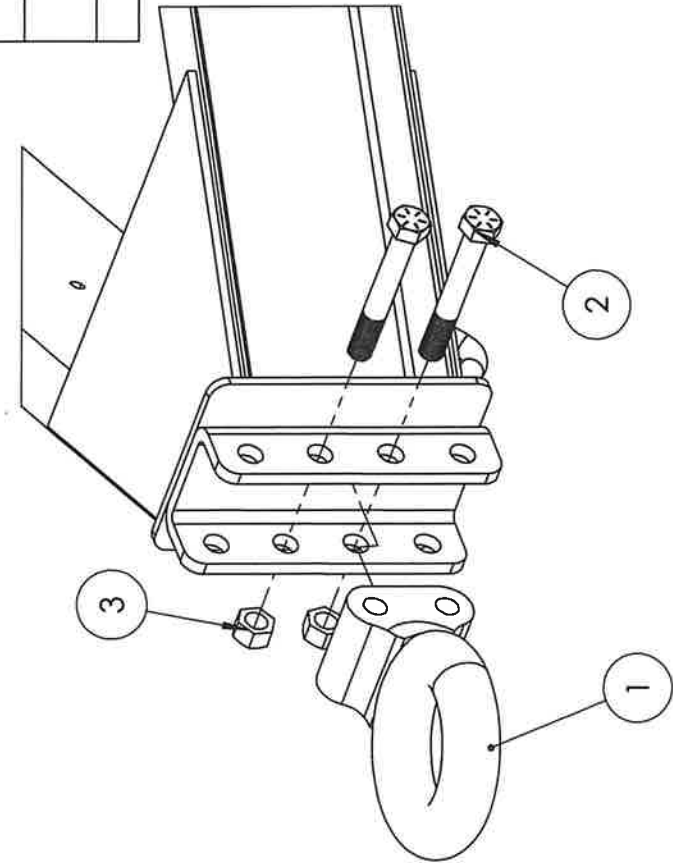
P/N: 70204

ITEM NO.	PART NUMBER	DESCRIPTION	
1	40041	ST235-80R-16E WHEEL ASM	4

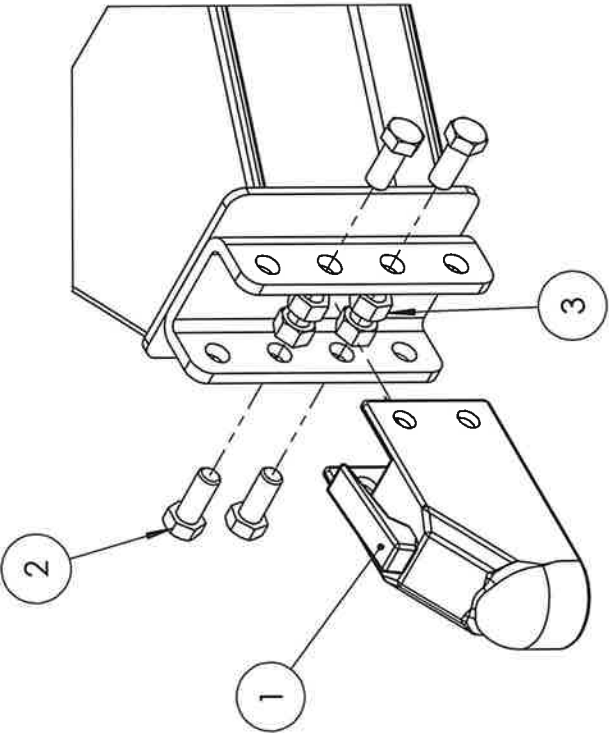


PINTLE RING HITCH KIT
P/N: 70199

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	09557-97	PINTLE RING, 3" ID X 6" OD, 25K GVWR, BOLT ON, DEMCO	1
2	18058050	BOLT, 5/8 X 4-1/2 GR 8 NC ZC	2
3	18458451	NUT, TOP LOCK, 5/8-11	2



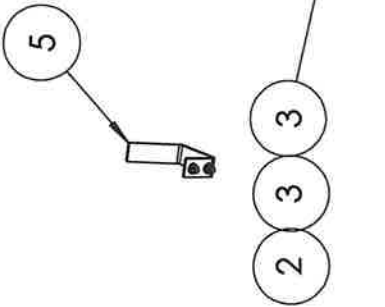
BALL HITCH COUPLER KIT
P/N: 70198



ITEM NO.	PART NUMBER	DESCRIPTION	
1	07678	2-5/16 EZ-LATCH COUPLER, 20K GVWR, DEMCO	1
2	18097926	BOLT HX 5/8 X 1 1/2 GR 8 NC ZC	4
3	18458451	NUT, TOP LOCK, 5/8-11	4

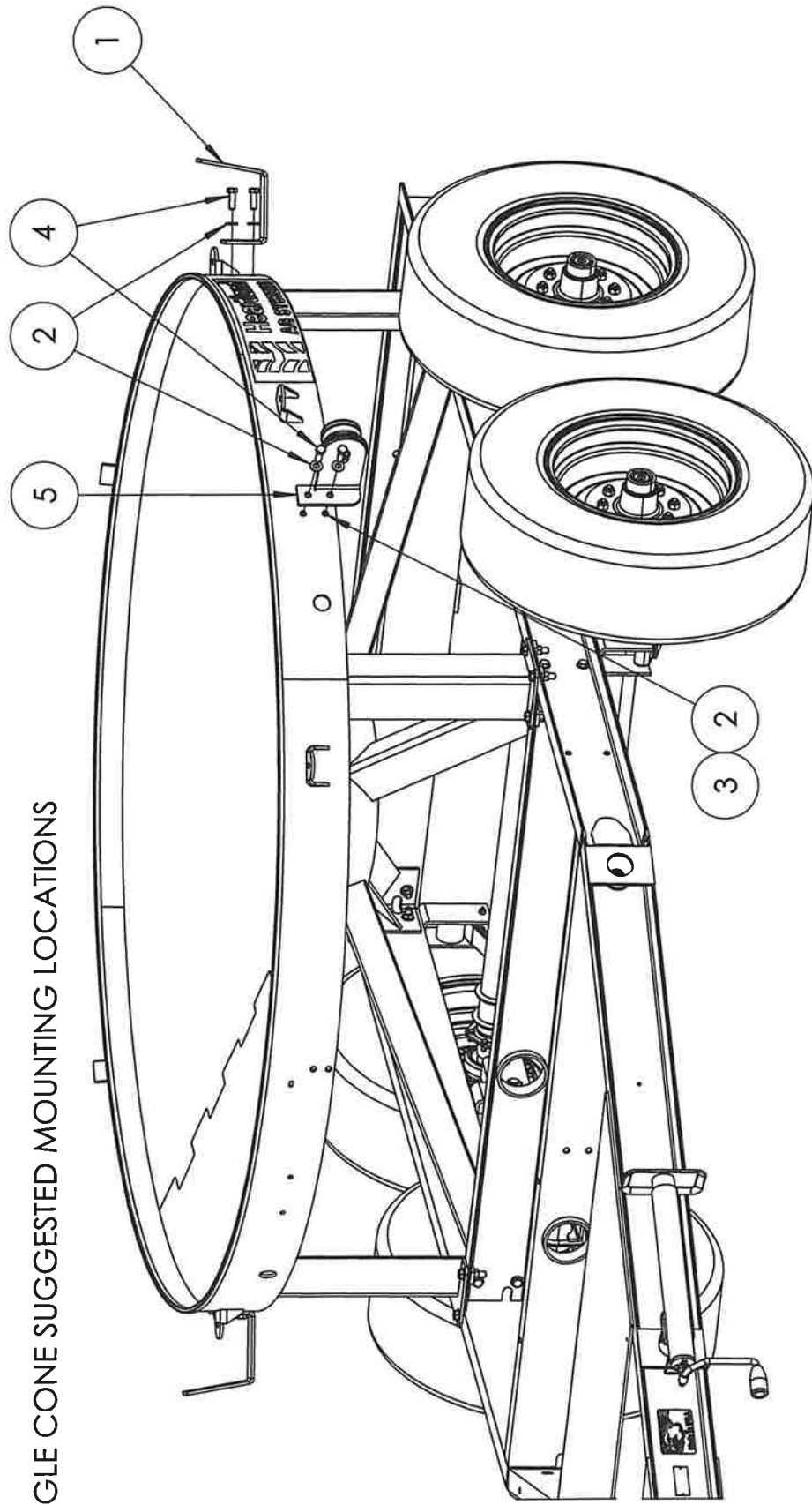
HOSE HOLDER KIT
P/N: 70130

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	18811400	WASHER, FLAT 1/2 ZC	20
2	18567400	NUT SS NYLOCK 1/2	10
3	18057426	BOLT, HX CAP 1/2-13 X 1 1/2 LG	10
4	70084	HOSE PLUG BRACKET ASM	1
5	70059	HOSE HOOK	4



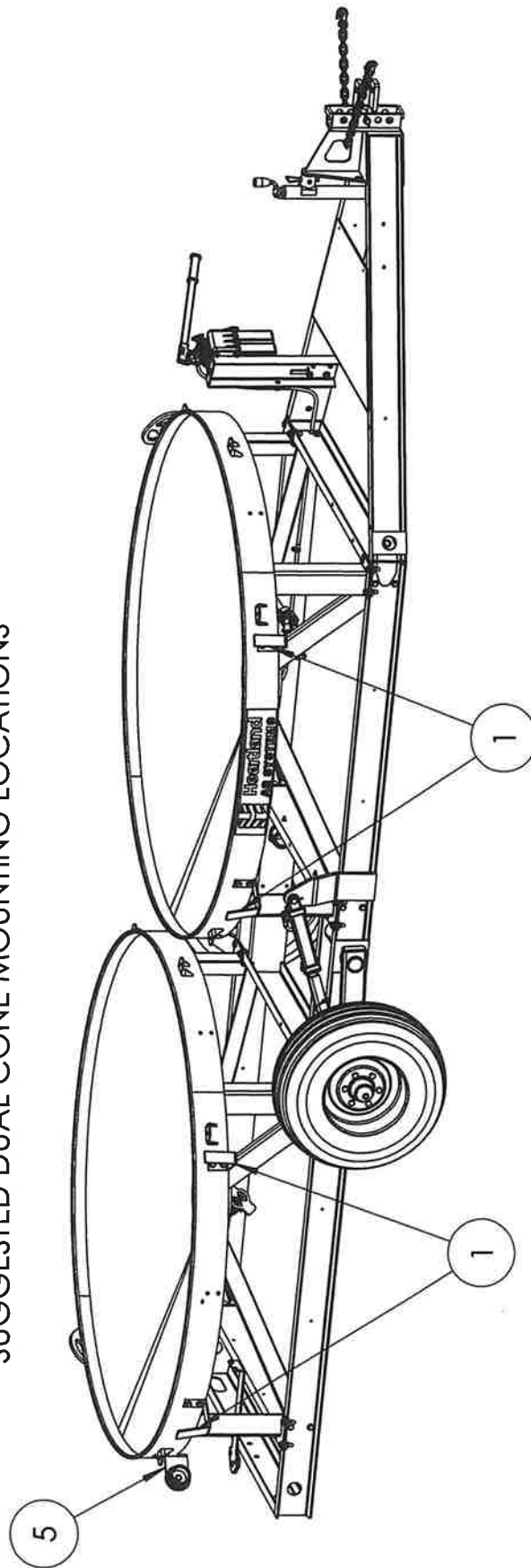
HOSE HOLDER KIT P/N: 70130

SINGLE CONE SUGGESTED MOUNTING LOCATIONS



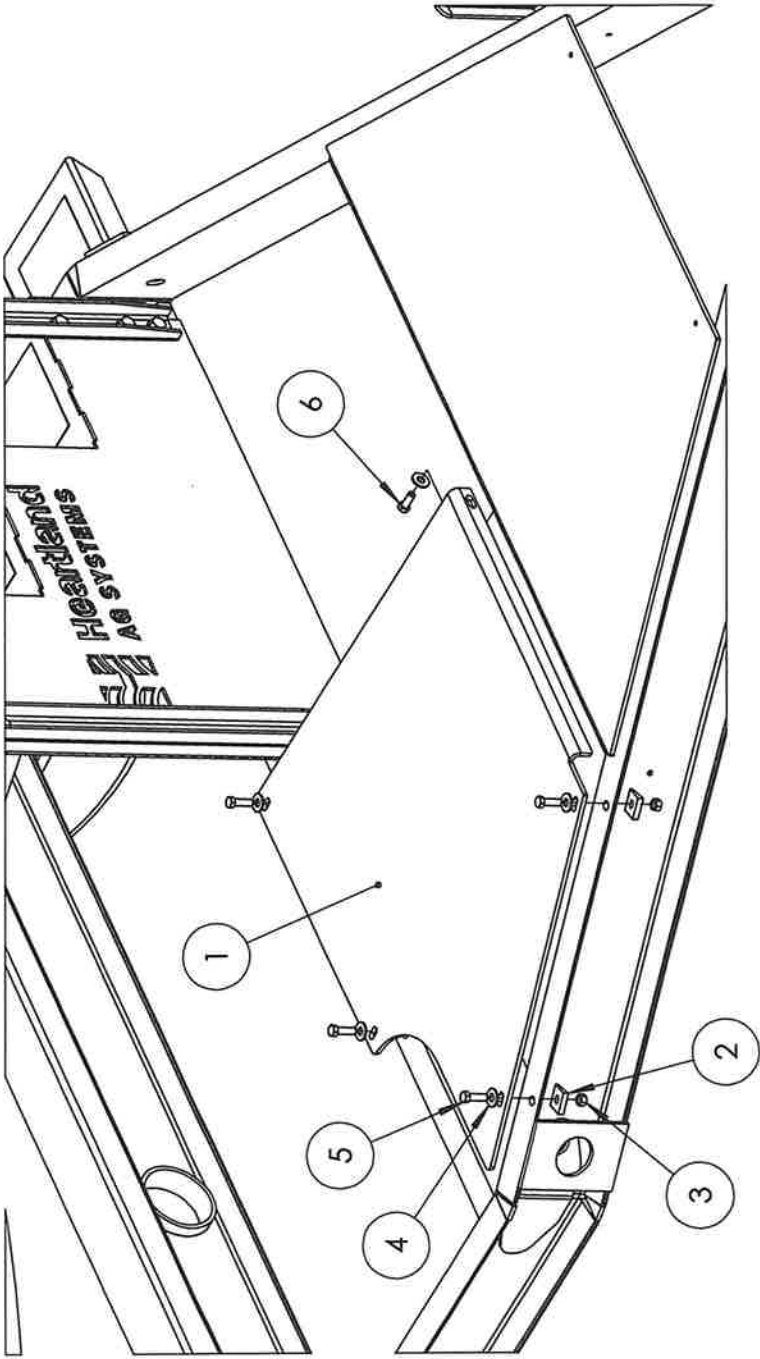
HOSE HOLDER KIT P/N: 70130

SUGGESTED DUAL CONE MOUNTING LOCATIONS



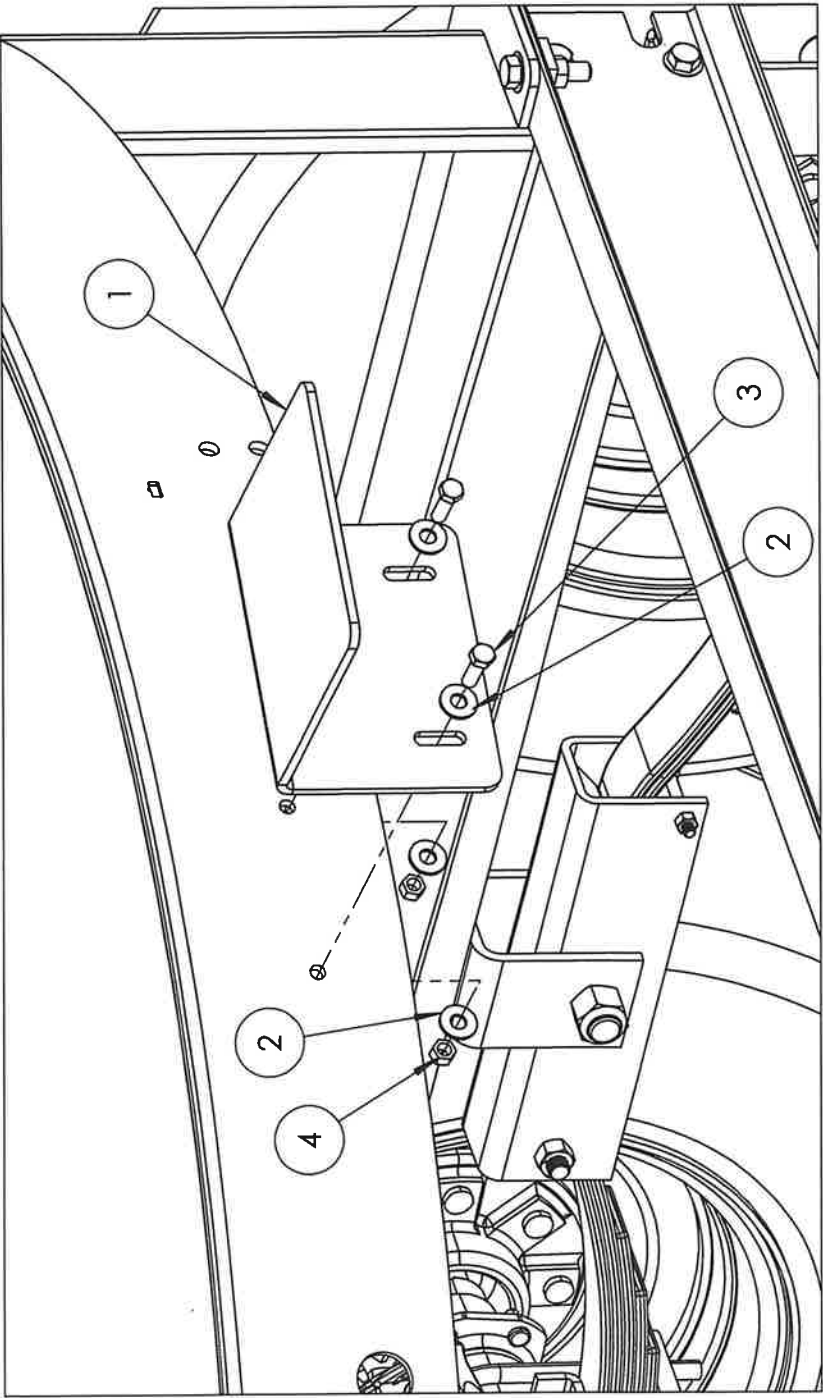
INDUCTOR MOUNT PLATE KIT **P/N: 70195**

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	70165	INDUCTOR MOUNT PLATE	1
2	91152A031	LEVELING WASHER, 3/8, MCMaster CARR	4
3	18459200	NUT 3/8 NYLOCK	5
4	18811200	WASHER FLAT USS ZC 3/8	6
5	18056824	BOLT HX ZC 3/8 X 1 1/4	4
6	18036822	BOLT, HEX HD 3/8 X 1 NC ZC	1

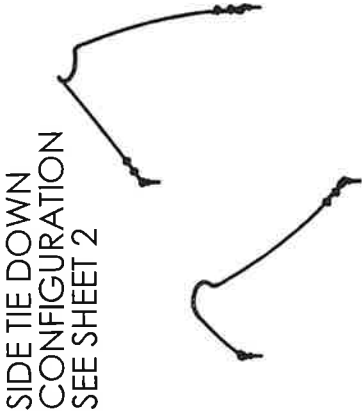


FRONT FILL SUPPORT PLATE KIT
P/N: 70196

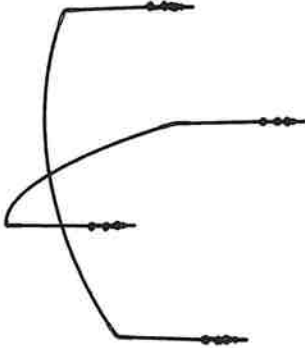
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	70185	FRONT FORCEFILL SUPPORT PLATE	1
2	18811200	WASHER FLAT USS ZC 3/8	4
3	18056824	BOLT HX ZC 3/8 X 1 1/4	2
4	18459200	NUT 3/8 NYLOCK	2



UNIVERSAL TANK TIE DOWN MOUNT KIT 1200-1500 GALLON P/N: 70090



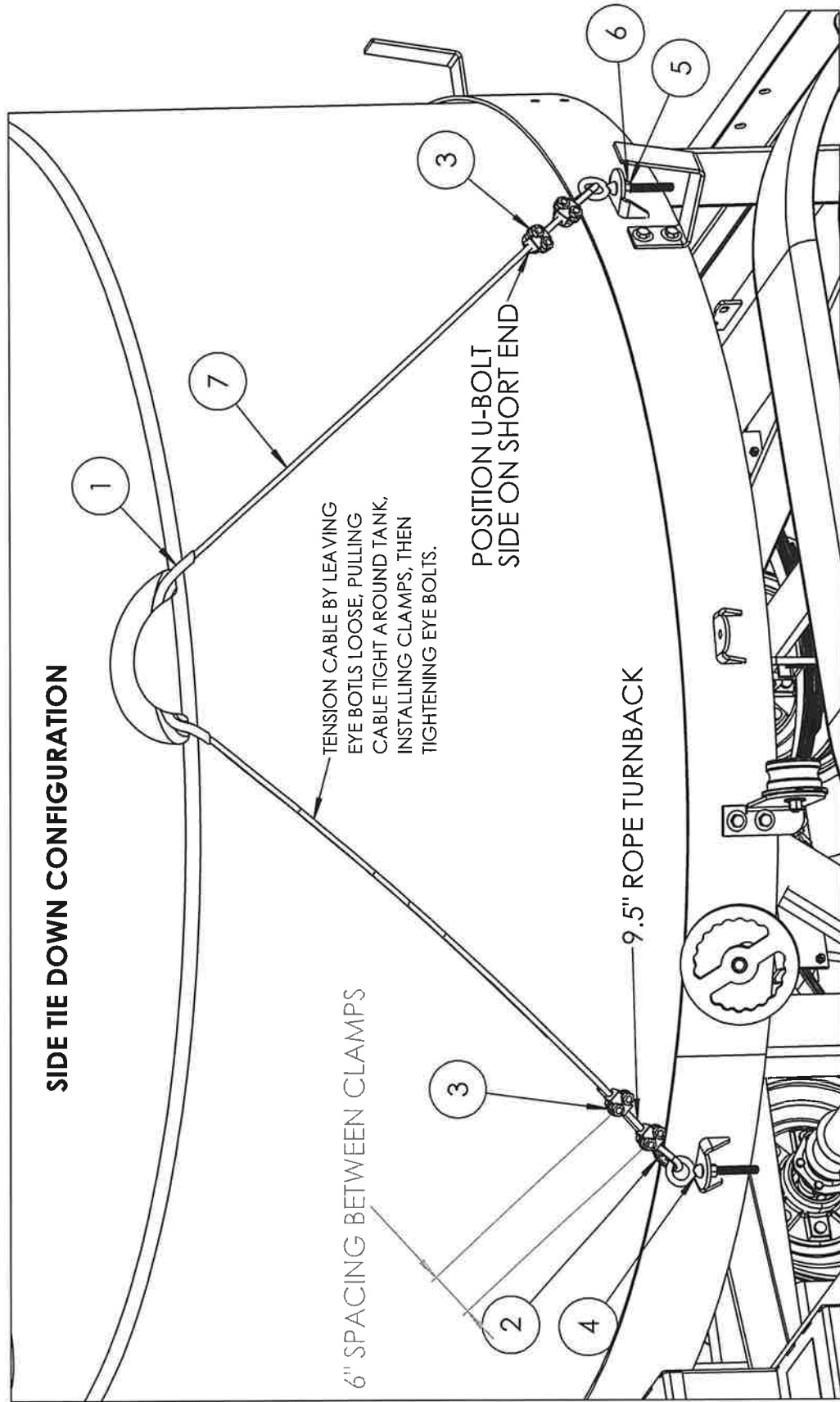
CROSS TOP TIE DOWN
CONFIGURATION SEE SHEET 3



ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	71461	1/2" ID X 5/8" OD CLEAR TUBING	4 FT
2	71459	WIRE ROPE THIMBLE, 3/8" DIAM, GALV STEEL	4
3	71460	3/8 WIRE ROPE CLAMP	8
4	71458	1/2"-13 EYE BOLT, 4" THREAD LENGTH, ZC STEEL	4
5	18811400	WASHER, FLAT 1/2 ZC USS	4
6	18567400	NUT SS NYLOCK 1/2	4
7	71457	STEEL WIRE ROPE, 3/8 DIAMETER, GALVANIZED, FLEXIBLE	32 FT

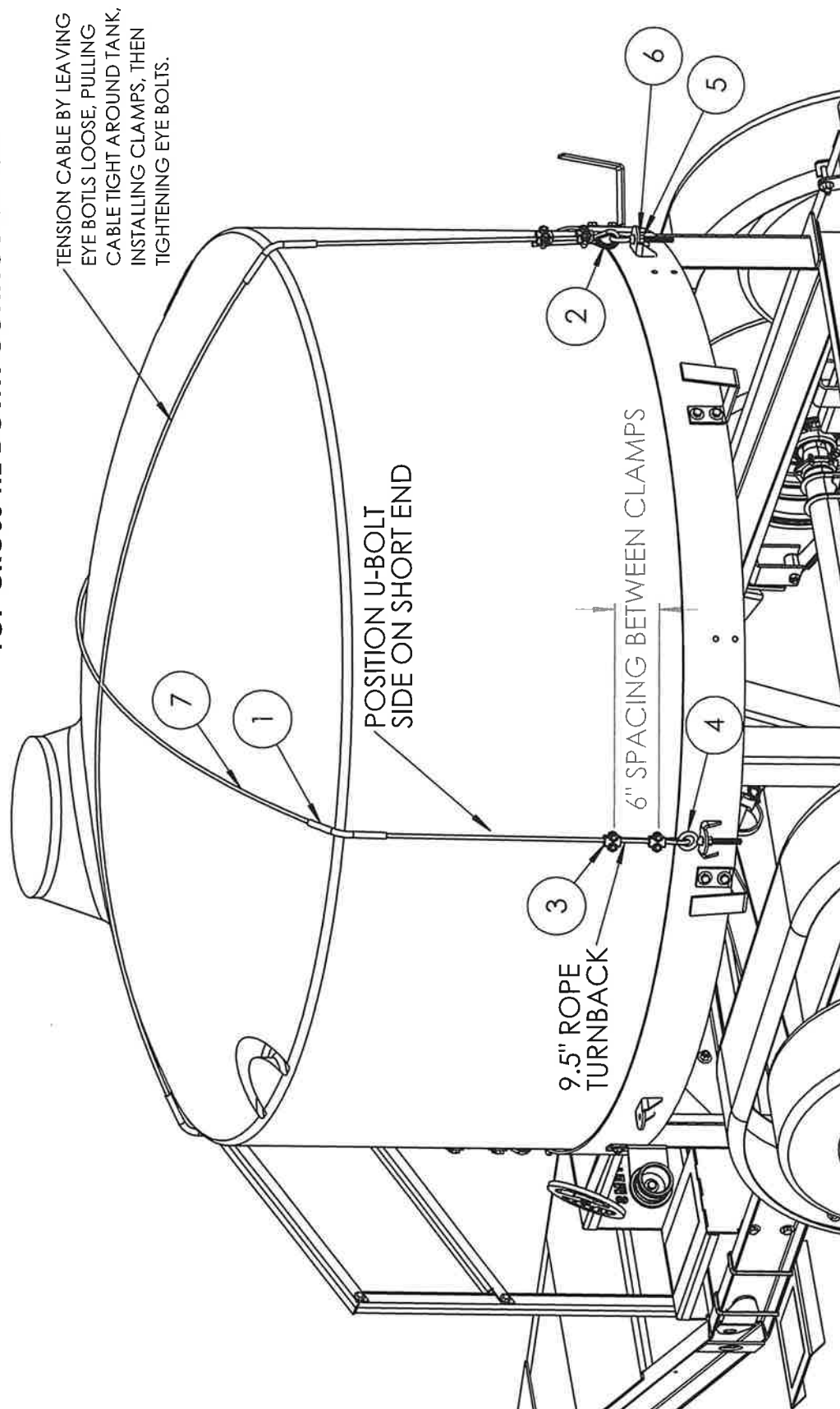
NOTE:
SEE SHEETS 2-3 FOR TIE DOWN ASSEMBLY CONFIGURATIONS.
CUT ITEMS 1 & 7 TO LENGTH NEEDED FOR TANK.
ASSEMBLE WITH ITEM 4 TURNED OUT TO ENSURE ENOUGH TRAVEL FOR CABLE TENSIONING.

UNIVERSAL TANK TIE DOWN MOUNT KIT **1200-1500 GALLON** **P/N: 70090**

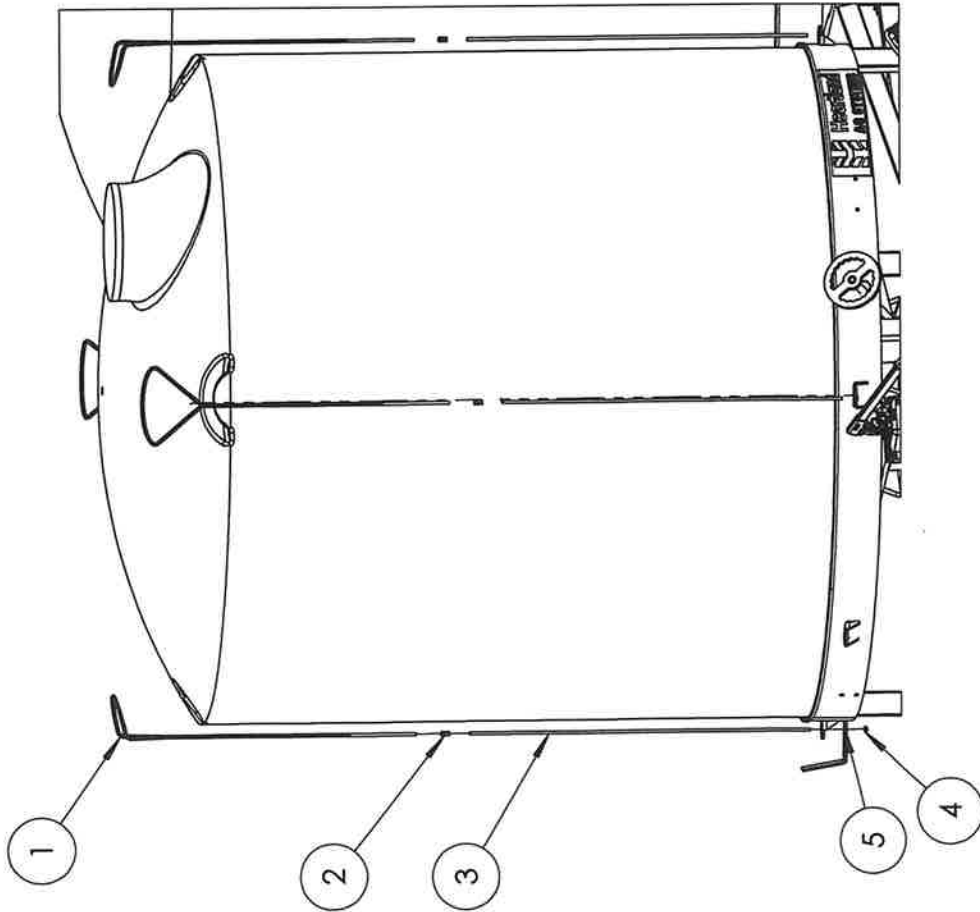


UNIVERSAL TANK TIE DOWN MOUNT KIT 1200-1500 GALLON P/N: 70090

TOP CROSS TIE DOWN CONFIGURATION



2500 GALLON TANK TIE DOWN KIT P/N: 70147

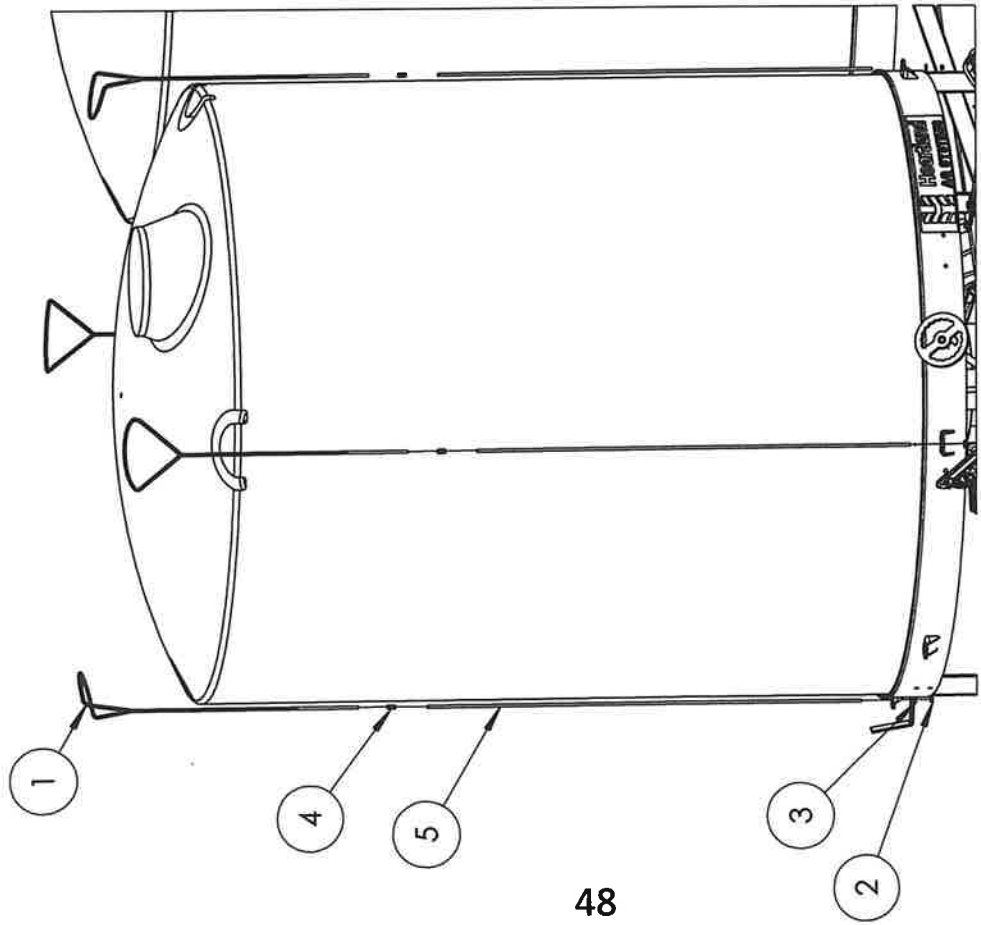


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	70141	HARD TANK TIE DOWN	4
2	90268A031	3/8-16 COUPLING NUT	4
3	70145	TIE DOWN EXTENSION ROD, 2500 GAL	4
4	18459200	NUT 3/8 NYLOCK	4
5	18811200	WASHER FLAT USS ZC 3/8	4

ASSEMBLY NOTES:
ATTACH ITEM 1 TO ITEM 3 USING ITEM 2. INSERT
LOOP OF ITEM 1 AROUND TANK TIE DOWN OF TANK
AND TIGHTEN TO TANK TIE DOWN OF CONE.

3000 GALLON TANK TIE DOWN KIT

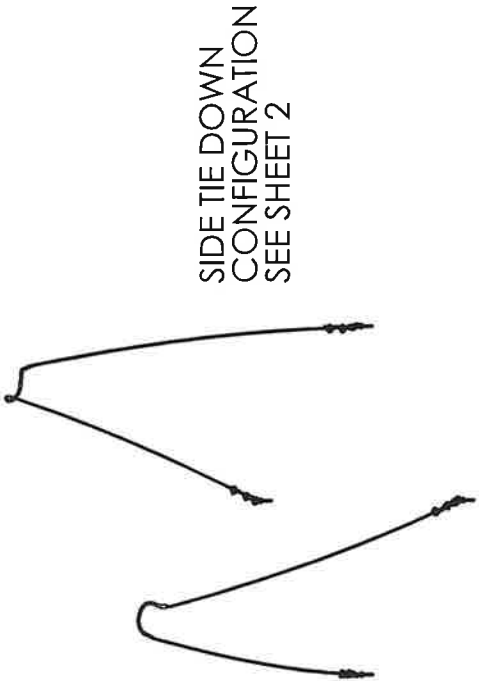
P/N: 70248



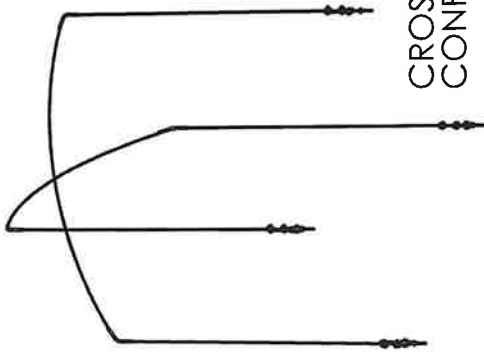
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	70141	HARD TANK TIE DOWN	4
2	18459200	NUT 3/8 NYLOCK	4
3	18811200	WASHER FLAT USS ZC 3/8	4
4	90268A031	3/8-16 COUPLING NUT	4
5	70144	TIE DOWN EXTENSION ROD, 3000 GAL	4

ASSEMBLY NOTES:
ATTACH ITEM 1 TO ITEM 5 USING ITEM 4. INSERT
LOOP OF ITEM 1 AROUND TIE DOWN OF TANK
AND TIGHTEN TO TANK TIE DOWN OF CONE.

UNIVERSAL TANK TIE DOWN MOUNT KIT **2500-3000 GALLON** **P/N: 70240**



SIDE TIE DOWN
CONFIGURATION
SEE SHEET 2



CROSS TOP TIE DOWN
CONFIGURATION SEE SHEET 3

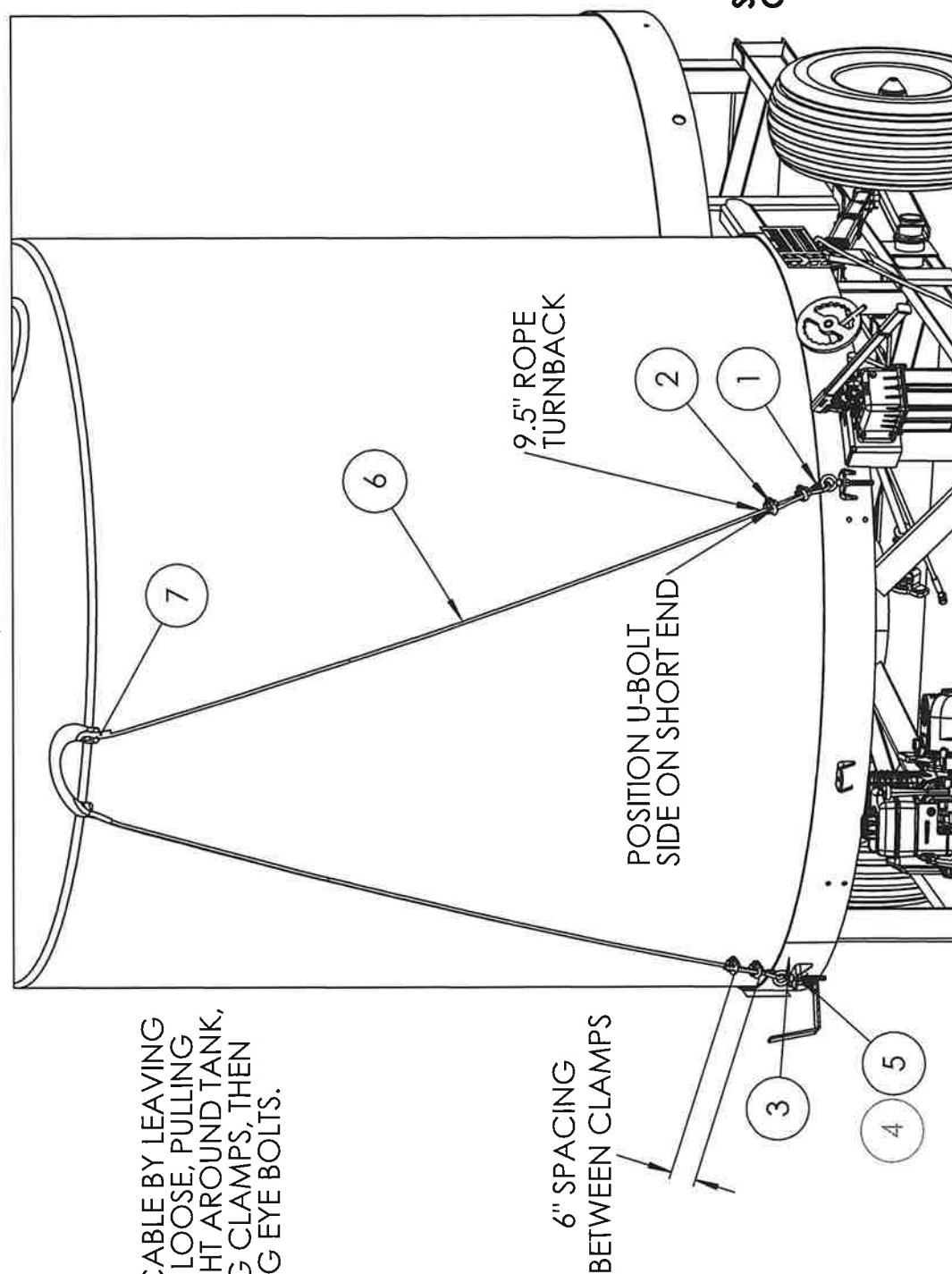
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	71459	WIRE ROPE THIMBLE, 3/8" DIAM, GALV STEEL	4
2	71460	3/8 WIRE ROPE CLAMP	8
3	71458	1/2"-13 EYE BOLT, 4" THREAD LENGTH, ZC STEEL	4
4	18811400	WASHER, FLAT 1/2 ZC USS	4
5	18567400	NUT SS NYLOCK 1/2	4
6	71457	STEEL WIRE ROPE, 3/8 DIAMETER, GLAVANIZED, FLEXIBLE	60 FT
7	71461	1/2" ID X 5/8" OD CLEAR TUBING	4 FT

NOTE:
 SEE SHEETS 2-3 FOR TIE DOWN ASSEMBLY CONFIGURATIONS.
 CUT ITEMS 6 & 7 TO LENGTH NEEDED FOR TANK.
 ASSEMBLE WITH ITEM 3 TURNED OUT TO ENSURE ENOUGH TRAVEL FOR CABLE TENSIONING.

UNIVERSAL TANK TIE DOWN MOUNT KIT 2500-3000 GALLON

P/N: 70240

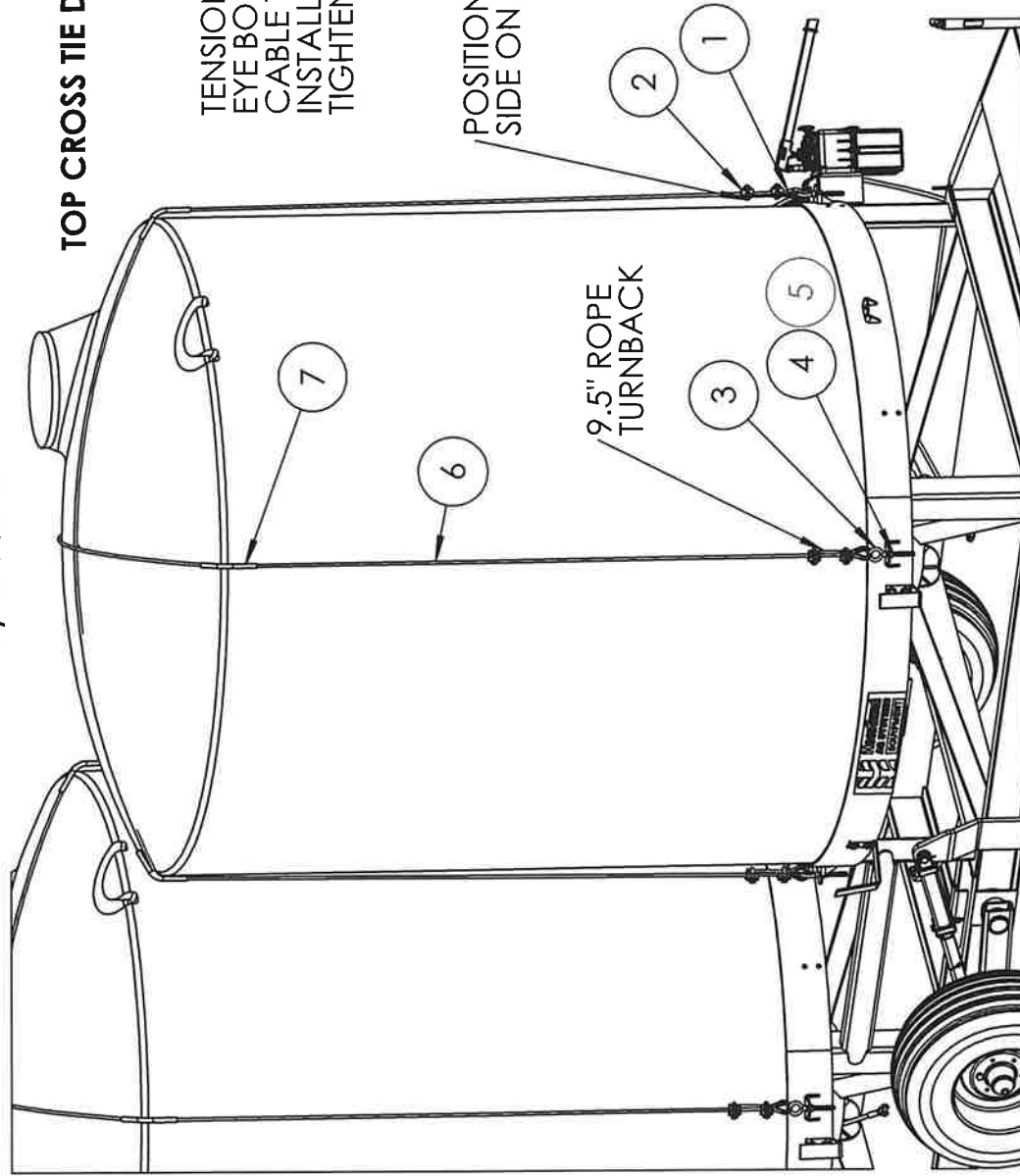
TENSION CABLE BY LEAVING EYE BOLTS LOOSE, PULLING CABLE TIGHT AROUND TANK, INSTALLING CLAMPS, THEN TIGHTENING EYE BOLTS.



UNIVERSAL TANK TIE DOWN MOUNT KIT 2500-3000 GALLON

P/N: 70240

TOP CROSS TIE DOWN CONFIGURATION



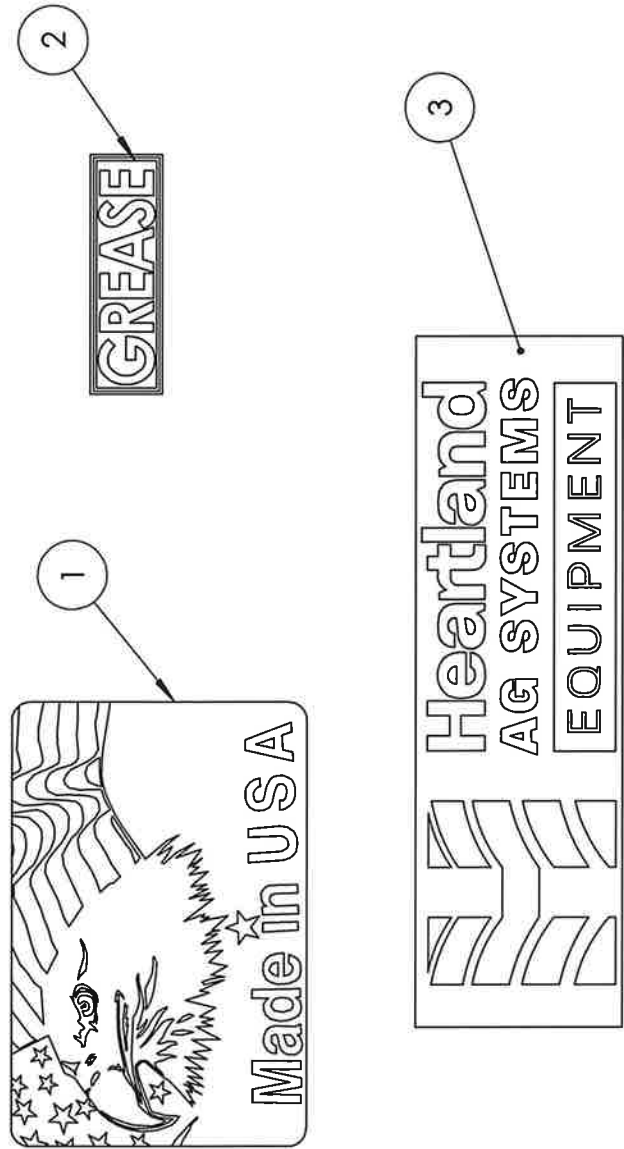
TENSION CABLE BY LEAVING EYE BOLTS LOOSE, PULLING CABLE TIGHT AROUND TANK, INSTALLING CLAMPS, THEN TIGHTENING EYE BOLTS.

POSITION U-BOLT SIDE ON SHORT END

9.5" ROPE TURNBACK

SINGLE CONE DECAL KIT

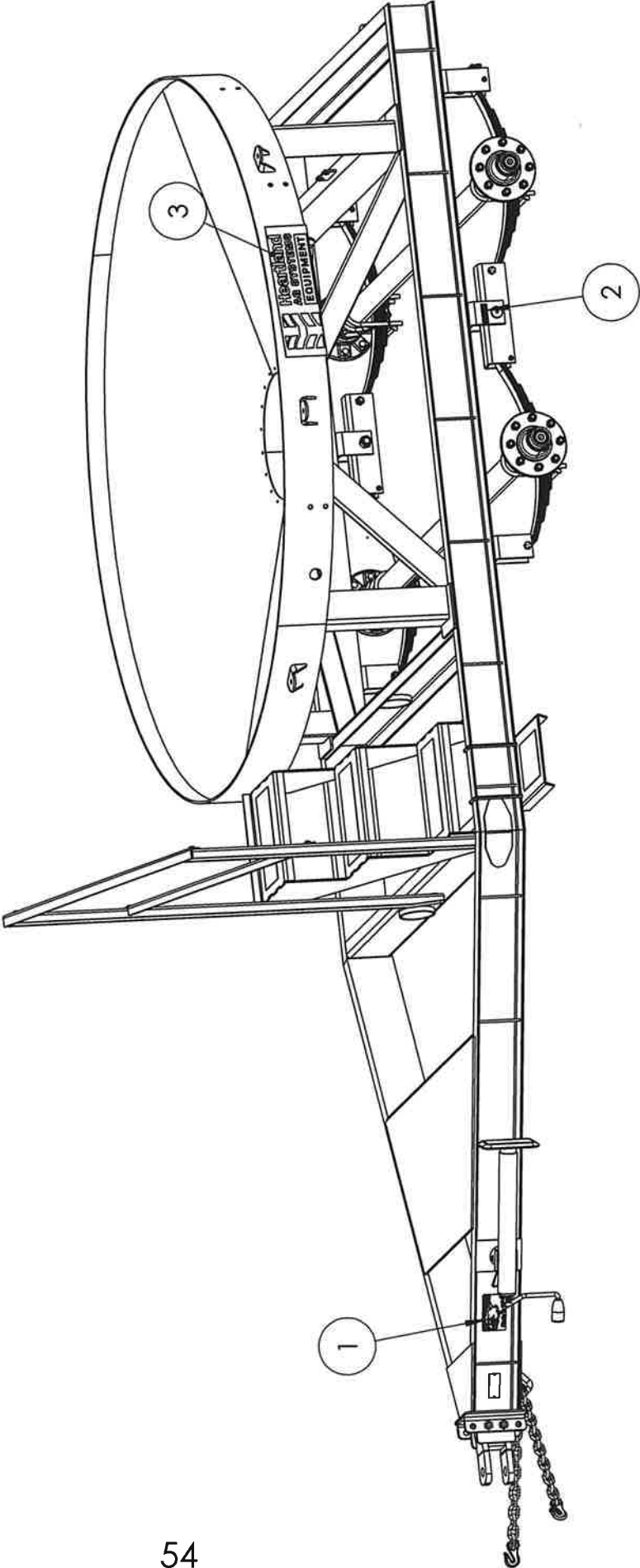
P/N: 70261



ITEM NO.	PART NUMBER	DESCRIPTION	
1	usa	MADE IN USA DECAL	1
2	70517	GREASE DECAL	2
3	54135	HEARTLAND AG SYSTEMS DECAL (LARGE)	2

SINGLE CONE DECAL KIT
P/N: 70261

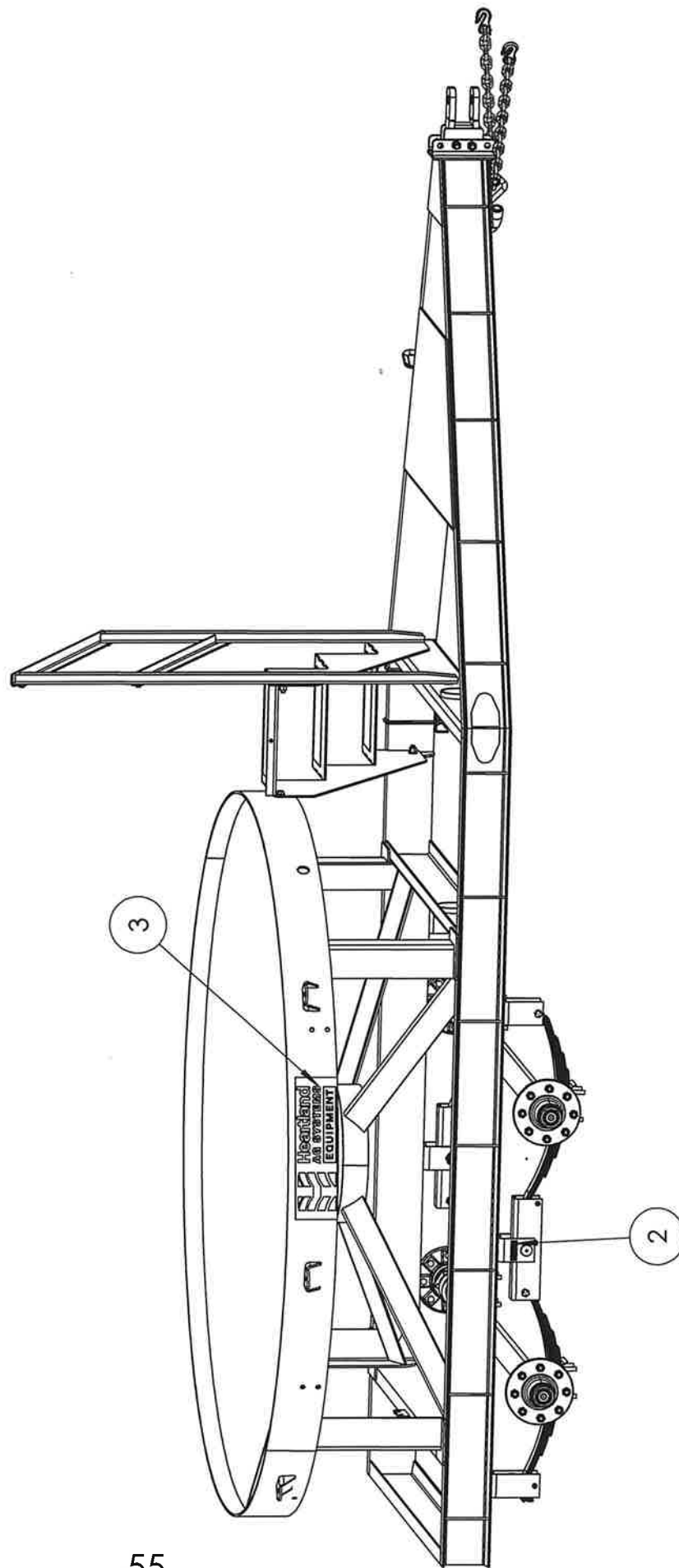
DRIVER SIDE DECAL APPLICATION



SINGLE CONE DECAL KIT

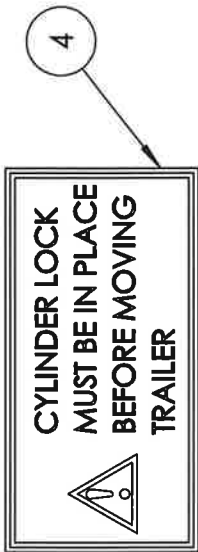
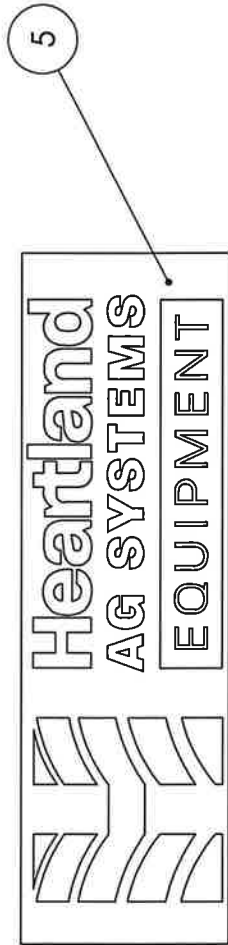
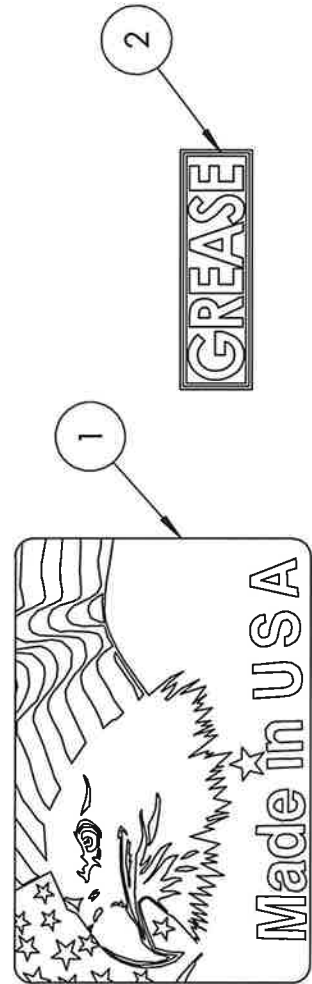
P/N: 70261

PASSENGER SIDE DECAL APPLICATION



DUAL CONE DECAL KIT

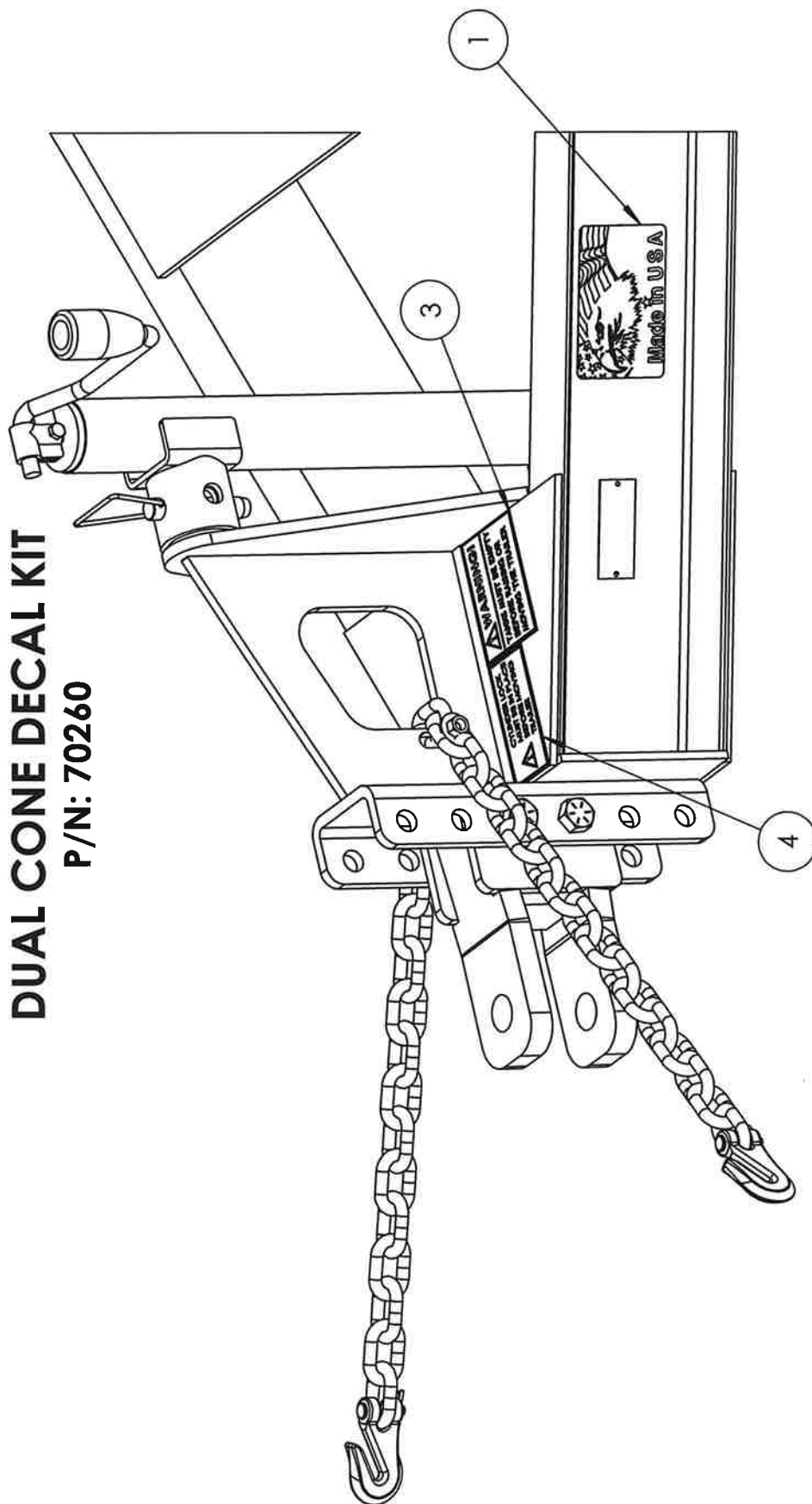
P/N: 70260



ITEM NO.	PART NUMBER	DESCRIPTION	
1	usa	MADE IN USA DECAL	1
2	70517	GREASE DECAL	2
3	70518	EMPTY TANK DECAL	2
4	70519	CYLINDER LOCK DECAL	3
5	54135	HEARTLAND AG SYSTEMS DECAL (LARGE)	2

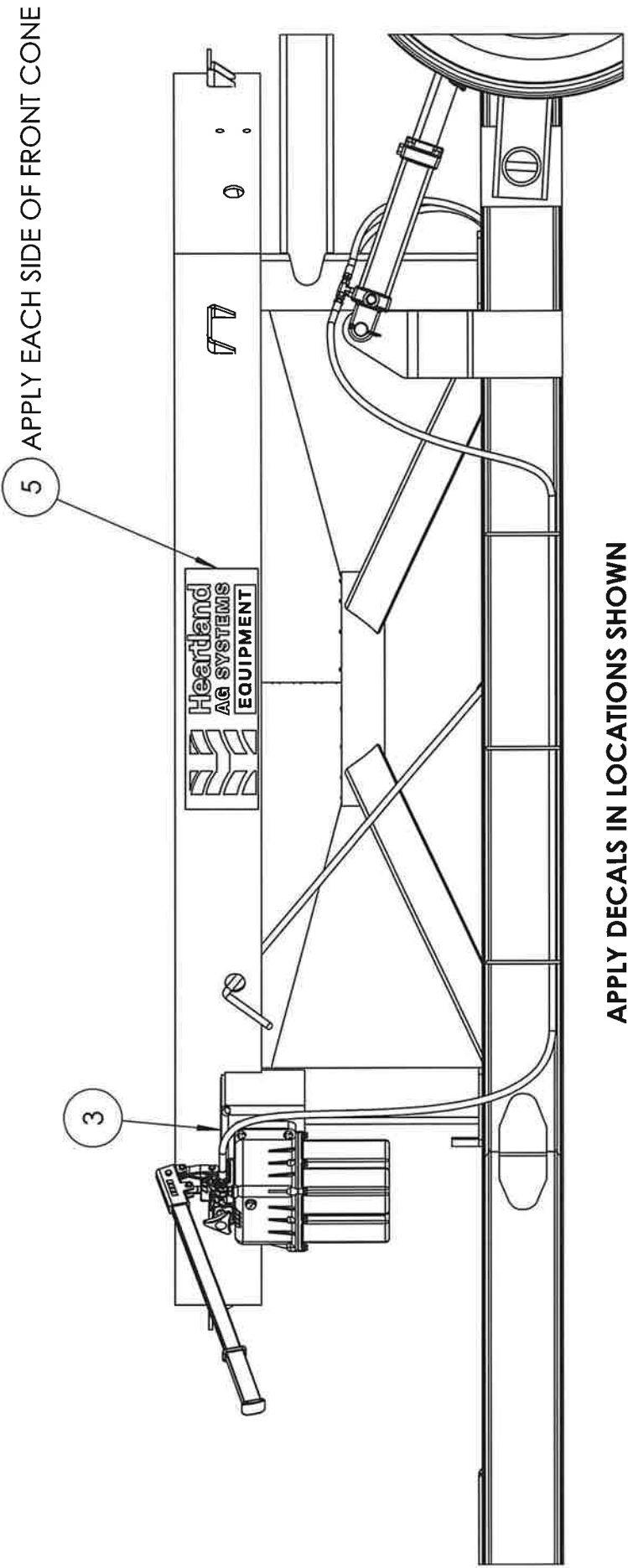
DUAL CONE DECAL KIT

P/N: 70260



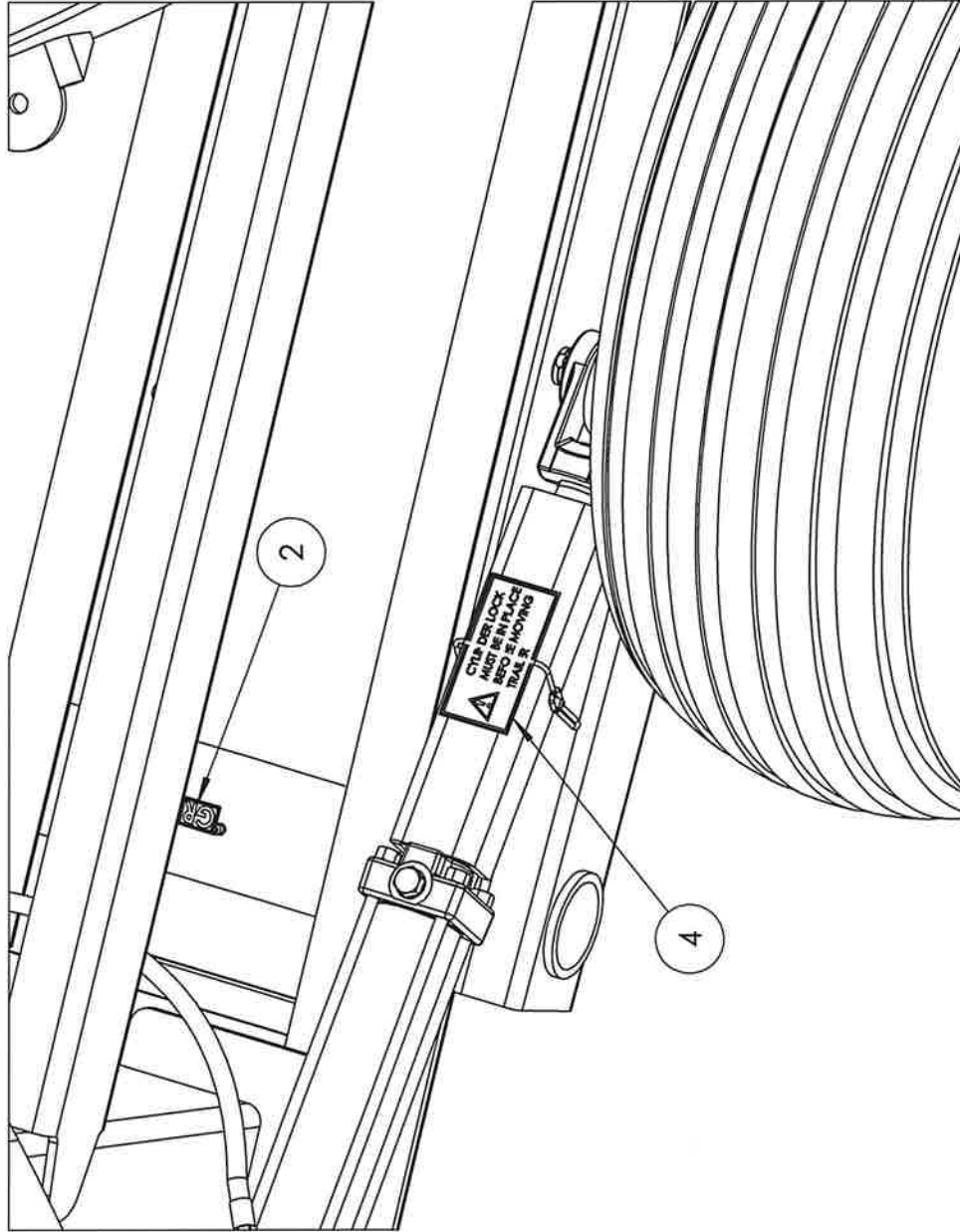
APPLY DECALS IN LOCATIONS SHOWN

DUAL CONE DECAL KIT
P/N: 70260



APPLY DECALS IN LOCATIONS SHOWN

DUAL CONE DECAL KIT P/N: 70260

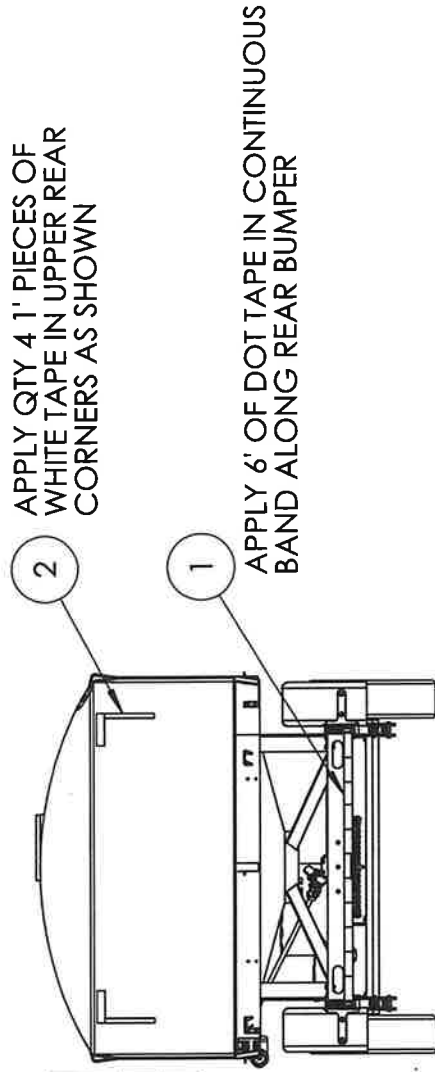


APPLY DECALS AS SHOWN ON EACH SIDE OF TRAILER

SINGLE CONE REFLECTOR TAPE KIT

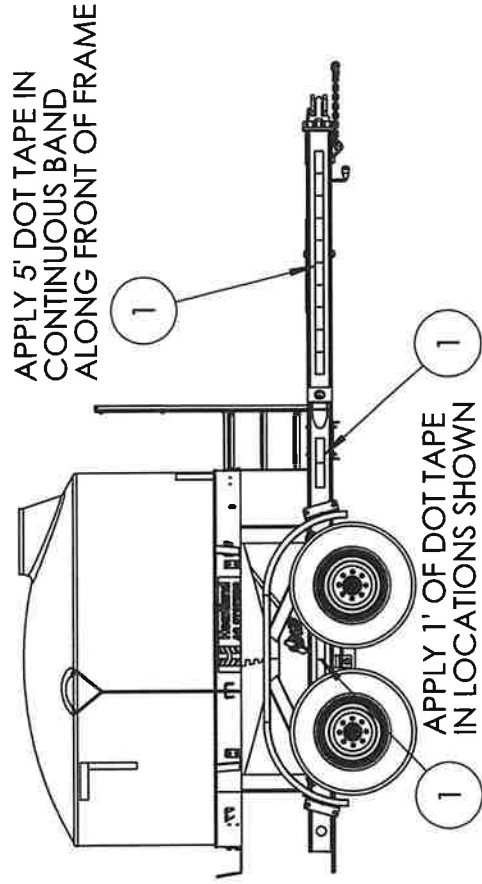
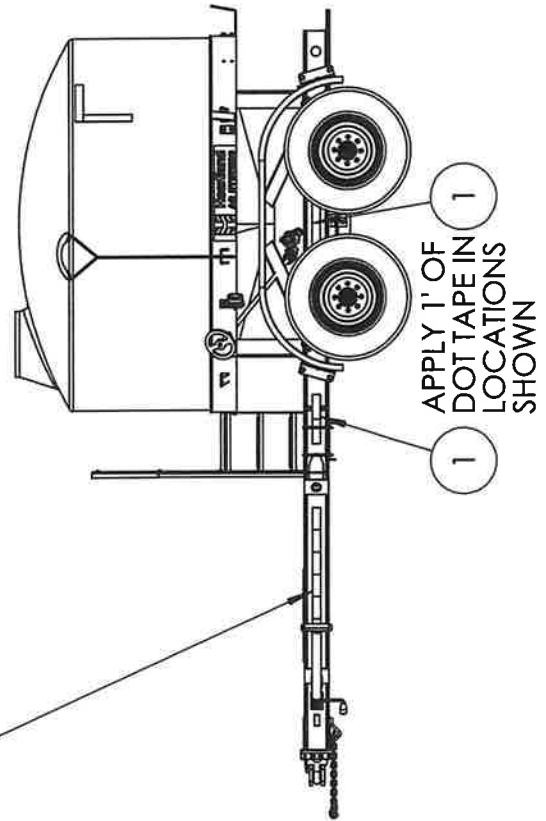
P/N: 19-4

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	980-3262	REFLECTIVE DOT TAPE, 2"	19 FT
2	980-102	REFLECTIVE TAPE, WHITE, 2"	4 FT



61

APPLY 4' OF DOT TAPE IN CONTINUOUS BAND ALONG FRONT OF FRAME

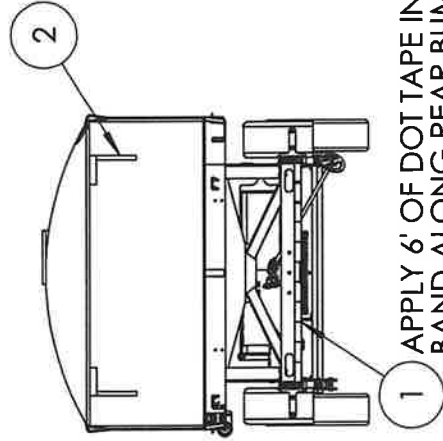


SC1200LF REFLECTOR TAPE KIT

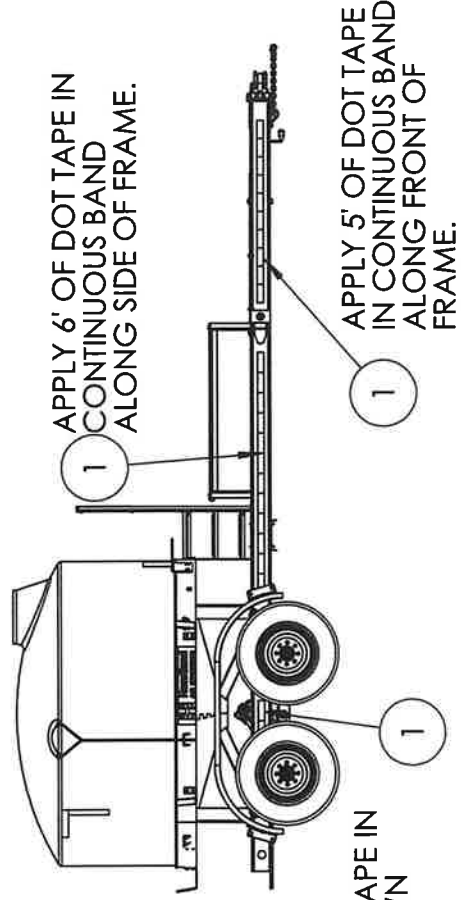
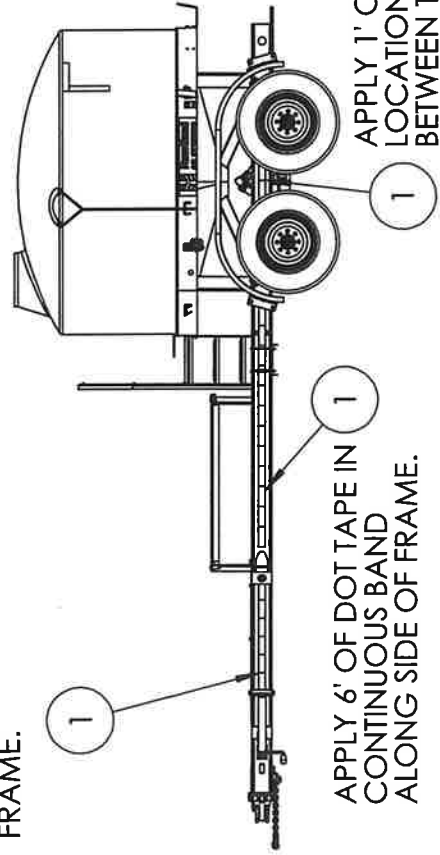
P/N: 29-4

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	980-3262	REFLECTIVE DOT TAPE, 2"	29
2	980-102	REFLECTIVE TAPE, WHITE, 2"	4

APPLY QTY 4 1' PIECES OF WHITE TAPE IN UPPER REAR CORNERS AS SHOWN.



APPLY 4' OF DOT TAPE IN CONTINUOUS BAND ALONG FRONT OF FRAME.



DUAL CONE TRAILER REFLECTOR TAPE KIT

P/N: 33-4

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	980-3262	REFLECTIVE DOT TAPE, 2" 33 FT	33 FT
2	980-102	REFLECTIVE TAPE, WHITE, 2" 4 FT	4 FT

APPLY QTY 4 1' PIECES OF WHITE TAPE IN UPPER REAR CORNERS AS SHOWN

2

APPLY 6' OF DOT TAPE IN CONTINUOUS BAND ALONG REAR BUMPER

1

APPLY 4' OF DOT TAPE IN CONTINUOUS BAND ALONG FRONT FRAME

1

APPLY 5' OF DOT TAPE IN CONTINUOUS BAND ALONG FRONT FRAME

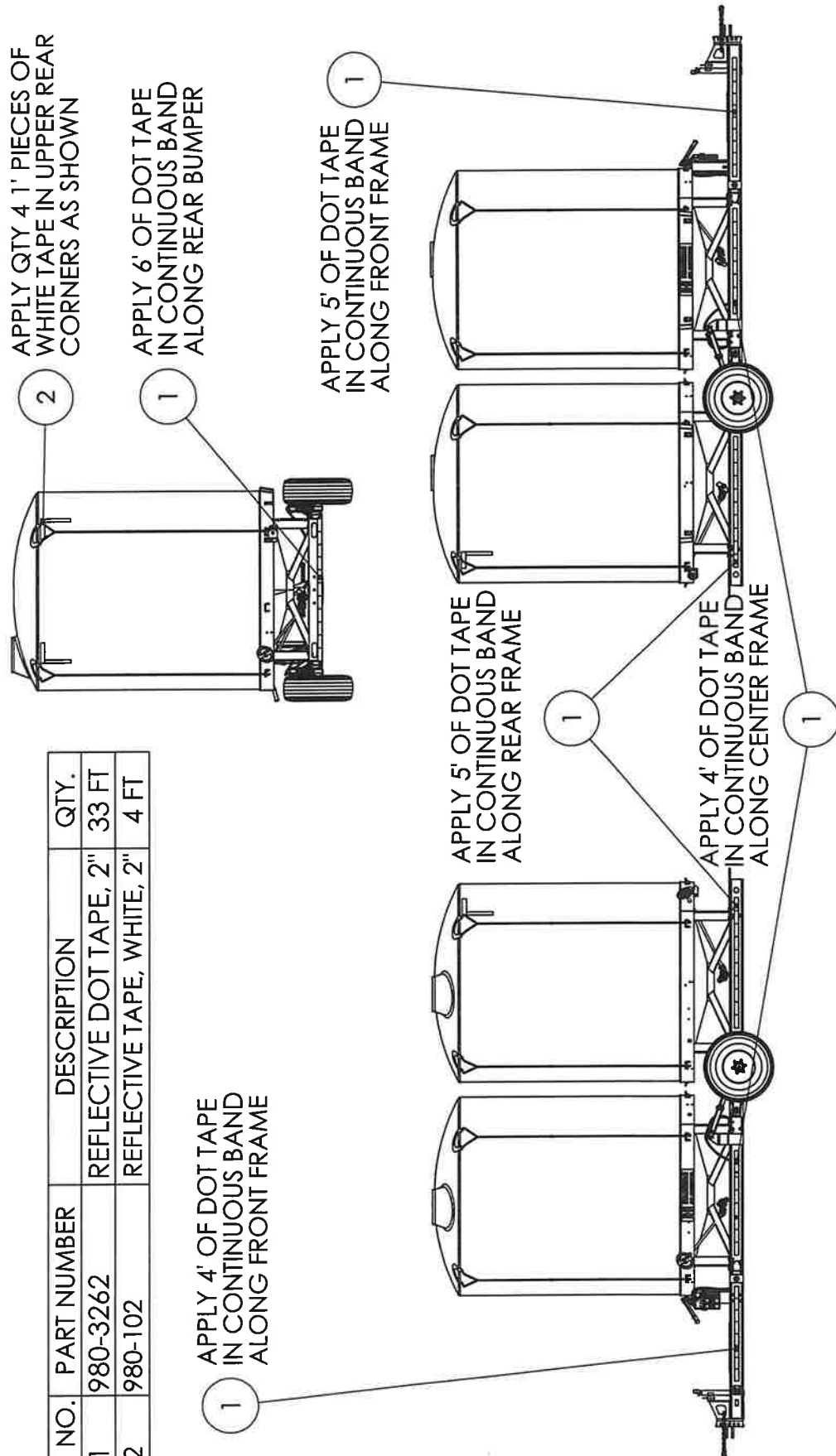
1

APPLY 5' OF DOT TAPE IN CONTINUOUS BAND ALONG REAR FRAME

1

APPLY 4' OF DOT TAPE IN CONTINUOUS BAND ALONG CENTER FRAME

1



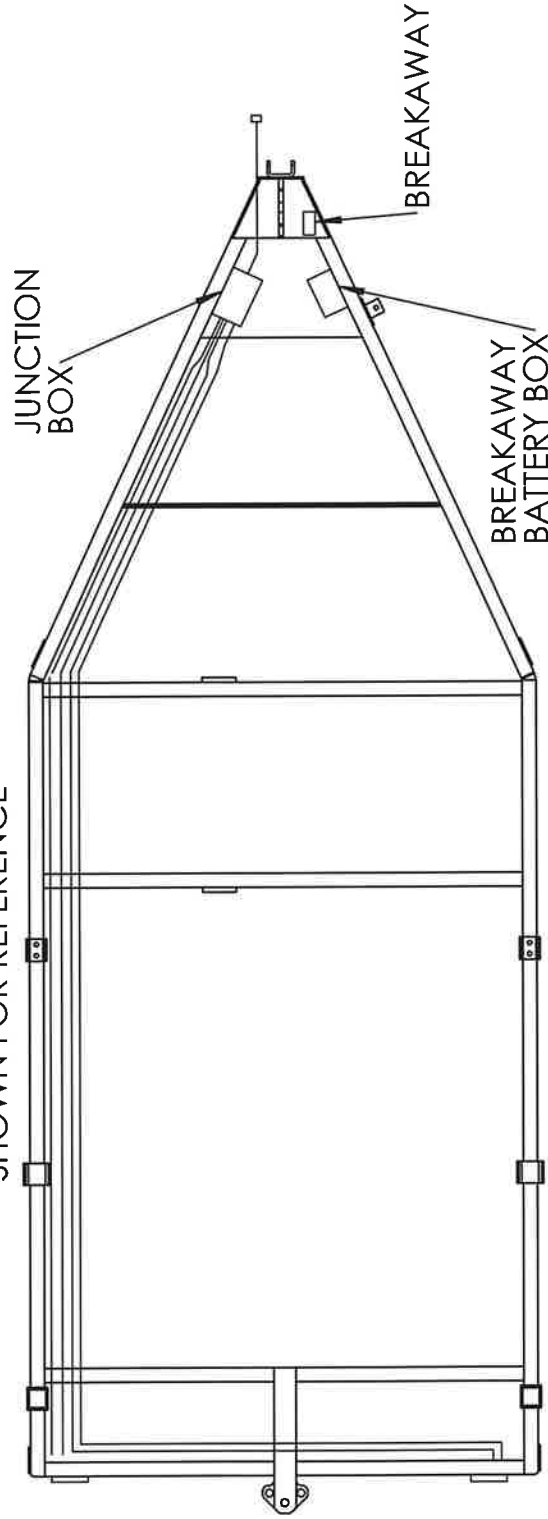
SC1200 BRAKE KIT, 1 AXLE
P/N: 70093

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	RVD-H-865-916	7K BRAKE DRUM 8-6.5"	2
2	GS-2250DL	DOUBLE LIP SEAL	2
3	BK-12E-01SA	7K 12X2 LEFT SA ELECTRIC BRAKE	1
4	BK-12E-02SA	7K 12X2 RIGHT SA ELECTRIC BRAKE	1
5	50-85-320	BREAKAWAY SYSTEM	1
6	83-2550	YELLOW HEAT SHRINK BUTT CONNECTOR	12
7	83-2410	16-14 GA HEAT SHRINK #10 RING TERMINAL	14
8	03212	12/2 WIRE	25 FT
9	50-67-614	7-WAY TRAILER END CONNECTOR 4' LEAD	1
10	83-2510	12-10 GA HEAT SHRINK #10 RING TERMINAL	4
11	18055722	BOLT, HX CAP G5NCZC 1/4X1	5
12	18811000	WASHER, FLAT 1/4 ZC	5
13	18569200	NUT 1/4 NYLOCK SS	5
14	70658	ADHESIVE BACKED CABLE TIE HOLDER, OUTDOOR	4
15	70659	CABLE TIE, 7-1/2 LONG, OUTDOOR	4
16	3225T4	1/4" HOSE LOOP CLAMP	6
17	18721018	SCREW SELF TAP HX #10 X 3/4	6
18	18436700	NUT, 3/8-24	10
19	18891200	3/8 LOCK WASHER	10
20	667-7040	7 WAY JUNCTION BOX	1
21	70879	1/4 X 1 SELF TAPPING SCREWS, SS, DRILL TIP	2

SC1200 BRAKE KIT, 1 AXLE

P/N: 70093

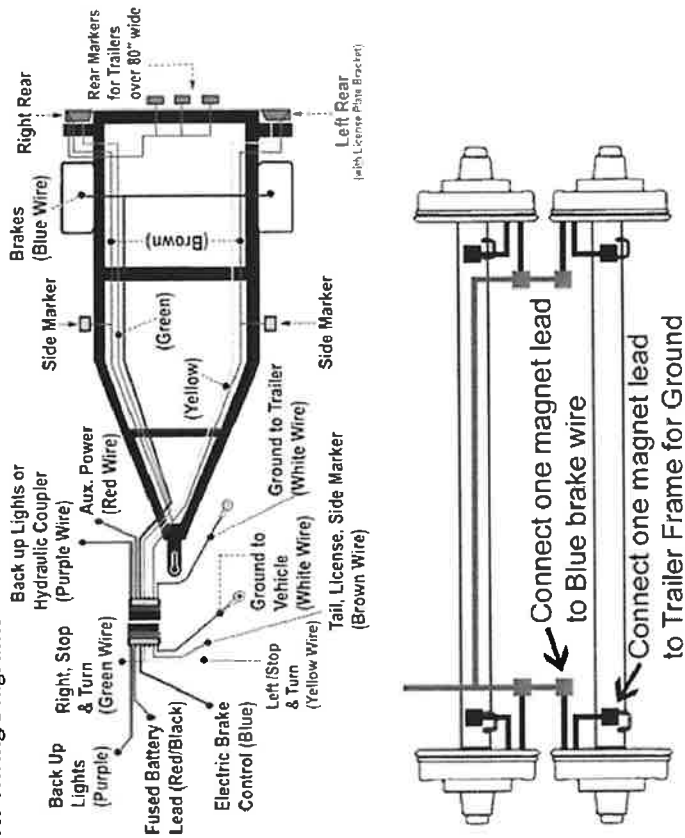
WIRES FROM LIGHT KIT
SHOWN FOR REFERENCE



WIRING NOTES:

1. LIGHT KIT IS REQUIRED FOR BRAKE KIT INSTALLATION - SEE 71456 FOR LIGHT KIT INSTALLATION DETAILS.
2. MOUNT BREAKAWAY SYSTEM COMPONENTS AND JUNCTION BOX IN APPROXIMATE LOCATION SHOWN.
3. REMOVE IDLER HUB AND INSTALL ELECTRIC BRAKE. ENSURE LH/RH ARE INSTALLED ON CORRECT SIDES - THE BOW SHOULD POINT TOWARDS THE FRONT OF TRAILER AND THE MAGNET SHOULD BE ON THE LOWER SIDE.
4. INSTALL DOUBLE LIP SEAL, BEARINGS, AND BRAKE DRUM ONTO SPINDLE. GREASE SPINDLE.
5. RUN WIRING TO BRAKES AND SECURE USING LOOP CLAMPS, SELF TAPPING SCREWS, CABLE TIES, AND CABLE TIE HOLDERS AS NEEDED. REFER TO WIRING DIAGRAMS ON SHEETS 3-4.
6. FOR ADDITIONAL INSTALLATION DETAILS SEE VIDEOS AT: <https://www.youtube.com/watch?v=DtzPmNNM34M> AND <https://www.youtube.com/watch?v=pqEgUE6zMG8>

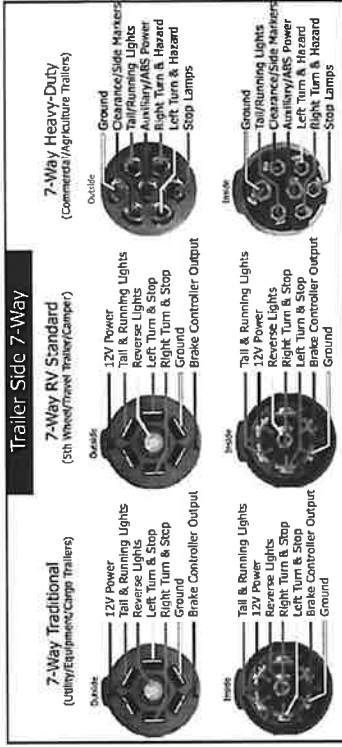
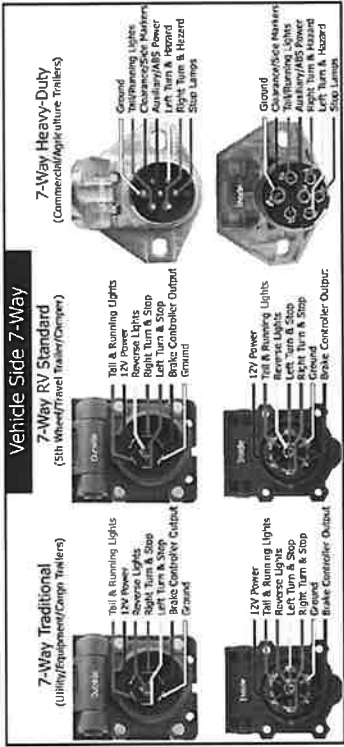
Trailer Wiring Diagrams



Trailer Wiring Color Code

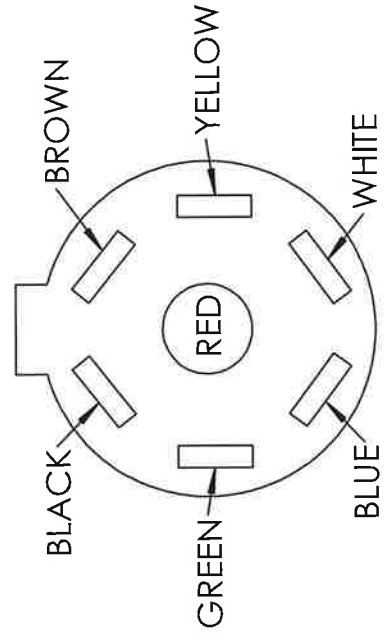
Connector	Function	Color	Minimum Wire Gauge	Where To Attach - Vehicle Side	Where To Attach - Trailer Side
4 Way	Right Turn	Green	18	Right turn of vehicle's wiring harness	Trailer's right turn signal
5 Way	Left Turn	Yellow	18	Left turn of vehicle's wiring harness	Trailer's left turn signal
6 Way	Ground	White	16	Vehicle ground point - metal, uncoated, rustproof	Trailer ground point - metal, uncoated, rustproof
7 Way	Tail / Marker	Brown	18	Tail light of vehicle's wiring harness	Trailer's taillights
	Brake*	Blue	18	Electric brake control, power for brakes	Break away switch
	Battery	Red (or Black)	12	Fuse block or FUSED battery lead	Break away kit, interior lights and battery charger
	Back Up	Purple	15	Back up circuit of vehicle's wiring harness	Back up lights (if available) / Hydraulic coupler

*This chart is a typical guide, wire colors may vary based on manufacturers. Use a circuit tester to verify connections.

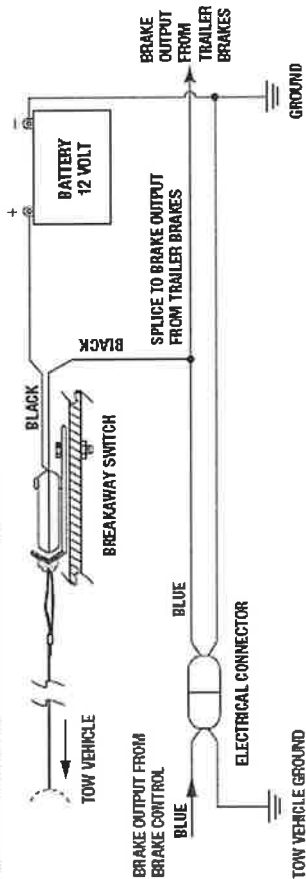


Note: To ensure that your trailer connector is wired properly, we recommend using a circuit tester to match pins by function. Because wire colors can vary, they are not as reliable for determining functions. And improperly connected wiring can cause damage to electric components.

50-67-614 MOLDED TRAILER CONNECTOR SUPPLIED WITH KIT WIRE COLOR LOCATIONS



BREAKAWAY SWITCH INSTALLATION INSTRUCTIONS



READ THIS FIRST:

Read and follow all instructions carefully before installing or operating the Breakaway Switch. Keep these instructions for future reference.

Important Facts to Remember

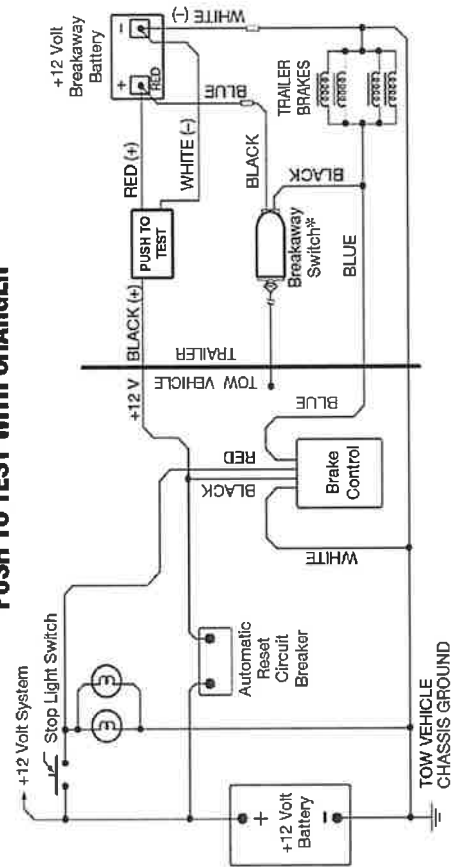
1. **ATTENTION INSTALLER:** Please give this sheet to consumer upon completion of installation.
2. **SAFETY ITEM:** Solder all wire connections.
3. Check condition of battery prior to each trip.
4. **WARNING:** Disconnect trailer plug before testing breakaway unit. Failure to do so will result in severe damage to electronic brake control.
5. **WARNING:** Check your breakaway system periodically to insure that wiring and connections are secure. A short or an open circuit can result in a no-brake condition.
6. For optimal performance, it is recommended that breakaway devices be replaced every 3-5 years.
7. For Technical Assistance and Warranty Information call: 1-888-785-5832 or www.tekonsha.com

Installation Guide

1. Mount Battery Case securely to frame, jack post or other suitable location on trailer with Breakaway Switch Cable towards tow vehicle.
2. **WARNING:** Switch location should be selected to ensure unobstructed line of pull in event of vehicle separation.
3. Bolt breakaway switch bracket to frame of trailer or battery case bracket using 1/4" bolt and lock nut or (2) 1/4" jam nuts. (Bolt and nuts not included in kit.)
4. **WARNING:** Do not over tighten bolt. Switch must be able to pivot.
5. Disconnect trailer from tow vehicle. Check and install battery.
6. Wire per schematic. Properly insulate all connections.
7. Attaching to tow vehicle: Attach Breakaway Switch Cable to tow vehicle frame being certain the cable does not drag on the ground and no strain or restriction is placed on the cable.
8. **WARNING:** Do not hook cable to safety chain loop or hitch ball.

SC1200 BRAKE KIT, 1 AXLE P/N: 70093

PUSH TO TEST WITH CHARGER



For Push-to-Test Models (With Charger)

(NOTE: Use only with 12V Battery Systems. The lower the battery voltage, the dimmer the LED's will illuminate.)

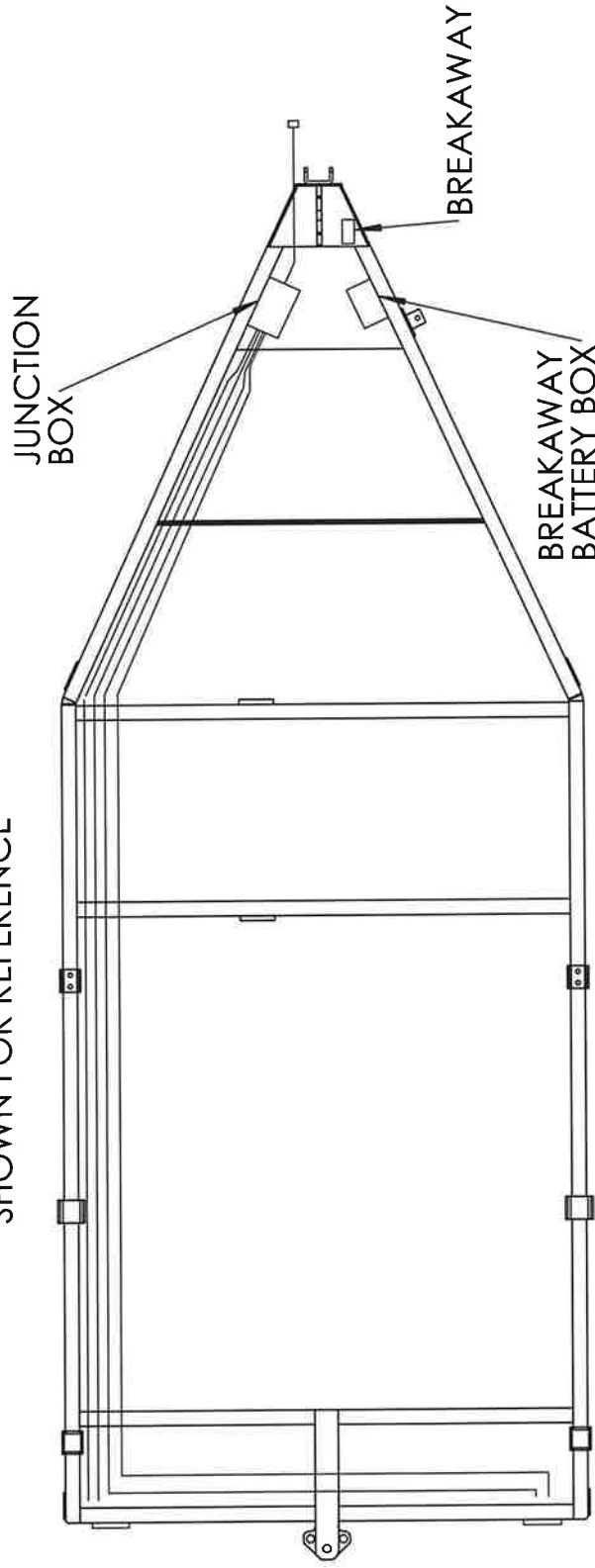
- The YELLOW LED will be illuminated when the Battery is being charged.
- Press the Test Button:
 - If the RED LED is illuminated, the battery voltage is low and requires charging prior to use. Connect the Trailer to the Tow Vehicle's charging system so the Breakaway Kit can charge from the vehicle's battery. Battery must be charged prior to use.
 - If the GREEN LED is illuminated the battery is charged.
- Wire Color with terminals: Red/Blue = Breakaway Battery, Positive, White = Breakaway Battery Negative.
- Wire Color without terminal: Black = Battery Input from Tow Vehicle, White = Vehicle Battery Negative.

SC1200 BRAKE KIT, 2 AXLE **P/N: 70092**

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	RVD-H-865-916	7K BRAKE DRUM 8-6.5"	4
2	GS-2250DL	DOUBLE LIP SEAL	4
3	BK-12E-01SA	7K 12X2 LEFT SA ELECTRIC BRAKE	2
4	BK-12E-02SA	7K 12X2 RIGHT SA ELECTRIC BRAKE	2
5	50-85-320	BREAKAWAY SYSTEM	1
6	83-2550	YELLOW HEAT SHRINK BUTT CONNECTOR	12
7	83-2410	16-14 GA HEAT SHRINK #10 RING TERMINAL	14
8	03212	12/2 WIRE	25 FT
9	50-67-616	7-WAY TRAILER END CONNECTOR 6' LEAD	1
10	83-2510	12-10 GA HEAT SHRINK #10 RING TERMINAL	4
11	18055722	BOLT, HX CAP G5NCZC 1/4X1	5
12	18811000	WASHER, FLAT 1/4 ZC	5
13	18569200	NUT 1/4 NYLOCK SS	5
14	70658	ADHESIVE BACKED CABLE TIE HOLDER, OUTDOOR	4
15	70659	CABLE TIE, 7-1/2 LONG, OUTDOOR	4
16	3225T4	1/4" HOSE LOOP CLAMP	6
17	18721018	SCREW SELF TAP HX #10 X 3/4	6
18	18436700	NUT, 3/8-24	20
19	18891200	3/8 LOCK WASHER	20
20	667-7040	7 WAY JUNCTION BOX	1
21	70879	1/4 X 1 SELF TAPPING SCREW, SS, DRILL TIP	2

SC1200 BRAKE KIT, 2 AXLE P/N: 70092

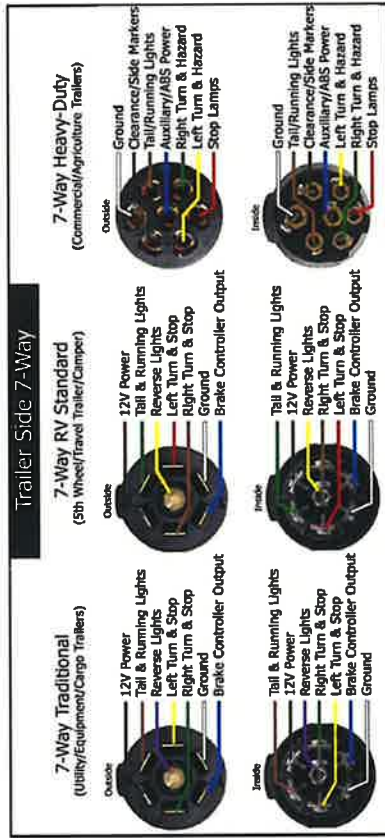
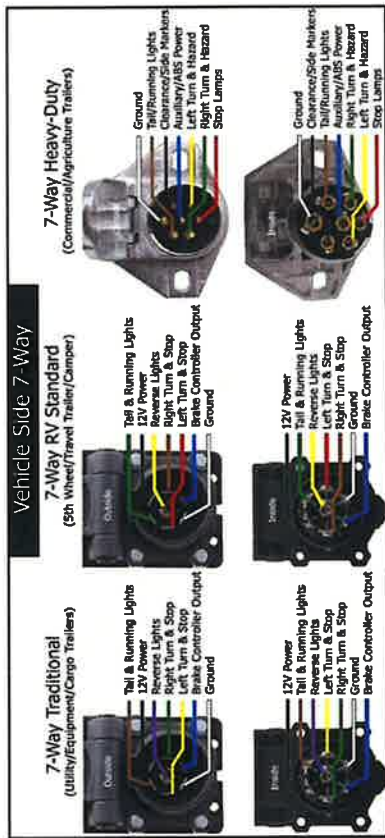
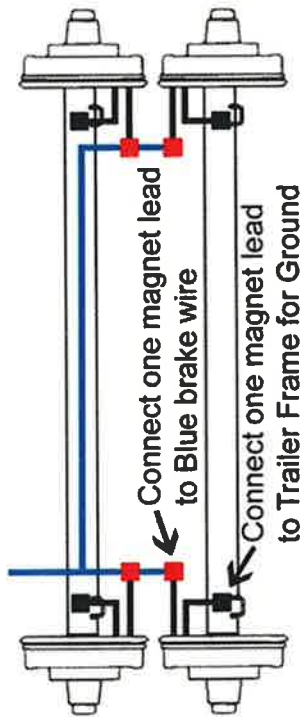
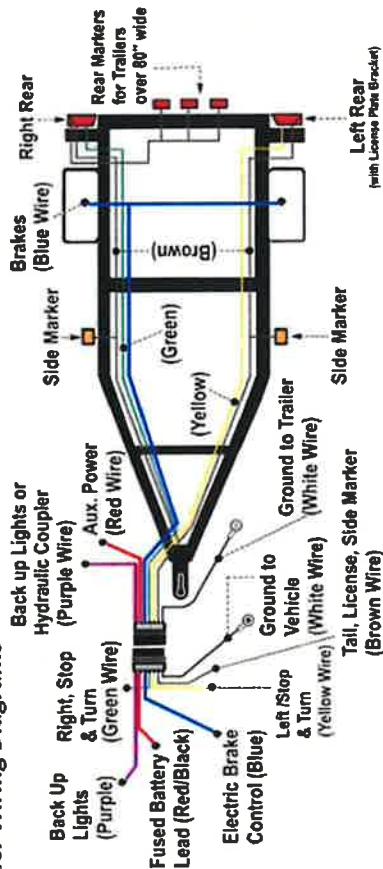
WIRES FROM LIGHT KIT
SHOWN FOR REFERENCE



WIRING NOTES:

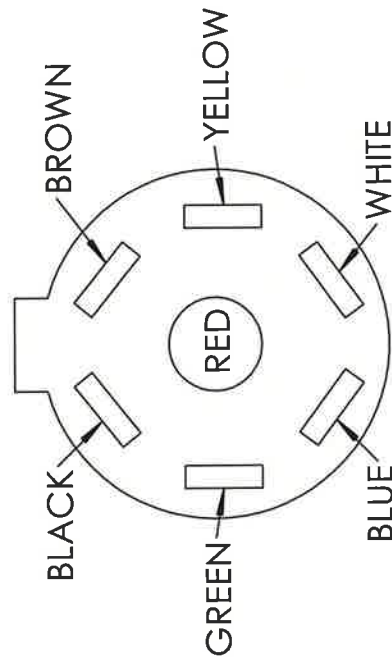
1. LIGHT KIT IS REQUIRED FOR BRAKE KIT INSTALLATION - SEE 71456 FOR LIGHT KIT INSTALLATION DETAILS.
2. MOUNT BREAKAWAY SYSTEM COMPONENTS AND JUNCTION BOX IN APPROXIMATE LOCATION SHOWN.
3. REMOVE IDLER HUB AND INSTALL ELECTRIC BRAKE. ENSURE LH/RH ARE INSTALLED ON CORRECT SIDES - THE BOW SHOULD POINT TOWARDS THE FRONT OF TRAILER AND THE MAGNET SHOULD BE ON THE LOWER SIDE.
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Trailer Wiring Diagrams



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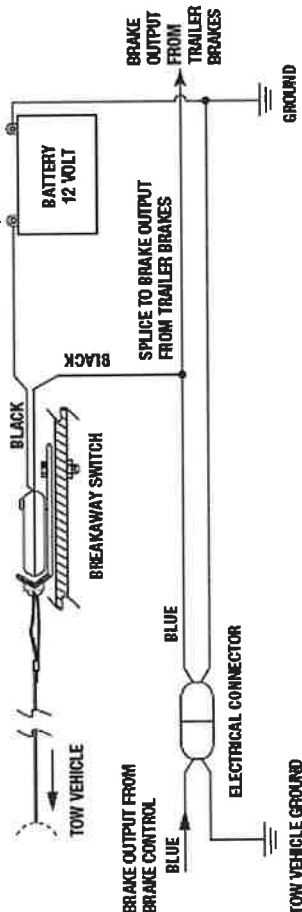
50-67-614 MOLDED TRAILER CONNECTOR SUPPLIED WITH KIT WIRE COLOR LOCATIONS



Trailer Wiring Color Code					Where To Attach - Vehicle Side	Where To Attach - Trailer Side
Connector	Function	Color	Suggested Minimum Wire Gauge			
4 Way	Right Turn	Green	18	16	Right turn of vehicle's wiring harness	Trailer's right turn signal
	Left Turn	Yellow	18	16	Left turn of vehicle's wiring harness	Trailer's left turn signal
5 Way	Ground	White	16	12	Vehicle ground point - metal, uncoated, rustproof	Trailer ground point - metal, uncoated, rustproof
6 Way	Tail / Marker	Brown	18	16	Tailight of vehicle's wiring harness	Trailer's taillights
7 Way	Brake*	Blue	18	12	Electric brake control power for brakes	Break away switch
	Battery	Red (or Black)	12	12	Fuse block or FUSED battery lead	Break away kit, marker lights and battery charge
	Back Up	Purple	16	16	Back up circuit of vehicle's wiring harness	Back up lights (if available) / Hydraulic assist

This chart is a typical guide, wire colors may vary based on manufacturers. Use a circuit tester to verify connections.

BREAKAWAY SWITCH INSTALLATION INSTRUCTIONS



READ THIS FIRST:

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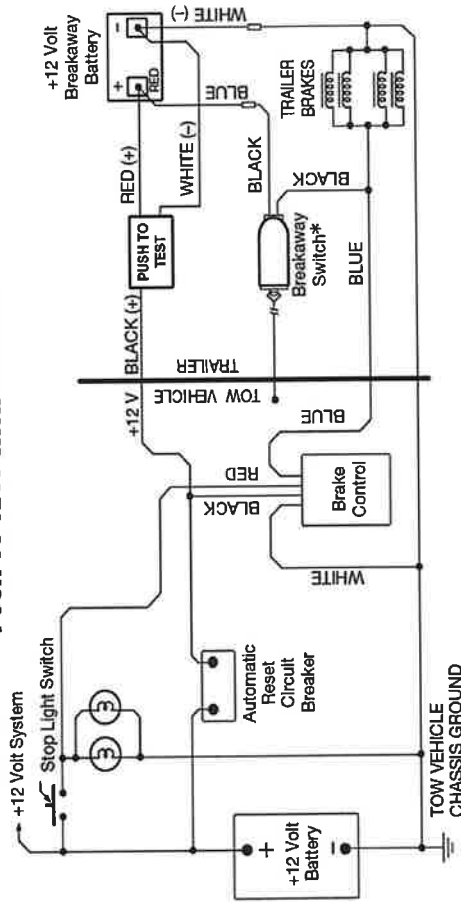
1. ATTENTION INSTALLER: Please give this sheet to consumer upon completion of installation.
2. SAFETY ITEM: Solder all wire connections.
3. Check condition of battery prior to each trip.
4. **WARNING** Disconnect trailer plug before testing breakaway unit. Failure to do so will result in severe damage to electronic brake control.
5. **WARNING** Check your breakaway system periodically to insure that wiring and connections are secure. A short or an open circuit can result in a no-brake condition.
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4. **WARNING** Do not over tighten bolt. Switch must be able to pivot.
5. Disconnect trailer from tow vehicle. Check and install battery.
6. Wire per schematic. Properly insulate all connections.
7. Attaching to tow vehicle: Attach Breakaway Switch Cable to tow vehicle frame being certain the cable does not drag on the ground and no strain or restriction is placed on the cable.
8. **WARNING** Do not hook cable to safety chain loop or hitch ball.

SC1200 BRAKE KIT, 2 AXLE P/N: 70092

PUSH TO TEST WITH CHARGER



For Push-to-Test Models (With Charger)

(NOTE: Use only with 12V Battery Systems. The lower the battery voltage, the dimmer the LED's will illuminate.)

- The YELLOW LED will be illuminated when the Battery is being charged.
- Press the Test Button:
 - If the RED LED is illuminated, the battery voltage is low and requires charging prior to use. Connect the Trailer to the Tow Vehicle's charging system so the Breakaway Kit can charge from the vehicle's battery. Battery must be charged prior to use.
 - If the GREEN LED is illuminated the battery is charged.
- Wire Color with terminals: Red/Blue = Breakaway Battery, Positive. White = Breakaway Battery Negative.
- Wire Color without terminal: Black = Battery Input from Tow Vehicle, White = Vehicle Battery Negative.

UNIVERSAL LIGHT KIT

P/N: 71456

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	MSB3440Y	4 WAY TRAILER HARNESS - 40'	1
2	71383	SURFACE MOUNT LED LIGHTS, RED	2
3	70676	SPLIT LOOM, 1/4 ID	40 FT
4	70879	1/4 X 1 SELF TAPPING SCREW, SS, DRILL TIP	20
5	41859	CLAMP, VINYL COVERED, 9/16	20
7	70886	SPLICE CONNECTOR, 16-14 GA. HEAT SHRINK	6
6	18704215	SCREW, MACHINE RD. #10-24 X 3/4	4
8	18997800	NUT SER FLANGE 10-24 NCZP	4
9	70656	RING TERMINAL, HEAT SHRINK, 16-14 GA AND #10 SCREW SIZE	3
10	18721018	#10 X 3/4 SELF TAPPING SCREW	1
11	73012	7-WAY TO 4 FLAT PLUG ADAPTER	1

INSTALLATION INSTRUCTIONS:

1. RUN MSB3440Y HARNESS THE LENGTH OF TRAILER FROM THE HITCH TO DESIRED LIGHT MOUNTING LOCATIONS. CUT TO LENGTH AND REMOVE EXCESS. INSTALL ITEM 11.
2. CRIMP 70656 RING TERMAL TO WHITE GROUND WIRE OF MSB3440Y AND USE HEAT GUN TO SHRINK INSULATION AND SEAL WIRE CONNECTION. ATTACH GROUND WIRE TO FRAME NEAR HITCH USING 18721018 SELF TAPPING SCREW (DRILL 3/16" PILOT HOLE).
3. INSTALL 70676 SPLIT LOOM OVER MSB3440Y HARNESS AND SECURE WITH ELECTRICAL TAPE (NOT PROVIDED).
4. SECURE WIRE HARNESS TO FRAME WITH 41859 VINYL CLAMPS AND 70879 SELF TAPPING SCREWS AS NEEDED.
5. CRIMP 70656 RING TERMINAL TO WHITE GROUND WIRE OF 71383 SURFACE MOUNT LED TAIL LIGHTS.
6. MATCH DRILL HOLES TO MOUNT LED LIGHTS IN DESIRED LOCATIONS USING 13/64" DRILL. DRILL 1/2" HOLE IN CENTER OF DESIRED LIGHT MOUNTING LOCATION TO ROUTE LIGHT WIRES THROUGH.
7. INSTALL LIGHTS USING 18704215 SCREWS AND 18997800 FLANGE NUTS. ATTACH GROUND RING TERMINAL TO MOUNTING SCREW.
8. CONNECT LIGHT WIRES TO WIRE HARNESS USING 70886 SPLICE CONNECTORS, CRIMP, AND SHRINK WITH HEAT GUN TO SEAL WIRE CONNECTION. CONNECT BROWN WIRES FROM HARNESS TO THE BLACK WIRE ON THE LIGHTS. CONNECT THE GREEN WIRE OF THE HARNESS TO THE RED WIRE OF THE RIGHT TAIL LIGHT. CONNECT THE YELLOW WIRE OF THE HARNESS TO THE RED WIRE OF THE LEFT TAIL LIGHT.

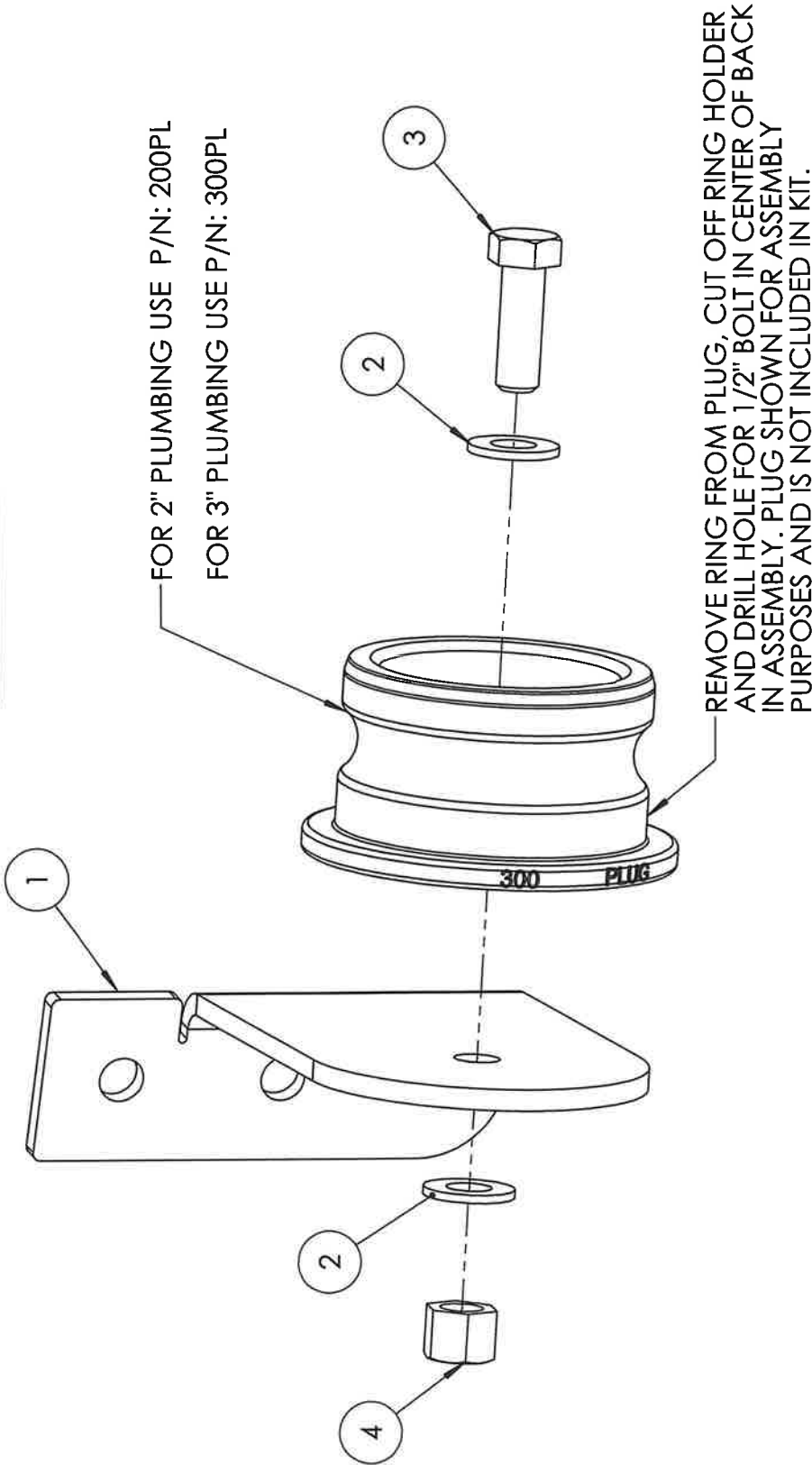
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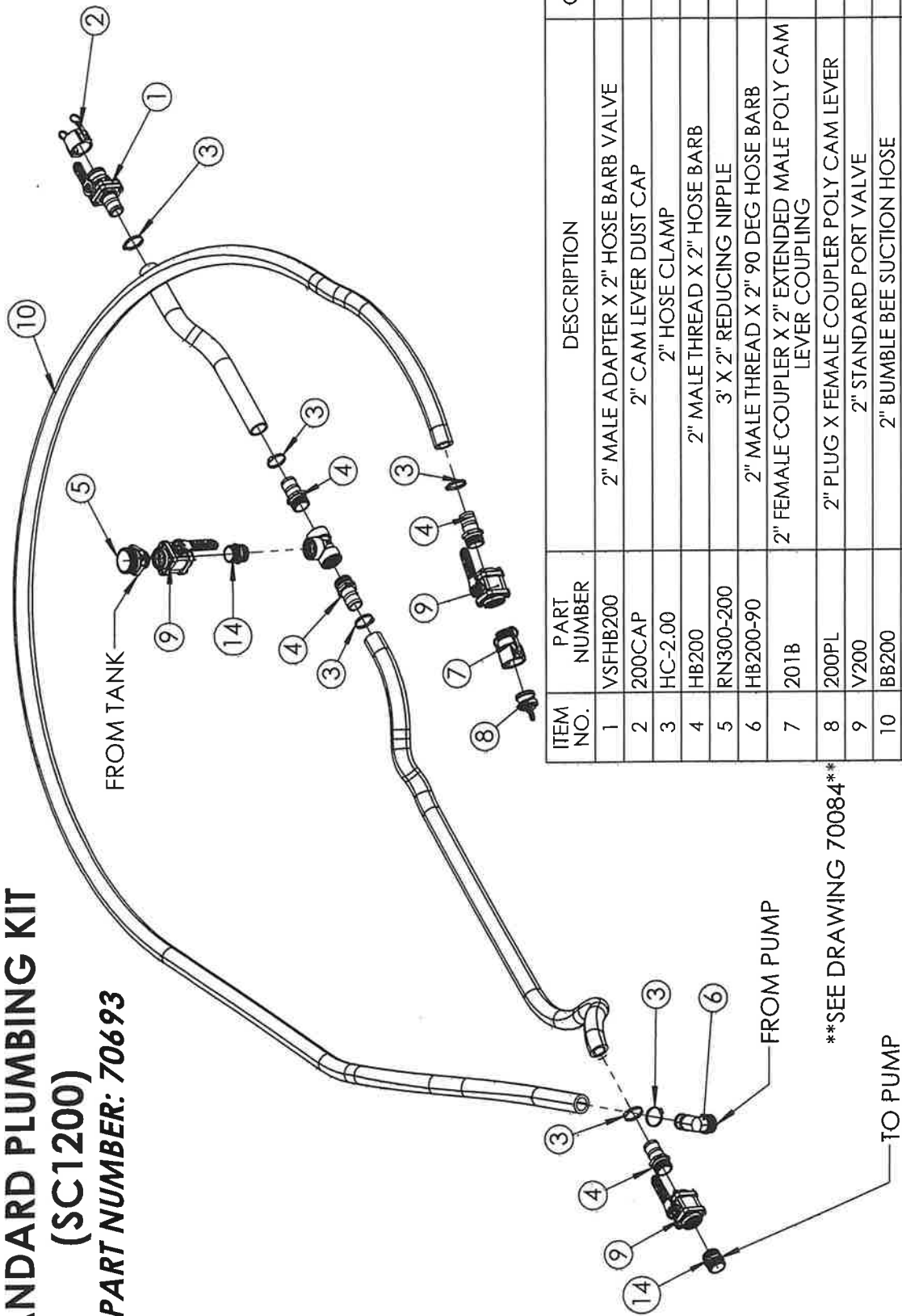
**PAGES 76-79
REMOVED**

PLUMBING HOSE PLUG MODIFICATION PART NUMBER: 70084

ITEM NO.	PART NUMBER	DESCRIPTION	
1	70083	HOSE PLUG BRACKET	1
2	18811400	WASHER, FLAT 1/2 ZC	2
3	18057426	BOLT, HX CAP 1/2-13 X 1 1/2 LG	1
4	18567400	NUT SS NYLOCK 1/2	1



2" STANDARD PLUMBING KIT (SC1200) PART NUMBER: 70693

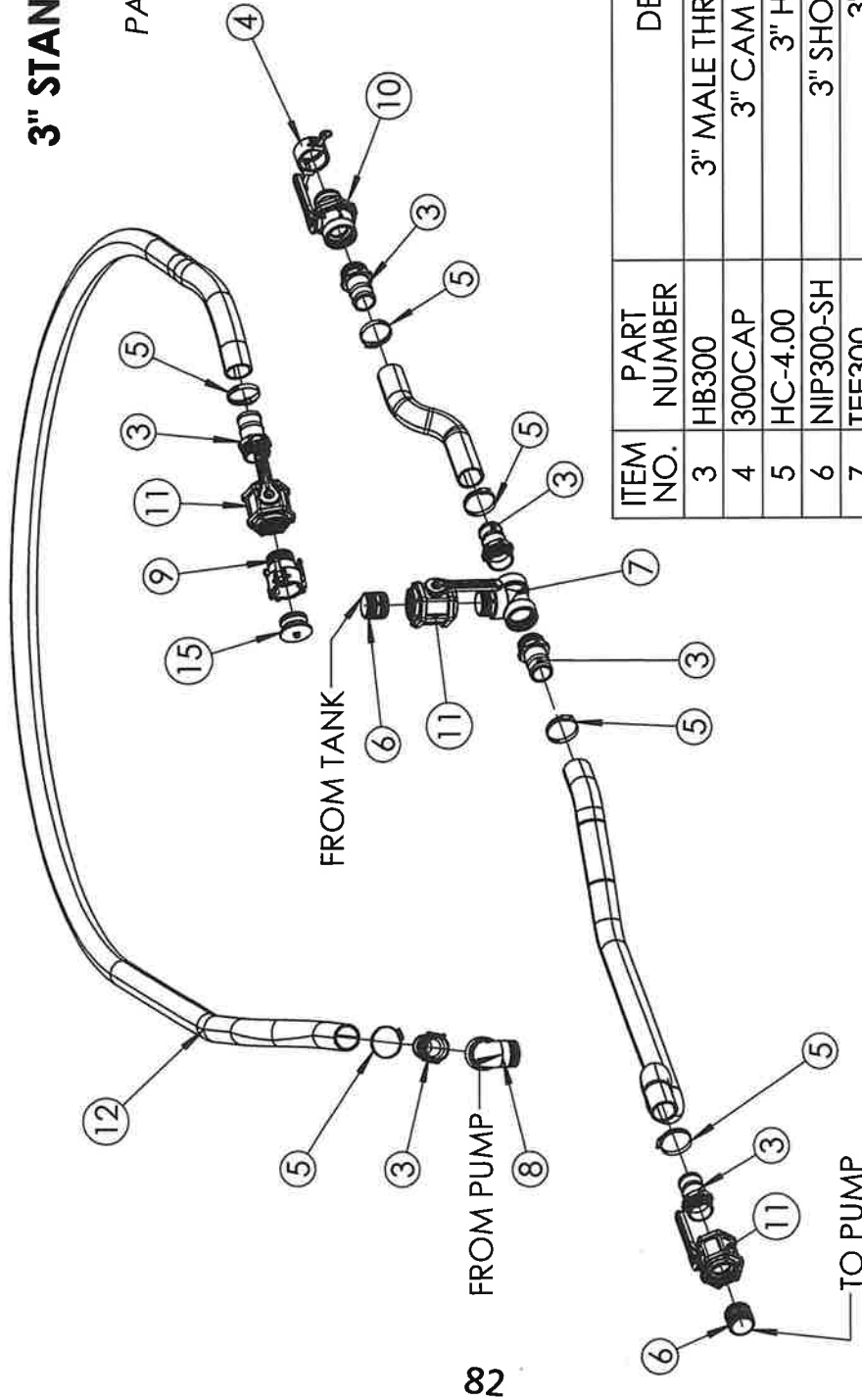


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	VSFHB200	2" MALE ADAPTER X 2" HOSE BARB VALVE	1
2	200CAP	2" CAM LEVER DUST CAP	1
3	HC-2.00	2" HOSE CLAMP	6
4	HB200	2" MALE THREAD X 2" HOSE BARB	4
5	RN300-200	3' X 2" REDUCING NIPPLE	1
6	HB200-90	2" MALE THREAD X 2" 90 DEG HOSE BARB	1
7	201B	2" FEMALE COUPLER X 2" EXTENDED MALE POLY CAM LEVER COUPLING	1
8	200PL	2" PLUG X FEMALE COUPLER POLY CAM LEVER	1
9	V200	2" STANDARD PORT VALVE	3
10	BB200	2" BUMBLE BEE SUCTION HOSE	43'
13	TEE200	2" POLY TEE	1
14	NIP200-SH	2" SHORT POLY NIPPLE	2

3" STANDARD PLUMBING KIT

SC1200

PART NUMBER #70695



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
3	HB300	3" MALE THREAD X 3" HOSE BARB	6
4	300CAP	3" CAM LEVER DUST CAP	1
5	HC-4.00	3" HOSE CLAMP	6
6	NIP300-SH	3" SHORT POLY NIPPLE	3
7	TEE300	3" POLY TEE	1
8	SL300-90	3" 90 DEGREE STREET ELBOW	1
9	303B	3" FEMALE COUPLER X 3" EXTENDED MALE THD POLY CAM LEVER COUPLING	1
10	VSF300	3" FEMALE NPT X 3" MALE ADAPTER VALVE	1
11	V300	3" STANDARD PORT VALVE	3
12	BB300	3" BUMBLE BEE SUCTION HOSE	43'
15	300PL	3" FEMALE PLUG, BANJO	1

SEE DRAWING 70084

2" FRONT RECIRCULATION KIT (SC1200) **PARTS LISTING** *PART # 70694*

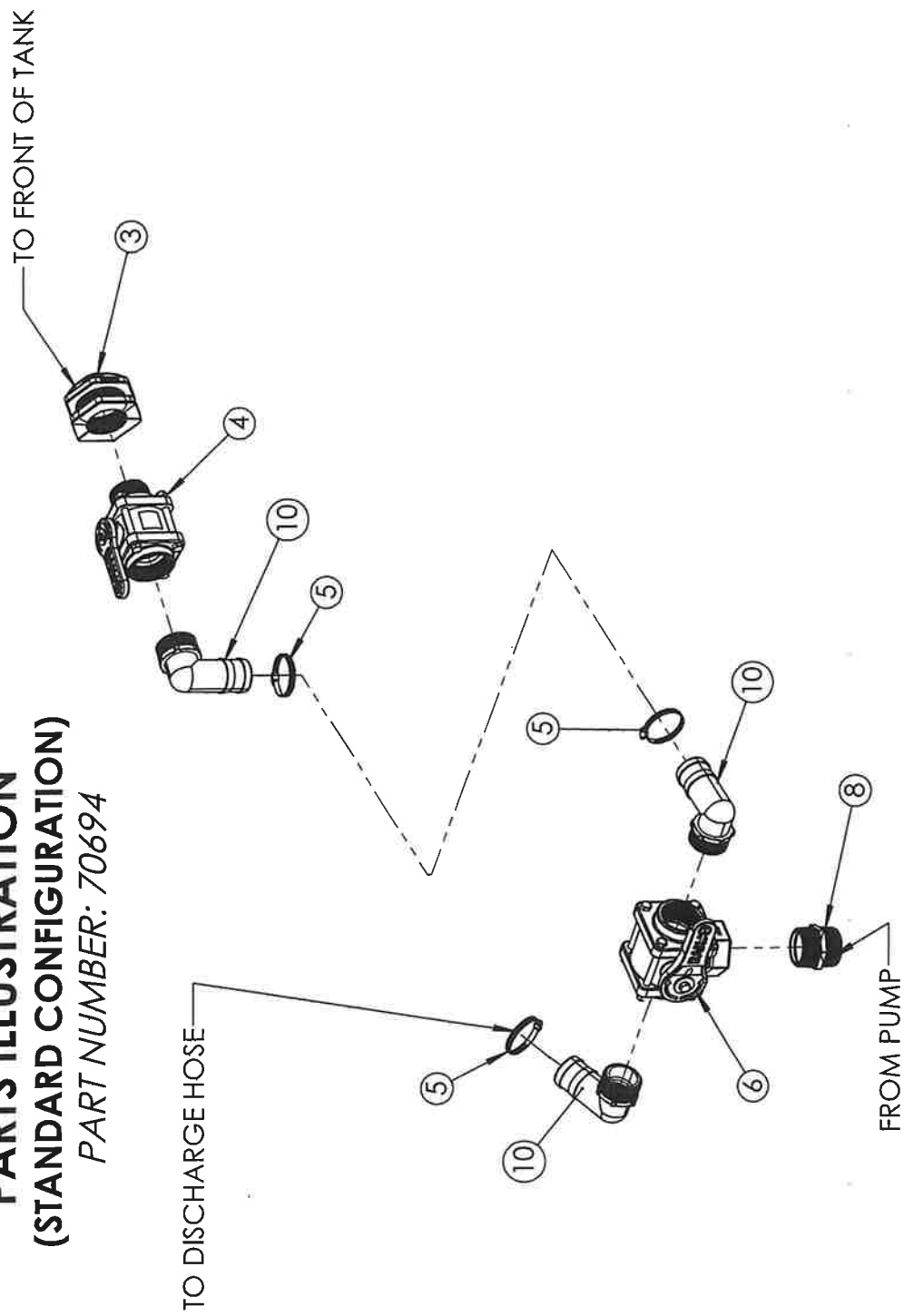
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
3	TF200	2" BULKHEAD FITTING W/ EPDM GASKET	1
4	VMT206	2" MALE THREAD VALVE	1
5	HC-2.00	2" HOSE CLAMP	4
6	V200SL	2" 3-WAY SIDE LOAD VALVE	1
7	HB200	2" MALE THREAD X 2" HOSE BARB	1
8	NIP200-SH	2" SHORT POLY NIPPLE	1
9	M200MPT	2" FLANGE X 2" MALE THREAD FITTING	1
10	HB200-90	2" MALE THREAD X 2" 90 DEG HOSE BARB	3
11	V25270	STRAIGHT MOUNTING BRACKET	1
12	70171	30 GAL INDUCTOR KIT, 2 IN	1

NOT INCLUDED
REFERENCE ONLY

*HOSE INCLUDED IN STANDARD PLUMBING PACKAGE P/N: 70693

CONFIGURATIONS ON THE FOLLOWING PAGES:
 SHEET 84 - STANDARD WITHOUT INDUCTOR
 SHEET 85 - WITH INDUCTOR, VALVE MOUNTED TO INDUCTOR
 SHEET 86 - WITH INDUCTOR, VALVE MOUNTED ON FRAME

2" FRONT RECIRCULATION KIT (SC1200) **PARTS ILLUSTRATION** **(STANDARD CONFIGURATION)** **PART NUMBER: 70694**

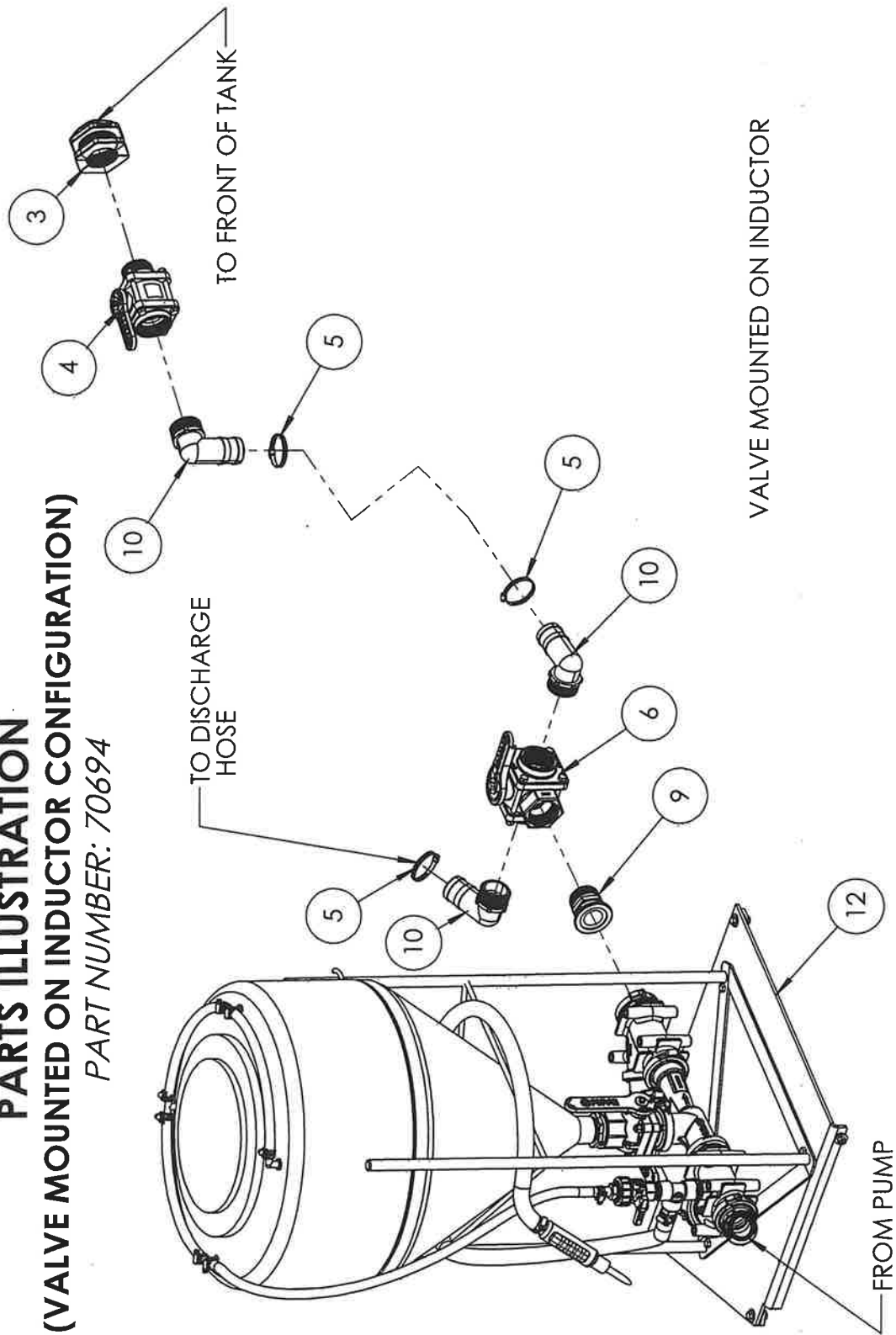


2" FRONT RECIRCULATION KIT (SC1200)

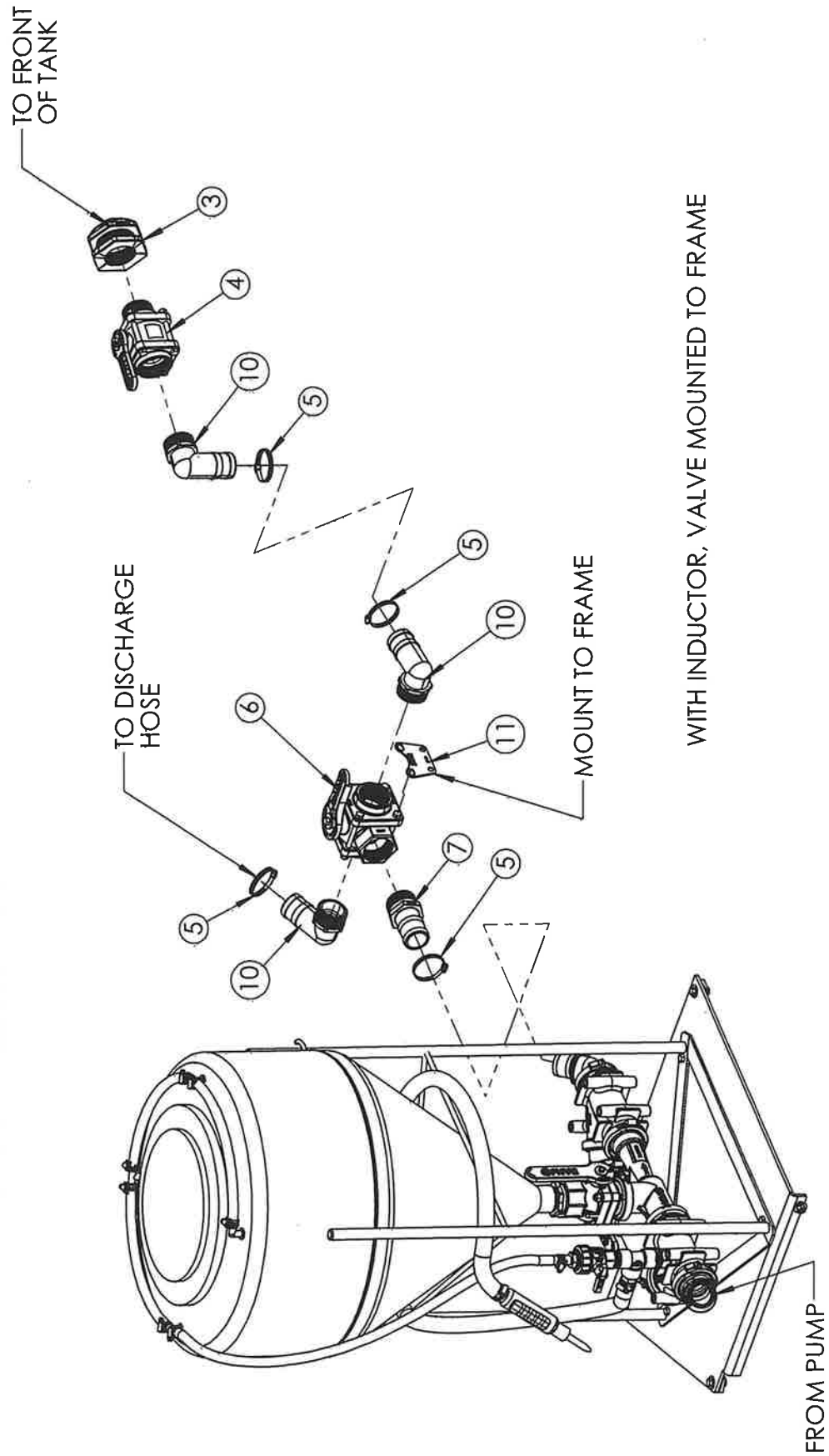
PARTS ILLUSTRATION

(VALVE MOUNTED ON INDUCTOR CONFIGURATION)

PART NUMBER: 70694



2" FRONT RECIRCULATION KIT (SC1200) **PARTS ILLUSTRATION** **(WITH INDUCTOR VALVE MOUNTED ON FRAME)** *PART NUMBER: 70694*



3" FRONT RECIRCULATION KIT (SC1200) **PART LISTING**

PART NUMBER: 70696

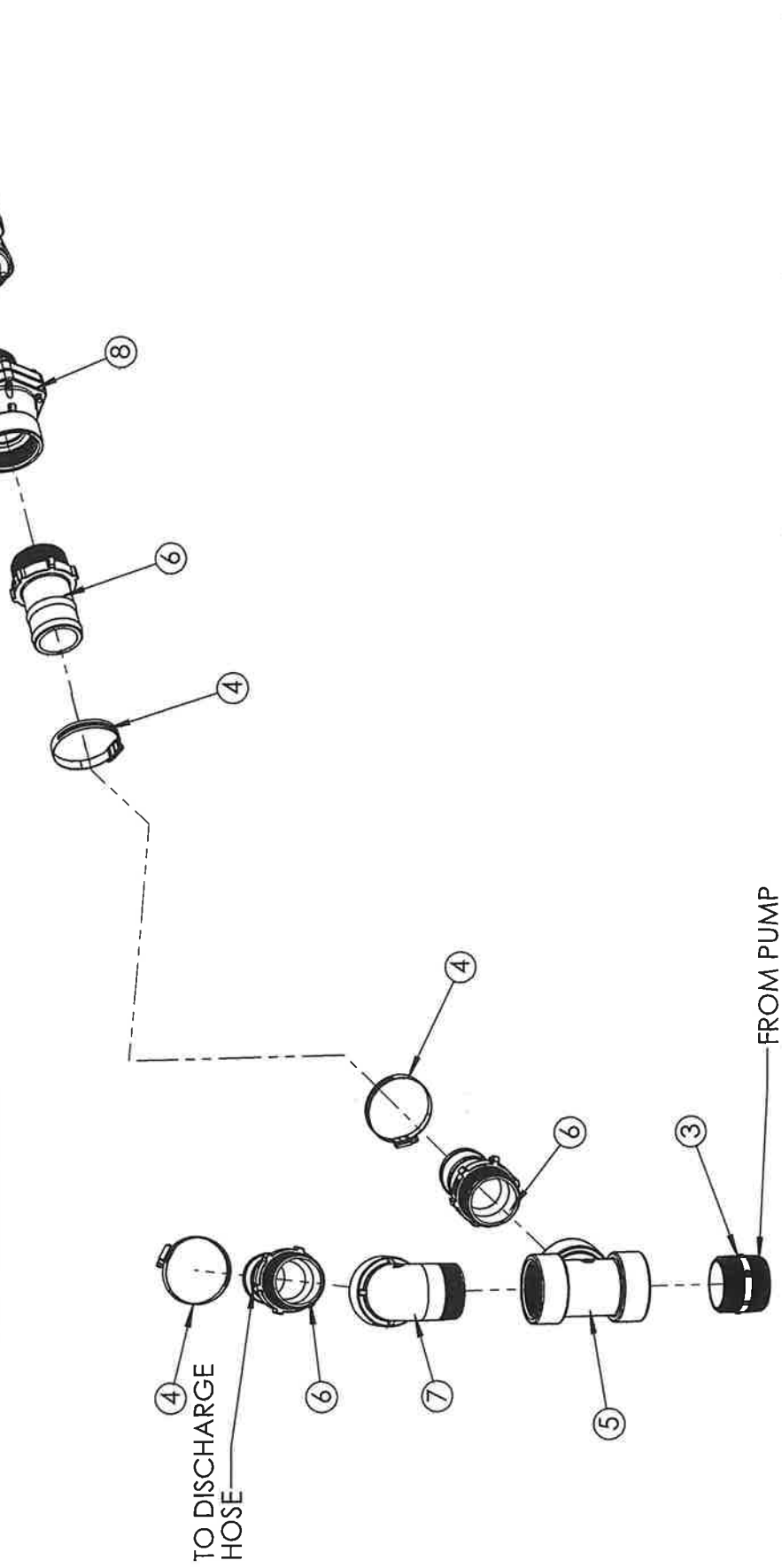
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
3	NIP300-SH	3" SHORT POLY NIPPLE	1
4	HC-4.00	3" HOSE CLAMP	4
5	TEE300	3" POLY TEE	1
6	HB300	3" MALE THREAD X 3" HOSE BARB	4
7	SL300-90	3" 90 DEGREE STREET ELBOW	3
8	VSM300	3" STUBBY VALVE	1
10	M300MPT	3" FLANGE X 3" MALE THREAD	1
11	TF300	3" POLY BULKHEAD TANK FITTING WITH EPDM GASKET	1

SEE SHEET 88 FOR STANDARD CONFIGURATION
 SEE SHEET 89 FOR CONFIGURATION WITH INDUCTOR

TO FRONT
OF TANK

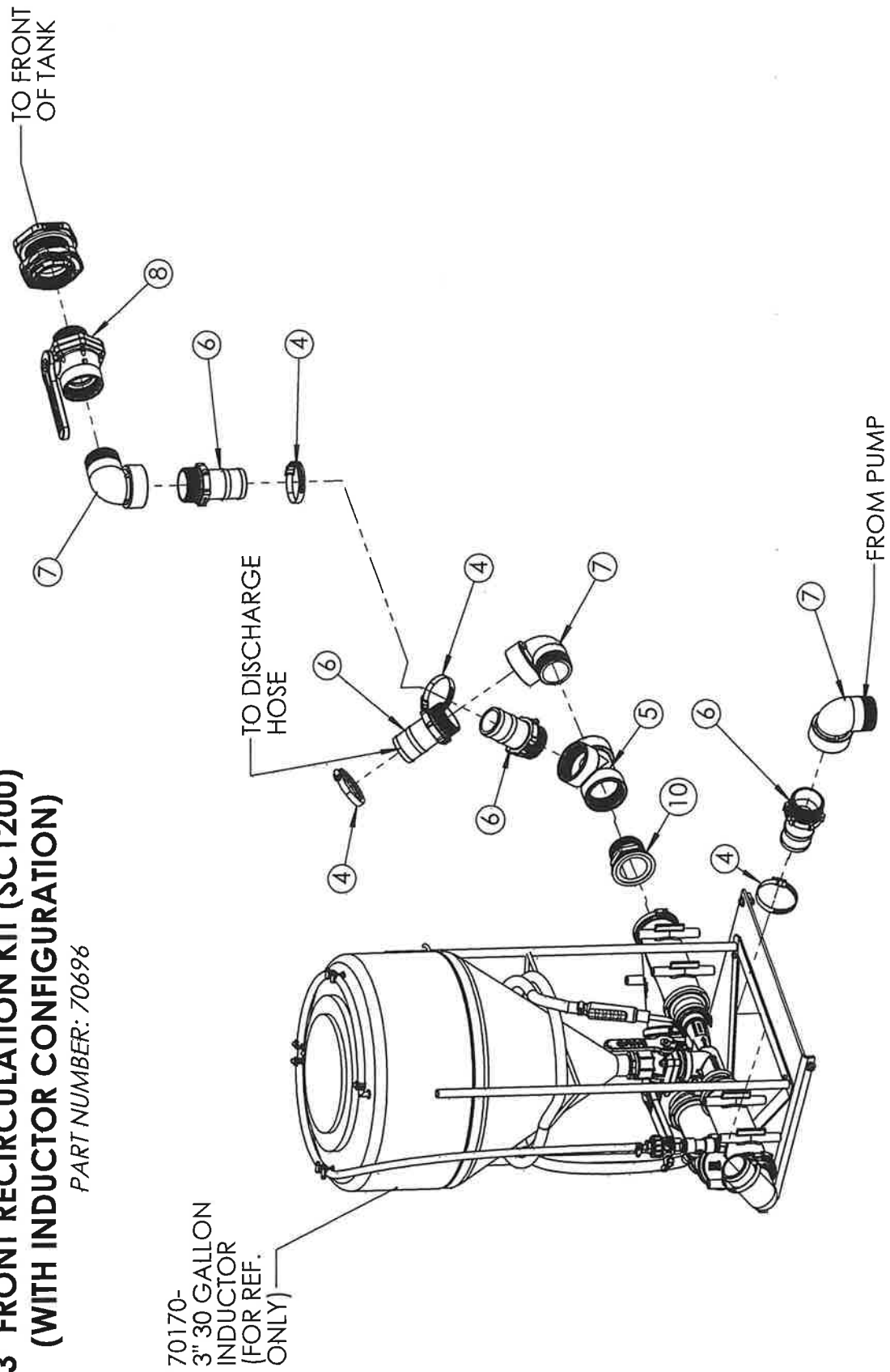
3" FRONT RECIRCULATION KIT (SC1200) (STANDARD CONFIGURATION)

PART NUMBER: 70696



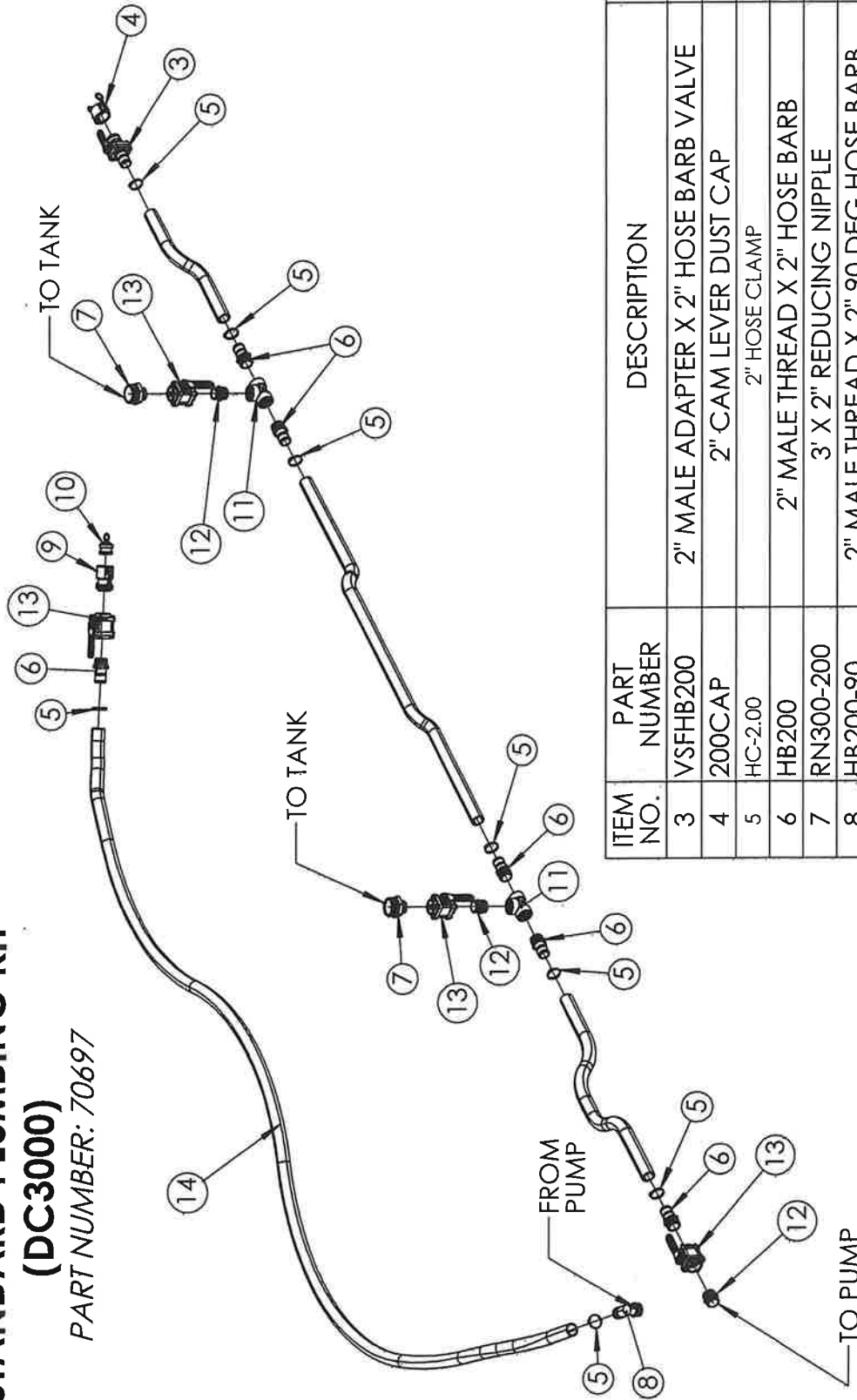
3" FRONT RECIRCULATION KIT (SC1200) (WITH INDUCTOR CONFIGURATION)

PART NUMBER: 70696



2" STANDARD PLUMBING KIT (DC3000)

PART NUMBER: 70697

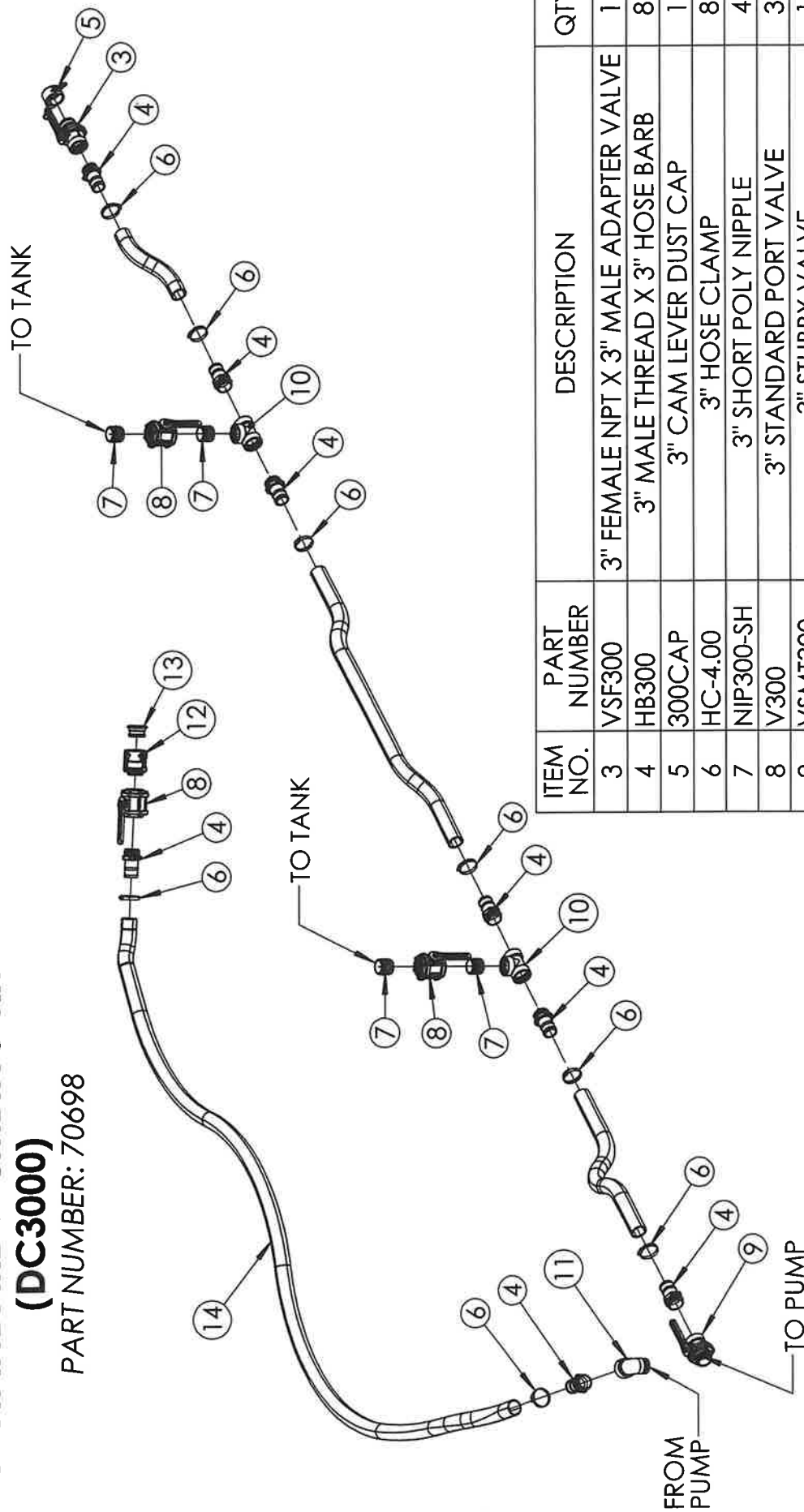


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
3	VSFHB200	2" MALE ADAPTER X 2" HOSE BARB VALVE	1
4	200CAP	2" CAM LEVER DUST CAP	1
5	HC-2.00	2" HOSE CLAMP	8
6	HB200	2" MALE THREAD X 2" HOSE BARB	6
7	RN300-200	3' X 2" REDUCING NIPPLE	2
8	HB200-90	2" MALE THREAD X 2" 90 DEG HOSE BARB	1
9	201B	2" FEMALE COUPLER X 2" EXTENDED MALE POLY CAM LEVER COUPLING	1
10	200PL	2" PLUG X FEMALE COUPLER POLY CAM LEVER	1
11	TEE200	2" POLY TEE	2
12	NIP200-SH	2" SHORT POLY NIPPLE	3
13	V200	2" STANDARD PORT VALVE	4
14	BB200	2" BUMBLE BEE SUCTION HOSE	50'

SEE DRAWING 70084

3" STANDARD PLUMBING KIT (DC3000)

PART NUMBER: 70698

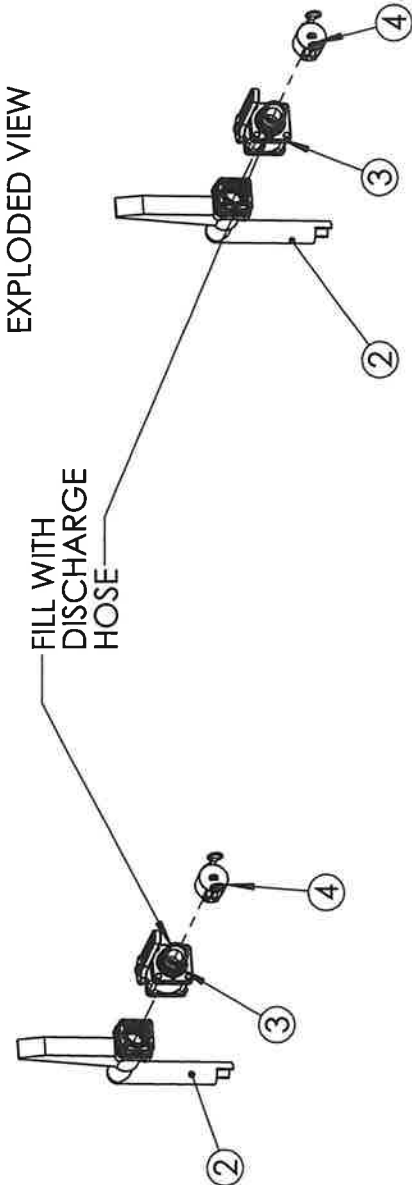


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
3	VSF300	3" FEMALE NPT X 3" MALE ADAPTER VALVE	1
4	HB300	3" MALE THREAD X 3" HOSE BARB	8
5	300CAP	3" CAM LEVER DUST CAP	1
6	HC-4.00	3" HOSE CLAMP	8
7	NIP300-SH	3" SHORT POLY NIPPLE	4
8	V300	3" STANDARD PORT VALVE	3
9	VSMT300	3" STUBBY VALVE	1
10	TEE300	3" POLY TEE	2
11	SL300-90	3" 90 DEGREE STREET ELBOW	1
12	303B	3" FEMALE COUPLER X 3" EXTENDED MALE THD POLY CAM LEVER COUPLING	1
13	300PL	3" POLY PLUG, BANJO	1
14	BB300	3" BUMBLE BEE SUCTION HOSE	50'

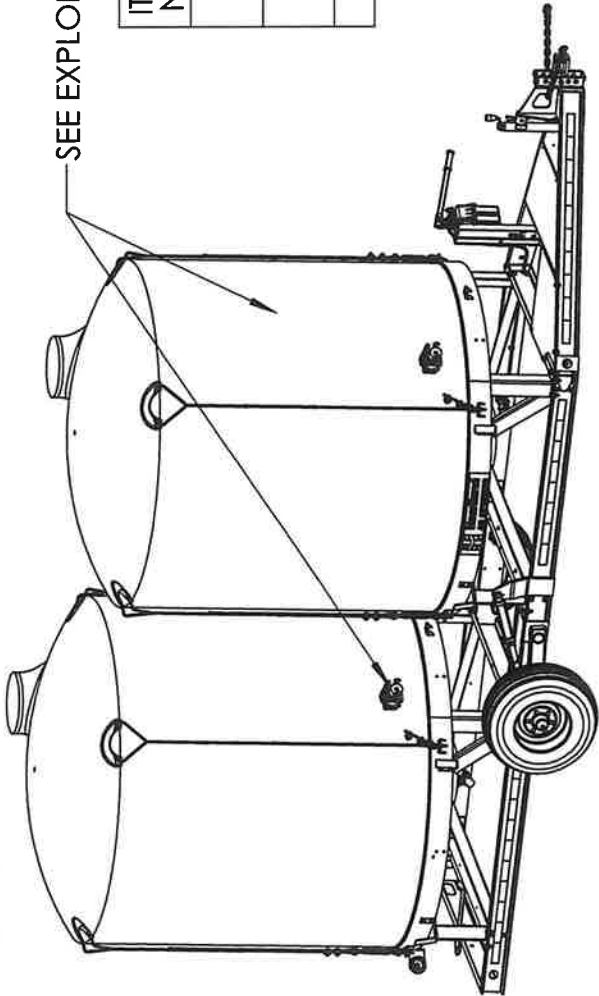
SEE DRAWING 70084

2" FRONT RECIRCULATION KIT
(DC3000)

PART NUMBER: 70703



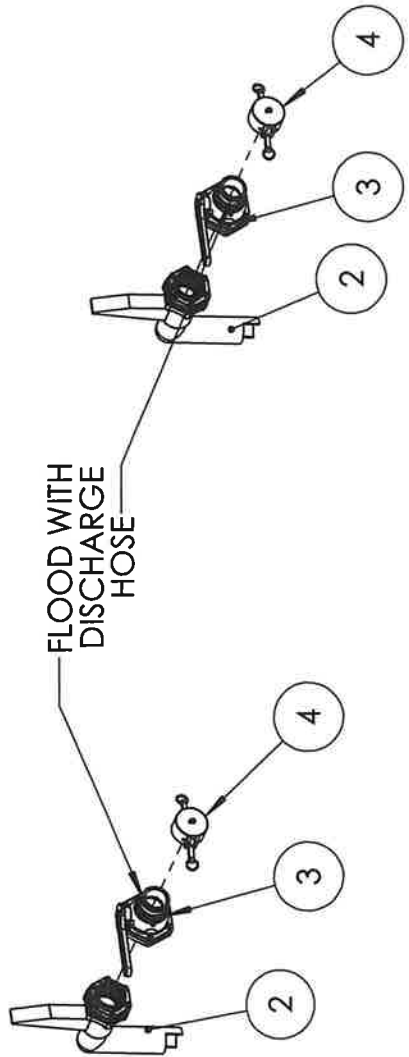
ASSEMBLED VIEW



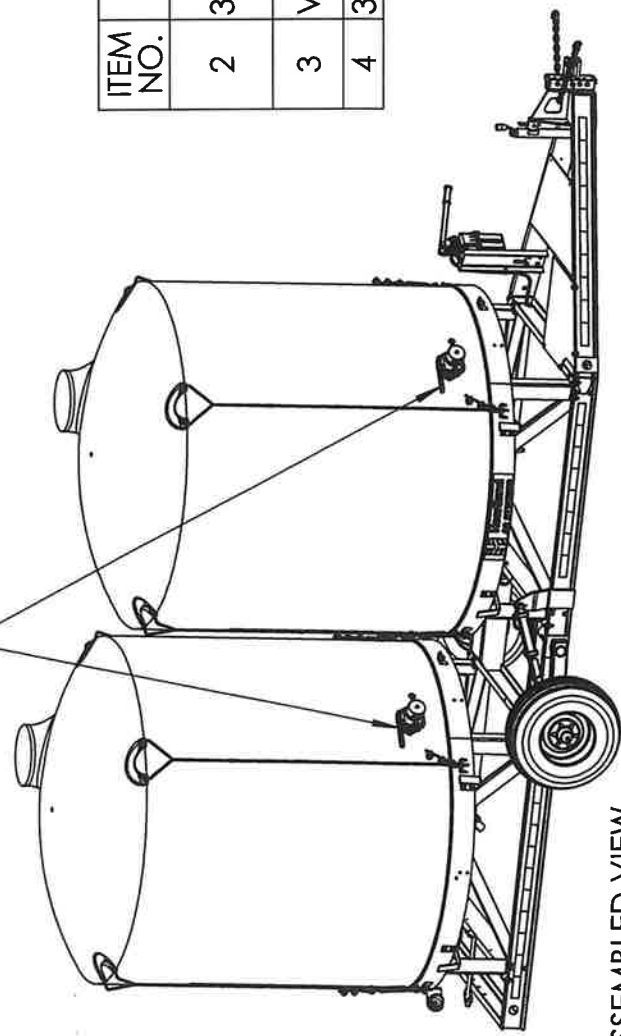
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
2	34701647	2" POLY BOLTED FITTING W/ LONG SIPHON, EPDM, & STRESS RELIEVER	2
3	VFMT204FP	2" FULL PORT VALVE MALE NPT X MALE ADAPTER	2
4	200CAP	2" CAM LEVER DUST CAP	2

3" FRONT RECIRCULATION KIT (DC3000) PART NUMBER: 70699

EXPLODED VIEW



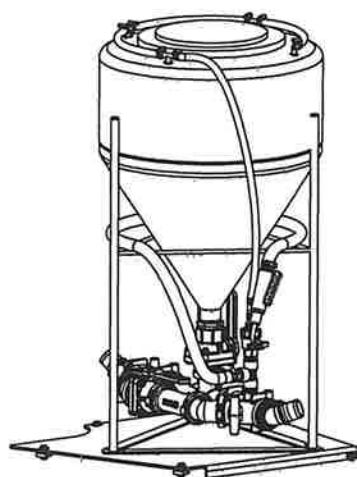
SEE
EXPLODED
VIEW



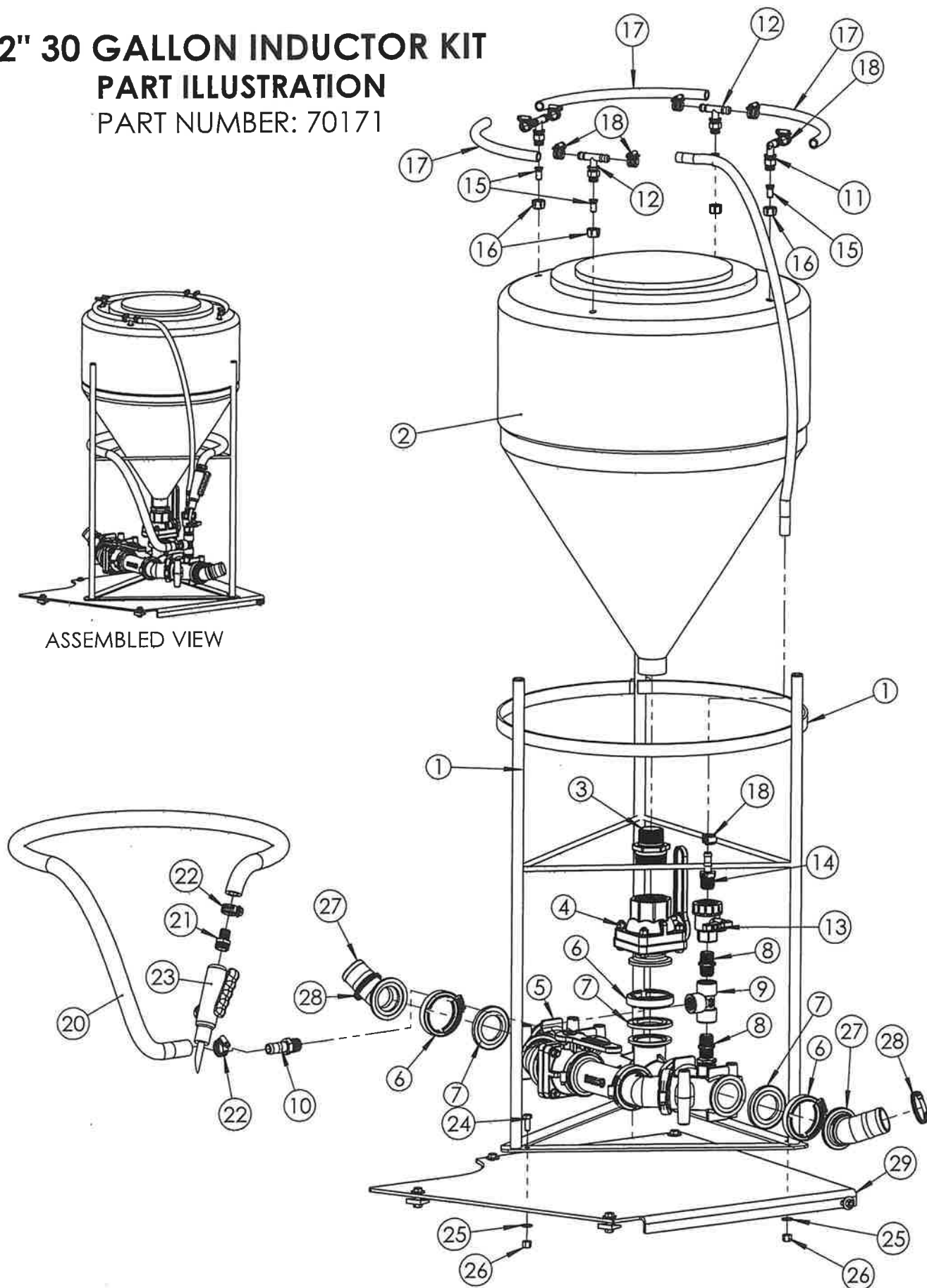
ASSEMBLED VIEW

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
2	34701630	3" POLY BOLTED FITTING W/ LONG SIPHON, EPDM GASKETS, & STRESS RELIEVER	2
3	VSFMT300FP	3" FULL PORT MALE ADAPTER X 3" MALE NPT VALVE	2
4	300CAP	3" CAM LEVER DUST CAP	2

2" 30 GALLON INDUCTOR KIT PART ILLUSTRATION PART NUMBER: 70171



ASSEMBLED VIEW



2" 30 GALLON INDUCTOR KIT

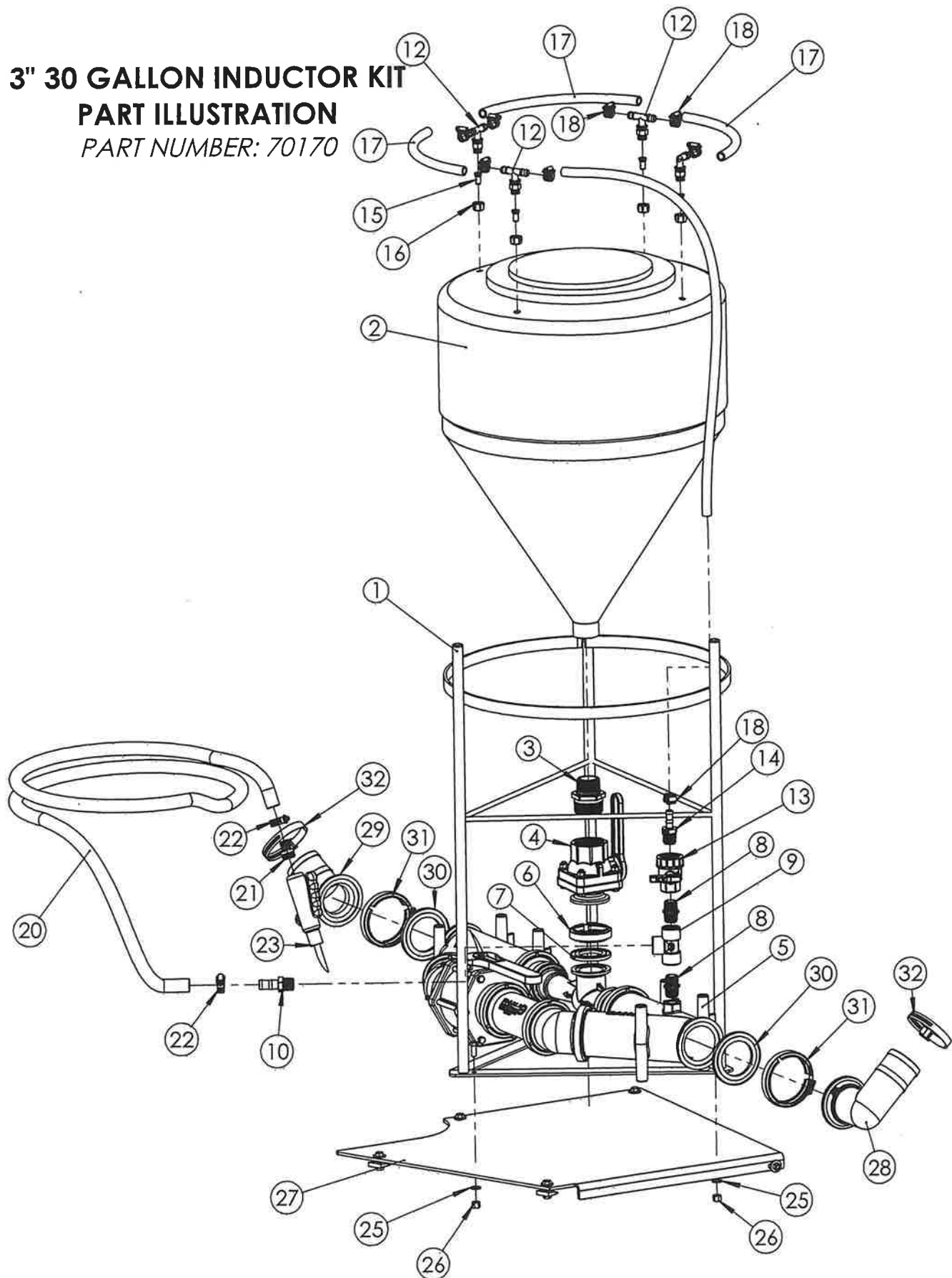
PART ILLUSTRATION

PART NUMBER: 70171

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	INFD30-ST	INDUCTOR STAND, 30 GAL, ACE	1
2	INFD30-24	30 GALLON INDUCTOR TANK (FULL DRAIN)	1
3	RN200-150	REDUCER, 2" X 1.5", PP, BANJO	1
4	MVS220FP	2" VALVE, STUBBY, BANJO	1
5	MIS220	2" FULL PORT MANIFOLD INDUCTOR SYSTEM	1
6	FC220	220 WORM SCREW CLAMP, BANJO	3
7	M221G	2" FULL PORT MANIFOLD GASKET	3
8	NIP075-SH	NIPPLE, 3/4, SHORT, BANJO	2
9	TEE075	3/4 POLY TEE, BANJO	1
10	HB075	HOSE BARB, 3/4 MALE THREAD, BANJO	1
11	NY-BEL050	EL & NUT - NY	1
12	NY-NBTEE050	NOZZLE BODY TEE	3
13	UV075FP	3/4 SINGLE UNION VALVE, BANJO	1
14	HB075-050	HOSE BARB, 3/4 MALE THREAD, BANJO	1
15	TF-VS5	TURBO FLOODJET WIDE	4
16	NY-NBCAP	NOZZLE BODY CAP	4
17	SP050	1/2" X 2SP HOSE	10'
18	HC-.500	HOSE CLAMP, 1/2 IN HOSE	8
20	SP075	3/4 X 2SP HOSE	8'
21	NY-MGHT075	HOSE BARB, 3/4 GARDEN HOSE	1
22	HC-.750	HOSE CLAMP, 3/4 HOSE	2
23	JR24	JET RINSE NOZZLE	1
24	18026822	BOLT, HEX HD 3/8 X 1 NC SS	3
25	18991200	WASHER FLAT 3/8 SS	3
26	18566400	NUT SS NYLOCK 3/8	3
27	M220BRB45	2" FULL PORT FLANGE X 2" 45 HOSE BARB	2
28	HC-2.00	2" HOSE CLAMP	2
29	70195	INDUCTOR MOUNT PLATE KIT	1

3" 30 GALLON INDUCTOR KIT **PART ILLUSTRATION**

PART NUMBER: 70170



3" 30 GALLON INDUCTOR KIT PART LISTING

PART NUMBER: 70170

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	INFD30-ST	INDUCTOR STAND, 30 GAL, ACE	1
2	INFD30-24	30 GALLON INDUCTOR TANK (FULL DRAIN)	1
3	RN200-150	REDUCER, 2" X 1.5", PP, BANJO	1
4	MVS220FP	2" VALVE, STUBBY, BANJO	1
5	MIS300	3" INDUCTOR SYSTEM, BANJO	1
6	FC220	220 WORM SCREW CLAMP, BANJO	1
7	M221G	2" FULL PORT MANIFOLD GASKET	1
8	NIP075-SH	NIPPLE, 3/4, SHORT, BANJO	2
9	TEE075	3/4 POLY TEE, BANJO	1
10	HB075	HOSE BARB, 3/4 MALE THREAD, BANJO	1
11	NY-BEL050	EL & NUT - NY	1
12	NY-NBTEE050	NOZZLE BODY TEE	3
13	UV075FP	3/4 SINGLE UNION VALVE, BANJO	1
14	HB075-050	HOSE BARB, 3/4 MALE THREAD, BANJO	1
15	TF-VS5	TURBO FLOODJET WIDE	4
16	NY-NBCAP	NOZZLE BODY CAP	4
17	SP050	1/2" X 2SP HOSE	10'
18	HC-.500	HOSE CLAMP, 1/2 IN HOSE	8
20	SP075	3/4 X 2SP HOSE	8'
21	NY-MGHT075	HOSE BARB, 3/4 GARDEN HOSE	1
22	HC-.750	HOSE CLAMP, 3/4 HOSE	2
23	JR24	JET RINSE NOZZLE	1
24	18026822	BOLT, HEX HD 3/8 X 1 NC SS	3
25	18991200	WASHER FLAT 3/8 SS	3
26	18566400	NUT SS NYLOCK 3/8	3
27	70195	INDUCTOR MOUNT PLATE KIT	1
28	M300BRB90	3" FLANGE X 3" 90 DEGREE HOSE BARB	1
29	M300BRB45	3" FLANGE X 3" 45 DEGREE HOSE BARB	1
30	M301G	3" FULL PORT MANIFOLD GASKET	2
31	FC300	300 SERIES WORM SCREW CLAMP	2
32	HC-4.00	3" HOSE CLAMP	2

[illegible]