



Heartland
AG SYSTEMS

Heartland Agriculture, LLC

TANDEM WAGONS

**OWNERS MANUAL
SAFETY AND
MAINTENANCE INSTRUCTIONS
OM-TANDEMS**

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

**ISSUE
MARCH 2022**



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.

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.

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

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

CONTENTS

Dealer Checklist (Fill Out and Return)	
To the Owner	2
Warranty	W1–W8
Introduction	4A
Safety	5 to 9
Brake Cluster Setup, Adjusting and Bleeding	10
DA–20 Actuator, installation & maintenance	11 & 12
DA–20 Actuator, Parts Breakdown	13
DA–20 Actuator, Troubleshooting Guide	14
Brake Clusters 12 inch & 13 inch (Parts)	15 & 16
Hydrastar Optional Electric/Hyd Braking System	17
Brake System Schematics (brake line parts)	18 thru 24
General Wagon Assembly	25
Wheel Hub Set–up, Lube, & Maintenance	26
Bolt Torque Data	27 & 28
Recommended Tire Pressure & Load Capacity	29
General Wagon Trouble Shooting	30
Service Schedule & Record Form	31 & 32
Wagon Style Illustrations (Typical Lube points)	33 & 34
Wagon Parts Illustrations & Parts List	35 thru 52
Accessories, Light Kit (Light Systems Plugs)	53
Optional Plumbing Packages	54 thru 79

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

INTRO

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.**



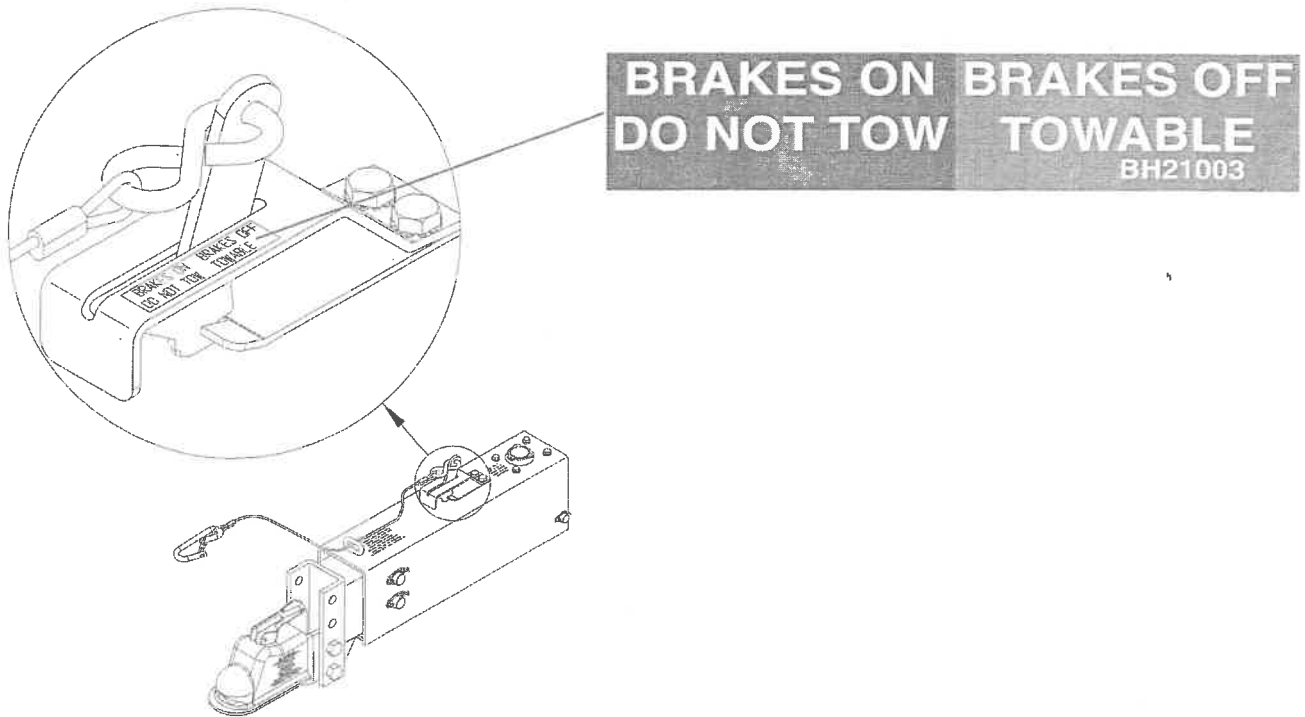
REMEMBER

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 27 and 28 of this manual for proper tightening requirements and methods of tightening wheel bolts.

WARNING

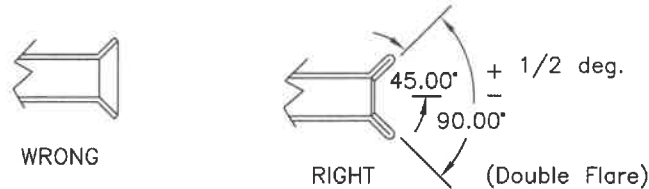
Saltwater, granular fertilizer and other corrosive materials are destructive to metal. To prolong the life of a braking system used under corrosive conditions we recommend that the actuator be flushed periodically with a high pressure water hose. Be sure to regrease bearings and oil all moving parts 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 manufacturer'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.



WARNING

DEMCO MODEL DA20 BRAKE ACTUATOR

To Prevent Serious Injury Or Death:

- Review all of the following instructions before installation and use of hydraulic brake actuator.
- Dealers or Distributors must review these instructions with ultimate user.
- Failure to follow these instructions, or failure to properly maintain braking system after installation, can result in loss of braking action which could cause severe property damage, personal injury or death.



WARNING

To avoid personal injury or death, do not exceed lowest of (1) the rated capacity of Model DA20 actuator, or (2) rated capacity of ball and hitch being used, or (3) trailer's Gross Vehicle Weight Rating (GVWR).

Model DA20 brake actuator has a maximum load rating of 20,000 lbs. GVWR and 2000 lbs. tongue load.



CAUTION

Do not weld on the outer case without disassembling actuator, damage to inner slider tube will occur.

INSTALLATION

Model DA20 is completely assembled and ready to bolt into place.

1. DA20 actuator comes with various mounting channels available.
2. Connect and tighten all brake lines.
3. Fill master cylinder (#18) with DOT 3 or 4 brake fluid.
4. Bleed brake system using a pressure-type brake bleeder or manually, as follows:
 - a. Remove two 5/16" hex head bolts (#13) and lock washers (#12) that hold lever guide (#23) and flat emergency lever spring (#11). Remove lever guide and emergency lever spring. Using short strokes, pull forward on emergency lever (#16), pumping master cylinder until brake fluid within master cylinder stops bubbling.
 - b. Attach a bleeder hose to bleeder valve on one of the wheels and submerge other end of hose into a transparent container partially filled with brake fluid. Loosen bleeder valve one turn and, watching hose in transparent container, use emergency lever to pump master cylinder as long as air bubbles continue to leave the hose. When bubbles stop, close bleeder valve, move to next wheel, and repeat process until all brakes have been bled. (Note: Check fluid level in master cylinder frequently while bleeding brakes (every 4 or 5 strokes). Refill as necessary to keep level above half full.)

5. Once bleeding is completed, refill master cylinder and attach cap (#21) securely. Replace emergency lever spring, lever guide, lock washers and 5/16" hex head bolts.
6. Test brakes by pulling emergency lever (#16) forward until it locks into its second notch position. (Lever should be approximately straight up.) Attempt to rotate wheels in a forward direction. If any wheels rotate, brakes must be adjusted. To adjust brakes, release emergency lever from locked position, set each wheels brake adjustment up 2 or 3 notches (per instructions in appropriate brake cluster manual). Repeat test procedure as necessary.

MAINTENANCE

1. Frequently check brake fluid level. (Fluid must be approved, clean and uncontaminated.)
2. Make sure actuator mounting bolts are secure.
3. Inspect actuator, replace bent, worn or damaged parts.
4. Be constantly aware of systems braking quality, make periodic checks as described in brakes owners manual. Consult certified brake specialist to make necessary adjustments or repairs. Failure to do so could result in loss of braking.

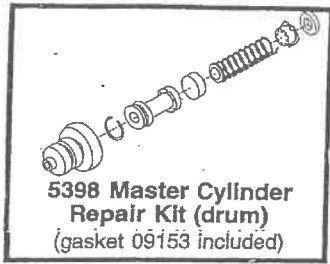
SERVICING THE EMERGENCY LEVER

If emergency lever (#16) of actuator is applied, it can be disengaged by using a screwdriver to lift upward on front of flat emergency lever spring (#11) while pulling lever forward until released. A thorough inspection of emergency lever, emergency lever spring, and cable with S-hooks is required. Damaged parts must be replaced as follows:

- a. Remove Cable S-hook (#22) from emergency lever (#16), emergency lever guide (#23) and flat emergency lever spring (#11), then pull lever out of actuator outer case (#7) through cross-slot in top.
- b. Install new emergency lever through cross-slot in top of outer case. Attach new emergency lever spring and emergency lever guide.
- c. Insert S-hook on emergency cable (#22) into hole in emergency lever (#16) and squeeze shut.
- d. Add adequate brake fluid to master cylinder and bleed brake system per instructions 4-6 in installation section.

DEMCO MODEL DA20 ACTUATOR PARTS BREAKDOWN

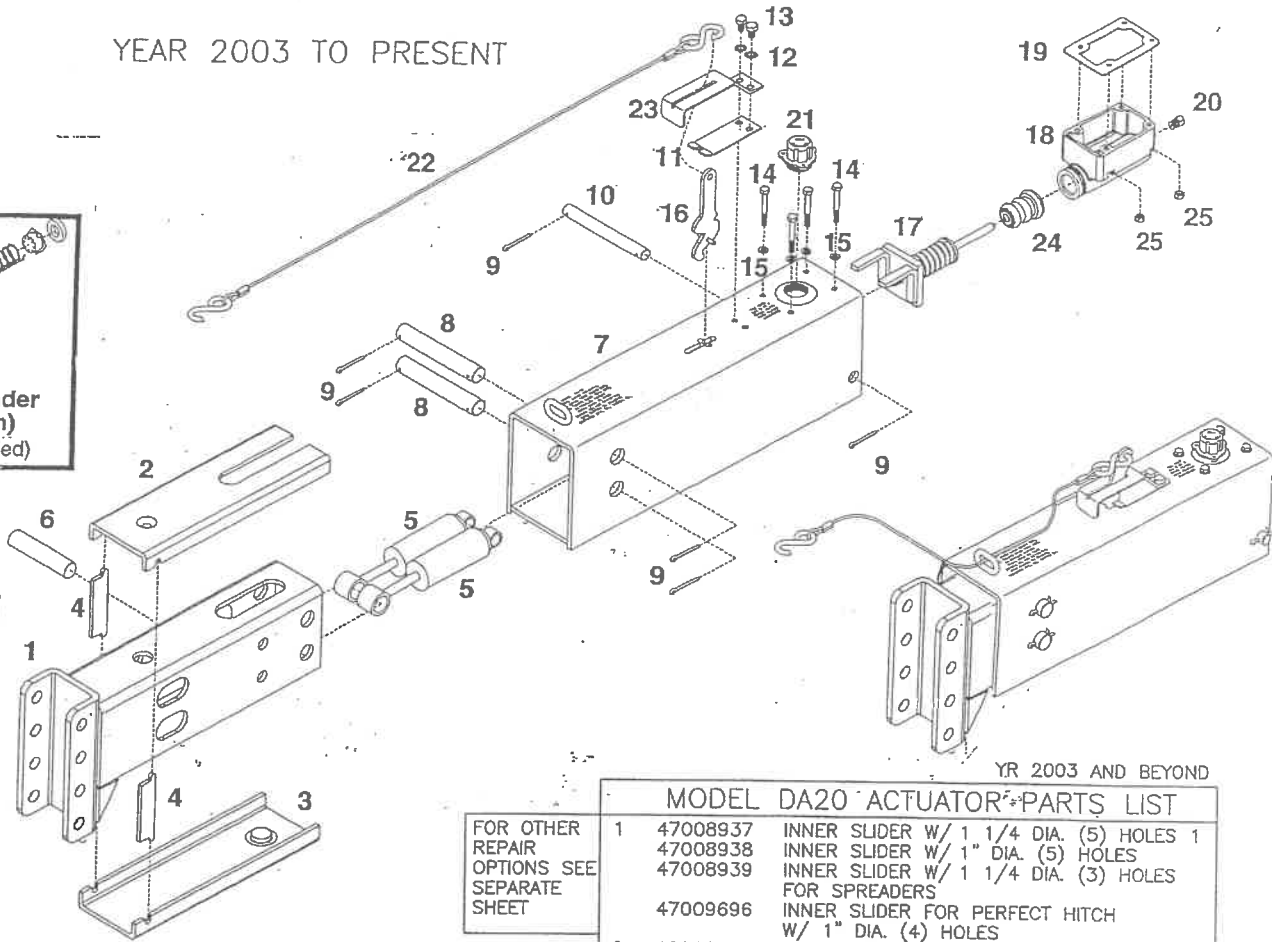
YEAR 2003 TO PRESENT



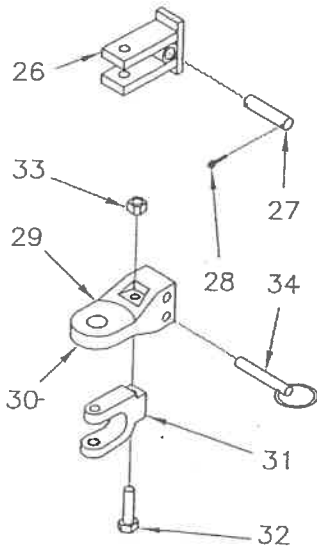
5398 Master Cylinder Repair Kit (drum)
(gasket 09153 included)



5650 Master Cyl. Replacement Kit (drum)
(gasket 09153 and fasteners included)



YR 2003 AND BEYOND



MODEL DA20 ACTUATOR PARTS LIST				
FOR OTHER REPAIR OPTIONS SEE SEPARATE SHEET	1	47008937	INNER SLIDER W/ 1 1/4 DIA. (5) HOLES	1
		47008938	INNER SLIDER W/ 1" DIA. (5) HOLES	1
		47008939	INNER SLIDER W/ 1 1/4 DIA. (3) HOLES FOR SPREADERS	1
		47009696	INNER SLIDER FOR PERFECT HITCH W/ 1" DIA. (4) HOLES	1
	2	10962	TOP WEAR PLATE	1
	3	10963	BOTTOM WEAR PLATE	1
ABOVE PARTS ARE NOT INTERCHANGABLE W/PRE-2003 UNITS				
	4	10964	SPACER BLOCK	2
	5	SB12426	DAMPER SHOCK	2
	6	03409	FRONT SHOCK PIN	1
	7	03412-97	OUTER CASE	1
	8	03411	CONNECTION PIN	2
	9	18560724	COTTER PIN, 5/32 X 1 1/4	6
	10	03410	REAR SHOCK PIN	1
	11	05693	EMERGENCY LEVER SPRING	1
	12		EXTERNAL TOOTH L'WASHER, 5/16	2
	13	18056416	BOLT, HEX. HD. 5/16-18UNC. X 5/8	2
	14	18055730	BOLT, HEX. HD. 1/4-20UNC. X 2	4
	15	18891000	LOCKWASHER, 1/4	4
	16	05951	EMERGENCY LEVER	1
	17	03534	PUSH ROD ASSEMBLY	1
	18	10616	MASTER CYLINDER, (COMPOSITE MATERIAL)	1
	19	09153	GASKET, (MASTER CYLINDER)	1
	20	SB12098	INVERTED FLARE FTG., 1/8 PIPE THD	1
	21	03876	MASTER CYLINDER CAP W/ O-RING	1
		05849	O-RING, (REPLACEMENT)	1
	22	05408	CABLE WITH HOOKS	1
		SB10555	"S" HOOK, (REPLACEMENT)	1
	23	03866	LEVER GUIDE	1
	24	05687	PROTECTIVE BOOT, MASTER CYLINDER	1
	25	18435700	HEX. NUT, 1/4-20UNC.	4
REPAIR KITS AVAILABLE				
		5401	LEVER KIT, INCL. ITEMS 11,16, & 22	
		5650	MASTER CYL. REPLACEMENT KIT INCLUDES ITEMS 14 & 25	
		5398	MASTER CYLINDER REPAIR KIT W/GASKET INCLUDES ITEMS 19 & 24	
	26	47009285	HITCH ASSEMBLY, FOR 1" PIN	OR 1
		47009523	HITCH ASSEMBLY, FOR 1 1/4" PIN	OR 1
	27	47001319	HITCH PIN, 1" X 5 5/8	1
		47001676	HITCH PIN, 1 1/4 X 5 1/4	OR 1
	28	18561026	COTTER PIN, 1/4 X 1 1/2	2
		18561030	COTTER PIN, 1/4 X 2	OR 2
	29	Pi-301V3C	PERFECT HITCH ASSEMBLY INCLUDES ITEMS 29 TO 33	1
	30	Pi-301V3	PERFECT HITCH	1
	31	Pi-206VR	PERFECT CLEVIS, 1" ROUND HOLE	1
		Pi-208VR	PERFECT CLEVIS, 1 1/4 OBOUND HOLE OPT.	1
	32	18058452	BOLT, 3/4-10NC. X 5, GR. 8	1
	33	18458452	LOCKNUT, 3/4-10NC. GR. 8	1
	34	600182	HITCH PIN, 1 X 6	2

SERVICING THE EMERGENCY LEVER

If emergency lever (#15) of actuator is applied, it can be disengaged by using a screwdriver to lift upward on front of flat emergency lever spring (#14) while pulling lever forward until released. A thorough inspection of emergency lever, emergency lever spring, and cable with S-hooks is required. Damaged parts must be replaced as follows:

- A. Remove Cable S-hook (#11) from emergency lever (#15), emergency lever guide (#9) and flat emergency lever spring (#14), then pull lever out of actuator outer case (#7) through cross-slot in top.
- B. Install new emergency lever through cross-slot in top of outer case. Attach new emergency lever spring and emergency lever guide.
- C. Insert S-hook on emergency cable (#11) into hole in emergency lever (#15) and squeeze shut.
- D. Add adequate brake fluid to master cylinder and bleed brake system per instructions 4-6 in installation section.

Actuator Trouble Shooting Guide

Symptoms

Possible Solutions

Brakes Locking Up

Emergency lever partially pulled

Release emergency lever.
(Lever must be in green zone).
(Emergency cable must have slack)
Clean/flush or replace orifice
Clean/flush or replace master cylinder
Replace brake line or hose.
Inspect wheel cylinder for rust and proper function
Check for broken springs
Check shoe adjustment (too tight)
Cluster mounting bracket bent
Check/clean slide tube area.

Debris in master cylinder orifice
Debris/rust in master cylinder
Pinched brake line or hose
Brake cluster hanging up

Debris wedged in slide tube.

Master Cylinder Not Priming

Master cylinder lever will not pump fluid

Slide tube must be completely extended
Check fluid level.
Clean/flush or replace master cylinder
Clean/flush or replace orifice
Inspect line/hoses for blockages.
Check all line connections for air leaks
Check fluid level and bleed brakes

Master cylinder orifice plugged
Brake fluid does not come out of orifice
Brake fluid does not come out of brake line
Air in brake lines

Leaking Master Cylinder

Brake fluid leaking out of pushrod area
Brake fluid leaks out of gasket area

Brake fluid leaks out of gasket area

Repair or replace master cylinder.
Damaged gasket. Replace gasket.
Tighten master cylinder bolts in an alternating sequence.
Master cylinder tightened unevenly.
Replace gasket and tighten bolts alternating sequence.
Do not overfill master cylinder
Tighten orifice (do not over tighten)
When attaching brake line use 2 wrenches

Brake fluid leaks around orifice

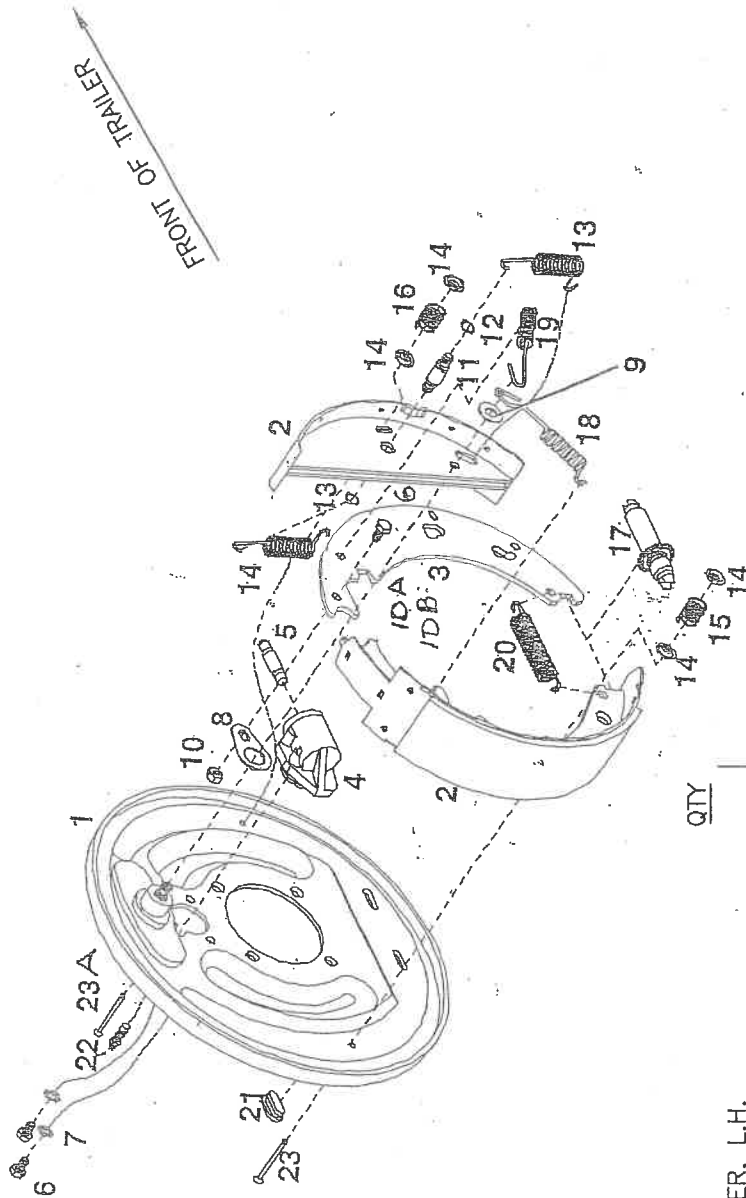
Brake Testing

Jack trailer wheels up off ground.
Spin wheel/wheels. Wheels should spin freely.
Pull emergency lever to first notch. Lever in first notch, wheels should drag. Lever in 2nd notch, should not turn wheels by hand. Release emergency lever.
Wheels should spin forward without resistance.

FREE BACKING BRAKE CLUSTER

BRKLS12

12 INCH DIAMETER (R.H. SHOWN)

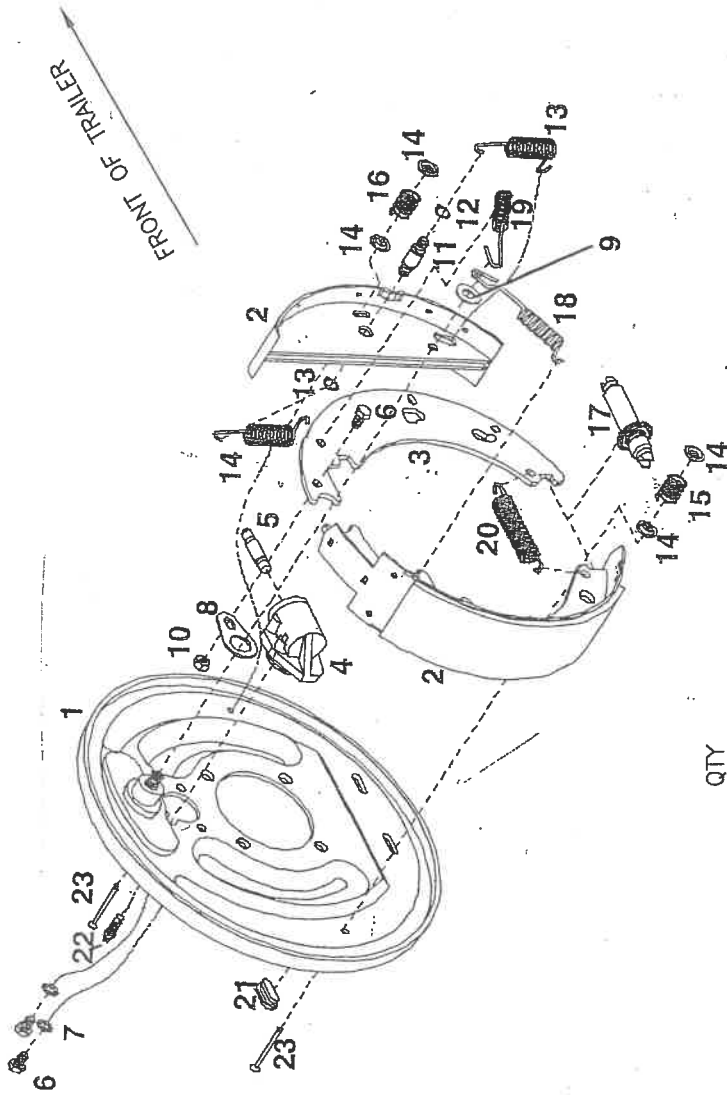


ITEM	PART NO.	DESCRIPTION	QTY
1	47005758	BRAKE CLUSTER, L.H.	1
2	47005757	BRAKE CLUSTER, R.H.	1
3	47005759	BRAKE DRUM (NOT SHOWN)	1
4	SB18496	BACK PLATE ASSEMBLY (W/PIVOT POST) SOLD AS COMPLETE CLUSTER ONLY.	1
5	SB18498	BRAKE SHOE KIT, (2 FRONT & 2 REAR)	1
6	SB18502	SHOE LEVER	1
7	30582	WHEEL CYLINDER ASSEMBLY, L.H.	1
8	30581	WHEEL CYLINDER ASSEMBLY, R.H.	1
9	30587	PUSH ROD	1
10	18056416	BOLT, HEX. HD. 5/16-18UNC. X 5/8	3
11	SB17917	EXTERNAL TOOTH WASHER, 5/16	2
12	18811400	TRAVEL LINK	1
13	18457600	FLATWASHER, 1/2 USS, ZC.	1
14	18055718	LOCKNUT, 5/16-18UNC.	1
15	18055718	BOLT, HEX. HD. 1/4-20UNC. X 3/4	1
16	30588	LOCKNUT, 1/4-20UNC.	1
17	30421	PIN, SPRING ANCHOR	1
18	30420	RETAINING RING	1
19	30420	SPRING, SHOE RETURN	2

ITEM	PART NO.	DESCRIPTION	QTY
14	30590	CUP, SHOE HOLD DOWN	4
15	30601	SPRING, SHOE HOLD DOWN - BLUE	1
16	30591	SPRING, SHOE HOLD DOWN - MAROON	1
17	SB42159	ADJUSTING SCREW ASSEMBLY	1
18	30595	SPRING, SHOE	1
19	30596	SPRING LEVER	1
20	30597	SPRING, ADJUSTING SCREW	1
21	SB9254	COVER GROMMET, ADJUSTING HOLE	2
22	30580	BLEEDER	1
23	SB18505	PIN, SHOE HOLD DOWN - # 4	1
23A	03562	PIN, SHOE HOLD DOWN - # 1	1
94005		WHEEL CYLINDER REPAIR KIT	1
		INCLUDES (1 EACH) SPRING, CUP AND BOOT	1

FREE BACKING BRAKE CLUSTER

13 INCH DIAMETER (R.H. SHOWN)



ITEM	PART NO.	DESCRIPTION	QTY
1	47005652	BRAKE CLUSTER, L.H.	1
2	47005651	BRAKE CLUSTER, R.H.	1
2A	47005650	BRAKE DRUM (NOT SHOWN)	1
3	30578	BACK PLATE ASSEMBLY (W/PIVOT POST)	1
4		SOLD AS COMPLETE CLUSTER ONLY	
5	03184	BRAKE SHOE, (BACK)	1
6	03183	BRAKE SHOE, (FRONT)	1
7	30594	SHOE LEVER	1
8	30582	WHEEL CYLINDER ASSEMBLY, L.H.	1
9	30581	WHEEL CYLINDER ASSEMBLY, R.H.	1
10	30587	PUSH ROD	1
11	18056416	BOLT, HEX. HD. 5/16-18UNC. X 5/8	3
12	30593	EXTERNAL TOOTH WASHER, 5/16	2
13	18811400	TRAVEL LINK	1
14	18457600	FLATWASHER, 1/2 USS, ZC.	1
15	30588	LOCKNUT, 5/16-18UNC.	1
16	30421	PIN, SPRING ANCHOR	1
17	30420	RETAINING RING	1
18	30590	SPRING, SHOE RETURN	2
19		CUP, SHOE HOLD DOWN	4

ITEM	PART NO.	DESCRIPTION	QTY
15	30601	SPRING, SHOE HOLD DOWN - BLUE	1
16	30591	SPRING, SHOE HOLD DOWN - MAROON	1
17	30598	ADJUSTING SCREW BOLT	1
18	30599	ADJUSTING SCREW NUT	1
19	30595	SPRING, SHOE	1
20	30596	SPRING LEVER	1
21	30597	SPRING, ADJUSTING SCREW	1
22	92455	COVER GROMMET, ADJUSTING HOLE	2
23	30580	BLEEDER	1
	30589	PIN, SHOE HOLD DOWN - # 6	2
	94005	WHEEL CYLINDER REPAIR KIT	
		INCLUDES (1 EACH) SPRING, CUP AND BOOT	

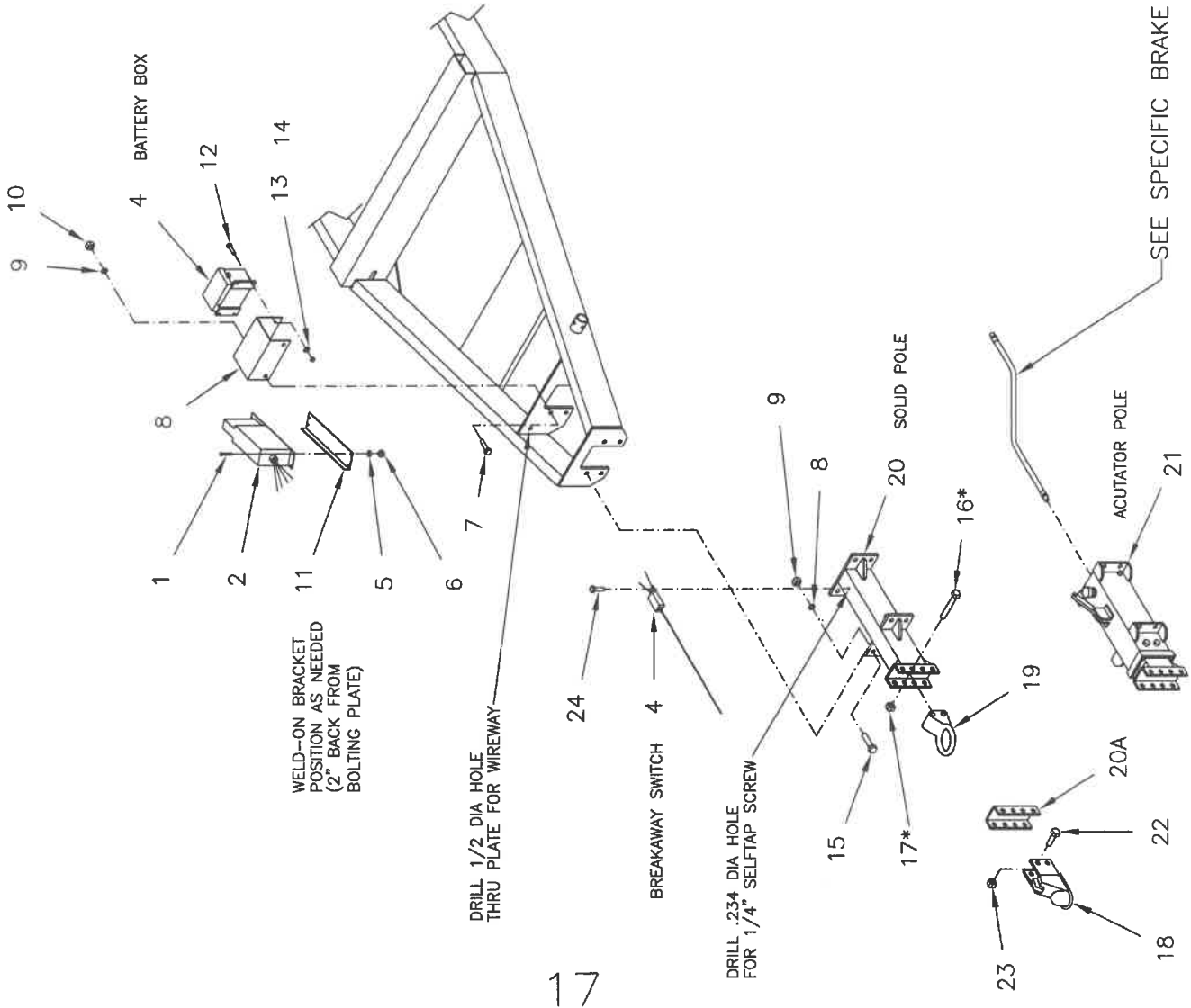
HYDRASTAR HYDRAULIC-ELECTRIC OPTIONAL BRAKING SYSTEM

02-20-08
HYDRASTARBRK

ITEM	PARTNUMBER	DESCRIPTION	QTY
1	18704217	MACH SCREW #10-24 X1/2	4
	47001	HYD-ELECTRIC ACTUATOR KIT (INCLUDES ITEMS 2, 3, & 4)	1
2	HBA-10	HYD-ELECTRIC ACTUATOR	
3	HFC	HFC CONTROLLER	
4	HBA-BA	BATTERY KIT WITH BA SWITCH	1
5	18890900	LOCKWASHER, #10	4
6	18415812	NUT, HEX #10-24 ZC	4
7	18057930	BOLT, 5/8-11X 2 GR5ZC	4
8	47005305	BATTERY BOX MOUNT	1
9	18891600	LOCKWASHER, 5/8 ZC	8
10	18417900	NUT, HEX 5/8-11	8
11	47005304	CARLISLE ACTUATOR MOUNT	8
12	18055722	BOLT, 1/4-20 X 1 ZC	4
13	18891000	LOCKWASHER, 1/4 ZC	4
14	18435700	NUT, HEX 1/4-20 ZC	4
15	18057930	BOLT, 5/8-11 X 2 GR5 ZC	4
16*	18058050	BOLT, 5/8-11 X 4 1/2 GR8	2
17*	18458451	TOP LOCK NUT 5/8-11NC ZC	2
18	07678-97	2 5/16" DIA BALL HITCH	1
19	09557-97	PINTLE RING 3" ID (2 7/8 W)	1
20	47005306	SOLID POLE ASSY FOR USE WITH DEMCO 2 7/8 WIDE PINTLE OR BALL HITCH	1
20A	57362	WELD ON CHANNEL OPTION	1
21	47005309	ACTUATOR POLE ASSY FOR USE WITH DEMCO 2 7/8 WIDE PINTLE OR BALL HITCH	1
22	18057926	BOLT, 5/8-11X1 1/2 GR5 ZC	4
23	18458451	TOP LOCK NUT 5/8-11NC ZC	4
24	18457900	1/4 X 1 SELF TAP SCREW	1
25	41002516	BALL HITCH KIT OPTION INCLUDES ITEMS 18, 20A, 22 & 23	1

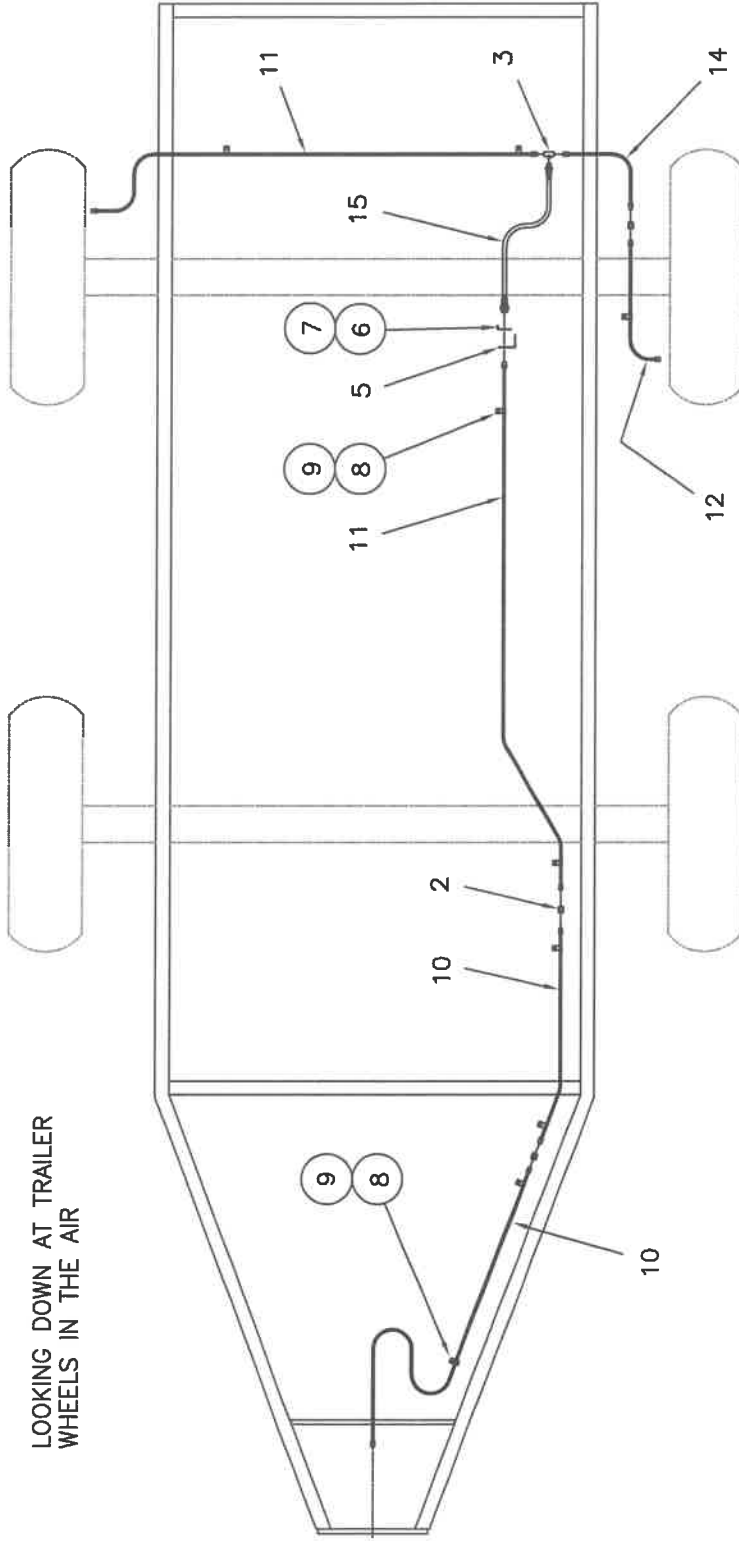
* HARDWARE REQ'D FOR PINTLE TYPE HITCH ONLY.

SEE SPECIFIC BRAKE SYSTEM PLUMBING DETAILS FOR PARTS.



25 BALL HITCH KIT

AG109 TANDEM WAGON 2-WHEEL BRAKES
BRAKE LINE SCHEMATIC ILLUSTRATION

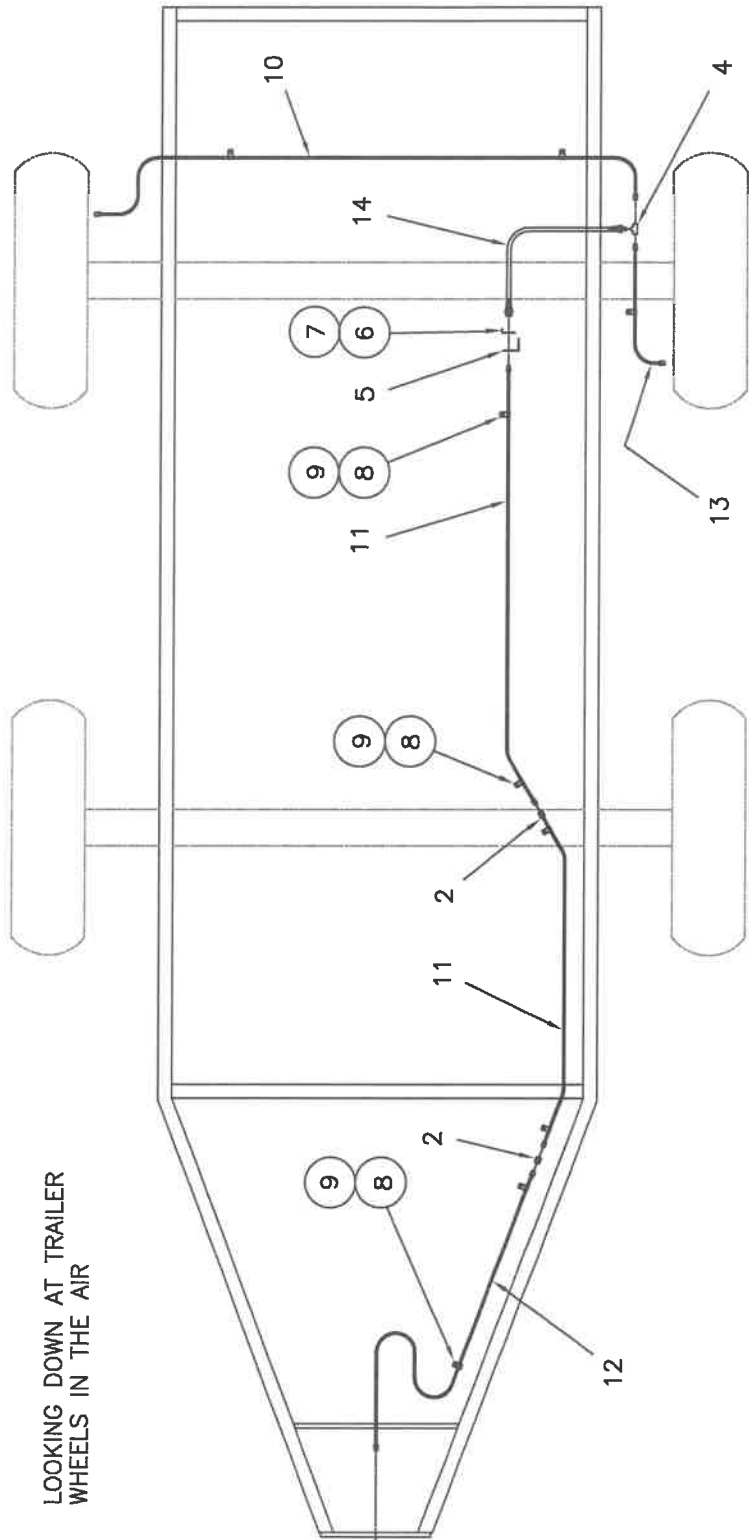


LOOKING DOWN AT TRAILER
 WHEELS IN THE AIR

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	47005829	BRAKE PACKAGE COMPLETE		10	47005688	TUBE, BRAKE LINE, (60")	2
2	47005660	UNION	3	11	47005695	TUBE, BRAKE LINE, (51")	2
3	47005680	TEE, F X F X M	1	12	47005692	TUBE, BRAKE LINE, (20")	1
4	47005663	HOSE BRACKET	1	13			
5	47005664	HOSE CLIP	1	14	47005682	TUBE, BRAKE LINE, (4")	1
6	18715718	SCREW, 1/4 X 3/4 SELF-TAP	1	15	47005667	BRAKE HOSE, (25")	1
7	47005666	LINE CLIP	1				
8	18721018	SCREW, #10 X 3/4 SELF-TAP	9				
9							

FOR (4) WHEEL BRAKES, RIGID AXLE
 47005839 BRAKE PACKAGE COMPLETE
 SEE AG1000 WAGON
 FOR BRAKES WITH ADJUSTABLE AXLE
 47005850 BRAKE PACKAGE COMPLETE
 SEE AG500 WAGON

AG111 TANDEM WAGON 2-WHEEL BRAKES
 BRAKE LINE SCHEMATIC ILLUSTRATION (DEMCO ACTUATOR)

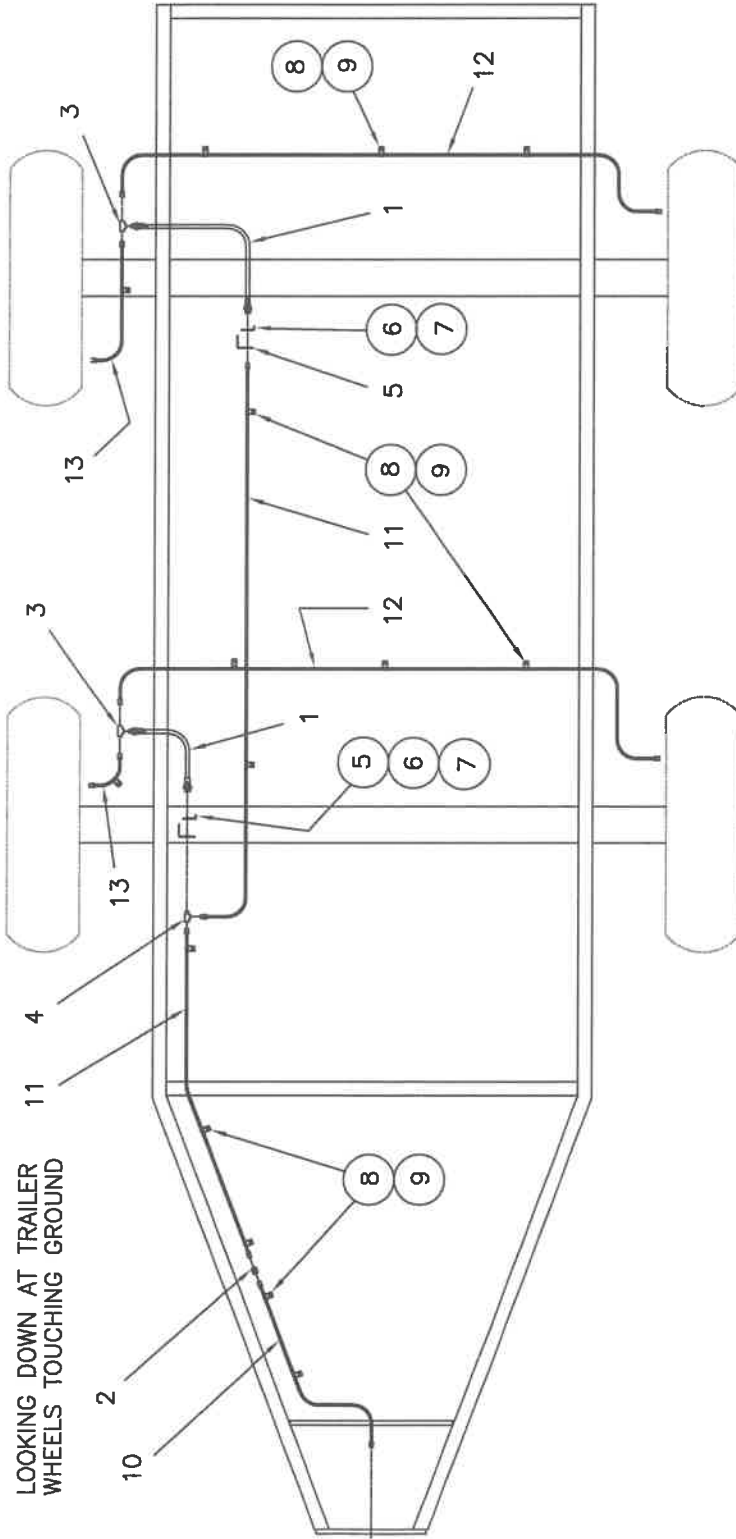


LOOKING DOWN AT TRAILER
 WHEELS IN THE AIR

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	47015822	BRAKE HOSE PACKAGE		10	47005688	TUBE, BRAKE LINE, (60")	1
2	47005660	UNION	2	11	47005694	TUBE, BRAKE LINE, (40")	2
3	47005660	UNION		12	47005687	TUBE, BRAKE LINE, (30")	1
4	47005685	UNION TEE	1	13	47005690	TUBE, BRAKE LINE, (12")	1
5	47005663	HOSE BRACKET	1	14	47005665	BRAKE HOSE, (18 INCH)	1
6	47005664	HOSE CLIP	1				
7	18715718	SCREW, 1/4 X 3/4 SELF-TAP	1				
8	47005666	LINE CLIP	9				
9	18721018	SCREW, #10 X 3/4 SELF-TAP	9				

AG111 NURSE WAGON 4-WHEEL BRAKES
 BRAKE LINE SCHEMATIC ILLUSTRATION

AG111BRKX4
 RV
 05/02/18

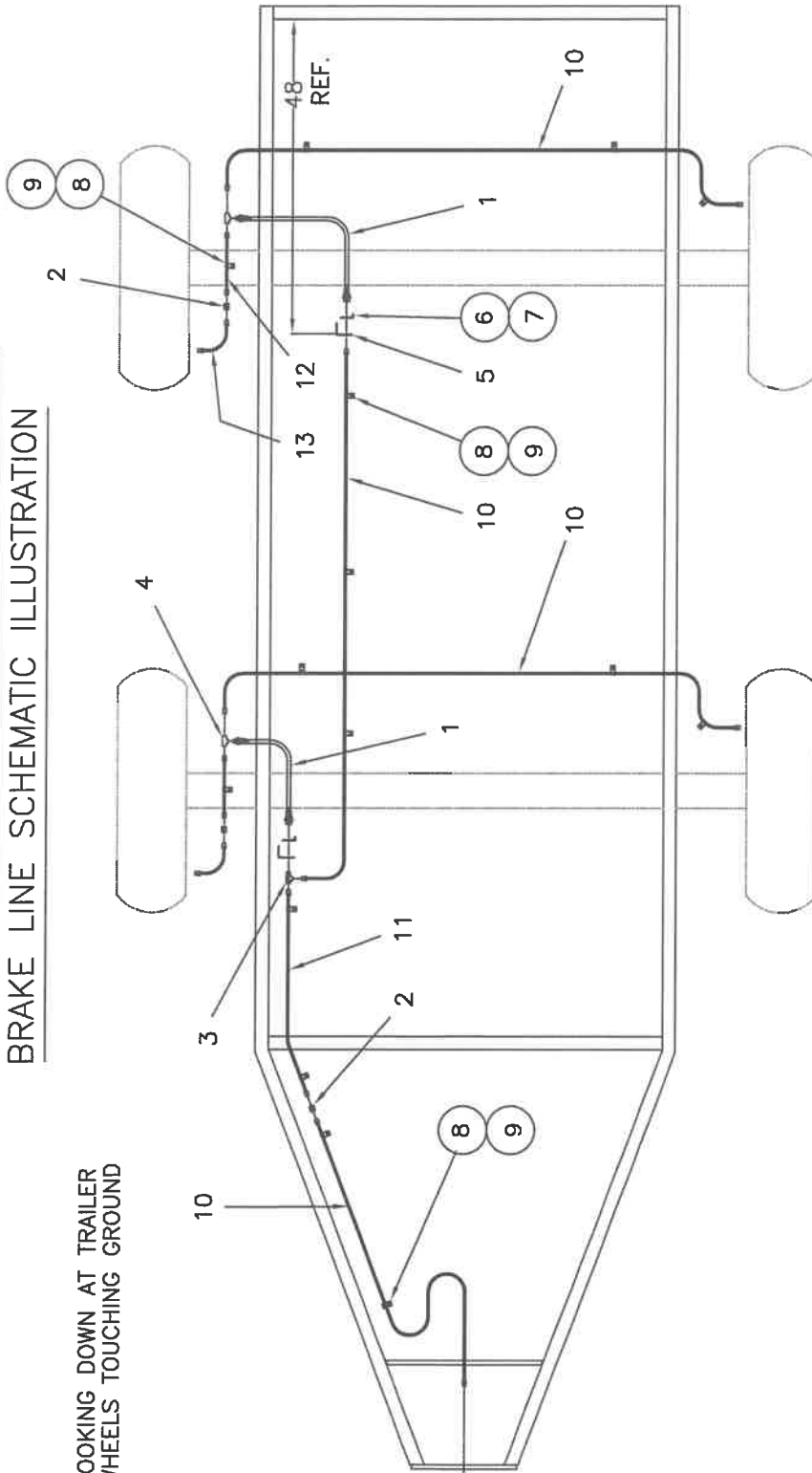


LOOKING DOWN AT TRAILER
 WHEELS TOUCHING GROUND

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	47015846	BRAKE HOSE PACKAGE	2	10	47005687	TUBE, BRAKE LINE, (30")	1
2	47005665	BRAKE HOSE, 18 INCH	1	11	47005694	TUBE, BRAKE LINE, (40")	2
3	47005660	UNION	2	12	47005688	TUBE, BRAKE LINE, (60")	2
4	47005685	UNION TEE	1	13	47005690	TUBE, BRAKE LINE, (12")	2
5	47005680	TEE, F X F X M	2				
6	47005663	HOSE BRACKET	2				
7	18715718	SCREW, 1/4 X 3/4 SELF-TAP	2				
8	47005666	LINE CLIP	15				
9	18721018	SCREW, #10 X 3/4 SELF-TAP	15				

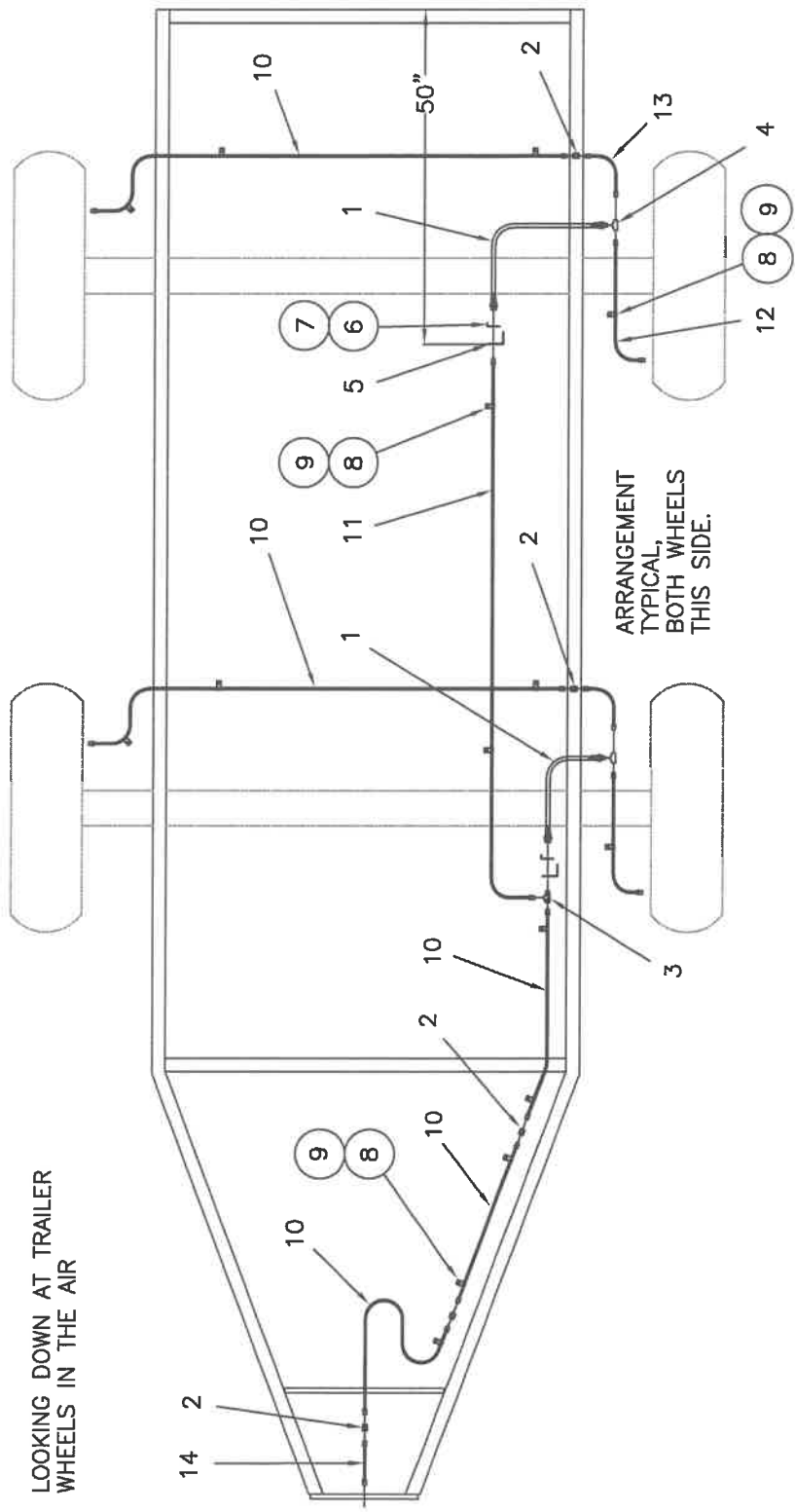
AG112 TANDEM NURSE WAGON
BRAKE LINE SCHEMATIC ILLUSTRATION

LOOKING DOWN AT TRAILER
 WHEELS TOUCHING GROUND



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	47005665	BRAKE PACKAGE COMPLETE		10	47005695	TUBE, BRAKE LINE, {51"}	4
2	47005660	BRAKE HOSE, 18 INCH	2	11	47005688	TUBE, BRAKE LINE, {60"}	1
3	47005680	UNION	3	12	47005692	TUBE, BRAKE LINE, {20"}	2
4	47005685	TEE, F X F X M	1	13	47005682	TUBE, BRAKE LINE, {4"}	2
5	47005663	UNION TEE	2				
6	47005664	HOSE BRACKET	2				
7	18715718	HOSE CLIP	2				
8	18715718	SCREW, 1/4 X 3/4 SELF-TAP	2				
9	47005666	LINE CLIP	15				
	18721018	SCREW, #10 X 3/4 SELF-TAP	15				

AG116 EXT. TANDEM NURSE WAGON
BRAKE LINE SCHEMATIC ILLUSTRATION
 WITH FOUR WHEEL BRAKES (EXTENDED FRAME ONLY)



LOOKING DOWN AT TRAILER
 WHEELS IN THE AIR

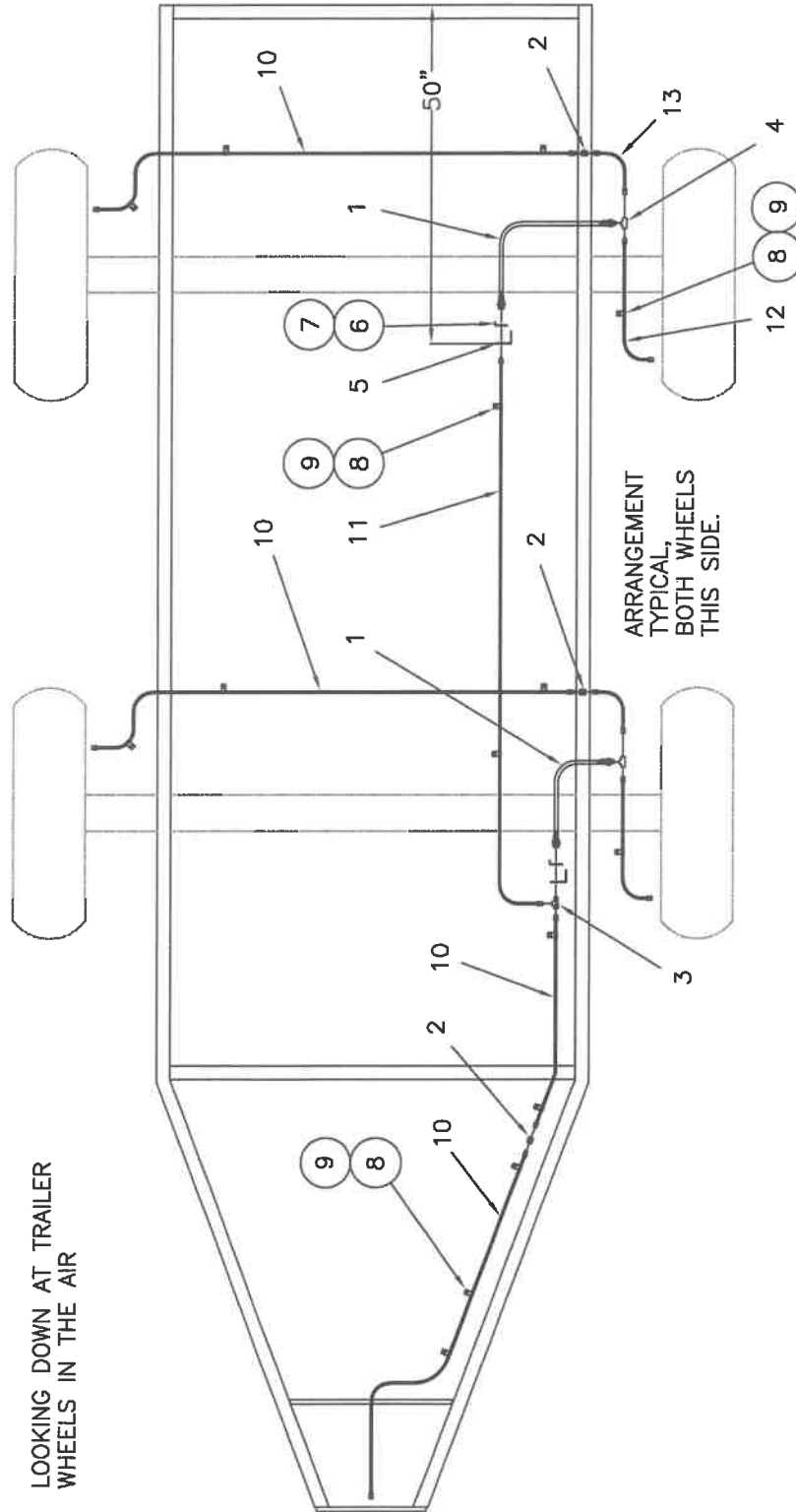
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	41160116A	BRAKE PACKAGE COMPLETE	2	10	47005688	TUBE, BRAKE LINE, (60")	5
2	47005665	BRAKE HOSE, 18 INCH	5	11	47005694	TUBE, BRAKE LINE, (40")	1
3	47005660	UNION	1	12	47005692	TUBE, BRAKE LINE, (20")	2
4	47005680	TEE, F X F X M	1	13	47005682	TUBE, BRAKE LINE, (4")	2
5	47005685	UNION TEE	2	14	47005686	TUBE, BRAKE LINE, (8")	1
6	47005663	HOSE BRACKET	2	FOR SHIPPING, ADD THE FOLLOWING HARDWARE			
7	18715718	SCREW, 1/4 X 3/4 SELF-TAP	2				
8	47005666	LINE CLIP	20				
9	18721018	SCREW, #10 X 3/4 SELF-TAP	20				

AG116 STANDARD LENGTH TANDEM NURSE WAGON

AG116BRKS
RV 05/02/18

BRAKE LINE SCHEMATIC ILLUSTRATION

WITH FOUR WHEEL BRAKES (STANDARD LENGTH FRAME ONLY)
(FOR EXTENDED FRAMES SEE AG116BRKEXT)

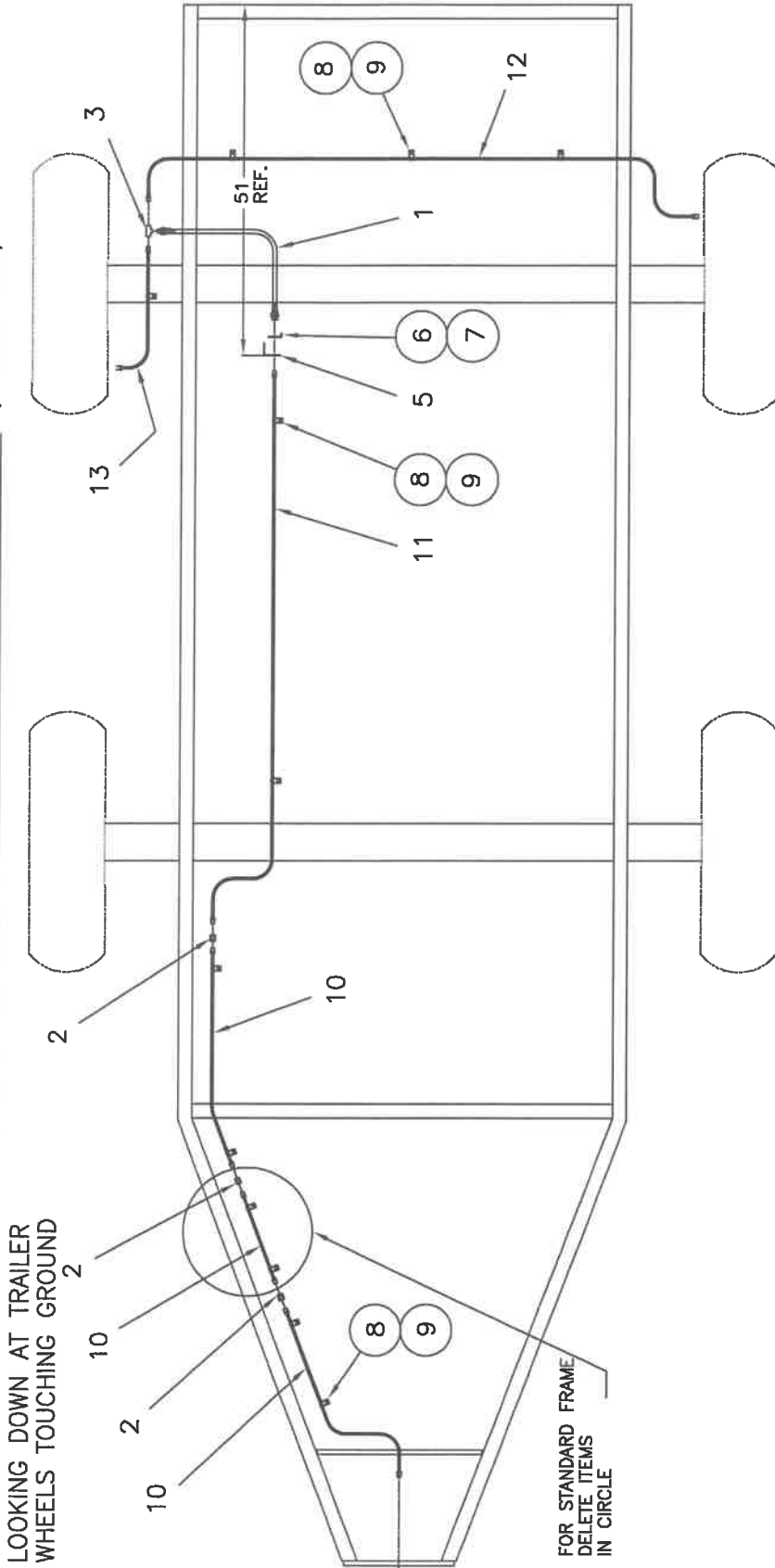


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	41160116	BRAKE PACKAGE COMPLETE		10	47005688	TUBE, BRAKE LINE, (60")	4
2	47005665	BRAKE HOSE, 18 INCH	2	11	47005694	TUBE, BRAKE LINE, (40")	1
3	47005660	UNION	4	12	47005692	TUBE, BRAKE LINE, (20")	2
4	47005680	TEE, F X F X M	1	13	47005682	TUBE, BRAKE LINE, (4")	2
5	47005685	UNION TEE	2	FOR SHIPPING, ADD THE FOLLOWING HARDWARE			
6	47005663	HOSE BRACKET	2		18057450	BOLT, 1/2-13NC. X 4 1/2	4
7	47005664	HOSE CLIP	2		18057976	BOLT, 5/8-11NC. X 8 1/2	16
8	18715718	SCREW, 1/4 X 3/4 SELF-TAP	2		18057805	BOLT, 7/8-9NC. X 5	4
9	47005666	LINE CLIP	20		18059062	BOLT, 1-8NC. X 6	4
	18721018	SCREW, #10 X 3/4 SELF-TAP	20				

AG1000 & AG1250 NURSE WAGON 2-WHEEL BRAKES

BRAKE LINE SCHEMATIC ILLUSTRATION (STANDARD AND) (EXTENDED FRAME)

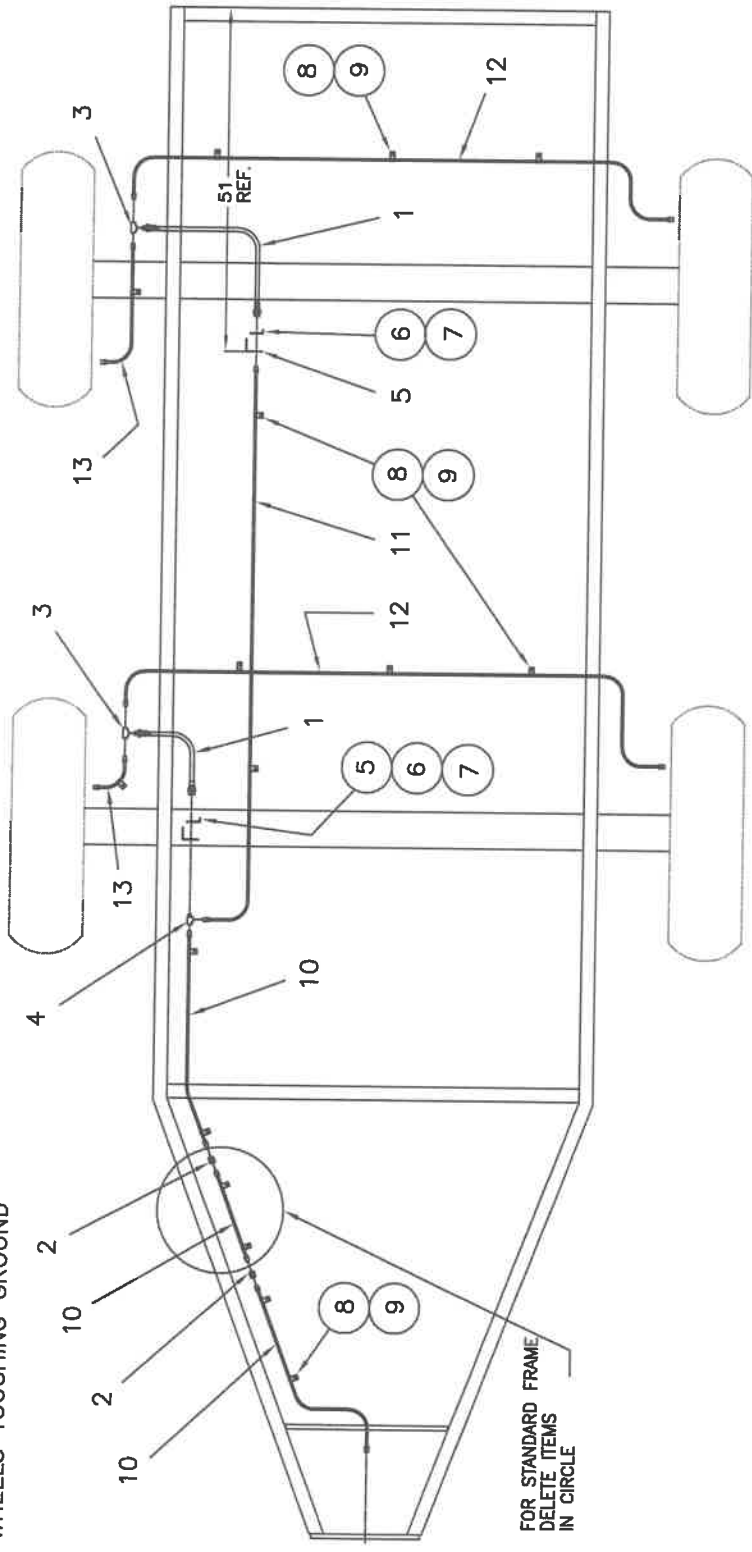
AG1000B2EX
REV
05/02/18



ITEM	PART NO.	DESCRIPTION	EXT'D. STD. FRAME QTY	EXT'D. STD. FRAME QTY	ITEM	PART NO.	DESCRIPTION	EXT'D. STD. FRAME QTY	EXT'D. STD. FRAME QTY
1	47015842	BRAKE HOSE PACKAGE	1	1	10	47005688	TUBE, BRAKE LINE, (60")	3	2
2	47015843	BRAKE HOSE PACKAGE	1	1	11	47005694	TUBE, BRAKE LINE, (40")	1	1
3	47005665	BRAKE HOSE, 18 INCH	1	1	12	47005695	TUBE, BRAKE LINE, (51")	1	1
4	47005660	UNION	3	2	13	47005690	TUBE, BRAKE LINE, (12")	1	1
5	47005685	UNION TEE	1	1	FOR TANK HOOPS ADD THE FOLLOWING HARDWARE BOLT, 1/2-13NC. X 2 1/2 LOCKNUT, 1/2-13NC. BOLT, 5/8-11NC. X 2 LOCKNUT, 5/8-11NC.				
6	47005663	HOSE BRACKET	1	1					
7	47005664	HOSE CLIP	1	1					
8	18715718	SCREW, 1/4 X 3/4 SELF-TAP	1	1					
9	47005666	LINE CLIP	12	10					
	18721018	SCREW, #10 X 3/4 SELF-TAP	12	10					

AG1000 & AG1250 NURSE WAGON 4-WHEEL BRAKES
BRAKE LINE SCHEMATIC ILLUSTRATION (STANDARD AND EXTENDED FRAME)

LOOKING DOWN AT TRAILER
WHEELS TOUCHING GROUND



FOR STANDARD FRAME
DELETE ITEMS
IN CIRCLE

ITEM	PART NO.	DESCRIPTION	STANDARD EXT'D	EXT'D. FRAME QTY	STD. FRAME QTY	ITEM	PART NO.	DESCRIPTION	EXT'D. FRAME QTY	STD. FRAME QTY
1	47015844	BRAKE HOSE PACKAGE		1		10	47005688	TUBE, BRAKE LINE, (60")	3	2
2	47015845	BRAKE HOSE PACKAGE		1		11	47005694	TUBE, BRAKE LINE, (40")	1	1
3	47005665	BRAKE HOSE, 18 INCH		2	2	12	47005695	TUBE, BRAKE LINE, (51")	2	2
4	47005660	UNION		2	1	13	47005690	TUBE, BRAKE LINE, (12")	2	2
5	47005685	UNION TEE		2	2					
6	47005680	TEE, F X F X M		1	1					
7	47005663	HOSE BRACKET		2	2					
8	47005664	HOSE CLIP		2	2					
9	18715718	SCREW, 1/4 X 3/4 SELF-TAP		2	2					
	47005666	LINE CLIP		16	14					
	18721018	SCREW, #10 X 3/4 SELF-TAP		16	14					
FOR TANK HOOPS ADD THE FOLLOWING HARDWARE										
		BOLT, 1/2-13NC. X 2 1/2		4	4					
		LOCKNUT, 1/2-13NC.		4	4					
		BOLT, 5/8-11NC. X 2		8	8					
		LOCKNUT, 5/8-11NC.		8	8					

GENERAL TANDEM WAGON ASS'Y

TDMWGNASY
ISSUE NOV 2010

OPERATION AND MAINTENANCE SUMMARY

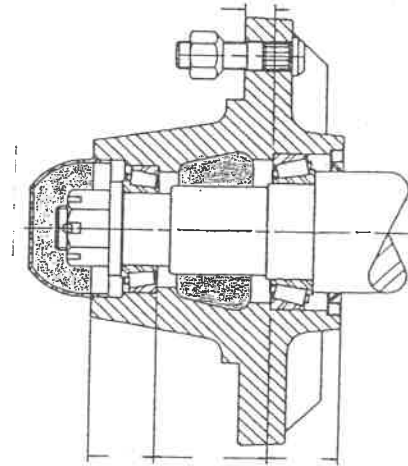
1. Assemble your wagon per the appropriate parts illustration (line drawing). Make sure all hardware is securely tightened. Generously grease all the pivot points indicated on the assembled wagon illustrations.
2. Bolts securely tightened at assembly may loosen under loaded operation. Within the first 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 *

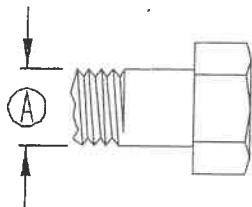
"A"	GRADE 2		GRADE 5		GRADE 8	
	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
1/4"	6	(8)	9	(12)	12	(16)
5/16"	10	(13)	18	(25)	25	(35)
3/8"	20	(27)	30	(40)	45	(60)
7/16"	30	(40)	50	(70)	80	(110)
1/2"	45	(60)	75	(100)	115	(155)
9/16"	70	(95)	115	(155)	165	(220)
5/8"	95	(130)	150	(200)	225	(300)
3/4"	165	(225)	290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

Bolt Torque for Metric bolts *

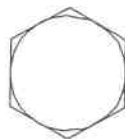
"A"	CLASS 8.8		CLASS 9.8		CLASS 10.9	
	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
6	9	(13)	10	(14)	13	(17)
7	15	(21)	18	(24)	21	(29)
8	23	(31)	25	(34)	31	(42)
10	45	(61)	50	(68)	61	(83)
12	78	(106)	88	(118)	106	(144)
14	125	(169)	140	(189)	170	(230)
16	194	(263)	216	(293)	263	(357)
18	268	(363)	--	--	364	(493)
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%.

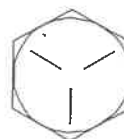
* GRADE or CLASS value for bolts and capscrews are identified by their head markings.



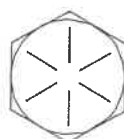
GRADE-2



GRADE-5



GRADE-8



CLASS 8.8



CLASS 9.8



CLASS 10.9



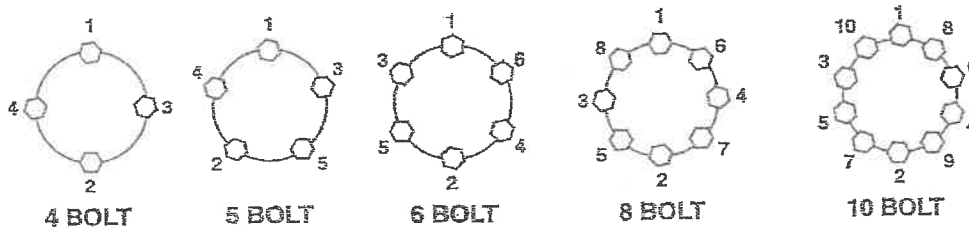
Torque Requirements

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

PROPER TIRE PRESSURE FOR AG206 & AG207 WAGON

USED 385/65R x 22.5J on 11.25 x 22.5 (8 on 8)
 Front Tires 45 PSI / 30 MPH
 Rear Tires 55 psi / 30 MPH

USED 425/65R X on 11.25 x 22.5 L (8 ON 8)
AVAILABLE ON AG207 WAGON ONLY!
 Front Tires 45 PSI / 30MPH
 Rear Tires 55 psi / 30 MPH

**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													

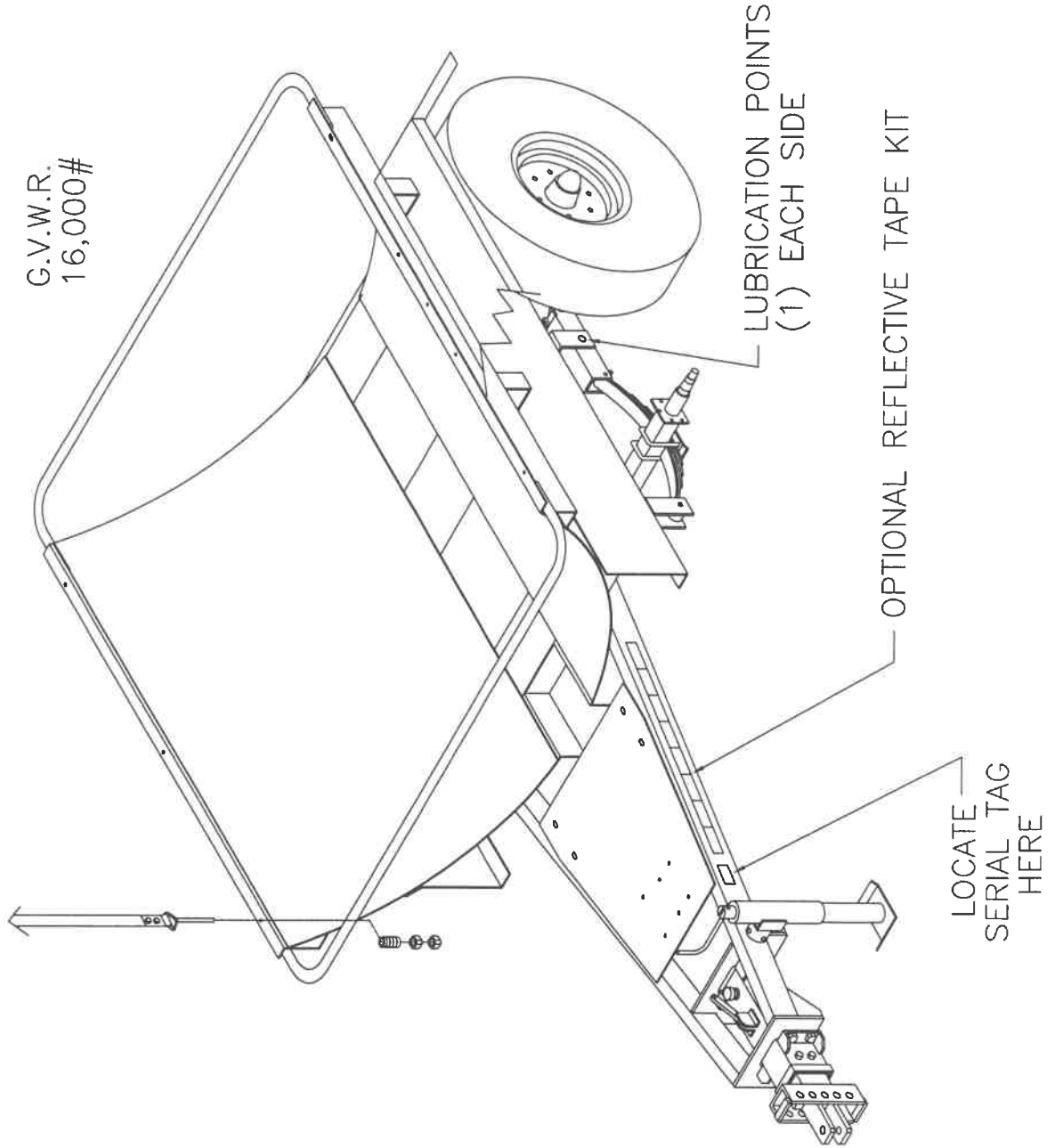
It is recommended that a separate service record be kept for each unit in your fleet.

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.		●		

NRSWGN111
05-09-13

AG111 TANDEM NURSE WAGON
WITH ELECTRICAL TANK

G.V.W.R.
16,000#

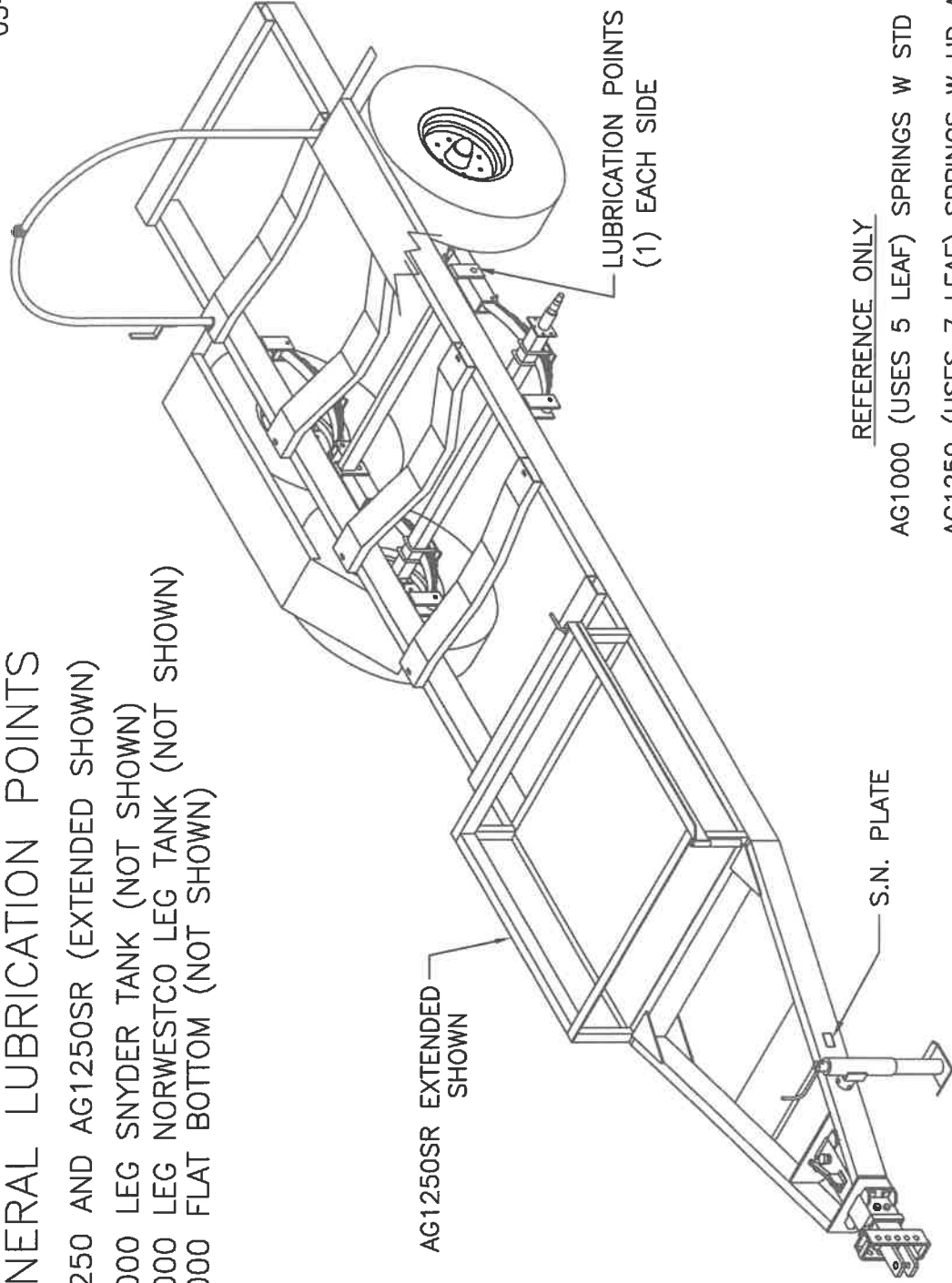


TANDEM NURSE WAGON

NRSWG1000
03-25-15

GENERAL LUBRICATION POINTS

- AG1250 AND AG1250SR (EXTENDED SHOWN)
- AG1000 LEG SNYDER TANK (NOT SHOWN)
- AG1000 LEG NORWESTCO LEG TANK (NOT SHOWN)
- AG1000 FLAT BOTTOM (NOT SHOWN)



REFERENCE ONLY

AG1000 (USES 5 LEAF) SPRINGS W STD AXLE

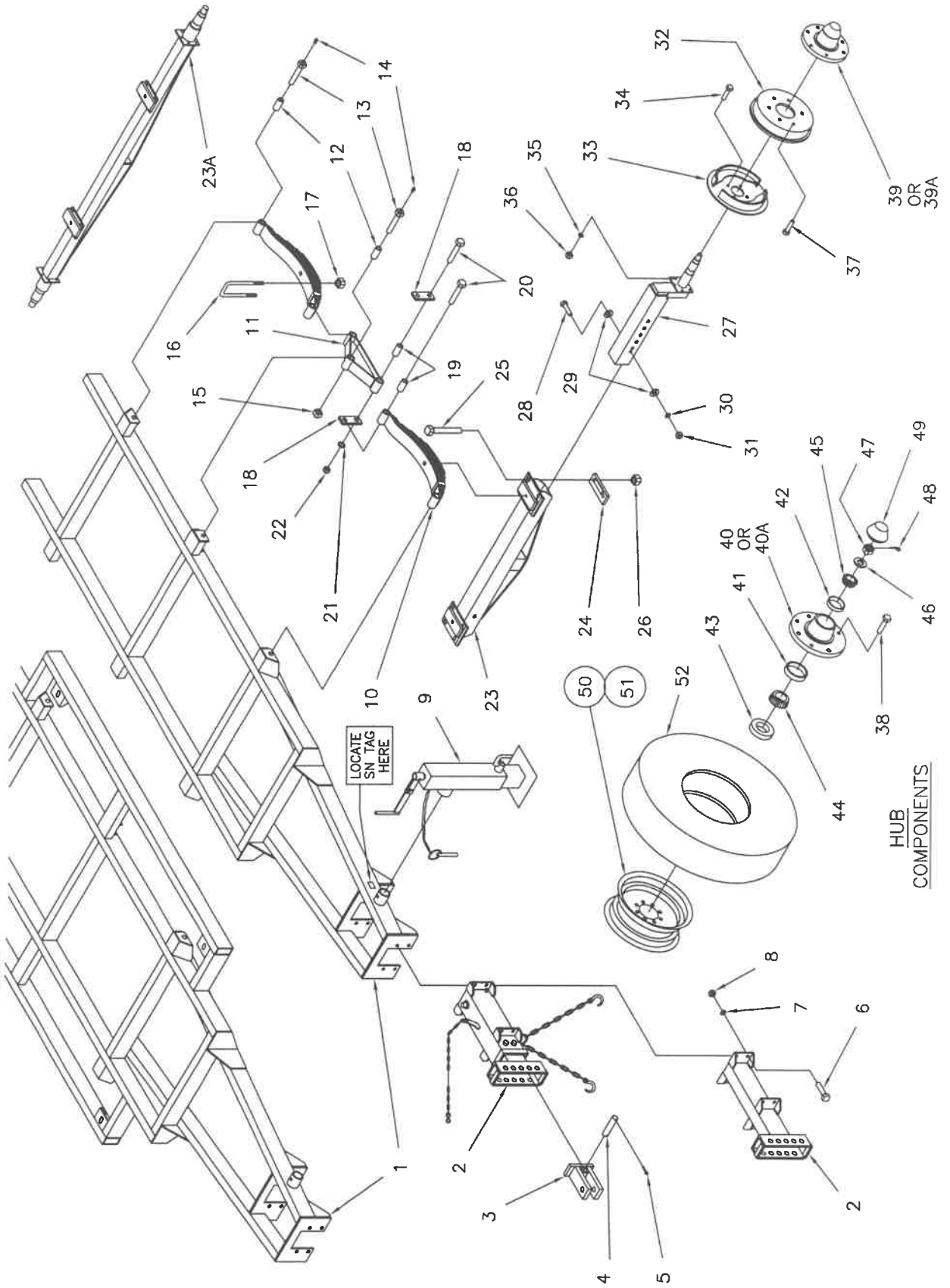
AG1250 (USES 7 LEAF) SPRINGS W HD AXLE

AG1250SR EXTENDED (USES 7 LEAF) SPRINGS W HD AXLE

AG109 TANDEM TRAILER

PRODUCTION YEARS 1983 TO PRESENT
ADJUSTABLE OR RIGID AXLE

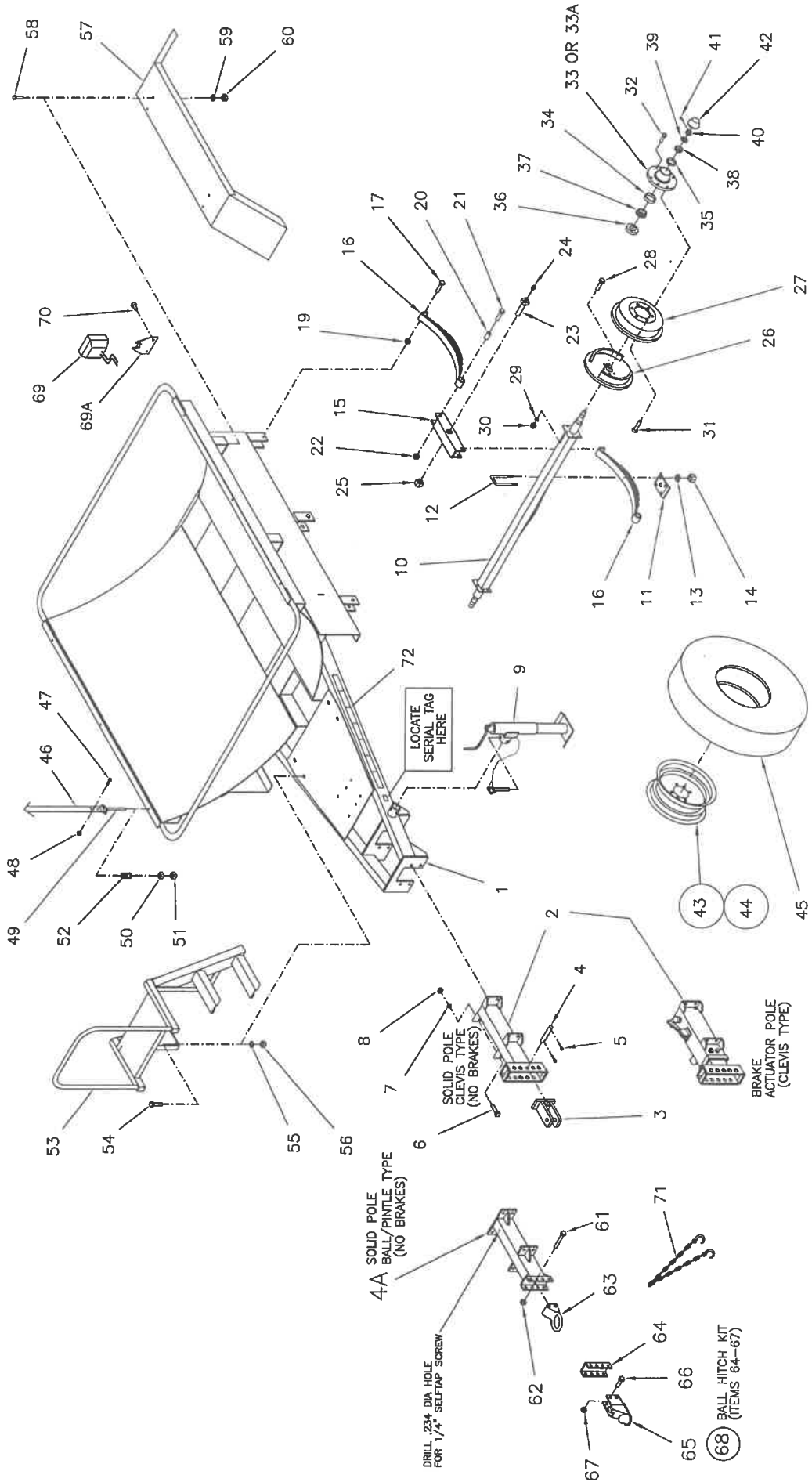
AG109ISO
rev 09-25-12



AG1111 HEAVY-DUTY

TANDEM NURSE WAGON

AG1111ISO
REV 07-16-13



AG 111 TANDEM NURSE WAGON

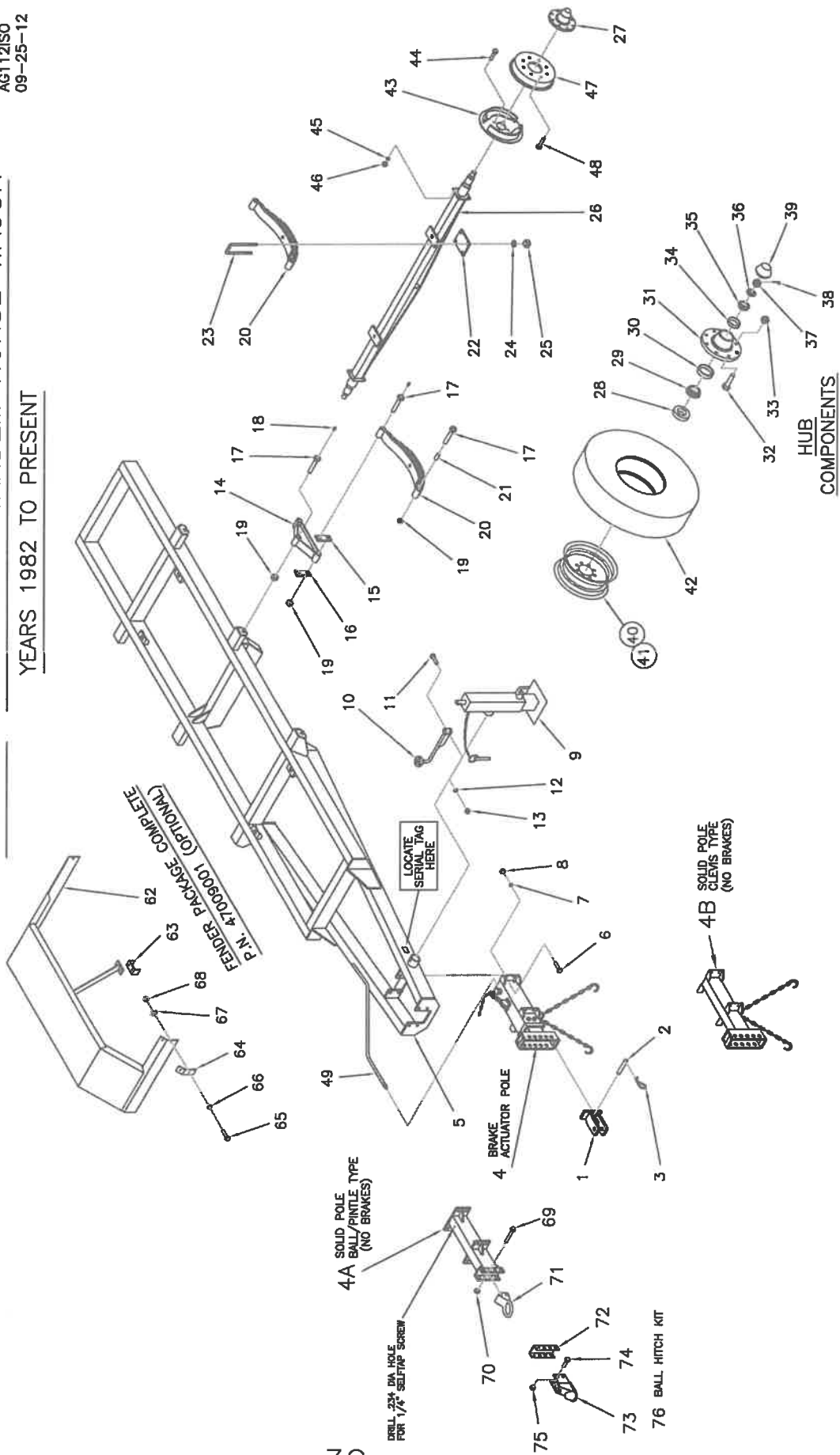
WITH HYDRAULIC BRAKES PROD. YEARS 1985 TO PRESENT

AG111LSA
RV 06/19/20

ITEM	PART NO.	DESCRIPTION	QTY.	ITEM	PART NO.	DESCRIPTION	QTY.
1	47009521	MAIN FRAME	1	45	20121215	TIRE, 12.5L X 15 10 PLY	4
2	47009359	SOLID POLE	1		20121216	TIRE, 12.5 X 16.5 12 PLY	
OR	47009620	SURGE POLE,	OPT.			HI-WAY TIRE	
		WITH "DICO" ACTUATOR ASSEMBLY		47409095		STRAP ASS'Y (SEPT 2011 & OLDER)	
		UP TO 1998 PROD. ENDING S.N. 1627				INCLUDES ITEMS 46 TO 51	
		WITH "DEMCO" ACTUATOR ASSEMBLY		47419095		STRAP ASS'Y (OCT 2011 TO PRESENT)	
		FROM 1998 PROD. STARTING S.N. 1628				INCLUDES ITEMS 46A TO 51	
3	47009285	HITCH CLEVIS	1	46	47006353	TANK BANDING, 2 X 120.19"	3
4	47001319	CLEVIS PIN, 1 X 5 5/8	1	46A	47005744	TANK BANDING, 2 X 115.19"	3
4A	47015306	SOLID POLE, BALL/PINTLE TYPE		47	18706420	SCREW, 5/16-18NC. X 1 1/2	6
5	18561026	COTTER PIN, 1/4 X 1 1/2	2	48	18496400	FLANGE NUT, 5/16-18NC	6
6	18057930	BOLT, 5/8-11NC. X 2	8	49	47409090	STRAP END BOLT, 3/8-16NC.	6
7	18891600	LOCKWASHER, 5/8	8	50	18496800	FLANGE NUT, 3/8-16NC.	6
8	18417900	HEX. NUT, 5/8-11NC.	8	51	18436800	HEX. NUT, 3/8-16NC.	6
9	600378	SWIVEL JACK	1	52	47000550	COMPRESSION SPRING, (2 1/2 LG)	3
10	47009533	AXLE ASSEMBLY	2				
11	47001276	AXLE CLAMP PLATE	4	47009411		LADDER OPTION PACKAGE	1
12	47001271	U-BOLT, 1/2-20NF.	8			INCLUDES ITEMS 53 TO 56	
13	18891400	1/2 LOCKWASHER	16	53	47009211	LADDER ASSEMBLY	1
14	18437500	HEX. NUT, 1/2-20NF.	16	54	18056822	BOLT, 3/8-16NC. X 1	4
15	47009527	EQUALIZER, L.H.	1	55	18891200	LOCKWASHER, 3/8	4
	47309527	EQUALIZER, R.H.	1	56	18436800	HEX. NUT, 3/8-16NC.	4
16	47005007	LEAF SPRING ASSEMBLY (7 LEAF)	4				
17	18057442	BOLT, 1/2-13NC. X 3 1/2	4			OPTIONS	
18				47009323		FENDER OPTION PKG.	1
19	18457650	LOCKNUT, 1/2-13NC.	4			INCLUDES ITEMS 57 TO 60	
20	47009204	NYLON BUSHING, INCL W SPRING)	4	57	47004223	FENDER	2
21	18058443	BOLT, 3/4-10NC. X 4	4	58	18056822	BOLT, 3/8-16NC. X 1	8
22	18418400	HEX. NUT, 3/4-10NC.	4	59	18891200	LOCKWASHER, 3/8	8
23	47001528	BOLT, 1-8NC. X 5, GREASEABLE	2	60	18436800	HEX. NUT, 3/8-16NC.	8
24	18901805	GREASE ZERK, STRAIGHT	2				
25	18439000	HEX.. JAM NUT, 1-8NC.	2	47005832		BRAKE PKG. OPT. (2-WHL. BRAKES)	1
26	47005758	BRAKE CLUSTER, LEFT HAND (12")	1			INCLUDES ITEMS 2 AND 26 TO 31	
	47005757	BRAKE CLUSTER, RIGHT HAND (12")	1			AND BRAKE LINE ITEMS AS LISTED	
27	47005759	BRAKE DRUM (12")	2	47005663		HOSE BRACKET	2
28	18056820	BOLT, 3/8-24NF. X 1	10	47005664		HOSE CLIP	2
29	18891200	LOCKWASHER, 3/8	10	47005666		LINE CLIP	9
30	18436700	HEX. NUT, 3/8-24NF.	10	18721018		SCREW, #10 X 3/4 SELF-TAP	9
31	18057522	BOLT, 1/2-20NF. X 1	12	18715718		SCREW, 1/4 X 3/4	2
32	47005012	WHEEL BOLT, 9/16-18NF.	24	47005685		TEE, 1/8F X 1/8M X 1/8F PIPE	1
				47005660		COUPLING, UNION 1/8 X 1/8 PIPE	1
	47009618	HUB COMPLETE, (NO BRAKES)	4	47005665		BRAKE HOSE ASSY. (18")	1
		INCLUDES ITEMS 33 & 34 THRU 38 AND ITEM 42		47005667		BRAKE HOSE ASSY. (25")	1
				47005690		BRAKE LINE ASSY. (12")	1
	47009635	HUB COMPLETE, (FOR BRAKES) OPT	4	47005687		BRAKE LINE ASSY. (30")	1
		INCLUDES ITEMS 33A & 34 THRU 38 AND ITEM 42		47005695		BRAKE LINE ASSY. (50")	1
				47005688		BRAKE LINE ASSY. (60")	1
33	47005618	HUB WITH CUPS (NO BRAKES)	4			ITEMS NOT SHOWN	
33A	47005635	HUB WITH CUPS (FOR BRAKES) OPT	4	47009364		REAR HITCH COMPLETE	1
34	47005520	BEARING CUP, INNER	4			(WELD TO FRAME)	
35	47005510	BEARING CUP, OUTER	4	61	18058050	BOLT, 5/8-11 X 4 1/2 GR8 ZC	2
36	47005030	GREASE SEAL, (1988 TO PRESENT)	4	62	18458451	TOP LOCK NUT, 5/8 - 11 NC ZC	2
	47005030A	GREASE SEAL; (1985-1987)		63	09557-97	PINTLE RING, 3" ID (2 7/8" W)	1
		OLDER SEALS ARE .050 UNDERSIZE		64	57362	DEMCO WELD-ON CHANNEL	1
37	47005580	BEARING CONE, INNER	4	65	07678	2 5/16" DIA BALL HITCH	1
38	47005548	BEARING CONE, OUTER	4	66	18097926	BOLT, 5/8-11 X 1 1/2 GR8 ZC	4
39	18000017	SPINDLE WASHER	4	67	18458451	TOP LOCK NUT, 5/8 - 11 NC ZC	4
40	18489100	SLOTTED HEX. NUT, 1-14NF.	4	68	41002516	BALL HITCH KIT, INCLUDES ITEMS	
41	18560826	COTTER PIN, 3/16 X 1 1/2	4			64, 65, 66, AND 67	1
42	47005515	DUST CAP	4	69	47013910	OPTIONAL TAIL LIGHT PACKAGE	1
43	47005809	RIM, 15 X 10 (STANDARD)	4	69A	47003910	OPTIONAL TAIL LIGHT BRACKET	2
OR	47005919	RIM, 9.75 X 16.5 (W/HI-WAY TIRE)	OPT.	70		HD SELF TAP SCREW 3/8 X 1	4
44	20120012	VALVE STEM, STD	4	71	47000314	OPTIONAL SAFETY CHAIN PACKAGE	1
OR	20120022	VALVE STEM, (USE WITH RIM 5919)	4	72	18-4	OPT. REFLECTIVE TAPE DECAL PKG	1

AG112 HEAVY-DUTY TANDEM NURSE WAGON
 YEARS 1982 TO PRESENT

AG112ISO
 09-25-12



AG112 HEAVY-DUTY TANDEM NURSE WAGON

PARTS LIST 1982 TO PRESENT

ITEM	PART NO.	DESCRIPTION	QTY.	ITEM	PART NO.	DESCRIPTION	QTY.
1	47009523	HITCH CLEVIS	1	33	47005040	WHEEL NUT, 9/16-18NF.	32
2	47001676	PIVOT PIN, HITCH	1	34	47005272	BEARING CUP, OUTER	4
3	18561030	COTTER PIN, 1/4 X 2	2	35	47005279	BEARING CONE, OUTER	4
4	47009379	SURGE POLE	1	36	18000017	SPINDLE WASHER, 1" X 3/16	4
	WITH "DICO" BRAKE ACTUATOR ASSEMBLY			37	18489100	SLOTTED NUT, 1-14NF.	4
OR	UP TO 1998 PROD ENDING S.N. 1298			38	18560830	COTTER PIN, 3/16 X 2	4
	FROM 1999 PROD. STARTING S.N.			39	47005917	DUST CAP	4
4A	47005306	SOLID POLE, (BALL/PINTLE TYPE)	1	40	47009814	RIM, W/14C X 16.1 STANDARD	4
	NO BRAKES			41	47006023	RIM, 8.25 X 22.5 (8 ON 8) OPTIONAL	4
4B	47005332	SOLID POLE, (CLEVIS TYPE)	1	42	20120012	VALVE STEM	4
	NO BRAKES			42	32297	TIRE, 16.5 X 16.1 (10 PLY) STD.	4
5	47009135	MAIN FRAME	1	20100022	TIRE, 295R75 X 2.5 RIB IMP.		
6	18057930	BOLT, 5/8-11NC. X 2	8	47005810	BRAKE PACKAGE (4 WHEEL)		
7	18891600	LOCKWASHER, 5/8	8		INCLUDES ITEMS, 43 TO 47		
8	18417900	HEX. NUT, 5/8-11NC.	8	43	47005652	BRAKE CLUSTER, 13" LEFT HAND	2
9	05410	JACK COMPLETE, (1982-1989)	1	44	18057522	BRAKE CLUSTER, 13" RIGHT HAND	2
OR FROM 1998 PROD TO PRESENT				45	18891400	BOLT, 1/2-20NF. X 1	16
70924	JACK COMPLETE, (PAINTED BLACK)		1	46	18437500	LOCKWASHER, 1/2	16
				47	47005650	HEX. NUT, 1/2-20NF.	16
				48	47005041	BRAKE DRUM, 13"	4
					SEE ITEM 32		
					ITEMS 49 TO 61 "NOT SHOWN"		
				49	47005663	HOSE BRACKET	3
				50	47005664	HOSE CLIP	3
				51	47005666	BRAKE TUBE CLIP	16
				52	18721018	SCREW, #10 X 3/4 SELF-TAP	16
				53	18715718	SCREW, 1/4 X 3/4	3
				54	47005685	UNION TEE	2
				55	47005660	UNION	3
				56	47005680	TEE, F X F X M	1
				57	47005685	BRAKE HOSE, 18"	3
				58	47005306	TUBE, BRAKE LINE-	2
				59	47005692	TUBE, BRAKE LINE-	2
				60	47005694	TUBE, BRAKE LINE-	1
				61	47005695	TUBE, BRAKE LINE-	4
					FENDER PACKAGE COMPLETE	OPTIONAL	
					INCLUDES ITEMS, 62 TO 68		
				62	47009001	FENDER ASSEMBLY	2
				63	47007498	BRACE MOUNTING BRACKET	2
				64	47007505	FENDER MOUNTING BRACKET	4
				65	18056824	BOLT, 3/8-16NC. X 1 1/4	12
				66	18891200	LOCKWASHER, 3/8	12
				67	18811200	FLATWASHER, 3/8	12
				68	18436800	HEX. NUT, 3/8-16NC.	12
					CAN, TOUCH-UP PAINT		
				69	18058050	BOLT, 5/8-11 X 4 1/2 GR8 ZC	1
				70	18458451	TOP LOCK NUT, 5/8-11 NC ZC	2
				71	09557-97	PINTLE RING 3" ID (2 7/8" W)	2
				72	57362	DEMCO WELD-ON CHANNEL OPTION	1
				73	07678-97	2 5/16" DIA. BALL HITCH	1
				74	18097926	BOLT, 5/8-11 X 1 1/2 GR8 ZC	4
				75	18458451	TOP LOCK NUT, 5/8-11 NC ZC	4
				76	41002516	BALL HITCH KIT, INCLUDES ITEMS 72, 73, 74, AND 75	1

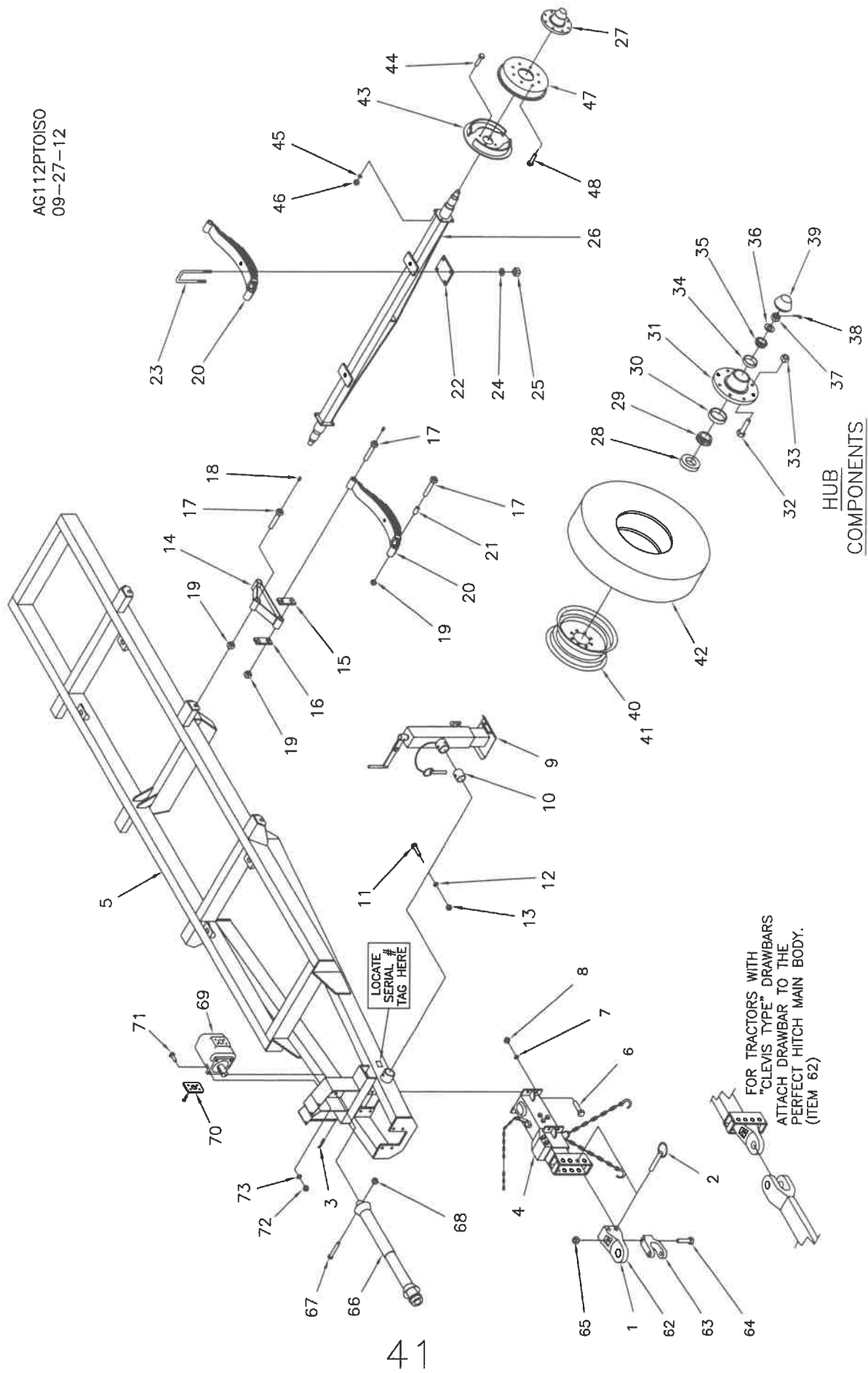
ITEMS 10 TO 13 FOR REPAIR PARTS ONLY

10	47007114	CRANK ASSEMBLY	1
11	18056830	BOLT, 3/8-16NC. X 2	1
12	18891200	LOCKWASHER, 3/8	1
13	18436800	HEX. NUT, 3/8-16NC.	1
14	47009152	EQUALIZER	2
15	47001496	HANGER STRAP, OUTSIDE	4
16	47001497	HANGER STRAP, INSIDE (TAPPED)	4
17	47001528	BOLT, 1-8NC. X 5 GREASEABLE	14
18	18901805	GREASE ZERK, STRAIGHT	14
19	18449000	JAM NUT	14
20	47005625	LEAF SPRING, 6 LEAF	4
21	47001529S	BRONZE BUSHING (PART OF SPRING)	8
22	47001502	CLAMP PLATE	4
23	47002153	U-BOLT, 5/8-11NC.	8
24	18891600	LOCKWASHER, 5/8	16
25	18417900	HEX. NUT, 5/8-11NC.	16
	47009261	AXLE ASSEMBLY,	2
		INCLUDES ITEMS, 26 AND 27	
26	47009161	AXLE ONLY	2
27	47009712	HUB COMPLETE,	2
		INCLUDES ITEMS, 28 THRU 35 AND ITEM 39	
28	(SEE NOTE)	GREASE SEAL	4
29	47005378	BEARING CONE, INNER	4
30	47005372	BEARING CUP, INNER	4
31	47005712	HUB WITH CUPS, ITEMS 30 & 34	4
32	47005041	WHEEL STUD, 9/16-18NF.	32

NOTE:
IF YOUR HUB IS SMOOTH W/ A GREASE ZERK, ORDER GREASE SEAL P/N: 906481
IF YOUR HUB HAS RIBS AND NO GREASE ZERK, ORDER GREASE SEAL P/N: 47005017

AG112 HEAVY-DUTY TANDEM NURSE WAGON WITH HYDRAULIC BRAKES PLUS PTO DRIVEN PUMP AND STAND

AG112PTOISO
09-27-12



41

FOR TRACTORS WITH
"CLEVIS TYPE" DRAWBARS
ATTACH DRAWBAR TO THE
PERFECT HITCH MAIN BODY.
(ITEM 62)

HUB
COMPONENTS

AG112 HEAVY-DUTY TANDEM NURSE WAGON

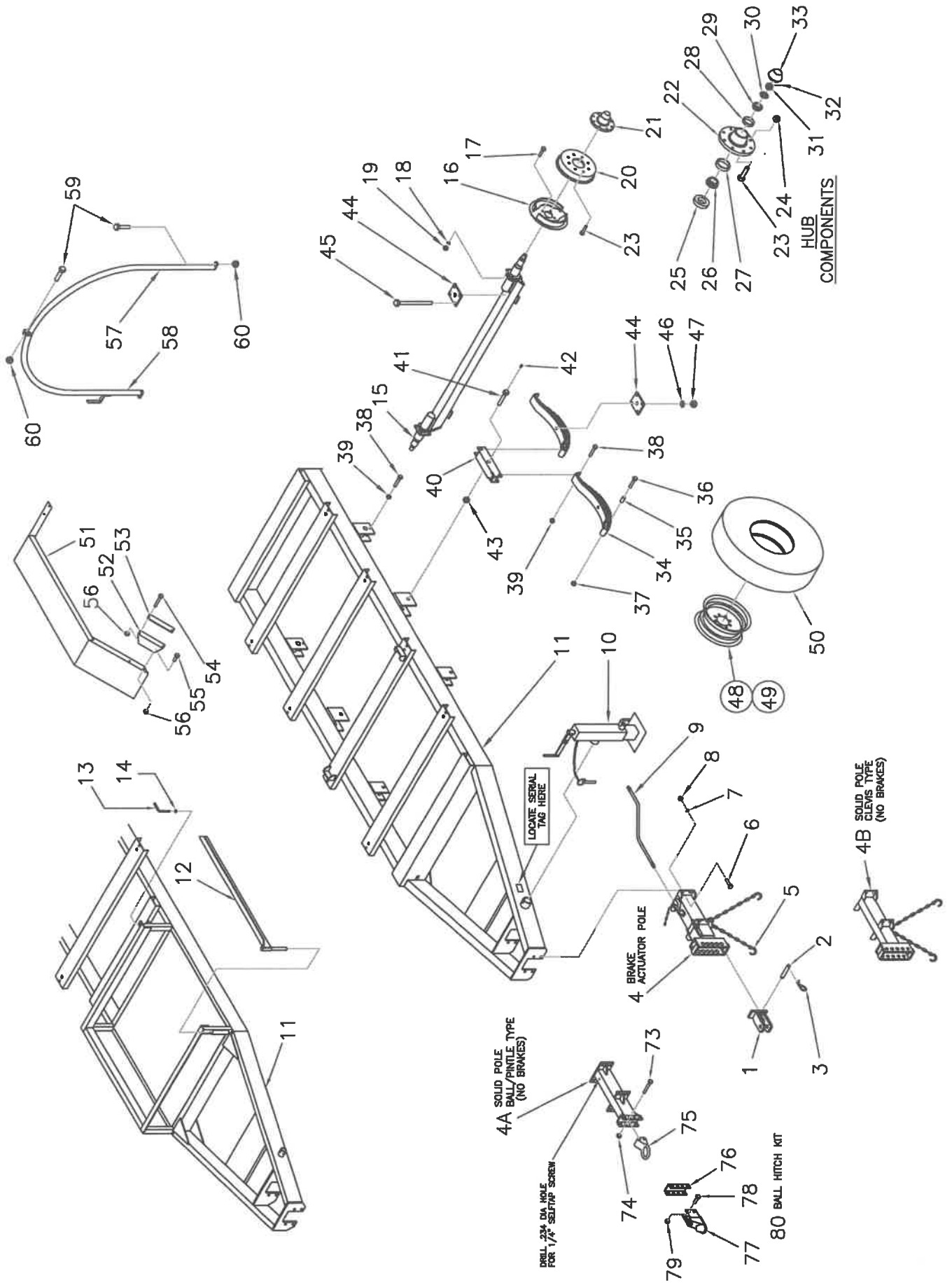
WITH HYD BRAKES, PLUS PTO DRIVEN PUMP WITH STAND

ITEM	PART NO.	DESCRIPTION	QTY.	ITEM	PART NO.	DESCRIPTION	QTY.
1	Pi-3013VC	PERFECT HITCH ASSEMBLY INCLUDES 1 INCLUDES ITEMS 62 THRU 65	1	34	47005272	BEARING CUP, OUTER	4
2	600182	PIVOT PIN, HITCH 1 X 6	1	35	47005279	BEARING CONE, OUTER	4
3	18590091	COTTER PIN	1	36	18000017	SPINDLE WASHER, 1" X 3/16	4
4	47015050	ACTUATOR POLE ASSY ("DICO")	1	37	18489100	SLOTTED NUT, 1-14NF.	4
5	47009135	MAIN FRAME	1	38	18560830	COTTER PIN, 3/16 X 2	4
5A	5236W	PUMP MT/PTO	1	39	47005917	DUST CAP	4
6	18057930	BOLT, 5/8-11NC. X 2	1	40	47009814	RIM, W14C X 16.1 STANDARD	4
7	18891600	LOCKWASHER, 5/8	8	41	47006023	RIM, 8.25 X 22.5 (8 ON 8) OPTIONAL	4
8	18417900	HEX. NUT, 5/8-11NC.	8	42	20120012	VALVE STEM	4
9	70924	JACK COMPLETE, (FINISH PAINTED)	1	42	32297	TIRE, 16.5 X 16.1 (10 PLY) STD.	4
					20100022	TIRE, 295R75 X 2.5 RIB IMP.	4
					47005810	BRAKE PACKAGE (4 WHEEL)	4
						INCLUDES ITEMS, 43 TO 47	
				43	47005652	BRAKE CLUSTER, 13" LEFT HAND	2
					47005651	BRAKE CLUSTER, 13" RIGHT HAND	2
				44	18057522	BOLT, 1/2-20NF. X 1	16
				45	18891400	LOCKWASHER, 1/2	16
				46	18437500	HEX. NUT, 1/2-20NF.	16
				47	47005650	BRAKE DRUM, 13"	16
				48	47005041	SEE ITEM 32	4
						ITEMS 49 TO 61 "NOT SHOWN"	-
				49	47005663	HOSE BRACKET	3
				50	47005664	HOSE CLIP	3
				51	47005666	BRAKE TUBE CLIP	16
				52	18721018	SCREW, #10 X 3/4 SELF-TAP	16
				53	18715718	SCREW, 1/4 X 3/4	3
				54	47005685	UNION TEE	2
				55	47005660	UNION	2
				56	47005680	TEE, F X F X M	3
				57	47005665	BRAKE HOSE, 18"	3
				58	47005306	TUBE, BRAKE LINE-	2
				59	47005692	TUBE, BRAKE LINE-	2
				60	47005684	TUBE, BRAKE LINE-	2
				61	47005685	TUBE, BRAKE LINE-	1
				62	PPI-301VC	PERFECT HITCH	4
				63	PPI-206VR	PERFECT HITCH CLEVIS	1
						WITH 1 INCH ROUND HOLE (STANDARD)	
						WITH 1 1/4" OBRROUND HOLE (OPTIONAL)	
				64	18058452	BOLT 3/4-10NC X 5 GR 8	1
				65	18458452	LOCKNUT, 3/4-10NC GR 8	1
				66	335-4820	PTO SHAFT, 48"FOR 1.75 PTO ASSY	1
				67	18056836	BOLT 3/8-16NC X 2 3/4	1
				68	18459200	HEXNUT, NYLOCK 3/8-16NC	1
				69	P76A278BYOR25-11	PUMP (WITH PTO STUB SHAFT)	1
				70	W43-24-24U-KIT	PUMP FLANGE KIT	1
				71	18057430	BOLT 1/2-13NC X 2 GR5 ZP	4
				72	18991400	LOCKWASHER, 1/2 ZP	4
				73	18417400	NUT, HEX 1/2-13NC ZP	4
					600225	CAN, TOUCH-UP PAINT	1
10	47010213	INNER MOUNTING STUB TUBE	1				
11	18056630	BOLT, 5/8-16NC. X 2	1				
12	18891200	LOCKWASHER, 3/8	1				
13	18436800	HEX. NUT, 3/8-16NC.	1				
14	47009152	EQUALIZER	2				
15	47001496	HANGER STRAP, OUTSIDE	4				
16	47001497	HANGER STRAP, INSIDE (TAPPED)	4				
17	47001528	BOLT, 1-8NC. X 5 GREASEABLE	14				
18	18901805	GREASE ZERK, STRAIGHT	14				
19	18449000	JAM NUT	14				
20	47005625	LEAF SPRING, 6 LEAF	4				
21	47001529	BRONZE BUSHING (PART OF SPRING)	8				
22	47001502	CLAMP PLATE	4				
23	47002153	U-BOLT, 5/8-11NC.	8				
24	18891600	LOCKWASHER, 5/8	16				
25	18417900	HEX. NUT, 5/8-11NC.	16				
	47009261	AXLE ASSEMBLY,	2				
		INCLUDES ITEMS, 26 AND 27					
26	47009161	AXLE ONLY	2				
27	47009712	HUB COMPLETE, INCLUDES ITEMS	2				
28	(SEE NOTE)	28, 29, 31 THRU 33, 35 AND 39	4				
29	47005378	GREASE SEAL	4				
30	47005372	BEARING CONE, INNER	4				
31	47005712	BEARING CUP, INNER	4				
32	47005041	HUB WITH CUPS, ITEMS 30 & 34	32				
33	47005040	WHEEL STUD, 9/16-18NF.	32				
		WHEEL NUT, 9/16-18NF.	32				

NOTE:
IF YOUR HUB IS SMOOTH W/ A GREASE ZERK, ORDER GREASE SEAL P/N: 906481
IF YOUR HUB HAS RIBS AND NO GREASE ZERK, ORDER GREASE SEAL P/N: 47005017

AG116 TANDEM NURSE WAGON STANDARD AND EXTENDED FRAME

1162KISO
09-27-12



AG116 TANDEM NURSE WAGON

1162KLST
RV 12/21/21

PARTS LIST STANDARD AND EXTENDED FRAME

ITEM	PART NO.	DESCRIPTION	QTY.	ITEM	PART NO.	DESCRIPTION	QTY.
1	47009523	HITCH CLEVIS	1	41	47008908	BOLT, 1-8NC. X 6, GREASEABLE	2
2	47001676	PIVOT PIN, HITCH 1 1/4 DIA	1	42	18901805	GREASE ZERK, STRAIGHT	2
3	18561030	COTTER PIN, 1/4 X 2	2	43	18449000	JAM NUT, 1-8NC.	2
4	47009379	SURGE POLE, INCLUDES ITEM 5 WITH "DICO" ACTUATOR ASSEMBLY UP TO 1998 PROD. ENDING S.N. 1014 WITH "DEMCO" ACTUATOR ASSEMBLY FROM 1998 PROD. STARTING S.N. 1015	1	44	47008529	CLAMP PLATE	8
4A	47005306	SOLID POLE (BALL/PINTLE TYPE) NO BRAKES	1	45	18057976	BOLT, 5/8-11NC. X 8 1/2	16
4B	47005332	SOLID POLE(CLEVIS TYPE)NO BRAKES 1	1	46	18891600	LOCKWASHER,	16
5	8607576	SAFETY CHAIN (PART OF POLE)	-	47	18417900	HEX. NUT, 5/8-11NC.	16
6	18057930	BOLT, 5/8-11NC. X 2	8	48	47009814	RIM, W14C X 16.1 STANDARD	4
7	18891600	LOCKWASHER, 5/8	8		47006023	RIM, 8.25 X 22.5 (8 ON 8)	OPT.
8	18417900	HEX. NUT, 5/8-11NC.	8	49	20120012	VALVE STEM 5/8	4
9	41160116	BRAKE LINE PKG. STD FRAME INCLUDES ITEMS 61 TO 72 (NOT SHOWN)	1	50	32297	TIRE, 16.5 X 16.1 (10 PLY) STD.	4
	41160116A	BRAKE LINE PKG. EXTENDED FRAME INCLUDES ITEMS 61 THRU 72B (NOT SHOWN)	1		20100022	TIRE, 295R75-22.5 (RIB IMPL.)	OPT.
10	70924	SWIVEL JACK COMPLETE	1		47998845	FENDER PACKAGE COMPLETE INCLUDES ITEMS, 51 TO 56 FOR FRAMES 1999 AND OLDER DELETE ITEMS 52 TO 54	OPTIONAL
11	47019364	MAIN FRAME, STANDARD	OR	51	47008845	FENDER ASSEMBLY	2
	47008802	MAIN FRAME, EXTENDED	1	52	47009367	STAND-OFF BRACKET	4
12	47008810	GATE FOR CAGE (EXT'D. FRAME ONLY)	1	53	47019368	CLAMP PLATE	4
13	47008816	LATCH PIN	1	54	18056852	BOLT, 3/8-16NC. X 4 1/2	8
14	1400-50ZP	RETAINING RING, (1/2 I.D.) AXLE ASSEMBLY, INCL. ITEMS 15 & 22	1	55	18056822	BOLT, 3/8-16NC. X 1	8
15	47008524	AXLE ONLY	2	56	18496800	FLANGE NUT, 3/8-16NC.	16
	47005810	BRAKE PACKAGE (4 WHEEL) INCLUDES ITEMS, 16 TO 20	4		47028897	HOOP ASSEMBLY (1685 GAL TANK)	4
16	47005652	BRAKE CLUSTER, 13" LEFT HAND	2		47028902	HOOP ASSEMBLY (2000 GAL TANK)	4
	47005651	BRAKE CLUSTER, 13" RIGHT HAND	2			INCLUDES ITEMS 57 TO 60	
17	18057522	BOLT, 1/2-20NF. X 1	16	57	47008897	HOOP HALF, STANDARD (1685 G)	4
18	18891400	LOCKWASHER, 1/2	16		47008902	HOOP HALF, STANDARD (2000 G)	4
19	18437500	HEX. NUT, 1/2-20NF.	16	58	47008898	HOOP HALF WITH BRACKET (1685 G)	4
20	47005650	BRAKE DRUM, 13"	4		47008903	HOOP HALF WITH BRACKET (2000 G)	4
21	47009712	HUB COMPLETE, INCLUDES ITEMS 22 THRU 26, 29 AND ITEM 33.	4	59	18057930	BOLT, 5/8-11NC. X 2	12
22	47005712	HUB WITH CUPS	4	60	18457900	SELF-LOCKING NUT, 5/8-11NC.	12
23	47005041	WHEEL STUD, 9/16-18NF.	32		41160116	REF. ITEM 9 STD FRAME BRAKE PACKAGE INCLUDES ITEMS, 61 TO 72 (NOT SHOWN)	
24	47005040	WHEEL NUT, 9/16-18NF.	32		41160116A	REF. ITEM 9 EXTENDED FR. BRAKE PKG INCLUDES ITEMS, 61 THRU 72B (NOT SHOWN)	
25	(SEE NOTE)	GREASE SEAL	4	61	47005663	HOSE BRACKET	3
26	47005378	BEARING CONE, INNER	4	62	47005664	HOSE CLIP	3
27	47005372	BEARING CUP, INNER	4	63	47005666	BRAKE TUBE CLIP	20
28	47005272	BEARING CUP, OUTER	4	64	18721018	SCREW, #10 X 3/4 SELF-TAP	20
29	47005279	BEARING CONE, OUTER	4	65	18715718	SCREW,	6
30	18000017	SPINDLE WASHER, 1" X 3/16	4	66	47005685	UNION TEE	2
31	18489100	SLOTTED NUT, 1-14NF.	4	67	47005660	UNION 1/4 X 3/4	4
32	18560830	COTTER PIN, 3/16 X 2	4	68	47005665	BRAKE HOSE, 18"	3
33	47005917	DUST CAP	4	69	47005682	TUBE, BRAKE LINE- (4")	2
34	47004202	LEAF SPRING,	4	70	47005692	TUBE, BRAKE LINE- (20")	2
35	47005419	BRONZE BUSHING (PART OF SPRING)	4	71	47005695	TUBE, BRAKE LINE- (50")	2
36	18057805	BOLT, 7/8-9NC. X 5	4	72	47005688	TUBE, BRAKE LINE- (60")	4
37	18417800	HEX. NUT, 7/8-9NC.	4	72A	47005688	TUBE, BRAKE LINE- (60") EXTENDED	1
38	18057450	BOLT, 1/2-13NC. X 4 1/2	4	72B	47005686	TUBE, BRAKE LINE- (8") EXTENDED	1
39	18457650	HEX. LOCKNUT, 1/2-13NC.	4	73	18058050	BOLT, 5/8-11 X 4 1/2 GRB ZC	2
40	47008550	EQUALIZER, L.H.	1	74	18458451	TOP LOCK NUT, 5/8-11 NC ZC	2
	47008551	EQUALIZER, R.H.	1	75	09557-97	PINTLE RING 3" ID (2 7/8" W)	1
				76	57362	DEMCO WELD-ON END CHANNEL	1
				77	07678-97	2 5/16" DIA BALL HITCH	1
				78	18097926	BOLT, 5/8-11 X 1 1/2 GRB ZC	4
				79	18458451	TOP LOCK NUT, 5/8-11 NC ZC	4
				80	41002516	BALL HITCH KIT, INCLUDE ITEMS 76, 77, 78 AND 79	1

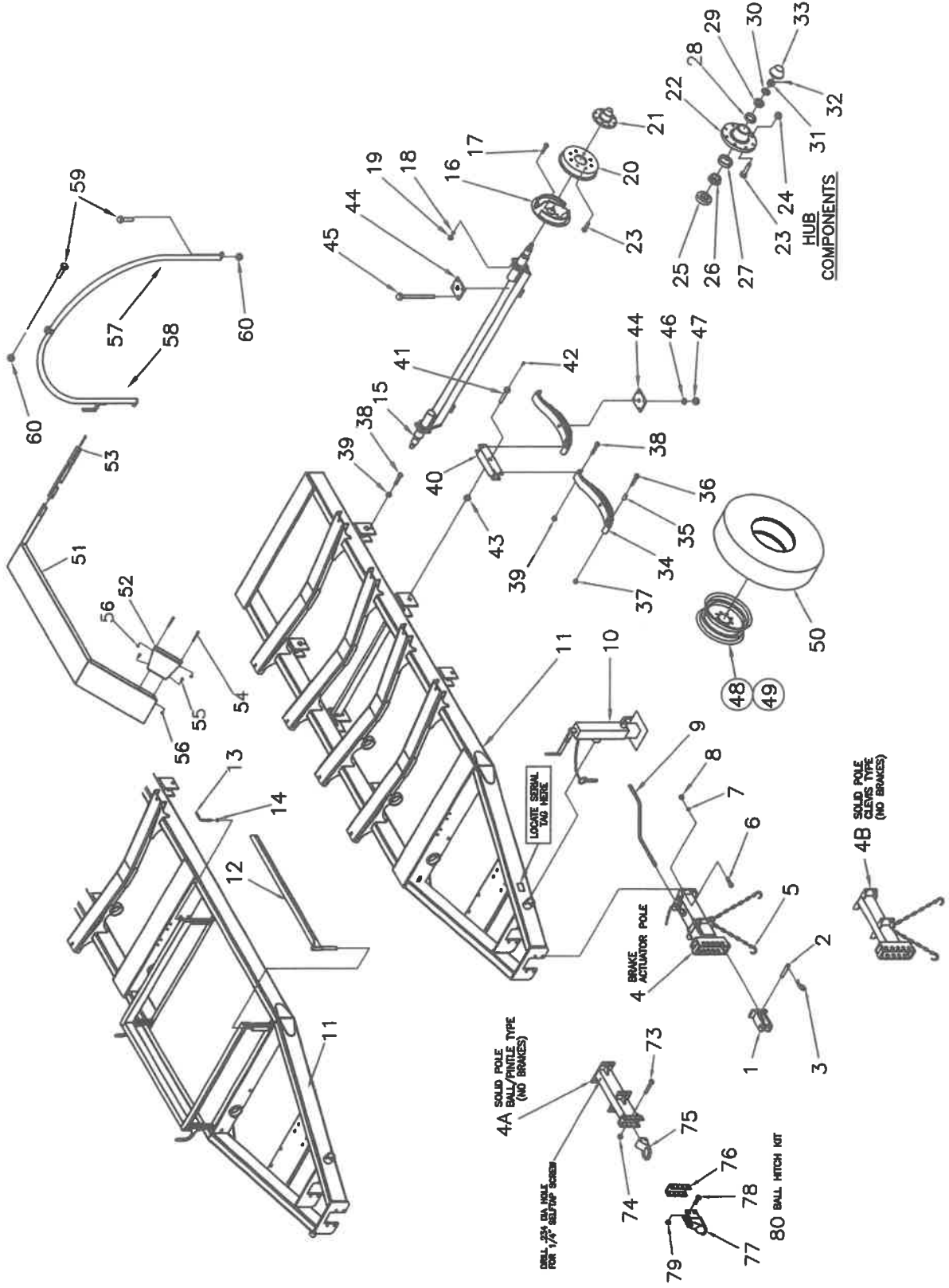
NOTE:

IF YOUR HUB IS SMOOTH W/ A GREASE ZERK, ORDER GREASE SEAL P/N: 906481
IF YOUR HUB HAS RIBS AND NO GREASE ZERK, ORDER GREASE SEAL P/N:47005017

AG116 WAGON FOR 1625 GAL. SNYDER LEG TANK WITH SUMP STANDARD AND EXTENDED FRAME

(ALSO FITS 1610 GAL. NORWESCO)

1625SISO
RV 03/17/22



44A

AG116 WAGON FOR 1625 GAL. SNYDER LEG TANK

1625SLST
RV 03/17/22

(ALSO FITS 1610 GAL. NORWESCO) PARTS LIST STANDARD AND EXTENDED FRAME

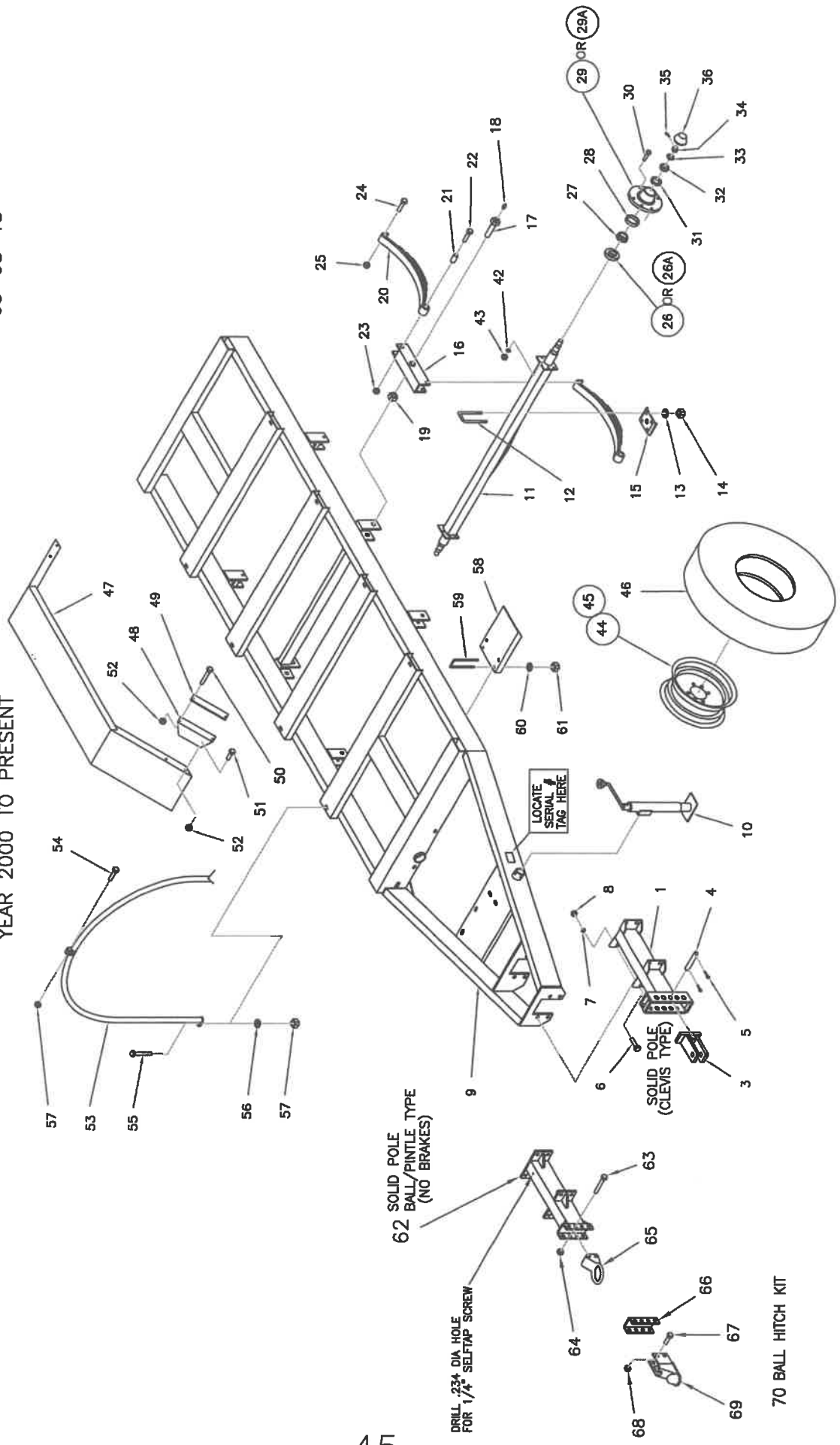
ITEM	PART NO.	DESCRIPTION	QTY.	ITEM	PART NO.	DESCRIPTION	QTY.
1	47009523	HITCH CLEVIS	1	42	18901805	GREASE ZERK, STRAIGHT	2
2	47001676	PIVOT PIN, HITCH 1 1/4 DIA	1	43	18449000	JAM NUT, 1-8NC.	2
3	18561030	COTTER PIN, 1/4 X 2	2	44	47008529	CLAMP PLATE	8
4	47009379	SURGE POLE, INCLUDES ITEM 5 WITH "DICO" ACTUATOR ASSEMBLY UP TO 1998 PROD. ENDING S.N. 1014 WITH "DEMCO" ACTUATOR ASSEMBLY FROM 1998 PROD. STARTING S.N. 1015	1	45	18057976	BOLT, 5/8-11NC. X 8 1/2	16
4A	47005306	SOLID POLE (BALL/PINTLE TYPE) NO BRAKES	1	46	18891600	LOCKWASHER,	16
4B	47005332	SOLID POLE(CLEVIS TYPE)NO BRAKES	1	47	18417900	HEX. NUT, 5/8-11NC.	16
5	8607576	SAFETY CHAIN (PART OF POLE)	-	48	47006023	RIM, 8.25 X 22.5 (8 ON 8)	STD. 4
6	18057930	BOLT, 5/8-11NC. X 2	8		47006026	RIM, 8.25 X 22.5	OPT. 4
7	18891600	LOCKWASHER, 5/8	8	49	20120012	VALVE STEM 5/8	4
8	18417900	HEX. NUT, 5/8-11NC.	8	50	40028	TIRE, 11R X 22.5	STD. 4
9	41160116	BRAKE LINE PKG. STD FRAME INCLUDES ITEMS 61 TO 72 (NOT SHOWN)	1	40033	TIRE HD, 11R X 22.5		OPT. 4
	41160116A	BRAKE LINE PKG. EXTENDED FRAME INCLUDES ITEMS 61 THRU 72B (NOT SHOWN)	1	71677	FENDER PACKAGE COMPLETE INCLUDES ITEMS, 51 TO 56		OPTIONAL
10	70924	SWIVEL JACK COMPLETE	1	51	47007877	FENDER ASSEMBLY	2
11	47003713	MAIN FRAME, STANDARD	OR	52	47007878	STAND-OFF BRACKET	4
	70852	MAIN FRAME, EXTENDED	1	53	47019368	CLAMP PLATE	2
12	47008810	GATE FOR CAGE (EXT'D. FRAME ONLY)	1	54	18056852	BOLT, 3/8-16NC. X 4 1/2	8
13	47008816	LATCH PIN	1	55	18056822	BOLT, 3/8-16NC. X 1	8
14	1400-50ZP	RETAINING RING, (1/2 I.D.) AXLE ASSEMBLY, INCL. ITEMS 15 & 22	1	56	18496800	FLANGE NUT, 3/8-16NC.	16
15	47007882	AXLE ONLY	2	71678	WIDE FENDER PACKAGE INCLUDES ITEMS, 51A & 52B AND 53 TO 56 ***FOR 16L TIRES ONLY (OUTSIDE WIDTH =105)***		OPTIONAL
	47005810	BRAKE PACKAGE (4 WHEEL) INCLUDES ITEMS, 16 TO 20	2	51A	47008845	16" FENDER ASSEMBLY	2
16	47005652	BRAKE CLUSTER, 13" LEFT HAND	2	52B	47007989	STAND-OFF BRACKET	4
	47005651	BRAKE CLUSTER, 13" RIGHT HAND	2	47027867	HOOP ASSEMBLY(1625 GAL TANK) INCLUDES ITEMS 57 TO 60		OPT. 4
17	18057522	BOLT, 1/2-20NF. X 1	16	57	47007867	HOOP HALF, STANDARD (1625 G)	4
18	18891400	LOCKWASHER, 1/2	16	58	47007883	HOOP HALF WITH BRACKET(1625 G)	4
19	18437500	HEX. NUT, 1/2-20NF.	16	59	18057930	BOLT, 5/8-11NC. X 2	12
20	47005650	BRAKE DRUM, 13"	4	60	18457900	SELF-LOCKING NUT, 5/8-11NC.	12
21	47009712	HUB COMPLETE, INCLUDES ITEMS 22 THRU 26, 29 AND ITEM 33.	4	41160116	REF. ITEM 9 STD FRAME BRAKE PACKAGE INCLUDES ITEMS, 61 TO 72 (NOT SHOWN)		
22	47005712	HUB WITH CUPS	4	41160116A	REF. ITEM 9 EXTENDED FR. BRAKE PKG INCLUDES ITEMS, 61 THRU 72B (NOT SHOWN)		
23	47005041	WHEEL STUD, 9/16-18NF.	32	61	47005663	HOSE BRACKET	3
24	47005040	WHEEL NUT, 9/16-18NF.	32	62	47005664	HOSE CLIP	3
25	(SEE NOTE)	GREASE SEAL	4	63	47005666	BRAKE TUBE CLIP	20
26	47005378	BEARING CONE, INNER	4	64	18721018	SCREW, #10 X 3/4 SELF-TAP	20
27	47005372	BEARING CUP, INNER	4	65	18715718	SCREW,	6
28	47005272	BEARING CUP, OUTER	4	66	47005685	UNION TEE	2
29	47005279	BEARING CONE, OUTER	4	67	47005660	UNION 1/4 X 3/4	4
30	18000017	SPINDLE WASHER, 1" X 3/16	4	68	47005665	BRAKE HOSE, 18"	3
31	18489100	SLOTTED NUT, 1-14NF.	4	69	47005682	TUBE, BRAKE LINE- (4")	2
32	18560830	COTTER PIN, 3/16 X 2	4	70	47005692	TUBE, BRAKE LINE- (20")	2
33	47005917	DUST CAP	4	71	47005695	TUBE, BRAKE LINE- (50")	2
34	47004202	LEAF SPRING,	4	72	47005688	TUBE, BRAKE LINE- (60")	4
35	47005419	BRONZE BUSHING (PART OF SPRING)	4	72A	47005688	TUBE, BRAKE LINE- (60") EXTENDED	1
36	18057805	BOLT, 7/8-9NC. X 5	4	72B	47005688	TUBE, BRAKE LINE- (8") EXTENDED	1
37	18417800	HEX. NUT, 7/8-9NC.	4	73	18058050	BOLT, 5/8-11 X 4 1/2 GR8 ZC	2
38	18057450	BOLT, 1/2-13NC. X 4 1/2	4	74	18458451	TOP LOCK NUT, 5/8-11 NC ZC	2
39	18457650	HEX. LOCKNUT, 1/2-13NC.	4	75	09557-97	PINTLE RING 3" ID (2 7/8" W)	1
40	47008550	EQUALIZER, L.H.	1	76	57362	DEMCO WELD-ON END CHANNEL	1
	47008551	EQUALIZER, R.H.	1	77	07678-97	2 5/16" DIA BALL HITCH	1
41	47008908	BOLT, 1-8NC. X 6, GREASEABLE	2	78	18097926	BOLT, 5/8-11 X 1 1/2 GR8 ZC	4
				79	18458451	TOP LOCK NUT, 5/8-11 NC ZC	4
				80	41002516	BALL HITCH KIT, INCLUDE ITEMS 76, 77, 78 AND 79	1

NOTE:
IF YOUR HUB IS SMOOTH W/ A GREASE ZERK, ORDER GREASE SEAL P/N: 906481
IF YOUR HUB HAS RIBS AND NO GREASE ZERK, ORDER GREASE SEAL P/N:47005017

1000FLT
05-08-13

AG1000 WAGON WITH FLAT BOTTOM TANK

YEAR 2000 TO PRESENT



AG1000 WAGON PARTS LIST

1000FTL
RV 06/19/20

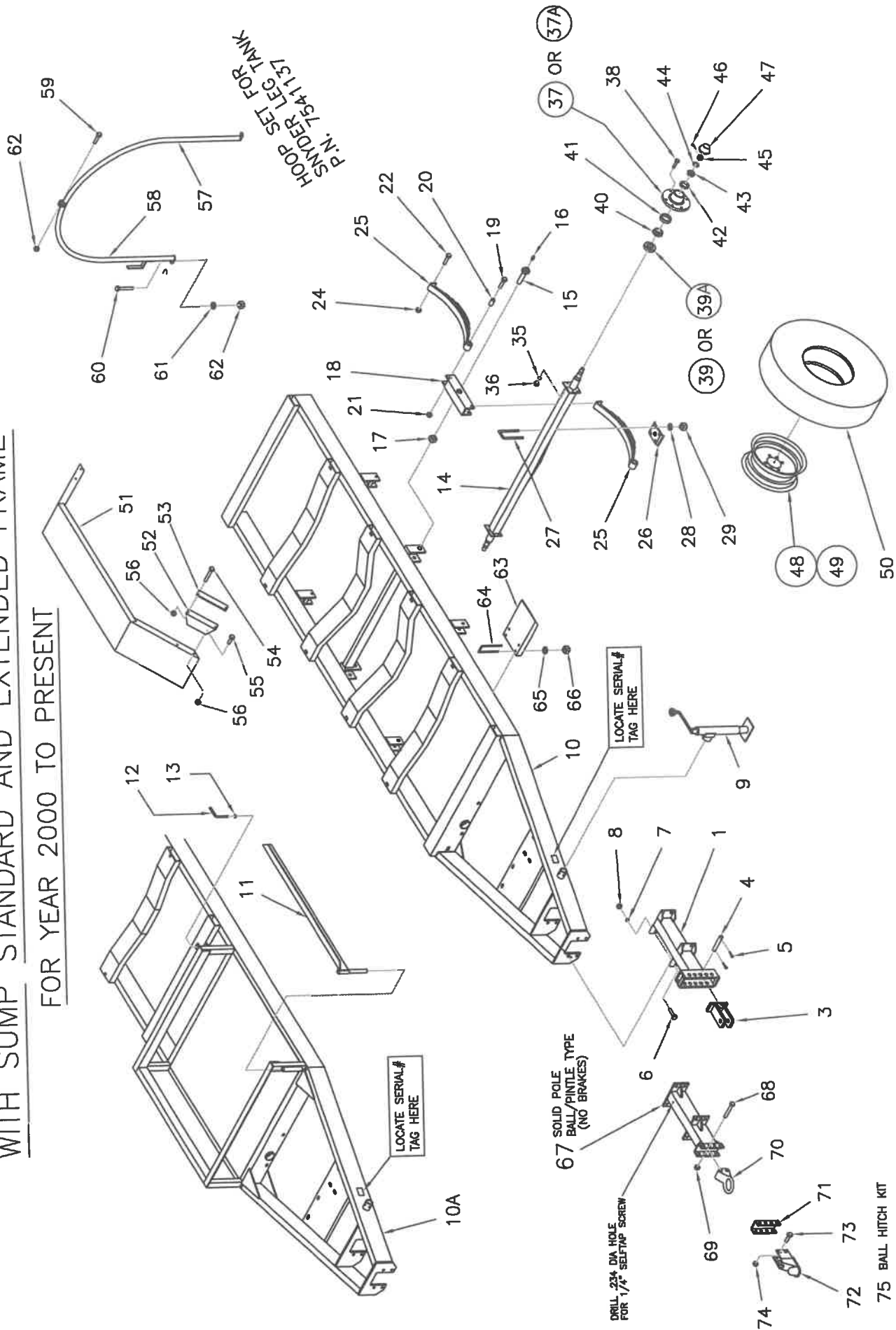
WITH FLAT BOTTOM TANK FOR YEAR 2000 TO PRESENT

ITEM	PART NO.	DESCRIPTION	QTY.	ITEM	PART NO.	DESCRIPTION	QTY.
1	47009359	POLE, SOLID	1	44	47005589	WHEEL RIM, 8 X 15 (6 ON 6)	4
2				OR	47005809	WHEEL RIM, 10 X 15 (6 ON 6)	4
3	47009285	HITCH	1	OR	47005919	RIM, FOR 12 X 16.5 HWY TIRES	4
4	47001319	HITCH PIN,	1	45	20120012	VALVE STEM, STD	4
5	18561026	COTTER PIN, 1/4 X 1 1/2	2	OR	20120022	VALVE STEM, (USE WITH RIM 5919)	4
6	18057930	BOLT, 5/8-11NC. X 2	8	46	10261	TIRE, 11L X 15 (8 PLY)	4
7	18891600	LOCKWASHER, 5/8	8	OR	30530	TIRE, 12.5L X 15 (8 PLY)	4
8	18417900	HEX. NUT, 5/8-11NC.	8	OR	20121215	TIRE, 12.5L X 15 (10 PLY)	4
9	47009361	MAIN FRAME, STANDARD	1	OR	364806	TIRE, 12.5L X 15 (10 PLY IMP TRD)	4
10	600378	SWIVEL JACK COMPLETE	1	OR	20121216	TIRE, 12.5L X 16.5 (12 PLY HWY)	4
11	47003102	AXLE	2				
12	47001271	U-BOLT, 1/2-20NF. (2 1/2W X 6 3/4LG)	8		47018794	FENDER SET OPTION	1
13	18891400	LOCKWASHER, 1/2	16			INCLUDES ITEMS 47 TO 52	
14	18437500	HEX. NUT, 1/2-20NF.	16	47	47008794	FENDER	2
15	47001276	CLAMP PLATE	4	48	47019357	STAND-OFF BRACKET	4
16	47009527	EQUALIZER, L.H.	1	49	47009358	CLAMP PLATE	4
	47309527	EQUALIZER, R.H.	1	50	18056842	BOLT, 3/8-16NC. X 3 1/2	8
17	47001528	BOLT, 1-8NC. X 5, GREASEABLE	2	51	18056822	BOLT, 3/8-16NC. X 1	8
18	18901805	GREASE ZERK, STRAIGHT	2	52	18496800	FLANGE NUT, 3/8-16NC.	16
19	18449000	HEX. JAM NUT, 1-8NC.	2				
20	47005005	SPRING ASSEMBLY	4		700081	HOOP SET OPTION (FOR 1000 GAL TANK)	
21	47009204	NYLON INSERT,(INCL. WITH SPRING)				INCLUDES ITEMS 53 TO 57	
22	18058443	BOLT, 3/4-10NC. X 4	4	53	47003147	HOOP HALF	8
23	18418400	HEX. NUT, 3/4-10NC.	4	54	18057434	BOLT, 1/2-13NC. X 2, 1/2	4
24	18057442	BOLT, 1/2-13NC. X 3 1/2	4	55	18057430	BOLT, 1/2-13NC. X 2	8
25	18457650	LOCKNUT, 1/2-13NC.	4	56	18811400	FLATWASHER, 1/2	8
26*	47005013	GREASE SEAL,1.75" (SEE SN NOTE BELOW)	4	57	18457650	LOCK NUT, 1/2-13NC.	12
26A*	47995024	GREASE SEAL 2" (SEE SN NOTE BELOW)					
27	47005749	BEARING CONE, INNER	4			STEP KIT OPTION	1
28	47005710	BEARING CUP, INNER	4		47999462	INCLUDES ITEMS 58 TO 61	
	47009611	HUB COMPLETE, (W/O BRAKES)	4	58	47009462	STEP PLATE	1
		INCLUDES ITEMS 26, 27, 29, 30, 32, AND 36		59	47019463	U-BOLT, 3/8-16NC. X 7" LEG	2
	47009632	HUB COMPLETE, (WITH BRAKES)		60	18891200	LOCKWASHER, 3/8	4
		WHICH BECAME OBSOLETE AFTER 2011	OPT.	61	18436800	HEX. NUT, 3/8-16NC	4
29	47005511	HUB WITH CUPS, (W/O BRAKES)	4				
29A	47005632	HUB WITH CUPS, (WITH BRAKES)	OPT.	62	47005306	SOLID POLE,(BALL/PINTLE TYPE)	1
		WHICH BECAME OBSOLETE AFTER 2011		63	18058050	BOLT, 5/8 X 4 1/2 GR8 NC ZC	2
				64	18458451	TOP LOCK NUT, 5/8-11 NC ZC	2
30	47005014	WHEEL BOLT, 1/2-20NF.	24	65	09557-97	PINTLE RING, 3" ID (2 7/8" W)	1
31	47005010	BEARING CUP, OUTER	4	66	57362	DEMCO WELD-ON END CHANNEL	1
32	47005048	BEARING CONE, OUTER	4	67	18097926	BOLT, 5/8 X 1 1/2 GR8 NC ZC	4
33	18000017	SPINDLE WASHER, 1 X .187	4	68	18458451	TOP LOCK NUT, 5/8-11 NC ZC	4
34	18489100	SLOTTED NUT, 1-14NF.	4	69	07678-97	2 5/16" DIA BALL HITCH	1
35	18560828	COTTER PIN, 3/16 X 3/4	4	70	41002516	BALL HITCH KIT	1
36	47005513	DUST CAP	4				
						OTHER OPTIONS (NOT SHOWN)	
					2002200	PLUMBING PACKAGE OPTION	1
					20110001	LIGHT PACKAGE OPTION	1
					47000314	SAFETY CHAIN OPTION	1
					23-4	REFLECTIVE TAPE DECAL OPTION	1

26A THE 2" SEAL IS USED ON FRAMES SERIAL # 2840 THRU #2990 ONLY, WITH THE FOLLOWING EXCEPTIONS.
 ITEM 26 THE 1.75" SEAL WAS USED ON ALL SR OR EXTENDED FRAMES. PLEASE CHECK FRAME SERIAL # BEFORE ORDERING.
 ALL FRAMES SERIAL NUMBER 2991 & HIGHER WILL USE ITEM 26 1.75" SEALS ONLY.

AG1000 WAGON FOR SNYDER LEG TANK WITH SUMP STANDARD AND EXTENDED FRAME

FOR YEAR 2000 TO PRESENT



AG1000 WAGON FOR SNYDER SUMP TANK

1000SLST
RV 06/19/20

PARTS LIST, STD. & EXT'D. FRAME

FOR YEAR 2000 TO PRESENT

ITEM	PART NO.	DESCRIPTION	QTY.	ITEM	PART NO.	DESCRIPTION	QTY.
1	47009359	POLE, SOLID	1	48	47005589	RIM, 8 X 15 (6 ON 6) 1000 GAL	4
2		SEE BRAKE PACKAGE OPTIONS			47005809	RIM, 10 X 15 (6 ON 6)	4
3	47009285	HITCH	1		47005919	RIM, FOR 12 X 16.5 HWY TIRES	4
4	47001319	HITCH PIN, 1 X 5 5/8	1	49	20120012	VALVE STEM, STD	4
5	18561026	COTTER PIN, 1/4 X 1 1/2	2	OR	20120022	VALVE STEM (USE WITH RIM 5919)	4
6	18057930	BOLT, 5/8-11NC. X 2	8	50	10261	TIRE, 11L X 15 (8 PLY) (1000G)	4
7	18891600	LOCKWASHER, 5/8	8	OR	30530	TIRE, 12.5L X 15 (8 PLY) (1000G)	4
8	18417900	HEX. NUT, 5/8-11NC.	8	OR	20121215	TIRE, 12.5L X 15 (10 PLY)	4
9	600378	SWIVEL JACK COMPLETE	1	OR	364806	TIRE, 12.5L X 15 (10 PLY IMP TREAD)	4
10	47009349	MAIN FRAME, STANDARD OR	1	OR	20121216	TIRE, 12.5L X 16.5 (12 PLY HWY)	4
10A	47008831	MAIN FRAME, EXTENDED SR SERIES	1				
		ITEMS 11, 12 AND 13 FOR EXT'D. FRAME ONLY					
11	47008810	GATE FOR CAGE	1		47018794	FENDER SET OPTION	
12	47008816	LATCH PIN	1			INCLUDES ITEMS, 51 TO 56	
13	1400-50ZP	RETAINING RING, 1/2 I.D.	1	51	47008794	FENDER	2
14	47003102	AXLE, STANDARD	2	52	47019357	STAND-OFF BRACKET	4
				53	47009358	CLAMP PLATE	4
15	47001528	BOLT, 1-8NC. X 5, GREASEABLE	2	54	18056842	BOLT, 3/8-16NC. X 3 1/2	8
16	18901805	GREASE ZERK, STRAIGHT	2	55	18056822	BOLT, 3/8-16NC. X 1	8
17	18449000	HEX. JAM NUT, 1-8NC.	2	56	18496800	FLANGE NUT, 3/8-16NC.	16
18	47009527	EQUALIZER, L.H.	1				
	47309527	EQUALIZER, R.H.	1		47028891	HOOP SET TO MOUNT TANK	
19	18058443	BOLT, 3/4-10NC. X 4	4		47018891	INCLUDES ITEMS, 57 TO 62	
20	47009204	NYLON BUSHING, (INCL. WITH SPRING)	4			HOOP COMPLETE, INCLUDES	
21	18418400	HEX. NUT, 3/4-10NC.	4			HOOP HALF AND HARDWARE FOR (1) HOOP	
22	18057442	BOLT, 1/2-13NC. X 3 1/2	4	57	47008891	HOOP HALF	4
23				58	47008894	HOOP HALF, WITH BRACKET	4
24	18457650	LOCKNUT, 1/2-13NC.	4	59	18057434	BOLT, 1/2-13NC. X 2 1/2	4
25	47005005	SPRING ASSEMBLY, STANDARD	4	60	18057430	BOLT, 1/2-13NC. X 2	8
				61	18811400	FLATWASHER, 1/2	8
				62	18457650	LOCK NUT, 1/2-13NC.	12
26	47001276	CLAMP PLATE	4				
27	47001271	U-BOLT, 1/2-20NF. (2 1/2W X 6 3/4LG)	8			STEP KIT OPTION	1
28	18891400	LOCKWASHER, 1/2	16		47999462	INCLUDES ITEMS 63 TO 66	
29	18437500	HEX. NUT, 1/2-20NF.	16	63	47009462	STEP PLATE	1
				64	47019463	U-BOLT, 3/8-16NC. X 7" LEG	2
				65	18891200	LOCKWASHER, 3/8	4
				66	18436800	HEX. NUT, 3/8-16NC	4
	47009611	HUB COMPLETE, (W/O BRAKES)	4				
		INCLUDES ITEMS 37, 38, 39, 40, 43, & 47		67	47005306	SOLID POLE, BALL/PINTLE TYPE	1
	47009632	HUB COMPLETE, (FOR BRAKES)	OPT.	68	18058050	BOLT, 5/8 X 4 1/2 GRB NC ZC	2
		INCLUDES ITEMS 37A, 38, 39, 40, 43, & 47		69	18458451	TOP LOCK NUT, 5/8-11 NC ZC	2
		WHICH BECAME OBSOLETE AFTER 2011		70	09557-97	PINTLE RING, 3" ID (2 7/8" W)	1
				71	57362	DEMCO WELD-ON END CHANNEL	1
37	47005511	HUB WITH CUPS, (W/O BRAKES)	4	72	07678-97	2 5/16" DIA BALL HITCH	1
37A	47005632	HUB WITH CUPS, (FOR BRAKES)	OPT.	73	18097926	BOLT, 5/8 X 1 1/2 GRB NC ZC	4
		WHICH BECAME OBSOLETE AFTER 2011		74	18458451	TOP LOCK NUT, 5/8-11 NC ZC	4
38	47005014	WHEEL BOLT, 1/2-20NF.	24	75	41002516	BALL HITCH KIT (ITEM 71 THRU 74)	1
39*	47005013	GREASE SEAL, 1.75" (SEE NOTE BELOW)	4				
39A*	47995024	GREASE SEAL, 2" (SEE NOTE BELOW)	4			OTHER OPTIONS (NOT SHOWN)	
40	47005749	BEARING CONE, INNER	4		20110001	LIGHT PACKAGE OPTION	1
41	47005710	BEARING CUP, INNER	4		47000314	SAFETY CHAIN OPTION	1
42	47005010	BEARING CUP, OUTER	4			(INCLUDED WITH BRAKE PACKAGES)	
43	47005048	BEARING CONE, OUTER	4		23-4	REFLECTIVE TAPE DECAL OPTION	1
44	18000017	SPINDLE WASHER, 1 X .187	4				
45	18489100	SLOTTED NUT, 1-14NF.	4				
46	18560828	COTTER PIN, 3/16 X 3/4	4				
47	47005513	DUST CAP	4				

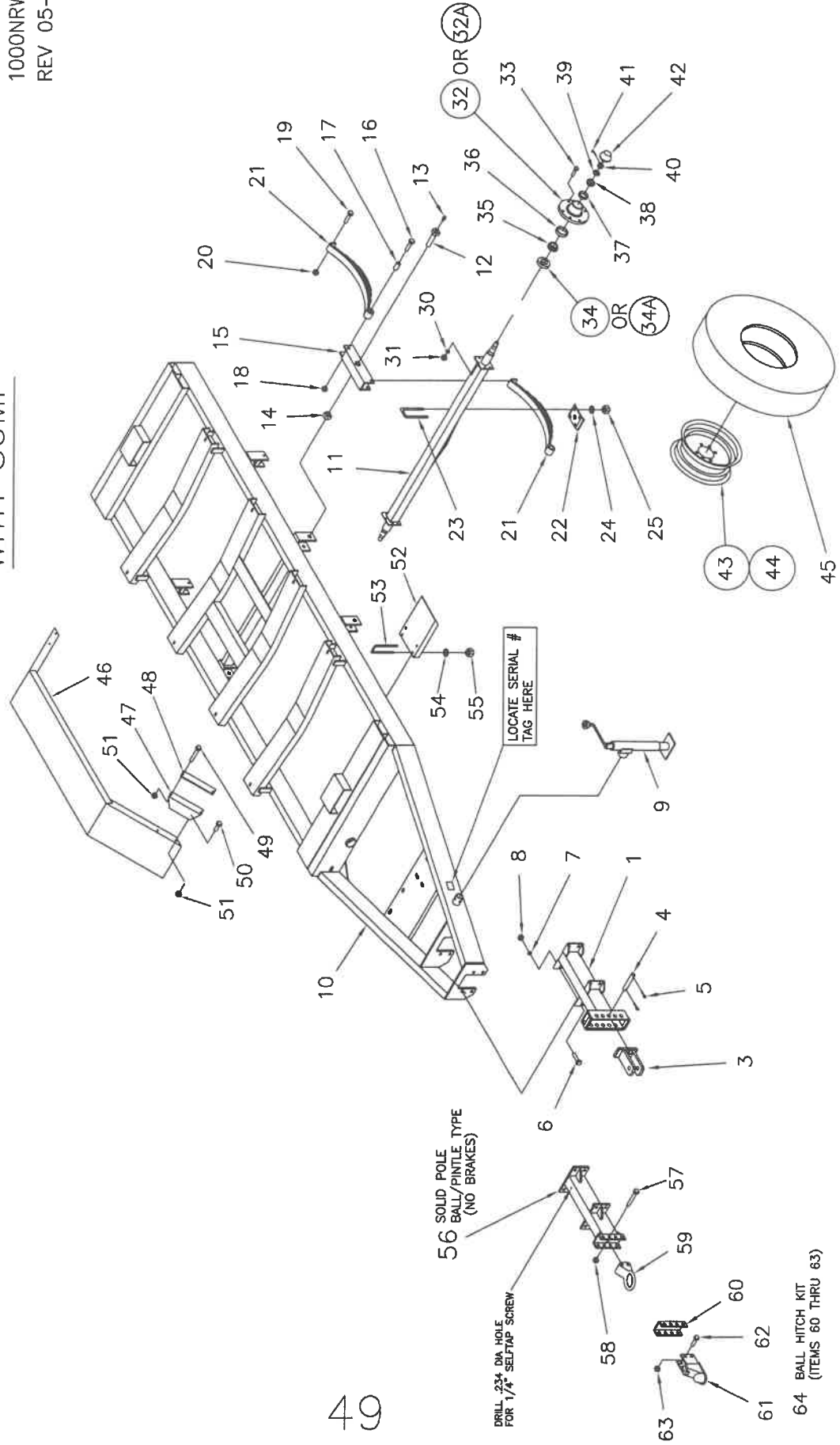
***AXLE SEAL NOTE**

39A THE 2" SEAL IS USED ON FRAMES SERIAL # 2840 THRU #2990 ONLY, WITH THE FOLLOWING EXCEPTIONS.
ITEM 39 THE 1.75" SEAL WAS USED ON ALL SR OR EXTENDED FRAMES. PLEASE CHECK FRAME SERIAL # BEFORE ORDERING.
ALL FRAMES SERIAL NUMBER 2991 & HIGHER WILL USE ITEM 39 1.75" SEALS ONLY.

AG1000 WAGON FOR NORWESTCO LEG TANK

WITH SUMP

1000NRW
REV 05-08-13



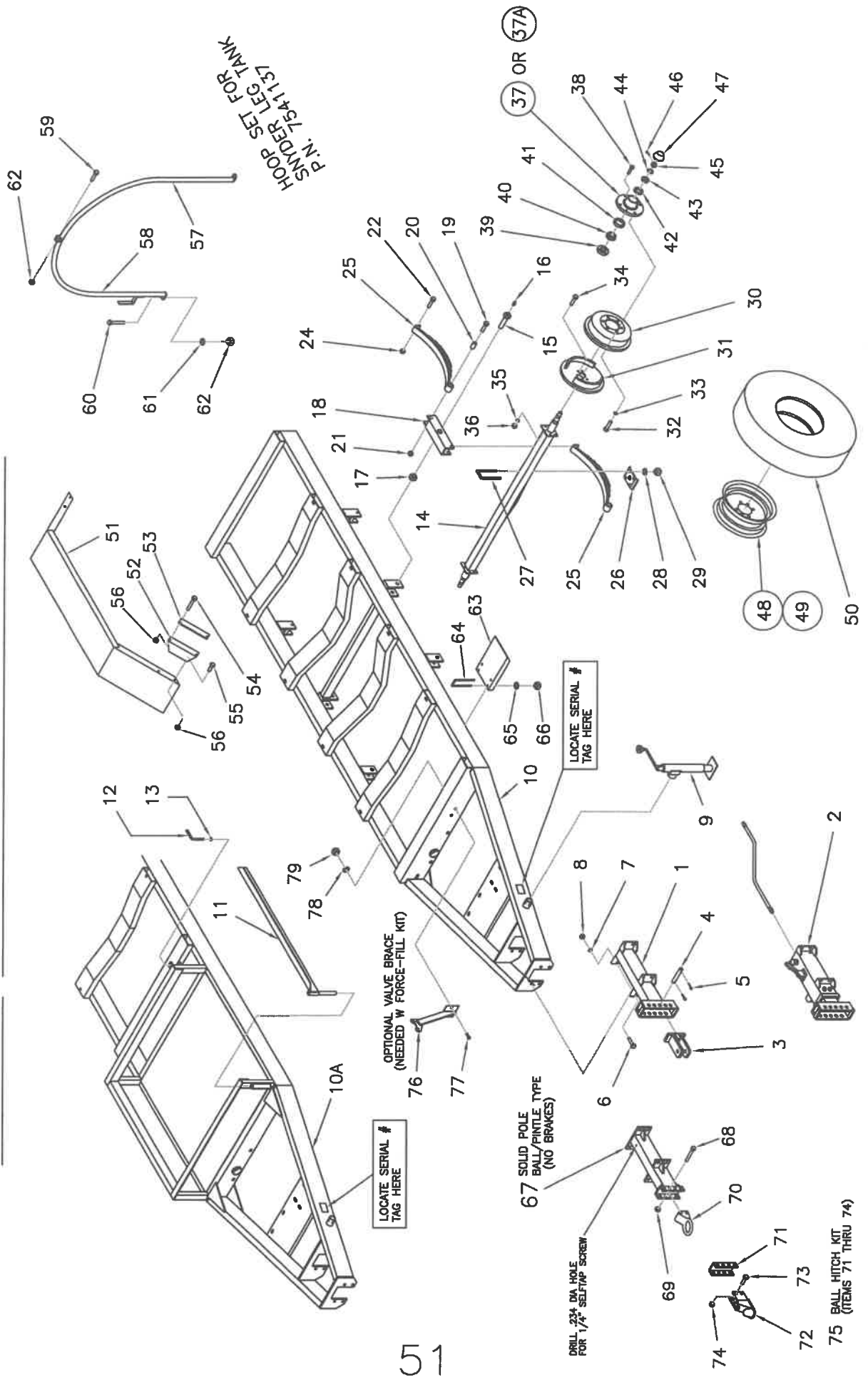
AG1000 WAGON PARTS LIST
FOR NORWESTCO 1010 GAL. TANK

ITEM	PART NO.	DESCRIPTION	QTY.	ITEM	PART NO.	DESCRIPTION	QTY.
1	47009359	POLE, SOLID	1	43	47005589	WHEEL RIM, 8 X 15 (6 ON 6)	4
2				OR	47005809	WHEEL RIM, 10 X 15 (6 ON 6)	4
3	47009285	HITCH	1	OR	47005919	RIM, FOR 12 X 16.5 HWY TIRES	4
4	47001319	HITCH PIN, 1 X 5 5/8	1	44	20120012	VALVE STEM, STD	4
5	18561026	COTTER PIN, 1/4 X 1 1/2	2	OR	20120022	VALVE STEM, (USE WITH RIM 5919)	4
6	18057930	BOLT, 5/8-11NC. X 2	8	45	10261	TIRE, 11L X 15 (8 PLY)	4
7	18891600	LOCKWASHER, 5/8	8	OR	30530	TIRE, 12.5L X 15 (8 PLY)	4
8	18417900	HEX. NUT, 5/8-11NC.	8	OR	20121215	TIRE, 12.5L X 15 (10 PLY)	4
9	600378	SWIVEL JACK COMPLETE	1	OR	364806	TIRE, 12.5L X 15 (10 PLY IMP TREAD)	4
10	47009349NRW	MAIN FRAME, (1010 GAL NORWESTCO)	1	OR	20121216	TIRE, 12.5L X 15 (12 PLY HWY)	4
11	47003102	AXLE, STANDARD	2				
12	47001528	BOLT, 1-8NC. X 5, GREASEABLE	2	47018794	FENDER SET OPTION		
13	18901805	GREASE ZERK, STRAIGHT	2		INCLUDES ITEMS, 46 TO 51		
14	18449000	HEX. JAM NUT, 1-8NC.	2	46	47008794	FENDER	2
15	47009527	EQUALIZER, L.H.	1	47	47019357	STAND-OFF BRACKET	4
	47309527	EQUALIZER, R.H.	1	48	47009358	CLAMP PLATE	4
16	18058443	BOLT, 3/4-10NC. X 4	4	49	18056842	BOLT, 3/8-16NC. X 3 1/2	8
17	47009204	NYLON BUSHING,(INCL. WITH SPRING)	4	50	18056822	BOLT, 3/8-16NC. X 1	8
18	18418400	HEX. NUT, 3/4-10NC.	4	51	18496800	FLANGE NUT, 3/8-16NC.	16
19	18057442	BOLT, 1/2-13NC. X 3 1/2	4				
20	18457650	LOCKNUT, 1/2-13NC.	4		STEP KIT OPTION		1
21	47005005	SPRING ASSEMBLY, STANDARD	4	47999462	INCLUDES ITEMS 52 TO 55		
22	47001276	CLAMP PLATE	4	52	47009462	STEP PLATE	1
23	47001271	U-BOLT, 1/2-20NF. (2 1/2W X 6 3/4LG)	8	53	47019463	U-BOLT, 3/8-16NC. X 7" LEG	2
24	18891400	LOCKWASHER, 1/2	16	54	18891200	LOCKWASHER, 3/8	4
25	18437500	HEX. NUT, 1/2-20NF.	16	55	18436800	HEX. NUT, 3/8-16NC	4
32	47005511	HUB WITH CUPS, (W/O BRAKES)	4	56	47005306	SOLID POLE, BALL & PINTLE TYPE	1
32A	47005632	HUB WITH CUPS, (WITH BRAKES) OPT. WHICH WENT OBSOLETE AFTER 2011		57	18058050	BOLT, 5/8 X 4 1/2 GR 8 NC ZC	2
	47009611	HUB COMPLETE, (NO BRAKES) 4 INCLUDES ITEMS 32 - 34, 35, 38, & 42		58	18458451	TOP LOCK NUT,5/8-11 NC ZC	2
	47009632	HUB COMPLETE, (FOR BRAKES) OPT. WHICH IS OBSOLETE AFTER 2011		59	09557-97	PINTLE RING, 3" ID (2 7/8" W)	1
				60	57362	DEMCO WELD-ON CHANNEL	1
33	47005014	WHEEL BOLT, 1/2-20NF.	24	61	07678-97	2 5/16" DIA BALL HITCH	1
34*	47005013	GREASE SEAL, 1.75" (SEE NOTE BELOW)	4	62	18097926	BOLT, 5/8 X 1 1/2 GR 8 NC ZC	4
34A*	47005013	GREASE SEAL, 2" (SEE NOTE BELOW)		63	18458451	TOP LOCK NUT,5/8-11 NC ZC	4
35	47005749	BEARING CONE, INNER	4	64	41002516	BALL HITCH KIT (ITEM 60 THRU 63)	1
36	47005710	BEARING CUP, INNER	4				
37	47005010	BEARING CUP, OUTER	4		OTHER OPTIONS (NOT SHOWN)		
38	47005048	BEARING CONE, OUTER	4	20110001	LIGHT PACKAGE OPTION		1
39	18000017	SPINDLE WASHER, 1 X .187	4	47000314	SAFETY CHAIN OPTION		1
40	18489100	SLOTTED NUT, 1-14NF.	4				
41	18560828	COTTER PIN, 3/16 X 3/4	4		(INCLUDED WITH BRAKE PACKAGES)		
42	47005513	DUST CAP	4	23-4	REFLECTIVE TAPE DECAL OPTION		1

*AXLE SEAL NOTE
34A THE 2" SEAL IS USED ON FRAMES SERIAL # 2840 THRU #2990 ONLY, WITH THE FOLLOWING EXCEPTIONS.
ITEM 34 THE 1.75" SEAL WAS USED ON ALL SR OR EXTENDED FRAMES. PLEASE CHECK FRAME SERIAL # BEFORE ORDERING.
ALL FRAMES SERIAL NUMBER 2991 & HIGHER WILL USE ITEM 34 1.75" SEALS ONLY.

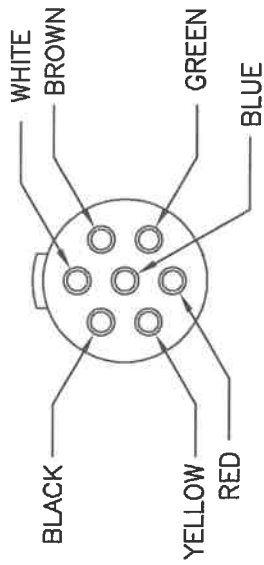
AG1000 WAGON FOR LEG TANK 1250 GAL. WITH SUMP STANDARD AND EXTENDED FRAME

1250SISO
REV 03-14-13

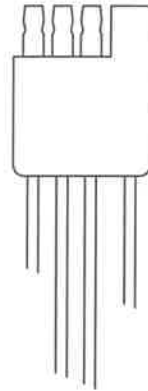


LIGHT SYSTEM PLUGS

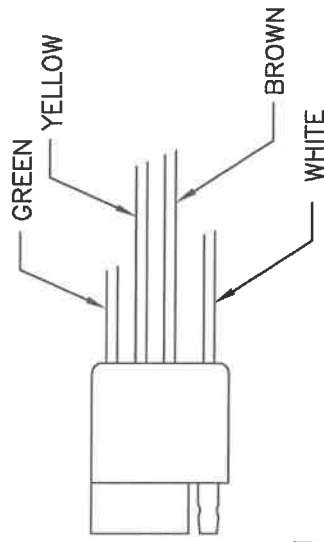
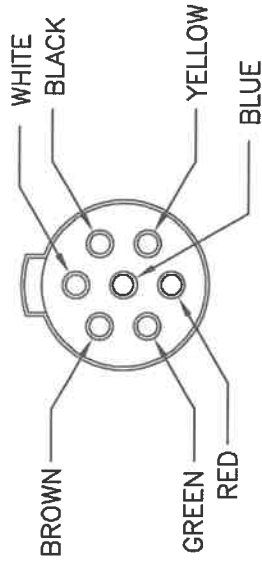
TRAILER



GREEN---RIGHT TURN
 YELLOW---LEFT TURN
 BROWN---TAIL LIGHTS
 WHITE---GROUND



TOW VEHICLE

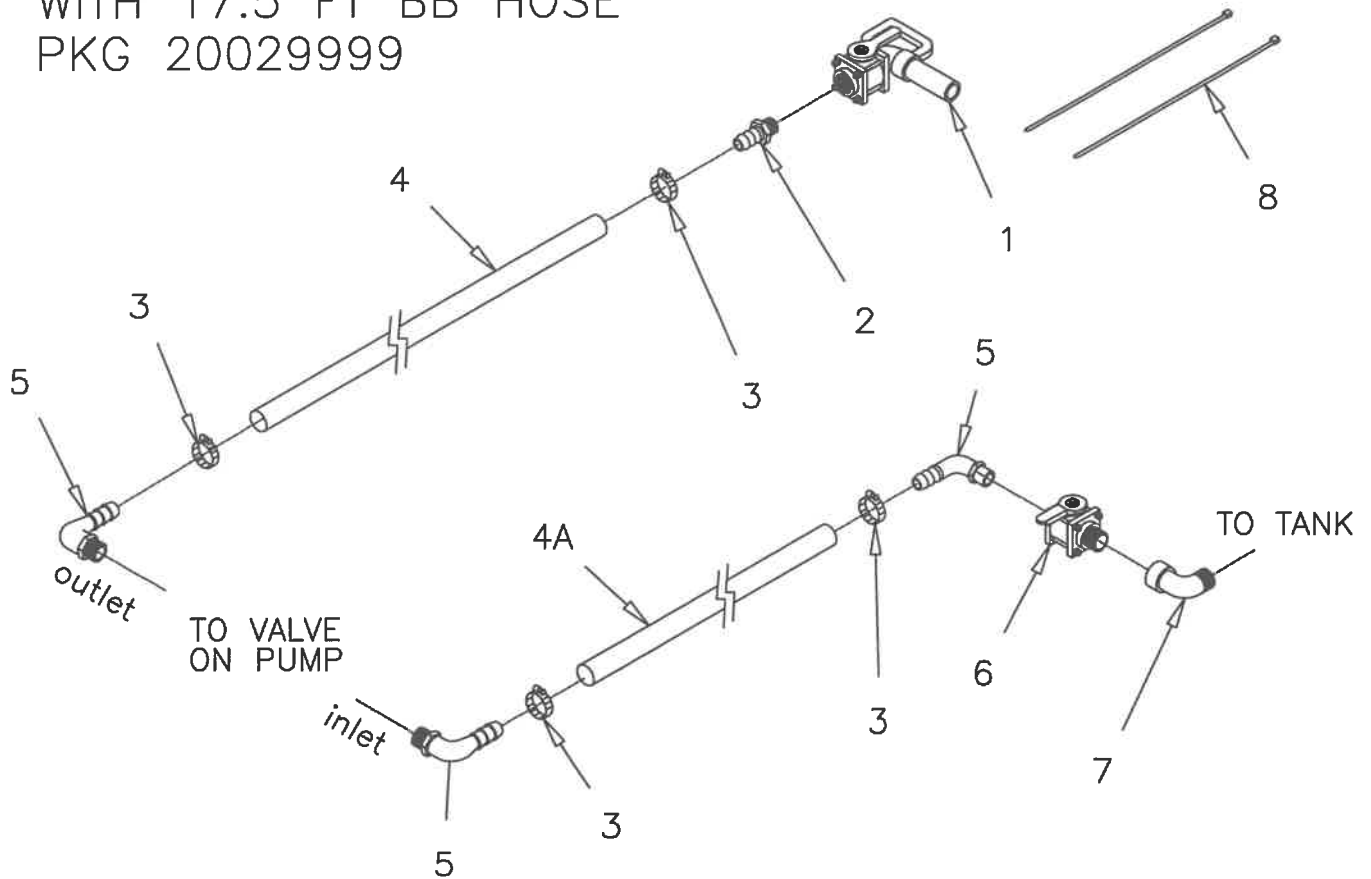


LOOKING DOWN AT TRAILER
 WHEELS TOUCHING GROUND

- 55551 ELECTRICAL KIT COMPLETE, INCLUDES WIRING HARNESS AND FRONT AND REAR LIGHTS FOR REPAIR PARTS ORDER
- 55552 TAIL LITE COMPLETE, (SPECIFY) L.H. OR R.H
- 99074 TAIL LITE LENS, ROUND, RED
- 99047 TAIL LITE LENS, SQUARE, RED
- 55553 SIDE MARKER LITE COMPLETE
- 99045 SIDE MARKER LENS, AMBER
- 30740 REAR CLEARANCE LITE BAR COMPLETE

AG1000 PLUMBING FLAT BOTTOM TANK
 2" PLUMBING PACKAGE
 WITH 17.5 FT BB HOSE
 PKG 20029999

20029999
 09-18-13

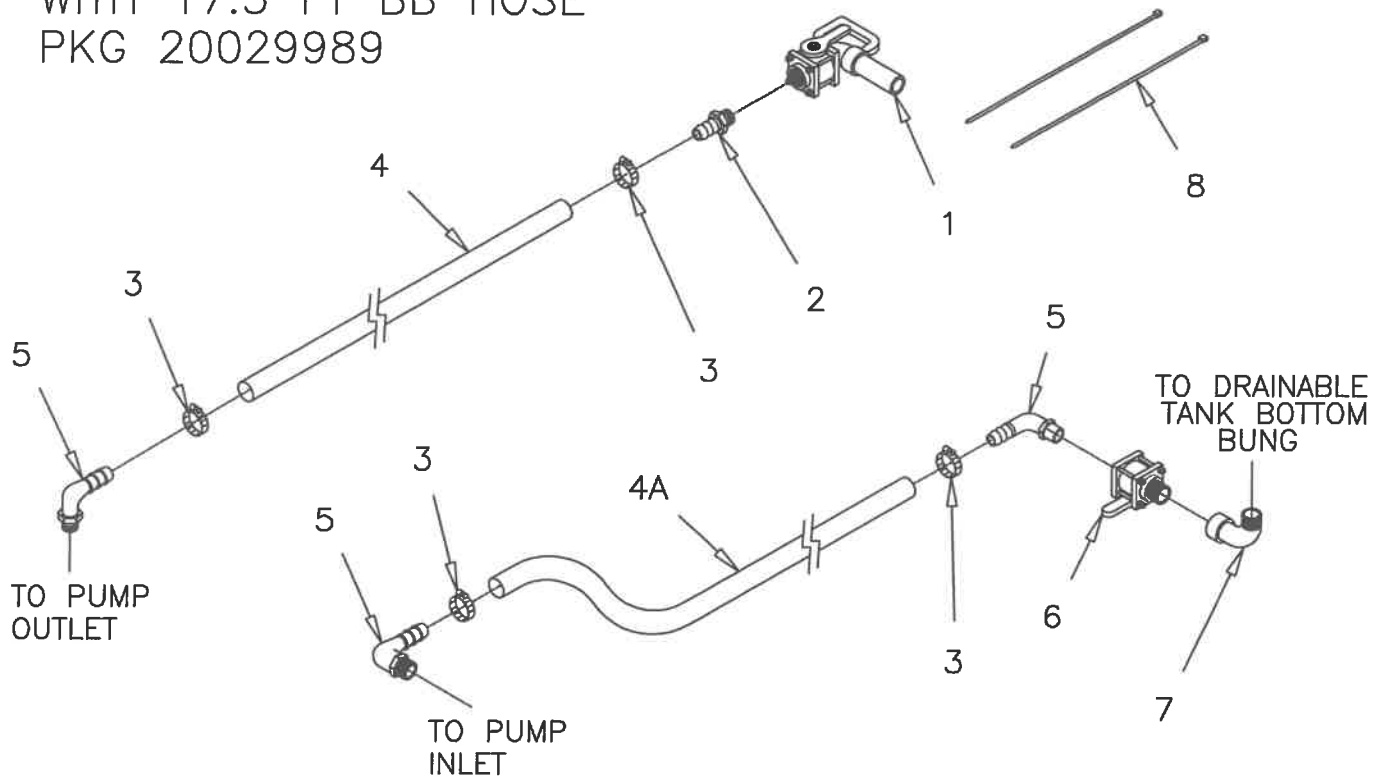


20029999 INCLUDES ITEM 1 THRU 9

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	200024	2" NOZZLE VALVE WITH SPOUT	1
2	200336	2" HOSE BARB	1
3	200261	2" HOSE CLAMPS	4
4	12012710	HOSE, PVC SUCTION, 2" X 17.5 FT	1
4A	12012710	HOSE, PVC SUCTION, 2" X 2.5 FT	1
5	200388	2" HB ELBOW POLY	3
6	200035	2" VALVE, FULL PORT	1
7	200890	2" POLY STREET ELBOW	1
8	609643	LONG TIE STRAP	2

AG1000 1250 PLUMBING FOR DRAINABLE
TANK 2" PLUMBING PACKAGE
WITH 17.5 FT BB HOSE
PKG 20029989

20029989
03-07-13



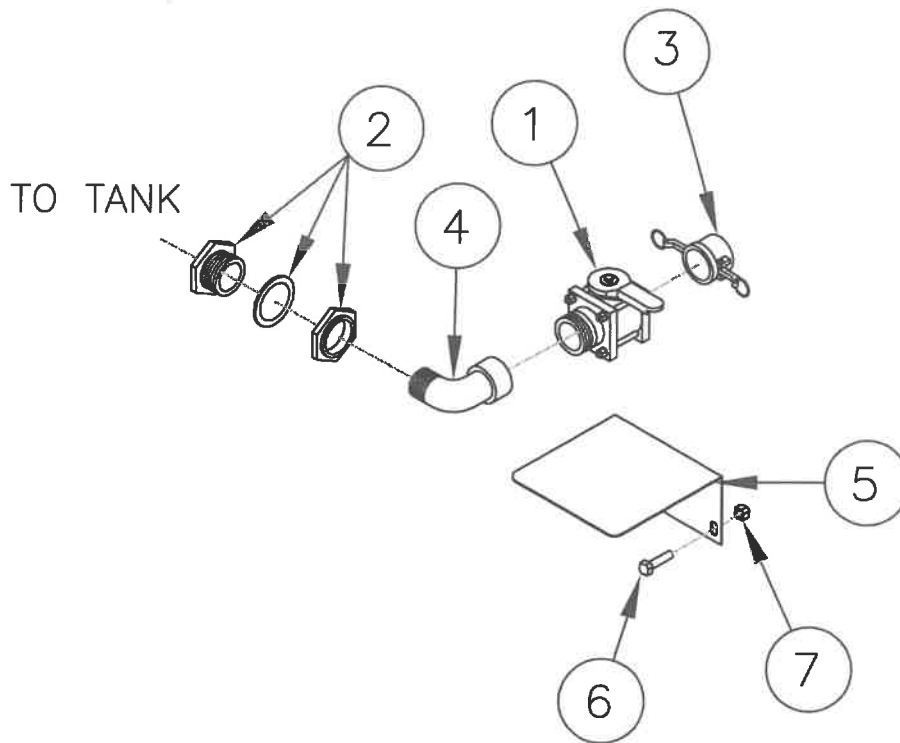
20029989 INCLUDES ITEM 1 THRU 9

ITEM	PART NO.	DESCRIPTION	QTY.
1	200024	2" NOZZLE VALVE WITH SPOUT	1
2	200336	2" HOSE BARB	1
3	200261	2" HOSE CLAMPS	4
4	12012710	HOSE, PVC SUCTION, 2" X 17.5 FT	1
4A	12012710	HOSE, PVC SUCTION, 2" X 11.5 FT	1
5	200388	2" HB ELBOW POLY	3
6	200035	2" VALVE, FULL PORT	1
7	200890	2" POLY STREET ELBOW	1
8	609643	LONG TIE STRAP	2

2" FRONT FORCE-FILL
AG1000, 1250

20030001
09-05-13
rev 04-06-15

OPTION 20030001

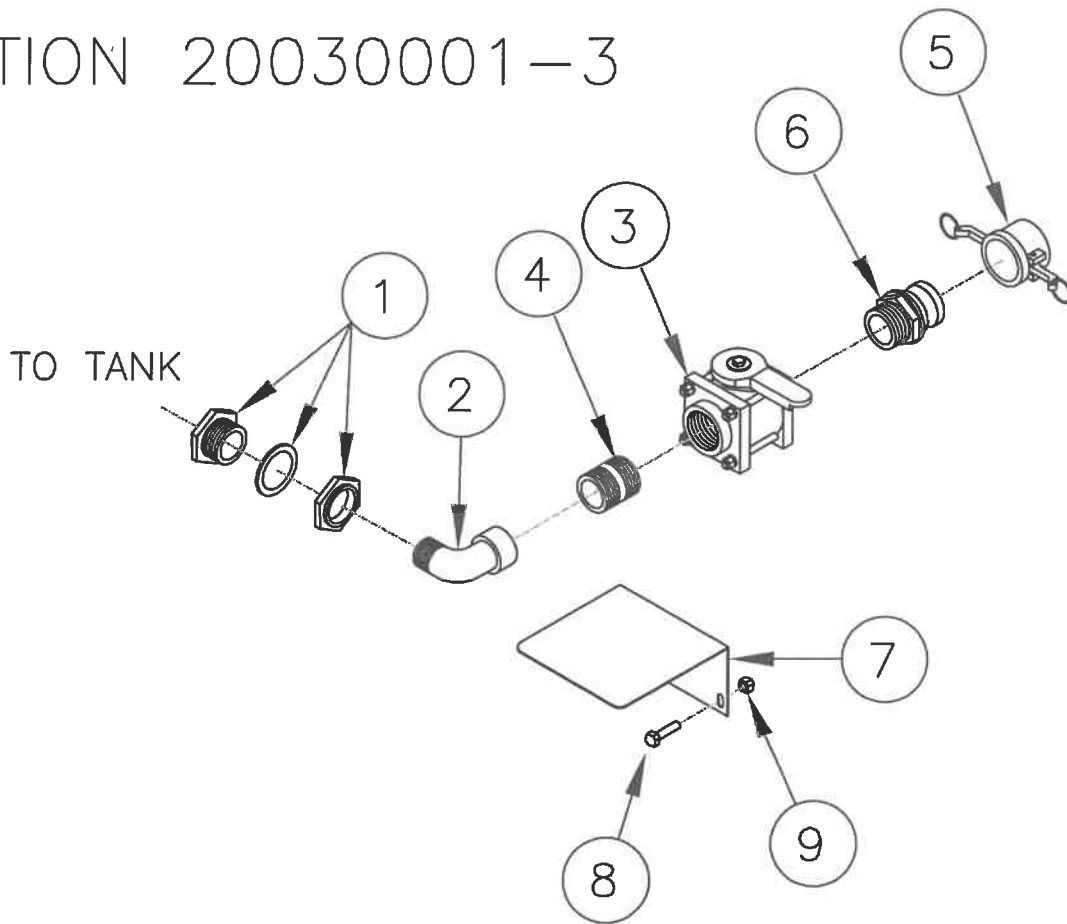


<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	200037	2" FULL PORT BALL VALVE	1
2	20020019	2" BUNG ASSEMBLY	1
3	200172	2" MALE CAP	1
4	200890	2" STREET ELBOW, POLY	1
5	10129A	VALVE SUPPORT BRACKET	1
6	18026418	BOLT, HEX HD 5/16 -18 X 3/4 SS	2
7	18987700	NUT, SERRATED FLANGE 5/16 -18 SS	2

3" FRONT FORCE-FILL
AG1000, 1250

20030001-3
04-06-15

OPTION 20030001-3

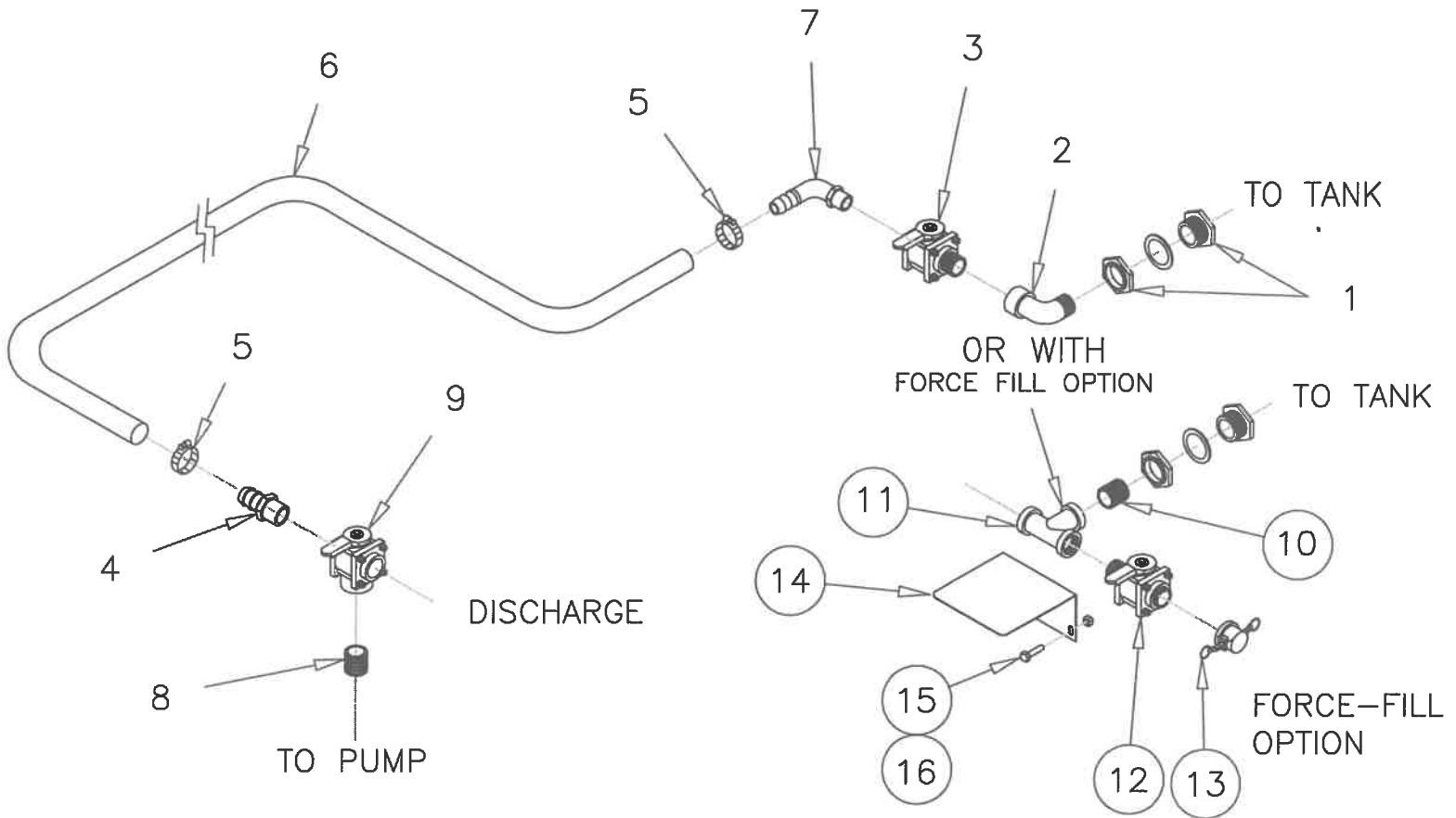


OPTION 20030001-3 ITEMS INCLUDES 1-9

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	290152	3" BUNG ASSEMBLY	1
2	200785	3" STREET ELBOW, POLY	1
3	200018	3" VALVE	1
4	200559	3" CLOSE NIPPLE	1
5	200196	3" CAP	1
6	200194	3" ADAPTER	1
7	10129A	VALVE SUPPORT BRACKET	1
8	18026418	BOLT, HEX HD 5/16 -18 X 3/4 SS	2
9	18987700	NUT, SERRATED FLANGE 5/16 -18 SS	2

FRONT RE-CIRCULATION PKG
STANDARD LENGTH (AG1000, AG1250)

20030003
02/18/16

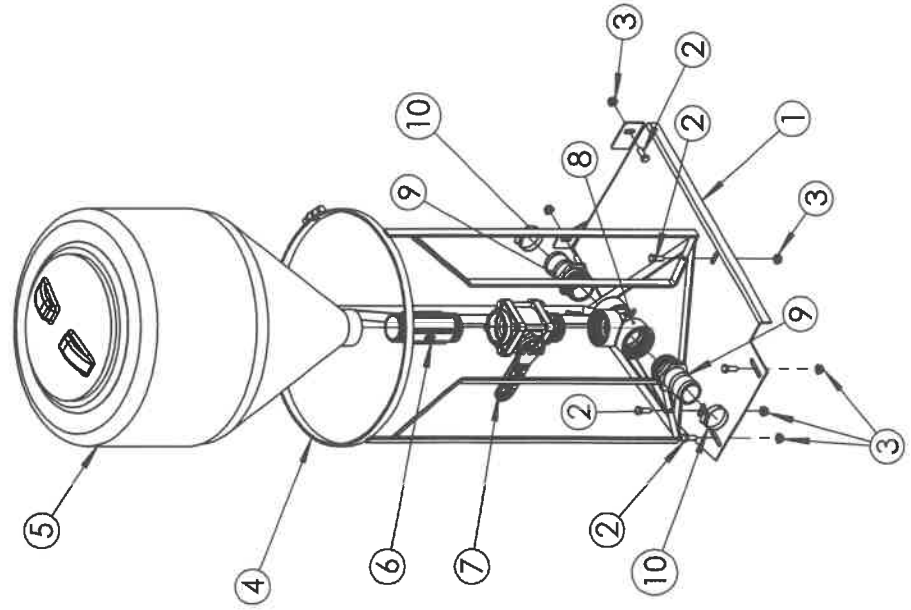


20030003 (INCLUDES ITEMS 1-9 only)

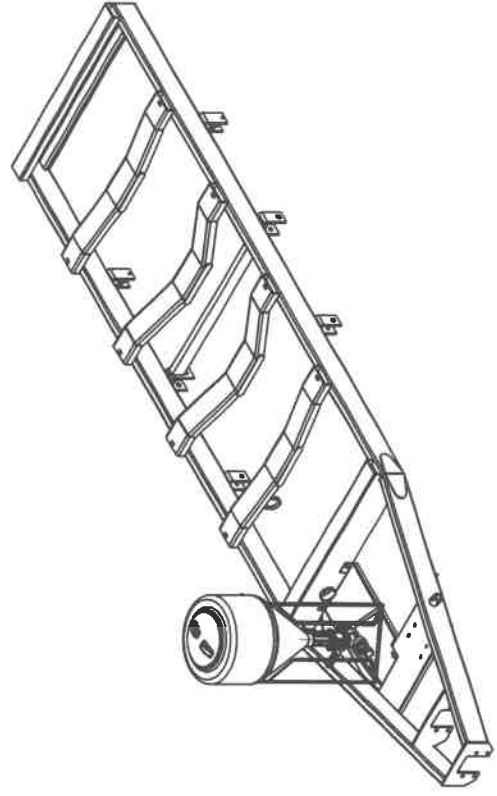
20030003FF (INCLUDES ITEMS 1, & 3-16)

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	20020019	TANK BUNG ASSEMBLY, 2 INCH POLY	1
2	200890	STREET ELBOW, 2 INCH POLY	1
3	200035	2" VALVE, FULL PORT MPT X FPT	1
4	200336	2" HOSE BARB POLY	1
5	200261	2" HOSE CLAMPS	2
6	12012710	HOSE, PVC SUCTION, 2" X 3 FT	1
7	200388	2" HB ELBOW POLY	1
8	200557	2" CLOSE NIPPLE	1
9	200031	2" 3-WAY VALVE BOTTOM LOAD	1
WITH FORCE FILL OPTION ADD THE FOLLOWING			
10	200557	2" CLOSE NIPPLE	1
11	261200	2" TEE	1
12	200037	2" FULL PORT BALL VALVE	1
13	200172	2" CAP	1
14	10129A	VALVE SUPPORT BRACKET	1
15	18026418	BOLT, HEX HD 5/16 -18 X 3/4 SS	2
16	18987700	NUT, SERRATED FLANGE 5/16 -18 SS	2

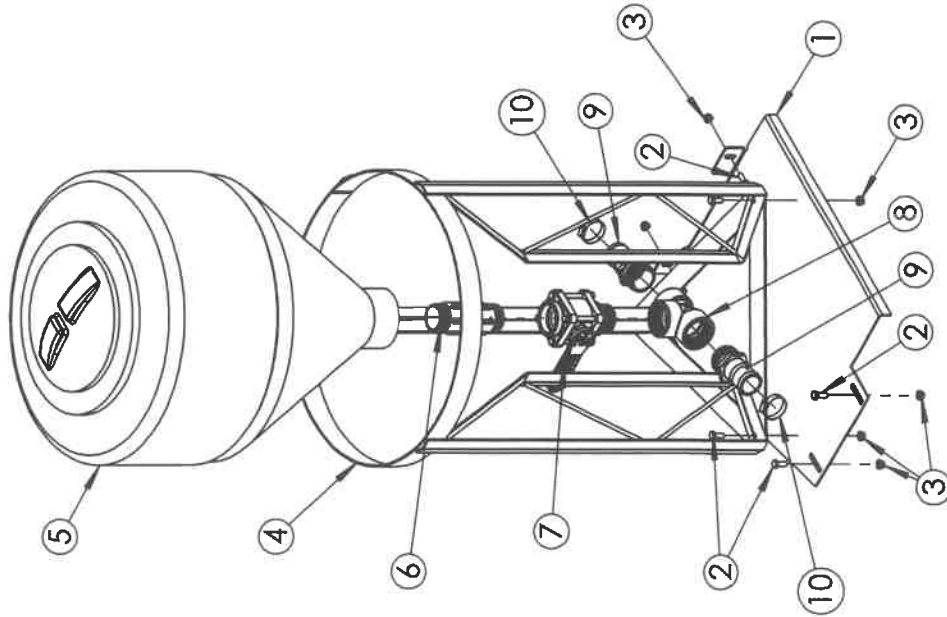
15 GALLON INDUCTOR STAND PACKAGE PART NUMBER: 20030005



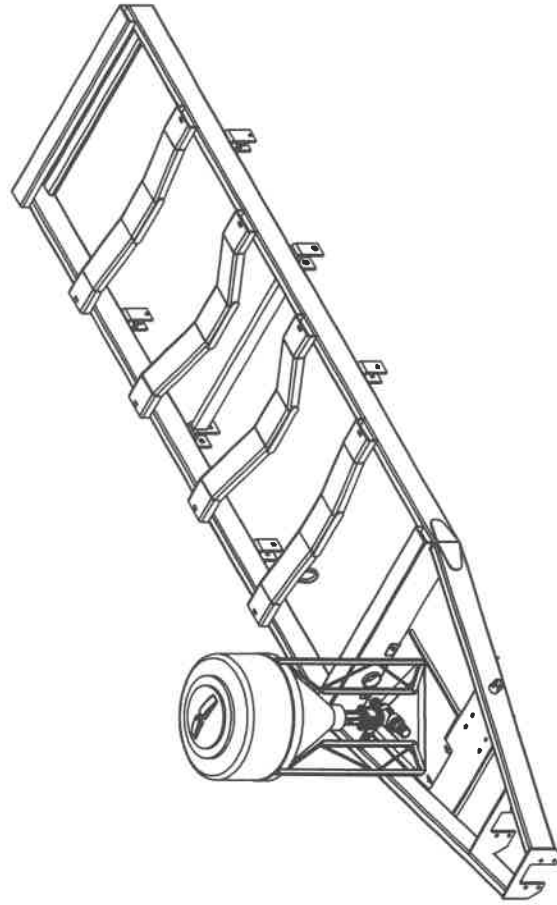
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	47005797	INDUCTOR STAND MOUNTING PLATE	1
2	18056822	BOLT HX CAP G5NCZC 3/8 X 1	7
3	18496800	NUT SER FLG ZC 3/8	7
4	700116	TANK STAND 15 GALLON	1
5	700115	15 GALLON TANK	1
6	NIP200-6	2" X 6" LG CLOSE NIPPLE	1
7	200035	2" VALVE, FULL PORT MPT X FPT	1
8	TEE200	2" TEE	1
9	HB200	2" HOSE BARB	2
10	200261	2" HOSE CLAMP	2



**30 GALLON INDUCTOR
STAND PACKAGE
PART NUMBER: 20030005-30**

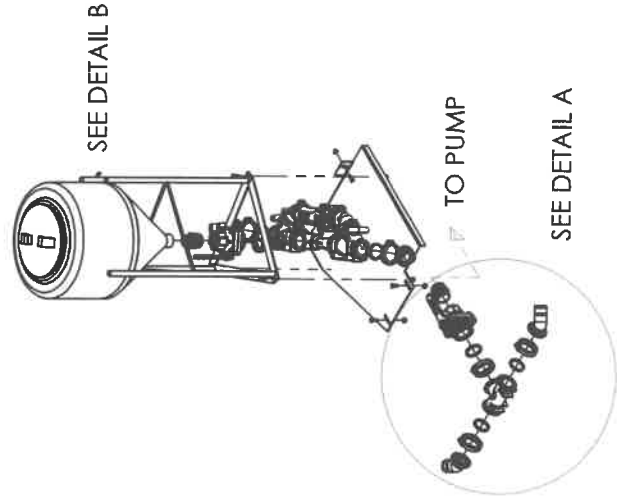
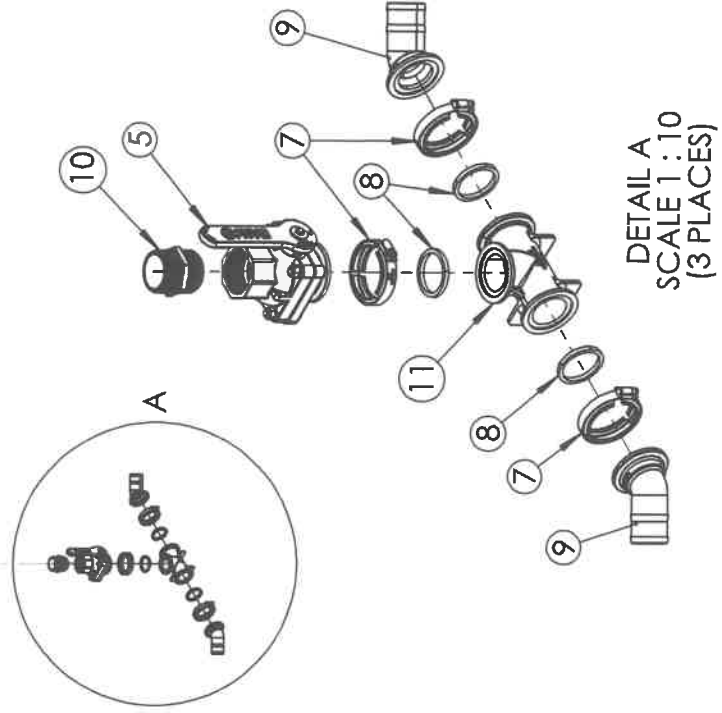


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	47003583	INDUCTOR STAND MOUNT (BOLT-ON)	1
2	18056822	BOLT HX CAP G5NCZC 3/8 X 1	7
3	18496800	NUT SER FLG ZC 3/8	7
4	700131	TANK STAND, 30 GALLON	1
5	700130	30 GALLON TANK	1
6	NIP200-6	2" X 6" LG CLOSE NIPPLE	1
7	200035	2" VALVE, FULL PORT MPT X FPT	1
8	TEE200	2" TEE	1
9	HB200	2" HOSE BARB	2
10	200261	2" HOSE CLAMP	2

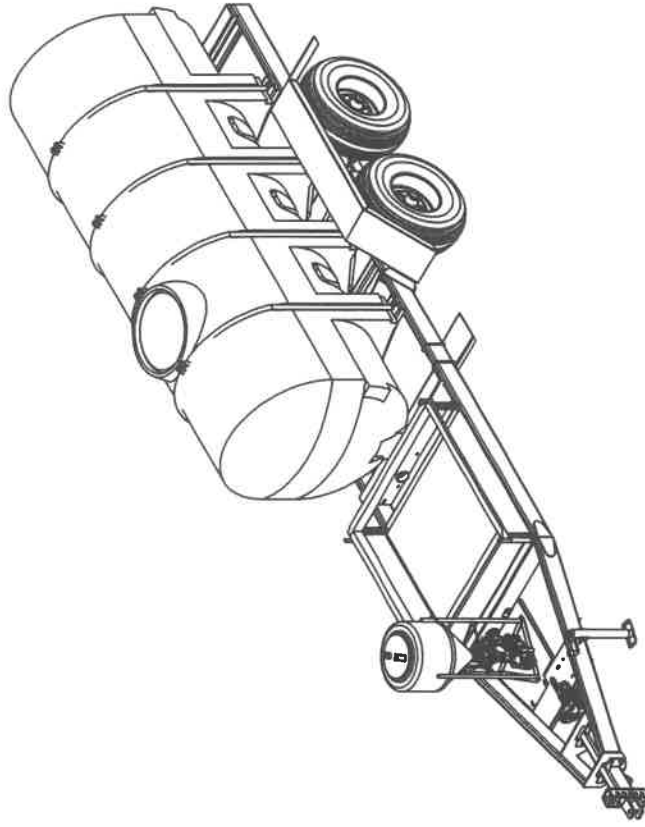
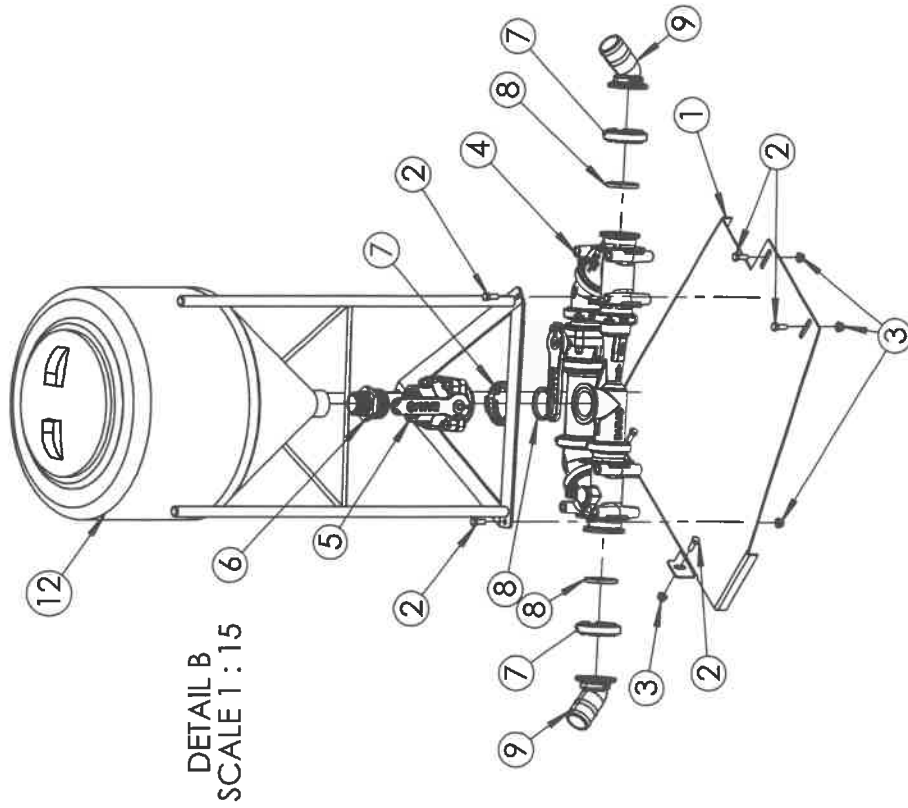


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	47003583	INDUCTOR STAND MOUNT (BOLI-ON)	1
2	18056822	BOLT HX CAP G5NCZC 3/8 X 1	7
3	18496800	NUT SER FLG ZC 3/8	7
4	MIS220	2" INDUCTOR MANIFOLD ASSY	1
5	MVS220FP	2" FPT X 2" FP FLANGE VALVE	4
6	21200150	2" X 1.5" REDUCING NIPPLE	1
7	FC220	2" FLANGE CLAMP	12
8	UFG0200E-A	2" FLANGE GASKET	12
9	M220BRB45	2" HOSE BARB X 45 DEGREES	8
10	NIP200-SH	2" SHORT POLY NIPPLE	3
11	M220TEE	2" FULL PORT FLANGED TEE	3
12	INFD15-19-16L	15 GALLON TANK & STAND	1

15 GALLON INDUCTOR STAND PACKAGE (AMES/MARSHALL) PART NUMBER: 20030005F



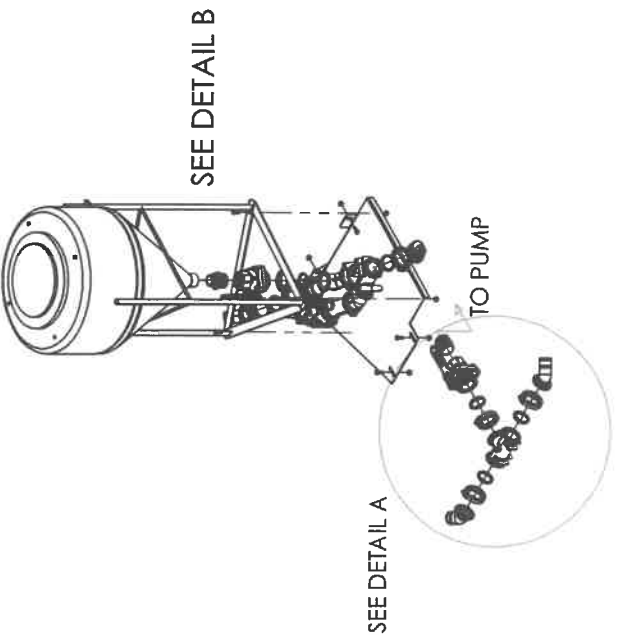
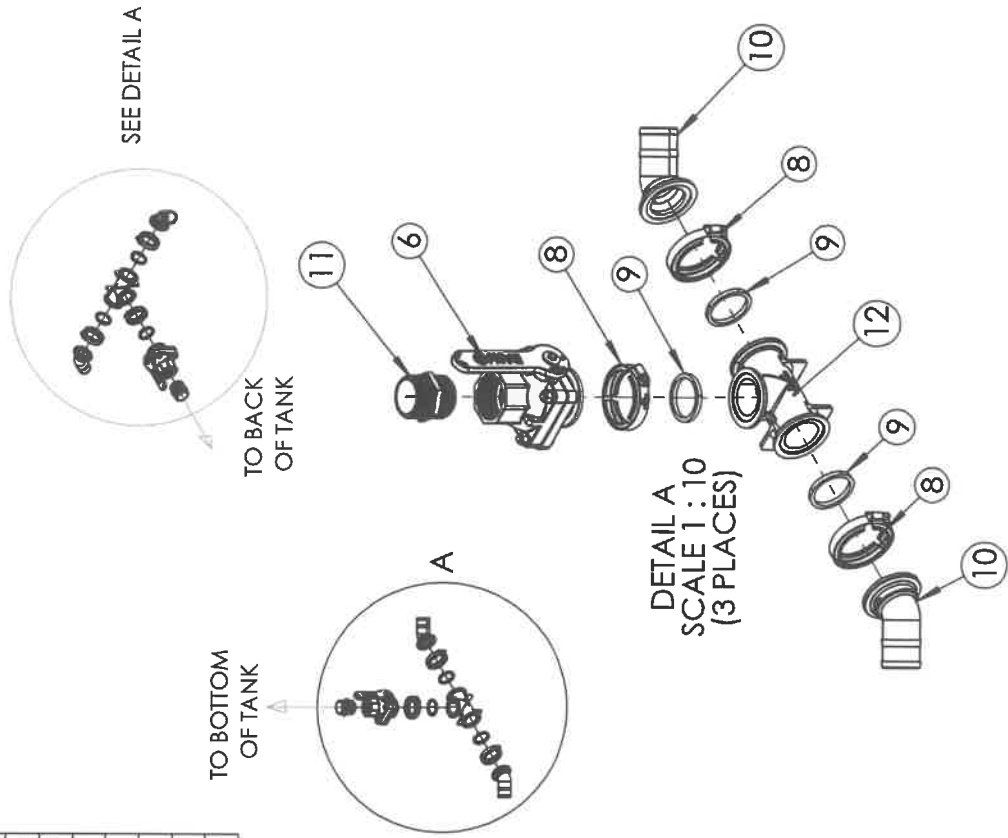
**15 GALLON INDUCTOR
STAND PACKAGE
(AMES/MARSHALL)
PART NUMBER: 20030005F**



IN USE

30 GALLON INDUCTOR STAND PACKAGE (AMES/MARSHALL) PART NUMBER: 20030005-30F

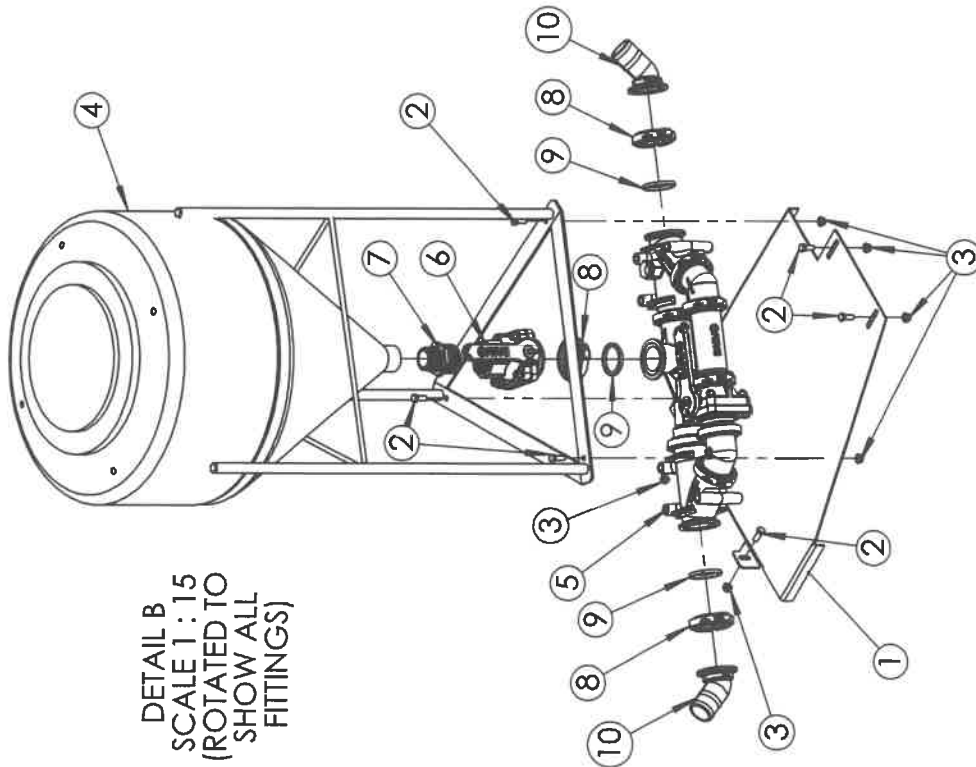
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	47003583	INDUCTOR STAND MOUNT (BOLT-ON)	1
2	18056822	BOLT HX CAP G5NCZC 3/8 X 1	7
3	18496800	NUT SER FLG ZC 3/8	7
4	INFD30-24-16L	30 GALLON INDUCTOR TANK W/ STAND	1
5	MIS220	2" INDUCTOR MANIFOLD ASSY	1
6	MVS220FP	2" FPT X 2" FP FLANGE VALVE	4
7	21200150	2" X 1.5" REDUCING NIPPLE	1
8	FC220	2" FLANGE CLAMP	12
9	UFG0200E-A	2" FLANGE GASKET	12
10	M220BRB45	2" HOSE BARB X 45 DEGREES	8
11	NIP200-SH	2" SHORT POLY NIPPLE	3
12	M220TEE	2" FULL PORT FLANGED TEE	3



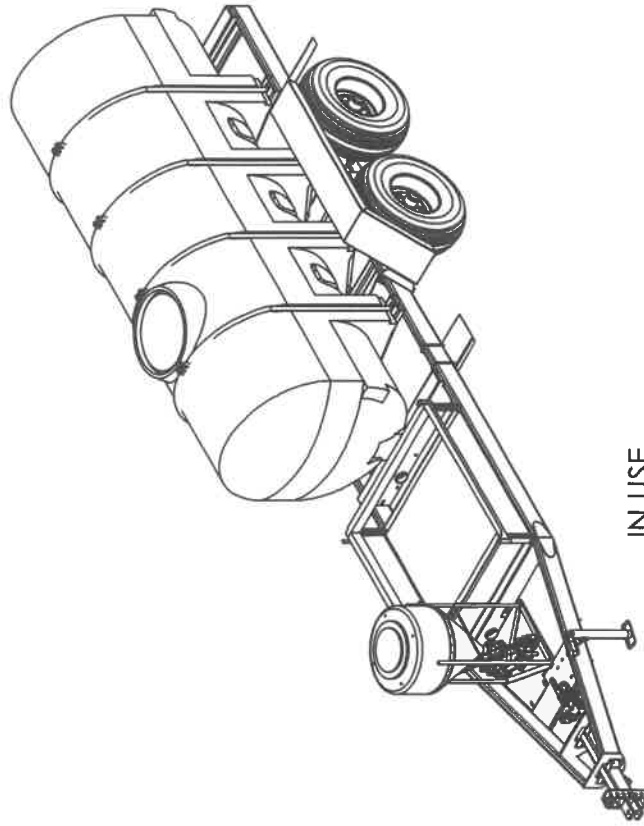
30 GALLON INDUCTOR STAND PACKAGE

(AMES/MARSHALL)

PART NUMBER: 20030005-30F



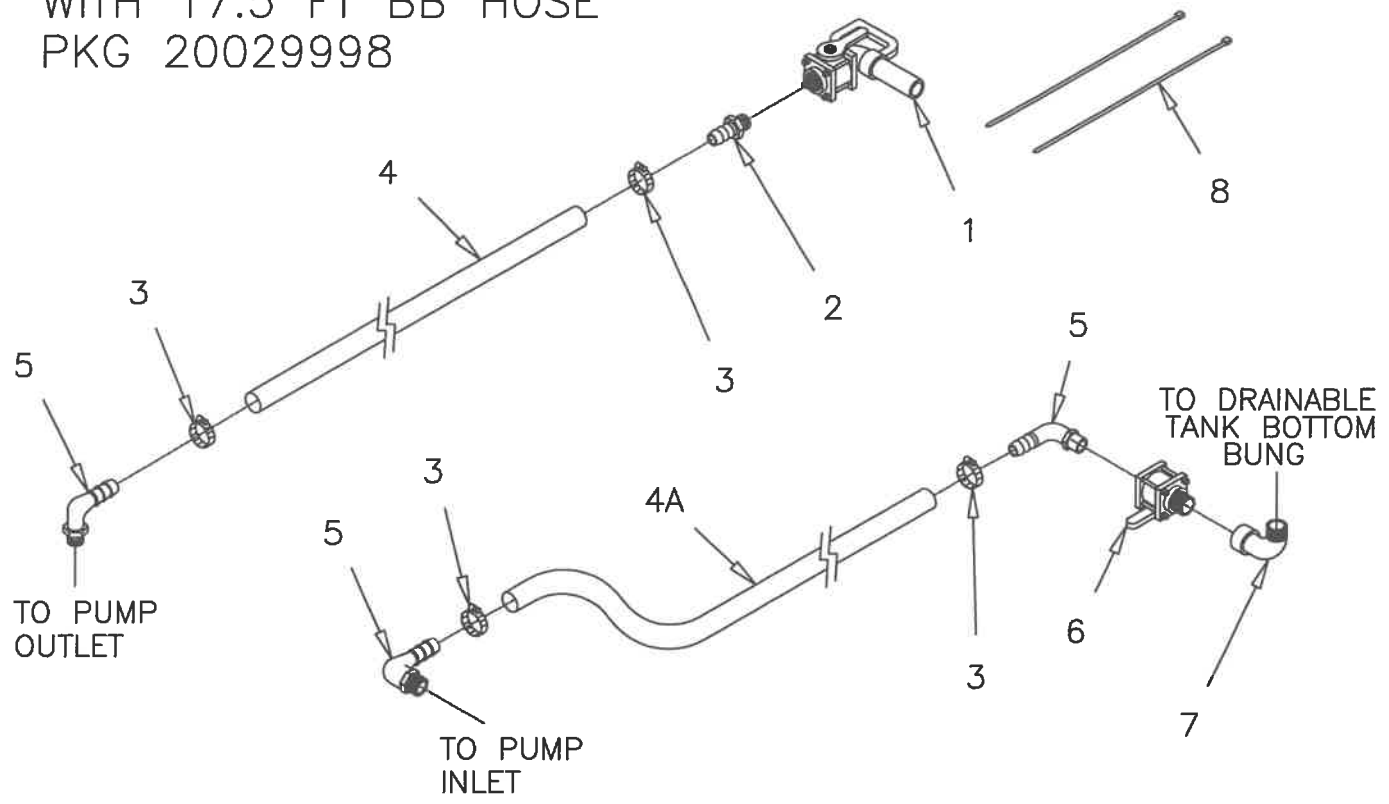
DETAIL B
SCALE 1:15
(ROTATED TO
SHOW ALL
FITTINGS)



IN USE

SR1000 SR1250 PLUMBING FOR DRAINABLE TANK 2" SR PLUMBING PACKAGE WITH 17.5 FT BB HOSE PKG 20029998

20029998
3-28-14

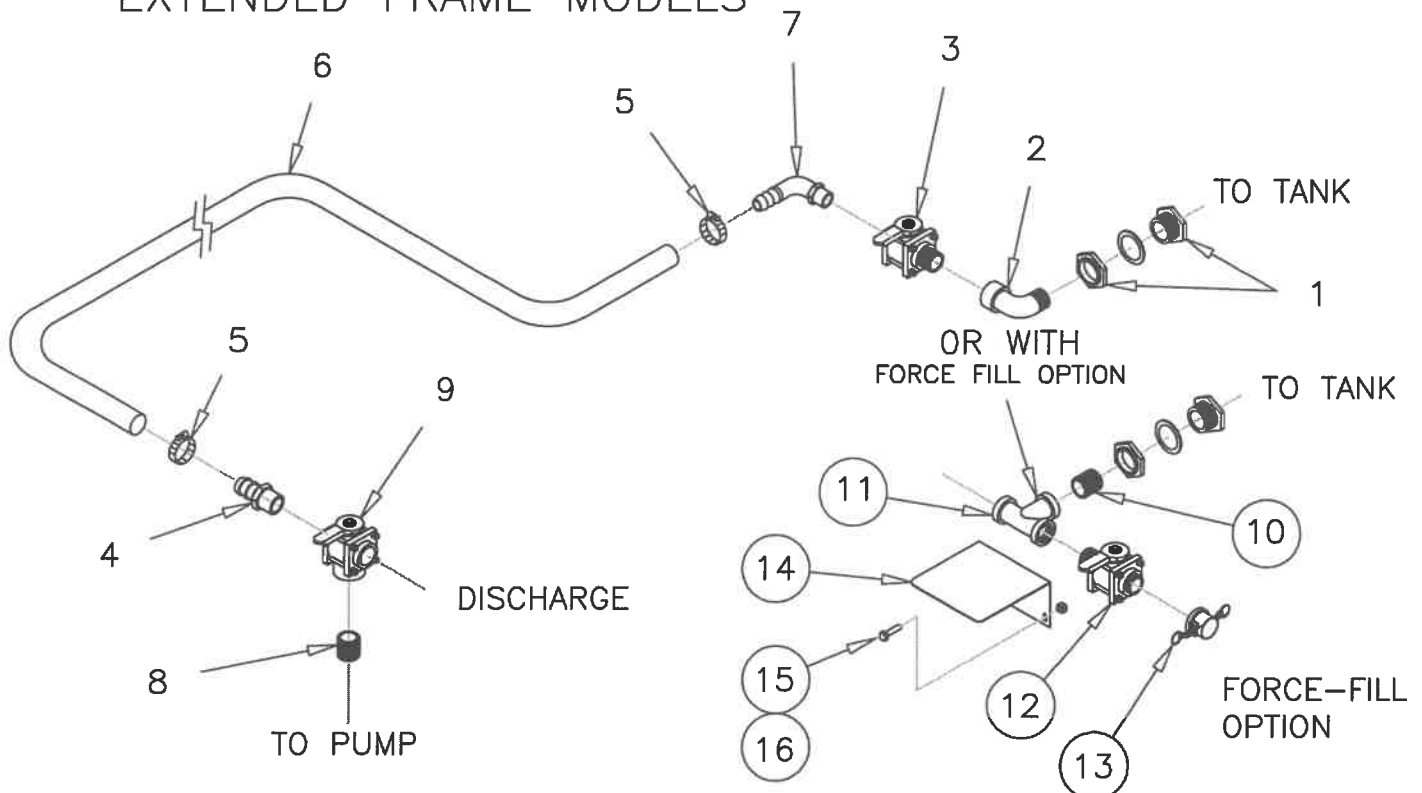


20029998 INCLUDES ITEM 1 THRU 8

ITEM	PART NO.	DESCRIPTION	QTY.
1	200024	2" NOZZLE VALVE WITH SPOUT	1
2	200336	2" HOSE BARB	1
3	200261	2" HOSE CLAMPS	4
4	12012710	HOSE, PVC SUCTION, 2" X 17.5 FT	1
4A	12012710	HOSE, PVC SUCTION, 2" X 14.5 FT	1
5	200388	2" HB ELBOW POLY	3
6	200035	2" VALVE, FULL PORT	1
7	200890	2" POLY STREET ELBOW	1
8	609643	LONG TIE STRAP	2

FRONT RE-CIRCULATION PKG
 (SR1000, SR1250)
 EXTENDED FRAME MODELS

20030004
 04-06-15

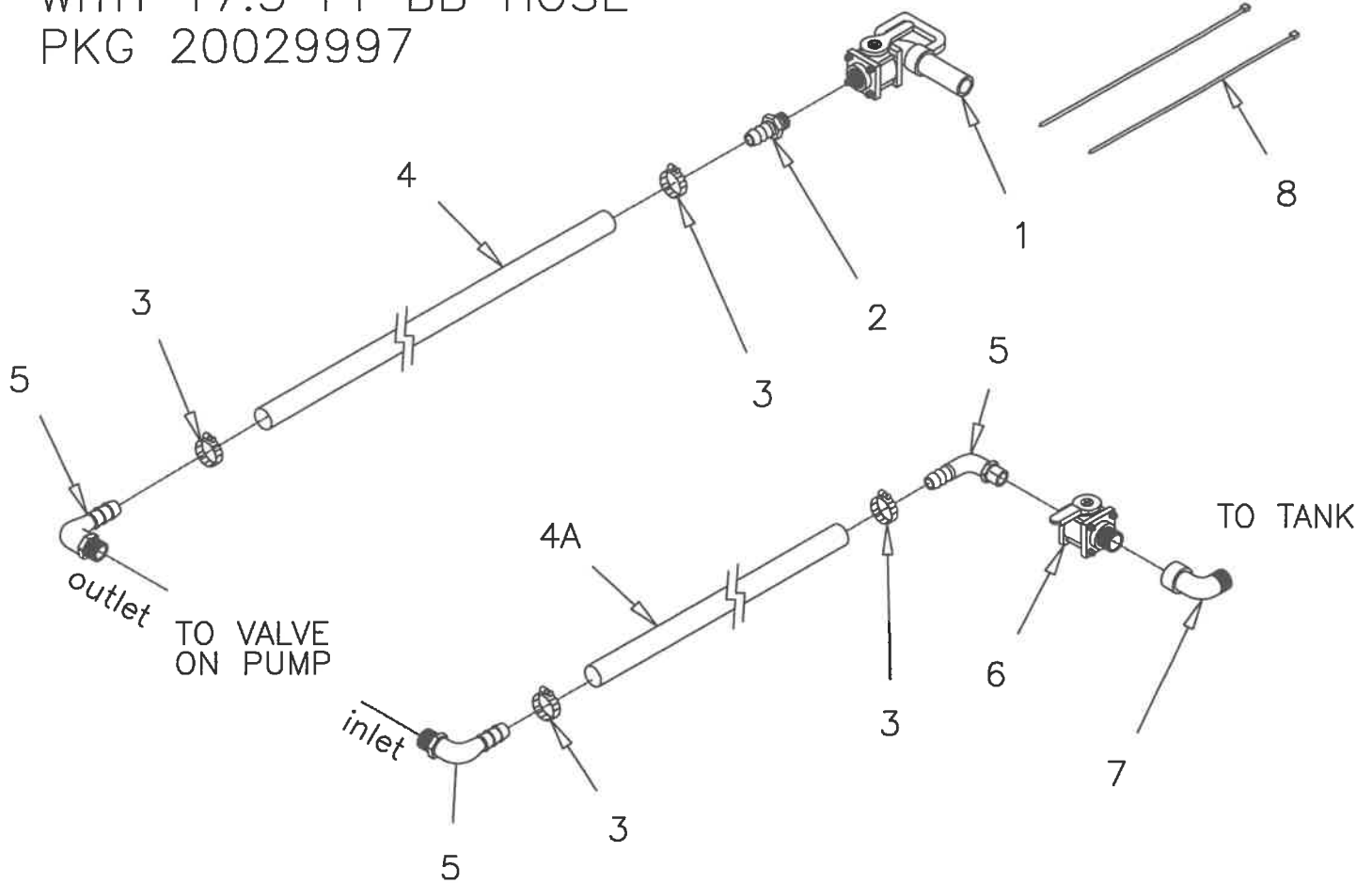


20030004 (INCLUDES ITEMS 1-9 only)
 20030004FF (INCLUDES ITEMS 1, & 3-16)

ITEM	PART NO.	DESCRIPTION	QTY.
1	20020019	TANK BUNG ASSEMBLY, 2 INCH POLY	1
2	200890	STREET ELBOW, 2 INCH POLY	1
3	200035	2" VALVE, FULL PORT MPT X FPT	1
4	200336	2" HOSE BARB POLY	1
5	200261	2" HOSE CLAMPS	2
6	12012710	HOSE, PVC SUCTION, 2" X 10.5 FT	1
7	200388	2" HB ELBOW POLY	1
8	200557	2" CLOSE NIPPLE	1
9	200031	2" 3-WAY VALVE BOTTOM LOAD	1
WITH FORCE FILL OPTION ADD THE FOLLOWING			
10	200557	2" CLOSE NIPPLE	1
11	261200	2" TEE	1
12	200037	2" FULL PORT BALL VALVE	1
13	200172	2" CAP	1
14	10129A	VALVE SUPPORT BRACKET	1
15	18026418	BOLT, HEX HD 5/16 -18 X 3/4 SS	2
16	18987700	NUT, SERRATED FLANGE 5/16 -18 SS	2

AG111 PLUMBING
 2 INCH PLUMBING PACKAGE
 WITH 17.5 FT BB HOSE
 PKG 20029997

20029997
 03-26-14

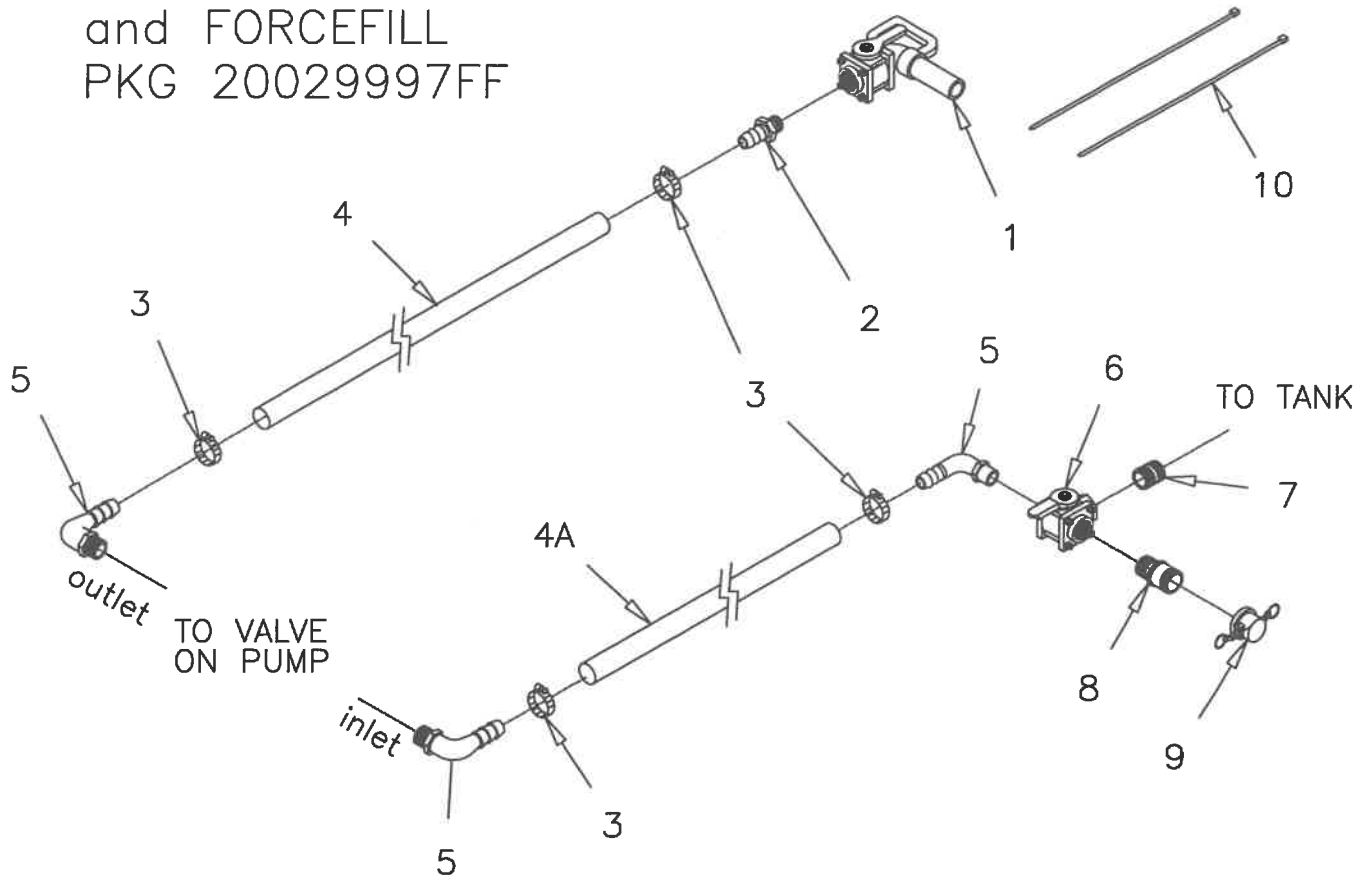


20029997 INCLUDES ITEM 1 THRU 9

ITEM	PART NO.	DESCRIPTION	QTY.
1	200024	2" NOZZLE VALVE WITH SPOUT	1
2	200336	2" HOSE BARB	1
3	200261	2" HOSE CLAMPS	4
4	12012710	HOSE, PVC SUCTION, 2" X 17.5 FT	1
4A	12012710	HOSE, PVC SUCTION, 2" X 1.5 FT	1
5	200388	2" HB ELBOW POLY	3
6	200035	2" VALVE, FULL PORT	1
7	200890	2" POLY STREET ELBOW	1
8	609643	LONG TIE STRAP	2

AG111 PLUMBING
 2 INCH PLUMBING PACKAGE
 WITH 17.5 FT BB HOSE
 and FORCEFILL
 PKG 20029997FF

20029997FF
 03-28-14

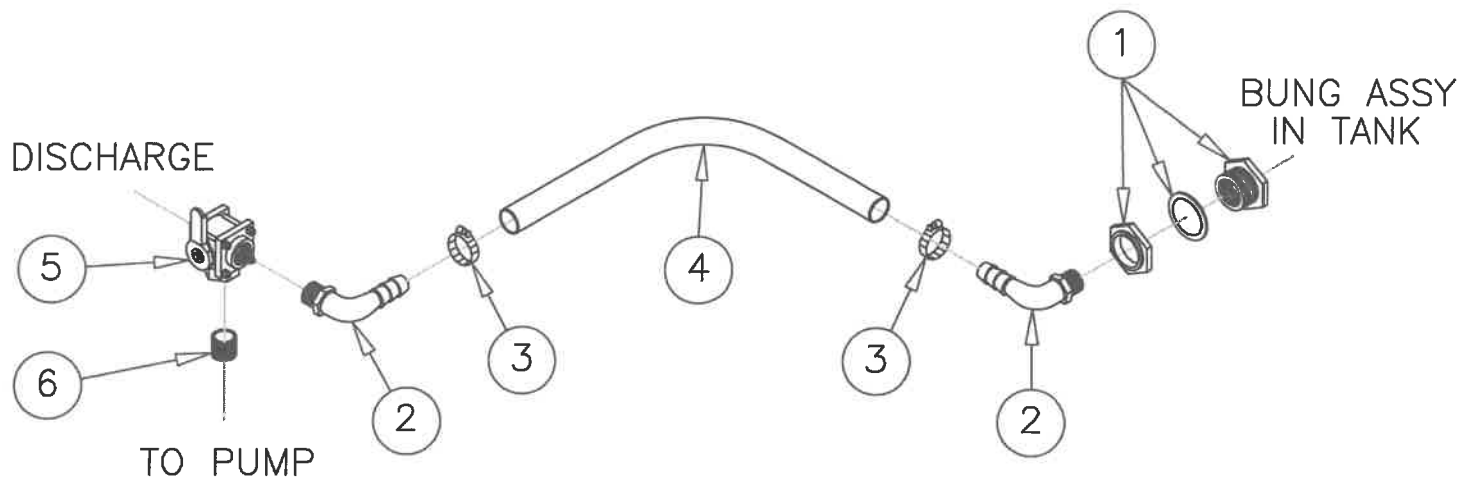


20029997FF INCLUDES ITEM 1 THRU 10

ITEM	PART NO.	DESCRIPTION	QTY.
1	200024	2" NOZZLE VALVE WITH SPOUT	1
2	200336	2" HOSE BARB	1
3	200261	2" HOSE CLAMPS	4
4	12012710	HOSE, PVC SUCTION, 2" X 17.5 FT	1
4A	12012710	HOSE, PVC SUCTION, 2" X 1.5 FT	1
5	200388	2" HB ELBOW POLY	3
6	200013	2" VALVE, 3-WAY SIDE LOAD	1
7	200557	2" CLOSE NIPPLE	1
8	200170	2" MALE ADAPTER	1
9	200172	2" MALE CAP	1
10	609643	LONG TIE STRAP, 28 INCHES LONG	2

FRONT RE-CIRCULATION PKG
(AG111 SHORT FRAME)

20030007
04-14-15

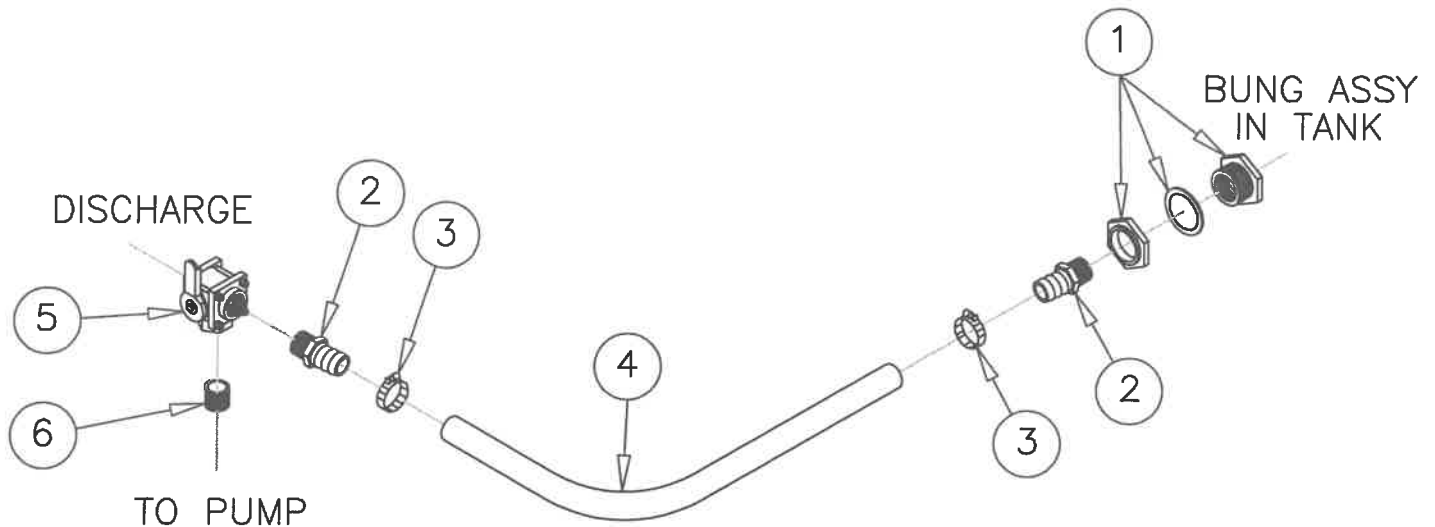


20030007 (INCLUDES ITEMS 1-6)

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	20020019	TANK BUNG ASSEMBLY, 2 INCH POLY	1
2	200388	2" HOSEBARB ELBOW 90°	2
3	200261	2" HOSE CLAMPS, 620-036	2
4	12012710	HOSE, PVC SUCTION, 2" X 3 FT	1
5	200031	2" 3 WAY VALVE, BOTTOM LOAD	1
6	200557	2" CLOSE NIPPLE	1

FRONT RE-CIRCULATION PKG
(AG116 SHORT FRAME)

20030009
04-14-15

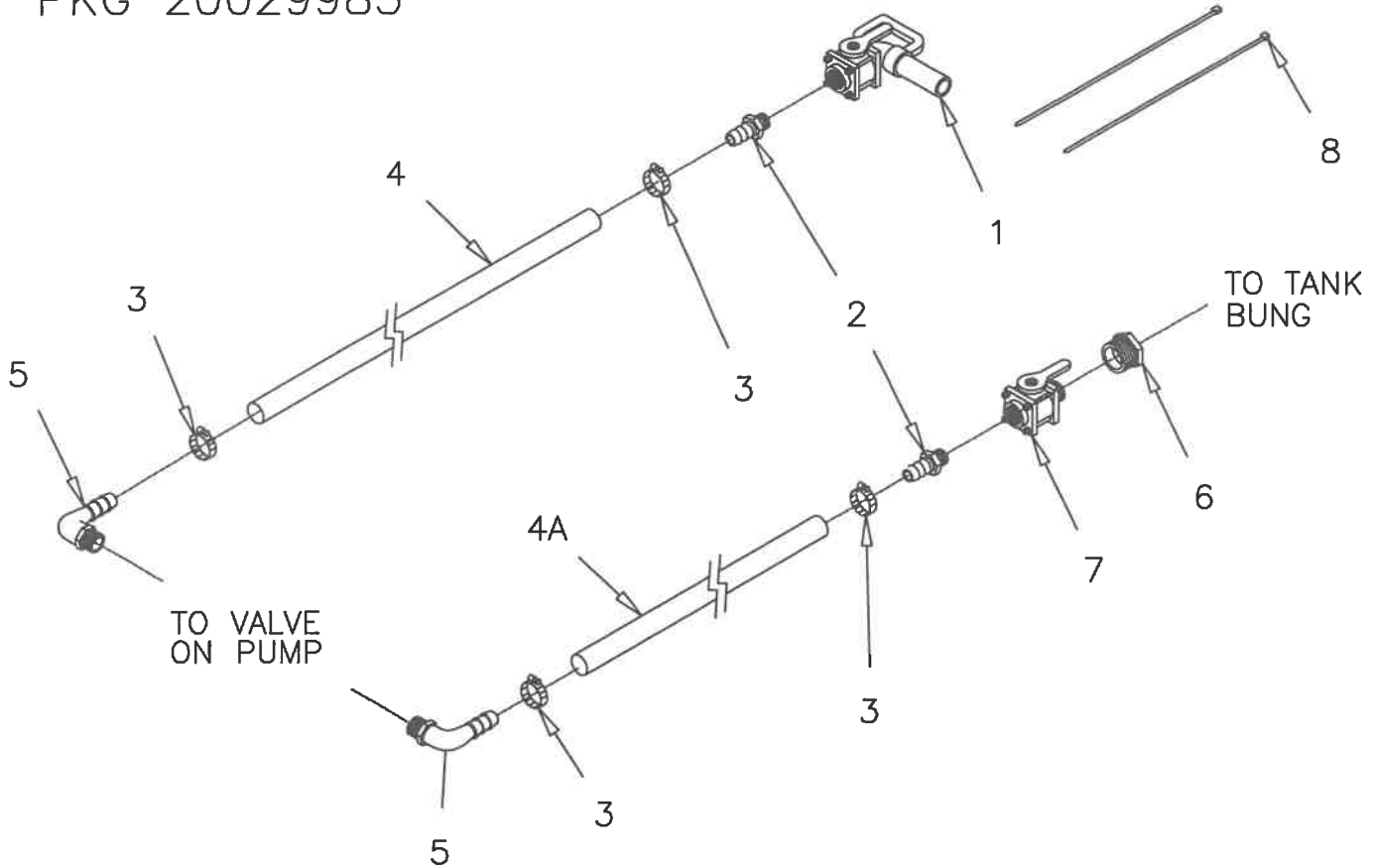


20030009 (INCLUDES ITEMS 1-6)

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	20020019	TANK BUNG ASSEMBLY, 2 INCH POLY	1
2	200336	2" HOSEBARB	2
3	200261	2" HOSE CLAMPS, 620-036	2
4	12012710	HOSE, PVC SUCTION, 2" X 2.5 FT	1
5	200031	2" 3 WAY VALVE, BOTTOM LOAD	1
6	200557	2" CLOSE NIPPLE	1

AG116 PLUMBING
 SHORT FRAME BB HOSE
 PKG 20029985

20029985
 09-26-14

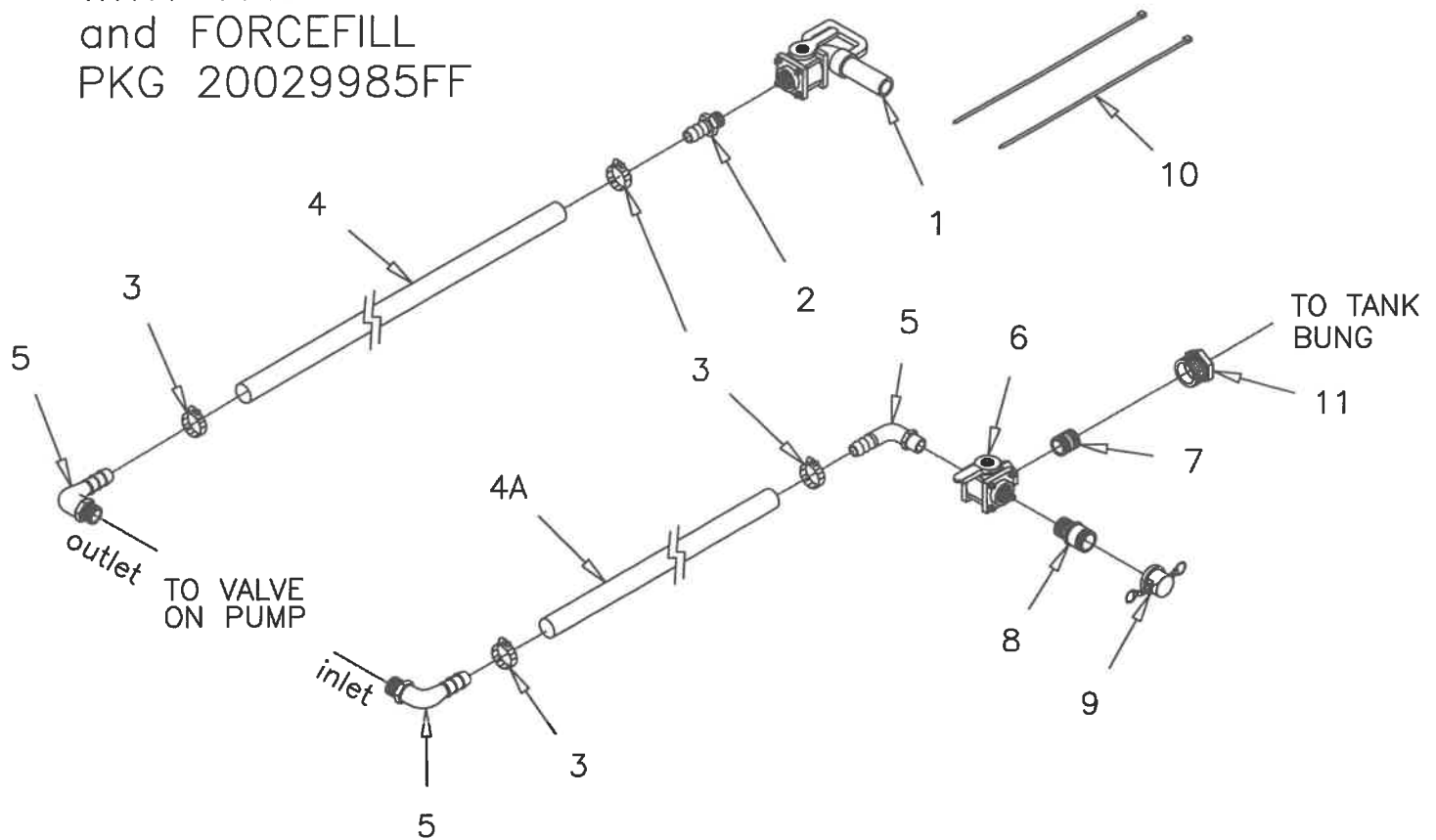


20029985 INCLUDES ITEM 1 THRU 8

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	200024	2" NOZZLE VALVE WITH SPOUT	1
2	200336	2" HOSE BARB	2
3	200261	2" HOSE CLAMPS	4
4	12012710	HOSE, PVC SUCTION, 2" X 17.5 FT	1
4A	12012710	HOSE, PVC SUCTION, 2" X 2.5 FT	1
5	200388	2" HB ELBOW POLY	2
6	200914	3" X 2" REDUCER BUSHING	1
7	200035	2" VALVE, FULL PORT	1
8	609643	LONG TIE STRAP	2

AG116 PLUMBING
 2 INCH PLUMBING PACKAGE
 WITH 17.5 FT BB HOSE
 and FORCEFILL
 PKG 20029985FF

20029985FF
 04-03-14



20029985FF INCLUDES ITEM 1 THRU 11

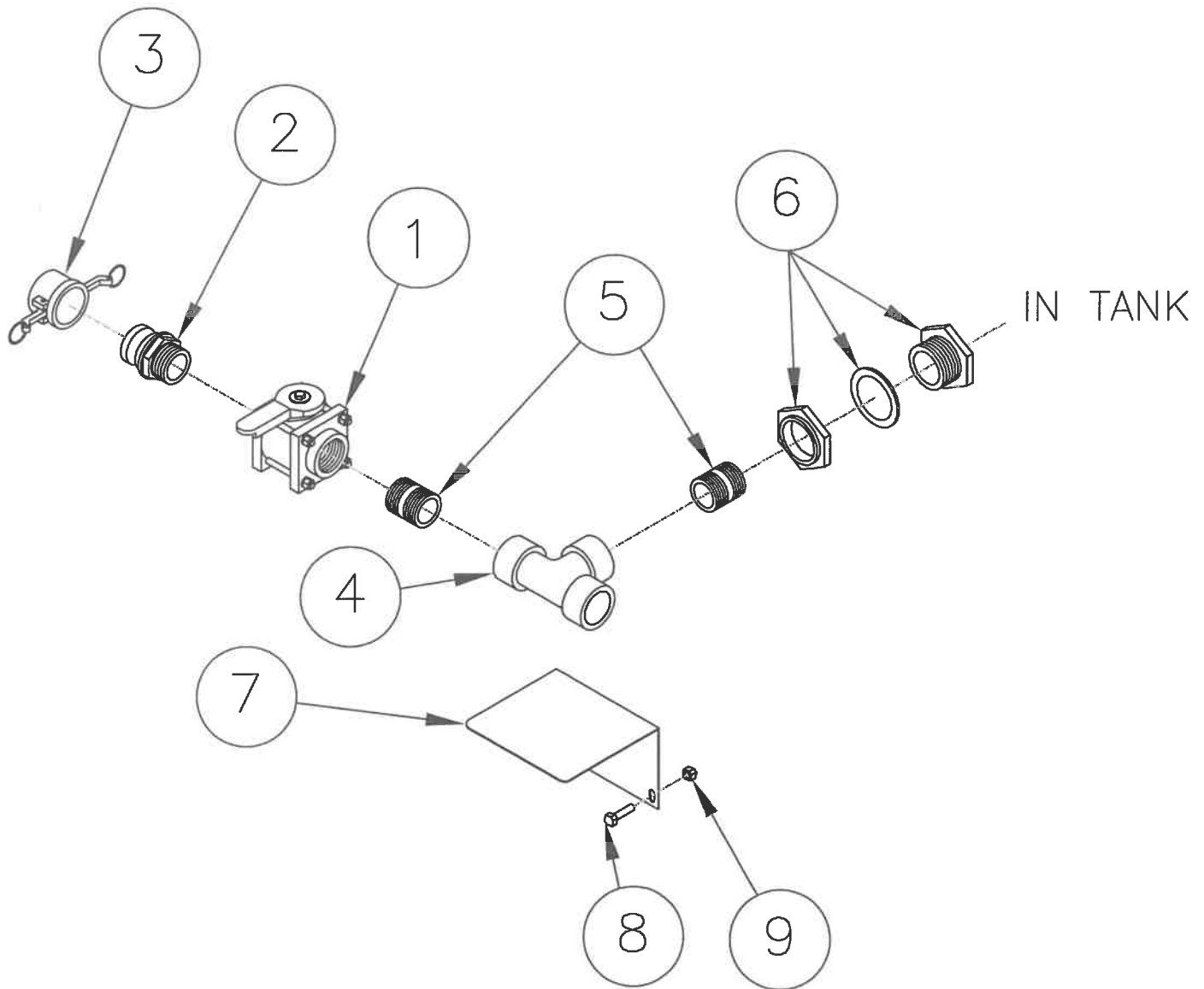
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	200024	2" NOZZLE VALVE WITH SPOUT	1
2	200336	2" HOSE BARB	1
3	200261	2" HOSE CLAMPS	4
4	12012710	HOSE, PVC SUCTION, 2" X 17.5 FT	1
4A	12012710	HOSE, PVC SUCTION, 2" X 2.5 FT	1
5	200388	2" HB ELBOW POLY	3
6	200013	2" VALVE, 3-WAY SIDE LOAD	1
7	200557	2" CLOSE NIPPLE	1
8	200170	2" MALE ADAPTER	1
9	200172	2" MALE CAP	1
10	609643	LONG TIE STRAP, 28 INCHES LONG	2
11	200914	3" X 2" REDUCER BUSHING	1

3" FRONT FORCE-FILL

20030006
rev 05/08/18

OPTION AG116

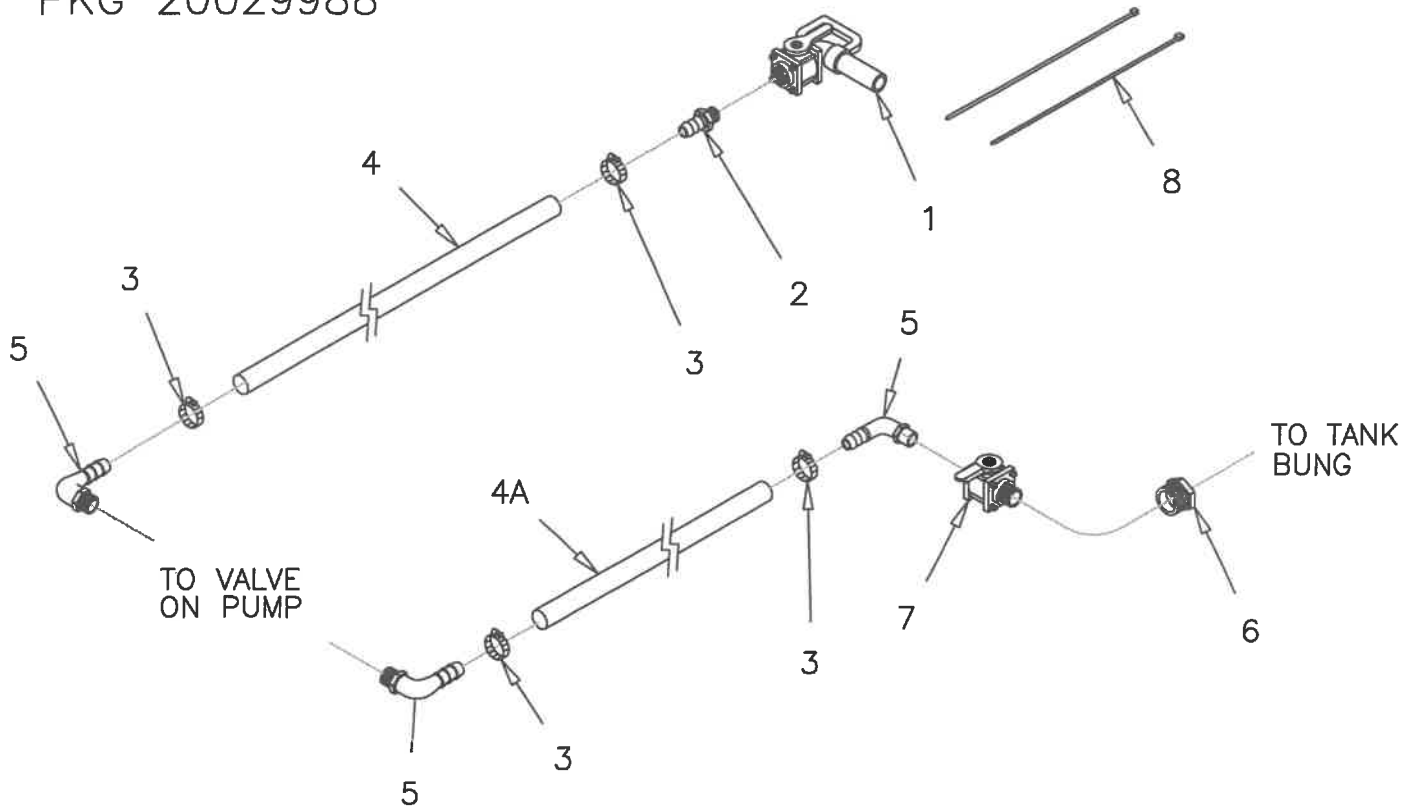
20030006 (INCLUDES ITEMS 1-9)



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	200018	3" FULL PORT POLY VALVE	1
2	200194	3" POLY MALE ADAPTOR	1
3	200196	3" MALE CAP	1
4	200497	3" POLY PIPE TEE	1
5	200559	3" CLOSE NIPPLE	2
6	290152	3" TANK BUNG ASSY (BANJO)	1
7	47003582	VALVE SUPPORT BRACKET	1
8	18026418	BOLT, HEX HD 5/16 -18 X 3/4 SS	2
9	18987700	NUT, SERR. FLANGE 5/16 -18 SS	2

AG116 LF PLUMBING
 LONG FRAME BB HOSE
 PKG 20029988

20029988
 03-31-15

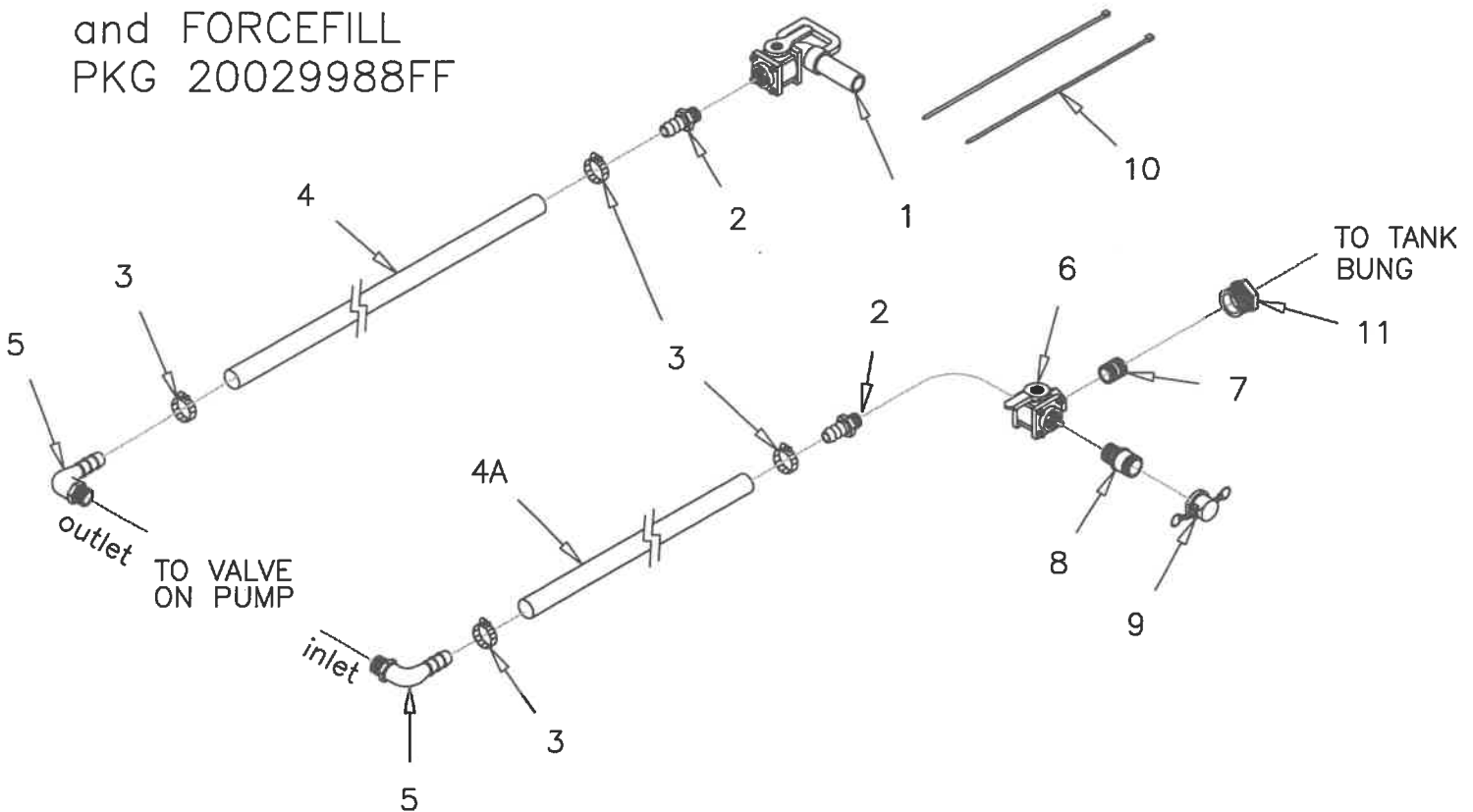


20029988 INCLUDES ITEM 1 THRU 9

ITEM	PART NO.	DESCRIPTION	QTY.
1	200024	2" NOZZLE VALVE WITH SPOUT	1
2	200336	2" HOSE BARB	1
3	200261	2" HOSE CLAMPS	4
4	12012710	HOSE, PVC SUCTION, 2" X 18 FT	1
4A	12012710	HOSE, PVC SUCTION, 2" X 9 FT	1
5	200388	2" HB ELBOW POLY	3
6	200914	3" X 2" REDUCER BUSHING	1
7	200035	2" VALVE, FULL PORT	1
8	609643	LONG TIE STRAP	2

AG116 LONG FRAME PLUMBING
 2 INCH PLUMBING PACKAGE
 WITH 17.5 FT BB HOSE
 and FORCEFILL
 PKG 20029988FF

20029988FF
 03-31-15

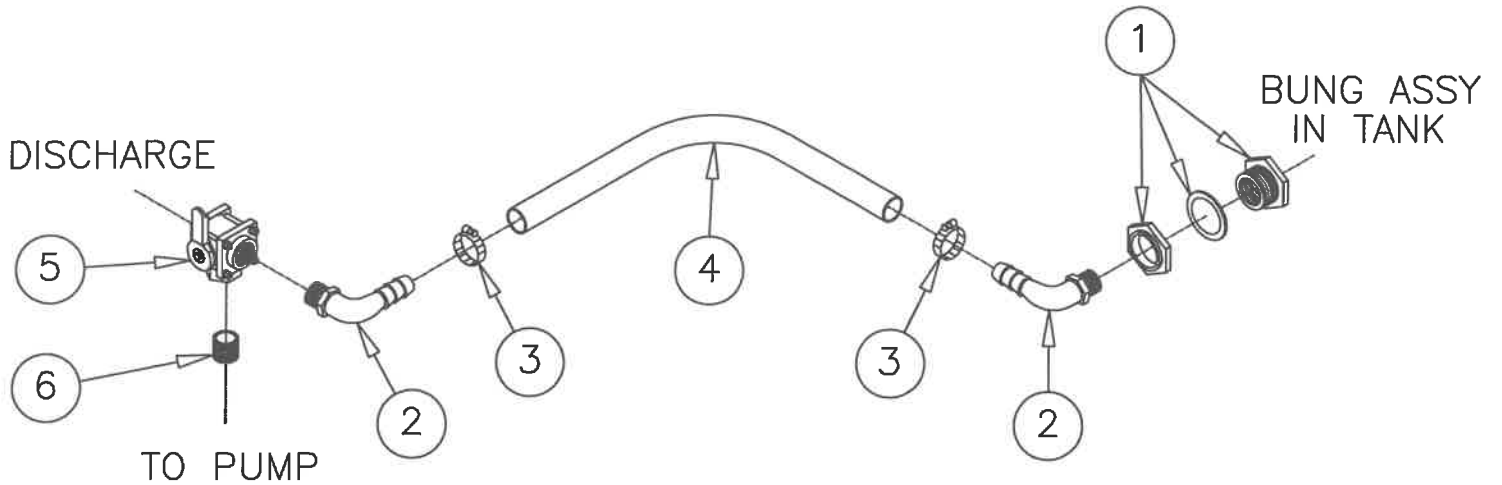


20029988FF INCLUDES ITEM 1 THRU 11

ITEM	PART NO.	DESCRIPTION	QTY.
1	200024	2" NOZZLE VALVE WITH SPOUT	1
2	200336	2" HOSE BARB	2
3	200261	2" HOSE CLAMPS	4
4	12012710	HOSE, PVC SUCTION, 2" X 18 FT	1
4A	12012710	HOSE, PVC SUCTION, 2" X 9 FT	1
5	200388	2" HB ELBOW POLY	2
6	200013	2" VALVE, 3-WAY SIDE LOAD	1
7	200557	2" CLOSE NIPPLE	1
8	200170	2" MALE ADAPTER	1
9	200172	2" MALE CAP	1
10	609643	LONG TIE STRAP, 28 INCHES LONG	2
11	200914	3" X 2" REDUCER BUSHING	1

FRONT RE-CIRCULATION PKG
 (AG116 LONG FRAME)

20030008
 04-16-14



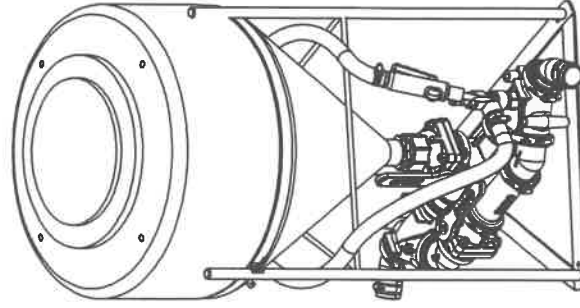
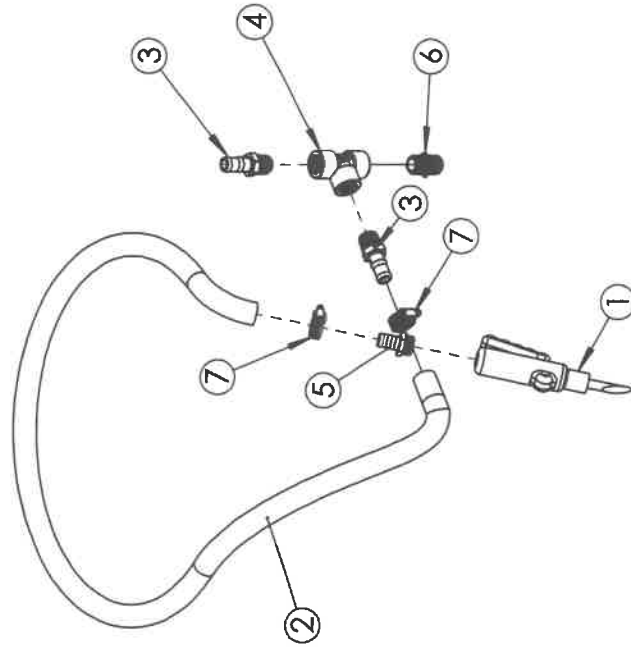
20030008 (INCLUDES ITEMS 1-6)

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	20020019	TANK BUNG ASSEMBLY, 2 INCH POLY	1
2	200388	2" HOSEBARB ELBOW 90°	2
3	200261	2" HOSE CLAMPS, 620-036	2
4	12012710	HOSE, PVC SUCTION, 2" X 10 FT	1
5	200031	2" 3 WAY VALVE, BOTTOM LOAD	1
6	200557	2" CLOSE NIPPLE	1

JUG / JET RINSE OPTION

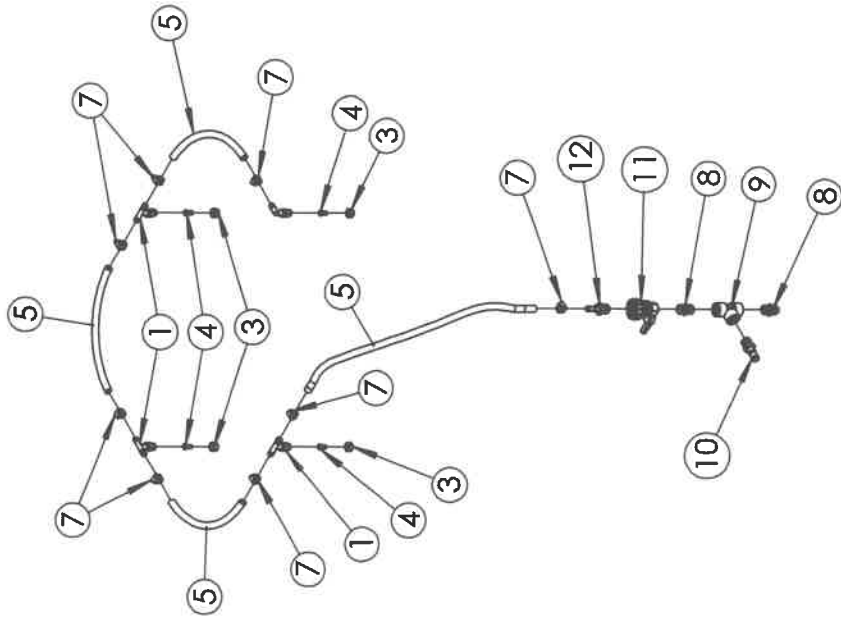
PART NUMBER: JRO

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	JR24	JET RINSE NOZZLE	1
2	SP075	3/4 X 2SP HOSE	8'
3	HB075	HOSE BARB, 3/4 MALE THREAD, BANJO	2
4	TEE075	3/4" TEE	1
5	NY-MGHT075	3/4 GARDEN HOSE FITTING	1
6	NIP075-SH	NIPPLE, 3/4, SHORT, BANJO	1
7	HC-.750	HOSE CLAMP, 3/4 HOSE	2

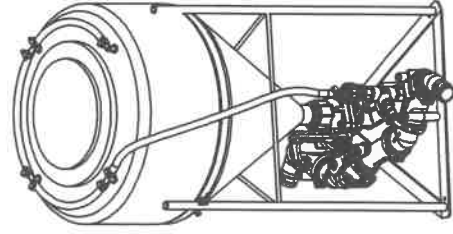


CHEMICAL INDUCTOR TANK RINSE PACKAGE

PART NUMBER: CITRP



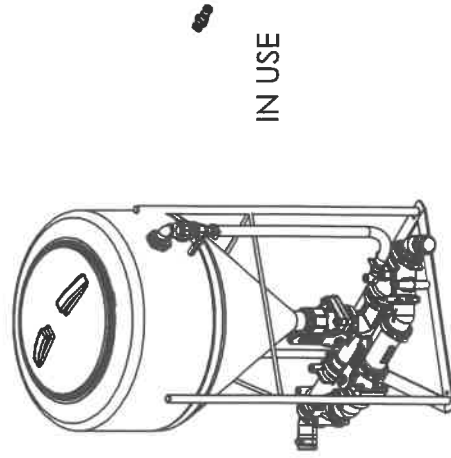
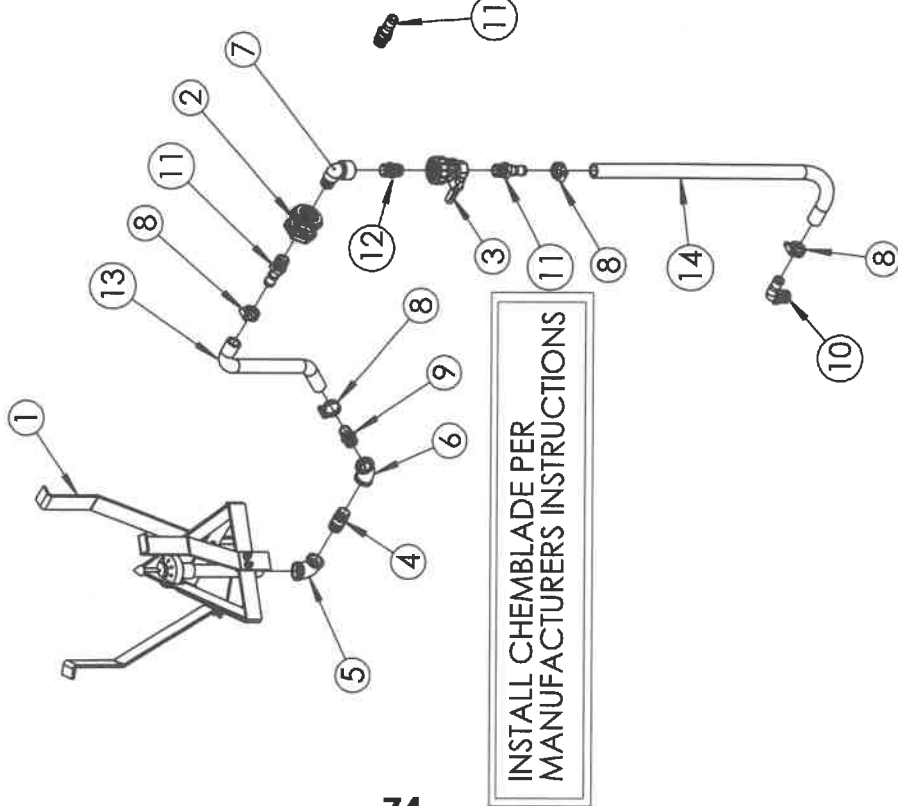
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	NY-NBTEE050	NOZZLE BODY TEE	3
2	NY-BELO50	EL & NUT - NY	1
3	NY-NBCAP	NOZZLE BODY CAP	4
4	TF-VS5	TURBO FLOODJET WIDE	4
5	SP050	1/2" X 2SP HOSE	9'
7	HC-.500	HOSE CLAMP, 1/2 IN HOSE	8
8	NIP075-SH	NIPPLE, 3/4, SHORT, BANJO	2
9	TEE075	3/4" TEE	1
10	HB075	HOSE BARB, 3/4 MALE THREAD, BANJO	1
11	UV075FP	3/4 POLY UNION VALVE	1
12	HB075-050	HOSE BARB, 3/4 MALE THREAD, BANJO	1



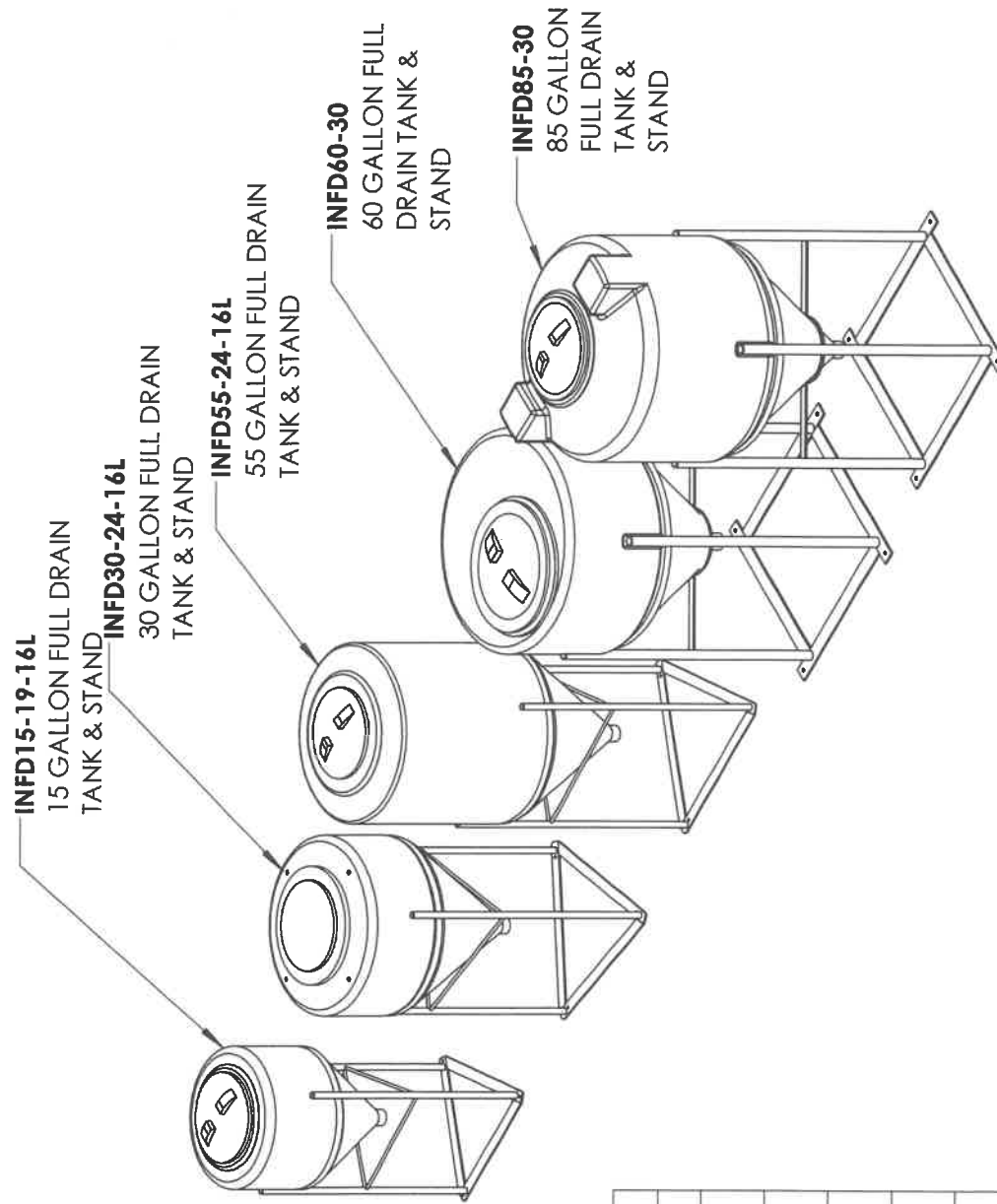
CHEM-BLADE INDUCTOR KIT

PART NUMBER: CBIK

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	CHEMBLADE	CHEMBLADE TANK RINSE	1
2	TF075	3/4" TANK BUNG	1
3	UV075FP	3/4 POLY UNION VALVE	1
4	SS-NIP-075-2	3/4" SS NIPPLE X 2" LG	1
5	SS-EL-075-90	3/4" SS ELBOW 90 DEGREE	1
6	SS-EL-075-45	3/4" SS ELBOW 45 DEGREE	1
7	SL075-90	3/4" STREET ELBOW	1
8	HC-750	HOSE CLAMP, 3/4 HOSE	4
9	HB075SS	3/4" SS HOSE BARB	1
10	HB075-90	3/4 HOSE BARB ELBOW 90 DEGREE	1
11	HB075	HOSE BARB, 3/4 MALE THREAD, BANJO	3
12	NIP075-SH	NIPPLE, 3/4, SHORT, BANJO	1
13	EVAR075	3/4" BRAIDED EVA TUBING	1
14	SP075	3/4" SPRAYER HOSE	1



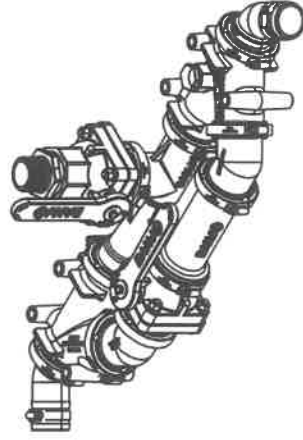
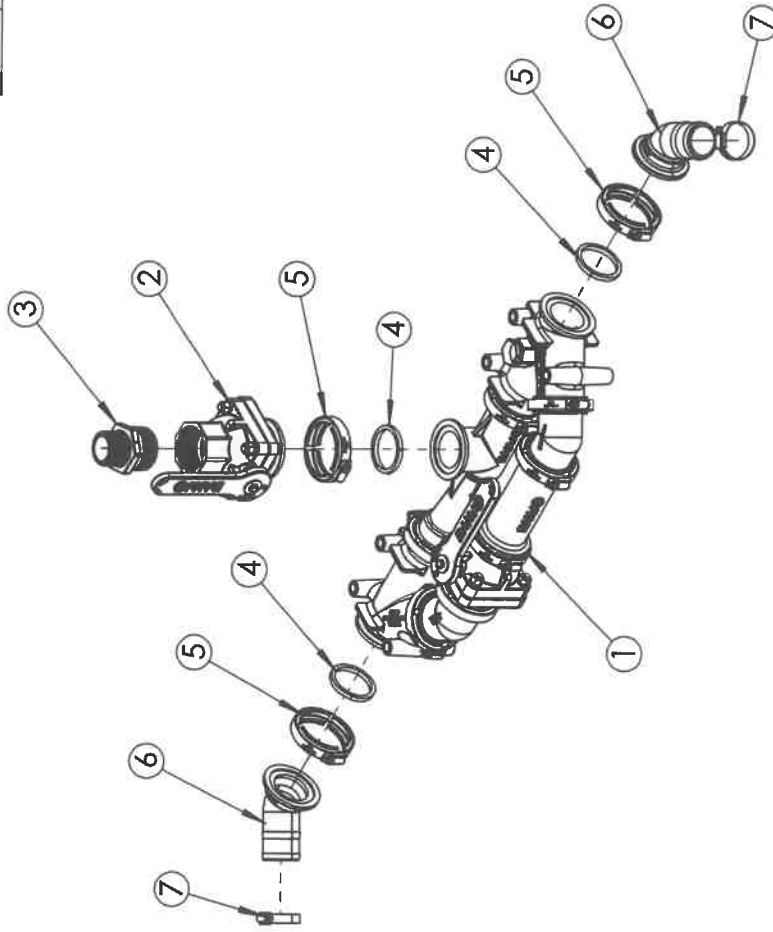
INDUCTOR TANKS / PLUMBING PACKAGE



TANK & STAND	INDUCTOR KIT PART NUMBER	
	2" INDUCTOR	3" INDUCTOR
INFD-15-19-16L (15 GALLON)	2IPP-1	3IPP-1
INFD30-24-16L (30 GALLON)	2IPP-1	3IPP-1
INFD55-24-16L (55 GALLON)	2IPP-1	3IPP-1
INFD60-30 (60 GALLON)	2IPP-2	3IPP-2
INFD85-30 (85 GALLON)	2IPP-2	3IPP-2

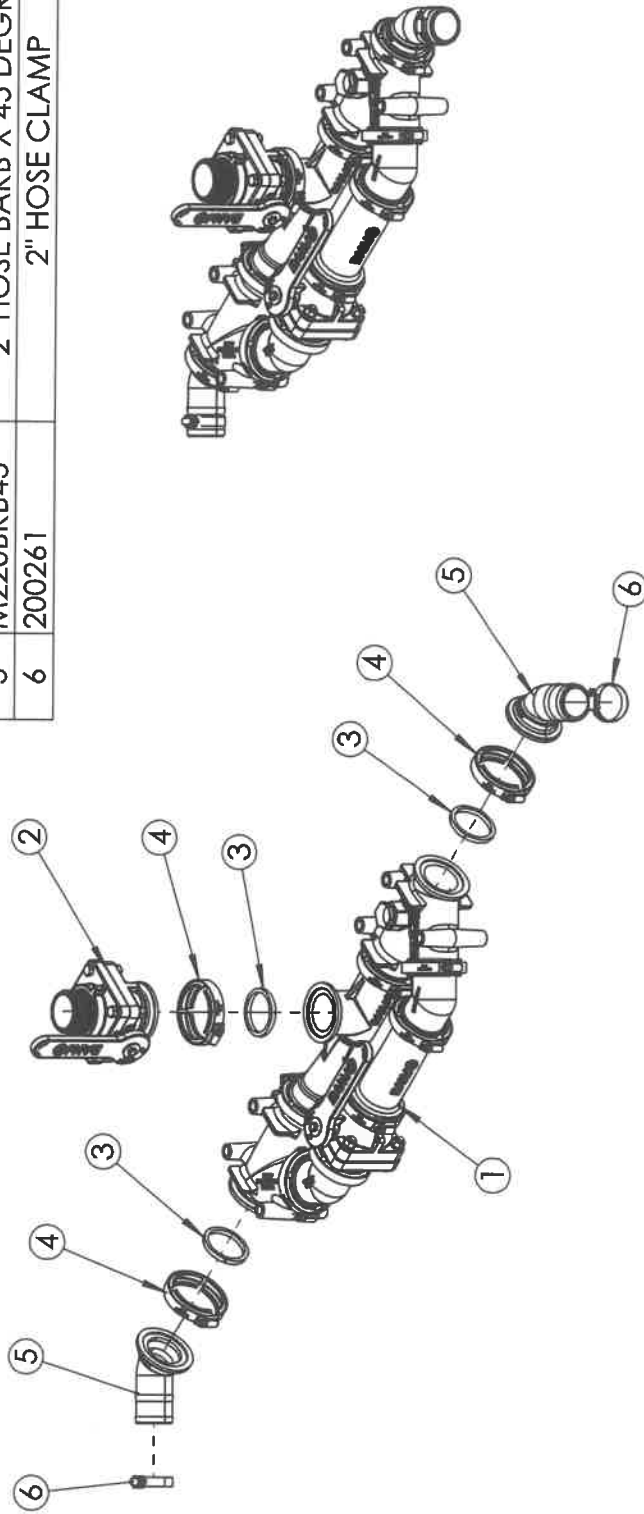
2" INDUCTOR PLUMBING PACKAGE
(FITS 15/30/55 GALLON INDUCTOR TANK)
PART NUMBER: 2IPP-1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	MIS220	2" INDUCTOR MANIFOLD ASSY	1
2	MVS220FP	2" FPT X 2" FP FLANGE VALVE	1
3	21200150	2" X 1.5" REDUCING NIPPLE	1
4	UFG0200E-A	2" FLANGE GASKET	3
5	FC220	2" FLANGE CLAMP	3
6	M220BRB45	2" HOSE BARB X 45 DEGREES	2
7	200261	2" HOSE CLAMP	2



2" INDUCTOR PLUMBING PACKAGE
(FITS 60/85 GALLON INDUCTOR TANK)
PART NUMBER: 2IPP-2

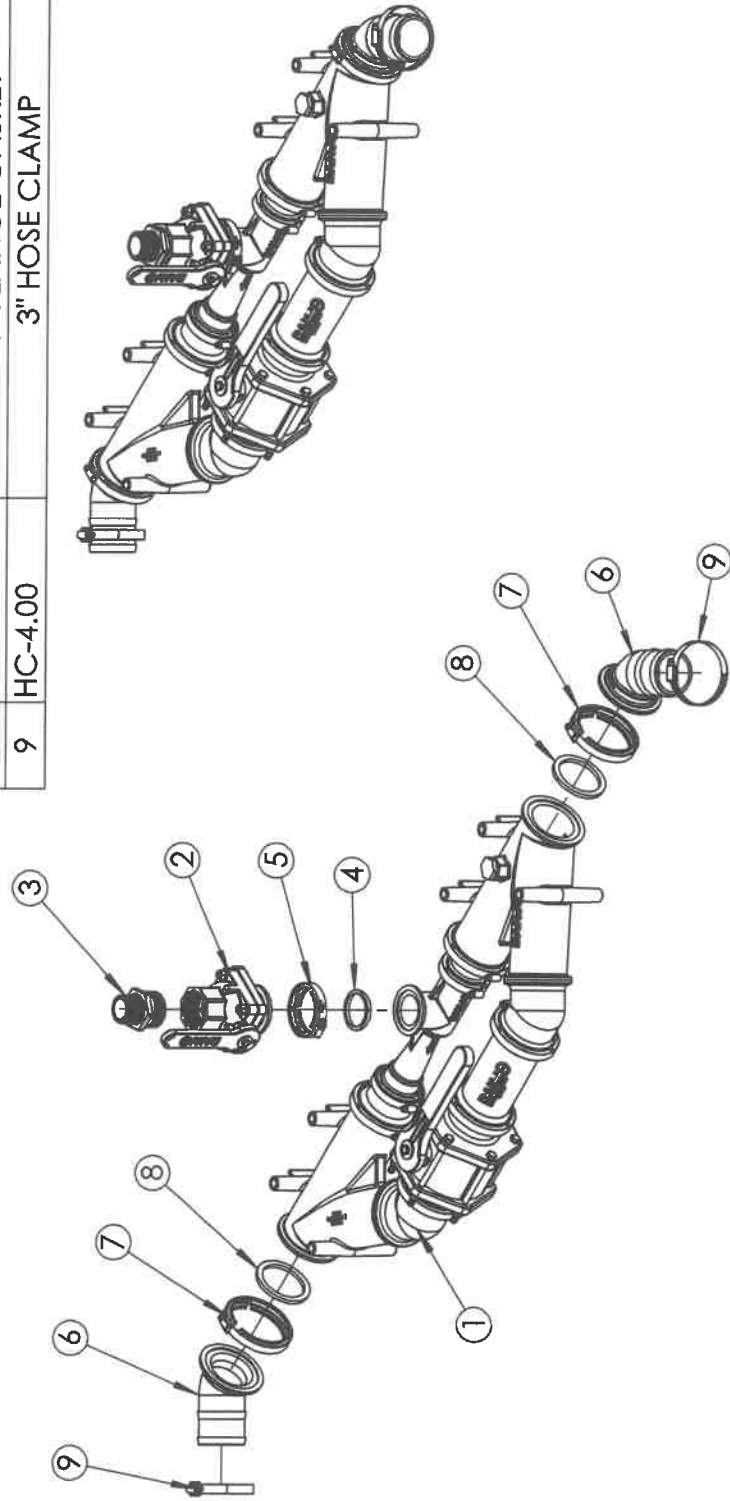
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	MIS220	2" INDUCTOR MANIFOLD ASSY	1
2	MVSMT220FP	2" MPT X 2" FP FLANGE VALVE	1
3	UFG0200E-A	2" FLANGE GASKET	3
4	FC220	2" FLANGE CLAMP	3
5	M220BRB45	2" HOSE BARB X 45 DEGREES	2
6	200261	2" HOSE CLAMP	2



3" INDUCTOR PLUMBING PACKAGE

(FITS 15/30/55 GALLON INDUCTOR TANK)
PART NUMBER: 3IPP-1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	MIS300	3" INDUCTOR ASSEMBLY	1
2	MVS220FP	2" FPT X 2" FP FLANGE VALVE	1
3	21200150	2" X 1.5" REDUCING NIPPLE	1
4	UFG0200E-A	2" FLANGE GASKET	1
5	FC220	2" FLANGE CLAMP	1
6	M300BRB45	3" MANIFOLD HOSE BARB X 45 DEGREE	2
7	FC300	3" FLANGE CLAMP	2
8	UFG0300E-A	3" FLANGE GASKET	2
9	HC-4.00	3" HOSE CLAMP	2



3" INDUCTOR PLUMBING PACKAGE

(FITS 60/85 GALLON INDUCTOR TANK)
PART NUMBER: 3IPP-2

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	MIS300	3" INDUCTOR ASSEMBLY	1
2	MVSMT220FP	2" MPT X 2" FP FLANGE VALVE	1
3	UFG0200E-A	2" FLANGE GASKET	1
4	FC220	2" FLANGE CLAMP	1
5	M300BRB45	3" MANIFOLD HOSE BARB X 45 DEGREE	2
6	FC300	3" FLANGE CLAMP	2
7	UFG0300E-A	3" FLANGE GASKET	2
8	HC-4.00	3" HOSE CLAMP	2

