HI•WAY

PRE-WET
Operator's/Parts Manual

UNIT SERIAL NUMBER _____

MANUAL NUMBER: 307724-D

EFFECTIVE 07/2019

NLM
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Interactive Features

NOTE:	This manual incorporates several interactive features to provide supplemental information and ease of navigation. The information below is to aid in the identification and use of these features.

Hyperlinks

Hyperlinks provide direct access to a specific destination when clicked. The entire Table of Contents of this manual is hyperlinked to provide quick access to all sections of this manual when viewing the electronic version.

Hyperlinks within the content are denoted by **blue, bold underlined text**. Electronic format viewers can click these links for direct access to New Leader online features. Internet access is required.

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Insert Current HI-WAY Warranty

PLEASE ! ALWAYS THINK SAFETY FIRST !!

The purpose of this manual is to familiarize the person (or persons) using this unit with the information necessary to properly install, operate, and maintain this system. The safety instructions indicated by the safety alert symbol in the following pages supersede the general safety rules. These instructions cannot replace the following: the fundamental knowledge that must be possessed by the installer or operator, the knowledge of a qualified person, or the clear thinking necessary to install and operate this equipment. Since the life of any machine depends largely upon the care it is given, we require that this manual be read thoroughly and referred to frequently. If for any reason you do not understand the instructions, please call your authorized dealer or our Product Sales and Support Department at 1-888-363-8006.

It has been our experience that by following these installation instructions, and by observing the operation of the spreader, you will have sufficient understanding of the machine enabling you to troubleshoot and correct all normal problems that you may encounter. Again, we urge you to call your authorized dealer or our Product Sales and Support Department if you find the unit is not operating properly, or if you are having trouble with repairs, installation, or removal of this unit.

We urge you to protect your investment by using genuine NLM parts and our authorized dealers for all work other than routine care and adjustments.

New Leader Manufacturing reserves the right to make alterations or modifications to this equipment at any time. The manufacturer shall not be obligated to make such changes to machines already in the field.

This Safety Section should be read thoroughly and referred to frequently.

ACCIDENTS HURT !!!

ACCIDENTS COST !!!

ACCIDENTS CAN BE AVOIDED !!!

Important Safety Information

Figure 1.1 - The need for safety cannot be stressed strongly enough in this manual. At New Leader Manufacturing, we urge you to make safety your top priority when operating any equipment. We firmly advise that anyone allowed to operate this machine carefully read, learn and understand all messages and information in this manual and on machine's safety decals before operating machine, as well as familiarize themselves with the location and function of all machine controls.

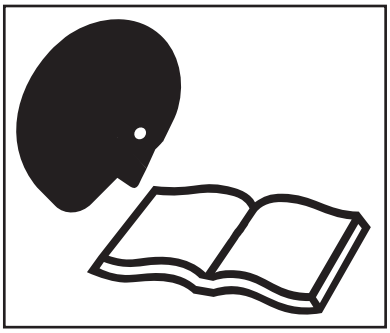


Figure 1.1

The following guidelines are intended to cover general usage and to assist you in avoiding accidents. There will be times when you will run into situations that are not covered in this section. At those times the best standard to use is common sense. If, at any time, you have a question concerning these guidelines, please call your authorized dealer or our Product Sales & Support Department at (800) 363-1771.

Safety Alert Symbols

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

In this manual and on the safety signs placed on the unit, the words "DANGER," "WARNING," "CAUTION," and "NOTICE" are used to indicate the following:

DANGER	Indicates an imminently hazardous situation that, if not avoided, WILL result in death or serious injury. This signal word is to be limited to the most extreme situations and typically for machine components that, for functional purposes, cannot be guarded.
WARNING	Indicates a potentially hazardous situation that, if not avoided, COULD result in death or serious injury, 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.
NOTICE!	Is used for informational purposes in areas which may involve damage or deterioration to equipment but generally would not involve the potential for personal injury.
NOTE:	Provides additional information to simplify a procedure or clarify a process.

PREPARE FOR EMERGENCIES

Figure 1.2 - Be prepared if a fire starts. Keep a fully charged fire extinguisher and first aid kit in accessible place on the vehicle at all times.

Fire extinguisher must be Type ABC or Type BC.

Keep emergency numbers for doctors, ambulance service, hospital and fire department available at all times.

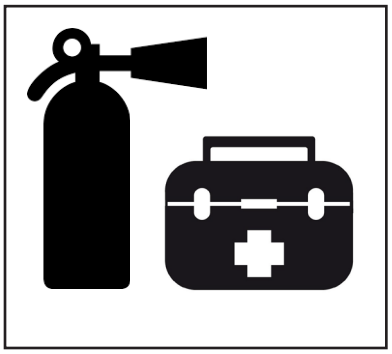


Figure 1.2

INSPECT HARDWARE BEFORE USE

Figure 1.3 - Inspect all bolts, screws, fasteners, keys, chain drives, body mounts and other attachments periodically. Immediately replace any missing or damaged parts immediately with proper specification parts.

Inspect spinner fins, spinner frame mounting and spinner fin hardware daily. Look for missing or loose fasteners, wear and cracks. Replace immediately if needed. Use only new SAE grade 5 or grade 8 screws and self-locking nuts.

Tighten all bolts, nuts and screws to specified torques. Refer to "Standard Torques" in Maintenance section of this manual.

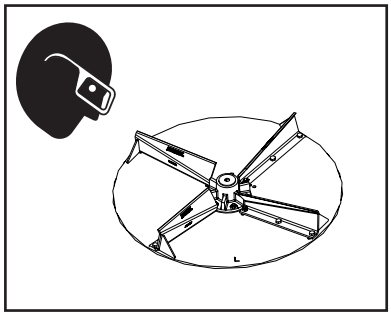


Figure 1.3

HANDLE FLAMMABLE MATERIALS SAFELY

Figure 1.4 - Handle fuel and hydraulic oil with care. They are highly flammable.

Always stop the engine before refueling machine or filling hydraulic reservoir.

Never smoke while adding fuel or oil to machine. Add fluids in a safe place away from open flame and sparks.

Do not allow overflow. Clean up spilled fuel and oil immediately.

Figure 1.4

Always have a multipurpose dry chemical fire extinguisher filled and available during machine operation and when adding fuel. Know how to use it.

HANDLE HAZARDOUS MATERIALS SAFELY

Figure 1.5 - Materials to spread can be dangerous.

Improper selection, application, use or handling may be a hazard to persons, animals, plants, crops or other property.

A Safety Data Sheet (SDS) provides specific details on chemical products: physical and health hazards, safety procedures and emergency response techniques.

Check the SDS before starting any job using a hazardous material. Follow all instructions and precautions given by the material manufacturer.

Figure 1.5

WORK IN WELL-VENTILATED AREAS

WARNING Never run machine engine inside a building unless adequate ventilation is provided to safely and properly remove exhaust fumes.

Figure 1.6 - Always work in a properly ventilated area.

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, use proper equipment to safely remove exhaust fumes from the working area.

Open building doors and get fresh air into the working area whenever possible.

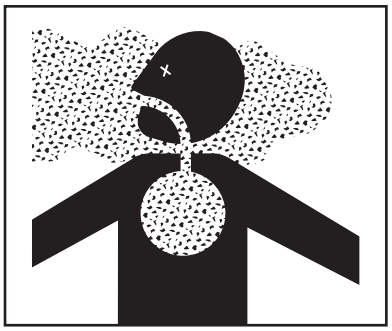


Figure 1.6

PROTECT AGAINST NOISE

Figure 1.7 - Long periods of exposure to high decibels or loud noise can cause hearing impairment or loss.

Wear proper hearing protection during periods of exposure to high decibels or loud noise.

Wear a proper hearing protective device such as earmuffs or earplugs to protect against high decibels and / or uncomfortable loud noises.

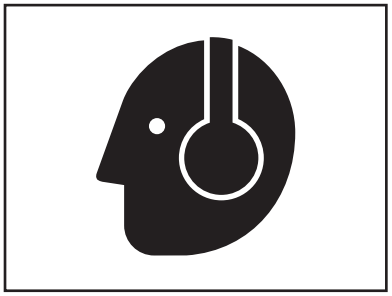


Figure 1.7

AVOID MOVING PART HAZARDS

Figure 1.8 - Entanglement in rotating drive lines or moving parts will cause serious injury or death.

Stay clear of all moving parts, such as shafts, couplings and universal joints.

Make sure all personnel are clear of machine before starting.

Figure 1.8

Figure 1.9 - Do not operate machine without all guards and shields closed and secured. Disconnect and lock out power source before removing guards.

Disconnect and lock out power source before adjusting or servicing.

Keep hands, feet, hair and clothing away from moving parts.

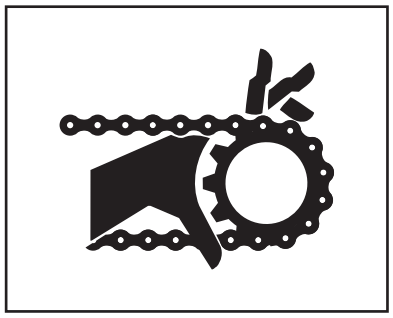


Figure 1.9

Figure 1.10 - Keep away from spinners while they are turning.

Rocks, scrap metal and other material can be thrown from the spinners violently. Stay away from discharge area.

Stop machine before servicing or adjusting. Wear eye protection.

Make sure discharge area is clear before spreading.

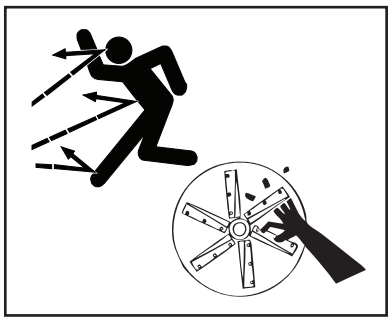


Figure 1.10

Figure 1.11 - Stay out of the spreader.

If it is necessary to enter the spreader, return to the shop, empty body, turn off all power, engage brakes, shut down engine and remove keys before entering.

Tag all controls to prohibit operation. Tags should only be placed, and later removed, by the person working in the body.

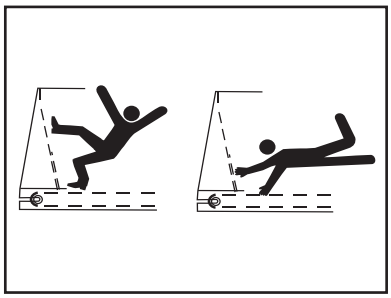


Figure 1.11

DO NOT CLIMB OR STAND ON MACHINE

Figure 1.12 - Never allow any personnel to ride in or on the machine.

Use only inspection ladder or portable ladder to view the unit. Use caution when getting on and off the ladder, especially in wet, icy, snowy or muddy conditions. Clean mud, snow and ice from steps and footwear.

Always maintain three-point contact with steps, ladders and handholds. Face the machine when mounting and dismounting inspection ladder. Do not jump off the machine.

Figure 1.12

OPERATE MACHINE SAFELY

Always walk around and visually inspect the machine before using. Check immediate vicinity of machine for people and obstructions. Ensure adequate visibility.

Avoid distractions such as reading, eating or operating personal electronics that take your attention away from operating the machine. Never operate the machine under the influence of alcohol, drugs or while otherwise impaired.

Always come to a complete stop before reversing. Be sure that all personnel are clear of machine path. Turn around and look directly for best visibility. Ensure all rear view mirrors are properly installed and adjusted. Use a signal person when backing if view is obstructed or when in close quarters.

Always disengage hydraulics before shutting down engine. DO NOT start engine with hydraulics engaged.

TRAVELING & TRANSPORTING ON PUBLIC ROADS

Always walk around and visually inspect the machine before traveling on public roads. Check for damage and/or faulty components that can fail and create a hazard or unsafe condition. Make sure all machine systems operate properly, including but not limited to: headlights, tail and brake lights, hazard warning lights, turn indicators, parking brake, horn and rear view mirrors. Repair or replace any component that is not in proper working order.

Never drive machine at a speed that causes it to bounce or cause loss of control.

Obey all traffic safety laws and regulations. Operate the machine with hazard warning lights on, unless prohibited by law. It is the operator's responsibility to activate and use road lights properly while traveling on public roads.

Cover all loads that may spill or blow away. Environmental damage may result. Do not spread dusty materials where dust may create pollution, visibility issues or interfere with traffic on public roads.

When transporting equipment or machine on a trailer, ensure it is properly secured. Be sure that SMV signs on equipment or machine are covered while in transport on a trailer.

Be aware of overhead structures and power lines. Make sure machine can safely pass under. Refer to "Dimensions & Capacities" pages in the Operations section of this manual.

NAVIGATING ROUGH & UNEVEN TERRAIN

Figure 2.1 - Turn slowly and be careful when traveling on rough surfaces and side slopes. Avoid holes, ditches and obstructions that may cause machine to roll over, especially with a loaded spreader.

Never drive near the edge of a gully or steep embankment.

Load may shift, causing vehicle to tip.

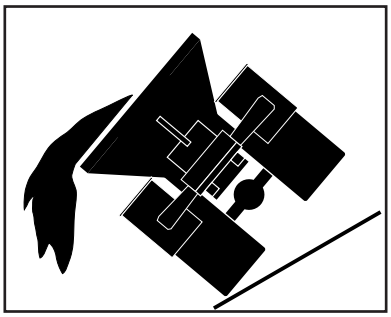


Figure 2.1

READ AND UNDERSTAND MAINTENANCE PROCEDURES

Figure 3.1 - Read the maintenance and safety instructions and understand them before performing any maintenance procedure.

Never perform any maintenance procedure or repair if the instructions and safety procedures are not fully understood. Only trained and qualified personnel should perform any maintenance procedure or repair.

Never modify any equipment or add attachments not approved by New Leader Manufacturing.

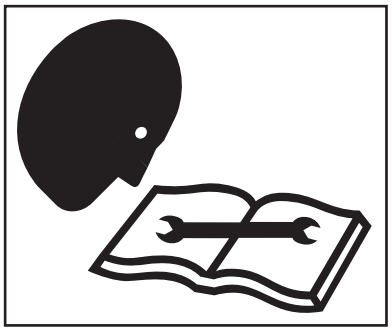


Figure 3.1

DO NOT SERVICE OR ADJUST MACHINE WHILE IN MOTION

Figure 3.2 - Never lubricate, service or adjust the machine or any of its components while they are moving.

Never wear loose clothing or jewelry when working near machine tools or moving parts.

Remove rings and other jewelry to prevent electrical shorts and other personal injury when in contact with machine tools or moving parts.

Close and secure all guards removed for service. Check all screws, bolts, nuts and fasteners for proper torques before operating machine.

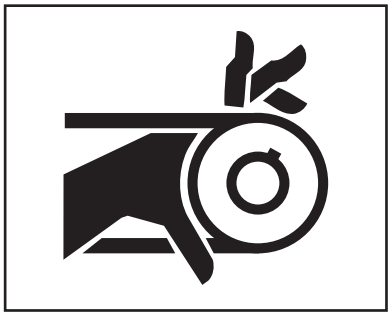


Figure 3.2

WEAR PROPER PROTECTIVE EQUIPMENT

Figure 3.3 - Wear close-fitting clothing and proper safety equipment for the job.

Always wear eye protection when working on or around the machine.

Wear a suitable hearing protection device such as earmuffs or earplugs to protect against high decibels or loud noises.

Prolonged exposure to high decibels or loud noise can cause hearing impairment or loss of hearing.

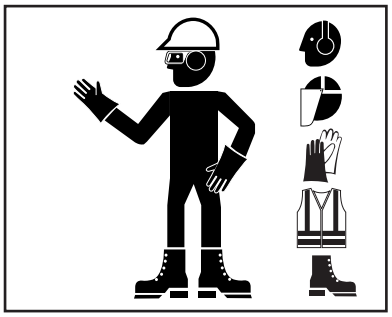


Figure 3.3

Wear protective gloves to protect hands from cuts, abrasions and minor burns.

HANDLE FLAMMABLE SOLVENTS SAFELY

Figure 3.4 - Never use diesel fuel, kerosene, gasoline or any flammable solvents for cleaning.

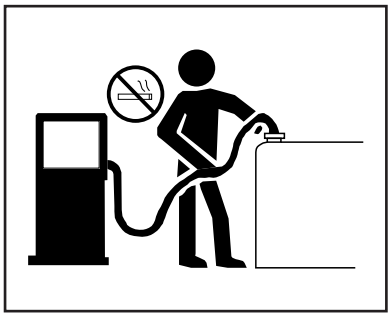


Figure 3.4

Perform work using flammable fluids and solvents in a safe place away from open flame and sparks. Do not smoke.

Do not weld, grind or flame cut on any tank containing oil, fuel, fumes or any other flammable material, or any container that contents or previous contents are unknown. Move all flammable materials and containers away from work area.

Clean up spilled fuel and oil immediately.

Always have a multipurpose dry chemical fire extinguisher filled and available. Know how to use it.

USE PROPER LIFTING EQUIPMENT

Figure 3.5 - Use only lifting devices that meet or exceed OSHA standard 1910.184 or ASME B30.20-2013.

Figure 3.5

Never lift equipment over people.

Never lift a loaded unit. Never lift unit with any loose objects or persons in the body. Loads may shift or fall if improperly supported, causing death, serious injury or machine damage.

Before unfastening heavy parts or assemblies, support with adequate hoist or other device to prevent falling, tipping, swinging or any other movement that may cause injury or damage.

USE PROPER TOOLS FOR THE JOB

Figure 3.6 - Use of improper tools (such as a screwdriver instead of a pry bar, pliers instead of a wrench, a wrench instead of a hammer) can cause serious injuries or machine damage.

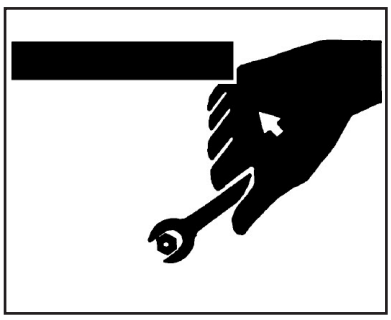


Figure 3.6

Use power tools only to loosen threaded parts and fasteners. Using power tools to tighten may cause over-tightening and component damage.

Use only service parts meeting New Leader specifications.

HIGH PRESSURE FLUID HAZARDS

Figure 3.7 - Escaping fluid under pressure can penetrate the skin causing serious injury.

Always stop machine, allow to cool and relieve pressure before servicing hydraulic system. Never open hydraulic lines under pressure. Make sure all connections are tight and all hoses are in good condition before pressurizing system.

Always use a piece of cardboard or wood to search for leaks instead of hand. Wear impervious gloves and eye protection when servicing system.

Seek medical attention immediately if fluid penetrates your skin. Gangrene may result if wound is left untreated.

Figure 3.7

AVOID HEATING NEAR HIGH PRESSURE FLUID LINES

Figure 3.8 - Flammable spray can be generated by heating near pressurized fluid lines, resulting in burns to yourself and bystanders.

Do not heat by welding, soldering or using a torch near pressurized fluid lines or other flammable materials.

Pressure lines can suddenly burst when heat goes beyond the immediate flame area.

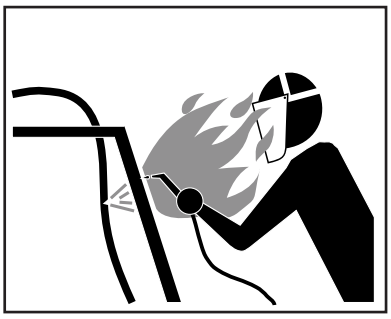


Figure 3.8

AVOID TOXIC FUMES & DUST

Figure 3.9 - Hazardous fumes can be generated when paint is heated from welding, soldering or using a torch.

Remove paint before heating:

- Remove a minimum of 4 in (100mm) from area to be affected by heating. If paint cannot be removed, wear an approved respirator while heating or welding.
- Avoid breathing dust from sanding or grinding on paint.
- If a solvent or paint stripper is used, wash stripper away with soap and water before heating or welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse for at least 15 minutes before heating or welding.

Do not use chlorinated solvents in areas where welding will take place.

Perform all work in a well-ventilated area that willl carry all toxic fumes and dust away.

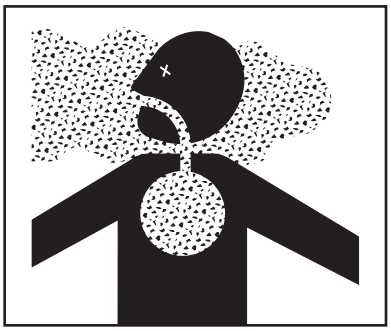


Figure 3.9

CLEAN MACHINE OF HAZARDOUS CHEMICALS

CAUTION	During application of hazardous chemicals, residue can build up on the inside or outside of the vehicle. Clean vehicle according to use instructions of hazardous chemical.

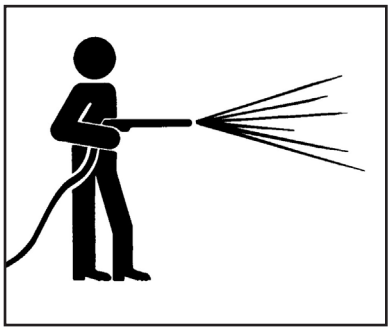


Figure 3.10

Figure 3.10 - When exposed to hazardous chemicals, clean exterior and interior of vehicle daily to keep free of the accumulation of visible dirt and contamination.

1. Clean operator's station to maintain unobstructed visibility of all windows and mirrors, and safe operation of all controls.

NOTICE!	Directing pressurized water at electronic/ electrical components, bearings and hydraulic seals or other sensitive parts and components may cause product malfunctions. Reduce pressure and spray at 45 to 90 degree angles.

2. Wash entire exterior of vehicle.
3. Dispose of any wash water with hazardous concentrations of active or non-active ingredients according to published regulations or directives.

HANDLE BATTERIES SAFELY

WARNING	Sulfuric acid in battery electrolyte is poisonous. It can burn skin, eat holes in clothing, and cause blindness if it contacts eyes.

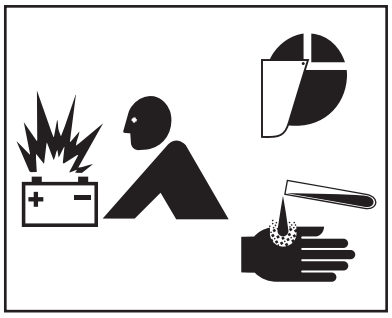


Figure 3.11

Figure 3.11 - Lead acid batteries generate flammable and explosive gases. Keep sparks and flame away from batteries. Do not smoke.

If acid contacts eyes, skin or clothing, flush with water immediately. Seek immediate medical attention if acid contacts eyes.

PROPER TIRE MAINTENANCE

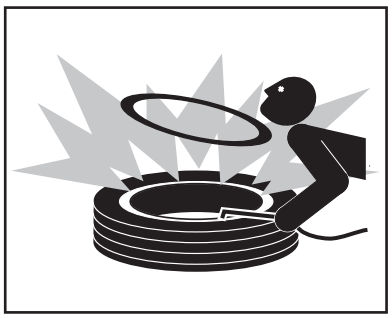


Figure 3.12

Figure 3.12 - Never weld on a wheel or rim that has a tire on it.

Never attempt to mount or remove a tire unless using the proper equipment, tire safety cage, instructions, training, and you are qualified to perform the work safely. Failure to follow the correct procedures when mounting a tire on a wheel or rim can cause an explosion and serious injury.

Tire service procedures must be performed by trained and qualified personnel.

Storage

PARK VEHICLE SAFELY

Figure 4.1 - When leaving the vehicle unattended for any reason, be sure to:

- Shut down PTO.
- Shut off vehicle's engine, and unit's engine if applicable.
- Place vehicle transmission in "Neutral" or "Park".
- Set parking brake firmly.
- Remove ignition key and take it with you.
- Block wheels.

These actions are recommended to avoid unauthorized use, runaway, vandalism, theft and unexpected operation during startup.

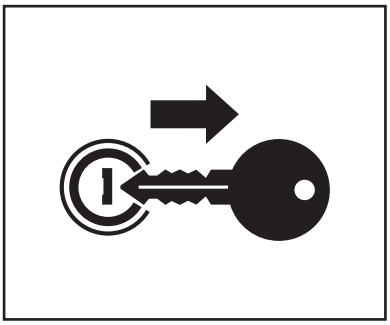


Figure 4.1

SUPPORT MACHINE PROPERLY

Figure 4.2 - When machine is removed from vehicle, always store on adequate supports on a firm level surface. Improper supporting or storage of spreader may cause machine to fall, resulting in serious injury or death.

Never use lifting device to free machine from a chassis, storage stands or frozen ground, or to lift the chassis in any way. Shock loading is prohibited and sudden accelerations must be avoided. Lifting in such a manner could result in injury or machine damage.

Figure 4.2

DISPOSE OF WASTE PROPERLY

Figure 4.3 - Improper disposal of waste can threaten the environment and ecology. Potentially harmful waste used with equipment include items such as fuel, oil, filters and batteries.

Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them. Do not pour waste onto the ground, down a drain, or into any water source.

Inquire on proper disposal methods from your local environmental or recycling center, or from your local dealer.

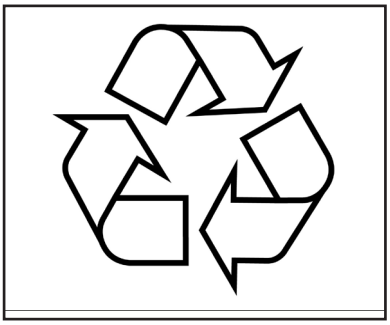


Figure 4.3

Safety Decal Maintenance

Keep safety decals and signs clean and legible at all times.

Replace safety decals and signs that are missing or have become illegible.

Replaced parts that displayed a safety sign should also display the current sign.

Safety decals or signs are available from your dealer's Parts Department or from New Leader Manufacturing by calling (800) 363-1771.

Safety Decal Installation

Clean Surface

Wash the installation surface with a synthetic, free-rinsing detergent. Avoid washing the surface with a soap containing creams or lotion. Allow to dry.

Position Safety Decal

Decide on the exact position before application. Application marks may be made on the top or side edge of the substrate with a lead pencil, marking pen, or small pieces of masking tape. NOTE: Do not use chalk line, china marker, or grease pencil. Safety decals will not adhere to these.

Remove the Liner

A small bend at the corner or edge will cause the liner to separate from the decal. Pull the liner away in a continuous motion at a 180-degree angle. If the liner is scored, bend at score and remove.

Apply Safety Decal

Tack decal in place with thumb pressure in upper corners. Using firm initial squeegee pressure, begin at the center of the decal and work outward in all directions with overlapping strokes. NOTE: Keep squeegee blade even—nicked edges will leave application bubbles. Pull up tack points before squeegeeing over them to avoid wrinkles.

Remove Pre-mask

If safety decal has a pre-mask cover remove it at this time by pulling it away from the decal at a 180 degree angle. NOTE: It is important that the pre-mask covering is removed before the decal is exposed to sunlight to avoid the pre-mask from permanently adhering to the decal.

Remove Air Pockets

Inspect the decal in the flat areas for bubbles. To eliminate the bubbles, puncture the decal at one end of the bubble with a pin (never a razor blade) and press out entrapped air with thumb moving toward the puncture.

Re-Squeegee All Edges

General Description

The Pre-Wet System is intended for use with a Hi-Way spreader. It applies deicing solution directly to the granular material being spread to enhance the melting of snow and ice. It's compatible with a variety of deicing solutions including sodium chloride, calcium chloride, magnesium chloride, potassium acetate and CMA. The system comes complete with a liquid spray pump, spray tank, frame with three mounting straps per tank, discharge nozzles, plumbing and hardware.

Tanks are polyethylene rotationally molded, UV protected with a minimum specific gravity rating of 1.9. The tanks include a molded-in enclosure 14" (356mm) high x 8-1/2" (216mm) wide x 4-1/2" (114mm) deep with a polyethylene removable cover for the pump and electrical components. They also include two molded-in internal baffles, five-inch vented spin-on lids, a 1-1/2" (38mm) quick fill port with a male camlock and dust cap, a 1/2" (13mm) suction port and a 1/2" (13mm) bypass port. The tanks are equipped with positive ventilation devises, which are splash resistant. All tank ports have replaceable polypropylene bulkhead adapters, not spin welds. Dual tank systems use a 1-1/2" (38mm) hose to connect tanks together for equalization and ease of filling.

This product is intended for commercial use only.

Hydraulic Closed Loop HCL

The closed loop hydraulic liquid dispensing system is designed for a constant application rate. The system calibration and programmable application rates are accomplished by the use of a variety of micro-processor controllers. The system comes with a closed loop flow meter.

Hydraulic Open Loop HOL

The open loop hydraulic liquid dispensing system is designed for a manually adjustable rate of application. The system calibration is accomplished through a (PWM) type of controller with the option of a low-level indicator.

Hydraulic Series Open Loop HSOL

The series open loop hydraulic liquid dispensing system is designed for a linear application rate. The calibration of the system is accomplished through the use of an in-cab controller with backlit scale, increase button, decrease button, and a 20 amp thermal self-resetting circuit breaker that protects the unit. The controller operates an electro-proportion valve (PWM), which is part of a specially designed modular valve. (On/off switch is not required.) The system is designed to be installed into the vehicles hydraulic system by the use of the conveyor/auger exhaust oil flow (must be a series loop) this allows for the ground speed orientation provided that the conveyor/auger is ground speed controlled.

Electric Open Loop Manual-EM

The Manual Electrical Liquid Dispensing system is designed for a constant application rate regardless of ground speed. The system uses an in-cab controller with backlit scale, increase button, decrease button, and a 20 amp thermal self-resetting circuit breaker that protects the unit. The cab control has a buzzer and three lit indicators for system warnings.

Discharge Nozzles

The system uses two brass spray body and nozzles to apply solution on material being conveyed to the spinners. The nozzles are easily disconnected from the spreader by the use of inline nylon quick disconnects. The nozzles spray a 110° flat fan spray pattern. Nozzles use a 7 pound inline check valve for the prevention of siphoning.

The system includes a 1-1/2" (38mm) polypropylene quick fill port with shut-off ball valve and integral camlocks. The pump inlet plumbing features a ball valve and a Y-strainer with serviceable screen filter cartridge. The bypass plumbing features a 3/4" (19mm) polypropylene bypass valve with adjustable pressure relief valve with pressure gauge. All hose, which is supplied, is nylon reinforced PVC hose with a working pressure of not less than 200 psi (13.8 bar) with max temperature rating of 100°F. All fasteners are 316 stainless steel.

Tailgate Systems

The system includes a tank support frame, which can be removed from the spreader via two pull pins. The pump outlet plumbing includes a nylon quick disconnect coupling.

Dimensions & Specifications

TANK	CAPACITY Gallons (Liters)	TANKS (Quantity)	MOUNT LOCATION
TG100	100 (378.5)	1	Truck's Tailgate
VB075	75 (284)	1	V-Body Driver's Side
VB100	100 (378.5)	1	V-Body Driver's Side
VB150	150 (568)	2	V-Body Both Sides
VB200	200 (757)	2	V-Body Both Sides

TANK	TANK HEIGHT Inches (cm)	TANK WIDTH Inches (cm)	TANK LENGTH Inches (cm)	TANK WEIGHT* approx. lbs (kg)
TG100	26 (66)	15 (38)	70 (178)	84 (38)
VB075/150	21.25(54)	14.25 (36)	78.5 (200)	64 (29)
VB100/200	21.25 (54)	19.25 (49)	90 (229)	84 (38)

*Tank weights are per tank, empty, with no attachments.

Tank/Straps

TG Mounting

NOTICE! Straps are intended for universal installation–some modification may be necessary.

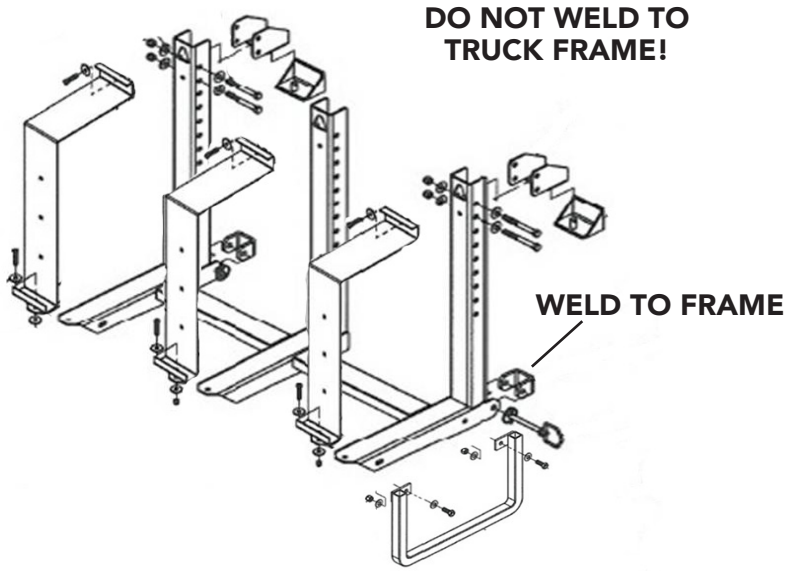


Figure 1 - TG Tank Mounting

1. Measure height from top of tailgate to dump body floor. This measurement must be at least 29" (740mm) to provide adequate clearance. If it's less contact your Hi-Way Dealer.

NOTICE!
Do not weld near polyethylene tank. Tank could be damaged by the heat.

WARNING Mounting Brackets must be welded to the tailgate on a strong flat surface.

2. Locate and weld Top Tailgate Brackets to Tailgate as shown in Figure 1.
3. Install Bottom Tailgate Brackets to Frame with Hitch Pin.
4. Set Frame in place on locating pins on Top Tailgate Brackets.
5. Level Frame so it's parallel to tailgate.
6. Weld Bottom Tailgate Brackets to tailgate as shown in Figure 1.
7. Remove Frame from tailgate and set on flat level surface.
8. Place Tank on Frame, upright, centered and level, with pump recess on passenger's side of truck.
9. Bolt Straps to Frame securing Tank.
10. Set Frame and Tank Assembly in place on locating pins on Top Tailgate Brackets.
11. Install Tailgate Plumbing Guard with hardware as shown in Figure 1.

VB Mounting

NOTICE! Straps are intended for universal installation–some modification may be necessary.

1. Check system combination, i.e. hopper tanks to truck bed. Check for interference with bed corner to tank corners.
2. Position Tank(s) on hopper, upright and level, and locate the Straps as shown in Figure 2. Modify Straps as necessary for fit.
3. Clamp Stops to Straps. Remove Tank and weld Stops to Straps.
4. Place Tank in Straps and mount to hopper.

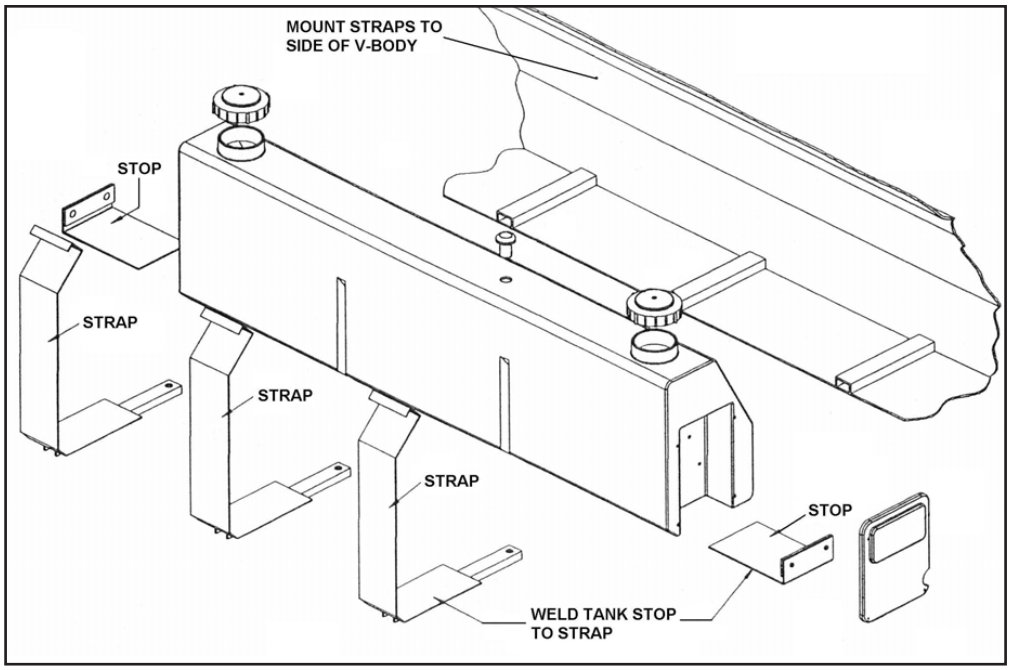


Figure 2 – VB Tank Mounting

POWER UNIT

See Parts Lists in the back of this manual for illustrations.

Mount power units, level and upright, vertical with air bleed down, at or below tank level to prevent problems with priming or crystallization of liquid solution between uses. The power unit should be in an easily accessible location that is protected from the elements and strike hazards. The tanks have enclosures for the power units that provide the necessary location and protection. The TG100 pump should be mounted on the passenger's side of the vehicle.

Mount control box in truck's cab in a location accessible to the operator without obstruction or diverting normal driving view. Avoid interference between the control box and vehicle controls. The control box should be mounted out of direct sunlight, preferably in a shaded area, and installed as far away as possible from any two-way radios.

FLOAT (Optional)

Mount the float on the side of the tank slightly above the suction outlet height. Install the float switch with the arrow down for standard, normally closed operation for 20 amp driver. (Arrow up installation is for normally open operation.) Make sure the float has adequate room to move unobstructed, and will not be struck by any loose objects inside the tank.

Plumbing

Drill holes in tanks as shown in Figures 3 – 6 and remove debris from tank. Install plumbing as shown in Figure 3 and Plumbing Parts Pages in this manual. Custom mounting may be required. Use pipe sealant on all threads. Make sure nozzles are aimed to spray onto the material as it leaves the spreader body.

NOTICE!
Install ties as needed to keep hoses away from pinch points, moving parts and hot areas.

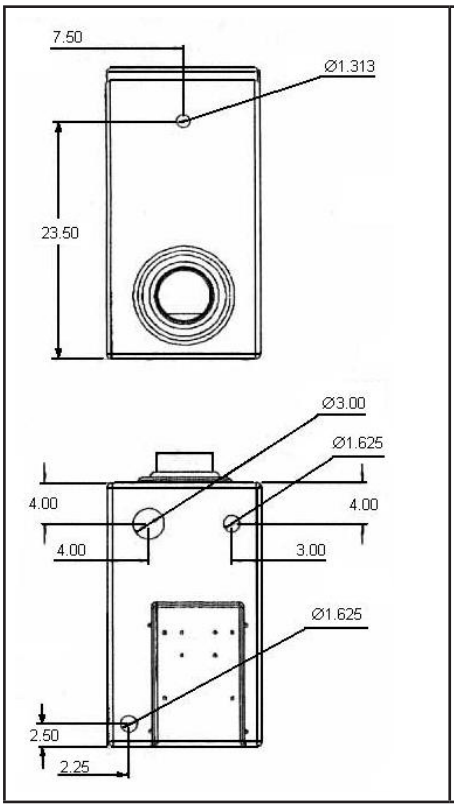


Figure 3 – TG100 Holes

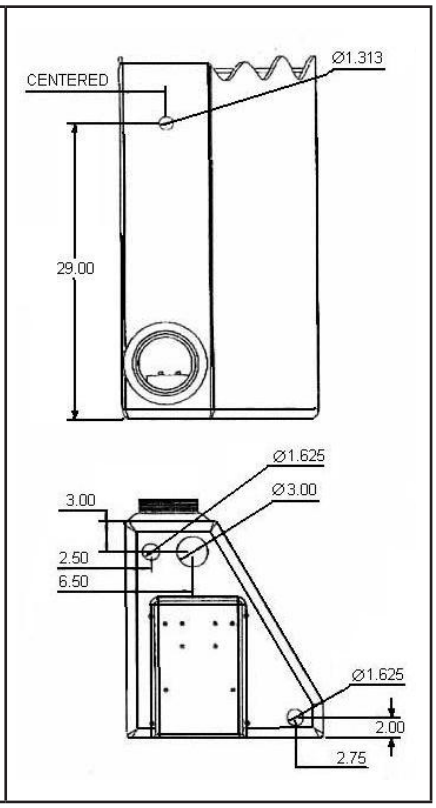


Figure 4 – VB100 Holes

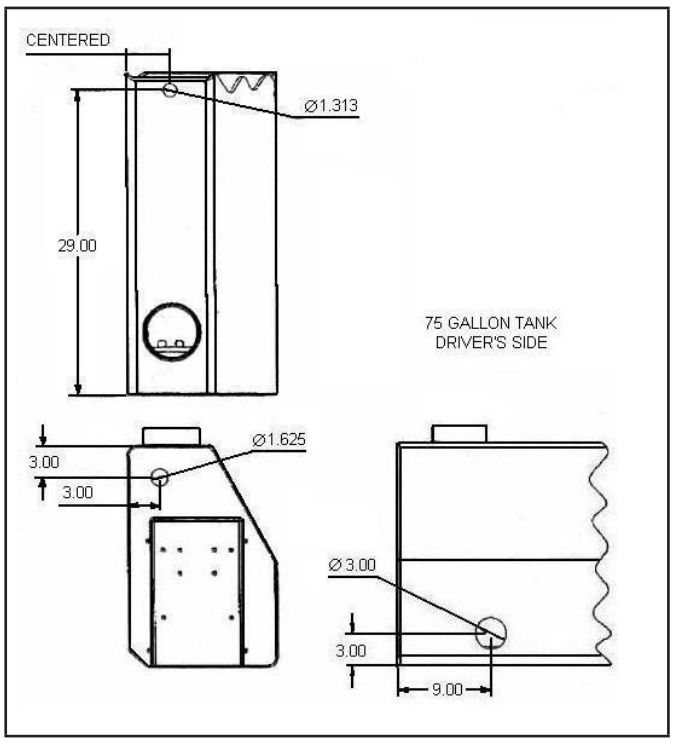


Figure 5A – VB075 & VB150 LH Holes

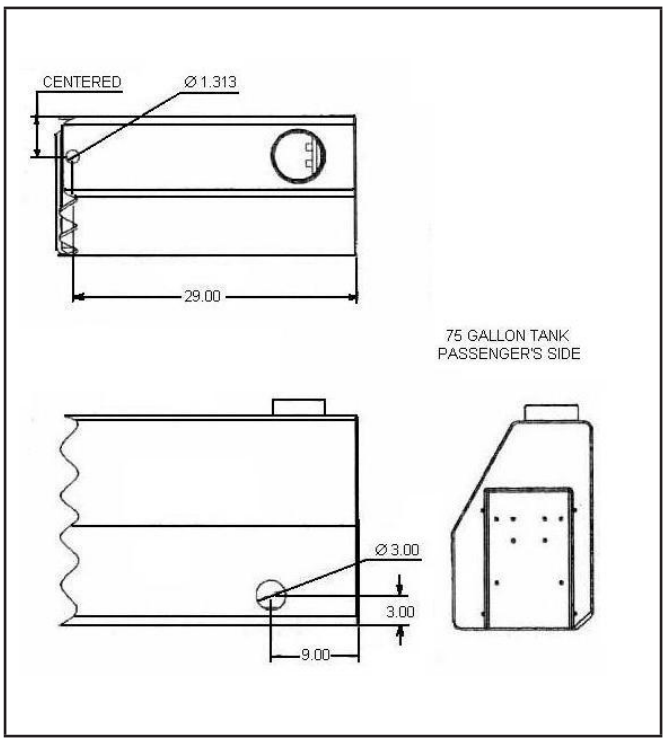


Figure 5B – VB150 RH Holes

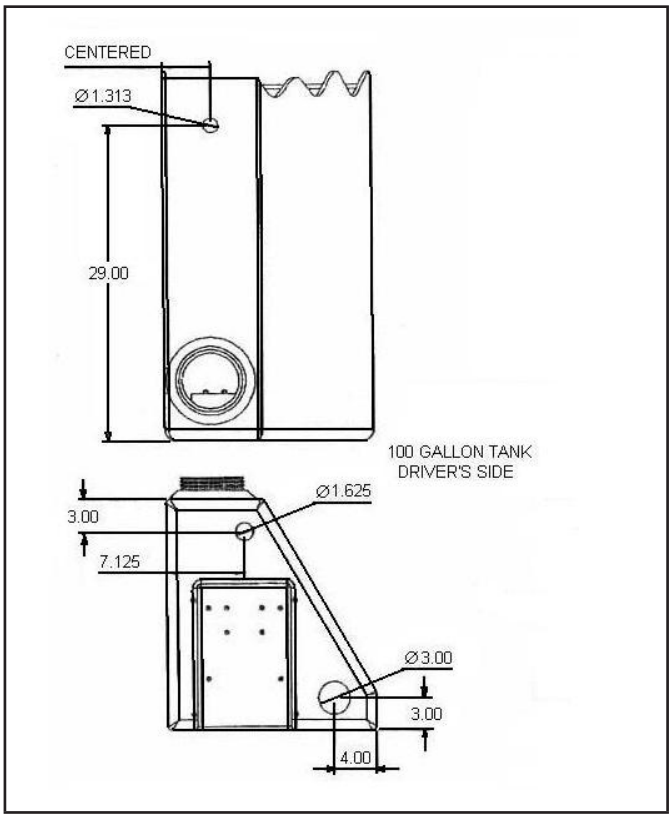


Figure 6A – VB200 LH Holes

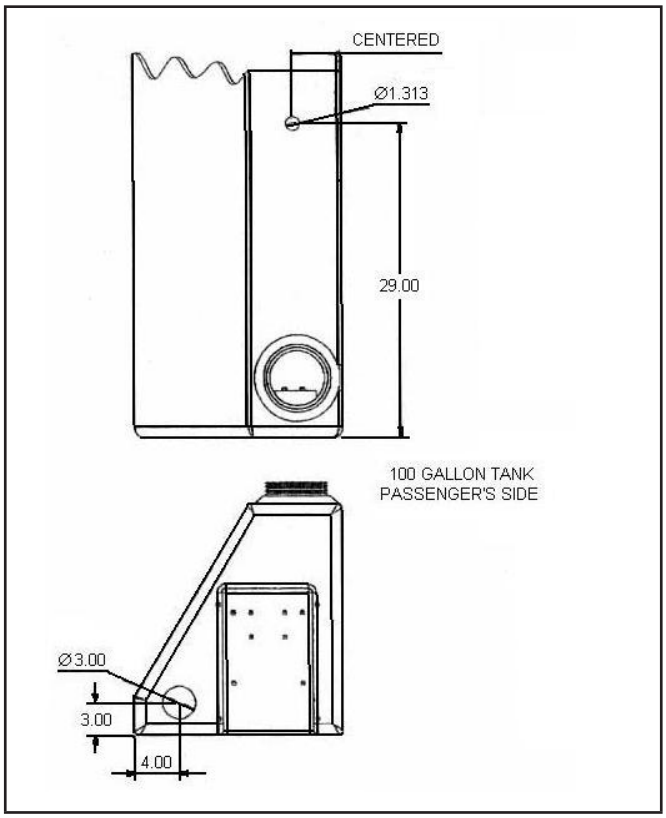


Figure 6B – VB200 RH Holes

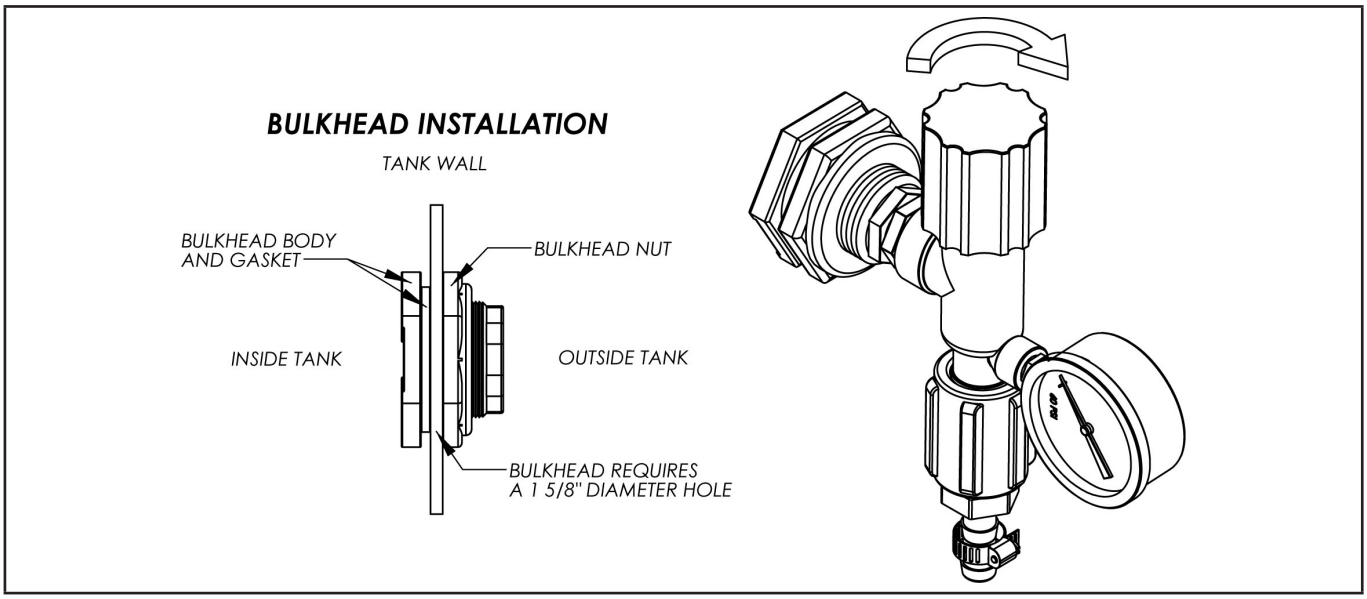


Figure 7 – Hydraulic Plumbing

Hydraulics (if applicable)

Install hydraulics as shown on "Power – HCL", "Power – HOL" and "Power – HSOL" Parts Pages in this manual.

Control Box

The 20-amp driver is designed to drive an electric motor or PWM valve to control the output of a liquid system and to vary the liquid output. The controller is pulse width modulated at 400 Hz. It has the capability of four warning or status indicators.

Install the control box inside the vehicle cab in a location that is accessible to the operator without obstructing or diverting normal driving view. Avoid interference with any vehicle controls. Mount the control box out of direct sunlight, preferably in a shaded area, and as far as possible from any two-way radios. Hook up wires as shown in Figure 8.

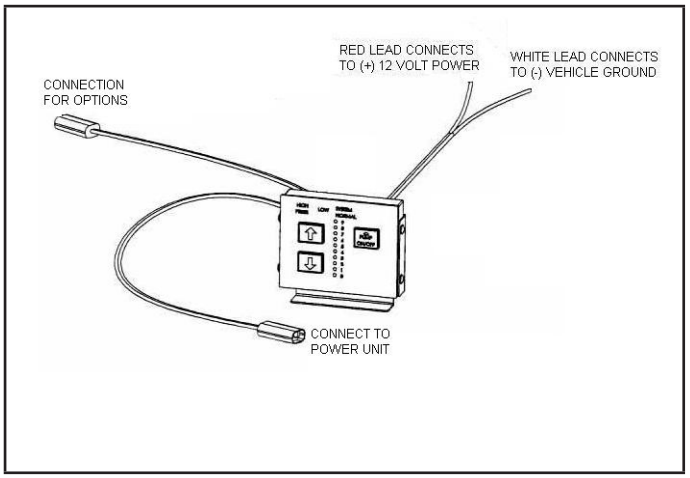


Figure 8 – Driver Hook-up

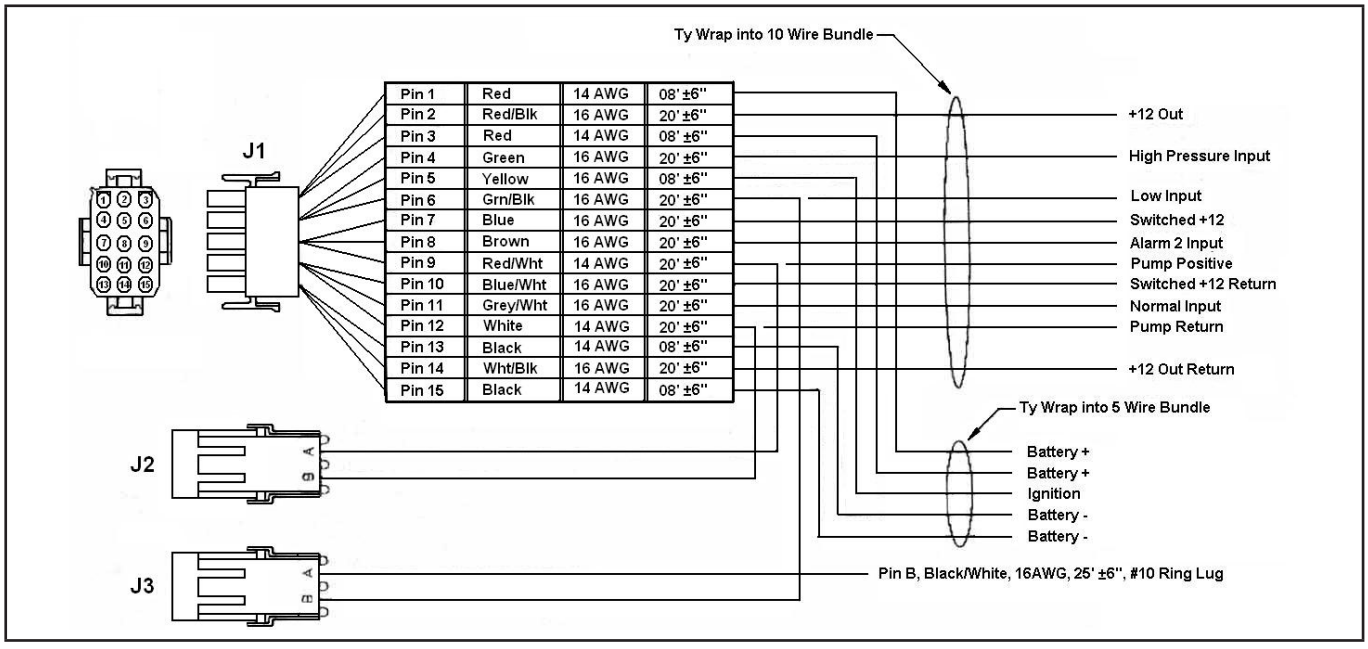


Figure 9 – Cable Assembly

Overview – Driver Connections

+12 out	This is a spare out for a high current output exceeding 20 amps, and less than 30 amps. Combine both pump outputs for current over 20 amps.
High Pressure	Not used.
Low Input	This is an optional ground input to trigger the low light, which can be connected to a low level or low pressure switch, which would be located in the liquid system on the pressure side. This is the J-3 plug. Note: The alarm 2 may be used in conjunction with this input to sound the alarm if needed for the low level switch. Not recommended for use with low-pressure switch.
Switched +12	The 12 switched is used to operate a solenoid valve, to open or close a valve using a 12-vdc signal.
Alarm 2	Alarm 2 is an audible alarm that is triggered by a ground signal, which can be used in conjunction with the low input for an audible alarm.
Pump Positive	Connected to J-2 Plug which connects to a 12-vdc pump to operate the liquid system. This is also the output for operating a pwm hydraulic valve.
Switched -12	This is the return or negative the + switch output signal.
Normal Input	This is a ground input to trigger the normal light to indicate system is working at a normal liquid pressure, and is connected to a low-pressure switch that is a normally open switch in the pressure side of the liquid system.
Pump return	This is the ground for the pump positive output. Both are used to run the pumps or valves in the liquid system. Both wires are in the J-2 connector.
+ 12 out return	This is a spare ground used with the spare 12+ out for a high current system over 20 amps.
Battery +	For 20-amp operation.
Ignition +	For back lighting.
Battery -	For 20-amp operation.

System Operating Parameters

	HSOL	HOL	HCL*	EM
Hydraulic Flow:	3 – 20 GPM	5 – 7 GPM	0 – 7 GPM	NA
Maximum Pressure:	1500 PSI	1500 PSI	1500 PSI	NA
Power at 20 Amps:	12 VDC	12 VDC	12 VDC	12 VDC

*HCL with flow meter has 5 Volt output signal. Note: Flow meter may vary depending on controller.

Operation

HSOL, HOL, EM

1. Fill tank with de-icing chemical. Open tank valve(s).
2. Turn controller on be pressing Pump On/Off button. Red light will illuminate when on. The controller will reset to last setting on 0 to 9 scale. Note: The EM system will be spraying at this time unless optional Hydraulic Shut-Down Switch is installed.
3. Operate salt spreader to desired application rate.

NOTICE! Do not operate Pre-Wet system without liquid.

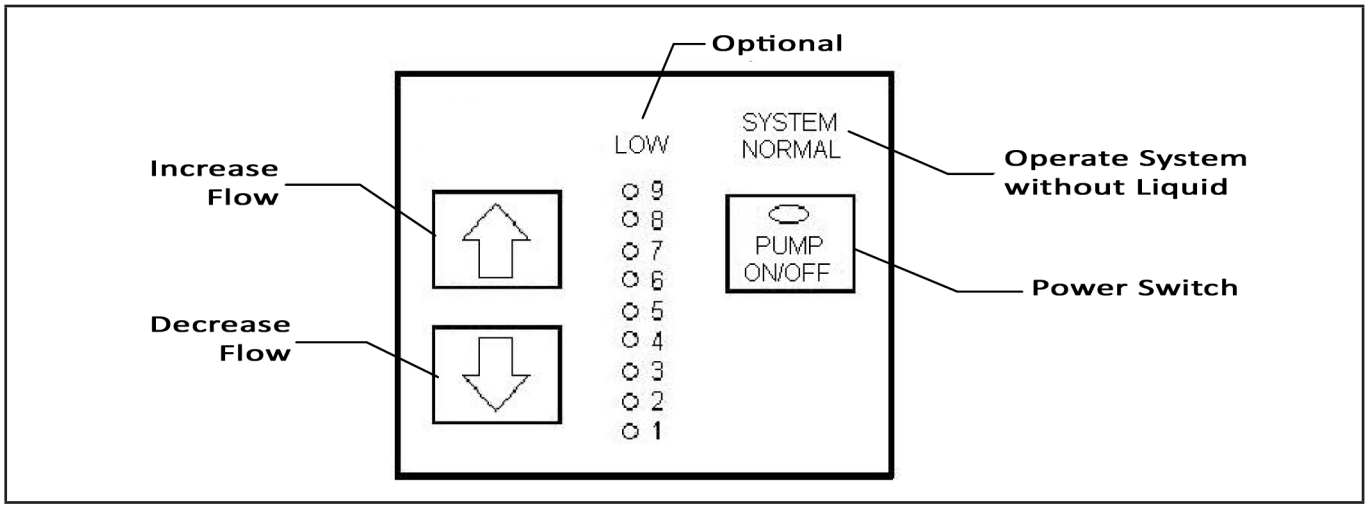


Figure 10 - Controller

HCL

Consult control manufacturer's manual.

Pre-Season

1. Check system for any damage which may have occurred during storage.
2. Flush system with hot soapy water.
3. Check system operation. Make sure there are no leaks; repair or reseal as necessary. Check filter; change as required.
4. Fill system with a non-corrosive anti-freeze until first use. Refer to "Every 2-3 Days" maintenance instructions prior to use.

In Season

WARNING DO NOT check leaks with hands while system is operating as high pressure oil leaks can be dangerous! If skin is pierced with hydraulic fluid at high pressure seek immediate medical attention as fluid injected into the skin could cause gangrene if left untreated. Relieve pressure before disconnecting hydraulic lines or working system. Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before applying pressure to the system. Wear protective gloves and safety glasses or goggles when working with hydraulic systems.

WARNING DO NOT check for hydraulic leaks adjacent to moving parts while system is operating as there may be danger of entanglement!

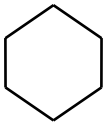
1. Flush system if it has been idle for more than five days. Flush with a non-corrosive agent that will not freeze. The amount of time will depend on the chemicals being used. Keep pump flooded to avoid crystallization of chemicals in the pump. If crystallization occurs in the pump, flush pump with hot water (disassembly may be required).
2. Wash system with hot soapy water.
3. Clean strain filter on suction side of pump. Check all filtration areas.
4. Check spray nozzles for chemical buildup and clean if necessary.
5. Make sure there are no leaks in the hydraulic system.

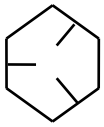
Annual – End Of Season

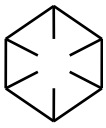
1. Flush system and pump with hot soapy water.
2. Wash enclosure inside and out with hot soapy water. Do not use power washer directly on power unit.
3. Fill system lines with a non-corrosive anti-freeze.
4. Flood pump, if possible, for storage.
5. Spray a light coat of storage seal coat, Cosmolene or WD-40 on power unit.
6. Spray electric grease on all open electrical connections.

Standard Torques National Coarse (NC) Cap Screws

CAP SCREW GRADE IDENTIFICATION - MARKINGS ON HEAD

SAE GRADE 2  NO MARKINGS

SAE GRADE 5  THREE MARKS - 120 DEGREES APART

SAE GRADE 8  SIX MARKS - 60 DEGREES APART

USE GRADE 2 TORQUES FOR STAINLESS STEEL FASTENERS AND CARRIAGE BOLTS.

CAP SCREW SIZE	TORQUE - FOOT-POUNDS					
	GRADE 2		GRADE 5		GRADE 8	
	DRY	LUBE	DRY	LUBE	DRY	LUBE
1/4″	5	4	8	6	12	9
5/16″	11	8	17	13	25	18
3/8″	20	15	30	23	45	35
7/16″	30	24	50	35	70	55
1/2″	50	35	75	55	110	80
9/16″	65	50	110	80	150	110
5/8″	90	70	150	110	220	170
3/4″	100	120	260	200	380	280
7/8″	140	110	400	300	600	460
1″	220	160	580	440	900	650

Instructions for Ordering parts

NEW LEADER MANUFACTURING

Order from the **AUTHORIZED DEALER** in your area.

Always give the pertinent model and serial number.

Give part name, part number and the quantity required.

Give the correct address to where the parts are to be shipped, and the carrier if there is a preference.

Unless claims for shortages or errors are made immediately upon receipt of goods they will not be considered. Any part returns should be directed through the dealer from which they were purchased.

When broken goods are received, a full description of the damage should be made by the carrier agent on the freight bill. If this description is insisted upon, full damage can always be collected from the transportation company.

No responsibility is assumed for delay or damage to merchandise while in transit. Our responsibility ceases upon delivery of shipment to the transportation company from whom a receipt is received showing that shipment was in good condition when delivered to them, therefore, claims (if any) should be filed with the transportation company and not with New Leader Manufacturing.

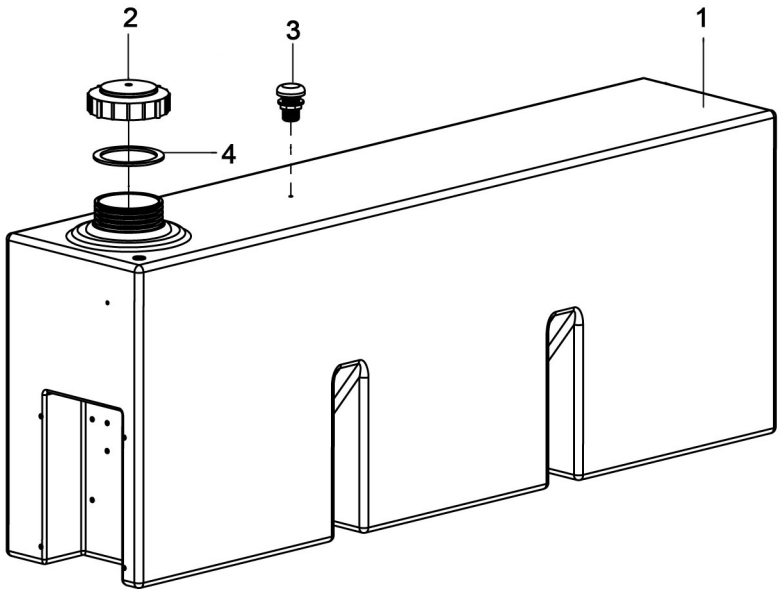
If your claims are not being handled (by the transportation company) to your satisfaction, please call the Parts Manager at New Leader Manufacturing (319-363-8281) for assistance.

In the parts list the following symbols and abbreviations stand for:

* - Not Shown
AR – As Required
CS – Carbon Steel
SS – Stainless Steel

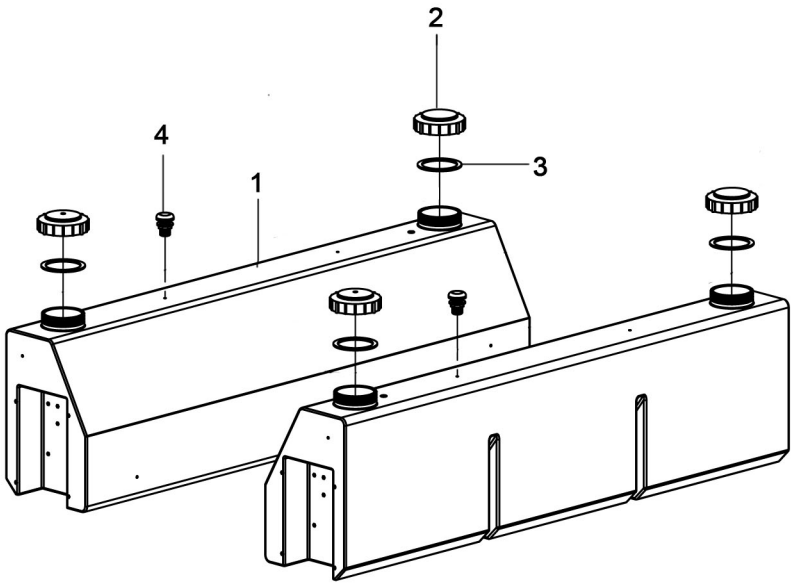
The parts listed under the different steel types (CS, 409 SS and 304 SS) are for that type of unit and do not necessarily mean the part is made of that type of steel.

Tank - TG100



ITEM	PART NO.	DESCRIPTION	QTY
	96599	Tank- Assembly TG100	
	307667	Kit- Single Lid and Breather, Includes 2-4	
1	96502	100 Gallon Tailgate Tank	1
2	96503	Lid	1
3	96533	Vent	1
4	304845	Gasket- Lid	1

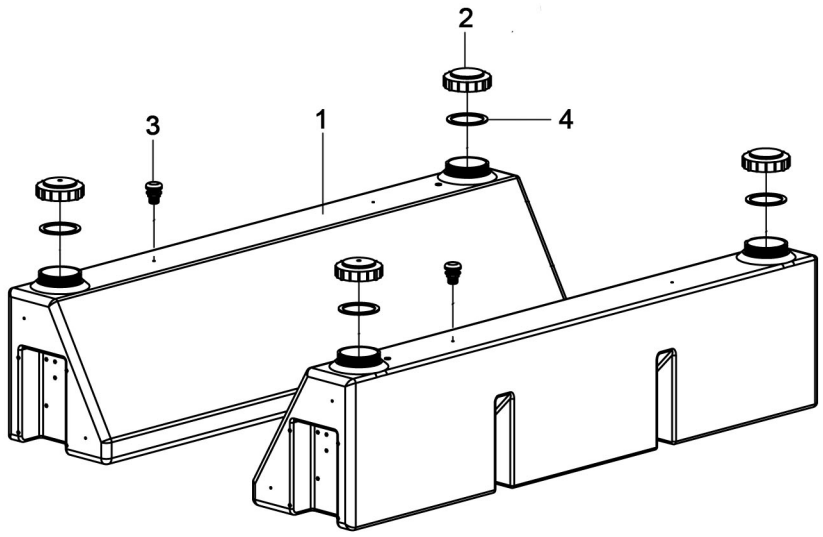
Tank - VB075/VB150



ITEM	PART NO.	DESCRIPTION	QTY
	96600	Tank- Assembly VB075B-ST	
	96601	Tank- Assembly VB150B-DT	
	307668	Kit- Dual Lid and Breather, Includes 2-4	
1	96564	Tank- 75 Gallon	1
2	96503	Lid	2
3	304845	Gasket- Lid	2
4	96533	Vent	1

Tank VB150- Part No. 96601 requires double the quantity of Items 1-4

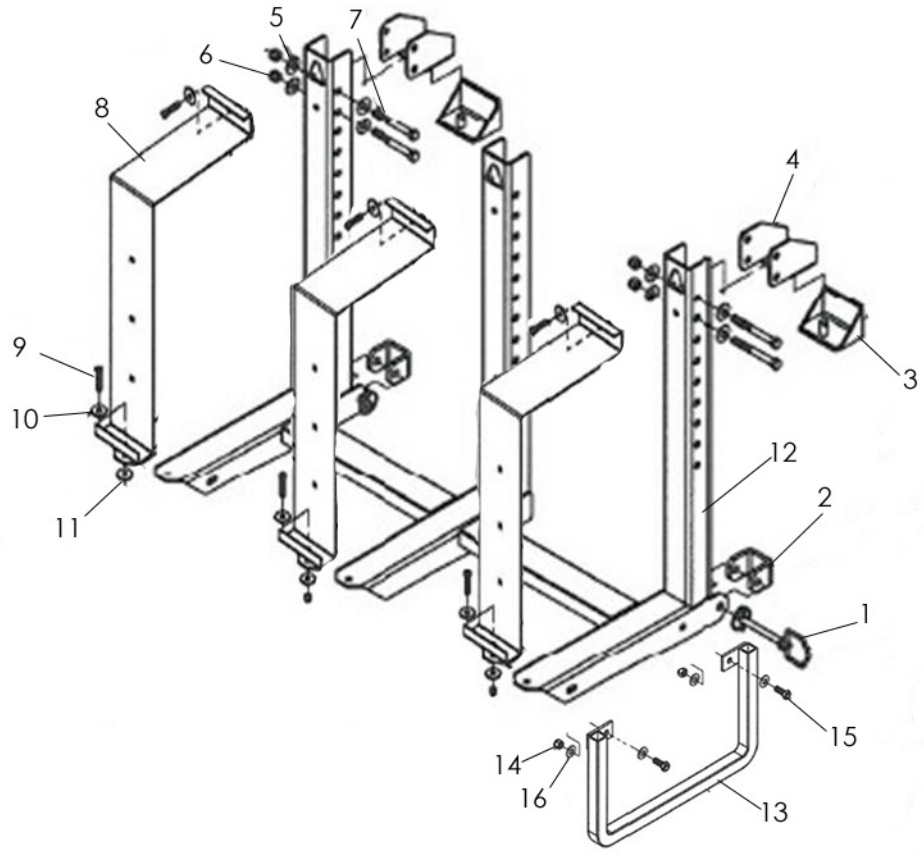
Tank - VB100/VB200



ITEM	PART NO.	DESCRIPTION	QTY
	96633	Tank- Assembly VB100B-ST	
	96602	Tank- Assembly VB200-DT	
	307668	Kit- Dual Lid and Breather, Includes 2-4	
1	96501	100 Gallon Tailgate Tank	1
2	96503	Lid	2
3	96533	Vent	1
4	304845	Gasket- Lid	2

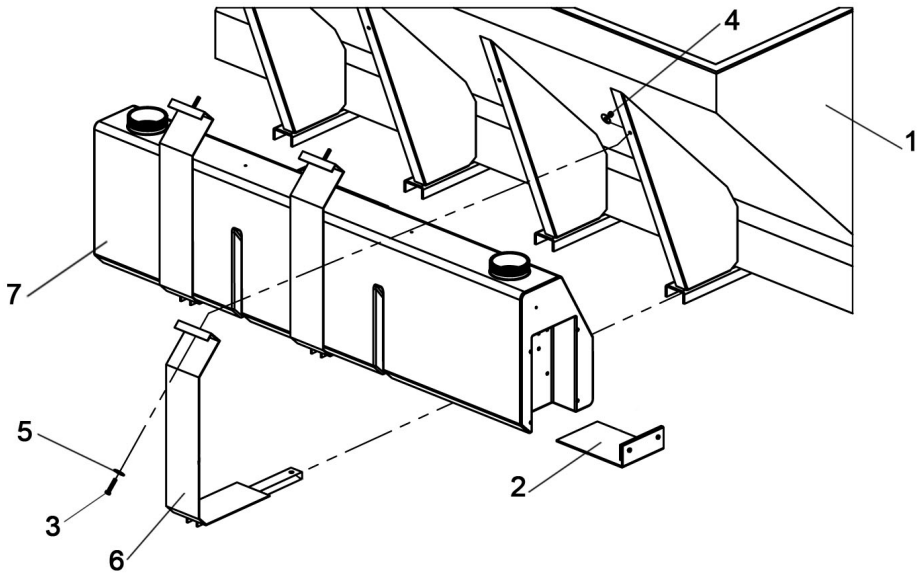
Tank VB200- Part No. 96602 requires double the quantity of Items 1-4

Mounting Straps - TG100



ITEM	PART NO.	DESCRIPTION	QTY
	96603	Strap- Kit Mounting TG100	
1	96540	Pin- Hitch 1/2 x 4-1/2”	2
2	307716	Bracket- Tailgate Bottom	2
3	307717	Bracket- Tailgate Top	2
4	308833	Bracket- Mount Pin	2
5	36426	Washer- Flat 1/2 SS	8
6	39016	Nut- Lock 3/8 SS	4
7	56318	Cap Screw- 1/2 x 5 SS	4
8	96589	Strap- Tank 100 Gal	3
9	34859	Cap Screw- 3/8 x 2 SS	6
10	96616	Washer- Flat 3/8 x 1-1/2 SS	12
11	72054	Nut- lock 3/8 SS	6
12	308834	Frame- Adjustable	1
13	307721	Guard- Tailgate Plumbing	1
14	72054	Nut- lock 3/8 SS	2
15	36398	Cap Screw- 3/8 x 1 SS	2
16	36425	Flat- Washer 3/8 SS	4

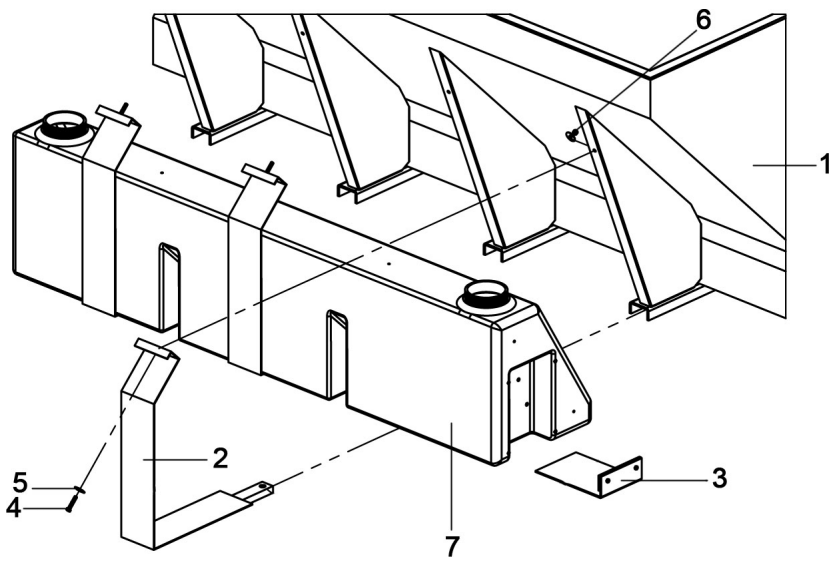
Mounting Straps - VB075/VB150



ITEM	PART NO.	DESCRIPTION	QTY
	96604	Strap – Kit VB075	
	96605	Strap – Kit VB150	
	307663	VB MK Fastener Kit- 8 & 16 Bolt, Includes 3-5	1
1	REFERENCE	Spreader	
2	96595	Stop – Tank	2
3	34859	Cap Screw – 3/8 x 2 SS	8
4	72054	Nut – Lock 3/8 SS	8
5	96616	Washer – Flat 3/8 x 1-1/2 SS	16
6	96597	Strap – VB075	3
7	REFERENCE	Tank	1

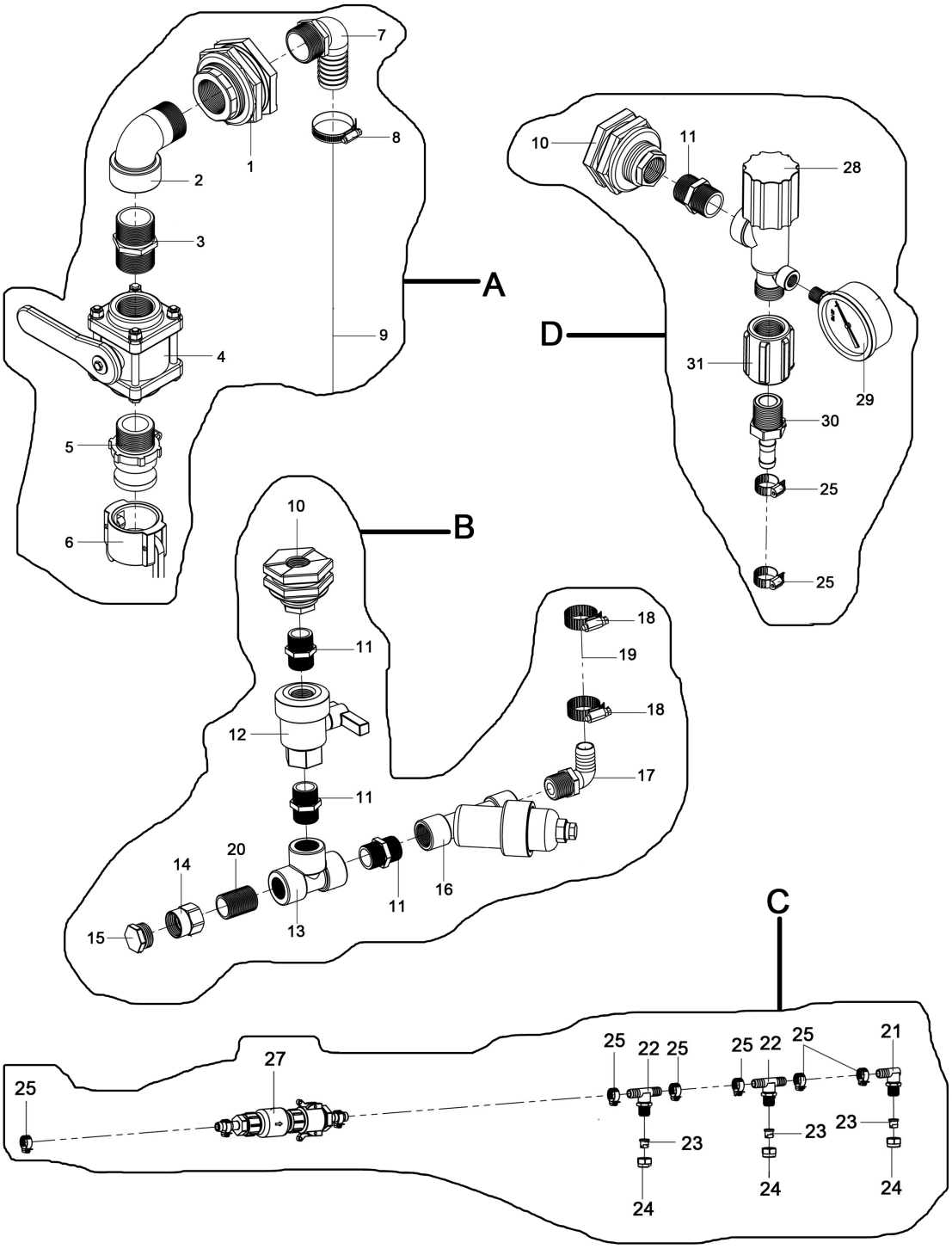
Strap Kit VB150 – Part No. 96605 requires double the quantity of Items 2-6.

Mounting Straps - VB100/VB200



ITEM	PART NO.	DESCRIPTION	QTY
	96634	Strap – Kit VB100	
	96606	Strap – Kit VB200	
	307663	VB MK Fastener Kit- 8 & 16 Bolt, Includes 4-6	1
1	REFERENCE	Spreader	
2	96596	Strap – VB100	3
3	96595	Stop – Tank	2
4	34859	Cap Screw – 3/8 x 2 SS	8
5	96616	Washer – Flat 3/8 x 1-1/2 SS	16
6	72054	Nut – Lock 3/8 SS	8
7	REFERENCE	Tank	1

Strap Kit VB200 – Part No. 96606 requires double the quantity of Items 2-6.



ITEM	PART NO.	DESCRIPTION	QTY
A	307651	TG-CS Quick Fill Kit, Includes 1-9	
B	307652	TG Suction Plumbing Kit, Includes 10-20	
C	307653	TG-CS-FM Discharge Kit- 3 Nozzle, Includes 21-27	
D	307654	Relief Kit with Bulkhead, Includes 10, 11, 25, 28-31	

Plumbing - TG100 Continued

ITEM	PART NO.	DESCRIPTION	QTY
1	96563	Bulkhead	1
2	96565	Elbow – Street	1
3	96516	Nipple	1
4	96523	Valve	1
5	96506	Coupling – Quick Disconnect	1
6	96507	Cap – Quick Disconnect	1
7	96513	Hose Barb 90 x 1-1/2	1
8	307686	Hose- Clamp 1-1/2 SS	1
9	96504	Reinforced Hose 1-1/2	3 ft
10	96562	Bulkhead	2
11	96515	Nipple	4
12	96522	Valve	1
13	96520	Tee	1
14	307705	Swivel	1
15	307706	Plug 3/4 Male	1
16	96514	Filter – Strain	1
	*96636	Element – Filter, Included in 96514	1
17	307688	Hose Barb 90 x 3/4	1
18	307682	Hose Clamp 3/4 SS	2
19	307673	Clear Vinyl Hose 3/4 x 1	10 ft
20	307694	Nipple 3/4	1
21	96548	Elbow – Brass	1
22	96549	Tee – Brass	2
23	96541	Nozzle – 2 GPM	3
24	96550	Nut – Brass	3
25	96556	Clamp – SS	8
26	*96505	Hose – 1/2	20 ft
27	307669	Inline Check Valve Assembly	1
	*304859	Spring Check	1
	*96510	Hose Barb	1
	*304861	Female Cam x 3/4	1
	*304860	Male Cam x 1/2	1
	*96556	Hose- Clamp 1/2 SS	2
28	96543	Valve – Relief	1
29	96535	Gauge – 60 PSI	1
30	96510	Barb – Hose	1
31	96508	Coupler	1

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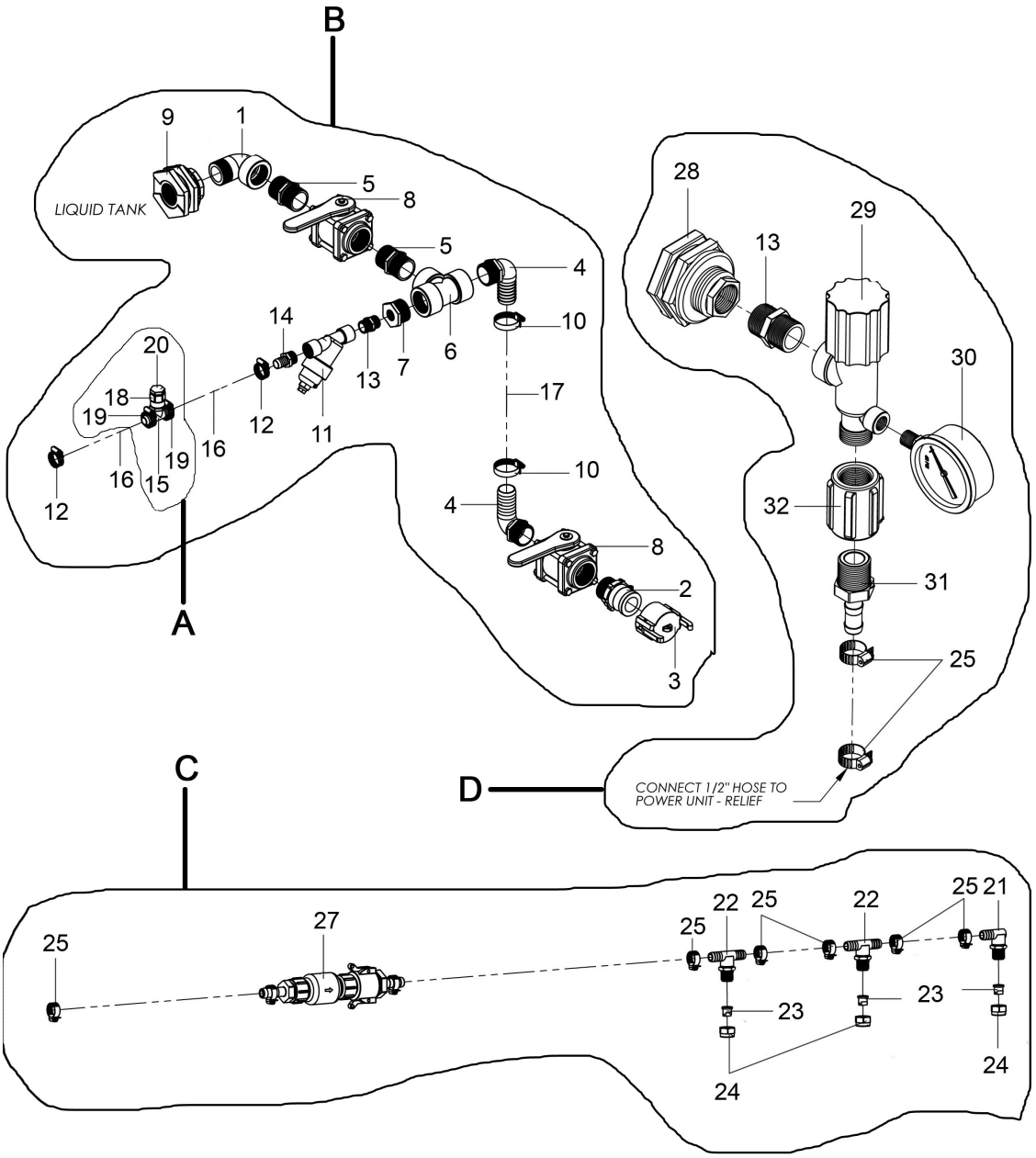

*- Item #1 is only used on 75 gallon tanks.

ITEM	PART NO.	DESCRIPTION	QTY
	96635	Plumbing- Kit VB100	
A	307670	Flush Kit, Includes 15, 18-20	
B	307655	VB-ST Quick Fill Suction Kit, Includes 1-20	
C	307653	TG-CS-FM Discharge Kit, Includes 21-27	
D	307654	Relief Kit with Bulkhead, Includes 13, 25, 28-32	
1	96565	Elbow – Street	1

Plumbing - VB075/VB100 Continued

ITEM	PART NO.	DESCRIPTION	QTY
2	96506	Coupling – Quick Disconnect	1
3	96507	Cap – Quick Disconnect	1
4	96513	Hose Barb 90 x 1-1/2	2
5	96516	Nipple	2
6	96521	Tee 1-1/2	1
7	96519	Reducer 1-1/2 x 3/4	1
8	96523	Valve	2
9	96563	Bulkhead 1-1/2	1
10	307686	Hose Clamp 1-1/2	2
11	96514	Filter – Strain	1
	*96636	Replacement Filter	1
12	307682	Hose Clamp 3/4	2
13	96515	Nipple	2
14	307687	Hose Barb 3/4	1
15	307677	Hose Barb Tee 3/4	1
16	307673	Clear Vinyl Hose 3/4 x 1	9 ft
17	96504	Reinforced Hose 1-1/2	15 ft
18	307705	Swivel	1
19	307682	Hose Clamp 3/4	2
20	307706	Plug 3/4 Male	1
21	96548	“L” Nozzle Body 1/2 Brass	1
22	96549	“T” Nozzle Body 1/2 Brass	2
23	96541	Fan Nozzle 2 GPM 110 Deg Brass	3
24	96550	Nozzle Body Nut Brass	3
25	96556	Clamp – SS	8
26	96505	Clear Vinyl Hose 1/2	20 ft
27	307669	Inline Check Valve Assembly	1
	*304859	Spring Check	1
	*96510	Hose Barb 1/2 x 3/4	1
	*304861	Female Cam x 3/4	1
	*304860	Male Cam x 1/2	1
	*96556	Hose Clamp 1/2	2
28	96562	Bulkhead 3/4	1
29	96543	Valve – Relief	1
30	96535	Gauge – 60 PSI	1
31	96510	Barb – Hose	1
32	96508	Coupler	1

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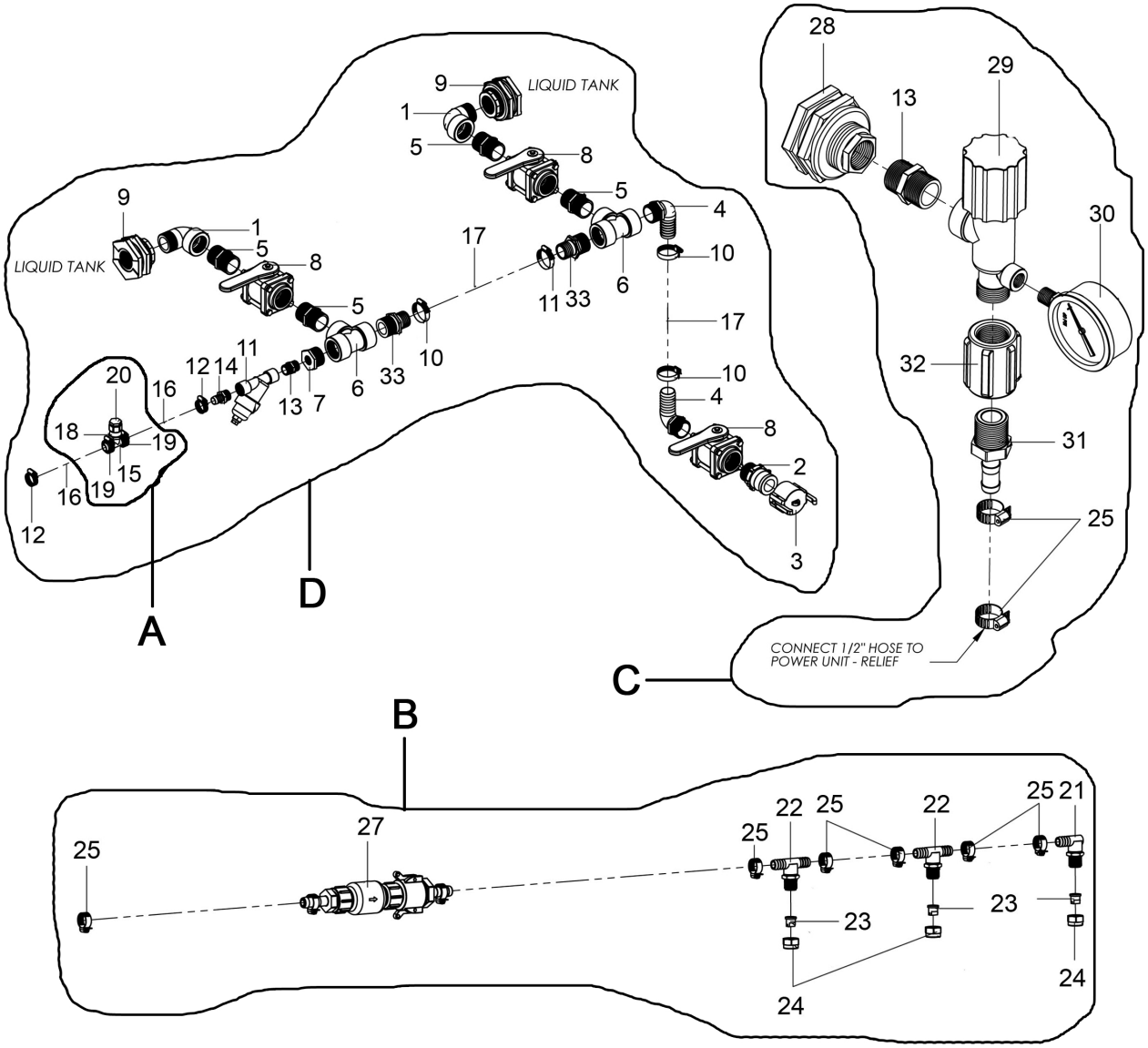


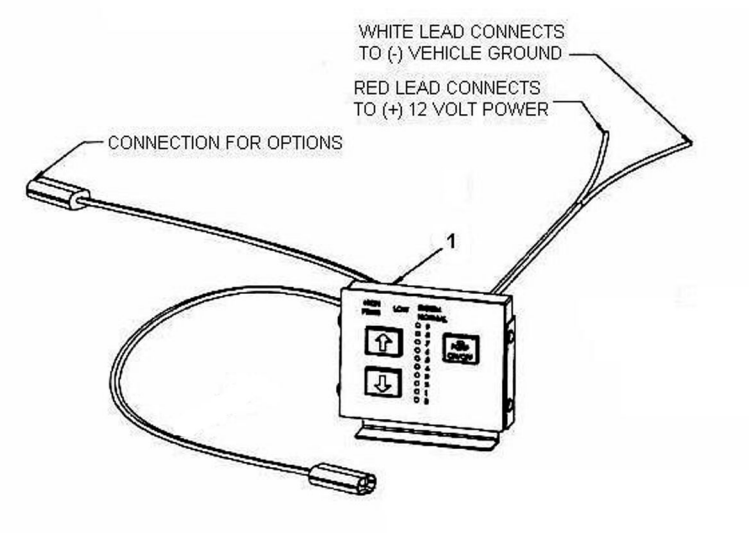
*- Item #1 is only used on 75 gallon tanks.

ITEM	PART NO.	DESCRIPTION	QTY
	96610	Plumbing- Kit VB200	
A	307670	Flush Kit, Includes 15, 18-20	
B	307653	TG-CS-FM Discharge Kit, Includes 21-27	
C	307654	Relief Kit with Bulkhead, Includes 13, 25, 28-32	
D	307656	VB-DT Quick Fill Suction Kit, Includes 1-20, 33	
1	96565	Elbow – Street	2
2	96506	Coupling – Quick Disconnect	1
3	96507	Cap – Quick Disconnect	1
4	96513	Hose Barb 90 x 1-1/2	2

Plumbing - VB150 & VB200 Continued

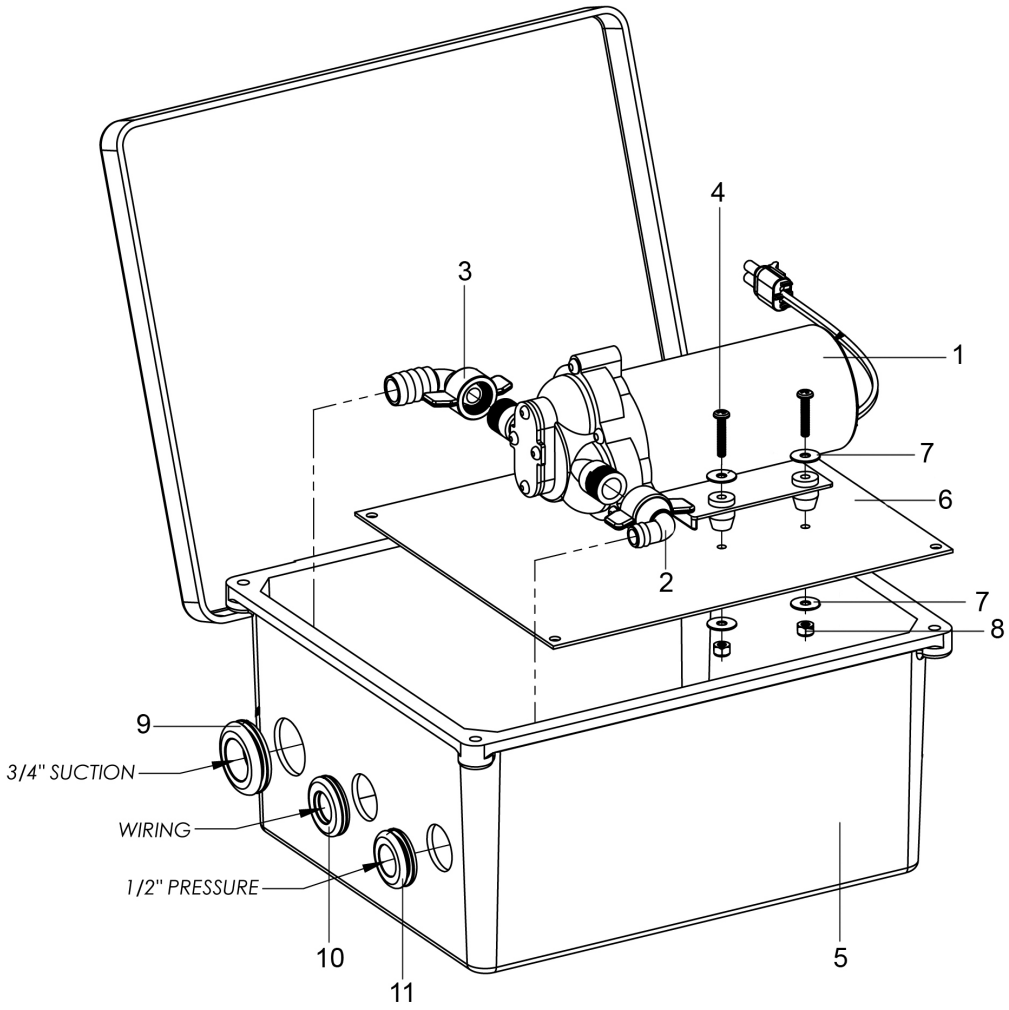
ITEM	PART NO.	DESCRIPTION	QTY
5	96516	Nipple	4
6	96521	Tee 1-1/2	2
7	96519	Reducer 1-1/2 x 3/4	1
8	96523	Valve	3
9	96563	Bulkhead 1-1/2	2
10	307686	Hose Clamp 1-1/2	4
11	96514	Filter – Strain	1
	*96636	Replacement Filter	1
12	307682	Hose Clamp 3/4	2
13	96515	Nipple	2
14	307687	Hose Barb 3/4	1
15	307677	Hose Barb Tee 3/4	1
16	307673	Clear Vinyl Hose 3/4 x 1	10 ft
17	96504	Reinforced Hose 1-1/2	15 ft
18	307705	Swivel	1
19	307682	Hose Clamp 3/4	2
20	307706	Plug 3/4 Male	1
21	96548	“L” Nozzle Body 1/2 Brass	1
22	96549	“T” Nozzle Body 1/2 Brass	2
23	96541	Fan Nozzle 2 GPM 110 Deg Brass	3
24	96550	Nozzle Body Nut Brass	3
25	96556	Clamp – SS	8
26	96505	Clear Vinyl Hose 1/2	20 ft
27	307669	Inline Check Valve Assembly	1
	*304859	Spring Check	1
	*96510	Hose Barb 1/2 x 3/4	1
	*304861	Female Cam x 3/4	1
	*304860	Male Cam x 1/2	1
	*96556	Hose Clamp 1/2	2
28	96562	Bulkhead 3/4	1
29	96543	Valve – Relief	1
30	96535	Gauge – 60 PSI	1
31	96510	Barb – Hose	1
32	96508	Coupler	1
33	96512	Hose Barb 1-1/2 x MNPT	2
*- Not Shown			

Driver



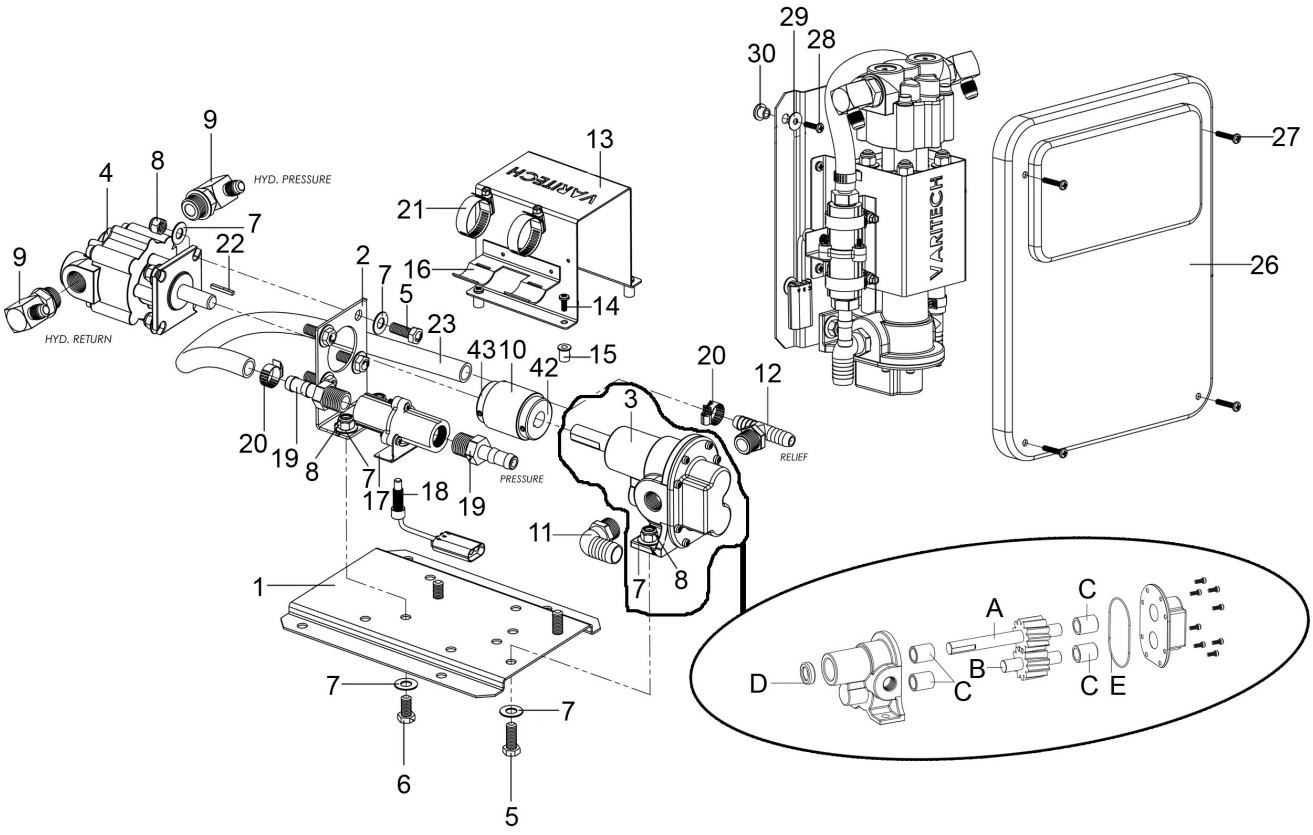
ITEM	PART NO.	DESCRIPTION	QTY
1	96558	Driver- 20 Amp with Loom	1

Power - EM



ITEM	PART NO.	DESCRIPTION	QTY
	96619	Power- Assembly EM Fiber Glass	
1	96617	Electric Pump w/Relief 12V 4 GPM	1
2	96539	Hose Barb	1
3	307678	3/4 HB Swivel 90 x 1/2	1
4	96614	Screw 10-24 x 1	4
5	96571	Nema Enclosure	1
6	96572	ECL Mounting Plate SS	1
7	171052	#10 Flat Washer	8
8	47295	10-24 Course Nylock Nut SS	4
9	307680	Rubber Grommet- 3/4 Hose	1
10	307681	Rubber Wiring Grommet- Enclosure	1
11	307679	Rubber Grommet- 1/2 Hose	1

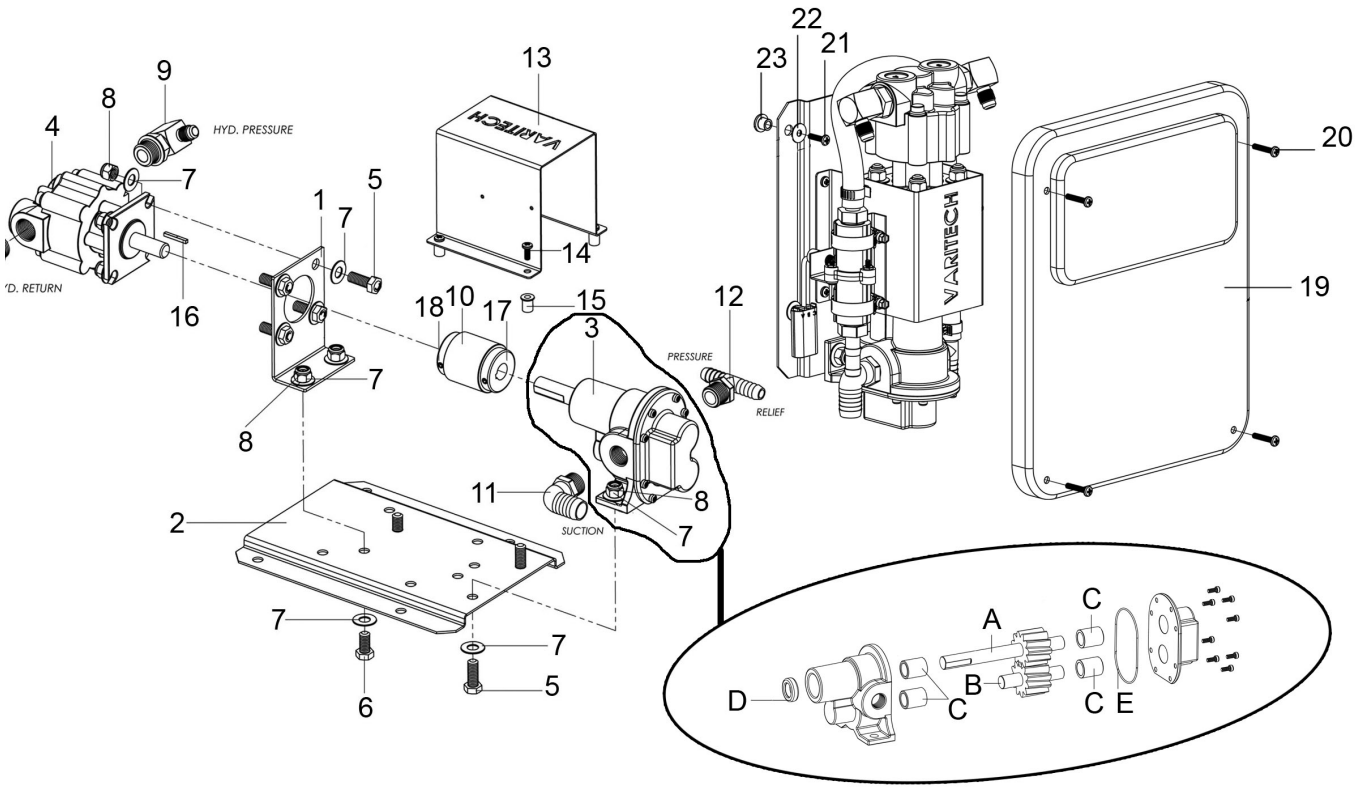
Power - HCL



ITEM	PART NO.	DESCRIPTION	QTY
	96620	Power – Assembly HCL	
	307671	Hydraulic Power Unit Closed Loop, Includes 1-25	
	307702	Repair Kit- Pump 1706, Includes A-E	
	96526	Flex Coupler 9/16 x 5/8, Includes 10, 24-25	1
1	307718	Base Plate	1
2	307714	Hydraulic Motor Bracket SS	1
3	307696	Gear Pump 1/2	1
A	307697	Drive Gear	1
B	307698	Idler Gear	1
C	307699	Carbon Bearing	4
D	307700	Shaft Seal	1
E	307701	O-Ring Seal	1
4	96575	Hydraulic Motor #10 Side Ports	1
5	36398	Bolt 3/8-16 x 1 Course SS	6
6	36293	Bolt 3/8-16 x 3/4 Course SS	2
7	36425	Washer 3/8 x 7/8 Flat SS	16
8	72054	Nut 3/8-16 Course Nylock SS	8

Power - HCL Continued

ITEM	PART NO.	DESCRIPTION	QTY
9	96574	Elbow 90 #10 ORB x #6 JIC	2
10	307674	Neoprene Sleeve 108 LB	1
11	307689	Hose Barb 90 3/4 x 1/2 MNPT Poly	1
12	96538	Hose Barb Tee 1/2 x MNPT Nylon	1
13	307715	Chain Guard SS	1
14	96612	Screw 10-32 x 1/2 Pan Head SS	4
15	96554	Well Nut 10-32 Fine	4
16	307713	HCL Flow Meter Bracket SS	1
17	307703	5 GPM Flow Meter 1/2	1
18	307704	Replacement FM Sensor	1
19	307693	Hose Clamp 1/2 SS MNPT Poly	2
20	96556	Hose Clamp 1/2 SS	2
21	304869	Hose Clamp 1 SS	2
22	96561	Key 1/8	1
23	96505	Clear Vinyl Hose 1/2	2 ft
24	307675	Flex Coupler Half 9/16 Bore	1
25	307676	Flex Coupler Half 5/8 Bore	1
26	96525	Pumping Unit Cover	1
27	96614	Screw 10-24 x 1 Pan Head SS	4
28	96613	Screw 10-24 x 3/4 Pan Head SS	4
29	171052	#10 Flat Washer	4
30	96524	Pump Mounting Grommet	4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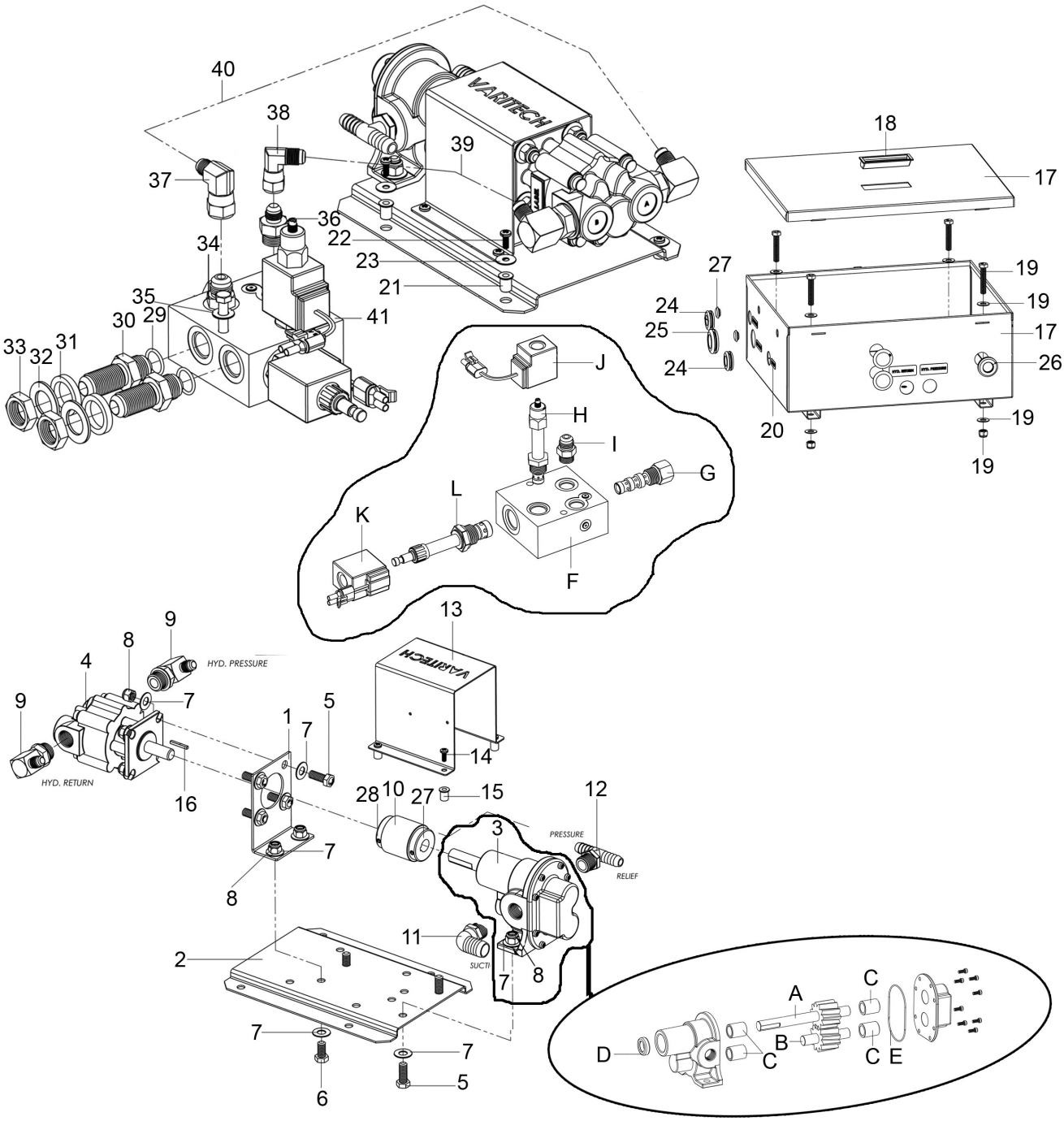
Power - HOL Continued

ITEM	PART NO.	DESCRIPTION	QTY
	96625	Power – Assembly HOL	
	307672	Hydraulic Power Unit Open Loop, Includes 1-18	
	307702	Repair Kit- Pump 1706, Includes A-E	
	96526	Flex Coupler 9/16 x 5/8, Includes 10, 17-18	1
1	307718	Base Plate	1
2	307714	Hydraulic Motor Bracket SS	1
3	307696	Gear Pump 1/2	1
A	307697	Drive Gear	1
B	307698	Idler Gear	1
C	307699	Carbon Bearing	4
D	307700	Shaft Seal	1
E	307701	O-Ring Seal	1
4	96575	Hydraulic Motor #10 Side Ports	1
5	36398	Bolt 3/8-16 x 1 Course SS	6
6	36293	Bolt 3/8-16 x 3/4 Course SS	2
7	36425	Washer 3/8 x 7/8 Flat SS	16
8	72054	Nut 3/8-16 Course Nylock SS	8
9	96574	Elbow 90 #10 ORB x #6 JIC	2
10	307674	Neoprene Sleeve 108 LB	1
11	307689	Hose Barb 90 3/4 x 1/2 MNPT Poly	1
12	96538	Hose Barb Tee 1/2 x MNPT Nylon	1
13	307715	Chain Guard SS	1
14	96612	Screw 10-32 x 1/2 Pan Head SS	4
15	96554	Well Nut 10-32 Fine	4
16	96561	Key 1/8	1
17	307675	Flex Coupler Half 9/16 Bore	1
18	307676	Flex Coupler Half 5/8 Bore	1
19	96525	Pumping Unit Cover	1
20	96614	Screw 10-24 x 1 Pan Head SS	4
21	96613	Screw 10-24 x 3/4 Pan Head SS	4
22	171052	#10 Flat Washer	4
23	96524	Pump Mounting Grommet	4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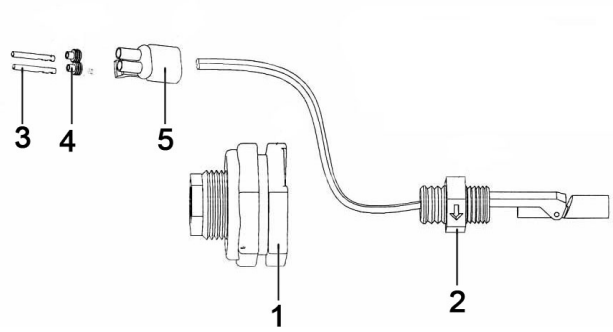
Power - HSOL Continued

ITEM	PART NO.	DESCRIPTION	QTY
	96624	Power – Assembly HSOL	
	307672	Hydraulic Power Unit Open Loop, Includes 1-16, 42,43	
	307702	Repair Kit- Pump 1706, Includes A-E	
	96526	Flex Coupler 9/16 x 5/8, Includes 10, 42-43	1
1	307718	Base Plate	1
2	307714	Hydraulic Motor Bracket SS	1
3	307696	Gear Pump 1/2	1
A	307697	Drive Gear	1
B	307698	Idler Gear	1
C	307699	Carbon Bearing	4
D	307700	Shaft Seal	1
E	307701	O-Ring Seal	1
4	96575	Hydraulic Motor #10 Side Ports	1
5	36398	Bolt 3/8-16 x 1 Course SS	6
6	36293	Bolt 3/8-16 x 3/4 Course SS	2
7	36425	Washer 3/8 x 7/8 Flat SS	16
8	72054	Nut 3/8-16 Course Nylock SS	8
9	96574	Elbow 90 #10 ORB x #6 JIC	2
10	307674	Neoprene Sleeve 108 LB	1
11	307689	Hose Barb 90 3/4 x 1/2 MNPT Poly	1
12	96538	Hose Barb Tee 1/2 x MNPT Nylon	1
13	307715	Chain Guard SS	1
14	96612	Screw 10-32 x 1/2 Pan Head SS	4
15	96554	Well Nut 10-32 Fine	4
16	96561	Key 1/8	1
17	307683	Universal Power Unit Enclosure SS	1
18	307710	Pocket Handle	1
19	307665	Enclosure Fastener Kit	1
20	307720	Power Unit Adhesive Labels	1
21	96554	Well Nut 10-32 Fine	4
22	96612	Screw 10-32 x 1/2 Pan Head SS	4
23	171052	#10 Flat Washer	4
24	307679	Rubber Grommet For 1/2 Hose	2
25	307680	Rubber Grommet For 3/4 Hose	1
26	307681	Rubber Wiring Grommet	1
27	307711	Poly Plug 9/16 For SS Encl	2
28	307712	Poly Plug 1 For SS	2
29	307709	O-Ring For #10 JIC Bulkhead	2

Power - HSOL Continued

ITEM	PART NO.	DESCRIPTION	QTY
30	307707	#10 JIC Bulkhead Fitting	2
31	307684	Flange Gasket 1	2
32	307722	Washer 7/8 x 1-1/2 Flat SS	2
33	307708	#10 JIC Bulkhead Nut	2
34	71830	Bolt 5/16-18 x 2-1/2 Course SS	2
35	36424	Washer 5/16 x 3/4 Flat SS	2
36	96579	Brass JIC Fitting	2
37	307690	Swivel Elbow 90 #8 JIC	1
38	307685	Swivel Elbow 90 #6 JIC	1
39	307691	HSOL Hydraulic Press Line Tube	1
40	307692	HSOL Hydraulic Return Line Tube	1
41	96621	On/Off Sol X Elect FC Valve Assembly	1
F	307695	Valve Block Aluminum	1
G	96582	Compensator w/80 PSI Spring	1
H	96585	Proportional FC Cartridge	1
I	96583	Check Fitting #8 ORB x Male JIC	1
J	96584	Proportional 12 VDC Coil Assembly	1
K	96581	Cartridge Valve Prewet Open	1
L	96586	On/Off 12 VDC Coil Assembly	1
42	307675	Flex Coupler Half 9/16 Bore	1
43	307676	Flex Coupler Half 5/8 Bore	1

Float



ITEM	PART NO.	DESCRIPTION	QTY
	96626	Float- Assembly	1
1	96627	Bulkhead	1
2	96628	Switch- Float	1
3	96629	Pin- Female	2
4	96630	Seal	2
5	96631	Connector- M	1

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