SPARTAN

Model 738 Water Jet

Owner's Manual

Record the VIN Number of your

Model 738

and give the number to the factory when ordering parts.

VIN Number .....

SPARTAN TOOL L.L.C.

800.435.3866

www.spartantool.com

73820100 (Rev e) 6-8-11

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— Read the safety and operating instructions before using any Spartan Tool product. Drain and sewer cleaning can be dangerous if proper procedures are not followed and appropriate safety gear is not utilized. Read the engine owner's manual for instruction and safety precautions on engine operation.

— Gasoline is extremely flammable and is explosive under certain conditions.

- Refuel in a well ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where the engine is refueled or where gasoline is stored.

- Do not overfill the fuel tank (there should be no fuel in the filler neck). After refueling, make sure the tank cap is closed properly and securely.

— Before starting unit, be sure to wear personal protective equipment such as safety goggles or face shield and protective clothing such as gloves, coveralls or raincoat, rubber boots with metatarsal guards, and hearing protection.

— Carbon monoxide exhaust and/or gasoline fumes from this equipment can create a hazardous atmosphere in confined spaces (which may include, but are not limited to, manholes and septic tanks), closed garages or other areas which may not be properly ventilated. In particular, excess gasoline fumes can create an explosion hazard. Such hazardous atmospheres can cause death or severe injury. Do not operate this equipment in any confined space or area with inadequate ventilation. Operate this equipment only when located outdoors or in an open, well ventilated area.

— Insure the jet hose has been placed in the pipe (minimum of 6 feet suggested) before engaging the water pressure to prevent the hose from coming out of the pipe prematurely and causing injury.

— Always shut the water pressure off before pulling the hose out of the pipe. Mark the hose a minimum of 6 feet from the end to help insure the hose is not accidentally pulled out of the pipe while still under pressure. Shut off the water pressure when the hose mark is encountered. WARNING: Portions of the system can still be under pressure even if the unit is not operating.

— Never point the wash gun at anyone while operating the unit. Injury may result.

— Drains and sewer can carry bacteria and other infectious micro-organisms or materials which can cause death or severe illness. Avoid exposing eyes, nose, mouth, ears, hands and cuts and abrasions to waste water or other potentially infectious materials during drain and sewer cleaning operations. To further help protect against exposure to infectious materials, wash hands, arms and other areas of the body, as needed, with hot, soapy water and, if necessary, flush mucous membranes with water. Also, disinfect potentially contaminated equipment by washing such surfaces with a hot soapy wash using a strong detergent.

— For any questions contact the company at the address shown below.

"California Prop. 65: This product may contain an extremely small amount of lead in the coating. Lead is a material known to the State of California to cause cancer or reproductive toxicity."

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PARTS & ACCESSORIES SECTION

Model 738 Water Jet Specifications

General	
Pipe Sizes	Up to 12” in Diameter
Max Water Delivery	12 GPM
Max Pressure Delivery	2000 PSI

Trailer	
Gross Trailer Weight	2125 lbs.
Trailer Weight (Empty)	875 lbs.
Max Tongue Weight	75 lbs.
Trailer Length	120”
Trailer Width	57”
Trailer Height	48”
Hitch	2” Ball Type (Class II)
Tank Capacity	150 Gal.
Wheels	13”
Tires	ST175-80-R13, Blackwall

Engine	
Horsepower	19 HP V-Twin
Cylinders	2
Bore & Stroke	2.96 x 2.99
Fuel	Gasoline
Cooling	Air
Oil Capacity (w/filter)	1.5 Qt.
Starter	Electric
Alternator	15 Amp
Battery	12 VDC

Pump	
Max Pressure	2000 PSI
Max Water Output	12 GPM
Max Temperature	140°
RPM	1460
Plungers	3

Model 738 Water Jet Features

Features

- Equipped with 3/8” x 250’ hose
- Open and Closed nozzles for 3/8 inch hose
- Easily accessible pump inlet filter assembly
- Axles are torsion design with fully independent wheel suspension
- Pre-Wired lighting with standard 5-Pole plug
- Pivoting hitch jack with caster wheel provided on trailer tongue
- Low water shut off

Optional Features

- Venturi Pump
- Foot Pedal Valve
- Mobile Hose Reel
- Various Special Application Nozzles
- Wash Down Kit

Jet Applications Areas

There are a wide variety of uses for the Spartan Model 738 Water Jet. Here are just a few:

— ***Apartments/Hotels***
Mains and garage drains, remove all grease and debris from main lines under the buildings.

— ***Factories***
Food processing plants and foundries have frequent drain and sewer blockages. Set up preventive maintenance contracts to avoid risk of total plant shutdown.

— ***Farms, Rural***
Clean and spray barns, pens and heavy farm equipment, revitalize drain field in septic systems and field tile. Clear blockages in liquid manure system.

— ***Housing Authorities***
Any drains, laundry lines, garbage chutes, clean-outs and many grease-removing applications.

— ***Institutions***
Clean-running drains and sewer lines are a "must" in hospitals, schools, prisons. Use in kitchens, remove lime deposits on buildings and clean parking lot drains.

— ***Municipals***
Open culverts for proper flood control, wash down manholes, clean lines in wastewater treatment plants.

— ***Residential***
Clean drain lines, septic lines, field tiles, culverts, swimming pools, surface cleaning and sandblasting.

— ***Restaurants***
Grease in drains is always a problem - Your Spartan Water Jet actually removes grease from the lines instead of simply punching a hole through the blockage, risking reaccumulation downstream.

Uncrating and Prep

If you received your machine crated, position crate so that your truck can be backed up to "front" side. Now remove end of crate marked "front". Remove hitch assembly from under machine. Connect and tape wire plugs and attach hitch to frame with bowmalloy bolts provided. These bolts *must* **be torqued to 74 ft.-lbs. (see Fig. 1).** *It is the uncrater's responsibility to torque the hitch.* Support the hitch and remove vertical supports under frame. Hook up jet to truck and pull from crate. Remove packing materials from jet. Door and engine keys are packed in a bag in the toolbox. Remove the contents.

If you receive your machine uncrated.
Upon receiving your machine double check the torque of all 7 hitch bolts. (See Fig. 1.)

Battery
Prior to shipping, the battery cables are disconnected from the terminals of the battery. The battery cables will need to be reconnected to the battery before operating.

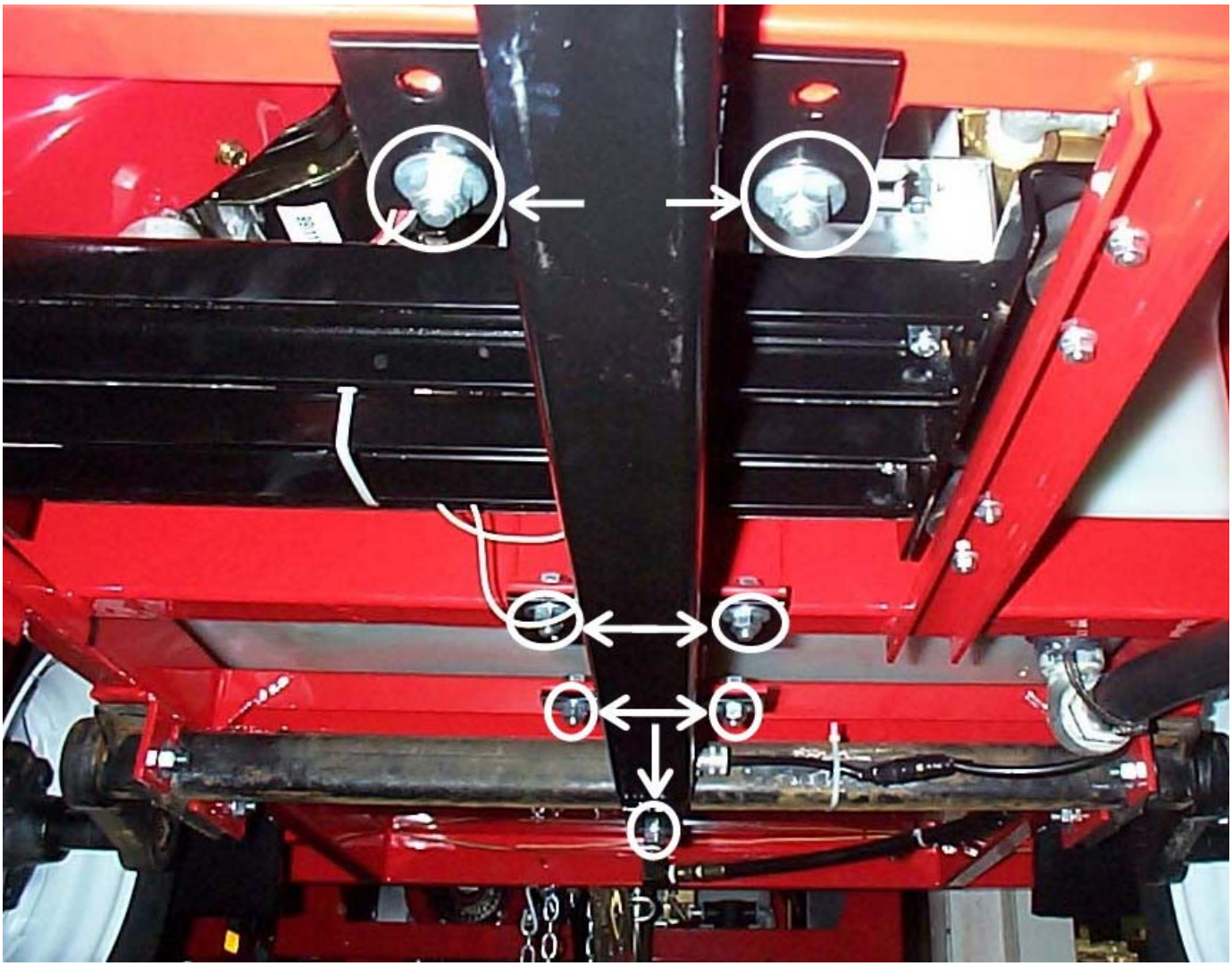
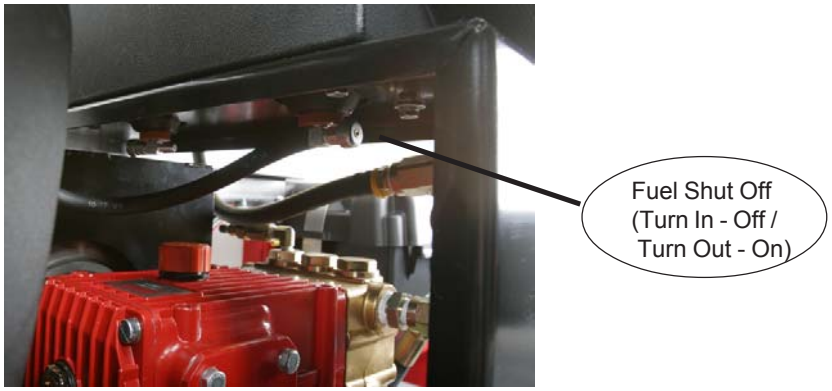


Fig. 1

Towing Instructions

Fuel Shut Off must be turn "OFF" when towing jet. Failure to shut off fuel can cause fuel to flow through the carburetor and fill the engine cylinders.



Before hitching and towing on public roads, check that the tow vehicle uses a 2" ball on a hitch rated class II minimum, make sure keeper engages ball to secure hitch. Adjust if necessary.

Because of the inherent water tank sloshing when towing, pull your jet empty at all times.

The following 2 rules may limit your vehicles towing capacity and the tank fill level when towed. Determine towing capacity as described below and follow guidelines in using the *lowest* value from the 2 rules.

Trailer Hitch

— Check rating of vehicles trailer hitch -

***WARNING*:** Class 1 hitches often uses 1 7/8 ball which is unsafe to couple with a 2" hitch. A class 1 hitch with a 2" ball may be used to tow an empty trailer only.

Class 2 - 3,500 lbs. Towing capacity is required.

Vehicle GCWR (Gross Combined Weight Rating)

— Towing capacity = GCWR minus vehicle weight minus cargo weight minus passenger weight.

NOTE: **GCWR is provided on your vehicle or in vehicle manual.**

Vehicle Towing Capacity

— Refer to your vehicle owners manual for listed trailer towing capacity.
— Trailer towing capacity should equal GCWR (gross combined weight rating) minus vehicle weight, cargo weight, people weight and (vehicle) fluids weight.
— Check axle load rotatings.

Towing Instructions (cont.)

Wire the plug receptacle to your vehicle as shown below. Note: The wire colors used on the jet running lights are also indicated in Fig. 2 for re-wiring to a different plug design.

— ***Always*** use safety chains.
— ***Always*** use trailer lights.

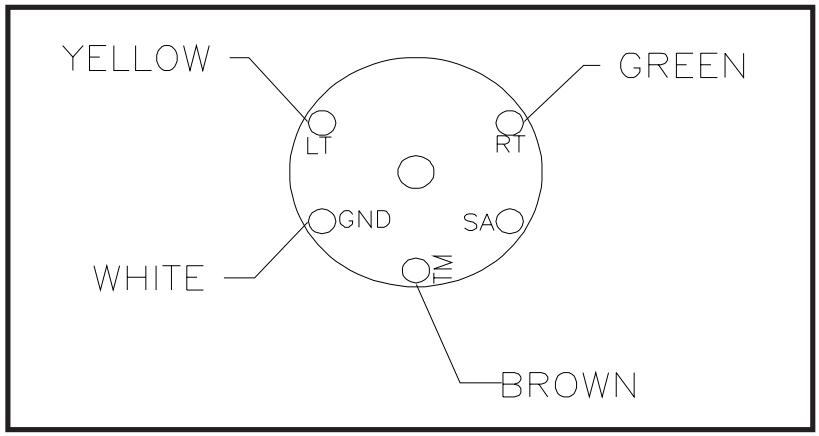


Fig. 2

The hitch jack should always be tilted up when towing to avoid damage to the caster wheel. Pin jack clamp securely.

Pump and Pressure System

The pump and relief valve are the heart of your jet. They have been specially designed for use with water temperatures up to 140°F for pipe jetting, but can provide useful water flow for many other cleaning jobs using the optional wash down gun and special attachments. The positive displacement pump (each crankshaft revolution has to move a certain amount of water) uses 3 plungers (similar to pistons in an engine) to create water flow. Pressure is not created until the pump outlet is restricted with a valve or nozzle. The pump, valving and hoses can support pressures to 2000 psi.

The regulator valve acts to direct the water flow to the water tank when the hose reel and gun valves are off or if nozzles provide too much restriction for total flow. Always use clean water to keep the regulator valve operating properly. The hose and nozzle are designed to allow ***full*** flow at 2000 psi (at 3200 engine rpm) and the wash down gun operates at 1600 PSI max pressure. If leaks develop in the system between the relief valve and hose reel valve (or gun valve) you will hear intermittent engine surges in bypass as the bypass pressure gradually drops and is built up again by the pump. Tighten or otherwise repair the leaks for smooth running. Always stop engine and release pressure before any plumbing changes or repairs.

Because of the inherent hazards with high pressure, use only Spartan high pressure hoses and components when repairing your machine.

If the nozzles become worn or if the gun is used with the jet hose, the regulator valve allows the same total flow but at lower pressure because the restriction is lower. To maintain desired PSI - replace nozzles.

If nozzles become plugged, the regulator valve will direct some of the flow back to the water tank while providing pressures over 2000 psi. If these pressures are seen with normal engine speed (3200 rpm), check and clean the nozzles. When using optional lengths of 1/4" hose the operating pressure can also be over 2000 psi at full gpm. Reducing engines rpm will produce lower pressures to prevent regulator valve from bypassing off and on. Continued operation at pressures over 2000 psi can cause engine overheat and reduce engine life.

High Pressure Water Jetting

High pressure water jetting is the utilization of high pressure water combined with sufficient water flow to remove debris in drain/sewer pipes. High pressure water alone cannot do the job. You need proper flow to wash debris downstream where it can be collected and removed. High pressure water jetting can also be used to remove debris on surfaces.

A high pressure water jet consists of a pump, a motor or engine, a hose reel, a given length of hose and a various assortment of nozzles.

A pipe is cleaned with a high pressure water jet by directing water pressure and flow through a nozzle. Controlled water pressure and flow propels a water jet through the sewer pipe allowing it to remove and wash away the obstruction. (See Fig. 4.)

Ideally, a sewer pipe is cleaned from the lower end of the pipe and the hose propels itself to the higher end of the pipe. By slowly withdrawing the jet hose, the water pressure and flow cleans the line most effectively. When it is impossible to clean from the lower end of the pipe, the pipe must be water jetted several times to remove all the debris. A skilled operator can effectively clean a drain/sewer regardless of the obstacles in his way.

How A Jet Works

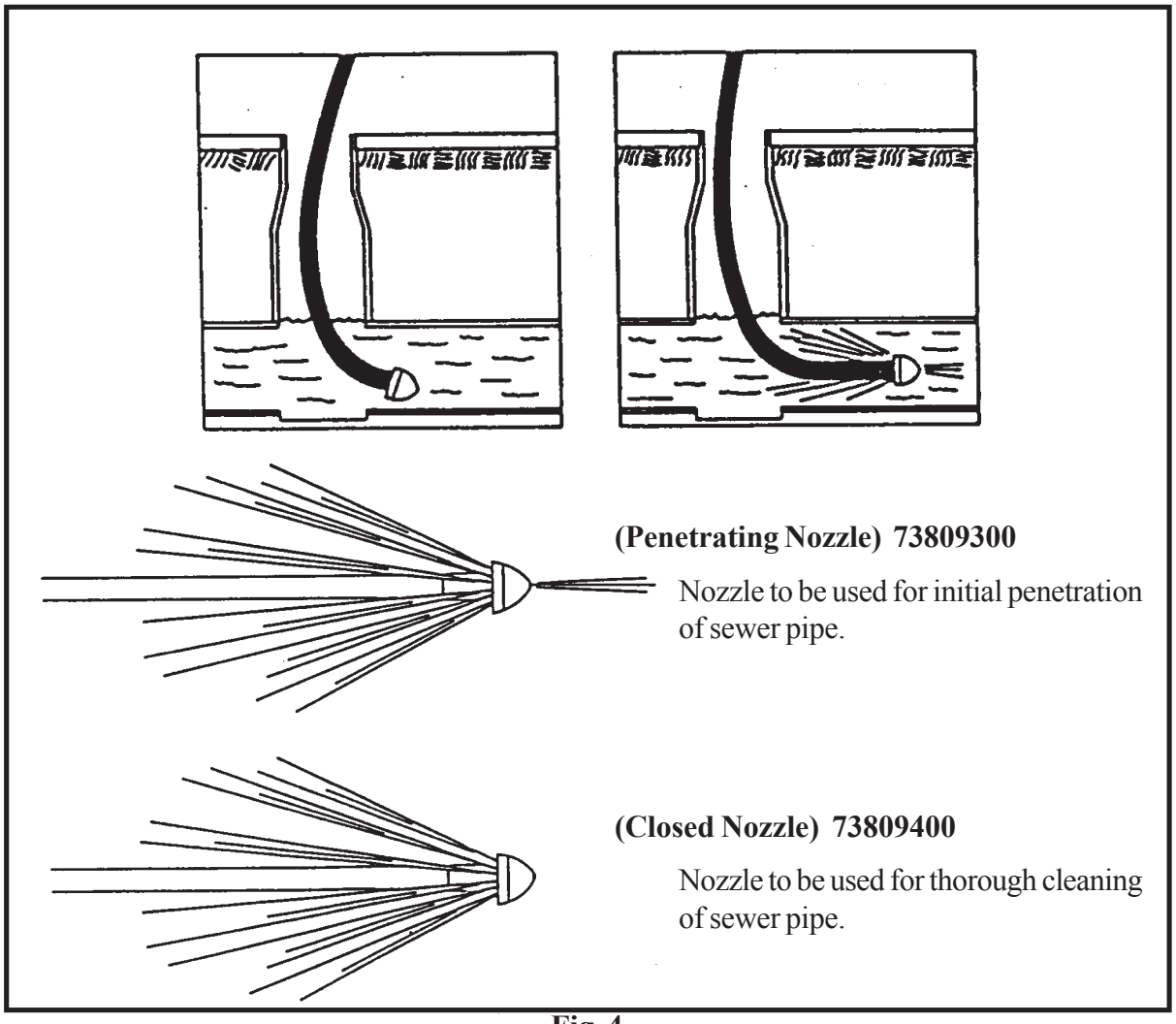


Fig. 4

Water Tank Filling

Fill the water tank from a clean water source. Always flush rust out of hydrants before connecting fill hose (with garden hose fitting) to top fill valve. Your water supply hose may remain connected for further filling by controlling water flow at fill valve.

Important Note: (If the next 4 items are not followed, cavitation of the pump could occur and reduce operating efficiency and severely damage the pump.)

— Use water temperatures under 140°F.
— Ensure that water strainer is clean (check daily or as needed).
— Make sure the strainer valve (between the tank and the pump) is fully open during operations. This valve stops tank flow to allow strainer service.
— The pump drain valve must be closed. It must not drip when engine is off and strainer valve is open.

Engine Operating Procedure

Start Up

— Check water tank level. This water jet is equipped with a ***Low Water Shut-Off*** switch that will prevent the engine from starting at low water levels.

— Check fuel level.
Note: Also Check engine and pump oil levels per manufacturer specifications (attached).

— Turn fuel valve **ON**.

— The hose reel valve may generally be placed on the **ON** (up) position during starting. However for manual start or marginal battery charge conditions place the hose reel valve in the **OFF** (down) position for ease of starting.

— Key-start the engine. Choke as necessary. Allow the engine to warm up at idle for 1 minute minimum.

Engine Shut-Down

— Turn the engine key switch **OFF**. (The engine key switch must be OFF when the engine is not running to avoid battery draining.)

— Turn the fuel valve OFF.

Setting up for Operation

Always locate the jet in the driest and safest place possible. Avoid high traffic areas and use flashers and safety cones. Position the jet so that hose can be pulled directly off of the reel for use. Remember that jetting is most effective when you jet against the water flow. See Fig. 5 for the recommended positioning of the jet for best visibility during manhole work. Note that loose hose and damaging corners are minimized when the jet is parked as shown. (See pages 14 and 15 for instructions on using upper and lower manhole guides.)

When operating upon unlevel ground, position trailer with the hitch (tanksump) end at the downhill side.

For non-manhole use, allow extra space for handling the hose before it is wound back on the reel or run the hose directly to the pipe inlet using extra hose guards to protect the hose from cutting when going around corners.

Warning: Do not unhitch or operate trailer jet unhitched upon unlevel ground.

When unhitching the machine from towing vehicle, always follow these steps:

— Place wheel chocks around trailer jet wheels.
— Lower hitch jack, pin clamp securely.
— Disconnect ball hitch by raising lever and jacking hitch up. Disconnect safety chains and light cord before driving away.

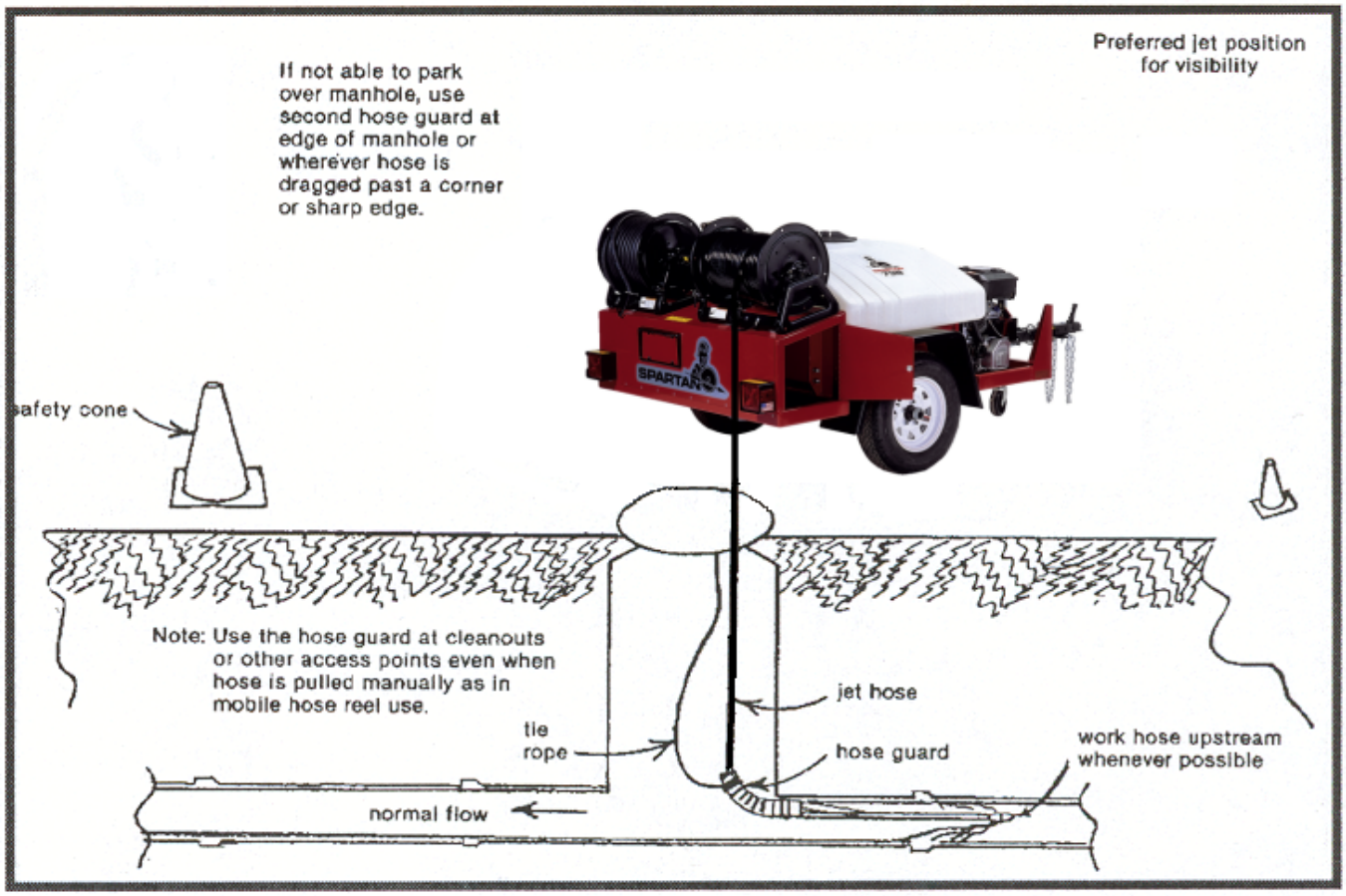


Fig. 5

Operating Instructions

Operation:

Release the ***reel lock***. Select and install nozzle, hose guards(s) and roller guides.

Always insert sewer hose several feet into pipe opening before actuating hose reel valve. Never stand in front of pipe opening when nozzle is near pipe opening. As described in "Setup Section," work upstream whenever possible.

You are ready to start pipe cleaning operations after tank filling and engine starting procedures are followed. Advance engine throttle to full speed.

Note: At this time, put on safety goggles to prevent eye injury from flying water and debris.

Now move hose reel valve ON (up) and let out hose as nozzle pulls into pipe. Untwist hose kinks as necessary before they enter the pipe. Since it is impossible to know exactly what the nozzle "sees" as it advances in a pipe, always proceed slowly and cautiously. Pull back 1-2 feet for every 4-5 feet of progress to make sure that the hose is not burying itself or tying itself up in an open cavity or larger pipe. Continue working up the line while watching and feeling for speed changes as the nozzle makes its way into a blockage. When working over a manhole, you often will see dirty water, chunks of grease or debris flow past as the nozzle penetrates a blockage. When backed up water flows, the line is probably open. Continue working up the line to open restrictions as desired. Now pull the "working" nozzle back slowly to re-clean and scour the pipe walls. When working through heavy and long blockages you may have to flush debris back to machine every 5-10 ft. Repeat until water runs clean from the pipe.

Do not let engine run at full throttle without load (hose reel valve OFF) for longer than 1-2 minutes.

The Model 738 will pull out past 250' but you will find the going slower because of the pressure loss from extra hose length. Unless longer operation is common, we recommend the hose extensions be added only when needed. If moving the jet before the job is done, the hose can be disconnected from the jet to avoid pulling hose completely out of pipe and restarting.

When finished, turn water valve off (down) before removing nozzle from pipe.

Hint: Wind white tape around hose (a minimum of 6 ft. from end recommended) to warn of nozzle being to close to pipe opening.

Wind hose back onto reel, remove hose guard and install hose end and nozzle in holder. Put pin in place. Lock reel. Store all parts in tool box compartment. Idle engine for 30 seconds before stopping engine. ***Reminder***: Engine key switch must be off to prevent battery drain when not using. Reverse setup instructions, drain tank and disconnect fill hose. Replace manhole cover or pipe caps and clean up machine before leaving job site.

Operating Hints:

The following techniques can be tried if the going gets slow.

— Grab the hose into an "S" shape and twist the hose to help it get around corners and off of pipe edges. (See Fig. 8 page 19.)

— Turn water valve off and pull hose back out of line. Look for traces of clay or other material to determine if nozzle is burying itself outside of pipe.

— Try different nozzle or different pipe openings.

— Walk to nearby buildings and manholes and listen for water sound to determine if hose is going where it should. The hose may tie itself up in a manhole and need help going into the next pipe. Use a pole or pipe to guide hose so entering the manhole can be avoided.

Pipe Jetting Procedure

Equipment:

Although the Model 738 is capable of various high pressure cleaning operations, jetting pipes of 4" - 10" is typically the major work required of the jet. The hose reel is designed for outdoor applications. See sections on the mobile hose reel and 1/4" drain hose for indoor or remote applications and for lines smaller than 6".

For ***safety*** reasons, always operate with 2 people when the pipe entrance is away from the jet location; one person should stay near the jet to control the machine operation while the other person works the hose and nozzle. The mobile hose reel should be used for remote control whenever the second person cannot be seen or heard by the machine operator.

The sewer hose should always be replaced when cord reinforcement can be seen because of a worn cover.

The Model 738 ***nozzles*** are designed to match the pressure and flow performance of your jet. They are key to efficient operation because they convert all of the engine and pump power to water speed for hose pull and for cleaning impact.

Nozzles "738 **Closed**" (73809400) and "738 **Open**" (73809300) are standard equipment. See parts section for part numbers to order additional nozzles or root cutters. Nozzle holes will wear after several months of continuous use. If the system operating pressure gradually drops, try a new nozzle to check for wear. Check for nozzle plugging occasionally by removing the nozzle from the hose and holding up to the light. Clean by inserting small diameter wire if necessary. Plugged nozzles will cause poor hose pull even though the gauge pressure will show higher.

When Obstruction Are Encountered

Fig. 8

Fig. 9

— When obstruction or corners are encountered it may be necessary to manually rotate the hose (See Fig. 8) to enable feed through that area. The rotation will cause the jetting nozzle to jump over or around those areas. When it becomes necessary to manually rotate the hose to clear obstructions, any rotations in one direction must be followed by an equal number in the opposite direction to prevent kinks from building in the hose.

— At times, it will be necessary to move the hose slightly in and out of the drain line to assist the jetting nozzle in clearing stubborn clogs, obstructions, or tight corners (See Fig. 9).

Wash Down Gun - 73817300 (Optional)

Note: To use wash-down gun do the following:

1 Turn off. By-pass valve (down).
2 Connect wash-down gun hose to end of 250 ft hose.
3 Start unit and operate wash-down gun with hose reel valve in on (up) position .

The wash down gun is used to control the spray lance and the 1/4" drain hose. The lance is attached by pulling back on the ring of the guns quick connect fitting. Insert adapter nipple of lance (or 1/4" hose) until ring can slide back to original position. The lance is equipped with a variable spray nozzle for general use.

Caution: Under no circumstances should you ever operate the wash down gun in the direction of any other person(s). To do so may cause serious damage to eyes or other bodily tissue and may even cause death!

1/4" Drain Hose - (Optional)

The 1/4" hose and nozzle may be used to clean smaller diameter lines. Attach the 1/4" hose to the forward end of the wash down gun as described above.

Use the 1/4" drain hose on lines 2" - 4" similar to the reel hose. Again, use care not to discharge water unless the hose is in the pipe. On inside lines, use short bursts of the gun to limit water backup.

If 50', 75' or 100' 1/4" hoses are used with the reel hose, the pressure gauge may read more than 1750 psi. Adjust engine speed to reduce to desired pressure to avoid engine overheat.

Part Number	Description
77719400	1/4" x 50' Hose
77719500	1/4" x 75' Hose
77708700	1/4" x 100' Hose

Mobile Hose Reel - 73816800 (Optional)

The mobile hose reel is used for remote use and control of the sewer hose. 400' total length of hose is the practical maximum with the 250' or 150' length on the machine reel and the balance on the mobile reel. To use, attach the machine reel hose to the valve of the mobile reel. Attach nozzle to mobile reel hose and make sure the mobile reel valve is off (handle perpendicular to valve body). Start jet as usual and open machine hose reel valve.

Now move the mobile reel to the pipe opening and use as before, using the mobile valve to control water flow (put hose in pipe before opening valve). To rewind hose, stand on front plate and use crank provided.

Venturi Pump Attachment- 77763700 (Optional)

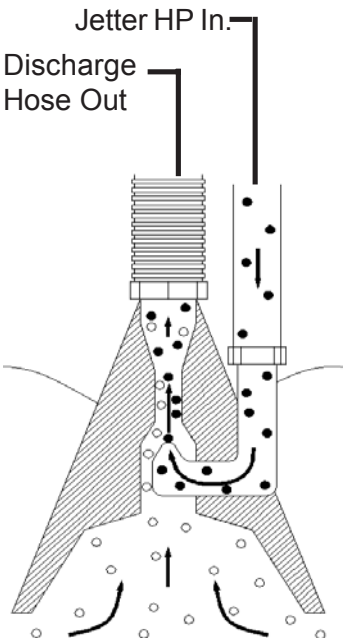


Fig. 9

How the Venturi Effect works.

The venturi effect uses the venturi pumping attachment and your Spartan Jetter to create a vacuum effect to drain standing water. In Fig. 9, the black circles represent water from the jetter and the white circles represent the water to be pumped. The venturi has two parts: the Venturi Throat, which is a restricted section of the suction tube; and above that is the venturi itself which is the part where the tube widens and connects to the discharge hose. The water from your Spartan Jetter is accelerated through a venturi restiction which causes it to increase speed causing a pressure drop and creates the vacuum that sucks in more water at the base of the attachment.

Venturi Pumping Attachment Operating Instructions

1. Attach high pressure hose directly to the suction head of the venturi attachment.
2. Lower suction head into water or liquid to be pumped. The discharge hose is 15 ft. long and this determines the maximum depth or distance liquids can be pumped.
3. At a depth of 15 ft., the venturi attachment will pump 35-40gpm. If additional lengths of discharge hose are added, the pumped volume will decrease accordingly.
4. Be sure to keep the pumping head submerged at all times to ensure steady, continuous operation.
5. Start engine and bring jet to full pressure. Use the ball valve on high pressure hose reel to control venturi operation.

Maintenance

Pump	Change oil after the initial 50 hours and then every 500 hours or less thereafter, depending upon operating conditions. Use SAE 90 Gear Oil.
Engine	Follow maintenance instructions in the engine manual.
Hose	Hose should be replaced when braid is visible.
Battery	Check fluid every week or 10 hours and fill with distilled water if needed.
Hitch	Tighten ball every 500 hours. Torque tongue bolts to 74 ft/lbs.
Wheel Bolts	Check for proper tightness. (General machine inspection of bolts, nuts, etc. every 100 hours.)

Cold Weather Protection

Winterize machine when stored below 32° F by following these steps:

Your machine can also be protected from freezing by using non alcohol based anti-freeze as follows:

Method 1

— Connect air hose to blow out fitting located near the pump to purge air from the entire system.

Method 2

— Drain tank completely.
— Add 50/50 mix anti-freeze to tank as follows: 0° - 4 gal.
-30° - 6 gal.
— Remove nozzle and feed reel jetting hose into tank, open reel valve.
— Start engine and circulate water through system for 1 minute.
— Close reel valve and discharge water through gun and 1/4” hose if necessary.
— Check freeze protection of mix with tester and add more anti-freeze if necessary.
— Replace nozzle and hose.

Note: Some anti-freeze mixture can be caught and reused, but will have to be strengthened as necessary for adequate protection.

738 Pump System Malfunction Chart

MALFUNCTION	CAUSE	REMEDY
The Pressure and/ or the Delivery Drops	Worn packing seals	Replace packing seals
	Broken valve spring	Replace spring
	Belt slippage	Tighten or Replace belt
	Worn or Damaged nozzle	Replace nozzle
	Fouled discharge valve	Clean valve assembly
	Fouled inlet strainer	Clean strainer
	Worn or Damaged hose	Repair/Replace hose
	Worn or Plugged relief valve on pump	Clean, Reset, and Replace worn parts
	Cavitation	Check suction lines on inlet of pump for restrictions
	Unloader	Check for proper operation
Water in crankcase	High humidity	Reduce oil change interval
	Worn seals	Replace seals
Noisy Operation	Worn bearings	Replace bearings, Refill crankcase oil with recommended lubricant
	Cavitation	Check inlet lines for restrictions and/or proper sizing
Rough/Pulsating Operation with Pressure Drop	Worn packing	Replace packing
	Inlet restriction	Check system for stoppage, air leaks, correctly sized inlet plumbing to pump
	Accumulator pressure	Recharge/Replace accumulator
	Unloader	Check for proper operation
	Cavitation	Check inlet lines for restrictions and/or proper size
Pressure Drop at Gun	Restricted discharge plumbing	Re-size discharge plumbing to flow rate of pump
Excessive Leakage	Worn plungers	Replace plungers
	Worn packing/seals	Adjust or Replace packing seals
	Excessive vacuum	Reduce suction vacuum
	Cracked plungers	Replace plungers
	Inlet pressure too high	Reduce inlet pressure
High Crankcase Temperature	Wrong Grade of oil	Giant oil is recommended
	Improper amount of oil in crankcase	Adjust oil level to proper amount

Troubleshooting

Symptom	Possible Causes	Corrective Action
Engine will not run	Check fuel levels Check fuel valve Check water level	Fill fuel tank Turn fuel valve ON Fill water tank or check low water shut-down.
Low pressure or flow	Clogged inlet filter Jetting nozzle worn	Clean inlet filter element Check for wear or orifice of jetting nozzle, replace nozzle if necessary. Use only approved jetting nozzles.
Erratic flow or pressure	Worn or dirty pump valves Worn or dirty regulator parts Worn jetting nozzle	Replace or clean Replace or clean Replace jetting nozzle
Pump noisy	Low oil level Worn or dirty valves Bad bearings	Add oil replace or clean Inspect bearings, replace as required
Water leaking from pump head	Pump seals worn	Replace pump seals

How To Use Parts & Accessories Manual

Spartan Tool will supply all parts or accessories you require as quickly as possible. In order to do so, we must have information from you, including machine serial number and part numbers.

Please record the VIN number of your machine in the space provided below:

Spartan Model 738

VIN No. _____

To order parts, look through the pictures until you find the part you require or an indication of where the part should be. Using the item number from the picture, go to that number on the adjacent page and check the description to determine if it is the part you desire.

Using the part numbers, please contact your Spartan Territory Manager or the factory in Mendota, Illinois or online at www.spartantool.com

Thank You.

Customer Service, Spartan Tool
1506 W. Division Street
Mendota, IL 61342
Phone (800)435-3866
Fax (815)538-2453

Special Note

Though much of your Model 738 Jet is user serviceable, trained professional mechanics may be needed with pump, plumbing, engine, lights, hitch and axle experience.

— Engine repair is best performed by your local engine repairman.

— Contact Spartan Tool or consult the Pump Repair Manual for all pump repair or troubleshooting.

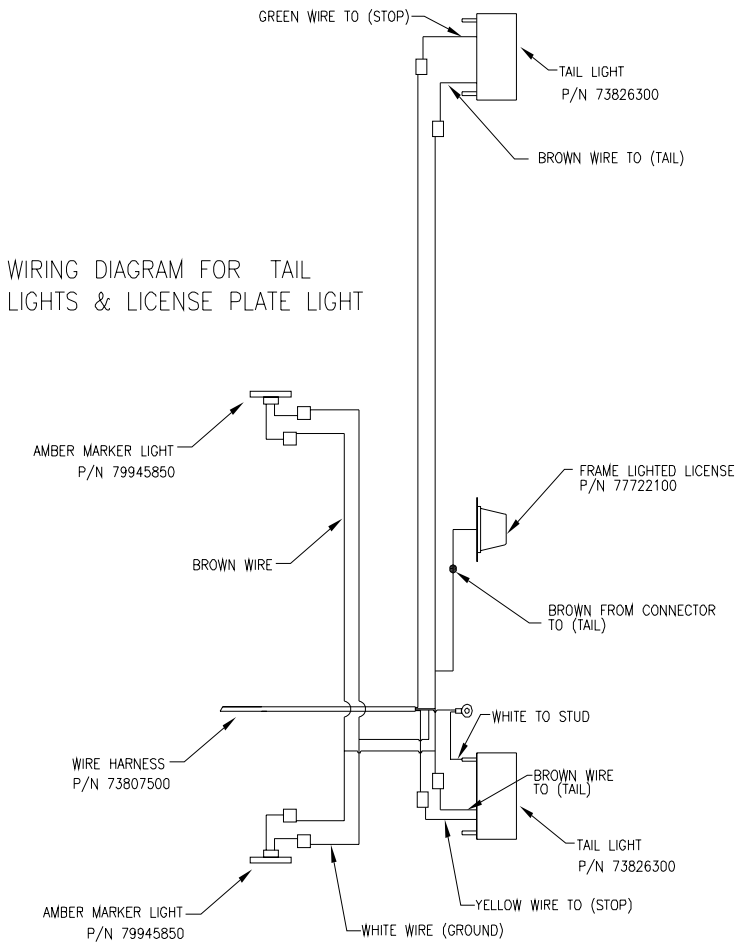
— All plumbing repairs should use Spartan parts. The high pressure plumbing has been designed for pressures greater than 2000 PSI. Substituting parts is dangerous and voids Spartan warranties. Use standard pipe sealing compound or "Teflon"® tape to seal all joints except swivel joints and hose nozzles (o-rings, seals, and tapered seat designs do not require sealing materials).

Electrical Components

Part Number	Description
44036500	Receptacle: Vehicle - (mounts on vehicle)
44055000	Plug: Trailer Lights - (inserted into above receptacle)
77731600	Connector Plug Set

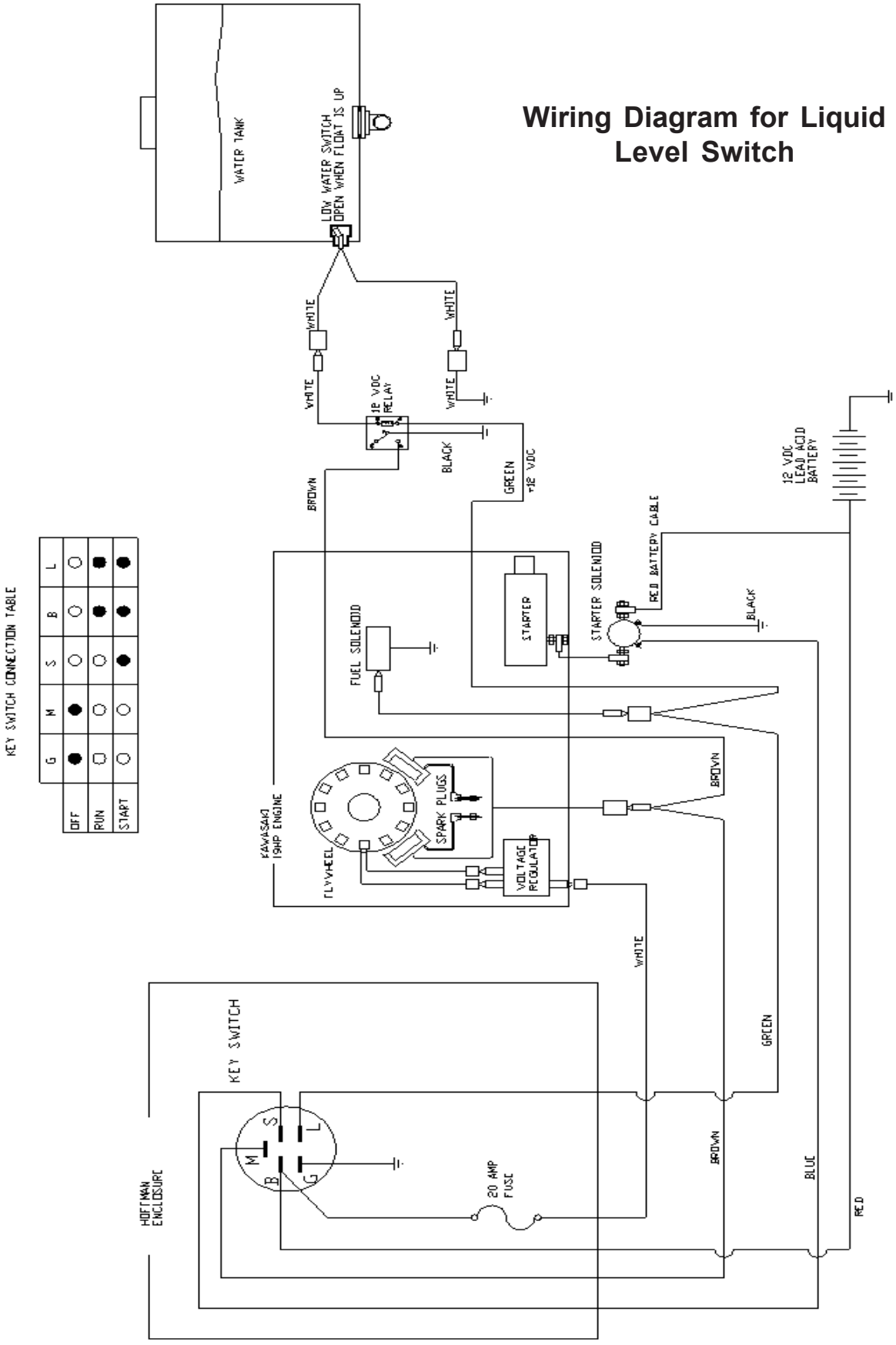
Other wiring supplies are easily obtained at local parts stores and therefore, are not listed.

Wiring Diagrams

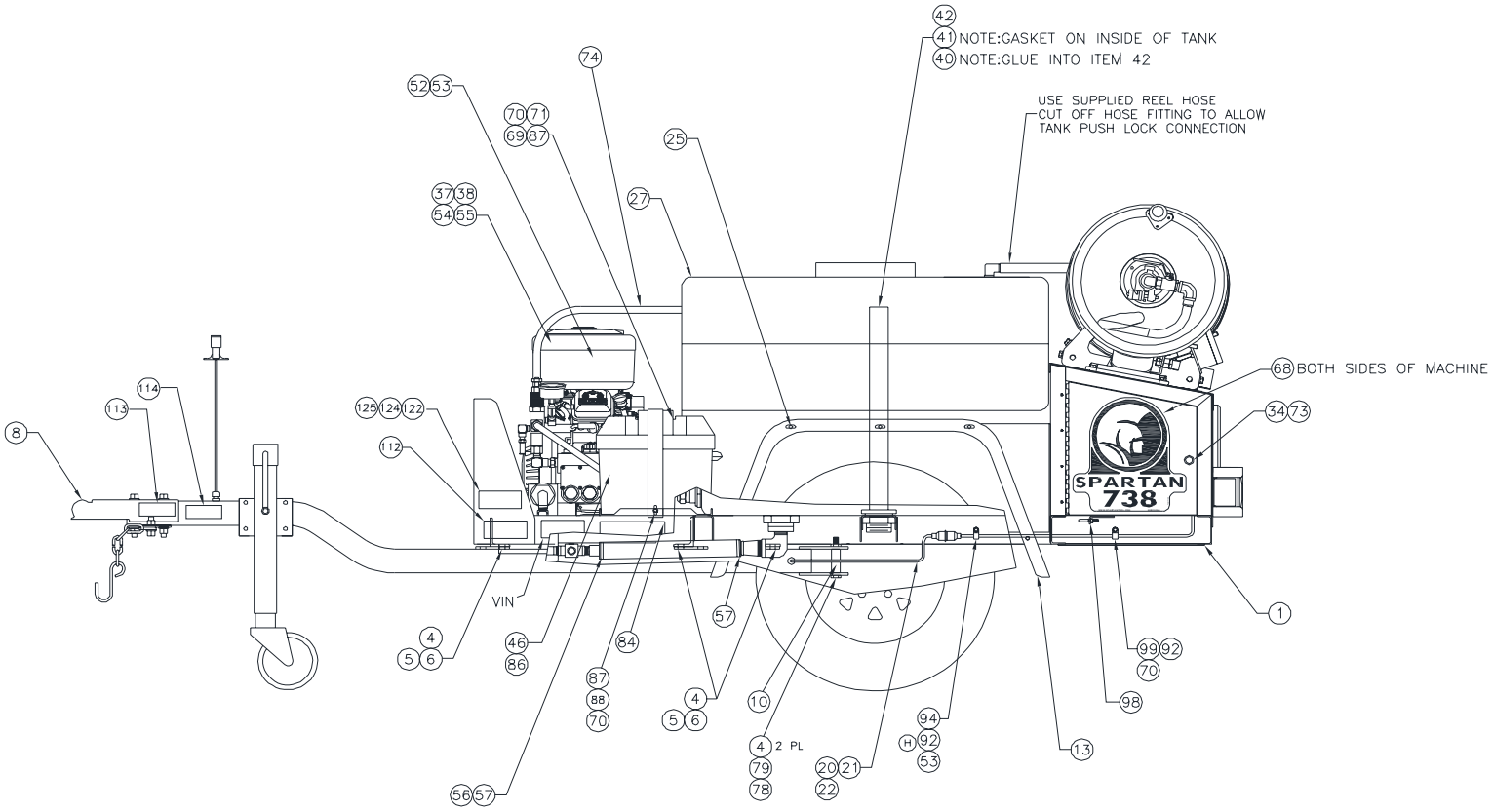


Wiring Diagrams (cont.)

Wiring Diagram for Liquid Level Switch



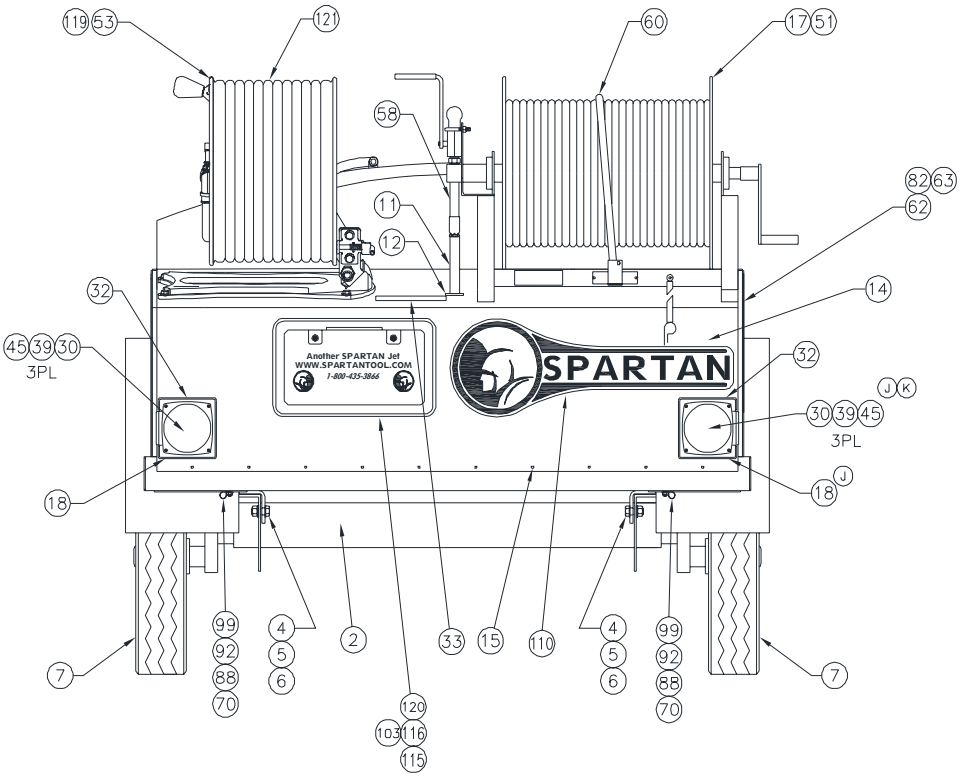
738 Final Assembly - 73800000



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	73823800	WELDMENT,FRAME
2	2	73804300	AXLE
4	22	73826900	WASHER, 1/2" FLAT
5	10	77744800	NUT, 1/2-13 STOVER LOCK
6	10	77745800	SCREW, 1/2-13 X 1-1/4
7	2	73803700	ASSY, TIRE & WHEEL
		73803500	TIRE ONLY
		73803600	WHEEL ONLY
8	1	73806800	ASSY,HITCH TUBE
10	1	73815100	SPACER, TOWBAR
11	1	73807300	ASSY, HIGH PRESSURE PIPE
12	2	73807400	RUBBER GROMMENT 7/8 ID
13	2	77710500	FENDER
14	1	73805100	COVER, TOOLBOX
15	6	77726500	RIVET, POP-3/16 X 3/16 GRIP
17	1	73808900	ASSY, HP REEL
18	2	73826400	WELDMENT, TAIL-LIGHT HOUSING
20	1	73807500	WIRING HARNESS
21	28	77768800	TIE WIRE-PLASTIC
22	8	77768900	HOLDER, WIRE TIE
24	1	77766100	CLIP, FRAME
25	6	77805100	BOLT, CARRIAGE 5/16-18X1
27	1	73807600	ASSY, WATER TANK

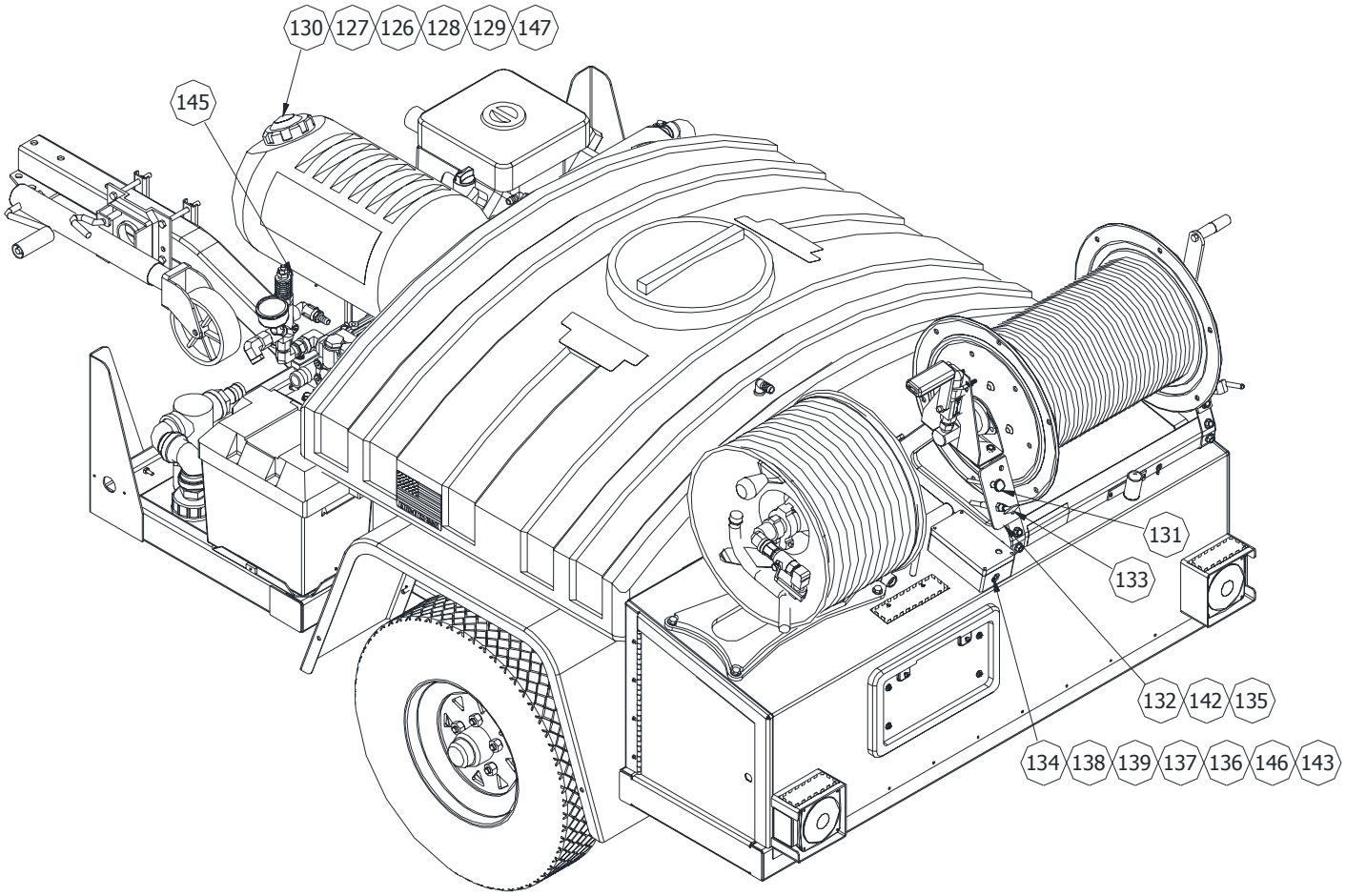
ITEM	QTY	PART NUMBER	DESCRIPTION
30	2	73826300	LIGHT, TAIL
32	2	77739800	DECAL, CAUTION REAR REEL
33	1	77739900	DECAL WARNING REAR
34	2	73806200	LOCK, DOOR
37	1	73807700	ASSY, POWER PAK 738
38	1	77728900	CAP, BATTERY CABLE
39	6	01950800	NUT, KEP HEX 1/4-20
40	1	73808000	PIPE, OVERFLOW 22" LG
41	1	73852700	GASKET, TANK
42	1	73803800	ADAPTER, 1-1/2" TANK
45	2	00113700	SCREW, HEX HD CAP 1/4-20 X 3/4
46	1	79847800	BATTERY, DIESEL 850 CCA
50	4	77785200	MOUNT, MOTOR
51	12	02939000	SCREW, CAP 5/16-18 X 3/4
52	4	77738300	SCREW, CAP HEX 3/8-16 X 3/4
53	15	03366300	WASHER, 3/8 FLAT
54	1	73815300	CABLE, NEGATIVE BATTERY-32"
55	1	73815200	CABLE, POSITIVE BATTERY-40"
56	2	77710200	HOSE, 1-1/4 ID
57	2	77736900	CLAMP, HOSE
58	1	73808100	ASSY, HP HOSE - 19" LG
59	1	73808200	ASSY, HP HOSE -24" LG

738 Final Assembly - 73800000



ITEM	QTY	PART NUMBER	DESCRIPTION
60	1	73808600	ASSY, HOSE 3/8-250
62	1	73809300	NOZZLE, OPEN
63	1	73809400	NOZZLE, CLOSED
68	2	73817100	DECAL, SPARTAN 738
69	4	00115300	SCREW, HEX HD 5/16-18 X 1-1/4
70	11	02825100	WASHER, FLAT 1/4
71	2	73815400	SPACER, RUBBER
73	4	73815600	SCREW,MACH 6-32 X 1/4
74	2FT	77705000	HOSE, PUSH LOK
78	1	77769300	LOCKNUT, 1/2-20 UNF
79	1	73808800	BOLT, 1/2 X 4 BOWMALLOY
80	2	77733300	RING TERMINAL 5/16"
82	1	77724000	BUSHING, REDUCER 1/2 X 3/8
84	1	58546301	DECAL, WARNING BATTERY
86	1	75815300	MODIFIED BATTERY BOX
87	1	75814700	STRAP,BATTERY HOLD DOWN
88	4	04728200	BOLT, HEX HD 1/4-20 X 3/8
92	18	73821200	NUT, NYLOK LOCK 1/4-20
94	9	72715100	CLAMP, HOSE 1-1/8
97	2	79842100	CLAMP, HOSE 3/16
98	1	521400-04	U-BOLT 1" X 1-3/4" (1/4-20)
99	3	79842200	CLAMP, HOSE 1/2
103	4	03850100	NUT, KEP 10-32
107	1	73826700	ASSY, WIRE HARNESS 30A RELAY
110	1	75815400	DECAL, SPARTAN

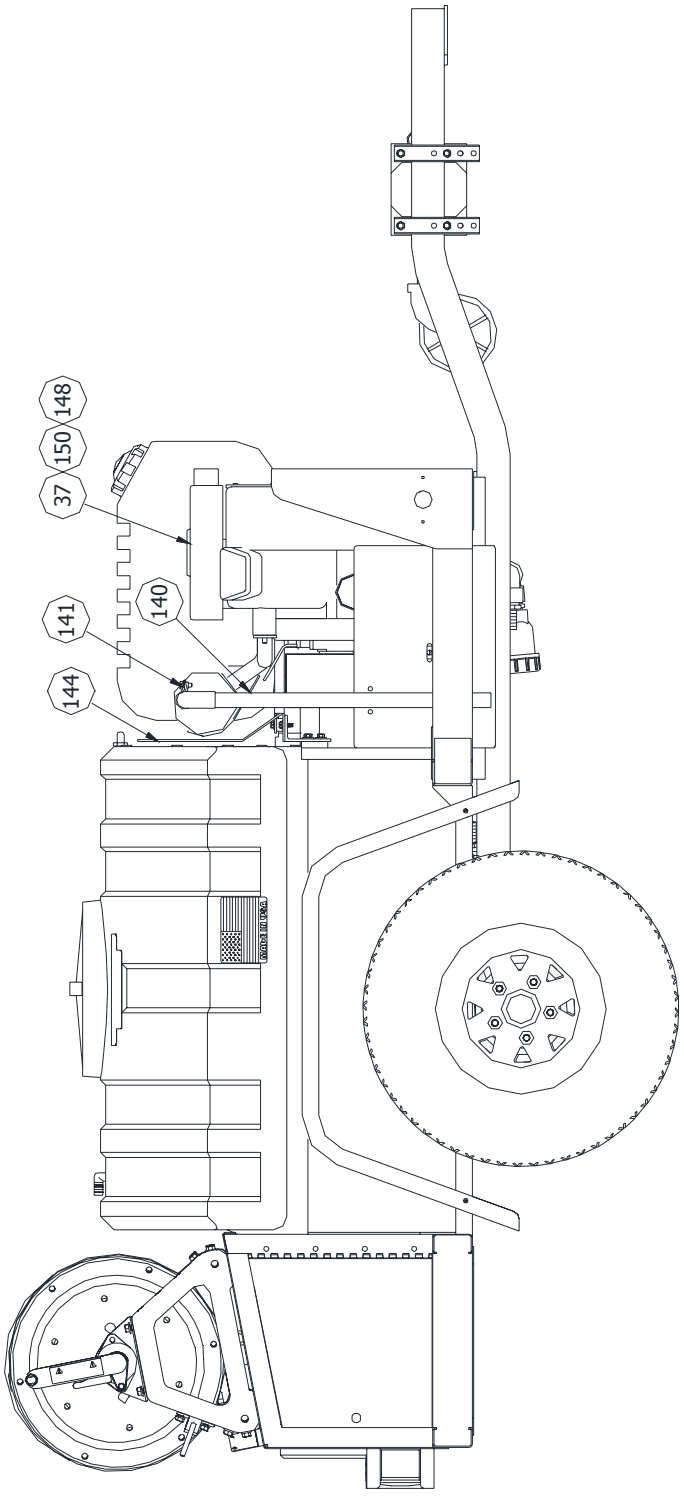
738 Final Assembly - 73800000



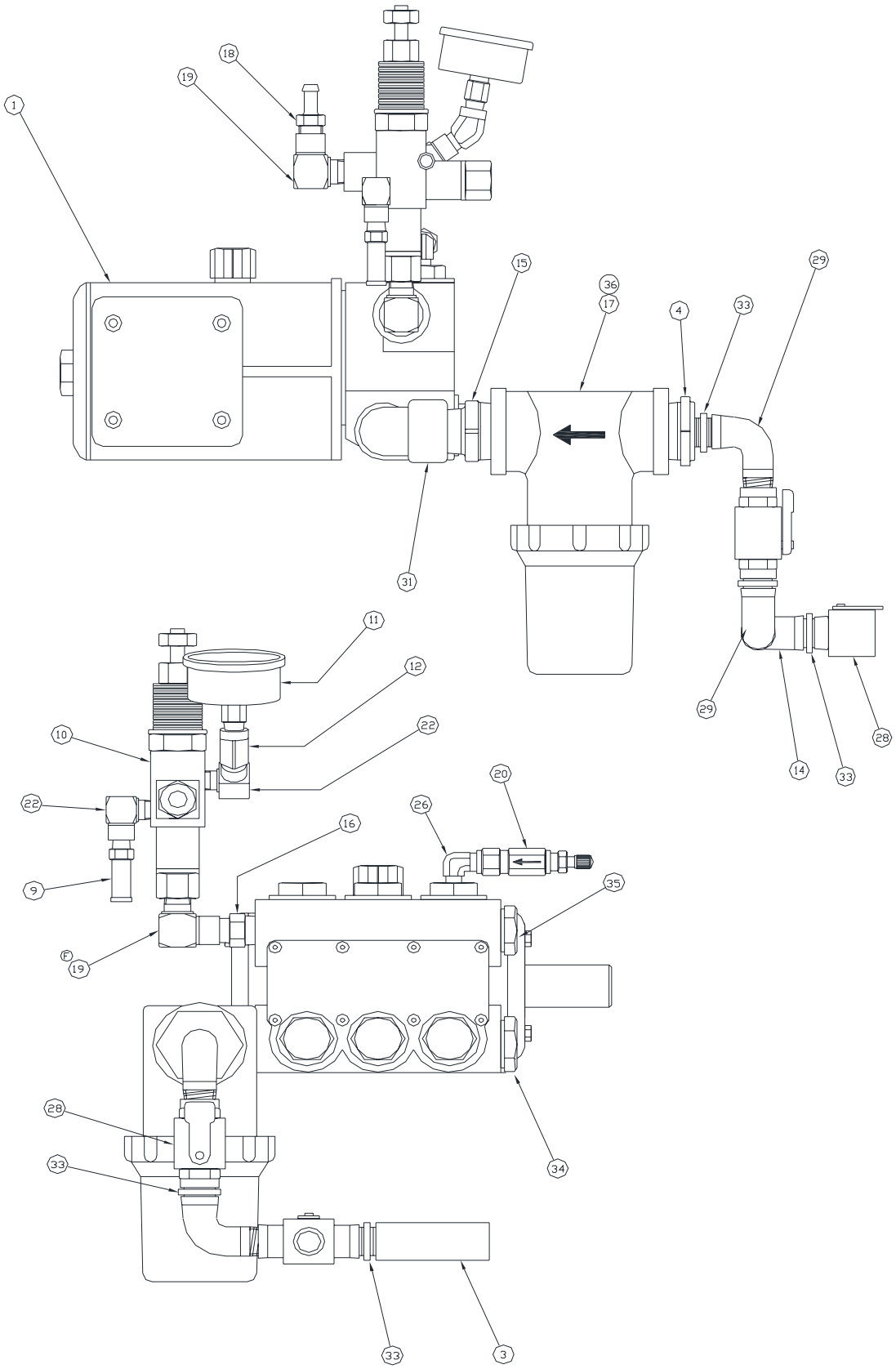
ITEM	QTY	PART NUMBER	DESCRIPTION
112	1	75866100	DECAL, 738/758 TIRE & LOADING
113	1	79952300	DECAL, WHEEL & LUG NUTS
114	1	79952400	DECAL, SAFETY CHAIN
115	12	00162400	WASHER, FLAT 3/16
119	1	75867000	FILL REEL ASSY 2010
120	1	77722100	FRAME, LIGHTED LICENSE
121	1	79944100	HOSE, GARDEN 5/8 X 100
122	2	79945850	LIGHT, SIDE MARKER AMBER
127	1	77766300	DECAL, DANGER NO SMOKING
128	1	75802300	SHEET, GAS TANK
129	1	75805400	ANGLE, GAS TANK
130	1	75815100	DECAL, GASOLINE ONLY
131	1	75807400	CONTROL, CHOKE
132	1	73852600	PLATE, THROTTLE & CHOKE CABLE
133	1	77771501	KEY, 1/4 X 1/4 X 1-5/8

ITEM	QTY	PART NUMBER	DESCRIPTION
134	1	73833100	SCREW, HEX HD 3/8-16 X 1
135	1	75814000	NUT, NYLON LOCKING 3/8-16
136	1	75818600	SCREW, CAP M10 X 25mm
137	1	73835400	WASHER, SPLIT LOCK M10
138	1	73835100	NUT, HEX 1/2-13
139	1	73835300	SCREW, HEX HD 1/4-20 X 3/4
140	1	73835200	SCREW, HEX HD 1/4-20 X 3/4
141	1	73834900	WASHER, FLAT 1/4 USS
142	1	75813900	WASHER, LOCK SPLIT 1/4
143	1	61018000	FUSE HOLDER
144	1	73834100	SHIELD, HEAT (REAR)
145	2	73834300	SPACER, FUEL TANK BRACKET
146	1	73834700	KEYS, IGNITION 19 HP KAWASAKI
147	1	75817900	CAP, FUEL TANK W/GAUGE
148	2	79849800	HOSE, FUEL 5/15
149	1	75808700	CONDUIT, THROTTLE CONTROL
150	4	73834200	SPACER, POWER PACK

738 Final Assembly - 73800000



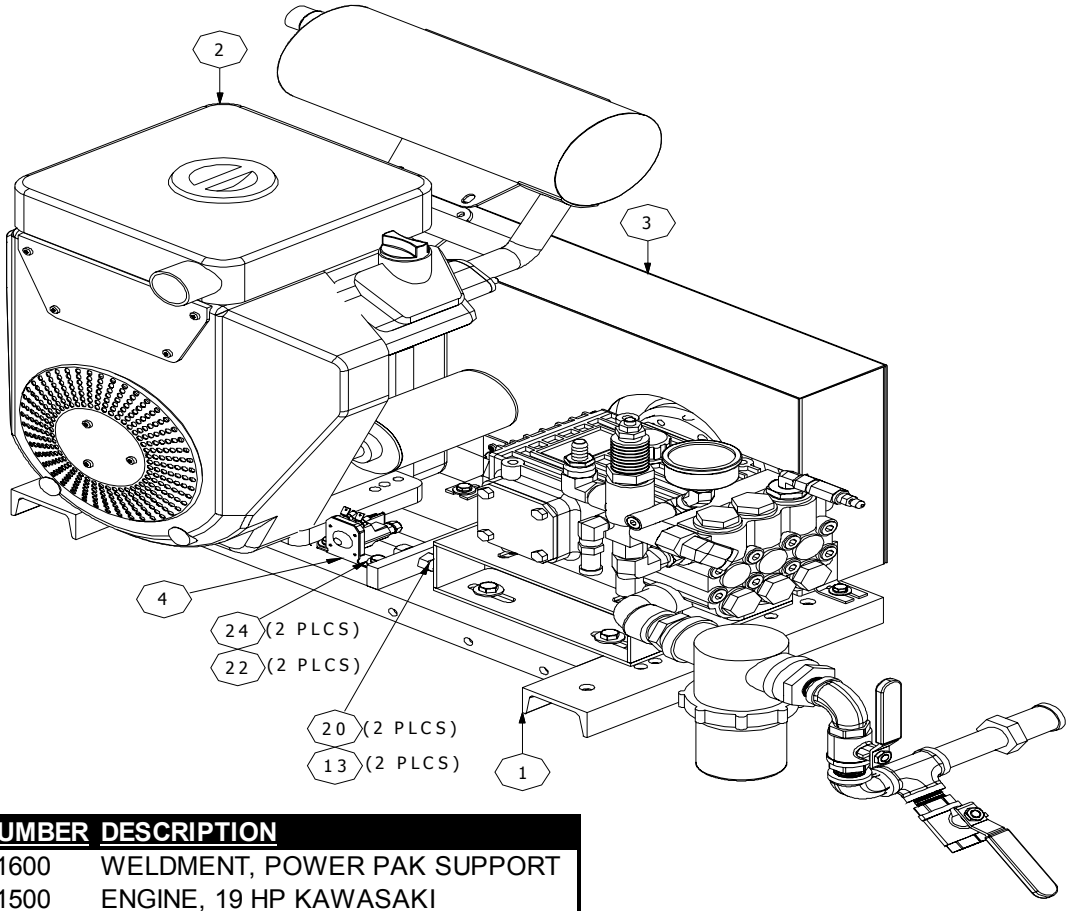
738 Pump Assembly - 73811500



738 Pump Assembly - 73811500

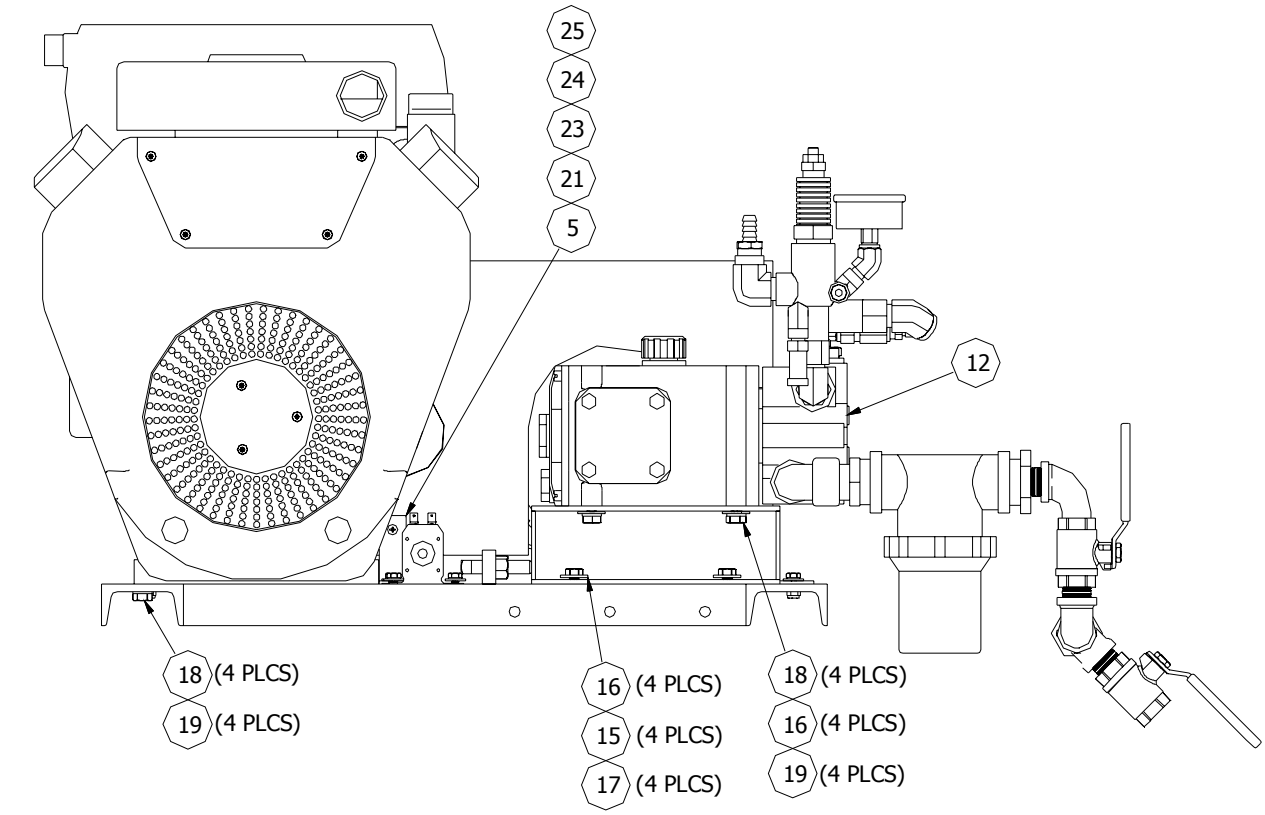
Item No	Qty	Part No	Description
1	1	73810200	Pump
3	1	41064100	Coupling, Pipe 3/4 NPT
4	1	54215501	Bushing, Reducer 1-1/4 x 3/4
9	1	73810700	Valve, Pop Off
10	1	73810800	Unloader
11	1	73818800	Gauge 3000 PSI, 1/4 CBM
12	1	72705900	Elbow, 45° Street 1/4" High Pressure
14	1	73811000	Tee, 3/4" (Galv. Steel)
15	1	73827400	Nipple, Reducer 1-1/4 x 1 NPT
16	1	73811700	Nipple, Reducer 3/4 x 1/2 High Pressure
17	1	77701600	Strainer, 1-1/4" NPT In Line
18	1	77704900	Fitting, Push Lock 1/2 NPT
19	2	77705101	Elbow, 90° Street 1/2 NPT
20	1	71707400	Valve, Check w/ Air Valve
22	2	77724300	Elbow, 90° Street 1/4 NPT
26	1	71707300	Elbow, 90° Male 1/4 x 1/8 NPT
28	2	77782400	Valve, Ball 3/4" NPT
29	2	77788200	Elbow, 90° Street 3/4 NPT
31	1	75803200	Elbow, 90° Street 1" NPT
33	3	79948130	Nipple, 3/4 NPT Znc Plt Steel
34	1	542103-05	Plug Hx 3/4 Stl
35	1	75803500	Plug 1" MNPT Stainless Stl
36	1	73827000	Filter Gasket

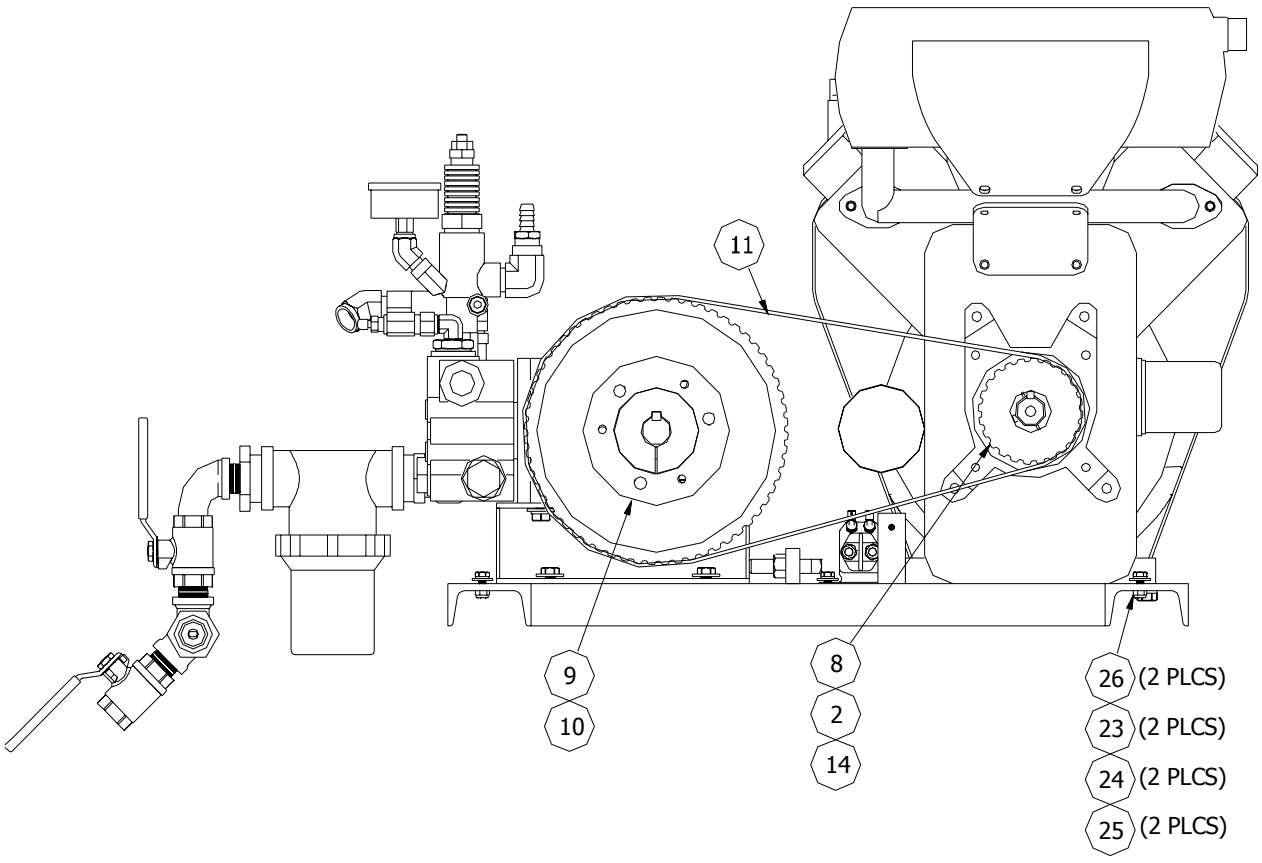
738 Power Pak - 73807700



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	73801600	WELDMENT, POWER PAK SUPPORT
2	1	73831500	ENGINE, 19 HP KAWASAKI
	1	73819300	SOLENOID, FUEL
	1	73852900	STARTER, 19 HP KAWASAKI
3	1	75820300	WELDMENT, BELT GUARD
4	1	73833600	SOLENOID, STARTER
5	1	75820800	BRACKET, BELT GUARD
6	1	75811600	BUSHING H 1-1/8
7	1	73828000	WELDMENT, PUMP MOUNT 738
8	1	73810000	SHEAVE,ENGINE DRIVE, 24 TEETH
9	1	73810400	SHEAVE, DRIVEN (60H150SF)
10	1	73810500	BUSHING, DRIVEN (SF X 28mm)
11	1	73810600	BELT, DRIVE (480H150)
12	1	73811500	ASSEMBLY, 73811500
13	2	77727100	BOLT, BELT ADJUSTMENT
14	1	79823400	KEY, 1/4 X 1/4 X 1-5/8
15	4	521035-03	SCREW, HEX HD 3/8-16 X 1
17	4	522132-00	NUT, NYLON LOCKING 3/8-16
18	8	75822800	SCREW, CAP M10 X 25mm
19	8	44029500	WASHER, SPLIT LOCK M10
20	2	00778000	NUT, HEX 1/2-13
22	2	00113600	SCREW, HEX HD 1/4-20 X 3/4
23	3	521012-03	SCREW, HEX HD 1/4-20 X 3/4
24	4	02825100	WASHER, FLAT 1/4 USS
25	4	00165400	WASHER, LOCK SPLIT 1/4

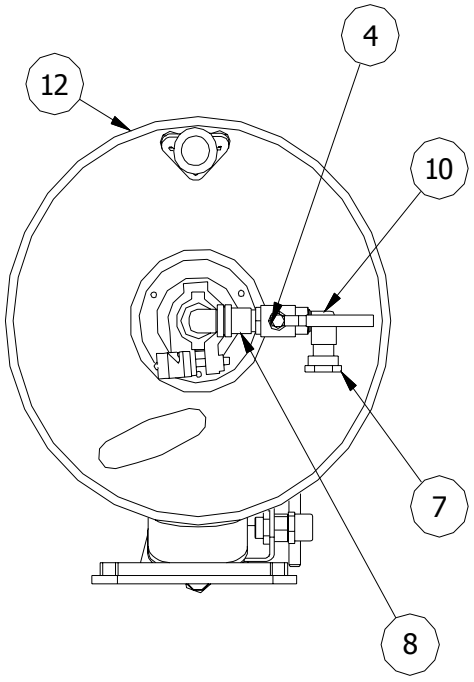
738 Power Pak - 73807700

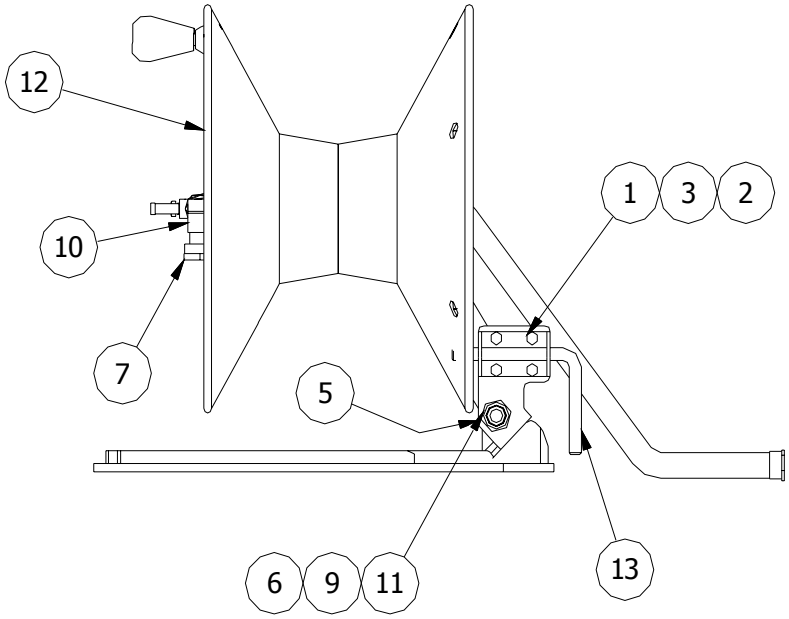




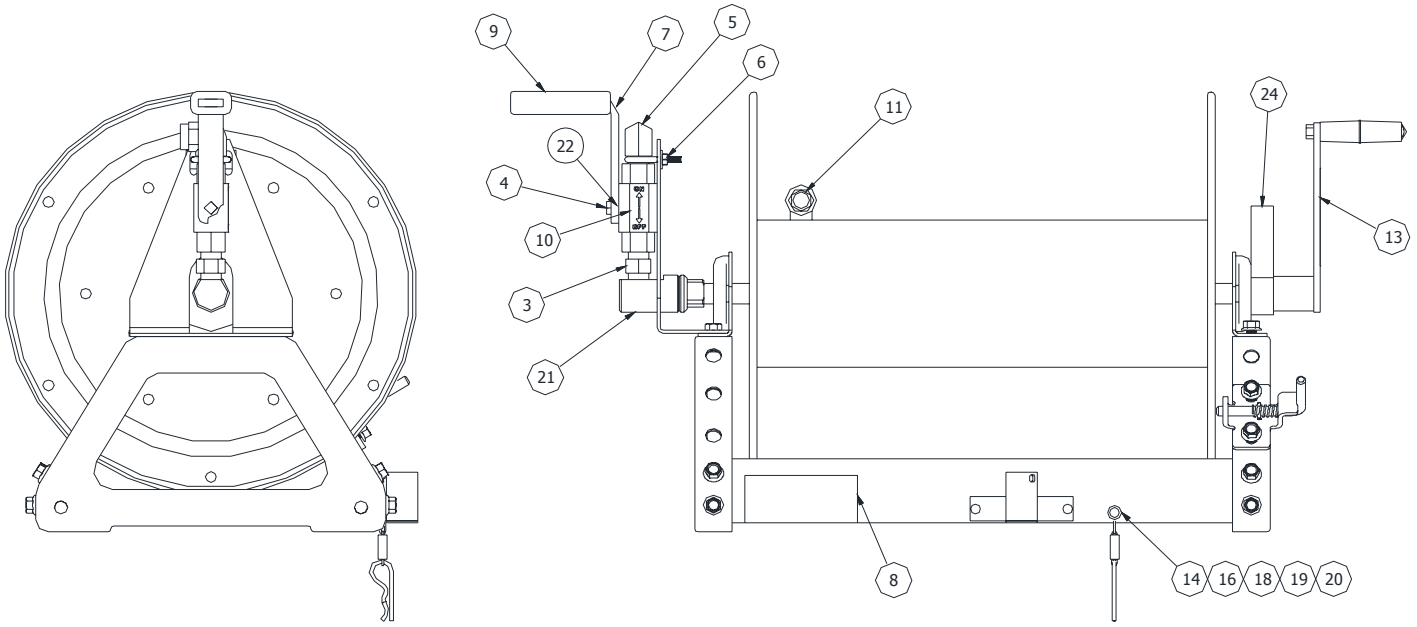
75867000 Fill Reel Assembly

ITEM	QTY	PART #	DESCRIPTION
1	4	00113901	SCREW, HX HD CAP 1/4-20 X 1 ZN
2	4	02821200	NUT, NYLOCK JAM 1/4-20
3	4	02825100	WASHER, FLAT 1/4 USS
4	1	72704800	VALVE, BALL 1/2 M X 1/2 F
5	1	75867010	BRACKET, FILL REEL LATCH - 2010
6	1	75867020	LOCKNUT, PIPE 1/2" NPT
7	1	75867030	ADAPTER, 3/4 GHT SWVL - 1/2 NPT
8	1	75867040	ADAPTER, 3/4 FGHT - 1/2 FNPT
9	1	77770800	NIPPLE, HEX 1/2 NPT
10	1	79904464	ST EL 90D 1/2NPT BRASS
11	1	79904492	ADAPTER, GARDEN HOSE 3/4M-1/2FM
12	1	79940300	RAPID REEL, 2008 FILL
13	1	79966320	LATCH, SPRING BOLT ZN PLT





H.P. Reel Assembly - 73808900



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	73802800	REEL, HIGH PRESSURE
2	1	73805800	SUPPORT, BALL VALVE
3	1	77770800	NIPPLE, HEX 1/2 NPT
4	1	75814600	VALVE, BALL 1/2 FNPT W/ DECAL
5	1	77705101	ELBOW, 90 DEG. STREET 1/2"
6	1	77778900	U-BOLT, 3/4 W/NUTS
7	1	73816100	HANDLE, HP VALVE
8	1	72707800	DECAL, WARNING - HP WATER JET
9	1	71102500	GRIP, FOAM BLACK
10	1	73817800	DECAL, BALL VALVE ON/OFF
11	1	73820600	BUSHING, REDUCER 1/2 X 3/8
13	1	73817500	HANDLE, REEL
14	1	00162400	WASHER, FLAT 3/16 USS
15	1	73816000	WELDMENT, HOSE HOLSTER (HP REEL)
16	3	77726500	RIVET, BLIND 3/16 DIA. (.062 - .125)
18	1	77737100	PIN, HAIR 9 GAUGE 2.45" LONG
19	1	77749400	TUBING, HEAT SHRINK 3/8
20	1	77726800	CHAIN, #5 DOUBLE LOOP
21	1	73819000	ASSEMBLY, REEL SWIVEL
22	1	73818900	BALL VALVE STOP WASHER
24	1	73828400	TENSIONER, CAM LOCK BRAKE (REEL)

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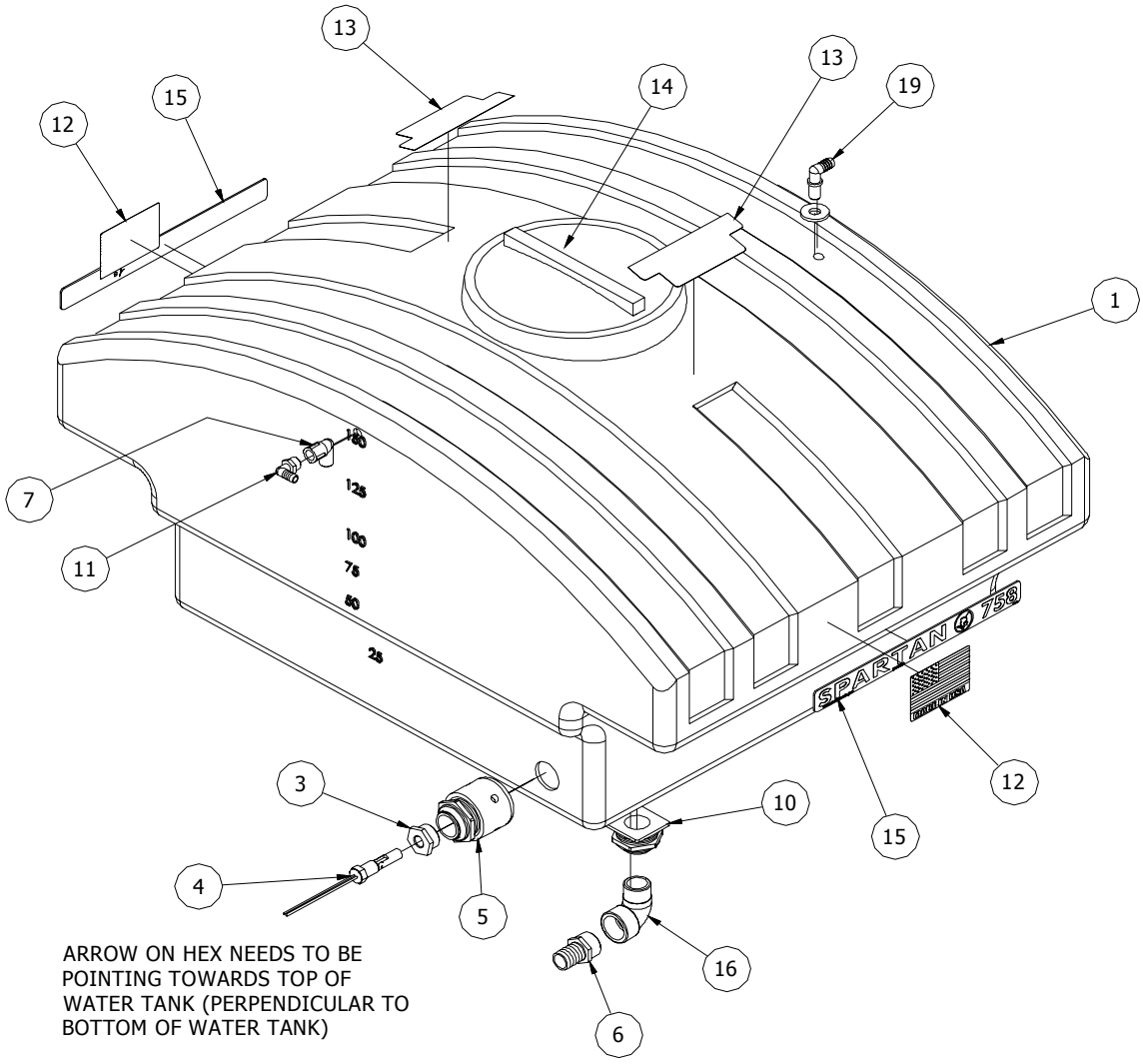
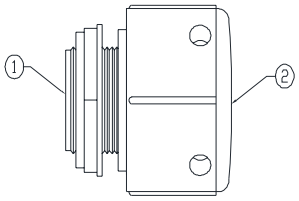
Water Tank Assembly - 75813400



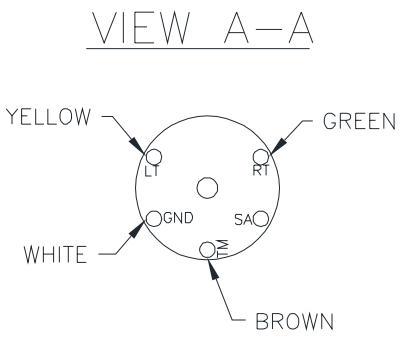


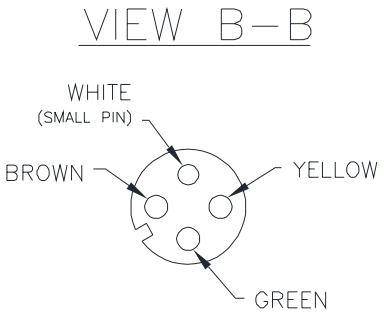
Item 5 (73827800) Bulk head Fitting

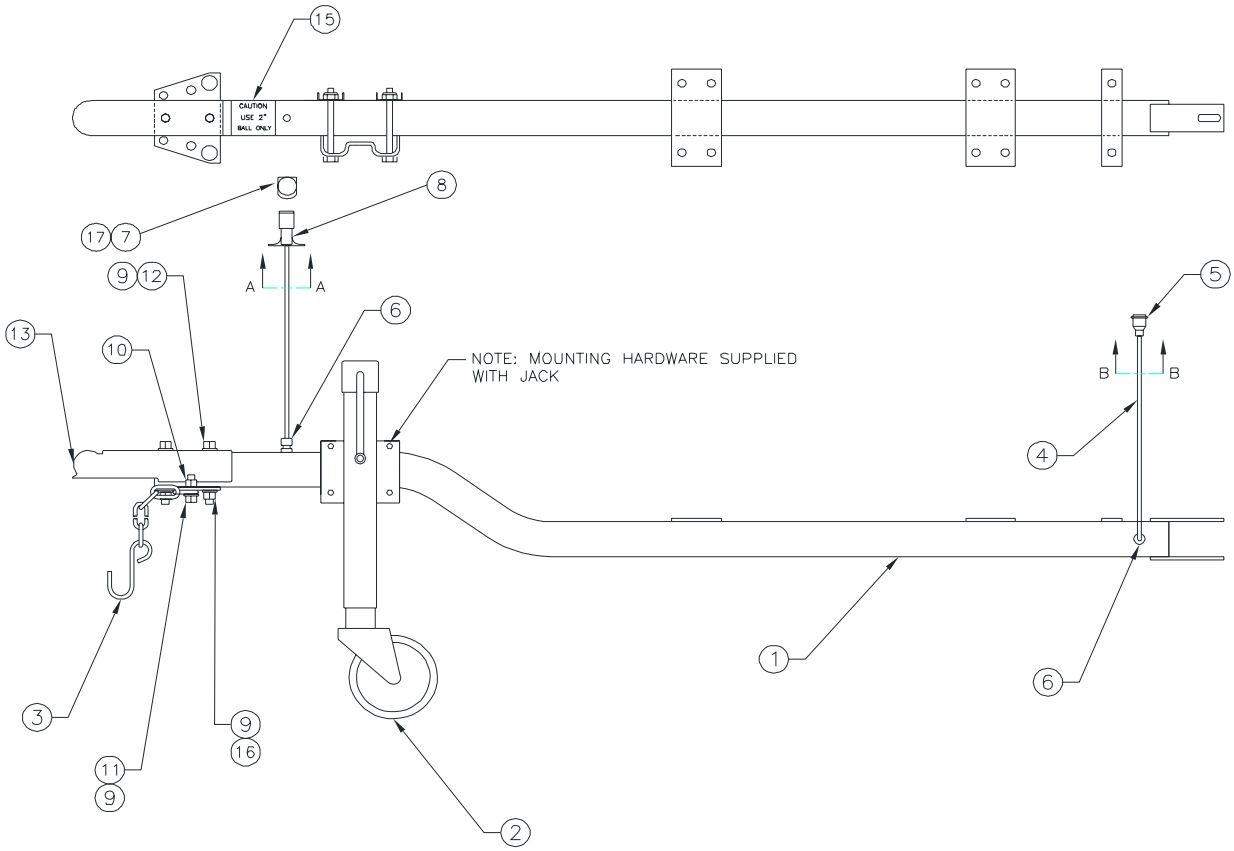
Item	Qty	Part #	Description
1	1	73827700	Bulkhead Fitting, 1-1/4
2	1	73827500	Cap, PVC 2-1/12 NPT

Item	Qty	Part #	Description
1	1	73801800	Water Tank w/ holes
3	1	73827600	Bushing, Reducer 1 1/4 x 1/2
4	1	75823200	Switch, Liquid Level (Compac) x
5	1	73827800	Bulkhead Fitting
6	1	79812000	Barb, Hose 1 1/4
7	1	73818000	Elbow, 90 Street 1/2NPT
10	1	79818500	Bulkhead Fitting 1 1/4
11	1	75811700	Elbow, 90 Deg Hose Barb 1/2
12	2	73817400	USA Label
13	2	75800100	Decal, Spartan 758
14	1	73817600	Water Tank Cover
15	2	75826100	Decal, 758 Water Tank
16	1	79811300	Elbow, 90 Street 1 1/4 Poly
19	1	75867300	Elbow, Nozzle Body

738 Hitch Tube Assembly - 73806800



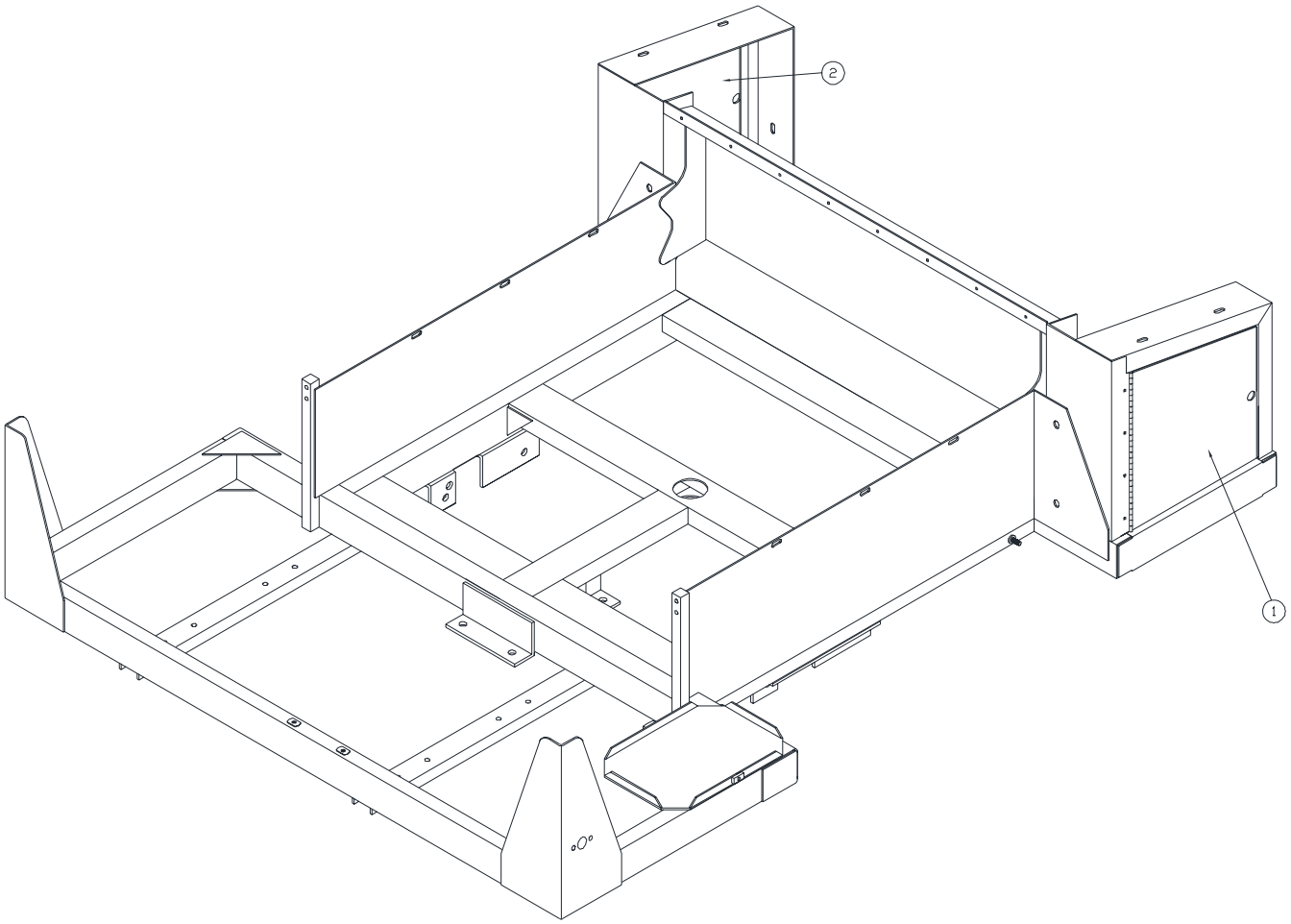




738 Hitch Tube Assembly - 73806800

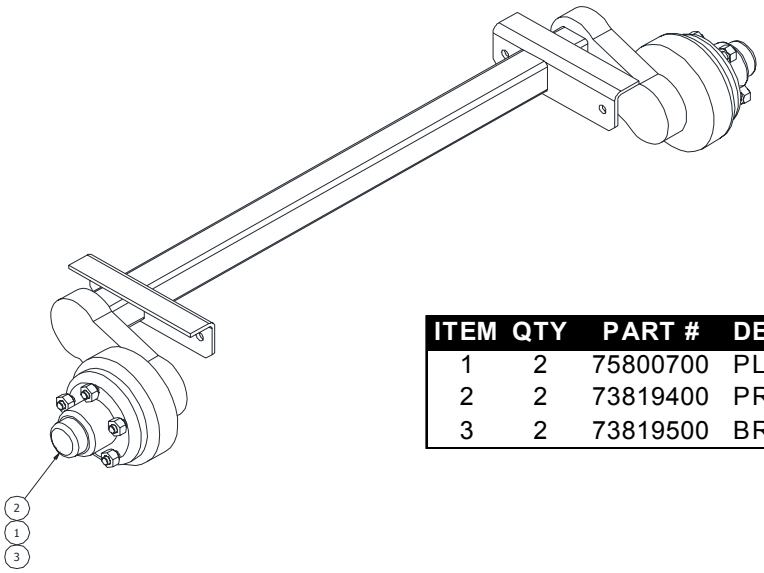
Item No	Qty	Part No	Description
1	1	73808700	Weldment, Hitch Tube
2	1	73852800	Assy., Jack
3	2	79960000	Chain, Safety
4	10.5'	77731500	Wire, Trailer Primary Jacketed
5	1	77731600	Connector, Plug Set
6	2	77764200	Grip, Cord
7	1	44036500	Trailer Connector, Vehicle End
8	1	44055000	Trailer Connector, Trailer End
9	6	73826900	Washer, 1/2" Flat High Strength
10	2	77744800	Locknut, 1/2-13 Stover
11	2	77745800	Screw, Hex HD Cap 1/2-13 x 1/4
12	2	73808800	Bolt, 1/2-20 x 4"
13	1	73803300	Tongue Coupler 2-1/2" Sq.
15	1	77749500	Decal, 2" Ball Only
16	2	77769300	Lock-Nut 1/2-20 UNF
17	1	77770900	Rubber Boot (Not Shown) for Item 7

Weldment, Frame
73823800



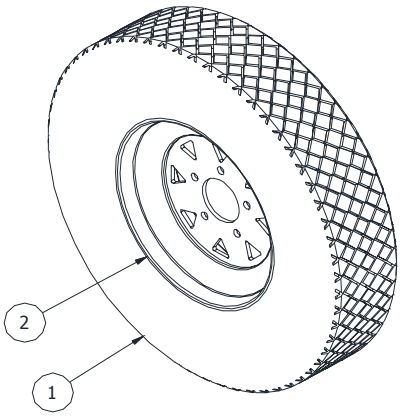
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	73806000	Weldment, Door (L.H.)
2	1	73806100	Weldment, Door (R.H.)

Axle-2300 LB
73804300



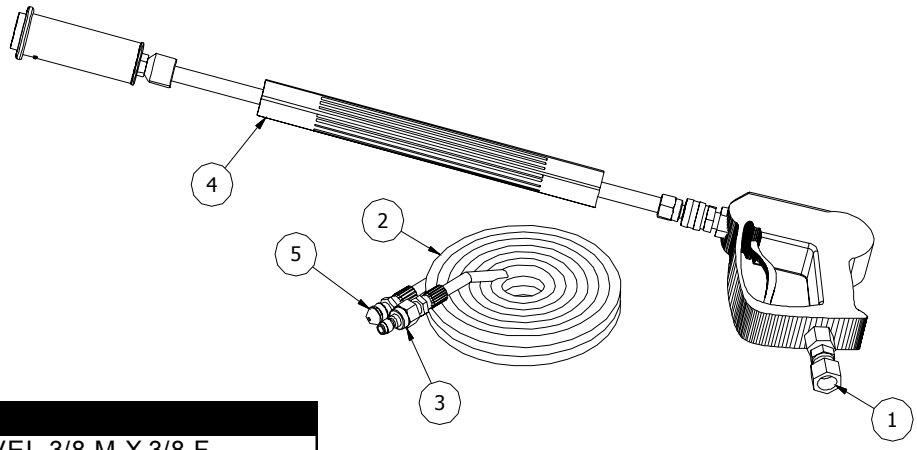
ITEM	QTY	PART #	DESCRIPTION
1	2	75800700	PLUG, EZ LUBE
2	2	73819400	PROTECTOR, BEARING
3	2	73819500	BRA, BEARING PROTECTOR

Assy, Tire & Wheel
73803700



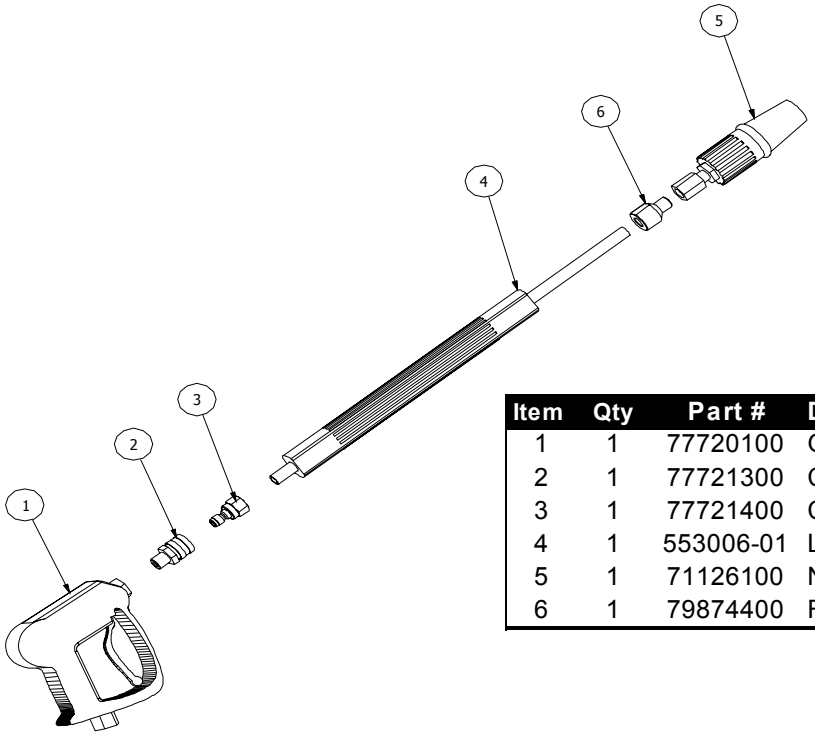
ITEM	QTY	PART #	DESCRIPTION
1	1	73803500	TIRE, 13" RADIAL-REPAIR PART
2	1	73803600	WHEEL, 13 X 4-1/2- REPAIR PART

Wash Down Accessory Package 73817300



Item	Qty	Part #	Description
1	1	73816500	ADAPTER, SWIVEL 3/8 M X 3/8 F
2	1	77719500	HOSE, 1/4" X 75'
3	1	77721400	COUPLER, QUICK GUN MALE
4	1	77799800	HANDGUN LANCE VNOZZLE ASSEMBLY
5	1	77815800	NOZZLE, 1/4" DOMED (6)

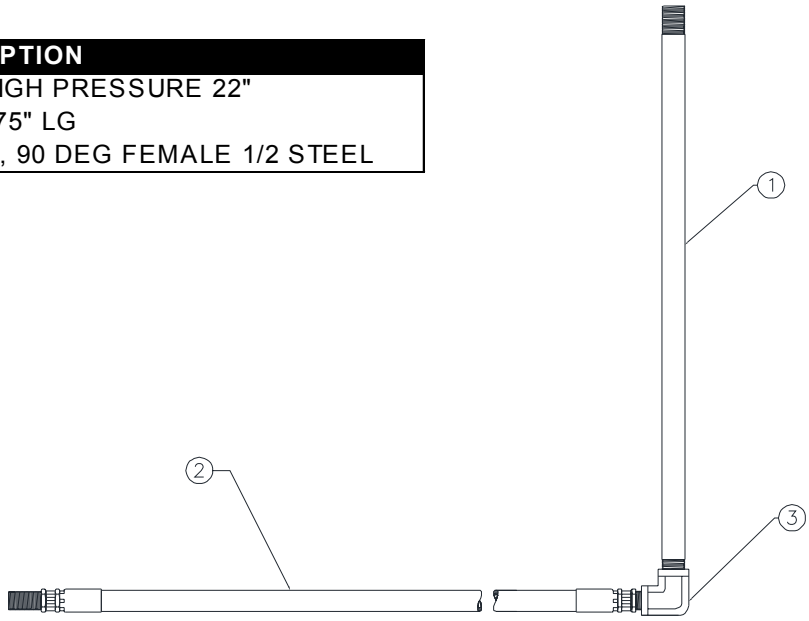
HandGun Lance Vnozzle Assembly 77799800



Item	Qty	Part #	Description
1	1	77720100	GUN, HAND
2	1	77721300	COUPLER, QUICK GUN, 1/4" NPT MALE
3	1	77721400	COUPLER, QUICK GUN, MALE
4	1	553006-01	LANCE, INSULATED GRIP, 18"
5	1	71126100	NOZZLE - VARIABLE .080
6	1	79874400	FITTING, WAND ANTI-KICKBACK

Assy, High Pressure Pipe
73807300

ITEM	QTY	PART #	DESCRIPTION
1	1	73809000	PIPE, HIGH PRESSURE 22"
2	1	73825200	HOSE, 75" LG
3	1	72714600	ELBOW, 90 DEG FEMALE 1/2 STEEL



73827300 Pump Parts List

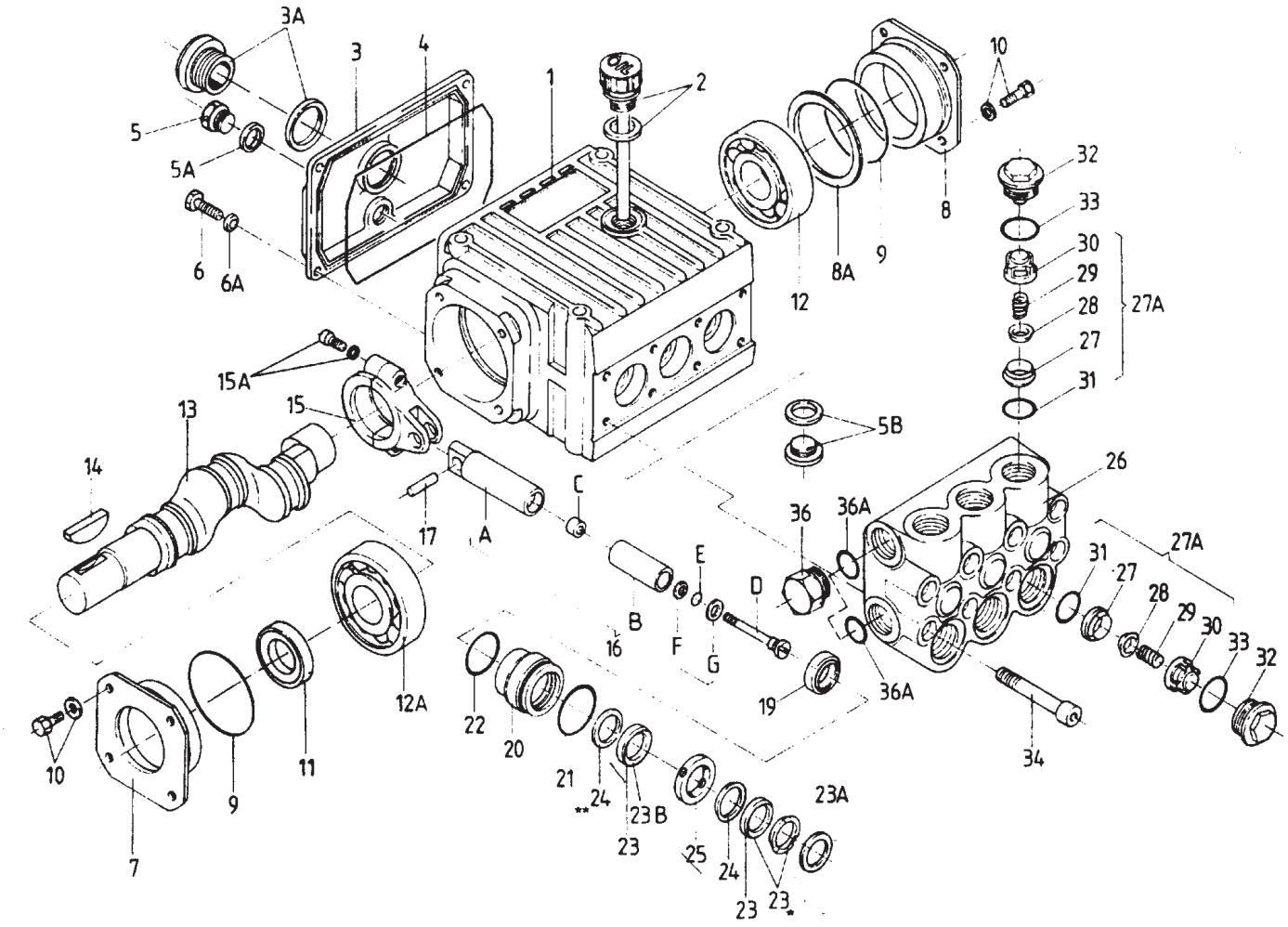
Item	Qty	Part Number	Description
1	1	73810205	CRANKCASE
2	1	73810206	OIL FILL PLUG W/ GASKET
3	1	73810207	CRANKCASE COVER
3A	2	73810208	OIL SIGHT GLASS W/ GASKET
4	1	73810209	O-RING
5	1	73810210	OIL DRAIN PLUG
5A	1	73810211	GASKET FOR OIL DRAIN PLUG
5B	1	73810212	PLUG W/ GASKET
6	4	73810213	SCREW
6A	4	73810214	SPRING WASHER
7	1	73810215	BEARING COVER OPEN
8	8	73810216	BEARING COVER CLOSED
8A	1	73810217	SHIM
9	2	73810218	O-RING
10	8	73810219	SCREW, W/ WASHER
11	1	73810220	RADIAL SHAFT SEAL
12	1	73810221	BEARING
12A	1	73810222	BEARING
13	1	73810223	CRANKSHAFT
14	1	73810224	KEY
15	3	73810225	CONNECTING ROD ASSEMBLY
15A	6	73810226	SCREW W/ WASHER
16	3	73810227	PLUNGER ASSY, 25mm
16A	3	73810228	PLUNGER BASE
16B	3	73810229	PLUNGER PIPE, 25mm
16C	3	73810230	CENTERING SLEEVE

Item	Qty	Part Number	Description
16D	3	73810231	TENSIONING SCREW
16E	3	73810232	O-RING
16F	3	73810233	BACKUP RING
16G	3	73810234	COPPER WASHER
17	3	73810235	CROSSHEAD PIN
18	3	73810236	O-RING
19	3	73810237	OIL SEAL
20	3	73810238	SEAL CASE
21	3	73810239	O-RING
22	3	73810240	O-RING
23	3	73810241	V-SLEEVE, 25mm
23A	3	73810242	SPACER RING
23B	3	73810243	WEEP SEAL
24	6	73810244	PRESSURE RING
25	3	73810245	WEEP RETURN RING
26	1	73810246	MANIFOLD
27	6	73810247	VALVE SEAT
27A	6	73810248	VALVE ASSEMBLY
28	6	73810249	VALVE PLATE
29	6	73810250	VALVE SPRING
30	6	73810251	VALVE SPRING RETAINER
31	6	73810252	O-RING
32	6	73810253	PLUG
33	6	73810254	O-RING
34	8	73810255	CAP SCREW

738 Pump Torque Specifications

Item Number	Part Number	Description	Torque Amount
15A	73810226	Screw w/ Washer	216 in. - lbs.
16D	73810231	Tensioning Screw	240 in. - lbs
32	73810253	Plug	125 ft. - lbs
34	73810255	Cap Screw	35 ft. - lbs

73827300 Pump - Exploded View



738 Pump Repair Kits

Plunger Packing Kits (73810256)

Qty.	Part Number	Description
3	73810239	O-Ring
3	73810240	O-Ring
3	73810241	V-Sleeve
3	73810243	Weep Seal
6	73810244	Pressure Ring

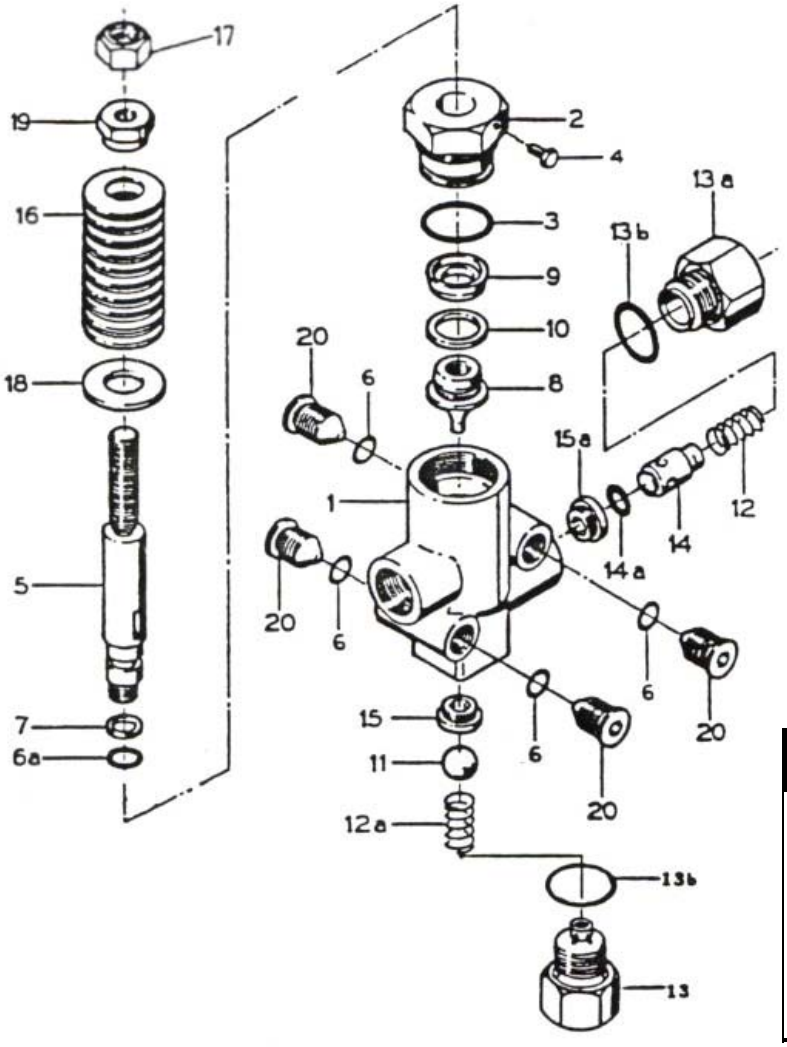
Oil Seal Kit (73810257)

Qty.	Part Number	Description
3	73810237	Oil Seal

Valve Assy. Kit (73810258)

Qty.	Part Number	Description
6	73810248	Valve Assy., Complete
6	73810233	O-Ring

738 Unloader - 73810800



Repair Kit 73810827

Item	Qty	Part Number	Description
3	1	73810803	O-Ring, Valve Cap
6	4	73810806	O-Ring, Plug
6a	1	73810807	O-Ring, Valve Stem
7	2	73810808	BackUp Ring, Valve Stem
9	1	73810810	Cup, 23mm
10	1	73810811	BackUp Ring, Piston
13b	2	73810817	O-Ring, Spring Retainer
14a	1	73810819	O-Ring, Outlet Valve

Item		Qty	Part Number	Description
1		1	73810801	Valve Body
2		1	73810802	Valve Cap
3	*	1	73810803	O-Ring, Valve Cap
4		1	73810804	Set Screw, Valve Cap
5		1	73810805	Valve Stem
6	*	4	73810806	O-Ring, Plug
6a	*	1	73810807	O-Ring, Valve Stem
7	*	2	73810808	BackUp Ring, Valve Stem
8		1	73810809	Piston
9	*	1	73810810	Cup, 23mm
10	*	1	73810811	BackUp Ring, Piston
11		1	73810812	Ball, Inlet
12		1	73810813	Spring, Outlet Valve

Item		Qty	Part Number	Description
12a		1	73810814	Spring, Inlet
13		1	73810815	Inlet Adapter
13a		1	73810816	Spring Retainer, Outlet Valve
13b	*	2	73810817	O-Ring, Spring Retainer
14		1	73810818	Outlet Valve
14a	*	1	73810819	O-Ring, Outlet Valve
15		1	73810820	Seat, Inlet Valve - S.S.
15a		1	73810821	Seat, Outlet Valve - Brass
16		17	73810822	Spring, Red 2400 PSI
17		1	73810823	Nut
18		1	73810824	Washer, Spring
19		1	73810825	Adjusting Nut
20		4	73810826	Plug, 1/4"

*** Included in Repair Kit (73810827)**

Optional 738 Accessories

Part Number	Description
73809300	Nozzle, Open
73809400	Nozzle, Closed
77724000	Reducer 1/2 x 3/8
75700200	Q-Nozzle
73820700	Nozzle, Grenade Bomb with Reducer
73700200	Rotating Nozzle
73821500	3/8 x 15 ft. Leader Hose
73700100	3/8 x 75 ft. Hose
73808601	3/8 x 150 ft. Hose
73808602	3/8 x 250 ft. Hose
73808600	3/8 x 350 ft. Hose
73808603	1/4 x 33 ft. Hose
*77719400	1/4 x 50 ft. Hose
77719500	1/4 x 75 ft. Hose
77708700	1/4 x 100 ft. Hose
73816800	Mobile Hose Reel
77763700	Venturi Pump
*77799800	Handgun Lance Vari-Nozzle Assembly
*73816500	Adapter, Swivel 3/8M to 3/8F
73817300	Wash Down Accessory Kit
44237200	468 Root Cutter
34/3-1	3" - Model 34 Root Cutter
34/3-2	4" - Model 34 Root Cutter
34003701	Root Cutter Adaptor Hose
199106-04	Foot Pedal Valve Kit
77773903	Foot Pedal
77800600	Hose Guard (Tiger Tail)

* Included in Washdown Accessory Kit

Tire Safety Information

This portion of the User's Manual contains tire safety information as required by 49 CFR 575.6.

The National Traffic Safety Administration (NHTSA) has published a brochure (DOT HS 809 361) that discusses all aspects of Tire Safety, as required by CFR 575.6. It can be obtained and downloaded from NHTSA, free of charge, from the following web site:

http://www.nhtsa.dot.gov/cars/rules/TireSafety/ridesonit/tires_index.html

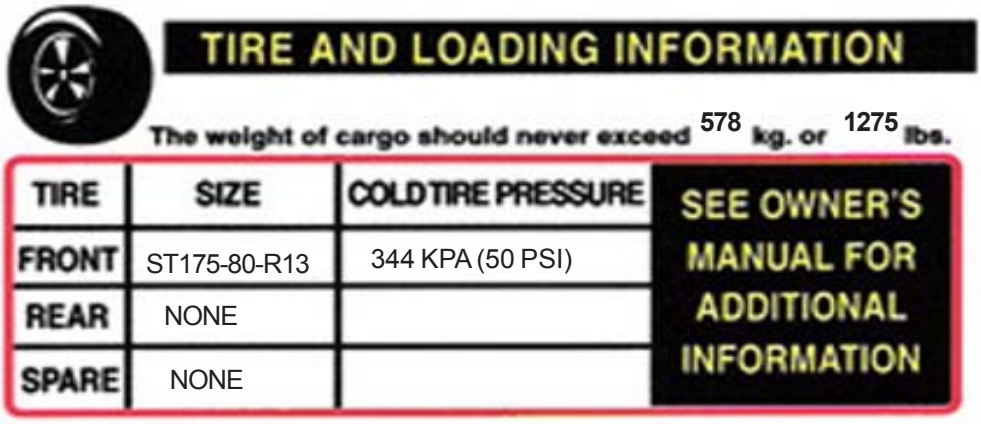
Tire Safety Terminology Glossary

- **Cold tire inflation pressure -** The pressure in the tire before you drive.
- **Gross Axle Weight Rating (GAWR) -** The maximum weight that any axle can support, as published on the Certification / VIN label on the front left side of the trailer. Actual weight determined by weighing each axle on a public scale, with the trailer attached to the towing vehicle.
- **Gross Vehicle Weight Rating (GVWR)-** The maximum weight of the fully loaded trailer, as published on the Certification / VIN label. Actual weight determined by weighing trailer on a public scale, without being attached to the towing vehicle.
- **Load rating -** The maximum load that a tire is rated to carry for a given inflation pressure.
- **Maximum load rating -** The load rating for a tire at the maximum permissible inflation pressure for that tire.
- **Maximum permissible inflation pressure -** The maximum cold inflation pressure to which a tire may be inflated.
- **Outer diameter -** The overall diameter of an inflated new tire.
- **Recommended inflation pressure -** The inflation pressure provided by the vehicle manufacturer on the Tire Information label and the Certification/VIN tag.
- **Rim -** A metal support for a tire or a tire and tube assembly upon which the tire beads are seated.
- **Vehicle maximum load on the tire -** The load on an individual tire that is determined by distributing to each axle its share of the maximum loaded vehicle weight and dividing by two.

Tire Information Placard

The Spartan Trailer Jet Federal Certification/VIN label is located on the forward half of the left (road) side of the unit. The VIN label will identify the units GVWR and GAWR.

The Spartan Trailer Jet's Tire Information Placard can be located adjacent to the trailer's VIN (Certification) label at the left front of the trailer. The placard includes the tire size, cold tire inflation pressure, and load limitations. The load limitation statement will give an indication of the maximum cargo capacity. Any items (cargo) added to the trailer must not cause the total weight to exceed the stated GVWR.



Steps for Determining Correct Load Limit

- Locate the statement "The weight of cargo should never exceed 578 kg or 1275 lbs" on your tire information placard.
- This figure equals the available amount of cargo and luggage load capacity.
- Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity.

General Tire Information

- Tire inflation pressure is the level of air in the tire that provides the load-carrying capacity and affects the overall performance of the vehicle. The tire inflation pressure is a number that indicates the amount of air pressure a tire requires to be properly inflated. Since tires are designed to be used on more than one type of vehicle, tire manufacturers list the "maximum permissible inflation pressure" on the tire sidewall. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.
- Improper inflation is the main cause of tire failure. Excessive loads and/or under inflation cause tire overloading, which leads to abnormal tire flexing. Check the cold tire inflation pressures at least once a week for proper inflation levels.
    - The proper air pressure may be found on the Certification/VIN label and/or the Tire Information placard.
- High speed towing in hot conditions degrades the life of the tires. The internal heat generated from high speeds breaks down the tire's internal structure. It is recommended to drive at moderate speeds.
- If the trailer is stored for an extended period of time, the tires should be fully inflated to the maximum rated pressure. The trailer jet should be stored in a cool, dry place. Use tire covers to protect the trailer tires from the harsh effects of the sun.

Tire Maintenance

Checking Tire Pressure

- The recommended tire inflation pressure that vehicle manufacturers provide reflects the proper PSI when a tire is cold. A cold tire is one that has not been driven on for at least three hours. Since driving raises the tires temperature, the internal air pressure also increases. To prevent inflated tire readings, the tire must be measured when cold.

Maintaining Proper Tire Pressure

a. Locate the recommended tire pressure on the vehicle's tire information placard, certification label, or in the owner's manual.
b. Record the tire pressure of all tires.
c. If the tire pressure is too high in any tires, slowly release air by gently pressing on the tire valve stem with the edge of your tire gauge until the correct pressure is reached.
d. If the tire pressure is too low, note the difference between the measured tire pressure and the correct tire pressure. Add the missing pounds of air pressure to each tire that is under inflated.
e. Check all the tires to make sure they have the same air pressure

Note: If the tires are warm due to driving, but testing confirms under inflation, fill the tire to the recommended cold inflation pressure. While the tire may be slightly under inflated due to extra pressure in the warm tire, it is safer to drive a slightly under inflated tire then to drive a significantly under inflated tire. Since this is a temporary fix, the tire must be re-checked and adjusted once a cold reading can be obtained.

Tire Size and Tread

- Tires should be replaced when the tread is worn down 1/16 of an inch.
- Treadwear indicators on the bottom of the tire can be used as a guide. The indicators are raised sections spaced intermittently in the bottom of the tread groves. If they appear even with the outside of the tread, the tire should be replaced.
- Replacement tires should be the same size as the original tires. To prevent error and maintain safety, it is recommended that all replacement parts be purchased through Spartan Tool LLC.

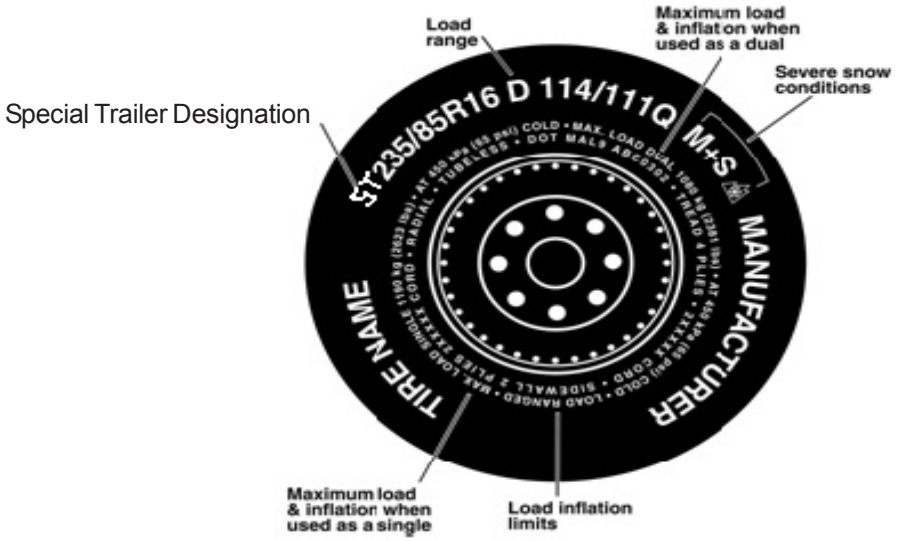
Tire Safety Information

Tire Balance and Wheel Alignment

- Tires must be properly balanced to avoid vibrations and shaking of the trailer. A wheel alignment adjusts the angles of the wheels to position them correctly relative to the trailer's frame. Such adjustments can maximize the life of the tires, but should be performed by a qualified technician.

Tire Repair

- A punctured tire can be repaired by plugging the hole and patching the area that surrounds the puncture hole. A small puncture in the tire tread can be repaired, but punctures to the sidewall should not. Tires should be removed from the rim to be properly inspected before plugging.



Tire Fundamentals

Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire. It also provides a tire identification number for safety standard certification and in case of a recall.

Tire Safety Tips

Preventing Tire Damage

- Slow down before driving over a pothole or other object in the road
- Do not run over curbs or other foreign objects in the roadway.

Tire Safety Checklist

- Check tire pressure regularly (at least once a month).
- Inspect tires for uneven wear patterns on the tread, cracks, foreign objects, or other signs of wear or trauma.
- Remove bits of glass and foreign objects wedged in the tread.
- Make sure tire valves have valve caps.
- Check tire pressure before any long trips.
- Do not overload trailer. Check the Tire Information Placard for the maximum recommended trailer load.

Confirm that:
• The coupler is secure to the hitch and is locked,
• Electrical connections are made,
• There is appropriate slack in the safety chains,

• The tires are not visibly low on pressure, and the cargo is secure and in good condition.

Reporting Safety Defects

If you believe that your vehicle has a defect that could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Spartan Tool LLC.

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

To contact NHTSA, you may either call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153), go to http://www.safecar.gov; or write to

Administrator
NHTSA
1200 New Jersey Avenue S.E.
Washington, DC 20590

You can also obtain other information about motor vehicle safety from http://www.safecar.gov.

Spartan Tool LLC
1506 W. Division St.
Mendota, IL 61342

ONE YEAR WARRANTY

Spartan Tool warrants its equipment to free from defects in material and workmanship for one year from the date of purchase. To obtain warranty service, a purchaser should notify Spartan Tool in writing, at the address provided below, within the warranty period, and Spartan Tool will direct where to take or send the equipment for service. If the defect is covered by the warranty, Spartan Tool will repair or replace, at its option, the defective equipment, without charge for labor or materials. (Freight and insurance are the purchaser's responsibility.)

This warranty is limited to the original retail purchaser and is not transferable. Spartan Tool assumes no responsibility for damage due to accident, neglect, abuse, tampering or misuse, nor damage from repairs or alterations by others. This warranty does not cover damage to the equipment resulting from the use of replacement parts other than Spartan Tool parts.

Spartan Tool's sole obligation and the original retail purchaser's exclusive remedy under this warranty shall be for repair or replacement as described above. ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL SPARTAN TOOL BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

SPARTAN TOOL L.L.C.
MENDOTA, ILLINOIS 61342

Spartan Tool L.L.C. reserves the right to make changes at any time, without notice, to specifications and models and also discontinue models. The right is also reserved to change specifications or parts at any time without incurring any obligation to equip same on models manufactured prior to the date of change.

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