



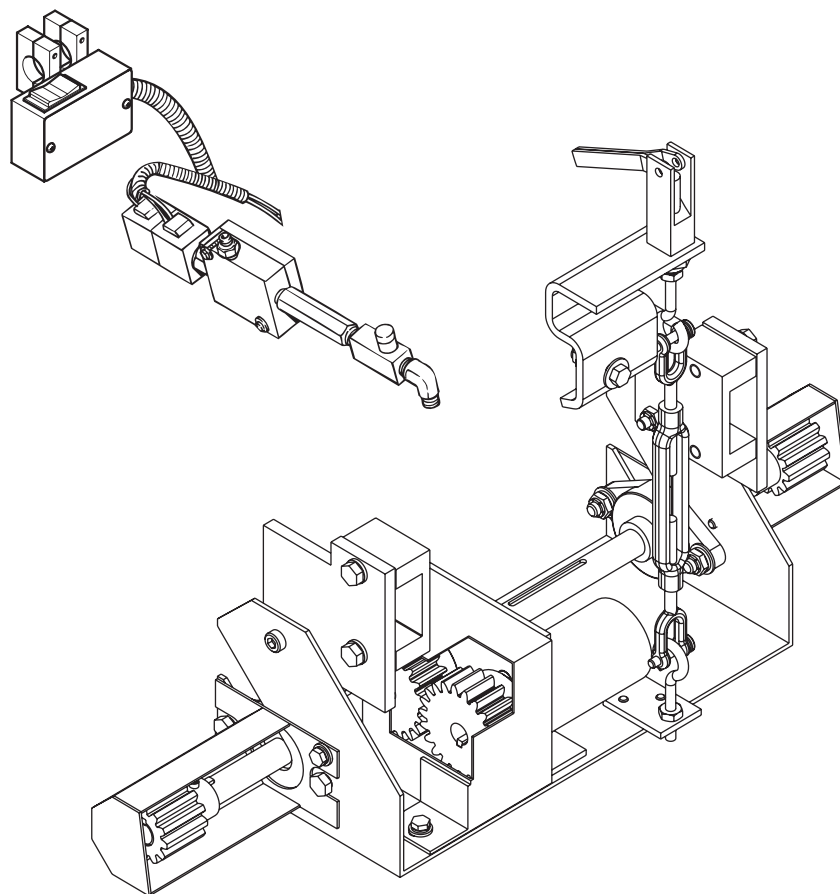
Owner's Manual

For professional use only

Do not use this equipment
before reading this manual!

SPEEFLO PowrDrive

Self-Propulsion Accessory Kit For PowrLiner 6900, 6950, 8900 and 8950 Models



Model Number: 759-135

NOTE: This manual contains important warnings and instructions. Please read and retain for reference.



Important Safety Information • Read all safety information before operating the equipment. **SAVE THESE INSTRUCTIONS.**



This symbol indicates a hazardous situation, which, if not avoided could result in death or serious injury.



To reduce the risks of fire or explosion, electrical shock, and the injury to persons, read and understand all instructions included in this manual. Be familiar with the controls and the proper usage of the equipment.



WARNING – To reduce the risk of fire or explosion:



- Do not spray flammable or combustible materials near an open flame, pilot lights or sources of ignition such as hot objects, cigarettes, motors, electrical equipment and electrical appliances. Avoid creating sparks from connecting and disconnecting power cords.
- For units intended for use with only water-based materials — Do not spray or clean with flammable liquids. For use with water-based liquids only.
- For units intended for use with only water-based or mineral spirit-type materials with a minimum flash point of 38°C (100°F) — Do not spray or clean with liquids having a flash point of less than 38°C (100°F). Flash point is the temperature at which a fluid can produce enough vapor to ignite.
- Paint or solvent flowing through the equipment is able to result in static electricity. Static electricity creates a risk of fire or explosion in the presence of paint or solvent fumes. All parts of the spray system, including the pump, hose assembly, spray gun and objects in and around the spray area shall be properly grounded to protect against static discharge and sparks. Use only conductive or grounded high-pressure airless paint sprayer hoses specified by the manufacturer.
- Verify that all containers and collection systems are grounded to prevent static discharge.
- Connect to a grounded outlet and use grounded extension cords (electric models only). Do not use a 3 to 2 adapter.
- Do not use a paint or solvent containing halogenated hydrocarbons. Such as chlorine, bleach mildewcide, methylene chloride and trichloroethane. They are not compatible with aluminum. Contact the coating supplier about compatibility of material with aluminum.
- Keep spray area well ventilated. Keep a good supply of fresh air moving through the area to keep the air within the spray area free from accumulation of flammable vapors. Keep pump assembly in well ventilated area. Do not spray pump assembly.
- Do not smoke in the spray area.
- Do not operate light switches, engines, or similar spark producing products in the spray area.
- Keep area clean and free of paint or solvent containers, rags, and other flammable materials.
- Know the contents of the paint and solvents being sprayed. Read all Material Safety Data Sheets (MSDS) and container labels provided with the paints and solvents. Follow the paint and solvent manufacture's safety instructions.
- Place pump at least 25 feet (7.62 meters) from the spray object in a well ventilated area (add more hose if necessary). Flammable vapors are often heavier than air. Floor area must be extremely well ventilated. The pump contains arcing parts that emit sparks and can ignite vapors.
- Plastic can cause static sparks. Never hang plastic to enclose spray area. Do not use plastic drop cloths when spraying flammable material.
- Fire extinguisher equipment shall be present and working.



WARNING – To reduce the risk of skin injection:



HAZARD:

Injection injury – A high pressure fluid stream produced by this equipment can pierce the skin and underlying tissues, leading to a serious injury and possible amputation. See a physician immediately. DO NOT TREAT AN INJECTION AS A SIMPLE CUT.

- Do not aim the gun at, or spray any person or animal.
- Keep hands and other body parts away from the discharge. For example, do not try to stop leaks with any part of the body.
- Always use the nozzle tip guard. Do not spray without the nozzle tip guard in place.
- Only use a nozzle tip specified by the manufacturer.
- Use caution when cleaning and changing nozzle tips. In the case where the nozzle tip clogs while spraying, ALWAYS lock gun trigger, shut pump off, and release all pressure before servicing, cleaning tip or guard, or changing tip. Pressure will not be released by turning off the motor. The PRIME/SPRAY valve or pressure bleed valve must be turned to their appropriate positions to relieve system pressure. Refer to PRESSURE RELIEF PROCEDURE described in the pump manual.
- Do not leave the unit energized or under pressure while unattended. When the unit is not in use, turn off the unit and relieve the pressure in accordance with the manufacturer's instructions.
- High-pressure spray is able to inject toxins into the body and cause serious bodily injury. In the event that injection occurs, seek medical attention immediately.
- Check hoses and parts for signs of damage, a leak can inject material into the skin. Inspect hose before each use. Replace any damaged hoses or parts.
- This system is capable of producing 3300 PSI / 22.8 MPa. Only use replacement parts or accessories that are specified by the manufacturer and that are rated a minimum of 3300 PSI. This includes spray tips, nozzle guards, guns, extensions, fittings, and hose.
- Always engage the trigger lock when not spraying. Verify the trigger lock is functioning properly.
- Verify that all connections are secure before operating the unit.
- Know how to stop the unit and bleed pressure quickly. Be thoroughly familiar with the controls. Pressure will not be released by turning off the motor. The PRIME/SPRAY valve or pressure bleed valve must be turned to their appropriate positions to relieve system pressure. Refer to PRESSURE RELIEF PROCEDURE described in the pump manual.
- Always remove the spray tip before flushing or cleaning the system.



WARNING – To reduce the risk of injury:

- Always wear appropriate gloves, eye protection, clothing and a respirator or mask when painting. Hazardous vapors – Paints, solvents, insecticides, and other materials can be harmful if inhaled or come in contact with body. Vapors can cause severe nausea, fainting or poisoning.
- Do not operate or spray near children. Keep children away from equipment at all times.
- Do not overreach or stand on an unstable support. Keep effective footing and balance at all times.
- Stay alert and watch what you are doing.
- Do not operate the unit when fatigued or under the influence of drugs or alcohol.



Important Safety Information • Read all safety information before operating the equipment. SAVE THESE INSTRUCTIONS.

- Do not kink or over-bend the hose. Airless hose can develop leaks from wear, kinking and abuse. A leak can inject material into the skin.
- Do not expose the hose to temperatures or pressures in excess of those specified by manufacturer.
- Do not use the hose as a strength member to pull or lift the equipment.
- Use lowest possible pressure to flush equipment.
- Follow all appropriate local, state and national codes governing ventilation, fire prevention and operation.
- The United States Government Safety Standards have been adopted under the Occupational Safety and Health Act (OSHA). These standards, particularly part 1910 of the General Standards and part 1926 of the Construction Standards should be consulted.
- Before each use, check all hoses for cuts, leaks, abrasion or bulging of cover. Check for damage or movement of couplings. Immediately replace hose if any of those conditions exist. Never repair a paint hose. Replace with a conductive high-pressure hose.
- Do not spray outdoors on windy days.
- Always unplug cord from outlet before working on equipment (electric models only).

Gasoline Engine Safety



The engine exhaust from this unit contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

- Gas engines are designed to give safe and dependable service if operated according to instructions. Read and understand the engine Owner's Manual before operating the engine. Failure to do so could result in personal injury or equipment damage.
- To prevent fire hazards and to provide adequate ventilation, keep the engine at least 1 meter (3 feet) away from buildings and other equipment during operation. Do not place flammable objects close to the engine.
- Children and pets must be kept away from the area of operation due to a possibility of burns from hot engine components or injury from any equipment the engine may be used to operate.
- Know how to stop the engine quickly, and understand the operation of all controls. Never permit anyone to operate the engine without proper instructions.
- 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 refueling area or where gasoline is stored.
- Do not overfill the fuel tank. After refueling, make sure the tank cap is closed properly and securely.
- Be careful not to spill fuel when refueling. Fuel vapor or spilled fuel may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.
- Never run the engine in an enclosed or confined area. Exhaust contains poisonous carbon monoxide gas; exposure may cause loss of consciousness and may lead to death.
- The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot. To avoid severe burns or fire hazards, let the engine cool before transporting it or storing it indoors.
- Never ship/transport unit with gasoline in the tank.



DO NOT use this equipment to spray water or acid.

IMPORTANT: Do not lift by cart handle when loading or unloading.

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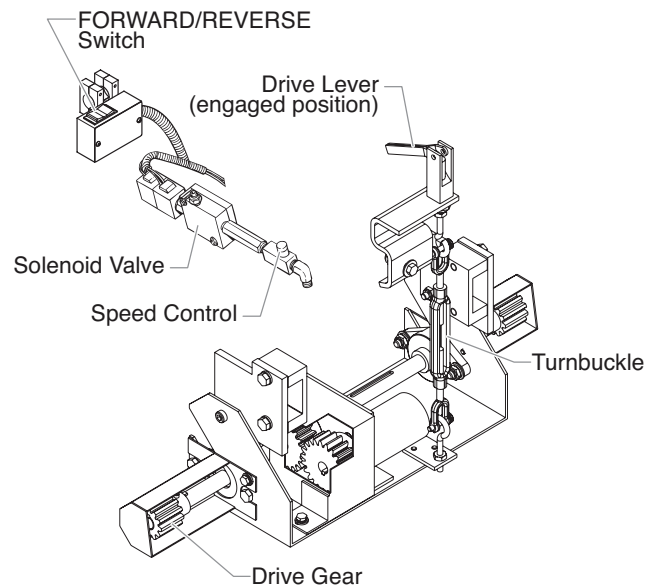
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Introduction

The PowrDrive is a self-propulsion accessory for PowrLiner 6900/6950 and PowrLiner 8900/8950 line strippers.

This PowrDrive offers the following features and benefits:

- Variable speed, hydraulically-powered system utilizes reserve hydraulic horsepower from the PowrLiner's on-board hydraulic system.
- Electric FORWARD/REVERSE rocker switch is spring-loaded to neutral for easy and safe operation.
- Dual rear-wheel drive provides for easier striping on hilly, sloped, or uneven surfaces.
- Provides increased productivity by allowing faster striping speeds.
- Speed is easily adjusted to suit the application or operator's preference.
- All controls are in easy reach of the operator.
- Drive mechanism is easily disengaged for manual operation.
- Auto bypass allows operator to push and pull the striper with the PowrDrive engaged for maximum maneuverability.
- PowrDrive installs easily in about one hour without special tools or drilling holes.



Assembly

Use the following procedures to install the PowrDrive onto a PowrLiner 6900/6950 or 8900/8950.

NOTE: Illustrations in this section show a PowrLiner without the engine and motor/pump assembly. This allows a better view of the PowrDrive installation.

Tools Required:

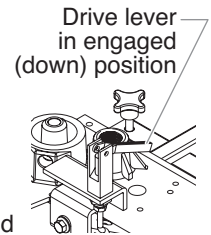
Adjustable wrenches Phillips screwdriver

Installing the Drive Assembly

Use the following procedure to install the drive assembly onto the PowrLiner frame.

1. Place the two side mount clamps over the PowrLiner frame in between the hydraulic tank and the bucket holder.
2. Position the drive assembly in front of the rear tires directly below the side mount clamps with the drive gears facing the tires. Lift the turnbuckle and drive lever assembly up and between the hydraulic tank and the bucket holder.
3. Using four 1.5" hex screws and four 3/8" lock washers, attach the side mount brackets on the drive assembly to the side mount clamps. Do not tighten the screws.
4. Loosen and remove the nut and bolt that secure the grounding chain to the hydraulic tank cover. Do not reuse this nut and bolt.
5. Place a flat washer onto the 1.75" hex screw. Position the drive lever bracket on the hydraulic tank and insert the 1.75" hex screw through the grounding chain, drive lever bracket, and hydraulic tank cover.
6. Place another flat washer on the end of the 1.75" hex screw followed by a lock washer and a 3/8" lock nut. Tighten securely.

7. Position the side mount clamps of the drive assembly so they are approximately 1" from the bucket holder.
8. Tighten the four hex screws to secure the drive assembly in position.
9. Move the drive lever to the engaged (down) position. The drive gears should be contacting the rear tires.



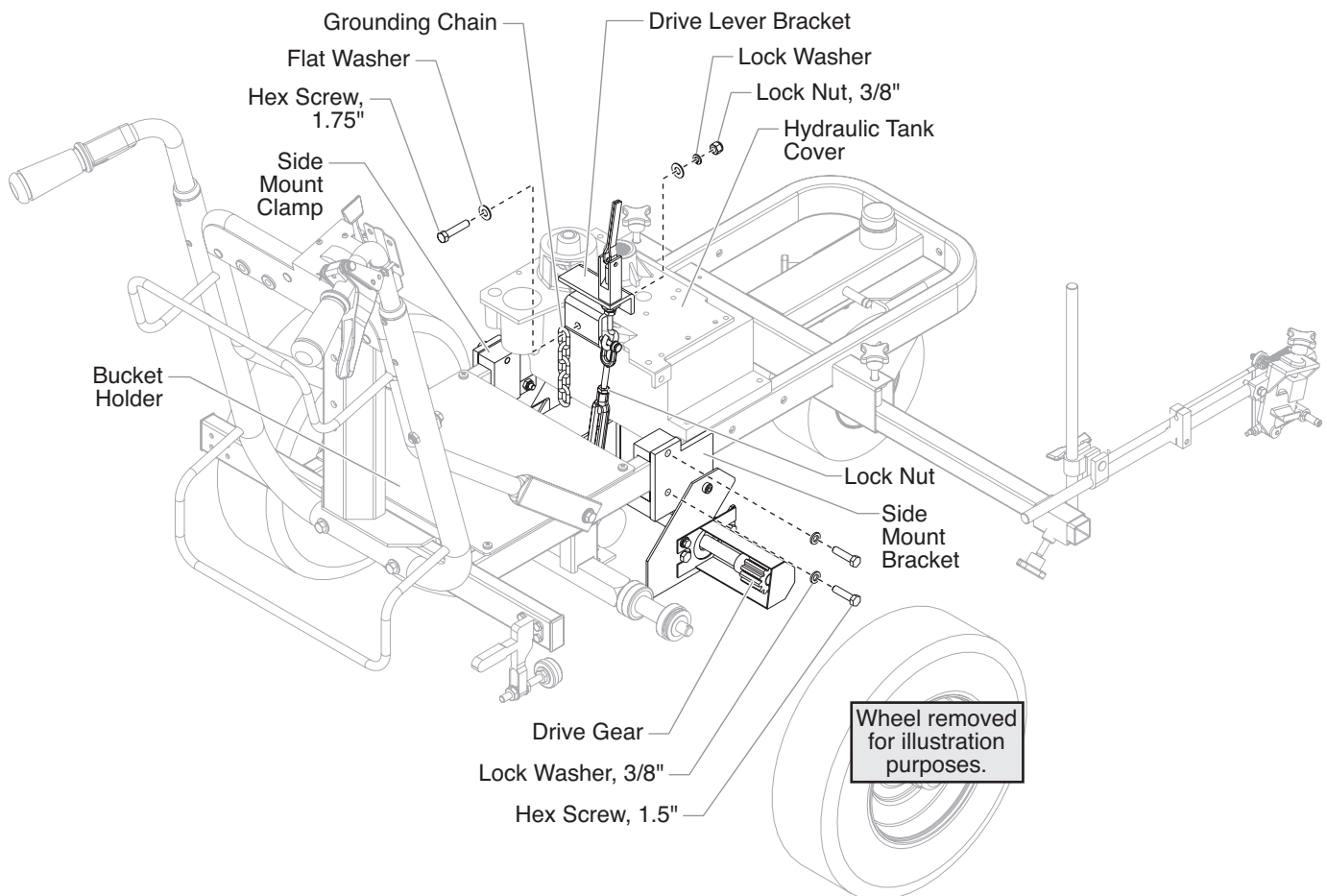
NOTE: If adjustment to the contact tension of the drive gears is required, loosen the turnbuckle lock nut. Rotate the turnbuckle in the desired direction to move the drive gears toward or away from the tires. Tighten the turnbuckle lock nut.

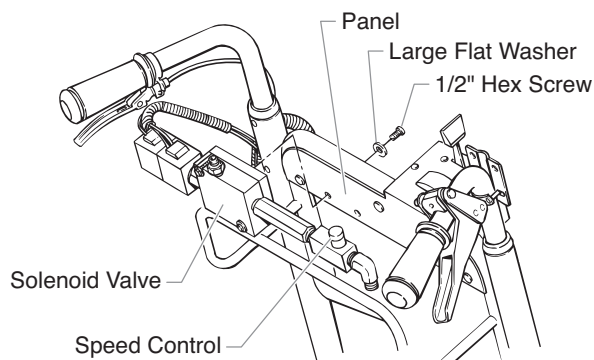
Installing the Valve and Speed Control Assembly

Use the following procedure to install the valve and speed control assembly onto the panel between the PowrLiner handle bars. The valve and speed control assembly is installed on the operator side of the panel.

NOTE: The valve and speed control assembly comes pre-wired to the switch assembly. Use caution during installation to prevent damage to the wiring.

1. Place two large flat washers on two 1/2" screws.
2. Position the solenoid valve mounting plate on the panel between the PowrLiner handle bars. Line up the two holes on the solenoid valve mounting plate with the two existing holes on the left side of the panel.
3. Insert the two 1/2" screws from the back of the panel into the solenoid valve mounting plate. Tighten securely.

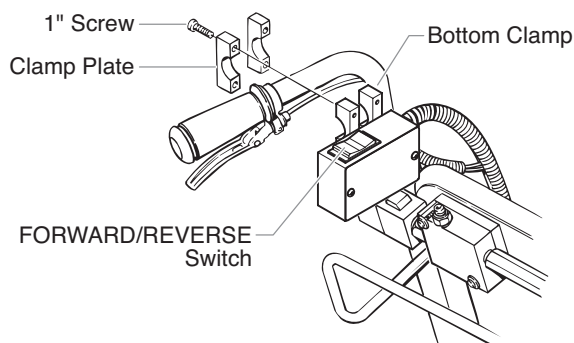




Installing the Switch Assembly

Use the following procedure to install the switch assembly onto the left handle of the PowrLiner.

1. Position the switch assembly against the inside of the left handle on the PowrLiner directly in front of the handle grip. Make sure the FORWARD/REVERSE switch on the switch assembly is positioned so that it can be operated easily while holding the left handle grip.
2. Place the two clamp plates against the outside of the left handle so that they line up with the bottom clamps on the switch assembly.
3. Insert the two 1" screws through the clamp plates and into the bottom clamps on the switch assembly. Tighten securely.



Installing the Hoses

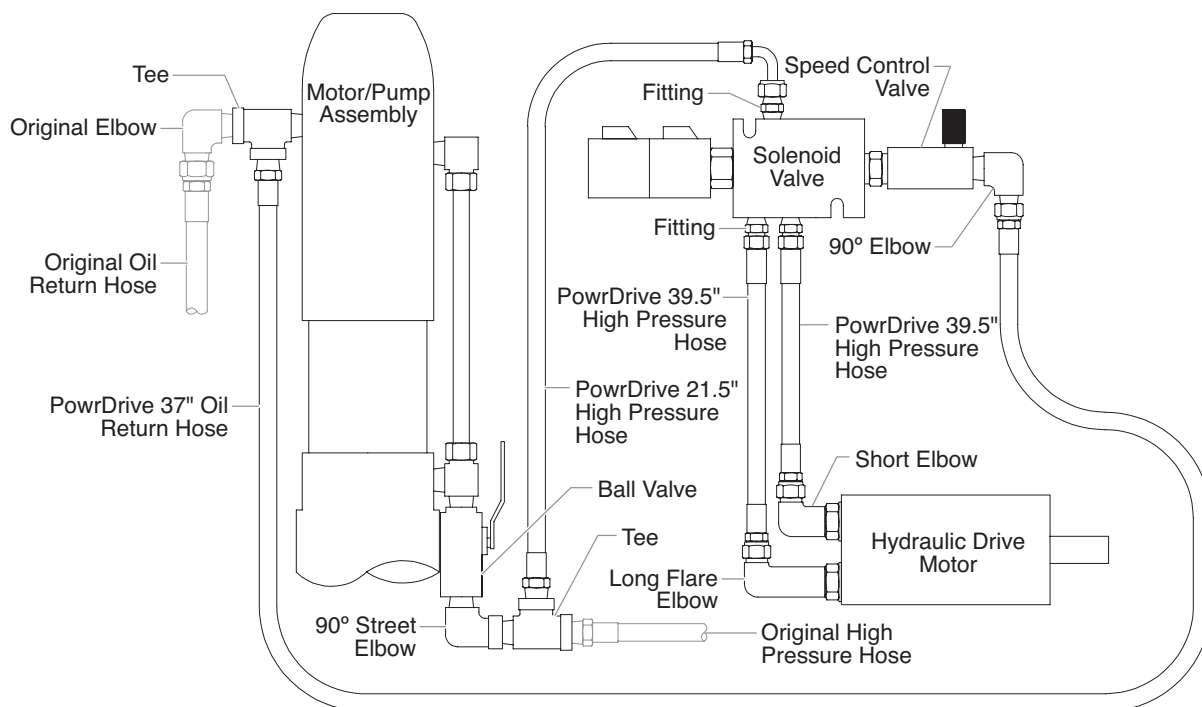
Use the following procedure to connect the hydraulic hoses of the PowrDrive with the hydraulic system of the PowrLiner.

NOTE: Use an oil pan to catch hydraulic oil that spills during the removal of the hoses.

1. Remove the high pressure hose from the ball valve on the motor/pump assembly.
2. Install the 90° street elbow into the ball valve.
3. Install one of the tee fittings into the 90° street elbow.
4. Connect the original high pressure hose to the side outlet on the tee fitting.
5. Connect the male end of the new 21.5" high pressure hose to the top outlet on the tee fitting. Run the hose up along the side of the motor/pump assembly, over the top of the handle bar panel, and connect the free end of the hose to the fitting on the top of the solenoid valve.
6. Remove the oil return hose from the elbow on the motor/pump assembly.
7. Remove the elbow from the motor/pump assembly.
8. Install another tee fitting into the port on the motor/pump assembly where the elbow was located.
9. Install the original elbow into the side outlet on the tee fitting.
10. Connect the original oil return hose to the original elbow.
11. Connect the male end of the new 37" high pressure hose to the bottom outlet of the tee fitting. Run the hose down in front of the motor/pump assembly, underneath the filter assembly, and up to the 90° elbow at the end of the valve and speed control assembly. Connect the hose to the 90° elbow.
12. Connect the two new 39.5" high pressure hoses to the fittings on the bottom of the solenoid valve. Run the hoses down between the PowrLiner bleed hose and the handle bar frame, underneath the PowrLiner cart, and toward the PowrDrive hydraulic drive motor.
13. Connect the hose that runs from the left fitting on the solenoid valve to the short elbow on the PowrDrive hydraulic drive motor.

NOTE: Do not use PTFE tape or thread sealant on the connection at the PowrDrive hydraulic drive motor.

14. Connect the hose that runs from the right fitting on the solenoid valve to the long elbow on the PowrDrive hydraulic drive motor.



NOTE: Do not use PTFE tape or thread sealant on the connection at the PowrDrive hydraulic drive motor.

15. Add approximately 1 pint of hydraulic oil to the PowrLiner hydraulic tank to replace the oil lost during hose installation.

IMPORTANT: Use of Speeflo's Coolflo™ Hydraulic Fluid is mandatory in the hydraulic system. Do not use any other hydraulic fluid. Use of any other hydraulic fluid may seriously damage the hydraulic system and will void the warranty.

Connecting the Wires

Use the following procedure to connect the electrical wires of the PowrDrive to the engine on the PowrLiner (refer to the electrical schematic below).

1. Disconnect the 12V adapter wire from the pink wire on the engine.
2. Plug splitter wire assembly P/N 779-257 into the pink wire on the engine.
3. Plug the original 12V adapter wire into one of the terminals on the splitter wire assembly.
4. Run black wire P/N 779-259 from the switch assembly to the engine and plug it into the remaining terminal of the splitter wire assembly.
5. Run green grounding wire P/N 779-258 from the switch assembly to the engine and attach it to one of the grounding screws on the engine recoil.

Operation

Use the following procedures to operate the PowrDrive.

NOTE: Due to the load on the electrical system of the PowrLiner, the PowrDrive accessory will not work at the same time as the Headlight accessory (P/N 759-145) without a battery pack.

Initial Startup

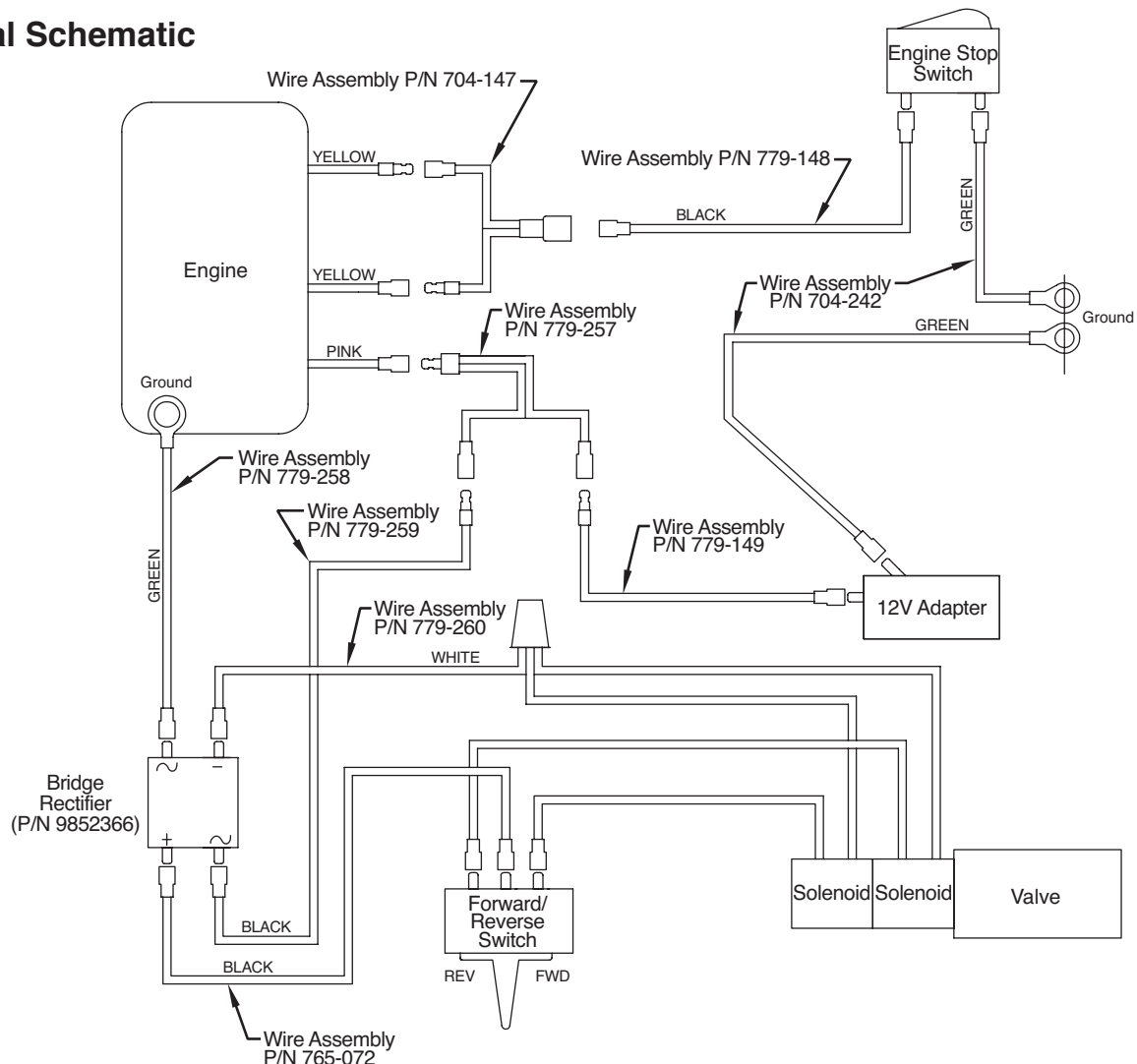
Use this procedure to start up the PowrLiner and PowrDrive for the first time.

1. Make sure the drive lever is in the disengaged (up) position. The drive gears should not be in contact with the tires.
2. Check the oil level in the hydraulic tank on the PowrLiner, and make sure it is full.
3. Turn the speed control clockwise to its lowest setting.
4. Start up the PowrLiner using the normal procedure (refer to the PowrLiner Owner's Manual).
5. Close the bleed valve on the PowrLiner.

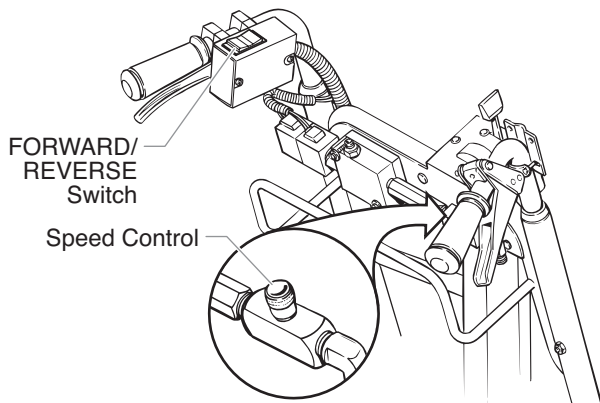
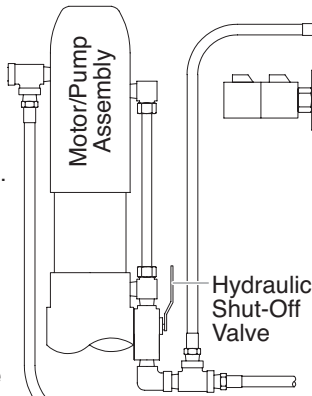


NOTE: The PowrDrive system will not operate properly with the bleed valve open or with the pressure control knob at a minimum pressure setting.

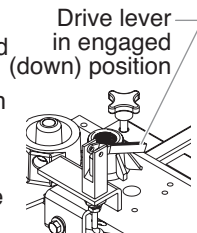
Electrical Schematic



6. Turn the pressure control knob on the PowrLiner clockwise approximately two turns.
7. Open the hydraulic shut-off valve on the PowrLiner to activate the hydraulic system.
8. Turn the speed control counterclockwise approximately one turn.
9. Move the FORWARD/REVERSE switch to both the FORWARD and REVERSE positions and make sure the drive gears on the PowrDrive are rotating properly.

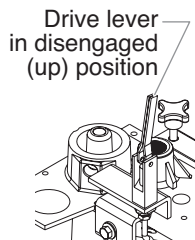


10. Move the drive lever to the engaged (down) position. The drive gears should be in contact with the tires.
11. Move the FORWARD/REVERSE switch to both the FORWARD and REVERSE positions. The PowrLiner should move forward and backward if the proper tension exists between the tires and the drive gears.



NOTE: If adjustment to the contact tension of the drive gears is required, loosen the turnbuckle lock nut. Rotate the turnbuckle in the desired direction to move the drive gears toward or away from the tires. Tighten the turnbuckle lock nut.

12. Check the hydraulic system for leaks.
13. Turn off the PowrLiner (refer to the PowrLiner Owner's Manual).
14. Move the drive lever to the disengaged (up) position. The drive gears should not be in contact with the tires.
15. Check the level of the hydraulic oil in the PowrLiner hydraulic tank. Fill the hydraulic tank with Speeflo Coolflo™ Hydraulic Fluid (P/N 430-361) until it reaches the proper operating level.



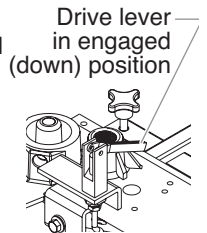
Normal Startup

Use this procedure to start up the PowrLiner and PowrDrive for daily operation.

1. Check the level of the hydraulic oil in the PowrLiner hydraulic tank. If necessary, fill the hydraulic tank with Speeflo Coolflo™ Hydraulic Fluid (P/N 430-361) until it reaches the proper operating level.
2. Start up the PowrLiner using the normal procedure (refer to the PowrLiner Owner's Manual).
3. Close the bleed valve on the PowrLiner.

NOTE: The PowrDrive system will not operate properly with the bleed valve open or with the pressure control knob at a minimum pressure setting.

4. Turn the pressure control knob on the PowrLiner clockwise approximately two turns.
5. Open the hydraulic shut-off valve on the PowrLiner to activate the hydraulic system.
6. Turn the speed control counterclockwise approximately one turn.
7. Move the drive lever to the engaged (down) position. The drive gears should be in contact with the tires.
8. Move the FORWARD/REVERSE switch to both the FORWARD and REVERSE positions. The PowrLiner should move forward and backward if the proper tension exists between the tires and the drive gears.
9. Adjust the speed control to achieve a convenient operating speed.



NOTE: It may be necessary to increase or decrease the PowrDrive speed for hills and inclines.

IMPORTANT: The PowrLiner will continue to move for a short distance after releasing the FORWARD/REVERSE switch. Plan ahead to avoid causing damage to the PowrLiner and its surroundings.

Maintenance

Perform the following steps to keep the PowrDrive running smoothly.

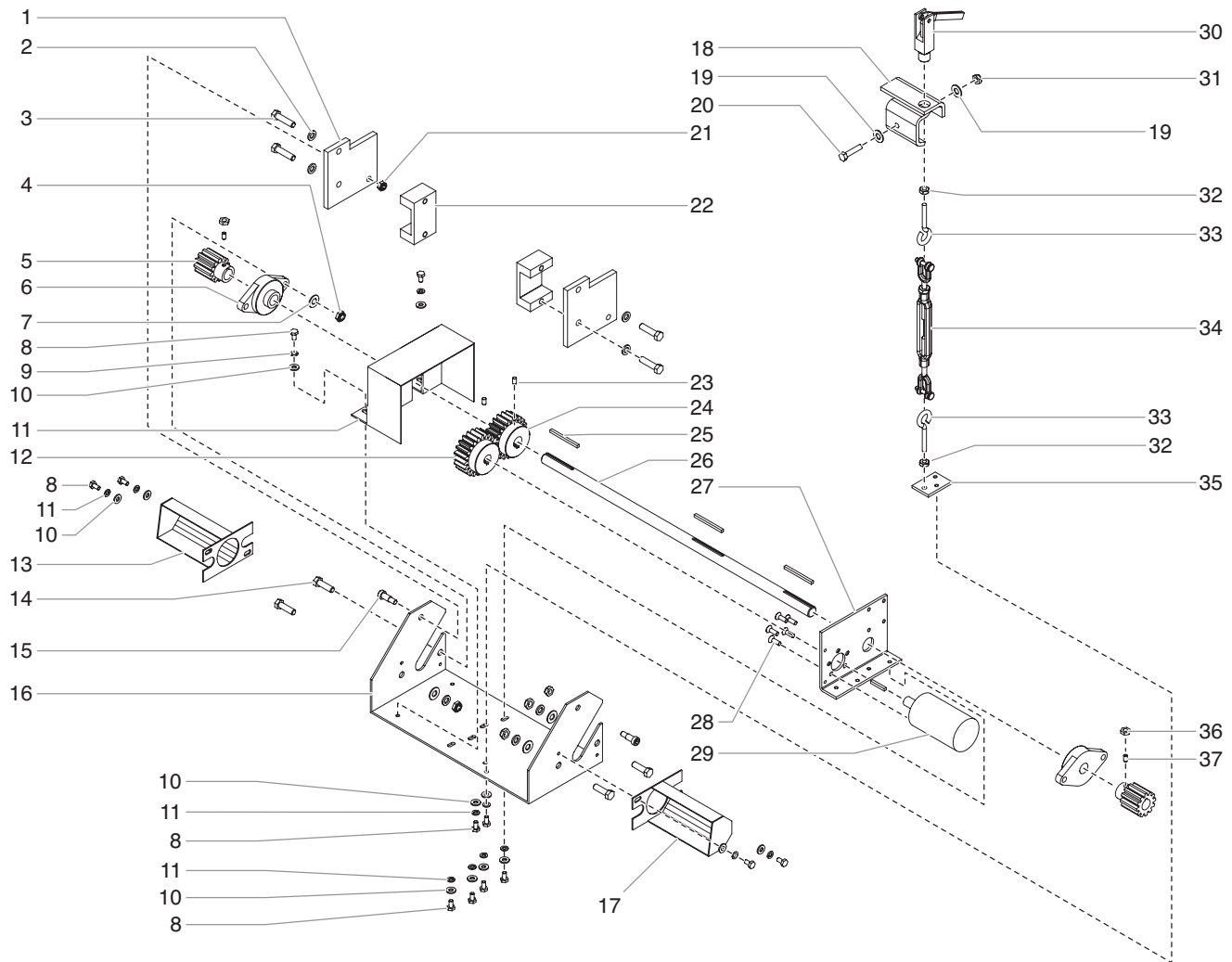
1. Check the level of the hydraulic oil in the PowrLiner hydraulic tank daily. If necessary, fill the hydraulic tank with Speeflo Coolflo™ Hydraulic Fluid (P/N 430-361) until it reaches the proper operating level.
2. Check all hoses for excessive wear, abrasions, and weak spots regularly. Replace, if necessary.
3. Check all fittings for leaks regularly. Tighten, repair, or replace as needed.
4. Check all nuts and bolts for tightness regularly. Tighten, if necessary.
5. Check the main spur gears located under the cover at the center of the PowrDrive monthly. Grease the gears using a quality wheel bearing or chassis grease.

IMPORTANT: Do not use silicone-based grease.

6. Check the air pressure in the rear tires. The tires must be properly inflated to ensure full contact with the drive gears.

Parts List

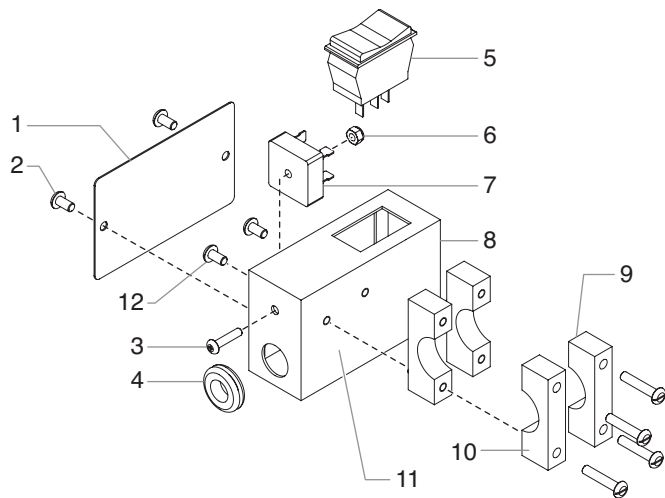
Drive Assembly



Item	Part No.	Description	Qty.
1	779-009	Side mount bracket	2
2	0509292	Lock washer, 3/8"	8
3	862-452	Hex screw, 1.5"	4
4	862-410	Lock nut	4
5	424-672	Drive gear	2
6	424-647	Bearing	2
7	0509285	Flat washer	4
8	858-625	Hex screw	12
9	858-002	Lock washer	12
10	770-601	Flat washer	12
11	779-318	Center gear guard	1
12	779-107	Gear, 5/8" bore	1
13	779-313	Right gear guard	1
14	862-444	Screw	4
15	860-526	Shoulder screw	2
16	779-311	Mounting plate, swinging	1
17	779-317	Left gear guard	1
18	779-021	Drive lever bracket	1
19	0509285	Flat washer	2

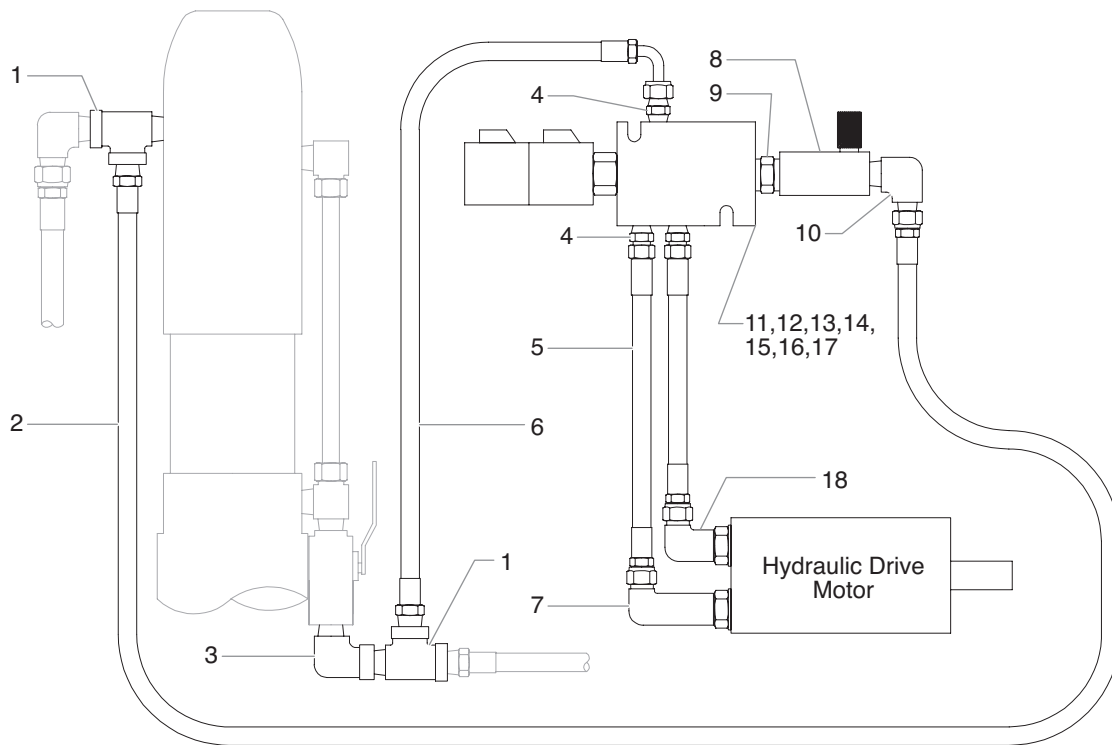
Item	Part No.	Description	Qty.
20	0509294	Hex screw, 1.75"	1
21	860-502	Stop nut	2
22	779-008	Side mount clamp	2
23	763-566	Set screw	2
24	779-108	Gear, 3/4" bore	1
25	779-338	Key	3
26	779-337	Drive axle	1
27	779-312	Motor mounting plate	1
28	858-813	Screw	5
29	424-654	Hydraulic drive motor	1
30	424-677	Drive lever	1
31	862-410	Lock nut	1
32	0509885	Nut	2
33	424-655	Eyebolt	2
34	779-324	Turnbuckle	1
35	779-023	Support bracket	1
36	858-605	Set screw	2
37	858-603	Jam nut	2

Switch Assembly



Item	Part No.	Description	Qty.
1	779-320	Housing cover	1
2	730-260	Screw, 3/8"	2
3	9802244	Screw, 3/4"	1
4	773-932	Grommet	1
5	779-335	FORWARD/REVERSE switch	1
6	855-914	Lock nut	1
7	9852366	Bridge rectifier	1
8	779-319	Switch housing	1
9	779-252	Clamp plate	2
10	856-939	Screw, 1"	4
11	779-342	Bottom clamp	2
12	770-739	Screw, 3/8"	2

Hydraulic System



Item	Part No.	Description	Qty.
1	424-671	Tee	2
2	779-333	Hydraulic hose, 37"	1
3	818-002	Street elbow, 90°	1
4	490-114	Fitting	3
5	779-332	Hydraulic hose, 39.5"	2
6	779-331	Hydraulic hose, 21.5"	1
7	192-050	Elbow, long flare	1
8	424-667	Needle valve	1
9	814-004	Nipple	1

Item	Part No.	Description	Qty.
10	490-113	Elbow, 90°	1
11	779-330	Solenoid valve	1
12	779-334	Valve mounting plate	1
13	858-624	Screw, 5/8"	2
14	770-223	Washer	2
15	858-002	Lock washer, 1/4"	4
16	770-601	Flat washer, 1/4"	2
17	858-652	Screw, 1.5"	2
18	192-051	Elbow, short	1

Notes

Notes

Warranty

Titan Tool, Inc., ("Titan") warrants that at the time of delivery to the original purchaser for use ("End User"), the equipment covered by this warranty is free from defects in material and workmanship. With the exception of any special, limited, or extended warranty published by Titan, Titan's obligation under this warranty is limited to replacing or repairing without charge those parts which, to Titan's reasonable satisfaction, are shown to be defective within twelve (12) months after sale to the End User. This warranty applies only when the unit is installed and operated in accordance with the recommendations and instructions of Titan.

This warranty does not apply in the case of damage or wear caused by abrasion, corrosion or misuse, negligence, accident, faulty installation, substitution of non-Titan component parts, or tampering with the unit in a manner to impair normal operation.

Defective parts are to be returned to an authorized Titan sales/service outlet. All transportation charges, including return to the factory, if necessary, are to be borne and prepaid by the End User. Repaired or replaced equipment will be returned to the End User transportation prepaid.

THERE IS NO OTHER EXPRESS WARRANTY. TITAN HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES INCLUDING, BUT NOT LIMITED TO, THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TO THE EXTENT PERMITTED BY LAW. THE DURATION OF ANY IMPLIED WARRANTIES WHICH CANNOT BE DISCLAIMED IS LIMITED TO THE TIME PERIOD SPECIFIED IN THE EXPRESS WARRANTY. IN NO CASE SHALL TITAN LIABILITY EXCEED THE AMOUNT OF THE PURCHASE PRICE. LIABILITY FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES UNDER ANY AND ALL WARRANTIES IS EXCLUDED TO THE EXTENT PERMITTED BY LAW.

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Material Safety Data Sheets (MSDS) are available on Titan's website or by calling Customer Service.

The logo for Titan Tool, Inc. features the word "TITAN" in a bold, italicized, sans-serif font. A small trademark symbol (TM) is located to the upper right of the letter "N".

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