



**Owner's Manual**  
For professional use only

Do not use this equipment  
before reading this manual!

# SPEEFLO PowrLiner 800



**Model Number**

**759-091**

**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 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:**



1. 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.
2. 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.
3. For units intended for use with only water-based or mineral spirit-type materials with a minimum flash point of 21°C (69.8°F) — Do not spray or clean with liquids having a flash point of less than 21°C (69.8°F). Flash point is the temperature at which a fluid can produce enough vapor to ignite.
4. 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.
5. Verify that all containers and collection systems are grounded to prevent static discharge.
6. Connect to a grounded outlet and use grounded extension cords (electric models only). Do not use a 3 to 2 adapter.
7. 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.
8. 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.
9. Do not smoke in the spray area.
10. Do not operate light switches, engines, or similar spark producing products in the spray area.
11. Keep area clean and free of paint or solvent containers, rags, and other flammable materials.
12. 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.
13. 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.

14. Plastic can cause static sparks. Never hang plastic to enclose spray area. Do not use plastic drop cloths when spraying flammable material.
15. 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.**

1. Do not aim the gun at, or spray any person or animal.
2. Keep hands and other body parts away from the discharge. For example, do not try to stop leaks with any part of the body.
3. Always use the nozzle tip guard. Do not spray without the nozzle tip guard in place.
4. Only use a nozzle tip specified by the manufacturer.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. Always engage the trigger lock when not spraying. Verify the trigger lock is functioning properly.
11. Verify that all connections are secure before operating the unit.
12. 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.
13. Always remove the spray tip before flushing or cleaning the system.



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



### **WARNING – To reduce the risk of injury:**

1. 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.
2. Do not operate or spray near children. Keep children away from equipment at all times.
3. Do not overreach or stand on an unstable support. Keep effective footing and balance at all times.
4. Stay alert and watch what you are doing.
5. Do not operate the unit when fatigued or under the influence of drugs or alcohol.
6. 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.
7. Do not expose the hose to temperatures or pressures in excess of those specified by manufacturer.
8. Do not use the hose as a strength member to pull or lift the equipment.
9. Use lowest possible pressure to flush equipment.
10. Follow all appropriate local, state and national codes governing ventilation, fire prevention and operation.
11. 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.
12. 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.
13. Do not spray outdoors on windy days.
14. Always unplug cord from outlet before working on equipment (electric models only).



### **DO NOT use this equipment to spray water or acid.**

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

## **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.**

1. 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.
2. 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.
3. 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.
4. Know how to stop the engine quickly, and understand the operation of all controls. Never permit anyone to operate the engine without proper instructions.
5. Gasoline is extremely flammable and is explosive under certain conditions.
6. 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.
7. Do not overfill the fuel tank. After refueling, make sure the tank cap is closed properly and securely.
8. 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.
9. 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.
10. 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.
11. Never ship/transport unit with gasoline in the tank.

## Table of Contents

Specifications .....	4
General Description .....	4
Operator Controls .....	4
Operation .....	5
Setup .....	5
Preparing to Paint .....	5
Painting .....	6
Pressure Relief Procedure .....	6
Attaching the Tip Guard and Tip .....	7
Clearing a Clogged Tip .....	7
Changing a Spray Tip .....	7
Stenciling .....	7
Operating the Front Caster .....	7
Cleanup .....	7
Special Cleanup .....	8
Cleaning the Spray Tip .....	8
Cleaning/Replacing the Gun Filter .....	8
Cleaning the Inlet Valve Assembly .....	8
Maintenance .....	9
General Repair and Service Notes .....	9
Adjusting the Trigger Tension .....	9
Maintaining the Engine .....	9
Safety Shut-Off Switch .....	9
Replacing the PRIME/SPRAY Valve .....	10
Servicing the Fluid Section .....	11
Troubleshooting .....	12
Parts Listings .....	13
Main Assembly .....	13
Drive Assembly .....	14
Spray Gun .....	14
Cart Assembly .....	15
Fluid Section Assembly .....	16
Gun Holder Assembly .....	16
Labels .....	16
Electrical Schematic .....	17
Accessories .....	17
Limited Warranty .....	20

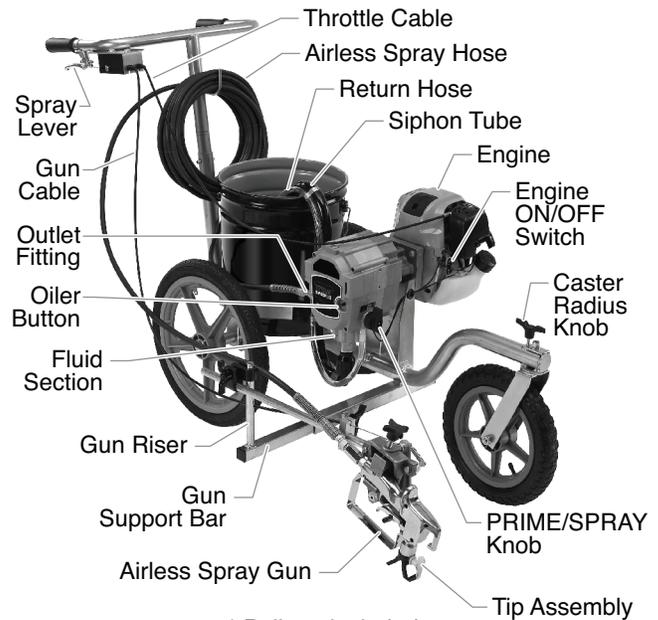
## Specifications

Gallons per minute (GPM) .....	0.33 (1.25 LPM)
Maximum tip size .....	0.019" — Traffic marking 0.023" — Field marking
Maximum pressure .....	2500 PSI (17.2 MPa)
Power .....	1.6 HP Robin-Subaru gas engine
Fuel capacity .....	0.17 US gallons
Weight .....	65 lbs. (29.5 kg)
Inlet paint filter .....	10 mesh "rock catcher"
Hose connection .....	1/4" NPS(M)
Line width range .....	2"–12" (5–30 cm)
Dimensions .....	41" L (104 cm) 21" W (53.3 cm) 32" H (81.3 cm)

**IMPORTANT:** Do not remove the spray gun from the gun holder and attempt to use it independently. Doing this will engage the safety shut-off switch.

## General Description

This airless line striper is a precision power tool used to spray many types of material for many types of applications including parking lots, curbs, and athletic fields. Read and follow this instruction manual carefully for proper operating instructions, maintenance, and safety information.

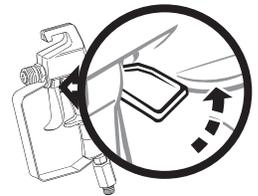


## Operator Controls

The following section describes the operator controls on the spray gun and line striper.

### Spray Gun Trigger Lock

Always engage the gun's trigger lock when the gun is not in use. The gun is locked when the trigger lock is at a 90° angle (perpendicular to the trigger in either direction).



### Spray Lever

The spray lever is a dual-function lever. It is located on the cart handle. The spray lever controls the throttle on the engine as well as the trigger on the spray gun. The initial pull of the spray lever engages the throttle and revs up the engine. This engages the engine clutch with the pump and causes the sprayer to build pressure. Fully pulling the spray lever triggers the spray gun. While striping, the spray lever should be fully pulled for proper operation.



**NOTE:** The sprayer is equipped with an automatic safety shut-off switch to prevent the sprayer from over-pressurizing. When the PRIME/SPRAY knob is in the SPRAY position, pulling and holding the spray lever half way without triggering the spray gun will engage the safety shut-off switch. Refer to the Maintenance section if the safety shut-off switch engages.

### PRIME/SPRAY Knob

The PRIME/SPRAY knob directs fluid to the spray hose when set to SPRAY or the return tube when set to PRIME. It is located on the side of the pump housing. The arrows on the PRIME/SPRAY knob show the rotation directions for PRIME and SPRAY.

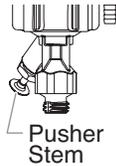


## Engine ON/OFF Switch

The engine ON/OFF switch controls the operation of the gas engine. Moving the engine ON/OFF switch to the ON position allows the engine to be started using the starter rope. Moving the engine ON/OFF switch to the OFF position shuts down the engine if it is running and prevents it from starting if it is not.

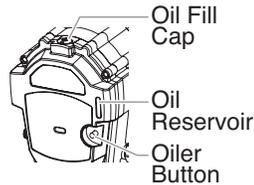
## Pusher Stem

The pusher stem is designed to keep the inlet valve open by preventing the inlet ball from sticking due to dried materials. It is located on the side of the inlet valve assembly.



## Oiler Button

The oiler button is designed to provide lubrication to the fluid section of the pump. After initial setup, press the oiler button once for every eight hours of use.



## Operation



**This equipment produces a fluid stream at extremely high pressure. Read and understand the warnings in the Safety Precautions section at the front of this manual before operating this equipment.**

## Setup

Perform the following procedure before starting the engine of a gas-powered sprayer.

1. Attach the handle to the cart.
  - a. Insert the handle into the tube on the cart weldment.
  - b. Position the handle at the desired height. The handle may be positioned at three different heights. Select the appropriate two holes on the cart weldment and match them up with the two holes on the handle.
  - c. Insert the supplied two screws through the handle and cart weldment. Thread on the supplied lock nuts and tighten securely.
2. Make sure that the siphon tube and the return hose are attached and secure.
3. Attach the airless spray hose to the outlet fitting on the sprayer. Tighten securely using a wrench.
4. Attach the other end of the airless spray hose to the inlet fitting on the spray gun. Tighten securely using two wrenches (one on the gun and one on the hose).

**NOTE: The spray gun and cables are mounted to the gun support bar at the factory.**



**Always follow the Pressure Relief Procedure when shutting the sprayer down for any purpose, including servicing or adjusting any part of the spray system, changing or cleaning spray tips, or preparing for cleanup.**

**NOTE: Do not attach the tip to the spray gun yet. Remove the tip if it is already attached.**

5. Position the spray gun.
  - a. Loosen the support bar clamp and slide the gun support bar to the desired horizontal position. Make sure the gun is far enough away from the cart so that the rear wheel does not track over the fresh spray pattern.
  - b. Loosen the gun riser clamp and slide the spray gun to the desired vertical position. A distance of 6" from the tip to the spray surface is a good starting point.

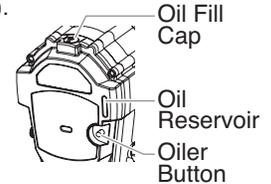
**NOTE: The height of the spray gun affects the width of the spray pattern (i.e., the lower the gun, the smaller the line width). Tip size also affects line width.**

6. Make sure the throttle cable and gun cable are operating properly. When pulling the spray lever on the cart handle, the throttle cable should be fully moving the throttle lever on the engine, and the gun cable should be pulling the gun trigger. These cables are factory-set to operate properly. If adjustment to the gun trigger tension is required, refer to the "Adjusting the Trigger Tension" procedure in the Maintenance section of this manual.
7. Turn the PRIME/SPRAY knob to the PRIME position.
8. Make sure the engine ON/OFF switch is in the OFF position.



**IMPORTANT: Never operate unit for more than ten seconds without fluid. Operating this unit without fluid will cause unnecessary wear to the packings.**

9. Fill the oil reservoir with Piston Lube (P/N 314-480, light household oil may be substituted). Press the oiler 2-5 times to lubricate the fluid section.



**NOTE: After initial setup, press the oiler button once for every eight hours of use. Keep the oil reservoir filled with Piston Lube.**

10. Check the engine oil level. The gasoline engine oil level is determined by the manufacturer. Refer to the engine manufacturer's service manual (supplied).
11. Fill the gas tank on the engine with unleaded gasoline only. Do not mix the gasoline with 2-cycle oil.

## Preparing to Paint

Before painting, it is important to make sure that the fluid in the system is compatible with the paint that is going to be used.

**NOTE: If this unit is new, it is shipped with test fluid in the fluid section to prevent corrosion during shipment and storage. This fluid must be thoroughly cleaned out of the system before you begin spraying. Incompatible fluids and paint may cause the valves to become stuck closed, which would require disassembly and cleaning of the sprayer's fluid section.**

**IMPORTANT: Always keep the trigger lock on the spray gun in the locked position while preparing the system.**

1. Place the siphon tube into a container of the appropriate solvent for the material being sprayed (refer to recommendations of the material manufacturer). An example of the appropriate solvent is water for latex paint.
2. Place the return hose into a metal waste container.
3. Turn the PRIME/SPRAY knob to the PRIME position.
4. Fully depress the pusher stem to make sure the inlet ball is free.
5. Move the engine ON/OFF switch to the ON position.
6. Start the engine:
  - a. Press the prime bulb underneath the air intake shroud seven times.
  - b. Move the choke lever up to the full choke position.
  - c. Pull the starter rope rapidly and firmly. Continue to hold the rope as you let it return. Pull and return the rope until the engine starts.
  - d. Once the engine is running, slowly move the choke lever down to the closed position.
7. Fluid will begin flowing through the return hose and into the waste container. Allow the fluid to circulate through the sprayer until the old solvent/test fluid is flushed out through the return hose and into the metal waste container.



- Turn off the sprayer by moving the engine ON/OFF switch to the OFF position.

**NOTE: Make sure that the spray gun does not have a tip or tip guard installed.**

- Place a metal waste container underneath the spray gun to catch the solvent.
- Turn the PRIME/SPRAY knob to the SPRAY position.
- Start the engine.
- Unlock the gun by turning the gun trigger lock to the unlocked position.
- Fully pull the spray lever on the cart handle to rev the engine, pressurize the sprayer, and trigger the spray gun. Fluid will begin flowing through the spray hose and out of the gun.
- Continue to pull the spray lever on the cart handle until the old solvent/test fluid is gone and fresh solvent is coming out of the gun.
- Release the spray lever.
- Lock the gun by turning the gun trigger lock to the locked position.
- Check the entire system for leaks. If leaks occur, turn the sprayer off and follow the "Pressure Relief Procedure" in this manual before tightening any fittings or hoses.
- Follow the "Pressure Relief Procedure" in this manual before changing from solvent to paint.



**Be sure to follow the pressure relief procedure when shutting the unit down for any purpose, including servicing or adjusting any part of the spray system, changing or cleaning spray tips, or preparing for cleanup.**

## Painting

- Place a five gallon bucket of material between the bucket holders on the cart. Make sure the bucket holders hold the five gallon bucket securely. Adjust the bucket holders using the thumb screw located underneath each holder, if necessary.

**NOTE: When using this line striper for first time, it may be helpful to use water in place of paint to gain familiarity with the operation of the line striper. After changing from water to paint, test spray several lines on cardboard, roofing felt, or rosin paper before striping to ensure correct line width.**

- Place the siphon tube into the bucket of material.
- Place the return hose into a metal waste container.
- Turn the PRIME/SPRAY knob to the PRIME position.
- Fully depress the pusher stem to make sure the inlet ball is free.
- Move the engine ON/OFF switch to the ON position.
- Start the engine:
  - Press the prime bulb underneath the air intake shroud seven times.
  - Move the choke lever up to the full choke position.
  - Pull the starter rope rapidly and firmly. Continue to hold the rope as you let it return. Pull and return the rope until the engine starts.
  - Once the engine is running, slowly move the choke lever down to the closed position.
- Fluid will begin flowing through the return hose and into the waste container. Allow the fluid to circulate through the sprayer until paint is flowing through the return hose and into the metal waste container.
- Turn off the sprayer by moving the engine ON/OFF switch to the OFF position.
- Remove the return hose from the waste container and place it in its operating position above the bucket of material.



- Turn the PRIME/SPRAY knob to the SPRAY position.
- Start the engine.
- Unlock the gun by turning the gun trigger lock to the unlocked position.
- Fully pull the spray lever on the cart handle to rev the engine, pressurize the sprayer, and trigger the spray gun. Fluid will begin flowing through the spray hose and out of the gun.
- Continue to pull the spray lever on the cart handle until material is coming out of the gun.
- Release the spray lever.
- Lock the gun by turning the gun trigger lock to the locked position.
- Turn off the sprayer.
- Attach tip guard and tip to the spray gun. Refer to the instructions later in this section.



**POSSIBLE INJECTION HAZARD. Do not spray without the tip guard in place. Never trigger the gun unless the tip is in either the spray or the unclog position. Always engage the gun trigger lock before removing, replacing or cleaning tip.**

- Start the engine.
- Fully pull the spray lever on the cart handle to rev the engine, pressurize the sprayer, and trigger the spray gun. Test the spray pattern and line position on a long piece of roofing felt or cardboard. Check for proper line width and position. If adjustment to the position of the spray gun is required, refer to the "Setup" procedure earlier in this section.
- Make sure that the spray gun shuts off completely when the gun trigger is released. If adjustment to the trigger tension is required, refer to the "Adjusting the Trigger Tension" procedure in the Maintenance section of this manual.
- Begin striping.
  - Position the line striper slightly in front of the striping path.
  - Start walking with the line striper and trigger the gun at the beginning of the striping path.
  - At the end of striping path, release the trigger and continue walking a short distance, if possible.

**NOTE: Triggering the gun after the line striper is moving and releasing the trigger before the line striper stops produces an evenly painted line from start to finish. If the striping path ends at an obstacle, release the trigger at the same moment that the line striper stops moving.**

## Pressure Relief Procedure



**Be sure to follow the pressure relief procedure when shutting the unit down for any purpose, including servicing or adjusting any part of the spray system, changing or cleaning spray tips, or preparing for cleanup.**

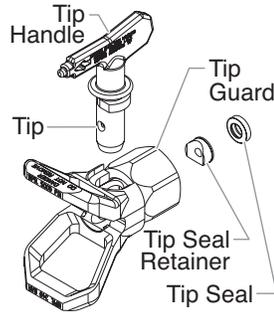
- Lock the gun by turning the gun trigger lock to the locked position.
- Turn off the sprayer by moving the engine ON/OFF switch to the OFF position.
- Turn the PRIME/SPRAY knob to the PRIME position.
- Unlock the gun by turning the gun trigger lock to the unlocked position.
- Fully pull the spray lever on the cart handle to trigger the spray gun and release any remaining pressure in the hose.
- Lock the gun by turning the gun trigger lock to the locked position.



## Attaching the Tip Guard and Tip

Use the following procedure to install the tip guard and tip to the spray gun.

1. Perform the “Pressure Relief Procedure” described earlier in this section.
2. Using the arrow head on the tip handle, insert the tip seal and tip seal retainer into the back of the tip guard. Press in for final adjustment.
3. Insert the tip into the slot on the tip guard.
4. Thread the tip guard onto the gun. Position the tip guard in the desired spraying position and tighten securely.



**NOTE: The arrow on the tip handle should be pointing in the forward direction for spraying.**

## Clearing a Clogged Tip

1. Rotate the tip 180° so that the arrow on the tip handle is pointing opposite the spray direction.
2. Trigger the gun once so that the pressure can blow the clog out.

**IMPORTANT: Never pull the trigger more than once at a time with the tip in the reverse position.**

3. Continue this procedure until the tip is clear of the clog.

## Changing a Spray Tip

Tips can be removed and replaced easily without disassembling the gun.



**Never attempt to change or clean the tip or tip guard without first performing the “Pressure Relief Procedure.”**

1. Perform the “Pressure Relief Procedure” described earlier in this section.
2. Remove the tip from the slot on the tip guard.
3. Insert the new tip into the slot on the tip guard. The arrow on the tip handle should be pointing in the forward direction for spraying.

## Removing the Seal and Tip Seal

1. Remove the tip and tip guard from the spray gun.
2. Remove the seal and tip seal from the back of the tip guard.

## Identifying Striping Tip Sizes

To identify striping tip sizes, use the following formula. A “1908” tip size will be used in this example.

The last two digits divided by two represent the size of the spray pattern when spraying 6” away from the work surface:

$$08 \div 2 = 4" \text{ spray pattern}$$

The first two digits represent the diameter of the orifice on the tip:

$$19 = .019" \text{ orifice}$$

**NOTE: Worn spray tips will adversely affect the spray pattern and result in reduced production, poor finish, and wasted material. Replace worn tips immediately.**

## Stenciling

**IMPORTANT: Do not remove the spray gun from the gun holder and attempt to use it independently. Doing this will engage the safety shut-off switch.**

The spray gun cannot be removed from the gun holder to perform stencil work. To stencil with this line striper, make multiple spraying passes from right to left over the stencil.

## Operating the Front Caster

The front caster on the cart is designed to track the sprayer in either a straight line or allow a desired radius to be set. To adjust the front caster:

1. Turn the caster radius knob counterclockwise to release the caster.
2. Move the front wheel to the proper position for the desired radius.
3. Turn the caster radius knob clockwise to secure the caster in position.

## Cleanup



**Special cleanup instructions for use with flammable solvents:**

- Always flush spray gun preferably outside and at least one hose length from spray pump.
- If collecting flushed solvents in a one gallon metal container, place it into an empty five gallon container, then flush solvents.
- Area must be free of flammable vapors.
- Follow all cleanup instructions.

**IMPORTANT: The sprayer, hose, and gun should be cleaned thoroughly after daily use. Failure to do so permits material to build up, seriously affecting the performance of the unit.**



**Always spray at minimum pressure with the gun spray tip removed when using mineral spirits or any other solvent to clean the sprayer, hose, or gun. Static electricity buildup may result in a fire or explosion in the presence of flammable vapors.**

1. Follow the “Pressure Relief Procedure” found in the Operation section of this manual.
2. Remove the gun tip and tip guard and clean with a brush using the appropriate solvent.
3. Place the siphon tube into a container of the appropriate solvent (refer to recommendations of the material manufacturer). An example of the appropriate solvent is water for latex paint.
4. Place the return hose into a metal waste container.
5. Turn the PRIME/SPRAY knob to the PRIME position.
6. Move the engine ON/OFF switch to the ON position and start the engine.
7. Fluid will begin flowing through the return hose and into the waste container. Allow the fluid to circulate through the sprayer and flush the paint out of the return hose into the metal waste container.
8. Turn off the sprayer by moving the engine ON/OFF switch to the OFF position.
9. Place a metal waste container underneath the spray gun to catch the paint and solvent.
10. Turn the PRIME/SPRAY knob to the SPRAY position.
11. Turn on the sprayer.
12. Fully pull the spray lever on the cart handle to rev the engine, pressurize the sprayer, and trigger the spray gun. Fluid will begin flowing through the spray hose and out of the gun.
13. Continue to pull the spray lever on the cart handle until the material is flushed out of the hose and the solvent coming out of the gun is clean.
14. Release the spray lever.



**NOTE: For long-term or cold weather storage, pump mineral spirits through the entire system.**

15. Follow the “Pressure Relief Procedure” found in the Operation section of this manual.
16. Store the sprayer in a clean, dry area.

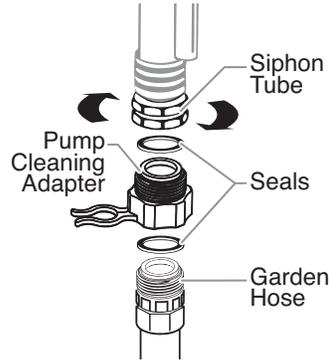
**IMPORTANT: Do not store the sprayer under pressure.**

## Special Cleanup

**IMPORTANT: Perform the following procedure after spraying with water-based materials only.**

Perform the following procedure when the valves of the sprayer are stuck or when preparing the sprayer for long term storage. The use of a pump cleaning adapter that attaches to the bottom of the siphon tube is required (the pump cleaning adapter is included with the sprayer).

1. Lock the gun and remove the spray tip assembly. Place the suction tube and return tube into an empty waste container.
2. Using a garden hose, rinse off the siphon tube, return hose and inlet filter. Empty the waste container.
3. Remove the inlet filter from the suction tube and place into a waste container.
4. Verify that the seals are present inside the adapter and suction tube. Thread the pump cleaning adapter onto a garden hose. Connect the hose and adapter to the fitting on the end of the siphon tube.
5. Unclip the return hose from the siphon tube and place it into the waste container.
6. Turn the PRIME/SPRAY knob to the PRIME position.
7. Turn on the water supply.
8. Move the engine ON/OFF switch to the ON position and start the engine. Water will go into the siphon tube and out through the return hose. Let the sprayer run for a few minutes to allow the return hose to be flushed.
9. Turn off the sprayer by moving the engine ON/OFF switch to the OFF position.
10. Place a metal waste container underneath the spray gun to catch the cleaning solution.
11. Turn the PRIME/SPRAY knob to the SPRAY position.
12. Turn on the sprayer.
13. Fully pull the spray lever on the cart handle to rev the engine, pressurize the sprayer, and trigger the spray gun. Fluid will begin flowing through the spray hose and out of the gun.
14. Continue to pull the spray lever on the cart handle until the material is flushed out of the hose and the water coming out of the gun is clean.
15. Release the spray lever.
16. Follow the "Pressure Relief Procedure" found in the Operation section of this manual.



## Cleaning the Spray Tip

Flush the gun and tip with the appropriate solvent after work is completed.

Should the spray tip become clogged, reverse the spray tip with the lever and pull the trigger once. When the obstruction comes out of the spray tip, release the trigger, reverse the spray tip back to the spray pattern setting, and resume spraying.



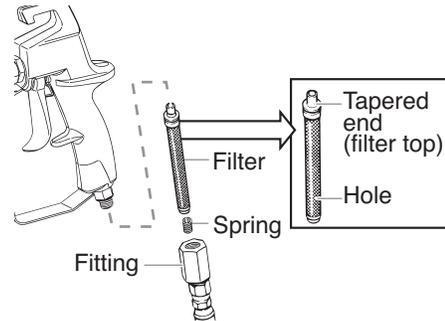
**Do not attempt to clean the tip with your finger.**

**Do not use a needle or other sharp pointed instrument to clean the tip. The hard tungsten carbide is brittle and can be chipped.**

## Cleaning/Replacing the Gun Filter

The gun filter must be cleaned after every use of the sprayer. When using thicker spray materials, the filter might need to be cleaned more often.

1. Perform Pressure Relief Procedure in the Operation section of this manual.
2. Unscrew the fitting from the bottom of the spray gun using an adjustable wrench, making sure not to lose the spring.
3. Remove the filter from the spray gun housing and clean with the appropriate cleaning solution (warm, soapy water for latex paints, mineral spirits for oil-based materials).
4. Inspect the filter for holes (see illustration). Replace if holes are found.



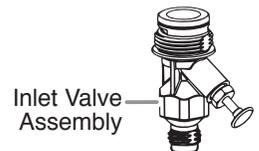
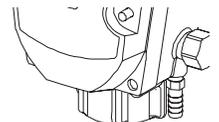
**NOTE: Never poke the filter with a sharp instrument!**

5. Replace the cleaned filter, tapered end first, into the gun housing. The tapered end of the filter must be loaded properly into the gun. Improper assembly will result in a plugged tip or no flow from the gun.
6. Reassemble the spray gun.

## Cleaning the Inlet Valve Assembly

Cleaning or servicing the inlet valve may be required if the unit has priming problems.

1. Remove the siphon tube and return hose.
2. Turning clockwise, unscrew the inlet valve assembly from the sprayer. Visually inspect the inside and outside of the inlet valve assembly. Clean any paint residue with the appropriate cleaning solution.
3. Lubricate the o-ring on the inlet valve. Replace inlet valve assembly by threading it into the sprayer. Torque to 32–38 ft./lbs.
4. Replace the siphon tube and tighten securely.



**NOTE: If priming problems continue, the inlet valve assembly might need to be replaced. Contact Customer Service to order a new inlet valve assembly.**

## Maintenance



Before proceeding, follow the Pressure Relief Procedure outlined previously in this manual. Additionally, follow all other warnings to reduce the risk of an injection injury, injury from moving parts, or electric shock.

### General Repair and Service Notes

The following tools are needed when repairing this sprayer:

flat-blade screwdriver      T20 Torx head driver  
needle-nose pliers         adjustable wrench

1. Before repairing any part of the sprayer, read the instructions carefully, including all warnings.

**IMPORTANT: Never pull on a wire to disconnect it. Pulling on a wire could loosen the connector from the wire.**

2. Test your repair before regular operation of the sprayer to be sure that the problem is corrected. If the sprayer does not operate properly, review the repair procedure to determine if everything was done correctly. Refer to the Troubleshooting section to help identify other possible problems.
3. Make certain that the service area is well ventilated in case solvents are used during cleaning. Always wear protective eyewear while servicing. Additional protective equipment may be required depending on the type of cleaning solvent. Always contact the supplier of solvents for recommendations.
4. If you have any further questions concerning your TITAN Airless Sprayer, call TITAN:

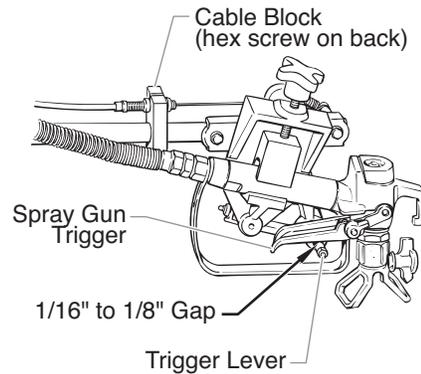
Technical Service (U.S.) ..... 1-800-526-5362  
Fax ..... 1-800-528-4826

### Adjusting the Trigger Tension

Use the following procedure to adjust the spring tension of the trigger lever on the gun holder assembly. The trigger lever pulls and releases the spray gun trigger when operated from the spray lever on the cart. The proper tension ensures that the gun will shut off when the gun trigger is released. To ensure proper tension, there should be approximately a 1/16" to 1/8" gap between the trigger lever and the spray gun trigger.

**IMPORTANT: Always keep the trigger lock on the spray gun in the locked position while making adjustments to the system.**

1. Using a 9/16" hex wrench, loosen the hex screw on the cable block.
2. Move the cable block in the appropriate direction to create a gap of 1/16" to 1/8" between the trigger lever and spray gun trigger.
  - a. Slide the cable block toward the gun to increase the gap between the trigger lever and spray gun trigger.
  - b. Slide the cable block away from the gun to decrease the gap between the trigger lever and spray gun trigger.



3. Tighten the hex screw securely.

### Maintaining the Engine

**NOTE: For detailed engine specifications and maintenance, refer to the separate engine manual supplied with this sprayer.**

#### Routine Engine Maintenance

##### Daily

- Check and fill the gas tank.
- After the first 20 hours of operation, drain the oil and refill with clean oil. Check the engine oil level and fill as necessary.

##### Weekly

- Remove the cover of the air filter and clean the element. Replace the element if necessary. If operating in an unusually dusty environment, check the filter daily and replace if necessary. (Replacement elements can be purchased from your local Titan dealer.)
- After each 50 hours of operation: Change the engine oil.

#### Safety Shut-Off Switch

The safety shut-off switch is pre-set by the factory to shut down the sprayer to prevent over-pressurization. Do not attempt to adjust or tamper with the safety shut-off switch. Contact an authorized service center if this setting requires adjustment.

**NOTE: The safety shut-off switch should be set to shut down the sprayer between 3200 – 3300 PSI.**

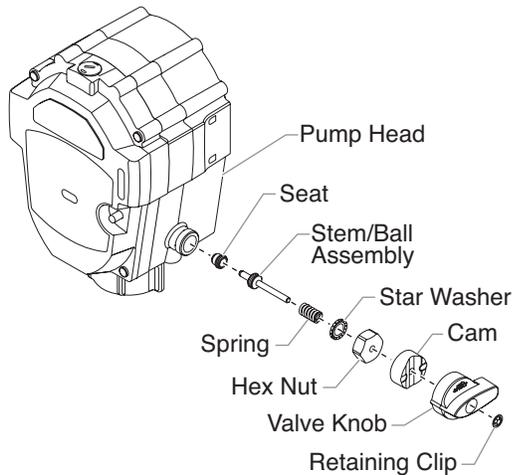
## Replacing the PRIME/SPRAY Valve

Perform the following procedure using PRIME/SPRAY valve replacement kit P/N 759-380.



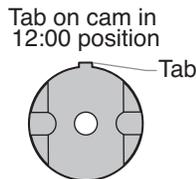
**Before proceeding, follow the Pressure Relief Procedure outlined previously in this manual. Additionally, follow all other warnings to reduce the risk of an injection injury, injury from moving parts or electric shock.**

1. Using a flat-head screwdriver, remove the Titan label and then pry off the retaining clip from inside the recessed portion of the valve knob. Remove the valve knob.
2. Slide the cam off of the stem/ball assembly.
3. Using a wrench, remove the hex nut from the pump head.
4. Remove the star washer, spring, and stem/ball assembly from the pump head.
5. Using a 7/32 hex wrench, remove the stem/ball assembly seat from the pump head.

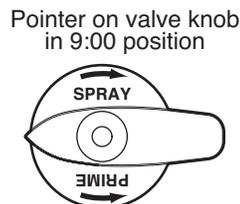


6. Tighten the new stem/ball assembly seat into the pump head. Use a 7/32 inch hex wrench. Torque to 10-12 ft./lbs.
7. Apply a light coating of grease around the o-ring on the new stem/ball assembly.
8. Push the stem/ball assembly into the stem/ball assembly seat in the pump head.
9. Place the new spring and star washer around the stem/ball assembly.
10. Slide the new hex nut onto the stem of the stem/ball assembly, thread it onto the pump head, and tighten with a wrench. Torque the nut to 13-15 ft./lbs.
11. Apply a light coating of grease to the top of the cam.
12. Slide the new cam onto the stem of the stem/ball assembly and over the hex nut. The design of the cam will allow the hex nut to fit inside the cam, causing the cam to lock in position.

**NOTE: Position the cam on the hex nut so that the tab on the side of the cam is as close to the 12:00 position as possible.**

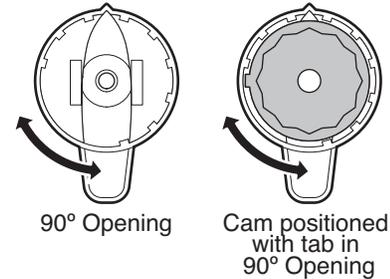


13. Place the new PRIME/SPRAY valve knob over the cam with the pointer on the knob as close to the 9:00 position as possible. Make sure the knob is pushed completely onto to the cam (the knob should cover the cam completely).



**NOTE: The knob is designed to allow 90° of movement between the SPRAY and PRIME positions. The inside of the knob has a 90° opening in it's circumference where the tab of the cam should be positioned to allow this movement. When placing the knob with the arrow in the 9:00 position, make sure that the tab on the cam is within the 90° opening on the inside of the knob. Then, make sure the knob is at the end of its movement in the clockwise direction (this is the SPRAY position) before continuing with this procedure.**

Back of PRIME/SPRAY valve knob



14. Slowly turn the knob counterclockwise until the bottom of the knob moves out to where it is flush with the bottom of the cam (approximately 5–7°).
15. Place the retaining clip over the stem of the stem/ball assembly where the stem passes through the recessed portion of the knob.
16. Using a 5/16" (8mm) nut driver, push the clip into the recessed portion of the knob with steady, even pressure until it stops.

**IMPORTANT: Do not hammer or wiggle the clip into position. It will damage the clip.**

17. Stick the "Titan" label onto the knob, covering the recessed portion of the knob and the retaining clip.
18. Turn the PRIME/SPRAY knob to the SPRAY position.
19. Start up the sprayer and run water through the system to check for leaks. If there are no leaks, the sprayer is ready to use.

## Servicing the Fluid Section

Use the following procedures to replace the seals and repack the fluid section.

**NOTE: Repacking kit P/N 759-365 is available. For best results use all parts supplied in this kit.**

### Disassembling the Fluid Section

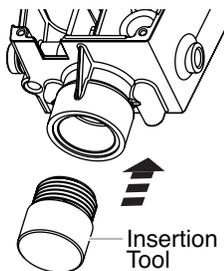


**Before proceeding, follow the Pressure Relief Procedure outlined previously in this manual. Additionally, follow all other warnings to reduce the risk of an injection injury, injury from moving parts or electric shock.**

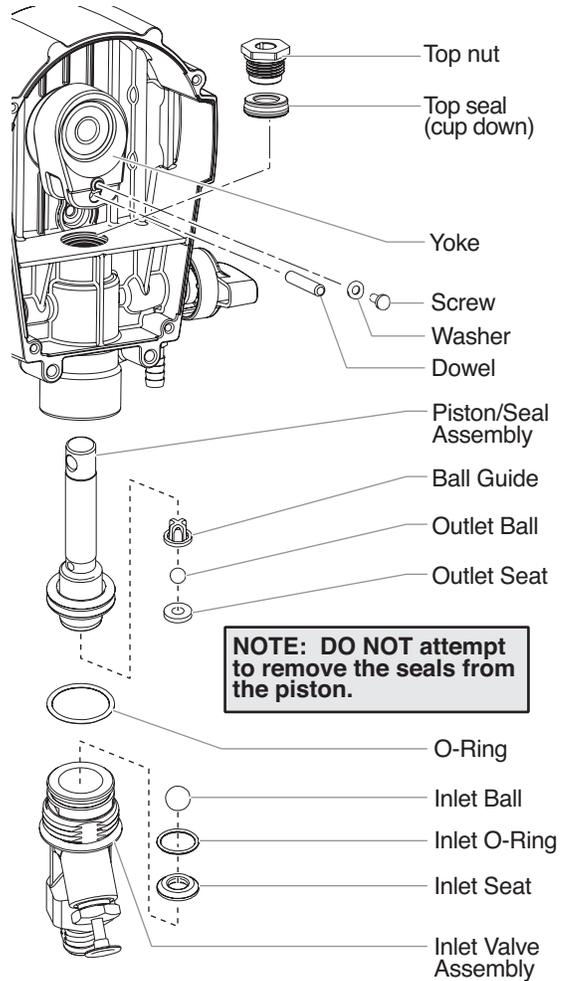
1. Remove the suction set.
2. Remove the front cover and the four screws that secure it using a T20 Torx head driver.
3. Remove the yoke screw and washer that secures the dowel pin. The dowel pin connects the yoke to the piston.
4. Using a pliers, pull the dowel pin out.
5. Inspect the yoke assembly and piston. In order to remove all the necessary parts, the piston must not be in the bottom dead center position. If the piston is at the bottom of the stroke, install the front cover and screws, start the engine to run the pump briefly, turn off the engine, unplug the unit, and repeat step 2.
6. Unscrew and remove the inlet valve assembly (refer to the Cleaning the Inlet Valve procedure in the Cleanup section of this manual).
7. Remove the piston assembly by pushing down on the piston near the yoke.
8. Unscrew and remove the top nut using an adjustable wrench.
9. Remove the worn seals using a flat head screwdriver or punch. Remove the top seal from the top and the bottom seal from the bottom by pressing against the side of the seal and popping it out. Be sure not to scratch the housing where the seals are located.
10. Clean the area where the new seals are to be installed.

### Assembling the Fluid Section

1. Lubricate the new top seal with Piston Lube (P/N 314-480) or light household oil and place the seal by hand with the cup side of seal down into the top port of the housing.
2. Place a small amount of anti-seize on the threads of the top nut. Place the top nut into the top of the housing and tighten with an adjustable wrench. This will drive the top seal into the correct position.
3. Turn the pump upside down. Lubricate the seal on the piston/seal assembly similar to the top seal. Place the piston/seal assembly into the bottom of the housing. Insert the insertion tool and thread into position to properly seat the piston/seal. Thread fully until tight. Remove the insertion tool.
4. Install the new O-ring on the inlet valve assembly, lubricate with Piston Lube (P/N 314-480), thread into the bottom (inlet) of the housing, and tighten with an adjustable wrench. This will drive the bottom seal into the correct position.
5. Align the piston with the yoke. Be careful not to damage the piston.
6. Apply any type of household grease to the piston and yoke area to prolong life. Apply to the holes in the yoke where the dowel is inserted.
7. Install the dowel pin to connect the yoke to the piston. The piston may have to be moved up or down to align with the yoke.



8. Install the yoke screw and washer to secure the dowel pin.
9. Turn pump right side up and apply a few drops of Piston Lube or light household oil between the top nut and piston. This will prolong the seal life.
10. Install front cover and four (4) screws.
11. Replace inlet valve and install the suction set.
12. Turn on the sprayer by following the procedure in the "Operation" section of this manual and check for leaks.

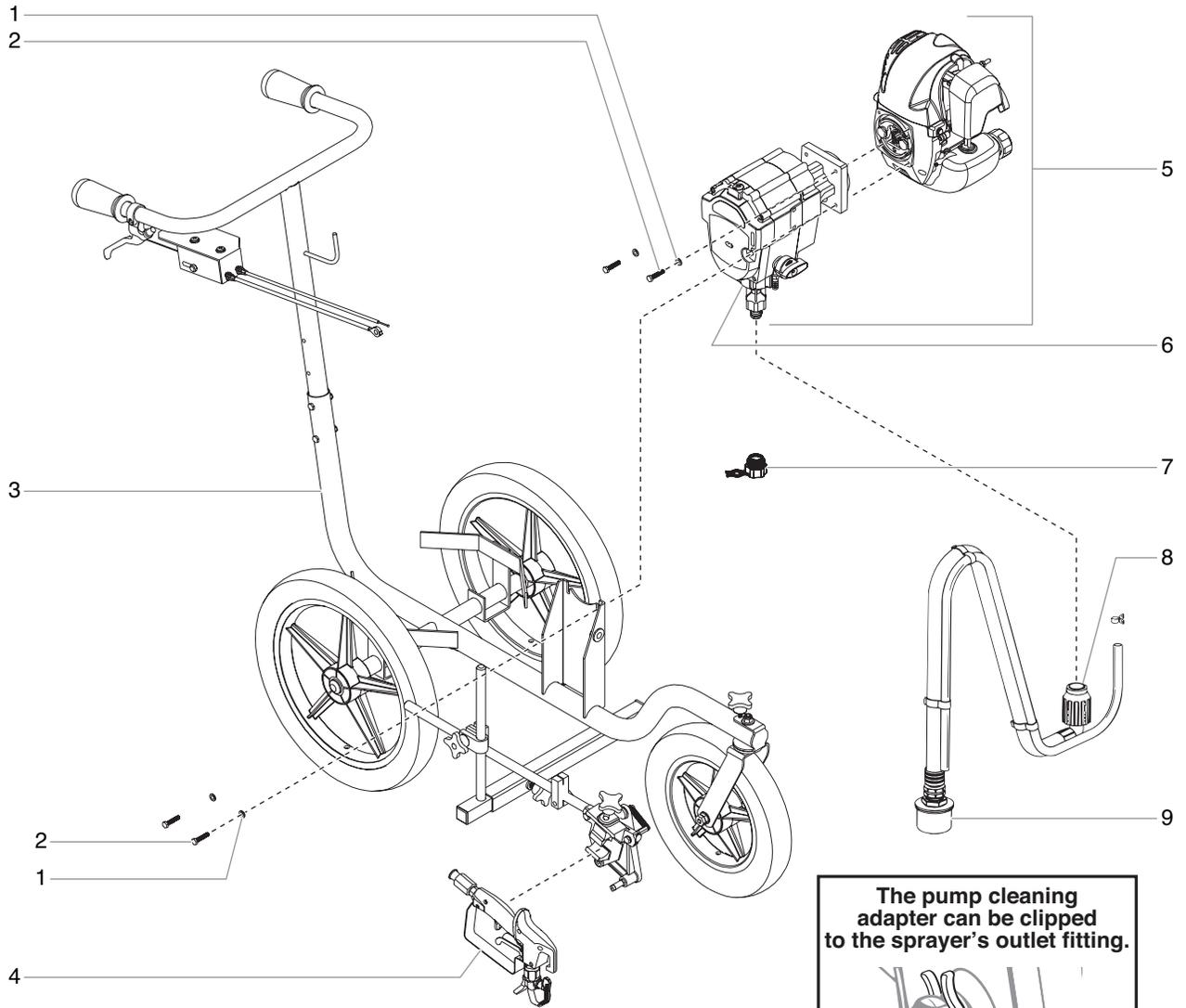


# Troubleshooting

Problem	Cause	Solution
A. The unit will not run.	<ol style="list-style-type: none"> <li>1. The pressure is set too low.</li> <li>2. Faulty or loose wiring.</li> <li>3. The gas tank is empty.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take to an authorized service center.</li> <li>2. Inspect or take to an authorized service center.</li> <li>3. Fill the gas tank.</li> </ol>
B. The unit will not prime.	<ol style="list-style-type: none"> <li>1. The PRIME/SPRAY knob is in the SPRAY position.</li> <li>2. Air leak in the siphon tube/siphon set.</li> <li>3. The inlet screen is clogged.</li> <li>4. The siphon tube/siphon set is clogged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rotate the PRIME/SPRAY knob to the PRIME position.</li> <li>2. Check the siphon tube/siphon set connection and tighten or re-tape the connection with PTFE tape.</li> <li>3. Remove the inlet screen and clean.</li> <li>4. Remove the siphon tube/siphon set and clean.</li> </ol>
C. The unit will not build or maintain pressure.	<ol style="list-style-type: none"> <li>1. The spray tip is worn.</li> <li>2. The spray tip is too large.</li> <li>3. The gun filter, or inlet screen is clogged.</li> <li>4. Material flows from the return hose when the PRIME/SPRAY valve is in the SPRAY position.</li> <li>5. Air leak in the siphon tube/siphon set.</li> <li>6. There is external fluid leak.</li> <li>7. There is an internal fluid section leak (seals are worn and/or dirty, valve balls are worn).</li> <li>8. Worn valve seats</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace the spray tip following the instructions in this manual.</li> <li>2. Replace the spray tip with a tip that has a smaller orifice following the instructions in this manual.</li> <li>3. Remove the gun filter and clean. Remove the inlet screen and clean.</li> <li>4. Clean or replace the PRIME/SPRAY valve.</li> <li>5. Check the siphon tube/siphon set connection and tighten or re-tape the connection with PTFE tape.</li> <li>6. Check for external leaks at all connections. Tighten connections, if necessary.</li> <li>7. Clean the valves and service the fluid section following the "Servicing the Fluid Section" procedure in the Maintenance section of this manual.</li> <li>8. Reverse or replace the valve seats following the "Servicing the Fluid Section" procedure in the Maintenance section of this manual.</li> </ol>
D. Fluid leakage at the upper end of the fluid section.	<ol style="list-style-type: none"> <li>1. The upper packings are worn.</li> <li>2. The piston rod is worn.</li> </ol>	<ol style="list-style-type: none"> <li>1. Repack the pump following the "Servicing the Fluid Section" procedure in the Maintenance section of this manual.</li> <li>2. Replace the piston rod following the "Servicing the Fluid Section" procedure in the Maintenance section of this manual.</li> </ol>
E. Excessive surge at the spray gun.	<ol style="list-style-type: none"> <li>1. Wrong type of airless spray hose.</li> <li>2. The spray tip worn or too large.</li> <li>3. Excessive pressure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace hose with a minimum of 50' of 1/4" grounded textile braid airless paint spray hose.</li> <li>2. Replace the spray tip following the instructions in this manual.</li> <li>3. Take to an authorized service center.</li> </ol>
F. Poor spray pattern.	<ol style="list-style-type: none"> <li>1. The spray tip is too large for the material being used.</li> <li>2. Incorrect pressure setting.</li> <li>3. Insufficient fluid delivery.</li> <li>4. The material being sprayed is too viscous.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace the spray tip with a new or smaller spray tip following the instructions in this manual.</li> <li>2. Take to an authorized service center.</li> <li>3. Clean all screens and filters.</li> <li>4. Add solvent to the material according to the manufacturer's recommendations.</li> </ol>
G. The unit lacks power.	<ol style="list-style-type: none"> <li>1. The pressure adjustment is too low.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take to an authorized service center.</li> </ol>

# Parts List

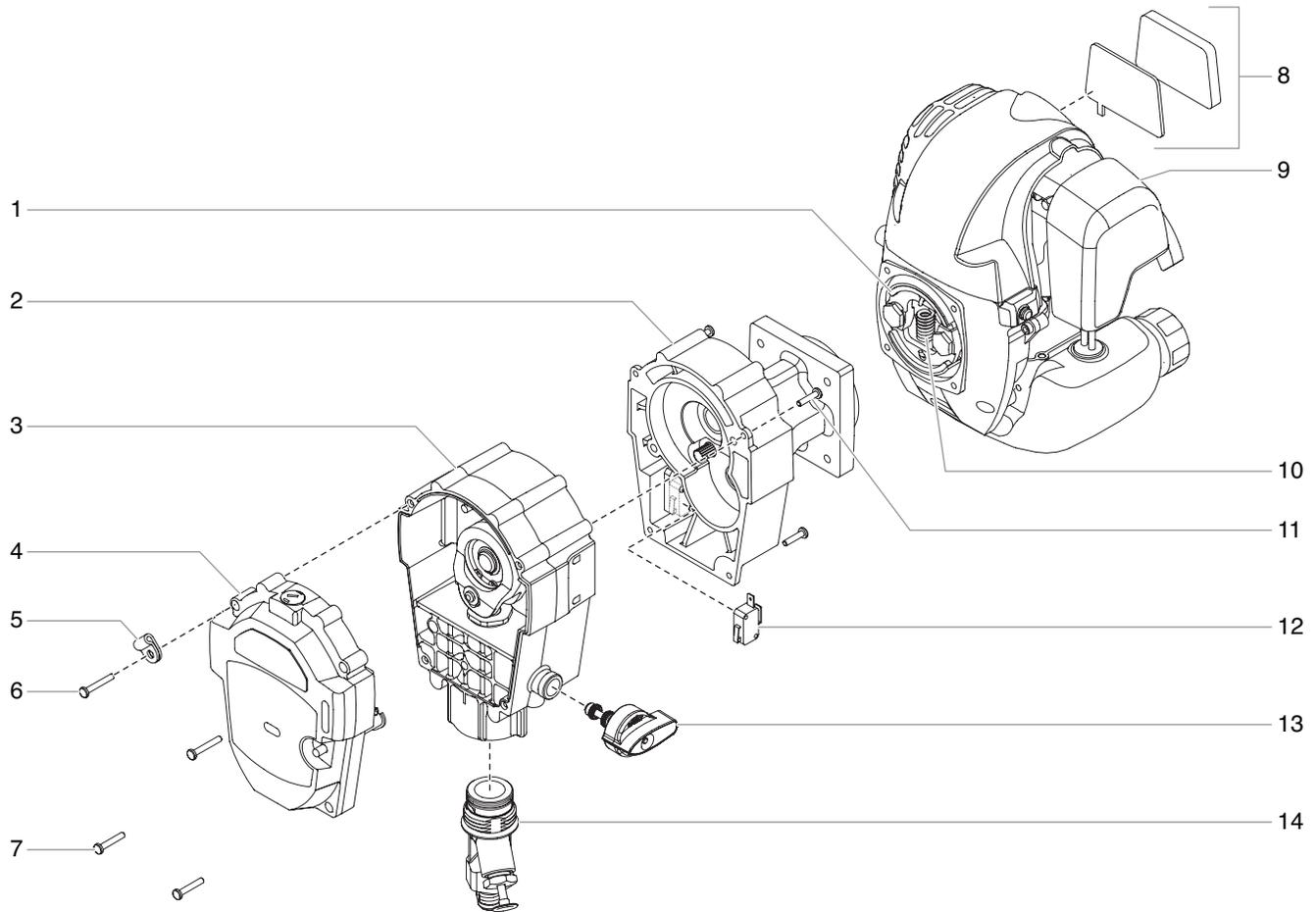
## Main Assembly



**The pump cleaning adapter can be clipped to the sprayer's outlet fitting.**

Item	Part #	Description	Quantity	Item	Part #	Description	Quantity
1	759-107	Hex screw.....	4	7	759-405	Pump cleaning adapter .....	1
2	858-003	Flat washer.....	4	8	759-367	Suction set complete .....	1
3	759-180	Cart Assembly .....	1	9	759-368	Inlet screen.....	1
4	759-369	Spray Gun .....	2	10	316-505	Airless spray hose (not shown) .....	1
5	-----	Drive assembly (see separate listing) .....	1				
6	-----	Fluid section assembly (see separate listing) .....	1				

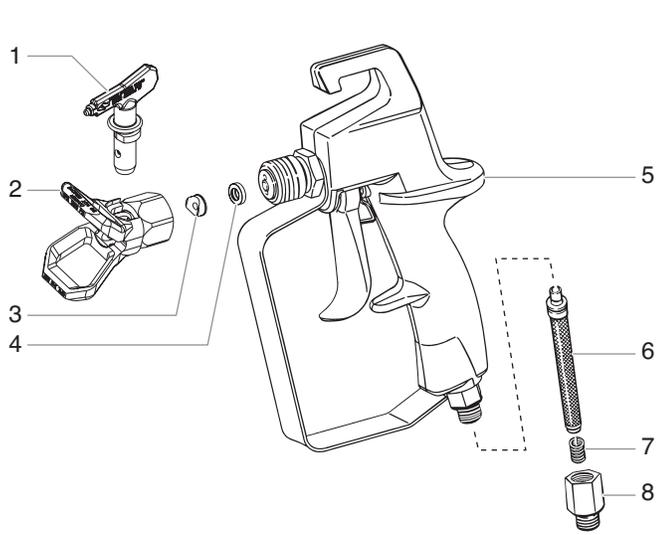
## Drive Assembly



Item	Part #	Description	Quantity
1	759-361	Clutch shoe .....	2
2	759-363	Clutch drum housing complete .....	1
3	759-364	Pump head complete .....	1
4	759-376	Front cover assembly .....	1
5	9890219	Cord clip .....	1
6	9805399	Screw .....	1
7	759-353	Screw .....	3

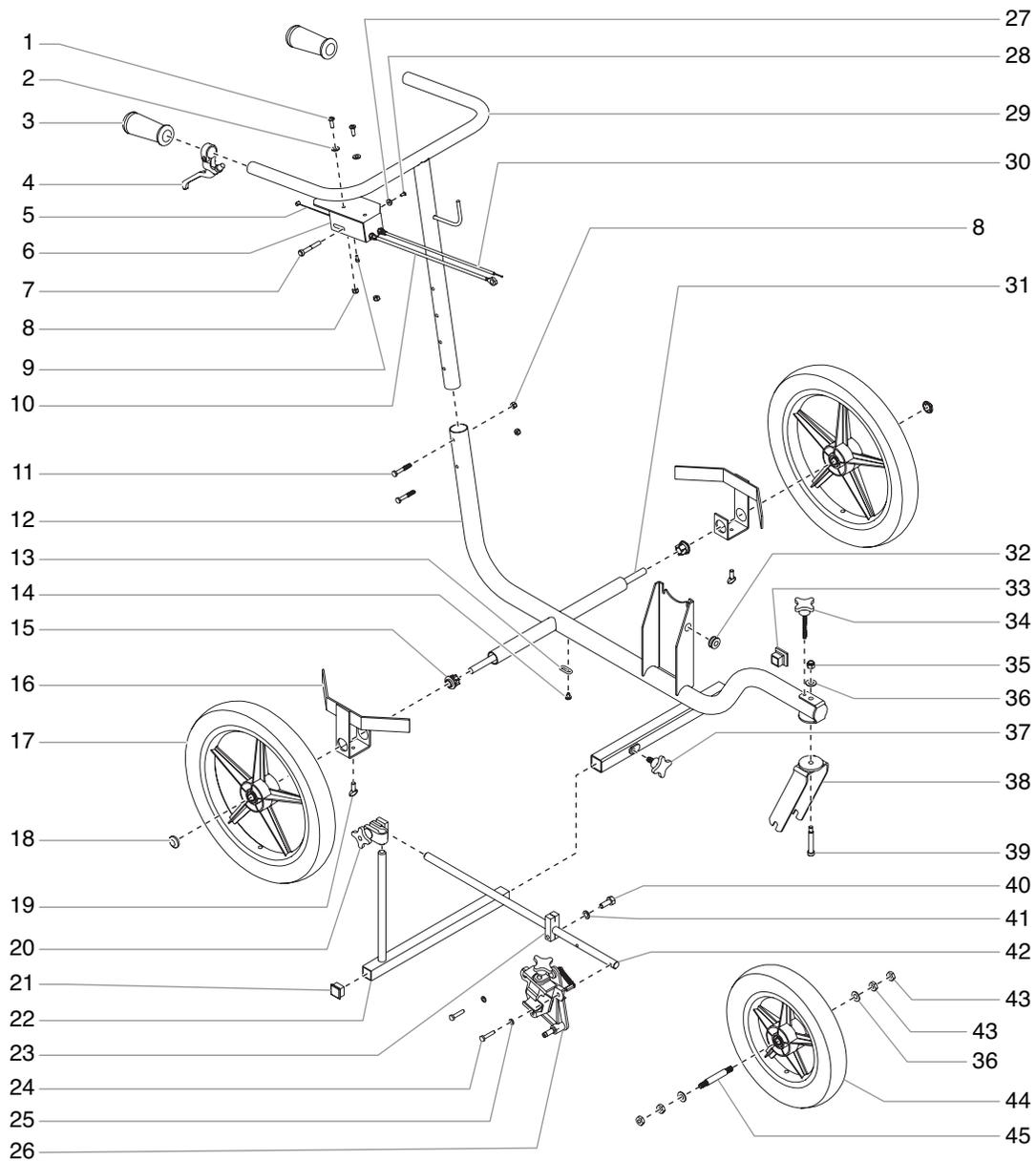
Item	Part #	Description	Quantity
8	759-403	Engine filter kit .....	1
9	759-360	Engine, 1.6 HP, Robin-Subaru .....	1
10	759-362	Spring .....	1
11	759-381	Screw .....	4
12	759-309	Microswitch .....	1
13	759-380	PRIME/SPRAY valve assembly .....	1
14	759-379	Inlet valve assembly .....	1

## Spray Gun (P/N 759-369)



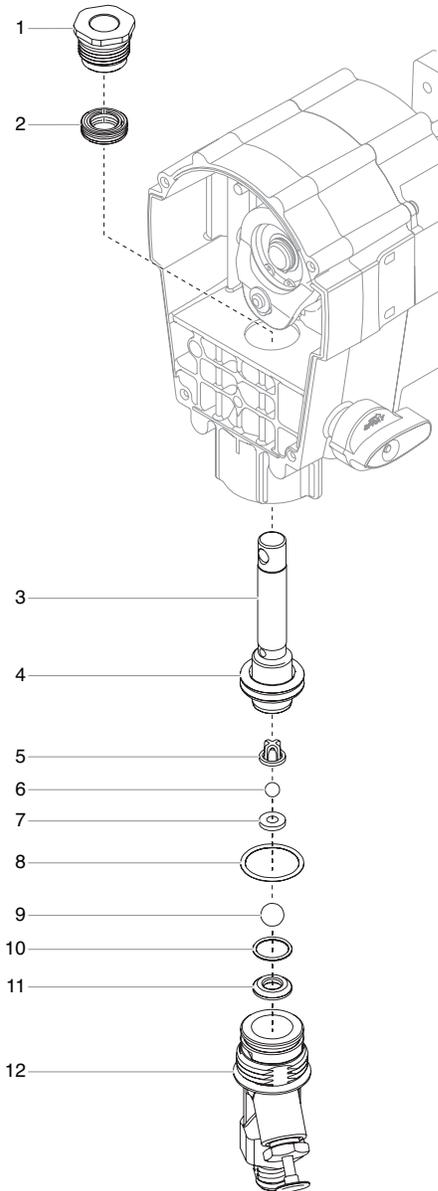
Item	Part #	Description	Quantity
1	661-1908	Tip assembly (not included with spray gun, see catalog) .....	1
2	661-012	Tip guard .....	1
3	651-020	Tip seal .....	1
4	651-040	Tip seal retainer .....	1
5	759-369	Gun assembly complete .....	1
6	759-370	Filter, fine (yellow) .....	1
7	759-374	Spring .....	1
8	759-375	Inlet fitting .....	1

# Cart Assembly (P/N 759-180)



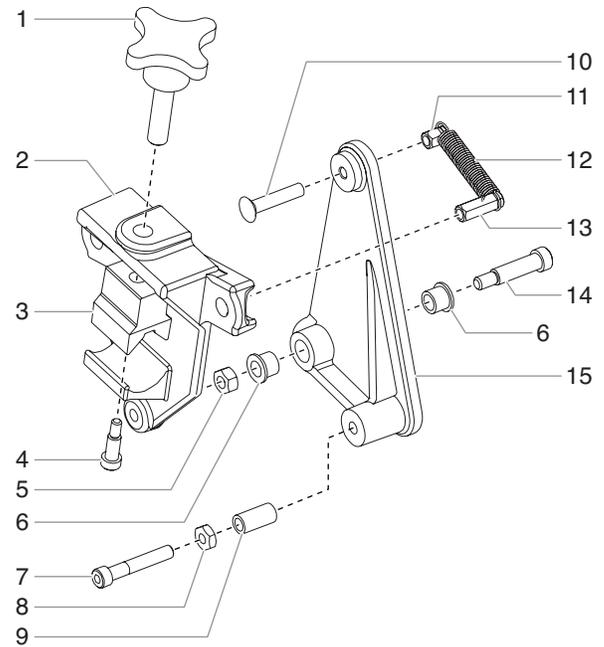
Item	Part #	Description	Quantity	Item	Part #	Description	Quantity
1	770-720	Screw	2	24	858-644	Screw	2
2	770-601	Flat washer	2	25	858-002	Lock washer	2
3	424-245	Handle grip	2	26	759-404	Gun holder assembly	1
4	759-215	Lever assembly	1	27	759-206	Pin cap	1
5	759-209	Lever cable	1	28	730-260	Screw	1
6	759-204	Cable box	1	29	759-185	Handle	1
7	759-205	Cable pin	1	30	759-207	Motor cable	1
8	770-144	Lock nut	4	31	759-194	Rear axle	1
9	756-076	Screw	1	32	800-036	Grommet	1
10	759-208	Gun cable	1	33	757-055	End cap	1
11	858-660	Screw	2	34	759-304	Knob assembly	1
12	759-190	Cart weldment	1	35	763-549	Lock nut	1
13	759-326	Grounding chain	1	36	862-001	Flat washer	3
14	759-325	Screw	1	37	759-306	Knob assembly	1
15	759-371	Axle bushing	2	38	759-235	Fork assembly	1
16	759-283	Bucket holder	2	39	759-288	Shoulder screw	1
17	759-293	Wheel assembly, 16"	2	40	862-436	Screw	1
18	759-378	Axle cap	2	41	862-002	Lock washer	1
19	759-320	Thumb screw	2	42	424-224	Support arm	1
20	759-329	Clamp assembly	1	43	862-401	Jam nut	4
21	756-056	Plug	1	44	759-298	Wheel assembly, 12.5"	1
22	759-188	Gun support	1	45	759-223	Wheel axle	1
23	424-226	Cable mounting clamp	1				

## Fluid Section Assembly



Item	Part #	Description	Quantity
1	759-382	Upper packing nut .....	1
2	759-385	Upper seal .....	1
3	759-384	Piston assembly (includes items 5-7) .....	1
4	759-383	Lower seal .....	1
5	759-397	Ball guide.....	1
6	759-396	Outlet seat .....	1
7	762-144	Outlet ball .....	1
8	759-386	O-ring.....	1
9	759-387	Inlet ball .....	1
10	759-388	Inlet o-ring.....	1
11	759-389	Inlet seat.....	1
12	759-379	Inlet valve complete (includes items 9-11)	
	759-365	Repacking kit (includes items 1-8)	

## Gun Holder Assembly (P/N 759-404)

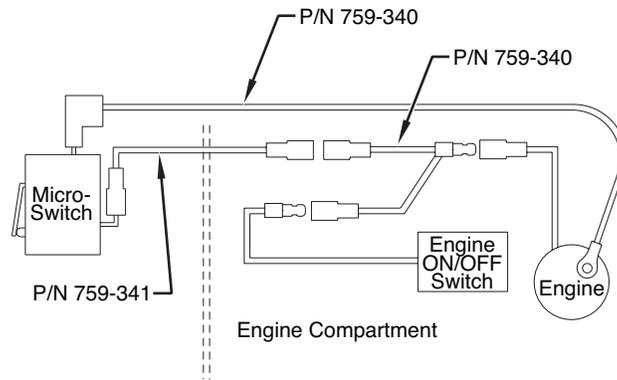


Item	Part #	Description	Quantity
1	756-034	Clamping knob.....	1
2	424-201	Gun holder.....	1
3	759-316	Clamp block.....	1
4	756-037	Shoulder screw .....	1
5	858-601	Hex nut .....	1
6	424-248	Flange bearing.....	2
7	858-653	Screw.....	1
8	858-603	Hex jam nut .....	1
9	424-249	Sleeve bearing.....	1
10	703-079	Screw.....	1
11	759-056	Spring holder, short .....	1
12	759-058	Return spring .....	1
13	759-057	Spring holder, long .....	1
14	860-936	Shoulder screw .....	1
15	424-202	Gun holder lever.....	1

## Labels

Part #	Description
759-128	Front cover label, bottom
759-127	Front cover label, top
759-406	Tire pressure label
313-2771	Tip size label
313-2772	Gun holder label
313-176	Warning label, ventilated area
313-771	Warning label, injection hazard
313-784	Hazard label, fire and explosion
313-1387	Warning label, empty gas tank
313-2775	Gun assembly label

## Electrical Schematic



**NOTE: All electrical work should be performed by a Titan authorized service center.**

## Accessories

### Liquid Shield Plus

Cleans and protects spray systems against rust, corrosion and premature wear.

Part No.	Description
314-483	4 ounce bottle
314-482	1 quart bottle



### Piston Lube

Specially formulated to prevent materials from adhering to the piston rod, which becomes abrasive to the upper seals. Piston Lube will break down any material that may accumulate in the wet cup and keep it from drying.

Part No.	Description
314-481	4 ounce bottle
314-480	1 quart bottle



### Stencil Kit — 759-135

Stencils are molded of 1/16" (1.5 mm) Durolast polyethylene. This material is very durable and lays flat on the surface being stenciled for clean and accurate marking.

The stencil kit contains one each of the following:

- 21.5" (55 cm) Handicap (symbol)
- 42" (105 cm) Straight arrow (symbol)
- 42" (105 cm) Curved arrow (symbol)
- 12" (30 cm) Number kit (0 through 9)
- 12" (30 cm) "No Parking" (words)
- 12" (30 cm) "Fire Lane" (words)
- 4" (10 cm) "No Parking" (words)
- 4" (10 cm) "Fire Lane" (words)
- 4" (10 cm) "Visitors" (word)
- 4" (10 cm) "Reserved" (word)

## 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.

TITAN MAKES NO WARRANTY AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY TITAN. THOSE ITEMS SOLD, BUT NOT MANUFACTURED BY TITAN (SUCH AS GAS ENGINES, SWITCHES, HOSES, ETC.) ARE SUBJECT TO THE WARRANTY, IF ANY, OF THEIR MANUFACTURER. TITAN WILL PROVIDE THE PURCHASER WITH REASONABLE ASSISTANCE IN MAKING ANY CLAIM FOR BREACH OF THESE WARRANTIES.

## Patents

These products are covered by one or more of the following U.S. patents:

5,947,381      5,749,528      5,660,332      5,425,506

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



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