ACCESS LINEMARKING EQUIPMENT

TITAN®

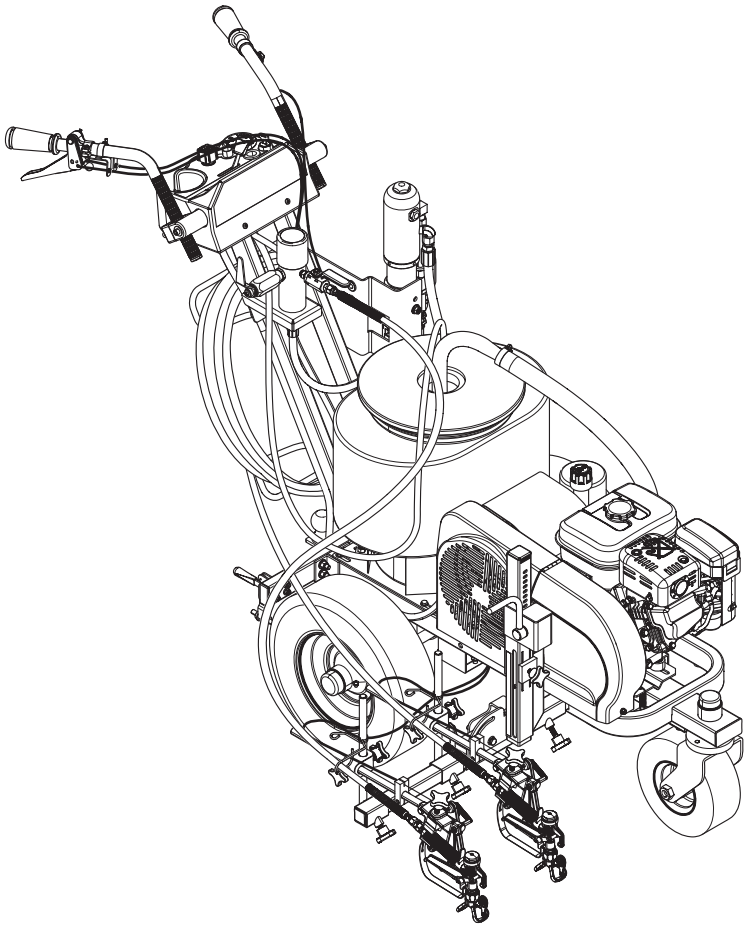
OPERATION MANUAL

POWRLINER™

AIRLESS, HIGH-PRESSURE SPRAYING UNIT

AIRLESS HOCHDRUCK-SPRITZGERÄT

GROUPE DE PROJECTION À HAUTE PRESSION



Models:

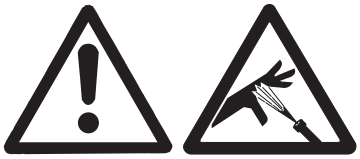
PL4955 0290052
PL6955 0290053
PL8955 0290054

1021 • Form No. 0537859G

Warning!

Attention: Danger of injury by injection!

Airless units develop extremely high spraying pressures.



1

Never put your fingers, hands or any other parts of the body into the spray jet!

Never point the spray gun at yourself, other persons or animals.

Never use the spray gun without safety guard.

Do not treat a spraying injury as a harmless cut. In case of injury to the skin through coating materials or solvents, consult a doctor immediately for quick and expert treatment. Inform the doctor about the coating material or solvent used.

2

The operating instructions state that the following points must always be observed before starting up:

1. Faulty units must not be used.
2. Secure Titan spray gun using the safety catch on the trigger.
3. Ensure that the unit is properly earthed.
4. Check allowable operating pressure of high-pressure hose and spray gun.
5. Check all connections for leaks.

3

The instructions regarding regular cleaning and maintenance of the unit must be strictly observed.

Before any work is done on the unit or for every break in work the following rules must be observed:

1. Release the pressure from spray gun and hose.
2. Secure the Titan spray gun using the safety catch on the trigger.
3. Switch off unit.

Be safety conscious!

Contents

1. Safety regulations for Airless spraying

1.1 Explanation of symbols used

This manual contains information that must be read and understood before using the equipment. When you come to an area that has one of the following symbols, pay particular attention and make certain to heed the safeguard.

	**This symbol indicates a potential hazard that may cause serious injury or loss of life. Important safety information will follow.**
 Attention	**This symbol indicates a potential hazard to you or to the equipment. Important information that tells how to prevent damage to the equipment or how to avoid causes of minor injuries will follow.**
	**Danger of skin injection**
	**Danger of fire from solvent and paint fumes**
	**Danger of explosion from solvent, paint fumes and incompatible materials**
	**Danger of injury from inhalation of harmful vapors**
	**Notes give important information which should be given special attention.**

HAZARD: INJECTION INJURY

A high pressure stream produced by this equipment can pierce the skin and underlying tissues, leading to serious injury and possible amputation.

Do not treat a spraying injury as a harmless cut. In case of injury to the skin through coating materials or solvents, consult a doctor immediately for quick and expert treatment. Inform the doctor about the coating material or solvent used.

PREVENTION:

- NEVER aim the gun at any part of the body.
- NEVER allow any part of the body to touch the fluid stream. DO NOT allow body to touch a leak in the fluid hose.
- NEVER put your hand in front of the gun. Gloves will not provide protection against an injection injury.
- ALWAYS lock the gun trigger, shut the fluid pump off and release all pressure before servicing, cleaning the tip guard, changing tips, or leaving unattended. Pressure will not be released by turning off the engine. The PRIME/SPRAY valve or pressure bleed valve must be turned to their appropriate positions to relieve system pressure.
- ALWAYS keep tip guard in place while spraying. The tip guard provides some protection but is mainly a warning device.
- ALWAYS remove the spray tip before flushing or cleaning the system.
- NEVER use a spray gun without a working trigger lock and trigger guard in place.
- All accessories must be rated at or above the maximum operating pressure range of the sprayer. This includes spray tips, guns, extensions, and hose.

HAZARD: HIGH PRESSURE HOSE

The paint hose can develop leaks from wear, kinking and abuse. A leak can inject material into the skin. Inspect the hose before each use.

PREVENTION:

- Avoid sharp bending or kinking of the high-pressure hose. The smallest bending radius amounts to about 20 cm.
- Do not drive over the high-pressure hose. Protect against sharp objects and edges.
- Replace any damaged high-pressure hose immediately.
- Never repair defective high-pressure hoses yourself!
- Electrostatic charging of spray guns and the high-pressure hose is discharged through the high-pressure hose. For this reason the electric resistance between the connections of the high-pressure hose must be equal to or lower than 1MΩ.
- For reasons of function, safety and durability use only original Titan high-pressure hoses.
- Before each use, check all hoses for cuts, leaks, abrasion or bulging of cover. Check for damage or movement of couplings. Immediately replace the hose if any of these conditions exist. Never repair a paint hose. Replace it with another earthed high-pressure hose.
- Make sure power cord, air hose and spray hoses are routed in such a manner to minimize slip, trip and fall hazard.

HAZARD: EXPLOSION OR FIRE

Flammable vapors, such as solvent and paint vapors, in work area can ignite or explode.

PREVENTION:

- Use equipment only in well ventilated area. 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.
- Gas models only - Do not fill fuel tank while engine is running or hot; shut off engine and allow to cool. Fuel is flammable and can ignite or explode if spilled on a hot surface.
- Electric models only - Do not use materials with a flashpoint below 38° C (100° F). Flashpoint is the temperature at which a fluid can produce enough vapors to ignite.
- Eliminate all ignition sources, such as pilot lights, cigarettes, portable electric lamps and plastic drop cloths (potential static arc).
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable vapors are present.
- Ground equipment and conductive objects in work area. Make sure grounding chain is in place and reaches the ground.
- Use only grounded hoses.
- Hold spray gun firmly to the side of a grounded pail when triggering into pail.
- If there is static sparking or if you feel a shock, stop operation immediately.

- 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 manufacturer's safety instructions.
- 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 a fire extinguisher in work area.

HAZARD: HAZARDOUS VAPORS

Paints, solvents, and other materials can be harmful if inhaled or come in contact with body. Vapors can cause severe nausea, fainting, or poisoning.

PREVENTION:

- Wear respiratory protection when spraying. Read all instructions supplied with the mask to be sure it will provide the necessary protection.
- All local regulations regarding protection against hazardous vapors must be observed.
- Wear protective eyewear.
- Protective clothing, gloves and possibly skin protection cream are necessary for the protection of the skin. Observe the regulations of the manufacturer concerning coating materials, solvents and cleaning agents in preparation, processing and cleaning units.

HAZARD: GENERAL

This product can cause severe injury or property damage.

PREVENTION:

- Follow all appropriate local, state, and national codes governing ventilation, fire prevention, and operation.
- Pulling the trigger causes a recoil force to the hand that is holding the spray gun. The recoil force of the spray gun is particularly powerful when the tip has been removed and a high pressure has been set on the airless pump. When cleaning without a spray tip, set the pressure control knob to the lowest pressure.
- Use only manufacturer authorized parts. User assumes all risks and liabilities when using parts that do not meet the minimum specifications and safety devices of the pump manufacturer.
- ALWAYS follow the material manufacturer's instructions for safe handling of paint and solvents.
- Clean up all material and solvent spills immediately to prevent slip hazard.
- Wear ear protection. This unit can produce noise levels above 85 dB(A).
- Never leave this equipment unattended. Keep away from children or anyone not familiar with the operation of airless equipment.
- Do not spray on windy days.
- The device and all related liquids (i.e. hydraulic oil) must be disposed of in an environmentally friendly way.

1.2 Electric Safety

Electric models must be grounded/earthed. In the event of an electrical short circuit, grounding/earthing reduces the risk of electric shock by providing an escape wire for the electric current. This product is equipped with a cord having an grounding/earthing wire with an appropriate earthing plug. Connection to the mains only through a special feed point, e.g. through an error protection insallation with INF < 30 mA.

DANGER — Work or repairs at the electrical equipment may only be carried out by a skilled electrician. No liability is assumed for incorrect installation. Switch the unit off. Before all repair work, unplug the power plug from the outlet.

Danger of short-circuits caused by water ingressing into the electrical equipment. Never spray down the unit with high-pressure or high-pressure steam cleaners.

Do not use 12V socket without a fully charged battery installed.

Work or repairs at the electrical equipment:

These may only be carried out by a skilled electrician. No liability is assumed for incorrect installation.

Operating Temperature

This equipment will operate correctly in its intended ambient, at a minimum between +50ºF (+10°C) and 104ºF (+40°C).

Relative Humidity

The equipment will operate correctly within an environment at 50% RH, +40°C. Higher RH may be allowed at lower temperatures.

Measures shall be taken by the Purchaser to avoid the harmful effects of occasional condensation.

Altitude

This equipment will operate correctly up to 2100 m above mean sea level.

Transportation and Storage

This equipment will withstand, or has been protected against, transportation and storage temperatures of -13ºF (-25°C) to +130ºF (+55°C) and for short periods up to 160ºF (+70°C).

It has been packaged to prevent damage from the effects of normal humidity, vibration and shock.

1.3 Gasoline Engine Safety

1. Gas engines are designed to give safe and dependable service if operated according to instructions. Read and understand the engine manufacturer's 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. People who are not operating the device must stay 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 sprayer with gasoline in the tank.

DO NOT use this equipment to spray water or acid.

Attention

Do not lift by cart handle when loading or unloading. Device is very heavy. Three-person lift is required.

1.4 Fueling (gas engine)

Gasoline is extremely flammable and is explosive under certain conditions.

Fuel Specifications

- Use automotive gasoline that has a pump octane number of 86 or higher, or that has a research octane number of 91 or higher. Use of a lower octane gasoline can cause persistent "pinging" or heavy "spark knock" (a metallic rapping noise) which, if severe, can lead to engine damage.

If "spark knock" or "pinging" occurs at a steady engine speed under normal load, change brands of gasoline. If spark knock or pinging persists, consult an authorized dealer of the engine manufacturer. Failure to do so is considered misuse, and damage caused by misuse is not covered by the engine manufacturer's limited warranty.

Occasionally you may experience light spark knock while operating under heavy loads. This is no cause for concern, it simply means your engine is operating efficiently.

- Unleaded fuel produces fewer engine and spark plug deposits and extends the life of the exhaust system components.
- Never use stale or contaminated gasoline or an oil/gasoline mixture. Avoid getting dirt, dust, or water in the fuel tank.

Gasolines Containing Alcohol

If you decide to use a gasoline containing alcohol (gasohol), be sure its octane rating is at least as high as that recommended by the engine manufacturer. There are two types of "gasohol": one containing ethanol, and the other containing methanol. Do not use gasohol that contains more than 10% ethanol. Do not use gasoline containing methanol (methyl or wood alcohol) that does not also contain co-solvents and corrosion inhibitors for methanol. Never use gasoline containing more than 5% methanol, even if it has co-solvents and corrosion inhibitors.

Fuel system damage or engine performance problems resulting from the use of fuels that contain alcohol is not covered under the warranty. The engine manufacturer cannot endorse the use of fuels containing methanol since evidence of their suitability is incomplete at this time.

Before buying gasoline from an unfamiliar station, try to find out if the gasoline contains alcohol. If it does, confirm the type and percentage of alcohol used. If you notice any undesirable operating characteristics while using a gasoline that contains alcohol, or one that you think contains alcohol, switch to a gasoline that you know does not contain alcohol.

2. General view of application

2.1 Application

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.

2.2 Coating materials

Processible coating materials

Pay attention to the Airless quality of the coating materials to be processed.

Latex paint, dispersion paints, fire protection and thick film materials, zinc dust and micaceous iron ore paints, Airless spray primer, sprayable glue, anti-corrosive agents, thick coating materials and bitumen-like coating materials.

No other materials should be used for spraying without Titan's approval.

Filtering

In spite of the high-pressure filter, filtering of the coating material is recommended in general.

Mix coating material before commencement of work.

Make sure when stirring with motor-driven agitators that no air bubbles are stirred in. Air bubbles disturb when spraying and can, in fact, lead to interruption of operation.

Viscosity

It is possible to work with high-viscosity coating materials with the devices.

If highly viscous coating materials cannot be sucked up, they must be diluted in accordance with the manufacturer's instruction.

Two-component coating material

The appropriate processing time must be adhered to exactly. A minimum of 45 minute set time is recommended. Within this time rinse through and clean the unit meticulously with the appropriate cleaning agents.

Coating materials with sharp-edged additional materials

These have a strong wear and tear effect on valves, high-pressure hose, spray gun and tip. The durability of these parts can be reduced appreciably through this.

3. Description of unit

3.1 Airless process

The main area of application are thick layers of highly viscous coating material for large areas and a high consumption of material.

A piston pump takes in the coating material by suction and conveys it to the tip. Pressed through the tip at a pressure of up to a maximum of 227 bar (22.7 MPa, 3300 PSI), the coating material is atomized. This high pressure has the effect of micro fine atomisation of the coating material.

As no air is used in this process, it is described as an AIRLESS process.

This method of spraying has the advantages of finest atomisation, cloudless operation and a smooth, bubble-free surface. As well as these, the advantages of the speed of work and convenience must be mentioned.

3.2 Functioning of the unit

The following section contains a brief description of the technical construction for better understanding of the function.

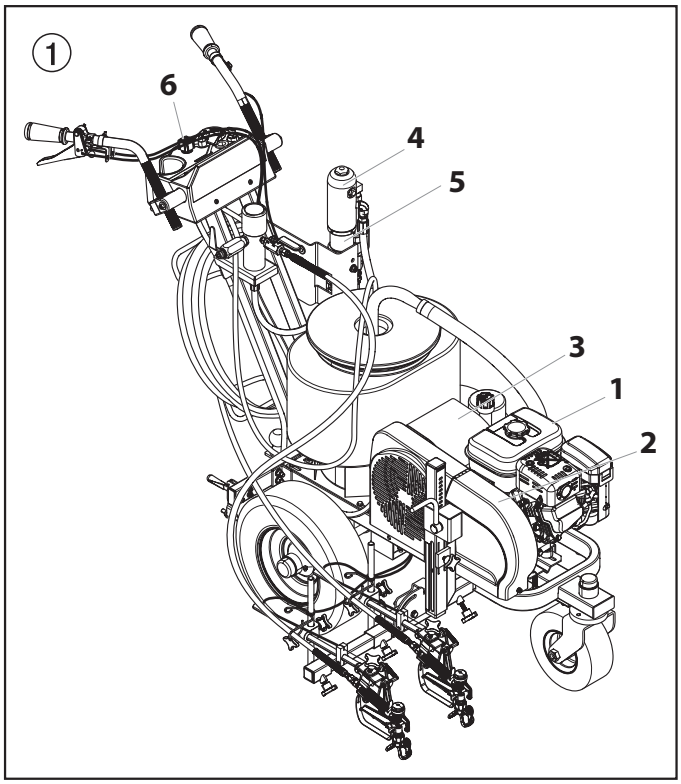
TITAN PowrLiner (PL) are high-pressure spraying units driven by either a gasoline engine or electric motor.

The gasoline engine or electric motor (fig. 1, item 1) drives the hydraulic pump (3) by means of a V-belt which is under the belt cover (2). Hydraulic oil flows to the hydraulic motor (4) and then moves the piston up and down in the material feed pump (5).

The inlet valve is opened automatically by the upwards movement of the piston. The outlet valve is opened when the piston moves downward.

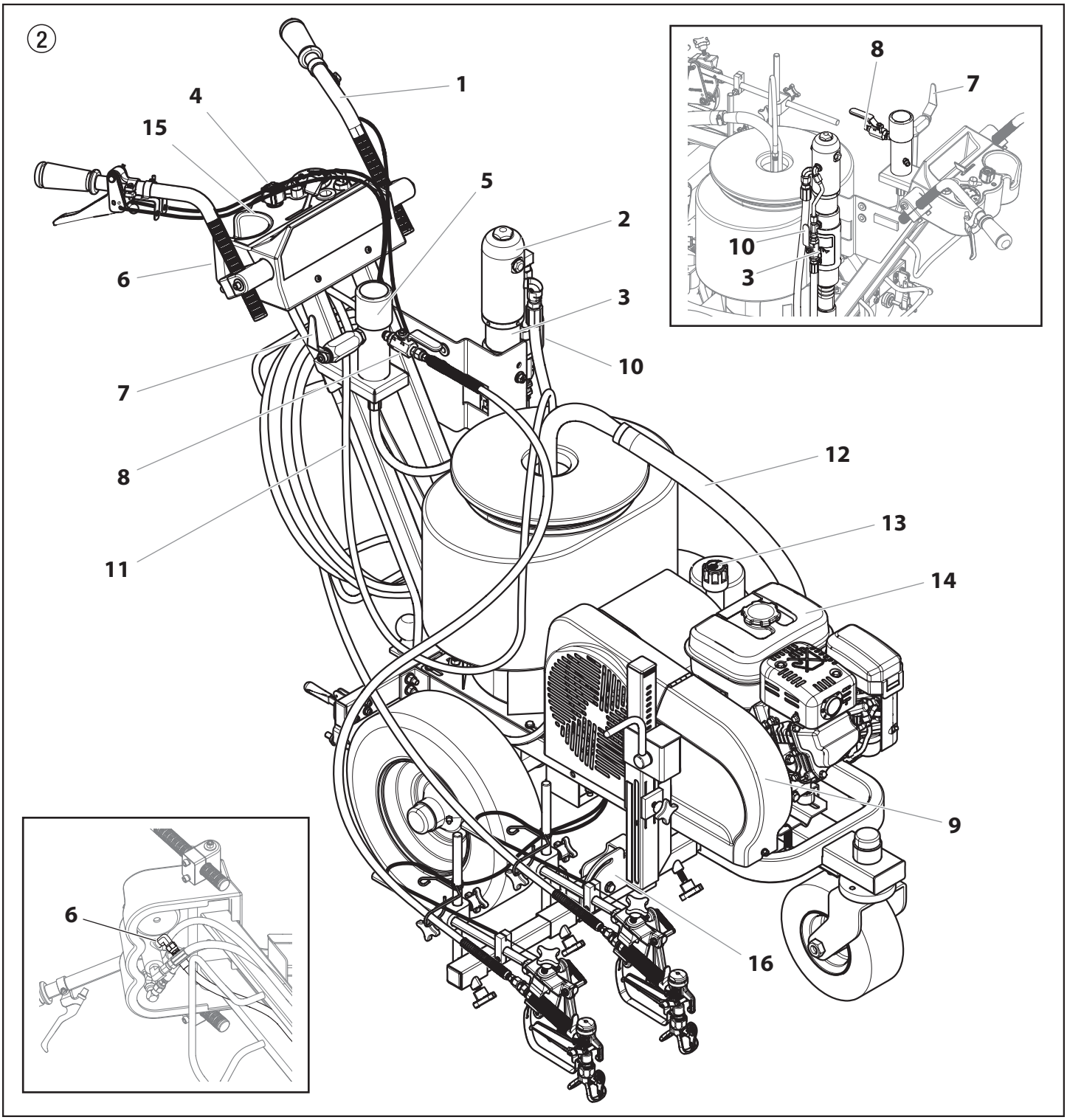
The coating material flows under high pressure through the high-pressure hose to the spray gun. When the coating material exits from the tip it atomizes.

The pressure control valve (6) controls the volume and the operating pressure of the coating material.



3.3 System diagram - gasoline PL units

1 Adjustable handle (2)
2 Hydraulic motor
3 Oil cup for Piston Lube (Piston Lube prevents increased wear and tear of the packings)
4 Pressure control knob
5 High-pressure filter
6 High-pressure hose outlet (first gun)
7 Relief valve handle: Turn left for circulation
Turn right for spray
8 High-pressure hose outlet (second gun)
9 V-belt under the belt cover
10 Ball valve: horizontal position – hydraulic motor switched off
vertical position – hydraulic motor switched on
11 Bleed hose
12 Suction tube
13 Oil measuring stick
14 Gasoline engine
15 PowrCenter™
16 SmartArm™



3.4 Technical data for PL units

		PL4955	PL6955	PL8955
Gasoline engine, power				
		118cc, 3.5 Hp	163cc, 4.8 Hp (electric start)	196cc, 5.5 Hp (electric start)
Fuel Capacity				
		0.53 US gal (2.0 l)	0.83 US gal (3.1 l)	0.83 US gal (3.1 l)
Max. operating pressure				
		22.7 MPa (227 bar, 3300 PSI)	22.7 MPa (227 bar, 3300 PSI)	22.7 MPa (227 bar, 3300 PSI)
Max. sound pressure level				
		92 dB (A)*	92 dB (A)*	98 dB (A)*
Max. size of tip with a spray gun				
	1-gun	0.034" – 0.86 mm	0.047" – 1.19 mm	0.054" – 1.37 mm
	2-gun	0.025" – 0.63 mm	0.031" – 0.79 mm	0.038" – 0.96 mm
Max. volume flow				
		1.25 gal (4.7 l)/min	2.10 gal (7.9 l)/min	2.5 gal (9.5 l)/min
Weight				
		324 lbs (147 kg)	334 lbs (151 kg)	339 lbs (154 kg)
Max. viscosity				
		50.000 mPa·s	50.000 mPa·s	65.000 mPa·s
Dimensions L x W x H				
		72" x 42" x 42" (183 cm x 107 cm x 107 cm)	72" x 42" x 42" (183 cm x 107 cm x 107 cm)	72" x 42" x 44" (183 cm x 107 cm x 112 cm)
Max. temperature of the coating material				
		109°F (43° C)	109°F (43° C)	109°F (43° C)
Filter insert (standard equipment)				
		50 mesh, 18 in^2	50 mesh, 18 in^2	50 mesh, 18 in^2
Hydraulic oil filling quantity				
		5.9 l (1.56 gal) CoolFlo	5.9 l (1.56 gal) CoolFlo	5.9 l (1.56 gal) CoolFlo
Max. tire pressure				
		0.2 MPa (2 bar, 30 PSI)	0.2 MPa (2 bar, 30 PSI)	0.2 MPa (2 bar, 30 PSI)
Special high-pressure hose				
		DN 6 mm, 15 m (50' x 1/4"), connection thread NPSM 1/4	DN 6 mm, 15 m (50' x 1/4"), connection thread NPSM 1/4	DN 6 mm, 15 m (50' x 1/4"), connection thread NPSM 1/4

* Place of measurement: 1 m distance from unit and 1.60 m above reverberant floor, 120 bar (12 MPa) operating pressure.

3.5 Instruction manuals list

The following is a list of the available instruction manuals for this unit.
Online items can be downloaded at **www.titantool.com**

Description	Form #	how to find
Operation Manuals		
GB/D/F	537859	• included with unit • online
E/I/P	537860	
NL/DK/S	537861	
RU/RFB	537862	
CN	537863	

Service manual, Spare Parts		
GB/D/F	2429900	• online
E/I/P	2429901	
NL/DK/S	2429902	
RU/RFB	2429903	
CN	2429904	
Operation / Service Manual, S-3 Spray Gun		
All languages	313-2440	• included with unit • online

4. 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.

4.1 Filling the Battery (PL6955 / PL8955)

Due to shipping regulations, the battery in your PowrLiner has been shipped to you empty. Before using the PowrLiner, the battery must be filled with electrolyte (acid) and then charged. Follow the instructions below.

Battery electrolyte can be purchased at your local hardware or auto parts retailer.

Battery electrolyte is very hazardous. Make sure to follow all precautions and warnings on the electrolyte container.

Electrolyte specifications

In cool or temperate climates, purchase electrolyte with a specific gravity of 1.270 - 1.280.

In tropical climantes, purchase electrolyte with a specific gravity of 1.250 - 1.260.

Fill the battery

1. Remove the battery from the cart.
   a. Remove the 12 gallon hopper from the cart.
   b. Unscrew and remove the four (4) screws and washers that secure the hopper plate to the cart. The top of the battery should now be exposed.
2. Remove rubber sealing cap from the exhaust opening on the side of the battery.
3. Replace the rubber sealing cap with the exhaust tube provided (this can be found in the plastic bag containing the instruction manual and other literature).
4. Remove the six (6) yellow filling caps on top of the battery.
5. Fill the battery with electrolyte in each of the filling ports (see "Electrolyte specifications", above). Fill the battery to the upper level as indicated on the battery case.

Attention

The electrolyte temperature must not be lower than 60º F (15º C) or higher than 86º F (30º C).

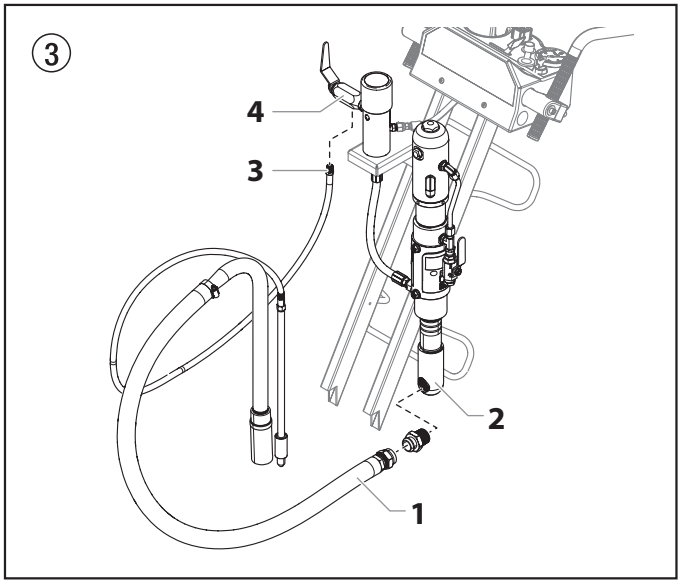
6. Allow the battery to stand for at least 30 minutes after filling.
7. After 30 minutes, check electrolyte level. If the level has fallen, refill to the upper level prior to charging.
8. Replace the yellow filling caps.
9. Replace the hopper plate back onto the cart and secure using the four (4) screws and washers.

Charge the battery

1. Place the battery on a charge for 3 to 5 hours at the approximate current equivalent to 1/10th of its rated capacity.
   a. If electrolyte level falls after charging, fill with distilled water to upper level.
   b. After water is added, continue charging for 1 to 2 hours in order to mix the water with the electrolyte.
2. After charging, check the battery voltage three times at 30 minute intervals. Make sure the voltage is constant over the three readings.
3. Replace the filler plugs (if needed) and wash off any electrolyte spillage with clean water.

4.2 Setup

1. Make sure the siphon hose (fig. 3, item 1) is connected to the fluid section (2) and the bleed hose (3) is connected to the bleed valve (4).

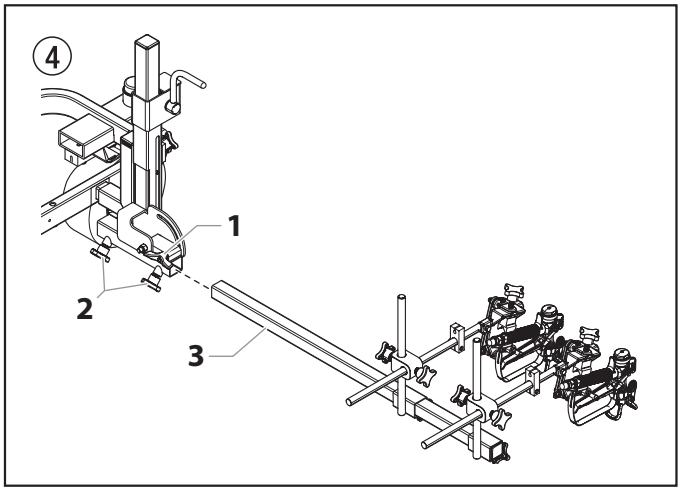


2. Install the gun support bar.

The spray gun, hose, and cables are mounted to the gun support bar at the factory.

   a. Loosen the tilt clamp knob (fig. 4, item 1) and lower the gun support bar into position.
   b. Loosen the support bar clamps (2) on each side of the cart.
   c. Slide the gun support bar (3) through the cart.
   d. Tighten the support bar clamps (2) to secure the gun support bar in position.

The support bar height will need to be lower than the cart frame to allow it to slide through the cart.



The gun support bar and the spray gun(s) can be mounted on either side of the sprayer.

3. Position the first spray gun.
   a. Disengage the trigger cable from the tensioning clamp.

Attention **Always disengage the trigger cable from the tensioning clamp before making any adjustments to the spray gun position.**

b. Loosen the support bar clamps and slide the gun support bar to the desired horizontal position.

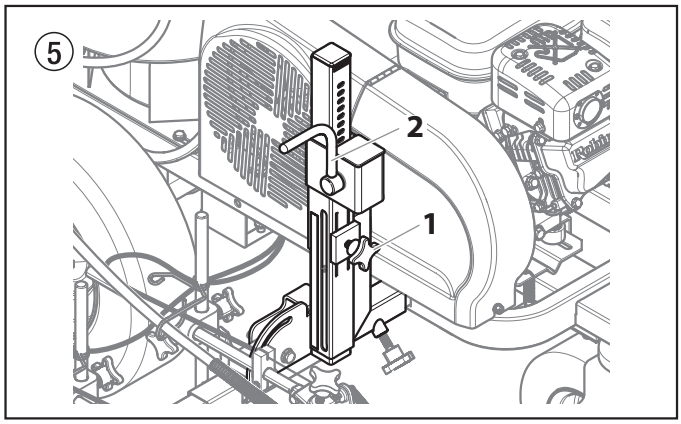
c. Loosen the gun riser clamp and slide the spray gun to the desired vertical position.

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.

4. Repeat steps 3a through 3c for the second spray gun.

It is recommended that both spray guns be installed at the same height as a starting point. The gun heights can be adjusted individually based on spraying needs (i.e. spraying a curb or spraying two lines of different widths).

5. Once both guns are installed, their vertical position can be adjusted simultaneously.
   a. Loosen the vertical support clamp knob (fig. 5, item 1) on the riser.
   b. Turn the crank (2) to adjust the overall height of the spray guns.
   c. Once at desired height, re-tighten the vertical support clamp knob (1).



6. Set the trigger selector for proper spray gun operation (fig. 6). The right handlebar triggers the gun or guns. The selector on the trigger must be set for the first gun, both guns, or the second gun .

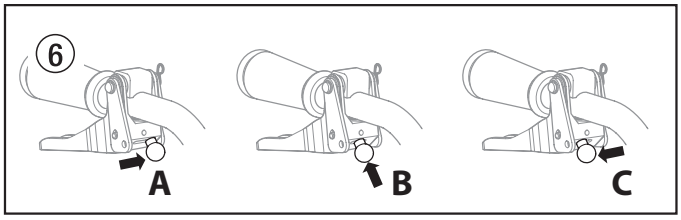
Attention **Always turn the trigger lock on the spray gun to the locked position before making any adjustments to the trigger selector. Also, release the trigger cable from its block by lifting the cable up and out of the block. There will be a brief triggering of the gun while releasing the trigger cable.**

If lift/tilt assembly has excessive friction during operation, spray the tubes with dry graphite lubricant.

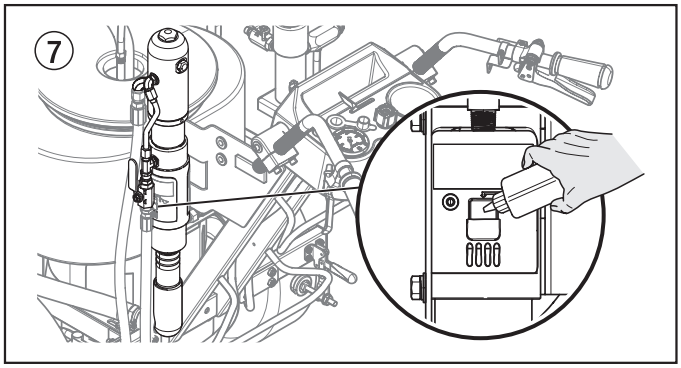
a. **First Gun** — The first gun position is with the selector in the left position. Push the lever toward the inside of the frame until the pin engages the left plate.

b. **Both Guns** — The dual gun position is with the selector in the center position. Push the lever toward the center position until the pin engages both plates. The pin must engage both plates.

c. **Second Gun** — The second gun position is with the selector in the right position. Push the lever away from the inside of the frame until the pin engages the right plate.



7. Fill the oil cup 1/2 full with Piston Lube (P/N 314-480). This extends packing life.



Attention **Piston Lube prevents increased wear and tear to the packings.**

8. Check the hydraulic fluid level daily before starting the sprayer. The hydraulic fluid level should be at the "Full" mark on the dipstick. Refer to the Maintenance section of this manual for hydraulic system maintenance instructions.

Attention **Use of Titan's Coolflo™ Hydraulic Fluid (P/N 430-361) 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.**

9. For gas models, check the engine oil level daily before starting the sprayer. The gasoline engine oil level is determined by the engine manufacturer. Refer to the engine manufacturer's service manual supplied with this sprayer.

10. For electric models, use a 20 amp service outlet. Always locate the electric model within 10 to 15 feet of the service outlet. Use a short electric cable and a long paint hose. Any extension cord will create some voltage drop. If an extension cord is necessary, use only a grounded 3-wire #12 extension cord.

Electric models only - Do not use materials with a flashpoint below 38° C (100° F). Flashpoint is the temperature at which a fluid can produce enough vapors to ignite.

11. Make sure the sprayer is grounded/earthed. All sprayers are equipped with an grounding/earthing chain. Make sure the chain reaches all the way to the ground. Check your local electrical regulations for detailed grounding/earthing instructions.

Proper grounding/earthing is important. This applies to both gas and electric powered models. The passage of some materials through the nylon fluid hose will build up a static electric charge, which if discharged, could ignite solvent vapors present and create an explosion.

12. Strain all paints with a nylon strainer to ensure trouble free operation and freedom from frequent cleaning of the inlet screen and gun filter.

13. Make sure the spray area is well ventilated to prevent hazardous operation with volatile solvents or exhaust fumes.

4.3 Preparing a New Sprayer

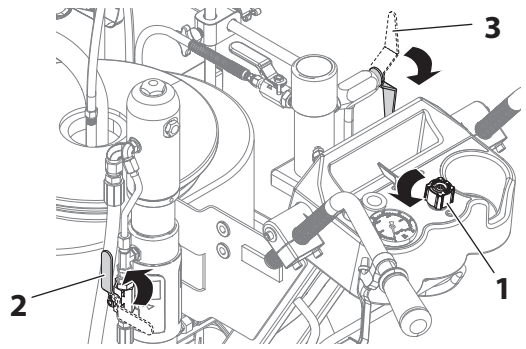
If this unit is new, it is shipped with test fluid in the fluid section to prevent corrosion during shipment and storage. This fluid must be thoroughly cleaned out of the system with mineral spirits before you begin spraying.

Attention

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 mineral spirits.
2. Place the bleed hose into a metal waste container.
3. Turn the pressure control knob fully counterclockwise to its lowest pressure setting (fig 8, 1).
4. Open the hydraulic shut-off valve (2) located on the hydraulic pressure hose. The handle should be in line with the hose.
5. Open the bleed valve (3) by turning it fully counterclockwise.

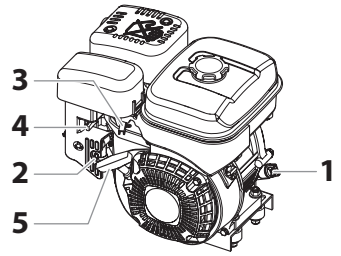
8



6. Start the engine or turn on the electric motor.
   a. To start the gas engine (fig. 9),
   - move the fuel valve lever (2) to the open position,
   - move the throttle lever (3) to its middle point,
   - move the choke lever (4) to the closed position for a cold engine or to the open position for a warm engine,
   - turn the engine switch (1) to the ON position, and
   - pull the starter rope (5) briskly until the engine starts or turn and hold the electric starter key towards “Start” until the engine starts (PL6955/PL8955 only)

   b. To start the electric motor, move the ON/OFF switch to the ON position.

9



7. Turn the pressure control knob (fig. 8, 1) clockwise approximately 1/3 of the way down to increase pressure until the sprayer cycles evenly and solvent flows freely from the bleed hose.
8. Allow the sprayer to run for 15–30 seconds to flush the test fluid out through the bleed hose and into the waste container.
9. Turn off the sprayer.
   a. To turn off the gas engine,
   - set the pressure to minimum by turning the pressure control knob fully counterclockwise,
   - move the throttle lever to the slow position, and
   - turn the engine switch to the OFF position.

   b. To turn off the electric motor,
   - set the pressure to minimum by turning the pressure control knob fully counterclockwise,
   - move the ON/OFF switch to the OFF position.

4.4 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.

Incompatible fluids and paint may cause the valves to become stuck closed, which would require disassembly and cleaning of the sprayer’s fluid section.

Attention

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.

If you are spraying a water-based latex, flush with warm, clean water. If you are using any other material, check with the material manufacturer for a compatible solvent.

2. Place the bleed hose into a metal waste container.
3. Turn the pressure control knob fully counterclockwise to its lowest pressure setting (fig 8, 1).
4. Open the hydraulic shut-off valve (2) located on the hydraulic pressure hose. The handle should be in line with the hose.
5. Open the bleed valve (3) by turning it fully counterclockwise.
6. Start the engine or turn on the electric motor.
   a. To start the gas engine (fig. 9),
   - move the fuel valve lever (2) to the open position,
   - move the throttle lever (3) to its middle point,
   - move the choke lever (4) to the closed position for a cold engine or to the open position for a warm engine,
   - turn the engine switch (1) to the ON position, and
   - pull the starter rope (5) briskly until the engine starts or turn and hold the electric starter key towards “Start” until the engine starts (PL6955/PL8955 only)

   b. To start the electric motor, move the ON/OFF switch to the ON position.
7. Turn the pressure control knob (1) clockwise approximately 1/3 of the way down to increase pressure until the sprayer cycles evenly and solvent flows freely from the bleed hose.
8. Allow the sprayer to run for 15–30 seconds to flush the test fluid out through the bleed hose and into the waste container.
9. Turn off the sprayer.
   a. To turn off the gas engine,
   - set the pressure to minimum by turning the pressure control knob fully counterclockwise,
   - move the throttle lever to the slow position, and
   - turn the engine switch to the OFF position.

   b. To turn off the electric motor,
   - set the pressure to minimum by turning the pressure control knob fully counterclockwise,
   - move the ON/OFF switch to the OFF position.

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

10. Close the bleed valve by turning it fully clockwise.
11. Start the engine or turn on the electric motor.

12. Turn the pressure control knob clockwise approximately 1/3 of the way down to increase pressure.
13. Unlock the gun by turning the gun trigger lock to the unlocked position.

Earth the gun by holding it against the edge of the metal container while flushing. Failure to do so may lead to a static electric discharge, which may cause a fire.

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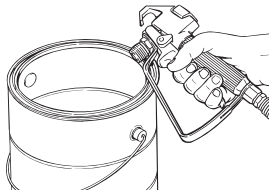

14. Trigger the gun into the metal waste container until the old solvent is gone and fresh solvent is coming out of the gun.
15. Lock the gun by turning the gun trigger lock to the locked position (fig 11).

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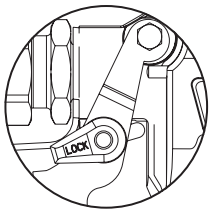


16. Set down the gun and increase the pressure by turning the pressure control knob slowly clockwise to its highest setting.
17. Check the entire system for leaks. If leaks occur, turn the sprayer off and follow the "Pressure Relief Procedure" in this manual before tightening any fittings or hoses.
18. Follow the "Pressure Relief Procedure" (section 4.6) 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.

4.5 Painting

1. Place the siphon hose into a container of paint.
2. Place the bleed hose into a metal waste container.
3. Turn the pressure control knob fully counterclockwise to its lowest pressure setting (fig 8, 1).
4. Open the hydraulic shut-off valve (2) located on the hydraulic pressure hose. The handle should be in line with the hose.
5. Open the bleed valve (3) by turning it fully counterclockwise.
6. Start the engine or turn on the electric motor.
   a. To start the gas engine (fig. 9),
   - move the fuel valve lever (2) to the open position,
   - move the throttle lever (3) to its middle point,
   - move the choke lever (4) to the closed position for a cold engine or to the open position for a warm engine,
   - turn the engine switch (1) to the ON position, and
   - pull the starter rope (5) briskly until the engine starts or turn and hold the electric starter key towards "Start" until the engine starts (PL6955/PL8955 only)

   b. To start the electric motor, move the ON/OFF switch to the ON position.
7. Turn the pressure control knob (1) clockwise approximately 1/3 of the way down to increase pressure until the sprayer cycles evenly and solvent flows freely from the bleed hose.
8. Turn off the sprayer.
   a. To turn off the gas engine,
   - set the pressure to minimum by turning the pressure control knob fully counterclockwise,
   - move the throttle lever to the slow position, and
   - turn the engine switch to the OFF position.

   b. To turn off the electric motor,
   - set the pressure to minimum by turning the pressure control knob fully counterclockwise,
   - move the ON/OFF switch to the OFF position.
9. Remove the bleed hose from the waste container and place it into the container of paint.
10. Close the bleed valve by turning it fully clockwise.
11. Start the engine or turn on the electric motor.
12. Turn the pressure control knob clockwise approximately 1/3 of the way down to increase pressure.
13. Unlock the gun by turning the gun trigger lock to the unlocked position.

Earth the gun by holding it against the edge of the metal container while flushing. Failure to do so may lead to a static electric discharge, which may cause a fire.

14. Trigger the gun into the metal waste container until all air and solvent is flushed from the spray hose and paint is flowing freely from the gun.
15. Lock the gun by turning the gun trigger lock to the locked position (fig 11).
16. Turn off the sprayer.
17. Attach tip guard and tip to the gun as instructed by the tip guard or tip manuals.

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.

18. Start the engine or turn on the electric motor.
19. Increase the pressure by turning the pressure control knob slowly clockwise and test the spray pattern on a piece of cardboard. Adjust the pressure control knob until the spray from the gun is completely atomized.

Turning the pressure up higher than needed to atomize the paint will cause premature tip wear and additional overspray.

4.6 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 nozzles, or preparing for cleanup.

1. Lock the spray gun by turning the gun trigger lock to the locked position.
2. Turn off the sprayer.
   a. To turn off the gas engine,
   - set the pressure to minimum by turning the pressure control knob fully counterclockwise,
   - move the throttle lever to the slow position, and
   - turn the engine switch to the OFF position.

   b. To turn off the electric motor,
   - set the pressure to minimum by turning the pressure control knob fully counterclockwise,
   - move the ON/OFF switch to the OFF position.
3. Close the hydraulic shut-off valve on the hydraulic pressure hose.
4. Unlock the gun by turning the gun trigger lock to the unlocked position.
5. Hold the metal part of the gun firmly to the side of a metal waste container to earth the gun and avoid a build up of static electricity.
6. Trigger the gun to remove any pressure that may still be in the hose.
7. Lock the gun by turning the gun trigger lock to the locked position.
8. Place the bleed hose into the metal waste container.
9. Open the bleed valve by turning it fully counterclockwise.

4.7 Operating the Front Caster

The front caster on the cart is designed to track the sprayer in either a straight line or allow free motion. Standing behind the sprayer, the trigger on the left handle of the cart controls the operation of the front caster.

1. To lock the front caster in the straight line position, squeeze then release the caster trigger and move the sprayer forward.
2. To allow free motion of the front caster, squeeze and hold the caster trigger.

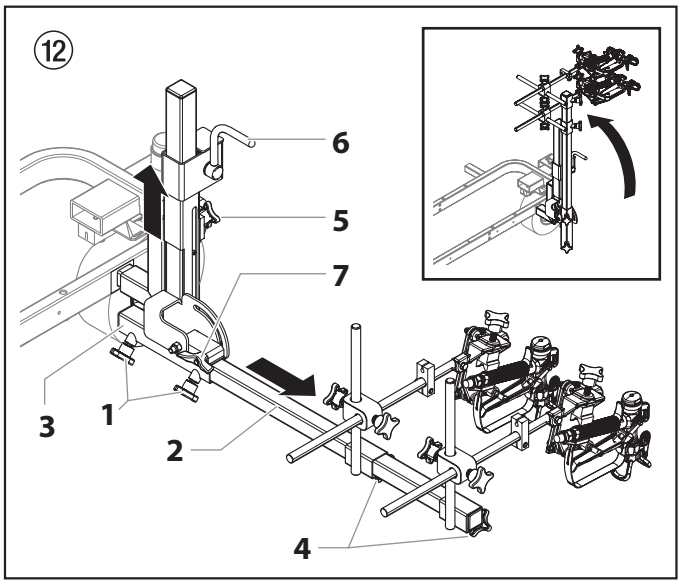
4.8 Folding the Spray Gun Support Bar

The spray gun support bar can be lifted vertically in order to make the sprayer smaller for storage. The spray guns or spray hoses do not need to be removed. Follow the steps below.

1. Loosen the support bar clamps (fig. 12, 1). Pull the support bar (2), with gun holder assemblies and spray guns still attached, away from the cart as far as it will go without being completely removed.

The support bar needs to remain completely within the tilt sleeve (3) so that both support bar clamps can re-engage.

2. Tighten the support bar clamps (1). Both clamps need to be engaged into the support bar (2).
3. Loosen the spray gun holder clamps (4) and slide both spray guns as far to the end of the support bar as they can go.
4. Loosen the vertical support clamp knob (5) on the riser. Turn the crank (6) so that the entire support bar assembly is raised as far as it will go. Tighten the vertical support clamp knob (5).



5. Loosen the tilt knob (7). Carefully raise the support bar to a vertical position.

Attention

Pinch hazard. Make sure keep fingers away from all moving parts. Make sure no hoses or cables get pinched in any moving parts.

6. Tighten the tilt knob (7) to secure in place.