Form No. 3352-319 Rev. C

Toro Line Painter 1200

Model No. 42004—250000001 and Up

Operator's Manual

Register your product at www.Toro.com

Original Instructions (EN,GB)

Warning

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

Important The engine in this product is not equipped with a spark arrester muffler. It is a violation of California Public Resource Code Section 4442 to use or operate this engine on any forest-covered, brush-covered, or grass-covered land as defined in CPRC 4126. Other states or federal areas may have similar laws.

This spark ignition system complies with Canadian ICES-002.

Ce système d'allumage par étincelle de véhicule est conforme à la norme NMB-002 du Canada.

The enclosed Engine Owner's Manual is supplied for information regarding The U.S. Environmental Protection Agency (EPA) and the California Emission Control Regulation of emission systems, maintenance and warranty.

Keep this engine Owner's Manual with your unit. Should this engine Owner's Manual become damaged or illegible, replace immediately. Replacements may be ordered through the engine manufacturer.

Contents

8111 Lyndale Avenue South
Bloomington, MN 55420-1196

Introduction

Read this manual carefully to learn how to operate and maintain your product properly. The information in this manual can help you and others avoid injury and product damage. Although Toro designs and produces safe products, you are responsible for operating the product properly and safely.

You may contact Toro directly at www.Toro.com for product and accessory information, help finding a distributor, or to register your product.

Whenever you need service, genuine Toro parts, or additional information, contact an Authorized Service Distributor or Toro Customer Service and have the model and serial numbers of your product ready. Figure 1 illustrates the location of the model and serial numbers on the product.

Figure 1

1. Model and serial number

Write the product model and serial numbers in the space below:

Model No. _____

Serial No. _____

This manual identifies potential hazards and has special safety messages that help you and others avoid personal injury and even death. ***Danger***, ***Warning***, and ***Caution*** are signal words used to identify the level of hazard. However, regardless of the hazard, be extremely careful.

Danger signals an extreme hazard that **will** cause serious injury or death if you do not follow the recommended precautions.

Warning signals a hazard that **may** cause serious injury or death if you do not follow the recommended precautions.

Caution signals a hazard that may cause minor or moderate injury if you do not follow the recommended precautions.

This manual uses 2 other words to highlight information. **Important** calls attention to special mechanical information and **Note:** emphasizes general information worthy of special attention.

Safety

Toro designed and tested this machine to offer reasonably safe service; however, **failure to comply with the following instructions may result in personal injury.**

Warning

Engine exhaust contains carbon monoxide, an odorless, deadly poison that can kill you.

Do not run the engine indoors or in an enclosed area.

To ensure maximum safety, best performance, and to gain knowledge of the product, it is essential that you and any other operator of the machine read and understand the contents of this manual before the engine is ever started.

⚠ This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

Improperly using or maintaining this machine can result in injury. To reduce the potential for injury, comply with these safety instructions.

General Safety

Failure to observe the following safety instructions could result in serious injury.

Training

- Read this operator's manual carefully. Be thoroughly familiar with the controls and the proper use of the machine before starting it.
- Never allow children or people unfamiliar with these instructions to use or service the machine. Local regulations may restrict the age of the operator.

- Never allow adults unfamiliar with these instructions to operate the machine.
- Never operate the machine while people (especially children) or pets are nearby. Stop the machine if anyone enters the area.
- Keep children out of the painting area and under the watchful care of a responsible adult.
- Be alert and turn the machine off if children enter the area.
- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.
- See the manufacturer's instructions for proper operation and installation of accessories. Use only the accessories that are approved by the manufacturer.

Preparation

- Thoroughly inspect the area where you will use the machine and remove all foreign objects.
- Do not operate the machine when barefoot or wearing open sandals.
- Always wear safety goggles or safety glasses with side shields when operating the machine.
- Warning: Gasoline is highly flammable. Take the following precautions:
  - Store fuel in containers specifically designed for this purpose.
  - Refuel outdoors only and do not smoke while refuelling.
  - Add fuel before starting the engine. Never remove the cap of the fuel tank or add gasoline while the engine is running or when the engine is hot.
  - If gasoline is spilled, do not attempt to start the engine. Move the machine away from the area of spillage to avoid creating any source of ignition until the gasoline vapors have dissipated.
  - Replace all fuel tank and container caps securely.
  - If you must drain the fuel from the fuel tank, do it outdoors.
- Replace faulty mufflers.
- Warning: Some types of paint fumes can explode or ignite causing property damage or severe injury. Also, paint fumes may be harmful if inhaled. Take the following precautions:
  - Comply with all appropriate local, state and national codes governing ventilation, fire prevention and operation.
  - Use the line painter only in a well ventilated area.
  - Use a respirator or mask if there is a chance fumes may be inhaled. Read the instructions provided with the mask to insure proper protection is provided.
  - Do not use oil based paints. Use only latex based paint products.
  - Do not use lacquers, lacquer thinners, acetones or any other solvents.
  - Clean the machine with soap and water only.

Operation

- Do not operate the machine in a confined space where dangerous carbon monoxide fumes can collect.
- Paint only in daylight or in good artificial light.
- Always be sure of your footing on slopes.
- Walk; never run.
- Keep a firm hold on the handles.
- Exercise extreme caution when changing the direction on slopes.
- Do not paint on excessively steep slopes.
- Use caution when reversing or pulling the machine toward you.
- Never operate the machine with damaged or missing guards or shields, or without safety devices in place.
- Do not change the speed settings on the engine.
- Start the engine according to the instructions.
- Never pick up or carry a machine while the engine is running.
- Stop the engine and disconnect the spark-plug wire:
  - before clearing blockages;
  - before checking, cleaning, or working on the machine;
  - after striking a foreign object. Inspect the machine for damage and make repairs before starting and operating the machine; and
  - if the machine starts to vibrate abnormally (check it immediately).
- Stop the engine:
  - whenever you leave the machine; and
  - before refuelling.
- Do not operate the machine while under the influence of alcohol or drugs.

- If the machine should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.

Slopes are a major factor related to slip and fall accidents which can result in a severe injury. If you feel uneasy on a slope, do not paint it.

- Watch for holes, ruts, or bumps. Tall grass can hide obstacles.
- Do not paint near drop-offs, ditches, or embankments. You could lose your footing or balance.
- Do not use on wet surfaces. Reduced footing could cause slipping.

Maintenance and Storage

- Keep all nuts, bolts, and screws tight to ensure that the machine is in safe working condition.
- Never store the machine with gasoline in the tank inside a building where fumes may reach an open flame or spark.
- Allow the engine to cool before storing the machine in any enclosure.
- To reduce the fire hazard, keep the engine, muffler and gasoline storage area free of grass, leaves, or excessive grease.
- Replace worn or damaged parts.
- Use extra care when handling gasoline; gasoline vapors are explosive.
- Never tamper with safety devices. Check their proper operation regularly.
- Keep the machine free of grass, leaves, or other debris buildup. Clean up any oil or fuel that spills.
- Stop and inspect the machine if you strike an object. Repair the machine, if necessary, before starting the engine.
- Do not change the speed settings on the engine.
- If you must drain the fuel from the fuel tank, do it outdoors.
- To ensure the best performance and safety, purchase only genuine Toro replacement parts and accessories.
- Maintain or replace safety and instruction decals when necessary.

Sound Pressure Level

This unit has an equivalent continuous A-weighted sound pressure at the operator ear of: 78 dB(A), based on measurements of identical machines per procedures outlined in Directive 98/37/EC and amendments.

Sound Power Level

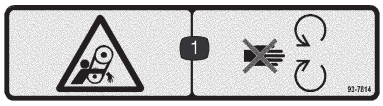
This unit has a guaranteed sound power level of: 96 dBA/1 pW, based on measurements of identical machines per Directive 2000/14/EC and amendments.

Vibration Level

This unit has a hand–arm vibration level of 3.00 $m/s^{2,}$ based on measurements of identical machines per ISO 5349 procedures.

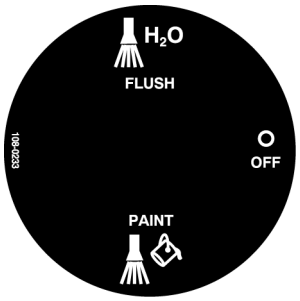
Safety and Instruction Decals

Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or lost.

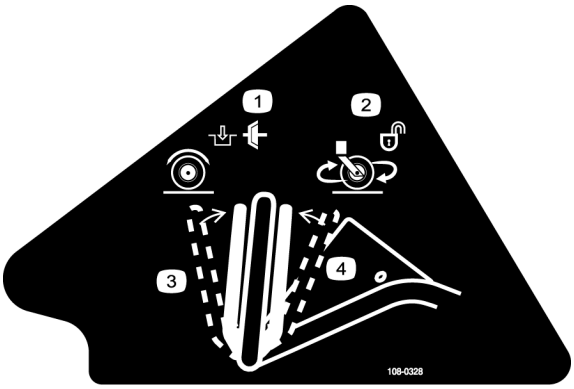


93-7814

1. Entanglement hazard, belt—stay away from moving parts.

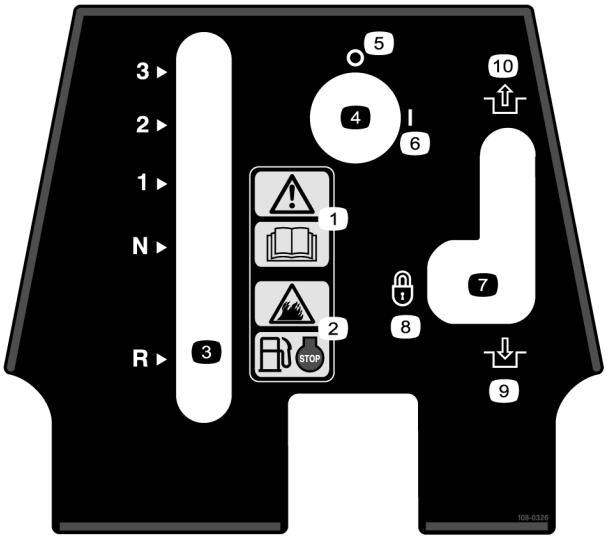


108-0233



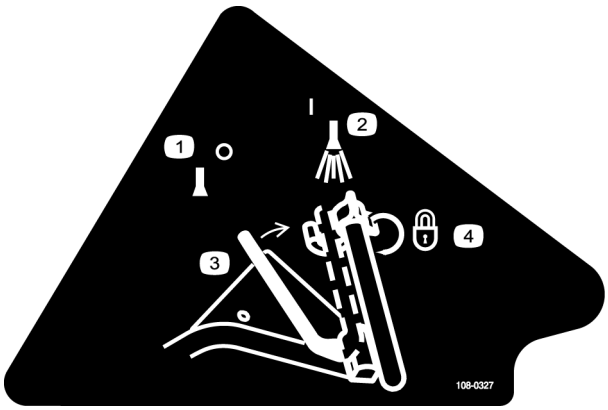
108-0328

1. Traction drive—Engaged
2. Front castor wheel—Unlock
3. Move the rear lever forward to engage the traction drive.
4. Move the forward lever rearward to Unlock the front castor wheel.



108-0326

1. Warning—read the *Operator's Manual.*
2. Fire hazard—stop the engine before fueling.
3. Gear selector
4. On/Off switch
5. Off
6. On
7. Service/Parking brake
8. Locked
9. Engaged
10. Disengaged



108-0327

1. Spray nozzle—Off
2. Spray nozzle—On
3. Move the lever rearward to engage spray nozzle.
4. Turn the lock lever to lock spray nozzle in the On position.

Specifications

Note: Specifications and design subject to change without notice.

General Specifications

Engine	Kawasaki, 6 hp (4.5 kW), 180 cc, dual–element air cleaner. 1 gallon (3.8 l) fuel tank.
Transaxle	3–speed gear–drive with neutral and reverse.
Wheels	Front: 10 x 3.5” (25.4 x 8.9 cm), pneumatic: Rear: 13.5 x 5” @34.3 x 12.7 cm), pneumatic. Pressure: 12–15 psi rear tires and 18–20 psi in front castor wheel.
Frame	Welded sheet steel and tube construction, integral trailer tie–downs.
Controls/Gauges	On/off ignition key switch, 3–speed transaxle shift lever with neutral and reverse, traction drive lever. spray on/off lever, flush/paint lever, parking brake lever, caster unlock lever.
Walking Speeds	1st gear: 1 mph (1.6 km/h); 2nd gear: 2.2 mph (3.5 km/h); 3rd gear, transport: 4 mph (6.4 km/h); Reverse: 1 mph (1.6 km/h).
Ground Pressure	Less than 15 psi (1.0 bar).
Flush System	Express Clean System.
Pump	Belt–driven five chamber diaphragm with welded diaphragm reinforcing shield. Flow: 4.5 gpm (I7 liters/min) free–flow, 4 gpm (15 liters/min) @ 30 psi (2.1 bar). Operating pressure range: 20–40 psi (1.4–2.8 bar), 55 psi (3.8 bar) full bypass. Excess spray flow returns to tank for paint agitation.
Nozzle	Double fan pattern, 2–6” (5.1–15.2 cm) wide.
Paint Pre–Mix	Dilute with water to suit the application.
Fresh Water Rinse	On board system, tank capacity: 2 gallons (7.6 liters). Capable of 4 rinse cycles per fill/tank.
Paint Tank	Roto–molded polyethylene construction, 12 gallon (45 liter) Capacity, 18 mesh strainer basket, drain valve located high enough to discharge into a standard 5 gallon (19 l) pail.
Attachments/Accessories	On–board storage container, selection of spray nozzles.

Measurements

Length (including handles)	64 in. (162.6 cm)
Width (outside wheels) (including spray head)	29 in. (73.7 cm) 36 in. (91.4 cm)
Height	46 in. (116.8 cm)
Wheelbase	22 in. (55.9 cm)
Weight (dry)	240 lb. (108.9 kg)

Optional Equipment

Hand Wand Kit	Model No. 42047
Pressure Gauge Kit	Part No. 107–0572
Hour Meter Kit	Part No. 107–0571
Nozzle–Twin Jet, 6508	Part No. 108–0130
Nozzle–Twin Jet, 6506	Part No. 108–0132
Nozzle–Twin Jet, 8008	Part No. 108–0131
*Cap Assembly, Single Fan Nozzle	Part No. 107–0524
Nozzle–Single Fan, TP 6504E	Part No. 107–0523
Nozzle–Single Fan, TP 6504	Part No. 107–0555
Nozzle–Single Fan, TP 6506	Part No. 107–0556
Nozzle–Single Fan, TP 8004	Part No. 107–0557

* Required for use of single fan nozzles such as 107–0523, 107–0555, 107–0556 or 107–0557.

Setup

Note: Determine the left and right sides of the machine from the normal operating position.

Note: Use this chart as a checklist to ensure that all parts necessary for assembly have been received. Without these parts, total set-up cannot be completed. Some parts may have already been assembled at the factory.

Description	Qty.	Use
Bolt Nut Washer Hairpin cotter	4 2 2 1	Install the handle and shift rod to the machine
Spray boom w/ mounting pin	1	Install the spray boom
Line Guide	1	Install the line guide
Filter wrench	1	In tool box
Nozzle	1	In tool box
Operator's Manual	1	Read before operating machine
Engine Manual	1	
Parts Catalog	1	
Operator Video	1	View before operating machine

Install the Handle and Shift Rod

1. Remove the hairpin cotter, washer and cable tie securing the shift rod for shipping (Fig. 2). Retain hairpin cotter and washer for installation of the shift rod.
2. Remove the (2) bolts, spacers and nuts securing the handle to the tank support (Fig. 2). Discard the bolts, spacers and nuts.

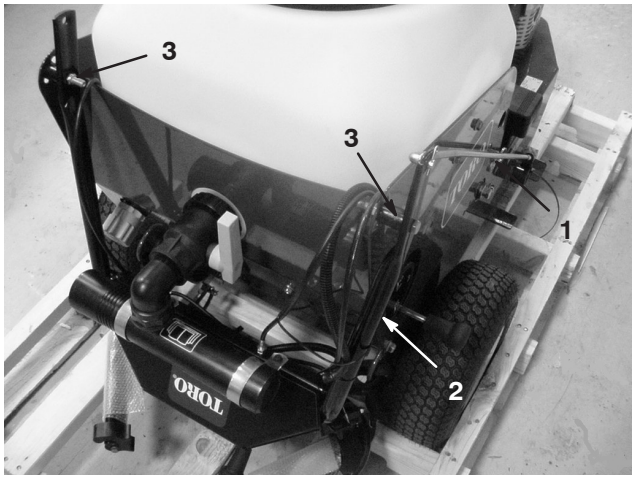


Figure 2

1. Shift rod
2. Handle
3. Bolt, spacer & nut (2)

3. Using the lower set of holes, loosely mount the handle to the tank support with (2) bolts (Fig. 3).

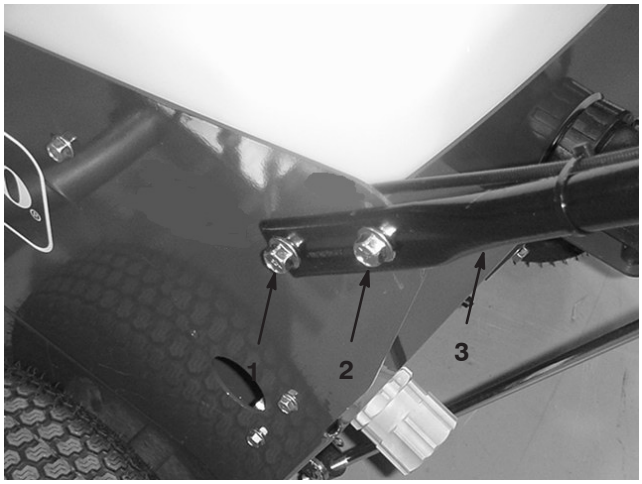


Figure 3

1. Lower mounting hole
2. Upper mounting hole
3. Handle

4. Select one of the upper mounting holes, position the handle at the desired operating position and secure the handle to the tank support with (2) bolts and nuts (Fig. 3).
5. Insert the upper end of the shift rod into the hole in the shift linkage (Fig. 4). Secure the rod end to the linkage with the washer and hairpin cotter previously removed.

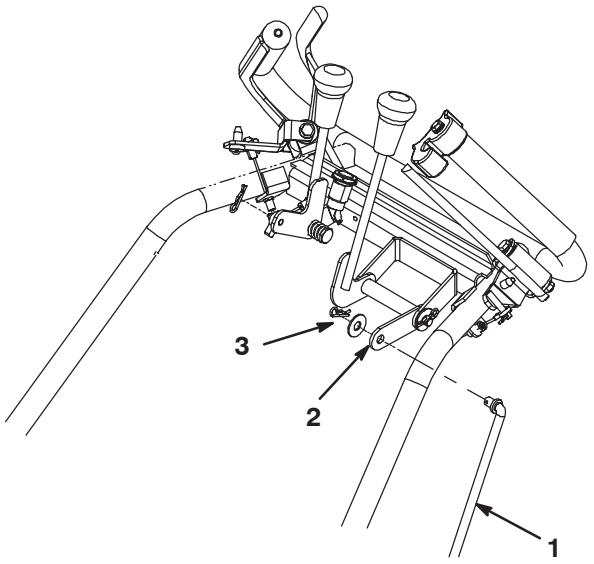


Figure 4

1. Shift rod
2. Shift linkage
3. Washer & hairpin cotter

6. Insert the rod fitting onto the shifter bell crank shaft and secure with a washer and a hairpin cotter (Fig. 5).

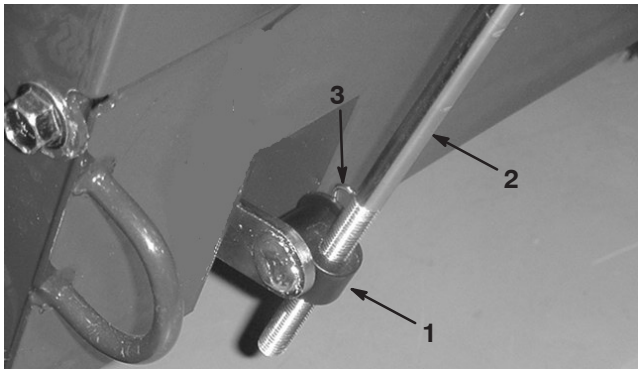


Figure 5

1. Rod fitting
2. Shift rod
3. Washer & hairpin cotter

7. Tighten the bolts and nuts.
8. The rod should be adjusted so the machine shifts smoothly into all gears. Adjust the rod fitting, up or down, as required.
9. Tighten the handle cable ties and cut off excess.

Install the Spray Boom

1. Slide the spray boom onto the mounting tube and secure with the mounting pin (Fig. 6). The spray boom may be installed on either side of the machine and pivoted to the front or rear.

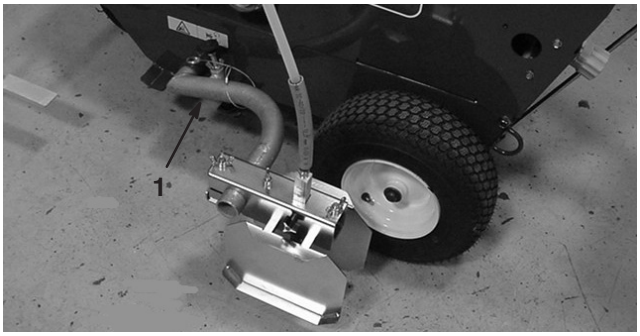


Figure 6

1. Spray boom

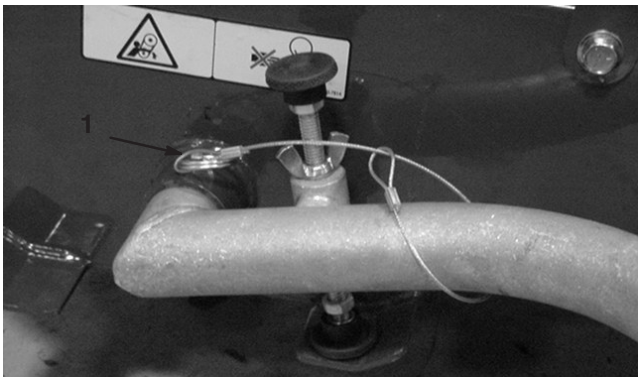


Figure 7

1. Mounting pin

Install the Line Guide

Insert the line guide (Fig. 8) into the tube and tighten the adjusting knobs.

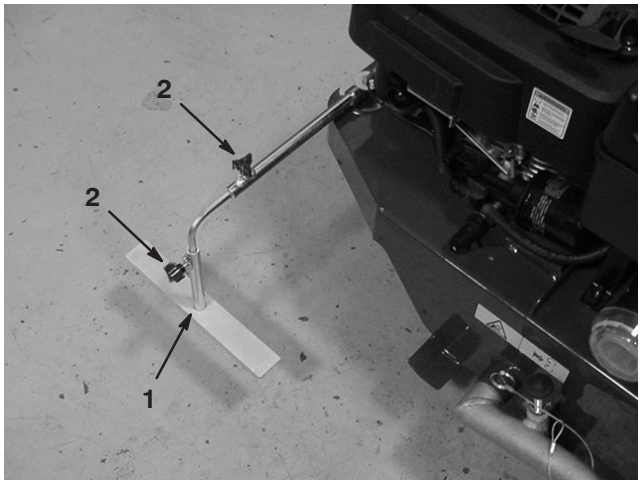


Figure 8

1. Line guide
2. Adjusting knobs

Before Operating

Note: Determine the left and right sides of the machine from the normal operating position.

Checking the Engine Oil

The engine is shipped with oil in the crankcase. However, check level of oil before and after the engine is first started.

Oil Capacity	
With Oil Filter	.89 qt.
Without Oil Filter	.69 qt.

The engine uses any high quality SAE 30 weight detergent oil having the American Petroleum Institute (API) service classification SF, SG, SH, SJ or higher.

Toro Premium Engine oil is available from your distributor.

1. Move the line painter to a level surface.
2. Clean the area around the dipstick (Fig. 9).
3. Remove the dipstick by rotating the cap counterclockwise and pulling it out.
4. Wipe the dipstick clean with a clean cloth.
5. Insert the dipstick into the filler neck (but **do not rotate the cap clockwise to secure it**), then remove it.

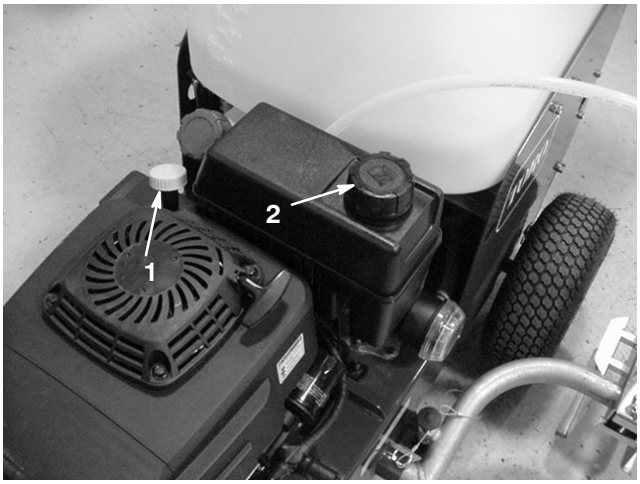


Figure 9

1. Dipstick
2. Fuel tank cap

6. Read the oil level on the dipstick (Fig. 10).

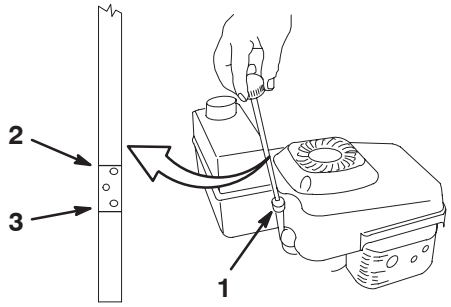


Figure 10

1. Dipstick
2. Full
3. Add

7. If the oil level reading is below the Add mark on the dipstick, **slowly** pour only enough oil into the filler hole to raise the oil level to the Full mark on the dipstick.

Important Do not overfill the crankcase with oil and run the engine; engine damage will result. Drain the excess oil until the oil level on the dipstick reads Full.

Note: When the crankcase is empty, pour about 3/4 of the crankcase capacity of oil in the crankcase, then follow the procedure in this section.

8. Insert the dipstick into the filler neck and rotate the cap clockwise until it is tight.

Before each use, ensure that the oil level is between the Add and Full marks on the dipstick (Fig. 10).

Filling the Fuel Tank with Gasoline

For best results, use clean, fresh, lead-free gasoline with an octane rating of 87 or higher. To ensure freshness, purchase only the quantity of gasoline that you expect to use in 30 days. Using unleaded gasoline results in fewer combustion deposits and longer engine life. You may use leaded gasoline if unleaded gasoline is not available.

Important Do not add oil to the gasoline.

Important Do not use methanol, gasoline containing methanol, gasohol containing more than 10% ethanol, premium gasoline, or white gas. Using these fuels can damage the engine's fuel system.

Important Do not use gasoline that has been stored longer than one season.

Danger

In certain conditions, gasoline is extremely flammable and highly explosive. A fire or explosion from gasoline can burn you and others and can damage property.

- **Fill the fuel tank outdoors, in an open area, and when the engine is cold. Wipe up any gasoline that spills.**
- **Do not fill the fuel tank completely full. Add gasoline to the fuel tank until the level is 1/4 to 1/2 in. (6 to 13 mm) below the bottom of the filler neck. This empty space in the tank allows the gasoline to expand.**
- **Never smoke when handling gasoline, and stay away from an open flame or where a spark may ignite the gasoline fumes.**
- **Store gasoline in an approved fuel container and keep it out of the reach of children.**
- **Never buy more than a 30-day supply of gasoline.**

Danger

When fueling, under certain circumstances, a static charge can develop, igniting the gasoline. A fire or explosion from gasoline can burn you and others and damage property.

- **Always place gasoline containers on the ground and away from your vehicle before filling.**
- **Do not fill gasoline containers inside a vehicle or on a truck or trailer bed because interior carpets or plastic truck bed liners may insulate the container and slow the loss of any static charge.**
- **When practical, remove gasoline-powered equipment from the truck or trailer and refuel the equipment with its wheels on the round.**
- **If this is not possible, then refuel such equipment on a truck or trailer from a portable container, not from a gasoline dispenser nozzle.**
- **If you must use a gasoline dispenser nozzle, keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete.**

Use a fuel stabilizer/conditioner regularly during operation and storage. A stabilizer/conditioner cleans the engine during operation and prevents gum-like varnish deposits from forming in the engine during periods of storage.

Important Do not use fuel additives other than a fuel stabilizer/conditioner. Do not use fuel stabilizers with an alcohol base such as ethanol, methanol, or isopropanol.

1. Clean around the fuel tank cap (Fig. 9).
2. Remove the cap from the tank.
3. Fill the fuel tank with unleaded gasoline to within 1/4 to 1/2 inch (6 to 13 mm) from the top of the tank. **Do not fill into the filler neck because the gasoline must have room to expand.**
4. Install the fuel tank cap and wipe up any spilled gasoline.

Check the Tire Pressure

Check the pressure of the tires because they are over-inflated at the factory for shipping. Maintain the air pressure in the tires as specified. Check the pressure at the valve stem after every 50 operating hours or monthly, whichever occurs first (Fig. 11). Check the tires when they are cold to get the most accurate pressure reading.

Pressure: 12–15 psi rear tires and 18–20 psi in front castor wheel.

Figure 11

1. Valve stem

Operation

Note: Determine the left and right sides of the machine from the normal operating position.

Controls

Become familiar with all the controls before you start the engine and operate the line painter.

Speed Selector Lever

The speed selector has three speeds forward and one reverse speed. To select speeds, move speed selector to desired position. (Fig. 12).

Note: Before shifting gears into or out of reverse, the traction control lever must be released. On–the–go shifting may be accomplished between any of the **FORWARD** speeds without releasing the traction control lever.

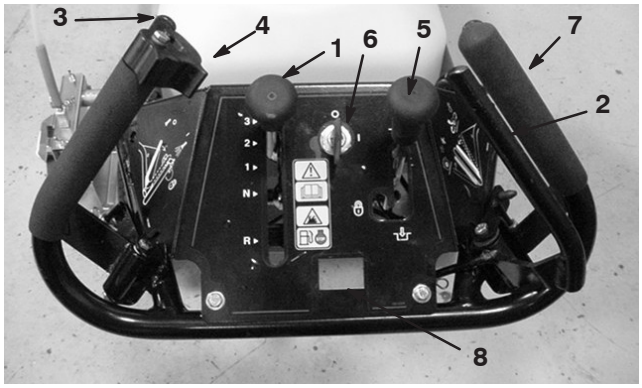


Figure 12

1. Speed selector lever
2. Traction lever
3. Paint control lever
4. Paint control lever latch
5. Parking brake
6. Ignition switch
7. Castor release lever (In front of right hand grip)
8. Optional hour meter location

Traction Lever

To engage the traction drive, the lever must be pushed forward against the right handgrip (Fig. 12). To stop traction, release the lever.

Slowly squeeze the lever for gradual acceleration.

Paint Control Lever

Squeeze the lever against the left hand grip to start the paint operation (Fig. 12). To stop the paint operation, release the lever.

Rotate the latch over the paint control lever to lock the lever in place (Fig. 12). Use lever latch when painting long lines or when cleaning the system.

Castor Release Lever

To release the castor, squeeze the right lever against the hand grip. Once the castor wheel has rotated, the lever can be released. The castor will automatically lock when the wheel returns to the straight position.

Parking/Service Brake

To engage the brake, move the lever rearward. To engage the parking brake move the lever into the detent. To disengage the parking brake, move the lever out of the detent and forward (Fig. 12).

Always set the parking brake when you stop the machine or leave it unattended.

Ignition Switch

Rotate the key to the ON position before starting the engine with the recoil starter (Fig. 12). To stop the engine, rotate the key to the OFF position.

Pressure Regulator Knob

Regulates the paint pressure at the nozzle (Fig. 13) Loosen the jam nut locking the knob. Adjust the knob in or out until the desired paint pattern is attained. Rotating the knob clockwise will increase the paint pressure, counter–clockwise will decrease the paint pressure. Tighten the jam nut to lock adjustment. Refer to the Pressure Adjustment Section of this manual for correct pressure settings.

Note: Excessive paint pressure will reduce the quality of the line, create excessive over spray and reduce agitation.

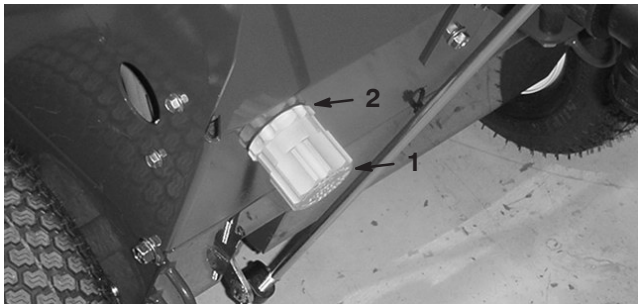


Figure 13

1. Pressure regulator knob
2. Jam nut

Primer

Press in the primer three times before starting a cold engine (Fig. 14).

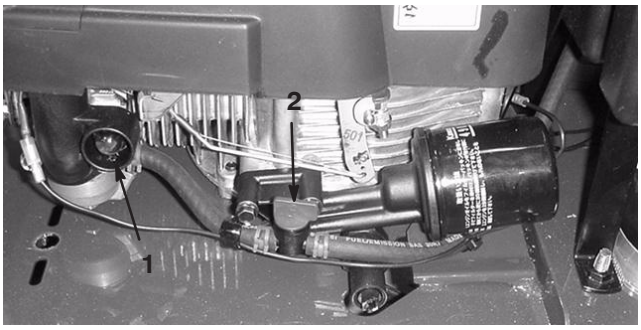


Figure 14

1. Engine primer
2. Fuel shut–off valve

Fuel Shut–Off Valve

The fuel shut–off valve is located on the left side of the engine. Close the valve to stop the fuel flow from the fuel tank and open the valve to allow the fuel to flow to the carburetor (Fig. 14). Close the valve when transporting the line painter or when it is not in use.

Recoil Starter

The recoil starter (Fig. 15) is on the top of the engine. Pull the recoil starter to start the engine.

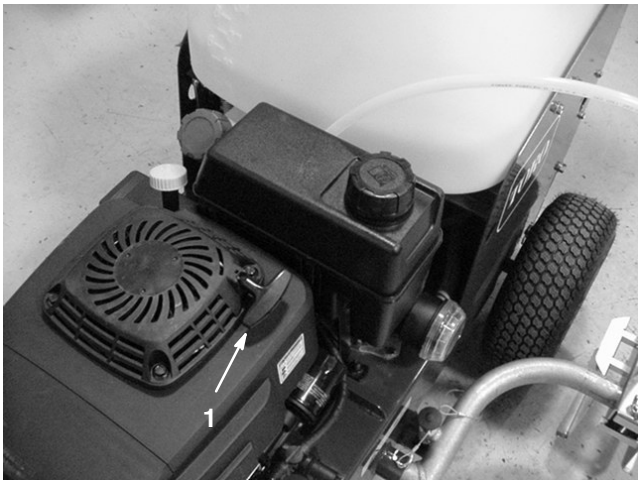


Figure 15

1. Recoil starter

Flush/Paint Lever

Rotate the flush/paint lever up to flush the system. Rotate the lever down to paint. Center position is Off (Fig. 13) The Off position closes all flow to the pump. Use the Off position when paint is in the tank and the paint filter has to be serviced. Do not operate the engine when the flush/paint lever is in the Off position

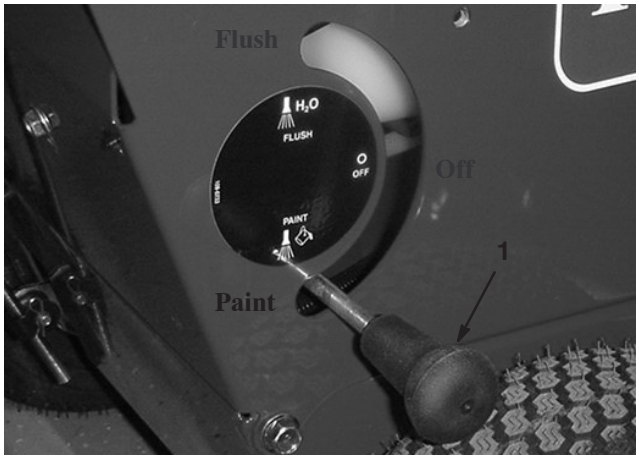


Figure 16

1. Flush/Paint Knob

Starting the Engine

1. Make sure the spark plug wire is connected to the spark plug (Fig. 17).

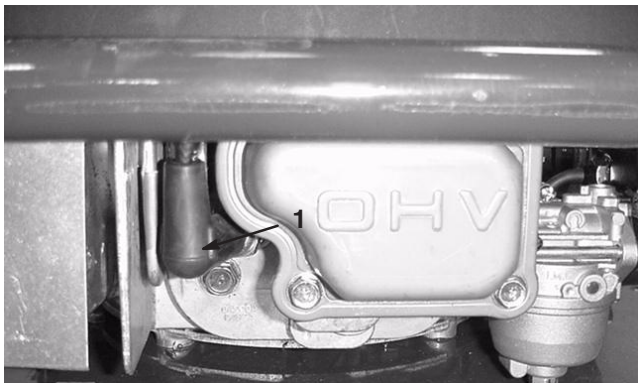


Figure 17

1. Spark plug wire

2. Engage the parking brake (Fig. 18).

3. Ensure that the speed selector lever is in Neutral and the paint and traction control levers are in the disengaged (released) position (Fig. 18)).

4. Open the fuel shut–off valve (Fig. 15).

5. Press the primer three times (Fig. 14).

Note: Do not use the primer when the engine is warm.

6. Rotate the ignition key to the Start position (Fig. 12).
7. Pull the starter handle (Fig. 15) lightly until you feel resistance, then pull it sharply. Allow the rope to return to the engine slowly.

Stopping the Engine

1. Release the traction control lever.
2. Move the speed selector lever to Neutral.
3. Rotate the ignition key to Stop.

Note: Close the fuel shut–off valve if you will not be starting the engine soon afterward.

Using the Ground Speed Control

The line painter has 3 forward speeds. **1** is slow, **2** is medium (paint), and **3** is fast (transport). (Fig. 12). **R** is reverse.

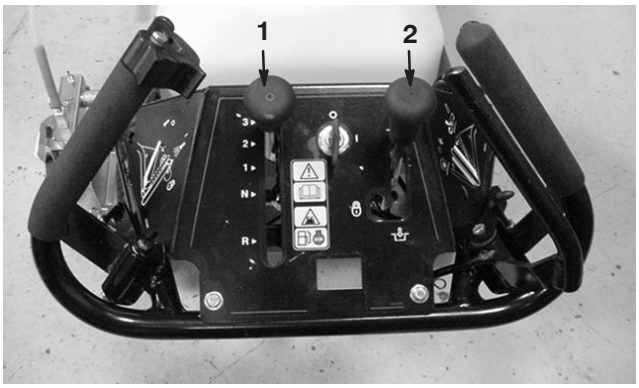


Figure 18

1. Ground speed control
2. Parking brake

1. Move the ground speed control to the Neutral position and engage the parking brake (Fig. 18).
2. Start the engine.
3. Move the ground speed control to the desired speed (Fig. 18).
4. Disengage the parking brake.

Note: You can vary the ground speed by increasing or decreasing the distance between the traction lever and the handle.

Mixing the Paint

- The line painter is designed to operate only with latex based water soluble paint.
- The recommended water to paint ratio is 1:1 to 10:1 depending on the quality of the paint and the desired result.
- **Do not use oil based paint.**
- For best results, pre–mix the paint and water before pouring it into the paint tank.
- The paint tank capacity is 12 gallons.

Filling the Paint Tank

1. Move the machine to a level surface.
2. Stop the engine, move the speed selector lever to Neutral, engage the parking brake and wait for all moving parts to stop before leaving the operating position.

Note: If desired, the engine can be running when filling to keep the paint circulating in the tank. The paint will only circulate when the paint/flush lever is in the paint position.

3. Make sure the paint control lever is in the released position and the tank drain valve (Fig. 19) is closed.

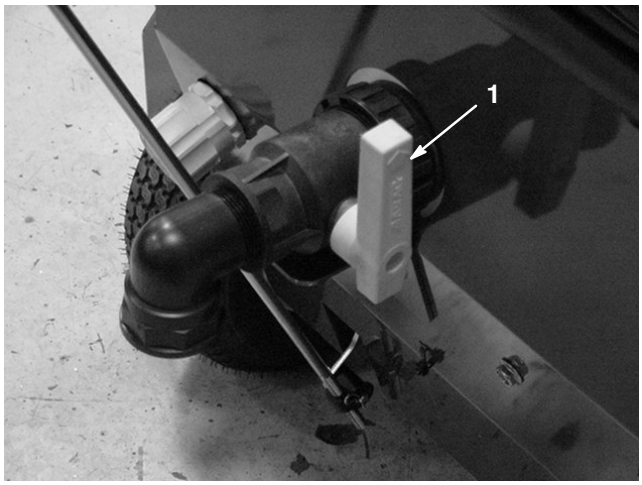


Figure 19

1. Tank drain valve

4. Remove the tank cover (Fig. 20).

Figure 20

1. Tank cover

5. Pour the desired amount of mixed paint, through the strainer and into the tank. Do not remove the paint strainer.

6. Install the tank cover.

Mixing Paint in the Tank

Certain brands of latex based paint can be mixed in the paint tank.

1. Start the engine.

2. Move the Flush/Paint lever to the paint position.

3. Pour the desired amount of water into the tank. Use the marks on the side of the tank to measure the amount.

4. Pour the desired amount of paint, through the strainer, and into the tank.

5. Allow the machine to mix the paint for 1 minute before painting.

Adjusting the Paint Width

1. Loosen the wing nuts securing the spray shields to the the boom arm (Fig. 21).

Note: Use the slotted end of the filter wrench to assist in loosening or tightening the wing nuts.

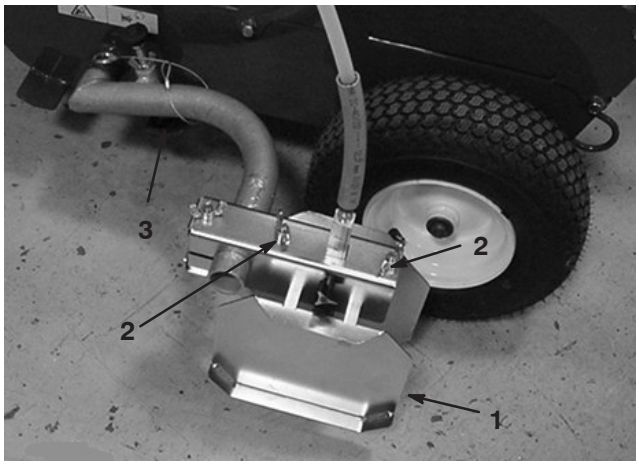


Figure 21

1. Spray shield
2. Spray shield wing nuts
3. Boom arm stop

2. Move the shields (Fig. 21) in or out until the desired line width is attained. Make sure each shield is equal distance from the spray nozzle.

3. Tighten the wing nuts.

4. Loosen the screw securing the paint nozzle tube to the boom arm (Fig. 22).

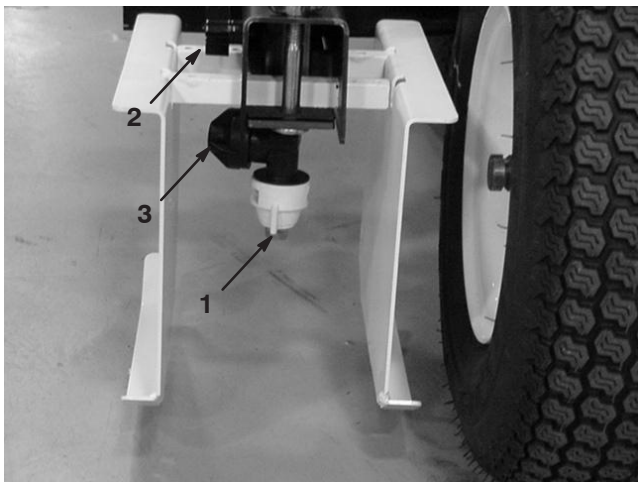


Figure 22

1. Spray nozzle
2. Nozzle tube screw
3. Check valve

5. Raise or lower the nozzle tube until the paint sprays slightly below the shields (Fig. 23).

Note: Spray contact will cause paint buildup on the shield that may drip or leave streaks when the paint is shut off.

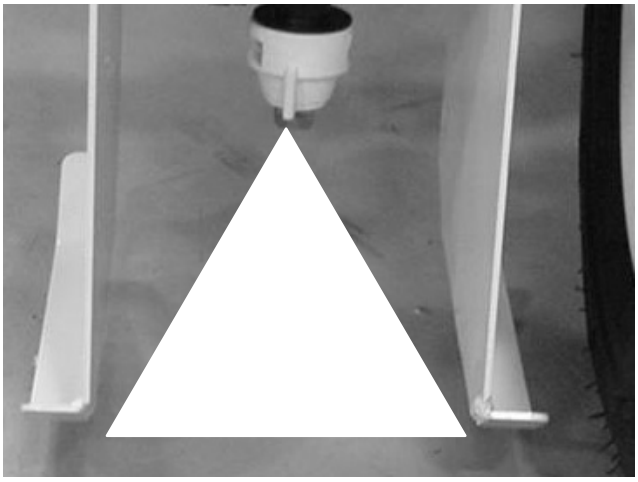


Figure 23

6. Tighten the screw when the desired spray width is attained.

Nozzle Description

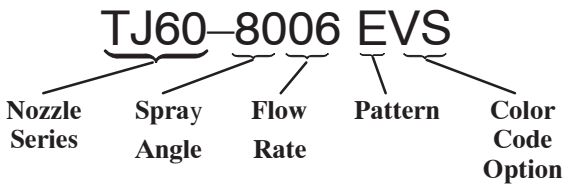


Figure 24

Spray Angle

2 in. – 4 in. line width	65° Nozzle
4 in. + line width	80° Nozzle

Flow Rate

The Flow Rate number represents the GPM of water at 40 psi. The higher the number the higher the flow rate.

Adjusting the Paint Boom Height

Thread the boom arm stop up or down to adjust the shield height (Fig. 25).

- Adjust the height so the bottom of the shields are at the top of the surface/grass to be painted.
- If the shields are positioned too low, they can leave streaks.

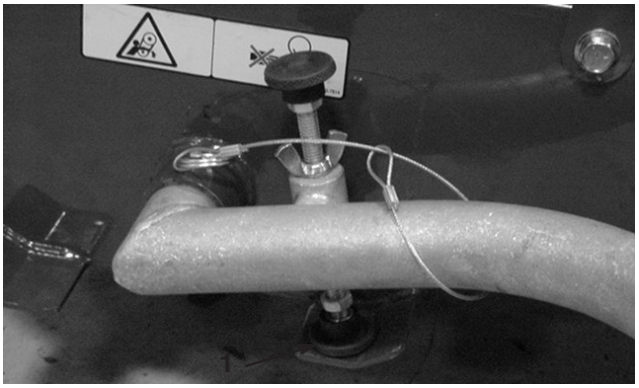


Figure 25

1. Boom arm stop

Adjusting the Spray Pressure

The spray pressure may need to be adjusted when changing nozzles, the mix ratio, paint brands or if the temperature changes significantly. Increasing the spray pressure will increase the volume and the velocity of the paint exiting the nozzle.

1. While engaging the spray nozzle, rotate the pressure regulator knob counterclockwise until a reduction in the spray width and uniformity is observed.
2. Rotate the pressure regulator knob clockwise until an acceptable spray width and pattern is achieved.

Note: Optimum line quality is normally attained at the lower end of the pressure range.

Note: Excessive paint pressure will reduce the quality of the line, create excessive over spray and reduce agitation.

Adjusting the Guide

The guide (Fig. 26) allows the operator to stay aligned with a string line or the existing painted line.

Note: The guide can be installed on the right or left side of the machine, depending on the location of the paint arm.

1. Loosen the screw securing the line marker (Fig. 26) to the mounting tube.
2. Adjust the guide to the desired position.
3. Tighten the screw.

Note: When the paint arm is in the forward position, the guide is not used and can be folded out of the way.

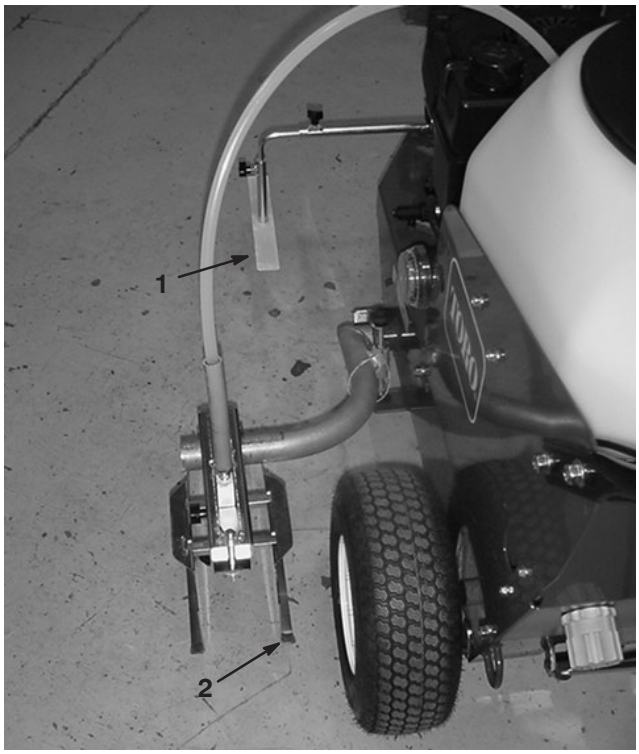


Figure 26

1. Line marker
2. Inner spray shield

Operating Tips

- Review the safety instructions and read this manual carefully before operating the machine.
- Thoroughly inspect the area where you will use the machine and remove all foreign objects.
- Keep everyone, especially children and pets, away from the area of operation.
- If the machine starts to vibrate, immediately stop the engine, disconnect the wire from the spark plug and examine the machine for damage.
- Do not paint wet grass. Paint only dry grass.
- Keep the engine in good running condition.
- To start painting:
  - Fill the paint tank with pre–mixed paint
  - Move the paint/flush lever to paint
  - Start the engine
  - Move the speed control lever to the desired gear
  - Slowly engage the traction lever
  - Engage the paint control

Fill the Fresh Water Tank

The fresh water is used to flush the system. The capacity of the tank is 2 gallons.

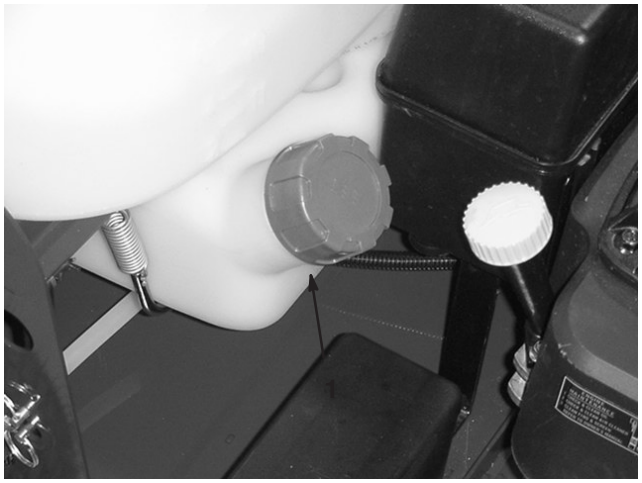


Figure 27

1. Fresh water tank

Using the Flush System

Using the flush system allows the line painter components to be cleaned without emptying the paint tank. The flush system introduces clean water from the water tank. The paint is not being agitated in the tank when in the flush mode. Flushing the spray system is recommended whenever the line painter will not be operated for an extended period of time, such as transporting to a different work site. Toro does not recommend leaving paint in the tank overnight. The paint may thicken and clog the lines.

1. Make sure the speed selector lever is in Neutral and the parking brake is engaged.
2. Rotate the flush/paint lever to the Flush position.
3. Start the engine, if not already running.
4. Engage the paint control and hold it for 15 to 30 seconds. Initially, paint will flow from the nozzle, however the output will become more diluted over time.

Note: To minimize paint mess while flushing the system, the nozzle boom can be removed and directed back into the paint tank.

Cleaning the Paint System

To clean the line painter:

1. Make sure the speed selector lever is in Neutral and the parking brake is engaged.

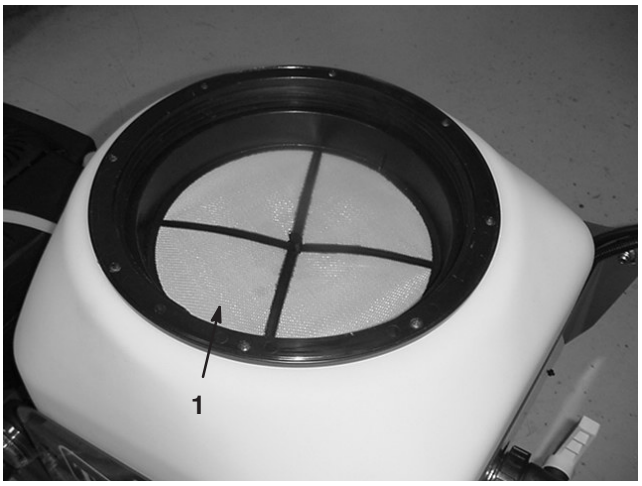


Figure 28

1. Tank strainer

1. Remove the paint tank strainer (Fig. 28) and clean with water.

2. Open the paint tank drain valve (Fig. 29). The farther the drain valve is opened the more paint is allowed to drain.

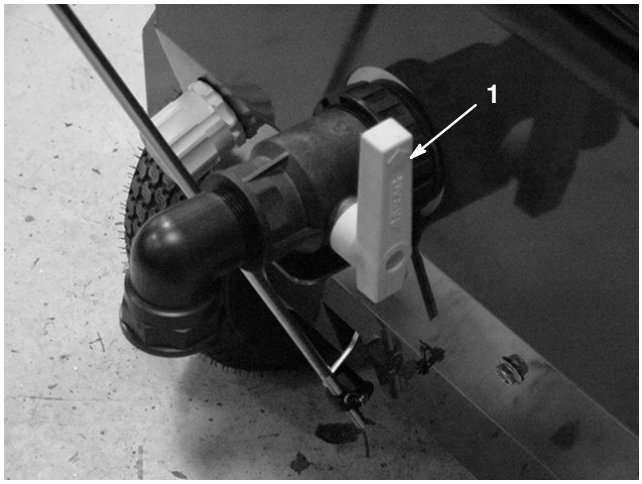


Figure 29

1. Paint tank drain valve

3. Inside the paint tank, insert the agitation line into the drain valve, as shown in figure 30.

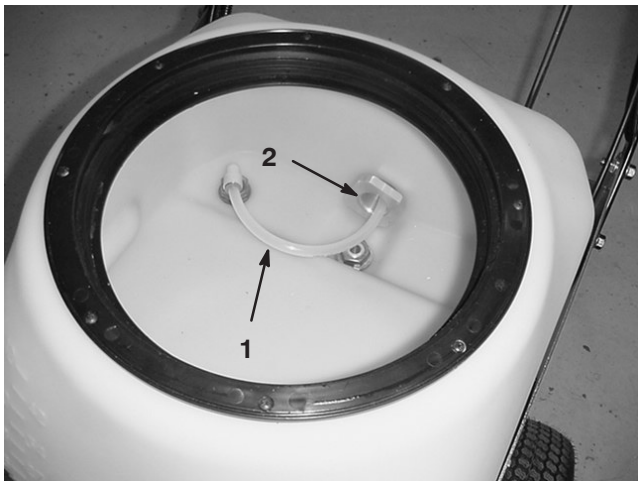


Figure 30

1. Agitation line
2. Tank drain valve

4. Start the engine which allows the pump to circulate.

5. Make sure the Flush/Paint lever (Fig. 31) is in the PAINT position.

6. Allow the engine to operate for 5 to 10 seconds to pump the remaining paint out of the system.

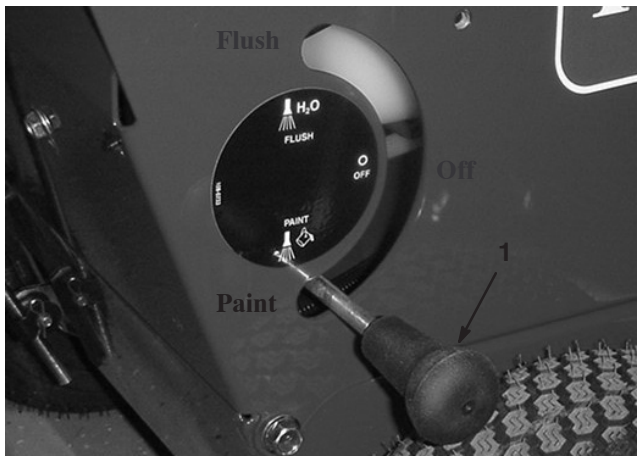


Figure 31

1. Flush/Paint Knob

7. Actuate the paint control lever and lock it open with the locking latch. This will allow the nozzle to flush continuously.

8. Rinse paint tank with clean water. Continue to fill tank with water until the nozzle sprays clean water.

Note: If the flush system has been used, move the flush/paint lever to the flush position for 15 seconds or until the nozzle sprays clean water.

9. Remove and clean the pump filter. Refer to Cleaning the Pump Filter.

Cleaning the Pump Filter

Remove and clean the paint filter (Fig. 32).

1. Turn the engine off.
2. Using the filter wrench provided, remove the pump filter cap.
3. Remove the pump filter and clean with water.
4. Install pump filter and cap.

Figure 32

1. Pump filter cap

Transporting the Line Painter

To transport the line painter:

- Set the parking brake and block the wheels.
- Fasten the line painter tie downs (Fig. 33 & 34) to the trailer or truck with straps, chains, cable, or ropes.

Figure 33

1. Rear tie down locations

Figure 34

1. Front tie down

Maintenance

Note: Determine the left and right sides of the machine from the normal operating position.

Recommended Maintenance Schedule

Maintenance Service Interval	Maintenance Procedure
Each Use	• Check the engine oil level.
5 Hours	• Check the engine mounting fasteners. Tighten them if they are loose.
25 Hours	• Clean the foam pre-cleaner of the air cleaner.
50 Hours	• Change the engine oil (without the oil filter).[1] • Check for leaks in the fuel system and/or a deteriorating fuel hose. Replace parts if necessary. • Remove any debris from the belts.
100 Hours	• Change the oil filter. • Inspect the spark plug and replace it if necessary. • Replace the paper air filter. • Clean the cooling system; remove any debris or dirt from the engine air cooling fins and starter. Clean the system more frequently in dirty or high-chaff conditions. • Clean the fuel filter. • Service the wheels.
300 Hours	• Replace the paper air filter. Replace it more frequently in dusty operating conditions. • Clean the combustion chamber–see engine manual • Lap the valves
Storage	• Empty the fuel tank before repairs as directed or before storage. • Refer to the storage procedures in the back of this manual.

[1]Change the engine oil after the first 8 operating hours.

Important Refer to your engine operator's manual for additional maintenance procedures.

Caution

If you leave the wire on the spark plug, someone could accidently start the engine and seriously injure you or other bystanders.

Disconnect the wire from the spark plug before you do any maintenance. Set the wire aside so that it does not accidently contact the spark plug.

Checking the Engine Oil Level

Before you use the line painter, make sure that the oil level is between the Add and the Full marks as shown on the dipstick (Fig. 35). If the oil level is below the Add mark, add oil. Refer to Filling the Crankcase with Oil.

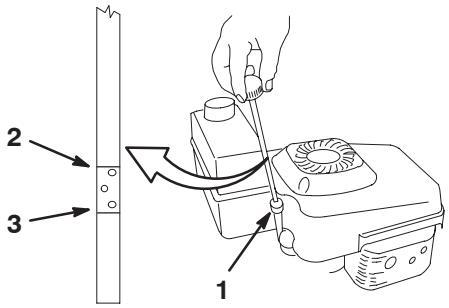


Figure 35

1. Dipstick
2. Full
3. Add

Servicing the Air Filter

Clean the foam pre-cleaner every 25 operating hours. Replace the paper air filter once every season or every 300 operating hours; replace it more frequently in dusty conditions.

Important Do not operate the engine without the air filter assembly; extreme engine damage will occur.

1. Stop the engine and wait for all moving parts to stop.

2. Disconnect the wire from the spark plug (Fig. 36).

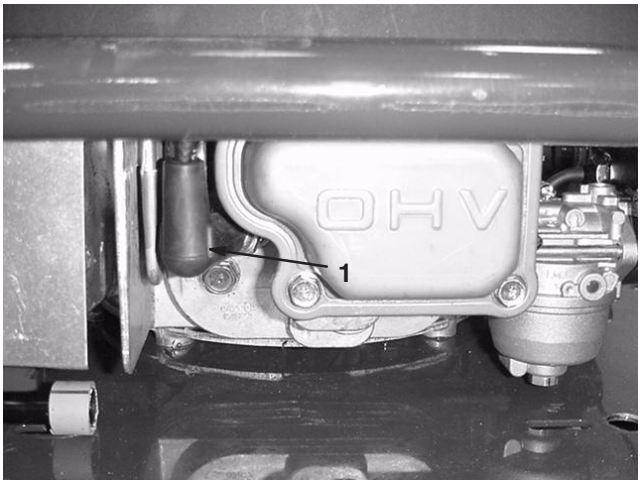


Figure 36

1. Spark plug

3. Remove the screw that secures the air cleaner cover (Fig. 37).

4. Remove the cover and clean it thoroughly (Fig. 37).

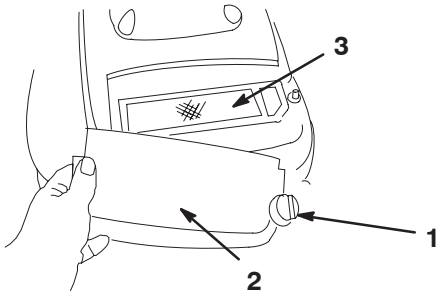


Figure 37

1. Screw
2. Cover
3. Paper air filter

5. Remove the paper air filter and discard it (Fig. 38).

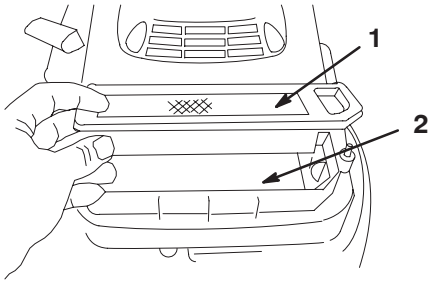


Figure 38

1. Paper air filter
2. Foam pre-cleaner

Important Do not try to clean a paper filter.

6. Remove the foam pre-cleaner and wash it with a mild detergent and water, then blot it dry (Fig. 37).

7. Saturate the pre-cleaner with clean engine oil, then squeeze it (do not twist) to remove the excess oil.

8. Install the foam pre-cleaner.

9. Install the new paper air filter.

10. Install the cover and secure it with the screw.

Changing the Engine Oil

Change the oil after the first 8 operating hours and then after every 50 operating hours or every season (more frequently in dusty or dirty conditions).

1. Run the engine to warm the engine oil.

   Note: Warm oil flows better and carries more contaminants.

Warning

Oil may be hot after engine has been run, and contact with hot oil can cause severe personal injury.

Avoid contacting the hot engine oil when you drain it.

2. Stop the engine and wait for all moving parts to stop.
3. Disconnect the wire from the spark plug.
4. Place a suitable drain pan under the drain hole in the line painter (Fig. 39).

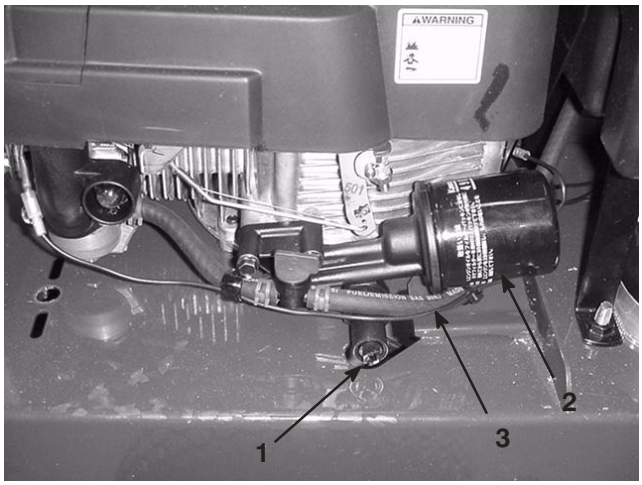


Figure 39

1. Oil drain plug
2. Oil filter
3. Fuel line

5. Rotate the oil drain valve and allow the oil to drain into the drain pan.
6. After draining the oil, rotate the oil drain valve closed.
7. Recycle the used oil according to local codes.
8. Fill the crankcase to the Full line on the dipstick with fresh oil. Refer to the Filling the Crankcase with Oil.
9. Wipe up any spilled oil.

Changing the Oil Filter

Replace the oil filter (Fig. 39) after every 100 operating hours or yearly, whichever comes first.

1. Run the engine to warm the oil.

Warning

Oil may be hot after the engine has been run, and contact with hot oil can cause sever personal injury.

Avoid contacting the hot engine oil when you drain it.

2. Stop the engine and wait for all moving parts to stop.
3. Disconnect the wire from the spark plug.
4. Drain the engine oil; refer to Changing the Engine Oil.
5. Place a rag under the oil filter to catch any oil that may leak out as you remove the filter.
6. Remove the oil filter.
7. Use your finger to coat the gasket on the new filter with clean engine oil (Fig. 40).

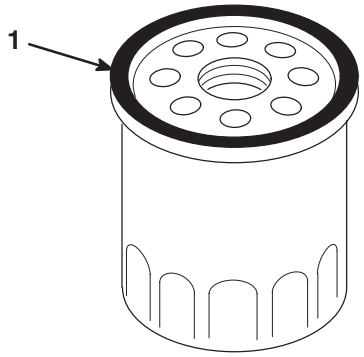


Figure 40

1. Gasket

8. Install the new filter and hand tighten it 2/3 turn only.
9. Fill the crankcase to the Full line on the dipstick with fresh oil. Refer to Filling the Crankcase with Oil.
10. Connect the wire to the spark plug.
11. Run the engine for about 3 minutes.
12. Stop the engine, wait for all moving parts to stop, and check for oil leakage around the filter.
13. Add oil to compensate for the oil in the oil filter. Refer to Checking the Engine Oil Level.
14. Recycle the used oil filter according to local codes.

Emptying the Fuel Tank and Cleaning the Fuel Filter

The fuel filter (screen) element is located inside the fuel tank. Clean the fuel filter element every 100 operating hours.

1. Stop the engine and wait for it to cool down.

Important Drain gasoline from a cold engine only.

2. Disconnect the wire from the spark plug.
3. Close the fuel valve.
4. Disconnect the fuel line (Fig. 39) by loosening the tube clamp at the carburetor.
5. Open the fuel valve.
6. Drain the gasoline completely from the tank and fuel line into an approved fuel container.
7. Remove the fuel tank from the machine.
8. Close the fuel valve.
9. Pour a small amount of fuel in the fuel tank, move the fuel around in the tank, and pour it out into an approved fuel container.
10. Install the fuel tank and fuel line.

Servicing the Spark Plug

Check the spark plug after every 100 operating hours. Use an **NGK BPR5ES** spark plug or equivalent.

1. Stop the engine and wait for all moving parts to stop.
2. Disconnect the wire from the spark plug .
3. Clean around the spark plug.
4. Remove the spark plug from the cylinder head.

Important Replace a cracked, fouled, or dirty spark plug. Do not clean the electrodes because grit entering the cylinder can damage the engine.

5. Set the gap on the plug to 0.030 in. (0.76 mm) (Fig. 41).

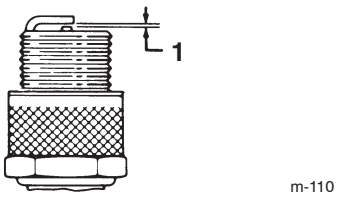


Figure 41

1. 0.030 in. (0.76 mm)

6. Install the spark plug and the gasket seal.
7. Torque the plug to 17 ft-lb (23 N·m).
8. Connect the wire to the spark plug.

Inspecting the Belts

The drive belts on the line painter have been designed to be very durable. However, the normal exposure to UV radiation, ozone or incidental exposure to chemicals can deteriorate the rubber compounding over time and lead to wear or material loss (i.e. chunking).

Annual belt inspection is highly recommended for signs of wear, excessive cushion cracks, or large embedded debris with replacement when needed.

Storage

To prepare the line painter for off-season storage, perform the recommended maintenance procedures. Refer to Maintenance Section in Manual.

Store the machine in a cool, clean, and dry place. Cover the machine to keep it clean and protected.

Preparing the Spray System

1. Clean the spray system.
2. Move the Flush/Paint lever to the flush position and run/flush the tank dry.
3. Move the Flush/Paint lever to the paint position.
4. Pour one gallon of rust inhibiting, non–alcohol based, RV antifreeze solution into the paint tank.
5. Run the pump to circulate the antifreeze solution, then activate the paint control lever until antifreeze sprays out the nozzle.
6. Empty the fresh water tank.
7. Drain the excess antifreeze solution from the tank.

Preparing the Engine

1. While the engine is still warm, drain the oil from the crankcase. Refer to Changing the Engine Oil.
2. Remove the spark plug.
3. Using an oil can, add about one tablespoon of oil to the crankcase through the spark plug hole.
4. Slowly rotate the engine several times, using the starter rope, to distribute the oil.
5. Install the spark plug but **do not** connect the wire to the spark plug.

Preparing the Fuel System

Drain the fuel tank before storing the machine.

1. Run the machine until the engine stops from running out of fuel.
2. Prime the engine and start it again.
3. Allow the engine to run until it stops. When you can no longer start the engine, it is sufficiently dry.

Warning

Gasoline can vaporize if you store it over long periods of time and explode if it comes into contact with an open flame.

- **Do not store gasoline over long periods of time.**
- **Do not store the machine with gasoline in the fuel tank or the carburetor in an enclosure with an open flame. (For example, a furnace or a water heater pilot light.)**
- **Allow the engine to cool before storing it in any enclosure.**

General Information

1. Clean any dirt and chaff from the engine cylinder head fins and blower housing.
2. Remove any dirt and grime from the external parts of the engine, the shrouding, and the top of the line painter housing.
3. Service the air cleaner; refer to Servicing the Air Cleaner.
4. Tighten all nuts, bolts, and screws.
5. Touch up all rusted or chipped paint surfaces with paint available from an Authorized Service distributor.

Removing the Line Painter from Storage

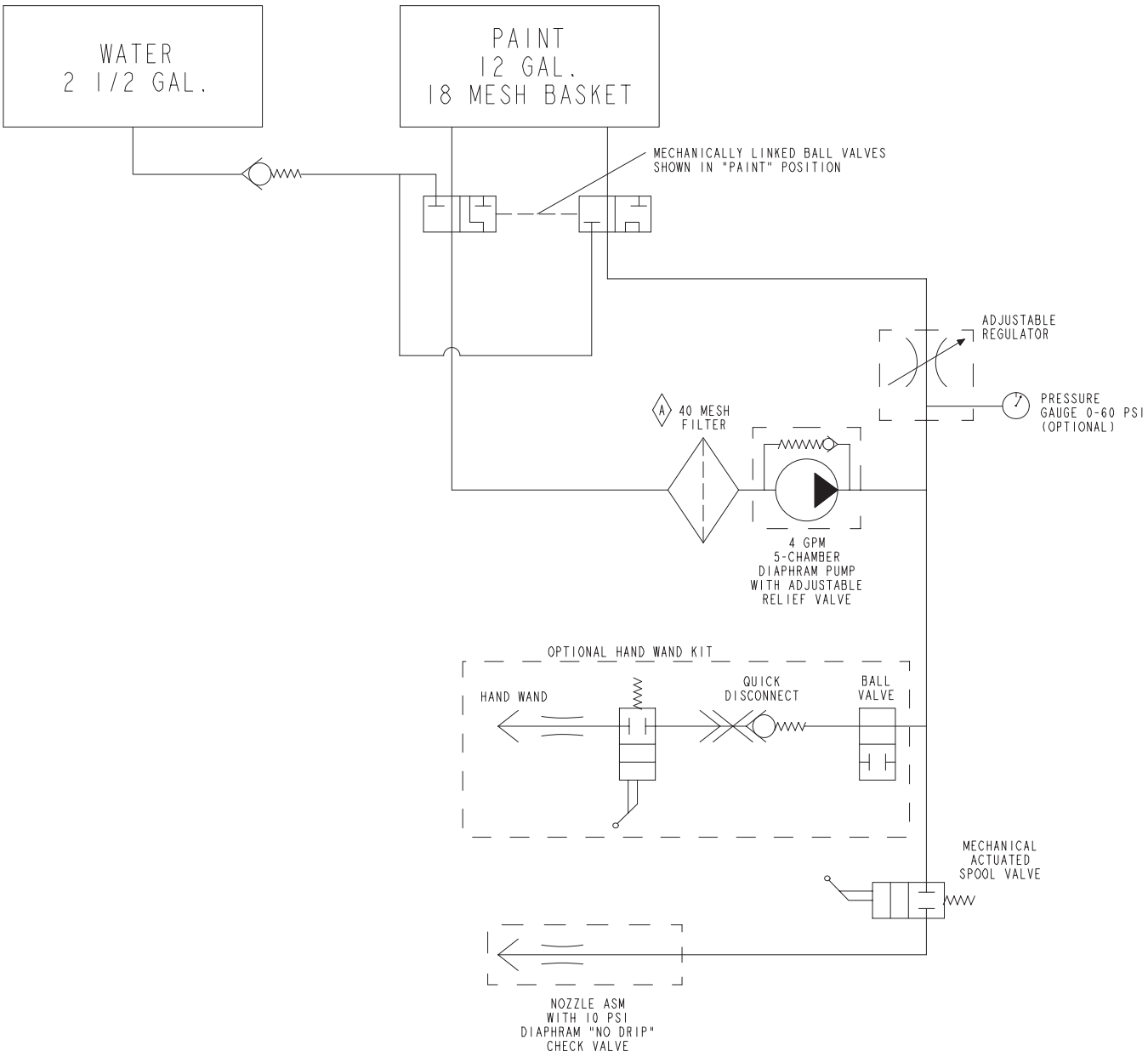
1. Check and tighten all fasteners.
2. Remove the spark plug and spin the engine rapidly using the starter to blow the excess oil from the cylinder.
3. Clean the spark plug or replace it if it is cracked, broken, or if the electrodes are worn.
4. Install the spark plug. Refer to Servicing the Spark Plug.
5. Perform any needed maintenance procedures; refer to Maintenance Section in Manual.
6. Fill the fuel tank with fresh gasoline.
7. Check the engine oil level.
8. Connect the wire to the spark plug.

Troubleshooting

Toro designed and built your line painter for trouble-free operation. Check the following components and items carefully, and refer to the Maintenance Section of Manual for more information. If a problem continues, contact an Authorized Service distributor.

Problem	Possible Causes	Corrective Action
Engine does not start	1. The fuel tank is empty or the fuel system contains stale fuel.	1. Drain and/or fill the fuel tank with fresh gasoline. If the problem persists, contact an Authorized Service Distributor.
	2. The wire is not connected to the spark plug.	2. Connect the wire to the spark plug.
	3. The spark plug is pitted, fouled, or the gap is incorrect.	3. Check the spark plug and adjust the gap if necessary. Replace the spark plug if it is pitted, fouled, or cracked.
Engine starts hard or loses power	1. The fuel tank contains stale fuel.	1. Drain and fill the fuel tank with fresh gasoline.
	2. The fuel cap vent hole is plugged.	2. Clean the fuel cap vent hole or replace the fuel cap.
	3. The air cleaner elements are dirty and are restricting the air flow.	3. Service the air cleaner elements.
	4. The spark plug is pitted, fouled, or the gap is incorrect.	4. Check the spark plug and adjust the gap if necessary. Replace the spark plug if it is pitted, fouled, or cracked.
	5. The engine oil level is low or the oil is dirty.	5. Check the engine oil. Change the oil if it is dirty or add oil if it is low.
Engine runs rough	1. The wire is not connected to the spark plug.	1. Connect the wire to the spark plug.
	2. The spark plug is pitted, fouled, or the gap is incorrect.	2. Check the spark plug and adjust the gap if necessary. Replace the spark plug if it is pitted, fouled, or cracked.
	3. The air cleaner elements are dirty and are restricting the air flow.	3. Service the air cleaner elements.
Line painter or engine vibrates excessively	1. The engine mounting bolts are loose.	1. Tighten the engine mounting bolts.
Line painter does not self-propel	1. The self-propel drive cable is out of adjustment.	1. Adjust the self-propel cable.
	2. The shift rod is out of adjustment.	2. Adjust the shift rod.
Line painter creeps when traction is disengaged	1. The traction drive cable is out of adjustment.	1. Adjust per instructions in the Service Manual.
	2. The traction belt is damaged	2. Replace the traction belt

Paint System Schematic



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The Toro General Commercial Products Warranty

A Two-Year Limited Warranty

Conditions and Products Covered

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrant your Toro Commercial Product ("Product") to be free from defects in materials or workmanship for two years or 1500 operational hours*, whichever occurs first. Where a warrantable condition exists, we will repair the Product at no cost to you including diagnosis, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.

* Product equipped with hour meter

Instructions for Obtaining Warranty Service

You are responsible for notifying the Commercial Products Distributor or Authorized Commercial Products Dealer from whom you purchased the Product as soon as you believe a warrantable condition exists.

If you need help locating a Commercial Products Distributor or Authorized Dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Toro Commercial Products Service Department
Toro Warranty Company
8111 Lyndale Avenue South
Bloomington, MN 55420-1196
952-888-8801 or 800-982-2740
E-mail: commercial.service@toro.com

Owner Responsibilities

As the Product owner, you are responsible for required maintenance and adjustments stated in your operator's manual. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.

Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This express warranty does not cover the following:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, modified, or unapproved accessories
- Product failures which result from failure to perform required maintenance and/or adjustments
- Product failures which result from operating the Product in an abusive, negligent or reckless manner
- Parts subject to consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, blades, reels, bedknives, tines, spark plugs, castor wheels, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, and check valves, etc.
- Failures caused by outside influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved coolants, lubricants, additives, or chemicals, etc.
- Normal "wear and tear" items. Normal "wear and tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.

Parts

Parts scheduled for replacement as required maintenance are warranted for the period of time up to the scheduled replacement time for that part.

Parts replaced under this warranty become the property of Toro. Toro will make the final decision whether to repair any existing part or assembly or replace it. Toro may use factory remanufactured parts rather than new parts for some warranty repairs.

General Conditions

Repair by an Authorized Toro Distributor or Dealer is your sole remedy under this warranty.

Neither The Toro Company nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. Except for the Emissions warranty referenced below, if applicable, there is no other express warranty. All implied warranties of merchantability and fitness for use are limited to the duration of this express warranty.

Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Note regarding engine warranty: The Emissions Control System on your Product may be covered by a separate warranty meeting requirements established by the U.S. Environmental Protection Agency (EPA) and/or the California Air Resources Board (CARB). The hour limitations set forth above do not apply to the Emissions Control System Warranty. Refer to the Engine Emission Control Warranty Statement printed in your operator's manual or contained in the engine manufacturer's documentation for details.

Countries Other than the United States or Canada

Customers who have purchased Toro products exported from the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the Toro importer. If all other remedies fail, you may contact us at Toro Warranty Company.

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