

## Section 3 Operation, Maintenance and Troubleshooting

### Operation and Use Questions

Call Generac customer service at 1-888-436-3722 with questions or concerns about unit operation and maintenance.

### Before Starting Engine

1. Verify engine oil level is correct.
2. Verify fresh fuel level is correct.
3. Verify all fittings and couplers are properly secured.
4. Verify sufficient water supply is properly connected.
5. Verify unit is secure on level ground, with proper clearance and is in a well ventilated area.

### Prepare Power Washer for Use

1. Place unit on level ground, within the specified clearance required.
2. Connect appropriate water supply.

### Power Washer Placement for Use



#### **⚠ DANGER**

Asphyxiation. Running engines produce carbon monoxide, a colorless, odorless, poisonous gas. Carbon monoxide, if not avoided, will result in death or serious injury. (000103)



#### **⚠ WARNING**

Risk of Fire. Hot surfaces could ignite combustibles, resulting in fire. Fire could result in death or serious injury. (000110)



#### **⚠ WARNING**

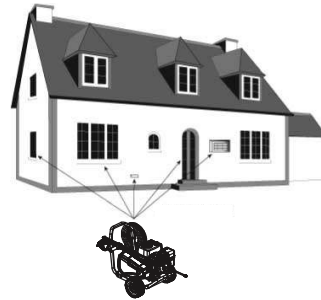
Hot Surfaces. When operating machine, do not touch hot surfaces. Keep machine away from combustibles during use. Hot surfaces could result in severe burns or fire. (000108)

It is a violation of California Public Resource Code, Section 4442, to use or operate the engine on any forest-covered, brush-covered, or grass-covered land unless the exhaust system is equipped with a spark arrester, as defined in Section 4442, maintained in effective working order. Other states or federal jurisdictions may have similar laws.

Only operate power washer outdoors in a well ventilated area. Never operate power washer indoors, or in a confined space. Be aware of building openings and ventilation systems where exhaust may enter during use.

- Verify power washer is placed on level ground to avoid tipping during operation.

- Only use the unit outdoors. Verify exhaust gas does not enter a confined area through windows, doors, ventilation intakes.
- See Figure 3-1. Keep at least 5 ft (1.5 m) of clearance on all sides of power washer including overhead from dwellings and combustibles, when in use.



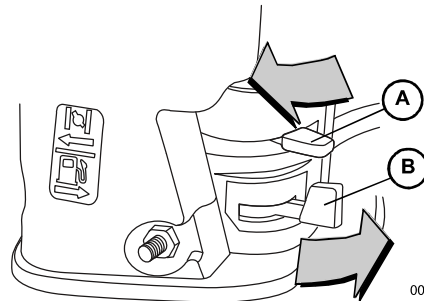
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**Figure 3-1. Five Feet of Minimum Clearance**

### Power Washer Start-Up

**NOTE:** DO NOT run power washer without a sufficient water supply turned ON. Damage to equipment resulting from failure to follow this instruction will void warranty.

1. Connect a sufficient water supply.
2. Move fuel valve (B) to ON.
3. Move choke lever (A) to CLOSE.

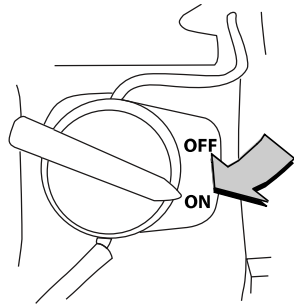


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**Figure 3-2. Fuel Valve and Choke**

**NOTE:** For warm engine, verify choke lever is in OPEN position.

4. See Figure 3-3. Turn engine switch ON.



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**Figure 3-3. Engine Switch**



**⚠ WARNING**

Vision Loss. Eye goggles are required to be worn when using this machine. Failure to wear eye goggles could result in permanent vision loss.

(000101)

5. Relieve spray gun pressure.
6. Secure unit from movement when pulling recoil.
7. See Figure 3-4. Firmly grasp the recoil handle. Pull slowly until resistance is felt. Then pull rapidly to start engine.



**⚠ WARNING**

Recoil Hazard. Recoil could retract unexpectedly if water pressure is not properly relieved from pump, creating kickback. Kickback could result in death or serious injury.

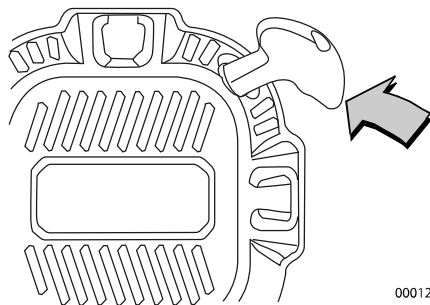
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**⚠ WARNING**

Do not aim spray gun at people, animals, electrical devices, or fragile items. Keep out of reach of children. Death or serious injury could result.

(000117)

After engine-start attempt, if engine fails to run, always point spray gun in safe direction, and squeeze spray gun trigger to release high-pressure.

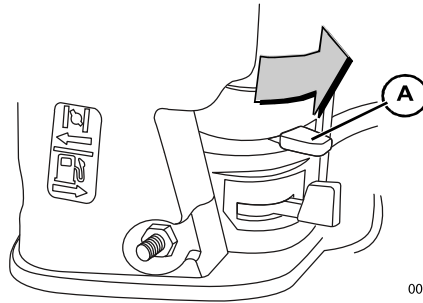


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**Figure 3-4. Engine Recoil**

8. Return recoil handle slowly. DO NOT let recoil snap back against recoil housing.

9. See Figure 3-5. When engine starts, slowly move choke lever to OPEN position (A) as engine warms. If engine falters, move choke lever to CLOSE position, then to OPEN position.



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**Figure 3-5. Fuel Valve and Choke**

- If engine fails to start after six pulls, move choke lever to OPEN position, and repeat steps 6 through 9.



**⚠ DANGER**

Fluid Injection. This machine produces high-pressure fluid streams that can pierce skin. Fluid injection will result in death or serious injury.

(000106)



**⚠ WARNING**

Risk of Fire. Hot surfaces could ignite combustibles, resulting in fire. Fire could result in death or serious injury.

(000110)



**⚠ WARNING**

Hot Surfaces. When operating machine, do not touch hot surfaces. Keep machine away from combustibles during use. Hot surfaces could result in severe burns or fire.

(000108)

## Power Washer Shut Down



**⚠ DANGER**

Fluid Injection. This machine produces high-pressure fluid streams that can pierce skin. Fluid injection will result in death or serious injury.

(000106)

**IMPORTANT:** Spray gun traps high-pressure water, even when engine is stopped and water is disconnected. Always point spray gun in safe direction, and squeeze spray gun trigger to release high-pressure. Engage trigger lock when not in use.

1. Release spray gun trigger.
2. Turn engine switch OFF.
3. Squeeze spray gun trigger and release high-pressure water.
4. Engage trigger lock.
5. Turn water supply OFF.

**NOTE:** Keep high-pressure hose connected to pump and spray gun while system is pressurized.

## Apply Detergent



### ⚠ DANGER

Fluid Injection. This machine produces high-pressure fluid streams that can pierce skin. Fluid injection will result in death or serious injury. (000106)

### ⚠ WARNING

Do not aim spray gun at people, animals, electrical devices, or fragile items. Keep out of reach of children. Death or serious injury could result.

(000117)

**NOTE:** DO NOT use caustic liquid with power washer. Use ONLY power washer safe detergents. Follow manufacturer instructions on detergent label.

Apply detergent as follows:

1. Prepare detergent solution as required by job.
2. Make sure siphoning tube remains fully submerged into the detergent.
3. When inserting the siphon into a detergent solution bottle, route the tube so as to keep it from inadvertently contacting the hot muffler.
4. Verify black detergent nozzle is installed.

**NOTE:** Detergent cannot be applied with high-pressure nozzle (Yellow, White, Green or Red). Only use black nozzle with detergent.

5. Start engine.
6. Firmly grasp spray gun with both hands when using high-pressure spray to avoid injury when spray gun kicks back.
7. Apply a high-pressure spray to a small area and then inspect surface for damage. If no damage is found, continue to apply detergent.
8. Apply detergent to a dry surface, start at lower portion of area to be washed and work upward using long, even, overlapping strokes.

**IMPORTANT:** Flush the detergent siphoning system after each use. Contact an authorized dealer or qualified service center with questions.

## Rinsing



### ⚠ WARNING

Risk of Falling. Use of machine creates wet areas and trip hazards. Be aware of work area conditions. A fall could result in death or serious injury.

(000112)



### ⚠ WARNING

Risk of Falling. Do not use this machine or any components on elevated surfaces. Doing so can result in a fall, serious injury or death.

(000114)

1. Remove black detergent nozzle from lance.
2. Select and install desired high-pressure nozzle.
3. Point spray gun in safe direction and squeeze trigger to flush remaining detergent from system.
4. Keep spray gun a safe distance from area you plan to spray.
5. Firmly grasp spray gun with both hands when using high-pressure spray to avoid injury when spray gun kicks back.
6. Apply a high-pressure spray to a small area and then inspect surface for damage. If no damage is found, continue rinsing.
7. Start at top of area to be rinsed, working down with same overlapping strokes as used for cleaning.

## Clean Detergent Siphoning Tube

Flush detergent siphoning tube after each use, before stopping the engine.

1. Place detergent siphoning tube/filter in bucket of clean water.
2. Remove high-pressure nozzle from nozzle extension.
3. Select and install black detergent nozzle.
4. Flush for 1-2 minutes.
5. Shut engine OFF.
6. Point spray gun in a safe direction, squeeze spray gun trigger to release retained high water pressure. Engage trigger lock.

## After Each Use

DO NOT allow water to remain in unit for long periods of time. Sediments or minerals can deposit on pump parts and freeze pump. Follow these procedures after every use:

1. Shut engine OFF.
2. Turn water supply OFF.

3. Point spray gun in a safe direction, and squeeze trigger to relieve trapped pressure.
4. Let engine cool.
5. Disconnect hoses from spray gun and high-pressure outlet on pump. Drain water from hoses, spray gun, and lance. Use a rag to wipe off components.
6. Verify engine start switch and fuel valve is OFF.
7. Pull recoil handle approximately six times to remove remaining liquid from pump.
8. Store unit in a clean, dry area.

**NOTE:** If storing for more than 30 days, see Storage section.

## Automatic Cool Down System (Thermal Relief)

When power washer runs for 3-5 minutes without spray gun activation, circulating water in pump can reach temperatures above 133°F (56.1 °C). Thermal relief system engages to cool pump by discharging warm water onto ground.

## Maintenance Recommendations

Regular maintenance will improve performance and extend power washer life. See a qualified dealer for service.

Power washer warranty does not cover items subjected to operator abuse or negligence. To receive full warranty value, operator must maintain power washer as instructed in this manual, including proper storage as detailed in Winter Storage and Long Term Storage.

**NOTE:** Call 1-888-436-3722 with questions about component replacement.

**NOTE:** All required service and adjustments should be each season, as detailed in maintenance schedule chart.

## Maintenance Schedule

Follow maintenance schedule intervals, whichever occurs first according to use.

**NOTE:** Adverse conditions will require more frequent service.

First 5 Hours
Change engine oil
Every 8 Hours or Daily
Inspect/clean water inlet screen*
Inspect high-pressure hose
Inspect detergent siphoning hose/filter
Inspect spray gun and assembly for leaks
Clean debris
Inspect engine oil level
Inspect pump oil level
Every 50 Hours or Every Season
Check/clean water inlet screen**
Change pump oil**
Change engine oil**
Inspect muffler and spark arrester*
Every 100 Hours or Every Season
Service spark plug

\* Clean if clogged. Replace if perforated or torn.

\*\* Service more often under dirty or dusty conditions.

## Preventive Maintenance

Dirt or debris can cause improper operation and equipment damage. Clean power washer daily or before each use. Keep area around and behind muffler free from combustible debris. Inspect all cooling air openings on power washer.

- Use a damp cloth to wipe exterior surfaces clean.
- DO NOT insert any objects through cooling air openings.
- Use a soft bristle brush to loosen caked on dirt, oil, etc.
- Use a vacuum to pick up loose dirt and debris.

## Inspect and Clean Inlet Screen

Inspect inlet screen on pump water inlet. Clean clogged screen and replace screen if damaged.

## Inspect High-Pressure Hoses

High-pressure hoses can develop leaks from wear, kinking, or abuse. Inspect hoses before each use. Inspect for cuts, leaks, abrasions, bulging, and damage or movement of couplings. If these conditions exist, replace hose immediately.

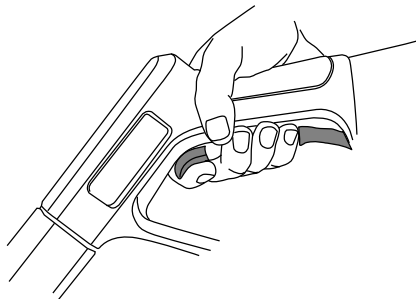
**NOTE:** DO NOT repair high-pressure hose. Replace with hose that meets or exceeds maximum pressure rating of unit.

### Inspect Detergent Siphoning Tube

Inspect filter on detergent tube and clean if clogged. Tube should fit tightly on barbed fitting. Examine tube for leaks or tears. Replace filter or tube if either is damaged.

### Inspect Spray Gun

**NOTE:** Replace spray gun immediately if it fails any test steps.



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**Figure 3-6. Test Spray Gun (typical)**

1. Verify spray gun hose connection is secure.
2. Squeeze and release trigger.

**NOTE:** Trigger should spring back into place and lock when released.

### Nozzle Maintenance

A pulsing sensation felt when squeezing spray gun trigger may be caused by excessive pump pressure. Typical causes of excessive pump pressure are nozzle clog or restriction. Immediately clean nozzle as follows:



#### **⚠ DANGER**

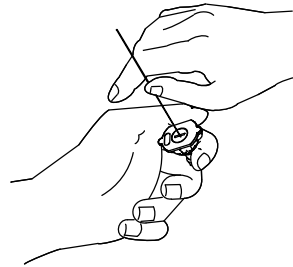
Fluid Injection. This machine produces high-pressure fluid streams that can pierce skin. Fluid injection will result in death or serious injury.

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1. Turn engine and water supply OFF.
- NOTE:** Keep high-pressure hose connected to pump and spray gun while system is pressurized.

2. Relieve spray gun water pressure.
3. Remove nozzle from lance.

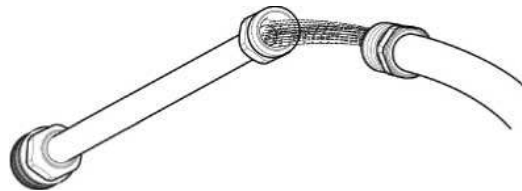
4. See Figure 3-7. Use a paper clip to remove debris.



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**Figure 3-7. Remove Debris**

5. See Figure 3-8. Remove lance from spray gun and back flush thoroughly.



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**Figure 3-8. Back Flush Lance**

6. Install nozzle on lance.
7. Install lance on spray gun.
8. Verify hose is connected to pump water inlet, and high-pressure hose is connected to spray gun, and pump.
9. Turn water ON.
10. Start engine.
11. Test power washer by operating with each quick connect nozzle.

#### **⚠ CAUTION**

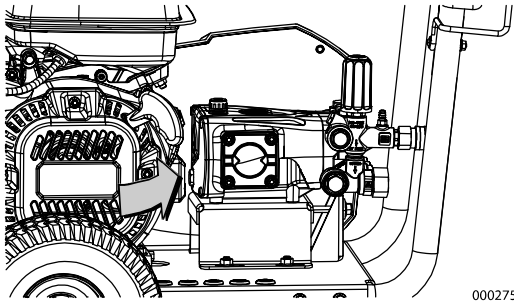
Avoid prolonged or repeated skin contact with used motor oil.

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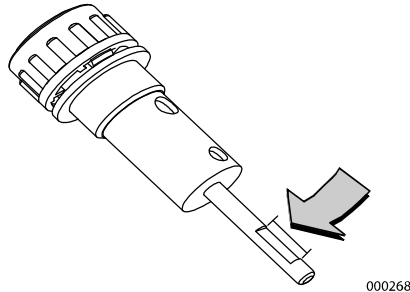
### Change Pump Oil

1. Clean area around oil drain plug (Figure 3-9.).
2. Place a small pan under oil drain plug to catch oil.
3. Remove oil drain plug. Drain oil completely.
4. Install oil drain plug. Do not over tighten.
5. Clean area around pump oil dipstick.
6. Fill pump with SAE 15W40 non-detergent oil. Oil level must be within markings on dipstick (Figure 3-10.). Do not overfill.
7. Install oil dipstick until finger tight.

8. Clean up any spilled oil.



**Figure 3-9. Drain Pump Oil**

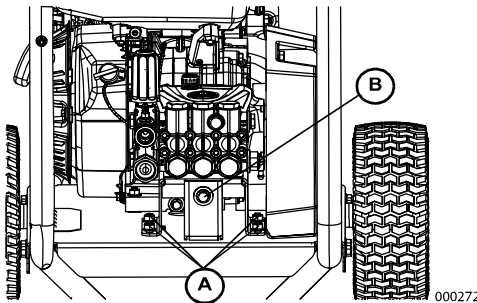


**Figure 3-10. Pump Oil Dipstick**

## Belt Replacement

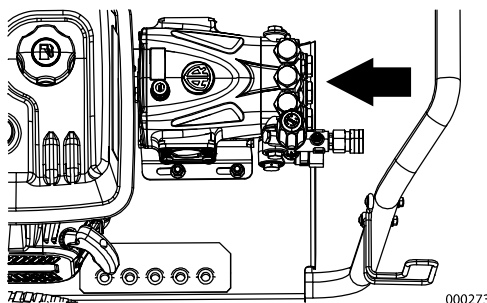
It may be necessary to replace belt if it breaks or if there is a sudden loss of pressure:

1. Remove belt guard
2. See Figure 3-11. Loosen nuts (A) and tensioning bolt (B).



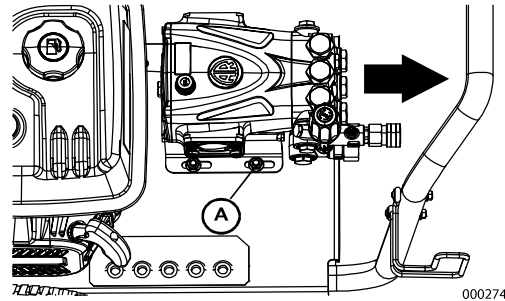
**Figure 3-11. Loosen Nuts**

3. Push pump toward engine (Figure 3-12.).



**Figure 3-12. Push Pump Toward Engine**

4. Remove old belt and install new belt.
5. See Figure 3-13. Pull pump away from engine so bolt is approximately 2/3 of the way through the pump bracket slot (A). Tighten bolt.



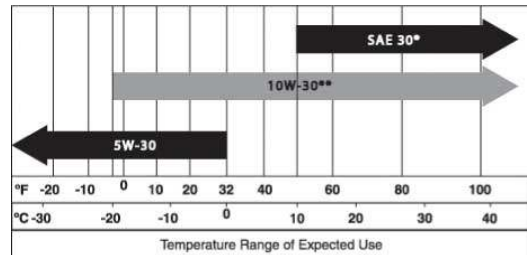
**Figure 3-13. Pull Pump Away From Engine**

6. Tighten tensioning bolt (B) (Figure 3-11.). The pulleys should be aligned within 1° of each other and the new belt should be tensioned to ~90.5 lbs. (1/8" deflection under 8.3 lbs. with a tension gauge).
7. Tighten all four nuts (A) (Figure 3-11.).
8. Replace belt guard before running unit.

## Engine Maintenance

### Engine Oil Recommendations

Only high-quality detergent oils classified for service SF, SG, SH, SJ or higher are recommended. DO NOT use special additives. Climate determines proper engine oil viscosity. See chart to select correct viscosity.



**Figure 3-14. Oil Viscosity**

\* Below 50°F (10°C) use of SAE 30 will result in hard start.

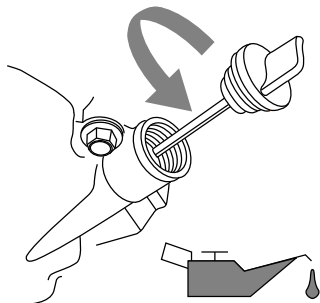
\*\* Above 80°F (27°C) use of 10W30 may cause increased oil consumption. Inspect oil level more frequently.



## Inspect Engine Oil Level

Inspect engine oil level prior to each use, or every 8 hours of operation.

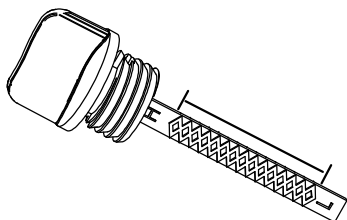
1. Place power washer on a level surface.
2. Clean area around oil fill.
3. See Figure 3-15. Remove oil fill cap and wipe dipstick clean.



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**Figure 3-15. Engine Oil Fill**

4. Screw dipstick into filler neck. Verify proper oil level on dipstick.



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**Figure 3-16. Oil Level**

5. Add recommended engine oil as necessary.
6. Replace oil fill cap and hand-tighten.

**NOTE:** Some units have more than one oil fill location. It is only necessary to use one oil fill point.

## Change Engine Oil

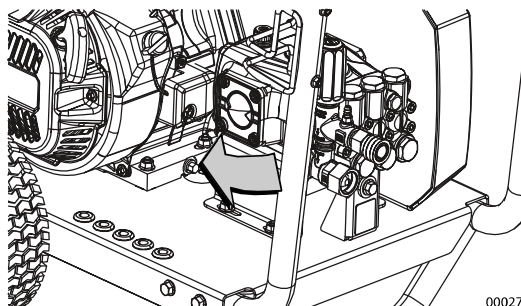
When using power washer under extreme, dirty, dusty conditions, or in extremely hot weather, change oil more frequently.

**NOTE:** Don't pollute. Conserve resources. Return used oil to collection centers.

Change oil while engine is still warm from running, as follows:

1. Place power washer on a level surface.
2. Disconnect the spark plug wire from the spark plug and place the wire where it cannot contact spark plug.
3. Clean area around oil fill, and oil drain plug.
4. Remove oil fill cap.

5. Remove oil drain plug and drain oil completely into a suitable container.



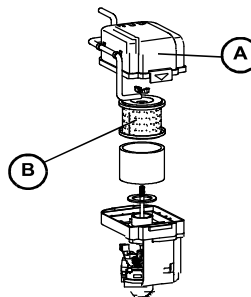
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**Figure 3-17. Oil Drain Plug**

6. Install oil drain plug and tighten securely.
7. Slowly pour oil into oil fill opening until oil level is between "L" and "H" marks on dipstick. **DO NOT OVERFILL.**
8. Install oil fill cap, and finger tighten.
9. Wipe up any spilled oil.
10. Properly dispose of oil in accordance with all applicable regulations.

## Air Filter

Engine will not run properly and may be damaged if run with a dirty air filter. Service air filter more frequently in dirty or dusty conditions.



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**Figure 3-18. Air Filter Assembly**

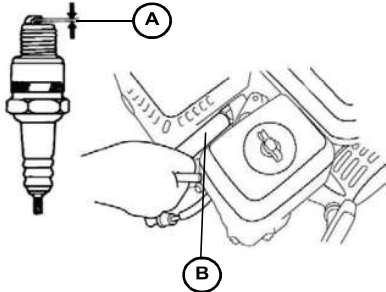
To service air filter:

1. Release air cleaner cover latch and remove cover (A).
2. Remove air filter (B).
3. Gently tap air filter on flat surface to remove dirt.
4. Install clean, or new filter.
5. Install cover and snap air cleaner cover latch to close.

## Service Spark Plug

To service spark plug:

1. Clean area around spark plug.
2. Remove and inspect spark plug.
3. Inspect electrode gap with wire feeler gauge and reset spark plug gap (A) to 0.028 - 0.031 in (0.70 - 0.80 mm).



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**Figure 3-19. Spark Plug**

**NOTE:** Replace spark plug if electrodes are pitted, burned or porcelain is cracked. Use ONLY recommended replacement plug. See Specifications.

4. Install spark plug finger tight, and tighten an additional 3/8 to 1/2 turn using spark plug wrench (B).

## Inspect Engine Spark

### **WARNING**

Accidental Start-up. Disconnect spark plug wire when working on unit. Failure to do so could result in death or serious injury.

(000102)

1. Disconnect spark plug wire from spark plug.
2. Secure spark plug wire where it cannot contact spark plug.
3. Test spark plug with approved spark plug tester.

**NOTE:** DO NOT inspect for spark with spark plug removed.

## Inspect Muffler And Spark Arrester

**NOTE:** It is a violation of California Public Resource Code, Section 4442, to use or operate the engine on any forest-covered, brush-covered, or grass-covered land unless the exhaust system is equipped with a spark arrester, as defined in Section 4442, maintained in effective working order. Other states or federal jurisdictions may have similar laws.

Contact original equipment manufacturer, retailer, or dealer to obtain a spark arrester designed for exhaust system installed on this engine.

**NOTE:** Use ONLY original equipment replacement parts.

Inspect muffler for cracks, corrosion, or other damage. Remove spark arrester, if equipped, inspect for damage or carbon blockage. If replacement parts are required.

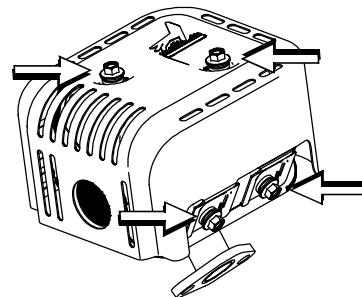
## Inspect Spark Arrester Screen



### **WARNING**

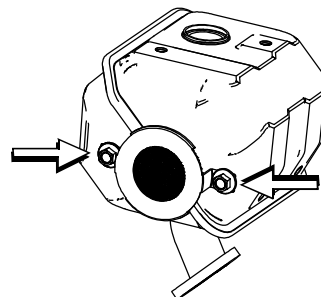
Hot Surfaces. When operating machine, do not touch hot surfaces. Keep machine away from combustibles during use. Hot surfaces could result in severe burns or fire. (000108)

1. Loosen fasteners and remove heat shield from muffler.
2. Loosen fasteners and remove spark arrester from muffler.
3. Inspect spark arrester. Replace if torn, perforated or otherwise damaged (part number 0K1851).
4. If screen is not damaged, clean it with a commercial solvent and replace.



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**Figure 3-20. Heat Shield Fasteners**



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**Figure 3-21. Spark Arrester Fasteners**



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## Storage

### General



#### **⚠ DANGER**

Explosion and Fire. Fuel and vapors are extremely flammable and explosive. Add fuel in a well ventilated area. Keep fire and spark away. Failure to do so will result in death or serious injury. (000105)



#### **⚠ WARNING**

Risk of Fire. Verify machine has properly cooled before installing cover and storing machine. Hot surfaces could result in fire.

(000109)

- DO NOT store fuel from one season to another unless properly treated.
- Replace fuel container if rust is present. Rust in fuel will cause fuel system problems.
- Cover unit with a suitable protective, moisture resistant cover.
- Store unit in a clean and dry area.

### Winter Storage

**NOTE:** If pump saver is not available, connect a 3-foot section of garden hose to water inlet adapter. Pour RV-antifreeze (antifreeze without alcohol) into hose. Pull recoil handle twice. Disconnect 3-foot hose.

- Store unit in a clean and dry area.

**NOTE:** If not using power washer for more than 30 days, prepare engine and pump for storage.

### Prepare Fuel System for Storage

Fuel stored over 30 days can go bad and damage fuel system components. Keep fuel fresh, use fuel stabilizer.

If fuel stabilizer is added to fuel system, prepare and run engine and pump for long term storage. Run engine for 2 minutes to circulate stabilizer throughout fuel system. Adequately prepared fuel can be stored up to 24 months.

**NOTE:** If fuel has not been treated with fuel stabilizer, it must be drained into an approved container. Run engine until it stops from lack of fuel. Use of fuel stabilizer in fuel storage container is recommended to keep fuel fresh.

Prepare Engine for Storage

1. Change engine oil.
2. Remove spark plug.
3. Pour tablespoon (5-10cc) of clean engine oil or spray a suitable fogging agent into cylinder.
4. Pull starter recoil several times to distribute oil in cylinder.

5. Install spark plug.
6. Pull recoil slowly until resistance is felt. This will close valves so moisture cannot enter engine cylinder. Gently release recoil.

### Change Oil

Change engine oil before storage. See "Change Engine Oil".

### Prepare Pump for Storage

Protect unit from freezing temperatures. Failure to do so will permanently damage pump and render unit inoperable. Freeze damage is not covered under warranty.

Protect unit from freezing temperatures as follows:

1. Shut engine OFF.
2. Turn water supply OFF.
3. Point spray gun in a safe direction, and squeeze trigger to relieve trapped pressure.
4. Let engine cool.
5. Disconnect hoses from spray gun and high-pressure outlet on pump. Drain water from hoses, spray gun, and lance. Use a rag to wipe off components.
6. Empty pump of all remaining liquids.
7. Turn engine start switch and fuel valve to OFF.
8. Pull recoil handle approximately six times to remove remaining liquid from pump.
9. Winterize pump with pump saver. This minimizes freeze damage and lubricates pistons and seals.
10. Store unit in a clean and dry area.

**NOTE:** If pump saver is not available, connect a 3-foot section of garden hose to water inlet adapter. Pour RV-antifreeze (antifreeze without alcohol) into hose. Pull recoil handle twice. Disconnect 3-foot hose.