



- ⓖ ***Operating & Maintenance Instructions***
- ⓓ ***Betriebsanleitung & Wartungsvorschriften***
- ⓓⓔ ***Drifts- og vedligeholdelsesvejledning***
- ⓔ ***Instrucciones de Mantenimiento & Operación***
- ⓕ ***Instructions d'utilisation et de maintenance***
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- ⓔ ***Instruktionsbok***
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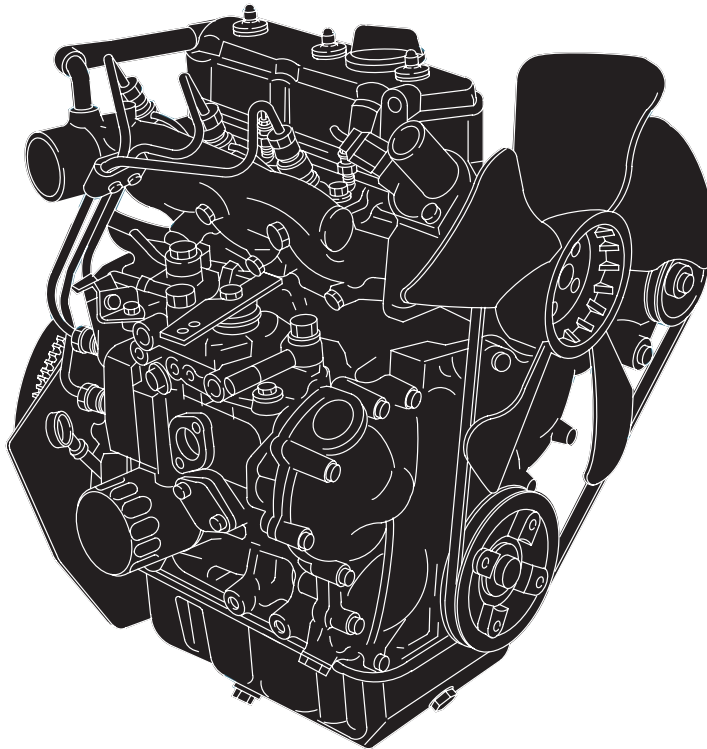


**Model** 432447  
522447  
582447

**Vanguard**  
Diesel

**Model** 588447  
58A447

**Vanguard**  
Turbocharged Diesel



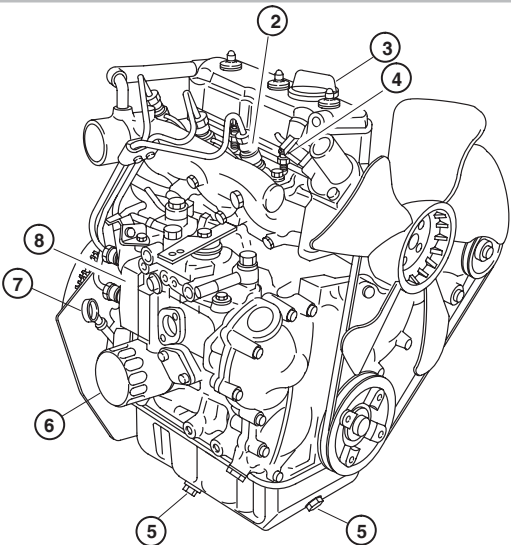
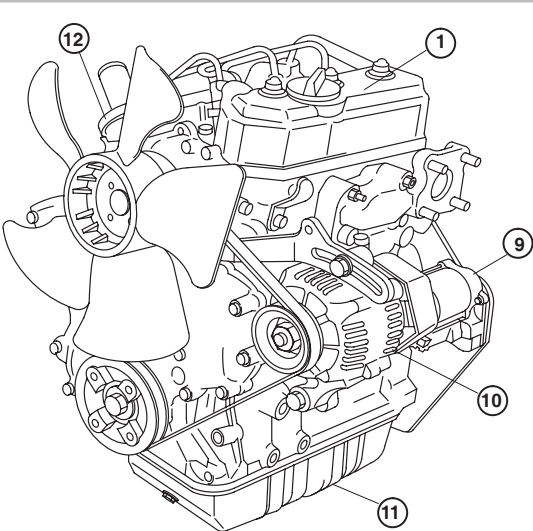
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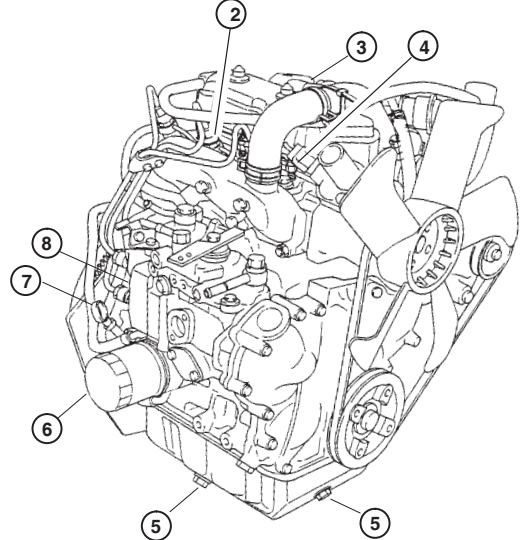
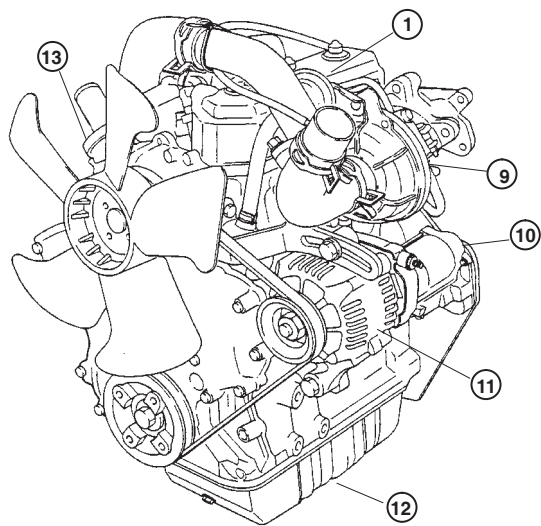
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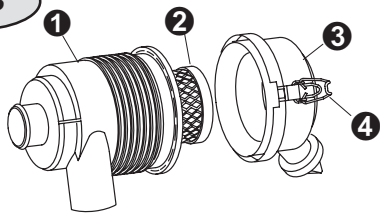
**Fig. 1**



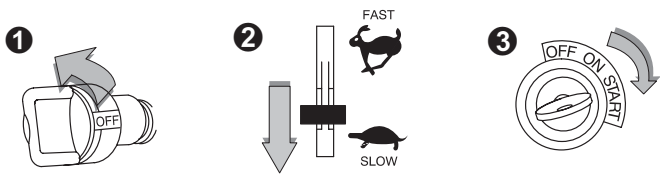
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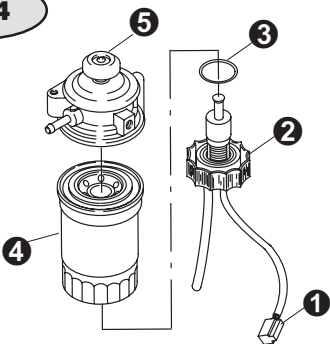
**Fig. 3**



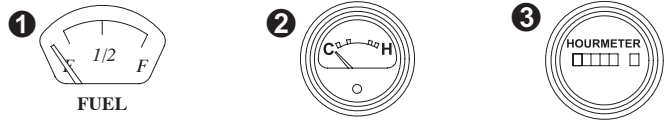
**Fig. 5**



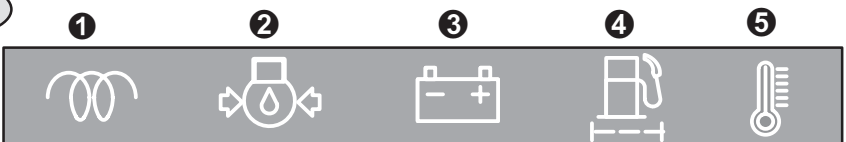
**Fig. 4**



**Fig. 6**



**Fig. 7**



## DIESEL ENGINE COMPONENTS

### Models 432447, 522447 and 582447

**Fig. 1**

- ① **Engine ID. Label: Model, Type & Code Numbers**  
Note: See ENGINE IDENTIFICATION NUMBERS—last section

- ② Injector Nozzle  
③ Oil Filler Cap  
④ Glow Plug  
⑤ Oil Drains  
⑥ Oil Filter  
⑦ Dipstick  
⑧ Injector Pump  
⑨ Electric Starter  
⑩ Alternator  
⑪ Oil Pan  
⑫ Thermostat

## TURBOCHARGED DIESEL ENGINE COMPONENTS

### Models 588447 and 58A447

**Fig. 2**

- ① **Engine ID. Label: Model, Type & Code Numbers**  
Note: See ENGINE IDENTIFICATION NUMBERS—last section

- ② Injector Nozzle  
③ Oil Filler Cap  
④ Glow Plug  
⑤ Oil Drains  
⑥ Oil Filter  
⑦ Dipstick  
⑧ Injector Pump  
⑨ Turbocharger  
⑩ Electric Starter  
⑪ Alternator  
⑫ Oil Pan  
⑬ Thermostat

## ADDITIONAL COMPONENTS

### Air Cleaner Assembly

**Fig. 3**

- ① Body  
② Cartridge  
③ Cover  
④ Clamps

### Fuel Filter Assembly

**Fig. 4**

- ① Sensor Wire  
② Water Drain Valve  
③ O-Ring  
④ Fuel Filter  
⑤ Priming Pump

## PANEL COMPONENTS

### Typical Controls (if equipped)

**Fig. 5**

- ① Fuel Shut-off Valve  
② Throttle  
③ Starter Switch

### Typical Gauges (if equipped)

**Fig. 6**

- ① Fuel gauge  
② Coolant Temperature Gauge  
③ Hour Meter – Indicates total number of hours the engine has been run.

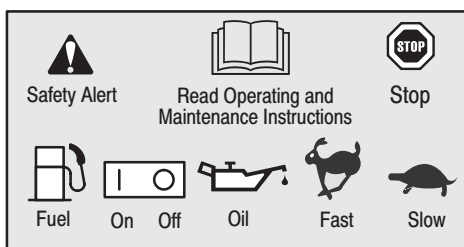
### Typical Panel Lights (if equipped)

**Fig. 7**

Lights will illuminate when the starter switch is turned to ON position, and should be out while engine is running.  
**CHECK ENGINE IF LIGHTS TURN ON DURING OPERATION.**

- ① **Heat or Glow Light** – The heat or glow light comes on when the key is turned to HEAT or GLOW. If no HEAT or GLOW position, it will light in ON position.  
② **Engine Oil Pressure Light** – If illuminates during engine operation, shut down engine immediately. Check oil level, or electrical system.  
③ **Charge Light** – If illuminates during engine operation, check electrical system.  
④ **Fuel Filter Light** – Illuminates when enough water collects in the fuel filter, but should be out when the water is drained.  
⑤ **Temperature Light** – If illuminates during engine operation, engine is overheating. Check coolant level; check for debris on radiator or any restriction to air flow.

## INTERNATIONAL SYMBOLS SHOWN ON ENGINE



## TECHNICAL INFORMATION

### Engine Power Rating Information

The gross power rating for individual gas engine models is labeled in accordance with SAE (Society of Automotive Engineers) code J1940 (Small Engine Power & Torque Rating Procedure), and rating performance has been obtained and corrected in accordance with SAE J1995 (Revision 2002-05). Torque values are derived at 3060 RPM; horsepower values are derived at 3600 RPM. Actual gross engine power will be lower and is affected by, among other things, ambient operating conditions and engine-to-engine variability. Given both the wide array of products on which engines are placed and the variety of environmental issues applicable to operating

the equipment, the gas engine will not develop the rated gross power when used in a given piece of power equipment (actual "on-site" or net power). This difference is due to a variety of factors including, but not limited to, accessories (air cleaner, exhaust, charging, cooling, carburetor, fuel pump, etc.), application limitations, ambient operating conditions (temperature, humidity, altitude), and engine-to-engine variability. Due to manufacturing and capacity limitations, Briggs & Stratton may substitute an engine of higher rated power for this Series engine.

## ENGINE SPECIFICATIONS

### 3-Cylinder, Liquid Cooled Diesel Engine

THIS ENGINE IS CERTIFIED TO OPERATE ON DIESEL FUEL.

#### Model 432447

Bore . . . . . 68 mm (2.68 in.)  
Stroke . . . . . 64 mm (2.52 in.)  
Displacement . . . . . 697 cc (42.5 cu. in.)

#### Model 522447

Bore . . . . . 68 mm (2.68 in.)  
Stroke . . . . . 78 mm (3.07 in.)  
Displacement . . . . . 850 cc (52.0 cu. in.)

#### Model 582447, 588447, 58A447

Bore . . . . . 72 mm (2.83 in.)  
Stroke . . . . . 78 mm (3.07 in.)  
Displacement . . . . . 953 cc (58.1 cu. in.)


## SAFETY SPECIFICATIONS



### WARNING

#### THE OPERATING & MAINTENANCE INSTRUCTIONS CONTAIN SAFETY INFORMATION TO

- Make you aware of hazards associated with engines.
- Inform you of the risk of injury associated with those hazards, and
- Tell you how to avoid or reduce the risk of injury.

The safety alert symbol  is used to identify safety information about hazards that can result in personal injury. A signal word (DANGER, WARNING, or CAUTION) is used with the alert symbol to indicate the likelihood and the potential severity of injury. In addition, a HAZARD SYMBOL may be used to represent the type of hazard.



**DANGER** indicates a hazard which, if not avoided, will result in death or serious injury.

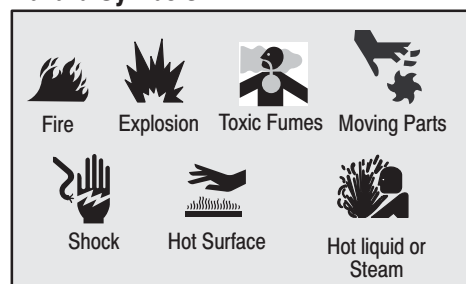


**WARNING** indicates a hazard which, if not avoided, could result in death or serious injury.



**CAUTION** indicates a hazard which, if not avoided, might result in minor or moderate injury. **CAUTION**, when used without the alert symbol, indicates a situation that could result in damage to the engine.

### Hazard Symbols





## WARNING

### BEFORE OPERATING ENGINE

- Read entire Operating & Maintenance Instructions.
- Briggs & Stratton does not necessarily know what equipment this engine will power. Thoroughly read and understand the operating instructions for the equipment on which this engine is placed.
- Failure to follow instructions could result in serious injury or death.



## WARNING

Unintentional sparking can result in fire or electric shock.



Unintentional start-up can result in entanglement, traumatic amputation, or laceration.

### BEFORE PERFORMING ADJUSTMENTS OR REPAIRS

- Disconnect battery at NEGATIVE (-) terminal.



## WARNING

Engines give off carbon monoxide, an odorless, colorless, poisonous gas.

Breathing carbon monoxide can cause nausea, fainting or death.

- Start and run engine outdoors in a well ventilated area.
- Do not start or run engine in enclosed area, even if doors or windows are open.

## WARNING

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



## WARNING

Briggs & Stratton does not approve or authorize the use of these engines on 3-wheel All Terrain Vehicles (ATVs), motor bikes, fun/recreational go-karts, aircraft products or vehicles intended for use in competitive events. Use of these engines in such applications could result in property damage, serious injury (including paralysis), or even death.



## WARNING

Diesel fuel, it's vapors and other gaseous vapors are extremely flammable and explosive.

Fire or explosion can cause severe burns or death.

### WHEN STARTING ENGINE

- Make sure muffler, fuel cap and air cleaner are in place.
- DO NOT start engine if there is natural or LP gas leakage in area.

### WHEN ADDING FUEL

- Turn engine OFF and let cool at least 2 minutes before removing fuel cap.
- Fill fuel tank outdoors in well-ventilated area, away from sparks, open flames, pilot lights, heat, and other ignition sources.
- Keep fuel tank full. Do not overfill tank. Fill tank to approximately 40 mm (1-1/2 inches) below top of neck to allow for fuel expansion.
- If fuel spills, wipe it up before starting engine.
- Replace fuel cap before starting.
- Check fuel lines, tank, cap, filter, and fittings frequently for cracks or leaks. Replace if necessary.

### WHEN OPERATING EQUIPMENT

- DO NOT tip engine or equipment at angle which causes fuel to spill.

### WHEN TRANSPORTING EQUIPMENT

- Transport with fuel tank EMPTY or CLOSE shut-off valve..

### BEFORE REPLACING FUEL FILTER

- Drain fuel tank or close shut-off valve. Fuel can leak out, creating a fire/explosion hazard.

### WHEN STORING FUEL OR EQUIPMENT WITH FUEL

- DO NOT store near a furnace, stove, water heater or other appliances which uses a pilot light or other ignition source because they can ignite fuel vapors.



## WARNING

Running engines produce heat. Engine parts, especially the muffler and turbo-charger, become extremely hot.

Severe thermal burns can occur on contact.

Combustible debris, such as leaves, grass, brush, etc. can catch fire.

- Allow muffler, turbocharger, engine cylinder and fins to cool before touching.
- Engine should be kept clean to reduce the risk of overheating and ignition of accumulated debris. Clean engine when it is cold, especially in the muffler and manifold areas.
- Install and maintain in working order a spark arrester before using equipment on forest-covered, grass-covered, brush-covered unimproved land. (The state of California Public Resources Code Section 4442 requires a spark arrester in working order.) Other states may have similar laws. Federal laws apply on federal land.



## WARNING

Rotating parts can contact or entangle hands, feet, hair, clothing, or accessories.

Traumatic amputation or severe laceration can result.

- Operate equipment with guards in place.
- Keep hands and feet away from rotating parts.
- Tie up long hair and remove jewelry.
- DO NOT wear loose-fitting clothing, dangling drawstrings or items that could become caught.



## WARNING

Do not touch radiator or open radiator / reservoir caps when engine is hot or running. Severe thermal burns or injury can occur by escaping steam or hot engine coolant.

- If Temperature WARNING Light comes on or gauge rises into the HOT zone (105° C / 220° F), shut down engine. Once engine is cooled, check for low coolant level, improper fan belt tension and clogged radiator fins.
- To remove **reservoir cap** after engine is cool, place a thick cloth over cap and remove it slowly.
- To remove **radiator cap** after engine is cool, place a thick cloth over cap and rotate it slowly counter-clockwise to the first stop. Pressurized steam may emit from the cap, stand back to avoid injury. Once all pressure is released, rotate cap counter-clockwise while pushing down on cap to remove.

## OIL RECOMMENDATIONS

Use a high quality detergent oil classified “For Service CF, CF-4”

Choose correct **Viscosity Grade** type of oil for expected starting temperature before next oil change.

### Fig. 8

Item ① A Synthetic 5W-30 oil may be used for all temperatures.

The use of synthetic oil does not alter required oil change intervals.

**Note:** Use no special additives with recommended oils. See MAINTENANCE section for checking and adding oil.

## FUEL RECOMMENDATIONS

THIS ENGINE IS CERTIFIED TO OPERATE ON DIESEL FUEL. IF INCORRECT FUEL IS USED, BLACK SMOKE, POWER LOSS, AND DAMAGE TO THE ENGINE WILL OCCUR, WHICH WILL NOT BE COVERED BY THE WARRANTY. Use clean, fresh, diesel fuel with a **minimum of 40 cetane**. Fresh fuel prevents gum from forming in the fuel system. Purchase fuel in quantity that can be used within 30 days. See STORAGE section.

## COOLANT RECOMMENDATIONS

A **50/50 mixture of phosphate-free antifreeze and tap water** is required for heat dissipation, rust resistance and lubrication.

See MAINTENANCE section for adding coolant.



## STARTING ENGINE

### CAUTION:

- This engine is shipped from Briggs & Stratton without oil. Check oil level before starting engine. If you start the engine without oil, the engine will be damaged beyond repair and will not be covered under warranty.
- Before starting engine for the first time, charge battery as the equipment manufacturer recommends. Failure to do so may cause damage to the engine.
- To prolong starter life, use short starting cycles, not to exceed 30 secs./min. Extended cranking can damage starter motor.

### See PANEL COMPONENTS

**Fig. 5**

1. Place throttle in the SLOW position.
  2. Be sure equipment is in neutral gear with clutches, belts, chains, etc., disengaged. (Follow equipment manufacturer's instructions.)
  3. Open fuel shut-off valve (if equipped).
  4. Insert and turn key to ON position. (GLOW light comes on indicating glow plugs are preheating combustion chamber.)
  5. When GLOW light goes out, turn key to START.
  6. When engine starts, release key, which will return to ON position. (After key has returned to ON position, the GLOW light comes on for about 20 seconds.)
  7. Allow engine to warm up several seconds to several minutes, depending on outside temperature before applying load.
- DO NOT accelerate or race a cold engine. Failure to observe this caution may lead to engine damage.

### Starting Engine when fuel has run out

- Operate priming pump on fuel filter assembly (if equipped) to bleed air from fuel line.

### Cold weather starting [below -10° C (14° F)]

Ensure correct **Viscosity Grade** of oil for expected starting temperature.

**Fig. 8**

**Item ①** A synthetic 5W-30 oil may be used for all temperatures.

- Use fresh fuel. DO NOT use fuel left over from summer.
- Start with throttle control in FAST position.
- Continue with Steps 2 thru 6 above.

## STOPPING ENGINE

### See PANEL COMPONENTS

**Fig. 5**

1. Move throttle to SLOW (idle) position. Engine should run for a short time to cool down.
2. Turn key to OFF. Always remove key when equipment is not in use or left unattended. Store key out of reach of children.

**CAUTION:** FOR TURBOCHARGER-EQUIPPED ENGINE: After operating engine at full load, allow engine to idle for one minute before shutting it off. Failure to observe this caution may lead to turbocharger malfunction.

## MAINTENANCE

See any **Authorized Briggs & Stratton 3/LC Dealer** for correct replacement parts. Other parts may not perform as

well, may damage the engine, result in injury, or void your warranty.

Regular maintenance improves performance and extends engine life. **More frequent service is required when** operating in adverse conditions: heavy load, high temperatures or in extremely dusty or dirty areas.

### FIRST 50 hours (Initial Break-In)

- Change oil and Oil Filter\*
- Service air cleaner cartridge
- Check spark arrestor (if equipped)

### DAILY CHECKS or Every 8 hours

- Check oil level
- Check for oil leaks
- Check fuel level
- Check coolant level
- Clean debris from engine

### Every 50 hours

- Check and clean Spark Arrestor (if equipped)

### Every 100 hours

- Check Fan Belt
- Service Air Cleaner Cartridge

### Every 150 hours

- Change Oil and Oil Filter \*

### Every 200 hours

- Check Battery Electrolyte

### Every 600 hours

- Replace Air Cleaner Cartridge
- Check Valve Clearance \*\*

### Perform Annually

- Perform the above procedures annually if the engine has operated less than the hours shown.
- Replace Coolant

\* The use of **Synthetic 5W-30** oil does not alter required oil change intervals.

\*\* If engine is running normally, this check and adjustment may be omitted.

## Air Cleaner

### See ADDITIONAL COMPONENTS

**Fig. 3**

**Note:** Air cleaner may be supplied by equipment manufacturer.

1. Unlock clamps and carefully remove cover.
2. Remove cartridge and clean by gently tapping on end with handle of screwdriver. Replace cartridge if very dirty or damaged.
3. Before replacing cartridge, clean inside of body and cover thoroughly.
4. Install cover and lock clamps.

### CAUTION:

DO NOT use pressurized air or solvents to clean cartridge. Pressurized air can damage cartridge; solvents will dissolve cartridge.  
DO NOT oil cartridge.

## Clean Debris from Engine



### WARNING

- Allow muffler, turbocharger, engine cylinder and fins to cool before touching.

**Before every use**, clean accumulated debris from engine.

- This will help insure adequate cooling and will reduce the possibility of overheating and mechanical damage.
- To insure smooth operation and correct engine speed, keep injector pump linkage, springs and controls clean.

### CAUTION:

DO NOT use water to clean engine parts. Water could contaminate fuel system. Use a brush, shop vac or dry cloth.

## Coolant



### WARNING



### ALLOW ENGINE TO COOL BEFORE ADDING OR CHANGING COOLANT.

- If Temperature WARNING Light comes on or gauge rises into the HOT zone (105° C / 220° F), shut down engine. Once engine is cooled, check for low coolant level, improper fan belt tension and clogged radiator fins.
- To remove **reservoir cap** after engine is cool, place a thick cloth over cap and remove it slowly.
- To remove **radiator cap** after engine is cool, place a thick cloth over cap and rotate it slowly counter-clockwise to the first stop. Pressurized steam may emit from the cap, stand back to avoid injury. Once all pressure is released, rotate cap counter-clockwise while pushing down on cap to remove.

A 50/50 mixture of phosphate-free antifreeze and tap water is required for heat dissipation, rust resistance and lubrication.

1. Reservoir level should be between FULL and LOW. If reservoir is DRY, it must be filled along with radiator. Fill radiator to bottom of fill cap seat.
2. Start and run engine for 30 seconds.
3. Shut engine off and allow to cool.
4. Recheck coolant levels in radiator and reservoir.

## Fan Belt

**Fig. 9**

### Check the condition of fan belt ①.

- Replace if worn or damaged.

### To Check fan belt tension:

1. Apply 98 N (22 lbs.) of force at center ② of span between fan and alternator. Measurement ③ should be 10 – 12 mm (3/8 – 1/2 in.) of belt movement.

### To adjust fan belt tension:

1. First loosen the 2 bolts (A) and (B) on the alternator.
2. Place a handle ④ or similar object between the alternator and engine cylinder block and move alternator toward outside of engine. Stop when fan belt conforms to specified tension listed above.
3. Tighten the alternator bolts to maintain tension, and remove handle.
4. Check tension again, if within specifications, torque bolts. (A) = 19 Nm (170 in. lbs.) (B) = 61 Nm (45 ft. lbs.)

## Fuel Filter



### WARNING

- Disconnect battery at negative terminal

### See PANEL COMPONENTS

**Fig. 7**

If the Fuel Filter WARNING Light comes on while engine is running, stop engine and drain water from fuel filter.

### To drain water from fuel filter:

**Fig. 4**

1. With engine STOPPED place a drain pan under fuel filter and loosen drain valve approximately 1 turn. Water should drain. If necessary, operate priming pump to drain water, but only until fuel flows from valve.
2. Tighten drain valve.
3. Start engine.
4. Ensure warning light goes out.
5. Check for leaks.

### To replace fuel filter:

1. Drain fuel tank or close fuel shut-off valve.
2. Disconnect sensor wire.
3. Remove drain valve and discard o-ring.
4. Remove fuel filter with filter wrench.
5. Screw new filter on by hand until gasket contacts housing. Then tighten 1/3 turn more.
6. Install drain valve with new o-ring.
7. Connect sensor wire.
8. Open fuel shut-off valve.
9. Operate priming pump to bleed air from fuel line.
10. Start engine.
11. Check for leaks.

## Oil and Oil Filter

### Checking Oil Level **Fig. 10**

Check oil every 8 hours of operation or daily, before starting engine.

1. Place equipment level and clean around dip stick.
2. Remove dipstick, wipe with clean cloth, insert FULLY.
3. Remove dipstick and check oil level. Oil should be at the "F" mark ①.
4. If oil is required, follow Steps 6 thru 11 below

### Changing Oil / Oil Filter **Fig. 11**

With engine off, but still warm.

1. Position equipment so that engine oil drain plug is lowest point on engine.
2. Clean around oil drain plug ① and oil fill cap ②, then remove allowing oil to drain completely.
3. Remove oil filter ③.
4. Before installing new filter, apply fresh oil to filter gasket. Reinstall filter by hand, once gasket contacts adapter tighten 3/4 turn more.
5. Reinstall drain plug, torque to 34.5 Nm (25.5 ft. lbs.)
6. Place equipment level.

See OIL RECOMMENDATIONS section.

### Oil capacity:

**Max. 3.3 liters (3.50 qts) when changing Oil & Oil Filter**

**Max. 3.1 liters (3.25 qts) when changing Oil only**

#### **CAUTION: When filling or adding oil.**

To prevent oil from overrunning into breather and damaging engine upon start-up, proper venting is necessary.

7. To provide proper venting, remove dipstick and place on a clean surface. Also maintain a clearance ④ between the oil fill device and the oil fill hole in the valve cover.
8. SLOWLY refill with a high quality detergent oil.
9. Replace and tighten oil filler cap and dipstick firmly.
10. Run engine at idle for 5 minutes, stop engine, wait 3 minutes, then recheck oil level. If required, add oil to bring level to "F" mark.

**Fig. 10** Item ①

11. Check for oil leaks around plug and filter.

#### **CAUTION:**

Used oil is a hazardous waste product. Do not discard with household waste. Check with your local authorities, service center, or dealer for safe disposal/recycling facilities.

## Tune-Up Specifications

### Valve Clearance (cold engine)

|               |                    |
|---------------|--------------------|
| Intake .....  | 0.2 mm (0.008 in.) |
| Exhaust ..... | 0.2 mm (0.008 in.) |

## STORAGE



### **WARNING**



### **WHEN STORING FUEL OR EQUIPMENT WITH FUEL**

- DO NOT store near a furnace, stove, water heater or other appliances which uses a pilot light or other ignition source because they can ignite fuel vapors.

### **Engines stored over 30 days need special attention.**

**CAUTION:** Running fuel tank dry is not recommended.

1. Fill fuel tank FULL to prevent condensation from forming.
2. A **Diesel Fuel Microbiocides Additive** should be used to prevent bacteria and fungi from growing in the fuel tank. Follow additive manufacturer's instructions for proportions. Run engine for a short time to circulate the additive through the fuel system.
3. Change oil. See MAINTENANCE section.
4. Remove all glow plugs.
5. Pour 3 cc (1/2 teaspoon) engine oil into each glow plug hole.
6. Crank engine over slowly to distribute oil.
7. Replace glow plugs.
8. Clean engine. See MAINTENANCE section - Cleaning Debris from Engine
9. Store in a clean and dry area.

## SERVICE AND PARTS

Authorized Briggs & Stratton 3/LC Service Dealer's carry a stock of Genuine Briggs & Stratton Parts and are equipped with special service tools. Other parts may not perform as well, may damage the engine, result in injury, or void your warranty. Trained mechanics assure expert repair service on all B&S engines.

When you purchase equipment powered by a B&S engine, you are assured of highly skilled, reliable service at more than 30,000 Authorized Service Dealers worldwide, including more than 6,000 Master Service Technicians.

Locate your nearest Authorized Briggs & Stratton 3/LC Service Dealer by viewing our locator map at :

**www.briggsandstratton.com**

An illustrated Briggs & Stratton 3/LC Engine **Shop Manual MS-1055** includes common specifications and detailed information covering adjustment, tune-up and repair of the B&S 3/LC Engine. Order manual from an Authorized Briggs & Stratton Service Dealer.

## Partial List of Genuine BRIGGS & STRATTON Parts

| Part                                   | Part No. |
|--|----------|
| Oil 1.4 liter (48 oz.) (1.5 qt.) ..... | 100028   |
| Oil Filter .....                       | 820314   |
| Air Cleaner Cartridge .....            | 820263   |
| Fuel Filter Element .....              | 820311   |

## ENGINE IDENTIFICATION NUMBERS (EIN/Serial Number)

To get replacement parts or technical assistance in the future write your engine Model, Type, and Code numbers along with the Date of Purchase here. These numbers are located on your engine. See ENGINE COMPONENTS.

### **Model**

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### **Code**

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## ABOUT YOUR ENGINE WARRANTY

B&S welcomes warranty repair and apologizes to you for being inconvenienced. Any Authorized Briggs & Stratton 3/LC Service Dealer may perform warranty repairs. Most warranty repairs are handled routinely, but sometimes requests for warranty service may not be appropriate. For example, warranty would not apply if engine damage occurred because of misuse, lack of routine maintenance, shipping, handling, warehousing or improper installation. Similarly, warranty is void if the serial number of the engine has been removed or the engine has been altered or modified.

If a customer differs with the decision of the Service Dealer, an investigation will be made to determine whether the warranty applies. Ask the Service Dealer to submit all supporting facts to the Distributor or the Factory for review. If the Distributor or the Factory decides that the claim is justified, the customer will be fully reimbursed for those items that are defective. To avoid misunderstanding which might occur between the customer and the Dealer, listed below are some of the causes of engine failure that the warranty does not cover.

### Normal wear:

Engines, like all mechanical devices, need periodic parts service and replacement to perform well. Warranty will not cover repair when normal use has exhausted the life of a part or an engine.

### Improper maintenance:

The life of an engine depends upon the conditions under which it operates, and the care it receives. Some applications, such as tillers, pumps and rotary mowers, are very often used in dusty or dirty conditions, which can cause what appears to be premature wear. Such wear, when caused by dirt, dust, spark plug cleaning

grit, or other abrasive material that has entered the engine because of improper maintenance, is not covered by warranty.

**This warranty covers engine related defective material and/or workmanship only, and not replacement or refund of the equipment to which the engine may be mounted. Nor does the warranty extend to repairs required because of:**

- 1 Engines that are not properly applied to equipment. It is strongly recommended that the factory be contacted prior to applying a B&S 3/LC engine to equipment that did not originally use a B&S 3/LC engine.
- 2 PROBLEMS CAUSED BY PARTS THAT ARE NOT ORIGINAL BRIGGS & STRATTON PARTS.
- 3 Equipment controls or installations that prevent starting, cause unsatisfactory engine performance, or shorten engine life. (Contact equipment manufacturer.)
- 4 Leaking carburetors, clogged fuel pipes or injectors, sticking valves, contaminated injection pumps, or other damage, caused by using contaminated or stale fuel. Use clean, fresh fuel (lead free gasoline, diesel fuel) and Briggs & Stratton fuel stabilizer, Part No. 5041.
- 5 Parts which are scored or broken because an engine was operated with insufficient or contaminated lubricating oil, or an incorrect grade of lubricating oil (check oil level daily or after every 8 hours of operation. Refill when necessary and change oil and oil filter at recommended intervals.) OIL GARD may not shut down running engine. Engine damage may occur if oil level is not properly maintained. Read Operating & Maintenance Instructions.

- 6 Repair or adjustment of associated parts or assemblies such as clutches, transmissions, remote controls, etc., which are not manufactured by B&S.

- 7 Damage or wear to parts caused by dirt, which entered the engine because of improper air cleaner maintenance, re-assembly, or use of a non-original air cleaner element or cartridge. (At recommended intervals, replace cartridge.) Read Operating & Maintenance Instructions.

- 8 Parts damaged by over-speeding, or overheating caused by grass, debris, or dirt, which plugs, clogs radiator or air cooling access openings, or damage caused by operating the engine in a confined area without sufficient ventilation. Engine damage caused by not using accurate mix of anti-freeze and tap water, or water entering the engine due to any cause.

- 9 Engine or equipment parts broken by excessive vibration caused by a loose engine mounting, loose cutter blades, unbalanced blades or loose or unbalanced impellers, improper attachment of equipment to engine crankshaft, over-speeding or other abuse in operation.
- 10 Routine tune-up or adjustment of the engine.

- 11 Engine or engine component failure, i.e., combustion chamber, valves, valve seats, valve guides, or burned starter motor windings, caused by the use of alternate fuels such as, liquified petroleum, natural gas, altered gasolines, etc.

**Warranty is available only through service dealers which have been authorized by Briggs & Stratton. Locate your nearest Authorized B&S 3/LC Service Dealer through our dealer locator map on [www.briggsandstratton.com](http://www.briggsandstratton.com).**

## BRIGGS & STRATTON 3/LC ENGINE OWNER WARRANTY POLICY

Effective January 1, 2006 replaces all undated Warranties and all Warranties dated before January 1, 2006

### LIMITED WARRANTY

Briggs & Stratton Corporation (B&S) will repair or replace, free of charge, any part(s) of the engine that is defective in material or workmanship or both. Transportation charges on parts submitted for repair or replacement under this warranty must be borne by purchaser. This warranty is effective for the time periods and subject to the conditions stated below. For warranty service, find the nearest Authorized Briggs & Stratton 3/LC Service Dealer in our dealer locator map at [www.briggsandstratton.com](http://www.briggsandstratton.com), or by calling 1-800-233-3723, or as listed in the 'Yellow Pages'™.

THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR FROM PURCHASE, OR TO THE EXTENT PERMITTED BY LAW ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES ARE EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW. Some states or countries do not allow limitations on how long an implied warranty lasts, and some states or countries do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion 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 and country to country.

## OUR PRODUCT

**VANGUARD  
3/LC Engine**

**Major Parts Warranty\***

**Parts & Labor\***

## WARRANTY PERIOD

Consumer and Commercial Use

2 years

3 years

2 years

\* **Note the following special warranty periods:** For purposes of this warranty policy, Parts and Labor coverage is 2 years. Major parts only coverage is extended to through the third year of operation. **Major Parts Warranty (M.P.W.) covers** but is not limited to or exclusive to cylinder block, cylinder head, crankshaft, camshaft, gears, pistons, rods, flywheel, flywheel housing, oil pump, fan, pulleys, mechanical governor, intake manifold, oil pan. **M.P.W. does not cover** and is not limited to piston rings, replaceable bearings, water pump, any electrical component, valve train components, accessory parts, seals, gaskets, carburetors, exhaust manifold, hoses, all fuel system components, injectors, injection pump, turbocharger, muffler, any filters, radiator, thermostat, spark plugs, glow plugs, fuel transfer pumps. The warranty period begins on the date of purchase by the first retail consumer or commercial end user, and continues for the period of time stated in the table above.

**NO WARRANTY REGISTRATION IS NECESSARY TO OBTAIN WARRANTY ON B&S ENGINES. SAVE YOUR PROOF OF PURCHASE RECEIPT. IF YOU DO NOT PROVIDE PROOF OF THE INITIAL PURCHASE DATE AT THE TIME WARRANTY SERVICE IS REQUESTED, THE MANUFACTURING DATE OF THE PRODUCT WILL BE USED TO DETERMINE THE WARRANTY PERIOD.**



## For Model 432447, 522447 & 582447

**Briggs & Stratton Corporation (B&S),  
the California Air Resources Board (CARB)  
and the United States Environmental Protection  
Agency (U.S. EPA)  
Emissions Control System Warranty Statement  
(Owner's Defect Warranty Rights  
and Obligations)**

EMISSIONS CONTROL WARRANTY COVERAGE IS APPLICABLE TO CERTIFIED MODEL YEAR 2001 AND LATER ENGINES, WHICH ARE PURCHASED AND USED IN CALIFORNIA, AND TO CERTIFIED MODEL YEAR 2001 AND LATER ENGINES, WHICH ARE PURCHASED AND USED ELSEWHERE IN THE UNITED STATES.

**California and United States Emissions Control  
Defects Warranty Statement**

The California Air Resources Board (CARB), U.S. EPA and B&S are pleased to explain the Emissions Control System Warranty on your model year 2001 and later Non-road Compression-ignition engine. In California, new Non-road Compression-ignition engines must be designed, built and equipped to meet the State's stringent anti-smog standards. Elsewhere in the United States, new Non-road Compression-ignition engines certified for model year 2001 and later, must meet similar standards set forth by the U.S. EPA. B&S must warrant the emissions control system on your engine for the period of time listed below, provided there has been no abuse, neglect or improper maintenance of your Non-road Compression-ignition engine.

Your emissions control system includes parts such as the air cleaner, ignition system and muffler. Also included may be connectors and other emissions related assemblies.

Where a warrantable condition exists, B&S will repair your Non-road Compression-ignition engine at no cost to you including diagnosis, parts and labor.

**Briggs & Stratton Corporation Emissions Control  
Defects Warranty Coverage**

Non-road Compression-ignition engines are warranted relative to emissions control parts defects for a period of 1500 hours or two years, whichever occurs first, subject to provisions set forth below. If any covered part on your Non-road Compression-ignition engine is defective, the part will be repaired or replaced by B&S.

**Owner's Warranty Responsibilities**

As the Non-road Compression-ignition engine owner, you are responsible for the performance of the required maintenance listed in

your Operating & Maintenance Instructions. B&S recommends that you retain all your receipts covering maintenance on your Non-road Compression-ignition engine, but B&S cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the Non-road Compression-ignition engine owner, you should however be aware that B&S may deny you warranty coverage if your Non-road Compression-ignition engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your Non-road Compression-ignition engine to an Authorized B&S Service Dealer as soon as a problem exists. The undisputed warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact a B&S Service Representative at 1-800-233-3723.

**Briggs & Stratton Corporation Emissions  
Control Defects Warranty Provisions**

The following are specific provisions relative to your Emissions Control Defects Warranty Coverage. It is in addition to the B&S engine warranty for non-regulated engines found in the Operating & Maintenance Instructions.

**1 Warranted Parts**

Coverage under this warranty extends only to the parts listed below (the emissions control systems parts) to the extent these parts were present on the engine purchased.

**a. Fuel Metering System**

- Injection Pump with feed pump
- Injection nozzle
- Fuel Filter

**b. Air Induction System**

- Air cleaner
- Intake manifold

**c. Ignition System**

- Glow plug

**d. Exhaust System**

- Exhaust manifold

**e. Miscellaneous Items Used in Above Systems**

- Vacuum, temperature, position, time sensitive valves and switches
- Electronic Controls

- Connectors and assemblies
- Hoses

**2 Length of Coverage**

B&S warrants to the initial owner and each subsequent purchaser that the Warranted Parts shall be free from defects in materials and workmanship which caused the failure of the Warranted Parts for a period of 1500 hours or two years, whichever occurs first, from the date the engine is delivered to a retail purchaser.

**3 No Charge**

Repair or replacement of any Warranted Part will be performed at no charge to the owner, including diagnostic labor which leads to the determination that a Warranted Part is defective, if the diagnostic work is performed at an Authorized B&S Service Dealer. For emissions warranty service, contact your nearest Authorized B&S Service Dealer as listed in the "Yellow Pages" under "Lawn Mowers," "Engines, Gasoline," "Gasoline Engines" or similar category.

**4 Claims and Coverage Exclusions**

Warranty claims shall be filed in accordance with the provisions of the B&S Engine Warranty Policy. Warranty coverage shall be excluded for failures of Warranted Parts which are not original B&S parts or because of abuse, neglect or improper maintenance as set forth in the B&S Engine Warranty Policy. B&S is not liable to cover failures of Warranted Parts caused by the use of add-on, non-original, or modified parts.

**5 Maintenance**

Any Warranted Part which is not scheduled for replacement as required maintenance or which is scheduled only for regular inspection to the effect of "repair or replace as necessary" shall be warranted as to defects for the warranty period. Any Warranted Part which is scheduled for replacement as required maintenance shall be warranted as to defects only for the period of time up to the first scheduled replacement for that part. Any replacement part that is equivalent in performance and durability may be used in the performance of any maintenance or repairs. The owner is responsible for the performance of all required maintenance, as defined in the B&S Operating & Maintenance Instructions.

**6 Consequential Coverage**

Coverage hereunder shall extend to the failure of any engine components caused by the failure of any Warranted Part still under warranty.

## For Model 588447 & 58A447

**Briggs & Stratton Corporation (B&S),  
the California Air Resources Board (CARB)  
and the United States Environmental Protection  
Agency (U.S. EPA)  
Emissions Control System Warranty Statement  
(Owner's Defect Warranty Rights and  
Obligations)**

EMISSIONS CONTROL WARRANTY COVERAGE IS APPLICABLE TO CERTIFIED MODEL YEAR 2001 AND LATER ENGINES, WHICH ARE PURCHASED AND USED IN CALIFORNIA, AND TO CERTIFIED MODEL YEAR 2001 AND LATER ENGINES, WHICH ARE PURCHASED AND USED ELSEWHERE IN THE UNITED STATES.

**California and United States Emissions Control  
Defects Warranty Statement**

The California Air Resources Board (CARB), U.S. EPA and B&S are pleased to explain the Emissions Control System Warranty on your model year 2001 and later Non-road Compression-ignition engine. In California, new Non-road Compression-ignition engines must be designed, built and equipped to meet the State's stringent anti-smog standards. Elsewhere in the United States, new Non-road Compression-ignition engines certified for model year 2001 and later, must meet similar standards set forth by the U.S. EPA. B&S must warrant the emissions control system on your engine for the period of time listed below, provided there has been no abuse, neglect or improper maintenance of your Non-road Compression-ignition engine.

Your emissions control system includes parts such as the air cleaner, ignition system and muffler. Also included may be connectors and other emissions related assemblies.

Where a warrantable condition exists, B&S will repair your Non-road Compression-ignition engine at no cost to you including diagnosis, parts and labor.

**Briggs & Stratton Corporation Emissions Control  
Defects Warranty Coverage**

Non-road Compression-ignition engines are warranted relative to emissions control parts defects for a period of 3,000 hours or five years, whichever occurs first, subject to provisions set forth below.

If any covered part on your Non-road Compression-ignition engine is defective, the part will be repaired or replaced by B&S.

**Owner's Warranty Responsibilities**

As the Non-road Compression-ignition engine owner, you are responsible for the performance of the required maintenance listed in your Operating & Maintenance Instructions. B&S recommends that you retain all your receipts covering maintenance on your Non-road Compression-ignition engine, but B&S cannot deny warranty solely for the lack of receipts or for

your failure to ensure the performance of all scheduled maintenance.

As the Non-road Compression-ignition engine owner, you should however be aware that B&S may deny you warranty coverage if your Non-road Compression-ignition engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your Non-road Compression-ignition engine to an Authorized B&S Service Dealer as soon as a problem exists. The undisputed warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact a B&S Service Representative at 1-800-233-3723.

**Briggs & Stratton Corporation Emissions Control  
Defects Warranty Provisions**

The following are specific provisions relative to your Emissions Control Defects Warranty Coverage. It is in addition to the B&S engine warranty for non-regulated engines found in the Operating & Maintenance Instructions.

**1 Warranted Parts**

Coverage under this warranty extends only to the parts listed below (the emissions control systems parts) to the extent these parts were present on the engine purchased.

**a. Fuel Metering System**

- Injection pump with feed pump
- Injection nozzle
- Fuel Filter

**b. Air Induction System**

- Air cleaner
- Intake manifold

**c. Ignition System**

- Glow plug

**d. Exhaust System**

- Exhaust manifold
- Turbocharger

**e. Miscellaneous Items Used in Above Systems**

- Vacuum, temperature, position, time sensitive valves and switches
- Electronic Controls
- Connectors and assemblies
- Hoses

**2 Length of Coverage**

B&S warrants to the initial owner and each subsequent purchaser that the Warranted Parts shall be free from defects in materials and workmanship which caused the failure of the Warranted Parts for a period of 3,000 hours or five years, whichever occurs first, from the date the engine is delivered to a retail purchaser.

**3 No Charge**

Repair or replacement of any Warranted Part will be performed at no charge to the owner, including diagnostic labor which leads to the determination that a Warranted Part is defective, if the diagnostic work is performed at an Authorized B&S Service Dealer. For emissions warranty service, contact your nearest Authorized B&S Service Dealer as listed in the "Yellow Pages" under "Lawn Mowers," "Engines, Gasoline," "Gasoline Engines" or similar category.

**4 Claims and Coverage Exclusions**

Warranty claims shall be filed in accordance with the provisions of the B&S Engine Warranty Policy. Warranty coverage shall be excluded for failures of Warranted Parts which are not original B&S parts or because of abuse, neglect or improper maintenance as set forth in the B&S Engine Warranty Policy. B&S is not liable to cover failures of Warranted Parts caused by the use of add-on, non-original, or modified parts.

**5 Maintenance**

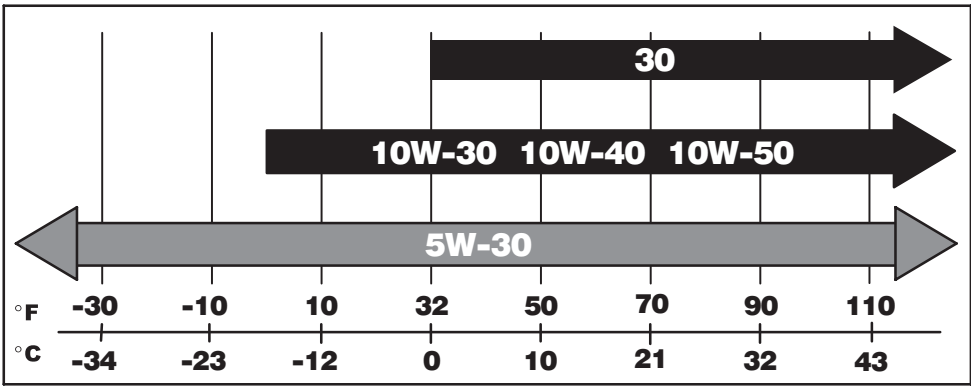
Any Warranted Part which is not scheduled for replacement as required maintenance or which is scheduled only for regular inspection to the effect of "repair or replace as necessary" shall be warranted as to defects for the warranty period. Any Warranted Part which is scheduled for replacement as required maintenance shall be warranted as to defects only for the period of time up to the first scheduled replacement for that part. Any replacement part that is equivalent in performance and durability may be used in the performance of any maintenance or repairs. The owner is responsible for the performance of all required maintenance, as defined in the B&S Operating & Maintenance Instructions.

**6 Consequential Coverage**

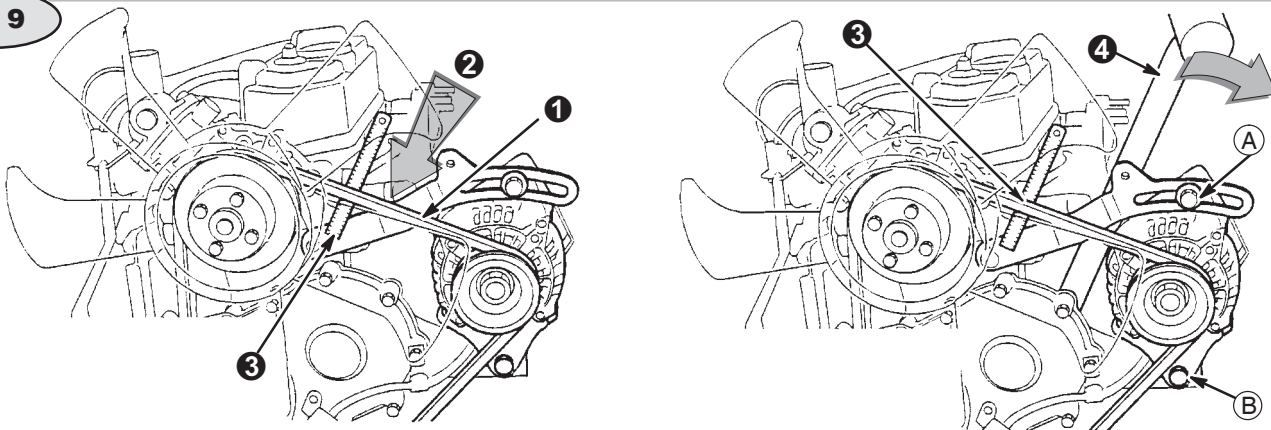
Coverage hereunder shall extend to the failure of any engine components caused by the failure of any Warranted Part still under warranty.



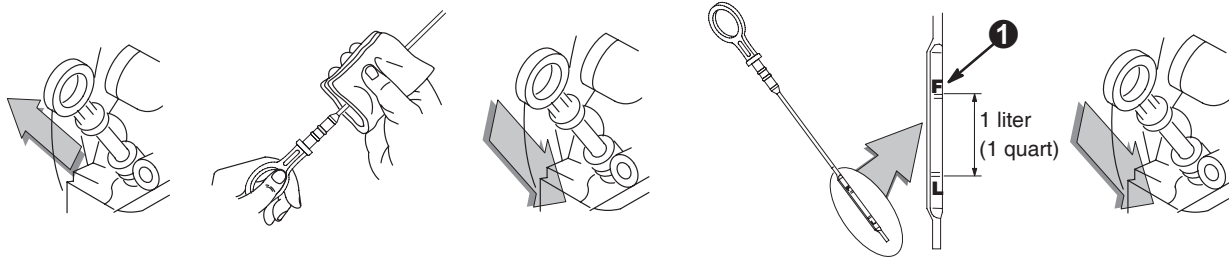
**Fig. 8**



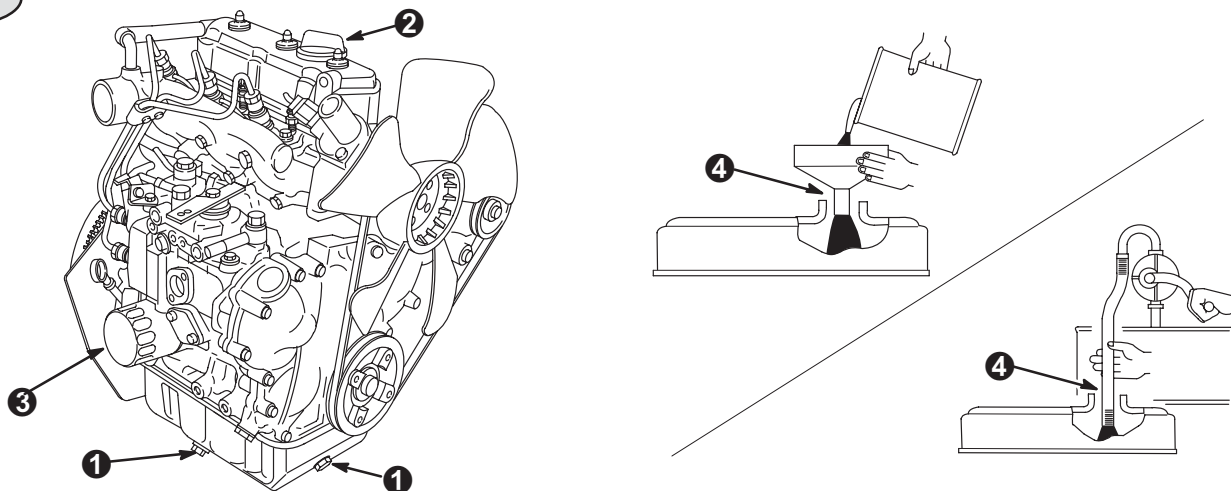
**Fig. 9**



**Fig. 10**



**Fig. 11**





**THE POWER WITHIN™**