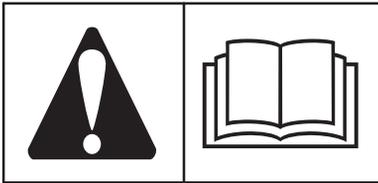
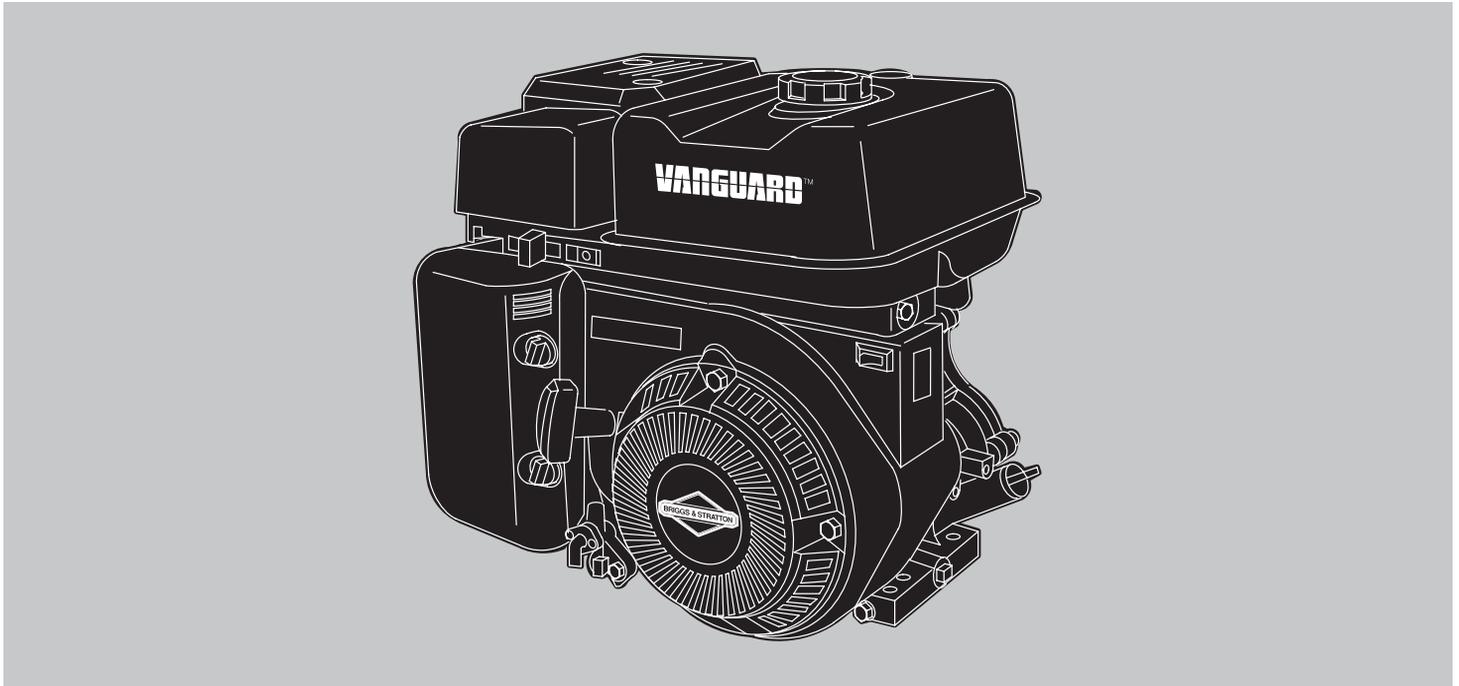
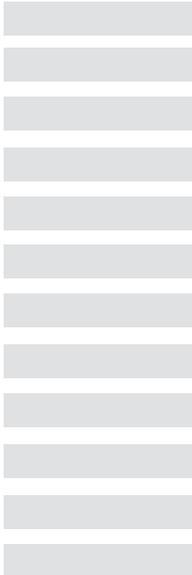




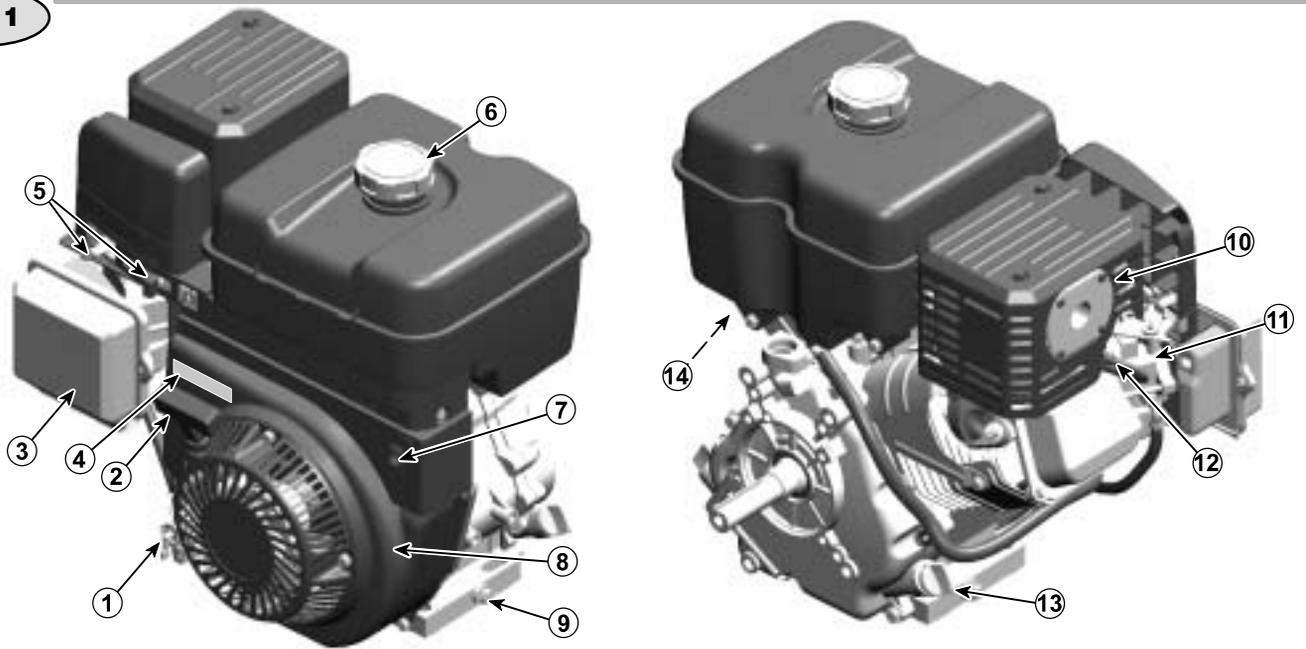
50000, 85400, 86400, 117400, 118400,  
138400, 185400, 235400, 245400, 246400



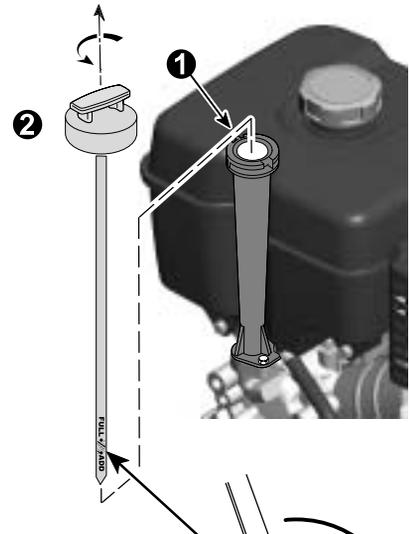
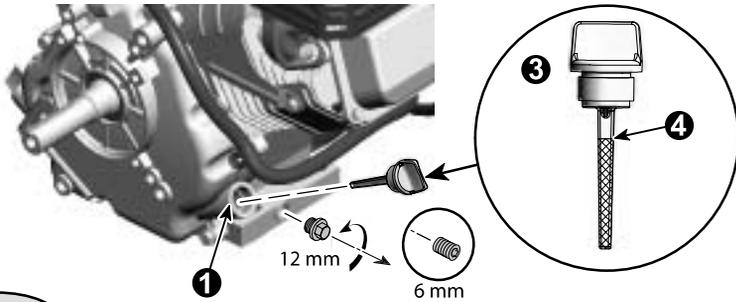
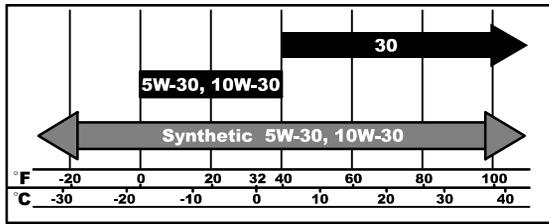
- (GB) *Operating & Maintenance Instructions***
- (D) *Betriebsanleitung & Wartungsvorschriften***
- (DK) *Drifts- og vedligeholdelsesvejledning***
- (E) *Instrucciones de Mantenimiento & Operación***
- (F) *Instructions d'utilisation et de maintenance***
- (GR) *Οδηγίες Λειτουργίας & Συντήρησης***
- (I) *Istruzioni per l'uso e la manutenzione***
- (N) *Anvisninger for bruk og vedlikehold***
- (NL) *Gebruiksaanwijzing***
- (P) *Instruções de operação e de manutenção***
- (S) *Instruktionsbok***
- (SF) *Käyttö & Huolto-ohjeet***



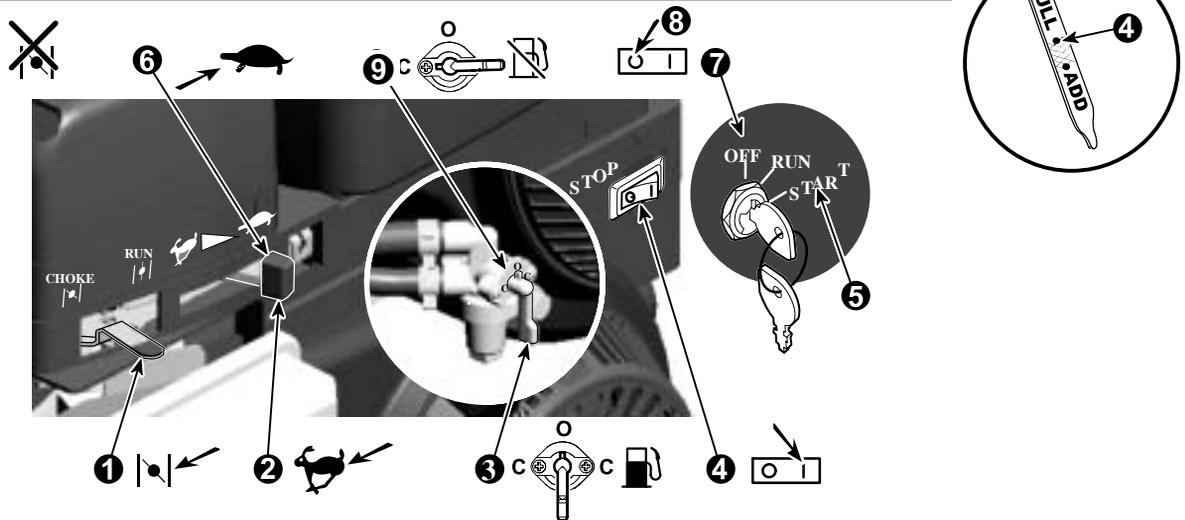
**Fig. 1**



**Fig. 2**



**Fig. 3**



Note: (This note applies only to engines used in the U.S.A.) Maintenance, replacement or repair of the emission control devices and systems may be performed by any nonroad engine repair establishment or individual. However, to obtain no charge repairs under the terms and provisions of the Briggs & Stratton warranty statement, any service or emission control part repair or replacement must be performed by a factory authorized dealer.



## ENGINE COMPONENTS

**Fig. 1**

- ① Fuel shut-off valve
  - ② Rope handle
  - ③ Air cleaner
  - ④ 

Engine	Model	Type	Code
xxxxxx	xxxx xx	xxxxxxxx	
  - ⑤ Throttle and choke controls
  - ⑥ Fuel fill
  - ⑦ Stop switch/Oil Gard®, if equipped
  - ⑧ Blower housing
  - ⑨ Oil drain plug
  - ⑩ Muffler guard/Muffler
  - ⑪ Carburetor
  - ⑫ Spark plug wire
  - ⑬ Oil fill/Dipstick
  - ⑭ 12V electric starter, if equipped
- Record your engine Model, Type and Code numbers here for future use.

Record your date of purchase here for future use.

## TECHNICAL INFORMATION

### Power Ratings

The power ratings for an individual engine model are initially developed by starting with SAE (Society of Automotive Engineers) code J1940 (Small Engine Power & Torque Rating Procedure) (Revision 2002-05). Given both the wide array of products on which our engines are placed, and the variety of environmental issues applicable to operating the equipment, it may be that the engine you have purchased will not develop the rated horsepower when used in a piece of power equipment (actual "on-site" power). This difference is due to a variety of factors including, but not limited to, the following: differences in altitude, temperature, barometric pressure, humidity, fuel, engine lubrication, maximum governed engine speed, individual engine to engine variability, design of the particular piece of power equipment, the manner in which the engine is operated, engine run-in to reduce friction and clean out of combustion chambers, adjustments to the valves and carburetor, and other factors. The power ratings may also be adjusted based on comparisons to other similar engines utilized in similar applications, and will therefore not necessarily match the values derived using the foregoing codes.

## GENERAL INFORMATION

In the state of California, Model Series 50000, 85400, 86400, 117400, 118400, 138400 engines are certified by the California Air Resources Board to meet emissions standards for 125 hours; Model Series, 185400, 235400, 245400, 246400 for 250 hours. Such certification does not grant the purchaser, owner or operator of this engine any additional warranties with respect to the performance or operational life of this engine. This engine is warranted solely according to the product and emissions warranties stated elsewhere in this manual.

## SAFETY SPECIFICATIONS

**BEFORE OPERATING ENGINE**

- Read entire Operating & Maintenance Instructions AND the instructions for the equipment this engine powers.\*
- Failure to follow instructions could result in serious injury or death.

**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.

\* Briggs & Stratton does not necessarily know what equipment this engine will power. For that reason, you should carefully read and understand the operating instructions for the equipment on which your engine is placed.

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.**

**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**

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

## Hazard Symbols

 Fire	 Explosion	 Toxic Fumes	 Hot Surface
 Moving Parts	 Kickback	 Shock	

## International Symbols and Meanings

 Safety Alert	 On Off	 Stop	 Choke
 Read Owner's Manual	 Oil	 Fuel	 Fuel Shutoff

**WARNING**

Gaseous fuels are extremely flammable and readily form explosive air-vapor mixtures at ambient temperatures.



### WARNING

Fuel and its vapors are extremely flammable and explosive. Fire or explosion can cause severe burns or death.

#### WHEN ADDING GASOLINE

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

#### WHEN STARTING ENGINE

- Make sure spark plug, muffler, fuel cap and air cleaner are in place.
- Do not crank engine with spark plug removed.
- If fuel spills, wait until it evaporates before starting engine.
- If engine floods, set choke to OPEN/RUN position, place throttle in FAST and crank until engine starts.

#### WHEN OPERATING EQUIPMENT WITH GASOLINE ENGINE

- Do not tip engine or equipment at angle which causes gasoline to spill.
- Do not choke carburetor to stop engine.

#### WHEN TRANSPORTING EQUIPMENT

- Transport with fuel tank EMPTY or with fuel shut-off valve OFF, and/or fuel cylinder empty.

#### WHEN STORING FUEL OR EQUIPMENT

- Store away from furnaces, stoves, water heaters or other appliances that have pilot light or other ignition source because they can ignite gaseous vapors.



### WARNING

Running engines produce heat. Engine parts, especially turbocharger and muffler, 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

Rapid retraction of starter cord (kickback) will pull hand and arm toward engine faster than you can let go.

Broken bones, fractures, bruises or sprains could result.

- When starting engine, pull cord slowly until resistance is felt, then pull rapidly.
- Remove all external equipment/engine loads before starting engine.
- Direct coupled equipment components such as, but not limited to, blades, impellers, pulleys, sprockets, etc., must be securely attached.



### 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

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.
- Disconnect spark plug wire and keep it away from spark plug.

#### WHEN TESTING FOR SPARK

- Use only Briggs & Stratton Spark Plug Tester.
- DO NOT check for spark with spark plug removed.



### WARNING

Starting engine creates sparking. Sparking can ignite nearby flammable gases. Explosion and fire could result.

- If there is natural or LP gas leakage in area, do not start engine.
- Do not use pressurized starting fluids because vapors are flammable.
- Servicing of products fueled by Natural Gas (NG) or Liquid Petroleum Gas (LPG) may require licensing or permits issued by state, provincial, and/or local governments.



### 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.

## OIL RECOMMENDATIONS

Fig. 2

Engine shipped from Briggs & Stratton without oil. Before starting engine, fill with oil. Do not over-fill.

Use a high quality detergent oil classified "For Service SF, SG, SH, SJ" or higher such as Briggs & Stratton 30W, Part Number 100005 (20 oz.) or 100028 (48 oz.). Use no special additives with recommended oils. Do not mix oil with gasoline.

Choose the SAE viscosity grade of oil from this chart that matches the starting temperature anticipated before the next oil change.



**Note:** Synthetic oil meeting ILSAC GF-2, API certification mark and API service symbol (shown at left) with "SJ/CF ENERGY CONSERVING" or higher, is an acceptable oil at all temperatures. **Use of synthetic oil does not alter required oil change intervals.**

- \* Air cooled engines run hotter than automotive engines. The use of non-synthetic multi-viscosity oils (5W-30, 10W-30, etc.) in temperatures above 40° F (4° C) will result in higher than normal oil consumption. When using a multi-viscosity oil, check oil level more frequently.
- \*\* SAE 30 oil, if used below 40° F (4° C), will result in hard starting and possible engine bore damage due to inadequate lubrication.

#### Oil Capacity

(Approximate amount when changing oil and filter.)

Model Series	Liters	Ounces*
050000	0.36	12.2
085400 & 086400	0.52	17.6
117400	0.63	21.3
118400	0.53	17.9
138400	0.89	30
184400 & 185400	1.0	33.8
235400 & 245400	0.96	32.5

Place engine level and clean around oil fill ❶.

Remove dipstick and wipe with clean cloth. Insert dipstick in oil fill - tighten down if high oil fill ❷, but do not tighten down if low oil fill ❸ - remove dipstick to check oil level. Oil should be at FULL mark ❹.

If oil is required, add slowly. Do not over-fill. Tighten dipstick firmly before starting engine.

## FUEL RECOMMENDATIONS

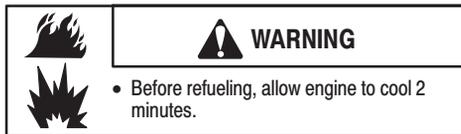
**THE GASOLINE ENGINE IS CERTIFIED TO OPERATE ON GASOLINE.** Exhaust Emission Control System: EM (Engine Modifications).

Use clean, fresh, **lead-free** gasoline with a minimum of 85 octane. Leaded gasoline may be used if it is commercially available and if unleaded is unavailable. Purchase fuel in quantity that can be used within 30 days. See **Storage**.

In U.S.A. leaded gasoline may not be used. Some fuels, called oxygenated or reformulated gasolines, are gasolines blended with alcohols or ethers. Excessive amounts of these blends can damage the fuel system or cause performance problems. If any undesirable operating symptoms occur, use gasoline with a lower percentage of alcohol or ether.

Do not use gasoline which contains Methanol. Do not mix oil with gasoline.

### Check fuel level



Clean around fuel fill before removing cap to refuel. Fill tank to approximately 1-1/2 inches below top of neck to allow for fuel expansion. Be careful not to overfill.

## STARTING



Check oil level.

Open fuel shut-off valve, if equipped.

### OIL GARD®

If engine is equipped with **OIL GARD®**, and if engine runs low on oil and cannot be started or has stopped and cannot be restarted, add oil. Fill to FULL mark on dipstick. Do not over-fill.

**CAUTION: OIL GARD® will shut down a running engine. Engine damage may occur if oil level is not properly maintained and will void warranty coverage.**

## STARTING

### Fig. 3

1. Move choke control ❶ to CHOKE position.
2. Move throttle control ❷ to FAST position.
3. Turn fuel shut-off valve ❸ on, if equipped on gasoline engine.
4. Move stop control ❹ to ON position, if equipped.

## Rewind starter, if equipped



Repeat if necessary with choke in RUN position and throttle in FAST. When FAST. When engine starts, operate in FAST position.

## Electric starter, if equipped

On engines equipped with 12 volt starting systems, turn key ❶ to START position. Repeat if necessary with throttle control in FAST position. When engine starts, operate in FAST position.

Note: If equipment manufacturer has supplied battery, charge it before trying to start engine, as equipment manufacturer recommends.

Note: Use short starting cycles (15 secs. per min.) to prolong starter life. Extended cranking can damage starter motor.

## STOPPING

### Fig. 3

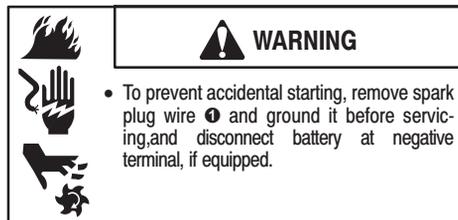
Do not move choke control to CHOKE position to stop engine. Backfire or engine damage may occur. Move throttle control ❸ to IDLE or SLOW position, if equipped. Then turn key ❷ to OFF or move stop control ❹ to OFF position. Close fuel shut-off valve ❺.

Note: Always remove key from switch when equipment is not in use or left unattended.

Note: When engine is transported, close fuel shut-off valve to prevent leakage.

## MAINTENANCE

### Fig. 7



See **Maintenance Schedule**. Follow the hourly or calendar intervals, whichever occur first. More frequent service is required when operating in adverse conditions.

### Oil service

### Fig. 2

Check oil level regularly.

Be sure correct oil level is maintained. Check every 8 hours or daily, before starting engine. See oil filling procedure under **Oil Recommendations**.

### Change oil.

Change oil after first 5 hours of operation. Change oil while engine is warm. Refill with new oil of recommended SAE viscosity grade.

## Air cleaner service

### Fig. 5

Replace pre-cleaner ❷, and/or cartridge ❸ if very dirty or damaged.

1. Loosen screws. Remove cover and air cleaner assembly from base.
2. Remove cartridge (retainer ❹, if equipped) and pre-cleaner.

To service pre-cleaner, wash in liquid detergent and water. Squeeze dry in a clean cloth. Saturate in engine oil. Squeeze in clean, absorbent cloth to remove ALL EXCESS oil.

To service cartridge, clean by tapping gently on a flat surface. Do not use petroleum solvents, e.g., kerosene, which will cause cartridge to deteriorate. Do not use pressurized air, which can damage cartridge. Do not oil cartridge.

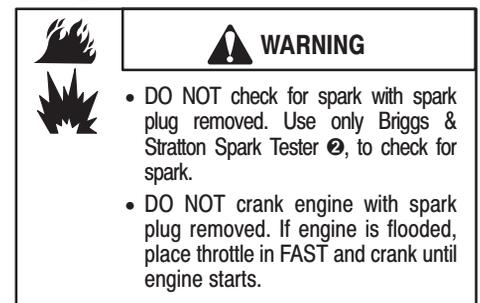
3. Reinstall pre-cleaner on retainer, if equipped.
4. Install pre-cleaner in cover with mesh side toward cartridge. Install cartridge in cover or on base.
5. Seat cover and air cleaner assembly squarely onto base (tabs ❺ into slots ❻, if equipped).
6. Tighten cover screws securely.

### Check valve clearance:

intake is .05 mm and exhaust .10 mm.

### Spark plug service

### Fig. 4



Spark plug gap ❸ should be .76 mm or 0.030 in.

Replace spark plug every 100 hours or every season, whichever occurs first. Spark tester and spark plug wrench are available from any Authorized Briggs & Stratton Service Dealer.

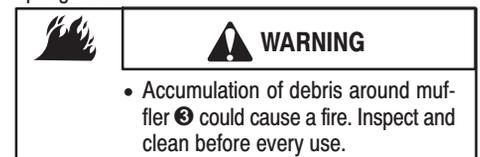
Note: In some areas, local law requires using a resistor spark plug to suppress ignition signals. If this engine was originally equipped with resistor spark plug, use same type of spark plug for replacement.

### Keep engine clean

### Fig. 6

Periodically remove chaff and debris build-up from engine. Do not spray engine with water to clean because water could contaminate fuel. Clean with a brush or compressed air.

To assure smooth operation, keep governor linkage, springs and controls free of debris ❷.



If muffler is equipped with spark arrester screen ❹, remove spark arrester screen for cleaning and inspection.

tion every 50 hours or every season. Replace if damaged.

Clean cooling system. Chaff or debris may clog engine's air cooling system, especially after prolonged operation. Internal cooling fins and surfaces may require cleaning to prevent overheating and engine damage. Remove blower housing and clean as shown 4.

#### Clean fuel filter

**Fig. 9**

	<b>WARNING</b>
<ul style="list-style-type: none"> <li>• Drain fuel tank or close fuel shut-off valve before cleaning filter</li> </ul>	

**Gasoline Engines:** Clean fuel filter screen 2.

#### Maintenance Schedule

Follow the hourly or calendar intervals, whichever occur first. More frequent service is required when operating in adverse conditions noted below.

##### First 5 Hours

- Change oil

##### Every 8 hours or daily

- Check oil level
- Clean around muffler, springs and linkages

##### Every 25 hours or every season

- Change oil if operating under heavy load or high ambient temperature
- Service air cleaner pre-cleaner\*

##### Every 50 hours or every season

- Change oil
- Clean and inspect spark arrester, if equipped
- Clean fuel filter\*\*

##### Every 100 hours or every season

- Service air cleaner cartridge\*
- Replace spark plug
- Clean cooling system\*

##### Every season

- Check valve clearance

\* *Clean more often under dusty conditions, or when airborne debris or chaff is present.*

\*\* *If equipped with gaseous fuel in-line filter, follow equipment manufacturers recommended maintenance.*

#### Partial List of Genuine Briggs & Stratton Parts

**CAUTION:** Part numbers listed may be model specific, use correct part to prevent damage to your engine.

Model Series	Part	Part No.
ALL	Oil (20 oz., 0.59 l)	100005
ALL	Oil (48 oz., 1.42 l)	100028
ALL	Oil Pump (uses standard electric drill)	5056
ALL	Fuel Stabilizer	5058
050000	Air Cleaner Cartridge	711351
050000	Air Cleaner Pre-cleaner	11352
085400	Air Cleaner Cartridge	710265
085400	Air Cleaner Pre-cleaner	710267
050000, 086400, 117400, 118400, 138400, 185400*, 245400*, 246400	Square Air Cleaner Cartridge	491588
246400	Square Air Cleaner	711785
050000, 086400, 117400, 118400, 138400, 185400*, 245400*, 246400	Square Air Cleaner Pre-cleaner	491435
185400, 235400, 245400	Air Cleaner Cartridge	710266
185400, 235400	Air Cleaner Pre-cleaner	710268
ALL (Except 050000, 086400, 118400)	Resistor Spark Plug	491055
050000, 086400, 118400	Resistor Spark Plug	711252
ALL OHV engines (Except 050000, 086400, 118400)	Long Life Platinum Spark Plug	491055
ALL	Spark Tester	19368
ALL	Spark Plug Wrench	19374

\* If equipped.

## STORAGE

Gasoline engines stored over 30 days need to be protected or drained of fuel to prevent gum from forming in fuel system or on essential carburetor parts.

For gasoline engine protection, we recommend use of Briggs & Stratton Fuel Stabilizer available from an Authorized Briggs & Stratton Service Dealer. Mix stabilizer with fuel in fuel tank or storage container. Run engine for a short time to circulate stabilizer through carburetor. Engine and fuel can be stored up to 24 months.

Note: If stabilizer is not used or if engine is operating on gasoline containing alcohol, e.g. gasohol, remove all fuel from tank and run engine until it stops from lack of fuel.

#### Storage Procedures for Gas/LPG/NG engines.

**Fig. 2**

**Fig. 8**

1. Change oil. See **Oil service**.
2. Remove spark plug and pour about 15 ml (1/2 oz.) of engine oil into cylinder. Replace spark plug and crank slowly to distribute oil.
3. Clean chaff and debris from cylinder and cylinder head fins, under finger guard and behind muffler.
4. Store in a clean and dry area, but NOT near a stove, furnace or water heater which uses a pilot light or any device that can create a spark.

## SERVICE

See an Authorized Briggs & Stratton Service Dealer. Each one carries a stock of Genuine Briggs & Stratton Parts and is equipped with special service tools. Trained mechanics assure expert repair service on all Briggs & Stratton engines. Only dealers advertising as "Authorized Briggs & Stratton" are required to meet Briggs & Stratton standards.

When you purchase equipment powered by a Briggs & Stratton 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. Look for these signs wherever Briggs & Stratton service is offered.



You may locate your nearest Authorized Briggs & Stratton Service Dealer in our dealer locator map on our web site [www.briggsandstratton.com](http://www.briggsandstratton.com) or in the



"Yellow Pages™" directory under "Engines, Gasoline" or "Gasoline Engines," or "Lawn Mowers" or similar category.

Note: Walking fingers logo and "Yellow Pages" are registered trademarks in various jurisdictions.

An illustrated shop manual includes "Theories of Operation," common specifications and detailed information covering adjustment, tune-up and repair of Briggs & Stratton single cylinder, OHV 4 cycle engines. Order P/N 272147 from an Authorized Briggs & Stratton Service Dealer.

Insist on Genuine Briggs & Stratton replacement parts with our logo on the box and/or part. Non-original parts may not perform as well and may void your warranty.

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

**California, United States and Canada Emission Control Defects Warranty Statement**

The California Air Resources Board (CARB), U.S. EPA and B&S are pleased to explain the Emission Control System Warranty on your small off-road engine (SORE). In California, new small off-road engines model year 2006 and later must be designed, built and equipped to meet the State's stringent anti-smog standards. Elsewhere in the United States, new non-road, spark-ignition engines certified for model year 1997 and later must meet similar standards set forth by the U.S. EPA. B&S must warrant the emission control system on your engine for the periods of time listed below, provided there has been no abuse, neglect or improper maintenance of your small off-road engine.

Your emission control system includes parts such as the carburetor, air cleaner, ignition system, fuel line, muffler and catalytic converter. Also included may be connectors and other emission related assemblies.

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

**Briggs & Stratton Emission Control Defects Warranty Coverage**

Small off-road engines are warranted relative to emission control parts defects for a period of two years, subject to provisions set forth below. If any covered part on your engine is defective, the part will be repaired or replaced by B&S.

**Owner's Warranty Responsibilities**

As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your Operating and Maintenance Instructions. B&S recommends that you retain all your receipts covering maintenance on your small off-road 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 small off-road engine owner, you should however be aware that B&S may deny you warranty coverage if your small off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road 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 1-414-259-5262.

The emission warranty is a defects warranty. Defects are judged on normal engine performance. The warranty is not related to an in-use emission test.

**Briggs & Stratton Emission Control Defects Warranty Provisions**

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

**1. Warranted Parts**

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

- a. Fuel Metering System
  - Cold start enrichment system (soft choke)
  - Carburetor and internal parts
  - Fuel Pump
  - Fuel line, fuel line fittings, clamps
- b. Air Induction System
  - Air cleaner
  - Intake manifold
- c. Ignition System
  - Spark plug(s)
  - Magneto ignition system
- d. Catalyst System
  - Catalytic converter
  - Exhaust manifold
  - Air injection system or pulse valve
- e. Miscellaneous Items Used in Above Systems
  - Vacuum, temperature, position, time sensitive valves and switches
  - Connectors and assemblies

**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 two years 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 "Engines, Gasoline," "Gasoline Engines," "Lawn Mowers," 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 and 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.

**Look For Relevant Emission Durability Period and Air Index Information On Your Engine Emission Label**

Engines that are certified to meet the California Air Resources Board (CARB) Tier 2 Emission Standards must display information regarding the Emissions Durability Period and the Air Index. Briggs & Stratton makes this information available to the consumer on our emission labels. The engine emission label will indicate certification information.

The **Emissions Durability Period** describes the number of hours of actual running time for which the engine is certified to be emissions compliant, assuming proper maintenance in accordance with the Operating & Maintenance Instructions. The following categories are used:

**Moderate:**

Engine is certified to be emission compliant for 125 hours of actual engine running time.

**Intermediate:**

Engine is certified to be emission compliant for 250 hours of actual engine running time.

**Extended:**

Engine is certified to be emission compliant for 500 hours of actual engine running time. For example, a typical walk-behind lawn mower is used 20 to 25 hours per year. Therefore, the **Emissions Durability Period** of an engine with an **intermediate** rating would equate to 10 to 12 years.

Certain Briggs & Stratton engines will be certified to meet the United States Environmental Protection Agency (USEPA) Phase 2 emission standards. For Phase 2 certified engines, the Emissions Compliance Period referred to on the Emissions Compliance label indicates the number of operating hours for which the engine has been shown to meet Federal emission requirements.

For engines less than 225 cc displacement.

- Category C = 125 hours
- Category B = 250 hours
- Category A = 500 hours

For engines of 225 cc or more displacement.

- Category C = 250 hours
- Category B = 500 hours
- Category A = 1000 hours

# BRIGGS & STRATTON ENGINE OWNER WARRANTY POLICY

Effective July 1, 2004 replaces all undated Warranties and all Warranties dated before July 1, 2004

## LIMITED WARRANTY

Briggs & Stratton Corporation 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 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

<b>Vanguard™</b>	<b>ELS™ I/C® Industrial Plus™ Intek™ (Sleeve Bore)</b>	<b>Fource™ Intek™ (Kool Bore) Power Built™ OHV Quantum® Quattro™ Q45™ Sprint™</b>	<b>Classic™</b>	<b>Etek™</b>
------------------	--	---	-----------------	--------------

## WARRANTY PERIOD\*

Consumer Use	2 years	2 years	2 years	1 year	1 year
Commercial Use	2 years	1 year	90 days	90 days	1 year

\* Note the following special warranty periods: **2 years** for Classic™ engines in the European Union and Eastern European countries, for all consumer products in the European Union, and for emission control systems on engines certified by EPA and CARB. **5 years** for consumer use, 90 days for commercial use of Touch-N-Mow® starter on Quantum® and Intek™ engines. **Engines used in competitive racing or on commercial or rental tracks are not warrantied.**

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. "Consumer use" means personal residential household use by a retail consumer. "Commercial use" means all other uses, including use for commercial, income producing or rental purposes. Once an engine has experienced commercial use, it shall thereafter be considered as a commercial use engine for purposes of this warranty.

**NO WARRANTY REGISTRATION IS NECESSARY TO OBTAIN WARRANTY ON BRIGGS & STRATTON PRODUCTS. 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.**

## ABOUT YOUR ENGINE WARRANTY

Briggs & Stratton welcomes warranty repair and apologizes to you for being inconvenienced. Any Authorized 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 his 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. PROBLEMS CAUSED BY PARTS THAT ARE NOT ORIGINAL BRIGGS & STRATTON PARTS.
2. Equipment controls or installations that prevent starting, cause unsatisfactory engine performance, or shorten engine life. (Contact equipment manufacturer.)
3. Leaking carburetors, clogged fuel pipes, sticking valves, or other damage, caused by using contaminated or stale fuel. (Use clean, fresh, lead-free gasoline and Briggs & Stratton Fuel Stabilizer, Part No. 5041.)
4. 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 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.
5. Repair or adjustment of associated parts or assemblies such as clutches, transmissions, remote controls, etc., which are not manufactured by Briggs & Stratton.
6. 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, clean and re-oil

the Oil-Foam element or the foam pre-cleaner, and replace the cartridge.) Read Operating & Maintenance Instructions.

7. Parts damaged by over-speeding, or overheating caused by grass, debris, or dirt, which plugs or clogs the cooling fins, or flywheel area, or damage caused by operating the engine in a confined area without sufficient ventilation. (Clean fins on the cylinder, cylinder head and flywheel at recommended intervals.) Read Operating & Maintenance Instructions.
8. 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.
9. A bent or broken crankshaft, caused by striking a solid object with the cutter blade of a rotary lawn mower, or excessive v-belt tightness.
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 Corporation. your nearest Authorized Service Dealer is listed in the "Yellow Pages"™ of your telephone directory under "Engines, Gasoline" or "Gasoline Engines," "Lawn Mowers," or similar category.**

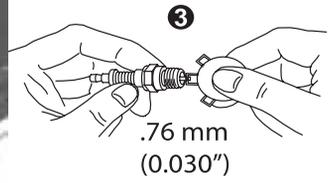
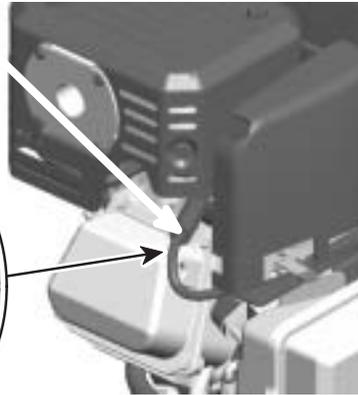
Briggs & Stratton Engines Are Made Under One Or More Of The Following Patents: Design D-247,177 (Other Patents Pending)

6,691,683	6,520,141	6,325,036	6,145,487	6,012,420	5,803,035	5,548,955	5,243,878	5,138,996	4,875,448	D 476,629
6,647,942	6,495,267	6,311,663	6,142,257	5,992,367	5,765,713	5,546,901	5,235,943	5,086,890	4,819,593	D 457,891
6,622,683	6,494,175	6,284,123	6,135,426	5,904,124	5,732,555	5,445,014	5,234,038	5,070,829	4,720,638	D 368,187
6,615,787	6,472,790	6,263,852	6,116,212	5,894,715	5,645,025	5,503,125	5,228,487	5,058,544	4,719,682	D 375,963
6,617,725	6,460,502	6,260,529	6,105,548	5,887,678	5,642,701	5,501,203	5,197,426	5,040,644	4,633,556	D 309,457
6,603,227	6,456,515	6,242,828	6,347,614	5,852,951	5,628,952	5,497,679	5,197,425	5,009,208	4,630,498	D 372,871
6,595,897	6,382,166	6,239,709	6,082,323	5,843,345	5,619,845	5,320,795	5,197,422	4,996,956	4,522,080	D 361,771
6,595,176	6,369,532	6,237,555	6,077,063	5,823,153	5,606,948	5,301,643	5,191,864	4,977,879	4,520,288	D 356,951
6,584,964	6,356,003	6,230,678	6,064,027	5,819,513	5,606,851	5,271,363	5,188,069	4,977,877	4,512,499	D 309,457
6,557,833	6,349,688	6,213,083	6,040,767	5,813,384	5,605,130	5,269,713	5,186,142	4,971,219	4,453,507	D 308,872
6,542,074	6,347,614	6,202,616	6,014,808	5,809,958	5,497,679	5,265,700	5,150,674	4,895,119	4,430,984	D 308,871

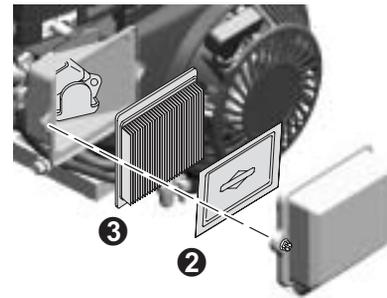
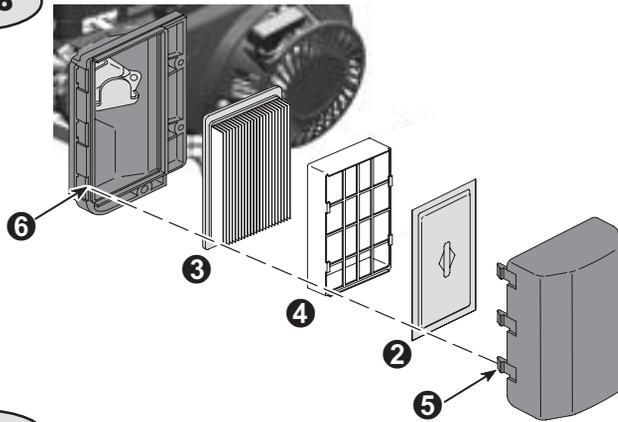
**Fig. 4**



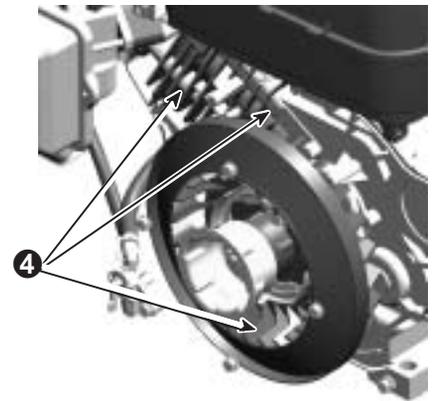
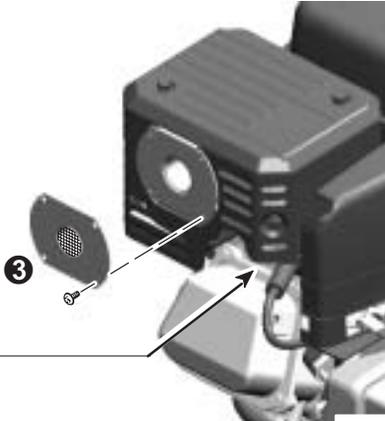
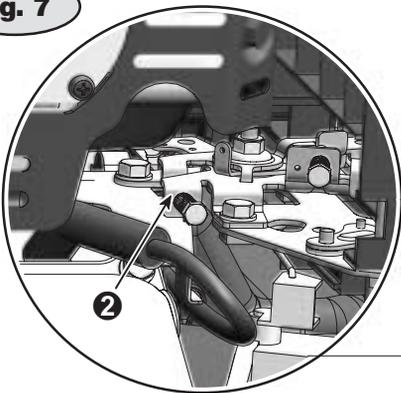
**Fig. 5**



**Fig. 6**



**Fig. 7**



**Fig. 8**

