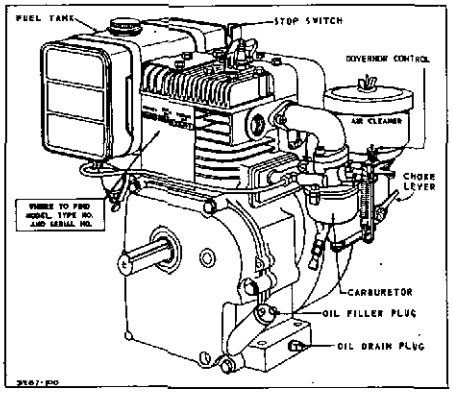
4 CYCLE
BRIGGS&STRATTON
MILWAUKEE, WIS. U.S.A.
GASOLINE ENGINES

MODEL SERIES

140300 to 140497
141300 to 141497
142300 to 142497
143300 to 143497

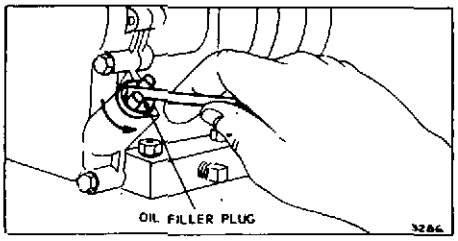
OPERATING AND MAINTENANCE INSTRUCTIONS

IMPORTANT: ***Do not start this engine before reading Section I and Section II of this manual. It takes only a few minutes.***



Fill Crankcase with Oil

Remove the oil filler plug. Use a screwdriver or bar. Some engines have oil filler cap. Use a wrench to remove.



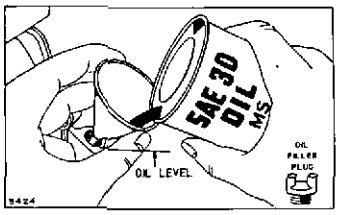
LUBRICATION RECOMMENDATIONS

Any high quality detergent oil bearing the American Petroleum Institute classification "For Service MS" can be used in your Briggs & Stratton engine. Detergent oils keep the engine cleaner and retard the formation of gum and varnish deposits.

Above 32° F.	*Below 32° F.*
Use SAE-30	Use SAE-10W

Nothing should be added to the recommended oils.

For engines with gear reductions, see page 3. Be sure gear reduction oil is at proper level.



CAUTION !

1. PROVIDE EFFICIENT VENTILATION. Exhaust gases contain carbon monoxide which is odorless and a deadly poison. Proper care must be taken to provide efficient ventilation.
2. DO NOT FILL GASOLINE TANK WHILE ENGINE IS RUNNING. Avoid spilling gasoline on a hot engine — this may cause an explosion and serious injury.
3. KEEP ENGINE CLEAN. This engine is air-cooled. If cooling system becomes clogged, serious damage may result. Therefore, keep the blower screen, fins on flywheel, cylinder head and block free from grass or dirt.
4. Be sure nobody is behind you when starting engine with rope starter.

SECTION I

BEFORE STARTING

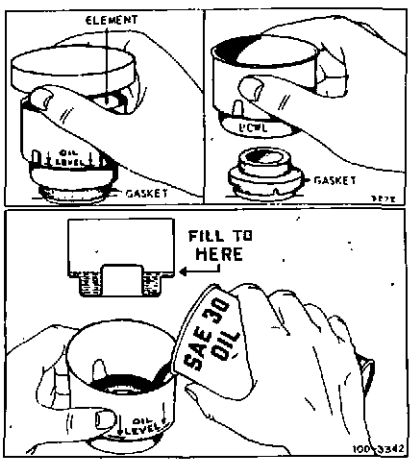
Place the engine level. Fill the crankcase to overflowing. POUR SLOWLY. (Capacity 2¾ pints.) Replace the filler plug.

Put Oil In Air Cleaner

Air cleaner protects engine by removing grit and dirt from air entering carburetor. Use same grade oil as in crankcase.

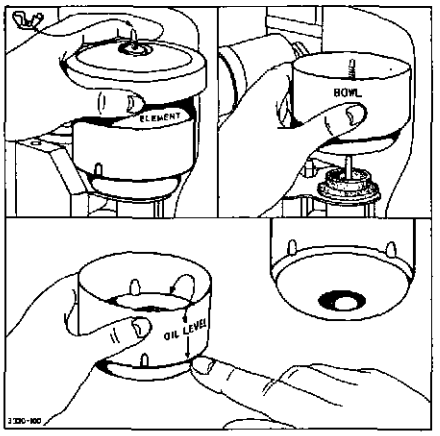
140000 — 141000 Series

Turn filter element counterclockwise to unscrew. Lift off filter element. Lift off bowl. Pour oil in small bottom part of bowl to "OIL LEVEL" mark at end of arrows. Replace bowl on carburetor. Replace filter element and turn clockwise until snug. Be sure gaskets are in place.



142000 — 143000 Series

Remove wing nut. Lift out filter element. Lift off bowl. Pour oil in small bottom part of bowl to "oil level" mark at end of arrows. Replace bowl, element, and wing nut. Be sure gaskets are in place.



Fill Fuel Tank

Use clean, fresh "regular" grade gasoline.

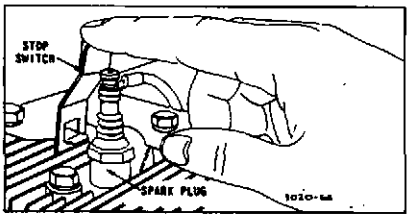
CAUTION: The use of old or stale gasoline will result in gum deposits clogging the fuel system and carburetor. Make sure that vent hole in the tank cap is open. DO NOT MIX OIL WITH GASOLINE.

SECTION II

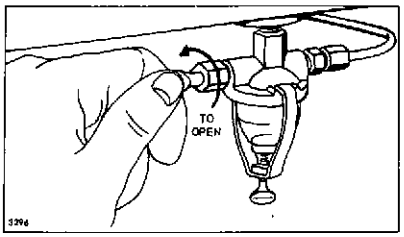
STARTING AND STOPPING

To Start Engine

1. Be Sure The Stop Switch Is Away from Spark Plug

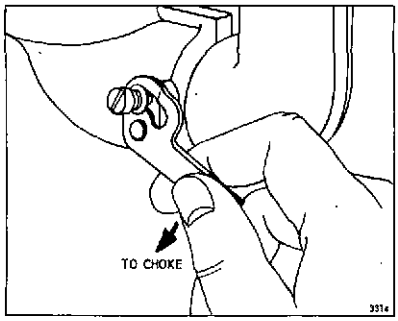


2. Open Fuel Valve



3. Choke The Carburetor

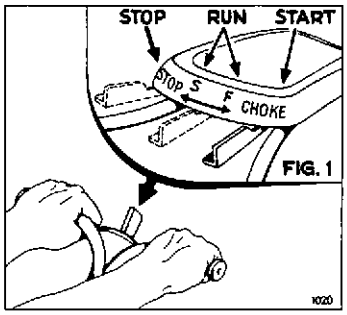
a. Manual Type



Move lever in direction of arrow to fully closed choke position. Set governor control in normal operating position.

NOTE: A warm engine requires less choking than a cold engine.

b. Choke-A-Matic Type



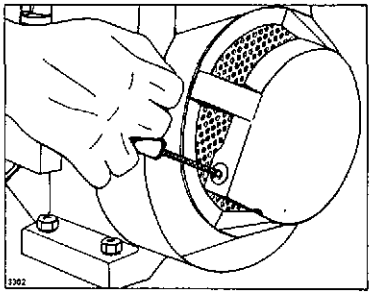
The Choke-A-Matic Carburetor permits choking, varying the engine speed, and stopping the engine by merely moving a single remote control lever to the desired position.

Move lever to "Full Choke" or "Start" position.

NOTE: This should fully close choke on carburetor. If it does not, remote control must be re-adjusted. See "Choke-A-Matic Carburetor" Adjustments, Section IV.

4. Start Engine

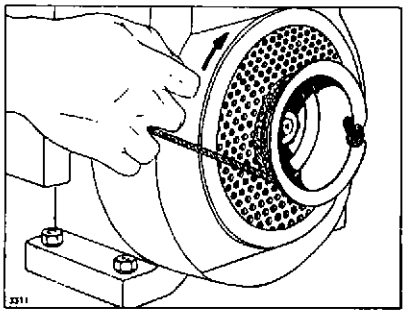
a. Easy-Spin Rewind Starter



Grasp starter grip as illustrated and pull out cord two to three feet. Exclusive Briggs & Stratton development tames the forces of compression during starting so that starting effort is reduced by 50%.

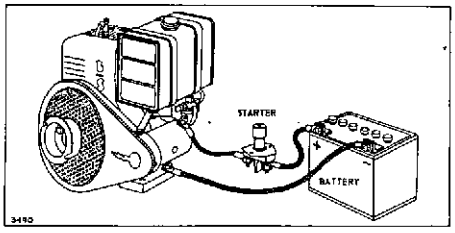
Repeat if necessary with choke opened slightly. When engine starts open choke gradually.

b. Rope Starter



Wind the starter rope around the pulley in direction shown by arrow. Pull the rope with a quick full arm stroke. Repeat if necessary with choke opened slightly. When engine starts open choke gradually.

c. 12 Volt D.C. Electric Starter



Press starter button on powered equipment. When engine starts open choke gradually.

SPECIAL LOW TEMPERATURE STARTING PROCEDURE

The following technique will make starting easier at temperatures below 40° F.:

Proper Lubrication

A. Drain summer oil (SAE 30) while engine is hot.

B. Add SAE 10W if lowest anticipated temperature will be 32° F. or lower. Run engine with 10W oil so as to distribute the oil throughout the working parts of the engine.

C. Below 10° F. use SAE 5W-20 low temperature oil. If this is not available, use SAE 10W plus 10% kerosene.

Special Starting Procedure

A. Turn needle valve located on side of carburetor, ⅛ turn counterclockwise from normal summer adjustment.

B. Pull choke out. Pull starter rope 1 or more times until engine fires at least once. A "pop" at the muffler indicates the engine is firing.

C. Push choke in slightly.

D. Pull starter again—engine should start.

E. As engine begins to run, push choke in slowly.

F. If engine begins to die, give more choke.

NOTE: If fuel drips out of carburetor while trying to start engine, the engine is over choked. Pull starter several times with choke open (inward).

SPECIAL WINTER RECOMMENDATIONS

A. Be sure to use the proper weight of oil for the air temperature expected.

B. Disconnect all external loads. Any V-belt drives must be removed or loosened so that the belts are standing still for satisfactory operation below freezing. Starter, motor and battery are designed to start the engine only.

C. Keep battery and engine warm if possible. If it is not possible to keep the entire unit warm, there is a big advantage to keeping the battery warm until it is required for starting. A warm battery has much more starting capacity than a cold battery.

NOTE: The electric starter will crank a completely unloaded engine at temperatures as low as +15° F. with SAE 10W oil. Below 15° F. rock starter pulley back and forth to disengage starter motor clutch and use the rope starter.

5. To Stop Engine

a. Manual Choke

Push the stop switch against end of spark plug.

b. Choke-A-Matic

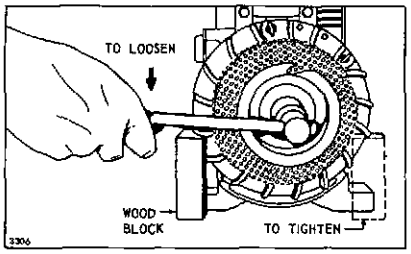
Move control lever to "stop" position.

SECTION IV

ADJUSTMENTS (Cont'd)

Hold a block of wood in close against one of the screw lugs. Use a hammer and drive clutch housing to the left to loosen it, or use flywheel wrenches No. 19114 or No. 19161.

Rope Starter



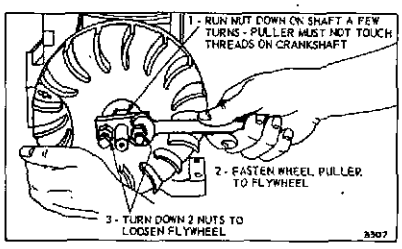
Remove blower housing. Place a block of wood under flywheel fin on the left side, close to the flywheel to hold it solid. Use a large wrench, turn to left to loosen. Crankshaft has right hand thread.

NEVER TRY TO PRY OFF FLYWHEEL

After removing nut, washer and pulley, loosen flywheel by using Flywheel Puller No. 19165.

Removing Flywheel With Flywheel Puller

Fasten flywheel puller to flywheel by screwing two screws into holes provided in flywheel. Turn down the two nuts gradually until flywheel is loosened. Pull off flywheel. Save key.

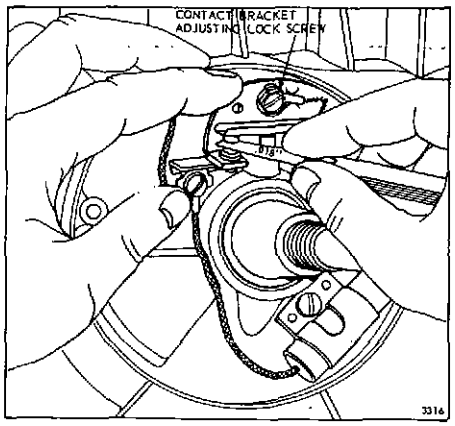


NOTE: If a flywheel puller is not available the flywheel can be removed by the following procedure:

Hold a block of hardwood against the end of the crankshaft or use a soft-faced hammer. Strike the end of the crankshaft a sharp blow to jar the flywheel loose from the taper on the crankshaft. AVOID EXCESSIVE POUNDING THAT WILL DAMAGE THE CRANKSHAFT OR OTHER INTERNAL PARTS OF THE ENGINE.

To Adjust and Clean Contact Points

Remove dust cover. Points must be clean and line up squarely to make good contact. Do not file points — use fine sandpaper or hone to dress the points. Turn the crankshaft until points open to widest gap. Adjust gap to .018" by loosening the adjusting lock screw and moving contact point bracket up or down. When proper gap is obtained tighten lock screw securely. If either or both points become badly pitted or burned, replace with complete new Contact Point Assembly. Replace dust cover.



Reassemble Flywheel

Clean flywheel hole and tapered end of crankshaft thoroughly. Turn keyway of crankshaft up. Put flywheel on shaft and align keyways. Insert the key into keyways and push it securely into place. (If key is partially sheared or damaged, replace with a new key, Part No. 61760. This is a soft metal key.) DO NOT USE STEEL KEY.

Rewind Starter

Put the spring washer on the crankshaft with hollow side against flywheel. Then screw on the clutch housing. (Right hand thread.) Place a wood block under fin on right side of flywheel, hold a block in close against one of the screw lugs on clutch housing. Use heavy blows with a hammer to tighten clutch housing securely, or use Clutch Wrench No. 19114 or 19161. Replace rotating screen. Turn starter clutch until world "Top" is up or toward the spark plug. Slide blower housing and starter assembly over clutch. Align and install four blower housing mounting screws.

Rope Starter

Assemble pulley and spring washer with hollow side next to pulley. Put on nut. Place wood block under fin on right side of flywheel. Tighten nut securely. (Proper torque is obtained by applying 70 lbs. force at the end of a 10" wrench). Replace blower housing.

NOTE: Flywheel key may shear if nut or clutch housing are not properly tightened. All Briggs & Stratton Service Organizations are equipped with special tools to tighten nut and clutch housing.

SECTION V

PARTS & SERVICE

GENERAL INFORMATION

These engines are single-cylinder, L-head, air-cooled type.

	Model Series 140000 – 141000	Model Series 142000 – 143000
Bore	2¾"	2¾"
Stroke	2⅜"	2⅜"
Displacement	14.1 cu. in.	14.1 cu. in.
Horsepower	5.0 @ 3600 RPM	6 @ 3600 RPM
Torque (Ft.-Lbs.)	8.69 max. @ 2600 RPM	9.25 max. @ 2800 RPM

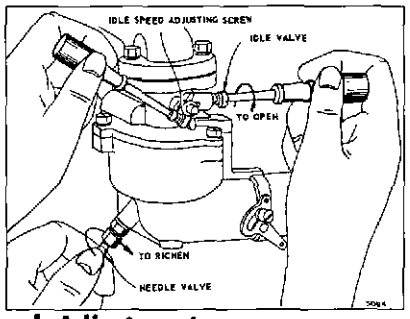
The horsepower ratings listed, left, are established by standard I.C.E.I. procedures. For practical operation, the horsepower loading should not exceed 85% of these ratings. Maximum engine power will decrease 3½% for each 1,000 ft. above sea level and 1% for each 10 degrees above 60 degrees F.

SECTION IV
ADJUSTMENTS

Carburetor Adjustments

Initial Adjustment

Close the needle valve (turn clockwise) carefully to avoid damaging valve. Then open it 1½ turns counterclockwise. Close the idle valve (clockwise). Open it ½ to ¾ turns. This initial adjustment will permit the engine to be started and warmed up for several minutes prior to final adjustment.



Final Adjustment

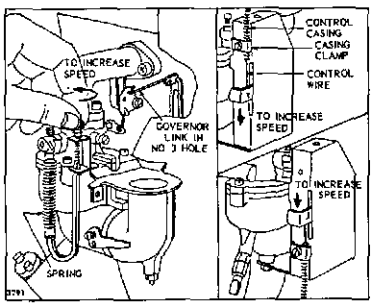
Turn needle valve in until engine misses (lean mixture), then turn it out past smooth operating point until engine runs unevenly (rich mixture). Now turn needle valve to the mid-point between rich and lean so the engine runs smoothly.

Hold throttle at idle position and set idle speed adjusting screw until fast idle is obtained (1750 R.P.M.). Hold throttle in idle position and turn idle valve in (lean) and out (rich) until engine idles smoothly. Then reset idle speed adjusting screw so that engine idles at 1750 R.P.M. Release throttle — engine should accelerate without hesitation or sputtering. If engine does not accelerate properly, the carburetor should be re-adjusted to a slightly richer mixture.

Governor Adjustments

There are two different types of governors used on these engines — air vane and mechanical. The recommended operating speed range is 2200 to 3600 R.P.M. The Standard speed setting (no load) is 3600 R.P.M. Idle speed is 1750 R.P.M.

I. Air Vane Governor Adjustments



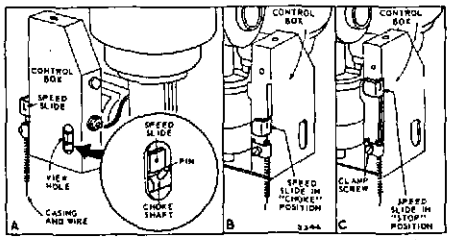
Standard Control **Remote Control**

Standard Speed Control — Speed adjusting thumb nut is located on top of engine. To increase speed turn thumb nut counterclockwise.

Remote Governor Control. Remote control casing and wire are fastened to top or bottom of control box on carburetor. Illustration shows direction of movement of control lever on control box to increase or decrease speed.

Choke-A-Matic Carburetor

Proper choke and stop switch operation is dependent upon proper adjustment of remote controls on the powered equipment.



To Check Operation of Choke-A-Matic Controls:

a. Remove air cleaner.

b. Move remote control lever to "Choke" position. The carburetor choke should be closed, (See "B") and speed slide at end of slot.

c. Move remote control to "Stop" position (See "C"). The speed slide must be at end of slot for stop switch to make good contact.

d. Move remote control to "Fast" and observe through view hole (See "A"). Speed slide must be just touching pin on choke shaft.

To Adjust Choke-A-Matic Remote Controls:

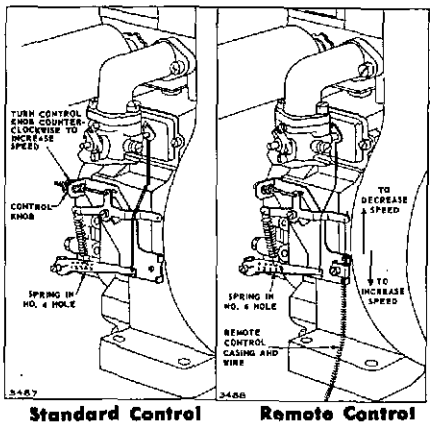
With remote control lever at "Fast," loosen casing clamp screw and move casing and wire up or down until speed slide, seen through view hole, is just touching pin on choke shaft. Tighten casing clamp screw. Re-check operation of controls. Reassemble air cleaner.

II. Mechanical Governor Adjustments

Standard Speed Control — Speed adjusting thumb nut is located on the power take-off side of engine. To increase speed turn adjusting nut counterclockwise.

NOTE: Spring loop should be in No. 3 hole of governor for speeds below 3100 R.P.M. Use No. 5 hole above 3100 R.P.M.

Remote Governor Control — The mechanical governor remote control is adjusted in the same manner as the air vane governor remote control.

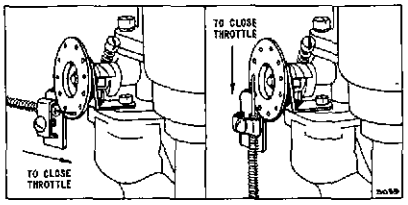


Standard Control **Remote Control**

III. Remote Throttle Control

Top speed of the engine is controlled by the governor. All other speeds from idle to top speed are controlled by a remote control lever.

Move control lever to LOW speed position. Loosen screw on swivel. Move wire through swivel until carburetor throttle closes. Tighten swivel screw, bend loose end of wire around swivel. Cut off excess wire.

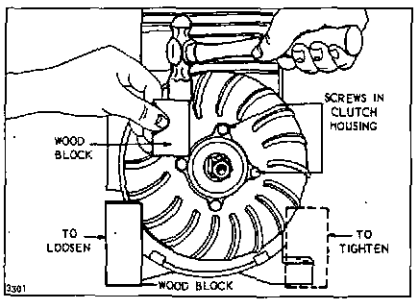


Adjustment and Cleaning of Contact Points

Blower housing, flywheel, and magneto point dust cover must be removed.

Removing Flywheel

Rewind Starter

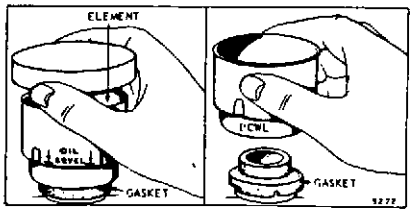


Blower housing must be removed with the starter assembly attached. Remove 4 screws and pull blower housing off of engine. Remove 4 screws and rotating screen from clutch housing. Replace screws in clutch housing. Place a block of wood under fin on left side of flywheel.

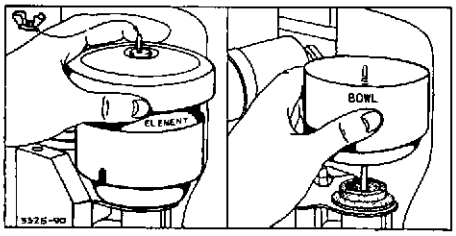
SECTION III

REGULAR MAINTENANCE

Service Air Cleaner Regularly



140000 — 141000 Series



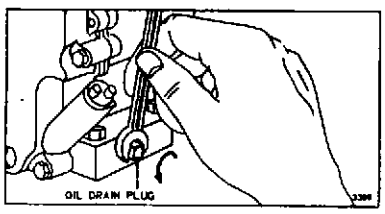
142000 — 143000 Series

Clean and refill the air cleaner frequently (every few hours under extremely dusty conditions). Clean and refill at least every 25 hours under normal conditions.

1. Refer to instructions in section I for removing filter element.
2. Lift off bowl. Pour out old oil.
3. Wash the filter element and bowl by swishing in gasoline and shake or wipe dry.
4. Pour oil in small bottom part of bowl to "OIL LEVEL" mark shown at end of arrows. Replace bowl on carburetor.
5. Replace filter element and turn element or wing nut clockwise until snug. Be sure gaskets are in place.

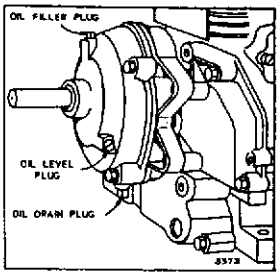
Change Oil (Crankcase)

Change oil after first 5 hours of operation. Thereafter change oil every 25 hours of operation. Remove oil drain plug and drain oil while engine is warm. Replace drain plug. Remove oil filler plug or cap and refill with new oil of proper grade. Replace oil filler plug or cap. Check oil level regularly — at least after 5 hours of operation. BE SURE OIL LEVEL IS MAINTAINED FULL TO POINT OF OVERFLOWING.



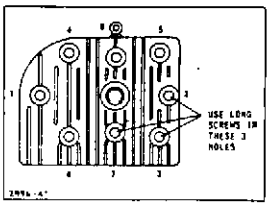
Check Oil (Gear Reduction):

Remove the drain plug in the bottom of gear case cover and drain oil every 100 hours of operation. Replace drain plug. To refill, remove oil level check plug and oil filler plug and pour oil (same grade as used in crankcase) into oil filler hole until oil runs out of oil level check hole. Replace oil level check plug and oil filler plug. CAUTION: Oil filler plug has a vent hole and must be installed on top of gear case cover.



Cylinder Head — Combustion Chamber Clean-out

This industrial engine generally operates at constant speed and at relatively constant load. The use of regular automotive fuels under these conditions results in a gradual build-up of tetraethyl lead deposits in the combustion chamber. This causes the engine to lose power and prevents the valves from seating properly. Removing the deposits is easy and will pay big dividends in reliability and increased valve life.



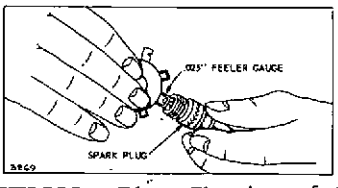
Clean Combustion Chamber Every 100-300 Hours of Operation

1. Remove cylinder head screws. Be sure to note if screws are of different length and have steel washers as they must be replaced in original position.
2. Turn crankshaft until piston is at top of cylinder bore and both valves are closed. Scrape and wire brush the lead and carbon deposits from cylinder head combustion chamber, top of piston, and around both valves.

   Blow off or use soft brush to remove loose deposits.
3. Re-use cylinder head gasket only if in good condition. Reassemble cylinder head, gasket, head cover, washers and head screws. Tighten screw with wrench until screw head seats lightly.
4. Use socket wrench with 6" handle and turn all screws ¼ turn. Tighten screws in sequence illustrated. Run engine approximately 5 minutes and retighten all screws snugly (approximately ¼ turn). Always tighten evenly in sequence shown to avoid warping cylinder head.

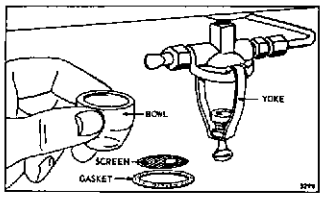
To Check Spark Plug Gap

Clean spark plug and reset gap at .025" every 100 hours of operation. When worn out replace with: AC 45 Comm., Autolite A7R or Champion J-8. Size 14mm.



CAUTION: Blast Cleaning of Spark Plugs in machines that use abrasive grit is not recommended. Spark plugs should be cleaned by scraping or wire brushing and washing with a commercial solvent or gasoline.

Draining Fuel Tank and Cleaning Fuel Filter



Loosen thumb screw below filter bowl. Remove and clean filter bowl and screen. Open shut-off valve to see if fuel flows freely from the tank. IMPORTANT: If you find a gummy, varnish-like substance use alcohol or acetone to dissolve it.

STORAGE INSTRUCTIONS

Engines stored over 30 days should be completely drained of fuel to prevent gum deposits forming on essential carburetor parts, fuel filter, fuel lines and tank.

A. Drain fuel tank completely. (See above.)
B. Re-assemble fuel filter assembly, fuel pipe and fuel shut-off valve. Leave shut-off valve open.
C. Operate engine until gasoline in carburetor is completely consumed.
D. While engine is still warm, drain oil from crankcase. Refill with fresh oil.
E. Remove spark plug, pour 1 ounce of SAE-30 Oil into cylinder and crank slowly to distribute oil. Replace spark plug.
F. Clean dirt and chaff from cylinder, cylinder head fins and blower housing.

BRIGGS & STRATTON ENGINE WARRANTY POLICY

Here is a reproduction of the Briggs & Stratton Warranty that is supplied with each engine. (Be sure to fill out and return registration card at time of purchase):

THE WARRANTY

For ONE YEAR from purchase date, Briggs & Stratton Corp. will replace for the original purchaser, FREE OF CHARGE, any part, or parts, found upon examination by any Factory Authorized Service Outlet, or by the Factory at Milwaukee, Wisconsin, to be defective in material and workmanship.

All transportation charges on parts submitted for replacement under this Warranty must be borne by purchaser.

There is no other Warranty express or implied. Briggs & Stratton Corp. shall in no event be liable for consequential damages.

See yellow pages of your Classified Telephone Directory for near-by engine service under heading "Engines — Gasoline" or "Gasoline Engines."

WHAT BRIGGS & STRATTON WARRANTY MEANS

Briggs & Stratton authorizes each Franchised Service Dealer to make "no charge" replacement (Labor and Material) of engine parts that are found to be defective in material or workmanship as set forth in "The Warranty" above, and under the warranty procedure.

All "no charge" Briggs & Stratton warranty repair is the responsibility of the Service Dealer rendering it, until all supporting facts are submitted to and approved by the factory.

If you differ with the decision of a Service Dealer on a warranty claim, the Dealer's terms should be accepted. The Dealer will submit all supporting facts to the factory for review. If the factory's decision is that your claim is justified, you will be fully reimbursed for those items accepted as defective.

Briggs & Stratton has no other warranty, nor do they recognize, endorse or approve other than Briggs & Stratton Warranty reproduced above.

Manufacturers and sellers of equipment powered by Briggs & Stratton engines may offer additional engine guarantees to cover other than defective material or workmanship, such as bent crankshafts, failure to maintain oil in crankcase, user negligence, abuse, etc., or give a "damaged engine" trade-in or replacement on special terms. Such guarantees are beyond the control of Briggs & Stratton and are the full responsibility of those who make them. An engine owner who goes to a Briggs & Stratton Authorized Service Dealer for "no charge" repair under any Special seller's guarantees will be referred to whomever made the Special guarantee, for satisfaction.

Genuine Briggs & Stratton service will assure continuous engine satisfaction. Our long experience in engine service and maintenance prompts us to urge you to contact one of our Authorized Service Dealers when in need of engine service work not covered in this Operating Instruction Manual. Mechanics unfamiliar with Briggs & Stratton engines, or without proper tools, should not be permitted to make major repairs.

Parts and repair work are F.O.B. any Authorized Briggs & Stratton Dealer. For your convenience, Authorized Service Dealers are listed in the yellow classified advertising pages of your telephone directory.

IMPORTANT NOTICE

This book includes all of the information normally required for operating and maintaining your engine. It includes instructions on normal adjustments and simple repairs. Major engine repairs should not be attempted unless you have the proper tools and a thorough knowledge of internal combustion engines. An illustrated parts list is available from any Briggs & Stratton authorized service organization.

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NATION WIDE SERVICE ORGANIZATION

Briggs & Stratton maintains a vast network of Authorized Service Dealers that are prepared to give you prompt and efficient engine service.

Each member of this organization carries a stock of original Briggs & Stratton repair parts and is equipped with special tools. Trained mechanics assure expert repair service on all Briggs & Stratton engines.

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WARRANTY INSTRUCTIONS

When you request engine or parts warranty service, always supply the Briggs & Stratton Authorized Service Dealer the following information:

Model Number, Type Number and Serial Number that are stamped on engine blower housing.

Date Purchased.

Kind of equipment engine is used on.

Name or trademark of manufacturer.

Name and address of dealer from whom purchased.

Approximate number of hours engine has run since equipment was purchased.

Also, give complete report of trouble experienced and special servicing instructions.

The above information is necessary to insure prompt and proper service.

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AUTHORIZED SERVICE ORGANIZATION

There is a member of the Briggs & Stratton Organization in your neighborhood who is fully qualified to take care of your service needs. Refer to the yellow pages of your telephone directory.

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