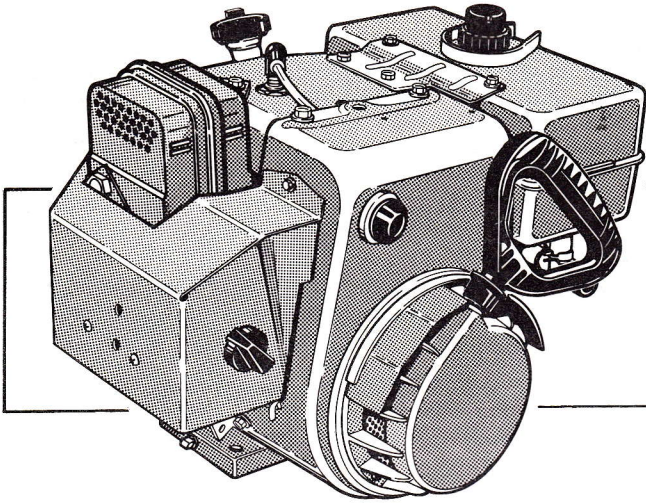


OWNER'S MANUAL

and OPERATING INSTRUCTIONS for

CRAFTSMAN[™] BY TECUMSEH



MODELS

143.756182

143.756192 143.756202

SNOW KING

SNOW BLOWER ENGINE

HORIZONTAL CRANKSHAFT
AIR COOLED • FOUR-CYCLE



THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH IF NOT FOLLOWED COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL AND ANY PROVIDED WITH THE EQUIPMENT ON WHICH THIS ENGINE IS USED BEFORE ATTEMPTING TO OPERATE YOUR CRAFTSMAN ENGINE.



THESE SYMBOLS MAY APPEAR ON THE ENGINE:



FAST



SLOW



STOP



FULL



OFF

CHOKE



IGNITION KEY



INSERT TO RUN



REMOVE TO STOP

PRINTED IN U.S.A.

5-1-85

181-574-1

OIL & FUEL RECOMMENDATIONS

To start and operate your Craftsman engine, you will need the following:

- 1 A CLEAN, HIGH QUALITY DETERGENT OIL. Be sure original container is marked: A.P.I. service "SF," "SE," "SD" or "SC."

DO NOT USE SAE10W40 OIL.

FOR SUMMER (ABOVE 32°F) USE SAE 30 OIL. (SAE10W30 is an acceptable substitute).

FOR WINTER (BELOW 32°F) USE SAE 5W30 OIL. (SAE10W is an acceptable substitute).

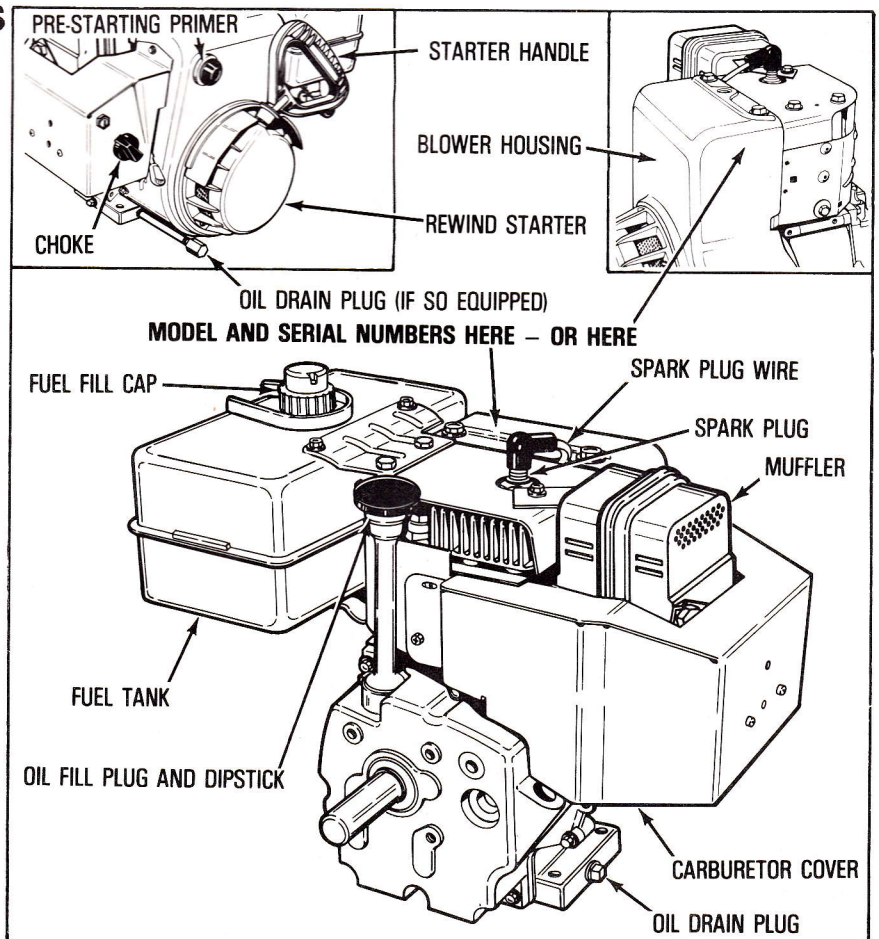
(BELOW 0°F ONLY)
SAE10W OIL diluted with 10% kerosene is an acceptable substitute.
SAEOW30 OIL is an acceptable substitute.

Oil Sump capacity is approximately 24 ounces (1-1/2 pints).

- 2 A FRESH, CLEAN, UNLEADED AUTOMOTIVE GASOLINE. (Leaded "Regular" grade gasoline is an acceptable substitute).

NOTE: DO NOT USE GASOLINE CONTAINING METHANOL (WOOD ALCOHOL). Gasoline containing a maximum of 10% ethanol or grain alcohol (sometimes called "Gasohol") may be used but requires special care when engine is unused for extended periods. See "STORAGE" instructions on Page 5.

NOTE: Use clean oil and fuel and store in approved, clean, covered containers. Use clean fill funnels.



(continued on Page 2)

Page 1

Figure 1

PRE-START INSTRUCTIONS

- ① Read all instructions provided with the equipment on which this engine is used.
- ② **CHECK OIL LEVEL IN OIL SUMP.**
 - A. **POSITION EQUIPMENT SO ENGINE IS LEVEL.**
 - B. Remove OIL FILL PLUG AND DIPSTICK (see Figure 1).
 - C. Add oil if oil level is not up to "Full" mark on DIPSTICK. See preceding "OIL & FUEL RECOMMENDATIONS," item ① for correct oil.

Fill oil sump, slowly, to "Full" mark on DIPSTICK. DO NOT OVERFILL. OIL FILL PLUG must be seated fully and tightened and locked securely into oil fill hole when checking oil level.
- ③ Oil level should be checked frequently during initial engine break-in period. OIL FILL PLUG must be seated fully and tightened and locked securely into oil fill hole when engine is running.
- ④ **FILL FUEL TANK** with gasoline as specified in the preceding "OIL & FUEL RECOMMENDATIONS," Item ② (Page 1).

NEVER MIX OIL WITH GASOLINE

Never use "stale" gasoline left over from last season or stored for long periods.

NEVER FILL FUEL TANK INDOORS. NEVER FILL FUEL TANK WHEN ENGINE IS RUNNING OR WHILE ENGINE IS HOT.

NEVER FILL FUEL TANK COMPLETELY. FILL TANK TO WITHIN 1/4 TO 1/2 INCH OF TOP OF TANK TO PROVIDE SPACE FOR FUEL EXPANSION. WIPE ANY FUEL SPILLAGE FROM ENGINE AND EQUIPMENT BEFORE STARTING ENGINE.

ANY LIQUIFIED PETROLEUM (LPG) OR NATURAL GAS FUEL SYSTEM MUST BE LEAKPROOF AND MEET ALL APPLICABLE CODES AND REGULATIONS.

- ⑤ **CHECK THE FOLLOWING** before attempting to start your engine:

A. BE SURE EQUIPMENT IS IN NEUTRAL GEAR WITH CLUTCHES, BELTS, CHAINS, ETC., DISENGAGED. (FOLLOW EQUIPMENT MANUFACTURER'S INSTRUCTIONS.) THIS SHOULD PLACE ANY SAFETY SWITCHES IN SAFE STARTING POSITION.

B. Be sure SPARK PLUG WIRE is attached to SPARK PLUG. (see Figure 1)

C. Be sure any IGNITION SWITCH (if so equipped) on engine or equipment is in ON, RUN or START position.

D. Be sure IGNITION KEY (if so equipped - see Figure 2) is inserted into IGNITION KEY SLOT in CARBURETOR COVER (see Figure 5). **DO NOT TURN IGNITION KEY.**

E. Be sure FUEL SHUT-OFF VALVE is open (see Figure 3 and 4).

NOTE: If engine is used for anything except snow removal, the CARBURETOR COVER (see Figure 5) must be removed, and an approved air cleaner installed. See equipment manufacturer's instructions or your nearest Sears Service Center for details.

ENGINE WILL NOT START UNLESS IGNITION KEY IS INSERTED INTO IGNITION KEY SLOT IN CARBURETOR COVER.
DO NOT TURN IGNITION KEY.

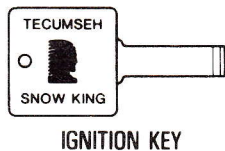


Figure 2

STARTING INSTRUCTIONS

NEVER RUN ENGINE INDOORS OR IN ENCLOSED, POORLY VENTILATED AREAS. ENGINE EXHAUST CONTAINS CARBON MONOXIDE, AN ODORLESS AND DEADLY GAS (CARBON MONOXIDE IS ALSO PRESENT IN ENGINE EXHAUST FROM LIQUID PETROLEUM (LPG) AND NATURAL GAS FUEL SYSTEMS).

KEEP HANDS, FEET, HAIR AND LOOSE CLOTHING AWAY FROM ANY MOVING PARTS ON ENGINE AND EQUIPMENT.

WARNING - TEMPERATURE OF MUFFLER AND NEARBY AREAS MAY EXCEED 150°F (65°C). AVOID THESE AREAS.

- ① **COLD ENGINE START** (Engine has not been run recently). Proceed with the following Instruction A. REWIND STARTER or B. ELECTRIC STARTER depending on type of starter.

A. REWIND STARTER (see Figures 4 & 5)

1. Move Remote Throttle Control on equipment (see equipment manufacturer's instructions) or CONTROL LEVER (see Figure 5) on engine to "Fast" or "Start" position.
2. Move CHOKE (see Figure 5) on engine to "Full".
3. Push PRE-STARTING PRIMER (see Figure 5) two (2) or three (3) times.

NOTE: Additional priming may be required, for initial start only, if temperature is below 15°F.

4. START ENGINE:

A. Grasp STARTER HANDLE (see Figure 4) and pull rope out, slowly, until it pulls slightly harder. Let rope rewind slowly.

B. Pull rope with a rapid continuous full arm stroke. Let rope rewind SLOWLY. Don't let STARTER HANDLE snap back against starter.

NOTE: If REWIND STARTER is frozen and won't crank engine, proceed as follows:

1. Pull as much rope out of starter as possible.
2. Release STARTER HANDLE and let it snap back against starter.

NOTE: The preceding should be done only when necessary to free a frozen starter.

C. Repeat preceding Instructions A and B until engine starts.

If engine fails to start, repeat preceding Instructions 3 and 4, as necessary, until engine starts.

D. When engine starts, move CHOKE gradually to "Off".

E. If engine falters, move CHOKE immediately to "Full" and then gradually to "Off".

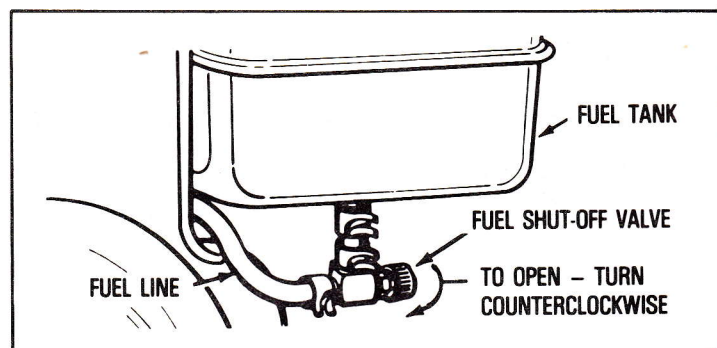


Figure 3

B. ELECTRIC STARTER — 120 VOLT AC (see Figures 4 and 5)



WARNING — THIS STARTER IS EQUIPPED WITH A THREE-WIRE POWER CORD AND PLUG AND IS DESIGNED TO OPERATE ON 120 VOLT AC HOUSEHOLD CURRENT. IT MUST BE PROPERLY GROUNDED AT ALL TIMES TO AVOID THE POSSIBILITY OF ELECTRIC SHOCK WHICH MAY BE INJURIOUS TO THE OPERATOR. FOLLOW ALL INSTRUCTIONS CAREFULLY AS SET FORTH BELOW. DETERMINE THAT YOUR HOUSE WIRING IS A THREE-WIRE GROUNDED SYSTEM. ASK A LICENSED ELECTRICIAN IF YOU ARE NOT SURE. IF YOUR HOUSE WIRING SYSTEM IS NOT A THREE-WIRE GROUNDED SYSTEM, DO NOT USE THIS ELECTRIC STARTER UNDER ANY CONDITION. IF YOUR SYSTEM IS GROUNDED AND A THREE-HOLE RECEPTACLE IS NOT AVAILABLE AT THE POINT YOUR STARTER WILL NORMALLY BE USED, ONE SHOULD BE INSTALLED BY A LICENSED ELECTRICIAN.



WHEN CONNECTING 120 VOLT AC "POWER CORD," ALWAYS CONNECT CORD TO "SWITCH BOX" ON ENGINE FIRST, AND THEN PLUG THE OTHER END INTO THREE-HOLE GROUNDED RECEPTACLE.



WHEN DISCONNECTING "POWER CORD," ALWAYS UNPLUG THE END IN THE THREE-HOLE GROUNDED RECEPTACLE FIRST.

NOTE: DO NOT USE PRE-STARTING PRIMER WHEN USING 120 VOLT ELECTRIC STARTER.

1. Move Remote Throttle Control on equipment (see equipment manufacturer's instructions) or CONTROL LEVER (see Figure 5) on engine to "Fast" or "Start" position.
2. Move CHOKE (see Figure 5) on engine to "Off".
3. Connect POWER CORD to SWITCHBOX. (see Figure 4).
4. Plug other end of POWER CORD into a three hole, GROUNDED 120V, AC receptacle. (See "warning" at beginning of these instructions).
5. START ENGINE:

A. Push STARTER BUTTON (see Figure 4) to engage starter motor and crank engine.

B. Move CHOKE on engine to "Full" while cranking engine.

NOTE: THIS ELECTRIC STARTER IS THERMALLY PROTECTED. IF OVERHEATED IT WILL STOP AUTOMATICALLY, AND CAN BE RESTARTED ONLY WHEN IT HAS COOLED TO A SAFE TEMPERATURE. (A WAIT OF ABOUT 5 TO 10 MINUTES IS REQUIRED.)

C. When engine starts, release STARTER BUTTON and move CHOKE gradually to "Off".

D. If engine falters, move CHOKE immediately to "Full" and then gradually to "Off".

E. Disconnect POWER CORD from receptacle, first, and then from SWITCHBOX.

If, after following the preceding instructions, your engine fails to start, have it checked by your nearest Sears Service Center.

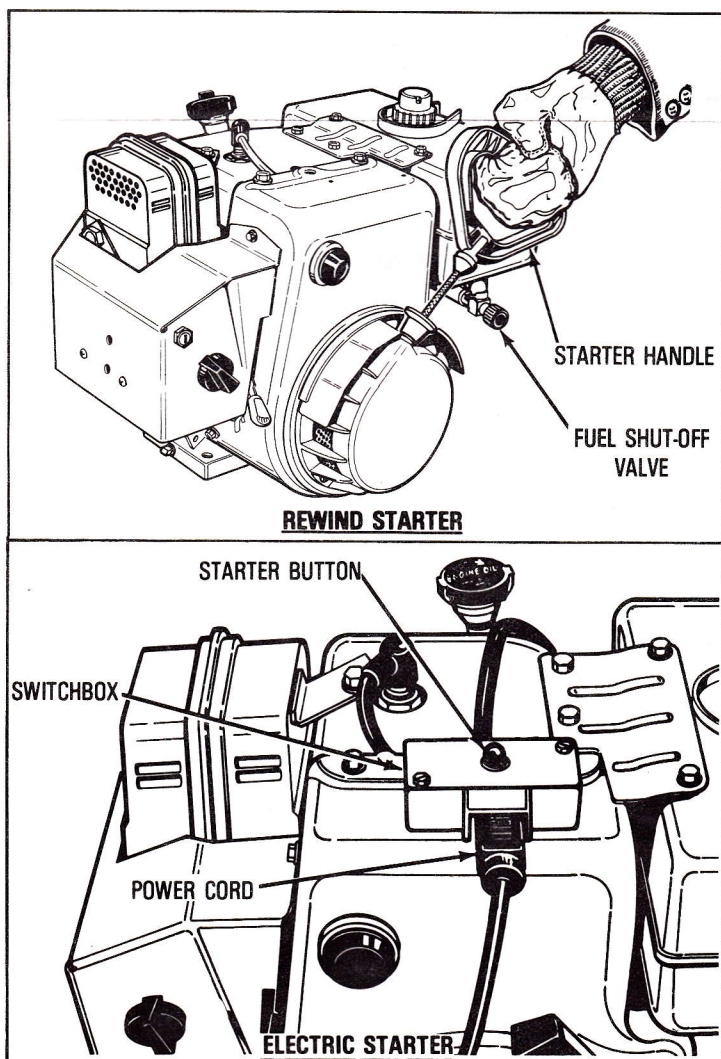


Figure 4

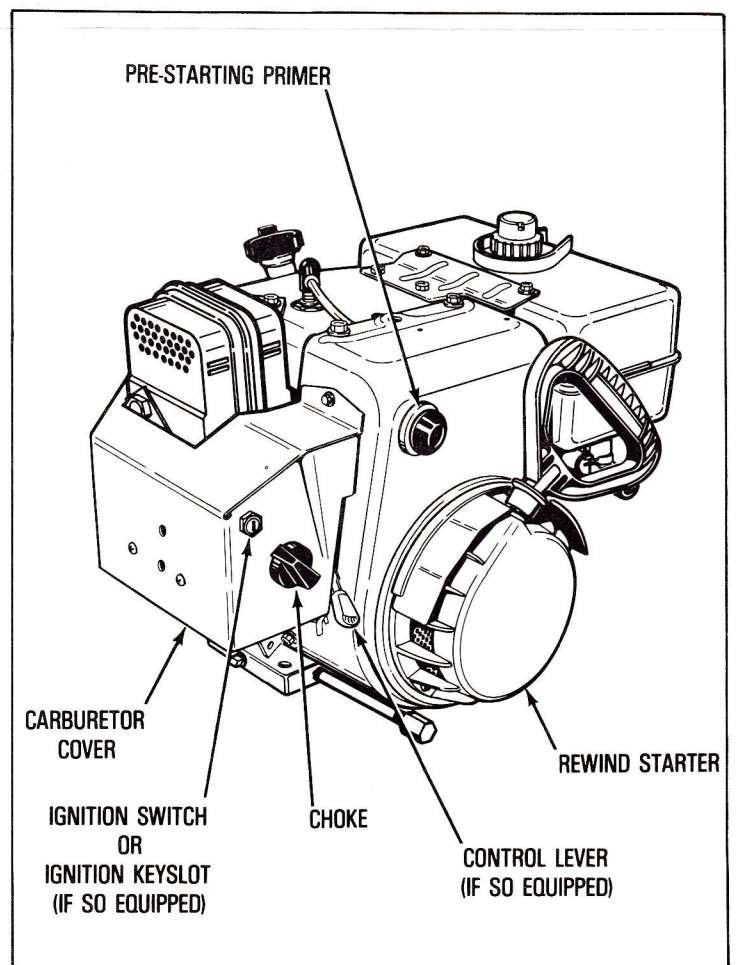


Figure 5

TO STOP ENGINE

- 2 WARM ENGINE START** (Engine still warm from recent running). Proceed with the following instruction A. REWIND STARTER or B. ELECTRIC STARTER depending on type of starter.

NOTE: Warm engine may start without choking.

A. REWIND STARTER: (see Figures 4 & 5)

1. Move Remote Throttle Control on equipment (see equipment manufacturer's instructions) or CONTROL LEVER (see Figure 5) on engine to "Fast" or "Start" position.
2. Move CHOKE (see Figure 5) on engine to "Off".
3. Push PRE-STARTING PRIMER (see Figure 5) once only.
4. START ENGINE:
 - A. Grasp STARTER HANDLE (see Figure 4) and pull rope out, slowly, until it pulls slightly harder. Let rope rewind slowly.
 - B. Pull rope with a rapid continuous full arm stroke. Let rope rewind SLOWLY. Don't let STARTER HANDLE snap back against starter.
 - C. Repeat preceding Instructions A and B until engine starts.
 - D. If engine fails to start, after a reasonable number of starting attempts, repeat preceding instructions 3 & 4 until engine starts.

B. ELECTRIC STARTER — 120 VOLT AC (see Figures 4 & 5)

NOTE: "WARNING" PERTAINING TO SAFE USE OF 3-WIRE GROUNDED ELECTRICAL SYSTEM, ON PAGE 3 UNDER "B. ELECTRIC STARTER — 120 VOLT AC" ALSO APPLIES TO THESE INSTRUCTIONS. REVIEW THIS "WARNING" BEFORE PROCEEDING.

NOTE: DO NOT USE PRE-STARTING PRIMER WHEN USING 120 VOLT ELECTRIC STARTER.

1. Move Remote Throttle Control on equipment (see equipment manufacturer's instructions) or CONTROL LEVER (see Figure 5) on engine to "Fast" or "Start" position.
2. Move CHOKE (see Figure 5) on engine to "Off".
3. Connect POWER CORD to SWITCHBOX. (see Figure 4).
4. Plug other end of POWER CORD into a three hole, GROUNDED 120V, AC receptacle. (See "warning" at beginning of these instructions).
5. START ENGINE:
 - A. Push STARTER BUTTON (see Figure 4) to engage starter motor and crank engine until engine starts.
 - B. If engine fails to start after a reasonable number of starting attempts, move CHOKE on engine to "Full" while cranking engine.
 - C. When engine starts, release STARTER BUTTON and move CHOKE gradually to "Off".
 - D. Disconnect POWER CORD from receptacle, first, and then from SWITCHBOX.

If, after following the preceding instructions, your engine fails to start, have it checked by your nearest Sears Service Center.

1 BEFORE STOPPING ENGINE:

A. RUN ENGINE FOR A FEW MINUTES TO HELP DRY OFF ANY MOISTURE WHICH MAY HAVE ACCUMULATED ON ENGINE.

B. TO HELP PREVENT POSSIBLE FREEZE-UP OF REWIND STARTER DUE TO EXTREME SNOW BLOWING CONDITIONS, PROCEED AS FOLLOWS:

WITH ENGINE RUNNING, PULL STARTER ROPE WITH A RAPID CONTINUOUS FULL ARM STROKE THREE (3) OR FOUR (4) TIMES.

NOTE: PULLING OF STARTER ROPE WILL PRODUCE A LOUD CLATTERING SOUND. THIS IS NOT HARMFUL TO THE ENGINE OR STARTER.

C. TO HELP PREVENT POSSIBLE FREEZE-UP OF ELECTRIC STARTER DUE TO EXTREME SNOW BLOWING CONDITIONS, PROCEED AS FOLLOWS:

1. CONNECT POWER CORD TO SWITCHBOX FIRST, AND THEN TO 120 VOLT AC RECEPTACLE PER PRECEDING "B. ELECTRIC STARTER 120 VOLT AC" INSTRUCTIONS.

2. WITH ENGINE RUNNING, PUSH STARTER BUTTON AND SPIN STARTER MOTOR FOR SEVERAL SECONDS.

NOTE: THE UNUSUAL SOUND PRODUCED BY THE SPINNING STARTER MOTOR IS NOT HARMFUL TO ENGINE OR STARTER MOTOR.

3. DISCONNECT POWER CORD FROM RECEPTACLE, FIRST AND THEN FROM SWITCHBOX.

2 STOP ENGINE

- A. Move equipment control to STOP or OFF.
- B. Move CONTROL LEVER or IGNITION SWITCH (if so equipped - see Figure 5) to STOP or OFF.
- C. Remove IGNITION KEY (if so equipped - see Figure 2) from CARBURETOR COVER (see Figure 5). DO NOT TURN IGNITION KEY.

3 AFTER ENGINE IS STOPPED:

A. TO HELP PREVENT POSSIBLE FREEZE-UP OF ENGINE CONTROLS DUE TO EXTREME SNOW BLOWING CONDITIONS, PROCEED AS FOLLOWS: (see Figure 5)

1. WIPE ALL SNOW AND MOISTURE FROM CARBURETOR COVER IN VICINITY OF CONTROL LEVER AND CHOKE.

2. MOVE CONTROL LEVER AND CHOKE BACK AND FORTH SEVERAL TIMES.

B. MOVE CHOKE (see Figure 5) ON ENGINE TO FULL AND LEAVE IN THIS POSITION.

C. MOVE REMOTE THROTTLE CONTROL ON EQUIPMENT (SEE EQUIPMENT MANUFACTURER'S INSTRUCTIONS) OR CONTROL LEVER (see Figure 5) ON ENGINE TO FAST OR START AND LEAVE IN THIS POSITION.

D. Close FUEL SHUT-OFF VALVE (see Figure 3 and 4).



E. DISCONNECT SPARK PLUG WIRE FROM SPARK PLUG AND PLACE IT WHERE IT CAN NOT CONTACT SPARK PLUG.



F. TURN IGNITION SWITCH KEY IF SO EQUIPPED, TO "OFF" POSITION AND REMOVE KEY FROM SWITCH. THIS WILL REDUCE THE POSSIBILITY OF UNAUTHORIZED STARTING OF ENGINE WHILE EQUIPMENT IS NOT IN USE.



G. NEVER STORE ENGINE WITH FUEL IN TANK INDOORS OR IN ENCLOSED, POORLY VENTILATED ENCLOSURES, WHERE FUEL FUMES MAY REACH AN OPEN FLAME, SPARK OR PILOT LIGHT AS ON A FURNACE, WATER HEATER, CLOTHES DRYER, ETC.

MAINTENANCE

WARNING — TEMPERATURE OF MUFFLER AND NEAR-BY AREAS MAY EXCEED 150°F (65°C). AVOID THESE AREAS.

- ① **CHECK OIL LEVEL REGULARLY.**
POSITION EQUIPMENT SO ENGINE IS LEVEL.

Check level every five (5) operating hours or each time equipment is used. Always clean area around OIL FILL PLUG (see Figure 1) before removing plug, to avoid contaminating oil with dirt, grass clippings, etc. Add oil as necessary. DO NOT RUN ENGINE UNLESS PROPER OIL LEVEL IS MAINTAINED. LEVEL MUST BE BETWEEN "FULL" AND "ADD" MARK ON DIPSTICK. See Instructions ② and ③ in preceding "PRE-START INSTRUCTIONS" (Page 2).

- ② **CHANGE OIL** — after first two (2) hours of operation and every twenty-five (25) hours thereafter, or more often if operated in extremely dusty or dirty areas.

DRAIN OIL — Position equipment so that engine OIL DRAIN PLUG (see Figure 1) is lowest point on engine. Remove OIL DRAIN PLUG and OIL FILL PLUG (while engine is still warm) and allow oil to drain completely.

Replace OIL DRAIN PLUG and tighten securely. Refill oil sump with new oil of proper viscosity and service classification per preceding "OIL & FUEL RECOMMENDATIONS." (see Page 1) Replace OIL FILL PLUG and tighten securely. See Instructions ② and ③ in preceding "PRE-START INSTRUCTIONS" (Page 2).

- ③ **SPARK PLUG** - Check periodically.
- A. Clean area around SPARK PLUG base.
 - B. Remove and inspect SPARK PLUG.
 - C. Replace SPARK PLUG if electrodes are pitted or burned or if porcelain is cracked. For replacement use Champion RJ-17LM or equivalent.
NOTE: If engine has a Champion RJ-17LM resistor SPARK PLUG, it is in compliance with the Radio Noise Limitations Order (Radio Frequency Interference) issued by the Ministry of Communications of the Canadian Telecommunications Regulations Branch.
To remain in compliance, a Champion RJ-17LM resistor SPARK PLUG must be used for any replacement.
 - D. If reusing SPARK PLUG clean it by carefully scraping electrodes (Don't wire brush or sand blast). Be sure entire SPARK PLUG is clean.
 - E. Check electrodes gap with wire feeler gauge and set gap at .030 if necessary.
 - F. Install SPARK PLUG in engine and tighten to 15 foot pounds torque or if lacking torque wrench, tighten securely.

- ④ **LUBRICATE REWIND STARTER BEFORE EACH SNOW BLOWING SEASON** — PROCEED AS FOLLOWS:
- A. Remove REWIND STARTER (See Figures 5 & 6) from engine and brush away accumulation of dirt and debris from STARTER PAWL and PAWL POST.
 - B. Apply a few drops of engine oil to each PAWL POST and rotate starter a few times.
 - C. Reinstall starter on engine. Be sure the four starter retaining nuts are tightened securely.

- ⑤ **CHECK ENGINE AND EQUIPMENT FREQUENTLY FOR LOOSE NUTS, BOLTS, ATTACHMENTS, ETC., AND KEEP THESE ITEMS TIGHTENED.**

ADJUSTMENTS

DO NOT MAKE UNNECESSARY ADJUSTMENTS, FACTORY SETTINGS ARE SATISFACTORY FOR MOST APPLICATIONS AND CONDITIONS. IF ADJUSTMENTS ARE NEEDED, PROCEED AS FOLLOWS:

- ① **CARBURETOR ADJUSTMENTS**
- HIGH SPEED and IDLE ADJUST NEEDLES are pre-set at the factory and re-adjustment should not be necessary.

NOTE: IF YOU THINK THE CARBURETOR NEEDS ADJUSTING, CONTACT YOUR NEARBY SEARS SERVICE CENTER, WHICH HAS THE PROPER EQUIPMENT AND EXPERIENCE TO MAKE ANY NECESSARY ADJUSTMENTS.

- ② **NEVER TAMPER WITH ENGINE GOVERNOR WHICH IS FACTORY SET FOR PROPER ENGINE SPEED. OVERSPEEDING ENGINE ABOVE FACTORY HIGH SPEED SETTING CAN BE DANGEROUS. IF YOU THINK THE ENGINE GOVERNED HIGH SPEED NEEDS ADJUSTING, CONTACT YOUR NEARBY SEARS SERVICE CENTER, WHICH HAS THE PROPER EQUIPMENT AND EXPERIENCE TO MAKE ANY NECESSARY ADJUSTMENTS.**

CHANGING OF ENGINE GOVERNED SPEED WILL VOID ENGINE WARRANTY.

STORAGE

NEVER STORE ENGINE WITH FUEL IN TANK INDOORS OR IN ENCLOSED, POORLY VENTILATED ENCLOSURES, WHERE FUEL FUMES MAY REACH AN OPEN FLAME, SPARK OR PILOT LIGHT AS ON A FURNACE, WATER HEATER, CLOTHES DRYER, ETC.

If engine is to be un-used for 30 days or more, prepare as follows:

- ① Remove all gasoline from CARBURETOR and FUEL TANK to prevent gum deposits from forming on these parts and causing possible malfunction of engine.
- DRAIN FUEL INTO APPROVED CONTAINER OUTDOORS, AWAY FROM OPEN FLAME.**
- A. Run engine until FUEL TANK is empty and engine stops due to lack of fuel.
 - B. Disconnect FUEL LINE at CARBURETOR or FUEL TANK. Be very careful not to damage FUEL LINE, Fittings or FUEL TANK.
Drain any remaining fuel from System
- NOTE:** If "Gasohol" has been used, complete preceding Instructions "A" and "B" and then put a small amount of unleaded (or leaded regular) gasoline into fuel tank and repeat preceding Instructions "A" and "B".
- ② If oil has not been changed recently, this may be a good time to do it. See "CHANGE OIL" instructions in "MAINTENANCE" section.
- ③ Remove SPARK PLUG and pour one (1) ounce (0,029 Liter) of engine oil into spark plug hole. Crank engine over, slowly, several times.
- AVOID SPRAY FROM SPARK PLUG HOLE WHEN CRANKING ENGINE OVER SLOWLY.**
- Replace SPARK PLUG.

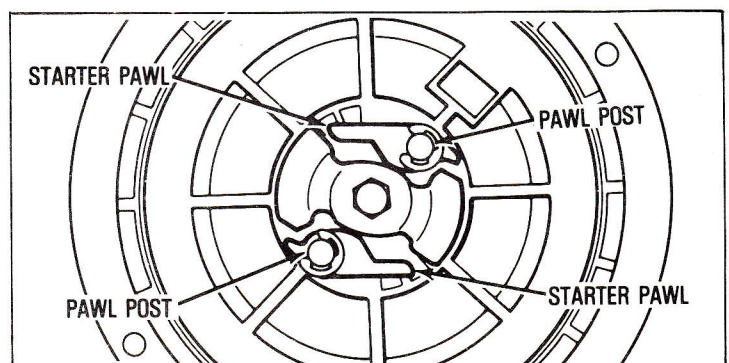


Figure 6

FOR ENGINE ADJUSTMENTS, REPAIRS, OR WARRANTY SERVICE NOT COVERED IN THIS MANUAL, CONTACT YOUR NEAREST SEARS SERVICE CENTER.

Craftsman Engine Warranty

For two years from purchase date, Simpsons-Sears will replace, Free of Charge, any part or parts found, upon examination to be defective under normal use and service, by reason of defects in material and workmanship. The warranty is void if the unit has been the subject of misuse.

Compliance with radio interference regulations certified, replace spark plug with resistor spark plug only.