

HOMELITE

Model	Bore mm (in.)	Stroke mm (in.)	Displacement cc (cu. in.)	Drive Type
290	42.0 (1.65)	34.0 (1.34)	47.5 (2.9)	Direct
340	45.0 (1.77)	34.0 (1.34)	54.1 (3.3)	Direct

MAINTENANCE

SPARK PLUG. Recommended spark plug is Champion RCJ6Y, CJ6Y or equivalent. Specified electrode gap is 0.025 inch (0.63 mm) for CJ6Y plugs and 0.020 inch (0.51 mm) for RCJ6Y plugs.

CARBURETOR. A Tillotson HU diaphragm type carburetor is used. Refer to CARBURETOR SERVICE section for overhaul procedures and exploded view.

A view of the carburetor mixture screws is shown in Fig. HL370. Initial adjustment of the idle speed screw is $\frac{3}{4}$ to 1 turn clockwise after contacting the throttle stop lever. Initial adjustment of the idle speed mixture screw is $1\frac{1}{2}$ turns counterclockwise from the seated position on Model 340 and $7/8$ turn counterclockwise from the seated position on Model 290. Initial adjustment of the high speed mixture screw is 1 turn counterclockwise from the seated position on both models. Make final adjustments with engine warm and running. Adjust idle speed screw so engine idles just below clutch engagement speed. Adjust low speed mixture screw so engine will accelerate cleanly without hesitation. Adjust high speed mixture screw to obtain optimum performance under cutting load.

A view of the carburetor linkage is shown in Fig. HL371.

MAGNETO AND TIMING. A solid-state ignition system is used. Timing is fixed and set at 29 degrees BTDC. The solid-state ignition system is serviced by renewing the spark plug, ignition module (1—Fig. HL375) or coil (3).

Two types of ignition systems have been used. Some early production units used a SEMS ignition system (blue module and black coil) while later and current production units use a Prufrex ignition system (blue module and blue coil). Components from one system are not compatible with the other. Service parts will only supply the Prufrex system. If an ignition system component fails on a SEMS system, the entire system will have to be replaced. The Prufrex module is part 98365 and the Prufrex coil is part 98366. Adjust rotor (flywheel)-to-module air gap to 0.008-0.012 inch (0.2-0.3 mm).

LUBRICATION. The engine is lubricated by mixing oil with unleaded gasoline. Recommended oil is Homelite® two-stroke oil mixed at the ratio designated on the oil container. If Homelite® oil is not available, a good quality oil designated for two-stroke engines may be used when mixed at a 16:1 ratio; however, an antioxidant fuel stabilizer (such as Sta-Bil) should be added to the fuel mix. Antioxidant fuel stabilizer is not required

with Homelite® oils, as they contain fuel stabilizer so the fuel mix will stay fresh up to one year. Fuel tank capacity is 25.3 ounces (748 mL).

The chain oil tank should be filled with Homelite® Bar and Chain Oil or a good quality SAE 30 oil. Tank capacity is 16 ounces (473 mL). It may be necessary to use SAE 10 oil or oil mixed with kerosene if temperature is below 40°F (4°C).

REPAIRS

TIGHTENING TORQUE VALUES. Tightening torque values are listed in the following table:

Guide bar to crankcase	89 in.-lbs. (10.1 N·m)
Transfer port	27 in.-lbs. (3.1 N·m)
Engine to housing	62 in.-lbs. (7 N·m)
Spark plug	120-180 in.-lbs. (13.6-20.3 N·m)
Cylinder to crankcase	53 in.-lbs. (6 N·m)
Clutch to crankshaft	204 in.-lbs. (23 N·m)
Flywheel to crankshaft	168 in.-lbs. (19 N·m)
Module to cylinder	44 in.-lbs. (5 N·m)

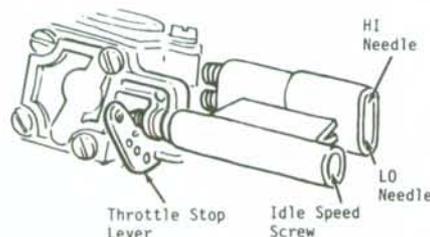
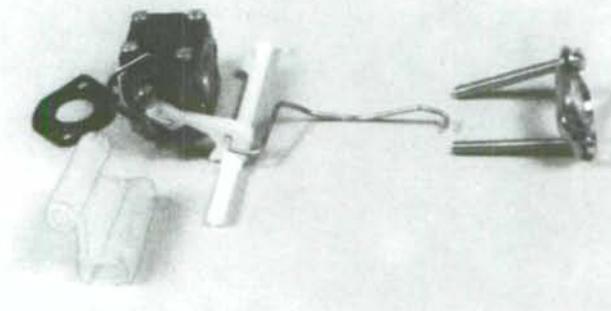


Fig. HL370—View of carburetor adjustment screws.

Fig. HL371—View of correct throttle linkage assembly.



- Starter cover 10 in.-lbs.
(1.1 N·m)
- Oil pump to engine 10 in.-lbs.
(1.1 N·m)

COMPRESSION PRESSURE. For optimum performance, cylinder compression pressure should be 140-170 psi (966-1173 kPa) with engine at normal

operating temperature. Engine should be inspected and repaired when compression pressure is 90 psi (620 kPa) or below.

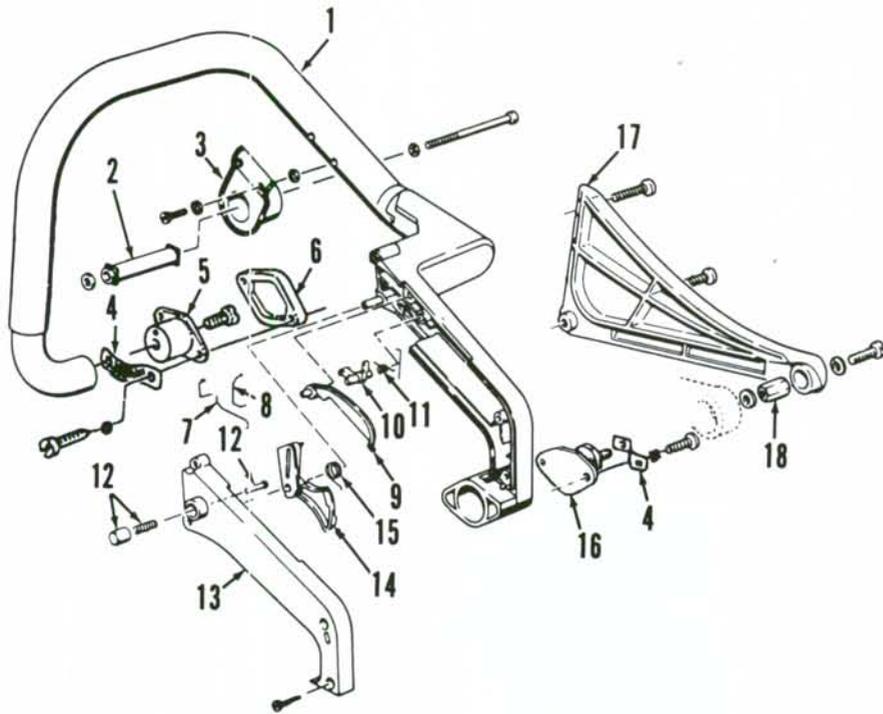


Fig. HL373—Exploded view of handle and drive case assembly.

- | | | | |
|-------------|-----------|----------------|--------------|
| 1. Handle | 6. Spacer | 10. Lever | 14. Trigger |
| 2. Spacer | 7. Link | 11. Spring | 15. Spring |
| 3. Isolator | 8. Link | 12. Lock Assy. | 16. Isolator |
| 4. Strap | 9. Lock | 13. Cover | 17. Guard |
| 5. Isolator | | | 18. Nut |

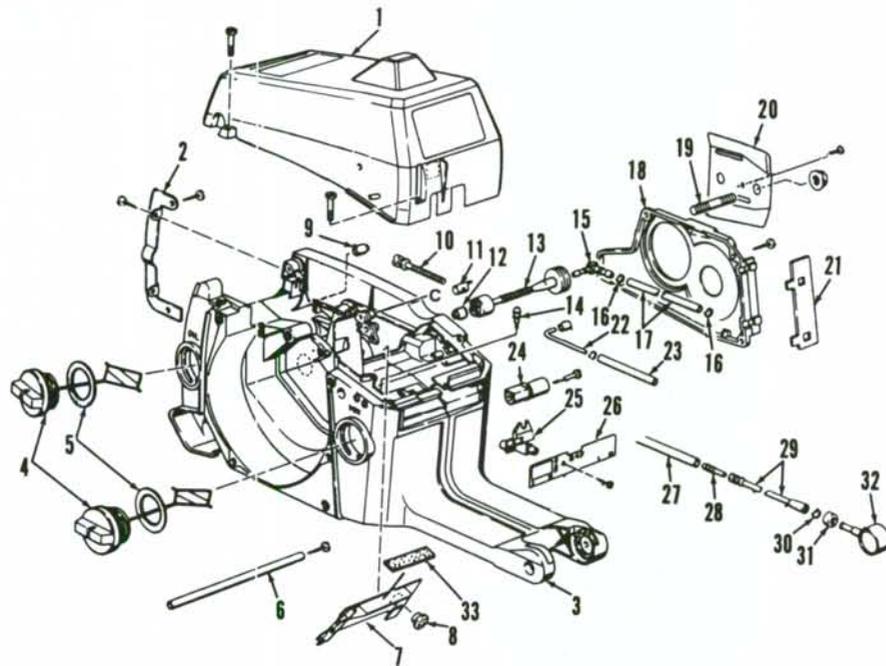


Fig. HL374—Exploded view of engine housing.

- | | | | |
|-----------------|---------------------------|--------------------|-------------------|
| 1. Cover | 10. Chain adjusting screw | 17. Rubber tubing | 25. Support plate |
| 2. Bumper plate | 11. Pin | 18. Oil pump cover | 26. Switch plate |
| 3. Housing | 12. Strainer | 19. Stud | 27. Rubber tubing |
| 4. Caps | 13. Oil tube | 20. Plate | 28. Fitting |
| 5. Gaskets | 14. Fitting | 21. Protector | 29. Fuel line |
| 6. Tube | 15. Elbow fitting | 22. Tube | 30. Clamp |
| 7. Baffle | 16. Clamp | 23. Rubber tubing | 31. Weight |
| 8. Plug | | 24. Chain stop | 32. Filter |
| 9. Check valve | | | |

CONNECTING ROD, CRANK-SHAFT AND CRANKCASE. Crankcase halves (1 and 16—Fig. HL377) must be split for access to crankshaft. The crankshaft (12) is supported by ball bearings (13) at both ends. Connecting rod, crankpin and crankshaft are pressed-together assembly and separate components are not available. Rod and crankshaft must be serviced as a unit assembly.

When installing bearings onto crankshaft, heat the bearing(s) to a temperature of 350°F (177°C) in hot oil. The bearing retaining rings should align with the grooves in the bearing bore of the crankcase. Note that the tapered (rotor) end of the crankshaft should be on the same side of the cylinder as the port cover with the module mounting boss.

When assembling the lower crankcase half onto the cylinder, apply a light coat of sealant to the mating surface and outer edge of the bearing bore. Note that the two large mounting ears on the crankcase lower half should be on the clutch side. The outer surfaces of the seals should be flush with the outside edge of the bearing bores.

When installing the shortblock assembly into the engine housing, loosely install the two screws on the rotor side, then install the five screws on the clutch side. Tighten all shortblock mounting screws evenly.

PISTON AND RINGS. Model 290 uses two piston rings and Model 340 uses one piston ring. Specified ring end gap is 0.006-0.014 inch (0.15-0.35 mm) for Model 290 and 0.008-0.016 inch (0.2-0.4 mm) for Model 340.

Install piston with arrow pointing toward exhaust side of cylinder as shown in Fig. HL378.

A matched cylinder and crankcase assembly is used. The piston for Model 290 is serviced separately, while the piston for Model 340 is only available as an assembly along with the cylinder and the crankcase.

CLUTCH. Refer to Fig. HL379 for an exploded view of shoe type clutch used on both models. Clutch hub (9) has left-hand threads. Turn clockwise to remove from crankshaft. The clutch shoes should only be replaced in sets of three.

Needle roller bearing (4) should be removed, cleaned and lubricated periodically. A high temperature grease such as Homelite® ALL-TEMP Multipurpose Grease should be used. Inspect crank-

shaft for wear or damage caused by a defective clutch bearing.

If clutch slips with engine running at high speed under load, check clutch shoes (8) for excessive wear. If chain continues to turn with engine running at idle speed (below normal clutch engagement speed), check for broken, weak or distorted clutch springs.

When reassembling clutch, hook spring ends together between any two of the clutch shoes.

AUTOMATIC CHAIN OILER PUMP. The gear driven, automatic chain oiler pump used on Models 290 and 340 is shown in Fig. HL379. Oil pump output is adjustable with five positions from 0.27-0.68 ounce (8-20 mL). A recessed screw is located at the bottom of the engine housing. Press screw inward with a flat screwdriver and rotate screw clockwise to increase flow and counterclockwise to reduce flow.

The oil pump may be removed after removing the clutch. When disassembling the pump, press spring-loaded plunger

in while removing cam pin from pump housing as shown in Fig. HL380. Inspect all pump components. Renew any

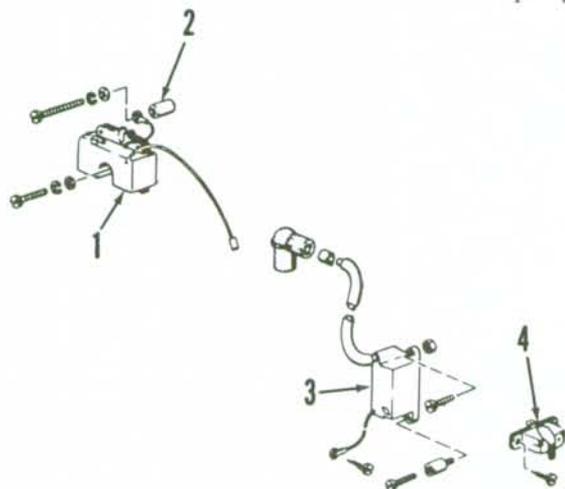


Fig. HL375—View of ignition components.

1. Module
2. Spacer
3. Coil
4. Switch

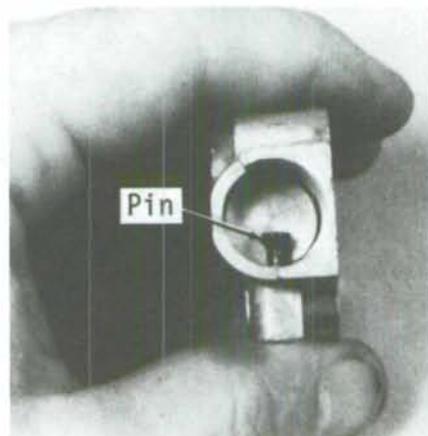


Fig. HL380—When disassembling oil pump, press the spring-loaded plunger in while removing the cam pin from the pump housing.

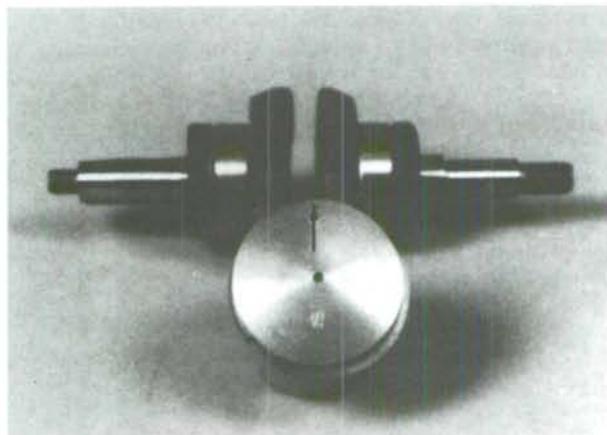


Fig. HL378—Install piston onto connecting rod with arrow pointing toward exhaust port.

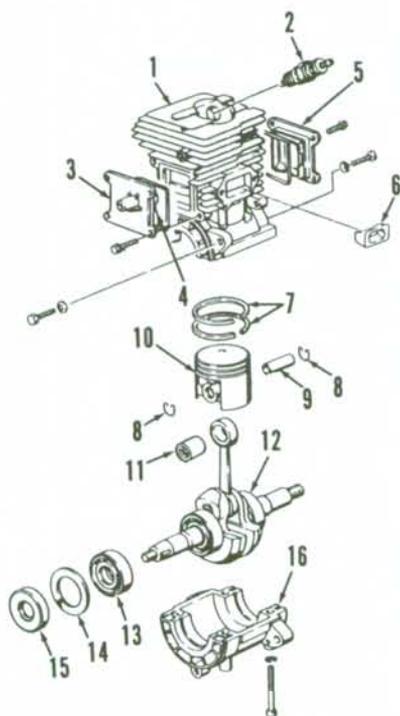
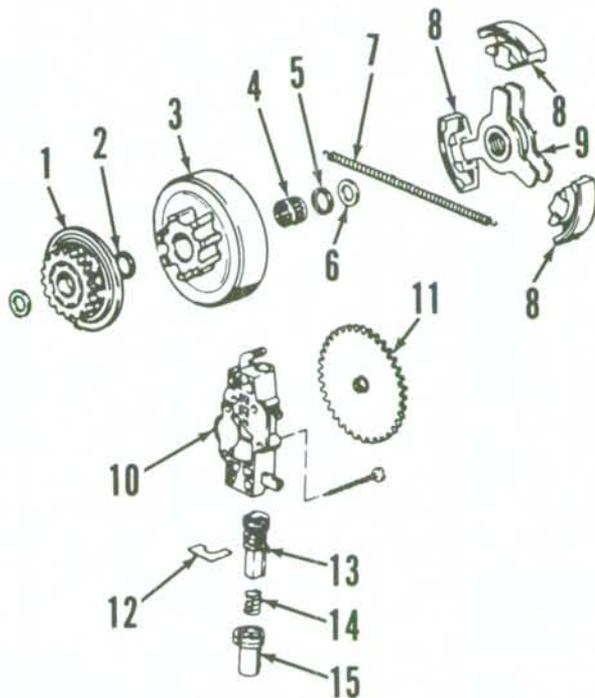


Fig. HL377—Exploded view of engine. Install intake port insert (6) so notched corners face up.

- | | |
|-------------------------|----------------------|
| 1. Crankcase & cylinder | 9. Piston pin |
| 2. Spark plug | 10. Piston |
| 3. Cover | 11. Bearing |
| 4. "O" ring | 12. Crankshaft assy. |
| 5. Insert | 13. Bearing |
| 6. Insert | 14. Retainer |
| 7. Piston ring(s) | 15. Seal |
| 8. Retainer clip | 16. Lower crankcase |

Fig. HL379—View of clutch and oil pump assemblies.

1. Hub
2. Felt seal
3. Drum
4. Bearing
5. Felt seal
6. Thrust washer
7. Spring
8. Shoe
9. Hub
10. Housing
11. Gear
12. Plate
13. Plunger
14. Spring
15. Plug



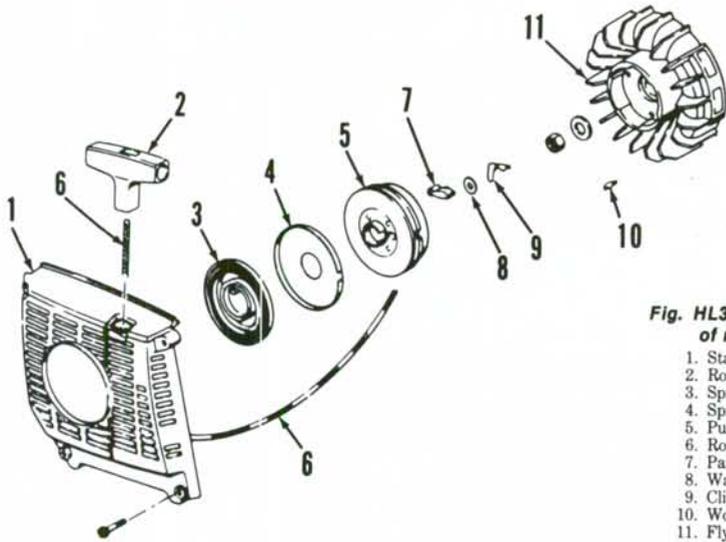


Fig. HL381—Exploded view of rewind starter.

1. Starter housing
2. Rope handle
3. Spring
4. Spring container
5. Pulley
6. Rope
7. Pawl
8. Washer
9. Clip
10. Woodruff key
11. Flywheel

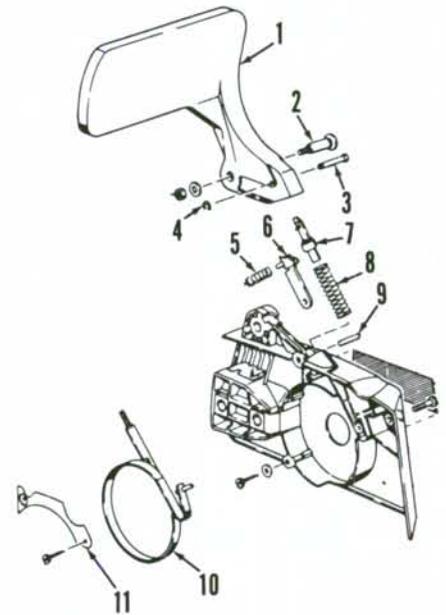


Fig. HL385—Exploded view of chain brake assembly.

1. Lever
2. Shoulder bolt
3. Pin
4. "E" ring
5. Spring
6. Latch
7. Adjuster
8. Spring
9. Pin
10. Brake band
11. Cover

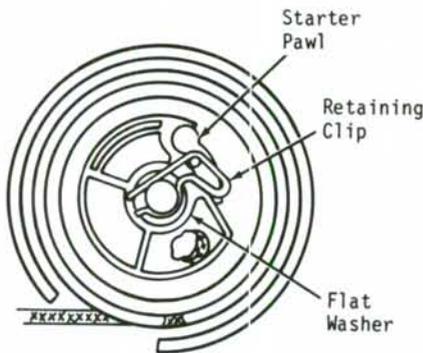


Fig. HL382—Pin on starter pawl must engage loop of retaining clip as shown.



Fig. HL384—View of the guide bar pad showing location of the oil tank vent. Keep vent clear of sawdust.

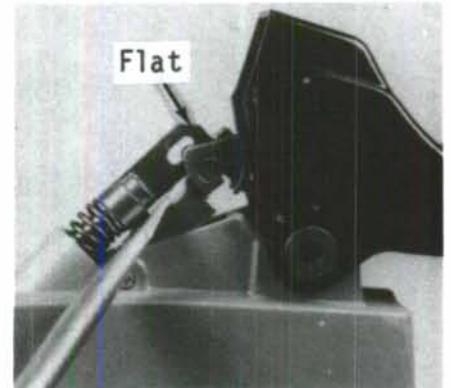


Fig. HL386—View of chain brake mechanism. Insert a screwdriver as shown, then turn screwdriver to release adjuster from latch. When assembling components, position adjuster so flat is up as shown.

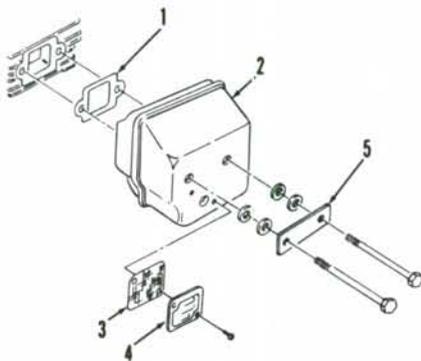


Fig. HL383 Exploded view of muffler.

1. Gasket
2. Muffler
3. Spark arrestor
4. Cover plate
5. Lockplate

part which is damaged or excessively worn.

Refer to Fig. HL374 for an exploded view of oil pump tubing and filter screen. Be sure vent shown in Fig. HL384 is free from sawdust.

MUFFLER. The muffler should be disassembled and periodically cleaned.

Renew muffler components that are cracked or worn excessively. Check engine exhaust port and remove excessive carbon buildup as required. Do not allow loose carbon to enter cylinder, and be careful not to damage exhaust port or piston. Refer to Fig. HL383 for an exploded view of the muffler.

REWIND STARTER. Refer to Fig. HL381 for an exploded view of the rewind starter. To disassemble starter, remove starter from saw, then detach rope handle and allow rope to wind into starter housing. Remove clip (9) from starter post and remove pulley (5). If rewind spring (3) must be removed, lift out retainer and spring while being careful not to dislodge spring. Take care not to allow spring to unwind uncontrolled when separating spring from container.

When reassembling starter, note the following: Rewind spring must be in-

stalled in spring container (4) so spring is coiled in a counterclockwise direction from outer spring end. Rope length should be 35 inches (89.7 cm). Apply cement to rope end or fuse end with heat before installing rope. Insert rope into rope pulley and tie a knot at pulley end. Wrap rope around pulley in a clockwise direction as viewed from pawl side of pulley. Leave approximately 10 inches (25.4 cm) of rope unwrapped. Apply a light coat of grease to starter housing pulley post. Assemble starter, insert rope through rope outlet and install rope handle. See Fig. HL382 for proper installation of retaining clip. To prewind spring, position rope in notch in outside

edge of rope pulley. While holding rope in notch, rotate rope pulley two turns clockwise, then remove rope from notch, release pulley and allow rope to wind onto pulley.

Before installing starter, check starter operation. Be sure spring is not bottomed out when starter rope is fully extended. It must be possible to rotate pul-

ley clockwise with rope fully extended; if not, decrease spring prewind tension by one turn and recheck.

CHAIN BRAKE. Refer to Fig. HL385 for an exploded view of the chain brake. The chain brake will be triggered when the operator's hand forces brake lever (1) forward. The chain brake

should stop the chain instantly. If chain brake does not operate correctly, outer surface of clutch drum may be glazed. Remove glaze using an emery cloth, being sure to clean drum afterward. Clutch drum and brake band (10) must not be bent or nicked.

Initial adjustment of the brake band adjusting screw is in 7 to 9 full turns.

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