

HUSQVARNA

Model	Bore mm (in.)	Stroke mm (in.)	Displacement cc (cu. in.)	Drive Type
40 Rancher, 140S, 240 S, 240 SE, 240 SG, 340 SE, 340 SG	40.0 (1.575)	32.0 (1.26)	40.0 (2.4)	Direct
44, 44 CB, 44 Rancher, 444 CB, 444 SE, 444 SG	42 (1.654)	32 (1.26)	44 (2.7)	Direct

MAINTENANCE

SPARK PLUG. Recommended spark plug is Champion RCJ7Y. Spark plug electrode gap should be 0.5 mm (0.020 in.).

CARBURETOR. Late Model 44 is equipped with a Walbro Model HDA diaphragm carburetor. All other models are equipped with a Walbro Model HDC carburetor. Refer to CARBURETOR SERVICE section for carburetor service and exploded view.

On 140S models equipped with Walbro HDC 10 carburetors, initial setting of low speed mixture screw is $\frac{3}{4}$ turn open while initial setting of high speed mixture screw is $\frac{1}{2}$ turn open. Initial setting for late Model 44 with Walbro Model HDA carburetor is $\frac{1}{4}$ turns open for low and high speed mixture screws. Initial setting for all other models is one turn open for low speed and high speed mixture screws.

On all models, make final adjustment 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.

Note that intake manifold must be installed with oval opening next to cylinder and round opening next to carburetor.

IGNITION. Models 40 Rancher, 140S and 240S are equipped with a breaker-point type flywheel magneto ignition system. Air gap between flywheel and coil legs should be 0.30-0.35 mm (0.012-0.014 in.). Breaker-point gap should be 0.3-0.4 mm (0.012-0.016 in.). Breaker-points should begin to open when mark on flywheel is 2.5 mm (0.1 in.) from upper edge of lower coil leg as shown in Fig. H10. Use a suitable test light or continuity meter to check breaker-point opening.

Models 240SE, 240SG, 340SE and 340SG are equipped with a two-piece breakerless electronic ignition system. An ignition module (6-Fig. H11) is

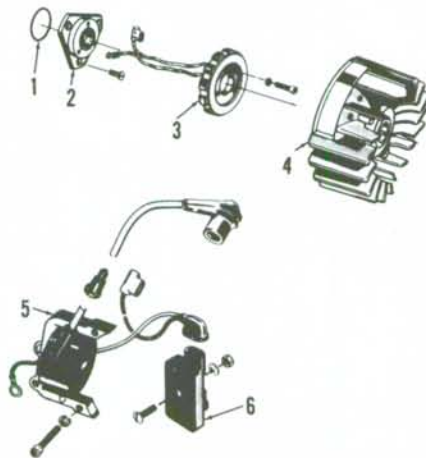


Fig. H11—Exploded view of electronic ignition system used on Models 240SE, 240SG, 340SE and 340SG. Generating coil (3) is used on Models 240SG and 340SG with heated handles.

1. "O" ring
2. Seal retainer
3. Generating coil
4. Flywheel
5. Ignition coil
6. Ignition module

located in the rewind starter housing. Models 44, 444SE and 444SG are equipped with a one-piece breakerless electronic ignition system. Air gap on both types of breakerless ignition systems, between flywheel and coil legs, should be 0.30-0.35 mm (0.012-0.014 in.).

On all models, flywheel may have two crankshaft key grooves. Key groove marked "P" is used on models equipped with Prufrex ignition systems while the

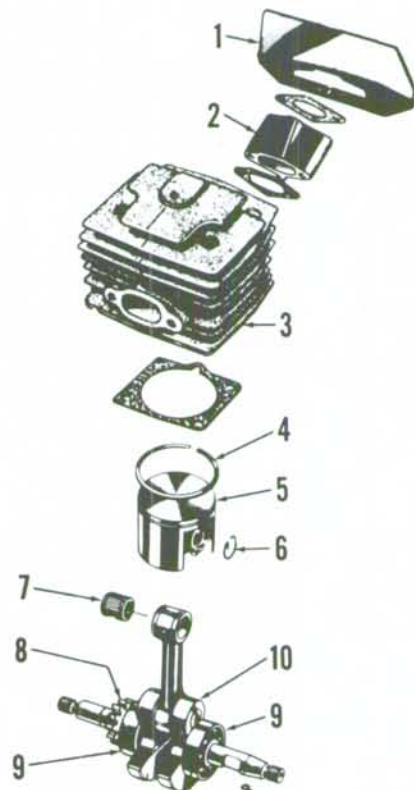


Fig. H12—Exploded view of engine. Oil pump drive gear (8) is used on Models 140S, 240S, 240SE and 240SG. Note oil pump gear in Fig. H17 used on all other models.

1. Air baffle
2. Intake manifold
3. Cylinder
4. Piston ring
5. Piston & pin
6. Pin retainer
7. Bearing
8. Oil pump drive gear
9. Bearing
10. Crankshaft & rod assy.

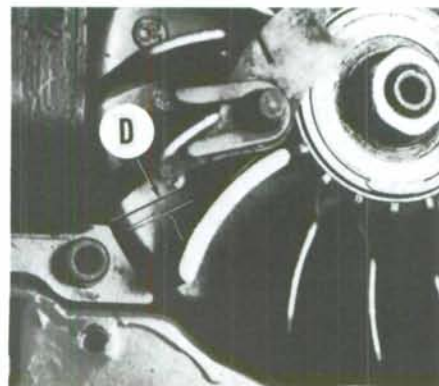


Fig. H10—Distance (D) from flywheel mark to edge of coil leg should be 2.5 mm (0.1 in.) when breaker-points open.

other key groove is used on models equipped with Bosch and breaker-point ignition systems. Tighten flywheel nut to 23.5-28.4 N·m (17-21 ft.lbs.).

LUBRICATION. Recommended fuel:oil ratio for engine lubrication is 50:1 when using Husqvarna Two-Stroke Oil. If Husqvarna Two-Stroke Oil is not available, fuel:oil ratio should be 25:1 using a good quality oil designed for use in two-stroke air-cooled engines.

The chain is lubricated by oil from an automatic chain oil pump. Clean automotive oil may be used. Oil viscosity should be chosen according to ambient temperature. Oil may be cut with up to 50 percent kerosene in extremely cold weather.

Oil pump output on 140S, 240S, 240SE and 240SG is not adjustable. Oil pump output on all other models is adjusted by exchanging cam screw (2—Fig. H17). Cam screw is available from the manufacturer in three color-coded sizes. A white cam screw indicates minimum oil output, a plain cam screw indicates standard oil output while a green cam screw indicates maximum oil output. Refer to OIL PUMP section for replacement procedure.

REPAIRS

CYLINDER, PISTON, PIN AND RINGS. Cylinder has a chrome bore which should be inspected for flaking,

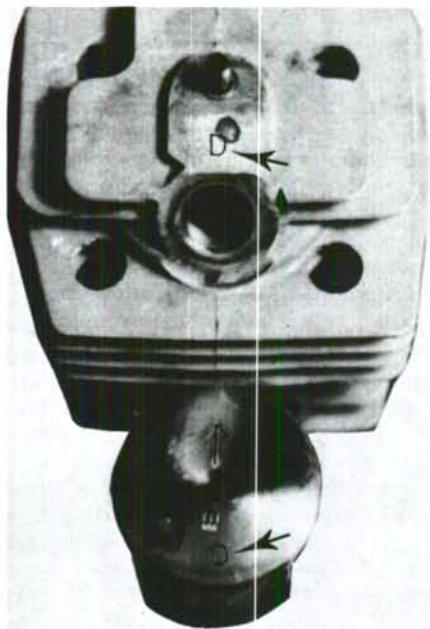


Fig. H13—View showing location of cylinder and piston grade letters. Grade "D" is shown.

cracking or other damage to chromed surface. Some pistons are equipped with one piston ring while others are equipped with two piston rings. Piston ring groove has a locating pin to prevent piston ring rotation. Arrow on piston crown must point toward exhaust port when installing piston.

Piston and cylinder are graded according to size to provide correct piston-to-cylinder clearance. Piston and cylinder bore sizes are indicated by a letter stamped on the piston crown or on the top of the cylinder. See Fig. H13. If cylinder is new or has very little use, piston and cylinder grade should be the same. If cylinder is used but not excessively worn, a piston with the same grade or a piston with the next largest grade may be installed. For instance, pistons with grade letters "B" or "C" may be installed in a used cylinder with grade letter "B." Grade letter "A" denotes smallest cylinder or piston while grade letter "E" denotes largest cylinder or piston. Tighten cylinder base screws to 8.8-9.8 N·m (78-87 in.-lbs.).

CRANKSHAFT, CONNECTING ROD AND CRANKCASE. Crankshaft and connecting rod are a unit assembly. It will be necessary to heat crankcase halves to remove or install crankshaft and main bearings. Care should be taken not to damage mating surfaces of crankcase halves. Check rotation of connecting rod around crankpin and renew crankshaft unit if roughness or other damage is found.

When reassembling crankshaft and crankcase halves, install main bearings allowing for installation of oil pump on drive side and crankshaft seal housing on flywheel side. A special tool is available from the manufacturer to properly position main bearings and crankshaft in crankcase. Tighten crankcase screws to 7-8 N·m (61-69 in.-lbs.). Make certain crankshaft is centered in crankcase and will rotate freely.

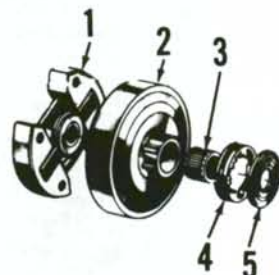


Fig. H14—Exploded view of clutch.

- 1. Clutch hub & shoes
- 2. Clutch drum
- 3. Bearing
- 4. Sprocket
- 5. Washer

CLUTCH. All models are equipped with the two-shoe centrifugal clutch shown in Fig. H14. Clutch hub (1) has left hand threads. Inspect clutch shoes and drum for excessive wear or damage due to overheating. Clean and inspect clutch hub, drum and bearing for damage or excessive wear. Inspect clutch bearing lubrication hole in crankshaft end and clutch bearing contact surface on crankshaft for wear or damage.

AUTOMATIC OIL PUMP. Models 140S, 240S, 240SE and 240SG are equipped with the automatic oil pump shown in Fig. H15 and Fig. H16. Oil pump output is not adjustable. Access to oil pump components is obtained after removing guide bar plate (8—Fig. H15). Withdraw pin (14), unscrew plug (12) and withdraw plunger (15). Oil pump is

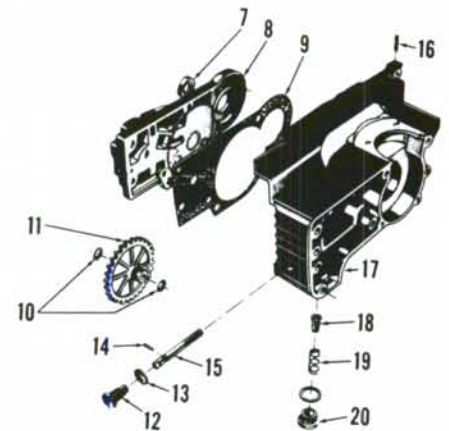


Fig. H15—Exploded view of early oil pump assembly.

- 7. Oil seal
- 8. Bar plate
- 9. Gasket
- 10. Washers
- 11. Oil pump gear
- 12. Plug
- 13. Washer
- 14. Pin
- 15. Plunger
- 16. Dowel pin
- 17. Right crankcase half
- 18. Screen
- 19. Spring
- 20. Plug

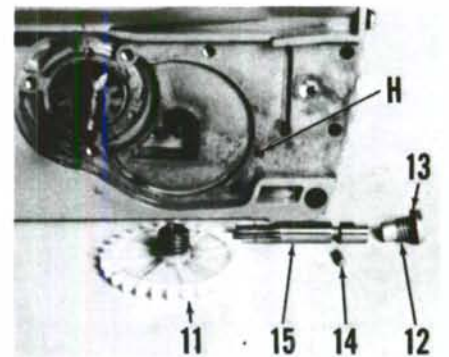


Fig. H16—View of oil pump components. Pin (14) is located in hole (H). Refer to Fig. H15 for parts identification.

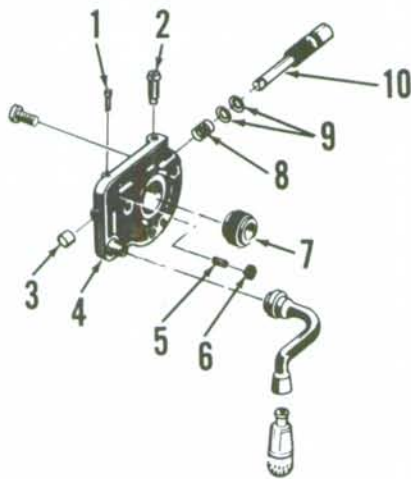


Fig. H17—Exploded view of oil pump used on Models 40 Rancher, 44, 340SE, 340SG, 444SE and 444SG.

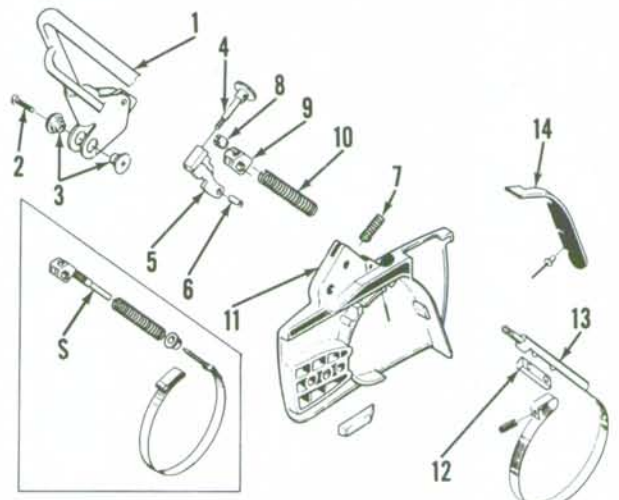
- | | |
|--------------|---------------|
| 1. Plug | 6. Seal |
| 2. Cam screw | 7. Drive gear |
| 3. Plug | 8. Spring |
| 4. Pump body | 9. Washers |
| 5. Tube | 10. Plunger |

driven by gear (8—Fig. H12) on crankshaft. A special tool is available from the manufacturer so gear can be removed without removing crankshaft.

Automatic oil pump used on all other models is shown in Fig. H17. Oil pump output is adjusted by exchanging cam screw (2—Fig. H17). Cam screw is available from the manufacturer in three color-coded sizes. A white cam screw indicates minimum oil output, a plain cam screw indicates standard oil output while a green cam screw indicates maximum oil output. Remove clutch for access to oil pump. Unscrew cam screw (2) before withdrawing pump plunger (10). Pump plunger (10) is driven by worm gear (7) on crankshaft. A special tool is

Fig. H19A—Exploded view of typical chain brake used on later models. Some models may have adjustable type brake band shown in inset.

1. Hand guard
2. Cap screw
3. Trunnion
4. Trigger button
5. Trigger lever
6. Pin
7. Spring
8. Nut
9. Latch
10. Spring
11. Housing
12. Guide
13. Brake band
14. Chain guard



available from the manufacturer for worm gear removal. Collar on worm gear must be toward oil pump when installed.

REWIND STARTER. To disassemble rewind starter on all models, first remove starter housing from saw. Pull starter rope and hold rope pulley with

notch in pulley adjacent to rope outlet. Pull rope back through outlet so it engages notch in pulley and allow pulley to completely unwind. Unscrew pulley retaining screw (6—Fig. H18) and carefully remove rope pulley. If rewind spring must be removed, care should be taken not to allow spring to uncoil uncontrolled.

Install rewind spring in starter housing with spring coiled in clockwise direction from outer spring end. Wrap starter rope around rope pulley in a clockwise direction as viewed with pulley in starter housing. Turn rope pulley two turns clockwise before passing rope through rope outlet to place tension on rewind spring. Spring tension is correct if rope pulley can be rotated at least 1/2 turn further when rope is pulled completely out.

When installing starter assembly on saw, make sure starter pulley properly engages pawls on flywheel before tightening retaining cap screws.

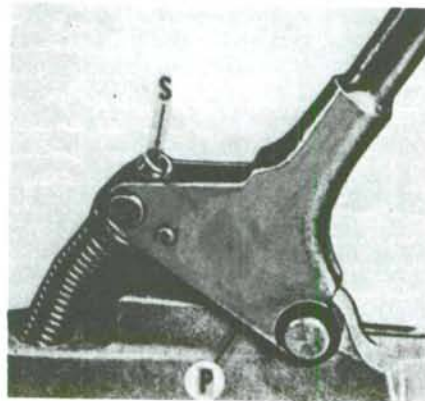


Fig. H19—Turn screw (S) to adjust chain brake on early models. Refer to text.

CHAIN BRAKE. Some models may be equipped with a chain brake system designed to stop chain movement should kickback occur. Several types of chain brake systems have been used.

The chain brake on early models is activated when the operator's hand strikes the hand guard. To adjust chain brake on early models, pull back hand guard and be sure mechanism is cocked. Turn adjusting screw (S—Fig. H19) in until chain cannot be pulled around bar then turn screw out three or four turns. If screw has a square head, be sure screw head does not rest on side plates (P).

The chain brake on later models is activated either by the operator's hand striking the hand guard (1—Fig. H19A) or by sufficient force being applied to the guide bar tip during kickback to cause the front handle to contact the trigger button (4) resulting in automatic

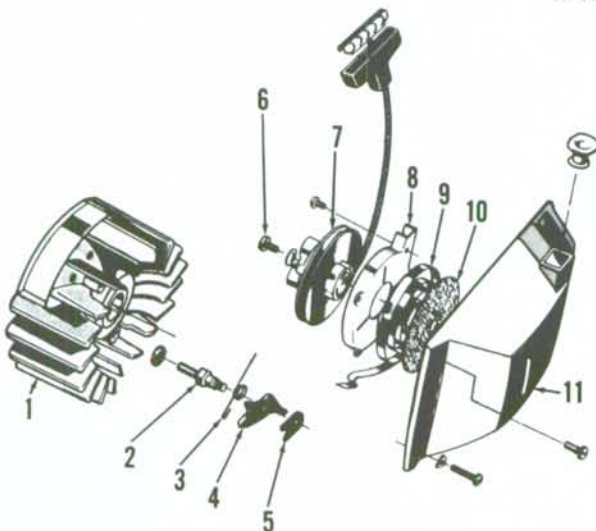


Fig. H18—Exploded view of Models 40 Rancher and 44 rewind starter. Other models are similar.

1. Flywheel
2. Pawl stud
3. Spring
4. Pawl
5. Clip
6. Screw
7. Rope pulley
8. Rope guide
9. Rewind spring
10. Washer
11. Starter housing

activation of brake mechanism. To adjust chain brake on later models, first pull back hand guard and be sure mechanism is cocked then determine if brake system has an adjustable brake band as shown in inset of Fig. H19A. If brake band is adjustable, turn adjusting screw (S) in until chain cannot be pulled

around bar then turn screw out three or four turns. Chain should rotate freely around bar. Check brake band tension adjustment by starting saw and running at wide open throttle, then manually engage chain brake. Chain should stop rotating immediately. On models without adjustable brake band, be sure

spring retaining nut (8) is tight against its seat. On all models, gap between trigger button (4) and front handle should be adjusted so chain brake will automatically activate when a 6.2-9.8 N (1.4-2.2 lbs.) force is applied on guide bar tip. A suitable spring balance should be used for testing and adjustment.

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