shindaiwa

MODEL EC350

GAS CUTOFF SAW

★PRODUCT DEVELOPMENT COPY★

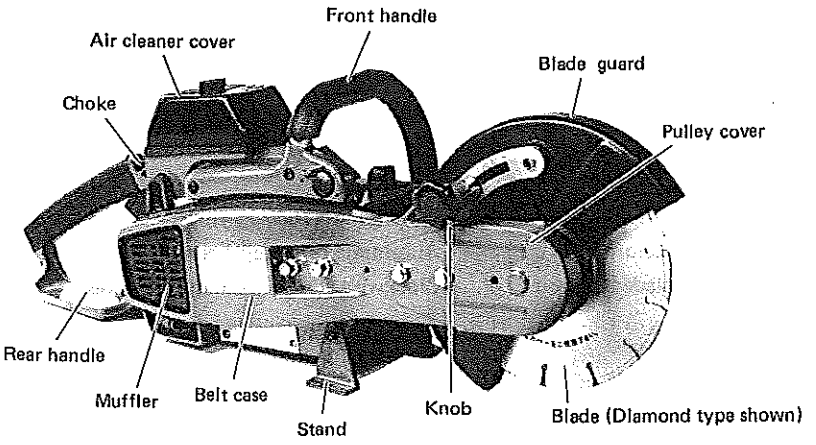
INSTRUCTION MANUAL

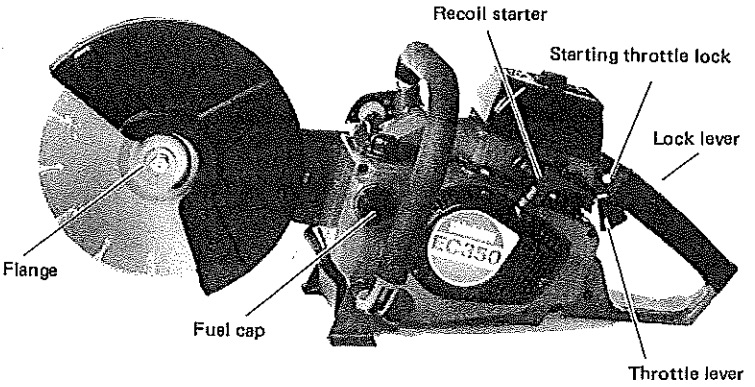
FOR YOUR OWN SAFETY, CAREFULLY READ THIS INSTRUCTION MANUAL BEFORE USE.

CAUTION : Always wear eye protection when operating this machine.
Your Shindaiwa EC-350 Gas Cutoff Saw is equipped with a spark arrestor muffler.
Do not run without spark arrestor screen in place.
The manufacturer takes no responsibility for fire if run without spark arrestor screen.

TABLE OF CONTENTS

DESIGNATION OF PARTS





SPECIFICATIONS

Model	EC350
Engine type	2 cycle air-cooled gas engine
Displacement	35.5 cc (37 x 33) 2.2 CU. IN.
Fuel	(Gasoline) 25 : 1 (2 cycle oil)
Carburetor	Diaphragm (WALBRO) WA 115
Ignition	All transistor electronic ignition system
Spark plug	Champion CJ-8Y
Starting	Recoil starter
Stopping	Grounding (Toggle switch)
Power transmission	Automatic centrifugal clutch
Direction of blade rotation	Clockwise viewed from muffler side
※ Blade	226mm (9″) exclusive Shindaiwa abrasive blade or diamond blade (dry type)
Bore size of blade	22 mm
Maximum cutting depth	2 3/4″ (with 9″) (70mm)
Peripheral speed of blade	Max. 19,685 FT/min. (6,000 m/min.)
Fuel tank capacity	22 oz. (.65 ℓ)
Handle	Special anti-vibration handles (Front and rear handles, independently vibration dampened)
Safety devices	Rear guard, throttle lock
Weight (dry)	16.5 LB (7.5 kg)

※ Note : The blades packed in the shipper carton are 2 abrasive wheels.

SAFETY REGULATIONS

IMPORTANT:

Read all instructions carefully before operating your new Shindaiwa cutoff saw. The following safety precautions should be observed by all users of this machine.

1. Do not operate a machine when you are fatigued.
2. Use safety footwear; snug-fitting clothing; protective gloves; and eye, hearing and head protection devices.
3. Use caution when handling fuel. Move the machine at least 10 feet (3 m) from the fueling point before starting the engine.
4. Do not start cutting until you have a clear work area and secure footing. Cluttered areas and benches invite accidents.
5. Before you start the engine, make sure that the blade is not contacting anything.
6. Carry the machine with the engine stopped, the blade to the rear, and the muffler away from your body.
7. It is unsafe for young children and persons unfamiliar with its usage to operate the machine.
8. When repairing or servicing, use only recommended Shindaiwa replacement parts.
9. Do not operate without a muffler.
10. Keep the handles dry, clean and free of oil or fuel mixture.
11. All machine service, other than the items listed in the owner's manual maintenance instructions, should be performed by trained Shindaiwa service personnel. (For example, if improper tools are used to remove the flywheel or if an improper tool is used to hold the flywheel in order to remove the clutch, structural damage to the flywheel could occur and subsequently cause the flywheel to burst.)

12. Do not allow other persons to be near the machine when starting or cutting with the machine. Keep bystanders and animals out of the work area.

13. Hold the machine firmly with both hands when the engine is running. Use a firm grip with thumbs and fingers encircling the handles.

14. Keep all parts of your body away from the machine when the engine is running.

15. Do not operate a machine that is damaged, improperly adjusted, or not completely and securely assembled. Be sure the blade stops moving when the throttle control trigger is released.

16. Shut off engine before setting the machine down.

17. Operate the machine only in well-ventilated areas.

18. Open fuel cap slowly to release any possible build-up of pressure. Do not refuel a hot machine. Allow to cool if possible.

19. Keep guards in place and in working order.

20. Remove adjusting wrench. Form a habit of checking to see that adjusting wrench is removed from a machine before turning it on.

21. Don't force a machine. It will do the job better and safer at the rate for which it was designed.

22. Use a machine of the proper size. Don't force machine or attachment to do a job for which it was not designed.

23. Wear proper apparel. Loose clothing, gloves, neckties, rings, bracelets, or other jewelry can get caught in moving parts. Non slip footwear is recommended. Wear protective hair covering to contain long hair.

24. Always use safety glasses. Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses; they are not safety glasses.

25. Don't overreach. Keep proper footing and balance at all times.

26. Maintain a machine with care. Keep machine clean for best and safest performance.

27. Check for damaged parts. Before further use of the machine, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function—check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

28. Never leave machine running unattended. Stop engine. Don't leave machine until it comes to a complete stop.

29. Replaced cracked or damaged blade immediately. Always use a Shindaiwa blade.

30. Don't exert impact upon the blade.

31. Never modify a blade to fit an arbor for which it was not designed.

32. Always feed work into a blade against the direction of rotation of the blade.

33. Do not overtighten blade nut.

34. Use only blade flanges furnished with this machine.

35. Start cutting only after engine reaches its operational rpm range.

36. Promptly release throttle lever when the blade stops revolving. Stop engine if an abnormal noise is heard.

37. Do not use any portion of the blade other than its peripheral surface.
When cutting material or working in a recess or slot, be sure that the blade is never twisted.

38. For safety, keep inflammable or fragile objects sufficiently away from the machine. Use caution that cut-off sparks do not directly contact the operator's hands, feet and face.

39. Keep hands and body clear of revolving blade.

40. Always inspect the blade clamping parts (spacer ring, flanges, shaft collor, washer, spindle lock bolt, spring washer etc.).
Defective parts will cause damage to the blade.

41. Although the screws have been fully tightened at the factory prior to delivery, securely retighten the mounting screws for safety.

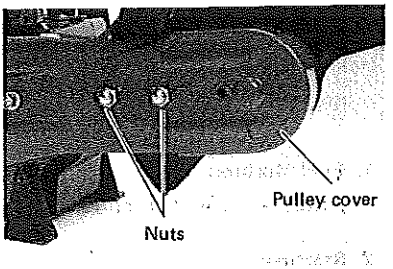
42. Check blade for side to side deflection by rotating it. A heavy deflection will cause the blade to vibrate. Change blade if this condition is found.

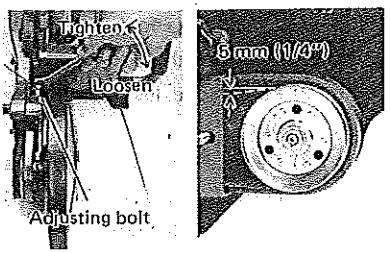
43. Never touch a cut-off piece after cutting until it has had a time to cool.

44. Never place yourself in front of blade during a cutting operation.

ADJUSTMENT OF BELT TENSION

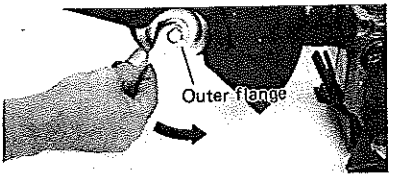
1. Take nuts (2 pieces) off, and remove pulley cover.
2. Loosen knob about one turn, then turn adjusting bolt with spanner.
   To properly adjust tension, first press on belt at near pulley. Adjust until a slight pressure on belt will deflect it about 5 mm (1/4") as shown in photo.
3. Install pulley cover in position, then tighten nuts and knob securely.

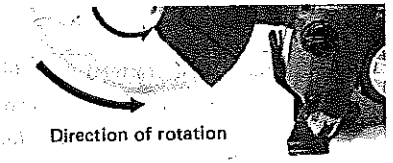


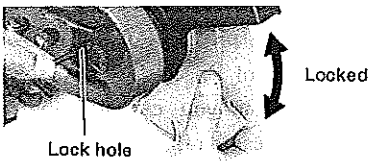


MOUNTING OF BLADE

1. Take bolt off with spanner, then remove outer flange and washer.
2. Install blade onto shaft in the correct direction of rotation.
   Then place outer flange, washer and bolt in position.
3. Insert hexagonal wrench into Lock hole on pulley cover so that blade will be locked. Then firmly tighten bolt with spanner.



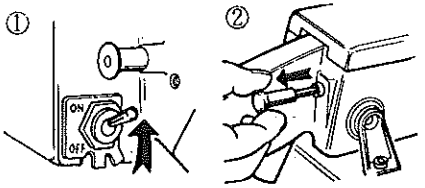




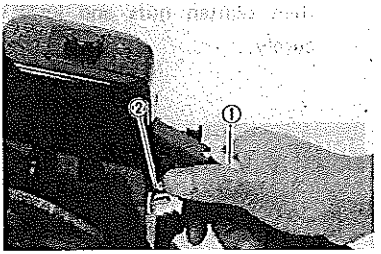
FILLING FUEL, STARTING AND STOPPING

CAUTION:
Before starting, clear a safe work area. When the engine starts, the blade will rotate, so be prepared!

1. **Fuel Mixture:**
   Always use a gas/oil ratio of 25:1.

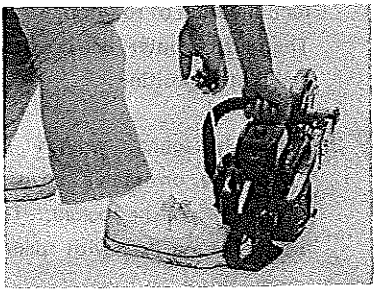


2. **Starting:**
   a. When engine is cool –
      1) Turn switch "ON".
      2) Pull choke lever all the way out.
      3) Depress lock lever ① , then push starting throttle lock ② into throttle lever.
   b. When engine is warm –
      1) Turn switch "ON".
      2) Depress lock lever, then push starting throttle lock into throttle lever.



NOTE:
Throttle lever cannot be pulled without depressing lock lever ① in upper handle. When throttle is released, idle speed is resumed, and blade rotation stops.

3) Pull recoil starter rope while holding the machine firmly and placing your right foot into rear handle as shown in the photo. Pull cord slowly until engaged, then rapidly after you can feel the increased resistance.

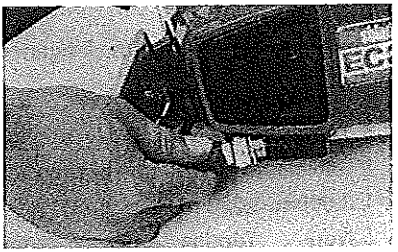


CAUTION:
Don't pull rope to its full length and do not let your hand slip off the rope when it is under tension.
Starting can be easily attained by pulling vigorously once the starter is engaged.

4) When engine fires or coughs, press choke in to the original off position and pull recoil starter again. Use caution as blade will rotate during engine starting. After brief revving of engine to clear carburetor, engine will idle with throttle lock off. If engine fails to start after a few pulls, follow above procedures from the beginning. If engine still will not start, flooding may have occurred so check as follows:

(a) Check spark by removing spark plug and shorting against cylinder while pulling recoil starter rope. Make sure switch is "ON".

(b) Inspect to see if spark plug is fouled when removing plug.
If fouled: 1) Expel fuel by hand cranking several times without spark plug.
2) Wipe off excess fuel from plug and replace before starting engine.



NOTE:
1. Make sure switch is "ON" before starting.
2. Return choke to the original position when engine first fires after starting with full choke. (Otherwise flooding will result and engine won't start.)
3. Upon starting, allow to idle for 1 to 2 minutes for warm-up.

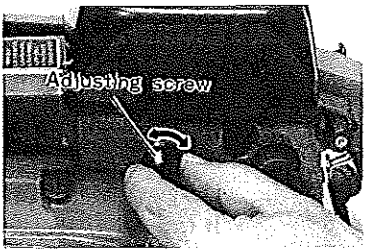
3. **Stopping:**
   Turn switch "OFF" after idling at low speed for 1 to 2 minutes.

CAUTION:
1. Do not mix fuel or refuel machine around fire or flame.
2. Don't smoke while refueling or mixing fuel.
3. Always use a mixing ratio of 25:1.
4. Don't use dirty or reclaimed oil.

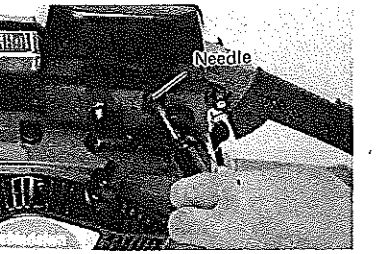
CARBURETOR ADJUSTMENT

With engine running, adjust carburetor using the following procedures:

1. **Idle Screw Adjustment –**
   Turn idle adjusting screw so that stable operation can be obtained at 3,000 to 3,200 rpm.
   Note: Turning adjusting screw clockwise increases rpm. (Blade will not turn at above rpm.)



2. **Low Speed (L) and High Speed (H) Adjustment –**
   Standard opening:
   L . . . . . 1-1/4 turns
   H . . . . . 1-1/4 turns
   "Standard opening" means number of turns from the fully closed position by turning needle gently counter-clockwise.



3. **Adjustments for Low Speed (L) Adjusting Screw –**
   After adjusting according to number 2, continue to turn gently either to right or to left so that engine rotation may be speeded up. Continuing to turn will result in engine rpm decrease. Return to the position just before this slow-down and set at this point.

Next, as idle speed is considerably higher than again number 1 setting, reset idle adjusting screw so that engine idles at 3,000 to 3,200 rpm. By repeating this procedure two to three times, optimum low speed idle adjustment can be obtained.

4. **High Speed (H) Adjustment –**
   When using a new machine, operate it as it was set on factory shipment. After about 10 hours of operation, adjust the needle (H) to the standard setting (1-1/4 turns).

CUTTING

1. **Before Starting –**
   a. Understand safety procedures.
   b. Clear a safe work area.
   c. One should wear safety helmet, protective wear for hands and feet, ear protection, and close fitting but comfortable clothes.
   d. When moving from place to place, stop engine for safety.
   e. Check for loose bolts and nuts before use.

2. **Efficient Operation –**
   Workpieces can be cut most efficiently by light pressure and with engine rpm in the 8,000 — 8,500 rpm range at full throttle.

NOTE:
High pressure against workpiece lowers engine rpm, increases fatigue, and lowers cutting performance, resulting in considerable efficiency loss.

3. **Angle Setting of Blade Guard**
   Set blade guard to proper angle for working condition.
   1. Loosen knob, and move wheel guard to proper angle.
   2. Firmly tighten knob.

CAUTION:
Always stop engine before this adjustment.

4. Cutting –

Cut the workpiece at right angles to blade. First cut a notch with lower engine speed, then continue to cut with higher engine speed.

NOTE:

Use a Shindaiwa blade.

Workpiece	Blade type	Dimensions		
		outer dia.	thickness	bore
Metal	Abrasive (M)	9″ (226 mm)	1/8″ (3.2 mm)	22 mm
Nonmetal	Abrasive (NM)	9″ (226 mm)	1/8″ (3.2 mm)	22 mm
	Diamond tip	9″ (226 mm)	.087″(2.2 mm) (tip area)	22 mm

5. Working in Limited Space

Install assembly parts, bearing case and blade cover, on opposite side as shown in photo.

This makes it possible to cut work piece 3/4 – 1″ (20 – 25 mm) from objcetion.

See page 16 for mounting instruction.

MAINTENANCE AND INSPECTION

A. Daily Maintenance

1. Blade Inspection

Blade sharpness is essential for best performance.

Always keep the abrasive blade in good condition.

When blade is cracked or deformed, replace it at once. Also replace when worn.

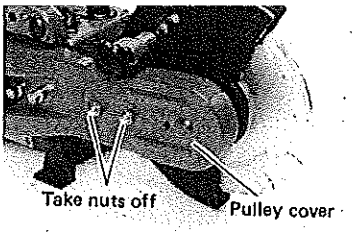
2. Belt Inspection and Replacement

(a) Inspection

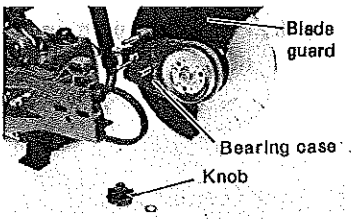
Belts can stretch or wear during long use. It is advisable to check the belt tension before use, and adjust or replace if necessary.

(b) Replacement

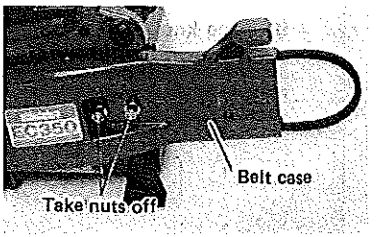
1. Take pulley cover off.
2. Loosen belt according to page 8 , ADJUSTMENT OF BELT TENSION.



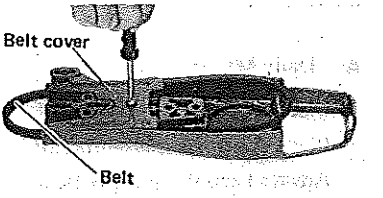
3. Take knob off, remove balde guard and bearing case assembly.



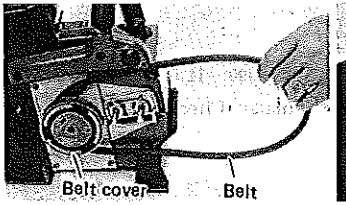
4. Take nuts (2 pieces) off, and remove belt case.

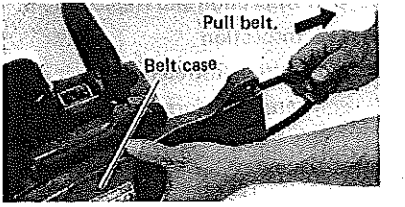


5. Remove belt cover by taking screw off.

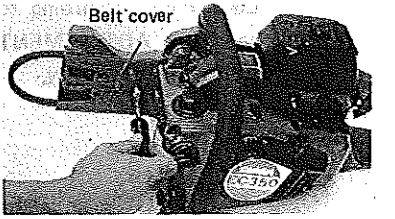


6. Fit a new belt to pulley in clutch drum, then install belt case in position. Firmly tighten nuts.

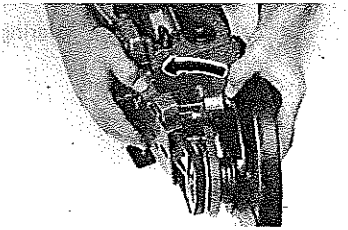




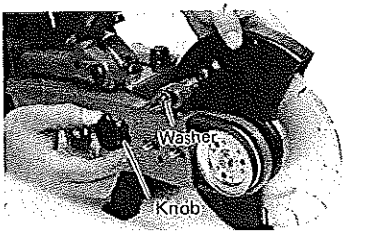
7. Place belt cover over belt case, then firmly tighten screw.



8. Place wheel guard in position.

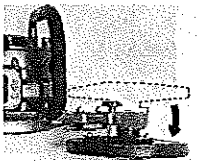


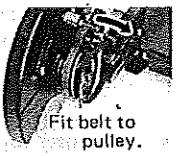
9. Place knob with washer in position, and install nuts.

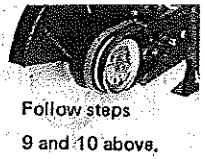


10. Adjust belt tension and install pulley cover according to page 8, ADJUST--MENT OF BELT TENSION.

* How to move blade assembly to opposite side for more clearance:







3. Air Cleaner

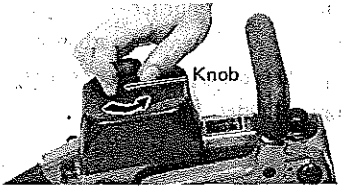
Maintenance of the air cleaner is essential for long engine life.

(a) Maintenance

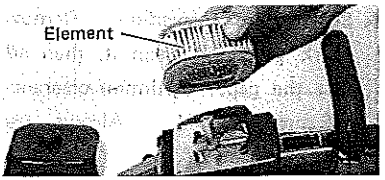
Always clean before starting work. Change air cleaner element every 20 hours.

(b) Cleaning

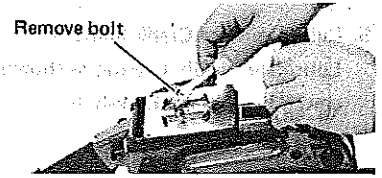
1. Loosen air cleaner knob, and remove cleaner cover.

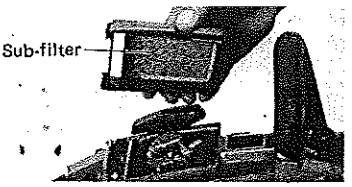


2. Remove cleaner element, then blow with air from inside.



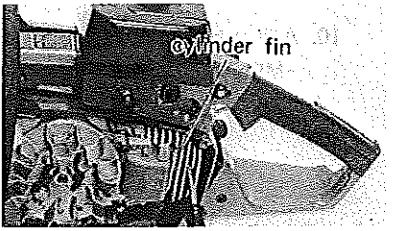
3. When changing air cleaner element, remove sub-filter by taking bolt off. Rinse with a 3:1 gas/oil solvent. After cleaning and drying, reinstall.



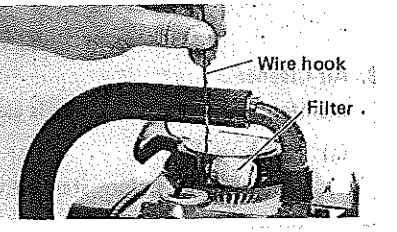


B. Periodical Maintenance

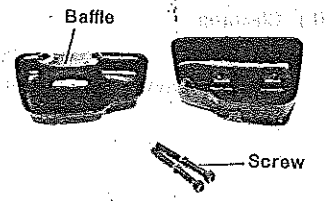
1. **Cylinder Fin Cleaning.** Dirt or dust clogged fins can cause engine overheating. Clean between cylinder fins. When heavily clogged, cleaning should be made after removing recoil case.



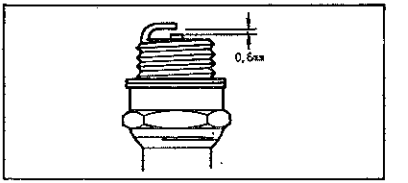
2. **Fuel Filter.** Take off filter by use of a wire hook through tank opening. Remove both filter elements and rinse them well with gasoline.



3. **Carbon Removal from Muffler.** Disassemble muffler by releasing two screws. Remove carbon build-up. Use caution to replace parts in proper order.

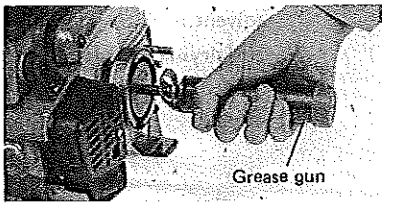


4. **Spark Plug Inspection.** Remove spark plug and clean it, then adjust the gap. Optimum clearance 0.6 mm (.024"). Always use Champion CJ-8Y.



5. **Lubrication of Crank Shaft**

Lubricate needle bearing as shown every 200 hours. This prevents seizure of the clutch bearing to crankshaft.



SHIN-DAIWA KOGYO CO., LTD.

Head Office:35, Shin-Ujigami, Chiyoda-cho,
Yamagata-Gun, Hiroshima, 731-15,
Japan
Phone: 082672-6011 TLX. No. 665871 SDKHIR
Fax No. 082672-6001

Shindaiwa Inc.

11975 S.W. Herman Road,
Tualatin, Oregon 97062 (U.S.A)
Phone: 503-692-3070
TLX : 910-466-8550 SDK USA WLSV
FAX : 503-692-6696

Printed in Japan
72941-94110