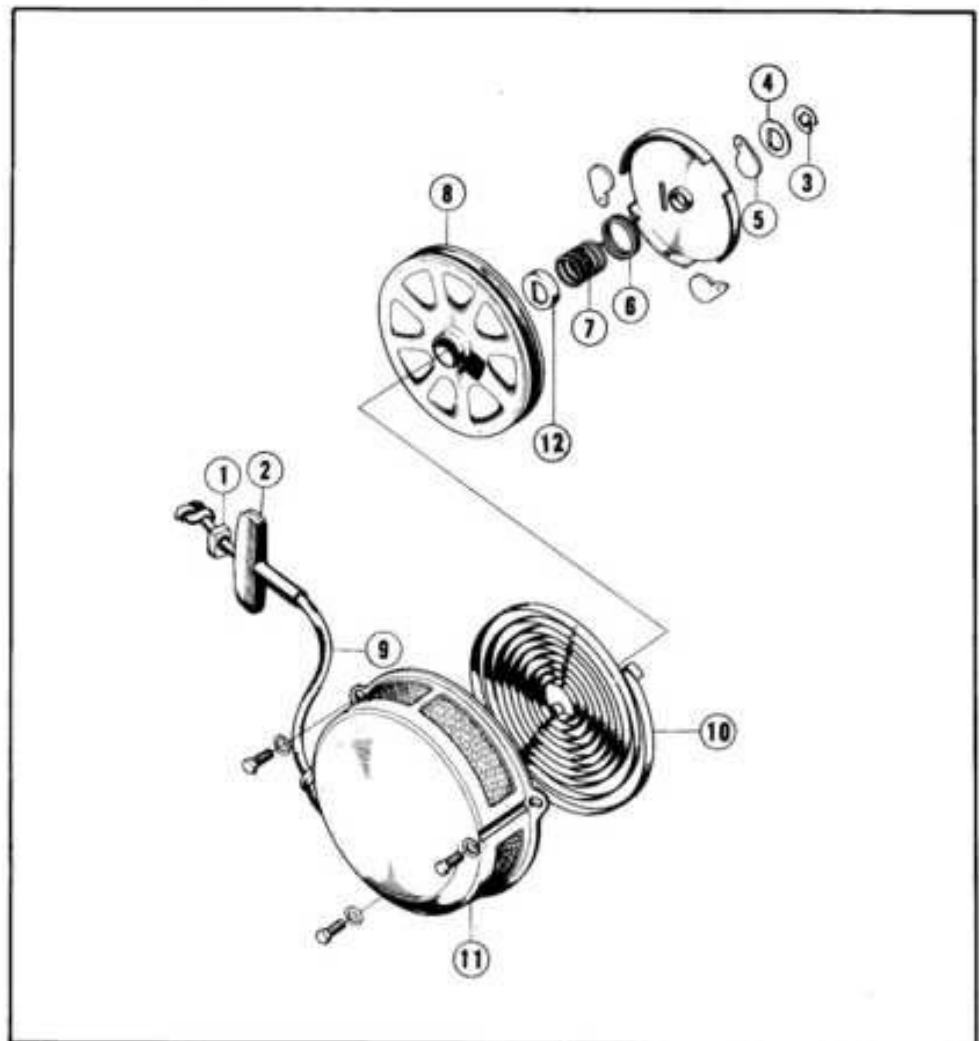


# 1. RECOIL STARTER

## a. Disassembly

Fig. 1-1 ① Rope stopper  
② Starter handle  
③ E. ring  
④ Friction plate  
⑤ Starter ratchet pawls  
⑥ Set spring  
⑦ Friction spring  
⑧ Recoil starter pulley  
⑨ Starter rope  
⑩ Starter return spring  
⑪ Starter case  
⑫ Washer A



Disassembly order	Remarks
※ Removing the recoil starter	
1. Rope starter, starter handle	Remove the three 6 mm bolts.
2. E ring, washer B	Pull the rope out and stop with a tube clip.
3. Friction plate	
4. Starter ratchets pawls	
5. Set spring	
6. Friction spring, washer A	
7. Recoil starter pulley	Be careful not to let the starter recoil spring fly out.
8. Starter rope	Untie knot in end of rope.
9. Starter return spring	Be careful it does not fly out.
10. Starter case	



Fig. 1-2 ① Starter rope

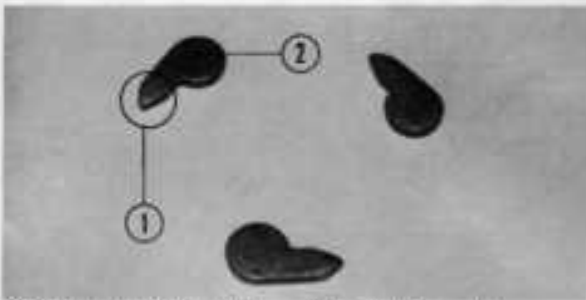


Fig. 1-3 ① Ratchet pawl ② Inspection point



Fig. 1-4 ① Starter case ② Starter return spring  
③ Grease here

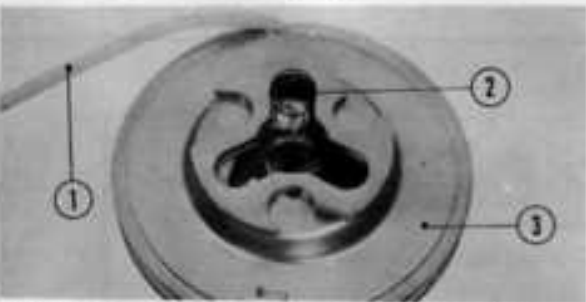


Fig. 1-5 ① Starter rope ② Knot ③ Recoil starter pulley

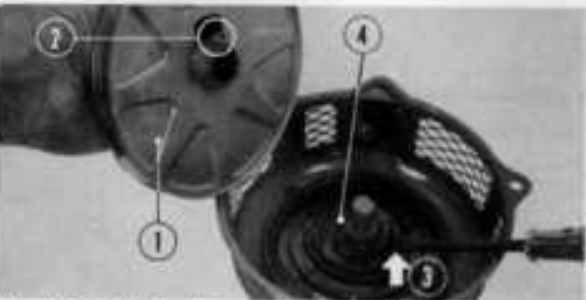


Fig. 1-6 ① Recoil starter pulley ② Raise

## b. Inspection

1. Inspect the starter rope for wear or cuts. Replace if necessary.

2. Check the starter ratchet pawls for wear. Replace if worn as starter may slip.

## c. Reassembly

1. Install the starter return spring in the starter case. Coat the shaft with grease.

### CAUTION

Be careful as the return spring may fly out.

2. Take out the end of the starter rope through the Y opening of the pulley and knot of the rope end.

3. Hook the knotted end of the rope at any recess of the Y and wind the rope on the pulley counterclockwise viewing from the Y opening side.

4. Using a screwdriver, lift the inner end of the starter return spring and hook it on the peg of the recoil starter pulley as shown.

### NOTE

Rotate the starter pulley in the wind-up direction while inserting it into the case.

5. Position the pulley on the starter case in place.

6. Assemble the washer A, the friction spring and the set spring. Insert the straight end of the set spring into the hole in the recoil starter pulley.
7. Place the starter ratchet pawls in the recoil starter pulley.
8. Install the friction plate so that the another end of the set spring comes through the slit near the center hole of the friction plate.  
Check that the tips of the respective pawls come out through the cutouts of the friction plate.

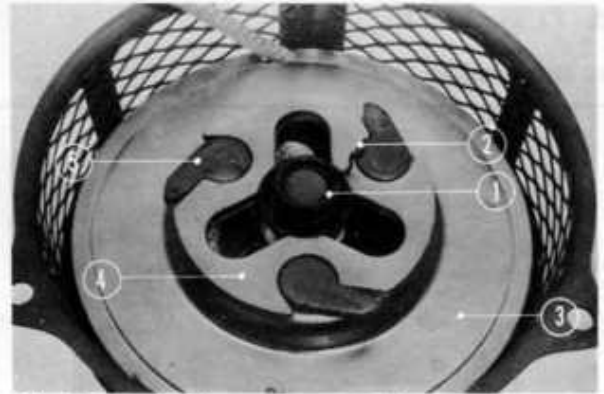


Fig. 1-7 ① Friction spring ④ Stopper  
② Set spring ⑤ Ratchet pawls  
③ Starter pulley

9. Install the washer B and E ring. Draw the rope out through the cutout in the recoil starter pulley and with the case held by hand, rotate the starter pulley counter-clockwise about three and half turns to provide an initial spring tension.

**NOTE**

Unless the recoil starter pulley has an initial spring tension, the rope will not rewind properly, resulting in insufficient rope pull.



Fig. 1-8 ① Friction plate ④ Cutouts  
② Set spring ⑤ Starter ratchets  
③ Alignment ⑥ Washer B

10. Draw the starter rope out through the rope guide, pass it through the starter handle and the rope stopper and tie a knot at the end.

**NOTE**

- Be sure the knot is tight enough.
- Check the operation of the starter ratchet pawls and recoil action of the starter rope.

11. Mount the recoil starter on the fan cover with the 6 mm bolts.

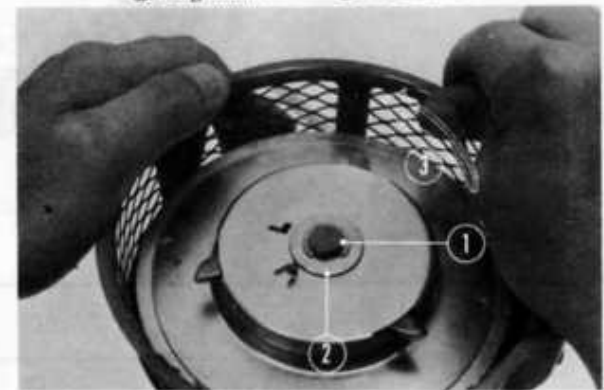
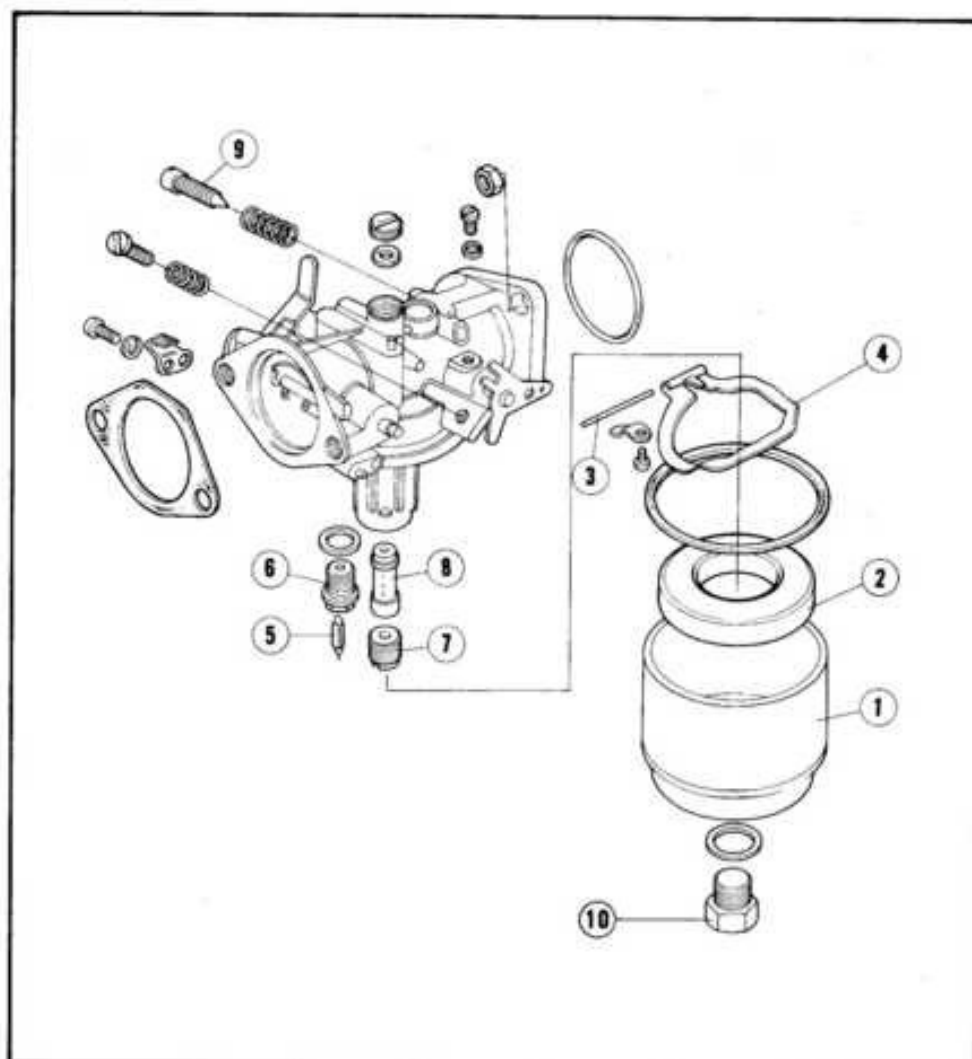


Fig. 1-9 ① E ring ② Washer B ③ Wind

## 4. CARBURETOR

## a. Disassembly

Fig. 4-1 ① Float chamber  
 ② Float  
 ③ Float arm pin  
 ④ Float arm  
 ⑤ Float valve  
 ⑥ Float valve seat  
 ⑦ Main jet  
 ⑧ Main nozzle  
 ⑨ Pilot screw  
 ⑩ Special bolt



Disassembly order	Remarks
※ Fuel tank	• Refer to Section 2.
※ Air cleaner	• Refer to Section 3.
1. Carburetor (elbow attached)	• Remove the two 6 mm nuts.
2. Inlet elbow	• Remove the two 6 mm bolts.
3. Float chamber and float	• Remove the special bolt.
4. Float arm pin and float arm	• Be careful not to bend the arm.
5. Float valve and float valve seat	
6. Main jet and main nozzle	
7. Pilot screw	• Do not lose the spring.

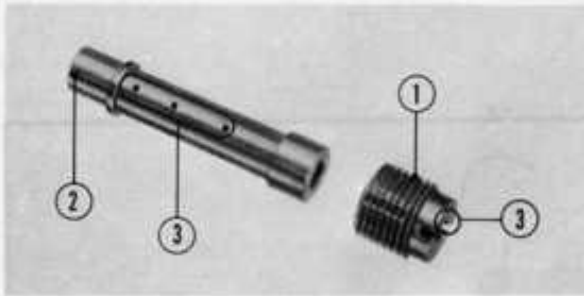


Fig. 4-2 ① Main jet ② Main nozzle  
③ Inspection points

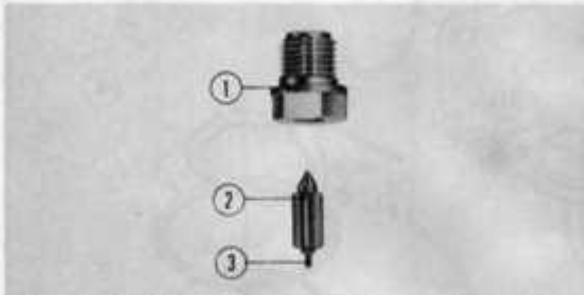


Fig. 4-3 ① Float valve seat ② Float valve  
③ Push rod

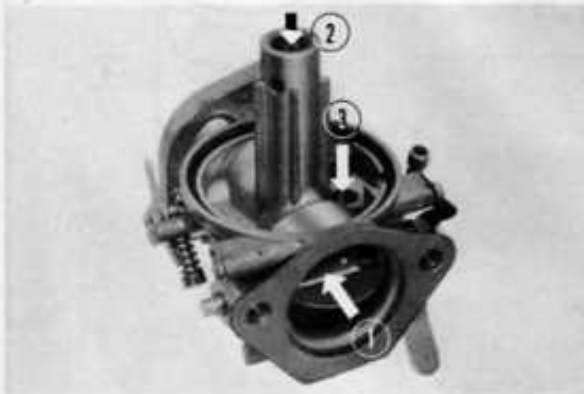


Fig. 4-4 ① Venturi tube ② Main jet area  
③ Fuel passages



Fig. 4-5 ① Pilot screw ② Rich  
③ Lean

## b. Inspection

### 1. Main jet and main nozzle

Inspect the jet and nozzle for restriction. Remove any dirt, foreign particles with compressed air. Clean the carburetor body with cleaning solvent and blow it out with compressed air.

### 2. Float valve and float valve seat

Excessive wear and clogging will make the float valve inoperative and cause overflow.

a. When the float valve is worn the float valve seat may also be worn unevenly, so replace both at the same time.

b. Remove dirt or foreign particles from the float valve and seat with compressed air.

### 3. Carburetor body

### 4. Choke valve

Operate the choke valve to make sure it opens and closes fully. Check smoothness of operation.

## c. Adjustment

The carburetor has been adjusted at the factory, so no attempt should be made to adjust it. However, when the engine is repaired or carburetor parts are replaced, adjustment is necessary. Adjust carefully as follows. Before adjusting idle speed, check the following items first.

1. Adjust the engine accurately to specifications.

2. Make sure there are no air leaks in the carburetor mounting.

3. Replace any adjustable parts that are worn.

### (1) Idle adjustment

a. Obtain an engine speed approximately 100 rpm lower than the specified idle speed by turning the throttle stop screw only. Do not manipulate the pilot screw at this step.

b. Attempt to set the engine speed to the specified idle speed by turning the pilot screw.

c. If the engine speed is not within the specified idle speed, repeat the foregoing steps ① and ② by changing the throttle stop screw opening.

- d. Erratic engine speed at the rated engine revolution is due to an incorrect idle adjustment.  
Adjust the idle speed if the engine does not run evenly.  
Specified idle speed: 1,200 rpm

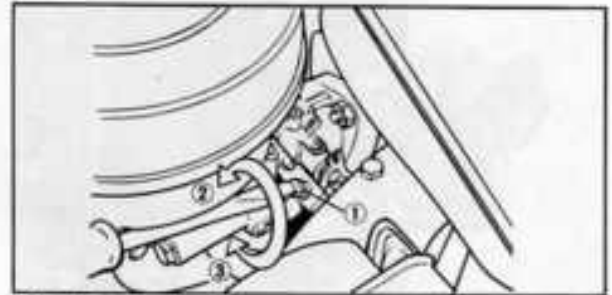


Fig. 4-6 ① Throttle stop screw ② Retard ③ Advance

(2) Float level adjustment

The fuel level in the carburetor must be maintained constant for optimum mixing.

- a. Set the float gauge to 2 mm (0.08 in.).
- b. Bend both tips of the float arm so that the distance between the individual tips and the top of the carburetor body is 2 mm (0.08 in.).

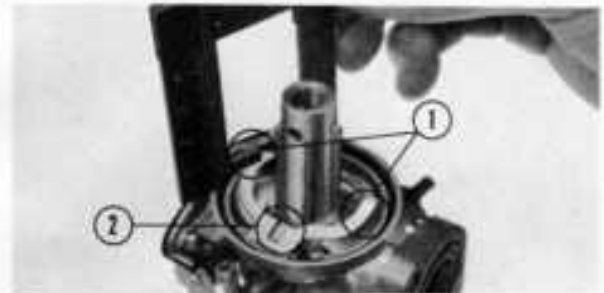


Fig. 4-7 ① Measuring point ② Float arm tip

d. Reassembly

1. Assemble the pilot screw, main jet and main nozzle.
2. Assemble the float valve seat and float valve.



Fig. 4-8 ① Main jet ② Float valve seat ③ Float valve

3. Install the float arm to the carburetor with the float arm pin.

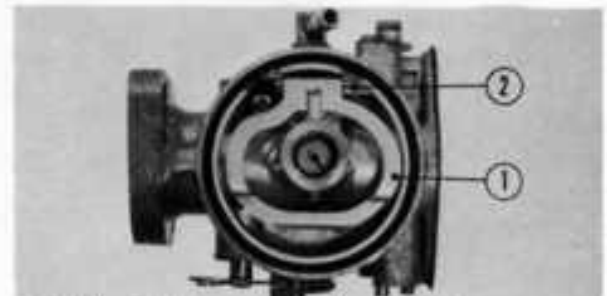


Fig. 4-9 ① Float arm ② Float arm pin

4. Assemble the float in the float chamber with the special bolt.



Fig. 4-10 ① Special bolt

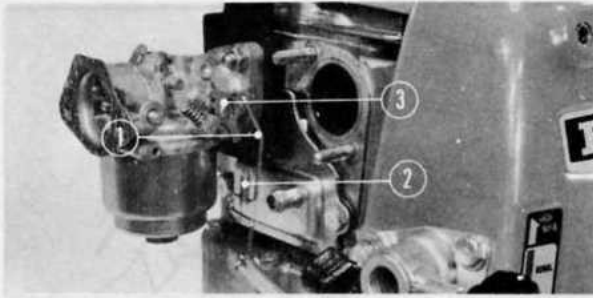


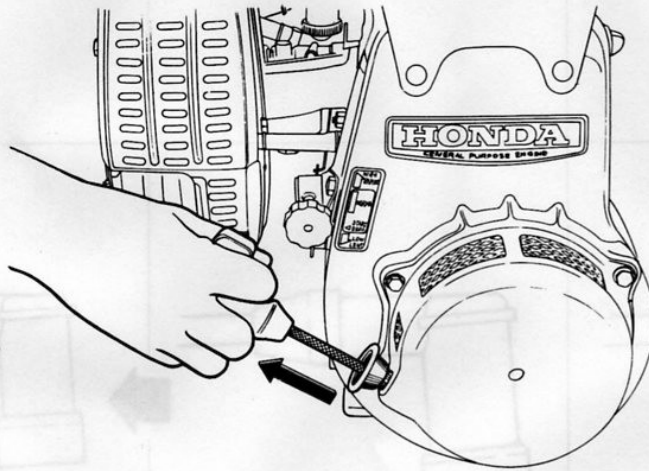
Fig. 4-11 ① Governor rod                      ③ Throttle shaft  
                  ② Throttle return spring

5. Link the governor and the throttle shaft with the governor rod and throttle return spring as shown Fig. 4-11 then mount the carburetor on the mounting surface of the cylinder.

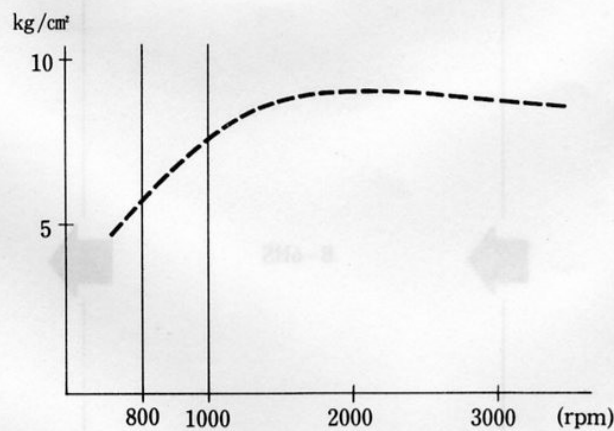
## 5. SERVICE PRECAUTIONS

### A. Compression pressure

When the recoil starter is fully pulled by an adult man (crankshaft rotated at 800–1000 rpm), the compression pressure should be above  $6\text{kg/cm}^2$  ( $85\text{ lbs/in}^2$ ). On new models, the pulling force of the recoil starter may be excessively reduced but the output is not changed. Remember that the reduction of the pulling force is not due to gas leaks caused by defective parts.



Compression Pressure Curve





## 6. SERVICE DATA

## A. Service data

Unit: mm (in.)

	G42K1		G50K2	
	Standard value	Service limit	Standard value	Service limit
Dia of valve stem				
IN	6.970 (0.274)	6.900 (0.272)	6.955-6.970 (0.2738-0.2744)	6.91 (0.272)
EX	6.925 (0.272)	6.855 (0.270)	6.940-6.955 (0.2732-0.2738)	6.90 (0.2713)
Inside dia. of valve guide	7.000-7.015 (0.276-0.2761)	7.065 (0.2781)	7.000-7.015 (0.2756-0.2762)	7.065 (0.2781)
Width of valve seat	0.7-1.0 (0.03-0.04)	2.0 (0.08)	0.7-1.0 (0.028-0.039)	2.0 (0.079)
Free length of valve spring	27.9 (1.1)	26.0 (1.0)	29.7 (1.169)	26.0 (1.024)
Dia. of piston				
Head	65.5-65.6 (2.57-2.58)	65.4 (2.57)	68.5-68.6 (2.697-2.701)	68.4 (2.693)
Skirt	65.97-65.99 (2.59-2.60)	65.87 (2.593)	68.97-68.99 (2.5492-2.5558)	68.87 (2.5164)
Outside dia. of piston pin	17.994-18.000 (0.707-0.709)	17.95 (0.707)	17.994-18.000 (0.7083-0.7087)	17.95 (0.7067)
End gap and clearance of piston ring				
Top ring				
End gap	0.2-0.4 (0.008-0.016)	0.6 (0.0236)	0.2-0.4 (0.0079-0.0157)	0.6 (0.0236)
Clearance	0.03-0.07 (0.001-0.003)	0.15 (0.006)	0.02-0.06 (0.008-0.024)	0.15 (0.006)
2nd ring				
End gap	0.2-0.4 (0.008-0.016)	0.6 (0.0236)	0.2-0.4 (0.0079-0.0157)	0.6 (0.0236)
Clearance	0.03-0.07 (0.001-0.003)	0.15 (0.006)	0.01-0.05 (0.004-0.019)	0.15 (0.006)
Oil ring				
End gap	0.2-0.4 (0.008-0.016)	0.6 (0.0236)	0.2-0.4 (0.0079-0.0157)	0.6 (0.0236)
Clearance	0.03-0.07 (0.001-0.003)	0.15 (0.006)	0.01-0.05 (0.004-0.019)	0.15 (0.006)
Inside dia. of small end of connecting rod	18.01-18.03 (0.708-0.711)	18.08 (0.71)	18.010-18.033 (0.7091-0.7100)	18.08 (0.7118)
Inside dia. of cylinder				
STD	66.00-66.01 (2.598)	66.15 (2.60)	69.00-69.01 (2.7165-2.7169)	69.10 (2.7205)
Over size 0.25	66.25-66.26 (2.608)	66.35 (2.61)	69.25-69.26 (2.7264-2.7268)	69.35 (2.7303)
0.50	66.50-66.51 (2.618)	66.60 (2.62)	69.50-69.51 (2.7362-2.7366)	69.60 (2.7402)
0.75	66.75-66.76 (2.627)	66.85 (2.63)	69.75-69.76 (2.7416-2.7465)	69.85 (2.7500)
Dia. of camshaft				
Side space	0.1-0.5 (0.003-0.019)	1.0 (0.04)	0.1-0.5 (0.0039-0.0197)	1.0 (0.0394)
Inside dia.	12.000-12.027 (0.472-0.473)	12.07 (0.48)	12.000-12.027 (0.4724-0.4735)	12.07 (0.4752)
Dia. of camshaft center	11.953-11.968 (0.470-0.471)	11.92 (0.46)	11.966-11.984 (0.4711-0.4718)	11.92 (0.4693)

**B. Torque specifications for important locations**

Location	Part	Quantity	Torque	
			kg-m	lbs-ft
Cylinder head	8 mm P1.25 clamp bolt	2	2.0 -2.4	14.5-17.4
	8 mm P1.25 hex. bolt	6	2.0 -2.4	14.5-17.4
Flywheel	14 mm P1.25 hex. nut	1	8.0 -9.0	57.9-65.1
Fuel tank	6 mm P1.0 hex. bolt	2	1.0 -1.2	7.2- 8.7
	8 mm P1.25 hex. bolt	2	2.4 -2.8	17.4-20.3
Muffler	6 mm P1.0 special nut	2	0.8 -1.2	5.8- 8.7
Starter pulley	6 mm P1.0 hex. bolt	3	0.8 -1.2	5.8- 8.7
Fuel cock	6 mm P1.0 screw	2	1.0 -1.2	7.2- 8.7
PTO	8 mm P1.25 hex. bolt	1	2.0 -2.4	14.5-17.4
Carburetor	6 mm P1.0 hex. nut	2	1.0 -1.2	7.2- 8.7
Others	5 mm P0.8 screw, bolt, nut		0.35-0.65	2.5- 4.7
	6 mm P1.0 hex. bolt		0.8 -1.2	5.8- 8.7
	8 mm P1.25 hex. bolt		2.0 -2.8	14.5-20.3
	10 mm P1.25 hex. bolt		4.0 -5.0	28.9-36.2

7. P.T.O. SHAFT INSTALLATION DIMENSIONS (G42K1 Q)

