makita® DOLMAR®

REPAIR MANUAL

EB7650TH

EB7650WH

Repair

CAUTION: Repair the machine in accordance with "Instruction manual" or "Safety instructions".

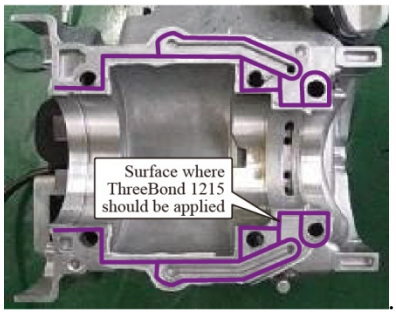
Index

[1] NECESSARY REPAIRING TOOLS

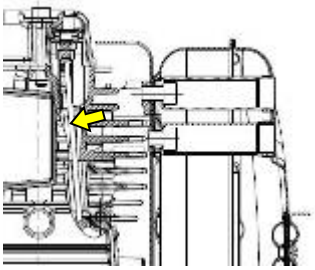
Code No.	Description	Use for
1R005	Retaining ring pliers RT-2N	Attaching/removing Cotter (used together with 1R389)
1R070	Tachometer	Engine speed check
1R181	Ignition checker	Diagnosis of Ignition coil
1R229	1/4" hex. Shank bit for M5	Loosening/tightening M5 Hex socket head bolts
1R288	Screwdriver magnetizer	Attaching/removing Cotter
1R306	Ring spring removing jig	Attaching/removing Cotter
1R311	Retaining ring pliers	Removing/inserting tubes
1R364	Flywheel puller	Removing Flywheel
1R366	Feeler gauge set	Adjusting gaps of Spark plug, Rocker arm, and Ignition coil
1R389	Cotter removal attachment	Attaching/removing Cotter (used together with 1R005)
1R402-A	Digital tester	Diagnosis of Ignition coil

[2] GASKETS AND LUBRICATION

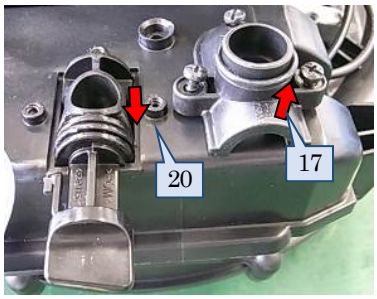
- After removing the gaskets, completely remove any residue.
- When reassembling, replace the gaskets with new ones.
- Use parts cleaner or the like to remove grease from the mating surface of Cylinder and Crankcase and then apply Liquid gasket ThreeBond 1215 as drawn below



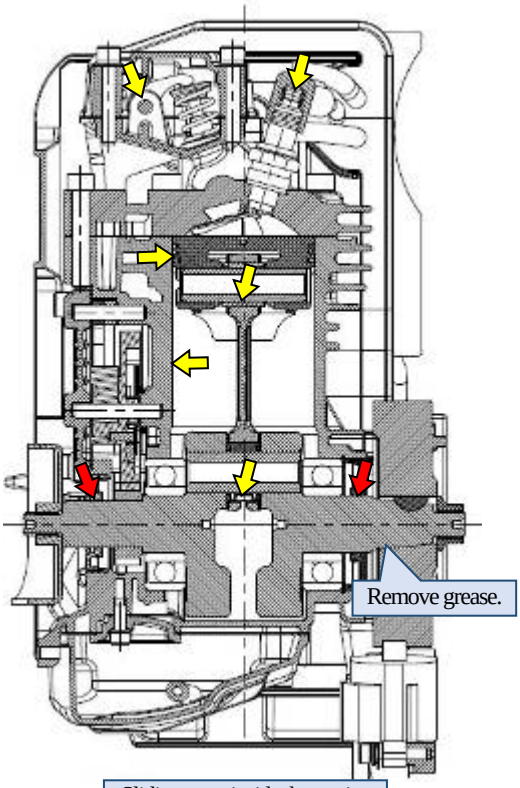
- Apply a small amount of 4-stroke engine oil to each part indicated by ⇨ in the following diagrams when assembling the parts.
- Apply Makita grease N No.2 to the sealing lips of Oil seals and outer circumference of O rings 17 and 20 of the anti-icing valve portion indicated by ➡.
- Apply Makita grease N No.2 to the outer circumference of the O ring of Elbow.
- When attaching Flywheel, use parts cleaner or the like to remove the grease from the tapered part.



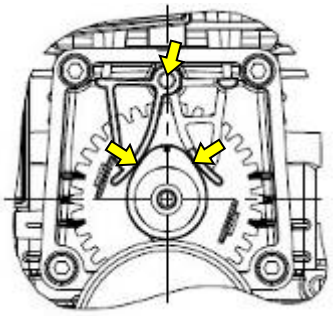
Outer circumference of Push rods



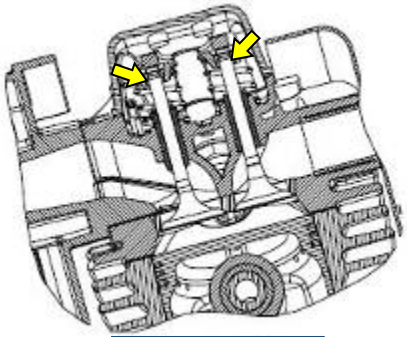
Outer circumference of O-rings 17 and 20 of the anti-icing valve portion



Sliding parts inside the engine
Sealing lips of Oil seals



Outer circumference of Cam lifter



Tips of valves

[3] DISASSEMBLY/ASSEMBLY

[3]-1. Warning

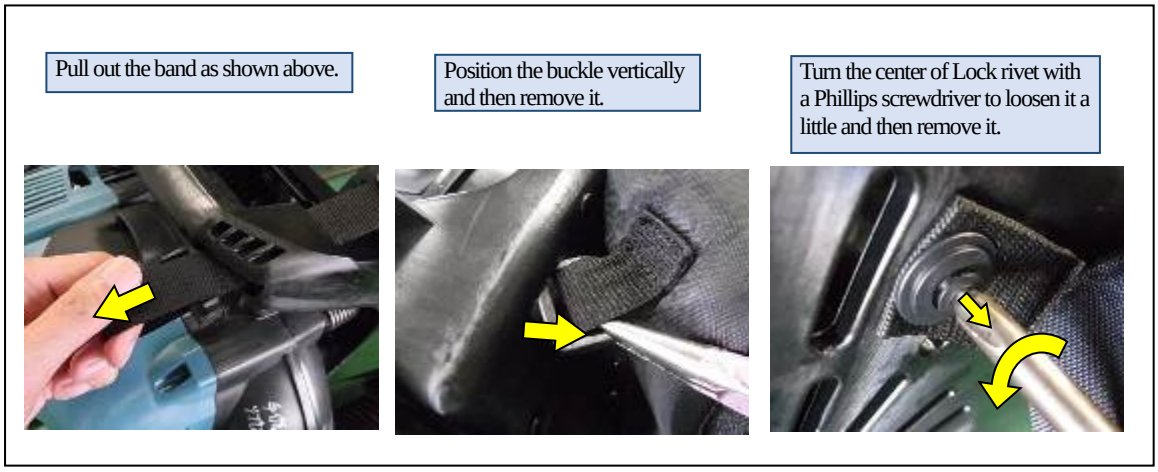
- There is a risk of a burn injury immediately after the engine is stopped. So wait until the engine has completely cooled before performing the work.
- Completely remove all fuel from the inside of Fuel tank and Carburetor before performing the work. [No open flames]
- Remove the engine oil before performing the work.
- Perform the work on a solid workbench in a place where dust, dirt, etc. will not enter inside.
- Remember how and where the parts were assembled when disassembling the product and take care not to make a mistake when assembling the product.
  Prepare boxes so that you can store the parts in groups when disassembling the product.
- Handle the removed parts carefully and clean and wash them properly.
- If a bolt or screw cannot be loosened, do not apply excessive force. Use an impact driver or similar tool.
- Be sure to tighten bolts and screws to the specified tightening torque values.
- After assembling the main parts, turn the engine by hand to check that there is no abnormality or looseness.

[3]-2. Blower Section (Band Completes L and R, Frame and Fan)

Disassembly

(1) Remove Band completes L and R and Hip belt. Remove each of the fixing parts as shown in **Fig. 1**.

Fig. 1



(2) Loosen three M5x20 Pan head screws and then remove Recoil starter (a). (**Fig. 2**)

(3) Loosen four 5x20 Tapping screws and then remove Engine cover (b). (**Fig. 3**)

Fig. 2

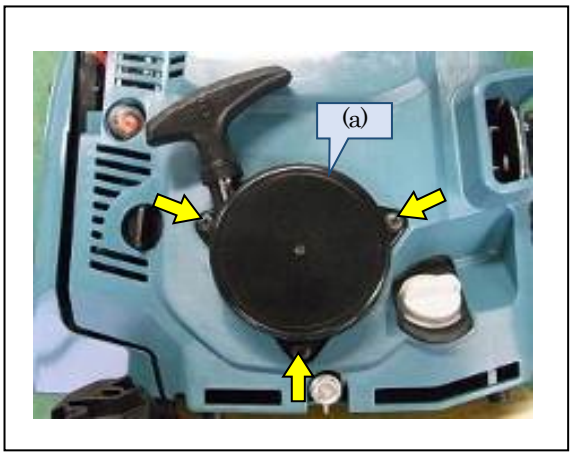
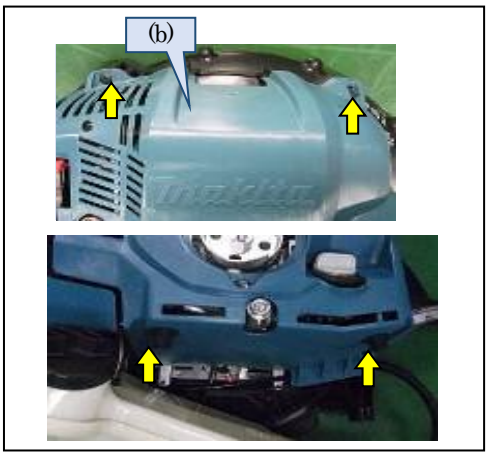
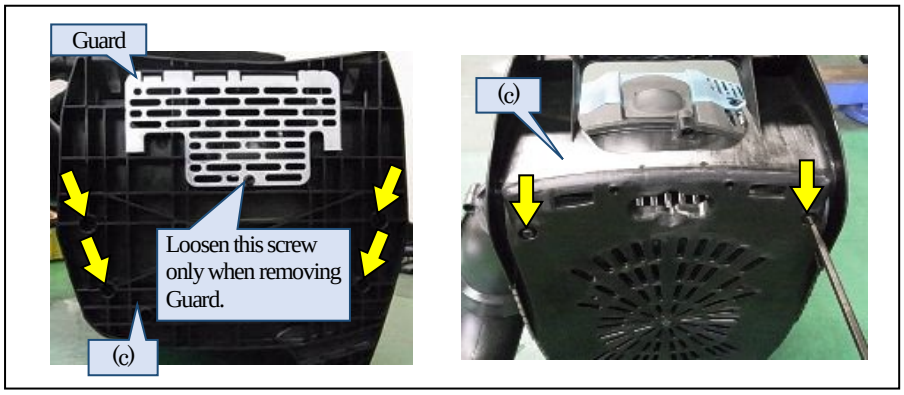


Fig. 3



(4) Remove six M5x16 Hex socket head bolts from the bottom and front of Frame (c). (**Fig. 4**)

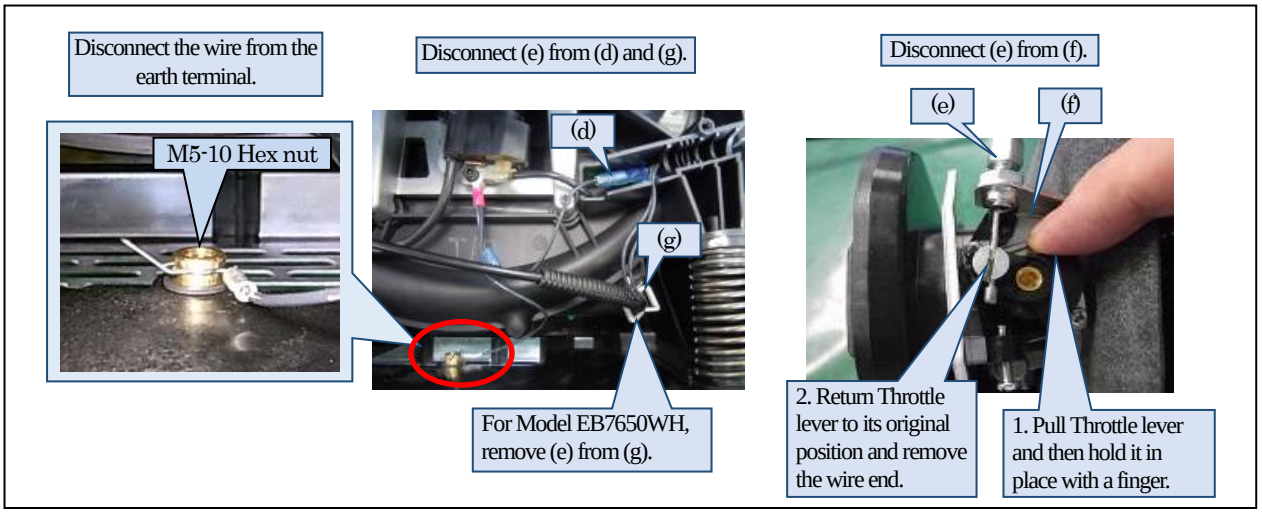
Fig. 4



(5) Lift up Fuel tank and disconnect the earth wire of Ignition coil from the brass M5-10 Hex nut beneath Fuel tank. (Left photo of **Fig. 5**)

(6) Disconnect Ignition coil at the bullet terminals (d) (Center photo of **Fig. 5**), then disconnect Control cable (e) from Carburetor (f) (Right photo of **Fig. 5**), and then remove the integrated Control cable (e) and Lead unit from Front volute case (h). In the case of EB7650WH, remove Control cable (e) from Clip (g). (Center photo of **Fig. 5**)

Fig. 5



(7) Remove the engine, Volute case and Fuel tank together and then replace Frame (c).

(8) Turn four Compression springs 22 (the upper two are shorter than the lower two) used as vibration damper counterclockwise and then remove them. (**Fig. 6**)

(9) Loosen eleven 5x20 Tapping screws and then remove Rear volute case (i). Remove Elbow (j) together with it. (**Fig. 7**)

Fig. 6

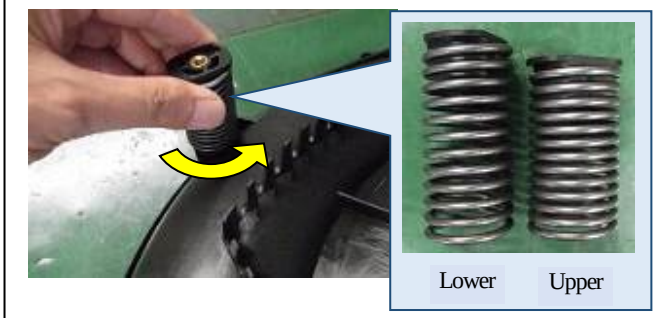
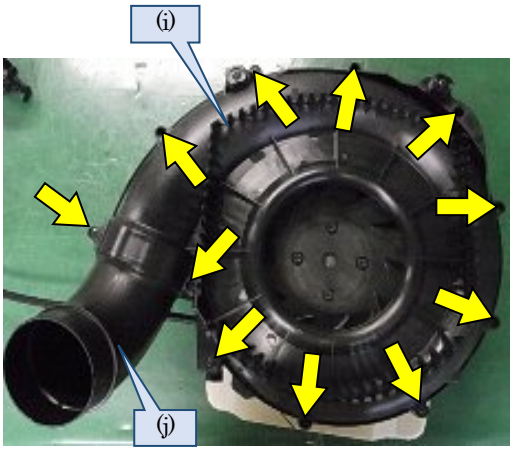
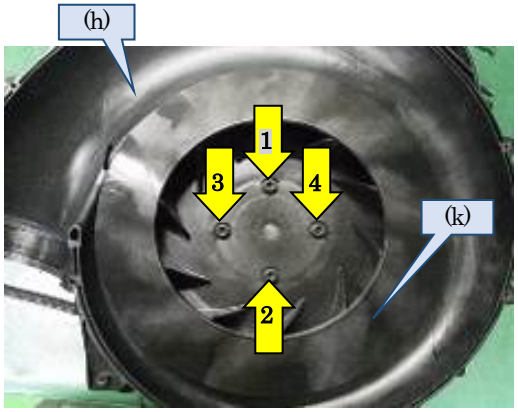


Fig. 7



(10) Loosen the four M6x25 Hex socket head bolts and then remove fan (k). (**Fig. 8**)

Fig. 8



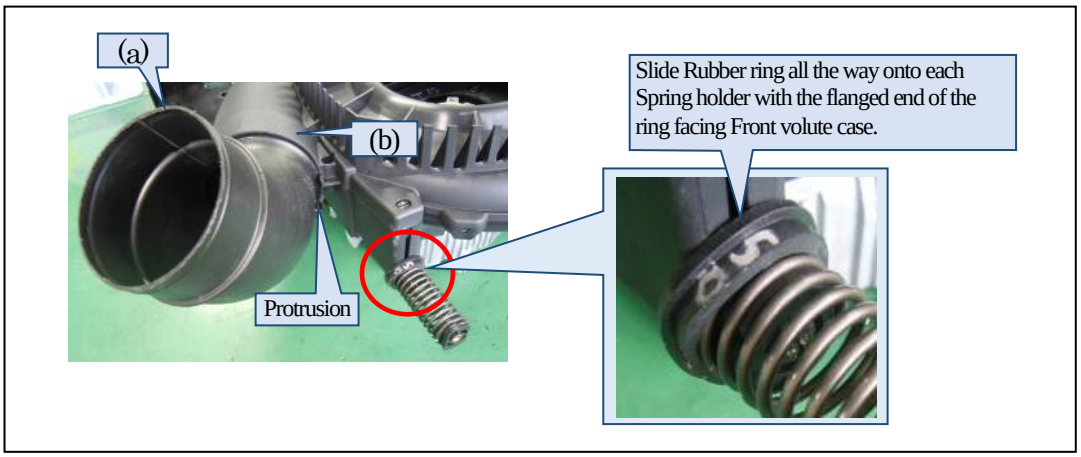
Assembly

(1) Tighten the four fan fixing screws in a criss-cross pattern (the order shown in **Fig. 8**).

(2) Screw Compression springs 22 all the way onto Spring holders. The two shorter ones should be at the top (of Rear volute case) and the two longer ones should be at the bottom (of Front volute case). (**Fig. 6**)

If Rubber rings at the bottom have been removed, attach them as shown in the photo on the right of **Fig. 9** and then screw the springs onto Spring holders.

Fig. 9

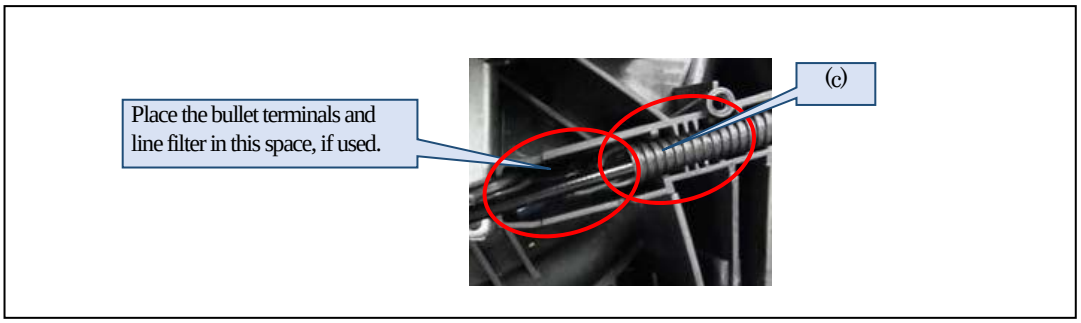


(3) Attach Elbow (a) with the protrusion positioned as shown in **Fig. 9** so that you can rotate Elbow from the front of the machine and then secure Rear volute case (b) with eleven Tapping screws 5. (**Fig. 7**)

(4) Attach Frame, then connect Carburetor to Control cable, then connect the bullet terminals and earth wire of Ignition coil and then secure Guard. (**Figs. 4** and **5**)

Place the bullet terminals in place as shown in Fig. 5 (d) while taking care that it will not become pinched in the engine cover. Place corrugated tube (c) of Model EB7650TH in place as shown in **Fig. 10**.

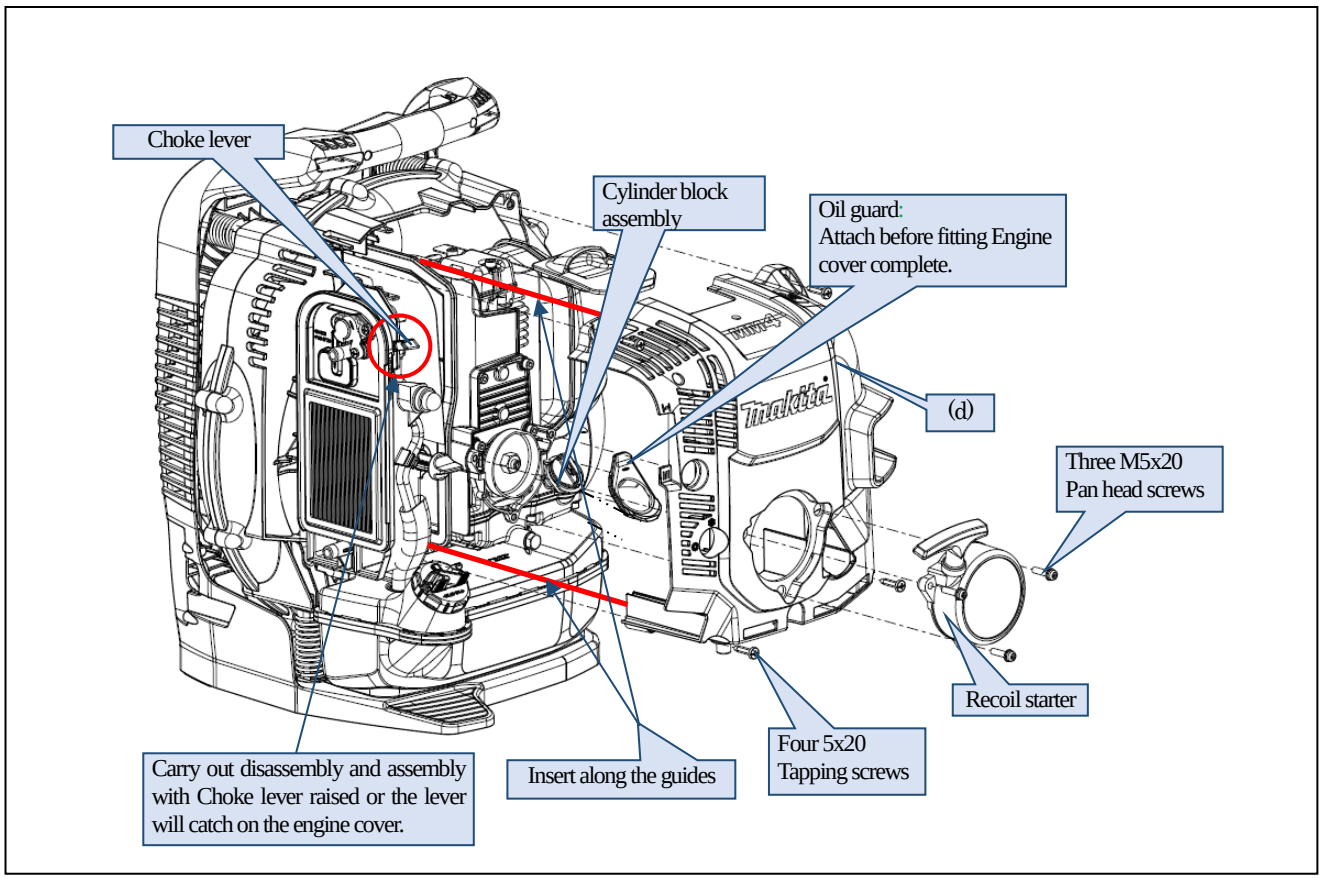
Fig. 10



(5) When fitting Engine cover complete (d), follow the instructions described in **Fig. 11**. Make sure that Carburetor gasket is on the inner side of the rib inside Engine cover complete and that Plug cover is not pinched.

Align the fixing screw boss positions and then fit the cover and secure it in place with the four screws. (**Fig. 3**)

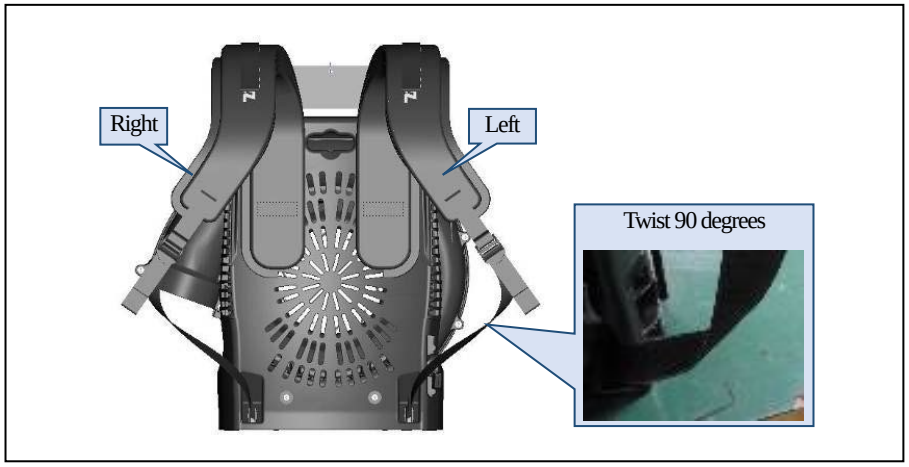
Fig. 11



(6) Secure Band completes L and R with the fixing parts by reversing the disassembly procedure shown in **Fig. 1** while taking care not to mix them up.

Twist the bands; Band complete R by 90 degrees clockwise and Band complete L by 90 degrees counterclockwise viewed from the top, and then attach them. (**Fig. 12**)

Fig. 12



(7) When the tubes have been disconnected from Fuel tank during disassembly, connect them as shown in **Figs. 13** and **14**.

Fig. 13

Outside of Fuel Tank

Cover the two tubes coming out of Fuel tank, individually, with Spiral tube 6-100, then cover the tube of Breather (e) with the coil spring 8 and then slide Tube guard 20-102 (f) all the way to cover the tubes.

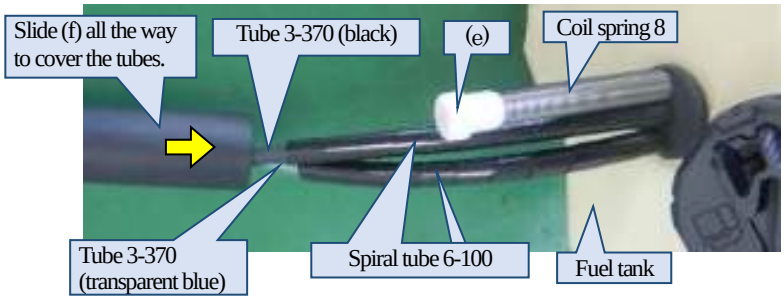
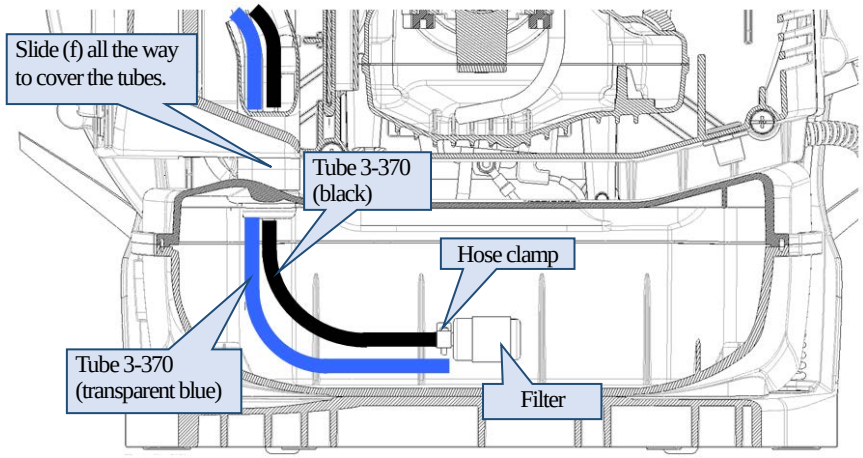


Fig. 14

Inside of Fuel Tank



[3]-3. Throttle Lever Section

EB7650TH

Disassembly

(1) Remove M5x30 thumb screw (a). (**Fig. 15**)

(2) Loosen five 4x18 Tapping screws and then remove Lever case R (b). (**Fig. 15**)

(3) Remove the head of Control cable (c) from Throttle lever A (d) and then remove the lever. (**Fig. 15**)

(4) Remove Throttle link (e), disconnect the connector of Switch unit, and then replace Switch unit.

(5) Loosen M4x18 Hex socket head bolt and remove Throttle lever B (f). (**Fig. 16**)

Fig. 15

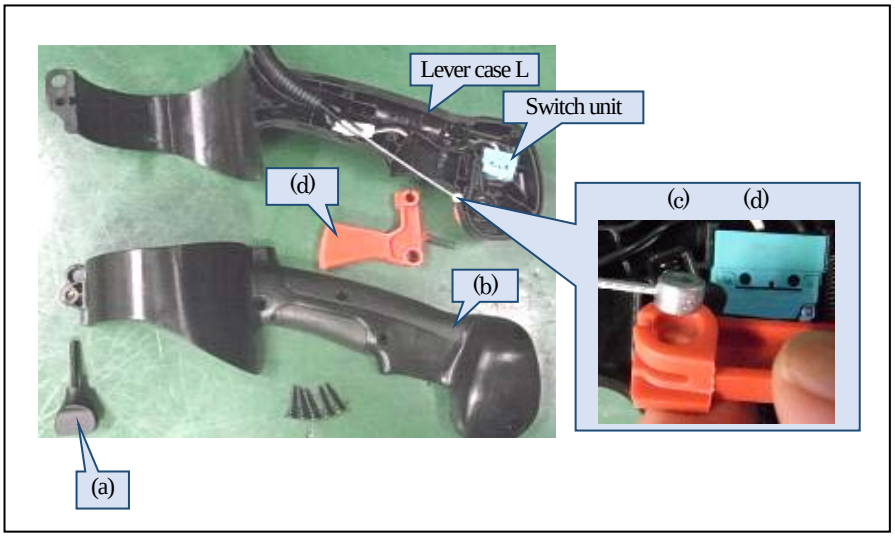
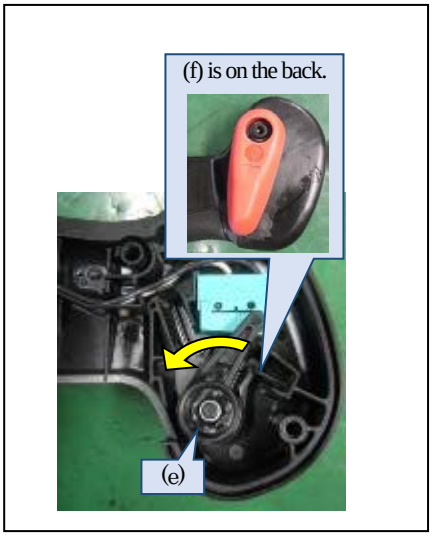


Fig. 16



Assembly

・Attach Throttle link (e) at the position shown in **Fig. 16**. First secure Throttle lever B (f) with the screw and then turn it counterclockwise (viewed from the inside) to press the lever of Switch unit and then attach Throttle lever A (d).

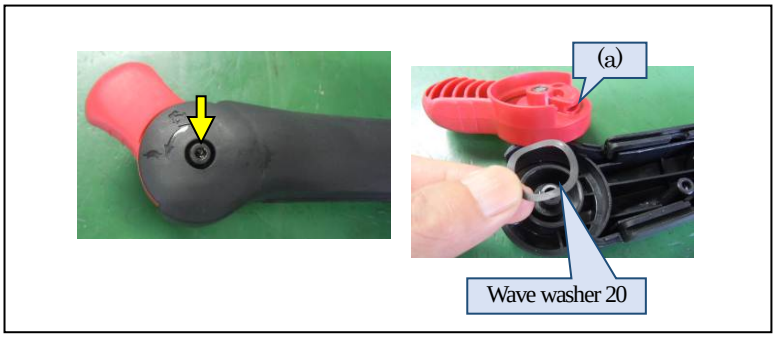
EB7650WH

Disassembly

(1) Loosen six 4x18 Tapping screws and then remove Arm cover.

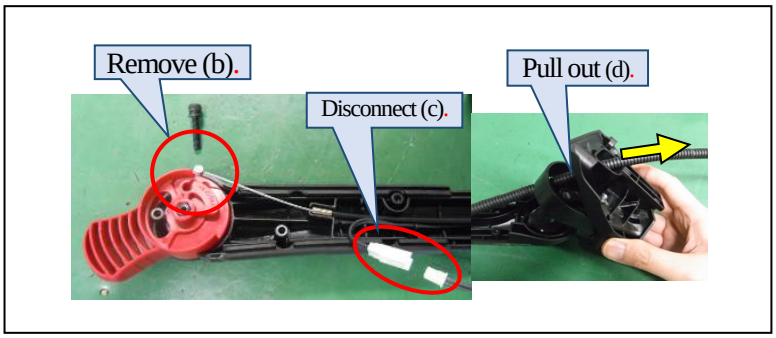
(2) Loosen M5x25 Hex socket head bolt and remove Throttle lever (a). (**Fig. 17**)

Fig. 17



(3) Remove the head of Control cable (b) from Throttle lever (a), then disconnect the connector (c) of Stop switch wire and then pull out Control cable (b), Lead unit, and Corrugated tube (d). (**Fig. 18**)

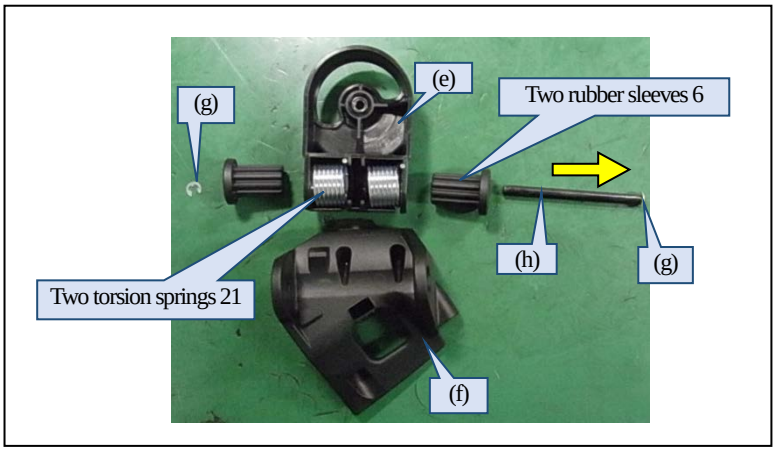
Fig. 18



(4) Loosen M6x25 Hex socket head bolt and then remove Arm base (e).

(5) Disassemble Arm base (e) and Arm base holder (f) by removing one of two E-4 Stop rings (g) and then pushing out Rod 6 (h) from there. (**Fig. 19**)

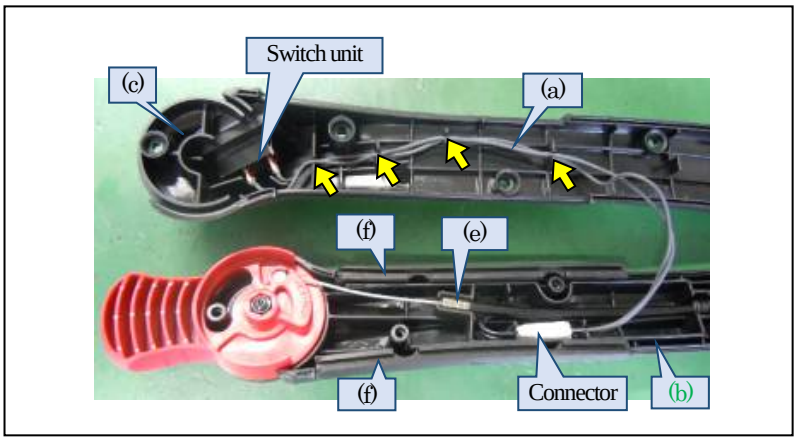
Fig. 19



Assembly

(1) Fix Lead unit (a) in the lead wire holders of Arm (b) and Arm cover (c). (**Fig. 20**)

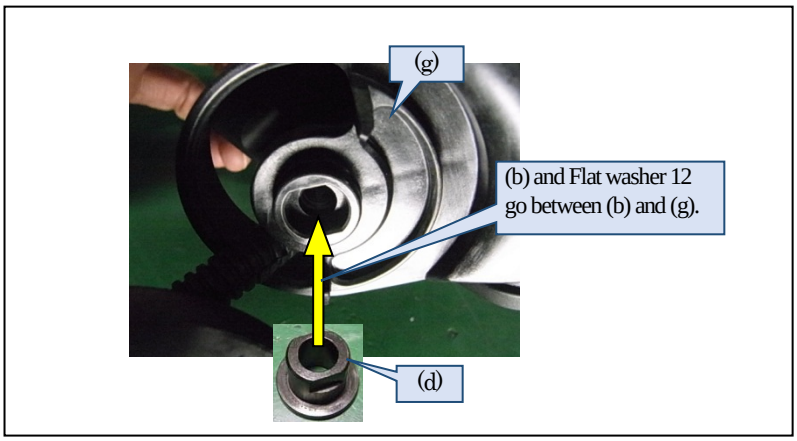
Fig. 20



(2) Be sure to insert Wave washer 20 beneath Throttle lever. (Right photo of **Fig. 17**)

(3) Insert Sleeve 7 (d) into Arm base (g) while aligning the flats of the two parts. (**Fig. 21**)

Fig. 21



(4) Pass Control cable (e), Lead unit (a), and Corrugated tube through at the position indicated in the right photo of **Fig. 1**8.

(5) Insert Arm rubbers (f) (they are identical, and the orientation does not matter), and then attach Arm cover (c).

[3]-4. Engine Section (Rocker Arm, Valve Portion, and Camgear Portion)

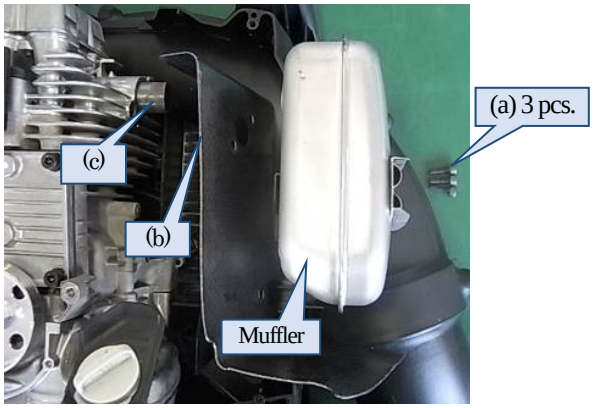
* The blower section does not need to be disassembled when repairing Rocker arm and Camgear portions.

Disassembly

(1) Refer to "**[3]-2. Blower Section (Band Completes L and R, Frame and Fan)**" (page 4), then remove Recoil starter and Engine cover and then disassemble Camgear portion. Leave Frame attached.

(2) Remove three M6x18 Hex socket head bolts (a) and then remove Muffler gasket (b) and Exhaust port spacer (c). (**Fig. 22**)

Fig. 22



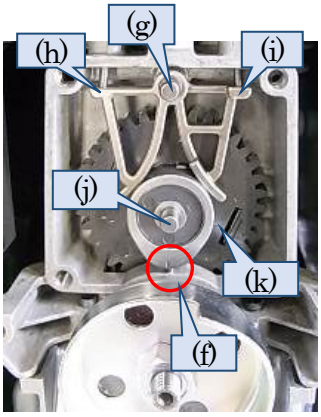
(3) Refer to "**[3]-6. Carburetor**" (page 18) and then remove Carburetor.

(4) Remove Camgear cover (d). Do not remove Pulley (e) or you will have to turn the engine by hand. (**Fig. 23**)

(5) Turn Pulley (e) to align the alignment marks (f). Pull out Pin 5 used as cam lifter shaft [part No.256186-0] (g) and remove Cam lifter L (h) and Cam lifter R (i). (**Fig. 24**)

Fig. 23

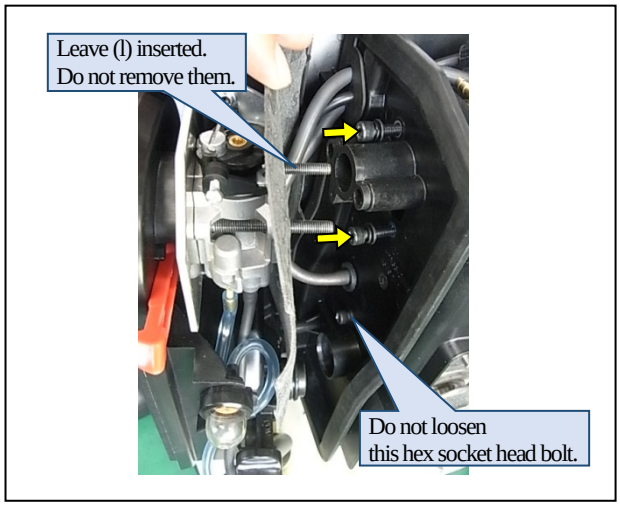
Fig. 24



(6) Pull out pin 5 used as Camgear shaft [part No.256200-2] (j) and remove Camgear (k), and then check that the gear teeth and counterweight portion are not damaged.

(7) Remove Air cleaner cover and Air cleaner element and then loosen two M5x60 Pan head screws (l) securing Carburetor. (**Fig. 51**)
Do not remove them. Leave them inserted for easier assembling. (**Fig. 25**)

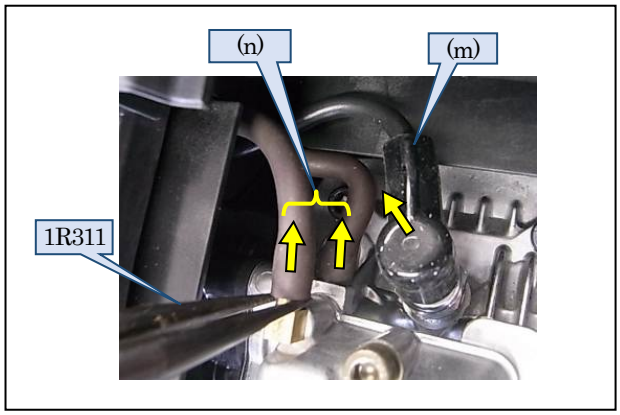
Fig. 25



(8) Remove Air cleaner case and Carburetor and move them a little out of the way as shown in **Fig. 25** and then remove two M5x25 Hex socket head bolts securing Insulator with 1R229. At this time, do not loosen the lower hex socket head bolt. (**Fig. 25**)

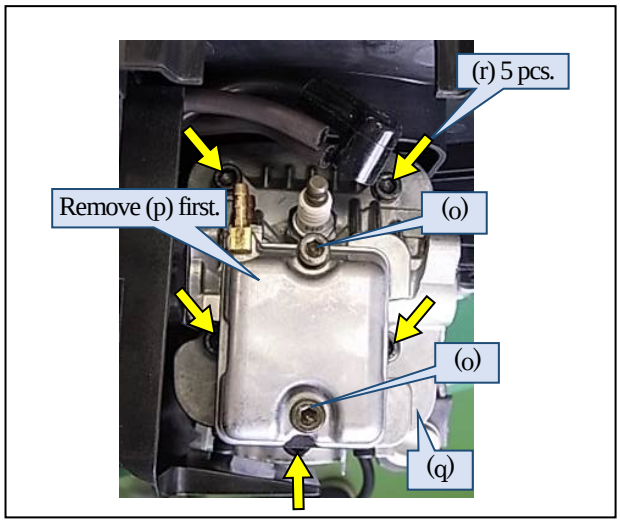
(9) Remove Plug cap (m) and then disconnect the two tubes (n) with 1R311. (**Fig. 26**)

Fig. 26



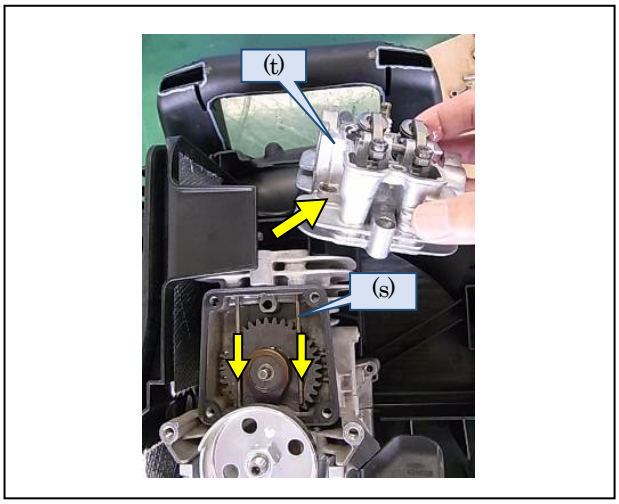
(10) Loosen two M5x30 Hex socket head bolts (o) and remove Rocker cover complete (p). Loosen five M6x35 Socket head bolts (r) of Cylinder head complete (q). (**Fig. 27**)

Fig. 27



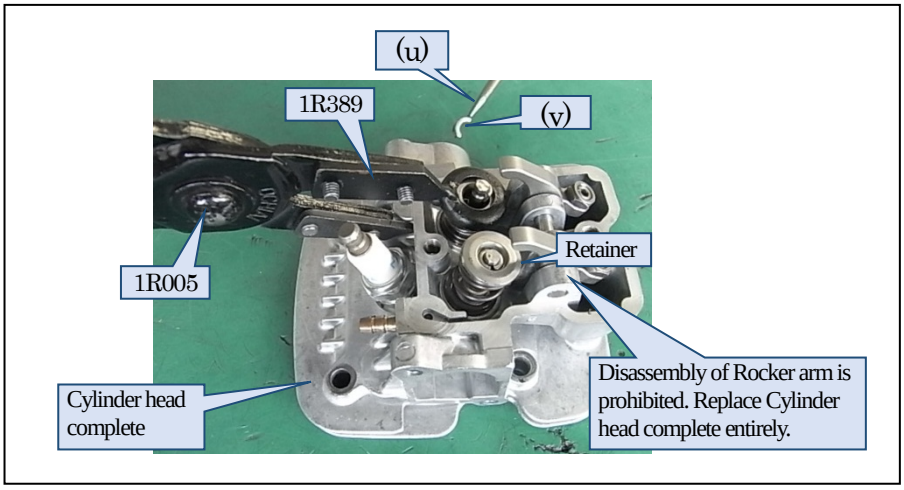
(11) Move Pusher rods (s) and remove Cylinder head complete (t). (**Fig. 28**)

Fig. 28



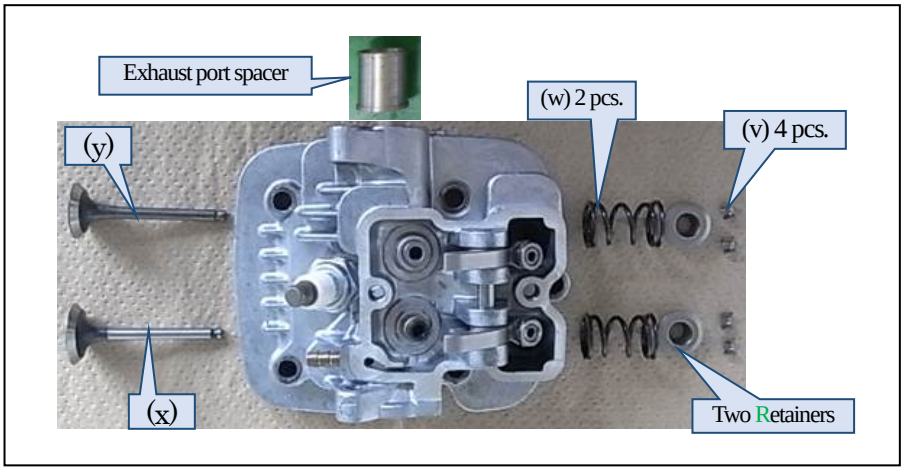
(12) Push in Retainer with 1R389 and 1R005 to compress Compression spring 11 (w) and remove Cotter (v) with a bit or the like (u) magnetized with 1R288. (**Fig. 29**)

Fig. 29



(13) Remove Intake valve (x) and Exhaust valve (y) to replace or clean them. (**Fig. 30**)

Fig. 30

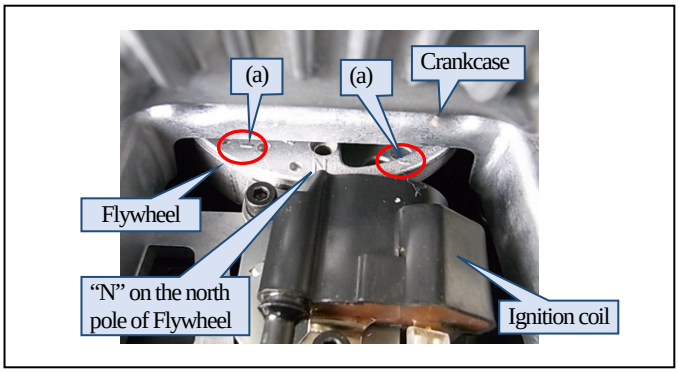


Assembly

(1) Assemble the parts by reversing the disassembly procedure.

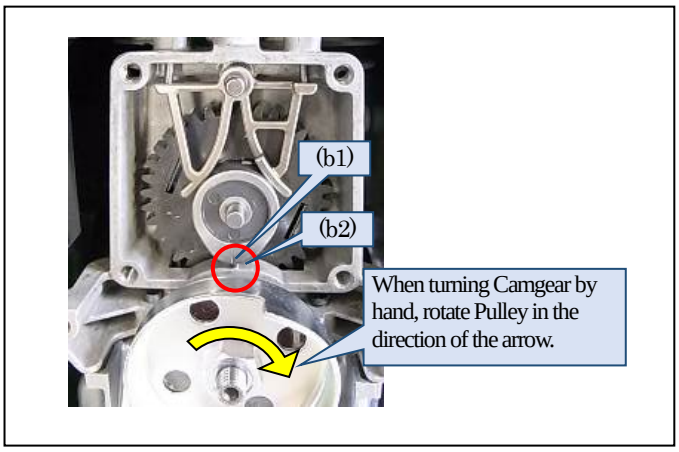
(2) Rotate Pulley to turn Crankshaft clockwise to align the alignment mark of two lines (a) on Flywheel so that they are parallel with the surface of Crankcase. "N" on the north pole of Flywheel will be positioned directly below the surface of Crankcase. (**Fig. 31**)

Fig. 31



(3) Align the alignment mark on Camgear (b1) and that of Crankcase (b2), then assemble them and then attach Camgear cover. (**Fig. 32**)

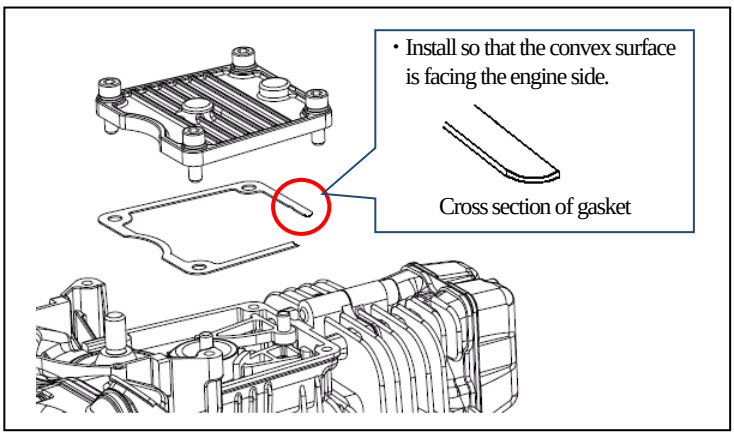
Fig. 32



・Please note that the engine speed will not increase if even one of the gear teeth is not aligned.

・Install the gasket so that the convex surface is facing the engine side. (**Fig. 33**)

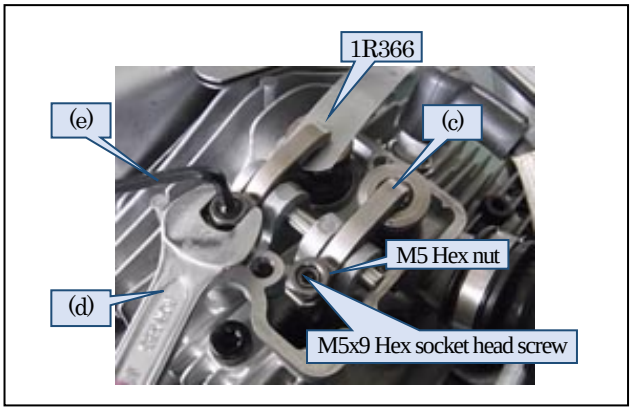
Fig. 33



(4) Adjust the clearance between Rocker arm (c) and Valve with a wrench 8 (d) and a hex wrench 2.5 (e) so that it is 0.1 to 0.14 mm when measured with 1R366. (**Fig. 34**)

When tightening M5x9 Hex socket head screw with (d), hold M5 Hex nut with (e) to prevent it from rotating together with the screw.

Fig. 34



・Be sure to adjust the clearance after Camgear cover has been attached. If it is adjusted with the cover removed, Pin 5 used as Cam lifter shaft [part No.256186-0] and Pin 5 used as Camgear shaft [part No.256200-2] will not be stable so the clearance will change when the cover is attached after adjustment.

(5) Turn Pulley clockwise by hand to rotate Crankshaft twice, check the gap, and then fully tighten. Confirm that a 0.15 mm leaf of the feeler gauge cannot be inserted.

(6) Apply ThreeBond 1342 or Loctite 243 to three M6x18 Hex socket head bolts for securing Muffler and five M6x35 Socket head bolts for securing Cylinder head complete when you re-tighten them because they are thread locking bolts.

[3]-5. Air Cleaner Case

(1) Pull the nozzle, insert a thin slotted screwdriver at the position shown in **Fig. 35**, and remove Separator plate (a).

(2) Use the screwdriver in the same way to pull off Separator mesh (b). **(Fig. 36)**

(3) Loosen 3x10 Tapping screw and remove Separator case.

(4) Use an awl or similar tool to pull out Check valve (c). (**Fig. 37**) Take care not to damage it.

(5) When installing Separator plate (a), tilt it first and then insert it as shown in **Fig. 38**.

Fig. 35

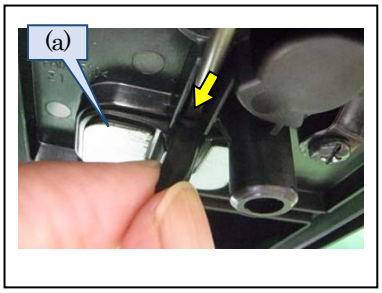


Fig. 36

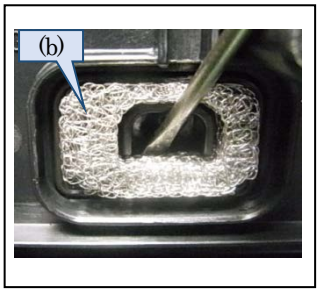


Fig. 37

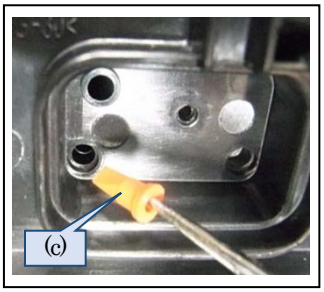
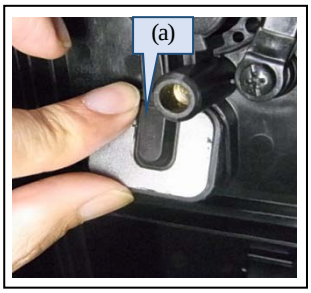


Fig. 38



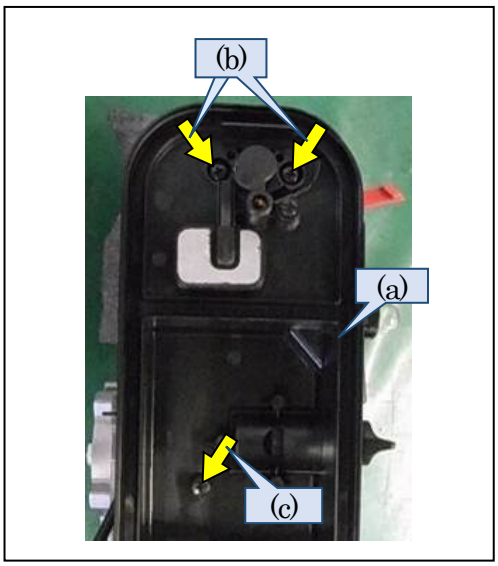
[3]-6. Carburetor

Disassembly

(1) Refer to "**[3]-2. Blower Section (Band Completes L and R, Frame and Fan)**" (page 4) and then remove Engine cover complete and disconnect Control cable from Carburetor.

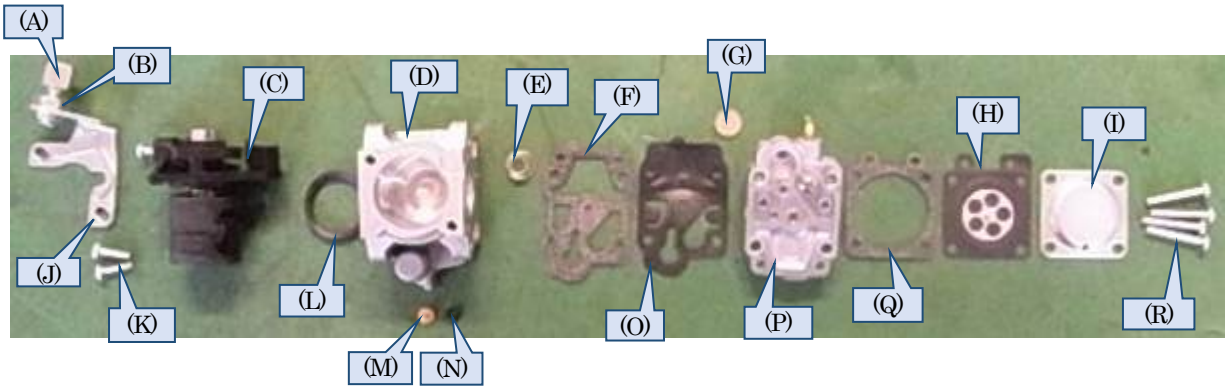
(2) Raise (close) Choke lever, then remove two M5x60 Pan head screws (b) and 5x20 Tapping screw (c) from Air cleaner case (a), then disconnect the tubes, and then remove Air cleaner case and Carburetor. (**Fig. 39**)

Fig. 39



(3) The Carburetor can be disassembled as shown in **Fig. 40**.

Fig. 40



(A) Adjust screw
(B) Cable adjust nut M6
(C) Throttle assembly
(D) Carburetor
(E) Conical compression spring 5-9
(F) Pump gasket
(G) Inlet screen
(H) Metering diaphragm
(I) Metering diaphragm cover
(J) Cable bracket
(K) M3x10 pan head screw (2 pcs.)
(L) Packing ring
(M) Main jet
(N) O ring
(O) Pump diaphragm
(P) Pump body assembly
(Q) Metering diaphragm gasket
(R) Screw (4 pcs.)

(4) Check the membrane around the metal part of Metering diaphragm (H) and replace the diaphragm if there is any deformation or hardening.

(5) Also replace Pump diaphragm (O) if there is any deformation or hardening.

(6) Remove Inlet screen (G) while taking care not to deform it and then clean it with carburetor cleaner.

(7) Be sure to use carburetor cleaner to clean the main jet portion at the center.

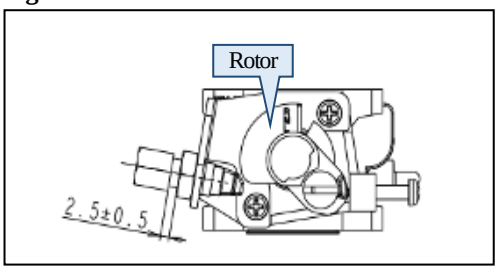
・Do not use air duster because parts such as Check valve may be damaged if they are cleaned with air duster.

(8) Replace Metering diaphragm gasket (Q) and Pump gasket (F) if possible when you disassemble Carburetor.

Assembly

(1) Make adjustment of Adjust screw for Control cable as shown in **Fig. 41**.

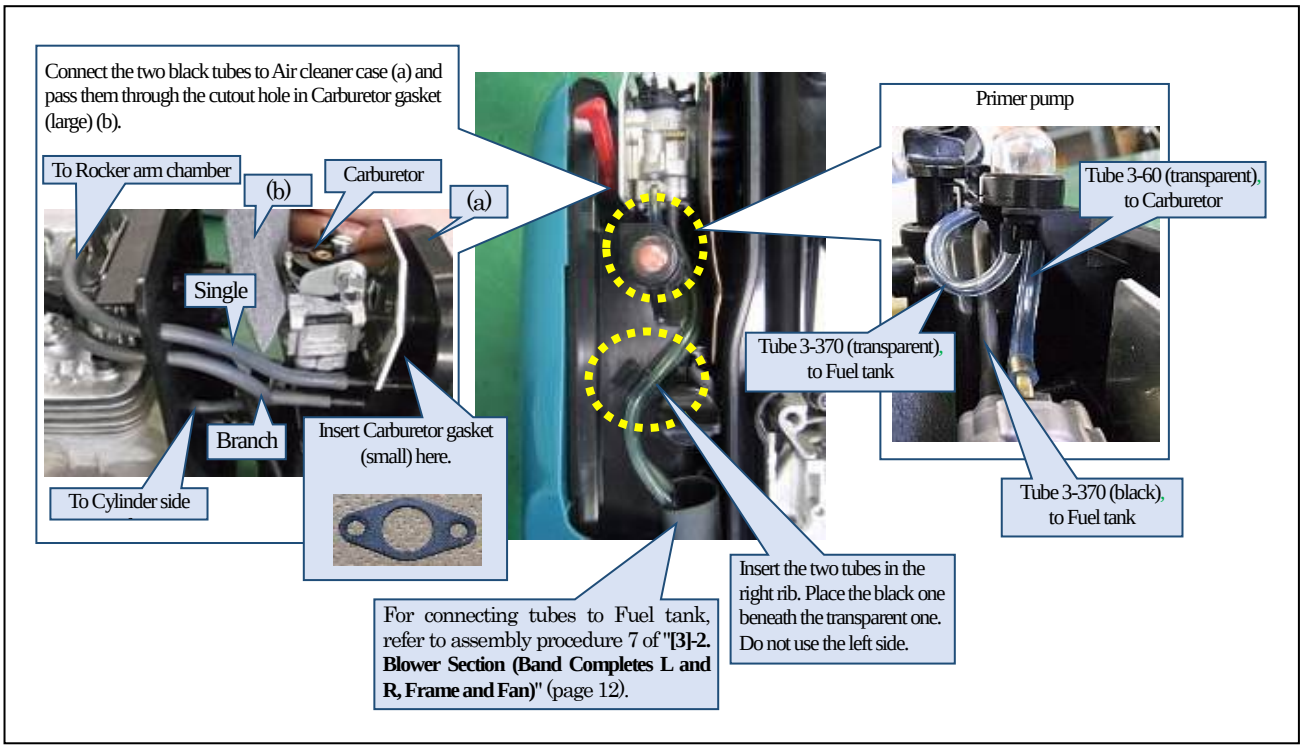
Fig. 41



(2) Check that Rotor contacts the stopper both at idling and full throttle and that the specified rotation speeds (refer to "**[3]-10. Completion Inspection Check Points**" [page 28]) are achieved after assembly.

(3) Refer to **Fig. 42** for the position to connect each tube to Carburetor.

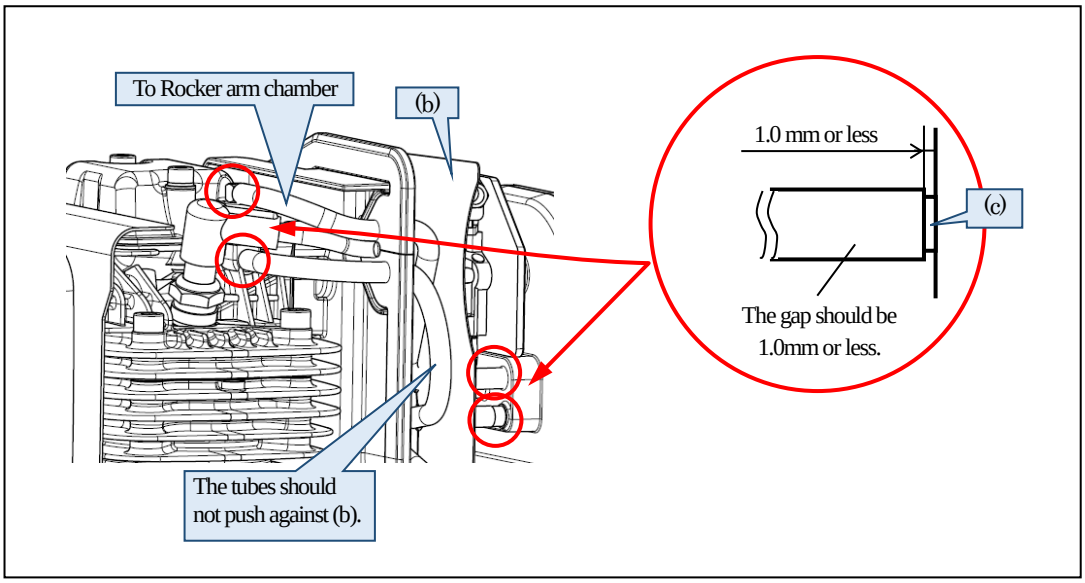
Fig. 42



(4) Use 1R311 to slide the tubes all the way over the nipples (c) until they stop. (**Fig. 43**)

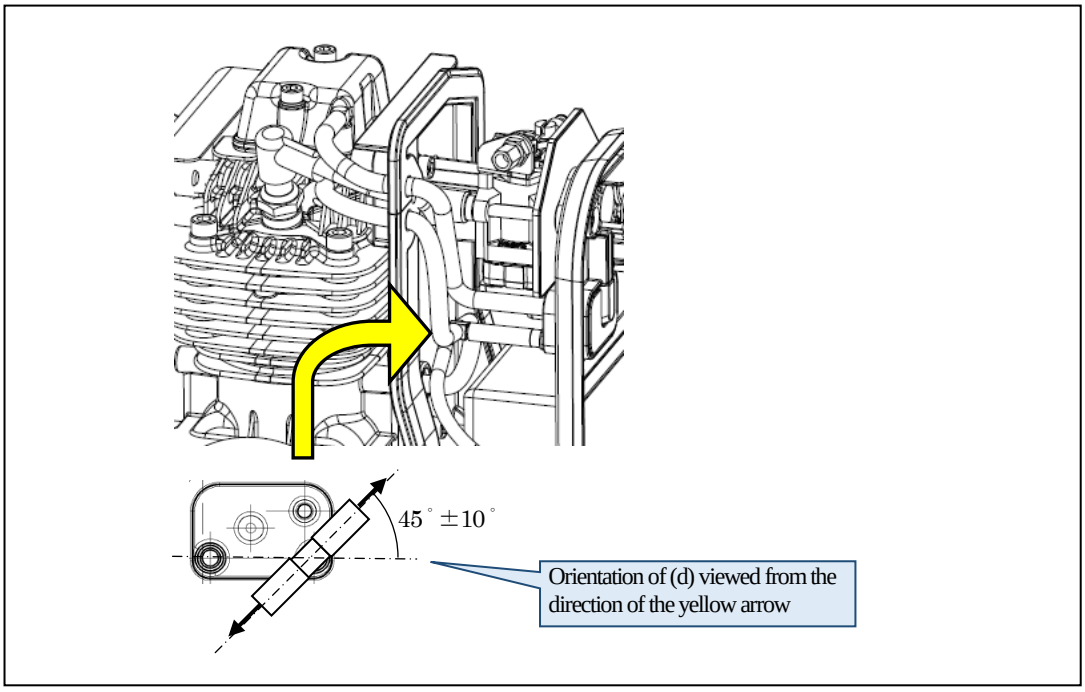
Make sure that the tubes are not pushing against Carburetor gasket (large) (b).

Fig. 43



(5) Connect the tubes with Hose joint (d) oriented as shown in **Fig. 44**.

Fig. 44



[3]-7. Flywheel

Repair Flywheel while the engine is separated from the blower section.

Disassembly

(1) Refer to **"[3]-2. Blower Section (Band Completes L and R, Frame and Fan)**" (page 4) and "**[3]-9. Crankcase**" (page 23) and then disassemble the blower section to separate the engine from the blower section.

(2) Remove M10 Flange nut (right-handed) that is securing Flywheel (a) with a box bit 14 and an impact driver. (**Fig. 45**)

(3) Remove Flywheel with 1R364. Remove it while M10 Flange nut (b) is screwed onto Crankshaft so as to prevent deformation of the external (male) thread. Woodruff key 4 will come off so take care not to lose it. (**Fig. 46**)

Fig. 45

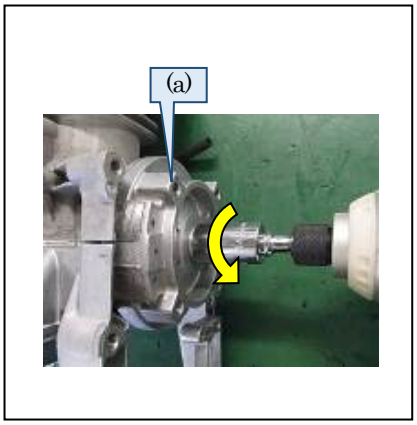
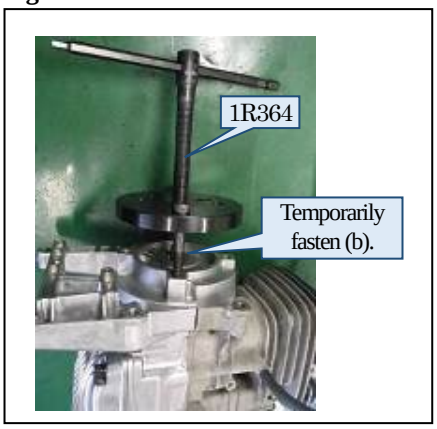


Fig. 46



[3]-8. Ignition System

Use 1R181 for Ignition coil diagnosis. Refer to page 24 of "Repair Tool List" for how to use the tool.

Disconnect the flag terminal of Stop switch and then, using 1R402, check the continuity between earth and the two places described below. The polarity of the tester does not matter. (**Fig. 48**)

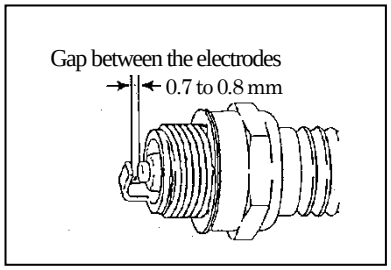
Between the earth terminal and Plug cap spring (solid line side)	12 kΩ ±10%
Between the earth terminal and the tab terminal for Stop switch (dashed line side)	1.0 Ω

Disassembly

(1) Disconnect the secondary cable from Spark plug and then remove Spark plug.

(2) Check that the electrode gap is between 0.7 and 0.8 mm and that the electrodes and insulator are not contaminated or damaged. (**Fig. 47**)

Fig. 47



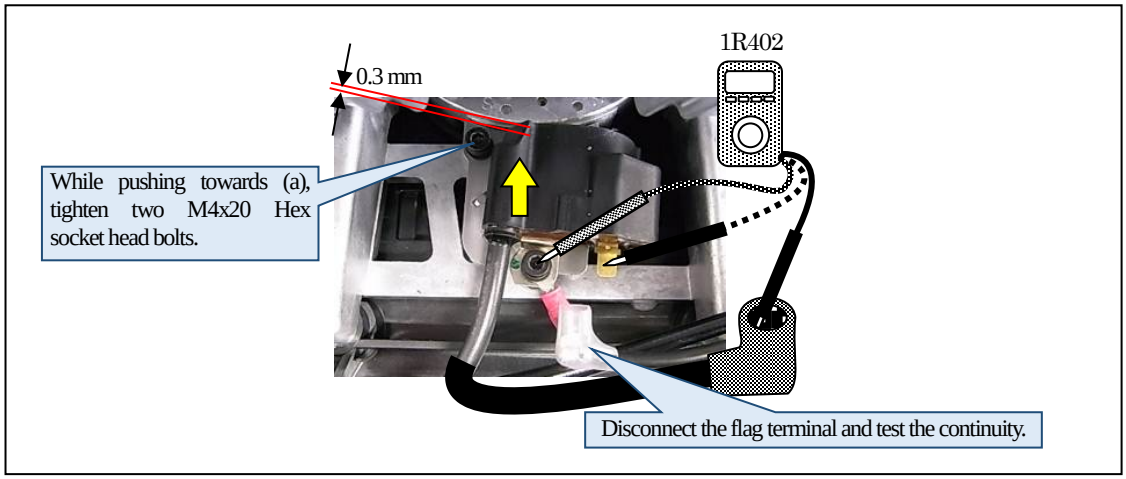
(3) For replacement and adjustment of Ignition coil, refer to "**[3]-2. Blower Section (Band Completes L and R, Frame and Fan)**" (page 4) and then disassemble the blower section. Repair will be easier if you refer to "**[3]-4. Engine Section (Rocker Arm, Valve Portion, and Camgear Portion)**" (page 13) and then separate the engine section from the blower section.

(4) Remove Engine cover and Fuel tank and then remove Ignition coil.

Assembly

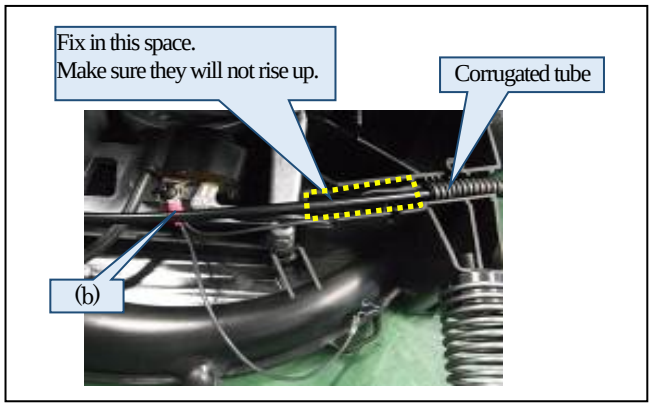
(1) Align the positions of the magnet of Flywheel (a) and the iron core of Ignition coil and adjust the air gap with the 0.3 mm leaf of 1R366. (**Fig. 48**)

Fig. 48



(2) Bend the lead wires of Stop switch and earth terminal (b) towards the right and then secure them together to Ignition coil. (**Fig. 49**)

Fig. 49



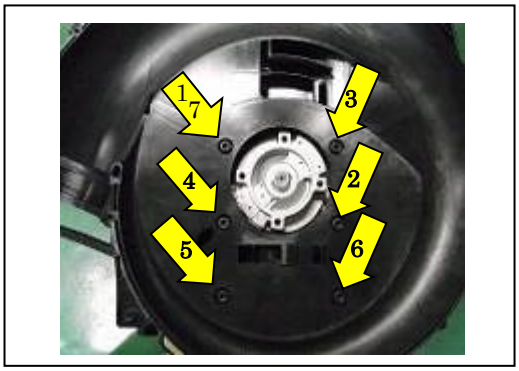
[3]-9. Crankcase

(1) Refer to "**[3]-2. Blower Section (Band Completes L and R, Frame and Fan)**" (page 4) and then separate the engine section from Frame.

(2) Remove the six M6x25 Hex socket head bolts from Front volute case and then detach the engine block.

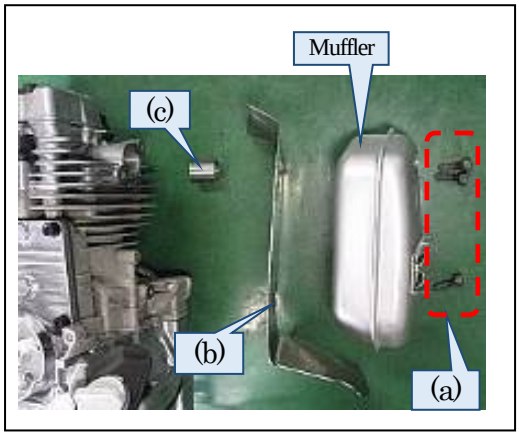
When assembling, tighten the bolts in the order shown in **Fig. 50**.

Fig. 50



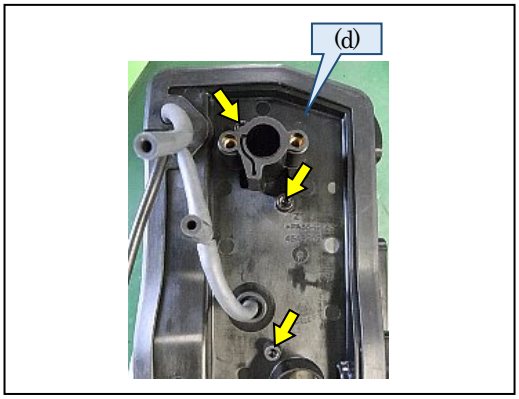
(3) Remove three M6x18 Hex socket head bolts (a) and then remove Muffler gasket (b) and Exhaust port spacer (c). (**Fig. 51**)

Fig. 51



(4) Loosen two M5x25 Hex socket head bolts and one M5x14 Hex socket head bolt (total of three bolts) and remove Insulator complete (d). (**Fig. 52**) For removing tubes, refer to "**[3]-6. Carburetor**" (page 18).

Fig. 52

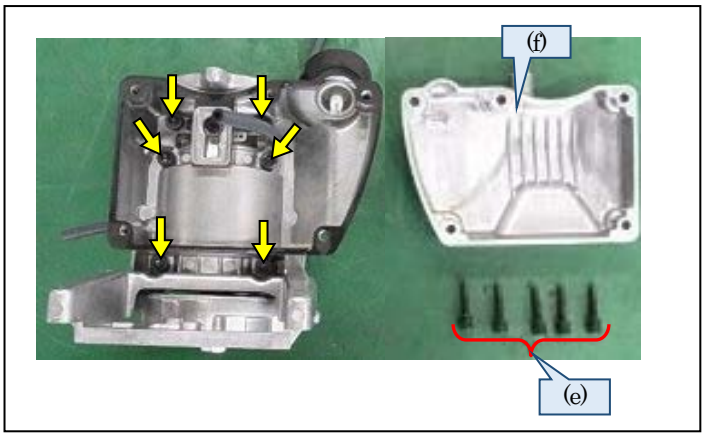


(5) Remove Pulley, Rocker cover complete, and Cylinder head complete.

(6) When replacing Oil seal only, do not disassemble Cylinder block assembly but insert a slotted screwdriver in the lip portion of the inner ring of Oil seal and pull it out. Take care not to damage Cylinder.

(7) Remove five M5x25 Socket head bolts (e) from the bottom of the engine section and then remove Oil case (f). (**Fig. 53**)

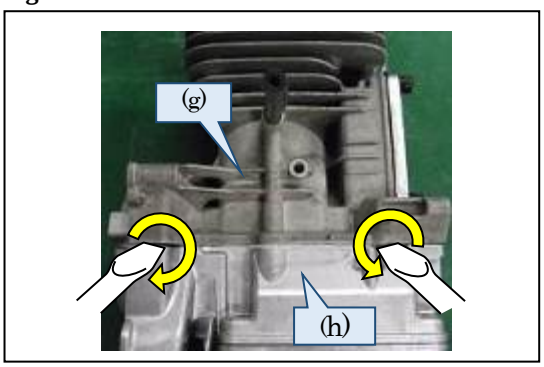
Fig. 53



(8) Remove four M6x30 Socket head bolts inside the oil chamber and two M6x30 Socket head bolts outside the oil chamber and then separate Cylinder block (g) and Crankcase (h). (**Fig. 54**)

Crankcase (h) is stuck to Cylinder block (g) with liquid gasket. Insert a slotted screwdriver into the four slots in the mating surface of Cylinder block and Crankcase and turn it to pry them apart. Please note that inserting a slotted screwdriver into other than the slots may result in damage.

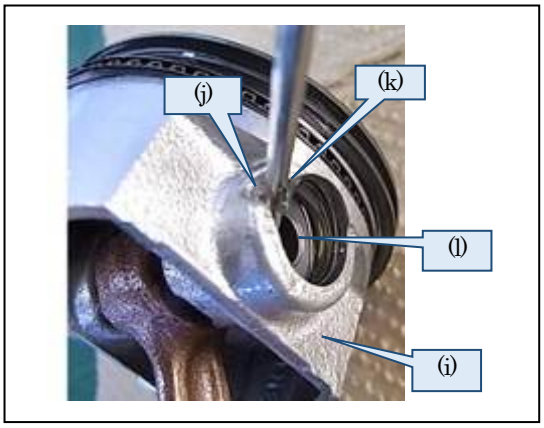
Fig. 54



(9) Remove Crankshaft and Piston assembly and then replace Oil seals on the both ends of the shaft, Piston, and Piston rings.

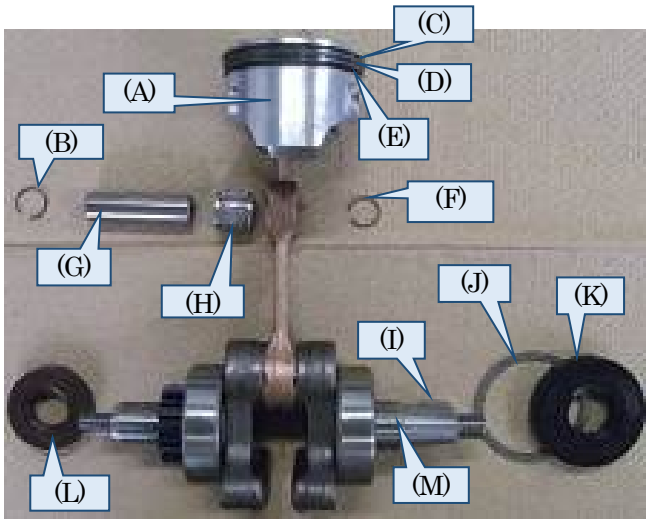
(10) Piston (i) can be disassembled first by inserting a small slotted screwdriver or similar tool in from the notch (j) shown in **Fig. 55**, then by removing one of Ring springs 12 (k), and then pushing out Piston pin (l) from the other side.

Fig. 55



(11) The parts that can be replaced are shown in **Fig. 56**.

Fig. 56



(A) Piston
(B) Ring spring 12
(C) Top ring
(D) Second ring
(E) Oil ring
(F) Ring spring 12
(G) Piston pin
(H) Needle roller bearing
(I) Woodruff key 4
(J) Flat washer 41
(K) Oil seal (L)
(L) Oil seal 17
(M) Crankshaft complete

Assembly

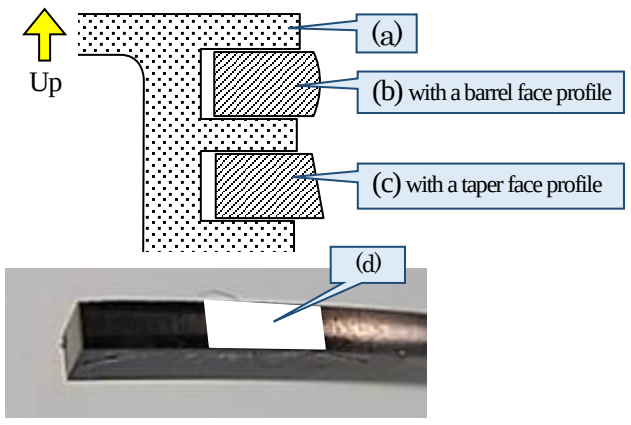
(1) Assemble the parts by reversing the disassembly procedure.

(2) Top ring (b) and Second ring (c) of Piston (a) are different. Top ring (b) has a barrel face profile and has no top and bottom as both sides are the same. Second ring (c) has a taper face profile with larger bottom than top and so orientation matters. Attach a new second ring so that the white paint (d) mark comes to the side that is on the right when viewed from the side surface of Piston (a). (**Fig. 57**)

When inserting Piston into Cylinder:

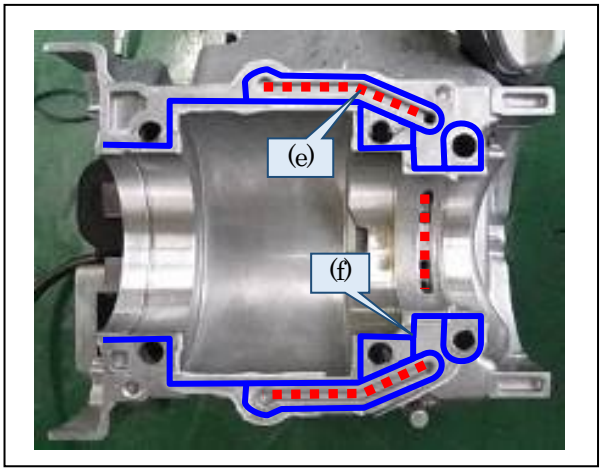
- The gaps of Top ring (b) and Second ring (c) must be at 180 degrees to each other.
- The gaps of the three parts of Oil ring must be at 120 degrees to one another.

Fig. 57



(3) When assembling Cylinder block and Crankcase, clean off any residue of liquid gasket from the mating surfaces and then remove any grease with parts cleaner. Apply a thin layer of Liquid Gasket ThreeBond 1215 to Crankcase and outer circumference of Oil seals, and apply a thin layer to the parts indicated by solid lines (f) in **Fig. 58** while avoiding the grooves indicated by the dashed lines (e) in **Fig. 58** so as not to get any in the oil passages.

Fig. 58



(4) Make sure that Exhaust port spacer is mounted on the muffler side of Cylinder head complete. Do not forget to mount it in place, and be careful not to allow it to fall off in assembling Crankcase. (**Fig. 51**)

(5) Refer to "**[3]-4. Engine Section (Rocker Arm, Valve Portion, and Camgear Portion)**" (page 13) and then assemble Camgear portion and attach Camgear cover.

(6) Apply ThreeBond 1342 or Loctite 243 to the three M6x18 Hex socket head bolts for securing Muffler and the five M6x35 Hex socket head bolts for securing Cylinder head complete when you re-tighten them because they are thread locking bolts.

(7) If Lead valve (g) inside Oil case has been removed, attach it so that the notch (h) is facing the oil filler opening. (**Fig. 59**)

(8) Bend Oil tube (i) to the lead valve side. (**Fig. 60**)

Fig. 59

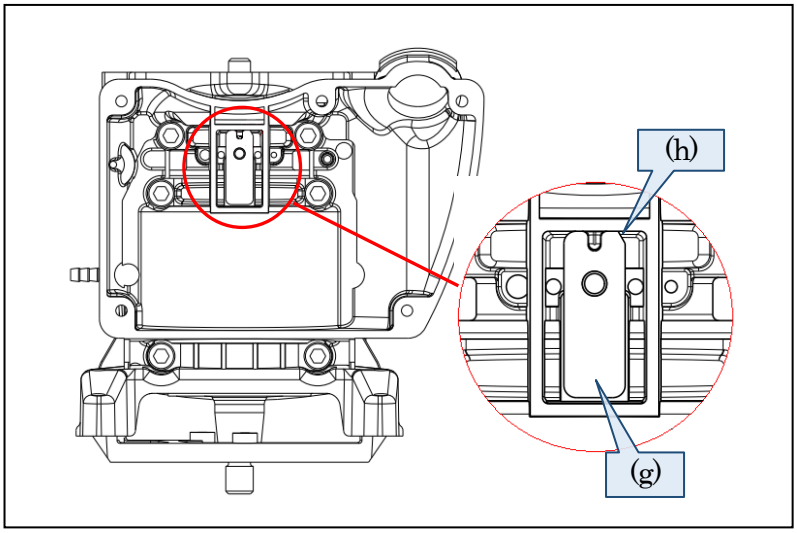
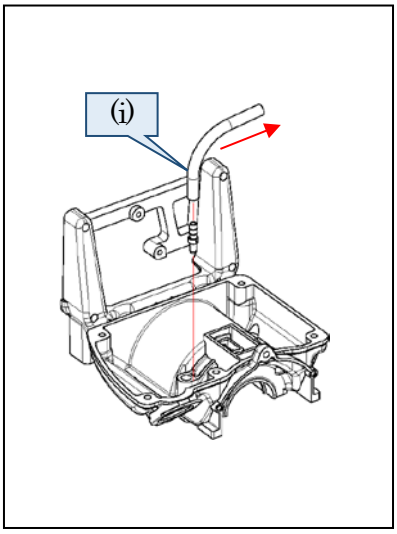


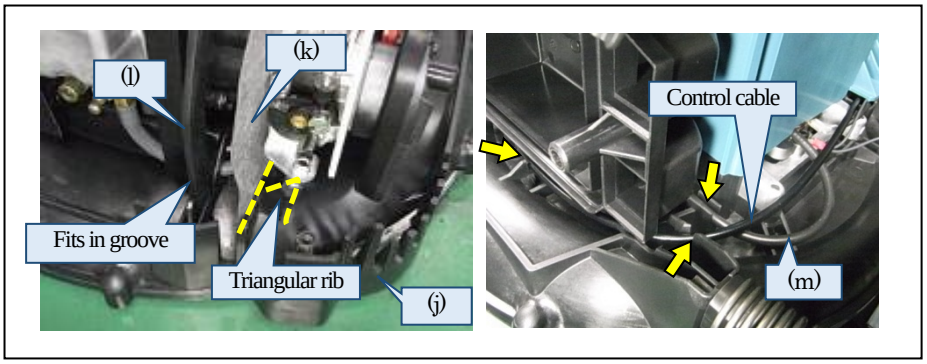
Fig. 60



(9) Attach Front volute case to the engine block and secure with the six M6x25 Hex socket head bolts. (**Fig. 50**)

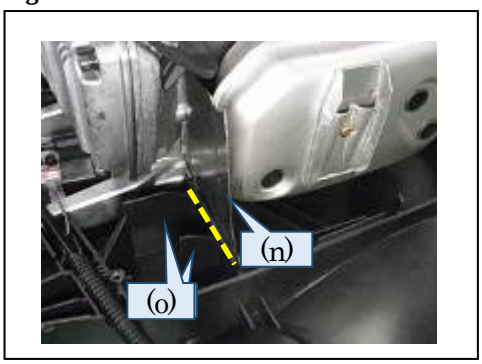
(10) When assembling Volute case (j) to Engine section, take care while routing Control cable and high voltage cable (m) through the grooves to ensure that Carburetor gasket (k) is in the position shown in **Fig. 61** and Insulator complete (l) fits in the groove. (**Fig. 61**)

Fig. 61



(11) Attach Muffler gasket (n) so that it is on the muffler side of the rib (o) of Volute case as shown in **Fig. 62**.

Fig. 62



(12) Connect Control cable to Carburetor and connect the lead wire of Stop switch to Ignition coil.

(13) Insert Control cable corrugated tube and the bullet terminal in the storage space of Front volute case. For the specification with a line filter, also insert Line filter and any slack wire in the storage space. (**Fig. 10**)

(14) For the tubes for connecting Fuel tank and Carburetor, attach each protector in reference to **Fig. 42**.

[3]-10. Completion Inspection Check Points

Measure the engine speed with 1R070 while Blower nozzle is attached.

Please note that the engine speed will not increase while the nozzle is not attached.

(1) Are the parts, screws, and bolts installed properly?

(2) Does a cold engine start within five pulls of Recoil starter?

(3) Does the engine speed increase smoothly after idling for about 1 minute?

The engine speed should be 2800 to 3000 min-1 at idling and 7000 to 7200 min-1at maximum speed.

(4) Check that the rotor contacts the stopper at both idling and full throttle and that the rotation speeds specified in the previous check point are achieved after assembly.

(5) Does Stop switch stop the engine properly?

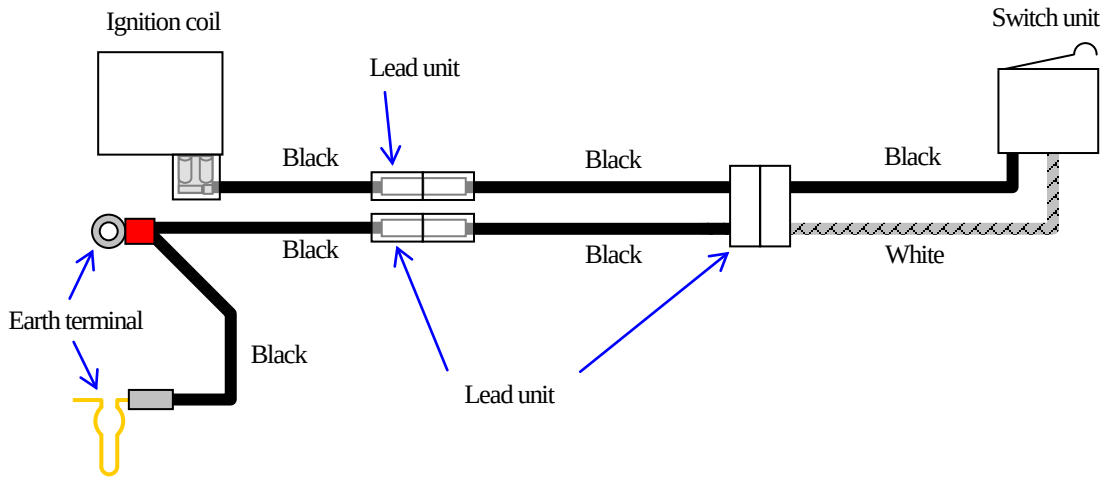
(6) Does a warm engine start within three pulls of Recoil starter?

(7) Is there no Fuel or oil leak?

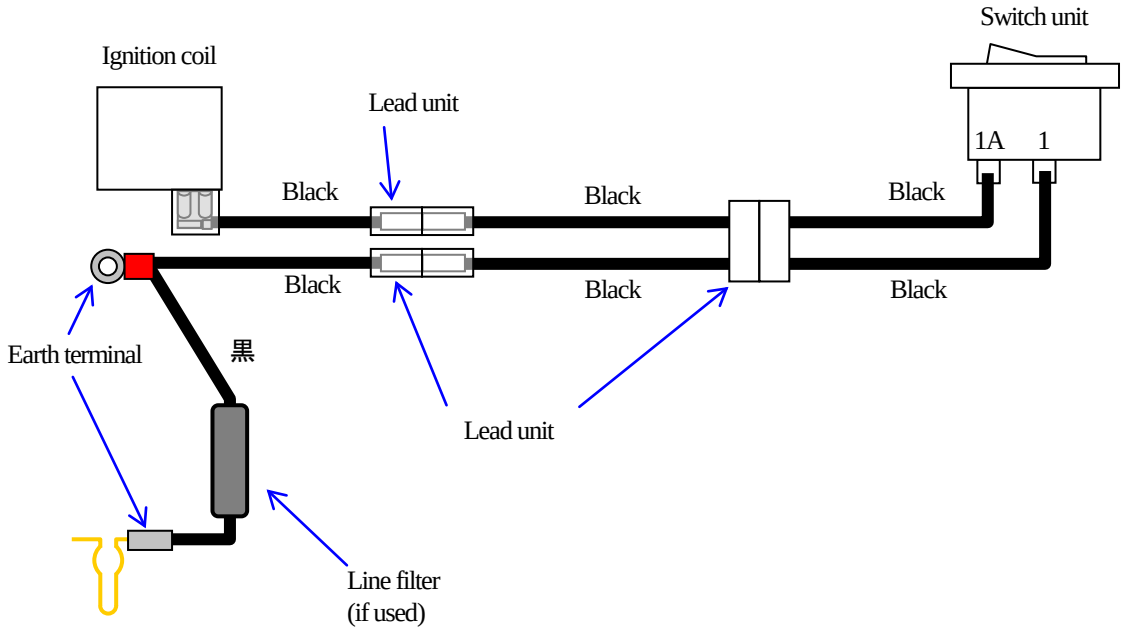
Circuit diagram

Fig. D-1

<EB7650TH>



<EB7650WH>

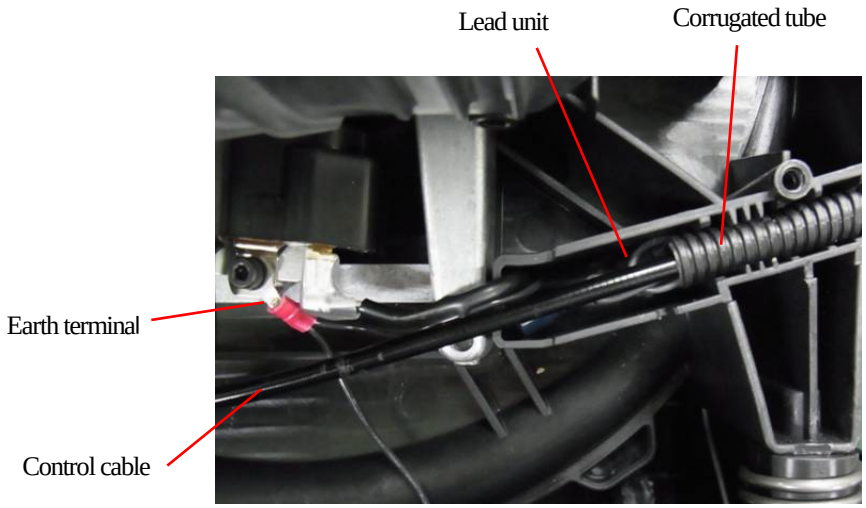


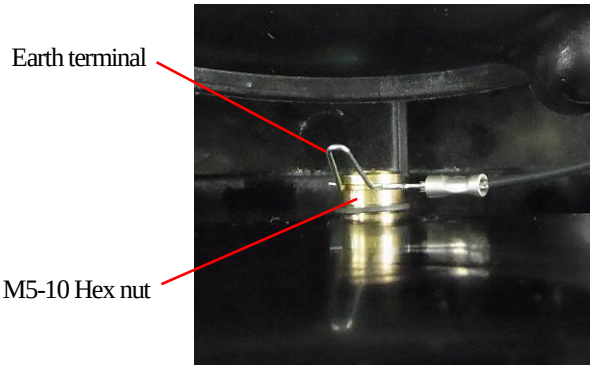
Wiring diagram

<EB7650TH>

Fig. D-2

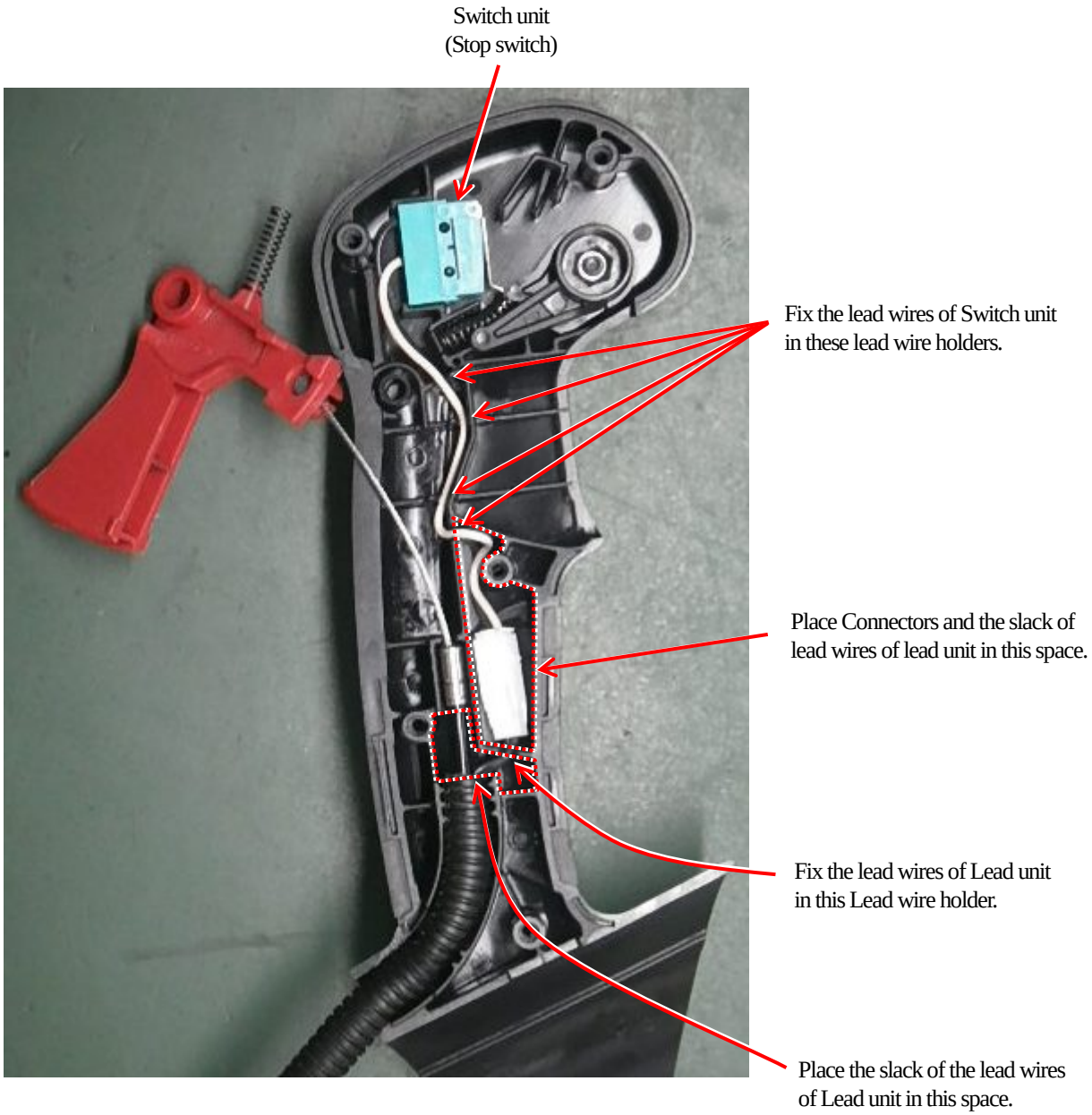
Fix Control cable and Lead unit in the groove of Front volute case.





Hook the earth terminal of Lead unit in the groove of M5-10 Hex nut.

Fig. D-3

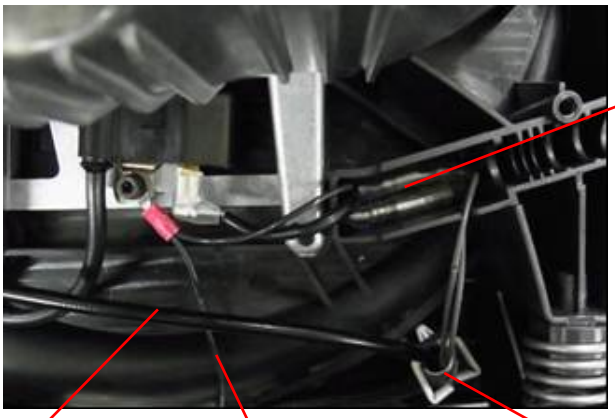

Switch unit
(Stop switch)
Fix the lead wires of Switch unit in these lead wire holders.
Place Connectors and the slack of lead wires of lead unit in this space.
Fix the lead wires of Lead unit in this Lead wire holder.
Place the slack of the lead wires of Lead unit in this space.

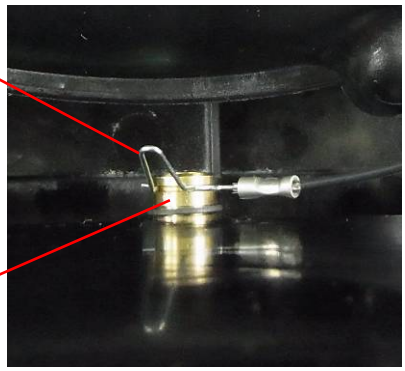
<EB7650WH>

Fix Control cable and Lead unit in the groove of Front volute case. (**Fig. D-4** or **Fig. D-5**)

Fig. D-4

Specifications without Line filter (For countries and areas where noise suppression is not required by regulation)

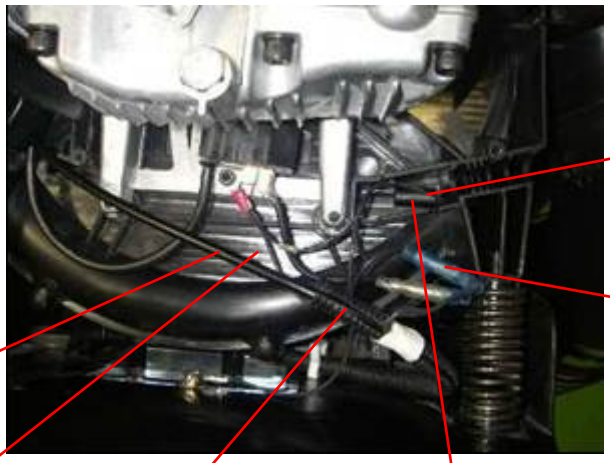




Hook the earth terminal of Lead unit in the groove of M5-10 Hex nut.

Fig. D-5

Specifications with Line filter
(For countries and areas where noise suppression is required by regulation)



Line filter

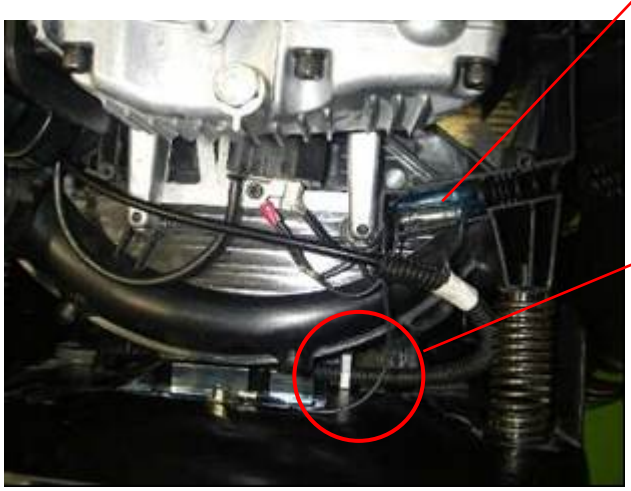
Lead unit

Control cable

Earth terminal

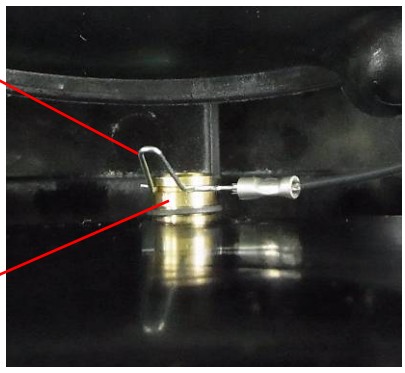
Corrugated tube

Place Line filter and the bullet terminals in this space.



Allow the lead wire of Lead unit to have some slack when routing it here.

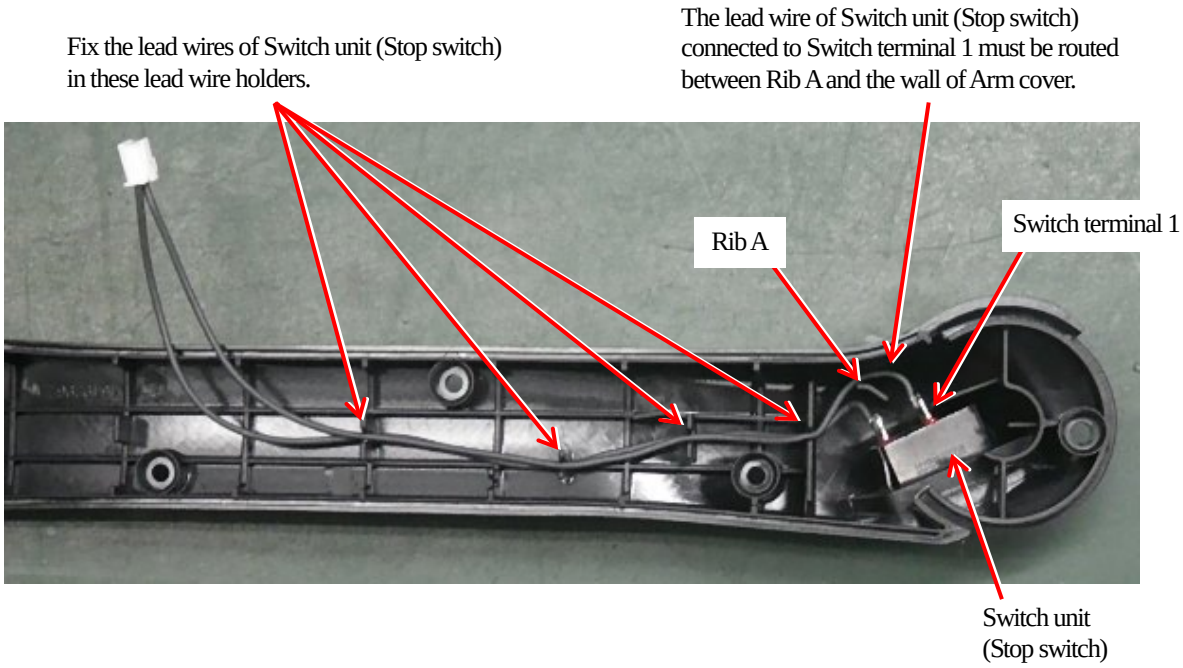
Earth terminal

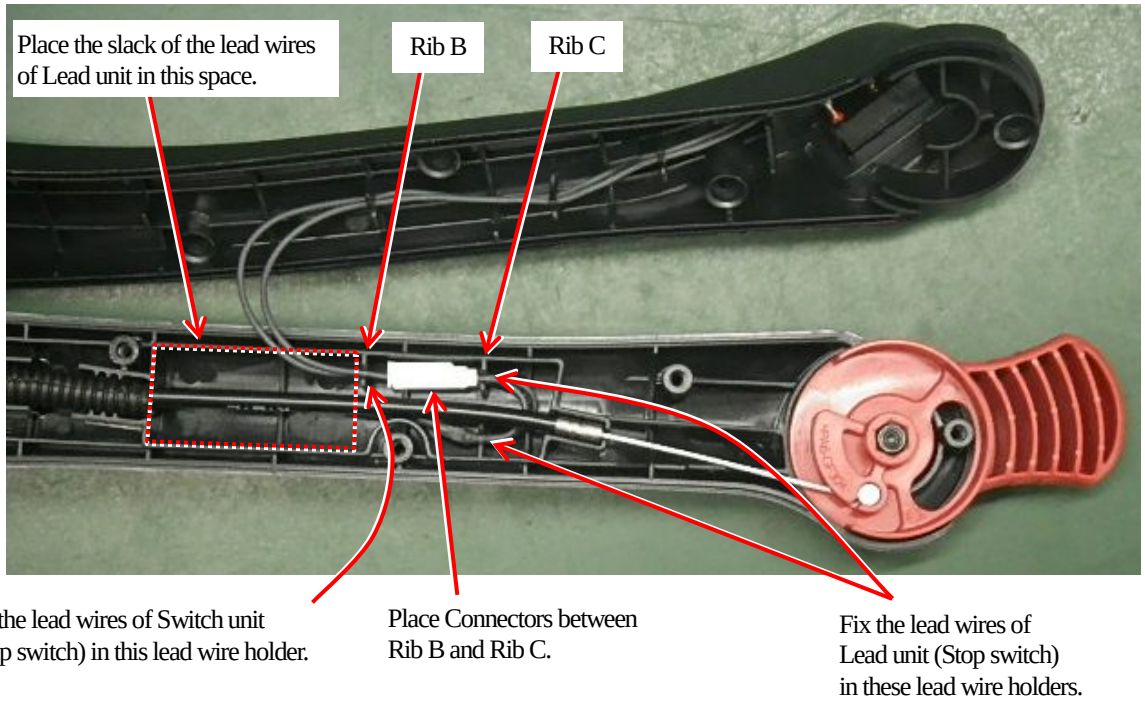


M5-10 Hex nut

Hook the earth terminal of Lead unit in the groove of M5-10 Hex nut.

Fig. D-6


Fix the lead wires of Switch unit (Stop switch) in these lead wire holders.
The lead wire of Switch unit (Stop switch) connected to Switch terminal 1 must be routed between Rib A and the wall of Arm cover.
Rib A
Switch terminal 1
Switch unit (Stop switch)


Place the slack of the lead wires of Lead unit in this space.
Rib B
Rib C
Fix the lead wires of Switch unit (Stop switch) in this lead wire holder.
Place Connectors between Rib B and Rib C.
Fix the lead wires of Lead unit (Stop switch) in these lead wire holders.

Tightening torque specifications

	Parts to fasten	Tightening torque [N･m]	Fastener	pcs
1	Engine / Front volute case	8.0 - 10.0	M6×25 Hex socket head bolt WR	6
2	Fan 250/ Flywheel complete	8.0 - 10.0	M6×25 Hex socket head bolt WR	4
3	Throttle lever B/ Throttle link	1.5 - 1.7	M4×18 Hex socket head bolt	1
4	Arm/ Throttle lever	0.8 - 1.2	M5×25 Hex socket head bolt WR	1
5	Arm/ Arm base	1.1 - 1.5	M6×25 Hex socket head bolt WR	1
6	Handle L/ Handle R	0.9 - 1.4	4×18 Tapping screw	3
7	Air cleaner cover/ Air cleaner case	0.9 - 1.2	M5×20 Thumb screw	2
8	Recoil/ Engine	2.5 - 4.0	M5×20 Pan head screw	3
9	Lever case L/ Lever case R	1.0 - 1.3	4×18 Tapping screw	5

	Parts to fasten	Tightening torque [N･m]	Fastener	pcs
1	Crankcase / Cylinder	10.0 - 12.0	M6×30 Hex socket head bolt	6
2	Retainer plate/ Crankcase	2.0 – 3.5	M4×10 Hex socket head bolt SW	1
3	M8x12 Hex socket bolt (+ Gasket)/ Oil case	4.0 – 6.0	M8x12 Hex socket bolt t	1
4	Oil case/ Crankcase	4.5 – 6.5	M5×25 Hex socket head bolt W, SW	5
5	Cylinder head/ Cylinder	10.0 – 14.0	M6×35 Hex socket head bolt	5
6	Flywheel	35.0 – 40.0	M10 Nut	1
7	Ignition coil/ Crankcase	2.3 – 2.7	M4×20 Hex socket head bolt W, SW	2
8	Camgear cover/ Cylinder	4.5 – 6.5	M5×16 Hex socket head bolt WR	4
9	Rocker arm/ Adjust screw	4.0 – 5.5	M5 Nut	2
10	Rocker cover/ Cylinder head	4.5 – 6.5	M5×30 Hex socket head bolt WR	2
11	Spark plug	9.0 – 13.0	M10 Spark plug CMR6A	1
12	Muffler/ Cylinder head	13.0 – 16.0	M6×18 Hex socket head bolt with thread locker	3
13	Insulator/ Cylinder head	5.0 – 7.0	M5×25 Hex socket head bolt WR with thread locker	2
14	Insulator/ Cylinder	4.5 – 6.0	M5×14 Hex socket head bolt W, SW	1
15	Air cleaner case/ Insulator	2.9 – 3.3	M5×60 Pan head screw WR	2
16	Air cleaner case/ Insulator	2.2 – 2.7	5x20 Tapping screw	1
17	Adjust screw	1.0 – 2.0	M6 Cable adjust nut	1
18	Pulley/ Crankshaft	9.0 – 11.0	M8 Pulley (15mm across flats)	1
19	Oil cap (+ Gasket)/ Crankcase	0.4 – 0.7	Oil cap	1
20	Choke plate/ Choke lever	0.9 – 1.1	4x14 Tapping screw	1
21	Air cleaner case/ Anti-icing valve cover	0.9 – 1.1	4x14 Tapping screw	3