OFFICIAL USE
for ASC & Sales Shop

PETROL BLOWER
EB5300TH (TUBE-MOUNTED THROTTLE)
EB5300THG (TUBE-MOUNTED THROTTLE)
EB5300WH (HIP-MOUNTED THROTTLE)

REPAIR MANUAL

April 2017
Ver.1

1 CONTENTS

2 SAFE HANDLING OF THE MACHINE

Read the instruction manual of this product and follow the instructions for safe repair.

- Wear gloves.
- When the engine is hot from use, cool down the engine enough or you can get burned.
- Remove remaining fuel from Fuel tank and Carburetor completely. [FLAMMABLE MATERIAL KEEP FIRE AWAY]
- Remove Spark plug cap from Spark plug.
- Repair the engine on a stable workbench and in a clean workplace kept as free of dust and debris as possible.
- In order to avoid wrong reassembly, draw or write down where and how the parts are assembled, and what are the parts.
- It is also recommended to have boxes ready to keep disassembled parts by group.
- Handle the disassembled parts carefully. Clean and wash them properly.
- If some bolts and screws are too tight, use an impact driver.
- Tighten the bolts and the screws to the specified torque as shown in "5 TIGHTENING TORQUE SPECIFICATIONS".
- Each time after you mounted a main part of the engine such as the piston, check if it moves smoothly without abnormal noise by manually turning the crankshaft.
- After completion of reassembly, check for loose parts or abnormal noise and vibration by manually turning the crankshaft.

3 REPAIR

3-1 Necessary repairing tools

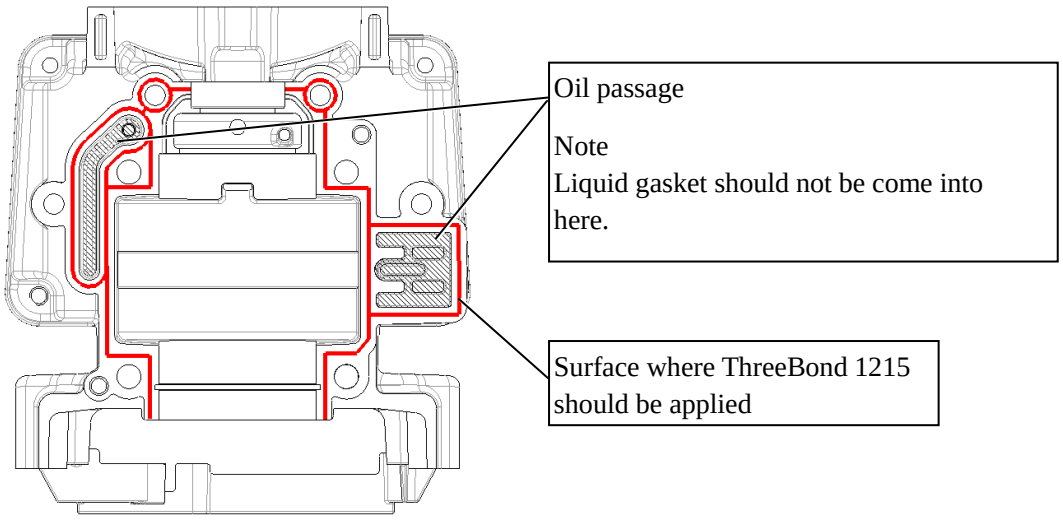
Code No.	Description	Use for
1R005	Retaining ring pliers RT-2N	attaching/removing Cotter (Use with 1R389.)
1R014-A	Hex head bit H3-150	loosening/tightening M4 Hex socket head bolts
1R015-A	Hex head bit H4-150	loosening/tightening M5 Hex socket head bolts
1R016-A	Hex head bit H5-150	removing Muffler
1R070	Tachometer	checking engine speed
1R127	Air density tester	checking Carburetor
1R181	Ignition checker	checking Ignition coil
1R288	Screwdriver magnetizer	attaching/removing Cotter
1R310	Spring pin extractor 6.0	inserting Check valve
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
1R372	Crank shaft lock bolt M10	locking Crankshaft
1R389	Cotter removal attachment	attaching/removing Cotter (Use with 1R005.)
1R402-A	Digital tester	checking Switch
1R402-B	Alligator clip set for tester	use with 1R402-A

3-2 Gaskets and lubrication

- When you remove Gasket, be sure to remove gasket residue.
- When reassembling the machine, replace 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.

Fig. 1

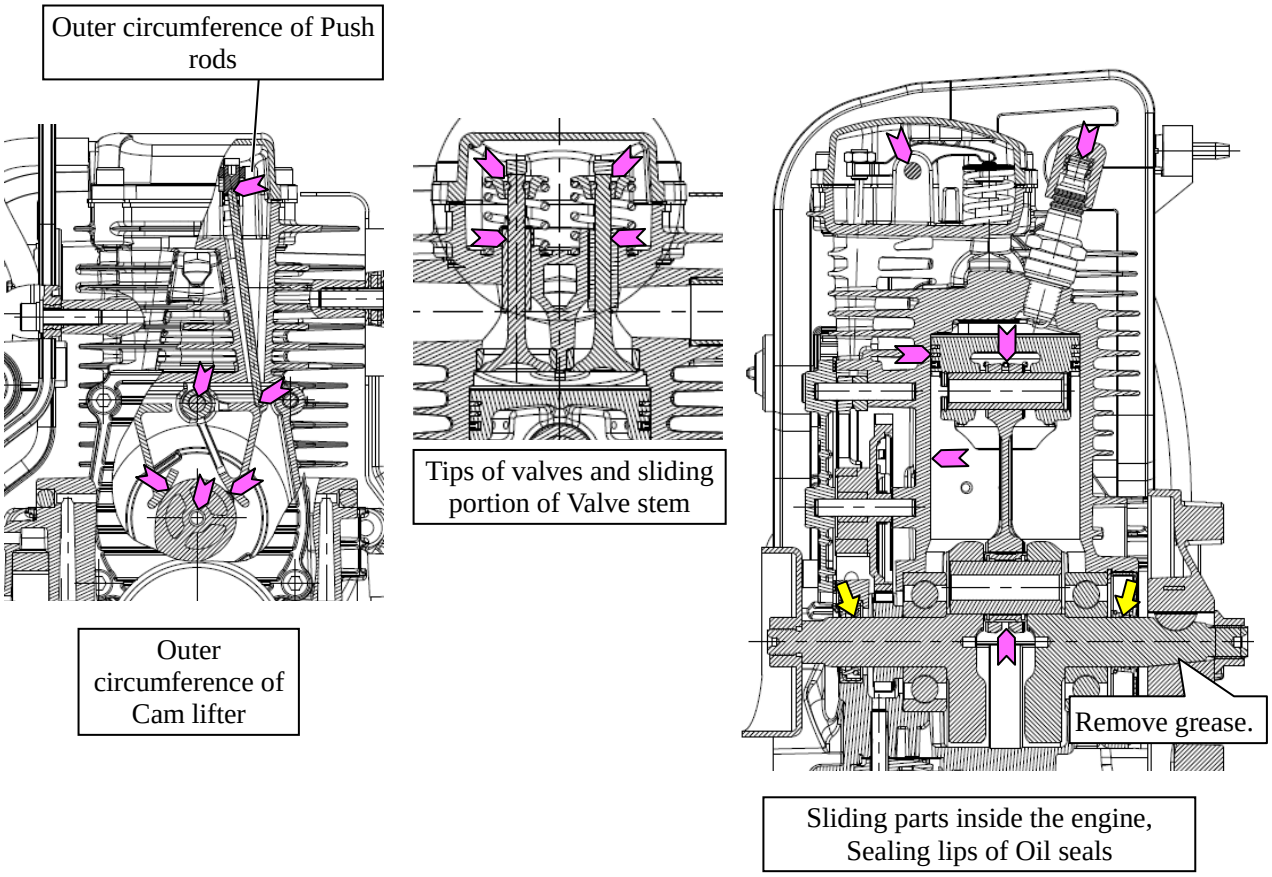
Note
When removing grease, do not directly spray parts cleaner to the rubber portion. Be sure to soak a rag with parts cleaner and remove grease.



- When attaching Flywheel, use parts cleaner or the like to remove the grease from the tapered portion.

Lubricant		Amount
⇧	Makita grease FA. No.2	a little
⇧	4-stroke engine oil	a little

Fig. 2

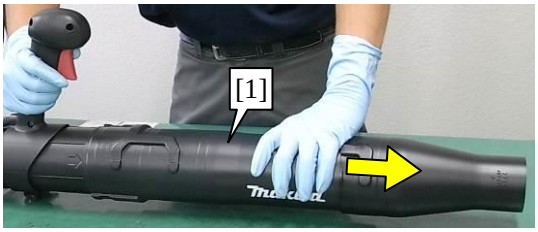


4 REPAIR WORK
4-1 Before starting repair work
4-1-1 Draining fuel tank, removing Pipes and Nozzle

1 Remove Fuel tank cap assembly, and then drain Fuel tank.

Tips
• Drain Carburetor as much as possible by pushing Primer pump repeatedly. • Drain the oil when the machine is disassembled down to Engine block. (Refer to Fig. 60.)

Fig. 3

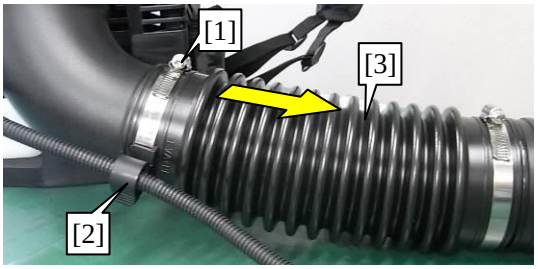


2 Remove Intermediate pipe (Long pipe or Short pipe) from Swivel pipe complete [1].

Fig. 4

3 Remove M5x30 Thumb screw [2] fastening Control lever ass'y [1].

Fig. 5



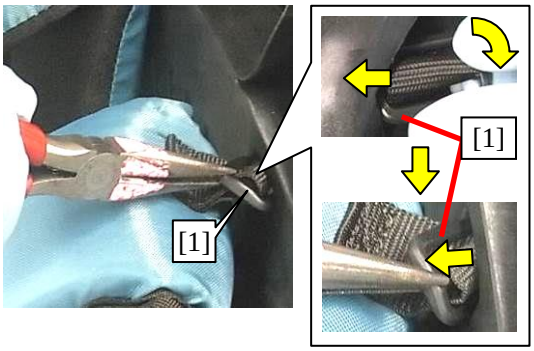
4 Loosen Hose clamp 100 [1] to remove Cable holder [2] and Flexible pipe [3]. Control lever ass'y can now be removed.

4-2 Blower Section

4-2-1 Removing Band complete L/R and Cushion

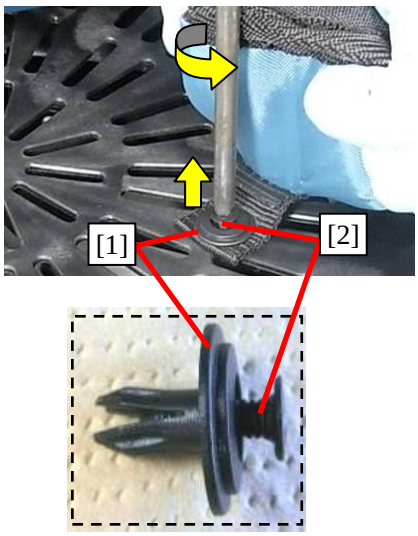
As for the REPAIR WORK of Cam gear, Muffler, Air cleaner plate, Carburetor, Insulator and Ignition coil, refer to 4-5-1.

Fig. 6



1 Release Buckle [1] on Band complete from the top of Frame as follows: with a tool such as long-nose pliers, turn Buckle 90 degrees, then pull it out through the slot of Frame. Release the other three Buckles from the bottom of Frame in the same way.

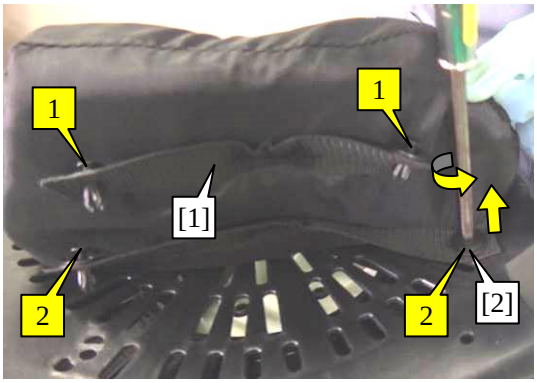
Fig. 7



2 Lock rivet [1] fastening Band complete to Frame can be removed by turning the center lock pin [2] of the rivet counterclockwise with a Phillips screwdriver to lift up the pin.

Tips
• If the center lock pin [2] spins freely and cannot be lifted up, turn the pin while lifting up Band complete as shown on the left. (Remember this tip also when removing Cushion.) • Lock rivet [1] can be removed from Band complete. If it is removed, however, be careful not to lose the center lock pin [2] because the pin will become easy to fall off and get lost.

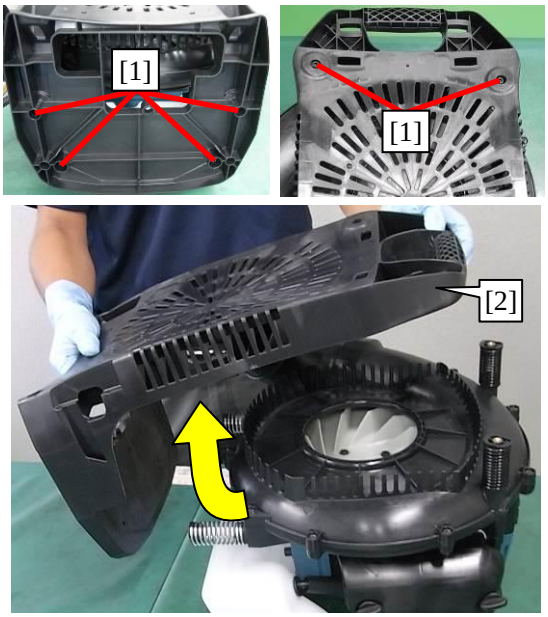
Fig. 8



3 Remove Cushion [1] from Frame by removing four Lock rivets [2] with a Phillips screwdriver; first remove the two rivets indicated by arrow 1, then remove the two indicated by arrow 2.

4-2-2 Removing Frame, Compression spring 22 (Damper spring), Fan 243 and Front volute case

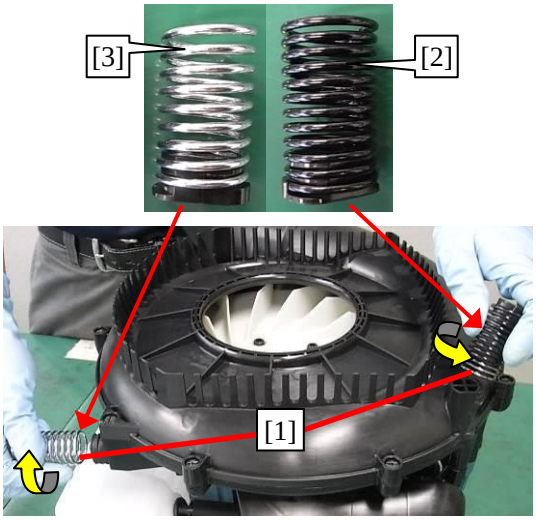
Fig. 9



1 Remove Frame by removing six M5x16 Hex socket head bolts [1] as shown on the left.

Note
• To prevent the engine section from falling down, put the machine on a workbench with the Recoil starter side down. • In the case of 5300WH, before removing Frame [2], it is necessary to disconnect Control cable and Lead unit from the engine section and to remove Control arm. (Refer to 4-4-3.) • Do not fail to remove the two bolts fastening Fuel tank.

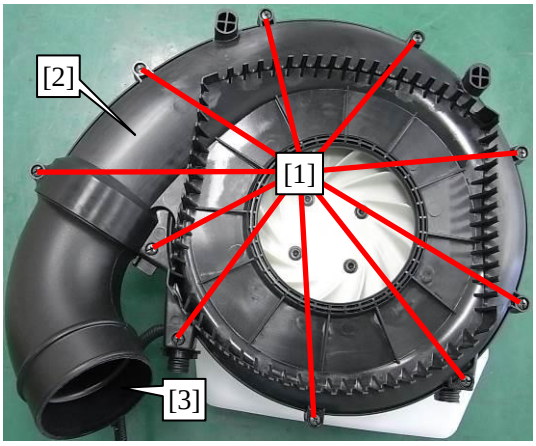
Fig. 10



2 Remove four Compression springs 22 (damper springs) [1] by turning them counterclockwise.

Note
Two different Compression springs 22 are used: • Two black ones [2] on the Cushion side of Frame • Two silver ones [3] on the bottom side of Frame Be careful not to mix up the two springs.

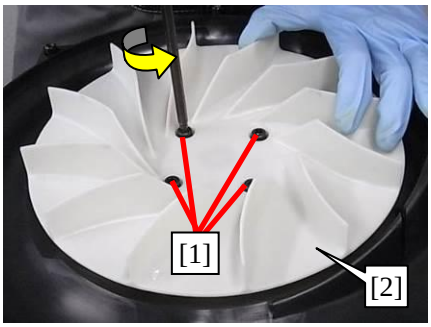
Fig. 11



3 Remove ten 5x20 Tapping screws [1] to remove Rear volute case [2]. Elbow [3] is removed at the same time.

Note
Remove the screws located on both sides of Elbow [3] last of all to prevent Elbow [3] from falling down.

Fig. 12

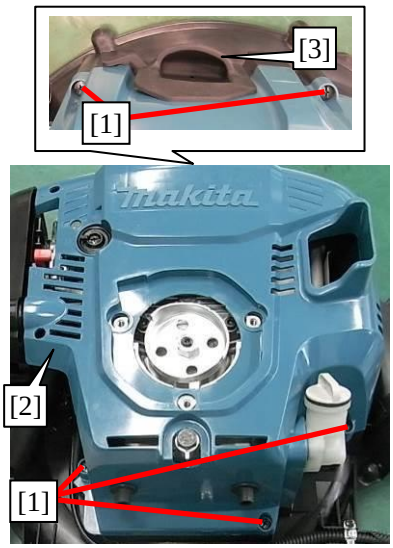


4 Remove four M6x25 Hex socket head bolts [1] to remove Fan 243 [2].

Fig. 13

5 Remove three M5x20 Hex socket head bolts [1] to remove Recoil starter [2].

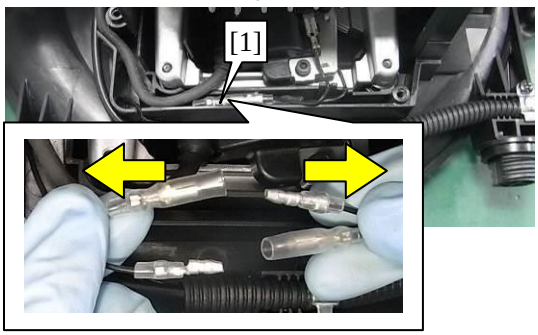
Fig. 14



6 Remove five 5x20 Tapping screws [1] to remove Engine cover complete [2].

7 Remove Plug cover [3].

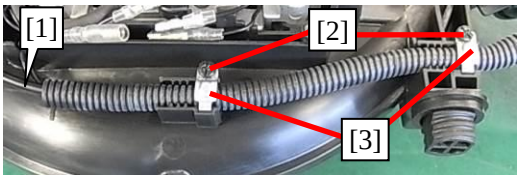
Fig. 15



8 Disconnect two Straight terminals [1] of Lead unit.

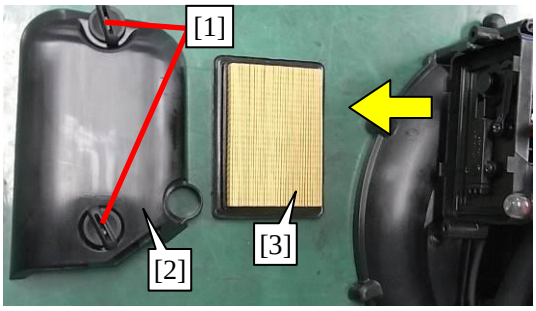
Note
When you pull off Straight terminal [1], do not hold the lead wire of Lead unit or the wire will be broken. Be sure to slide the cover tube and hold the metal body of the terminal.

Fig. 16



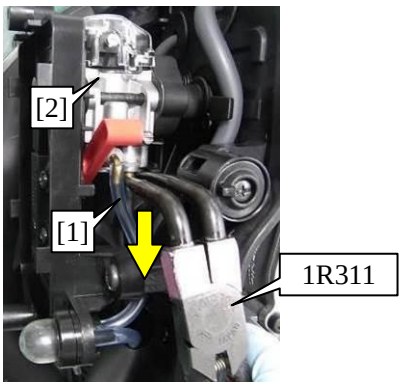
9 Remove two 4x14 Tapping screws [2] fastening Control cable [1], and remove two Strain relieves [3].

Fig. 17



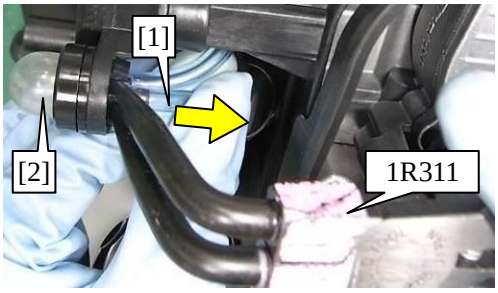
10 Loosen two M5x20 Thumb screws [1] to remove Air cleaner cover [2] and Air cleaner element [3].

Fig. 18



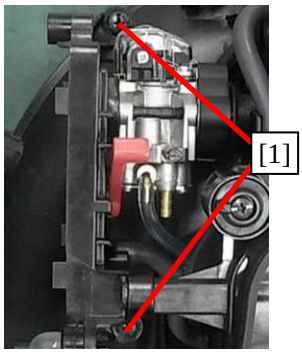
11 Remove Fuel tube 3-370 (black) [1] from Carburetor [2] with 1R311.

Fig. 19



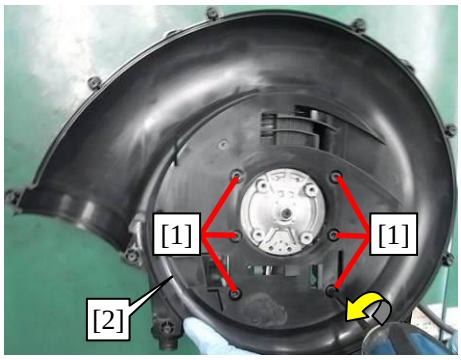
12 Remove Fuel tube 3-370 (clear) [1] from Primer pump [2], and then remove Fuel tank.

Fig. 20



13 Remove two 5x20 Tapping screws [1].

Fig. 21



14 Remove six M6x25 Hex socket head bolts [1] to remove Front volute case [2].

4-3 Recoil starter

4-3-1 Disassembling Recoil starter

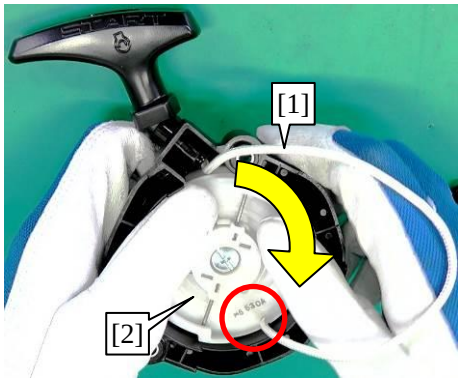
1 Follow Fig. 13 to remove Recoil starter.

Note
Be sure to wear leather gloves to protect your hands.

Fig. 22

2 Pull Starter knob [3] approximately 200mm, then hold Reel [1] so that it does not rotate back and then pull out Starter rope [4] from the triangular gap between Recoil starter [2] and Reel [1].

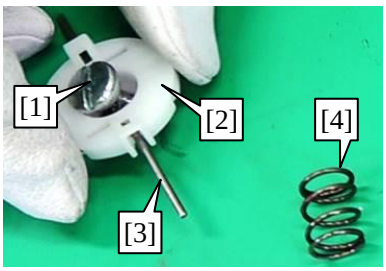
Fig. 23



3 Hook Starter rope [1] on the U-shaped notch of Reel [2], and then turn Reel [2] clockwise to release the tension from Spiral spring.

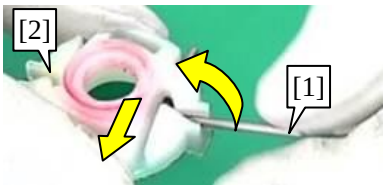
Note
Once the tension is released from Spiral spring, do not turn Reel [2] clockwise any further or Spiral spring will be deformed.

Fig. 24



4 Remove Set screw [1] to remove Collar [2], Swing arm [3] assembly and Friction spring [4].

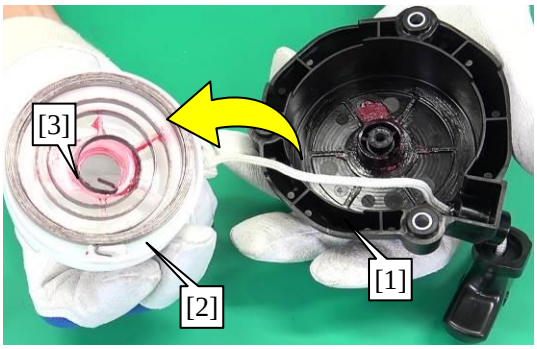
Fig. 25



5 Remove two Swing arms [1] from Collar [2].

4-3-2 Disassembling/Assembling of Spiral spring

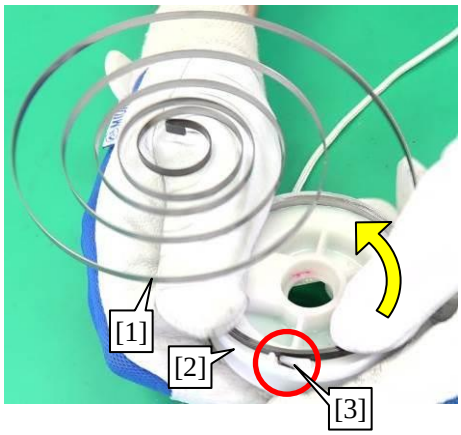
Fig. 26



1 Take Reel [2] out of Recoil starter [1].

Tips
Remove Reel [2] carefully so that the inside end of Spiral spring [3] is removed from Recoil starter [1] and placed in Reel [2].

Fig. 27



2 When Spiral spring [1] is removed for repair or accidentally pops out of Reel [2], fit it back in place as follows:

1 Hook the outer end of the spring into the notch [3] of Reel [2].

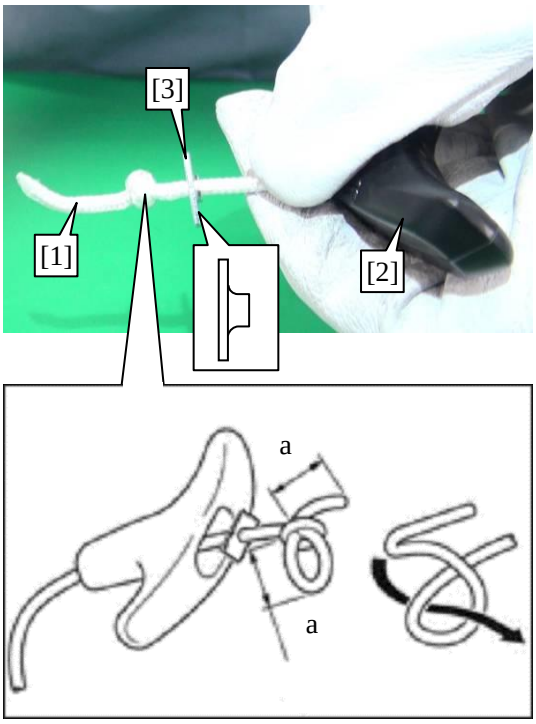
2 Rewind the spring.

Tips
When rewinding Spiral spring [1], keep pressing it down to prevent it from popping out.

3 Apply Makita grease FA No.2 to the whole portion of Spiral spring.

4-3-3 Assembling Recoil starter

Fig. 28

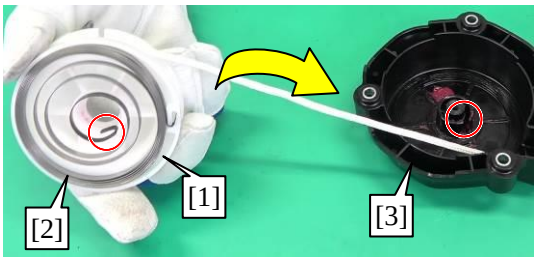


1 Pass one end of Starter rope [1] through Starter knob [2] and Rope stopper [3], and then tie a knot in the end of the rope.

Note
• Be sure to wear leather gloves to protect your hands. • Face the protruding side of Rope stopper [3] towards Starter knob [2]. • Tie the knot in Starter rope [1]. Each length (a) should be approximately 10mm.

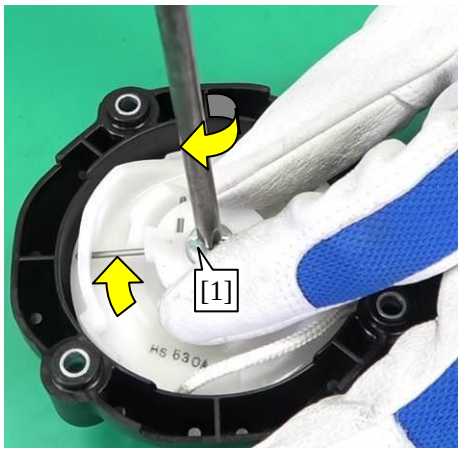
2 Wind the other end of Starter rope on Reel, leaving approximately 200mm unwound.

Fig. 29



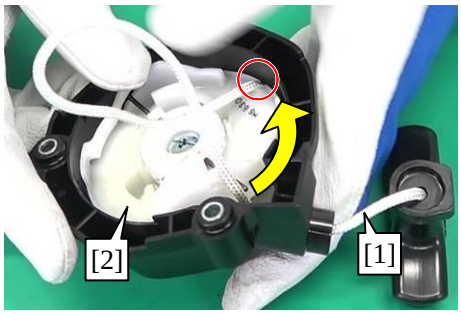
3 Put Reel [1] into Recoil starter [3]. When assembling them together, be sure to look in the center hole of Reel [1] to engage the inner end of Spiral spring [2] with the hook of Recoil starter [3].

Fig. 30



4 Install Friction spring, and then fasten Collar and Swing arm assembly to Reel with Set screw [1].

Fig. 31

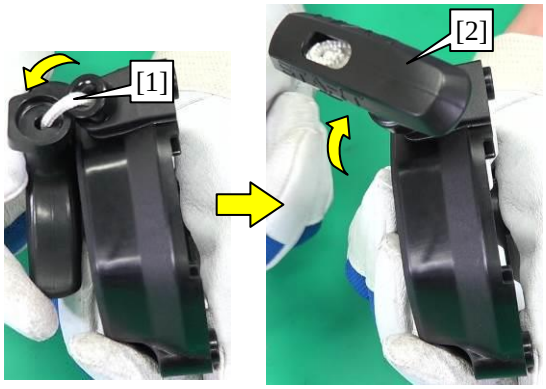


5 Hook Starter rope [1] on the U-shaped notch of Reel [2], and then turn Reel [2] counterclockwise at least three turns to increase the tension on Spiral spring.

Note
Do not turn Reel [2] clockwise or Spiral spring will be deformed.

6 Unhook Starter rope from the U-shaped notch to let Reel wind up Starter rope into Recoil starter.

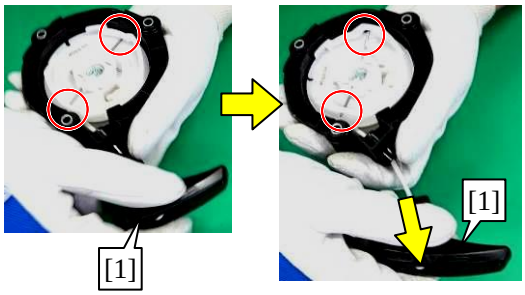
Fig. 32



7 Make sure that Starter rope [1] is wound up with an optimum tension.

Note
Starter knob [2] should get upright by itself if you let go of it, and Reel should turn approximately one more turn even after Starter rope [1] is pulled to the full.

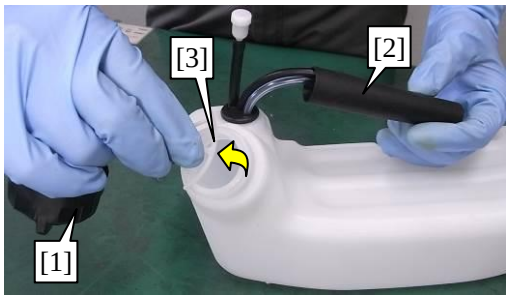
Fig. 33



8 Check Swing arms for correct operation.
They should be raised when you pull Starter knob [1], and should be lowered down back to the initial position when you release Starter knob [1].

4-3-4 Disassembling Fuel tank

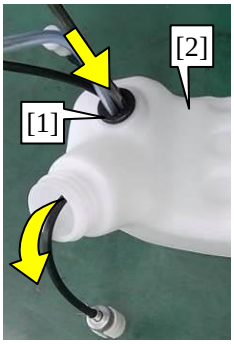
Fig. 34



1 Remove Fuel tank cap assembly [1] and Tube guard 20-102 [2].

Note
Be careful not to break Cap holder [3] of Fuel tank cap assembly [1]. Be sure to hook your finger on Cap holder [3], and then pull it out of Fuel tank.

Fig. 35

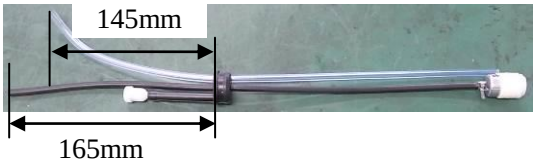


2 Push Grommet [1] into Fuel tank [2] with a Phillips screwdriver or the like, and then pull Tubes out of the fuel filler opening with 1R311.

Note
Be sure to clean Grommet [1].

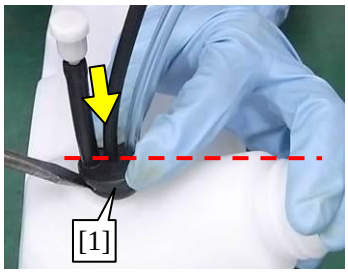
4-3-5 Assembling Fuel tank

Fig. 36



1 Pass Tubes through Grommet.

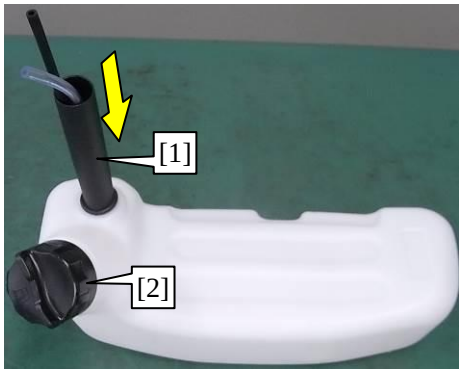
Fig. 37



2 With a slotted screwdriver, assemble Grommet [1] to Fuel tank.

Note
The clear Tube should be placed to the fuel filler opening side, and all the three Tubes should be on the red dotted line.

Fig. 38

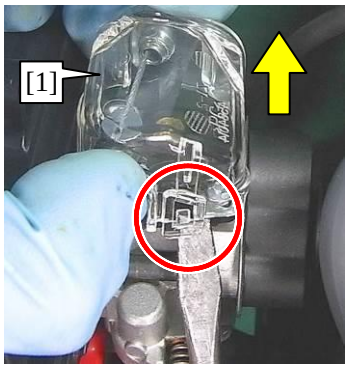


3 Install Tube guard 20-102 [1] and Fuel tank cap assembly [2].

4-3-6 Disconnecting Control cable

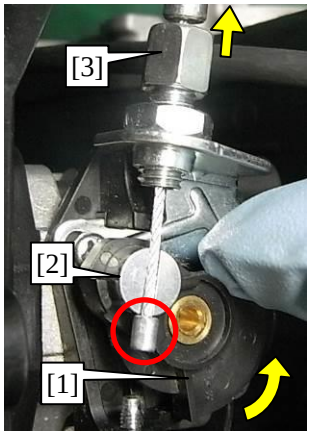
1 Disconnect two Straight terminals and remove two Strain relieves. (Refer to Fig. 15 and Fig. 16.)

Fig. 39



2 With a slotted screwdriver, pry up the locking tab to remove Carburetor cover [1].

Fig. 40



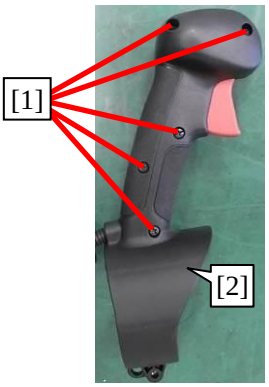
3 Turn Throttle [1] clockwise and hold it there with your finger. Then remove the end of Control cable from Swivel [2], and then pull it off from Adjust screw [3].

4-4 Control lever

4-4-1 Disassembling Control lever (for Model EB5300TH)

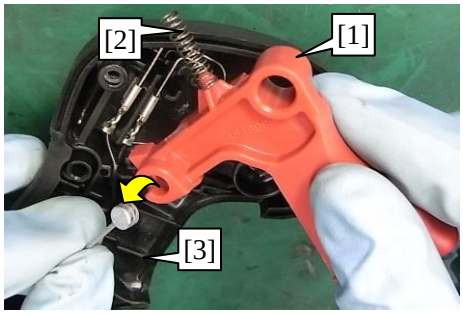
1 According to 4-1-1, remove M5x30 Thumb screw.

Fig. 41



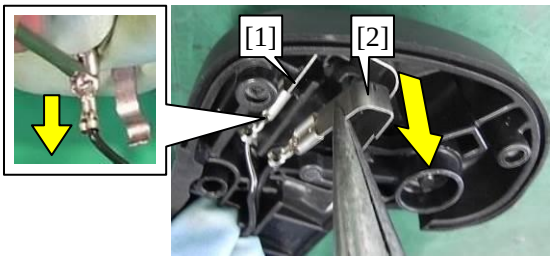
2 Remove five 4x18 Tapping screws [1] to remove Lever case R [2].

Fig. 42



3 Remove Throttle lever A [1] and Compression spring 4 [2] from Lever case L [3], and then disconnect the barrel nipple of Control cable from Throttle lever A [1].

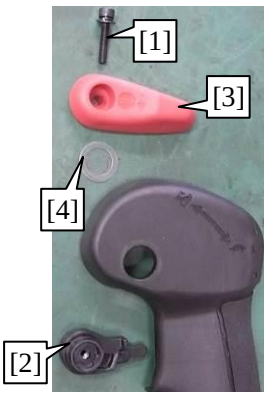
Fig. 43



4 Release the corrugated tube, and remove Leaf spring A [1]/ B [2] with long-nose pliers.

Tips
Remove Flag receptacles while releasing lock with a slotted screwdriver or the like.

Fig. 44

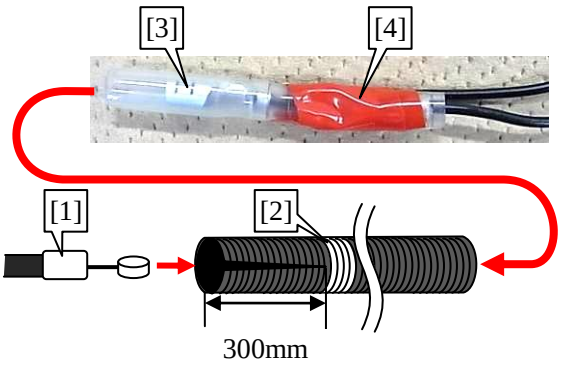


5 Remove M4x20 Hex socket head bolt [1] to remove Throttle link [2] and Throttle lever B [3]. In this step, Flat washer 12 [4] is also removed.

	6 Pull Control cable and Lead unit out of Corrugated tube. **Tips** First, pull out the wire of Control cable, and then one by one, pull out the two lead wires (with Straight terminal) of Lead unit.

4-4-2 Assembling Control lever (for Model EB5300TH)

Fig. 45

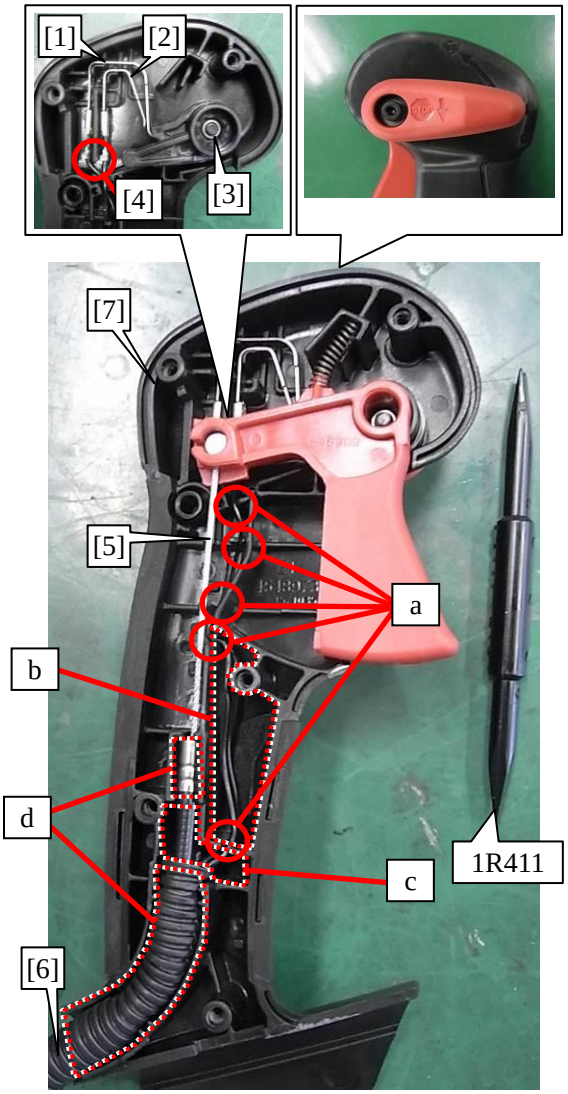


1 Route Lead unit and Control cable [1] through Corrugated tube [2].

Tips
Using vinyl tape or the like, attach the male straight terminal [4] of Lead unit to the back of the cover tube of the female straight terminal [3]. And then insert the two terminals into Corrugated tube [2] to route the two lead wires at the same time.

Note
Insert the two straight terminals into Corrugated tube [2] from the end without the white marking, and insert the barrel nipple end of Control cable [1] from the end with the white marking.

Fig. 46



2 Assemble Control lever by reversing the disassembly procedure.

3 Install Leaf spring A [1] and Leaf spring B [2] so that Throttle link [3].

4 Fix the lead wires [4] of Lead unit in the lead wire holders indicated by (a).

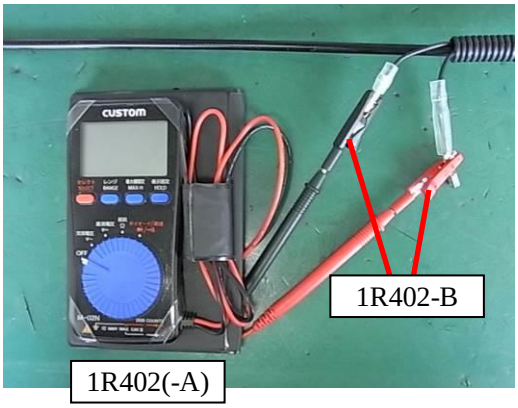
5 The slack portion of the lead wires [4] of Lead unit should be put in the space indicated by (b) and (c).

6 Control cable [5] and Corrugated tube [6] should be put in the space indicated by (d).

Note
Make sure that Leaf spring A [1] and Leaf spring B [2] are secured to Lever case [7] and they work properly.

Tips
• Refer to 6 CIRCUIT DIAGRAM and 7 WIRING DIAGRAM for wiring of the lead wires. • Fix lead wires into lead wire holders with 1R411.

Fig. 47



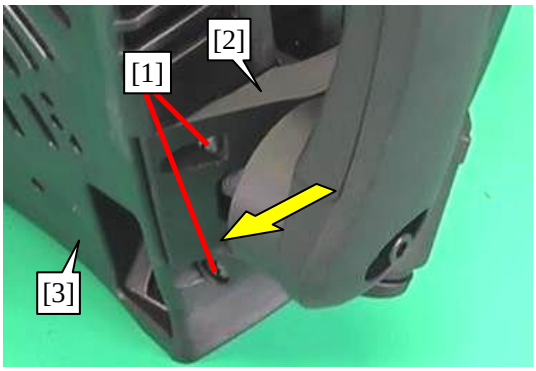
7 Using 1R402-A, make sure that there is conduction when Control lever B [1] is set to “O”, and that there is no conduction when Control lever B [1] is set to ”I”.

Tips
By attaching 1R402-B to the tip of each probe of 1R402-A, you can do the check easily, with clipping the straight terminals with the probes.

4-4-3 Disassembling Control arm (for Model EB5300WH)

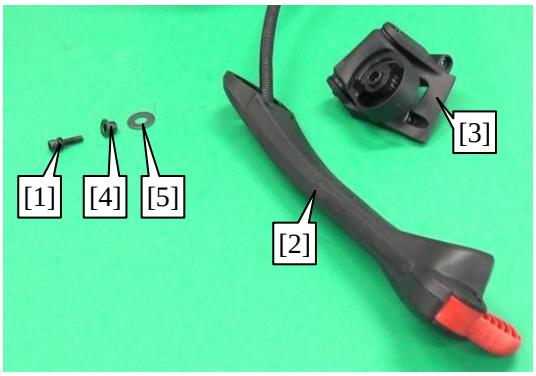
1 According to Fig. 39 and Fig. 40, remove Lead unit and Control cable.

Fig. 48



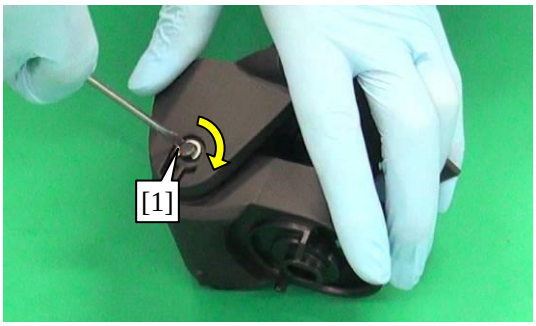
2 Remove two 5x20 Tapping screws [1] to remove Arm base section [2] from Frame [3].

Fig. 49



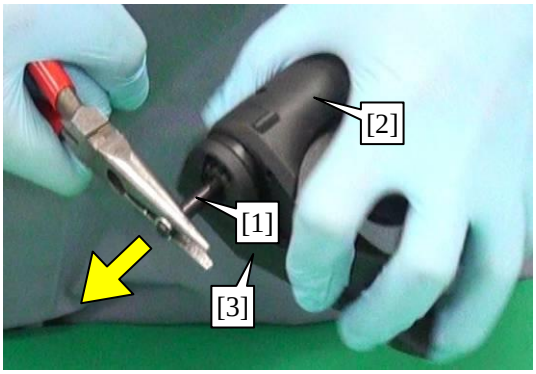
3 Remove M6x25 Hex socket head bolt [1] to remove Arm [2] and Arm base section [3]. In this step, Sleeve 7 [4] and Flat washer 12 [5] are also removed.

Fig. 50



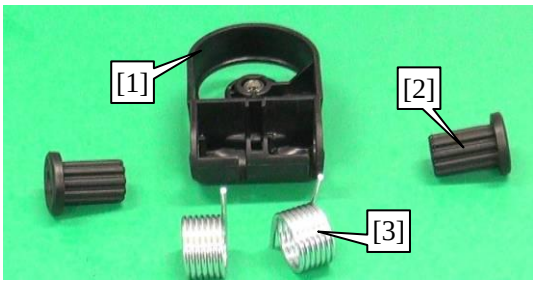
4 Using a slotted screwdriver, remove one of two Stop rings E-4 [1].

Fig. 51



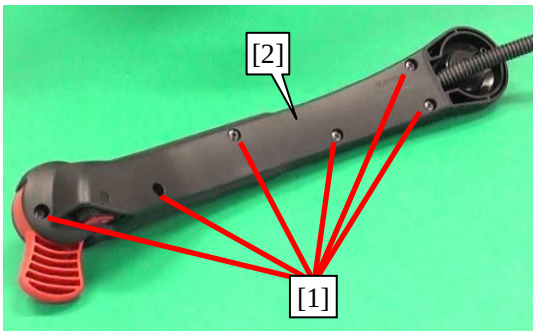
5 Using long-nose pliers, pull off Rod 6 [1] from the opposite side, and then remove Arm base [2] and Arm base holder [3].

Fig. 52



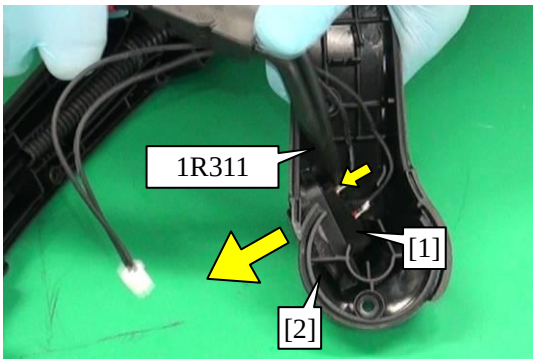
6 Remove two Rubber sleeves 6 [2] from Arm base [1]. and then remove two Torsion springs 21 [3].

Fig. 53



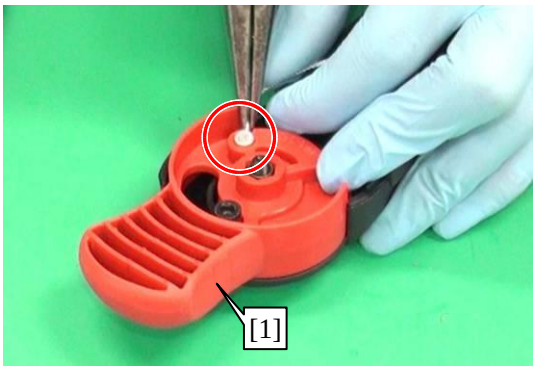
7 Remove six 4x18 Tapping screws [1] to remove Arm cover [2].

Fig. 54



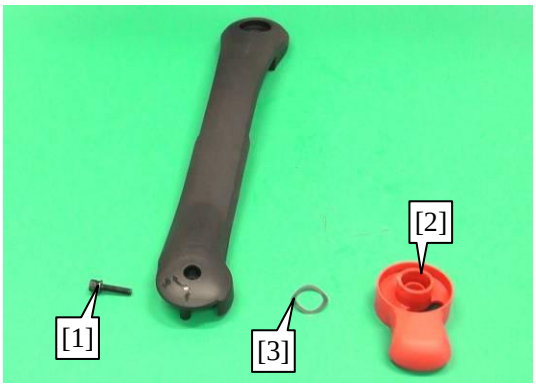
8 Disconnect the connector of Lead unit, and then push Switch unit [1] out of Arm cover [2] with 1R311.

Fig. 55



9 Remove Corrugated tube, and then disconnect the barrel nipple of Control cable from Throttle lever [1].

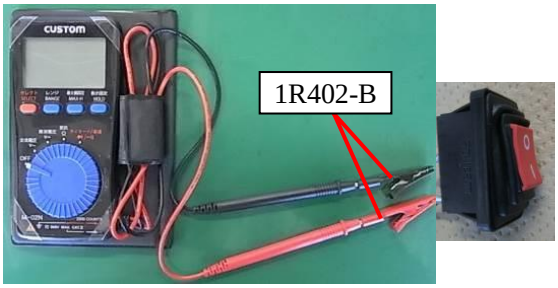
Fig. 56



10 Remove M5x25 Hex socket head bolt [1] to remove Throttle lever [2]. In this step, Wave washer 20 [3] is also removed.

Fig. 57

1R402(-A)



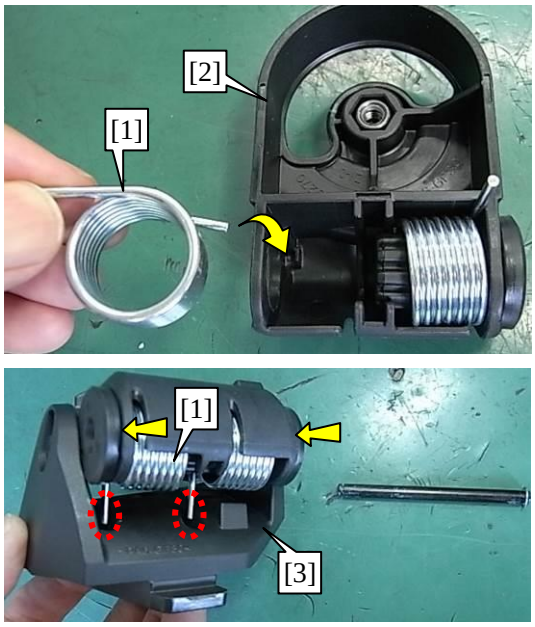
11 Using 1R402-A, make sure that there is conduction when Control lever is set to “O”, and that there is no conduction when Control lever is set to ”I”.

Tips
By attaching 1R402-B to the tip of each probe of 1R402-A, you can do the check easily, with clipping the straight terminals with the probes.

4-4-4 Assembling Control arm (for Model EB5300WH)

1 Assemble Control arm by reversing the disassembly procedure.

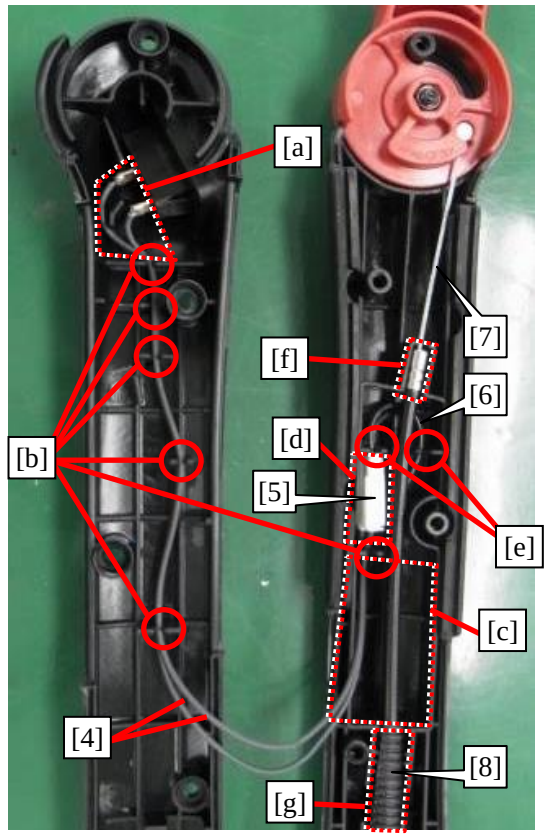
Fig. 58

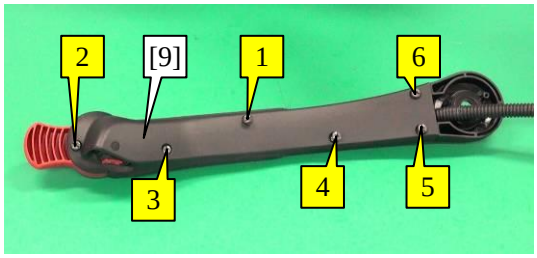


2 The orientation of the two Torsion springs 21 [1] matters. Put the spring in the spring chamber of Arm base [2] with the short leg on the far side.

3 Fit the long leg of Torsion spring 21 [1] in the depressed portion of Arm base holder [3], then assemble Arm base to Arm base holder.

Fig. 59





4 Put the lead wires [4] of Switch unit in the space indicated by (a).

5 Fix the lead wires [4] of Switch unit in the lead wire holders indicated by (b).

6 The slack portion of the lead wires [4] of Switch unit should be put in the space indicated by (c).

7 Put Connector [5] in the space indicated by (d).

8 Fix the lead wires [6] of Lead unit in the lead wire holders indicated by (e).

9 Put Control cable [7] in the space indicated by (f).

10 Put Corrugated tube [8] in the space indicated by (g).

11 Fasten Arm cover [9] by tightening six 4x18 Tapping screws in numerical sequence as shown below left.

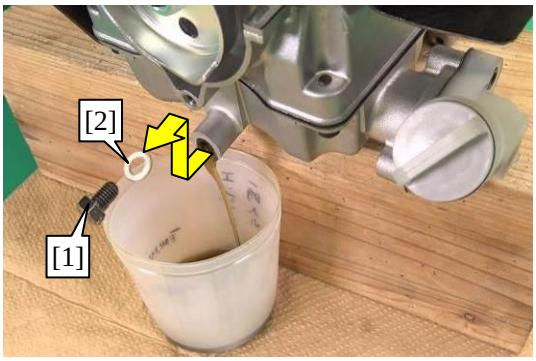
Tips
Refer to 6 CIRCUIT DIAGRAM and 7 WIRING DIAGRAM for wiring of the lead wires.

4-5 Engine section
4-5-1 Disassembling Engine

The following parts can be disassembled from Engine section without removing Blower section: Cam gear, Muffler, Air cleaner plate, Carburetor, Insulator, Ignition coil. The following procedure is that the blower section is removed.

1 According to Fig. 13 and Fig. 14, remove Recoil starter and Engine cover complete.

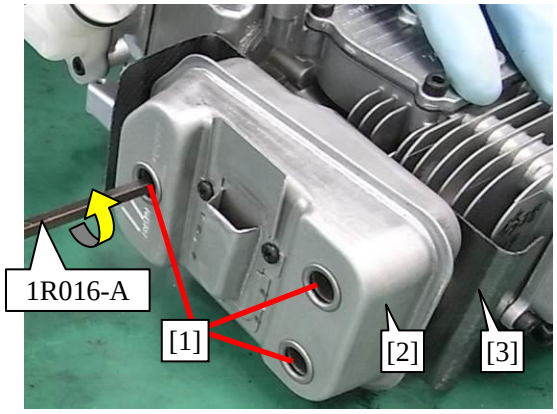
Fig. 60



2 Remove M8x12 Hex bolt (drain bolt) [1] to drain Oil case.

Note
Be careful not to lose Gasket (washer) [2].

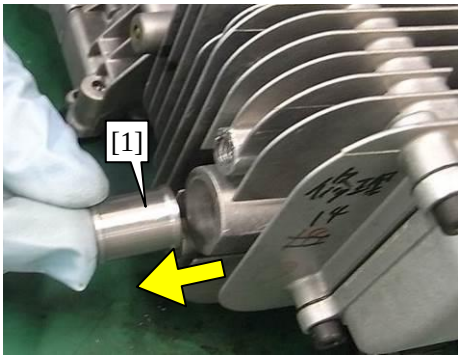
Fig. 61



3 Remove three M6x20 Hex socket head bolts [1] to remove Muffler [2] and Muffler gasket [3].

Note
Use a ratchet wrench, a bit adapter and 1R016-A to loosen the bolt because it is a bolt with high strength thread locking patch.

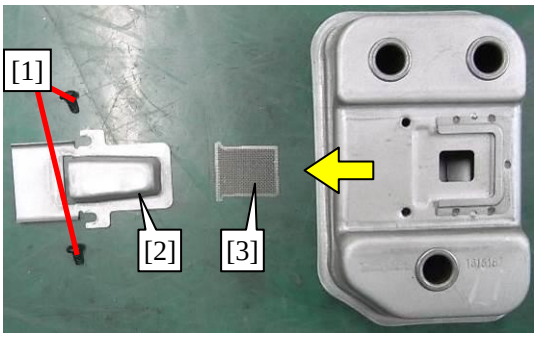
Fig. 62



4 Remove Exhaust port spacer [1] from Cylinder.

4-5-2 Disassembling Muffler

Fig. 63



1 Remove M4x6 Pan head screw [1], and then remove Tail plate [2] and Spark arrester [3] out of Muffler.

Tips
If there are carbon deposits on Spark arrester [3], remove them with commercial carbon remover.

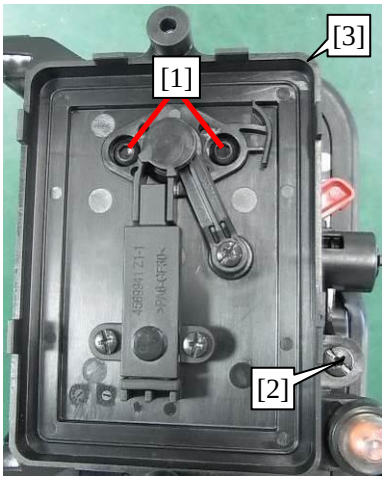
4-5-3 Assembling Muffler

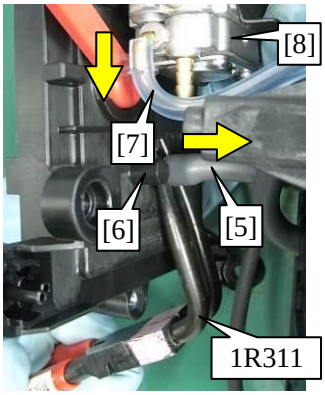
1 Assemble by reversing the disassembly procedure.

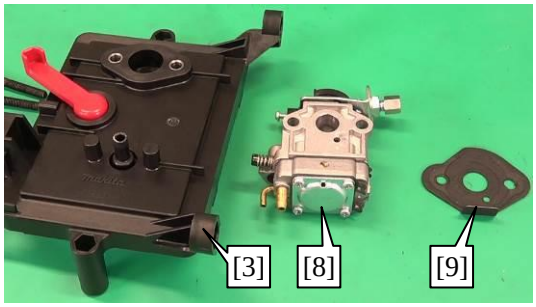
4-5-4 Disassembling Engine (continued)

1 According to Fig. 17, remove Air cleaner cover and Air cleaner element.

Fig. 64







2 Close the choke, and loosen two M5x50 Hex socket button head bolts [1].

Tips
At this point, do not remove two M5x50 Hex socket button head bolts [1].

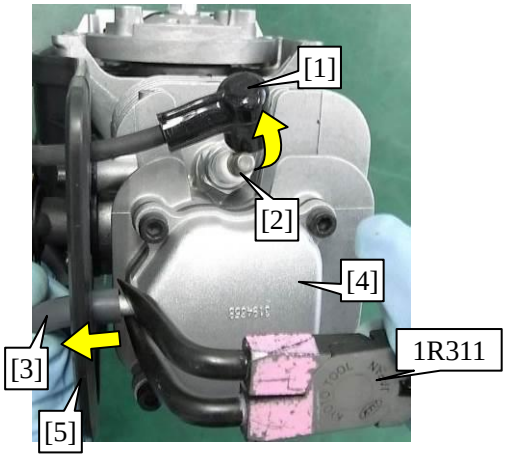
3 Remove 5x20 Tapping screw [2].

4 Disconnect Tube 5-55 [5] from the nipple [6] of Blowby guide with 1R311.

5 Disconnect Fuel tube 3-85 (transparent) [7] from Carburetor [8].

6 Remove Carburetor [8], Carburetor gasket [9] and Air cleaner plate [3].

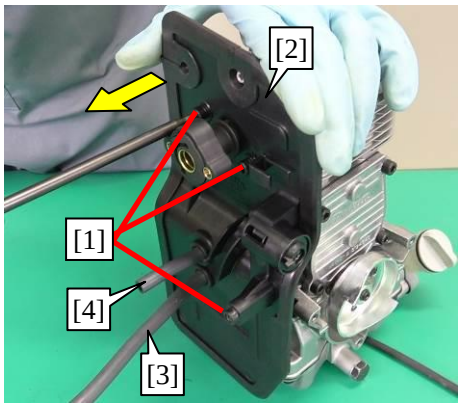
Fig. 65



7 Remove Plug cap [1] from Spark plug CMR6H [2].

8 With 1R311, remove Oil tube 5-195 [3] from Rocker cover [4], and then pull it out through the hole of Insulator seal [5].

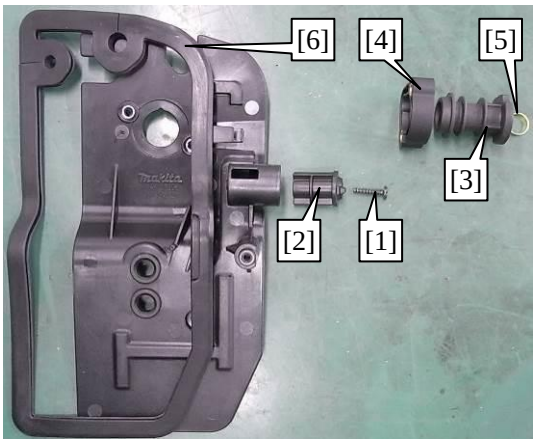
Fig. 66



9 Remove two M5x20 Hex socket head bolts [1], and remove Insulator [2].

10 With 1R311, remove Oil tube 5-195 [3] and Tube 5-55 [4] from Cylinder block.

Fig. 67

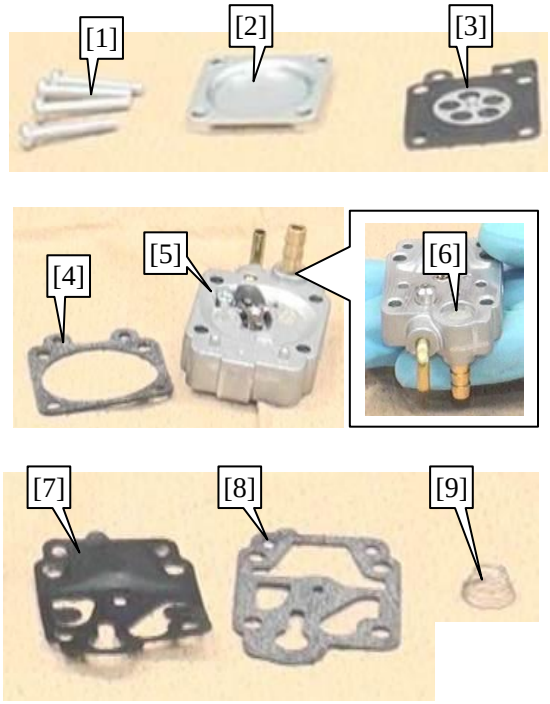


11 Remove the following parts:

- 4x18 Tapping screw [1]
- Icing valve [2]
- Fuel suction line [3]
- Carburetor bracket [4]
- Inner ring [5]
- Insulator seal [6]

4-5-5 Disassembling Carburetor

Fig. 68



1 Remove four Screws [1] to remove Metering diaphragm cover [2], Metering diaphragm [3], Metering diaphragm gasket [4], Pump body assembly [5], Inlet screen [6], Pump diaphragm [7] and Pump gasket [8].

2 Remove Conical compression spring 5-9 [9].

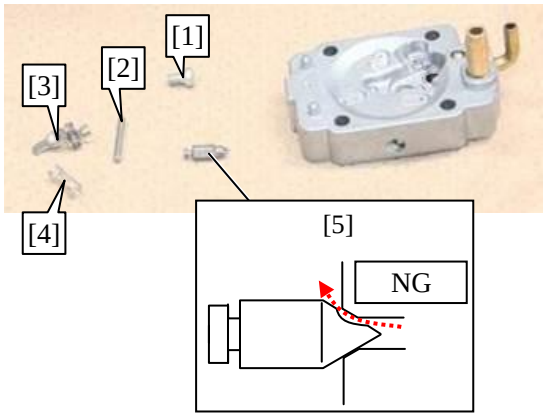
3 If Metering diaphragm [3] or Pump diaphragm [7] is deformed or hardened, replace it with a new one.

4 Remove and clean Inlet screen [6] with carburetor cleaner; when removing Inlet screen, be careful not to deform it.

5 Use air duster as little as possible or it may break the inner parts of Carburetor such as Check valve.

Note
Once Metering diaphragm gasket [4] or Pump gasket [8] is removed, be sure to replace it with a new one.

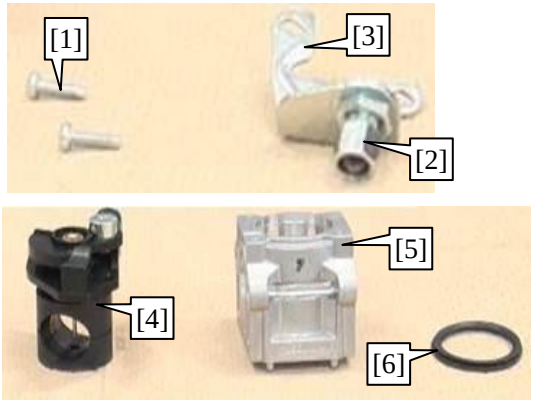
Fig. 69



6 Remove Screw [1] to remove Metering lever pin [2], Lever [3], Spring [4] and Inlet needle valve [5].

Note
Replace Inlet needle valve [5] if the valve tip is worn.

Fig. 70

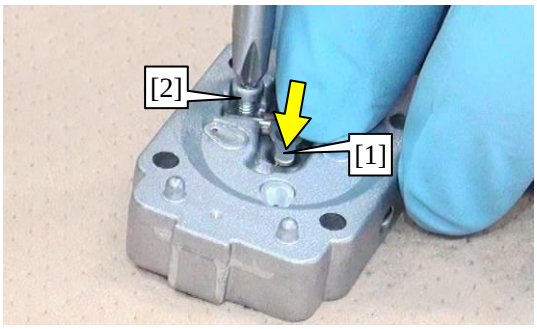


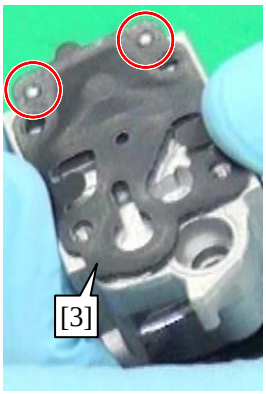
7 Remove two M3x10 Pan head screws [1] to remove the assembly of Adjust screw [2] and Cable bracket [3] and Throttle [4] from Carburetor body [5].

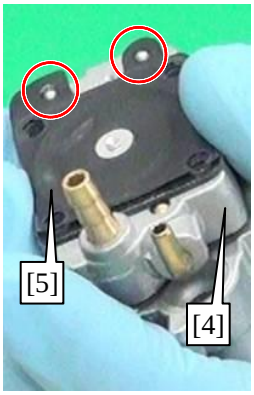
8 Remove Packing ring [6] from Carburetor body [5].

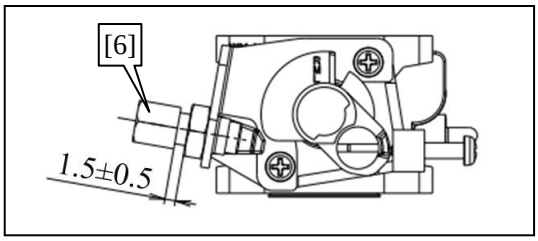
4-5-6 Assembling Carburetor

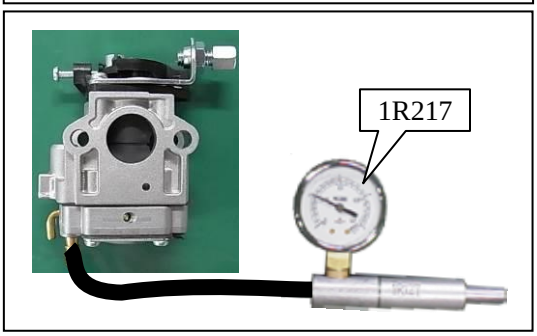
Fig. 71











1 Assemble Carburetor by reversing the disassembly procedure.

2 Clean up the parts with gasoline or the like, and then blow away the gasoline with air duster gun or the like.

Note
Do not blow air at a high pressure.

3 If Pump diaphragm [3] and Metering diaphragm [5] are deformed/ hardened/ damaged/ corroded, replace them with new ones.

4 While pressing down Lever [1], install Screw [2], and then make sure that Lever [1] is movable.

5 Match the two holes of Pump gasket and Pump diaphragm [3] with the positioning pins of Carburetor body, and then install Pump body assembly [4] on Carburetor body.

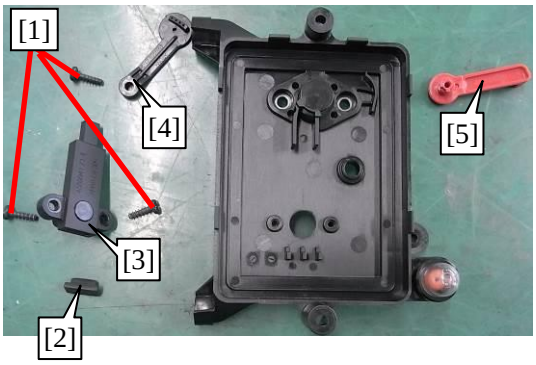
6 Match the two holes of Metering diaphragm gasket and Metering diaphragm [5] with the positioning pin of Pump body assembly, and then assemble Metering diaphragm cover to Pump body assembly.

7 Adjust Adjust screw [6] so that the clearance is 1.0 to 2.0mm.

	Note But do not take the clearance width into consideration to adjust Adjust screw [6], if Throttle of Carburetor does not move to the fully open/idle positions when you operate Throttle lever under the assembling-completed condition; in the case of EB5300TH, it indicates that Control lever is installed on Swivel pipe complete without twist in the cable. 8 Check Carburetor for air leaks. Connect the tube of 1R127 with the fuel inlet nipple of Carburetor, and then increase the tester pressure up to 0.05Mpa. The pressure will remain unchanged for approximately 10 seconds if Carburetor has no leaks.

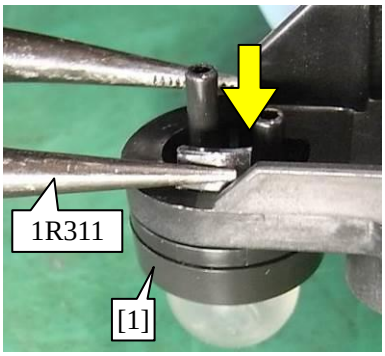
4-5-7 Disassembling Air Cleaner plate

Fig. 72



1 Remove three 4x14 Tapping screws [1] to remove Rubber plate [2], Blowby guide [3], Choke plate [4] and Choke lever [5].

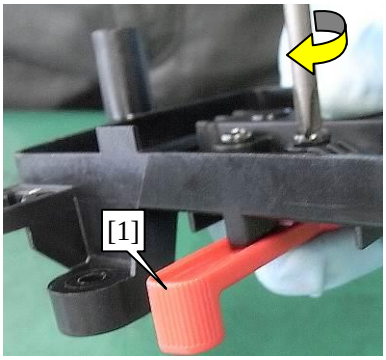
Fig. 73



2 With 1R311, squeeze the locking claws of Primer pump [1] to unlock from Cleaner case. Primer pump can now be removed.

4-5-8 Assembling Air Cleaner plate

Fig. 74

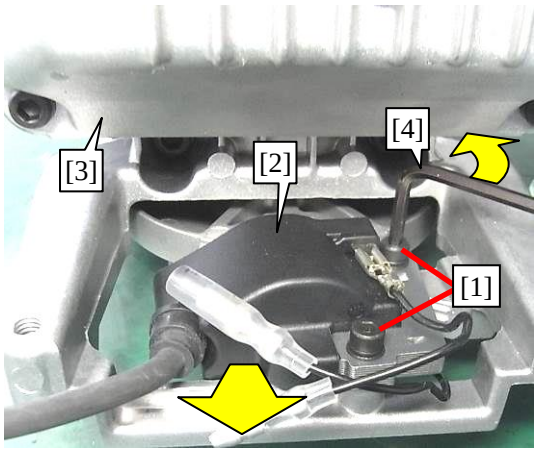


1 Assemble Air cleaner case by reversing the disassembly procedure.

2 Set Choke lever [1] to the fully open position. Supporting Choke lever with your fingers from the opposite side of Air cleaner case, fasten Choke plate to Choke lever with the screw.

4-5-9 Disassembling Engine (continued)

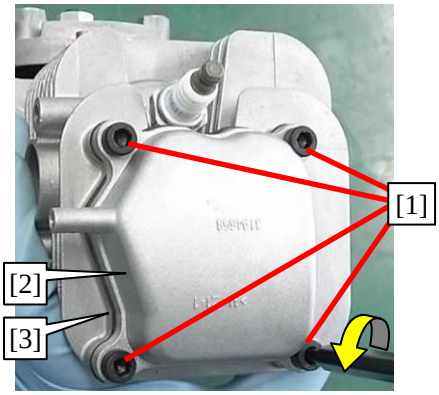
Fig. 75



1 Remove two M4x20 Hex socket head bolts [1] to remove Ignition coil [2].

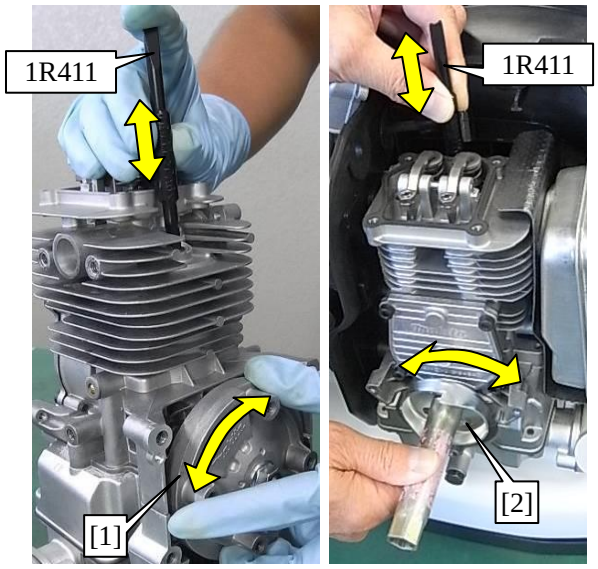
Tips
• Oil case [3] will interfere with removal of the bolt on the far side. So remove Oil case [3] or use an L-shaped hex wrench [4] to loosen the bolt. • Use 1R181 to check Ignition coil [2]. Refer to 4-5-10 for details on how to use the checker.

Fig. 76



2 Remove two M5x30 Hex socket head bolts [1] to remove Rocker cover [2] and Rocker cover gasket [3].

Fig. 77



3 For easy removal of Rod 2.5 from Rocker arm, position Piston at compression top dead center as follows:

1 Remove Spark plug and then insert 1R411 through the spark plug hole.

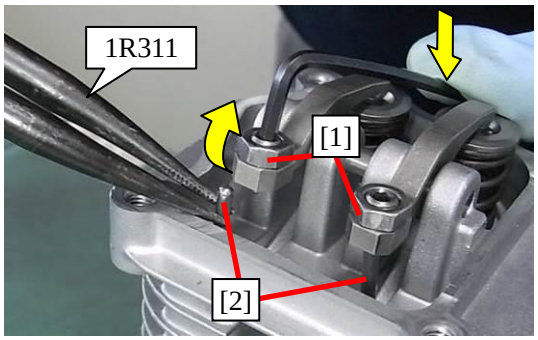
2 Turn Flywheel [1] until Piston reaches the highest position. (Turn Pulley [2] instead of Flywheel [1] if the blower body is assembled to the backpack frame.)

3 Turn Flywheel [1] (or Pulley [2]) 45 degrees left and right to confirm the position of Piston.

4 If Valve does not move, Piston is positioned at compression top dead center. If Valve moves, Piston is positioned at exhaust top dead center. In this case, bring Piston to compression top dead center by turning Flywheel [1] (or Pulley [2]) 360 degrees.

Tips
This method to find compression top dead center can be applied to our all 4-stroke engines.

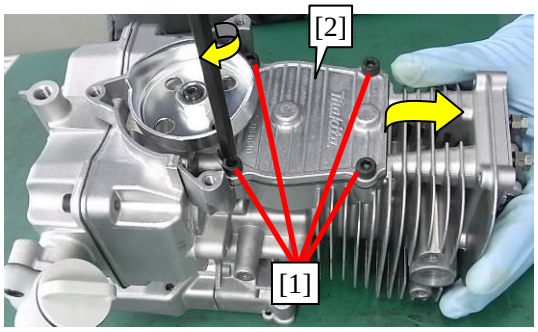
Fig. 78



4 Remove Rod 2.5 (2 pcs) [2] as follows. Insert a Hex wrench 2.5 into M5x9 Hex socket set screw [1]. Then, while pushing down the wrench to raise the screw, pull Rod 2.5 [2] out of Cylinder with 1R311.

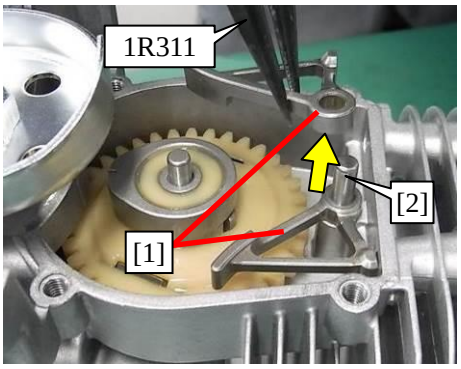
Tips
Rod 2.5 [2] can also be removed in the step of removing Cam gear cover.

Fig. 79



5 Remove four M5x20 Hex socket head bolts [1] to remove Cam gear cover [2] and Cam gear cover gasket.

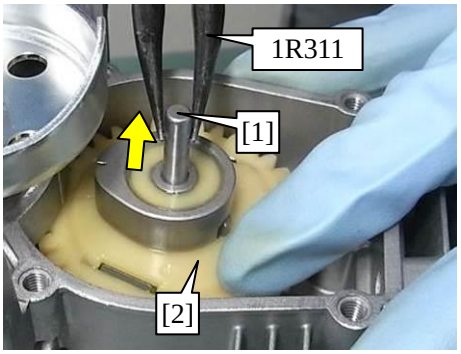
Fig. 80



6 With 1R311, remove two Cam lifters [1] and Pin 5 [2].

Tips
The left and right Cam lifters [1] are identical for easy assembling ; however, when assembling them to Pin 5 [2], be sure to install the one on your right first.

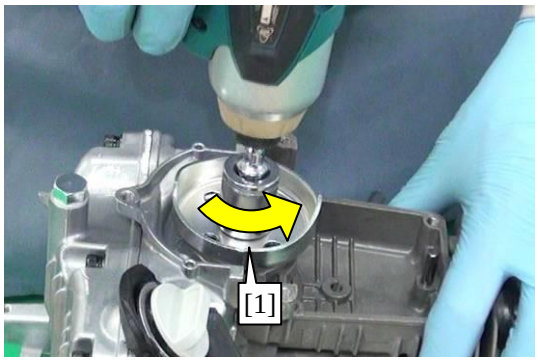
Fig. 81



7 With 1R311, pull off Pin 5 [1] to remove Cam gear [2].

Tips
Check the gear teeth for wear, and check the flyweight for damage. Flyweight is normal if you can push it in easily with finger and if it returns to the initial position easily.

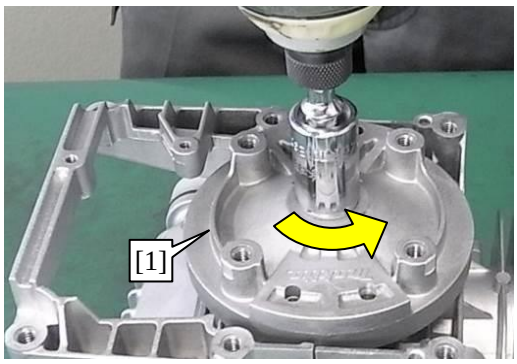
Fig. 82



8 Remove Pulley [1] by turning counterclockwise with an impact driver and Socket bit 15.

Tips
Tighten Spark plug CMR6H beforehand because this operation takes advantage of the power of air in Cylinder.

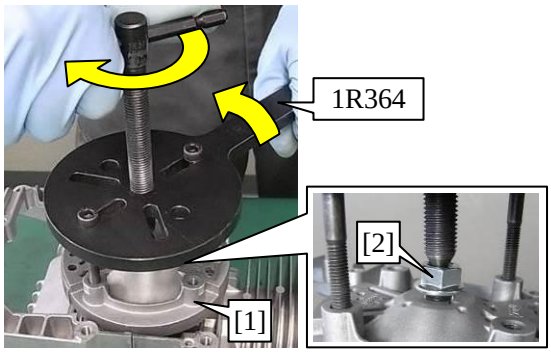
Fig. 83



9 Remove Flange nut M10 by turning counterclockwise with an impact driver and Socket bit 14.

Tips
Flywheel [1] is not screwed to Crankshaft, but the two parts are joined together via a taper connection.

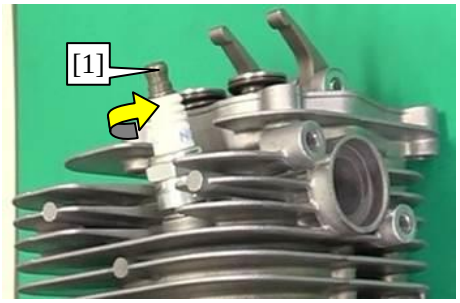
Fig. 84



10 Using 1R364, remove Flywheel [1].

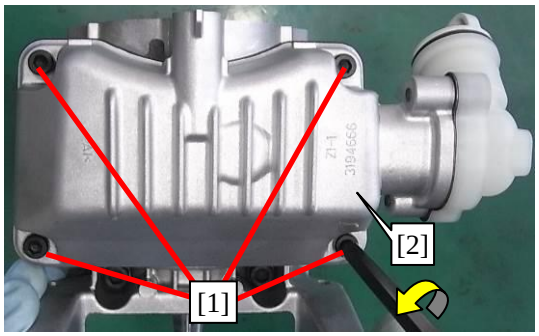
Tips
Temporarily tighten Flange nut M10 [2] to protect the threads of Crankshaft.

Fig. 85



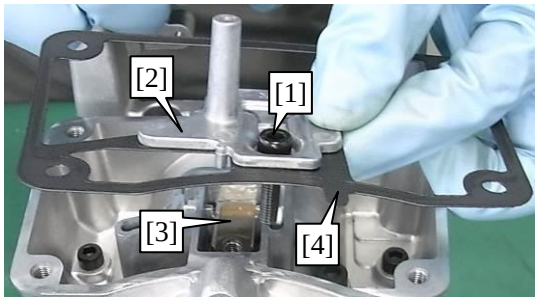
11 Remove Spark plug CMR6H [1] with Box wrench 16.

Fig. 86



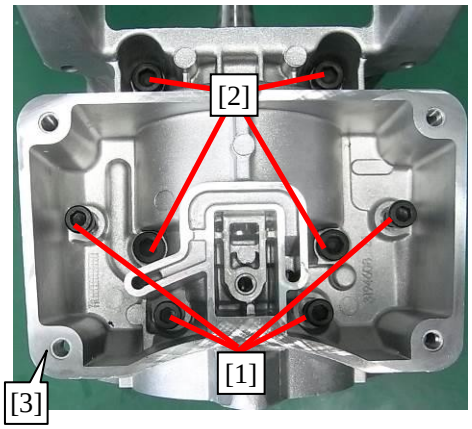
12 Remove four M5x20 Hex socket head bolts [1] to remove Oil case [2].

Fig. 87



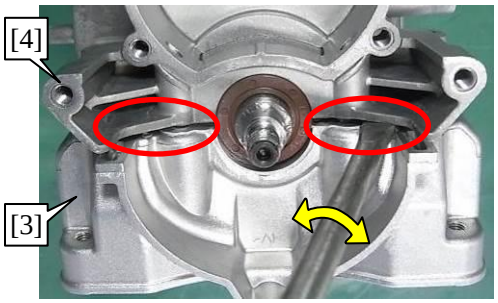
13 Remove M5x20 Hex socket head bolt [1] to remove Retainer plate [2], Reed valve [3] and Oil case gasket [4].

Fig. 88



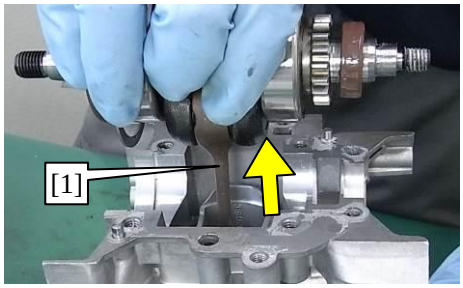
14 Remove four M5x20 Hex socket head bolt [1] and four M6x20 Hex socket head bolt [2] to separate Crankcase [3] from Cylinder block.

Fig. 89



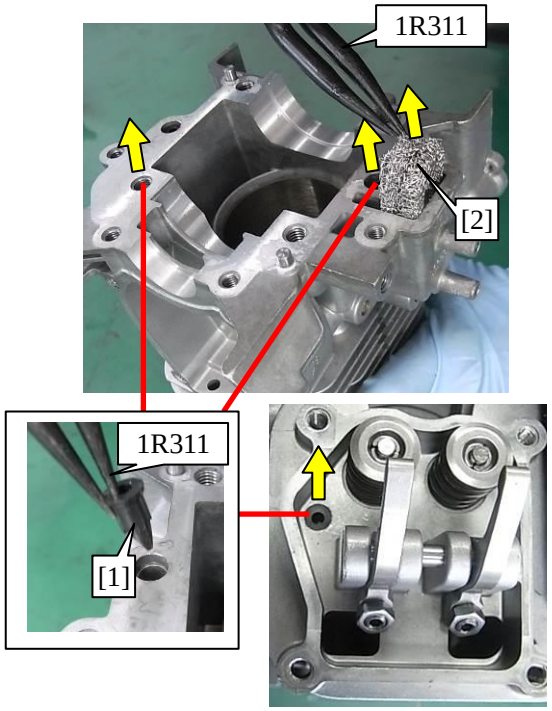
Tips
Crankcase [3] and Cylinder block [4] are securely joined together with liquid gasket. So, after removing the bolts, insert a slotted screwdriver into the gap of the mating face, and then turn the screwdriver to pry off Crankcase [3] from Cylinder block [4].

Fig. 90



15 Pull off the assembly of Crankshaft and Piston from Cylinder block [1].

Fig. 91



16 With 1R311, remove one Check valve [1] from the rocker chamber, and two Check valves [1] and Separator mesh [2] from the mating surface of Cylinder and Crankcase.

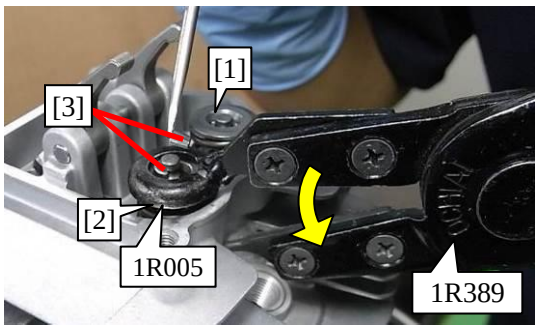
Tips
• If Check valve [1] is deformed or damaged, or remains open, replace it with a new one. • If Separator mesh [2] is clogged with sludge, clean up, or replace it with a new one.

Fig. 92

17 Prevent Intake valve and Exhaust valve from dropping by following the procedure as follows:

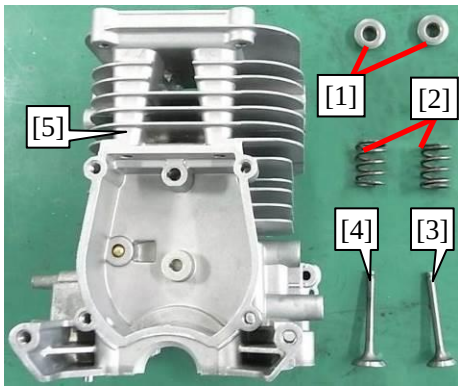
1 Clamp a plastic hammer securely in a vise.
2 Wrap a rag around the handle of the hammer.
3 Put Cylinder block [1] over the handle of the hammer.

Fig. 93



18 Compress Compression spring 12 [2] by pushing in and holding Retainer [1] with 1R389 and 1R005. And then, with a slotted screwdriver or the like magnetized with 1R288, remove Cotters [3] (Two Cotters are used for each Valve).

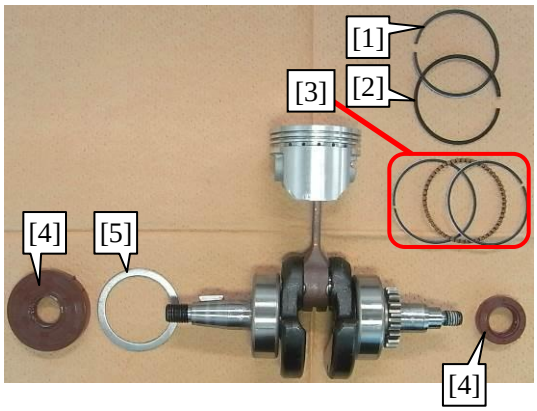
Fig. 94



19 Remove the following parts: Retainer (2 pcs) [1], Compression spring 12 (2 pcs) [2], Exhaust valve [3], Intake valve [4].

Tips
• If Valve is contaminated, clean it up with a carbon remover. • Rocker arm cannot be removed from Cylinder block because Rocker shaft is press-fitted into Cylinder block [5]. If it is broken, replace Cylinder block [5] with a new one.

Fig. 95

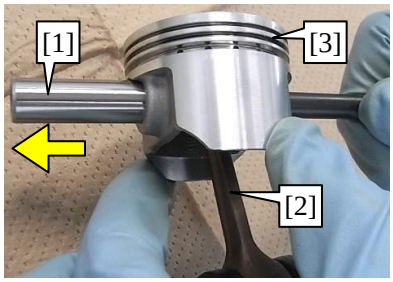


20 From Piston, remove Top ring [1], Second ring [2], Oil ring [3].

21 From Crankshaft, remove the following parts:

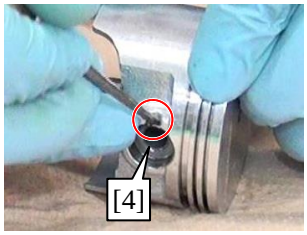
- Oil seal 15 [4]: Two different ones are used and the one on Key installation side has a larger outer diameter.
- Flat washer 35 [5].

Fig. 96



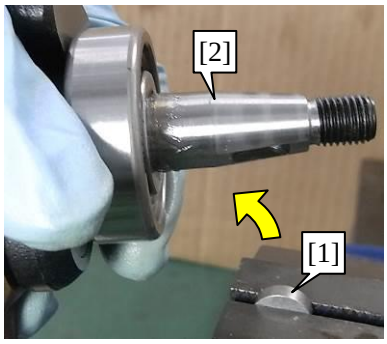
22 Piston [3] can be separated from Crankshaft [2] first by removing one of the two Ring springs 11 from Piston, then by pushing out Piston pin 11 [1] from the other side.

Fig. 97



Tips
Remove Ring spring 11 [4] by inserting a small slotted screwdriver or the like into the notch of Piston.

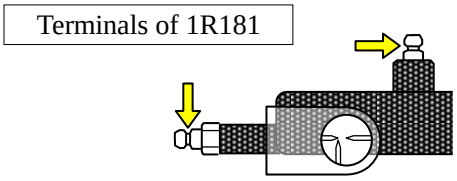
Fig. 98



23 Woodruff key 4 [1] can be removed by clamping it in a vise, then by pulling up Crankshaft [2].

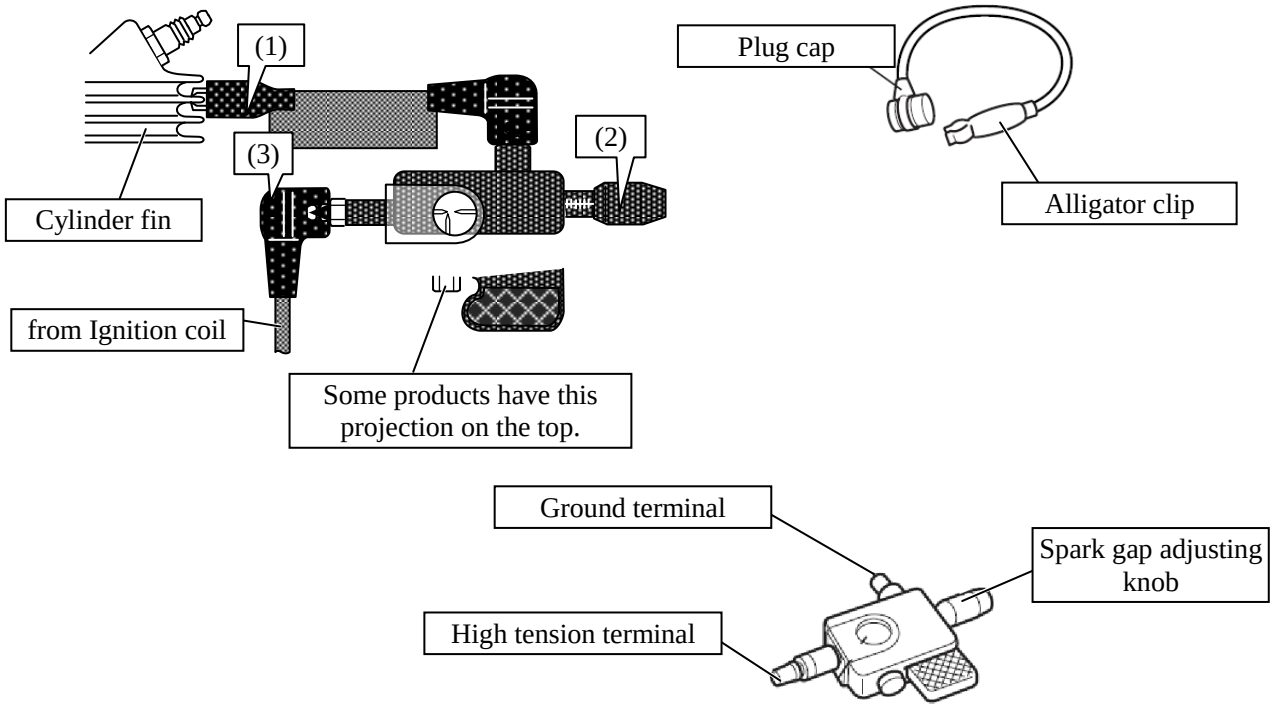
4-5-10 How to use 1R181 Ignition checker

- Do not remove Spark plug. (It is necessary to check that sparks are certainly generated by pulling Starter rope even against the compressed air in Cylinder for normal use.)
- The conventional method to check directly for spark, with Spark plug attached on the outside of Cylinder, is uncertain and therefore prohibited.
- Persons with a pacemaker should not use this checker.
- Do not touch any terminal during use because dangerous high voltage is applied to each terminal.
- Make sure that the terminals of 1R181 are firmly tightened.

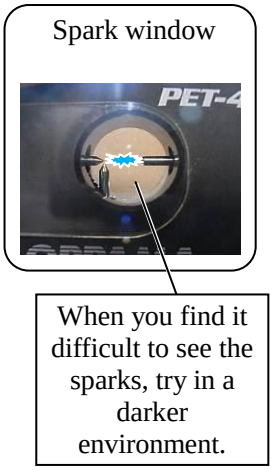


- Do not overtighten Spark gap adjusting knob.

1 First, check that sparks are properly generated at startup of the engine.



(1) Attach Alligator clip onto Cylinder fin.
(2) Set Spark gap adjusting knob to 6mm.
(3) Remove High-voltage cable from Spark plug, and attach it to 1R181.
(4)
A) Pull Starter rope strongly* ten consecutive times. * Some coils do not put out voltage until the engine speed reaches a certain level.
B) Check, through Spark window, that bluish white sparks are certainly generated ten consecutive times. And replace Ignition coil with a new one if there is no spark or spark generation is discontinued even once.

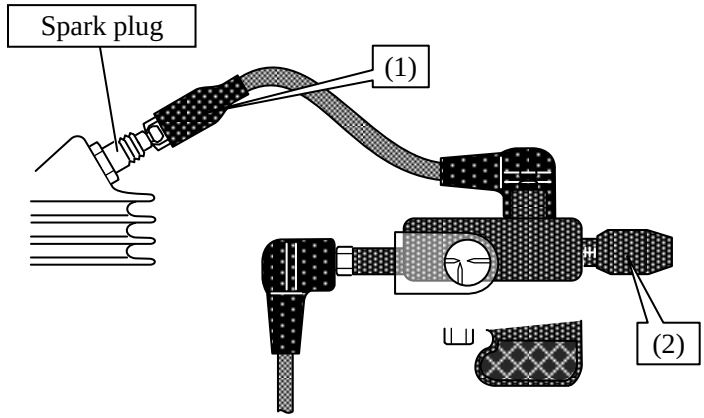


2 Next, check that sparks are properly generated while the engine is running. (description below contains only the differences from 1.

This check is to determine whether engine stall/poor acceleration is caused by spark misfire or some other problem.

You do not have to do this check, if sparks are properly generated in the startup check described in 1.

* Set Spark gap adjusting knob to 4mm. If the gap is narrower than 4mm, you will not be able to check the sparks visually, and if you leave the gap unchanged at 6mm, Ignition coil will be overloaded and broken.



(1) Attach Alligator clip onto Spark plug.
(2) Set Spark gap adjusting knob to 4mm.
(3) Start the engine and check that sparks are generated consecutively from idling to the maximum speed.
*Some models have a protection feature that causes misfire when the maximum speed is reached.

And replace Ignition coil with a new one, if spark generation is discontinued for even a moment, or if there is no spark when the engine speed increases to a certain level.

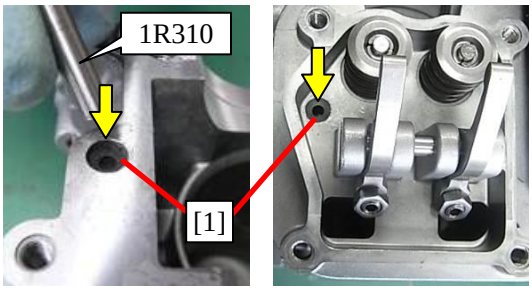
If spark generation is normal but the engine speed is not abnormal, suspect some parts other than Ignition coil.

* Finish this check in a short period of time, because the cover of Alligator clip can be melted due to the heat of the engine.

4-5-11 Important steps in assembling Engine

1 Assemble by reversing the disassembly procedure.

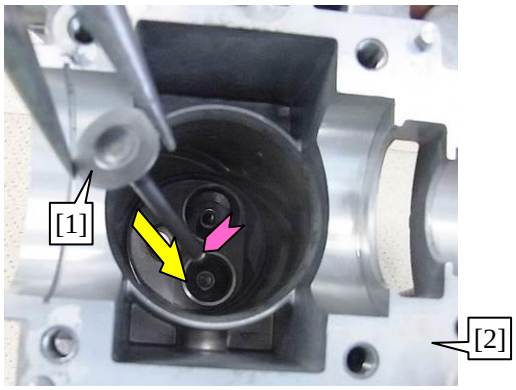
Fig. 99



2 With 1R310 or the like, push in the following Check valves [1] until they stop:

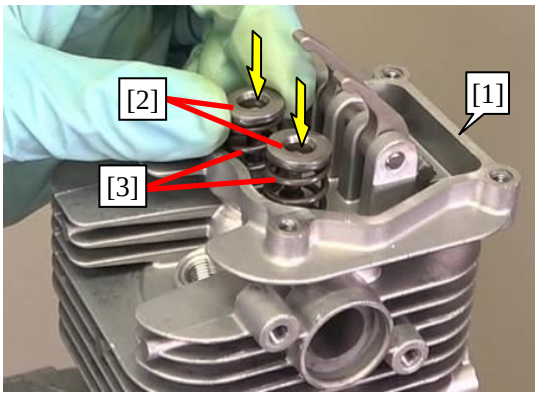
- One Check valve [1] on the rocker chamber
- Two Check valves [1] on the mating surface of Cylinder and Crankcase

Fig. 100



3 Apply a little amount of 4-stroke engine oil to the tips of Intake valve and Exhaust valve [1] and then insert them into Cylinder block [2].

Fig. 101

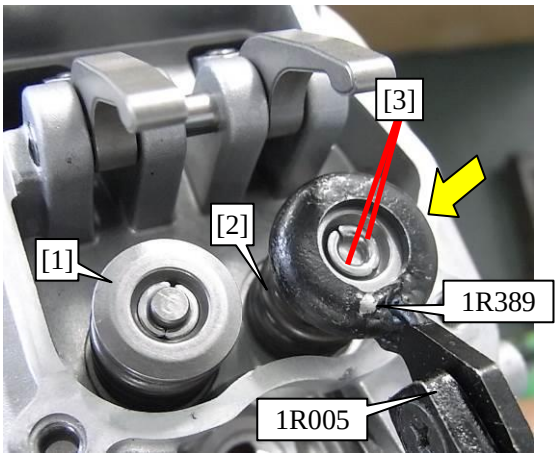


4 Prevent Intake valve and Exhaust valve from dropping by following the procedure as follows:

1 Clamp a plastic hammer securely in a vise.
2 Wrap a rag around the handle of the hammer.
3 Put Cylinder block [1] over the handle of the hammer.

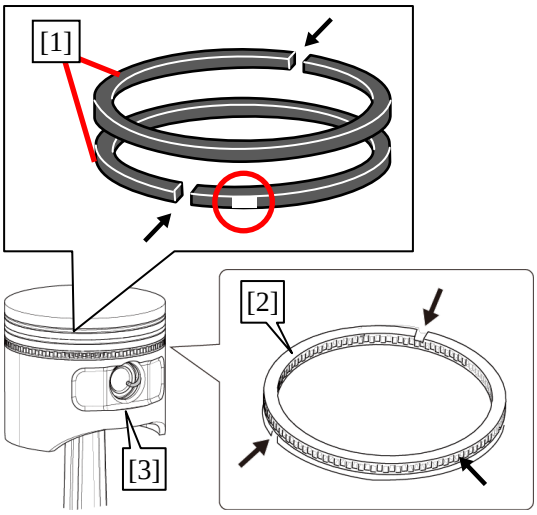
5 Install Retainer (2 pcs) [2] and Compression spring 12 (2 pcs) [3] on Cylinder block [1].

Fig. 102



6 Compress Compression spring 12 [2] by pushing in and holding Retainer [1] with 1R389 and 1R005. And then, with a slotted screwdriver or the like magnetized with 1R288, install Cotters [3] (Two Cotters are used for each Valve).

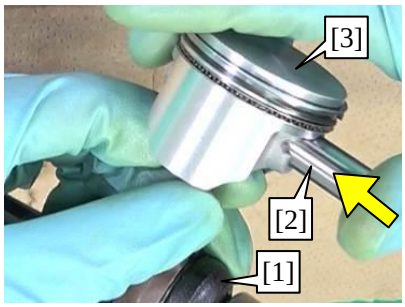
Fig. 103



7 The ring end gaps of Piston ring [1] should be at 180 degrees to each other. The ring end gaps of the three parts of Oil ring [2] should be at 120 degrees to one another.

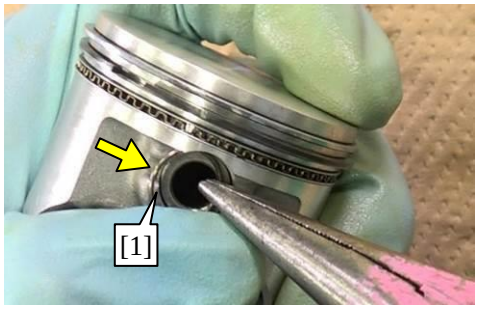
Tips
The orientation of Second ring matters. When the ring is installed on Piston [3], the white paint mark should be located on the right side of the ring end gap.

Fig. 104



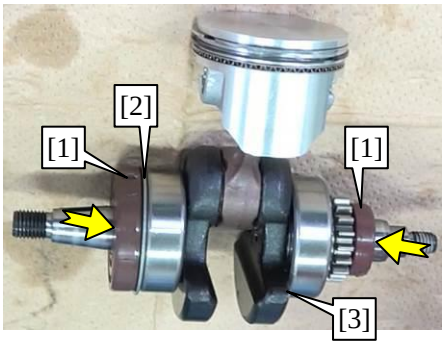
8 Apply a small amount of 4-stroke engine oil to the contact surface of Crankshaft [1] and Piston pin 11 [2] before assembling Piston [3] and Crankshaft [1] together by inserting Piston pin 11 [2].

Fig. 105



9 When installing Ring spring 11 [1], do not align the ring end gap with the notch of Piston.

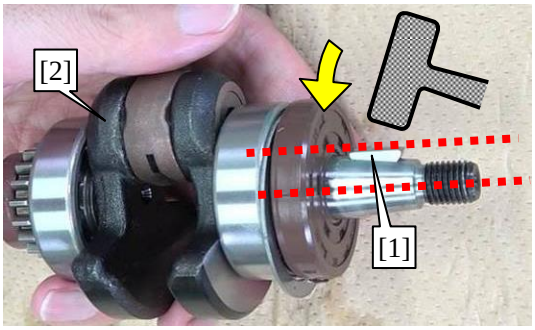
Fig. 106



10 Apply a small amount of grease to each Oil seal 15 [1]'s contact surface with Crankshaft before installing Flat washer 35 [2] and Oil seal 15 [1] (Two different ones are used and the one on Key installation side has a larger outer diameter.) onto Crankshaft [3].

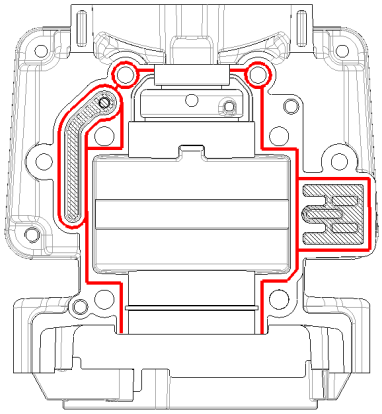
Note
Once Oil seal [1] is removed from Crankshaft [3], replace it with a new one.

Fig. 107



11 When installing Woodruff key 4 [1] onto Crankshaft [2], tap the key with a plastic hammer until the surface of the key is parallel to the tapered surface of Crankshaft.

Fig. 108

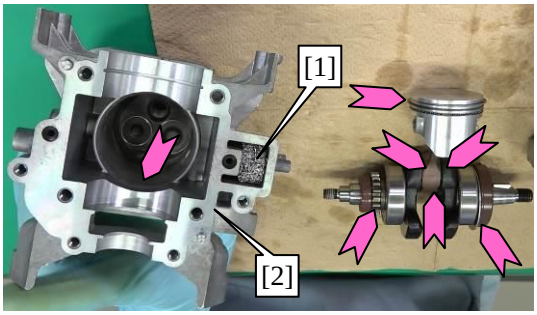


12 When assembling Cylinder block and Crankcase, apply a thin layer of Liquid Gasket ThreeBond 1215 evenly to the mating surface (the portions indicated by the red line) on the Crankcase side.

Tips
Before applying the liquid gasket, clean off any residue of old liquid gasket from the mating surfaces. Also remove any grease with parts cleaner.

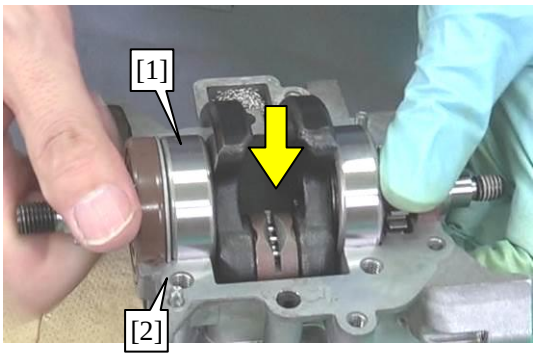
Note
Be careful not to get any of the liquid gasket in the oil passages.

Fig. 109



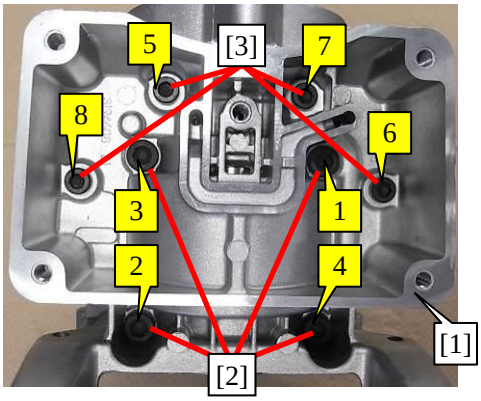
13 Install Separator mesh [1] on Cylinder block [2]. Apply a small amount of 4-stroke engine oil to the moving portions of Crank, circumference of Piston rings and Oil ring and inner surface of Cylinder.

Fig. 110



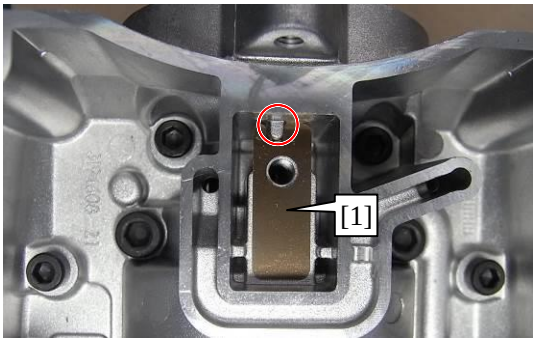
14 Insert the assembly of Crankshaft [1] and Piston into Cylinder block [2].

Fig. 111



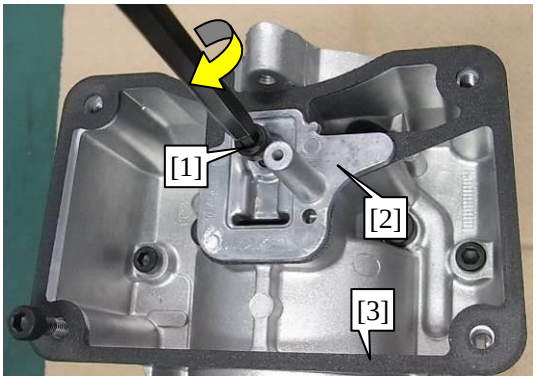
15 Carefully set Crankcase [1] on Cylinder block, and then fasten them by tightening four M6x20 Hex socket head bolts [2] and four M5x20 Hex socket head bolts [3] in numerical sequence as shown on the left.

Fig. 112



16 Put Reed valve [1] on Crankcase. U-shaped notch of the valve must be aligned with the rib of Crankcase.

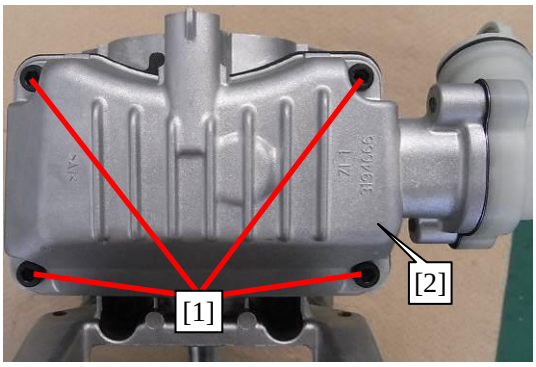
Fig. 113



17 By tightening M5x20 Hex socket head bolt [1], assemble Retainer plate [2], Oil case gasket [3] and Reed valve to Crankcase.

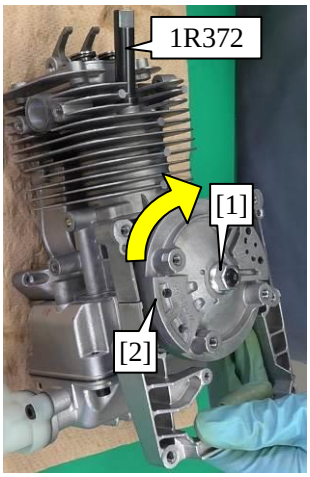
Tips
• Oil case gasket [3] can be reused for replacement. • Tighten Oil case fastening bolts temporarily as a positioning tool for Oil case gasket [3].

Fig. 114



18 By tightening four M5x20 Hex socket head bolts [1], fasten Oil case [2] to Crankcase.

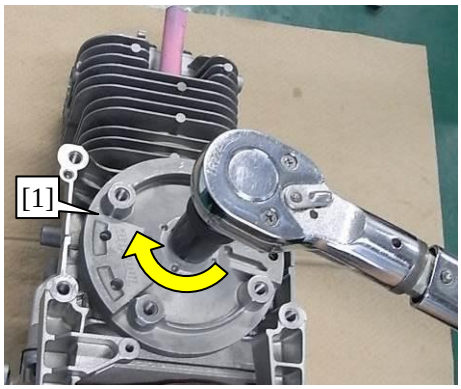
Fig. 115



19 Temporarily tighten Flange nut M10 [1], then screw 1R372 into the spark plug hole by hand, and then turn Flywheel [2] until Piston stops.

Note
Remove any grease from the tapered portion of Crankshaft with parts cleaner.

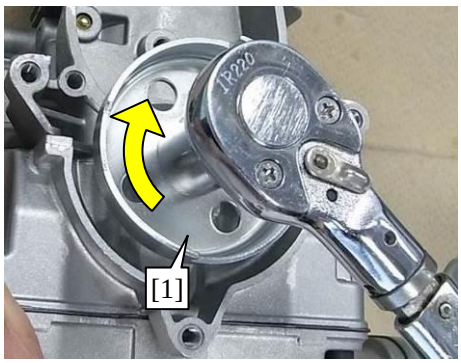
Fig. 116



20 Install Flywheel [1] onto Crankshaft, and then fasten with Flange nut M10.

Tips
• Use a torque wrench and Box wrench 14. • Tightening torque: 30-35N·m

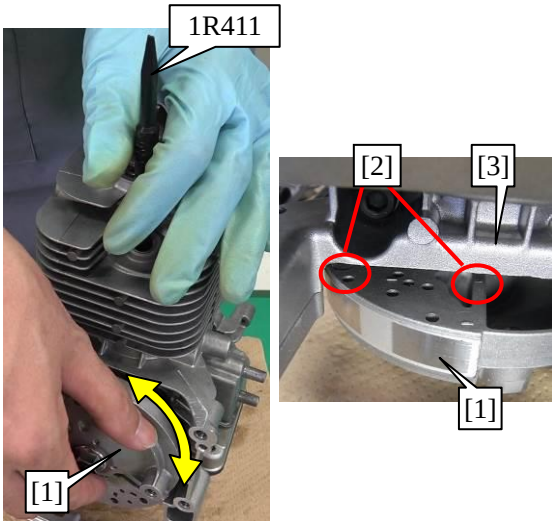
Fig. 117



21 Fasten Pulley [1] to Crankshaft.

Tips
• Use a torque wrench and Box wrench 15. • Tightening torque: 9-11N·m

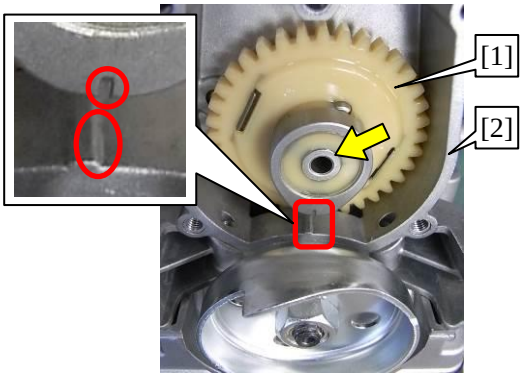
Fig. 118



22 Remove 1R372, then insert 1R411 into the spark plug hole, and then turn Flywheel [1] so that Piston is at top dead center.

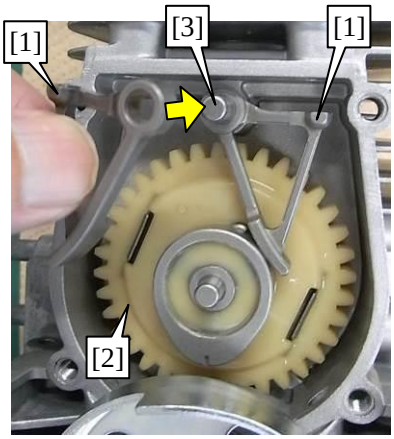
23 Check the back of Flywheel [1]. If Piston is at top dead center, the matching mark of two lines [2] is parallel with Cylinder block (Crankcase) [3].

Fig. 119



24 Install Cam gear ass'y [1] and Cylinder block [2] while aligning the matching marks of the two parts, and then insert Pin 5 through Cam gear ass'y [1] into Cylinder block.

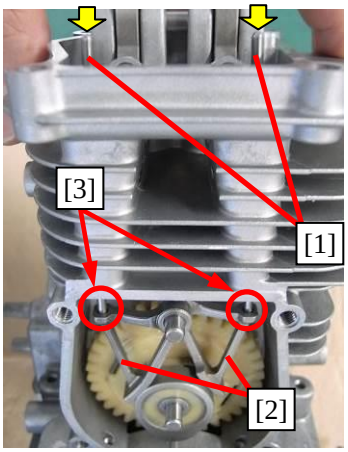
Fig. 120



25 Install two Cam lifters [1].

Tips
• Install Cam lifters [1] first on the right side and then on the left side. • Apply a small amount of 4-stroke engine oil to the contact surfaces of two Cam lifters [1], Cam gear ass'y [2] and Pin 5 [3].

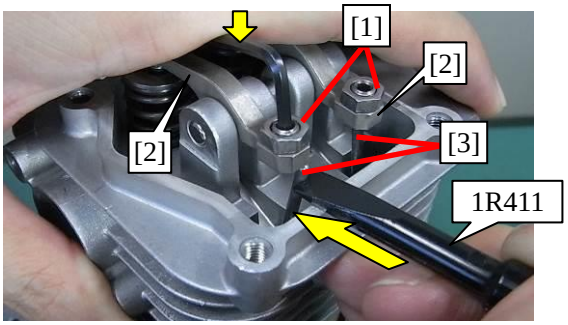
Fig. 121



26 Insert Rod 2.5 (2 pcs) [1] from the hole of Cylinder head, and put the tip of the rod in the dimple of Cam lifter (2 pcs) [2].

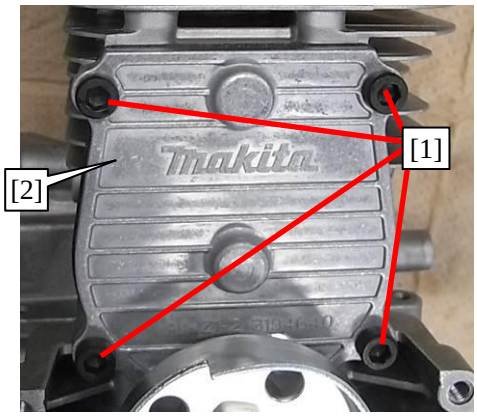
Tips
Apply a little amount of 4-stroke engine oil to the dimple [3] of Cam lifter (2 pcs) [2].

Fig. 122



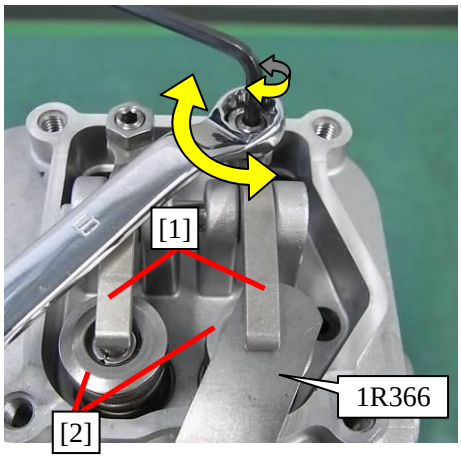
27 Install Rod 2.5 (2 pcs) [3] as follows. Insert a Hex wrench 2.5 into M5x9 Hex socket set screw [1]. Then, while raising Rocker arm (2 pcs) [2] by pushing down near the end of the long arm of the wrench, install Rod 2.5 (2 pcs) [3] with 1R411 in place.

Fig. 123



28 By tightening four M5x20 Hex socket head bolts [1], fasten Cam gear cover [2] and Cam gear cover gasket to Cylinder block.

Fig. 124

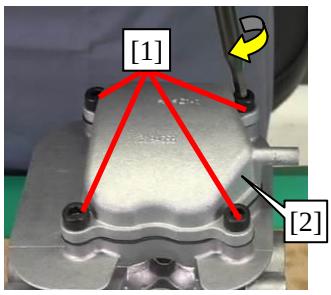


29 Using an offset wrench 8 and hex wrench 2.5, adjust the clearance between Rocker arm (2 pcs) [1] and Valve (2 pcs) [2] so that the 0.10mm leaf of 1R366 can pass through the clearance and 0.15mm leaf cannot.

30 Turn Pulley an even number of times to bring Piston to the compression top dead center again, and then check the valve clearance.

Tips
When Fuel tank is installed on the engine, you cannot check the position of the matching mark. In this case, find compression top dead center as follows. 1 Remove Spark plug and then insert 1R411 through the spark plug hole. 2 Turn Pulley until Piston reaches the highest position. 3 Turn Pulley 45 degrees left and right to confirm the position of Piston. 4 If Rocker arm does not move, Piston is positioned at compression top dead center. If Rocker arm moves, Piston is positioned at exhaust top dead center. In this case, bring Piston to compression top dead center by turning Pulley 360 degrees. 5 Check the valve clearance.

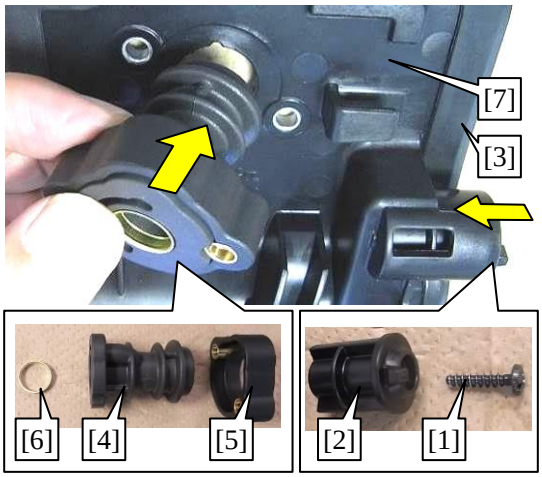
Fig. 125



31 By tightening four M5x20 Hex socket head bolts [1], fasten Rocker cover [2] and Rocker cover gasket to Cylinder head.

32 Tighten Spark plug CMR6H.

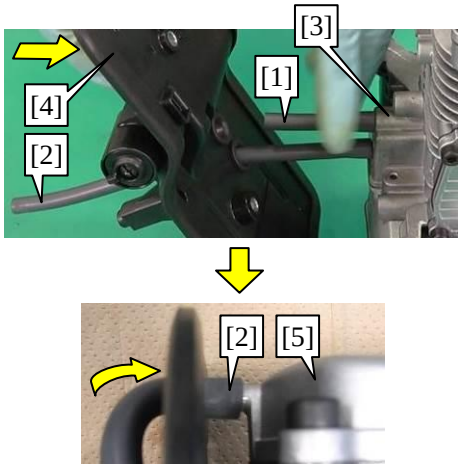
Fig. 126



33 Fasten Anti-icing valve [2] to Insulator [7] with Tapping screw [1].

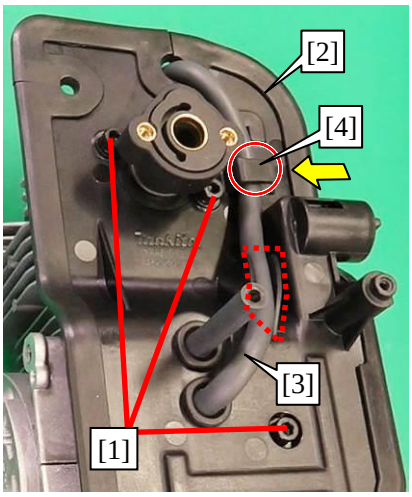
34 Install the following parts on Insulator [7]: Insulator seal [3], Fuel suction line [4], Carburetor bracket [5], Inner ring [6].

Fig. 127



35 Connect Tube 5-55 [1] and Oil tube 5-195 [2] to Cylinder block [3], then pass them through the corresponding holes of Insulator [4] and then connect Oil tube 5-195 [2] to Rocker cover [5].

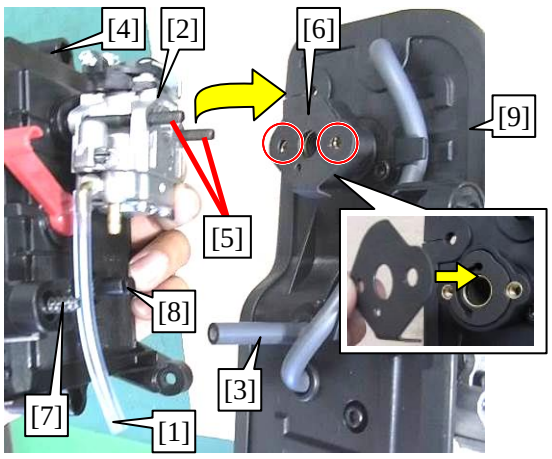
Fig. 128



36 Fasten Insulator [2] to Cylinder block with M5x20 Hex socket head bolt (3 pcs) [1], and then hold Oil tube 5-195 [3] in the clamp [4] of Insulator [2].

Note
Be careful not to bend Oil tube 5-195 [3] at each of the top and bottom curves.

Fig. 129



37 Connect Fuel tube 3-85 (transparent) [1] to Carburetor [2], and Tube 5-55 [3] to the nipple [8] of Blowby guide.

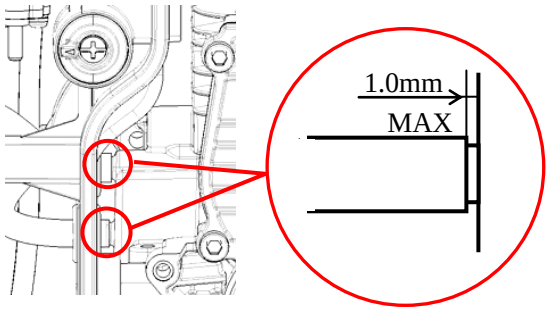
38 Pass M5x50 Hex socket head bolt (2 pcs) [5] through Carburetor [2] and Carburetor gasket [6].

39 Fasten the assembly of Air cleaner plate [4] and Carburetor [2] to Insulator [9] by tightening the two bolts.

40 Tighten 5x20 Tapping screw (1 pc) [7].

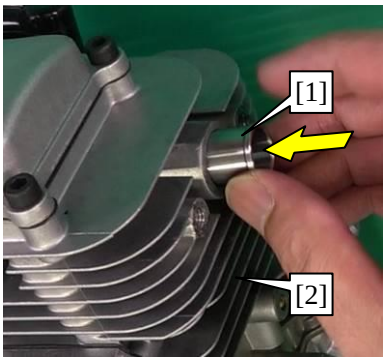
41 The orientation of Carburetor gasket [6] matters.

Fig. 130



42 Push each Tube to Cylinder securely onto the nipple of each part until it stop. The clearance between them should be 1.0mm or less.

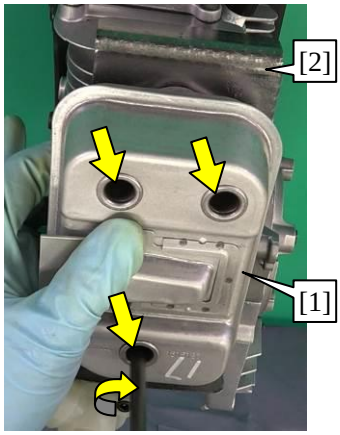
Fig. 131



43 Install Exhaust port spacer [1] on Cylinder block [2].

Tips
The orientation of Exhaust port spacer [1] does not matter.

Fig. 132



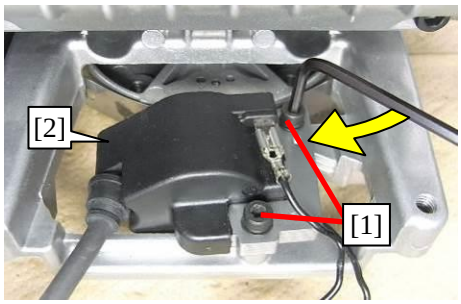
44 By tightening three M6x20 Hex socket head bolts, fasten Muffler [1] and Muffler gasket [2] to Cylinder block.

Note
• Do not reuse Muffler gasket [2]. Be sure to replace it with a new one. • The bolt holes can be easily misaligned in tightening operation. So, before tightening securely, be sure to provisionally tighten the three bolts to align the bolt holes.

Fig. 133

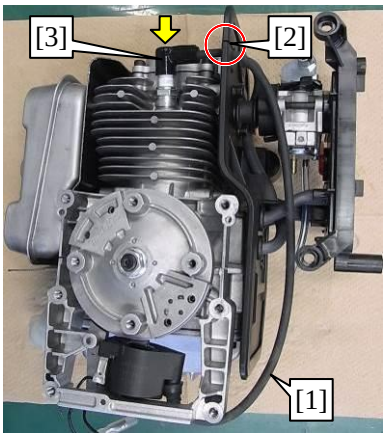
45 Attach the 0.30mm leaf of 1R366 to the magnet of Flywheel [1] as shown on the left, and then place Ignition coil so that the iron core of Ignition coil touches the 0.30mm leaf.

Fig. 134



46 Using an L-shaped hex wrench, tighten two M4x20 Hex socket head bolts [1] to fasten Ignition coil [2] to Crankcase.

Fig. 135

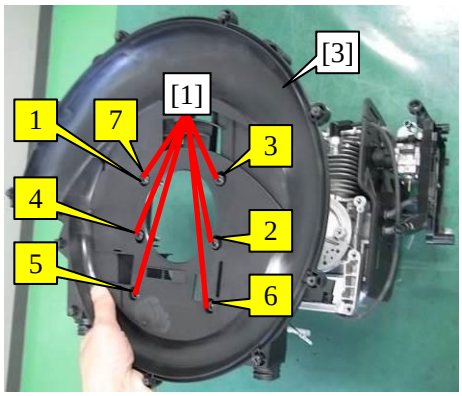


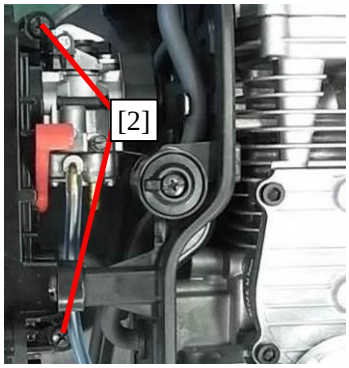
47 Pass High-voltage cable [1] through the hole of Insulator [2], and then install Spark plug cap [3] onto Spark plug CMR6H.

48 Turn Flywheel by hand to remove 1R366.

4-5-12 Assembling Blower section to Engine section

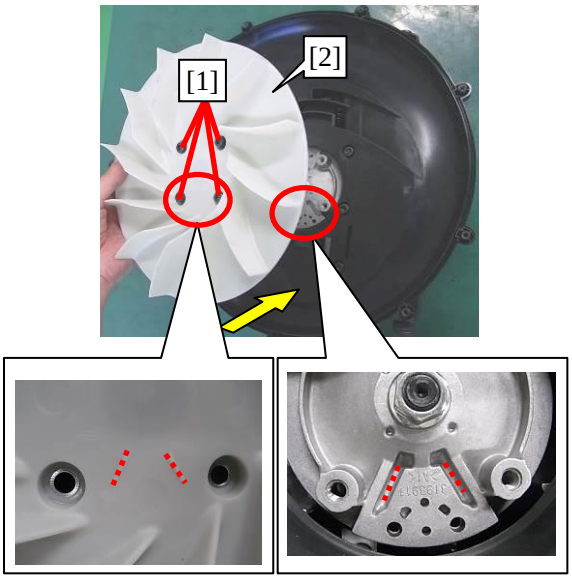
Fig. 136





1 By tightening six M6x25 Hex socket head bolts [1] and two Tapping screws [2], fasten Front volute case [3] to Cylinder block.

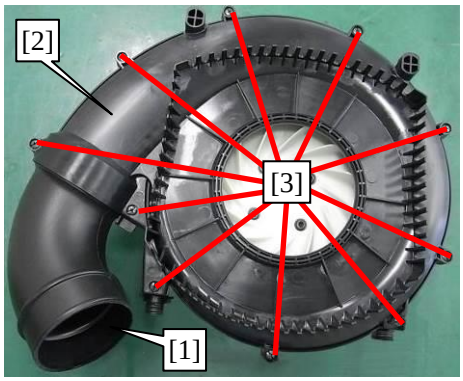
Fig. 137



2 By tightening four M6x25 Hex socket head bolts [1], fasten Fan 243 [2] to Flywheel.

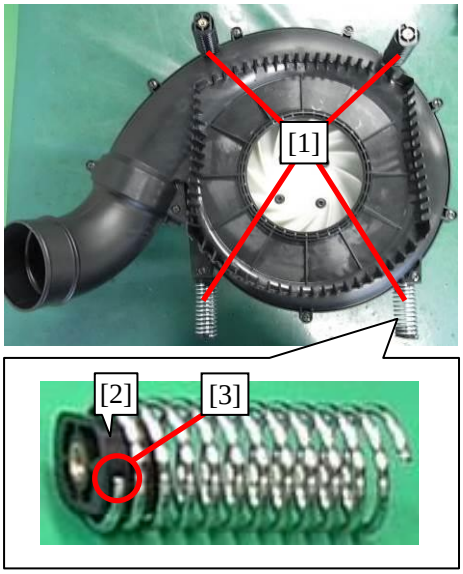
Tips
Align the matching mark (two nonparallel lines) of Fan 243 [2] with the two nonparallel grooves of Flywheel.

Fig. 138



3 Fasten Rear volute case [2] to Front volute case by tightening ten 5x20 Tapping screws [3] so that Elbow [1] can be squeezed with the two volute cases.

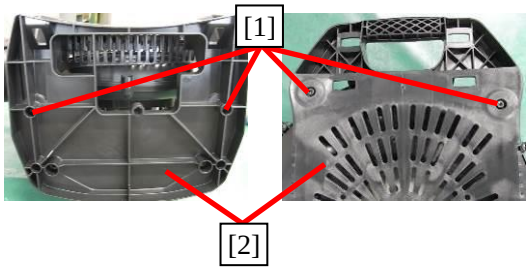
Fig. 139



4 Install four Compression springs 22 [1] on Rear volute case.

Note
• Two different Compression springs 22 [1] are used: Install two black ones on the Cushion side of Frame and two silver ones on the bottom side of Frame. Be careful not to mix up the two springs. • When assembling Compression spring 22 [1] to Spring holder B [2], be sure to rotate the spring until the end face of the spring stops against the stopper [3] of the holders.

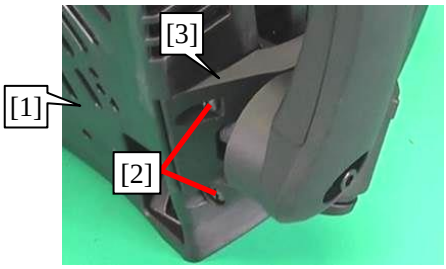
Fig. 140



5 Fasten Frame [2] to Rear volute case by tightening four M5x16 Hex socket head bolts [1] into Spring holder B.

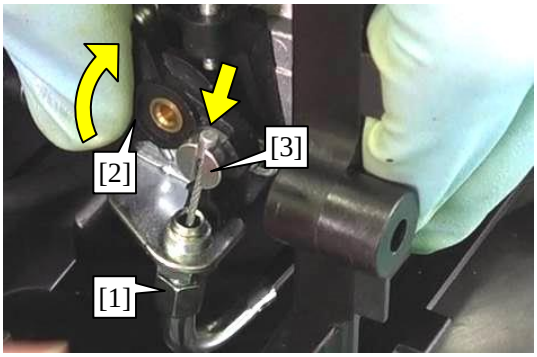
4-5-13 Connecting Control cable to Blower body (for Model EB5300WH)

Fig. 141



1 Pass the cables through the hole of Frame [1], and then tighten two 5x20 Tapping screws [2] to fasten Arm base section [3] to Frame.

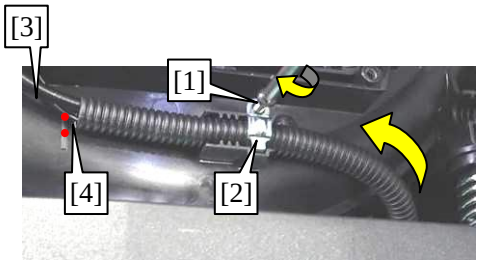
Fig. 142



2 Pass the barrel nipple [1] of Control cable through Adjust screw. Then turn Throttle [2] clockwise and hold it, and then attach the barrel nipple to Swivel [3].

Tips
Note the orientation of Swivel [3]. If it is oriented wrong, the barrel nipple cannot be attached.

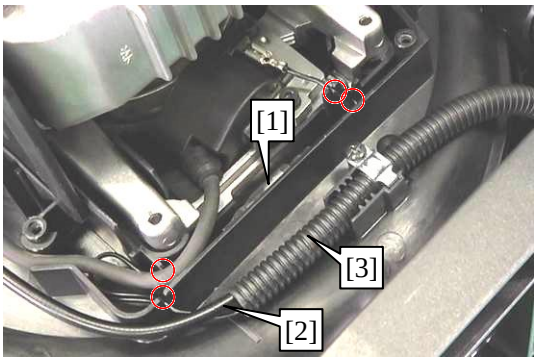
Fig. 143



3 Fix Control cable [3] in Clamp [2] by tightening 4x14 Tapping screw [1].

Note
• Position Corrugated tube [4] so that the end face of the tube is aligned with the marking (indicated by the red dotted line) on Front volute case. • Be careful not to twist the cable.

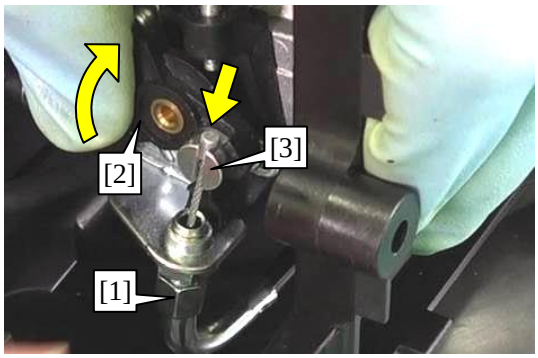
Fig. 144



4 Connect two Straight terminals [1] of Lead unit with those from Ignition coil and Earth terminal, and then put the terminals in the space of Front volute case. Put Control cable [2] and Corrugated tube [3] in place as shown on the left.

4-5-14 Connecting Control cable to Blower body (for Model EB5300TH)

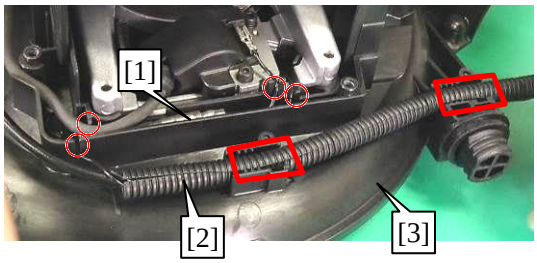
Fig. 145



1 Pass the barrel nipple of Control cable through Adjust screw [1]. Then turn Throttle [2] clockwise and hold it with finger, and then attach the barrel nipple to Swivel [3].

Tips
Note the orientation of Swivel [3]. If it is oriented wrong, the barrel nipple cannot be attached.

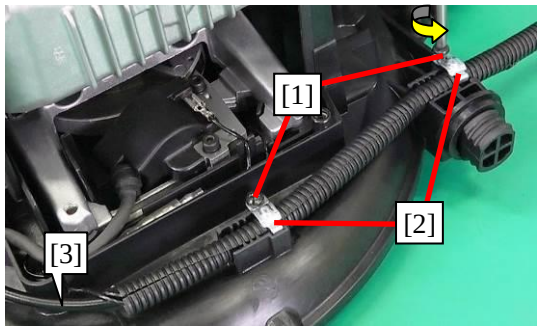
Fig. 146



2 Connect two Straight terminals [1] of Lead unit with those from Ignition coil and Earth terminal, and then put the terminals and Corrugated tube [2] in the space of Front volute case [3].

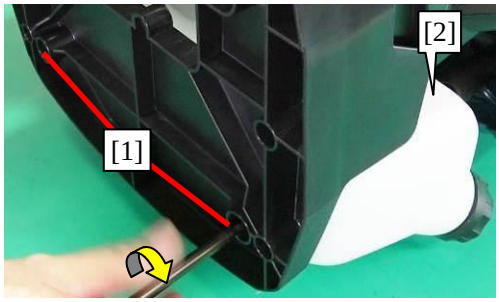
Tips
• Position Corrugated tube [2] so that the end face of the tube is aligned with the marking (indicated by the red dotted line) on Front volute case. • Be careful not to twist the cable.

Fig. 147



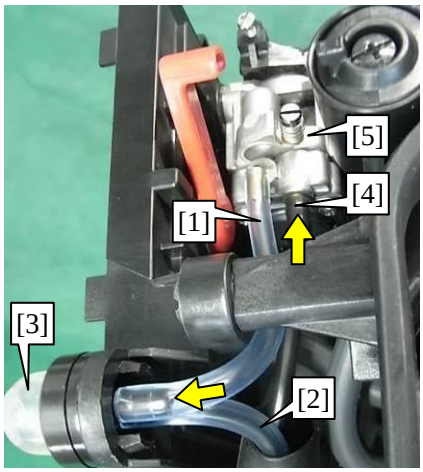
3 Fix Control cable [3] in Clamp (2 pcs) [2] by tightening 4x14 Tapping screw [1].

Fig. 148



4 By tightening two M5x16 Hex socket head bolts [1], fasten Fuel tank [2] to Frame.

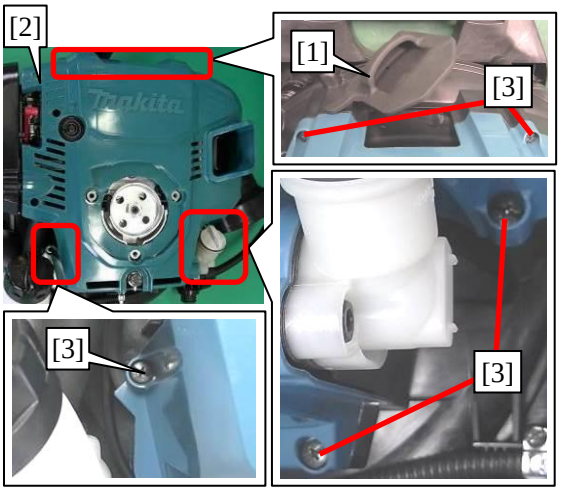
Fig. 149



5 With 1R311, connect Fuel tube 3-85 (transparent) [1] and Fuel tube 3-370 (transparent) [2] to Primer pump [3], and Fuel tube 3-370 (black) [4] to Carburetor [5].

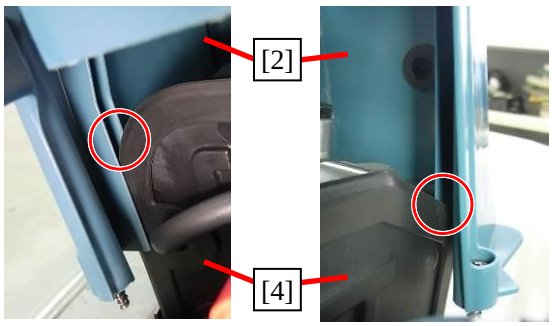
Note
Push each Tube securely onto the nipple of each part until it stops.

Fig. 150



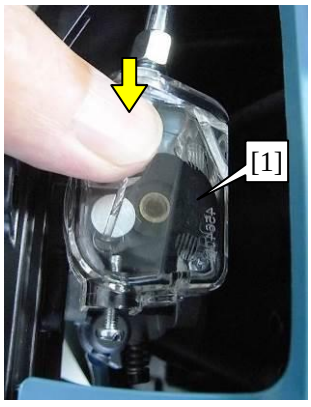
6 Put Plug cover [1] and Engine cover complete [2] on the engine section, and then fasten them with 5x20 Tapping screw (5 pcs) [3] magnetized with 1R288.

Fig. 151



Note
Fit the two grooves of Engine cover complete [2] onto Insulator [4].

Fig. 152



7 Install Carburetor cover [1] onto Carburetor.

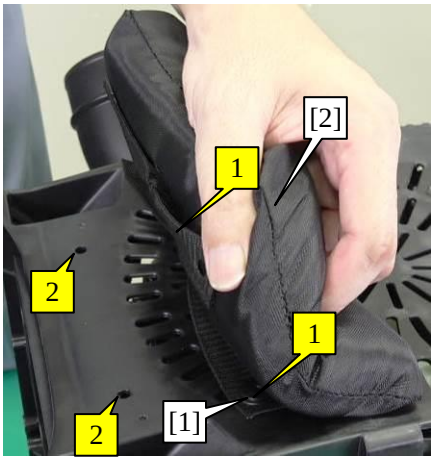
Note
Push Carburetor cover [1] until it clicks in place.

8 Install Recoil starter with three M5x20 Hex socket head bolts.

9 Attach Air cleaner element to Air cleaner case.

10 Fasten Air cleaner cover to Air cleaner case by tightening two M5x20 Thumb screws securely until they are seated.

Fig. 153



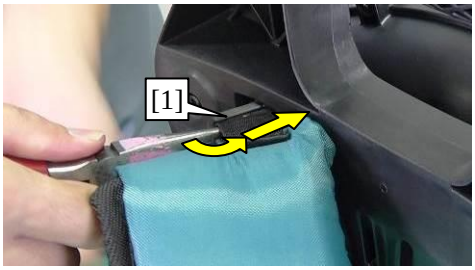
11 Install Cushion [2] onto Frame by pushing four Lock rivets [1] through Cushion into Frame.

Note
Push Lock rivet into Cushion until the threaded portion protrudes approximately 5mm above Cushion, then make sure that all rivet legs are closed, and then push into Frame. When reusing Lock rivet, you may find that one or two rivet legs are not closed. If you push in the rivet without closing the legs, the legs will be broken.

12 Attach Band completes L and R to Frame by pushing Lock rivet through each Band complete into Frame.

Note
Band completes L and R are not interchangeable. When you wear them correctly, the black edging of each Band complete is positioned on the outside.

Fig. 154



13 Match the short side of Buckle [1] to the slot of Frame, then insert Buckle (6 pcs) [1] through the slot, and then turn Buckle [1] 90 degrees.

14 Install Control lever/Control handle on Swivel pipe, and then fasten with M5x30 Thumb screw.

15 Install Hose Clamp 100 and Cable holder.

16 By tightening Hose clamp 100, install Flexible pipe on Elbow.

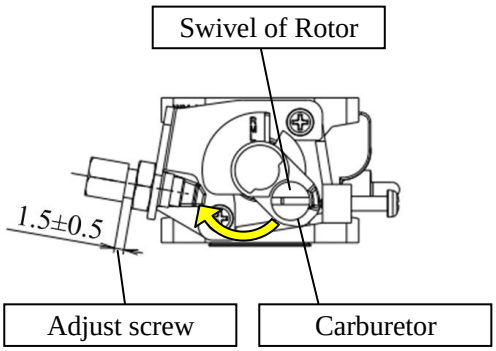
17 Install Nozzle and Intermediate pipe (Long pipe or Short pipe) on Swivel pipe.	Note Be sure to check engine speed with 1R070, and with End nozzle 90-62 (nozzle diameter: 61.5mm) on Intermediate pipe. Without the nozzle, engine speed cannot be increased.

4-6 Key points of completion inspection

(1) All parts and fasteners should be securely assembled.
(2) Cold engine should be started by pulling Recoil starter 5 or less times.
(3) Engine should be smoothly accelerated after two minutes idling.
(4) Engine speed should be 2600-3000min^{-1} at idling and more than 6200min^{-1} at maximum output.
* Be sure to check engine speed with 1R070, and with End nozzle 90-62 (nozzle diameter: 61.5mm) on Intermediate pipe. Without the nozzle, engine speed cannot be increased.

(5) After assembly, make sure that Swivel of Rotor hits Stopper (as shown) both at idling and maximum output, and that engine speed reaches the range described above in (4).
Adjust Adjust screw, if Throttle of Carburetor does not move to the full throttle or idling position even though you operate Throttle lever in the condition of "assembly completed", which indicates, in the case of Model EB5300TH, that Control lever is installed on Swivel pipe with no twist in Control cable.

Fig. 155



(6) After assembly is finished, make sure that Throttle lever B (EB5300T)/Throttle lever (EB5300W) can be locked in the full throttle position.
* If the lever cannot be locked and returns to the initial position, carry out adjustment by retightening the lever locking bolt properly.
(7) Engine should always stop with operation of Stop switch.
(8) Hot engine should be restarted by pulling Recoil starter 5 or less times.
(9) There should be no fuel or oil leak.
(10) If Pipes and Nozzle are too tight, apply commercial a silicone lubricant spray to them.

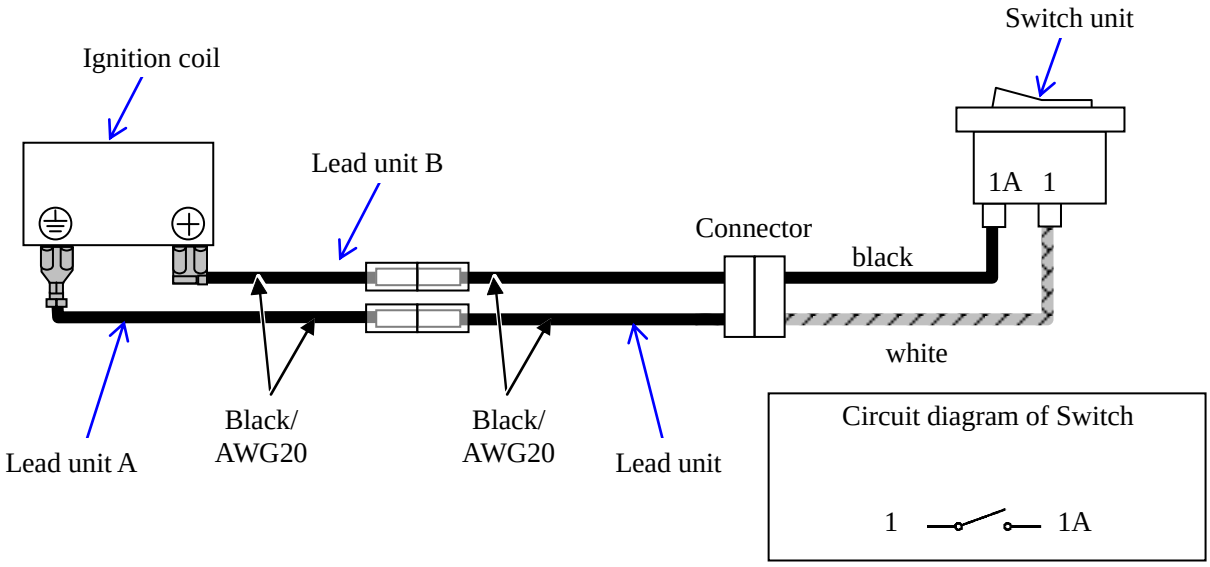
5 TIGHTENING TORQUE SPECIFICATIONS

Parts to fasten			Fastener	Tightening torque (N·m)	Q'ty
Crankcase	<=>	Cylinder block	M5x20 Hex socket head bolt	6.0 - 8.0	4
			M6x20 Hex socket head bolt	10.0 - 12.0	4
Retainer plate	<=>	Crankcase	M5x20 Hex socket head bolt	4.5 - 6.5	1
Drain bolt (aluminum washer)			M8x12 Hex bolt	5.0 - 7.0	1
Oil case	<=>	Crankcase	M5x20 Hex socket head bolt	4.5 - 6.5	4
Flywheel			M10 Flange nut	30.0 - 35.0	1
Ignition coil	<=>	Crankcase	M4x20 Hex socket head bolt with WR	2.0 - 3.0	2
Cam gear cover	<=>	Cylinder block	M5x20 Hex socket head bolt	6.0 - 8.0	4
Rocker arm	<=>	Adjust screw	M5 Hex nut	4.0 - 5.5	2
Rocker cover	<=>	Cylinder block	M5x20 Hex socket head bolt	6.0 - 8.0	4
Spark plug			CMR6H (M10)	9.0 - 13.0	1
Muffler	<=>	Cylinder block	M6x20 Hex socket head bolt	10.0 - 15.0	3
Insulator	<=>	Cylinder block	M5x20 Hex socket head bolt	4.5 - 6.5	3
Air cleaner plate	<=>	Carburetor bracket	M5x50 Hex socket button head bolt	2.9 - 3.3	2
Air cleaner plate	<=>	Insulator	5x20 Tapping screw	2.2 - 2.7	1
Adjust screw			M6 Hex nut	1.0 - 2.0	1
Pulley	<=>	Crank shaft	Pulley (M8)	9.0 - 11.0	1
Oil pipe	<=>	Oil case	M5x20 Hex socket head bolt	4.5 - 6.5	2
Oil cap	<=>	Oil pipe	-	0.4 - 0.7	1
Choke plate	<=>	Choke lever	M4x14 Tapping screw	1.3 - 1.5	1
Blowby guide	<=>	Air cleaner plate	M4x14 Tapping screw	1.3 - 1.8	2
Anti-icing valve	<=>	Insulator	M4x18 Tapping screw	1.3 - 1.8	1
Engine	<=>	Front volute case	M6x25 Hex socket head bolt with WR	8.0 - 10.0	6
Fan 243	<=>	Flywheel	M6x25 Hex socket head bolt with WR	8.0 - 10.0	4
Throttle lever B	<=>	Throttle link	M4x20 Hex socket head bolt with WR	0.75 - 0.85	1
Arm	<=>	Throttle lever	M5x25 Hex socket head bolt	0.8 - 1.2	1
Arm	<=>	Arm base	M6x25 Hex socket head bolt with WR	2.0 - 2.4	1
Handle L	<=>	Handle R	4x18 Tapping screw	0.9 - 1.4	3
Air cleaner cover	<=>	Air cleaner case	M5x20 Thumb screw	0.9 - 1.2	2
Recoil starter	<=>	Engine	M5x20 Hex socket head bolt	2.5 - 4.0	3
Lever case L	<=>	Lever case R	4x18 Tapping screw	1.0 - 1.3	5
Lever case L	<=>	Lever case R	M5x30 Thumb screw	0.3 - 0.6	1
Handle L	<=>	Handle R	M5x30 Thumb screw	0.3 - 0.6	1
Fuel tank	<=>	Frame	M5x16 Hex socket head bolt with WR	2.0 - 2.5	2

6 CIRCUIT DIAGRAM

6-1 EB5300WH (Hip throttle model)

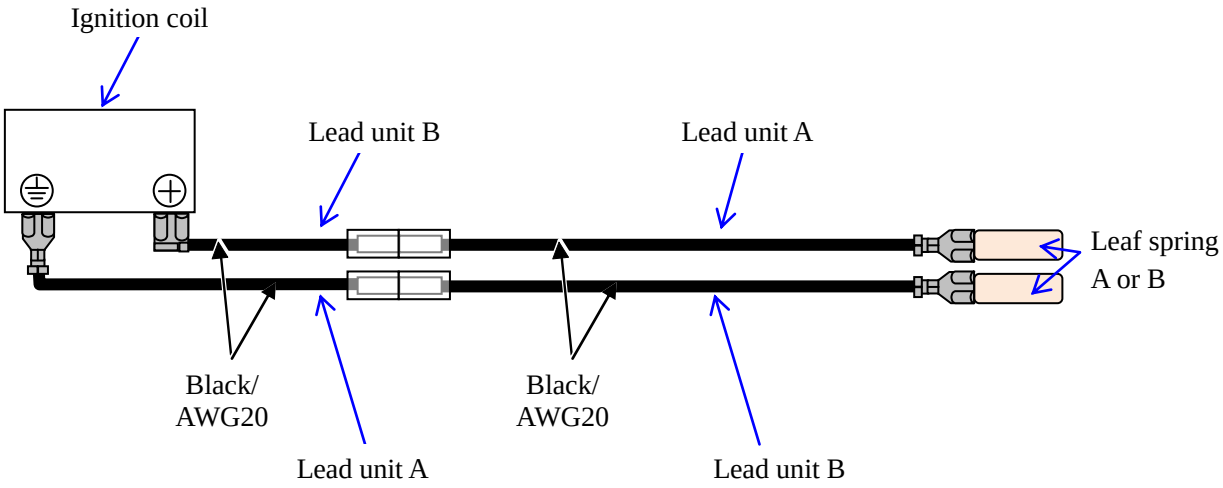
Fig. 156



AWG: American wire gauge

6-2 EB5300TH (Tube throttle model)

Fig. 157

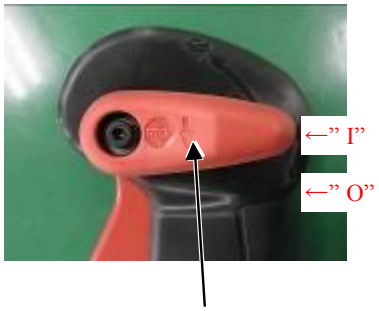


AWG: American wire gauge

7 WIRING DIAGRAM
7-1 Lever case or Arm section
7-1-1 EB5300TH (Tube throttle model)

Fig. 158

Throttle lever should be installed as shown below.



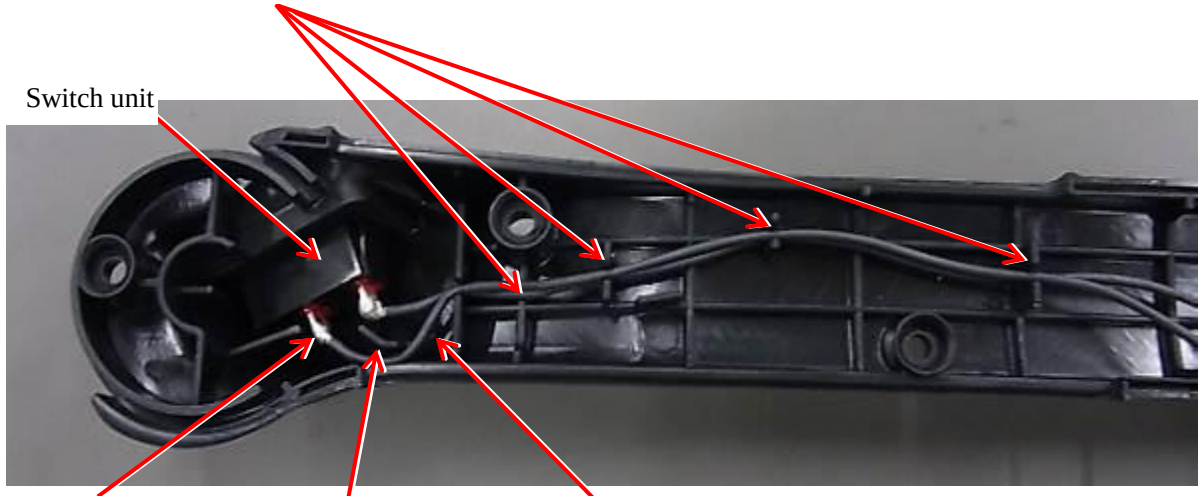
Throttle lever

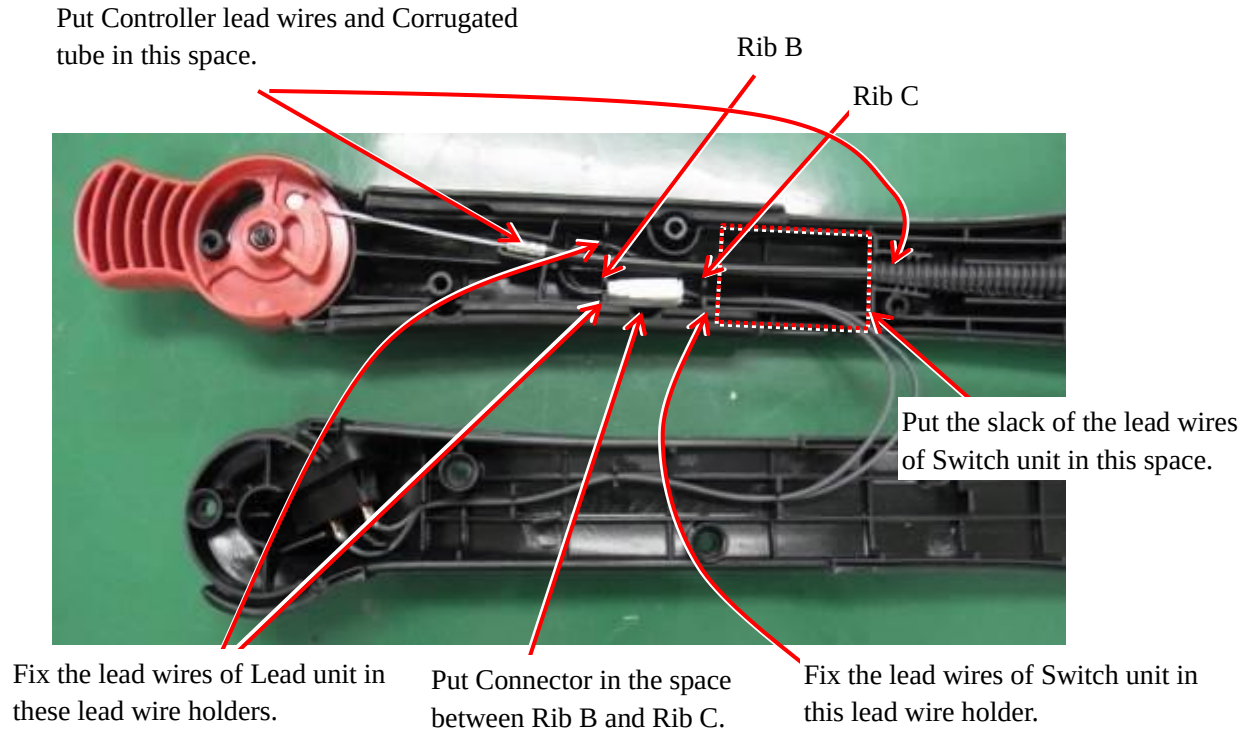
Fix the lead wires in these lead wire holders.

Put Controller lead wires and Corrugated tube in these lead wire holders.

7-1-2 EB5300WH (Hip throttle model)

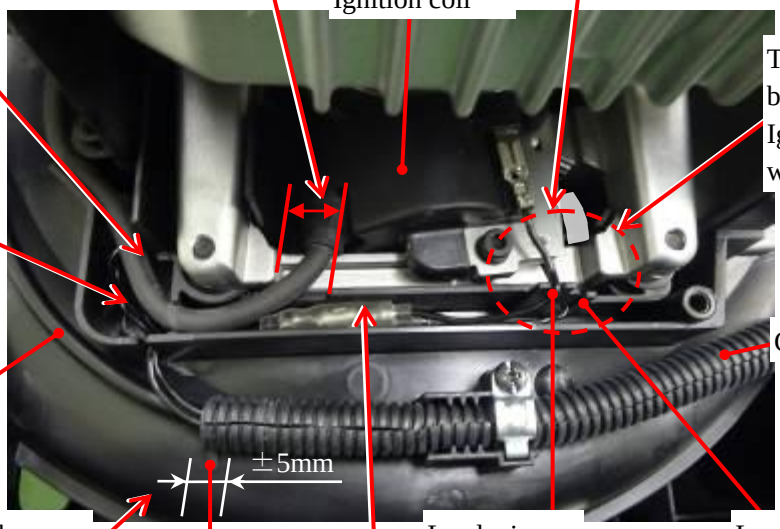
Fig. 159





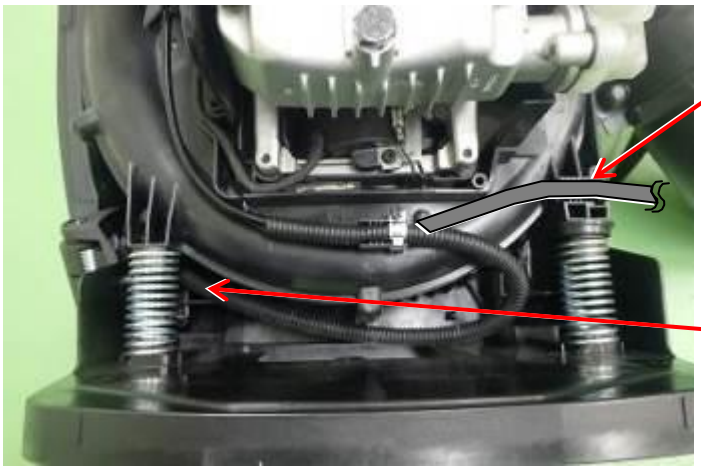
7-2 Front volute case section

Fig. 160



7-2-1 Routing of Corrugated tube

Fig. 161



EB5300TH:
Corrugated tube should be put into this space.

EB5300WH:
Corrugated tube should be put into this space.