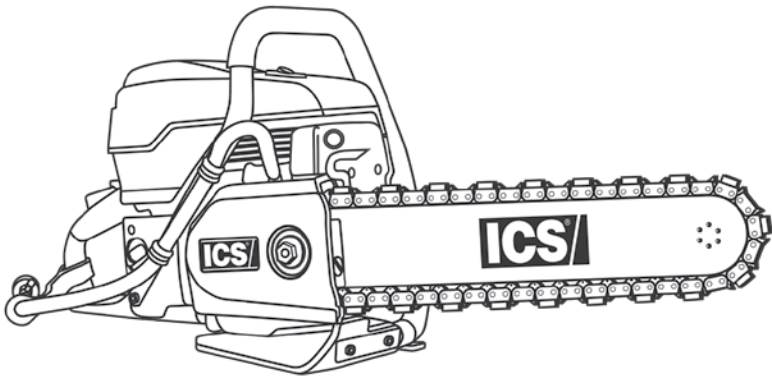




Diamond Tools and Equipment
for Construction and Infrastructure

695XL



SERVICE MANUAL

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Service Manual Use

This manual contains all the technical information necessary for carrying out repairs on the 695XL power cutter. For safe, efficient work, it is of prime importance that the values indicated be adhered to. Routine periodic maintenance is covered in the operator's manual included with each power cutter.

General Service Rules

- Always use the right tools for the job, otherwise components may be damaged.
- Use a plastic dead blow mallet to separate parts attached solidly to each other.
- Mark mating parts as a reassembly reference.
- Keep component parts together as a group. Assemble screws and nuts into appropriate subgroups.
- When reassembling, clean all parts carefully, lubricate moving parts and replace all oil seals, o-rings, gaskets, washers and self-locking nuts.
- **For best results, use only original ICS® replacement parts.**

General Recommendations

- Some procedures in this manual require the use of special tools. These are noted in the service manual.
- Detailed carburetor maintenance and overhaul information is available in Walbro's Diaphragm Carburetor Service Manual. Walbro can be contacted at <http://www.walbro.com> or by calling 1.520.877.3000.



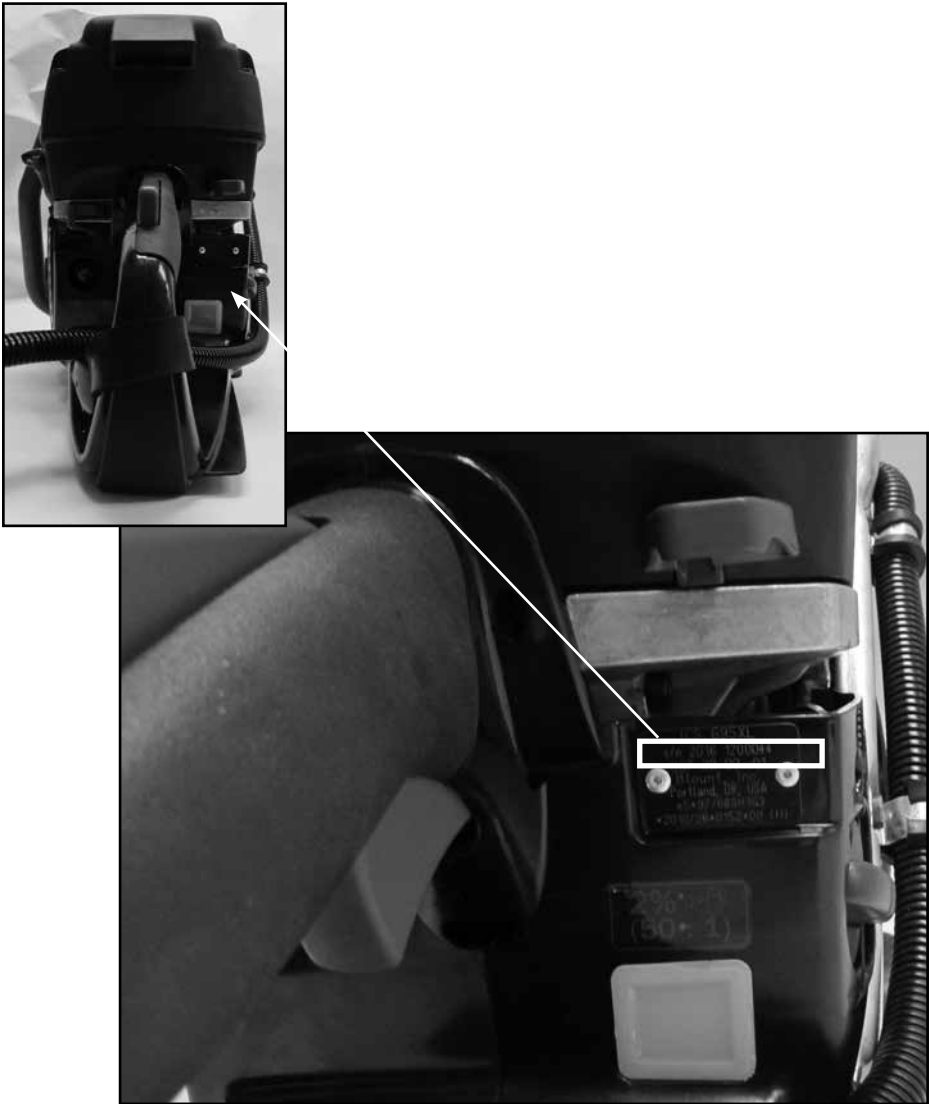
| Key # | Part No. | Description |
|-----------|----------|--|
| 1 | 71541 | Pressure Gauge Bulb |
| 2 | 71543 | Cylinder Assembly Clamps & Piston Stop |
| 3 | 71565 | Electronic Tachometer |
| 4 | 546191 | Workshop Key Torx T27 |
| 5 | 546192 | Test Spark Plug |
| 6 | 546193 | Air Gap Gauge |
| 7 | 546194 | Flywheel Puller |
| 8 | 547277 | Piston Stop |
| 9 | 546196 | Wrist Pin Punch |
| 10 | 546197 | Cylinder Seal, Exhaust |
| 11 | 546198 | Cylinder Seal, Inlet Port |
| 12 | 546289 | Puller, Sealing Ring |
| 13 | 546292 | Universal Puller |
| 14 | 546293 | Grip Plate |
| 15 | 546294 | Bearing Puller |
| 16 | 546295 | Bearing Press |
| 17 | 546307 | Screwdriver, Idle |
| not shown | 546659 | Clutch Tool |
| not shown | 544120 | Flat Blade Srench |
| not shown | 544119 | Torque Srench |
| not shown | 70249 | 14T Bar Nose Sprocket Repair Kit (for 695GC) |
| not shown | 530046 | FORCE4™ Bar Nose Sprocket Repair Kit (for 695F4) |
| not shown | 571227 | OIL, 2-STROKE 2.6 OZ (6-PACK) |
| not shown | 571228 | OIL, 2-STROKE 2.6 OZ (24-PACK) |

| | |
|---|---|
| Engine Type | 2-stroke, Air Cooled |
| Displacement | 94 cc (5.7 cu-in) |
| Horsepower | 4.8 kW (6.4 hp) @ 9000 rpm |
| Torque | 5.7 Nm (50.4 in-lbs) @ 7,200 rpm |
| Engine Speed | 9,300 +/- 150 rpm (max) 2,700 +/- 100 rpm (idle) |
| Chain Speed at Maximum Power | 28 m/s (5500 ft/min) |
| Weight | 9.5 kg (21 lbs) powerhead only |
| Dimensions | 46 cm (18 in) length 36 cm (14 in) height 30 cm (12 in) width |
| Air Filter | Water resistant polyester |
| Carburetor | Walbro RWJ-7 |
| Starter | Recoil, dust and water resistant |
| Ignition | Special water resistant electronic ignition |
| Clutch | Centrifugal, three shoe, three spring |
| Fuel ratio | 2% (50:1) petrol-to-oil |
| Fuel Capacity | 1 liter (0.26 gallon) |
| Water Supply Requirement | Minimum 1.5 bar (20 psi) |
| Water Flow Requirement | Minimum: 4lpm (1 gpm) |
| Guaranteed Sound Power Level, L_{wa} (1) | 115 dB(A); ($K_{wa}=1.0$ dB(A)) |
| Equivalent Sound Pressure at the Operator's Ear L_{pA} | 104.6 dB(A) ($K=1.0$ dB(A)) |
| Vibration, $a_{hv,eq}$ Concrete Cutting (2) | 3.6 m/s ² ($K=1.0$ m/s ²) Front Handle 3.1 m/s ² ($K=1.0$ m/s ²) Rear Handle |
| Vibration, $a_{hv,eq}$ Pipe Cutting (2) | 5.62 m/s ² ($K=0.2$ m/s ²) Front Handle 5.28 m/s ² ($K=0.2$ m/s ²) Rear Handle |
| Engine Break-in Period | One tank, without cutting, cycling throttle |
| Spark Plug | NGK BPMR7A or Champion RCJ6Y Electrode gap 0.5 mm (0.020 in) |

(1) Measured in accordance with ANSI S12.51-2012/ISO3741:2010

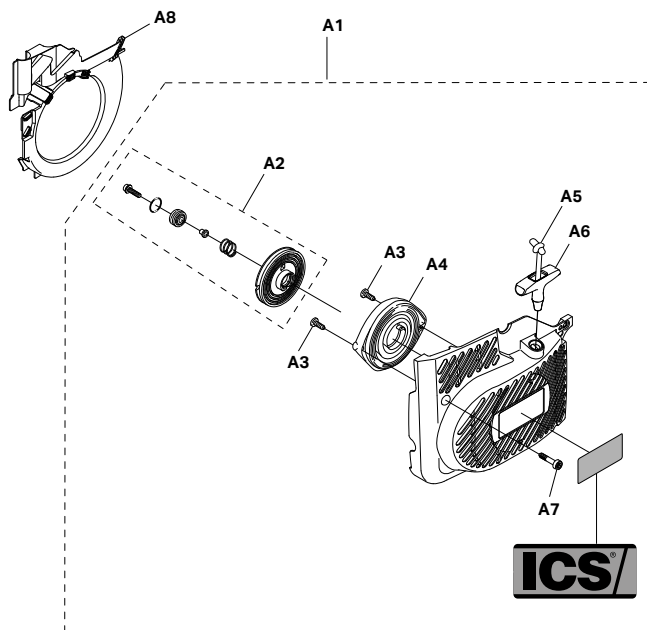
(2) Measured in accordance with ISO5349-1:2001, ISO22867:2011 and ISO19432:2012

3. This section shows the single location of the serial number.



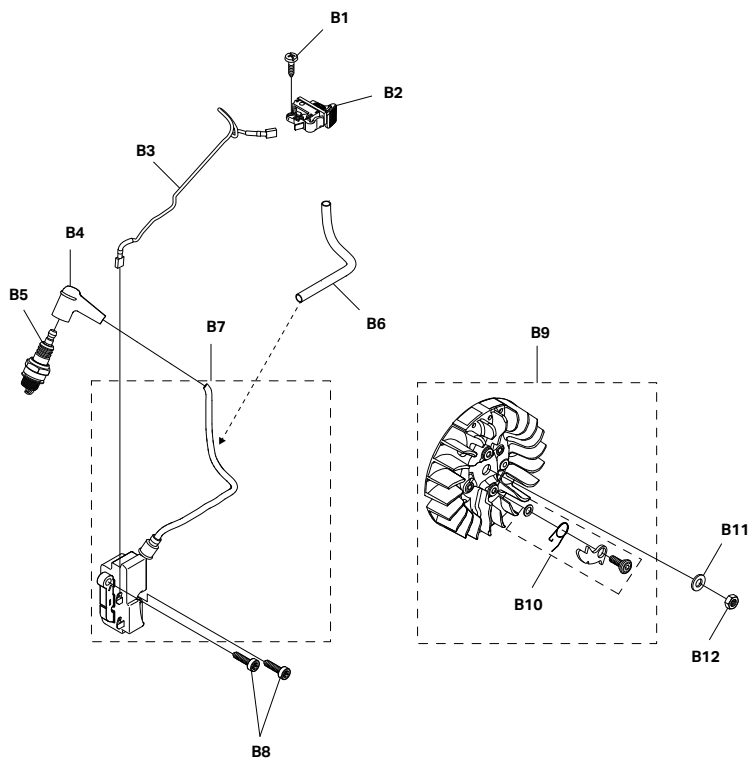
4. This section covers spare parts.

STARTER ASSEMBLY



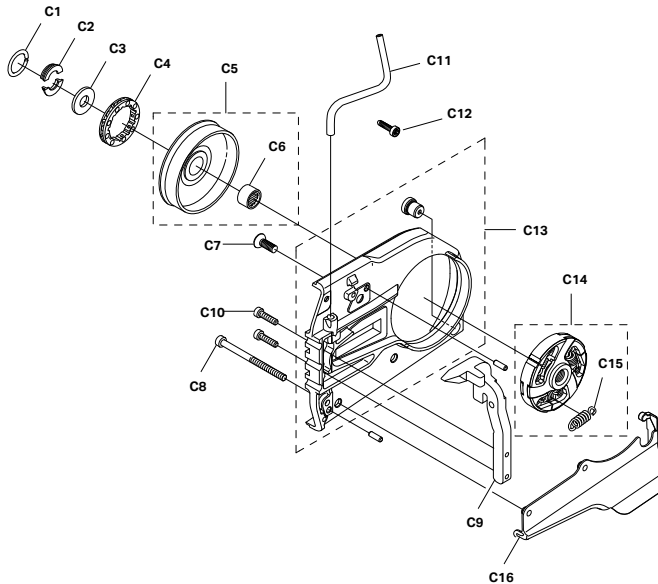
| Key # | Part No. | Description |
|-------|----------|------------------------|
| A1 | 544013 | STARTER COVER ASSEMBLY |
| A2 | 544127 | STARTER PULLEY KIT |
| A3 | 543974 | SCREW |
| A4 | 544021 | RECOIL SPRING |
| A5 | 544023 | STARTER CORD |
| A6 | 544024 | STARTER HANDLE |
| A7 | 544012 | SCREW |
| A8 | 544026 | STARTER COVER SHIELD |

FLYWHEEL & IGNITION ASSEMBLY



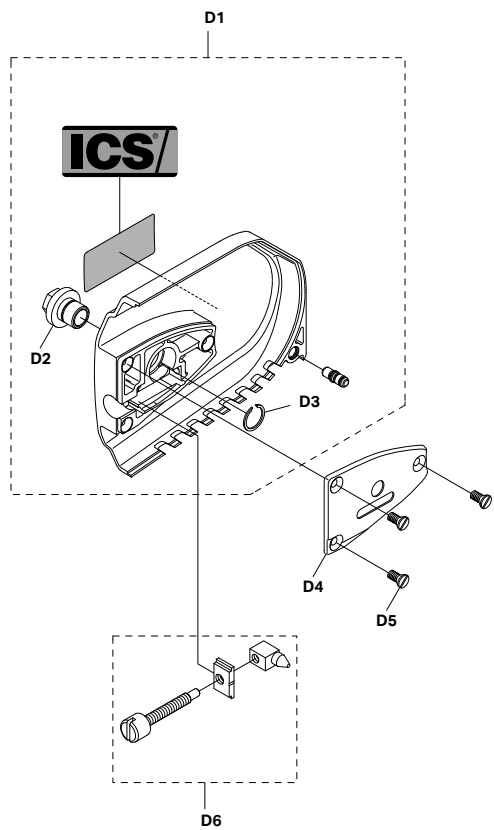
| Key # | Part No. | Description |
|-------|----------|---|
| B1 | 544030 | STOP SWITCH SCREW |
| B2 | 544031 | STOP SWITCH |
| B3 | 544032 | STOP SWITCH CABLE |
| B4 | 544033 | SPARK PLUG CAP |
| B5 | 544034 | SPARK PLUG |
| B6 | 544035 | PROTECTIVE SLEEVE |
| B7 | 544036 | IGNITION MODULE |
| B8 | 544038 | IGNITION MODULE SCREW |
| B9 | 544053 | FLYWHEEL |
| B10 | 544125 | STARTER PAWL KIT (INCL. TWO OF EACH ITEM) |
| B11 | 544058 | STARTER WASHER |
| B12 | 544059 | STARTER NUT |

CLUTCH ASSEMBLY & WALLWALKER®



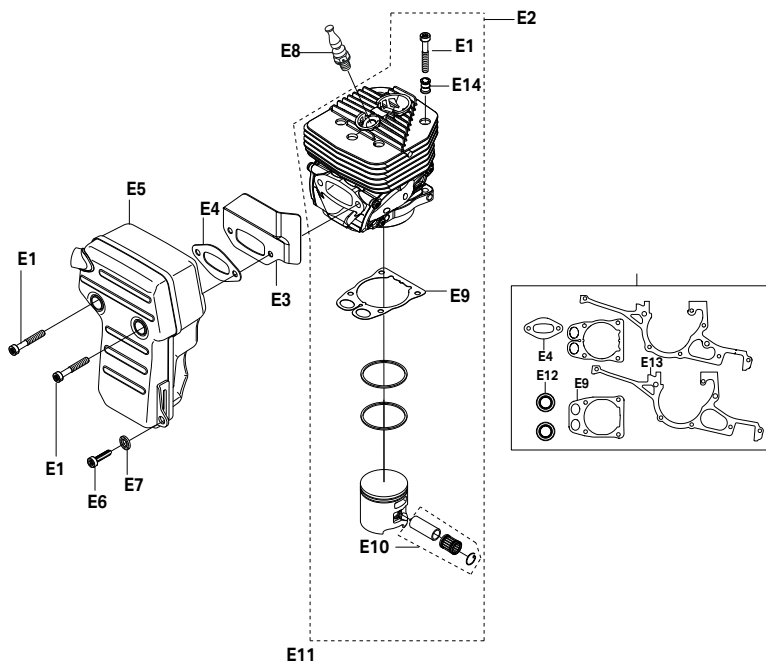
| Key # | Part No. | Description |
|-------|----------|----------------------------|
| C1 | 543905 | RETAINING RING |
| C2 | 551384 | SPLIT RETAINER, 695 (PAIR) |
| C3 | 543907 | SPACER |
| C4 | 525496 | 695F4 FORCE4™ SPROCKET |
| C4 | 70949 | 695GC RIM SPROCKET |
| C5 | 543909 | CLUTCH CUP |
| C6 | 543910 | NEEDLE BEARING |
| C7 | 543911 | BAR BRACKET SCREW |
| C8 | 543912 | CRANK CASE BOLT |
| C9 | 544130 | WALLWALKER® |
| C10 | 543920 | WALLWALKER® SCREW |
| C11 | 543915 | WATER PIPE |
| C12 | 546548 | WATER PIPE SCREW |
| C13 | 543916 | BAR BRACKET |
| C14 | 547856 | CLUTCH KIT |
| C15 | 543928 | CLUTCH SPRING |
| C16 | 544137 | SHIELD |

SIDE COVER & TENSIONER ASSEMBLY



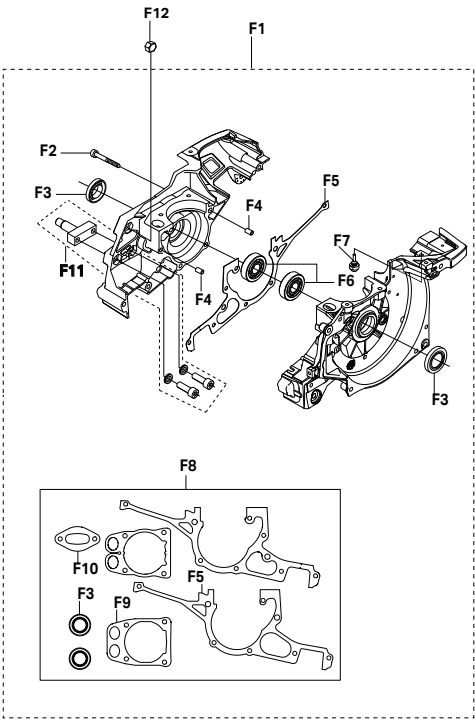
| Key # | Part No. | Description |
|-------|----------|------------------------|
| D1 | 543899 | SIDE COVER ASSEMBLY |
| D2 | 543900 | SIDE COVER NUT |
| D3 | 543901 | SIDE COVER NUT CIRCLIP |
| D4 | 543902 | TENSIONER COVER PLATE |
| D5 | 543903 | SCREW, SIDE COVER CAP |
| D6 | 543904 | TENSIONER |

CYLINDER & EXHAUST ASSEMBLIES



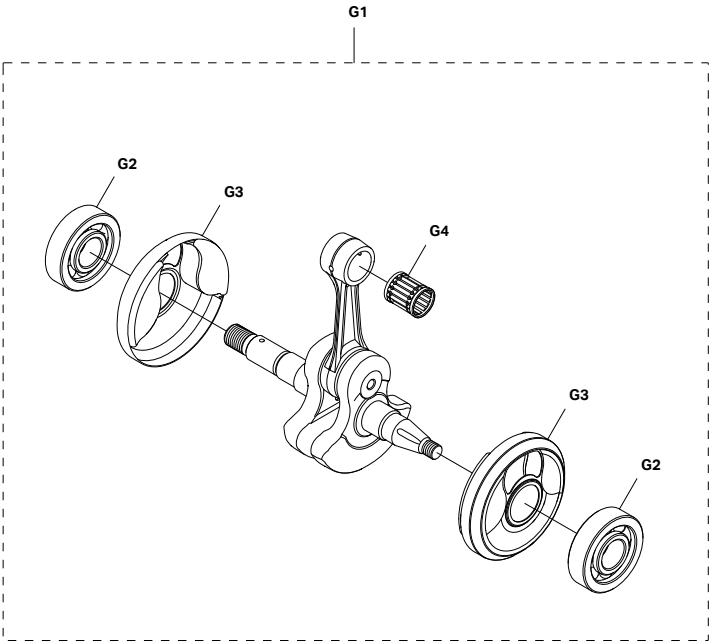
| Key # | Part No. | Description |
|-------|----------|------------------------------|
| E1 | 543942 | CYLINDER/MUFFLER SCREW |
| E2 | 576169 | PISTON/CYLINDER KIT |
| E3 | 543844 | HEAT DEFLECTOR |
| E4 | 543938 | MUFFLER GASKET |
| E5 | 543845 | MUFFLER |
| E6 | 543846 | LOWER MUFFLER MOUNTING SCREW |
| E7 | 543847 | MUFFLER MOUNTING WASHER |
| E8 | 576166 | DECOMPRESSION VALVE |
| E9 | 576165 | CYLINDER BASE GASKET |
| E10 | 543949 | NEEDLE BEARING |
| E11 | 543936 | GASKET KIT |
| E12 | 543931 | SEALING RING |
| E13 | 543933 | CRANKCASE GASKET |

CRANKCASE ASSEMBLY



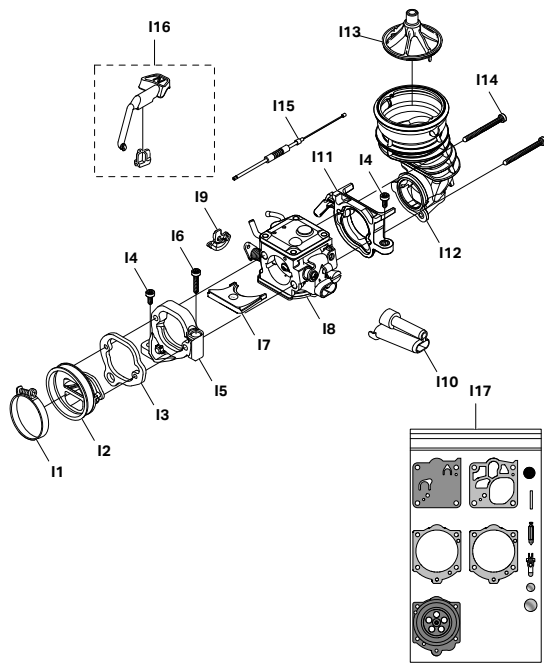
| Key # | Part No. | Description |
|-------|----------|----------------------|
| F1 | 543929 | CRANKCASE ASSEMBLY |
| F2 | 543930 | CRANKCASE SCREW |
| F3 | 543931 | SEALING RING |
| F4 | 543932 | GUIDE BUSHING |
| F5 | 543933 | CRANKCASE GASKET |
| F6 | 543934 | MAIN BEARING |
| F7 | 543935 | RUBBER BUSHING |
| F8 | 543936 | GASKET KIT |
| F9 | 543937 | CYLINDER BASE GASKET |
| F10 | 543938 | MUFFLER GASKET |
| F11 | 544129 | BAR STUD KIT |
| F12 | 543941 | BAR BRACKET FASTENER |

CRANKSHAFT ASSEMBLY



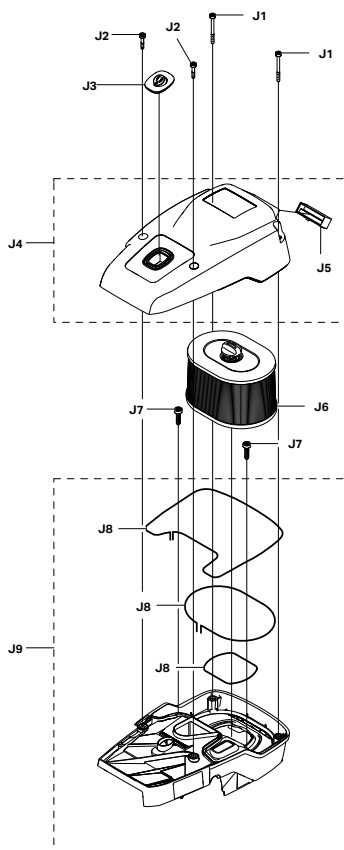
| Key # | Part No. | Description |
|-------|----------|---------------------|
| G1 | 543952 | CRANKSHAFT ASSEMBLY |
| G2 | 543934 | MAIN BEARING |
| G3 | 543953 | CRANKSHAFT SHIELD |
| G4 | 543949 | NEEDLE BEARING |

CARBURETOR & INTAKE ASSEMBLIES



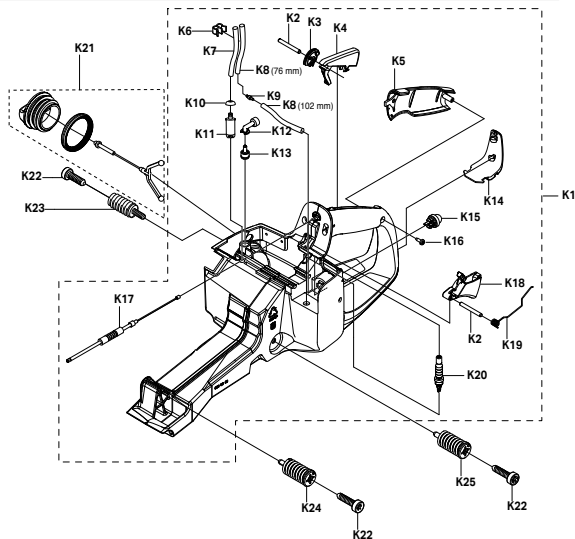
| Key # | Part No. | Description |
|-------|----------|--|
| I1 | 544069 | INLET BOOT CLAMP |
| I2 | 544070 | INLET BOOT |
| I3 | 544071 | FLANGE |
| I4 | 544072 | FLANGE CLUTCH SIDE SCREW |
| I5 | 544073 | FLANGE BRACKET |
| I6 | 544065 | SCREW |
| I7 | 544074 | SEPARATOR PLATE |
| I8 | 544075 | CARBURETOR (WALBRO RWJ-7) |
| I9 | 544111 | THROTTLE CABLE LEVER |
| I10 | 576168 | ADJUSTMENT GUIDE |
| I11 | 544112 | MANIFOLD BRACKET |
| I12 | 544113 | AIR INTAKE MANIFOLD |
| I13 | 544114 | AIR FILTER BRACKET |
| I14 | 544115 | CARBURETOR MOUNTING SCREW |
| I15 | 543975 | THROTTLE CABLE ASSEMBLY |
| I16 | 544117 | CHOKE LEVER |
| I17 | 576161 | CARBURETOR REPAIR KIT (Only for 695XL, will not fit 695GC/F4/PG) |

CYLINDER AND AIR FILTER ASSEMBLIES



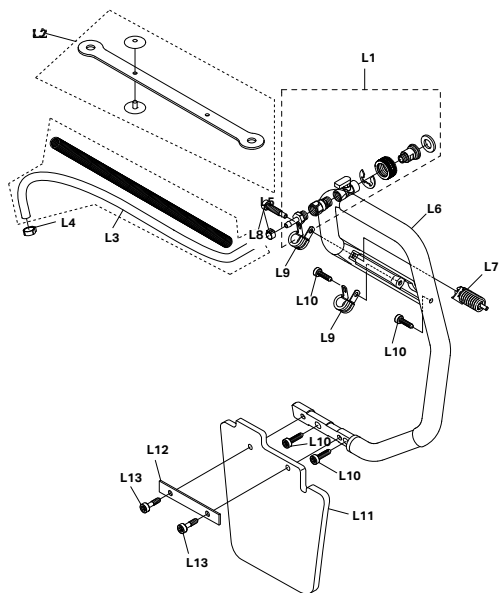
| Key # | Part No. | Description |
|-------|----------|---|
| J1 | 544060 | FILTER COVER REAR SCREW |
| J2 | 544061 | FILTER COVER FRONT SCREW |
| J3 | 576167 | PLUG (may be required on older 695GC/F4 models) |
| J4 | 544062 | FILTER COVER |
| J5 | 544063 | AIR INTAKE INSERT |
| J6 | 544064 | AIR FILTER |
| J7 | 544065 | CYLINDER COVER SCREW |
| J8 | 544067 | CYLINDER COVER SEALS (seal comes in one size, cut to appropriate length, it may not be necessary to replace all seals at one time) |
| J9 | 544066 | CYLINDER COVER ASSEMBLY |

FUEL TANK ASSEMBLY



| Key # | Part No. | Description |
|-------|----------|------------------------------|
| K1 | 543812 | FUEL TANK ASSEMBLY |
| K2 | 543813 | PARALLEL PIN |
| K3 | 543814 | CABLE LEVER |
| K4 | 543815 | THROTTLE LOCK OUT LEVER |
| K5 | 543816 | REAR HANDLE COVER |
| K6 | 543818 | CLIP |
| K7 | 543993 | FUEL LINE |
| K8 | 543994 | CHECK VALVE TUBE |
| K9 | 543969 | CHECK VALVE |
| K10 | 543970 | HOSE CLAMP |
| K11 | 543971 | FUEL FILTER |
| K12 | 544990 | TANK VENT ELBOW |
| K13 | 544122 | TANK VENT |
| K14 | 543972 | REAR HANDLE GROUND SUPPORT |
| K15 | 543973 | PURGE BULB |
| K16 | 543974 | REAR HANDLE SCREW |
| K17 | 543975 | THROTTLE CABLE ASSEMBLY |
| K18 | 543976 | THROTTLE TRIGGER |
| K19 | 543977 | TRIGGER SPRING |
| K20 | 543995 | PURGE BULB TUB |
| K21 | 543979 | GAS TANK CAP ASSEMBLY |
| K22 | 543981 | SHOCK ABSORBER SCREW |
| K23 | 543982 | SHOCK ABSORBER CLUTCH SIDE |
| K24 | 543983 | SHOCK ABSORBER FRONT |
| K25 | 543984 | SHOCK ABSORBER FLYWHEEL SIDE |

WATER DELIVERY SYSTEM



| Key # | Part No. | Description |
|-------|----------|-------------------------------------|
| L1 | 543996 | WATER HOSE VALVE ASSEMBLY |
| L2 | 547969 | HOSE HANGER |
| L3 | 543999 | WATER HOSE WITH PROTECTIVE COVERING |
| L4 | 544000 | CLAMP, WATER HOSE |
| L5 | 544001 | CLAMP, WATER HOSE VALVE SIDE |
| L6 | 544002 | FRONT HANDLE |
| L7 | 544003 | SHOCK ABSORBER, FRONT HANDLE |
| L8 | 543981 | SCREW, SHOCK ABSORBERS |
| L9 | 544008 | CLIP, FRONT HANDLE |
| L10 | 544009 | SCREW, FRONT HANDLE |
| L11 | 576679 | MUD FLAP |
| L12 | 544011 | BACKING PLATE, MUD FLAP |
| L13 | 544012 | SCREW, MUD FLAP |

5. This section covers the removal, inspection, and assembly of the air intake.**5.1**

Loosen the air filter cover screws and remove the air filter cover.

**5.2**

Loosen air filter screw.

- Inspect air filter for dirt or damage.
- Replace with P/N 544064.



6. This section covers the removal, inspection and installation of the spark plug.

6.1

Remove the spark plug cap.



6.2

Remove the spark plug.



6.3

Inspect spark plug.

- If it's dirty, clean with a wire brush.
- Replace spark plug if fouled or eroded. USE NGK BRMR7A or Champion RCJ6Y.



6.4

Gap if necessary to 0.20" (0.5mm).



6.5

Assemble in reverse order ensuring that the spark plug is properly engaged in threads and fully seated.



7. This section covers side cover removal, side cover nut removal, inspection and assembly.

7.1

Loosen side cover nut.

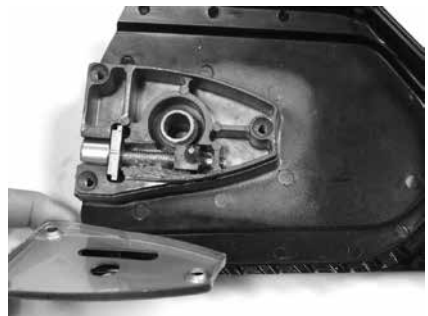
- Remove side cover.
- Remove tensioner plate screws and tensioner plate.



7.2

Remove tensioner assembly.

Note the orientation of the tensioner assembly.



7.3

Inspect tensioner and replace if needed.

- Clean tensioner threads and liberally apply grease to threads prior to assembly.



7.4

Inspect side cover, nut and circlip.
Replace if damaged.

Circlip can be removed with a large
flathead screwdriver.



7.5

Assemble in reverse order.



8. This section covers clutch removal, rim sprocket removal, inspection and assembly. Refer to sections 5 and 6 if necessary.

Rim sprocket removal procedure.

8.1

Using flat head screwdriver, remove retaining ring.

* Use caution when removing retaining ring to prevent damage to the split retainer or crankshaft.

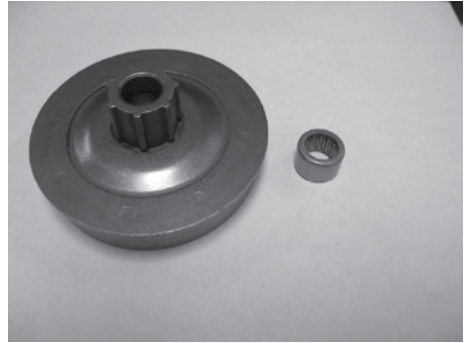
8.2

Remove the split retainer and spacer.



8.3

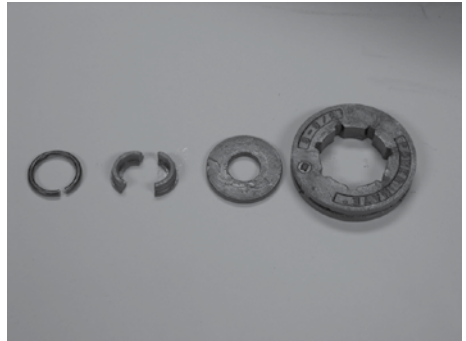
Inspect clutch cup and replace if necessary (P/N 543909).



8.4

Rim sprocket assembly.

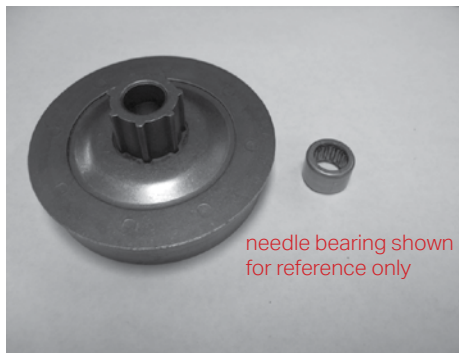
- Assemble in reverse order.



8.5

Remove clutch cup and needle bearing (needle bearing is press fitted into clutch cup).

- Apply grease to needle bearing prior to reinstalling.



8.6

Clutch removal.

- Remove clutch cup & rim sprocket first.



8.7

Insert piston stop tool into spark plug hole.



8.8

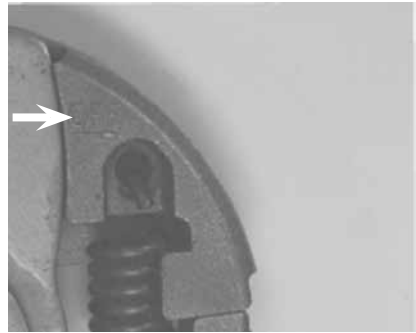
Remove clutch with clutch tool (P/N 546659).

- Rotate clockwise to remove clutch (clutch is left-handed thread).



8.9

Clutch is marked with arrow (off) for direction of removal.



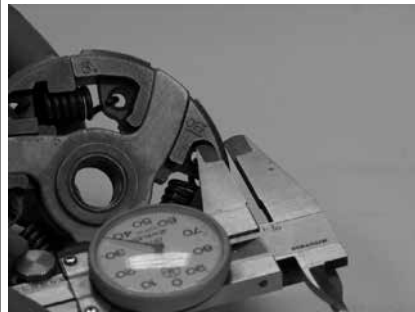
8.10

Inspect clutch shoes (P/N 543927 - CHECK - I can't find this p/n in the RPPL) for excessive wear or damage.



8.12

Height of clutch shoes should not be less than 1 mm.



8.12

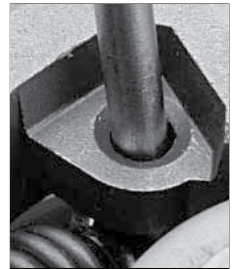
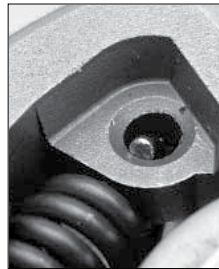
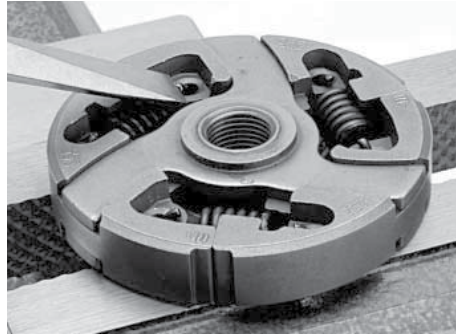
Inspect and clean springs if necessary.



8.13

Remove the springs.

- Set into a vice to hold in place.
 - Place a flat head screwdriver or flat tipped rod against the spring hook.
 - Tap lightly at the end of the screwdriver or rod. This will cause the spring hook to detach.
-
- Push the spring out.
 - Repeat with the remaining two springs.



8.14

Fit clutch shoes.

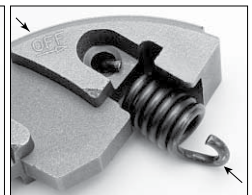
- Slide the spring into the narrower section of the clutch shoe first.

NOTE: All spring hooks should point the same direction as the word "OFF". See illustration at right for an example.

8.15

Fit springs.

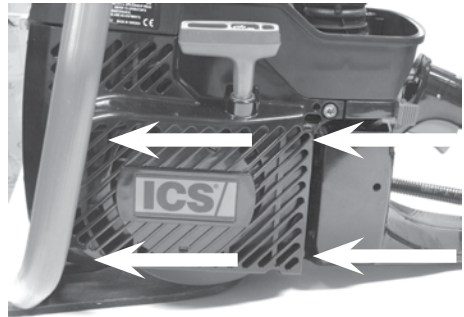
- Turn the clutch so the word "OFF" is facing down.
- Push the spring hook into its hole by using a pointed tool.



9. This section covers the removal of the starter cover, replacement of the starter rope and replacement of the recoil spring.

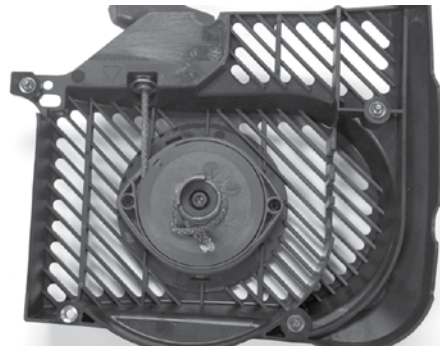
9.1

Loosen (4) starter cover screws.



9.2

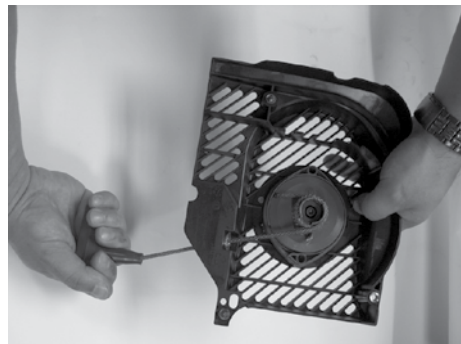
Remove starter cover from the power cutter.



9.3

Relieve spring tension in starter recoil.

- Pull 6 - 8 in (15 - 20 cm) of rope out.
- Line up rope with notch in pulley.



9.4

Rotate pulley shaft counter clockwise, allowing pulley to unwind using rope as a brake.



9.5

Pulley removal from spring.



9.6

Remove the center screw and components.

Note the orientation of the parts.

refer to photo (9.7).



9.7

Note the orientation of the parts for re-installation.



9.8

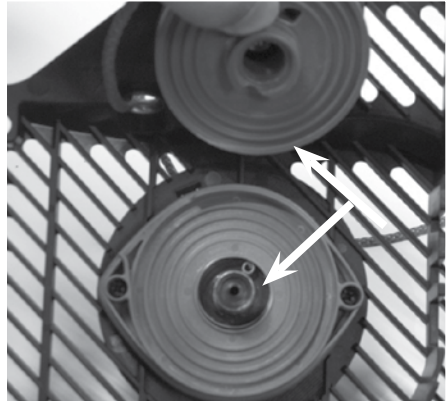
A. Lift pulley from spring housing. NOTE: the spring catch and spring hook must be aligned during installation (arrows).

B. Remove the two screws holding the spring housing.

C. Use CAUTION when removing the spring to prevent the spring from unwinding.

D. Inspect spring and lubricate with light oil.

E. Align notch in spring housing with end of spring.



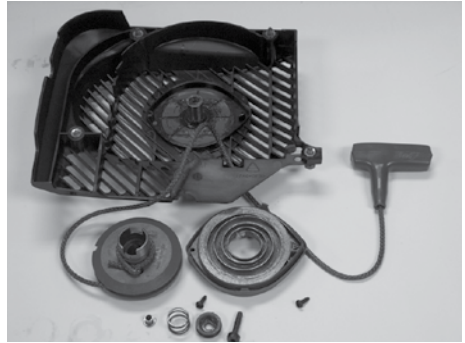
9.9

Inspect rope (P/N 544023) and pulley (P/N 544127). Replace if necessary. Note the orientation of the knot.



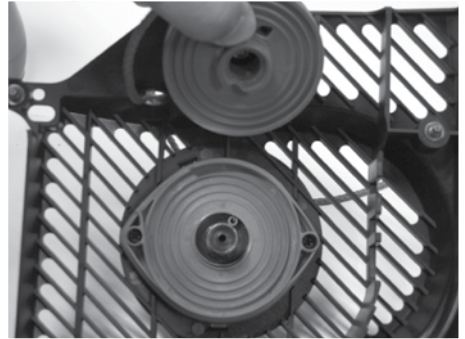
9.10

Assemble in reverse order.



9.11

Install the center screw and components. Note the orientation of the parts for re-installation. See 9.7 for orientation.



9.12

Tension pulley.

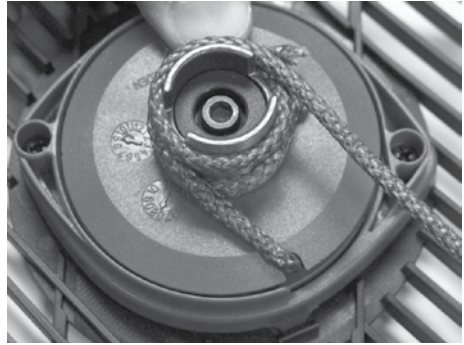
- Wind rope onto pulley clockwise, leaving 6-8 in (15 - 20 cm) of rope out.
- Ensure the pulley spring catch is installed on the spring hook.



9.13

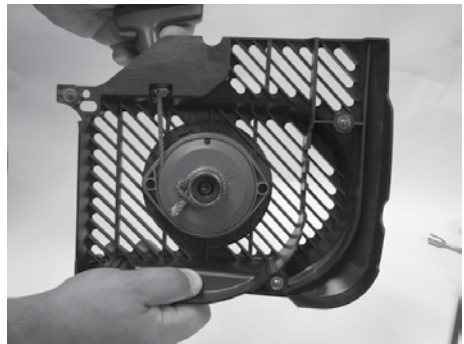
Insert the rope into the pulley notch.

- Wind rope clockwise around pulley shaft 3 - 4 times. Then pull starter rope handle.
- Repeat as necessary to ensure proper spring tension.
- Ensure with starter rope fully extended the pulley can still be rotated an additional 1/2-turn before being stopped by the spring.



9.14

- Rope must fully retract into starter cover.



9.15

Install starter cover.

- Pull starter rope to engage starter pawls and seat cover.
- Tighten side cover screws.



10. This section covers the removal & replacement of the carburetor & cylinder cover. Removal of air intake components and front handle is required. Refer to sections 5 & 15 if necessary.

10.1

Remove air filter cover and air filter.
Refer to section 5.

Remove (2) screws (P/N 544065).

Lift cylinder cover off from the front of
the cover.

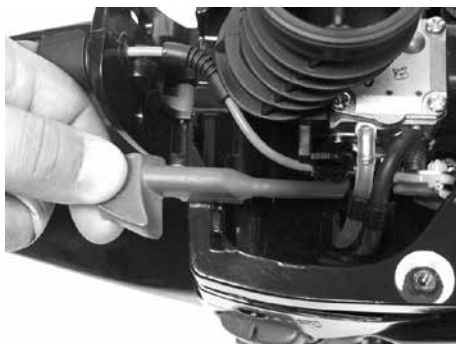
Install in reverse order using Loctite® 242



10.2

Carburetor Removal.

Remove choke lever (P/N 544117).



10.3

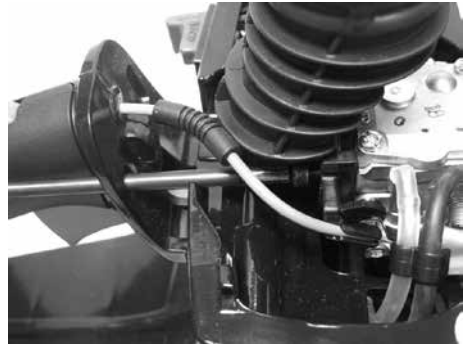
Lift up choke lever and rotate 90 degrees
then pull out from carburetor.

Install in reverse order.



10.4

Remove (2) carburetor mounting screws (P/N 544115) using a Workshop Key Torx T27 (P/N 546191).



10.5

Remove flange screw (P/N 544072).

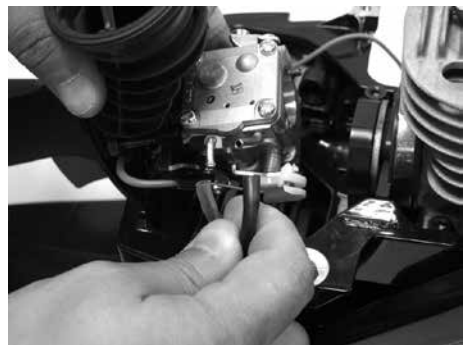
Remove air intake manifold (P/N 544113).

Inspect for damage.



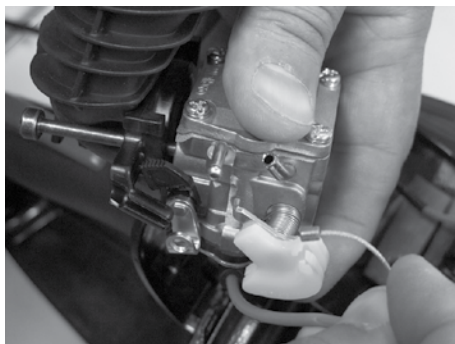
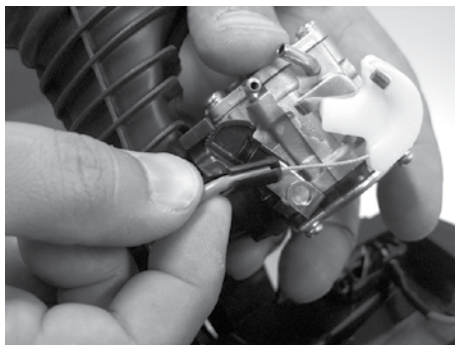
10.6

Remove fuel line, check valve tube and carburetor.



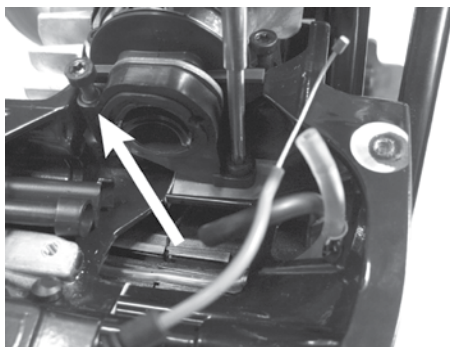
10.7

Remove throttle cable from carburetor.



10.8

Remove clutchside flange screw (P/N 544072) and screw (P/N 544065).



10.9

Remove plate from inlet boot.

Remove the flange bracket and flange from the inlet boot.

Note orientation of plate "UP".



10.10

Loosen clamp.

Inspect and replace inlet boot if damaged (see section 16.2).

- Cylinder must be loosened in order to remove the inlet boot.
- Install in reverse order.
- Using Loctite® 242 for screws.
- Note orientation of plate "UP".



11. This section covers the removal, inspection and assembly of the muffler. Removal of WallWalker® and cylinder cover is required. Refer to section 10 if necessary.

11.1

Muffler removal.

- Remove (2) cylinder/muffler screws (P/N 543942) with screwdriver.
- Remove (1) lower muffler mounting screw (P/N 543846) and muffler mounting washer (P/N 543847).



11.2

Inspect and replace if damaged.

- Muffler (P/N 543845).
- Muffler gasket (P/N 543938).
- Heat Deflector (P/N 543844).

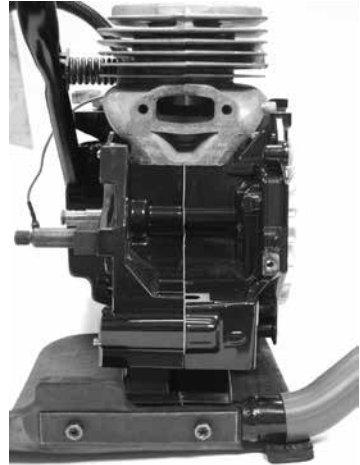
Reassemble in reverse order using Loctite® 242.



12. This section covers the removal, inspection and installation of the guide bar stud. Removal of WallWalker® and muffler is required. Refer to section 10 if necessary.

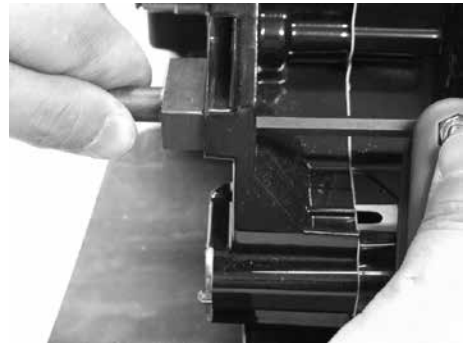
12.1

Bar stud removal (P/N 544129).



12.2

Using a 6 mm allen or hex head, remove (2) bolts holding bar stud.



12.3

Inspect bar stud (P/N 544129).

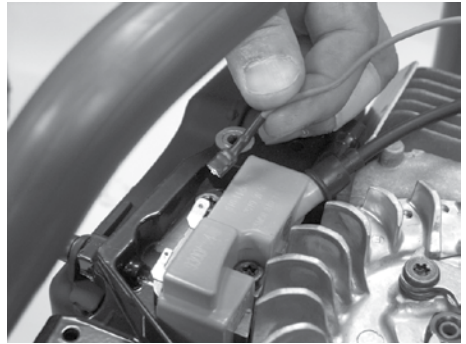
- Replace if damaged.
- Install in reverse order using Loctite®242.



13. This section covers the removal, inspection and installation of the ignition module. Removal of the starter is required. Refer to section 8 if necessary.

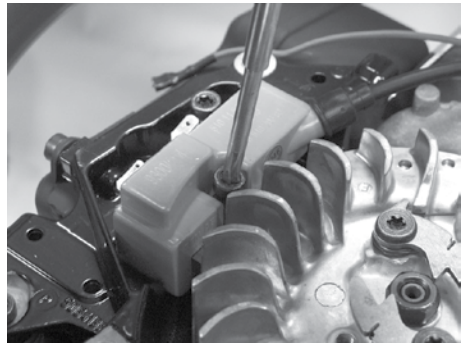
13.1

- Remove starter cover.
- Remove starter cover shield.
- Disconnect the stop switch cable.
- Inspect and replace if damaged (P/N 544032).



13.2

- Remove (2) ignition module screws (P/N 544038).
- Remove ignition module (P/N 544036).
- Inspect and replace if damaged.

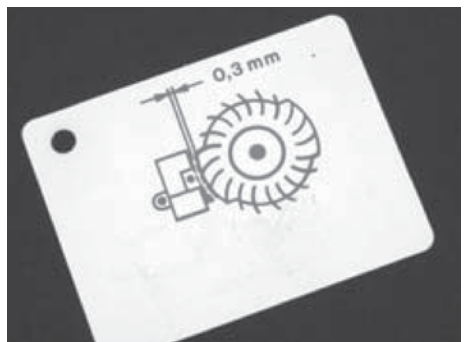


13.3

Reassemble in reverse order.

Place air gap gauge (.010 in/0.3 mm) on the magnet side of the flywheel.

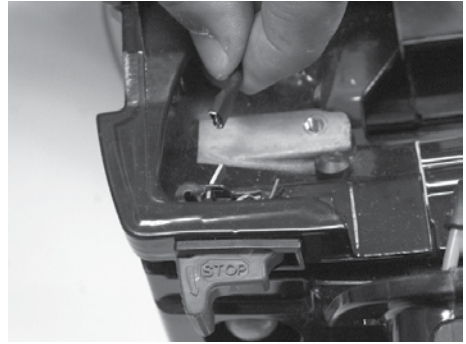
- Set ignition module in place.
- Install ignition module screws with blue Loctite® 242.
- Holding gauge, rotate flywheel magnets around to coil.
- Torque ignition coil screws to 89-105 in/lbs (10 - 12 Nm).
- Remove gauge, rotate flywheel and check for clearance.
- Connect stop switch cable.



14.1

Remove stop switch (P/N 544031).

Disconnect cable wire.



14.2

Remove screw (P/N 544030).



14.3

Pry the switch to the left using the screwdriver.



14.4

Pull the right side out first.

- Replace switch if damaged.
- Install in reverse order.
- Switch will snap back into place.
- Use Loctite®242 only on screw.



15. This section covers water hose and water tank cap.**15.1**

Inspect hose (P/N 543999), water pipe (P/N 543915) and water valve (P/N 543996).

Replace if damaged.

**15.2**

Release clip from water inlet pipe.
Pull hose upward.

Inspect hose and water inlet pipe,
replace if damaged.

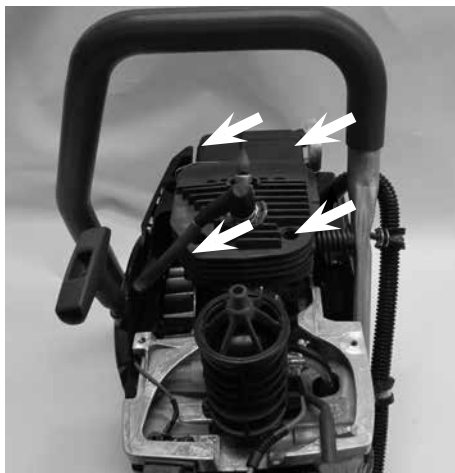


16. This section covers the removal, inspection and assembly of the cylinder, piston and related components. Refer to section 5 & 10 if necessary

16.1

Remove outer shock absorber screw (set aside for reassembly) (P/N 543981).

Loosen (4) cylinder screws(P/N 543942).

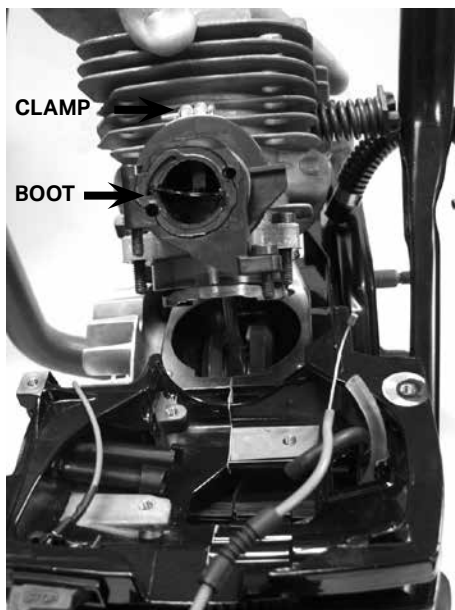


16.2

Remove cylinder from piston.

Remove shock absorber screw (see section 16.1).

Remove inlet boot and clamp. Set aside shock absorber, boot & clamp for reassembly later (see section 10.9).



16.3

Remove wrist pin clip from each side of piston.



16.4

Remove wrist pin using the wrist pin punch (P/N 543196).

Remove piston and cylinder base gasket.



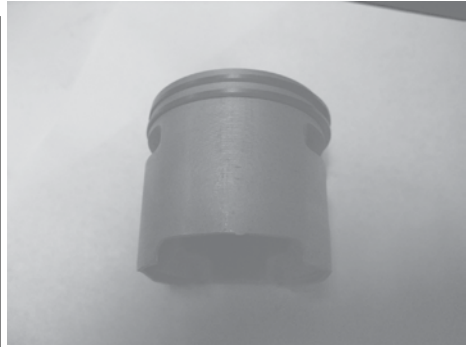
16.5

Clean crankcase.



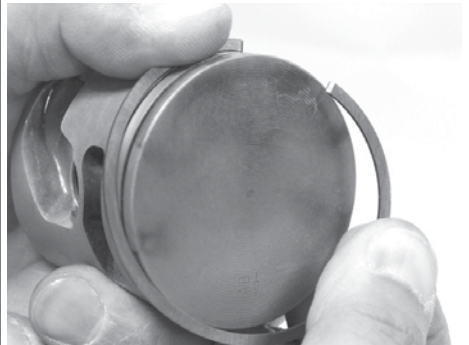
16.6

Inspect cylinder and piston (P/N 543843)
replace if damaged.



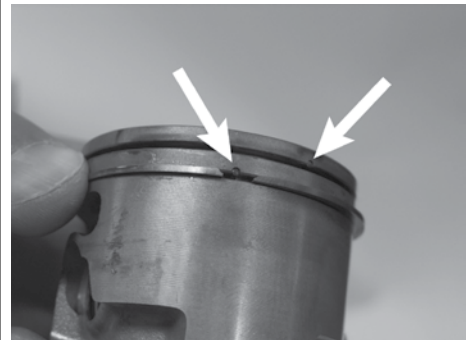
16.7

Install piston rings.
Install lower piston ring first.



16.8

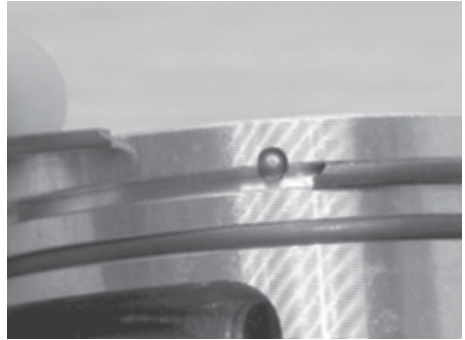
Note the ring locator pins.



16.9

Note ring orientation.

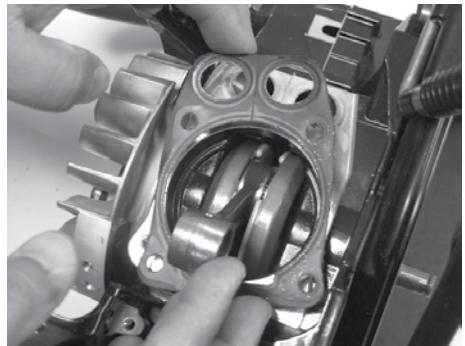
*If rings are installed upside down or incorrectly, ring will not seat properly and piston damage will occur.



16.10

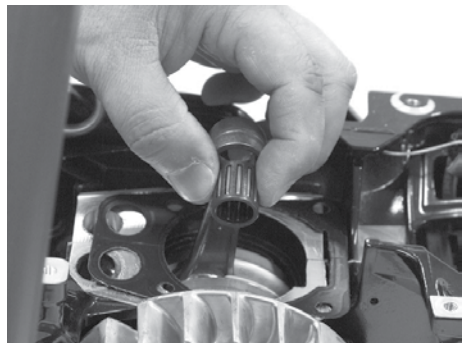
Lubricate crankcase gasket mating surface with ICS® 2-stroke oil.

Install cylinder base gasket.



16.11

Lubricate needle roller with ICS® 2-stroke oil. Insert into the connecting rod.



16.12

Lubricate wrist pin with ICS® 2-stroke oil and partially install in the piston.



16.13

Install wrist pin clip into opposite side of the piston.

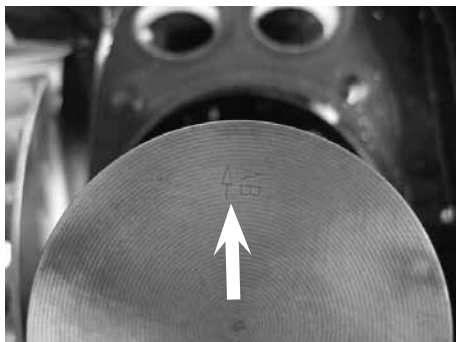
Make sure wrist pin clip is in the proper orientation.

See 16.15



16.14

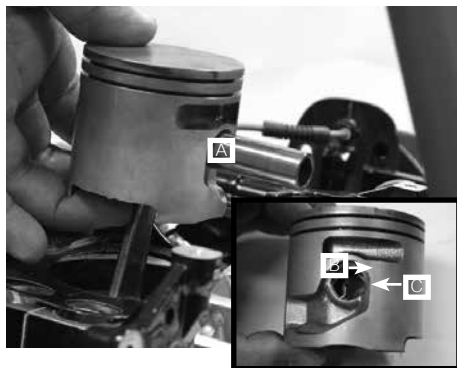
Align the piston in correct orientation. Arrow on top of the piston points towards the muffler/exhaust port.



16.15

Install piston.

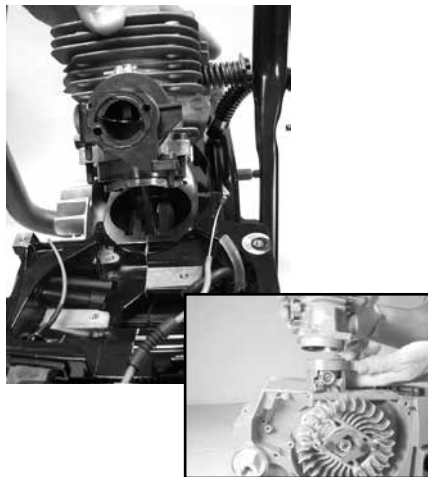
- A.) Align wrist pin with wrist pin needle bearing.
- B.) Complete wrist pin installation.
- C.) Install second wrist pin clip (note the orientation of the pin clips).
- D.) Coat piston with ICS® 2-stroke oil.



16.16

Install the inlet boot clamp, flange bracket, flange and shock absorber screw before cylinder installation.

- A.) Lubricate the cylinder bore with ICS® 2-stroke oil.
- B.) Compress the rings with compression tool (P/N 71543).
- C.) Slide cylinder onto piston, pushing ring tool down.
- D.) Remove ring compressor.
- E.) Slide cylinder onto piston and into the crankcase.
- F.) Align cylinder bolt holes with crankcase. Align cylinder screw with holes on gasket & crankcase.



16.17

Install (4) cylinder screws using Loctite®242. Torque to 132-156 in-lbs (15 - 18 Nm).



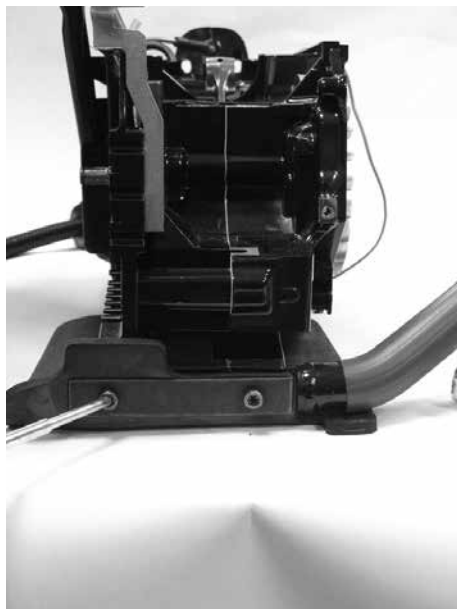
17. This section covers the removal, inspection and installation of the bottom guard and front handle.

17.1

Remove (2) screws (P/N 544012) and guard flap backing plate (P/N 544011).

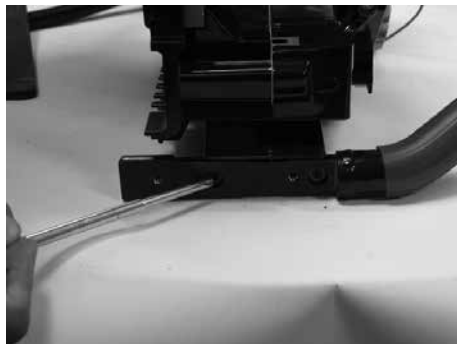
Inspect guard flap for damage (P/N 576679) replace if damaged.

Reassemble in reverse order using Loctite®242.



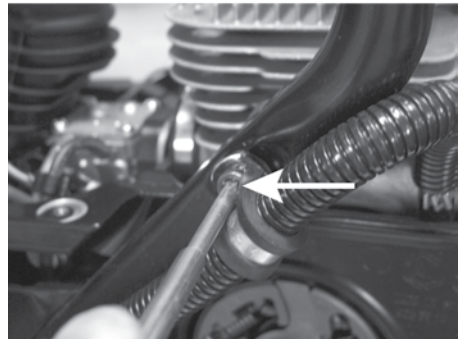
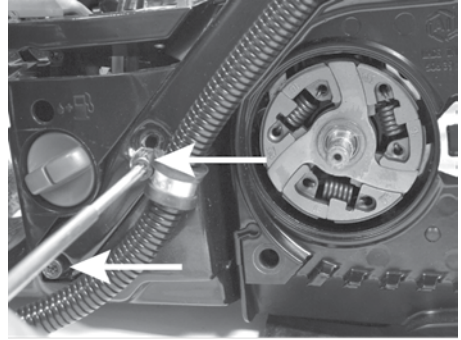
17.2

Remove (2) screws from lower front handle (P/N 544009).



17.3

Remove (3) screws on the side of the handle (P/N 544009).

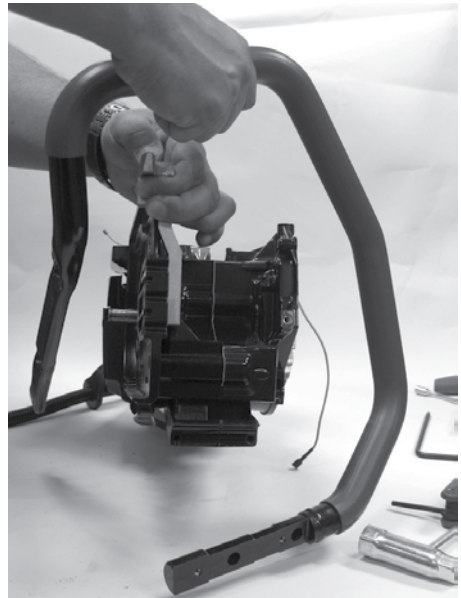


17.4

Lift up crankcase and remove handle, inspect and replace if damaged.

Install in reverse order

Use Loctite®242 on all screws except shock absorber screw.



18. This section covers the removal, inspection and installation of the rear handle.**18.1**

Remove screw from rear handle (P/N 543974).

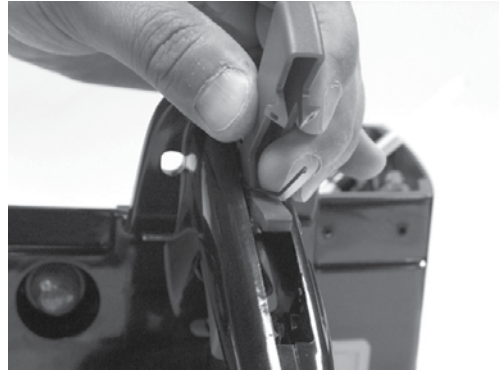
**18.2**

Remove rear handle cover (P/N 543816).



18.3

Remove throttle lock out (P/N 543815) by squeezing, pulling up and out.



18.4

Remove throttle trigger (P/N 543976) by pushing the (2) parallel pins (P/N 543813) from the rear handle housing.



18.5

Pull the throttle trigger and spring (P/N 543977) down from the rear handle.



18.6

Remove throttle cable (P/N 543975)
See section 10 to remove cable from carburetor.



18.7

Remove cable lever (P/N 543814) using
needle nose pliers pulling up.



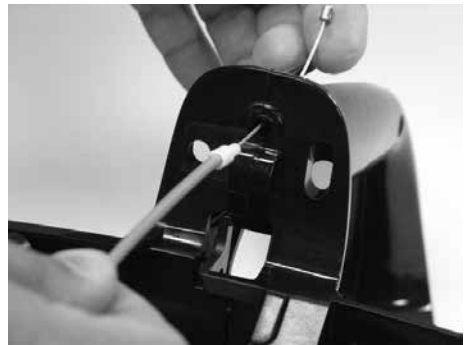
18.8

Remove throttle cable from cable lever using an awl or small punch.



18.9

Remove throttle cable through the front of the handle.



18.10

Inspect all throttle component parts.

- Replace if damaged.
- Reassemble in reverse order.



19. This section covers the removal, inspection, and assembly of the shock absorbers, fuel tank and components**19.1**

Remove fuel cap (P/N 543979).

- Inspect fuel cap and O-ring.
- Replace if damaged.

**19.2**

Remove fuel filter (P/N 543971).

Use a small hook to remove filter from gas tank.

**19.3**

Remove fuel filter.

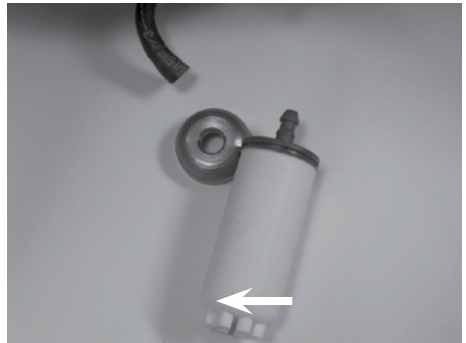
- Pull up on hose clamp (P/N 543970).
- Pull down on fuel filter.



19.4

Inspect fuel filter and line.

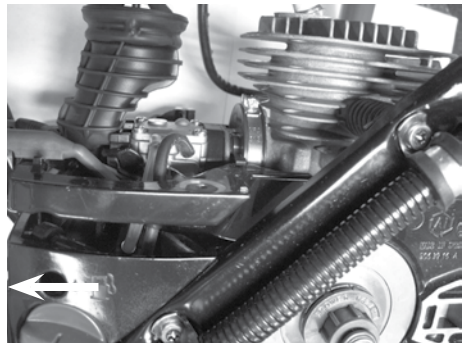
- Replace if damaged or dirty.
- Reassemble in reverse order.



19.5

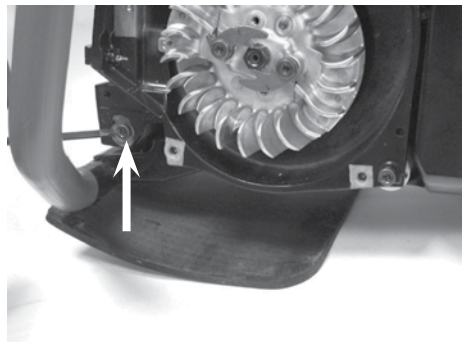
Before separating the fuel tank from crankcase, remove the front handle (see section 17) and throttle cable (see section 10).

Remove the (2) shock absorber screws from the clutch side of the power cutter.



19.6

Remove the (2) shock absorber screws from the flywheel side of the power cutter.



19.7

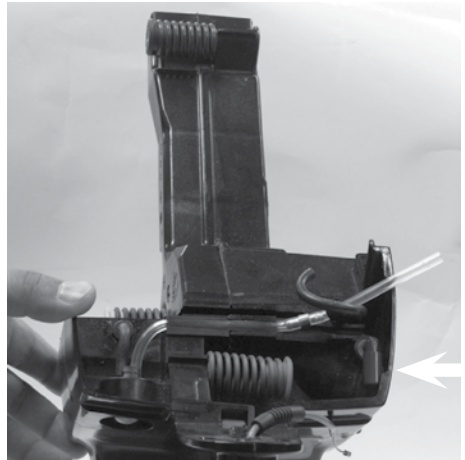
Separate fuel tank from crankcase by pulling up on the crankcase while holding the fuel tank.



19.8

Inspect Tank Vent Assembly.

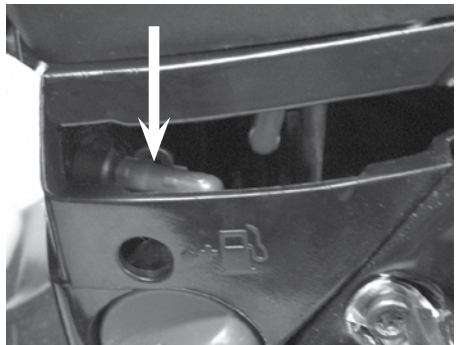
Location of the tank vent on a disassembled power cutter.



19.9

Location of the tank vent on an assembled power cutter.

NOTE: The breather assembly can be removed without removing the fuel tank.



19.10

Using a small wedge, insert between the crank case and fuel tank to create more space.



19.11

Remove fuel cap and locate the fuel tank breather hole. The hole is directly in line with the breather assembly.



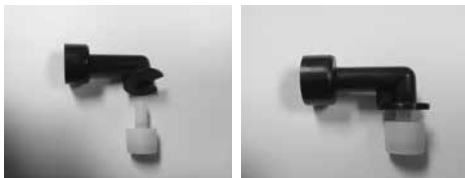
19.12

Using a small pick or Allen wrench, push the breather assembly up and out of the breather hole



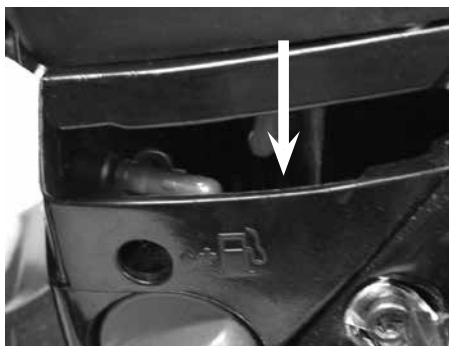
19.13

Assemble the tank vent elbow and tank vent by pressing together.



19.14

Insert the breather assembly by pressing directly over the elbow (see arrow at right) and vent into the breather hole.



19.15

Inspect the tank vent and replace if damaged.
Refer to troubleshooting (section 25) if necessary.



19.16

Inspect fuel tank for damage.

Replace if damaged.



19.17

Shock Absorbers

Using the Workshop Key Torx T27 (P/N 546191), remove shock absorbers.

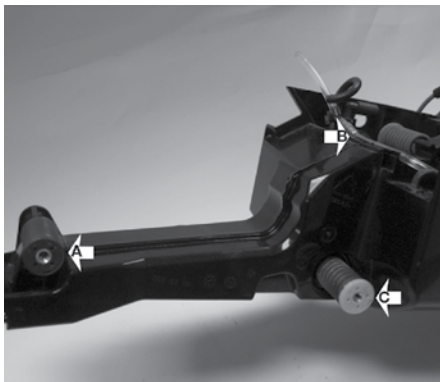
A.)Front shock absorber (P/N 543983).

B.) Clutch side shock absorber (P/N 543982).

C.)Flywheel side shock absorber (P/N 543984).

Inspect and replace if damaged.

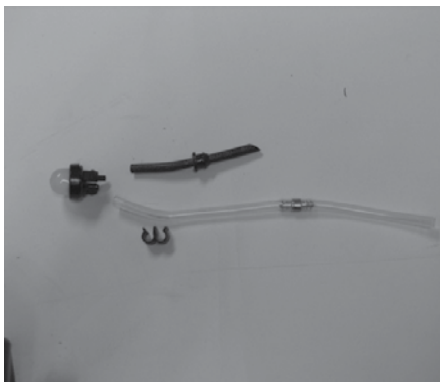
Install in reverse order using Loctite® 242 (except Tank Vent).



19.18

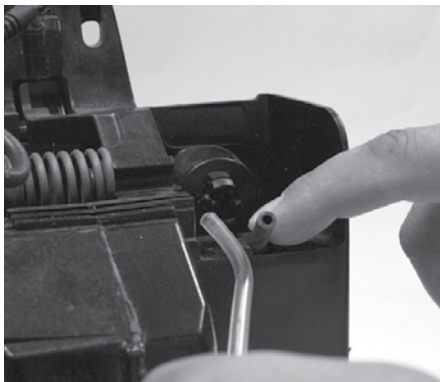
Purge bulb circuit.

Refer to troubleshooting (section 24) if necessary.



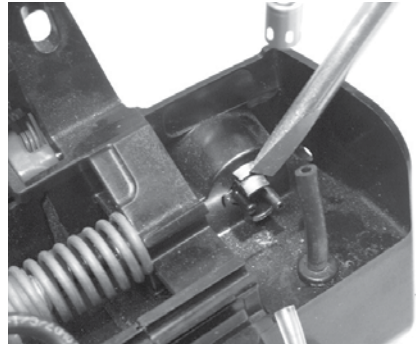
19.19

Disconnect the purge bulb tube, return line (P/N 543995) and disconnect check valve tube (P/N 543994).



19.20

Remove purge bulb (P/N 543973) lightly depress tab to disengage purge bulb.

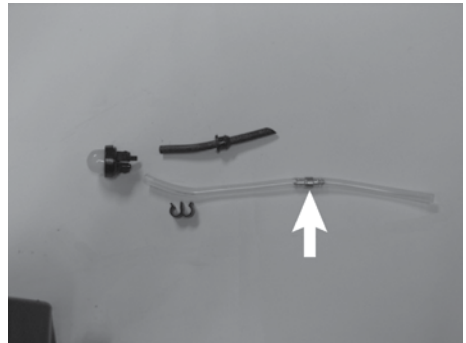


19.21

Inspect all components.

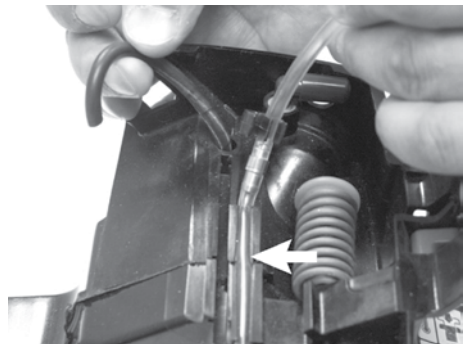
Replace if damaged. Check valve (P/N 543969) flows one way, ensure that it is installed correctly. Fuel flows towards the purge bulb.

Refer to troubleshooting (section 24) if necessary.



19.22

Reassemble in reverse order. Check valve tube must be inserted back into channel and connected to fuel line with clip. (P/N 543818).



20. This section covers the disassembly, inspection and assembly of the crankcase seals and bearings.

20.1

Crankcase seal puller and punch.



20.2

Crankcase seals.



20.3

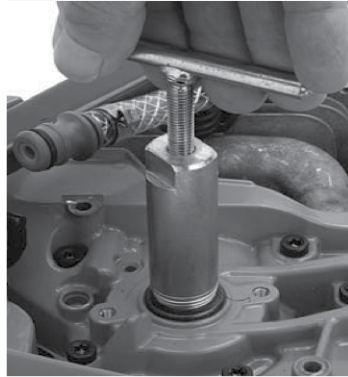
Seal removal.

A.) Insert T-handle puller over the shaft.
B.) Apply downward pressure to the T-handle and turn the barrel clockwise with a wrench to thread into the seal.



20.4

Turn the T-handle until it presses against the shaft and pulls the seal from the crankcase.



20.5

Lift off the seal and inspect the shaft for damage.



20.6

Lubricate the shaft with High Pressure Grease.



20.7

Install the new seal.

Use caution as seal slides over the threads.



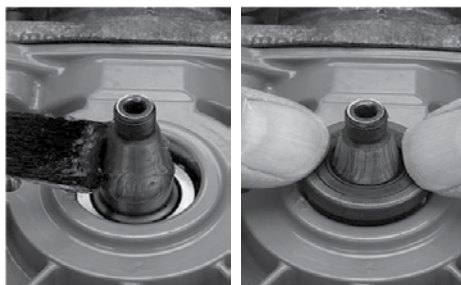
20.8

Use the punch and soft mallet to tap seal into place.



20.9

Repeat procedure for the flywheel side.



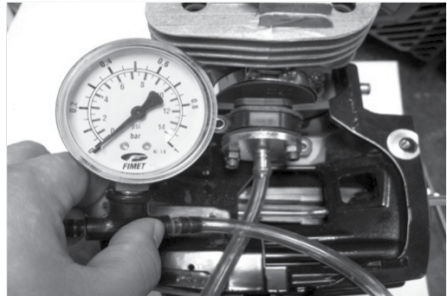
20.10

Using soapy water on both sides, perform a crankcase leak down test using pressure gauge and vacuum gauge.



20.11

Use pressure gauge to perform a leak down test. Pressure should hold at 7 psi (0.5 bar).



20.12

Crankcase separation.

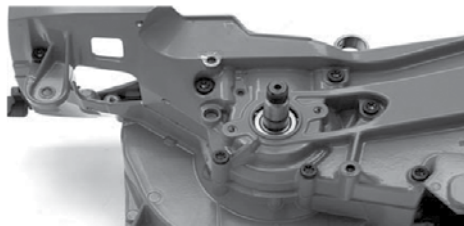
The universal puller and grip plate are required to separate the crankcase.



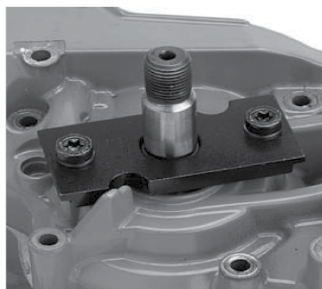
20.13

Remove the shaft seals from both sides of the crankcase.

See seal removal.

**20.14**

Install grip plate on the clutch side of the crankcase.

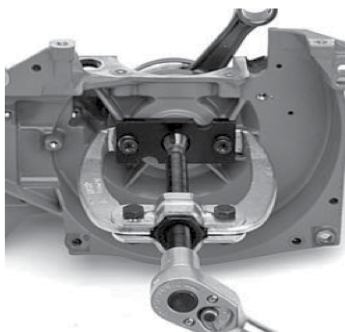
**20.15**

Attach universal puller and press out the crank shaft.



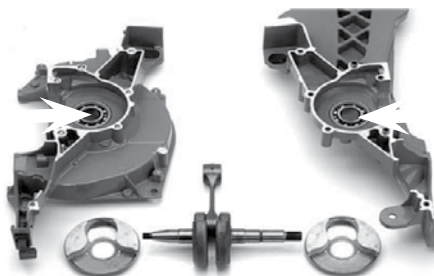
20.16

Using the same process, press out the other half from the flywheel side.



20.17

Separated crankcase halves with bearings installed.



20.18

If the bearing(s) remain on the shaft upon separation, the bearing removal tool must be used.



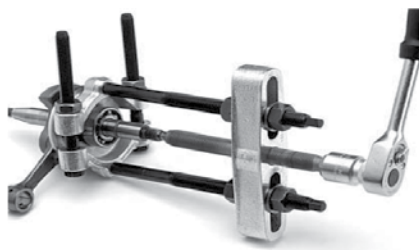
20.19

Install the bearing clamp and tighten nuts.



20.20

Install the bearing puller and press the bearing off the shaft.



20.21

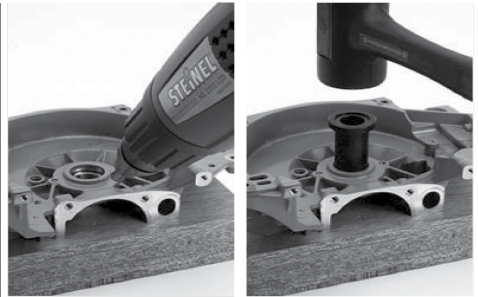
Crankcase bearing tools. These tools are required to remove the bearing from the crankcase.



20.22

Heat crankcase halves to 150°F (65.5°)

C. Use the shaft sleeve and soft mallet to tap out both bearings.



20.23

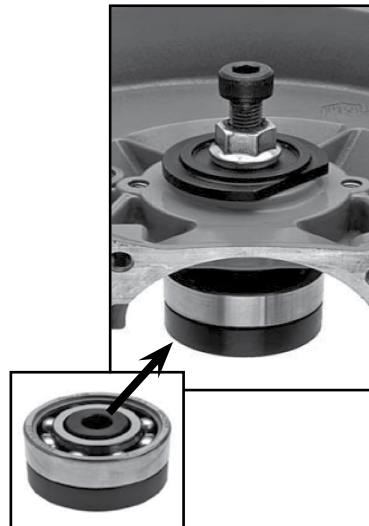
Bearing installation.

Bearing press tools.



20.24

Place the bearing on the bearing support plate. Holding the bearing support plate under the crankcase half.



20.25

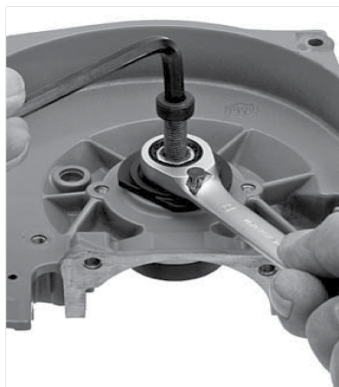
Place the screw with nut and washers through the crankcase support plate and thread into the bearing support plate.



20.26

Hold the screw in place and turn the nut until the bearing stops against the crankcase.

Repeat the process for the other half of the crankcase.



20.27

Bearing Tools.

Shaft Sleeve.

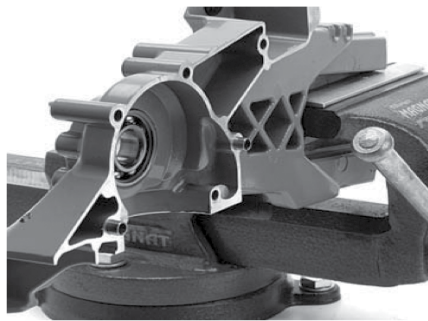
Shaft Mandrels.



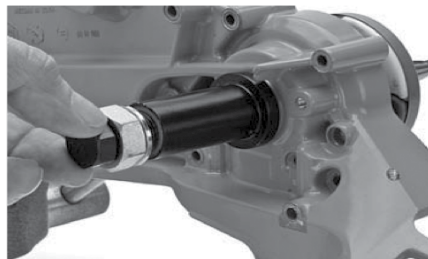
20.28
Bearing press kit.



20.29
Crankshaft install.
Secure clutch side crankcase face down,
so the connecting rod is not pinched
against the crankcase.

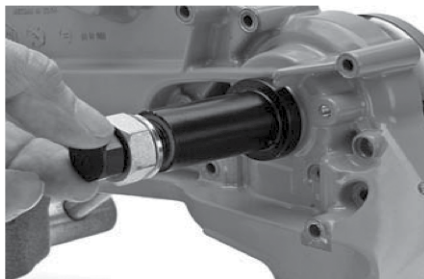


20.30
Slide the clutch side shaft through the
bearing.



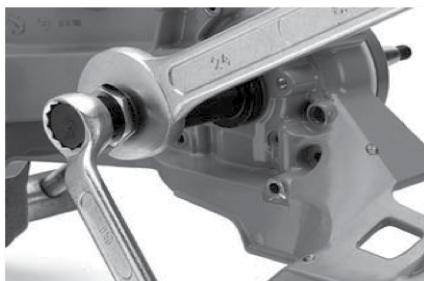
20.31

Slide the shaft sleeve over the shaft, against the crankcase. Thread the M12 mandrel with the nut and washer until it bottoms (Note - **REVERSE THREAD** on the clutch side).



20.32

Hold mandrel in place, turn nut clockwise until the shaft reaches the top at the bearing. Ensure the connecting rod is not pinched against the case.



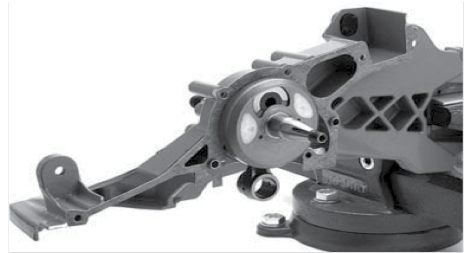
20.33

Install the (2) crankcase guide pins.



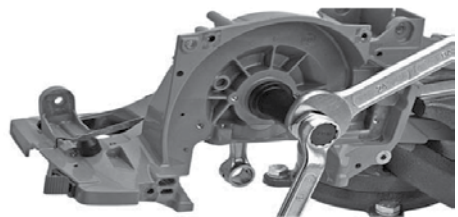
20.34

Lubricate the crankcase halves with ICS® 2-stroke oil and install the crankcase gasket.



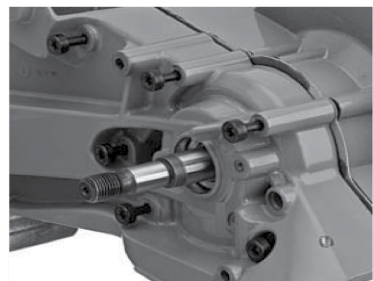
20.35

Lubricate and assemble the flywheel side of the crankcase using the same method, with the M8 standard thread mandrel. Ensure the connecting rod does not become pinched between the crankcase halves.



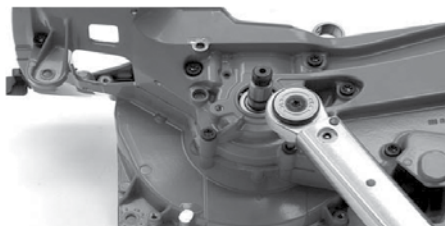
20.36

Loctite®242 and prefit the (8) screws and align the guide pins before bringing the crankcase together.



20.37

Tighten the screws to 106 - 124 in-lbs./
12 - 14 Nm using an "x" pattern.



20.38

Cut the excess gasket over the cylinder
port and carburetor area. Tap both sides
of the shaft with a soft mallet and ensure
free movement of shaft and connecting
rod.



20.39

Install shaft seals (refer to section 20.7).



21. This section covers the carburetor tuning.**21.1**

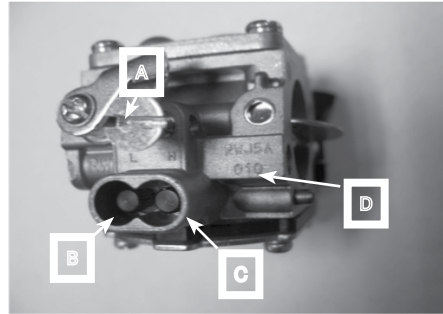
Carburetor tuning.

A.) Throttle screw.

B.). Low speed jet.

C.). High speed jet.

D.). Model number.

**21.2**

Tools required:

Tuning screwdriver.

Flat screwdriver.

Tachometer.

**21.3**

Carburetor adjustment.

Tachometer is required for proper tuning of the power cutter.



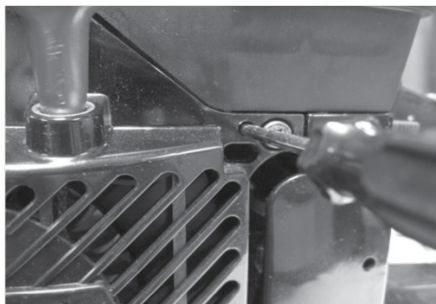
21.4

Throttle screw.

Basic setting:

T = 3 turns from closed.

Used to adjust chain speed at idle.



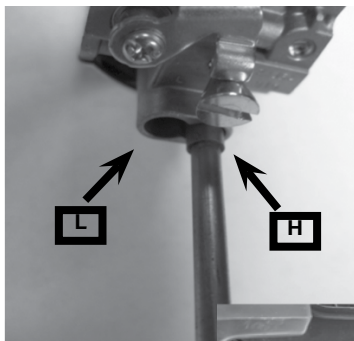
21.5

Carburetor basic setting:

H= 1 1/2 turns from closed.

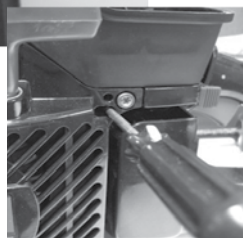
L= 1 5/8 turns from closed.

Insert the tuning screw driver into the crankcase slot. Note the H screw is on the right as seen in the picture.



21.5a

Turn both the H and the L needle screws clockwise until they stop.



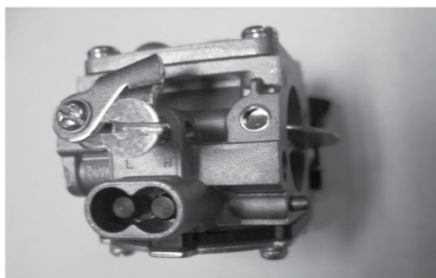
21.7

Turn the screws counter clockwise to the carburetor basic settings.

Carburetor basic setting:

H= 1 1/2 turns from closed.

L= 1 5/8 turns from closed.



22.1

Verify the RPM's using the tachometer.

Start and warm up the power cutter

NOTE: This is a "no load" tuning procedure. The side cover must be securely fastened with a bar and chain.

Water MUST be used, failure to follow this procedure may result in personal injury and or damage to the power cutter.



22.2

Using the tachometer, check the power cutter RPM's at idle.

- Idle speed = 2700 RPM's +/- 150.

- Make minor adjustments using the throttle screw.

Using the tachometer, check the power cutter RPM's at full throttle.

- Full throttle target = 9300 RPM's +/- 150.
- Make minor adjustments using the throttle screw.



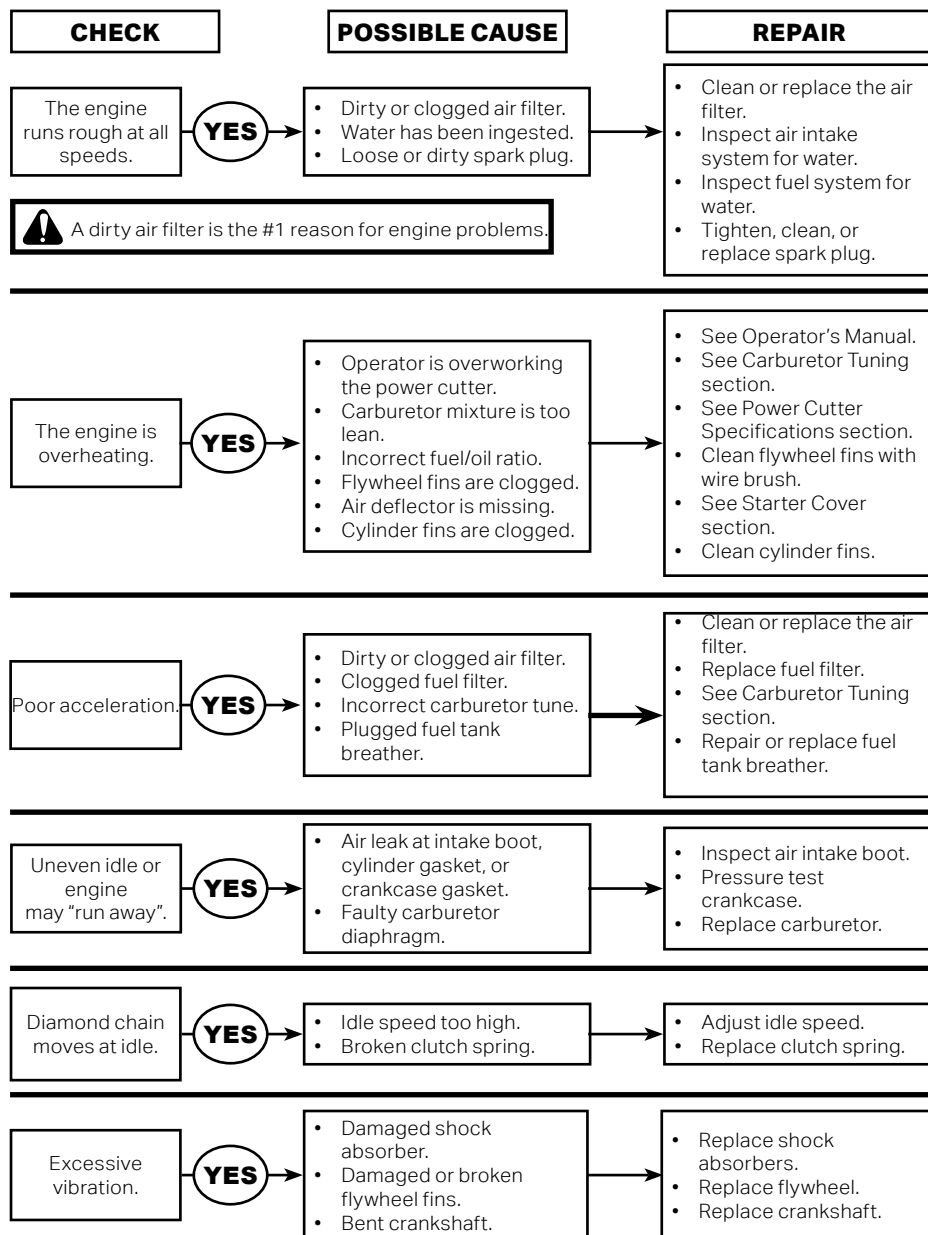
Do not hold the power cutter at maximum RPM for more than 5 seconds.

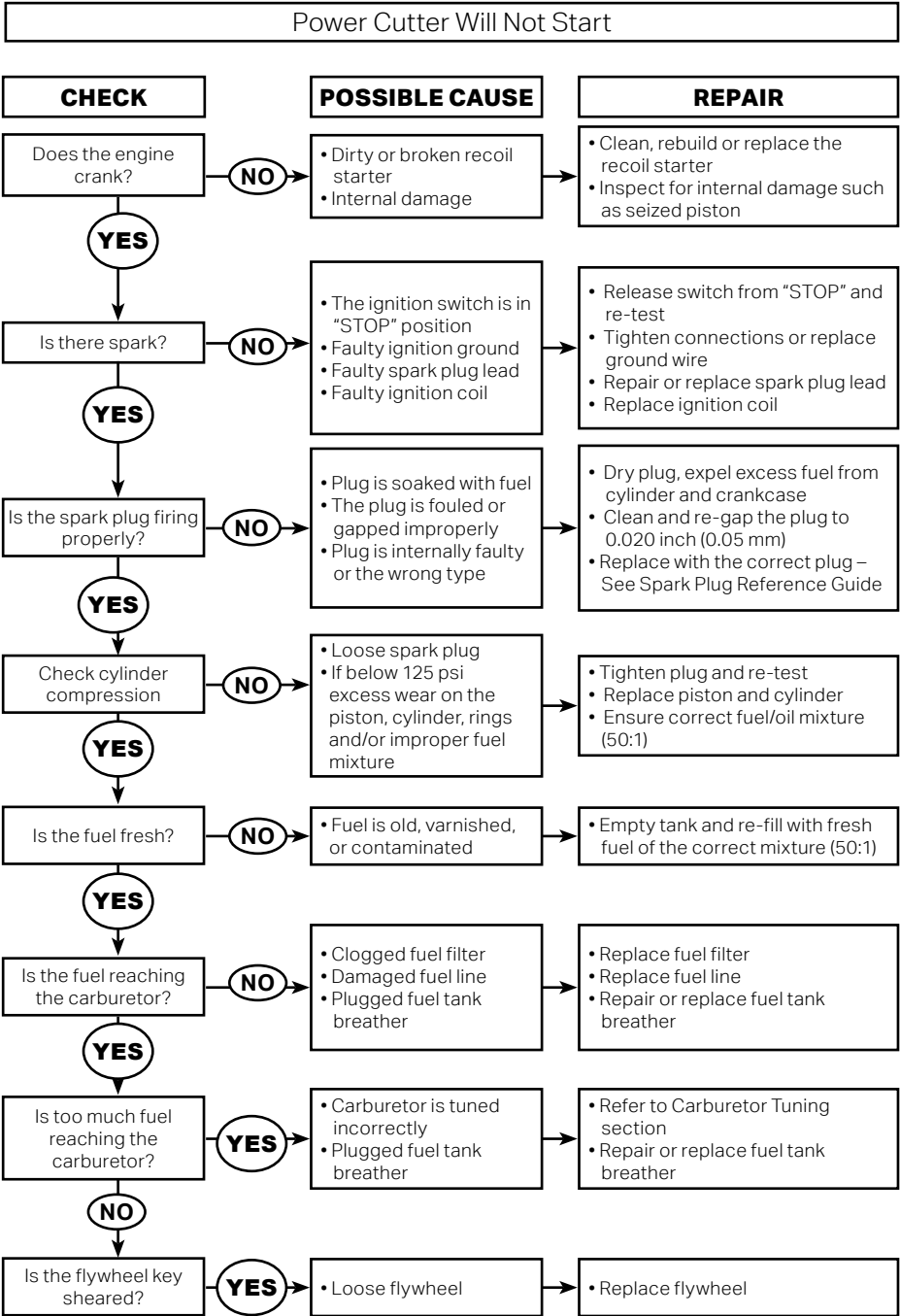
If the full throttle RPM falls below this range, turn the H needle clockwise 1/16 of a turn at a time, checking the RPM's at each interval.

NOTE: pulse the throttle to stabilize the system.

Once the carburetor is adjusted, install the chain to the proper tension and continue normal operations.

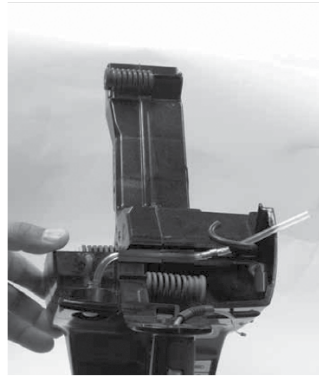
23. This section provides several flowcharts to aid diagnosing common problems.



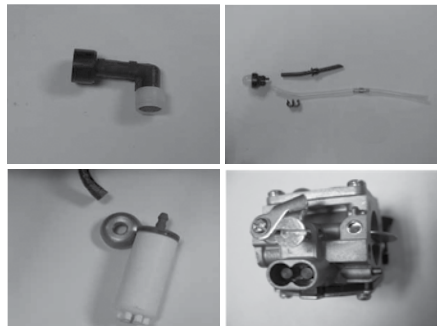


24. This section covers testing the fuel system.**24.1**

Engine starvation can result from a leak or malfunction of any of the main components of the fuel system.

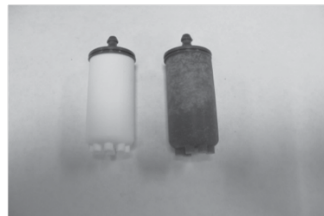
**24.2**

The main components are the fuel tank, fuel tank breather, fuel filter, purge bulb, delivery tubes and carburetor.

**24.3**

Remove and inspect the fuel filter.

Replace the fuel filter if the filter is excessively dirty or there is foreign material stuck to it.



24.4

Test the main fuel pick-up for leaks.

Install the pressure gauge and bulb to the filter end of the fuel line.

Pressurize the tube to 7psi (0.5 bar)

If the pressure does not maintain, separate the fuel line from the carburetor

24.5

Plug one end of the fuel pick-up tube.

Pressurize the tube to 7 psi (0.5 bar).

If the pressure holds, the leak has been isolated to the carburetor. Refer to the Walbro Carburetor Service Manual.

<http://wem.walbro.com/distributors/servicemanuals>

**24.6**

The fuel tank breather stabilizes the pressure in the fuel tank preventing both excessive pressure, which could flood the engine and negative pressure which could starve the engine of fuel.

**24.7**

The fuel breather is located above the fuel cap on top of the fuel tank.



24.8

Testing the fuel tank breather.

Attach the pressure gauge to the fuel tank plug. Plug the fuel line at the carburetor end. Pressurize the tube to 4.5 psi (0.3 bar).

The pressure should reduce to nearly 0 psi (0 bar) over a period of 3 seconds.



24.9

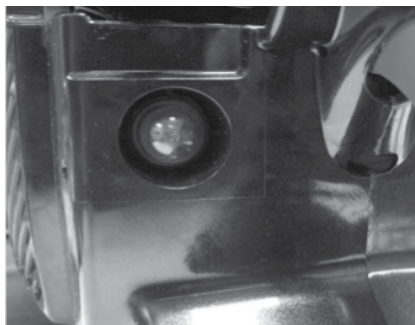
If the pressure does not release, disassemble or replace the breather.



24.10

Inspect the fuel purge circuit.

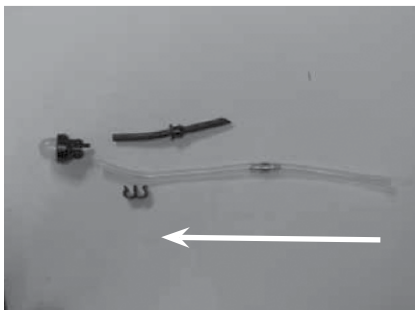
Inspect the purge bulb for leaks or damage. Replace if damaged. See fuel tank section.



24.11

Inspect fuel purge lines and one way purge valve for leaks or damage. The arrow is the purge flow direction.

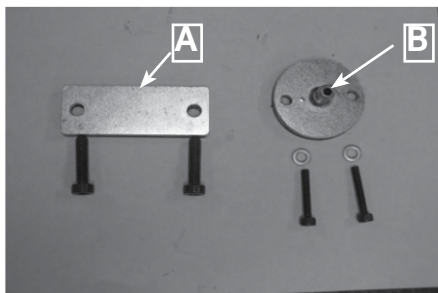
Replace if damaged. See fuel tank section.



25. This section covers testing the crankcase for leaks. A crankcase leak can cause the engine to run too lean, causing engine damage, or not run at all.

25.1

- A.) Exhaust Seal Flange.
B.) Intake Seal Flange.

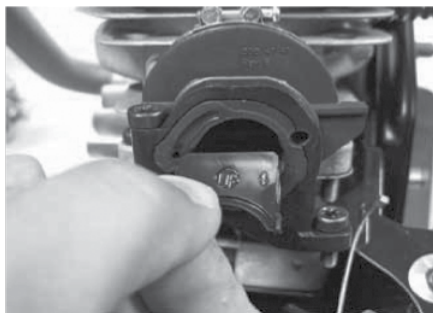


25.2

With the carburetor and muffler removed, block the intake and exhaust ports with the seal flanges.

See Cylinder Cover and Muffler sections.

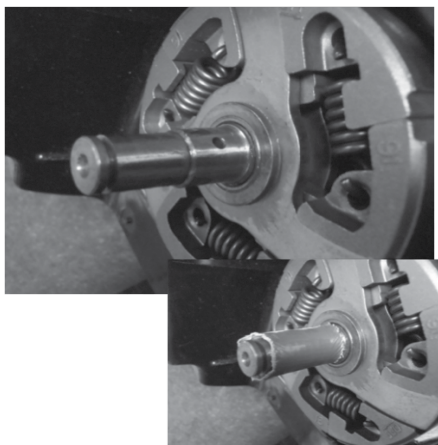
NOTE: Remove intake plate from intake boot prior to installing intake seal flange.



25.3

Securely plug or tape over the clutch needle roller lubrication port on the crankshaft.

Clutch cup and needle roller must be removed. See Clutch Cup and Rim Sprocket Section (section 8).

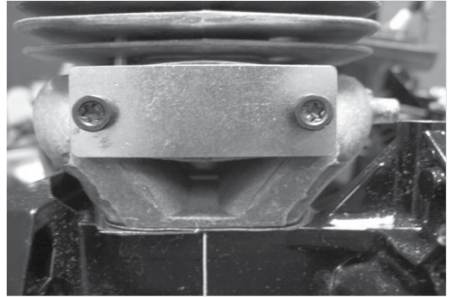


25.4

Install the exhaust seal flange.

Use the muffler mounting screws to install the flange.

Be sure the spark plug is secure and the decompression valve is pulled out.



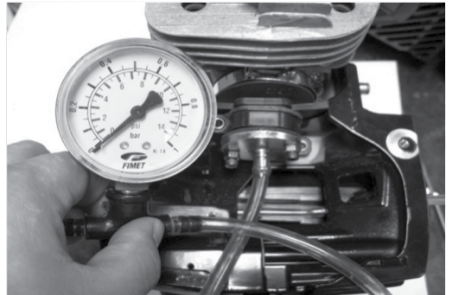
25.5

Install the intake seal flange.

Use M4 x 20 screws w/ washers (not supplied) to secure the seal flange.

Install the pressure gauge and pressurize the crankcase to 7 psi (0.5 bar). If the pressure does not hold, use soapy water to find the leak.

Note: it is recommended to pressure test the engine after a piston and cylinder rebuild, and or crank seal replacements.



This appendix covers the removal, inspection, and installation of the spark plug for the 695XL.

Remove the spark plug lead.

Clean area around the spark plug to prevent debris from entering the cylinder.

Remove the spark plug.

Inspect the spark plug.

If dirty, clean with a wire brush as shown.



Gap if necessary to 0.02" (0.5 mm).

Champion RCJ-6 or NGK-BPMR7A

Assemble in the reverse order.

Make sure the plug boot is seated completely.



695XL SERVICE MANUAL

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