Name	Class Period

TEARDOWN
950 Series OHV
Model 130G32-0022-F1

	TASK	HARDWARE	TOOL	TORQUE	MANUAL LOCATION		
					SEC.	PAGE	FIG.
	Based on APSI: xxxx TBD						
	Total Time: Minimum of 4 hours						
	Tool List File Name: 900 Series M13 Required Tools.DOC						
	Engine Stand: N/A						
	This is a 208cc horizontal shaft Utility engine. Features are heavy duty and include dual element air cleaner, dual ball bearings, cast iron sleeve, helical cut gears, metal fuel tank						
	DISASSEMBLY						
1	**Do a walk around of the engine, describing the following features**						

	TASK	HARDWARE	TOOL	TORQUE	MANUAL LOCATION		
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	• Steel Fuel Tank • Throttle Control (right to left) • Top No Load Speed Adjuster • Air Cleaner (dual element) • Full Circuited Carburetor • Manual Choke • Fuel Shutoff • On/Off Rocker Switch • Rewind Grip • Rewind • Bowl Drain • Remote Magneto Stop Connector • Muffler • Spark Plug Boot • Spark Plug • Throttle Cable Bowden Wire Clamp • Valve Cover • Breather Hose • Carburetor • Cylinder Air Guide • Oil Fills • Oil Drain Plugs • Mounting Feet • Governor Arm Pinch Bolt						
	• Accessory Mounting Boss • Attachment Bolt Circle • PTO • Engine ID Sticker and Individualized Serial Number • Emission Data Label • Model, Type, Code Data Stamped into Block **Note**: If engine has previously been run, be prepared for approximately 40cc of oil in the crankcase and 2cc of fuel in the carburetor even though fluids had been drained						
	CLOSE FUEL SHUT OFF VALVE AND REMOVE SPARK PLUG LEAD!						
2	Remove Air Cleaner Cover and Air Filter Element	Plastic Nut and metal wing nut 2x	By Hand				

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	• Air cleaner cover protects and stylizes-pre-filter and filter element • Pre-filter can be washed with water and dish soap. Ring out, and squeeze in paper towel to dry. Lightly oil pre-cleaner with SAE30 • Never use compressed air to clean a paper cartridge. Air under pressure will enlarge the pores of the element compromising its ability to filter out particles • Tap cartridge gently on a hard surface to clean						
3	Remove Front Engine Decorative Panel	Plastic Knob Screw 3x	Hand 8mm				
	• Remove Speed control lever knob first to facilitate easy removal • Stylizes engine and protects fuel line						
4	Remove Muffler	Nut 2x	13mm				
	• Lo-Tone Series • Stamped guard standard, Wire-form guard optional. Includes 12-hole outlet deflector mounting, moisture drain in bottom of housing, and single rain deflector mounting hole on outlet pipe						
5	Remove Spark Plug		16mm Spark plug socket				
	• Installed plug is a long reach with projected electrode • Plug is Champion QC12YC .030” Gap						
6	Remove Air Cleaner Base	Screw 1x Nut 2x	8mm 10mm				
	• Keep screw separate – it’s a different length than most • Assembly provides air cleaner mounting provisions and breather inlet • Carefully pull breather line off base before removing hardware • Position control levers by turning fuel valve to off position and choke to open • Note correct position of gaskets for reassembly						
7	Remove Fuel Tank	Screw 1x Nut 2x Clamp 1x	8mm 13mm Pliers 19620				
	• Use fuel line pry tool part # 19620 to prevent line damage • Gas cap is tethered • All-steel tank serves as reservoir for fuel • Fuel tank capacity: • Fuel cap houses fuel tank vent and has EVAP system built into cap, called CIC or Carbon in Cap • Removable fuel outlet contains flushable filter • Tank has neck baffle to prevent spillage during filling						
8	Remove Carburetor	Linkage and Spring	Hand				

	TASK	HARDWARE	TOOL	TORQUE	MANUAL LOCATION		
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	• Take a picture of links and linkage while installed for reference upon reassembly • Disengage high tension lead from carburetor heat isolation block • Slide carburetor along studs. This movement will position the throttle shaft so the governor link can be lifted up and away from the throttle shaft. Note the link end at the carburetor is an "L" bend and at the governor arm, a "Z" bend • Detach link spring from throttle shaft • Slide the carburetor the rest of the way off the mounting studs • Slide the plastic isolator block and gaskets off. Note bowl vent channel in block • Pay attention to the orientation of gaskets						
9	Examine Carburetor	Screw 1x	10mm				
	• This full-circuited carburetor has a fixed high-speed jet. Although there is a brass adjustment needle screwed into the carburetor mounting flange where an idle mixture screw would be installed, there is no provision for a tool to turn the shaft. Therefore, this carburetor has a fixed idle jet. Earlier versions had an adjustable idle mixture screw fitted with a tamper proof cap • Carburetor ID numbers are stamped into the carburetor body • The carburetor body features an integral fuel shut-off and a high mount external bowl vent • Throttle plate edges are beveled and the inlet needle is spring loaded • Carburetor bowl is conveniently fitted with a bowl drain • Pilot jet is contained by a plastic housing, sealed in its bore by 2 "O"-rings and held in position by a special flare on the mechanical idle stop screw • Inlet needle and seat is contained in carburetor kit only						
10	Remove Governor Arm	Nut	10mm				
	• Loosen Nyloc pinch bolt nut and lift arm straight up and off of governor shaft. Do not disturb Tine Pin • The different hole locations (1,2,3,4,5) allow the engine governing system to be "tuned" to different applications • The closer the spring is moved towards the governor shaft (pivot point) the more sensitive the system becomes but at the expense of system stability • The further from the pivot point the spring is moved, the more stable the system becomes at the sacrifice of sensitivity						
11	Remove Speed Control Bracket	Screw 2x Spring	8mm Hand				
	• Take a digital picture of bracket to capture wire and linkage routings • Note red ignition ground wire ring terminal under top mounting screw • Looped end of governor spring faces up at speed control bracket • Looped end of governor spring faces down at governor arm. On this engine, install spring in hole #3 and link in hole "G" • The travel of this control is the reverse of most other Briggs engines • Speed control bracket is capable of fixed speed, manual friction and remote control, all obtained by tightening or loosening Nyloc nut at control pivot point • Bowden wire throttle controls will accept a Z bend cable end or a straight end, flexible						

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	(braided) control wire • Note location of governor spring – outer hole on this engine • Bracket is equipped with a return-to-idle spring • Mark hole on speed control bracket where governor spring attaches with a magic marker to facilitate reassembly						
12	Remove Rewind from Blower Housing	Screw 3x	8mm				
	• Keep screws separate – length is different than others • Starter can be mounted in multiple positions • Rewind is a dog and cup style, similar to the Eaton type system • Starter rope is a healthy #5 • Rewind is repairable						
13	Remove Blower Housing	Screw 4x	8mm Needle nose				
	• Remove screws • Carefully slide housing away from flywheel until access to terminals at on/off switch is possible • Unplug terminals from switch. Take a picture or make a note as to which wire goes where on the switch and record where the wire goes on the engine as well as its routing. This engine has some distinct pathways for wire routing • Note the switch terminals are numbered 1 thru 3						
14	Remove Ignition Armature	Screw 2x	8mm				
	• Armature is a transistor controlled electronic ignition • Contains primary and secondary coils of wire along with a transistor • This type of ignition system is a called a Magneto. It uses magnets embedded in the flywheel to produce a high voltage electrical discharge at the spark plug by way of electromagnetic induction • Armature is properly oriented when the high tension (sparkplug) lead is up • At normal operating speed, this system can attain 16KV output if required • Spark plug boot is replaceable • Upon reassembly, the clearance between the armature and flywheel magnet must be set with a gage						
15	Remove Right Hand Flywheel Guard	Screw 1x	8mm				
	• Keep screw separate						
16	Remove Flywheel	Nut 1x	21mm Socket 19433 Strap 19203 Puller				
	• Use 19433 Flywheel strap wrench to hold flywheel while loosening flywheel nut • Use an 8 or 9 inch, 2 jaw gear puller to remove flywheel, lifting on edges 90 degrees out from flywheel magnet for early engines • Use 19203 flywheel puller for later engines • Note flywheel key is a steel, woodruff type						

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17	Remove Cylinder Air Guide	Screw 2x	8mm				
	• Guide is actually held on by 3 screws but one has already been removed with the blower housing						
18	Remove Valve Cover	Screw 4x	8mm				
	• Valve cover houses a reed style crankcase breather						
19	Remove Cylinder Head	Screw 4x	12mm 10mm				
	• Loosen lock nut above valve clearance adjuster • Remove nut and adjuster • Remove rockers • Remove stem cap from both valves • Remove push rods • Remove head bolts • Remove head • Note notch or mark on piston crown facing towards pushrods. The notch is an installation aid as the piston has an offset wrist pin						
20	Disassemble Cylinder Head (Sub-routine)		Hand				
	• Bunch up a rag and stuff into combustion chamber • Set head on bench, combustion chamber down • Push down on and disengage spring retainers by hand • Stem seal is installed at base of intake valve spring only • Guides are not replaceable • Valve seat repair will require a pilot and cutter not available from Briggs & Stratton. At this time, any valve sealing problems that cannot be repaired by lapping the valve will require a replacement cylinder head or sourcing valve seat cutting tools elsewhere						
21	Remove Crankcase Cover	Screw 6x	10mm				
	• Screws use red thread locker to assure there are no oil leaks • Note the gasket crush ridge machined onto cover • Cover features a ball bearing for the PTO and offers flange mounting • Note excellent support ribbing for strength throughout cover, dual oil fills and Accessory Mounting Boss						
22	Remove Cam Gear		Hand				

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!!	• Gears are helical cut so cam may require some maneuvering to remove • Cam contains lobes that transfer motion to tappets for opening and closing of valves • Height of lobes affects the duration or how long or short the valve is open • Gear has a mark for proper orientation in relation to position of crankshaft gear • Cam gear features mechanical compression release which is a mechanism that bumps a valve off of its seat to make the engine easier to start with a rewind starter. Once started, the mechanism will move out of the way for full compression **Note**: **the governor cup and thrust washer beneath it are not held in position so are free to fall off the governor shaft. Keep an eye on them or remove them now**						
23	Remove Rod Cap Screws	Screw 2x	10mm				
	• Note match marks on rod and cap and integral dipper • Note dipper is oriented in the same direction as the notch in the piston crown • Rod oil hole faces cam gear • Rod journal bearing surface is nice and wide						
24	Remove Piston and Connecting Rod Assembly		Hand				
	• Note cylinder bore is a cast iron sleeve • Piston features an offset wrist pin which is indicated by an arrow that faces the cylinder, not the flywheel • Piston is cam ground and barrel faced • Top ring is a chrome plated compression ring. Rings are properly installed when letters on ring face up • Second ring is cast iron and is stepped on the outer surface. The step goes down on reassembly. Rings are properly installed when letters on ring face up • Third ring is a typical three piece oil control ring with an expander and two chrome steel rails. Expander gap ends must point to piston crown when assembled • Piston pin floats and is secured from both sides by a spring retainer • **Note: If removing and installing rings on piston, use 19340 Ring Expander**						
25	Remove Crankshaft		Hand				
	• Note spur gear on Mag side that drives governor gear • Crankshaft converts linear motion into rotating motion • Ultimately attaches to a device for producing work, example: mower blade, belts, hydraulic pump • Supported at both ends in cylinder housing by bearings • Contains an offset for connecting rod						
26	Discuss Crankcase/Cylinder Assembly						
	• Structure for engine - contains cooling fins for heat transfer, bearings for cam gear, etc. • Cylinders are made from a unique alloy of aluminum, typically with a high silica content - some units, like this one, contain a cast iron sleeve for better wear characteristics						
27	Governor Gear						

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	• Governor gear, spool and flyweights are visible in back left of crankcase • Governor System: A balance of forces that maintains engine speed even though the load may vary • The rotating crankshaft drives the governor gear via a spur gear highlighted by the red arrow. This means the governor gear speed will vary proportionately to crankshaft speed. The governor flyweights (lower right) inside the gear assembly are affected by centrifugal force and move outwards as the gear begins to spin. The faster the rotation, the stronger the force. This is one of the two forces the system depends on to maintain engine speed						
28	Low Oil System						
	• This is a simple float mechanism that connects to ground when the oil level is too low. That signal is sent to the low oil module seen earlier. During use, false ground connections are not unusual as the engine bounces along on equipment. The low oil module monitors these and at some point makes a path to ground to short out the ignition pulse. This shuts down the engine.						
END							
	REASSEMBLY						
	General Instructions						
	• Remove old gasket material and clean parts to be reused • Follow all torque values listed in column 5 during the reassembly process • Clearance adjustments are required for the valves and armature air guide and are also listed in column 5 • A special adjustment procedure is performed for the governor system • Lubricate all moving parts upon assembly						
29	Install Governor Cup/Spool (if removed)		Hand				
	• Make sure thrust washer is under cup • Turn governor crank so paddle is against governor cup • Make sure crankcase cover dowel pins are installed in crankcase						
30	Install Crankshaft		Hand				
	• Crank gear has a “dot” on a tooth that must face out • Carefully, make sure governor gears mesh with each other so plastic governor gear is not damaged by steel gear on crankshaft						
31	Install Piston and Connecting Rod Assembly		19070 Ring Compressor				

	TASK	HARDWARE	TOOL	TORQUE	MANUAL LOCATION		
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	• Lubricate piston assembly, rings, ring grooves, cylinder wall and ring compressor with oil • Set piston into bore. Be sure orientation marks (notch or triangle) on the piston crown faces toward the push rods • Unwind ring compressor far enough to stretch it over the piston/ring assembly. Do not unwind too far or tool will be damaged • Slide compressor over piston far enough that it covers all the rings • Firmly tighten ring compressor, compressing rings into the ring grooves. Remove piston assembly from bore and inspect that all rings are captured and compressed. Adjust compressor position on piston to accomplish this if necessary • Position piston in bore and crankshaft in block so that the piston/connecting rod assembly will not be impeded when pressed into the bore • Gently tap on the upper edge of the compressor to make sure the bottom edge is in contact with the cylinder at all points • Press firmly and <u>steadily</u> on top of piston sliding it from the compressor into the cylinder bore. Do not let up until piston is completely in the bore. If it stops before it completely enters the bore, a ring has popped out from the compressor and failed to enter the bore • <u>Do not</u> hammer piston assembly into block or rings may be damaged. If you cannot push the piston in by hand or if a ring has popped out, reset the ring compressor and try again. Multiple tries is not uncommon for the novice						
32	Install Connecting Rod Cap	Screw 2x	8mm	125 lb in 17.5Nm			
	• Align Match Marks on rod cap and rod and install rod cap screws • Carefully torque rod cap screws • Rotate crankshaft by hand after assemble to insure there is no binding. **Use caution. The edges of the crankshaft key way are very sharp**						
33	Install Tappets		Hand				
	• Tip cylinder assembly on its side or turn upside down to prevent tappets from falling out						
34	Install Cam Gear		Hand				
	• Make sure compression release mechanism moves freely and the return spring is in position • Note mark on cam gear in the valley between 2 teeth. This aligns with the dot on the crankshaft gear. Orienting these marks establishes the internal timing of the engine by assuring the valves will open and close at the correct time in relation to the piston location in the cylinder bore						
35	Install Crankcase Cover	Screw 6x	10mm	210 lb in (25 Nm)			

	TASK	HARDWARE	TOOL	TORQUE	MANUAL LOCATION		
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	• The clearance between the crankshaft and main bearing and the bearing races and block/cover is a clearance fit. If the alignment is off even slightly, the cover will bind during reassembly. If this occurs, do not force the cover on. Make sure the cover is perpendicular to the crankshaft axis and it will slide right into position • Torque sequence in o'clock positions: Screw at 3:00 position is number 1 Number 2: 9:00 Number 3: 5:00 Number 4: 10:00 Number 5: 7:00 Number 6: 1:00 • When finished, rotate crankshaft through several complete revolutions to check for binding						
36	Check Crankshaft Endplay		Dial caliper	.003-.030 in (.09-.075 mm)			
	• Pump applications require endplay of .002-.009 in. This is adjusted by adding shims between the crank gear and the pto ball bearing • If endplay is too much on standard engines, the crankcase cover must be replaced						
37	Assemble Cylinder Head	Screw 1x	8mm	30 lb in (3.4 Nm)			

	TASK	HARDWARE	TOOL	TORQUE	MANUAL LOCATION		
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	• Lubricate the valve stems with oil and insert the valves into the valve guides from the combustion chamber side. The larger valve is always the intake valve and the smaller, the exhaust. These valves have an “E” or an “H” embedded in the part number on the top of the valve to help identify them as exhaust or intake • Bunch up a rag and push it into the combustion chamber then put the cylinder head on the work bench with the rag and combustion chamber against the bench surface. The rag is there to apply pressure against the valve so the head can be reassembled • Slide the stem seal – flat side in – along the intake valve stem. When the piston drops down in the bore during the intake stroke, the low pressure area created can draw oil along the valve stem and into the combustion chamber raising exhaust emissions. The stem seal acts like a “squeegee” and prevents the oil migration. It is usually not necessary on the exhaust valve although some engines have a seal on both. • The head plate was not removed but if it was, install it and torque the studs to 125 lb. in. • Set a valve spring down over the stem seal and a retainer on top of the spring. Make sure you have safety glasses on. Compress the spring by pressing down on the retainer. At the same time, guide the end of the valve stem through the larger hole in the retainer. Continue to press down until the narrower center hole through the retainer can be slipped into the slot in the valve stem • The procedure is the same for the exhaust but there is no stem seal. • Once springs are installed, make sure the axis of the spring is parallel to the valve stem. If the spring is cocked, the valve guide will wear prematurely						
38	Install Cylinder Head and Dowel Pins	Screw 4x	12mm	210 lb in (23.5 Nm)			
	• Set head gasket onto dowel pins • Make sure valves, springs and retainers are installed • Rotate engine so piston is at top dead center • Step Torque Head Bolts; 70 lbs in, 140 lbs in, 210 lbs in • Torque sequence: Top right Bottom left Top left Bottom right						
39	Install Remaining Valve Components	Nut 2x	Hand 10mm				

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	• Slide pushrods through sheet metal plate and seat the ends into the recess in the tappets. Inspect pushrod ends. If one appears to protrude from the head further than the other, turn crankshaft 360 degrees • Install 2 valve stem caps – do not drop them as they may end up in the crankcase! • Slide rockers over the studs, thread adjusters on to stud and follow with locking nut • Align rockers with push rod and valve stem cap. Lightly snug adjuster nut against rocker and then the locking nut against the adjuster						
40	Position Piston for Valve Adjustment		Pencil, Popsicle Stick, Wood Dowel				
	• If piston was set to TDC and pushrods were at even lengths from steps above, insert something like a popsicle stick or soda straw into the spark plug hole, until it contacts the top of the piston. Rotate the crankshaft counter clockwise when viewed from the PTO until the stick drops ¼ in. Valve clearance on Briggs & Stratton engines is adjusted when the piston is ¼ in past top dead center on the power stroke.						
41	Set Valve Clearance	Nut 2x Nut 2x	Feeler gage 10mm 14mm	.004-.006 in .006-008 in 70 lb in (7.9 Nm)			
	• If piston was set to TDC and pushrods were at even lengths from steps above, insert something like a popsicle stick or soda straw into the spark plug hole, until it contacts the top of the piston. Rotate the crankshaft counter clockwise when viewed from the PTO until the stick drops ¼ in. Valve clearance on Briggs & Stratton engines is adjusted when the piston is ¼ in past top dead center on the power stroke. • For the intake valve, rotate the .004, .005 and .006 in leaves from the closed gage. Insert the .005 blade between the stem cap and the rocker. Loosen or tighten the adjustment nut until there is a slight drag on the blade. Push down on the nut while checking the clearance to simulate the pressure the locking nut will apply. Snug down the locking nut and recheck. If too tight using the .005 blade, check with the .004. If too loose, check with the .006. If either of the other blades offers a slight drag, you are still within tolerance so the setting is acceptable. When complete, torque lock nut to 70 lb in (7.9 Nm) • Repeat procedure for the exhaust valve using .006, .007 and .008 feeler gage blades.						
42	Install Valve Cover	Screw 4x	8mm	80 lb in (9Nm)			
	• Torque sequence: Top right Bottom left Top left Bottom right						
43	Install Finger Guard and Low Oil Module	Screw 1x	8mm	85 lb in (9.6Nm)			

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	• Screw is 20mm long						
44	Install Cylinder Air Guide	Screw 2x	8mm	50 lb in (5.6Nm)			
45	Install Flywheel	Nut 1x	19433 Strap	65 **lb ft** (88Nm)			
	• Never oil flywheel or crankshaft tapered joint surfaces. Make sure surfaces are clean and dry • Starter cup extrusion must align with hole in flywheel • Pins on back of flywheel fan must seat into corresponding holes in flywheel`						
46	Install Ignition Armature	Screw 2x	10mm	.012 in (.3mm) 95 lb in (10.7Nm)			
	• Set air gap between armature lamination stack and magnet on flywheel • Torque bottom screw first • Screws are 25mm						
47	Install Blower Housing and Wiring	Screw 4x	8mm	85 lb in (9.6Nm)			
	• Switch terminal 1: red ground wire at top of block • Switch terminal 2: wire to ignition armature • Switch terminal 3: wire to low oil sensor • Torque sequence: Bottom right Bottom left Top left Top right						
48	Install Rewind	Screw 3x	8mm	30 lb in (3.4Nm)			
	• Mount in the 9:00 position						
49	Install Spark Plug		16mm	180 lb in (20.3Nm)			
50	• Reattach spark plug boot						
51	Mount Carburetor		Hand				
	• Slide “D” shaped gasket on studs • Add plastic isolation block • Add second gasket • Install Carburetor • Mount air cleaner base gasket • Seat high tension lead into groove on top of isolation block						
52	Install Speed Control Bracket	Screw 2x	8mm	85 lb in (10.7Nm)			

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	• Turn bracket upside down • Install long end of spring through hole marked during disassembly • Check hook at other end of spring – the short end should be up • Mount bracket • Engage short end of spring into hole “G” on governor arm • Screw that attaches bracket at base of fuel tank also goes through the eyelet of the red wire that goes down to the ignition armature. Check your picture library for correct routing						
53	Install Governor Arm	Nut 1x Bolt 1x	10mm				
	• The governor arm clamps around the splines of the shaft. Because of the clamping force imparted when the nut is torqued, the fit of the arm against the shaft is tight. If we push it back on in its compressed condition, the clip will probably be dislodged from the slot and we run the risk of the governor spool falling off. To avoid this, spread the slot of the governor arm open slightly so the arm will easily fit over the shaft. Back the Nyloc nut off a few turns, slide a screwdriver into the legs of the arm and gently pry the legs apart to increase the hole size for the shaft. • Test fit the arm on the shaft to make sure it is a smooth, slip fit. The arm should slide onto the shaft and sit on top of the clip. If OK, remove arm, turn Nyloc nut onto the threads until it just touches the governor arm, insert the governor spring into hole #3 for this engine model and type and slide arm back onto governor shaft. The spring loop opening should be down. • The solid link has a Z bend on one end and an L bend on the other. Insert the Z bend into hole G of the governor arm from the top. Engage the L-shaped end of the link with the throttle shaft of the carburetor • Attach the loop of the link spring in hole F of the governor arm • Attach the other loop of the link spring to the small hole in the throttle shaft • Leave the governor system alone for now. It will be adjusted later						
54	Install Air Cleaner Base	Nut 2x Screw 1x	10mm 8mm	40 lb in (4.5Nm) 50 lb in (5.6Nm)			
	• Get nuts and screw started before tightening either • Install breather hose between valve cover and air cleaner backing plate						
55	Perform Static Governor Adjustment	Nut 1x	10mm Pliers Torque Wrench	40 lb in (4.5Nm)			
	• A static governor adjustment must be performed whenever the governor system is disturbed such as when replacing parts like links or springs or removing and reinstalling the carburetor. It is a static adjustment, so is performed with the engine not running and is only necessary on mechanically governed engines • The purpose is to make sure the “paddle” on the governor crank is						

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	tight up against the governor spool on the inside of the crankcase. This assures that any movement of the spool is transferred to the carburetor throttle shaft, therefore providing reliable throttling and speed control as engine loads are applied. The question is always what direction do I turn the shaft to make the adjustment? • Use the following procedure to determine which direction to turn the governor shaft to adjust the governor. This works for <u>all</u> Briggs & Stratton engines • Place the <u>throttle control</u> in the "fast" position. All static governor adjustments are made with the throttle in the fast or wide open position • Manually move carburetor throttle <u>shaft</u> to the idle position (throttle plate closed) and then turn it from the idle to fast speed position (throttle plate wide open) • As the throttle shaft travels from idle to wide open, watch for a rotating movement of the governor lever and governor shaft. This will occur because of the linkage that ties the throttle shaft to the governor arm • Whichever direction the shaft rotates in is the direction to turn the governor shaft when performing the static governor adjustment. If lever rotates counterclockwise when the throttle shaft is moved from idle to wide open, rotate governor shaft counter clockwise when making the adjustment • Once direction is determined, the actual adjustment is simple. Static governor adjustments are always performed with the throttle set in the fast or wide open throttle position so turn the throttle control to the fast position or hold the governor arm so the throttle is wide open. Now, turn the governor shaft in the direction discovered above until it stops. Hold the governor arm steady and tighten, then torque the pinch bolt nut. Be careful when tightening the nut that the arm does not move. **TIP:** hold the governor arm tight with your hand at wide open throttle while tightening the nut. Because the nut is not on the centerline of the governor shaft, any torque on the nut will tend to push the governor arm to one side or the other, ruining your adjustment. • The governor shaft will only rotate about an 1/8th turn or less from stop to stop so don't force it to turn further						
56	Install Air Cleaner Assembly		Hand				
	• Install sealing washer at air cleaner element base • Install element • Install wingnut • Install air filter cover • Install air cleaner knob						

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57	Install Fuel Tank	Screw 1x Nut 2x	8mm 12mm	85 lb in (9.6Nm) 100 lb in (11.3Nm)			
	• Attach fuel line and fuel clamp • Install 30mm screw from cylinder head side first • Secure other side of tank with nuts • **Make sure governor spring, link, link spring or governor lever do not make contact with fuel line or tank in any fashion**						
58	Connect Low Oil Sensor Wires		Hand				
	• Make sure the wires are routed through the channels on the block they were originally seated in						
59	Install Muffler		13mm	95 lb in (10.7 Nm)			
	• Fasteners are nuts and lock washers						
60	Install Trim Panel		8mm	30 lb in (3.4Nm)			
	• Left hand side of panel hinges into air cleaner base. Screws are usually black • First screw to install is that above the rewind. Push gently to the left while installing screw to aid panel in locking in to the air cleaner cover • Install final 2 screws						
61	Install Speed Control Knob		Hand				
62	Secure Dipstick Tube (if equipped)	Screw 1x	8mm	10 lb in (1.1Nm)			
	FINISHED						