

SERVICE MANUAL

Model

**EX30
ENGINES**

PUB-ES2268
Rev. 10/06

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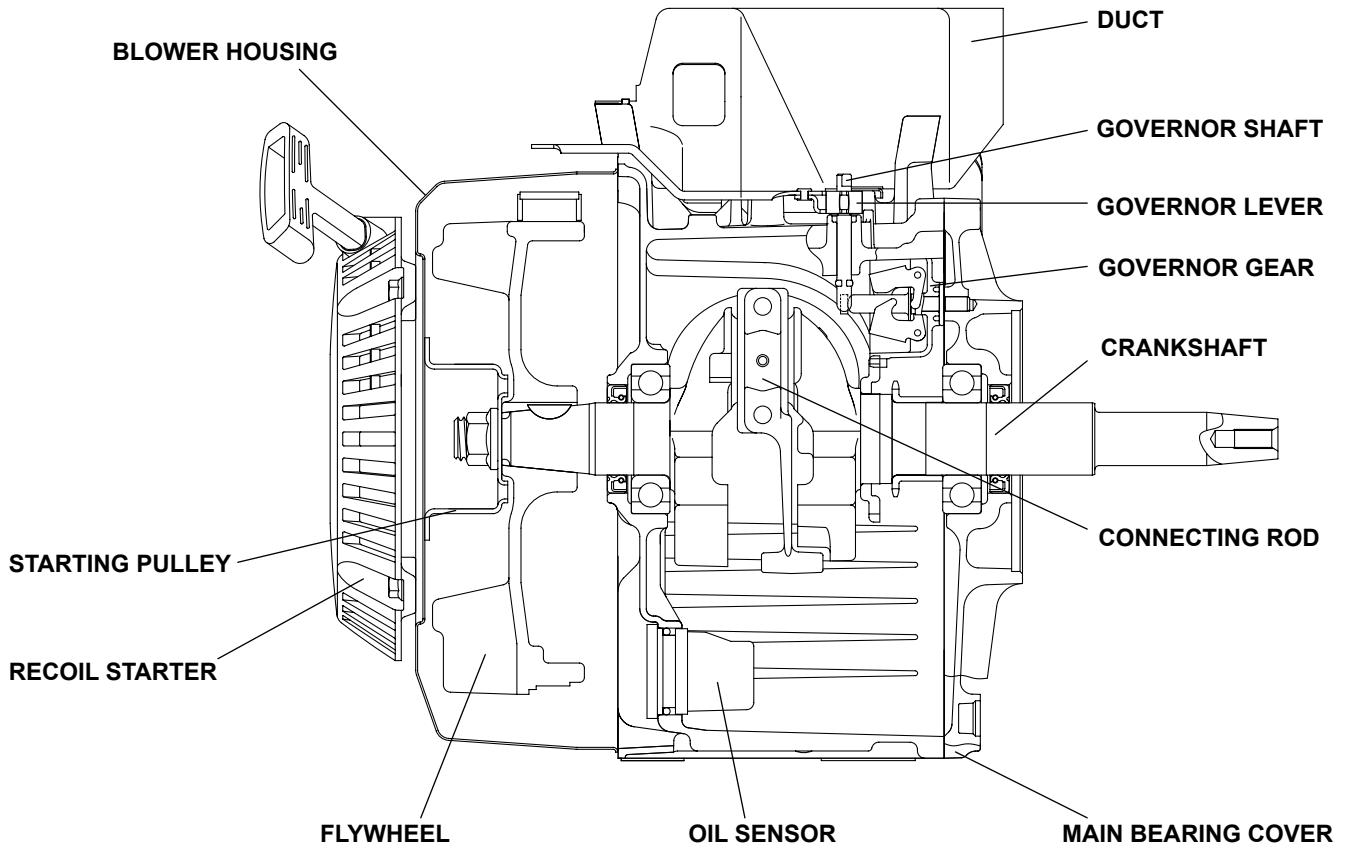


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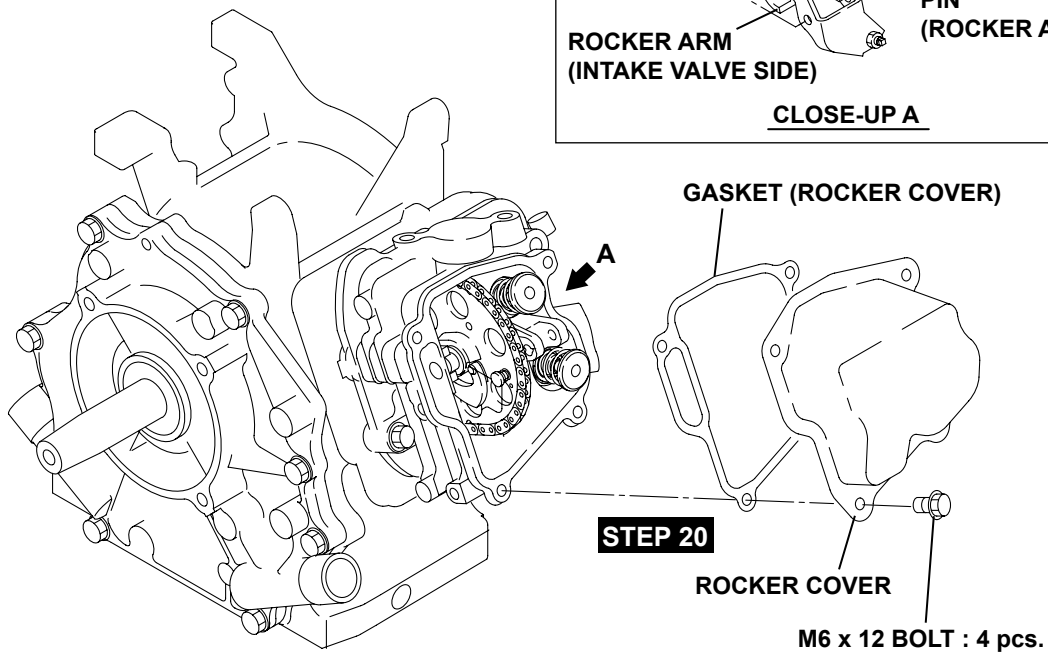
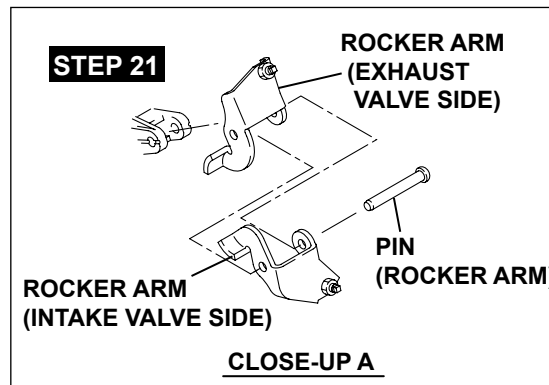
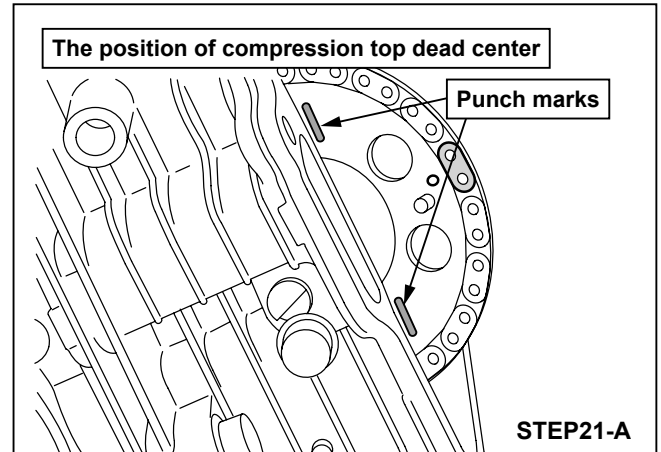
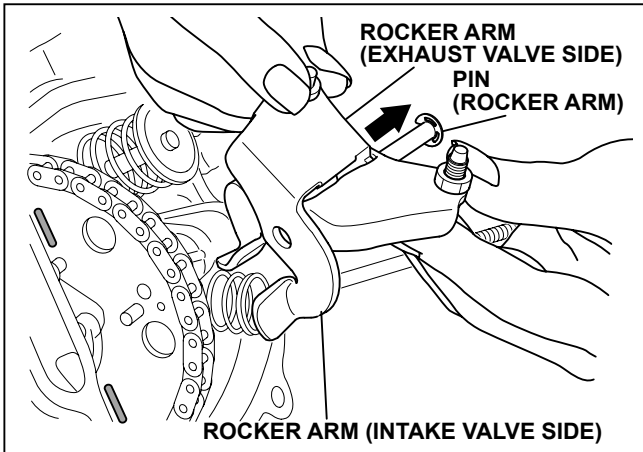
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4-17 SECTIONAL VIEW OF THE ENGINE

Cross sectional view - across the shaft

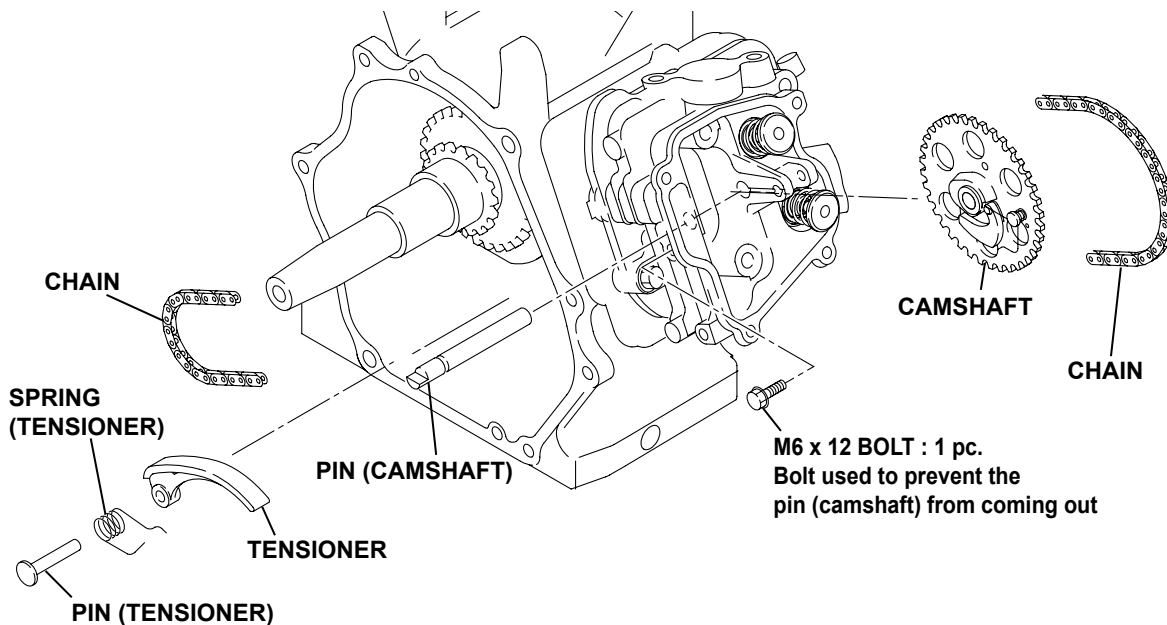
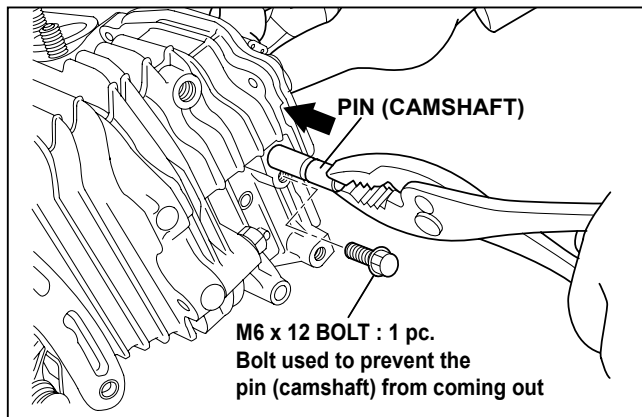
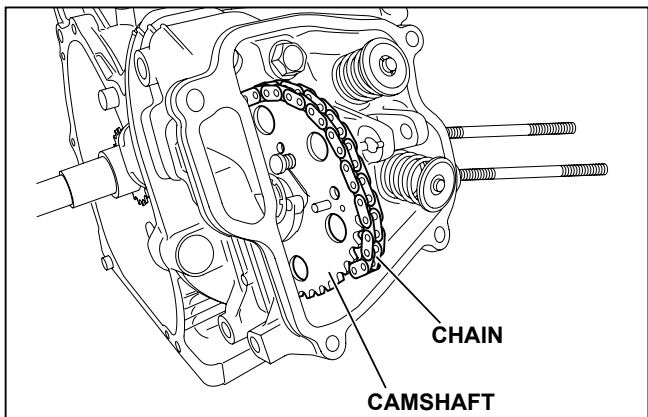


Step	Parts to remove	Remarks and procedures	Fasteners
20	Rocker cover	(1) Remove the rocker cover from the cylinder head. (2) Remove the gasket (rocker cover).	10 mm box spanner M6 x 12mm : 4 pcs.
21	Rocker arm	Remove the pin (rocker arm) and the rocker arm from the cylinder head at the compression top dead center. (See Figure STEP21-A)	

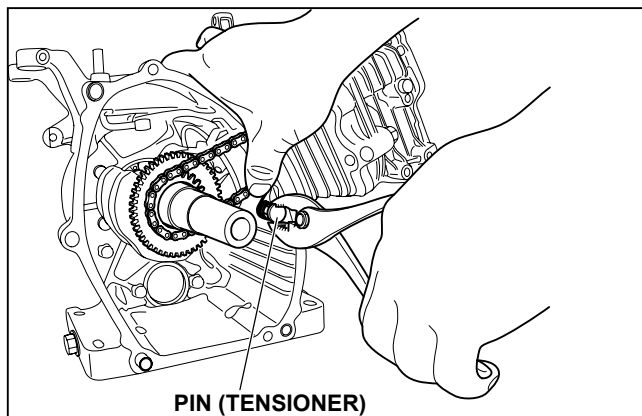
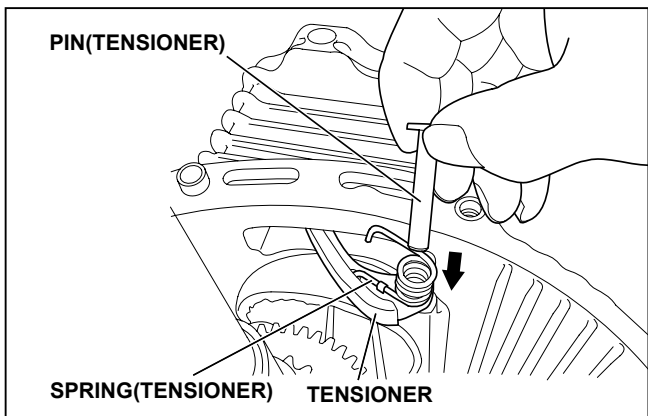


(10) MOUNTING THE CAMSHAFT ON THE CYLINDER HEAD

Mount the camshaft on the cylinder head by inserting the pin (camshaft) through the head.
 Fix the bolt to prevent the pin (camshaft) from coming out.



(11) MOUNTING THE TENSIONER



6. ENGINE OIL

Using engine oil of the correct grade and viscosity greatly lengthens engine life and improves performance. Too much or too little oil can also result in serious problems, including engine seizure.

6-1 CLASSIFICATION BY OIL GRADE

API (American Petroleum Institute)

Classification	SA	SB	SC	SD	SE	SF	SG	SH	SJ
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Grades suited for Robin Engine: SE or higher (SG,SH or SJ in recommended)

6-2 CLASSIFICATION BY OIL VISCOSITY

SAE (Society of Automotive Engineers)

Single grade	5W							
	10W							
Multigrade	20W							
	#20							
	#30							
								#40
	10W-30							
	10W-40							
Ambient temperature	-20	-10	0	10	20	30	40°C	
	-4	14	32	50	68	86	104°F	

Be sure to use automobile engine oil of the viscosity shown in the table above, depending on environmental air temperature.

When the air temperature falls below -20°C or rises above 40°C, be sure to choose engine oil of appropriate viscosity and grade, according to the prevailing conditions.

※ Care must be taken when using multi-grade engine oil, because the oil consumption rate tends to increase when the air temperature is high.

6-3 ADDING AND CHANGING ENGINE OIL

- Engine oil inspection and filling up Every time you use the engine
(add engine oil up to the designated maximum level)
- Engine oil change First time After 20 hours' use
Thereafter Every 100 hours' use

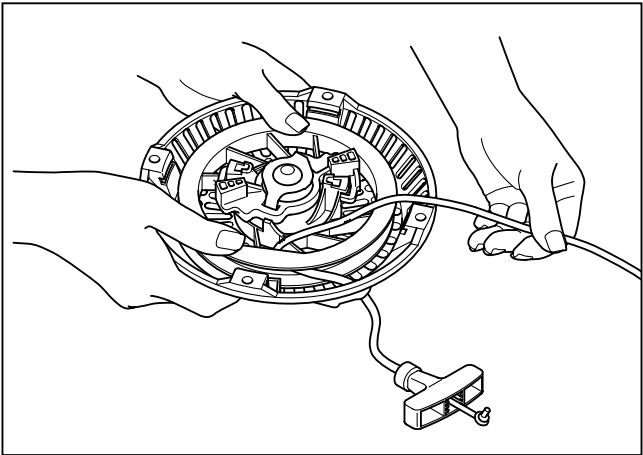
13. RECOIL STARTER

Tools to be prepared: Driver, Pinchers (Pliers), Protective Glasses and Work gloves.

WARNING
Before starting the disassembly, make sure to wear the protective glasses.

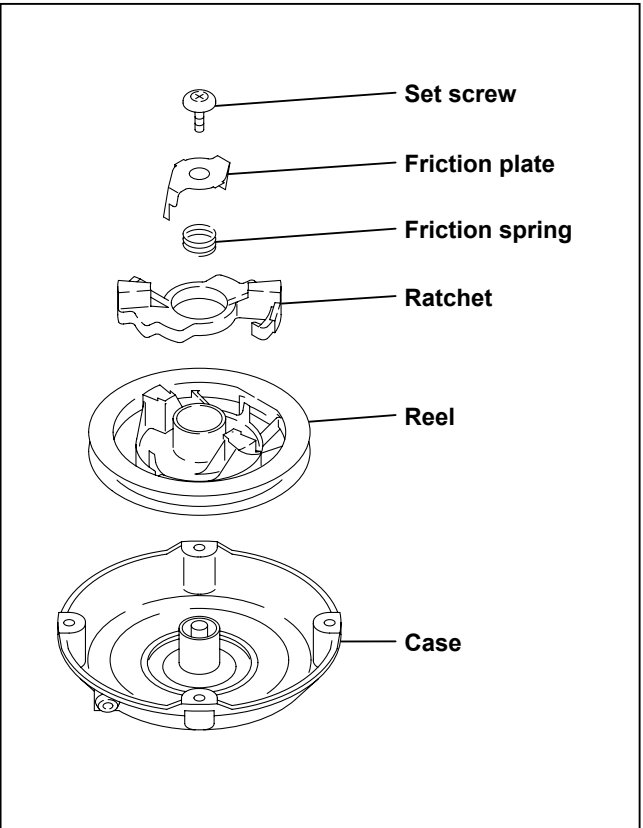
13-1 DISASSEMBLY STEPS

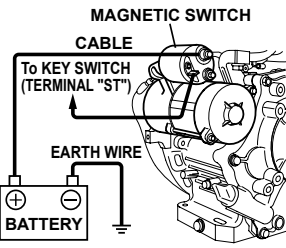
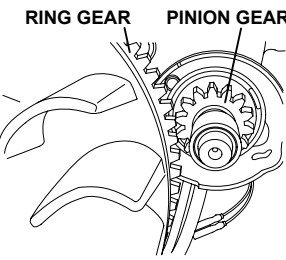
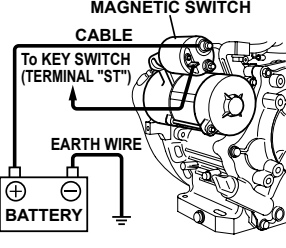
- (1) Relieve the spring power.
 - 1: Hold the starter knob and extract the starter rope.
 - 2: Extract the rope fully and hold the rope so that the knot of the rope in the reel makes a straight line with the rope guide.
 - 3: Hold the reel with the thumbs of both hands firmly so that the rope will not be wound back.
 - 4: Pull out the knot of the rope out of the reel, and unfasten the knot and pull it out toward the starter knob. (2 people required)
 - 5: By controlling the reel with the thumbs of both hands, unwind the reel gently until the rotation of the reel stops.



WARNING
The spring power is at its maximum when the rope is fully extracted. Do not put off your hand nor loosen the pressure of your finger suddenly.

- (2) Remove the component parts.
 - 1: Fix the case and loosen the set-screw.
 - 2: Remove the set-screw, the friction plate, the friction spring and the latchet in the order from the above.
- (3) Remove the reel.
 - 1: Hold the reel lightly so that it will not float. Move the reel clockwise and counter-clockwise about a quarter circle for several times until it moves smoothly.



Problem and check item		Description		Remedy
(2) Starter runs but engine not	Check engaged state of pinion and ring gear.	Motor idles and engine does not run.		(1) Remove and check the starter. Check or replace the pinion clutch if necessary. (2) Check battery charged state and battery terminal connection or corrosion for any abnormality.
		If pinion and ring gear do not engage with each other and abnormal noise is heard between end faces of pinion and ring gear, check the starter pinion and ring gear.		(1) Remove the starter and check pinion and ring gear end faces. If worn, replace the pinion and ring gear. (2) In case of sliding fault of the pinion, correct it. (3) If shift lever or spring is deformed, replace it.
(3) Both starter and engine run, but the engine does not start.	Check if the rotation speed is normal or slow. If slow, check the battery and engine oil viscosity.			(1) When the rotation speed is normal Check the ignition system and fuel system. (2) When the rotation speed is slow (a) Check the battery. (b) Check the viscosity of engine oil. If not normal, change the oil. (c) If both (a) and (b) are normal Remove and check the starter.

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