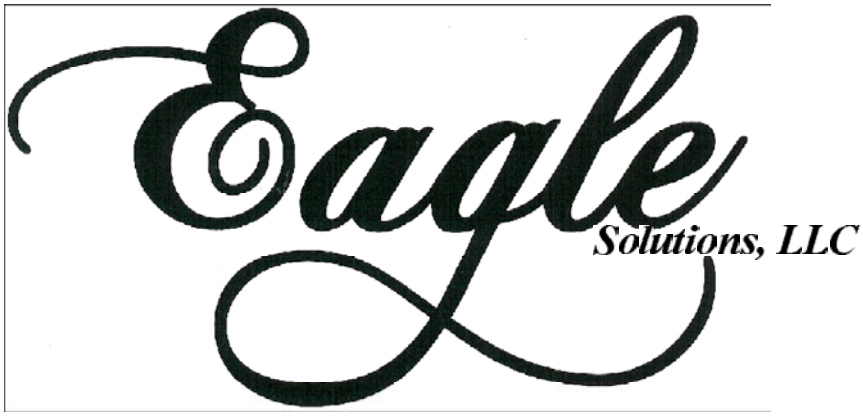

EAGLE

ENGINE

SERVICE MANUAL

ZXV 653

22 hp.

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4-7 CYLINDER HEAD

The cylinder head is an aluminum die-casting which utilizes semi-spherical type combustion chamber for the high combustion efficiency.

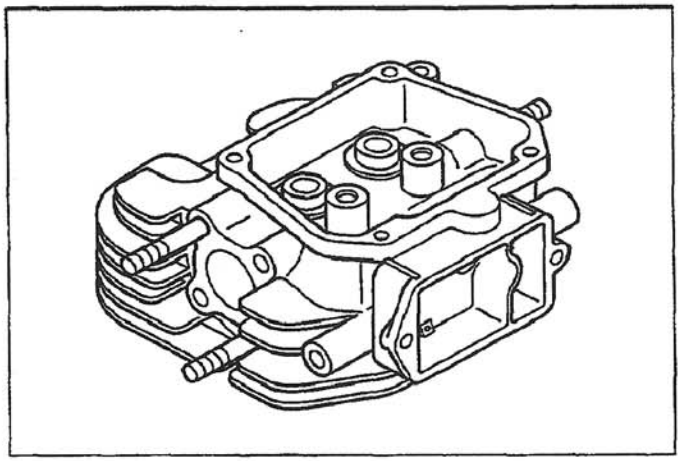


Fig. 4-7

4-8 VALVE ARRANGEMENT

The intake valve is located on flywheel side of the cylinder head.

The cooling fins and passages design lead cooling air to the exhaust valve area for the optimum cooling.

Hard alloy valve seats are molded in the cylinder head and stellite is fused to the exhaust valve face.

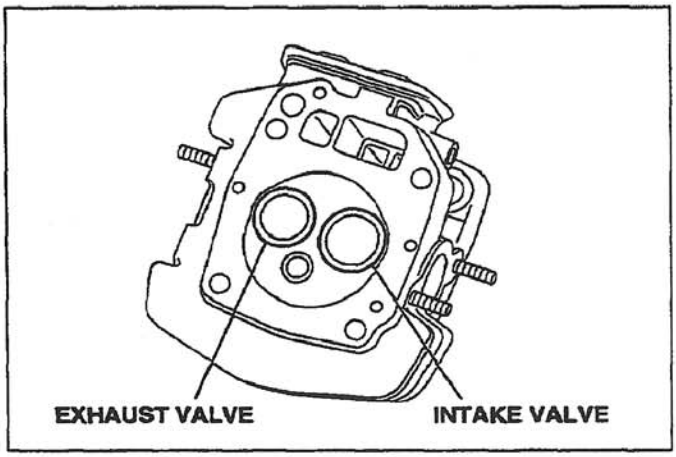


Fig. 4-8

4-9 GOVERNOR SYSTEM

The governor is a centrifugal flyweight type which ensures constant operation at the selected speed against load variations.

The governor gear with governor weights is installed inside of main bearing cover and driven by the crankshaft.

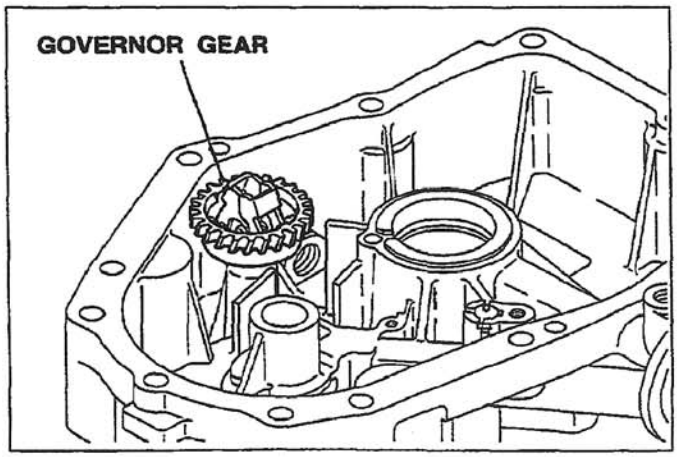


Fig. 4-9

Step	Parts to remove	Remarks and procedures	Fasteners
8	Ignition coil	1. Take out plug cap. 2. Remove ignition coil. 3. Cut out stop wire fixing bands. 4. Disconnect stop wires from ignition coil.	M6x30 bolt & washer ; 4 pcs.
9	Intake manifold		M8 flange nut ; 4 pcs.
10	Flywheel	Remove flywheel from crankshaft by using puller.	M18 nut, washer, spring washer

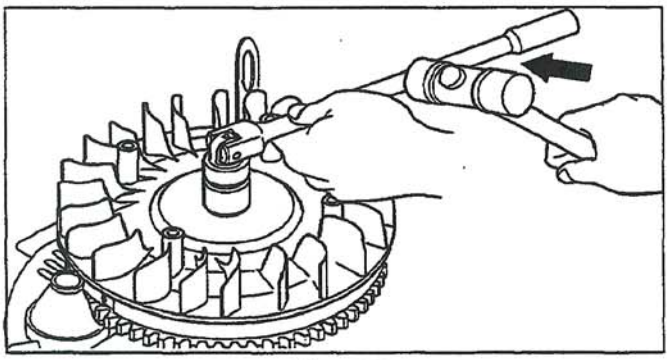


Fig. 5-8

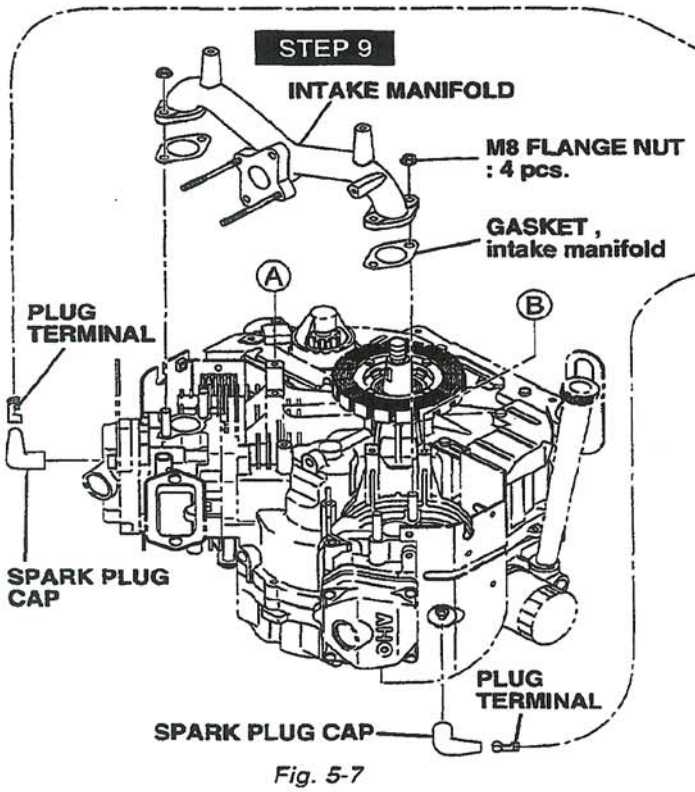
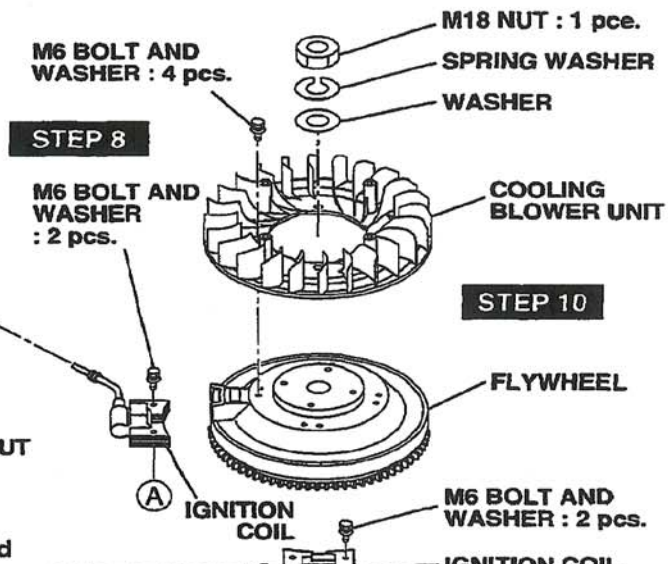


Fig. 5-7



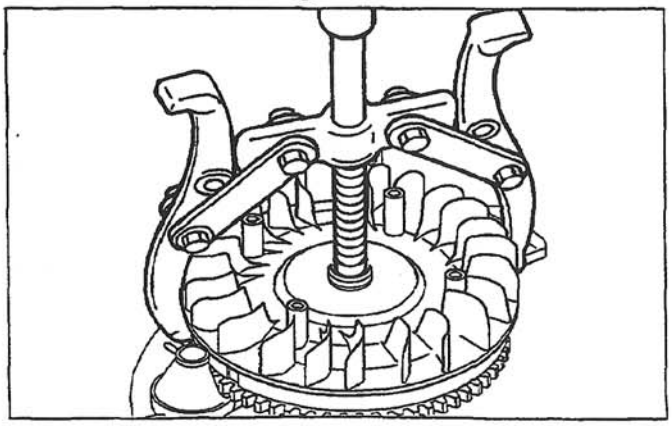


Fig. 5-9

B. CYLINDER HEAD, VALVES and ROCKER ARM

NOTE ;

- **Clean valves and wash cylinder head thoroughly.**
- **Remove carbon and gum deposits from the valves, seats, ports and guides.**
- **Inspect valves, valve seats and valve guides.**
- *** Replace valves that are badly burned, pitted or warped.**
- **Valve guides should be replaced when valve stem clearance exceeds specifications.**

(Refer to SERVICE DATA for clearance specifications.)

If exceeds, draw valve guides out and press new guides in.

After replacing valves and guides, lap valves in place until a uniform ring shows around the face of the valve.

(1) Attach oil seal both onto intake and exhaust valve guide.

(2) Apply oil to valve spring and valve stem.

Place cylinder head on flat table and install valve spring, valve and spring retainer.

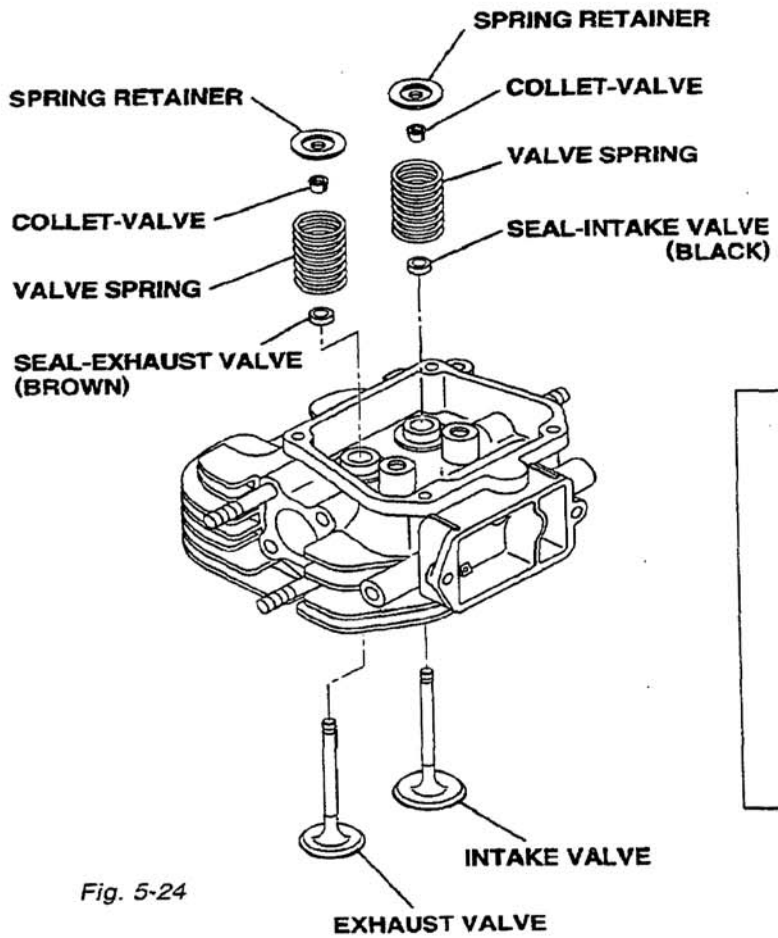


Fig. 5-24

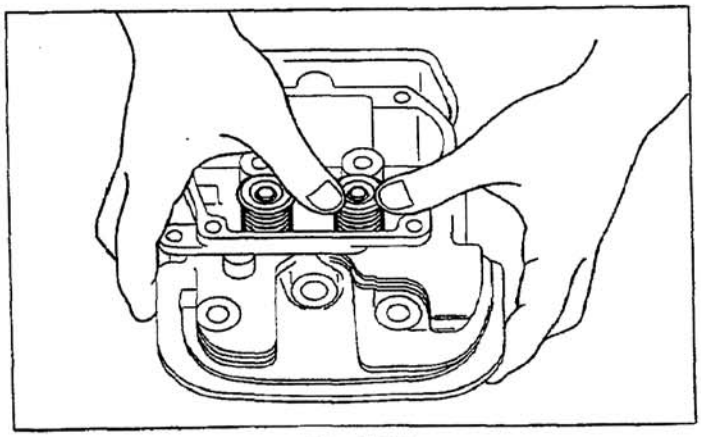


Fig. 5-23

15) OIL FILLER and SUPPORT (BLOWER HOUSING)

Install oil filler and support (blower housing)

16) CYLINDER BAFFLE

Attach cylinder baffle #1, #2, #3 and #4.

17) REGULATOR

Attach regulator to cylinder baffle.

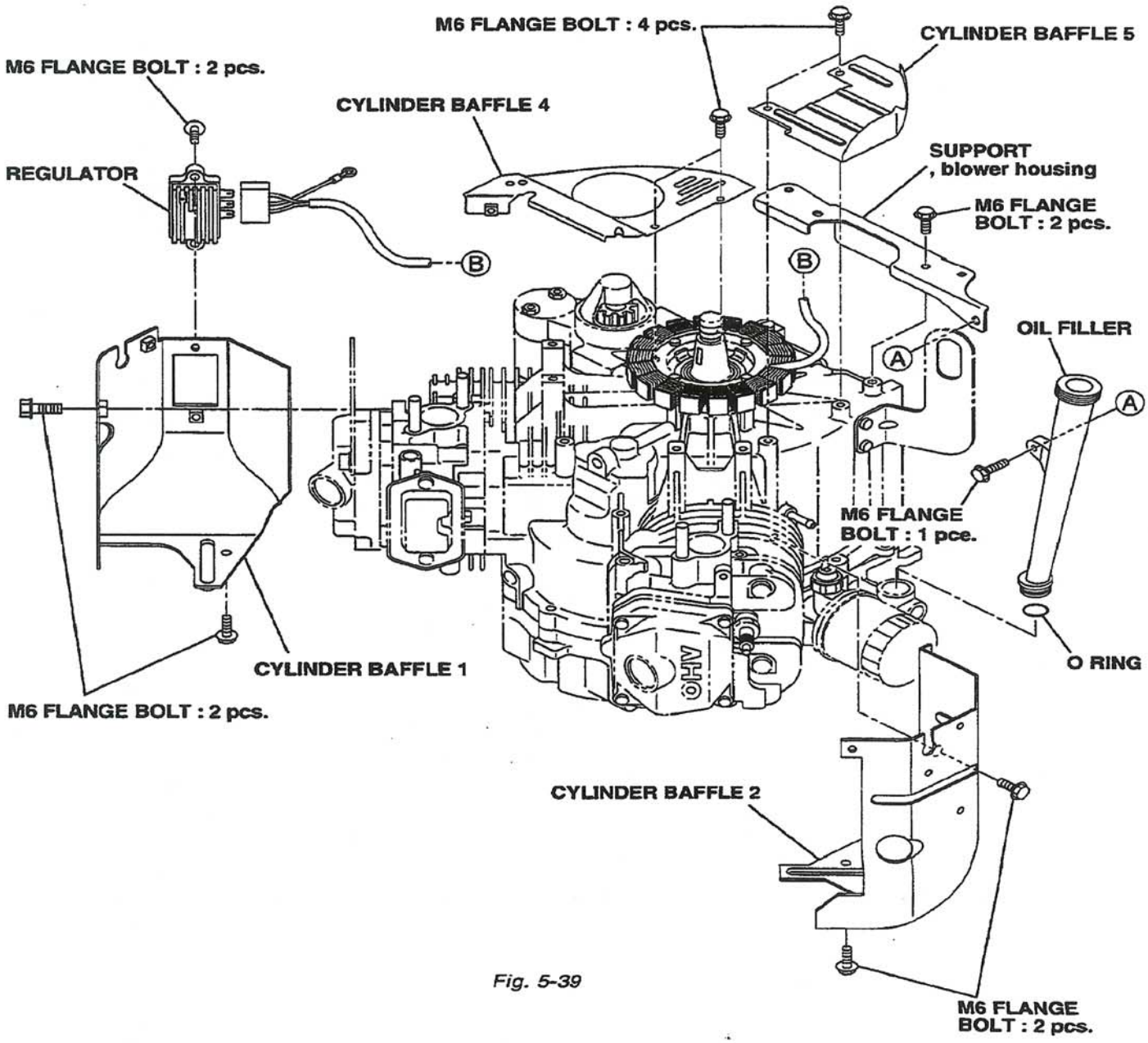


Fig. 5-39

8-1-1 FLOAT SYSTEM

The float system is consists of a float and a float valve, and maintains a constant fuel level during engine operation.

The fuel flows from the fuel tank into the float chamber through float valve.

When the fuel rises to a specific level, the float rises, and when its buoyancy and fuel pressure are balanced, the float valve closes to shut off the fuel, thereby keeping the fuel at the predetermined level.

8-1-2 PILOT SYSTEM

The pilot system feeds the fuel to the engine during idling and low-speed operation.

The fuel is fed through the main jet to the pilot jet, where it is metered, and mixed with the air metered by the pilot air jet.

The fuel-air mixture is fed into the combusion chamber through the idle port and the slow port.

At idling speed, the fuel is mainly fed from the idle port.

8-1-3 MAIN SYSTEM

The main system feeds the fuel to the engine at medium-and high-speed operation.

The fuel is metered by the main jet and fed to the main nozzle. The air metered by the main air jet is mixed with the fuel through the emulsion hole, and the mixture is atomized out of the main bore. It is mixed again with the air taken through the air cleaner into an optimum fuel-air mixture, which is supplied to the combusion chamber.

8-1-4 CHOKE

The choke is used for easy start when engine is cold.

When the starter is operated with a choke valve fully closed, the negative pressure applied to the main nozzle increases and draws much fuel accordingly; thus easily start up the engine.

8-1-5 ACCELERATOR-PUMP SYSTEM

When the throttle is opened rapidly for acceleration, air flow and manifold vacuum change almost instantaneously. Because fuel is heavy and lags behind air flow, a momentary leaness results. The accelerator-pump suplies extra fuel for smooth operation during this condition.

At constant load condition, a vacuum passage in the carburetor applies manifold vacuum to the pump diaphragm and the pump diaphragm is held to pull position.

When the throttle is opened rapidly for acceleration, the manifold vacuum is droped, the pump diaphragm moves by the diaphragm spring, the fuel in the pump chamber push out by the pump diaphragm and the fuel gush out from the accelerator-pump nozzle.

8-1-6 FUEL CUT VALVE

Fuel cut valve, operated with starter key switch, is equipped with main system of carburetor for preventing engine running on and after burning.

When the key switch is on, the valve is activated and the plunger is pulled in to open the main jet.

When the key switch is off, the power source to the valve is off. The plunger is pushed out by the return spring and stop the fuel flow of main jet.

TROUBLE SHOOTING GUIDE

PROBLEM	CAUSE	SOLUTION
Will not start	No fuel or dirt in fuel line Blown head gasket Engine overload Dirty air cleaner Faulty spark plug Fuel susyem out of adjustment Defective ignition coil	See engine owners manual for servicing. **NOTE: only properly trained service technicians should adjust or repair fuel system!**
Hard to start	No fuel or dirt in fuel line Engine overload Dirty air cleaner Faulty spark plug Spark plug or head bolts loose Blown head gasket Timing, coil or valves need adjustment Regulator need adjustment Insufficient vacuum	See engine owners manual for servicing. **NOTE: only properly trained service technicians should adjust or repair fuel system!**
Lacks power	Improper valve clearance Dirt in fuel line Faulty spark plug Improper oil level Worn rings	See engine owners manual for servicing. **NOTE: only properly trained service technicians should adjust or repair fuel system!**
Odor of burned rubber	Belt out of adjustment	See "Adjusting Belt Tension"
Engine overheats	Incorrect oil level Engine overload Build up of dirt inside engine shroud	See engine owners manual for servicing.
High fuel consumption	Faulty spark plug Dirty air cleaners Improper fuel system adjustment	See engine owners manual for servicing. **NOTE: only properly trained service technicians should adjust or repair fuel system!**
Machine stops suddenly	Out of fuel	Change fuel cylinders
	Faulty spark plug	Clean adjust or replace spark plug
	Pad not centered on pad driver	Center pad on pad holder
	Incorrect pad size	Replace with proper pad
	Low oil	Add oil (see page 9)
Excess vibration	Bolts loose on engine or deck	Tighten all bolts
	Pad not centered or damaged pad	Center or replace pad
	Incorrect oil level	Check and adjust oil level
	Engine overload Dirty filters Faulty spark plug	See engine owners manual for servicing.