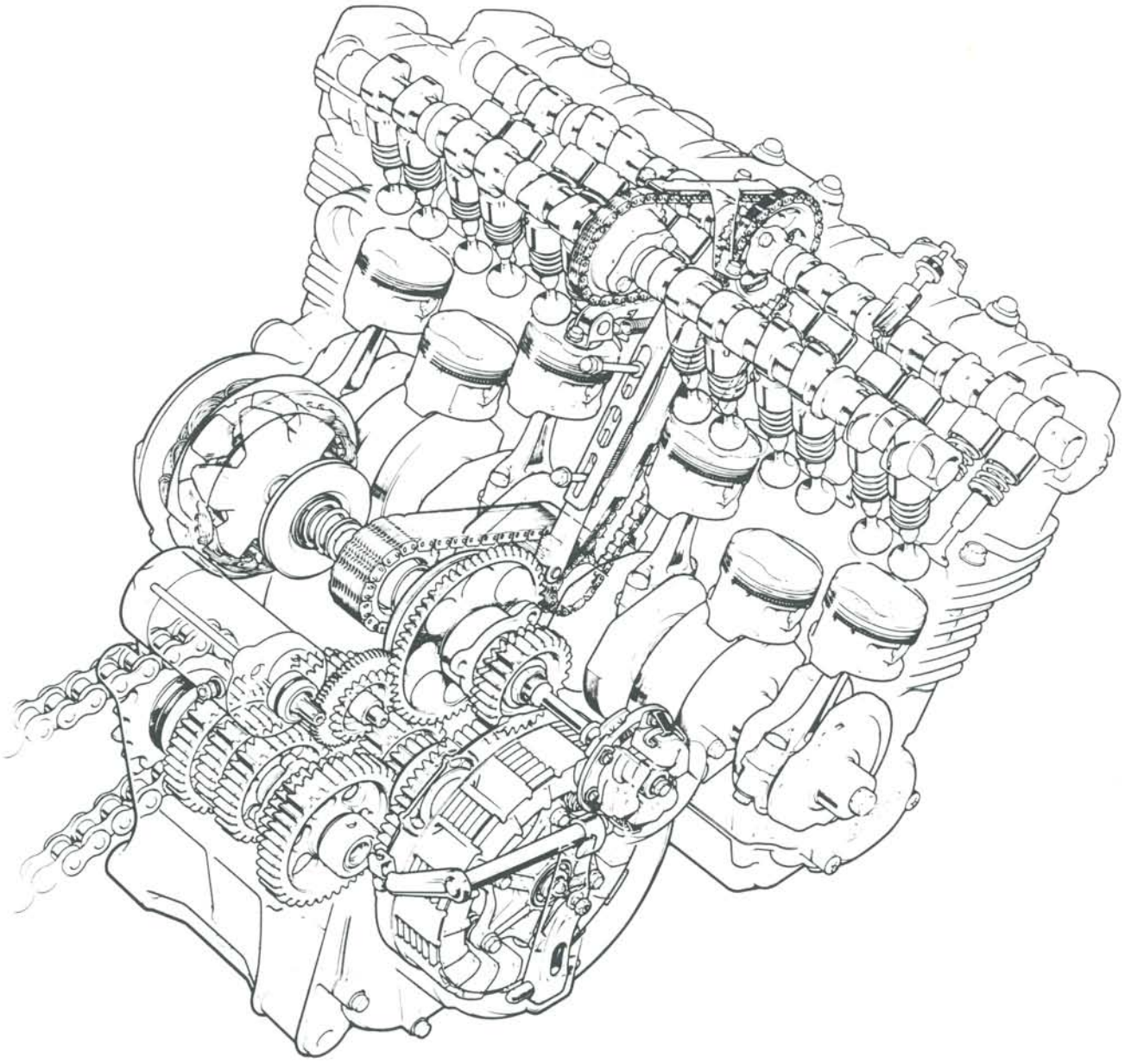
TECHNICAL FEATURES

PARTICULARITES TECHNIQUES

TECHNISCHE MERKMALE

CARACTERISTICAS TECNICAS

ENGINE CONSTRUCTION
CONSTRUCTION DU MOTEUR
MOTORKONSTRUKTION
CONSTRUCCION DEL MOTOR



DUAL CAM CHAINS

Dual cam chains drive the camshafts. Drive is transmitted from the crankshaft to the exhaust camshafts and from there to the intake camshafts. This eliminates a diagonal chain path through the rear of the engine, reducing the distance between the carburetors and cylinders.

The narrow air cleaner and canted carburetors eliminate interference with the rider's legs.

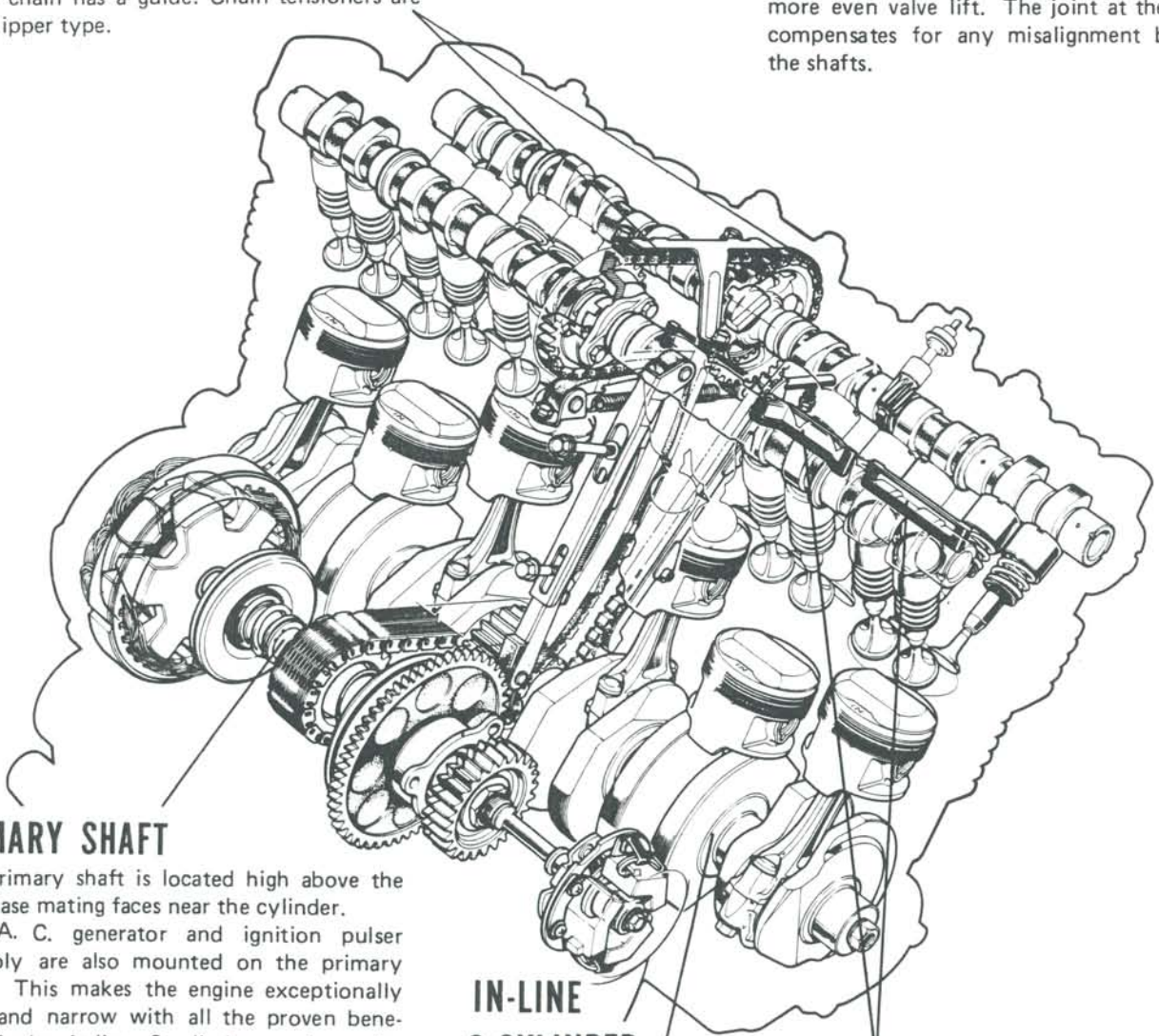
The cam chains are durable silent type.

Each chain has a guide. Chain tensioners are the slipper type.

24 VALVES, SEPARATED CAMSHAFTS

Each cylinder has two intake and two exhaust valves. The arrangement insures effective breathing at high speed without valve float. Four valves instead of two allow a large overall port area with a low reciprocating weight for each valve spring.

The camshafts are of a two-piece forging. The separated shafts provide rigidity with more even valve lift. The joint at the center compensates for any misalignment between the shafts.



PRIMARY SHAFT

The primary shaft is located high above the crankcase mating faces near the cylinder.

The A. C. generator and ignition pulser assembly are also mounted on the primary shaft. This makes the engine exceptionally short and narrow with all the proven benefits of the in-line 6-cylinder engine. Its physical size is equal to the standard in-line 4-cylinder motorcycles in its cc class.

IN-LINE 6-CYLINDER ARRANGEMENT

The in-line ultra short 53.4 mm stroke 6-cylinder arrangement reduces the vehicle's height. It also reduces piston speed and minimizes wear.

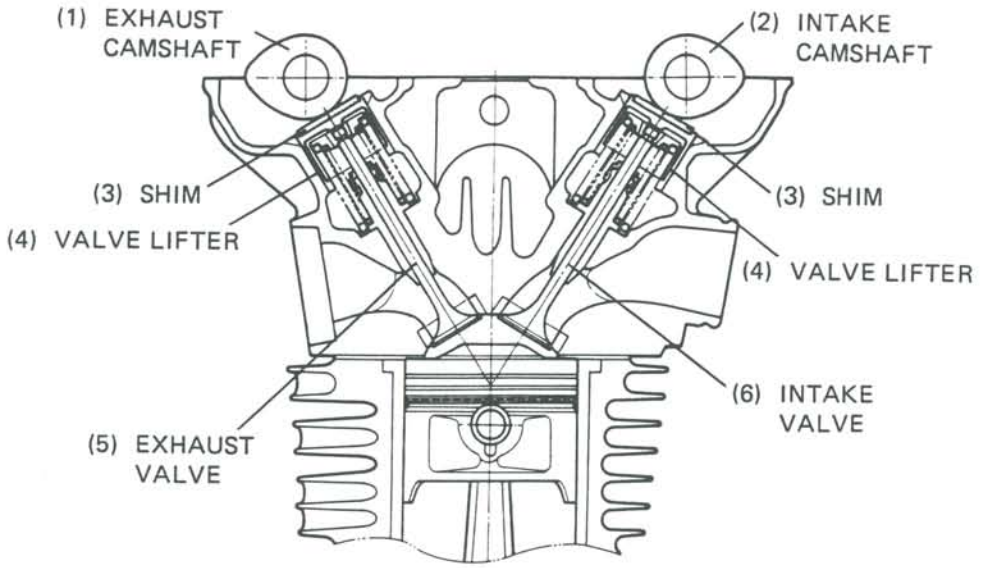
CAMSHAFT OIL POOL PLATES

The engine oil is collected in the camshaft troughs by oil pool plates for positive lubrication of the valve lifters and cams.

The plates also contribute to quieter valve operation.

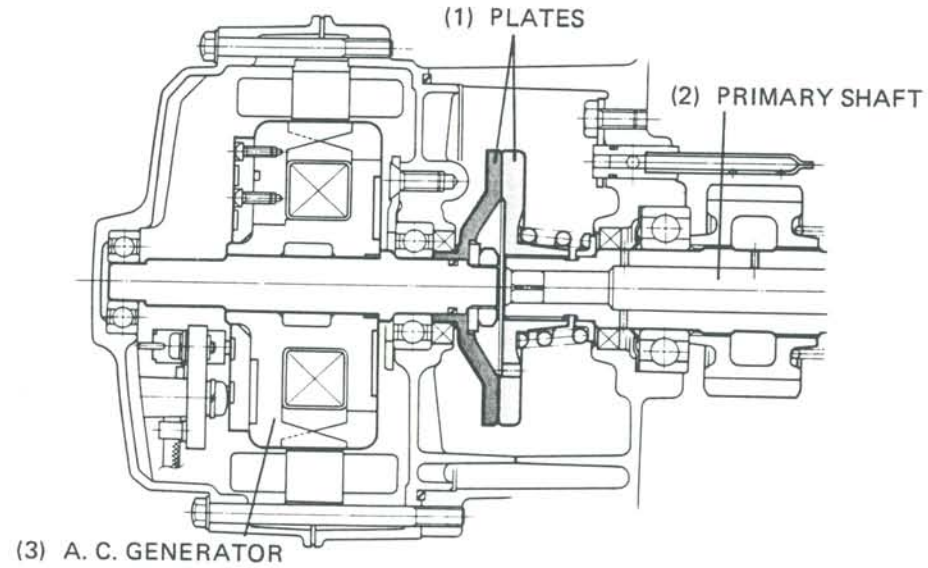
VALVE MECHANISM

The valves are operated by the cams through the valve lifters. The shims can be removed and installed easily without removing the camshafts by pushing down on the lifters with a special tool.



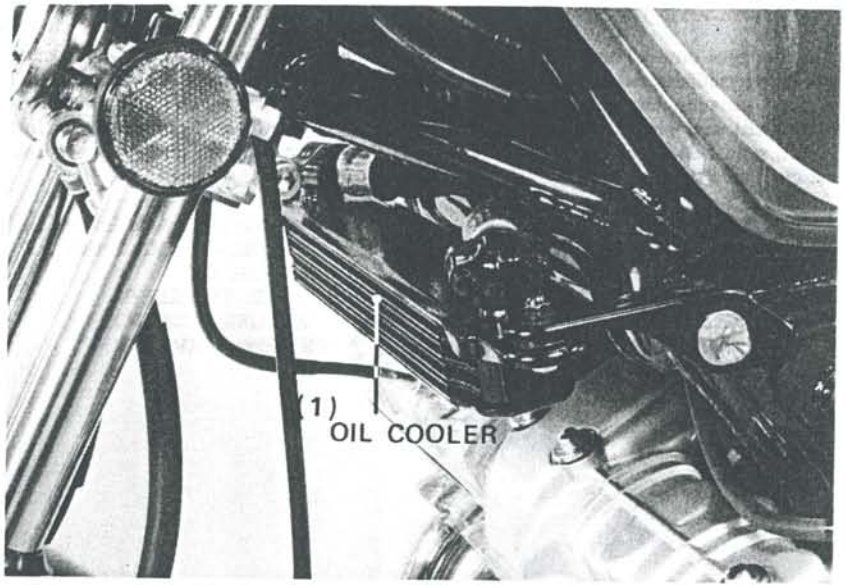
A.C. GENERATOR COUPLING

Power from the primary shaft is transmitted to the generator through a frictional coupling. The coupling consists of two steel discs pressed against each othrer by a spring. Relative movement between the discs prevents excessive inertia from being transmitted directly from the generator to the primary chain when snapping.

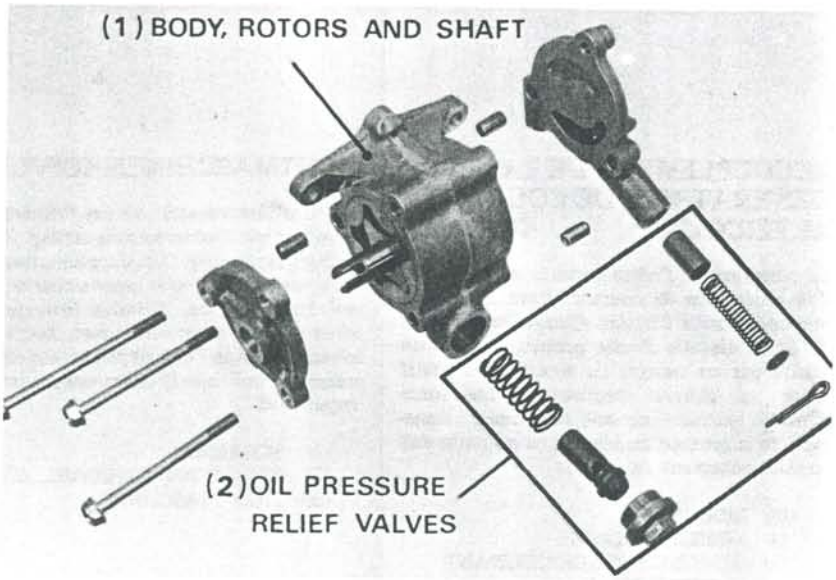


OIL COOLER, OIL PUMP

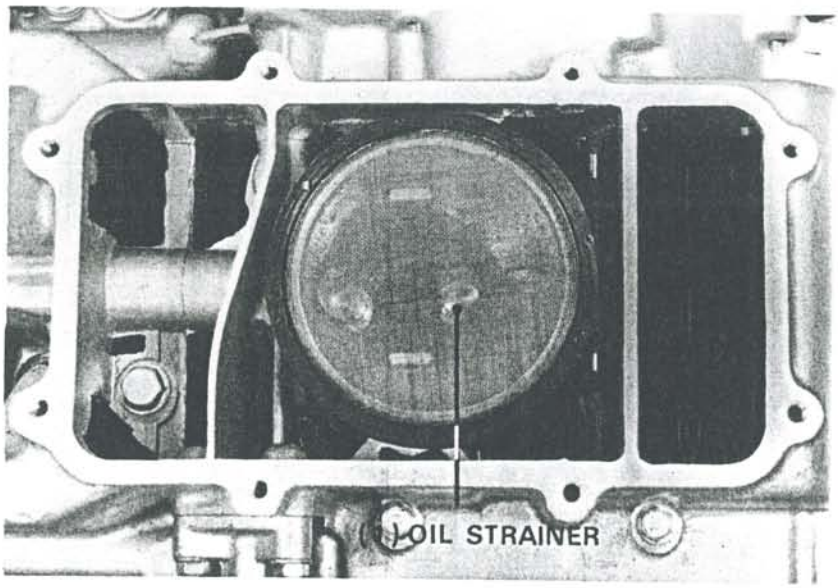
The lubricating system uses a wet sump with the sump at the crankcase bottom. The oil is cooled by an oil cooler.



A tandem trocoid pump supplies oil to the bearings and other moving parts of the engine. Oil from the oil sump is forced by the main pump into the crankshaft and cylinder head.
The auxiliary pump feeds oil to the primary shaft and transmission. The oil cooler is in the auxiliary pump circuit and cools the oil drawn from the sump by the auxiliary pump.
The oil damper in the primary chain receives oil from this pump circuit.

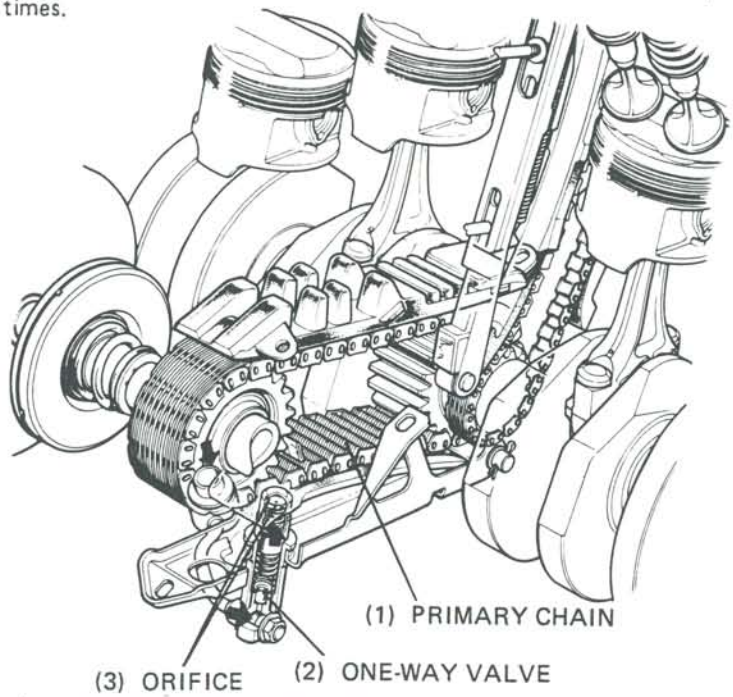


Oil from the sump must pass through a strainer before it enters the pumps.



OIL DAMPER TYPE PRIMARY CHAIN TENSIONER

Primary chain tension is controlled by an oil dampened chain tensioner. It consists of a one-way check valve using a steel ball, a spring and a tension bar. The bar has an oil chamber with small orifices at its end. Oil in the chamber compensates for cavitation, assuring positive damper action at all times.

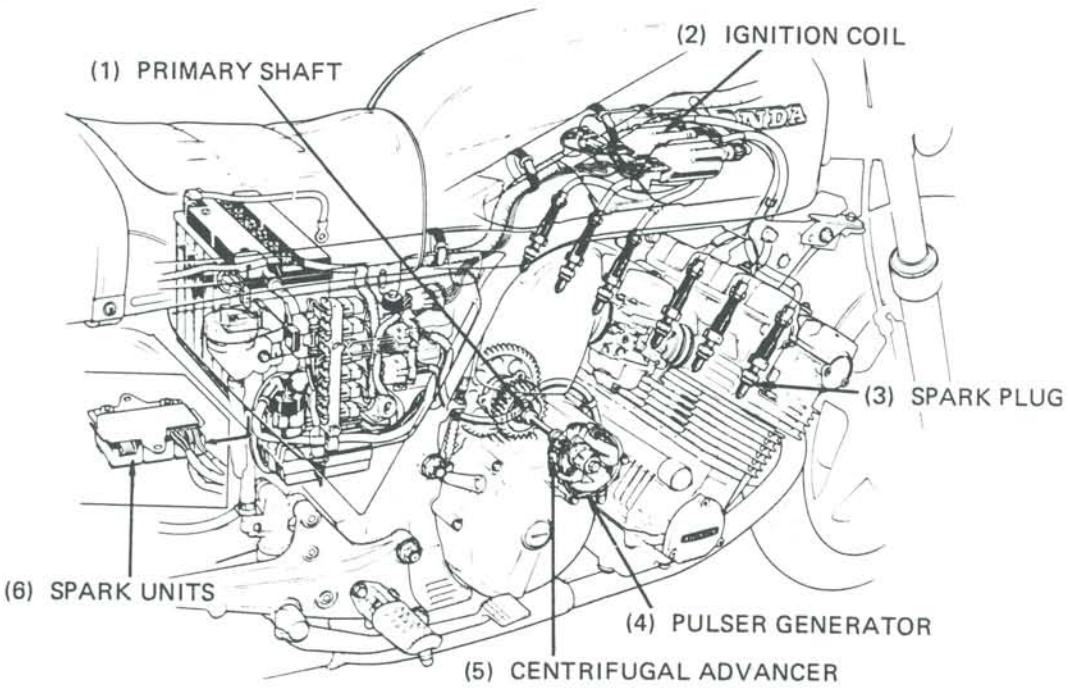


TRANSISTORIZED IGNITION

The engine uses a transistorized ignition. A pulser generator and transistorized spark unit supply current to the primary circuit. The system is free from problems that occur in mechanical breaker systems. It produces stable secondary energy and eliminates periodic adjustments and maintenance services. There are three independent systems; one for 1 & 6, 2 & 5, and 3 & 4 cylinders.

The generator rotor is connected to the primary shaft so they turn as a unit as the shaft rotates. Three generating coils are spaced evenly on the base plate, 120 degrees apart.

When the rotor turns, pulses are generated as it passes over the coils. Adjusting timing for 1 & 6 cylinders automatically adjusts the other cylinders.



ADJUSTABLE F. V. Q. SHOCK ABSORBER

The adjustable F. V. Q. shock absorber has two adjusters and an ordinary spring adjuster to suit the individual riders and varying riding conditions.

1. Upper Adjuster (3 stages)

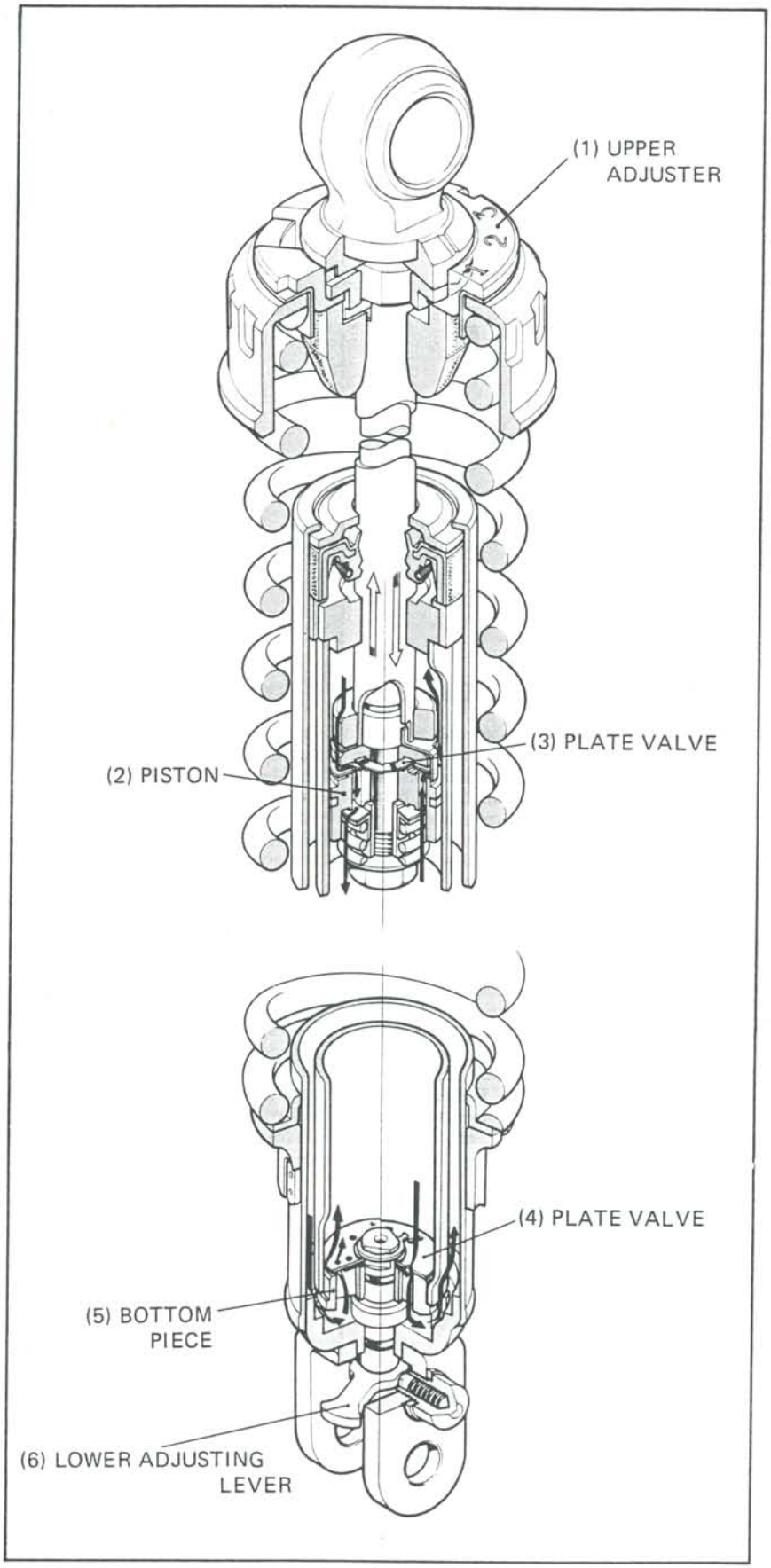
The upper adjusting mechanism consists essentially of a plate valve with a series of orifices having different diameters. As the upper adjuster is moved, the valve is rotated. This changes the relationship between the orifices and oil passage in the piston, providing variable dampings on the tension side of the shock absorber.

2. Lower Adjusting Lever (2 stages)

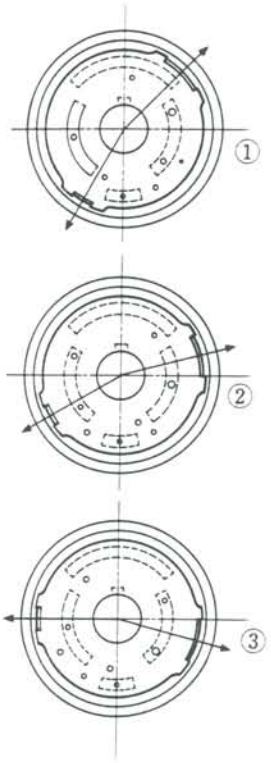
The lower adjusting mechanism makes use of a plate valve in that either of the two sets of orifices with different diameters are indexed with the grooves in the bottom piece. This controls dampings on the compression side of the shock absorber depending on which way the lever is operated.

3. Spring Adjuster (5 stages)

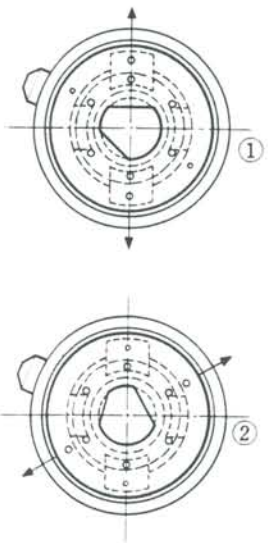
The adjuster has 5 positions. A pin spanner is used to change the load of the shock absorber spring.



(1) Upper adjusting mechanism controls damping force of tension side.



(2) Lower adjusting mechanism controls damping force of compression side.



(3) DAMPING FORCE CHARACTERISTICS

