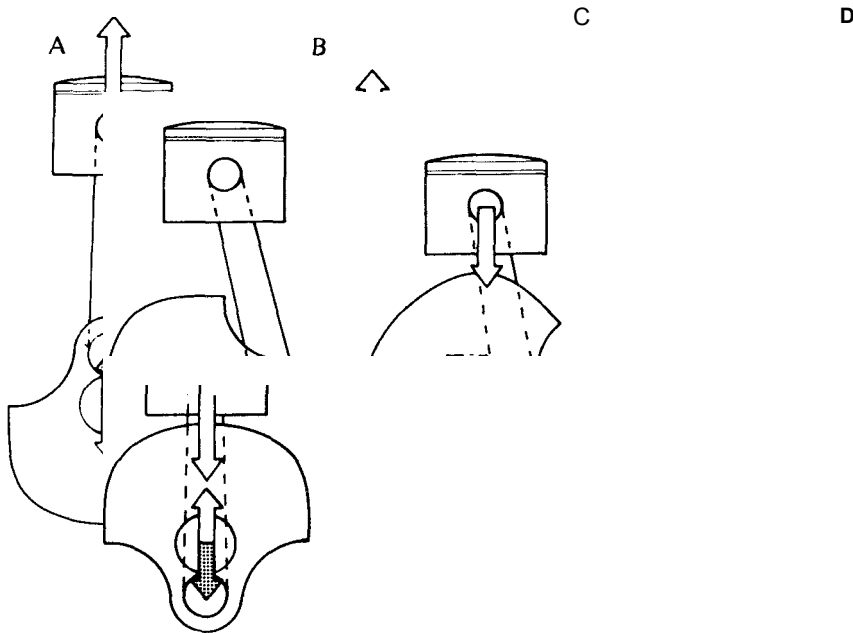


Vibration Reduction with Crankshaft



cancel each other since the directions of these forces are opposite. With the forces cancelled, engine vibration is greatly reduced. At other crankshaft positions, these two forces are also equal and opposing such that they cancel each other, keeping the system always in balance.

The balancer weights, turning at the same rpm as the crankshaft, are chain-driven by a sprocket on the crankshaft. The balancer chain is an endless type for maximum durability and wears very slowly due to its ample lubrication. The chain drives the weights through a sprocket on each balancer shaft. Each sprocket has four spring wedged between the sprocket and the weights to protect the sprocket and chain from the shock of power impulses. In the center of each spring is a pin, which prevents damage to the spring from excessive compression.

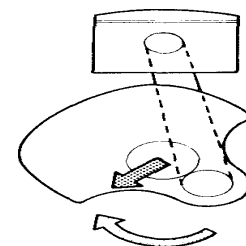
If balancer mechanism trouble develops, such as excessive shaft or chain wear, not only are the bearings and crankcase parts affected but the resulting power loss and engine vibration may adversely affect performance and overall engine life.

Balancer shaft wear

Measure with a micrometer the diameter of each shaft where it wears on the needle bearings. Replace

a shaft and its needle bearings if it has worn down on either side to less than the service limit.

Balancer Mechanism



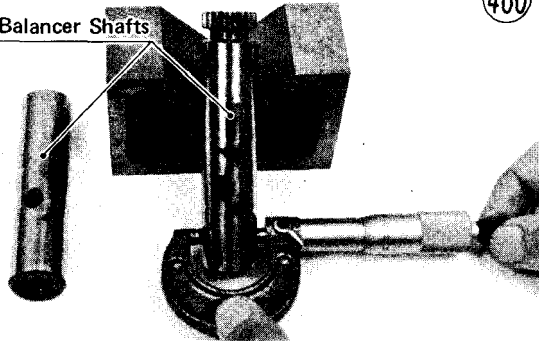
Spring free length

Measure the free length of each spring with vernier calipers. Replace any spring which is shorter than the service limit.

Table 53 Balancer Shaft Diameter

Standard	Service Limit
23.987~24.000 mm	23.95mm

Balancer Shafts



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