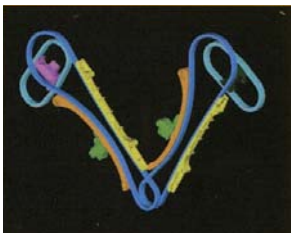
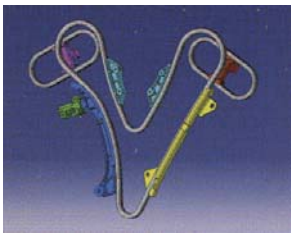
CENTRAL CORE PRODUCTS

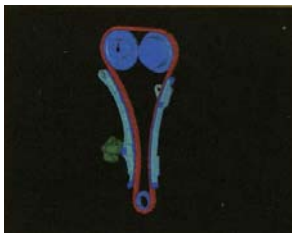
TSUBAKI
TSUBAKIMOTO CHAIN CO.

CAMELLIA®

Timing Chain & Components







FEATURE OF PRODUCTS

1. Tsubakimoto Chain is one of world's leading suppliers of Timing drive chain systems, not only production but also design and development.

2. Tsubakimoto Chain has a big market share of Japanese timing chain engines and supplies major Car Manufacturers in the world.
   The history of Timing chain systems is the history of Tsubakimoto Chain.

3. Tsubakimoto Chain is supplying not only Chains, but also Tensioners, Guides/Levers and Sprockets for Timing chain engine systems and Automatic Tensioner for Belt engine systems.

SPECIAL HIGH PERFORMANCE ROLLER CHAIN

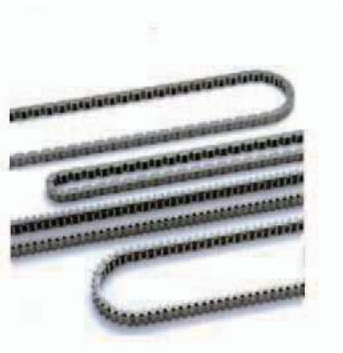
The following special types of chain are particularly well suited for high performance engines.

RF06E-U, RF05E-U - Special Simplex Chain

1. Pins have a specially hardened surface.
2. Bushing is extended from the inner link plate to increase the bearing area and reduce side bow of the chain.
3. Link plates are thicker than standard to increase tensile strength.

SILENT CHAIN

TSUBAKI'S Silent Chains are the fruit of efforts to further lower noise while maintaining roller-chain characteristics. Also, TSUBAKI has realized even more compact timing chain drive systems by introducing an ultra-small, 6.35mm-pitch silent chain.



REPLACEMENT OF TIMING CHAINS, SPROCKETS AND TENSIONERS

Excess elongation of timing chain and/or wear on sprockets, tensioner, or guide shoe may cause noise and reduce the output power efficiency of the engine. We recommend that these parts should be replaced the manner stated in this manual.

A) Replace chain, sprocket and/or tensioner when:

1. The engine oil depletion is excessive during driving.

B) Replace the chain when:

1. The chain becomes stiff against its articulation.
2. Abnormal wear or damage on bushing, roller, or link plate is observed.
3. When the average length measured over 16 pitches, at any of the 3 places shown in Fig.2, is over 146.6mm.

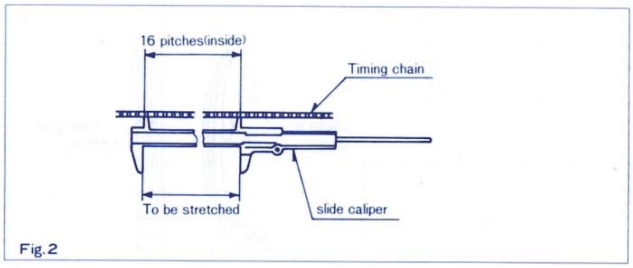


Fig.2

4. When the difference between max. length and min. length of above is over 0.15mm.

C) Replace the sprockets when:

1. Scratches are observed on the sprocket teeth.
2. Uneven wear is observed on tooth bottom (as shown in Fig. 3 and Fig. 4)

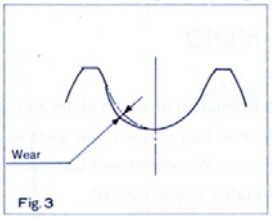


Fig.3

Fig.4

D) Replace the tensioner (Fig. 5) when:

1. Peeling or heavy scratches are observed on the rubber surface.
2. Wear amount over 0.5mm is observed on the rubber surface.
3. Abnormal wear is observed on the plunger rod (cylinder).

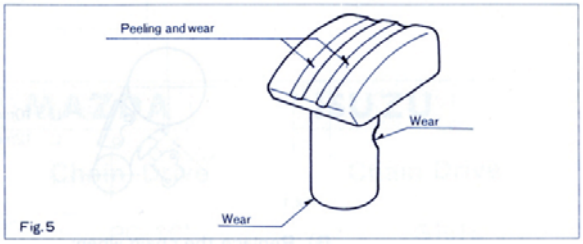


Fig.5

E) Replace the Guide Shoe (Fig. 6 & 7) when:

1. Any crack or peeling is observed on the rubber surface.
2. The wear amount exceeds 0.5mm on the rubber.

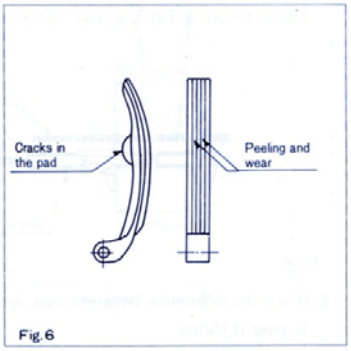


Fig.6

Fig.7