

Special Feature: Tsubaki Group's Competitive Advantage



■ Advantages in Technology, Product Development,
and Manufacturing Know-How

page **12**

■ Advantages in Production and Supply

page **14**

Advantages in Technology, Product Development, and Manufacturing Know-How

■ Proactive Investment for Sustainable Growth

As a company with a strong manufacturing culture, our lifelines are excellent technology, product development, and manufacturing know-how. Combined with a highly efficient sales network, these are the keys to sustainable growth. Since our foundation, we have aggressively invested in R&D, resulting in a distinct technology advantage in each of our operating segments.

Fundamental Technology

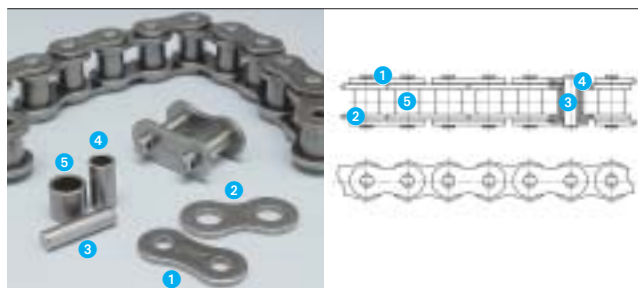
Founded 90 years ago, the Tsubaki Group's business has been built around core technology for industrial-use chains. From this base, we have expanded and diversified into automotive parts, power transmission units and components, and materials handling systems. Taking chains, which form the base for all our product groups, as an example, we continue to lead the industry in the following ways.

Our mainstay roller chain is composed of just 5 main parts: an outer plate, an inner plate, a pin, a bush, and a roller. Such a simple structure gives the appearance of a low-tech product. Despite this simplicity, it is not so widely known that our chains have an absolute technology advantage over the chains of other major global makers in such crucial quality areas as durability (wear-resistance characteristics and fatigue strengths), quiet operation, and lightness.

This technology gap has been built on two main strengths. First, we have diligently developed basic materials and heat treatment technologies as well as related application technologies. Second, we have cultivated the manufacturing skills and experience to sustain small-lot, variable-item manufacturing.

The global chain industry comprises a small number of powerful makers and a larger number of companies with a comparatively modest scale. In this context, for the past five years, the Tsubaki Group has grown its business on the world stage, with net sales from its Chain Operations rising 1.5 times and global market share increasing to 23.5%. The quality advantages just described are based on our continuing capital and technology development investment, which is focused on strengthening R&D. This approach is further widening the gap between ourselves and competitors.

Basic Structure of Roller Chain



① Outer plate ② Inner plate ③ Pin ④ Bush ⑤ Roller

An Example of Our Advantage Backed by Differentiated Technology

Achieving superior fatigue strengths

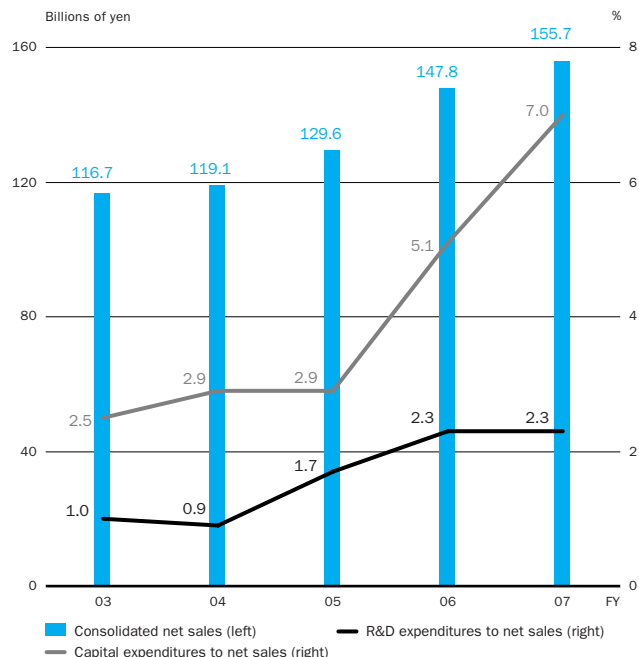
Comparison of Joint Plate Fatigue Strengths

Tsubaki chains	100
Domestic and overseas competitors' products	23 ~ 45

Source: Comparison is based on tests conducted by Tsubakimoto Chain. The figures for competitors' products show the comparison with Tsubaki chains, which represent 100.

Net Sales, R&D Expenditures, and Capital Expenditures

Sustained, aggressive investment to create technological competitive advantage



■ New Products Emerge from Application of Technological Expertise

By quickly and accurately assessing the needs of the era, we offer new products that match market requirements based on superior fundamental technology. In this way, we build a win-win relationship, whereby customers achieve greater satisfaction with products and our market share expands. The result is continuing growth in our main product sectors, including chains and automotive parts.

Steady Refinement in Technology: New G7 RS Roller Chain

“We want to cut costs through adopting long-life chains with excellent drive performance.” “We need components that will contribute to reducing CO₂ emissions, which society is increasingly demanding.” In response to such customer requests, we launched the next-generation G7 RS Roller Chain in May 2006. This chain features the newly developed seamless-structure LD solid bush technology (patent pending), with a lube dimple that enhances the lubricant’s retentive performance. The result is wear life double that of our previous RS Roller Chain products. The improvement in drive performance also means that smaller chain sizes can be used.

In addition, the LCA Inventory Analysis, which evaluates the entire product life cycle from materials procurement to scrapping, concludes that the G7’s CO₂ emissions are 49% less than previous products, a major lowering of the environmental burden.

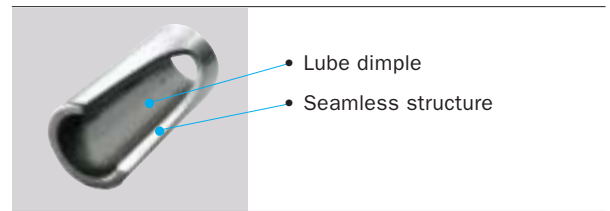
Tailored to Suit Customers’ Systems: Timing Chain Drive Systems

For automakers, lowering exhaust gas emissions and improving fuel efficiency are more than a matter of complying with regulations and environmental requirements. These factors have now become crucial to determining product competitiveness. In timing chain drive systems, the mainstay product of our Automotive Parts Operations, we strive to meet industry needs by making each part in the system – chain, tensioner, lever, and guide – quieter, more compact, and less prone to friction. At the same time, we work to enhance our system technology to optimize our timing drive systems for individual engine types. Thanks to those efforts, our global market share in timing chain drive systems climbed to 34% in fiscal 2007.

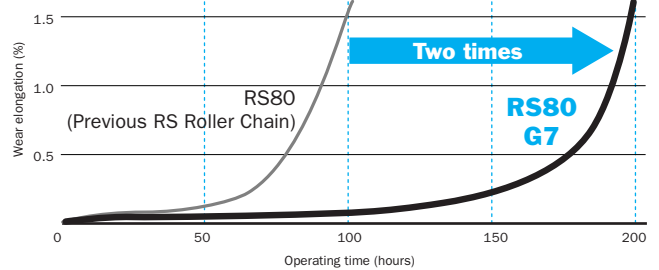
Differentiated Technology in G7 RS Roller Chain

Dramatically enhanced wear life with development of LD (lube dimple) solid bush

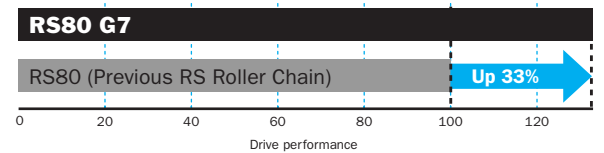
LD Solid Bush



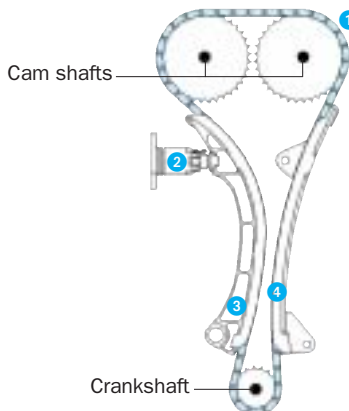
Wear Life



Drive performance increased by more than 30%



Source: Tests conducted by Tsubakimoto Chain



Differentiated Technology in Timing Chain Drive Systems

Parts	Market needs	Tsubaki's solutions
① Chain	Lighter weight	→ 8mm pitch, high-strength chain
	Lower friction	→ Chains with treated link plate edge
	Quieter operation	→ Super silent chains
	Longer life	→ Chains with reduced wear elongation
② Tensioner	Lighter weight	→ Aluminum body
	Lower friction	→ Low oil-consumption structure
③ Lever ④ Guide	Lighter weight & recyclable materials	→ Application of plastic
	Lower friction	→ Application of friction-reducing materials

Advantages in Production and Supply

■ Comprehensive System Strength beyond Individual Products

Differentiation through technology development – this is the most important element for any manufacturer. However, differentiation alone is not enough to win in the current tough business environment. We must not only create high-quality products; we must also ensure timely delivery and a solid after-sales support system. In addition, we should make proactive and appropriate proposals for comprehensive systems that enhance our customers' competitiveness. In these areas too, the Tsubaki Group is exercising its advantage.

Global Production and Supply System

As our customers globalize their operations, it is imperative that they are supplied with components of identical quality and price worldwide. We have established a global network that optimizes regional production and supply and that fits our customers' needs exactly at every stage, from product development to maintenance. This ability to respond on a global basis is one of our greatest Group strengths. In automotive parts, we have a five-point production, sales, and technology support system for timing chain drive systems that spans Japan, North America, Europe, Thailand, and China. This system allows us to respond to customer needs promptly and flexibly.

Comprehensive Strength in Power Transmission Products and Materials Handling Systems

The strength of the Tsubaki Group lies in its diverse power transmission product lineup – for example, parts like chains and sprockets and devices like power transmission units – as well as in the system solutions capacity of its Materials Handling Systems Segment. By developing and offering modular products that exploit these strengths, we are contributing to the enhancement of customers' productivity.

Production, Sales, and Technology Support System Spanning the Globe

