

Trend analysis (obtained automatically from database)

| | |
|---|---|
| Is tool life normal? | (Yes) no action (No) investigate |
| Are tool life trends upward? | (Yes) continuous improvement (No) investigate |
| Tool failure economics | Tool costs + lost production (action/no action) |
| Influence of modifications on tool life (%) | Improvement/no change/worse |
| Cost of modification per component | Accept/further investigation/reject |

Figure 2. Proposal for Tool Monitoring Database

It must be recognised that Figure 2 provides a very simple first stage a company needs to take if it is serious in seeking to understand and analyse its own tooling

performance. However, it represents only a small fraction of the accumulation of work and across the board effort that global members of the ICFG have put into their published documentation on the subject. It is also worth noting that the ICFG have been publishing detailed analyses on all aspects of cold forging technology for over 50 years. Today, China, Japan and South Korea have very strong national links with the ICFG which those in the region who work in cold forging might find it useful to approach.

Footnote. In 2003, recognising that the main players in cold forging technology had relocated out of the UK or been sold or closed, it was evident that the BCFG could not continue in its previous role. So, the name was changed to Industrial Metalforming Technologies (IMfT) to embrace the new global environment and include all aspects of metalforming technology, e.g.: equipment, materials/treatment and process/finishing. In this way, IMfT seeks to collaborate with interested parties worldwide whilst continuing its non aligned and independent support for an industry without which we would all live in a very strange place.

References

Tool Life & Tool Quality in Cold Forging

Part 1. ICFG Document 14/02

Part 2. ICFG Document 16/04

Part 3. ICFG Document 17/06

Part 4. ICFG Document 22/12

Part 5. ICFG Document 23/13

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Opportunities and Challenges in the Automotive Industry for Chinese Manufacturers

by Shervin Shahidi Hamedani

The automotive industry as a pillar of the global economy continues to face a growing number of challenges and pressures, including cost pressure, competition, globalization, market shifts, and volatility. However, the automotive industry in China has grown at more than 15 percent annually for a decade. In late 2015, when it looked like demand might decline, a tax break was introduced to keep the market growth in 2016.

Chinese automakers' efforts to expand into more emerging markets have spurred positive forecasts on export growth, amongst strengthening international political ties. The emerging markets such as the Middle East and North Africa are identified as key growth drivers for Chinese carmakers. Several trade relationships in these markets are promoted by the country's political

relationships instead of market expansion. Other than the Middle East and North Africa, the fast-growing Indian and South Asian markets have been considered for their opportunities by many of Chinese manufacturers which have shifted their focus.

The automotive sector faces a range of challenges globally with complicated safety regulations. The majority of exported Chinese-branded vehicles are shipped to developing countries. There is room for development in Iran, India, Indonesia and Malaysia. The Indian market draws Chinese auto makers' attention because the demand is climbing and the market is developing at high speed.

Although Chinese companies are speeding up their pace to go abroad, the export environment in developed countries is not expected to change in the near future, as their saturated markets leave only limited opportunities for Chinese exports. Some developed countries have complex legal frameworks to protect local manufacturers. In the U.S., for instance, the market situation differs in each state, and has begun to levy heavy duties on truck and bus tires imported from China. That is, Chinese products are well-matched more to the local needs there, in terms of parts, materials, road performance, emission standards, and driving safety than markets in developed countries such as the US and EU.



However, some manufacturers in China by leveraging on acquiring high quality resources and absorbing advanced operation insights and management methodology have become a major pathway for Chinese automotive companies to grow bigger and stronger.

Automotive Fasteners

The automotive industry is the largest market for industrial fasteners. Automotive fasteners are made up of various materials such as iron, aluminium, brass, nickel, stainless steel, plastic and they are further classified with their distinct characteristics. Automotive fasteners are generally used for clamping parts of vehicles together to avoid their separation or wobbling, transmitting loads as well as preventing leakage of joint. Automotive fasteners come in various shapes and coatings, colours to meet the demand of the automotive fastening market along with the attractive designs and quality. Over the last decade various companies have been involved in the technological research and development of automotive fasteners, which results in superior quality fasteners and the growth of the automotive fastener market.

The global fastener market is segmented into seven regions which include North America, Latin America, Western Europe, Eastern Europe, APEJ, Japan, the Middle East & Africa. Europe is the market leader in the automotive fastener market, owing to its being the largest global automobile hub. APEJ is the second major contributor in the automotive fastener market due to the growth in the vehicles market and the aftermarket sales of fasteners.

The growing automobile industry in China and the vital importance of fasteners in automobiles in this country are key driving factors in the automotive fastener market. The technical developments and improvements in the quality and durability of fasteners is another driving factor in the automotive fastener market.

The main automotive industry manufacturers support a variety of business segments, both upstream and downstream. Not only in China, but across the globe, the automotive industry accompanied by its components manufacturing facilities, including steel plants, fastener producers, aftermarket shops, service providers are the catalyst for regional and local development.

The industrial fastener industry, as one of the key upstream industries in the automotive market, is expected to grow significantly at a CAGR of 5.7% by 2025 as a result of increasing applications in automotive and construction industries in emerging countries such as China.

The majority of largest Chinese fastener manufacturers are well-equipped to meet the needs of both the volume

serial production of commercial vehicles and the aftermarket supply of replacement parts by supplying all metal and plastic fasteners, engineered small parts and manual assemblies. Whether for vehicle body, chassis, powertrain, interior or electronics, Chinese suppliers provide good quality parts to meet every application.

The usage of industrial fasteners in maintenance, repair, and overhaul (MRO) industry will predict substantial revenue growth at a CAGR of 5.3% from 2016 to 2025. Rising MRO activities in various sectors including automobile will increase the market size. The growing requirement for enhanced efficiency for machines is anticipated to fuel the need for MRO activities, which in turn is expected to boost the industrial fastener demand over the upcoming years.

Externally threaded fasteners are the largest product segments in the automotive industry. Growth can be attributed to the increasing use of fasteners in the automotive OEM, machinery OEM and construction industry. The automotive industry is the largest market for fasteners, and automotive OEM is the second largest application market as a result of increasing production of automobiles in China, and other countries such as Japan, Australia, Mexico, USA and India.

Although automotive manufacturing is growing in China, the automotive distribution industry is facing an enormous challenge. Among the weak development of the automotive distribution industry in China, the automotive aftermarket, covering automotive finance, auto repair & beauty and used cars, has jumped up with higher profit margins. However, the easy replaceable nature of automotive fasteners makes it convenient for the end use consumers to purchase fasteners for their vehicles that would further boost the aftermarket of automotive fasteners. The alternatives to automotive fasteners such as clinching and welding can slow down the growth of the automotive fastener market. ■

Sources:

China Automotive Industry, Deloitte

China Automotive Distribution and Aftermarket Report; Industrial Fasteners Market, PR Newswire

Automotive Fasteners Market: Global Industry Analysis and Opportunity Assessment, Future Market Insights

