

Engaging in Expansive R&D Activities for Maintaining a Competitive Edge

Guided by its founding spirit, "Be ahead of the times through endless creativity, inquisitiveness and pursuit of improvement," Toyota Industries undertakes Company-wide strategic R&D aimed not just at improving short-term business results but also at achieving sustainable growth over the long term. At the same time, each business division actively carries out R&D activities that are important for ensuring that the Toyota Industries Group maintains its competitive advantage.

Toyota Industries' R&D can be broadly divided into the two categories of product development and improvements performed independently within each business division in addition to R&D carried out mainly by the Research & Development Center in terms of overall management strategy. Toyota Industries operates in an extensive range of business spheres, and each of the Company's business divisions has its own distinctive technological strengths, core technologies and market characteristics. Accordingly, to efficiently develop products in line with customer needs, the development departments of each business division play a leading role in product improvement, technology development and applied research. As such, these development departments maintain their own experiment equipment and research laboratories while proactively undertaking technology development in cooperation with manufacturing departments based on product development plans.

The Research & Development Center within the Head Office engages in R&D in technology fields such as materials fields that serve as a common foundation for all business divisions in addition to undertaking R&D in new domains. The Research & Development Center is also working to further strengthen and enhance the efficiency of our Company-wide R&D structure, promote lateral transfers of technologies among different business divisions and investigate new technology development themes. Concurrently, the center deploys the accumulated technologies and know-how of each business division in a continuous search for and creation of new products and services that will form the pillars of our future business. Depending on specific research themes, the center also

promotes joint research in collaboration with Toyota Central Research & Development Laboratories, Inc., an R&D facility of the Toyota Group that engages in basic research, as well as with universities and other outside R&D institutions.

Toyota Industries actively promotes in-house manufacturing of essential processing and assembly equipment. The Machinery & Tools Sub-Division develops and manufactures specialized manufacturing equipment for the Compressor Division, Engine Division, Toyota Material Handling Company and affiliates. Manufacturing such equipment internally yields a host of advantages, which include speedy development and manufacturing through cooperation among development and design departments as well as the rapid launch of production lines. Toyota Industries' outstanding manufacturing equipment also contributes to the Group's manufacturing, serving as a source of competitiveness for each business and protecting against any outflow of proprietary production know-how. We are also utilizing our strength in creating manufacturing equipment for the quick startup of operations at overseas production bases while striving to nurture personnel with expertise in such equipment, as we aim to further raise the production technology capabilities of the Toyota Industries Group.

In fiscal 2008, R&D expenses increased 6.4% from the previous fiscal year to ¥36.7 billion. By segment, R&D expenses amounted to ¥17.3 billion in the Automobile Segment, ¥16.5 billion in the Materials Handling Equipment Segment, ¥0.9 billion in the Textile Machinery Segment and ¥1.8 billion in the Others Segment.



Lift truck evaluation test



Vehicle wind tunnel test



Textile machinery development test