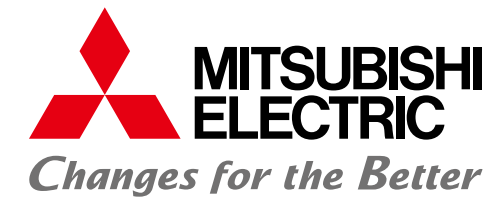


Rail Transport

History of Mitsubishi Brake System

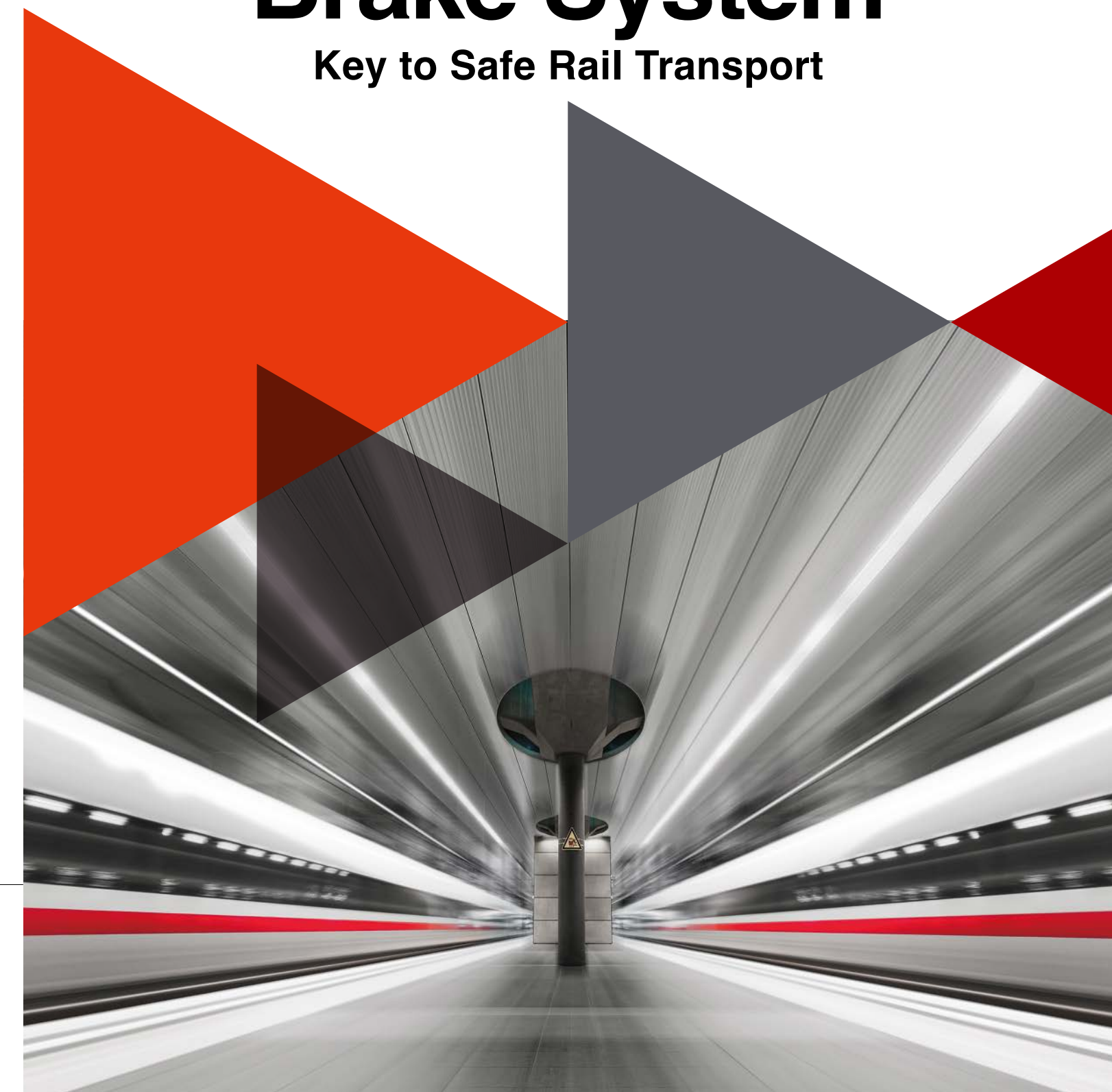
1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020

- ◆1924 Concluded a technical partnership with Westinghouse Air Brake
- ◆1924 First shipment of air brake product (SM-3 type brake control unit for Transportation Bureau City of Nagoya)
 - ◆1933 Shipment of AMU type brake control unit for Osaka Municipal Transportation Bureau
 - ◆1945 Started production of brake cylinder
 - ◆1954 Shipment of HSC type electro-magnetic straight brake control unit
 - ◆1960 Shipment of SEA type brake control unit for Tokaido Shinkansen
 - ◆1968 Shipment of MBS type electric command brake control unit
 - ◆1974 Development of electronic control brake control unit
 - ◆1978 Shipment of electric command brake control unit for Tohoku Shinkansen
 - ◆1984 Development of micro processor control brake control unit
 - ◆1988 Started production of tread brake unit
 - ◆1990 Development of wheel slide protection system
 - ◆1992 Shipment of brake control unit for 300 Series Shinkansen
 - ◆1994 Shipment of rotary compressor for Shinkansen
 - ◆1999 Development of MBSA-TIMS brake control unit
 - ◆2000 Shipment of compact oil-free compressor
 - ◆2003 Shipment of brake control unit for Taiwan Shinkansen
 - ◆2005 Shipment of pneumatic brake caliper
 - ◆2010 Development of compact type brake control unit



Mitsubishi Brake System

Key to Safe Rail Transport

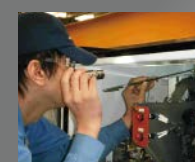


MITSUBISHI ELECTRIC CORPORATION
 (Head Office) 2-7-3, Marunouchi, Chiyoda-ku, Tokyo 100-8310 TEL:03-3218-2111

Key to Safe Rail Transport

Mitsubishi Electric has been supplying brake system for rolling stock over 90 years. Under the cooperation with Mitsubishi Heavy Industries, Ltd., we provided 90,000 brake equipment all over the world. With our experience and ability in supplying extreme safety and high quality products, we are able to provide total solution for brake system. We can propose brake system that fits any type of rolling stock such as high-speed, commuter, metro and locomotive. Since Mitsubishi Electric can supply propulsion system, we are able to optimize rolling stock running and stopping performance. Electric and pneumatic brake are closely blended by the systems, and rolling stock's power consumption and wear in friction material are reduced. Mitsubishi Electric also supplies Train Control and Management System(TCMS) that controls rolling stock equipment as total system. As a rolling stock system integrator, Mitsubishi Electric manages rolling stock as total system to implement optimized train operation.

Our designing section cooperates with research and development section to develop innovative product applying cutting-edge technology.

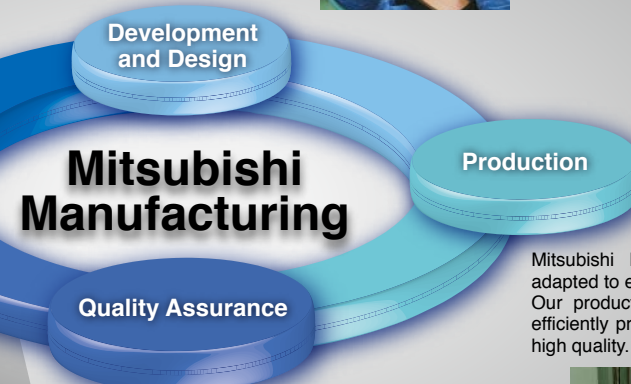


Our well experienced staff gives total support to our customer in all process, from receipt of product order to after-sales service and overhaul of the product.

We have introduced a comprehensive state-of-the-art inspection facility which brings together many years of know-how, and shifted to automatic data collection. We manage both thorough evaluation on product reliability and successive effort on optimizing test efficiency, which ensures our product has high quality.



Mitsubishi has production lines which are adapted to electronic and pneumatic products. Our production system makes it possible to efficiently produce various brake products with high quality.



Mitsubishi Brake System

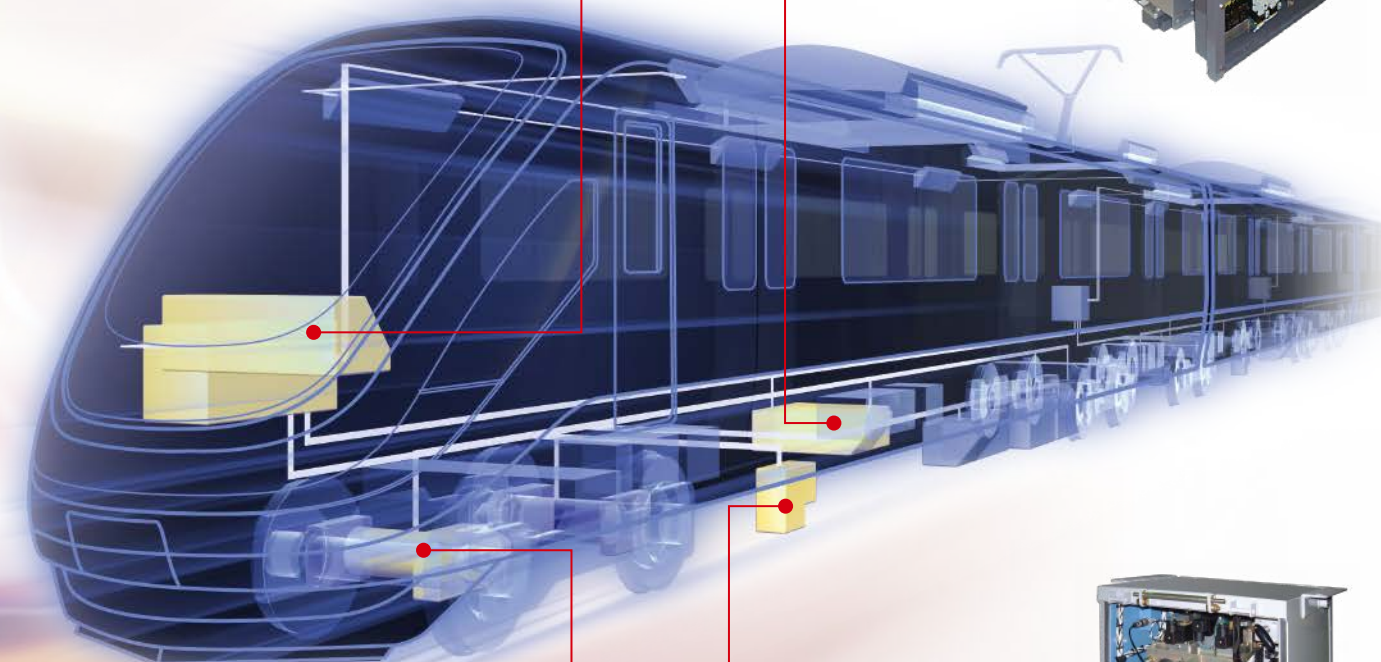
Master Controller

- High reliability and a high economy, small and lightly by modularized elements



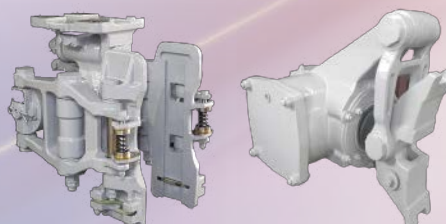
Air Supply

- Wide range of product, to fit any type of system
- Line up Oil-free type



Bogie Brake Equipment

- Line up both Caliper or Tread type
- Automatic slack adjuster, parking brake
- Flexible mounting



Brake Control Unit

- Per bogie or car control
- Various optional functions such as wheel slide protection or train brake control.



Quality

"Quality First" is one of the most important concept in all process of Mitsubishi's manufacturing. To make our product highly qualified, we constantly work on research and development.

We are proactively acquiring international certifications. We have certification of ISO9001, ISO14001, CMMI Lv.2 which issued by external inspection organizations. We also have an ability of acquiring SIL4 certification if required.



ISO 9001



ISO 14001



CMMI-Lv.2



SIL4

Testing

Every time Mitsubishi ships product, its safety and quality are carefully tested by quality control engineer. We have innovative test facility that tests our product's safety and quality from every aspect.

