Building Blocks of ROTEX

Philosophy of Design

- Reliability through proven performance
- Adhere to high demand application
- Product life cycle management
- Minimal “Total Cost of Ownership”

Research and Development

- Culture of constant innovation
- Adherence to International Design Standards
- Innovative designs to meet customer demands
- In-house Validation Labs
- Patents and IP Rights Management

Trust

- Large base of 6000 satisfied clients
- Earned reputation of being “right first time” with consistent high quality
- ROTEX products are trusted for most critical applications

Skilled Manpower

- Highly skilled, engaged and connected team
- Focussed “Learning and Development” approach
- Virtual cross functional team
- Team of over 800 employees
- Combined aim to satisfy customers

New Product Development

- Innovative new product lines introduced by responding to voice of customer
- >15% of CAGR is achieved through new products
- Patents to help customers gain maximum benefits
- Extensive product testing prior to launch

Acquisition

- MAGWEN Valves and Actuators GmbH
- MAGWEN Valves GmbH
Highly specialized sales executives for each product line
Expertise in providing integrated solutions
Service is a top priority with a focus on corrective and preventive actions to solve the problem at the root

State-of-the-art manufacturing plants
Hi-tech automation using Robots, process digitisation, poka yoke, Vision cameras etc.
ISO 9001, ISO 14001 and OHSAS 18001 for all manufacturing plants
TS 16949 for Vadodara unit
Automated unmanned testing facilities

Product integration through gradual horizontal integration
End to end solutions on automation
Quick solution for customised application

Global product certifications
ATEX, API, CuTR, DGMS, IECEx, KOSHA, PED, PESO, SIL 3, UL etc.
Highly qualified and specialised team
Country specific approvals like USA, Europe, Russia, Brazil, Canada, Australia, South Africa, Korea etc.

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Quality is at the heart of our complete value chain
Effective quality management systems
Partnership with high quality suppliers
Strong quality improvement cycle

Quality

Marketing and Service

Certification

Manufacturing

Customised Solutions
Performance Periscope

The manufacturing activity that started in one modest industrial building in 1967 is today conducted in five state-of-the-art plants having an area of over 35000m².

Today, ROTEX has more than 6000 clients spread worldwide and holds a sizeable share of the Indian market. ROTEX has clocked a steady compounded annual growth of 30 percent since the nineties through a combined strategy of optimum technology introduction, integrated and streamlined operations, meticulous process planning, short response time and timely delivery. With a highly cost-effective price structure, ROTEX has built its entire production philosophy around customer needs and market trends. This has ensured a healthy demand for all its products in a diverse range of industries and applications.
Clients represent a wide spectrum of industries including:

- Aluminium
- Automobile
- Chemical
- Consumer Product
- Electronics
- Fertilizer
- Fire Protection
- Food and Beverages
- Manufacturing
- Oil and Gas-Upstream
- Oil and Gas-Midstream
- Oil and Gas-Downstream
- Paper and Pulp
- Petrochemical
- Pharmaceutical
- Power-Hydro
- Power-Thermal
- Power-Nuclear
- Railway
- Steel
- Sugar
- Water Treatment
- and many more

Compound Annual Growth Rate

>30% CAGR
Quality minus excuses

Product Certification


System Certification

Design Standard and Accreditation

ROTEX products pass through a strict regimen of quality and performance tests.

ROTEX has an extensive and highly advanced in-house type testing facilities like High Pressure Test (up to 700 bar), Mass Spectro-Helium Leak Detection Test (up to $1 \times 10^{-12}$ scc/sec), CV Test, Response Time, Time Characteristic Measurement Test, Life Cycle Monitoring Environment, Thermal Shock Test, Torque Measurement, Fire Safe Test (API 607/ API 6FA) etc.

ANSYS is used for specialized checks for design integrity, Mould Flow, Electromagnetic Force etc. to ensure proper functioning of the products.

ROTEX has a robust Vendor Management System, ensuring compliance with design and quality standards.

ROTEX offers total traceability and back-up support for its products, assuring the customer complete peace of mind.
State-of-the-art Infrastructure

ROTEX rolls out its vast range of productions from five world class manufacturing facilities located at Ambarnath, Dombivli, Vadodara and Vithal Udyog Nagar in India and Magdeburg in Germany. All five plants have the latest and the most advanced manufacturing and testing facilities. These facilities have the latest generation CNC, SPM and GPM machines to manufacture quality components.

In addition to the five production facilities, ROTEX has developed a strong base of vendors and suppliers for outsourcing of components. Strict inspection and testing procedures ensure that outsourced material meets all the ROTEX quality requirements. Periodic expansion of the manufacturing facilities and the necessary infrastructure in response to the market demand and technology innovations, is an ongoing process at ROTEX.

All the important manufacturing processes are executed in-house conforming to international standards.
State-of-the-art Infrastructure for Solenoid

ROTEX manufactures 100% of its Solenoid requirements in-house. The manufacturing begins with unmanned winding of wire on the bobbin till vacuum epoxy potting.

ROTEX has nearly five decades of experience in design and manufacturing of solenoids for varied applications.

Over a period of time, ROTEX has invested in modern infrastructure to move from manual to highly automated solenoid valves manufacturing.

ROTEX ensures extensive design and testing standards. ROTEX solenoids go through 29 rigorous inspections and 8 final inspection processes before being shipped out to the customer. ROTEX designs are suitable for the widest range of applications:
- High speed to continuous energisation
- Low temperature -60 ºC
- High temperature 270 ºC above ambient

ROTEX offers Solenoid valves with power ranging from 0.4 Watt to 140 Watt to meet most of the industry standards.

“ROTEX offers life time warranty on its solenoids”
Sales Network Implementing a Think Global, Act Local Approach!!!

It is the philosophy of ROTEX to build long-term relationships with its agents and distributors by integrating a transparent and honest policy. Hence, most of the agents and distributors have been associated with ROTEX for decades and some of them for more than a quarter century.

ROTEX has a far-reaching network of over 20 offices in India, Germany, Netherlands, UK and USA and more than 80 distributors across the globe. With representations in over 3 countries, ROTEX presents a finely networked sales and service team to help provide quick and efficient support wherever needed.

In order to maintain consistency in quality and service, ROTEX undertakes regular training for all its partners.

ROTEX Engineering For The Future
Standardised processes, learning and improvement are incorporated in the sales support processes. These are indispensable and ROTEX has imbibed them in its after sales strategy since its inception to foster sustainability. Thus, after sales support provided by ROTEX is strong, prompt and trustworthy.
MAGWEN has invested heavily into type testing which can test shut-off and flow control valves. The facility can perform Cv Measurement, Noise and Vibration Measurement during the flow, Control Valve rangeability up to the size of 80" and Ultra High Pressure Testing up to 1500 bar.

Test Lab at Magwen
Magwen & Maxflow Valve Range

MAGWEN GmbH and Maxflow range of high performance valves are designed and manufactured to meet the stringent German standards.

**Ball Valve**
- Floating ball valve
  - ½” to 12”, #150, #300
- Trunnion mounted ball valve
  - 2” to 52”, #150 till #2500

**Plunger Valve**
- Pressure regulation for gas or water
- Soft seated, Metal seated.
- Electrical or Electro Hydraulic Actuators
  - 4” to 88”, #150 till #2500

**Non Slam Nozzle Check Valve**
- High performance Zero leak NRV.
  - 4” to 88”, #150 till #2500

**Butterfly Valve**
- Centric BFV
- Double Offset BFV
- Triple Offset BFV
- Piggable Triple Offset BFV
  - 2” to 120”, #150 till #2500

**Speciality Valves**
MAGWEN GmbH is specialised in manufacturing gate valve and globe valve for extreme critical applications. MAGWEN valves are proven in severe service applications.
ROTEX offers a wide range of solenoid valves with enormous applications and engineering know-how. Most of the customers have acknowledged our wide product range and this has inspired ROTEX to innovate and grow further. Solenoid valves ranging from 0.5mm to 80mm orifice, vacuum to 400 bar pressure and cryogenic temperature to 350 °C depict the strength of ROTEX.

Product Verticals
- Solenoid Valves for Process Industry
- Angle Seat Valves
- Solenoid Valves for Automobile Industry
- Pulse Jet Valves
Control Components for Valve Automation System

ROTEX specializes in control elements. ROTEX has a two pronged strategic approach to the market – One as a VAC to end user and second as an OEM to valve manufacturers and VAC customers across the world.

Product Verticals
- Positioner
- Limitswitch
- Volume Booster
- AFR
- Valve Control Box
- Solenoid Valve
- Pilot Valve
- Air Lock Relay
Valve Automation System

ROTEX is one of the most versatile Valve Automation Centres. Valves ranging from ½” to 88” and upto #2500 can be automated at ROTEX. ROTEX VAS offers Rack and Pinion to large Scotch Yoke Actuators; Limit Switches; Solenoid Valves; Positioners, Control Relays etc.

Product Verticals

Automation
- Rack and Pinion Actuator
- Scotch Yoke Actuator
- HPU and controls
- Electro Hydraulic
- Gas Over Oil

Ball Valve
- Floating
- Trunnion

Butterfly Valve
- Centric
- Double Offset
- Triple Offset
Pneumatic Power Cylinder

ROTEX can offer integrated solutions for most Power Cylinder applications. Our engineering team can offer support from old installation to pioneering applications. ROTEX offers cylinders ranging from 2” to 52” bore and a stroke up to 3 meter.

Product Verticals
- Pneumatics
- Power Cylinder
- Integrated Panel
- Specials and system integration
ROTEx designs special products and offers solutions for the aluminium industry. Our unique design offers technical advantage to meet the challenging plant environment. Specially designed valve products offer an exhaustive range of solutions including that for higher temperature applications.

Challenges met by ROTEx
- High temperature resistant with use of special Viton seals
- High strength wiper scraper for cylinder for protection against aluminium vapour deposition
- Solenoid valves designed to perform under high magnetic field
Automotive

ROTEX has successfully designed and manufactured many solutions in Solenoid Valves for the automotive segment for various applications like DPF regeneration systems, Exhaust brakes, Fuel shut off, Transmission system, Tipping applications, HVAC, Differential locking and many more. ROTEX has a dedicated manufacturing plant and team serving automotive customers and all of them are TS 16949, ISO 9001, ISO 14001 and OHSAS 18001 certified. Also ROTEX complies with stringent VDA 6.3 auditing systems. ROTEX also manufactures ARAI certified pneumatic and electric bus door systems like Inswing, Outswing, Jack Knife and etc. using aluminium extrusions.

Challenges met by ROTEX
- IP6K9K solenoid to withstand 100 bar water pressure jet and high velocity sand abrasion
- Component designed to withstand extreme vibrations up to 56g
- Leak rates as low as 1mm³/sec of H₂ at 10 bar for mass production run
- Less than 50 ppm quality performance
- Bus doors with safety sensors and pneumatic kits
- Unique flap mechanism for a wide opening
- Doors can be operated with a minimum pressure of 2 bar
Chemical plants have corrosive and aggressive environments. Such plants need products that are not only reliable but also capable to withstand such abuse. ROTEX manufactured valves are specially designed to function smoothly in such an environment and withstand the effects of highly corrosive chemicals.

**Challenges met by ROTEX**
- Valves made from materials like Hastalloy, Monel, Ceramic seat for corrosive slurry
- All products are certified SIL 3 for reliable functionality
- Solenoid valves to work under sticky environmental conditions
Consistent performance and efficient operations are vital for Cement plants. ROTEX offers specially designed basket of Pneumatic and Solenoid Valves. ROTEX meets the requirement of long life and consistent performance for cement industry.

Challenges met by ROTEX
- Valve Automation with zero cavity filled seats
- Pulse valve with Hytrel Diaphragm for high cyclic demand
- Dual stroke cylinder for bagging plant
Fertilizer industry requires the toughest and the most technologically advanced products as wear and corrosion are very high. ROTEX manufactures products using a combination of alloys and elastomers that can handle severe wear and corrosion.

Challenges met by ROTEX
- Metal seated valves for slurry application
- Wear resistant solenoid valves for severe application
- Lowest PFD valves for entire system certifying to SIL 3
In upstream stations which are unmanned and during an event of a failure, flammable gases can severely affect human beings as well as nature. Valves manufactured at ROTEX are made with the utmost precision in operations to prevent mishaps. The robust design and manufacturing accuracy offered by ROTEX ensure safe and reliable processing.

**Challenges met by ROTEX**

- Well head control Hydraulic actuators
- HPU to operate 24 valves with redundant pump and stand by filtration system
- High pressure NACE certified valves
- Low pressure high pressure panels with diagnosis
We offer control valve solutions for gas chains with varied Regulators that control gas pressure. At ROTEX, we not only manufacture the core product but can simultaneously customize and modify as per the customer requirements. Our products are manufactured considering the intensity of leakage detection.

**Challenges met by ROTEX**
- Electro Hydraulic system for quick closing valves
- User friendly Gas over Oil system
- Solenoid valves for 200 bar
- Redundant system to achieve SIL 3
Valves used in oil refineries, petrochemical plants and natural gas distribution companies are critical and hence there can be no compromise in their operation. ROTEX offers reliable valves that prevent hazards.

Challenges met by ROTEX
- Shut down in less than 5 sec for Large actuator 1300 mm Bore 800 mm stroke for Gate valve 32" #900
- < 1 sec shutdown for Pneumatic actuators used in ESD
- To achieve SIL 3 using redundant systems
- SS316L solenoid valve with MTBF of 130 years
Thermal Power plants require valves that can sustain high levels of corrosion, extreme temperature and pressures. At ROTEX, valves are designed and engineered with the objective of sustaining the most adverse conditions.

**Challenges met by ROTEX**
- Power cylinder with unique 16 step programming positioner
- Rugged Poppet Solenoid valve for ash handling system needs no panel
- Pneumatic cylinder with 900 mm bore and 3000 mm stroke
- For coal dust injection, metal seated with metal cavity filled ball valves
The biggest apprehension for any Nuclear Power Industry is safety. At ROTEX, we understand the criticality and manufacture high quality and reliable safety solenoid valves. Our products are designed to work even under extraordinary conditions, high temperatures and radiation protected environment.

Challenges met by ROTEX
- Direct acting solenoid valve 80 NB, for Helium at 0-120 bar, response OFF < 100 mS
- 4/2 solenoid valve for water at 100 bar
- Solenoid with special epoxy potting for withstanding GAMMA radiation
- Specially designed products to achieve seismic qualifications
- Special design & material of construction to meet a service life of 30 years
Solenoid valves are critical for locomotives. Both electric and diesel locomotives need solenoid valves. ROTEX has developed solenoid valves for these critical applications. Our valves perform under dusty and harsh environments.

**Challenges met by ROTEX**
- Robust Panel Design for Diesel engine
- Solenoid to perform in voltage variation of over -40% to +30%
- High performance Pneumatic wiper assembly for high speed locomotive
ROTEX has designed valves to meet the challenging environment of steel plants. ROTEX valves are manufactured from high quality materials. Our valves are rugged and withstand temperatures up to 1800 ºC.

Challenges met by ROTEX
- Electrohydraulic actuators with 0.1 % positioning accuracy
- 5/2 solenoid valves upto 50 mm orifice
- Frictionless Pneumatic cylinder for precision control for rolling mills
- 3200 mm butterfly valve with pneumatic actuator
Turbine is a critical equipment in a power plant and Solenoid valve plays a vital role in its functioning. ROTEX valves are designed to meet critical applications and engage safe shutdown.

MAGWEN HP-LP bypass valves are proven products.

Challenges met by ROTEX
- Solenoid isolated for voltage and thermal shocks
- Special constructions to achieve up to SIL 4
- Minimised friction to get precise opening closing time
- 25mm Solenoid valve response within 27 ms
With the acquisition of MAGWEN valves in Germany, ROTEX has added a complete set of valve solutions to its range which includes Double and Triple offset Butterfly valves, Full bore Butterfly valves, TRIBALL, Single Chamber, Double effect air valves, large diameter gate valve and Non slam nozzle check valve.

Challenges met by ROTEX
- Special coating with metal to metal seated valve for sewer application
- Coatings to prevent chlorine wear
- Products designed to perform for 30 years life
- Air valve with patented dual piston
MAGWEN has a complete range of valves from 2” to 120” size with wide range of pressure classes which include Butterfly valve, Full bore butterfly valve, Top Entry Ball valve, Non slam nozzle check valve and Air Release valve for shut off function and Plunger type Flow control valve for regulating applications.

MAGWEN Axial flow valves and Non slam nozzle check valves are also used for hydro carbon pipelines, especially for Gas pipelines.

Challenges met by ROTEX
- Magwen type triple offset valve with full opening
- Piggable triple offset Butterfly valve
In a world where resources are getting scarce and demands are surging, providing 24X7 water supply to each consumer is a challenge for any city. MAGWEN plunger type flow control valves are designed for high range ability to control pressure and flow. These offer great benefit for each application.

**Challenges met by ROTEX**
- High pressure regulation from 160 bar to 2 bar in single stage
- Replaceable sleeve cage to meet Pressure/Flow characteristic
- Electro Hydraulic system with 0.1% accuracy