



ESCORTS
RAILWAY EQUIPMENT DIVISION



TRANSFORMATION
THROUGH
**ENGINEERING
AND INNOVATION**



Our philosophy is to offer India's best to the world and bring the world's best to India, positioning us as an innovation-driven engineering company.



- H P Nanda, Founder Chairman

Taking Engineering Excellence to the next level

Committed to engineer a better world, Escorts combines endless possibilities of human caliber with innovative engineering solutions to address the growing needs – safety, comfort and reliability – of

the second largest railway network in the world.

We believe in sustaining our growth curve, both organically and through astute product definitions.

Our collaborations with global technology leaders have enabled us to seamlessly weave experience, engineering and excellence to be counted among the industry leaders.

Escorts Railway Equipment Division The trusted partner of Indian and Global Rail Networks

Escorts' **Railway Equipment Division (RED)** possesses a rich, multi-decade experience in the manufacture of critical railway components. The division (operationalised in 1962) is one of the oldest such units in the country, partnering the Indian Railways in its modernization journey. The division is a market leader across all its product offerings. RED develops cutting-edge technology products in a state-of-the-art research and design facility and through collaborations with leading technology providers. The division has specialized in the safety, comfort and reliability niche.

RED is an ISO 9001:2015 & ISO 14001:2015 company and received coveted Railway industry specific IRIS: REV03 (ISO TS/22163) certification with products conforming to Indian RDSO (Research Design & Standards Organization) and international standards (UIC and AAR, among others). The division's manufacturing facility is spread across 5,98,580 Sq. Ft. housing robust production and testing facilities. The division also possesses strong quality practices and

systems backed by state-of-the-art calibration facilities and standard room (including automatic 3D CMM and other facilities selected around MSA principles).

Strategy

- Presence across the rolling stock segments for passenger coaches, locomotives, wagons, EMUs and metro/ MRTS
- Strong focus on the principles of lean and frugal engineering and operational excellence

Product

- Mix of in-house manufacturing, technology transfer agreements (and buybacks) and contract manufacturing
- Focus on innovation through the development of high-end, next-generation equipment (for instance, bogie-mounted brake systems and axle-mounted disc brakes, among others)
- Synergistic focus on other systems and components (for instance fire protection and retardation systems) for the Indian Railways

Presence

- One manufacturing unit located in Faridabad (Haryana)

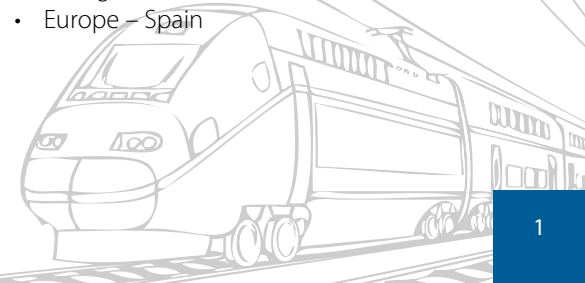
Portfolio

- The division caters to the needs of the Indian Railways and metro rail products
- The division focuses on the safety, comfort and reliability niche
- Within this broad range, division offers diverse products (brake systems, couplers, suspension systems, composite materials, vestibule, green toilets and testing equipment)

Marketplace

The division enjoys more than half a century of collaborative working with the Indian Railways, its principal customer. Additionally, we are also exporting products to railway networks across the world, including:

- Asia – Indonesia, Thailand, Sri Lanka, Bangladesh, Myanmar, Malaysia, Taiwan, Iran, Vietnam and China
- Oceania – New Zealand
- Africa – Ghana, Egypt, Tanzania, Senegal and Gabon
- Europe – Spain



Escorts Group Leading India's Growth Story

Escorts Group, one of India's leading engineering companies, is a partner of choice for farming and construction equipment in the country. For seven decades, Escorts has helped in accelerating India's socio-economic growth through its presence across high-growth sectors of agri-machinery, construction and material handling equipment and railway equipment. Powered by an in-house research and development centre and collaborations with global technology leaders, Escorts is committed to contribute towards India's growth story and bringing in quality change in the lives of people.

Driving growth through innovation is the cornerstone of the company's strategy. Escorts has been a harbinger of new technology and has introduced several products and services that have helped take the country forward in key growth areas. Following the globally accepted best manufacturing practices with relentless focus on research and development, Escorts has, over the years, developed products that are technologically sound and operationally efficient. Through our engineering initiatives, we have been creating solutions that help our customers be happier and more productive.



Escorts Group Highlights:

- Inception: 1948 | Headquarters: Faridabad
- Six state-of-the-art manufacturing plants in India and one in Europe
- One of India's leading tractor manufacturers and amongst the world's top ten
- World's largest Pick-n-Carry Hydraulic Mobile Crane manufacturer
- Leading manufacturer of critical railway components for over six decades
- Presence across 40 countries

Our Businesses:

- Escorts Agri Machinery
- Escorts Construction Equipment
- Escorts Railway Equipment Division

Manufacturing Experience:

- 1 million+ tractors
- 16,000+ construction equipment
- Around six decades of experience in manufacturing safety critical Railway Equipment for India and International market

Market Penetration:

- 1,000-plus dealers, stockists and distributors
- 1,200-plus sales and service outlets
- Pan India network for Railway Equipment Business

Escorts Group



Railway Equipment

Railway Equipment Division plays a key role in the growth and modernization of the Indian Railway industry.

- Covered area of 5,98,580 sq. ft. and a captive generation of 4000 KVa
- ESCORTS, Railway Equipment Division are engaged in Design, Manufacture, Supply, Installation and service of wide range of products like Brake Systems, Couplers, Suspension systems and Rubber & Friction Products for the last 60 years besides new high-tech products like Locomotive Brake Electronics, Loco Dampers, Axle Mounted Disc Brakes, Brake Disc and LHB Dampers.
- Escorts RED has a presence in almost all the rolling stock segments of Passenger Coach, Locomotive, Wagons, EMUs in Indian Railways.

Agri Machinery

Escorts Agri Machinery's mission is to enhance agricultural productivity and improve quality of life in rural India.

- Three plants - Farmtrac, Powertrac and Component, spread across combined manufacturing area of 14,42,364 sq.ft.
- Poland Plant, a 100% subsidiary with installed manufacturing capacity of 2500 tractors per annum
- Key features include Tractor Assembly and Testing Line, state-of-the-art Paint Shop and Engine Assembly with built-in foolproofing for quality and testing facility with sophisticated dynamometers, transmission assembly and testing lines
- Machining lines with sophisticated CNC horizontal machining centers, vertical machining centers, CNC turning centers as well as precision machines including gear hobbing and shaving machines

Construction Equipment

Escorts Construction Equipment's vast range of construction & material handling equipment supports India's infrastructural growth

- Escorts Construction Equipment's vast range of construction & material handling equipment supports India's infrastructural growth
- State-of-the-art manufacturing and assembly facility sprawling 6,53,262 sq.ft. of space
- Contemporary capabilities and processes including Fabrication & Weld Shop, Shot Blast & Paint Shop, Stores and Dedicated Assembly Lines
- Capacity of 4,500 units per annum

Quality Engineering

Our relentless focus on quality as a business process has facilitated development of standard operating procedures that stabilize and standardize our operational efficiencies. In our journey of transformation, we have followed global best practices and consequently developed our own excellence model to set new benchmarks in quality standards.

Our testing facilities include:

- State-of-the-art calibration facilities and standard room, including Automatic 3D CMM and other facilities selected on principles of MSA
- Fully-equipped testing laboratories to carry out detailed examination of friction material and rubber chemicals and metallurgy of ferrous and non-ferrous materials
- A modern, full scale dynamometer for testing of friction material products in simulated working conditions of rolling stock
- Culture of process design and control to achieve zero defect and Six Sigma objectives
- Complete range of inspection, measuring and testing equipment for destructive and non-destructive inspection and analysis of products including components, sub-assemblies, assemblies and system solutions.



Our comprehensive testing system ensures that each product which is produced is able to set a benchmark for quality standards.

Manufacturing Excellence

The manufacturing plant of the **Railway Equipment Division** is spread across an area of over 5,98,580 Sq. Ft. and houses superior production and testing facilities, inclusive of a research and development centre. The unit is capable of manufacturing crucial railway products of high quality. This is further ensured with the involvement of proficient human resource and technology advancement.



- Lean manufacturing concept with capability to produce multiple technology-based products through engagement of multiple processes
- State-of-the-art conveyerised Paint shop, Automated Shocker Assy. line, Brake Disc product line, CNC Machining (HMCs, UMCs, TCs, and DTCs), hydraulic power presses ranging from 10 tons to 1000 tons, DESMA Injection moulding machines, Compression moulding M/C, Rubber and friction material
- Mixers/Kneaders, Wire crimping M/C, Grinding Machines, Welding, Heat Treatment and Heat Exchanger ovens. Dust-free air conditioned assembly shops for manufacturing highly critical products
- Process design based on FMEA outcomes to achieve optimum process capabilities (SPC)
- Captive power generation of approx 4.5 MW for 100% power backup to run uninterrupted manufacturing

Escorts fosters a zero-defect manufacturing culture, which is backed by a strong focus on principles of lean and frugal engineering and operational excellence.



Product Segment

The division has, over a period of time, developed a comprehensive line of products that match up to international standards. Moreover, our strength lies in our ability to offer high quality products at affordable prices.

Brake System

- Air Brake System- Passenger- Conventional&Axle Mounted
- Air Brake System- Freight- Conventional& Bogie Mounted
- Electro Pneumatic Brake System- EMU/MEMU/DEMU
- Pneumatic Brake System- EMU- AC/AC
- Parking Brake System
- Feed Valve for Loco
- Air Brake Accessories
- Leveling Valve for Air Spring Suspension

Vestibules

- Fire Retardant Vestibules for Passenger Coaches- Conventional / LHB

Suspension System

- TV Type Shocker- Conventional Coaches
- NTa Type Shockers – EMU Coaches with Air Suspension
- Ta Type Dampers- Conventional Locos
- Dampers for LHB Coaches, ABB Locos, EMD Loco, Self Propelled Cars

Coupler

- AAR H Centre Buffer Coupler- LHB / Main line Coaches
- Semi Permanent Coupler- Schaku Type- EMU/MEMU/DEMU
- Automatic Coupler- Kolkata Metro
- AAR H Transition Coupler- Locos – EMD / ALCO

Composite Material

- CBB for Freight application – L Type
- CBB for Coaching application – K Type
- CBB for EMU application – K Type
- CBB for Loco application – L Type
- Brake Pads for LHB / Metro Coaches



Market Segment

Railway Equipment Division offers products for diverse segments of the Indian Railways :

Passenger Coach

Air Brake/ Accessories for conventional Coaches, Piping, Brake Blocks, Shock Absorbers, Fire Retardant Vestibules, Air suspension control equipment, FIBA and Air springs Couplers, Axle Mounted Disc Brake System.

Locomotives

Feed Valves, Dampers, Brake Blocks, Coupler, Computer Controlled Brake System, Traction System.

Wagons

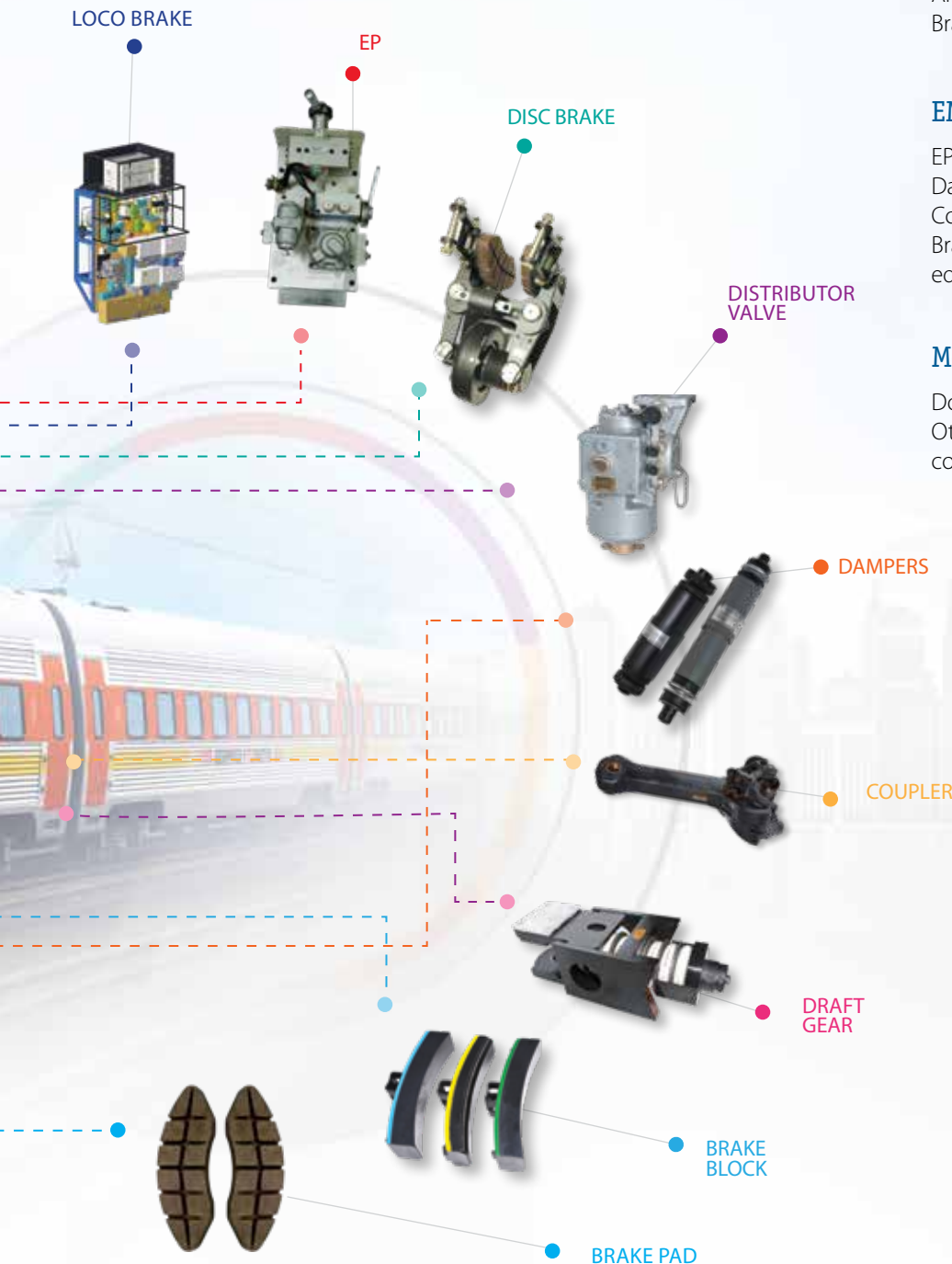
Air Brake / Accessories, Piping, Brake Blocks.

EMUs

EP / Pneumatic Brake & Accessories, Dampers, Semi Permanent Couplers, Brake Blocks, Parking Brake, Air suspension control equipment , FIBA and Air springs.

Metro

Door System, Brake System and Others (Under Development) with collaboration with our partners



Certifications



CERTIFICATE

awarded to

Escorts Limited, Railway Equipment Division
Plot no. 114-115, Sector 24
121005, Faridabad (Haryana)
India

DNV GL Business Assurance Zertifizierung & Umweltgutachter GmbH

confirms, as an IRIS Certification™ approved certification body, that the Management System of the above organization has been assessed and found to be in accordance with the

IRIS Certification™ rules:2017
and based on
ISO/TS 22163:2017

for the activities of Design and Development and Manufacturing
 for the scopes of certification: 03 (Guidance), 06 (Braking system), 16 (Vehicle linkage devices), 19 (Single railway components)
 Design, Development, Manufacturing & Supply of Braking Systems, Brake Blocks, Couplers, Dampers, Rubber Products & Rubber to Metal Bonded components including Gangway Bellow

Certificate valid from: 10/08/2018

Certificate valid until: 19/07/2021*





Current date: 28/08/2018
 Certificate-Register-No: 211508-2016-AQ-IND-UNIFE

* Providing that the subsequent surveillance audits are successful before the validity date of the previous audit.
 Certification body address: Schnieringshof 14, 45329 Essen, Germany

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INTACT
Certificate Of Registration

This is to certify that

ESCORTS LIMITED (RAILWAY EQUIPMENT DIVISION)
 Plot No. 114-115, Sector -24, Faridabad - 121005, Haryana, India

has been audited at the above address for the scope as under and found to be in accordance with the requirements of Management System:

Quality Management System
ISO 9001:2015

The certificate is valid for the following scope of Operations:
 Design, Development, Manufacturing & Supply of Heavy Duty Shock Absorber / Damper/Struckers for Suspension Products, Air Spring, Buffers, Couplers & Draw Gear Coupling, HMA Locomotives, Wagon Applications, Brake Equipment & Accessories such as Single Mounted Brake System, Head Brake Unit, Air Suspension Control Equipment, Brake Disc, Pneumatic Equipment's Distributor Valve, Brake Cylinder, FKA, Air Electronic, Electronic & Electromechanical Products for Rolling Stock such as Electro-Pneumatic Brake Equipment, Choke Brake System, Microprocessor Controlled Brake System, Unit under Panel, Call System, Controlled Discharge Toilet System, Wheel Slip Protection Device, Wheel Test Equipment, HMC Di Composite Brake Brakes, Brake Pads, Air Brake Operating Equipment, Valve and Components including Metal to Rubber Bonded Components such as Blank Brakes, Blankets/ Pads, Side Brake Pads, CC Valve and Rail Fanning Systems.

Certificate No.	491 2018/020
Date of Initial Registration	10 08 2018
Date of Issuance Certificate	10 08 2018
Certificate Expiry	09 08 2021
Re Certification Due Date	31 08 2021






INTACT SYSTEMCERT PRIVATE LIMITED
 Accredited to International System of Standards and Technical Specifications by ISO/IRIS/IRIS-CERT/IRIS-UK
 FECCA House, 4 Phipps Close, Donkirk, SCT 2000, Australia

This certificate is valid only if it is available on Internet Website at <http://www.intactcert.com/certificate.php>
 The certificate Registration number, the property of International System of Standards and Technical Specifications (IRIS) and the original scope report. No other certificate holder is allowed to use or reproduce or alter the certificate and/or report without IRIS consent.

Office: 500 Redfern Street, Sydney, NSW, Australia. Phone: 61 2 9533 0000
 Email: info@intactcert.com Website: www.intactcert.com Fax: 61 2 9533 0000



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ESCORTS LIMITED (RAILWAY EQUIPMENT DIVISION)
 Plot No. 114-115, Sector -24, Faridabad - 121005, Haryana, India

has been audited at the above address for the scope as under and found to be in accordance with the requirements of Management System:

Environmental Management System
ISO 14001:2015

The certificate is valid for the following scope of Operations:
 Design, Development, Manufacturing & Supply of Heavy Duty Shock Absorber / Damper/Struckers for Suspension Products, Air Spring, Buffers, Couplers & Draw Gear Coupling, HMA Locomotives, Wagon Applications, Brake Equipment & Accessories such as Single Mounted Brake System, Head Brake Unit, Air Suspension Control Equipment, Brake Disc, Pneumatic Equipment's Distributor Valve, Brake Cylinder, FKA, Air Electronic, Electronic & Electromechanical Products for Rolling Stock such as Electro-Pneumatic Brake Equipment, Choke Brake System, Microprocessor Controlled Brake System, Unit under Panel, Call System, Controlled Discharge Toilet System, Wheel Slip Protection Device, Wheel Test Equipment, HMC Di Composite Brake Brakes, Brake Pads, Air Brake Operating Equipment, Valve and Components including Metal to Rubber Bonded Components such as Blank Brakes, Blankets/ Pads, Side Brake Pads, CC Valve and Rail Fanning Systems.

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ESCORTS
MAHINDRA EQUIPMENT DIVISION

MAIN BLOCK I

your place is not a
place to live it's a
place to work



ESCORTS
RAILWAY EQUIPMENT DIVISION

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