A Humble Beginning

In 1983, Mr. Rakesh Jain, a B.Com. (Honors) graduate from Sri Ram College of Commerce, set up a workshop for the manufacture of Agricultural Diesel Engine Fuel-Injection Elements and Locomotive miscellaneous spares. He was guided by his father, Mr. S. P. Jain, an acclaimed Tool Room engineer of his time.

This workshop, with a staff of 15 employees and total land area of 6,000 Sq. Ft., marked the humble beginning of a group whose foundation was laid on relentless hard-work, uncompromising quality, and a vision of constant improvement, innovation, and continual forward movement.

Today, the group has several manufacturing facilities located in India in the cities of Lucknow & Dehradun with a workforce of over 350 people and covered manufacturing area of over 200,000 Sq. Ft., offering one of the most diversified product portfolios in the industry.

“There were no bank balances, capital assets, or management teams; The only real resources I had were my passion, vision, and a resolve to deliver the very best.”

Rakesh Jain, Founder & Chairman
We strongly believe that a company is only as good as the people behind it. Our loyal and dedicated workforce that we believe is our single most important asset, has over time blended into a large family that we call the Prag Parivaar. It is this exceptional bonding that enables our people to realize their full potential and often perform miracles at work.

Gokul Jain, CEO
Continual Growth

With constant improvement, innovation, & continual forward movement as our guiding principles, evolution became a natural and continual process. From the modest roots laid down in 1983, Prag gradually branched out into the fields of Elastomers, Polyurethanes, Filters, Engineering Equipment, Sub-Assemblies and Systems.

Major milestones along our journey are listed below.

1983
Workshop set up by Mr. Rakesh Jain to manufacture small precision engineering components

1987
Manufacture of Rubber and Rubber-Metal Bonded products for the railroads

1991
Design, manufacture and installation of Sugar Milling Equipment in USA under technical collaboration with M/s Polymex Pty. Ltd., Australia

1996
Range of automobile mounts for aftersales markets in USA & Europe

2001
Introduction of Centrifugal Lube Oil Cleaners for Locomotives [Import substitute for Mann+Hummel Product]

2003
First indigenous design & development of Aquacheck™ Air Dryers adopted by Indian Railways with Transfer of Technology

2004
Introduction of completely indigenous range of Plate Type Heat Exchangers

2005
Manufacture of Cast & Thermo-plastic Urethane Products
Pneumatic Clutch and Brake manufacture under license of and 100% buyback arrangement with M/s Oil States Industries – USA

Manufacture of:
- Fire Retardant Densified Thermal Bonded Polyester Blocks for Rail Coach Seats & Berths
- First indigenous development of UIC compliant Polspa™ Spring Packs for Buffer, Draw Gear and Draft Gear Applications
- Design and Development of Spinflo™ Inertial Air Filtration Systems for Locomotive Air Intake Filtration
- Setting up of in-house Aluminium Alloy Casting facility
- Development of Auto Drain Valves & Feed Valves for Air Brakes
- Manufacture of High Voltage Composite Insulators, High Temperature Insulation Kits for Exhaust Manifold & Compressor oil pipelines
- Manufacture of AAR approved design of Bogie Mounted Air Brake System for Railroad Freight Cars
- Development of Draft Gears with Yoke Assemblies for Locomotives - PAC / MAC for EMD and Soft Draft Gear 70 kJ Capacity for Alco & Electric
- Development of Draft Gears
- Manufacture of High Voltage Composite Insulators
- Development of Auto Drain Valves & Feed Valves for Air Brakes
- Setting up of in-house Aluminium Alloy Casting facility
- Agreement signed with E.I. DuPont India for development and manufacture of Pad ‘F’ for LHB Coach Bogies using Hytrel® material
- MOU signed with M/s Oil States Industries, USA for setting up a Joint Venture facility in India to manufacture a range of specialty Oilfield & Industrial products
- MOU signed with M/s Lankhorst Mouldings, Netherlands, for offering Long-Life KLP Composite Bridge Sleepers to IR
- MOU signed with M/s Shandong Zhiheng Vibration Damping Tech Co. Ltd., China for establishing Joint Venture Facilities on reciprocal basis:
  - In India for manufacture of Steel Springs for Metros & High Speed Rail
  - In China for manufacture of Polspa™ Polymer Springs
Compressed Air Supply Equipment

Prag designs and manufactures a range of equipment used for supply and treatment of compressed air for Railroad Air Brake Systems. These include Heatless Air Dryers, Auto-Drain Valves, Feed Valves, Coalescer Filters and Main Reservoir Filters.

Amongst our most notable innovations is the Prag Aquacheck Heatless Regenerative Air Dryer System. This vibration-resistant, compact and lightweight Air Dryer is designed to remove moisture and oil aerosols from compressed air and ensure continuous supply of clean and dry air to the air brake system.

Prag offers five different Aquacheck models catering to a wide range of rolling stock. The system is in active service on over 1,000 locomotives. Optional heaters can be provided, wherever required, for operation in sub-zero ambient conditions.

The Prag Aquacheck design was provided to the Indian Railways on Technology Transfer basis in 2003 and has been adopted by them as a standard on their Diesel & Electric Locomotive Fleet as well as on EMU & DEMUs.
Unique parallelogram design brake system is manufactured under the license of and transfer-of-technology from M/s Knorr Bremse India Pvt. Ltd. This highly reliable design is AAR approved and is designed to minimize weight and deliver optimum braking performance, which results in uniform shoe and wheel wear. Over 5,000 freight wagons fitted with Prag Air Brake System are in active service in the Indian Railways.

The brake cylinders are equipped with integral double-acting slack adjusters, which maintain constant piston stroke, resulting in uniform and efficient braking performance.

A Load Sensing Device [EL-60] - UIC approved design - senses loaded or empty conditions of the freight wagons, and provides a visual indicator showing brake cylinder pressure proportioning, and also sends out pneumatic signals which govern the magnitude of braking forces. This helps protect the wheels by reducing empty-car braking forces that can result in costly wheel skidding, especially under adverse weather or track conditions.
Prag’s range of Locomotive Draft Gears include both Rubber as well as Polymer based Draft Gears with Yoke Assemblies and are built to perform continuously in the harshest of operating and environmental conditions.

PAC and MAC Draft Gears with laminated-rubber spring elements, designed for use on EMD locomotives, are engineered to perform in the heaviest of traction applications and offer adequate protection in draw as well as buff modes while absorbing huge amounts of energy.

The DG70N Draft Gear is a Non-Friction Heavy Duty Soft Draft Gear designed for use in Alco & Electric Locomotives. It is fitted with a 70 kJ Polspa™ Polymer Spring Pack, offering years of maintenance-free performance and ensuring much superior riding comfort and safety, as compared to rubber-spring based draft gears.
Prag was amongst the first to develop a completely indigenous Plate Heat Exchanger for Locomotive applications with the introduction of PHE-01 Plate Type Lube Oil Cooler in 2004.

Designed to offer the most optimum thermodynamic performance, the PHE-01 heat exchanger has been in use on several Diesel-Electric Locomotives in India for more than 10 years.

Heat transfer SS plates and Rubber Gaskets used in Prag PHE-01 are manufactured on fully automatic presses in accordance with the highest quality standards. Our team is well equipped to develop custom-designed Plate Heat Exchangers as per specific customer requirements.
Prag is India’s leading manufacturer of Air, Oil, and Fuel filters for Railroad Applications and has been providing comprehensive filtration solutions for all kinds of rolling stock applications for more than two decades.

Backed by technical support from our partner, M/s Clark Filter, USA – world’s premier producer of railroad filtration products – our highly experienced filtration technologists and engineering design team are constantly working in-sync to develop and qualify improved filtration products.

Prag has been the pioneer for development of higher efficiency and longer life filters for the Indian Railways, having extended the filter replacement cycles from 30 days to over 180 days for most filtration products, and to over 240 days, in case of lube-oil filtration, when used in conjunction with our Centrifugal Cleaners.
Prag’s range of mechanical filtration systems includes the Spinflo™ Self-Cleaning Inertial Air Filtration System used in engine air intake filtration and Centrifugal Cleaners used in locomotive lube oil filtration.

Spinflo™ filters consist of an array of spin-tubes designed to check tough contaminants including soot, rain, snow and sawdust while offering minimal resistance to the flow of air. It is the only fully indigenous inertial air filtration system for use in railroad applications, removing up to 98% contaminants at the primary filtration stage itself.

Our Centrifugal Lube-Oil Cleaner is a ‘fit-and-forget’ mechanical lube-oil filtration system developed indigenously for the first time by Prag. Today, the system is installed in more than 3,000 locomotives and has led to effectively doubling the life of media-based lube-oil filters in addition to extending the lube-oil service life.
Over Three Decades of Engineering Excellence...

- Composite Sleepers
- TPU Sole Plates
- Spring Packs for RF-361 Draft Gear
- Draft Gear Pad (HR-40-L)
- Bogie Mounted Air Brake System
- Constant Contact Rubber and PU Side Bearings
- 10" Brake Cylinders with Integrated Slack Adjuster
- Lateral Control Pad / Elastomeric Pad
- Cast Steel Brake Heads
- EL-50 Load Sensing Device
- High Capacity Rubber Buffer Spring Assemblies
- High Capacity Polymer Springs for Buffers, Draw Gears & Draft Gears
- Fresh & Return Air Filters for HVAC
- Self Adhesive Insulation Kits for HVAC Air Ducts
- TPU Upper / Lower Washers
- Silent Block Anchor Link for Flat Bogies
- Silent Block Roll Link for Flat Bogies
- TPU Brake Gear Bushings
- Silent Block for Centre Pivot Arrangement for Flat Bogies
- Air Spring Assembly for Mainline ICF/EMU/DEMU Coaches
- Flat Bogie Rubber Springs
- Stainless Steel Battery Box for LHB Coaches
- Densified Thermal Bonded Polyester Blocks
- Fire Retardant Passenger Car Seats & Berths
- Pad-F for Secondary Suspension for Flat Bogies
- Lateral Bump Stop for Flat Bogies
- Long Life Buffer Assemblies
- Traction Motor Air Duct Assemblies
- Soft Draft Gear 70kJ with Yoke Assemblies
- Sandwich Mountings
- TPU Spring Pads
- TPU Gear Case Seals
- Side Bearings (Secondary Rubber Spring)
- Heatless Regenerative Air Dryers
- Filter Air Dryer Main Reservoir
- Auto Drain Valves
- Disposable Carbody Filters with Louver
- Plate Type Lube Oil Cooler
- 122-Days Long Life Lube Oil Filters
- Thermal Insulation Kits
- Inertial Air Intake Filters
- Glass Fibre Secondary Engine Air Filters
- Air Intake Filtration Housings
- Finer Micron Secondary Fuel Filters
- Long Life Finer Micron Primary Fuel Filters
- Exhaust Manifold Thermal Insulation Kits
- Centrifugal Lube Oil Cleaner
Prag has been providing products and services to the railroad industry for more than 30 years. Products range from specialty rubber and rubber-metal bonded products to advanced railway equipment, a variety of polyurethane products, and a wide range of railroad filters and filtration systems.

Regardless of function or complexity, you can rely on Prag to provide the highest-quality solutions based on extensive experience backed by world-class design & engineering capabilities, state-of-the-art manufacturing & quality control facilities and strategic partnerships with renowned global technology leaders.
Polyurethane Products

Urethanes are next generation materials that offer the elasticity of rubber combined with the toughness and durability of metal. Prag manufactures a range of thermoplastic as well as cast urethane products for use in rolling stock and track applications.

Our Thermoplastic Urethane product range includes Brake Gear Bushes, Bearing Liners, Wear-Plates, Gear Case Seals, and Spring-Pads.

Some of our noteworthy Cast Urethane products include Constant Contact Side Bearings for Freight Wagons and Polspa™ Damper Systems for Buffer, Draft Gear, and Draw Gear applications.
Prag’s Polymer Technologists are working constantly to identify problem areas and design suitable high performance long-life solutions for our customers using cutting-edge materials and processing technologies offered and supported by our world-renowned technology partners including BASF (Germany), Bayer (Germany), Chemtura (USA), and DuPont (USA).

Constant Contact Side Bearings, manufactured under license of M/s Chemtura Corporation, USA [Patented Product] was introduced in 2005. With over 2 Million units in service today, this product has successfully enhanced the changeover cycle from 9 to 12 months to over 6 years with negligible failure rate as brought out by the performance reports of major user railways.

The Polspa™ Damper System, indigenously developed and introduced in 2011, is a highly engineered elastomeric spring pack that absorbs significantly higher amounts of energy as compared to rubber or steel springs, while at the same time offers a service life of more than 5 times, making it virtually a “Fit & Forget” concept.

Prag’s Polymer Technologists are working constantly to identify problem areas and design suitable high performance long-life solutions for our customers using cutting-edge materials and processing technologies offered and supported by our world-renowned technology partners including BASF (Germany), Bayer (Germany), Chemtura (USA), and DuPont (USA).
Rubber moulding and Rubber-metal bonding has been Prag’s forte since the very beginning. Today, range of rubber products offered is amongst the most extensive in the industry and caters to Oilfield, Industrial, Automotive and Railroad applications.

Our energy management rubber products include a range of rubber buffer, draft gear and side bearer springs for use on locomotives, passenger cars and freight wagons. We also manufacture a range of shear pads, compression mounts, spherical bearings, rubber springs, and bushes for use in EMD Locomotive and LHB Fiat Bogie suspension.
Pneumatic Air Spring Suspension is manufactured by Prag in Technical Collaboration with M/s Zhuzhou Times New Material Technology Co. Ltd. (China). The system was designed specifically for use in India and was adopted by the Indian Railways in 2008.

ELASTA-FLEX® drum clutch elements are manufactured in Technical Collaboration with M/s Oil States Industries, USA. These products are designed for a multitude of severe clutch and brake applications in oilfield, mining, paper-logging and marine industries, as well as other industrial applications.

Our TGHV silicone insulators are used on high voltage power lines. These insulators provide a valuable alternative to the widely used ceramic insulators due to their hydrophobicity, high mechanical strength, and lighter weight.
KLP® Bridge Sleepers, offered to the Indian Railways in 2014 by Prag in association with Lankhorst Mouldings, Netherlands, provide a very effective and long lasting alternative to the traditionally used wooden and steel channel sleepers on girder bridges extending the sleeper service life while significantly reducing the noise and vibration levels.

With an expected lifetime of over 30 years, these lightweight sleepers are virtually maintenance free and can be supplied with millimeter accuracy. Prag can even pre-install the fastening system and mark the sleepers with a unique number to ensure fast installation.
In November 2014, Prag signed an MOU with Shandong Zhiheng Vibration Damping Tech. Co. Ltd., China for setting up a Joint Venture Manufacturing Facility in India to manufacture high quality steel springs for ABB / EMD Locomotives, LHB Coaches, Metros and High-Speed Rail.

Shandong Zhiheng is China’s largest producer of Steel Springs, including springs used in 350 Km/hr. trains, with over 60% market share as OEMs to Chinese Railways and Bombardier. This JV would be the first private facility in India to manufacture such special high-grade springs for railroad applications.
Not merely a smart punch line, “Innovation At Work” is a philosophy that is part of Prag Group DNA. Our highly skilled and experienced team of engineers is constantly pushing the envelope to engineer new and improved products for our customers. Our innovative approach to engineering enables us to provide customers with effective, flexible and affordable high performance engineered solutions.

Continual adoption of new technologies, choice of improved materials, and optimization has over the years resulted in several breakthrough product designs. Some of our innovations at work today include filtration products that provide significantly higher efficiencies and up to eight times the life as compared to incumbent filters, rubber products that have successfully demonstrated significantly higher performance, longer life and better damping properties, and long-life polyurethane products that have successfully eliminated erstwhile problems of swelling, leakage, and permanent set.
At Prag, development of any new product begins with extensive analysis and simulations on 3D models including FEA, Fatigue, Impact, and CFD analysis on linear as well as non-linear materials. This enables us to generate the most optimum designs that have undergone extensive virtual testing well before actual prototyping and physical product development.

For example, when designing a new filtration system, required filtering efficiencies and pressure drops are factored into the design using CFD analysis at the product conceptualization stage itself. This helps us not only design high-performance products but also drastically cuts down the time required for new product development.

The integration of CAD/CAM software with our in-house CNC Machine Shop enables us to generate high-quality tools and dies directly from mould patterns generated by our engineering design team.
Prag’s state-of-the-art manufacturing facilities give us an edge when it comes to providing our customers with world-class engineering products.

Machinery and equipment used at Prag come from some of the world’s most reputed machinery manufacturers such as Klockner-Desma, State Mix, Baulé, Tung Yu, L&T, Windsor, TAL, and Haas Automation.

Prag’s automated assembly lines are equipped with fully computerized conveyor systems with poka-yoke and bar code sensors at each work-station, ensuring compliance of operating procedures and complete product traceability. The quality and reliability of products is accurately tested on our in-line computerized electronic test benches and RDSO approved test rigs.
Quality Control

Repeatedly exceeding customer expectations with products that provide exceptional performance & unfaltering reliability has been the driving force of Prag Group from our very inception. Quality is built into the manufacturing process starting from the raw material inspection stage right up to final product assembly. Standard quality checks are laid down at every step to ensure the highest level of quality and product traceability.

All of our extensive in-house testing facilities are ISO 9001:2008 certified and are equipped with some of the latest test equipment such as:

- Five-Axis Dynamic Endurance Test Equipment with Moog Controls
- Vibration Testing Machine
- Rheometers to Test Rubber Mix
- Computerized Universal Testing Machines
- Fire Retardancy & High Voltage Test Labs
- Environmental, Ozone Test & Low-Temperature Testing
- Computerized Functional & Leakage Test Equipment
- Air Filter Test Rigs designed and calibrated by IIT, Delhi

“Our products, some of which are backed by liability coverage of up to US$ 1 Million against one single manufacturing defect, are built to provide years of trouble-free performance in several critical applications around the world.”

Sarthak Jain, COO