Hydraulic Cylinders
Wipro Infrastructure Engineering possess in-depth knowledge of the industry, design expertise, a relentless focus on quality, and a culture that fosters innovation. A multi-talented globally distributed workforce reflects the diversity of thought, skill, knowledge and culture which uniquely positions us to push boundaries, seek newer and innovative ways to improve products and exceed customer expectation.

When you partner with Wipro you are assured of cost-effective, high-quality products, that help you stay ahead of the competition.
Dear Reader,

Wipro Infrastructure Engineering is a global hydraulic solutions provider with expertise spanning over 4 decades of engineering and manufacturing excellence in helping customers meet their hydraulic solution needs. It is today a diversified business in Aerospace, Water Treatment, Additive Manufacturing and Automation Solutions, in addition to its Hydraulics business.

As I look at the growth over the years, I am extremely proud of what we have achieved, and even more excited about our outlook for an equally promising future. We have come a long way since we started our journey in 1976 with engineering and designing of pneumatic cylinders, then moving into developing hydraulic cylinders for mobile and truck hydraulic solutions, and steadily foraying into manufacturing actuators and precision engineered components for the aerospace industry, developing pumps for excavators in association with Kawasaki, offering end-to-end solutions in water and wastewater treatment for industrial applications, making inroads into the field of additive manufacturing and industrial automation.

Our deep engineering expertise coupled with scalable manufacturing, capacity to innovate and relentless focus on quality has made us a leading hydraulic solution provider to global OEMs. We continually invest in our facilities, including modernizing our plants with advanced technologies, the latest equipment and skilled manpower in order to offer our customers the best quality products. Our investments in the automated, zero discharge, green piston rod plant bears testimony to our commitment to further expand and develop the solutions we offer.

Wipro Infrastructure Engineering’s workforce reflects a diverse and multi-faceted employee base of individuals, each with unique thought, skill, knowledge and culture who help us push boundaries to seek newer and innovative ways to improve our products and exceed our customers’ expectations. Our cross-continental geographic presence and the ethnic diversity of our workforce have helped us expand our capabilities and remain closer to our customers.

With the continual support of our dedicated members, customers and suppliers we shall be doing the best to strengthen our capabilities and achieve growth and excellence in all our dealings.

I want to extend my sincere gratitude to our Global OEMs for their patronage and confidence in us, for inspiring us along the way to deliver the best at all times.

Pratik Kumar
Chief Executive Officer
Wipro Infrastructure Engineering
# Product Range

## Single and Double Acting Cylinders

<table>
<thead>
<tr>
<th>Specification</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bore</td>
<td>25mm to 500 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>Up to 10,000 mm</td>
</tr>
<tr>
<td>Working Pressure</td>
<td>Up to 400 bar</td>
</tr>
</tbody>
</table>

## Telescopic Cylinder / Kits for Tippers

<table>
<thead>
<tr>
<th>Specification</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front End Tipping</td>
<td>Up to 6 stages</td>
</tr>
<tr>
<td>Under Body Tipping</td>
<td>2 – 11 Stages</td>
</tr>
<tr>
<td>Application Tonnage</td>
<td>Up to 100 T</td>
</tr>
<tr>
<td>Mounting Types</td>
<td>Eye, Cover Tube and Trunnion</td>
</tr>
<tr>
<td>Accessories for Kits</td>
<td>Pumps, Valves, Tanks and Hoses</td>
</tr>
</tbody>
</table>

## Suspension and Hoist Cylinders

<table>
<thead>
<tr>
<th>Specification</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tonnage</td>
<td>Up to 100 T</td>
</tr>
<tr>
<td>Application</td>
<td>Off Highway Trucks and Gas Hydraulic System for Articulated Haulers</td>
</tr>
</tbody>
</table>

## Industrial Hydraulics

<table>
<thead>
<tr>
<th>Specification</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bore ID</td>
<td>200-500 mm</td>
</tr>
<tr>
<td>Rod OD</td>
<td>100-250 mm</td>
</tr>
<tr>
<td>Stroke</td>
<td>2000-8000 mm</td>
</tr>
<tr>
<td>Operating pressure</td>
<td>Up to 250 bar</td>
</tr>
</tbody>
</table>
Hydraulics for every Application

Construction and Earthmoving
- Excavators (Mini, Midi and Large)
- Backhoe Loaders
- Wheel Loaders
- Motor Graders
- Dozers
- Dumpers
- Compactors

Truck Hydraulics
- Front End and Under Body Tipping
- Truck Steering
- Cabin Tilt Cylinders and Latches
- Car Carrier
- Refuse Trucks
- 3 Way Tipping System
- Aggregates

Lifting and Utility
- Loader Cranes
- Telehandlers
- Aerial Work Platforms
- Container Handlers
- Fork Lifts
- Tail Lifts
- Hook Lifts and Refuse Collectors

Mining and Special Applications
- Underground Haulers and Loaders
- Surface Drill Rigs
- Windmills
- Industrial Applications

Farm and Agriculture
- Harvester and Combines
- Sprayer
- Planter
- Tractor Steering and Attachments
- Sugarcane Transporter

Forestry
- Feller-Bunchers
- Log Skidders
- Log Loaders
- Sawmill Machinery

Power Within
Design Engineering and Validation

**Diverse Applications**

**Skilled Engineers**

**Successful Designs**

Design processes are driven by Six Sigma methodologies, optimised by analytical and simulation tools like Finite Element Analysis (FEA) using Ansys, Creo Simulate, etc. Wipro product engineering is supported by the latest 3D modelling, design and product management tools such as Auto CAD, Windchill PDM, etc.

Effective product design verification and validation covers the selection of material, application environment, duty cycles and life expectancy. Operating conditions are simulated to arrive at the best design solutions. Test rigs are deployed to determine function, reliability and endurance of cylinders. Pulse testing, back-to-back testing, bell crank, steering simulation, forklift test simulation and high temperature cycling are used extensively to test and improve the reliability of the cylinders.

Manufacturing Process

**Lean and Flexible Manufacturing Systems**

**Mechanized Assembly**

**Automated Testing**

Wipro strives towards improvement, constantly benchmarking against global standards in manufacturing and scaling up production to meet growing global demands. Wipro does this by embracing technological and capacity advancements to improve productivity.

Quality is built into the product through processes to improve reliability. All critical manufacturing processes - burnishing, tube welding, heat treatment, induction hardening, grinding, friction welding, super finishing, component washing and cylinder testing are done in-house. Lean and flexible manufacturing systems are deployed with robotic welding, automated washing stations, mechanized assembly and testing in a controlled environment.
Power Within

Quality First

With a work environment featuring advanced manufacturing facilities, Wipro plants are powerhouses of sophisticated production technology and manufacturing know-how that maintain a steady and efficient production of top quality products. Wipro follows a robust process for supplier selection and supplier quality management.

Emphasis on strict quality standards, constant updating and improvement in systems, ensure that customers receive the best product. Quality management is integrated into manufacturing processes to achieve consistency and reliability.

- Corrosion resistance: Standard: 100 hours - Rating 10
- Component cleanliness up to NAS level 7
- Superior ratings to meet specific requirement through chrome and nickel chrome processes

Sustaining the Future

Environmental Policy

Wipro is committed to the laws, regulations and policy mechanisms concerning environmental issues and has an environmental policy in place. Committed to preserving and creating a clean environment in all activities, products and services, natural resources are conserved through reduction, reuse and recycling. Effective control measures are put in place to prevent pollution. Environmental performance systems are periodically reviewed and continuously improved and the policy is communicated to all stakeholders. Every member of Wipro Infrastructure Engineering including our vendors and suppliers are party to this policy, in action and intent.
Customers

Construction and Earthmoving
- Caterpillar
- CNH
- Deere Hitachi
- Escorts
- Hyundai
- JCB
- Kobelco
- Kraneks
- Kubota
- Liugong
- Mahindra and Mahindra
- Manitou
- Mecalac
- Sany
- Takeuchi
- Tata Hitachi
- Volvo
- Wacker Neuson

Lifting and Utility
- Haulotte
- Hiab
- HMF
- Hyster-Yale
- JLG
- Kalmar
- Kion Group
- Kobelco Cranes
- Komatsu Forklift
- Liebherr
- Manitou
- Multilift
- Terex
- TIL
- Toyota Material Handling
- Zepro

Truck Tipping
- Ashok Leyland
- Bharat Benz
- Dautel
- Geesink Norba
- Istrail
- KH-Kipper
- Mahindra and Mahindra
- NTM
- SAWO
- SML Isuzu
- Sorling Ilsbo
- Tata Motors
- VECV
- Volvo
- Walser
- Zetterberg

Forestry
- Cranab
- Hultdins
- John Deere Forestry
- Komatsu Forest
- Ponsse
Farm and Agriculture
- AGCO
- CNH
- Kubota
- Mahindra and Mahindra
- Vaderstad
- Valtra

Mining and Special Applications
- Epiroc
- Sandvik Mining and Construction

Globally Connected

USA
Chambersburg

EUROPE
- Pernio – Finland
- Bispgarden – Sweden
- Ostersund – Sweden
- Rm Valcea – Romania

BRAZIL
Piracicaba

INDIA
- Bengaluru
- Chennai
- Hindupur (plant 1)
- Hindupur (plant 2)
Wipro Aerospace has state-of-the-art manufacturing facilities for Aerospace Actuators and Precision Machined Components (PMCs) in Bangalore, Israel and U.S.A. Long term agreements are in place with OEM’s, Global Tier-1s for development and manufacture of precision structural parts, landing gears and power door opening system actuators.

Water Treatment

Wipro Water designs, manufactures, and operates the complete range of industrial water and waste water treatment plants to meet the most demanding needs of its customers.

Aerospace

Wipro Kawasaki Precision Machinery Private Limited is a joint venture between Kawasaki Precision Machinery Company and Wipro Infrastructure Engineering to manufacture hydraulic pumps and swing motors for excavators in India.

Automation Solutions

WIN Automation is an end-to-end system integrator of industrial automation solutions that enable companies in the manufacturing sector to be automated, digitized and smart.
Wipro Infrastructure Engineering (WIN) is a diverse industrial engineering business with expertise in hydraulics, water treatment, aerospace, additive manufacturing and automation solutions. The hydraulics division of WIN specializes in designing and manufacturing custom hydraulic cylinders for a variety of applications such as construction and earthmoving, lifting and utility, forestry, farm and agriculture, mining, truck and industrial hydraulics.

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