

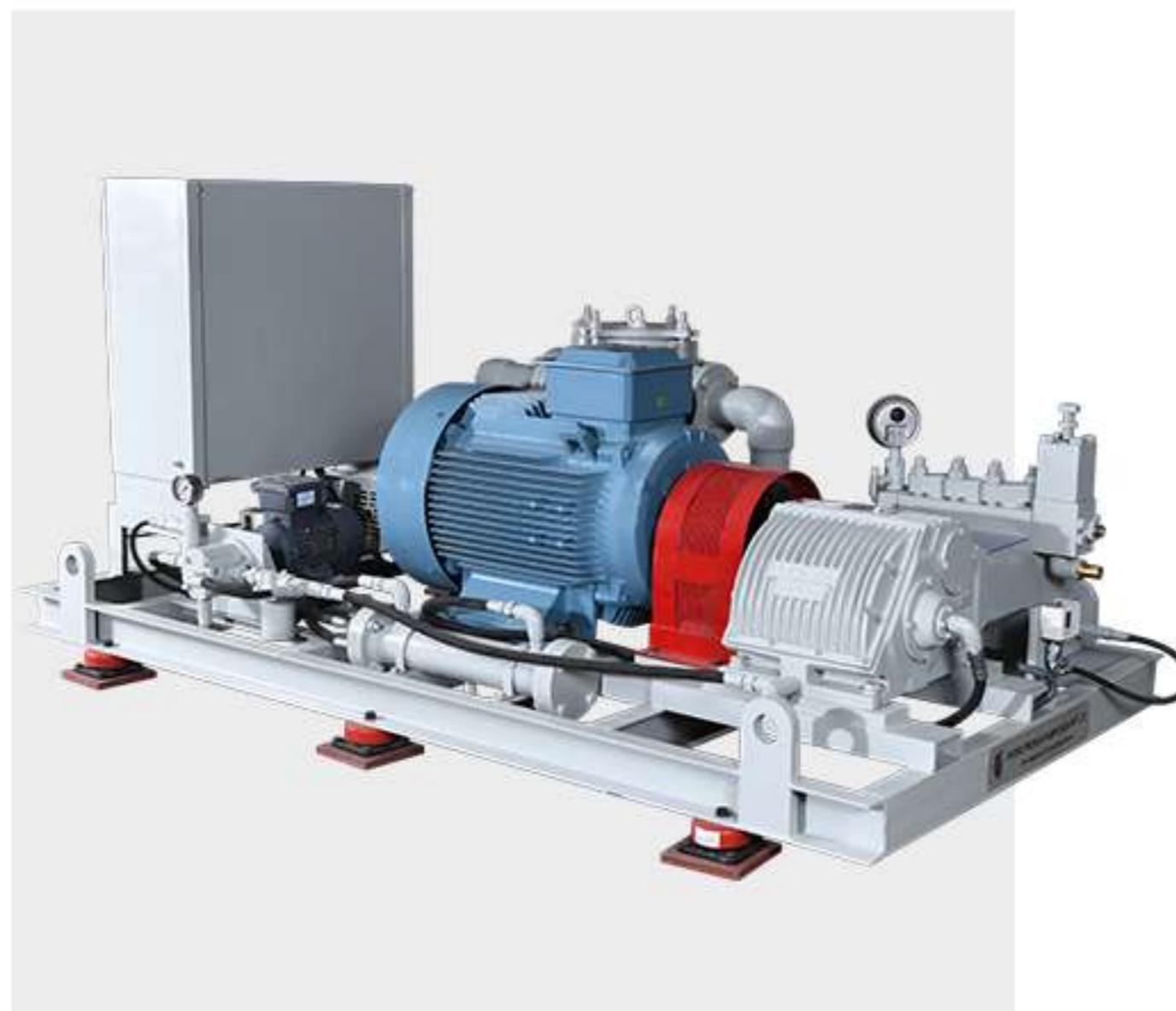
# HIGH-PRESSURE DESCALING SYSTEMS FOR HIGH-QUALITY PRODUCTIVITY

Engineered Precision, Targeted Performance.



# Descale Faster. Produce More.

Descaling in the steel industry is a critical surface treatment process aimed at removing oxide scale, rust, and other contaminants from steel surfaces, especially after high-temperature operations like hot rolling, forging, or heat treatment.



**High-Pressure Triplex Plunger Pump**

## PURPOSE OF DESCALING

- Removes oxide layers ( $FeO$ ,  $Fe_2O_3$ ,  $Fe_3O_4$ ) formed during heating
- Improves surface quality, corrosion resistance, and mechanical integrity
- Prepares steel for downstream processes like coating, welding, or forming

UT Pumps' Hydraulic Descaling System is precision-engineered to deliver high-pressure water jets through angled nozzles, effectively removing scale from hot metal surfaces—including steel, stainless steel, and non-ferrous alloys. The system utilizes a combination of impact pressure (to physically dislodge scale) and thermal shock (caused by cold water striking hot metal, cracking and detaching the scale) for thorough cleaning. In certain applications, abrasives are mixed with water to accelerate the process and enhance cleaning efficiency.

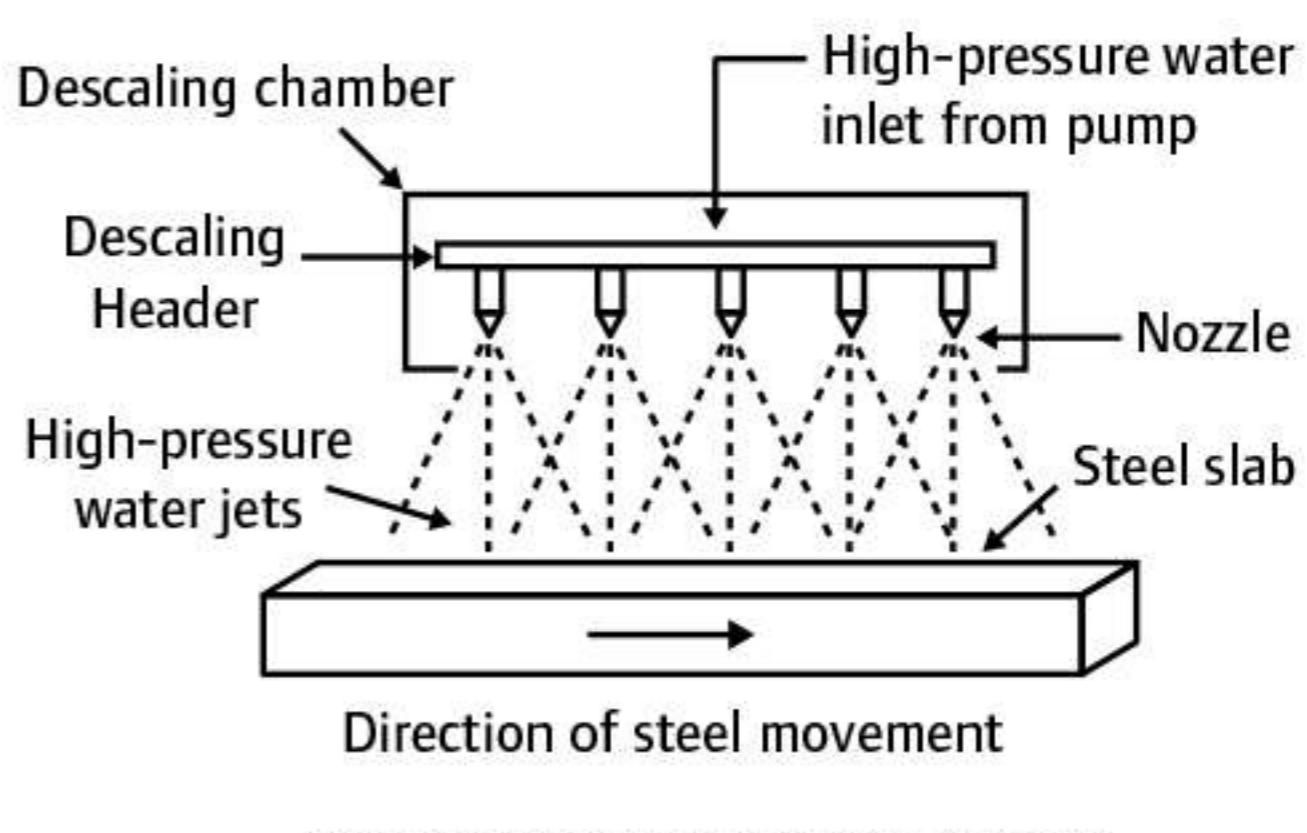
This system also excels at removing heavy deposits of oil, grease, and other stubborn contaminants from a wide range of industrial surfaces, contributing to improved productivity and superior surface quality.

## How it Works

**Descalers ensure high surface quality in hot steel as it exits the production line.**

Hydraulic Descalers blast the metal surface with high-pressure water jets to remove scale. A typical descaler features one or more spray headers equipped with recessed nozzles that direct water diagonally onto the steel surface for maximum impact.

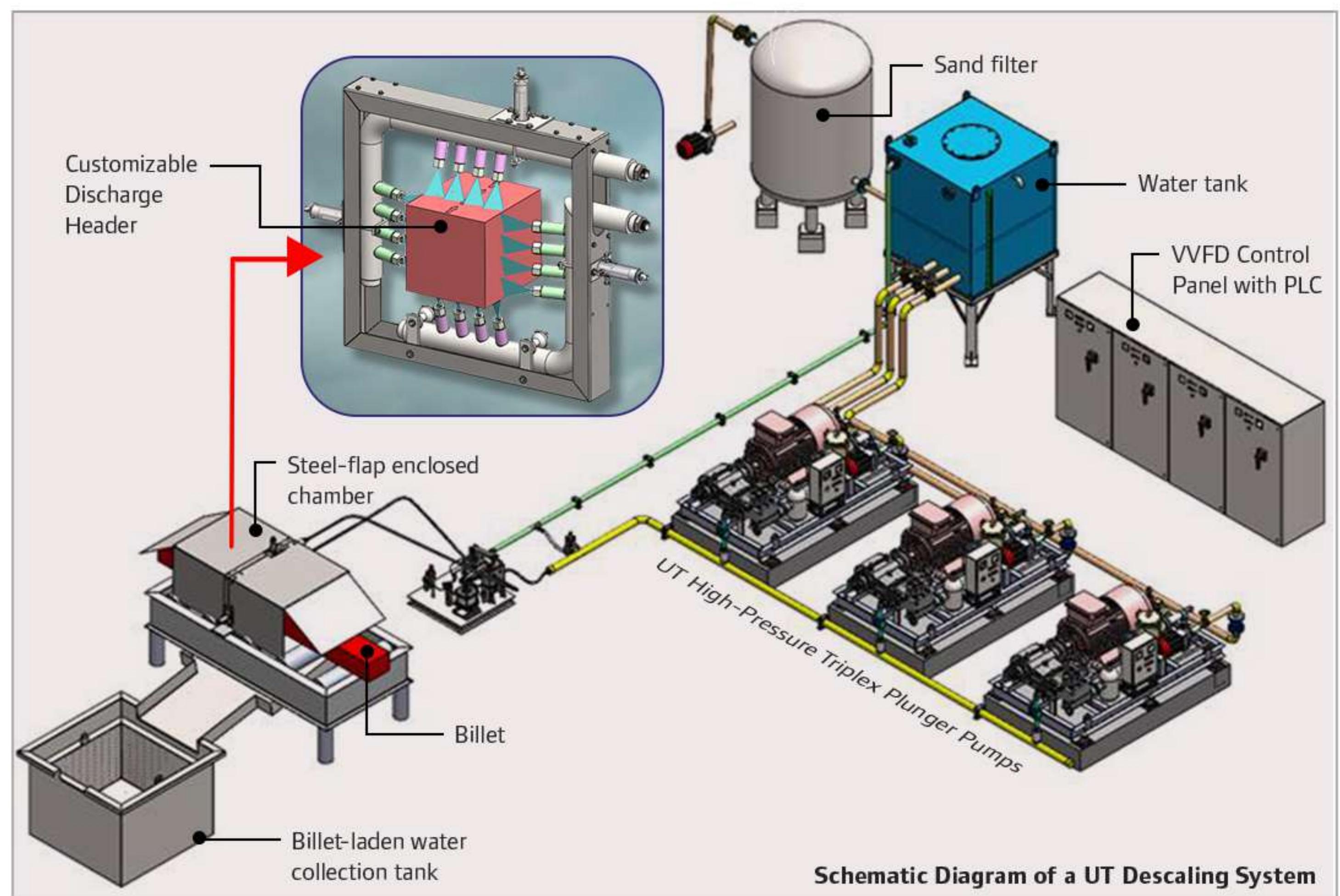
Descalers operate at water pressures ranging from 100 to 1600 bar, depending on the application. To meet these demanding conditions, UT Pumps' high-pressure triplex plunger pumps play a critical role, delivering the consistent performance and reliability required for effective descaling.



In UT Descaling Systems, water—filtered to minimize particulate content—is drawn from a pressurized tank and stabilized through booster systems. Depending on system requirements, one or more high-pressure plunger pumps deliver a consistent flow to a customizable multi-nozzle descaling header housed within a steel-flap-enclosed chamber. This setup enables efficient, targeted scale removal across industrial applications. For enhanced cleaning performance, abrasives may be mixed with water, accelerating the removal of stubborn scale and surface contaminants.



Direct descaling delivers high-pressure water straight from the pump for continuous scale removal, while indirect descaling uses an accumulator to release stored pressure in controlled bursts for targeted cleaning.



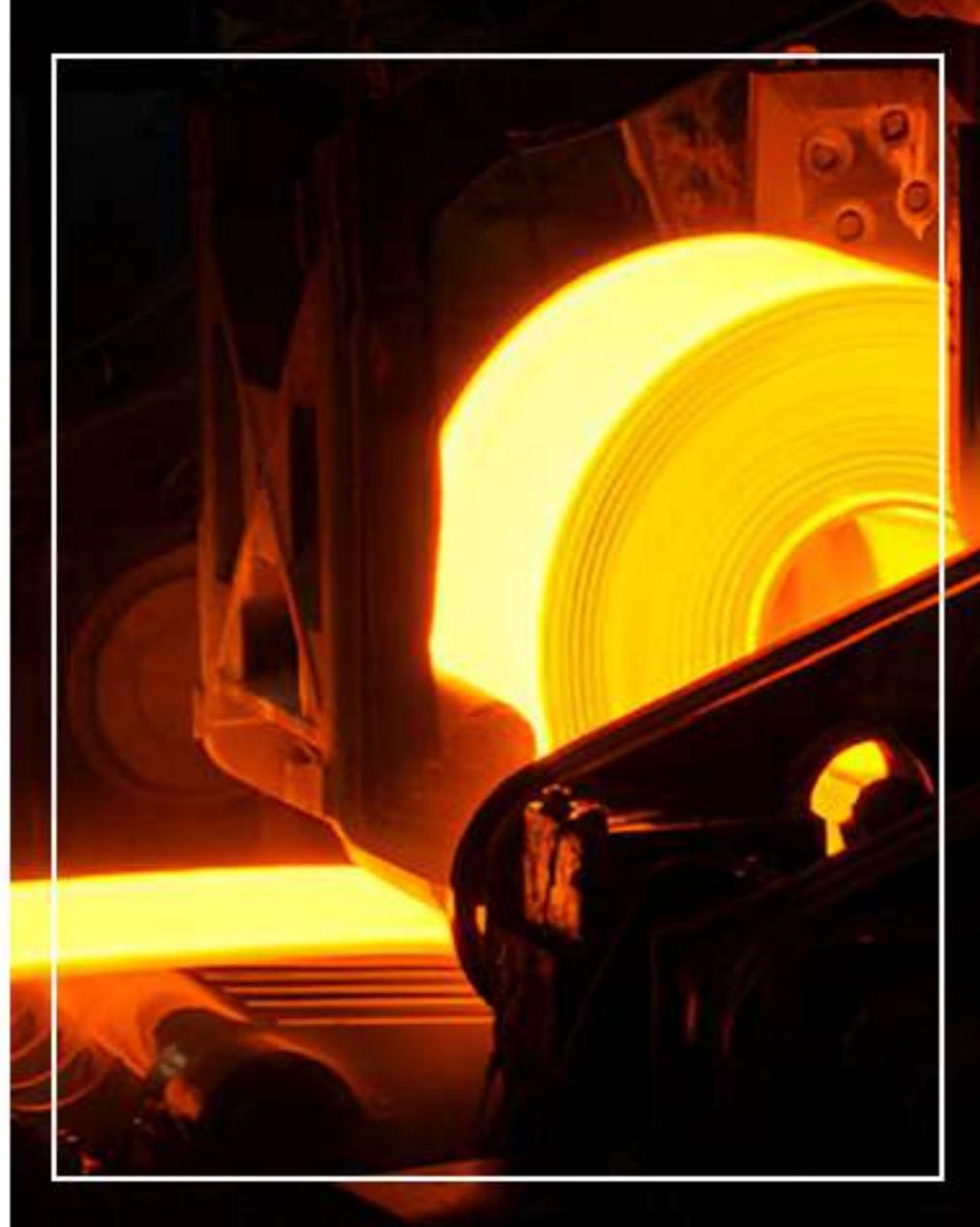
## INDUSTRIES

- Steel Manufacturing
  - Hot Rolling Mills
  - Forging Operations
  - Tube & Pipe Mills
- Bar & Rod Mills
- Plate Mills

- Specialty Steel & Alloy Processing
- Non-ferrous Metal Manufacturing

## INDUSTRIES

- Billets
- Blooms
- Slabs
- Plates
- Parabolic Springs
- Seamless Pipes
- Strips
- Profiles



## Key Benefits of UT Descaling Systems

- Enhanced surface quality
- Maximized throughput and operational efficiency
- Extends the life of rolling mills, dies, & tools
- Reduced operational downtime

## What does UT Descaling System Consists of?

- **UT High-Pressure Triplex Plunger Pumps**  
Configurable in working and standby modes to ensure uninterrupted operation.
- **Adjustable Descaling Header**  
Designed to accommodate various steel sizes and profiles for precise scale removal.
- **Solenoid-Operated Pneumatic NRV with Bypass Valve**  
Regulates water flow efficiently, ensuring optimal pressure and control.
- **Hot Metal Detector**  
Automatically senses the presence of hot metal exiting the furnace to trigger descaling.
- **Pressurized Water Tank with Level Control**  
Maintains a continuous supply of clean water to the pump system.
- **Sand Filter Unit**  
Ensures particle-free water for consistent descaling performance.
- **PLC-Controlled Electrical Panel**  
Enables automated system operation with real-time monitoring and diagnostics.
- **Interconnecting Pipelines and Valves**  
Engineered for seamless water distribution and system integration.
- **Safety & Process Control Features**  
Built-in safeguards to prevent system failures and ensure reliable operation.
- **Variable Voltage Frequency (VVF) Drive**  
Optimizes power consumption during idle periods, enhancing energy efficiency.

# Our Other Products for Steel Industries



## Triple Screw Pumps

- Used in lubrication systems for rolls, gearboxes, gear trains, and boiler firing operations.



## Twin Screw Pumps

- Ideal for loading and unloading of fuel oils, lubricating oils, and other viscous fluids.



## Progressive Cavity Pumps

- Designed for transferring sludges, slurries, and liquids of low or high viscosity—whether neutral or aggressive, with or without solids or fibrous matter.



## Triplex Plunger High-Pressure Pumps

- Perfect for cleaning rolls, heat exchanger tubes, and industrial equipment, as well as for hydro-testing and energy applications where water jetting is the most effective and efficient method.



## High-Pressure Cleaning Systems

- Used for washing vehicles, machinery, rooms, and for cleaning surfaces coated with oil, grease, paint, and other industrial residues.



# Why UT Pumps?

- **ISO 9001, 14001, 45001 & CE Certified** for Quality, Safety, and Compliance
- **4 Decades of global expertise** in industrial pump solutions across diverse categories
- **High-Pressure Precision Engineered** for consistency and reliability
- **Customizable Configurations** for furnace layout, billet size, and throughput requirements



**HYDRO  
PROKAV**

An Ingersoll Rand Business

## UT Pumps

Door No. 1/18, 1/18-1, 1/18-2  
Palladam Main Road, Othakkalmandapam  
Coimbatore, Tamil Nadu – 641032  
India  
Phone No: +91 422 690 1900

## Sales Office

1/15, Block 1, East Patel Nagar,  
New Delhi, Delhi - 110008  
India

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Email ID: [utpumps@irco.com](mailto:utpumps@irco.com) | [proposalhppfbd@irco.com](mailto:proposalhppfbd@irco.com)