### FORMING THE FUTURE



FORGING AND ROLLING
RAILWAY WHEELS AND RINGS



### FORGING AND ROLLING.

## TURNKEY MACHINES FOR MANUFACTURING RINGS.

Machines for hot forging

Schuler forging. System solutions from Schuler offer customers all over the world a decisive quality advantage in all temperature ranges:

Systems for hot forging
Systems for warm forging
Systems for cold forging

Turnkey machines for manufacturing rings or railway wheels are used in hot forging.

### Tailor-made forging and rolling processes from Schuler.

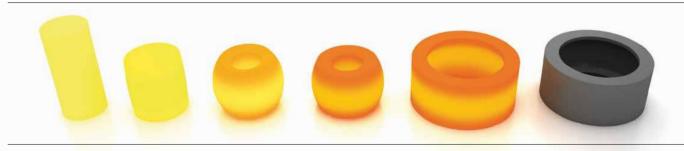
These machines make it possible to manufacture seamless rings according to their specific required properties.

The seamless rings are used on engine casings, bearing shells, blade carriers and different structural elements. Advanced features offered by Schuler, such as simultaneous punching, achieve optimized flow of special products.

### The advantages of ring roller:

- Reliable technology proven for decades in forging environments
- Special design for production of small and large rings on the same ring roller
- Quick tool change solutions to reduce machine downtime

### STAGE SET FOR MANUFACTURING SEAMLESS RINGS



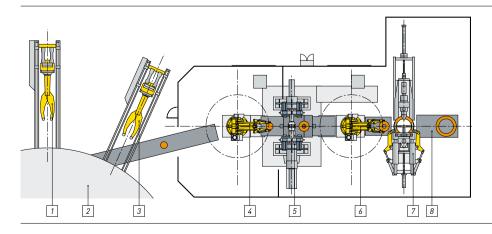


Hydraulic press for forging ring blanks (MH-3000).



Production of small and large rings on a single Schuler ring roller.

### TURNKEY MACHINE FOR MANUFACTURING RINGS



- 1 Charging
- 2 Rotary hearth furnace
- 3 Discharging
- 4 Robot
- 5 Hydraulic forging press
- 6 Robot
- 7 Ring roller
- 8 Conveyor

### FORGING AND ROLLING.

# TURNKEY MACHINES FOR MANUFACTURING RAILWAY WHEELS.



Rolling a freight car wheel on the new Schuler wheel roller.

### Turnkey machines for efficiently manufacturing wheels.

Schuler special equipment configurations can fulfill all customer requirements for a complete process starting from the continuous casted material to the finished wheel for the most economic production of Wagon, Locomotive and High Speed Wheels. High press forces linked to precise control systems ensure lowest material consumption.

### The advantages:

- Precise pre-forging by high press forces for high precision in the areas of the hub and running rim
- Weight savings due to high accuracy in presses and wheel roller
- · Enhanced productivity and availability
- · Quick and easy retooling of the entire machine
- Standardized operating concept for the presses and the wheel roller

### STAGE SET FOR MANUFACTURING RAILWAY WHEELS



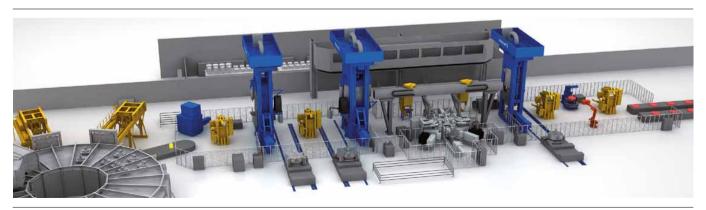


Schuler wheel roller optimized for extended tool life.

### The advantages of wheel roller:

- High accuracy due to rigid machine design
- All tool axles driven (main and support drives)
- Continuous cooling during loading /unloading for less wear and increased tool life
- Zeroing of internal torque for less abrasion and extended tool life
- Extended life time of shafts and bearings due to well-sized units

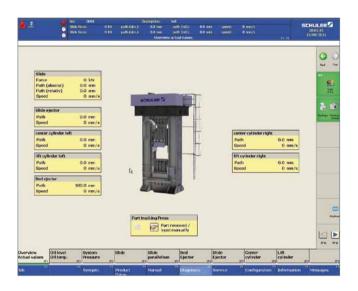
# AUTOMATED TURNKEY MACHINE FOR MANUFACTURING RAILWAY WHEELS WITH ROTARY HEARTH FURNACE, THREE HYDRAULIC FORGING PRESSES AND THE SCHULER WHEEL ROLLING MACHINE



# OPTIMUM ROLLING PROCESSES.

## CONTROL SYSTEMS FOR TURNKEY MACHINES.

The control system assures optimum rolling production. This program takes into account the special needs of rings and wheels.





### Machine control:

- Well-arranged visualization of process parameters
- Free sequence programming of processes
- Easy input of parameters
- · Complete product data management
- · Service friendly
- User-Management with different password levels

### Master control:

- Total line overview
- · Easy part and fault tracking
- · Multiple production plans possible
- Connection to Production information system
- Entire safety control of the line

#### Process control:

Strong partnership for the simulation of the entire process chain



# SCHULER **SERVICE.**

# STATE-OF-THE-ART SERVICE FOR MORE PERFORMANCE.

Schuler Service offers a tailored portfolio of services covering the entire life cycle of your equipment.

Over 900 service employees worldwide provide expert support 24/7 in close cooperation with you – our partners. Our main priority is always to ensure the maximum productivity and safety of your production equipment in order to secure your company's continued success.

With over 175 years of experience and expertise, we can guarantee the best possible support for the operation of your machines – and not only those supplied by Schuler, but by all other manufacturers. Whatever the situation, Schuler Service has the right solution for your specific needs.



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