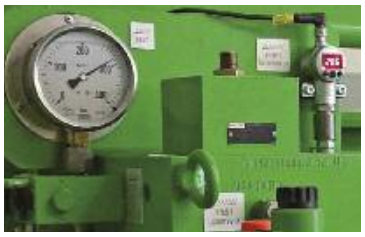
SMS group

Hydraulic systems
Quality without cutting corners


Hydraulics:
Large forces in a small space

Movements in plant and machinery need the advantages of hydraulics: Large forces in a small space.

We are an international plant-building and mechanical engineering company and, in the Hydraulic Systems Department of our Flat Rolling Plants Business Unit, we can offer you our experience and services also outside the company. You will benefit from our comprehensive experience. Thanks to our previous field of activity, we can help you with the planning of your plant and equipment by approaching it from a new angle. Since we are not dependent on any particular individual hydraulic components, we can coordinate our solutions precisely with your requirements.

If you want high, functionally reliable quality and cost advantages that can be realized quickly, then you should talk to us. A highly motivated and qualified team is looking forward to dealing with your requirements.

Basic engineering

- Technical design of drives and controls
- Specifications, determination of costs and weights
- Reference documentation, standards
- Simulation of special functions
- Preparation of diagrams
- Component selection / Manufacturer's certificate
- Adaptation of design to your application
- Order supervision
- Final documentation
- Commissioning support
- Spare parts

Detail engineering

- All modules are designed and documented 100 % on Creo 3D.
- Your control systems too can be sourced from the complete range of control and block modules, representing a great saving of time and costs.
- The necessary pipework is engineered with perfect precision by means of the Creo piping module.

Standards:
Our hydraulic solutions

Valve units
Valve units of up to two meters in length and of various constructional types take shape in our design and production departments: manifold-type valve stands, valve stations, utility rails, single blocks.
Block material: EN-GJS-400-15C-H / in stock

A particularly compact constructional type can be achieved thanks to our ability to produce multi-axis oblique drill holes and coordinated drill-hole cross-sections and to make use of cartridge valve technology. System requirements can be satisfied right into the most highly dynamic control range. The long service lives of the valve units are guaranteed by in-plant paint coating and up-to-date corrosion protection processes such as (carbo-)nitriding, nickel-plating or galvanizing.

Pump stations
In conformity with the most frequently arising load and performance requirements in SMS applications, a series has been developed which covers all such requirements. Our individual assemblies, which are nevertheless based on standardized components, are a low-cost alternative and can also satisfy your requirements when combined in a practical and functionally oriented manner.
Furthermore, thanks to the worldwide acceptance of our plants, we have gained a great wealth of experience, also covering standard and special-purpose fluids.
The pump stations are of modular design and comprise the following:

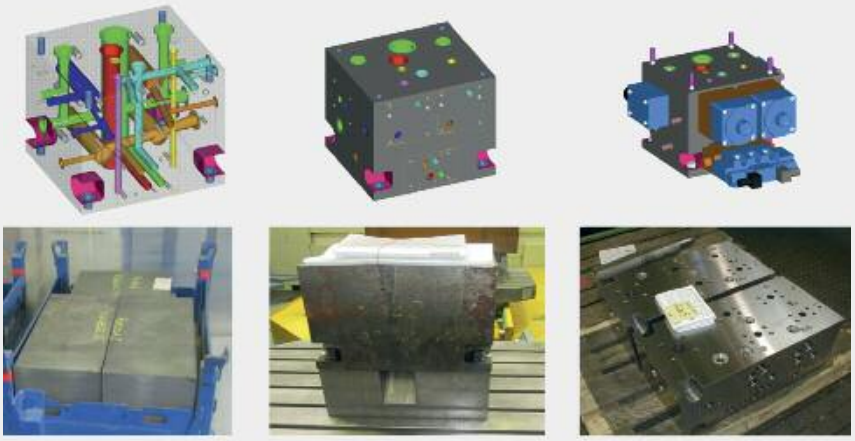
Tank unit
Graduated sizes according to gross tank volume in stages of 2 m^3 to 18 m^3.
Design: Two-chamber tank, rectangular, with pumps taking suction directly, heating elements and manifold block.

Recirculation unit
Various performance stages have been developed with a recirculation capacity of 170 to 1000 dm^3/min, adapted to the gross tank volume and to the given requirements.
Design: Gear pump or screw pump, 3µm filtration with SMS-certified duplex filter, water cooling via plate-type heat exchanger, filling and draining via integrated pump and filter, separately pre-cabled.

Main pump unit
Our standard considers various pump sizes according to their absorption volume: 125 cm^3, 180 cm^3, 250 cm^3 (the sizes 355 cm^3 and 500 cm^3 are in preparation, and other pump sizes are possible upon request)
Design: Pressure-controlled axial-flow piston pumps in oblique segmented construction (alternative controllers upon request), pump block able to be equipped with modules and with full-flow pressure filter, individual shut-off and relief possibility, mounted on a base frame for one or two pumps and with optional sound insulation.

Return-line filter unit
The SMS standard considers three filter sizes according to the respective return flow volume.
Design: Duplex filter unit with check valve on a base frame.

Accumulator unit
Bladder-type accumulators are standardized in the following sizes: 2 x 32 dm^3, 4 x32 dm^3,
2 x 50 dm^3 to 8 x 50 dm^3
Design: In one row or two rows with separate safety and shut-off blocks, common bottom block with fluid energy isolation.



Valve controls for hydraulic system

Design of valve blocks for hydraulic controls, 100 % Creo 3D.
The transparent nature of Creo 3D design reduces the error rate and makes the design more reliable. Production in the hydraulic workshop.

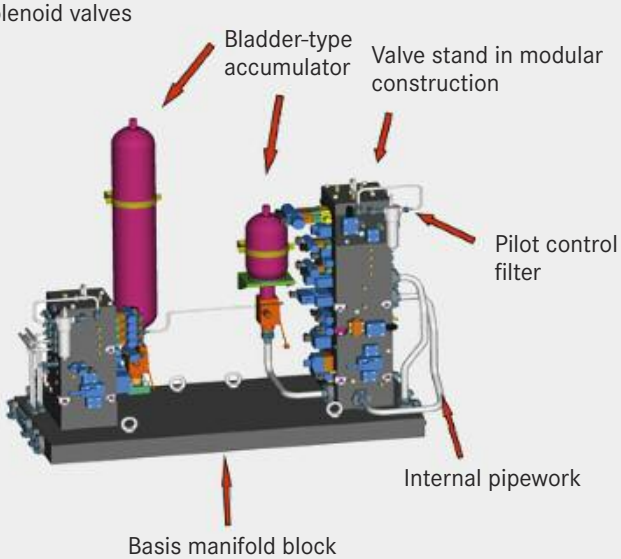
Hydraulic testing stand

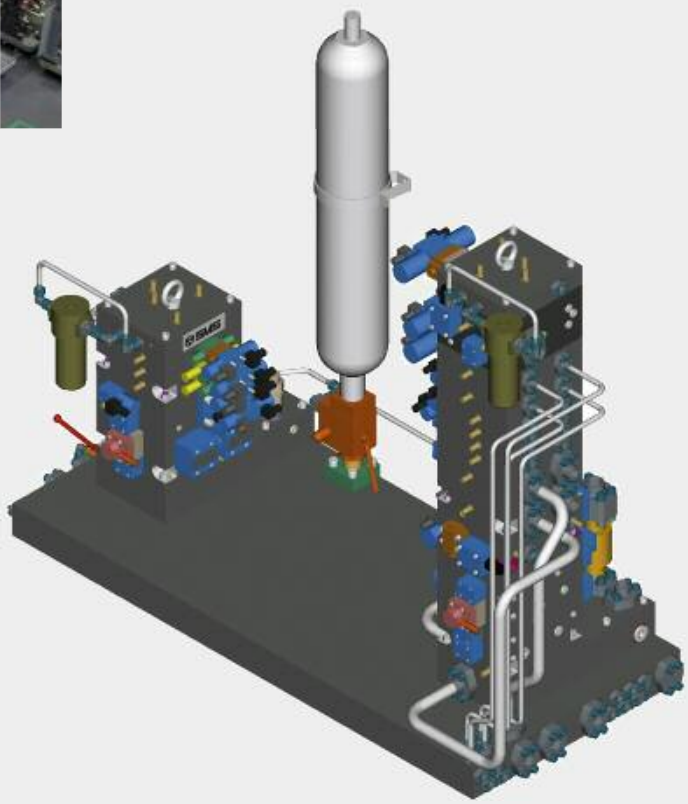
The curves and results for the precisely defined, reproducible and partially automated testing procedures are logged electronically, as is also the presetting of valves.

Modular units

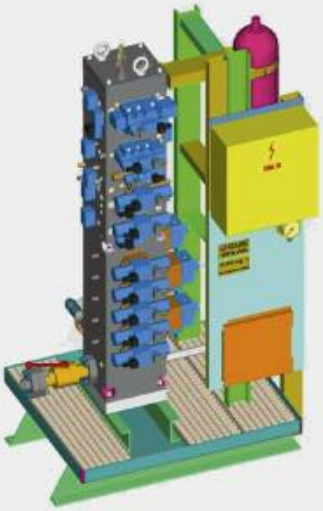
Hydraulic control unit
This functional unit is ready-fitted with its own piping and all its functions are tested on the hydraulic testing stand, following which it is inserted into the millstand service platform.

Per millstand
up to 11 servo controls
and up to 25 solenoid valves

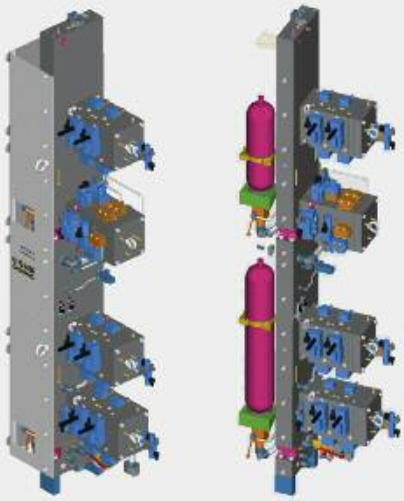




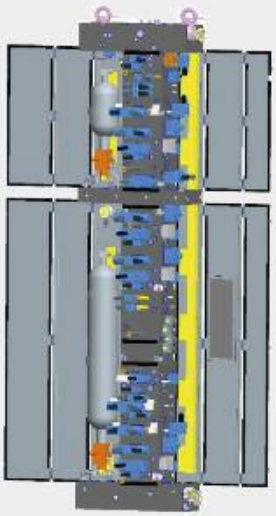
Hydraulic valve stands



Valve blocks in manifold-type construction are able to be used universally in media modules and can be installed in machine housings or on foundations.



Alternative designs to manifold-type construction: Utility rails for long-product rolling mills, design type 1.

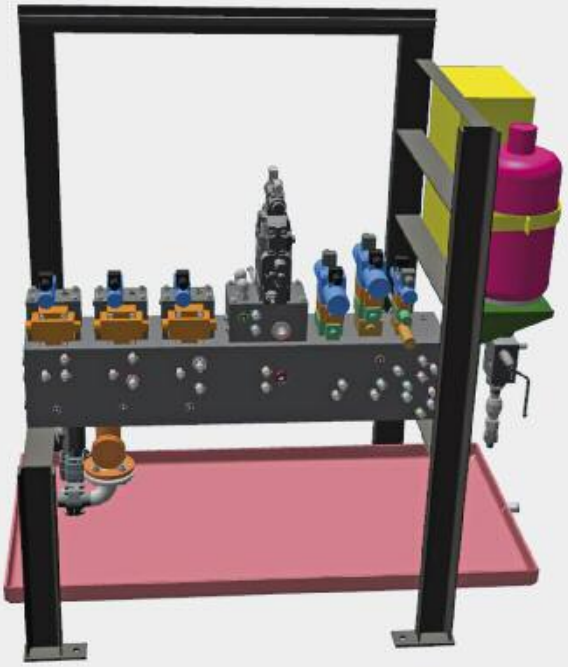


Utility rails for long-product rolling mills, design type 2.

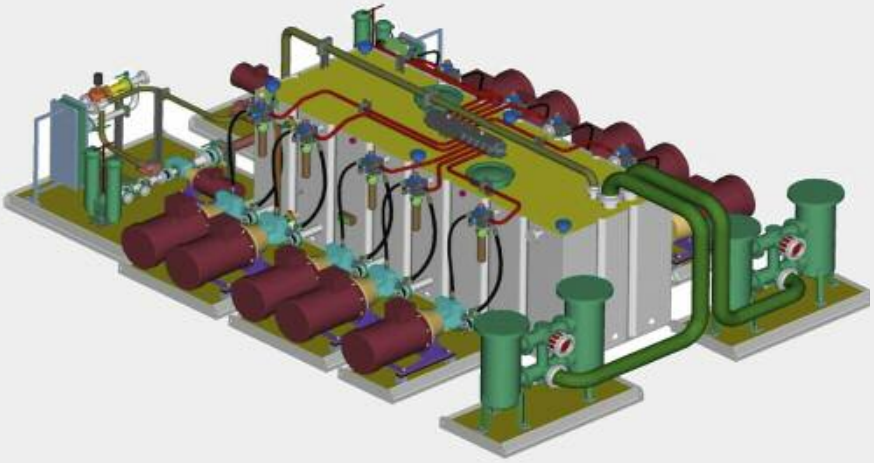
Cabling

The control systems are fully pre-cabled. On the site, it is only necessary to connect to the terminal boxes.

Control systems in table design



Hydraulic pump station



Unitized construction systems for utility platforms and millstand piping:

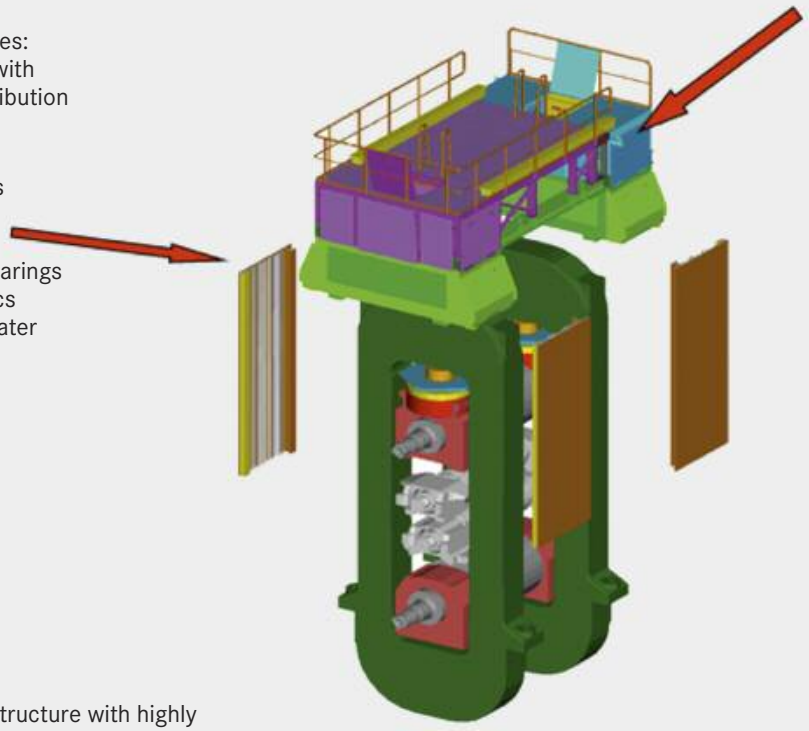
- Modular design
- Pre-assembled and checked for fitting accuracy
- Transported as a unit
- Time-saving final assembly
- No problems on the site, thanks to minimal piping work

The millstand piping consists of five modules

Four modules:
Side walls with
power distribution

- Hydraulics
- Grease
- Rolling oil
- Oil film bearings
- Pneumatics
- Cooling water
- Electrics

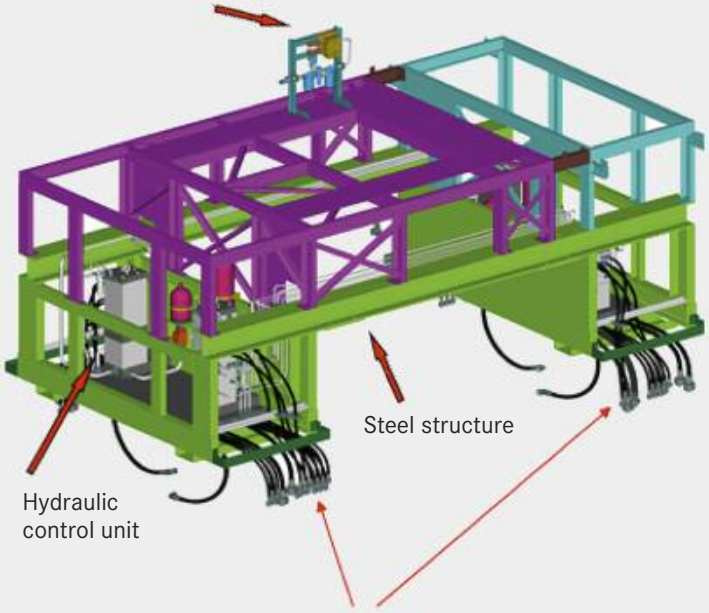
One module:
Utility platform
with integrated
hydraulic controls



Millstand service platform
The millstand service platform is a steel structure with highly precise manufacturing tolerances. These tolerances allow the accurately fitting installation of the hydraulic control unit.

Millstand service platform with integrated hydraulic controls

Pneumatic control system



The individual modular units are inter-connected via hoses, which means less adaptation work

Modular assembly for installation in the utility platform

Products and services

- Pump stations
- Accumulator stands / Accumulator units
- Valve control stands of all kinds
- Valve block structures (up to 10 t)
- The electrical control systems belonging to all plants
- Design and calculation work for the plants
- (Detail) design / Pipework planning
- General arrangement drawings
- Tests performed on testing stand
- Worldwide service and commissioning

Adapted solutions

On the basis of our comprehensive individual modules, we can elaborate a solution to fit your type of application quickly, flexibly and cost-favorably. Put us to the test - we look forward to your inquiry.
E-mail: andreas.loehr@sms-group.com

Your benefits at a glance

Project planning support
- Design and layout of functions and plants
- Pricing
- Specification
- Overviews and rough layouts

Overall process competence:
Mechanical equipment - Utilities - Electrical systems - Purchasing - Production
- Electrical and automation systems from a single source allow short coordination routes and a fully integrated concept
- Build-up and expansion of know-how without a “knowledge drain” to competitors
- Production of the essential components in our workshop is a guarantee, for example, of fully tested control systems

Commissioning support with own personnel
- Technical consultancy for the site personnel
- Local assignments for hot commissioning
- Local training sessions
- Problem analyses and solutions

SMS group GmbH
Hydraulic systems

Wiesenstrasse 30
57271 Hilchenbach, Germany
Phone: +49 2733 29-1251
Fax: +49 2733 29-2422
andreas.loehr@sms-group.com
www.sms-group.com

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