

HYGIENIC VALVE PROGRAM

Technics in stainless steel
for the food, chemical and
pharmaceutical industry





HYGIENIC VALVES

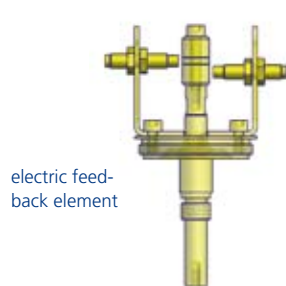
Our ideas – your advantages

- ▣ solid housings made of **solid bar** – all mounting positions possible depending on draining
- ▣ completely draining
- ▣ **dead space free** design
- ▣ perfectly cleanable
- ▣ interior surface Ra 0,8 µm (standard)
- ▣ better interior surfaces and electro-polishing on request
- ▣ 3A-standard-approved seal up to product area
- ▣ **gentle** product conduction
- ▣ simple and quick assembly without special tools
- ▣ slight periods of disuse
- ▣ tube outlets available as DIN, OD tube and ISO
- ▣ seals in conformity with FDA
- ▣ Thanks to the **building block system** change to aseptic type is possible.
- ▣ The **opening mode of the pneumatic actuator** may be changed by simple device modification from “air open – spring close” to “spring open – air close” and vice versa.
- ▣ screwed pneumatic actuators for easy maintenance
- ▣ A **three position actuator** permits a third position in simple static dosing processes.
- ▣ Proximity switches and control tops can be mounted.



HYGIENIC AND ASEPTIC SEAT VALVES

The building block system



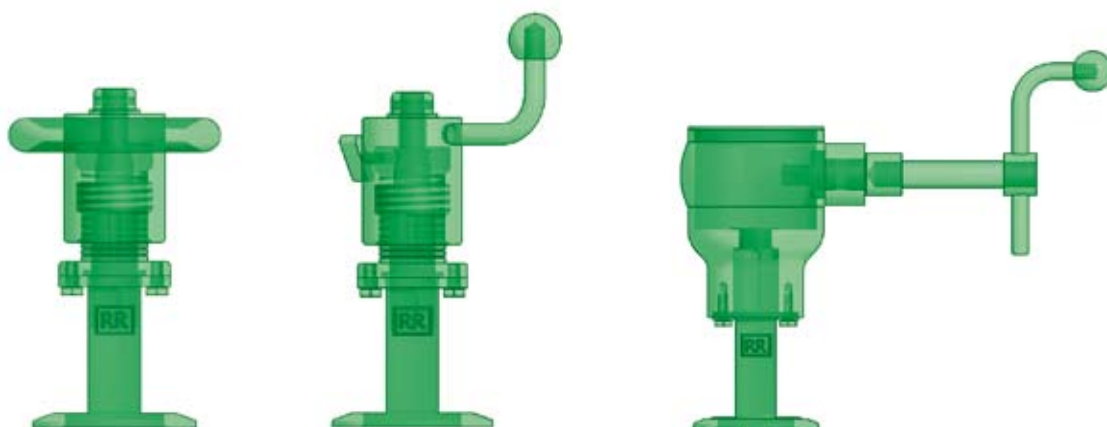
pneumatic actuators



spindles – aseptic design



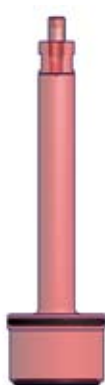
body variants



manual actuators



spindles - hygienic design



spindles – metallic bellow design



SINGLE SEAT VALVES

... for all ranges of application



Right angle valve



Right angle valve with crank handle



Inclined-seat valve



Change-over valve
two-part valve body



Bottom seat valve



Double seal valve



Pressure resistance valve with steam barrier



Overflow valve



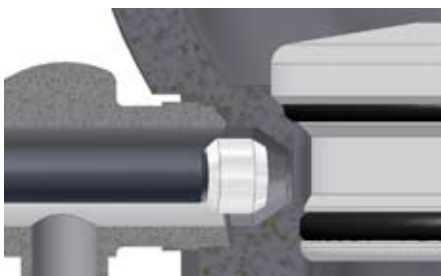
Overflow valve with T-body



Safety valve

HYGIENIC DOUBLE SEAL VALVE DD

... safe media separation



RIEGER-Double seal valves are used for reliable separation of product from cleaning agent in pipings. The leakage space is situated between the separating gaskets. The leakage fluid is drained off through two leakage valves.

DATA

- ▣ one-part valve body made of solid bar
- ▣ no dead spaces
- ▣ safe CIP/SIP-cleaning
- ▣ cheap alternative to mix proof valves i.e. in CIP-clusters
- ▣ use in plants of beverage and food industry



HYGIENIC PRESSURE RESISTANCE VALVE DH ... stabilized backpressure without spring tension

The valve task is to stabilize the defined pressure at the valve inlet. This may be i.e. the pressure (PP) in a line after the filter or homogenizer. If the pressure decreases after the filter, the valve automatically arranges the adjusted pressure. This is possible by means of a service unit, whose pressure gauge is set on the desired pressure of the pressure resistance valve.

The example shows a constant product pressure of 3 bars between filter and pressure resistance valve. First, the 3/2-ways-solenoid valve is adjusted on passage in direction to the pressure resistance valve. In case of cleaning the solenoid valve has to be turned, the regulating cone opens and air is vented over the solenoid valve.

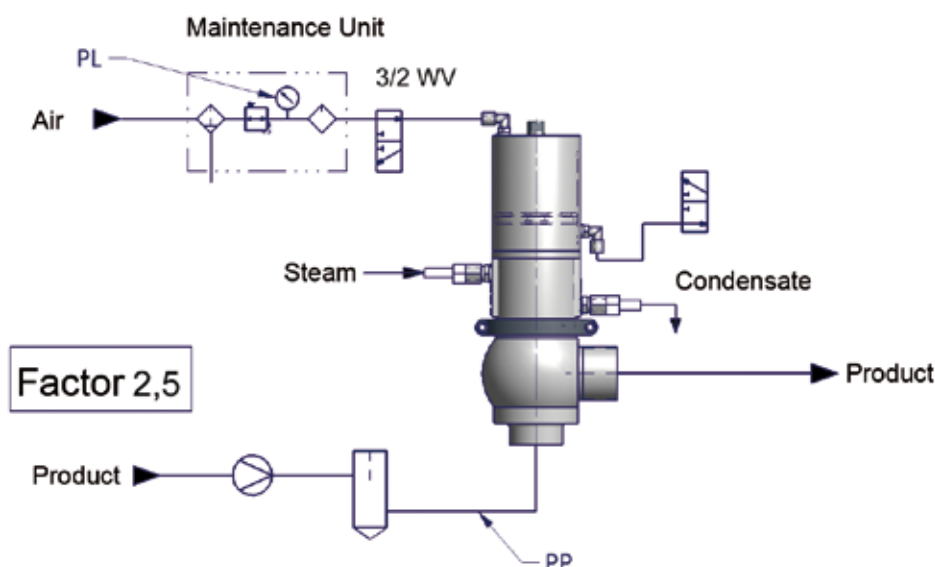
Example DN 50: The service unit (PL) is adjusted to approx. 0,96 bar.

$0,96 \text{ bar air} \times \text{factor } 2,5 = 2,4 \text{ bar} + 0,6 \text{ bar internal friction} = 3 \text{ bar product pressure in the line.}$

The pressure will stay on 3 bars, even if the pressure changes behind the pressure resistance valve.

The valve factor "F" is to be found on the product drawing and can change according to valve size.

Above the product space – in the sterile chamber – the piston is protected against contamination by cleaning with pure steam (= no lift effect).



HYGIENIC OVERFLOW VALVE ÜS

... protects pipings



RIEGER-Overflow valves type ÜS open when the set pressure is reached and so prevent undue over pressures in pipings.

They are NO safety valves. For this purpose, we recommend our TÜV-approved safety valves type SH (see page 10).



DATA

- ▣ right angle valve body made from solid bar
- ▣ available with weld-on ends and/or male and female connections
- ▣ optional with lever for lifting in type ÜS or pneumatically lifted in type E8 during cleaning

HYGIENIC OVERFLOW VALVE E8

... for safe pressure reduction

RIEGER-Overflow right angle valves E8 are a combination between right angle and overflow valves. Following the pressure tables, the desired pressure is adjustable, with a valve stroke as high as possible.

Unlike an usual overflow valve, this valve opens up to 100 % – like an angle valve.

It is suitable for fusing of compulsive feed pumps.

For reasons of safety, we use clamp unions between valve body and actuator, starting from size DN 25 – only to be opened with a tool.

Overflow right angle valves type E8 are NO safety valves. For this purpose, we recommend our TÜV-approved safety valve type SH (see page 10).

- ▣ upgrade possible from type ÜS to type E8
- ▣ standard pressure range 0,5 to 6 bars
- ▣ higher set pressures on request



HYGIENIC SAFETY VALVE SH

... with TÜV-approval for gas and steam



The RIEGER-Safety valve type SH prevents undue pressure excesses of gaseous media in plants and vessels.

The set pressure is always higher than the operating pressure of the plants. Full stroke is already reached as soon as the pressure is 10 % higher than the set pressure.

DATA

- ▣ one-part valve body made from solid bar
- ▣ no dead spaces
- ▣ exchange of seals without special tools
- ▣ range of setting – see catalogue
- ▣ additionally liftable – pneumatic and/or with lever during cleaning



HYGIENIC REGULATING VALVE E

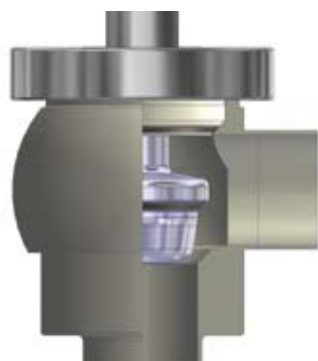
... exact control of flow quantities

In the food branch, uninterrupted production processes and product safety are of the greatest importance. Longer product cycles mean slight maintenance costs and thus higher productivity.

On product side, the control valves can be equipped with spindles and O-rings or with PTFE-bellows.

Thanks to the building block system the change between both seal systems – O-ring and PTFE-bellows – and between both actuator types – manual or pneumatic – is possible any time.

The regulating curve can be adjusted to customer's specific processes.



HYGIENIC MIX PROOF VALVE N1

... reliable separation of liquids



VALVE STRUCTURE

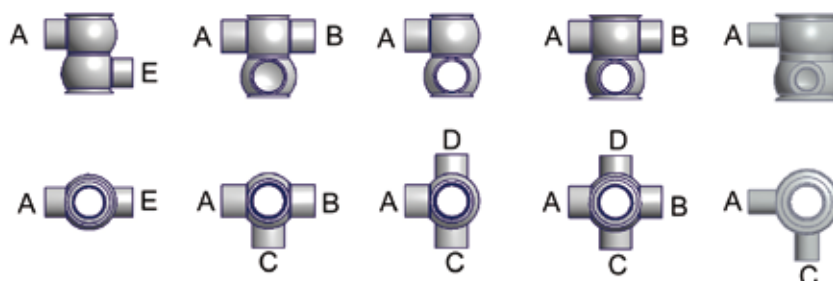
- one-part valve body made from solid bar
- radial sealing of both valve seats
- balanced one-part valve disks

EASE OF SERVICE

- only 4 seals in product space
- exchange of seals without special tools
- service possible without compressed air
- slight periods of disuse
- light: valve DN 100 weighs only 31 kgs

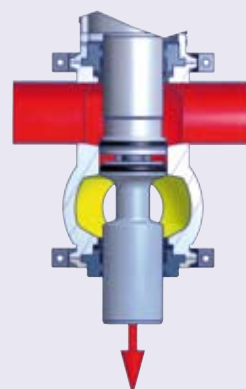
PRODUCT PROTECTION

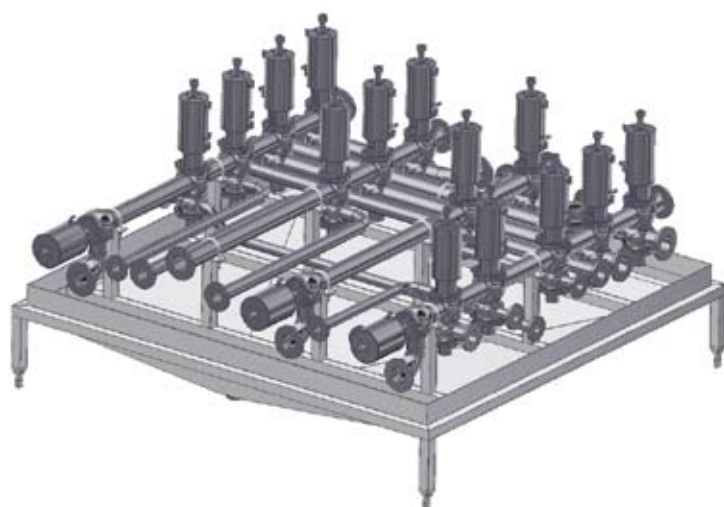
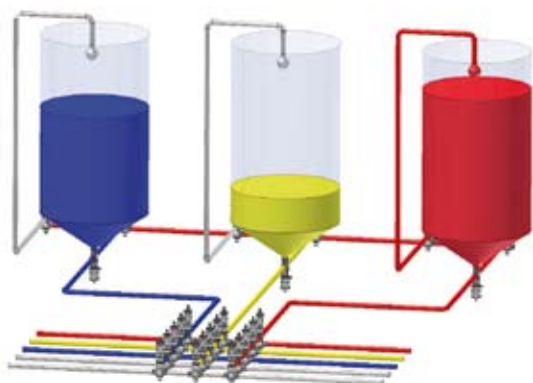
- stroking without loss
- safe media separation of both product lines
- closing force up to 10 bars, water-hammer safe up to 30 bars
- computer CIP-cleaning and SIP-sterilizing
- For CIP-cleaning of the upper (lower) valve body the upper (lower) valve disk is lifted cyclewise.
- Flow velocity should be 2 to 3 m/sec during cleaning.



OPERATING MODE

L3 – compressed air connection for stroking the upper valve disk



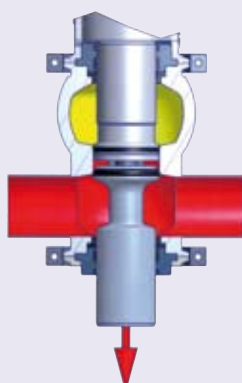


type 150

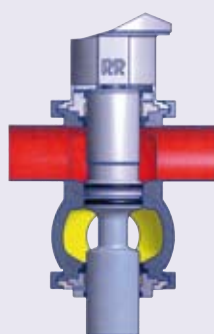


type 200

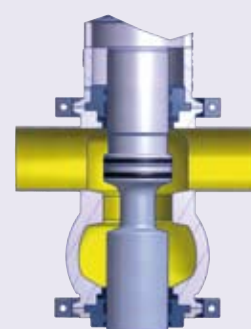
L2 – compressed air connection for stroking the lower valve disk



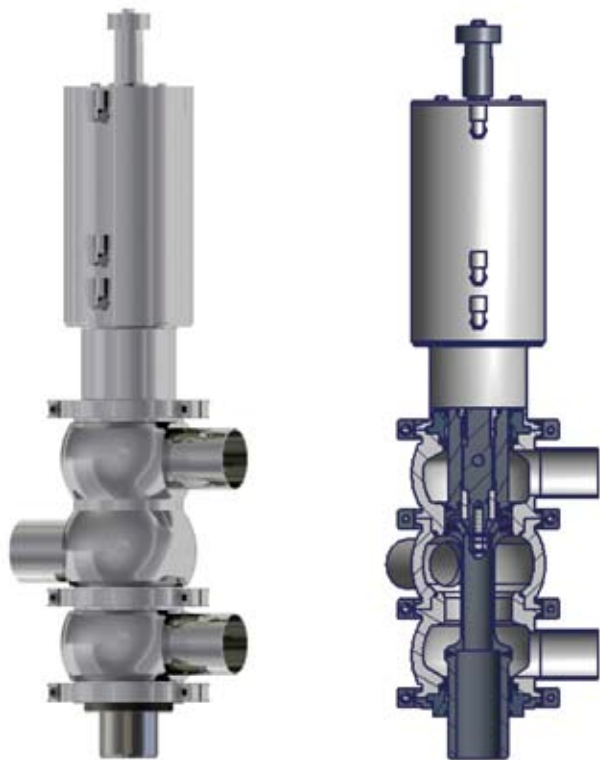
Valve closed



L1 – compressed air connection for opening the valve



HYGIENIC MIX PROOF CHANGE-OVER VALVE N3



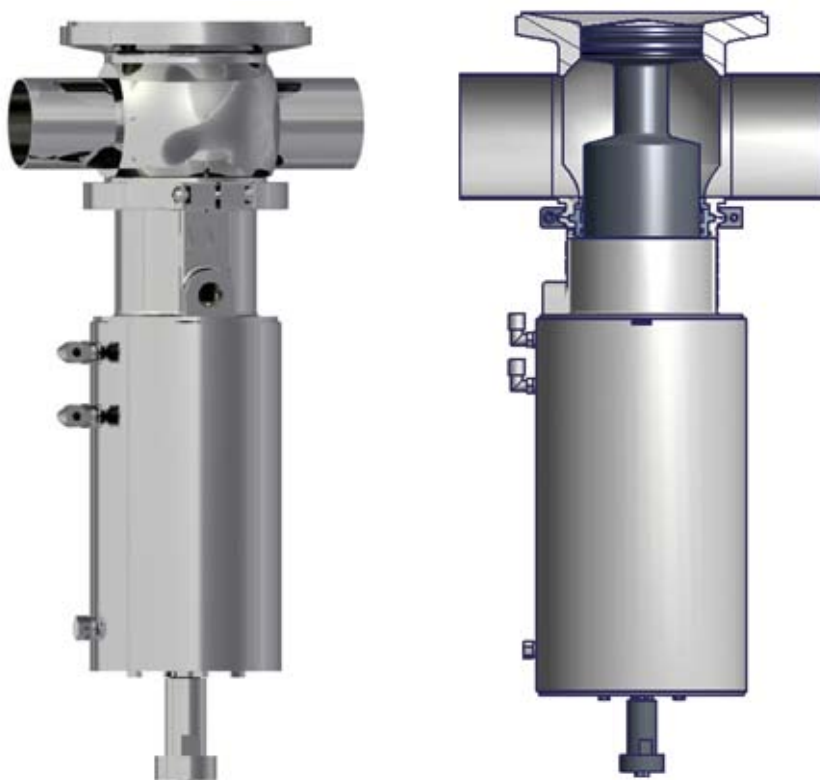
VALVE STRUCTURE

- ▣ two-part valve body – lower body turnable
- ▣ alternatively three-part valve body – all bodies turnable
- ▣ upper valve seat can be stroked upwards and downwards

HYGIENIC MIX PROOF BOTTOM SEAT VALVE N5

VALVE STRUCTURE

- ▣ with weld-in flange
- ▣ can be stroked on both sides
- ▣ available with one outlet only



HYGIENIC MIX PROOF BOTTOM SEAT CHANGE-OVER VALVE N9

RIEGER is the only valve producer on the market to offer this type of mix proof bottom seat valve where additionally the function of a change-over valve is realized.

The advantage towards the usual passage mix proof bottom seat valve is that the piping is not filled during filling or emptying of vessel rows. The piping is only open until the vessel to be filled. This way of process avoids an additional risk of contamination caused by otherwise necessary shut-off fittings.



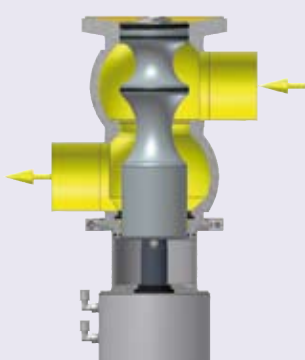
with pipe connection



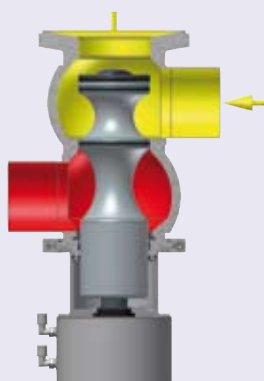
with weld-in flange

OPERATING MODE

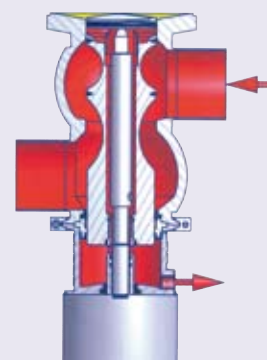
position "vessel closed"
passage open



position "vessel open"
passage closed



cleaning of piping and valve seat



ASEPTIC VALVES IN OPERATION

... in dairies, for food and beverages

New production techniques and a high safety of process equipment are the challenges of the future. RIEGER valves make a contribution to achieve a maximum of productivity, safety and quality in dairies, food and beverage industry.

Strictly made of bulk material, the valve bodies even comply with very high requirements in terms of puncture resistance, absence of distortions and stability. Precisely tailored, either as single valve or combined to valve blocks, they accurately fit in installations while being exchangeable among each other.

The building block system allows unproblematic change between manual and pneumatic actuation as well as between hygienic and aseptic realisation. Equally, a modification of the sealing system is simple – from “spring close / air open” to “spring open / air close” and vice versa.

Thus, RIEGER valves are easily adaptable to changing process requirements.



THE RIEGER VALVE RANGE STANDS FOR



... in the pharmaceutical, chemical and bioengineering industry

Aseptic production equipment in the area of the pharmaceutical and biotechnological industry set new benchmarks for aseptic components such as valves. These are only met with a consequent selection of materials and an uncompromisingly aseptic realisation.

Integrated into pharmaceutical installations for absolutely clean applications, RIEGER valves successfully demonstrate their excellent aseptic properties since years by hermitically separating products from the environment.

RIEGER valves are used globally, complying with the requirements of each climate zone: in breweries in Mexico, in dairies and breweries in China and Vietnam, in pharmaceutical installations in Brazil and in mineral wells in Germany. As renowned German company and part of the worldwide operating Neumo-Ehrenberg-Gruppe, RIEGER disposes of the necessary economic capacity and international experience to supply all markets.

Whether being bottom seat valves for fermenters, inclined seat valves with bottling functions or sampling valves, always the construction emphasis is laid on the proper aseptic operation of the valves.



PERFECT RELIABILITY IN PROCESS CONTROL AND IN INSTALLATIONS.



TECHNICAL DATA

MATERIAL	in contact with product	1.4404/AISI 316L	
	optionally	1.4435/AISI 316L	
	not in contact with product	1.4301/AISI 304	
SEALS		EPDM (FDA)	PTFE (FDA)
TEMPERATURES	for continuous operation	130 °C (EPDM)*	121 °C
	for sterilisation	150 °C (EPDM)*	135 °C (for a short time)
PRESSURE	operating pressure	max. 6 bar (standard edition)	
	control pressure	min. 6 bar – max. 10 bar	
SURFACES	in contact with product	Ra <= 0,8 µm	
	not in contact with product	rotated, Ra <= 1,6 µm	
	optionally	higher quality surfaces on demand	
CONNECTIONS	standard	welding end	
	optionally	all common threads and flange connectors	

* depending on operating parameters

REFERENCES

... familiar with many sectors

PHARMACEUTICAL INDUSTRY / BIOTECHNOLOGY / COSMETICS / CHEMICAL INDUSTRY	B. Braun Melsungen	Bayer Schering Pharma
	Dr. Hobein (Eubos)	Ecolab
	Fresenius Medical Care	HAKA Kunz
	Inova pharma systems	kocher-plastik
	Kwizda Pharma	Merck
	Novartis	Rentschler
	Sandoz	Sanofi-Aventis
	Sartorius	Queisser Pharma
DAIRIES	Bayernland	Bergland Naturkäse
	Breisgaumilch	Campina
	Danone	Ehrmann
	Hochwald	Kärtnermilch
	Meggle	MZG Molkerei Zeulenroda
	Nordmilch	Starmilch
	Tirol Milch	Zott
BEVERAGES	Altmühltaler Mineralbrunnen	Brandenburger Urstromquelle
	Brasserieies Kronenbourg	EICO-Quelle
	Glashäger Brunnen	Markengetränke Schwollen
	Mineralbrunnen AG	Ricker Fruchtsäfte
	Sinziger Mineralbrunnen	Thüringer Waldquell
	Ybbstaler Fruchtsaft	WEG Weser-EMS
PLANT ENGINEERING	Döhler Engineering	Gasti Verpackungsmaschinen
	GEA	Höfliger
	HOSOKAWA ALPINE	Idoneus
	INDAG	Kinetics
	KHS	Krones
	LTH Dresden	Löhrke
	Miteco AG	OPTIMA
	Oystar-Gruppe	Pharmaplan
	Ruland	Seppelec
	SIG Combibloc Systems	Tetra Pak
	VA GmbH	WILD INDAG

Further references on request. Please use our contact form on our website www.rr-rieger.de

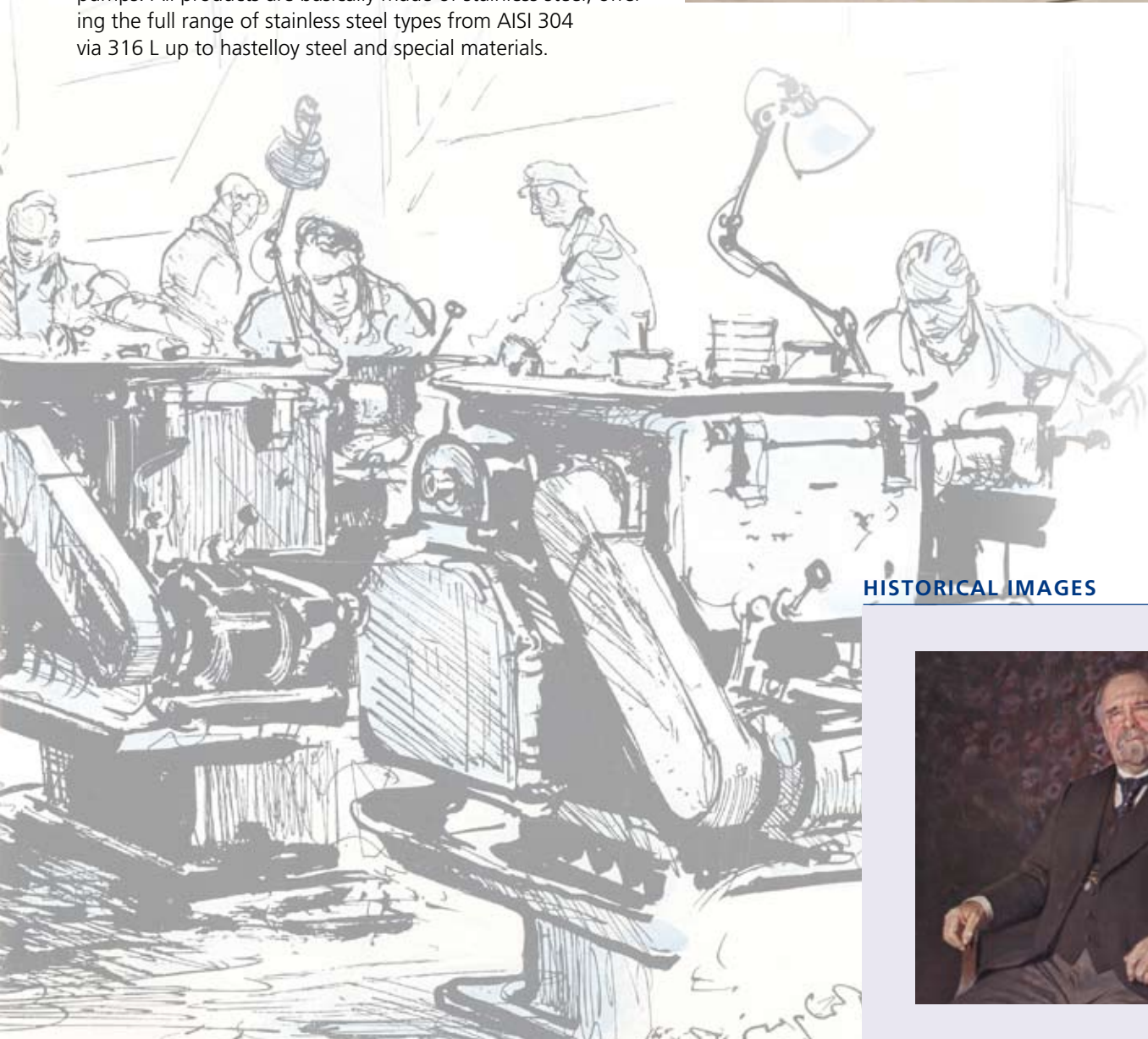
THE COMPANY



The firm Rieger Brothers is a company with long tradition. It was founded 1879 as machine factory in the centre of Aalen. At the beginning of 1991, the company moved into a new and modernly conceived factory building at the outskirts of Aalen.

Being subdivided into the two departments machine factory and aluminium foundry, today, Rieger Brothers is member of the worldwide operating Neumo-Ehrenberg-Gruppe.

Rieger Brothers' machine factory successfully competes in the areas of armatures, valves, welded constructions and tap pumps. All products are basically made of stainless steel, offering the full range of stainless steel types from AISI 304 via 316 L up to hastelloy steel and special materials.



HISTORICAL IMAGES





Our products, which prove their worth in long duration utilisation, and especially our constructions in the aseptic valve area are primarily used in the chemical, pharmaceutical and food industry. Rieger Brothers offers for many sectors mature solutions in stainless steel.

Experienced and motivated employees ensure the high quality standard of our products. Modern manufacturing technology like machining centres lay the foundation of a distortion-free utilisation of our armatures, valves and components.

The more advanced will prevail over the already well – following this spirit, our construction department continuously develops new solutions to support our clients in optimising their processes. Inspired by client specific challenges, their solutions are convenient for many clients.

Our striving for improvement was first rewarded in 2005 with the certification according to ISO 9001/2000. The renewed certification in 2008 guarantees our clients that our attention will continue to be focussed on innovation, customer proximity and the reliability of our products.



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