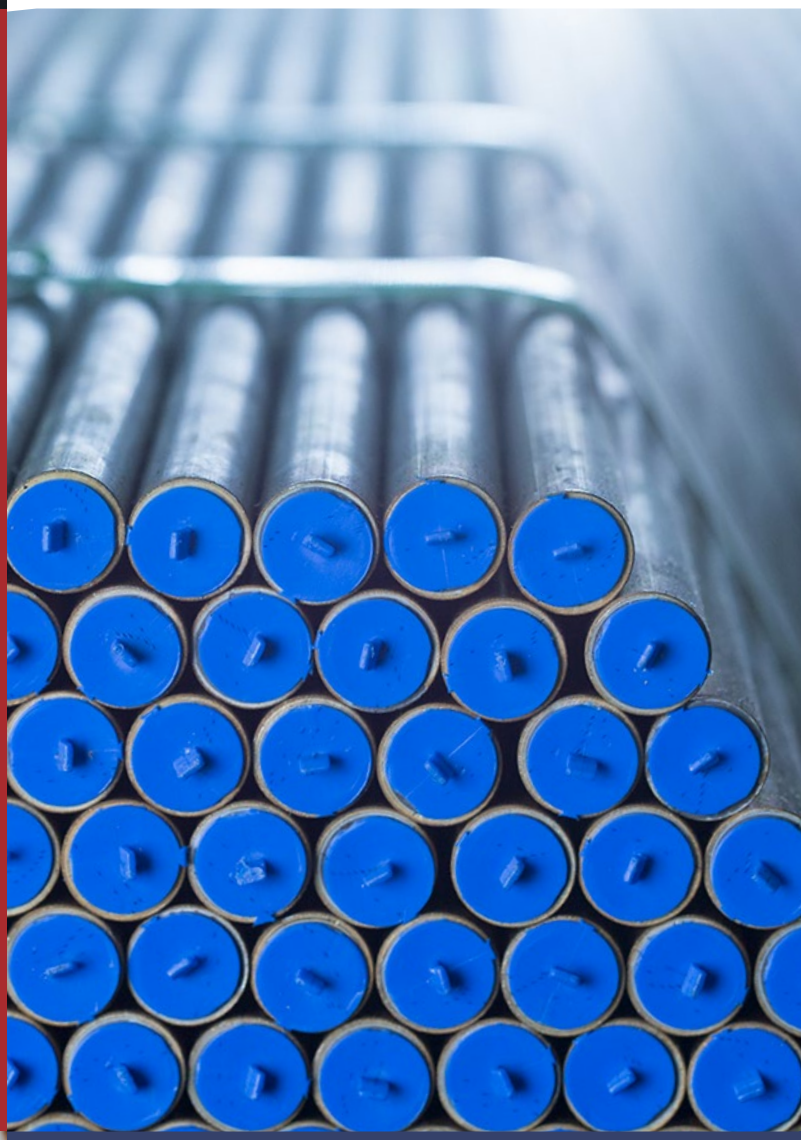
VAN LEEUWEN

Product catalogue

Hydraulics



Contents

Van Leeuwen. More than tubes.

Customized steel tube solutions for challenging requirements

VAN LEEUWEN is an internationally operating stockholding and processing company of steel tubes. At about 70 locations in more than 30 countries we pursue a common mission: the reliable supply of high-quality steel tubes and comprehensive services – from single-source procurement and individual processing to customized stocking solutions and just-in-time deliveries.

As a distributor we are the link between suppliers and customers. Longstanding, established customer and supplier relationships are not only the foundation but the proof of our joint success. With more than 100 years of experience in the steel market and a wide supplier and customer base, we rank among the leading global distribution companies – and we work hard to keep this position.

We see ourselves as a service provider through and through: Our goal is to strengthen your competitive position with tubes and services precisely tailored to your individual requirements.

A perfect alliance

Products and services that help you increase the profitability of your business

Seamless precision steel tubes are some of our core products. Our customers benefit from high quality products and extensive material and processing expertise.

Our international relationships with suppliers, modern warehousing technologies and processing equipment make us a reliable procurement and logistics partner for steel tubes – worldwide.

Our services – your benefits

Access to leading steel tube manufactures	Advantageous material prices, also for smaller lots
Deliveries according to national and international standards	High-quality steel tubes for demanding applications
Applications engineering	Comprehensive technical consultancy
Pre-machining up to ready-to-install components	Increased efficiency of manufacturing processes
Kanban, JIT, JIS, and consignment stocks	Reduced working capital stocks and in-house logistics
DIN ISO 9001 certified across all locations	Equally high service levels across 32 countries
Integrated global account management	Beneficial cross-border cooperation

HPL tubes according to
DIN EN 10305-4

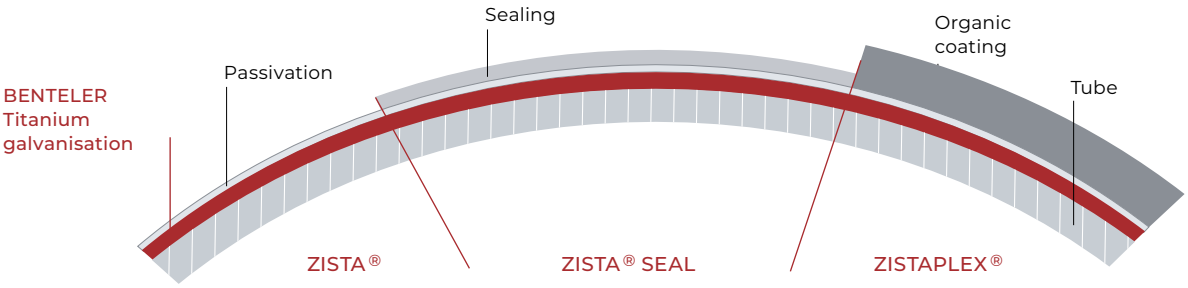
Hydraulic pneumatic lines

Specifications

Dimensions	OD 4 to 114.3 mm	WT 0.5 to 20 mm
Commercial length	6,000 (-0/+50) mm	
Delivery condition	+N (normalised)	
Material	C-Steel: E235, E355, Special materials Stainless steel: 1.4301, 1.4571, 1.4404	
Surfaces	Temporary corrosion protection Phosphated	Galvanised (outside, optionally inside) Organic coating

Nextgen ZISTA® Family

The innovative BENTELER TITAN galvanisation process increases the corrosion resistance of all ZISTA® products by more than 50 per cent. The proven processing properties when bending or attaching connection systems remain unchanged.



Next level in corrosion protection

The new generation of ZISTA® products far exceeds the corrosion resistance of the market standard, particularly after tube processing.

Market standard	200 h	400 h
ZISTA®	300 h	720 h
ZISTA® SEAL	720 h	1.200 h
ZISTAPLEX®	1.200 h	2.500 h

Market standard	values not confirmed	
ZISTA®	keine Werte bestätigt	
ZISTA® SEAL	96 h	600 h
ZISTAPLEX®	500 h	1.200 h

Min. hours until zinc corrosion Min. hours until iron corrosion In the salt spray test according to ISO 9227 NSS

ZISTA® and ZISTA® SEAL

Surface finish	Zink coating: Protection against red rust (Iron corrosion)	Standard coating thickness: min. 8 µm, 12 µm, 18 µm or 25 µm
	Passivation: Protection against white rust (zinc corrosion)	CrVI-free
Features and special characteristics	Uniform corrosion protection	The uniform application of the zinc coating and passivation – confirmed in the salt spray test
	Protected interior surface	A specially developed pipe connection system ensures that the inner surface never comes into contact with process chemicals.
	Very good processability	Excellent forming properties without flaking of the zinc layer thanks to the multi-layer system (even at 25 µm)
	Compliance with guidelines	The CrVI-free organic coating fulfils all requirements of the End of Life Vehicle, REACH and EU Directives.

ZISTAPLEX® OD 4 – 42 mm, larger OD on request

Surface finish	Zink coating	Standard coating thickness: min. 8 µm
	Organic Coating	Standard coating thickness: < 50 µm epoxy black (also possible: > 50 µm or >100 µm as well as further layer types and colours)
Features and special characteristics	Excellent corrosion resistance	Due to the duplex system (zinc with organic coating) – confirmed in the salt spray test (test duration up to 2,500 h)
	Extreme processability	Excellent properties even after forming processes such as bending and end forming for pipe connection systems
	Many choises of colour	Wide range of colours; market standard: Black
	Compliance with guidelines	The CrVI-free organic coating fulfils all requirements of the End of Life Vehicle, REACH and EU Directives.

Seamless and welded

Cylinder tubes

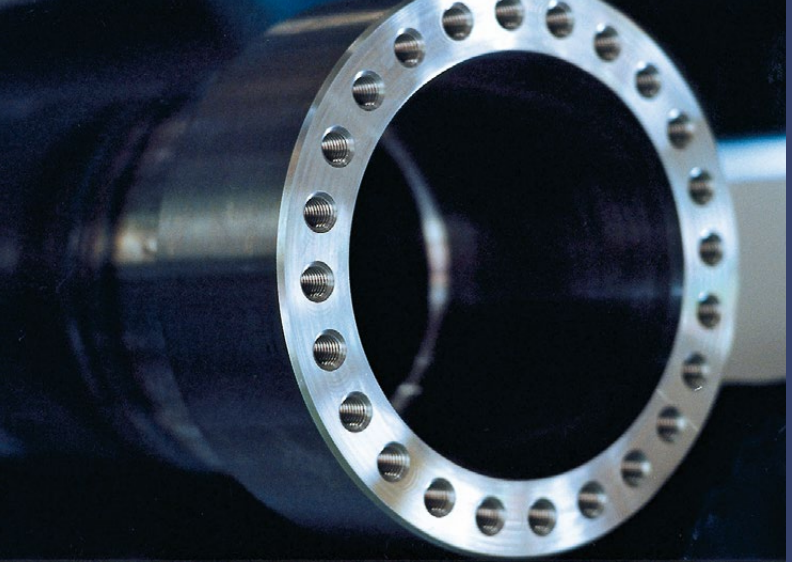
HP-H8 (seamless), HPG-H8 (welded), HPS-H9 (welded), HPZ (seamless preliminary tube)

Specifications

Diameter	OD 30 – 300 mm according to DIN EN 10305-1 OD 30 – 230 mm according to DIN EN 10305-2 OD > 230 mm according to EN 10210-1, EN 10297	
Wall thickness	WT 5 – 25 mm according to DIN EN 10305-1 WT 5 – 17.5 mm according to DIN EN 10305-2 WT > 25 mm according to EN 10210-1, EN 10297	
Standard lengths	4.0 – 8.0 m Special lengths and fixed lengths	
Steel grades	E355 +SR, S355 +SR, P355 +N other steel grades and properties as well as requirements on request	
Tolerances		
OD and wall thickness	according to EN 10305-1/-2	
Inner diameter	**Tolerances**	Surface
	H8 skived and roller burnished	Ra max. 0.3 µm
	H8 honed	Ra max. 0.4 µm
	H9 drawn	Ra max. 0.8 µm
Straightness	max. 1.0 mm/m for EN10305-1 max. 0.8 mm/m for EN10305-2	
Eccentricity	**OD < 160 mm** according to DIN EN 10305-1: max 10%, on request 7.5% possible, according to DIN EN 10305-2: max 7,5%, on request 5% possible (For OD ≥ 160 mm, the eccentricity is max. 10%)	
Certification	3.1 according to EN 10204, other certificates available on request	

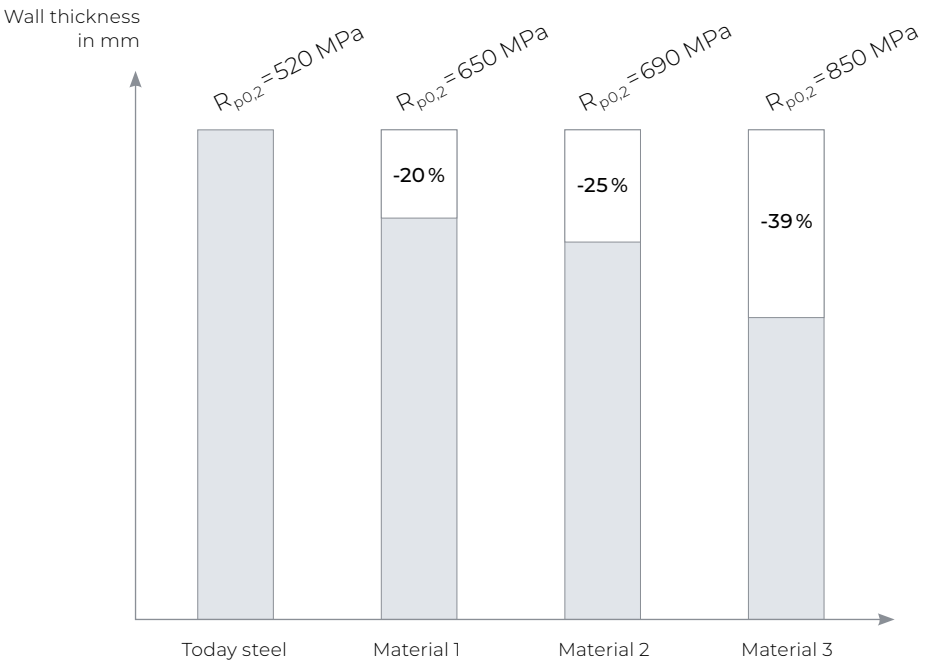
Machining and processing solutions

Our machinery and an extensive network of cooperation partners enable us to provide you with the entire range of processing techniques relevant in today's market. Our services range from the production of cast iron and sintered parts to the forming, cutting, jointing and coating of tubes as well as the specific development of material properties.



Engineering solutions:

Light weight concepts



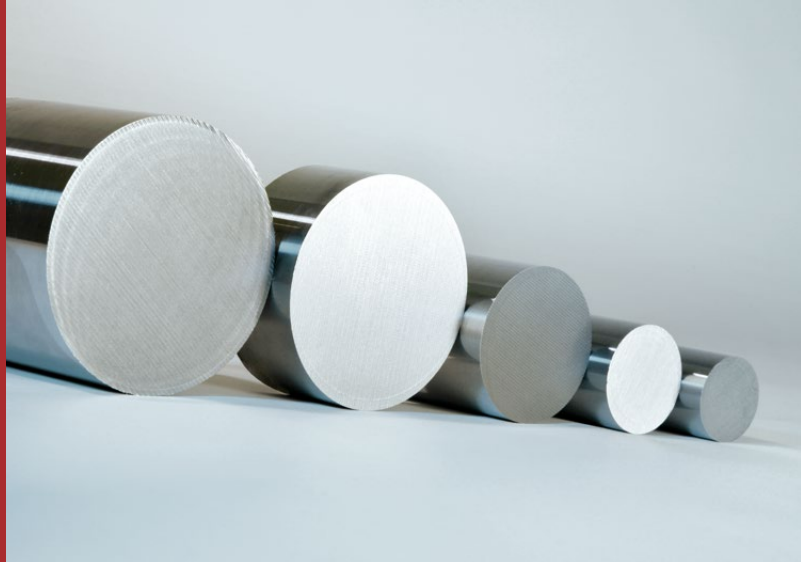
Pressure: 450 bar, 100 mm bore, static load, calculation based on DIN 2413

Steels for low temperature service

Van Leeuwen can provide steel tubes with Charpy Impact Energy levels of 27 J in longitudinal and transverse direction at –20°C. Special solutions for lower temperatures and higher impact values are also part of our delivery options.

Hard chrome plated and nickel plated

Piston rods and piston tubes



Specifications

Dimensions	Piston rods/Chromed bars OD 6 – 220 mm, larger sizes available on request piston tubes OD 16 mm – 140 mm, WD 2 – 15 mm, larger sizes available on request	
Tolerances	Ø ≤ 16 mm ISO f8 Ø ≥ 18 mm ISO f7 (other tolerances on request)	
Straightness	Ø ≤ 16 mm = max. 0.3 mm/m Ø > 16 mm = max. 0.2 mm/m	Ø > 160 mm = max. 0.5 mm/m Stainless steel max. 0.7 mm/m
Standard lengths	Ø ≤ 16 mm 2.7 – 3.1 m Ø ≥ 18 mm 5.4 – 7.6 m (Special and fixed lengths on request)	
Roundness	max. ½ OD Tolerance	
Surface	Ra max. 0.20 µm (Average value 0.10 – 0.15 µm)	

Available materials

20MnV6, 20MnV6(312h), 20MnV6(NiCr)
C45, C45(IH*)
38MnVS6(IH*)
42CrMo4+QT, 42CrMo4+QT(IH*)
1.4057(QT), 1.4462

*IH = induction hardened

Chrome plating

Standard chrome layer thickness	< Ø 20 = min. 14 µm ≥ Ø 20 = min. 20 µm

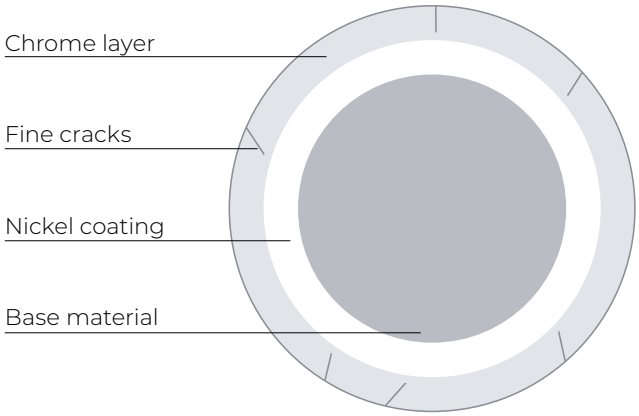
Corrosion protection classes according to ISO 9227 (NSS)

200 h	Rating 9
72 h	Rating 10

NSS = Neutral Salt Spray

Nickel-chrome coating

Standard layer thicknesses	Nickel 30 µm Chrom 20 µm



Corrosion protection classes according to ISO 9227 (NSS)

NF X41002-08-1975, ISO 3768/ASTM B117

1,500 h	Rating 10

Corrosion protection classes according to ISO 9227 (AASS)

NF A91101-05-1985, ISO 3769/ASTM B287

500 h	Rating 10

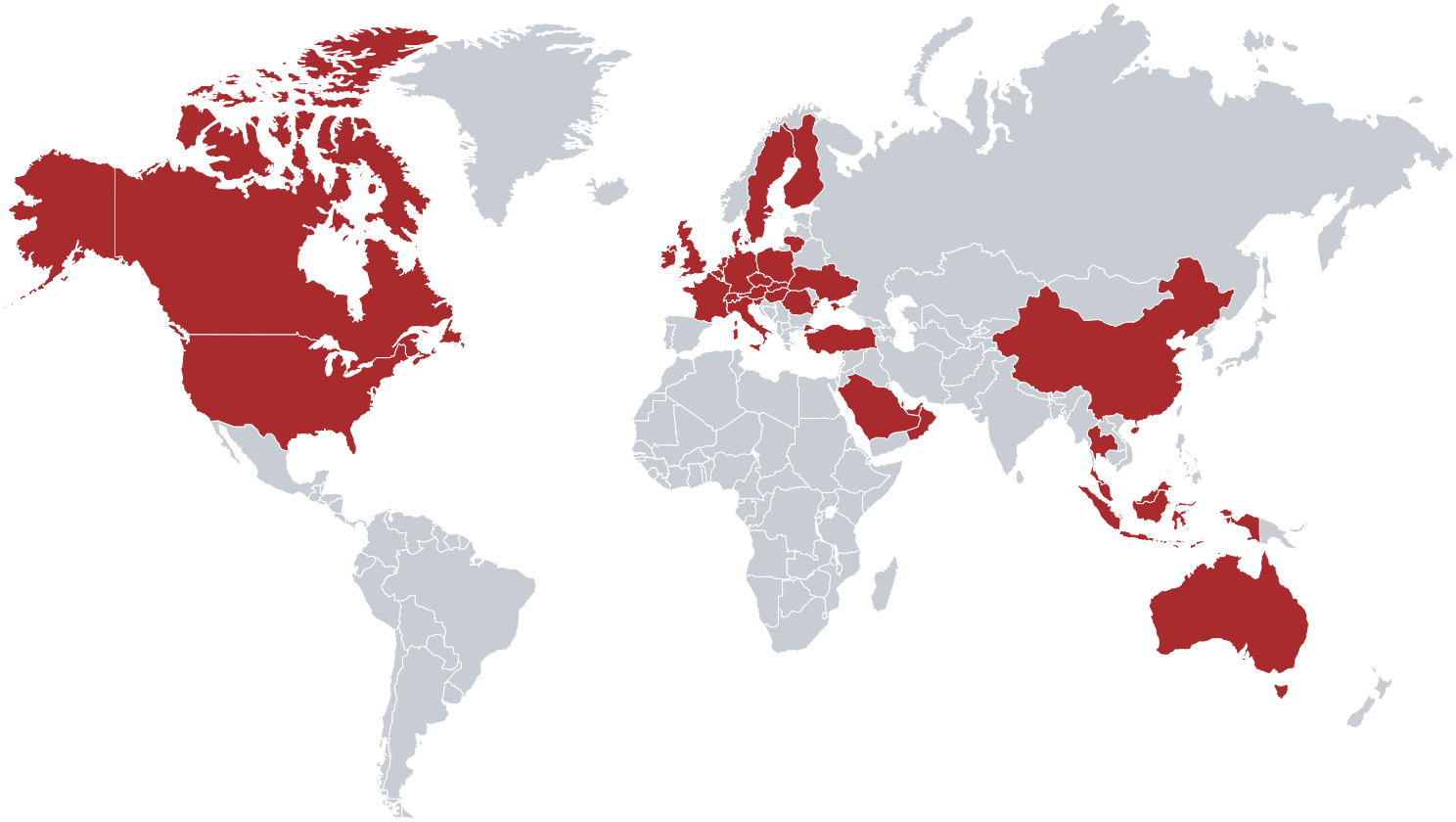
NSS = Neutral Salt Spray AASS = Acetic Acid Salt Spray

The global network

Our global network of about seventy, largely stock-keeping sites, forms an important basis for our services. By deploying our global procurement, treatment and distribution capabilities as efficiently and effectively as possible, our international network optimally supports our customers.

The current addresses and contact details for all of our sites are available at www.vanleeuwen.com.

Our employees look forward to assisting you.



Countries	32
Offices and warehouses	70
Available storage area	760,000 m^2
Different items in stock	200,000
Employees	2,400
Nationalities	58

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