

# VS 100, VS 110, VS 120, VS 200 Isolating Vent Valve Isolating Valve Testing Vent Valve Two Valve Manifold

- Operating pressure up to 42 MPa.
- Operating temperature up to 500 °C.
- Material stainless steel 1.4541.
- Sealing component selection from different material: Graphite, PTFE, PEEK, Viton, EPDM.
- Gland packing adjuster.
- Seat diameter 4 mm.
- EC Type Examination Certificate acc. to Directive PED 97/23/EC.



## **Application**

Isolating valves are used to shut off the supply of pressured medium to the pressure sensor. In addition, the valve type with a small deaeration valve (VS 100, VS 120) allows discharge of mud or deaeration of the impulse piping. VS 120 valve, thanks to the side screwing, allows connection of other equipment to pressure medium. Individual types of the valves are designed for direct installation on a pressure sensor or for installation between the impulse piping.

The two valve manifold VS 200 is used to shut off the supply of pressured medium to the pressure sensor, allows discharge of mud or deaeration of the impulse piping and possibly serves to connect other equipment to pressure medium. The manifold is designed for direct installation on a pressure sensor or for installation between the impulse piping.

### **Description**

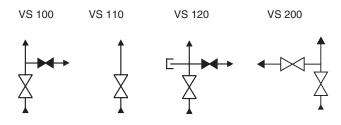
All parts of the valve is made of stainless steel (1.4541) except the sealing ball and spindle gland. As a sealing element of the valve is used a ball, embedded into the valve spindle face and closing the through seat with diameter 4 mm. Material of the sealing ball is optional; it could be made of guenched stainless steel (1.4125), ceramics (Si<sub>2</sub>N<sub>4</sub>) or plastic (PTFE 325). The valve spindle of the standard version is sealed using an FPM (Viton) or EPDM O-ring; in both cases with two Teflon supporting rings. In case of valves with gland packing adjuster it is possible to choose the sealing material PTFE, Graphite or PEEK. The wide range of dimensions of the input and output screwing allows installation of the valve into a welded on piece, on a sleeve with a transition connection, into a sensor screwing or connection of the impulse piping using a welding on nipple, welding on plow or single cutting ring for piping diameters 8, 10 mm, or double cutting ring for piping diameters 12 or 14 mm.

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### Interconnection diagram



# **Technical specifications**

Operation pressure:

up to 42 MPa

Operation temperature:

up to 500 °C

Materials:

Manifold body Sealing ball of valve Stainless steel 1.4541 Stainless steel X105CrMo17 (1.4125), Ceramics Si<sub>3</sub>N<sub>4</sub>, Plastic PTFE 325, Vent screw Stainless steel 1.4034
O-ring Ethylene-propylene, Viton

Carrier rings Teflon

Dust cap Silicone rubber

Gland packing adjuster PTFE, Graphite, PEEK Welding nipple Carbon steel 1.0570

Steel 1.7715

Stainless steel 1.4541

Welding cone Carbon steel 1.0570

Steel 1.7715

Stainless steel 1.4541

Cutting ring Stainless steel 1.4571

Weight without accessories:

VS 100	0,35 kg
VS 110	0,32 kg
VS 120	0,45 kg
VS 200	1,1 kg

The scope of application of the valve set depending on temperature and pressure (Figure 1).

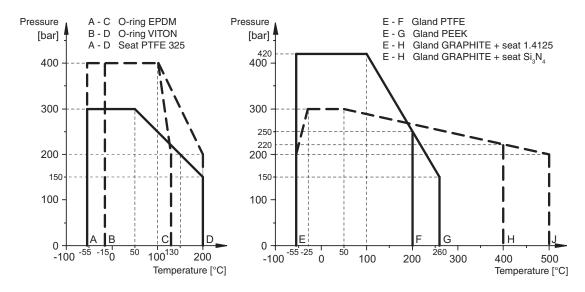


Table 2: Maximal values of temperature and pressure depending on material of the sealing seat (ball) and material of the valve spindle gland.

Material of the	Material of the sealing valve spindle gland									
sealing seat	EPDM		Viton (FPM)		PTFE		PEEK		Graphite	
(ball)	Pressure	Temperature	Pressure	Temperature	Pressure	Temperature	Pressure	Temperature	Pressure	Temperature
Steel 1.4125	40 MPa	100°C	40 MPa	100°C	42 MPa	100°C	42 MPa	100°C	30 MPa	100°C
(X105CrMo17)	20 MPa	130°C	20 MPa	200°C	25 MPa	200°C	15 MPa	260°C	22 MPa	400°C
Ceramics	40 MPa	100°C	40 MPa	100°C	42 MPa	100°C	42 MPa	100°C	30 MPa	100°C
Si <sub>3</sub> N <sub>4</sub>	20 MPa	130°C	20 MPa	200°C	25 MPa	200°C	15 MPa	260°C	20 MPa	500°C
Fluoroplastic	30 MPa	50°C	30 MPa	50°C	30 MPa	50°C	30 MPa	50°C	-	-
PTFE 325	20 MPa	130°C	15 MPa	200°C	15 MPa	200°C	15 MPa	200°C	-	-

VS 100   One-way vent valve	
v VS 120	
Code  Ode Nate thread M20x1.5 with tapered seat  Alle thread M20x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)  Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)  Male thread M20x1.5 (left)  Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)  Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)  Male thread 1/2*-14 NPT  Male thread 1/2*-14 NPT  11 Female thread 1/2*-14 NPT  12 Female thread 1/2*-14 NPT  13 Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)  Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316  Other  Code Version of outlet thread  Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)  Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)  Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)  Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)  Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)  Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)  Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)  Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)  Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316  Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316  Other  Code Sealing valve spindle material/ application  Oring / EPDM - pmax 40 MPa, for ammoniac, for air up to 95 °C (not suitable for DEMI water!)  Oring / EPDM - pmax 40 MPa, for water and DEMI water up to 100 °C, for air up to 200 °C  Gland / PTEE - pmax 42 MPa, Tmax=200 °C  Ode Sealing ball material  Other  Code Version of side thread  Male thread M20x1.5 manometric  Male thread M20x1.5 manometric  Male thread M20x1.5 manometric  Male thread M20x1.5 manometric	
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O2 Male thread M20x1.5 with tapered seat     O4 Male thread M16x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)     Male thread M20x1.5L (left)     O6 Male thread G1/2" manometric     O7 Male thread 1/2"-14 NPT     O8 Male thread 1/2"-14 NPT     O8 Male thread 1/4"-18 NPT     Female thread 1/4"-18 NPT     Female thread 1/4"-18 NPT     O8 Male thread 1/4"-18 NPT     O9 Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)     Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316     O0 Other     O1 Male thread M20x1.5 manometric     O2 Male thread M20x1.5 manometric     O1 Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)     Male thread M20x1.5L (left)     O8 Male thread 1/2"-14 NPT     O8 Male thread 1/2"-14 NPT     O8 Male thread 1/4"-18 NPT     Female thread 1/4"-18 NPT     Female thread 1/4"-14 NPT     O8 Male thread 1/4"-14 NPT     O9 Male thread 1/4"-14 NPT     O0 Male thread 1/4"-14 NPT     O1 Male thread 1/4 NPT     O1 Male thread 1/4"-14 NPT	
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Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316     Other     Version of outlet thread     In Male thread M20x1.5 manometric     Male thread M20x1.5 with tapered seat     Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)     Male thread M20x1.5.5 with tapered seat (only for cutting ring, diameter of 8 mm)     Male thread M20x1.5.5 with tapered seat (only for cutting ring, diameter of 18 mm)     Male thread 1/2"-14 NPT     Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316     Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316     Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316     Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316     Other     Sealing valve spindle material / application     Oring / EPDM - pmax 40 MPa, for ammoniac, for air up to 95 °C (not suitable for DEMI water!)     Oring / Vition - pmax 40 MPa, for water and DEMI water up to 100 °C, for air up to 200 °C     Gland / PTEF - pmax 42 MPa, Tmax=200 °C     Gland / Graphite - pmax 30 MPa, Tmax=500 °C     Other     Code Sealing ball material     Other     Code Sealing ball material     Other     OrinoNAL ACCESSORIES ONLY FOR VS 120     Version of side thread     Male thread M20x1.5 mith tapered seat	
Code Code Version of outlet thread  Olamore of Small entread M20x1.5 manometric  Male thread M20x1.5 with tapered seat Male thread M16x1.5 with tapered seat (only for cutting ring, diameter of 8 mm) Male thread M16x1.5 with tapered seat (only for cutting ring, diameter of 8 mm) Male thread M1/2" manometric Male thread 1/2"-14 NPT Male thread 1/4"-18 NPT Male thread 1/4"-18 NPT Male thread 1/2"-14 NPT Male thread M12x1.5 with tapered seat (only for cutting ring, diameter of 10 mm) Male thread M12x1.5 with tapered seat (only for cutting ring, diameter of 10 mm) Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm) Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm) Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm) Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm) Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)  Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316  Other  Code  Sealing valve spindle material / application  Oring / EPDM - pmax 40 MPa, for ammoniac, for air up to 95 °C (not suitable for DEMI water!)  Oring / Viton - pmax 40 MPa, for water and DEMI water up to 100 °C, for air up to 200 °C  Gland / PTFE - pmax 42 MPa, Tmax=200 °C  Gland / Graphite - pmax 30 MPa, Tmax=500 °C  Gland / Graphite - pmax 42 MPa, Tmax=260 °C  Other  Code  Sealing ball material  O Stainless steel 1.4125 up to 400 °C  Coramic Si3N4 up to 500 °C  Other  OPTIONAL ACCESSORIES ONLY FOR VS 120  Version of side thread  Male thread M20x1.5 mith tapered seat	
Code Version of outlet thread  • 01 Male thread M20x1.5 manometric  • 02 Male thread M20x1.5 with tapered seat  • 04 Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)  • 05 Male thread M20x1.5L (left)  • 06 Male thread 1/2"-14 NPT  • 08 Male thread 1/2"-14 NPT  • 11 Female thread 1/4"-18 NPT  • 12 Female thread 1/2"-14 NPT  • 13 Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)  • 22 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316  • 24 Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316  • 24 Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316  • 24 Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316  • 20 Oring / EPDM  • 1 O-ring / PIDM  • 2 Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316  • 20 Oring / EPDM  • 1 O-ring / PIDM  • 2 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316  • 20 Oring / EPDM  • 10 O-ring / PIDM  • 2 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316  • 20 Oring / EPDM  • 10 O-ring / PIDM  • 2 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316  • 20 Oring / EPDM  • 21 Oring / EPDM  • 22 Oring / EPDM  • 22 Oring	
O1 Male thread M20x1.5 manometric     O2 Male thread M20x1.5 with tapered seat     Male thread M16x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)     Male thread M20x1.5L (left)     Male thread 1/2"-14 NPT     Male thread 1/4"-18 NPT     Female thread 1/4"-18 NPT     Female thread 1/2"-14 NPT     Male thread M3x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)     Male thread M3x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)     Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316     Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316     Other  Code     Sealing valve spindle material / application     O O-ring / EPDM - pmax 40 MPa, for ammoniac, for air up to 95 °C (not suitable for DEMI water!)     Oring / Viton - pmax 40 MPa, for water and DEMI water up to 100 °C, for air up to 200 °C     Gland / PTFE - pmax 42 MPa, Tmax=200 °C     Gland / Graphite - pmax 42 MPa, Tmax=500 °C     Gland / PEEK - pmax 42 MPa, Tmax=260 °C     Other  Code     Sealing ball material     O Stainless steel 1.4125 up to 400 °C     Ceramic Si3N4 up to 500 °C     Plastic PTEE 325 up to 400 °C     Other  OPTIONAL ACCESSORIES ONLY FOR VS 120  Version of side thread     Male thread M20x1.5 manometric     Male thread M20x1.5 manometric     Male thread M20x1.5 manometric	
Male thread M20x1.5 with tapered seat     Male thread M16x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)     Male thread M20x1.5L (left)     Male thread G1/2" manometric     Male thread 1/2"-14 NPT     Male thread 1/4"-18 NPT     Temale thread 1/4"-18 NPT     Temale thread 1/4"-14 NPT     Male thread 1/4"-14 NPT     Male thread 1/4"-18 NPT     Temale thread 1/4"-18 NPT     Male thread 1/2"-14 NPT     Male thread M20x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)     Device 10 mm)     Male thread 1/2"-14 NPT     Male thread 1/2"-14 NPT     Male thread 1/2"-14 NPT     Male thread M20x1.5 with tapered seat     Male thread M20x1.5 with tapered seat	
o 04 Male thread M16x1.5 with tapered seat (only for cutting ring, diameter of 8 mm) Male thread M20x1.5L (left) Male thread G1/2" manometric Male thread 1/2"-14 NPT Male thread 1/4"-18 NPT Male thread 1/4"-18 NPT Female thread 1/2"-14 NPT Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm) Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316 Other  Code Sealing valve spindle material / application O-ring / FPDM - pmax 40 MPa, for ammoniac, for air up to 95 °C (not suitable for DEMI water!) Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316 Other  Code Sealing valve spindle material / application - pmax 40 MPa, for ammoniac, for air up to 95 °C (not suitable for DEMI water!) - pmax 40 MPa, for water and DEMI water up to 100 °C, for air up to 200 °C - pmax 42 MPa, Tmax=200 °C - pmax	
<ul> <li>Male thread M20x1.5L (left)</li> <li>Male thread G1/2" manometric</li> <li>Male thread 1/2"-14 NPT</li> <li>Male thread 1/4"-18 NPT</li> <li>Temale thread 1/4"-18 NPT</li> <li>Temale thread 1/4"-18 NPT</li> <li>Temale thread 1/4"-18 NPT</li> <li>Male thread 1/4"-18 NPT</li> <li>Temale thread 1/8"-14 NPT</li> <li>Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)</li> <li>Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316</li> <li>Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316</li> <li>Other</li> <li>Sealing valve spindle material / application</li> <li>O -ring / EPDM - pmax 40 MPa, for ammoniac, for air up to 95 °C (not suitable for DEMI water!)</li> <li>To-ring / Viton - pmax 40 MPa, for water and DEMI water up to 100 °C, for air up to 200 °C</li> <li>Gland / PTFE - pmax 42 MPa, Tmax=200 °C</li> <li>Gland / Graphite - pmax 30 MPa, Tmax=200 °C</li> <li>Gland / PEEK - pmax 42 MPa, Tmax=260 °C</li> <li>Other</li> <li>Stainless steel 1.4125 up to 400 °C</li> <li>Saaling ball material</li> <li>O Stainless steel 1.4125 up to 500 °C</li> <li>Plastic PTFE 325 up to 500 °C</li> <li>Up to 200 °C (not for sealing valve spindle Graphite and PEEK)</li> <li>Other</li> <li>OPTIONAL ACCESSORIES ONLY FOR VS 120</li> <li>Version of side thread</li> <li>Male thread M20x1.5 manometric</li> <li>Male thread M20x1.5 manometric</li> <li>Male thread M20x1.5 manometric</li> </ul>	
o 06 Male thread G1/2" manometric 07 Male thread 1/2"-14 NPT 08 Male thread 1/4"-18 NPT 19 11 Female thread 1/4"-18 NPT 10 12 Female thread 1/2"-14 NPT 10 13 Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm) 10 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316 10 Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316 11 Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316 12 Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316 13 Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316 14 Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316 15 Code Sealing valve spindle material / application 16 Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316 16 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316 17 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316 18 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316 19 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316 19 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316 19 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316 10 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316 10 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316 10 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316 10 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316 10 Double cutting ring for piping dia. 12 mm, cap nut with silver-plate	
o 88 Male thread 1/4"-18 NPT  o 11 Female thread 1/4"-18 NPT  o 12 Female thread 1/2"-14 NPT  o 13 Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)  o 22 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316  Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316  Other  Code Sealing valve spindle material / application  o Cring / EPDM - pmax 40 MPa, for ammoniac, for air up to 95 °C (not suitable for DEMI water!)  o pmax 40 MPa, for water and DEMI water up to 100 °C, for air up to 200 °C  o Gland / PTFE - pmax 42 MPa, Tmax=200 °C  o Gland / PEEK - pmax 42 MPa, Tmax=500 °C  Other  Code Sealing ball material  o O Stainless steel 1.4125 up to 400 °C  o Sealing ball material  o O Stainless steel 1.4125 up to 500 °C  o Plastic PTFE 325 up to 500 °C  other  Code OPTIONAL ACCESSORIES ONLY FOR VS 120  Version of side thread  Male thread M20x1.5 with tapered seat	
Female thread 1/4"-18 NPT	
o 12 Female thread 1/2"-14 NPT o 13 Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm) Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316 Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316 Oother  Code Sealing valve spindle material / application  O O-ring / EPDM - pmax 40 MPa, for ammoniac, for air up to 95 °C (not suitable for DEMI water!) Oring / Viton - pmax 40 MPa, for water and DEMI water up to 100 °C, for air up to 200 °C Gland / PTFE - pmax 42 MPa, Tmax=200 °C Gland / Graphite - pmax 30 MPa, Tmax=500 °C Gland / PEEK - pmax 42 MPa, Tmax=260 °C Other  Code Sealing ball material  O Stainless steel 1.4125 up to 400 °C Sainless steel 1.4125 up to 500 °C Plastic PTFE 325 up to 500 °C Other  OPTIONAL ACCESSORIES ONLY FOR VS 120 Version of side thread Male thread M20x1.5 manometric Male thread M20x1.5 with tapered seat	
<ul> <li>13 Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)</li> <li>22 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316</li> <li>24 Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316</li> <li>25 Other</li> <li>Code Sealing valve spindle material / application</li> <li>Oring / EPDM - pmax 40 MPa, for ammoniac, for air up to 95 °C (not suitable for DEMI water!)</li> <li>1 O-ring / Viton - pmax 40 MPa, for water and DEMI water up to 100 °C, for air up to 200 °C</li> <li>Gland / PTFE - pmax 42 MPa, Tmax=200 °C</li> <li>Gland / Graphite - pmax 30 MPa, Tmax=500 °C</li> <li>Gland / PEEK - pmax 42 MPa, Tmax=260 °C</li> <li>Other</li> <li>Code Sealing ball material</li> <li>O Stainless steel 1.4125 up to 400 °C</li> <li>3 Ceramic Si3N4 up to 500 °C</li> <li>Plastic PTFE 325 up to 200 °C (not for sealing valve spindle Graphite and PEEK)</li> <li>Other</li> <li>OPTIONAL ACCESSORIES ONLY FOR VS 120</li> <li>Version of side thread</li> <li>Male thread M20x1.5 manometric</li> <li>Male thread M20x1.5 with tapered seat</li> </ul>	
o 22 Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316	
<ul> <li>24 99 Other</li> <li>Code Sealing valve spindle material / application</li> <li>0 O-ring / EPDM Oring / Viton Gland / PTFE Gland / PEEK Other</li> <li>Code Sealing ball material Operators Operators</li></ul>	
99 Other  Code   Sealing valve spindle material / application  • 0   O-ring / EPDM   - pmax 40 MPa, for ammoniac, for air up to 95 °C (not suitable for DEMI water!)  • 1   O-ring / Viton   - pmax 40 MPa, for water and DEMI water up to 100 °C, for air up to 200 °C  • 5   Gland / PTFE   - pmax 42 MPa, Tmax=200 °C  • 6   Gland / Graphite   - pmax 30 MPa, Tmax=500 °C  7   Gland / PEEK   - pmax 42 MPa, Tmax=260 °C  9   Other  Code   Sealing ball material  • 0   Stainless steel 1.4125   up to 400 °C  • 3   Ceramic Si3N4   up to 500 °C  • 5   Plastic PTFE 325   up to 200 °C (not for sealing valve spindle Graphite and PEEK)  Other    OPTIONAL ACCESSORIES ONLY FOR VS 120  Code   Version of side thread  • B01   Male thread M20x1.5 manometric   Male thread M20x1.5 with tapered seat	
Code Sealing valve spindle material / application  Oring / EPDM - pmax 40 MPa, for ammoniac, for air up to 95 °C (not suitable for DEMI water!)  The pmax 40 MPa, for water and DEMI water up to 100 °C, for air up to 200 °C  pmax 40 MPa, for water and DEMI water up to 100 °C, for air up to 200 °C  pmax 40 MPa, for water and DEMI water up to 100 °C, for air up to 200 °C  pmax 42 MPa, Tmax=200 °C  pmax 30 MPa, Tmax=500 °C  pmax 42 MPa, Tmax=260 °C  pmax 42 MPa	
<ul> <li>O-ring / EPDM</li></ul>	
<ul> <li>Gland / PTFE - pmax 42 MPa, Tmax=200 °C</li> <li>Gland / Graphite - pmax 30 MPa, Tmax=500 °C</li> <li>Gland / PEEK - pmax 42 MPa, Tmax=260 °C</li> <li>Other</li> <li>Code Sealing ball material</li> <li>Stainless steel 1.4125 up to 400 °C</li> <li>Ceramic Si3N4 up to 500 °C</li> <li>Plastic PTFE 325 up to 200 °C (not for sealing valve spindle Graphite and PEEK)</li> <li>Other</li> <li>OPTIONAL ACCESSORIES ONLY FOR VS 120</li> <li>Wersion of side thread</li> <li>B01 Male thread M20x1.5 manometric</li> <li>Male thread M20x1.5 with tapered seat</li> </ul>	
Gland / Graphite - pmax 30 MPa, Tmax=500 °C     Gland / PEEK - pmax 42 MPa, Tmax=260 °C     Other      Code   Sealing ball material	
7 Gland / PEEK - pmax 42 MPa, Tmax=260 °C 9 Other  Code   Sealing ball material  • 0 Stainless steel 1.4125 up to 400 °C • 3 Ceramic Si3N4 up to 500 °C • 5 Plastic PTFE 325 up to 200 °C (not for sealing valve spindle Graphite and PEEK) 9 Other  OPTIONAL ACCESSORIES ONLY FOR VS 120  Code   Version of side thread  • B01 Male thread M20x1.5 manometric  • B02 Male thread M20x1.5 with tapered seat	
9 Other  Code   Sealing ball material  • 0 Stainless steel 1.4125 up to 400 °C  • 3 Ceramic Si3N4 up to 500 °C  • 1 Plastic PTFE 325 up to 200 °C (not for sealing valve spindle Graphite and PEEK)  • Other  OPTIONAL ACCESSORIES ONLY FOR VS 120  Code   Version of side thread  • B01 Male thread M20x1.5 manometric  • B02 Male thread M20x1.5 with tapered seat	
Code Sealing ball material  Stainless steel 1.4125 up to 400 °C  Ceramic Si3N4 up to 500 °C  Plastic PTFE 325 up to 200 °C (not for sealing valve spindle Graphite and PEEK)  Other  Code Version of side thread  Male thread M20x1.5 manometric  Male thread M20x1.5 with tapered seat	
Stainless steel 1.4125 up to 400 °C     Ceramic Si3N4 up to 500 °C     Plastic PTFE 325 up to 200 °C (not for sealing valve spindle Graphite and PEEK)     Other      Code Version of side thread     B01 Male thread M20x1.5 manometric     B02 Male thread M20x1.5 with tapered seat	
Ceramic Si3N4 up to 500 °C     Plastic PTFE 325 up to 200 °C (not for sealing valve spindle Graphite and PEEK)     Other      OPTIONAL ACCESSORIES ONLY FOR VS 120     Version of side thread     Male thread M20x1.5 manometric     Male thread M20x1.5 with tapered seat	
o 5 Plastic PTFE 325 up to 200 °C (not for sealing valve spindle Graphite and PEEK) Other  OPTIONAL ACCESSORIES ONLY FOR VS 120 Version of side thread  Male thread M20x1.5 manometric Male thread M20x1.5 with tapered seat	
Code Version of side thread  B01 Male thread M20x1.5 manometric B02 Male thread M20x1.5 with tapered seat	
Code Version of side thread  B01 Male thread M20x1.5 manometric  B02 Male thread M20x1.5 with tapered seat	
B01    Male thread M20x1.5 manometric     B02    Male thread M20x1.5 with tapered seat	
B02 Male thread M20x1.5 with tapered seat	
B04   Male thread M16x1.5 with tapered seat (only for cutting ring, diameter of 8 mm)	
B05   Male thread M20x1.5L (left)  Male thread M20x1.5L (left)	
B06   Male thread G1/2" manometric	
B07   Male thread 1/2"-14 NPT	
B08   Male thread 1/4"-18 NPT	
B10 Male thread M20x1.5 cylindrical (without neck for centring seal)	
B11 Female thread 1/4"-18 NPT	
B12 Female thread 1/2"-14 NPT  Make thread 1/2"-14 NPT  Make thread 1/2"-14 NPT	
B13    Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)      Double outling ring for piping dia 12 mm, one put with either plotted thread material AISL 316.	
<ul> <li>B22</li> <li>Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316</li> <li>B24</li> <li>Double cutting ring for piping dia. 14 mm, cap nut with silver-plated thread, material AISI 316</li> </ul>	
B99 Other	
OPTIONAL ACCESSORIES	
Code Reducing connection Material Only for thread codes	
P1 M20x1,5L / M20x1,5 Carbon steel 1.0715 (B) 01; 05; 10	
P2 M20x1,5L / M20x1,5 Stainless steel 1.4301 (B) 01; 05; 10	
P3 M20x1,5L / G1/2" Carbon steel 1.0715 (B) 05; 06	
P4 M20x1,5L / G1/2" Stainless steel 1.4021 (B) 05; 06	
P9 Other Code   Blinding nut and plug Material Only for thread codes	
Mo1 Nut M20x1.5 Stainless steel 1.4541 (B) 01; 10	
• M05   Nut M20x1.5L   Stainless steel 1.4541   (B) 05	
o M06   Nut G1/2"   Stainless steel 1.4541 (B) 06	
o M11 Plug 1/4"-18 NPT Stainless steel 1.4541 (B) 11	
M99 Other	

	Code	Nipples, cones and cutting rings	Only for thread code	es
•	V12	Nipple for welding dia. 12 (dia. 14)/dia. 8 mm with cap nut M20x1.5	(B) 01	
•	V14	Nipple for welding dia. 14/dia. 8 mm with cap nut M20x1.5	(B) 01	
•	K12	Cone for welding dia. 12/dia. 8 mm with cap nut M20x1.5	(B) 02	
•	K14	Cone for welding dia. 14/dia. 8 mm with cap nut M20x1.5	(B) 02	
•	Z08	Cutting ring for piping dia. 8 mm (±0.06 mm) with cap nut M16x1.5		
•	Z10	Cutting ring for piping dia. 10 mm (±0.07 mm) with cap nut M18x1.	5 (B) 13	
	Code	Nipple or cone material	Cutting ring material	
•	1	Carbon steel 1.0570	_	
•	2	Structural alloy steel 1.7715	_	
•	4	Stainless steel 1.4541	_	
•	5	_	Stainless steel 1.4571	
	9	Other	<del>_</del>	
	Code	Material of nut for nipples or cones	Material of nut for cutting ring	
•	0	Galvanized carbon steel 1.0715	Galvanized carbon steel 1.0715	
•	3	Stainless steel 1.4301	Stainless steel 1.4301	
١.	5	_	Stainless steel 1.4571, silver-plated	(not for Z10)
1	-		thread	(1101 101 210)
	9	Other	_	
	Code	Sealing (not for cones and cutting rings)		
•	CU	flat sealing, dia. 17/6.5 - 2 mm, copper		
•	AL	flat sealing, dia. 17/6.5 - 2 mm, aluminium		
	ОС	comb sealing, diameter. 17/6, 5 - 3,5 mm material stainless steel		
		1.4541		
	Code	Supplements		
•	GR	G-Rapid plus paste (50 g) against thread seizure and for easy inst		(not for oxygen)
•	LU	Lukosan M11 paste (50 g) for lubricating of O-rings, threads and for		
•	TT	Liquid teflon paste for high temperatures and for valves reassemble	ing	
•	KL	Control valve handle for high temperatures		
•	Q1	Material certificate of manifold body according to EN 10204, 3.1		
•	TZ RRT	Pressure test	ranja aamant auttar urbaaja aanault with a	ounalies)
l°.	RPO	Hand pipe cutter for pipe diameters from 1/4" to 1 1/2" (delivery of Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivery		
	RO6	Hand pipe bender with indication of the bending angle, for pipe dia		iiei)
l°.	RO12	Hand pipe bender with indication of the bending angle, for pipe dia Hand pipe bender with indication of the bending angle, for pipe dia		
	Code	Special version	IIIetei 12 IIIIII	·
	PL	Adjustment of valve handle for sealing	<u> </u>	
	KY	Degrease version for oxygen		(not for Graphite)
		ple of order: VS 100 0101 10 V1210(2x) CU(2x)	·	(Hot for Grapfille)
	LXaIII	pie of order. V3 100 0101 10 V1210(2x) CO(2x)		

<sup>• ...</sup> Ex stock version

 $<sup>^{\</sup>rm o}$  .. Marked version can be dispatched up to 5 working days

Туре	Description	
• VS 200	Two valve manifold	
Code	Version of inlet thread	
• 01	Male thread M20x1.5 manometric	
• 02 • 04	Male thread M20x1.5 with tapered seat Male thread M16x1.5 with tapered seat (only for	or cutting ring, diameter of 8 mm)
• 05	Male thread M20x1.5L (left)	of cutting fing, diameter of 6 min)
• 06	Male thread G1/2" manometric	
• 07	Male thread 1/2"-14 NPT	
• 08	Male thread 1/4"-18 NPT	
0 11	Female thread 1/4"-18 NPT	
o 12	Female thread 1/2"-14 NPT Male thread M18x1.5 with tapered seat (only for	or cutting ring, diameter of 10 mm)
0 22	Double cutting ring for piping dia. 12 mm, cap r	
o 24	Double cutting ring for piping dia. 14 mm, cap r	
99	Other	
Code	Version of outlet thread	
• 01 • 02	Male thread M20x1.5 manometric Male thread M20x1.5 with tapered seat	
04	Male thread M16x1.5 with tapered seat (only fo	or cutting ring, diameter of 8 mm)
• 05	Male thread M20x1.5L (left)	,
• 06	Male thread G1/2" manometric	
07	Male thread 1/2"-14 NPT	
o 08	Male thread 1/4"-18 NPT Female thread 1/4"-18 NPT	
• 12	Female thread 1/2"-14 NPT	
• 13	Male thread M18x1.5 with tapered seat (only for	
o 22	Double cutting ring for piping dia. 12 mm, cap r	
o 24 99	Double cutting ring for piping dia. 14 mm, cap r Other	nut with silver-plated thread, material AISI 316
Code	Sealing valve spindle material / application	
• 0		IPa, for ammoniac, for air up to 95 °C (not suitable for DEMI water!)
• 1	O-ring / Viton - pmax 40 N	1Pa, for water and DEMI water up to 100 °C, for air up to 200 °C
o 5		IPa, Tmax=200 °C
o 6		IPa, Tmax=500 °C
7 9	Other - pmax 42 N	IPa, Tmax=260 °C
Code	Sealing ball material	
• 0	Stainless steel 1.4125 up to 400 °C	
° 3	Ceramic Si3N4 up to 500 °C	
° 5	Plastic PTFE 325 up to 200 °C Other	C (not for sealing valve spindle Graphite and PEEK)
Code	Version of side thread	
• B01	Male thread M20x1.5 manometric	
• B02	Male thread M20x1.5 with tapered seat	
• B04	Male thread M16x1.5 with tapered seat (only fo	or cutting ring, diameter of 8 mm)
<ul><li>B05</li><li>B06</li></ul>	Male thread M20x1.5L (left) Male thread G1/2" manometric	
• B07	Male thread 1/2"-14 NPT	
• B08	Male thread 1/4"-18 NPT	
• B10	Male thread M20x1.5 cylindrical (without neck	for centring seal)
• B11 • B12	Female thread 1/4"-18 NPT Female thread 1/2"-14 NPT	
• B13	Male thread M18x1.5 with tapered seat (only for	or cutting ring, diameter of 10 mm)
• B22	Double cutting ring for piping dia. 12 mm, cap r	
• B24	Double cutting ring for piping dia. 14 mm, cap r	nut with silver-plated thread, material AISI 316
B99	Other OPTIONAL ACCESSORIES	
Code	Reducing connection Material	Only for thread codes
• P1	M20x1,5L / M20x1,5 Carbon stee	
• P2	M20x1,5L / M20x1,5 Stainless st	eel 1.4301 (B) 01; 05; 10
• P3	M20x1,5L / G1/2" Carbon stee	( ) )
• P4 P9	M20x1,5L / G1/2" Stainless st	eel 1.4021 (B) 05; 06
Code	Other   Blinding nut and plug Material	Only for thread codes
• M01	Nut M20x1.5 Stainless st	
• M05	Nut M20x1.5L Stainless st	eel 1.4541 (B) 05
• M06	Nut G1/2" Stainless st	
o M11 M99	Plug 1/4"-18 NPT Stainless st	eel 1.4541 (B) 11
Code	Nipples, cones and cutting rings	Only for thread codes
• V12	Nipple for welding dia. 12 (dia. 14)/dia. 8 mm w	ith cap nut M20x1.5 (B) 01
• V14	Nipple for welding dia. 14/dia. 8 mm with cap n	ut M20x1.5 (B) 01
	Cone for welding dia. 12/dia. 8 mm with cap nu	
• K12		
• K14	Cone for welding dia. 14/dia. 8 mm with cap nu	
		th cap nut M16x1.5 (B) 04

	Code	Nipple or cone material	Cutting ring material	
	1	Carbon steel 1.0570		
	2	Structural alloy steel 1.7715	_	
	4	Stainless steel 1.4541	<u> </u>	
	5		Stainless steel 1.4571	
ľ	9	Other	Starriess steer 1.437 1	
	Code	Material of nut for nipples or cones	Material of nut for cutting ring	
	0	Galvanized carbon steel 1.0715	Galvanized carbon steel 1.0715	
	3	Stainless steel 1.4301	Stainless steel 1.4301	
	3	Stairliess steel 1.4501	Stainless steel 1.4571, silver-plated	
•	5	_	thread	(not for Z10)
1	9	Other	lillead	
	Code	Sealing (not for cones and cutting rings)	·	
•	CU	flat sealing, dia. 17/6.5 - 2 mm, copper		
	AL	flat sealing, dia. 17/6.5 - 2 mm, aluminium		
	OC	comb sealing, diameter. 17/6, 5 - 3,5 mm material stainless	stool 1 4E41	
			steer 1.4541	
•	<b>Code</b> GR	Supplements		(not for oxygen)
•	Code	Supplements G-Rapid plus paste (50 g) against thread seizure and for eas	sy installation	(not for oxygen)
•	<b>Code</b> GR	Supplements	sy installation and for oxygen application	(not for oxygen)
•	Code GR LU	Supplements G-Rapid plus paste (50 g) against thread seizure and for eas Lukosan M11 paste (50 g) for lubricating of O-rings, threads Liquid teflon paste for high temperatures and for valves reas	sy installation and for oxygen application	(not for oxygen)
•	GR LU TT	Supplements G-Rapid plus paste (50 g) against thread seizure and for eas Lukosan M11 paste (50 g) for lubricating of O-rings, threads	sy installation and for oxygen application sembling	(not for oxygen)
•	Code GR LU TT KL	Supplements  G-Rapid plus paste (50 g) against thread seizure and for east Lukosan M11 paste (50 g) for lubricating of O-rings, threads Liquid teflon paste for high temperatures and for valves reast Control valve handle for high temperatures	sy installation and for oxygen application sembling	(not for oxygen)
•	Code GR LU TT KL Q1	Supplements  G-Rapid plus paste (50 g) against thread seizure and for east Lukosan M11 paste (50 g) for lubricating of O-rings, threads Liquid teflon paste for high temperatures and for valves reast Control valve handle for high temperatures  Material certificate of manifold body according to EN 10204,	sy installation and for oxygen application sembling 3.1	, ,,,
•	Code GR LU TT KL Q1 TZ	Supplements G-Rapid plus paste (50 g) against thread seizure and for east Lukosan M11 paste (50 g) for lubricating of O-rings, threads Liquid teflon paste for high temperatures and for valves reast Control valve handle for high temperatures Material certificate of manifold body according to EN 10204, Pressure test Hand pipe cutter for pipe diameters from 1/4" to 1 1/2" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8"	sy installation and for oxygen application sembling 3.1  ery of replacement cutter wheels consult with livery of replacement blades consult with sup	supplier)
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•	Code GR LU TT KL Q1 TZ RRT RPO	Supplements G-Rapid plus paste (50 g) against thread seizure and for east Lukosan M11 paste (50 g) for lubricating of O-rings, threads Liquid teflon paste for high temperatures and for valves reast Control valve handle for high temperatures Material certificate of manifold body according to EN 10204, Pressure test Hand pipe cutter for pipe diameters from 1/4" to 1 1/2" (delivited)	sy installation and for oxygen application sembling 3.1  ery of replacement cutter wheels consult with livery of replacement blades consult with supple diameter 6 mm	supplier)
•	Code GR LU TT KL Q1 TZ RRT RPO RO6	Supplements G-Rapid plus paste (50 g) against thread seizure and for east Lukosan M11 paste (50 g) for lubricating of O-rings, threads Liquid teflon paste for high temperatures and for valves reast Control valve handle for high temperatures Material certificate of manifold body according to EN 10204, Pressure test Hand pipe cutter for pipe diameters from 1/4" to 1 1/2" (delivent Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivent Hand pipe bender with indication of the bending angle, for pipe diameters from 1/8" to 1 5/8" (delivent Hand pipe bender with indication of the bending angle, for pipe diameters from 1/8" to 1 5/8" (delivent Hand pipe bender with indication of the bending angle, for pipe Special version	sy installation and for oxygen application sembling 3.1  ery of replacement cutter wheels consult with livery of replacement blades consult with supple diameter 6 mm	supplier)
•	Code GR LU TT KL Q1 TZ RRT RPO RO6 RO12 Code PL	G-Rapid plus paste (50 g) against thread seizure and for east Lukosan M11 paste (50 g) for lubricating of O-rings, threads Liquid teflon paste for high temperatures and for valves reast Control valve handle for high temperatures Material certificate of manifold body according to EN 10204, Pressure test  Hand pipe cutter for pipe diameters from 1/4" to 1 1/2" (delived Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delived Hand pipe bender with indication of the bending angle, for piecial version  Adjustment of valve handle for sealing	sy installation and for oxygen application sembling 3.1  ery of replacement cutter wheels consult with livery of replacement blades consult with supple diameter 6 mm	supplier)
•	Code GR LU TT KL Q1 TZ RRT RPO RO6 RO12 Code PL KY	Supplements G-Rapid plus paste (50 g) against thread seizure and for east Lukosan M11 paste (50 g) for lubricating of O-rings, threads Liquid teflon paste for high temperatures and for valves reast Control valve handle for high temperatures Material certificate of manifold body according to EN 10204, Pressure test Hand pipe cutter for pipe diameters from 1/4" to 1 1/2" (delived Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delived Hand pipe bender with indication of the bending angle, for piectal version Adjustment of valve handle for sealing Degrease version for oxygen	sy installation and for oxygen application sembling 3.1  ery of replacement cutter wheels consult with livery of replacement blades consult with supple diameter 6 mm	supplier)
•	Code GR LU TT KL Q1 TZ RRT RPO RO6 RO12 Code PL KY Code	Supplements G-Rapid plus paste (50 g) against thread seizure and for east Lukosan M11 paste (50 g) for lubricating of O-rings, threads Liquid teflon paste for high temperatures and for valves reast Control valve handle for high temperatures Material certificate of manifold body according to EN 10204, Pressure test Hand pipe cutter for pipe diameters from 1/4" to 1 1/2" (delived Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delived Hand pipe bender with indication of the bending angle, for piecial version Adjustment of valve handle for sealing Degrease version for oxygen Fastening bolts for mounting manifold	sy installation and for oxygen application sembling  3.1  ery of replacement cutter wheels consult with livery of replacement blades consult with supple diameter 6 mm pe diameter 12 mm	supplier) blier)
•	Code GR LU TT KL Q1 TZ RRT RPO RO6 RO12 Code PL KY Code SR4	Supplements G-Rapid plus paste (50 g) against thread seizure and for east Lukosan M11 paste (50 g) for lubricating of O-rings, threads Liquid teflon paste for high temperatures and for valves reast Control valve handle for high temperatures Material certificate of manifold body according to EN 10204, Pressure test Hand pipe cutter for pipe diameters from 1/4" to 1 1/2" (delived Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delived Hand pipe bender with indication of the bending angle, for piectal version Adjustment of valve handle for sealing Degrease version for oxygen	sy installation and for oxygen application sembling  3.1  ery of replacement cutter wheels consult with livery of replacement blades consult with supple diameter 6 mm pe diameter 12 mm	supplier) olier)

<sup>• ...</sup> Ex stock version

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