

VS 300, VS 500, VS 501

Three and Five Valve Manifolds

- Operating pressure up to 42 MPa.
- Operating temperature up to 500 °C.
- Direct installation on a pressure sensor or between impulse piping.
- Sealing component selection from different material: Graphite, PTFE, PEEK, Viton, EPDM.
- Gland packing adjuster.
- Seat diameter 4 mm.
- Drain piping on the side of the manifold body enables arbitrary position of the manifold.
- EC Type Examination Certificate acc. to Directive PED 97/23/EC.



Application

The three valve manifold VS 300 and five valve manifolds VS 500 and VS 501 are used to shut off supply of a pressure medium for disconnection of the pressure or pressure difference sensor and interconnection of both input chambers of the pressure difference sensor when resetting zero on operational pressure. In addition, the five valve manifold allows deaeration and mud discharge from the impulse piping.

Description

The manifold is designed for direct installation on a pressure difference sensor with spacing of inputs 54 mm or for installation between impulse piping. The whole manifold 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 quenched stainless steel (1.4125), ceramics (Si_3N_4) 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 connection of the impulse piping using a welding on nipple, welding on plow or single cutting ring for piping diameters 8, 10, or double cutting ring for piping diameters 12 or 14 mm.

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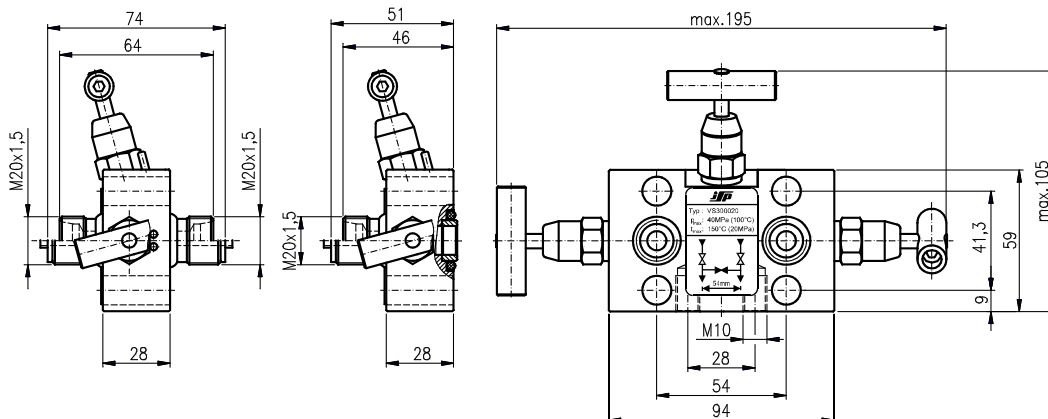
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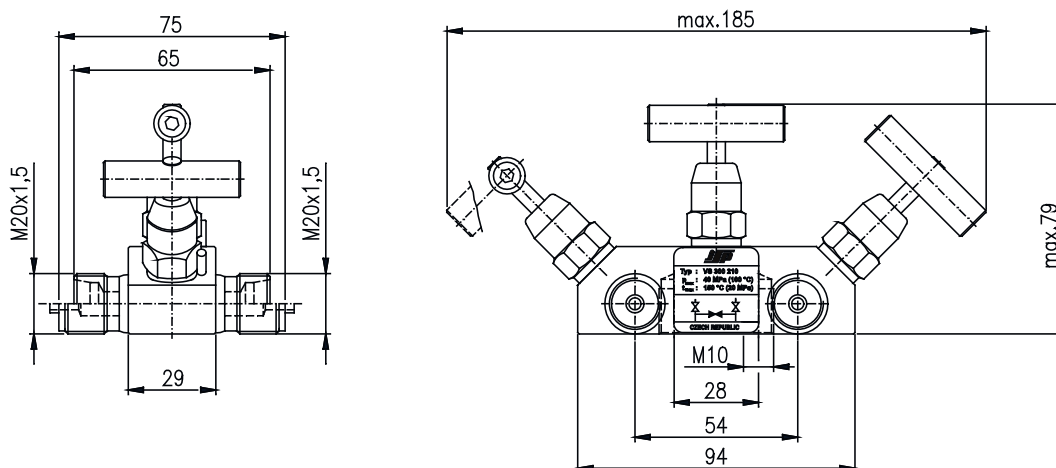
Dimensional drawings

Three-way manifold VS 300

Version for mounting on differential pressure transmitter

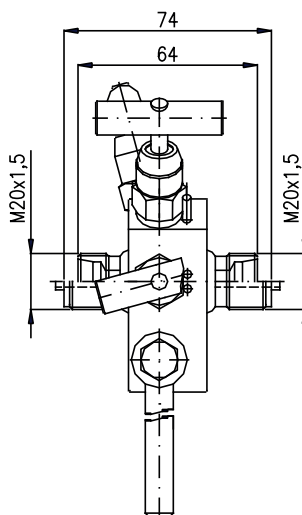


Version for mounting between impulse piping

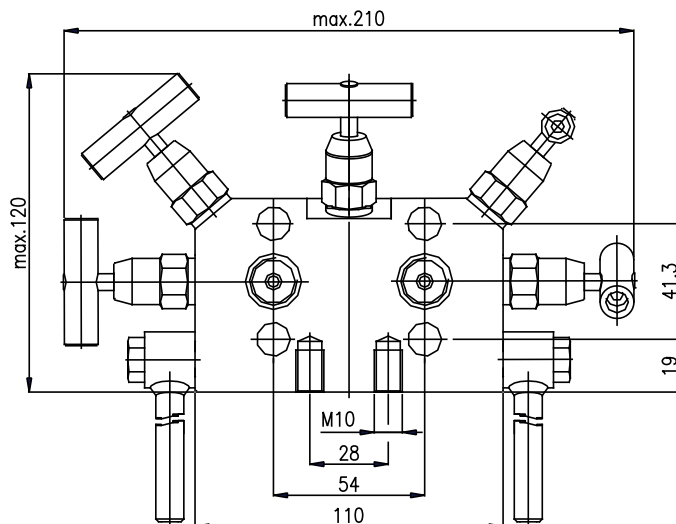
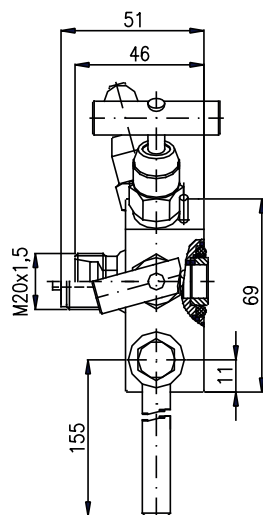


Five-way Manifold VS 500, VS 501

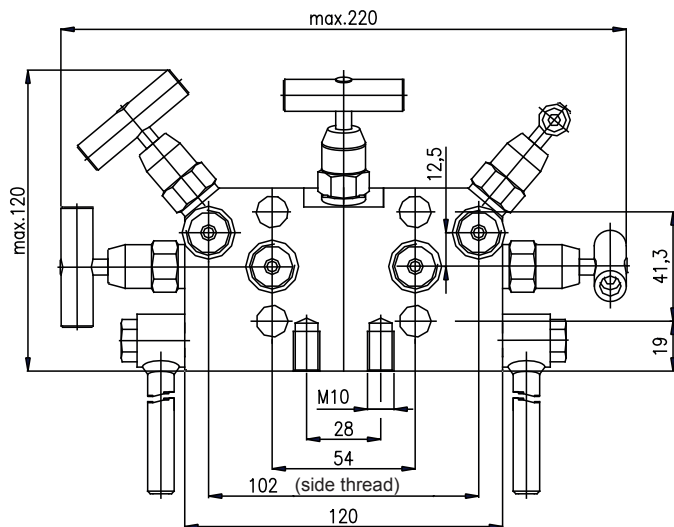
Version for mounting between pulse piping



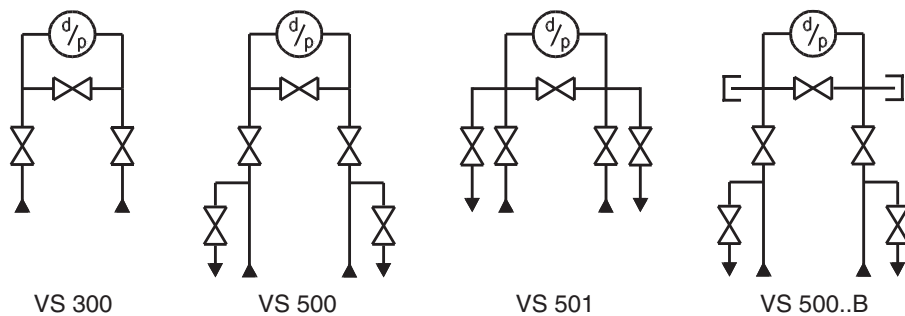
Version for mounting on differential pressure transmitter



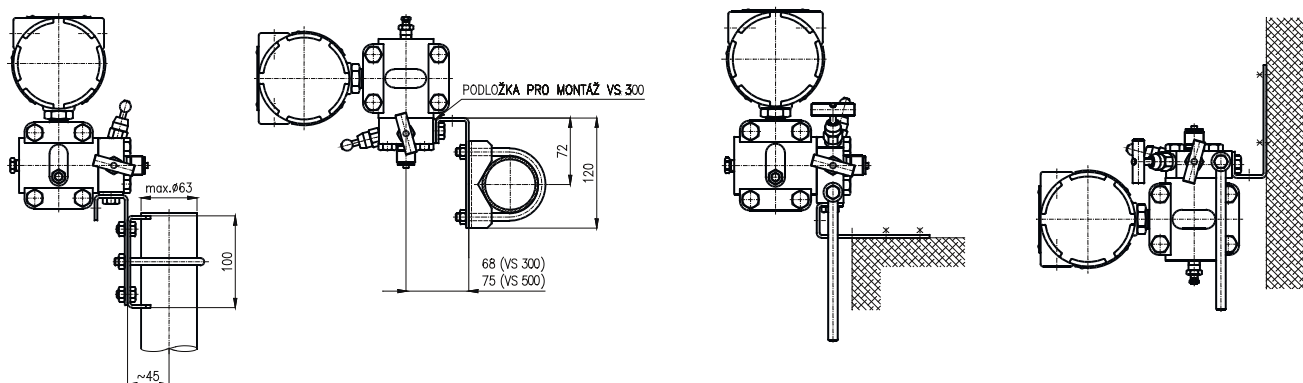
Five-way Manifold VS 500..B



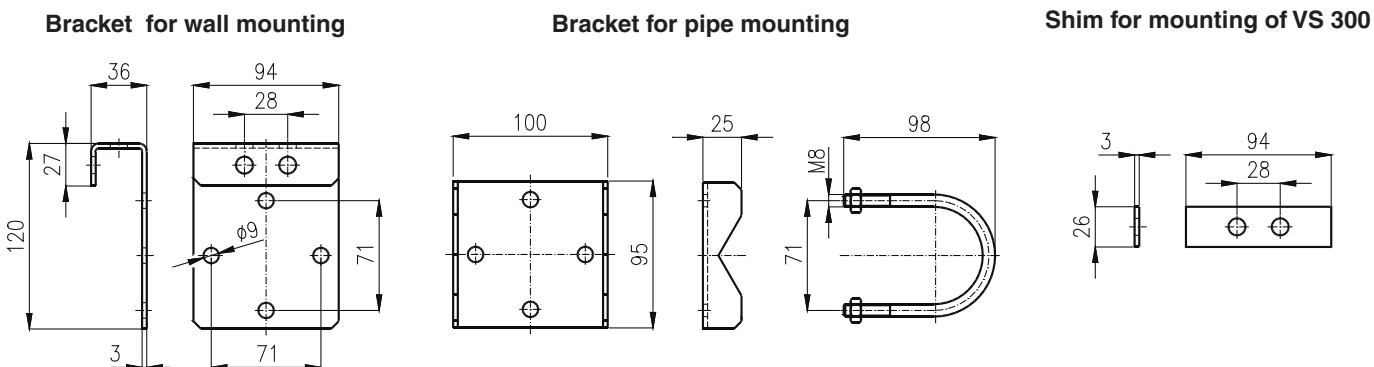
Interconnection diagram



Examples of mounting with brackets



Examples of mounting of the manifolds in operation



Technical specifications

Operation pressure:

up to 42 MPa

Operation temperature:

up to 500 °C

Spacing of inputs:

54 mm

Supplementary parameters

Materials:

Manifold body	Stainless steel 1.4541
Sealing ball of valve	Stainless steel X105CrMo17 (1.4125), Ceramics Si ₃ N ₄ , Plastic PTFE 325,
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 300	1,5 kg
VS 500	2,2 kg
VS 501	2,2 kg
holder for wall	0,5 kg
holder for pipe	0,9 kg

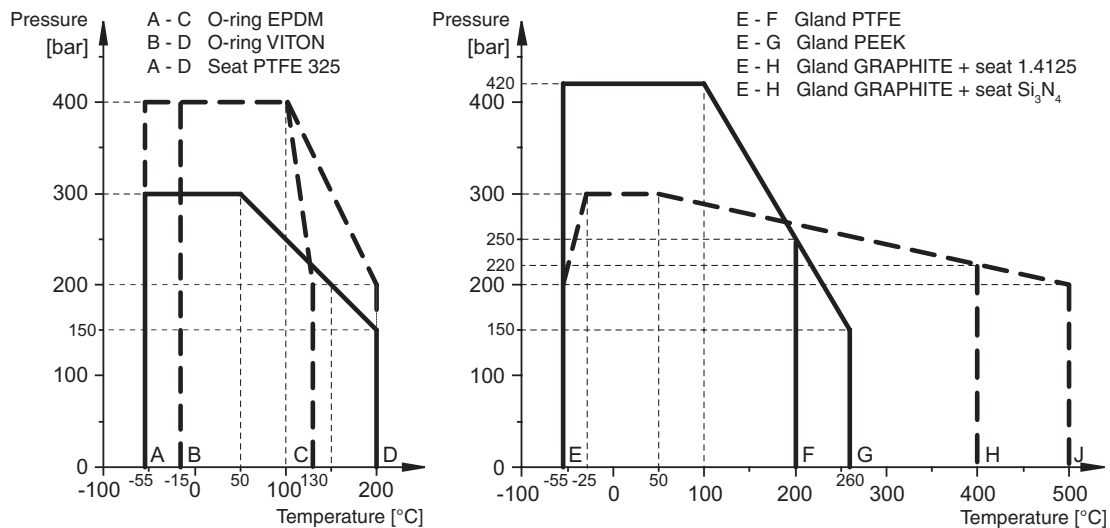


Figure 1: The scope of application of the manifold depending on temperature and pressure.

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

Type	Description		
• VS 300	Three-way manifold with 54 mm process connection pitch (see interconnection diagram)		
• VS 500	Five-way manifold with 54 mm process connection pitch (see interconnection diagram)		
◦ VS 501	Five-way manifold with 54 mm process connection pitch (see interconnection diagram)		
Code	Version of inlet thread		
• 01	Male thread M20x1.5 manometric		
• 02	Male thread M20x1.5 with tapered seat		
◦ 04	Male thread M16x1.5 with tapered seat (only for 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		
◦ 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		
99	Other		
Code	Version of outlet thread		
• 00	Direct mounting on flange of differential pressure sensor with 54 mm process connection pitch		
◦ 01	Male thread M20x1.5 manometric		
◦ 02	Male thread M20x1.5 with tapered seat		
◦ 04	Male thread M16x1.5 with tapered seat (only for 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		
◦ 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		
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)		
9	Other		
OPTIONAL ONLY FOR VERSION VS 500			
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 for cutting ring, diameter of 8 mm)		
B05	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		
B13	Male thread M18x1.5 with tapered seat (only for cutting ring, diameter of 10 mm)		
B22	Double cutting ring for piping dia. 12 mm, cap nut with silver-plated thread, material AISI 316		
B24	Double cutting ring for piping dia. 14 mm, cap 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 steel 1.0715	01; 05
• P2	M20x1,5L / M20x1,5	Stainless steel 1.4301	01; 05
• P3	M20x1,5L / G1/2"	Carbon steel 1.0715	05; 06
• P4	M20x1,5L / G1/2"	Stainless steel 1.4021	05; 06
P9	Other		
Code	Nipples, cones and cutting rings	Only for thread codes	
• V12 ..	Nipple for welding dia. 12 (dia. 14) / dia. 8 mm with cap nut M20x1.5	01	
• V14 ..	Nipple for welding dia. 14 / dia. 8 mm with cap nut M20x1.5	01	
• K12 ..	Cone for welding dia. 12 / dia. 8 mm with cap nut M20x1.5	02	
• K14 ..	Cone for welding dia. 14 / dia. 8 mm with cap nut M20x1.5	02	
• Z08 ..	Cutting ring for piping dia. 8 mm (±0.06 mm) with cap nut M16x1.5	04	
• Z10 ..	Cutting ring for piping dia. 10 mm (±0.07 mm) with cap nut M18x1.5	13	

• ... Ex stock version

◦ .. Marked version can be dispatched up to 5 working days

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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	—
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
• 5	—	Stainless steel 1.4571, silver-plated thread (not for Z10)
• 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	
• OC	comb sealing, diameter. 17/6, 5 - 3,5 mm material stainless steel 1.4541	
Code	Fastening bolts for mounting of manifold to differential pressure sensor	
• SR1	4 pcs of bolts 7/16"-20 UNF x 7/4" (45 mm), galvanized	
• SR2	4 pcs of bolts 7/16"-20 UNF x 6/4" (38 mm), galvanized, for sensor 2051,3051 with traditional flange	
• SR3	4 pcs of bolts 7/16"-20 UNF x 2 3/4" (70 mm), galvanized, for sensor 3051 with coplanar flange	
• SR5	4 pcs of bolts M10x45, galvanized	
• SR6	4 pcs of bolts M10x45, stainless steel	
Code	Mounting bracket	
• DS31	Bracket for wall mounting VS300	
• DS51	Bracket for wall mounting VS500, VS501	
• DT31	Bracket for pipe mounting (max. diameter 63 mm) with clamp for VS300	
• DT51	Bracket for pipe mounting (max. diameter 63 mm) with clamp for VS500, VS501	
Code	Supplements	
• GR	G-Rapid plus paste (50 g) against thread seizure and for easy installation (not for oxygen)	
• LU	Lukosan M11 paste (50 g) for lubricating of O-rings, threads and for oxygen application	
• TT	Liquid teflon paste for high temperatures and for valves reassembling	
• KL	Control valve handle for high temperatures	
• Q1	Material certificate of manifold body according to EN 10204, 3.1	
• TZ	Pressure test	
◦ RRT	Hand pipe cutter for pipe diameters from 1/4" to 1 1/2" (delivery of replacement cutter wheels consult with supplier)	
◦ RPO	Hand end deburrer for pipe diameters from 1/8" to 1 5/8" (delivery of replacement blades consult with supplier)	
◦ RO6	Hand pipe bender with indication of the bending angle, for pipe diameter 6 mm	
◦ RO12	Hand pipe bender with indication of the bending angle, for pipe diameter 12 mm	
Code	Special version	
PL	Adjustment of valve handle for sealing	
KY	Degrease version for oxygen (not for Graphite)	
Example of order: VS 300 0101 10 V1210(2x) CU(2x)		
VS 500 0200 13 Z1250		

• ... Ex stock version

◦ .. Marked version can be dispatched up to 5 working days

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