3/2 Piloted Poppet Valve Datasheet

Safety Integrity Level
SIL2
IEC 61508 / IEC 61511

VD3 Series

Up to 450 L/min

Up to 355 Barg

Zero Leakage (< 1 drop per minute)

Aisi 316L stainless steel

Exotic materials on request

• Technical specification

Materials of construction

Body **SS316L (Special version on request)***

Internals **SS316L – 17/4 PH**

Seals **NBR – HNBR – VITON – FLUOROSILICON - PTFE**

Screws **A4-70**

***exotic materials i.e. 6Mo , Hastelloy® C276 , Inconel® 625 …**

Media

Mineral oils (advised max 500 cst)

Water glycol

(Please contact for special Media and viscosity range)

Working pressure

355 BARG - NBR – VITON – HNBR

250 BARG - FLUOROSILICON

Pneumatic / hydraulic low pressure pilot version (Max pilot pressure 12 barg)

Working Ambient Temperature and environment

NBR	**-30°C /**	**+80°C**
HNBR	**-40°C /**	**+80°C**
VITON	**-20°C /**	**+120°C**
FLUOROSILICON	**-60°C /**	**+60°C**

Max Relative Humidity 100% , Direct exposure to sunlight,

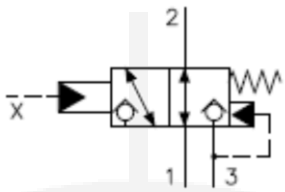
Atmospheric Pressure 500 mbar ÷ 1200mbar

Installation

Minimum level Oil cleanliness requested 19/15 ISO 4466

• Port Configurations

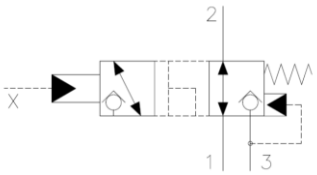
VD3 pilot valves series are universal 3 ports 2 positions spring return valves.



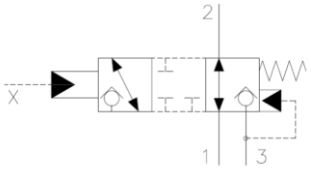
All ports accept fluid in pressure and can be used as per Normally Open or Normally Close function:

- **Normally Open**
  Pressure Line PORT1 Actuator Line PORT2 Discharge Line PORT3
  The line "3" (high pressure) open on the line "2" (actuator) and the line "1" is in communication with the discharge
- **Normally Close**
  Pressure Line PORT3 Actuator Line PORT2 Discharge Line PORT1
  The line "3" normally closed (high pressure), the line "2" (actuator) in communication with the line "1" (discharge)

The valve are available in open ports or close ports (block before bleed) configuration.



Open ports



close ports

• STORAGE AND TRASPORTATION

	NBR-HNBR	VITON	FLUOROSILICON
Min / Max Temperature [°C]	-40 °C ÷ +80 °C	-20 °C ÷ +120 °C	-60 °C ÷ +60°C
Max Relative Humidity	100%	100%	100%
Exposure to sunlight	admitted	admitted	admitted
Dust Contamination	19/15 ISO 4466 (25µ absolutes)	19/15 ISO 4466 (25µ absolutes)	19/15 ISO 4466 (25µ absolutes)
Atmospheric Pressure	500mbar ÷ 1200mbar	500mbar ÷ 1200mbar	500mbar ÷ 1200mbar

• Coding information

A								COSTANT
VD3								SERIES
	X	SS316L						EXTERNAL MATERIAL
	Z	SPECIAL						
		06	DN6					NOMINAL DIAMETER SIZE
		10	DN10					
		13	DN13					
		16	DN16					
		20	DN20					
		25	DN25					
		99	SPECIAL					
			1	HIGH PRESSURE (SUBBASE PILOT)				PILOT
			2	HIGH PRESSURE (EXTERNAL PILOT)				
			3	LOW PRESSURE				
			Z	SPECIAL				
				N	NBR			SEAL MATERIAL
				H	HNBR			
				V	VITON			
				F	FLUOROSILICON			
				Z	SPECIAL			
					1	SUBBASE		MOUNTING/CONNECTIONS
					2	¼” NPT (DN6)		
					2	3/8” NPT (DN10)		
					2	1/2” NPT (DN13)		
					2	3/4” NPT (DN16)		
					2	1” NPT (DN20/25)		
					3	¼” BSPP (DN6)		
					3	3/8” BSPP (DN10)		
					3	1/2” NPT BSPP (DN13)		
					3	3/4” NPT BSPP (DN16)		
					3	1” BSPP (DN20/25)		
					Z	SPECIAL		
						A	OPEN PORTS (negative coverage)	SPOOL VERSION
						B	CLOSED PORTS (positive coverage – block before bleed)	
							JJ	SEQUENTIAL NUMBER FOR SPECIAL VERSIONS
AVD3	X	10	1	N	1	A	00	EXAMPLE
3/2 VALVE BODY AISI 316L DN 10 mm SUBBASE PILOT – NBR SEALS – SUBBASE MOUNTING – OPEN CENTRE								

Via Isacchi, 3 - 42124 Reggio Emilia (Italy) - Tel. (0522) 305902 - 381830 • Fax (0522) 381831 • e-mail: oleoreva@oleoreva.it
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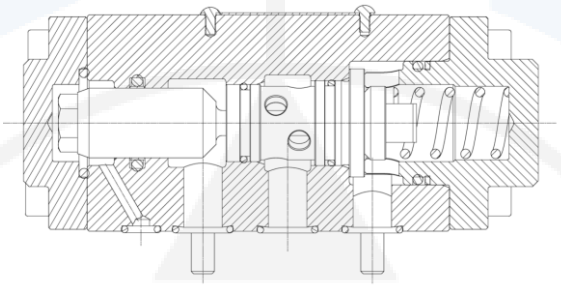
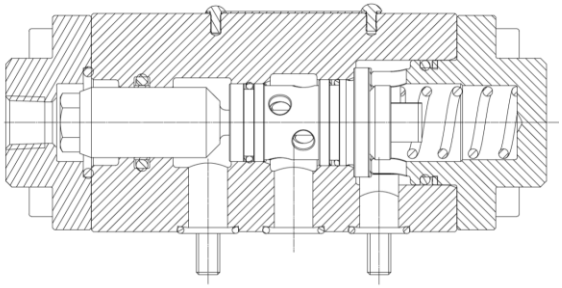
• PILOT OPERATORS

The drive of the valve is obtained by means of hydraulic pilot form the mouth "X", which can be a plate (TYPE A) or external tube (TYPE B).

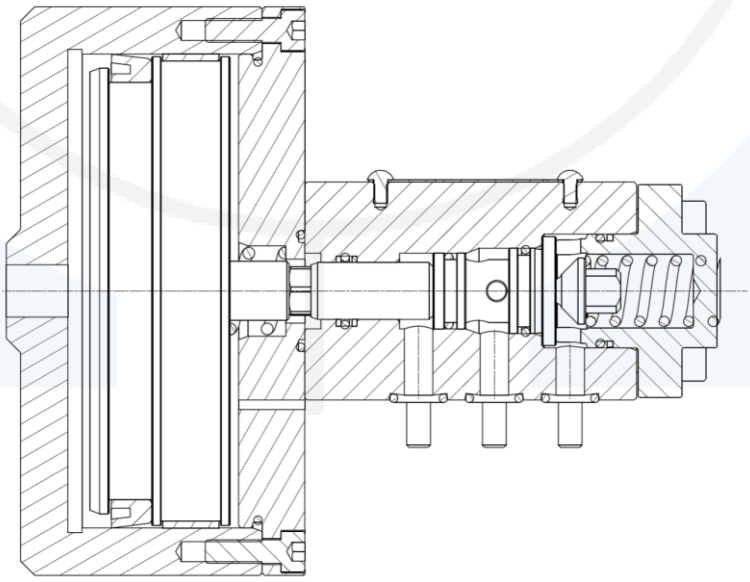
- **TYPE A (INTERNAL PILOTING)**



- **TYPE B (EXTERNAL PILOTING)**



- **TYPE C (EXTERNAL PILOTING – LOW PRESSURE)**



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• SIL 3 CERTIFICATE

TÜVRheinland®

Certificate of Conformity No.: 28716211

Manufacturer: Oleodinamica Reva S.r.l.
Via Isacchi, 3
I-42124 Reggio Emilia (RE)

Specifications: IEC 61508-1÷7:2010

Product: 3 way hydraulic operated valves

Type: Series VD3

RESULT:
As per the TÜV Rheinland Italia Report No. FS 28716211 Rev. 0, we declare that the product meets the below requirements:

IEC 61508: 2010, part 1 to 7

Functional Safety of electrical/electronic/programmable electronic safety related systems; Type A, Low Demand Mode, HFT=0

Safety Function	λ_D [1/h]	$\lambda_{DD(PS)}$ [1/h]	SFF (without PST)	SFF (with PST)	Systematic Capability
Case 1a) Valve N. C.; X not piloted	9,15E-09	9,05E-09	>60 %	>99 %	2
Case 1b) Valve N. C.; X piloted	1,81E-07	1,79E-07	>60 %	>99 %	2
Case 2a) Valve N. O.; X piloted	1,65E-07	1,63E-07	>60 %	>99 %	2
Case 2b) Valve N. O.; X not piloted	9,28E-08	9,19E-08	<60 %	>99 %	2

The above values are compatible with SIL 2.

The requirements of minimum hardware fault tolerance (HFT) according to par. 11.4.3 of IEC 61511-1 have to be observed.

For further details, see what written in the Safety Manual.

Expiry date: **2019-07-31**

--- End document

Location Milan
Date 2016-07-15

Diego Sirtori
Business Stream Manager

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I-20010 Pogliano Milanese

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