2/2-Ways Lacquer Valves VNT-200x

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1. Introduction

APSON 2/2-Ways Lacquer Valves 200x are pneumatically operatable compact needle valves made of inoxidable steel. They fulfill their function together with modules intended therefore e.g. valve blocks, lacquer distributors, sprayheads etc. They are designed for applications with aggressive non-granular fluid media, e.g. lacquers, solvents, caustic solutions, a.o.

APSON 2/2-Ways Lacquer Valves (e.g. 2000, 2003 and 2002)

2. Features

- Fast error recognition in the lacquer system by directly evident switching status.
- Early detecting of leakage of the medium as well as the pneumatics air.
- Mechanical operation of the valve with a special tool possible.
- Delimitation of the flow rate by variable operating path.
- Fast valve exchange, and efficient maintenance and spareparts management.
- Small pressure losses between medium inlet and medium outlet.
- Very good rinsing characteristics, because of APSON deadroom-free valve technology.
- Very compact design.

3. Structure and Function

The valves are built from the drive in the pneumatics chamber, a seal packing in the intermediate chamber and the medium seals in the medium chamber (actually the valve). Furthermore the valves have a mechanical visual display for the switching status.

APSON 2/2-Ways Lacquer Valves (e.g. 2000, 2003 and 2002)

The *drive* consists of the pneumatic cylinder, a piston with sealing diaphragm, the valve needle and the pre-compressed spring for closing the valve, if the valve is not addressed with compressed air. The piston and the valve needle are rigidly connected together.

The *seal packing* (medium barrier) consists of several seals, which manage the sealing at the valve needle by means of a pre-compressed spring, on the one hand to the medium chamber and on the other hand to the pneumatics chamber.

The *medium seal* consists of the valve needle head and seals which withstand aggressive media. All seals of the valve must therefore be adapted to the media which are to be used.

The mechanical *visual display* consists of a display pin for the switching status of the valve. The display pin is rigidly connected with the valve needle. The valve can be switched by pulling on the display pin manually. Optionally the possibility exists for sensing electrically the status of the valve by means of a proximity sensor.

In the screwed in status with the appropriate valve block, the valve forms one discrete medium chamber each with a radial inlet and an axial outlet with sealing seat for the medium.

In the *inactive status* (normal condition), if no compressed air or control signal pends, the valve is closed. In the *active status*, when the valve is subjected with compressed air, the piston provided with a fastened diaphragm and fixed at the valve needle squeezes the recoil spring together. Thereby the valve needle is raised from its sealing seat at the axial outlet. Thus the flow of the medium is released.

4. Technical Data

Denomination:	**APSON Lacquer Valves 200x**
Media:	Aggressive media (lacquer, solvent, caustic solution, a.o.)
Medium pressure:	approx. 12 bar (or in accordance with customer's request)
Pneumatic control air pressure:	6 to 8 bar
Medium-touching housing parts:	Inoxidable steel
Piston seal:	Teflon™
Main seal:	Teflon™ (optional Kalrez™ or FFKM™)
Housing seals:	Viton™

5. Service Life

For the APSON Lacquer Valves 200x the following service lives were determined within the basecoat area. The service life for valves, at operation with basecoat lacquer amounts to approx. 500,000 operating cycles. For a troublefree operation of the lacquer valves all 300,000 operating cycles a visual inspection must be executed. The visual inspection is to be executed first at the installed valve and afterwards in the unscrewed status.

The installed valve must be outward absolutely tight:

- If pneumatic air withdraws from the bleed bore (annular gap cover), the pneumatic seal at the piston must be exchanged.
- If peumatic air withdraws from the exhausting drilling of the valve needle, the piston sided seal (air side) of the valve needle for the pneumatic control air must be exchanged.
- If lacquer withdraws from the exhausting drilling of the valve needle, the seal at the valve needle (lacquer side) must be exchanged.

At the unscrewed valve the following critical parts are to be checked for wear:

- Main seal of the needle
- O-rings of the valve
- Needle seals to compressed air side or to the lacquer side

Important: After approx. 300,000 switching cycles the compression spring in the pneumatics chamber must be exchanged by a new compression spring. The exchange can be made with installed valve within one minute. For the sake of safety, the medium can be switched pressure-free. Eventually the inner surface of the pneumatic cylinder is to be coated again with valve fat.

6. Ordering Data

Denomination	Part-Nr.
APSON 2/2-Ways Lacquer Valve 2015, PF2 (for Lacquer Changer 2000, a.o.)	060-A030
APSON 2/2-Ways Lacquer Valve 2016, PF2 (for Lacquer Changer 2009, 2010, a.o.)	060-A031
APSON 2/2-Ways Lacquer Valve 2017, PF2 (for Lacquer Changer 2008 N, a.o.)	060-A033
APSON 2/2-Ways Lacquer Valve 2017, T3 (for Lacquer Changer 2008 N, a.o.)	060-A035
APSON 2/2-Ways Lacquer Valve 2014, T3 (for Lacquer Changer 2000, a.o.)	060-A029
APSON 2/2-Ways Lacquer Valve 2014, P (for Lacquer Changer LCLT-20K4 and LCLT-25K4, a.o.)	060-A039-6
APSON 2/2-Ways Lacquer Valve 2000 with special seal (for Lacquer Changer 2000, a.o.)	060-A008
APSON 2/2-Ways Lacquer Valve 2000 (for Lacquer Changer 2000, a.o.)	060-A010
APSON 2/2-Ways Lacquer Valve 2009, PF2	060-A013
APSON 2/2-Ways Lacquer Valve 2001 - (old!)	(060-A002)
APSON 2/2-Ways Lacquer Valve 2002 (for lacquer Changer 2007)	060-A004
APSON 2/2-Ways Lacquer Valve 2003 (for APSON Sprayhead 200x)	060-A011

Options

- Main seal of Kalrez™
- Non-medium-touching housing parts from aluminum

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