

## Lacquer Pressure Regulator PRM-2007, mechanical

### 1. Introduction

The **APSON Lacquer Pressure Regulator PRM-2007** is a mechanically controllable pressure regulator for frequently changing aggressive use-media/working-materials. It holds the working material pressure at the output constant and independent of pressure fluctuations of the working material supply system at the input of the controller, if the input pressure is greater than the preset output pressure. The controller is optimized for good rinsing and low solvent consumption. It is particularly suitable for use in automatic systems for the processing of paints, solvents, alkalis, a.o.



*Fig. 1: APSON Lacquer Pressure Regulator PRM-2007  
with vertical pressure gauge (radial connector)*

### 2. Features

- Environmental carefully due to short rinsing times.
- Very good rinsing barness and small solvent consumption.
- Compact design, large throughput and small pressure losses.
- Fast exchange of a defective diaphragm (2 minutes).
- Simple handling at assembling, adjustment and maintenance.
- Rational maintenance and spareparts holding.

### 3. Structure and Function

The **APSON Lacquer Pressure Regulator PRM-2007** consists mainly of a pressure chamber provided with a throttle. The chamber is separated by means of a solvent-resistant membrane / diaphragm from the main spring chamber. This pressure regulator is a robust flow through controller. Regulator behaviour under normal operating conditions: (a) it regulates if through the regulator flows medium, (b) it closes if the output is closed, and (c) it regulates again once the output is opened.

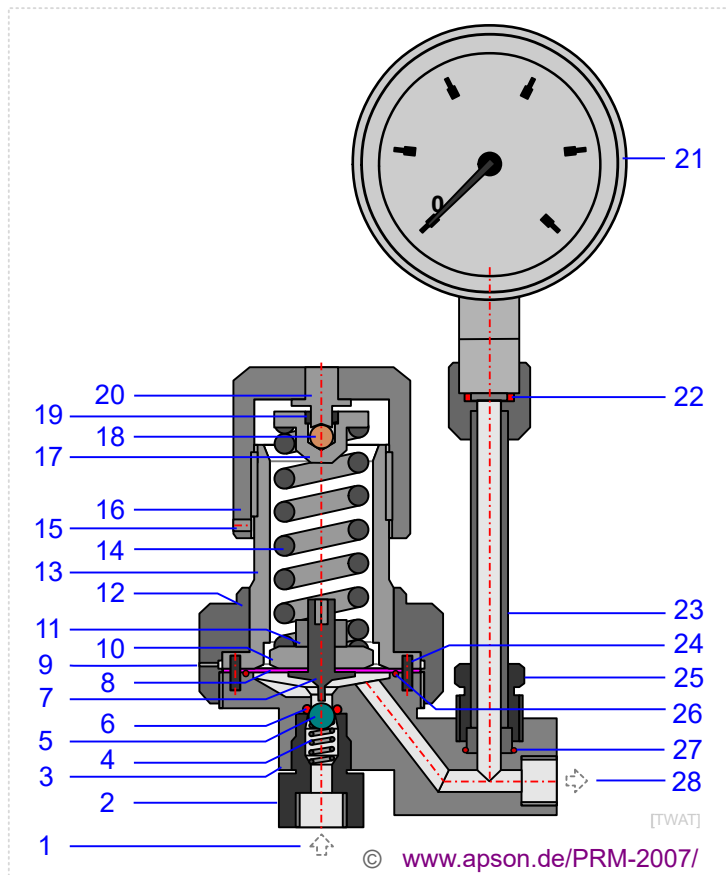


Fig. 2: APSON Lacquer Pressure Regulator PRM-2007 - Structure

**Legend:** 1=input, 2=input port, 3=lower casing part, 4=closing spring, 5=sealing ball, 6=sealing ring, 7=thrust piece, 8=diaphragm, 9=vent hole (for this regulator type it has no function), 10=diaphragm fastening nut, 11=locking nut, 12=overthrow/union nut, 13=upper housing part, 14=main spring, 15=threaded hole (for grub screw to lock the adjustment nut), 16=adjustment nut, 17=spring holder, 18=ball, 19=press bushing, 20=pressure pin, 21=vertical pressure gauge (radial connector), 22=pressure gauge seal, 23=riser-pipe, 24=centering pin, 25=riser-pipe mounting nut, 26=sealing ring, 27=sealing ring, 28=output port resp. output.

An axial removal/approach of the sealing ball from/to seal effects between them a different wide opening, called throttle. The thrust piece connected to the diaphragm controls thus by the sealing ball, the working material amount per time unit, flowing through the pressure regulator and keeps the output pressure constant. The regulation process is achieved by the balance of forces on the diaphragm. On the diaphragm acts on one side the main spring and on the other side, the closing spring as well as the resultant force due to the pressure of the working material/medium at the output of the regulator.

The desired working material pressure at the outlet of the regulator is adjusted by manually rotating the adjustment nut of the regulator. For rinsing of the pressure regulator the adjustment nut must be set to a predetermined value, so that the throttle is fully opened.

**Important:** Due to the gas column in the rising pipe of the pressure gauge, the pressure regulator is to be operated in vertical position. When exchanging the diaphragm it is to be made certain that the Teflon™-coated surface of the diaphragm points into the direction of the working material. For storage of the controller, the diaphragm should be relieved.

## 4. Technical Data

<b>Denomination:</b>	<b>APSON Lacquer Pressure Regulator PRM-2007</b>
Working materials/media:	Lacquers, solvents, alkalis, a.o.
Working material pressure at input:	max. 20 bar
Operating pressure at output:	approx. 1 to 16 bar
Materials:	Medium-touching parts made of inoxidable steel. Union nut and cover part from aluminum, hardcoated. Diaphragm from rubber with fabric, Teflon™-coated.
Connection ports:	Input and output, both G1/4" resp. G3/8"
Dimensions LxWxH [mm]:	without pressure gauge: approx. 82x57x108; with gauge: approx. 82x57x186
Mass:	without pressure gauge: approx. 540g; with gauge: approx. 735g

## 5. Ordering Data

<b>Denomination</b>	<b>Part-Nr.</b>
(APSON Lacquer Pressure Regulator PRM-2007, G1/4" flat sealing surfaces, with vertical pressure gauge (radial connector)) *	(040-A011-75) *
(APSON Lacquer Pressure Regulator PRM-2007, G3/8" flat sealing surfaces, with horizontal dampened pressure gauge (axial connector)) *	(040-A011-75-G38) *
(APSON Lacquer Pressure Regulator PRM-2007, flat sealing surfaces, with pressure gauge, mounting bracket and 6x8 mm hose connectors) *	(040-A011-1) *
(APSON Lacquer Pressure Regulator PRM-2007, flat sealing surfaces, with pressure gauge, mounting bracket and 8x10 mm hose connectors) *	(040-A011-6) *
APSON Lacquer Pressure Regulator Key (wrench width 54 mm)	100-0105
APSON Lacquer Pressure Regulator PRM-2007 Repair Kit	300-0017

\* Old denominations. At new orderings, please order according to the following ordering example.

**Important:** The type of the pressure gauge and its mounting direction are choosable (see Options, below).

### Ordering Example with Options:

**PRM-2007 D:F E:0 A:6x8 P:M M:10S R:V B:0 S:'explosion-deburring, electro-polishing'**

means PRM-2007, flat sealing surfaces, without input adapter, with output adapter for hose 6x8 mm, with riser pipe seal of metal, with pressure gauge for 10 bar, vertical, with pressure gauge seal

of Viton™, without fastening bracket, in special version: explosion-deburred and electro-polished.

**Options** (Information in square brackets [] is standard.)

**D:**<X> = sealing surfaces of the connectors: [F]=flat, K=conical.

**E:**<X> = input adapter: [0]=none, 4x6, 6x8,.. for hose; G1/2", G3/8".. for thread.

**A:**<X> = output adapter: [0]=none, 4x6, 6x8,.. for hose; G1/2", G3/8".. for thread.

**P:**<X> = riser pipe seal: [V]=Viton™, K=Kalrez™, M=metal ring.

**M:**<X> = pressure gauge: [10]=10bar, 4=4bar, 16=16bar, [S]=vertical (radial connector),  
W=horizontal (axial connector), etc.

**R:**<X> = pressure gauge seal: [V]=Viton™, K=Kalrez™, M=metal ring.

**B:**<X> = fastening bracket: [0]=without, 1=with.

**S:**<X, ..> = special options: [0]=without, 'explosion-burring', 'electro-polishing', or other. Please specify unambiguously.

All special requests at surcharge. The delivery times may be extended depending on the special options.

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