P.A. – S.p.A. – EQUIPAGGIAMENTI TECNICI DEL LAVAGGIO
VIA MILANO, 13 – CASELLA POSTALE 115 – 42048 RUBIERA (REGGIO EMILIA) – ITALY
Tel. +39 0522 623611 – Fax. +39 0522 629600 – R.E.A. RE 156319 – R.I. RE11535 – Mecc. RE 013446
C.F. e P. IVA 01035950359 – Cap. Soc. i.v. € 750.000,00 – Codice Identificativo C.E.E. IT 01035950359
ART. 2497 – BIS C.C. DIREZIONE E COORDINAMENTO BENETTI srl R.I. TRIB. DI RE 01480690351
Web: http://www.pa-etl.it – **E-mail:** info@pa-etl.it

VRP200 – Safety and pressure regulating valve

Technical manual: E 205

Compensated pressure regulating valve with double connection for inlet port.
Regulates the bypass of the fluid with a minimum variation of the pressure.
Suitable to be utilized as a safety valve.

DN 10

- **60.0220.00** VRP200 G3/8 F
- **60.0220.60** VRP200 G3/8 F
- **60.0220.05** VRP200 3/8NPT F
- **60.0220.65** VRP200 3/8NPT F

- Sturdy construction in Sst and brass.
- Piston return operated by strong springs for steady working and setting without faltering.
- Multiple connections for quick installation.
- Pressure set up differentiated by choosing between two springs.

AS A SAFETY VALVE
- Reliable intervention discharging all the flow.
- Prompt and effective damping action against pressure spikes.

AS A PRESSURE REGULATING VALVE

- High balancing to guarantee slight variations of the rated pressure when the flow varies in bypass.
- Usable with a multiple number of lances.

TECHNICAL SPECIFICATIONS

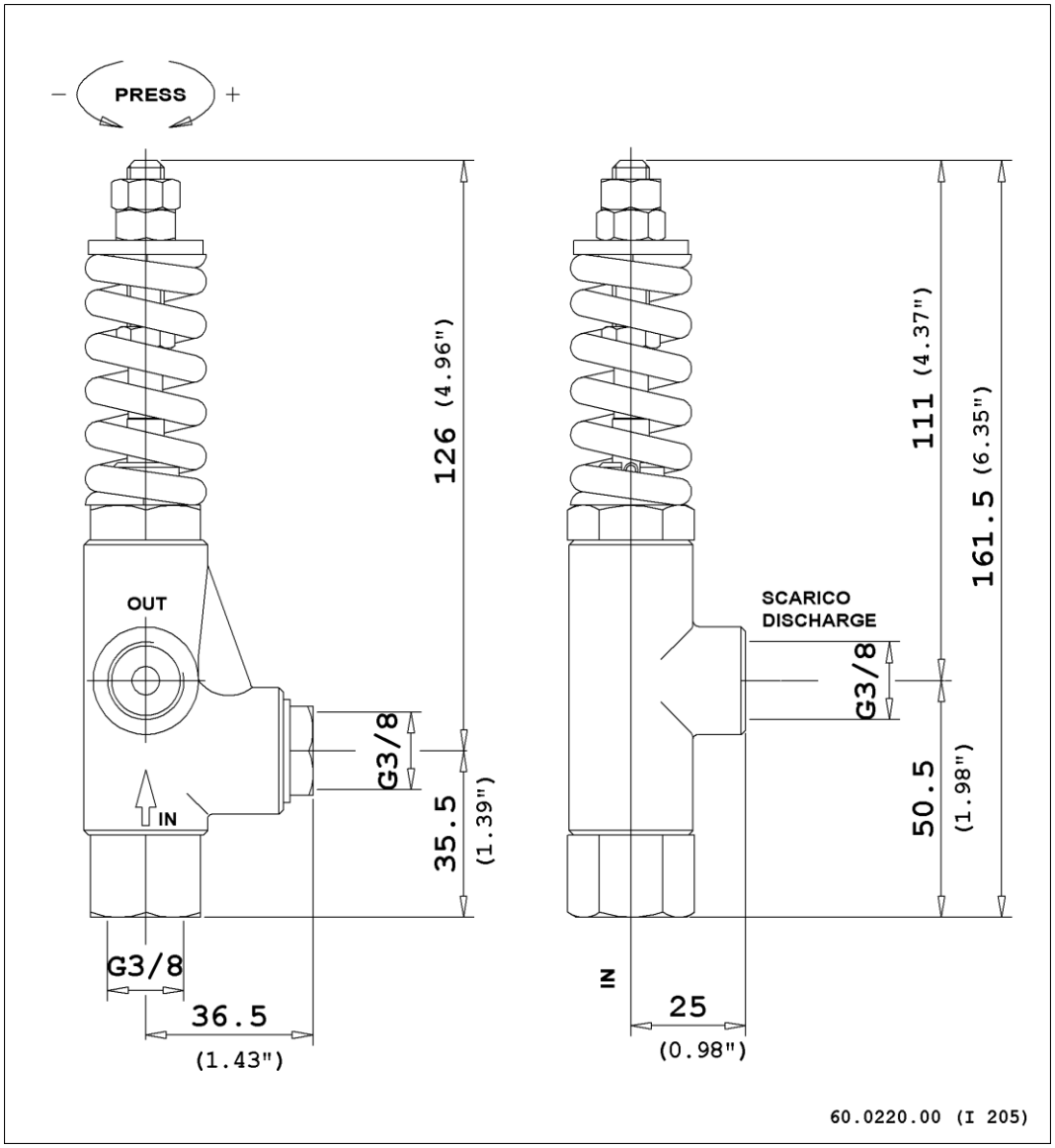
Max.flow rate 30 l/min **(1)** - Max. temperature 90°C **(2)**

Part number	Rated pressure bar - MPa	Permissible pressure bar - MPa	Minimum adjustable pressure bar - MPa	(3) Pressure increase as a VS – as a VRP bar - MPa - bar - MPa	Inlet	Bypass	Weight g
60.0220.00	100 - 10	120 - 12	10 - 1	28 – 2.8 - 17 – 1.7	G3/8 F	G3/8 F	570
60.0220.60	220 - 22	250 - 25	22 – 2.2	33 – 3.3 - 18 – 1.8	G3/8 F	G3/8 F	605
60.0220.05	100 - 10	120 - 12	10 - 1	28 – 2.8 - 17 – 1.7	3/8NPT F	3/8NPT F	570
60.0220.65	220 - 22	250 - 25	22 – 2.2	33 - 3.3 - 18 – 1.8	3/8NPT F	3/8NPT F	605

(1) Max flow rate: 15 l/min if fed by the lower fitting.
(2) The valve has been designed for a continuous use at a water temperature of 60°C. It can resist for short periods at a maximum temperature of 90°C.
(3 Pressure increase = is the increase of pressure needed into the valve for discharging the max. flow when utilized at rated pressure

Instruction manual, maintenance, installation, spare parts. For a correct utilization, follow the directions of this manual **Re-print them on the use and maintenance booklet of the machine.**	n. 12.9205.00

DIMENSIONAL DRAWING.



INSTRUCTIONS

SELECTION

This product is to be utilized with clean fresh water, even slightly additivated with normal detergents. For use involving different or corrosive liquids, contact the PA Technical department. Choose the valve in line with the data of nominal running (system rated pressure, max flow and max temperature). In any case, the pressure of the machine should not exceed the permissible pressure rate imprimed on the valve.The feed through the lower fitting is possible with a reduced flow rate (see point 1). When in use as pressure regulator, adopt a nozzle that allows a bypass of at least 5% of the total flow, bearing in mind that a worn out nozzle causes pressure loss. The valve, assembled in line with these indications, avoids pressure spikes whilst the machine is in operation.

INSTALLATION

This accessory, on a system that produces hot water, must be fitted **in front of the heat generator**.

As a SAFETY VALVE: in the case when frequently combined with unloader valves and low pressure in the pump, it has to be fitted in the section that remains pressurized when the gun is shut off.

As a PRESSURE REGULATOR: maintains the pressure in the system steady during flow changes. **Always** install with the correct specifications when combined with a safety valve. In case of discharge in the tank or directly into the pump, it is necessary to provide devices capable to prevent damaging turbolence to the liquid flow.

OPERATIONS

The discharge should be returned to a baffled tank. If, on the contrary, the pump is fed directly from the water mains, it is advisable to install a pressure reducing valve, before the pump, to avoid dangerous pressure spikes which could badly damage manifolds and suction valves. In case of extended conditions of bypass directed to the suction side of the pump, it is recommended to install a thermal valve (VT3 or VT6) to avoid dangerous water temperature build-up.

PRESSURE ADJUSTMENT/SETTING

As a SAFETY VALVE: the adjustment has to be made in such a way that the pressure setting is not superior to the system working pressure and its accessories; this prevents the arisal of numerous pressure increases in hot water systems and static pressure (gun shut off).

As a PRESSURE REGULATOR: adjust the valve when the system is pressurized and the gun open. The operation will be easy and smooth if the proper nozzle is chosen. When rotating the adjustment knob, it has to correspond to a consequent pressure increase; should the pressure stop increasing before reaching the desired value, **do not insist**, but check the correct nozzle size in relation to flow and pressure. On reaching the desired pressure, tighten the nut (pos 15) with a drop of paint in order to emphasize any tampering or slackness.

ATTENTION: The nut (pos 15 nr 1pc) must never be removed otherwise a mechanical safety feature that limits the max pressure will lack , avoiding serious damage to persons and machine.

PROBLEMS AND SOLUTIONS

PROBLEMS	PROBABLE CAUSES	SOLUTIONS
Valve cycles	- Air inside the system - Worn out seals - Clogged circuit	- Flush out - Replace - Clean or widen passages
The valve does not reach pressure	- Unproper nozzle size - Seat/shutter/ball worn out - Damaged nozzle - Impurities	- Modify - Replace - Replace - Clean
Pressure drop	- Worn out nozzle - Pump gaskets worn out - Valve seat worn out - Air inside the system	- Replace - Replace - Replace - Flush out
Pressure spikes	- There is not a min.5% of total flow in bypass - Clogged nozzle	- Re-adjust - Clean - Repeat adjustment and replace nozzle
Water leakage from bypass Valve pounding	- O-ring seat damaged - Damaged seat - Impurities or worn out valve pumps	- Replace - Replace - Clean

REGULATIONS : *see norm manual*

For a correct utilization, follow the directions described in this manual and re-print them on the Use and maintenace manual of the machine.
Make sure that you are given **the Original Conformity Declaration** for the accessory chosen. The present manual is valid for all unloader valves named **VRP 200.**

MAINTENANCE

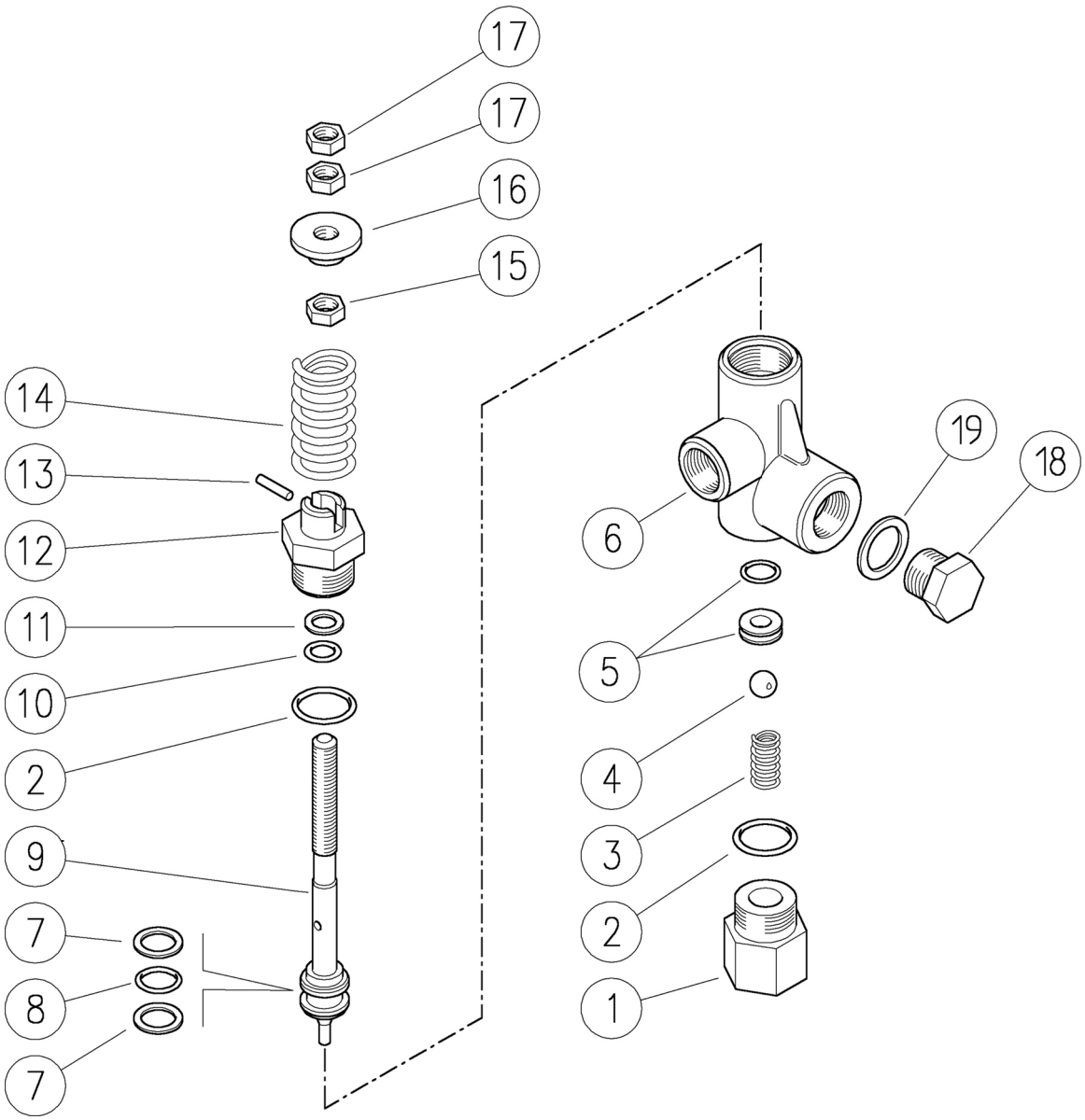
Maintenance has to be carried out by **Specialized Technicians.**
STANDARD: every 400 working hours (circa 10,000 cycles), check and lubricate the seals with water resistant grease.
SPECIAL: every 800 working hours(circa 20,000 cycles), control the wear of the seals and internal parts and if necessary, replace with original PA parts taking care during installation and to lubricate with water resistant grease.

ATTENTION: reassemble the valve in the correct manner paying special attention how to set the valve as described in the paragraph PRESSURE ADJUSTMENT/SETTING.
The manufacturer is not to be considered responsible for damage as a result from incorrect fitting and maintenance

Technical data, descriptions and illustrations are indicative and liable to modification without notic

60.0220.00 VRP200 safety valv. 3/8F Bsp-120bar
60.0220.05 VRP200 safety valv. 3/8F Npt-120bar

60.0220.60 VRP200 safety valv. 3/8F Bsp-250bar
60.0220.65 VRP200 safety valv. 3/8F Npt-250bar



Pos.	P/N	Description	Q.ty	K1	K2	K3	K4	
1	60.0024.31R	Suction coupl., 3/8F Bsp brass	1					10
1	60.0030.31R	Suction coupl., 3/8F Npt brass (1)	1					10
2	10.3068.00R	O-ring, 1,78x17,17 mm	2	•				10
3	60.0015.51R	Spring, 1,4x10x16 mm Sst.	1					10
4	14.7461.00R	Ball, 13/32" Sst.	1	•				10
5	60.0259.20R	Seat, 8mm + O-ring, 1,78mm	1	•				10
6	60.0251.35R	Housing -VRP200, 3/8F Bsp brass	1					3
6	60.0252.35R	Housing -VRP200, 3/8F Npt brass (1)	1					1
7	10.4021.00R	Back-up ring, opn. 11,5x15,9x1,2 mm	2	•				10
8	10.3175.00R	O-ring, 2,62x10,77 mm	1	•				10
9	60.0061.23R	Valve piston, Sst.	1					5
10	10.3170.00R	O-ring, 2,62x7,6 mm	1	•				10

Kit	P/N	Description	
K1	60.0054.24	Spares kit -Vrp-Pulsar280, 10x1pcs.	1

(1) 60.0220.65 (2) 60.0220.00 (3) 60.0220.60

Pos.	P/N	Description	Q.ty	K1	K2	K3	K4	
11	10.4020.00R	Back-up ring, 8x12,6x1,2 mm	1	•				10
12	60.0064.31R	Piston holder, brass	1					5
13	15.1021.00R	Roll pin, 3x14 mm Sst.	1					10
14	60.0012.61R	Spring, 5x25x50 mm white (2)	1					5
14	60.0033.61R	Spring, 5,7x26x53 mm blue (3)	1					5
15	11.4576.31R	Hex. nut, M8, brass	1					10
16	60.0011.31R	Spring holder ring, brass	1					10
17	11.4574.00R	Hex. nut, M8	2					10
18	60.0028.31R	Plug,brass 3/8 Bsp,hex.19	1					25
18	60.0025.31R	Grub screw, brass 3/8M Npt (1)	1					10
19	14.4042.00R	Washer, 16,7x22x1,5 mm alu.	1					25