

**P.A. – S.p.A. – EQUIPAGGIAMENTI TECNICI DEL LAVAGGIO**

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 ART. 2497 – BIS C.C. DIREZIONE E COORDINAMENTO BENETTI srl R.I. TRIB. DI RE 01480690351  
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**Technical Booklet: E 262**

Compensated pressure regulating valve.  
 Regulates fluid bypass minimising pressure variations  
 Indicated as pressure regulating valve on pressure washers and stable systems.

**DN 15**

- **60.0665.00** VRP23 1/2 Bsp 280 bar – 28 MPa
- **60.0670.00** VRP43 1/2 Bsp 400 bar – 40 MPa

- Sturdy construction in Aisi 303 stainless steel.
- Return action of the piston by means of a powerful spring, for a safe and reliable pressure adjustment.
- High balancing to guarantee slight variations of calibration pressure when flow rate in bypass varies.
- Possibility to use the valve with several lances at the same time

**TECHNICAL SPECIFICATIONS**

Max. flow rate 80 l/min - Max. temperature 90°C (1)

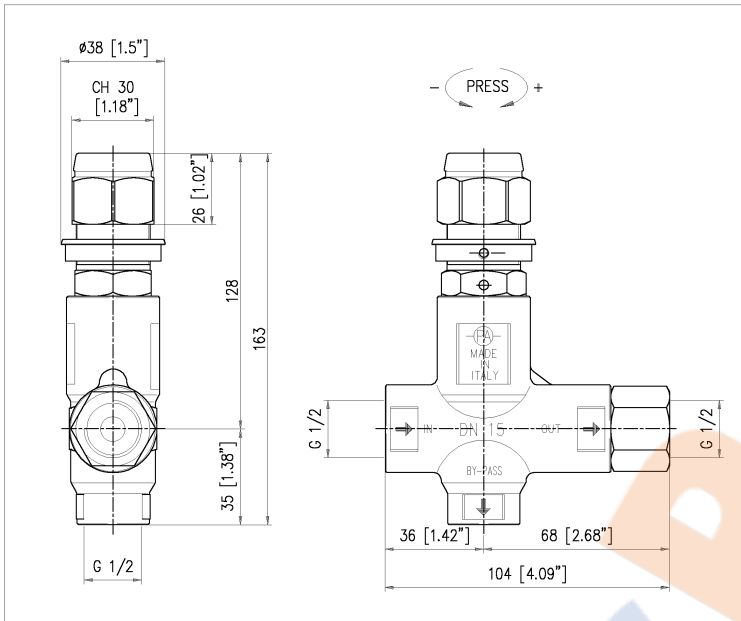
PART No.	RATED PRESSURE RP bar - MPa	PERMISSIBLE PRESSURE bar - MPa	MIN. ADJUSTABLE PRESSURE bar - MPa	(2) PRESSURE INCREASE %	INLET OUTLET	BYPASS	WEIGHT g
<b>60.0665.00</b>	280 - 28	310 - 31	28 - 2.8	3 - 6 % of RP	1/2" Bsp F	1/2" Bsp F	800
<b>60.0670.00</b>	400 - 40	440 - 40	40 - 4	3 - 6 % of RP	1/2" Bsp F	1/2" Bsp F	800

(1) The valve is especially designed for a constant use at a water temperature of 60°C. It can withstand up to a max. temperature of 90°C for short intervals only.

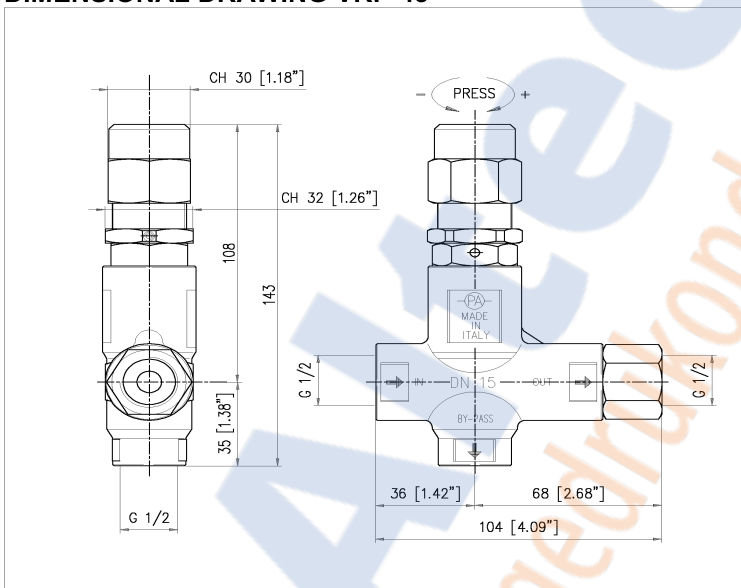
(2) The max. pressure increase inside the valve occurs when the max. flow rate is discharged at max. calibration pressure.

For a correct use of the item, please follow the instructions of this manual.  
**Please re-print them on the Use & Maintenance Booklet of the machine.**

### DIMENSIONAL DRAWING VRP-23



### DIMENSIONAL DRAWING VRP-43



## 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. Appropriate filtration should be installed when using unclean liquids. To select the right valve, always take in consideration rated running data of the system (rated pressure, max. flow rate and max. temperature). In any case, the pressure of the machine should not exceed the permissible pressure rate imprinted on the valve.

### INSTALLATION

This accessory, on a hot water system, **must be fitted upstream the heat generator**. This product is bound to be incorporated on a finished machine. On a hot water system, is advisable to fit accessories that limit the accidental increase of fluid temperature.

**Always install in combination with a suitable Safety Valve .**

Choose a correct nozzle size, which allows a regular discharge on bypass, at least 5% of the total flow of the system. This will keep pressure rate stable and avoid troublesome pressure spikes at shutdown.

Please note that when the nozzle wears out, the pressure drops.

On installation of a new nozzle, re-adjust the system to the original pressure setting.

## OPERATIVITY

The valve regulates the max. system pressure through a piston, which acts on a cone that, normally positioned, closes the bypass opening.

## DISCHARGE SYSTEM AND WATER ADDUCTION

The bypass line should be returned into a tank with deflectors. However, if the pump is fed directly externally it is advisable to fit a pressure reducer, before the pump, to avoid dangerous pressure spikes that could damage the passages and intake valves. When long bypass conditions occur, direct to the pump intake, it is advisable to fit a thermal protector valve (VT3 or VT6) in order to eliminate excessive temperature build up.

## PRESSURE ADJUSTMENT/SETTING

The adjustment has to be made with the system under pressure and the gun open. Vary the pressure by screwing/unscrewing the adjustment knob. This operation will be less difficult if the correct nozzle has been chosen. Upon screwing the adjustment knob, it must correspond with a pressure increase; failing this before the desired value, **do not insist**, but verify the correct ratio nozzle/rated pressure. Upon reaching the desired pressure, tighten the ring nut with a drop of paint in order to emphasize eventual tampering or loosening.

## PROBLEMS AND SOLUTIONS

PROBLEMS	PROBABLE CAUSES	SOLUTIONS
Valve cycles	<ul style="list-style-type: none"><li>- Air inside the system</li><li>- Worn out seals</li><li>- Clogged circuit</li></ul>	<ul style="list-style-type: none"><li>- Flush out</li><li>- Replace</li><li>- Clean or widen passages</li></ul>
The valve does not reach pressure	<ul style="list-style-type: none"><li>- Unproper nozzle size</li><li>- Seat/shutter/ball worn out</li><li>- Damaged nozzle</li><li>- Impurities</li></ul>	<ul style="list-style-type: none"><li>- Modify</li><li>- Replace</li><li>- Replace</li><li>- Clean</li></ul>
Pressure drops	<ul style="list-style-type: none"><li>- Worn out nozzle</li><li>- Pump seals worn out</li><li>- Valve seat worn out</li><li>- Air inside the system</li></ul>	<ul style="list-style-type: none"><li>- Replace</li><li>- Replace</li><li>- Replace</li><li>- Flush out</li></ul>
Pressure spikes	<ul style="list-style-type: none"><li>- Minus min.5% of total flow in bypass</li><li>- Clogged nozzle</li></ul>	<ul style="list-style-type: none"><li>- Re-adjust</li><li>- Clean</li><li>- Repeat adjustment and replace nozzle</li></ul>

## REGULATIONS : see norm manual

The accessory hereby described is in accordance with the Norms and Directives applied on the **Declaration of conformity**. For a correct utilization, follow the directions described in this manual and re-print them on the Use and maintenance 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 **VRPP 23-43**.

## 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:** Re-assemble the valve in the correct manner paying special attention to resetting operations. These must be carried out according to what specified in 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 notice.



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SYSTEM CERTIFIED BY DNV  
= ISO 9001 =