PRAL®

Cometal®
HIGH TECHNOLOGY FOR WATER

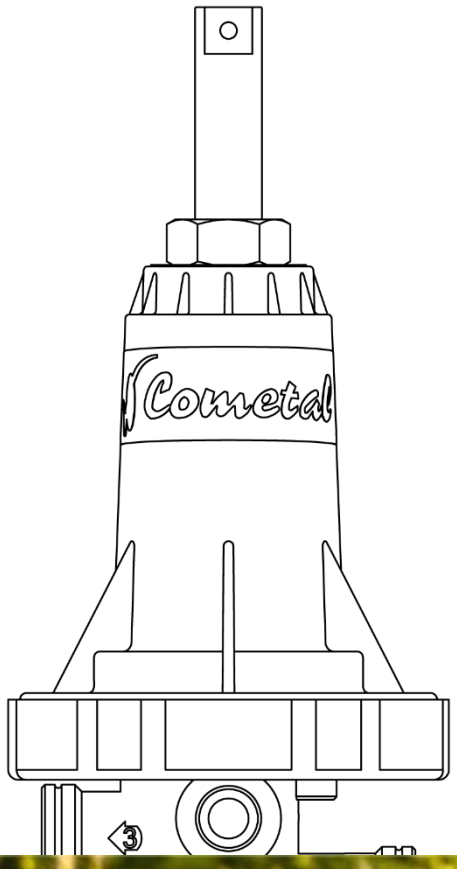
- ✓ The pressure regulating pilot **PRAL**, is a three-way hydraulic control valve
- ✓ Main functions:

  Adjust the pressure **downstream** from the hydraulic valve as a **pressure reducer**.

  Regulate pressure **upstream** of the valve as a **pressure sustainer.**

  Safety valve: **relief of pressure** on the network.

  Hydraulic remote control of a hydraulic valve. **Anti topographical valve**
- ✓ ONLY SUITABLE FOR AGRICULTURAL USE



SPECIFICATIONS

- CONNECTIONS : 1/8” threads (Blue PRAL® and PRAL® 2.5)
  1/4” threads (Brass PRAL® 4.5).
- DESIGN : Three way regulating pilot.
- SIZES RANGE :
  PRAL®2.5, PRAL®4.5 and Blue PRAL®.
- NOMINAL PRESSURE (bar): PN10 o PN16.
  (psi): PN145 o PN232.

MATERIALS

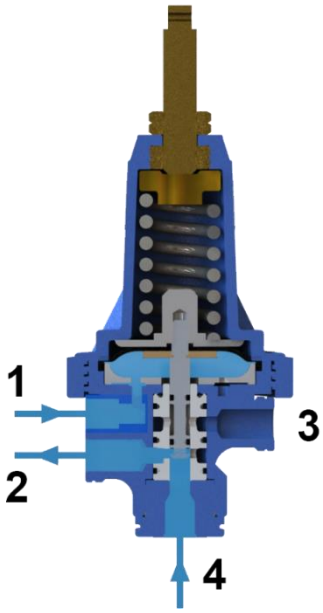
- BODY AND COVER:

PRAL®2.5, PRAL®4.5: Brass
Blue PRAL®: Polyamide with fibre-glass.

- DIAPHRAGM: EPDM
- SPRING: Stainless steel.
- CLOSING ELEMENTS: Teflon and NBR joints.

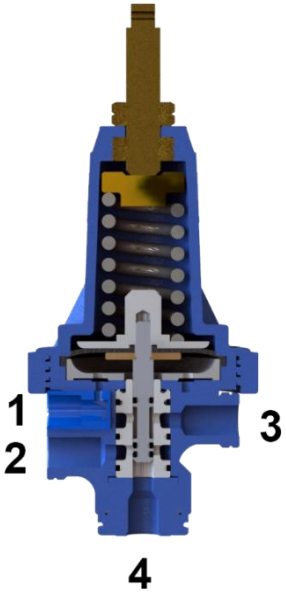
WORKING SCHEME

COMETAL pilots comply to standard ISO 10522-93 in terms of regulating direct action pressure regulating valves



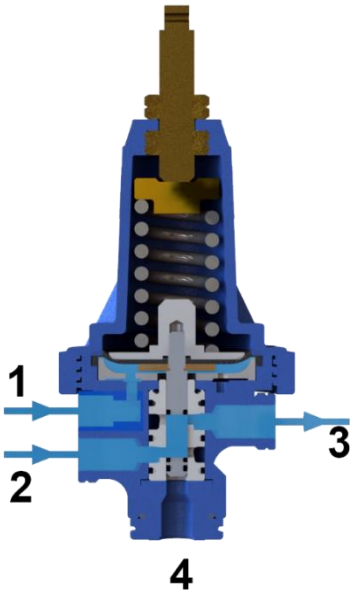
UPPER POSITION

If the force on the sensor of the pilot (port 1) is greater than the force of compression of the spring, ports 2 and 4 are communicated.
Reducing valve: close, reducing the pressure.
Sustaining valve: open, increasing the pressure



BALANCE POSITION

If the force on the sensor of the pilot (port 1) is equal to the force of compression of the spring, there is no communication between tracks.



DOWN POSITION

If the force on the driver (port 1) sensor is less than the force of compression of the spring, ports 2 and 3 are communicated.
Reducing valve: opens, increasing the pressure.
Sustaining valve: close, reducing the pressure.

WAYS NUMBERING

WAY NUMBER	AS PRESSURE REDUCER	AS PRESSURE SUSTAINER
1	Sensor	Sensor
2	Common	Common
3	Drainage	Pressure
4	Pressure	Drainage

SPRING SELECTION

MODEL		BLUE SPRING		STANDAR SPRING		RED SPRING	
		bar	psi	bar	psi	bar	psi
WORKING RANGE (downstream pressure)	PRAL® 2.5	---	---	1,5-8,5	21.8-123.2	1-8,5	14.5-123.2
	PRAL® 4.5	0,5-2,5	7.3-36.3	1,5-5,5	21.8-79.8	2-8	29.0-116.0
	Blue PRAL®	0,5-2,5	7.3-36.3	0,5-5,5	7.3-79.8	0,5-8,5	7.3-123.3

DIMENSIONS AND WEIGHTS

MODEL	NOMINAL PRESSURE		INSIDE DIAMETER		ACCURACY LEVEL	WEIGHT
	bar	psi	mm	inch		g
PRAL® 2.5	16	232	2,5	0.10	CLASE B	380
PRAL® 4.5	16	232	4,5	0.18	CLASE A	750
PRAL® azul	10	145	4,5	0.18	CLASE A	240

PRAL® ADJUSTMENT

All Cometal regulating pilots are adjustable. In addition, these can be locked with a locking nut at the top of the cover.

a) As pressure reducer:

To reduce the downstream pressure, turn the PRAL® bolt counter clockwise (-). To increase the downstream pressure, turn the bolt clockwise (+).

Recommended reduction ratio (upstream: downstream): **3:1*

b) As pressure sustainer:

To open with more upstream pressure turn the PRAL® bolt clockwise (+). To open with less upstream pressure, turn the bolt counterclockwise (-).

REGULATING PILOT WITH PRESSURE SCALE

Cometal has designed a few scales of pressure for each pilot in particular. These pressure scales are inserted in form of rule in the top screw of the pilot, in such a way that we are informed of the pressure that the regulating pilot pressure is pre-calibrated before even use.

The scales are defined for all pilots of design and manufacture of Cometal, including the variety according to compression springs. These scales reflect the minimum and maximum pressure range of each pilot, as well as indoor ranges where the pilot behaves better, according to the downstream pressure of the hydraulic valve.

VAR®

Cometal®
HIGH TECHNOLOGY FOR WATER

- Fast action valve **VAR**, is a three-way relay hydraulic control valve.

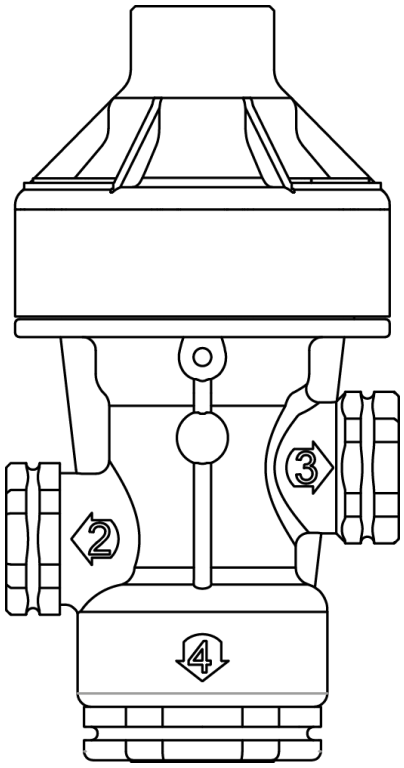
- Main functions :

Hydraulic relay and **switch signal**, normally closed or normally open. It allows to speed up the response time of the valve with other lower section elements such as solenoids.

Hydraulic remote control of a hydraulic valve

Anti topographical valve.

- ONLY SUITABLE FOR AGRICULTURAL USE



SPECIFICATIONS

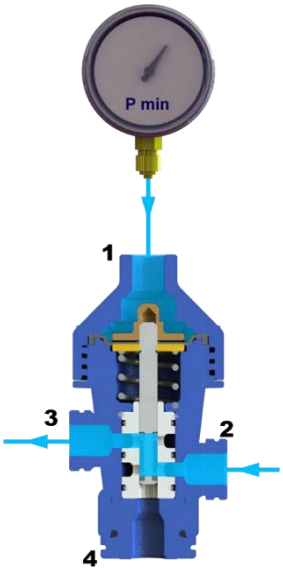
- CONNECTIONS : 1/8” threads.
- DESIGN: Hydraulic relay.
- SIZES RANGE: Brass VAR® y Blue VAR®
- NOMINAL PRESSURE (bar): PN10 o PN16.
  (psi): PN145 o PN232.

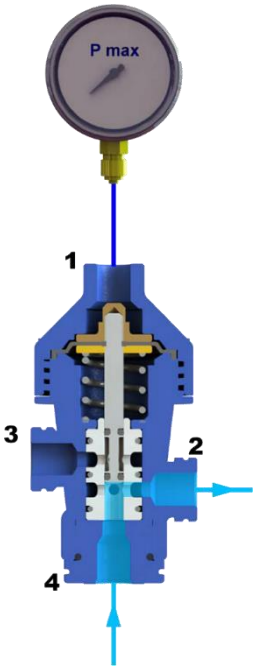
MATERIALS

- BODY AND COVER:
  Brass VAR® : Brass
  Blue VAR® : Polyamide with fibre-glass.
- DIAPHRAGM: EPDM
- SPRING: Stainless steel.
- CLOSING ELEMENTS: Teflon and NBR joints.

WORKING SCHEME

COMETAL pilots comply to standard ISO 10522-93 in terms of regulating direct action pressure regulating valves





Minimum activation P :
Minimum pressure in the sensor necessary for ports 2 and 3, to communicate being completely closed the port 4.

Maximum resting P:
Maximum pressure on the sensor, so ports 2 and 4, to communicate via being completely closed port 3.

DIMENSIONS AND WEIGHTS

MODEL	NOMINAL PRESSURE		INSIDE DIAMETER		WEIGHT
	bar	psi	mm	inch	g
Brass VAR®	16	232	4,0	0.16	455
Blue VAR®	10	145	4,0	0.16	85

SPRING SELECTION

NC VAR: PRESSURE TAP PORT 3

SPRING	*Activation Pmin*		*Resting Pmax*	
	bar	*psi*	*bar*	*psi*
Yellow	1	14,5	0,2	2,9
Standard	1,4	20,3	0,5	7,3
Green	2	29	0,7	10,2
Red	2,6	37,7	0,9	13
Blue	3,3	47,9	1,2	17,4

NO VAR: PRESSURE TAP PORT 4

MUELLE	***Activation Pmin***		***Resting Pmax***	
	bar	*psi*	*bar*	*psi*
Yellow	1,3	18,8	0,5	7,3
Standard	1,7	26,6	0,9	13
Green	2,4	34,8	1,2	17,4
Red	3	43,5	1,4	20,3
Blue	3,5	50,7	1,7	24,7

KATAL®

Cometal®
HIGH TECHNOLOGY FOR WATER

- The pressure regulating pilot **KATAL**, is a three-way hydraulic control valve.

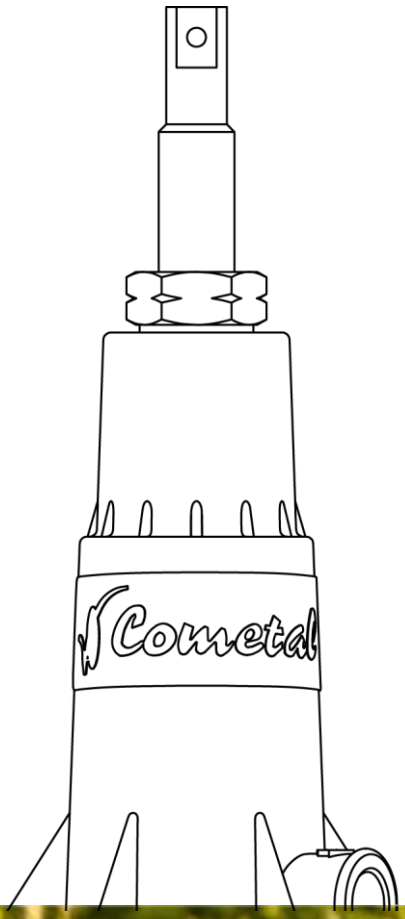
- Main functions:

  Adjust the **differential pressure** of the hydraulic valve, and therefore **limit the flow.**

  An **orifice plate** calculated for each situation creates an unique headloss for each volume that you want to limit.

  Safety valve: **pipe break control.**

- ONLY SUITABLE FOR AGRICULTURAL USE



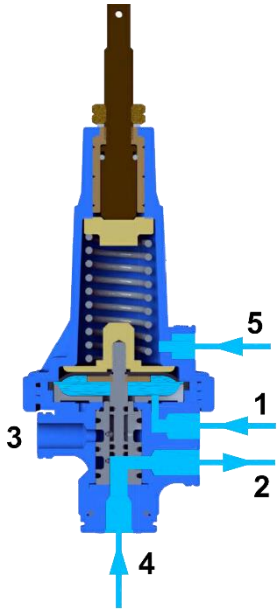
SPECIFICATIONS

- CONNECTIONS : 1/8” threads.
- DESIGN: Three way regulating pilot.
- SIZES RANGE : KATAL® 4,5 and Blue KATAL®
- NOMINAL PRESSURE(bar): PN10 or PN16.
  (psi): PN145 or PN232.

MATERIALS

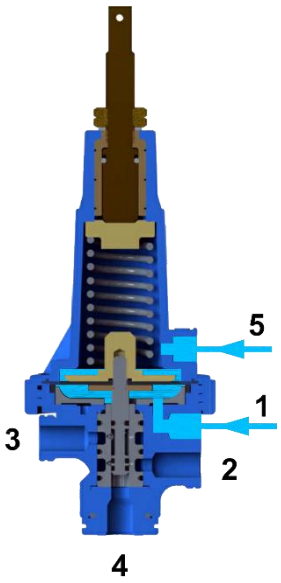
- BODY AND COVER :
  KATAL® 4.5: Brass
  Blue KATAL®: Polyamide with fibre-glass.
- DIAPHRAGM: EPDM
- SPRING: Stainless steel.
- CLOSING ELEMENTS: Teflon and NBR joints.

WORKING SCHEME



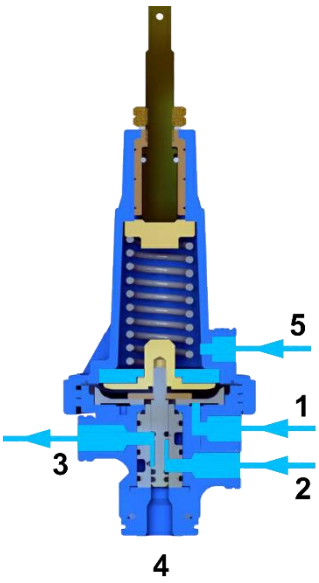
UPPER POSITION

If orifice plate differential pressure exerts a force on the sensors of the pilot (ports 1-5) greater than the force of compression of the spring, ports 2 and 4 are communicated. The valve closes, decreasing flow rate



BALANCE POSITION

If orifice plate differential pressure exerts a force on the sensors of the pilot (ports 1-5) equal to the force of the spring compression, there is no communication between ports.



DOWN POSITION

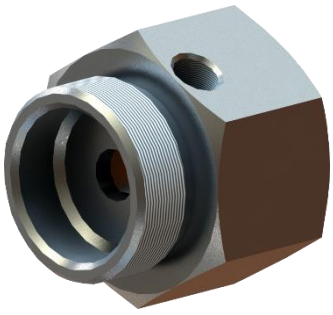
If orifice plate differential pressure exerts a force on the sensors of the pilot (ports 1-5) smaller than the force of compression of the spring, communicate ports 2 and 3. The valve opens, increasing the flow.

DIMENSIONS AND WEIGHTS

MODEL	NOMINAL PRESSURE		INSIDE DIAMETER		ORIFICE PLATE HEADLOSS		WEIGHT
	bar	psi	mm	inch	mca	psi	g
KATAL® 4.5	16	232	4,5	0.18	De 2 a 5	De 2.9 a 7.25	800
KATAL® azul	10	145	4,5	0.18	De 2 a 5	De 2.9 a 7.25	260

ORIFICE PLATES

For threaded valves:



For flanged valves:

For grooved valves: