

RUBINETTERIE
MALGORANI
PRESSURE REDUCING VALVES FOR WATER SINCE 1969



**USAGE
AND MAINTENANCE
OF PRESSURE
REDUCING VALVES**

Made in Italy

INDEX

INTRO .....	.pag.	3
GENERAL FEATURES .....	.pag.	4
INSTALLATION .....	.pag.	5
CHOICE OF THE PRESSURE REDUCING VALVE .....	.pag.	7
HOW TO ADJUST THE PRESSURE REDUCING VALVE .....	.pag.	9
MINIBRASS TECHNICAL DATA .....	.pag.	12
EUROBRASS TECHNICAL DATA .....	.pag.	16
EUROBRONZE TECHNICAL DATA .....	.pag.	22

*Inside waterworks
pressure reducing valves hold a basic part:
the perfect working of the whole waterworks
comes mainly from the good quality
of the pressure reducing valve.*

***MALGORANI pressure reducing valves**
combine quality, solidness and good performances:
the use of this workbook will let everybody check
the right way to use our pressure reducing valves
and reach the best performances from each waterworks.*

*We thank you for having choosen
MALGORANI's products
and we hope to always meet your requirements.*

***RUBINETTERIE MALGORANI PIETRO SRL**
ITALY*

GENERAL FEATURES OF PRESSURE REDUCING VALVES

MALGORANI pressure reducing valves are divided in five series:

Series MINIBRASS

small pressure reducing valve for water all made in brass with NBR O-rings

Series MINIBRASS VITON

small pressure reducing valve for water and Diesel oil all made in brass with VITON O-rings

Series EUROBRASS

Brass pressure reducing valve for water with compensator, stainless steel seat, NBR O-ring, available with female-female thread, female-female unions or male-male unions.

Series EUROBRASS VITON

Brass pressure reducing valve for water and Diesel oil with compensator, stainless steel seat, VITON O-ring, available with female-female thread, female-female unions or male-male unions.

Series EUROBRONZE

Bronze pressure reducing valve for water with membrane functioning, internal parts in DZR brass, stainless steel seat and patented membrane.

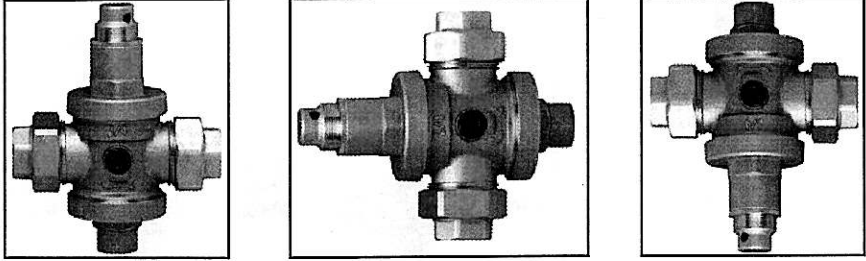
All MALGORANI pressure reducing valves are tested one by one on test stands before packaging; the outlet pressure is set during test at 3 bars.

EUROBRASS series has the compensator system: it consist in a small chamber in the lower part of the pressure reducing valve which counterbalances the variation of the inlet and outlet pressure. This devices allows the EUROBRASS pressure reducing valve to work steadily with outlet pressures lower than 1 bar.

INSTALLATION OF THE PRESSURE REDUCING VALVE

All MALGORANI pressure reducing valves can be installed into waterworks and work in any position: horizontally, vertically or upside down.

PICTURE 1

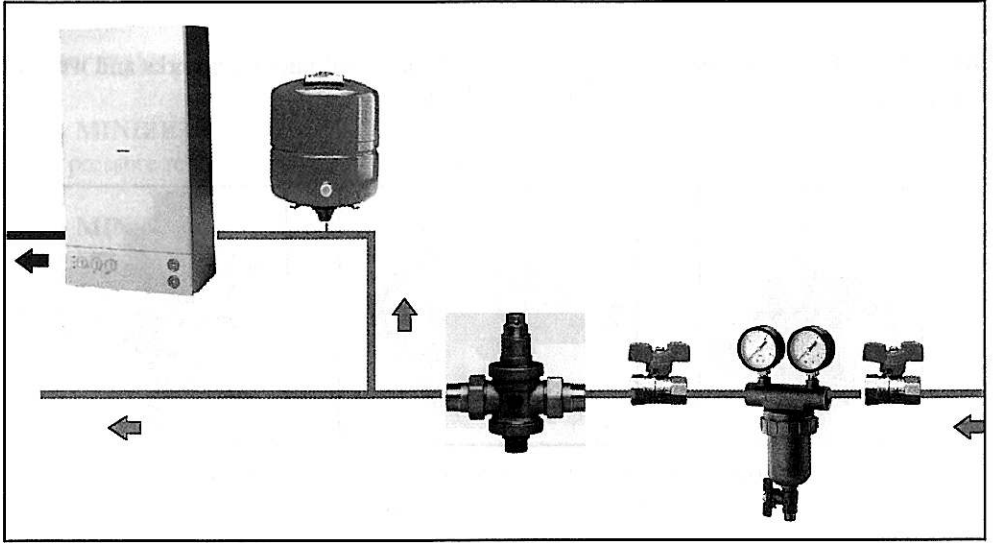


The right flow direction is indicated by an embossed arrow on the body of the pressure reducing valve.

For a correct set up of the pressure reducing valves please follow these directions:

- before assembling pressure reducing valves into waterworks remember to clean up;
- always position pressure reducing valves away from boilers: hot water increases its volume and consequently the higher pressure into the plant prevent pressure reducing valves from working correctly;
- it is always recommended to protect pressure reducing valves using: a self cleaning filter upstream the pressure reducer, a check valve and an expansion vessel downstream the pressure reducer.

PICTURE 2



CHOICE OF THE PRESSURE REDUCING VALVE

A correct choice of the pressure reducing valves improves the functioning of the entire waterworks.

To choose the right pressure reducing valve please follow these advices:

- check the following data into the waterworks:

a- inlet pressure;

b- outlet pressure needed;

c- hydraulic discharge needed;

d- kind of fluid;

- find into the table below the series needed:

		MINIBRASS	MINIBRASS VITON	EUROBRASS	EUROBRASS VITON	EUROBRONZE
MAX INLET PRESSURE	10 Bar	●	●	●	●	●
	25 Bar			●	●	●
OUTLET PRESSURE	1 - 4 Bar	●	●	●	●	●
	0,5 - 6 Bar			●	●	●
HYDRAULIC DISCHARGE IN M ³ /H	0 - 2	●	●	●	●	●
	0 - 6			●	●	●
	0 - 40			●	●	
PRESSURE GAUGE CONNECTION		● <small>excepted 101-102-103</small>	● <small>excepted 101-102-103</small>	●	●	●
KIND OF FLUID	Cold Water*	●	●	●	●	●
	Hot Water*		●		●	
	Diesel Oil		●		●	

*Cold water at a temperature lower than 80°C.

Once you have determined the suitable series, you have to choose the right size of the pressure reducing valve; this choice not only comes from the size of the pipe, but mainly from the hydraulic discharge needed compared to head loss.

Head loss means the difference in pressure between inlet and outlet when the waterworks is opened downstream and it is due to the technical features of the product (hydraulic frictions). MALGORANI pressure reducing valves guarantee low head losses thanks to the everlasting development of our products.

Available sizes:

	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"	2"1/2
MINIBRASS F.F.	●	●	●					
MINIBRASS M.M.		●	●					
EUROBRASS 142 M.M. UNIONS		●	●	●	●	●	●	
EUROBRASS 143 F.F.	●	●	●	●	●	●	●	●
EUROBRASS 146 F.F. UNIONS		●	●	●	●	●	●	
EUROBRONZE F.F.		●	●	●				

SIZES CONVERSION TABLE

1/2"	DN 15
3/4"	DN 20
1"	DN 25
1"1/4	DN 32
1"1/2	DN 40
2"	DN 50
2"1/4	DN 60
2"1/2	DN 65
3"	DN 80
4"	DN 100

RECOMMENDED HYDRAULIC DISCHARGES

In the table below you will find MALGORANI pressure reducing valves recommended hydraulic discharges for all sizes available; these discharges are stated both in litres/minute and in cubic metres/hour and represent the ideal operation ranges which better combine good performances, comfort and low hydraulic discharge.

TYPE	Size	Ideal discharge L/min	Ideal discharge m ³ /h
Minibrass	all	12-15	0,7 - 0,9
Eurobrass	1/2"	20-50	1,2 - 3
Eurobrass	3/4"	50-75	3 - 4,5
Eurobrass	1"	75-95	4,5 - 6
Eurobrass	1"1/4	95-130	6 - 8
Eurobrass	1"1/2	110-140	7 - 8,5
Eurobrass	2"-2"1/2	120-160	7,5 - 10
Eurobronze	1/2"	20-50	1,2 - 3
Eurobronze	3/4"	40-70	2,4 - 4,5
Eurobronze	1"	60-100	3,5 - 6

All these data verified by Istituto Giordano s.p.a. - Rimini October 2000.

HOW TO ADJUST PRESSURE REDUCING VALVES

All MALGORANI pressure reducing valves are set at 3 bars outlet pressure; a different setting is available on request.

When the pressure reducing valves is already assembled on the waterworks, simply follow the next directions:

- **Minibrass** series: unscrew the cap (part N. 1 pictures N. 4-6 pages 12-14), then using a screwdriver act on the screwholder (part N. 5 pictures N. 4-6 pages 11-14) screwing clockwise to increase the outlet pressure, counterclockwise to decrease the outlet pressure.
- **Eurobrass** series: unscrew the locknut (part N. 2 pictures 8-10-12 pages 16-18-20) then act on the spring holder (part N. 1 pictures 8-10-12 pages 16-18-20) screwing clockwise to increase outlet pressure, counterclockwise to decrease the outlet pressure.
- **Eurobronze** series: unscrew locknut then act on the spring holder (part N. 3 picture 14 page 22) screwing clockwise to increase outlet pressure, counterclockwise to decrease the outlet pressure.

***WARNING:** setting the pressure reducing valves remember to close all mixers and valves downstream; a correct setting should be done without water flowing.

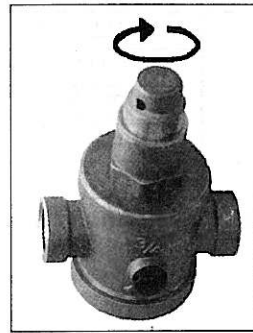
****WARNING FOR ALL SERIES:** when spring holder is removed the outlet pressure reaches the lowest level; screwing clockwise completely the spring holder the pressure outlet reaches the maximum level.

*****WARNING:** screwing clockwise the spring holder to get a higher outlet pressure, the spring is put under stress; to avoid that the spring losses its tension, make sure that the pressure reducing valve does not work continuously with outlet pressures close to the maximum recommended (4 bars for Minibrass series, 6 bars for Eurobrass and Eurobronze series).

PICTURE 3



DECREASE
OUTLET PRESSURE



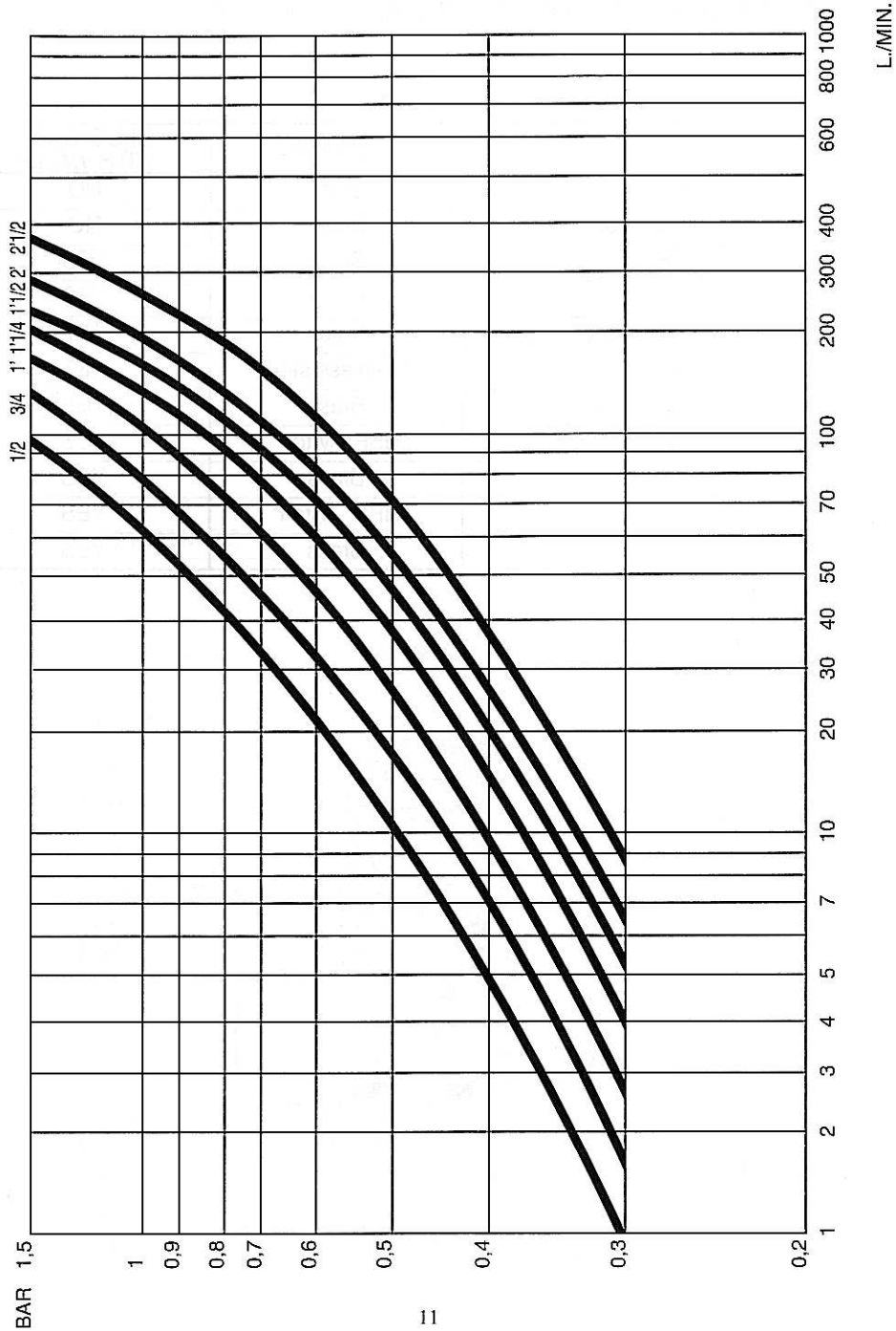
INCREASE
OUTLET PRESSURE

MALGORANI PRESSURE REDUCING VALVES TECHNICAL DATA

The following pages comprise technical drawings and several data concerning MALGORANI pressure reducing valves.

Please contact us for any further information.

DISCHARGE AND HEADLOSS DIAGRAM FOR EUROBRASS SERIES



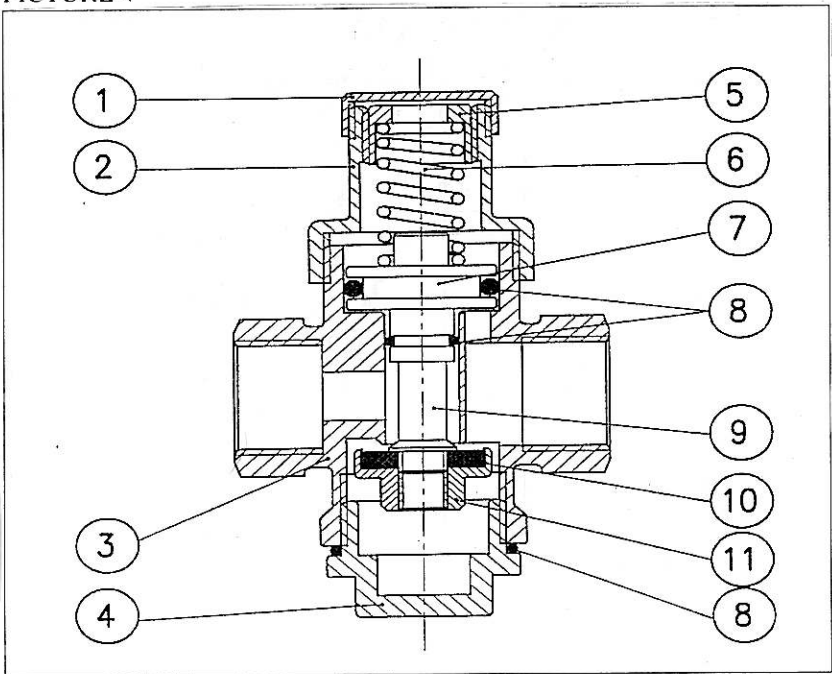
PRESSURE REDUCER *MINIBRASS 101 - 102 - 103*

TABLE 1

N.	PART	MATERIAL	IN CONTACT WITH WATER
1	Closure cap	Brass	NO
2	Upper cap	Brass	NO
3	Body	Brass	YES
4	Lower cap	Brass	YES
5	Spring holder	Brass	NO </td
6	Spring	Stainless steel	NO
7	Diaphragm	Brass	YES
8	O-ring	NBR - Viton*	YES
9	Bar	Brass	YES
10	O-ring	NBR - Viton*	YES
11	Shutter	Brass	YES

*Minibrass Viton Series

PICTURE 4

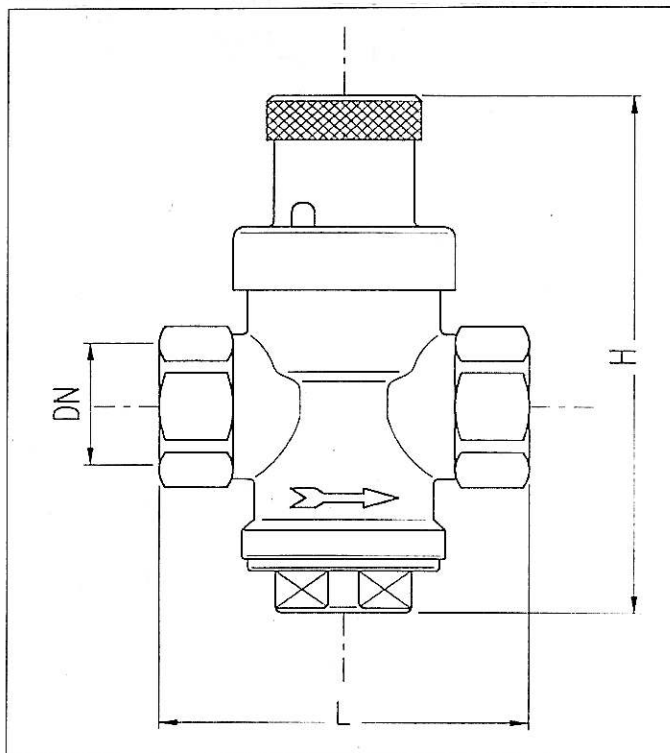


PRESSURE REDUCER *MINIBRASS 101 - 102 - 103*

TABLE 2

	SIZE	3/8"	1/2"	3/4"
	FLOW	13	13	13
DIMENSIONS in mm.	L	60	60	60
	H	93	93	93
SURFACE IN CONTACT WITH WATER IN CM ²		36,2	38,0	42,7
SURFACE/VOLUME		1,94	1,93	1,85

PICTURE 5



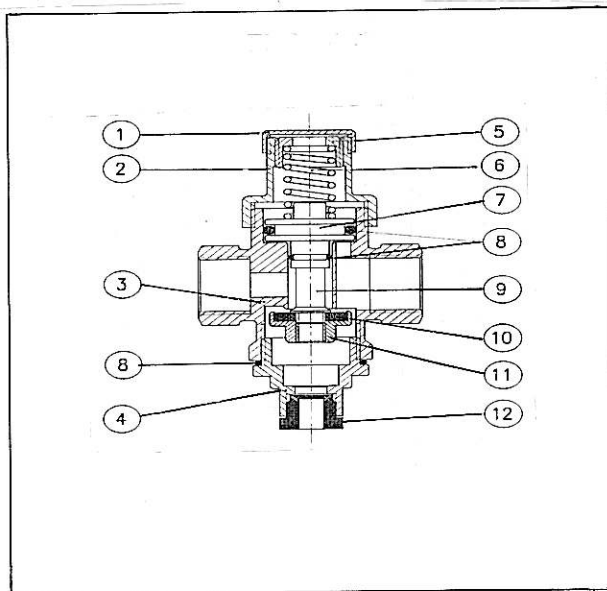
PRESSURE REDUCER *MINIBRASS 105 - 106 - 109*

TABLE 3

N.	PART	MATERIAL	IN CONTACT WITH WATER
1	Closure cap	Brass	NO
2	Upper cap	Brass	NO
3	Body	Brass	YES
4	Lower cap	Brass	YES
5	Spring holder	Brass	NO </td
6	Spring	Stainless steel	NO
7	Diaphragm	Brass	YES
8	O-ring	NBR - Viton*	YES
9	Bar	Brass	YES
10	O-ring	NBR - Viton*	YES
11	Shutter	Brass	YES
12	Gauge intake	Nylon	YES

**Minibrass Viton Series*

PICTURE 6

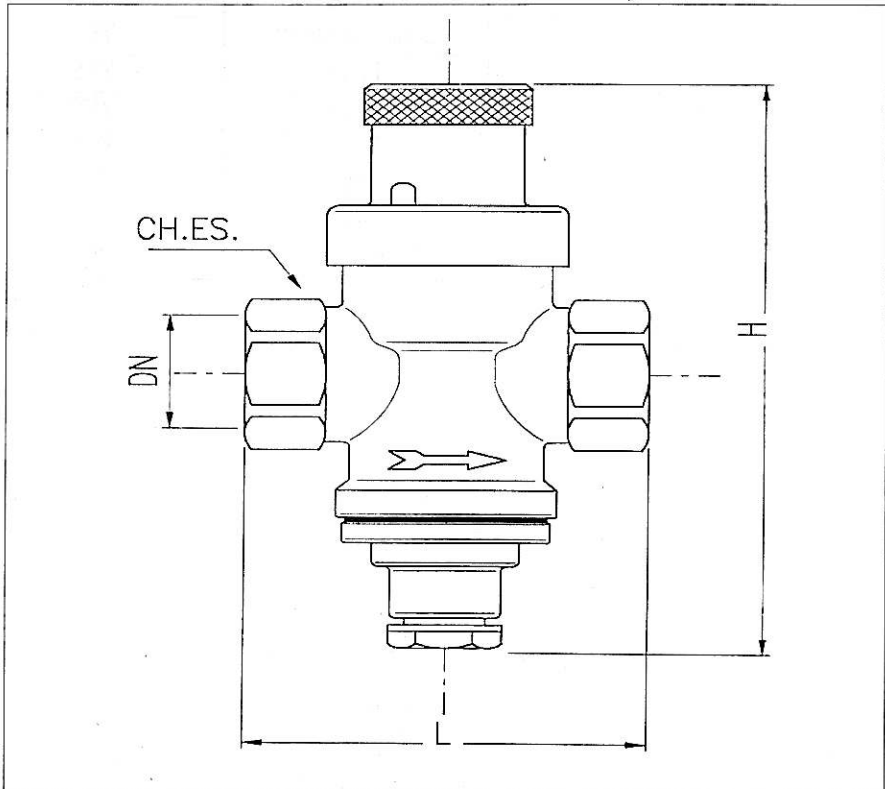


PRESSURE REDUCER *MINIBRASS 105 - 106 - 109*

TABLE 4

	SIZE	3/8"	1/2"	3/4"
	FLOW	12	12	12
DIMENSIONS in mm.	L	60	60	60
	H	112	112	112
SURFACE IN CONTACT WITH WATER IN CM ²		36,2	38,0	42,7
SURFACE/VOLUME		1,94	1,93	1,85

PICTURE 7

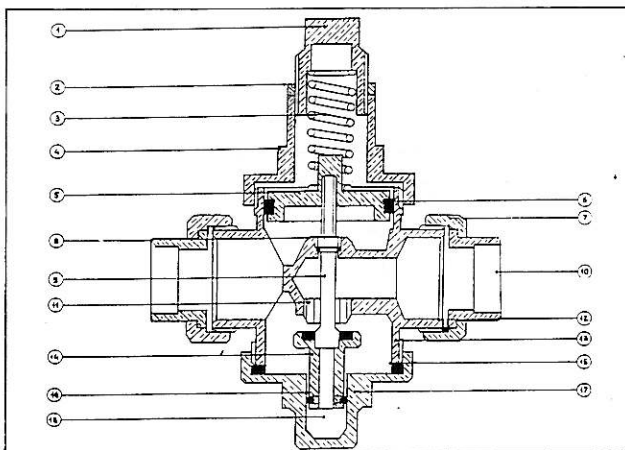


PRESSURE REDUCER *EUROBRASS 142*

TABLE 5

N.	PART	MATERIAL	IN CONTACT WITH WATER
1	Spring holder	Brass	NO
2	Fixing ring	Brass	NO
3	Spring	Steel pring	NO
4	Upper cap	Brass	NO
5	Brass membrane	Brass	YES
6	O-ring	NBR	YES
7	Nut	Brass	YES
8	Seal ring with O-ring	Brass + NBR	YES
9	Bar	Stainless steel*	YES
10	Male connection	Brass	YES
11	Seat	Stainless steel*	YES
12	Gasket	Fasit	YES
13	Body	Brass	YES
14	Shutter	Brass	YES
15	Gasket	NBR	YES
16	Gasket	NBR	YES
17	Lower cap	Brass	YES

*Sizes higher than 1"

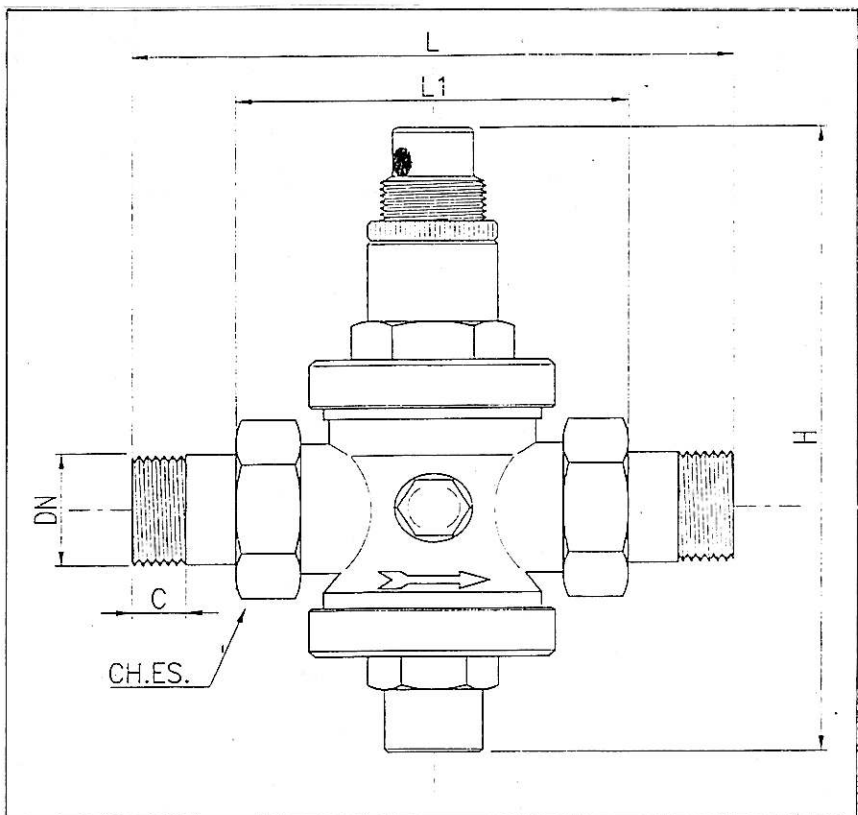


PICTURE 8

PRESSURE REDUCER *EUROBRASS 142*

TABLE 6

	SIZE	1/2"	3/4"	1"	1"1/4	1"1/2	2"
	FLOW	20 l/min	34 l/min	66 l/min	110 l/min	160 l/min	240 l/min
DIMENSIONS in mm.	L	112	134	140	185	190	260
	H	120	120	160	220	220	250
	L1	75	88	93	131	131	140
SURFACE IN CONTACT WITH WATER IN CM ²		72,6	131,3	159,1	320,6	332,1	794,5
SURFACE/VOLUME		1,52	1,22	1,15	0,91	0,90	0,69



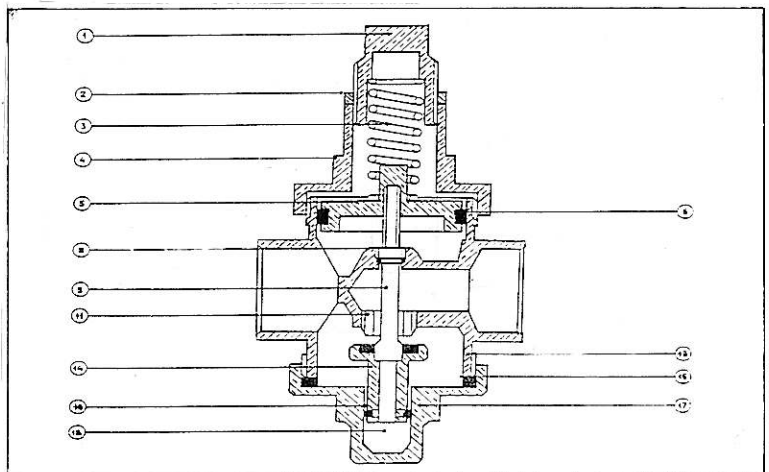
PICTURE 9

PRESSURE REDUCER *EUROBRASS 143*

TABLE 7

N.	PART	MATERIAL	IN CONTACT WITH WATER
1	Spring holder	Brass	NO
2	Fixing ring	Brass	NO
3	Spring	Steel pring	NO
4	Upper cap	Brass	NO
5	Brass membrane	Brass	YES
6	O-ring	NBR	YES
8	Seal ring with O-ring	Brass + NBR	YES
9	Bar	Stainless steel*	YES
11	Seat	Stainless steel	YES
13	Body	Brass	YES
14	Shutter	Brass	YES
15	Gasket	Fasit	YES
16	O-ring	NBR	YES
17	Lower cap	Brass	YES

**Sizes higher than 1"*



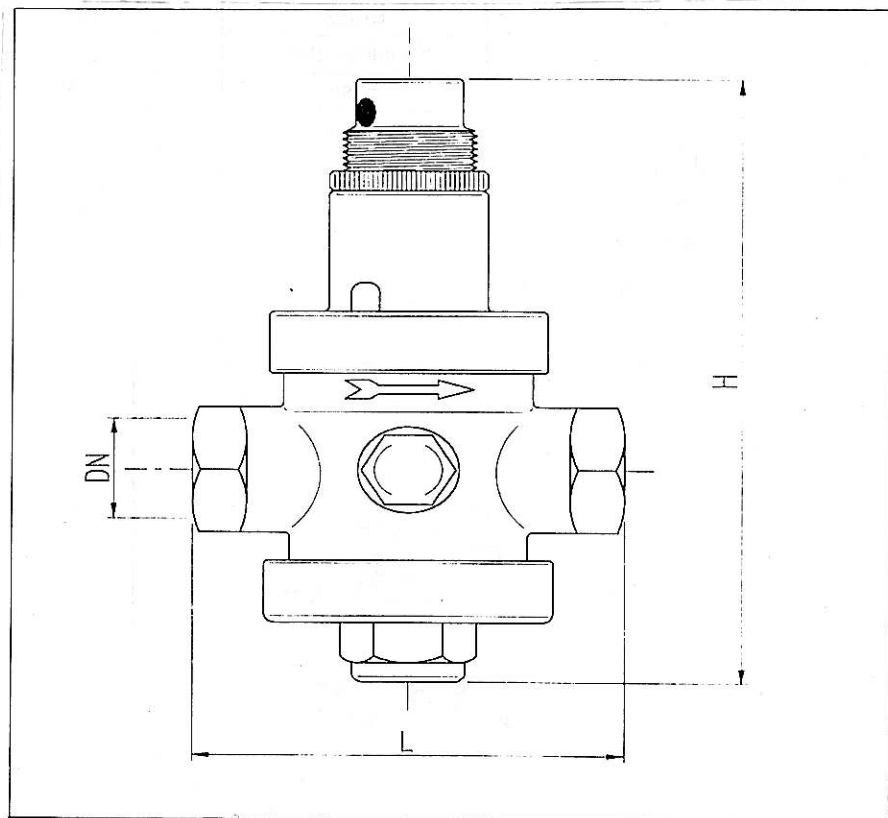
PICTURE 10

PRESSURE REDUCER *EUROBRASS 143*

TABLE 8

	SIZE	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
	FLOW	20 l/min	34 l/min	66 l/min	110 l/min	160 l/min	240 l/min	260 l/min
DIMENSIONS in mm.	L	75	85	89	125	130	138	138
	H	120	150	160	220	220	250	250
SURFACE IN CONTACT WITH WATER IN CM ²		69,3	128,3	148,3	295,0	287,3	700,1	743,5
SURFACE/VOLUME		1,53	1,23	1,16	0,94	0,94	0,72	0,67

PICTURE 11

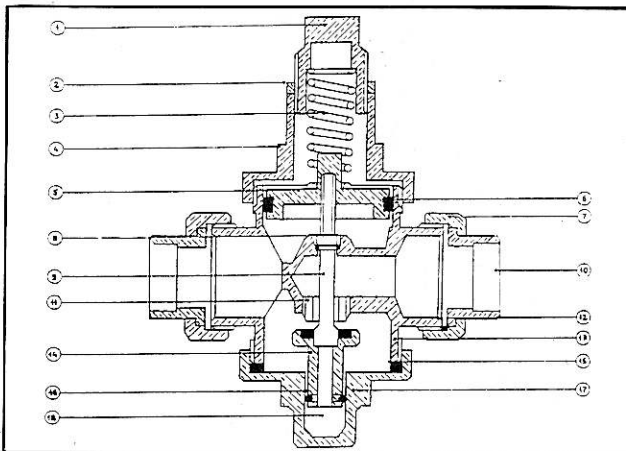


PRESSURE REDUCER *EUROBRASS 146*

TABLE 9

N.	PART	MATERIAL	IN CONTACT WITH WATER
1	Spring holder	Brass	NO
2	Fixing ring	Brass	NO
3	Spring	Steel pring	NO
4	Upper cap	Brass	NO
5	Brass membrane	Brass	YES
6	O-ring	NBR	YES
7	Nut	Brass	NO
8	Seal ring with O-ring	Brass + NBR	YES
9	Bar	Stainless steel*	YES
10	Female connection	Brass	YES
11	Seat	Stainless steel	YES
12	Gasket	Fasit	YES
13	Body	Brass	YES
14	Shutter	Brass	YES
15	Gasket	NBR	YES
16	Gasket	NBR	YES
17	Lower cap	Brass	YES

*Sizes higher than 1"



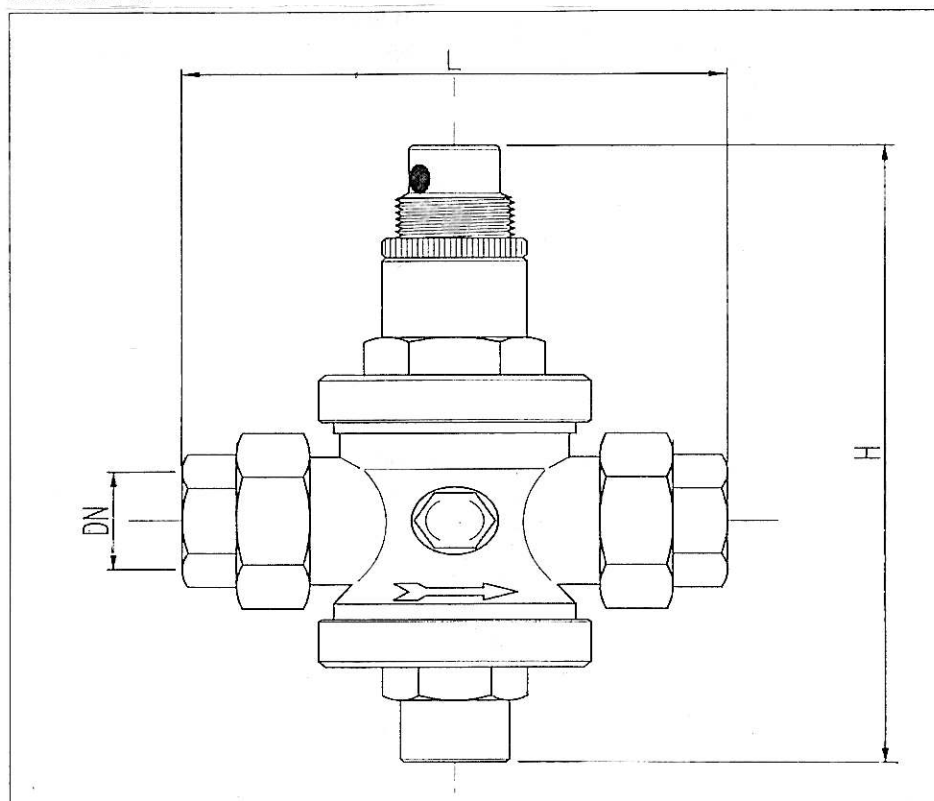
PICTURE 12

PRESSURE REDUCER *EUROBRASS 146*

TABLE 10

	SIZE	1/2"	3/4"	1"	1"1/4	1"1/2	2"
	FLOW	20 l/min	34 l/min	66 l/min	110 l/min	160 l/min	240 l/min
DIMENSIONS in mm.	L	112	135	140	170	175	200
	H	120	160	166	220	220	250
SURFACE IN CONTACT WITH WATER IN CM ²		71,5	131,3	153,4	317,8	316,2	770,7
SURFACE/VOLUME		1,52	1,22	1,15	0,91	0,90	0,69

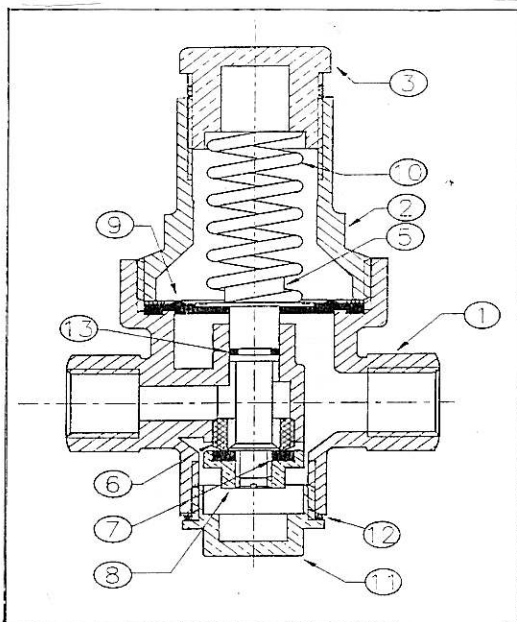
PICTURE 13



PRESSURE REDUCER *EUROBRONZE 150*

TABLE 11

N.	PART	MATERIAL	IN CONTACT WITH WATER
1	Body	Bronze	YES
2	Upper cap	Bronze	NO
3	Spring holder	Brass	NO
5	Bar	DZR brass	YES
6	Seat	Stainless steel	YES
7	Shutter rubber	NBR	YES
8	Shutter	DZR brass	YES
9	Double membrane	NBR	YES
10	Spring	Stainless steel	NO
11	Lower cap	DZR brass	YES
12	O-ring	NBR	YES

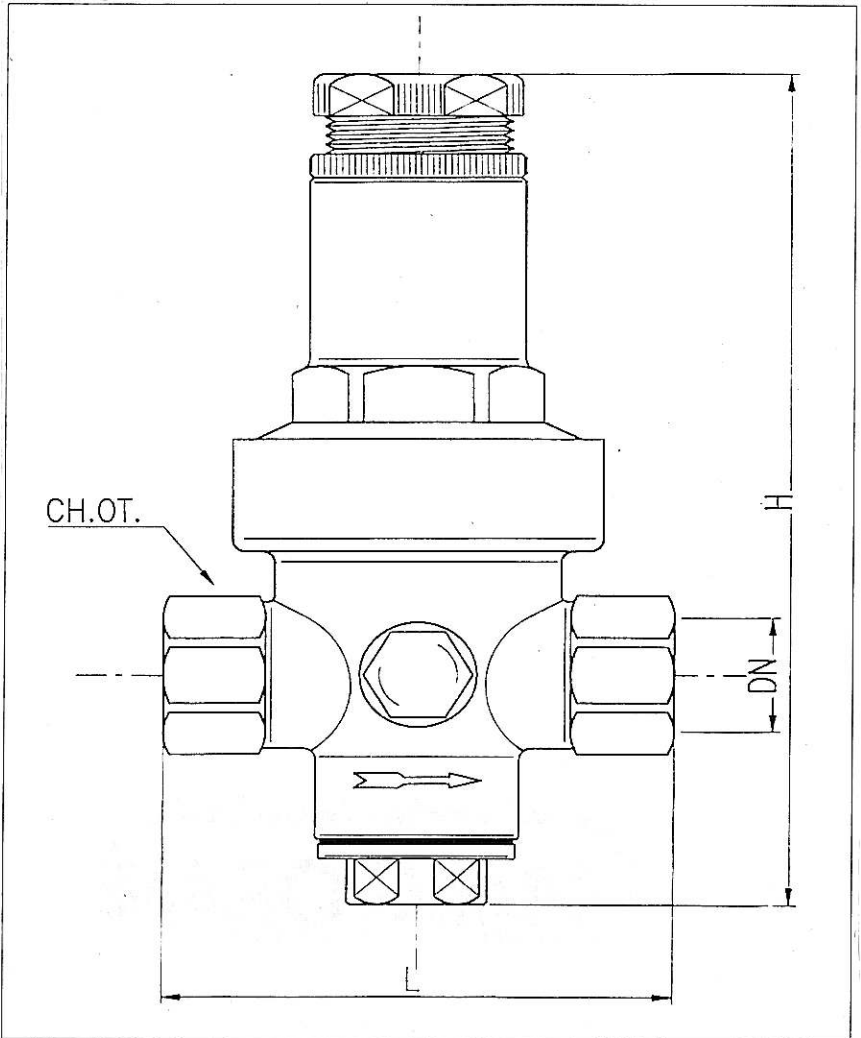


PICTURE 14

PRESSURE REDUCER *EUROBRONZE 150*

TABLE 12

	SIZE	1/2"	3/4"	1"
	FLOW	25 l/min	35 l/min	70 l/min
DIMENSIONS in mm.	L	79	91	100
	H	148	159	170



PICTURE 15

RUBINETTERIE
MALGORANI
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