Rev. 10/2009

SINGLE ADJUSTMENT MANUAL VALVES AND LOCKSHIELDS

For iron, copper or polyethylene pipes.

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For iron, copper or polyethylene pipes.

PRODUCTION RANGE

SINGLE ADJUSTMENT VALVE - IRON CONNECTION			
Connection	Size	Code	
		Angle	Straight
GAS UNI-EN-ISO 228	3/8" *	**7.03.00**	**8.03.00**
GAS UNI-EN-ISO 228	1/2" *	**7.04.00**	**8.04.00**
GAS UNI-EN-ISO 228	3/4"	**7.05.00**	**8.05.00**
GAS UNI-EN-ISO 228	1"	**7.06.00**	**8.06.00**
GAS UNI-EN-ISO 228	1"1/4	**7.07.00**	**8.07.00**

LOCKSHIELD REGULATION VALVE - IRON CONNECTION			
Connection	Size	Code	
		Angle	Straight
GAS UNI-EN-ISO 228	3/8" *	**9.03.00**	**10.03.00**
GAS UNI-EN-ISO 228	1/2" *	**9.04.00**	**10.04.00**
GAS UNI-EN-ISO 228	3/4"	**9.05.00**	**10.05.00**
GAS UNI-EN-ISO 228	1"	**9.06.00**	**10.06.00**
GAS UNI-EN-ISO 228	1"1/4	**9.07.00**	**10.07.00**

* RFS Connection

SINGLE ADJUSTMENT VALVE - COPPER OR POLYETHYLENE CONNECTION			
Connection	Size	Code	
		Angle	Straight
Standard RBM	3/8" *	**27.03.00**	**28.03.00**
Standard RBM	3/8" * (1)	**27.03.10**	**28.03.10**
Standard RBM	1/2" *	**27.04.00**	**28.04.00**
Standard RBM	1/2" * (1)	**27.04.10**	**28.04.10**

LOCKSHIELD REGULATION VALVE - COPPER OR POLYETHYLENE CONNECTION			
Connection	Size	Code	
		Angle	Straight
Standard RBM	3/8" *	**29.03.00**	**30.03.00**
Standard RBM	3/8" * (1)	**29.03.10**	**30.03.10**
Standard RBM	1/2" *	**29.04.00**	**30.04.00**
Standard RBM	1/2" * (1)	**29.04.10**	**30.04.10**

(1) Only set-up for copper pipes with an external diameter of Ø18

* RFS Connection

DESCRIPTION

The **RBM single adjustment manual valves and lockshields** are used as shut-off and adjustment parts for heating bodies (radiators, fan coils, etc...) in heating and air conditioning systems.

On the radiator side, they are fitted with a mechanical airtight joint system called "RFS", with a nominal size of 3/8" and 1/2", which allows a quick and safe connection to any heating body. The airtight joint system is guaranteed by a PTFE gasket with fixing ring nut and an EPDM O-ring.

The valves and lockshields are manufactured in straight and angle versions that allow connection to different types of pipes on the system side.

The valves and lockshields with a gas thread, on the system side, are set up for connection with iron pipes.

The valves and lockshields with standard RBM thread, on the system side, are set up for connection with copper, polyethylene and multilayer polyethylene pipes, which have a specific fitting.

IMPORTANT: Connection of valves and lockshields with a standard RBM thread to a copper pipe with an external diameter of Ø18 is possible by using the reduction (code **57.18.00**) in addition to the specific fitting.

PURPOSE

Even though the RBM single adjustment manual valves and lockshields are not real adjustment devices, they can perform the task of balancing the hydraulic system by adjusting the stroke of the shutter.

OPERATION

RBM single adjustment manual valves and lockshields work through the manual adjustment of the shutter. This adjustment is performed by turning the hand wheel on the valve or lockshield body.

Rotating the hand wheel clockwise will close the valve or lockshield, whereas rotating the hand wheel anticlockwise will open it.

The hydraulic features and pressure drops of the RBM single adjustment valves and lockshields can be found on the diagrams in the technical data sheet.

* **FF:** Female / female connection ** **MF:** Male / female connection

(1) Clean Filter

TECHNICAL FEATURES - VALVES AND LOCKSHIELDS FOR IRON CONNECTION

Body	Nickel-plated brass
Seals	Ethylene-propylene elastomer (EDPM) and nitrile elastomer (NBR)
Hand wheel	ABS
Inlet connection	F UNI-EN-ISO 228
Outlet connection	M UNI-EN ISO 228
Pre-gasket ogive	PTFE
Operating T_{max}	110 °C
Operating P_{max}	1000 KPa - 10 bar

TECHNICAL FEATURES - VALVES AND LOCKSHIELDS FOR COPPER OR POLYETHYLENE CONNECTION

Body	Nickel-plated brass
Seals	Ethylene-propylene elastomer (EDPM) and nitrile elastomer (NBR)
Hand wheel	ABS
Inlet connection	M Standard RBM (W24,5x19F)
Outlet connection	M UNI-EN ISO 228
Pre-gasket ogive	PTFE
Operating T_{max}	110 °C
Operating P_{max}	1000 KPa - 10 bar

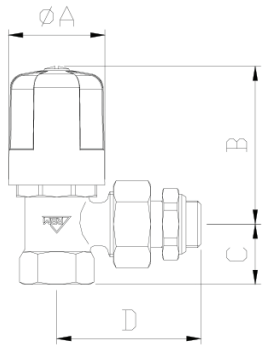
SPARE PARTS

Product	Code	Size	Description
	**426.013**	3/8"	Spherical nut for iron, copper or polyethylene connection with O-ring
	426.013	1/2"	
	**2711.005**	3/8"	Cap for lockshield valve
	2711.005	1/2"	
	3511.005	3/4"	
	3511.005	1"	
	3511.005	1"1/4	
	**2711.055**	3/8"	Cap for lockshield valve - Chrome plated version
	2711.055	1/2"	
	**2587.003**	3/8"	Long hub hand wheel with screw
	2587.003	1/2"	
	**331.013**	3/4"	Long hub hand wheel with screw
	332.013	1"	
	333.013	1"1/4	
	**2587.053**	3/8"	Long hub hand wheel with screw - Chrome plated version
	2587.053	1/2"	

DIMENSIONAL FEATURES

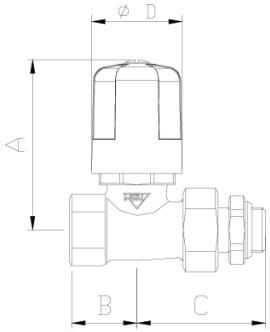
IRON CONNECTION

Angle valve



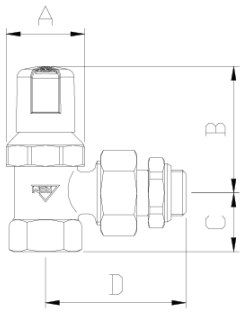
Measurement	ø A [mm]	B [mm]	C [mm]	D [mm]
G 3/8"	33,5	55	19,5	50
G 1/2"	33,5	56	22,5	51,5
G 3/4"	53	34,5	28	62,5
G 1"	56	75	33,5	67,5
G 1" 1/4	65	82	37,5	81

Straight valve



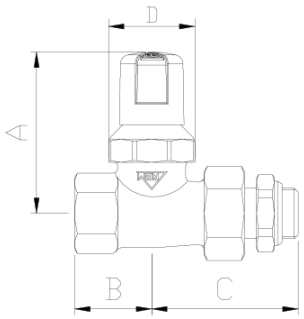
Measurement	A [mm]	B [mm]	C [mm]	ø D [mm]
G 3/8"	62	22,5	48,5	33,5
G 1/2"	62	24,5	50	33,5
G 3/4"	72	33	59,5	53
G 1"	85	38	62	56
G 1" 1/4	97	41,5	75	65

Angle lockshield valve



Measurement	A [mm]	B [mm]	C [mm]	D [mm]
G 3/8"	33,5	55	19,5	50
G 1/2"	33,5	56	22,5	51,5
G 3/4"	53	34,5	28	62,5
G 1"	56	75	33,5	67,5
G 1" 1/4	65	82	37,5	81

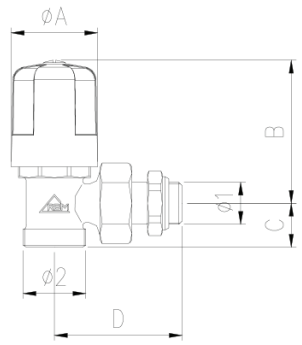
Straight lockshield valve



Measurement	A [mm]	B [mm]	C [mm]	D [mm]
G 3/8"	52	22,5	48,5	28
G 1/2"	52	24,5	50	28
G 3/4"	56	33	59,5	37
G 1"	68	38	62	41
G 1" 1/4	83,5	41,5	75	48,5

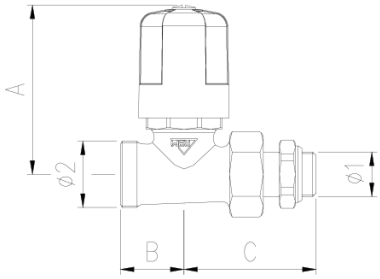
COPPER OR POLYETHYLENE CONNECTION

Angle valve



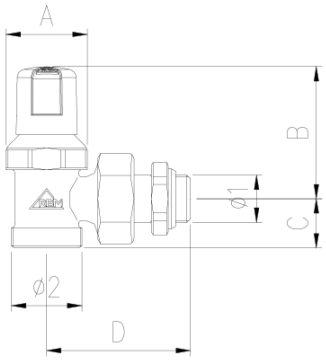
ø 1	ø 2	ø A [mm]	B [mm]	C [mm]	D [mm]
G 3/8"	Standard RBM	33,5	55,5	17	50
G 1/2"	Standard RBM	33,5	55,5	17	51,5

Straight valve



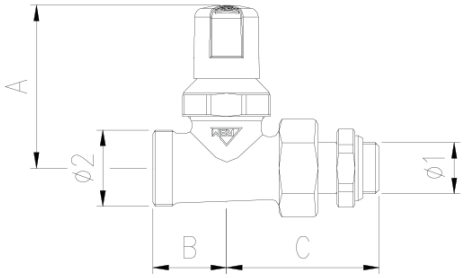
ø 1	ø 2	A [mm]	B [mm]	C [mm]
G 3/8"	Standard RBM	62	23,5	49
G 1/2"	Standard RBM	62	23,5	50,5

Angle lockshield valve



ø 1	ø 2	A [mm]	B [mm]	C [mm]	D [mm]
G 3/8"	Standard RBM	28	45,5	17	50
G 1/2"	Standard RBM	28	45,5	17	51,5

Straight lockshield valve

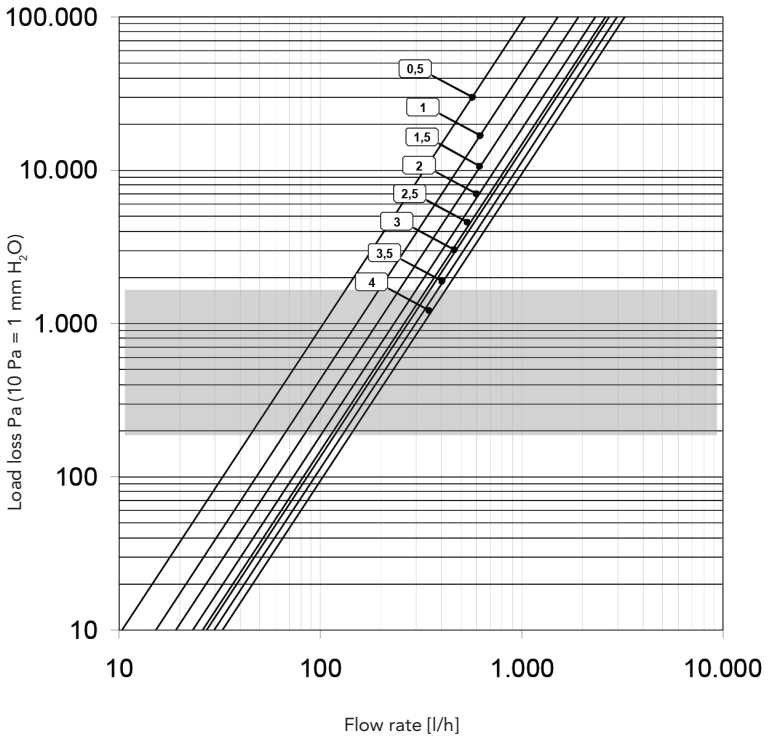


ø 1	ø 2	A [mm]	B [mm]	C [mm]
G 3/8"	Standard RBM	52	23,5	49
G 1/2"	Standard RBM	52	23,5	50,5

FLUID DYNAMICS FEATURES

VALVES AND LOCKSHIELDS FOR IRON CONNECTION

3/8" ANGLE VALVES AND LOCKSHIELDS

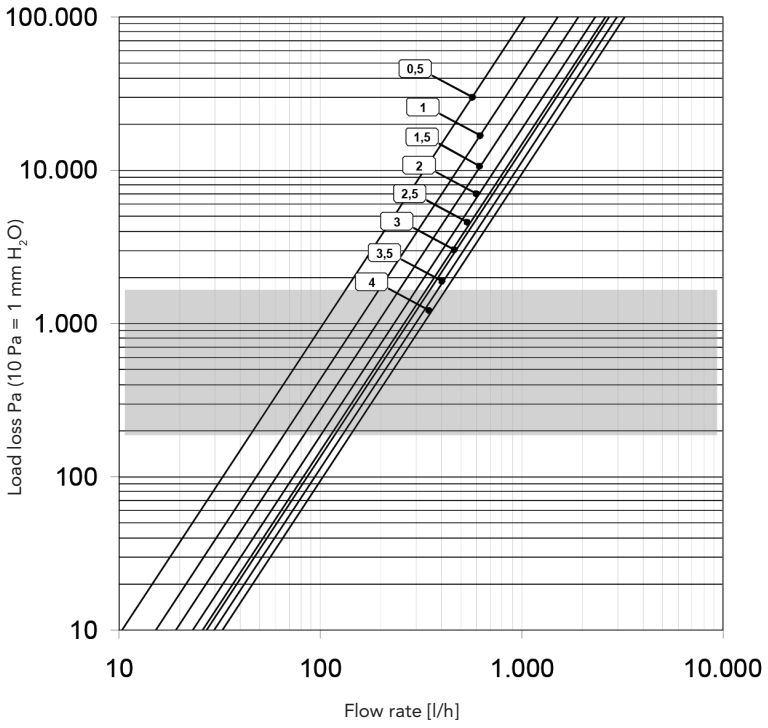


Rpm	Kvs [m³/h]
0,5	1,04
1	1,52
1,5	1,92
2	2,32
2,5	2,6
3	2,72
3,5	2,97
4	3,26
Valve open	3,26

KEY

Field of use

3/8" STRAIGHT VALVES AND LOCKSHIELDS



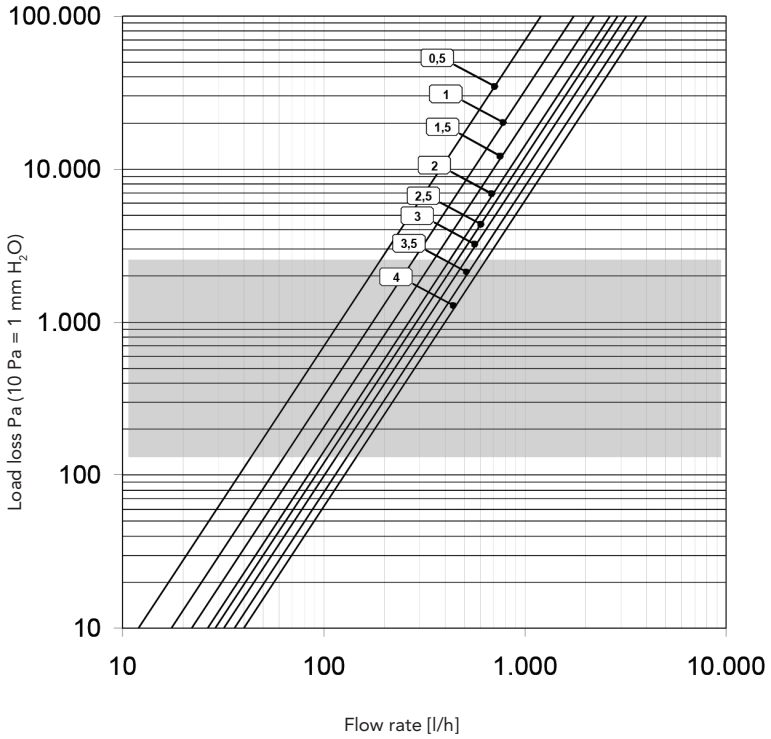
Rpm	Kvs [m³/h]
0,5	0,39
1	0,63
1,5	0,76
2	0,96
2,5	1,05
3	1,15
3,5	1,21
4	1,36
Valve open	1,36

KEY

Field of use

VALVES AND LOCKSHIELDS FOR IRON CONNECTION

1/2" ANGLE VALVES AND LOCKSHIELDS

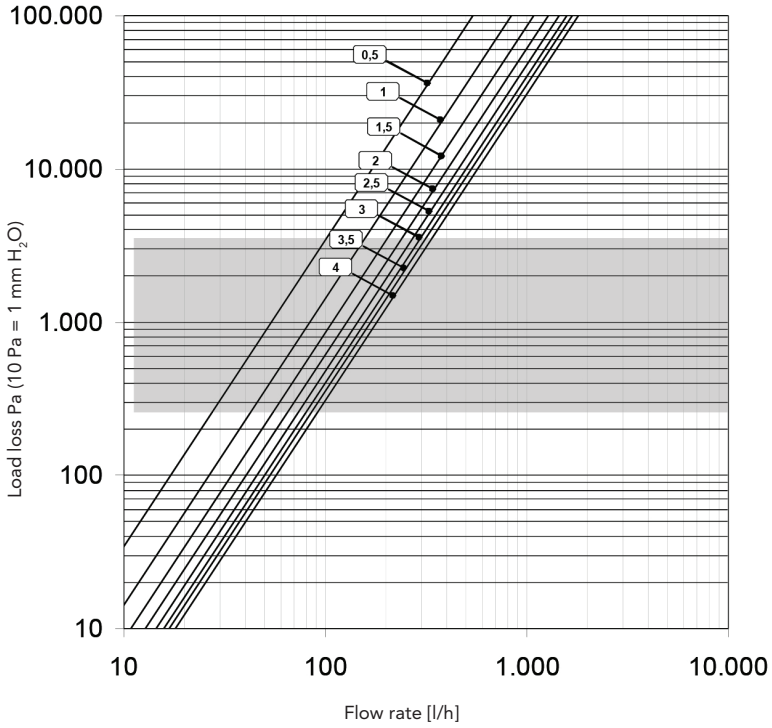


Rpm	Kvs [m³/h]
0,5	1,20
1	1,75
1,5	2,20
2	2,66
2,5	2,90
3	3,20
3,5	3,60
4	4,02
Valve open	4,02

KEY

Field of use

1/2 "STRAIGHT VALVES AND LOCKSHIELDS



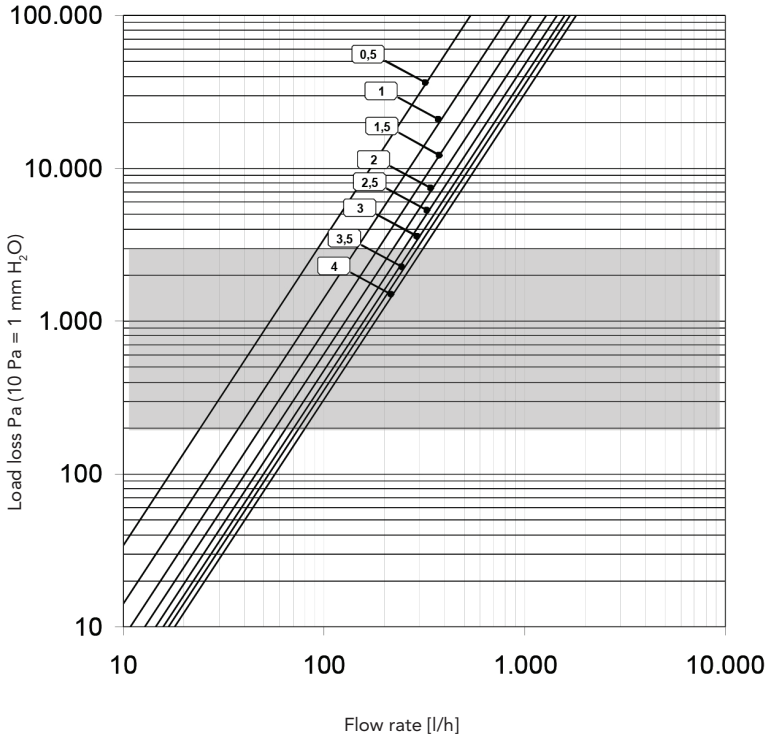
Rpm	Kvs [m³/h]
0,5	0,54
1	0,84
1,5	1,08
2	1,28
2,5	1,45
3	1,58
3,5	1,68
4	1,80
Valve open	1,80

KEY

Field of use

VALVES AND LOCKSHIELDS FOR IRON CONNECTION

3/4" ANGLE VALVES AND LOCKSHIELDS

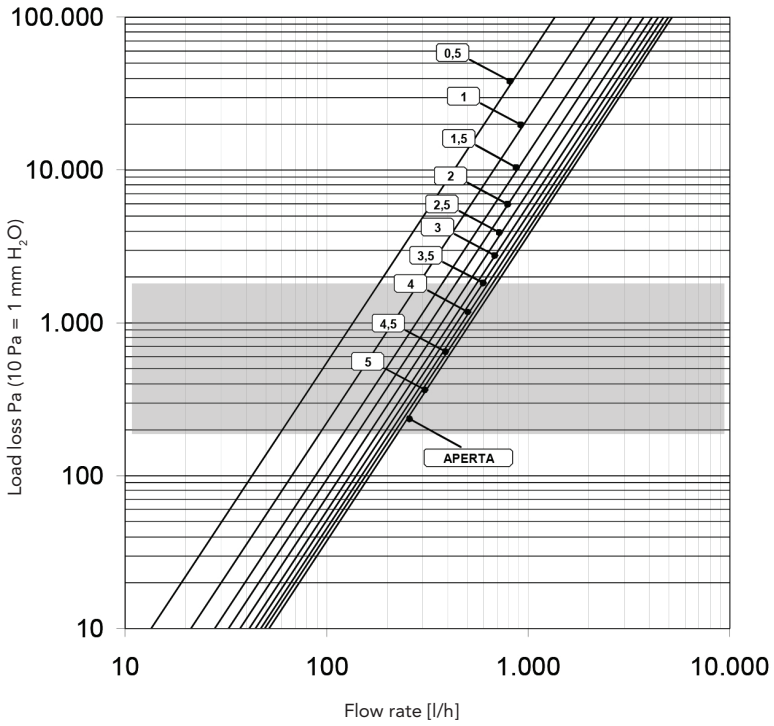


Rpm	Kvs [m³/h]
0,5	2,76
1	3,81
1,5	5,06
2	5,88
2,5	6,62
3	7,26
3,5	7,36
4	8,28
4,5	8,74
5	9,38
Valve open	10,86

KEY

Field of use

3/4" STRAIGHT VALVES AND LOCKSHIELDS



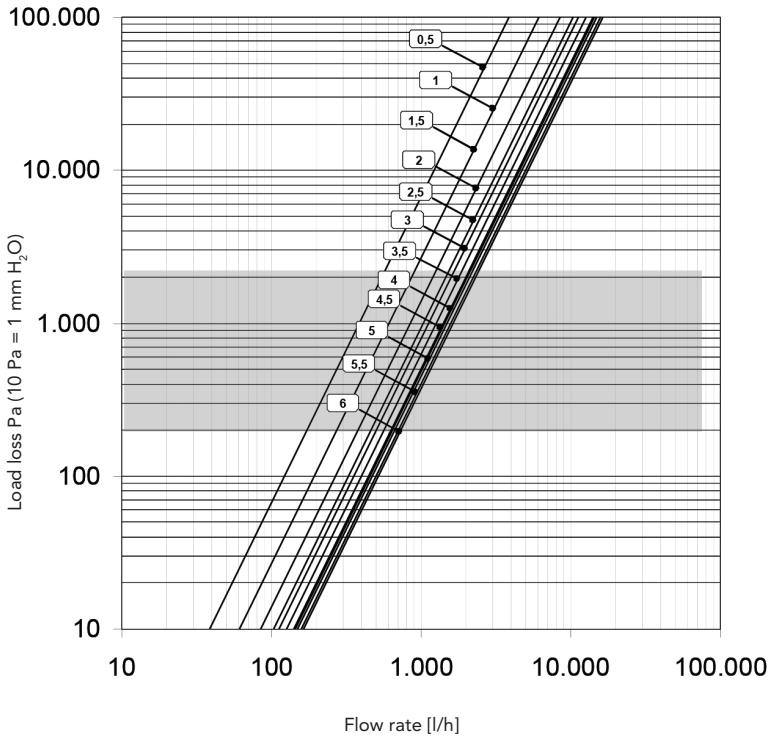
Rpm	Kvs [m³/h]
0,5	1,35
1	2,13
1,5	2,78
2	3,27
2,5	3,74
3	4,13
3,5	4,44
4	4,70
4,5	4,94
5	5,20
Valve open	5,20

KEY

Field of use

VALVES AND LOCKSHIELDS FOR IRON CONNECTION

1" ANGLE VALVES AND LOCKSHIELDS

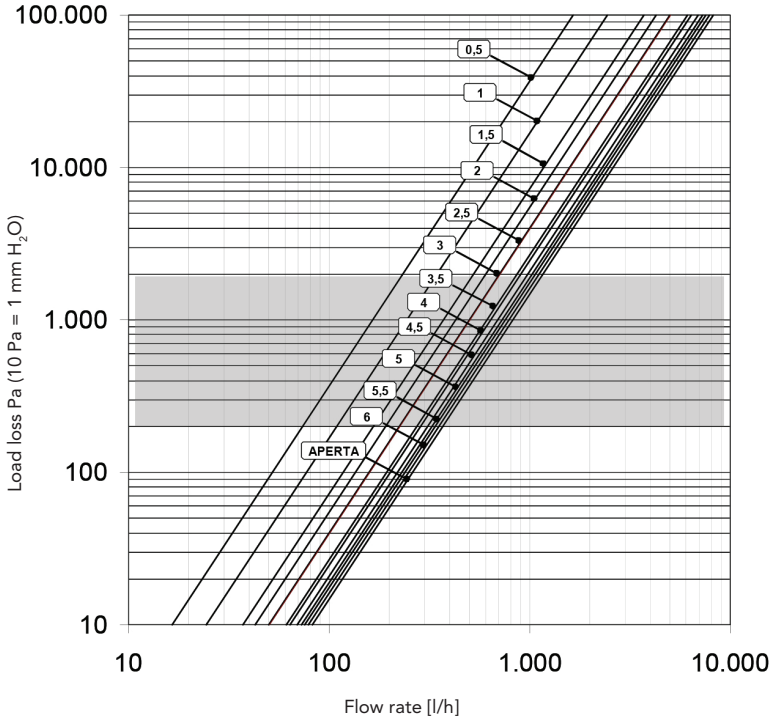


KEY

Field of use

Rpm	Kvs [m³/h]
0,5	3,84
1	6,10
1,5	8,50
2	10,30
2,5	11,22
3	12,7
3,5	14,43
4	14,11
4,5	14,96
5	15,72
5,5	16,32
6	17,12
Valve open	17,12

1" STRAIGHT VALVES AND LOCKSHIELDS

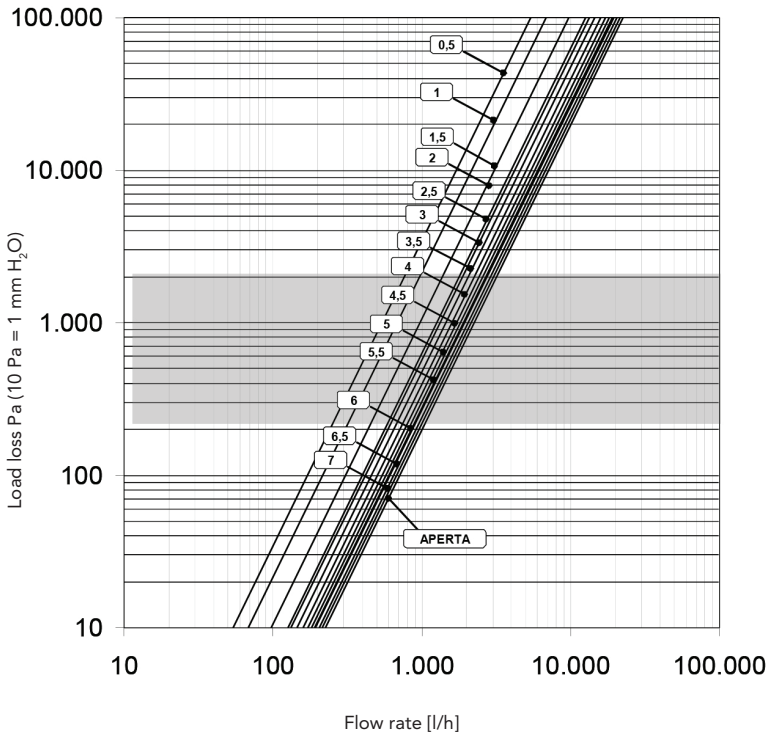


KEY

Field of use

Rpm	Kvs [m³/h]
0,5	1,65
1	2,44
1,5	3,71
2	4,28
2,5	5,01
3	5,06
3,5	6,12
4	6,39
4,5	6,95
5	7,30
5,5	7,54
6	7,90
Valve open	8,25

1" 1/4 ANGLE VALVES AND LOCKSHIELDS

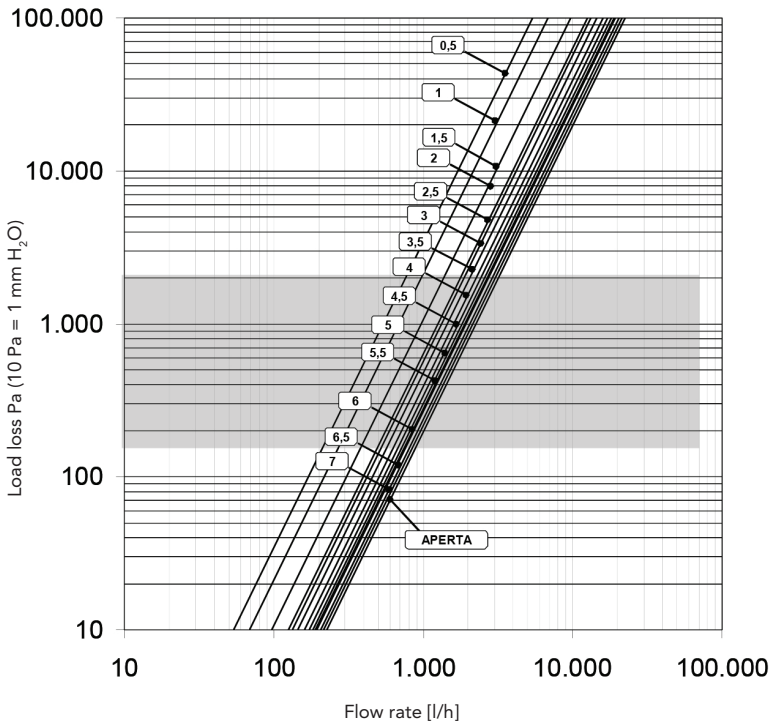


Rpm	Kvs [m³/h]
0,5	5,40
1	6,85
1,5	9,72
2	12,60
2,5	13,30
3	14,50
3,5	16,00
4	17,20
4,5	18,20
5	19,00
5,5	19,40
6	19,70
6,5	20,50
7	21,50
Valve open	22,50

KEY

Field of use

1" 1/4 STRAIGHT VALVES AND LOCKSHIELDS



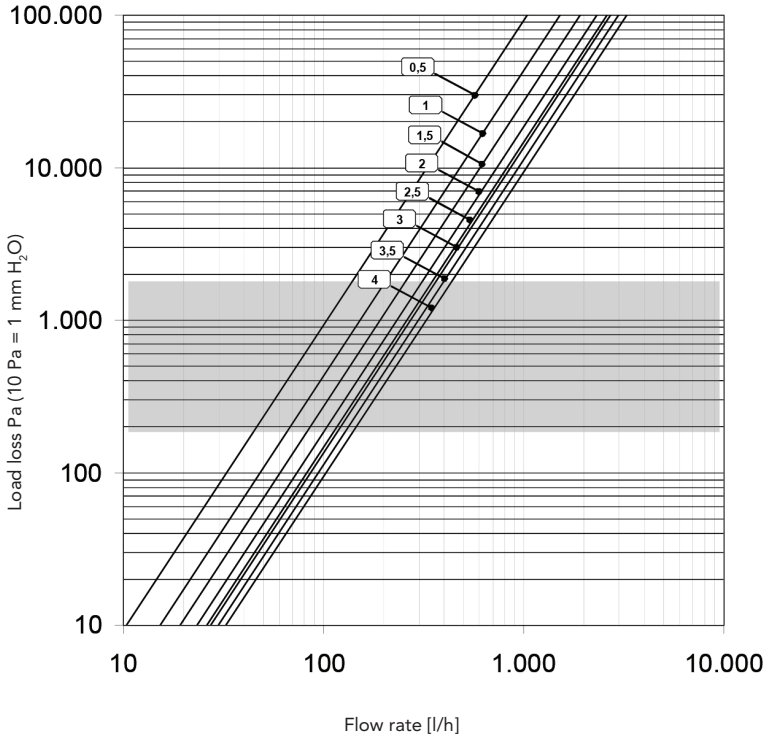
Rpm	Kvs [m³/h]
0,5	2,05
1	3,63
1,5	5,26
2	6,11
2,5	7,26
3	7,92
3,5	8,71
4	9,37
4,5	9,80
5	10,40
5,5	10,89
6	11,31
6,5	11,61
Valve open	22,50

KEY

Field of use

VALVES AND LOCKSHIELDS FOR COPPER OR POLYETHYLENE CONNECTION

3/8" ANGLE VALVES AND LOCKSHIELDS

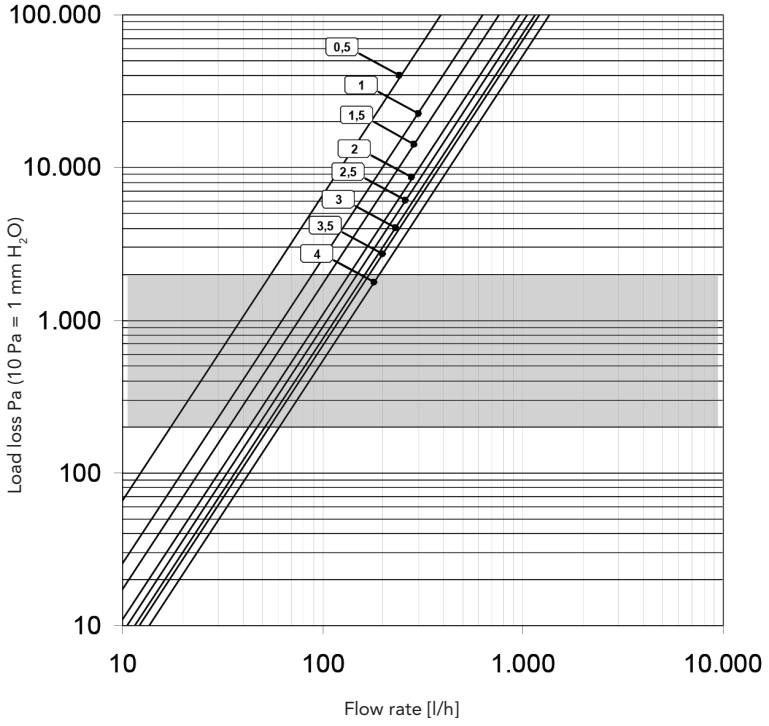


Rpm	Kvs [m³/h]
0,5	1,04
1	1,52
1,5	1,92
2	2,32
2,5	2,6
3	2,72
3,5	2,97
4	3,26
Valve open	3,26

KEY

Field of use

3/8" STRAIGHT VALVES AND LOCKSHIELDS



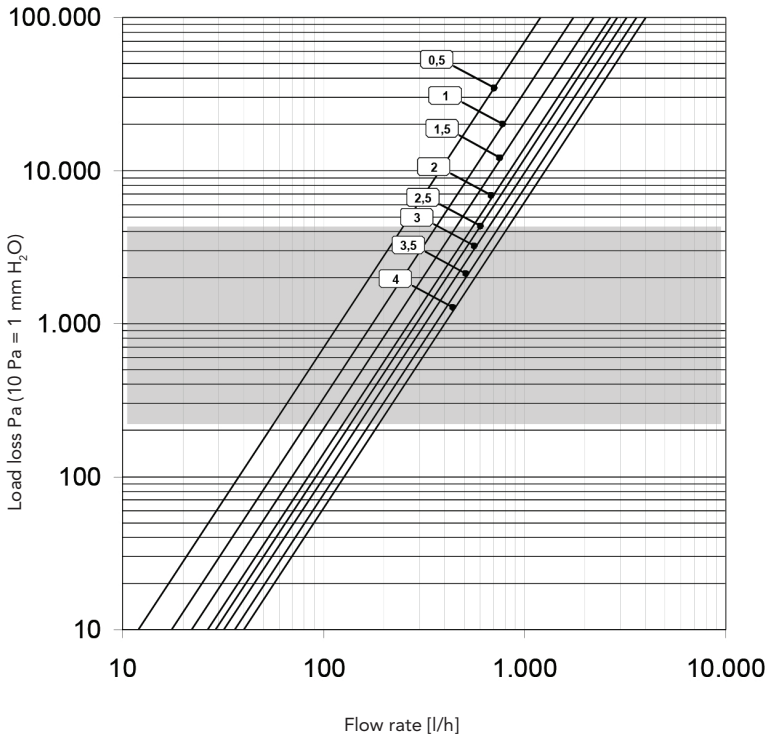
Rpm	Kvs [m³/h]
0,5	0,39
1	0,63
1,5	0,76
2	0,96
2,5	1,05
3	1,15
3,5	1,21
4	1,36
Valve open	1,36

KEY

Field of use

VALVES AND LOCKSHIELDS FOR COPPER OR POLYETHYLENE CONNECTION

1/2" ANGLE VALVES AND LOCKSHIELDS

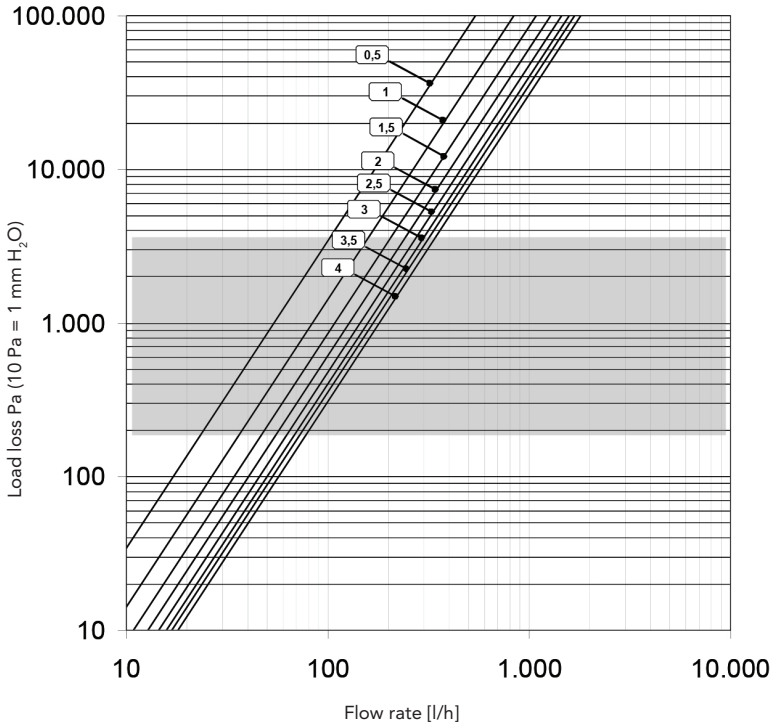


Rpm	Kvs [m³/h]
0,5	1,20
1	1,75
1,5	2,2
2	2,66
2,5	2,9
3	3,2
3,5	4
4	4,02
Valve open	4,02

KEY

Field of use

1/2" STRAIGHT VALVES AND LOCKSHIELDS



Rpm	Kvs [m³/h]
0,5	0,54
1	0,84
1,5	1,08
2	1,28
2,5	1,45
3	1,58
3,5	1,68
4	1,8
Valve open	1,8

KEY

Field of use

COMBINED FITTINGS

POLYETHYLENE PIPES				
Type of fitting	**Number of threaded connections**	**Type of threaded connection**	**Piping**	**Code**
COMPRESSION FITTING	1	Standard RBM Nut	POLYETHYLENE	**71.12...20.X0** **122.12...20.00**

MULTILAYER POLYETHYLENE PIPES				
Type of fitting	**Number of threaded connections**	**Type of threaded connection**	**Piping**	**Code**
COMPRESSION FITTING	1	Standard RBM Nut	MULTILAYER POLYETHYLENE	**70.10...20.X0** **1216.14...16.00**
Type of fitting	**Number of threaded connections**	**Press fittings**	**Piping**	**Code**
PRESS FITTING	1 Standard RBM	1	MULTILAYER POLYETHYLENE	**826.14...20.X0**

COPPER PIPES				
Type of fitting	**Number of threaded connections**	**Type of threaded connection**	**Piping**	**Code**
COMPRESSION FITTING	1	Standard RBM Nut	COPPER	**602.10...16.00** **41.10...16.20** **41.18.20*** **(only pipe Ø18)**

* Install a reduction, code **57.18.00**, for fitting connection for copper pipe Ø18

POSSIBLE APPLICATIONS

Fig.1

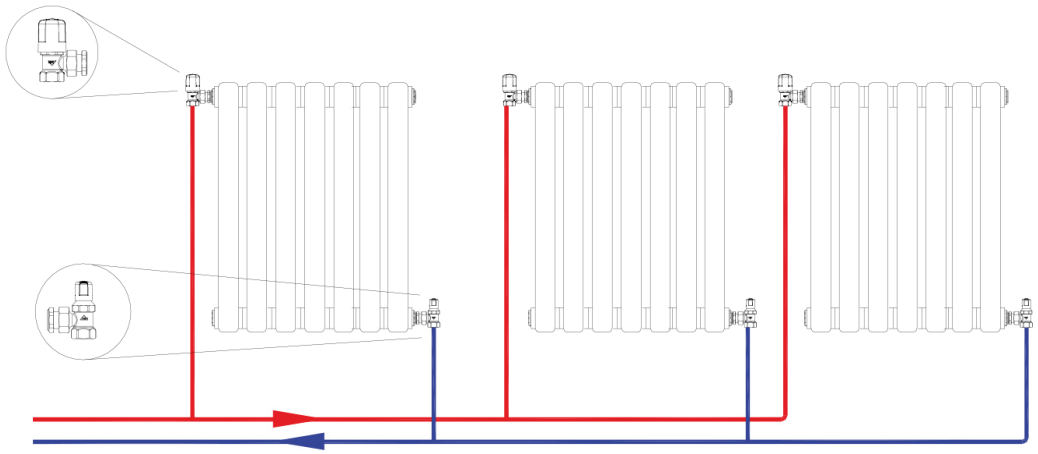
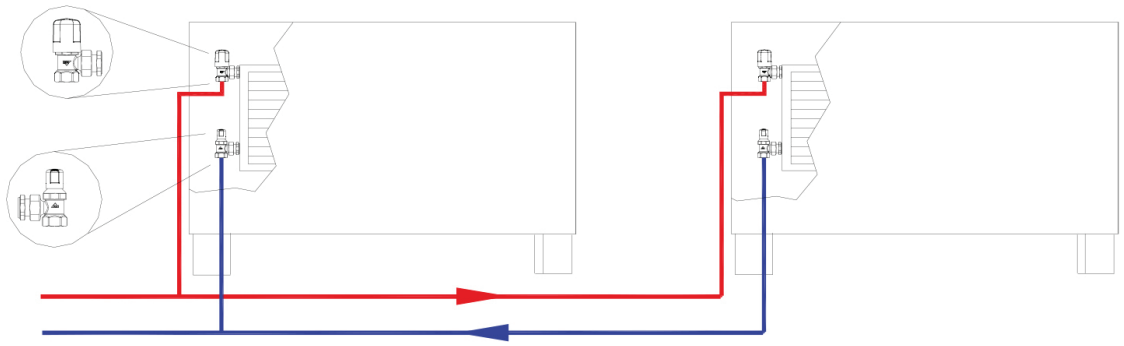


Fig.2



The pictures show the main uses of the RBM manual valves and lock-shields used as shut-off and adjustment devices for terminal bodies (radiators, fan coils, etc.) in heating and packaging systems.

RBM spa reserves the right to improve and change the described products and related technical data at any moment and without prior notice: always refer to the instructions attached with the supplied components; this sheet is an aid, should the instructions be extremely schematic. Our technical office is always at your disposal for any doubt, problem or explanation.

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