Rev. 09/2012

Y-SHAPED PURIFYING FILTER

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DESCRIPTION

The **Y-shaped purifying filters with replaceable filtering cartridge** solve plant problems due to pollution from suspended particles with a range of filters suitable for small, medium and large plants.

The special Y-shaped design of the filter allows the impurities to be deposited on the bottom of the filter-holder seat, thus facilitating filter maintenance.

THE PURPOSE

The **Y-shaped purifying filters with replaceable filtering cartridge** ensure the achievement of the following objectives:

- Easy installation in the hydraulic system;
- Easy maintenance;
- Limited overall dimensions.

This makes it possible to fit them in any hydraulic system, whether existing or under construction.

The filters represent a first level of filtration, which is essential for the protection of the regulating parts and pipes. The substances possibly present in excess in the fluids must be controlled and treated by suitable purifiers, in combination with the RBM line filters.

USE

The **Y-shaped purifying filters with replaceable filtering cartridge** are mainly used in hydraulic systems whose primary fluid is water, both hot and cold. Possibility to fit them in flanged systems.

Special care must be taken when mounting on the filter system.

The filter must be mounted with the **seat-filter holder facing downwards** to facilitate the deposit of impurities on the bottom and **placed horizontally.**

When mounting, **it is important to observe the direction shown by the arrow on the filter body.**

The filtering cartridge is made of AISI 304 stainless steel, can be regenerated and can be replaced.

For fast and easy filter maintenance, a shut-off valve to close the hydraulic system must be installed before the filter.

PRODUCTION RANGE

Connections	Degree of filtration [µm]	Size	Code	Kv [m³/h] (1)
THREADED FF UNI-EN-ISO 228-1	800	1/2"	**858.04.12**	3,69
THREADED FF UNI-EN-ISO 228-1	800	3/4"	**858.05.12**	6,57
THREADED FF UNI-EN-ISO 228-1	800	1"	**858.06.12**	9,23
THREADED FF UNI-EN-ISO 228-1	800	1" 1/4	**858.07.12**	15,60
THREADED FF UNI-EN-ISO 228-1	800	1" 1/2	**858.08.12**	25,10
THREADED FF UNI-EN-ISO 228-1	800	2"	**858.09.12**	38,80
THREADED FF UNI-EN-ISO 228-1	300	1/2"	**858.04.02**	3,00
THREADED FF UNI-EN-ISO 228-1	300	3/4"	**858.05.02**	6,53
THREADED FF UNI-EN-ISO 228-1	300	1"	**858.06.02**	8,79
THREADED FF UNI-EN-ISO 228-1	300	1" 1/4	**858.07.02**	14,15
THREADED FF UNI-EN-ISO 228-1	300	1" 1/2	**858.08.02**	23,80
THREADED FF UNI-EN-ISO 228-1	300	2"	**858.09.02**	36,20
THREADED FF UNI-EN-ISO 228-1	100	1/2"	**858.04.72**	2,57
THREADED FF UNI-EN-ISO 228-1	100	3/4"	**858.05.72**	5,74
THREADED FF UNI-EN-ISO 228-1	100	1"	**858.06.72**	5,84
THREADED FF UNI-EN-ISO 228-1	100	1" 1/4	**858.07.72**	10,80
THREADED FF UNI-EN-ISO 228-1	100	1" 1/2	**858.08.72**	16,80
THREADED FF UNI-EN-ISO 228-1	100	2"	**858.09.72**	28,20

(1) Clean filter

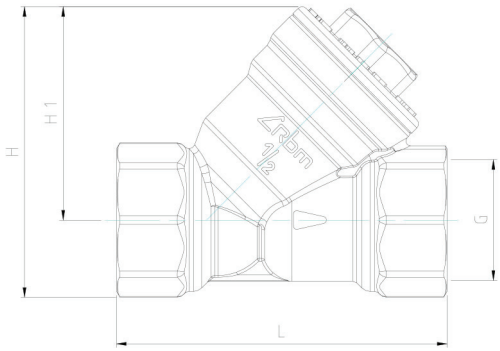
CONSTRUCTION FEATURES

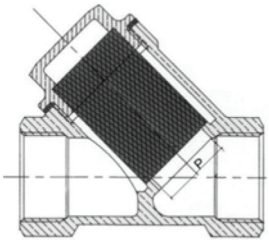
Body	Brass CW 617N
Plug	Brass CW 617N
Filter	AISI 304 STAINLESS STEEL
Gaskets	EPDM
Threaded connections	FF UNI-EN-ISO-228

TECHNICAL FEATURES

P_{max} max. operating pressure	16 bar
T_{max} max. operating temperature	100 °C (water)
Filtering grade	100 ÷ 800 µm
Operating fluid	water

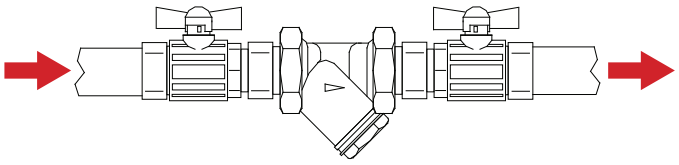
DIMENSIONAL FEATURES





Code	Size (G)	DN [mm]	L [mm]	H [mm]	H1 [mm]
858.04.X2	1/2"	15	57	50	36,5
858.05.X2	3/4"	20	70	60,5	44
858.06.X2	1"	25	76	70,7	50
858.07.X2	1" 1/4	32	96	86	60,8
858.08.X2	1" 1/2	40	106	97,3	70,2
858.09.X2	2"	50	126	123	87,8

ASSEMBLY

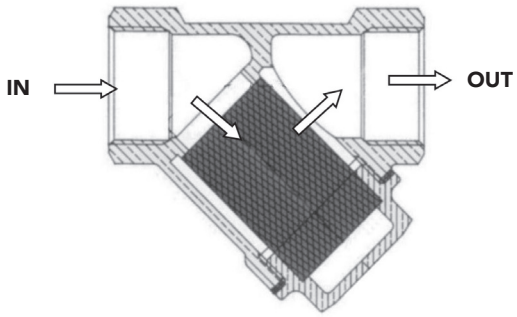


The image shows how the RBM Y-shaped purifying filter must be installed within a hydraulic circuit.

The filter must be installed **in a horizontal position** with the filter-holder seat facing downwards. The filter must be placed inside the circuit, observing **the directional arrow** stamped on the filter, which indicates the circuit flow direction.

A shut-off valve must be installed upstream of the purifying filter in order to close the circuit to facilitate filter maintenance. A shut-off valve can also be installed downstream of the filter.

In the event of installation in flanged systems, a pair of RBM PN 16 threaded flanges can be used.



Filter operating diagram

FLUID DYNAMICS FEATURES

Analytical procedure for valve dimensioning valid for liquids with ρ ≃ 1 kg/dm³

$$Kvs = Q * \left(\frac{10000}{\Delta P} \right)^{0,5}$$

valid for water with temp. from 0 to 30 °C

Analytical procedure for determining the pressure drop for liquids with ρ ≃ 1 kg/dm³

$$\Delta P = \left(\frac{Q}{Kvs} \right)^{2} \times 10.000$$

valid for water with temp. from 0 to 30 °C

Kvs correction for fluids with ρ other than 1 kg/dm³

$$Kvs' = Kvs * \sqrt{\rho'}$$

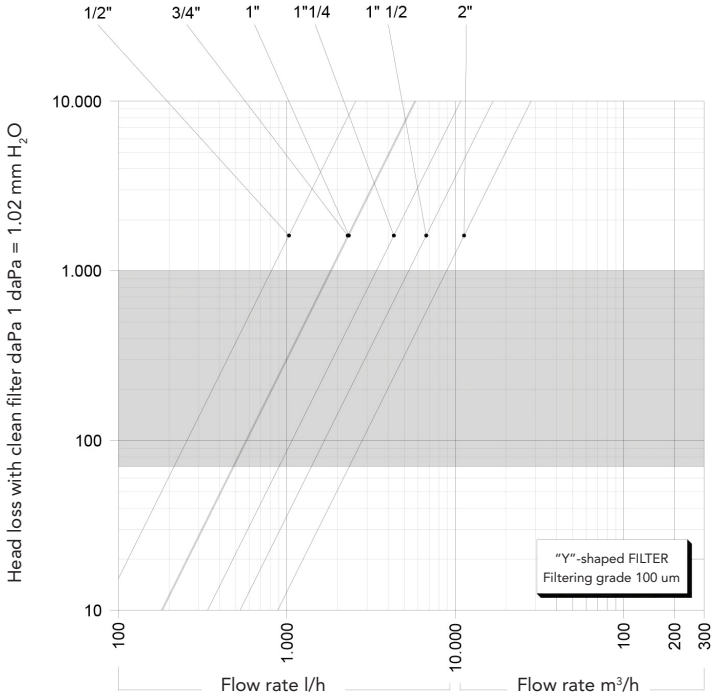
P Δcorrection for fluids with ρ different from 1 kg/dm³

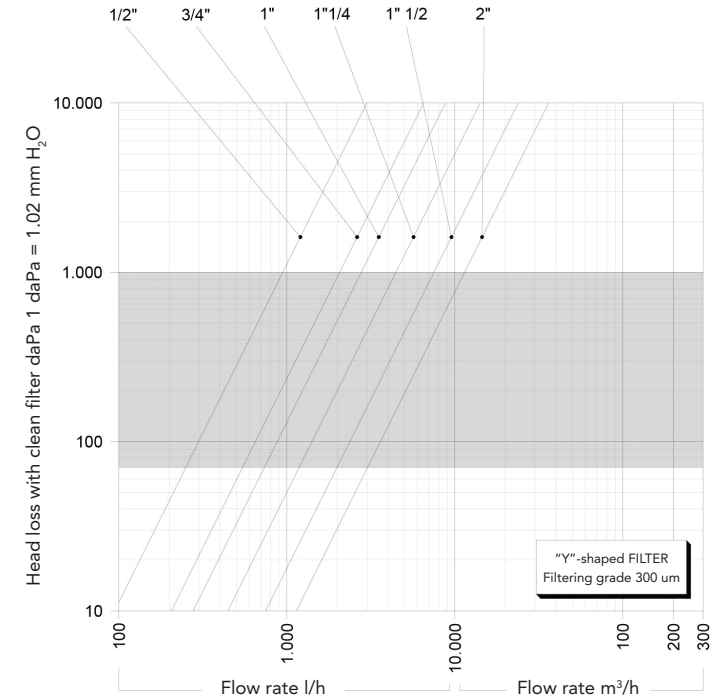
$$\Delta P' = \Delta P \times \rho'$$

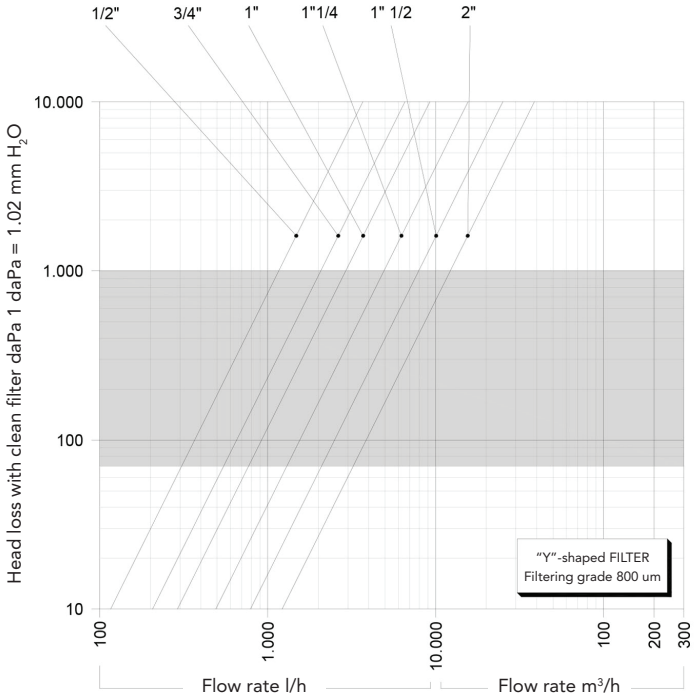
KEY

ΔP head loss in daPa (1daPa=10Pa)
ΔP' correct head loss in daPa (1daPa=10Pa)
ΔP_{max} pressure difference recommended for correct operation

Q flow rate in m³/h
Kvs hydraulic characteristic in m³/h (1m³/h=1,000 l/h)
ρ' liquid density in kg/dm³





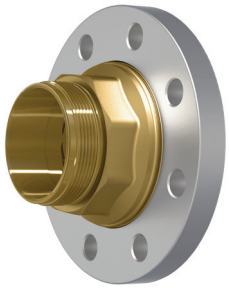


FOR QUICK SELECTION OF THE Y-SHAPED FILTER

Measurement	WATER FLOW IN TRANSIT [l/h]					
	Filter of 100 µm		Filter of 300 µm		Filter of 800 µm	
	with ΔP 1,000 Pa	with ΔP 10,000 Pa	with ΔP 1,000 Pa	with ΔP 10,000 Pa	with ΔP 1,000 Pa	with ΔP 10,000 Pa
1/2"	257	850	300	975	369	1,173
3/4"	574	1,846	653	2,078	657	2,078
1"	584	1,850	879	2,759	923	2,900
1" 1/4	1,080	3,400	1,415	4,500	1,560	4,950
1" 1/2	1,680	5,300	2,380	7,500	2,510	7,950
2"	2,820	8,900	3,620	11,450	3,880	12,250

The table has the sole purpose of providing the technician with a quick reference to match the chosen component with a given system size. The values shown in the table are not binding and therefore do not represent the performance limits of the components.

ACCESSORIES

Product	Code	Size	DN	Description
	**120.04.00**	1/2"	DN 15	**THREADED FLANGE PN 16** • Nickel-plated brass body; • UNI-EN-ISO 228/I M threaded connection; • Flanged connection UNI 2223 PN 16 DIN 2566 PN 16; • P_{max} max. operating pressure: 16 bar; • Max. temperature: 150 °C.
	120.05.00	3/4"	DN 20	
	120.06.00	1"	DN 25	
	120.07.00	1" 1/4	DN 32	
	120.08.00	1" 1/2	DN 40	
	120.09.00	2"	DN 50	

MAINTENANCE

1. Close the shut-off valve located upstream of the filter;
NOTE: If high temperature fluid circulates in the circuit, use the due precautions and the specific protections to avoid direct contact with the fluid.

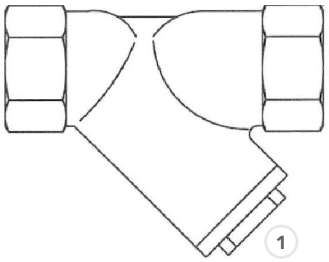
2. Unscrew the end plug of the filter with a spanner;

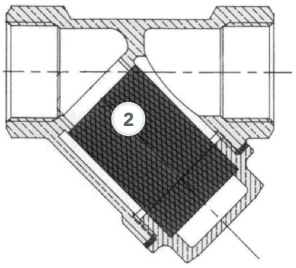
3. Remove the filtering cartridge from the filter-holder and remove any impurities;

4. Put the filtering cartridge back into its seat;

5. Close the filter with the end plug and tighten it with a spanner;

6. Open the valve upstream of the filter again to open the hydraulic system.
NOTE: In the event of replacing the filtering cartridge, carry out the same operations described above and select the filtering cartridge from among those indicated in the "SPARE PARTS" table according to the filtering cartridge used.





1 End plug

2 Filtering cartridge

SPARE PARTS: CARTRIDGE FOR Y-SHAPED FILTER MADE OF AISI 304 STEEL

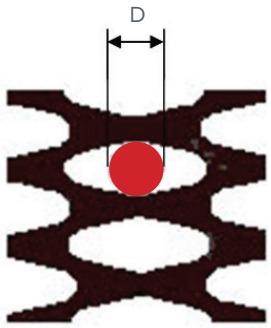
Product	Size	Grado di filtrazione		
		100 [µm] Code	300 [µm] Code	800 [µm] Code
	1/2"	**6065.055**	**6065.015**	**6065.005**
	3/4"	**6062.055**	**6062.015**	**6062.005**
	1"	**6059.055**	**6059.015**	**6059.005**
	1" 1/4	**6068.055**	**6068.015**	**6068.005**
	1" 1/2	**6071.055**	**6071.015**	**6071.005**
	2"	**6074.055**	**6074.015**	**6074.005**

FOR FURTHER INFORMATION

The filtering cartridge is the most important element of the filter. The filtering cartridge features a cylindrical body with rhomboidal mesh made of AISI 304 stainless steel.

The number of mesh holes per cm^2 is crucial for selecting the filter correctly. A filtering cartridge, in fact, stands out from another depending on the amount of mesh holes present. The narrower the filter mesh holes, the tighter the filter mesh; therefore, the greater the number of mesh holes per cm^2, the greater the filtering capacity of the filter. It is necessary to know the size of a single filtering mesh hole to understand how many holes are present per cm^2.

Each filtering cartridge is accompanied by a number expressed in micron [1µ = 0.001 mm] that expresses its filtering capacity. This number represents the diameter of the rim [D: see figure] enclosed inside the diamond mesh of the filtering cartridge. The greater the value expressed in micron, the wider the filter mesh holes, resulting in less mesh holes per cm^2 and, therefore, a lower filtering capacity.



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