

# MAHLE

*Industry*

## MAHLE Automatic Filter Series R8-30W

With internal pressure segment cleaning, rated pressure to 150 psi  
Connection Sizes: ANSI 8" to ANSI 20", welded design

### 1. Features

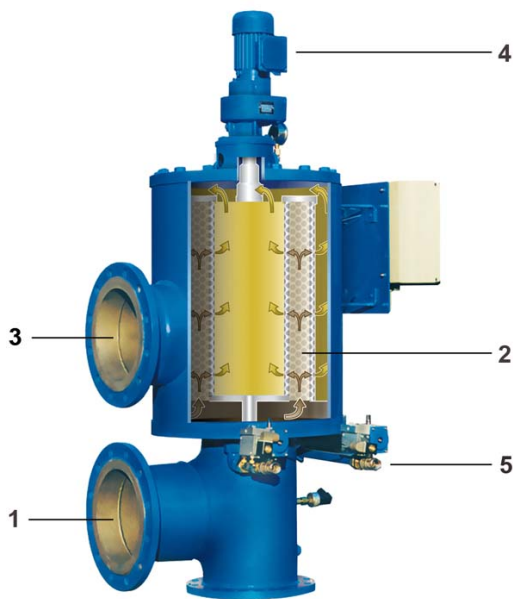
#### Powerful, fully automatic filtration

- Used in general and heavy industry
- Continuous filtration with automatic self-cleaning
- Large filter surface area due to 2-cylinder filter elements
- Low backflush flow rates and optimal cleaning of the filter elements improve filtration efficiency
- Mature engineering and robust, compact design
- Filter ratings from 25 to 1000  $\mu\text{m}$  absolute, other ratings on request
- Easy to service
- Optional ASME code, Section VIII, Division 1
- Worldwide network of distribution and service agents



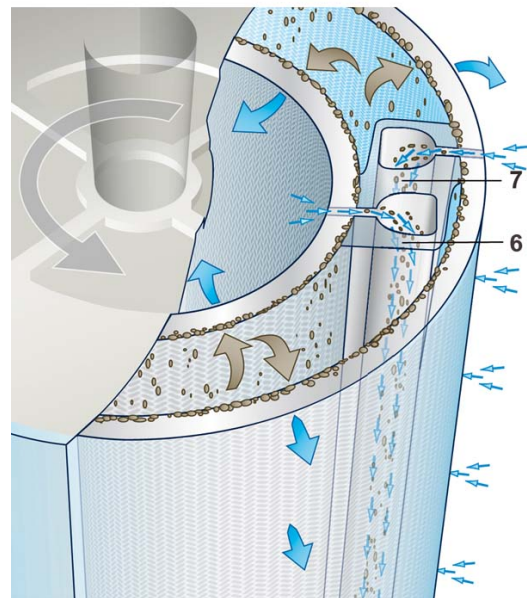
## 2. Operating principle

- The filter housing contains two filter elements with pleated wire cloth cylinders through which the medium flows and contaminants are trapped on the inside of the elements (2).
- When a defined differential pressure is reached or after a settable time interval, the fully automatic backflush process starts.
- When the backflush start time is reached, one of the flush valves (5) opens and the gear motor (4) starts to turn the external filter element. Thereby the whole filter surface passes the cleaning nozzle (6 and 7).
- The process medium that has already been filtered flows at high speed in the opposite direction through the vertical slot (6 and 7), which is located directly on the filter element. The trapped contaminants are discharged from the system via the flush pipe.
- The flush valve closes when the filter element has been turned approximately 400° and the second flush valve opens in order to clean the internal filter element similarly. Afterwards the gear motor is switched off and the flush valve closes again. The back-flush process is completed in only a few seconds.
- Operation is not interrupted during cleaning cycle.

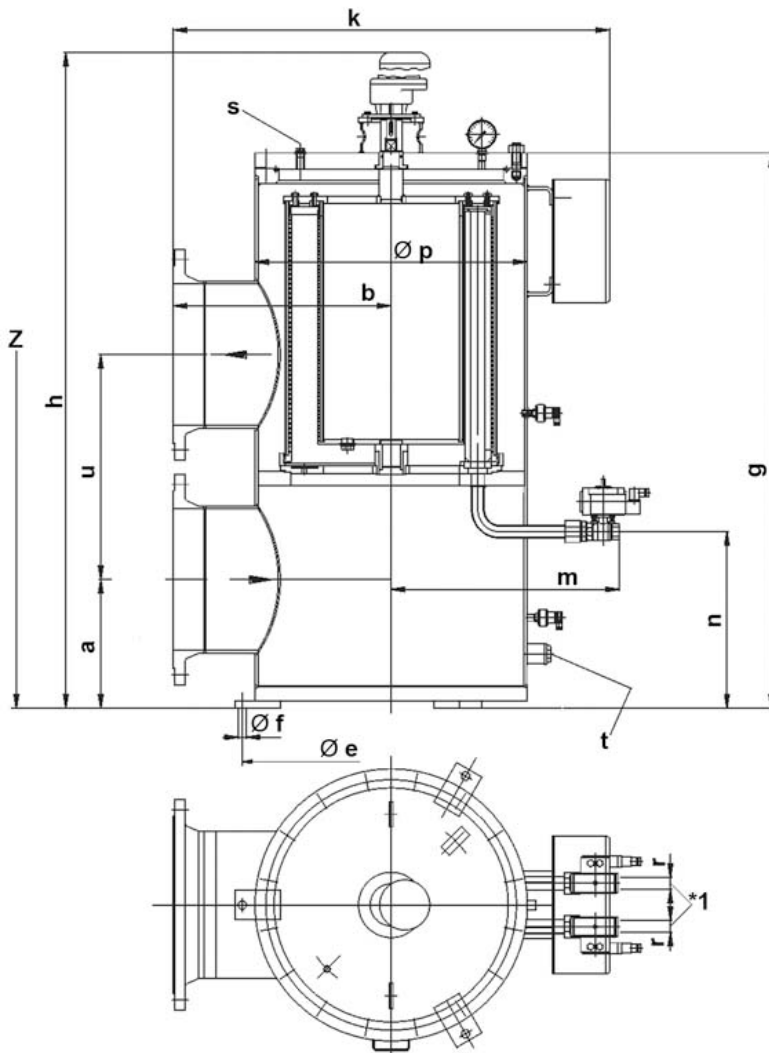


## 3. Technical Data

Connection:	ANSI 8" to ANSI 20"
Flange:	ANSI B16.5
Material:	316 Stainless Steel, Carbon Steel Shell
Max. operating pressure:	150 psi
Max. operating temperature:	302 °F
Filter element:	Screen basket with wire cloth (smooth or pleated), perforated sheet (profiled), screen sieve
Filter rating:	25 to 1000 µm absolute, other ratings on request



## 4. Dimensions



t = Drain  
s = Vent  
Z = Clearance required  
\*1 = Flush pipe

All dimensions in inches unless otherwise noted.

Model Number	ANSI	a	b	e	f	g	h	k	m	n	p	r	s	t	u	Z	Filter area [ft <sup>2</sup> ]	Cap. [US gal]	Weight [lb]
RXN15F08UUF64	8	10	15	20.5	¼	41	60.5	32.25	16	12.5	18	¾	¼	1	17.75	71	19.5	46	880
RXN15F10UUF65	10	11	17.75	24.8	¼	48.5	66	38	17.5	15	22	¾	¼	1	19.75	81	30	78	1100
RXN15F12UUF65	12	11	17.75	24.8	¼	48.5	66	38	17.5	15	22	¾	¼	1	19.75	81	30	78	1100
RXN15F14UUF67	14	12.75	21.75	28	¼	54	72	43	22.75	15.75	25.5	1	½	1½	22.75	90.5	41.5	105	1410
RXN15F16UUF66	16	14	23.5	32	¼	60	78	46	24.75	19	29.5	1	½	1½	24.5	96.5	57.5	177	2645
RXN15F20UUF66	20	14	23.5	32	¼	60	85	46	24.75	22.75	29.5	1	½	1½	30	104	57.5	211	3090

Due to our continuing program of product improvement, dimensions are for reference only and subject to change without notice. Dimensions are approximate values and not intended for piping specifications.

## 5. Design and application

The design of the MAHLE R8-30W Automatic Filter is based on the respective customer's requirements. The material, type of construction, and filter surface and rating are expertly adapted to the specific filtration task based on the medium and capacity.

Customized configurations are available with various options for the MAHLE R8-30W Automatic Filter.

### Options:

- **Heater**  
Capacity and size optimally matched to filter sizes.  
Steam and electric versions available.  
Heating jackets for steam/thermal oil available.
- **Magnetic elements**
- **Control**  
Control by means of an automated switch box.  
Easily programmable.  
PC simulation.
- **Pressure transmitter**  
Differential pressure monitored with a pressure transmitter.  
This permits precise monitoring of the differential pressure using the PLC module in the switch box.  
Max. temperature: 302 °F  
Max. operating pressure: 150 psi  
Measuring tolerance: 0.3 %
- **Duplex configuration**  
Manual, semi-automatic, fully automatic with change-over unit (manual, fully automatic).

MAHLE R8-30W Automatic Filter are not at all complicated to use and they guarantee continuous filtration. The necessary steps are described in the following:

- The filter comprises a bowl with a cover and a gear motor.
- The bowl contains a vent port, a drain port and a filter element.
- The filter must be filled and vented before it is put into service. It must not be operated with the full pump flow when empty.
- Switch on the filter controller and start a flushing process with the hand release. If the viscosity of the medium is very sensitive to temperature, the filter controller should not be switched on until the filter reaches its normal service temperature.
- The filter controller must be switched off if the unit is not in service.
- In order for the backflushing process to be efficient, there must be operating overpressure during the flushing process on the outlet side of the filter.
- Backflushing starts automatically after a defined time or when the maximum differential pressure is reached. If the differential pressure exceeds 43 psi, the filter must be removed from service or changed over to bypass. Then dismantle the filter and clean the wire cloth cylinder (refer to "Cleaning").
- When a flushing process is tripped, the gear motor is switched on and a flush valve for the flushing medium outlet opens. The medium flows from the clean side through the filter element and into the internal nozzle as the element is turned by the gear motor. After turning approximately one time the first flush valve closes and the second one opens. As the filter element is still turned by the gear motor, the second filter element is cleaned.
- The flushing medium flows through the wire cloth at high speed, so that the contaminants trapped in the filter are detached and discharged via the flushing outlet and the flush pipe connected to it.
- The filter controller is programmed so that the flush valves close again and the gear motor is switched off after approximately 2¼ turns of the filter elements.
- To clean the filter, switch off the filter controller, dismantle the gear motor, loosen the cover fixing screws and remove the cover. The complete filter element can now be lifted vertically out of the filter. To clean the filter element manually, spray it with steam, compressed air or water from the outside towards the inside. Pre-treat the element with a suitable solvent if the dirt cannot be removed easily. It may be necessary to dismantle the pleated wire cloth cylinder.
- The service of the filter has to be done biannual. The operation of the filter controller, flush valves, and the gear motor has to be checked. All gaskets, O-rings and bearing bushes also have to be checked for wear or damage and replaced as necessary. The pleated wire cloth cylinders have to be checked for damage to the wire cloth and the seals as well.

## 6. Type number key

### Type number key with selection example for MAHLE R8-30W Automatic Filter ANSI 8" to ANSI 20"

#### Main product group

**R** Automatic filter

#### Series

**X** Weld design

#### Code

**C** ASME Code housing

**N** Non code housing

#### Pressure rating

**15** 150 psi standard pressure rating

#### Connection style

**F** Flanged (RFSO)

**N** FNPT

**W** Flanged (RFWN)

#### Inlet / Outlet nominal size

**8** 8 inch

**10** 10 inch

**12** 12 inch

**14** 14 inch

**16** 16 inch

**20** 20 inch

#### Housing material

**U** 316 stainless steel

**C** Carbon steel

#### Nozzle material

**U** 316 stainless steel

**B** Bronze

#### Insert (element) size

**F64**

**F65**

**F66**

**F67**

#### Drawing number

Designated drawing number for specials or customization

**R X C 15 F 8 U U F64 -XXXX**

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