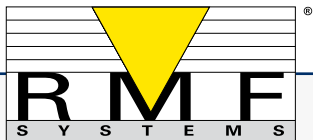


# Managing your oil contamination

**RMF SYSTEMS**  
Radial  
Micro  
Filtration



## Off-line filters

RMF Systems radial micro filter units are characterized by their extremely efficient filter elements with a fineness of 0.5 micron. If required different micron sizes are available to suit any specific application.

The Off-line filters can also be equipped with special water absorbing pre-filters in case of extreme water contamination. These water absorbing spin-on cans will remove most of the water prior to the fluid reaching the cellulose element.

Specially designed for industrial hydraulic installations the RMF Off-line filters are available in single or multiple housing configurations. The Off-line filter units can be easily mounted to new and existing hydraulic installations.

By means of an integrated pump-motor unit in the Off-line filter, the oil is pumped from the reservoir through the filter unit. After filtering the oil is returned to tank. Off-line filters can continue to work even when the main system is not in use. Element change can also be done without interfering with the main system.

## Economical

The hydraulic market accepts that 80% of mechanical failures are caused by contamination in the system.

The RMF Off-line filters attack this contamination at source and in addition to solid particles. These filters are also capable of removing water from the oil. This prevents the catalytic reaction of water and solid particle contamination, resulting in extended useable oil life.

The use of RMF filters means less defects, less maintenance, and less wear and tear of the hydraulic components.

## Applications

RMF Off-line filter units can be fitted to every imaginable industrial application where hydraulic and/or lubrication systems are present.

The standard range of Off-line filters can be utilized in reservoirs with a maximum volume of 11,000 litres. A large selection in electrical motors is available, ranging from single phase, three phase to explosion proof.

In recent years RMF Systems have developed a great deal of experience in cleaning and keeping clean hydraulic and lubrication systems in the:

- steel industry;
- plastic moulding industry;
- maritime industry;
- petro chemical industry;
- paper industry.

## Advantages

- Extremely clean oil due to high filtration efficiency.
- Prevention of channel forming by radial filtration direction.
- Increased flow capacity.
- Large dirt holding capacity.
- Large water holding capacity.
- Compact and easy-maintenance design.
- Environmentally friendly elements available.
- Longer usage life for oil and components.
- Reduces cost of ownership.



### TECHNICAL DATA OFF-LINE UNITS

Filter model	OLU1A30...	OLU2A30...	OLU1B30...	OLU2B30...	OLU4A30...	OLU4B30...
No. of filter housings	1	2	1	2	4	4
Material filter housing	Anodised aluminium					
Seal material filter unit	Buna-N standard					
Nominal flow	2.1 l/min	4.2 l/min	4.2 l/min	8.4 l/min	8.4 l/min	16.8 l/min
By-pass opening pressure	6.2 bar (at 0 bar back pressure)					
No. of filter elements	1	2	2	4	4	8
Length filter elements	300 mm (standard)					
Max. pressure filter housing	20 bar					
Max. oil temperature	80 °C					
Dirt indicator	Pressure gauge (0-10 bar, green / yellow / red zones) Gauge glycerine fill					
Connection pump suction port	3⁄8" BSP female	1⁄2" BSP female				3⁄4" BSP female
Diameter hose suction side	1⁄2"					3⁄4"
Connection return port	1⁄2" BSP female				EW 18L - 3⁄4"	
Diameter hose return side	1⁄2"				3⁄4" or 1" (with long hoses)	
Dimensions h x w x d (mm)	420 x 335 x 190	420 x 340 x 325	730 x 335 x 190	730 x 340 x 325	530 x 340 x 500	830 x 350 x 500
Minimum overhead clearance for element removal	400 mm	400 mm	700 mm	700 mm	400 mm	700 mm
Pump type	Hydraulic gear pump					
Power supply E-motor	Various electrical power supplies possible					
Max. tank volume	± 1,350 l	± 2,700 l	± 2,700 l	± 5,400 l	± 5,400 l	± 10,800 l
Sample port connections: P1 filter inlet side (red) P2 filter inlet side (yellow)	Test connector M16x2 Test connector M16x2					
Approximate weight	14.0 kg	21.0 kg	18.0 kg	30.0 kg	39.0 kg	61.0 kg



## Ordering codes: RMF Off-line units

**Filtrertype:**  
**OLU units**

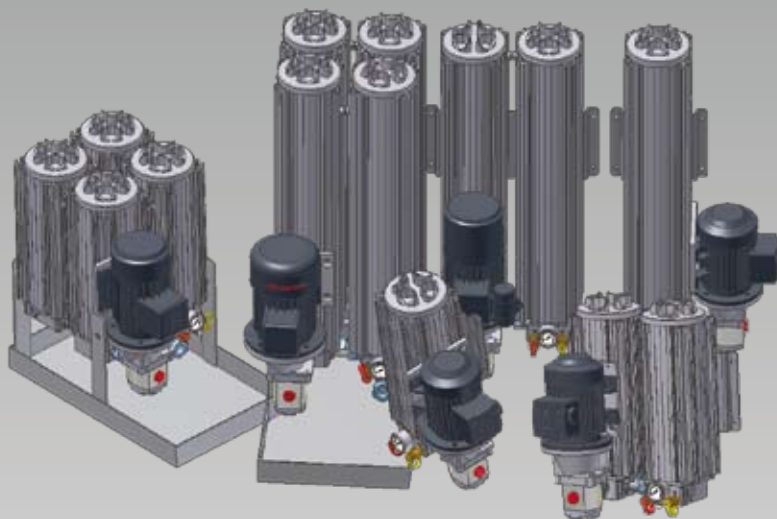


Table 1	Table 2	Table 3	Table 4	Table 5	Table 6	Table 7	Table 8	Table 9
<b>OLU</b>								

Table 1	Basic configuration	
<b>OLU</b>	Off-line unit	Industrial applications

Table 2	Housing configuration	Typical reservoir size	Number of elements
<b>1A</b>	Single housing (single length)	Suitable for 1,350 l reservoir	1 pcs element (300 mm)
<b>2A</b>	Twin housing (single length)	Suitable for 2,700 l reservoir	2 pcs element (300 mm)
<b>4A</b>	Quadruple housing (single length)	Suitable for 5,400 l reservoir	4 pcs element (300 mm)
<b>1B</b>	Single housing (double length)	Suitable for 2,700 l reservoir	2 pcs element (300 mm)
<b>2B</b>	Twin housing (double length)	Suitable for 5,400 l reservoir	4 pcs element (300 mm)
<b>4B</b>	Quadruple housing (double length)	Suitable for 10,800 l reservoir	8 pcs element (300 mm)

Table 3	Length element	
<b>30</b>	L = 300 mm	Standard

Table 4	Filter material
<b>H</b>	Cellulose 0.5 micron, silicon bottom seal
<b>N</b>	Cellulose 0.5 micron, NO silicon bottom seal
<b>G1*</b>	Glass fibre, 1 micron, $\beta_1 \geq 200$
<b>G3*</b>	Glass fibre, 3 micron, $\beta_3 \geq 200$
<b>A5</b>	Glass fibre with polymer, 5 micron, $\beta_5 \geq 200$
<b>*</b>	<i>G1 and G3 also suitable for Water Glycol</i>

Table 5	Seal material	
<b>B</b>	Buna-N	Standard
<b>V</b>	Viton	Optional

Table 6	E-motor options
<b>O</b>	Standard: 230/400 VAC 50 Hz / 3 phase, 255/460 VAC 60 Hz / 3 phase
<b>A</b>	230 VAC 50 Hz / 1 phase
<b>B</b>	24 VDC
<b>C</b>	110 VAC 50 Hz / 1 phase
<b>D</b>	110 VAC 60 Hz / 1 phase
<b>E</b>	230/400 VAC 50 Hz, IP65 / 3 phase
<b>F</b>	230 VAC 60 Hz / 1 phase
<b>H</b>	690 VAC 50 Hz / 3 phase
<b>N</b>	500 VAC 50 Hz / 3 phase
<b>M</b>	575 VAC 60 Hz / 3 phase
<b>S</b>	Special motor, on request
<b>X</b>	Explosion proof, on request

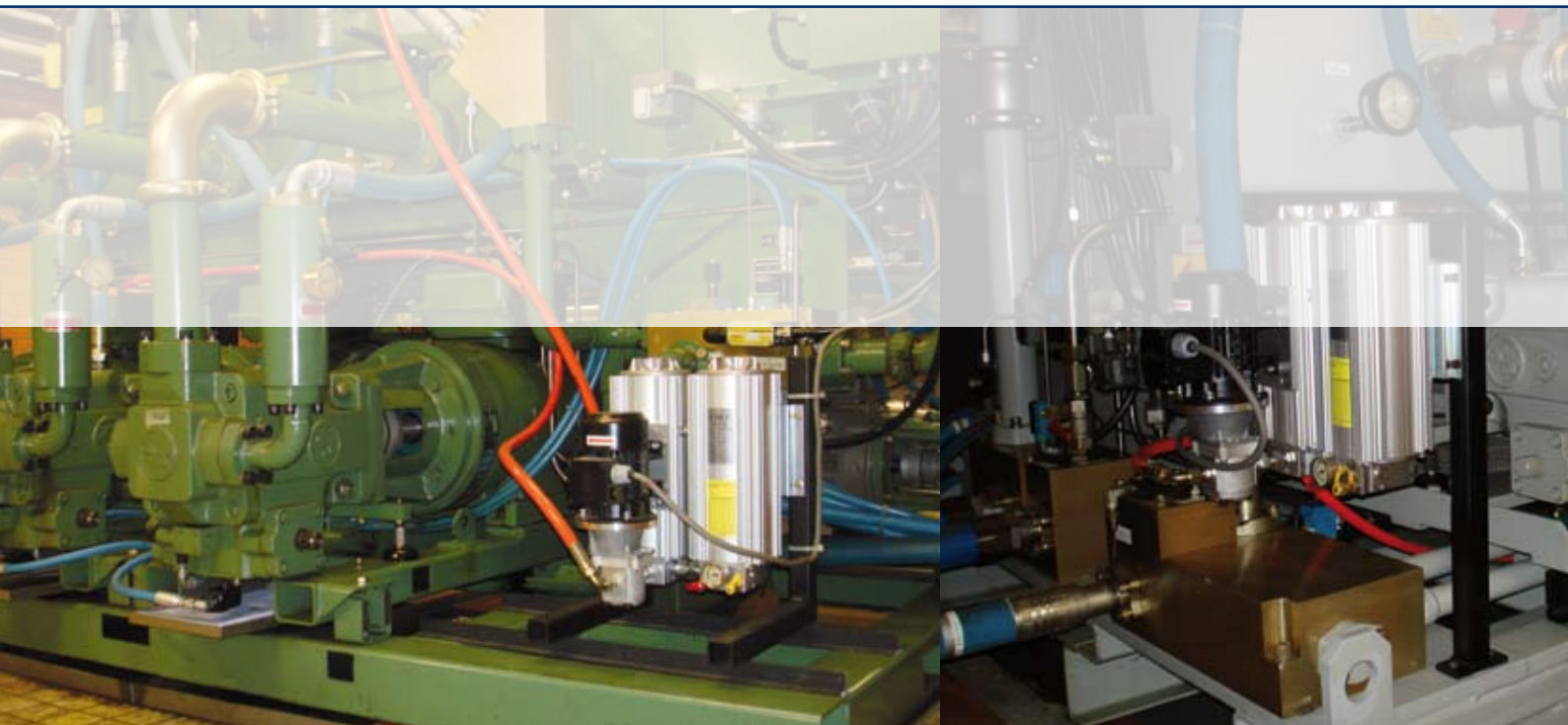


Table 7	Pump options	
Code	Standard for 50 Hz motor	Standard for
00	1.6 cc/rev. group 1	OLU1A
10	3.15 cc/rev. group 1	OLU2A / OLU1B
20	6.1 cc/rev. group 1	OLU4A / OLU2B
30	8.2 cc/rev. group 2	
40	11.3 cc/rev. group 2	OLU4B
50	0.8 cc/rev. group 1	obsolete
60	1.0 cc/rev. group 1	
Code	Standard for 60 Hz motor	Standard for
01	1.25 cc/rev. group 1	OLU1A
11	2.5 cc/rev. group 1	OLU2A / OLU1B
21	5.0 cc/rev. group 1	OLU4A / OLU2B
31	6.3 cc/rev. group 2	
41	10.0 cc/rev. group 2	OLU4B

Table 8	Indicator	
0	Pressure gauge	Standard
1	Additional electr. indicator	Optional
2	Additional $\Delta p$ indicator	Optional

Table 9	Extra options	
0	No options	
1	Motor / pump right side mount	
2	Motor / pump left side mount	
3	Motor / pump front side mount	
4	Incl. on/off and motor protection relais	
5	Incl. on/off and motor protection relais / External By-pass	
S	Stainless steel fittings	





## Water absorbing Off-line filters

RMF Systems radial micro filter units are characterized by their extremely efficient filter elements with a fineness of 0.5 micron. If required different micron sizes are available to suit any specific application.

The Off-line filters can also be equipped with special water absorbing pre-filters in case of extreme water contamination. These water absorbing spin-on cans will remove most of the water prior to the fluid reaching the cellulose element. Specially designed for industrial hydraulic installations the RMF Off-line filters are available in single or multiple housing configurations. The Off-line filter units can be easily mounted to new and existing hydraulic installations.

By means of an integrated pump-motor unit in the Off-line filter, the oil is pumped from the reservoir through the filter unit. After filtering the oil is returned to tank.

### Economical

The hydraulic market accepts that 80% of mechanical failures are caused by contamination in the system. The RMF Water absorbing Off-line filters attack this contamination at source and in addition to solid particles, these filters are also capable of removing water from the oil. This prevents the catalytic reaction of water and solid particle contamination, resulting in extended useable oil life. The use of RMF filters means less defects, less maintenance, and less wear and tear of the hydraulic components.

### Water absorbing

RMF Water absorbing filters are Off-line filters that use a special water absorbing spin-on as a pre-filter. The fluid is pumped through the pre-filter which removes most water and larger solid contamination. In the second stage the fluid passes through the RMF cellulose micro filter where final water removal takes place as well as solid particle removal.

## Applications

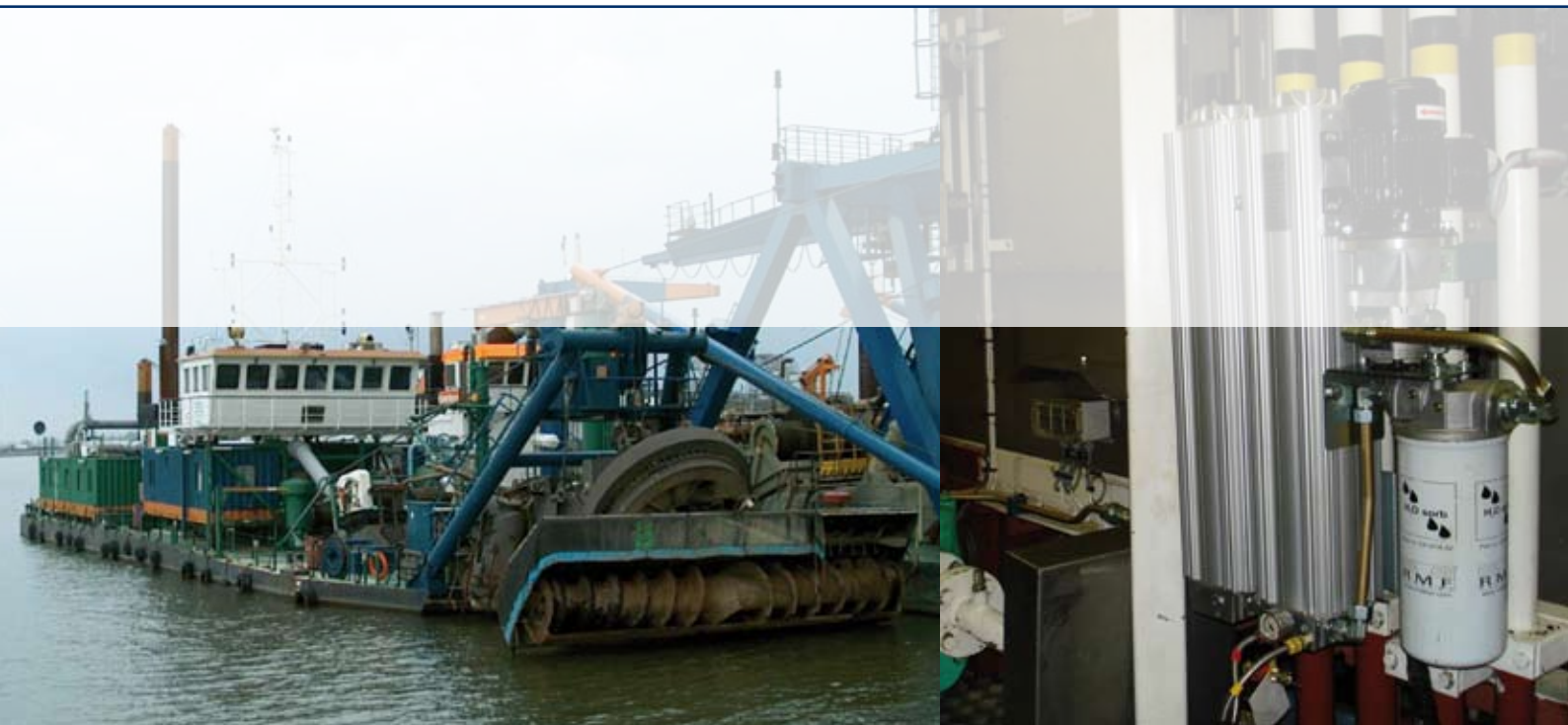
RMF Water absorbing Off-line filter units can be fitted to every imaginable industrial application where hydraulic and/or lubrication systems are present.

The standard range of Off-line filters can be utilized in reservoirs with a maximum volume of 11,000 litres. A large selection in electrical motors is available ranging from single phase, three phase to explosion proof.

In recent years RMF Systems have developed a great deal of experience in cleaning and keeping clean hydraulic and lubrication systems in the steel industry, plastic moulding industry, maritime industry, petro chemical industry and paper industry.

## Advantages

- Extremely clean oil due to high filtration efficiency.
- Prevention of channel forming by radial filtration direction.
- Increased flow capacity.
- Large dirt holding capacity.
- Large water holding capacity.
- Compact and easy-maintenance design.
- Environmentally friendly elements available.
- Longer usage life for oil and components.
- Reduces cost of ownership.



TECHNICAL DATA OFF-LINE UNITS WITH WATERSORB						
Filter model	OLUW1A30...	OLUW2A30...	OLUW1B30...	OLUW2B30...	OLUW4A30...	OLUW4B30...
No. of filter housings	1	2	1	2	4	4
Material filter housing	Anodised aluminium					
Seal material filter unit	Buna-N standard					
Nominal flow	2.1 l/min	4.2 l/min	4.2 l/min	8.4 l/min	8.4 l/min	16.8 l/min
By-pass opening pressure	6.2 bar (at 0 bar back pressure)					
No. of filter elements	1	2	2	4	4	8
Length filter elements	300 mm (standard)					
No. of watersorb elements	1	1	1	1 or 2	1 or 2	1 or 2
Total water absorbing capacity	690 ml	840 ml	840 ml	840 or 1,380 ml	840 or 1,380 ml	1,740 or 2,280 ml
Max. pressure filter housing	20 bar					
Max. oil temperature	80 °C					
Dirt indicator	Pressure gauge (0-10 bar, green/yellow/red zones)					
Connection pump suction port	½" BSP female					¾" BSP female
Diameter hose suction side	½"					¾"
Connection return port	½" BSP female				EW 18L - ¾"	
Diameter hose return side	½"				¾" or 1" (with long hoses)	
Dimensions h x w x d (mm)	400 x 380 x 325	400 x 530 x 325	710 x 380 x 325	710 x 530 x 325	560 x 335 x 494	820 x 350 x 505
Minimum overhead clearance for element removal	400 mm	400 mm	700 mm	700 mm	400 mm	700 mm
Pump type	Hydraulic gear pump					
Power supply E-motor	Various electrical power supplies possible					
Max. tank volume	± 1,350 l	± 2,700 l	± 2,700 l	± 5,400 l	± 5,400 l	± 10,800 l
Sample port connections: P1 filter inlet side (red) P2 filter inlet side (yellow)	Test connector M16x2 Test connector M16x2					
Approximate weight	18.0 kg	25.0 kg	22.0 kg	34.0 kg	43.0 kg	65.0 kg



## Ordering codes: Water absorbing Off-line units

Filter type:  
OLUW units

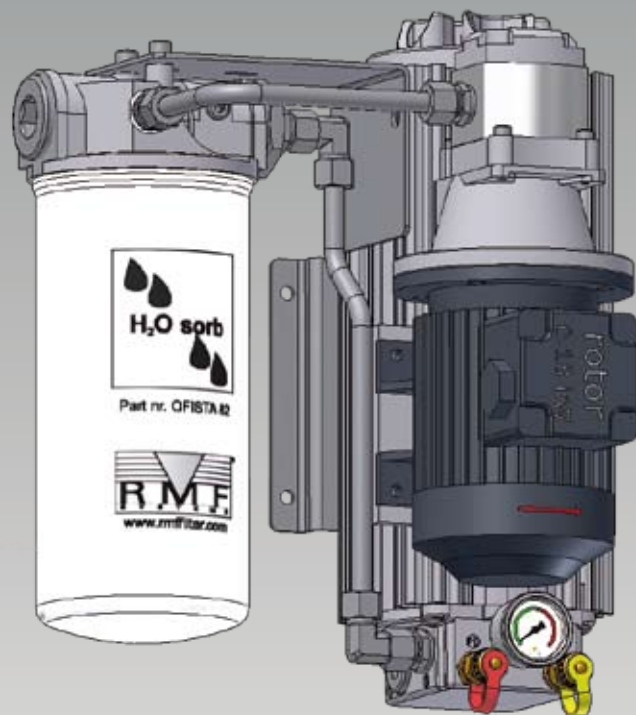


Table 1	Table 2	Table 3	Table 4	Table 5	Table 6	Table 7	Table 8	Table 9	Table 10
OLUW									

Table 1	Basic configuration	
OLUW	Off-line unit + water absorbing pre-filter	Industrial applications

Table 2	Housing configuration	Typical reservoir size	Number of elements
1A	Single housing (single length)	Suitable for 1,350 l reservoir	1 pcs element (300 mm)
2A	Twin housing (single length)	Suitable for 2,700 l reservoir	2 pcs element (300 mm)
4A	Quadruple housing (single length)	Suitable for 5,400 l reservoir	4 pcs element (300 mm)
1B	Single housing (double length)	Suitable for 2,700 l reservoir	2 pcs element (300 mm)
2B	Twin housing (double length)	Suitable for 5,400 l reservoir	4 pcs element (300 mm)
4B	Quadruple housing (double length)	Suitable for 10,800 l reservoir	8 pcs element (300 mm)

Table 3	Length element	
30	L = 300 mm	Standard

Table 4	Filter material
H	Cellulose 0.5 micron, silicon bottom seal
N	Cellulose 0.5 micron, NO silicon bottom seal
G1*	Glass fibre, 1 micron, $\beta_1 \geq 200$
G3*	Glass fibre, 3 micron, $\beta_3 \geq 200$
A5	Glass fibre with polymer, 5 micron, $\beta_5 \geq 200$
*	G1 and G3 also suitable for Water Glycol

Table 5	Seal material	
B	Buna-N	Standard
V	Viton	Optional

Table 6	E-motor options
O	Standard: 230/400 VAC 50 Hz / 3 phase, 255/460 VAC 60 Hz / 3 phase
A	230 VAC 50 Hz / 1 phase
B	24 VDC
C	110 VAC 50 Hz / 1 phase
D	110 VAC 60 Hz / 1 phase
E	230/400 VAC 50 Hz, IP65 / 3 phase
F	230 VAC 60 Hz / 1 phase
H	690 VAC 50 Hz / 3 phase
N	500 VAC 50 Hz / 3 phase
M	575 VAC 60 Hz / 3 phase
S	Special motor, on request
X	Explosion proof, on request





Table 7	Pump options	
Code	Standard for 50 Hz motor	Standard for
00	1.6 cc/rev. group 1	OLU1A
10	3.15 cc/rev. group 1	OLU2A / OLU1B
20	6.1 cc/rev. group 1	OLU4A / OLU2B
30	8.2 cc/rev. group 2	
40	11.3 cc/rev. group 2	OLU4B
50	0.8 cc/rev. group 1	obsolete
60	1.0 cc/rev. group 1	
	Standard for 60 Hz motor	
01	1.25 cc/rev. group 1	OLU1A
11	2.5 cc/rev. group 1	OLU2A / OLU1B
21	5.0 cc/rev. group 1	OLU4A / OLU2B
31	6.3 cc/rev. group 2	
41	10.0 cc/rev. group 2	OLU4B

Table 8	Indicator	
0	Pressure gauge	Standard
1	Additional electr. indicator	Optional
2	Additional $\Delta p$ indicator	Optional

Table 9	Extra options	
0	No options	
1	Motor/pump right side mount	

Table 10	Water absorption element		
A	Single H <sub>2</sub> O-sorb element	Capacity = 540 ml	Standard mounting single filter head
B	Single H <sub>2</sub> O-sorb element	Capacity = 540 ml	Alternative mounting single filter head
C	Dual H <sub>2</sub> O-sorb element	Capacity = 2 x 540 ml	Standard mounting double filter head



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