



## MobileFiltration Unit MFU-30 - 100 series

### Description

The MobileFiltration Unit MFU-30 - 100 series units are used as portable service units for filling hydraulic systems, flushing small hydraulic systems and for cleaning in bypass flow. Unfiltered draining is also possible. Solid particle contamination and free water can be removed by the filter elements. Optionally, the power units can be equipped with measurement technology for continuous monitoring of the fluid. Wireless communication and connection to cloud portals enable incorporation into modern I4.0 environments.

### Applications

- Filtered and unfiltered filling of hydraulic systems
- Temporary offline filtration of hydraulic systems
- Filtered and unfiltered fluid transfer
- Unfiltered drainage of hydraulic tanks
- Continuous fluid monitoring

### Special features

- I4.0-enabled power unit with optional graphic, local display and control
- Optional cloud connection to enable in-depth analysis and evaluation
- Mobile filter unit
- Improved service life of components and system filters
- Reduction of life cycle cost (LCC)
- Removal of small quantities of free water in the oil is possible

### Technical data

General data	MFU-30	MFU-60	MFU-100
	Economy / Standard / Premium		
Nominal flow rate	30 l/min	60 l/min	100 l/min
Pump type	Vane pump or gear pump		
Max. operating pressure	6.0 bar		
Vane pump	6.0 bar		
Gear pump	10.0 bar		
Perm. inlet pressure at power unit	-0.4 bar* to 0.5 bar		
Max. perm. outlet pressure at unit	2.5 bar**		
Vane pump	2.5 bar**		
Gear pump	5.0 bar***		
Permitted fluids	Mineral oil, HLPD, HEES, HETG (biodegradable oils)		
Viscosity range	10 ... 400 mm <sup>2</sup> /s		
Vane pump	10 ... 400 mm <sup>2</sup> /s		
Gear pump	6 ... 1000 mm <sup>2</sup> /s ****		
When condition monitoring functionality is used	max. 400 mm <sup>2</sup> /s (with vane pump) Max. 800 mm <sup>2</sup> /s (with gear pump)		
Power cable, length	Voltage K, M, N: 10 m incl. plug connector		
Fluid temperature range	-10 ... *80 °C		
Ambient temperature range	-10 ... *40 °C		
Seal material	FKM (FPM, Viton®)		
Inlet connection	ISO 8434-1-42L (M52x2)		
Outlet connection	ISO 8434-1-28L (M36x2)		
Empty weight			
Economy	≈58 kg	≈80 kg	≈ 95 kg
Standard	≈60 kg	≈82 kg	≈ 97 kg
Premium	≈63 kg	≈85 kg	≈100 kg

\* pressure available at the end of the suction hose when HYDAC accessories are used: -0.2 bar

\*\* pressure available at the end of the pressure hose when HYDAC accessories are used: 1.5 bar

\*\*\* pressure available at the end of the pressure hose when HYDAC accessories are used: 4.0 bar

\*\*\*\* for 1000 mm<sup>2</sup>/s at 60 or 100 l/min in continuous operation, select hose accordingly

### Preferred models (with shorter delivery times)

Filter unit	Part no.
MFU-60S34-SN-FED/-Professional	4796531
MFU-60P34-SN-FED/-CC-M1-Professional+	4796532

The Professional units already contain a suction and a pressure hose (E-MFU-30/60/100-SDN)

## Model code

**MFU - 60 P 34 - S N - F ED / - CB - M1**

### Type

MFU = Mobile Filter Unit

### Size

30 = 30 l/min  
60 = 60 l/min  
100 = 100 l/min

### Model

E = Economy  
S = Standard  
P = Premium

### Element type

18 = N50  
34 = N100

### Pump version

S = vane pump  
G = gear pump

### Power supply

	MFU-30E/S	MFU-30P	MFU-60E/S	MFU-60P	MFU-100E/S/P
K = 120 V, 60 Hz, 1 Ph*	•	-	•**	-	-
M = 230 V, 50 Hz, 1-ph	•	-	•**	-	-
N = 400 V, 50 Hz, 3 Ph***	•	•	•	•	•

Other voltages on request

\* With NEMA 5 – 15 plug connector

\*\* Only with vane pump

\*\*\* Neutral conductor required for type S or contamination indicator "OD"

### Seal material

F = FKM (FPM, Viton®)

### Clogging indicator

OD = optical differential pressure indicator for MFU type E (or type S with 400 V without neutral conductor)

ED = electrical or electronic differential pressure indicator (for type S and P)

### Supplementary details (only for MFU Premium)

CB = Control Basic

CC = Connect Cloud

### Measurement technology (only for MFU Premium)

M1 = Sensor package with display of cleanliness class according to ISO, relative water saturation, fluid temperature

M2 = Sensor package with display of cleanliness class according to SAE, relative water saturation, fluid temperature

M3 = Sensor package with display of cleanliness class according to NAS, relative water saturation, fluid temperature

## Scope of supply

- MFU (without filter element, without hoses)
- MFU Professional (without filter element, with hoses (E-MFU-30/60/100-SDN))
- Operating and maintenance instructions

Filter elements and hoses must be ordered separately and installed before operation on site. For this purpose, please observe the next pages.

## Function overview – MFU types

Function	Type		
	Economy	Standard	Premium
Clogging indicator	Visual back-pressure indicator and visual differential pressure indicator	Visual back-pressure indicator and electrical differential pressure indicator	Visual back-pressure indicator and electronic differential pressure indicator
Switch between filtration / circulation	X	✓	✓
Autom. shut-off if filter is clogged	X	✓	✓
Differential pressure indicator	X	X	✓
Fluid cleanliness class indicator (optionally ISO, SAE or NAS)	X	X	✓
Shut-off when target cleanliness achieved	X	X	✓
Fluid temperature indicator	X	X	✓
Rel. water saturation indicator	X	X	✓

## Function overview – supplementary details for MFU Premium

Function	Control Basic	CMX Connect Cloud
<b>Touch panel</b> for operating the unit	✓	✓
<b>Selection between two operating modes</b>		
<ul style="list-style-type: none"> <li>■ Continuous operation: continuous system maintenance</li> <li>■ Cleaning until target cleanliness is achieved (automatic mode with energy-saving function – independent, cyclical check of set limit values)</li> </ul>	✓	✓
Option to enter system-specific information (system, oil type, quantity and type of installed filter elements, most recent filter change)	✓	✓
Current and historical measured values displayed at the unit	✓	✓
Filter monitoring via differential pressure	✓	✓
<b>Web server</b> to display the measured values and unit status (PC, Notebook, Tablet)	✓	✓
Data export of the measured values via CSV file	✓	✓
Setting options like touch panel, except for start/stop functionality	✓	✓
<b>CMX Connect Cloud</b>	X	✓
Device-specific cloud access via the internet providing all important device information on a clear dashboard	X	✓
Current + historic measured values (graphic, error messages)	X	✓
Statistical data, filter process (operating hours, energy consumption, amount of oil treated, etc.)	X	✓
E-mail alert of limit values being exceeded, malfunctions and pending maintenance requirements	X	✓
Filter monitoring function with e-mail alert for better planning of filter changes	X	✓
Filter monitoring function with remaining time algorithm* for optimal planning of filter change	X	✓

\* Not possible for every application or oil type – please contact us if you are interested

## Filter elements for MFU-30E/S/P, MFU-60E/S/P, MFU-100E/S/P

Name	Part no.	Filtration rating	Water intake
<b>Filtration</b>			
N50DM002-F	3944985	2 µm	-
N50DM005-F	3944987	5 µm	-
N50DM010-F	3944988	10 µm	-
N50DM020-F	3944989	20 µm	-
N100DM002-F	3944991	2 µm	
N100DM005-F	3944992	5 µm	
N100DM010-F	3944993	10 µm	
N100DM020-F	3944994	20 µm	
<b>Filtration + dewatering</b>			
N50AM002-F	4728566	2 µm	✓
N50AM005-F	4728567	5 µm	✓
N50AM010-F	4728568	10 µm	✓
N50AM020-F	4728569	20 µm	✓
N100AM002-F	4728570	2 µm	✓
N100AM005-F	4728571	5 µm	✓
N100AM010-F	4728572	10 µm	✓
N100AM020-F	4728573	20 µm	✓

## Accessories for MFU-30E/S/P, MFU-60E/S/P, MFU-100E/S/P

### Hoses with lances

(30 l/min intake up to max. 1000 mm<sup>2</sup>/s)

(60 l/min intake up to max. 700 mm<sup>2</sup>/s)

(100 l/min intake up to max. 400 mm<sup>2</sup>/s)

Name	Part no.	Suction hose / pressure hose	Lances, suction hose / pressure hose	Suction / pressure hose material
E-MFU-30/60/100-SDN	4728635	2.5 m / 4.0 m	0.7 m / 0.5 m	PVC / SAE 100 R4
E-MFU-30/60/100-SDF	4728639	2.5 m / 4.0 m	0.7 m / 0.5 m	SAE 100 R4 / SAE 100 R4

### Hoses with lances for increased viscosity

(30 l/min intake up to max. 1000 mm<sup>2</sup>/s)

(60 l/min intake up to max. 1000 mm<sup>2</sup>/s)

(100 l/min intake up to max. 1000 mm<sup>2</sup>/s)

Name	Part no.	Suction hose / pressure hose	Lances, suction hose / pressure hose	Suction / pressure hose material
E-MFU-30/60/100-HSDN	4728504	2.5 / 4.0 m	0.7 m / 0.5 m	PVC / SAE 100 R4
E-MFU-30/60/100-HSDF	4728710	2.5 / 4.0 m	0.7 m / 0.5 m	SAE 100 R4 / SAE 100 R4

### Hoses with threaded connections

(30 l/min intake up to max. 1000 mm<sup>2</sup>/s)

(60 l/min intake up to max. 700 mm<sup>2</sup>/s)

(100 l/min intake up to max. 400 mm<sup>2</sup>/s)

Name	Part no.	Suction hose / pressure hose	Thread	Suction / pressure hose material
E-MFU-30/60/100-SKDKN	4728716	2.5 / 4.0 m	M52x2 / M36x2	PVC / SAE 100 R4
E-MFU-30/60/100-SKDKF	4728717	2.5 / 4.0 m	M52x2 / M36x2	SAE 100 R4 / SAE 100 R4

### Hoses with threaded connections for increased viscosity

(30 l/min intake up to max. 1000 mm<sup>2</sup>/s)

(60 l/min intake up to max. 1000 mm<sup>2</sup>/s)

(100 l/min intake up to max. 1000 mm<sup>2</sup>/s)

Name	Part no.	Suction hose / pressure hose	Thread	Suction / pressure hose material
E-MFU-30/60/100-HSKDKN	4728755	2.5 / 4.0 m	M52x2 / M52x2	PVC / SAE 100 R4
E-MFU-30/60/100-HSKDKF	4728756	2.5 / 4.0 m	M52x2 / M52x2	SAE 100 R4 / SAE 100 R4

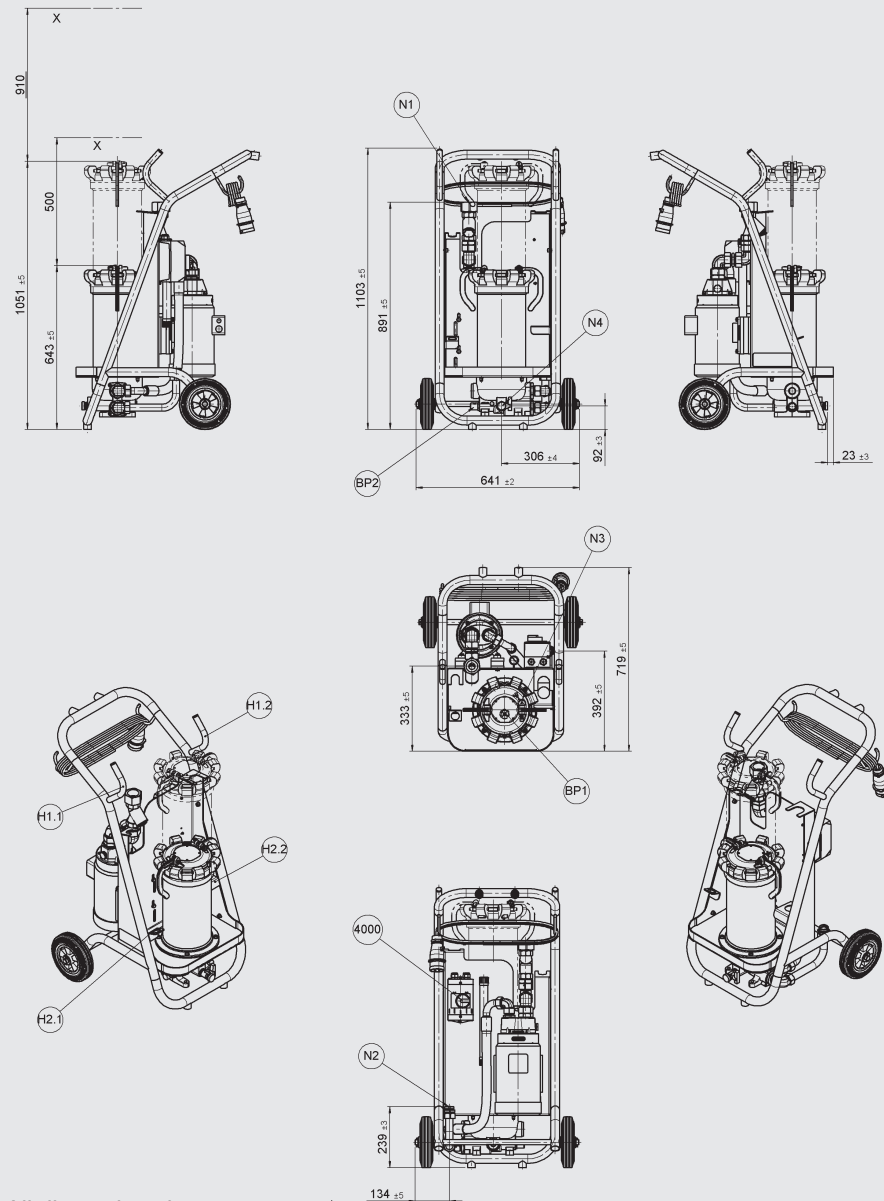
### Accessories for hoses with threaded connections

Name	Part no.	Function
E-MFU-30/60/100-SKDK-SF	4728760	Suction line filter*

\* max. viscosity 400 mm<sup>2</sup>/s

## Dimensions

### MFU-xE18(34)-Sx-FOD



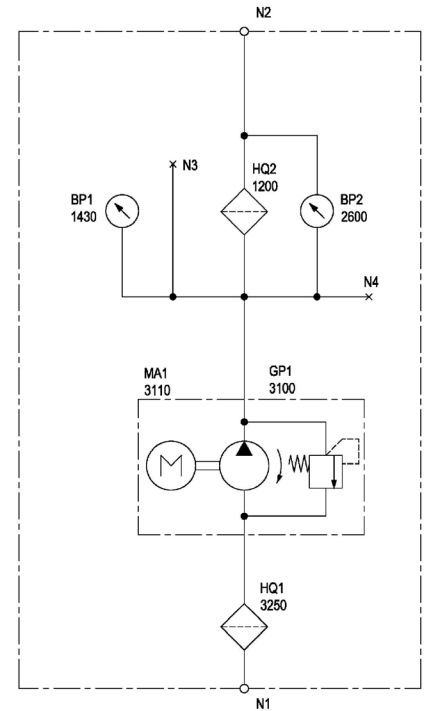
All dimensions in mm

### Hydraulic connections and controls

N1	Inlet
N2	Outlet
N3	Air vent
N4	Drain
BP1	Clogging indicator
BP2	Differential pressure indicator
X	Space for filter element removal
H1.1	Hose holder, pressure line
H1.2	Hose holder, suction line
H2.1	Lance holder, pressure line
H2.2	Lance holder, suction line
4000	On/off switch

## Hydraulic diagram

### MFU-xE18(34)-Sx-FOD

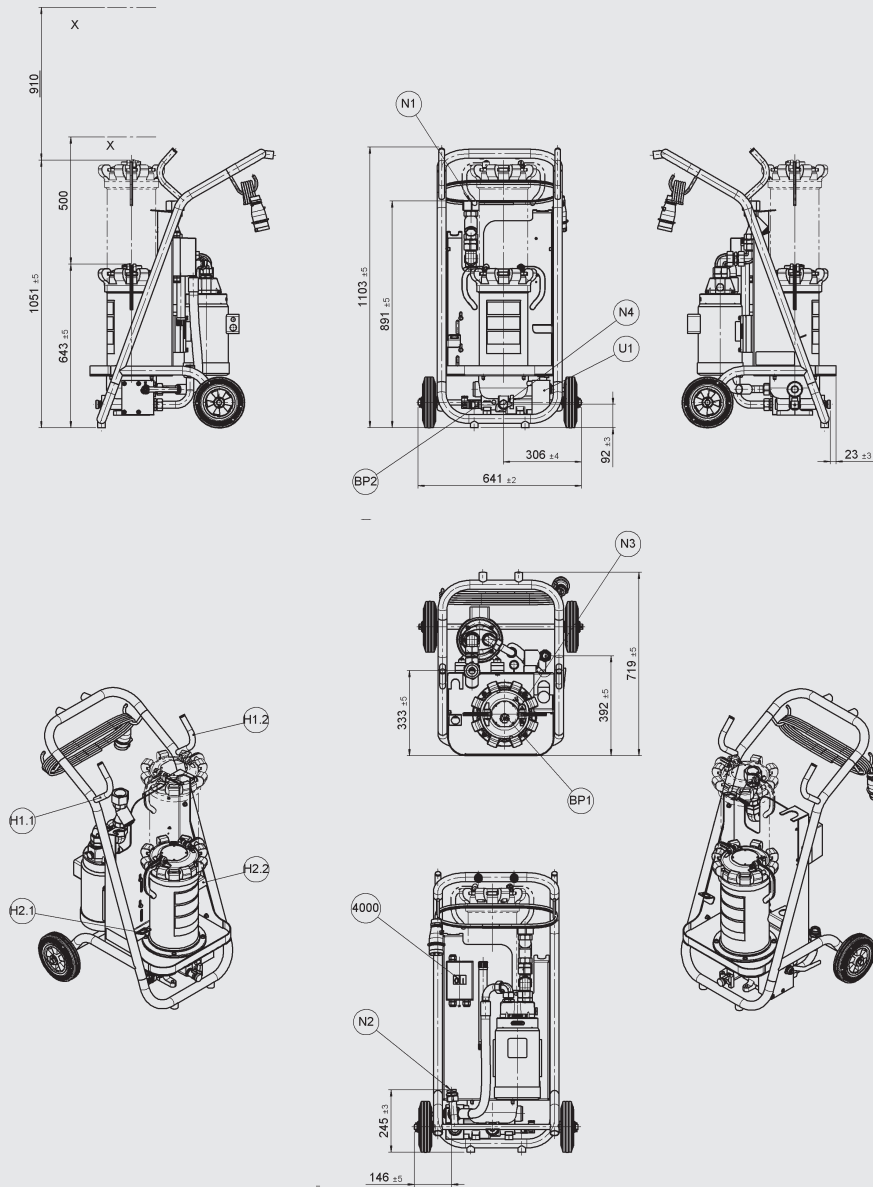


### Caption

N1	Inlet
N2	Outlet
N3	Air vent
N4	Drain
HQ2 / 1200	Filter housing
BP1 / 1430	Clogging indicator
BP2 / 2600	Differential pressure indicator
GP1 / 3100	Pump
MA1 / 3110	Motor
HQ1 / 3250	Protective screen

## Dimensions

### MFU-xS18(34)-Sx-FED



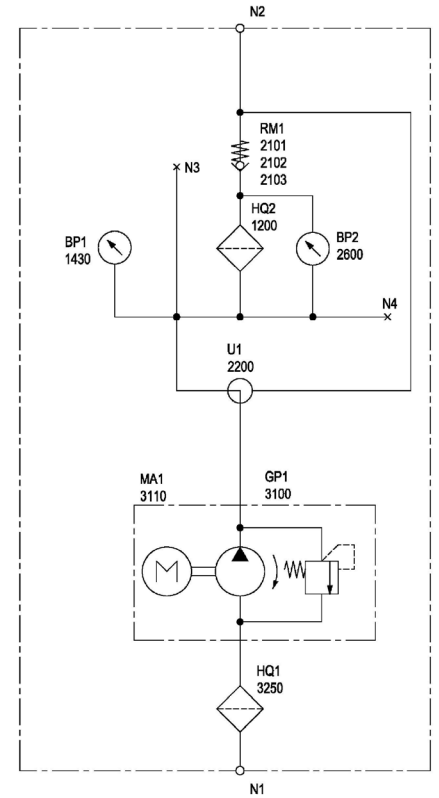
All dimensions in mm

### Hydraulic connections and controls

N1	Inlet
N2	Outlet
N3	Air vent
N4	Drain
BP1	Clogging indicator
BP2	Differential pressure indicator
X	Space for filter element removal
H1.1	Hose holder, pressure line
H1.2	Hose holder, suction line
H2.1	Lance holder, pressure line
H2.2	Lance holder, suction line
U1	Switch repump
4000	On/off switch

## Hydraulic diagram

### MFU-xS18(34)-Sx-FED



### Caption

N1	Inlet
N2	Outlet
N3	Air vent
N4	Drain
HQ2 / 1200	Filter housing
BP1 / 1430	Clogging indicator
RM1 / 2101 2102 2103	Check valve
BP2 / 2600	Differential pressure indicator
U1 / 2200	Switch repump
GP1 / 3100	Pump
MA1 / 3110	Motor
HQ1 / 3250	Protective screen

