



Varnish Elimination Unit – Filtration VEU-F

Description

The service-friendly Varnish Elimination Units VEU are used to condition mineral oils. They are particularly effective at removing oil degradation products (varnish) from mineral oils.

Varnish takes the form of oil-insoluble oil degradation products which settle in the tank, in valves or in bearings. These can be filterable gels or solid varnish-type deposits.

The units in the VEU-F series are used in bypass flow.

Special features

- Removal of solid and gel-like oil degradation products
- Increased system reliability due to reduced deposits on the hydraulic valves
- Increased fluid service life
- Available as a complete unit for retrofitting existing systems and for new systems

Technical Data

Hydraulic data	5/3	60/1	15/5	30/10	45/15	60/20
Permitted flow rate - oil	3 l/min	1 l/min	5 l/min	10 l/min	15 l/min	20 l/min
Recommended flow rate - cooling water (for cooler variant A)	–	–	5 l/min	10 l/min	15 l/min	20 l/min
Permissible viscosity range [mm ² /s]	15 to 200	15 to 300				
Permitted operating media	Mineral oils					
Permitted temperature range - oil	10 ... 80 °C					
Permitted temperature range - cooling water	–	< 30 °C				
Operating pressure	12 bar	6 bar				
Permitted pressure at suction port	-0.4 ... 0.5 bar					
Oil connection IN	ISO 228-1 G1	ISO 8434-1 M36 x2 (28L)				
Oil connection OUT	ISO 228-1 G1	ISO 8434-1 M36 x2 (22L)				
Water connection IN	–	ISO 8434-1 M36 x2 (18L)				
Water connection OUT	–	ISO 8434-1 M36 x2 (18L)				
Achievable MPC values	<10					
Electrical data						
Supply voltage	See model code					
Power consumption	VEU-F-5/3 ≈ 0.37 kW VEU-F-xx-A ≈ 0.4 kW VEU-F-xx-C ≈ 6.5 kW					
Fuse required on site	VEU-F-5/3 = 16 A VEU-F-xx-A = 16 A VEU-F-xx-C = 32 A					
Protection class according to DIN 40050	IP54	IP55				
General data						
Noise level at 1 m distance	< 70 db(A)	< 80 db(A)				
Sealing material	FKM					
Permitted ambient temperature range	-20 ... 40 °C	0 to 40 °C				
Permitted storage temperature range	0 ... 50 °C	0 to 60 °C				
Permitted relative humidity	0 ... 80%, non-condensing					
Weight when empty	VEU-F-5/3 ≈ 14 kg VEU-F-xx-A ≈ 80 kg VEU-F-xx-C ≈ 280 kg					
Length of hoses (mobile version only)	–	2.5 m suction hose 5 m pressure hose				

Model code

VEU - F - 60/1 - S - A - G - M - Z - B - PKZ

Type

VEU = Varnish Elimination Unit

Function

F = filtration

Size

5/3 = filter housing 5 litres / nominal flow rate max. 3 litres
 60/1 = filter housing 60 litres / nominal flow rate max. 1 litre
 15/5 = filter housing 15 litres / nominal flow rate max. 5 litres
 30/10 = filter housing 30 litres / nominal flow rate max. 10 litres
 45/15 = filter housing 45 litres / nominal flow rate max. 15 litres
 60/20 = filter housing 60 litres / nominal flow rate max. 20 litres

Model

S = stationary
 M = mobile

Size	5/3	60/1	15/5	30/10	45/15	60/20
S	•	•	•	•	•	•
M		•	•	•	•	•

Cooler/heat exchanger

A = plate heat exchanger
 C = compressor cooler
 Z = none

A			•	•	•	•
C		•				
Z	•					

Pump

G = gear pump
 S = vane pump
 Z = none

G		•	•	•	•	•
S	•					
Z			•	•	•	•

Voltage

B 60 = 480 V, 60 Hz, 3 Ph
 C = 380 V, 50 Hz, 3 Ph
 G 60 = 440 V, 60 Hz, 3 Ph
 L = 115 V, 50 Hz, 1 Ph
 AE 60 = 120 V, 60 Hz, 1 Ph
 M = 230 V, 50 Hz, 1 Ph
 N = 400 V, 50 Hz, 3 Ph
 O 60 = 460 V, 60 Hz, 3 Ph
 P = 575 V, 50 Hz, 3 Ph
 R = 415 V, 50 Hz, 3 Ph
 S = 500 V, 50 Hz, 3 Ph
 W = 230 V, 50 Hz, 3 Ph
 X = other voltage supply
 Z = without motor

B	•	•	•	•	•	•
V	•	•	•	•	•	•
G	•	•	•	•	•	•
L	•		•	•	•	•
AE	•		•	•	•	•
M	•		•	•	•	•
N	•	•	•	•	•	•
O	•	•	•	•	•	•
P	•	•	•	•	•	•
R	•	•	•	•	•	•
S	•	•	•	•	•	•
W	•		•	•	•	•
X	•	•	•	•	•	•
Z						

Filter element

Z = without filter element (filter element must be ordered separately)

Clogging indicator

B = 2 bar visual
 C = 2 bar electrical
 D3 = 2 bar visual/electrical
 D70 = 5 bar visual

B			•	•	•	•
C		•				
D3			•	•	•	•
D70	•					

Supplementary details

S3D5 = suction/return hose
 with lance, L = 3 m / 5 m
 SKDK = suction/return hose with
 threaded connection, L = 2.5 m / 5 m
 PKZ = on/off switch with motor protection switch
 FA1 = on and off switch with motor protection switch
 and switch-off when filter is clogged
 Neutral conductor required. Only for voltages
 up to a maximum of 240 V, 1 phase or
 a maximum of 415 V, 3 phases
 FA2 = on/off switch with switch-off when filter is
 clogged
 incl. PKZ without neutral conductor
 S = cooling water flow limiter

S3D5		•	•	•	•	•
SKDK		•	•	•	•	•
PKZ			•	•	•	•
FA1		•	•	•	•	•
FA2		•	•	•	•	•
S			•	•	•	•

Preferred models (with shorter delivery times)

Part no.	Model code
4157202	VEU-F-60/1-M-C-G-N-Z-C/-SKDK-FA1
4262152	VEU-F-30/10-S-A-G-N-Z-D3/-FA1
4632042	VEU-F-5/3-S-Z-S-M-Z-D70

Dimensioning

As a rough guide, the VEU-F can be dimensioned according to the tank volume of the system.

System tank volume in litres	Cooler type		
	With plate heat exchanger	Without plate heat exchanger	Without cooling
<1,000	–	–	5/3
1,000	15/5	60/1	–
10,000	30/10	60/1	–
15,000	45/15	60/1	–
20,000	60/20	60/1	–

Filter elements

Filter elements must be ordered separately and installed on site before commissioning.

VEU-F size	No. of elements	Part no.
5/3	1	4595690
15/5	1	1251590
30/10	2	
45/15	3	
60/20	4	
60/1	4	

Scope of delivery

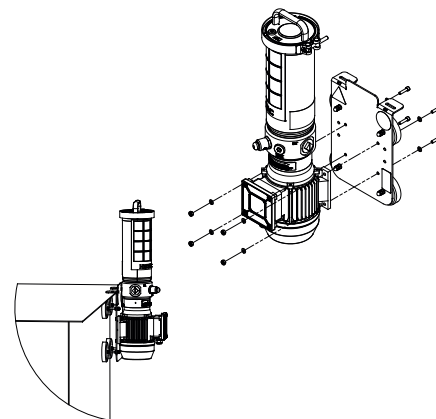
- VEU-F acc. to model code
- Operating and maintenance instructions

Accessories

Magnetic installation plate

- Quick Fix Plate VEU-F-5/3/OLF-5; part number: 4760248

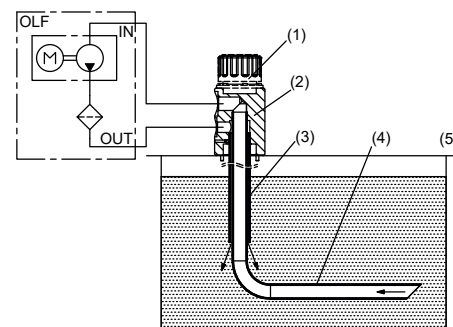
Magnetic installation plate for rapid retrofitting of a VEU-F-5/3 to metal tanks.



Tank Connection Kit

- TAK -OLF-5 Kit 2.0 (incl. suction and pressure hose); part number: 3039235

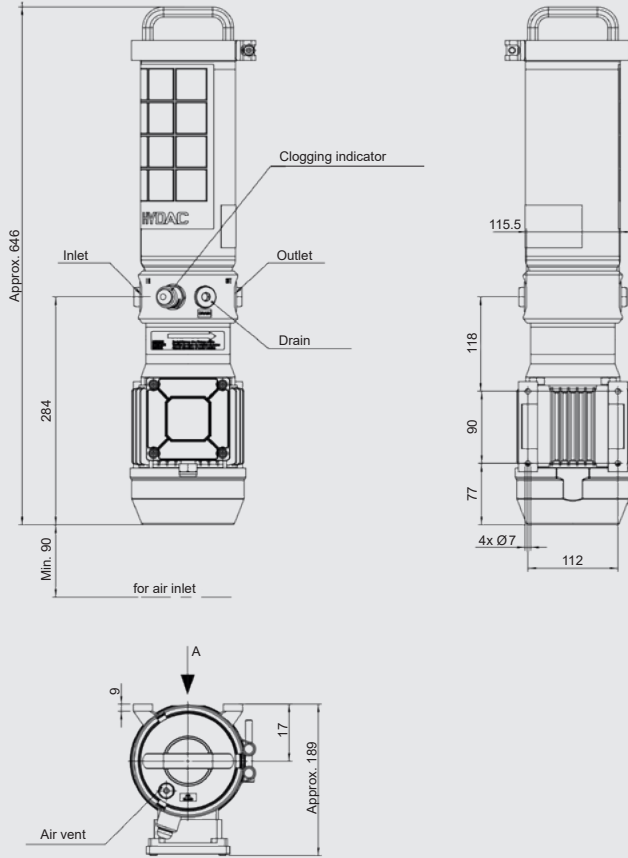
Kit for rapid retrofitting of a VEU-F-5/3 to hydraulic or lubricating oil systems. Can be installed in systems outfitted with breather filters with connection specifications according to DIN 24557/T2.



Key

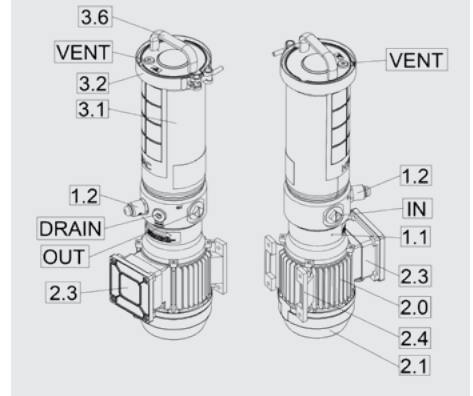
Item	Designation
1	Vent pipe
2	Adapter*
3	Return tube*
4	Suction tube*
5	Tank
*	Scope of delivery

Dimensions VEU - F - 5/3



All dimensions in mm

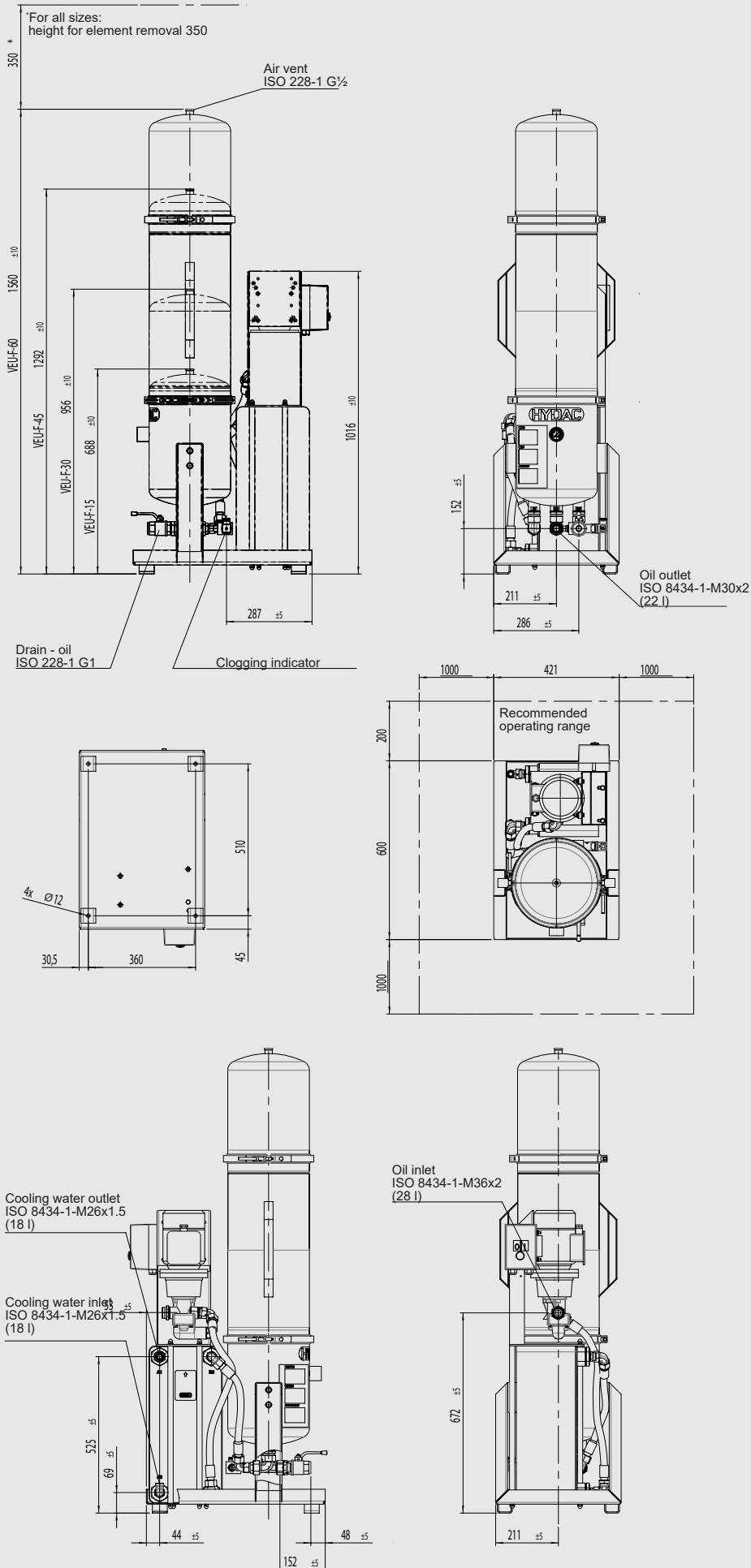
Components



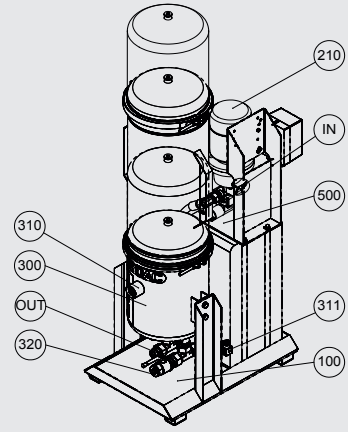
Key

Item	Designation
IN	Inlet
OUT	Outlet
Drain	Drain
Vent	Air vent
1.1	Vane pump
1.2	Clogging indicators
2.0	Electric motor
2.1	Ventilator hood
2.3	Terminal box
2.4	Motor pump assembly
3.1	filter housing
3.2	Tensioning clamp
3.6	Filter bowl cover with O-ring

Dimensions VEU - F - xx/x - x - A (stationary)



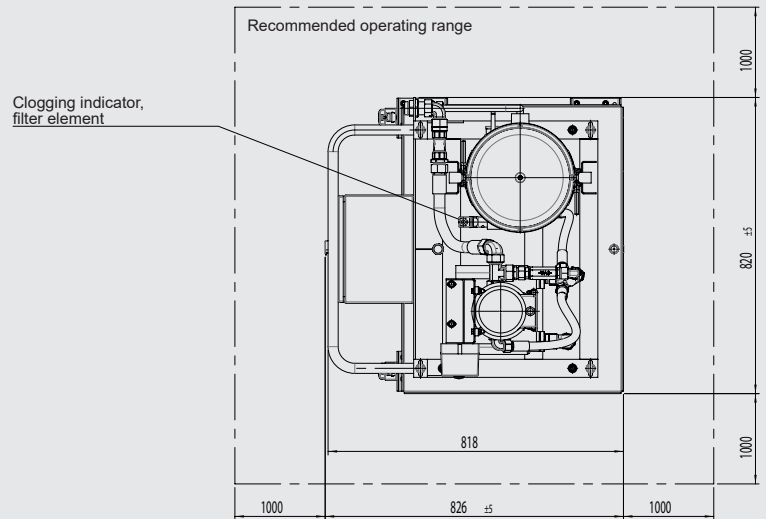
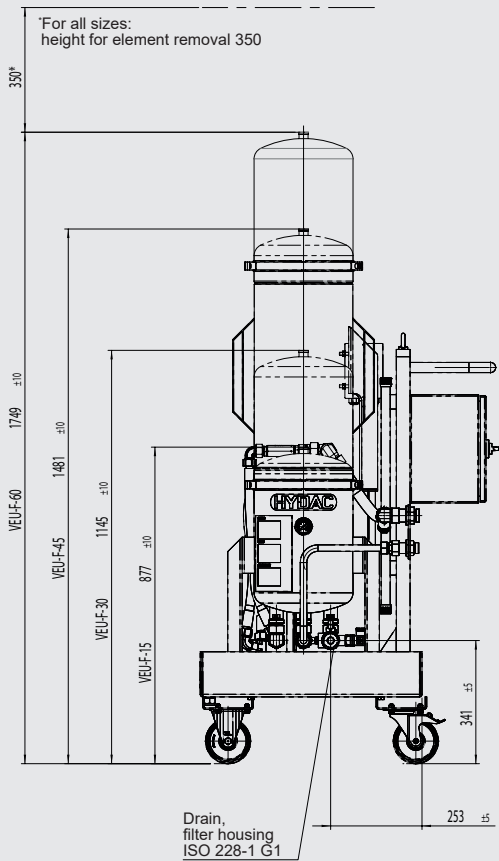
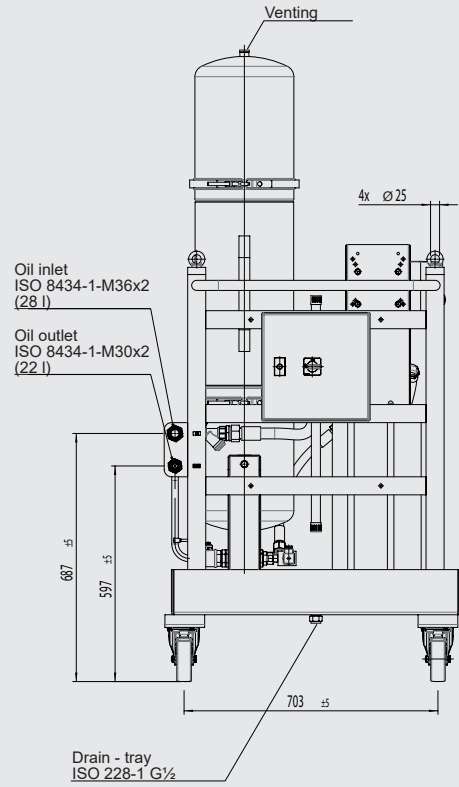
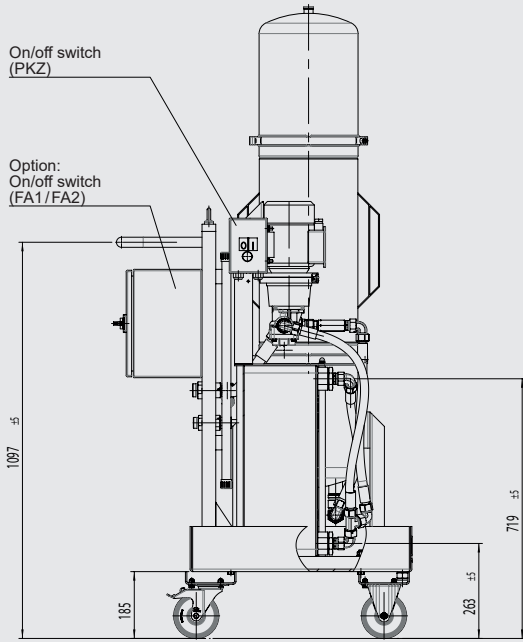
Components



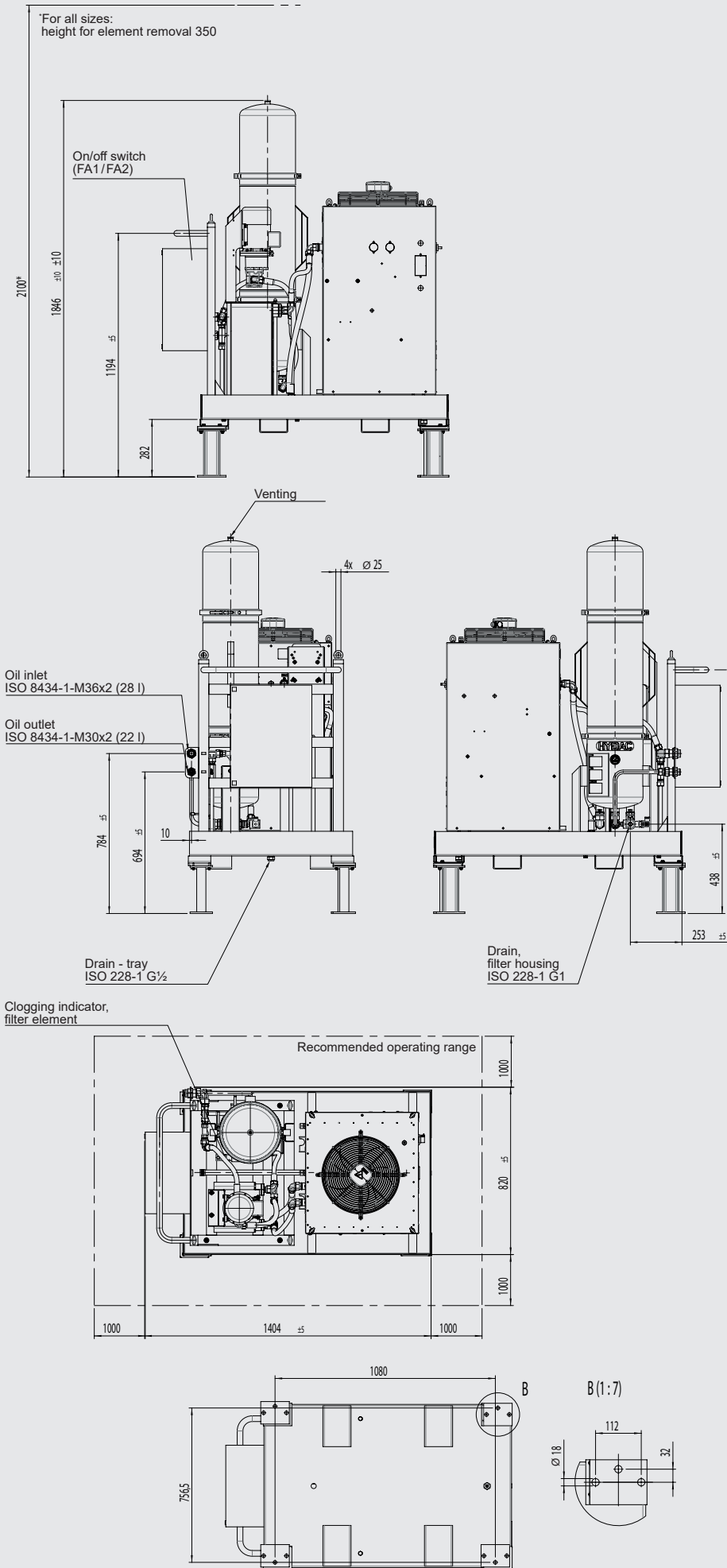
Key

Item	Designation
IN	Inlet
OUT	Outlet
100	Drip tray
210	Motor pump assembly
300	filter housing
310	Differential pressure indicator
311	Clogging indicators
320	Drain
500	Plate heat exchanger

Dimensions VEU - F - xx/x - x - A (mobile)

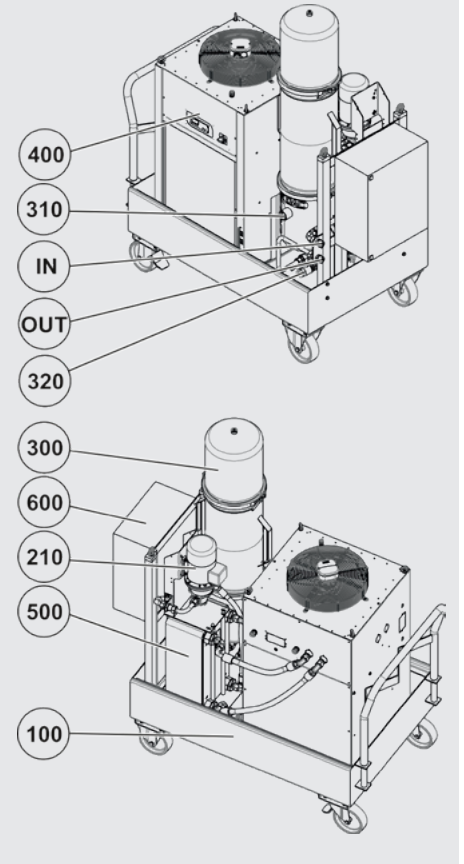


Dimensions VEU - F - 60/1 - x - C (stationary)



All dimensions in mm

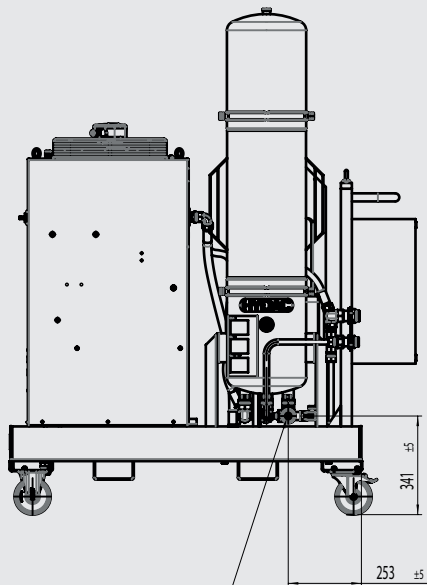
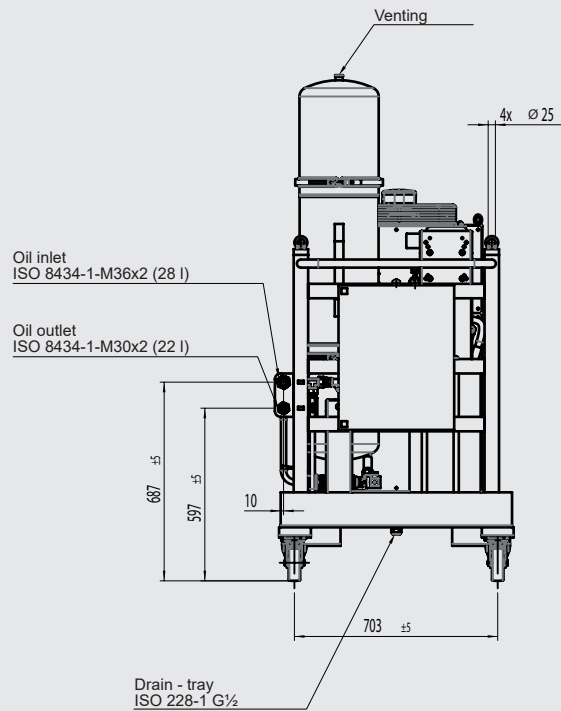
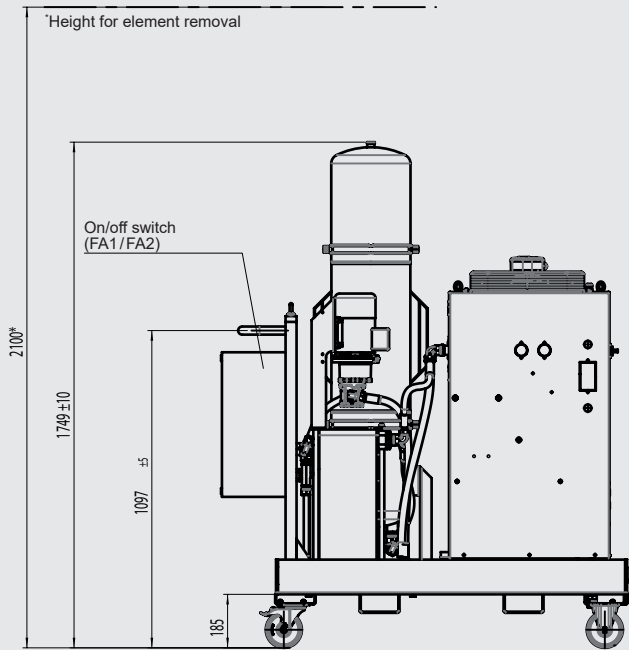
Components



Key

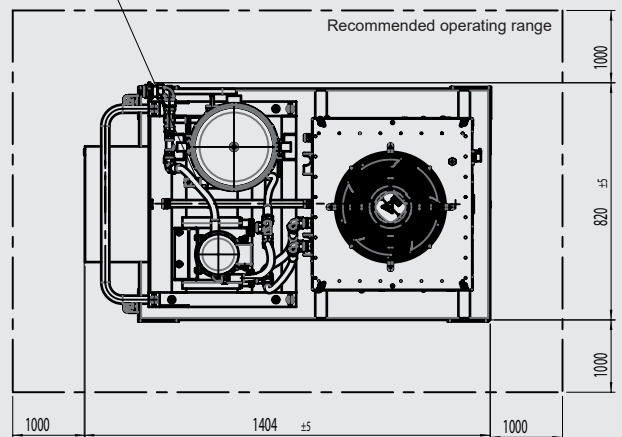
Item	Designation
IN	Inlet
OUT	Outlet
100	Drip tray
210	Motor pump assembly
300	filter housing
310	Differential pressure indicator
320	Drain
400	Compressor with cooler
500	Plate heat exchanger
600	Electrical control

Dimensions VEU - F - 60/1 - x - C (mobile)



Drain,
filter housing
ISO 228-1 G1

Clogging indicator,
filter element



All dimensions in mm

Note

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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