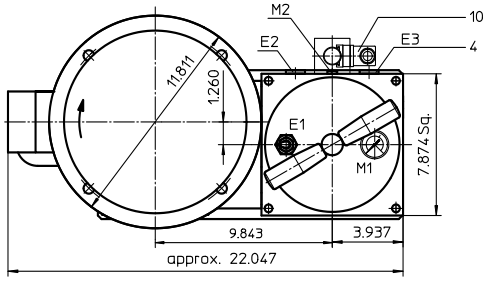
FILTER UNIT, stationary
Series US 321

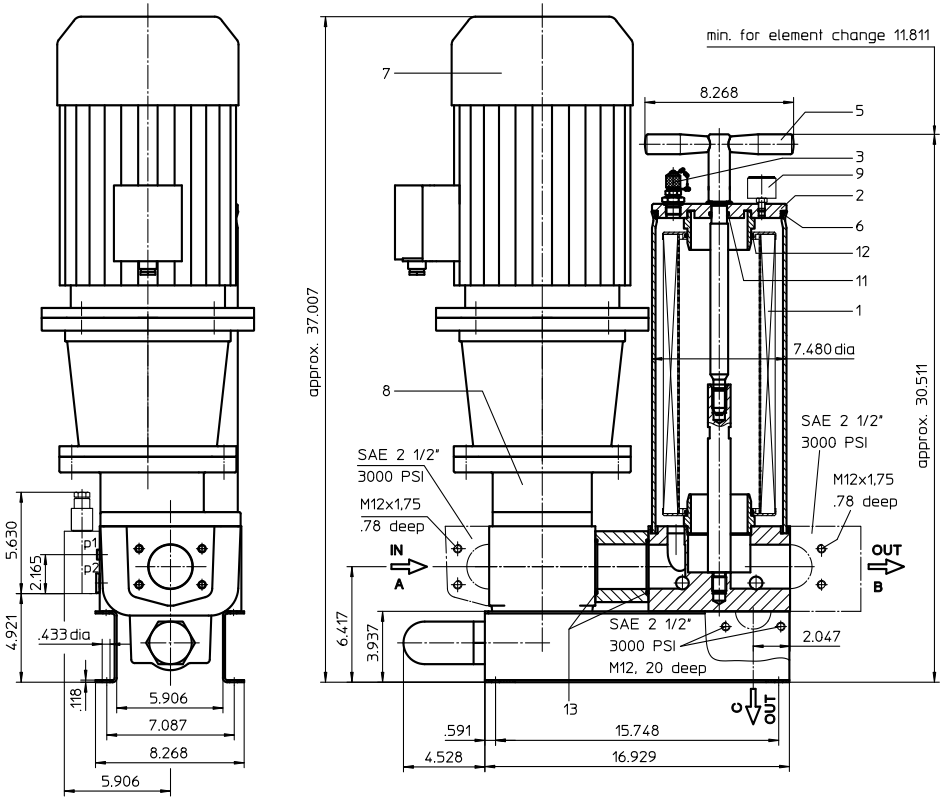
Sheet No. **4012.2 F**
Sheet 2/2

- preference version -

Assignment of connections and functions:

E1: venting mini-measuring connection, MA.1.St see sheet-no.1650
E2: drainage of filter, dirt side
E3: drainage of filter, clean side
M1: measure connection in the housing cover, dirt side
M2: measure connection at filter housing
p_1 = dirt side
p_2 = clean side





1. Type index:

1.1. Filter unit: (ordering example)

US. 321. 6VG. 10. B. P. -. P07. D07. 3. O. AE

1	2	3	4	5	6	7	8	9	10	11	12

1 **series:**
US = filter unit, stationary

2 **nominal size:** 321

3 **filter-material and filter-fineness:**
10 VG = 10 $\mu m_{(c)}$, 6 VG = 7 $\mu m_{(c)}$, 3 VG = 5 $\mu m_{(c)}$, 1 VG = 4 $\mu m_{(c)}$ Interpor fleece (glass fiber)
10 WVG = 10 $\mu m_{(c)}$, 3 WVG = 5 $\mu m_{(c)}$ Watersorp-filter element

4 **resistance of pressure difference for filter element:**
10 = Δp 145 PSI

5 **filter element design:**
B = both sides open

6 **sealing material:**
P = Nitrile (NBR), V = Viton (FPM) , by agreement

7 **filter element specification:**
- = standard, VA = stainless steel, IS06 = see sheet-no. 31601

8 **pump unit:**
P07 = pump unit 07, NG 320.200 (standard-pump-unit / setting range 58-116 PSI)

9 **motor:** (D = rotary current motor)

motor	electrical connection		volume flow	max. viscosity	max. pressure	on/off switch	cable	doc.-no.
D07 [1]	400/690V	50Hz	75 GPM	46-1860 SUS	58 PSI	-	-	34378-4
D07 [1]	460/790V	60Hz	90 GPM	46-1860 SUS	58 PSI	-	-	34378-4
D22	400/690V	50Hz	50 GPM	46-3720 SUS	87 PSI	-	-	34486-4
D22	460/790V	60Hz	60 GPM	46-3720 SUS	87 PSI	-	-	34486-4

[1] standard motor

10 **connection variant:**

variant	connection A		connection B		connection C	
	type	size	type	size	type	size
3	FS	9	FS	9	-	-
4	FS	9	FS	9	FS	9

type: FS = flange SAE 3000 PSI
size: 9 = 2 ½"
- = no connection

11 **clogging indicator at M1:**
- = without
O = visual, 36 PSI

12 **clogging indicator at M2:**
- = without
AOR = AOR.2,5..., visual, at p_1 and p_2, 36 PSI, see sheet-no. 1606,
AOC = AOC.2,5..., visual, at p_1 and p_2, 36 PSI, see sheet-no. 1606,
AE = AE30.2,5..., electrical at p_1 and p_2, 36 PSI, see sheet-no. 1609
OP = OP.2,5..., visual, at p_1 and p_2, 36 PSI, see sheet-no. 1628
OE = OE.2,5..., visual-electrical, at p_1 and p_2, 36 PSI, see sheet-no. 1628
E1 = E1.2,5 electrical at p_1, 36 PSI, see sheet-no. 1616
E5 = E5.2,5 electrical at p_1, 36 PSI, see sheet-no. 1616

1.2. Filter element: (ordering example)

01NR. 1000. 6VG. 10. B. P. -

1	2	3	4	5	6	7

1 **series:**
01NR. = standard-return-line filter element according to DIN 24550, T4

2 **nominal size:** 1000

3 - 7 see type index-filter unit

Changes of measures and design are subject to alteration!

Notice:

Only operate all motors listed on this data sheet in combination with the pump unit specified on the type plate under item 8.

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2. Spare parts:

item	designation	qty.	dimension	article-no.
1	filter element	1	01NR. 1000	
2	housing cover	1	22496-3	313837
3	mini-measuring connection	1	MA.1.St	305453
4	screw plug	2	½ BSPP	304678
5	straining screw	1	31067-3	316893
6	O-ring	1	140 x 6	315392 (NBR)
7	electric motor	1	according to type index	
8	pump unit P07	1	NG 320.200	316908
9	clogging indicator (series)	1	visual 1.57 dia	315452
10	clogging indicator	1	according to type index	
11	O-ring	1	22 x 3	304387 (NBR)
12	O-ring	2	90 x 4	306941 (NBR)
13	O-ring	2	69,45 x 3,53	305868 (NBR)

3. Description:

The stationary filter unit is intended for oil maintenance on hydraulic systems.
The area of application comprises:
- secondary flow filtration in addition to the existing operating filter
- secondary flow filtration without the action of the operating filter
- filtration when filling the oil reservoir.

The filter unit must not be used to pump contaminated hydraulic fluids and is therefore designed without a switchover fitting to by-pass the filter. The compact structural design on a base plate without pipe satisfies the prerequisites for small dimensions and high reliability.
The device is equipped with a gear pump driven by an E-motor. The flow conveyed by the geared pump is fed over a filter element to DIN 24550, T4, nominal size 1000.
Depending on the customer's wishes, the filter fineness is either 4, 5, 7 or 10 $\mu m_{(c)}$. The contamination level of the filter element can be read off from a pressure display in the cover of the filter.
At a pressure >36 PSI (red area of the scale field), the filter element is contaminated and it must be replaced with a new filter element.
The filter element can be changed without tools. After removing the straining screw and taking off the housing cover, the filter element is accessible and it can be exchanged. The filter elements are supplied complete with seals. Since it is not possible to clean the elements, the user must always keep an adequate supply of spare elements in stock.
To protect against overpressure, the filter unit is fitted with a safety valve. The initial response pressure difference valve is set according to pressure stated in the table on the type plate under item 9. If a different pressure setting is requested, please state the initial response presse with respect to the set pressure range of the pump unit in the plain text when ordering.
Stationary filter units with motors without combined protective motor switch and ON/OFF switch and without any cable with plug (see switch „-“, cable „-“ under item 9 of the type plate) can be operated without supervision if the electrical connection is fitted with an overload protection corresponding to the current consumption of the selected E-motor and if the switch-off function of the E-motor of the electrical clogging indicator is disengaged at 36 PSI.
The line, venting and draining connections are identified according to their function. Drainage is necessary when cleaning the filter unit in connection with the change of filter element, and when setting the medium.

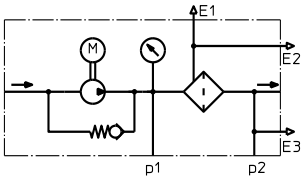
4. Technical data:

filter-fineness:	4, 5, 7 or 10 $\mu m_{(c)}$
weight:	approx. 275 lbs.
operating medium:	hydraulic oil based on mineral oil from 46 SUS, other media on request

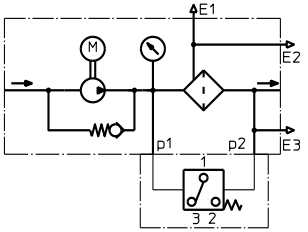
Classified under the Pressure Vessel Directive 97/23/EC for mineral oil (fluid group 2), Article 3, Para. 3.
Classified under ATEX Directive 94/9/EC according to specific application (see questionnaire sheet-no. 34279-4).

5. Symbols:

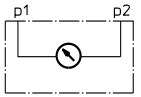
Filter unit without clogging indicator



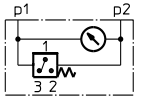
Filter unit with electrical clogging indicator AE30



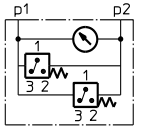
Filter unit with visual clogging indicator AOR, AOC, OP



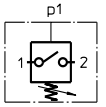
Filter unit with visual-electrical clogging indicator OE1



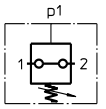
Filter unit with visual-electrical clogging indicator OE2



Filter unit with electrical clogging indicator contact maker E1



Filter unit with electrical clogging indicator contact breaker E5



6. Test methods:

Filter elements are tested according to the following ISO standards:

ISO 2941	Verification of collapse/burst resistance
ISO 2942	Verification of fabrication integrity
ISO 2943	Verification of material compatibility with fluids
ISO 3723	Method for end load test
ISO 3724	Verification of flow fatigue characteristics
ISO 3968	Evaluation of pressure drop versus flow characteristics
ISO 16889	Multi-pass method for evaluating filtration performance