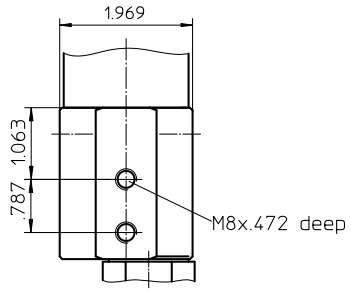
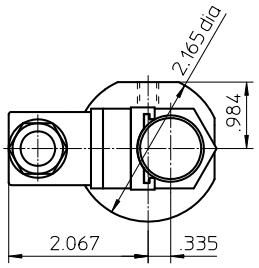
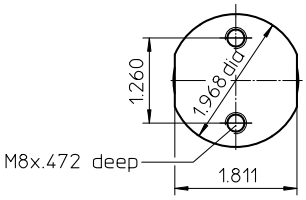
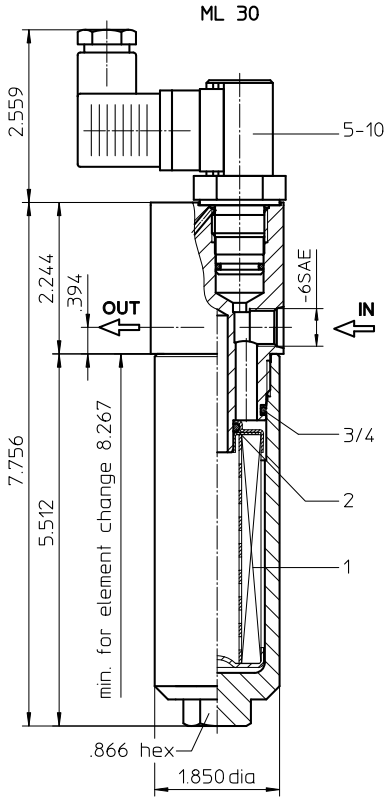
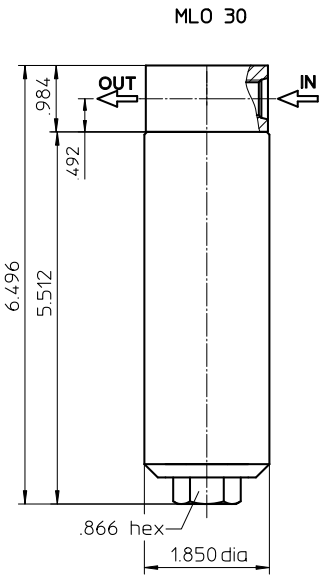
Series ML/MLO 30
2320 PSI











Weight without indicator: approx. 2.50 lbs.
Weight with indicator: approx. 2.90 lbs

Dimensions: inches

Designs and performance values are subject to change.

EDV 09/15

Powering Business Worldwide

Pressure Filter
Series ML/MLO 30
2320 PSI

Description:

Pressure filter series ML30 and MLO30, have a working pressure up to 2320 PSI. Pressure peaks can be absorbed with a sufficient safety margin. The Filter is in-line mounted.

The filter element consists of star-shaped, pleated filter material, which is supported on the inside by a perforated core tube and is bonded to the end caps with a high-quality adhesive. The flow direction is from outside to inside. Filter elements are available down to 4 $\mu m_{(c)}$.

Eaton filter elements are known for high intrinsic stability and an excellent filtration capability, a high dirt-retaining capacity and a long service life.

Eaton filter elements are suitable for all petroleum based fluids, HW-emulsions, most synthetic hydraulic fluids and lubrication oils.

Eaton filter elements are available up to a pressure resistance of Δp 2320 PSI and a rupture strength ofΔp 3625 PSI.

1. Type index:

1.1. Complete filter: (ordering example)

ML.	30.	10VG.	HR.	E.	P.	-.	UG.	1.	-.	AE
1	2	3	4	5	6	7	8	9	10	11

1 **series:**
- ML = in-line filter-medium pressure range with indicator
- MLO = in-line filter-medium pressure range without indicator

2 **nominal size:** 30

3 **filter-material and filter-fineness:**
80G, 40G, 25G, 10G stainless steel wire mesh
25VG, 16VG, 10VG, 6VG, 3VG microglass

4 **filter element collapse rating:**
- 30 = Δp 435 PSI
- HR = Δp 2320 PSI (rupture strength Δp 3625 PSI)

5 **filter element design:**
- E = single-end open

6 **sealing material:**
- P = Nitrile (NBR)
- V = Viton (FPM)

7 **filter element specification:** (see catalog)
- - = standard
- VA = stainless steel
- IS06 = for HFC applications, see sheet-no. 31601

8 **process connection:**
- UG = thread connection

9 **process connection size:**
- 1 = -6 SAE

10 **filter housing specification:** (see catalog)
- - = standard
- IS06 = for HFC application, see sheet-no. 31605

11 **clogging indicator or clogging sensor:**
series MLO:
- - = without

series ML:
- AOR = visual, see sheet-no. 1606
- AOC = visual, see sheet-no. 1606
- AE = visual-electric, see sheet-no. 1615
- VS5 = electronic, see sheet-no. 1619

To add an indicator to your filter, use the corresponding indicator data sheet to find the indicator details and add them to the filter assembly model code.

1.2. Filter element: (ordering example)

01E.	30.	10VG.	HR.	E.	P.	-
1	2	3	4	5	6	7

1 **series:**
- 01E. = filter element according to company standard

2 **nominal size:** 30

3 - 7 see type index-complete filter

Technical data:

design temperature:	14 °F to +212 °F
operating temperature:	14 °F to +176 °F
operating medium	mineral oil, other media on request
max. operating pressure:	2320 PSI
test pressure:	3318 PSI
process connection:	thread connection
housing material:	Al, C-steel
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical
volume tank:	.02 Gal

Classified under the Pressure Equipment Directive 2014/68/EC for mineral oil (fluid group 2), Article 4, Para. 3.
Classified under ATEX Directive 2014/34/EC according to specific application (see questionnaire sheet-no. 34279-4).

Pressure drop flow curves:

Filter calculation/sizing

The pressure drop of the assembly at a given flow rate Q is the sum of the housing Δp and the element Δp and is calculated as follows:

$\Delta p_{assembly} = \Delta p_{housing} + \Delta p_{element}$
$\Delta p_{housing}$ = *(see Δp = f (Q) - characteristics)*

$$\Delta p_{element}\,(PSI) = Q\ (GPM)\ x\ \frac{MSK}{1000}\left(\frac{PSI}{GPM}\right) x\ \nu\,(SUS)\ x\ \frac{\rho}{0.876}\left(\frac{kg}{dm^3}\right)$$

For ease of calculation our Filter Selection tool is available online at www.eatonpowersource.com/calculators/filtration/

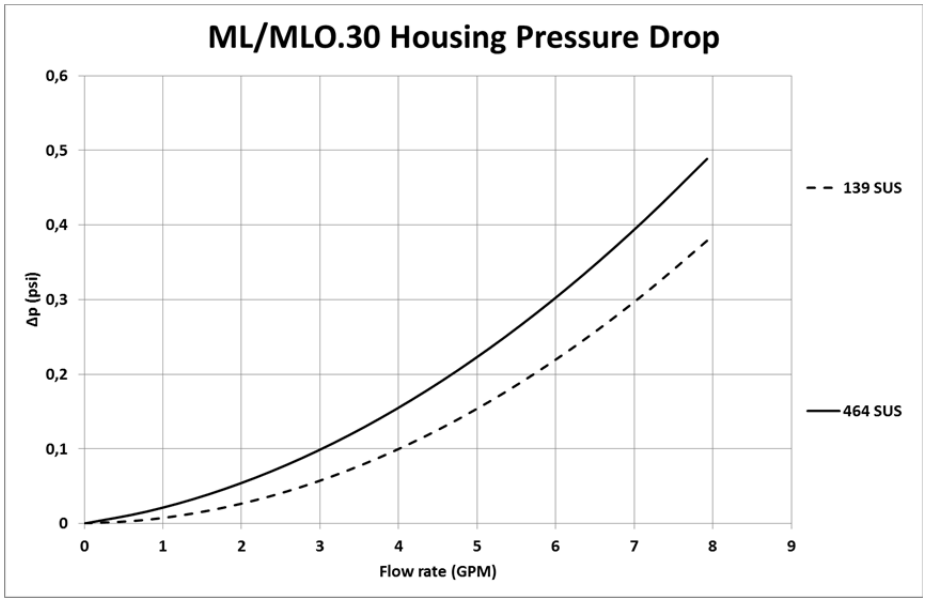
Material gradient coefficients (MSK) for filter elements

The material gradient coefficients in psi/gpm apply to mineral oil (HLP) with a density of 0.876 kg/dm³ and a kinematic viscosity of 139 SUS (30 mm²/s). The pressure drop changes proportionally to the change in kinematic viscosity and density.

ML/MLO	VG					G		
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G
30	12.554	8.716	5.580	4.794	3.275	0.2539	0.2369	0.1623

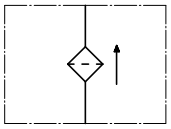
Δp = f(Q) – characteristics according to ISO 3968

The pressure drop characteristics apply to mineral oil (HLP) with a density of 0.876 kg/dm³. The pressure drop changes proportionally to the density.

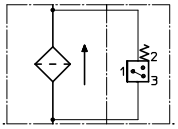


Symbols:

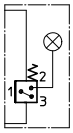
without indicator



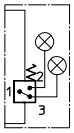
with electric indicator
AE 30 and AE 40



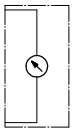
with visual-electric indicator
AE 50 and AE 62



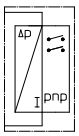
with visual-electric indicator
AE 70 and AE 80



with visual indicator
AOR/AOC



with electronic clogging sensor
VS5



Spare parts:

item	qty.	designation	dimension	article-no.	
1	1	filter element	01E.30…		
2	1	O-ring	11 x 3	312603 (NBR)	312727 (FPM)
3	1	O-ring	32 x 2,5	306843 (NBR)	308268 (FPM)
4	1	support ring	37 x 2,1 x 1	305466	
5	1	clogging indicator, visual	AOR or AOC	see sheet-no. 1606	
6	1	clogging indicator, visual-electric	AE	see sheet-no. 1615	
7	1	clogging sensor, electronic	VS5	see sheet-no. 1619	
8	1	O-ring	15 x 1,5	315357 (NBR)	315427 (FPM)
9	1	O-ring	22 x 2	304708 (NBR)	304721 (FPM)
10	1	O-ring	14 x 2	304342 (NBR)	304722 (FPM)

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

North America
44 Apple Street
Tinton Falls, NJ 07724
Toll Free: 800 656-3344
(North America only)
Tel: +1 732 212-4700

Europe/Africa/Middle East
Auf der Heide 2
53947 Nettersheim, Germany
Tel: +49 2486 809-0

Friedensstraße 41
68804 Altlußheim, Germany
Tel: +49 6205 2094-0

An den Nahewiesen 24
55450 Langenlonsheim, Germany
Tel: +49 6704 204-0

China
No. 3, Lane 280,
Linhong Road
Changning District, 200335
Shanghai, P.R. China
Tel: +86 21 5200-0099

Singapore
4 Loyang Lane #04-01/02
Singapore 508914
Tel: +65 6825-1668

Brazil
Av. Julia Gaioli, 474 – Bonsucesso
07251-500 – Guarulhos, Brazil
Tel: +55 11 2465-8822

For more information, please email us at *filtration@eaton.com* or visit *www.eaton.com/filtration*

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