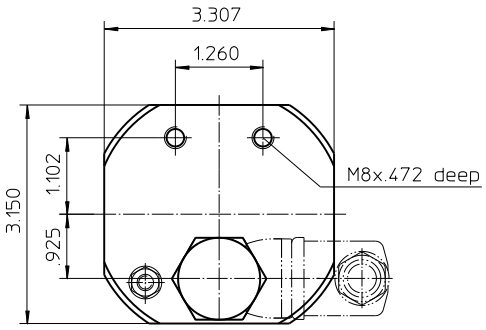
Series MNL 40-100
2320 PSI

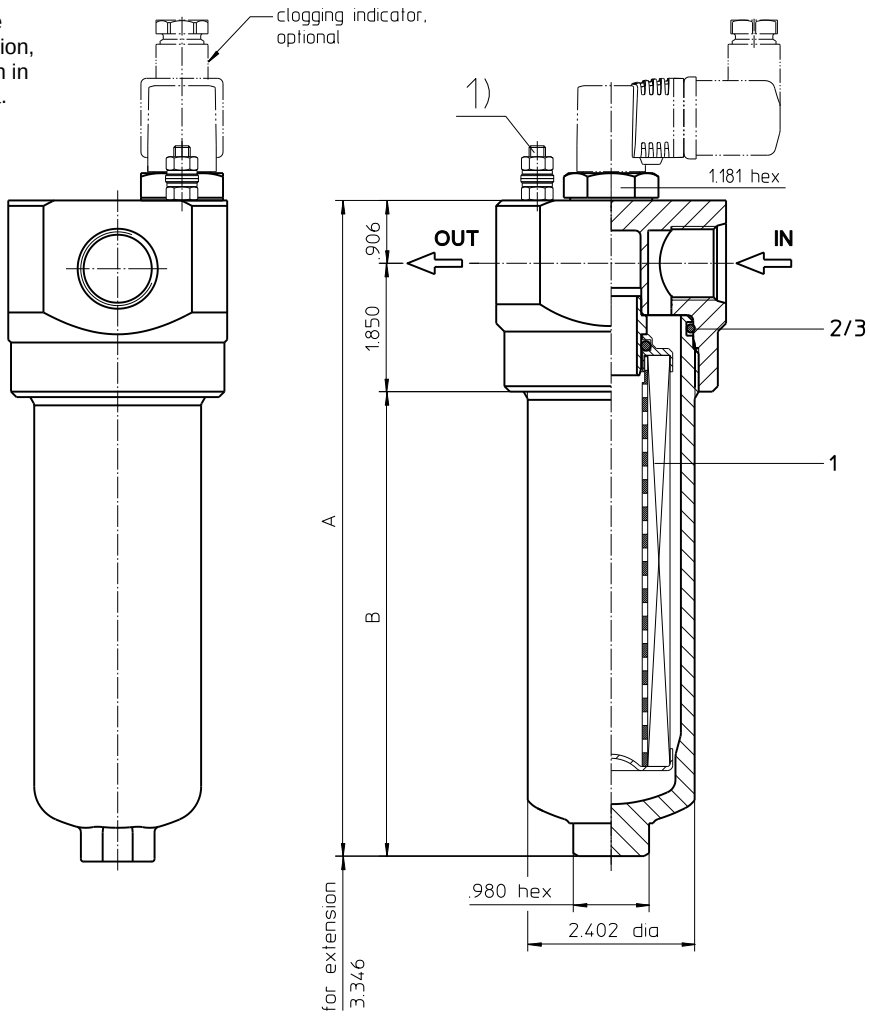
Dimensions:

type	MNL 40	MNL 63	MNL 100
connection	-8 SAE	-12 SAE	-16 SAE
A	7.16	9.52	13.07
B	4.33	6.69	10.23
weight	4.41 lbs.	5.51 lbs.	7.25 lbs.
volume tank	.06 Gal.	.09 Gal.	.14 Gal.

Connection assignments as shown in the table are standard according to DIN 24 550 T1. Are the connection assignments against DIN 24 550 T1, see item 9 of the type code.



1) Connection for the potential equalization, only for application in the explosive area.



Dimensions: inches

Designs and performance values are subject to change.

Pressure Filter
Series MNL 40-100
2320 PSI

Description:

Pressure filter series MNL 40-100 have a working pressure up to 2320 PSI. Pressure peaks can be absorbed with a sufficient safety margin.
The MNL-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 5 $\mu m_{(c)}$. Finer filtration is available upon request.

For cleaning the stainless steel mesh element (see special leaflets 21070-4 and 39448-4) or changing the filter element, remove the filter bowl and take out the element. The mesh elements are not guaranteed to maintain 100% performance after cleaning.

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 available up to a pressure resistance of 160 bar and a rupture strength of Δp 250 bar.

Eaton filter can be used for petroleum-based fluids, HW emulsions, water glycols, most synthetic fluids and lubrication fluids. Consult factory for specific fluid applications.

The internal valve is integrated into the filter head. After reaching the bypass pressure setting, the bypass valve will send unfiltered partial flow around the filter.

The reversing valve provides another level of protection for the filter element. The reverse flow will not be filtered.

Type index:

Complete filter: (ordering example)

MNL.	63.	10VG.	HR.	E.	P.	-.	UG.	4.	-.	-.	AE
1	2	3	4	5	6	7	8	9	10	11	12

1 **series:**
MNL = standard in-line filter-medium pressure range according to DIN 24550 T1

2 **nominal size:** 40, 63, 100

3 **filter-material:**
80G, 40G, 25G 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:**
- = standard
VA = stainless steel
IS06 = for HFC applications, see sheet-no. 31601

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

9 **process connection size:**
3 = -8 SAE
4 = -12 SAE
5 = -16 SAE

10 **filter housing specification:**
- = standard
IS06 = for HFC applications, see sheet-no. 31605

11 **internal valve:**
- = without
S1 = with bypass valve Δp 51 PSI
S2 = with bypass valve Δp 102 PSI
R = reversing valve, Q ≤ 18.50 GPM

12 **clogging indicator or clogging sensor:**
- = without
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.

Filter element: (ordering example)

01NL.	63.	10VG.	HR.	E.	P.	-
1	2	3	4	5	6	7

1 **series:**
01NL. = standard filter element according to DIN 24550, T3

2 **nominal size:** 40, 63, 100

3 - 7 see type index-complete filter

Technical data:

operating temperature:	+14°F to +212°F
operating medium	mineral oil, other media on request
max. operating pressure:	2320 PSI
test pressure:	3320 PSI
process connection:	thread connection
housing material:	aluminium forging alloy; carbon steel (filter bowl)
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical

Classified under the Pressure Equipment Directive 2014/68/EU for mineral oil (fluid group 2), Article 4, Para. 3.
Classified under ATEX Directive 2014/34/EU 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)*

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

For ease of calculation our Filter Selection tool is available online at www.eaton.com/hydraulic-filter-evaluation

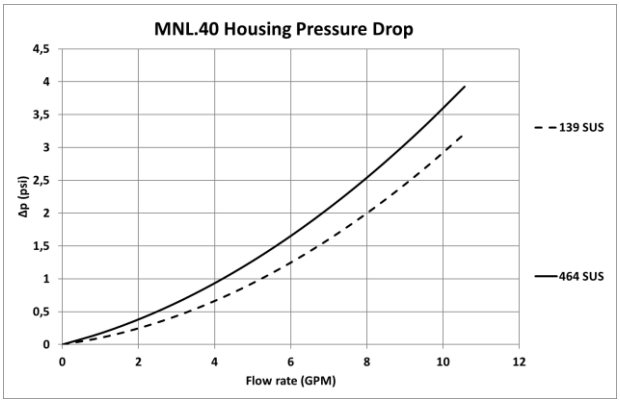
Material gradient coefficients (MSK) for filter elements

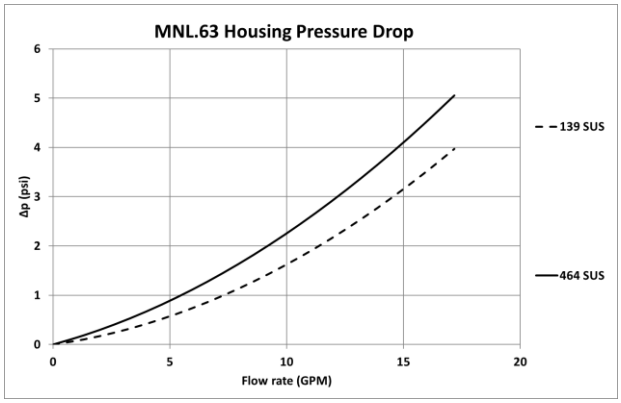
The material gradient coefficients in PSI/GPM apply to mineral oil (HLP) with a density of 0.876 kg/dm³ and a kinematic viscosity of 139 SUS (30 mm²/s). The pressure drop changes proportionally to the change in kinematic viscosity and density.

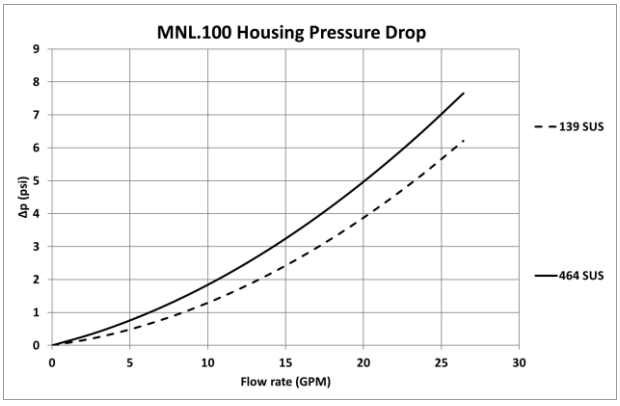
MNL	VG					G		
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G
40	6.991	4.853	3.107	2.705	1.848	0.1893	0.1766	0.1210
63	4.241	2.926	1.873	1.631	1.114	0.1131	0.1056	0.0723
100	2.640	1.833	1.173	1.021	0.698	0.0699	0.0652	0.0447

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

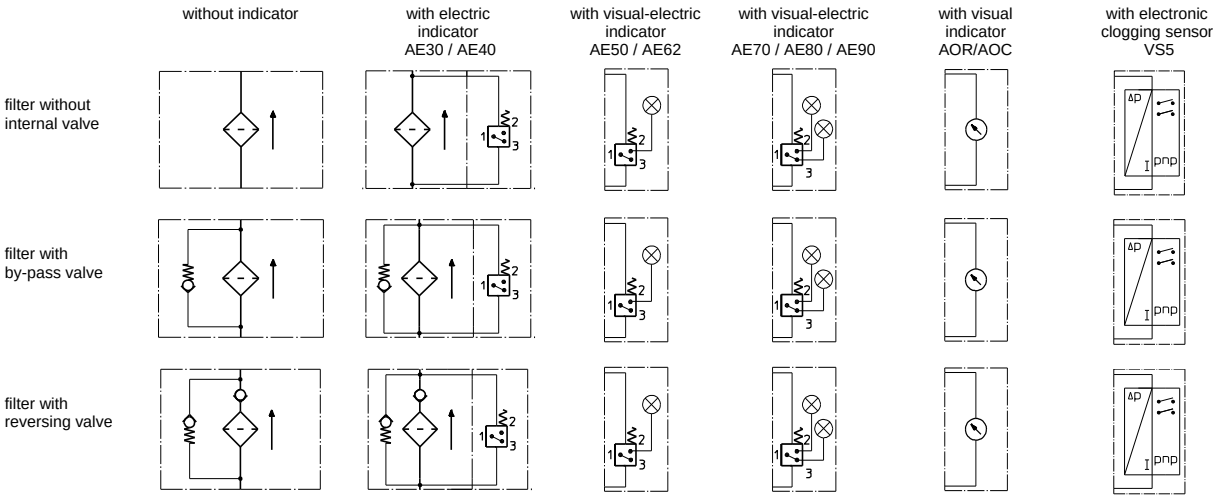
The pressure drop characteristics apply to mineral oil (HLP) with a density of 0.876 kg/dm³. The pressure drop changes proportionally to the density.







Symbols:



Spare parts:

item	qty.	designation	dimension			article-no.	
			MNL 40	MNL 63	MNL 100		
1	1	filter element	01.NL40…	01.NL63…	01.NL100…		
2	1	O-ring	54 x 3			304657 (NBR)	304720 (FPM)
3	1	support ring	60 x 2,6 x 1			311779	

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

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