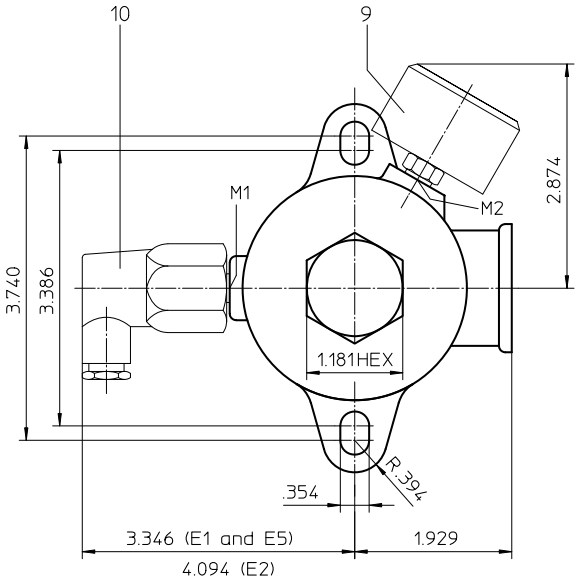
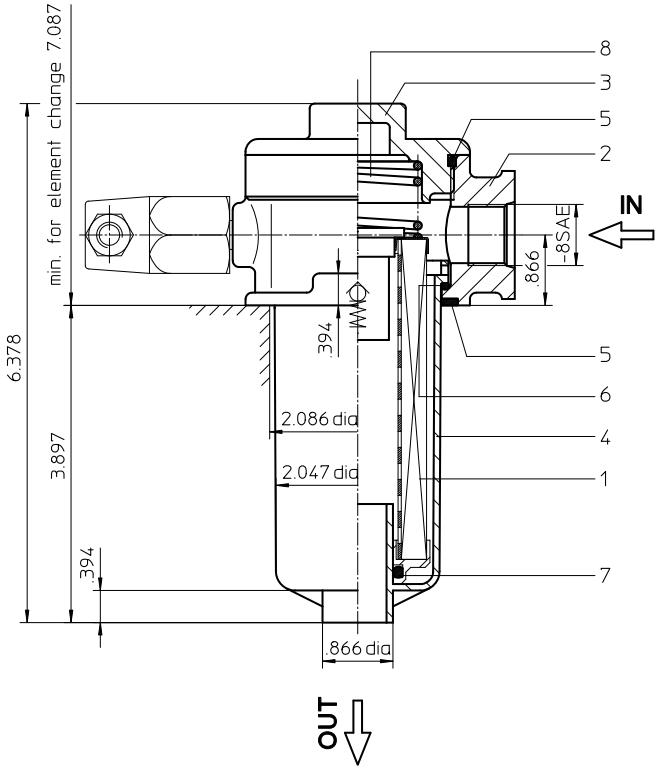
Series TEF 41
145 PSI





Use connection M1 if only one indicator is required.

Weight: approx. 1.76 lbs.
Dimensions: inches

Designs and performance values are subject to change.

Return Line Filter
Series TEF 41
145 PSI

Description:

Return-line TEF series filters have a working pressure up to 145 PSI. Pressure peaks can be absorbed with a sufficient safety margin.

The TEF-filters are directly mounted to the reservoir and connected to the return-line.

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

Eaton filter elements are known for high intrinsic stability and an excellent filtration capability, a high dirt-retaining capacity and a long service life. Due to its practical design, the return-line filter is easy to service.

When changing the filter element, a detachable connection between the filter head and the filter bowl prevents a flow back of dirty oil into the tank.

1. Type index:

1.1. Complete filter: (ordering example)

TEF.	41.	10VG.	16.	S.	P.	-.	UG.	3.	-.	E1.	O
1	2	3	4	5	6	7	8	9	10	11	12

1 **series:**
TEF = tank-mounted return-line-filter

2 **nominal size**: 41

3 **filter-material and filter-fineness:**
80G, 40G, 25G stainless steel wire mesh
25VG, 16VG, 10VG, 6VG, 3VG microglass
10P paper (only with 01E.41)

4 **filter element collapse rating:**
16 = 01E.41 for Δp 232 PSI (standard with by-pass valve)
30 = 01E.60 for Δp 435 PSI (standard without by-pass valve)

5 **filter element design:**
S = with by-pass valve (01E.41) Δp 29 PSI
E = without by-pass valve (01E.60)

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:**
3 = - 8 SAE

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

11 **clogging indicator at M1:**
- = without
O = visual, see sheet-no. 1616
E1 = pressure switch, see sheet-no. 1616
E2 = pressure switch, see sheet-no. 1616
E5 = pressure switch, see sheet-no. 1616

12 **clogging indicator at M2:**
see position 11 of the type index for indicator options

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.	41.	10VG.	16.	S.	P.	-
1	2	3	4	5	6	7

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

2 **nominal size:** 41, 60

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:	145 PSI
opening pressure by-pass valve:	29 PSI
process connection:	thread connection
housing material:	Al-cast, glass fiber reinforced polyamide
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical
volume tank:	.05 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 ∆p and the element ∆p and is calculated as follows:

$\Delta p_{assembly} = \Delta p_{housing} + \Delta p_{element}$
$\Delta p_{housing}$ = *(see ∆p = 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/

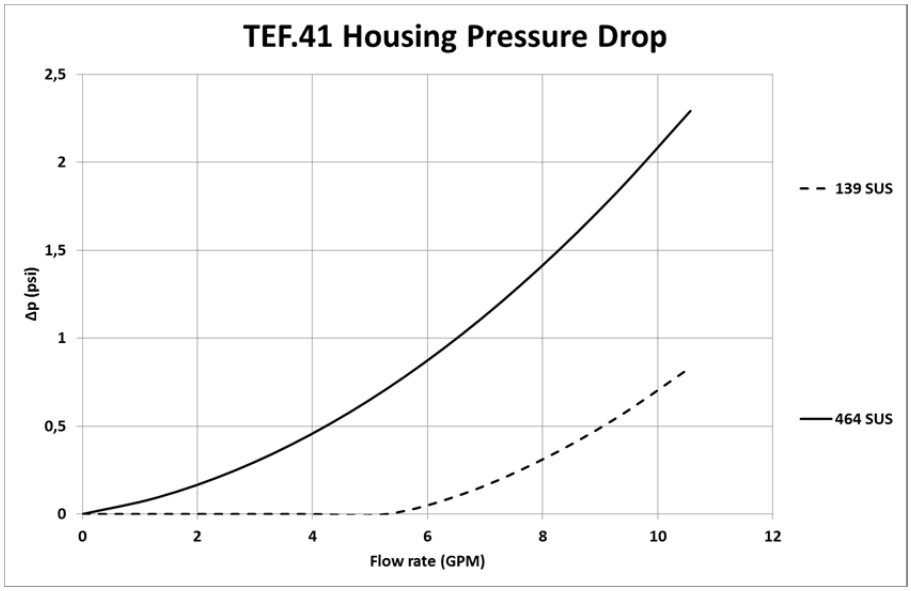
Material gradient coefficients (MSK) for filter elements

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.

TEF	VG					G			P
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G	10P
41 (without bypass)	6.748	4.685	2.999	2.577	1.760	0.2002	0.1868	0.1280	1.469
41 (with bypass)	6.748	4.685	2.999	2.577	1.760	0.2002	0.1868	0.1280	-

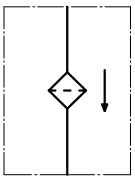
∆p = f(Q) – characteristics according to ISO 3968

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.

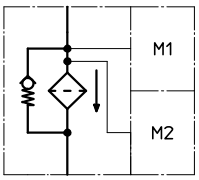


Symbols:

without indicator



with by-pass valve



visual O

electric contact maker E1

electric contact breaker E5

electric contact maker/breaker E2

Spare parts:

item	qty.	designation	dimension	article-no.	
1	1	filter element with by-pass	01.E41…		
	1	filter element without by-pass	01.E60…		
2	1	filter head	TEF 41 - 55	308646	
3	1	filter cover	M 60 x 2	303621	
4	1	filter bowl	TEF 41	306673	
5	2	O-ring	56 x 3	305072 (NBR)	305322 (FPM)
6	1	O-ring	50 x 2,5	305239 (NBR)	305321 (FPM)
7	1	O-ring	22 x 3,5	304341 (NBR)	304392 (FPM)
8	1	spring	DA = 40	304982	
9	1	clogging indicator visual	O	301721	
10	1	clogging indicator electrical	E1, E2 or E5	see sheet-no. 1616	

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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