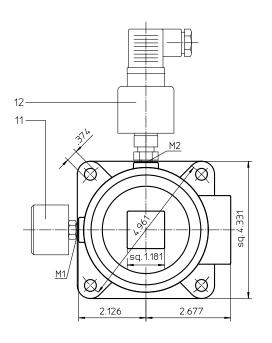
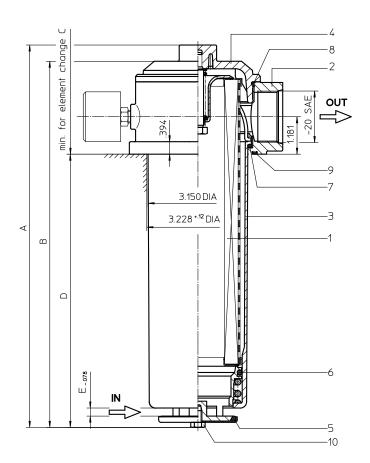
Series TS 210-310





Dimensions:

type	TS 210	TS 310
connection	- 20 SAE	-20 SAE
Α	12.09	15.47
В	11.57	14.96
С	11.42	14.76
D	8.62	12.00
E	.26	.30
weight	5.10 lbs.	6.60 lbs.
volume tank	.30 Gal.	.40 Gal.

Dimensions: inches

Designs and performance values are subject to change.



Suction Filter Series TS 210-310

Description:

The TS-filters are directly mounted to the reservoir and connected to the suction-line. The suction inlet connection must be below the oil level.

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.

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

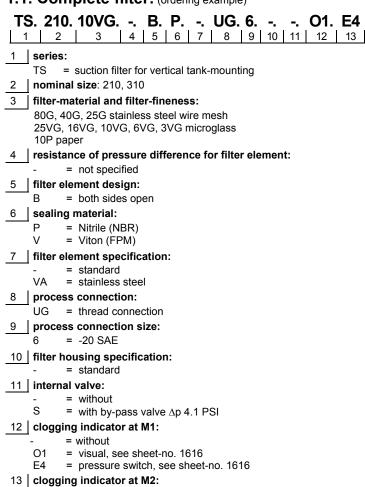
For filtration finer than 40 μm use the disposable elements made of microglass. Filter elements as fine as 5 $\mu m(c)$ are available; finer filter elements on request.

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

When removing the filter cover, a plate-shaped valve closes the suction-inlet of the filter bowl and prevents dirty oil from flowing into the tank. For cleaning, the filter bowl and the filter element can be taken out of the filter head

1. Type index:

1.1. Complete filter: (ordering example)



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.

possible indicators see position 12 of the type index

3 - 5 / 7 see type index-complete filter 6 seling material:

- = without

Technical data:

design temperature: 14 °F to +212 °F operating temperature: 14 °F to +176 °F to +176 °F

operating medium mineral oil, other media on request

process connection: thread connection

housing material: Al-casting, glass fiber reinforced polyamide

sealing material: Nitrile (NBR) or Viton (FPM), other materials on request

installation position: vertica

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:

 Δp assembly = Δp housing + Δp element Δp housing = (see Δp = f (Q) - characteristics)

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

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

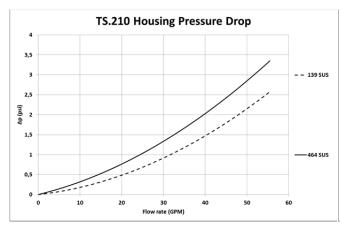
Material gradient coefficients (MSK) for filter elements

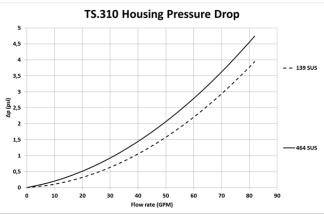
The material gradient coefficients in psi/gpm apply to mineral oil (HLP) with a density of 0.876 kg/dm³ and a kinematic viscosity of 139 SUS (30 mm²/s). The pressure drop changes proportionally to the change in kinematic viscosity and density.

TS	VG				G			Р	
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G	10P
210	2.250	1.562	1.000	0.871	0.595	0.0826	0.0612	0.0571	0.443
310	1.628	1.130	0.724	0.630	0.430	0.0598	0.0443	0.0413	0.321

$\Delta p = f(Q) - characteristics according to ISO 3968$

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.

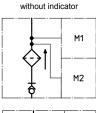




Symbols:

filter without internal valve

filter with internal valve





visual O









electric E4

Spare parts:

item	qty.	designation	dimension		article-	no.	
			TS 210	TS 310			
1	1	filter element	01TS.210	01TS.310			
2	1	filter head			30442	23	
3	1	filter bowl			304518.1		
4	1	filter cover	M 90	x 2			
5	1	O-ring	53 x 4		309143 (NBR)	332434 (FPM)	
6	1	O-ring	62 x	4	308045 (NBR)	311472 (FPM)	
7	1	O-ring	75 x	3	302215 (NBR)	304729 (FPM)	
8	1	O-ring	82 x	3	305191 (NBR)	305298 (FPM)	
9	1	O-ring	88 x 3		304417 (NBR)	310266 (FPM)	
10	1	sheet metal screw	B 6,3	¢ 13	31664	11	
11	1	clogging indicator, visual	01		301722		
12	1	pressure switch, electric	E4		31101	16	

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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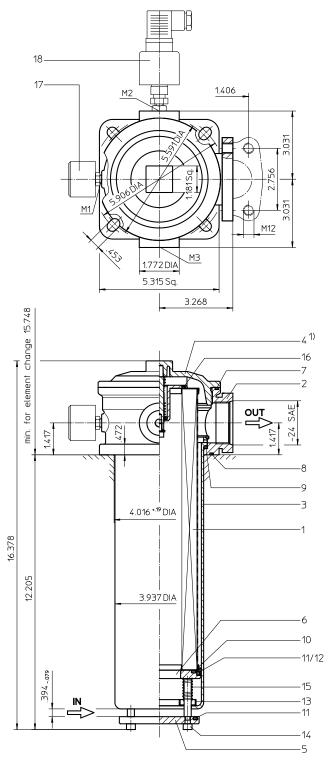
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Series TS 426



 $^{^{1)}}$ The bypass valve is contained in the screw plug. For filters without a by-pass valve, the opening pressure is Δp 14.5 PSI.

Weight: approx. 12.5 lbs. Dimensions: inches

Designs and performance values are subject to change.



Suction Filter Series TS 426

Description:

The TS-filters are directly mounted to the reservoir and connected to the suction-line. The suction inlet connection must be below the oil level.

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.

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

For filtration finer than 40 µm use the disposable elements made of microglass. Filter elements as fine as 5 µm(c) are available; finer filter elements on request.

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

When removing the filter cover, a plate-shaped valve closes the suction-inlet of the filter bowl and prevents dirty oil from flowing into the tank. For cleaning, the filter bowl and the filter element can be taken out of the filter head

1. Type index:

1.1. Complete filter: (ordering example)

TS. 426. 10VG. -. B. P. -. UG. 7. -. -. O1. E4. -1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 1 series:

TS = suction filter for vertical tank-mounting

nominal size: 426

filter-material and filter-fineness:

80G, 40G, 25G stainless steel wire mesh 25VG, 16VG, 10VG, 6VG, 3VG microglass 10P paper

4 | filter element collapse rating:

= not specified

5 filter element design:

= both sides open

6 sealing material:

= Nitrile (NBR)

= Viton (FPM)

7 | filter element specification:

= standard

VA = stainless steel

8 process connection:

UG = thread connection

FS = SAE-flange 3000 PSI

9 process connection size:

= -24 SAE or 1 1/2" SAE

10 filter housing specification:

= standard

11 internal valve:

= without

= with by-pass valve Δp 4.1 PSI

12 clogging indicator at M1:

= without

= visual, see sheet-no. 1616

E4 = pressure switch, see sheet-no. 1616

13 | clogging indicator at M2:

possible indicators see position 12 of the type index

14 | clogging indicator at M3:

possible indicators see position 12 of the type index

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)

01TS. 425. 10VG. -. B. -. 1 2 3 4 5 6 7

1 series:

01TS. = suction filter element according to company standard

2 nominal size: 425

3 - 5 / 7 | see type index-complete filter

6 seling material:

= without

Technical data:

design temperature: 14 °F to +212 °F operating temperature: 14 °F to +176 °F

operating medium mineral oil, other media on request process connection: thread connection or SAE-flange 3000 PSI housing material: Al-casting, glass fiber reinforced polyamide

sealing material: Nitrile (NBR) or Viton (FPM), other materials on request

installation position: vertical volume tank: vertical .70 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:

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

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

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

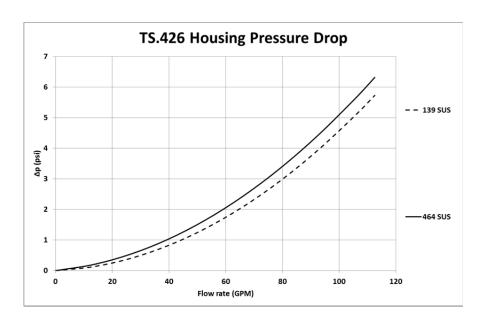
Material gradient coefficients (MSK) for filter elements

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.

TS	VG				G		Р		
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G	10P
426	0.887	0.616	0.394	0.343	0.235	0.0226	0.0211	0.0144	0.188

$\Delta p = f(Q)$ – 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:

filter without internal valve

filter with internal valve

M1

M2/M3

M1

M2/M3

without indicator



visual O



electric E4

Ø



Spare parts:

item	qty.	designation	dimension	article-no.		
1	1	filter element	01TS.425			
2	1	filter head	NG 426			
3	1	filter bowl	NG 426			
4	1	screw plug with by-pass	M 120 x 3			
	1	screw plug without by-pass	M 120 x 3			
5	1	valve disc		3118	392	
6	1	valve bushing		307548		
7	1	O-ring	128 x 3	304602 (NBR)	308140 (FPM)	
8	1	O-ring	115 x 3	303963 (NBR)	307762 (FPM)	
9	1	O-ring	98 x 4	301914 (NBR)	304765 (FPM)	
10	1	O-ring	70 x 4	306253 (NBR)	310280 (FPM)	
11	2	O-ring	76 x 4	305599 (NBR)	310291 (FPM)	
12	1	sliding ring		3075	547	
13	1	pressure ring		3075	549	
14	1	fillister head cap screw	M 6 x 60	307534		
15	1	spring	1,6 x 10 x 53 x 12.5	311847		
16	1	O-ring	50 x 3	307398 (NBR)	314682 (FPM)	
17	1	clogging indicator, visual	01	301722		
18	1	clogging indicator, electric	E4	311016		

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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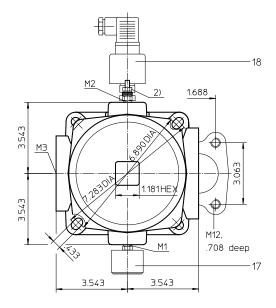
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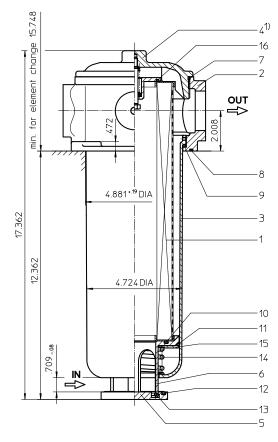
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Series TS 625





¹⁾ The bypass valve is contained in the screw plug. For filters without a by-pass valve, the opening pressure is ∆p 14.5 PSI.

Weight: approx. 12.0 lbs.
Dimensions: inches

Designs and performance values are subject to change.



²⁾ Connect the stand grounding tab to a suitable earth ground point.

Suction Filter Series TS 625

Description:

The TS-filters are directly mounted to the reservoir and connected to the suction-line. The suction inlet connection must be below the oil level.

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.

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

For filtration finer than 40 µm use the disposable elements made of microglass. Filter elements as fine as 5 µm(c) are available; finer filter elements on request.

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

When removing the filter cover, a plate-shaped valve closes the suction-inlet of the filter bowl and prevents dirty oil from flowing into the tank. For cleaning, the filter bowl and the filter element can be taken out of the filter head

1. Type index:

1.1. Complete filter: (ordering example)

TS. 625. 10VG. -. B. P. -. FS. 8. -. -. O1. E4. -3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 1 series: TS = suction filter for vertical tank-mounting nominal size: 625

filter-material and filter-fineness:

80G, 40G, 25G stainless steel wire mesh 25VG, 16VG, 10VG, 6VG, 3VG microglass 10P paper

4 | filter element collapse rating:

= not specified

5 filter element design:

В = both sides open

6 sealing material:

= Nitrile (NBR) = Viton (FPM)

7 | filter element specification:

= standard

VA = stainless steel

8 process connection:

FS = SAE-flange 3000 PSI 9 process connection size:

> 8 = 2"

10 filter housing specification:

= standard

IS11 = for filter head and filter cover, see sheet-no. 40530

11 internal valve:

= without

= with by-pass valve Δp 4.1 PSI

12 clogging indicator at M1:

= without

= visual, see sheet-no. 1616

E4 = pressure switch, see sheet-no. 1616

= pressure o....= = ground connection PΑ

13 clogging indicator at M2:

possible indicators see position 12 of the type index

14 | clogging indicator at M3:

possible indicators see position 12 of the type index

1.2. Filter element: (ordering example)

01TS. 625. 10VG. -. B. -. 1 | 2 | 3 | 4 | 5 | 6 | 7 |

1 series:

= suction filter element according to company standard

2 | nominal size: 625

3 - 5 / 7 | see type index-complete filter

6 seling material:

= without

Technical data:

design temperature: 14 °F to +212 °F operating temperature: 14 °F to +176 °F to +176 °F

operating medium mineral oil, other media on request

process connection: SAE-flange 3000 PSI

housing material standard: filter head, filter cover AL / filter bowl glass fibre reinforced polyamide housing material IS11: filter head, filter cover GG / filter bowl carbon fibre reinforced polyamide

sealing material: Nitrile (NBR) or Viton (FPM), other materials on request

installation position: vertical volume tank: vertical 1.0 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:

 Δp assembly = Δp housing + Δp element Δp housing = (see Δp = f (Q) - characteristics)

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

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.

TS	VG				G		Р		
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G	10P
625	0.733	0.509	0.326	0.284	0.194	0.0170	0.0159	0.0109	0.160

$\Delta p = f(Q)$ – characteristics according to ISO 3968

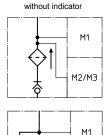
The pressure drop characteristics apply to mineral oil (HLP) with a density of 0.876 kg/dm³. The pressure drop changes proportionally to the density.



Symbols:

filter without internal valve

filter with internal valve



M2/M3



visual O



electric E4





Spare parts:

item	qty.	designation	dimension	article-no.		
1	1	filter element	01TS.625			
2	1	filter head	NG 625			
3	1	filter bowl	NG 625			
4	1	screw plug with by-pass valve	M 140 x 3			
	1	screw plug without by-pass valve	M 140 x 3			
5	1	valve disc		3187	740	
6	1	valve bushing		318739		
7	1	O-ring	135 x 3,5	318386 (NBR)	318387 (FPM)	
8	1	O-ring	140 x 3	304604 (NBR)	307514 (FPM)	
9	1	O-ring	120 x 4	305300 (NBR)	307991 (FPM)	
10	1	O-ring	76 x 4	305599 (NBR)	310291 (FPM)	
11	1	O-ring	104,37 x 3,53	304339 (NBR)	304390 (FPM)	
12	1	O-ring	70 x 4	306253 (NBR)	310280 (FPM)	
13	1	snap ring	B 55	311976		
14	1	spring	5,0 x 70 x 117 x 3,5	318742		
15	1	disc		318741		
16	1	O-ring	56 x 3	307398 (NBR)	314682 (FPM)	
17	1	clogging indicator, visual	E4	311016		
18	1	clogging indicator, electrical	01	301722		

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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