TFR3

In-Tank Filter Assemblies

Donaldson Hy-Pro TFR3 in-tank filter assemblies are ideal for particulate contamination removal at high flow rates in large hydraulic power units and mobile hydraulic OEM applications.

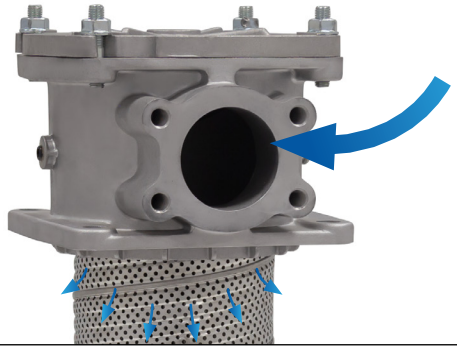
Max Operating Flow: 225 gpm (852 lpm)

Max Operating Pressure: 150 psi (10 bar)

Donaldson HY-PRO™ hyprofiltration.com/

Filtration starts with the filter.

Advanced DFE rated filter elements deliver lower operating ISO Codes with high efficiency particulate removal and retention efficiency. With a range of media options down to $\beta 3_{[c]} > 4000$ + water absorbing options, you get the perfect element for your application, every time.

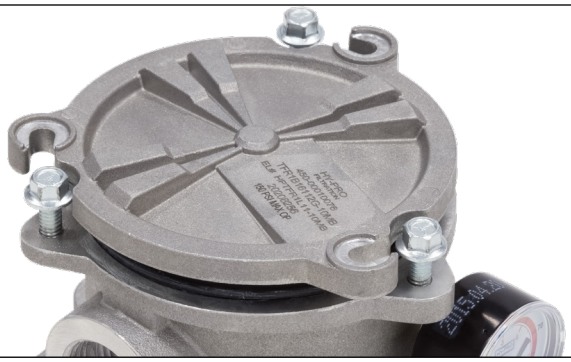


Inside to out flow.

The dirtiest fluid in you system can be found before the filter element in the filter housing. Here, contaminants collect in the filter media and unless disposed of properly, can wreak havoc on your system after element service. That's why when you service the TFR3 element, which utilizes inside-to-outside flow, you remove all the dirt and contaminated fluid with the element.

Integral element bypass.

TFR3 elements include an integral, zero-leak bypass valve. Every time an element is changed a new bypass is installed eliminating bypass valve fatigue and leakage over time.

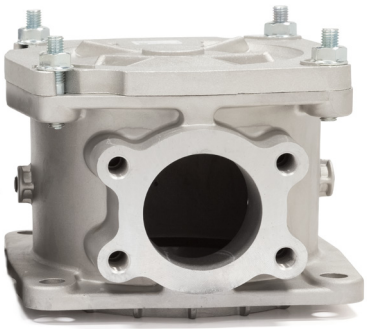


Minimize the mess.

The top loading TFR3 housing provides easy and clean access during element service, no slippery spin-ons to handle. With the keyway cover and bolt arrangement, lost parts during element service become a thing of the past.

Sized for your system.

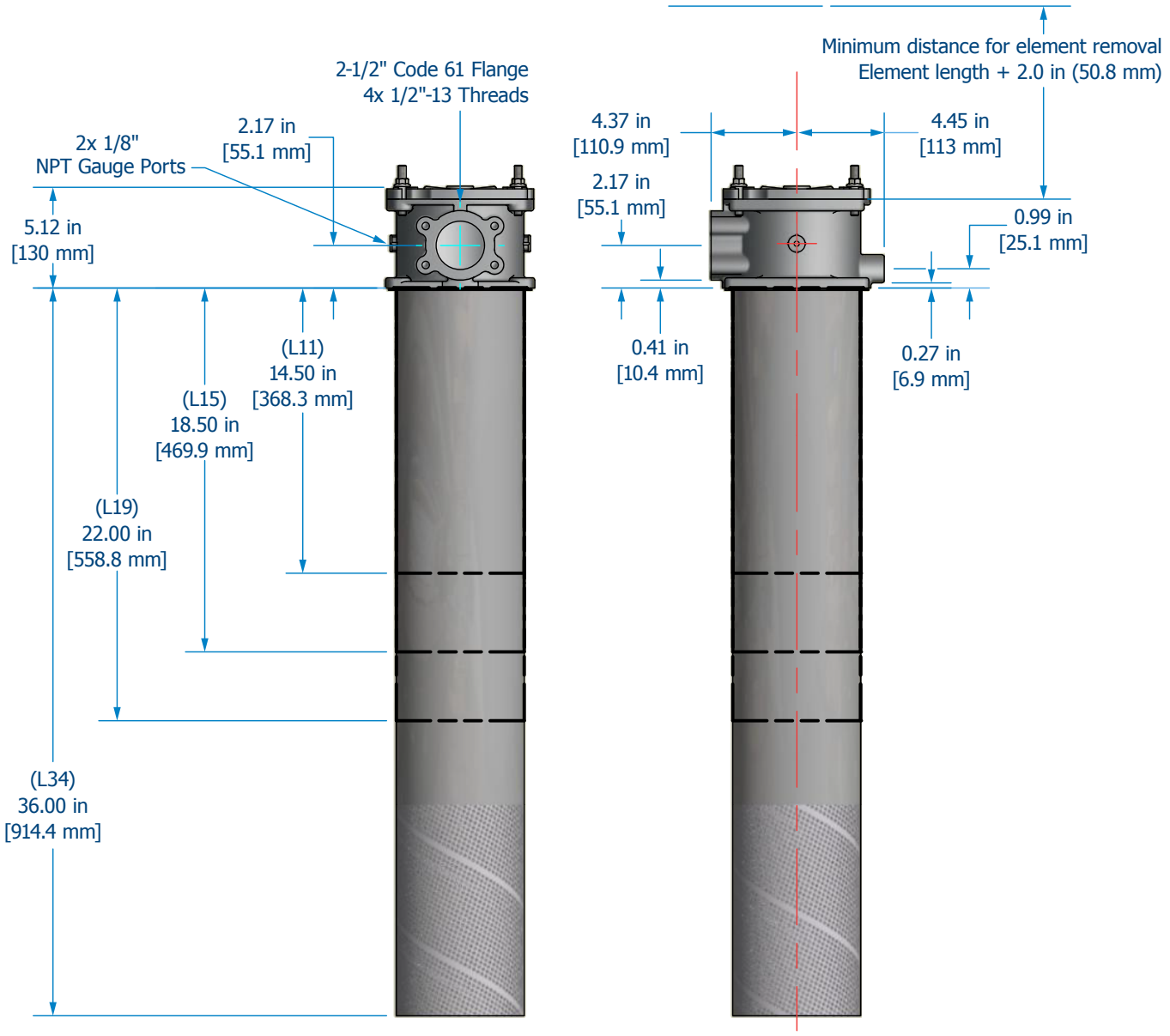
Choose from a range of different length elements and bypass valve settings to handle the flow rate and oil viscosity of your specific system.

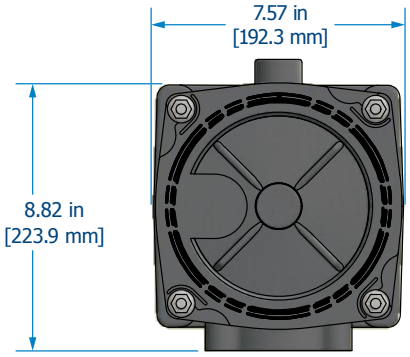


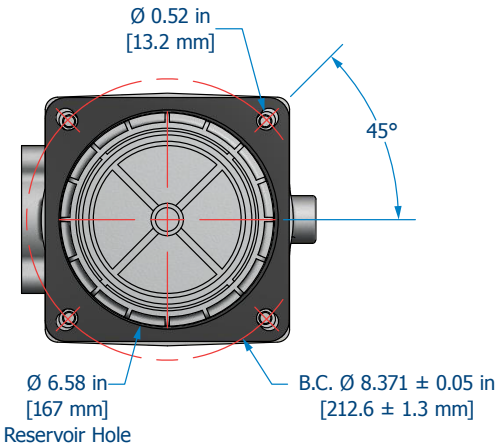
Eliminate aeration.

Smaller reservoirs with higher turnover and less settling time typically lead to aeration as fluids are churned and recirculated. The unique TFR3 element design minimizes turbulence and integral diffuser tube prevents aeration in compact hydraulic and high velocity return line applications by maintaining a column of fluid outside the filter element and above the fluid line to ensure your fluids are returned clean and without aeration.

TFR3 Installation Drawings

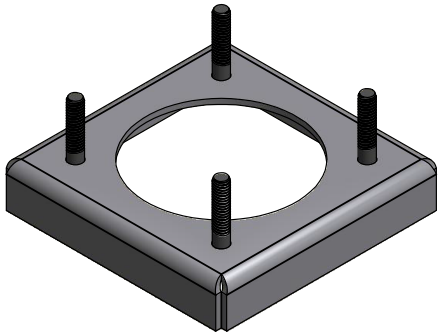


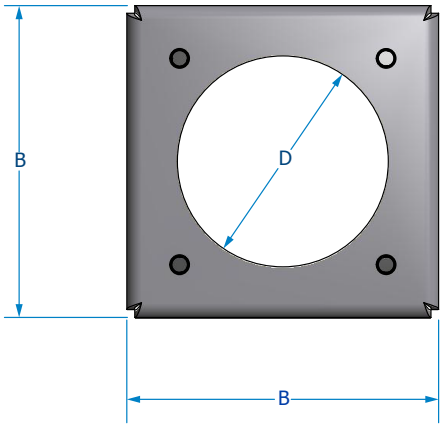




TFR3 Installation Drawings

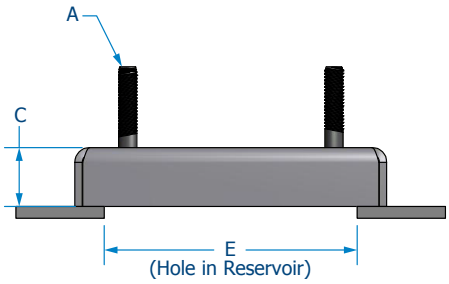
TFR Weld Flange Installation Drawing





TFR3 Installation Drawing

Series	TFR3
A	3/8″ - 16 UNC-2A
B	8.31″ (21.1 mm)
C	1.00″ (25.4 mm)
D	6.67″ (169.4 mm)
E	6.75-7.25″ (171.5-184.2 mm)



TFR3 Specifications

Operating Temperature	**Fluid Temperature** 30°F to 225°F (0°C to 105°C)	**Ambient Temperature** -4°F to 140°F (-20C to 60C)	
Operating Pressure	150 psi (10 bar) maximum		
Pressure Switch Trigger	22 psi (1.5 bar) 45 psi (3.1 bar)		
Visual Gauge	0-22 psi (0-1.5 bar), green to red 0-45 psi (0-3.1 bar), green to red		
Element Collapse Rating	100 psid (6.9 bard)		
Integral Bypass Setting	25 psid (1.7 bard) standard. For 50 psid (3.4 bard) option, select Bypass Option "3" in Assembly Part Number Builder and add "-50" to the end of Replacement Element part number.		
Materials of Construction	**Head** Cast aluminum	**Diffuser** Powder coated or plated steel	**Element Bypass Valve** Plated steel
Media Description	**M** G8 Dualglass, our latest generation of DFE rated, high performance glass media for all hydraulic & lubrication fluids. $\beta x_{[C]} \geq 4000$	**A** G8 Dualglass high performance media combined with water removal scrim. $\beta x_{[C]} \geq 4000$	**W** Stainless steel wire mesh media $\beta x_{[C]} \geq 2$ ($\beta x \geq 2$)

Replacement Elements

To determine replacement elements, use corresponding codes from your assembly part number:

Series Code	Bypass Code	Filter Element Part Number	Example
3	2	HPTFR3L[Element Length Code] – [Media Selection Code][Seal Code]	HPTFR3L19–3ME-WS
	3	HPTFR3L[Element Length Code] – [Media Selection Code][Seal Code] – 50	HPTFR3L19–3ME-WS–50

Fluid Compatibility	Petroleum and mineral based fluids (standard). For polyol ester, phosphate ester, and other specified synthetic fluids use fluorocarbon seal option or contact factory.
Filter Sizing[1]	Filter assembly clean element ΔP after actual viscosity correction should not exceed 10% of filter assembly bypass setting. For applications with extreme cold start condition contact Donaldson Hy-Pro for sizing recommendations.

ΔP Factors[1]

Model	Length	Units	Media 1M	3M	6M	10M	16M	25M	**W
TFR3	L11	psid/gpm	0.1102	0.0930	0.0721	0.0646	0.0632	0.0609	0.0112
		bard/lpm	0.0020	0.0017	0.0013	0.0012	0.0012	0.0011	0.0002
	L15	psid/gpm	0.0834	0.0704	0.0545	0.0489	0.0479	0.0461	0.0084
		bard/lpm	0.0015	0.0013	0.0010	0.0009	0.0009	0.0008	0.0002
	L19	psid/gpm	0.0688	0.0580	0.0450	0.0403	0.0395	0.0380	0.0070
		bard/lpm	0.0013	0.0011	0.0008	0.0007	0.0007	0.0007	0.0001
	L34	psid/gpm	0.0398	0.0336	0.0260	0.0234	0.0228	0.0220	0.0040
		bard/lpm	0.0007	0.0006	0.0005	0.0004	0.0004	0.0004	0.0001

[1]Max flow rates and ΔP factors assume β = 150 SUS, 32 cSt. See filter assembly sizing guideline for viscosity conversion formula for viscosity change.

TFR3 Part Number Builder

TFR3 [ ] [ ] [ ] [ ] - [ ] - [ ] [ ]

Connection | Length | Bypass | Indicator | Special Options | Media | Seal

Connection

TFR3		Max Flow Rate
F40	2.5″ Code 61 flange	225 gpm (852 lpm)[1]

Element Length[2]

TFR3	
11	11″ (28 cm) nominal
15	15″ (38 cm) nominal
19	19″ (48 cm) nominal)
34	34″ (86 cm) nominal

Bypass

2	Integrated bypass - 25 psid (1.7 bar)
3	Integrated bypass - 50 psid (3.4 bar)

Pressure Indicator

DX	Electric pressure switch (DIN connection)
E	Electric switch with flying leads (3-wire connection)
G	Visual pressure gauge
X	No indicator (port plugged)

Special Options

R[3]	Exclude diffuser tube
W	Reservoir weld flange

Media Selection

G8 Dualglass		G8 Dualglass + water removal		Stainless wire mesh	
1M	$\beta 3_{[C]} \geq 4000$	**3A**	$\beta 4_{[C]} \geq 4000$	**25W**	25µ nominal
3M	$\beta 4_{[C]} \geq 4000$	**6A**	$\beta 6_{[C]} \geq 4000$	**40W**	40µ nominal
6M	$\beta 6_{[C]} \geq 4000$	**10A**	$\beta 11_{[C]} \geq 4000$	**74W**	74µ nominal
10M	$\beta 11_{[C]} \geq 4000$	**25A**	$\beta 22_{[C]} \geq 4000$	**149W**	149µ nominal
16M	$\beta 16_{[C]} \geq 4000$				
25M	$\beta 22_{[C]} \geq 4000$				

Seals

B	Nitrile (Buna)
V	Fluorocarbon
E-WS	EPR seals + stainless steel support mesh

[1]Maximum recommended flow rate based on velocity through port and internal flow path. Consult sizing guidelines or consult factory for sizing based on flow rate, viscosity, temperature, filter media selection.
[2]Improper length selection could result in reservoir foaming. Consider diffuser and element length and anticipated reservoir fluid level when sizing. To protect against foaming, using longer lengths is recommended.
[3]Excluding diffuser tube can result in reservoir foaming in high flow density applications.

For all up to date option details and compatibilites, please reference our Contamination Solutions Price List or contact customer service.

Want to find out more? Get in touch.
hyprofiltration.com
info@hyprofiltration.com
+1 317 849 3535

Donaldson HY-PRO™

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