

# TFR2

## In-Tank Filter Assemblies

Donaldson Hy-Pro TFR2 in-tank filter assemblies are ideal for particulate contamination removal in hydraulic power unit return line and mobile hydraulic OEM installations.

**Max Operating Flow: 100 gpm (379 lpm)**

**Max Operating Pressure: 150 psi (10 bar)**

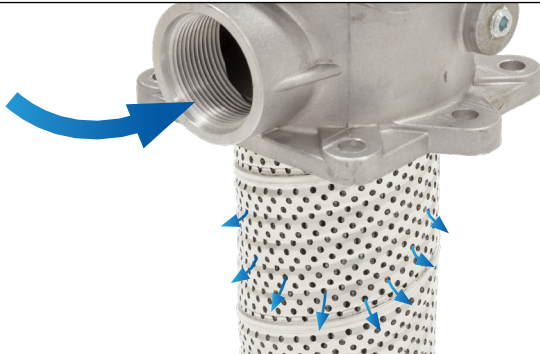


[hyprofiltration.com/](http://hyprofiltration.com/)



## 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  $\beta_{3[\mu]} > 4000$  + water absorbing options, you get the perfect element for your application, every time.



## Inside to out flow.

The dirtiest fluid in your 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 TFR2 element, which utilizes inside-to-outside flow, you remove all the dirt and contaminated fluid with the element.

## Integral element bypass.

TFR2 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.

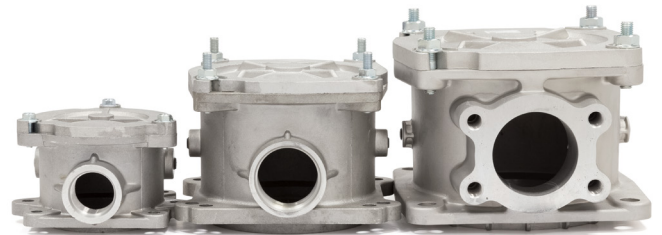


## Minimize the mess.

With most of the assembly inside the reservoir, the top loading TFR2 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.

## Compact and sized for your system.

With three head sizes, multiple connection sizes, filter element lengths and diffuser options to choose from, TFR2 assemblies smoothly deliver clean fluids back to tank with a design that keeps things compact.

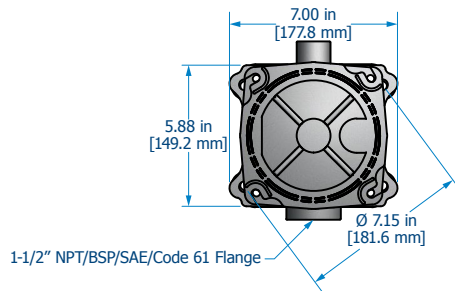


## Eliminate aeration.

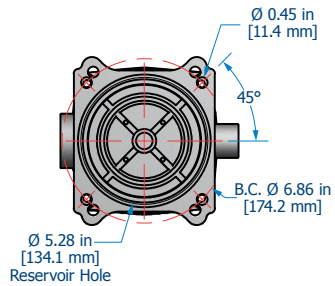
Smaller reservoirs with higher turnover and less settling time typically lead to aeration as fluids are churned and recirculated. The unique TFR2 element design minimizes turbulence and integral diffuser tube prevents aeration in compact hydraulic and high velocity return line applications by maintaining a column of fluid outside the filter element and above the fluid line to ensure your fluids are returned clean and without aeration.

# TFR Installation Drawings

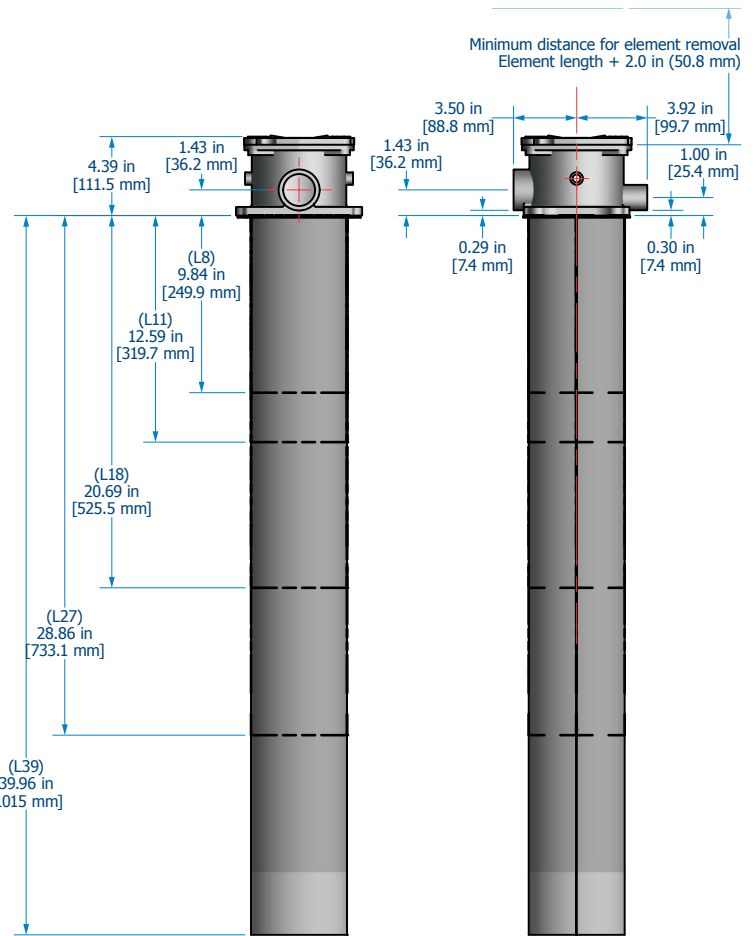
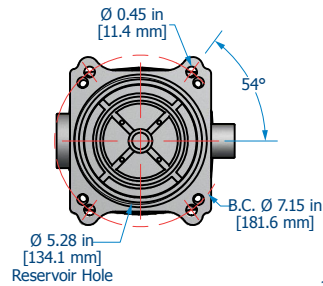
## TFR2 Installation Drawing



### 4-Hole Mounting Pattern

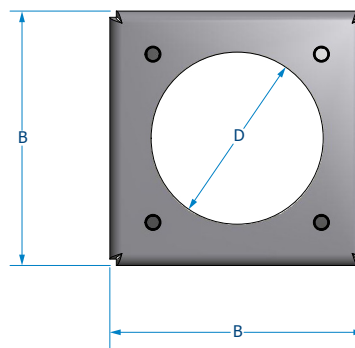
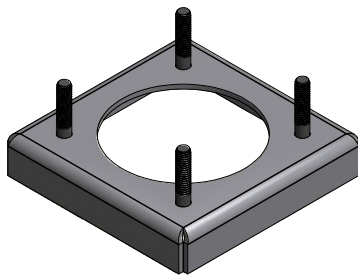


### 2-Hole Mounting Pattern

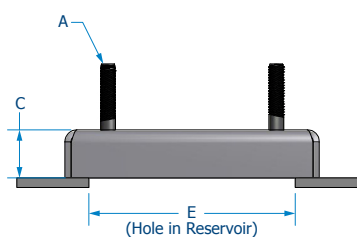


# TFR Installation Drawings

## TFR Weld Flange Installation Drawing



Series	TFR2
A	3/8" - 16 UNC-2A
B	7.09" (18.0 mm)
C	1.00" (25.4 mm)
D	5.30" (134.6 mm)
E	5.5-6.25" (139.7-158.75 mm)



# TFR2 Specifications

Dimensions	See Installation Drawings for model specific dimensions.																				
Operating Temperature	<b>Fluid Temperature</b> 30°F to 225°F (0°C to 105°C)				<b>Ambient Temperature</b> -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	<b>Head</b> Cast aluminum			<b>Diffuser</b> Powder coated or plated steel			<b>Element Bypass Valve</b> Plated steel														
Media Description	<b>M</b> G8 Dualglass, our latest generation of DFE rated, high performance glass media for all hydraulic & lubrication fluids. $\beta_{x_{[C]}} \geq 4000$			<b>A</b> G8 Dualglass high performance media combined with water removal scrim. $\beta_{x_{[C]}} \geq 4000$			<b>W</b> 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: <table><tr><th>Series Code</th><th>Bypass Code</th><th>Filter Element Part Number</th><th>Example</th></tr><tr><td rowspan="2">2</td><td>2</td><td>HPTFR2L[Element Length Code] – [Media Selection Code][Seal Code]</td><td>HPTFR2L27–10AB</td></tr><tr><td>3</td><td>HPTFR2L[Element Length Code] – [Media Selection Code][Seal Code] – 50</td><td>HPTFR2L27–10AB–50</td></tr></table>										Series Code	Bypass Code	Filter Element Part Number	Example	2	2	HPTFR2L[Element Length Code] – [Media Selection Code][Seal Code]	HPTFR2L27–10AB	3	HPTFR2L[Element Length Code] – [Media Selection Code][Seal Code] – 50	HPTFR2L27–10AB–50
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	3	HPTFR2L[Element Length Code] – [Media Selection Code][Seal Code] – 50	HPTFR2L27–10AB–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 <sup>1</sup>	Filter assembly clean element ΔP after actual viscosity correction should not exceed 10% of filter assembly bypass setting. See filter assembly sizing guidelines & examples. For applications with extreme cold start condition contact Donaldson Hy-Pro for sizing recommendations.																				
ΔP Factors <sup>1</sup>	Model	Length	Units	Media																	
				1M	3M	6M	10M	16M	25M	**W											
	TFR2	L8	psid/gpm	0.2370	0.2000	0.1550	0.1390	0.1360	0.1310	0.0240											
bard/lpm			0.0043	0.0036	0.0028	0.0025	0.0025	0.0024	0.0004												
L11		psid/gpm	0.1774	0.1497	0.1160	0.1041	0.1018	0.0981	0.0180												
		bard/lpm	0.0032	0.0027	0.0021	0.0019	0.0019	0.0018	0.0003												
L18		psid/gpm	0.1009	0.0852	0.0660	0.0592	0.0579	0.0558	0.0102												
		bard/lpm	0.0018	0.0016	0.0012	0.0011	0.0011	0.0010	0.0002												

<sup>1</sup>Max flow rates and  $\Delta P$  factors assume  $\beta = 150$  SUS, 32 cSt. See filter assembly sizing guideline for viscosity conversion formula for viscosity change.



# TFR2 Part Number Builder

**TFR**      -  -

Series Connection Length Bypass Indicator Special Options Media Seal

Series	Series 21.5" maximum inlet		Max Flow Rate 100 gpm (379 lpm) <sup>1</sup>			
Connection	TFR2					
	F24	1.5" Code 61 flange				
	G24	1.5" G thread (BSPP)				
	N24	1.5" NPT				
	S24	1.5" SAE				
Element Length <sup>2</sup>	TFR2					
	8	8" (20 cm) nominal				
	11	11" (28 cm) nominal				
	18	18" (46 cm) nominal				
	27	27" (69 cm) nominal				
	39	39" (99 cm) nominal				
Bypass	2 <sup>3</sup>	Integrated bypass - 25 psid (1.7 bar)				
	3 <sup>4</sup>	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 <sup>5</sup>	Exclude diffuser tube				
	W	Reservoir weld flange				
Media Selection	G8 Dualglass		G8 Dualglass + water removal		Stainless wire mesh	
	1M	β <sub>3(c)</sub> ≥ 4000	3A	β <sub>4(c)</sub> ≥ 4000	25W	25μ nominal
	3M	β <sub>4(c)</sub> ≥ 4000	6A	β <sub>6(c)</sub> ≥ 4000	40W	40μ nominal
	6M	β <sub>6(c)</sub> ≥ 4000	10A	β <sub>11(c)</sub> ≥ 4000	74W	74μ nominal
	10M	β <sub>11(c)</sub> ≥ 4000	25A	β <sub>22(c)</sub> ≥ 4000	149W	149μ nominal
	16M	β <sub>16(c)</sub> ≥ 4000				
	25M	β <sub>22(c)</sub> ≥ 4000				
	Seals	B	Nitrile (Buna)			
V		Fluorocarbon				
E-WS		EPR seals + stainless steel support mesh				

<sup>1</sup>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.

<sup>2</sup>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.

<sup>3</sup>Standard Bypass Rating. Consult Donaldson Hy-Pro for alternate valve setting.

<sup>4</sup>When selected, add "-50" to end of replacement element part number.

<sup>5</sup>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.**

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