



### Mix&Match to Get What You Need

Donaldson's Mix&Match system provides the great performance and functional advantages of custom-engineered filters with the convenience and speedy delivery of in-stock parts. Choose your options and build a filter model that exactly suits your cleanliness requirements.

#### Technical Data

- Operating pressure up to 1000 kPa (10 bar).
- Static pressure testing up to 1500 kPa (15 bar).
- By-pass valve setting 150 kPa (1,5 bar) or 170 kPa (1,7 bar) per ISO 3968.
- Operating temperature -20 +120°C.
- Compatibility with hydraulic fluids per ISO 2943.
- Flow rate and pressure drop determined per ISO 3968 with oil kinematic viscosity 30 cSt at 40°C and density 0,875 kg/dm<sup>3</sup>.

#### Filter Elements

- Operating pressure up to 1000 kPa (10 bar).
- Static pressure testing up to 1500 kPa (15 bar).
- Collapse resistance 1000 kPa (10 bar) per ISO 2941.
- Wire mesh: 60 micron.
- Cellulose media: 36-50 micron, reinforced with wire mesh.
- Synteq® synthetic media: 11-23 micron.



## Components

Family	WIRE MESH MEDIA		CELLULOSE MEDIA				SYNTHETIC MEDIA				CARTRIDGE CODE
	/6		/3		/1		/03		XP10		
	60µm		β <sub>50µm(c)</sub> ≥1000		β <sub>36µm(c)</sub> ≥1000		β <sub>23µm(c)</sub> ≥1000		β <sub>11µm(c)</sub> ≥1000		
	RMF		RMF		RMF		RMF		RMF		
FRCA60	60	P171607	60	P171606	50	P550268	40	P171604	40	P171602	CA60
FRCA80	80	P171612	70	P171611	60	P171610	50	P171609	50	P171608	CA80
FRCA108			100	P764638							CA108
FRCA118			100	P763987							CA108
FRCA160	160	P171617	150	P171616	140	P550148	120	P171614	120	P171613	CA160
FRCA200	200	P171622	190	P171621	160	P171620	140	P171619	140	P171618	CA200
FRCA380	380	P171617	340	P171616	300	P550148	280	P171614	280	P171613	CA160
FRCA400	400	P171622	360	P171621	320	P171620	300	P171619	300	P171618	CA200
FRCA220			200	P764410					150	P764411	CA220
FRCA250			230	P764409					170	P763668	CA250

RMF = Recommended Maximum Flow in liters/minute with use of standard head.  
BPV = Bypass Valve Setting.

## Heads Choices



Head for Size	Part	Ports	Bypass Valve Setting	Indicator Info			Snout	Mounting holes
				Drilled holes for indicator	Side	Indicator to use		
FRCA 60/80	P563279	1 1/16 SAE	1 bar	no	-	none	1-12 UNF	1/4-20 UNC
	P563287	1 1/16 SAE	1 bar	no	-	none	1-12 UNF	M6
	P563280	1 1/16 SAE	1,7 bar	plugged	left + right	P563297, P563298, P563978 or P563296	1-12 UNF	1/4-20 UNC
	P561141	1 1/16 SAE	1,7 bar	no	-	none	1-12 UNF	1/4-20 UNC
	P765539	1 1/16 SAE	2,5 bar	no	-	none	G3/4	M8
	P562261	1/2-14 NPTF	no opening	no	-	none	1-14 UNS	1/4-20 UNC
	P562262	7/8-14 UNF	no opening	no	-	none	1-14 UNS	1/4-20 UNC
	P175017	G3/4	1,7 bar	plugged	left + right	P171954, P171958, P171966 or P173104	G3/4	M8
FRCA 160/200	P173441*	G3/4	1,7 bar	no	-	none	G3/4	M8
	P765584	G3/4	no opening	used	left	P162696 (installed)	G3/4	M8
	P764407	G1 1/4	1,5 bar	plugged	left	P162400 or P163839	G1 1/4	M8
	P761314	G1 1/4	1,5 bar	plugged	top	P171954, P171958, P171966 or P173104	G1 1/4	M8
	P762638	G1 1/4	1,5 bar	plugged	right	P171954, P171958, P171966 or P173104	G1 1/4	M8
	P176846*	G1 1/4	1,5 bar	no	-	none	G1 1/4	M8
	P765583	G1 1/4	no opening	used	left	P162696 (installed)	G1 1/4	M8
	P760071	G1 1/4	1,5 bar	drilled, not plugged	top	P171961, P171963 or P171950	G1 1/4	M8
	P764408	G1 1/4	1,5 bar	drilled, not plugged	left	P162696	G1 1/4	M8
	P762641	G1 1/4	3 bar	no	-	none	G1 1/4	M8
FRCA 220/250	P176965	G1 1/4	no opening	plugged	left + right	-	G1 1/4	M8
	P173403	G1 1/4	no opening	plugged	left + right	P171954, P171958, P171966 or P173104	G1 1/4	M8
	P765639	G1 1/4	no opening	drilled, not plugged	left	P162696	G1 1/4	M8
	P764414	G1 1/4	1,5 bar	drilled, not plugged	left	P162400 or P163839	1 1/2-16 UN	M8
	P764413	G1 1/4	1,5 bar	plugged	top	P171954, P171958, P171966 or P173104	1 1/2-16 UN	M8
	P764412*	G1 1/4	1,5 bar	no	-	none	1 1/2-16 UN	M8
FRCA 380/400	P764415	G1 1/4	1,5 bar	drilled, not plugged	left	P162696	1 1/2-16 UN	M8
	P764421	G1 1/4	no opening	plugged	right	P171954, P171958, P171966 or P173104	1 1/2-16 UN	M8
	P761264	G1 1/2	1,7 bar	drilled, not plugged	front	P171961, P171963 or P171950	G1 1/4	M10
	P766293*	G1 1/2	1,7 bar	no	-	none	G1 1/4	M10

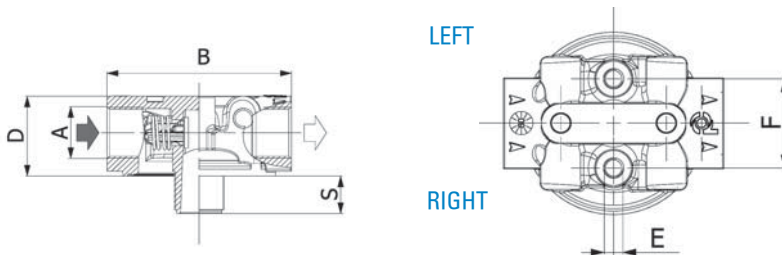
FBK Filters aren't delivered with drilled holes for indicators or bypass valve, heads are.  
Unless otherwise mentioned, the usage of indicators is mandatory, because the drilled holes for indicators are not plugged.

\* Standard Head

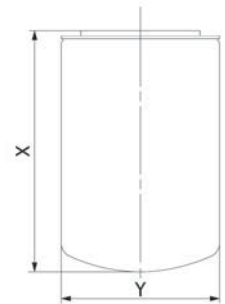
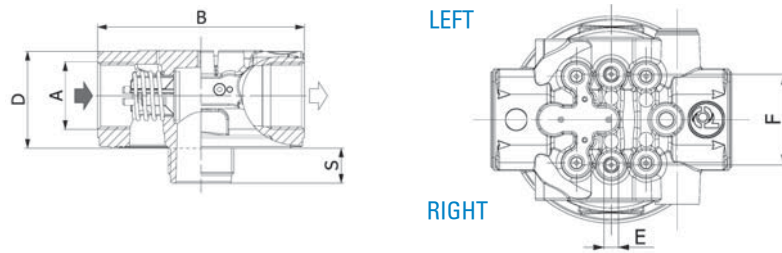


Standard Head	HEAD DIMENSIONS									SPIN-ON DIMENSIONS		
	A	B	C	D	E	F	G	S	BPV	X	Y	Z
		mm	mm	mm		mm	mm	mm	bar	mm	mm	
P173441	G3/4	95	13	41,5	M8	38		20	1,7	146	96	G3/4
NA										209	96	G3/4
										183	108	M40x2
										230	108	M40x2
P176846	G1 1/4	132	28,5	61,5	M8	50		24	1,5	181	128	G1 1/4
P766293	G1 1/2	138	35	70	M10		65	24	1,5	226	128	G1 1/4
										181	128	G1 1/4
P764412	G1 1/4	132	28,5	61,5	M8	50		25	1,5	236	136	1 1/2-16UN
										306	136	1 1/2-16UN

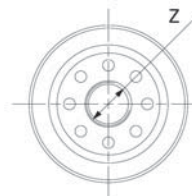
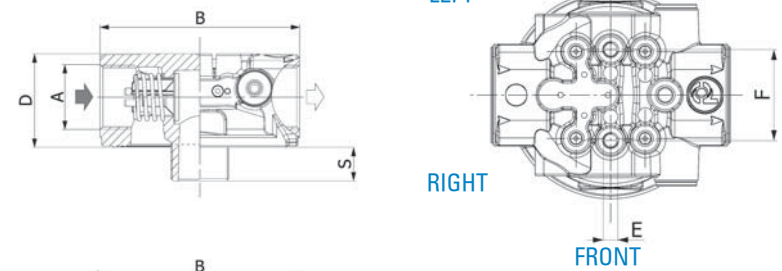
FRCA 60/80



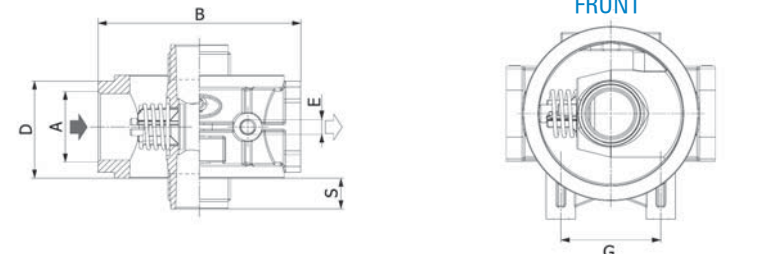
FRCA 160/200



FRCA 220/250



FRCA 380/400



## Indicator Choices

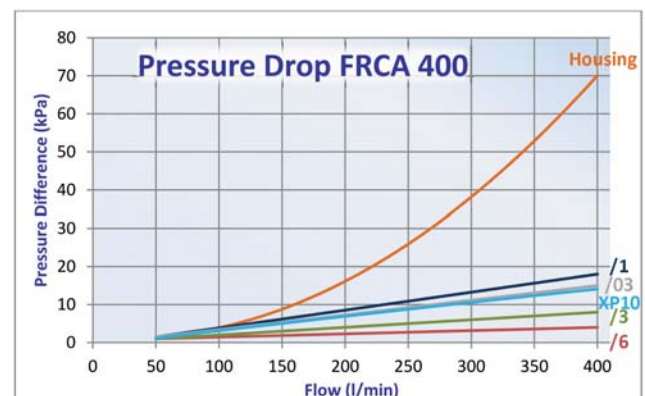
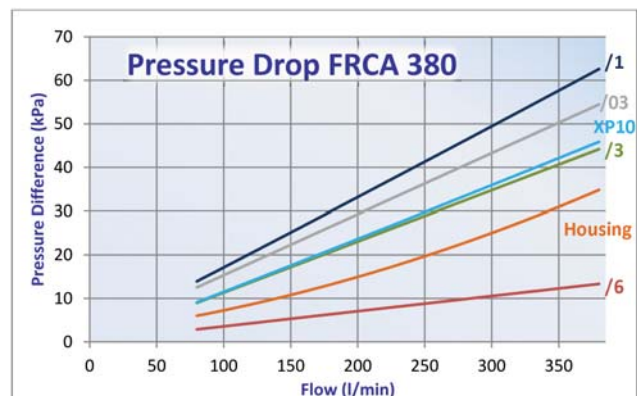
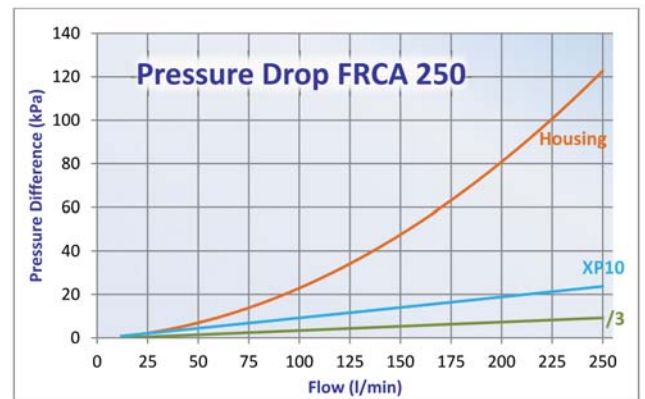
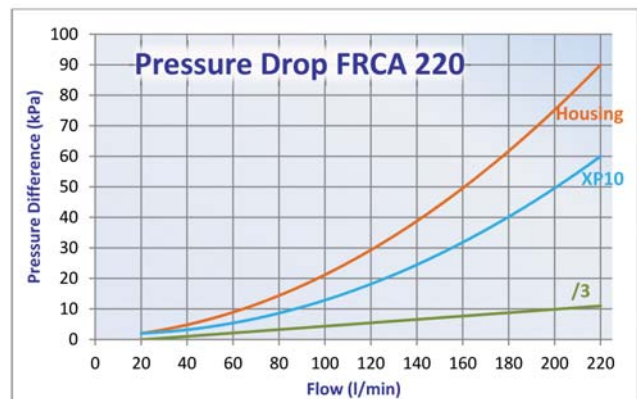
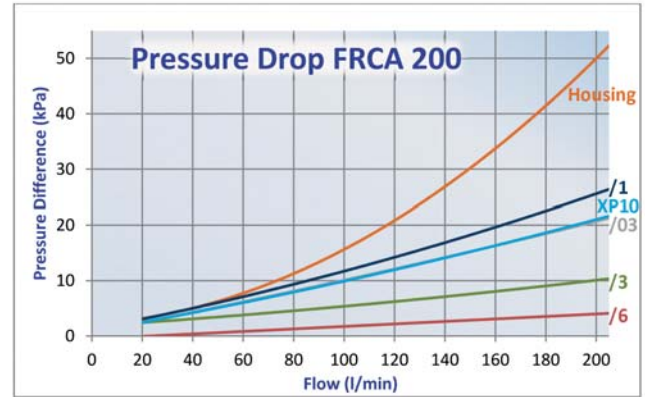
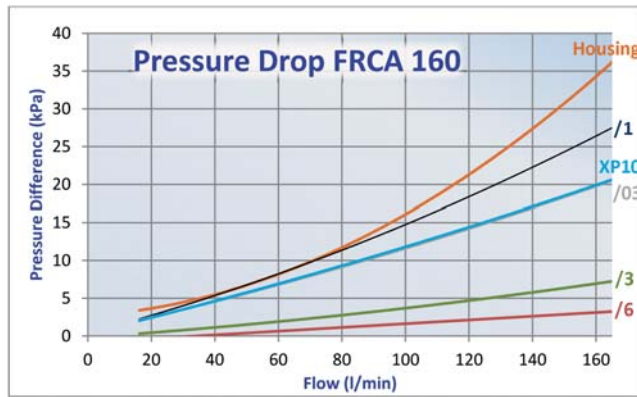
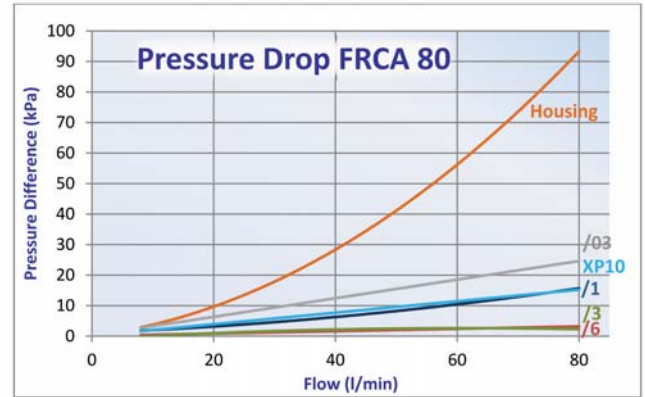
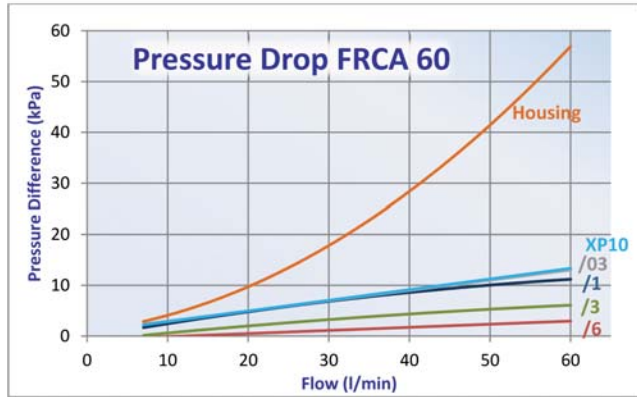
Indicator	Kind		Reference Drawing	Setting (bar)	Contact	Protection Class	Cable Clamp	Max. Values
P171961	Electrical	Differential	A	1,4	Normally Open/Closed	IP65	PG11	30 Vcc/Ac; 0,5 A res. and 0,2 A ind.
P171963	Electrical	Differential	A	1,4	Normally Open/Closed	IP65	PG11	30 Vcc/Ac; 0,5 A res. and 0,2 A ind.
P162400	Electrical	Differential	B	1,25	Normally Open			6-30 V DC; 200 mA
P163839	Electrical	Differential	B	1,25	Normally Closed			6-30 V DC; 200 mA
P171966	Electrical	Differential	C	1,2	Normally Open	IP65	PG7	48 V; 0,5 A res. and 0,2 A ind.
P173104	Electrical	Differential	C	1,2	Normally Closed	IP65	PG7	48 V; 0,5 A res. and 0,2 A ind.
P162696	Visual	Differential	D	1,7				
P171950	Visual	Differential	E	1,4				
P171958	Visual	Differential	F	1,2				
P171954	Visual	Vacuum	G	-1/3				

## Installation & Service Guidelines

**Important**

- The filter head snout must be lubricated before spinning on a new filter to prevent thread damage. Heavyweight gear lube is recommended.
- Oil the O-Rings before assembly.

## Performance Curves



RETURN FILTERS  
IN-LINE

