














A

Quick Reference Guide


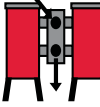
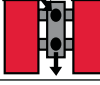
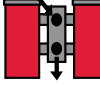













Quick Reference is an easy one-stop general selection guide. Broken down by operating pressure (low, medium, high), filter type (inside-tank, in-tank, inline, duplex, manifold-mount, etc.), maximum flow rate, port size, and flow path; Quick Reference narrows down the selection into one or more filter series suitable for the application. Catalog page numbers are also provided so that the desired filter series data sheet can be found with ease.

QUICK REFERENCE

Low Pressure Filters

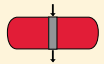
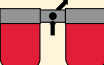
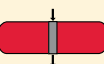
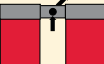
Filter Type	Maximum Pressure psi (bar)	Maximum Flow gpm (l/min)	Port Size Range (in)	Flow Path	Indicator D = Diff. S = Static	Filter Model Page	Features
Inside Tank	145 (10)	43 (165)	2 (outlet)		S	RFM...S page D88	Unique design places entire filter inside of the reservoir tank. Consult Factory.
	145 (10)	132 (500)	1.26 (outlet)		S	RFM...Set page D88	Unique design places entire filter inside of the reservoir tank plenum. Consult Factory. Ideal for low tank top clearances and multiple inlets to reservoir.
In-Tank	360 (25)	343 (1300)	1/2 - 4		S D-size 660 & up with DE option	RF page D2	HYDAC standard in-tank/in-line filters. Threaded or flanged outlets and one piece casting enable in-line use. Robust design.
	360 (25)	450 (1700)	4		S (in-tank; 1.x) D (in-line; 2.x)	NF page D12	Configurable for in-tank or in-line applications. Low weight, water tolerant aluminum alloy-high flow capability.
	145 (10)	300 (1100)	3/4 - 2 1/2		S	RFM page D50	In-tank low cost high performance mobile filters – Sizes 75, 90, 150, 165, & 185 have a built-in breather option. All sizes allow oil filling through element.
	100 (7)	26 (100)	1" hose barb			RFMP page D66	In-tank return filter made of polyamide-housing and plastic lid-low cost.
	100 (7)	100 (378)	1 1/2		S	HF4R page D70	Meets HF4 automotive specs and uses industry standard-size HF4 spec elements. Threaded outlet permits in-line use.
	145 (10)	211 (800)	3/4 - 2 1/2		S & Vac.	RKM page D74	Single filter functions as return line and charge pump filter in single housing. (up to two charge pumps)
In-Tank Duplex	360 (25)	343 (1300)	3/4 - 4		S	RFD page D26	For return lines in continuously operating systems; tank mounting or in-line due to one piece casting.
	360 (25)	450 (1700)	4		S (1.x) D (2.x)	NFD page D34	For return lines in continuously operating systems; tank mounting (1.x) and in-line (2.x).
In-Line	360 (25)	350 (1325)	3, 4		D	RFL Cast page D94	Back Mount single filter with metric threads.
	145 / 232 (10 / 16)	3963 (15000)	2 - 12		D	RFL Welded page D98	Floor mounted. Holds up to ten 2600 high capacity elements. ASME and CRN versions available. For High flow applications.
	360 (25)	105 (400)	1 1/4		D	FLN (DIN) page D108	HYDAC standard DIN low pressure filter. Low weight, water-tolerant aluminum alloy.
	500 (34.5)	450 (1700)	4		D	NFH (modular) page D112	Filters can be manifolded for high viscosity applications. Housings designed for high flow up to 450 gpm, and/or high viscosity fluid (e.g. in lube systems).
In-Line Staged	360 (25)	300 (1136)	2 - 4		D	NF...UHE page D120	Ultra-high efficiency staged filter combinations to increase separation efficiencies far above levels achieved by single elements, for cleaning fluids and transferring.
	360 (25)	300 (1136)	4		D	NFD...UHE page D42	Ultra-high efficiency staged filter combinations to increase separation efficiencies far above levels achieved by single elements, for cleaning fluids and transferring.
In-Line Modular Manifold-Parallel	360 (25)	1350 (5110)	4		D	NF MMP page D180	In-line manifolded modular parallel filter assemblies for high flow and high viscosity applications particularly in primary metals and pulp and paper applications. Fully isolatable in maintenance mode-element changeout.

Low Pressure (cont.) and Spin-on Filters





Filter Type	Maximum Pressure psi (bar)	Maximum Flow gpm (l/min)	Port Size Range (in)	Flow Path	Indicator D = Diff. S = Static	Filter Model Page	Features
In-Line Duplex	(360 / 580) (25 / 40)	343 (1300)	1 - 4		D	RFLD Cast page D128	Back mounted duplex filter with metric threads. Ball valve changeover.
	145 / 232 (10 / 16)	3900 (14,763)	2 - 8		D	RFLD Welded page D134	Floor mounted. Holds up to ten 2600 high capacity elements per side. ASME and CRN versions available. For high flow applications. Large ball valve changeovers available.
	145 (10)	793 (3000)	2 - 6		D	RFLDH Welded page D148	Floor mounted. Holds up to 5 high cap. elements/side. ASME standard; Ball valve changeover. Carbon & stainless steel.
	232 (16)	634 (2400)	1 - 6		D	AFLD (API) page D158	In-line duplex filter series which are API 614 compliant. These filters are available with CRN, AS1210 and GOST certifications. Material certificate is standard.
	360 (25)	105 (400)	1 1/4 - 1 1/2		D	FLND (DIN) page D168	Integrated equalization valve with transfer valve. Light weight. CRN available. Water tolerant aluminum alloy.
	500 (34.5)	450 (1700)	4		D	NFHD (modular) page D172	Filters can be manifolded for high flow/viscosity applications in continuously operating systems.
In-Tank Suction	360 (25)	200 (757)	3/4 - 4		Mechanical Bypass In Element	SF page D202	Mounts in-tank. Modified vacuum gauge indicators are available.
	145 (10)	80 (303)	2 1/2 Flange Plus 2 x 1 1/2 SAE Threaded		Vacuum Gauge / Switch	SFW60412 page D208	Mounts in-tank; side or bottom tank mounting possible. Consult Factory.
Spin-On Single Element <i>(available in BSPP ports)</i>	120 (8.3)	7 (26.5)	3/8		N/A	MF 40 page D192	Standard length element. Not available with 3 µm Betamicron elements.
	120 (8.3)	15 (57)	3/4 - 1		S	MF 80 page D192	Standard length element. Not available with 3 µm Betamicron elements.
	120 (8.3)	25 (95)	3/4 - 1		S	MF 85 page D192	Extended length element. Same head as size 80. 10 µm paper elements only. 25 psid bypass standard.
	120 (8.3)	30 (113)	1 1/4 - 1 1/2		S	MF 160 page D192	Standard length element.
	120 (8.3)	60 (227)	1 1/4 - 1 1/2		S	MF 180 page D192	Extended length element. Same head as size 160.
	120 (8.3)	30 (113)	1 1/4 - 1 1/2		D	MF 190 page D192	Standard length element. ΔP Sensing Indicators for applications where tank not vented to atmosphere.
	120 (8.3)	60 (227)	1 1/4 - 1 1/2		D	MF 195 page D192	Extended length element. Same head as size 190. ΔP Sensing Indicators for applications where tank not vented to atmosphere.
	250 (17)	15 (57)	3/4 - 1		D	MF 90 page D192	Standard length element. 250 psi rating minimizes leakage in case of flow surges. ΔP sensing indicators. Not available in 3 µm or 25 µm paper elements.
	250 (17)	25 (95)	3/4 - 1		D	MF 95 page D192	Extended length element. 250 psi rating minimizes leakage in case of flow surges. Same head as size 90. ΔP sensing indicators. 20 µm Betamicron or 25 µm paper elements not available.

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






Spin-on Filters *(cont.)*

Filter Type	Maximum Pressure psi (bar)	Maximum Flow gpm (l/min)	Port Size Range (in)	Flow Path	Indicator D = Diff. S = Static	Filter Model Page	Features
Spin-On Dual Elements	120 (8.3)	60 (227)	1 1/2		S	MFD 160 page D192	Parallel flow through two standard length elements mounted end to end.
	120 (8.3)	60 (227)	1 1/2 - 2		S	MFDS 160 page D192	Parallel flow through two standard length elements mounted side by side.
	120 (8.3)	120 (454)	1 1/2		S	MFD 180 page D192	Parallel flow through two extended length elements mounted end to end. Same head as MFD 160.
	120 (8.3)	120 (454)	1 1/2 - 2		S	MFDS 180 page D192	Parallel flow through two extended length elements mounted side by side. Same head as MFDS 160.

Medium Pressure Filters

Filter Type	Maximum Pressure psi (bar)	Maximum Flow gpm (l/min)	Port Size Range (in)	Flow Path	Indicator D = Diff. S = Static	Filter Model Page	Features
In-Line	750 (52)	90 (341)	1 1/2		D	HF4RL page E2	In-line top loaded simplex filter which meets HF4 automotive, specification requirements and performance.
	725 (50)	74 (280)	1/2 - 1 1/4		D	LPF page E6	Multiple uses: pressure lines, returns, off-line loops, and lube lines. Aluminum for low weight and water tolerance.
	1450 (100)	174 (660)	1/2 - 1 1/2		D	LF page E12	HYDAC standard filter. Aluminum for low weight and water tolerance.
	725 (50)	35 (130)	3/4 - 1		D	MFX page E16	ECO-friendly, cost effective high performance alternative to spin-on filters.

High Pressure Filters

Filter Type	Maximum Pressure psi (bar)	Maximum Flow gpm (l/min)	Port Size Range (in)	Flow Path	Indicator D = Diff. S = Static	Filter Model Page	Features
In-Line	6090 (420)	200 (757)	1/2 - 2		D	DF page F2	HYDAC standard high pressure filter. Wide choice of models and elements, and optional features.
	6090* / 4060 (420/ 280)	250 (946)	2		D	DF/DFE page F10	HYDAC high pressure filter, available in bi-directional and single-flow configurations.
	6090 (420)	160 (606)	2		D	DFFX page F18	In-line high flow ΔP optimized forward and reverse flow high pressure filter. High Flow and low differential pressure are prominent features.
	4060 (280)	100 (378.5)	1 - 1 1/2		D	HDF page F26	In-line forward and reverse flow capable "L" ported, high pressure filter which utilizes competitive "9600" geometry filter elements. Available with and without bypass valves. Low and high collapse elements available.
	4000 (276)	25 (95)	3/4		D	HF2P page F30	Meets HF2 automotive specifications and uses industry standard-size elements. In-line configuration.
	6090 (420)	120 (454)	1 - 2		D	HF3P page F36	Meets HF3 automotive specifications and uses industry standard-size elements. In-line configuration.
	5000 (345)	120 (454)	1 1/2		D	HF4P page F40	Meets HF4 automotive specifications and uses industry standard-size elements. Top loading in-line configuration.

*Good to 300,000 cycles

High Pressure *(cont.)*

Filter Type	Maximum Pressure psi (bar)	Maximum Flow gpm (l/min)	Port Size Range (in)	Flow Path	Indicator D = Diff. S = Static	Filter Model Page	Features
In-Line	4060 (280)	25 (95)	3/4		D	MFM page F46	Low cost in-line high pressure filter (<i>efficient design and construction</i>).
	5800 (400)	37 (140)	1		D	HFM page F52	In-line high pressure filter.
Manifold Mount	4568 (315)	110 (416.4)	0.551 - 1.181		D	DF...QE page F80	Side mount to manifold; upper inlet, lower outlet. Size (30-280). Lower inlet, upper outlet sizes ≥ 330.
	4568 (315)	125 (473)	0.689 - 1.181		D	DFP page F86	HYDAC standard manifold filter. Ports at top.
	4000 (276)	25 (95)	0.689		D	HF2-P page F30	Meets HF2 automotive specifications and uses industry standard-size elements. Manifold configuration.
	5000 (345)	120 (454)	1.25		D	HF4-P page F40	Meets HF4 automotive specifications and uses industry standard-size elements. Manifold configuration.
Manifold Cartridge	3000 (207)	25 (95)	(1) SAE-16, (1 1/4) SAE-20		NA	CF page F98	Disposable, high pressure manifold cartridge filter. Low weight, water-tolerant aluminum alloy.
	3000 (207)	12 (45)	(1) SAE-16		NA	CP-C16 page F102	Circuit protector, high pressure manifold cartridge filter. Back-up protection for upstream pressure filters. Fits into standard C16-2 manifold port.
	6090 (420)	30 (113)	(5/8) SAE-10, (1) SAE-16, (1 1/2) SAE-24		NA	CP-SAE page F106	Circuit protector, high pressure manifold cartridge filter. Back-up protection for upstream pressure filters. Fits into standard SAE o-ring port.
Modular Stacking In-line	4568 (315)	10 (38)	D03/D05 Patterns (0.25 / 0.44)		D	DFZ page F92	Cartridge valve sandwich mount. Bowl on right side (standard) or left (optional).
Duplex	3045 (210)	106 (400)	1 1/4 - 1 1/2		D	FMND page F56	HYDAC standard DIN duplex high pressure filter. Right to left flow option available.
	4568 (315)	90 (340)	3/4 - 2		D	DFDK page F60	HYDAC standard industrial duplex for continuously operating systems.
	4568 (315)	90 (340)	2		D	HFDK4P page F68	Meets automotive specifications and uses HF4 standard-size elements. Top loading duplex configuration.
In-line Reverse Flow	6090 (420)	100 (378.5)	1 1/4 - 2		D	DFFH page F72	Filters in one direction; bypasses in reverse. Common use: hydrostatic circuit.
In-line Bi-Directional Flow	6090 (420)	100 (378.5)	1 1/4 - 2 Flange Only		D	DFFHM page 73	Filters in both directions (bi-directional filtration and flow). Common use: hydrostatic circuit. See DFFH/DFFHM filter brochure.

Betterfit® Elements

Description	Types of Elements
HYDAC supplies a wide range of elements that are dimensionally interchangeable with elements of other manufacturers. Elements are of the same media and quality construction as HYDAC proprietary elements. A list of available interchanges can be found under "Betterfit Element Selector" at www.hydac-na.com .	<ul style="list-style-type: none"> • High efficiency depth filtration, pressure and return • Surface filtration (wire mesh or paper) nominal, low pressure • Tank air-breather filters • Suction Strainers