

SET SERIES FILTERS – HIGH PRESSURE

DF SET Series

Manifold Cartridge Filters

6090 psi • up to 200 gpm



Manifold cavity is only for representation and not HYDAC's scope of supply

Installation

The DF Set Manifold Cartridge Filter is installed into a threaded cavity that is machined in the manifold (*manifold not included - see cavity drawing*). A bushing is provided for proper element installation, as well as a bowl with o-ring seal and back-up ring. An element can be provided as a option. The bushing holds the element in place during filtration operation, and facilitates easy removal for element change out.

More than one SET may be installed in the manifold if required for capacity. A differential pressure clogging indicator, to warn of high upstream pressure (*element clogged*), can be attached to the manifold as well (*cavity drawings for that upon request*). For additional information, contact HYDAC.

Features

- Non-welded housing design reduces stress concentrations and prevents fatigue failure.
- O-ring seals are used to provide positive, reliable sealing. Choice of O-ring materials (*nitrile rubber, fluorocarbon elastomer, ethylene propylene rubber*) provides compatibility with petroleum oils, synthetic fluids, water-glycols, oil/water emulsions, and high water based fluids.
- Screw-in bowl requires minimal clearance to remove the element for replacement, and contaminated fluid cannot be washed downstream when element is serviced.
- HYDAC differential Pressure Indicators (*optional*) have no external dynamic seal. This results in a high system reliability due to magnetic actuation, thus eliminating a potential leak point.
- For special finishes and coatings – consult HYDAC for minimum quantities, availability and pricing.

Technical Specifications

Mounting Method	Threaded bowl	
Flow Direction	Out-to-in	
Construction Materials		
Bowl (30-660)	Steel	
Housing/Bowl (660-1320 - 2.0)	Steel	
Flow Capacity		
30	8 gpm (30 lpm)	
60	16 gpm (60 lpm)	
110	29 gpm (110 lpm)	
160	42 gpm (160 lpm)	
240	63 gpm (240 lpm)	
280	74 gpm (280 lpm)	
330	87 gpm (330 lpm)	
660	174 gpm (660 lpm)	
1320	200 gpm (757 lpm)	
Housing Pressure Rating		
Max. Allowable Working Pressure	6090 psi (420 bar)	
Fatigue Pressure	6090 psi (420 bar) @ 1 million cycles	
Burst Pressure		
30	15950 psi (1100 bar)	
60/110	17400 psi (1200 bar)	
160/240/280	17110 psi (1180 bar)	
330/660/1320	15080 psi (1040 bar)	
Element Collapse Pressure Rating <i>(optional)</i>		
BH4HC, V	3045 psid (210 bar)	
SN, W/HC	290 psid (20 bar)	
BN4HC	145 psid (10 bar)	
Fluid Temp. Range	14°F to 212°F (-10°C to 100°C)	
Consult HYDAC for applications operating below 14°F (-10°C)		
Fluid Compatibility	Compatible with all hydrocarbon based, synthetic, water glycol, oil/water emulsion, and high water based fluids when the appropriate seals are selected.	
Indicator Trip Pressure <i>(optional)</i>		
ΔP = 29 psid (2 bar) -10% <i>(optional)</i>		
ΔP = 72 psid (5 bar) -10% <i>(standard)</i>		
ΔP = 116 psid (8 bar) -10% <i>(optional non bypass)</i>		

Applications



Agricultural



Automotive



Construction



Gearboxes



Industrial



Offshore



Commercial
Municipal



Power
Generation



Pulp & Paper



Railways



Shipbuilding

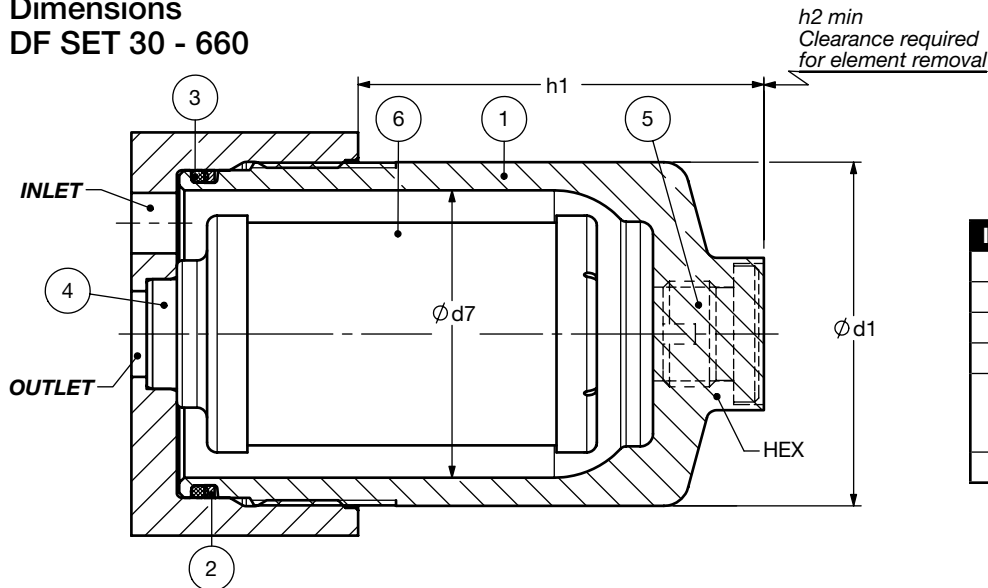


Steel / Heavy
Industry

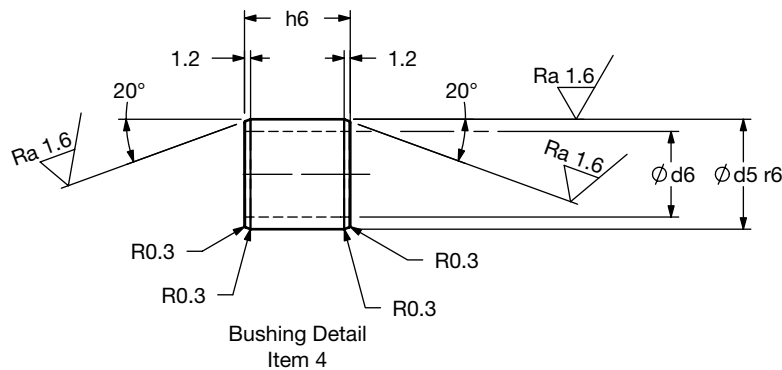
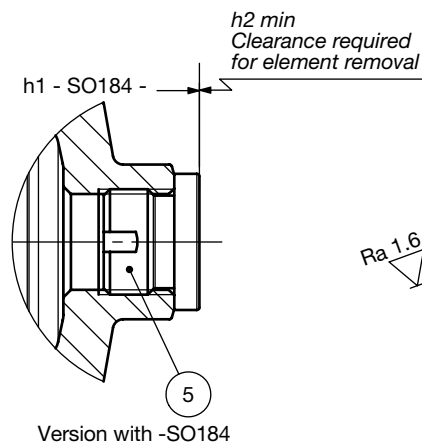
SET SERIES FILTERS – HIGH PRESSURE

Dimensions

DF SET 30 - 660



Item No	SET Components
1	Bowl
2	Bowl back-up ring
3	Bowl o-ring
4	Bushing
5	Drain plug (Std - sizes 330/660, Opt - sizes 60-280 - use code SO184)
6	Element (optional)



Size	d1	d2	d3	d4	d5	d6	d7	d8	d9	h1	h1 -SO184	h2	h3	h4	h5	h6	h7	h8	h9	h10	HEX
030	52	52	M55x1.5	11.9	11.9	8	42	56	55.2	76	81	75	36	34	26	18	6	4	5	1.8	24
060	68	65	M68x2	21.8	21.8	17	52	69	68.3	72.5	77.5	85	45	43	34.5	21	6	6.5	5	2.5	27
110	68	65	M68x2	21.8	21.8	17	52	69	68.3	140	145	85	45	43	34.5	21	6	6.5	5	2.5	27
140	68	65	M68x2	21.8	21.8	17	52	69	68.3	183.5	188.5	85	45	43	34.5	21	6	6.5	5	2.5	27
160	95	88	M95x2	33.8	33.8	26	75	96	95.3	106	110	105	56	54	44	25	8	6.5	7	2.5	32
240	95	88	M95x2	33.8	33.8	26	75	96	95.3	166	169.5	105	56	54	44	25	8	6.5	7	2.5	32
280	95	88	M95x2	33.8	33.8	26	75	96	95.3	348	352	105	56	54	44	25	8	6.5	7	2.5	32
330	130	125	M130x2	47.8	47.8	36	102	131	130.3	156	-	115	66	64	52.6	26	10	5	9	4	36
500	130	125	M130x2	47.8	47.8	36	102	131	130.3	249	-	115	66	64	52.6	26	10	5	9	4	36
660	130	125	M130x2	47.8	47.8	36	102	131	130.3	326.5	-	115	66	64	52.6	26	10	5	9	4	36

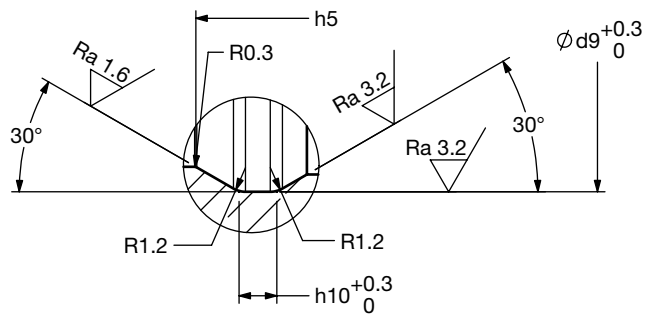
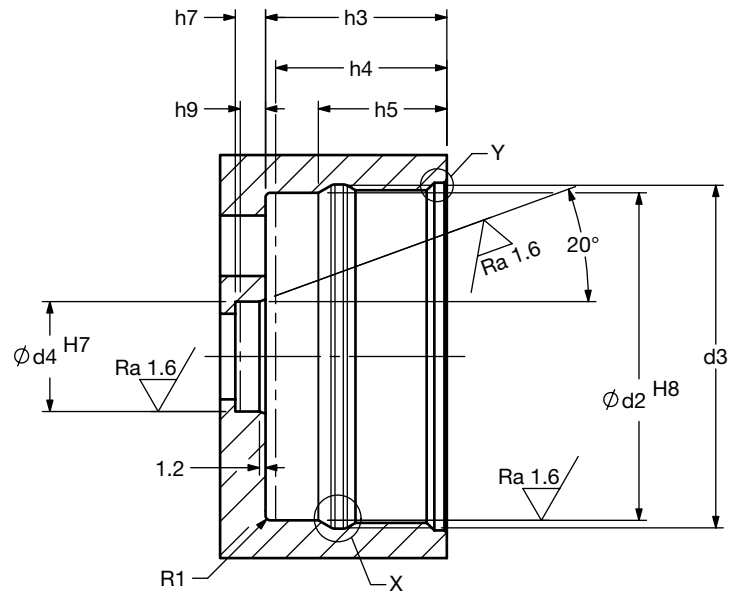
Unspecified Tolerances

From	0.5	3	6	30	120
To	3	6	30	120	400
	±0.1	±0.1	±0.2	±0.3	±0.5

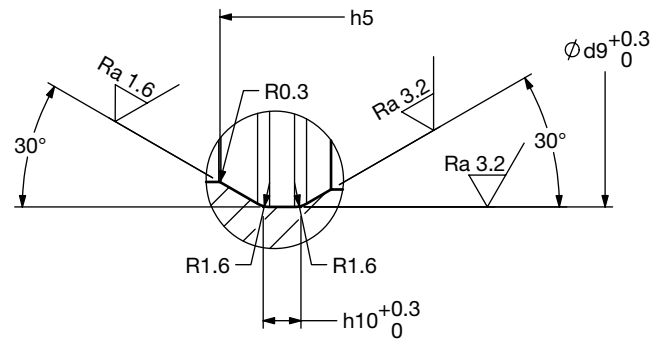
Size	30	60	110	140	160	240	280	330	500	660
Weight (lbs.)	1.9	3.6	6	7.2	8.6	11.6	21.4	22.9	32.1	39.2

Dimensions shown are millimeters for general information and overall envelope size only. Weights listed include element.
For complete dimensions please contact HYDAC to request a certified print.

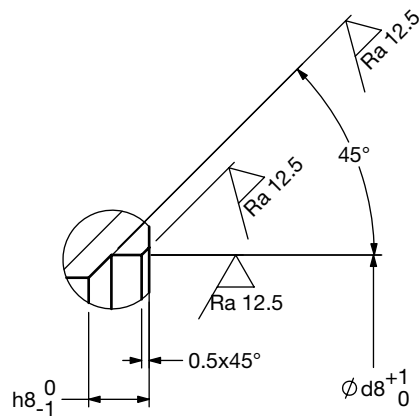
Customer Manifold Machining DF SET 30 - 660



DETAIL X (SIZE 30)



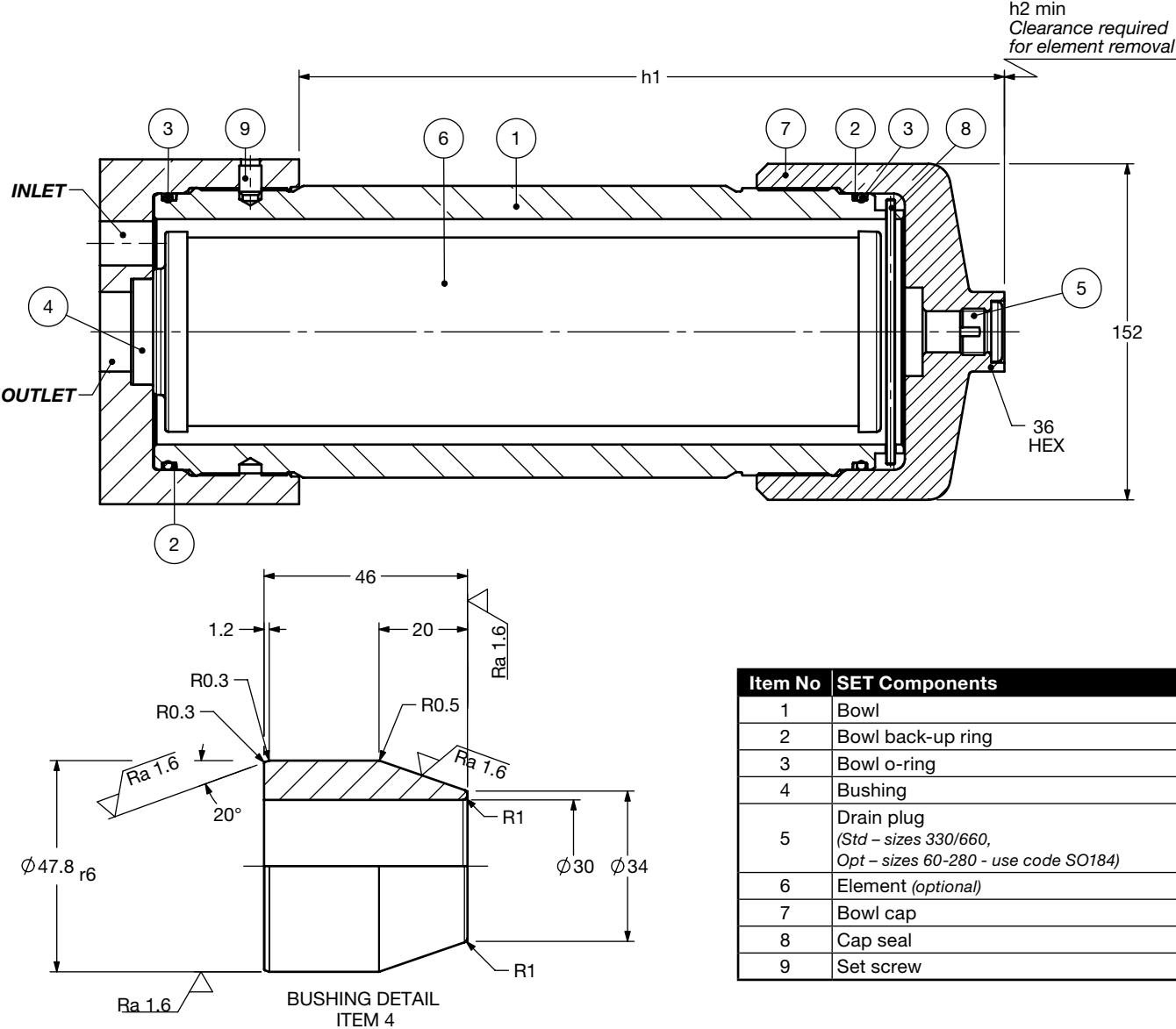
DETAIL X (SIZE 60-660)



DETAIL Y

SET SERIES FILTERS – HIGH PRESSURE

Dimensions
DF SET 660 - 1320 2.X



Size	h1	h2
660 2.X	319	350
990 2.X	477	500
1320 2.X	643	670

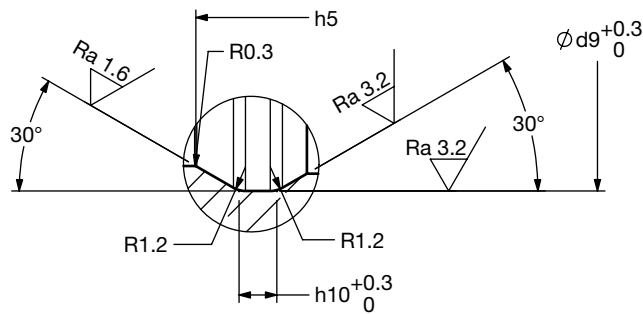
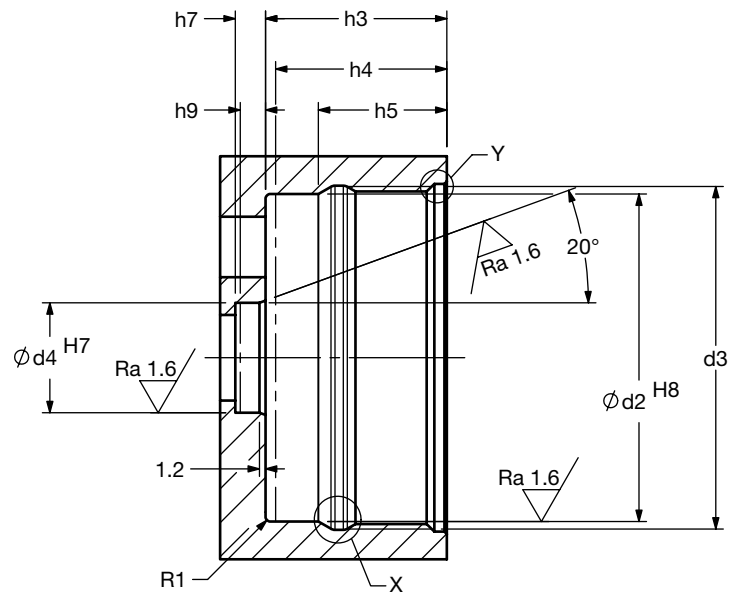
Unspecified Tolerances

From	0.5	3	6	30	120	400
To	3	6	30	120	400	1000
	±0.1	±0.1	±0.2	±0.3	±0.5	±0.8

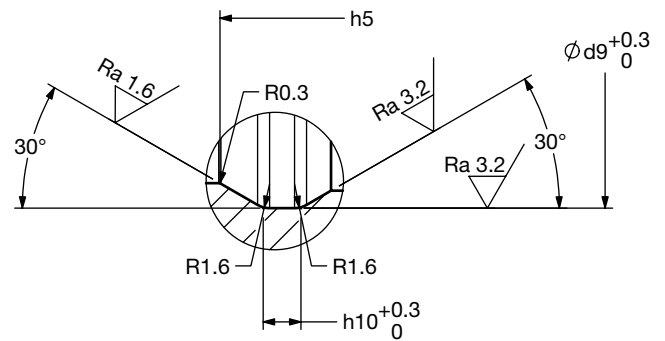
Size	660 2.X	990 2.X	1320 2.X
Weight (lbs.)	48.4	64.1	82.1

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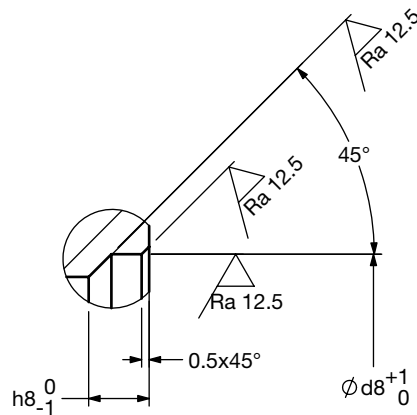
Customer Manifold Machining DF SET 660 - 1320 2.X



DETAIL X (SIZE 30)



DETAIL X (SIZE 60-660)

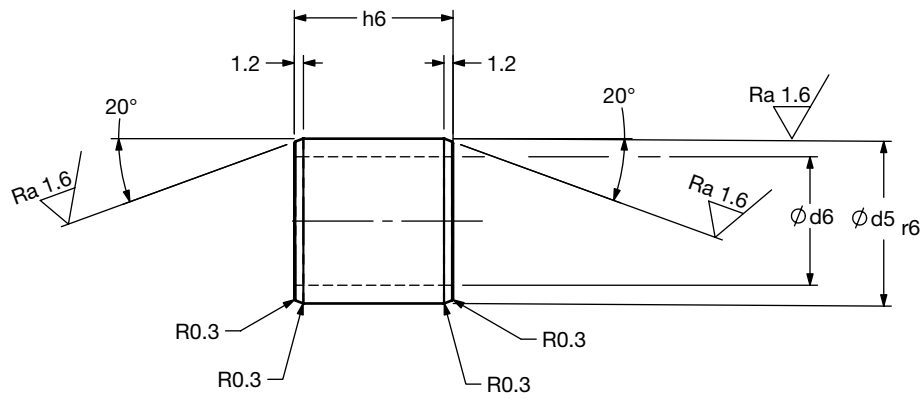
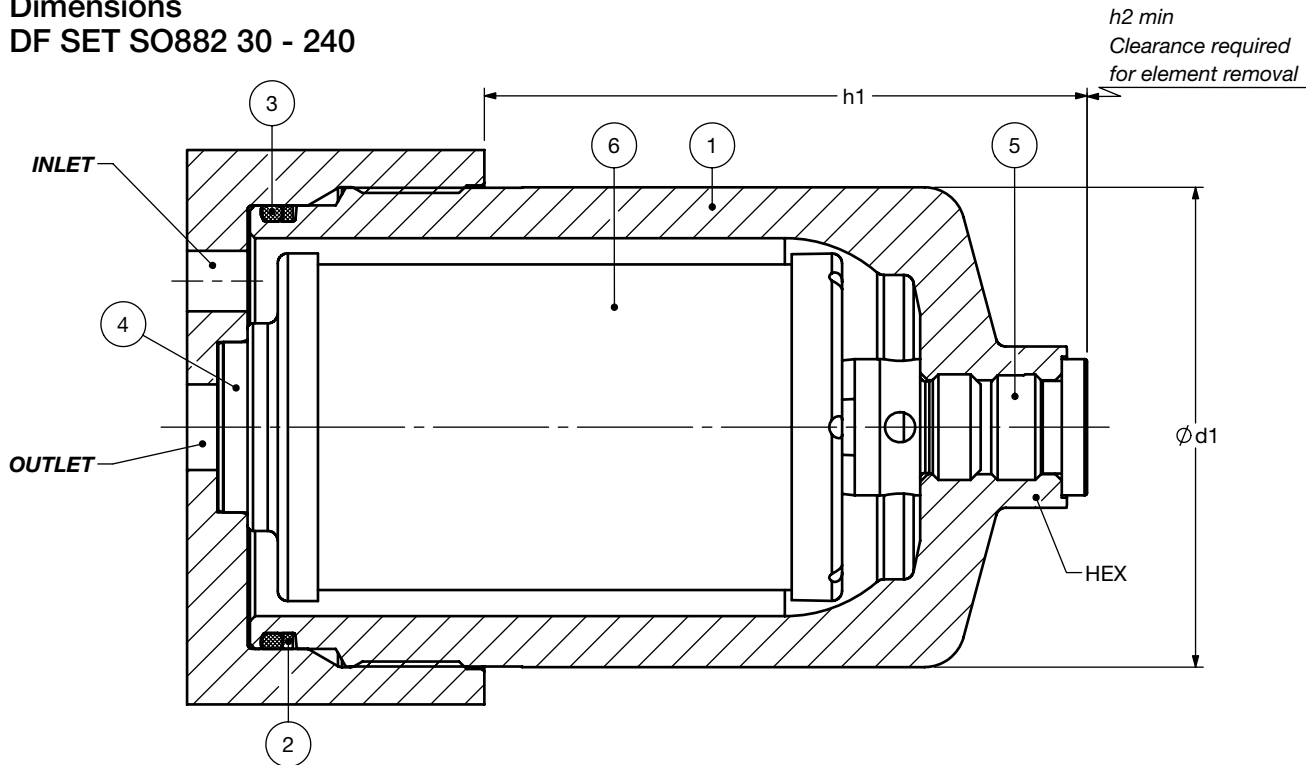


DETAIL Y

SET SERIES FILTERS – HIGH PRESSURE

Dimensions

DF SET SO882 30 - 240



BUSHING DETAIL
ITEM 4

Item No	SET Components
1	Bowl
2	Bowl back-up ring
3	Bowl o-ring
4	Bushing
5	Drain plug (Std – sizes 330/660, Opt – sizes 60-280 - use code SO184)
6	Element (optional)

Size	d1	d2	d3	d4	d5	d6	d7	d8	d9	h1	h2	h3	h4	h5	h6	h7	h8	h9	h10	HEX
030	95	88	M95x2	33.8	33.8	26	75	96	95.3	110	105	56	54	44	25	8	6.5	7	2.5	32
060	95	88	M95x2	33.8	33.8	26	75	96	95.3	169.5	105	56	54	44	25	8	6.5	7	2.5	32
110	95	88	M95x2	33.8	33.8	26	75	96	95.3	352	105	56	54	44	25	8	6.5	7	2.5	32
140	130	125	M130x2	47.8	47.8	36	102	131	130.3	156	115	66	64	52.6	26	10	5	9	4	36
160	130	125	M130x2	47.8	47.8	36	102	131	130.3	249	115	66	64	52.6	26	10	5	9	4	36
240	130	125	M130x2	47.8	47.8	36	102	131	130.3	326.5	115	66	64	52.6	26	10	5	9	4	36

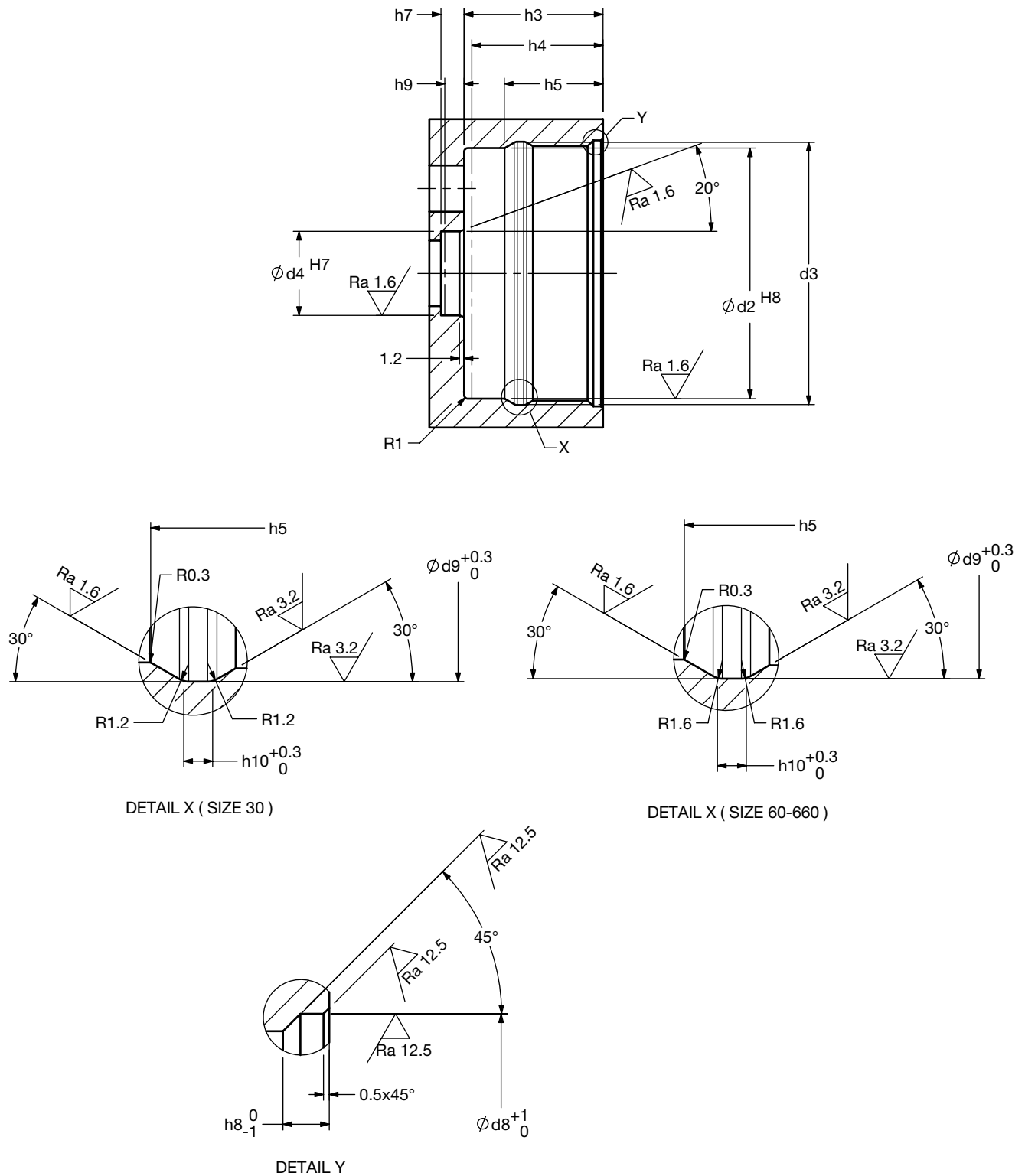
Unspecified Tolerances

From	0.5	3	6	30	120
To	3	6	30	120	400
	±0.1	±0.1	±0.2	±0.3	±0.5

Size	30	60	110	160	240	280
Weight (lbs.)	9.3	12.8	22	24.4	33.3	41.1

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Customer Manifold Machining DF SET SO882 30 - 240



SET SERIES FILTERS – HIGH PRESSURE

Element K Factors

$$\Delta P \text{ Elements} = \text{Elements (K) Flow Factor} \times \text{Flow Rate (gpm)} \times \frac{\text{Actual Viscosity (SUS)}}{141 \text{ SUS}} \times \frac{\text{Actual Specific Gravity}}{0.86}$$

(From Tables Below)

Betamicon®	...D...BH4HC Elements (High Collapse)			
Size	3 µm	5 µm	10 µm	20 µm
0030 D XXX BH4HC	5.005	2.782	1.992	1.043
0060 D XXX BH4HC	3.216	1.789	0.993	0.670
0110 D XXX BH4HC	1.394	0.818	0.489	0.307
0160 D XXX BH4HC	0.922	0.571	0.324	0.241
0240 D XXX BH4HC	0.582	0.373	0.214	0.159
0280 D XXX BH4HC	0.313	0.187	0.099	0.088
0330 D XXX BH4HC	0.423	0.247	0.154	0.110
0660 D XXX BH4HC	0.181	0.104	0.055	0.049
1320 D XXX BH4HC	0.088	0.055	0.033	0.022

Sustainmicron	...D...SN Elements			
Size	3 µm	5 µm	10 µm	20 µm
0030 D XXX BN	3.507	2.376	1.251	0.62
0060 D XXX SN	1.427	1.004	0.664	0.347
0110 D XXX SN	0.735	0.527	0.333	0.164
0160 D XXX SN	0.604	0.423	0.225	0.175
0240 D XXX SN	0.379	0.293	0.175	0.115
0280 D XXX SN	0.185	0.15	0.082	0.064
0330 D XXX SN	0.23	0.185	0.135	0.067
0660 D XXX SN	0.106	0.086	0.051	0.031
1320 D XXX SN	0.053	0.042	0.025	0.015

Wire Mesh	...D...W/HC Elements
Size	25, 50, 100, 200 µm
0030 D XXX W/HC	0.166
0060 D XXX W/HC	0.042
0110 D XXX W/HC	0.023
0160 D XXX W/HC	0.016
0240 D XXX W/HC	0.010
0280 D XXX W/HC	0.005
0330 D XXX W/HC	0.008
0660 D XXX W/HC	0.004
1320 D XXX W/HC	0.002

Metal Fiber	...D...V Elements (High Collapse)			
Size	3 µm	5 µm	10 µm	20 µm
0030 D XXX V	1.011	0.740	0.411	0.200
0060 D XXX V	0.877	0.511	0.296	0.183
0110 D XXX V	0.452	0.304	0.182	0.118
0160 D XXX V	0.251	0.177	0.123	0.079
0240 D XXX V	0.169	0.137	0.093	0.062
0280 D XXX V	0.126	0.093	0.064	0.041
0330 D XXX V	0.121	0.097	0.065	0.043
0660 D XXX V	0.063	0.050	0.034	0.021
1320 D XXX V	0.032	0.026	0.018	0.012

All Element K Factors in psi / gpm.

A large grid of graph paper, consisting of a 20x20 square grid of cells. In the bottom right corner, there is a small QR code.