

SET SERIES FILTERS – MEDIUM PRESSURE

LPF Set Series

Manifold Cartridge Filters

725 psi • up to 74 gpm

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



Features

- Non-welded housing design reduces stress concentrations and prevents fatigue failure.
- Aluminum alloy is water tolerant - anodization is not required for water based fluids (HWBF).
- 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.

Applications



Agricultural



Automotive



Construction



Industrial



Steel / Heavy Industry

Installation

The LPF 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.

Technical Specifications

Mounting Method	Threaded bowl	
Flow Direction	Element	
	Out-to-in	
Construction Materials	Bowl	
	Aluminum Extrusion	
Flow Capacity	35	
	9 gpm (35 lpm)	
	55	
	15 gpm (55 lpm)	
	160	
	42 gpm (160 lpm)	
	240	
	63 gpm (240 lpm)	
	280	
	74 gpm (280 lpm)	
Housing Pressure Rating	Max. Allowable Working Pressure	
	35 - 55	580 psi (40 bar)
	160 - 280	725 psi (50 bar)*
	*Note: 580 psi (40 bar) when using BF indicator	
	Fatigue Pressure	
	35 - 55	580 psi (40 bar) (10 ⁷ cycles)
	160 - 280	725 psi (50 bar) (10 ⁶ cycles)
	35 - 55	Contact HYDAC
	Burst Pressure	
	160 - 280	> 3625 psi (200 bar)
Element Collapse Pressure Rating (optional)	BH4HC, V	
	3045 psid (210 bar)	
	ON, W/HC	
	290 psid (20 bar)	
Fluid Temp. Range	-22°F to 212°F (-30°C to 100°C)	
	Consult HYDAC for applications operating below -22°F (-30°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	
ΔP Indicator Trip Pressure (optional)	ΔP = 29 psid (2 bar) -10% (optional)	
	ΔP = 36.25 psid (2.5 bar) (BF indicator)	
	ΔP = 72 psid (5 bar) -10% (standard)	

Model Code

LPF ON 280 SET 3 W 1 . 0 /

Filter Type

LPF = Manifold cartridge filter

Element Media

(omit) = Without element
 ON = Optimicron® (*low collapse*)
 BH/HC = Betamicron® (*High Collapse*)
 W/HC = Wire Mesh

Size

35, 55, 160, 240, 280

Type of Mounting

SET = Manifold cartridge

Filtration Rating (microns)

XX = Without element
 1, 3, 5, 10, 15, 20 = ON
 3, 5, 10, 20 = BH/HC
 25, 50, 100, 200 = W/HC

Type of ΔP Clogging Indicator

W = Without indicator (*Indicators can be installed in manifold, cavity drawing upon request.*
(For additional details and options, see Clogging Indicators section.))

Type Number

1 = Sizes 35 to 280

Modification Number (latest version always supplied)

Seals

(omit) = Nitrile rubber (NBR) (*standard*)
 V = Fluorocarbon elastomer (FKM)
 EPR = Ethylene propylene rubber (EPR)

Supplementary Details

SO263 = Modification of elements for Skydrol or HYJET phosphate ester fluids
 SFREE = Element specially designed to minimize electrostatic charge generation
 QPG1 = Quality Protection (sizes 160-280)
 QPG1V2 = Quality Protection (sizes 35, 55)

Replacement Element Model Code

0280 D 003 ON / V

Size

0035, 0055, 0160, 0240, 0280

Filtration Rating (micron)

ON = 1, 3, 5, 10, 15, 20
 BH/HC = 3, 5, 10, 20
 W/HC = 25, 50, 100, 200

Element Media

ON, BH4HC, W/HC

Seals

(omit) = Nitrile rubber (NBR)
 V = Fluorocarbon elastomer (FKM)
 EPR = Ethylene propylene rubber (EPR)

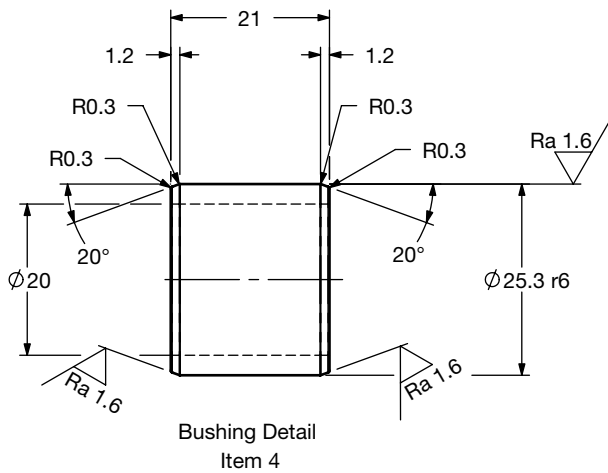
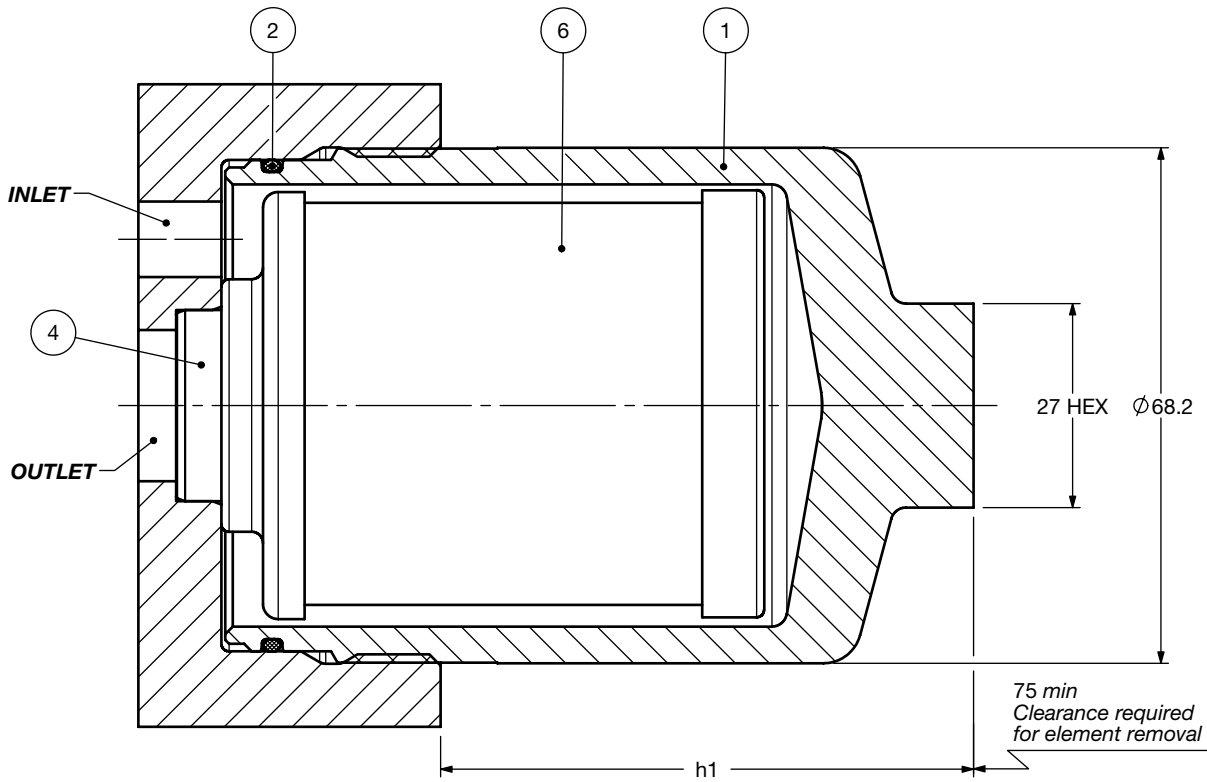
Supplementary Details

SO263 = Same as above
 SFREE = Element specially designed to minimize electrostatic charge generation
 QPG1 = Quality Protection (sizes 160-280)
 QPG1V2 = Quality Protection (sizes 35, 55)

Model Codes Containing RED are non-stock items – Minimum quantities may apply – Contact HYDAC for information and availability

SET SERIES FILTERS – MEDIUM PRESSURE

Dimensions
LPF Set 35 / 55



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	h1
LPF 35 SET	70.5
LPF 55 SET	116.5

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

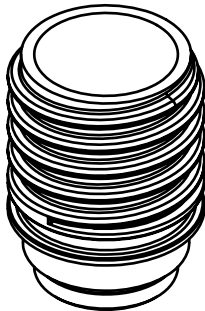
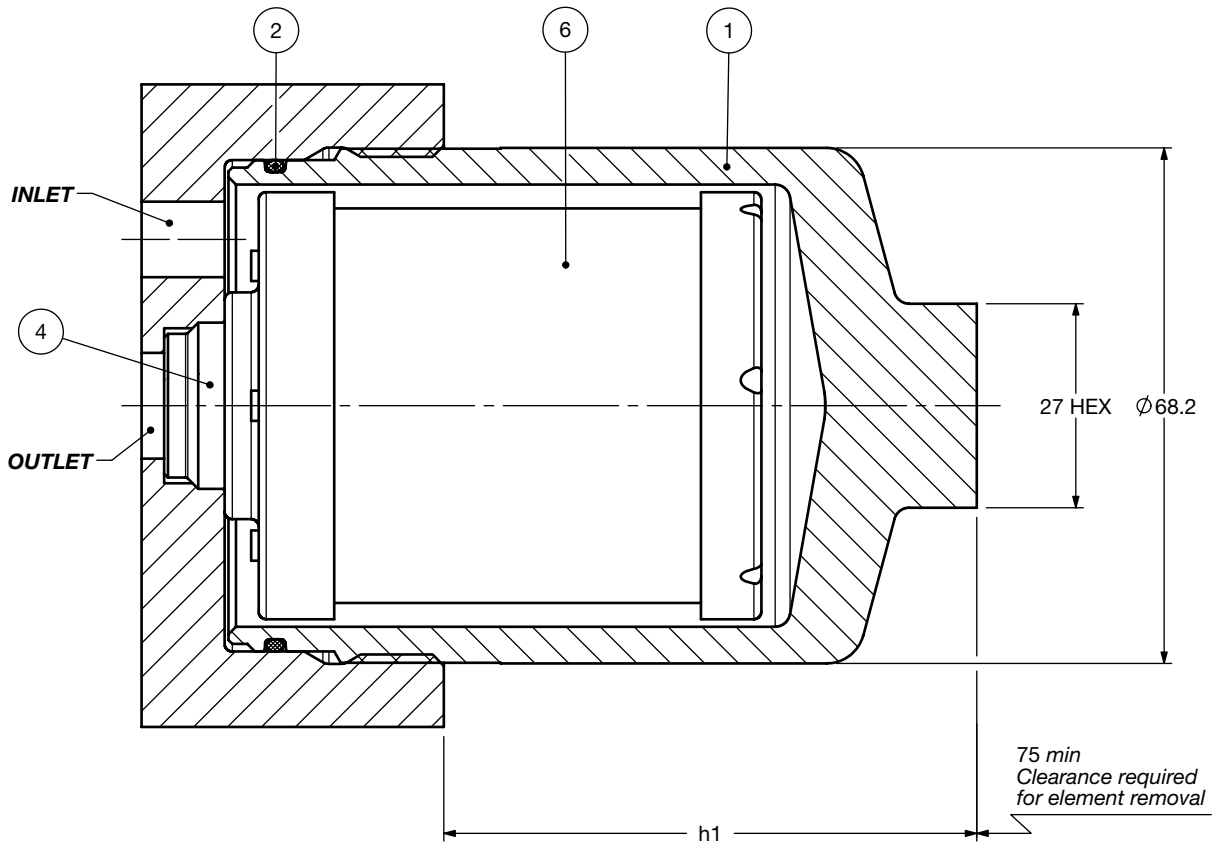
Size	35	55
Weight (lbs.)	1	1.6

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.

SET SERIES FILTERS – MEDIUM PRESSURE

Dimensions

LPF Set QPG1V2 35 / 55



Bushing Detail
Item 4
Secure with Loctite 4204
Torque to 10-2Nm

Item No	SET Components
1	Bowl
2	Bowl back-up ring
4	Bushing
6	Element (optional)

Size	h1
LPF 35 SET	70.5
LPF 55 SET	116.5

Unspecified Tolerances

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

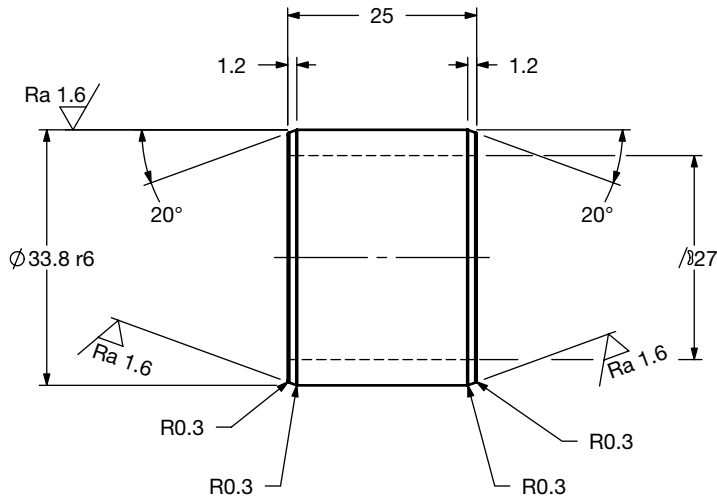
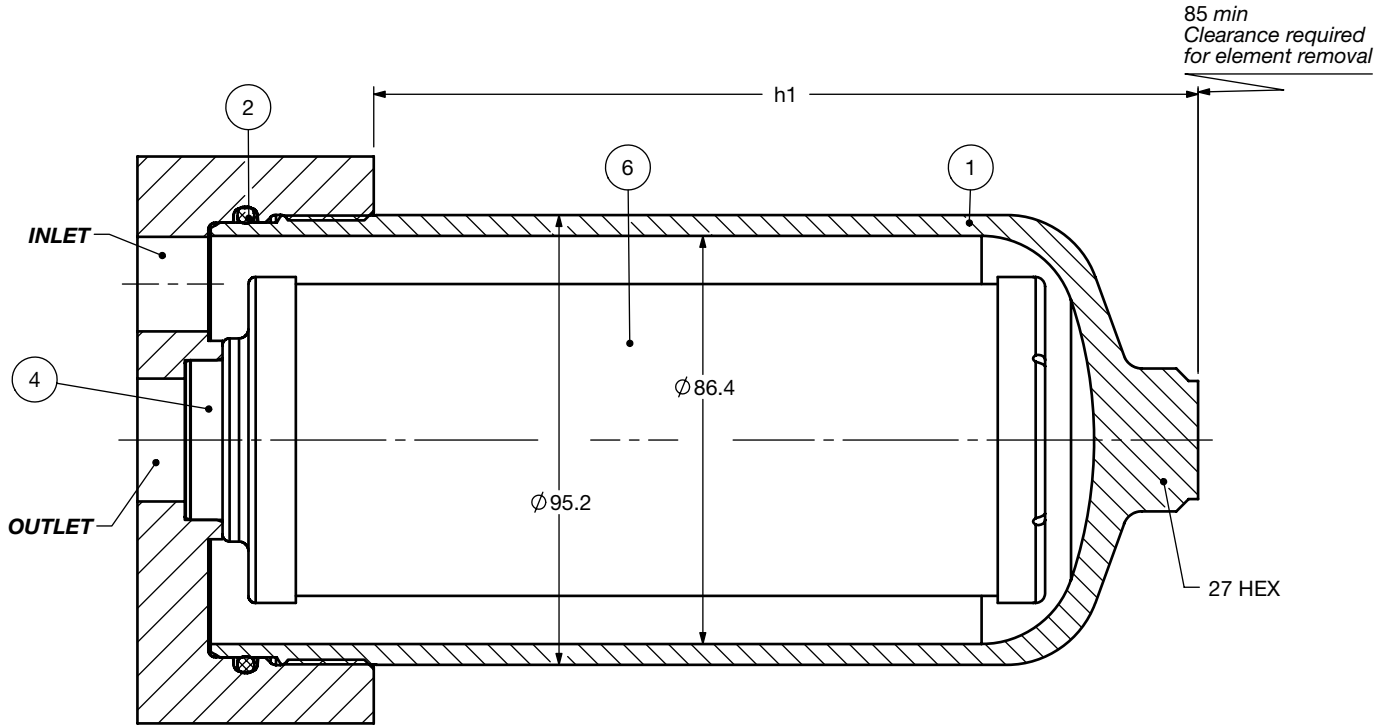
Size	35	55
Weight (lbs.)	1	1.6

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SET SERIES FILTERS – MEDIUM PRESSURE

Dimensions

LPF Set 160 / 240 / 260 / 280



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	h1
LPF 160 SET	121.5
LPF 240 SET	174.5
LPF 260 SET	244.5
LPF 280 SET	359.5

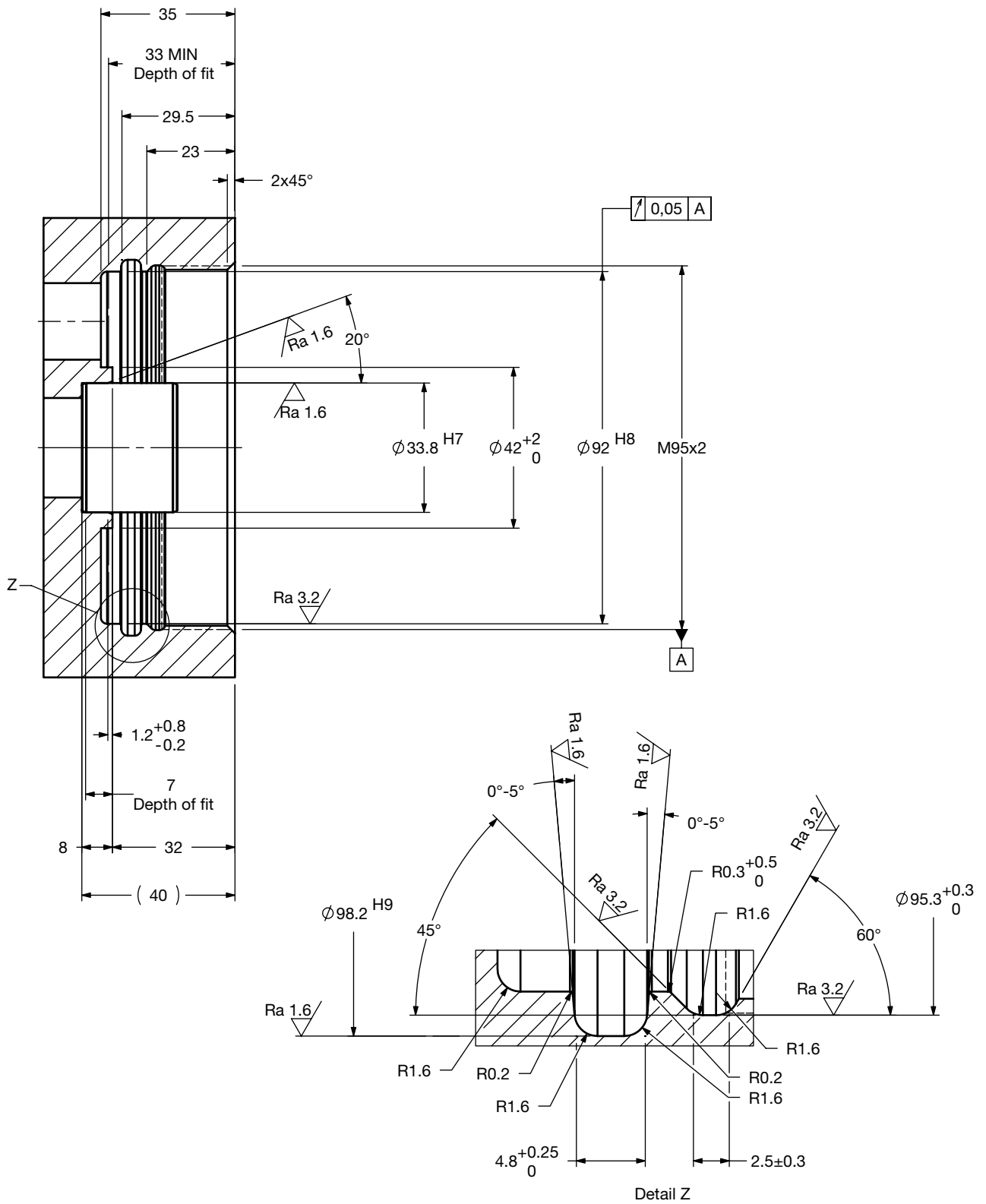
Unspecified Tolerances

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

Size	160	240	260	280
Weight (lbs.)	1.9	2.5	3.2	4.7

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

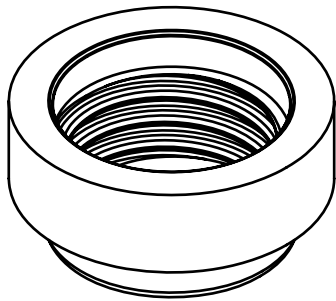
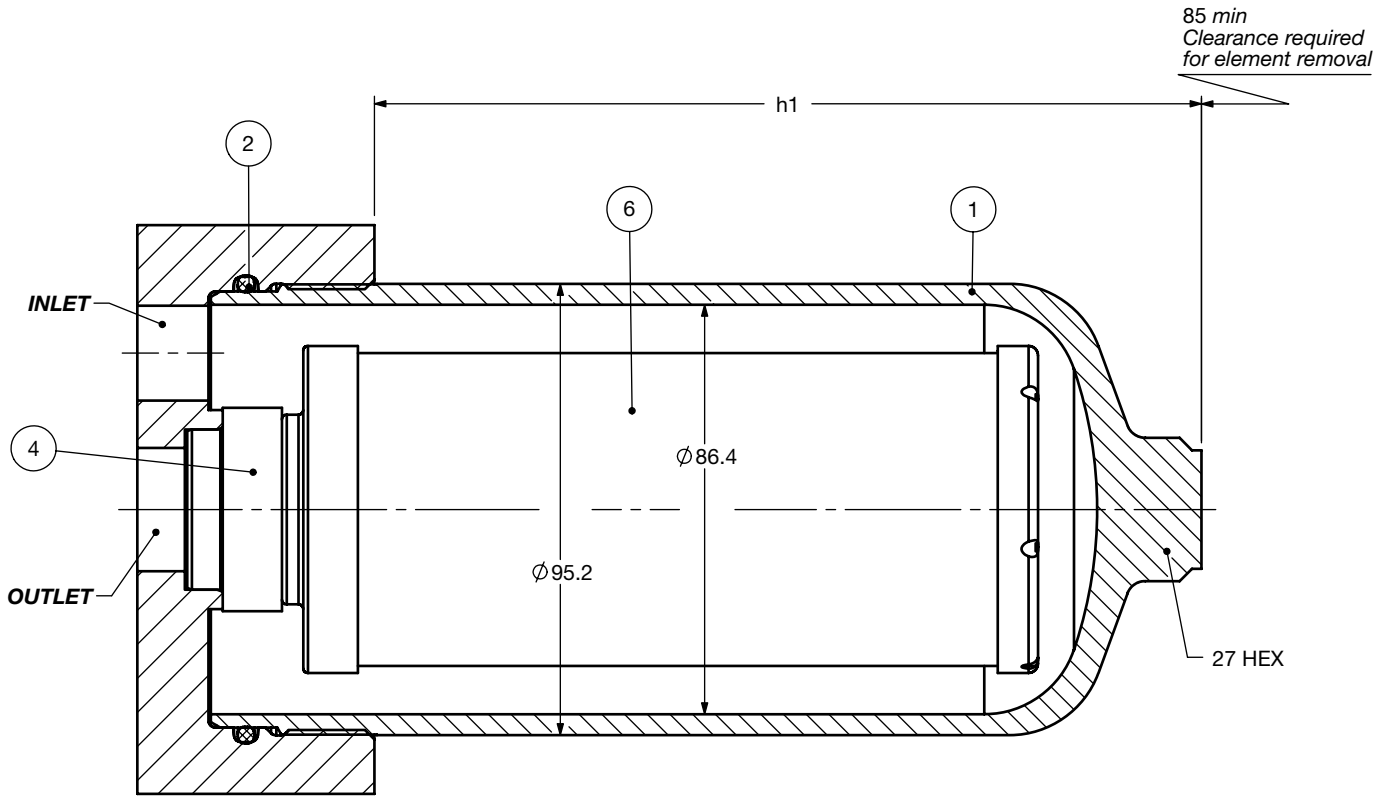
Customer Manifold Machining LPF Set 160 / 240 / 260 / 280



SET SERIES FILTERS – MEDIUM PRESSURE

Dimensions

LPF Set QPG1 160 / 240 / 260 / 280



Bushing Detail
Item 4
(Supplied by HYDAC)

Item No	SET Components
1	Bowl
2	Bowl back-up ring
4	Bushing
6	Element (optional)

Size	h1
LPF 160 SET	121.5
LPF 240 SET	174.5
LPF 260 SET	244.5
LPF 280 SET	359.5

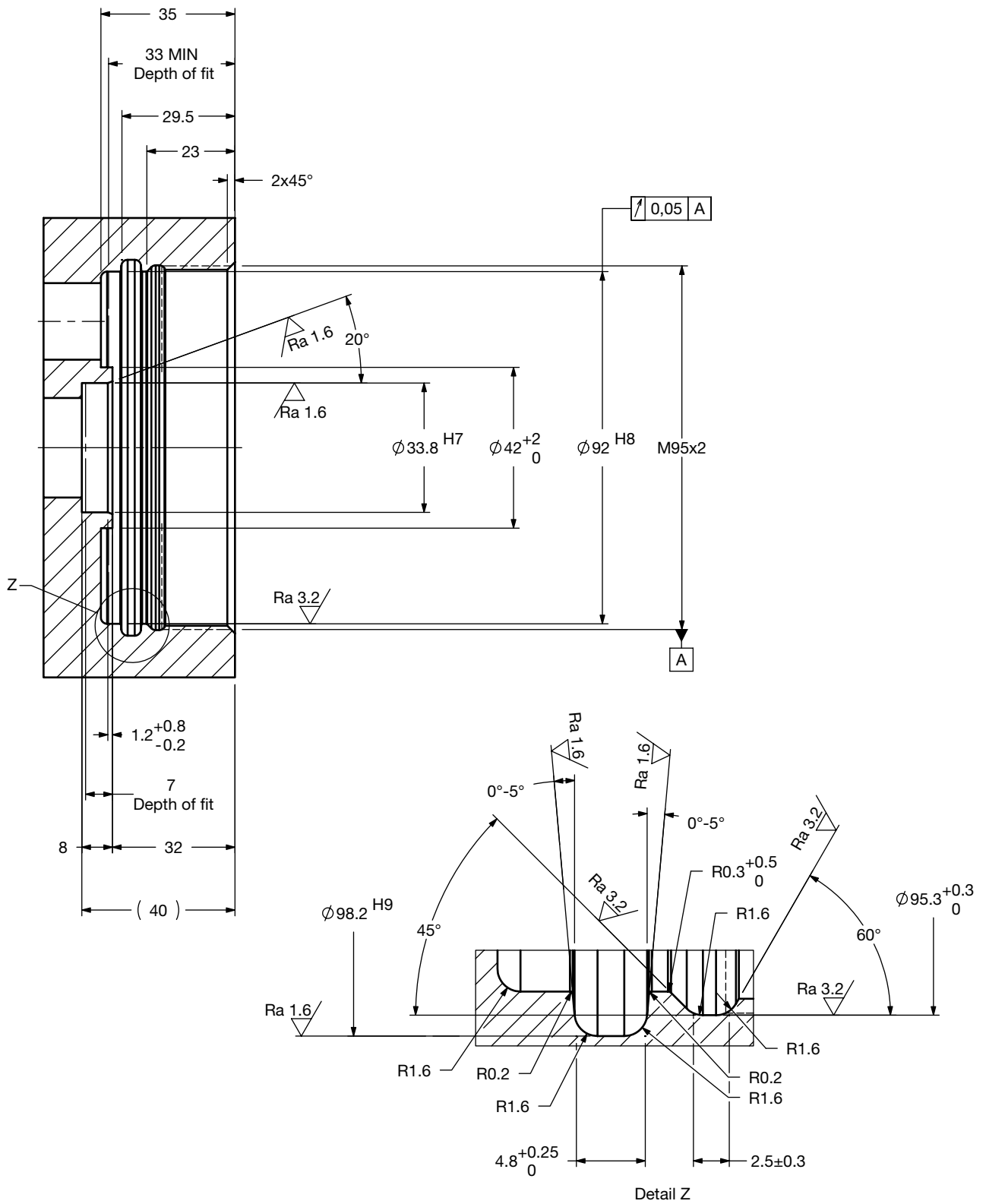
Unspecified Tolerances

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

Size	160	240	260	280
Weight (lbs.)	2	2.6	3.3	4.8

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For complete dimensions please contact HYDAC to request a certified print.

Customer Manifold Machining LPF Set QPG1 160 / 240 / 260 / 280



SET SERIES FILTERS – MEDIUM 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)

"ON" Pressure Elements	...D...ON (Optimicron Pressure Elements)					
Size	1 µm	3 µm	5 µm	10 µm	15 µm	20 µm
0035 D XXX ON	2.755	1.169	0.938	0.752	0.549	0.408
0055 D XXX ON	1.427	0.675	0.543	0.434	0.284	0.211
0160 D XXX ON	1.015	0.604	0.423	0.225	0.204	0.175
0240 D XXX ON	0.631	0.379	0.293	0.175	0.134	0.115
0280 D XXX ON	0.304	0.185	0.15	0.082	0.075	0.064

"D" Pressure Elements	...D...BH4HC (Betamicron High Collapse)			
Size	3 µm	5 µm	10 µm	20 µm
0035 D XXX BH4HC	2.623	1.542	0.922	0.576
0055 D XXX BH4HC	1.328	0.779	0.466	0.291
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

Wire Mesh	...D...W/HC Elements (Low Collapse)
Size	...D...W/HC Elements 25, 50, 100, 200 µm
0160 D XXX W/HC	0.016
0240 D XXX W/HC	0.010
0280 D XXX W/HC	0.005

All Element K Factors in psi / gpm.