

3M Housings DS Series

For Cartridge Filters

DS Series Cartridge Filter Housings, constructed of durable stainless steel, meet general-purpose industrial, chemical, commercial and some food & beverage filtration needs. All wetted surfaces are 316L stainless steel. Other parts (V-band clamp, feet mountings, etc.) supplied in 304 stainless steel or similar. DS filter housings are electro-polished for a consistent, easy care finish.

The DS Series filter housings are available in a variety of sizes to accommodate 5 or 12 filter cartridges with lengths from 9 ¾ to 40 inches (or 5 to 48 EQSLs). The housing handles liquids at pressures up to 10 bar g and temperatures of up to 120 °C.

Specifications

Table 1 gives standard model specifications for the DS Series Filter Housings. Note that maximum operating pressure and temperature is the rating for the housing only. Actual housing operating temperature depends on temperature and chemical capability of the filter cartridge and gasket used in the housing.

Cartridge Requirements

DS Series filter housings accept both single and multiple length filter cartridges. Table 2 lists the number of filter cartridges for each model housing.

Pressure Equipment Directive 97/23/CE

DS housings are in compliance with Non Coded Article 3.3. "Sound Engineering Practice". In addition, DS housings are only to be used for the filtration of Group 2 Liquids (and Group 1 Liquids at reduced operating pressures). Do not use DS housings with gas or vapour applications.

ATEX Directive 94/9/CE

The 05 DS housings are approved for use in ATEX condition II/2/G/T4 and the 12 DS housings in ATEX condition II/2/G/T5.

The user of these housings must ensure that they are used in accordance with the requirements of these PED and ATEX directives at all times. Please consult your local 3M Purification representative for any other classification or further information.

Features & Benefits

316L stainless steel construction

- Provides excellent corrosion protection for rugged, long-lasting service.

Accepts varying length cartridges

- Allows use of 9 ¾ to 10 inch modular cartridges for greater flexibility.

Shouldered seal plates

- Solid fit into cartridge core ensures positive seal and prevents bypass.

V-Band Clamp and Swing bolt designs

- Optimizes cartridge change-out.

Removable cartridge posts

- Easy cleaning reduces maintenance.

Housing drains located on dirty and clean chambers

- Allows full drainage of chambers for optimised filter change-out.

Air Vent

- Allows venting before start-up and draining for safe filter operation.

Pedestal cup fitting

- Allows for use of both DOE or SOE cartridges.



Applications

Chemicals & Petrochemicals

Food & Beverage

Healthcare

Industrial Processes

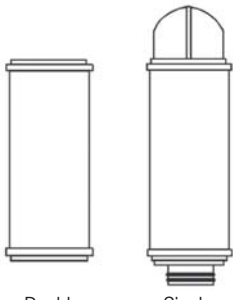
Paint & Coatings

Industrial Water Treatment





Picture 1
12DS top spring assembly (05DS does not use spring or upper cup)



Double Open-end (DOE) Cartridge

Single Open-end (SOE) Cartridge with Locating Spear

Flow Rates

Table 1 lists the maximum water flow rates in liters per minute (l/min) for each model filter housing.

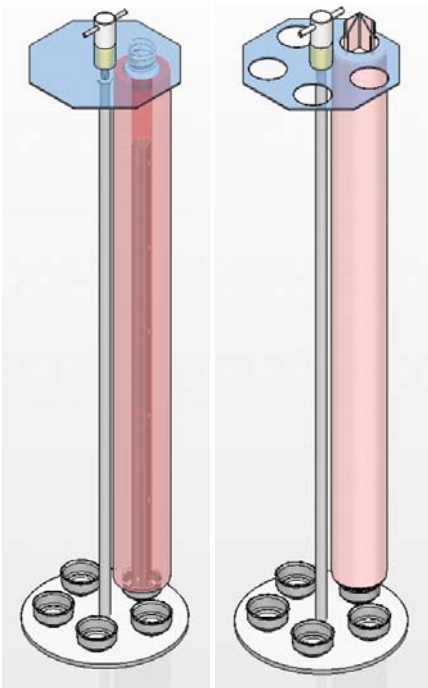
Use the data in Table 1 only as a guide in establishing the maximum housing flow capacity; do not use it for filter sizing. Once a flow rate for a selected cartridge is known, use Table 1 to check whether the housing's flow rate falls within the recommended guidelines.

When sizing a filter, the amount of contaminant load needs to be considered in addition to the flow rate and desired pressure drop. Low initial pressure drop enhances filter cartridge life.

Cartridge Seal Assemblies

Standard housings are configured to accept double open end style (DOE) cartridges. These DS DOE housings use pressure plate assemblies including top cup and spring seal assemblies (Picture 1) that permit the use of filter cartridges with single length equivalents of 9 3/4 to 10 inches.

To adapt the housing to accept single open end (SOE), double o-ring cartridges with locating spear, the standard pressure plate and the center rod are replaced with the SOE pressure plate and center rod (order separately).



Picture 2 DOE Version (standard)
Picture 3 SOE Version (optional)
Image 2 and 3 are for information only and the actual design may vary from that shown here.

Standard Model Dimensions

To find a selected dimension, refer to Table 3 to locate the model in the left column and the selected dimension symbol (A-D) in the top row. These dimensions can be used for rough plumbing. For critical installations, request a certified drawing.

Table 1 : Standard Model Specifications		
Housing Type Specifications	05 DS	12 DS
Connection Sizes	GM 2" (except 05 DS 1 = GM 1,5")	BP 80
Vent Connections	1/4" NPT	1/2" NPT
Drain Connections	1" NPT	1" NPT
Cartridge Sizes (9 3/4" to 10")	1, 2, 3 and 4 high	2, 3 and 4 high
Housing Material	316 L Stainless Steel	316 L Stainless Steel
Standard Gasket Material	Nitrile	Nitrile
Max. Operating Pressure	10 bar g	10 bar g
Max. Operating Temperature	120 °C	100 °C
Max. Housing Flow Rate	397 l/min	871 l/min

Table 1 is intended as a guide. Grade selection and performance should be confirmed with small-scale pilot trial.

Table 2 : Cartridge Requirements	
Housing Type	Single Length (9 3/4" to 10") Cartridge Capacity
05 DS 1	5
05 DS 2	10
05 DS 3	15
05 DS 4	20
12 DS 2	24
12 DS 3	36
12 DS 4	48

Figure 1: DS Series Configurations

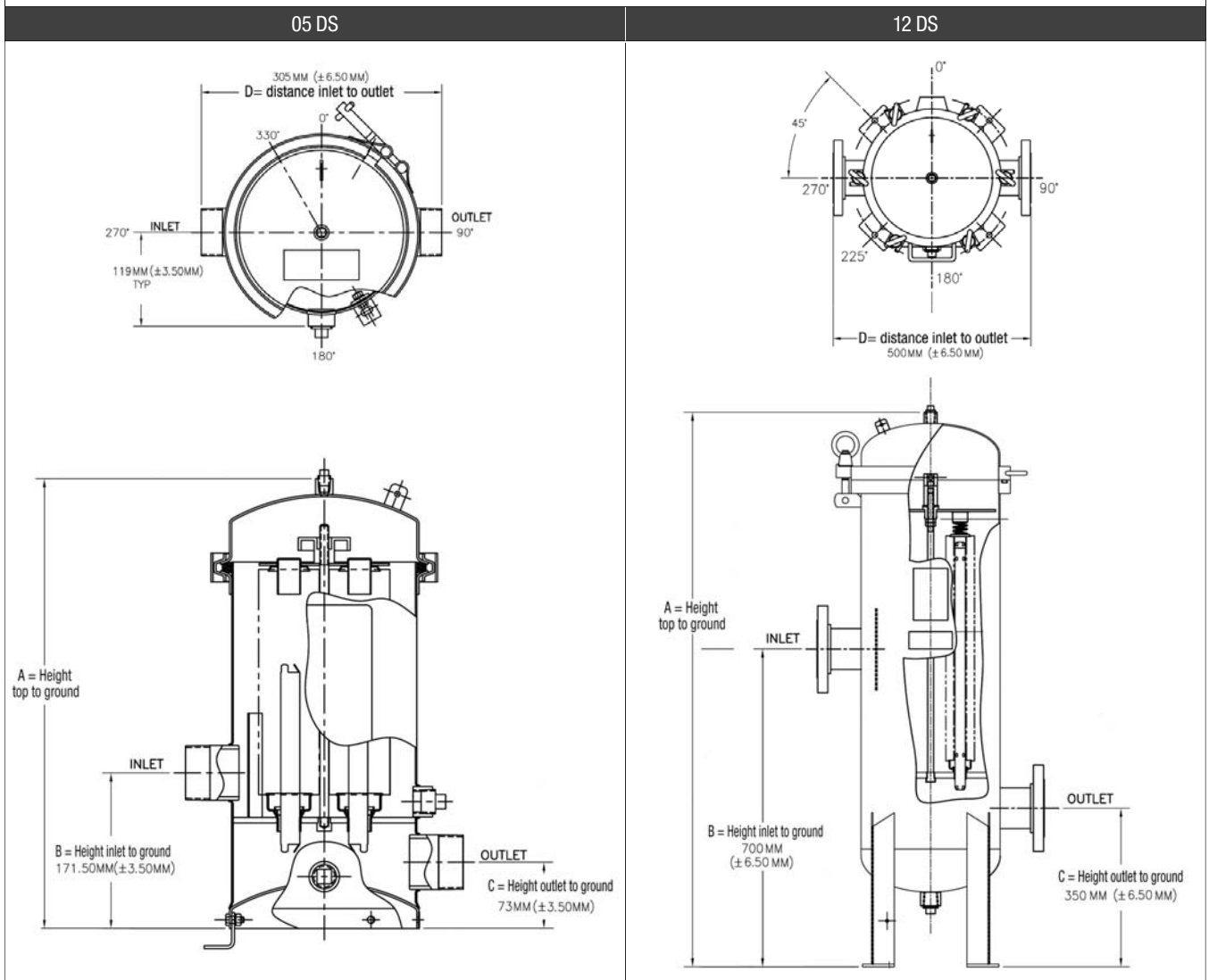


Table 3 : Standard Model Dimensions

Housing Type	A*	B*	C*	D	Cartridge Removal Clearance	Housing Weight
05 DS 1	495,5 mm	171,5 mm	73 mm	305 mm	660,5 mm	9 kg
05 DS 2	749,5 mm				1168,5 mm	11 kg
05 DS 3	1003,5 mm				1676,5 mm	13 kg
05 DS 4	1257,5 mm				2184,5 mm	15 kg
12 DS 2	1222,5 mm	700 mm	350 mm	500 mm	1575,0 mm	69 kg
12 DS 3	1473,0 mm				2083,0 mm	77 kg
12 DS 4	1722,5 mm				2591,0 mm	85 kg

* Add 19 mm (¾") for leg installation on 5DS housings.

All dimensions are subject to normal manufacturing tolerances.

3M Part Number DS Standard Housings	Number of Cartridges	Vessel type	Height	Cartridge Type	Materials (Wetted)	Gaskets	Surface Finish	Connection type	Connection Size
70020246701	05	DS	1	N	6	NB	F0	GM	1,5"
70020246719	05	DS	2	N	6	NB	F0	GM	2"
70020246727	05	DS	3	N	6	NB	F0	GM	2"
70020246735	05	DS	4	N	6	NB	F0	GM	2"
70020246743	12	DS	2	N	6	NB	F0	BP	80
70020246750	12	DS	3	N	6	NB	F0	BP	80
70020246768	12	DS	4	N	6	NB	F0	BP	80

Ordering Guide DS Range

Number of Cartridges	Housing Type	Cartridge Height	Cartridge Type**	Construction Material in contact	Gasket Material*	Surface Finish	Connection Type
05	DS	1	N = DOE	6 = 316L	NB = Nitrile	FE = Electro-polished	GM 38 = 1,5" Male BSPT
05	DS	2 3 4	N = DOE	6 = 316L	NB = Nitrile	FE = Electro-polished	GM 50 = 2" Male BSPT
12	DS	2 3 4	N = DOE	6 = 316L	NB = Nitrile	FE = Electro-polished	BP 80 = DIN PN16

Example: 12 DS 2 N 6 NB FE BP80

* Other gasket materials and spare parts are available to order on request. Please contact a local 3M Purification representative for more information.

** SOE is available as option on request. For more information contact your local 3M Purification representative.

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