




CSF16 and CSF16T Stainless Steel Sterile Air Filters

Description

The CSF16 and CSF16T are horizontal, in-line high efficiency filters used to remove contaminate particles from compressed air systems. The filter housing is available in a choice of austenitic stainless steel (1.4301) designated CSF16 or (1.4404) designated CSF16T. The DN8 to DN80 (¼" to 3") housing is externally polished with an internal natural finish whereas the DN100 and DN150 housing will have a natural finish both internally and externally. The housings are constructed in two halves, DN8 to DN80 will be joined by a food industry fitting to DIN 11851. DN100 and DN150 will be joined by bolts and nuts. Replaceable borosilicate depth filter elements are available with a retention rate of >than 99.9998% related to 0.01 µm. In some pipe sizes the element is available in a choice of low capacity designated 'L' and high capacity designated 'H'.

Standards

These products fully comply with the requirements of the Pressure Equipment Directive 2014/68/EU and carry the  mark when so required.

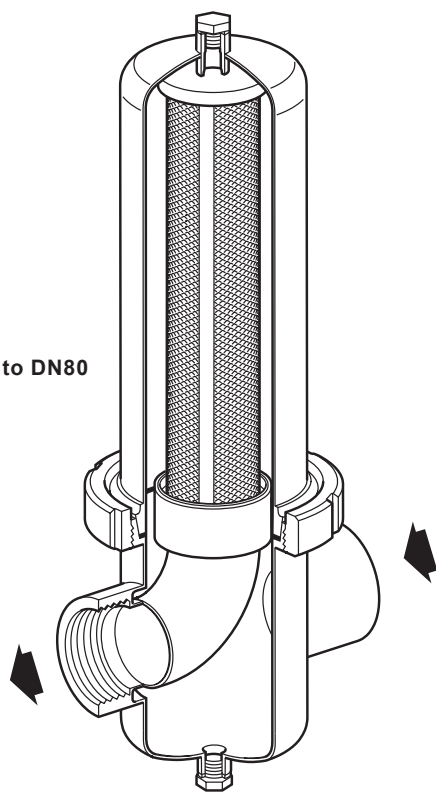
Please note that all materials meet the requirements as stipulated by the US FDA Regulations.

Certification

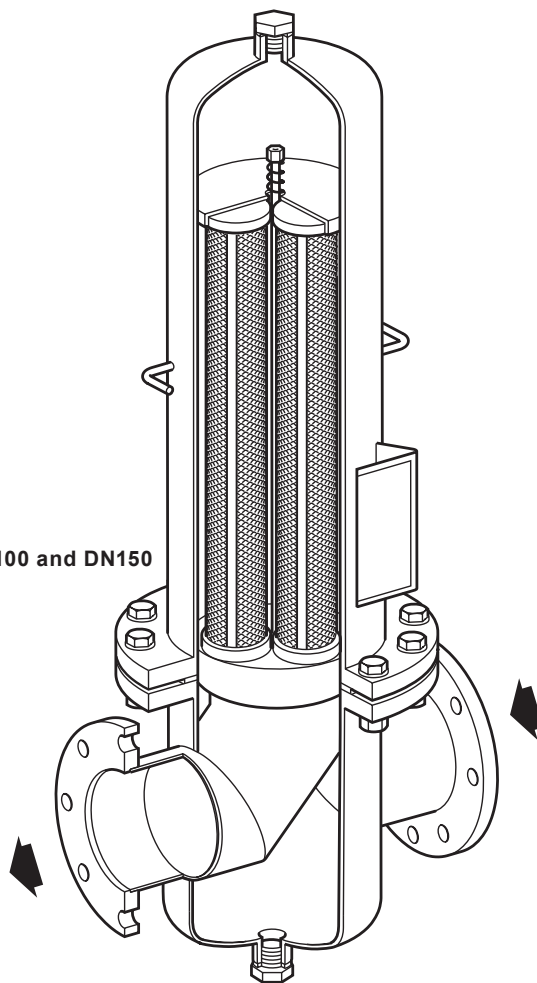
These products can be supplied with certification to EN 10204 3.1.

Note: All certification/inspection requirements must be stated at the time of order placement.

DN8 to DN80



DN100 and DN150



Sizes and pipe connections

Screwed

BSP and NPT: ¼", ⅜", ½", ¾", 1", 1¼", 1½", 2", 2½" and 3".

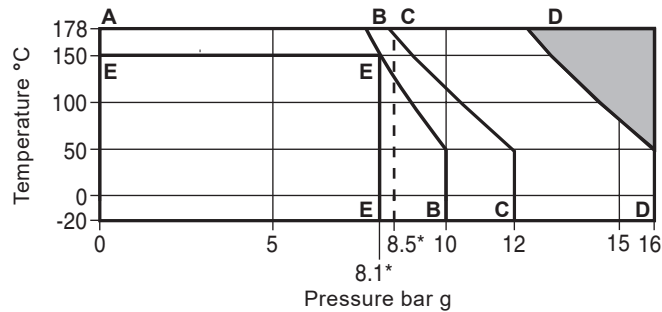
Flanged

EN 1092 PN16: DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65 and DN80.

EN 1092 PN10: DN100 and DN150.

ASME 150: ½", ¾", 1", 1¼", 1½", 2", 2½", 3", 4" and 6".

Pressure/temperature limits



The product **must not** be used in this region.

A-B-B Flanged PN10.

A-C-C Maximum allowable pressure for the DN80H.

A-D-D Screwed BSP or NPT, flanged PN16 and ASME 150.

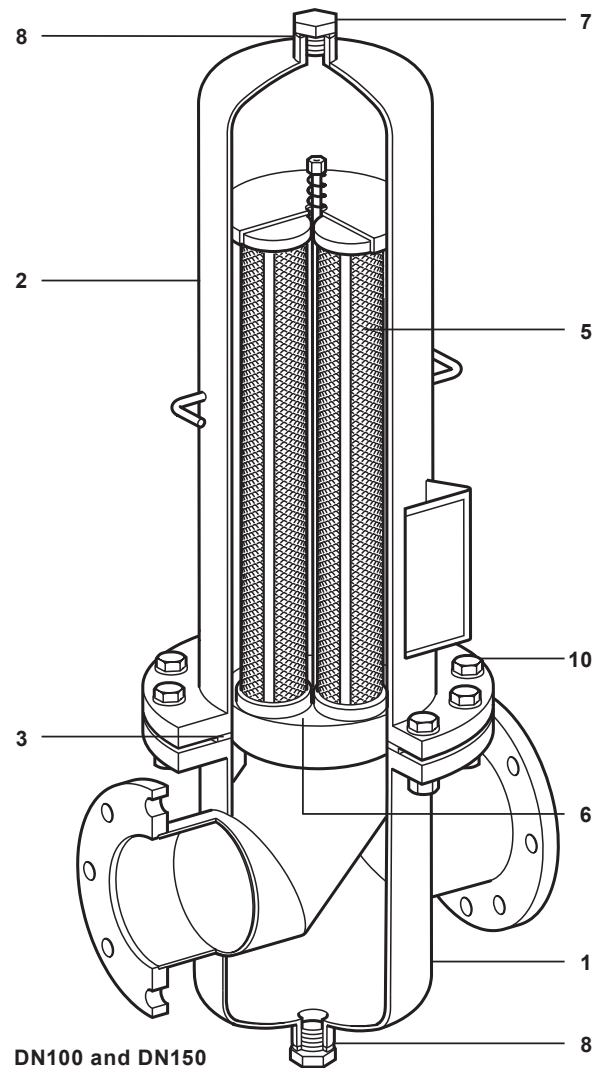
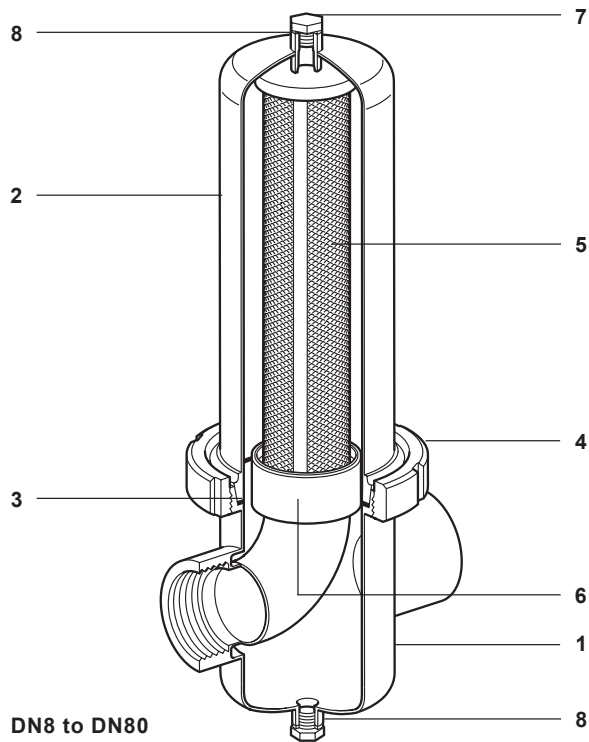
E-E-E Maximum operating limits for sizes DN100 and DN150.

Body design rating

		DN8 - DN65 (¼" to 2½")	16 bar g	
PMA	Maximum allowable pressure	DN80 (3")	L version	16 bar g
			H version	12 bar g
		DN100 and DN150	10 bar g	
TMA	Maximum allowable temperature	DN8 - DN80	178 °C @ 8.5 bar g	
		DN100 and DN150	150 °C @ 8.1 bar g	
	Minimum allowable temperature		-20 °C	
PMO *	Maximum operating pressure	DN8 - DN80	8.5 bar g @ 178 °C	
		DN100 and DN150	8.1 bar g @ 150 °C	
TMO	Maximum operating temperature	DN8 - DN80	178 °C @ 8.5 bar g	
		DN100 and DN150	150 °C @ 8.1 bar g	
	Minimum operating temperature		0 °C	
ΔPMX	Maximum differential pressure		5 bar g	
		DN8 - DN65 (¼" to 2½")	27.5 bar g	
Designed for a maximum cold hydraulic test pressure of:		DN80 (3")	L version	27.5 bar g
			H version	20.6 bar g
		DN100 and DN150	18.3 bar g	

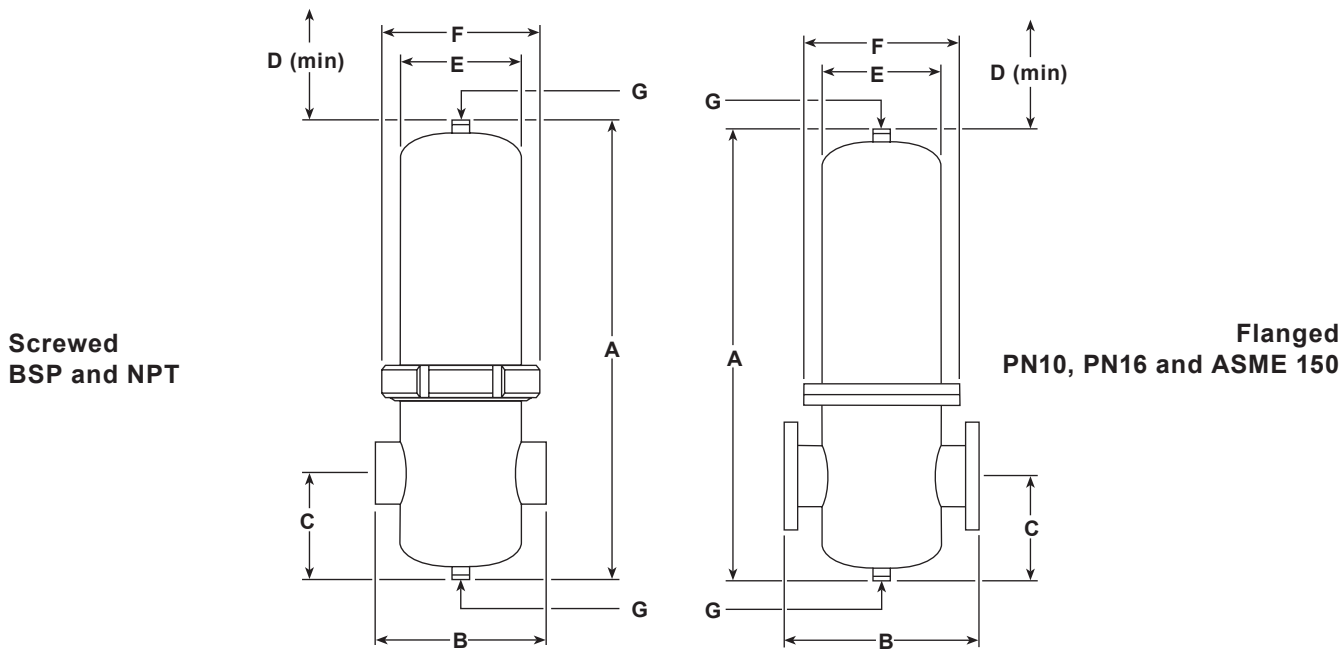
Materials

No.	Part	Materials		
1	Filter housing bowl	Stainless steel	CSF16	1.4301
			CSF16T	1.4404
2	Filter housing head	Stainless steel	CSF16	1.4301
			CSF16T	1.4404
3	Housing seal	For sizes DN8 to DN80 EPM is supplied as standard. For sizes DN100 and DN150 PTFE spirally wound gasket with stainless steel inner and outer rim support is supplied as standard - No other option is available.		
4	Housing ring (DN8 - DN80)	Stainless steel		1.4301
		Filter medium		Borosilicate
5	CSF16-A filter element	Outer core		1.4301
		End cap		1.4301
6	Filter element seal (2 off)	Silicone VMQ		
7	Plug	Stainless steel	CSF16	1.4301
			CSF16T	1.4404
8	Gasket	PTFE		
9	Flange	Stainless steel		1.4541
10	Bolts and nuts (DN100 and DN150)	Stainless steel		A2 - 70



Dimensions / volume and weights (approximate) in mm, litres and kg

Filter	Size	Dimensions									Vol. Litres	Weight (kg) without element			
		A	Screwed	Flanged		C	D	E	F	G		Screwed	Flanged		
				PN	ASME								PN	ASME	
CSF16 and CSF16T	1/4" DN8	220	108			55	90	70	112	1/4"	0.60	2.0			
	3/8" DN10	248	105	180		55	120	70	112	1/4"	0.70	2.1	3.4		
	1/2" DN15	248	108	180	203	55	120	70	112	1/4"	0.70	2.2	3.6	3.2	
	3/4" DN20	272	125	202	230	55	150	70	112	1/4"	0.80	2.4	4.4	3.9	
	1" DN25	298	125	212	247	74	150	85	127	1/4"	1.30	3.2	5.7	5.4	
	1 1/4" DN32	350	140	220	254	74	200	85	127	1/4"	1.70	3.7	7.2	6.3	
	1 1/2" DN40	388	170	254	294	94	200	104	148	1/4"	2.80	5.2	8.9	8.0	
	2 1/2" DN65	740	216	306	356	107	580	129	178	1/4"	9.00	8.1	13.7	15.9	
	6" DN150	1370		480	480	240	850	273	395	1"	75.00		85.0	85.0	
CSF16L and CSF16LT	2" DN50	463	170	260	297	94	280	104	148	1/4"	3.50	5.2	9.9	9.9	
	3" DN80	1002	240	316	356	111	850	129	178	1/4"	13.00	10.2	17.2	19.2	
	4" DN100	1040		430	430	190	850	219	340	1"	36.00		60.0	60.0	
CSF16H and CSF16HT	2" DN50	590	170	260	297	94	450	104	148	1/4"	4.50	5.8	10.5	10.6	
	3" DN80	1027	240	340	380	113	850	154	210	1/4"	17.70	13.2	19.9	21.8	
	4" DN100	1300		410	410	190	850	219	340	1"	45.00		65.0	65.0	



Capacity correction factors for air pressure

Air pressure	bar g	1	2	3	4	5	6	7	8
Correction factor		0.25	0.375	0.5	0.625	0.75	0.875	1.0	1.125

Air pressure	bar g	9	10	11	12	13	14	15	16
Correction factor		1.25	1.375	1.5	1.625	1.75	1.875	2.0	2.125

CSF16 and CSF16T air sizing:

Select an air filter for a flowrate of 500 m³/h with air pressure at 4 bar g.

Step 1:

Divide the flowrate required by the capacity correction factor for the operating air pressure. In this case, 500 m³/h is divided by 0.625 for an equivalent 800 m³/h flow.

Step 2:

Using the look up tables below select a filter to pass the equivalent flow in this case a 2"H CSF16 or CSF16T with a maximum flowrate or 1080 m³/h

CSF16 and CSF16T air sizing table

Please note that the flowrates displayed on the CSF16 and CSF16T air sizing table are based on an air pressure of 7 bar g.

	DN8	DN10	DN15	DN20	DN25	DN32	DN40	DN50L
Size of unit	¼"	⅜"	½"	¾"	1"	1¼"	1½"	2"L
Maximum flowrate m ³ /h	60	90	120	180	270	360	480	720

	DN50H	DN65	DN80L	DN80H	DN100L	DN100H	DN150
Size of unit	2"H	2½"	3"L	3"H	4"L	4"H	6"
Maximum flowrate m ³ /h	1080	1440	1920	2880	4320	5760	7680

Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P185-02) which is supplied with the product.

How to order

The following information must be specified when ordering a Spirax Sarco CSF filter:

Compressed air flowrate	m ³ /h	Size	DN or NPS (")
Compressed air flowrate	bar	Pipe connections	EN, ASME, BSP or NPT
Allowable pressure drop bar	(0.07 bar maximum recommended)	Housing seal/element seal material	
Housing material	1.4301 or 1.4404		

Note: For DN50 and DN80 high capacity version denoted by 'H' and low capacity by 'L'. For a 1.4404 housing version, the suffix 'T' must be added to the nomenclature e.g. CSF16T.

Supply

The CSF16 and CSF16T are supplied in two parts:

1. The filter housing head and bowl with housing seal packed in one carton.
2. The filter element complete with filter element seals (2 off).

Note: The job of the filter is to remove (and retain) unwanted contamination. In time, the filter element will become saturated. To ensure a minimum downtime, we recommend that a spare filter element set is ordered at the same time as the CSF16 and CSF16T filter housing.

Example:

1 off Spirax Sarco DN20 CSF16 to pass compressed air at 4 bar g. Housing to be 1.4301 having NPT connections element with EPM body seal.

1 off CSF16-A borosilicate depth filter element.

Spare parts

The spare parts available are shown in solid outline. Parts drawn in a grey line are not supplied as spares.

Available spares

CSF16-A filter element kit	5, 6 (2 off)
Seal kit	3, 6 (please see the table below for quantities)

Seal kit contents

Unit size	Housing seal (Part number 3)	Element seals (Part number 6)
DN8 - DN80	1	2
DN100	1	6
DN150	1	6

How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size and type of filter housing.

Example: 1 off Seal kits for a Spirax Sarco DN150 CSF16 clean air filter.

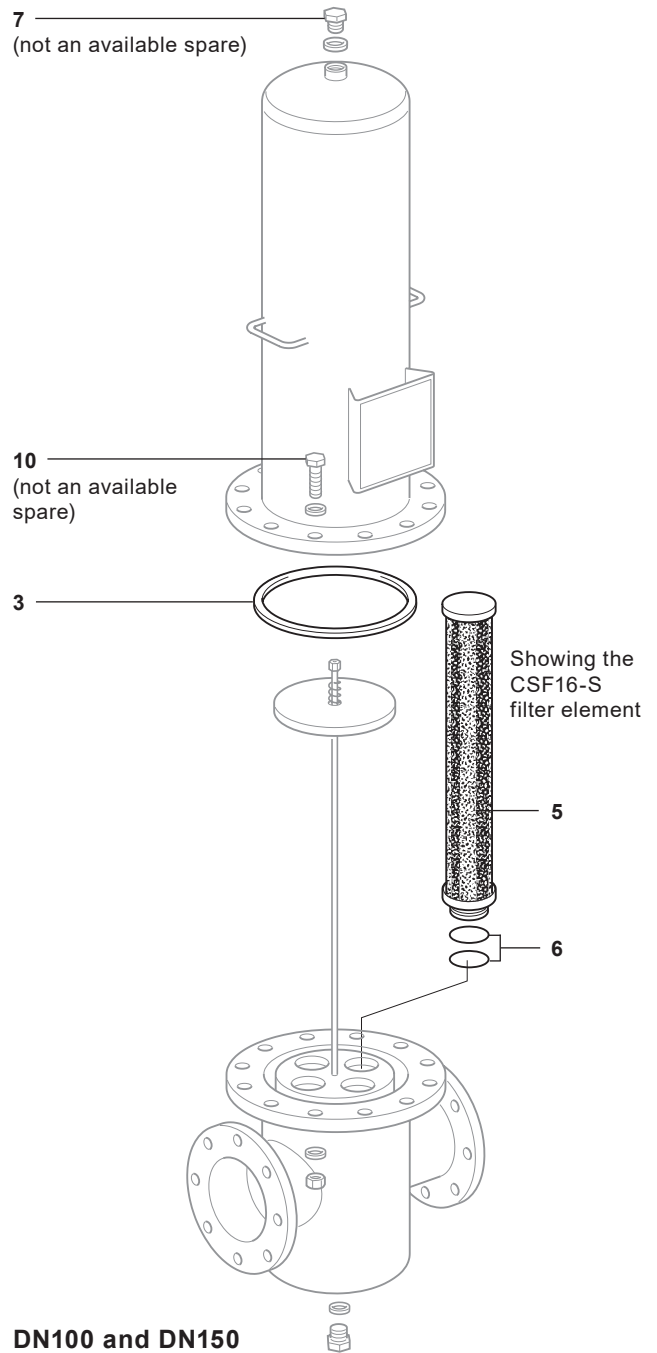
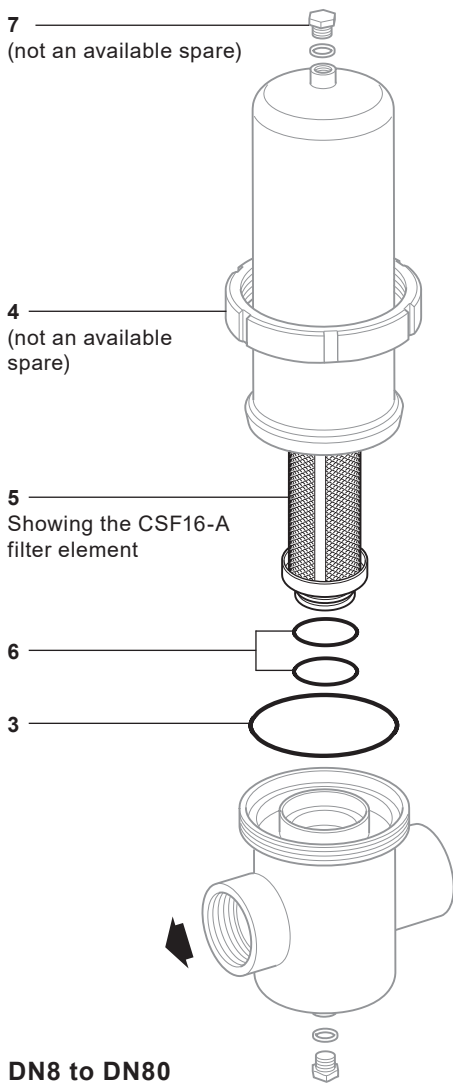




Table 1 Recommended tightening torques

Item	Part	 or 	N m
4		use C spanner	As required
7	DN8 - DN80	¼" BSP	As required
	DN100 and DN150	1" BSP	As required
10	DN100	A/F 30 M20	180
	DN150	A/F 30 M20	260