



ISO 9001-2008 CERTIFIED COMPANY



**Compressed Air & Gas Filter**



**NAND SHYAM**  
**ENGINEERING CORPORATION**

[www.nsecindia.com](http://www.nsecindia.com)

## You Need pure compressed air & gas

If compressed air & gas is the energy source behind your production, you depend on its economic and efficient operation. Every cubic metre of air contains as many as 140 million particles of dirt. These particles, mixed with water vapour and hydrocarbon vapour from unburnt fuel and industrial processes, are drawn into the compressor and concentrated under compression. After compression, all these contaminants can combine in the piping system with condensed moisture, pipe scale and rust, creating a damaging abrasive emulsion. NSEC has developed a perfectly matched filter system, which reduces all type of contamination right from the source according to your individual requirement.

## NSEC grade to meet your compressed air quality needs.

- P** – Grade : Particulate filter for dust protection, removal particles down to 3 micron including liquid (water and oil ) and solid particles.
- Z** – Grade : Coalescing filters for general purpose protection for removal of particles down to 1 micron including coalesced liquid water and oil, providing maximum remaining oil aerosol content of 0.5 mg/m<sup>3</sup> @ 20° C.
- X** – Grade : High efficiency coalescing filter for removal of particles down to 0.01 micron including coalesced liquid water and oil, providing maximum remaining oil aerosol content of 0.01 mg/m<sup>3</sup> @ 20° C. ( Precede grade X with Grade Z )
- S** – Grade : Super fine High efficiency coalescing filter for removal of particles down to 0.01 micron including coalesced liquid water and oil, providing maximum remaining oil aerosol content of 0.001 mg/m<sup>3</sup> @ 20° C.
- C** – Grade : Activated carbon filter for removal oil vapour and hydrocarbon odour giving a maximum remaining oil content of ≤ 0.003 mg/m<sup>3</sup> @ 20° C ( Precede C with Grade Z & X )

## NSEC filter housing

NSEC supplies Microfilters in two housing formats :

### G-Housings with threaded connection from G 1/4 to G 3

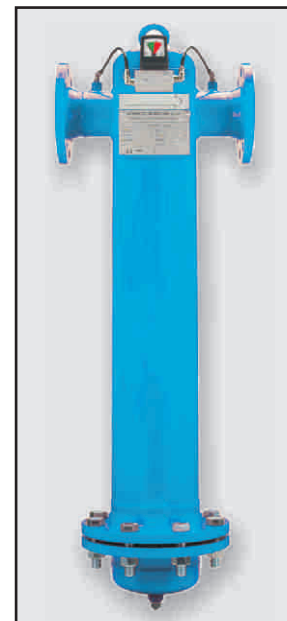
- High grade aluminium casting
- Alu-chromed in and outside to prevent corrosion
- Powder coated to ensure top outside quality finish

### F-Flanged housings DN 80 to DN 300

- Welded mild steel vessels
- Sand blasted, cleaned and de-greased
- Polyester primed in and
- Acrylic paint outside

Both types of housings are built to the highest quality standards and have a double surface protection. The aluminium housings with aluchrome and epoxy powder coating and the steel housings with intensive cleaning, polyester priming and acrylic paint.

Thanks to the attention to quality surface treatment, NSEC offers a 10 year guarantee on the filter housings. This gives confidence to the user!

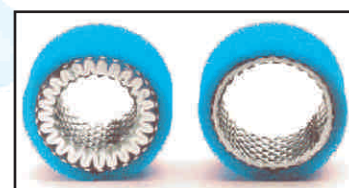


## NSEC pleated filter elements

NSEC filters use machine pleated elements, which form the heart of the filter. These pictures well illustrate the benefits of a pleated filter. They have 3 to 4.5 times the filter surface area of a wrapped filter and have a consistent and reproducible quality.

Pleated means following benefits

- Lower Velocity
- Lower differential pressure
- Better separation
- High dirt holding capacity
- Lower operating cost



Pleated

Wrapped

Differential Pressure Gauge

Tierod Connection

Aluminium Housing

Pleated Filter Element

Automatic Condensate Drain

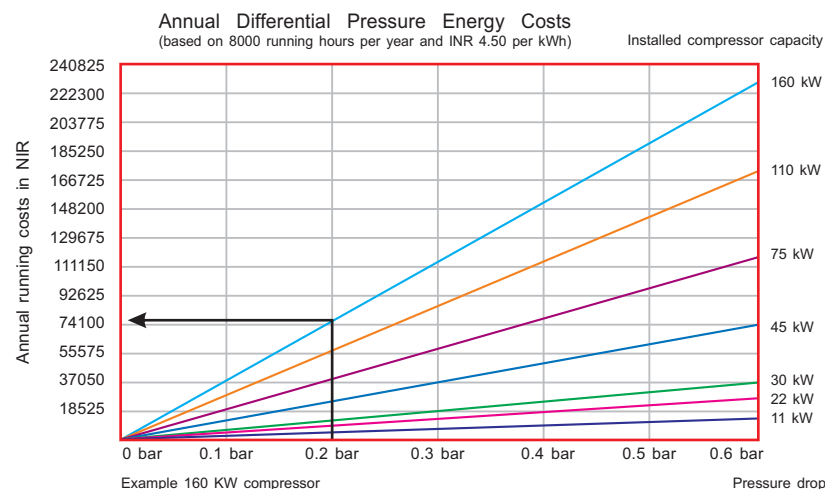
Manual Drain Valve



## COMPRESSED AIR QUALITY TO ISO 8573.1

Class	Solid Particles Maximum number of practicles per m <sup>3</sup>			Water Pressure Dewpoint°C	Oil (Ind. Vapour) mg/m <sup>3</sup>
	0.1-0.5 micron	0.5-1.0 micron	1.0-5.0 micron		
1	100	1	0	-70	0.01
2	10,000	1,000	10	-40	0.1
3	-	10,000	500	-20	1
4	-	-	1,000	3	5
5	-	-	20,000	7	-
6	-	-	-	10	-

The advantages quickly pays for themselves. No matter what the capacity of the system pleated filter element save considerable electrical costs. The graph gives an example of 160 kW compressor. NSEC pleated filters can save INR 74,100 per annum compared to a conventional wrapped element.



## Filter Technical Data

	Model	Connect	Flow		Max. Oper. Pressure		App. Weight	Dimensions					Elements
			cfm	M3/hr	bar g	psi g		A	B	C	D	E	
<b>T H R E A D E D</b>	G 002 (grade)	1/2"	23	40	16	232	0.9	87	151	21	60	32	N 002 (grade)
	G 003 (grade)	1/2"	34	58	16	232	0.95	87	192	21	75	32	N 003 (grade)
	G 005 (grade)	1/2"	47	79	16	232	0.95	87	192	21	90	32	N 005 (grade)
	G 007 (grade)	1/2"	70	119	16	232	1.3	87	263	21	90	32	N 007 (grade)
	G 009 (grade)	3/4"	116	198	16	232	3.6	130	285	43	135	32	N 009 (grade)
	G 011 (grade)	1"	201	342	16	232	4.1	130	380	43	235	32	N 011 (grade)
	G 012 (grade)	1 1/2"	318	540	16	232	4.6	130	482	43	335	32	N 012 (grade)
	G 013 (grade)	1 1/2"	470	800	16	232	6.7	130	692	43	525	32	N 013 (grade)
	G 014 (grade)	2"	616	1047	16	232	8.9	162	686	48	520	140	N 014 (grade)
	G 017 (grade)	2 1/2"	923	1570	16	232	11	162	937	48	770	140	N 017 (grade)
	G 018 (grade)	3"	1324	2250	16	232	26.2	252	910	74	610	140	N 018 (grade)
	G 019 (grade)	3"	1645	2797	16	232	27.7	252	1060	74	760	140	N 019 (grade)
<b>F L A N G E D</b>	F 017 (grade)	DN 80	923	1570	16	232	100.5	449	1093	176	580	225	N 017 (grade)
	F 019 (grade)	DN 80	1324	2400	16	232	135.2	503	1230	211	580	225	N 018 (grade)
	F 020 (grade)	DN 100	1645	2900	16	232	136	503	1230	211	580	225	N 019 (grade)
	F 025 (grade)	DN 100	1847	3259	16	232	220.6	652	1286	259	580	225	N 017 (grade)(2)
	F 030 (grade)	DN 150	2523	4350	16	232	222.1	652	1286	259	580	225	N 017 (grade)(3)
	F 040 (grade)	DN 150	3335	5800	16	232	285	686	1394	299	580	225	N 017 (grade)(4)
	F 060 (grade)	DN 200	5540	8700	16	232	352.3	757	1416	312	580	225	N 017 (grade)(6)
	F 080 (grade)	DN 200	6670	11600	16	232	438.3	805	1536	314	580	225	N 017 (grade)(8)
	F 100 (grade)	DN 200	8337	14500	16	232	523.4	856	1581	360	580	225	N 017 (grade)(10)
	F 120 (grade)	DN 250	10000	17400	16	232	749	960	1718	420	610	225	N 017 (grade)(12)
	F 160 (grade)	DN 250	13340	23200	16	232	763.4	960	1718	420	610	225	N 017 (grade)(16)
	F 200 (grade)	DN 300	16675	29000	16	232	833	944	1732	445	610	225	N 017 (grade)(20)

## Capacity Correction Factor Various Operating Pressure

Pressure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Factor	0.25	0.38	0.50	0.65	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.63	1.75	1.88	2.00	2.13

## Filter Element Performance

Filter Grade	Particle Removal Down to	Oil Removal Down to*	Nominal Initial Pressure Drop
P	3 micron	-	0.03 bar g
Z	1 micron	0.1 mg/m <sup>3</sup>	0.05 bar g
X	0.01 micron	0.01 mg/m <sup>3</sup>	0.09 bar g
S	0.01 micron	0.001 mg/m <sup>3</sup>	0.10 bar g
C	-	0.003 mg/m <sup>3</sup>	0.10 bar g

\* at 20°C

## General Information

Maximum recommended operating temperature of 60°C (high temperature range is also available)

Minimum recommended operating temperature 1°C.

Maximum recommended operating pressure of 16 bar g.

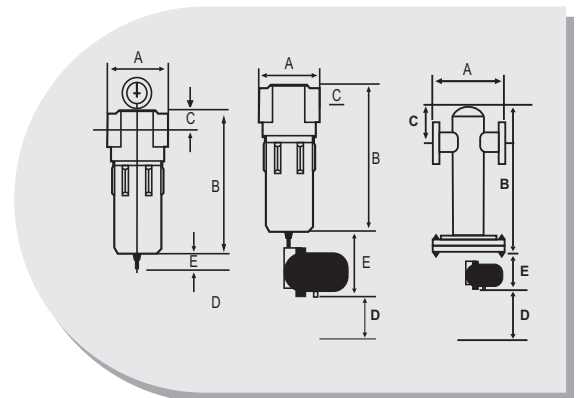
Maximum recommended pressure differential for element change is 0.6 bar g. (Except Grade C)

Material for G-Type filters housing is aluminium. Material for F-Type filters is steel.

Filters come complete with auto drain. Gauges are optional.

The Weight of the compressed air filters does not include packaging and gauge.

**High Pressure Filters also available upto 400 bars.**



## FILTRATION TECHNOLOGY



Water Separator



High Pressure Filter



Compatible Filter Elements

## DRYER TECHNOLOGY



Refrigerated Air Dryer

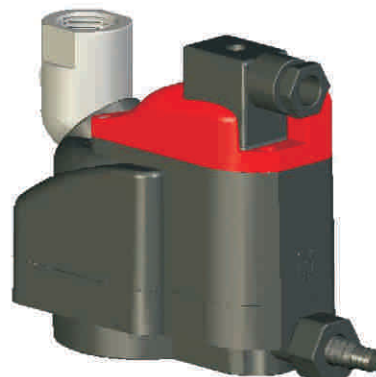


Heatless Air Dryer

## CONDENSATE TECHNOLOGY



Drain Valve  
NS-120



Drain Valve  
ND-3000



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All performance parameters are as per IS standard

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