



positive displacement



CATALOG  
#1

COMPRESSED AIR PREPARATION  
FILTERS FOR COMPRESSED AIR LINES  
**DFF-series**

This Catalogue is valid from May 2021. All previous catalogues lose their validity with the publication of the new catalogue. Technical characteristics, specifications and details published in this catalogue are subject to change without notice.

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## CONTAMINANTS AND PURITY CLASSES

The normative document establishing the procedure for the classification of the main types of contaminants in compressed air systems is ISO 8573-1:2010 Compressed air -Part 1: Contaminants and purity classes.

This standard specifies purity classes of compressed air in respect of particles, water and oil regardless of the source of the compressed air.

The standard specifies purity classes for each type of contamination in the form of three separate tables. In

practice, manufacturers of compressors and compressed air treatment equipment, combine the three tables into one for ease of use, as shown below:

**Combined table Compressed air purity classes**

ISO8573-1:2010 CLASS	Solid Particulate				Water		Oil
	Maximum number of particulates per m³			Mass Concentration mg/m³	Vapour Pressure Dewpoint	Liquid g/m³	Total Oil (aerosol liquid and vapour)
	0,1 - 0,5 micron	0,5 - 1 micron	1 - 5 micron				mg/m³
0	As specified by the equipment user or supplier and more stringent than Class 1						
1	≤20.000	≤400	≤10	-	≤-70 °C	-	0,01
2	≤400.000	≤6.000	≤100	-	≤-40 °C	-	0,1
3	-	≤90.000	≤1.000	-	≤-20 °C	-	1
4	-	-	≤10.000	-	≤+3 °C	-	5
5	-	-	≤100.000	-	≤+7 °C	-	-
6	-	-	-	≤ 5	≤+10 °C	-	-
7	-	-	-	5-10	-	≤ 0,5	-
8	-	-	-	-	-	0,5-5	-
9	-	-	-	-	-	5-10	-
X	-	-	-	>10	-	>10	>10

## Determination of the purity class of compressed air according to ISO 8573-1:2010

The combined table «Compressed air purity classes» is grouped according to three main types of contamination: Solid particulates, Water and Oil. The different levels of contamination, contained in one cubic meter of compressed air, are assigned purity classes.

Essentially, the purity classes characterize the quality of the compressed air. When using ISO 8573-1:2010 to determine the required purity class for compressed air, the following designation is used:

ISO 8573-1:2010 Class A: B: C

**ISO 8573-1:2010 Class A: B: C****A - the purity class for solid particles****B - the purity class for water (liquid, vapor and aerosol)****C - the purity class for oil (liquid, vapor and aerosol)**

If a purity class is not specified for any type of contamination A, B or C, the corresponding letter is changed to a dash. In the example below, there is no classification for the water content (liquid, vapor and aerosol) in the compressed air:

ISO 8573-1:2010 Class A: - : C

If the level of contamination corresponds to class X, then the highest concentration of contamination should be indicated in brackets. In the example below, the concentration of water in the liquid phase is 15 g / m<sup>3</sup>:

ISO 8573-1:2010 Class A: X (15): C

**Example:**

The company requires compressed air prepared according to ISO 8573-1:2010 Class 1: 2: 1. The selection of equipment should be made according to the following criteria:

**Class****1****purity class for solid particles:**

The maximum permissible number of particles with a size of 0.1 - 0.5 micron is 20,000 particles, with a size of 0.5 - 1 micron is 400 particles, with a size of 1 - 5 micron is 10 particles.

**Class****2****purity class for total water content (liquid, vapor and aerosol):**

Dew point temperature -40°C or lower; no water in the liquid phase allowable in a cubic metre of compressed air.

**Class****1****purity class for the total oil content (liquid, vapor and aerosol):**

No more than 0.01 mg of the total oil content (aerosol, liquid and vapour) allowable in a cubic metre of compressed air.

## AIR FILTERS for compressed air lines DFF-series

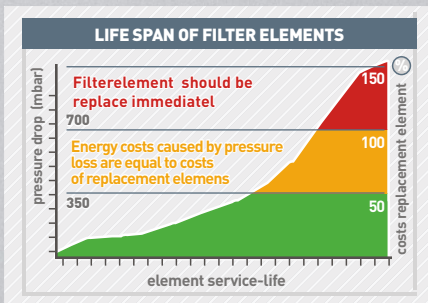
DFF-series Air Filters supplied ready-to-use, assembled with a filter element, and are a reliable and cost effective method of compressed air preparation.

### Technical data

<b>T</b>	Min. / Max. operating temperature	+2°C / +60°C
<b>P</b>	Min. / Max. operating pressure	0,3 bar / 16 bar



### Life span of filter elements



For grades P, M и S: A pressure drop of 350 mbar increases energy costs commensurate with the cost of a new filter element. When the pressure is 400 mbar (maximum) a replacement of filter element is required.

For grade A: A ROCI indicator should be used to monitor the total residual oil content in the compressed air. If the total oil content is indicated above the permissible level, the replacement of the filter element is required.

## Advantages



Modular construction. New filter head design enables in-line installation of filters and separators to achieve the required ISO filtration class according to ISO 8573-1:2010.

New air filters design: aluminum body (A), filter element (B), drain valve (C), status indicator (D), wide range of thread sizes from 3/8" to 1.1/2", reliable sealing with O-rings.

### Aluminum body (A)

- Light aluminum body with optimized Dynamic Flow shape for minimum pressure loss.
- Durable powder coating.
- Filter bowl with an integrated hexagonal wrench adapter. Quick and easy filter element change.
- Special internal shape to prevent air eddies. Condensate does not exude back to the line by vortex flow.

Filter element (B)

Drain valve (C)

Status indicator (D)



Filter elements with different filtering grades. High filtration level with minimal pressure loss. Top-quality filtering medium. Reliable thread connection with filter body. Air-tight gasket connections. Full degree of filtration, starting from 5% of nominal pressure.



Built-in reliable maintenance-free float drain valve.



Built-in differential manometer or filter element status indicator.

## Filters specification



Compressed air filter DFF-....-P: Solid particles

Coarse filtration of dry air, solid particles. Cellulose-based filter media, pleated.

Standard delivery:

Status indicator (DFF 012-025) or differential manometer (DFF 036-125), automatic drain valve.

To be preceded by:

Adsorption dryer ADM/ADX, Activated carbon tower ACM/ACT.

### UPPER END CAP

Upper end cap holds filter medias together in compact form.

### INTERNAL NONWOVEN LAYER

Internal nonwoven layer gives basic protection of filter media.

### CELLULOSE-BASED FILTER MEDIA, PLEATED

Pleated filter media provides significant larger surface filter area than wrapped and lower pressure drop.

### LOWER END CAP

Lower end cap assures reliable cartridge fitting and binding of filter media.

RELIABLE THREAD CONNECTION WITH FILTER BODY

### SEALING O-RING

Ensures reliable tightness between filter head and filter element.

### INNER STAINLESS STEEL MESH

Stainless steel expanded mesh supports filtration media and give them stability.

### EXTERNAL STAINLESS STEEL MESH

Stainless steel expanded mesh supports filtration media and give them stability.

Technical data	Description
Grade	P
Filter type	Solid particles
Particle removal*, micron	5
Max. remaining oil content at 20°C (total oil)*, mg/m <sup>3</sup>	-
Maximum operating temperature, °C	65
Pressure loss at nominal air flow - new filter element, mbar	10
Pressure loss at nominal air flow - element change, mbar	350
Change element every	12 months

\* Nominal conditions and test procedures according to ISO 8573

## Table of models

Table of models				Filter element (spare part)	
Article	Model	Screw connection	Air flow (m³/min)*	Article	Model
14201101	DFF-012-P	3/8"	1,2	14222101	EL-012-P
14201102	DFF-016-P	1/2"	1,6	14222102	EL-016-P
14201103	DFF-025-P	1/2"	2,5	14222103	EL-025-P
14201104	DFF-036-P	3/4"	3,6	14222104	EL-036-P
14201105	DFF-047-P	1"	4,7	14222105	EL-047-P
14201106	DFF-060-P	1"	6,0	14222106	EL-060-P
14201107	DFF-072-P	1.1/4"	7,2	14222107	EL-072-P
14201108	DFF-085-P	1.1/2"	8,5	14222108	EL-085-P
14201109	DFF-125-P	1.1/2"	12,5	14222109	EL-125-P
14201110	DFF-152-P Twin	3"	15,2	2 x 14222105	2 x EL-047-P
14201111	DFF-187-P Twin	3"	18,7	2 x 14222106	2 x EL-060-P
14201112	DFF-230-P Twin	3"	23,0	2 x 14222107	2 x EL-072-P
14201113	DFF-280-P Twin	3"	28,0	2 x 14222108	2 x EL-085-P
14201114	DFF-360-P Twin	3"	36,0	2 x 14222109	2 x EL-125-P

## Operating pressure correction

The above table is designed based on the performance of the filters at 7 bar working pressure. To calculate the performance of the filters with a different operating pressure, please use the following correcting coefficients:

Operating pressure, (bar)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Correction coefficient	0,38	0,5	0,63	0,75	0,88	1	1,13	1,25	1,38	1,5	1,63	1,75	1,88	2,00	2,13





## Compressed air filter DFF-....-M: Coalescing

Micro-Filtration aerosols of oil & water and solid particles. Glass microfiber filter media, pleated, outer drainage layer.

### Standard delivery:

Status indicator (DFF 012-025) or differential manometer (DFF 036-125), automatic drain valve.

### To be preceded by:

Cyclone Separator DFS.



Technical data	Description
Grade	M
Filter type	Micro-filtration aerosols of oil & water, solid particles
Particle removal*, micron	0,1
Max. remaining oil content at 20°C (total oil)*, mg/m <sup>3</sup>	<0,1
Maximum operating temperature, ° C	65
Pressure loss at nominal air flow - new filter element, mbar	50
Pressure loss at nominal air flow – element change, mbar	350
Change element every	12 months

\* Nominal conditions and test procedures according to ISO 8573

## Table of models

Table of models				Filter element (spare part)	
Article	Model	Screw connection	Air flow (m³/min)*	Article	Model
14201301	DFF-012-M	3/8"	1,2	14222301	EL-012-M
14201302	DFF-016-M	1/2"	1,6	14222302	EL-016-M
14201303	DFF-025-M	1/2"	2,5	14222303	EL-025-M
14201304	DFF-036-M	3/4"	3,6	14222304	EL-036-M
14201305	DFF-047-M	1"	4,7	14222305	EL-047-M
14201306	DFF-060-M	1"	6,0	14222306	EL-060-M
14201307	DFF-072-M	1.1/4"	7,2	14222307	EL-072-M
14201308	DFF-085-M	1.1/2"	8,5	14222308	EL-085-M
14201309	DFF-125-M	1.1/2"	12,5	14222309	EL-125-M
14201310	DFF-152-M Twin	3"	15,2	2 x 14222305	2 x EL-047-M
14201311	DFF-187-M Twin	3"	18,7	2 x 14222306	2 x EL-060-M
14201312	DFF-230-M Twin	3"	23,0	2 x 14222307	2 x EL-072-M
14201313	DFF-280-M Twin	3"	28,0	2 x 14222308	2 x EL-085-M
14201314	DFF-360-M Twin	3"	36,0	2 x 14222309	2 x EL-125-M

## Operating pressure correction

The above table is designed based on the performance of the filters at 7 bar working pressure. To calculate the performance of the filters with a different operating pressure, please use the following correcting coefficients:

Operating pressure, (bar)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Correction coefficient	0,38	0,5	0,63	0,75	0,88	1	1,13	1,25	1,38	1,5	1,63	1,75	1,88	2,00	2,13



## Compressed air filter DFF-....-S: Coalescing

Super-Filtration aerosols of oil & water and solid particles. Glass microfiber filter media, pleated, outer drainage layer.

### Standard delivery:

Status indicator (DFF 012-025) or differential manometer (DFF 036-125), automatic drain valve.

### To be preceded by:

Coalescing filter grade M.



Technical data	Description
Grade	S
Filter type	Super-filtration aerosols of oil & water, solid particles
Particle removal*, micron	0,01
Max. remaining oil content at 20°C (total oil)*, mg/m <sup>3</sup>	<0,01
Maximum operating temperature, ° C	65
Pressure loss at nominal air flow - new filter element, mbar	80
Pressure loss at nominal air flow – element change, mbar	350
Change element every	12 months

\* Nominal conditions and test procedures according to ISO 8573

## Table of models

Table of models				Filter element (spare part)	
Article	Model	Screw connection	Air flow (m³/min)*	Article	Model
14201401	DFF-012-S	3/8"	1,2	14222401	EL-012-S
14201402	DFF-016-S	1/2"	1,6	14222402	EL-016-S
14201403	DFF-025-S	1/2"	2,5	14222403	EL-025-S
14201404	DFF-036-S	3/4"	3,6	14222404	EL-036-S
14201405	DFF-047-S	1"	4,7	14222405	EL-047-S
14201406	DFF-060-S	1"	6,0	14222406	EL-060-S
14201407	DFF-072-S	1.1/4"	7,2	14222407	EL-072-S
14201408	DFF-085-S	1.1/2"	8,5	14222408	EL-085-S
14201409	DFF-125-S	1.1/2"	12,5	14222409	EL-125-S
14201410	DFF-152-S Twin	3"	15,2	2 x 14222405	2 x EL-047-S
14201411	DFF-187-S Twin	3"	18,7	2 x 14222406	2 x EL-060-S
14201412	DFF-230-S Twin	3"	23,0	2 x 14222407	2 x EL-072-S
14201413	DFF-280-S Twin	3"	28,0	2 x 14222408	2 x EL-085-S
14201414	DFF-360-S Twin	3"	36,0	2 x 14222409	2 x EL-125-S

## Operating pressure correction

The above table is designed based on the performance of the filters at 7 bar working pressure. To calculate the performance of the filters with a different operating pressure, please use the following correcting coefficients:

Operating pressure, (bar)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Correction coefficient	0,38	0,5	0,63	0,75	0,88	1	1,13	1,25	1,38	1,5	1,63	1,75	1,88	2,00	2,13



## Compressed air filter DFF-....-A: Activated carbon

Oil removal filters, to adsorb vapour and gaseous hydrocarbons. Filter media impregnated with activated carbon, rolled.

### Standard delivery:

Venting ball valve.

### Optional equipment:

Residual oil content indicator ROCI.

### To be preceded by:

Coalescing filter grade S.



Technical data	Description
Grade	A
Filter type	oil vapour and gaseous hydrocarbons
Particle removal*, micron	-
Max. remaining oil content at 20°C (total oil)*, mg/m <sup>3</sup>	<0,005
Maximum operating temperature, ° C	45
Pressure loss at nominal air flow - new filter element, mbar	60
Pressure loss at nominal air flow – element change, mbar	According to the indicator ROCI
Change element every	6 months

\* Nominal conditions and test procedures according to ISO 8573

## Table of models

Table of models				Filter element (spare part)	
Article	Model	Screw connection	Air flow (m³/min)*	Article	Model
14201501	DFF-012-A	3/8"	1,2	14222501	EL-012-A
14201502	DFF-016-A	1/2"	1,6	14222502	EL-016-A
14201503	DFF-025-A	1/2"	2,5	14222503	EL-025-A
14201504	DFF-036-A	3/4"	3,6	14222504	EL-036-A
14201505	DFF-047-A	1"	4,7	14222505	EL-047-A
14201506	DFF-060-A	1"	6,0	14222506	EL-060-A
14201507	DFF-072-A	1.1/4"	7,2	14222507	EL-072-A
14201508	DFF-085-A	1.1/2"	8,5	14222508	EL-085-A
14201509	DFF-125-A	1.1/2"	12,5	14222509	EL-125-A
14201510	DFF-152-A Twin	3"	15,2	2 x 14222505	2 x EL-047-A
14201511	DFF-187-A Twin	3"	18,7	2 x 14222506	2 x EL-060-A
14201512	DFF-230-A Twin	3"	23,0	2 x 14222507	2 x EL-072-A
14201513	DFF-280-A Twin	3"	28,0	2 x 14222508	2 x EL-085-A
14201514	DFF-360-A Twin	3"	36,0	2 x 14222509	2 x EL-125-A

## Operating pressure correction

The above table is designed based on the performance of the filters at 7 bar working pressure. To calculate the performance of the filters with a different operating pressure, please use the following correcting coefficients:

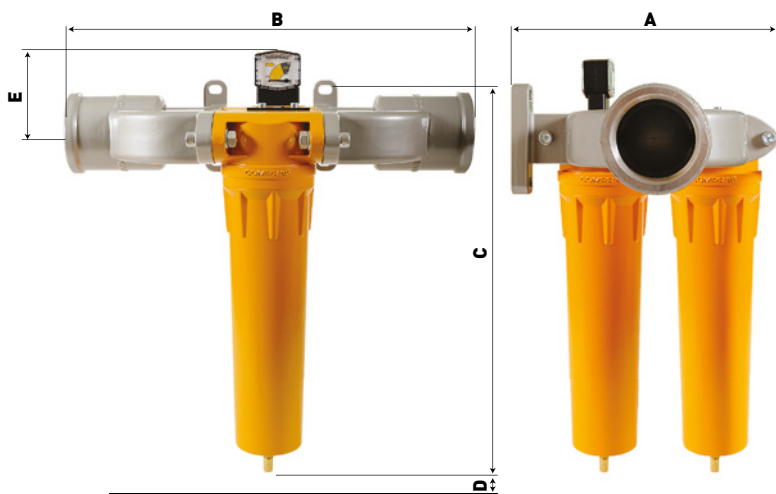
Operating pressure, (bar)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Correction coefficient	0,38	0,5	0,63	0,75	0,88	1	1,13	1,25	1,38	1,5	1,63	1,75	1,88	2,00	2,13

## General information

## Dimensions and weight



Model	Screw connection	Dimensions (mm)					Weight (kg)
		A	B	C	D	E	
DFF-012	3/8"	88	88	187	80	35	0,9
DFF-016	1/2"	88	88	256	80	35	1,0
DFF-025	1/2"	106	106	278	100	35	1,5
DFF-036	3/4"	106	106	278	100	65	1,5
DFF-047	1"	125	125	252	120	65	2,3
DFF-060	1"	125	125	352	140	65	2,6
DFF-072	1.¼"	125	125	352	140	65	2,6
DFF-085	1.½"	125	125	450	160	65	3,4
DFF-125	1.½"	160	160	450	160	65	3,4



Model	Screw connection	Dimensions (mm)					Weight (kg)
		A	B	C	D	E	
DFF-152 Twin	3"	330	530	435	140	115	10,5
DFF-187 Twin	3"	330	530	435	140	115	11,0
DFF-230 Twin	3"	330	530	435	140	115	11,6
DFF-280 Twin	3"	330	530	570	160	115	12,4
DFF-360 Twin	3"	330	530	570	160	115	13,5



## Optional equipment

## ROCI RESIDUAL OIL contest indicator



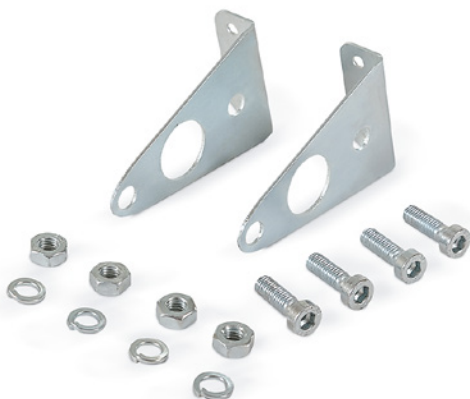
The ROCI indicator is intended for indicative control of the total residual oil content in compressed air. Any oil in the liquid or aerosol form present in the compressed air causes a proportional color indication in indicator tube.

The ROCI indicator is calibrated for an evaluation range of 0.01 - 30.0 mg/m<sup>3</sup>.

### Technical data ROCI

Article	Description
51202100	ROCI, assy. with needle valve and indicator tube, G1/4" other thread
51202101	Spare indication tube

## WALL MOUNTING SETS



### Technical data

Article	Description
14200181	Wall mounting set 012-016
14200182	Wall mounting set 025-036
14200183	Wall mounting set 047-125

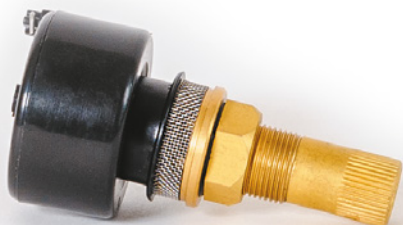
## CONNECTION SETS



### Technical data

Article	Description
14200184	Connection set 012-016
14200185	Connection set 025-036
14200186	Connection set 047-125

## AUTOMATIC CONDENSATE DRAIN



### Technical data

Article	Description
13300035	DRA Automatic condensate drain, internal

## ADAPTER SET, for external condensate drain valve connection



### Technical data

Article	Description
14200190	Adapter set, with ball valve, 1/2" inner thread



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