Lloyd's Register

Current issue date:	2 September 2020	Original approval(s):
Expiry date:	31 December 2022	ISO 14001 - 1 January 2005
Certificate identity number:	10297126	ISO 45001 - 2 September 2020
		ISO 9001 - 9 December 2002

Certificate of Approval

This is to certify that the Management System of:

Atlas Copco Romania Srl

Sos, Bucuresti-Ploiesti Km 13,2, 075100 Bucharest (Otopeni Iilofov), Romania

has been approved by Lloyd's Register to the following standards:

ISO 14001:2015, ISO 45001:2018, ISO 9001:2015

Approval number(s): ISO 14001 – 0019527-723, ISO 45001 – 0019525-080, ISO 9001 – 00014256-255

This certificate forms part of the approval identified by approval number: 0019527/ 0019525/ 0019526

The scope of this approval is applicable to:
ISO 14001:2015
Marketing, sales, design and service of air/gas compressors, generator sets and related products and services.
ISO 45001:2018
Marketing, sales, design and service of air/gas compressors, generator sets and related products and services.
ISO 9001:2015
Marketing, sales, design and service of air/gas compressors, generator sets and related products and services.

Digitally signed by Grabazei Alexandru
Date: 2021.08.26 11:43:19 EEST
Reason: MoldSign Signature
Location: Moldova

Paul Graaf

Area Operations Manager North Europe

Issued by: Lloyd's Register EMEA

for and on behalf of: Lloyd's Register Quality Assurance Limited

UKAS MANAGEMENT SYSTEMS
001

IBR LABORATORIES

Type test Certificate

Evaluation of the solid particle removal efficiency of Atlas Copco DD+/DDp+ or PD+/PDp+ filter

According to ISO12500-3:2009

Test report IBR JN: 12828A & 12828C

Report prepared for: Atlas Copco Airpower n.v.
Issue date of certificate: 26h October, 2012

PN for DD+/DDp+: 1 624 1829 09

PN for PD+/PDp+: 1 624 1829 07

	0.01 µm	0.1µm	0.5 µm	1 µm	5µm
DD+/DDp+	99.93%	99.92%	99.95%	99.998%	>99.999%
PD+/PDp+	99.995%	99.992%	99.997%	>99.999%	>99.999%

	MPPS	Efficiency at MPPS
DD+/DDp+	0.1 µm	99.92%
PD+/PDp+	0.06 µm	99.98%

Report Authorized By:

Susan H Goldsmith Managing Director

-

Note: Full report available upon request

IBR Laboratories 11599 Morrissey Rd Grass Lake MI USA 49240

140 anniversary
1872 - 2012

TÜVRheinland®
LGA
Genau. Richtig.

TÜV Rheinland LGA Products GmbH • 51105 Cologne • Germany

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Your correspondence
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Customer Service Center
for Products
Phone +49 911 655-5225

Mail service@de.tuv.com

Cologne, 05th March 2012

Type Test certificate
Evaluation of the residual aerosol oil content after an
Atlas Copco DD+ filter
Test report No.: 3047714

The Atlas Copco DD+ filters are measured under the test conditions according to ISO 12500-1:2007, the compressed air samples are analyzed according to the ISO 8573-2:2007 test method.

	Maximum residual aerosol oil content	Average wet pressure drop
DD+-filter	0.07 mg/m³	< 180 mbar

i. V.

Björn Koch

i. A.

Dr. rer. nat. Norbert Horlemann

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Industrie Service
Energie und Umwelt

TÜVRheinland®
Precisely Right.

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17 August 2015

Validation Certificate
Evaluation of the air purity class for total oil
after an Atlas Copco DD+ PD+ QDT filter train
Test report no.: 931 / 21229599/01

The Atlas Copco DD+ PD+ QDT filter train meets the requirements of air purity **class 1** for total oil, according to ISO 8573-1:2010, in a typical compressed air installation.

Details can be found in the full test report no.: 931/21229599/01

i. V. 

Dr. Walter Dormagen

i. A. 

Dr. Norbert Horlemann

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Managing Director
Marcus Staude

District Court
Cologne HRB 56171

1. **DECLARATIE DE CONFORMITATE CE**

2 Noi, Atlas Copco Airpower n.v., declaram pe proprie raspundere, ca produsul

3 Numele echipamentului: **Filtru de aer**

4 Tipul echipamentului: **DD/ DDp/ PD/ PDp/ QD (9-120)**

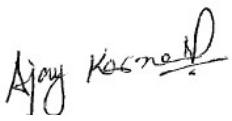
5 Seria echipamentului: **N/A**

6 ce cade sub incidenta articolului 12.2 a al Directivei CE 2006/42/CE, respecta Cerintele de Siguranta si pe cele Fundamentale pentru Sanatate ale Directivei Consiliului anterior mentionat, si amendamentele pentru armonizarea legislatiei Statelor Membre referitoare la Agregate.

7 Echipamentul este conform cu cerintele directivelor si a amendamentelor :

Directiva privind variatiile legilor Statelor Membre cu privire la		Standarde folosite	Comentarii
Echipament sub presiune	97/23/CE		X

8 Standardele tehnice folosite sunt mentionate in atasament

9	**Conformitatea specificatiilor**		**Conformitatea produsului**
10	**cu directivele**		**cu specificatiile**
11			
12	Emitent	Product engineering	Fabricant
14	Nume	Yves Goister	Ajay Karnail
15	Semnatura		
16	Data	26/04/2018	

Atlas Copco Airpower n.v. A company within the Atlas Copco Group

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Com. Reg. Antwerp 44651
V.A.T. 403.992.231

For info, please contact your local Atlas Copco representative

DIRECTIVA ECHIPAMENTELOR SUB PRESIUNE 97/23/CE

1 Estimari de conformitate urmarite: Vezi Tabelul. T1.

a. Categorie	b. Aplicabil	c. Modul	d. Org. Autorizat	e. Certificat de ref.
I	X	H	(1)	f:Ref: 0038/PED/2003004/A
II		H	(1)	
III		H	(1)	
IV		B	(2)	
		D	(1)	

(1) Notified body number 0038
Lloyd's Register Verification ltd
71 Fenchurch street
EC3M – 4 BF London
United Kingdom

(2) Notified body number 0343
Lloyd's Register Stoomwezen
P.O. Box 701
3000 A 3 Rotterdam
Netherlands

2. Descrierea echipamentului sub presiune care constituie ansamblul : vezi tabelul T.2

a. Echipamentul, subiect al Directivei 87/404/CEE privind rezervoare sub presiune simple, este exclus din directiva 97/23/CE in concordanta cu articolul I, sectiunea 3.3			
b. Echipamentul face parte din categoria I, in concordanta cu directiva 97/23/CE, si este integrat in masina si este exclus din articolul I, sectiunea 3.6.			
c. Echipamentul din articolul 3.3 al 97/23/CE este subiectul unei practici si testari ingineresti			
h. Cat. II si mai sus	d. **Echipament**		g. **Declaratie de conformitate atasat (include procedura de testare de conformitate urmata, identificarea standardelor)**
	e. **Descriere si/sau** f. **Componenta**		
	Accesorii de siguranta	Supapa de siguranta	
	Rezervor	Separator de ulei	

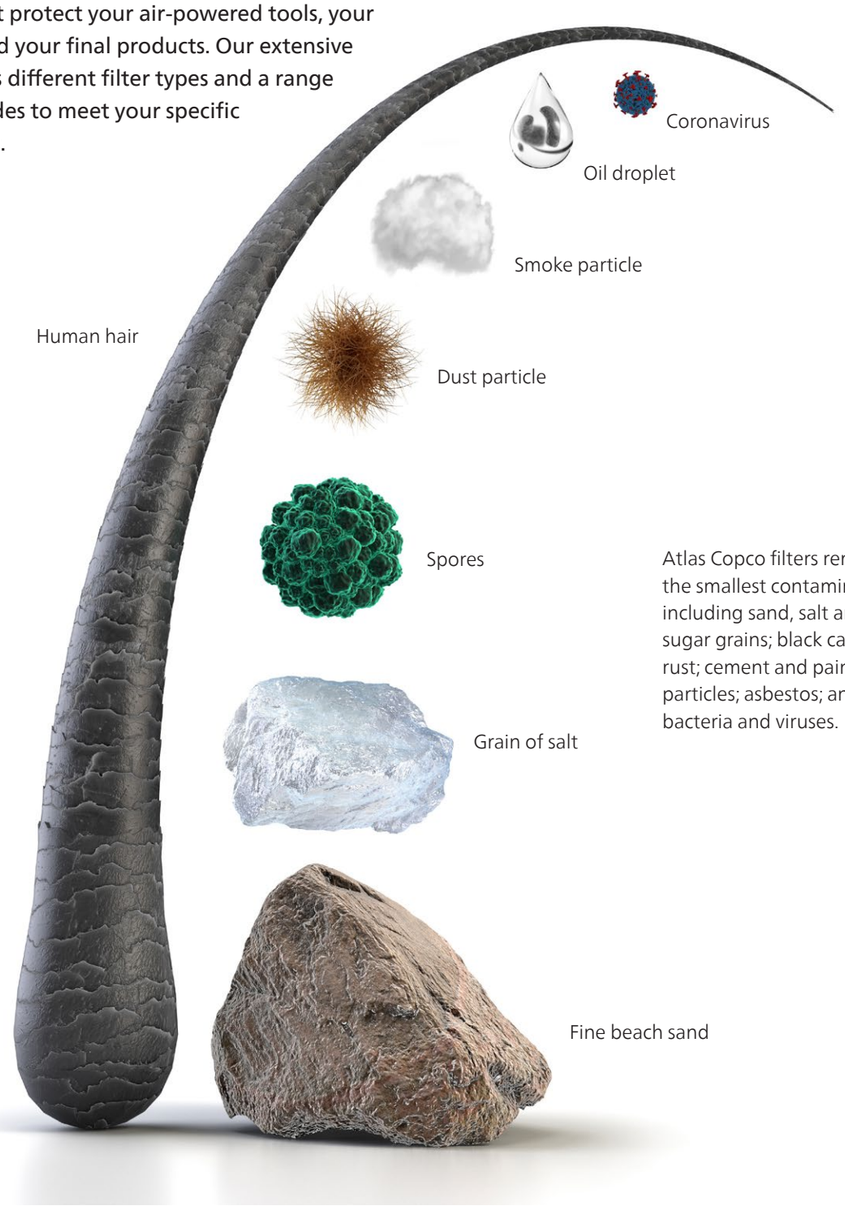
3 Standarde estimate folosite: vezi Tabelul 2

4 Standarde tehnice nationale si specificari pentru utilizare: vezi Tabelul 2

Compressed air filters

Committed to superior productivity

Untreated compressed air can be contaminated by dust, water and oil. This makes filtration a crucial component of your air system. Atlas Copco has developed filtration solutions that protect your air-powered tools, your processes, and your final products. Our extensive offer includes different filter types and a range of purity grades to meet your specific requirements.



Atlas Copco filters remove the smallest contaminants, including sand, salt and sugar grains; black carbon; rust; cement and paint particles; asbestos; and bacteria and viruses.

Unsurpassed filtration quality

In-house expertise

Because filtration is so important, Atlas Copco's dedicated engineering team works in close collaboration with universities, regulatory authorities and premium filter material suppliers. Our scientists and engineers are therefore knowledgeable on the latest advances and innovations in the industry. Every step of the engineering process is meticulously executed, from basic research to prototype designs and end-of-life analysis.

Rigorous quality control

To ensure top performance and reliability, all Atlas Copco filters are subjected to rigorous internal and external certification and quality control. Thanks to our testing facility, we conduct all certification in-house, including testing witnessed by independent parties. Capable of testing filters according to all relevant standards and under real-life conditions, our competence continues to grow with every new development in the filtration business.

Engineered and built in Europe

Our entire filter range is designed and produced in Atlas Copco's European facilities, using state-of-the art production lines and quality controls. This geographic proximity allows us to keep R&D, engineering, production, and testing close together and streamline their collaboration.

Certified peace of mind

FILTER APPROVALS

COMPANY CERTIFICATION

ACTIVE MEMBER OF

Atlas Copco's filters are certified to meet the following ISO standards:

- ISO 8573-1:2010: Compressed air - Contaminants and purity classes
- ISO 8573-2:2018: Compressed air - Test method for oil aerosol content
- ISO 8573-4:2019: Compressed air - Test method for particles
- ISO 8573-5: 2001: Compressed air - Test method for oil vapor and organic solvent content
- ISO 12500-1:2007: Filters for compressed air - Test methods - Oil aerosols
- ISO 12500-2:2007: Filters for compressed air - Test methods - Oil vapors
- ISO 12500-3:2009: Filters for compressed air - Test methods - Particulates

Advanced filtration technology

Filtration technology matters if you need constant air quality with low maintenance requirements. Over the years, Atlas Copco has innovated filter types, design, processes and media to give you best-in-class performance, reliability and lifetime.

Filtration technologies

Choose the best filtration technology for your application to improve your air system performance:

Wet particles: wrapped media

Wrapped media are known for their durability in wet and oil-contaminated environments. Our patented Nautilus technology combines multiple wrapped layers to offer constant air quality at the lowest pressure drop, even in the harshest working conditions.

Solid particles: pleated media

Pleating is the optimal technology for capturing dry particulates in compressed air. Pleated media have a large surface area and therefore ensure a longer filter service lifetime and lower pressure drop.

Oil vapors: macro-structured activated carbon

Macro-structured activated carbon has a larger surface compared to the typical carbon filter media, giving it a superior adsorption capacity and a steady performance over a longer time.

Water: cyclone

The use of centrifugal forces secures a proper separation of liquid water droplets in the air flow.

Anodized aluminum housing with powder coating to maximize corrosion protection

Element bottom cap (UD+, PD+ & DD+)

A patented drainage system facilitates the removal of oil from the filter element, eliminating the “wet band” at the bottom of the element that can compromise filter performance and lifetime.

Service indicator

To ensure constant air quality, the service indicator allows for an easy check of the filter’s running hours, differential pressure, and maintenance status. It can even send a remote alert.

Element top cap

The top cap guides the air flow optimally into the cartridge and to the outlet to reduce pressure drop and the overall energy use of the filter.

inPASS™ bypass

Atlas Copco’s revolutionary built-in bypass can be used to reroute the air during filter service to ensure an uninterrupted air flow. It’s an invisible invention that will give you big investment and operational savings:

- Service your filters at any time, even during working hours.
- Secured air flow for your production during maintenance.
- Reduced maintenance time as your air system doesn’t need to be shut down.
- Eliminates the huge cost of an external piping bypass.
- Lowers the risk of leakages, resulting in lower energy costs.

Strong and durable stainless-steel cylinders

Differently colored end caps to easily recognize the filtration grade

Easy-service float drain

Our non-stick float drain automatically expels all captured oil and water. To save you time and money, our drains can easily be serviced without removing the filter bowl. The threaded drain connection to the bowl also makes it easy to replace the float drain with an external manual or automatic drain.

Complete filtration

Dirt, water and oil are no match for Atlas Copco's filters. They are designed to remove one or more of the following contaminants:

- DIRT: dust, solid particles, rust particles, micro-organisms.
- WATER: condensed liquid water, water aerosols, acidic condensates.
- OIL: liquid oil, oil aerosol, hydrocarbon vapor.

Flanged design
6 grades
12 sizes
550 → 8,000 l/s
1,200 → 17,000 cfm

Threaded design
7 grades
14 sizes
7 → 630 l/s
14 → 1,335 cfm

Flanged design
850 → 1,100 l/s
1,801 → 2,331 cfm

Tower design
1 grade
9 sizes
20 → 1,800 l/s
42 → 3,814 cfm

20 bar / 290 psi
50 bar / 725 psi
100 bar / 1,450 psi
350 bar / 5,075 psi

Threaded design
5 grades
9 sizes
15 → 944 l/s
32 → 2,000 cfm

Threaded design
5 grades
11 sizes
9 → 520 l/s
19 → 1,102 cfm

Name	DDp+	PDp+	DD+	PD+	UD+	QD+	QDT+	H High-pressure			SFA Silicone-free		
Grade	Rough	Fine	Rough	Fine	Ultimate	Basic	Optimal	Rough & fine	Rough & fine	Basic	Rough & fine	Rough & fine	Basic
Contaminant	Dry dust		Oil aerosol/wet dust			Oil vapor							
	General applications							Special applications					

A solution for every application

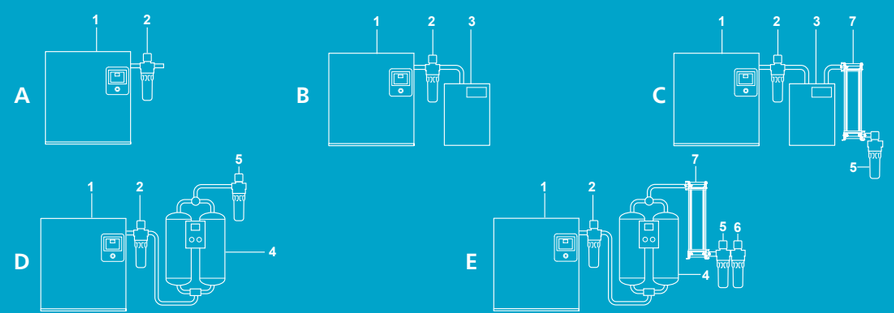
Depending on point of use and application, different compressed air purities might be needed. The table below shows the various ISO 8573-1:2010 air purity classes and the Atlas Copco filter and dryer-combinations that meet these classes.

ISO 8573-1:2010 class	Solid particles		Water	Oil (aerosol, liquid, vapor)	
	Wet conditions	Dry conditions			
0	As specified by the customer*			Oil-free compressor	
1	DD+ & PD+	DDp+ & PDp+	Desiccant dryer	DD+ & PD+	& QD+/QDT
	UD+			UD+	& QD+/QDT
2	DD+	DDp+	Desiccant dryer, rotary drum dryer	DD+ & PD+	
				UD+	
3	DD+	DDp+	Desiccant dryer, membrane dryer, rotary drum dryer	DD+	
4	DD+	DDp+	Membrane dryer, refrigerant dryer	DD+	
5	DD+	DDp+	Membrane dryer, refrigerant dryer	-	
6	-	-	Membrane dryer, refrigerant dryer	-	

* Please contact your Atlas Copco sales representative.

Examples of typical installations

A	Compressor - UD+	Air purity class ISO 8573-1:2010 [1:-:2]
B	Compressor - UD+ - Refrigerant dryer	Air purity class ISO 8573-1:2010 [1:4:2]*
C	Compressor - UD+ - Refrigerant dryer - QDT - DDp+	Air purity class ISO 8573-1:2010 [2:4:1]
D	Compressor - UD+ - Desiccant dryer - DDp+	Air purity class ISO 8573-1:2010 [2:2:2]
E	Compressor - UD+ - Desiccant dryer - QDT - DDp+ - PDp+	Air purity class ISO 8573-1:2010 [1:2:1]



1. Compressor
2. UD+ filter
3. Refrigerant dryer
4. Desiccant dryer
5. DDp+ filter
6. PDp+ filter
7. QDT filter

* Particle class 1 is reached directly after UD+. As downstream piping & vessels can add particles, it is advised to install particle filters DDp+ and PDp+ just before the application to reach particle class 1 at point of use.

The compressor should be equipped with a liquid water separation system such as an aftercooler including a drain or a water separator (WSD). If this is not the case, install a water separator in front of a coalescence filter. For critical applications, install extra air treatment products at the point of use for the removal of pipeline contamination and condensation.

DD+/PD+/UD+ Series

Oil coalescence filters with patented Nautilus technology

Compressor element lubrication and your compressor installation itself can release oil aerosols and wet dust in your air system. DD+, PD+ and UD+ filters efficiently remove these contaminants to protect your equipment and your processes. These innovative filtration solutions are engineered to cost-effectively provide the best air purity and meet today's increasingly stringent quality requirements.

Your benefits:

- **Maximum oil aerosol, wet dust and water droplet filtration and drainage** - High-efficiency glass fiber Nautilus technology ensures a low pressure drop.
- **Patented drainage technology** - A coarse 3D-structured layer/barrier provides efficient oil drainage and prevents re-entry of oil droplets into the air stream.
- **Minimal operating costs** - Optimal design and filter technology allow for low pressure losses.
- **Cost-saving maintenance** - Ribbed housing ensures easy removal of the filter bowl. The push-in element and drain connection were designed for effortless replacement. The service indicator shows (preventive) maintenance alerts.

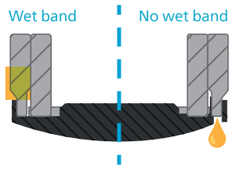
Certification

- ISO 8573-2:2018
- ISO 12500-1:2007

3 patented innovations

1. **Nautilus technology for energy savings**

   The Nautilus multi-wrap technology was specifically developed to improve the oil aerosol coalescing process. That means you get optimal filtration results at a lower pressure drop to minimize your operational costs.



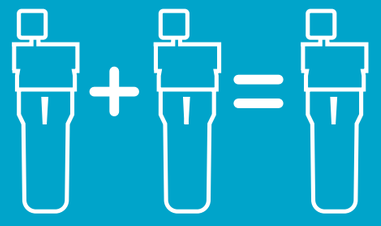
2. **Enhanced drainage channels for pure air**

   The bottom cap of the filter is designed to increase the drainage rate of the oil from the barrier by optimizing the contact between the barrier and drainage routes. This ensures no wet band is formed in the barrier and the re-entrainment risk is significantly diminished, resulting in cleaner air.

3. **Superior drainage technology for a strong performance & long lifetime**

   A unique coarse 3D-structured layer/barrier ensures efficient oil drainage and prevents re-entry of oil droplets into the air flow. The 3D structure also offers a service life of 8,000 hours.

UD+ 2-in-1 concept saves money and space



The UD+ combines two filtration steps (DD+ and PD+) into one, a unique technology to meet the quality requirements of diverse applications and offer superior energy savings. The UD+ filter provides the same air purity as a DD+-PD+ filter train with a lower pressure drop.

- Save up to 50% in space: The 2-in-1 concept is ideal for applications where space is at a premium, reducing your environmental footprint, system complexity, and installation space.
- Save money: Install UD+ filters to enjoy significant installation and maintenance (cost) savings compared to conventional filters.

Performance

	DD+	PD+	UD+
Contaminant	Oil aerosol/wet dust		
Filtration technology	Wrapped		
Test method	ISO 8573-2:2018, ISO 12500-1:2007		
Maximum oil carry-over (mg/m³)*	0.08*	0.008*	0.001
ISO class 8573-1	[2:-:3]	[1:-:2]	[1:-:2]
Average wet pressure drop (mbar)	119	132	220
Element service	After 8,000 operating hours or 1 year For flanged filters: after 4,000 operating hours or 1 year or 350 mbar pressure drop		
Precede with	Water separation	Water separation & DD+	Water separation

* Inlet oil concentration = 10 mg/m³. Oil = oil aerosol and liquid.

DDp+/PDp+ Series

Optimal dry dust filtration

DDp+ and PDp+ filters efficiently prevent dust, corrosion particles, micro-organisms, dirt and adsorption material from entering your compressed air stream. These innovative filtration solutions are engineered to cost-effectively provide the best air purity and meet today's strict quality demands.

Your benefits:

- **Maximum dirt, solid particle, micro-organism and rust particle removal**
  High-efficiency pleated glass fiber media with coarse pre-filter fleece ensure a high dust-holding capacity.
- **Minimal operating costs** - Optimal pleated design and filter technology allow for low pressure losses.
- **Cost-saving maintenance** - Ribbed housing ensures easy removal of the filter bowl. The push-in element and drain connection were designed for effortless replacement. The service indicator shows (preventive) maintenance alerts.

Performance

	DDp+	PDp+
Contaminant	Dry dust	
Filtration technology	Pleated	
Test method	ISO 8573-4:2001, ISO 12500-3:2009	
Particle removal efficiency (% at MPPS)	99.92	99.98
ISO class 8573-1	[2:-:3]	[1:-:2]
Element service	After 8,000 operating hours or 1 year or 350 mbar pressure drop For flanged filters: after 4,000 operating hours or 1 year or 350 mbar pressure drop	
Precede with	Dryer	Dryer & DDp+

Certification

- ISO 8573-4:2019
- ISO 12500-3:2009

QD+ Series

High-performance oil vapor filters

QD+ filters efficiently reduce hydrocarbons, odors and oil vapor in your compressed air to protect your investment, equipment and processes. The macro-structured activated carbon will reduce the residual oil content through adsorption to less than 0.003 mg/m³. The pressure drop is low and remains constant during the lifetime of the filter.

Your benefits:

- **Maximum oil vapor removal**
  The macro-structured activated carbon is specifically designed to efficiently and completely remove oil vapors from compressed air with minimal dust release.
- **Minimal operating costs** - Low pressure losses thanks to an optimal flow design.
- **Low-cost maintenance** - Ribbed housing ensures easy removal of the filter bowl. The push-in element and drain connection were designed for effortless replacement. The service indicator shows (preventive) maintenance alerts.

Performance

	QD+
Contaminant	Oil vapor
Filtration technology	Macro-structured activated carbon
Test method	ISO 8573-5:2001
Maximum oil carry-over (mg/m³)*	0.003*
ISO class 8573-1	[2:-:1]
Average dry pressure drop (mbar)	75
Element service	After 2,000 operating hours or 1 year For flanged filters: after 1,000 operating hours or 1 year
Precede with	Water separation UD+ or DD+/PD+ Dryer

* In a typical installation with refrigerant dryer and UD+ filter.

Options
DD+/PD+/UD+/DDp+/PDp+/QD+

- Potential-free alarm contact for gauge.
- Smart indicator.
- External wiring kit for smart indicator (alarm/ power supply).
- Interconnection kit.
- Wall mounting kit.
- EWD including connection kit.

		DD+/PD+/UD+		DDp+/PDp+		QD+	
		Standard	inPASS™	Standard	inPASS™	Standard	inPASS™
	Standard						
Drain	Floater drain	X	X				
	Manual drain			X	X	X	X
Indicator	Sliding indicator	size 7-25		size 7-25			
	Gauge	> size 25		> size 25			
	Smart indicator		X		X		
	Bypass		X		X		X
	Options						
	Smart indicator	X		X		X	X
	External wiring kit (for smart indicator)	X	X	X	X	X	X
	Potential-free alarm for gauge	X		X			
	Filter connection kit	X	X	X	X	X	X
	Wall mounting kit	X	X	X	X	X	X
	EWD drain with connection kit	X	X				

Correction factors

When working with other pressures than the nominal pressure, the actual FAD capacity is calculated by multiplying the correction factor with the rated AML capacity. The calculated actual flow capacity corresponds to the AML-stated pressure drop.

Working pressure in bar(g)	1	2	3	4	5	6	**7**	8	10	12	14	16
Correction factor	0.38	0.53	0.65	0.75	0.83	0.92	**1**	1.06	1.20	1.31	1.41	1.50

Sizing & dimensions
DD+/PD+/UD+/DDp+/PDp+/QD+

Filter size with or without inPASS™	Nominal capacity		Reference pressure		Maximum pressure		Connections		Dimensions						Free space for cartridge replacement		Weight	
									A		B		C		D			
	l/s	cfm	bar(e)	psig	bar(e)	psig	G	NPT	mm	inch	mm	inch	mm	inch	mm	inch	kg	lbs
7+	7	15	7	102	16	232	G 1/2	NPT 1/2	106	4.17	90	3.54	362.6	14.3	90	3.54	1.18	2.60
15+	15	32	7	102	16	232	G 1/2	NPT 1/2	106	4.17	90	3.54	362.6	14.3	90	3.54	1.24	2.73
25+	25	53	7	102	16	232	G 1/2	NPT 1/2	106	4.17	90	3.54	415.1	16.3	90.5	3.56	1.45	3.20
45+	45	95	7	102	16	232	G 3/4	NPT 3/4	135	5.31	110	4.33	442.6	17.4	110	4.33	2.35	5.18
75+	75	159	7	102	16	232	G 1	NPT 1	135	5.31	110	4.33	527.6	20.8	110	4.33	2.8	6.17
110+	110	233	7	102	16	232	G 1 1/2	NPT 1 1/2	175	6.89	143	5.63	559.1	22.0	130.5	5.14	5.4	11.91
145+	145	307	7	102	16	232	G 1 1/2	NPT 1 1/2	175	6.89	143	5.63	629.1	24.8	130.5	5.14	5.93	13.08
180+	180	381	7	102	16	232	G 1 1/2	NPT 1 1/2	175	6.89	143	5.63	699.1	27.5	130.5	5.14	6.45	14.22
240+	240	509	7	102	16	232	G 2	NPT 2	222	8.74	171	6.73	729.6	28.7	175	6.89	9.54	21.04
300+	300	636	7	102	16	232	G 2	NPT 2	222	8.74	171	6.73	822.6	32.4	175	6.89	10.71	23.62
							G 2 1/2	NPT 2 1/2									10.43	23.00
With inPASS™																		
380+	380	805	7	102	16	232	G 3	NPT 3	250	9.84	191	7.52	927.1	36.5	200.5	7.89	13.6	29.99
425+	425	901	7	102	16	232	G 3	NPT 3	250	9.84	191	7.52	1043.1	41.1	200.5	7.89	14.95	32.96
510+	630	1081	7	102	16	232	G 3	NPT 3	250	9.84	191	7.52	1281.1	50.4	200.5	7.89	19.6	43.22
Without inPASS™																		
360+	360	763	7	102	16	232	G 2 1/2	NPT 2 1/2	222	8.74	171	6.73	812.7	32.0	175	6.89	10.2	22.49
430+	430	911	7	102	16	232	G 3	NPT 3	250	9.84	191	7.52	917.2	36.1	200.5	7.89	13.98	30.83
525+	525	1112	7	102	16	232	G 3	NPT 3	250	9.84	191	7.52	1033.2	40.7	200.5	7.89	15.32	33.78
630+	630	1335	7	102	16	232	G 3	NPT 3	250	9.84	191	7.52	1271.2	50.0	200.5	7.89	19.24	42.42
Flanged							**Flanged connection**											
550+F/630+F	550	1165	7	102	16	232	DN 80		370	14.6	280	11.0	1295	51.0	1375	54.1	76.0	167.6
850+F/970+F	850	1801	7	102	16	232	DN 100		510	20.1	410	16.1	1360	53.5	1500	59.1	141.0	310.9
850+T	850	1801	7	102	16	232	DN 100		510	20.1	418	16.5	796	31.3	200	7.9	35.2	77.6
1100+F/1260+F	1100	2331	7	102	16	232	DN 100		510	20.1	410	16.1	1360	53.5	1500	59.1	143.0	315.3
1100+T	1100	2331	7	102	16	232	DN 100		510	20.1	418	16.5	966	38.0	200	7.9	37.4	82.4
1400+F/1600+F	1400	2967	7	102	16	232	DN 150		620	24.4	485	19.1	1480	58.3	1560	61.4	210.0	463.0
1800+F/2200+F	1800	3814	7	102	16	232	DN 150		640	25.2	490	19.3	1555	61.2	1640	64.6	176.0	388.0
2200+F/2400+F	2200	4662	7	102	16	232	DN 150		640	25.2	490	19.3	1555	61.2	1640	64.6	178.0	392.4
3000+F/3600+F	3000	6357	7	102	16	232	DN 200		820	32.3	650	17.7	1745	68.7	1710	67.3	420.0	925.9
4000+F	4000	8476	7	102	16	232	DN 200		820	32.3	650	17.7	1745	68.7	1710	67.3	428.0	943.6
5000+F	5000	10595	7	102	16	232	DN 200		820	32.3	650	17.7	1745	68.7	1710	67.3	432.0	952.4
6000+F	6000	12714	7	102	16	232	DN 250		920	36.2	815	32.1	2085	82.1	1625	64.0	671.0	1479.3
7000+F	7000	14833	7	102	16	232	DN 250		920	36.2	815	32.1	2085	82.1	1625	64.0	675.0	1488.1
8000+F	8000	16952	7	102	16	232	DN 300		1040	40.9	930	36.6	2070	81.5	1625	64.0	900.0	1984.2

Non-inPASS™ variant: height “C” decreases by 51 mm (2”) for sizes 7-25 and by 10 mm (0.4”) for sizes 45-300.

Temperature correction factors QD+

At higher temperatures, more compressor oil evaporates. When the actual working air inlet temperature differs from the reference, divide the filter capacity by the corresponding correction factors to obtain the correct capacity.

Inlet temperature °C	20	25	30	35	40	45	50	55	60
Inlet temperature °F	68	77	96	95	104	113	122	131	140
Correction factor oil-free	1	1	1	1	1	1	**1**	1	1
Correction factor oil-lubricated	1	1	1	1.2	1.5	1.7	**2.1**	2.4	2.6

Some environmental or process aspects could cause a higher amount of hydrocarbons or other volatile organic compounds in the compressed air. Contact Atlas Copco when higher concentrations can be expected.

QDT Series

Activated carbon towers for optimal oil vapor filtration

The high-efficiency activated carbon tower is capable of removing hydrocarbons, odors and oil vapor from compressed air. The activated carbon will, through adsorption, reduce the residual oil content to lower than 0.003 mg/m³. The pressure drop is low and stays minimal during the filter's lifetime.

Your benefits:

- **Maximum oil vapor removal**
  Superb activated carbon material.
- **Low pressure drop** - Optimal internal flow path.
- **High reliability** - The QDT's robust design and rigorous quality control of the activated carbon optimize filter reliability.
- **Long service intervals** - The high volume of activated carbon material ensures a long lifetime, even in very harsh working conditions.

Options

- Oil indicator ensures pure air.
- Wall mounting kit for easy installation (20-185 l/s).

Performance

	QDT
Contaminant	Oil vapor
Test method	ISO 8573-5:2001, ISO 12500-2:2007
Maximum oil carry-over (mg/m³)*	0.003
Average dry pressure drop (mbar)	125 (QDT 20-310) 72 (QDT 425-1800)
Element service	After 4,000 operating hours or 1 year (up to QDT 310) After 8,000 operating hours or 1 year (from QDT 425)
Precede with	Water separation UD+ or DD+/PD+ Dryer

* After UD+ or DD+/PD+.

QDT 20-310

QDT 425-1800

Certification

ISO 8573-5:2001

Sizing & dimensions

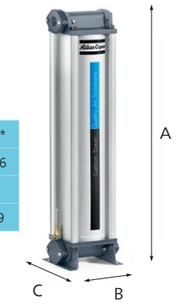
Filter size	Nominal capacity		Connections G or NPT	Dimensions						Weight	
				A		B		C			
	l/s	cfm	in	mm	in	mm	in	mm	in	kg	lbs
20	20	42	1/2	490	19	223	9	190	7	7	22
45	45	95	1	715	28	223	9	190	7	15	33
60	60	127	1	840	33	223	9	190	7	18	40
95	95	210	1	715	28	387	15	190	7	29	64
125	125	265	1 1/2	840	33	387	15	190	7	34	75
150	150	318	1 1/2	715	28	551	22	190	7	42	93
185	185	392	1 1/2	840	33	551	22	190	7	50	110
245	245	519	1 1/2	840	33	715	28	190	7	67	148
310	310	657	1 1/2	840	33	879	35	190	7	84	185
425	425	901	DN 80 3"	2148	85	710	28	600	24	264	581
550	550	1165	DN 80 3"	2190	86	710	28	670	26	302	664
850	850	1801	DN 100/4"	2320	91	724	29	805	32	391	860
1100	1100	2331	DN 100/4"	2450	97	934	37	820	32	602	1324
1800	1800	3814	DN 150/6"	2612	103	1046	41	980	39	882	1940

Correction factors

For other compressed air inlet temperatures, divide the filter capacity by the following correction factor (Kt):

Inlet temperature °C	10	15	20	25	30	35	40	45	50	55	60	65	70*	75*	80*
Inlet temperature °F	50	59	68	77	96	95	104	113	122	131	140	149	158	167	176
Correction factor oil-free	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Correction factor oil-lubricated	1	1	1	1	1	1	1.2	1.5	1.7	2.1	2.4	3	3.5	4.1	4.9

* For QDT flanged only.



For other compressed air inlet pressures, multiply the filter capacity by the following correction factor (Kp):

Inlet pressure bar	3	4	5	6	7	8	9	10	11	12	13
Inlet pressure psi	44	58	73	87	102	116	131	145	160	174	193
Correction factor	0.57	0.77	0.83	1	1	1	1	1.05	1.05	1.11	1.18

UD+ & QDT: the winning combination

The Atlas Copco UD+ - QDT filter train meets the requirements of air purity class 1 for total oil, according to ISO 8573-1:2010, in a typical compressed air installation:

UD+	QDT
Liquid oil & oil aerosol removal	Oil vapor removal
Guaranteed 0.0009 mg/m³ aerosol and liquid	Guaranteed 0.003 mg/m³ vapor
40% pressure drop reduction compared to DD+/PD+	65% pressure drop reduction compared to previous QDT
50% footprint reduction	Extremely compact compared to vessel designs

Certified filter trains

Filter train	Purity class according to ISO 8573-1:2010	Certified
UD+ - QDT - DDp+	[2:-:1]	yes
UD+ - QDT - DDp+ PDp+	[1:-:1]	yes
UD+ - QD+	[2:-:1]	yes

SFA Series

Silicone-free removal of oil aerosol, dust and oil vapor

Superb air purity is a prerequisite to safeguard your instruments and end products. Our silicone-free SFA filters efficiently prevent dry and wet dust, particulates, oil aerosol and water droplets from entering your compressed air system. The SFA series is manufactured and treated according to the high standards of silicone-free equipment, and certified by the Fraunhofer Institute as guaranteed silicone-free.

Your benefits:

- **Maximum contaminant removal** - Removal of dry and wet dust, particulates, oil aerosol and water droplets with high-efficiency glass fiber and fleece media.
- **Significant energy savings & limited system operating costs** - Optimal design and filter media allow for a low pressure drop.
- **High reliability** - Stainless-steel cores, double O-rings, epoxy-sealed caps and filter housing with anti-corrosive coating.
- **Easy maintenance** - External ribbing on the threaded housing and push-on elements.
- **Monitoring of energy use** - Differential pressure indication (indicator for sizes 9-32 l/s, gauge for sizes 44-520 l/s – optional).

Options

Filter connection kit (9-520 l/s).
Wall mounting kit (9-520 l/s).
Quick coupling (DD+ & PD+ only).
EWD no-loss electronic drain (DD+ & PD+ only).
Voltage-free contact mounted in the differential gauge (not for QD+).

Certification

Paint compatibility certificate (Fraunhofer Institute)

Sizing & dimensions

Filter size	Nominal capacity*		Maximal capacity*		Connections G or NPT	Dimensions						Free space for cartridge replacement		Weight	
						A		B		C		D			
DD+, DDp+, PD+, PDp+, QD+	l/s	cfm	l/s	cfm	in	mm	in	mm	in	mm	in	mm	in	kg	lbs
9	9	19	11	23	3/8	90	3.54	61	2.40	268	10.55	75	2.95	1	2.2
17	17	36	21	45	1/2	90	3.54	61	2.40	268	10.55	75	2.95	1.1	2.4
32	32	68	40	85	1/2	90	3.54	61	2.40	323	12.72	75	2.95	1.3	2.9
44	44	93	55	117	3/4 & 1	110	4.33	98.5	3.88	374	14.72	75	2.95	1.9	4.2
60	60	127	75	159	1	110	4.33	98.5	3.88	414	16.3	75	2.95	2.1	4.6
120	120	254	150	318	1-1/2	140	5.51	105	4.13	520	20.47	100	3.94	4.2	9.3
150	150	318	188	399	1-1/2	140	5.51	105	4.13	603	23.47	100	3.94	4.5	9.9
175	175	371	219	464	1-1/2	140	5.51	105	4.13	603	23.47	100	3.94	4.6	10.1
280	280	594	350	742	2 & 2-1/2	179	7.05	121	4.76	689	27.13	150	5.91	6.9	15.2
390	390	827	488	1035	3	210	8.27	128	5.04	791	31.14	200	7.87	11	24.2
520	520	1102	650	1378	3	210	8.27	128	5.04	961	37.83	200	7.87	12.6	27.8

* Nominal pressure: 7 bar(e)/102 psig; temperature: 20°C/68°F.

WSD Series

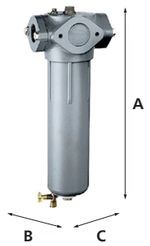
High-performance water separators

Atlas Copco's WSD prevents condensed water from building up in your air system. The water separator comes as standard with Atlas Copco's aftercoolers and can also be installed at any point in your system. Made entirely of corrosion-proof material, these cyclone-based separators remove water aerosols to protect system components such as dryers and filters. Maintenance-free and without moving parts, they come with an automatic or a manual drain.

Your benefits:

- **A reliable air system** - The corrosion-proof drain prevents condensed water from building up in your air system.
- **Minimal maintenance** - The water separator does not have moving parts and is thus maintenance-free. It comes with an automatic and a manual drain.
- **Energy savings** - The intelligent drain function monitors condensate build-up with liquid level sensors. It drains the condensate only when required to avoid using compressed air inefficiently.
- **Flexible installation** - WSD water separators can be installed at any point in your air net.

Sizing & dimensions



Type	Capacity range		Maximum working pressure		Connections	Dimensions						Weight	
						A		B		C			
	l/s	cfm	bar(e)	psi	inlet/outlet	mm	inch	mm	inch	mm	inch	kg	lbs
WSD 25	7-60	15-127	20	290	G 1	332	13.0	130	5.1	185	7.3	1.1	2.4
WSD 80	50-150	106-318	20	290	G 1½	432	17.0	130	5.1	185	7.3	3.5	7.7
WSD 250	125-350	265-742	20	290	G 2½	532	20.9	160	6.3	230	9.0	12.5	27.6
WSD 750	300-800	636-1695	20	290	83 mm*	532	20.9	160	6.3	230	9.0	14.0	30.9

* Blind flange to be machined up to this diameter.

H Series

Guaranteed air purity up to 350 bar

High-pressure filters efficiently reduce oil aerosol, dust and wet dust, particulates, water droplets and oil vapor in your compressed air stream to protect your investment, equipment and processes. Our innovative high-pressure filtration solutions are engineered to cost-effectively provide the best air purity and meet today's increasing quality demands for working pressures of up to 350 bar. All high-pressure filter housings are hydraulically tested to ensure safe and reliable operation at all times. A pressure test certificate accompanies each filter.

Your benefits:

- **Maximum contaminant removal (dry & wet dust, particulates, oil aerosol and water droplets)** - High-efficiency glass fiber and fleece media.
- **Significant energy savings & limited system operation costs** Optimal design and filter media allow for low pressure losses.
- **High reliability** - Strong and durable stainless-steel cores, double O-rings, epoxy-sealed caps and filter housing with anti-corrosive coating.

Applications

- Chemical
- Food & beverage
- Manufacturing
- Military
- Oil & gas

Performance

	DDHp+	PDHp+	DDH+	PDH+	QDH+
Contaminant	Dry dust		Oil aerosol/wet dust		Oil vapor
Test method	ISO 8573-4:2019 ISO 12500-3:2009		ISO 8573-2:2018 ISO 12500-1:2007		ISO 8573-5:2001
Maximum oil carry-over (mg/m^3)	-	-	0.08*	0.007*	0.003**
Particle removal efficiency (% at MPPS)	99.92 (0.1)	99.98 (0.06)	N/A	N/A	N/A
ISO class 8573-1	[2:-:-]	[1:-:-]	[2:-:3]	[1:-:2]	[3:-:1]
Dry pressure drop (mbar)	85	100	N/A	N/A	140
Wet pressure drop (mbar)	N/A	N/A	180	215	N/A
Element service	After 4,000 operating hours or 1 year or 350 mbar pressure drop		After 4,000 operating hours or 1 year		After 1,000 operating hours or 1 year
Precede with	N/A	DDHp+	N/A	DDH+	DDH+/PDH+

Always install a liquid water separation system in front of a filter. Water separation is not needed in the high-pressure line if there is a sufficiently low PDP in the low-pressure line (e.g. nitrogen skid, low-pressure line with adsorption dryer).

* Inlet oil concentration = 10 mg/m^3. Oil = oil aerosol and liquid.
** After DD+/PD+ with inlet oil concentration of 10 mg/m^3.

Sizing & dimensions

Filter size	Nominal capacity			Connections	Dimensions						Weight	
					A		B		C			
DDH, DDHp, PDH, PDHp, QDH	m^3/h	l/s	cfm	in	mm	in	mm	in	mm	in	kg	lbs
20 bar aluminum												
15+	54	15	32	3/8	90	3.5	80	3.1	185	7.3	1.0	2.2
32+	115	32	68	1/2	90	3.5	80	3.1	185	7.3	1.1	2.4
55+	198	55	117	1/2	90	3.5	80	3.1	240	9.4	1.3	2.9
80+	288	80	170	3/4 & 1	110	4.3	100	3.9	260	10.2	1.6	3.5
110+	396	110	233	1	110	4.3	100	3.9	300	11.8	2.1	4.6
200+	720	200	424	1 1/2	140	5.5	131	5.2	410	16.1	4.2	9.3
270+	972	270	572	1 1/2	140	5.5	131	5.2	490	19.3	4.5	9.9
330+	1188	330	699	1 1/2	140	5.5	131	5.2	490	19.3	4.6	10.1
490+	1764	490	1038	2 & 2 1/2	179	7	166	6.5	575	22.6	6.9	15.2
50 bar aluminum												
160+	160	44	94	1/4	63	2.5	63	2.5	150	5.9	0.3	0.7
250+	250	69	147	3/8	63	2.5	63	2.5	190	7.5	0.3	0.7
450+	450	125	265	1/2	114	4.5	114	4.5	305	12.0	2.6	5.7
550+	550	153	324	3/4	114	4.5	114	4.5	305	12.0	2.6	5.7
835+	835	232	491	1	114	4.5	114	4.5	395	15.6	3.3	7.3
1250+	1250	347	736	1 1/2	146	5.8	146	5.8	435	17.1	7.5	16.5
1725+	1725	479	1015	1 1/2	146	5.8	146	5.8	435	17.1	7.5	16.5
1925+	1925	535	1133	2	146	5.8	146	5.8	435	17.1	7.5	16.5
3200+	3200	889	1883	2	146	5.8	146	5.8	635	25.0	10	22.0
50 bar stainless steel												
100+	100	28	59	1/4	85	3.4	85	3.4	202	8.0	1.7	3.7
200+	200	56	118	3/8	85	3.4	85	3.4	227	8.9	2	4.4
340+	340	94	200	1/2	85	3.4	85	3.4	257	10.1	2.2	4.8
500+	500	139	294	3/4	110	4.3	110	4.3	270	10.6	4	8.8
1000+	1000	278	589	1	110	4.3	110	4.3	422	16.6	5	11.0
1700+	1700	472	1000	1 1/2	150	5.9	150	5.9	517	20.4	15	33.1
2040+	2040	567	1200	2	150	5.9	150	5.9	517	20.4	15	33.1
3400+	3400	944	2000	2	150	5.9	150	5.9	817	32.2	21	46.3
100 bar stainless steel												
100+	100	28	59	1/4	65	2.6	65	2.6	135	5.3	3.2	7.1
315+	315	88	185	1/2	65	2.6	65	2.6	250	9.8	5.6	12.3
460+	460	128	271	3/4	88	3.5	88	3.5	275	10.8	6.1	13.4
680+	680	189	400	1	135	5.3	135	5.3	265	10.4	10.5	23.1
1200+	1200	333	706	1	135	5.3	135	5.3	480	18.9	14.7	32.4
1700+	1700	472	1000	1 1/2	150	5.9	150	5.9	525	20.7	22	48.5
3400+	3400	944	2000	2	150	5.9	150	5.9	815	32.1	28	61.7
350 bar stainless steel												
48+	48	13	28	1/4	41	1.6	41	1.6	103	4.0	1.6	3.5
111+	111	31	65	1/4	65	2.6	65	2.6	135	5.3	3.2	7.1
255+	255	71	150	1/2	88.5	3.5	88.5	3.5	210	8.2	5.6	12.3
510+	510	142	300	3/4	88.5	3.5	88.5	3.5	280	10.9	6.1	13.4
750+	750	208	441	1	150	5.9	150	5.9	330	12.9	14.5	32.0
1330+	1330	369	783	1	150	5.9	150	5.9	480	18.7	17.4	38.3

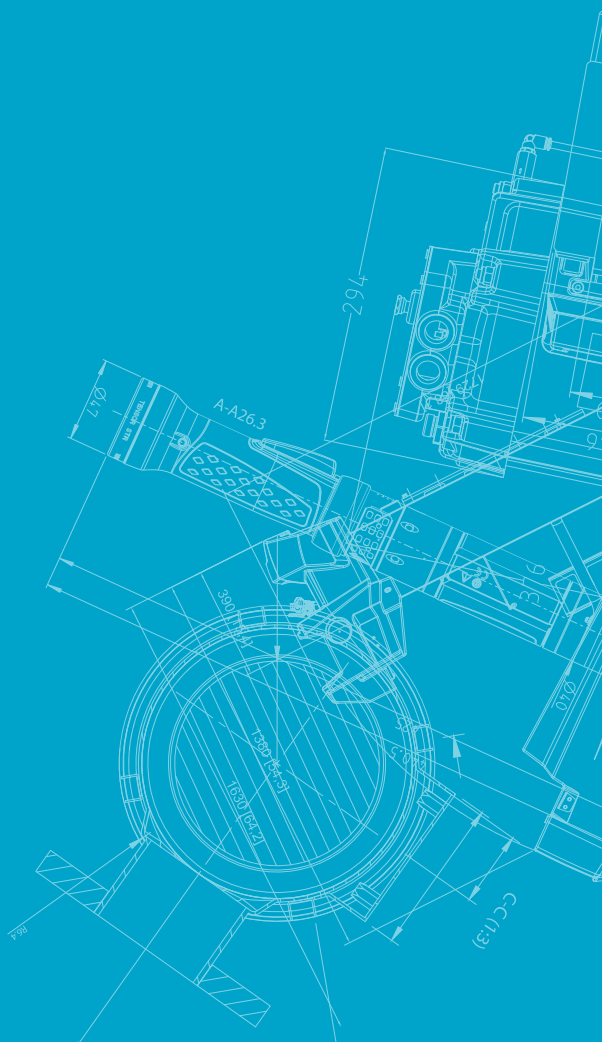
Correction factors

20 bar aluminum										
Operating pressure	barg	-	-	-	-	-	14	16	18	20
	psig	-	-	-	-	-	203	232	261	290
Correction factor							0.9	0.95	1	1.05

50 bar aluminum & stainless steel										
Operating pressure	barg	4	6	8	10	15	20	30	40	50
	psig	58	87	116	145	218	290	435	581	726
Correction factor		0.14	0.22	0.28	0.34	0.47	0.56	0.7	0.85	1

100 bar stainless steel										
Operating pressure	barg	20	30	40	50	60	70	80	90	100
	psig	290	435	581	726	871	1016	1161	1306	1451
Correction factor		0.45	0.57	0.68	0.8	0.84	0.88	0.92	0.96	1

350 bar stainless steel										
Operating pressure	barg	-	-	50	100	150	200	250	300	350
	psig	-	-	726	1451	2177	2903	3628	4354	5080
Correction factor				0.73	0.78	0.82	0.87	0.91	0.96	1



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ISO 9001 • ISO 14001
OHSAS 18001

Atlas Copco

atlascopco.com

Compressed air filters

COMMITTED TO SUPERIOR PRODUCTIVITY

In-house development & testing

Since 1998, our dedicated filtration team is responsible for in-house development of cutting-edge filtration solutions. This results in expert know-how of filtration mechanisms, state-of-the-art test facilities and breakthrough innovations. For many years, our filtration team has cooperated closely with the University of Karlsruhe, a leading institute in research of filtration mechanisms.

Rigorous quality control

To ensure the highest standards, all Atlas Copco products are subjected to rigorous quality control testing. The entire filter range is produced in-house, on the most advanced production lines, using the most stringent methods in the industry. You can rest assured at all times that strict certification and testing procedures are conducted to ensure our filtration products meet the highest standards.

THE ATLAS COPCO SOLUTION

Compressed air can be contaminated by dirt, water and oil, which can be further divided as follows:

- **DIRT**: micro-organisms, dust, solid particles, rust particles.
- **WATER**: water vapor, condensed liquid water, water aerosols, acidic condensates.
- **OIL**: liquid oil, oil aerosol, hydrocarbon vapor.

Atlas Copco offers a wide selection of filtration solutions and application knowledge. Different product types and grades are available to meet your every demand. Only genuine spare cartridges guarantee the Atlas Copco filter performance.

Welded design
6 grades
12 sizes
550 → 8,000 l/s
1,200 → 17,000 cfm

Cast design
6 grades
13 sizes
9 → 550 l/s
19 → 1,200 cfm

850 → 1,100 l/s
1,801 → 2,331 cfm

Tower design
1 grade
14 sizes
20 → 1800 l/s
42 → 3814 cfm

20 bar / 290 psi
50 bar / 725 psi
100 bar / 1,450 psi
350 bar / 5,075 psi

Threaded design
5 grades
9 sizes
15 → 944 l/s
32 → 2,000 cfm

Threaded design
5 grades
11 sizes
9 → 520 l/s
19 → 1,102 cfm

Threaded design
1grade
10 sizes
400 → 6,700 l/min
14 → 237 cfm

Name	DDp+	PDp+	DD+	PD+	UD+	QD+	QDT	H High pressure			SFA Silicone-free			MV Medical vacuum
	DDp	PDp	DD	PD		QD								
Grade	Rough	Fine	Rough	Fine	Ultimate	Basic	Optimal	Rough & Fine	Rough & Fine	Basic	Rough & Fine	Rough & Fine	Basic	Fine
Contaminant	Dry dust		Oil aerosol / wet dust			Oil vapor								Dry dust
	General applications							Special applications						

Dry dust	Micro-organisms	Oil aerosol	Wet dust	Oil vapor	Water drops

CERTIFIED PERFORMANCE

Atlas Copco filters are qualified according to the ISO 8573-1:2010 standard. This is the latest edition of the standard. Beware of filters that comply with earlier editions, such as ISO 8573-1:1991 or ISO 8573-1:2001. The difference is inferior quality of the delivered compressed air. This qualification is a result of our filters being tested according to ISO 12500-1:2007, ISO 12500-2:2007, and ISO 12500-3:2009. These specify the test layout, test procedures and inlet conditions required for testing coalescing filters, vapor filters, and solid particle filters used in compressed air systems, to determine their effectiveness in removing oil aerosol, oil vapor and solid particles. The measurements of the air purity downstream the filter for each specific contaminant have been performed according to the test methods described in respectively ISO 8573-2:2007, ISO 8573-5:2001 and ISO 8573-4:2001. Tests have been conducted in-house as well as in external labs, and are independently validated by TÜV.

ISO certification

Atlas Copco's filters have been fully tested and qualified according to the following ISO standards:

- ISO 8573-1:2010: Compressed air - Contaminants and purity classes
- ISO 8573-2:2007: Compressed air - Test method for oil aerosol content
- ISO 8573-4:2001: Compressed air - Test method for dust
- ISO 8573-5: 2001: Compressed air - Test method for oil vapor and organic solvent content
- ISO 12500-1:2007: Filters for compressed air - test methods - oil aerosols
- ISO 12500-2:2007: Filters for compressed air - test methods - oil vapors
- ISO 12500-3:2009: Filters for compressed air - test methods - particulates

Certified peace of mind

FILTER APPROVALS

CE ASME CRN

COMPANY CERTIFICATION

ACTIVE MEMBER OF

pneurop CAGI bcas VDMA

A SOLUTION FOR EVERY APPLICATION

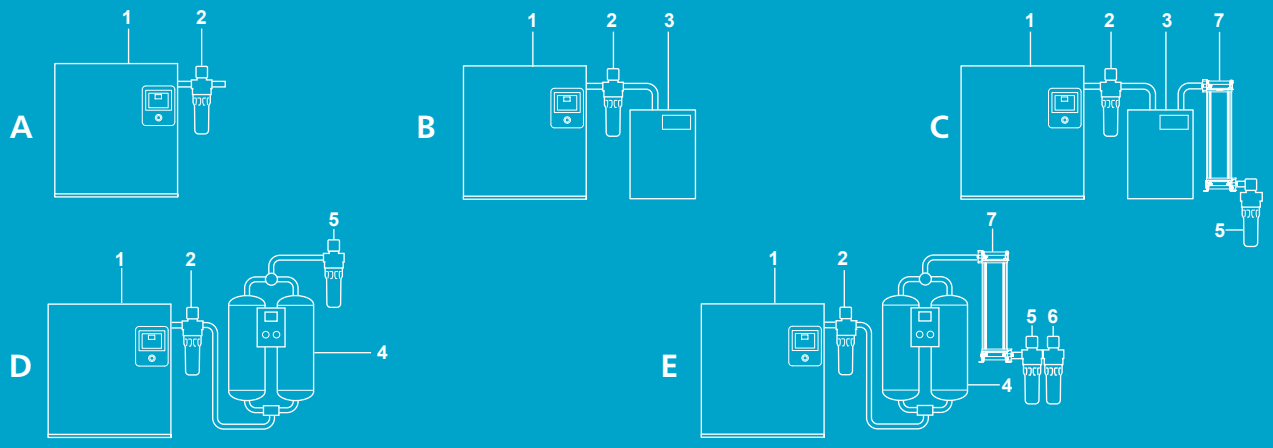
At different points of use, different compressed air purities might be needed, depending on the application. The various air purity classes are provided in the table below, which clearly shows the various Atlas Copco filters and dryers that meet all the different classes.

ISO 8573-1:2010 CLASS	Solid particles		Water	Oil (= aerosol, liquid, vapor)
	Wet conditions	Dry conditions		
0	As specified by the customer*			Oil-free compressor
1	DD+ & PD+	DDp+ & PDp+	Desiccant dryer	DD+ & PD+ & QD+/QDT
	UD+			UD+ & QD+/QDT
2	DD+	DDp+	Desiccant dryer	DD+ & PD+
				UD+
3	DD+	DDp+	Desiccant dryer, membrane dryer, rotary drum dryer	DD+
4	DD+	DDp+	Membrane dryer, refrigerant dryer	DD+
5	DD+	DDp+	Membrane dryer, refrigerant dryer	-
6	-	-	Membrane dryer, refrigerant dryer	-

* Please contact your Atlas Copco sales representative.

Examples of typical installations

A	Compressor - UD+	Air purity class ISO 8573-1:2010 [1:-:2]
B	Compressor - UD+ - Refrigerant dryer	Air purity class ISO 8573-1:2010 [1:4:2]*
C	Compressor - UD+ - Refrigerant dryer - QDT - DDp+	Air purity class ISO 8573-1:2010 [2:4:1]
D	Compressor - UD+ - Desiccant dryer - DDp+	Air purity class ISO 8573-1:2010 [2:2:2]
E	Compressor - UD+ - Desiccant dryer - QDT - DDp+ - PDp+	Air purity class ISO 8573-1:2010 [1:2:1]



1. Compressor
2. UD+ filter
3. Refrigerant dryer
4. Desiccant dryer
5. DDp+ filter
6. PDp+ filter
7. QDT filter

* Particle class 1 is reached directly after UD+. As downstream piping & vessels can add particles, it is advised to install particle filters DDp+ and PDp+ just before the application to reach particle class 1 at point of use.

The compressor should be equipped with a liquid water separation system such as an after cooler including a drain or a water separator (WSD). Always install a water separator in front of a coalescence filter. In case of critical applications, install extra air treatment products at point of use for the removal of pipeline contamination and condensation.

UD+ SERIES

Two-in-one oil coalescing filters with supreme energy savings

UD+ filters efficiently reduce oil aerosol, wet dust and water drops in your compressed air stream to protect your investment, equipment and processes. The UD+ combines two filtration steps (DD+ and PD+) into one, a unique technology to meet the high-quality requirements of diverse applications and provide ultimate energy savings.

YOUR BENEFITS

40% energy savings
A 40% lower pressure drop than the conventional filter combination results in 40% higher energy efficiency.

Pure air
Air purity is equal to that obtained using two filters in line, thanks to the thick filter package of UD+ filters.

Save space
The two-in-one filtration concept reduces installation space and complexity, making UD+ filters particularly suitable for applications where space is at a premium.

Save money
Install UD+ filters to enjoy significant cost savings compared to conventional filters.

Performance

	UD+
Contaminant	Oil aerosol/wet dust
Test method	ISO 8573-2:2007, ISO 12500-1:2007
Maximum oil carry-over (mg/m^3)*	0.0009
Wet pressure drop (mbar)	245
Element service	After 4,000 operating hours or 1 year
Precede with	Water separation

* Inlet oil concentration = 10 mg/m^3. Oil = oil aerosol and liquid.

Sizing & dimensions

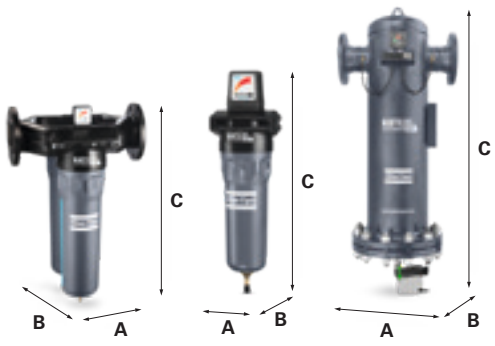
FILTER SIZE UD+	Nominal capacity		Reference pressure		Maximum pressure		Connections	Dimensions						Free space for cartridge replacement		Weight	
								A		B		C		D			
	l/s	cfm	bar(e)	psig	bar(e)	psig	in	mm	in	mm	in	mm	in	mm	in	kg	lbs
9+	9	19	7	102	16	232	3/8	90	3.5	61	2.4	268	10.6	75	2.9	1.0	2.2
15+	15	32	7	102	16	232	1/2	90	3.5	61	2.4	268	10.6	75	2.9	1.1	2.4
25+	25	53	7	102	16	232	1/2	90	3.5	61	2.4	323	12.8	75	2.9	1.3	2.9
45+	45	95	7	102	16	232	3/4 & 1	110	4.3	99	3.9	374	14.7	75	2.9	1.6	4.2
60+	60	127	7	102	16	232	1	110	4.3	99	3.9	414	16.3	75	2.9	2.1	4.6
100+	100	212	7	102	16	232	1	140	5.5	105	4.0	425	16.7	100	3.9	3.7	8.2
140+	140	297	7	102	16	232	1-1/2	140	5.5	105	4.1	520	20.5	100	3.9	4.2	9.3
180+	180	381	7	102	16	232	1-1/2	140	5.5	105	4.1	603	23.7	100	3.9	4.5	9.9
220+	220	466	7	102	16	232	1-1/2	140	5.5	105	4.1	603	23.7	100	3.9	4.6	10.1
310+	310	657	7	102	16	232	2 & 2-1/2	179	7.1	121	4.8	689	27.1	150	5.9	6.9	15.2
425+	425	901	7	102	16	232	3	210	8.3	128	5.1	791	31.1	200	7.9	11.0	24.2
550+	550	1165	7	102	16	232	3	210	8.3	128	5.1	961	37.8	200	7.9	12.6	27.8
550+F	550	1165	7	102	16	232	DN80	370	14.6	280	11.0	1295	51.0	1375	54.1	76.0	167.6
850+T	850	1.801	7	102	16	232	DN100	510	20.1	418	16.5	796	31.3	200	7.9	35.2	77.6
850+F	850	1801	7	102	16	232	DN100	510	20.1	410	16.1	1360	53.5	1500	59.1	141.0	310.9
1100+T	1.100	2.331	7	102	16	232	DN100	510	20.1	418	16.5	966	38.0	200	7.9	37.4	82.4
1100+F	1100	2331	7	102	16	232	DN100	510	20.1	410	16.1	1360	53.5	1500	59.1	143.0	315.3
1400+F	1400	2967	7	102	16	232	DN150	620	24.4	485	19.1	1480	58.3	1560	61.4	210.0	463.0
1800+F	1800	3814	7	102	16	232	DN150	640	25.2	490	19.3	1555	61.2	1640	64.6	176.0	388.0
2200+F	2200	4662	7	102	16	232	DN150	640	25.2	490	19.3	1555	61.2	1640	64.6	178.0	392.4
3000+F	3000	6357	7	102	16	232	DN200	820	32.3	650	17.7	1745	68.7	1710	67.3	420.0	925.9
4000+F	4000	8476	7	102	16	232	DN200	820	32.3	650	17.7	1745	68.7	1710	67.3	428.0	943.6
5000+F	5000	10595	7	102	16	232	DN200	820	32.3	650	17.7	1745	68.7	1710	67.3	432.0	952.4
6000+F	6000	12714	7	102	16	232	DN250	920	36.2	815	32.1	2085	82.1	1625	64.0	671.0	1479.3
7000+F	7000	14833	7	102	16	232	DN250	920	36.2	815	32.1	2085	82.1	1625	64.0	675.0	1488.1
8000+F	8000	16952	7	102	16	232	DN300	1040	40.9	930	36.6	2070	81.5	1625	64.0	900.0	1984.2

Correction factors

Inlet pressure (bar)	1	2	3	4	5	6	7	8	10	12	14	16
Inlet pressure (psig)	15	29	44	58	72.5	87	102	116	145	174	203	232
Correction factor	0.38	0.53	0.65	0.75	0.83	0.92	1.00	1.06	1.20	1.31	1.41	1.50

Example

- Working pressure 3 bar(g), compressed air flow 35 l/s.
- Multiply the nominal capacity of the selected filter with the corresponding correction factor at the required working pressure to obtain the capacity at working pressure:
  - Size 45+: 45 l/s * 0.65 = 29 l/s => the 45+ filter size is not large enough.
  - Size 60+: 60 l/s * 0.65 = 39 l/s => the 60+ filter size is the size to select.



850+T & 1100+T | 9+ – 550+ | 550+F – 8000+F

Options

- Filter connection kit for easy mounting in series (9-550 l/s).
- Wall mounting kit simplifies installation (9-550 l/s).
- Quick coupling connects the filter with a drain or oil/water separator.
- Voltage-free contact mounted in the differential pressure gauge, to give remote indication of cartridge replacement.
- EWD electronic drain with no loss of compressed air and an alarm function (EWD is optional on size 9⁺ - 550⁺, 850⁺T and 1100⁺T; standard on size 550⁺F and larger).

Wall mounting kit

Certification

- ISO 8573-2:2007
- ISO 12500-1:2007

DD(+)/PD(+) SERIES

High performance oil coalescing filters

DD(+) and PD(+) filters efficiently reduce oil aerosol, wet dust and water drops in your compressed air stream. These could come from the lubrication of the compressor element, the intake air, and the compressor installation itself. These innovative filtration solutions are engineered to cost-effectively provide the best air purity and meet today's increasing quality demands.

YOUR BENEFITS

Maximum oil aerosol, wet dust and water droplet filtration and drainage
High-efficient glass fiber and foam media.

Significant energy savings & limited system operating costs
Optimal design and filter media allow low pressure losses.

High reliability
High-performance stainless steel cores, double O-rings, epoxy sealed caps, and anti-corrosive coated filter housing.

Easy maintenance
External ribs on the threaded housing, or a rotating bottom cover for the welded housings, and push-on elements.

Monitoring of energy use
Differential pressure indication (indicator for sizes 10-35 l/s, gauge for sizes 50-8000 l/s) (optional for standard range).

Performance

	DD	PD	DD+	PD+
Contaminant	Oil aerosol/wet dust			
Test method	ISO 8573-2:2007, ISO 12500-1:2007			
Maximum oil carry-over (mg/m^3)*	0.1*	0.01*	0.07*	0.008*
Wet pressure drop (mbar)	245	280	180	215
Element service	After 4,000 operating hours or 1 year			
Precede with	Water separation	Water separation DD	Water separation	Water separation DD+

* Inlet oil concentration = 10 mg/m^3. Oil = oil aerosol and liquid.

Sizing & dimensions

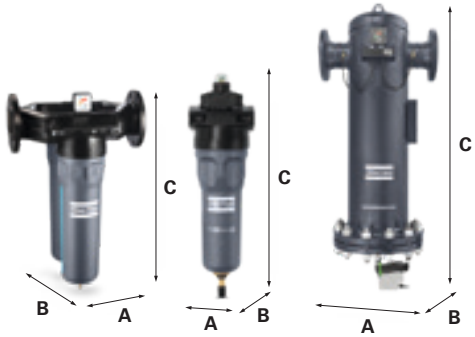
FILTER SIZE DD/PD		Nominal capacity				Reference pressure		Maximum pressure		Connections	Dimensions						Free space for cartridge replacement		Weight	
		Standard		+							A		B		C		D			
Standard	+	l/s	cfm	l/s	cfm	bar(e)	psig	bar(e)	psig	in	mm	in	mm	in	mm	in	mm	in	kg	lbs
12	10+	12	25	10	21	7	102	16	232	3/8	90	3.5	61	2.4	268	10.6	75	2.9	1.0	2.2
25	20+	25	53	20	42	7	102	16	232	1/2	90	3.5	61	2.4	268	10.6	75	2.9	1.1	2.4
45	35+	45	95	35	74	7	102	16	232	1/2	90	3.5	61	2.4	323	12.7	75	2.9	1.3	2.9
65	50+	65	138	50	106	7	102	16	232	3/4 & 1	110	4.3	99	3.9	374	14.7	75	2.9	1.6	4.2
90	70+	90	191	70	148	7	102	16	232	1	110	4.3	99	3.9	414	16.3	75	2.9	2.1	4.6
160	130+	160	339	130	275	7	102	16	232	1-1/2	140	5.5	105	4.1	520	20.5	100	3.9	4.2	9.3
215	170+	215	456	170	360	7	102	16	232	1-1/2	140	5.5	105	4.1	603	23.7	100	3.9	4.5	9.9
265	210+	265	562	210	445	7	102	16	232	1-1/2	140	5.5	105	4.1	603	23.7	100	3.9	4.6	10.1
360	310+	360	763	310	657	7	102	16	232	2 & 2-1/2	179	7.0	121	4.8	689	27.1	150	5.9	6.9	15.2
525	425+	525	1112	425	901	7	102	16	232	3	210	8.3	128	5.0	791	31.1	200	7.9	11.0	24.2
690	550+	690	1462	550	1165	7	102	16	232	3	210	8.3	128	5,0	961	37.9	200	7.9	12.6	27.8
630F	550+F	630	1335	550	1165	7	102	16	232	DN80	370	14.6	280	11	1295	51.0	1375	54.1	76.0	167.6
-	850+T	-	-	850	1801	7	102	16	232	DN100	510	20.1	418	16.5	796	31.3	200	7.9	35.2	77.6
970F	850+F	970	2055	850	1801	7	102	16	232	DN100	510	20.1	410	16.1	1360	53.5	1500	59.1	141.0	310.9
-	1100+T	-	-	1100	2331	7	102	16	232	DN100	510	20.1	418	16.5	966	38.0	200	7.9	37.4	82.4
1260F	1100+F	1260	2670	1100	2331	7	102	16	232	DN100	510	20.1	410	16.1	1360	53.5	1500	59.1	143.0	415.3
1600F	1400+F	1600	3390	1400	2967	7	102	16	232	DN150	620	24.4	485	19.1	1480	58.3	1560	61.4	210.0	463.0
2200F	1800+F	2200	4662	1800	3814	7	102	16	232	DN150	640	25.2	490	19.3	1555	61.2	1640	64.6	176.0	388,0
2400F	2200+F	2400	5086	2200	4662	7	102	16	232	DN150	640	25.2	490	19.3	1555	61.2	1640	64.6	178.0	392.4
3600F	3000+F	3600	7628	3000	6357	7	102	16	232	DN200	820	32.3	650	25.6	1745	68.7	1710	67.3	420.0	925.9
-	4000+F	-	-	4000	8476	7	102	16	232	DN200	820	32.3	650	25.6	1745	68.7	1710	67.3	428.0	943.6
-	5000+F	-	-	5000	10595	7	102	16	232	DN200	820	32.3	650	25.6	1745	68.7	1710	67.3	432.0	952.4
-	6000+F	-	-	6000	12714	7	102	16	232	DN250	920	32.3	815	32.1	2085	80.3	1625	64	671.0	1479.3
-	7000+F	-	-	7000	14833	7	102	16	232	DN250	920	36.2	815	32.1	2085	82.1	1625	64	675.0	1488.1
-	8000+F	-	-	8000	16952	7	102	16	232	DN300	1040	40.9	930	36.6	2070	81.5	1625	64	900.0	1984.2

Correction factors

Inlet pressure (bar)	1	2	3	4	5	6	7	8	10	12	14	16
Inlet pressure (psig)	15	29	44	58	72.5	87	102	116	145	174	203	232
Correction factor	0.38	0.53	0.65	0.75	0.83	0.92	1.00	1.06	1.20	1.31	1.41	1.50

Example

- Working pressure 3 bar(g), compressed air flow 35 l/s.
- Multiply the nominal capacity of the selected filter with the corresponding correction factor at the required working pressure to obtain the capacity at working pressure:
  - Size 50+: 50 l/s * 0.65 = 33 l/s => the 50+ filter size is not large enough.
  - Size 70+: 70 l/s * 0.65 = 46 l/s => the 70+ filter size is the size to select.



850+T & 1100+T | 9+ – 550+ | 550+F – 8000+F

Options

- Filter connection kit for easy mounting in series (10+ - 550+ l/s and 12-690 l/s).
- Wall-mounting kit simplifies installation (10+ - 550+ l/s and 12-690 l/s).
- Quick coupling connects the filter with a drain or oil/water separator.
- Voltage-free contact mounted in the differential pressure gauge, to give remote indication of cartridge replacement.
- EWD electronic drain with no loss of compressed air and an alarm function (EWD is optional on sizes 10+ - 550+ l/s and 12-690 l/s; standard on sizes ≥550F).


EWD electronic drain

Certification

- ISO 8573-2:2007
- ISO 12500-1:2007

DDp(+)/PDp(+) SERIES

Optimal dry dust filtration

DDp(+) and PDp(+) filters efficiently prevent dust, particulates and micro-organisms arising from corrosion, dirt and adsorption material from entering your compressed air stream. These innovative filtration solutions are engineered to cost-effectively provide the best air purity and meet today's increasing quality demands.

YOUR BENEFITS

Maximum dirt, solid particles, micro-organisms and rust particles removal
High-efficient glass fiber and foam media.

Significant energy savings & limited system operating costs
Optimal design and filter media allow for low pressure losses.

High reliability
High-performance stainless steel cores, double O-rings, epoxy sealed caps, and anti-corrosive coated filter housing.

Easy maintenance
External ribs on the threaded housing, or a rotating bottom cover for the welded housings, and push-on elements.

Monitoring of energy use
Differential pressure indication (indicator for sizes 10-35 l/s, gauge for sizes 45-8000 l/s) (optional for standard range).

Performance

	DDp	PDp	DDp+	PDp+
Contaminant	Dry dust			
Test method	ISO 8573-4:2001, ISO 12500-3:2009			
Particle removal efficiency (% at MPPS)	99.81	99.97	99.92	99.98
Dry pressure drop (mbar)	135	150	85	100
Element service	After 4,000 operating hours or 1 year or 350 mbar pressure drop			
Precede with	Dryer	Dryer DDp	Dryer	Dryer DDp+

Sizing & dimensions

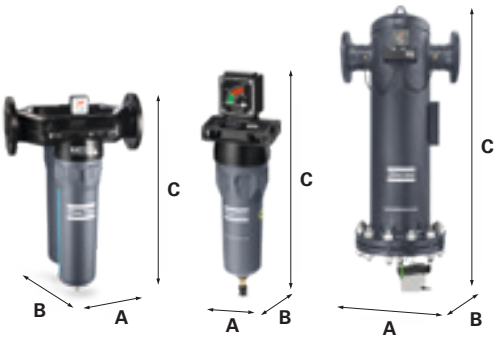
FILTER SIZE DDp/PDp		Nominal capacity				Reference pressure		Maximum pressure		Connections	Dimensions						Free space for cartridge replacement		Weight	
		Standard		+							A		B		C		D			
Standard	+	l/s	cfm	l/s	cfm	bar(e)	psig	bar(e)	psig	in	mm	in	mm	in	mm	in	mm	in	kg	lbs
12	10+	12	25	10	21	7	102	16	232	3/8	90	3.5	61	2.4	268	10.6	75	2.9	1.0	2.2
25	20+	25	53	20	42	7	102	16	232	1/2	90	3.5	61	2.4	268	10.6	75	2.9	1.1	2.4
45	35+	45	95	35	74	7	102	16	232	1/2	90	3.5	61	2.4	323	12.7	75	2.9	1.3	2.9
65	50+	65	138	50	106	7	102	16	232	3/4 & 1	110	4.3	99	3.9	374	14.7	75	2.9	1.6	4.2
90	70+	90	191	70	148	7	102	16	232	1	110	4.3	99	3.9	414	16.3	75	2.9	2.1	4.6
160	130+	160	339	130	275	7	102	16	232	1-1/2	140	5.5	105	4.1	520	20.5	100	3.9	4.2	9.3
215	170+	215	456	170	360	7	102	16	232	1-1/2	140	5.5	105	4.1	603	23.7	100	3.9	4.5	9.9
265	210+	265	562	210	445	7	102	16	232	1-1/2	140	5.5	105	4.1	603	23.7	100	3.9	4.6	10.1
360	310+	360	763	310	657	7	102	16	232	2 & 2-1/2	179	7.0	121	4.8	689	27.1	150	5.9	6.9	15.2
525	425+	525	1112	425	901	7	102	16	232	3	210	8.3	128	5.0	791	31.1	200	7.9	11.0	24.2
690	550+	690	1462	550	1165	7	102	16	232	3	210	8.3	128	5,0	961	37.9	200	7.9	12.6	27.8
630F	550+F	630	1335	550	1165	7	102	16	232	DN80	370	14.6	280	11	1295	51.0	1375	54.1	76.0	167.6
-	850+T	-	-	850	1801	7	102	16	232	DN100	510	20.1	418	16.5	796	31.3	200	7.9	35.2	77.6
970F	850+F	970	2055	850	1801	7	102	16	232	DN100	510	20.1	410	16.1	1360	53.5	1500	59.1	141.0	310.9
-	1100+T	-	-	1100	2331	7	102	16	232	DN100	510	20.1	418	16.5	966	38.0	200	7.9	37.4	82.4
1260F	1100+F	1260	2670	1100	2331	7	102	16	232	DN100	510	20.1	410	16.1	1360	53.5	1500	59.1	143.0	415.3
1600F	1400+F	1600	3390	1400	2967	7	102	16	232	DN150	620	24.4	485	19.1	1480	58.3	1560	61.4	210.0	463.0
2200F	1800+F	2200	4662	1800	3814	7	102	16	232	DN150	640	25.2	490	19.3	1555	61.2	1640	64.6	176.0	388,0
2400F	2200+F	2400	5086	2200	4662	7	102	16	232	DN150	640	25.2	490	19.3	1555	61.2	1640	64.6	178.0	392.4
3600F	3000+F	3600	7628	3000	6357	7	102	16	232	DN200	820	32.3	650	25.6	1745	68.7	1710	67.3	420.0	925.9
-	4000+F	-	-	4000	8476	7	102	16	232	DN200	820	32.3	650	25.6	1745	68.7	1710	67.3	428.0	943.6
-	5000+F	-	-	5000	10595	7	102	16	232	DN250	820	32.3	650	25.6	1745	68.7	1710	67.3	432.0	952.4
-	6000+F	-	-	6000	12714	7	102	16	232	DN250	920	32.3	815	32.1	2085	80.3	1625	64	671.0	1479.3
-	7000+F	-	-	7000	14833	7	102	16	232	DN300	920	36.2	815	32.1	2085	82.1	1625	64	675.0	1488.1
-	8000+F	-	-	8000	16952	7	102	16	232	DN300	1040	40.9	930	36.6	2070	81.5	1625	64	900.0	1984.2

Correction factors

Inlet pressure (bar)	1	2	3	4	5	6	7	8	10	12	14	16
Inlet pressure (psig)	15	29	44	58	72.5	87	102	116	145	174	203	232
Correction factor	0.38	0.53	0.65	0.75	0.83	0.92	1.00	1.06	1.20	1.31	1.41	1.50

Example

- Working pressure 3 bar(g), compressed air flow 35 l/s.
- Multiply the nominal capacity of the selected filter with the corresponding correction factor at the required working pressure to obtain the capacity at working pressure:
  - Size 50+: 50 l/s * 0.65 = 33 l/s => the 50+ filter size is not large enough.
  - Size 70+: 70 l/s * 0.65 = 46 l/s => the 70+ filter size is the size to select.



850+T & 1100+T | 9+ – 550+ | 550+F – 8000+F

Options

- Filter connection kit for easy mounting in series (10+ - 550+ l/s and 12-690 l/s).
- Wall-mounting kit simplifies installation (10+ - 550+ l/s and 12-690 l/s).
- Voltage-free contact mounted in the differential pressure gauge, to give remote indication of cartridge replacement.

Certification

- ISO 8573-4:2001
- ISO 12500-3:2009

Voltage-free contact

QDT SERIES

Activated carbon towers for optimal oil vapor filtration

The high efficiency activated carbon tower is capable of removing hydrocarbons, odors and oil vapor from compressed air.
The activated carbon will, by the use of adsorption, reduce the residual oil content to lower than 0.003 mg/m³.
The pressure drop is low and stays minimal during the filter's lifetime.

YOUR BENEFITS

Maximum oil vapor removal
Superb activated carbon material.

Low pressure drop
Optimal internal flow path.

High reliability
Robust design and optimal filter material.

Options
- Oil indicator ensures pure air.
- Wall mounting kit for easy installation (20 – 185 l/s).

Certification
ISO 8573-5:2001

Performance

	QDT
Contaminant	Oil vapor
Test method	ISO 8573-5:2001, ISO 12500-2:2007
Maximum oil carry-over (mg/m³)*	0.003
Dry pressure drop (mbar)	125 (QDT 20-310) 72 (QDT 425-1800)
Element service	After 4,000 operating hours or 1 year
Precede with	Water separation UD+ or DD+/PD+ Dryer

* After UD+ or DD+/PD+ with inlet oil concentration of 10 mg/m³.

Sizing & dimensions

FILTER SIZE QDT	Nominal capacity		Connections G or NPT threaded	Dimensions						Weight	
				A		B		C			
	l/s	cfm	DIN or ANSI flanged	mm	in	mm	in	mm	in	kg	lbs
20	20	42	1/2"	490	19	223	9	190	7	10	22
45	45	95	1"	715	28	223	9	190	7	15	33
60	60	127	1"	840	33	223	9	190	7	18	40
95	95	210	1"	715	28	387	15	190	7	29	64
125	125	265	1 1/2"	840	33	387	15	190	7	34	75
150	150	318	1 1/2"	715	28	551	22	190	7	42	93
185	185	392	1 1/2"	840	33	551	22	190	7	50	110
245	245	519	1 1/2"	840	33	715	28	190	7	67	148
310	310	657	1 1/2"	840	33	879	35	190	7	84	185
425	425	901	DN80 / 3"	2148	85	710	28	600	24	264	581
550	550	1165	DN80 / 3"	2190	86	710	28	670	26	302	664
850	850	1801	DN100 / 4"	2320	91	724	29	805	32	391	860
1100	1100	2331	DN100 / 4"	2450	97	934	37	820	32	602	1324
1800	1800	3814	DN150 / 6"	2612	103	1046	41	980	39	882	1940

Correction factors

For other compressed air inlet temperatures, please multiply the filter capacity by the following correction factor (Kt):

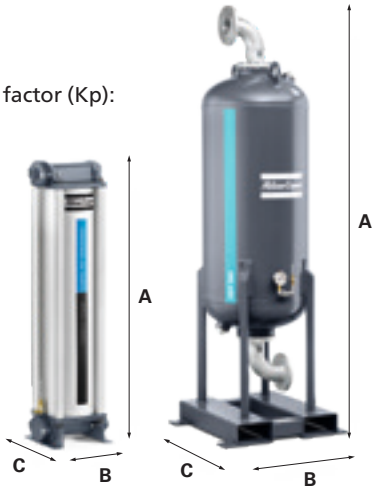
Inlet temperature °C	20	25	30	35	40	45	50	55	60
Inlet temperature °F	68	77	96	95	104	113	122	131	140
Correction factor	1	1	1	1	0.85	0.67	0.59	0.48	0.42

For other compressed air inlet pressures, please multiply the filter capacity by the following correction factor (Kp):

Inlet pressure bar	3	4	5	6	7	8	9	10	11	12	13
Inlet pressure psi	44	58	73	87	102	116	131	145	160	174	193
Correction factor	0.57	0.77	0.83	1	1	1	1	1.05	1.05	1.11	1.18

Example

- Working temperature 50°C, pressure 12 bar(g), compressed air flow 120 l/s.
- Multiply the nominal capacity of the selected filter with the corresponding correction factors at the required working temperature and pressure to obtain the capacity at operating condition
  - QDT 150: 150l/s * 0.59 * 1.11 = 98l/s => A QDT 150 filter is not large enough
  - QDT 195: 195l/s * 0.59 * 1.11 = 128l/s => A QDT 195 filter is the correct size



QDT 20-310 QDT 425-1800

UD+ & QDT: the winning combination

UD+	QDT
Liquid oil & oil aerosol removal	Oil vapor removal
Guaranteed 0.0009 mg/m³ aerosol and liquid	Guaranteed 0.003 mg/m³ vapor
40% pressure drop reduction compared to DD+/PD+	65% pressure drop reduction compared to previous QDT
50% footprint reduction	Extremely compact compared to vessel designs

CLASS 1: Total oil, according ISO 8573-1:2010

The Atlas Copco UD+ - QDT filter train meets the requirements of air purity class 1 for total oil, according to ISO 8573-1:2010, in a typical compressed air installation.

QD(+) SERIES

High performance oil vapor filters

QD(+) filters efficiently reduce hydrocarbons, odors and oil vapor in your compressed air stream to protect your investment, equipment and processes. The activated carbon layers will, by the use of adsorption, reduce the residual oil content to less than 0.003 mg/m³. The pressure drop is low and stays minimal during the lifetime of the filter.

YOUR BENEFITS

Maximum oil vapor removal
Highly efficient activated carbon layers.

Significant energy savings & limited system operating costs
Low pressure losses.

High reliability
High-performance stainless steel cores, double O-rings, epoxy sealed caps, and anti-corrosive coated filter housing.

Easy maintenance
External ribs on the threaded housing, or a rotating bottom cover for the welded housings, and push-on elements.

Options
- Filter connection kit for easy mounting in series (10+ - 550+ l/s and 12-690 l/s).
- Wall mounting kit simplifies installation (10+ - 550+ l/s and 12-690 l/s).

For sizing and dimensions, please refer to the product pages of the DD(+) & PD(+) Series.

Performance

	QD	QD+
Contaminant	Oil vapor	
Test method	ISO 8573-5:2001	
Maximum oil carry-over (mg/m³)*	0.003*	
Dry pressure drop (mbar)	190	140
Element service	After 1,000 operating hours or 1 year. Service life is decreased when inlet temperature exceeds 35°C, 95°F	
Precede with	Water separation DD/PD Dryer	Water separation UD+ or DD+/PD+ Dryer

* After UD+ or DD(+)/PD(+) with inlet oil concentration of 10 mg/m³.

SFA SERIES

Silicone-free removal of oil aerosol, dust and oil vapor

Superb air purity is a prerequisite to safeguard your instruments and end product. Our silicone-free SFA filters efficiently prevent dry and wet dust, particulates, oil aerosol and water drops from entering your compressed air system. The SFA series is manufactured and treated according to the high standards of silicone-free equipment, and certified by the Fraunhofer Institute as guaranteed silicone-free.

YOUR BENEFITS

Maximum contaminant removal
Removal of dry and wet dust, particulates, oil aerosol and water droplets. High-efficiency glass fiber and fleece media.

Significant energy savings & limited system operating costs
Optimal design and filter media allow for low pressure drops.

High reliability
High-performance stainless steel cores, double O-rings, epoxy sealed caps and anti-corrosive coated filter housing.

Easy maintenance
External ribs on the threaded housing and push-on elements.

Monitoring of energy use
Differential pressure indication (indicator for sizes 9-32 l/s, gauge for sizes 44-520 l/s) (optional).

Applications
- Painting
- Automotive

Options
- Filter connection kit (9-520 l/s).
- Wall-mounting kit (9-520 l/s).
- Quick coupling (DD & PD only).
- EWD no-loss electronic drain (DD & PD only).
- Voltage-free contact mounted in the differential gauge (not for QD).

Certification
Paint compatibility certificate (Fraunhofer Institute)

The performance of the SFA filters is comparable to the performance of the + range filters (please refer to pages 8, 10 and 14).

Sizing & dimensions

FILTER SIZE	Nominal capacity*		Maximal capacity*		Connections G or NPT	Dimensions						Free space for cartridge replacement		Weight	
						A		B		C		D			
DD, DDp, PD, PDp, QD	l/s	cfm	l/s	cfm	in	mm	in	mm	in	mm	in	mm	in	kg	lbs
9	9	19	11	23	3/8	90	3.54	61	2.40	268	10.55	75	2.95	1	2.2
17	17	36	21	45	1/2	90	3.54	61	2.40	268	10.55	75	2.95	1.1	2.4
32	32	68	40	85	1/2	90	3.54	61	2.40	323	12.72	75	2.95	1.3	2.9
44	44	93	55	117	3/4 & 1	110	4.33	98.5	3.88	374	14.72	75	2.95	1.9	4.19
60	60	127	75	159	1	110	4.33	98.5	3.88	414	16.3	75	2.95	2.1	4.6
120	120	254	150	318	1-1/2	140	5.51	105	4.13	520	20.47	100	3.94	4.2	9.3
150	150	318	188	399	1-1/2	140	5.51	105	4.13	603	23.47	100	3.94	4.5	9.9
175	175	371	219	464	1-1/2	140	5.51	105	4.13	603	23.47	100	3.94	4.6	10.1
280	280	594	350	742	2 & 2-1/2	179	7.05	121	4.76	689	27.13	150	5.91	6.9	15.2
390	390	827	488	1035	3	210	8.27	128	5.04	791	31.14	200	7.87	11	24.2
520	520	1102	650	1378	3	210	8.27	128	5.04	961	37.83	200	7.87	12.6	27.8

* Nominal pressure: 7 bar(e)/102 psig; temperature: 20°C, 68°F.

H SERIES

Guaranteed air purity up to 350 bar

High pressure filters efficiently reduce oil aerosol, dust and wet dust, particulates, water droplets and oil vapor in your compressed air stream to protect your investment, equipment and processes. Our innovative high pressure filtration solutions are engineered to cost effectively provide the best air purity and meet today's increasing quality demands up to working pressures of 350 bar. All high pressure filter housings are hydraulically tested to ensure safe and reliable operation at all times. A pressure test certificate accompanies each filter.

YOUR BENEFITS

Maximum contaminant removal (dry & wet dust, particulates, oil aerosol and water droplets)

High-efficient glass fiber and fleece media.

Significant energy savings & limited system operation cost

Optimal design and filter media allow for low pressure losses.

High reliability

High-performance stainless steel cores, double O-rings, epoxy sealed caps and anti-corrosive coated filter housing.

Applications

- Chemical
- Food & beverage
- Manufacturing
- Military
- Oil & gas

Performance

	DDHp+	PDHp+	DDH+	PDH+	QDH+
Contaminant	Dry dust		Oil aerosol/wet dust		Oil vapor
Test method	ISO 8573-4:2001 ISO 12500-3:2009		ISO 8573-2:2007 ISO 12500-1:2007		ISO 8573-5:2001
Maximum oil carry-over (mg/m^3)	-	-	0.08*	0.007*	0.003**
Particle removal efficiency (% at MPPS)	99.92 (0.1)	99.98 (0.06)	N/A	N/A	N/A
Dry pressure drop (mbar)	85	100	N/A	N/A	140
Wet pressure drop (mbar)	N/A	N/A	180	215	N/A
Element service	After 4,000 operating hours or 1 year or 350 mbar pressure drop		After 4,000 operating hours or 1 year		After 1,000 operating hours or 1 year
Precede with	N/A	DDHp+	N/A	DDH+	DDH+/PDH+

Always install a liquid water separation system in front of a filter. Water separation is not needed in the high pressure line if there is a sufficiently low PDP in the low pressure line (e.g. nitrogen skid, low pressure line with adsorption dryer).

* Inlet oil concentration = 10 mg/m^3. Oil = oil aerosol and liquid.
** After DD(+)/PD(+) with inlet oil concentration of 10 mg/m^3.

Sizing & dimensions

FILTER SIZE	Nominal capacity			Connections	Dimensions						Weight	
					A		B		C			
DDH, DDHp, PDH, PDHp, QDH	m^3/h	l/s	cfm	in	mm	in	mm	in	mm	in	kg	lbs
20 bar Aluminum												
15+	54	15	32	3/8	90	3.5	61	2.4	268	10.6	1.0	2.2
32+	115	32	68	1/2	90	3.5	61	2.4	268	10.6	1.1	2.4
55+	198	55	117	1/2	90	3.5	61	2.4	323	12.7	1.3	2.9
80+	288	80	170	3/4 & 1	110	4.3	99	3.9	374	14.7	1.6	3.5
110+	396	110	233	1	110	4.3	99	3.9	414	16.3	2.1	4.6
200+	720	200	424	1 1/2	140	5.5	105	4.1	520	20.5	4.2	9.3
270+	972	270	572	1 1/2	140	5.5	105	4.1	603	23.7	4.5	9.9
330+	1188	330	699	1 1/2	140	5.5	105	4.1	603	23.7	4.6	10.1
490+	1764	490	1038	2 & 2 1/2	179	7.0	121	4.8	689	27.1	6.9	15.2
50 bar Aluminum												
160+	160	44	94	1/4	63	2.5	63	2.5	150	5.9	0.3	0.7
250+	250	69	147	3/8	63	2.5	63	2.5	190	7.4	0.3	0.7
450+	450	125	265	1/2	114	4.4	114	4.4	305	11.9	2.6	5.7
550+	550	153	324	3/4	114	4.4	114	4.4	305	11.9	2.6	5.7
835+	835	232	491	1	114	4.4	114	4.4	395	15.4	3.3	7.3
1250+	1250	347	736	1 1/2	146	5.7	146	5.7	435	17.0	7.5	16.5
1725+	1725	479	1015	1 1/2	146	5.7	146	5.7	435	17.0	7.5	16.5
1925+	1925	535	1133	2	146	5.7	146	5.7	435	17.0	7.5	16.5
3200+	3200	889	1883	2	146	5.7	146	5.7	635	24.8	10	22.0
50 bar Stainless Steel												
100+	100	28	59	1/4	85	3.3	85	3.3	202	7.9	1.7	3.7
200+	200	56	118	3/8	85	3.3	85	3.3	227	8.9	2	4.4
340+	340	94	200	1/2	85	3.3	85	3.3	257	10.0	2.2	4.8
500+	500	139	294	3/4	110	4.3	110	4.3	270	10.5	4	8.8
1000+	1000	278	589	1	110	4.3	110	4.3	422	16.5	5	11.0
1700+	1700	472	1000	1 1/2	150	5.9	150	5.9	517	20.2	15	33.1
2040+	2040	567	1200	2	150	5.9	150	5.9	517	20.2	15	33.1
3400+	3400	944	2000	2	150	5.9	150	5.9	817	31.9	21	46.3
100 bar Stainless Steel												
100+	100	28	59	1/4	65	2.5	65	2.5	135	5.3	3.2	7.1
315+	315	88	185	1/2	65	2.5	65	2.5	250	9.8	5.6	12.3
460+	460	128	271	3/4	88	3.4	88	3.4	275	10.7	6.1	13.4
680+	680	189	400	1	135	5.3	135	5.3	265	10.3	10.5	23.1
1200+	1200	333	706	1	135	5.3	135	5.3	480	18.7	14.7	32.4
1700+	1700	472	1000	1 1/2	150	5.9	150	5.9	525	20.5	22	48.5
3400+	3400	944	2000	2	150	5.9	150	5.9	815	31.8	28	61.7
350 bar Stainless Steel												
48+	48	13	28	1/4	41	1.6	41	1.6	103	4.0	1.6	3.5
111+	111	31	65	1/4	65	2.5	65	2.5	135	5.3	3.2	7.1
255+	255	71	150	1/2	88.5	3.5	88.5	3.5	210	8.2	5.6	12.3
510+	510	142	300	3/4	88.5	3.5	88.5	3.5	280	10.9	6.1	13.4
750+	750	208	441	1	150	5.9	150	5.9	330	12.9	14.5	32.0
1330+	1330	369	783	1	150	5.9	150	5.9	480	18.7	17.4	38.3

Correction factors

20 bar Aluminum											
Operating pressure	barg	-	-	-	-	-	14	16	18	20	
	psig	-	-	-	-	-	203	232	261	290	
Correction factor							0.9	0.95	1	1.05	

50 bar Aluminum & Stainless Steel											
Operating pressure	barg	4	6	8	10	15	20	30	40	50	
	psig	58	87	116	145	218	290	435	581	726	
Correction factor		0.14	0.22	0.28	0.34	0.47	0.56	0.7	0.85	1	

100 bar Stainless Steel											
Operating pressure	barg	20	30	40	50	60	70	80	90	100	
	psig	290	435	581	726	871	1016	1161	1306	1451	
Correction factor		0.45	0.57	0.68	0.8	0.84	0.88	0.92	0.96	1	

350 bar Stainless Steel											
Operating pressure	barg	-	-	50	100	150	200	250	300	350	
	psig	-	-	726	1451	2177	2903	3628	4354	5080	
Correction factor				0.73	0.78	0.82	0.87	0.91	0.96	1	

Example

- Working pressure 300 bar(g), compressed air flow 500 m^3/h.
- Multiply the nominal capacity of the selected filter with the corresponding correction factor at the required working pressure to obtain the capacity at working pressure:
  - Size 510+: 510 m^3/h * 0.96 = 490 m^3/h => the 510+ filter size is not large enough.
  - Size 750+: 750 m^3/h * 0.96 = 720 m^3/h => the 750+ filter size is the size to select.

MV SERIES

Medical vacuum filters for optimal protection of man and machine

Medical vacuum filters are installed at the inlet of the vacuum pump to remove any liquid, solid or bacterial contamination which could damage the vacuum pump and biologically infect the downstream air.
Our innovative medical vacuum filtration solutions comply with HTM medical standards.

YOUR BENEFITS

Maximum contaminant removal
Removal of dry and wet dust, particulates, oil aerosol and water droplets.
High-efficiency glass fiber and fleece media.

Significant energy savings & limited system operation cost
Optimal design and filter media allow for low pressure losses.

High reliability
High performance stainless steel cores, double O-rings, epoxy sealed caps and anti-corrosive coated filter housing.

Easy maintenance
External ribs on the threaded housing and push-on elements.

Monitoring of energy use
Differential pressure indication show the pressure loss.

Applications
- Medical
- Dental
- Veterinary

Performance

	MV
Contaminant	Dry dust
Maximum temperature	60°C/140°F
Maximum working vacuum	Full vacuum
Test method	Sodium flame test BS 3928:1969, based on requirements of HTM2022
Particle removal efficiency (%)*	99.995
Dry pressure drop (mbar)	30
Element service	After 2,000 operating hours or 1 year or 100 mbar pressure drop

* In accordance with BS 3928-1969.

Sizing & dimensions

FILTER SIZE MV	Nominal Capacity	Connections	Dimensions						Weight	
			A		B		C			
	l/min	in	mm	in	mm	in	mm	in	kg	lbs
10	400	1/2	60	2	90	4	240	9	1.3	2.9
20	800	1	76	3	110	4	300	12	2.1	4.6
60	2400	1 1/2	103	4	140	5	489	19	4.6	10.1
80	3400	2	135	5	179	7	575	22	6.9	15.2
120	4900	3	155	6	210	8	677	26	11.0	24.2
160	6700	3	155	6	210	8	847	33	12.6	27.8

Correction factors

Operating pressure	bar(a)	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
	Psig	1	3	4	6	7	9	10	12	13	15
	Torr = mm Hg	75	150	225	300	375	450	525	600	675	750
Correction factor		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1

Example

- Working vacuum 300 mbar(a), capacity 1,000 l/min.
- Multiply the nominal capacity of the selected filter with the corresponding correction factor at the required working vacuum to obtain the correct capacity:
  - Size 60: 2,400 l/min * 0.3 = 720 l/min => the 60 filter size is not large enough.
  - Size 80: 3,400 l/min * 0.3 = 1,020 l/min => the 80 filter size is the size to select.

Options

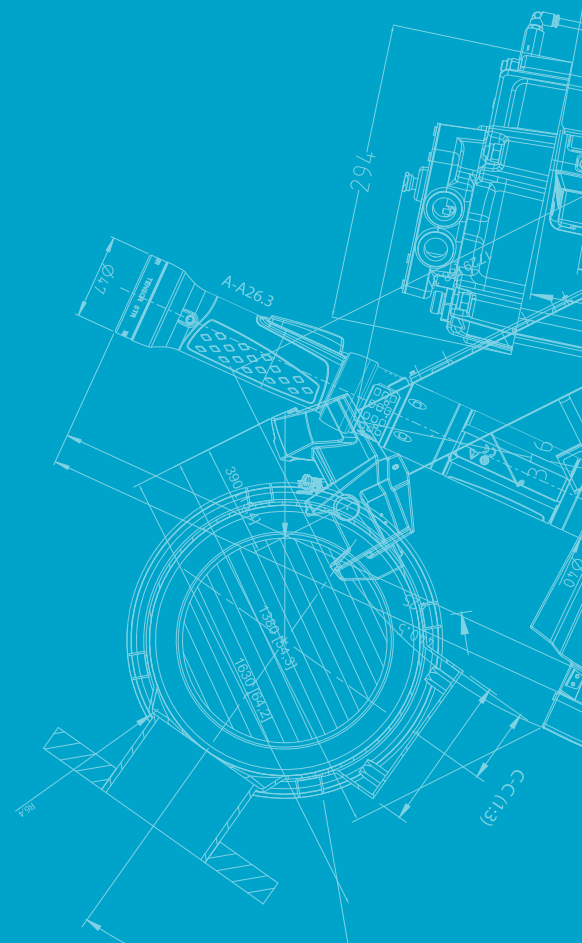
- Wall mounting kit.
- Drain flask.

Drain flask

AIR FILTRATION TEST CERTIFICATE

Certification

BS 3928 Sodium flame test certificate based on requirements of HTM2022.



ISO 9001 • ISO 14001
OHSAS 18001
ISO 22000

Atlas Copco

atlascopco.com

EC CERTIFICATE – FULL QUALITY ASSURANCE SYSTEM
CERTIFICATE LRQ 4009595/B SCHEDULE

In accordance with the requirements of the Medical Devices Directive 93/42/EEC and the Medical Devices Regulations 2002, UK Statutory Instrument 2002 No. 618

Atlas Copco Nederland B.V.
Technologieweg 19
4906AC Oosterhout
The Netherlands

Class IIb Products
OGP-MED Oxygen Generators

Schedule Issue: 01

Date of Schedule Issue: 28 November 2016

LRQA Notified Body Number 0088

Issued by: Lloyd's Register Quality Assurance Limited

Trinity Park, Bickenhill Lane, Birmingham B37 7ES, United Kingdom.

Health Protection Agency
Microbiology Services
Porton Down
Salisbury
Wiltshire SP4 0JG
United Kingdom

Certificate of Filtration Efficiencies

Evaluation of Filtration Efficiencies Against Bacterial and Viral Aerosol Challenges

Report No. 79-10

Report prepared for: Atlas Copco Airpower n.v.
Issue Date of Certificate: 25th July 2011

Test Summary

The efficiencies of four Atlas Copco Airpower n.v. PDp filters were determined against aerosols of micro-organisms at 240 litres min^{-1}. Two filters were challenged with bacterial aerosols of *Bacillus atrophaeus* and two filters were challenged with viral aerosols of MS-2 coliphage.

Challenge aerosol	Average Challenge	Average Removal Efficiency	Average Titre Reduction
Bacteria *Bacillus atrophaeus*	**4.91×10^8 cfu**	**99.966675 %**	**3.15×10^3**
Virus MS-2 Coliphage	**3.75×10^8 pfu**	**99.99335 %**	**1.51×10^4**

cfu = colony forming units, pfu = plaque forming units

Report Written By Anna May

Report Authorised By

WALKER FILTRATION
MEDICAL

Medical Sterile Filters

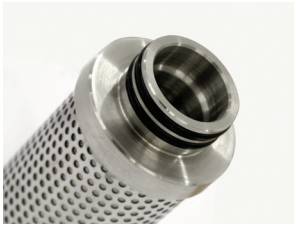
Designed to exceed the requirements of HTM 02-01 Technical Memorandum

Models | A3021MS to A3303MS

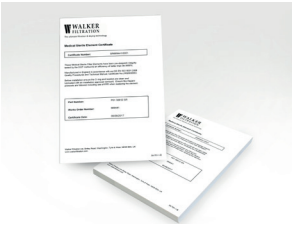
Flow Rates 15 SCFM (25 Nm³/hr) to 1500 SCFM (2550 Nm³/hr)

When it comes to patient care, quality and reliability of compressed air is paramount. Walker Filtration's range of New Alpha Medical Sterile Filters guarantees reliable and outstanding air purity that meets internationally certified medical performance levels.

100% integrity tested, New Alpha Medical Sterile elements are guaranteed for a minimum of 100 sterilizations at 248°F (120°C), ensuring your compressed air is free from live bacteria and other submicron particles.



Stainless Steel End Caps
Specially designed for autoclave sterilization compatibility



100% Integrity Tested
Each element is supplied with an Air Sterilization Certificate to guarantee the highest quality to our customers

Product Safety in Mind
Lock indication arrows assure effective sealing

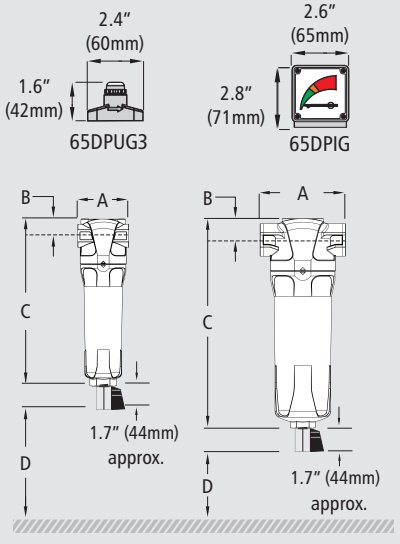
- **International Validation** Designed to exceed the requirements of HTM 02-01 medical gas pipeline systems
- **Simplified Serviceability** Ribbed bowl design and unique push fit elements ensure quick and reliable maintenance
- **Product Safety in Mind** Guaranteed safe housing closure with rotational safety stop
- **Corrosion Protection** Internal and external electrophoretic paint finish followed by a tough polyester powder coating
- **Flexible Installation** Modular design and accessible fixings enable simple close coupling assembly
- **Robust and Sterilizable Materials** Manufactured from cast aluminum alloy for enhanced strength and protection

For further information please visit www.walkerfiltration.com

Technical Specification

Filter model	Pipe size inches	Inlet flow rate*		Dimensions inches (mm)				Weight		Element model
		SCFM	Nm³/hr	A	B	C	D	lbs	kg	
A3021MS	¼	15	25	1.97 (50)	0.67 (17)	618 (157)	2.36 (60)	0.6	0.25	E30306SR
A3022MS	¼	25	42	2.76 (70)	0.94 (24)	9.09 (231)	2.76 (70)	1.3	0.6	E30408SR
A3031MS	⅜	32	54	2.76 (70)	0.94 (24)	9.09 (231)	2.76 (70)	1.3	0.6	E30408SR
A3051MS	½	50	85	2.76 (70)	0.94 (24)	9.09 (231)	2.76 (70)	1.3	0.6	E30412SR
A3052MS	½	70	119	5.00 (127)	1.26 (32)	11.22 (285)	3.15 (80)	3.7	1.7	E30612SR
A3071MS	¾	85	144	5.00 (127)	1.26 (32)	11.22 (285)	3.15 (80)	3.7	1.7	E30612SR
A3102MS	1	175	297	5.00 (127)	1.26 (32)	14.61 (371)	3.15 (80)	4.4	2	E30621SR
A3122MS	1¼	280	476	6.69 (170)	2.09 (53)	20.00 (508)	3.94 (100)	10.8	4.9	E30831SR
A3151MS	1½	400	680	6.69 (170)	2.09 (53)	20.00 (508)	3.94 (100)	10.8	4.9	E30831SR
A3201MS	2	450	765	6.69 (170)	2.09 (53)	20.00 (508)	3.94 (100)	10.8	4.9	E30831SR
A3202MS	2	700	1189	6.69 (170)	2.09 (53)	27.87 (708)	3.94 (100)	12.1	5.5	E30850SR
A3251MS	2½	850	1444	8.66 (220)	2.76 (70)	28.98 (736)	3.94 (100)	23.1	10.5	E31140SR
A3301MS	3	900	1529	8.66 (220)	2.76 (70)	28.98 (736)	3.94 (100)	23.1	10.5	E31140SR
A3302MS	3	1250	2125	8.66 (220)	2.76 (70)	33.74 (857)	3.94 (100)	25.4	11.5	E31160SR
A3303MS	3	1500	2550	8.66 (220)	2.76 (70)	39.57 (1005)	3.94 (100)	27.6	12.5	E31175SR

*Rated flow at 100 psig (7 barg), reference conditions at 14.5 psi (a) (1 bar (a)) 68ºF (20ºC)



Grade	SR	
DOP efficiency**	>99.9999%	
Particle removal	0.01 micron	
Maximum operating temperature	248ºF	120ºC
Recommended operating temperature	122ºF	50ºC
Maximum autoclave temperature	273ºF	134ºC
Pressure Loss - clean & dry	1.5 psi	100 mbar
Maximum working pressure	300 psig	20.7 barg
Element end cap material	Stainless steel	

**As specified in HTM 02-01 medical gas pipeline systems

Pressure correction factors	For maximum flow rate, multiply model flow rate by the correction factor corresponding to the minimum operating pressure									
Operating pressure psig (barg)	58 (4)	72 (5)	87 (6)	100 (7)	115 (8)	145 (10)	174 (12)	203 (14)	232 (16)	290 (20)
100 psig correction factor	0.76	0.84	0.92	1.00	1.07	1.19	1.31	1.41	1.51	1.60

Technical notes

1. Filter element End Caps are stainless steel.
2. Direction of air flow is outside to in through the filter element.
3. Pop up indicators (65DPUG3) are fitted to models A3022 to A3051 as standard. Differential pressure indicators (65DPIG) are fitted to models A3052 to A3303 as standard.
4. Manual drain valves (MDV25 on models A3021MS to 3051MS and MDVE25 on models A3052MS to A3303MS) are fitted as standard.
5. Medical Sterile Filter elements must not operate in water or oil saturated conditions.
6. Maximum steam sterilizing temperature refers to the filter element ONLY. Grade SR filter elements can be steam sterilized 100 times. Each element must be autoclaved before commencement of duty.
7. Pre-filtration should be used in conjunction with 0.01 micron sterile filters.
8. Threaded filters are manufactured from cast aluminum alloy and are PED 2014/68/EU compliant for group 2 gases.
9. Standard threaded connections are NPT to ANSI/ASME B1.20.1. RP (BSP Parallel) to ISO 7-1 and RC (BSP Taper) to ISO 7-1 are also available upon request.
10. Filter elements should be changed at least every 6 months or every 100 sterilizations, whichever comes first.
11. Filters are suitable for use in dry air conditions only, as any liquids passings through the filter could carry bacteria and compromise sterility

CRN

MEMBER OF CAGI Compressed Air & Gas Institute

bcas BRITISH COMPRESSED AIR SOCIETY LIMITED

THE QUEEN'S AWARDS FOR ENTERPRISE: INNOVATION 2016

Walker Filtration Inc, 4748 Pacific Avenue, Erie, PA 16506, USA
tel: +1 814 836 2900 fax: +1 814 836 7921 **email:** usa@walkerfiltration.com **web:** www.walkerfiltration.com

WFI1009 Rev-D-US 0119

Lloyd's Register

Current issue date:	1 September 2020	Original approval:
Expiry date:	31 August 2023	ISO 13485 - 27 September 2005
Certificate identity number:	10285386	
Certificate approval number:	LRQ4002629	

Certificate of Approval

This is to certify that the Management System of:

Atlas Copco Airpower NV

Boomsesteenweg 957, 2610 Wilrijk, Belgium

has been approved by Lloyd's Register to the following standards:

ISO 13485:2016

Product approval number: ISO 13485 – 0010344

The scope of this approval is applicable to:
Manufacture of medical device components for compressors, vacuum pumps and air treatment products.

David Derrick

Area Operations Manager UK & Ireland

Issued by: Lloyd's Register Quality Assurance Limited

UKAS MANAGEMENT SYSTEMS
001

Lloyd's Register

Current issue date:	2 September 2020	Original approval(s):
Expiry date:	31 December 2022	ISO 14001 - 1 January 2005
Certificate identity number:	10294956	ISO 45001 - 11 September 2007
		ISO 9001 - 9 December 2002

Certificate of Approval

This is to certify that the Management System of:

Atlas Copco Compressors LLC, Corporate office

300 Technology Center Way, Suite 550, Rock Hill, SC, 29730, United States

has been approved by Lloyd's Register to the following standards:

ISO 14001:2015, ISO 45001:2018, ISO 9001:2015

Approval number(s): ISO 14001 – 0019527-776, ISO 45001 – 0019525-119, ISO 9001 – 0019526-055

This certificate forms part of the approval identified by approval number: 0019527/ 0019525/ 0019526

The scope of this approval is applicable to:
ISO 14001:2015
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.
ISO 45001:2018
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.
ISO 9001:2015
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.

Paul Graaf

Area Operations Manager North Europe

Issued by: Lloyd's Register EMEA

for and on behalf of: Lloyd's Register Quality Assurance Limited

UKAS MANAGEMENT SYSTEMS
001

Certificate identity number: 10294956

Certificate of Approval

Atlas Copco Compressors LLC
Central Regional Office
2501 Landmeier Road, Elk Grove Village, IL, 60007, United States

ISO 14001:2015
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.

ISO 45001:2018
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.

ISO 9001:2015
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.

Atlas Copco Compressors LLC
Eastern Regional Office
92 Interstate Dr., West Springfield, MA, 01089, United States

ISO 14001:2015
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.

ISO 45001:2018
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.

UKAS MANAGEMENT SYSTEMS
001

Issued by: Lloyd's Register EMEA, Jan Van Gentstraat 7 (bus 202) 2000 Antwerp Belgium for and on behalf of: Lloyd's Register Quality Assurance Limited, 1 Trinity Park, Bickenhill Lane, Birmingham B37 7ES, United Kingdom

Certificate identity number: 10294956

Certificate of Approval

ISO 9001:2015
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.

Atlas Copco Compressors LLC
Southern Regional Office
15045 Lee Road, Houston, TX, 77032,
United States

ISO 14001:2015
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.

ISO 45001:2018
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.

ISO 9001:2015
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.

Atlas Copco Compressors LLC
Western Regional Office
48434 Milmont Drive, Fremont, CA, 94538,
United States

ISO 14001:2015
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.

UKAS MANAGEMENT SYSTEMS
001

Issued by: Lloyd's Register EMEA, Jan Van Gentstraat 7 (bus 202) 2000 Antwerp Belgium for and on behalf of: Lloyd's Register Quality Assurance Limited, 1 Trinity Park, Bickenhill Lane, Birmingham B37 7ES, United Kingdom

Certificate identity number: 10294956

Certificate of Approval

ISO 45001:2018
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.

ISO 9001:2015
Marketing, sales, installation of Oil-Free Air compressors, Oil-Injected Air compressors, Air Blowers, Nitrogen Generators, Air Treatment equipment, Vacuum Pumps and related services and parts.

UKAS MANAGEMENT SYSTEMS
001

Issued by: Lloyd's Register EMEA, Jan Van Gentstraat 7 (bus 202) 2000 Antwerp Belgium for and on behalf of: Lloyd's Register Quality Assurance Limited, 1 Trinity Park, Bickenhill Lane, Birmingham B37 7ES, United Kingdom

CERTIFICATE

This is to certify that

Condor-Werke Gebr. Frede GmbH

Warendorfer Straße 47 - 51
59320 Ennigerloh
Germany

with the organizational units/sites as listed in the annex

has implemented and maintains a **Quality Management System**.

Scope:
Development, production and sales of electromechanical switches as well as monitoring systems and control units for the pump- and compressor industry

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 9001 : 2015

Certificate registration no.	001856 QM15
Valid from	2021-07-13
Valid until	2024-07-09
Date of certification	2021-07-13

Deutsche Akkreditierungsstelle D-ZM-16074-01-00

DQS GmbH

Markus Bleher
Managing Director

Annex to certificate
Registration No. 001856 QM15

Condor-Werke Gebr. Frede GmbH

Warendorfer Straße 47 - 51
59320 Ennigerloh
Germany

Location	Scope
350590 **Condor Pressure Control GmbH** **Warendorfer Straße 47 - 51** **59320 Ennigerloh** **Germany**	Development, production and sales of electromechanical switches as well as monitoring systems and control units for the pump- and compressor industry

This annex (edition: 2021-07-13) is only valid in connection with the above-mentioned certificate.

THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

DQS Holding GmbH has issued an IQNet recognized certificate that the organization

Condor-Werke Gebr. Frede GmbH

Warendorfer Straße 47 - 51
59320 Ennigerloh
Germany

Condor Pressure Control GmbH

Warendorfer Straße 47 - 51
59320 Ennigerloh
Germany

with the following business unit

has implemented and maintains a **Quality Management System**.

Scope:
Development, production and sales of electromechanical switches as well as monitoring systems and control units for the pump- and compressor industry

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 9001 : 2015

Issued on: 2018-07-10
Expires on: 2021-07-09

This attestation is directly linked to the IQNet Partner's original certificate and shall not be used as a stand-alone document.

Registration number: DE-001856 QM15

Alex Stoichitoiu
President of IQNet

Michael Drechsel
Managing Director of DQS Holding GmbH

IQNet Partners*:

AENOR *Spain* AFNOR Certification *France* APCER *Portugal* CCC *Cyprus* CISQ *Italy*
CQC *China* CQM *China* CQS *Czech Republic* Cro Cert *Croatia* DQS Holding GmbH *Germany* FCAV *Brazil*
FONDONORMA *Venezuela* ICONTEC *Colombia* Inspecta Sertifiointi Oy *Finland* INTECO *Costa Rica*
IRAM *Argentina* JQA *Japan* KFQ *Korea* MIRTEC *Greece* MSZT *Hungary* Nemko AS *Norway* NSAI *Ireland*
NYCE-SIGE *México* PCBC *Poland* Quality Austria *Austria* RR *Russia* SII *Israel* SIQ *Slovenia*
SIRIM QAS International *Malaysia* SQS *Switzerland* SRAC *Romania* TEST St Petersburg *Russia* TSE *Turkey* YUQS *Serbia*
IQNet is represented in the USA by: AFNOR Certification, CISQ, DQS Holding GmbH and NSAI Inc.

* The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com

Europäische Gemeinschaft

AEO - Zertifikat

AEO-Zertifikat

DE AEOC 119710
(Nummer des Zertifkats)

1. Inhaber des AEO-Zertifikats

Condor Pressure Control GmbH
EORI-Nummer: DE 6149480
Nr. der amtl. Eintragung: HRB 10065
UST-IDNr(n).: DE 814475375

2. Erteilende Behörde

Hauptzollamt Bielefeld
Werner-Bock-Str. 25-29
33602 Bielefeld

Im Auftrag

HAUPTZOLLAMT BIELEFELD

Der in Feld 1 genannte Inhaber ist

Zugelassener Wirtschaftsbeteiligter

- [x] - Zollrechtliche Vereinfachungen
- [ ] - Sicherheit
- [ ] - Zollrechtliche Vereinfachungen / Sicherheit

3. Tag, ab dem das Zertifikat wirksam ist:

05.08.2014

Bundesministerium der Finanzen

AEO ©

ZOLL

DNV·GL

Certificate No:
TAA00002VK

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pressure Switch

with type designation(s)
MDR-F..2, 4, 8, 10, 12.5, 16, 32, 60, 120, 250..

Issued to
Condor-Werke Gebr. Frede GmbH
Ennigerloh, Germany

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Temperature	**B**
Humidity	**B**
Vibration	**B**
EMC	**A**
Enclosure	**Required protection according to DNV GL Rules shall be provided upon installation on board**

Issued at **Hamburg** on **2020-10-01**

This Certificate is valid until **2025-09-30**.
DNV GL local station: **Magdeburg**

Approval Engineer: **Didier Girardin**

for **DNV GL**
Digitally Signed By:
Papanuskas, Joannis

Joannis Papanuskas
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

TECHNICAL DATA:
Rated operating current Ie, Ue=240V (1~)/AC 1 10A
Rated operating current Ie, Ue=240V (1~)/AC 15 4A
Output contacts:
Microswitch, 1x SPDT (Single Pole Double Throw)
Temperature range:
Metal Flange -20 °C...+70 °C
Plastic Flange -20 °C...+50 °C
Degree of Protection: IP65
Material Flange:
High pressure flange, CuZn39Pb3 (CW614N); CuZn36Pb2As (CW602N);
X10CrNiS189 (1.4305);
X2CrNiMoN22-5-3 (1.4462)
Metal flange, G-AlSi 12
Plastic flange, PA 6.6 GF 30%
Pressure range:
High pressure flange up to 250 [bar]
Metal flange up to [32 bar]; Plastic flange up to 12,5 [bar]

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Type Approval documentation

Hidden
Renewal of certificate 86884 -10 HH including:
TR-06193.020.10 V1.0 dated 29.01.2010
TR- S-0369-3440-00RK dated 27.01.2010
TR-No. 09-2662 dated 28.01.2010

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, December 2019.

Marking of product

The products to be marked with:
- manufacturer name
- model name
- serial number
- power supply ratings

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE

ИНСТРУКЦИЯ ПО ЭКСПЛУАТАЦИИ

MDR 2

РЕЛЕ ДАВЛЕНИЯ

ПРОИЗВЕДЕНО **В ГЕРМАНИИ** | **2** ГОДА **ГАРАНТИИ**

- Применение: компрессоры
- Подключение: однофазное
- Регулировка дифференциала: есть
- Разгрузочный клапан: есть
- Рукоятка вкл/откл: есть
- Максимальная мощность эл. двигателя: 2,2 кВт (220V)
- Максимальное давление отключения : 11 бар
- Класс защиты: IP 44
- Фланец: алюм., 4-х линейный

Фланец

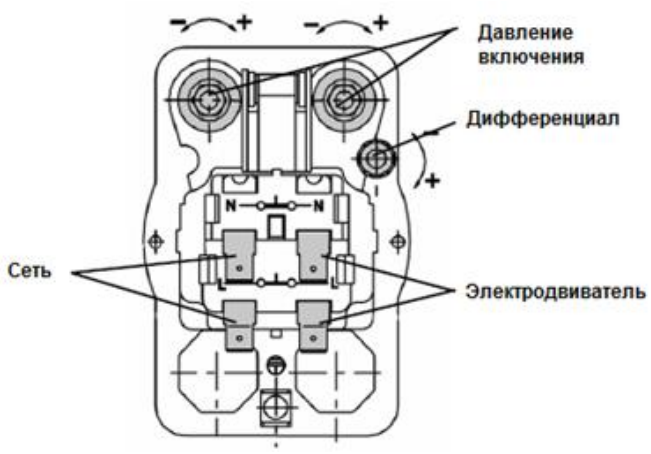
Разгрузочный клапан

Кабельная арматура

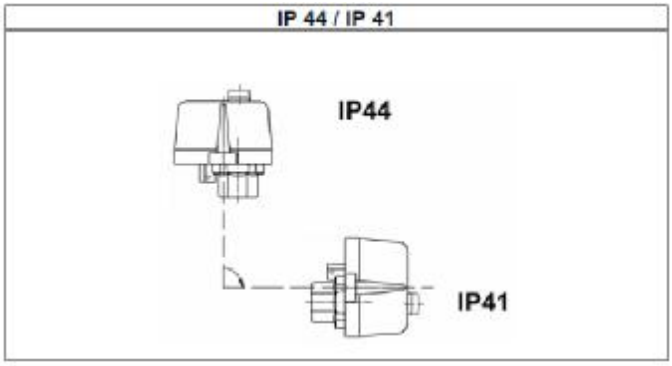
Техника безопасности

- Соблюдайте действующие предписания по регулировке и вводу в эксплуатацию электрических установок
- Монтаж может производиться только обученными специалистами.
- Никогда не превышайте специфических предельных величин по напряжению, току, давлению и температуре.
- Избегайте сильных пульсаций и гидравлических ударов.

Устройство, установка и регулировка



Способ установки



Порядок регулировки:

- Снять крышку
- Сжатием больших пружин установить давление включения
- Сжатием малой пружины установить интервал между давлением включения и отключения (дифференциал)

Допустимые значения регулировки указаны в заштрихованной области графика давления.

Например: после установки давления включения 3,0 бар, давление отключения может быть установлено винтом регулировки дифференциала в диапазоне от 4,5 до 6,5 бар

ВНИМАНИЕ! Регулировка осуществляется только тогда, когда реле давления **установлено** и находится **под давлением** и **без напряжения**!

РЕЛЕ ДАВЛЕНИЯ ВОЗДУХА
ДЛЯ УСТАНОВОК КОМПРЕССОРНЫХ ПОРШНЕВЫХ

Condor MDR 2/11, MDR 3/11

РУКОВОДСТВО ПО ЭКСПЛУАТАЦИИ

1. Общие сведения об изделии

1.1 Руководство по монтажу и эксплуатации, объединенное с паспортом, является документом, содержащим техническое описание реле давления воздушного компрессора (далее – РД), указания по эксплуатации и технические характеристики, гарантированные изготовителем.

1.2. Изготовитель оставляет за собой право вносить изменения в конструкцию установки, которые могут быть не отражены в настоящем документе и направленные на повышение качества и надежности, без предварительного предупреждения.

1.3. Фирма изготовитель: Condor Pressure Control GmbH

2. Назначение и устройство

2.1. Реле давления (маностат, прессостат, телепрессостат) является частью установки компрессорной, предназначено только для работы с атмосферным воздухом.

Температура эксплуатации, °С – от 278 до 313 К (от +5 до +40 °С).

Рабочая среда для установки – атмосферный воздух.

Запрещается использование РД для иных газов и жидкостей.

Реле давления – это устройство, предназначенное для автоматического управления воздушным поршневым компрессором. В зависимости от величины давления в пневмосистеме, реле замыкает или размыкает цепь питания, запуская тем самым компрессорный блок при низком давлении и останавливая при достижении максимального рабочего значения.

Рабочим механизмом реле служат пружины различной степени жесткости, которые реагируют на изменение давления в системе. В процессе работы сравниваются силы, возникающие в результате давления сжатого установкой воздуха, и силы упругой деформации пружин. При изменении давления срабатывает пружинный механизм, и реле подключает или отключает цепь электропитания.

Реле давления воздуха для установки компрессорной оснащено:

- Механическим переключателем. Он служит для включения и выключения режима автоматической работы установки. Переключатель имеет два состояния: «ВКЛ» и «ВЫКЛ». В положении «ВКЛ» компрессор будет автоматически подключаться к сети и отключаться в соответствии с заданными значениями максимального и минимального давления воздуха в системе. В состоянии «ВЫКЛ» на электропривод электропитание не подается.
- Разгрузочным клапаном, который подключается между камерой сжатия установки и обратным клапаном на компрессоре. Когда двигатель останавливается, разгрузочный клапан срабатывает (открывается) и стравливает давление из поршневого блока (установка разгружается). При следующем запуске и разгоне двигателя клапан закрывается нагнетаемым давлением, значительно облегчая тем самым пуск установки из отключенного состояния.

- Для серии MDR3 тепловым реле для защиты от перегрузок электродвигателя. Оно ограничивает величину силы питающего тока, чтобы предотвратить выгорание обмоток двигателя. Требуемое значение силы тока можно выставить с помощью специального регулятора. При превышении этого значения двигатель будет немедленно отключен от электрической сети.

Реле давления имеет отверстия с резьбой G1/4" в количестве 3-х штук, что позволяет установить на компрессор параллельно вспомогательные устройства: предохранительный клапан, регулятор давления и манометр.

Главное входное отверстие имеет диаметр: Condor MDR 2– 1/4″, MDR 3 – 3/8″.

2.2. Климатическое исполнение УХЛ 3.1* для эксплуатации при температуре окружающего воздуха от +1°С до +40°С. Степень защиты – IP44/IP41. Высота над уровнем моря не должна превышать более 1000 м.

3. Технические характеристики

3.1. Основные технические характеристики РД приведены в приложении.

4. Правила безопасности

4.1. К обслуживанию, ремонту и установке РД допускаются лица, ознакомленные с устройством и правилами эксплуатации, прошедшие инструктаж по технике безопасности и оказанию первой помощи.

4.2. Перед началом использования, после хранения и (или) транспортирования при отрицательных температурах окружающего воздуха, необходимо выдержать РД при положительной температуре до достижения допустимого эксплуатационного диапазона температур, но не менее 2 часов.

4.3. РД рассчитан на давление атмосферного воздуха, использование его для иных газов не допускается. При замене РД необходимо убедиться в целостности и исправности предохранительного и обратного клапанов, приборов контроля компрессора.

4.4. Во время эксплуатации содержите РД в исправном состоянии, незамедлительно устраняйте возникающие неисправности.

4.5. При эксплуатации РД должны соблюдаться действующие нормы и правила пожарной безопасности.

5. ЗАПРЕЩАЕТСЯ

5.1. Устанавливать РД на модель установки компрессорной и подключать к контактам реле цепь управления электродвигателем ток потребления, которого превышает допустимый ток контактов реле.

Подключать компрессор к бытовой электросети или подключать через удлинители, если при этом происходит падение напряжения на участке от источника питания до места приложения нагрузки более чем на 5% от номинального (п.13.5 МЭК 60204);

5.2. Эксплуатация РД во взрывопожаро-опасных помещениях и под воздействием атмосферных осадков

5.3. Эксплуатировать РД с неисправными или отключенными узлами установки компрессорной.

5.4. Эксплуатировать РД В НЕИСПРАВНОМ СОСТОЯНИИ.

5.5. Вносить какие-либо изменения в электрическую и пневматическую цепь РД или в его регулировку, в частности, изменять значение максимального давления сжатого воздуха в сторону увеличения и настройку интервала включения-выключения.

5.6. Подключение трехфазного электродвигателя при помощи реле давления на 220В, без использования дополнительной автоматики.

5.7. Производить ремонт РД на установке компрессорной включенной в электрическую сеть, находящейся под давлением, не приняв меры безопасности, предотвращающие ошибочное включение оборудования в работу (пуск двигателя, подача сжатого воздуха).

6. Подготовка изделия к работе и порядок работы

6.1. Внимательно изучите и следуйте инструкциям настоящего руководства по эксплуатации.

6.2. Установка и первичная настройка РД вне конвейера должна производиться только специалистами сервисного центра, аттестованного заводом-изготовителем, осуществляющими различные виды контроля в соответствии с инструкциями.

Особое внимание: Регулировка должна производиться только под давлением, но при отсутствующем напряжении питания электродвигателя!

6.3. Аккуратно вскройте упаковку, проверьте комплектность, убедитесь в отсутствии повреждений.

6.4. В помещении, где расположен компрессор на который устанавливается РД, необходимо обеспечить достаточную вентиляцию, следя за тем, чтобы температура окружающего воздуха поддерживалась в пределах от +1°С до +40°С. При температуре окружающего воздуха выше +30°С забор воздуха рекомендуется осуществлять не из помещения или принимать специальные меры для уменьшения температуры окружающего компрессор воздуха.

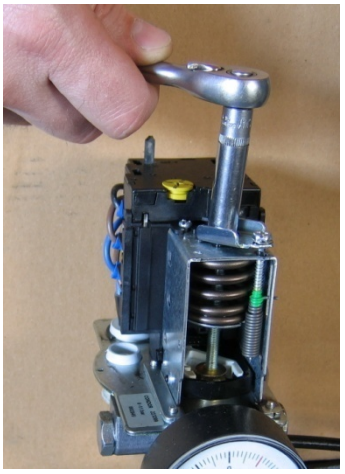
6.5. Разместите установку компрессорную на ровной горизонтальной поверхности. Обеспечьте свободный доступ для проведения технического обслуживания и/или ремонта на расстоянии как минимум 1 метра вокруг РД. При установке узла особое внимание уделите правильному позиционированию для обеспечения подключения и контроля. Пол помещения в месте расположения установки должен быть из несгораемого, неэлектропроводного материала и маслоустойчивым.

6.6. Установите РД на ресивер. Перед установкой манометра и предохранительного клапана проверьте их целостность и исправность. Присоедините к клапану разгрузки РД разгрузочный воздухопровод.

6.7. Произведите подключение силовых проводов от питающей сети и от электродвигателя согласно схеме включения реле в сеть, отрегулировав значение защиты от перегрузки под номинальный ток электродвигателя (для MDR 3/11).

6.8. При первом пуске, а также при каждом повторном подключении к электрической сети компрессора проверьте соответствие напряжения питающей сети требованиям настоящего руководства по эксплуатации. Допустимое колебание напряжения составляет ± 10% от номинального значения, допустимое колебание частоты тока ± 1% от номинального значения. Падение напряжения от источника питания до электродвигателя не должно превышать 5% от номинального значения (МЭК 60204-1).

При электрическом подсоединении особое значение имеет последовательность фаз (для трех фазного подключения), так как это определяет направление вращения, которое должно соответствовать стрелке, нанесенной на шкиве поршневого блока и на корпусе электродвигателя.



6.9. После пуска, для распределения смазки, необходимо дать поработать компрессору в течение нескольких минут без нагрузки (с открытым выходным краном). Затем закрыть кран и осуществить загрузку до требуемого максимального давления. После того, как необходимое значение достигнуто, нужно обязательно отключить компрессор от электрической сети, снять крышку реле и произвести регулировку согласно схеме регулировки, контролируя его функционирование:

С помощью большего винта регулируется, как правило, верхнее давление, т.е. максимальное, при котором приводной двигатель будет отключаться, обозначен символом «P» и стрелкой со знаками «+» и «-». Для увеличения значения выключения винт необходимо вращать в сторону знака «+», для уменьшения, соответственно, в сторону «-».

Меньший винт регулирует разность давления отключения и включения. Обозначается символом «ΔP» и стрелкой. Величина этой разности давлений составляет ΔP=0,25±0,05 МПа (2,5±0,5 бар) отрегулирован изготовителем, и не должен подвергаться регулировкам.

После регулировки РД необходимо дать поработать установке в течение нескольких циклов и в случае необходимости произвести повторную регулировку как описано выше.

7. Техническое обслуживание

Для обеспечения долговечной и надежной работы РД выполняйте следующие операции по его техническому обслуживанию:

- Ежедневно проверяйте исправность работы РД, плотность соединения воздухопроводов, очищайте реле от пыли и загрязнения.
- После первых 8-ми и 50-ти ч работы, далее не реже 600 часов (одного раза в полгода) проверьте и при необходимости подтяните винты клемм крепления проводов. Момент затяжки – 2 Нм.

Подтяжку производить после отключения от питающей сети после принятия соответствующих мер безопасности, предотвращающие ошибочное включение оборудования в работу.

- В зависимости от условий эксплуатации, но не реже 100 часов (одного раза в месяц), проверяйте параметры питающей сети и работу разгрузочного клапана. Неисправность или снижение пропускной способности клапана снижает срок службы РД и может привести к выходу из строя реле.

8. Транспортирование и хранение

8.1. Транспортирование РД должно производиться только в закрытом транспорте.

Погрузочно-разгрузочные работы должны производиться в соответствии с транспортной маркировкой на таре с соблюдением правил и предписаний по технике безопасности.

8.2. Реле давления следует хранить в закрытых помещениях при температуре от -25 до +50 °С и относительной влажности не более 80 %.

ВНИМАНИЕ: СОДЕРЖАНИЕ ПАРОВ КИСЛОТ И ЩЕЛОЧЕЙ, АГРЕССИВНЫХ ГАЗОВ И ДРУГИХ ВРЕДНЫХ ПРИМЕСЕЙ В ПОМЕЩЕНИЯХ, ГДЕ ХРАНИТСЯ РЕЛЕ ДАВЛЕНИЯ, НЕ ДОПУСКАЕТСЯ!

REPUBLICA MOLDOVA
Ministerul Economiei și Infrastructurii

LEGITIMAȚIE Seria 2019-DLS Nr. 0200

Numele **Nastasiu**
prenumele **Valeriu**
Atestat în calitate de **Diriginte cu executarea lucrărilor specializate și instalațiilor aferente construcțiilor**
Eliberată la **19 iunie 2019**
Valabilă pînă la **19 iunie 2024**
Anatol USATÎI
Secretar de Stat

MOLDOVA

ECONOMIEI
RUCTURII

CERTIFICAT

de atestare tehnico-profesională

Seria 2019-DLS **Numărul 0200**

Eliberat domnului (doamnei): **Nastasiu Valeriu**

Pentru a activa în calitate de: Diriginte cu executarea lucrărilor specializate şi instalaţiilor aferente construcţiilor

Domeniile:

9. Instalaţii tehnologice.

Exigenţele esenţiale:

A - rezistenţă şi stabilitate;
B - siguranţă în exploatare;
C - siguranţă la foc;
D - igienă, sănătatea oamenilor, refacerea şi protecţia mediului înconjurător;
E - izolaţie termică, hidrofugă şi economie de energie;
F - protecţie împotriva zgomotului.

Data eliberării **19 iunie 2019**

Valabil pînă la **19 iunie 2024**

Anatol Usatîi

Secretar de Stat

Certificate of Training

It is hereby certified, that

Mr. Valeriu Nastasiu
Data Control SRL, Republic of Moldova

has been trained in January 2018
at company DataControl SRL
in Chisinau, Republic of Moldova

Training Subjects :

* *Medical Oxygen Plants (OGP);*
* *Oil-injected, oil-free compressors (GA, ZT);*
* *Refrigerant air dryers (FX, FD);*
* *Compressed air filters (DD, PD, QD, QDT).*

Installation, assembling, function, maintenance and spare parts.

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Compressor Technique Equipment

Liviu Chelaru

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SOCIETATEA COMERCIALA ATLAS COPCO ROMANIA SRL BUCUREST