



# Adsorption dryers

Today's compressed air production process is not only a matter of producing air, but also of confirming with defined purity criteria. As humidity is a component of atmospheric air, it can be found in the form of condensate and/or vapor in the compressed air distribution systems and the machines that use the compressed air. ABAC provides adsorption dryers to remove condensate and vapor so that dry compressed air is achieved and a continuous efficiency is preserved.



## Applications

- Pneumatic control systems
- Painting systems
- Packaging
- Injection molding
- Food industry
- Chemical industry
- Automotive industry
- Pharmaceutical process
- ...and whenever a pressure dew point below 3°C is needed

## Main Benefits

- Eliminate any water residual from the net to guarantee clean compressed air
- Longer life span of your equipment and distribution network due to less wear
- Greater productivity and lower maintenance costs thanks to less breakdowns
- Higher final product quality
- Increased reliability and reduced risk for leaks
- Energy savings with lower pressure drops (HAD 115 - HAD 1300)
- Compact execution
- Compatible with any compressor technology

## Components

### HAD 7-60

1. Prefilter removes particulates and coalesced liquids from the air stream.
2. Removable front panel allows for easy access for servicing without disconnecting the pipe system.
3. Postfilters, integrated in the dryer, removes particulate in the air stream.
4. Electronic control housed in an IP65 box, which enables:
  - regeneration cycle management
  - regulation status
  - default diagnosis
  - remote default report
5. Multiport inlet and outlet



### HAD 115-645

1. Base frame makes it easy to transport by fork lift.
2. Pressure gauge – tower A
3. Pressure gauge – tower B
4. Control dew point sensor (CD) as option.



### HAD 650-1300

1. Wide vessels for optimum air speed and reliable drying. Unit is rather low for its capacity due to flanges that are built into the vessels.
2. Air outlet connection.
3. Robust frame, including fork lift slots for easy installation.
4. Pressure Dew Point sensor (HAD/CD).
5. Pressure Dew Point digital display (HAD/CD).
6. Two manometers integrated in the control panel to show pressure in the two vessels.
7. Purge nozzle for regeneration.
8. Galvanized piping with flanged connections.
9. Inlet valves - long service interval.

# Filters

Atmospheric air contains in its origin impurities like dust, various forms of hydrocarbons and water in form of humidity, which once sucked by the compressor is compressed and delivered to the line together with eventual oily particles. These polluting agents, interacting among each other, may generate abrasive and corrosive emulsions which can damage the distribution lines, the pneumatic devices and the product itself. To prevent this negative impact, ABAC has developed a whole range of filters to purify the air.



## Applications

- Instrument systems
- Pharmaceutical industry
- Food industry
- Chemical & packaging industry
- Pneumatic transports
- Industrial painting
- Control systems
- Generic tools
- ...and any application using compressed air

## Main benefits

- Purify the air its oil/dust contamination
- Increased production & quality: prevent breakdowns instead of curing
- Ensuring greater efficiency and reliability
- Less wear of distribution network and equipment
- Simple design, excellent performance
- Decreased maintenance costs
- Different cartridges with specific filtration qualities
- Higher final product quality



1. Enjoy a reduced pressure drop and increased savings thanks to the unique head design.
2. A venting hole will give an audible alarm if the filter is dismantled under pressure.
3. Removing the filter bowl is an easy job as the external ribs allow for a firm grip on the filter.
4. No need to worry about corrosion. The die cast aluminum housing with special anodized treatment protects our filters both on the inside and the outside.
5. Easy monitoring via sight glass.
6. Smooth draining of the filter ensures a reliable performance. This is guaranteed by our high performance drains (G - C - P) and manual drains (V - S - D).

# Filter range overview



## G FILTER RANGE

Coalescing filters for general purpose protection, removing solid particles, liquid water and oil aerosol.

Total Mass Efficiency: 99%

*For optimum filtration, a G filter should be preceded by a water separator.*



## S FILTER RANGE

Particulate filters for dust protection.

Count Efficiency: 99,81% at Most Penetrating Particle Size (MPPS = 0,1 micron)

*An S filter should be preceded by a dryer at all times.*



## C FILTER RANGE

High-efficiency coalescing filters, removing solid particles, liquid water and oil aerosol.

Total Mass Efficiency: 99,9%

*For optimum filtration, a C filter should be preceded by a G filter at all times.*



## D FILTER RANGE

High-efficiency particulate filters for dust protection.

Count Efficiency: 99,97% at Most Penetrating Particle Size (MPPS = 0,06 micron)

*A D filter should be preceded by an S filter at all times and is commonly fitted after an adsorption dryer.*



## V FILTER RANGE

Activated carbon filter for removal of oil vapour and hydrocarbon odors with a maximum remaining oil content of 0,003 mg/m<sup>3</sup> (0,003 ppm).  
1000 hour lifetime



## P FILTER RANGE

Coalescing and particulate general purpose prefilter. Removing solid particles, dust, liquid water and oil aerosol.  
Total Mass Efficiency: 90%

## Options



- Pressure gauge
- Voltage free contact mounted on the differential pressure gauge to give remote indication of the cartridge replacement



- Pressure indicator
- Serial Connection Kit allows easy mounting of filters in series
- Wall mounting kit to simplify installation



- Quick coupling for easy connection to fix an intelligent drain with no loss of compressed air

# Adsorption dryers



Type	Code	Max Working Pressure		Operating Pressure	Air treatment capacity (at reference conditions)			Standard dew point	AEF 0,1 µm 0,1 mg/m	AHF 0,01 µm 0,01 mg/mc	APF 1µm n.a. mg/mc	outlet connections	dimensions	Weight
		bar	psi		bar	l/1'	m <sup>3</sup> /h							
HAD 7 STD	8102822304	16	232	7,0	114	7	4,1	-40	n.a.	AHF 60	Integrated in the dryer	3/8"	281 x 92 x 445	13
HAD 11 STD	8102822312	16	232	7,0	168	10	5,9	-40	n.a.	AHF 60			281 x 92 x 504	14
HAD 18 STD	8102822320	16	232	7,0	282	17	10	-40	n.a.	AHF 60			281 x 92 x 635	17
HAD 25 STD	8102822338	16	232	7,0	426	26	15,3	-40	n.a.	AHF 60			281 x 92 x 815	20
HAD 40 STD	8102822346	16	232	7,0	708	42	24,7	-40	n.a.	AHF 60			281 x 92 x 1065	24
HAD 60 STD	8102822353	16	232	7,0	990	59	34,7	-40	n.a.	AHF 60			281 x 92 x 1460	31
HAD 115 STD	8102327106	14,5	210	7,0	1920	115	67,7	-40	n.a.	AHF 120	APF 120	1"	550 x 242 x 998	64
HAD 145 STD	8102327114	14,5	210	7,0	2400	144	84,8	-40	n.a.	AHF 120	APF 120		550 x 242 x 998	64
HAD 160 STD	8102327122	14,5	210	7,0	2700	162	95,3	-40	n.a.	AHF 200	APF 200		550 x 242 x 1243	78
HAD 215 STD	8102327130	14,5	210	7,0	3900	234	138	-40	n.a.	AHF 200	APF 200		550 x 242x 1611	98
HAD 250 STD	8102327148	14,5	210	7,0	4500	270	159	-40	n.a.	AHF 340	APF 340		550 x 358 x 998	133
HAD 325 STD	8102327155	14,5	210	7,0	5400	324	191	-40	n.a.	AHF 340	APF 340		550 x 358 x 1243	158
HAD 360 STD	8102327163	14,5	210	7,0	6300	378	222	-40	n.a.	AHF 510	APF 510		550 x 358 x 1611	256
HAD 470 STD	8102327171	14,5	210	7,0	7800	468	275	-40	n.a.	AHF 510	APF 510		550 x 358 x 1611	256
HAD 575 STD	8102327189	14,5	210	7,0	9600	576	339	-40	n.a.	AHF 510	APF 510		550 x 520 x 1611	310
HAD 645 STD	8102327197	14,5	210	7,0	11400	684	403	-40	n.a.	AHF 800	APF 800		550 x 520 x 1611	310
HAD 650 STD 11	8102823120	11	159	7,0	10800	648	381	-40	AEF 800	AHF 800	APF 800	1 1/2"	1040 x 840 x 1760	445
HAD 650 STD 14,5	8102823138	14,5	210	12,5	12900	774	456	-40	AEF 800	AHF 800	APF 800		1040 x 840 x 1760	445
HAD 800 STD 11	8102823153	11	159	7,0	13200	792	466	-40	AEF 800	AHF 800	APF 800		1040 x 840 x 1760	445
HAD 800 STD 14,5	8102823161	14,5	210	12,5	15900	954	561	-40	AEF 800	AHF 800	APF 800		1040 x 840 x 1760	445
HAD 1080 STD 11	8102823195	11	159	7,0	18000	1080	636	-40	AEF 1000	AHF 1000	APF 1000	2"	1046 x 894 x 1876	600
HAD 1080 STD 14,5	8102823203	14,5	210	12,5	21600	1296	763	-40	AEF 1000	AHF 1000	APF 1000		1046 x 894 x 1876	600
HAD 1300 STD 11	8102823237	11	159	7,0	21600	1.296	763	-40	AEF 1500	AHF 1500	APF 1500		1100 x 923 x 1914	650
HAD 1300 STD 14,5	8102823245	14,5	210	12,5	25800	1.548	911	-40	AEF 1500	AHF 1500	APF 1500		1100 x 923 x 1914	650

Standard features and options	HAD 7-60	HAD 115 - 645	HAD 650-1300
Capacity at 7 bar (- 40°C)	114 - 990 l/min	1920 - 11400 l/min	10800 - 21600 l/min
Dew point	Standard -40°C	Standard -40°C	Standard -40°C
Working pressure range	4-16 bar	4 - 14,5 bar	4-11 bar & 11-14,5 bar
Voltages	12 - 24 V - DC 50/60Hz	115- 230 V - AC 50/60Hz	230V - AC 50/60Hz
	100 - 115 - 230 V - AC 50/60Hz		



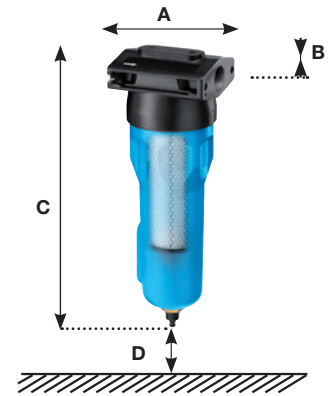
# Filters

	S	D	G	C	P	V
Filter type	Solid particles	Solid particles	Oil aerosol & solid particles	Oil aerosol & solid particles	Oil aerosol & solid particles	Oil vapor
Test method	ISO 12500-3	ISO 12500-3	ISO 12500-1 / ISO 8573-2	ISO 12500-1 / ISO 8573-2	ISO 12500-1 / ISO 12500-3 / ISO 8573-2	ISO 8573-5
Inlet Oil Concentration (mg/m <sup>3</sup> )	NA	NA	10	10	10	0,01
Count efficiency (% at MPPS)	(MPPS=0,1 µm) 99,81	(MPPS=0,06 µm) 99,97	NA	NA	(MPPS=0,1 µm) 89,45	NA
Count efficiency (% at 1 µm)	99,97	99,999	NA	NA	94,19	NA
Count efficiency (% at 0,01 µm)	99,87	99,992	NA	NA	93,63	NA
Max oil carry-over (mg/m <sup>3</sup> )	NA	NA	0,1	0,01	1	0,003
Dry pressure drop (mbar)	120	140	NA	NA	85	160
Wet pressure drop (mbar)*	NA	NA	205	240	115	NA
Wet pressure drop (mbar), in typical compressor installation	NA	NA	185	200	NA	NA
Element service	After 4.000 operating hours or 1 year or pressure drop > 350 mbar	After 4.000 operating hours or 1 year or pressure drop > 350 mbar	After 4.000 operating hours or 1 year	After 4.000 operating hours or 1 year	After 4.000 operating hours or 1 year	After 1.000 operating hours (at 20°C.) or 1 year
Precede with	-	S	water separator	G	-	G & C

\* Inlet oil concentration = 10 mg/m<sup>3</sup>

Partnumber	Option	Available for
8092242968	Wall mounting kit	Filter 45 up to 125
8092242976	Wall mounting kit	Filter 180 - 290
8092242984	Wall mounting kit	Filter 505 up to 935
8092242992	Wall mounting kit	Filter 1295
8092243008	Wall mounting kit	Filter 1890 - 2430
8092243016	Serial connection kit	Filter 45 up to 125
8092243024	Serial connection kit	Filter 180 - 290
8092243032	Serial connection kit	Filter 505 up to 935
8092243040	Serial connection kit	Filter 1295
8092243057	Serial connection kit	Filter 1890 - 2430
1617704800	Diff. pressure indicator	Filter 45 up to 2430
1624117200	Diff. pressure gauge	Filter 45 up to 2430
8055216447	Potential free contact NO	(only in combination with pressure gauge)
8055216488	Potential free contact NC	(only in combination with pressure gauge)
1617708201	Male coupling 1/8"	(only in combination with automatic drain)
1617708202	Female coupling 1/8"	(only in combination with automatic drain)
1617708203	Hose coupling	
2901069200	Drain connection kit (male) 1/2"	Filter 45 up to 2430
2901206803	Drain connection kit (female) 1/2"	Filter 45 up to 2430

# Filters



Filter type	Nominal Capacity*			Maximum pressure		Connections / port thread	Dimensions			Free space for cartridge replacement	Weight
	l/min	m <sup>3</sup> /h	cfm	bar	psi		A	B	C		
						G	mm	mm	mm	D	Kg
FILTER 45	720	43	25	16	232	3/8 "	90	21	228	75	1
FILTER 90	1500	90	53	16	232	1/2"	90	21	228	75	1,1
FILTER 125	2100	126	74	16	232	1/2"	90	21	283	75	1,3
FILTER 180	3000	180	106	16	232	3/4"	110	27,5	303	75	1,9
FILTER 180	3000	180	106	16	232	1"	110	27,5	303	75	1,9
FILTER 290	4800	288	170	16	232	1"	110	27,5	343	75	2,1
FILTER 505	8400	504	297	16	232	1 1/2"	140	34	449	100	4,2
FILTER 685	11400	684	403	16	232	1 1/2"	140	34	532	100	4,5
FILTER 935	15600	936	551	16	232	1 1/2"	140	34	532	100	4,6
FILTER 1295	21600	1296	763	16	232	2"	179	50	618	150	6,9
FILTER 1295	21600	1296	763	16	232	2 1/2"	179	50	618	150	6,9
FILTER 1890	31500	1890	1112	16	232	3"	210	57	720	200	11,0
FILTER 2430	40500	2430	1430	16	232	3"	210	57	890	200	12,6

\* Reference condition: pressure 7 bar (102 psi). Maximum operating temperature of 66°C, and 35°C, only for V series. Minimum operating temperature of 1°C.

### Correction factor for operating pressure charges

For other compressed air inlet pressures, multiply the filter capacity by the following correction factors:

Inlet pressure (bar)	1	2	3	4	5	6	<b>7</b>	8	10	12	14	16
Inlet pressure (psig)	15	29	44	58	72,5	87	<b>102</b>	116	145	174	203	232
Correction factor	0,38	0,53	0,65	0,75	0,83	0,92	<b>1</b>	1,06	1,2	1,31	1,41	1,5

Filter type	P		G		S	
	Product number	Kit number	Product number	Kit number	Product number	Kit number
FILTER 45	8102 8423 85	2258 2901 01	8102 8425 18	2258 2901 12	8102 8426 41	2258 2901 12
FILTER 90	8102 8423 93	2258 2901 02	8102 8425 26	2258 2901 13	8102 8426 58	2258 2901 13
FILTER 125	8102 8424 01	2258 2901 03	8102 8425 34	2258 2901 14	8102 8426 66	2258 2901 14
FILTER 180	8102 8424 19	2258 2901 04	8102 8425 42	2258 2901 15	8102 8426 74	2258 2901 15
FILTER 180	8102 8424 27	2258 2901 04	8102 8425 59	2258 2901 15	8102 8426 82	2258 2901 15
FILTER 290	8102 8424 35	2258 2901 05	8102 8425 67	2258 2901 16	8102 8426 90	2258 2901 16
FILTER 505	8102 8424 43	2258 2901 06	8102 8425 75	2258 2901 17	8102 8427 08	2258 2901 17
FILTER 685	8102 8424 50	2258 2901 07	8102 8425 83	2258 2901 18	8102 8427 16	2258 2901 18
FILTER 935	8102 8424 68	2258 2901 08	8102 8425 91	2258 2901 19	8102 8427 24	2258 2901 19
FILTER 1295	8102 8424 76	2258 2901 09	8102 8426 09	2258 2901 20	8102 8427 32	2258 2901 20
FILTER 1295	8102 8424 84	2258 2901 09	8102 8426 17	2258 2901 20	8102 8427 40	2258 2901 20
FILTER 1890	8102 8424 92	2258 2901 10	8102 8426 25	2258 2901 21	8102 8427 57	2258 2901 21
FILTER 2430	8102 8425 00	2258 2901 11	8102 8426 33	2258 2901 22	8102 8427 65	2258 2901 22



# Filters

Filter type	C		D		V	
	Product number	Kit number	Product number	Kit number	Product number	Kit number
FILTER 45	8102 8427 73	2258 2901 23	8102 8429 06	2258 2901 23	8102 8430 37	2258 2901 34
FILTER 90	8102 8427 81	2258 2901 24	8102 8429 14	2258 2901 24	8102 8430 45	2258 2901 35
FILTER 125	8102 8427 99	2258 2901 25	8102 8429 22	2258 2901 25	8102 8430 52	2258 2901 36
FILTER 180	8102 8428 07	2258 2901 26	8102 8429 30	2258 2901 26	8102 8430 60	2258 2901 37
FILTER 180	8102 8428 15	2258 2901 26	8102 8429 48	2258 2901 26	8102 8430 78	2258 2901 37
FILTER 290	8102 8428 23	2258 2901 27	8102 8429 55	2258 2901 27	8102 8430 86	2258 2901 38
FILTER 505	8102 8428 31	2258 2901 28	8102 8429 63	2258 2901 28	8102 8430 94	2258 2901 39
FILTER 685	8102 8428 49	2258 2901 29	8102 8429 71	2258 2901 29	8102 8431 02	2258 2901 40
FILTER 935	8102 8428 56	2258 2901 30	8102 8429 89	2258 2901 30	8102 8431 10	2258 2901 41
FILTER 1295	8102 8428 64	2258 2901 31	8102 8429 97	2258 2901 31	8102 8431 28	2258 2901 42
FILTER 1295	8102 8428 72	2258 2901 31	8102 8430 03	2258 2901 31	8102 8431 36	2258 2901 42
FILTER 1890	8102 8428 80	2258 2901 32	8102 8430 11	2258 2901 32	8102 8431 44	2258 2901 43
FILTER 2430	8102 8428 98	2258 2901 33	8102 8430 29	2258 2901 33	8102 8431 51	2258 2901 44

## Typical installations:

1. Compressor with after-cooler
2. G filter
3. C filter
4. V filter
5. S filter
6. D filter
7. P Filter
8. Refrigerant dryer
9. Adsorption dryer

