Atlas Copco

Quality Air Solutions
SD Membrane Dryers

Sustainable Productivity

Atlas Copco

Total capability, total responsibility

Right at the heart of your business, Atlas Copco delivers quality compressed air for superior operational capacity. From compressed air generation to point of use, you can choose from our wide range of products to create a complete compressed air system tailored to your specific needs. All Atlas Copco products are engineered to integrate seamlessly, ensuring the highest level of reliability and energy efficiency. As a result, Atlas Copco can take full responsibility for your compressed air infrastructure with a guarantee of best-in-class quality. With a global presence in over 150 countries, we can provide an unrivalled service to maintain and continually improve your compressed air system performance.

Backed by 100 years at the forefront of compressed air, Atlas Copco products offer the finest quality and efficiency. Our goal is to be First in Mind—First in Choice®. That is why Atlas Copco's pursuit of innovation never ceases, driven by the dedication to meet and exceed your demands. Always working with you, we are committed to providing the customized air solution that is the driving force behind your business.

Atlas Copco:
We are committed to your superior productivity through interaction and innovation.

SD membrane dryers: saving energy, driving efficiency

DELIVERING QUALITY AIR

Untreated compressed air contains moisture, aerosols and dirt particles that can damage your air system and contaminate your end product. Resulting maintenance costs can far exceed air treatment costs. We believe in effective prevention.

INCREASE YOUR PRODUCTION RELIABILITY

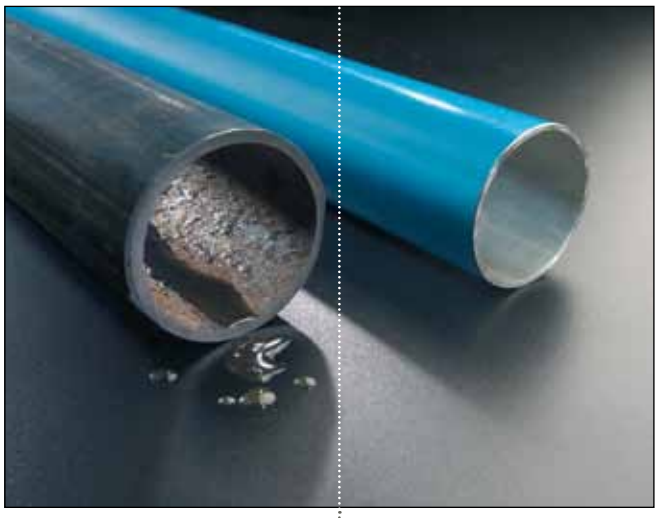
Low quality air heightens the risk of corrosion in your system, which can lower the life span of air tools and production equipment. Atlas Copco's filters and dryers produce high quality air that enhances your system's reliability, avoiding costly downtime and production delays.

REDUCE YOUR ENERGY COSTS

Clean, treated air reduces the risk of corrosion and leaks in your compressed air system. A 3 mm leak could easily add up to EUR1800 to your energy bill annually.

SAFEGUARD YOUR PRODUCT QUALITY

Compressed air coming into contact with your final products should not affect their quality. Atlas Copco's quality air solutions provide the clean, dry air that will protect your product's reputation in the marketplace.



An abrasive oily sludge, a by-product of the compression process, can cause corrosion in your piping system which can shorten the life of equipment and make it prone to leakage.

With Atlas Copco's quality air solutions, your compressed air system remains clean and free from moisture, expanding the life of equipment, increasing efficiency and ensuring quality in your final product.

PROTECT THE ENVIRONMENT

With leaks and energy waste minimized and the disposal of untreated condensate eliminated, you can safeguard the environment and comply with international regulations.

CLEAN AIR…

Removing oil, particles and moisture from compressed air in the most demanding conditions, Atlas Copco's SD membrane dryers with pre-filters eliminate the results of low quality air at the lowest energy cost. Thanks to their pioneering Advanced Fiber Technology, SD dryers ensure the lowest pressure drop and purge air loss for the highest possible efficiency – saving you time and money through your production process.

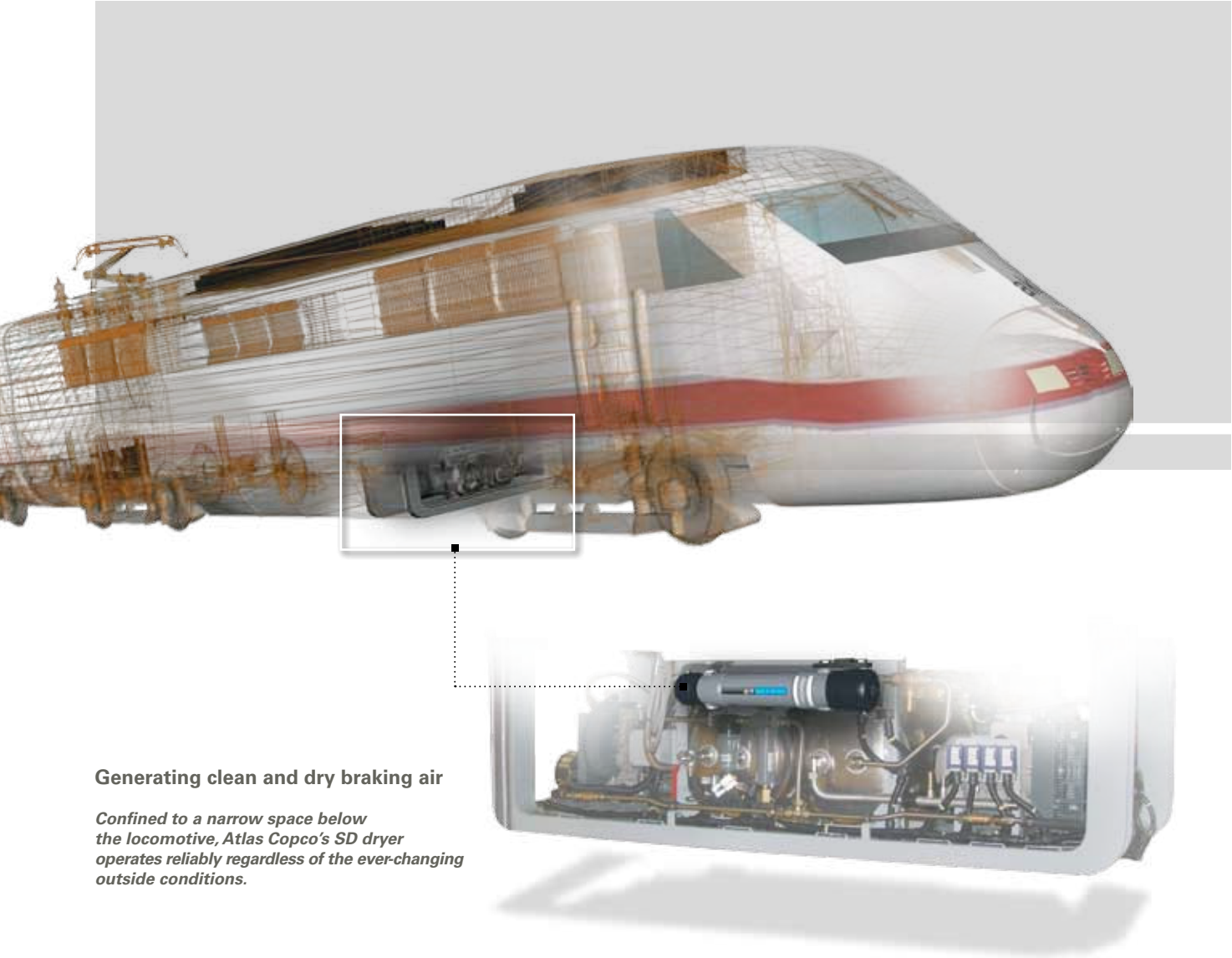
… IN EXTREME CONDITIONS

From small spaces to environments with fluctuating ambient temperatures, SD dryers can perform in a wide variety of harsh and critical conditions. SD dryers also come with different types of membranes, each with a range of performance, to offer you the exact air treatment you require.

Custom-built performance

Atlas Copco offers a selection of membrane dryers for the dew point your operation requires. Thanks to their innovative design, SD dryers provide the quality of air that will increase the reliability and energy efficiency of your production.

PERFORMANCE IN HARSH CONDITIONS



Generating clean and dry braking air

Confined to a narrow space below the locomotive, Atlas Copco's SD dryer operates reliably regardless of the ever-changing outside conditions.

Atlas Copco's membrane dryers perform where others won't:

- In small spaces
- In areas where flexible mounting is required
- In high vibration areas
- In widely fluctuating temperatures

PERFORMANCE IN CRITICAL CONDITIONS

Clean and dry air for operating laboratory equipment

Because they are not powered by electricity, Atlas Copco SD dryers function safely in environments that must be explosion proof such as laboratories. Thanks to their quiet operation, they can be used close to the workplace.

SD dryers provide dry air in environments with strict safety or environmental requirements:

- In low flow environments
- In areas without electrical supply
- In areas with explosion proof requirements
- In noise sensitive areas
- In corrosion sensitive areas

Save energy, increase efficiency

Atlas Copco's unique SD dryer range ensures the lowest pressure drop and the lowest purge air use – providing real energy savings without compromise in production reliability and efficiency.

ADVANCED FIBER TECHNOLOGY: MAXIMIZING EFFICIENCY

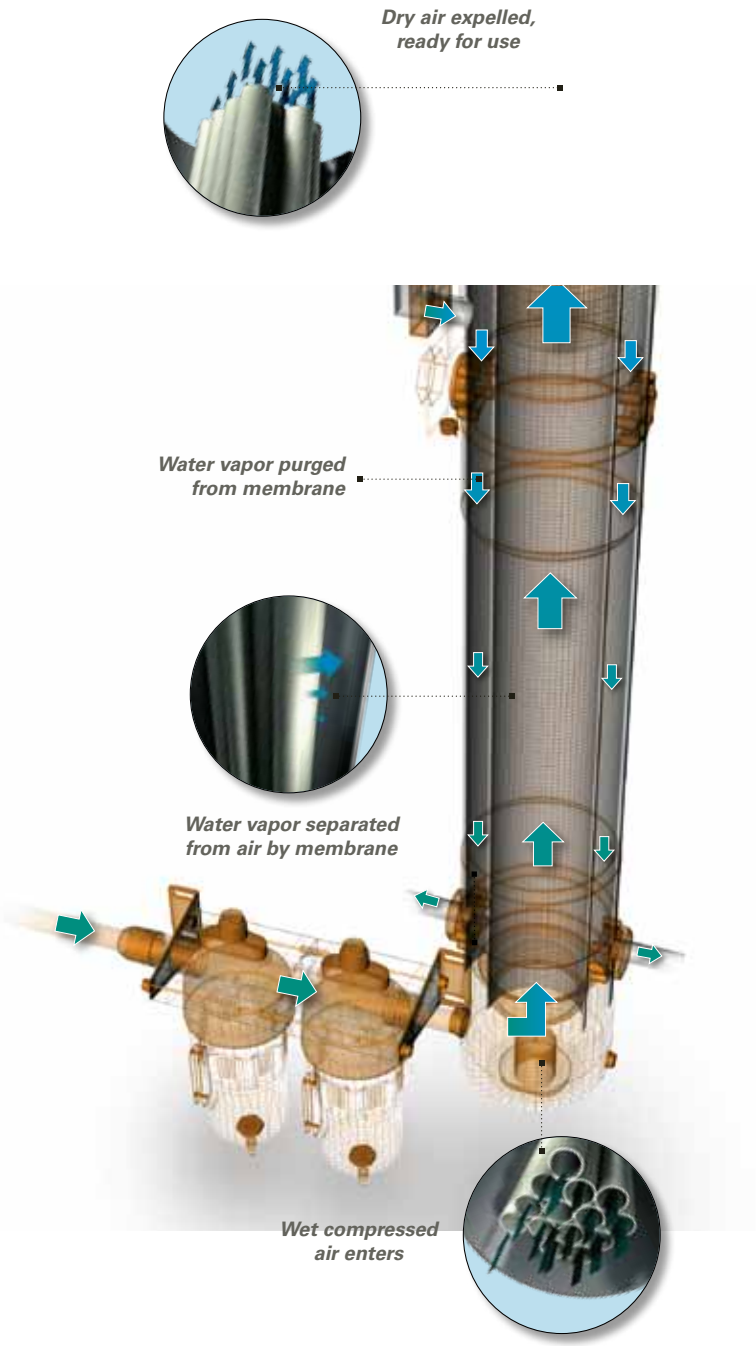
Atlas Copco's membrane dryers contain thousands of hollow fibers with a pioneering inner coating. As wet compressed air enters, the membrane coating allows water vapor to permeate and collect between the fibers, while the dry air continues its journey. Compared to conventional membrane dryers, the unique coating increases the separation efficiency between water vapor and oxygen and nitrogen, giving an unprecedented low air leakage and the lowest purge air loss.

CUSTOM FITTED MEMBRANES: OPTIMIZING CHOICE

SD dryers are offered with two types of membranes, each providing a different Pressure Dew Point Suppression (PDPS: see below). This choice of performance ensures that regardless of your production environment and demands, there is an SD dryer to meet your needs.

LOW AIR RESISTANCE: SAVING ENERGY

Due to the straight-forward design of SD dryer, compressed air has no twists and turns to make inside the housing – ensuring minimal pressure drop and utmost efficiency throughout the drying process.



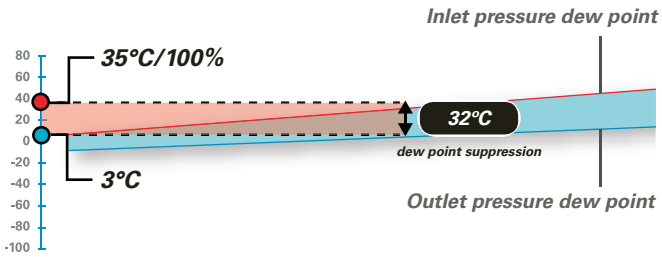
A CHOICE OF PERFORMANCE

The Atlas Copco SD dryer range includes the P and N model range, each offering 7 different size dryers.

P RANGE: Ensures a suppression of 32°C (55°F), giving at the reference conditions an outlet air dew point of 3°C (40°F), similar to a well-designed refrigerant-type air dryer.

N RANGE: Lowers the inlet dew point with 55°C (100°F), giving a pressure dew point of -20°C (-5°F) at the reference conditions.

PDPS EXPLAINED *Example shown for P range*



Membrane dryers lower the temperature at which condensation is formed by bringing down the dew point temperature of the inlet air. Their performance is measured by Pressure Dew Point Suppression, PDPS. For example, if inlet air is 35°C (95°F) and 100% saturated, the inlet dew point is also 35°C. An Atlas Copco SD dryer of the P range will lower the dew point by 32°C, so the outlet pressure dew point will be 3°C. Therefore the PDPS is 32°C.

Technical specifications

DRYER TYPE		Pressure		Max. inlet flow			Purge	Pressure drop		Filter model	Connection	Weight excl. filters		Weight incl. filters	
		bar	psi	l/s	m³/h	cfm	%	mBar	psi			kg	lb	kg	lb
P Range (PDPS 32°C/55°F)															
SD 1P	7	7	102	3.0	10.8	6.4	14	100	1.5	DD9, PD9	G3/8	0.6	1.3	2.9	6.4
	10	10	145	4.0	14.4	8.5	10	100	1.5	DD9, PD9	G3/8	0.6	1.3	2.9	6.4
	13	13	190	5.0	18.0	10.6	8	100	1.5	DD9, PD9	G3/8	0.6	1.3	2.9	6.4
SD 2P	7	7	102	5.0	18.0	10.6	15	170	2.5	DD9, PD9	G3/8	0.6	1.3	2.9	6.4
	10	10	145	7.0	25.2	14.8	11	170	2.5	DD9, PD9	G3/8	0.6	1.3	2.9	6.4
	13	13	190	8.5	30.6	18.0	9	170	2.5	DD9, PD9	G3/8	0.6	1.3	2.9	6.4
SD 3P	7	7	102	9.0	32.4	19.1	15	170	2.5	DD9, PD9	G1/2	1.7	3.7	4.0	8.8
	10	10	145	12.0	43.2	25.4	11	170	2.5	DD9, PD9	G1/2	1.7	3.7	4.0	8.8
	13	13	190	14.0	50.4	29.7	9	170	2.5	DD9, PD9	G1/2	1.7	3.7	4.0	8.8
SD 4P	7	7	102	14.0	50.4	29.7	15	270	3.9	DD17, PD17	G1/2	1.7	3.7	4.2	9.2
	10	10	145	19.0	68.4	40.3	14	270	3.9	DD17, PD17	G1/2	1.7	3.7	4.2	9.2
	13	13	190	22.0	79.2	46.6	11	270	3.9	DD17, PD17	G1/2	1.7	3.7	4.2	9.2
SD 5P	7	7	102	19.0	68.4	40.3	14	170	2.5	DD17, PD17	G1/2	2.8	6.2	5.3	11.7
	10	10	145	25.0	90.0	53.0	11	175	2.5	DD17, PD17	G1/2	2.8	6.2	5.3	11.7
	13	13	190	32.0	115.2	67.8	8	180	2.6	DD32, PD32	G1/2	2.8	6.2	5.7	12.5
SD 6P	7	7	102	25.0	90.0	53.0	14	240	3.5	DD32, PD32	G1/2	2.8	6.2	5.7	12.5
	10	10	145	34.0	122.4	72.1	10	240	3.5	DD32, PD32	G1/2	2.8	6.2	5.7	12.5
	13	13	190	42.0	151.2	89.0	8	250	3.6	DD32, PD32	G1/2	2.8	6.2	5.7	12.5
SD 7P	7	7	102	35.0	126.0	74.2	14	180	2.6	DD32, PD32	G1/2	5.0	11.0	7.9	17.4
	10	10	145	44.0	158.4	93.3	11	200	2.9	DD32, PD32	G1/2	5.0	11.0	7.9	17.4
	13	13	190	55.0	198.0	116.6	9	190	2.8	DD44, PD44	G3/4	5.0	11.0	8.9	20
N Range (PDPS 55°C/100°F)															
SD 1N	7	7	102	1.5	5.4	3.2	18	80	1.2	DD9, PD9	G3/8	0.7	1.5	3.0	6.6
	10	10	145	2.0	7.2	4.2	13	80	1.2	DD9, PD9	G3/8	0.7	1.5	3.0	6.6
	13	13	190	2.5	9.0	5.3	11	80	1.2	DD9, PD9	G3/8	0.7	1.5	3.0	6.6
SD 2N	7	7	102	3.5	12.6	7.4	19	250	3.6	DD9, PD9	G3/8	0.9	2.0	3.2	7.0
	10	10	145	4.5	16.2	9.5	13	240	3.5	DD9, PD9	G3/8	0.9	2.0	3.2	7.0
	13	13	190	5.5	19.8	11.7	10	240	3.5	DD9, PD9	G3/8	0.9	2.0	3.2	7.0
SD 3N	7	7	102	6.0	21.6	12.7	17	160	2.3	DD9, PD9	G1/2	2.4	5.3	4.7	10.3
	10	10	145	8.0	28.8	17.0	12	150	2.2	DD9, PD9	G1/2	2.4	5.3	4.7	10.3
	13	13	190	10.0	36.0	21.2	10	150	2.2	DD9, PD9	G1/2	2.4	5.3	4.7	10.3
SD 4N	7	7	102	9.0	32.4	19.1	17	250	3.6	DD9, PD9	G1/2	2.4	5.3	4.7	10.3
	10	10	145	12.0	43.2	25.4	14	240	3.5	DD9, PD9	G1/2	2.4	5.3	4.7	10.3
	13	13	190	15.0	54.0	31.8	10	240	3.5	DD9, PD9	G1/2	2.4	5.3	4.7	10.3
SD 5N	7	7	102	13.0	46.8	27.6	17	180	2.6	DD17, PD17	G1/2	3.6	7.9	6.1	13.4
	10	10	145	18.0	64.8	38.2	12	190	2.8	DD17, PD17	G1/2	3.6	7.9	6.1	13.4
	13	13	190	23.0	82.8	48.8	10	190	2.8	DD17, PD17	G1/2	3.6	7.9	6.1	13.4
SD 6N	7	7	102	17.0	61.2	36.0	19	250	3.6	DD17, PD17	G1/2	3.6	7.9	6.1	13.4
	10	10	145	22.0	79.2	46.6	14	240	3.5	DD17, PD17	G1/2	3.6	7.9	6.1	13.4
	13	13	190	28.0	100.8	59.4	10	250	3.6	DD17, PD17	G1/2	3.6	7.9	6.1	13.4
SD 7N	7	7	102	26.0	93.6	55.1	18	250	3.6	DD32, PD32	G1/2	6.8	15.0	9.7	21.3
	10	10	145	35.0	126.0	74.2	13	240	3.5	DD32, PD32	G1/2	6.8	15.0	9.7	21.3
	13	13	190	45.0	162.0	95.4	10	250	3.6	DD32, PD32	G1/2	6.8	15.0	9.7	21.3

Notes:
For higher flows, please contact your Atlas Copco sales representative.
For lower ambient temperatures down to -20°C, -5°F please contact your Atlas Copco sales representative.

Reference conditions:
Inlet temperature: 35°C, 95°F
Humidity: 100%

Operating limits:
Compressed air inlet pressure (min-max): 4-14 bar(e), 58-203 psig
Compressed air inlet temperature (min-max): 1-66 °C, 32-150°F
Ambient air temperature (min-max): 1-66°C, 32-150°F

Other pressure, pressure dew point suppressions and inlet dew points:

- *For pressures other than the ones mentioned above, correction factors give the correct flow*
- *Pressure dew point suppressions of 15°C (27°F) to as much as 95°C (171°F) are possible. Correction factors give the correct flows*
- *The performance of the SD membrane dryer range is independent of ambient temperature and inlet temperature; it is only dependent of inlet dew point*

SD membrane dryers

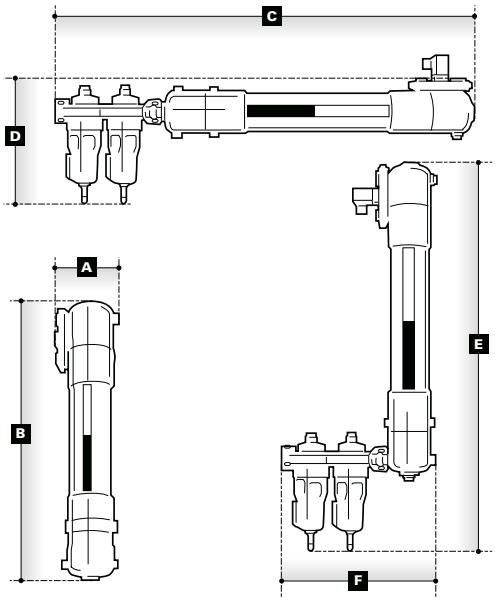
STANDARD EQUIPMENT

- Purge block, fitted onto the dryer, controls the purged air
- Two pre-filters, all interconnection components included, ensure optimal inlet air quality
- Flexible inlet and outlet caps allow filters and dryer to be mounted in two settings for optimal use of available space

OPTIONAL EQUIPMENT

- Purge air stop to save purge when there is no air consumption
- Wall mounting kits for easy dryer installation
- Wall mounting kits for filters
- Quick filter coupling, ensures easy connection to drain collector or oil/water separator
- 4-20 mA filter read out, providing an external system with the exact dP across the filter
- Voltage-free filter contact, mounted on the differential pressure gauge, to give remote indication of cartridge replacement
- EWD electronic filter drain with alarm function ensures no loss of compressed air

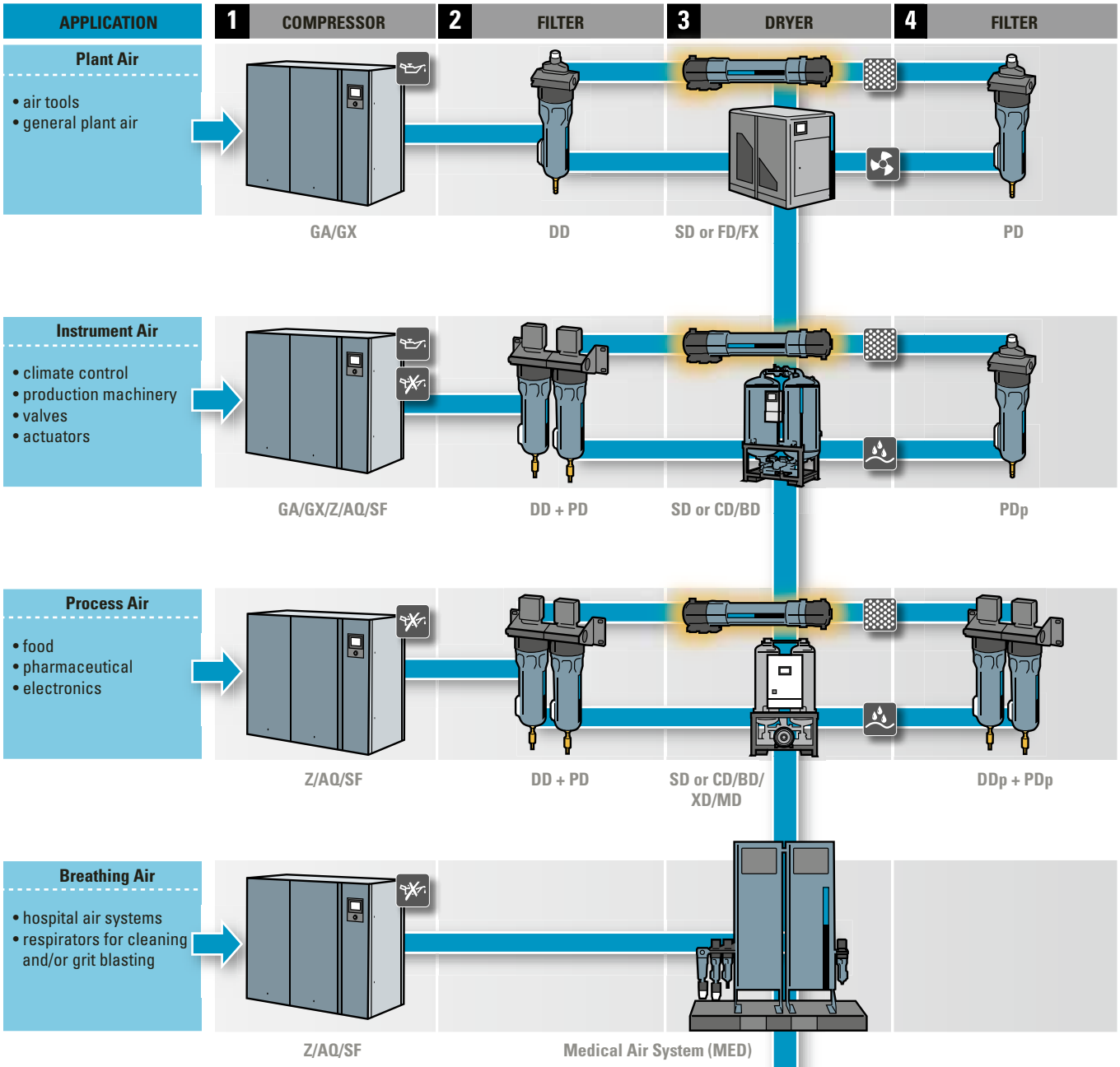
DIMENSIONS												
DRYER TYPE	A		B		C		D		E		F	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
P Range (PDPS 32°C/55°F)												
SD 1P	99	3.9	532	20.9	757	29.8	264	10.4	716	28.2	291	11.5
SD 2P	99	3.9	532	20.9	757	29.8	264	10.4	716	28.2	291	11.5
SD 3P	122	4.8	733	28.9	959	37.8	277	10.9	906	35.7	313	12.3
SD 4P	122	4.8	733	28.9	959	37.8	277	10.9	906	35.7	313	12.3
SD 5P	145	5.7	709	27.9	934	36.8	287	11.3	881	34.7	334	13.1
SD 6P	145	5.7	709	27.9	934	36.8	342	13.5	936	36.9	334	13.1
SD 7P	170	6.7	732	28.8	957	37.7	355	14.0	953	37.5	361	14.2
SD 7P-13	170	6.7	732	28.8	997	39.3	369	14.5	967	38.1	401	15.8
N Range (PDPS 55°C/100°F)												
SD 1N	99	3.9	715	28.1	940	37.0	264	10.4	899	35.4	291	11.5
SD 2N	99	3.9	1020	40.2	1245	49.0	264	10.4	1204	47.4	291	11.5
SD 3N	122	4.8	1076	42.4	1302	51.3	277	10.9	1249	49.2	313	12.3
SD 4N	122	4.8	1076	42.4	1302	51.3	277	10.9	1249	49.2	313	12.3
SD 5N	145	5.7	1074	42.3	1299	51.1	287	11.3	1246	49.1	334	13.1
SD 6N	145	5.7	1074	42.3	1299	51.1	287	11.3	1246	49.1	334	13.1
SD 7N	170	6.7	1113	43.8	1338	52.7	355	14.0	1334	52.5	361	14.2

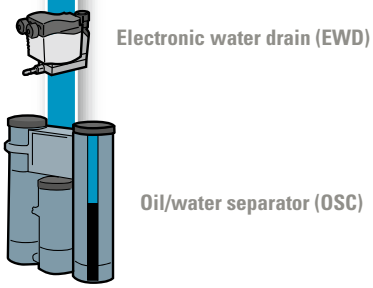


Notes:
1. SD 5P-13: dimensions, filters and weight of SD 6P
2. Add 100 mm free space below the filters for easy cartridge exchange
3. The purge stop option adds 50 mm to diameter A and height D

Atlas Copco quality air solutions

FOUR STEPS TO QUALITY AIR





FILTERS

Type	Purpose/Principle	Oil removal	Particle removal
DD	coalescing filters for general purpose protection	0.1 ppm	1 µm
DDp	particle filter for dust protection	-	1 µm
PD	high effiency coalescing filter	0.01 ppm	0.01 µm
PDp	high efficiency particle filter for dust protection	-	0.01 µm
QD	active carbon filter for removal of oil vapors and (hydrocarbon) odors	0.003 ppm	

DRYERS

Refrigerant *Adsorption* *Membrane*

COMPRESSORS

Lubricated *Oil-free*

This diagram is intended as a general guide.
Please contact your Atlas Copco sales representative for a breakdown of your specific requirements.

Driven by innovation

With more than 135 years of innovation and experience, Atlas Copco will deliver the products and services to help maximize your company's efficiency and productivity. As an industry leader, we are dedicated to offering high air quality at the lowest possible cost of ownership. Through continuous innovation, we strive to safeguard your bottom line and bring you peace of mind.

Building on interaction

As part of our long-term relationship with our customers, we have accumulated extensive knowledge of a wide diversity of processes, needs and objectives. This gives us the flexibility to adapt and efficiently produce customized compressed air solutions that meet and exceed your expectations.

A committed business partner

With a presence in over 170 countries, we will deliver high-quality customer service anywhere, anytime. Our highly skilled technicians are available 24/7 and are supported by an efficient logistics organization, ensuring fast delivery of genuine spare parts when you need them. We are committed to providing the best possible know-how and technology to help your company produce, grow, and succeed. With Atlas Copco you can rest assured that your superior productivity is our first concern!

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Atlas Copco

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