



# Refrigerated Air Dryers

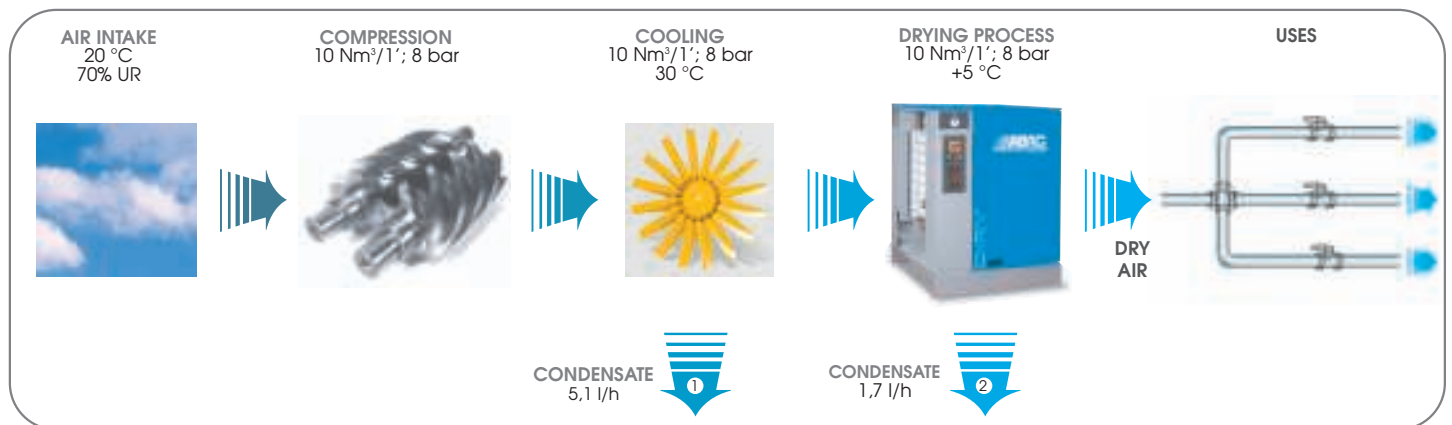
Catalogue

# Why use a refrigerated dryer?

Humidity is a component of atmospheric air, which can be found in the compressed air distribution systems and the machines that use the compressed air in the form of condensate and/or vapour.

If left untreated the humidity found in compressed air form of vapour, will follow the air flow all the way to the final product. When it then cools, a part of this humidity present in the compressed air condenses to form water and over time causes serious damage to the distribution network, the machines using the compressed air and the final product.

For example, 5.1 l/h of condensate is separated from a compressor with an output capacity of 10 Nm<sup>3</sup>/min and an ambient intake air temperature of 20°C and 70% relative humidity, whilst operating at a delivery pressure of 8 bar(g) and cooling the air to 30°C. ①



If the compressed air is then dried further to a dewpoint of +5° C, an additional 1.7 l/h of condensate can be separated. ②

**The distribution network becomes more economical** and can be installed without slopes to drain points, without separators and without condensate drains.

**Lower maintenance costs:**

- for the distribution network, as there is no need to clean line separators or check the operation of the drains, which may be located over a very wide area.
- for machine applications and pneumatic tools, the absence of condensate eliminates the main cause of breakdowns and wear.

**Energy savings** by preventing corrosion in the pipelines a lower pressure drop is achieved resulting in energy savings.

**Longer life** for pneumatic equipment, as the use of dry air guarantees reliable performance over time.

**Greater productivity** because of fewer untimely breakdowns due to machine faults.

**Higher final product quality** both for applications where compressed air comes directly into contact with the product and where the air acts purely to assist the efficiency of machine's and all pneumatic equipment.

**Increasing profitability and enhancing the company's image.**

*That's why maintenance managers, production managers, and air compressor specialists ensure their systems have a DRYER.*

# Quality • Installation • Maintenance

ABAC is one of the world's leading manufacturers of dryers and is the only air compressor manufacturer that designs and produces all the dryers they use for their range of compressors in their own factory.

## Quality

High reliability is achieved through the continuous development of the dryers in the DRY range.

First-class components are used that have been tested under the most adverse operating conditions.

Constant dewpoint control under any load condition.

Automatic operation.



## Installation

The unique light and compact design make it easy to transport the dryers. Installation of the DRY dryer is simple and does not require any special equipment nor any special foundation work, whether it is a new system or an update to an existing system.

All that is necessary is for a pneumatic and an electrical connection to be completed and the dryer is ready to use.

Installation is only complete once filters have also been fitted.

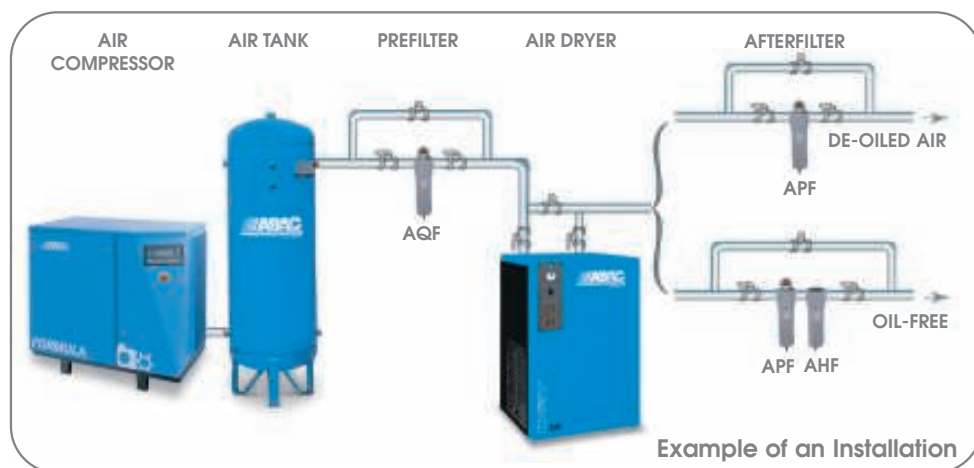
## Maintenance

Years of experience, along with the use of high-quality components added to, the generous size of the unit, its simple design and effective control system all contribute towards making these units safe and reliable over time.

All the dryers in the DRY range have been designed and built with particular attention given to its operation and performance using first-class components that have been tested in the field for many years.

The refrigerated dryer offered by ABAC is a unit that:

- requires low maintenance and long intervals between overhauls;
- has fewer components that are subject to wear.



# Savings • Environment



## Savings

High energy savings due to low pressure drops throughout the system.

No wastage of compressed air because of the intelligent (zero loss) automatic discharge of condensate.

A cleaner compressed air distribution network without leakage.

Greater reliability and longer life of all pneumatic equipment.

Lower and easier maintenance due to the reliability of the components and the easy access to internal components.

Safe and reliable operation.

## Intelligent automatic discharger of condensate

### Advantages

- **Discharges only water, NOT compressed air**  
= Energy savings
- **Noise-free, no acoustic impact**  
= Environmental protection



## Environmental protection

No CFC = No impact on the OZONE LAYER

Ecological thanks to the adoption of R134a - R404 A gas

Complies with current EC regulations

Thermal insulation to guarantee high efficiency Intelligent discharge of condensate



*That's why maintenance managers, production managers, and air compressor specialists make sure their systems have a DRYER made by ABAC*



# DRY dryers • Layout

① **REFRIGERANT COMPRESSOR**  
driven by an electric motor, cooled using refrigerant fluid and protected against thermal overload.

② **REFRIGERANT CONDENSER** air-cooled and with a large exchange surface for high thermal exchange.

③ **IP 54 MOTOR-DRIVEN VENTILATOR** for the condenser cooling air flow.

④ **AIR/REFRIGERANT EVAPORATOR** with high thermal exchange and low leakage rates.

⑤ **CONDENSATE SEPARATOR**  
High-efficiency.

⑥ **AIR-AIR HEAT EXCHANGER** with high thermal exchange and low load losses.

⑪ **HOT GAS BYPASS VALVE**  
controls the refrigerant capacity under all load conditions preventing any formation of ice within the system.



DRY 60

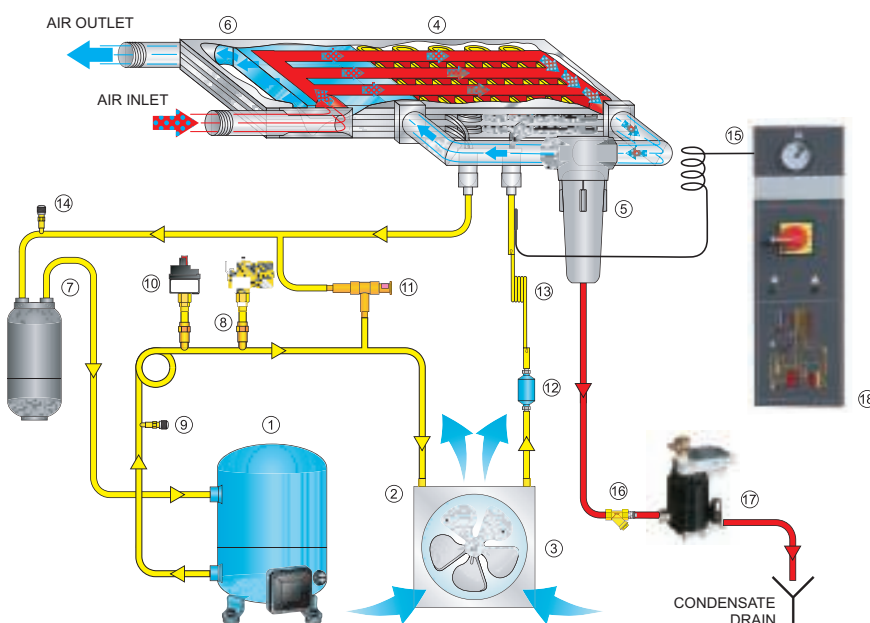


DRY 530

⑮ ⑱ **INSTRUMENT PANEL** consisting of: dewpoint level indicator, ON/OFF switch, voltage indicator and fault alarm.

⑰ **AUTOMATIC DISCHARGE OF CONDENSATE** which is ecological and capable of preventing unwanted discharge of compressed air.

⑯ **IMPURITY FILTER** for collecting any impurities to protect the system.



LAYOUT DRY 690-1260

- ① Refrigerant compressor
- ② Refrigerant condenser
- ③ Motor-driven ventilator
- ④ Air/Refrigerant Evaporator
- ⑤ Condensate separator with a demister filter
- ⑥ Air/air heat exchanger
- ⑦ Refrigerant fluid separator
- ⑧ Maximum pressure switch
- ⑨ Service valve
- ⑩ Pressure switch, fan control
- ⑪ Hot gas bypass valve
- ⑫ Refrigerant fluid filter
- ⑬ Capillary Tube
- ⑭ Service valve
- ⑮ Dewpoint thermometer
- ⑯ Impurity collector filter
- ⑰ Automatic discharge of condensate
- ⑱ Instrument panel

**TECHNICAL DATA** ( according to ISO 7183 and Cagi Pneurop PN8NTC2 )

Type	bar	psi	m³/1'	① m³/h	cfm	① W	V/Hz/Ph	gas/DN	L	W	H	Kg
DRY 20	16	232	0,333	20	11,8	130	230/50/1	3/4" M	350	500	450	19
DRY 25	16	232	0,417	25	14,7	130	230/50/1	3/4" M	350	500	450	19
DRY 45	16	232	0,750	45	26,5	164	230/50/1	3/4" M	350	500	450	19
DRY 60	16	232	1,000	60	35,3	190	230/50/1	3/4" M	350	500	450	20
DRY 85	16	232	1,417	85	50,0	266	230/50/1	3/4" M	350	500	450	25
DRY 130	16	232	2,167	130	76,5	284	230/50/1	3/4" M	350	500	450	27
DRY 165	13	188	2,750	165	97,1	609	230/50/1	1" F	370	500	764	44
DRY 210	13	188	3,500	210	124	673	230/50/1	1" F	370	500	764	44
DRY 250	13	188	4,167	250	147	793	230/50/1	1 1/2" F	460	560	789	53
DRY 290	13	188	4,833	290	171	870	230/50/1	1 1/2" F	460	560	789	60
DRY 360	13	188	6,000	360	212	1072	230/50/1	1 1/2" F	460	560	789	65
DRY 460	13	188	7,667	460	271	1190	230/50/1	1 1/2" F	580	590	899	80
DRY 530	13	188	8,833	530	312	1446	230/50/1	1 1/2" F	580	590	899	80
DRY 690	13	188	11,500	690	406	1818	400/50/3	2" F	735	898	962	128
DRY 830	13	188	13,833	830	489	2013	400/50/3	2" F	735	898	962	146
DRY 1040	13	188	17,333	1040	612	2636	400/50/3	2" F	735	898	962	158
DRY 1260	13	188	21,000	1260	742	3568	400/50/3	2" F	735	898	962	165

NOTES:

① Reference conditions:

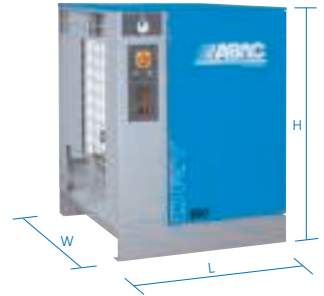
- Operating pressure: : 7 bar (100 psi)
- Operating temperature : 35 °C
- Room temperature: : 25 °C
- Pressure dewpoint: : +5 °C +/- 1
- Available in different voltages and frequency

Optional for DRY (20-130):

- Bypass + filter support
- Filter support

Limit conditions:

- Working pressure : 16 bar (232 psi) DRY 20-130  
: 13 bar (188 psi) DRY 165-1260
- Operating temperature : 55 °C
- Min/Max room temperature : +5 °C; +45 °C



Correction factor for conditions differing from the project $K = A \times B \times C$														
Room temperature	°C	25	30	35	40	45	Operating temperature	°C	30	35	40	45	50	55
		1,00	0,92	0,84	0,80	0,74			1,24	1,00	0,82	0,69	0,58	0,45
(DRY 20-530)						(DRY 20-530)								
(DRY 690-1260)						(DRY 690-1260)								
Operation pressure	bar	5	6	7	8	9	10	11	12	13	14	15	16	
		0,90	0,96	1,00	1,03	1,06	1,08	1,10	1,12	1,13	1,15	1,16	1,17	
(DRY 20-530)						(DRY 20-530)								
(DRY 690-1260)						(DRY 690-1260)								

The new flow rate value can be obtained by dividing the current or real flow rate by the correction factor related to the real operation conditions.

The company reserves the right to make any changes from the point of view of continuous product improvement.



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