



**Air treatment solutions from  
ABAC will protect your  
compressed air investment.**

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## **COOL Refrigeration Air Dryers**



# The Drying Process

Refrigeration dryers use a refrigerant gas in order to cool the compressed air. As a result the water from the air condenses and can be removed. With this technique we can reach in the COOL range a pressure dew point of 45°F. As a result, the refrigeration technology is by far the most used dryer technology, complying for more than 95% of industrial applications. Refrigerant dryers are commonly used with pneumatic applications and in the general industry (e.g. engineering, steel, paper, tannery, garage).



## // Main Benefits

- Remove Water Pollution from Network
- Refrigeration Dryer is a Simple, Low Maintenance Technology
- Extremely Easy Installation
- Compact Equipment
- Compatible with all Compressor Technology
- Low Energy Consumption
- Check Air Quality with Dew Point Indicator
- Higher Final Product Quality
- Increased Overall Productivity

## // Applications

- Pneumatic Tools & Equipment
- Pneumatic Control Systems
- Painting Application
- Packaging
- Injection Molding
- Car Shop
- Tire Inflation



## // Risks to Avoid

### Humid air can cause:

- Corrosion, Pollution, Leakage and Rust of Air Net & Downstream Equipment/Tools
- Costly Interruptions of Production
- Extremely Easy Installation
- Decreased Efficiency
- Reduction of Life Span of all Equipment Involved
- Water Contamination within Air Net & Potential Freezing
- Increased Maintenance Costs
- Lower Quality Final Products & Potential Risk of Product Recalls
- Increased Overall Productivity

## // Compact & Efficient

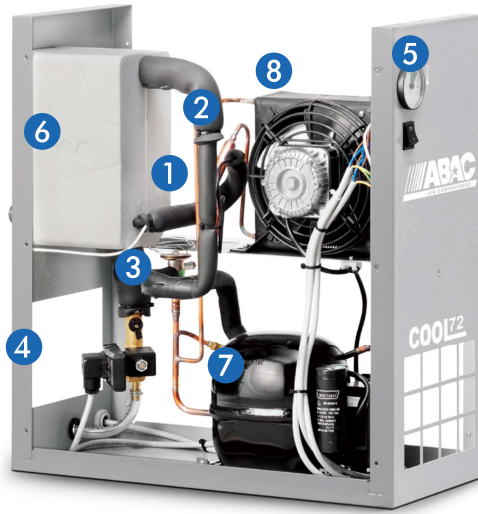
### The COOL range offers reliable components in a simple, vertical lay-out:

- Simple to Install & Easy to Operate
- Easy Access for Quick & Efficient Servicing
- Efficient Cooling System
- Flexible Transportation
- Small Footprint
- Stable Dew Point



# Components

- 1 **Capillary Tube** in order to considerably reduce the pressure & temperature of the refrigerant, improving the cooling process.
- 2 **Refrigerant Filter** in order to protect the capillary from possible dirty particles.
- 3 **Hot Gas By-Pass Valve:**
  - Injects hot gas from compressor discharge into suction/liquid separator.
  - Keeps refrigeration capacity in all load conditions.
  - Maintains constant pressure in the evaporator, avoiding freezing.
- 4 **Timer Drain** ensures a proper drain of the condensate.



- 5 **Control Panel:** PDP indicator (green zone) & main on-off switch.
- 6 **Air/Air & Air/Refrigerant Heat Exchange** with high thermal exchange and low load losses. Integrated water separator allows a highly efficient water-air separation.
- 7 **Refrigerator compressor** driven by an electric motor, cooled using refrigerant fluid and protected against thermal overload.
- 8 **Refrigerant condenser** air-cooled and with a large exchange surface for high thermal exchange.

Type	Max Working Pressure		Air Treatment Capacity			Nominal Electrical Power	Voltages	Inlet/Outlet Connections	Weight	Dimensions	Refrigeration Gas Type
	Bar	PSI	l/min	mc/h	cfm						
COOL 15	16	232	350	21	15	159	115/1/60	1/2" F	42	9 × 22 × 22	R134A
COOL 25	16	232	600	36	25	159	115/1/60	1/2" F	42	9 × 22 × 22	
COOL 35	16	232	850	51	35	163	115/1/60	1/2" F	42	9 × 22 × 22	
COOL 50	16	232	1200	72	50	228	115/1/60	1/2" F	44	9 × 22 × 22	
COOL 65	16	232	1825	110	65	321	115/1/60	1/2" F	55	9 × 22 × 22	
COOL 75	16	232	2150	129	75	366	115/1/60	3/4" F	59	9 × 22 × 22	
COOL 100	16	232	3000	180	100	583	115/1/60	1" F	66	9 × 22 × 22	
COOL 125	16	232	3600	216	125	687	230/1/60	1" F	114	12 × 28 × 39	
COOL 150	13	188	4100	246	150	812	230/1/60	1" 1/2 F	125	12 × 28 × 39	R404A
COOL 200	13	188	5200	312	200	922	230/1/60	1" 1/2 F	130	12 × 28 × 39	
COOL 250	13	188	6500	390	250	1102	230/1/60	1" 1/2 F	158	12 × 28 × 39	
COOL 275	13	188	7700	462	275	1292	230/1/60	1" 1/2 F	176	12 × 28 × 39	

## Limit Conditions

- Working Pressure: 232 PSI COOL 15-125  
188 PSI COOL 150-275
- Operating Temperature: 122 °F
- Min/Max Room Temp: +41 °F, + 104 °F

## Reference Conditions

- Operating Temperature: 95 °F
- Room Temperature: 77 °F
- Pressure Dewpoint: 50 °F
- Operating Temperature: 122 °F
- Min/Max Room Temp: +41 °F, + 104 °F

## Correction Factor for Conditions Differing from the Project $K = A \times B \times C$

Room Temperature	°F	77	86	95	100
	A	1.00	0.92	0.84	0.80

Operating Temperature	°F	86	95	100	113	122
	B	1.24	1.00	0.82	0.69	0.54

Operating Pressure	PSI	75	85	100	115	130	145	160	175	190	200	215	230
	C	.90	.96	1.00	1.03	1.06	1.08	1.10	1.12	1.13	1.15	1.16	1.17