FAMCO
هایپرصنعت

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تهران، کیلومتر۲۱ بزرگراه لشگری (جاده مخصوص کرج)
روبروی پالایشگاه نفت پارس، پلاک ۱۲

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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 5°C. 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).

Footprint only 0,13m²

Main benefits

- Remove the water pollution from your network
- Refrigeration dryer is a simple, low maintenance technology
- Extremely easy to install
- Very compact equipment fits in a minimum space
- Low maintenance requirement
- Compatible with any compressor technology
- Very low energy consumption
- Check your air quality with the dew point indicator
- Higher final product quality
- Increase your overall productivity

Risks to avoid

Humid, unclean compressed air can cause:

- Corrosion, pollution, leakage and rust of the air net (pipes) and the downstream equipment/tools
- Costly interruptions of the production
- A decreased efficiency of the equipment/tools used
- Reduction of the life span of all equipment involved
- Risk of water contamination in the air network, with potential freezing in winter time
- Increased maintenance costs
- Lower quality of the final product and potential risk of product recalls

Applications

- Pneumatic tools and equipment
- Pneumatic control systems
- Painting application
- Packaging
- Injection molding
- Car shop
- Tire inflation

Components

1. **Capillary tube** in order to considerably reduce the pressure and temperature of the refrigerant, improving the cooling process.
2. **Refrigerant filter** in order to protect the capillary from some 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** and **Air/Refrigerant Heat Exchanger** with high thermal exchange and low load losses. **Integrated water separator** allows a highly efficient water-air separation.
7. **Refrigerant 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.

Technical table

Type	Max. working pressure		Air treatment capacity[1]			Nominal electrical power[1]	Voltage	Inlet/Outlet connections	Dimensions (mm.)			Weight	Refrigeration gas type
	bar	psi	l/min	mc/h	cfm	W	V / ph / Hz	gas	L	W	H	Kg.	
COOL 21	16	232	350	21	12,4	126	230/1/50	3/4" M	233	559	561	19	
COOL 36	16	232	600	36	21,2	126	230/1/50	3/4" M	233	559	561	19	
COOL 51	16	232	850	51	30,0	163	230/1/50	3/4" M	233	559	561	19	
COOL 72	16	232	1200	72	42,4	228	230/1/50	3/4" M	233	559	561	20	R134a
COOL 110	16	232	1825	110	64,4	293	230/1/50	3/4" M	233	559	561	25	
COOL 129	16	232	2150	129	76	380	230/1/50	3/4" M	233	559	561	27	
COOL 180	16	232	3000	180	106	419	230/1/50	1" F	233	559	561	30	
COOL 216	16	232	3600	216	127	664	230/1/50	1" F	310	706	994	52	
COOL 246	13	188	4100	246	145	767	230/1/50	1" 1/2 F	310	706	994	57	
COOL 312	13	188	5200	312	184	865	230/1/50	1" 1/2 F	310	706	994	59	R404A
COOL 390	13	188	6500	390	230	1028	230/1/50	1" 1/2 F	310	706	994	80	
COOL 462	13	188	7700	462	272	1242	230/1/50	1" 1/2 F	310	706	994	80	

Compact & efficient

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

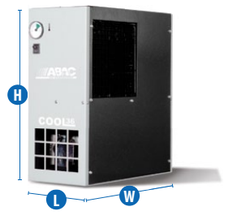
- Simple to install and easy to operate
- Easy access for quick servicing resulting in low maintenance costs
- Efficient cooling system
- Flexible transportation
- Small footprint
- Stable dew point

Reference conditions[1]

- Operating pressure: 7 bar (100 psi)
- Operating temperature: 35 °C
- Room temperature: 25 °C
- Pressure dewpoint: +5 °C +/- 1
- Also available at 60Hz

Limit conditions:

- Working pressure: 16 bar COOL 21-216, 13 bar COOL 246-462
- Operating temperature: 50 °C
- Min/Max room temperature: +5 °C; +40 °C



Correction factor for conditions differing from the project K = A x B x C

- Room temperature

°C	25	30	35	40
A	**1,00**	0,92	0,84	0,80

- Operating temperature

°C	30	35	40	45	50
B	1,24	**1,00**	0,82	0,69	0,54

- Operating Pressure

bar	5	6	7	8	9	10	11	12	13	14	15	16
C	0,90	0,96	**1,00**	1,03	1,06	1,08	1,10	1,12	1,13	1,15	1,16	1,17

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