

COOL

Refrigeration air dryers



People.
Passion.
Performance.

 **Chicago
Pneumatic**

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).

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



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

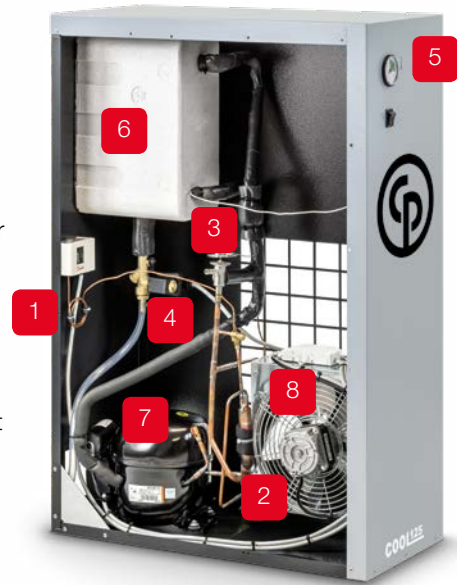
Applications

- 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 10 | 16 | 232 | 350 | 21 | 12,4 | 130 | 230/1/50 | 1/2 F | 233 | 550 | 561 | 19 | R134a |
| COOL 20 | 16 | 232 | 600 | 36 | 21,2 | 135 | 230/1/50 | 1/2 F | 233 | 550 | 561 | 19 | |
| COOL 30 | 16 | 232 | 850 | 51 | 30,0 | 167 | 230/1/50 | 1/2 F | 233 | 550 | 561 | 19 | |
| COOL 40 | 16 | 232 | 1200 | 72 | 42,4 | 286 | 230/1/50 | 1/2 F | 233 | 550 | 561 | 20 | |
| COOL 60 | 16 | 232 | 1825 | 110 | 64,4 | 323 | 230/1/50 | 1/2 F | 233 | 550 | 561 | 25 | |
| COOL 80 | 16 | 232 | 2150 | 129 | 76 | 297 | 230/1/50 | 3/4 F | 233 | 550 | 561 | 27 | |
| COOL 100 | 16 | 232 | 3000 | 180 | 106 | 419 | 230/1/50 | 1" F | 233 | 559 | 561 | 30 | |
| COOL 125 | 16 | 232 | 3600 | 216 | 127 | 675 | 230/1/50 | 1" F | 310 | 706 | 994 | 52 | |
| COOL 150 | 13 | 188 | 4100 | 246 | 145 | 735 | 230/1/50 | 1" 1/2 F | 310 | 706 | 994 | 57 | R410A |
| COOL 180 | 13 | 188 | 5200 | 312 | 184 | 702 | 230/1/50 | 1" 1/2 F | 310 | 706 | 994 | 59 | |
| COOL 225 | 13 | 188 | 6500 | 390 | 230 | 746 | 230/1/50 | 1" 1/2 F | 310 | 706 | 994 | 80 | |
| COOL 270 | 13 | 188 | 7700 | 462 | 272 | 954 | 230/1/50 | 1" 1/2 F | 310 | 706 | 994 | 80 | |

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 $K = A \times B \times C$

| | | | | | |
|------------------|----|------|------|------|------|
| 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 |



Chicago Pneumatic: full offer, global presence



Piston compressors



Screw compressors



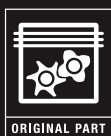
Industrial & vehicle service tools



Portable compressors & generators



Construction equipment



Care. Trust. Efficiency.

Care.

Care is what service is all about: professional service by knowledgeable people, using high-quality original parts.

Trust.

Trust is earned by delivering on our promises of reliable, uninterrupted performance and long equipment lifetime.

Efficiency.

Equipment efficiency is ensured by regular maintenance. Efficiency of the service organization is how Original Parts and Service make the difference.

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