

# Wear and corrosion threaten your air distribution network. Our COOL range of refrigeration dryers keeps your compressed air system in optimal shape.

## COOL REFRIGERATION AIR DRYERS




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## 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 7 °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



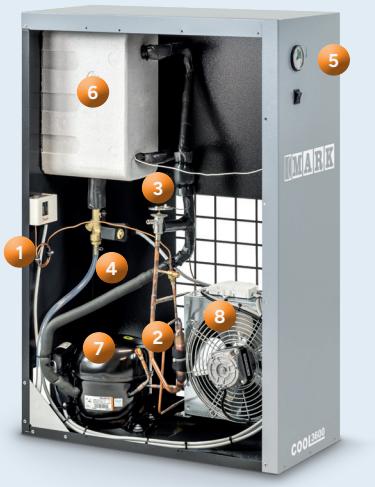
## APPLICATIONS

- 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 | Air treatment capacity[1] | | | R410A - 50Hz | | R513A - 50Hz | | R513A - 60Hz | | Inlet/Outlet connections | Dimensions (mm) | Weight up to |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Power consumption[1] | Voltage | Power consumption[1] | Voltage | Power consumption[1] | Voltage | | | |
| | l/min | m³/h | cfm | W | V/Ph/Hz | W | V/Ph/Hz | W | V/Ph/Hz | gas/DN | L x W x H | kg |
| **COOL 400** | 350 | 21 | 12,4 | – | – | 130 | 230/1/50 | 140 | 230/1/60 | 1/2 F | 233 x 550 x 561 | 22 |
| **COOL 600** | 600 | 36 | 21,2 | – | – | 135 | 230/1/50 | 144 | 230/1/60 | 1/2 F | 233 x 550 x 561 | 22 |
| **COOL 900** | 850 | 51 | 30 | – | – | 167 | 230/1/50 | 147 | 230/1/60 | 1/2 F | 233 x 550 x 561 | 25 |
| **COOL 1200** | 1200 | 72 | 42,4 | – | – | 286 | 230/1/50 | 202 | 230/1/60 | 1/2 F | 233 x 550 x 561 | 25 |
| **COOL 1800** | 1800 | 108 | 63,6 | – | – | 372 | 230/1/50 | 297 | 230/1/60 | 1/2 F | 233 x 550 x 561 | 27 |
| **COOL 2200** | 2150 | 129 | 76 | – | – | 337 | 230/1/50 | 393 | 230/1/60 | 3/4 F | 233 x 550 x 561 | 32 |
| **COOL 3000** | 3000 | 180 | 106 | – | – | 419 | 230/1/50 | 459 | 230/1/60 | 1" F | 233 x 559 x 561 | 31 |
| **COOL 3600** | 3600 | 216 | 127 | – | – | 657 | 230/1/50 | 730 | 230/1/60 | 1" F | 310 x 706 x 994 | 47 |
| **COOL 4100** | 4100 | 246 | 145 | – | – | 735 | 230/1/50 | 756 | 230/1/60 | 1" 1/2 F | 310 x 706 x 994 | 54 |
| **COOL 5200** | 5200 | 312 | 184 | 702 | 230/1/50 | 623 | 230/1/50 | 751 | 230/1/60 | 1" 1/2 F | 310 x 706 x 994 | 66 |
| **COOL 6500** | 6500 | 390 | 230 | 746 | 230/1/50 | 645 | 230/1/50 | 778 | 230/1/60 | 1" 1/2 F | 310 x 706 x 994 | 65 |
| **COOL 7700** | 7700 | 462 | 272 | 954 | 230/1/50 | 794 | 230/1/50 | 957 | 230/1/60 | 1" 1/2 F | 310 x 706 x 994 | 69 |

### Reference conditions[1]

- **Operating pressure:** 7 bar (100 psi)
- **Inlet temperature:** 35 °C
- **Room temperature:** 25 °C
- **Pressure dewpoint:** 7 °C

### Limit conditions:

- **Working pressure:**
  16 bar COOL 400-3600 / 14 bar COOL 4100-7700
- **Inlet 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 |

| Inlet 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 |

## Contact your local representative:
www.mark-compressors.com




**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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