Nortec High Capacity Refrigerated Air/Gas Dryers

**Nortec Advantages:**
Nortec uses the most energy efficient components in the manufacture of these High Capacity Refrigerated Dryers. The dryers are custom built to suit your design and application requirements.

- Capacity and type of application determines the use of one of these three types of high quality energy saving compressors.

**Open Drive Rotary Screw Compressors**
- Semi Hermetic
- Water Saver and Pumping Stations
- NEMA 12 enclosures are standard on all these dryers.

**Semi Hermetic Reciprocating Compressors**
- Water cooled condensers are constructed from high thermal efficiency copper tubes, coils and aluminum fins and are rated for 100°F ambient temperature.

**High Efficiency Scroll Compressors**
- Water cooled condensers are constructed from high thermal efficiency copper tubes, coils and aluminum fins and are rated for 100°F ambient temperature.

**Water Cooled Condenser**
- NEMA 12 enclosures are standard on all high capacity refrigerated dryers. Optional control, monitoring systems, indicators and NEMA 4, 4X and NEMA 4X enclosures are also available.

**Air Cooled Condenser**
- With very little pressure drop, the cyclone separator stops the mist from the chilled air and safely discharges the condensate with the use of a zero-purge loss drain.

**Evaporator**
- Air cooled condensers are constructed from high thermal efficiency copper tubes, coils and aluminum fins and are rated for 100°F ambient temperature.

**Controller**
- Water cooled condensers are constructed from high thermal efficiency copper tubes, coils and aluminum fins and are rated for 100°F ambient temperature.

**Separator**
- Expansions see either shell-and-tube high efficiency brazed or welded plate or are designed for high head efficiency. Each refrigeration zone has its own independent evaporator, so failure of one refrigeration zone or compressor will have no effect on the other circuits.

**Logic Controller**
- State of the art PLC’s (Programmable Logic Controllers) are used for close monitoring of inlet, outlet and Dew point temperatures of these dryers. Their modular and versatile features make them suitable to various applications, including local and remote display.

**NRD Series – Non-Cycling Refrigerated Dryers**

The Non-Cycling Refrigerated Dryer System Expansion Type is the best value dryer. With a substantial capital investment, these high-efficiency dryers are most suited for applications that have significant load fluctuations (constant load). Reduce maintenance and unanticipated downtime will ensure years of trouble-free performance from these dryers.

### NRD Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity in CFM</th>
<th>In/Out Conn.</th>
<th>Inlet Size</th>
<th>Inlet Temp.</th>
<th>Inlet Pressure</th>
<th>Inlet &amp; Outlet Pressure Loss</th>
<th>Compressor HP</th>
<th>Inlet &amp; Outlet Voltage</th>
<th>Lbs.</th>
<th>Full Load Amps</th>
<th>Full Load Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10000-NRD</td>
<td>10000</td>
<td>10 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>69</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>9000-NRD</td>
<td>9000</td>
<td>10 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>69</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>8000-NRD</td>
<td>8000</td>
<td>10 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>69</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>7000-NRD</td>
<td>7000</td>
<td>8 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>65</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>6000-NRD</td>
<td>6000</td>
<td>8 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>65</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>5000-NRD</td>
<td>5000</td>
<td>6 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>60</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>4000-NRD</td>
<td>4000</td>
<td>6 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>60</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>3500-NRD</td>
<td>3500</td>
<td>6 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>60</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>2000-NRD</td>
<td>2000</td>
<td>6 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>45</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>1500-NRD</td>
<td>1500</td>
<td>6 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>45</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>1000-NRD</td>
<td>1000</td>
<td>6 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>45</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>800-NRD</td>
<td>800</td>
<td>6 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>45</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>600-NRD</td>
<td>600</td>
<td>6 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>45</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>500-NRD</td>
<td>500</td>
<td>6 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>45</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>400-NRD</td>
<td>400</td>
<td>6 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>45</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>350-NRD</td>
<td>350</td>
<td>6 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>45</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>200-NRD</td>
<td>200</td>
<td>6 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>45</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>150-NRD</td>
<td>150</td>
<td>6 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>45</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
<tr>
<td>100-NRD</td>
<td>100</td>
<td>6 FLG</td>
<td>3/4&quot;</td>
<td>100°F</td>
<td>100 PSIG</td>
<td>150 PSIG</td>
<td>2 x 13’</td>
<td>460-3-60</td>
<td>45</td>
<td>460-3-60</td>
<td>460-3-60</td>
</tr>
</tbody>
</table>

**NORTEC CORPORATION**
Compressed Air, Gas & Fluid Technologies

1723 Henry G. Lane, Maryville TN 37801
Tel 865-980-6100    Fax 865-980-6190
www.nbdry.com

- Energy Efficient Compressors
- Fluctuating and Intermittent Loads
- Capacity – 3,500 CFM to 30,000+
- Pressure – 100 PSIG to 5,000+

![www.nbdry.com](www.nbdry.com)
In today’s industrial world, compressed air is considered as the fourth utility. However, typical accounting procedures never consider it as a direct component of the production cost. Hidden behind overhead, it is usually considered as a cost that cannot be mitigated. In addition, in most plants the compressed air consumption is not uniform and fluctuations occur throughout the day. This cost can add up to hundreds of thousands of dollars annually.

At Nortec, we realize that the cost of compressed air can be significant. Hence, we design and manufacture our dryers to work according to your plant’s air demands. To accommodate the new generation of energy efficient Variable Frequency Drive (VFD) or compressor technology, Nortec has introduced the energy efficient refrigeration cycle that adapts to the changing air requirements.

The need for Clean Dry Air

Atmospheric air contains oil, dust particles, water vapor and other impurities. When compressed it is compressed from 14.7 psig to 100 psig (the typical pressure for most industrial applications), the only component that is compressed is the air. The impurities and water vapor is not compressed and it rises to 7 times as much as in ambient air. In addition, harmful oil and other contaminants are added to the air stream during the process of compression. This impure compressed air is used in wetted areas, the hot compressed air cools and forms water droplets along the entire air stream. This with the impurities will contaminate the air stream, contaminate the lines and eventually damages the piping and the pneumatic tools and equipment. This will lead to periodic replacement of parts, excessive downtime for maintenance and will directly affect the bottom line.

Nortec’s high capacity refrigerated dryers with the recommended pre-filter and after-filter will eliminate the harmful of the wet air and reduce the Pressure Dew Point (PDP) of the compressed air to a safe level, thereby preventing contamination or any accumulation of moisture in the pipelines.

**Principle of Operation**

The hot compressed air from the compressor is passed through an after cooler to cool down to approximately 100°F. This compressed air stream enters the Air-Air exchanger where it is cooled by the outgoing cold dry air. The glycol-water mixture is kept chilled by utilizing multiple compressors and a thermal mass medium. By cycling, the Air-Water/Glycol heat exchanger where it cools the entering hot moisture laden air. A zero-purge loss automatic timer drain separator stripping the moisture out from the air stream. Before exiting the dryer, the chilled dry air passes through the Air-Air heat exchanger where it cools the entering hot moisture laden air. A zero-purge loss automatic timer drain separator stripping the moisture out from the air stream. Before exiting the dryer, the chilled dry air passes through the Air-Air heat exchanger where it cools the entering hot moisture laden air. A zero-purge loss automatic timer drain separator stripping the moisture out from the air stream.

To pick a suitable dryer for the adjusted capacity of your inlet conditions, easily determine that you need a genre suitable for your inlet conditions and flow rate. Referring to the models and capacity in the table above, you can select a suitable dryer model for your inlet conditions and flow rate.

Select a suitable dryer model for your inlet conditions and flow rate. Referring to the models and capacity in the table above, you can select a suitable dryer model for your inlet conditions and flow rate.

**CRD Series - Cycling Thermal Mass Refrigerated Dryers**

<table>
<thead>
<tr>
<th>Model</th>
<th>Inlet Temperature (deg. F)</th>
<th>Outlet Temperature (deg. F)</th>
<th>Ambient Temperature (deg. F)</th>
<th>Pressure Drop (psig)</th>
<th>Outside Dimensions (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4000-CRD</td>
<td>180</td>
<td>110</td>
<td>100</td>
<td>150</td>
<td>130 x 100</td>
</tr>
<tr>
<td>5000-CRD</td>
<td>180</td>
<td>110</td>
<td>100</td>
<td>150</td>
<td>130 x 100</td>
</tr>
<tr>
<td>6000-CRD</td>
<td>180</td>
<td>110</td>
<td>100</td>
<td>150</td>
<td>130 x 100</td>
</tr>
<tr>
<td>7000-CRD</td>
<td>180</td>
<td>110</td>
<td>100</td>
<td>150</td>
<td>130 x 100</td>
</tr>
<tr>
<td>8000-CRD</td>
<td>180</td>
<td>110</td>
<td>100</td>
<td>150</td>
<td>130 x 100</td>
</tr>
</tbody>
</table>

For more information, please refer to our Nortec High Capacity Refrigerated Air/Gas Dryers Brochure.

**CRD - Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Inlet Temperature (deg. F)</th>
<th>Outlet Temperature (deg. F)</th>
<th>Ambient Temperature (deg. F)</th>
<th>Pressure Drop (psig)</th>
<th>Outside Dimensions (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4000-CRD</td>
<td>180</td>
<td>110</td>
<td>100</td>
<td>150</td>
<td>130 x 100</td>
</tr>
<tr>
<td>5000-CRD</td>
<td>180</td>
<td>110</td>
<td>100</td>
<td>150</td>
<td>130 x 100</td>
</tr>
<tr>
<td>6000-CRD</td>
<td>180</td>
<td>110</td>
<td>100</td>
<td>150</td>
<td>130 x 100</td>
</tr>
<tr>
<td>7000-CRD</td>
<td>180</td>
<td>110</td>
<td>100</td>
<td>150</td>
<td>130 x 100</td>
</tr>
<tr>
<td>8000-CRD</td>
<td>180</td>
<td>110</td>
<td>100</td>
<td>150</td>
<td>130 x 100</td>
</tr>
</tbody>
</table>

For more information, please refer to our Nortec High Capacity Refrigerated Air/Gas Dryers Brochure.
In today's industrial world, compressed air is considered as the fourth utility. However, typical accounting procedures are not ideal. Hence, Nortec has introduced the energy efficient cycle sequencing for the compressors, which reduces the cost of compressed air by 20%.

**The need for Clean Dry Air**

Atmospheric air contains – air, dust particles, water vapor and other impurities. When ambient air is compressed from 1 atm to 150 PSIG, the volume of air is reduced 7 times as much as ambient air. The impurities and water vapor is not compressed and its ratio increases 7 times as much as in ambient air. Hence, 4000-CRD will be able to handle 5438 CFM at your inlet conditions.

### CRD - Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Dryer Capacity (CFM)</th>
<th>Required Dew Point:</th>
<th>Ambient Temperature:</th>
<th>Inlet Temperature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4000-CRD</td>
<td>4000</td>
<td>-30°F (-34°C)</td>
<td>120°F (49°C)</td>
<td>120°F (49°C)</td>
</tr>
<tr>
<td>5000-CRD</td>
<td>5000</td>
<td>-30°F (-34°C)</td>
<td>120°F (49°C)</td>
<td>120°F (49°C)</td>
</tr>
<tr>
<td>6000-CRD</td>
<td>6000</td>
<td>-30°F (-34°C)</td>
<td>120°F (49°C)</td>
<td>120°F (49°C)</td>
</tr>
<tr>
<td>8000-CRD</td>
<td>8000</td>
<td>-30°F (-34°C)</td>
<td>120°F (49°C)</td>
<td>120°F (49°C)</td>
</tr>
<tr>
<td>10000-CRD</td>
<td>10,000</td>
<td>-30°F (-34°C)</td>
<td>120°F (49°C)</td>
<td>120°F (49°C)</td>
</tr>
<tr>
<td>12000-CRD</td>
<td>12,000</td>
<td>-30°F (-34°C)</td>
<td>120°F (49°C)</td>
<td>120°F (49°C)</td>
</tr>
<tr>
<td>14000-CRD</td>
<td>14,000</td>
<td>-30°F (-34°C)</td>
<td>120°F (49°C)</td>
<td>120°F (49°C)</td>
</tr>
<tr>
<td>16000-CRD</td>
<td>16,000</td>
<td>-30°F (-34°C)</td>
<td>120°F (49°C)</td>
<td>120°F (49°C)</td>
</tr>
<tr>
<td>18000-CRD</td>
<td>18,000</td>
<td>-30°F (-34°C)</td>
<td>120°F (49°C)</td>
<td>120°F (49°C)</td>
</tr>
<tr>
<td>20000-CRD</td>
<td>20,000</td>
<td>-30°F (-34°C)</td>
<td>120°F (49°C)</td>
<td>120°F (49°C)</td>
</tr>
</tbody>
</table>

### CRD Series - Cycling Thermal Mass Refrigerated Dryers

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4000-CRD</td>
<td>4000</td>
<td>4000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>5000-CRD</td>
<td>5000</td>
<td>5000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>6000-CRD</td>
<td>6000</td>
<td>6000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>8000-CRD</td>
<td>8000</td>
<td>8000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>10000-CRD</td>
<td>10,000</td>
<td>10,000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>12000-CRD</td>
<td>12,000</td>
<td>12,000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>14000-CRD</td>
<td>14,000</td>
<td>14,000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>16000-CRD</td>
<td>16,000</td>
<td>16,000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>18000-CRD</td>
<td>18,000</td>
<td>18,000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>20000-CRD</td>
<td>20,000</td>
<td>20,000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
</tbody>
</table>

**The Compressor Air-Side Pack**

The hot compressed air from the compressor is passed through an after cooler to cool down to approximately 110°F. This compressed air stream enters the Air-Air heat exchanger where it is cooled by the outgoing cold dry air from the dryer. The heat is then removed from the incoming air stream to approximately 70°F by the chilled water-glycol mixture. The chilled air is then forced through a high efficiency moisture separator before entering the dryer. The dryer, which is essentially a condenser, removes all water vapor from the air stream by condensing and forming water droplets along the entire air stream. This along with the impurities will contaminate the air compression. This impure compressed air cannot be used in plants. As the hot compressed air cools, the water vapor condenses and forms water droplets along the entire air stream. This along with the impurities will contaminate the air compression. The impurities and water vapor is not compressed and its ratio increases 7 times as much as ambient air. Hence, 4000-CRD will be able to handle 5438 CFM at your inlet conditions.

### Principle of Operation

At Nortec, we realize that the cost of compressed air can be significant. Hence, we design and manufacture our compressors to work according to your plant's air demands. To accommodate the new generation of energy efficient variable frequency drive (VFD), or compressor technology, Nortec has introduced the energy efficient cycle sequencing for the compressors, which reduces the cost of compressed air by 20%.

The hot compressed air from the compressor is passed through an after cooler to cool down to approximately 110°F. This compressed air stream enters the Air-Air heat exchanger where it is cooled by the outgoing cold dry air from the dryer. The heat is then removed from the incoming air stream to approximately 70°F by the chilled water-glycol mixture. The chilled air is then forced through a high efficiency moisture separator before entering the dryer. The dryer, which is essentially a condenser, removes all water vapor from the air stream by condensing and forming water droplets along the entire air stream. This along with the impurities will contaminate the air compression. This impure compressed air cannot be used in plants. As the hot compressed air cools, the water vapor condenses and forms water droplets along the entire air stream. This along with the impurities will contaminate the air compression. The impurities and water vapor is not compressed and its ratio increases 7 times as much as ambient air. Hence, 4000-CRD will be able to handle 5438 CFM at your inlet conditions.

### Standard Features

- Pump temperature gauge
- Blegeltronic suction pressure gauge
- Blegeltronic discharge pressure gauge
- Motor overload indicators
- Thermostatic expansion valve
- Compressor Oil indication
- Standard NEMA 12 Enclosure
- Single disk mounted
- Air/Water-Glycol heat exchanger
- Air/Fuel ratio control (Economizer)
- Condenser automatic water regulating valve
- Inlet temperature indicator
- Outlet temperature indicator
- Compressor sequencer (for units with multiple compression)
- Compressor pressure indicator

### Optional Features

- Duplex pumping mounted on disk
- Three valve by-pass
- Multiple compressor
- Insulated pre and after filter
- Digital dew point monitor
- Remote condenser
- Compressor sequencer

### CRD - Specifications

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4000-CRD</td>
<td>4000</td>
<td>4000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>5000-CRD</td>
<td>5000</td>
<td>5000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>6000-CRD</td>
<td>6000</td>
<td>6000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>8000-CRD</td>
<td>8000</td>
<td>8000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>10000-CRD</td>
<td>10,000</td>
<td>10,000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>12000-CRD</td>
<td>12,000</td>
<td>12,000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>14000-CRD</td>
<td>14,000</td>
<td>14,000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>16000-CRD</td>
<td>16,000</td>
<td>16,000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>18000-CRD</td>
<td>18,000</td>
<td>18,000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
<tr>
<td>20000-CRD</td>
<td>20,000</td>
<td>20,000</td>
<td>150</td>
<td>-30</td>
<td>120</td>
<td>-30</td>
<td>120</td>
</tr>
</tbody>
</table>
In today’s industrial world, compressed air is considered as the fourth utility. However, typical accounting procedures never consider it as a direct component of the production cost. Hidden behind overheads, it is usually considered as a cost that cannot be mitigated. In addition, in most plants the compressed air consumption is not uniform and fluctuations occur throughout the day. This cost can add up to hundreds or thousands of dollars annually.

At Nortec, we realize that the cost of compressed air can be significant. Hence, we design and manufacture our products to accommodate the new generation of energy efficient variable frequency drive (VFD) or compressor technology. Nortec has introduced the energy efficient cycle-on-demand technology to meet today’s stringent energy requirements.

The need for Clean Dry Air

Atmospheric air contains – air, dust particles, water vapor and other impurities. When ambient air is compressed from atmospheric pressures to meet today’s stringent energy requirements.

Dryers

To calculate the dryer’s capacity at your inlet conditions:

\[
\text{Adjusted Capacity} = \frac{\text{SCFM}}{\text{CF1} \times \text{CF2} \times \text{CF3} \times \text{CF4}}
\]

To pick a suitable dryer for the required inlet conditions use the CRD Series- Cycling Thermal Mass Refrigerated Dryers.

Select a suitable dryer model for your inlet conditions:

\[
\text{Suitable Dryer Model: } \frac{\text{Capacity}}{\text{Temp. Range}} \times \text{CF1} \times \text{CF2} \times \text{CF3} \times \text{CF4}
\]

Temperature (°F) & Capacity (SCFM) & Temp. Range (°F)
--- & --- & ---
-45 & 30000 & -45 to 140
-38 & 25000 & -38 to 140
-30 & 20000 & -30 to 140
-26 & 15000 & -26 to 140
-20 & 10000 & -20 to 140
-15 & 5000 & -15 to 140
-10 & 4000 & -10 to 140
-7 & 3000 & -7 to 140
-3 & 2000 & -3 to 140

Applicable Capacity: CRD-000

Select a suitable dryer model for your inlet conditions:

\[
\text{Suitable Dryer Model: } \frac{\text{Capacity}}{\text{Temp. Range}} \times \text{CF1} \times \text{CF2} \times \text{CF3} \times \text{CF4}
\]

To pick a suitable dryer for the required inlet conditions use the CRD Series- Cycling Thermal Mass Refrigerated Dryers.

Select a suitable dryer model for your inlet conditions:

\[
\text{Suitable Dryer Model: } \frac{\text{Capacity}}{\text{Temp. Range}} \times \text{CF1} \times \text{CF2} \times \text{CF3} \times \text{CF4}
\]

To pick a suitable dryer for the required inlet conditions use the CRD Series- Cycling Thermal Mass Refrigerated Dryers.

Select a suitable dryer model for your inlet conditions:

\[
\text{Suitable Dryer Model: } \frac{\text{Capacity}}{\text{Temp. Range}} \times \text{CF1} \times \text{CF2} \times \text{CF3} \times \text{CF4}
\]

To pick a suitable dryer for the required inlet conditions use the CRD Series- Cycling Thermal Mass Refrigerated Dryers.

Select a suitable dryer model for your inlet conditions:

\[
\text{Suitable Dryer Model: } \frac{\text{Capacity}}{\text{Temp. Range}} \times \text{CF1} \times \text{CF2} \times \text{CF3} \times \text{CF4}
\]

To pick a suitable dryer for the required inlet conditions use the CRD Series- Cycling Thermal Mass Refrigerated Dryers.

Select a suitable dryer model for your inlet conditions:

\[
\text{Suitable Dryer Model: } \frac{\text{Capacity}}{\text{Temp. Range}} \times \text{CF1} \times \text{CF2} \times \text{CF3} \times \text{CF4}
\]

To pick a suitable dryer for the required inlet conditions use the CRD Series- Cycling Thermal Mass Refrigerated Dryers.

Select a suitable dryer model for your inlet conditions:

\[
\text{Suitable Dryer Model: } \frac{\text{Capacity}}{\text{Temp. Range}} \times \text{CF1} \times \text{CF2} \times \text{CF3} \times \text{CF4}
\]
### Nortec High Capacity Refrigerated Air/Gas Dryers

**Nortec Advantages:**
Nortec uses the most energy efficient components in the manufacture of these High Capacity Refrigerated Dryers. The dryers are custom built to fit your design and application requirements. Capacity and type of application determine the use of one of these three types of high quality energy saving compressors.

- Water Cooled Condenser
- Air Cooled Condenser
- Water Saver and Pumping Stations

### Nortec High Capacity Refrigerated Air/Gas Dryers

**NRD Series – Non-Cycling Refrigerated Dryers**

The Non-Cycling Refrigerated Dryers (Direct Expansion Type) are the best value dryers. With no substantial input investment, these high efficiency dryers are most suited for applications that have marginal load fluctuations (constant load). Recirculation maintenance and automated drain systems will ensure years of trouble-free performance from these dryers.

**Nortec High Capacity Refrigerated Air/Gas Dryers**

Pressures – 100 PSIG to 5,000+

Capacity – 3,500 CFM to 30,000+

Cycling and Non-Cycling Design

Energy Efficient Compressors

Fluctuating and Intermittent Loads

Capacity – 3,500 CFM to 30,000+

Pressures – 100 PSIG to 5,000+

### NRD Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Nom. Comp. HP</th>
<th>In/Out Conn.</th>
<th>Max. Working Pressure PSIG</th>
<th>Full Load KW</th>
<th>Full Load Amps</th>
<th>Inlet CAGI Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>10000-NRD</td>
<td>2 x 13</td>
<td>10 FLG</td>
<td>150</td>
<td>38</td>
<td>69</td>
<td>460-3-60</td>
</tr>
<tr>
<td>9000-NRD</td>
<td>2 x 10</td>
<td>10 FLG</td>
<td>150</td>
<td>30</td>
<td>50</td>
<td>460-3-60</td>
</tr>
<tr>
<td>8000-NRD</td>
<td>2 x 10</td>
<td>8 FLG</td>
<td>150</td>
<td>26</td>
<td>40</td>
<td>460-3-60</td>
</tr>
<tr>
<td>7000-NRD</td>
<td>2 x 10</td>
<td>6 FLG</td>
<td>150</td>
<td>22</td>
<td>35</td>
<td>460-3-60</td>
</tr>
<tr>
<td>6000-NRD</td>
<td>2 x 10</td>
<td>6 FLG</td>
<td>150</td>
<td>20</td>
<td>30</td>
<td>460-3-60</td>
</tr>
<tr>
<td>5000-NRD</td>
<td>2 x 10</td>
<td>6 FLG</td>
<td>150</td>
<td>19</td>
<td>25</td>
<td>460-3-60</td>
</tr>
<tr>
<td>4000-NRD</td>
<td>2 x 10</td>
<td>6 FLG</td>
<td>150</td>
<td>15</td>
<td>19</td>
<td>460-3-60</td>
</tr>
<tr>
<td>3500-NRD</td>
<td>2 x 10</td>
<td>6 FLG</td>
<td>150</td>
<td>15</td>
<td>15</td>
<td>460-3-60</td>
</tr>
<tr>
<td>3000-NRD</td>
<td>2 x 10</td>
<td>6 FLG</td>
<td>150</td>
<td>10</td>
<td>10</td>
<td>460-3-60</td>
</tr>
<tr>
<td>2500-NRD</td>
<td>2 x 10</td>
<td>6 FLG</td>
<td>150</td>
<td>10</td>
<td>10</td>
<td>460-3-60</td>
</tr>
<tr>
<td>2000-NRD</td>
<td>2 x 10</td>
<td>6 FLG</td>
<td>150</td>
<td>10</td>
<td>10</td>
<td>460-3-60</td>
</tr>
<tr>
<td>1500-NRD</td>
<td>2 x 10</td>
<td>6 FLG</td>
<td>150</td>
<td>10</td>
<td>10</td>
<td>460-3-60</td>
</tr>
<tr>
<td>1000-NRD</td>
<td>2 x 10</td>
<td>6 FLG</td>
<td>150</td>
<td>10</td>
<td>10</td>
<td>460-3-60</td>
</tr>
</tbody>
</table>

Adapted from Standard CAGI inlet conditions. Measure – 100 PSIG, Temp. – a 120 Deg. F and design – 100 Deg. F. Standard CAGI inlet conditions are with 90% duty cycle and 10% average load.

Contactors feature 3-phase coil configurations. All above models are standard air-cooled. For water-cooled units, consult factory. Full load amps at standard voltage.
Nortec High Capacity Refrigerated Air/Gas Dryers

Nortec Advantages:
Nortec uses the most energy efficient components in the manufacture of these High Capacity Refrigerated Dryers. The dryers are custom built to fit your design and application requirements.

Capacity and type of application determine the use of one of these three types of high quality energy saving compressors.

- Open Drive Rotary Screw Compressors
- Semi Hermetic High Performance Piston Compressors
- High Efficiency Scroll Compressors

Semi Hermetic Energy Saver Screw and Rotary Screw Compressors are engineered to provide efficient operation at high refrigeration demand. They are equipped with head pressure control and energy saver demand. They are equipped with head pressure control and energy saver

Water cooled condensers are constructed from high thermal efficiency copper tubes, coils and aluminum fin and are rated to 120°F ambient temperature.

Air cooled condensers are constructed from high thermal efficiency copper tubes, coils and aluminum fin and are rated to 120°F ambient temperature.

Air cooled condensers are constructed from high thermal efficiency copper tubes, coils and aluminum fin and are rated to 120°F ambient temperature.

Water Saver and Pumping Stations

Capacity rated at Standard CAGI Inlet conditions - Pressure = 100 PSIG, Temp. = 100 Deg. F and Ambient Temp. = 100 Deg. F

NORTEC CORPORATION
Compressed Air, Gas & Fluid Technologies
1723 Henry G. Lane, Maryville TN 37801
Tel 865-980-6100    Fax 865-980-6190
www.nbdry.com

Cycling and Non-Cycling Design
Energy Efficient Compressors
Fluctuating and Intermittent Loads
Capacity – 3,500 CFM to 30,000+
Pressures – 100 PSIG to 5,000+

NORTEC High Capacity Refrigerated Air/Gas Dryers

High Efficiency Scroll Compressors

Semi Hermetic Reciprocating Compressors

NEMA Electrical Enclosure

NEMA 12 enclosures are standard on all Nortec high capacity refrigerated dryers. Optional controls, monitoring systems, and are designed for high heat transfer surfaces. All above models are standard air-cooled. For water-cooled units, consult factory. Full load amps at standard voltage.

State of the art PLCs (Programmable Logic Controllers) are used for close monitoring of inlet, outlet and Dew Point temperatures (constant load). Recirculation and automatic drain systems will ensure years of trouble-free performance from these dryers.

With very little pressure drop, the cyclone separator stops the moisture from the chilled air and safely discharges the condensate with the use of a remotely located drain.

Dew-point temperatures of these dryers will have no effect on the other circuits.

Failure of one refrigeration compressor will have no effect on the other circuits.

High Capacity Refrigerated Air/Gas Dryers

The Non-Cycling Refrigerated Dryers (Direct Expansion Type) are the best value dryers. With a substantial initial investment, these high-efficiency dryers are most suited for applications that have marginally load fluctuations (constant load). Recirculation, maintenance and automated drain systems will ensure years of trouble-free performance from these dryers.

For water regulating valve, pressure control and energy saver demand, they are equipped with head pressure control and energy saver demand.

With very little pressure drop, the cyclone separator stops the moisture from the chilled air and safely discharges the condensate with the use of a remotely located drain.

Compressed Air, Gas & Fluid Technologies
1723 Henry G. Lane, Maryville TN 37801
Tel 865-980-6100    Fax 865-980-6190
www.nbdry.com

Cycling and Non-Cycling Design
Energy Efficient Compressors
Fluctuating and Intermittent Loads
Capacity – 3,500 CFM to 30,000+
Pressures – 100 PSIG to 5,000+

NORTH EANUM
High Capacity Refrigerated Air/Gas Dryers

High Efficiency Scroll Compressors

Semi Hermetic Reciprocating Compressors

NEMA Electrical Enclosure

NEMA 12 enclosures are standard on all Nortec high capacity refrigerated dryers. Optional controls, monitoring systems, and are designed for high heat transfer surfaces. All above models are standard air-cooled. For water-cooled units, consult factory. Full load amps at standard voltage.

State of the art PLCs (Programmable Logic Controllers) are used for close monitoring of inlet, outlet and Dew Point temperatures (constant load). Recirculation and automatic drain systems will ensure years of trouble-free performance from these dryers.

With very little pressure drop, the cyclone separator stops the moisture from the chilled air and safely discharges the condensate with the use of a remotely located drain.

Dew-point temperatures of these dryers will have no effect on the other circuits.

Failure of one refrigeration compressor will have no effect on the other circuits.

High Capacity Refrigerated Air/Gas Dryers

The Non-Cycling Refrigerated Dryers (Direct Expansion Type) are the best value dryers. With a substantial initial investment, these high-efficiency dryers are most suited for applications that have marginally load fluctuations (constant load). Recirculation, maintenance and automated drain systems will ensure years of trouble-free performance from these dryers.