Compressed Natural Gas Dryers
for Natural Gas and Renewable Natural Gas
Xebec is a world leader in the drying of natural gas for refueling stations.

XEBEC DRYERS ARE ASME CODE COMPLIANT, NATIONAL BOARD CERTIFIED AND CAN BE CUSTOM-BUILT TO SPECIFICATION.

- 40 years’ experience in designing and manufacturing gas dryers
- Complete dehydration and filtration solutions
- Proven engineered solutions for custom applications
- 1,800 natural gas dryers sold globally throughout the world, including in North America, China, Russia, Australia, South America, Indonesia and the Middle East
- Dedicated CNG team at every level of the process
- Worldwide support, service, replacement parts
- Partnerships with Exxon, Suncor, Sinopec and Petro China
- Can be built to specific requirements such as the Chinese and Malaysian pressure vessel codes

ISO 15403:2006 – The single most important safety requirement

The ISO 15403:2006 standard states (paragraph 5.1): “The single most important safety requirement of compressed natural gas (CNG) fuel is a very low water dew point temperature to preclude the formation of liquid water at any time. Liquid water is the precursor to the formation of corrosive compounds through combination with components in natural gas, namely carbon dioxide and hydrogen sulphide. The combination of corrosive agents, and the pressure cycling caused by fuel consumption and subsequent refilling of the fuel storage container, can result in crack growth in metals and ultimately damage and failure. Also, liquid water itself can be detrimental as it may cause blockages, both liquid and solid, in the fuel system.

Thus, the water dew point of the fuel gas at the fueling station outlet shall be sufficiently below the lowest ambient temperature in which the fueling station and vehicles will operate.”

Xebec is committed to responsible and sustainable environmental solutions
Drying natural gas for today’s NGV fueling stations
What you need to know if you think your gas is already dry:

As the effects of moisture in natural gas systems are not always immediately evident, some NGV station builders are reluctant to address the importance of installing desiccant dryer systems in CNG fueling stations. This is despite the fact that there are industry standards and recommended practices for the required dew point of compressed natural gas used for fueling stations, such as ISO 15403:2006 (see page 11 for more details).

The most common reason for not installing dryers in NGV stations is the belief that the gas is already dry. However, it is important to keep in mind that, although the gas dew point may be as low as -40°C at pipe pressure, the effects of compression will affect the dew point of the gas.

Physical laws dictate that the dew point of a gas increases as its pressure increases. Therefore, although the dew point of the gas in a given pipeline may be very low when it reaches the compressor, it will be significantly higher when the gas leaves the compressor. This is why natural gas desiccant dryers are required in the majority of NGV stations in order to meet the requirements of ISO 15403:2006, specifically in areas where lower temperatures are encountered during the colder winter months.

Suction-side versus high-pressure discharge drying technology
Pressure swing dryers use 10–15% of the dry gas from their outlet to regenerate the offline tower. This used gas must then be recovered on the suction side of the compressor, increasing its size and decreasing the output to the storage vessels and dispensers. This is not an economical solution as compared to the suction-side dryer, which does not utilize any purge gas.
Xebec STV (single-tower vessel) units are perfect for removing water vapor and contaminants from small or intermittent volumes of natural gas. Once saturated, adsorbent media must be externally regenerated through a mobile regeneration package or replaced. All units are built to meet ASME Section VIII and contain a factory-fitted pre-filter and after-filter.
## NATURAL GAS DRYERS

### SINGLE-TOWER - STVNX

**Features**

✓ Low cost  
✓ External regeneration or desiccant replacement required  
✓ AutoDew is a highly recommended option

**Applications**

✓ Low to high flows  
✓ Low- to high-pressure designs  
✓ Recommended for low-throughput (water content) fueling needs

### Features

- **✓ Low cost**  
- **✓ External regeneration or desiccant replacement required**  
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### Applications

- **✓ Low to high flows**  
- **✓ Low- to high-pressure designs**  
- **✓ Recommended for low-throughput (water content) fueling needs**

### Model Numbers and Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Connection</th>
<th>Capacity (approx.) MMSCF@7#H2O/MMSCF (E3Nm3@112mgH2O/m3)</th>
<th>Inlet Gas Flow (approx.) scfm (Nm³/hr) @ 100 psig (7 bar g)</th>
<th>Approximate Weight &amp; Dimensions</th>
<th>AutoDew: Available on all our dryers</th>
<th>Features</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>STV10NGX-0.5</td>
<td>0.5&quot; NPT</td>
<td>0.52 (14)</td>
<td>66 (100)</td>
<td>Width inches (mm) 20 (508)</td>
<td><strong>Features</strong></td>
<td><strong>Applications</strong></td>
<td></td>
</tr>
<tr>
<td>STV10NGX-1.0</td>
<td>1&quot; NPT</td>
<td>1.60 (43)</td>
<td>193 (310)</td>
<td>Length inches (mm) 60 (1524)</td>
<td><strong>Low cost</strong></td>
<td><strong>Low to high flows</strong></td>
<td></td>
</tr>
<tr>
<td>STV14NGX-1.5</td>
<td>1-1/2&quot; NPT</td>
<td>3.40 (95)</td>
<td>454 (730)</td>
<td>Height inches (mm) 22 (559)</td>
<td><strong>Low cost</strong></td>
<td><strong>Low to high flows</strong></td>
<td></td>
</tr>
<tr>
<td>STV20NGX-2</td>
<td>2&quot; NPT</td>
<td>7.00 (189)</td>
<td>748 (1200)</td>
<td>Weight lbs (kg) 515 (232)</td>
<td><strong>Low cost</strong></td>
<td><strong>Low to high flows</strong></td>
<td></td>
</tr>
<tr>
<td>STV24NGX-2</td>
<td>2&quot; NPT</td>
<td>10.30 (267)</td>
<td>748 (1200)</td>
<td><strong>AutoDew</strong></td>
<td><strong>Low to high flows</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STV24NGX-3</td>
<td>3&quot; FLG</td>
<td>10.30 (267)</td>
<td>1369 (2204)</td>
<td><strong>AutoDew</strong></td>
<td><strong>Low to high flows</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STV30NGX-3</td>
<td>3&quot; FLG</td>
<td>16.70 (447)</td>
<td>1647 (2651)</td>
<td><strong>AutoDew</strong></td>
<td><strong>Low to high flows</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STV30NGX-4</td>
<td>4&quot; FLG</td>
<td>20.20 (523)</td>
<td>2205 (3550)</td>
<td><strong>AutoDew</strong></td>
<td><strong>Low to high flows</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STV36NGX-3</td>
<td>3&quot; FLG</td>
<td>23.20 (621)</td>
<td>1647 (2651)</td>
<td><strong>AutoDew</strong></td>
<td><strong>Low to high flows</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STV36NGX-4</td>
<td>4&quot; FLG</td>
<td>23.20 (621)</td>
<td>2836 (4566)</td>
<td><strong>AutoDew</strong></td>
<td><strong>Low to high flows</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STV42NGX-6</td>
<td>6&quot; FLG</td>
<td>36.80 (960)</td>
<td>5211 (8390)</td>
<td><strong>AutoDew</strong></td>
<td><strong>Low to high flows</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Standard pressures models (150 psig). Contact our experts for higher pressure or flow requirements.**

1. Flow conditions given for reference only. Please contact factory for sizing at different flow pressure conditions.

Standard conditions are 1 ATM at 60°F. Normal conditions are 1 ATM at 0°C.

### NATURAL GAS DRYERS

**AutoDew** is a precision dew point monitor with digital dew point indication (in °C or °F) installed at the dryer control panel.

**Features**

- **✓ Low cost**
- **✓ External regeneration or desiccant replacement required**
- **✓ AutoDew is a highly recommended option**

**Applications**

- **✓ Low to high flows**
- **✓ Low- to high-pressure designs**
- **✓ Recommended for low-throughput (water content) fueling needs**

**Modular single-tower STVNX-0.5 - STVNX-4**

**AutoDew by Xebec**

A precision dew point monitor with digital dew point indication installed at the dryer control panel.

**The AutoDew hygrometer displays the dew point data on a monitor inside a NEMA 4 enclosure.**

The moisture sensor is installed at the dryer outlet to continuously verify the dew point. Two AutoDew hygrometer set points are factory adjusted: the first to signal deteriorating dew point performance, and the second when regeneration is required. A set of form “C” dry contacts are provided for remote signal monitoring. Alarm settings typically conform to SAE J1616 for each installation.
Xebec regenerative dryers contain an internal regeneration system and are available in manually initiated single-tower (STR-S) or dual-tower (STR-D) designs, as well as a fully automated dual-tower (DTRA) design. Each model has an optimized footprint for ease of service, is built to meet ASME Section VIII and contains a factory-fitted pre-filter and after-filter.
# REGENERATIVE NATURAL GAS DRYERS

## SINGLE-TOWER - STRNGX-S

### Features
- ✓ Closed-loop, operator-initiated, heat-reactivated regenerated cycles for reliable dryer regeneration control and shutdown
- ✓ AutoDew is a standard feature and will signal when regeneration is required

### Applications
- ✓ Medium to high flows
- ✓ Low- to high-pressure designs
- ✓ Minimum downtime

### Model Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Connection</th>
<th>Capacity (approx.)</th>
<th>Inlet Gas Flow (approx.) scfm (Nm³/hr) @ 100 psig (7 bar g) 1</th>
<th>Approximate Weight &amp; Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>STR18NGX-1S</td>
<td>1-1/2” NPT</td>
<td>5.60 (151)</td>
<td>44 (730)</td>
<td>Width: 68 (1724)</td>
</tr>
<tr>
<td>STR24NGX-2S</td>
<td>2” NPT</td>
<td>7.00 (189)</td>
<td>748 (1203)</td>
<td>68 (1727)</td>
</tr>
<tr>
<td>STR24NGX-3S</td>
<td>2” NPT</td>
<td>10.30 (278)</td>
<td>748 (1203)</td>
<td>68 (1727)</td>
</tr>
<tr>
<td>STR24NGX-4S</td>
<td>3” FLG</td>
<td>10.30 (278)</td>
<td>1369 (2224)</td>
<td>68 (1727)</td>
</tr>
<tr>
<td>STR30NGX-2S</td>
<td>3” FLG</td>
<td>16.70 (447)</td>
<td>1647 (2651)</td>
<td>71 (1803)</td>
</tr>
<tr>
<td>STR36NGX-3S</td>
<td>4” FLG</td>
<td>16.70 (447)</td>
<td>2205 (3550)</td>
<td>71 (1803)</td>
</tr>
<tr>
<td>STR36NGX-4S</td>
<td>4” FLG</td>
<td>23.20 (621)</td>
<td>1647 (2651)</td>
<td>99 (2510)</td>
</tr>
<tr>
<td>STR36NGX-3S</td>
<td>4” FLG</td>
<td>23.20 (621)</td>
<td>2836 (4566)</td>
<td>99 (2510)</td>
</tr>
<tr>
<td>STR42NGX-4S</td>
<td>4” FLG</td>
<td>36.80 (608)</td>
<td>2836 (4566)</td>
<td>106 (2692)</td>
</tr>
<tr>
<td>STR42NGX-6S</td>
<td>6” FLG</td>
<td>36.80 (608)</td>
<td>5211 (8388)</td>
<td>106 (2692)</td>
</tr>
</tbody>
</table>

Standard pressure models (150 psig). Contact our experts for higher pressure or flow requirements.

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# REGENERATIVE NATURAL GAS DRYERS

## DUAL-TOWER - STRNGX-D

### Features
- ✓ Closed-loop, operator-initiated, heat-reactivated regenerated cycles for reliable dryer regeneration control and shutdown
- ✓ AutoDew is standard and will signal when regeneration is required
- ✓ Manual valve switching between towers
- ✓ No downtime

### Applications
- ✓ Medium to high flows
- ✓ Low- to high-pressure designs
- ✓ Recommended for medium-throughput fueling needs

### Model Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Connection</th>
<th>Capacity (approx.)</th>
<th>Inlet Gas Flow (approx.) scfm (Nm³/hr) @ 100 psig (7 bar g) 1</th>
<th>Approximate Weight &amp; Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>STR18NGX-1D</td>
<td>1-1/2” NPT</td>
<td>5.60 (151)</td>
<td>454 (750)</td>
<td>Width: 68 (1724)</td>
</tr>
<tr>
<td>STR24NGX-2D</td>
<td>2” NPT</td>
<td>7.00 (189)</td>
<td>748 (1203)</td>
<td>68 (1727)</td>
</tr>
<tr>
<td>STR24NGX-3D</td>
<td>2” NPT</td>
<td>10.30 (278)</td>
<td>748 (1203)</td>
<td>68 (1727)</td>
</tr>
<tr>
<td>STR24NGX-4D</td>
<td>3” FLG</td>
<td>10.30 (278)</td>
<td>1369 (2224)</td>
<td>68 (1727)</td>
</tr>
<tr>
<td>STR30NGX-3D</td>
<td>3” FLG</td>
<td>16.70 (447)</td>
<td>2205 (3550)</td>
<td>71 (1803)</td>
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<tr>
<td>STR36NGX-4D</td>
<td>4” FLG</td>
<td>16.70 (447)</td>
<td>2836 (4566)</td>
<td>71 (1803)</td>
</tr>
<tr>
<td>STR36NGX-6D</td>
<td>3” FLG</td>
<td>23.20 (621)</td>
<td>1647 (2651)</td>
<td>99 (2510)</td>
</tr>
<tr>
<td>STR36NGX-4D</td>
<td>3” FLG</td>
<td>23.20 (621)</td>
<td>2836 (4566)</td>
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<td>4” FLG</td>
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<td>106 (2692)</td>
</tr>
<tr>
<td>STR42NGX-6D</td>
<td>4” FLG</td>
<td>36.80 (608)</td>
<td>5211 (8388)</td>
<td>106 (2692)</td>
</tr>
</tbody>
</table>

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### REGENERATIVE NATURAL GAS DRYERS

**DUAL-TOWER AUTOMATED - DTRNGX**

**Features**

- ✓ Simplified operation - fully automatic regeneration package maximizes desiccant performance
- ✓ All models complete with regeneration package
- ✓ AutoDew is standard
- ✓ No downtime

**Applications**

- ✓ Low to high flows
- ✓ Low- to medium-pressure designs
- ✓ Recommended for medium- to high-throughput fueling needs

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**Table: Approximate Weight & Dimensions**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Connection</th>
<th>Capacity (approx.)</th>
<th>Input Gas Flow (approx.)</th>
<th>Approximate Weight &amp; Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MMSCF @ 7#H2O/MMSCF (E3Nm3@ 112 mg H2O/m3) 1</td>
<td>scfm (Nm3/hr) @ 100 psig (7 barg) 1</td>
<td>Width (inches (mm))</td>
</tr>
<tr>
<td>DTRA14NGX-1.5</td>
<td>1-1/2” NPT</td>
<td>2 X 3.40 (96)</td>
<td>454 (733)</td>
<td>55 (1397)</td>
</tr>
<tr>
<td>DTRA20NGX-2</td>
<td>2” NPT</td>
<td>2 X 7.00 (189)</td>
<td>748 (1203)</td>
<td>88 (2235)</td>
</tr>
<tr>
<td>DTRA24NGX-3</td>
<td>3” FLG</td>
<td>2 X 10.30 (267)</td>
<td>1369 (2244)</td>
<td>95 (2413)</td>
</tr>
<tr>
<td>DTRA30NGX-3</td>
<td>3” FLG</td>
<td>2 X 16.70 (427)</td>
<td>1647 (2651)</td>
<td>118 (2997)</td>
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<tr>
<td>DTRA30NGX-4</td>
<td>3” FLG</td>
<td>2 X 16.70 (427)</td>
<td>2305 (5550)</td>
<td>89 (2246)</td>
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<tr>
<td>DTRA42NGX-6</td>
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<td>6” FLG</td>
<td>2 X 36.80 (953)</td>
<td>5211 (8039)</td>
<td>149 (3795)</td>
</tr>
</tbody>
</table>

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**Other Designs Available**

**PORTABLE REGENERATION SYSTEM - RGNNGX**

Xebec offers two models of regeneration skids for mobile use. These portable units are specially designed for ease of transport and frequent relocation.

**Includes**

- ✓ Two regeneration hoses with stainless steel flanges and firesleeve (10')
- ✓ Two regeneration hoses with stainless steel flanges and firesleeve (20')
- ✓ One power cable with connector (20')

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**CUSTOM DUAL-TOWER AUTOMATED - HRBNGX**

Xebec also offers custom, high-pressure, high-flow units for industrial applications. Please contact us for more details.

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**Model No.**

| RGN18-30NGX-1.5 | 1-1/2” | 69 (1753) | 74 (1880) | 101 (2565) | 2100 (950) |
| RGN36-48NGX-2   | 2”     | 75 (1905) | 99 (2515) | 126 (3200) | 2520 (1135) |
Industrial Air & Gas Filtration
Xebec provides best-in-class filtration solutions for compressed air and natural gas.
- Practical solutions developed from over 50 years of experience
- Full range of products for one-stop shopping
- Proven quality on a global scale

Service and Parts
We support you with all your equipment needs! Xebec is committed to providing you with top-quality services and a complete range of replacement parts and spares for your compressed air and gas equipment of all makes and models.
- Fully certified technicians on call
- Onsite commissioning
- Preventative maintenance
- Servicing and upgrading
- Replacements and spares for all makes and models

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