Compressed Natural Gas Dryers

FOR NATURAL GAS AND RENEWABLE NATURAL GAS

IVYS
Purely Driven

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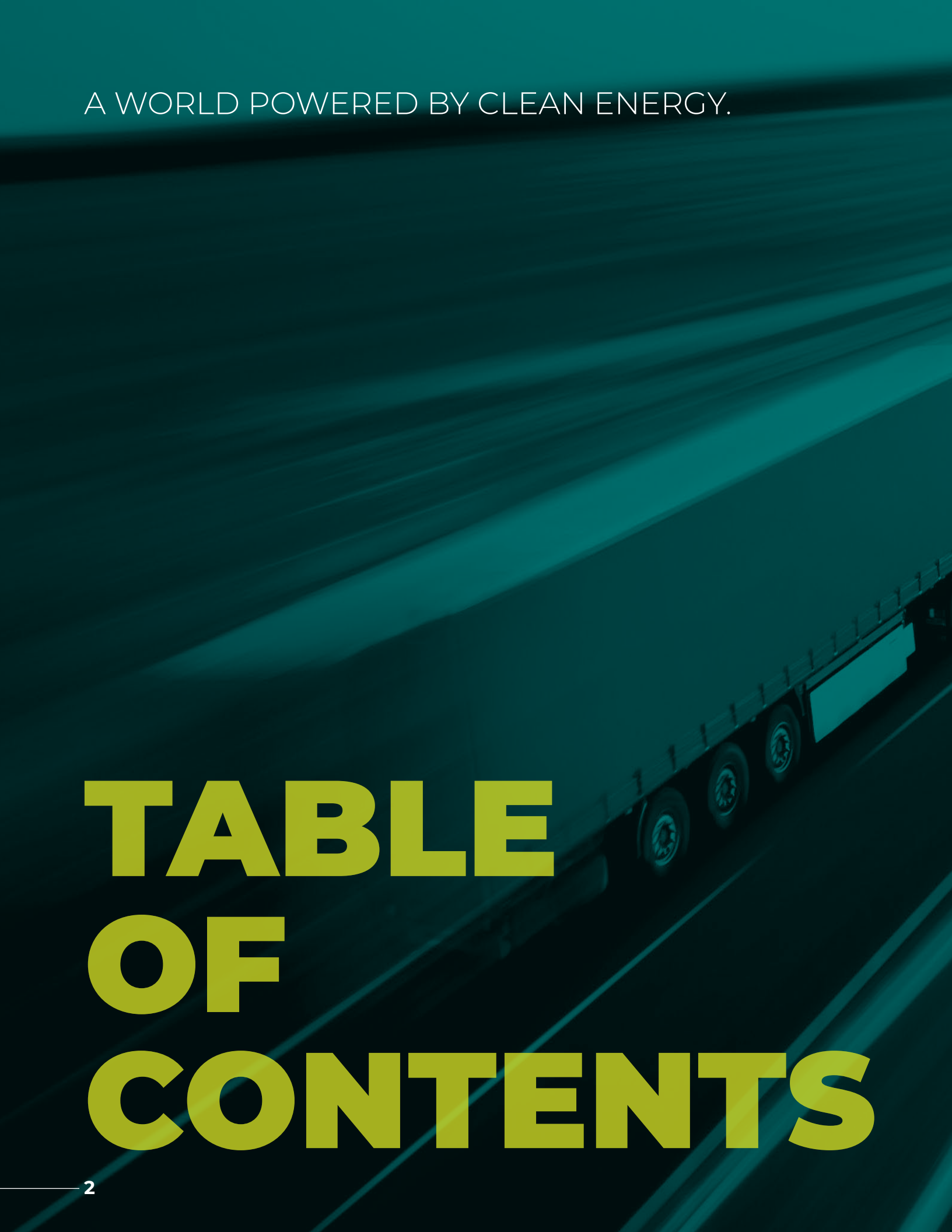
A WORLD POWERED BY CLEAN ENERGY.



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Our Vision

IVYS
Purely Driven

A World Powered by Clean Energy

By providing both high-performance and innovative technological solutions for the purification of biogas and by offering a wide range of equipment for the conditioning, compression, and filtration of air and gas, Ivys is part of the great line of companies aiming to decarbonize the planet. A sustainable development model that integrates economic growth with social and environmental responsibility.

Our slogan, "Purely Driven," reflects our vision of a cleaner planet, our continued search for more efficient solutions and our dedication to building an organization of excellence together that stays true to its values.

A leader in the drying of natural gas for refueling stations

- Ivys 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
- 2,000 natural gas dryers sold globally throughout the world
- Worldwide support, service, replacement parts

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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.

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 in the pipeline 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.

Auto-Dew: included on all our dryers, no longer an option

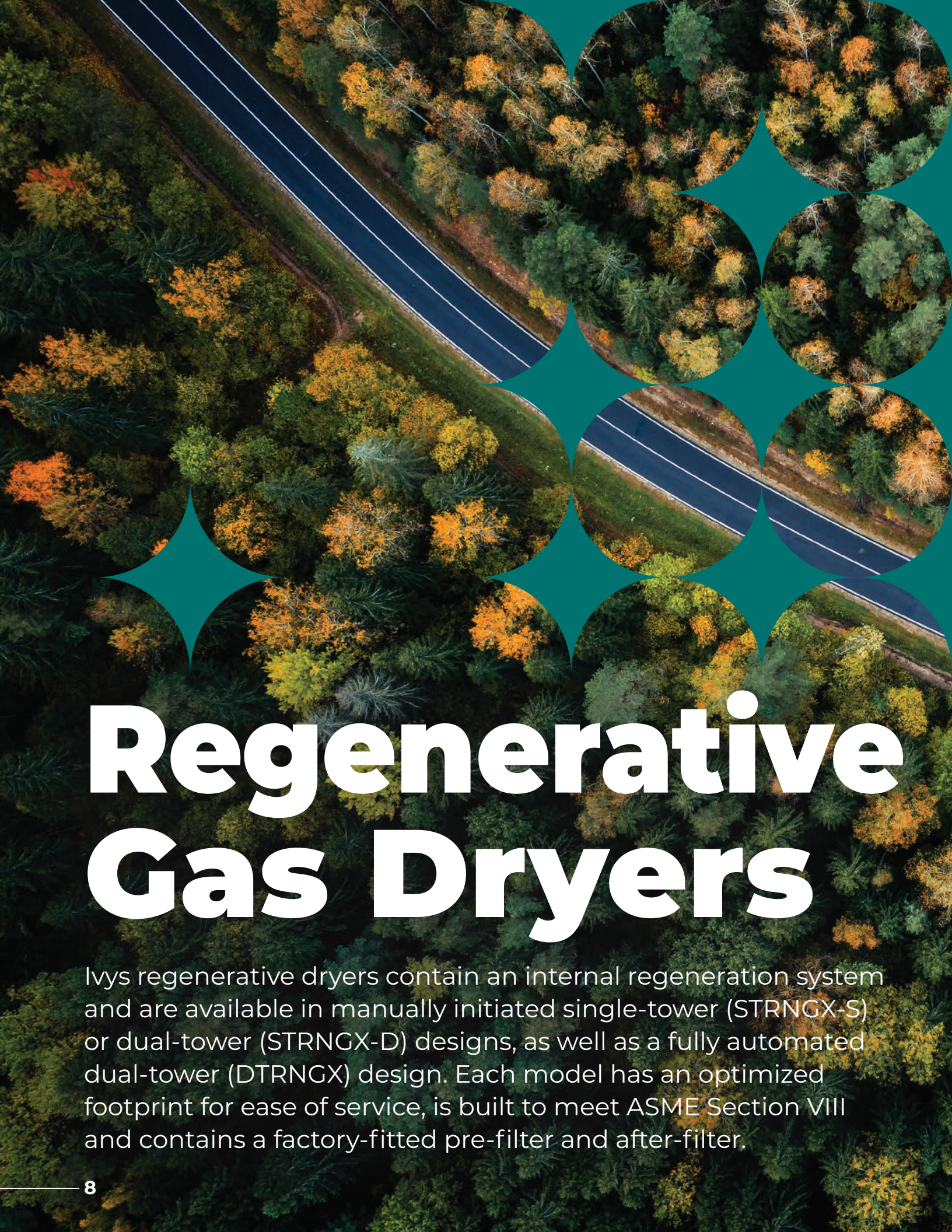
Auto-Dew is a precision dew point monitor with digital dew point indication (in ˚C or ˚F), installed at the dryer control panel.

The Auto-Dew 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 Auto-Dew 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.

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 lead to 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.”



Regenerative Gas Dryers

Ivys regenerative dryers contain an internal regeneration system and are available in manually initiated single-tower (STRNGX-S) or dual-tower (STRNGX-D) designs, as well as a fully automated dual-tower (DTRNGX) 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.

Single-Tower

STRNGX-S

Features

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

Applications

- Medium to high flows
- Low to high pressure designs
- Minimum downtime

Model Number	Connection	Capacity (approx.) MMSCF at 7 H_2O/MMSCF ($E3Nm^3$ at 112 mg H_2O/m^3) [1]	Inlet Gas Flow (approx.) SCFM (Nm^3/h) at 100 psig (7 barg) [1]	Approximate Weight and Dimensions			
				Width Inches (mm)	Length Inches (mm)	Height Inches (mm)	Weight lb (kg)
STR18NGX-1.5S	1-1/2" NPT	5.60 (151)	454 (730)	68 (1,727)	85 (2,159)	95 (2,413)	3,195 (675)
STR20NGX-2S	2" NPT	7.00 (189)	748 (1,203)	68 (1,727)	85 (2,159)	95 (2,413)	3,650 (693)
STR24NGX-3S	3" FLG	10.30 (276)	1,369 (2,204)	68 (1,727)	85 (2,159)	95 (2,413)	4,819 (1,008)
STR30NGX-3S	3" FLG	16.70 (447)	1,647 (2,651)	71 (1,803)	84 (2,134)	101 (2,565)	4,815 (1,289)
STR36NGX-4S	4" FLG	23.20 (621)	2,836 (4,566)	99 (2,515)	108 (2,743)	126 (3,200)	8,735 (3,541)
STR42NGX-6S	6" FLG	36.80 (985)	5,211 (8,390)	106 (2,692)	149 (3,784)	135 (3,429)	8,950 (5,770)

Standard pressure 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.

Dual-Tower

STRNGX-D

Features

- Closed-loop, operator-initiated, heat-reactivated regenerated cycles for reliable control and shutdown
- Auto-Dew 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 Number	Connection	Capacity (approx.) MMSCF at 7 H_2O/MMSCF ($E3Nm^3$ at 112 mg H_2O/m^3) [1]	Inlet Gas Flow (approx.) SCFM (Nm^3/h) at 100 psig (7 barg) [1]	Approximate Weight and Dimensions			
				Width Inches (mm)	Length Inches (mm)	Height Inches (mm)	Weight lb (kg)
STR18NGX-1.5D	1-1/2" NPT	2 X 5.60 (151)	454 (730)	68 (1,724)	85 (2,159)	95 (2,413)	3,195 (675)
STR20NGX-2D	2" NPT	2 X 7.00 (189)	748 (1,203)	80 (2,032)	108 (2,743)	95 (2,413)	5,900 (2,680)
STR24NGX-3D	3" FLG	2 X 10.30 (276)	1,369 (2,204)	89 (2,261)	124 (3,150)	94 (2,388)	5,933 (2,670)
STR30NGX-3D	3" FLG	2 X 16.70 (447)	1,647 (2,651)	99 (2,515)	103 (2,616)	102 (2,591)	9,601 (4,321)
STR36NGX-4D	4" FLG	2 X 23.20 (621)	2,836 (4,566)	102 (2,591)	156 (3,962)	126 (3,200)	11,500 (5,175)
STR42NGX-6D	6" FLG	2 x 36.80 (985)	5,211 (8,390)	149 (3,785)	158 (4,015)	135 (3,430)	12,100 (5,445)

Standard pressure 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.

Dual-Tower Automated

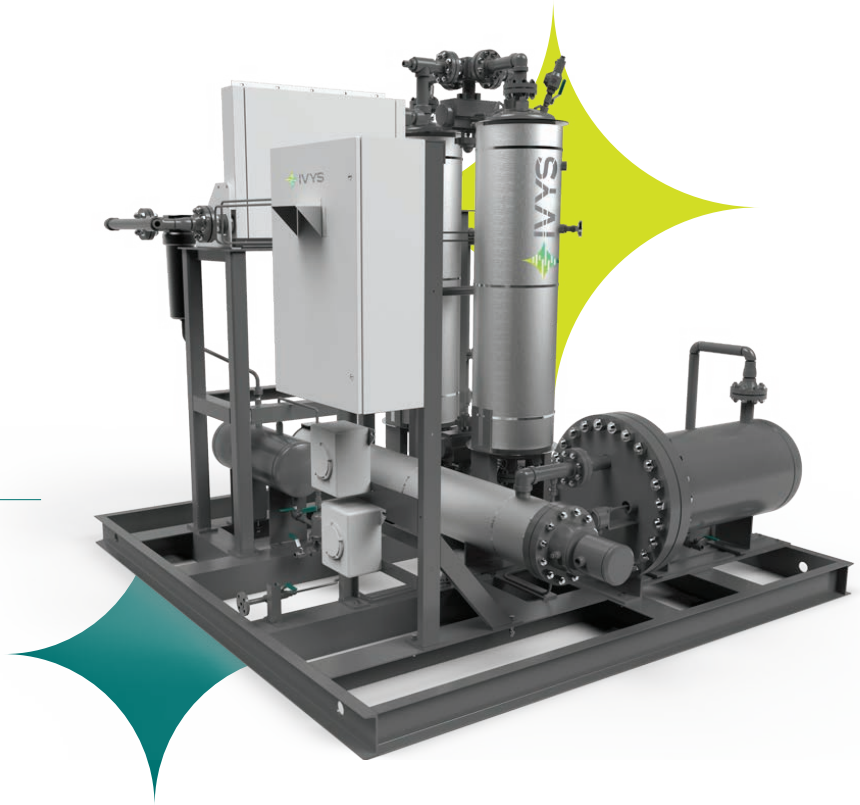
DTRNGX

Features

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

Applications

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



Model Number	Connection	Capacity (approx.) MMSCF at 7 H_2O/MMSCF (E3Nm³ at 112 mg H_2O/m^3) [1]	Inlet Gas Flow (approx.) SCFM (Nm³/h) at 100 psig (7 barg) [1]	Approximate Weight and Dimensions			
				Width Inches (mm)	Length Inches (mm)	Height Inches (mm)	Weight lb (kg)
DTRA14NGX-1.5	1-1/2" NPT	2 X 3.40 (90)	454 (730)	55 (1,397)	83 (2,108)	94 (2,388)	3,376 (1,519)
DTRA20NGX-2	2" NPT	2 X 7.00 (189)	748 (1,203)	88 (2,235)	103 (2,616)	94 (2,388)	5,524 (2,486)
DTRA24NGX-3	3" FLG	2 X 10.30 (276)	1,369 (2,204)	95 (2,413)	124 (3,150)	94 (2,388)	7,164 (3,224)
DTRA30NGX-3	3" FLG	2 X 16.70 (447)	1,647 (2,651)	97 (2,464)	130 (3,302)	106 (2,692)	11,594 (5,217)
DTRA36NGX-4	4" FLG	2 X 23.20 (621)	2,836 (4,566)	118 (2,997)	141 (3,581)	131 (3,327)	12,100 (5,445)
DTRA42NGX-6	6" FLG	2 x 36.80 (985)	5,211 (8,390)	149 (3,785)	158 (4,015)	135 (3,430)	13,886 (6,249)

Standard pressure 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.

Filters, Service and Parts

Industrial Air and Gas Filtration

Ivys 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! Ivys 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

Ask our sales team for our **Filters Brochure** or visit **ivysads.com**

Looking for

Compressed Air Dryer

Solutions?

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