

BS&B[®]

**Black, Sivalls & Bryson
(Canada) Limited**

Glycol Dehydrator

**Removes
water vapor
from
natural gas
streams**





BS&B Canada is particularly proud of its leadership in glycol dehydration. Today there are units in operation around the world, providing one of the most economical ways to remove water vapour from natural gas streams.

Water vapour is the most common impurity found in natural gas. By virtue of its source, natural gas is almost always saturated with both "free" and "entrained" water. The presence of water in the gas flowline leads to the formation of ice-like hydrates that may plug flowlines and create severe operational problems.

BS&B Canada's standard line of Glycol Dehydration Units are designed to achieve large dew point depressions resulting in outlet water contents below 4 lbs/MMscf. They feature an efficient tray-type absorber design to ensure maximum gas-to-glycol contact and minimum glycol loss. Coupled with BS&B Canada's highly efficient over-under style regenerators and

operator friendly, ergonomically designed packaging, this design has positioned BS&B Canada as an industry leader in Glycol Dehydration.

BS&B engineers will custom design a Glycol Dehydration package if your gas well flowrate specifications cannot be accommodated by our wide range of standard units.

Three Types of BS&B Glycol Dehydrators

1. Standard Units.

- Guaranteed to produce 65° F water dew point depressions.
- Efficient tray-type absorber design.
- Maximum gas-to-glycol contact with minimum glycol loss, even at variable gas rates.
- Matched Glycol regenerators available now in capacities to 200 MMSCFD.

2. High Concentration Units (HI-CON™).

- Includes all of the above features plus guaranteed for dew point depressions in excess of 140° F.
- Patented "Superconcentrator" which uses a small quantity of stripping gas to achieve glycol purities as high as 99.95% TEG. No other system can achieve the process efficiency of BS&B's HI-CON.

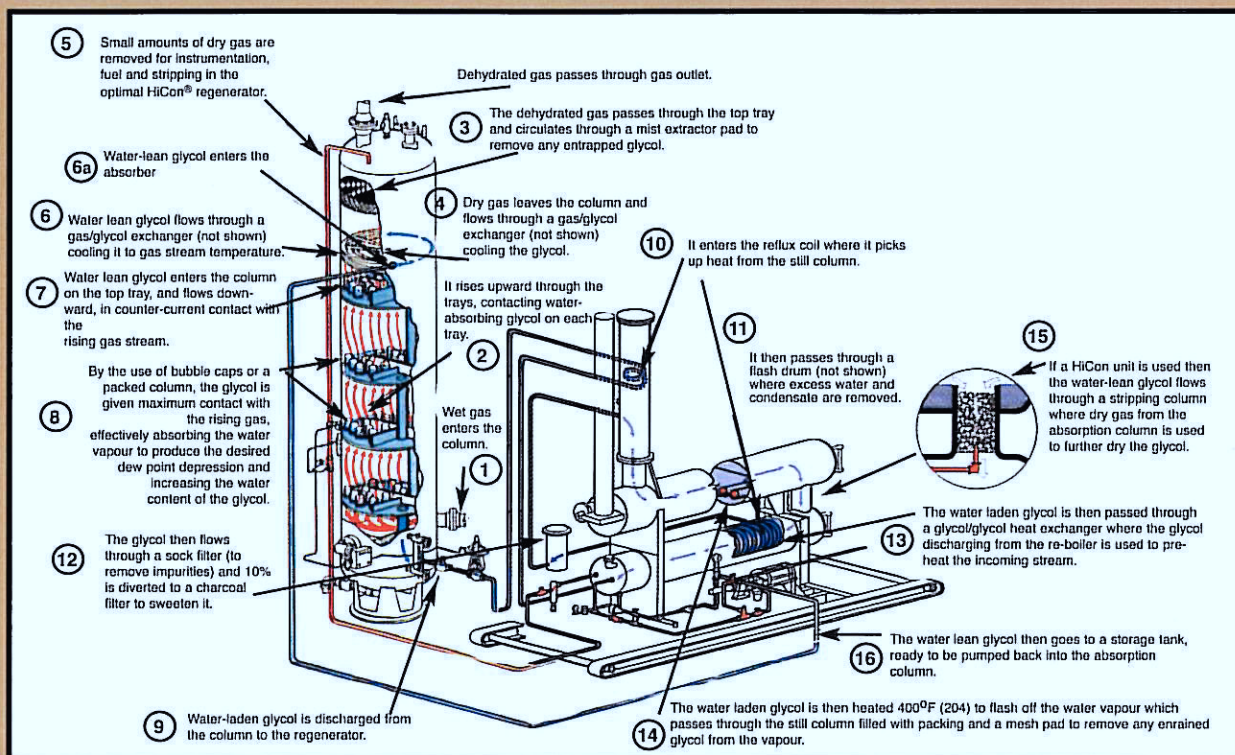
3. Type "S" Packaged Units.

- Specifically engineered for low flow rates to 5 MMSCFD.
- Unit features counter-current gas to glycol flow in a packed column.





Basic Operation of our BS&B Glycol Dehydrator



Quality Features and Benefits

Airtight Regeneration System reduces corrosion and saves fuel.

High Efficiency Burner achieves 70% thermal efficiency, designed for trouble free service.

Windproof Pilot Light stays lit even in high winds.

Reliable Temperature Controller reduces fuel costs and protects glycol charge.

Efficient Glycol Heat Exchanger prolongs pump packing, minimizes glycol losses and reduces reboiler duty.

Improved Glycol Distribution and Maximum Gas-Glycol Contact reduces operating costs and provides wider ranges of operating flexibility.

Low Fire Box Flux Rate and Lower Skin Temperature reduces source of glycol decomposition, promotes efficient fuel combustion and contributes to longer fire box life.

Correct Glycol Reflux minimizes still column losses.

Quality Accessories and Controls assures trouble-free operation, maintenance costs are minimized and when required, spare parts are readily available.

Design Services

Our engineers select the right combination of equipment to fit your dehydration requirements, and provide you with the best equipment cost and operating efficiency.

To obtain optimum design, our engineers use:

- Proprietary gas-glycol equilibrium design data.
- Performance data on glycol condition as it affects dew point depressions.
- Our latest processes and fabrication techniques.
- A high speed computer programmed to calculate, compare and select equipment.

You can rely on the many years of accumulated experience of BS&B engineers to guide your selection of the right glycol dehydration system.

Standard Accessories:

- Reboiler with still column.
- Removable firebox (except non-removable on 75,000 Btu/hr units).
- Stack.
- Burner and pilot light assembly.
- Thermostats, one for normal temperature, one for high temperature shutdown. (Except only one on 75,000 Btu/hr unit.)
- Fuel gas control valves (furnished only on 250,000 Btu/hr and larger; others use direct-acting thermostats).
- Thermometer.
- Fuel gas regulator.
- Fuel gas pressure gauge.
- Burner gas shut-off valve.
- Pilot gas shut-off valve.
- Supply gas drip pot with shut-off valve (not furnished on 175,000 Btu/hr unit and smaller).
- Fuel gas strainer with drain cock (furnished on 250,000 Btu/hr and larger only).
- Glycol filter with built-in relief valve and extra set of cartridges.
- Fuel gas preheat-coil.
- Set of insulation on reboiler, w/alarm, jacketing.
- Storage tank with internal glycol heat exchanger (non-removable).
- Liquid level gauge assemblies with drain-cocks, tubular type, one on reboiler, one on storage tank.
- Pump, gas, glycol or electric powered complete with accessories, as listed for Std. Regen.
- Skid with piping and components, assembled and hooked up as completely as shipping limitations will allow.

Optional Accessories

- Removable glycol-glycol coil in the storage tank.
- External heat exchanger.
- Standby pump.
- Automatic startup for standby pumps.
- Exhaust gas, hot oil or steam heating coil for reboiler.
- Flash arrestor on burner and/or stack.
- Skid extension and mounting of absorber on regenerator skid.
- Safety fuel gas scrubber.
- Filter bypass valves.
- Pilot failure safety shutdown.
- Automatic pilot reignition system.
- Triethylene glycol.

BS&B reserves the right to make changes at any time, without notice, in materials of construction, equipment and specifications.



Specifications: High Concentration Units with Gas Stripping of Glycol

| Regenerator Model Number | Nominal Firebox Rating Btu/ hr. | Nominal Sizes | | | | Regen. Glycol Charge Gallons | Regen. Weight lbs. |
|--------------------------|---------------------------------|---------------|---------------|----------------|-----------------|------------------------------|--------------------|
| | | Reboiler | Storage Tanks | Still Column * | Skid ** | | |
| 75-GDR-HC | 75,000 | 16" x 5' 9" | 16" x 5' 9" | 6" x 6' 7" | 4' 0" x 7' 9" | 55 | 1,620 |
| 100-GDR-HC | 100,000 | 16" x 6' 9" | 16" x 6' 9" | 6" x 6' 7" | 4' 0" x 8' 9" | 64 | 2,000 |
| 125-GDR-HC | 125,000 | 16" x 7' 10" | 16" x 7' 10" | 6" x 6' 7" | 4' 0" x 9' 10" | 74 | 2,400 |
| 175-GDR-HC | 175,000 | 20" x 10' 0" | 20" x 8' 6" | 6" x 6' 7" | 5' 0" x 12' 0" | 122 | 3,000 |
| 250-GDR-HC | 250,000 | 20" x 12' 1" | 20" x 10' 6" | 8" x 6' 10" | 5' 0" x 14' 0" | 149 | 3,900 |
| 375-GDR-HC | 375,000 | 24" x 14' 0" | 24" x 14' 0" | 10" x 7' 2" | 6' 0" x 16' 0" | 278 | 5,200 |
| 500-GDR-HC | 500,000 | 24" x 16' 6" | 24" x 16' 6" | 10" x 7' 10" | 6' 0" x 18' 6" | 318 | 6,400 |
| 750-GDR-HC | 750,000 | 30" x 14' 2" | 30" x 14' 2" | 14" x 9' 1" | 6' 6" x 17' 8" | 561 | 8,400 |
| 1000-GDR-HC | 1,000,000 | 36" x 14' 4" | 36" x 14' 4" | 16" x 8' 7" | 7' 0" x 17' 10" | 796 | 10,500 |
| 1250-GDR-HC | 1,250,000 | 36" x 16' 9" | 36" x 16' 9" | 18" x 8' 7" | 7' 0" x 20' 3" | 953 | 12,200 |
| 1500-GDR-HC | 1,500,000 | 42" x 16' 9" | 42" x 16' 9" | 20" x 8' 7" | 7' 6" x 20' 3" | 1167 | 13,900 |
| 1750-GDR-HC | 1,750,000 | 42" x 18' 8" | 42" x 18' 8" | 22" x 9' 9" | 7' 6" x 22' 2" | 1288 | 15,600 |
| 2000-GDR-HC | 2,000,000 | 42" x 20' 10" | 42" x 20' 10" | 22" x 10' 9" | 7' 6" x 24' 4" | 1427 | 17,000 |
| 2500-GDR-HC | 2,500,000 | 48" x 21' 10" | 48" x 18' 6" | 24" x 11' 3" | 8' 0" x 25' 4" | 1631 | 20,000 |
| 3000-GDR-HC | 3,000,000 | 48" x 23' 0" | 48" x 21' 6" | 22" x 21' 0" | 8' 0" x 26' 6" | 1732 | 23,000 |
| 3500-GDR-HC | 3,500,000 | 48" x 23' 2" | 48" x 22' 0" | 24" x 22' 8" | 8' 0" x 27' 2" | 1913 | 25,600 |
| 4000-GDR-HC | 4,000,000 | 48" x 23' 2" | 48" x 23' 2" | 26" x 21' 11" | 8' 0" x 27' 2" | 1933 | 28,000 |
| 4500-GDR-HC | 4,500,000 | 54" x 25' 4" | 48" x 25' 4" | 28" x 20' 3" | 8' 0" x 29' 4" | 2266 | 30,300 |
| 5000-GDR-HC | 5,000,000 | 60" x 27' 6" | 54" x 23' 0" | 30" x 15' 10" | 8' 6" x 31' 6" | 2598 | 33,000 |
| 6000-GDR-HC | 6,000,000 | 60" x 28' 8" | 54" x 25' 0" | 32" x 17' 9" | 8' 6" x 32' 8" | 2709 | 37,800 |

*Still Columns through 2,500,000 Btu/hr are packed type. Tray type still columns are standard on larger models.

** Skid size does not include space for Absorber. If Absorber is mounted on regenerator skid, skid is larger. Specifications subject to change without notice.

Information needed to determine the appropriate BS&B Glycol Dehydrator for your application:

1. Gas flow rate
2. Gas specific gravity
3. Operating pressure
4. Inlet temperature
5. Desired dew point
6. Type of pump desired

Contact:



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