



**Q.B. JOHNSON**  
MANUFACTURING, INC.

A TECHNOLOGICAL LEADER IN GAS AND CONDITIONING EQUIPMENT

[www.qbjohnson.com](http://www.qbjohnson.com)

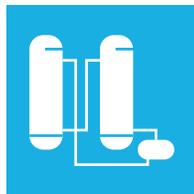
## Q.B. JOHNSON (QBJ) BY THE NUMBERS

<b>57</b>	Years of business experience established in 1962	Years of manufacturing as our first code vessel stamps were issued in 1976	<b>43</b>
<b>3</b>	Generations of Johnson family ownership	Years of engineering experience	<b>88</b>
<b>44</b>	Years of Midstream experience	Process Vessels Manufactured	<b>7384</b>
<b>1232</b>	Glycol Units Built	Countries where our products are located	<b>21</b>
<b>40</b>	Years we have been building heat exchangers	Years experience building large vessel closures	<b>28</b>
<b>6</b>	Skilled Trades in our manufacturing process	Square feet of manufacturing capacity	<b>54783</b>

## WHAT WE (QBJ) MANUFACTURE



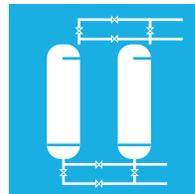
FILTER SEPARATORS



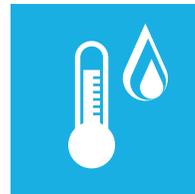
AMINE UNITS



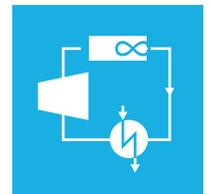
TEG DEHYDRATION UNITS



MOLECULAR SIEVE UNITS



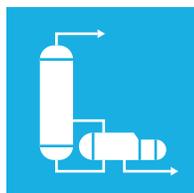
DEW POINT UNITS



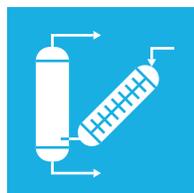
MECHANICAL REFRIGERATION



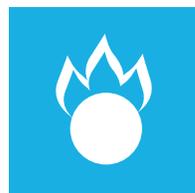
CRYO UNITS



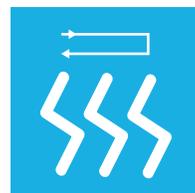
STABILIZATION UNITS



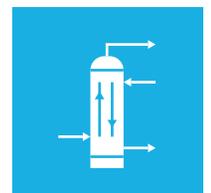
BTEX CONDENSERS



THERMAL OXIDIZERS



INDIRECT FIRED HEATERS



SCRUBBERS

## WHY Q.B. JOHNSON

When selecting a manufacturer of gas treating equipment needed for your project, Q.B. Johnson is the logical choice because of our proprietary gas conditioning solutions.

- **Process Solutions:** Q.B Johnson looks at your project's specific needs and provides a solution that works. Our process solutions approach is what ensures success for clients' needs with his most difficult applications and service conditions.
- **Engineering:** We have put together an international engineering team with 88 years of engineering experience in solving the most complex customer applications.
- **Manufacturing:** Our 'in-house', single source fabrication approach allows us to control the quality of the manufacturing process and favorably influences the overall cost of our equipment. QBJ's manufacturing capacity advances our opportunity to meet the time sensitive constraints of our client's project schedules. QBJ's skilled craftsmen, in house trades, have maintained the following Codes and Standards certifications for over 40 years:

### **In House Trades**

Code welders

Pipe fitters

Electricians

Instrument engineering

Machinists

Coaters/Painters

### **Codes & Standards Certifications**

ASME Section VIII, Div. 1 'U' & 'UM'

National Board "R"

ASME Section I 'S'

CE Certification

PED Certification

ANSI

TEMA

ASTM

- **Product Quality:** Our product quality speaks for itself as our equipment is still working in 22 countries across the globe after 30 years of service.



## Q.B. JOHNSON WORLD PRESENCE



### INDIRECT FIRED HEATERS



QBJ's water bath heaters employ proven fuel train / burner designs to heat the EG / H<sub>2</sub>O bath to the process temperature which allows the natural gas and liquids to be safely heated in process coils without direct flame impingement upon the gas coils. Thermal efficiencies range from 70% to 85% (natural draft – forced draft). QBJ produces standard and custom designs from 100 MBTU/hr thru 25 MMBTU/hr. All process coils are ASME Code Constructed and Stamped and our IDH comply with the latest NFPA, GPSA and API standards.

### CRYO UNITS



QBJ's turbo expander solutions are based on efficient and industry proven processes. Our unitized modular designs can deliver 95% + C<sub>3</sub> recovery, minimize installation, ease operation and reduce ROI time. Transition between C<sub>2</sub> recovery / rejection regimes allow our clients the flexibility to seamlessly respond to market and operational requirements. Our process team can design and unitize our cryo designs to your requirement and specifications.

### AMINE TREATING UNITS



Generic and formulated amines and physical solvents have been successfully used for many years to remove naturally occurring CO<sub>2</sub> and H<sub>2</sub>S from gas and liquid hydrocarbon streams. Utilizing proven process designs, combined with the selection of the best metallurgy and components, QBJ's process team can design and fabricate modular amine treating units up to 750 GPM. For units larger than 750 GPM pedestal mounted can be designed and fabricated for your application.

### HC DEW POINT UNITS



HC Dew Point is reduced by separating the condensed liquids from the HC vapors at reduced temperatures. The reduced temperature can be achieved through expansion refrigeration (J-T), conventional closed cycle mechanical refrigeration or our proprietary integral cycle refrigeration process. With QBJ's 35 years of sizing and manufacturing heat exchangers, we can reduce your time from order to in-spec gas in the sales line.



10 MMSCFD Mole Sieve Unit  
Lukoil, Russia

## STABILIZATION UNITS



Utilizing single or split feeds, QBJ Stabilization Units are designed to receive a raw hydrocarbon liquid and through the mass transfer process at a specific temperature & pressure, produce a transportable product. Whether you require a Y-grade or 9 PSI RVP stabilized product, QBJ utilizes proven conventional designs with common or split feed bottom exchangers to ease operation and maximize turndown for a broad range of process applications.

## THERMAL OXIDIZERS



The QBJ Thermal Oxidizers are designed to operate between 1300°F and 1500°F with a 2 second retention time to thermally destruct still hydrocarbon effluents from TEG and Amine regenerators in order to meet current environmental requirements for BTEX destruction. Our standard units are equipped with 3-way diverter shutdown valve, flash arrestor, 316SS inlet effluent super-heater, quench air blower, forced draft burner, proven fuel train design and PLC control. Burner control comply with the latest NFPA standards.

## FILTER SEPARATORS



Natural Gas streams with dust, fog, mist & lubrication oil contaminants require filter separator or coalescer designs to remove particles smaller than 10 microns. If not removed, these ultrafine contaminants can cause erosion, plugging and foaming in equipment such as compressors & process units. QBJ has successfully furnished filter separators / coalescers in sizes from 500 MSCFD to 1,000 MMSCFD.

## GAS SCRUBBERS



QBJ Gas scrubbers are two-phase separators, designed to process gas streams with high gas to liquid ratios where it is necessary to remove essentially all liquid particles 10 microns and larger from the gas stream. Scrubbers are routinely installed upstream and downstream of compressors, amine units, and dehydration units and upstream of mol sieve units. QBJ scrubbers are furnished with very efficient vane or wire mesh mist extractors to eliminate re-entrainment at high gas flows.

## TEG DEHYDRATION UNITS



For over 40 years, QBJ has produced in excess of 1200 TEG units from 100 MSCFD to 1,000 MMSCFD. There are units throughout the US and in over 20 different countries. Utilizing proven designs and innovative process's (QBJ Enhancelator and Enhanced Solvent Stripping) we have produced units which have achieved H<sub>2</sub>O Dew Points of -50°F. Our standard TEG Units are shop fabricated, complete with 2 equilibrium stage absorbers, shell & tube TEG / Gas hex, 8000 BTU/hr flux rate regenerators, 304/316SS reflux condenser, shell & tube lean rich hex, flash separators, charcoal & particulate filters, pneumatic controls and welded TEG piping. Options include 3 and 4 equilibrium stage absorbers, PLC controller with electronic controls and weatherization for severe arctic conditions.

## MOLECULAR SIEVE



QBJ molecular sieve dehydrator units are utilized upstream of cryogenic process to achieve an H<sub>2</sub>O content of less than 0.1 ppmv. Our modular system consists of two or three adsorption beds with one (or two) beds in the adsorption (dehydration) cycle while the remaining bed is being regenerated. When one of the adsorption cycle beds nears saturation, programmed switching valves activate to cycle the regenerated bed to adsorption and one of the adsorption beds to regeneration cycle. Regeneration occurs when a fractional side stream of dry gas is heated up to 450°F to 550°F and is switched to flow through the saturated bed, absorbing the H<sub>2</sub>O from the bed. The hot saturated regeneration gas exits the bed and is then cooled and the condensed H<sub>2</sub>O is separated from the slipstream of regeneration gas.



50MMSCFD TEG Dehydration Unit  
DCP, Miami, TX



4MMSCFD H<sub>2</sub>S Scavenger Unit  
Amromco Energy, Romania



175 MMSCFD TEG Dehydration Unit  
DTE, Sanford, NY



Monroe 450 MMSCFD TEG Dehydration Unit  
Monroe Gas Storage, Amory, MS



200 MMSCFD TEG Dehydration Unit  
Toromont, Ringgold, LA



37 MM TEG Dehydration Unit  
Rosneft, Russia



5 MMSCFD Dew Point Unit  
ENAP, Tierra del Fuego, Chile



12.5 MM Heater  
Willbros Engineers, Cheniere, LA



42 MMSCFD Dehydration Unit  
Ameren, Freeburg, IL



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