

**BLACKMER HD GAS COMPRESSORS**  
**provide efficient and quiet delivery of oil-free gas or air**



- 1 CFM to 125 CFM
- 1/4" to 2" inlet/outlet
- Air and liquid cooled options
- Single & 2 stage compression

- Single, double & triple sealing options
- To 50 HP, to 1000PSI max working pressure

Our mission at R. A. Ross is to solve problems for our customers. We do that with superior products, experience, knowledge and service.

We also know that every customer has unique needs and process applications, and that's where we stand out. We tailor every application to solve your company's individual needs.

One call gets you not only highly engineered products, but over 200 years combined experience and top-notch repair work.

Call us and put us to work on solving your process problems today. We'll keep you up and running.

R.A. Ross & Associates, Inc.  
 2231-A Ampere Drive  
 Louisville, KY 40299



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**Explosion proof compressor package to transfer propylene?**



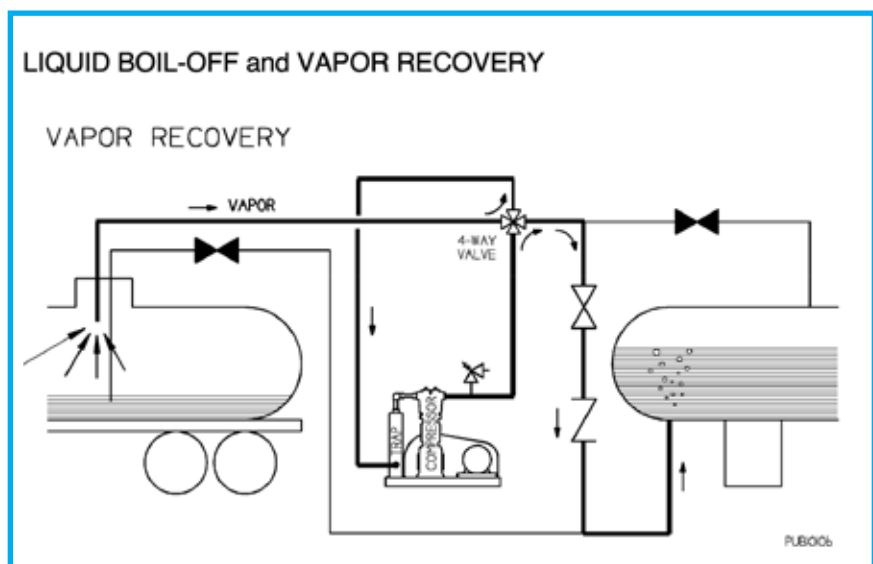
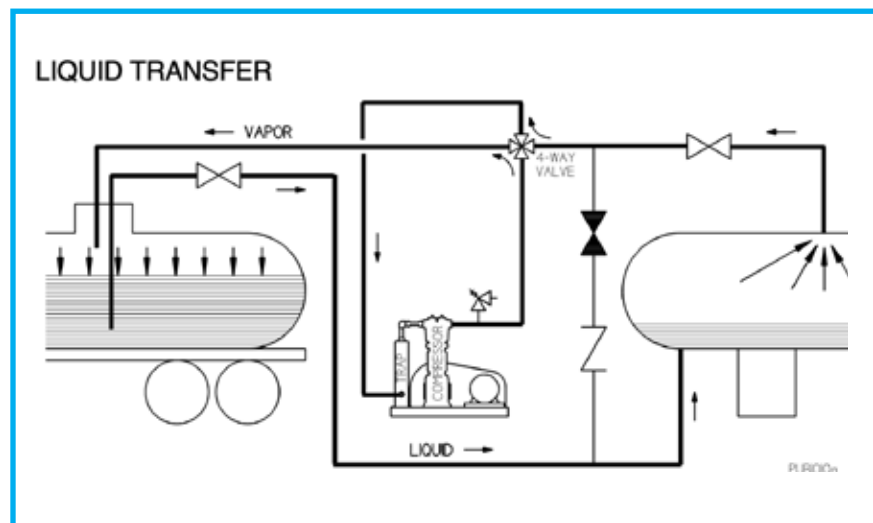


# It didn't exist, so we built it!

## (And exceeded our customer's expectations.\*)

A global chemical manufacturer (and their engineering firm) asked for "Liquid transfer of propylene from a 435 lb. cylinder to a 125 gallon storage tank and transfer from the storage tank to a feed tank". Conditions: 20F, 57 psi inlet pressure/77 psi discharge pressure; 70F, 140 psi inlet pressure/166 psi discharge pressure; and 100F, 210 psi inlet pressure/230 psi discharge pressure thus the compressor was going to see varying conditions although the differential pressures (discharge minus suction) were pretty constant at 20 psid to 26 psid.

**Here's how it works:**



### Using a Blackmer compressor for liquid transfer and vapor recovery

#### LIQUID TRANSFER

The compressor and 4 way valve is configured to allow the destination vessel vapor to enter the compressor where the gas is slightly compressed and discharged to the top of the source container or vessel where the gas pushes on the top of the liquid forcing the liquid up the liquid line connected to the bottom of destination vessel.

#### LIQUID BOIL OFF AND VAPOR RECOVERY

When nearly all the product is transferred, you are left with a small amount (heel) at the bottom. You then change the 4 way valve and other valves to allow the vapor line from the source vessel to connect to the compressor inlet and you compress that gas and push it up through the bottom of the destination vessel. As the gas travels up through the liquid, it cools and tends to condense into liquid. This operation continues until the pressure in the source vessel drops to a pre-set point (typically dictated by economics).

The compressor transfer process described is done with many liquefied gases and natural gas with the same basic process steps.

As a long-time distributor for Blackmer, we were able to provide a Blackmer gas compressor package for this important application.

Our design team assembled a complete package in our Louisville facility per the customers requirements from the ground up, including a custom steel base with forklift portability, and a complete controls package for "plug and play" installation.

**\* Our customer asked for 15 minute liquid transfer and we did it in about 5 minutes!**



Backside of Nema 7 control panel showing Nema 7 controls which were prewired and connected to compressor and panel.

#### **Application details:**

Liquefied gas transfer of propylene from 435-gal cylinder to 125-gal storage tank and transfer from storage tank to feed tank. 4 SCFM @ 77 PSIG, 166 PSIG and 231 PSIG.

#### **Custom compressor package:**

- Blackmer heavy-duty compressor model HD082B (Blackmer's smallest HD size) – non-lubricated, 1-stage, vertical, air cooled, single cylinder, single acting, ductile-iron construction with packing.

Blackmer heavy-duty compressor «model HD082B mounted on structural steel baseplate.

- 76"x76" structural steel baseplate with V-belt drive, belt-guard, motor slide base, liquid trap, 4-way valve and strainer.
- 3-HP, 1750 RPM, 182T frame explosion proof motor, belt drive.
- NEMA7 Low oil pressure switch, low suction pressure switch, high discharge pressure switch, high temp switch and SS high liquid level float switch.



- Discharge relief valve ASME.
- Mounted and wired NEMA 7 control panel with start/stop push button, Power "on" light, Production test report and hydrostatic test @ 503 PSIG.

**Whether simple or complex, we can solve your processing needs.  
You can see more of these solutions at our website under case studies.  
Or just call us!**

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**R. A. ROSS & ASSOCIATES, INC.**  
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