

Pump Skids Down Under



Figure 1: Simple TC-21 LOX Transfer Skid

Australia's relative isolation and the comparatively small local market means that diversity, innovation and flexibility are key to continued success.



Figure 2: Dual P2K CO2 Well Injection Pump Skid

A prime example of this is Cryoquip Australia's local design and manufacturing of cryogenic ACD pump skids. The time and cost of building and shipping customized skids from the USA or Europe is simply unfavorable, and the local market is too small to justify stocking pre-ordered systems. As the only representative of the Cryogenic Industries group based 'Down Under', Cryoquip Australia addresses the need for local engineering and manufacturing to suit individual customer requirements. As well as tackling shipping time and cost issues, it provides a more complete and integrated system to local customers, with readily available parts.

Examples of pump skids recently built include:

- Reciprocating NDPD Laser SMS Skid – used to maintain pressure in a buffer pack of cylinders for laser cutting applications, these can be controlled/monitored remotely by SMS text messages (220bar/256SCMH)

- Reciprocating RPSA-40 Cylinder Filling Skid – used to fill CO2 cylinders, commonly supplied in a dual-pump redundancy arrangement (90bar, 386SCMH)
- Reciprocating P2K High Pressure Supply Skid – used for high pressure cylinder or buffer pack filling in CO2 or LIN service, outside the operating range of the NDPD/WDPD or RPSA-40 (345bar, 208SCMH)
- Centrifugal (TC-21, TC-30, etc.) Transfer Skid – used for bulk transfer of LIN, LAR or LOX, commonly used to fill road tankers or ISOs (20bar, 9000SCMH)



Figure 3: Fully Automated RPSA-40 Skid for maintaining a HP buffer

The pump skids are based on an in-house fabricated galvanized mild steel skid base, and come with a locally sourced electric motor and drive train. This immediately saves on the significant international shipping cost of these large and heavy items. The pump hot and cold ends are usually the only parts shipped from overseas. They are supplied by ACD, another Cryogenic Industries subsidiary, and ship from the USA or Germany. Stainless steel stands, flexible hoses and piping are fabricated locally to suit, and the imported ACD pump parts are assembled together with stocked valves, standard tube and fittings as needed.



The NDPD Laser Skid is one pump solution commonly built by Cryoquip Australia. It is used frequently in high-volume laser cutting operations, which require a large supply of relatively high pressure nitrogen gas. They are also used for standard cylinder filling applications, and for oxygen and argon as well as nitrogen. Most of the laser skids built by Cryoquip are a true turnkey solution and incorporate both a pump and a high pressure vaporizer, as well as associated controls.

Cryoquip’s laser skids are typically part of a larger package supplied by the industrial gas company to the end user. A cryogenic vessel and a high pressure (200-300bar) buffer pack of cylinders are the most common items to complete such a package. When low buffer pressure is detected, the pump skid goes through an automatic cooldown and startup process and runs until the high set-point is reached. These skids are often equipped with SIM cards to allow remote monitoring and control of the pump installation by text message.



Figure 5: Dual RPSA-40 CO2 Cylinder Filling Skid

Cryoquip Australia is not a “one solution fits all” company. Project engineers, engineering management and the sales team work together as a close team in order to offer project and customer specific solutions in a cost effective way. The local manufacturing of skids allows a minimum of overhead on the transition of ideas to reality. It is a key to success and customer satisfaction.

For further information, visit www.cryoquip.com.au.

The scope of supply for a pump skid varies widely, with common options including:

- Fully automated startup and control
- Simple manual operation
- Integrated high pressure vaporizers
- Cooldown and loss of prime interlocks via thermocouple (reciprocating) or differential pressure switch (centrifugal)
- Dual pumps with swap-over valves

UPCOMING EVENTS

LNG 18 Conference

Perth, Australia
April 11-15
Exhibiting

Offshore Technology Conference (OTC)

Houston, TX
May 2-5
Exhibiting

Global Petroleum Show (GPS)

Calgary, Canada
June 7-9
Exhibiting

HHP Summit

Chicago, IL
October 11-13
Exhibiting