

Item 17: VRU Hy-Bon HB-HGF12000HI-100-36DV

Design Conditions

Model: HB-HGF12000HI-100-36DV
Type: HY-BON/EDI VRU standard design
Design: 75-300 MSCFD (based on the following conditions)

Suction Pressure:	0 psig	Discharge Pressure:	100 psig
Suction Temperature:	100 °F	Discharge Temperature:	210 to 230 °F
Specific Gravity:	1.2 (assumed)	"N" Value:	1.16-1.24 (assumed)
Elevation:	3000 ftasl	Ambient Temperature:	100 °F

Compressor and associated equipment

- A. Compressor: LeROI HGF12000HI rotary screw compressor. Complete with the following:
 - a. Fan driven Oil Cooler and Filter.
 - b. Thermostatic by-pass valve set at 230 °F.
 - c. LeROI Gas-Oil Separator with oil level sight glass, relief valve, and coalescing filter, ASME Code stamped.
 - d. Back pressure valve to maintain minimum of 65 PSIG differential pressure
- B. One section heat exchanger designed for compressor oil cooling. Complete with a 3 HP, XP fan
- C. Discharge Check Valve: 2" Wheatley Model 510-025027-121 (or equal), 150# RFFE, steel body with stainless steel trim.
- D. Compressor Capacity Control By-Pass: 1" Kimray 130-SMT motor valve, ductile iron construction, operated by an explosion proof solenoid valve.
- E. Compressor Inlet Check Valve: Wafer style, 150# RF, steel body with stainless steel trim

Electric motor

- A. 100 HP, 3600 RPM, 460/3/60 NEMA B rating with 1.15 SF, Class F insulation, and TEFC enclosure. Manufacturer: TECO or equal.

Scrubber

- A. Suction Scrubber: HY-BON/EDI, vertical single compartment standard scrubber. Size 16" OD x 36" seam to seam, 150 PSIG working pressure. 4" flanged inlet and outlet, 1" FNPT drain with 1" stainless steel trim ball valve. Ductile iron gagecocks rated at 150 lb. WP complete with guarded heavy-duty tubular sight glass. ASME code stamped. No mist extractor is provided in vessel.
 - a. High Liquid Level Switch: Murphy Model LS200 liquid level switch, SS trim, explosion proof, rated for 1500 PSIG working pressure, 2" NPT connections.
 - b. Liquid Level Control: Murphy Model LS200 liquid level switch, SS trim, explosion proof, rated for 1500 PSIG working pressure, 2" NPT connection.
 - c. Liquid Transfer Pump: Tuthill Model 2LE liquid transfer pump direct coupled to a ¾ HP, 1800 RPM, 460/3/60, TEFC electric motor. System designed to automatically remove free liquids from the Suction Scrubber.

Electric controls

- A. Motor Starter: NEMA 3R weatherproof panel, shipped loose for remote mounting by others, complete with the following:

- a. Fused disconnect, with external safety handle.
- b. VFD Drive for compressor motor
- c. Dry type transformer, 250 VA, 460/120 volt.
- B. Control Panel: Unit controlled by an Allen Bradley Micrologix 1400 Programmable Logic Controller mounted in a NEMA 4 weatherproof enclosure and mounted on skid. Control Panel is rated for Class 1 Div 2 area, complete with the following:
 - a. Alphanumeric interface to indicate status of the unit.
 - b. On/Off Switch on panel exterior.
 - c. Shutdown Indicators as follows:
 - i. High Discharge Temperature
 - ii. High Discharge Pressure
 - iii. High Liquid Level – Suction Scrubber
 - iv. Low Suction Pressure
 - v. Low Compressor Oil Pressure
 - vi. Motor Overload
 - d. Skid and panel prewired and tested. All wiring, conduit and fittings on skid are compliant with NEC latest edition (Class I, Division 2, Group D).
- C. Electrical controls, local mounted except as noted:
 - a. Pressure Transmitters: Pressure Systems (or equal), 4–20 mA, stainless steel trim, explosion proof, range as required for service, w/ 1/2" isolation valve. One each for high discharge pressure and low oil pressure.
 - b. High Discharge Temperature: Reotemp (or equal) temperature transmitter, 4–20 mA, stainless steel thermowell, explosion proof, 0–400 °F range.
 - c. Suction Pressure Transmitter: Rosemount 2088 (or equal), 4–20 mA, explosion proof, stainless steel trim. Range as required for service on atmospheric tanks or VRT.

Instrumentation

- A. Thermometers: S.S. case, with S.S. thermowell, range as required for service.
- B. Pressure Gauges: S.S. trim, range as required for service.

Fabricated steel skid

- A. One shop fabricated, heavy-duty oilfield type skid, welded up from steel channel sections. Approximate size is 7' x 11'.
 - a. Complete with smooth deck plate and drip rail for liquid containment

Documentation

- A. Two electronic parts and operations manual will be provided. Additional hard copy manuals available at US \$1,000.00 each.

General construction

- A. All 2" and larger piping is 150# ANSI ASA flanged and welded per the requirements of the methods described by Cimarron Energy's standard shop welding procedure, as qualified per ASME, Section IX.
 - a. Piping is air leak tested, hydrostatic tested and x-rayed per ASME B31.3.
- B. Components assembled and unitized per all applicable codes, on skid and shop tested with air.
- C. Scrubber and suction piping internally plastic-coated with Corvel 1660 for protection against corrosion caused by CO₂ and H₂S.
- D. Cimarron Energy's standard equipment may contain parts from different manufacturers than called out above. Any alternate parts will be of equal or greater scope.
- E. Unit to be cleaned, primed, and painted, final color Desert Tan.

