

Equipment / Functions.....: - Hazardous area engine protection package including: exhaust gas manifold cooler, air inlet flame trap, shut down valve and exhaust spark arrestor
- Hydraulic heat load system
- Cooling system rated to +50 degC, 100% humidity

Special Features:

- All cryogenic piping to be Stainless Steel type 316 or 304
- Fuel and hydraulic tanks to be Stainless Steel
- Stainless Steel floor in all areas exposed to possible cryogenic spillage
- Cryogenic long stem ball valves for liquid nitrogen circuit
- Tempering line around nitrogen vaporizer to control the gaseous nitrogen discharge temperature
- Discharge relief valve set at 11,000 psi and a gas check valve for unit
- Engine to be equipped with an air start system
- Cryogenic suction, boost pump bypass and return fittings to be 1.5" CGA
- Hydraulically operated discharge valve to be 2 x 1 valve with Danfoss actuator
- Stainless Steel engine air inlet, engine exhaust pipe work and silencer
- Solder dipped radiator suitable for onshore use up to 50 degC
- Boost pump bypass line

Equipment Specifications:

- Certified by D.V.
- Skid mounted liquid nitrogen pumping and vaporizing system
- Designed and constructed for operation both onshore and offshore
- Engine designed to meet current requirements for engines for use in a Zone 2 area
- Power pack has a Detroit Diesel Series 60 (500 BHP) engine
- Engine loading is achieved using Denison hydraulic vane pump; the applied load being controlled by remote activation of the sequence valve. The triplex power end is a model number NP200 complete with reduction drive and hydraulic drive motor. The drive obtained using a Denison P14 variable flow, high pressure piston hydraulic pump
- 1 5/8" cold end pumps DNV approved; 10,000psi working pressure, 180,000 scf/hr flow, 1.5" x 2.5" x 6" centrifugal charge pump and D.V. approved high pressure vaporizer used to convert the waste heat obtained from the power pack and hydraulic circuits to useful heat for liquid nitrogen conversion
- Stainless Steel Exhaust System, with the exception of the manifold cooler, manifolds and turbocharger

Instrumentation and Controls:

This unit has a local panel containing all instrumentation and controls for ease of operation. The panel contains the following gauges:

- Engine Controls
- Start / Stop
- Emergency Stop
- Engine RPM
- Oil Pressure
- Air Pressure
- Water Temperature
- Engine Speed Control
- Hour Meter
- Nitrogen HP Pump and Discharge System
- Hydraulic Pressure
- Hydraulic Charge Pressure
- Digital Rate Display
- Nitrogen Discharge Temperature
- Discharge Control Valve
- Pump Speed Control
- Lubricating Oil Pressure and Temperature
- Hydraulic Oil Temperature
- Vaporizer Circuit Temperature