



## EQUIPMENT DATASHEET

HT ENERGY JOINT STOCK COMPANY

Add: No 225/1A, Le Quang Dinh Street, Thang Nhat Ward, Vung Tau City, Viet Nam

Tel : (+84) 254 361 62 63/ Fax: (+84) 254 361 62 64

# NITROGEN CONVERTER PUMP DATASHEET EQUIPMENT DATASHEET

Name Equipment:

HYDRA RIG 90K NITROGEN UNIT





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## DESCRIPTION

### *General*

#### Weights

Nitrogen Unit (Full water and oil).....19,000lb  
(8618kg)

#### Dimensions

Height.....96in (244cm)  
Length.....156in (396cm)  
Width.....96in (244 cm)

### *Nitrogen System*

Pump Model .....NOV LN2-040  
Working Pressure .....Maximum 10,000psig (690 bars)  
Hydrostatic Test.....15,000psig (1034 bars)  
Flow Rates (Maximum).....90,000 SCFH  
Ambient Temperature Operation (Minimum)..... -20°F (-29°C)  
Ambient Temperature Operation (Maximum).....120°F (49°C)  
Liquid Nitrogen Pump .....Hydra Rig NP200  
Cold End Bore..... 1.625in. (4.128cm)  
Stroke .....1.39in. (3.539cm)  
Maximum Speed.....1000rpm  
Capacity.....3000 SCFM  
Boost Pump..... 100gpm  
Coolant..... 120gpm

### *Vaporizer System*

#### *Vaporizer Coolant System*

Model .....NOV Hydra Rig 4N490035  
Working Pressure..... 15,000 Psi (103.4 MPa)  
Coolant Discharge Temperature .....70 F (21 C) at full rate



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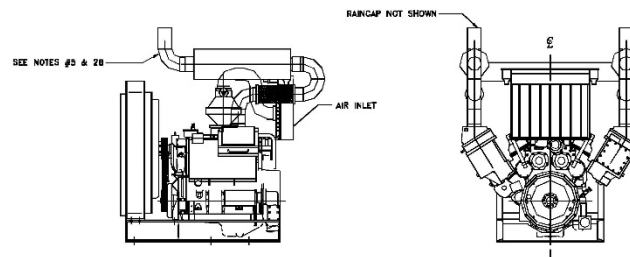
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Texaco 2353. **DO NOT** substitute alcohol-based antifreeze. Add an inhibitor with antifreeze to protect aluminum parts in engine cooling system:

- Normal (to  $-25^{\circ}\text{F}$  or  $-31^{\circ}\text{C}$ ) use 40% antifreeze/60% water
- Arctic (to  $-62^{\circ}\text{F}$  or  $-52^{\circ}\text{C}$ ) use 60% antifreeze/40% water



### 8V92N Engine Spec.

One (1) 8V92N skid mounted engine assembly (Detroit Diesel).  
Engine to conform to , Zone 2, EEMUA Pub.107 (1992),

### Engines:

- 1.) 8V92N with 9285 injectors rated 384HP @ 2100 RPM (gross power)
- 2.) Mechanical variable speed governor set at 2300 RPM full load, 2400 RPM no load.
- 3.) RH rotation (CCW-viewed facing flywheel)
- 4.) SAE #1 flywheel housing (w/removable plug on bottom)
- 5.) Stationary power unit front mount
- 6.) Sucker type fan 36" diameter
- 7.) Throttle booster spring with air actuator
- 8.) Engine lifting brackets
- 9.) Fuel filters: (mounted on driver's side of engine)  
Primary filter, element  
Secondary filter, element
- 10.) Oil filters, element (mounted on driver's side of engine). Oil filler to be located on left valve cover (viewed from rear).
- 11.) Flywheel for 14" clutch with 2.83" pilot
- 12.) Engine mounted oil cooler-water cooled
- 13.) Dipstick mounted on LH side (facing flywheel). Dipstick and oil filler to be screwed type in accordance with OCMC MEC-1 and BP200.
- 14.) Radiator to be solder dipped
- 15.) Belts to be anti-static fire resistant.
- 16.) Throttle
- 17.) Fan clutch, (air to engage)
- 18.) Centerline of fan to centerline of engine - 16"
- 19.) Supply full guard around air compressor belts and pulleys
- 20.) Oil drain to be piped over to LH side of skid (when viewed from flywheel end). Drain to have 3/4" valve. Locate drain outlet 18" from end of skid.
- 21.) All slave cylinders to have applicable mufflers.
- 22.) Engine to have std. kill (fuel) and emergency kill (air).
- 23.) 180° F Thermostat
- 24.) Engine to have fan and compressor belt guards.
- 25.) All hoses to be with reuseable fittings.
- 26.) Reverse exhaust outlets. Outlets to be on radiator end, (this is opposite from standard configuration).

### Coolant Plumbing:

- 1.) Dual coolant outlets at top front of engine to be manifolded together.  
One (1) 3" K.C. nipple to be furnished. Locate on RHS of engine (viewed from flywheel end).

### Air Cleaner:

- 1.) Unipower, Air box, Pre-cleaner
- 2.) Air shutdown, air to kill, reset on left side.
- 3.) Use metal air intake elbow between engine and turbo

### Instruments:

- All gauges to be stainless steel (wetted parts, case & ring) and liquid filled. Gauges to be dual scale (psi/bar).  
Gauges furnished loose as applicable.
- 1.) Oil pressure gauge, 2 1/2" (0-100psi/bar), cbm/uc
  - 2.) Tachometer, digital tach (intrinsically safe) and two pickups installed in flywheel housing.  
One tachometer to include one 2 pin shielded cable assembly, 20' long.
  - 3.) Water temperature gauge (20-200 Deg. F/C) with 22" lead for panel mount.
  - 4.) Air pressure gauge, 2 1/2" (0-160 psi/bar).
  - 5.) Exhaust temperature gauges. One gauge for each exhaust. Gauges to be direct mounted (remote panel mount not required).
  - 6.) Coolant pressure gauge for main control panel (furnish loose), 2 1/2" 0-100 psi/bar.

### Air Compressor:

- 1.) 12 CFM air compressor (belt driven on front of engine-driver's side) with muffler. Self contained unit.

### Muffler:

- 1.) Spark arresting mufflers arrestors to be fully dismantling.
- 2.) Exhaust installation to consist of flanged and welded connections.
- 3.) Paint not required.
- 4.) Equipped with back pressure gauges (Ref Instruments #5).
- 5.) Vendor to supply rain caps (2). Ship loose.

### Safety System:

- (Mount applicable valves to engine, balance to be furnished loose)
- 1.) High water temperature valve
  - 2.) High exhaust temperature valve
  - 3.) Low oil pressure valve
  - 4.) Engine kill valve, permissive start & engine start to be (2).
  - 5.) (5) Pneumatic safety shutdown indicators
  - 6.) Engine start button (See air starter).
  - 7.) Fuel kill valve
  - 8.) Valve - coolant loss sensing
  - 9.) Valve - (qty 1).

### Starters:

- 1.) Air starter
- 2.) Starter valve
- 3.) Start button
- 4.) Muffler