

## **SPECIFICATIONS**

- Manufactured according to the ASME Code Section VIII and has certificate (U Stamp) for its use throughout Canada. It operates at 270 psig (maximum 300 psig). The hydraulics test was at 427.5 psig.
- Unit capacity is 8 cubic meters per hour and has a volume of 2 cubic meters.
- Empty weight is 3,455 kg y and full is 5507 kg.
- Dimensions: 1700 mm height and 3500 mm long.
- Design temperature: 60C.
- Instruments and controls are Class I, Division I (explosions-proof).
- The controller panel uses 120 or 220 VAC, 50 Hz and the instruments operate with 24 VDC. Consume is less than 1 KW.
- Tested petroleum density was 14° API with relative water density of 1.025 and operating liquid at 60 C.

## MAIN FEATURES AND BENEFITS

### **Innovative Design**

- 4 phase separation (natural gas, oil, water and sand)
- Patented technology
- Wireless computer control of operations
- Data downloadable to the internet
- Meets BS&W standards

## **No Process Heat Required**

- 4-phase separation results in higher effluent purity and virtually no heat consumption
- Replaces a heater treater resulting in lower capital and operating costs
- Reclaimed oil is drier and cleaner

## **No Chemicals Required**

• Separation performed without chemical additives

#### Compact

- Self-contained, compact and mobile
- Minimal footprint
- Horizontal orientation

# **High Capacity**

- Offers the benefits of cyclonic action versus gravity settling
- Capacities range from 50 bbl/day to 500,000 bbl/day

# APPLICATIONS

• The Genoil Diamond is a 4-phase mobile separator designed to dehydrate oil products to meet BS&W standards. It was designed to operate as a self-contained, compact and mobile unit that can be used to test oil wells in remote areas.



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#### **DIAMOND 4-PHASE SEPARATION SYSTEM**



## **DESCRIPTION**

The Genoil Diamond is a 4-phase mobile separator designed to dehydrate oil products to meet BS&W standards. The Diamond efficiently separates four immiscible phases with different densities, such as natural gas, oil, water and sand to meet BS&W standards. It was designed to operate as a self-contained, compact and mobile unit that can be used to test oil wells in remote areas.

Unlike conventional test separators, the Diamond achieves the separation of the phases with higher effluent purity and virtually no heat consumption. Furthermore, oil reclaimed within the apparatus is drier and cleaner. One of the disadvantages of conventional test separators is the fact that they cannot be utilized as mobile units. To increase the ability of test separators achieve separation by gravity the fluid is heated at elevated temperatures. Due to large flow rates, a significant amount of heat energy is required to heat the fluid. Providing this heat energy is expensive especially at times when heat energy prices are high. Furthermore, large amounts of heat energy are available only at batteries.



In order to achieve gravity separation, traditional test separators provide increased residence time. This inevitably increases their size and render them unsuitable for transportation to oil wells. The Diamond was designed to operate as a self-contained, compact and mobile unit that can be used to test oil wells in remote areas.

### PRINCIPLE OF OPERATION

The separator is towed by a trailer to an oil well and connected to the wellhead. The ground needs to be fairly level to facilitate the good operation of the unit. The operation of the unit is controlled by way of a control panel wirelessly connected to a laptop. The unit, piping, instrumentations and controls are displayed on the laptop screen. The flow rate of gas, oil and water are displayed on the screen and recorded on the hard drive. The readings can be downloaded to the internet and emailed to interested parties via mobile phone through Bluetooth connection.

The pressure vessel and the control panel can be built through the Venezuelan representation of Genoil or a Genoil representative in order to reduce manufacturing costs and eliminate import taxes.

Local engineers would be trained to commission and service the unit. Instrumentation and controls are to be shipped from Canada or provided through local representatives of Endress-Hauser if possible.



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**3D DRAWING** 

Fig. 1 Oil-water separation

