CS&P Technologies

ENGINEERING CRITERIA

- Low maintenance and high reliability
- Compact design and rugged construction
- Advanced heat transfer and heat recovery characteristics

1.2 M SCFH Direct Fired Vaporizer

CS&P Technologies offers a complete line of cryogenic vaporizers and heat exchangers for well service, industrial gas, alternative fuel and aerospace applications. Vaporizer options include both fired and non-fired as well as manual and automated control options to meet your specific requirements. Models are available using stainless steel construction with both DNV approval and Lloyds Register certification.

STANDARD FEATURES

- Direct ignition eliminates the need for propane assist
- Burner transition provides a uniform distribution of energy across entire tube bundle surfaces
- Dynamically insulated combustion chamber and transition allows for higher burner temperature and eliminates burner cool down time and the need for refractory materials
- High turndown ratio
- Internal pressure build up coil
- Fuel heater for cold weather operation
- 50% parallel / 50% counter flow maximizes heat exchanger efficiency
- High efficiency fan
- Variable speed direct coupled hydraulically driven fan
- Combustor chamber sight glass
- Thermocouples to measure tube temperature.
- Wide range of fuel nozzles available
- Automatic exhaust diverter door
- Provisions for redundant ignition system

SYSTEM CONTROLS

- Integrated control system with color touch screen interface
- Tube bundle temperature monitoring
- Automatic tube bundle temperature control
- Integrated fuel flow control system with adjustable fuel pressure
- Computer controlled air/fuel mixture control
- Computer controlled electronic ignition function, automatically sets fuel pressure and fan speed for optimal ignition

SAFETY FEATURES

- Automatic controls limit tube bundle temperature in the upper ranges to virtually eliminate over temping of the tube bundle during operation
- Flame detection system to prevent over fueling
- Combustion chamber target protects tube bundle from malfunctioning fuel nozzles

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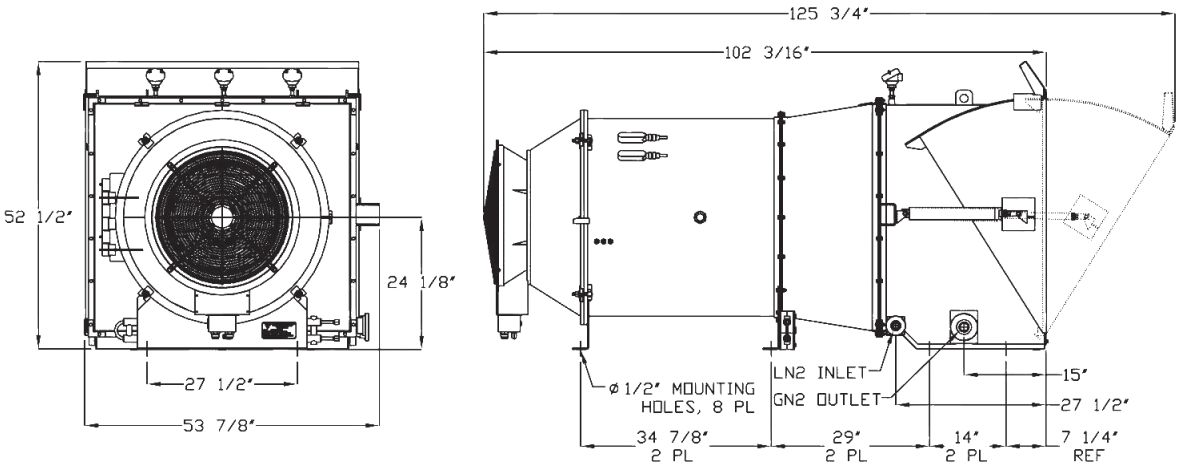
INSTALLATION DETAILS



SPECIFICATIONS				
Capacity (N2)	1.2 MSCFH (33,980 M3H)			
MAWP	10,000 PSI (69.0 MPa)	15,000 PSI (103.4 MPa)		
MAWP Hydraulic	6,000 PSI (413.7 Bar)			
MAWP Fuel	1,550 PSI (106.9 Bar)			
Fuel Type	No. 2 Diesel			
Fuel Flow Required	2.8 GPM (10.6 LPM) up to 1,550 PSI (106.9 Bar)			
Fuel Minimum Operating Pressure	500 PSI (34.5 Bar)			
Ignition Pressure	750 PSI (51.7 Bar)			
Air Pressure	80 PSI (5.5 Bar)			
Fan Power	140 hp @ 5,800 RPM			
Fan Motor Displacement	30cc			
Voltage Required	12 VDC			
Solenoid Valve Power Required	2A (X4)			
Igniter Power Required	6A			
Suggested Parameters	-	Fuel Nozzle Size	Fan Speed	Hydraulic Flow
	Low	1.35 GPH	1,500 RPM	12.8 GPM
	Med	3.5 GPH	3,800 RPM	32.3 GPM
	High	4.5 GPH	5,200 RPM	44.3 GPM
Total Weight	Approx. 3,300 Lbs. (1,500 Kg)			
Nitrogen Connections	-	10,000 PSI	15,000 PSI	
	IN	2 GR 14	2 GR 11	
	OUT	3 GR 14		

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