VPS Series Stationary Gensets

For Continuous Duty Power Generation, Cogeneration, and Trigeneration

VERICOR

Gas Turbine Stationary Power

VPS3 - USA


Sierra Pine - USA

The Vericor VPS3 and VPS4 gas turbine gensets (GTGs) are available based on the ASE40 and ASE50B Gas Turbines. These gensets can be used in a variety of industrial applications, including stationary utility power, cogeneration and trigeneration, emergency standby, distributed power, and portable power, among other.

VPS Genset Configurations

The generator sets can be installed indoors or outdoors on a simple concrete slab. Designs are available in a single skid configuration with a variety of subsystem scopes, fuel systems, and air handling options.
The VPS3 and VPS4 GTG are available in the following base configurations:

- Single Skid Enclosed Open Drip Proof - ODP Generator Package w/ Free Standing Controls
- Extended Single Skid Enclosed ODP Generator Package with Control Room Option
- Separate Control Building Option

ASE40 & ASE50B Gas Turbines

The ASE50B and ASE40 gas turbines have the following features:

- Run on either 100% natural gas or liquid fuel and can changeover while operating under full load
- Modular construction, simplifying on-site maintenance
- High power to weight ratio, minimizing package weight and dimensions
- Direct mount to driven equipment, eliminating alignment issues
- Superior cold start capability - ideal for standby applications
- 60,000 hours between scheduled shop visits, reducing maintenance costs

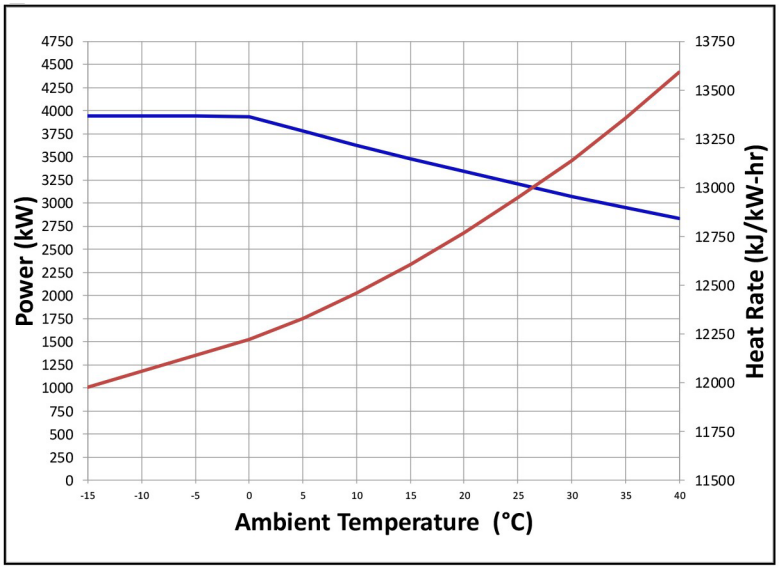
VPS Series Scope of Supply

Standard Equipment	Optional Equipment
ASE Series gas turbine	Gas turbine water wash system
Epicyclic reduction gear (1,500 rpm)	Epycicling reduction gear (1,800 rpm)
Generator (ODP) (synchronous, 50Hz, 60HZ, 6.6 kV, 0.8 PF)	Open ventilated and totally enclosed air cooled (TEWAC) enclosures, 60Hz, other voltages, high voltage generator switchgear
Natural gas fuel system	Distillate fuel system, dual fuel system, fuel gas conditioning skid, fuel gas compressor, water injection system
Lube system (water cooled)	Oil/air cooler
Electro hydraulic start system	Pnuematic electric start system
Structural steel base, weatherproof acoustic enclosure (gas turbine & reduction gear) generator with enclosure ventilation air system	No enclosure, no fire and combustable gas detection or suppression systems
Combustion air intake system (barrier filter)	Self cleaning filter, chilling, evaporative cooling
Package PLC, generator controls, uninterruptible power supply (UPS)	MCC, HMI station, control room building, remote control interfaces
Exhaust gas diffuser and expansion metal bellows	Exhaust silencer, stack, heat recovery steam generator (20,000 - 60,000 lbs/h)

VPS Series

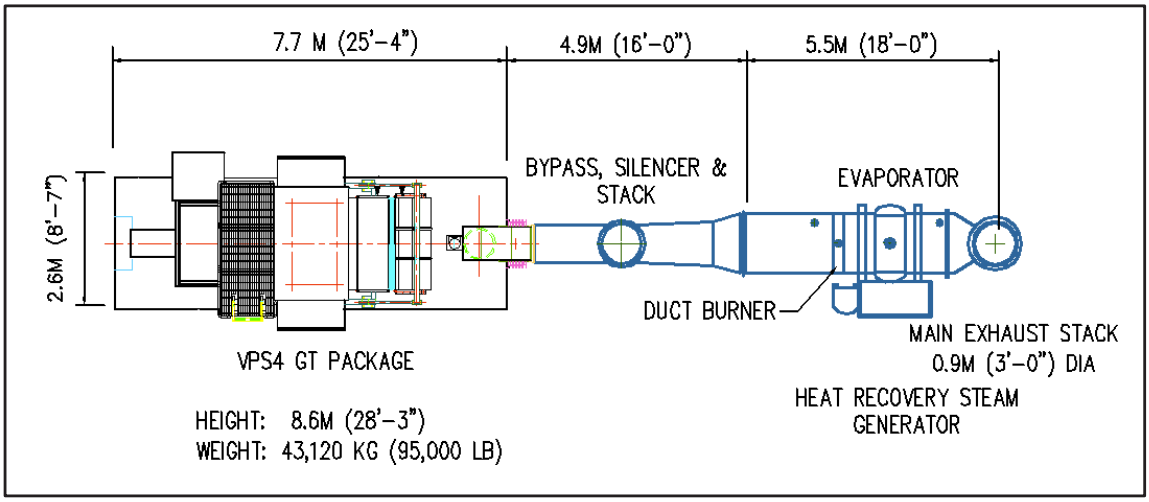
Particle Board Manufacturing Plant - USA

VPS4 - Power & Heat Rate vs Ambient

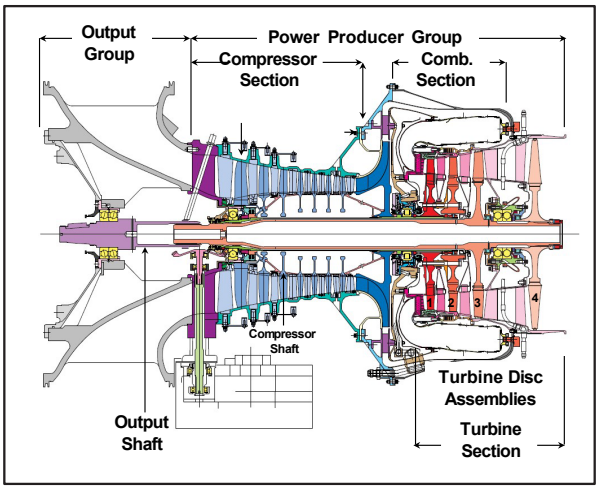


Uninstalled @ ISO - Natural Gas Fuel

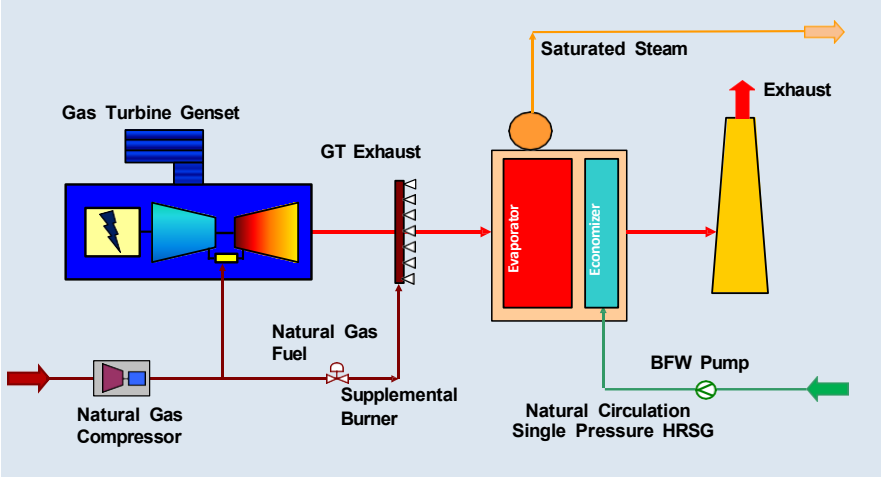
Typical Cogeneration Layout



ASE50B Cross-Section



Cogeneration Flow Diagram



VPS Series

VPS4 - Middle East

Cogeneration Plant - USA

Power Generation

Nominal Performance Natural Gas		VPS3	VPS4
Output power	kW	3,086	3,451
Heat rate	Btu/kWh	13,415	12,025
	kJ/kWh	14,153	12,686
Thermal efficiency	%	26.8	28.4
Fuel flow	lbs/h	1,910	2,020
	Kg/h	866	916
Fuel pressure required (min/max)	psig	200/250	250/300
	kPa	1,379/1,723	1,723/2,068
Exhaust gas flow	lbs/s	28.0	30.1
	Kg/s	12.7	13.7
Exhaust gas temperature	°F	1,115	1,080
	°C	602	582

Performance at installed ISO Conditions, with 7.5 mbar inlet (3") / 10mbar (4") exhaust loss

Combined Heat & Power - CHP

Net power output	kW	2,910	3,328
Net plant efficiency*	%	80.3	81.1
Steam pressure	psia	150	150
	bar	10.3	10.3
Steam temperature	°F	358	358
	°C	181	181
Steam mass flow	lbs/h	21,150	21,700
	Kg/h	9,590	9,842

Performance at installed ISO Conditions, with 10 mbar inlet (4") / 25 mbar (10") exhaust loss

*Stack temperature of 158°C (316°F). Higher plant efficiencies are attainable

Maintenance Schedule

Recommended Frequency - Hrs	500	10,000	30,000	60,000
Preventive - Inspection / Check				
Initial Lube Oil Sampling	●			
External Inspection	●			
Chip Detector Inspection	On Condition			
Compressor Cleaning	On Condition			
Lube Oil Sampling		●		
Inlet Inspection		●		
Exhaust Inspection		●		
Fuel Manifold/Nozzle Inspection		●		
Spark Igniters Inspection		●		
Maintenance				
Boroscope Inspection		●		
Hot Section Refurbishment			●	
Major Inspection				●

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