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THE FOLLOWING GAS ENGINE GENERATOR SET IS AVAILABLE FOR SALE WITH US WITH IMMEDIATE DELIVERY:

1 No. – 588 kW, UNUSED GE Jenbacher make Gas Engine Generator Set, having the Following Technical Specifications:

TECHNICAL DETAILS:

ENGINE DETAILS:

Make	:	GE JENBACHER GMBH & CO.
Year of Make	:	2011
Type	:	JMS320
Capacity	:	588 kW
Speed	:	1500 RPM
kVA	:	735

GENERATOR DETAILS:

Make	:	Stamford
Year of Make	:	2011
kVA	:	735 kVA
Speed	:	1500 RPM
Voltage	:	400V
P.F.	:	0.8
Frequency	:	50 Hz
Insulation Class	:	H
Protection	:	IP 23

TECHNICAL SPECIFICATIONS:

NITIN CORPORATION

0.02 Technical data of engine

Manufacturer		GE Jenbacher
Engine type		J320 C45
Working principle		4-Stroke
Configuration		V 70°
No. of cylinders		20
Bore	mm	135
Stroke	mm	170
Piston displacement	lit	48,67
Nominal speed	rpm	1.500
Mean piston speed	m/s	8,50
Filling capacity lube oil	lit	370
Filling capacity water	lit	150
Length	mm	3.320
Width	mm	1.358
Height	mm	2.065
Weight dry	kg	5.000
Weight filled	kg	5.500
Moment of inertia	kgm²	8,61
Direction of rotation (from flywheel view)		left
Flywheel connection		SAE 18"
Radio interference level to VDE 0875		N
Starter motor output	kW	9
Starter motor voltage	V	24

Thermal energy balance

Energy input	kW	1.636
Intercooler	kW	82
Lube oil	kW	88
Jacket water	kW	258
Exhaust gas total	kW	499
Exhaust gas cooled to 180 °C	kW	339
Exhaust gas cooled to 100 °C	kW	422
Surface heat	kW	69
Balance heat	kW	33

Exhaust gas data

Exhaust gas temperature at full load	°C [8]	471
Exhaust gas mass flow rate, wet	kg/h	3.699
Exhaust gas mass flow rate, dry	kg/h	3.517
Exhaust gas volume, wet	Nm³/h	2.820
Exhaust gas volume, dry	Nm³/h	2.593
Max.admissible exhaust back pressure after engine	mbar	60

Combustion air data

Combustion air mass flow rate	kg/h	2.817
Combustion air volume	Nm³/h	2.179
Max. admissible pressure drop in front of intake-air filter	mbar	10

0.03 Technical data of generator

Manufacturer		STAMFORD e)
Type		PE 734 B2 e)
Type rating	kVA	1,305
Driving power	kW	608
Ratings at p.f. = 1,0	kW	588
Ratings at p.f. = 0.8	kW	583
Rated output at p.f. = 0.8	kVA	729
Rated current at p.f. = 0.8	A	1,014
Frequency	Hz	50
Voltage	V	415
Speed	rpm	1,500
Permissible overspeed	rpm	2,250
Power factor lagging		0,8 - 1,0
Efficiency at p.f. = 1,0	%	96.7%
Efficiency at p.f. = 0.8	%	95.9%
Moment of inertia	kgm²	31.75
Mass	kg	2,710
Radio interference level to VDE 0875		N
Construction		B3/B14
Protection Class		IP 23
Insulation class		H
Temperature (rise at driving power)		F
Maximum ambient temperature	°C	40
Total harmonic distortion	%	1.5

Reactance and time constants appr.

xd direct axis synchronous reactance	p.u.	2.14
xd' direct axis transient reactance	p.u.	0.13
xd'' direct axis sub transient reactance	p.u.	0.10
Td'' sub transient reactance time constant	ms	10
Ta Time constant direct-current	ms	20
Tdo' open circuit field time constant	s	2.14

0.04 Technical data of heat recovery

General data - Hot water circuit

Total recoverable thermal output	kW	729
Return temperature	°C	70,0
Forward temperature	°C	90,0
Hot water flow rate	m³/h	31,3
Nominal pressure of hot water	bar	10
Pressure drop hot water circuit	bar	0,80
Maximum Variation in return temperature	°C	+0/-20
Max. rate of return temperature fluctuation	°C/min	10

Mixture Intercooler (1st stage)

Type		gilled pipes
Nominal pressure of hot water	bar	10
Pressure drop hot water circuit	bar	0,20
Hot water connection	DN/PN	80/10

Mixture Intercooler (2nd stage) (Intercooler separate)

Type		gilled pipes
Nominal pressure of hot water	bar	10
Pressure drop hot water circuit	bar	0,20
Hot water connection	DN/PN	65/10

Heat exchanger lube oil

Type		shell-and-tube
Nominal pressure of hot water	bar	10
Pressure drop hot water circuit	bar	0,20
Hot water connection	DN/PN	80/10

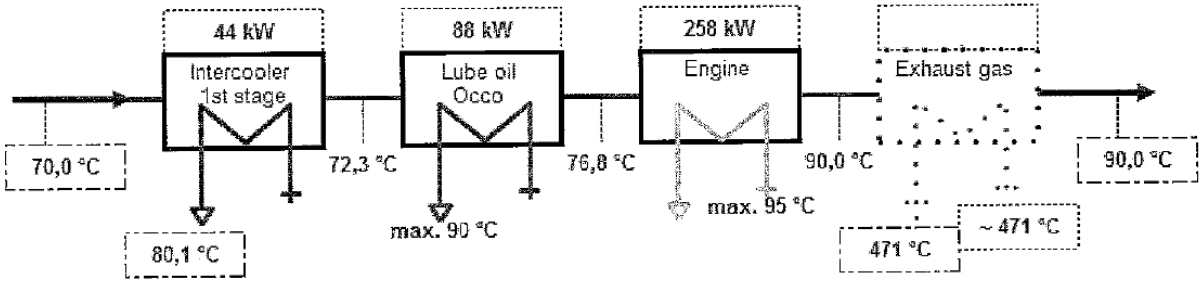
Heat exchanger engine jacket water

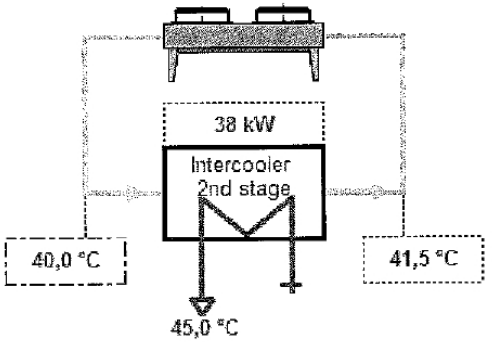
Type		plate heat exchanger
Nominal pressure of hot water	bar	10
Pressure drop hot water circuit	bar	0,20
Hot water connection	DN/PN	80/10

Recoverable thermal output = 390 kW

(±8% tolerance +10% reserve for cooling requirements)

Hot water flow rate = 16,7 m³/h





* Low temperature circuit (calculated with Glykol 37%)

Heat to be dissipated = 38 kW

(±8% tolerance +10% reserve for cooling requirements)

Cooling water flow rate = 25,0 m³/h

0.10 Technical parameters

All data in the technical specification are based on engine full load (unless stated otherwise) at specified temperatures and the methane number and subject to technical development and modifications.

All pressure indications are to be measured and read with pressure gauges (psi.g.).

(1) At nominal speed and standard reference conditions ICFN according to DIN-ISO 3046 and DIN 6271, respectively
(2) According to DIN-ISO 3046 and DIN 6271, respectively, with a tolerance of + 5 %
(3) Average value between oil change intervals according to maintenance schedule, without oil change amount
(4) At p. f. = 1.0 according to VDE 0530 REM / IEC 34.1 with relative tolerances
(5) Total output with a tolerance of +/- 8 %
(6) According to above parameters (1) through (5)
(7) Only valid for engine and generator; module and peripheral equipment not considered
(8) The exhaust gas temperature is valid according to the above stated (ref) gas composition. Other gas compositions, trace elements, and moisture can lead to exhaust gas temperatures outside the +/-5% tolerance.

Radio interference level
The ignition system of the gas engines complies the radio interference levels of CISPR 12 and EN 55011 class B, (30-75 MHz, 75-400 MHz, 400-1000 MHz) and (30-230 MHz, 230-1000 MHz), respectively.

Definition of output
- ISO-ICFN continuous rated power:
  Net break power that the engine manufacturer declares an engine is capable of delivering continuously, at stated speed, between the normal maintenance intervals and overhauls as required by the manufacturer. Power determined under the operating conditions of the manufacturer's test bench and adjusted to the standard reference conditions.
- Standard reference conditions:

Barometric pressure:	1000 mbar (14.5 psi) or 100 m (328 ft) above sea level
Air temperature:	25°C (77°F) or 298 K
Relative humidity:	30 %

- Volume values at standard conditions (fuel gas, combustion air, exhaust gas)

Pressure:	1013 mbar (14.7 psi)
Temperature:	0°C (32°F) or 273 K

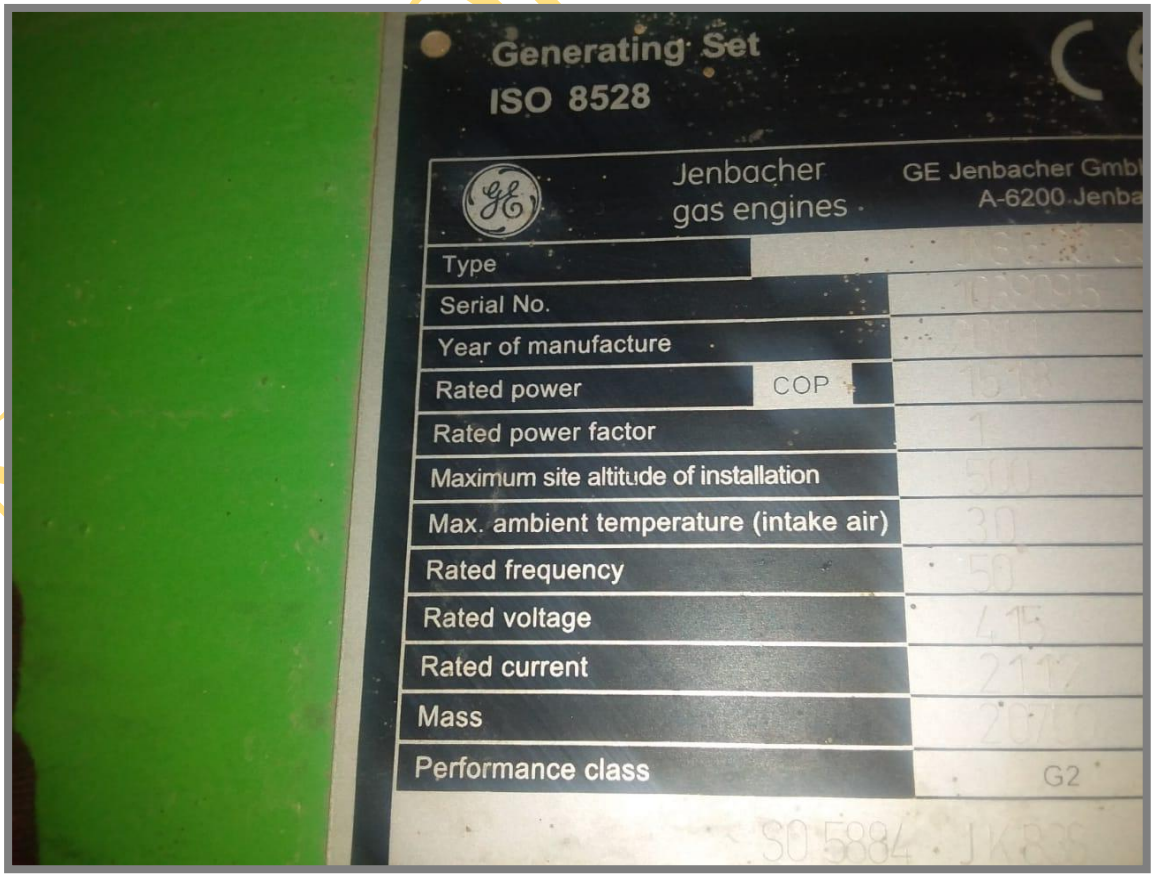
Output adjustment for turbo charged engines
For altitudes > 350m and/or air intake temperatures > 35°C the reduction in output must be evaluated on a case by case basis.

If the actual methane number is lower than the specified, the knock control responds. First the ignition timing is changed at full rated power. Secondly the rated power is reduced. These functions are carried out by the engine management system.

0.11 Additional Technical parameters

- Island operation will be full controlled by CEI
- The engine room ventilation must be designed as a forced system (with intake fans), so that there is always a slight overpressure in the engine room. This ensures that any unburned exhaust gas will be forced out of the exhaust system and cannot leak back into the engine room.
- The engine room ventilation must be designed so that in case of leaks no ignitable amounts of gas can form.
- It must be insured that during any operational mode no ignitable gas mixture is evident at any of GE Jenbacher delivered components. See TA 1000-0110.
- A emergency cut off valve that can be controlled by Jenbacher shall be installed outside of the engine room.
- The gas warning system must be designed according to the gas composition
- All persons in the immediate vicinity of the site must be equipped with a suitable wearable gas warning sensor. Relevant warning and security notification boards for CO, H2 and other poisonous and flammable gases/substances must be visible positioned and in a manner that informs and motivates personal correctly.
- The gas, according to TA 1000-0302 / TA 1400-091 and at the given parameters (gas temperature < 40°C, gas pressure 130mbar) must be free of condensate and/or sublimates.

PHOTOGRAPHS




ISO 8528
CE
Jenbacher
gas engines
GE Jenbacher GmbH & Co OG
A-6200 Jenbach | Austria
Type
Serial No.
Year of manufacture
Rated power
COP
kW
Rated power factor
Maximum site altitude of installation
m
Max. ambient temperature (intake air)
°C
Rated frequency
Hz
Rated voltage
V
Rated current
A
Mass
kg
Performance class
G2