



ENERGY CAPITAL

WADE Member

Factory Representative

FLENDER
GRAFFENSTADEN



TYPE: MW-701D



Location: JAPAN



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Generator Package



MW-701D GAS TURBINE POWER PLANT



Exhaust Noise Control Wall



Starting Equipment Package



Air inlet duct



Turbine Package



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SCOPE OF SUPPLY FOR USED GAS TURBINE POWER PLANT

(TYPE: MW - 701D)

No.	Equipment	Remarks
1	Gas Turbine with Auxiliary Equipment	
2	Generator with Auxiliary Equipment	
3	Starting Equipment Package	
4	Air Inlet Filter	
5	Noise Control Wall	
6	Auxiliary Machine Room	
7	Fuel Oil Pump Room	
8	Fuel Gas Compressor Unite	
9	Fuel Gas Compressor Unite Control Panel	
10	Air Cooler	
11	Casing Extraction Pipe Frame	
12	Lubricating Oil Cooler	
13	Fuel Oil Transfer Pump	
14	Demineralized Water Supply Pump	
15	Demineralized Water Transfer Pump	
16	Water Injection Pump	
17	Foam Fire Extinguishing Tank	
18	Exhaust Duct	



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19	Main Transformer	
20	Neutral Grounding Cubicle for Main Transformer	
21	Station Transformer	
22	Station Transformer NGR Cubicle	
23	Isolated Phase Bus	
24	PT and SA Cubicle	
25	Generator NGR Cubicle	
26	Outdoor Type Metal clad Cubicle	
27	Control Panel Room Package	
28	Power Supply Room Package (No.1 &No.2)	
29	Battery Room Package	
30	Main Transformer Cooling Control Panel	
31	Power Center Transformer	
32	Power Center	
33	Selective Catalytic Reduction Process	
34	Chemical Powder Fire Extinguishing System	
35	CO 2 Fire Extinguishing System	
36	Spray Air Compressor	
37	Blade Cleaning System	
38	Strainer for Demi.Water Transfer Pump	
39	Strainer for Demi.Water Supply Pump	
40	Strainer for Water Injection Pump	
41	Strainer for Fuel Oil Transfer Pump	



42	Fuel Drain Tank	
43	Fuel Oil Feed Pump	
44	Strainer for Fuel Oil Feed Pump	
45	Control Air Dryer	
46	Control Air Receiver	
47	Control Air Compressor	
48	Ammonia Dilution Air Fan	
49	Exhaust Duct Draft Damper	
50	Drain Transfer Pump	
51	GT Control Panel (at Central Control Room)	
52	Final Specification (Japanese)	
53	As built Drawing (Japanese)	

[OUT OF SCOPE]

(1) Power & Control Cable

(2) Pipe work between Equipment and Other Equipment

(3) Foundation Bolts and Embedded Metal

(4) Out Door Lighting System

(5) Stack

(6) Spare Parts



MITSUBISHI MW – 701D GAS TURBINE SPECIFICATION

1. Major Items for Gas Turbine Power Station

(1) Gas Turbine

Type :	Open Simple Cycle Single Shaft
Speed:	3,000 rpm
Capacity	144 Mw
Design base	
Inlet Air Temp	5 C
Atm Pressure:	1,033 kg/cm ³ abs
Relative Humidity:	60%
Fuel :	Light Oil or City Gas
	Light Oil
	Specific Gravity: 0.83
	HHV:10,800 kcal/kg
	*City Gas
	Specific Gravity:0.847 (kg/m ³ N)
	HHV: 11,000kcal/kg
NOx control	Water Injection + High Temp. Nox Denitration
	NOx Limited Value
	G/T Outlet: not more than 50ppm (at 02-16%)
	Denitration Outlet : not more than 20ppm (at 02-16%)



(2) Generator Type:

Cylindrical Rotating Field Type Three Phase Synchronous
Generator

Rating Item:

Apparent Output	160,000 KVA (at 5°C)
Power Factor	90%
Relative Output	144,000 kw
Terminal Voltage	15,000 V
Frequency	50 Hz
No.of Pole, Speed	2 pole, 3,000 rpm
Cooling Method	Open Air Cooling
Insulation	Class F
Excitor	Brushless Type using Silicon Rectifier and excitor Coupled with the Generator

(3) Latest work scope of hot gas path inspection completed in 2007.

Combustion section:

Did not dismantle the unit for inspection. Used bore scope at 3 out of 18 chamber. Visual inspection done. Continued to use as is.

Turbine section:

1st blade: Visual inspection as the blades are still attached to rotor.
Nothing was replaced

2nd blade: Sent the blade sent to MHI and inspected at factory.
26 pcs out of 93 pcs were replaced.

3rd blade: Visual inspection done as the blades are still attached to rotor.
2 pcs out of 71 pcs were replaced.



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4th blade: Visual inspection done as the blades are attached to rotor.
Nothing replaced.

All other stator: Visual inspection done and nothing was replaced.

Transformer: Tested insulation resistance, Visual inspection-OK.

Controlling devices: General function check-OK.

Fuel Gas compressor: Shipped to factory and dismantled for inspection and overhaul

Performance of unit: May 2009: Running data was taken at ambient temp 18Deg C.
Output 135 MW recorded.

There was no deviation from design with original name plate rating of 5C 144MW Base load.

Gas Turbine operating in tip-top condition.