

The Mitsubishi "G" Series: A Giant Step in Gas Turbine History

Features of MITSUBISHI "G" Series

Proven design based on over 40 years of experience

- Two bearing supports
- Cold-end generator drive
- Single shaft rotor and axial exhaust

Innovative new technology

- Multiple circular arc and Controlled diffusion airfoils in compressor blades
- Steam-cooled combustor
- Turbine blades with Directionally solidified casting material, Thermal Barrier Coating and highly sophisticate cooling scheme

Strict verification

- MHI's comprehensive test plan incorporates extensive factory development
- Extended field evaluation to verify design integrity and durability prior to release of production unit

World's highest performance

- The world's highest performance in heavy-duty industrial gas turbines

Environmental protection

- Effective use of fossil fuel resources
- Lowest NOx and SOx emissions
- Minimum CO, UHC and VOC emissions



M701G2 : The World Largest gas turbine

OPERATION EXPERIENCES OF "G" SERIES GAS TURBINE

CUSTOMER SITE	No. of UNIT GT+ST	PLANT OUTPUT	STATUS OF OPERATION							OPE. HRS	START & STOP
			1997	1998	1999	2000	2001	2002	2003		
T-POINT	1+1	330 MW								16,346	978
OVERSEAS 1	2+1	625 MW								5,588	149
	2+1	625 MW								5,480	157
OVERSEAS 2	2+1	808 MW								6,566	101
	2+1	808 MW								6,866	134
OVERSEAS 3	2+1	808 MW								4,423	74
	2+1	808 MW								3,969	33
OVERSEAS 4	2+1	732 MW								2,506	40
	2+1	732 MW								2,101	33
OVERSEAS 5	2+1	808 MW								1,560	57
	2+1	808 MW								1,415	31
OVERSEAS 6	2+1	802 MW								1,813	77
	2+1	802 MW								1,653	57
OVERSEAS 7	2+1	802 MW								89	20
	2+1	802 MW									
M501G TOTAL	30									60,375	1,941
DOMESTIC 1	2+1	805 MW								31,591	66
	2+1	805 MW								30,327	69
	2+1	805 MW									
	2+1	805 MW									
DOMESTIC 2	(1+1) x 3	1,500 MW									
M701G TOTAL	7									61,918	135
TOTAL	37									122,293	2,076

Mitsubishi "G" series gas turbines

Performance-ISO	M501G1	M701G2
Gross Power Output, MW	264	334
Combined Cycle Output*, MW	387	489
Combined Cycle Efficiency*, LHV%	58.2	58.7

*: Single-shaft, one GT, one ST and one HRSG

Performance-ISO	M501G1	M701G2
Air Flow, kg/s	581	737
Pressure Ratio	20	21
Turbine Speed, rpm	3,600	3,000
Number of Compressor Stages	17	14
Number of Combustors	16	20
Number of Turbine Stages	4	4

Plant Overview



KEILCO / Ilijan, Philippines
2on1x2 2002



Tohoku Electric / Higashi Niigata No.4, Japan
2on1x1 1999(First), 2on1 x1 (Future)