

ERTISA COGENERATION Gas Turbine Driven Power Generation Unit

Equipment Title: Gas Turbine Driven Power
Generation Unit

Document Title: Operation and
Maintenance Manual

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Supplier: Cooper Rolls Limited
Dunnings Bridge Road
Bootle
Merseyside L30 4UZ
England



Telephone: +44 (0)151 524 6555
Telefax: +44 (0)151 524 6557

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Equipment:— Gas Turbine Driven Power Generation Unit

C.E.S. Ref:— LP0847

Project No.:— 16023

Operation And Maintenance Manual

Master Index

Description	Supplier Or Drawing No.	Section	Volume No.
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C.E.S. Technical Manuals

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Note: The minor sub-vendor documentation manuals are compiled as listed on P&ID bills of materials (BMs)

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lubrication oil system, gearbox acoustic enclosure.			
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Connection Type	No.	Interface or Connection (* = Battery Plate Connection)	Notes	Connect (✓/X)
05 module cooling	A11	Cooling air inlets to (Davis) valve	Common	
	A12			
Air pressure tappings and bleeds	A14	PS 25 pressure tapping	Not used	N/A
	A15	PS 305 pressure tappings		
	A16			
	A17			
	A21	IP7 207 air for plant services	Cool & seal air	
	A22	PS 25 pressure tapping	Not used	N/A
	A24	PS 455 pressure tapping (left-side)		
	A25	PS 455 pressure tapping (right-side)		
	A42	IP7 bleed valve duct (centre top)		
	A43	HP3 Handling bleed valve duct (right-side)		
	A44	Starting bleed valve vents (left-side)	On engine bleeds to enclosure	N/A
	A50	Starting bleed valve vents (left-side)		
	A51	Starting bleed valve vent (right-side)		
	A48	PS 263 pressure tapping	Not used	
	A52	PS1 pressure tapping (right-side)	Common	
	A53	PS1 pressure tappings (left-side)		
	A54	PS1 pressure tappings (left-side)		
	A56	HP3 263 air for plant services	Not used	N/A
Compressor wash and inhibit	C1	Fired wash connection to flare	Remains in situ	N/A
	C2	Crank (soak) wash connection to M8		
	C3	Inhibit connection to flare extension		
Drains	D1	Intermediate casing drain		
	D2	*Variable Inlet Guide Vane (VIGV) ram drain	Drain plug	N/A
	D6/F	Combustion casing drain – front		
	D6/R	Combustion casing drain – rear		
	D15	Injector drain	From four lowest combustors	
	D16	Injector drain		
	D17	Injector drain		
	D18	Injector drain		
	D21	Central (diffusion) manifold drain		
Gas fuel system	G1/TO	Torch manifold – gas fuel inlet		
	G1/C	Central manifold – gas fuel inlet		
	G1/P	Primary manifold – gas fuel inlet		
	G1/S	Secondary manifold – gas fuel inlet		
Gas starter (Hilliard)	L33	*Oil feed to starter (lobed only)	Not used	N/A
	L35	Oil return from starter		
	S20	Gas inlet		
	S21	Gas outlet		
		Starter motor speed probe (from E33)	From rear of battery plate to starter	
		Starter gearbox oil feed (from L33)		
Fig 2.17 Gas Generator Connection List				

Connection Type	No.	Interface or Connection (* = Battery Plate Connection)	Notes	Connect (✓/X)
Hydraulic starter (Voac)	L12	Starter gearbox oil level spill		
	S3	Starter motor oil inlet		
	S4	Starter motor oil outlet		
	S5	Starter cooling oil inlet		
	S6	Starter cooling oil outlet		
		Starter motor speed probe (from E33)	From rear of battery plate to starter	
		Starter gearbox oil feed (tee conn. from H1)		
Hydraulic and lubricating oil system	H1	*Hydraulic oil inlet (VIGVs)		
	H2	*Hydraulic oil outlet (VIGVs)		
	L1	*Lubricating oil inlet (supply to bearings)		
	L2	*Scavenge oil – front bearings		
	L3	*Scavenge oil – centre bearings		
	L4	*Scavenge oil – rear bearings		
	L5	*Combined bearing vent (air/oil vent to tank)		
	L6	*Lubricating oil inlet pressure signal		
	L7	*Scavenge oil centre bearing pressure signal		
	L30	*Chip detector – L2 line	Three assemblies on battery plate	
	L31	*Chip detector – L3 line		
	L32	*Chip detector – L4 line		
	L36	Instrument tapping (back pressure) in L5	Leave in situ	N/A
Electrical connections	E32	*VIGV indication		
	E33	*Starter motor speed probe (N _S)		
	E35	*VIGV servo-valve		
	E36	*IP speed probe (N _I) ABC	One plug	
	E38	*HP speed probe (N _H) ABCD		
	E37	Accelerometer – front (pre-amp mtg. plate)	Transport by attaching to battery plate	
	E39	Accelerometer – centre (pre-amp mtg. plate)		
	E40	Accelerometer – rear (pre-amp mtg. plate)		
	E58	*Solenoid valve – bleed		
	E87A	*Exhaust gas thermocouples T455		
	E87C	*Exhaust gas thermocouples T455		
	E87B	*Exhaust gas thermocouples T455	One plug	
	E91	*IP compressor exit thermocouple T25		
	E95	Igniter adapters (two per combustor)		
	E100	T31 temperature sensors	Junction box	
Miscellaneous	M8	Air intake lip (fibreglass extension)	Leave attached	N/A
	M9	Exhaust mounting flange		
	M15	Gas manifold mount (transportation)	For transport only	
	M16	Gas manifold mount (transportation)		
	T5	Engine mounting (front leg attachment)		
		Air intake rubber boot seal		
		Blade containment shield		
Fig 2.17 Gas Generator Connection List				