

18.04.2020

ElectroGas Malta Ltd

Unit Reference : CP 5 – FSU Aux.Diesel Generator 2

Thermal Input Calculation-

Maximum fuel consumption = 448.0 ltrs/hr = 0.124 ltrs/sec
At 100% load

Density = 836kg/cu.mtr = 0.836kg/ ltr

Fuel consumption = 0.104 kg/sec

Heating value = 43 MJ/kg

Power Thermal input = 43MJ/kg x 0.104kg/sec = 4.5MWth

Power = 4.5MWth



Ing. Nicholas Bellizzi

PERFORMANCE DATA[DM6954]

February 26, 2020

Performance Number: DM6954

Change Level: 04

SALES MODEL: 3516B
 BRAND: CAT
 ENGINE POWER (BKW): 1,901.0
 GEN POWER W/O FAN (EKW): 1,825.0
 COMPRESSION RATIO: 14
 RATING LEVEL: PRIME
 PUMP QUANTITY: 2
 FUEL TYPE: DIESEL
 MANIFOLD TYPE: DRY
 GOVERNOR TYPE: ADEM3
 ELECTRONICS TYPE: ADEM3
 CAMSHAFT TYPE: STANDARD
 IGNITION TYPE: CI
 INJECTOR TYPE: EUI
 FUEL INJECTOR: 3920217
 UNIT INJECTOR TIMING (MM): 64.34
 REF EXH STACK DIAMETER (MM): 305
 MAX OPERATING ALTITUDE (M): 2,000

COMBUSTION: DIRECT INJECTION
 ENGINE SPEED (RPM): 1,800
 HERTZ: 60
 ASPIRATION: TA
 AFTERCOOLER TYPE: SCAC
 AFTERCOOLER CIRCUIT TYPE: JW+OC, AC
 AFTERCOOLER TEMP (C): 30
 JACKET WATER TEMP (C): 99
 TURBO CONFIGURATION: PARALLEL
 TURBO QUANTITY: 2
 TURBOCHARGER MODEL: L15101-VG19-HF11-WG08-AF12
 CERTIFICATION YEAR: 2004
 CRANKCASE BLOWBY RATE (M3/HR): 72.1
 FUEL RATE (RATED RPM) NO LOAD (L/HR): 42.8
 PISTON SPD @ RATED ENG SPD (M/SEC): 11.4

INDUSTRY	SUBINDUSTRY	APPLICATION
MARINE	FERRY	MARINE AUXILIARY
OIL AND GAS	OFFSHORE PRODUCTION	MARINE AUXILIARY
MARINE	DREDGE	MARINE AUXILIARY
MARINE	FISHING	MARINE AUXILIARY
MARINE	GENERAL CARGO	MARINE AUXILIARY
MARINE	OFFSHORE	MARINE AUXILIARY
MARINE	CRUISE	MARINE AUXILIARY
MARINE	GOVERNMENT	MARINE AUXILIARY

General Performance Data

GENSET POWER WITHOUT FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP
EKW	%	BKW	KPA	G/BKW-HR	L/HR	KPA	DEG C	DEG C	KPA	DEG C
2,007.5	110	2,089	2,018	197.4	491.6	217.5	46.3	592.6	117.1	469.3
1,825.0	100	1,901	1,837	197.7	448.0	192.6	43.7	577.1	101.6	464.7
1,642.5	90	1,711	1,653	199.6	407.2	168.6	41.9	567.2	88.4	464.5
1,460.0	80	1,522	1,470	202.9	368.0	144.9	40.4	560.4	75.8	467.1
1,368.8	75	1,427	1,376	204.9	348.6	132.9	39.7	557.3	68.7	469.5
1,277.5	70	1,334	1,286	206.6	328.5	120.0	39.0	552.7	63.6	474.8
1,095.0	60	1,147	1,108	210.6	288.0	94.1	37.8	543.0	51.7	484.1
912.5	50	962	929	215.5	247.0	69.0	36.7	532.5	40.4	487.3
730.0	40	777	750	221.0	204.6	45.9	35.9	507.2	30.9	477.4
547.5	30	590	570	229.8	161.6	25.0	35.3	467.2	22.9	451.5
456.2	25	495	479	237.1	140.0	15.3	35.1	441.5	19.5	432.2
365.0	20	400	386	248.9	118.6	7.2	34.9	407.7	16.6	402.9
182.5	10	203	196	311.6	75.4	-5.5	34.6	319.8	12.4	319.9

GENSET POWER WITHOUT FAN	PERCENT LOAD	ENGINE POWER	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP	WET INLET AIR VOL FLOW RATE	ENGINE OUTLET WET EXH GAS VOL FLOW RATE	WET INLET AIR MASS FLOW RATE	WET EXH GAS MASS FLOW RATE	ENGINE OUTLET WET EXH VOL FLOW RATE (0 DEG C AND 101 KPA)	ENGINE OUTLET DRY EXH VOL FLOW RATE (0 DEG C AND 101 KPA)
EKW	%	BKW	KPA	DEG C	M3/MIN	M3/MIN	KG/HR	KG/HR	M3/MIN	M3/MIN
2,007.5	110	2,089	227	173.9	168.6	426.2	11,571.4	11,986.6	157.5	146.4
1,825.0	100	1,901	201	160.1	156.0	393.8	10,716.9	11,092.8	145.8	135.6
1,642.5	90	1,711	176	147.2	143.9	362.9	9,891.3	10,232.9	134.4	125.1
1,460.0	80	1,522	152	134.6	131.8	333.6	9,059.8	9,368.5	123.1	114.7
1,368.8	75	1,427	140	128.1	125.5	318.7	8,628.3	8,920.8	117.2	109.3
1,277.5	70	1,334	127	120.8	118.3	301.7	8,135.9	8,411.5	110.2	102.7
1,095.0	60	1,147	100	105.6	103.7	267.4	7,133.9	7,375.5	96.5	89.9
912.5	50	962	74	90.2	89.3	232.4	6,148.1	6,355.3	83.5	77.9
730.0	40	777	50	75.4	76.3	195.8	5,256.7	5,428.8	71.2	66.6
547.5	30	590	28	60.6	64.6	159.8	4,454.8	4,590.8	60.2	56.8
456.2	25	495	18	53.2	59.3	142.6	4,085.7	4,203.3	55.2	52.0
365.0	20	400	10	47.3	54.8	126.5	3,781.4	3,880.8	51.1	48.4