

Sea Trial PAR data (System Format)

Sea Trial PAR data is used for the evaluation of engine performance, on a Marine vessel, primarily during the commissioning process. This data is not valid for other uses.

3406E DI TA SCAC TEST SPEC 2T-9883 EFF S/N 9WR01285

ADV PWR 799 BHP (596.5 BKW) @ 2300 RPM PERF REF DM6122

Air Systems					
900 Series Designation	Location Description	Spec	Units	Max/Min /Delta	Notes
906	Intake air manifold temperature	98.6	F	Min	Minimum allowable intake manifold temperature under standard, 25C, ambient air operating conditions. This limit is variable as ambient air and sea water temperature varies. To account for "as tested" sea water and ambient air conditions, use the following equation. MIN = (IMAT minimum under standard conditions) + (Ambient Sea Water temp -25C) + 0.3x(Air intake temp - 25C)
906	Intake air manifold temperature	116.6	F	Max	Maximum allowable intake manifold temperature under standard, 25C, ambient air operating conditions. This limit is variable as ambient air and sea water temperature varies. To account for "as tested" sea water and ambient air conditions, use the following equation. MAX = (IMAT limit under standard conditions) + (Ambient Sea Water temp -25C) + 0.3x(Air intake temp - 25C)
907	Air cleaner restriction - (gauge pressure)		in. WTR	Max	Maximum allowable intake restriction with a clean element.
911	Intake air manifold pressure	61.2	IN_HG	Min	Boost Pressure to the engine under rated speed/load conditions.
911	Intake air manifold pressure	82.8	IN_HG	Max	Boost Pressure to the engine under rated speed/load conditions.
930	Air cleaner outlet temp		F	Max	Inlet Air Temp @ Air Cleaner.
Jacket Water Systems					
900 Series Designation	Location Description	Spec	Units	Max/Min /Delta	Notes
922	Jacket Water Inlet Temp		F	Min	Jacket water inlet temp to engine from cooling system HEX outlet
922	Jacket Water Inlet Temp		F	Max	Jacket water inlet temp to engine from cooling system HEX outlet
901	Jacket water engine outlet temperature (before regulators)		F	Max	Jacket water temperature from engine to cooling system (HEX, Keel Cooler, Radiator)
902	Jacket water pump outlet temp		F	Max	Jacket water temp after pump outlet. This number should equal 922 with a fully open thermostat.
Jacket Water Engine Temperature Delta (dT)	Engine Jacket Water (Out-In) (901 and 902)	Error/duplicate pump curves	F	Min	901 (Jacket water temperature from engine) - 902 (Jacket water pump outlet temperature) * Values are based on 50/50 glycol coolant
Jacket Water Engine Temperature Delta (dT)	Engine Jacket Water (Out-In) (901 and 902)	Error/duplicate pump curves	F	Max	901 (Jacket water temperature from engine) - 902 (Jacket water pump outlet temperature) * Values are based on 50/50 glycol coolant
920	JW Pump Inlet Pressure	0.5	PSI	Min	Minimum inlet pressure required on jacket water pump inlet
Aftercooler / Low Temp Circuit					
900 Series Designation	Location Description	Spec	Units	Max/Min /Delta	Notes
903	Aftercooler water inlet temp to engine		F	Max	Maximum aftercooler water inlet design temp under standard reference conditions. For 3500 and larger engines, this limit is variable as sea water temperature changes. To account for "as tested" sea water conditions, use the following equation. MAX TEMP = (Aftercooler Design Temp) + (Sea Water Design Temp) - (Emissions Set Point). Refer to low temperature cooling sizing chart for guidance
904	Aftercooler / Auxiliary low temp pump inlet pressure (treated water)	0.5	PSI	Min	Minimum inlet pressure required on pump inlet for a treated water system. (If aftercooler is Sea Water cooled, use Raw water pump data In SW System)
Engine Lubrication Systems					
900 Series Designation	Location Description	Spec	Units	Max/Min /Delta	Notes
913	Engine to oil bearings temp		F	Max	Engine Oil Temp
914	Engine to oil bearings pressure - Low Idle	15	PSI	Min	Low Idle Oil Pressure
914	Engine to oil bearings pressure - Low Idle	87	PSI	Max	Low Idle Oil Pressure
914	Engine to oil bearings pressure - Rated	40	PSI	Min	Rated Speed Oil Pressure
914	Engine to oil bearings pressure - Rated	87	PSI	Max	Rated Speed Oil Pressure
Engine Fuel Systems					
900 Series Designation	Location Description	Spec	Units	Max/Min /Delta	Notes
917	Engine Fuel Pressure	135	PSI	Max	At the Engine Mounted Fuel Filters
917	Engine Fuel Pressure	67	PSI	Min	At the Engine Mounted Fuel Filters
935	Fuel Inlet Temp	151	F	Max	At the fuel transfer pump inlet
936	Fuel return line restriction (engine outlet pressure)		IN_HG	Max	Engine Fuel Outlet Pressure leaving engine (Customer Connection)
961	Fuel supply line restriction (engine inlet pressure)		IN_HG	Max	Fuel Pressure to Engine Transfer Pump (Customer Connection)
Fuel API	Fuel Density	36	API	Max	This is Corrected API Value

Fuel API	Fuel Density	34	API	Min	This is Corrected API Value
Engine Exhaust System					
900 Series Designation	Location Description	Spec	Units	Max/Min /Delta	Notes
908	Exhaust engine outlet stack pressure		in. WTR	Max	Engine exhaust back pressure.
912					
912A-D	Exhaust manifold right front turbo temperature	1168.5	F	Max	Exhaust manifold temperature before turbos. Exhaust manifold temperature tolerance is +/- 8%.
Heat Rejection					
900 Series Designation	Location Description	Spec	Units	Max/Min /Delta	Notes
Heat Rejection - JW	Total Cooling System	17971	BTU/Min	Max	This is the Maximum heat rejection to the Jacket Water Circuit. Size system to allow for 10% overload factor.
Heat Rejection - AC	After Cooler System	10180	BTU/Min	Max	This is the Maximum heat rejection to the After Cooler Circuit. Size system to allow for 5% overload factor. For 3600/ C280 the oil cooler heat rejection is incorporated in this aftercooler system heat rejection data.
Heat Rejection - Fuel	Total fuel System		BTU/Min	Max	This is the maximum heat rejection to the fuel for fuel cooler sizing.
SW System (Sea Water/ Raw Water)					
900 Series Designation	Location Description	Spec	Units	Max/Min /Delta	Notes
965					
966	Raw Water Pump inlet Temperature (966)	90	F	Max	Maximum Sea water temperature to engine
957	Raw Water Temp from HEX (957)	129	F	Max	Maximum recommended Sea water temperature leaving the engine
Pump Flow Rates					
900 Series Designation	Location Description	Spec	Units	Max/Min /Delta	Notes
JW_PFR	Jacket Water	missing data	GPM	Min	Jacket water flow rate at maximum allowable external restriction.
JW_PFR	Jacket Water	missing data	GPM	Max	Jacket water flow rate at minimum allowable external restriction.
Fuel Rate Specifications					
900 Series Designation	Location Description	Max/Min/Delta	Max/Min/Delta		
				Max GAL/HR	Min GAL/HR
	ENGINE RATED FUEL RATE	RPM			
		2,300	41.4	37.5	
		1,950	41.4	37.5	
		1,600	41.4	37.4	
Additional Data					
900 Series Designation	Location Description	Spec	Units	Max/Min /Delta	Notes
JWO_KEEL	JW stat start to open temperature (KEEL)		F	Min	The temperature at which point the jacket water thermostat starts to open. (For keel cooled engines)
JWFO_KEEL	JW stat Full open temperature (KEEL)		F	Max	The temperature at which point the jacket water thermostat is fully open and no longer bypassing any flow. (For keel cooled engines)
JWO_HEX	JW stat start to open temperature (HEX)		F	Min	The temperature at which point the jacket water thermostat starts to open. (For heat exchanger cooled engines)
JWFO_HEX	JW stat Full open temperature (HEX)		F	Max	The temperature at which point the jacket water thermostat is fully open and no longer bypassing any flow to the heat exchanger. (For heat exchanger cooled engines)
RLJWC	Regulator Location for JW Circuit			Inlet or Outlet	Jacket Water circuit thermostat location
ERP	Engine Room Pressure	0.5 "	in. H2O	Min	Engine room vacuum with respect to atmospheric should not exceed 0.5 "H2O at rated speed and load.
932	Crankcase Pressure		in. H2O	Min	
932	Crankcase Pressure		in. H2O	Max	
BSFC	Rated BSFC	0.4	LB/HP.H	Max	Corrected Brake Specific Fuel Consumption
BSFC	Rated BSFC	0.3	LB/HP.H	Min	Corrected Brake Specific Fuel Consumption
HIS	High Idle	2410	RPM	Nominal	Maximum engine speed limited by ECM or Governor at no load
LIS	Low Idle	600	RPM	Nominal	Minimum engine speed limited by ECM or Governor at no load
MinS	Min Engine Speed During Reversal / Min Clutch In		RPM	Min	Minimum engine speed required for adequate lube oil flow or that the engine will not stall during emergency vessel maneuvers
FLS	Full Load Setting(FLS) Intercept	-24		Nominal	Factory Full Load setpoint (FLS)
FTS	Full Torque Setting(FTS) Slope	3		Nominal	Factory Full Torque setpoint (FTS)

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