fascination of power

Technical Engine Data

12V4000G23

Water charge air cooling (external); 50 Hz - 1.500/min fuel consumption optimized

Operating method	Four stroke Diesel	**Flywheel housing flange**	SAE 00
Combustion system	Direct Injection	**Flywheel interface**	21
Charging method	Exhaust turbo charger and Water charge air cooling (external);	**Starter ring-gear teeth no.**	182
		Injection system	Common Rail System with electronically controlled high-pressure injection through single injection pumps
Bore / Stroke	170 / 210 mm		
Displacement, total	57.2 Liter		
Number of cylinders	12	**Control / Monitoring**	Electronic engine management system "ADEC"
Cylinder configuration	V - 90°	**Number of turbo chargers**	4
Compression ratio	16.5 : 1	**Number of intercooler**	1
Direction of rotation (viewed from flywheel side)	left		

MTU-Application group				**3D** (ICFN)	**3B** (ICXN)
Power (ISO 3046)		kW	A	1575	1420
Mean piston speed		m/s	A	10.5	10.5
Mean effective pressure		bar	A	22.0	19.9
Engine weight (Engine in basic execution)	dry	kg	R	6200*	6200*
	wet	kg	R	-	-
Dimensions (Engine only)	length	mm	R	2531	2531
	height	mm	R	1660	1660
	width	mm	R	2160	2160
Consumption					
Specific fuel consumption (be)	100% CP	g/kWh	G	193	192
(Tolerance +5% according to ISO 3046/1)	75% CP	g/kWh	R	194	195
	50% CP	g/kWh	R	201	203
Lube oil consumption (after run-in)			R	-	-
Capacity					
Engine oil capacity, initial filling (standard oil system)	total	Liter	R	260	260
	Oil pan capacity, dipstick mark min.	Liter	L	160	160
	Oil pan capacity, dipstick mark max.	Liter	L	200	200
Engine coolant capacity (without cooling equipment)		Liter	R	160	160
Intercooler coolant capacity		Liter	R	40	40
Heat dissipation					
Engine coolant dissipation	100% load	kW	R	580	540
Charge-air heat dissipation	100% load	kW	R	260	200
Radiation and convection heat, engine		kW	R	75	75
Starter system					
Electrical Starter (make Delco)					
Starter, rated voltage		V	R	24	24
Starter, rated power		kW	R	-	-
Starter, power requirement max.		A	R	-	-
Starter, power requirement at firing speed		A	R	-	-
Recommended battery capacity	Lead-acid	Ah/20h	R	450	450
	NiCd	Ah/5h	R	240	240
Firing speed		1/min	R	80 - 120	80 - 120
Coolant pre-heating					
Preheating temperature (min.)		°C	R	32	32
Heater performance		kW	R	9	9

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Coolant system, Engine coolant circuit					
Coolant temperature (at engine outlet to cooling equipment)		°C	A	100	100
Coolant temperature after engine, alarm		°C	R	102	102
Coolant temperature after engine, shutdown		°C	L	104	104
Coolant antifreeze content, max. permissible		%	L	50	50
Cooling equipment: coolant flow rate		m^3/h	A	56	56
Coolant pump: inlet pressure, min.		bar	L	0.5	0.5
Coolant pump: inlet pressure, max.		bar	L	1.5	1.5
Pressure loss in off-engine cooling system, max. permissible		bar	L	0.7	0.7
Cooling equipment: height above engine max. permissible		m	L	15	15
Cooling equipment: design pressure		bar	A	2.5	2.5
Coolant system, Charge-air coolant circuit					
Coolant temperature before intercooler (engine inlet)		°C	A	55	55
Coolant antifreeze content, max. permissible		%	L	50	50
Cooling equipment: coolant flow rate		m^3/h	A	30	30
Pressure loss in off-engine cooling system max. permissible		bar	L	0.7	0.7
Cooling equipment: height above engine max. permissible		m	L	15	15
Cooling equipment: design pressure max. permissible		bar	A	2.5	2.5
Combustion air					
Combustion air volume flow		m^3/s	R	1.8	1.6
Intake air depression	new filter	mbar	A	15	15
	limit value	mbar	L	50	50
Fuel system					
Fuel supply flow, max.		l/min	R	12	12
Fuel temperature, max.		°C	L	55	55
Fuel pressure at supply connection on engine, max. admissible		bar	L	1.5	1.5
Fuel pressure at supply connection on engine, min. admissible		bar	L	-0.1	-0.1
Exhaust system					
Exhaust volume flow		m^3/s	R	4.5	4.0
Exhaust temperature after turbocharger		°C	R	440	430
Exhaust backpressure limit value		mbar	L	85	85
General operating data					
Recommended minimum continuous load		%	R	20	20
Engine mass moment of inertia, with standard flywheel		kgm^2	R	19.95	19.95
Noise emission					
(Free-field sound pressure level, 1m distance)					
Engine surface noise		dB(A)	R	103	102
Exhaust noise, unsilenced		dB(A)	R	113	111

A = Design value; G = Guarenteed value; R = Guideline value
L = Limit value, up to which the engine can be operated w/o change
- = Data not available; * = Estimated or projected values

Reference conditions

	Standard	Power available up to
Intake air temperature	25°C	40°C
Site altitude above sea level	100 m	400 m

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