

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
Bore / Stroke	170 / 210 mm	Injection system	Common Rail System with electronically controlled high-pressure injection through single injection pumps
Displacement, total	57.2 Liter	Control / Monitoring	Electronic engine management system "ADEC"
Number of cylinders	12	Number of turbo chargers	4
Cylinder configuration	V - 90°	Number of intercooler	1
Compression ratio	16.5 : 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	mbar	A	15	15
Intake air depression new filter 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 = Guaranteed 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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