
Gas groups

The maintenance intervals also depend on the quality of the combustion gases.

The combustion gasses are divided into three groups according to their wear properties, for which the different normal maintenance plans are valid, also see Technical Bulletin 0199 - 99 - 3017.

Gas group 1

Natural gas

Marsh gas

Liquid gas - propane, butane, LNG (liquid natural gas)

Crude oil gas

Gases with a hydrogen content $H_2 > 30$ vol%, e.g. coke oven gas

Gas group 2

Sewage gas

Landfill gas

Wood gas

Other bio-gases

Maintenance schedule

Valid for:	Engine type:	V12 and V16 engines
	Speed:	$n = 1000 \text{ min}^{-1}$ (50 Hz applications)
	Combustion gas :	Gas group 1
	Performance abbreviations	ICN
	Type of application:	Current generators

Maintenance measures

as specified	E10	E20	E40	E45	E50	E55	E60	E70	Description	
	1x after 300 oh	every 24 hours (daily)	after every 4000 oh	after every 12000 oh	after every 16000 oh	after every 48000 oh	after every 32000 oh	after every 64000 oh		
									In accordance with Technical Bulletin 0199 - 99 - 2105	Gas engines - lubricating oil Lube oil analysis, lube oil change, etc.
									In accordance with Technical Bulletin 0199 - 99 - 2091	Engine coolant Engine coolant analysis, engine coolant change, etc.
									In accordance with Technical Bulletin 0199 - 99 - 2116	Engine corrosion protection Engine corrosion protection, etc.
									as required	Renew intake air cleaner - when low pressure limit value is reached (note maintenance indicator) - if damaged (leakage) - after 4000 oh at the latest
									as required	Clean the engine
									as required	Replace or recondition the starter
									Monthly	Test run, if the engine was not run in operational readiness within a month
									every 4 months	Carry out a gas analysis (according to Technical Bulletin 0199 - 99 - 3017)
									every 6 months	Check engine coolant (according to Technical Bulletin 0199 - 99 - 2091)
									every 6 months	Check pressure drop of the gas filter
									every 12 months	Check regulating devices, pressure setting and impermeability of the gas control process
									every 12 months	Replace gas filter insert
									After every 24 months	Replace engine coolant
									After maintenance work	Run-in the engine (after e.g. replacing pistons, cylinder liners, etc.)
									According to manufacturer specifications	Service the generator

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	1x after 300 oh	every 24 hours (daily)	after every 4000 oh	after every 12000 oh	after every 16000 oh	after every 48000 oh	after every 32000 oh	after every 64000 oh		
									According to manufacturer specifications	Service the clutch
									According to manufacturer specifications	Service spring elements (underframe)
x			x		x		x	x		Renew lube oil filter cartridge - when given number of operating hours is reached - if the TEM system gives a warning that the differential pressure is too great
x			x		x		x	x		Renew lube oil fine filter cartridge - when given number of operating hours is reached - when the pressure gauge is in the red area
	x		x		x		x	x		Test and function run
	x		x		x					Check and set inlet and exhaust valve clearance
	x		x		x					Check valve lag (cylinder head fitted)
	x				x		x	x		Clean or replace the dirt screen of the compressed air passageway of the starter
		x								Visual inspection of the system
			x		x					Service crankcase breather (model Dynapure)
							x	x		Overhaul crankcase breather (model Dynapure)
			x		x		x	x		Replace spark plugs
			x		x		x	x		Check ignition time
			x		x		x	x		Auxiliary units test by TEM system
				x						Check, clean turbocharger - Observe manufacturer's documentation
						x				Overhaul the exhaust gas turbocharger - Observe manufacturer's documentation
					x					Check combustion chambers with endoscope
					x		x	x		Check engine mounting
					x		x	x		Check speed governor linkage
					x		x	x		Replace rod ends for speed controller linkage
					x		x	x		Check compressor bypass (actuator and connectors)
					x		x	x		Check waste gate (actuator and connectors)
					x		x	x		Check starter pinion and gear rim on the flywheel
					x					Check mixture cooler (using a bore scope)
							x	x		Clean mixture cooler
					x					Check the flame filter (cylinder head mounted)

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	1x after 300 oh	every 24 hours (daily)	after every 4000 oh	after every 12000 oh	after every 16000 oh	after every 48000 oh	after every 32000 oh	after every 64000 oh	
							x	x	Clean or renew flame filter
					x				Renew main bearing No. 6 (V12) or No. 8 (V16)
							x	x	Replace base bearing and thrust bearing
					x		x		Cleaning the gas-air mixer
								x	Overhauling the gas-air mixer
							x		Check rubber compensators
								x	Renew rubber compensators
							x		Check electric cabling, cable set plug and sensor system
							x		Check crankshaft axial clearance
							x		Check camshaft, axial clearance
							x	x	Renew torsional vibration damper
							x	x	Check vibration dampers, hoses and flexible lines
							x	x	Check vibration dampers and flexible lines of the compressor bypass
							x	x	Check fittings and control units on engine side
							x	x	Check the strong-back, collar rest and water chambers
							x	x	Renew or overhaul cylinder heads
							x	x	Renew cylinder liners
							x	x	Check crankshaft web deflector
								x	Measure crankshaft lifting journal, polish
							x		Check small end bushings
							x	x	Renew big end bearing
							x		Replace the connecting rod pin bolts
							x		Check piston bolt
								x	Renew piston bolt
							x	x	Renew piston rings
							x		Check the piston
								x	Renew pistons (complete)
								x	Check valve tappet
								x	Renew valve tappet
							x	x	Check camshaft
							x		Renew camshaft bearing, camshaft axial bearing
								x	Check and clean valve train (complete)

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	1x after 300 oh	every 24 hours (daily)	after every 4000 oh	after every 12000 oh	after every 16000 oh	after every 48000 oh	after every 32000 oh	after every 64000 oh	
								x	Renew connecting rods
								x	Check and clean gear drive
								x	Replace lubricating oil filter (screen insert)
								x	Renew lubricating oil pump
								x	Renew lubricating oil pressure limiting valve
								x	Renew exhaust gas compensators
								x	Recondition actuator