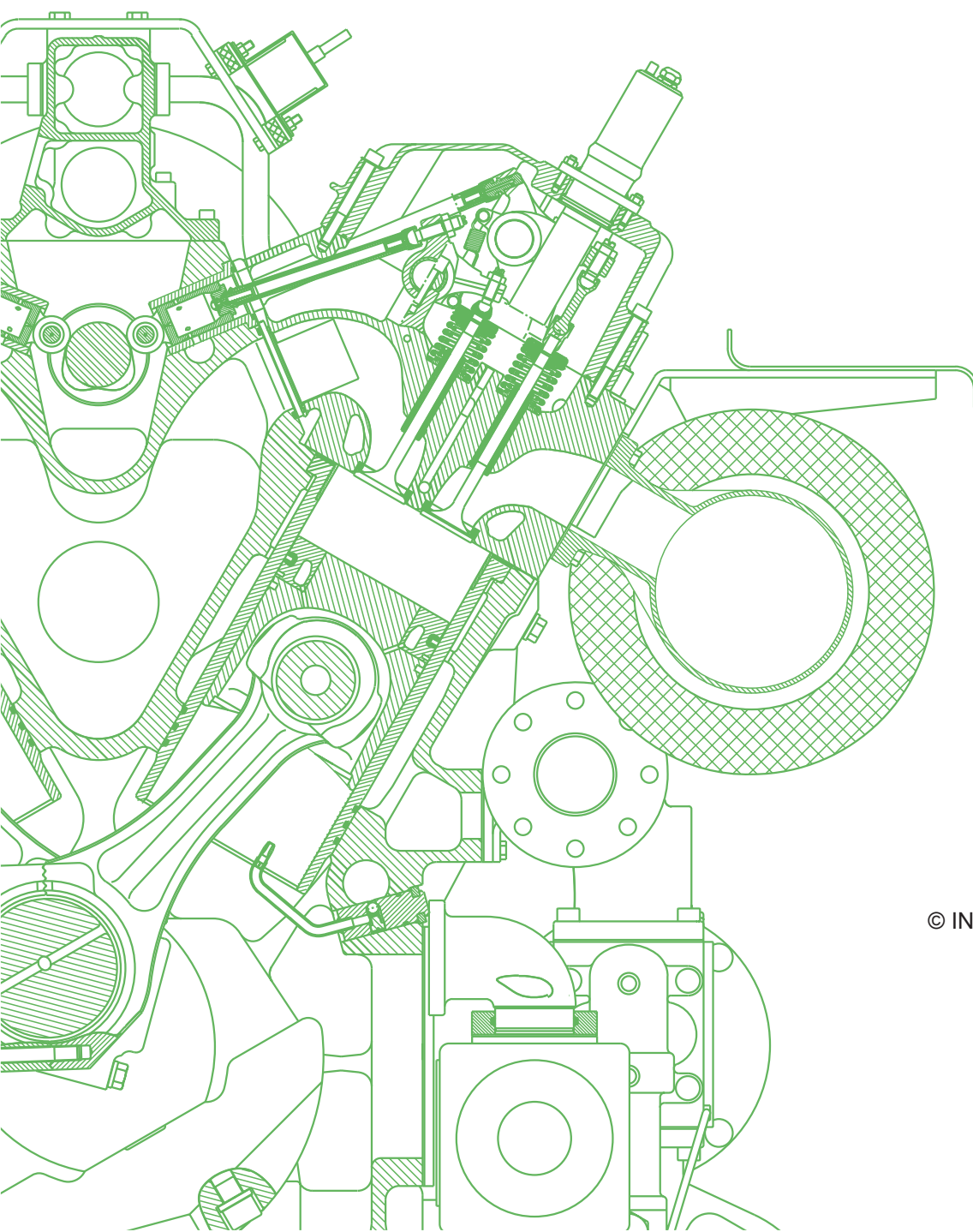




Standard Maintenance schedule A Type J616-J620



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Maintenance instruction highlighted in green

The maintenance instructions highlighted in green in the maintenance schedule are plant-specific and are incorporated into the customer-specific maintenance schedule according to engine type and version.

Maintenance instruction highlighted in blue

The maintenance work highlighted in blue in the maintenance plan only applies to engines with gearboxes.

Revision history

Index	Date	Description / Revision summary	Expert <i>Auditor</i>
1	02.09.2019	First issue	Technology <i>Technology</i>

The target recipients of this document are:

Service Partners, commissioning partners, subsidiaries/branches, Jenbach location

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**Note to warranty claims:**

Complying with TA 1100-0113 ensures a safe, quick and proper execution of every maintenance task.

The risk assessment to be performed by the plant operator and the official and quasi-official safety rules and laws may give rise to acceptance tests, inspections and maintenance operations which are not included in the Maintenance Plan. The operator is responsible for implementing and enforcing these additional measures.

The maintenance intervals are based on empirical values during average types of operation while fully complying with the manufacturer's operating and maintenance instructions. In individual cases, the operating conditions and other factors relating to wear may affect the actual amount of maintenance required. The manufacturer therefore reserves the right to specify different maintenance intervals where appropriate.

NOTE**Damage to the engine**

Damage to the engine may result if the intervals in the maintenance schedule are not followed precisely. Observe intervals related to the condition and starts, or intervals not to the operating hours.

The maintenance instructions highlighted in colour in the maintenance schedule are plant-specific and are incorporated into the customer-specific maintenance schedule according to engine type and version.

inspect	Wear parts and tolerances will be evaluated by INNIO and / or a company selected and authorized by INNIO, and may be changed as required as part of preventive maintenance. Seals require replacement due to disassembly of components for inspection.
replace	Indicates a scheduled preventive part exchange based on operating hours, time or starts.
overhaul	Parts will be disassembled, overhauled (cleaned, wear parts changed etc.) and assembled again.
c (condition-based)	The inspect-, replace-, and overhaul interval is condition based.
s (start-dependent)	The inspect-, replace-, and overhaul interval is start dependent.
t (time-dependent)	The inspect-, replace-, and overhaul interval is time dependent.
z (Thermal cycle)	The inspection, replacement or overhaul interval depends on the thermal cycle. A thermal cycle is defined as heating up to operating temperature and then cooling down to a defined temperature for the component in question. If the operating temperature is reached again before cooling down to below the limit temperature has taken place, there is no thermal cycle.
K	This activity is to be carried out by the customer, INNIO or a company selected and authorised by INNIO to carry out this work.
INNIO	This activity is to be carried out by INNIO or a company selected by INNIO authorised to carry out this work.
WA	Reference for the maintenance instruction.
I	A maintenance instruction which contains only inspection working tasks.
W	A maintenance instruction which contains only replacement / overhaul working tasks.
IW	A maintenance instruction which contains inspection and replacement / overhaul working tasks.
Oh	Operating hours



The line in the maintenance plan after the maintenance <100 Oh is shown as thicker. This line marks the difference between one-off intervals or intervals not related to operating hours, and intervals which have to be repeated after a certain number of operating hours.

The detailed **description of the time-, start- and condition-based intervals** can be found in the chapter maintenance interval in the respective **maintenance instruction**.

If a maintenance step depends on two different factors, for example operating hours and starts, the maintenance step need only be carried out once when a limit value is reached. After the maintenance step has been carried out, both limit values start counting again from the beginning.

Arbeitsschritte

c- Condition-dependent

t- Time-dependent

s- Start-dependent

[illegible]

Arbeitsschritte

		c	t	s	< 100 Oh	every 1.000 Oh	1,000 Oh	2,000 Oh	4,000 Oh	6,000 Oh	8,000 Oh	10,000 Oh	12,000 Oh	14,000 Oh	16,000 Oh	18,000 Oh	20,000 Oh	22,000 Oh	24,000 Oh	26,000 Oh	28,000 Oh	30,000 Oh	31,000 Oh	32,000 Oh	34,000 Oh	36,000 Oh	38,000 Oh	40,000 Oh	42,000 Oh	44,000 Oh	46,000 Oh	48,000 Oh	50,000 Oh	52,000 Oh	54,000 Oh	56,000 Oh	58,000 Oh	60,000 Oh	80,000 Oh			
⇒ Tightening the bolted joints	IW 8040 A0		■																																							
Surge arrester	IW 8047 A0																																									
⇒ Checking the surge arrester			■																																							
Overvoltage deflector	IW 8048 A0																																									
⇒ Checking the overvoltage deflector			■																																							
Cylinder pressure sensor	IW 8058 A0																																									
⇒ Replacing the cylinder pressure sensor (on type 6 engines only)			■														■											■												■		
⇒ Checking the electrical connections of the cylinder pressure sensor								■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Condensate removal in the fuel gas system	IW 8090 A0																																									
⇒ Manual condensate drain: Drain off condensate		■																																								
⇒ Automatic condensate removal: Check for leaks			■					■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Exhaust gas system condensate drain line	IW 8095 A0																																									
⇒ Inspecting the condensate drain line in the exhaust gas system		■																																								
Generator	W 8034 A0																																									
⇒ Relubricating the bearing(s)		■				■																																				
⇒ Measuring the insulation/polarisation		■										■					■					■							■						■				■			
⇒ Daily check			■																																							
⇒ Overhauling the generator				■																																				■		
⇒ Inspecting and cleaning the generator												■					■					■						■						■				■				
⇒ Carrying out a vibration measurement and replacing the earth brush (if fitted)												■					■					■						■						■				■				
⇒ Replacing the bearing(s)																	■												■											■		
Generator	W 8035 A0																																									
⇒ Relubricating the bearing(s)		■				■																																				
⇒ Measuring the insulation/polarisation		■										■					■					■							■						■				■			
⇒ Daily check			■																																							
⇒ Overhauling the generator				■																																				■		
⇒ Inspecting and cleaning the generator												■					■					■						■						■				■				
⇒ Carrying out a vibration measurement and replacing the earth brush (if fitted)												■					■					■						■						■				■				
⇒ Replacing the bearing(s)																	■												■											■		
Generator	W 8037 A0																																									
⇒ Relubricating the bearing(s)		■						■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
⇒ Measuring the insulation/polarisation		■										■					■					■							■						■				■			

Arbeitsschritte

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		c- Condition-dependent			t- Time-dependent			s- Start-dependent																																		
		c	t	s	< 100 Oh	every 1.000 Oh	1,000 Oh	2,000 Oh	4,000 Oh	6,000 Oh	8,000 Oh	10,000 Oh	12,000 Oh	14,000 Oh	16,000 Oh	18,000 Oh	20,000 Oh	22,000 Oh	24,000 Oh	26,000 Oh	28,000 Oh	30,000 Oh	31,000 Oh	32,000 Oh	34,000 Oh	36,000 Oh	38,000 Oh	40,000 Oh	42,000 Oh	44,000 Oh	46,000 Oh	48,000 Oh	50,000 Oh	52,000 Oh	54,000 Oh	56,000 Oh	58,000 Oh	60,000 Oh	80,000 Oh			
⇒ Replacing the bearing(s)	W 8037 A0	■															■												■											■		
⇒ Daily check			■																																				■			
⇒ Overhauling the generator				■																																			■			
⇒ Inspecting and cleaning the generator													■					■					■						■						■				■			
⇒ Carrying out a vibration measurement and replacing the earth brush (if fitted)													■					■					■						■						■				■			
Plate heat exchanger	W 8043 A0																																									
⇒ Replace the O-rings and rubber seals		■	■																																				■			
⇒ Overhauling the plate heat exchanger																																								■		
Gas train	W 8045 A0																																									
⇒ Inspect the gas filter and replace if necessary			■						■		■		■		■		■		■		■			■		■		■		■		■		■		■		■				
⇒ Overhauling the gas train			■																																				■			
⇒ Replacing the gas filter										■			■			■			■				■			■			■			■			■				■			
⇒ Inspecting the gas train												■					■					■						■						■				■				
⇒ Overhauling the gas pressure controller/gas regulator																						■							■									■				
⇒ Overhauling the prechamber differential pressure controller																						■																■				
⇒ Overhauling the zero pressure controller (optional)																						■																	■			
Flat-bed cooler	W 8065 A0																																									
⇒ Inspecting the fan power unit			■																																							
⇒ Inspecting the fan bearing			■																																							
⇒ Inspecting the fans			■																																							
⇒ Inspecting the fan blades			■																																							
Activated carbon adsorber	W 8074 A0																																									
⇒ Flushing the activated carbon adsorber		■																																								
⇒ Checking the activated carbon mass		■																																								
⇒ Emptying and filling the activated carbon		■																																								
Cooling water	W 8080 A0																																									
⇒ Cooling water analysis		■	■					■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			
⇒ Replacing the cooling water		■																																								
⇒ Checking the water pressure			■																																							
⇒ Replacing O-rings			■															■										■											■			
⇒ Replace hoses			■															■										■											■			
Humidity sensor	W 8048 A4																																									
⇒ Calibrating the EE330 humidity sensor, part no. 674941		■	■																																							
⇒ Replacing the PMA humidity sensor, part no. 9028765			■																																							

Arbeitsschritte

c- Condition-dependent

t- Time-dependent

s- Start-dependent

		c- Condition-dependent t- Time-dependent s- Start-dependent																																										
		c	t	s	< 100 Oh	every 1.000 Oh	1,000 Oh	2,000 Oh	4,000 Oh	6,000 Oh	8,000 Oh	10,000 Oh	12,000 Oh	14,000 Oh	16,000 Oh	18,000 Oh	20,000 Oh	22,000 Oh	24,000 Oh	26,000 Oh	28,000 Oh	30,000 Oh	31,000 Oh	32,000 Oh	34,000 Oh	36,000 Oh	38,000 Oh	40,000 Oh	42,000 Oh	44,000 Oh	46,000 Oh	48,000 Oh	50,000 Oh	52,000 Oh	54,000 Oh	56,000 Oh	58,000 Oh	60,000 Oh	80,000 Oh					
⇒ Replacing the EE220 humidity sensor tip, part no. 1243222	W 8048 A4		■																																									
	IW 8040 A6																																											
⇒ Replace filter cartridges		■						■	■	■	■	■	■	■	■	■	■		■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			
⇒ Replace rubber buffers			■															■											■												■			
Intake air filter	IW 8041 A6																																											
⇒ Replacing the filter pockets		■						■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Gearbox	IW 8071 A6																																											
⇒ Inspecting the engine/gearbox flexible coupling		■							■		■		■		■		■		■		■			■		■		■		■		■		■		■		■		■		■		
⇒ Inspect oil level			■																																									
⇒ Change the oil and replace the oil filter insert			■							■		■		■		■		■		■		■			■		■		■		■		■		■		■		■		■		■	
⇒ Carrying out a gear oil analysis (optional)			■						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
⇒ Changing the rubber elements of the flexible coupling			■															■											■												■			
⇒ Replacing the rubber rails of the engine and generator			■															■											■												■			
⇒ Checking the tightening torques										■		■		■		■		■		■		■			■		■		■		■		■		■		■		■		■		■	
⇒ Torque-resistant coupling – inspect generator/gearbox										■		■		■		■		■		■		■			■		■		■		■		■		■		■		■		■		■	
Flexibly-mounted coupling housing and engine mounting		IW 8079 A6																																										
⇒ Replace rubber elements on the coupling housing			■	■														■										■													■			
⇒ Replace rubber coupling element			■	■														■										■													■			
⇒ Replace the rubber rails of the engine and generator			■																			■																			■			
⇒ Measure the axial offset										■		■		■		■		■		■		■			■		■		■		■		■		■		■		■		■		■	
⇒ Inspect the rubber rails of the engine and generator																		■											■													■		
Scavenging air fans	IW 8083 A6																																											
⇒ Draining off the condensate manually		■																																										
⇒ Inspecting the motor cooling ribs			■							■		■		■		■		■		■		■			■		■		■		■		■		■		■		■		■		■	
⇒ Inspecting the impeller blades			■								■				■				■				■			■			■				■				■			■			■	
Engine cooling water pump	W 0203 A6																																											
⇒ Relubricating the bearings (only for pumps with grease nipples)										■		■		■		■		■		■		■			■		■		■		■		■		■		■		■		■		■	
⇒ Replacing the mechanical seal													■					■					■					■						■						■		■		
⇒ Overhauling the engine cooling water pump																							■																		■			
Camshaft/valve timing gear	IW 8052 M0																																											
⇒ Examining the camshaft and valve timing gear (only on Type 6 engines)		■																																										
⇒ Inspecting the camshaft																																										■		
⇒ Replacing roller tappets or cup tappets																																										■		

Arbeitsschritte

c- Condition-dependent

t- Time-dependent

s- Start-dependent

		c	t	s	< 100 Oh	every 1.000 Oh	1,000 Oh	2,000 Oh	4,000 Oh	6,000 Oh	8,000 Oh	10,000 Oh	12,000 Oh	14,000 Oh	16,000 Oh	18,000 Oh	20,000 Oh	22,000 Oh	24,000 Oh	26,000 Oh	28,000 Oh	30,000 Oh	31,000 Oh	32,000 Oh	34,000 Oh	36,000 Oh	38,000 Oh	40,000 Oh	42,000 Oh	44,000 Oh	46,000 Oh	48,000 Oh	50,000 Oh	52,000 Oh	54,000 Oh	56,000 Oh	58,000 Oh	60,000 Oh	80,000 Oh	
Condition-dependent																																								
Time-dependent																																								
Start-dependent																																								
Combustion chamber	IW 8056 M0																																							
⇒ Inspecting and cleaning the combustion chamber																																								
⇒ Checking the fuel gas quality, in particular the silicon content for landfill gas engines																																								
⇒ Checking the oil consumption																																								
⇒ Check for oil ingress into the engine due to a faulty blow-by filter and inspect the intake line for "Oil wetness"																																								
NOx	IW 8057 M0																																							
⇒ Measure NOx value and if necessary adjust LEANOX setting																																								
⇒ Replacing the NOx sensor (if present)																																								
Ignition	W 0303 M0																																							
⇒ Cleaning the pick-ups																																								
⇒ Replacing the spark plug connector gasket																																								
⇒ Inspecting the ignition system																																								
Vibration damper	W 0601 M0																																							
⇒ Replacing the vibration damper																																								
Gas quantity controller	W 0705 M0																																							
⇒ Replacing the sealing rings																																								
⇒ Cleaning the gas quantity controller																																								
⇒ Replacing the gas quantity controller																																								
Mixture bypass valve	W 0802 M0																																							
⇒ Mixture bypass valve – replacement																																								
Revision	W 2100 M0																																							
⇒ Replacing the rubber rails of the engine and generator																																								
⇒ Replacing the camshaft																																								
⇒ Inspecting the crankshaft																																								
⇒ Inspecting the crankcase																																								
⇒ Inspecting the gear train																																								
⇒ Inspecting the cylinder heads																																								
⇒ Replacing piston, piston rings and piston pins																																								
⇒ Replacing a cylinder liner																																								
⇒ Replacing the crankshaft main bearings/crankshaft thrust bearings																																								
⇒ Replacing big-end bearing shells																																								
⇒ Replacing the vibration damper																																								
Exhaust-gas turbocharger	W 8023 M0																																							

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[illegible]

Arbeitsschritte

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⇒ Replacing O-rings	IW 0101 M6		■														■											■												■			
⇒ Replace hoses			■														■											■													■		
Inter cooler - float vent	IW 8074 M6																																										
⇒ Checking the float vent for ease of movement									■		■		■		■		■		■		■			■		■		■		■		■		■		■		■		■			
Control rod assembly, throttle valve, actuator	W 0200 M6																																										
⇒ Inspecting and relubricating the control rod assembly			■					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
⇒ Replacing the O-rings			■	■													■											■													■		
⇒ Replacing the throttle valve bearing, throttle valve, throttle valve shaft and related adjusting lever				■													■											■													■		
⇒ Replacing and lubricating the joint head												■					■					■						■						■						■			
⇒ Replacing the regulator and related adjusting lever																						■																		■			
Valve clearance	W 0400 M6																																										
⇒ Measure and document the valve stem projection		■						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
⇒ Check and adjust valve lash								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Prechamber/prechamber gas valve	W 0501 M6																																										
⇒ Replacing the sealing ring and O-rings		■	■																																								
⇒ Replacing the prechamber gas valve				■						■			■			■			■			■					■			■			■				■				■		
⇒ Inspect the prechamber and the spark-plug sleeve				■						■			■			■			■			■					■			■			■				■				■		
⇒ Replace prechamber (6 hole, 8-hole version)				■								■					■					■							■							■					■		
⇒ Inspecting the spark-plug sleeve				■								■					■					■							■						■						■		
Spark-plug sleeve	W 0502 M6																																										
⇒ Replacing the spark plug sleeve and O-rings												■					■					■						■						■						■			
Gas mixer	W 0705 M6																																										
⇒ Replace circuit board.																	■											■													■		
⇒ Replacing the actuator motor																						■																			■		
⇒ Overhauling the gas mixer																						■																			■		
Exhaust-gas turbocharger	W 8026 M6																																										
⇒ Inspecting the compressor side of the exhaust gas turbocharger		■																																									
⇒ Overhauling the exhaust-gas turbocharger		■	■	■													■												■												■		
⇒ Replacing the exhaust gas turbocharger		■																																								■	
⇒ Replacing the exhaust gas turbocharger		■																																								■	
⇒ Replacing O-rings			■														■												■													■	
Oil filter cartridge	W 8038 M6																																										
⇒ Changing the oil filter insert		■							■		■		■		■		■		■		■			■		■		■		■		■		■		■		■		■		■	
⇒ Changing the oil filter insert		■								■		■			■				■				■				■			■			■			■				■			
⇒ Replacing O-rings		■	■																																								

Arbeitsschritte

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		c	t	s	< 100 Oh	every 1.000 Oh	1,000 Oh	2,000 Oh	4,000 Oh	6,000 Oh	8,000 Oh	10,000 Oh	12,000 Oh	14,000 Oh	16,000 Oh	18,000 Oh	20,000 Oh	22,000 Oh	24,000 Oh	26,000 Oh	28,000 Oh	30,000 Oh	31,000 Oh	32,000 Oh	34,000 Oh	36,000 Oh	38,000 Oh	40,000 Oh	42,000 Oh	44,000 Oh	46,000 Oh	48,000 Oh	50,000 Oh	52,000 Oh	54,000 Oh	56,000 Oh	58,000 Oh	60,000 Oh	80,000 Oh						
Lubricating oil pump	W 8046 M6																																												
⇒ Replacing O-rings			■														■												■												■				
⇒ Changing the lubricating pump																						■																			■				
Replace the crankshaft main bearings and thrust bearings	W 8050 M6																																												
⇒ Replace crankshaft main bearings				■																		■																			■				
⇒ Replace crankshaft thrust bearings				■																		■																			■				
Cylinder head	W 8053 M6																																												
⇒ Replace the cylinder head with a new or overhauled cylinder head		■		■																		■																				■			
⇒ Replace the cylinder head with a new or overhauled cylinder head		■																				■																				■			
⇒ Replacing the rocker cover moulded gasket			■									■						■				■							■							■						■			
⇒ Replacing the O-rings on the cylinder head			■																			■																				■			
⇒ Tightening the nuts on the prechamber retaining bracket								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Crankshaft thrust bearing	W 8060 M6																																												
⇒ Replacing the crankshaft thrust bearing												■						■				■							■								■					■			
Safety valve	-----																																												
⇒ Inspect safety valve		■	■																																										
Gas and smoke alarm system	-----																																												
⇒ Inspect gas and smoke alarm system		■	■																																										
Gas compressor	-----																																												
⇒ Servicing the gas compressor		■																																											