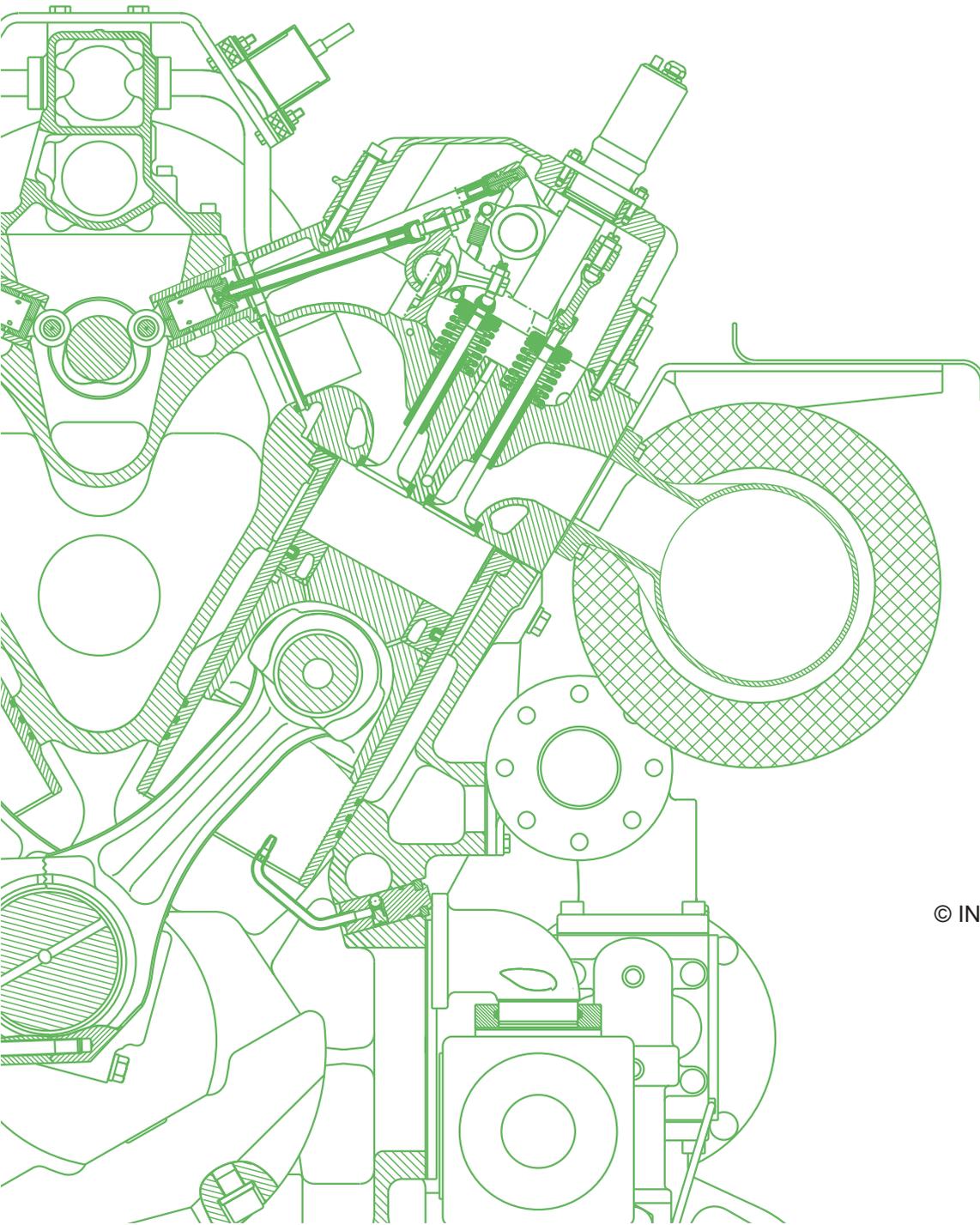




Standard Maintenance schedule A Type J612



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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 yellow

The maintenance work highlighted in yellow in the maintenance plan only applies for the J612 with mean effective pressure ≥ 22 bar.

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 Auditor
1	02.09.2019	First issue	Technology Technology

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

		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		
Daily inspection	I 9003 0		■																																						
⇒ Inspecting the system			■																																						
Leak test	IW 8049 0		■																																						
⇒ Carrying out the leak test			■																																						
Inspection	I 0103 6																																								
⇒ Checking engine connection in myPlant								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
⇒ Inspecting the exhaust gas/water heat exchanger								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
⇒ Measuring the pre-combustion chamber gas differential pressure								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
⇒ Recording the flexible coupling housing data									■	■		■		■		■		■		■		■		■		■		■		■		■		■		■		■		■	
⇒ Thermal reactor - measuring the differential pressure									■	■		■		■		■		■		■		■		■		■		■		■		■		■		■		■		■	
⇒ Inspecting the mixture/water heat exchanger												■					■					■																		■	
⇒ Inspecting the flame traps in the intercooler												■					■					■																		■	
⇒ Inspecting the blow-by pipe flame traps												■					■					■																		■	
Maintenance after initial commissioning	W 1000 6																																								
⇒ Checking the ignition voltage					■																																				
⇒ Inspecting the gas filter					■																																				
⇒ Inspecting the flexibly-mounted coupling housing					■																																				
⇒ Inspecting the gas compressor					■																																				
⇒ Changing the gearbox oil					■																																				
⇒ Checking the thermal reactor (optional)					■																																				
⇒ Lubricating the control rod linkage					■																																				
⇒ Checking the electrical connections of the cylinder pressure sensor					■																																				
Surge arrester in the Junction Box	IW 8029 A0																																								
⇒ Checking and cleaning the surge arrester			■																																						
⇒ Measuring capacitance			■																																						
⇒ Replacing the unit			■																																						
Jenbacher Control cabinet	IW 8031 A0																																								
⇒ Replace the rubber buffer and filter mat			■																																						
⇒ Inspect and clean filter fan including filter mat								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
⇒ Inspect and clean the interior of the control cabinet																																									
⇒ Inspect and clean the cooling device for the control cabinet																																									
Container	IW 8040 A0																																								
⇒ Replacing the container intake air filter			■																																						
⇒ Checking the louvre shutters				■																																					

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

		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			■																																							
⇒ Replace filter cartridges		■						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
⇒ Replace rubber buffers			■														■																								■	
Intake air filter																																										
⇒ Replacing the filter pockets		■						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Gearbox																																										
⇒ 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																																										
⇒ 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																																										
⇒ Draining off the condensate manually		■																																								
⇒ Inspecting the motor cooling ribs			■					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
⇒ Inspecting the impeller blades			■																																							
Engine cooling water pump																																										
⇒ Relubricating the bearings (only for pumps with grease nipples)								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
⇒ Replacing the mechanical seal																							■																	■		
⇒ Overhauling the engine cooling water pump																							■																	■		
Camshaft/valve timing gear																																										
⇒ 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			
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				■								■					■																									
⇒ 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			■																																							

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					
⇒ Change the lubricating oil	IW 0101 M6	■																																										
⇒ Replacing O-rings			■														■																											
⇒ 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		■								■		■			■		■			■		■		■		■		■		■		■		■		■		■		■		■		

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				
⇒ Changing the oil filter insert	W 8038 M6		■								■			■			■			■			■			■			■			■			■			■			■			
⇒ Replacing O-rings			■	■																																								
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			■																																									