

Service, Wärtsilä Nederland B.V.

Engine section	Engine type	Ref.	Date	Issue	Document No.	Page
99 Service information	D616	Service	03.07.2008	01	SN616/99/7001	1(1) + encl.

D616 Maintenance schedules / maintenance parts

Engine manual ref. Chapter 'Maintenance schedules'

General

For business activities it is necessary to make fast offers to our customers. For this purpose lists with spare parts numbers and corresponding ETL – pages have been added to the available maintenance schedules.

This information is indicative!



As soon as the order is assigned, it is absolutely necessary to check if the indicative parts can be used for a specific engine of the client, by using 'Depic' to find the right engine configuration, by filling in the right engine number.

Recommendation

In the enclosure you will find indicative information regarding maintenance schedules and maintenance parts.

Ordering parts

According the standard ordering procedure as described in the engine specific parts catalogue.

Applies to

All D616 engines.

Letter distribution

The Wärtsilä Service Network.

Feedback

E-mail to: service.sales.nl@wartsila.com

Letter validity

Until further notice.

Enclosure

Maintenance schedules / maintenance parts D616

Disclaimer

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Maintenance schedules/ maintenance parts D616

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A1

E10	once in special cases
E20	daily
E23	after every 250 h
E25	after every 500 h
E30	after every 1500 h
E40	after every 3000 h
E50	after every 6000 h
E60	after every 12,000 h
E70	after every 24,000 h

A2

E10	once in special cases
E20	daily
E23	after every 250 h
E25	after every 500 h
E30	after every 1500 h
E40	after every 3000 h
E50	after every 6000 h
E60	after every 9000 h
E70	after every 18,000 h

B

E10	once in special cases
E20	daily
E23	after every 250 h
E25	after every 500 h
E30	after every 1500 h
E40	after every 3000 h
E60	after every 6000 h
E70	after every 12,000 h

C

E10	once in special cases
E20	daily
E23	after every 250 h
E25	after every 500 h
E30	after every 1000 h
E60	after every 3000 h
E70	after every 6000 h

A1

SCFN, MCFN (speed max. 1,800 min⁻¹).
 Area of application:
 Blocked useful power for unlimited continuous operation.
 Type of application:
 Work boats, tugs, push boats, fishing boats,
 passenger ships, ferries, harbour boats, water pumps,
 bow thrust propeller, compressors and fire extinguisher pumps.

A2

SCFN, MCFN (speed max. 2,100 min⁻¹).
 Area of application:
 Blocked useful power for unlimited continuous operation.
 Type of application:
 Work boats, tugs, push boats, fishing boats,
 passenger ships, ferries, harbour boats, water pumps,
 bow thrust propeller, compressors and fire extinguisher pumps.

B

SCFN, MCFN (speed max. 2165 min⁻¹).
 Area of application:
 Blocked useful power for continuous operation.
 Type of application:
 Fast passenger ships, ferries and hydrofoils.

C

SFN, MFN (speed max. 2235 min⁻¹).
 Area of application:
 Blocked useful power for time limited operation.
 Type of application:
 Patrol boats and speed boats.

D

E10	once in special cases
E20	daily
E23	after every 250 h
E30	after every 500 h
E50	after every 1500 h
E60	after every 3000 h
E70	after every 6000 h

G

E23	after every 250 h
E25	after every 500 h
E30	after every 1500 h
E40	after every 3000 h
E50	after every 6000 h
E60	after every 12.000 h
E70	after every 24.000 h

D

SFN, MFN (speed max. 2,300 min⁻¹).

Area of application:

Blocked useful performance as maximum performance.

Type of application:

Fast patrol boats and yachts.

G

ICXN, MCXN (speed 1500/1800 min⁻¹)

Area of application:

Continuous operation unrestricted in time

Type of application:

Marine gensets and CPP


Performance Groups D616

Ship Main propulsion

Application		Ship						
Description for field of application and examples		Continuous operation unrestricted in time (fuel stop at 100% of load) For working boats, e.g.: Tug boats and pusher tugs, supply boats, fishing boats (trawler), river and sea freight vessels, passenger ships, ferries and harbour boats. $A1 \leq 1800/\text{min}$				Continuous operation restricted in time For high - speed boats, e.g.: Fast passenger ships, Police customs and patrol boats, crew boats, catamarans with seasonal passenger service, yachts and gliders, Fast yachts, fast patrol boats, fast naval crafts.		
				$A2 > 1000/\text{min}$				
Power category		A1		A2		B	C	D
Stand. reference conditions acc. to ISO 3046 - 1		Air temperature / charge - air coolant inlet temperature / air pressure / rel. air humidity 25°C / 50° C / 1000 mbar \ 100 m Höhe / 30%						
Rating codes acc. to ISO 3046 - 7		SCFN				SCFN	SFN	SFN
Engine speed	n (1/min)	1500	1650	1800	2100	2165	2235	2300
V 8	P_r (kW) $p_{r,ref}$ (bar)	320 14,81	365 15,15	407 15,49	480 15,86	552 17,45	607 18,60	662 19,72
V 12	P_r (kW) $p_{r,ref}$ (bar)	480 14,01	547 15,15	610 15,48	720 15,00	880 18,14	946 19,33	1030 20,45
V 16	P_r (kW) $p_{r,ref}$ (bar)	640 14,81	730 15,15	814 15,49	980 15,86	1135 17,98	1250 19,13	1360 20,25
Stand. reference conditions acc. to ISO 3046 - 1		Air temperature / charge - air coolant inlet temperature / air pressure / rel. air humidity 45°C / 50° C / 1000 mbar \ 100 m Höhe / 60%						
Rating codes acc. to ISO 3046 - 7		SCFN				SCFN	SFN	SFN
Engine speed	n (1/min)	1500	1650	1800	2100	2165	2235	2300
V 8	P_r (kW) $p_{r,ref}$ (bar)	312 14,25	366 14,77	307 15,10	488 15,27	538 17,02	582 18,13	645 19,21
V 12	P_r (kW) $p_{r,ref}$ (bar)	488 14,25	533 14,77	596 15,09	702 15,27	839 17,89	922 18,85	1005 19,96
V 16	P_r (kW) $p_{r,ref}$ (bar)	624 14,25	712 14,77	794 15,10	936 15,27	1107 17,51	1217 18,88	1325 19,73

The performance group can be found at the test bed protocol or at the rating shield of the engine; see examples.



 DEUTZ AG Werk - Mannheim	Testbed - Results for engine
ISO - power SCFN 339 kW 2165 1/min at site power kW 1/min	Barometric 1006 mbar Ambient air temp. 24 °C

Wärtsilä Maintenance & service schedules		Executed by
E10	After commissioning and after E60 & E70.	Technicians
E20	Daily check.	
E23	Periodic maintenance (small scope).	
E25	Periodic maintenance (small scope).	
E30	Periodic maintenance (small scope).	
E40	Periodic maintenance (medium scope).	
E50	Periodic maintenance (extended scope).	Authorized specialists
E60	Intermediate overhaul.	
E70	Major overhaul.	

Definition of activities in the maintenance schedule	
Adjust	Adjust torques, dimensions, pressures etc.; extra work may be necessary to renew parts.
Drain water	Drain condensed water for example.
Renew	Renew parts, assembly groups and liquids.
Recondition	Machine material within the set tolerances to reinstate a nominal condition.
Check	Check acc. the criteria in the Job Card. Rejection of the part, if not all criteria are fulfilled.
Clean	Cleaning by hand or machine, renewal of cleaning parts (e.g. air filters) may be necessary.
Visual Inspection	Visual inspection according to Job Card. Rejection of the part, if not all criteria are fulfilled.
Overhaul	Check assembly groups, rework or renew parts.
Maintain	Maintain according to Job Card. Checking of functions; reworking or renewal of parts may be necessary.
Change	Change lubricating oil for example.

Cleaning should be done more frequently if increased contamination prevails.

Checking means: Visual inspection or dimensional check, adjustment, reconditioning or replacement may be necessary.

Note: In special situations of engine application the maintenance interval can be shorter!

E23	E25	E30	E40	E50	E60	E70	Maintenance schedule A1	
after every 250 oh	after every 500 oh	after every 1,500 oh	after every 3,000 oh	after every 6,000 oh	after every 12,000 oh	after every 24,000 oh	Periodic maintenance jobs	Job card
x	x	x	x	x	x	x	Maintain the battery	B 13-4-1
x	x	x	x	x	x	x	Maintain the centrifugal lube oil filter ³⁾	B 8-13-1
x	x	x	x	x	x	x	Clean the vacuum limiter ⁴⁾	B 6-3-4
x	x	x	x	x	x	x	Lubricating oil change ^{1) 2)} (engine without centrifugal lube oil filter)	B 8-1-2
	x	x	x	x	x	x	Lubricating oil change ^{1) 2)} (engine with centrifugal lube oil filter)	B 8-1-2
	x	x	x	x	x	x	Renew lube oil filter cartridge	B 8-10-4
	x	x	x	x	x	x	Maintain the duplex fuel filter	B 7-10-1
	x	x	x	x	x	x	Check engine shutdown	B 11-0-1
	x	x	x				Check V-belts	B 12-2-1
				x	x	x	Renew V-belt	B 12-2-1
			x	x			Check and set inlet and exhaust valve clearance	B 1-1-1
			x	x	x	x	Check the injection valve	B 7-7-3
			x	x			Visually inspect arched denture clutch ⁵⁾	B 7-4-16
			x				Check the cooling water pump	B 9-7-11
				x			Check the untreated water pump, Steimel	B 9-7-13
					x	x	Renew arched denture clutch ⁵⁾	W 7-4-6
				x	x	x	Renew the cooling water pump	W 9-7-8
					x	x	Renew the untreated water pump	W 9-7-10
				x	x	x	Check compression	W 0-2-6
					x	x	Overhaul or renew cylinder heads	W 1-4-2
				x			Clean the turbocharger	MD
				x			Check turbocharger bearing clearance	MD
					x	x	Overhaul the turbocharger	MD
				x			Check the charge air cooler	W 6-4-5
					x	x	Clean the charge air cooler	W 6-4-3
					x		Check cylinder liners	W 0-2-7
						x	Renew the cylinder liners	W 3-3-3
					x		Check injection pump drive	W 7-4-12
						x	Overhaul or renew injection pump drive	W 7-4-7
					x		Check pistons (piston bolt, piston rings)	W 2-9-3
						x	Renew pistons (piston bolt, piston rings)	W 2-9-3
					x	x	Water-cooled exhaust pipe, check liquid chambers ⁶⁾	W 6-1-3
					x	x	Clean the plate heat exchanger	W 9-10-4
					x	x	Clean the lubricating oil cooler	W 8-8-2
					x	x	Renew the oil pressure control valve	W 8-11-3
					x	x	Renew the by-pass valve	W 8-11-5
					x	x	Renew the thermostat cartridges	W 9-8-2
					x	x	Renew hose pipes, vibration dampers and flexible lines	W 0-3-4
					x	x	Renew injection lines	W 7-3-3
					x	x	Overhaul fuel pump	W 7-11-4
					x	x	Renew check valve in the leak fuel system	W 7-3-5
					x	x	Renew connecting rod bearing	W 2-5-1
					x	x	Check connecting rod geometry	W 2-3-5
					x	x	Overhaul injection pump	MD
					x	x	Overhaul dynamo	MD
						x	Check coolant chambers	W 9-0-3

E23	E25	E30	E40	E50	E60	E70	Maintenance schedule A1	
after every 250 oh	after every 500 oh	after every 1,500 oh	after every 3,000 oh	after every 6,000 oh	after every 12,000 oh	after every 24,000 oh	Periodic maintenance jobs	Job card
						x	Renew rotary vibration dampers	W 12-1-4
						x	Renew rocker arms, valve bridges	W 1-2-2
						x	Check elastic suspension	MD
						x	Check elastic coupling	MD
						x	Renew main bearing	W 2-7-2
						x	Renew crankcase bleed valve	W 3-1-10
						x	Check crankshaft	W 2-1-7
						x	Renew camshaft and valve lifter	W 4-5-1
						x	Renew camshaft bearing	W 4-1-1
						x	Renew camshaft axial bearing	W 3-8-1
						x	Renew mass compensation shaft bearing	W 2-8-1
						x	Check push rods or valve tappets	W 4-2-1
						x	Check intermediate gear wheel and bearing bush of the untreated water pump	W 9-7-6
						x	Check intermediate gear wheels and bearing bush of the coolant pump	W 9-7-5
						x	Check lubricating oil pump	W 8-4-5
						x	Renew cooler cap	
						x	Renew crankshaft sealing ring (drive side)	W 2-2-2
						x	Renew crankshaft sealing ring (free side)	W 2-2-4
						x	Overhaul starter	MD
						x	Check solenoid valve(s)	MD
						x	Electric sensors, solenoids	MD
							Other connected parts	MD

- 1) Observe the operating media specifications in chapter 4, Operating Media.
- 2) Change annually if the operating hours are not reached.
- 3) Clean annually if the operating hours are not reached.
- 4) The vacuum limiter must also be cleaned when the maintenance indicator is "RED".
- 5) V16 engines only
- 6) If installed.

MD: Manufacturer Documents

E23	E25	E30	E40	E50	E60	E70	Maintenance schedule A2	Jobcard
after every 250 oh	after every 500 oh	after every 1,500 oh	after every 3,000 oh	after every 6,000 oh	after every 9,000 oh	after every 18,000 oh	Periodic maintenance jobs	Jobcard
x	x	x	x	x	x	x	Maintain the battery	B 13-4-1
x	x	x	x	x	x	x	Maintain the centrifugal lube oil filter ³⁾	B 8-13-1
x	x	x	x	x	x	x	Clean the vacuum limiter ⁴⁾	B 6-3-4
x	x	x	x	x	x	x	Lubricating oil change ^{1) 2)} (engine without centrifugal lube oil filter)	B 8-1-2
	x	x	x	x	x	x	Lubricating oil change ^{1) 2)} (engine with centrifugal lube oil filter)	B 8-1-2
	x	x	x	x	x	x	Renew lube oil filter cartridge	B 8-10-4
	x	x	x	x	x	x	Maintain the duplex fuel filter	B 7-10-1
	x	x	x	x	x	x	Check engine shutdown	B 11-0-1
	x	x	x				Check V-belts	B 12-2-1
				x	x	x	Renew V-belt	B 12-2-1
		x	x	x			Check and set inlet and exhaust valve clearance	B 1-1-1
		x	x	x	x	x	Check the injection valve	B 7-7-3
			x	x			Visually inspect arched denture clutch ⁵⁾	B 7-4-16
			x				Check the cooling water pump	B 9-7-11
			x	x			Check the untreated water pump, Steimel	B 9-7-13
					x	x	Renew arched denture clutch ⁵⁾	W 7-4-6
				x	x	x	Renew the cooling water pump	W 9-7-8
					x	x	Renew the untreated water pump	W 9-7-10
				x	x	x	Check compression	W 0-2-6
					x	x	Overhaul or renew cylinder heads	W 1-4-2
				x			Clean the turbocharger	MD
				x			Check turbocharger bearing clearance	MD
					x	x	Overhaul the exhaust gas turbocharger	MD
				x			Check the charge air cooler	W 6-4-5
					x	x	Clean the charge air cooler	W 6-4-3
					x		Check cylinder liners	W 0-2-7
						x	Renew the cylinder liners	W 3-3-3
					x		Check injection pump drive	W 7-4-12
						x	Overhaul or renew injection pump drive	W 7-4-7
					x		Check pistons (piston bolt, piston rings)	W 2-9-3
						x	Renew pistons (piston bolt, piston rings)	W 2-9-3
					x	x	Water-cooled exhaust pipe, check liquid chambers ⁶⁾	W 6-1-3
					x	x	Clean the plate heat exchanger	W 9-10-4
					x	x	Clean the lube oil cooler	W 8-8-2
					x	x	Renew the oil pressure control valve	W 8-11-3
					x	x	Renew the by-pass valve	W 8-11-5
					x	x	Renew the thermostat cartridges	W 9-8-2
					x	x	Renew hose pipes, vibration dampers and flexible lines	W 0-3-4
					x	x	Renew injection lines	W 7-3-3
					x	x	Overhaul fuel pump	W 7-11-4
					x	x	Renew check valve in the leak fuel system	W 7-3-5
					x	x	Renew connecting rod bearing	W 2-5-1
					x	x	Check connecting rod geometry	W 2-3-5
					x	x	Overhaul injection pump	MD
					x	x	Overhaul dynamo	MD
						x	Check coolant chambers	W 9-0-3

E23	E25	E30	E40	E50	E60	E70	Maintenance schedule A2	
after every 250 oh	after every 500 oh	after every 1,500 oh	after every 3,000 oh	after every 6,000 oh	after every 9,000 oh	after every 18,000 oh	Periodic maintenance jobs	Jobcard
						x	Renew rotary vibration dampers	W 12-1-4
						x	Renew rocker arms, valve bridges	W 1-2-2
						x	Check elastic suspension	MD
						x	Check elastic coupling	MD
						x	Renew main bearing	W 2-7-2
						x	Renew crankcase bleed valve	W 3-1-10
						x	Check crankshaft	W 2-1-7
						x	Renew camshaft and valve lifter	W 4-5-1
						x	Renew camshaft bearing	W 4-1-1
						x	Renew camshaft axial bearing	W 3-8-1
						x	Renew mass compensation shaft bearing	W 2-8-1
						x	Check push rods or valve tappets	W 4-2-1
						x	Check intermediate gear wheel and bearing bush of the untreated water pump	W 9-7-6
						x	Check intermediate gear wheels and bearing bush of the coolant pump	W 9-7-5
						x	Check lubricating oil pump	W 8-4-5
						x	Renew cooler cap	
						x	Renew crankshaft sealing ring (drive side)	W 2-2-2
						x	Renew crankshaft sealing ring (free side)	W 2-2-4
						x	Overhaul starter	MD
						x	Check solenoid valve(s)	MD
						x	Electric sensors, solenoids	MD
							Other connected parts	MD

- 1) Observe the operating media specifications in chapter 4, Operating Media.
- 2) Change annually if the operating hours are not reached.
- 3) Clean annually if the operating hours are not reached.
- 4) The vacuum limiter must also be cleaned when the maintenance indicator is "RED".
- 5) V16 engines only
- 6) If installed.

MD: Manufacturer Documents

E23	E25	E30	E40	E60	E70	Maintenance schedule B	
after every 250 oh	after every 500 oh	after every 1,500 oh	after every 3,000 oh	after every 6,000 oh	after every 12,000 oh	Periodic maintenance jobs	Jobcard
x	x	x	x	x	x	Maintain the battery	B 13-4-1
x	x	x	x	x	x	Maintain the centrifugal lube oil filter ³⁾	B 8-13-1
x	x	x	x	x	x	Clean the vacuum limiter ⁴⁾	B 6-3-4
x	x	x	x	x	x	Lubricating oil change ^{1) 2)} (engine without centrifugal lube oil filter)	B 8-1-2
	x	x	x	x	x	Lubricating oil change ^{1) 2)} (engine with centrifugal lube oil filter)	B 8-1-2
	x	x	x	x	x	Renew lube oil filter cartridge	B 8-10-4
	x	x	x	x	x	Maintain the duplex fuel filter	B 7-10-1
	x	x	x	x	x	Check engine shutdown	B 11-0-1
	x	x	x			Check V-belts	B 12-2-1
				x	x	Renew V-belt	B 12-2-1
x	x					Check the untreated water pump impeller	B 9-7-7
		x	x			Renew the untreated water pump impeller	B 9-7-7
		x	x			Check and set inlet and exhaust valve clearance	B 1-1-1
		x	x	x	x	Check the injection valve	B 7-7-3
			x			Visually inspect arched denture clutch ⁵⁾	B 7-4-16
			x			Check the cooling water pump	B 9-7-11
			x			Check the untreated water pump	B 9-7-13
				x	x	Renew arched denture clutch ⁵⁾	W 7-4-6
				x	x	Renew the cooling water pump	W 9-7-8
				x	x	Renew the untreated water pump	W 9-7-10
				x	x	Check compression	W 0-2-6
				x	x	Overhaul or renew cylinder heads	W 1-4-2
						Clean the turbocharger	MD
						Check turbocharger bearing clearance	MD
				x	x	Overhaul the exhaust gas turbocharger	MD
						Check the charge air cooler	W 6-4-5
				x	x	Clean the charge air cooler	W 6-4-3
				x		Check cylinder liners	W 0-2-7
					x	Renew the cylinder liners	W 3-3-3
				x		Check injection pump drive	W 7-4-12
					x	Overhaul or renew injection pump drive	W 7-4-7
				x		Check pistons (piston bolt, piston rings)	W 2-9-3
					x	Renew pistons (piston bolt, piston rings)	W 2-9-3
				x	x	Water-cooled exhaust pipe, check liquid chambers ⁶⁾	W 6-1-3
				x	x	Clean the plate heat exchanger	W 9-10-4
				x	x	Clean the lube oil cooler	W 8-8-2
				x	x	Renew the oil pressure control valve	W 8-11-3
				x	x	Renew the by-pass valve	W 8-11-5
				x	x	Renew the thermostat cartridges	W 9-8-2
				x	x	Renew hose pipes, vibration dampers and flexible lines	W 0-3-4
				x	x	Renew injection lines	W 7-3-3
				x	x	Overhaul fuel pump	W 7-11-4
				x	x	Renew check valve in the leak fuel system	W 7-3-5
				x	x	Renew connecting rod bearing	W 2-5-1
				x	x	Check connecting rod geometry	W 2-3-5
				x	x	Overhaul injection pump	MD

E23	E25	E30	E40	E60	E70	Maintenance schedule B	
after every 250 oh	after every 500 oh	after every 1,500 oh	after every 3,000 oh	after every 6,000 oh	after every 12,000 oh	Periodic maintenance jobs	Jobcard
				x	x	Overhaul dynamo	MD
					x	Check coolant chambers	W 9-0-3
					x	Renew rotary vibration dampers	W 12-1-4
					x	Renew rocker arms, valve bridges	W 1-2-2
					x	Check elastic suspension	MD
					x	Check elastic coupling	MD
					x	Renew main bearing	W 2-7-2
					x	Renew crankcase bleed valve	W 3-1-10
					x	Check crankshaft	W 2-1-7
					x	Renew camshaft and valve lifter	W 4-5-1
					x	Renew camshaft bearing	W 4-1-1
					x	Renew camshaft axial bearing	W 3-8-1
					x	Renew mass compensation shaft bearing	W 2-8-1
					x	Check push rods or valve tappets	W 4-2-1
					x	Check intermediate gear wheel and bearing bush of the untreated water pump	W 9-7-6
					x	Check intermediate gear wheels and bearing bush of the coolant pump	W 9-7-5
					x	Check lubricating oil pump	W 8-4-5
					x	Renew cooler cap	
					x	Renew crankshaft sealing ring (drive side)	W 2-2-2
					x	Renew crankshaft sealing ring (free side)	W 2-2-4
					x	Overhaul starter	MD
					x	Check solenoid valve(s)	MD
					x	Electric sensors, solenoids	MD
						Other connected parts	MD

- 1) Observe the operating media specifications in chapter 4, Operating Media.
 - 2) Change annually if the operating hours are not reached.
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 - 6) If installed.
- MD: Manufacturer Documents

E23	E25	E30	E60	E70	Maintenance schedule C	
after every 250 oh	after every 500 oh	after every 1,000 oh	after every 3,000 oh	after every 6,000 oh	Periodic maintenance jobs	Jobcard
x	x	x			Check the untreated water pump impeller	B 9-7-7
x	x	x	x	x	Maintain the battery	B 13-4-1
x	x	x	x	x	Maintain the centrifugal lube oil filter ³⁾	B 8-13-1
x	x	x	x	x	Clean the vacuum limiter ⁴⁾	B 6-3-4
x	x	x	x	x	Lubricating oil change ^{1) 2)} (engine without centrifugal lube oil filter)	B 8-1-2
	x	x	x	x	Lubricating oil change ^{1) 2)} (engine with centrifugal lube oil filter)	B 8-1-2
	x	x	x	x	Renew lube oil filter cartridge	B 8-10-4
	x	x	x	x	Maintain the duplex fuel filter	B 7-10-1
	x	x	x	x	Check engine shutdown	B 11-0-1
	x	x			Check V-belts	B 12-2-1
			x	x	Renew V-belt	B 12-2-1
		x			Check and set inlet and exhaust valve clearance	B 1-1-1
		x	x	x	Check the injection valve	B 7-7-3
		x			Visually inspect arched denture clutch ⁵⁾	B 7-4-16
			x	x	Renew arched denture clutch ⁵⁾	W 7-4-6
			x	x	Renew the cooling water pump	W 9-7-8
			x	x	Renew the untreated water pump	W 9-7-10
			x	x	Check compression	W 0-2-6
			x	x	Overhaul or renew cylinder heads	W 1-4-2
			x	x	Overhaul the exhaust gas turbocharger	MD
			x	x	Clean the charge air cooler	W 6-4-3
			x		Check cylinder liners	W 0-2-7
			x	x	Renew the cylinder liners	W 3-3-3
			x	x	Overhaul or renew injection pump drive	W 7-4-7
			x	x	Renew pistons (piston bolt, piston rings)	W 2-9-3
			x	x	Water-cooled exhaust pipe, check liquid chambers ⁶⁾	W 6-1-3
			x	x	Clean the plate heat exchanger	W 9-10-4
			x	x	Clean the lube oil cooler	W 8-8-2
			x	x	Renew the oil pressure control valve	W 8-11-3
			x	x	Renew the by-pass valve	W 8-11-5
			x	x	Renew the thermostat cartridges	W 9-8-2
			x	x	Renew hose pipes, vibration dampers and flexible lines	W 0-3-4
			x	x	Renew injection lines	W 7-3-3
			x	x	Overhaul fuel pump	W 7-11-4
			x	x	Renew check valve in the leak fuel system	W 7-3-5
			x	x	Renew connecting rod bearing	W 2-5-1
			x	x	Check connecting rod geometry	W 2-3-5
			x	x	Overhaul injection pump	MD
			x	x	Overhaul dynamo	MD
			x	x	Renew rocker arms, valve bridges	W 1-2-2
			x	x	Check elastic suspension	MD
			x	x	Renew rotary vibration dampers	W 12-1-4
			x	x	Check elastic coupling	MD
				x	Renew main bearing	W 2-7-2
				x	Renew crankcase bleed valve	W 3-1-10
				x	Check crankshaft	W 2-1-7

E23	E25	E30	E60	E70	Maintenance schedule C	
after every 250 oh	after every 500 oh	after every 1,000 oh	after every 3,000 oh	after every 6,000 oh	Periodic maintenance jobs	Jobcard
				x	Renew camshaft and valve lifter	W 4-5-1
				x	Renew camshaft bearing	W 4-1-1
				x	Renew camshaft axial bearing	W 3-8-1
				x	Renew mass compensation shaft bearing	W 2-8-1
				x	Check push rods or valve tappets	W 4-2-1
				x	Check intermediate gear wheel and bearing bush of the untreated water pump	W 9-7-6
				x	Check intermediate gear wheels and bearing bush of the coolant pump	W 9-7-5
				x	Check lubricating oil pump	W 8-4-5
				x	Renew cooler cap	
				x	Renew crankshaft sealing ring (drive side)	W 2-2-2
				x	Renew crankshaft sealing ring (free side)	W 2-2-4
				x	Overhaul starter	MD
				x	Check solenoid valve(s)	MD
				x	Electric sensors, solenoids	MD
					Other connected parts	MD

- 1) Observe the operating media specifications in chapter 4, Operating Media.
 - 2) Change annually if the operating hours are not reached.
 - 3) Clean annually if the operating hours are not reached.
 - 4) The vacuum limiter must also be cleaned when the maintenance indicator is "RED".
 - 5) V16 engines only
 - 6) If installed.
- MD: Manufacturer Documents

E23	E30	E50	E60	E70	Maintenance schedule D	
after every 250 oh	after every 500 oh	after every 1,500 oh	after every 3,000 oh	after every 6,000 oh	Periodic maintenance jobs	Jobcard
x	x				Check the untreated water pump impeller	B 9-7-7
		x			Renew the untreated water pump impeller	B 9-7-7
x	x	x	x	x	Maintain the battery	B 13-4-1
x	x	x	x	x	Maintain the centrifugal lube oil filter ³⁾	B 8-13-1
x	x	x	x	x	Clean the vacuum limiter ⁴⁾	B 6-3-4
x	x	x	x	x	Lubricating oil change ^{1) 2)} (engine without centrifugal lube oil filter)	B 8-1-2
	x	x	x	x	Lubricating oil change ^{1) 2)} (engine with centrifugal lube oil filter)	B 8-1-2
	x	x	x	x	Renew lube oil filter cartridge	B 8-10-4
	x	x	x	x	Maintain the duplex fuel filter	B 7-10-1
	x	x	x	x	Check engine shutdown	B 11-0-1
	x				Check V-belts	B 12-2-1
		x	x	x	Renew V-belt	B 12-2-1
	x	x			Check and set inlet and exhaust valve clearance	B 1-1-1
		x	x	x	Check the injection valve	B 7-7-3
	x	x			Visually inspect arched denture clutch ⁵⁾	B 7-4-16
		x			Check the cooling water pump	B 9-7-11
		x			Check the untreated water pump, Steimel	B 9-7-13
			x	x	Renew arched denture clutch ⁵⁾	W 7-4-6
		x	x	x	Renew the cooling water pump	W 9-7-8
			x	x	Renew the untreated water pump	W 9-7-10
		x	x	x	Check compression	W 0-2-6
			x	x	Overhaul or renew cylinder heads	W 1-4-2
		x			Clean the turbocharger	MD
		x			Check turbocharger bearing clearance	MD
			x	x	Overhaul the exhaust gas turbocharger	MD
		x			Check the charge air cooler	W 6-4-5
			x	x	Clean the charge air cooler	W 6-4-3
				x	Renew the cylinder liners	W 3-3-3
				x	Overhaul or renew injection pump drive	W 7-4-7
				x	Renew pistons (piston bolt, piston rings)	W 2-9-3
			x	x	Water-cooled exhaust pipe, check liquid chambers ⁶⁾	W 6-1-3
			x	x	Clean the plate heat exchanger	W 9-10-4
			x	x	Clean the lube oil cooler	W 8-8-2
			x	x	Renew the oil pressure control valve	W 8-11-3
			x	x	Renew the by-pass valve	W 8-11-5
			x	x	Renew the thermostat cartridges	W 9-8-2
			x	x	Renew hose pipes, vibration dampers and flexible lines	W 0-3-4
			x	x	Renew injection lines	W 7-3-3
			x	x	Overhaul fuel pump	W 7-11-4
			x	x	Renew check valve in the leak fuel system	W 7-3-5
			x	x	Renew connecting rod bearing	W 2-5-1
			x	x	Check connecting rod geometry	W 2-3-5
			x	x	Overhaul injection pump	MD
			x	x	Overhaul dynamo	MD
			x	x	Check coolant chambers	W 9-0-3
			x	x	Renew rotary vibration dampers	W 12-1-4

E23	E30	E50	E60	E70	Maintenance schedule D	
after every 250 oh	after every 500 oh	after every 1,500 oh	after every 3,000 oh	after every 6,000 oh	Periodic maintenance jobs	Jobcard
			x	x	Renew rocker arms, valve bridges	W 1-2-2
			x	x	Check elastic suspension	MD
			x	x	Check elastic coupling	MD
				x	Renew main bearing	W 2-7-2
				x	Renew crankcase bleed valve	W 3-1-10
				x	Check crankshaft	W 2-1-7
				x	Renew camshaft and valve lifter	W 4-5-1
				x	Renew camshaft bearing	W 4-1-1
				x	Renew camshaft axial bearing	W 3-8-1
				x	Check push rods or valve tappets	W 4-2-1
				x	Check intermediate gear wheel and bearing bush of the untreated water pump	W 9-7-6
				x	Check intermediate gear wheels and bearing bush of the coolant pump	W 9-7-5
				x	Check lubricating oil pump	W 8-4-5
				x	Renew cooler cap	
				x	Renew crankshaft sealing ring (drive side)	W 2-2-2
				x	Renew crankshaft sealing ring (free side)	W 2-2-4
				x	Overhaul starter	MD
				x	Check solenoid valve(s)	MD
				x	Electric sensors, solenoids	MD
					Other connected parts	MD

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- MD: Manufacturer Documents

E23	E25	E30	E40	E50	E60	E70	Maintenance schedule G	Jobcard
after every 250 oh	after every 500 oh	after every 1,500 oh	after every 3,000 oh	after every 6,000 oh	after every 12,000 oh	after every 24,000 oh	Periodic maintenance jobs	Jobcard
x	x	x	x	x	x	x	Maintain the battery	B 13-4-1
x	x	x	x	x	x	x	Maintain the centrifugal lube oil filter ³⁾	B 8-13-1
x	x	x	x	x	x	x	Clean the vacuum limiter ⁴⁾	B 6-3-4
x	x	x	x	x	x	x	Lubricating oil change ^{1) 2)} (engine without centrifugal lube oil filter)	B 8-1-2
	x	x	x	x	x	x	Lubricating oil change ^{1) 2)} (engine with centrifugal lube oil filter)	B 8-1-2
	x	x	x	x	x	x	Renew lube oil filter cartridge	B 8-10-4
	x	x	x	x	x	x	Maintain the duplex fuel filter	B 7-10-1
	x	x	x	x	x	x	Check engine shutdown	B 11-0-1
	x	x	x				Check V-belts	B 12-2-1
				x	x	x	Renew V-belt	B 12-2-1
			x	x			Check and set inlet and exhaust valve clearance	B 1-1-1
			x	x	x	x	Check the injection valve	B 7-7-3
			x	x			Visually inspect arched denture clutch ⁵⁾	B 7-4-16
			x				Check the cooling water pump	B 9-7-11
				x			Check the untreated water pump, Steimel	B 9-7-13
					x	x	Renew arched denture clutch ⁵⁾	W 7-4-6
				x	x	x	Renew the cooling water pump	W 9-7-8
					x	x	Renew the untreated water pump	W 9-7-10
				x	x	x	Check compression	W 0-2-6
					x	x	Overhaul or renew cylinder heads	W 1-4-2
				x			Clean the turbocharger	MD
				x			Check turbocharger bearing clearance	MD
					x	x	Overhaul the exhaust gas turbocharger	MD
				x			Check the charge air cooler	W 6-4-5
					x	x	Clean the charge air cooler	W 6-4-3
					x		Check cylinder liners	W 0-2-7
						x	Renew the cylinder liners	W 3-3-3
					x		Check injection pump drive	W 7-4-12
						x	Overhaul or renew injection pump drive	W 7-4-7
					x		Check pistons (piston bolt, piston rings)	W 2-9-3
						x	Renew pistons (piston bolt, piston rings)	W 2-9-3
					x	x	Water-cooled exhaust pipe, check liquid chambers ⁶⁾	W 6-1-3
					x	x	Clean the plate heat exchanger	W 9-10-4
					x	x	Clean the lube oil cooler	W 8-8-2
					x	x	Renew the oil pressure control valve	W 8-11-3
					x	x	Renew the by-pass valve	W 8-11-5
					x	x	Renew the thermostat cartridges	W 9-8-2
					x	x	Renew hose pipes, vibration dampers and flexible lines	W 0-3-4
					x	x	Renew injection lines	W 7-3-3
					x	x	Overhaul fuel pump	W 7-11-4
					x	x	Renew check valve in the leak fuel system	W 7-3-5
					x	x	Renew connecting rod bearing	W 2-5-1
					x	x	Check connecting rod geometry	W 2-3-5
					x	x	Overhaul injection pump	MD
					x	x	Overhaul dynamo	MD
						x	Check coolant chambers	W 9-0-3

E23	E25	E30	E40	E50	E60	E70	Maintenance schedule G	
after every 250 oh	after every 500 oh	after every 1,500 oh	after every 3,000 oh	after every 6,000 oh	after every 12,000 oh	after every 24,000 oh	Periodic maintenance jobs	Jobcard
						x	Renew rotary vibration dampers	W 12-1-4
						x	Renew rocker arms, valve bridges	W 1-2-2
						x	Check elastic suspension	MD
						x	Check elastic coupling	MD
						x	Renew main bearing	W 2-7-2
						x	Renew crankcase bleed valve	W 3-1-10
						x	Check crankshaft	W 2-1-7
						x	Renew camshaft and valve lifter	W 4-5-1
						x	Renew camshaft bearing	W 4-1-1
						x	Renew camshaft axial bearing	W 3-8-1
						x	Renew mass compensation shaft bearing	W 2-8-1
						x	Check push rods or valve tappets	W 4-2-1
						x	Check intermediate gear wheel and bearing bush of the untreated water pump	W 9-7-6
						x	Check intermediate gear wheels and bearing bush of the coolant pump	W 9-7-5
						x	Check lubricating oil pump	W 8-4-5
						x	Renew cooler cap	
						x	Renew crankshaft sealing ring (drive side)	W 2-2-2
						x	Renew crankshaft sealing ring (free side)	W 2-2-4
						x	Overhaul starter	MD
						x	Check solenoid valve(s)	MD
						x	Electric sensors, solenoids	MD
							Other connected parts	MD

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MD: Manufacturer Documents

TBD616V8	CG	Description	Material no	ETL	POS	8 cyl "A1"	8 cyl "A2"	8 cyl "B"	8 cyl "C"	8 cyl "D"	
Oil pan	02	SEALING RING	DZ01118718	0509 4912	1	1	1	1	1	1	E10
Cylinder head	08	SEALING RING	DZ01118654	0509 5122	5	16	16	16	16	16	E10
	08	GASKET	DZ12277677	0509 5122	2	8	8	8	8	8	E10
Lube oil filter / cooler	15	FILTER CARTRIDGE	DZ12276605	0509 4792	1	1	1	1	1	1	E10
Oil pan	02	SEALING RING	DZ01118718	0509 4912	3	1	1	1	1	1	E23
Cylinder head	08	SEALING RING	DZ01118654	0509 5122	5	16	16	16			E40
	08	GASKET	DZ12277677	0509 5122	2	8	8	8			E40
Injector	19	O-SEAL	DZ01212509	0509 5010	4	16	16	16			E40
	19	O-SEAL	DZ01153878	0509 5526	5	8	8	8			E40
	19	O-SEAL	DZ01153884	0509 5526	6	8	8	8			E40
	19	SEALING RING	DZ12313327	0509 5526	7	8	8	8			E40
Fuel filter	20	FILTER	DZ01174422	0509 1688	2	1	1	1			E40
Suction pipe / Air cleaner	22	PAPER CARTRIDGE	DZ02165059	0509 1045	2	2	2	2			E40
Injector	19	NOZZLE ELEMENT	DZ01319792	0509 5526	14	8	8			8	E50
	19	O-SEAL	DZ0115 3867	0509 5071	6	16	16			16	E50
Suction pipe / Air cleaner	22	PAPER CARTRIDGE	DZ02165059	0509 1045	2	2	2			2	E50
Dynamo / Starter motor	44	SET NARROW V-BELTS	DZ02235255	0503 2662	1	1	1			1	E50
Crankcase	01	TUBING CONNECTION	DZ12163475	0509 5139	7	2	2	2	2	2	E60
Oil pan	02	SCREW PLUG	DZ01118971	0509 4912	2	1	1	1	1	1	E60
	02	O-SEAL	DZ01165973	0509 4912	25	1	1	1	1	1	E60
	02	GASKET	DZ12276604	0509 4912	15	1	1	1	1	1	E60
Connecting rod	06	STRAIGHT PIN	DZ01115420	0509 4762	3	8	8	8	8	8	E60
	06	BIG END BOLT	DZ12161131	0509 4762	4	16	16	16	16	16	E60
	06	BIG END BEARING	DZ12276967	0509 4762	5	8	8	8	8	8	E60
Piston	07	PISTON RING SET	DZ12213242	0509 4763	8	2	2	2	2	2	E60

TBD616V8	CG	Description	Material no	ETL	POS	8 cyl "A1"	8 cyl "A2"	8 cyl "B"	8 cyl "C"	8 cyl "D"	
Cylinder head	08	O-SEAL	DZ01153857	0509 4980	12	16	16	16	16	16	E60
	08	O-SEAL	DZ01153872	0509 4980	5	8	8	8	8	8	E60
	08	COMPRESSION SPRING	DZ01222009	0509 4980	19	16	16	16	16	16	E60
	08	COMPRESSION SPRING	DZ01222051	0509 4980	18	16	16	16	16	16	E60
	08	VALVE GUIDE	DZ12160262	0509 0050	3	32	32	32	32	32	E60
	08	VALVE COLLET	DZ12164698	0509 4980	16	64	64	64	64	64	E60
	08	VALVE SEAT INSERT	DZ12188202	0509 4980	9	16	16	16	16	16	E60
	08	INLET VALVE CONE	DZ12275153	0509 4980	13	16	16	16	16	16	E60
	08	EXHAUST VALVE CONE	DZ12275154	0509 4980	14	16	16	16	16	16	E60
	08	VALVE SEAT INSERT	DZ12312207	0509 4980	8	16	16	16	16	16	E60
08	GUIDE BOLT	DZ12312898	0509 4980	22	16	16	16	16	16	E60	
Lube oil filter / cooler	15	SEALING RING	DZ01118748	0509 4809	14	1	1	1	1	1	E60
	15	FILTER CARTRIDGE	DZ12276605	0509 4792	1	1	1	1	1	1	E60
	15	BY-PASS COMPONENT	DZ12314523	0509 4809	12	1	1	1	1	1	E60
	15	OIL RESS. REG. VALVE	DZ12276218	0509 4809	15	1	1	1	1	1	E60
Injection pump	17	SEALING RING	DZ01118688	0509 5515	3	5	5	5	5	5	E60
	17	FUEL SUPPLY PUMP	DZ01319286	0509 5443	1	1	1	1	1	1	E60
	17	INJECTION PUMP	DZ12212170	0509 5279	1	1	1	1	1	1	E60
Injector	19	NOZZLE ELEMENT	DZ01319792	0509 5526	14	8	8	8	8	8	E60
	19	O-SEAL	DZ01153867	0509 5071	6	16	16	16	16	16	E60
	19	O-SEAL	DZ01153878	0509 5526	5	8	8	8	8	8	E60
	19	O-SEAL	DZ01153884	0509 5526	6	8	8	8	8	8	E60
	19	SEALING RING	DZ12313327	0509 5526	7	8	8	8	8	8	E60
Fuel filter	20	FILTER	DZ01175893	0509 1721	25	1	1	1	1	1	E60
	20	PIPE / LINE / LEAD	DZ12317437	0509 5013	8	2	2	2	2	2	E60
Fuel pipes	21	OVERFLOW VALVE	DZ01121514	0509 6081	37	1	1	1	1	1	E60
	21	FUEL SUPPLY PUMP	DZ0336 1757	0509 5543	50	1	1	1	1	1	E60
	21	HOSE ASSEMBLY	DZ12150752	0509 1983	1	3	3	3	3	3	E60
	21	INJECTION PIPE	DZ12276792	0509 4886	1	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276793	0509 4886	2	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276794	0509 4886	3	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276795	0509 4886	4	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276800	0509 4886	5	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276801	0509 4886	6	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276802	0509 4886	7	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276803	0509 4886	8	1	1	1	1	1	E60
	21	CAP	DZ12276833	0509 4886	20	8	8	8	8	8	E60

TBD616V8	CG	Description	Material no	ETL	POS	8 cyl "A1"	8 cyl "A2"	8 cyl "B"	8 cyl "C"	8 cyl "D"	
Suction pipe / Air cleaner	22	HOSE CLIP	DZ01151115	0509 1654	7	4	4	4	4	4	E60
	22	O-SEAL	DZ01153853	0509 1654	22	2	2	2	2	2	E60
	22	INSULATOR	DZ12154065	0509 5144	13	4	4	4	4	4	E60
	22	TUBING CONNECTION	DZ12163471	0509 1654	23	2	2	2	2	2	E60
	22	PAPER CARTRIDGE	DZ12189925	0509 5100	18	2	2	2	2	2	E60
	22	TUBING CONNECTION	DZ12277155	0509 5144	9	2	2	2	2	2	E60
Cooling water pump	37	CENTRIFUGAL PUMP	DZ15081817	0509 5394	1	1	1	1	1	1	E60
	37	O-SEAL	DZ01153598	0509 5394	19	1	1	1	1	1	E60
Cooling water pipes	38	TUBING CONNECTION	DZ01154139	0509 5607	16	2	2	2	2	2	E60
	38	CLIP	DZ01174171	0509 4967	8	4	4	4	4	4	E60
	38	O-SEAL	DZ01180134	0509 5117	6	1	1	1	1	1	E60
	38	O-SEAL	DZ01180135	0509 5117	7	1	1	1	1	1	E60
	38	CLIP	DZ12151678	0509 4968	27	4	4	4	4	4	E60
	38	TUBING CONNECTION	DZ12314041	0509 5607	6	2	2	2	2	2	E60
Turbocharger	43	REPAIR KIT	DZ01319121	0509 5162	2	2	2	2	2	2	E60
	43	CORE ASSEMBLY	DZ01319122	0509 5162	3	2	2	2	2	2	E60
	43	HOSE CLIP	DZ12151677	0509 5458	49	4	4	4	4	4	E60
	43	HOSE	DZ12188858	0509 5458	48	2	2	2	2	2	E60
	43	INSULATION	DZ12316711	0509 5135	1	2	2	2	2	2	E60
Dynamo / Starter moto	44	PROTECTING CAP	DZ01169030	0500 3725	1	2	2	2	2	2	E60
	44	STARTER	DZ01178721	0509 4210	1	1	1	1	1	1	E60
	44	GENERATOR	DZ03045097	0507 1230	950	1	1	1	1	1	E60
Electrical accessories	48	THERMOSTAT	DZ12272132	0509 2794	1	1	1	1	1	1	E60
	48	PRESSURE SWITCH	DZ12402757	0509 4192	1	1	1	1	1	1	E60
	48	RUBBER PROTECT. CAP	DZ12402758	0509 4194	1	2	2	2	2	2	E60
Charge air pipe	87	HOSE CLIP	DZ12151678	0509 5628	66	2	2	2	2	2	E60
	87	INSERT / ELEMENT	DZ12276553	0509 5411	14	2	2	2	2	2	E60
	87	AIR TUBE	DZ12312024	0509 5628	67	8	8	8	8	8	E60
	87	AIR TUBE	DZ12312025	0509 5628	68	2	2	2	2	2	E60
General	90	GASKET SET	DZ02929876	0509 5371	1	1	1	1	1	1	E60
	90	GASKET SET	DZ02929943	0509 5587	1	1	1	1	1	1	E60

TBD616V8	CG	Description	Material no	ETL	POS	8 cyl "A1"	8 cyl "A2"	8 cyl "B"	8 cyl "C"	8 cyl "D"	
Crankcase	01	HEXAGON BOLT	DZ01153796	0509 4787	6	20	20	20	20	20	E70
	01	O-SEAL	DZ01181871	0509 5139	11	2	2	2	2	2	E70
	01	PLAIN WASHER	DZ01154443	0509 4787	7	20	20	20	20	20	E70
	01	TUBING CONNECTION	DZ12163475	0509 5139	3	2	2	2	2	2	E70
	01	OIL SEPARATOR	DZ12270354	0509 5139	6	1	1	1	1	1	E70
	01	CYLINDER LINER	DZ12275301	0509 4787	29	8	8	8	8	8	E70
	01	LOCATING BEARING	DZ12276203	0509 4815	1	1	1	1	1	1	E70
	01	MAIN BEARING	DZ12312137	0509 5358	1	4	4	4	4	4	E70
	01	BEARING BUSH	DZ12313195	0509 4787	25	4	4	4	4	4	E70
	01	BEARING BUSH	DZ12313196	0509 4787	24	1	1	1	1	1	E70
Piston	07	PISTON	DZ12276364	0509 4763	1	8	8	8	8	8	E70
	07	PISTON PIN	DZ01154079	0509 4763	6	8	8	8	8	8	E70
	07	CIRCLIP	DZ01107836	0509 4763	7	16	16	16	16	16	E70
Camshaft	10	BEARING BUSH	DZ12200055	0509 2399	12	5	5	5	5	5	E70
	10	CAMSHAFT	DZ12276282	0509 4777	1	1	1	1	1	1	E70
	10	QUADRANT/SEGMENT	DZ12277612	0509 4777	3	2	2	2	2	2	E70
Timing gears	11	CIRCLIP	DZ01107737	0509 4979	15	16	16	16	16	16	E70
	11	MUSHROOM TAPPET	DZ12276301	0509 5017	2	16	16	16	16	16	E70
	11	ROCKER ARM INLET	DZ12313201	0509 4979	12	8	8	8	8	8	E70
	11	ROCKER ARM EXHAUST	DZ12313205	0509 4979	7	8	8	8	8	8	E70
	11	BRIDGE PIECE	DZ12314359	0509 4979	23	16	16	16	16	16	E70
Injection pump drive	18	ROT. SHAFT LIP SEAL	DZ01133289	0509 4817	10	1	1	1	1	1	E70
	18	TAP. ROLLER BEARING	DZ01136214	0509 4817	7	1	1	1	1	1	E70
	18	TAP. ROLLER BEARING	DZ01136508	0509 4817	5	1	1	1	1	1	E70
	18	O-SEAL	DZ01153850	0509 4817	16	1	1	1	1	1	E70
	18	O-SEAL	DZ01171696	0509 4817	13	1	1	1	1	1	E70
	18	O-SEAL	DZ06214824	0509 4817	8	1	1	1	1	1	E70
Vibration damper	34	STRAIGHT PIN	DZ01101334	0501 3729	32	1	1	1	1	1	E70
	34	VIBRATION DAMPER	DZ12276119	0509 4063	12	1	1	1	1	1	E70

TBD616V12	CG	Description	Material nr.	ETL	POS	12 cyl "A1"	12 cyl "A2"	12 cyl "B"	12 cyl "C"	12 cyl "D"	
Oil pan	02	SEALING RING	DZ01118718	0509 4914	3	1	1	1	1	1	E10
Cylinder head	08	SEALING RING	DZ01118654	0509 5122	5	24	24	24	24	24	E10
	08	GASKET	DZ12277677	0509 5122	2	12	12	12	12	12	E10
Lube oil filter / Cooler	15	FILTER CARTRIDGE	DZ1227 6605	0509 4792	1	1	1	1	1	1	E10
Fuel filter	20	FILTER	DZ0117 5893	0509 0635	25	2	2	2	2	2	E30
Cylinder head	08	SEALING RING	DZ01118654	0509 5122	5	24	24	24			E40
	08	GASKET	DZ12277677	0509 5122	2	12	12	12			E40
Injector	19	O-SEAL	DZ0121 2509	0509 5010	4	24	24	24			E40
	19	O-SEAL	DZ01153878	0509 5010	5	12	12	12			E40
	19	O-SEAL	DZ01153884	0509 5010	6	12	12	12			E40
	19	SEALING RING	DZ12313326	0509 5010	7	12	12	12			E40
Suction pipe / Air cleaner	22	PAPER CARTRIDGE	DZ12154939	0509 1650	9	2	2	2			E40
Injector	19	NOZZLE ELEMENT	DZ01319792	0509 5010	11	12	12			12	E50
Dynamo / Starter motor	44	SET NARROW V-BELTS	DZ02235255	0503 2662	1	1	1			1	E50
Crankcase	01	O-SEAL	DZ01181871	0509 5139	11	2	2	2	2	2	E60
	01	HOSE CLAMP	DZ0117 7986	0509 5139	8	4	4	4	4	4	E60
	01	TUBING CONNECTION	DZ12163475	0509 5139	7	2	2	2	2	2	E60
Oil pan	02	SCREW PLUG	DZ01118971	0509 4914	2	1	1	1	1	1	E60
	02	O-SEAL	DZ01165973	0509 4915	25	1	1	1	1	1	E60
	02	GASKET	DZ12276603	0509 4914	15	1	1	1	1	1	E60
Connecting rod	06	STRAIGHT PIN	DZ01115420	0509 4762	3	12	12	12	12	12	E60
	06	BIG END BOLT	DZ12161131	0509 4762	4	24	24	24	24	24	E60
	06	BIG END BEARING	DZ12276967	0509 4762	5	12	12	12	12	12	E60
Piston	07	PISTON RING SET	DZ12213242	0509 4763	8	4	4	4	4	4	E60

TBD616V12	CG	Description	Material nr.	ETL	POS	12 cyl "A1"	12 cyl "A2"	12 cyl "B"	12 cyl "C"	12 cyl "D"	
Cylinder head	08	O-SEAL	DZ01153857	0509 4980	12	24	24	24	24	24	E60
	08	O-SEAL	DZ01153872	0509 4980	5	12	12	12	12	12	E60
	08	COMPRESSION SPRING	DZ01222009	0509 4980	19	24	24	24	24	24	E60
	08	COMPRESSION SPRING	DZ01222051	0509 4980	18	24	24	24	24	24	E60
	08	VALVE GUIDE	DZ12160262	0509 0050	3	48	48	48	48	48	E60
	08	VALVE COLLET	DZ12164698	0509 4980	16	96	96	96	96	96	E60
	08	VALVE SEAT INSERT	DZ12188202	0509 0050	9	24	24	24	24	24	E60
	08	INLET VALVE CONE	DZ12275153	0509 4980	9	24	24	24	24	24	E60
	08	EXHAUST VALVE CONE	DZ12275154	0509 4980	14	24	24	24	24	24	E60
	08	VALVE SEAT INSERT	DZ12312207	0509 4980	8	24	24	24	24	24	E60
08	GUIDE BOLT	DZ12312898	0509 4980	22	24	24	24	24	24	E60	
Lube oil filter / Cooler	15	FILTER CARTRIDGE	DZ1227 6605	0509 4792	1	1	1	1	1	1	E60
	15	SEALING RING	DZ01118748	0509 4809	14	1	1	1	1	1	E60
	15	BY-PASS COMPONENT	DZ12314523	0509 4809	12	1	1	1	1	1	E60
	15	OIL RESS. REG. VALVE	DZ12276218	0509 4809	15	1	1	1	1	1	E60
Injection pump	17	FUEL SUPPLY PUMP	DZ01319286	0509 5443	1	1	1	1	1	1	E60
	17	INJECTION PUMP	DZ12277436	0509 5282	1	1	1	1	1	1	E60
Injection pump drive	18	HALF-COUPLING	DZ12212613	0509 4919	7	1	1	1	1	1	E60
	18	O-SEAL	DZ12212616	0509 4919	9	2	2	2	2	2	E60
	18	HALF-COUPLING	DZ12212620	0509 4919	8	1	1	1	1	1	E60
Fuel filter	20	PIPE / LINE / LEAD	DZ12317437	0509 5013	8	2	2	2	2	2	E60
Fuel pipes	21	NON-RETURN VALVE	DZ01175952	0509 2479	39	2	2	2	2	2	E60
	21	FUEL SUPPLY PUMP	DZ0336 1757	0509 2479	29	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276466	0509 4890	1	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276467	0509 4890	2	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276468	0509 4890	3	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276469	0509 4890	4	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276470	0509 4890	5	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276471	0509 4890	6	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276472	0509 4890	7	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276473	0509 4890	8	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276474	0509 4890	9	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276475	0509 4890	10	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276476	0509 4890	11	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276477	0509 4890	12	1	1	1	1	1	E60
21	CAP	DZ12276833	0509 4890	20	12	12	12	12	12	12	E60

TBD616V12	CG	Description	Material nr.	ETL	POS	12 cyl "A1"	12 cyl "A2"	12 cyl "B"	12 cyl "C"	12 cyl "D"	
Suction pipe / Air cleaner	22	O-SEAL	DZ01173923	0509 5143	7	2	2	2	2	2	E60
	22	HOSE CLIP	DZ12151685	0509 5143	11	2	2	2	2	2	E60
	22	PAPER CARTRIDGE	DZ12154939	0509 1650	9	2	2	2	2	2	E60
	22	TUBING CONNECTION	DZ12163470	0509 5143	9	2	2	2	2	2	E60
	22	TUBING CONNECTION	DZ12163471	0509 5143	8	2	2	2	2	2	E60
	22	INSULATOR	DZ12277084	0509 5143	13	4	4	4	4	4	E60
Cooling water pump	37	CENTRIFUGAL PUMP	DZ12314329	0509 5394	1	1	1	1	1	1	E60
	37	O-SEAL	DZ01153598	0509 5394	19	1	1	1	1	1	E60
Cooling water pipes	38	TUBING CONNECTION	DZ01154139	0509 5607	16	2	2	2	2	2	E60
	38	O-SEAL	DZ01180134	0509 5117	6	1	1	1	1	1	E60
	38	O-SEAL	DZ01180135	0509 5117	7	1	1	1	1	1	E60
	38	CLIP	DZ12151678	0509 8008	12	4	4	4	4	4	E60
	38	TUBING CONNECTION	DZ12314041	0509 5607	6	2	2	2	2	2	E60
Turbocharger	43	REPAIR KIT	DZ01340000	0509 5162	2	2	2	2	2	2	E60
	43	CORE ASSEMBLY	DZ01319122	0509 5162	3	2	2	2	2	2	E60
	43	HOSE CLIP	DZ12151677	0509 5410	43	4	4	4	4	4	E60
	43	HOSE	DZ12188858	0509 5410	6	2	2	2	2	2	E60
	43	INSULATION	DZ12316712	0509 5131	1	2	2	2	2	2	E60
Dynamo / Starter motor	44	PROTECTING CAP	DZ01169030	0500 3725	1	2	2	2	2	2	E60
	44	STARTER	DZ01178721	0509 4210	1	1	1	1	1	1	E60
	44	GENERATOR	DZ03045097	0507 1230	950	1	1	1	1	1	E60
Electrical accessories	48	TRANSMITTER	DZ12320541	0509 4588	1	1	1	1	1	1	E60
	48	TACHO-GENERATOR	DZ12322055	0509 5862	5	1	1	1	1	1	E60
	48	THERMOSTAT	DZ12272132	0509 2794	1	1	1	1	1	1	E60
	48	PRESSURE SWITCH	DZ12402757	0509 4192	1	1	1	1	1	1	E60
Charge air pipe	87	INSULATION	DZ12150235	0509 5862	5	4	4	4	4	4	E60
	87	HOSE CLIP	DZ12151678	0509 0669	27	8	8	8	8	8	E60
	87	INSERT / ELEMENT	DZ12276553	0509 5411	14	2	2	2	2	2	E60
	87	AIR TUBE	DZ12312024	0509 5628	67	8	8	8	8	8	E60
	87	AIR TUBE	DZ12312025	0509 5628	68	2	2	2	2	2	E60
General	90	GASKET SET	DZ02929868	0509 5363	1	1	1	1	1	1	E60
	90	GASKET SET	DZ02929876	0509 5363	950 ?	1	1	1	1	1	E60

TBD616V12	CG	Description	Material nr.	ETL	POS	12 cyl "A1"	12 cyl "A2"	12 cyl "B"	12 cyl "C"	12 cyl "D"	
Crankcase	01	HEXAGON BOLT	DZ01153796	0509 5861	10	24	24	24	24	24	E70
	01	O-SEAL	DZ01153892	0509 5139	11	2	2	2	2	2	E70
	01	PLAIN WASHER	DZ01154443	0509 5861	9	24	24	24	24	24	E70
	01	OIL SEPARATOR	DZ12270354	0509 5139	6	2	2	2	2	2	E70
	01	CYLINDER LINER	DZ12275301	0509 5861	35	12	12	12	12	12	E70
	01	LOCATING BEARING	DZ12276203	0509 4815	1	1	1	1	1	1	E70
	01	MAIN BEARING	DZ12312137	0509 5358	1	7	7	7	7	7	E70
Piston	07	PISTON	DZ12276364	0509 4763	1	12	12	12	12	12	E70
	07	PISTON PIN	DZ01154079	0509 4763	6	12	12	12	12	12	E70
	07	CIRCLIP	DZ01107836	0509 4763	7	24	24	24	24	24	E70
Camshaft	10	BEARING BUSH	DZ12200055	0509 5861	13	9	9	9	9	9	E70
	10	CAMSHAFT	DZ12276283	0509 4778	1	1	1	1	1	1	E70
	10	QUADRANT / SEGMENT	DZ12277612	0509 4778	3	1	1	1	1	1	E70
Timing gears	11	CIRCLIP	DZ01107737	0509 4979	15	12	12	12	12	12	E70
	11	MUSHROOM TAPPET	DZ12276301	0509 5017	2	12	12	12	12	12	E70
	11	ROCKER ARM INLET	DZ12313201	0509 4979	12	6	6	6	6	6	E70
	11	ROCKER ARM EXHAUST	DZ12313205	0509 4979	7	6	6	6	6	6	E70
	11	BRIDGE PIECE	DZ12314359	0509 4979	23	12	12	12	12	12	E70
Vibration damper	34	STRAIGHT PIN	DZ01181339	0509 4945	5	1	1	1	1	1	E70
	34	VIBRATION DAMPER	DZ12276122	0509 4945	1	1	1	1	1	1	E70

TBD616V16	CG	Description	Material no	ETL	POS	16 cyl "A1"	16 cyl "A2"	16 cyl "B"	16 cyl "C"	16 cyl "D"	
Oil pan	02	SEALING RING	DZ01118718	0509 5183	3	1	1	1	1	1	E10
Cylinder head	08	SEALING RING	DZ01118654	0509 5122	5	32	32	32	32	32	E10
	08	GASKET	DZ12277677	0509 5122	2	16	16	16	16	16	E10
Lube oil filter / cooler	15	FILTER CARTRIDGE	DZ12211042	0509 5011	1	2	2	2	2	2	E10
Fuel filter	20	FILTER ELEMENT	DZ01181060	0509 5012	13	1	1	1	1	1	E30
	20	GASKET	DZ01169896	0509 5012	14	1	1	1	1	1	E30
Injector	19	O-SEAL	DZ01153867	0509 0642	6	32	32	32			E40
	19	O-SEAL	DZ01153878	0509 5526	5	16	16	16			E40
	19	O-SEAL	DZ01153884	0509 5526	6	16	16	16			E40
	19	SEALING RING	DZ12313327	0509 5526	7	16	16	16			E40
Suction pipe / Air cleaner	22	PAPER CARTRIDGE	DZ12189925	0509 5100	18	2	2	2			E40
Injector	19	NOZZLE ELEMENT	DZ01319792	0509 5526	14	16	16			16	E50
Dynamo / Starter motor	44	SET NARROW V-BELTS	DZ02235255	0503 2662	1	1	1			1	E50
Crankcase	01	TUBING CONNECTION	DZ12163475	0509 4789	3	2	2	2	2	2	E60
Oil pan	02	SCREW PLUG	DZ01118971	0509 4916	2	1	1	1	1	1	E60
	02	O-SEAL	DZ01165973	0509 4916	25	1	1	1	1	1	E60
	02	GASKET	DZ12276602	0509 4916	15	1	1	1	1	1	E60
Connecting rod	06	STRAIGHT PIN	DZ01115420	0509 4762	3	16	16	16	16	16	E60
	06	BIG END BOLT	DZ12161131	0509 4762	4	32	32	32	32	32	E60
Piston	07	PISTON RING SET	DZ12213242	0509 4763	8	4	4	4	4	4	E60
Cylinder head	08	O-SEAL	DZ01153857	0509 4980	12	32	32	32	32	32	E60
	08	O-SEAL	DZ01153872	0509 4980	5	16	16	16	16	16	E60
	08	COMPRESSION SPRING	DZ01222009	0509 4980	19	32	32	32	32	32	E60
	08	COMPRESSION SPRING	DZ01222051	0509 4980	18	32	32	32	32	32	E60
	08	VALVE GUIDE	DZ12160262	0509 0050	3	64	64	64	64	64	E60
	08	VALVE COLLET	DZ12164698	0509 4980	16	128	128	128	128	128	E60
	08	VALVE SEAT INSERT	DZ12188202	0509 4980	9	32	32	32	32	32	E60
	08	INLET VALVE CONE	DZ12275153	0509 4980	13	32	32	32	32	32	E60
	08	EXHAUST VALVE CONE	DZ12275154	0509 4980	14	32	32	32	32	32	E60
	08	VALVE SEAT INSERT	DZ12312207	0509 4980	8	32	32	32	32	32	E60
08	GUIDE BOLT	DZ12312898	0509 4980	22	32	32	32	32	32	E60	
Lube oil filter / cooler	15	SEALING RING	DZ01118748	0509 4808	11	1	1	1	1	1	E60
	15	BY-PASS COMPONENT	DZ12314523	0509 4808	12	1	1	1	1	1	E60
	15	OIL PRESS. REG. VALVE	DZ12276218	0509 4808	15	1	1	1	1	1	E60

TBD616V16	CG	Description	Material no	ETL	POS	16 cyl "A1"	16 cyl "A2"	16 cyl "B"	16 cyl "C"	16 cyl "D"	
Injection pump	17	FUEL SUPPLY PUMP	DZ01319286	0509 5443	1	1	1	1	1	1	E60
	17	INJECTION PUMP	DZ12277428	0509 5289	1	1	1	1	1	1	E60
	17	INJECTION PUMP	DZ12277429	0509 5288	1	1	1	1	1	1	E60
Injection pump drive	18	O-SEAL	DZ12188301	0509 4383	6	2	2	2	2	2	E60
	18	O-SEAL	DZ12212616	0509 4941	9	2	2	2	2	2	E60
	18	HALF-COUPLING	DZ12212629	0509 4941	7	1	1	1	1	1	E60
	18	HALF-COUPLING	DZ12212631	0509 4941	8	1	1	1	1	1	E60
Fuel pipes	21	INJECTION PIPE	DZ12276792	0509 4894	1	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276793	0509 4894	2	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276794	0509 4894	3	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276795	0509 4894	4	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276796	0509 4894	5	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276797	0509 4894	6	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276798	0509 4894	7	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276799	0509 4894	8	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276800	0509 4894	9	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276801	0509 4894	10	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276802	0509 4894	11	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276803	0509 4894	12	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276804	0509 4894	13	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276805	0509 4894	14	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276806	0509 4894	15	1	1	1	1	1	E60
	21	INJECTION PIPE	DZ12276807	0509 4894	16	1	1	1	1	1	E60
21	CAP	DZ12276833	0509 4894	20	16	16	16	16	16	16	E60
Suction pipe / Air cleaner	22	O-SEAL	DZ01173923	0509 5143	7	2	2	2	2	2	E60
	22	HOSE CLIP	DZ01174420	0503 8980	17	4	4	4	4	4	E60
	22	HOSE CLIP	DZ01177986	0509 0699	11	4	4	4	4	4	E60
	22	HOSE CLIP	DZ12151685	0509 5099	34	2	2	2	2	2	E60
	22	HOSE CLIP	DZ12151686	0509 5099	33	2	2	2	2	2	E60
	22	TUBING CONNECTION	DZ12163471	0509 5099	23	2	2	2	2	2	E60
	22	PAPER CARTRIDGE	DZ12189925	0509 5100	18	2	2	2	2	2	E60
	22	INSULATOR	DZ12212498	0509 1654	12	4	4	4	4	4	E60
	22	TUBING CONNECTION	DZ12312061	0509 5099	24	2	2	2	2	2	E60
	22	TUBING CONNECTION	DZ12313374	0509 5099	26	2	2	2	2	2	E60
Cooling water pump	37	CENTRIFUGAL PUMP	DZ12314329	0509 5394	23	1	1	1	1	1	E60
	37	O-SEAL	DZ01153598	0509 5394	19	1	1	1	1	1	E60

TBD616V16	CG	Description	Material no	ETL	POS	16 cyl "A1"	16 cyl "A2"	16 cyl "B"	16 cyl "C"	16 cyl "D"	
Cooling water pipes	38	TUBING CONNECTION	DZ01154139	0509 5607	16	2	2	2	2	2	E60
	38	CLIP	DZ01174171	0509 5099	25	4	4	4	4	4	E60
	38	O-SEAL	DZ01180134	0509 5051	6	1	1	1	1	1	E60
	38	O-SEAL	DZ01180134	0509 5117	6	1	1	1	1	1	E60
	38	O-SEAL	DZ01180135	0509 5117	7	1	1	1	1	1	E60
	38	O-SEAL	DZ01180135	0509 5051	7	1	1	1	1	1	E60
	38	CLIP	DZ12151678	0509 5039	27	4	4	4	4	4	E60
	38	TUBING CONNECTION	DZ12314041	0509 5607	6	2	2	2	2	2	E60
Turbocharger	43	REPAIR KIT	DZ01319136	0509 5173	2	2	2	2	2	2	E60
	43	CORE ASSEMBLY	DZ01319222	0509 5173	3	2	2	2	2	2	E60
	43	HOSE CLIP	DZ12151677	0509 5410	43	4	4	4	4	4	E60
	43	HOSE	DZ12188858	0509 5410	6	2	2	2	2	2	E60
	43	INSULATION	DZ12316715	0509 5134	1	2	2	2	2	2	E60
Dynamo / Starter motor	44	PROTECTING CAP	DZ01169030	0500 3725	1	2	2	2	2	2	E60
	44	STARTER	DZ01178721	0509 4210	1	1	1	1	1	1	E60
	44	GENERATOR	DZ03045097	0507 1230	950	1	1	1	1	1	E60
Electrical accessories	48	THERMOSTAT	DZ12272132	0509 2794	1	1	1	1	1	1	E60
	48	PRESSURE SWITCH	DZ12402757	0509 4192	1	1	1	1	1	1	E60
	48	RUBBER PROTECT. CAP	DZ12402758	0509 4194	1	2	2	2	2	2	E60
Charge air pipe	87	HOSE CLIP	DZ12151678	0509 5628	66	2	2	2	2	2	E60
	87	INSERT / ELEMENT	DZ12276553	0509 5411	14	2	2	2	2	2	E60
	87	AIR TUBE	DZ12312024	0509 5628	67	8	8	8	8	8	E60
	87	AIR TUBE	DZ12312025	0509 5628	68	2	2	2	2	2	E60
General	90	GASKET SET	DZ02929871	0509 5366	1	1	1	1	1	1	E60
	90	GASKET SET	DZ02929876	0509 5369	1	1	1	1	1	1	E60

TBD616V16	CG	Description	Material no	ETL	POS	16 cyl "A1"	16 cyl "A2"	16 cyl "B"	16 cyl "C"	16 cyl "D"	
Crankcase	01	HEXAGON BOLT	DZ01153796	0509 4789	6	36	36	36	36	36	E70
	01	O-SEAL	DZ01181871	0509 5139	11	2	2	2	2	2	E70
	01	PLAIN WASHER	DZ01154443	0509 4789	7	36	36	36	36	36	E70
	01	OIL SEPARATOR	DZ12270354	0509 5139	6	2	2	2	2	2	E70
	01	CYLINDER LINER	DZ12275301	0509 4789	29	16	16	16	16	16	E70
	01	LOCATING BEARING	DZ12276203	0509 4815	1	1	1	1	1	1	E70
	01	MAIN BEARING	DZ12312137	0509 5358	1	8	8	8	8	8	E70
Piston	07	PISTON	DZ12276364	0509 4763	1	16	16	16	16	16	E70
	07	PISTON PIN	DZ01154079	0509 4763	6	16	16	16	16	16	E70
	07	CIRCLIP	DZ01107836	0509 4763	7	32	32	32	32	32	E70
Camshaft	10	BEARING BUSH	DZ12200055	0509 2399	12	9	9	9	9	9	E70
	10	CAMSHAFT	DZ12276284	0509 4779	1	1	1	1	1	1	E70
	10	QUADRANT / SEGMENT	DZ12277612	0509 4779	3	1	1	1	1	1	E70
Timing gears	11	CIRCLIP	DZ01107737	0509 4979	15	32	32	32	32	32	E70
	11	MUSHROOM TAPPET	DZ12276301	0509 5017	2	32	32	32	32	32	E70
	11	ROCKER ARM INLET	DZ12313201	0509 4979	12	16	16	16	16	16	E70
	11	ROCKER ARM EXHAUST	DZ12313205	0509 4979	7	16	16	16	16	16	E70
	11	BRIDGE PIECE	DZ12314359	0509 4979	23	32	32	32	32	32	E70
Lube oil filter / cooler	15	SEALING RING	DZ01118748	0509 4808	14	1	1	1	1	1	E70
	15	BY-PASS COMPONENT	DZ12276217	0509 4808	12	1	1	1	1	1	E70
	15	OIL RESS. REG. VALVE	DZ12276218	0509 4808	15	1	1	1	1	1	E70
Injection pump drive	18	ROT. SHAFT LIP SEAL	DZ01133289	0509 4817	10	1	1	1	1	1	E70
	18	TAP. ROLLER BEARING	DZ01136214	0509 4817	7	1	1	1	1	1	E70
	18	TAP. ROLLER BEARING	DZ01136508	0509 4817	5	1	1	1	1	1	E70
	18	O-SEAL	DZ01153850	0509 4817	16	1	1	1	1	1	E70
	18	O-SEAL	DZ01171696	0509 4817	23	1	1	1	1	1	E70
	18	O-SEAL	DZ06214824	0509 4817	8	1	1	1	1	1	E70
Fuel filter	20	SEALING RING	DZ01118713	0509 5012	6	4	4	4	4	4	E70
	20	PIPE / LINE / LEAD	DZ12317434	0509 5012	12	2	2	2	2	2	E70