

## Fehlercodeliste Motor Yanmar 3TVN 88C-KHW- Citymaster 650, Version 05- 2021

## Error - Code- List Yanmar Engine 3TNV 88C- KHW- Citymaster 650, Version 05- 2021

SPN	FMI	P-Code	Number of the lamp flashes	Bauteil- Component	Fehlerbeschreibung- Error Description
522400	2	P0336	MIL + AWL	Kurbelwellenpositionssensor	Fehlfunktion des Kurbelwellenpositionssensor
522400	2	P0336	MIL + AWL	Crank speed sensor	Crank signal malfunction
522400	5	P0337	MIL + AWL	Kurbelwellenpositionssensor	Kein Signal vom Kurbelwellenpositionssensor
522400	5	P0337	MIL + AWL	Crank speed sensor	No crank Signal
522401	2	P0341	MIL + AWL	Nockenwellenpositionssensor	Fehlfunktion des Nockenwellenpositionssensor
522401	2	P0341	MIL + AWL	Cam speed sensor	Cam signal malfunction
522401	5	P0342	MIL + AWL	Nockenwellenpositionssensor	Kein Signal vom Nockenwellenpositionssensor
522401	5	P0342	MIL + AWL	Cam speed sensor	No cam Signal
522401	7	P1341	MIL + AWL	Nockenwellenpositionssensor	Nockenwellenpositionssensor Bereich- / Betriebsverhalten
522401	7	P1341	MIL + AWL	Cam speed sensor	Angle offset failure
523249	5	P0008	MIL + RSL	Kurbelwellendrehzahl-, Nockenwellendrehzahlsensor	Kein Signal an Kurbel- und Nockendrehzahlsensor
523249	5	P0008	MIL + RSL	Crank speed, Cam speed sensor	No signal on both crank and cam speed sensor
28	0	P1126	MIL + AWL	Fahrpedal Potentiometer	Ausfall des Fahrpedalgebers 3 (Fußpedal in offener Stellung)
28	0	P1126	MIL + AWL	Accelerator sensor 3	Accelerator sensor 3 failure (Foot pedal in open position)
28	1	P1125	MIL + AWL	Fahrpedal Potentiometer	Ausfall des Fahrpedalgebers 3 (Fußpedal in geschlossener Stellung)
28	1	P1125	MIL + AWL	Accelerator sensor 4	Accelerator sensor 3 failure (Foot pedal In closed position)
51	3	P02E9	MIL + RSL	Sensor für die Öffnung der Einlassdrosselklappe	Fehler am Einlassdrosselklappenöffnungssensor (Überspannung)
51	3	P02E9	MIL + RSL	Intake throttle opening sensor	Intake throttle opening sensor fault (High voltage)
51	4	P02E8	MIL + RSL	Sensor für die Öffnung der Einlassdrosselklappe	Fehler des Einlassdrosselöffnungssensors (Unterspannung)
51	4	P02E8	MIL + RSL	Intake throttle opening sensor	Intake throttle opening sensor fault (Low voltage)
102	3	P0238	MIL + RSL	EGR-Drucksensor auf der Ansaugseite	EGR-Sensorfehler auf der Niederdruckseite (Überspannung)
102	3	P0238	MIL + RSL	EGR low pressure side sensor	EGR low pressure side sensor fault (High voltage)
102	4	P0237	MIL + RSL	EGR-Drucksensor auf der Ansaugseite	EGR-Sensorfehler auf der Niederdruckseite (Unterspannung)
102	13	P0236	MIL + RSL	EGR-Drucksensor auf der Ansaugseite	EGR-Ansaugseitensensor (Anormaler Messwert).
102	13	P0236	MIL + RSL	EGR low pressure side sensor	EGR low pressure side sensor (Abnormal learning value)
1209	3	P0473	MIL + RSL	EGR-Drucksensor auf der Abgasseite	EGR-Sensorfehler auf der Hochdruckseite (Überspannung)
1209	3	P0473	MIL + RSL	EGR high pressure side sensor	EGR high pressure side sensor fault (High voltage)
1209	4	P0472	MIL + RSL	EGR-Drucksensor auf der Abgasseite	EGR-Sensorfehler auf der Hochdruckseite (Unterspannung)
1209	4	P0472	MIL + RSL	EGR high pressure side sensor	EGR high pressure side sensor fault (Low voltage)
1209	10	P0339	MIL + RSL	EGR high pressure side sensor. If the message occurs at low outside temperatures ignore it. Remedy: Let the engine warm up. Ignition Off and restart.	EGR high pressure side pressure sensor error (detected value error). Note: The message may occur at low temperatures due to frozen condensation in the air intake. Remedy: Start the engine and allow it to warm up.
1209	10	P0339 P1679	MIL + RSL	EGR high pressure side sensor. Wenn die Meldung bei niedrigen Aussentemperaturen auftritt ignorieren. Abhilfe: Motor warmlaufen lassen! Zündung aus und den Motor neu starten.	Fehler des Drucksensors der AGR-Hochdruckseite (erkannter Wertfehler) Hinweis: Die Meldung kann bei niedrigen Temperaturen durch gefrorenes Kondenswasser im Luftansaug auftreten. Abhilfe: Motor starten und warmlaufen lassen. Zündung aus und den Motor neu starten.
1209	13	P0471	MIL + RSL	EGR-Drucksensor auf der Abgasseite	EGR-Sensorfehler auf der Hochdruckseite (Abnormaler Lernwert)
1209	13	P0471	MIL + RSL	EGR high pressure side sensor	EGR high pressure side sensor (Abnormal learning value)
110	3	P0118	MIL + AWL	Kühlwassertemperatursensor an der Wasserpumpe	Fehler im Kühlwassertemperatursensor (Überspannung)
110	3	P0118	MIL + AWL	Cooling water temperature sensor	Cooling water temperature sensor fault (High voltage)
110	4	P0117	MIL + AWL	Kühlwassertemperatursensor an der Wasserpumpe	Fehler des Kühlwassertemperatursensors (Unterspannung)
110	4	P0117	MIL + AWL	Cooling water temperature sensor	Cooling water temperature sensor fault (Low voltage)

110	0	P0217	Auswahl nach Option	Kühlwassertemperatursensor an der Wasserpumpe	Ungewöhnlich hohe Temperatur des Kühlwassersensors (Überhitzung)
110	0	P0217	Select by application	Cooling water temperature sensor	Cooling water temperature sensor temperature abnormal high (Overheat)
172	3	P0113	MIL + AWL	Ansauglufttemperatursensor I.	Fehler des Ansauglufttemperatursensors (Überspannung)
172	3	P0113	MIL + AWL	New air temperature sensor I.	New air temperature sensor fault (High voltage)
172	4	P0112	MIL + AWL	Ansauglufttemperatursensor I.	Fehler des Ansauglufttemperatursensor I. (Unterspannung)
172	4	P0112	MIL + AWL	New air temperature sensor I.	New air temperature sensor fault I. (Low voltage)
174	3	P0183	MIL + AWL	Kraftstofftemperatursensor in der Hochdruckpumpe	Fehler des Kraftstofftemperatursensor (Überspannung)
174	3	P0183	MIL + AWL	Fuel temperature sensor	Fuel temperature sensor fault (High voltage)
174	4	P0182	MIL + AWL	Kraftstofftemperatursensor in der Hochdruckpumpe	Fehler des Kraftstofftemperatursensor (Unterspannung)
174	4	P0182	MIL + AWL	Fuel temperature sensor	Fuel temperature sensor fault (Low voltage)
174	0	P0168	Auswahl nach Option	Kraftstofftemperatursensor in der Hochdruckpumpe	Kraftstofftemperatursensor - Temperatur ungewöhnlich hoch
174	0	P0168	Select by application	Fuel temperature sensor	Fuel temperature sensor temperature abnormal high
157	3	P0193	MIL + RSL	Raildrucksensor im Railrohr	Fehler im Raildrucksensor (Überspannung)
157	3	P0193	MIL + RSL	Rail pressure sensor at Rail Pipe	Rail pressure sensor fault (High voltage)
157	4	P0192	MIL + RSL	Raildrucksensor im Railrohr	Fehler im Raildrucksensor (Unterspannung)
157	4	P0192	MIL + RSL	Rail pressure sensor	Rail pressure sensor fault (Low voltage)
3251	3	P2455	MIL + RSL	Differenzdrucksensor	Fehler im DPF-Differenzdrucksensor (Überspannung)
3251	3	P2455	MIL + RSL	DPF differential pressure sensor	DPF differential pressure sensor fault (High voltage)
3251	4	P2454	MIL + RSL	DPF- Differenzdrucksensor	Fehler im DPF-Differenzdrucksensor (Unterspannung)
3251	4	P2454	MIL + RSL	DPF differential pressure sensor	DPF differential pressure sensor fault (Low voltage)
3251	0	P2452	MIL + RSL	DPF- Differenzdrucksensor	DPF-Differenzdrucksensor Differenzdruck anormal hoch
3251	0	P2452	MIL + RSL	DPF differential pressure sensor	DPF differential pressure sensor differential pressure abnormal high
3251	13	P2453	MIL + RSL	DPF- Differenzdrucksensor	DPF-Differenzdrucksensor (Anormaler Lernwert)
3251	13	P2453	MIL + RSL	DPF differential pressure sensor	DPF differential pressure sensor (Abnormal learning value)
3609	3	P1455	MIL + RSL	DPF- Differenzdrucksensor Hochdruckseite	DPF-Differenzdrucksensorfehler auf der Hochdruckseite (Überspannung)
3609	3	P1455	MIL + RSL	DPF high pressure side sensor	DPF high pressure side sensor fault (High voltage)
3609	4	P1454	MIL + RSL	DPF- Differenzdrucksensor Hochdruckseite	DPF-Differenzdrucksensorfehler auf der Hochdruckseite (Unterspannung)
3609	4	P1454	MIL + RSL	DPF high pressure side sensor	DPF high pressure side sensor fault (Low voltage)
3242	3	P1428	MIL + RSL	Temperaturgeber DPF Eingang	Fehler des DPF-Einlasstemperatursensors (Überpannung)
3242	3	P1428	MIL + RSL	DPF inlet temperature sensor	DPF inlet temperature sensor fault (High voltage)
3242	4	P1427	MIL + RSL	Temperaturgeber DPF Eingang	Fehler des DPF-Einlasstemperatursensors (Unterspannung)
3242	4	P1427	MIL + RSL	DPF inlet temperature sensor	DPF inlet temperature sensor fault (Low voltage)
3242	0	P1436	MIL + AWL	Temperaturgeber DPF Eingang	DPF-Einlasstemperatursensortemperatur ungewöhnlich hoch
3242	0	P1436	MIL + AWL	DPF inlet temperature sensor	DPF inlet temperature sensor temperature abnormal high
3250	3	P1434	MIL + RSL	Temperaturgeber DPF- Innen	Temperaturgeber DPF- Innen (Überspannung)
3250	3	P1434	MIL + RSL	DPF intermediate temperature sensor	DPF intermediate temperature sensor fault (High voltage)
3250	4	P1435	MIL + RSL	Temperaturgeber DPF- Innen	Temperaturgeber DPF- Innen (Unterspannung)
3250	4	P1435	MIL + RSL	DPF intermediate temperature sensor	DPF intermediate temperature sensor fault (Low voltage)
3250	1	P0420	MIL + AWL	Temperaturgeber DPF- Innen	Temperaturgeber DPF- Innen ungewöhnlich niedrige Temperatur
3250	1	P0420	MIL + AWL	DPF intermediate temperature sensor	DPF intermediate temperature sensor temperature abnormal low temperature
3250	0	P1426	MIL + RSL	Temperaturgeber DPF- Innen	Ungewöhnlich hohe Temperatur des DPF-Temperaturgeber Innen (Ausfall nach der Einspritzung)
3250	0	P1426	MIL + RSL	DPF intermediate temperature sensor	DPF intermediate temperature sensor temperature abnormal high (Post injection failure)

108	3	P2229	MIL + AWL	Atmospheredrucksensor im Steuergerät ECU	Fehler im Atmospheredrucksensor (Überspannung)
108	3	P2229	MIL + AWL	Atmospherio pressure sensor	Atmospherio pressure sensor fault (High voltage)
108	4	P2228	MIL + AWL	Atmospheredrucksensor im Steuergerät ECU	Fehler im Atmospheredrucksensor (Unterspannung)
108	4	P2228	MIL + AWL	Atmospherio pressure sensor	Atmospherio pressure sensor fault (Low voltage)
108	10	P1231	MIL + AWL	Atmospheredrucksensor im Steuergerät ECU	Fehler in der Kennlinie des Atmospheredrucksensors
108	10	P1231	MIL + AWL	Atmospherio pressure sensor	Atmospherio pressure sensor characteristic fault
412	3	P041D	MIL + AWL	EGR Temperatursensor im EGR Ventil	Fehler im EGR-Temperatursensor (Überspannung)
412	3	P041D	MIL + AWL	EGR gas temperature sensor	EGR gas temperature sensor fault (High voltage)
412	4	P041C	MIL + AWL	EGR Temperatursensor im EGR Ventil	Fehler im EGR-Temperatursensor (Unterspannung)
412	4	P041C	MIL + AWL	EGR gas temperature sensor	EGR gas temperature sensor fault (Low voltage)
105	3	P040D	MIL + RSL	Einlasskrümmer-Temperatursensor II.	Fehler im Einlasskrümmer-Temperatursensor (Überspannung). Sensor T1 und T2 vertauscht
105	3	P040D	MIL + RSL	Intake manifold temperature sensor II.	Intake manifold temperature sensor fault (High voltage). Sensor T1 and T2 switched
105	4	P040C	MIL + RSL	Einlasskrümmer-Temperatursensor II.	Fehler im Einlasskrümmer-Temperatursensor I. (Unterspannung)
105	4	P040C	MIL + RSL	Intake manifold temperature sensor II.	Intake manifold temperature sensor I. fault (Low voltage)
173	3	P0546	MIL + AWL	Auspuffkrümmer-Temperatursensor	Fehler im Auspuffkrümmer-Temperatursensor (Überpannung)
173	3	P0546	MIL + AWL	Exhaust manifold temperature sensor	Exhaust manifold temperature sensor fault (High voltage)
173	4	P0545	MIL + AWL	Auspuffkrümmer-Temperatursensor	Fehler im Auspuffkrümmer-Temperatursensor (Unterspannung)
173	4	P0545	MIL + AWL	Exhaust manifold temperature sensor	Exhaust manifold temperature sensor fault (Low voltage)
1485	7	P068B	MIL + AWL	Hauptrelaiskontakt Yanmar- Motor oder Sicherung defekt.	Hauptrelaiskontakt verklebt. Sicherungen F2, F17, F18, F40, F41, F42, F43 prüfen
1485	7	P068B	MIL + AWL	Main relay Yanmar engine or fuses defective.	Main relay contact stuck, Check fuses F2, F17, F18, F34, F40, F41, F42, F43.
1485	2	P068A	MIL + AWL	Hauptrelaiskontakt oder Sicherung defekt.	Vorzeitiges öffnen des Hauptrelais Sicherungen F2, F17, F18, F34, F40, F41, F42, F43 prüfen.
1485	2	P068A	MIL + AWL	Main relay defective or fuse defective	Main relay early opening
522243	5	P0543	MIL + AWL	Startrelais	Startrelais unterbrochen
522243	5	P0543	MIL + AWL	Sartup assist relay	Startup assist relay interrupted
522243	6	P0541	MIL + AWL	Startrelais	Startrelais Kabel unterbrochen
522243	6	P0541	MIL + AWL	Sartup assist relay	Startup assist relay GND interrupted
652	5	P0203	MIL + RSL	Einspritzventils 1 3TNV: Zyl. Nr. 3 Zugehöriger Port 3TNV: 1 3	Einspritzventils 1 offener Kreislauf (Eigene Ansteuerung).
652	5	P0203	MIL + RSL	Injector 1 3TNV: Cyl No. 3 Corresponding port 3TNV: 1 -3	Injector 1 open Circuit (Inherent location of the injector)
652	6	P0268	MIL + RSL	Einspritzventils 1 3TNV: Zyl. Nr. 3 Zugehöriger Port 3TNV: 1 4	Kurzschluss des Einspritzventils 1 Spule
652	6	P0268	MIL + RSL	Injector 1 3TNV: Cyl No. 3 Corresponding port 3TNV: 1 -4	Injector 1 coli short Circuit
652	3	P1262	MIL + RSL	Einspritzventils 1 3TNV: Zyl. Nr. 3 Zugehöriger Port 3TNV: 1 5	Kurzschluss des Einspritzventils 1
652	3	PI 262	MIL + RSL	Injector 1 3TNV: Cyl No. 3 Corresponding port 3TNV: 1 -5	Injector 1 short Circuit
653	5	P0202	MIL + RSL	Einspritzventils 2 3TNV: Cyl No. 2	Einspritzventils 2 offener Kreislauf (Eigene Ansteuerung)
653	5	P0202	MIL + RSL	Injector2 3TNV: Cyl No. 2 Corresponding port 3TNV: 1 - 2	Injector 2 open Circuit (Inherent location of the injector)
653	6	P0265	MIL + RSL	Einspritzventils 2 3TNV: Cyl No. 2 Zugehöriger Port 3TNV: 1 - 3	Kurzschluss des Einspritzventils 2 Spule

653	6	P0265	MIL + RSL	Injector2 3TNV: Cyl No. 2 Corresponding port 3TNV: 1 - 3	Injector 2 coil short Circuit
653	3	P1265	MIL + RSL	Einspritzventils 2 3TNV: Cyl No. 2 Zugehöriger Port 3TNV: 1 - 4	Kurzschluss des Einspritzventils 2
653	3	P1265	MIL + RSL	Injector2 3TNV: Cyl No. 2 Corresponding port 3TNV: 1 - 4	Injector 2 short Circuit
654	5	P0201	MIL + RSL	Einspritzventils 3 3TNV: Cyl No. 1 Zugehöriger Port 3TNV: 1 -1	Einspritzventils 2 offener Kreislauf (Eigene Ansteuerung)
654	5	P0201	MIL + RSL	Injector 3 3TNV: Cyl No, 1 Corresponding port 3TNV: 1 -1	Injector 3 open Circuit (Inherent location of the injector)
654	6	P0262	MIL + RSL	Einspritzventils 3 3TNV: Cyl No. 1 Zugehöriger Port 3TNV: 1 -2	Kurzschluss des Einspritzventils 3 Spule
654	6	P0262	MIL + RSL	Injector 3 3TNV: Cyl No, 1 Corresponding port 3TNV: 1 -2	Injector 3 coil short Circuit
654	3	P1262	MIL + RSL	Einspritzventils 3 3TNV: Cyl No. 1 Zugehöriger Port 3TNV: 1 -3	Kurzschluss des Einspritzventils 3
654	3	P1262	MIL + RSL	Injector 3 3TNV: Cyl No, 1 Corresponding port 3TNV: 1 -3	Injector 3 short Circuit
4257	12	P0611	MIL + RSL	Einspritzventils (allgemein)	Injektorsteuerung IC-Fehler
4257	12	P0611	MIL+RSL	Injector (common)	Injector drive IC error
2797	6	P1146	MIL + RSL	Einspritzventils (allgemein)	Kurzschluss des Injektors (Bank1)
2797	6	P1146	MIL + RSL	Injector (common)	Injector drive circuit (Bank1) short circuit (4TN: Common circuit for No. 1, No. 4 and all 3TN)
2798	6	P1149	MIL + RSL	Einspritzventils (allgemein)	Kurzschluss des Injektors (Bank2)
2798	6	P1149	MIL + RSL	Injector (common)	Injector drive circuit (Bank 2) short circuit (4TN: Circuit for No. 2 and No. 3 cylinders)
523462	13	P1648	MIL + RSL	Einspritzventils (Korrekturwert)	IQA-korrigierte Injektionsmenge für Injektor 1 Fehler
523462	13	P1648	MIL + RSL	Injector (correction value)	IQAcorrected injection amountfor injector 1 error
523463	13	P1649	MIL + RSL	Einspritzventils (Korrekturwert)	IQA korrigierte Injektionsmenge für Injektor 2 Fehler
523463	13	P1649	MIL + RSL	Injector (correction value)	IQA corrected injection amount for injector 2 error
523464	13	P1650	MIL + RSL	Einspritzventils (Korrekturwert)	IQA korrigierte Injektionsmenge für Injektor 3 Fehler
523464	13	P1650	MIL + RSL	Injector (correction value)	IQA corrected injection amount for injector 3 error
523465	13	P1651	MIL + RSL	Einspritzventils (Korrekturwert)	IQA korrigierte Injektionsmenge für Injektor 4 Fehler
523465	13	P1651	MIL + RSL	Injector (correction value)	IQA corrected injection amount for injector 4 error
522571	3	P1641	MIL+RSL	Regelventil Kraftstoffdruck MPROP an der Hochdruckpumpe	Regelventil Kraftstoffdruck (Niedriger) VB-Kurzschluss
522571	3	P1641	MIL+RSL	SCV (MPROP)	High-pressure pump drive circuit (Lowside VB short circuit)
522571	6	P1643	MIL + RSL	Regelventil Kraftstoffdruck MPROP an der Hochdruckpumpe	Regelventil Kraftstoffdruck (Kurzschluss)
522571	6	P1643	MIL + RSL	SCV (MPROP)	High-pressure pump drive circuit (Lowside GND short circuit)
633	3	P0629	MIL+RSL	Regelventil Kraftstoffdruck MPROP an der Hochdruckpumpe	Regelventil Kraftstoffdruck (Kurzschluss auf der Hochspannungsseite).
633	3	P0629	MIL+RSL	SCV (MPROP)	High-pressure pump drive circuit (High side VB short circuit)
633	6	P1642	MIL + RSL	Regelventil Kraftstoffdruck MPROP an der Hochdruckpumpe	Regelventil Kraftstoffdruck (GND-Kurzschluss auf der Hochdruckseite).
633	6	PI 642	MIL + RSL	SCV (MPROP)	High-pressure pump drive circuit (High side GND short circuit)
633	5	P0627	MIL + RSL	Regelventil Kraftstoffdruck MPROP an der Hochdruckpumpe	Regelventil Kraftstoffdruck (Offener Kreis)

633	5	P0627	MIL + RSL	SCV (MPROP)	High-pressure pump drive circuit (Open circuit)
522572	6	P062A	MIL + RSL	Regelventil Kraftstoffdruck MPROP an der Hochdruckpumpe	Regelventil Kraftstoffdruck (Steuerstrom (hohe Intensität))
522572	6	P062A	MIL + RSL	SCV (MPROP)	High-pressure pump drive circuit (Drive current (high level))
522572	11	P1645	MIL+RSL	Regelventil Kraftstoffdruck MPROP an der Hochdruckpumpe	Regelventil Kraftstoffdruck (Überlastfehler der Pumpe)
522572	11	P1645	MIL+RSL	SCV (MPROP)	High-pressure pump drive circuit (Pump overload error)
157	0	P0088	MIL+RSL	Abweichender Raildruck.	Aktueller Fehler beim Druckanstieg der Rails.
157	0	P0088	MIL+RSL	Abnormal rail pressure	Actual rail pressure rise error
157	18	P0094	MIL + RSL	Abweichender Raildruck.	Raildruckabweichungsfehler während des tatsächlichen Druckverlustes des Railsdrucks.
157	18	P0094	MIL + RSL	Abnormal rail pressure	Rail pressure deviation error during the actual rail pressure drop
157	15	P0093	MIL + RSL	Abweichender Raildruck.	Raildruckabweichungsfehler während des tatsächlichen Raildruckanstiegs.
157	15	P0093	MIL + RSL	Abnormal rail pressure	Rail pressure deviation error during the actual rail pressure rise
157	16	P000F	MIL + RSL	PLV (Raildruckbegrenzungsventil) im Railrohr	PLV offenes Ventil
157	16	P000F	MIL + RSL	PLV (Common rail pressure limit valve)	PLV open valve
523469	0	P1666	MIL + RSL	PLV (Raildruckbegrenzungsventil) im Railrohr	Rail-Druckfehler (Öffnungszeiten) des PLV-Ventils
523469	0	P1666	MIL + RSL	PLV (Common rail pressure limit valve)	Rail pressure fault (The times of PLV valve opening error)
523470	0	P1667	MIL + RSL	PLV (Raildruckbegrenzungsventil) im Railrohr	Rail-Druckfehler (Öffnungszeiten) des PLV-Ventils
523470	0	P1667	MIL + RSL	PLV (Common rail pressure limit valve)	Rail pressure fault (The time of PLV valve opening error)
523489	0	P1668	MIL + RSL	PLV (Raildruckbegrenzungsventil) im Railrohr	Rail-Druckfehler (Der tatsächliche Raildruck ist zu hoch, wenn das PLV-Ventil klemmt)
523489	0	P1668	MIL + RSL	PLV (Common rail pressure limit valve)	Rail pressure fault (The actual rail pressure is too high during PRV limp home)
523468	9	P1665	MIL+RSL	PLV (Raildruckbegrenzungsventil) im Railrohr	Rail-Druckfehler (kontrollierter Raildruckfehler nach dem Öffnen des PLV-Ventils)
523468	9	P1665	MIL+RSL	PLV (Common rail pressure limit valve)	Rail pressure fault (Controlled rail pressure error after PLV valve opening)
523491	0	P1669	MIL + RSL	Kontrolle des Raildrucks	Rail-Druckfehler (Temperaturfehler des Injektors B/F während des PLV Ventil klemmt)
523491	0	P1669	MIL + RSL	Rail pressure control	Rail pressure fault (Injector B/F temperature error during PLV4 limp home)
523460	7	P1670	MIL + RSL	Kontrolle des Raildrucks	Rail-Druckfehler (Betriebszeitfehler während RPS klemmt)
523460	7	P1670	MIL + RSL	Rail pressure control	Rail pressure fault (Operation time error during RPS limp home)
190	16	P0219	MIL + RSL	Overspeed	Overspeed
190	16	P0219	MIL + RSL	Overspeed	Overspeed
2950	5	P0660	MIL + AWL	Steuerung der Ansaugdrosselklappe	Leerlauf des Drosselklappenantriebs H-Brückenschaltung
2950	5	P0660	MIL + AWL	Intake throttle drive Circuit	No load of throttle valve drive H bridge circuit
2950	3	P1658	MIL + AWL	Steuerung der Ansaugdrosselklappe	Leistungskurzschluss des Drosselklappenantriebs Ausgang 1
2950	3	P1658	MIL + AWL	Intake throttle drive Circuit	Power short circuit of throttle valve drive H bridge output 1
2950	4	P1659	MIL + AWL	Steuerung der Ansaugdrosselklappe	GND Kurzschluss gegen Masse des Drosselklappenantriebs Ausgang 1
2950	4	P1659	MIL + AWL	Intake throttle drive Circuit	GND short circuit of throttle valve drive H bridge output 1
2950	6	P1660	MIL + AWL	Steuerung der Ansaugdrosselklappe	Überspannung am Antrieb der Drosselklappe
2950	6	P1660	MIL + AWL	Intake throttle drive Circuit	Overload on the drive H bridge circuit of throttle valve
2951	3	P1661	MIL + AWL	Steuerung der Ansaugdrosselklappe	Kurzschluss des Drosselklappenantriebs Ausgang 2
2951	3	P1661	MIL + AWL	Intake throttle drive Circuit	VB Power short Circuit of throttle valve drive H bridge output 2
2951	4	P1662	MIL + AWL	Steuerung der Ansaugdrosselklappe	Kurzschluss gegen Masse des Drosselklappenantriebs Ausgang 2
2951	4	P1662	MIL + AWL	Intake throttle drive Circuit	GND short circuit of throttle valve drive H bridge output 2
522585	12	P1613	MIL + RSL	Interner ECU-Fehler	CY146 SPI-Kommunikationsfehler
522585	12	P1613	MIL + RSL	ECU internal fault	CY146 SPI communication fault
522588	12	P1608	MIL + RSL	Interner ECU-Fehler	Überhöhte Spannung der Versorgung 1
522588	12	P1608	MIL + RSL	ECU internal fault	Excessive voltage of supply 1

522589	12	P1617	MIL + RSL	Interner ECU-Fehler	Unzureichende Spannung der Versorgung 1
522589	12	P1617	MIL + RSL	ECU internal fault	Insufficient voltage of supply 1
522590	12	P1609	None	Interner ECU-Fehler	Fehler der Sensor-Versorgungsspannung 1
522590	12	P1609	None	ECU internal fault	Sensor supply voltage error 1
522591	12	P1618	None	Interner ECU-Fehler	Fehler der Sensor-Versorgungsspannung 2
522591	12	P1618	None	ECU internal fault	Sensor supply voltage error 2
522592	12	P1619	None	Interner ECU-Fehler	Fehler der Sensor-Versorgungsspannung 3
522592	12	P1619	None	ECU internal fault	Sensor supply voltage error 3
522744	4	P1626	MIL + AWL	Interner ECU-Fehler	Aktorantrieb Stromkreis 1 kurzgeschlossen gegen Masse
522744	4	P1626	MIL + AWL	ECU internal fault	Actuator drive Circuit 1 short to ground
522994	4	P1633	MIL + AWL	Interner ECU-Fehler	Aktorantrieb Stromkreis 2 kurzgeschlossen gegen Masse
522994	4	P1633	MIL + AWL	ECU internal fault	Actuator drive Circuit 2 short to ground
523471	6	P1467	MIL + AWL	Interner ECU-Fehler	Aktorantrieb Stromkreis 3 kurzgeschlossen gegen Masse
523471	6	P1467	MIL + AWL	ECU internal fault	Actuator drive Circuit 3 short to ground
523473	12	P1469	MIL + RSL	Interner ECU-Fehler	AD-Wandler-Fehler 1
523473	12	P1469	MIL + RSL	ECU internal fault	AD Converter fault 1
523474	12	P1470	MIL + RSL	Interner ECU-Fehler	AD-Wandler-Fehler 2
523474	12	P1470	MIL + RSL	ECU internal fault	AD Converter fault 2
523475	12	P1471	MIL + RSL	Interner ECU-Fehler	Externer Überwachungs-IC und CPU-Fehler 1
523475	12	P1471	MIL + RSL	ECU internal fault	External monitoring IC and CPU fault 1
523476	12	P1472	MIL + RSL	Interner ECU-Fehler	Externer Überwachungs-IC und CPU-Fehler 2
523476	12	P1472	MIL + RSL	ECU internal fault	External monitoring IC and CPU fault 2
523477	12	P1473	MIL + RSL	Interner ECU-Fehler	ROM-Fehler
523477	12	P1473	MIL + RSL	ECU internal fault	ROM fault
523478	12	P1474	MIL + RSL	Interner ECU-Fehler	Unterbrechung des Schaltweges 1
523478	12	P1474	MIL + RSL	ECU internal fault	Shutoff path fault 1
523479	12	P1475	MIL + RSL	Interner ECU-Fehler	Unterbrechung des Schaltweges 2
523479	12	P1475	MIL + RSL	ECU internal fault	Shutoff path fault 2
523480	12	P1476	MIL + RSL	Interner ECU-Fehler	Unterbrechung des Schaltweges 3
523480	12	P1476	MIL + RSL	ECU internal fault	Shutoff path fault 3
523481	12	P1477	MIL + RSL	Interner ECU-Fehler	Unterbrechung des Schaltweges 4
523481	12	P1477	MIL + RSL	ECU internal fault	Shutoff path fault 4
523482	12	P1478	MIL + RSL	Interner ECU-Fehler	Unterbrechung des Schaltweges 5
523482	12	P1478	MIL + RSL	ECU internal fault	Shutoff path fault 5
523483	12	P1479	MIL + RSL	Interner ECU-Fehler	Unterbrechung des Schaltweges 6
523483	12	P1479	MIL + RSL	ECU internal fault	Shutoff path fault 6
523484	12	P1480	MIL+RSL	Interner ECU-Fehler	Unterbrechung des Schaltweges 7
523484	12	P1480	MIL+RSL	ECU internal fault	Shutoff path fault 7
523485	12	P1481	MIL + RSL	Interner ECU-Fehler	Unterbrechung des Schaltweges 8
523485	12	P1481	MIL + RSL	ECU internal fault	Shutoff path fault 8
523486	12	P1482	MIL + RSL	Interner ECU-Fehler	Unterbrechung des Schaltweges 9
523486	12	P1482	MIL + RSL	ECU internal fault	Shutoff path fault 9
523487	12	P1483	MIL + RSL	Interner ECU-Fehler	Unterbrechung des Schaltweges 10
523487	12	P1483	MIL + RSL	ECU internal fault	Shutoff path fault 10
523488	0	P1484	MIL + RSL	Interner ECU-Fehler	Erkennungsfehler der Motordrehzahl
523488	0	P1484	MIL + RSL	ECU internal fault	Recognition error of engine speed
522323	0	P1101	Auswahl nach Option	Geber Luftfilterverschmutzung	Alarm für verschmutzte Luftfilter

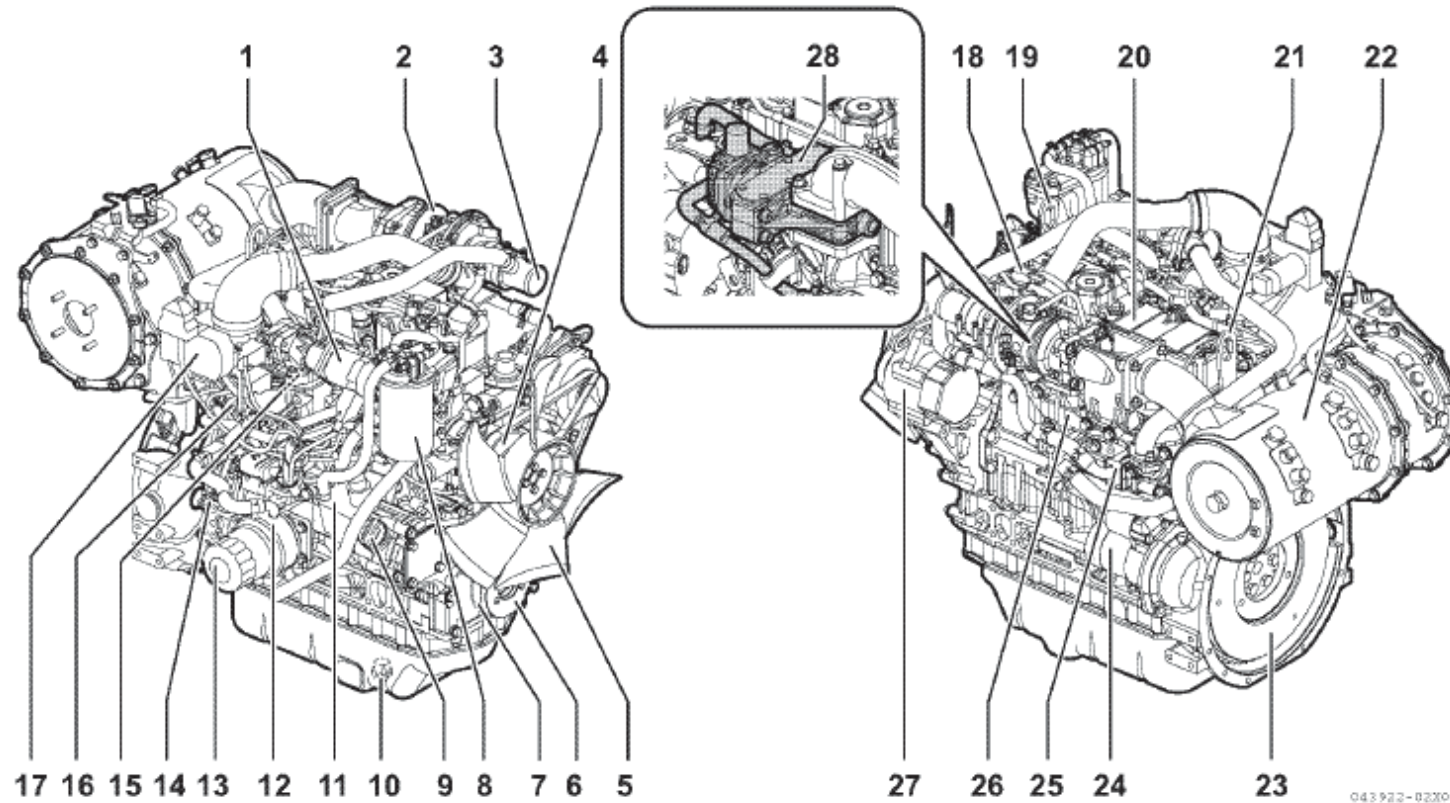
522323	0	P1101	Select by application	Air cleaner switch	Air cleaner clogged alarm
522329	0	P1151	Auswahl nach	Öl- / Wasserabscheider	Alarm für Ölwasserabscheider
522329	0	P1151	Select by application	Oil/water separator switch	Oil/water Separator alarm
167	5	P1562	Auswahl nach Option	Ladekontrollleuchte H13 geht nicht aus. Kein Ladestrom vom Generator G02, Kabelunterbrechung , Kurzschluss oder zu hoher Widerstand in der elektrischen Leitung (Kabel) zu H13.	Prüfen sie den Ladezustand der Batterie. Prüfen sie die Keilriemenspannung vom Generator (loser Antriebsriemen) . Prüfen sie die elektrische Leitung (Kabel) vom Generator in das Motorsteuergerät G02, X31:12, A01K88 und vom Motor Steuergerät A01K66, H13, 1B. Prüfen sie den Ladestrom von Generator (Lichtmaschine) G02.
167	5	P1562	Select by application	Charge indicator light (pilot lamp) H13 does not go out. No charging current from the G02 generator, cable interruption, short circuit or too high resistance in the electrical line (cable) to H13.	Check the charge level of the battery. Check the V-belt tension of the alternator (loose drive belt) . Check the electrical wiring (cables) from the generator to the engine control unit G02, X31:12, A01K88 and from the engine control unit A01K66 to H13, 1B. Check the charging current of alternator G02.
167	1	P1568	Auswahl nach Option	Alarm Ladezustand der Batterie. Ladekontrollleuchte H13 geht nicht aus. Kein Ladestrom vom Generator G02, Kabelunterbrechung , Kurzschluss oder zu hoher Widerstand in der elektrischen Leitung (Kabel) zu H13.	Ladezustand-Alarm. Prüfen sie die elektrische Leitung (Kabel) vom Generator in das Motorsteuergerät G02, X31:12, A01K88 und vom Motor Steuergerät A01K66, H13, 1B. Prüfen sie den Ladestrom von Generator (Lichtmaschine) G02.
167	1	P1568	Select by application	Charge alarm. Charge indicator light (pilot lamp) H13 does not go out. No charging current from the G02 generator, cable interruption, short circuit or too high resistance in the electrical line (cable) to H13.	Check the charge level of the battery. Check the V-belt tension of the alternator (loose drive belt) . Check the electrical wiring (cables) from the generator to the engine control unit G02, X31:12, A01K88 and from the engine control unit A01K66 to H13, 1B. Check the charging current of alternator G02.
100	4	P1192	Auswahl nach Option	Öldruckschalter	Öldruckschalter offener Stromkreis
100	4	P1192	Select by application	Oil pressure switch	Oil pressure switch open Circuit
100	1	P1198	Auswahl nach Option	Öldruckschalter	Alarm bei niedrigem Öldruck
100	1	P1198	Select by application	Oil pressure switch	Low oil pressure fault alarm
522573	0	P2463	Not turned on	Partikelfilter	Einschränkung des Dieselpartikelfilters - Rußansammlung
522573	0	P2463	Not turned on	DPF	Overaccumulation (Method C)
522574	0	P1463	Not turned on	Partikelfilter	Einschränkung des Dieselpartikelfilters - Rußansammlung
522574	0	P1463	Not turned on	DPF	Overaccumulation (Method P)
522575	7	P2458	Not turned on	Partikelfilter	Regenerationsfehler (Stationärer Regenerationsfehler)
522575	7	P2458	Not turned on	DPF	Regeneration defect (Stationary regeneration failure)
522577	11	P2459	Not turned on	Partikelfilter	Regenerationsfehler (Stationäre Regeneration nicht durchgeführt)
522577	11	P2459	Not turned on	DPF	Regeneration defect (Stationary regeneration not performed)
3720	16	P242F	MIL + AWL	Partikelfilter-OP-Schnittstelle.	Anfrage zur Aschereinigung 1
3720	16	P242F	MIL + AWL	DPF OP interface	Ash cleaning request 1
3720	0	P1420	MIL + RSL	Partikelfilter-OP-Schnittstelle.	Anfrage zur Aschereinigung 2
3720	0	P1420	MIL + RSL	DPF OP interface	Ash cleaning request 2
3719	16	P1421	MIL + AWL	Partikelfilter-OP-Schnittstelle.	Stationäre Regeneration in Bereitschaft.
3719	16	P1421	MIL + AWL	DPF OP interface	Stationary regeneration standby
3719	0	P1424	MIL + RSL	Partikelfilter-OP-Schnittstelle.	Sicherheitsmodus
3719	0	P1424	MIL + RSL	DPF OP interface	Backup mode

3695	14	P1425	Not turned on	Partikelfilter-OP-Schnittstelle.	Rücksetzen der Regeneration nicht erlaubt.
3695	14	P1425	Not turned on	DPF OP interface	Reset regeneration prohibited
3719	9	P1445	MIL + RSL	Partikelfilter-OP-Schnittstelle.	Fehler bei der Wiederherstellungsregeneration.
3719	9	P1445	MIL + RSL	DPF OP interface	Recovery regeneration failure
3719	7	P1446	MIL + RSL	Partikelfilter-OP-Schnittstelle.	Wiederherstellung der Regeneration gesperrt
3719	7	P1446	MIL + RSL	DPF OP interface	Recovery regeneration prohibition
522596 M1000	9	U0292	MIL + AWL	CAN2CAN2, CAN Bus- Error or error in the power supply of ECU- A01. Check Power supply of A01 B+ and B- (GND).	TSC1 (CAN-Nachricht) Zeitüberschreitung beim Empfang (SA1) Y_EC (CAN message) reception time out. Error in the power supply of the ECU (A01). Check fuse F34.Check ground supply of A01. Check CAN Bus.
522596 M1000	9	U0292	MIL + AWL	CAN2CAN2, CAN Bus- Error or error in the power supply of ECU- A01. Check Power supply of A01 B+ and B- (GND).	TSC1 (CAN message) reception time out (SA1) TSC1 (CAN-Nachricht) Zeitüberschreitung beim Empfang (SA1) Y_EC (CAN message) reception time out. Error in the power supply of the ECU (A01). Check fuse F34. Check ground supply of A01. Check CAN Bus.
522597	9	U13Q1	MIL + AWL	CAN2	TSC1 (CAN-Nachricht) Zeitüberschreitung beim Empfang (SA2)
522597	9	U13Q1	MIL + AWL	CAN2	TSC1 (CAN message) reception time out (SA2)
522599	9	UI 292	MIL + AWL	CAN2	Y_ECR1 (CAN-Nachricht) Zeitüberschreitung beim Empfang
522599	9	UI 292	MIL + AWL	CAN2	Y_ECR1 (CAN message) reception time out
522600 1.7.0.3 1703	9	U1293 M1000	MIL + AWL	CAN2 , CAN- Bus- Fehler oder Fehler in der Spannungsversorgung vom Motorsteuergerät A01. Versorgung B+ und B- (Masse) prüfen.	Y_EC (CAN-Nachricht) Zeitüberschreitung beim Empfang. Fehler in der Spannungsversorgung vom Motorsteuergerät. Sicherung F34 prüfen.Masseversorgung von A01 prüfen . CAN- Bus prüfen.
522600 1.7.0.3 1703	9	U1293 M1000	MIL + AWL	CAN2, CAN Bus- Error or error in the power supply of ECU- A01. Check Power supply of A01 B+ and B- (GND).	Y_EC (CAN message) reception time out. Error in the power supply of the ECU (A01). Check fuse F34. Check ground supply of A01. Check CAN Bus.
484607 1.7.0.3 1703	25	M1000	MIL + AWL	CAN2 , CAN- Bus- Fehler oder Fehler in der Spannungsversorgung vom Motorsteuergerät A01. Versorgung B+ und B- (Masse) prüfen.	Y_EC (CAN-Nachricht) Zeitüberschreitung beim Empfang. Fehler in der Spannungsversorgung vom Motorsteuergerät. Sicherung F34 prüfen. Masseversorgung von A01 prüfen . CAN- Bus prüfen.
484607 1.7.0.3 1703	25	M1000	MIL + AWL	CAN2, CAN Bus- Error or error in the power supply of ECU- A01. Check Power supply of A01 B+ and B- (GND).	Y_EC (CAN message) reception time out. Error in the power supply of the ECU (A01). Check fuse F34. Check ground supply of A01. Check CAN Bus.
522601	9	U1294	MIL + AWL	CAN2	Y_RSS (CAN-Nachricht) Zeitüberschreitung beim Empfang
522601	9	U1294	MIL + AWL	CAN2	Y_RSS (CAN message) reception time out
522603	9	U1296	MIL + AWL	CAN2	VPI (CAN-Nachricht) Zeitüberschreitung beim Empfang
522603	9	U1296	MIL + AWL	CAN2	VPI (CAN message) reception time out
522605	9	U1298	MIL + AWL	CAN2	Y_ECM3 (CAN-Nachricht) Zeitüberschreitung beim Empfang
522605	9	U1298	MIL + AWL	CAN2	Y_ECM3 (CAN message) reception time out
237	31	U0168	MIL + AWL	CAN2	VI (CAN-Nachricht) Zeitüberschreitung beim Empfang
237	31	U0168	MIL + AWL	CAN2	VI (CAN message) reception time out
237	13	U3002	MIL + AWL	CAN2	VI (CAN-Nachricht) Fehler bei Empfangsdaten
237	13	U3002	MIL + AWL	CAN2	VI (CAN message) reception data fault
522609	9	U1300	MIL + AWL	CAN2	Y_ETCP1 (CAN-Nachricht) Zeitüberschreitung beim Empfang
522609	9	U1300	MIL + AWL	CAN2	Y_ETCP1 (CAN message) reception time out
522618	9	U1302	MIL + AWL	CAN2	EBC1 (CAN-Nachricht) Zeitüberschreitung beim Empfang
522618	9	U1302	MIL + AWL	CAN2	EBC1 (CAN message) reception time out
522619	9	UI 303	MIL + AWL	CAN2 , CAN- Bus- Fehler oder Fehler in der Spannungsversorgung vom Motorsteuergerät A01. Versorgung B+ und B- (Masse) prüfen.	Y_DPFIF (CAN-Nachricht) Zeitüberschreitung beim Empfang. Fehler in der Spannungsversorgung vom Motorsteuergerät. Sicherung F34 prüfen. Masseversorgung von A01 prüfen . CAN- Bus prüfen.



522619	9	UI 303	MIL + AWL	CAN2, CAN Bus- Error or error in the power supply of ECU-A01. Check Power supply of A01 B+ and B- (GND).	Y_DPFIF (CAN message) reception time out. Y_EC (CAN message) reception time out. Error in the power supply of the ECU (A01). Check fuse F34. Check ground supply of A01. Check CAN Bus.
522610	9	U010B	MIL + AWL	EGR- CAN1 Fehler in der der Spannungsversorgung zum EGR (AGR) Ventil oder CAN- Bus- Fehler.	Sicherung F41 prüfen. Spannungsversorgung Relais K03- Pin 1+ 2 (30- 87) prüfen. Elektrische Leitung (Kabel W9K3) zum Stecker 12 polig rot auf Kabelunterbrechung, Kurzschluss und zu hohen Widerstand prüfen.
522610	9	U010B	MIL + AWL	EGR- CAN1. Error power supply to EGR- Valve or CAN- Bus Error .	Check fuse F41. Check power supply to relay K03- pin 1+ 2 (30- 87). Check electrical cable (cable W9K3) to connector 12-pin red for cable interruption, short circuit and too high resistance.
522611	9	U1107	TBD	CAN1	Auslassdrossel (CAN-Nachricht von der Auslassdrossel-Zeitüberschreitung)
522611	9	U1107	TBD	CAN1	Exhaust throttle (CAN message from the exhaust throttle time out)
2791	0	P0404	MIL + AWL	EGR-Ventil	EGR-Überspannungsfehler
2791	0	P0404	MIL + AWL	EGR valve	EGR over-voltage fault
2791	1	P1404	MIL + AWL	EGR-Ventil	EGR-Unterspannungsfehler
2791	1	P1404	MIL + AWL	EGR valve	EGR under-voltage fault
2791	7	PI 409	MIL + AWL	EGR valve	EGR feedback malfunction
2791	7	PI 409	MIL + AWL	EGR-Ventil	Fehlfunktion der EGR-Rückmeldung
2791	9	U0401	MIL + AWL	EGR-Ventil	EGR ECM-Datenfehler
2791	9	U0401	MIL + AWL	EGR valve	EGR ECM data fault
2791	12	P0403	MIL + AWL	EGR-Ventil	Offener Stromkreis zwischen den EGR-Motorspulen
2791	12	P0403	MIL + AWL	EGR valve	Open Circuit between the EGR motor coils
522579	12	P1405	MIL + AWL	EGR- Ventil	Kurzschluss zwischen den EGR-Motorspulen
522579	12	P1405	MIL + AWL	EGR valve	Short Circuit between the EGR motor coils
522580	12	P0488	MIL + AWL	EGR- Ventil	Fehlfunktion des EGR-Positionssensors
522580	12	P0488	MIL + AWL	EGR valve	EGR position sensor malfunction
522581	7	P148A	MIL + RSL	EGR-Ventil	Fehlfunktion des EGR-Ventils, das blockiert ist
522581	7	P148A	MIL + RSL	EGR valve	EGR stuck open valve malfunction
522582	7	P049D	MIL + RSL	EGR-Ventil	Fehlfunktion der EGR-Initialisierung
522582	7	P049D	MIL + RSL	EGR valve	EGR initialization malfunction
522183	1	P1410	MIL + AWL	EGR-Ventil	Ausfall eines EGR-Hochtemperatur-Thermistors
522183	1	P1410	MIL + AWL	EGR valve	EGR high temperature thermistor malfunction
522184	1	P1411	MIL + AWL	EGR-Ventil	Fehlfunktion eines EGR-Thermistors bei niedriger Temperatur
522184	1	P1411	MIL + AWL	EGR valve	EGR low temperature thermistor malfunction
522617	12	U1401	MIL + AWL	EGR-Ventil	EGR-Zielwert außerhalb des Bereichs
522617	12	U1401	MIL + AWL	EGR valve	EGR target value out of range
630	12	P0601	MIL + RSL	EEPROM	Fehler beim Löschen des EEPROM-Speichers
630	12	P0601	MIL + RSL	EEPROM	EEPROM memory deletion error
522576	12	P160E	MIL + RSL	EEPROM	EEPROM-Speicher-Lesefehler
522576	12	P160E	MIL + RSL	EEPROM	EEPROM memory read error
522578	12	P160F	MIL + RSL	EEPROM	EEPROM-Speicher-Schreibfehler
522578	12	P160F	MIL + RSL	EEPROM	EEPROM memory writing error
					AB62:F329

## Anbauteile Motor



043922-02X01

- 1 – AGR-Ventil
- 2 – Turbolader\*1
- 3 – Lufteinlasskanal (von Luftfilter)
- 4 – Motorkühlmittelpumpe
- 5 – Motorkühlgebläse
- 6 – Kurbelwellenriemenscheibe
- 7 – Keilriemen
- 8 – Kraftstofffilter
- 9 – seitlicher Einfüllstutzen (Motoröl)

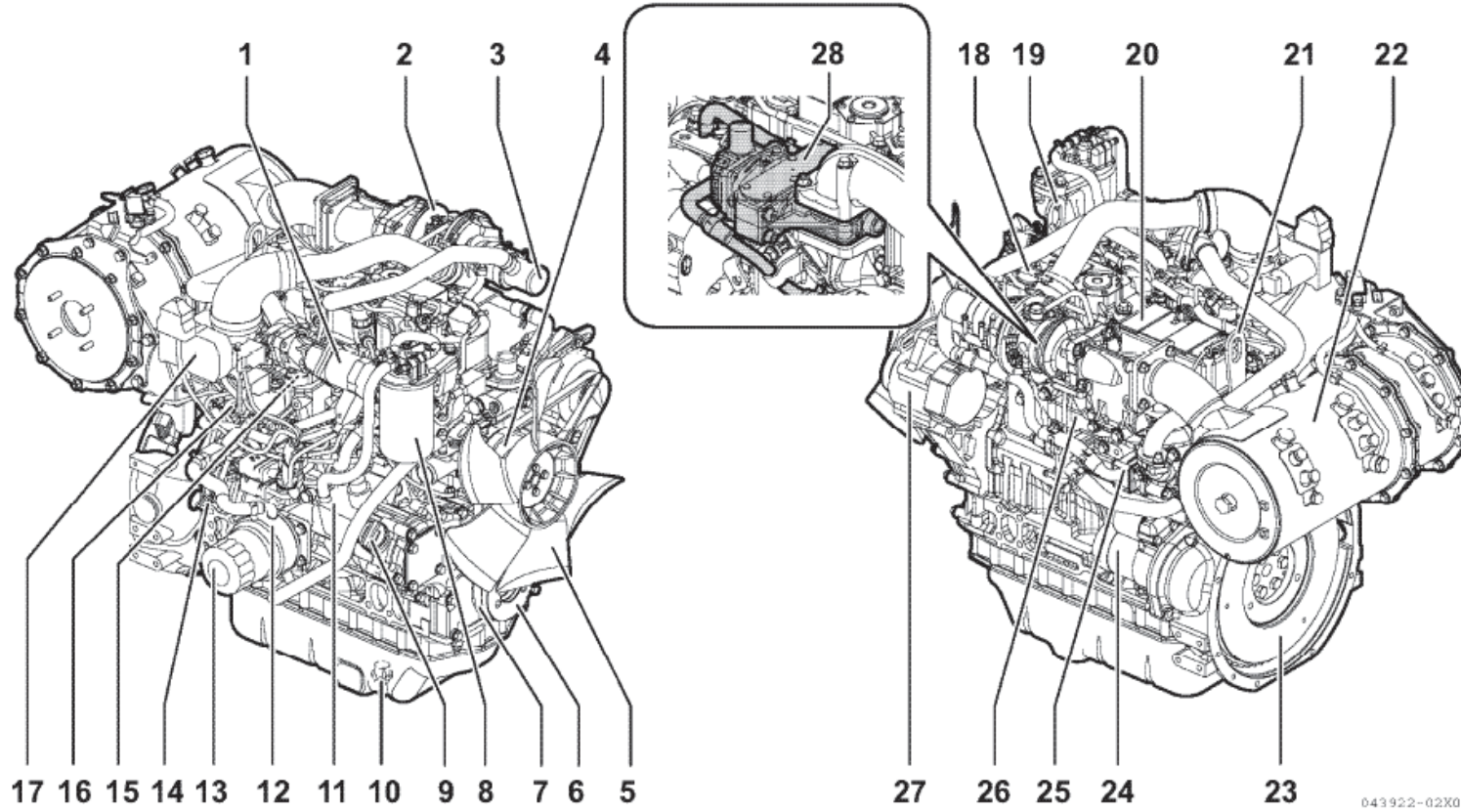
11 – Hochdruckpumpe

13 – Motorölfilter

14 – Messstab (Motoröl)

- 15 – Ansaugkrümmer
- 16 – Common-Rail
- 17 – Einlassdrosselklappe
- 18 – oberer Einfüllstutzen (Motoröl)
- 19 – Aufhängeöse (am Motorkühlgebläse-Ende)
- 20 – Zylinderkopfabdeckung
- 21 – Aufhängeöse (am Schwungrad-Ende)
- 22 – Dieselpartikelfilter (DPF)\*4
- 23 – Schwungrad
- 24 – Starter
- 25 – AGR-Kühler
- 26 – Auspuffkrümmer
- 27 – Generator

Components at Yanmar Engine

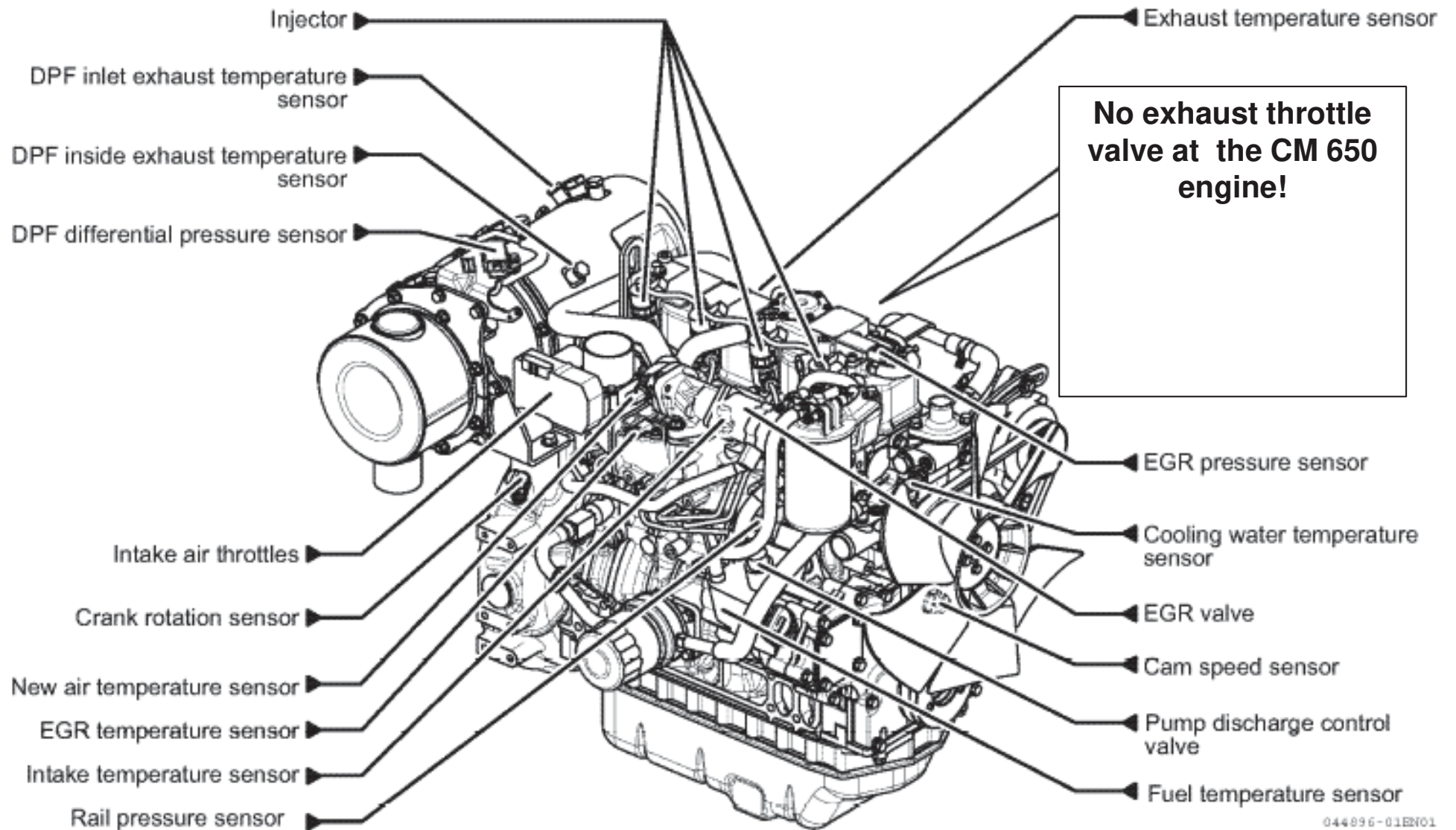


- 1 – EGR valve
- 2 – Turbocharger\*1
- 3 – Air intake port (from air cleaner)
- 4 – Engine coolant pump
- 5 – Engine cooling fan
- 6 – Crankshaft V-pulley
- 7 – V-belt
- 8 – Fuel filter
- 9 – Side filler port (engine oil)
- 10 – Drain plug (engine oil)\*2
- 11 – Supply pump
- 12 – Engine oil cooler\*3
- 13 – Engine oil filter
- 14 – Dipstick (engine oil)

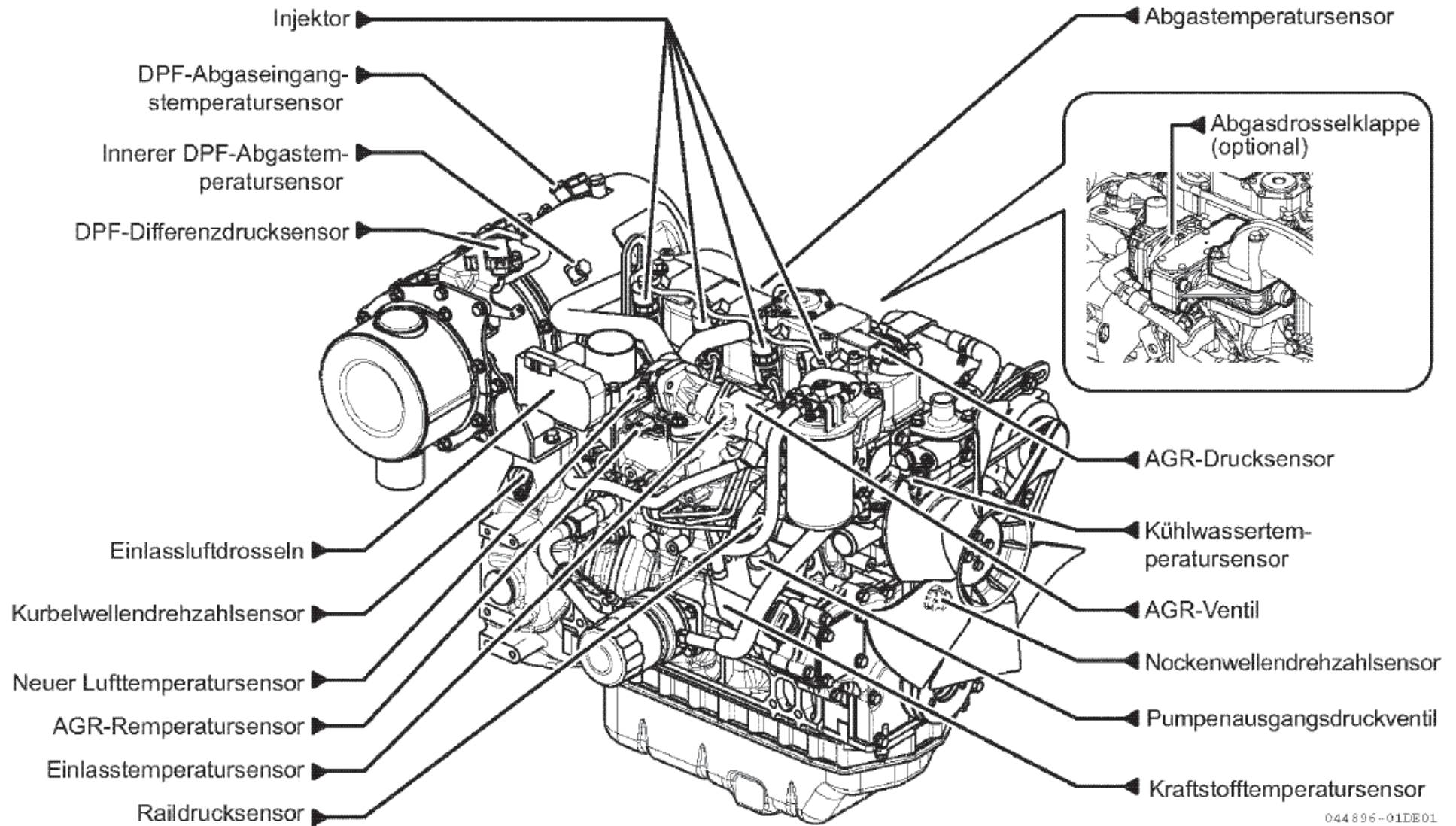
- 15 – Intake manifold
- 16 – Common rail
- 17 – Intake throttle valve
- 18 – Top filler port (engine oil)
- 19 – Lifting eye (engine cooling fan end)
- 20 – Cylinder head cover
- 21 – Lifting eye (flywheel end)
- 22 – Diesel Particulate Filter (DPF)\*4
- 23 – Flywheel
- 24 – Starter motor
- 25 – EGR cooler
- 26 – Exhaust manifold
- 27 – Alternator

043922-02X01

Mounting position of sensors (transducers) of the electronic engine control

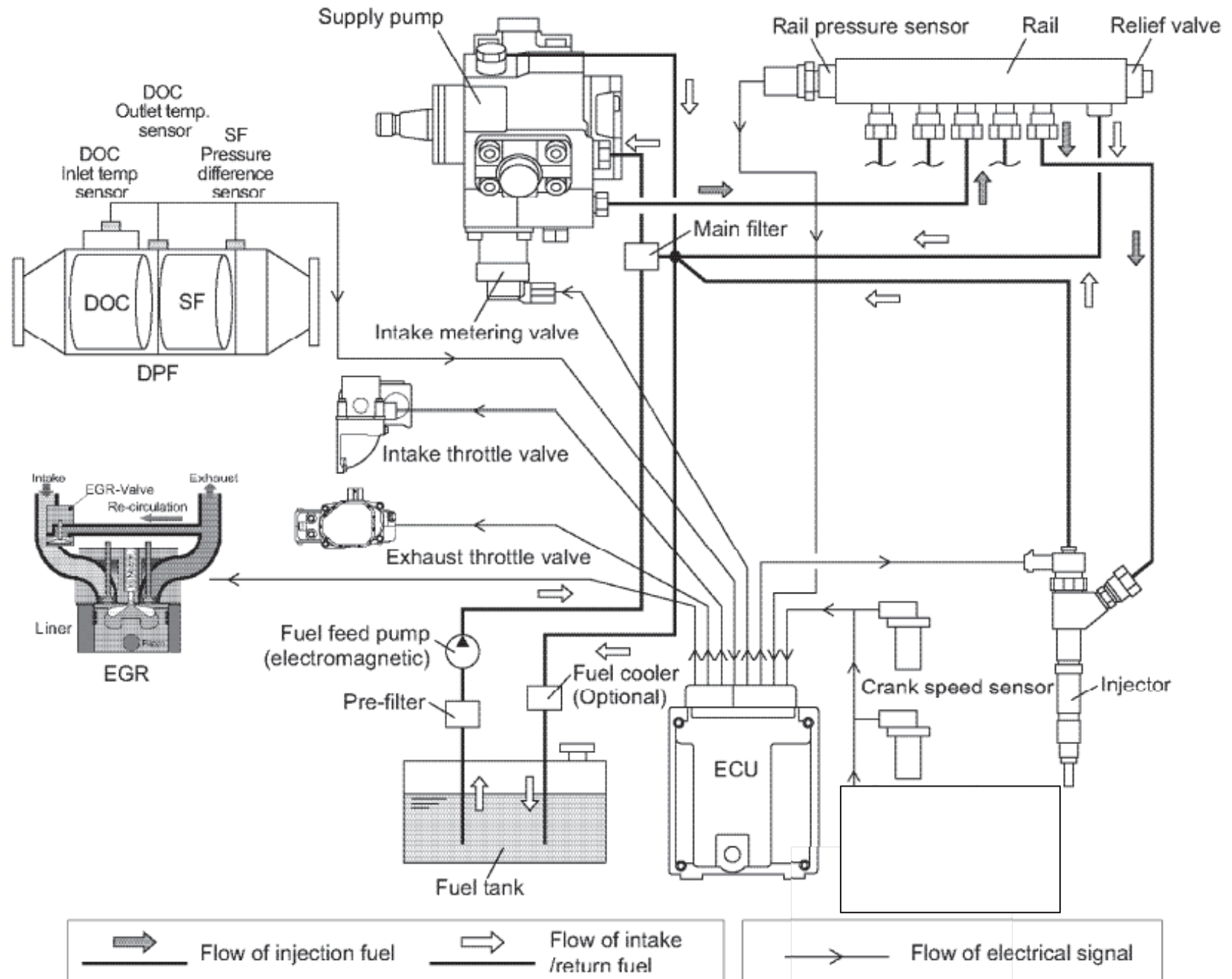


# Einbauposition von Sensoren der elektronischen Steuerung



044 896 - 01DE01

Electronic Control System



### 9.0.1 Yanmar Engine 3TVN 88C- KHW

#### Components at Yanmar Engine

Kühlwasser- Thermostat  
Cooling Water Thermostat  
PN 01184540

Kühlmittelpumpe  
Engine Coolant Pump  
PN 01477170

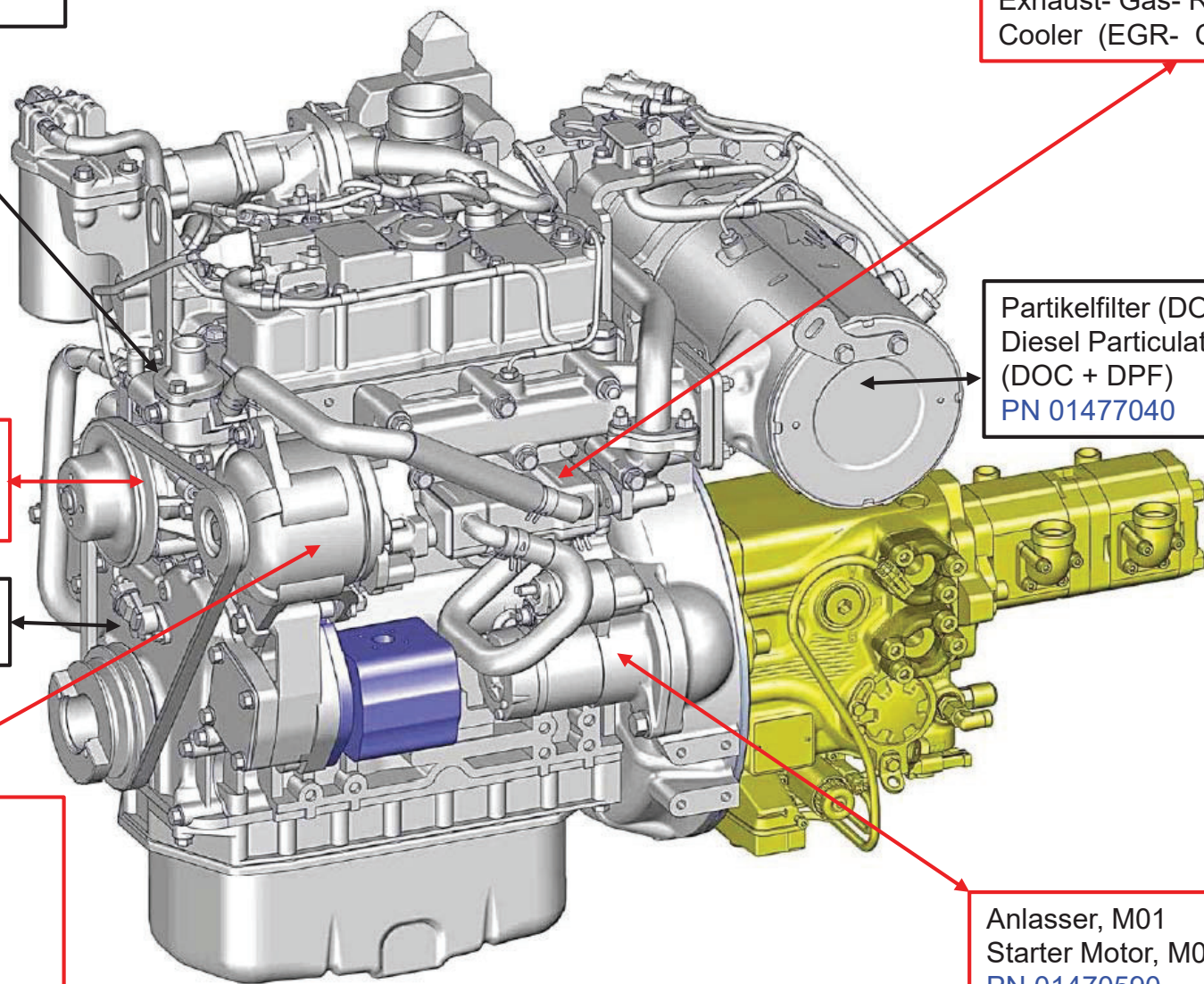
Nockenwellensensor  
Camshaft Sensor

Generator, G02  
(Lichtmaschine)  
12V, 80A  
G02 Alternator 12V, 80A  
PN 01477100

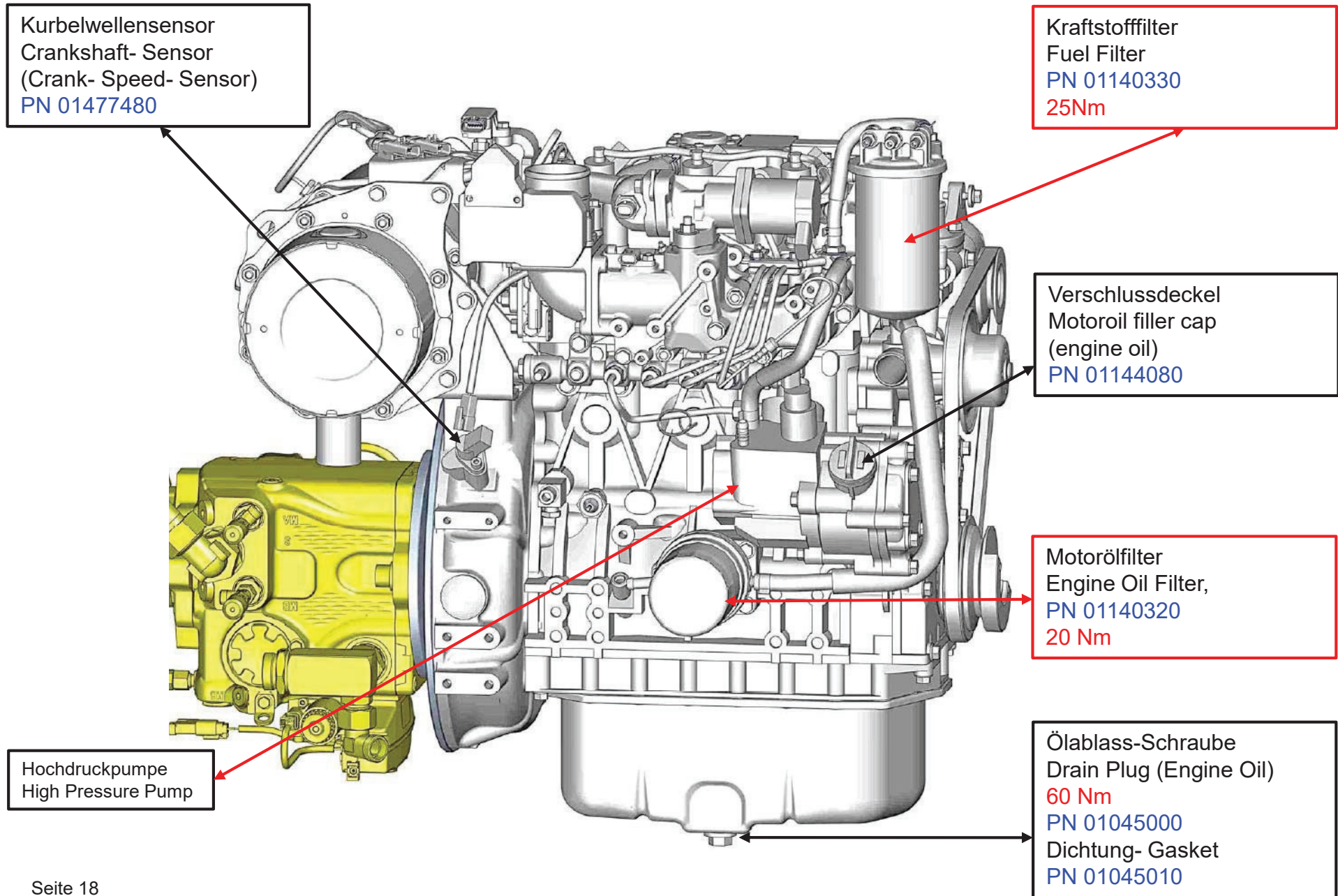
Abgasrückführungs- Kühler  
(AGR)  
Exhaust- Gas- Recirculation  
Cooler (EGR- Cooler)

Partikelfilter (DOC + DPF)  
Diesel Particulate Filter  
(DOC + DPF)  
PN 01477040

Anlasser, M01  
Starter Motor, M01  
PN 01470590



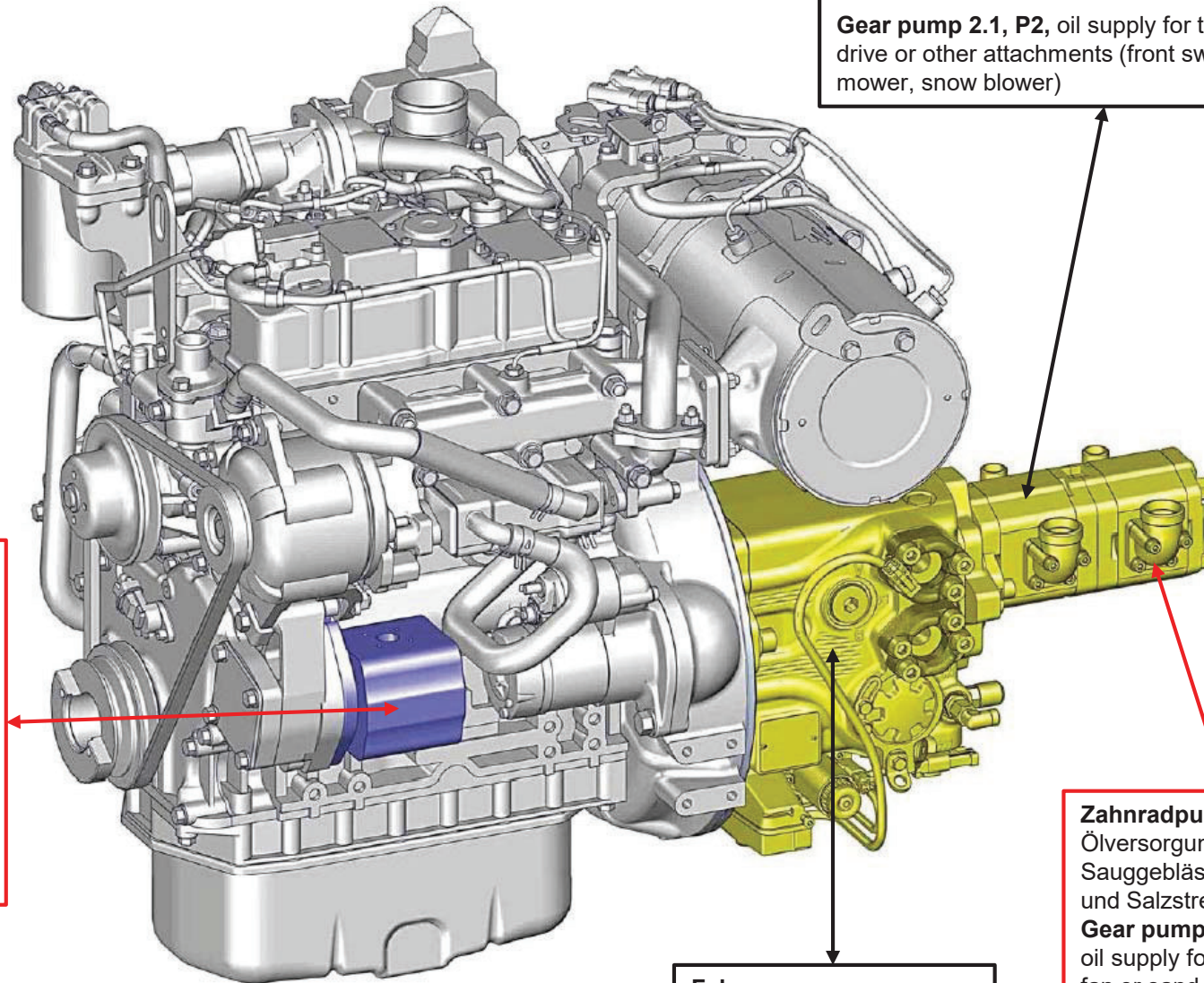
Components at Yanmar Engine





### 9.0.1 Yanmar Engine 3TVN 88C- KHW

#### Components at Yanmar Engine



**Zahnradpumpe 2.1, P2**, Ölversorgung für den Tellerbesenantrieb oder andere Anbaugeräte (Frontkehrwalze, Mähwerk, Schneefräse)  
**Gear pump 2.1, P2**, oil supply for the disc brush drive or other attachments (front sweeper, lawn mower, snow blower)

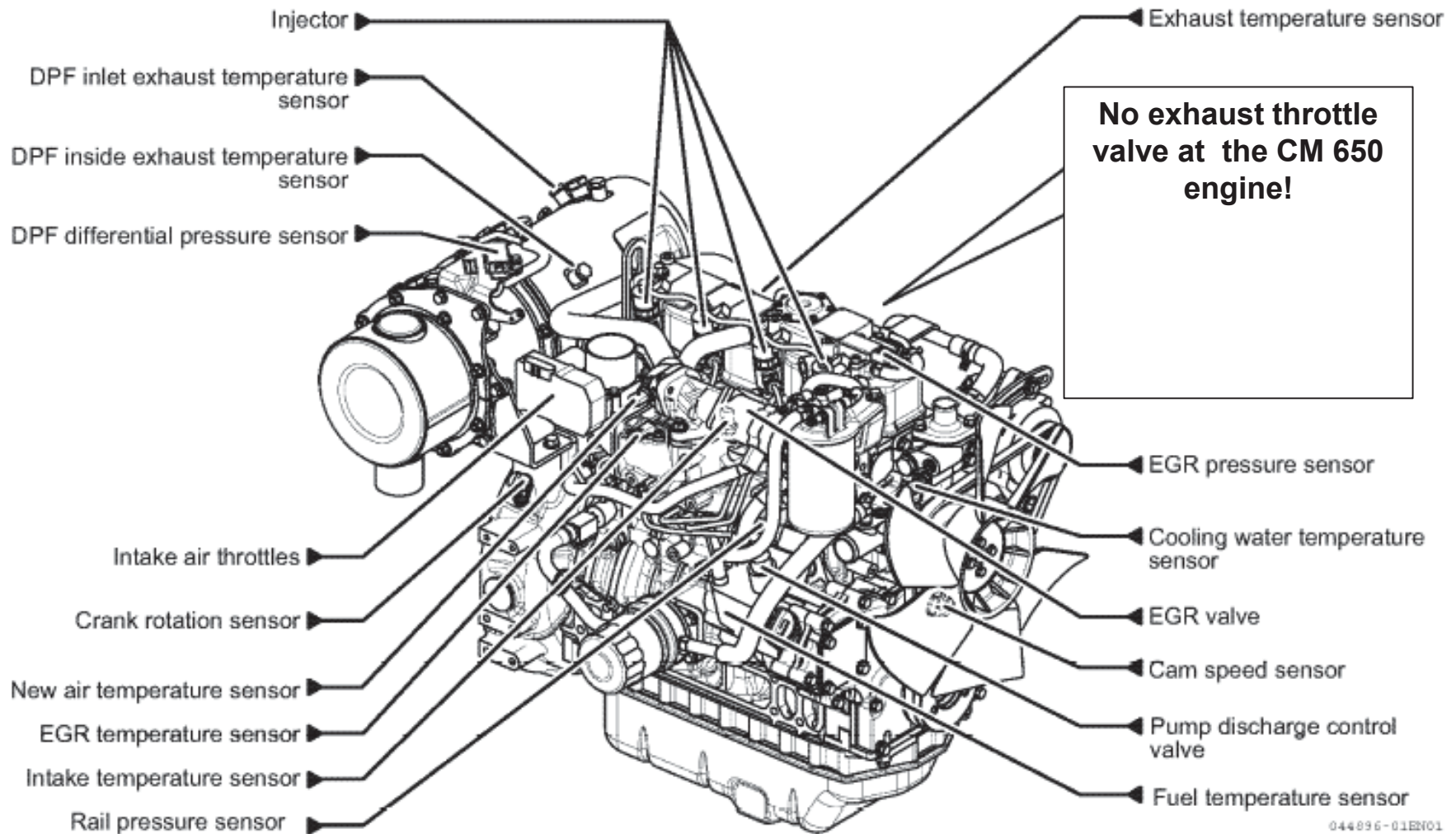
**Zahnradpumpe 2.2**, Ölversorgung für die Lenkung und die Arbeitshydraulik, Fördermenge max. 25 Liter/Min.  
**Gear pump 2.2**, oil supply for Steering and the working hydraulics, delivery rate max. 25 litres/min.

**Fahrpumpe**  
**Drive (Travel) Pump**

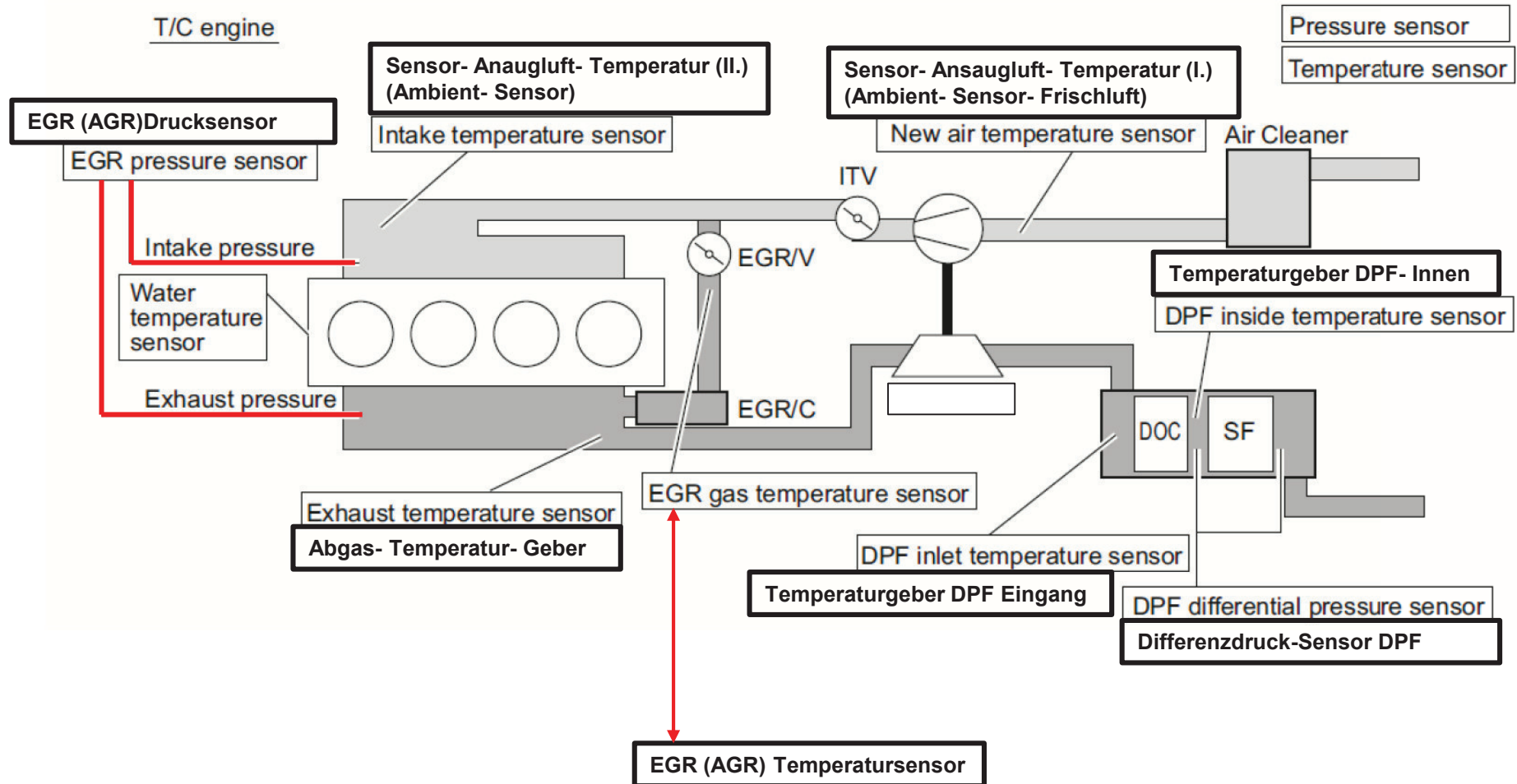
**Zahnradpumpe 2.1, P1**, Ölversorgung für das Sauggebläse oder Sand- und Salzstreuer  
**Gear pump 2.1, P1**, oil supply for the suction fan or sand and salt spreader

### 9.0.1 Yanmar Engine 3TVN 88C- KHW

Mounting position of sensors (transducers) of the electronic engine control



Sensors (transducers) of the electronic engine control



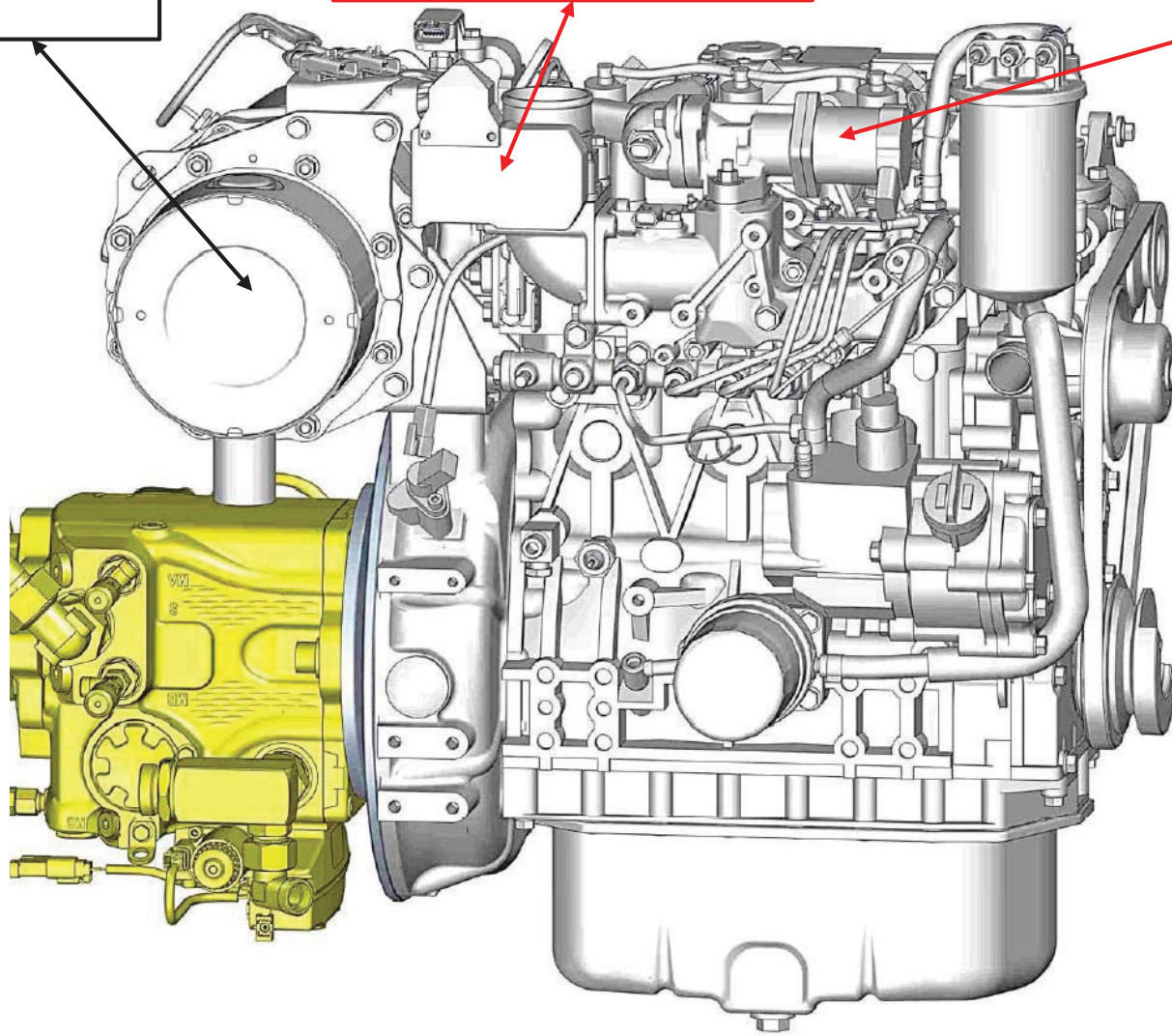
### 9.0.1 Yanmar Engine 3TVN 88C- KHW

Installation (mounting) position of components and sensors of the exhaust system

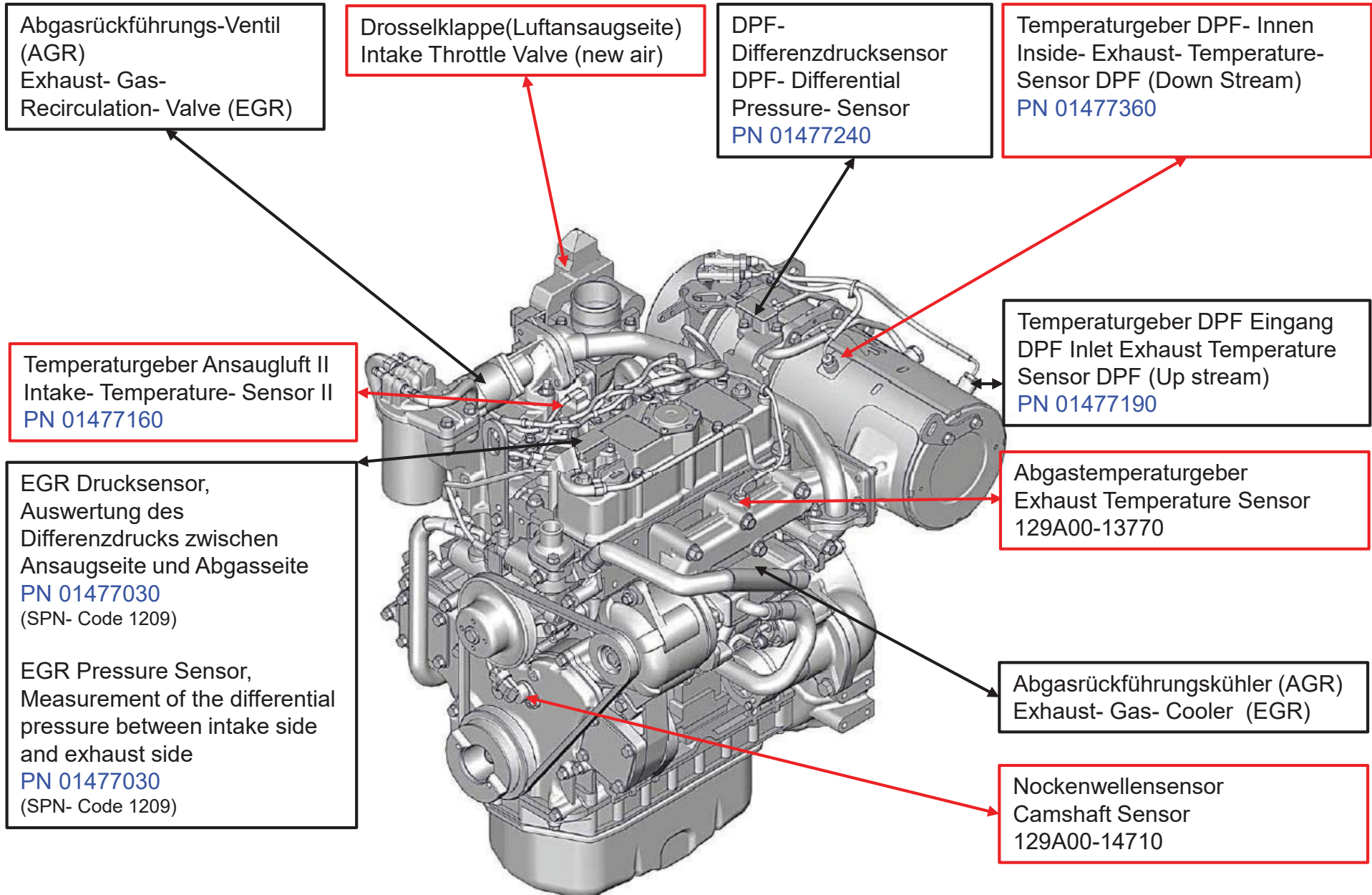
Partikelfilter (DOC + DPF) Diesel Particulate Filter (DOC + DPF)  
PN 01477040

Drosselklappe(Luftansaugseite)  
Intake throttle valve

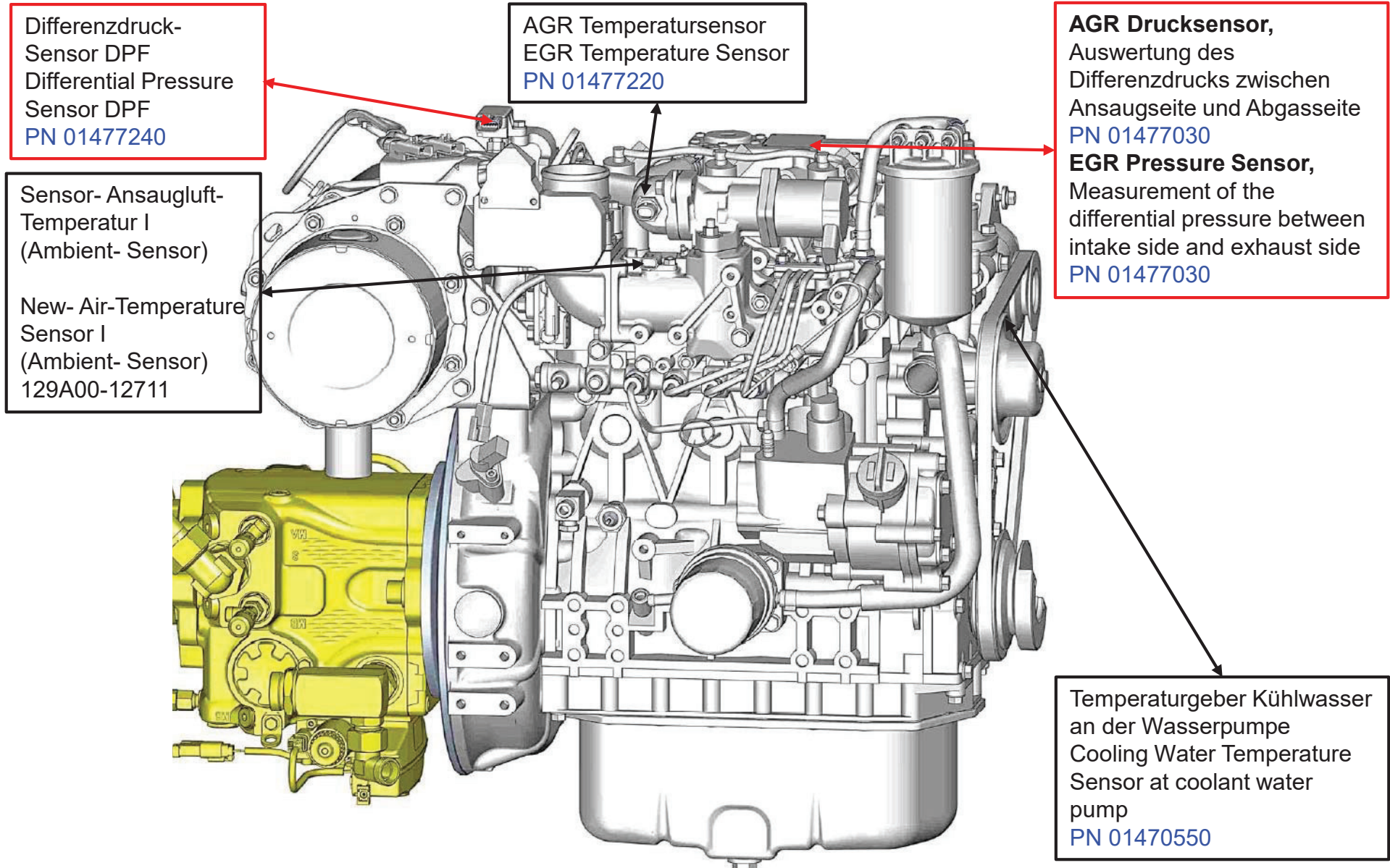
Abgasrückführungsventil (AGR)  
Exhaust- Gas- Recirculation- Valve (EGR)



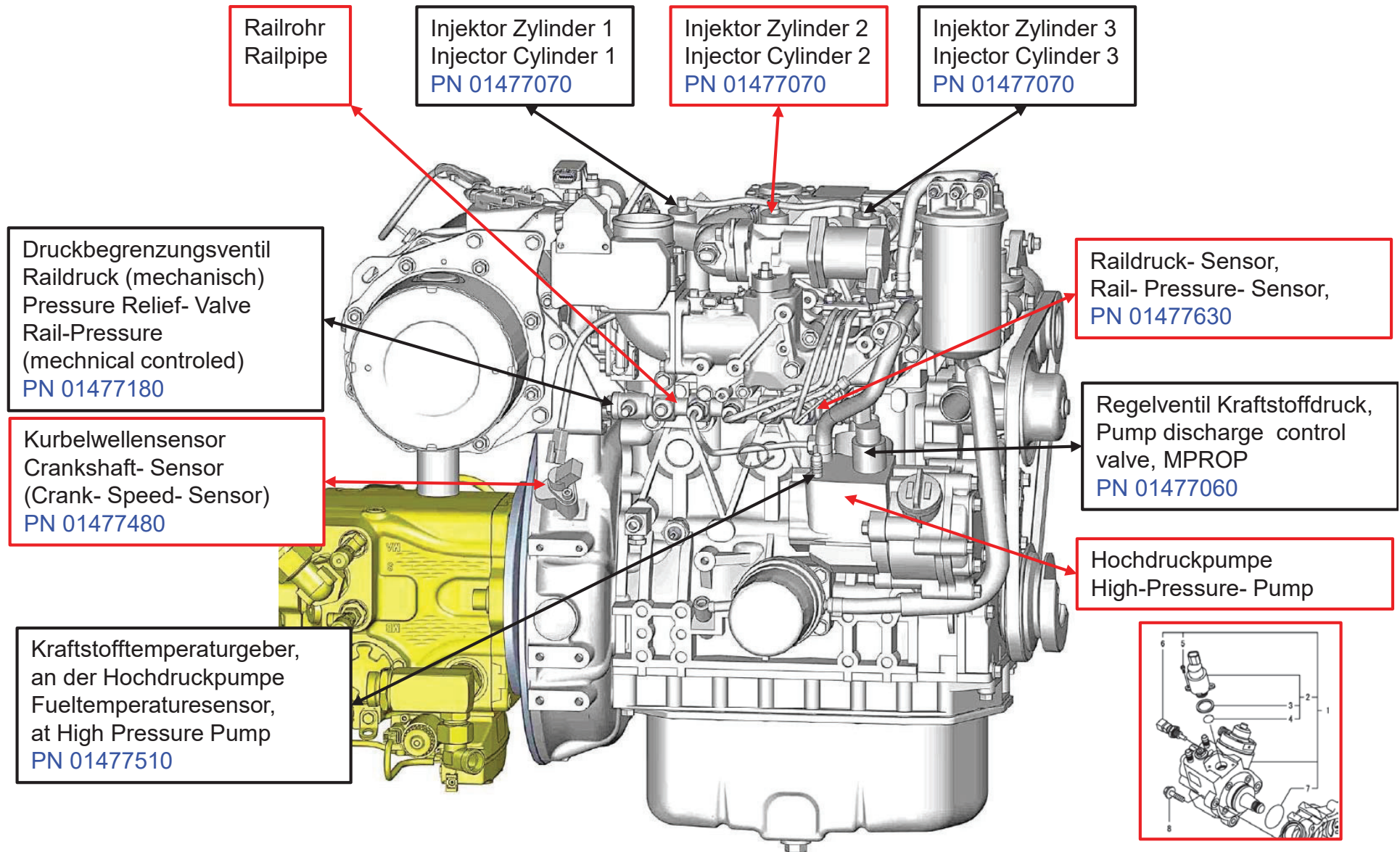
Installation (mounting) position of components and sensors of the exhaust system



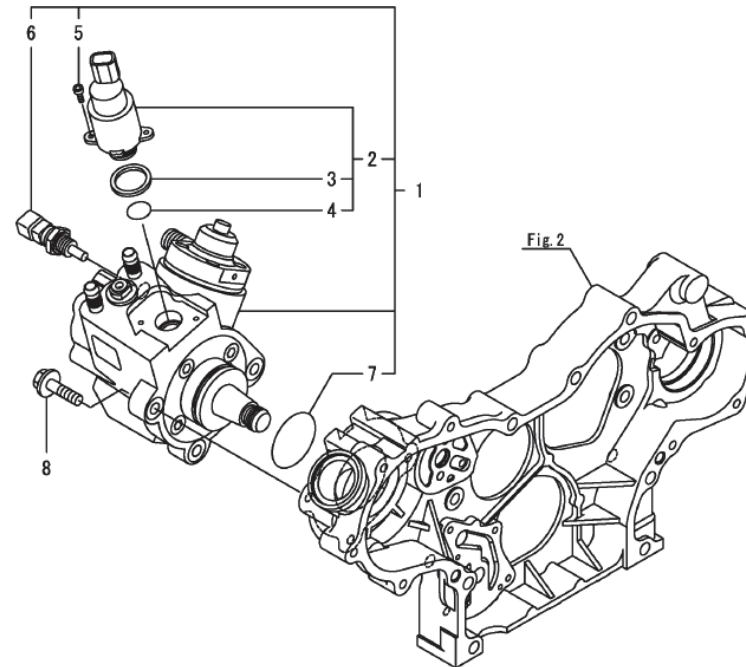
Installation (mounting) position of components and sensors of the exhaust system



Installation (mounting) position of components and sensors of the high-pressure injection system (Common Rail)



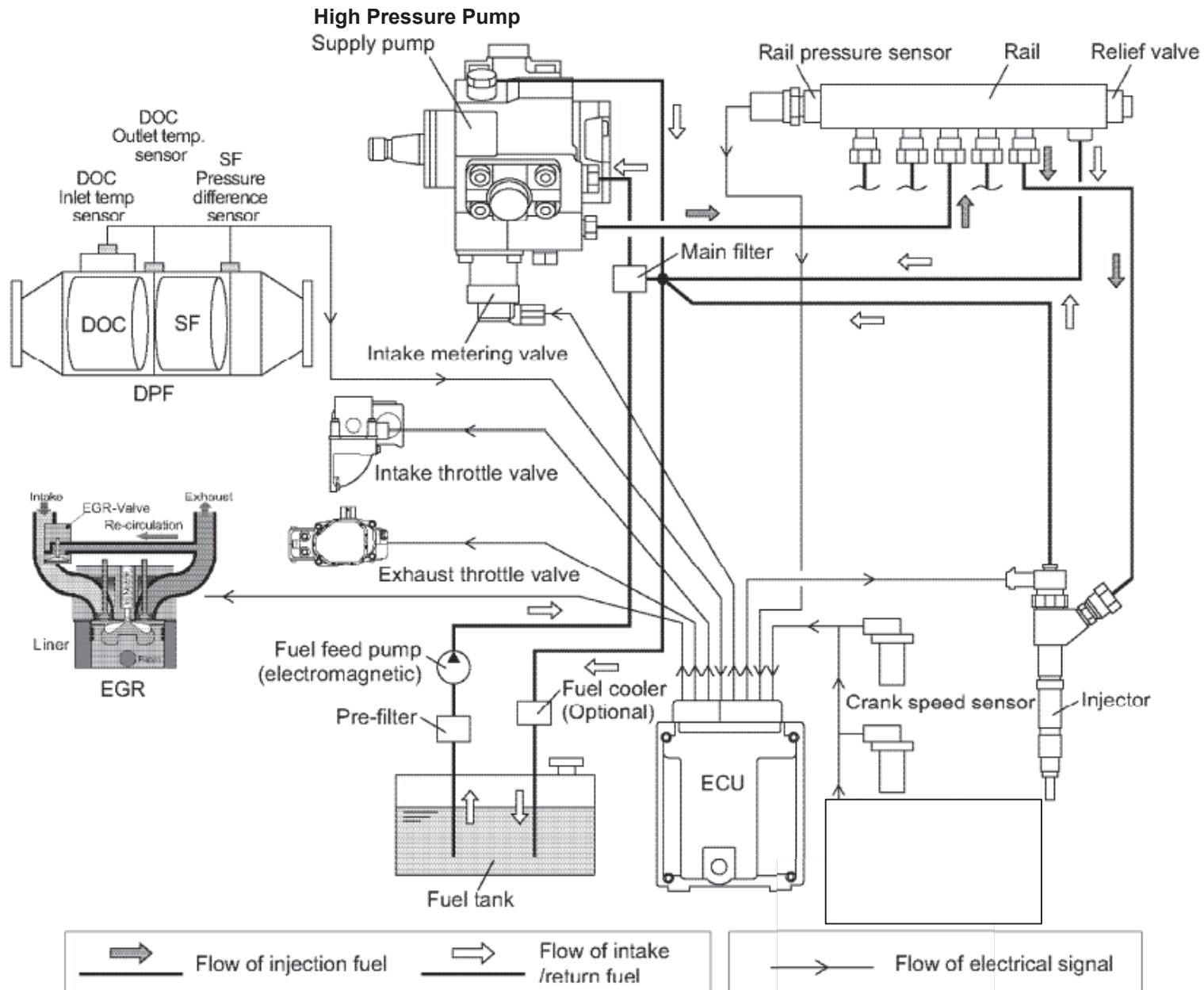
Installation (mounting) position of components and sensors of the high-pressure injection system (Common Rail)



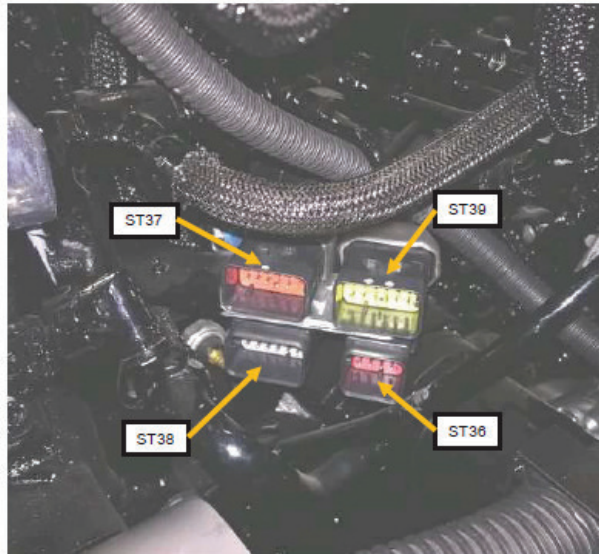
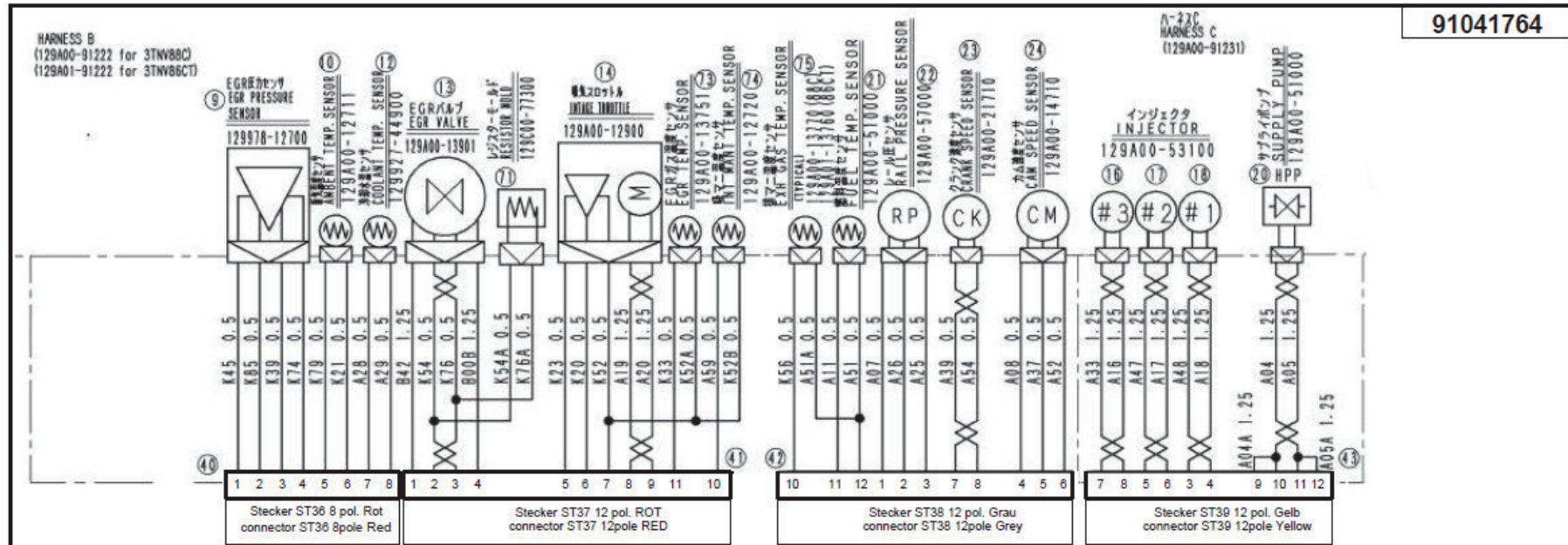
- |   |              |
|---|--------------|
| 1. Hochdruckpumpe kpl; Yanmar Mat.Nr                    | 129A00-51000 |
| 1. High-Pressure- Pump Assy; Yanmar PN                  | 129A00-51000 |
| 2. Regelventil Kraftstoffdruck, MPROP mit Dichtringen;  | PN 01477060  |
| 2. Pump discharge control valve, MPROP with sealings,   | PN 01477060  |
| 6. Kraftstofftemperatur- Geber, an der Hochdruckpumpe , | PN 01477510  |
| 6. Fuel- Temperature- Sensor at the High Pressure Pump, | PN 01477510  |



Electronic Control System



Schaltplan Yanmar Motor

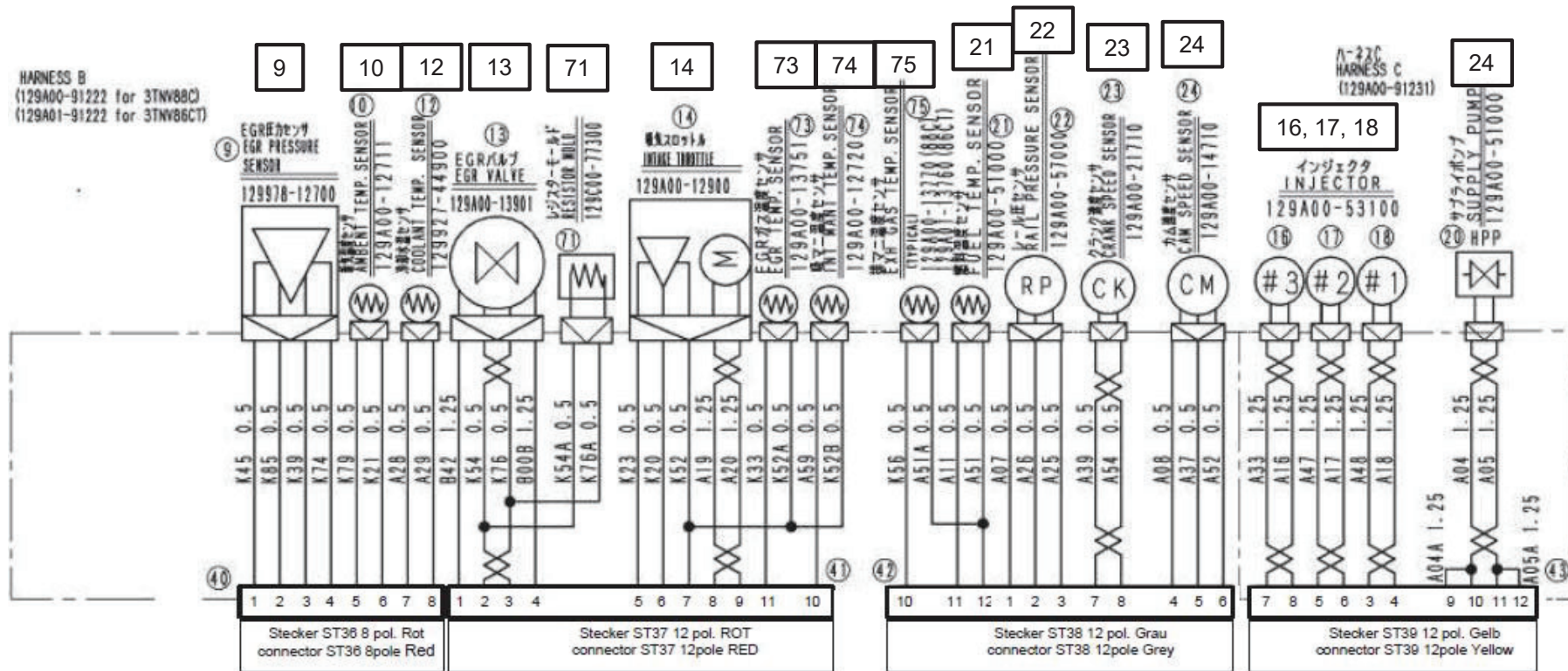


Anbindung an 91039362 Schaltplan CM650

Werkstück-Außenkante	DIN ISO 13715
A	Befiebig bis 0,5
C	Scharfkantig von 0 bis -0,2
D	Gratfrei von -0,2 bis -0,5
Unbrenn. Innenkant.	R0,4 bis R1,2

						Konstr. Freigabe:	
						<b>Hako</b> Hako GmbH 23840 Bad Oldesloe	
						A3	
Paßmaß	Abmaße	Nr.	Zahl kommt vor	Änd.-Nr.	Datum	Name	Typ
		0	Eingeführt it.	4000-34	20.01.20	DK	☐ Diese Maße werden vom Empfänger besonders geprüft
Gezeichnet	28.D1:	DK	Hergestellt aus	Maße ohne Toleranzangabe			
Geprüft			Werkstoff				
Normgeprüft							
<b>Schaltplan Yanmar Motor Harness B</b>						Zeichnungs-Nr.: <b>91041764</b>	
Für diese Zeichnung behalten wir uns alle Rechte vor. (Gemäß DIN ISO 15016)						Blattzahl: 1   Blatt: 1	

9.0.1 Yanmar Engine 3TVN 88C- KHW  
Schaltplan Yanmar Motor



- Pos. 9. EGR Drucksensor- EGR pressure sensor- [129978-12700](#)
- Pos. 10. Sensor Ansaugluft (Ambient- Sensor) / New air temperature sensor (Ambient- Sensor)- [129A00-12711](#)
- Pos. 12. Temperatugeber K hlwasser an der Wasserpumpe / Cooling water temperature sensor at water pump- [129927-44900](#)
- Pos. 13. AGR Ventil / EGR Valve- [129A13901](#)
- Pos. 14. Drosselklappe (Luftansaugseite)- Intake Throttle Valve- [129A0012910](#)
- Pos. 16, 17, 18, Injektoren Zylinder 1-3, Injectors Zyl. 1- 3
- Pos. 21. Kraftstoff Temperatugeber- Fuel Temperature Sensor- [129A00-51000](#)
- Pos. 22. Raildruck- Sensor- Rail Pressure Sensor- [129A00-57000](#)
- Pos. 23. Kurbelwellen- Sensor- Crankshaft- Sensor (Crank Speed- Sensor)- [129A00- 21710](#)
- Pos. 24. Nockenwellen- Sensor- Camshaft- Sensor (Cam- Speed- Sensor)- [129A00- 14710](#)
- Pos. 71. Widerstand 120 Ohm , Resistor 120 Ohm
- Pos. 73. (AGR) EGR- Temperatursensor- EGR- Temperature- Sensor- [129A00- 12720](#)
- Pos. 74. Temperatugeber Ansaugluft (II)- Intake- Temperature- Sensor (II.)- [129A00- 17720](#)
- Pos. 75. Abgastemperatur- Sensor- Exhaust- Gas- Temperature Sensor-

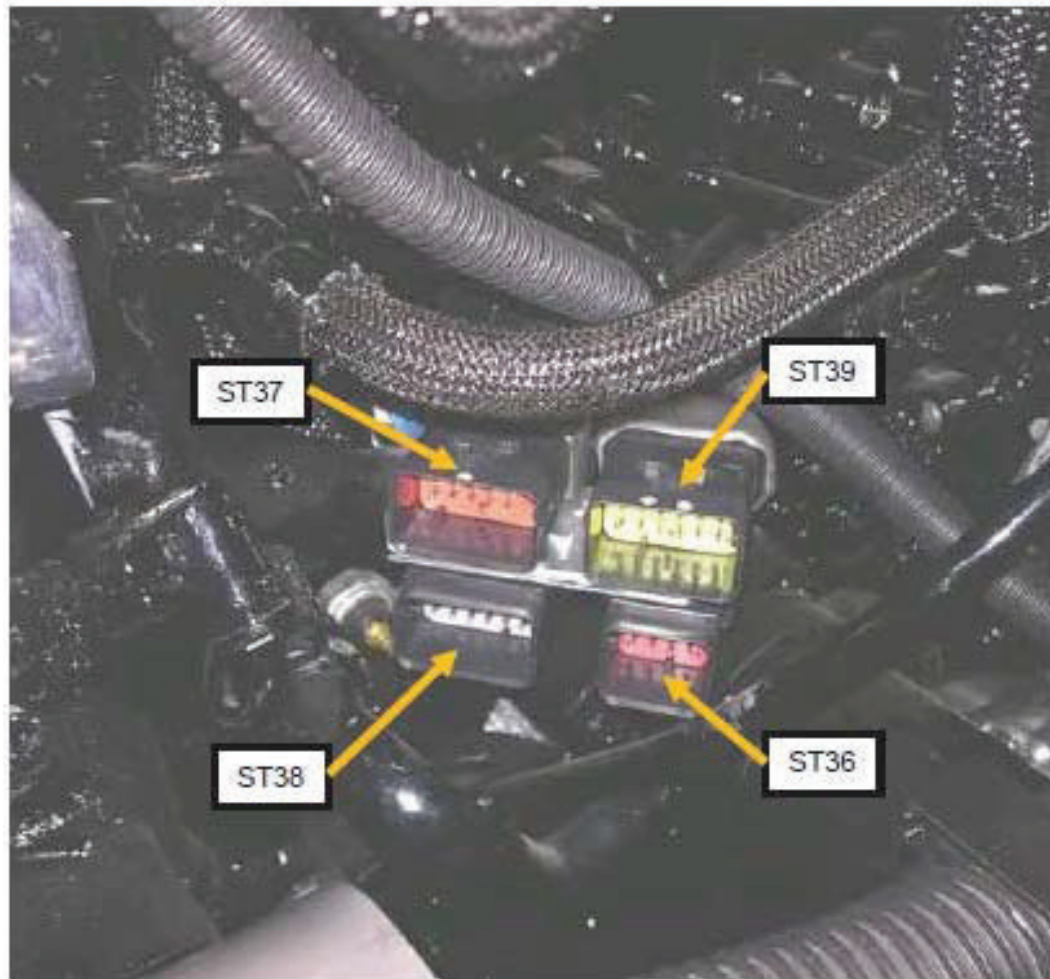
### 9.0.1 Yanmar Engine 3TVN 88C- KHW Motorkabelsätze Yanmar Motor

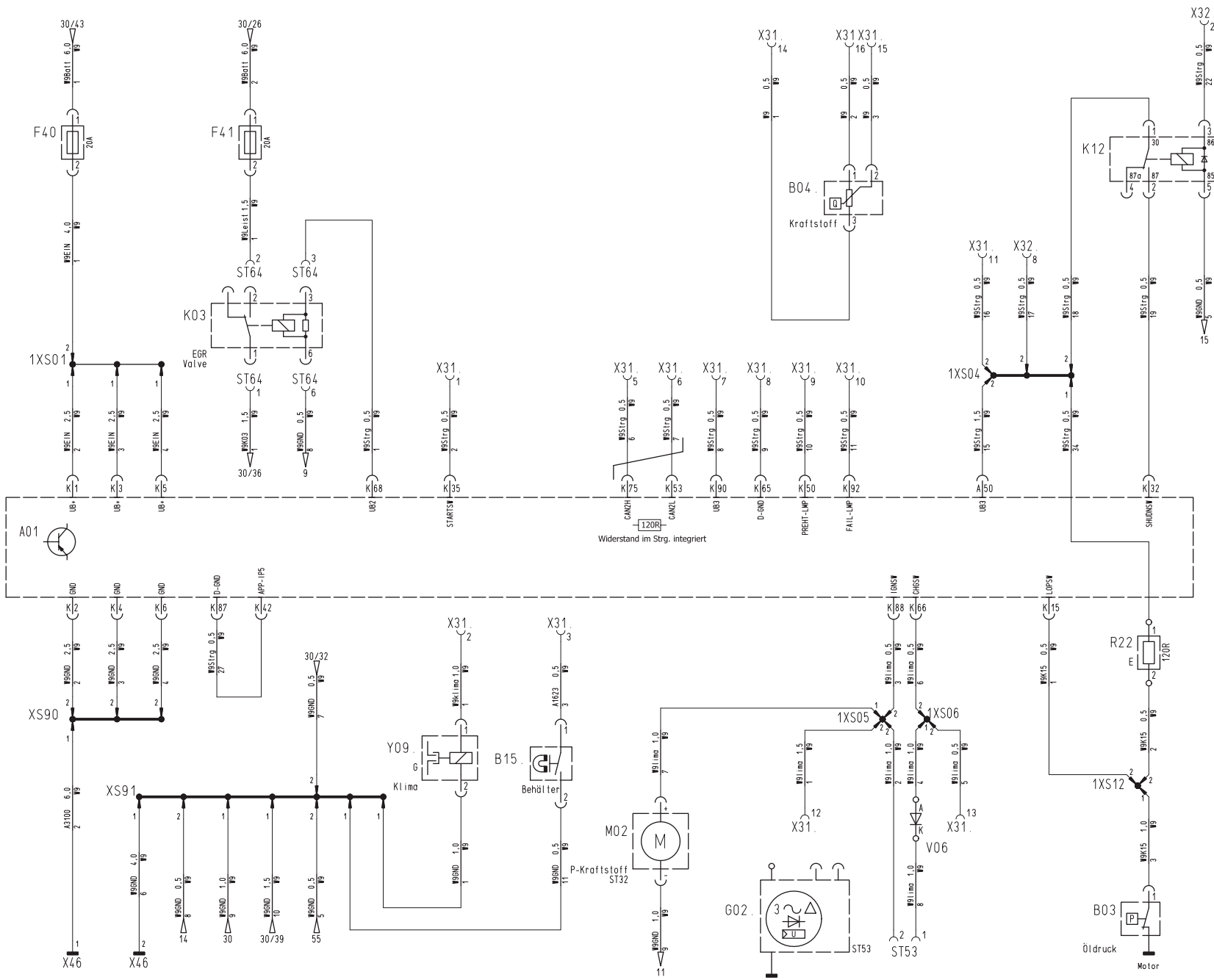
Yanmar Motorkabelsatz B, mit Stecker ST36 (rot) ST37 (rot) und ST38 (grau), Hako Ersatzteilnummer **01477130**

Yanmar Engine- Harness B with plug ST 36 (red), St 37 (red) und ST38 (grey), Hako- Spare Part Number **0147130**

Yanmar Motorkabelsatz C, ST39 (gelb), Hako Ersatzteilnummer **01477200**

Yanmar Engine- Harness B with plug ST38 (yellow), Hako- Spare Part Number **01477200**





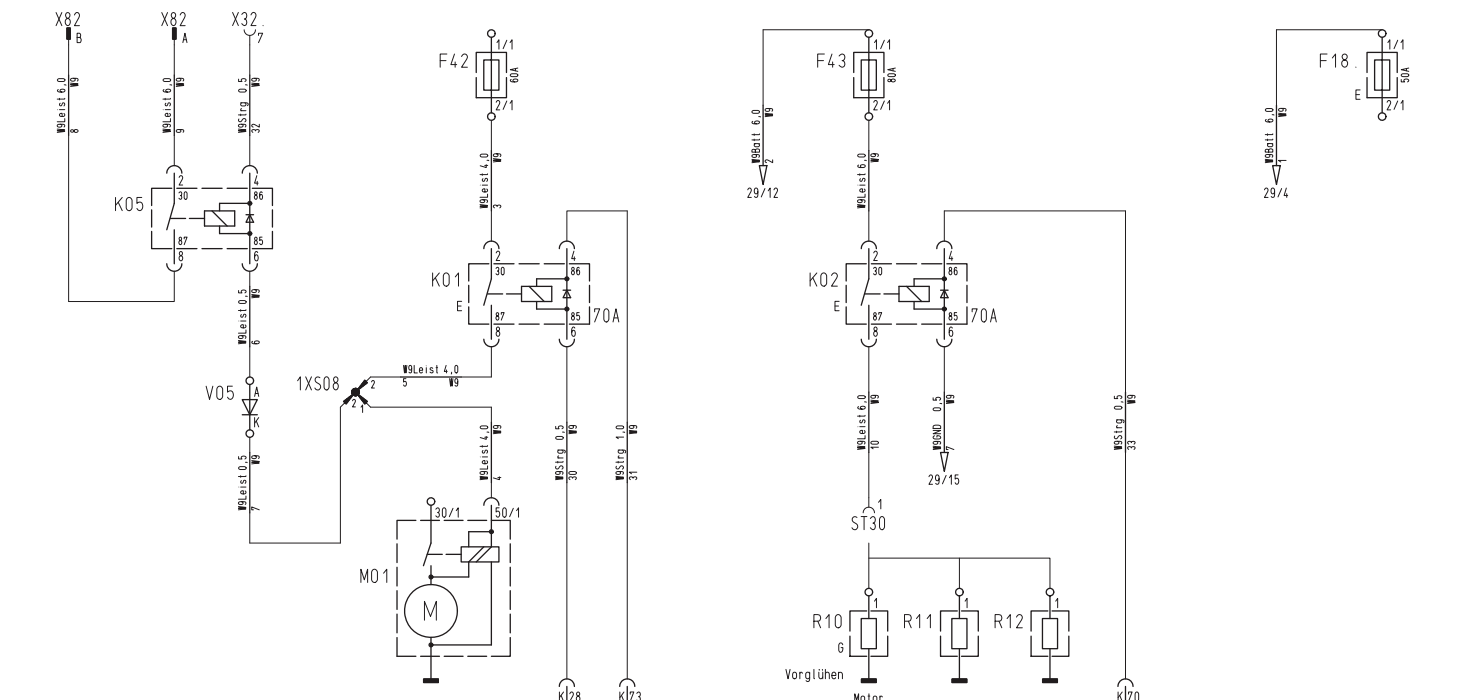
- ### Legende
- A01 Motorsteuergerät ECU  
engine controller ECU
  - B03 Öldruckschalter  
oil pressure switch
  - B04 Niveausensor Kraftstofftank  
fuel level sensor
  - B15 Reed-Sensor Behälter oben  
hopper reed switch
  - F40 Sicherung 20A  
fuse 20A
  - F41 Sicherung 20A  
fuse 20A
  - G02 Generator 12V  
alternator 12V
  - K03 Relais EGR Ventil  
relay EGR valve
  - K12 Relais  
relay
  - M02 Kraftstoffpumpe  
fuel pump
  - R22 Widerstand 120R  
resistor 120Ohm
  - ST53 Anschlussstecker 2pol. (W9)  
connector 2 pole (W9)
  - ST64 Anschlussstecker 6pol. (W9)  
connector 6 pole (W9)
  - V06 Diode  
diode
  - X31 Steckverbinder 16pol. (W1<->W9)  
connector 16 pole (W1<->W9)
  - X32 Steckverbinder 12pol. (W1<->W9)  
connector 12 pole (W1<->W9)
  - X46 Massebolzen M10 Motor  
ground bolt M10 motor
  - 1XS01 USSP (W9)  
ussp (W9)
  - 1XS04 USSP (W9)  
ussp (W9)
  - 1XS05 USSP (W9)  
ussp (W9)
  - 1XS06 USSP (W9)  
ussp (W9)
  - 1XS12 USSP (W9)  
ussp (W9)
  - XS90 USSP (W9)  
ussp (W9)
  - XS91 USSP (W9)  
ussp (W9)
  - Y09 Kupplung Klimakompressor  
clutch compressor AC (var.Comfort)



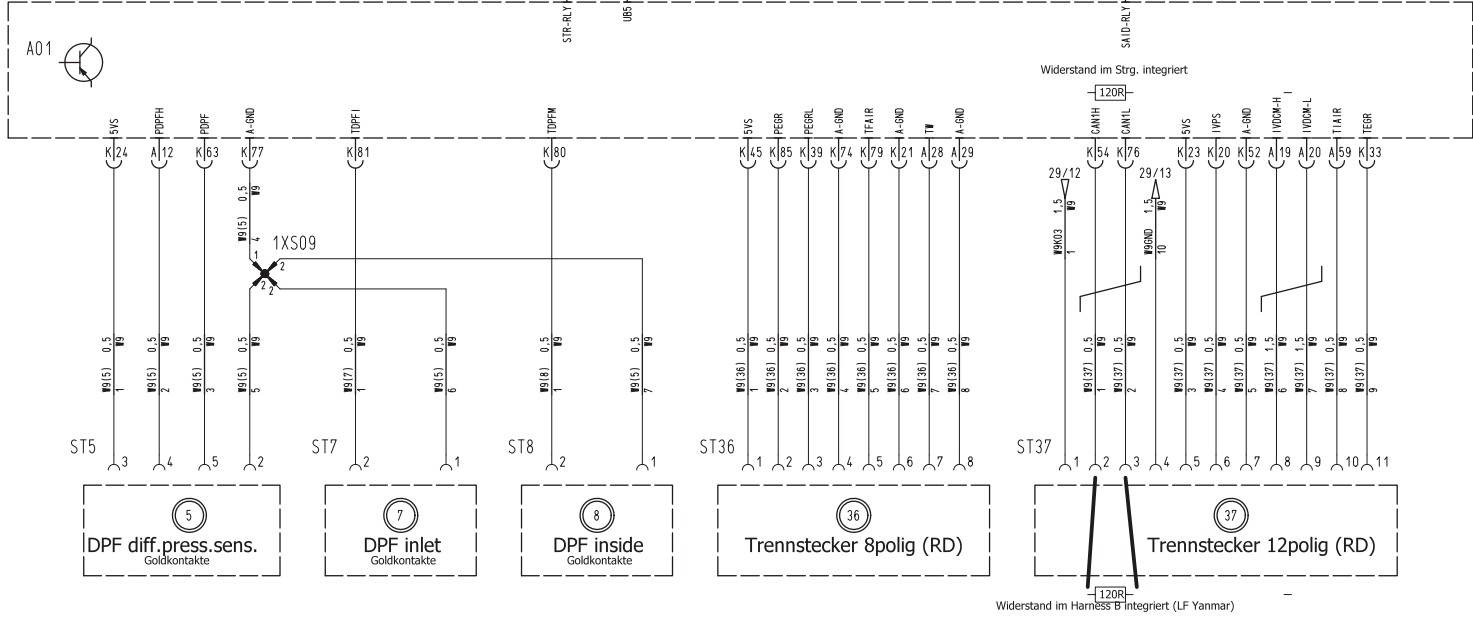
0	Integrated acc.	4000-34	20 01 20	DK	2019	Date	Name	CM650	Name	
					Drawn by	21.08.	DK		Replacem. for	
					Verified				Schaltplan / circuit diagram	
A2	No. Number appears	Change No	Date	Name	Standard			Change No	For this drawing we reserve all rights (acc. DIN ISO 16016)	
								KABI 472	Type 1470 Dep DS	No. of Sh 38 Sheet 29



Drawing Number  
**91039362**



- ### Legende
- A01 Motorsteuergerät ECU engine controller ECU
  - F18. Sicherung 50A Vorsicherung 30 fuse 50A pre-fuse 30
  - F42 Sicherung 60A fuse 60A
  - F43 Sicherung 80A fuse 80A
  - K01 Relais Anlasser relay starter
  - K02 Relais Vorglühen relay preheating
  - K05 Relais Versorgung 75 relay supply 75
  - M01 Anlasser starter
  - R10 Vorglüherkerze glow plug
  - R11 Vorglüherkerze glow plug
  - R12 Vorglüherkerze glow plug
  - ST5 Anschlussstecker 6pol. (W9) connector 6 pole (W9)
  - ST7 Anschlussstecker 2pol. (W9) connector 2 pole (W9)
  - ST8 Anschlussstecker 2pol. (W9) connector 2 pole (W9)
  - ST30 Anschlussstecker 1pol. (W9) connector 1 pole (W9)
  - ST36 Steckverbinder 8pol. (W9<->Motor KB) connector 8 pole (W9<->motor wh)
  - ST37 Steckverbinder 12pol. (W9<->Motor KB) connector 12 pole (W9<->motor wh)
  - V05 Diode diode
  - X32. Steckverbinder 12pol. (W1<-W9) connector 12 pole (W1<->W9)
  - X82 Steckverbinder 2 pol. (W9<-W1) connector 2 pole (W9<->W1)
  - 1XS08 USSP (W9) ussp (W9)
  - 1XS09 USSP (W9) ussp (W9)



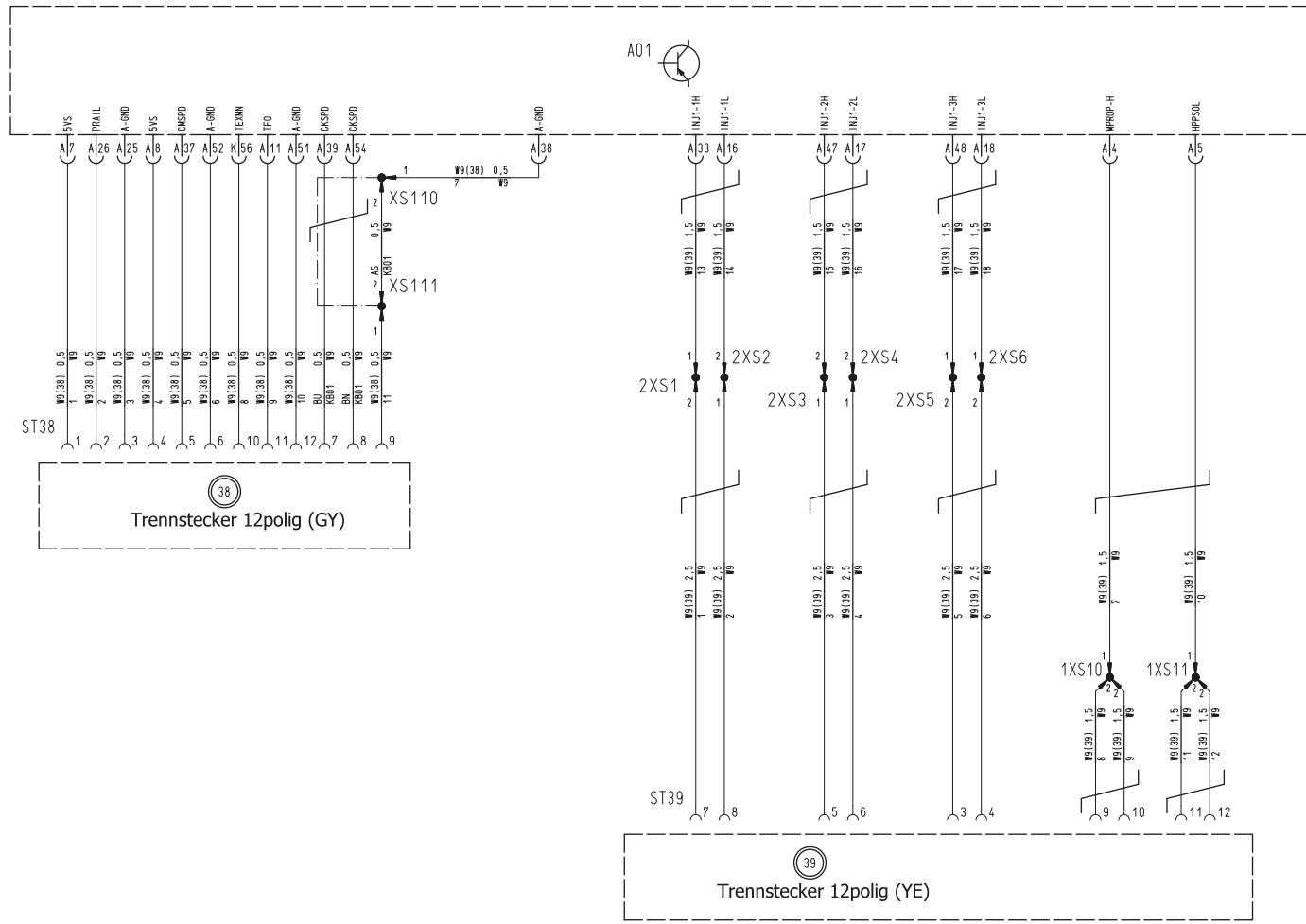
siehe 91041764 Schaltplan Yanmar Motor Harness B



0	Integrated acc.	4000-34	20 01 20	DK	2019	Date	Name	CM650	Name	Schaltplan / circuit diagram	Hako GmbH D-23840 Bad Oldesloe	Drawing Number 91039362
					Drawn by	21 08	DK					
A2	No. Number appears	Change No	Date	Name	Standard			Change No				

### Legende

- A01 Motorsteuergerät ECU  
engine controller ECU
- ST38 Steckverbinder 12pol. (W9<->Motor KB)  
connector 12 pole (W9<->motor wh)
- ST39 Steckverbinder 12pol. (W9<->Motor KB)  
connector 12 pole (W9<->motor wh)
- 1XS10 USSP (W9)  
ussp (W9)
- 1XS11 USSP (W9)  
ussp (W9)
- 2XS1 USSP (W9)  
ussp (W9)
- 2XS2 USSP (W9)  
ussp (W9)
- 2XS3 USSP (W9)  
ussp (W9)
- 2XS4 USSP (W9)  
ussp (W9)
- 2XS5 USSP (W9)  
ussp (W9)
- 2XS6 USSP (W9)  
ussp (W9)
- XS110 USSP (W9)  
ussp (W9)
- XS111 USSP (W9)  
ussp (W9)

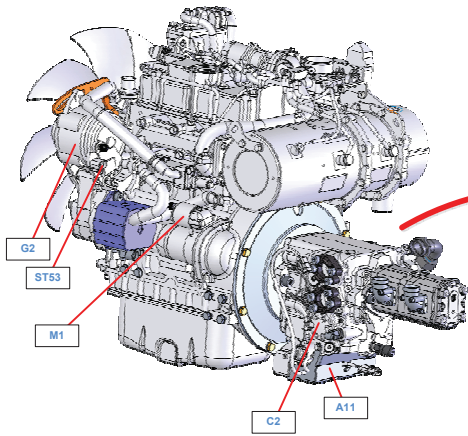


siehe 91041764 Schaltplan Yanmar Motor Harness B

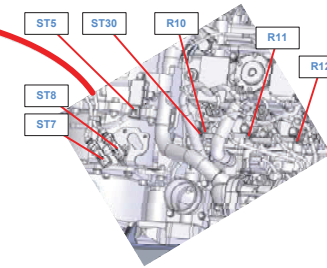
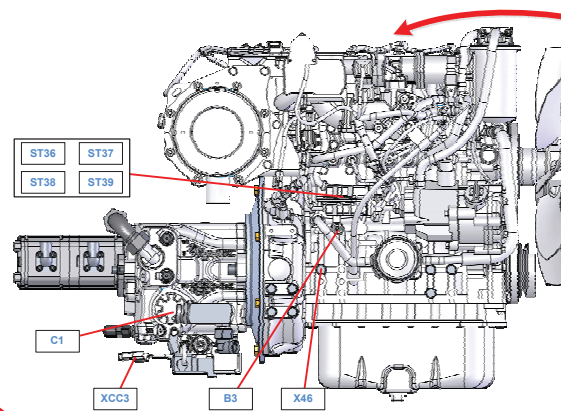


0	Integrated acc.	4000-34	20 01 20	DK	2019	Date	Name	CM650	Name	Schaltplan / circuit diagram	Hako GmbH D-23840 Bad Oldesloe	Drawing Number 91039362		
A2	No. Number appears	Change No	Date	Name	Drawn by	21 08	DK	Replacem. for	For this drawing we reserve all rights (acc. DIN ISO 16016)					
										KABI 472	Type 1470	Dep. DS	No. of Sh. 38	Sheet 31

# Hinterwagen rear vehicle

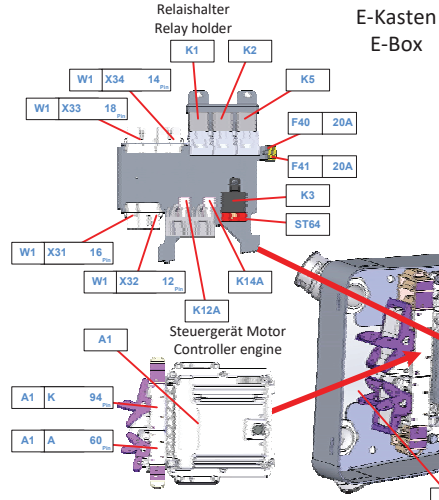
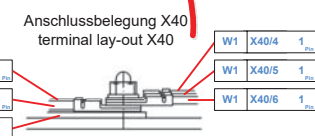
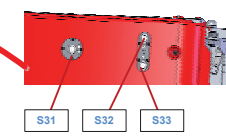
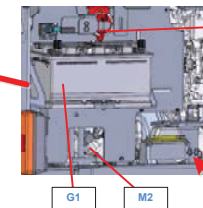
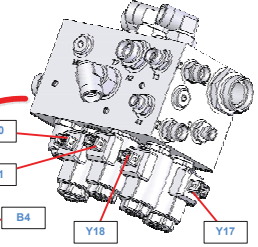
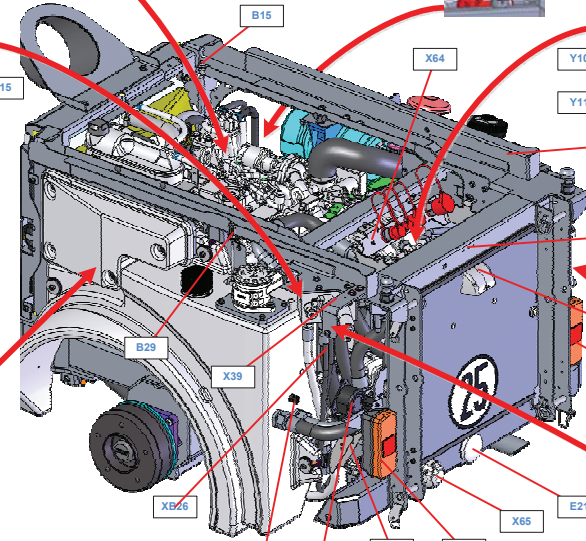
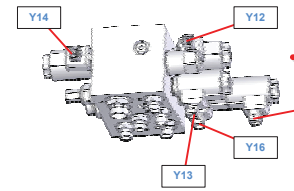


Hydraulik Steuerblock Gebläse, Besenantrieb & Behälter  
hydraulic control block fan, brush power unit & container

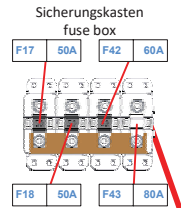


Hydraulik Steuerblockvorderwagen  
hydraulic control block front vehicle

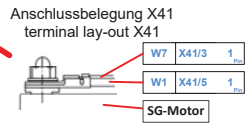
Klimakompressor  
A. C.



E-Kasten  
E-Box



Sicherungskasten  
fuse box



Anschlussbelegung X41  
terminal lay-out X41

SG-Motor

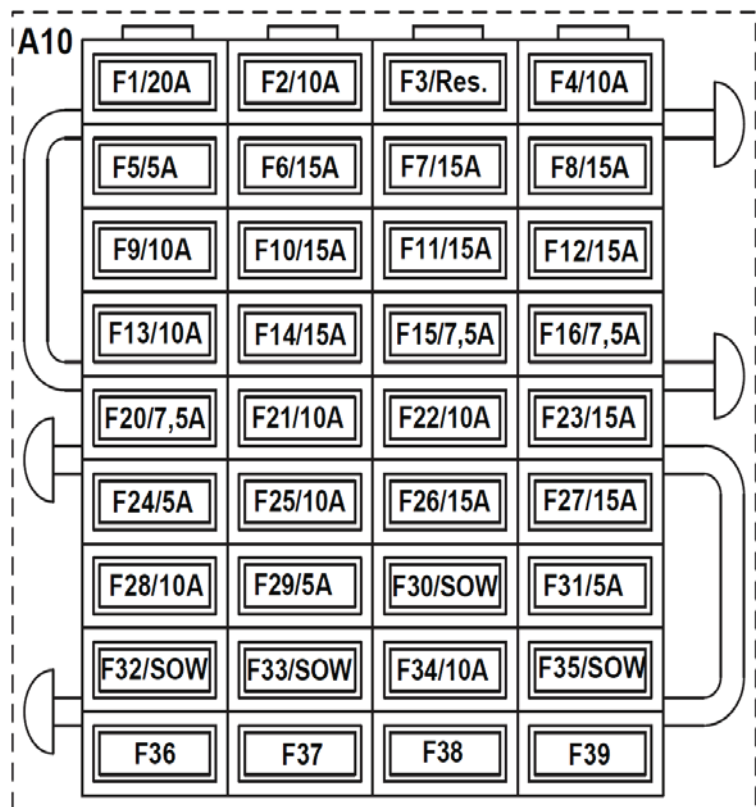
Alle Betriebsmittelkennzeichen unter 10 sind wie folgt zu deuten, Beispiel: P2 = P02  
all equipment indicators below 10 should be interpreted as follows, example: P2 = P02

Freigabevermerk:				Date		Name		CM650		Name		Hako		Drawing Number	
A2	0	Integrated acc.	4000-34	20.01.2020	DK / LK	Drawn	12.01.2020	LK	Replacim. for	Schaltplan circuit diagram		Type 1470		91039362	
No	Number appears	Change No.	Date	Name	Standard	Verified			Change No.	For this drawing we reserve all rights (acc. DIN ISO 15016)		Engineering Base 6.8.2		No of Sheets/38	
										Sheet 37					



### 3.0.1 Elektrik

#### Sicherungskasten in der Kabine, Seitenkonsole rechts / Fuse box in the cab, side console, right



F01, 15A, Klimaanlage, Opt. Spiegelheizung

F02, 10A, Entlastung Anlassvorgang

F03, 10A, Nicht belegt

F04, 10A, Radio

F05, 5A, Steuergerät Hydraulik

F06, 10A, Steuergerät für Fahren, Kraftstoffpumpe

F07, 10A, Wasserpumpe Frischwassersystem

F08, 15A, Steuergerät Arbeitshydraulik, Hecksteckdose

F09, 10A, Scheibenwaschanlage, Steuergerät Hydraulik

F10, 15A, Heizung und Klimaanlage

F11, 15A, Arbeitsscheinwerfer vorn

F12, 10A, Hauptscheinwerfer, Nebelschlussleuchte

F13, 10A, Innenbeleuchtung, Rundumkennleuchte (RKL)

F14, 10A, Blinker, Warnblinker

F15, 7.5A, Schlussleuchte (Klemme 58L) und Standlicht (Klemme 57L)

F16, 7.5A, Schlussleuchte (Klemme 58R) und Standlicht (Klemme 57R)

F20, 7.5A, Anlasser

F21, 10A, Steuergerät Hydraulik, Hupe

F01, 15A, Air-con unit, optional mirror heater

F02, 10A, Relief starting process

F03, 10A, Not used

F04, 10A, Radio

F05, 5A, Control unit hydraulic

F06, 10A, Control unit Drive, fuel pump

F07, 10A, Water pump, solution system

F08, 15A, Controller working hydraulics

F09, 10A, Windscreen washer, Controller hydraulic

F10, 15A, Heater, Air Conditioning

F11, 15A, Working lights front

F12, 10A, Driving lights (headlights)

F13, 10A, Parking light, flashing beacon (RKL),

F14, 10A, Indicators, horn

F15, 5A, Parking light, rear light left

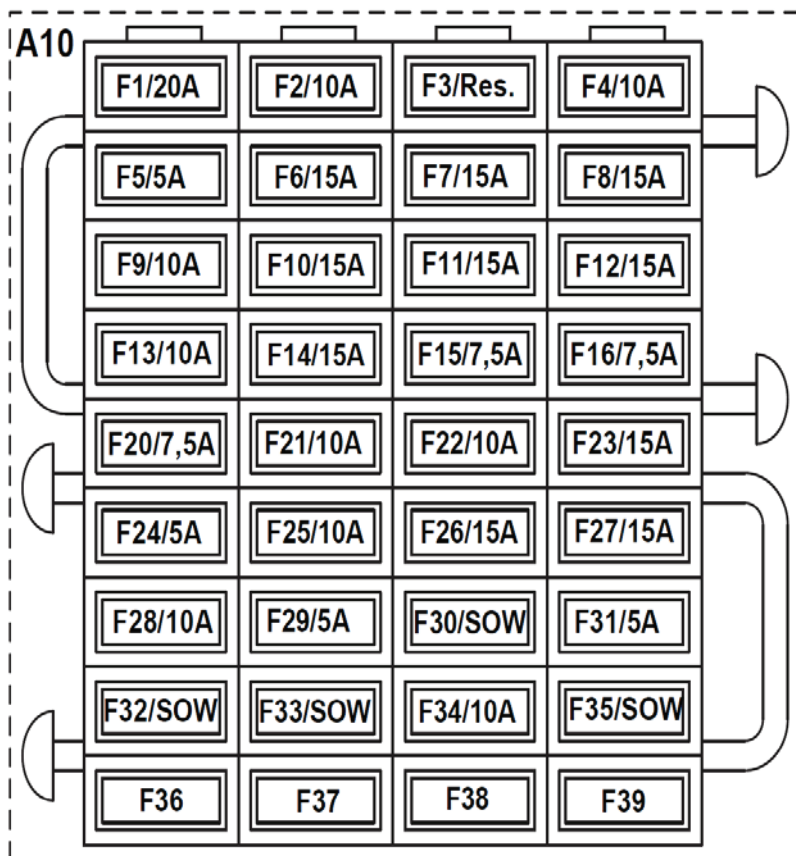
F16, 7.5A, Parking light right, rear fog lamp

F20, 7.5A, Starter

F21, 10A, Controller hydraulic, Horn

## 3.0.1 Elektrik

### Sicherungskasten in der Kabine, Seitenkonsole rechts / Fuse box in the cab, side console, right

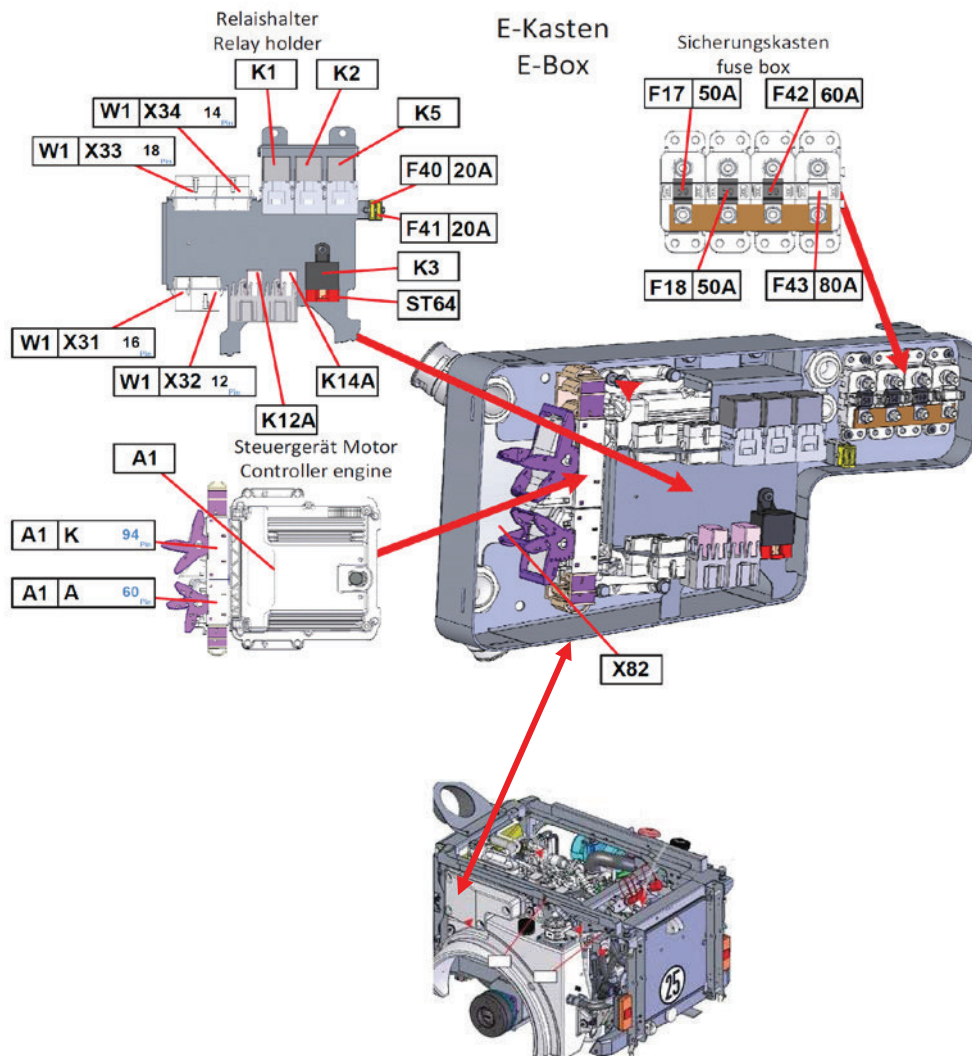


F22, 5A, Steuergerät Hydraulik , Multifunktionsdisplay  
 F23, 15A, Vorsicherung (F15,F16,F35)  
 F24, 5A, Steckdose USB  
 F25, 10A, Arbeitsscheinwerfer Kabine hinten , Bremslicht  
 F26, 15A, Radio  
 F27, 10A, Steckdose Lenksäule  
 F28, 10A, Fahrersitz  
 F29, 5A, Fleetrecorder, Steckdose 12 polig X67  
 F30, nicht belegt  
 F31, 5A, Fleetrecorder Steckdose 12 polig X67  
 F32, nicht belegt  
 F33, nicht belegt  
 F34, 10A, Steuergerät Fahrpumpe  
 F35, nicht belegt  
 F36, 5A Ersatzsicherung  
 F37, 7,5A Ersatzsicherung  
 F38, 10A, Ersatzsicherung  
 F39, 15A Ersatzsicherung

F22, 5A, Controller hydraulic multifunction display  
 F23, 15A, Preater Fuse (F15,F16,F35)  
 F24, 5A, T01, USB plug socket  
 F25, 10A Working light back, reversing light  
 F26, 15A Radio  
 F27, 10A Socket steering column  
 F28, 10A Drivers seat  
 F29, 5A Fleetrecorder socket 12 pole X67  
 F30, Not used  
 F31, 5A Fleetrecorder socket 12 pole X67  
 F32, Not used  
 F33, Not used  
 F34, 10A Controller Drive pump  
 F35, Not used  
 F36, 5A Spare fuse  
 F37, 7,5A Spare fuse  
 F38, 10A Spare fuse  
 F39, 15A Spare fuse

### 3.0.1 Elektrik

#### Elektrokasten im Hinterwagen Links - Electric Box rear section , left hand side

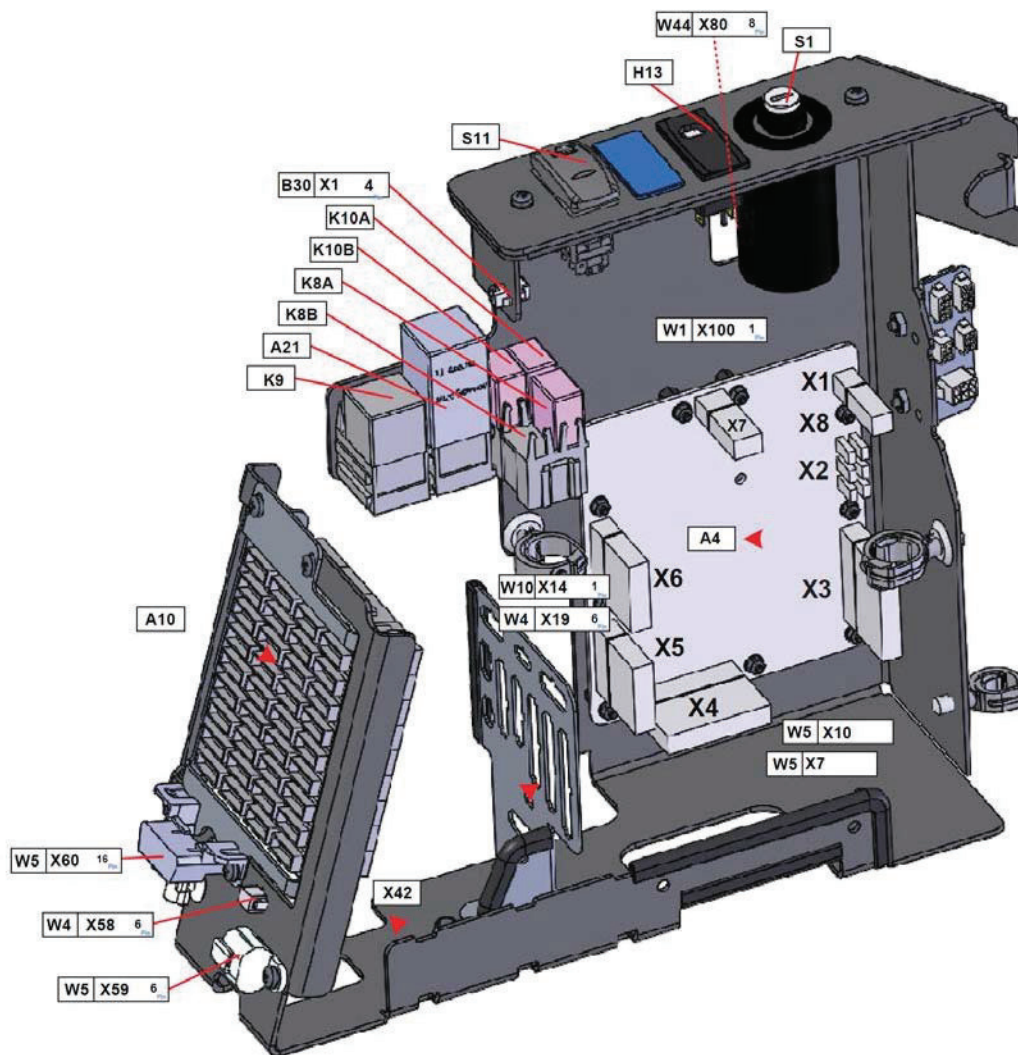


- A01, Motorsteuergerät (ECU) Yanmar Motor
- A01, Engine controller (ECU) Yanmar Engine
- F17, 50A, Hauptsicherung/ Vorsicherung 58/ 75 (30)
- F17, 50A, Main fuse, power supply 58/ 75 (30)
- F18, 50A, Hauptsicherung/ Vorsicherung 30/15 (30)
- F18, 50A, Main fuse, power supply 30/ 15 (30)
- F19, 40A, Sicherung Vorglühen Yanmar Motor (30)
- F19, 40A, Fuse engine preheating Yanmar Engine (30)
- F40, 20A, Steuergerät ECU
- F40, 20A, Engine controll ECU
- F41, 20A, EGR Ventil
- F41, 20A, EGR Valve
- F42, 60A, Anlasser
- F42, 60A, Starter
- F43, 80A, Steuergeät Fahrpumpe
- F43, 80A, Controller hydraulc traction pump
- K01 Relais Anlasser Freigabe
- K01 Relay Starter release
- K02 Relais Vorglühen Yanmar Motor
- K02 Relay pre heating Yanmar Engine
- K03 Relais EGR Ventil
- K03 Relay EGR Valve
- K05 Relais Versorgung 75
- K05 relay supply 75
- K12A Relais Startfreigabe
- K12A Relay Start release
- K14A Relais Bremslicht
- K14A relay brake light

### 3.0.1 Elektrik

#### Elektrische Bauteile (Schalter, Relais) in der Kabine, Seitenkonsole rechts

Seitenkonsole rechts  
side console right



A04, Steuergerät Hydraulik  
A04, Control Unit Work Hydraulics

A10, Sicherungskasten,  
A10, Fusebox side consol right

A21, Gateway  
A21, gateway

S01, Zündstartschalter, Starter switch

S11, Taster Kehrgutbehälter/Pritsche heben/senken  
S11, Push Button, raise/lower hopper/platform

K08A, Relais Scheibenwischer,  
K08A, Relay winscreen wiper

K08B, Relais Nebelschlussleuchte  
K08B, Relay fog lamp

K09, Relais Klimaanlage  
K09, Relay, air-condition unit

K10A, Entlastungsrelais  
K10A, Release relay

K10B, Spannung und Proportionalventile  
K10B, Voltage and proportional valves

X58, Steckdose 6-pol. Progr.Displ.  
X58, Connector 6-pol progr. displ.

X59, Steckdose Yanmar Diagnose, 6-polig  
X59, Diagnosis Socket Yanmar 6-pole

X60, Diagnose Steckdose 16-polig  
X60, Diagnosis Socket 16-pole

# ELECTRONIC CONTROL SYSTEM

## Fault Detection Function of the E-ECU

Table 14-30 provides a list of various error items covered by self diagnosis performed by E-ECU.

**Table 14-30 Fault detection list (monitor provisional specification)**

Item 1	Item 2	Fault	Applica- tion model	Failure decision		Fail safe action													Recovery timing	Fault code	Lamp information				
				Prerequisite condition	Detection condition	Engine stop	Rotation limit (1800 min <sup>-1</sup> )	Rotation limit (1500 min <sup>-1</sup> )	Max. injection amount limit (75 %)	Max. injection amount limit (60 %)	Rail pressure limit	EGR command full-dose	Suction air throttle full-open	Rail pressure back-up control	DPF regeneration stop	Deposit amount calculation stop depending on DPF differential pressure	Engine stop 1 with delay time (2 hour)	Engine stop 2 with delay time (15 minutes)			Failure bank injection stop	Failure cylinder injection stop	Note	DTC	MIL
Sensor	Crank	Abnormal signal	•	Under 56 kW	-	ECU detects abnormal signal of 15 times	•	•												ECU keeps engine operation by only cam sensor.	ECU Power OFF	P0336	•		•
		No signal	•	Under 56 kW	-	ECU does not detect crank pulse signal while cam make 10 rotations		•	•											ECU keeps engine operation by only crank sensor.	ECU Power OFF	P0337		•	•
		Angle off-set fault	•	Under 56 kW	-	The phase difference with crank is more than 30 degrees. or ECU detects the condition that the phase difference is less than -20 degrees of 2 times.	•	•													ECU Power OFF	P1341		•	•
	Acceleration sensor 1	Voltage high	•	Under 56 kW	-	Voltage of sensor signal is more than 4.6 V	(Select able)													Fail safe action is applied to application menu.	ECU Power OFF	P0123		•	•
		Voltage low	•	Under 56 kW	-	Voltage of sensor signal is less than 0.2 V	(Select able)													Fail safe action is applied to application menu.	ECU Power OFF	P0122		•	•
	Suction air throttle opening sensor	Voltage high	•	Under 56 kW	-	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is more than 4.8 V	•	•		•	•			•						ECU Power OFF	P02E9		•	•
		Voltage low	•	Under 56 kW	-	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is less than 0.2 V	•	•		•	•			•						ECU Power OFF	P02E8		•	•
	EGR low-pressure side sensor (Suction air pressure)	Voltage high	•	Under 56 kW	-	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is more than 4.8 V	•	•		•				•						ECU Power OFF	P0238		•	•
		Voltage low	•	Under 56 kW	-	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is less than 0.2 V	•	•		•				•						ECU Power OFF	P0237		•	•

Item 1	Item 2	Fault	Applica-tion model	Failure decision		Fail safe action												Recovery timing	Fault code	Lamp information							
				Prerequisite condition	Detection condition	Engine stop	Rotation limit (1800 min <sup>-1</sup> )	Rotation limit (1500 min <sup>-1</sup> )	Max. injection amount limit (75 %)	Max. injection amount limit (50 %)	Rail pressure limit	ECR command full-close	Suction air throttle full-open	Rail pressure back-up control	DPF regeneration stop	Deposit amount calculation stop depending on DPF differential pressure	Engine stop 1 with delay time (2 hour)			Engine stop 2 with delay time (15 minutes)	Failure bank injection stop	Failure cylinder injection stop	Note	DTC	MIL	RSL	AWL
Sensor	EGR high-pressure side sensor (exhaust gas pressure sensor)	Voltage high	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is more than 4.8 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•		ECU Power OFF	P0473	•	•	•			
		Voltage low	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is less than 0.2 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		ECU Power OFF	P0472	•	•	•		
Sensor	Water temperature sensor	Voltage high	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is more than 4.8 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•		ECU Power OFF	P0118	•	•	•			
		Voltage low	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is less than 0.2 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		ECU Power OFF	P0117	•	•	•		
	Water temperature increase (overheat)	• Water temperature sensor is normal operation (No failure detection) • After 60 seconds from when engine cranking has been completed successful	Temperature is more than the threshold (threshold: 110 degC)	(Selectable)	•	•	•	•	•	•	•	•	•	•	•	(Selectable)	•	Fail safe action is applied to application menu.	• When recovery condition consists or • ECU Power OFF	P0217	•	(Selectable)	•				
Sensor	New air temperature sensor	Voltage high	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is more than 4.85 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•		ECU Power OFF	P0113	•	•	•			
		Voltage low	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is less than 0.15 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		ECU Power OFF	P0112	•	•	•		
Sensor	Fuel temperature sensor	Voltage high	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is more than 4.8 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•		ECU Power OFF	P0183	•	•	•			
		Voltage low	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is less than 0.2 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		ECU Power OFF	P0182	•	•	•		
	High temperature	Fuel temperature sensor is normal operation (No failure detection)	Engine is running and Fuel temperature is more than the threshold (threshold: 90 degC)	(Selectable)	•	•	•	•	•	•	•	•	•	•	•	•	(Selectable)	•	Fail safe action is applied to application menu.	• When recovery condition consists or • ECU Power OFF	P0168	•	(Selectable)	•			

# ELECTRONIC CONTROL SYSTEM

Sensor	Item 2	Fault	Applica-tion model	Failure decision		Fail safe action											Recovery timing	Fault code	Lamp information										
				Under 56 kW	Prerequisite condition	Detection condition	Engine stop	Rotation limit (1800 min <sup>-1</sup> )	Rotation limit (1500 min <sup>-1</sup> )	Max. injection amount limit (75 %)	Max. injection amount limit (50 %)	Rail pressure limit	EGR command full-close	Suction air throttle full-open	Rail pressure back-up control	DPF regeneration stop			Deposit amount calculation stop depending on DPF differential pressure	Engine stop 1 with delay time (2 hour)	Engine stop 2 with delay time (15 minutes)	Failure bank injection stop	Failure cylinder injection stop	Note	Under 56 kW	DTC	MIL	RSL	AWL
Rail pressure sensor	Voltage high	•	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is more than 4.75 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		ECU Power OFF	P0193	•	•					
					•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		ECU Power OFF	P0192	•	•			
DPF differential pressure sensor	Voltage high	•	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is more than 4.8 V	•	•	•				•	•	•	•	•	•					ECU Power OFF	P2455	•	•					
					•	•	•				•	•	•	•	•	•							ECU Power OFF	P2454	•	•			
DPF high-pressure side sensor	Voltage high	•	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is more than 4.8 V	•	•					•	•	•	•	•	•					ECU Power OFF	P1455	•	•					
					•	•	•				•	•	•	•	•	•							ECU Power OFF	P1454	•	•			
DPF inlet temperature sensor	Voltage high	•	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is more than 4.8 V	•	•					•	•	•	•	•	•					ECU Power OFF	P1428	•	•					
					•	•	•				•	•	•	•	•	•							ECU Power OFF	P1427	•	•			
DPF intermediate temperature sensor	Voltage high	•	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is more than 4.8 V	•	•					•	•	•	•	•	•					ECU Power OFF	P1434	•	•					
					•	•	•				•	•	•	•	•	•							ECU Power OFF	P1435	•	•			

Item 1	Item 2	Fault	Applica-tion model	Failure decision		Fail safe action												Recovery timing	Fault code	Lamp information					
				Prerequisite condition	Detection condition	Engine stop	Rotation limit (1800 min <sup>-1</sup> )	Rotation limit (1500 min <sup>-1</sup> )	Max. injection amount limit (75 %)	Max. injection amount limit (50 %)	Rail pressure limit	EGR command full-close	Suction air throttle full-open	Rail pressure back-up control	DPF regeneration stop	Deposit amount calculation stop depending on DPF differential pressure	Engine stop 1 with delay time (2 hour)			Engine stop 2 with delay time (15 minutes)	Failure bank injection stop	Failure cylinder injection stop	Note	DTC	MIL
Sensor	Atmospheric pressure sensor	Voltage high	Under 56 kW	• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is more than 4.8	•	•													ECU Power OFF	P2229		•		•
		Voltage low		• ECU does not control starter • Sensor supply voltage is normal range • AD converter is normal operation	Voltage of sensor signal is less than 0.2 V	•	•													ECU Power OFF	P2228		•		•
		Abnormal atmospheric pressure		• Atmospheric pressure sensor is normal operation • EGR high-pressure side sensor is normal operation • EGR low-pressure side sensor is normal operation	• Absolute value of final offset value of intake manifold pressure >= 5 kPa and • Absolute value of final offset value of exhaust manifold pressure >= 5 kPa * "intake manifold pressure" means "EGR low-pressure side" * "Exhaust manifold pressure" means "EGR high-pressure side"	•	•	•												ECU Power OFF	P1231		•		•
Sensor	EGR gas temperature sensor	Voltage high		• ECU does not control starter	Voltage of sensor signal is more than 4.8 V	•	•		•										ECU Power OFF	P041D		•		•	
		Voltage low		• ECU does not control starter	Voltage of sensor signal is less than 0.2 V	•	•		•										ECU Power OFF	P041C		•		•	
	Intake air temperature sensor	Voltage high		• ECU does not control starter	Voltage of sensor signal is more than 4.8 V	•	•		•	•	•	•	•	•	•				ECU Power OFF	P040D		•	•		
		Voltage low		• ECU does not control starter	Voltage of sensor signal is less than 0.2 V	•	•		•	•	•	•	•	•	•				ECU Power OFF	P040C		•	•		
	Exhaust temperature sensor	Voltage high		• ECU does not control starter	Voltage of sensor signal is more than 4.8 V	•	•		•											ECU Power OFF	P0546		•		•
		Voltage low		• ECU does not control starter	Voltage of sensor signal is less than 0.2 V	•	•		•											ECU Power OFF	P0545		•		•
Digital Output	Main relay	Relay contact stuck		When ECU conducts shut-down sequence	Main relay is not opened after 150ms from when the ECU shutdown has been done		•	•											ECU Power OFF	P068B		•		•	
		Power-off without self-hold		When ECU conducts initialization	ECU power-off without self-hold		•	•											ECU Power OFF	P068A		•		•	
	Start assist relay	Disconnection		When ECU controls the relay OFF	Driver voltage that the ECU internal circuit detects is more than 3 V		•	•												ECU Power OFF	P0543		•		•
GND short-circuit			When ECU controls the relay ON	Driver voltage that the ECU internal circuit detects is less than 2.8 V		•	•												ECU Power OFF	P0541		•		•	
CPS	Injector 1 4TNV: Cyl No. 4 3TNV: Cyl No. 3 Port: 4TNV: 1-2 3TNV: 1-3	Disconnection		(under confirmation)	Disconnection is detected by the drive circuit.	•	•		•					•		•			ECU Power OFF	P0204 (4TNV) P0203 (3TNV)		•	•		
		Short circuit (inner coil)		(under confirmation)	Layer short-circuit in injector coil	•	•		•						•		•			ECU Power OFF	P0271 (4TNV) P0268 (3TNV)		•	•	
		Short circuit		(under confirmation)	VB short-circuit of low side is detected by the drive circuit.	•	•		•						•		•			ECU Power OFF	P1271 (4TNV) P1262 (3TNV)		•	•	
		Unclassified		(under confirmation)	Multiple failure related to injector	•	•		•						•		•			ECU Power OFF	P1272 (4TNV) P1263 (4TNV)		•	•	











# ELECTRONIC CONTROL SYSTEM

Item 1	Item 2	Fault	Application model	Failure decision		Fail safe action												Recovery timing	Fault code	Lamp information												
				Under 56 kW	Under 56 kW	Engine stop	Rotation limit (1800 min <sup>-1</sup> )	Rotation limit (1500 min <sup>-1</sup> )	Max. injection amount limit (75 %)	Max. injection amount limit (50 %)	Rail pressure limit	EGR command full-close	Suction air throttle full-open	Rail pressure back-up control	DPF regeneration stop	Deposit amount calculation stop depending on DPF differential pressure	Engine stop 1 with delay time (2 hour)			Engine stop 2 with delay time (15 minutes)	Failure bank injection stop	Failure cylinder injection stop	Note	DTC	MIL	RSL	AWL					
ECU	ECU internal failure	WDA/ABE shut off (Operation malfunction)		(under confirmation)	(under confirmation)	•																				Under 56 kW	ECU Power OFF	P1640	•	•		
Digital Input	Air cleaner switch	Air cleaner blockage alarm		• Key switch is turned on • Battery voltage is more than 9 V	Air cleaner switch is turned on	(Selectable)	nicht vorhanden					(Selectable)														Fail safe action is applied to application menu.	ECU Power OFF	P1101	•		(Selectable)	
	Oily water separator switch	Oily water separator alarm		• Key switch is turned on • Battery voltage is more than 9 V	Oily water separator switch is turned on	(Selectable)	nicht vorhanden					(Selectable)														Fail safe action is applied to application menu.	ECU Power OFF	P1151	•		(Selectable)	
	Charge switch	Disconnection		• Key switch is turned on • Judgement finish condition is not satisfied *Judgement finish condition: Judgement finishes when starter relay ON or engine speed is more than 45 rpm	Charge switch is turned off	(Selectable)	nicht vorhanden					(Selectable)														Fail safe action is applied to application menu.	When recovery condition consists • ECU Power OFF	P1562	•		(Selectable)	
		Charge failure		• Key switch is turned on • After engine cranking has been completed successful	Charge switch is turned on	(Selectable)	nicht vorhanden					(Selectable)														Fail safe action is applied to application menu.	When recovery condition consists	P1568	•		(Selectable)	
	Oil pressure switch	Disconnection		• Engine speed is not reached to 45 rpm after key switch ON. Or starter is not energized after key switch ON. • Key switch is turned on • Battery voltage is more than 9 V	Oil pressure switch is turned off	(Selectable)	keine Reaktion					(Selectable)														Fail safe action is applied to application menu.	When recovery condition consists • ECU Power OFF	P1192	•		(Selectable)	
		Oil pressure too low		• Key switch is turned on • After engine cranking has been completed successful • Battery voltage is more than 9 V • After "delay time of oil pressure failure detection start" * "delay time of oil pressure failure detection start" is calculated based on water temperature	Oil pressure switch is turned on	(Selectable)	keine Reaktion					(Selectable)														Fail safe action is applied to application menu.	ECU Power OFF	P1198	•		(Selectable)	
Aftertreatment control	DPF intermediate temperature sensor	Low temperature		• Exhaust temperature sensor is normal operation • DPF inlet temperature sensor is normal operation • DPF intermediate temperature sensor is normal operation	DPF regeneration defect timer 3 >= 1200s	•	•	•	•																	ECU Power OFF	P0420	•	•			
	DPF	Over PM accumulation (C method)		• After engine cranking has been completed successful • PM accumulation (C method) failure correction is not operated	PM accumulation by C method is more than 12g/L, then Stationary Regeneration Request Flag is "3"																					When recovery condition consists	P2463					
		Over PM accumulation (P method)		• After engine cranking has been completed successful • PM accumulation (P method) calculation stop is not operated	PM accumulation by P method is more than 12g/L, then Stationary Regeneration Request Flag is "3"																					When recovery condition consists	P1463					





# TROUBLESHOOTING

## DTC (Diagnostic Trouble Codes) General Description

### DTC code list

P code	DTC code			Number of the lamp flashes	Part	Error item	Reference page	
	SPN		FMI				Description	Failure diagnosis
	Decima number	Hexadecimal number	Decima number					
P0336	522400	7F8A0	2	MIL + AWL	Crank speed sensor	Crank signal malfunction	P7	P290
P0337			5	MIL + AWL		No crank signal	P9	P290
P0341	522401	7F8A1	2	MIL + AWL	Cam speed sensor	Cam signal malfunction	P11	P293
P0342			5	MIL + AWL		No cam signal	P13	P293
P1341			7	MIL + AWL		Angle offset failure	P15	-
P0008	523249	7FBF1	5	MIL + RSL	Crank speed, Cam speed sensor	No signal on both crank and cam speed sensor	P17	P290, P293
P0123	91	5B	3	MIL + AWL	Accelerator sensor 1	Accelerator sensor 1 (Excessive sensor output)	P18	P297
P0122			4	MIL + AWL		Accelerator sensor 1 (Insufficient sensor output)	P20	P297
P0223	28	1C	3	MIL + AWL	Accelerator sensor 2	Accelerator sensor 2 (Excessive sensor output)	P22	P297
P0222			4	MIL + AWL		Accelerator sensor 2 (Insufficient sensor output)	P24	P297
P1646	522624	7F980	7	MIL + AWL	Accelerator sensor 1 + 2	Dual accelerator sensor (closed position) failure	P26	-
P1647	522623	7F97F	7	MIL + AWL		Dual accelerator sensor (open position) failure	P28	-
P0228	29	1D	3	MIL + AWL	Accelerator sensor 3	Accelerator sensor 3 (Excessive sensor output)	P30	P297
P0227			4	MIL + AWL		Accelerator sensor 3 (Insufficient sensor output)	P32	P297
P1227			8	MIL + AWL	Pulse sensor	Pulse sensor failure (Pulse communication)	P34	-
P1126	28	1C	0	MIL + AWL	Accelerator sensor 3	Accelerator sensor 3 failure (Foot pedal in open position)	P35	-
P1125			1	MIL + AWL		Accelerator sensor 3 failure (Foot pedal in closed position)	P37	-
P02E9	51	33	3	MIL + RSL	Intake throttle opening sensor	Intake throttle opening sensor fault (High voltage)	P38	P301
P02E8			4	MIL + RSL		Intake throttle opening sensor fault (Low voltage)	P40	P301
P0238	102	66	3	MIL + RSL	EGR low pressure side sensor	EGR low pressure side sensor fault (High voltage)	P42	P304
P0237			4	MIL + RSL		EGR low pressure side sensor fault (Low voltage)	P44	P304
P0236			13	MIL + RSL		EGR low pressure side sensor (Abnormal learning value)	P46	P304
P0473	1209	4B9	3	MIL + RSL	EGR high pressure side sensor	EGR high pressure side sensor fault (High voltage)	P48	P307
P0472			4	MIL + RSL		EGR high pressure side sensor fault (Low voltage)	P50	P307
P0471			13	MIL + RSL		EGR high pressure side sensor (Abnormal learning value)	P52	P307
P0118	110	6E	3	MIL + AWL	Cooling water temperature sensor	Cooling water temperature sensor fault (High voltage)	P54	P310
P0117			4	MIL + AWL		Cooling water temperature sensor fault (Low voltage)	P56	P310
P0217			0	Select by application		Cooling water temperature sensor temperature abnormal high (Overheat)	P58	P310
P0113	172	AC	3	MIL + AWL	New air temperature sensor	New air temperature sensor fault (High voltage)	P60	P314
P0112			4	MIL + AWL		New air temperature sensor fault (Low voltage)	P62	P314
P0183	174	AE	3	MIL + AWL	Fuel temperature sensor	Fuel temperature sensor fault (High voltage)	P64	P318
P0182			4	MIL + AWL		Fuel temperature sensor fault (Low voltage)	P66	P318
P0168			0	Select by application		Fuel temperature sensor temperature abnormal high	P68	P318



# TROUBLESHOOTING

DTC code				Number of the lamp flashes	Part	Error item	Reference page		
P code	SPN		FMI				State	Description	Failure diagnosis
	Decima number	Hexadecimal number	Decima number						
P0193	157	9D	3	MIL + RSL	Rail pressure sensor	Rail pressure sensor fault (High voltage)	P70	P322	
P0192			4	MIL + RSL		Rail pressure sensor fault (Low voltage)	P72	P322	
P2455	3251	CB3	3	MIL + RSL	DPF differential pressure sensor	DPF differential pressure sensor fault (High voltage)	P74	P325	
P2454			4	MIL + RSL		DPF differential pressure sensor fault (Low voltage)	P76	P325	
P2452			0	MIL + RSL		DPF differential pressure sensor differential pressure abnormal high	P78	P325	
P2453			13	MIL + RSL		DPF differential pressure sensor (Abnormal learning value)	P80	P325	
P1455	3609	E19	3	MIL + RSL	DPF high pressure side sensor	DPF high pressure side sensor fault (High voltage)	P82	P325	
P1454			4	MIL + RSL		DPF high pressure side sensor fault (Low voltage)	P84	P325	
P1428	3242	CAA	3	MIL + RSL	DPF inlet temperature sensor	DPF inlet temperature sensor fault (High voltage)	P86	P329	
P1427			4	MIL + RSL		DPF inlet temperature sensor fault (Low voltage)	P88	P329	
P1436			0	MIL + AWL		DPF inlet temperature sensor temperature abnormal high	P90	P329	
P1434	3250	CB2	3	MIL + RSL	DPF intermediate temperature sensor	DPF intermediate temperature sensor fault (High voltage)	P91	P333	
P1435			4	MIL + RSL		DPF intermediate temperature sensor fault (Low voltage)	P93	P333	
P0420			1	MIL + AWL		DPF intermediate temperature sensor temperature abnormal low temperature	P95	P333	
P1426			0	MIL + RSL		DPF intermediate temperature sensor temperature abnormal high (Post-injection failure)	P96	P333	
P2229	108	6C	3	MIL + AWL	Atmospheric pressure sensor	Atmospheric pressure sensor fault (High voltage)	P97	P390	
P2228			4	MIL + AWL		Atmospheric pressure sensor fault (Low voltage)	P98	P390	
P1231			10	MIL + AWL		Atmospheric pressure sensor characteristic fault	P99	P390	
P041D	412	19C	3	MIL + AWL	EGR gas temperature sensor	EGR gas temperature sensor fault (High voltage)	P101	P337	
P041C			4	MIL + AWL		EGR gas temperature sensor fault (Low voltage)	P103	P337	
P040D	105	69	3	MIL + RSL	Intake manifold temperature sensor	Intake manifold temperature sensor fault (High voltage)	P105	P341	
P040C			4	MIL + RSL		Intake manifold temperature sensor fault (Low voltage)	P107	P341	
P0546	173	AD	3	MIL + AWL	Exhaust manifold temperature sensor	Exhaust manifold temperature sensor fault (High voltage)	P109	P345	
P0545			4	MIL + AWL		Exhaust manifold temperature sensor fault (Low voltage)	P111	P345	
P068B	1485	5CD	7	MIL + AWL	Main relay	Main relay contact stuck	P113	P349	
P068A			2	MIL + AWL		Main relay early opening	P115	P349	
P0543	522243	7F803	5	MIL + AWL	Startup assist relay	Startup assist relay interrupted	P117	P353	
P0541			6	MIL + AWL		Startup assist relay GND interrupted	P119	P353	
P0204 (4TNV), P0203 (3TNV)	651 (4TNV), 652 (3TNV)	28B (4TNV), 28C (3TNV)	5	MIL + RSL	Injector 1 4TNV: Cyl No. 4 3TNV: Cyl No. 3 Corresponding port 4TNV: 1 - 2 3TNV: 1 - 3	Injector 1 open circuit (Inherent location of the injector)	P121	P364	
P0271 (4TNV), P0268 (3TNV)			6	MIL + RSL		Injector 1 coil short circuit	P123	P364	
P1271 (4TNV), P1262 (3TNV)			3	MIL + RSL		Injector 1 short circuit	P125	P368	
P0202	653	28D	5	MIL + RSL	Injector 2 4TNV: Cyl No. 2 3TNV: Cyl No. 2 Corresponding port 4TNV: 2 - 1 3TNV: 1 - 2	Injector 2 open circuit (Inherent location of the injector)	P127	P364	
P0265			6	MIL + RSL		Injector 2 coil short circuit	P129	P364	
P1265			3	MIL + RSL		Injector 2 short circuit	P131	P368	

DTC code				Number of the lamp flashes	Part	Error item	Reference page		
P code	SPN		FMI				State	Description	Failure diagnosis
	Decima number	Hexadecimal number	Decima number						
P0201	654	28E	5	MIL + RSL	Injector 3 4TNV: Cyl No. 1 3TNV: Cyl No. 1 Corresponding port 4TNV: 2 - 2 3TNV: 1 - 1	Injector 3 open circuit (Inherent location of the injector)	P133	P364	
P0262			6	MIL + RSL		Injector 3 coil short circuit	P135	P364	
P1262			3	MIL + RSL		Injector 3 short circuit	P137	P368	
P0203	652	28C	5	MIL + RSL	Injector 4 4TNV: Cyl No. 3 Corresponding port 4TNV: 1 - 1	Injector 4 open circuit (Inherent location of the injector)	P139	P364	
P0268			6	MIL + RSL		Injector 4 coil short circuit	P141	P364	
P1268			3	MIL + RSL		Injector 4 short circuit	P143	P368	
P0611	4257	10A1	12	MIL + RSL	Injector (common)	Injector drive IC error	P145	-	
P1146	2797	AED	6	MIL + RSL		Injector drive circuit (Bank1) short circuit (4TN: Common circuit for No. 1, No. 4 and all 3TN cylinders)	P146	P368	
P1149	2798	AEE	6	MIL + RSL		Injector drive circuit (Bank 2) short circuit (4TN: Circuit for No. 2 and No. 3 cylinders)	P148	P368	
P1648	523462	7FCC6	13	MIL + RSL	Injector (correction value)	IQA corrected injection amount for injector 1 error	P150	-	
P1649	523463	7FCC7	13	MIL + RSL		IQA corrected injection amount for injector 2 error	P151	-	
P1650	523464	7FCC8	13	MIL + RSL		IQA corrected injection amount for injector 3 error	P152	-	
P1651	523465	7FCC9	13	MIL + RSL		IQA corrected injection amount for injector 4 error	P153	-	
P1641	522571	7F94B	3	MIL + RSL	SCV (MPROP)	High-pressure pump drive circuit (Low side VB short-circuit)	P154	P370	
P1643			6	MIL + RSL		High-pressure pump drive circuit (Low side GND short-circuit)	P155	P370	
P0629	633	279	3	MIL + RSL		High-pressure pump drive circuit (High side VB short-circuit)	P157	P370	
P1642			6	MIL + RSL		High-pressure pump drive circuit (High side GND short-circuit)	P159	P370	
P0627			5	MIL + RSL		High-pressure pump drive circuit (Open circuit)	P160	P370	
P062A	522572	7F94C	6	MIL + RSL		High-pressure pump drive circuit (Drive current (high level))	P161	P370	
P1645			11	MIL + RSL		High-pressure pump drive circuit (Pump overload error)	P163	P370	
P0088	157	9D	0	MIL + RSL		Abnormal rail pressure	Actual rail pressure rise error	P165	-
P0094			18	MIL + RSL			Rail pressure deviation error during the actual rail pressure drop	P167	-
P0093			15	MIL + RSL	Rail pressure deviation error during the actual rail pressure rise		P169	-	
P000F			16	MIL + RSL	PLV open valve		P171	-	
P1666	523469	7FCCD	0	MIL + RSL	PLV (Common rail pressure limit valve)	Rail pressure fault (The times of PLV valve opening error)	P173	-	
P1667	523470	7FCC E	0	MIL + RSL		Rail pressure fault (The time of PLV valve opening error)	P175	-	
P1668	523489	7FCE1	0	MIL + RSL		Rail pressure fault (The actual rail pressure is too high during PRV limp home)	P177	-	
P1665	523468	7FCCC	9	MIL + RSL		Rail pressure fault (Controlled rail pressure error after PLV valve opening)	P179	-	
P1669	523491	7FCE3	0	MIL + RSL	Rail pressure control	Rail pressure fault (Injector B/F temperature error during PLV4 limp home)	P181	-	
P1670	523460	7FCC4	7	MIL + RSL		Rail pressure fault (Operation time error during RPS limp home)	P183	-	
P0219	190	BE	16	MIL + RSL	Overspeed	Overspeed	P285	P393	
P0660	2950	B86	5	MIL + AWL	Intake throttle drive circuit	No-load of throttle valve drive H bridge circuit	P184	P373	
P1658			3	MIL + AWL		Power short circuit of throttle valve drive H bridge output 1	P185	P373	
P1659			4	MIL + AWL		GND short circuit of throttle valve drive H bridge output 1	P186	P373	
P1660			6	MIL + AWL		Overload on the drive H bridge circuit of throttle valve	P187	P373	
P1661	2951	B87	3	MIL + AWL		VB Power short circuit of throttle valve drive H bridge output 2	P188	P373	
P1662			4	MIL + AWL		GND short circuit of throttle valve drive H bridge output 2	P189	P373	

# TROUBLESHOOTING

DTC code				Number of the lamp flashes	Part	Error item	Reference page		
P code	SPN		FMI				State	Description	Failure diagnosis
	Decimal number	Hexadecimal number	Decimal number						
U0292	522596	7F964	9	MIL + AWL	CAN2	TSC1 (CAN message) reception time out (SA1)	P210	P387	
U1301	522597	7F965	9	MIL + AWL		TSC1 (CAN message) reception time out (SA2)	P212	P387	
U1292	522599	7F967	9	MIL + AWL		Y_ECR1 (CAN message) reception time out	P214	P387	
U1293	522600	7F968	9	MIL + AWL		Y_EC (CAN message) reception time out	P216	P387	
U1294	522601	7F969	9	MIL + AWL		Y_RSS (CAN message) reception time out	P218	P387	
U1296	522603	7F96B	9	MIL + AWL		VH (CAN message) reception time out	P220	P387	
U1298	522605	7F96D	9	MIL + AWL		Y_ECM3 (CAN message) reception time out	P222	P387	
U0168	237	ED	31	MIL + AWL		VI (CAN message) reception time out	P224	P387	
U3002			13	MIL + AWL		VI (CAN message) reception data fault	P226	P387	
U1300	522609	7F971	9	MIL + AWL		Y_ETCP1 (CAN message) reception time out	P228	P387	
U1302	522618	7F97A	9	MIL + AWL		EBC1 (CAN message) reception time out	P230	P387	
U1303	522619	7F97B	9	MIL + AWL		Y_DPFIF (CAN message) reception time out	P232	P387	
U010B	522610	7F972	9	MIL + AWL		CAN1	CAN1 (for EGR): Reception time out	P208	P384
U1107	522611	7F973	9	TBD			Exhaust throttle (CAN message from the exhaust throttle time out)	P209	P384
P0404	2791	AE7	0	MIL + AWL		EGR valve	EGR over-voltage fault	P190	P378
P1404			1	MIL + AWL	EGR under-voltage fault		P191	P378	
P1409			7	MIL + AWL	EGR feedback malfunction		P192	P382	
U0401			9	MIL + AWL	EGR ECM data fault		P193	P382	
P0403			12	MIL + AWL	Open circuit between the EGR motor coils		P194	P382	
P1405	522579	7F953	12	MIL + AWL	Short circuit between the EGR motor coils		P195	P382	
P0488	522580	7F954	12	MIL + AWL	EGR position sensor malfunction		P196	P382	
P148A	522581	7F955	7	MIL + RSL	EGR stuck open valve malfunction		P197	P382	
P049D	522582	7F956	7	MIL + RSL	EGR initialization malfunction		P198	P382	
P1410	522183	7F957	1	MIL + AWL	EGR high temperature thermistor malfunction		P200	P382	
P1411	522184	7F958	1	MIL + AWL	EGR low temperature thermistor malfunction		P201	P382	
U1401	522617	7F979	12	MIL + AWL	EGR target value out of range		P199	P382	
P1438	522746	7F9FA	12	TBD	Exhaust throttle		Exhaust throttle (Voltage fault)	P202	-
P1439	522747	7F9FB	12	TBD			Exhaust throttle (Motor fault)	P203	-
P1440	522748	7F9FC	12	TBD			Exhaust throttle (Sensor system fault)	P204	-
P1441	522749	7F9FD	12	TBD		Exhaust throttle (MPU fault)	P205	-	
P1442	522750	7F9FE	12	TBD		Exhaust throttle (PCB fault)	P206	-	
P1443	522751	7F9FF	19	TBD		Exhaust throttle (CAN fault)	P207	-	
P0601	630	276	12	MIL + RSL		EEPROM	EEPROM memory deletion error	P234	P390
P160E	522576	7F950	12	MIL + RSL	EEPROM memory read error		P235	P390	
P160F	522578	7F952	12	MIL + RSL	EEPROM memory writing error		P236	P390	

DTC code				Number of the lamp flashes	Error item		Reference page		
P code	SPN		FMI		Part	State	Description	Failure diagnosis	
	Decima number	Hexadecimal number	Decima number						
P1613	522585	7F959	12	MIL + RSL	ECU internal fault	CY146 SPI communication fault	P237	P390	
P1608	522588	7F95C	12	MIL + RSL		Excessive voltage of supply 1	P238	P390	
P1617	522589	7F95D	12	MIL + RSL		Insufficient voltage of supply 1	P239	P390	
P1609	522590	7F95E	12	None		Sensor supply voltage error 1	P240	-	
P1618	522591	7F95F	12	None		Sensor supply voltage error 2	P241	-	
P1619	522592	7F960	12	None		Sensor supply voltage error 3	P242	-	
P1626	522744	7F9F8	4	MIL + AWL		Actuator drive circuit 1 short to ground	P243	-	
P1633	522994	7FAF2	4	MIL + AWL		Actuator drive circuit 2 short to ground	P244	-	
P1467	523471	7FCCF	6	MIL + AWL		Actuator drive circuit 3 short to ground	P245	-	
P1469	523473	7FCD1	12	MIL + RSL		AD converter fault 1	P246	P390	
P1470	523474	7FCD2	12	MIL + RSL		AD converter fault 2	P247	P390	
P1471	523475	7FCD3	12	MIL + RSL		External monitoring IC and CPU fault 1	P248	P390	
P1472	523476	7FCD4	12	MIL + RSL		External monitoring IC and CPU fault 2	P249	P390	
P1473	523477	7FCD5	12	MIL + RSL		ROM fault	P250	P390	
P1474	523478	7FCD6	12	MIL + RSL		Shutoff path fault 1	P251	P390	
P1475	523479	7FCD7	12	MIL + RSL		Shutoff path fault 2	P252	P390	
P1476	523480	7FCD8	12	MIL + RSL		Shutoff path fault 3	P253	P390	
P1477	523481	7FCD9	12	MIL + RSL		Shutoff path fault 4	P254	P390	
P1478	523482	7FCDA	12	MIL + RSL		Shutoff path fault 5	P255	P390	
P1479	523483	7FCDB	12	MIL + RSL		Shutoff path fault 6	P256	P390	
P1480	523484	7FCDC	12	MIL + RSL		Shutoff path fault 7	P257	P390	
P1481	523485	7FCDD	12	MIL + RSL		Shutoff path fault 8	P258	P390	
P1482	523486	7FCDE	12	MIL + RSL		Shutoff path fault 9	P259	P390	
P1483	523487	7FCDF	12	MIL + RSL		Shutoff path fault 10	P260	P390	
P1484	523488	7FCE0	0	MIL + RSL		Recognition error of engine speed	P261	-	
P1101	522323	7F853	0	Select by application		Air cleaner switch	Air cleaner clogged alarm	P262	P361
P1151	522329	7F859	0	Select by application		Oil/water separator switch	Oil/water separator alarm	P264	P361
P1562	167	A7	5	Select by application		Charge switch	Charge switch open circuit	P266	P357
P1568			1	Select by application	Charge alarm		P268	P357	
P1192	100	64	4	Select by application	Oil pressure switch	Oil pressure switch open circuit	P270	P357	
P1198			1	Select by application		Low oil pressure fault alarm	P272	P357	
P2463	522573	7F94D	0	Not turned on	DPF	Overaccumulation (Method C)	P274	-	
P1463	522574	7F94E	0	Not turned on		Overaccumulation (Method P)	P275	-	
P2458	522575	7F94F	7	Not turned on		Regeneration defect (Stationary regeneration failure)	P276	-	
P2459	522577	7F951	11	Not turned on		Regeneration defect (Stationary regeneration not performed)	P277	-	
P242F	3720	E88	16	MIL + AWL	DPF OP interface	Ash cleaning request 1	P278	-	
P1420			0	MIL + RSL		Ash cleaning request 2	P279	-	
P1421	3719	E87	16	MIL + AWL		Stationary regeneration standby	P280	-	
P1424			0	MIL + RSL		Backup mode	P281	-	
P1425	3695	E6F	14	Not turned on		Reset regeneration prohibited	P282	-	
P1445	3719	E87	9	MIL + RSL		Recovery regeneration failure	P283	-	
P1446			7	MIL + RSL		Recovery regeneration prohibition	P284	-	