

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

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

FMI		P-Code		Number of the lamp flashes		Bautteil- 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 Nockenwellendrehzahlsensor				
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).				
1209	3	P0473	MIL + RSL	EGR-Drucksensor auf der Abgasseite	EGR low pressure side sensor (Abnormal learning value)				
1209	3	P0473	MIL + RSL	EGR high pressure side sensor	EGR-Sensorfehler auf der Hochdruckseite (Überspannung)				
1209	4	P0472	MIL + RSL	EGR-Drucksensor auf der Abgasseite	EGR high pressure side sensor (Abnormal learning value)				
1209	4	P0472	MIL + RSL	EGR high pressure side sensor	EGR-Sensorfehler auf der Hochdruckseite (Unterspannung)				
1209	10	P0339	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	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	P1679	MIL + RSL	EGR high pressure side sensor	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	Kühlwassertempersensoren 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	Ansauglufttempersensoren I.	Fehler des Ansauglufttempersensors (Überspannung)
172	3	P0113	MIL + AWL	New air temperature sensor I.	New air temperature sensor fault (High voltage)
172	4	P0112	MIL + AWL	Ansauglufttempersensoren I.	Fehler des Ansauglufttempersensors 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	Kraftstofftempersensoren in der Hochdruckpumpe	Fehler des Kraftstofftempersensors (Überspannung)
174	4	P0182	MIL + AWL	Fuel temperature sensor	Fuel temperature sensor fault (High voltage)
174	4	P0182	MIL + AWL	Kraftstofftempersensoren in der Hochdruckpumpe	Fehler des Kraftstofftempersensors (Unterspannung)
174	0	P0168	Auswahl nach Option	Fuel temperature sensor	Fuel temperature sensor fault (Low voltage)
174	0	P0168	Select by application	Fuel temperature sensor	Kraftstofftempersensoren - Temperatur ungewöhnlich hoch
174	0	P0168	Select by application	Fuel temperature sensor	Fuel temperature sensor temperature abnormal high
157	3	P0193	MIL + RSL	Raildrucksensoren 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	Raildrucksensoren 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	Differenzdrucksensoren	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-Differenzdrucksensoren	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-Differenzdrucksensoren	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-Differenzdrucksensoren	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-Differenzdrucksensoren 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-Differenzdrucksensoren 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-Einlasstempersensors (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-Einlasstempersensors (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-Einlasstempersensortemperatur 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	MIL + AWL	Atmosphärendrucksensor im Steuergerät ECU	Fehler im Atmosphärendrucksensor (Überspannung)
108	3	MIL + AWL	Atmospherio pressure sensor	Atmospherio pressure sensor fault (High voltage)
108	4	MIL + AWL	Atmosphärendrucksensor im Steuergerät ECU	Fehler im Atmosphärendrucksensor (Unterspannung)
108	4	MIL + AWL	Atmospherio pressure sensor	Atmospherio pressure sensor fault (Low voltage)
108	10	MIL + AWL	Atmosphärendrucksensor im Steuergerät ECU	Fehler in der Kennlinie des Atmosphärendruckensors
108	10	MIL + AWL	Atmospherio pressure sensor	Atmospherio pressure sensor characteristic fault
412	3	MIL + AWL	EGR Temperatursensor im EGR Ventil	Fehler im EGR- Temperatursensor (Überspannung)
412	3	MIL + AWL	EGR gas temperature sensor	EGR gas temperature sensor fault (High voltage)
412	4	MIL + AWL	EGR Temperatursensor im EGR Ventil	Fehler im EGR- Temperatursensor (Unterspannung)
412	4	MIL + AWL	EGR gas temperature sensor	EGR gas temperature sensor fault (Low voltage)
105	3	MIL + RSL	Einlasskrümmer-Temperatursensor II.	Fehler im Einlasskrümmer-Temperatursensor (Überspannung). Sensor T1 und T2 vertauscht
105	3	MIL + RSL	Intake manifold temperature sensor II.	Intake manifold temperature sensor fault (High voltage). Sensor T1 and T2 switched
105	4	MIL + RSL	Einlasskrümmer-Temperatursensor II.	Fehler im Einlasskrümmer-Temperatursensor I. (Unterspannung)
105	4	MIL + RSL	Intake manifold temperature sensor II.	Intake manifold temperature sensor I. fault (Low voltage)
173	3	MIL + AWL	Auspuffkrümmer-Temperatursensor	Fehler im Auspuffkrümmer-Temperatursensor (Überspannung)
173	3	MIL + AWL	Exhaust manifold temperature sensor	Exhaust manifold temperature sensor fault (High voltage)
173	4	MIL + AWL	Auspuffkrümmer-Temperatursensor	Fehler im Auspuffkrümmer-Temperatursensor (Unterspannung)
173	4	MIL + AWL	Exhaust manifold temperature sensor	Exhaust manifold temperature sensor fault (Low voltage)
1485	7	MIL + AWL	Hauptrelaiskontakt Yanmar- Motor oder Sicherung defekt.	Hauptrelaiskontakt verklebt, Sicherungen F2, F17, F18, F40, F41, F42, F43 prüfen
1485	7	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	MIL + AWL	Hauptrelaiskontakt oder Sicherung defekt.	Vorzeitiges Öffnen des Hauptrelais Sicherungen F2, F17, F18, F34, F40, F41, F42, F43 prüfen.
1485	2	MIL + AWL	Main relay defective or fuse defective	Main relay early opening
522243	5	MIL + AWL	Startrelais	Startrelais unterbrochen
522243	5	MIL + AWL	Startup assist relay	Startup assist relay interrupted
522243	6	MIL + AWL	Startrelais	Startrelais Kabel unterbrochen
522243	6	MIL + AWL	Startup assist relay	Startup assist relay GND interrupted
652	5	MIL + RSL	Einspritzventils 1 3TNV: Zyl. Nr. 3 Zugehöriger Port 3TNV: 1 3	Einspritzventils 1 offener Kreislauf (Eigene Ansteuerung).
652	5	MIL + RSL	Injector 1 3TNV: Cyl No. 3 Corresponding port 3TNV: 1 -3	Injector 1 open Circuit (Inherent location of the injector)
652	6	MIL + RSL	Einspritzventils 1 3TNV: Zyl. Nr. 3 Zugehöriger Port 3TNV: 1 4	Kurzschluss des Einspritzventils 1 Spule
652	6	MIL + RSL	Injector 1 3TNV: Cyl No. 3 Corresponding port 3TNV: 1 -4	Injector 1 coil short Circuit
652	3	MIL + RSL	Einspritzventils 1 3TNV: Zyl. Nr. 3 Zugehöriger Port 3TNV: 1 5	Kurzschluss des Einspritzventils 1
652	3	MIL + RSL	Injector 1 3TNV: Cyl No. 3 Corresponding port 3TNV: 1 -5	Injector 1 short Circuit
653	5	MIL + RSL	Einspritzventils 2 3TNV: Cyl No. 2	Einspritzventils 2 offener Kreislauf (Eigene Ansteuerung)
653	5	MIL + RSL	Injector2 3TNV: Cyl No. 2 Corresponding port 3TNV: 1 -2	Injector 2 open Circuit (Inherent location of the injector)
653	6	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 (Bank) 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)	IC-A-korrigierte Injektionsmenge für Injektor 1 Fehler
523462	13	P1648	MIL + RSL	Injector (correction value)	ICAcorrected injection amountfor injector 1 error
523463	13	P1649	MIL + RSL	Einspritzventils (Korrekturwert)	IC-A korrigierte Injektionsmenge für Injektor 2 Fehler
523463	13	P1649	MIL + RSL	Injector (correction value)	ICAc corrected injection amount for injector 2 error
523464	13	P1650	MIL + RSL	Einspritzventils (Korrekturwert)	IC-A korrigierte Injektionsmenge für Injektor 3 Fehler
523464	13	P1650	MIL + RSL	Injector (correction value)	ICAc corrected injection amount for injector 3 error
523465	13	P1651	MIL + RSL	Einspritzventils (Korrekturwert)	IC-A korrigierte Injektionsmenge für Injektor 4 Fehler
523465	13	P1651	MIL + RSL	Injector (correction value)	ICAc 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	P1642	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 Auswahl nach	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	Stationäre Regeneration standby
3719	0	P1424	MIL + RSL	Partikelfilter-OP-Schnittstelle,	Sicherheitsmodus
3719	0	P1424	MIL + RSL	DPF OP interface	Backup mode

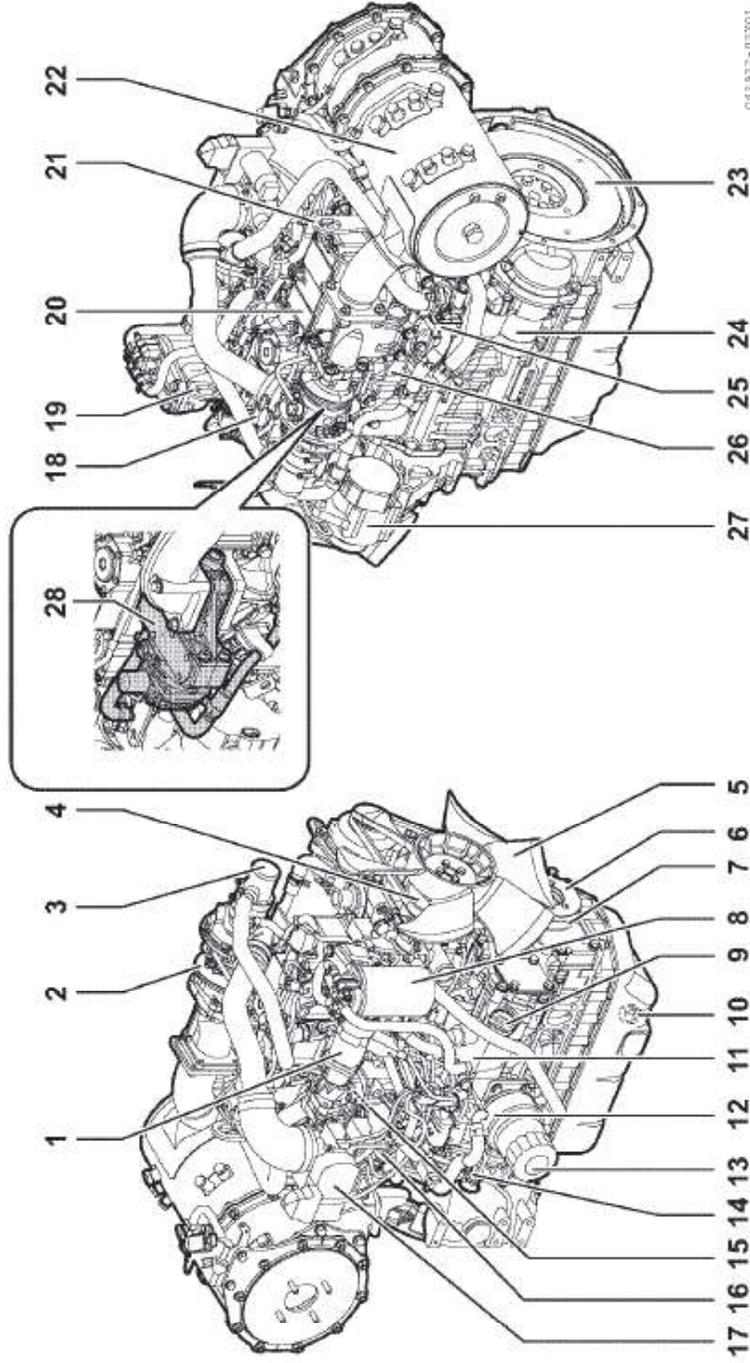
3695	14	P1425	Not turned on	Partikelfilter-OP-Schnittstelle.	Rücksetzen der Regeneration nicht erlaubt.
3695	14	P1425	Not turned on	DPF OP interface	Reset regeneration prohibited
3719	9	P1445	MIL + RSL	Partikelfilter-OP-Schnittstelle.	Fehler bei der Wiederherstellungsregeneration.
3719	9	P1445	MIL + 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	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	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	U1292	MIL + AWL	CAN2	Y_ECR1 (CAN-Nachricht) Zeitüberschreitung beim Empfang
522599	9	U1292	MIL + AWL	CAN2	Y_ECR1 (CAN message) reception time out
522600	9	U1293	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	9	U1293	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.
522600	9	M1000	MIL + AWL	CAN2	Y_EC (CAN message) reception time out (SA2)
484607	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	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	U1303	MIL + AWL	CAN2 , CAN- Bus- Fehler oder Fehler in der Spannungsversorgung vom Motorsteuergerät A01. Versorgung B+ und B- (Masse) prüfen.	Y_DPFIIF (CAN-Nachricht) Zeitüberschreitung beim Empfang. Fehler in der Spannungsversorgung vom Motorsteuergerät. Sicherung F34 prüfen. Masseversorgung von A01 prüfen . CAN- Bus prüfen.

522619	9	U1 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
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## 9.0.1 Yanmar Motor 3TVN 88C- KHW

Citymaster 650

### Anbauteile Motor



- 1 – AGR-Ventil
- 2 – Turbolader\*1
- 3 – Lufteinlasskanal (von Luftfilter)
- 4 – Motor Kühlmittelpumpe
- 5 – Motor Kühlegebläse
- 6 – Kurbelwellenriemenscheibe
- 7 – Keilriemen
- 8 – Kraftstofffilter
- 9 – seitlicher Einfüllstutzen (Motoröl)
- 11 – Hochdruckpumpe
- 13 – Motorölfilter
- 14 – Messstab (Motoröl)

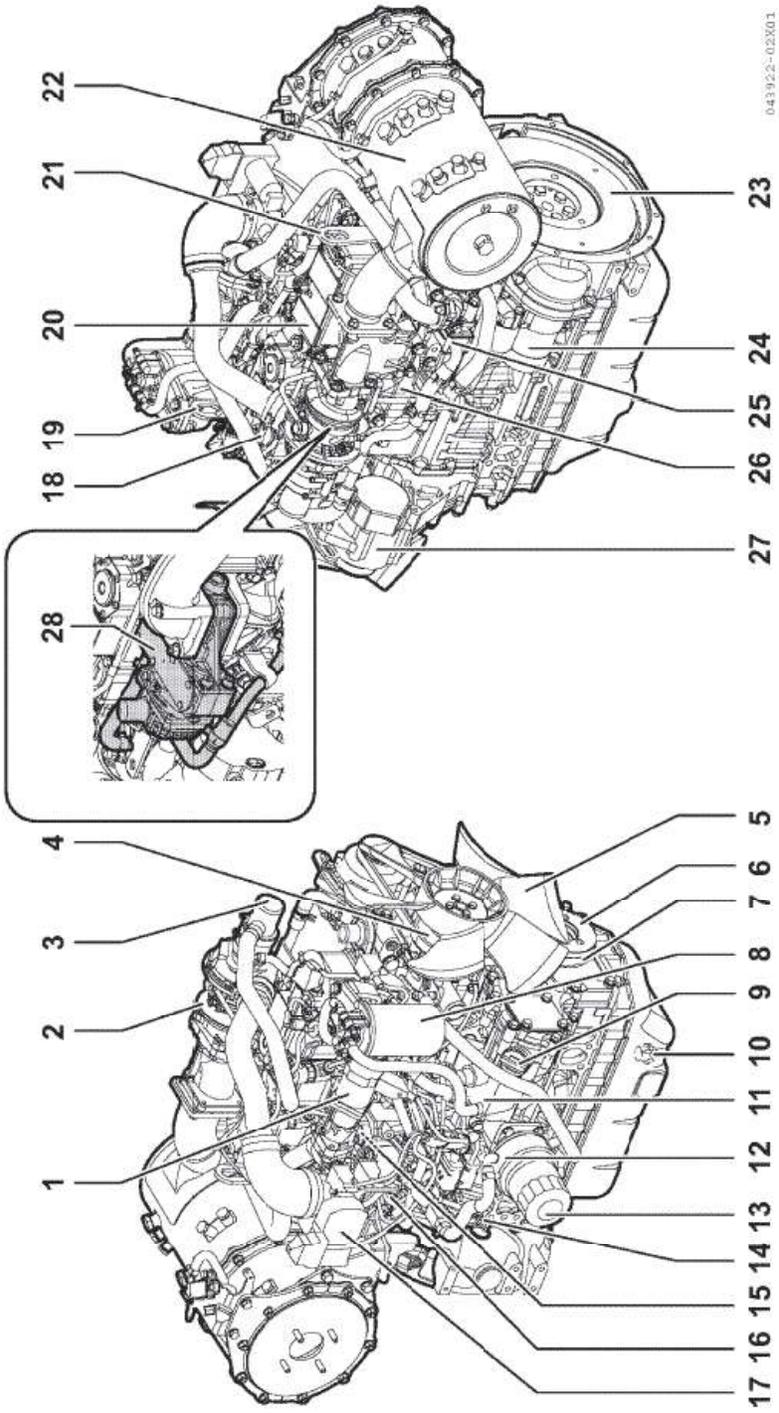
- 15 – Ansaugkrümmer
- 16 – Common-Rail
- 17 – Einlassdrosselklappe
- 18 – oberer Einfüllstutzen (Motoröl)
- 19 – Aufhängeöse (am Motor Kühlegebläse-Ende)
- 20 – Zylinderkopfabdeckung
- 21 – Aufhängeöse (am Schwungrad-Ende)
- 22 – Dieselpartikelfilter (DPF)\*4
- 23 – Schwungrad
- 24 – Starter
- 25 –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

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# 9.0.1 Yanmar Engine 3TVN 88C- KHW

Components at Yanmar Engine

Citymaster 650



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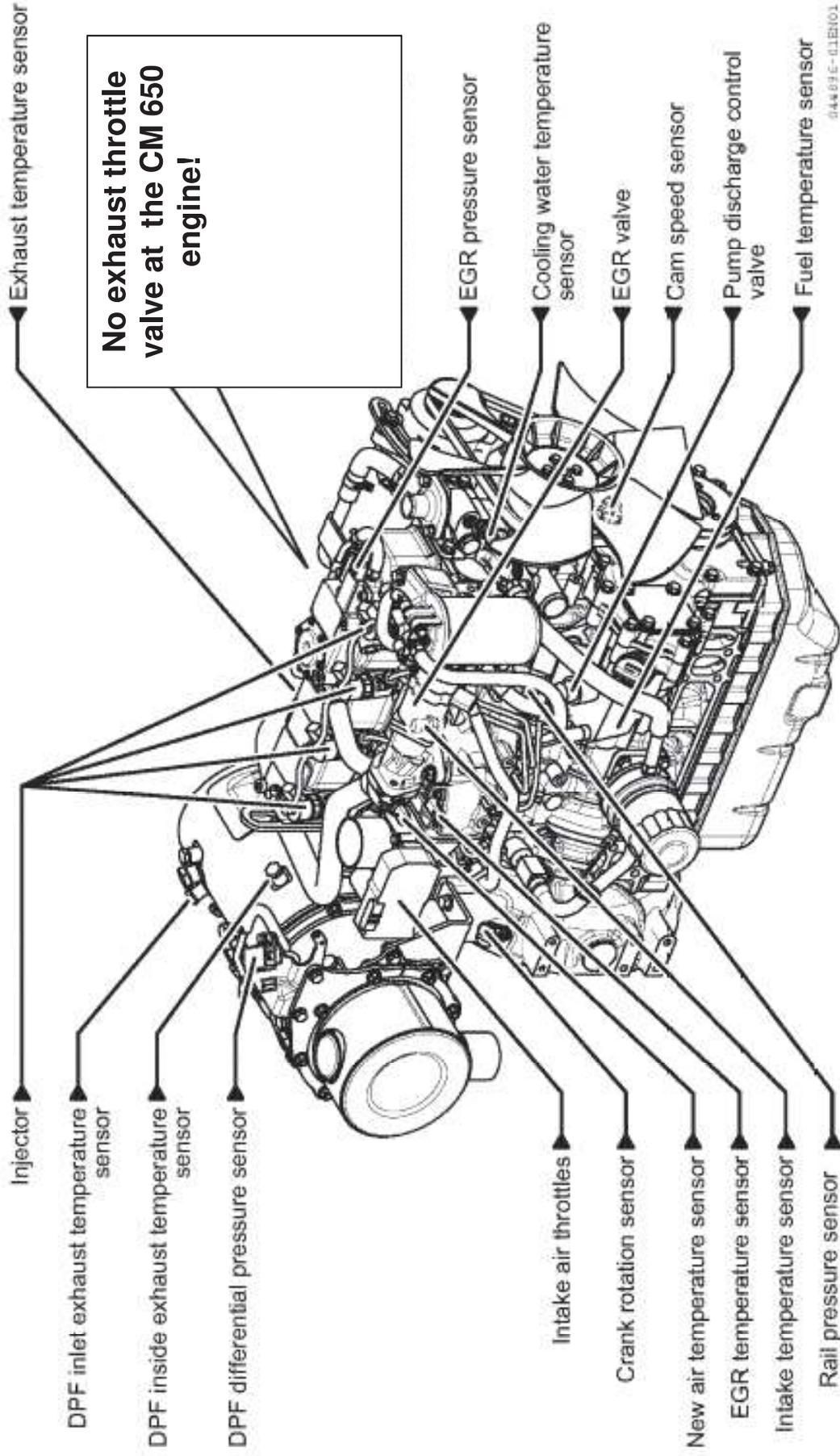
- 1 – EGR valve
- 2 – Turbocharger\*1
- 3 – Air intake port (from air cleaner)
- 4 – Engine coolant pump
- 5 – Engine cooling fan
- 6 – Crankshaft V-pulley
- 7 – V-belt
- 8 – Fuel filter
- 9 – Side filler port (engine oil)
- 10 – Drain plug (engine oil)\*2
- 11 – Supply pump
- 12 – Engine oil cooler\*3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

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

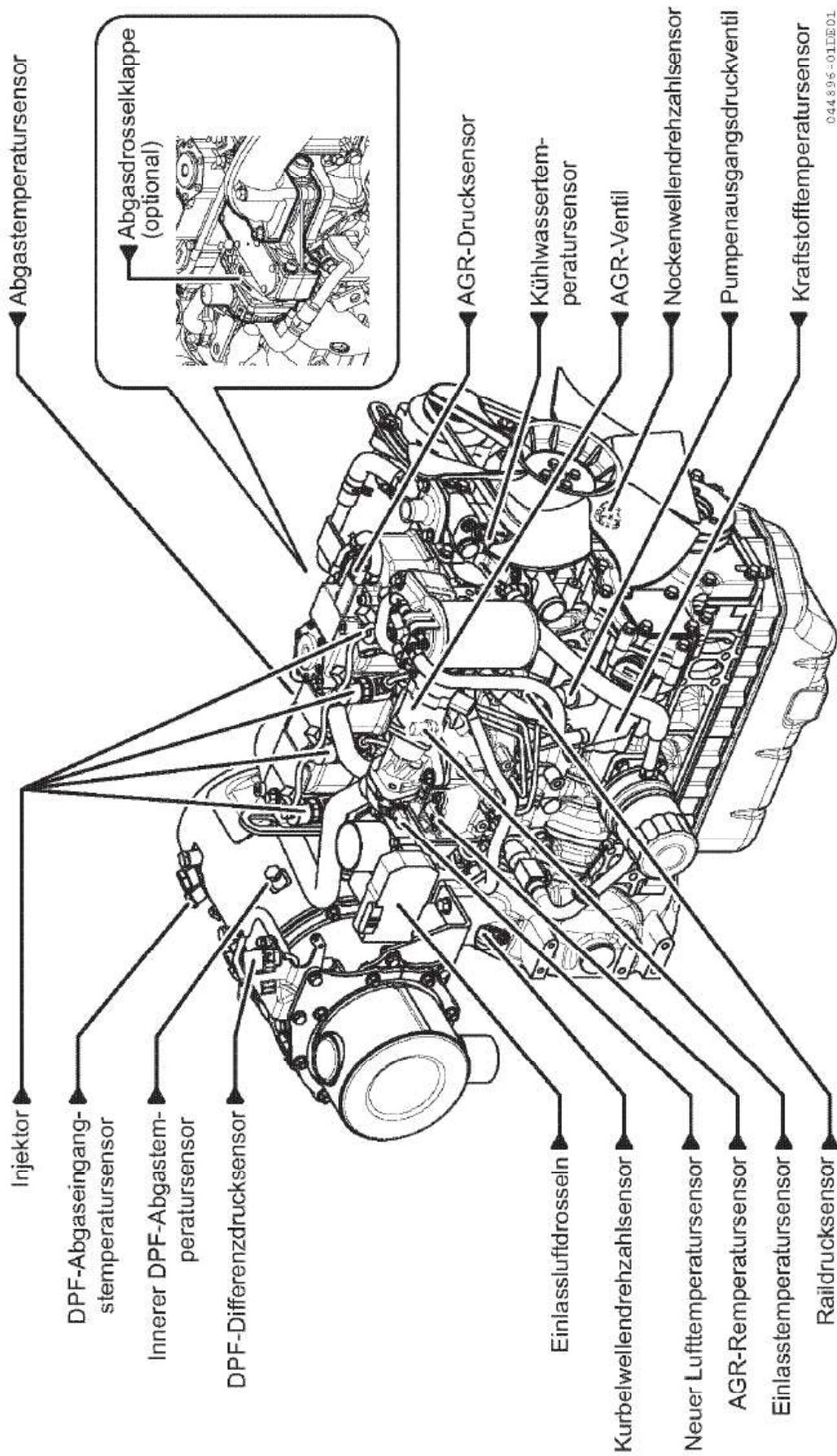
Citymaster 650

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



Einbauposition von Sensoren der elektronischen Motorsteuerung

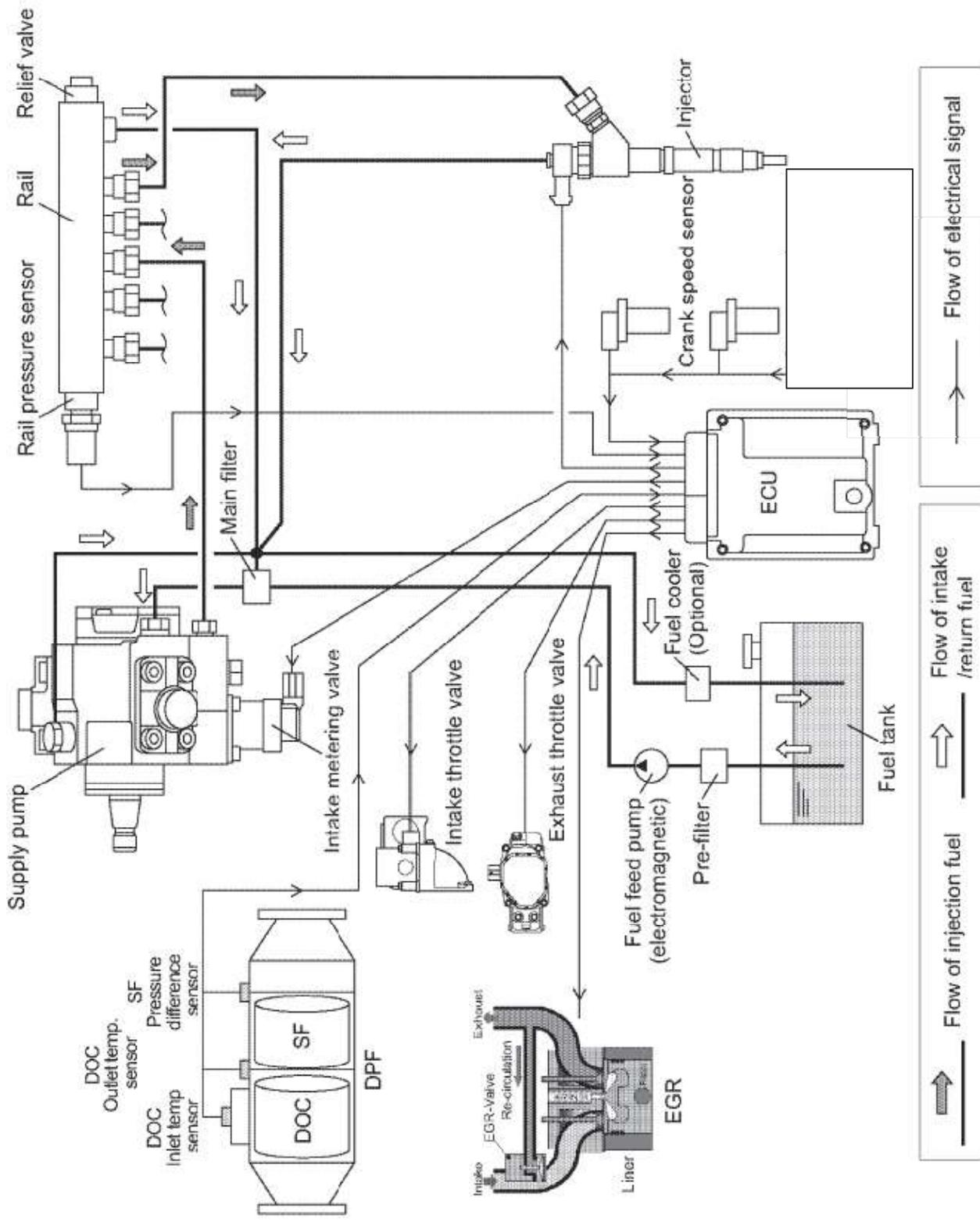
## Einbauposition von Sensoren der elektronischen Steuerung



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

Electronic Control System



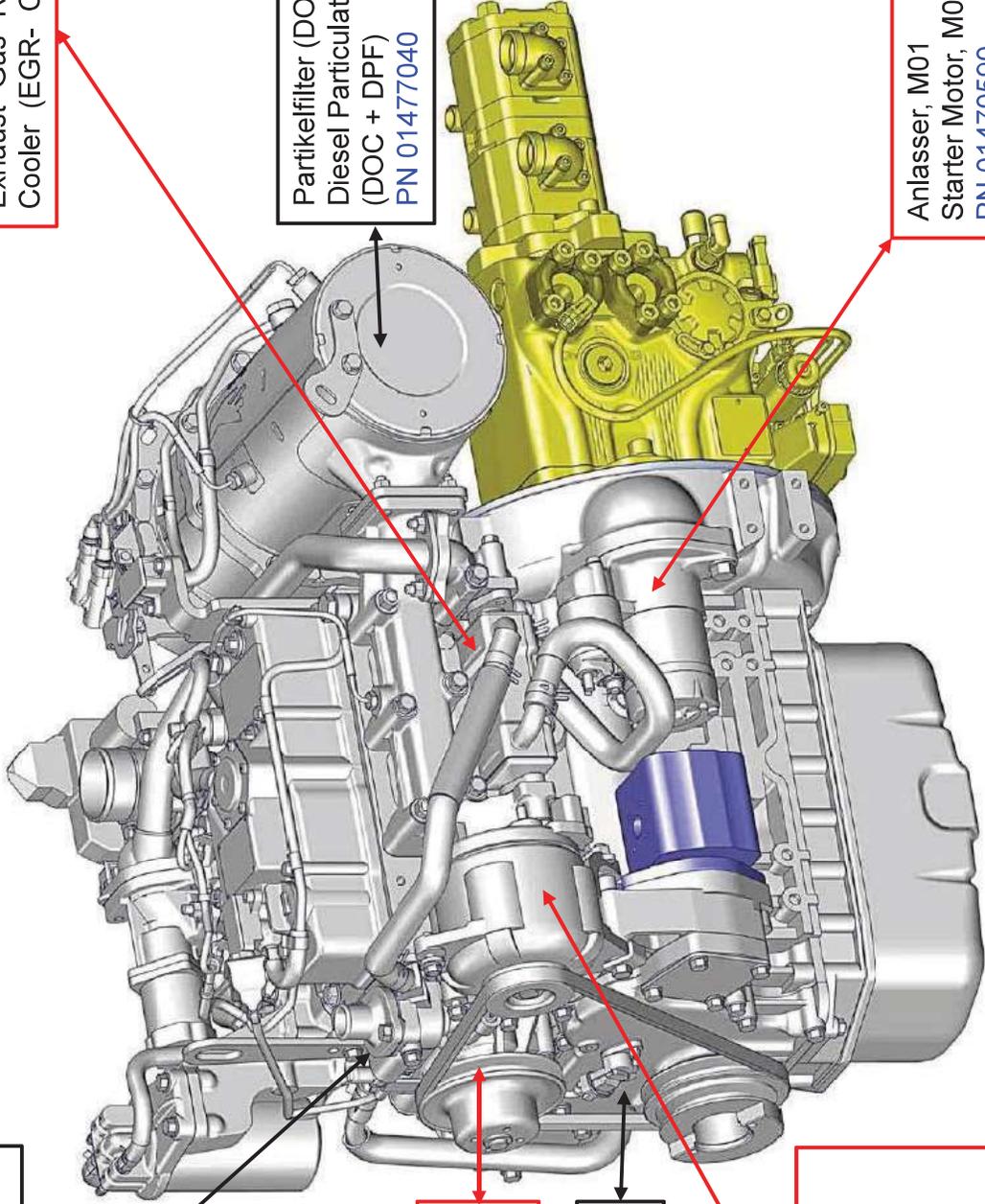
### 9.0.1 Yanmar Engine 3TVN 88C- KHW

Components at Yanmar Engine

Citymaster 650

Kühlwasser- Thermostat  
Cooling Water Thermostat  
PN 01184540

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



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

Kühlmittelpumpe  
Engine Coolant Pump  
PN 01477170

Nockenwellensensor  
Camshaft Sensor

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

Anlasser, M01  
Starter Motor, M01  
PN 01470590

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

Components at Yanmar Engine

Citymaster 650

Kurbelwellensensor  
Crankshaft- Sensor  
(Crank- Speed- Sensor)  
PN 01477480

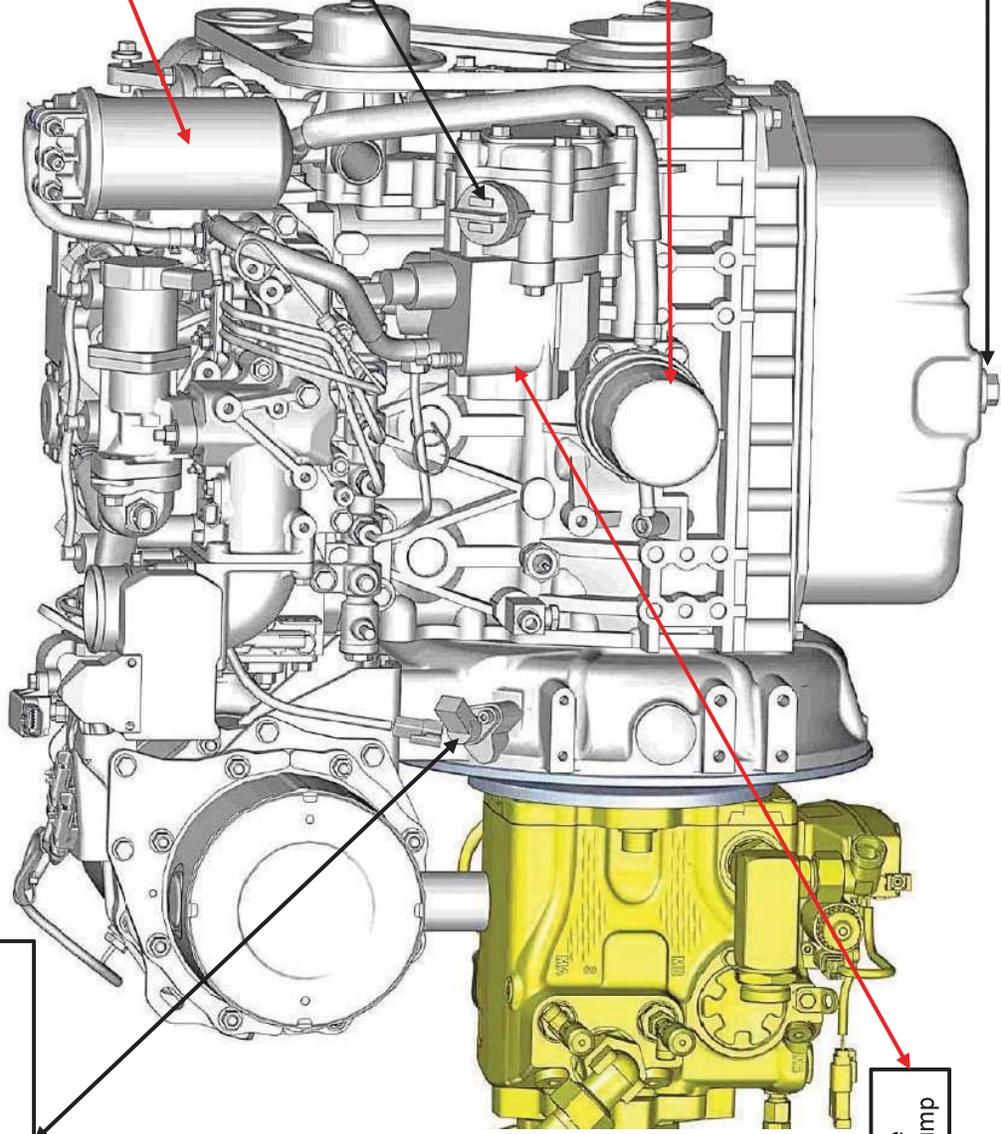
Kraftstofffilter  
Fuel Filter  
PN 01140330  
25Nm

Verschlussdeckel  
Motoroil filler cap  
(engine oil)  
PN 01144080

Motorölfilter  
Engine Oil Filter,  
PN 01140320  
20 Nm

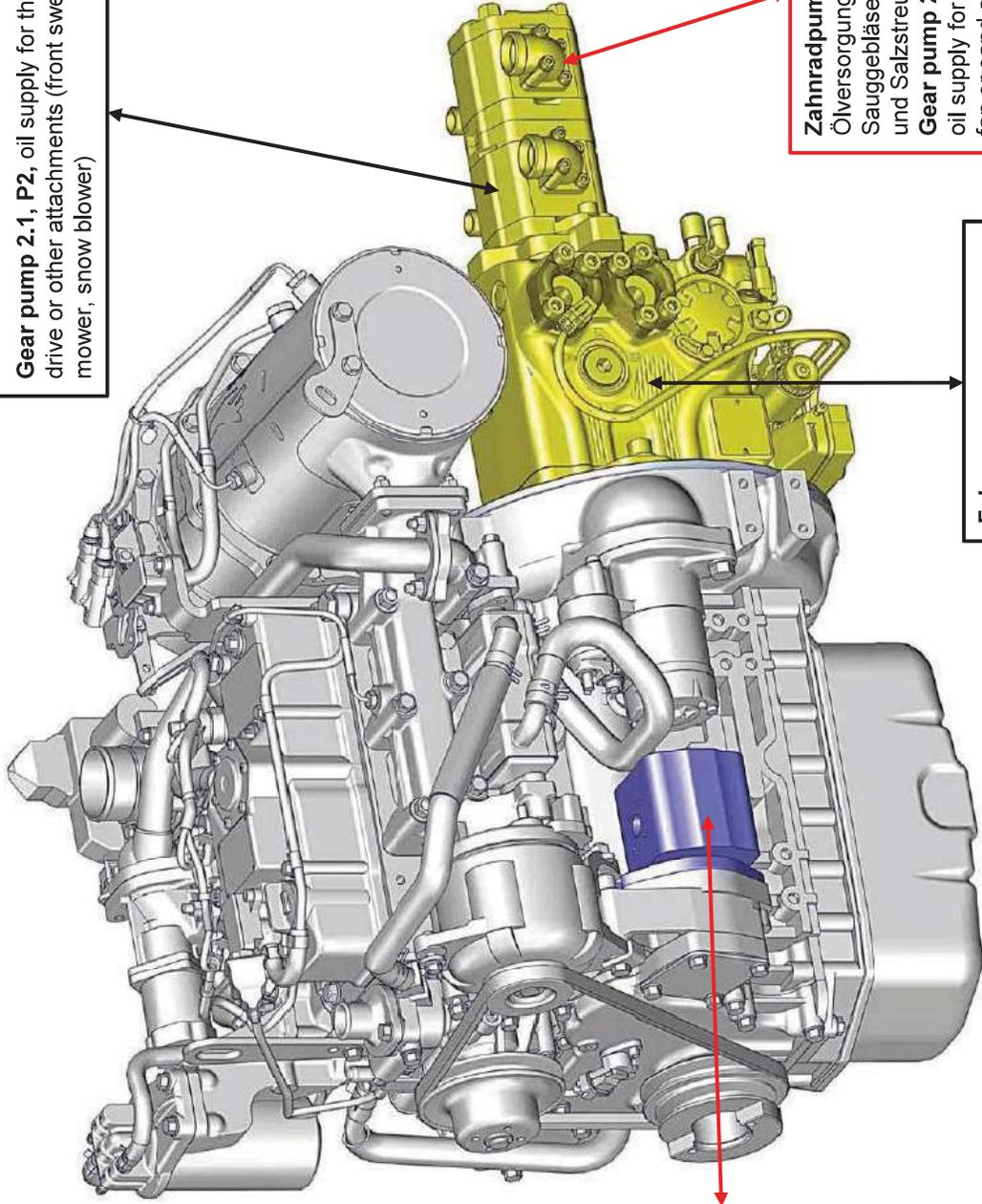
Ölablass-Schraube  
Drain Plug (Engine Oil)  
60 Nm  
PN 01045000  
Dichtung- Gasket  
PN 01045010

Hochdruckpumpe  
High Pressure Pump



**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.

**Zahnradpumpe 2.1, P1**, Ölversorgung für das Sauggebläse oder Sand- und Salzstreuer

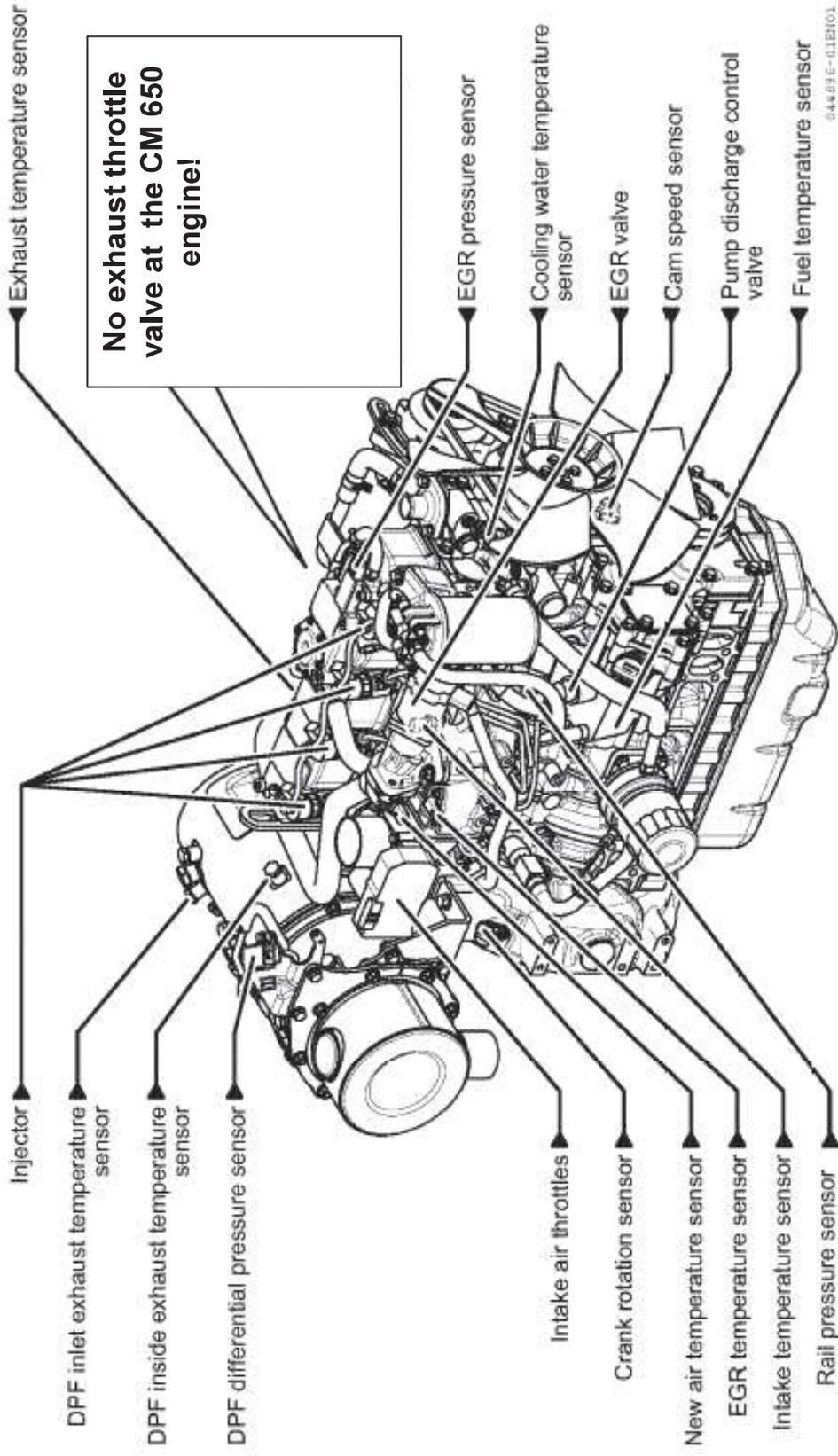
**Gear pump 2.1, P1**, oil supply for the suction fan or sand and salt spreader

**Fahrpumpe Drive (Travel) Pump**

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

Citymaster 650

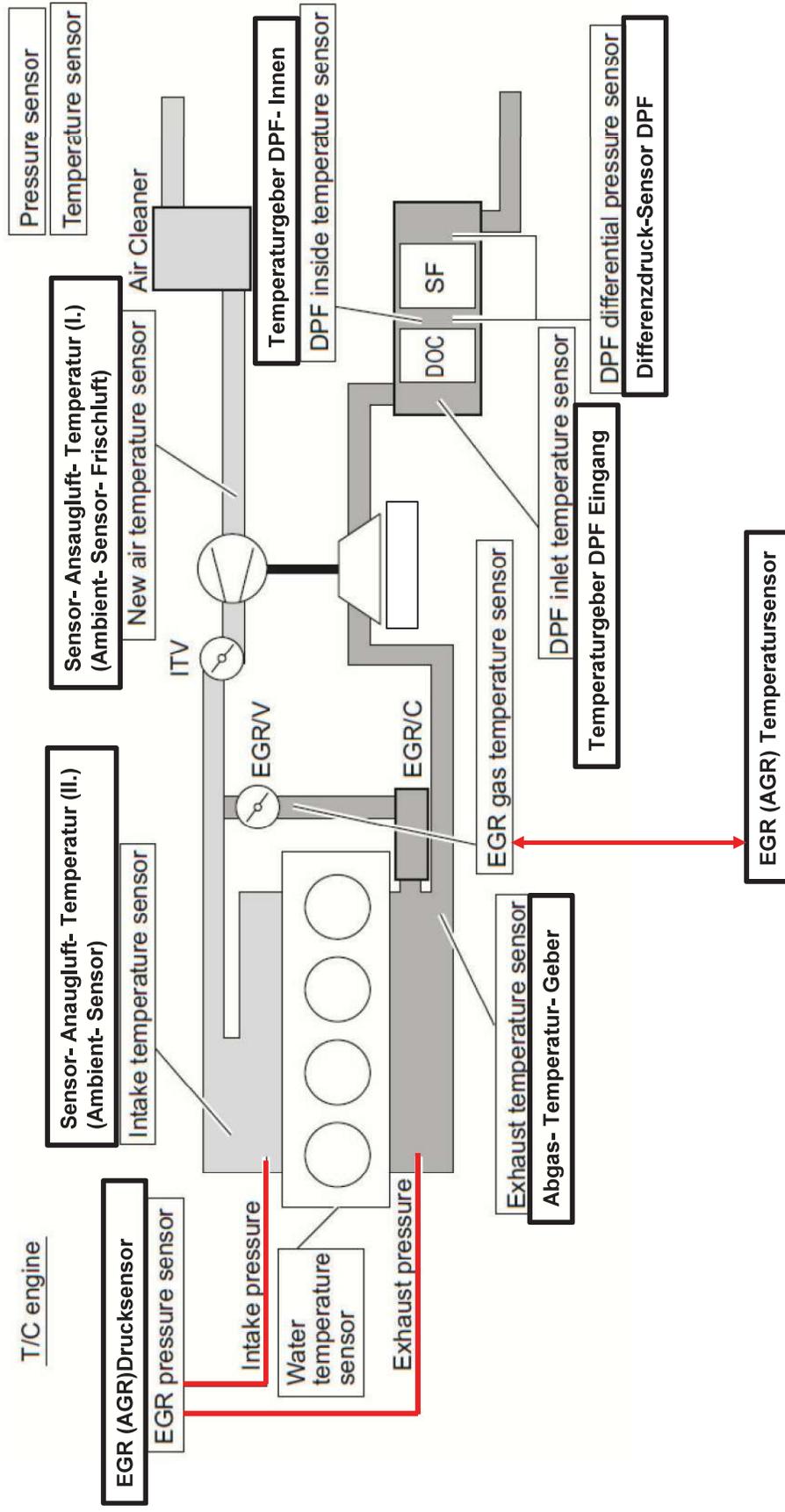
Mounting position of sensors (transducers) of the electronic engine control



## 9.0.1 Yanmar Engine 3TVN 88C- KHW

Sensors (transducers) of the electronic engine control

Citymaster 650



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

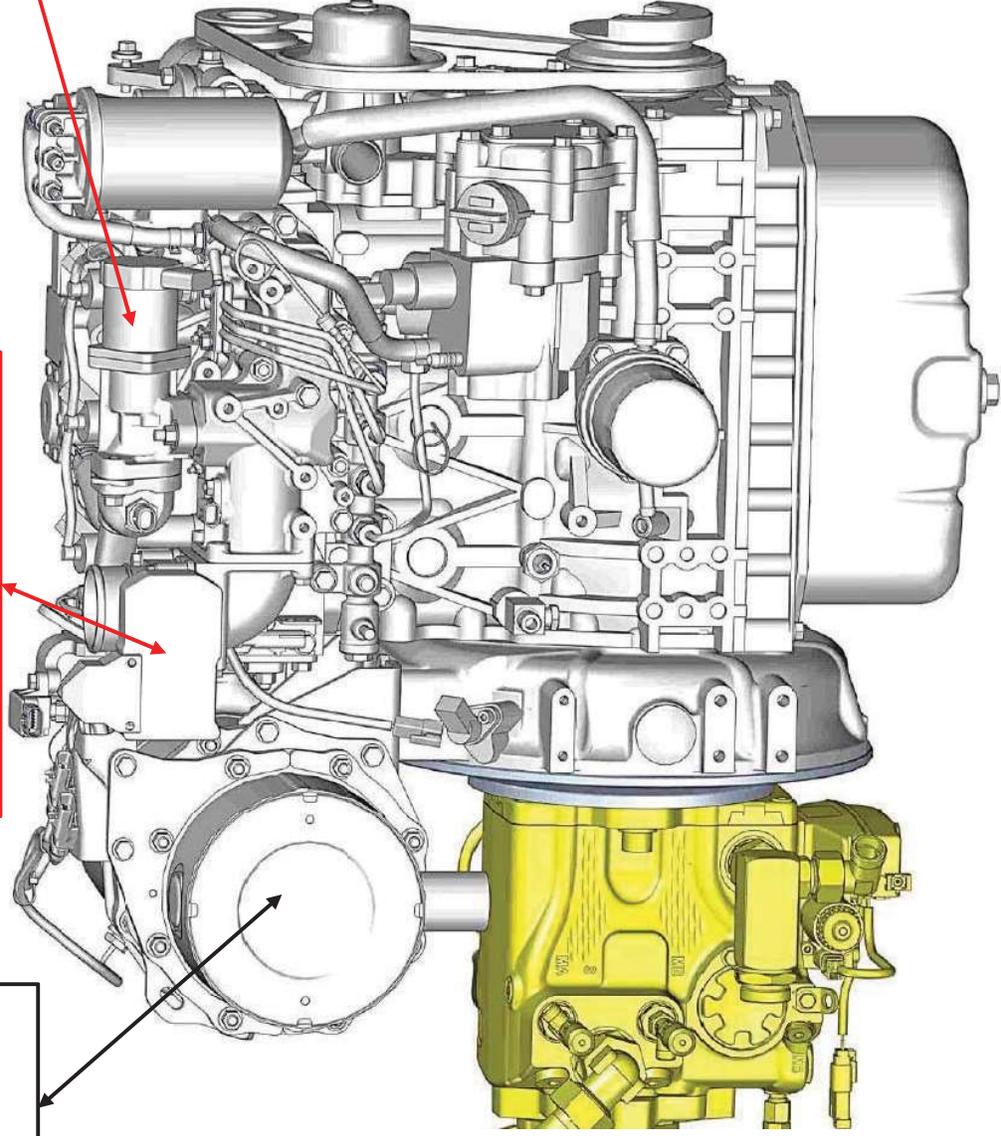
Citymaster 650

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

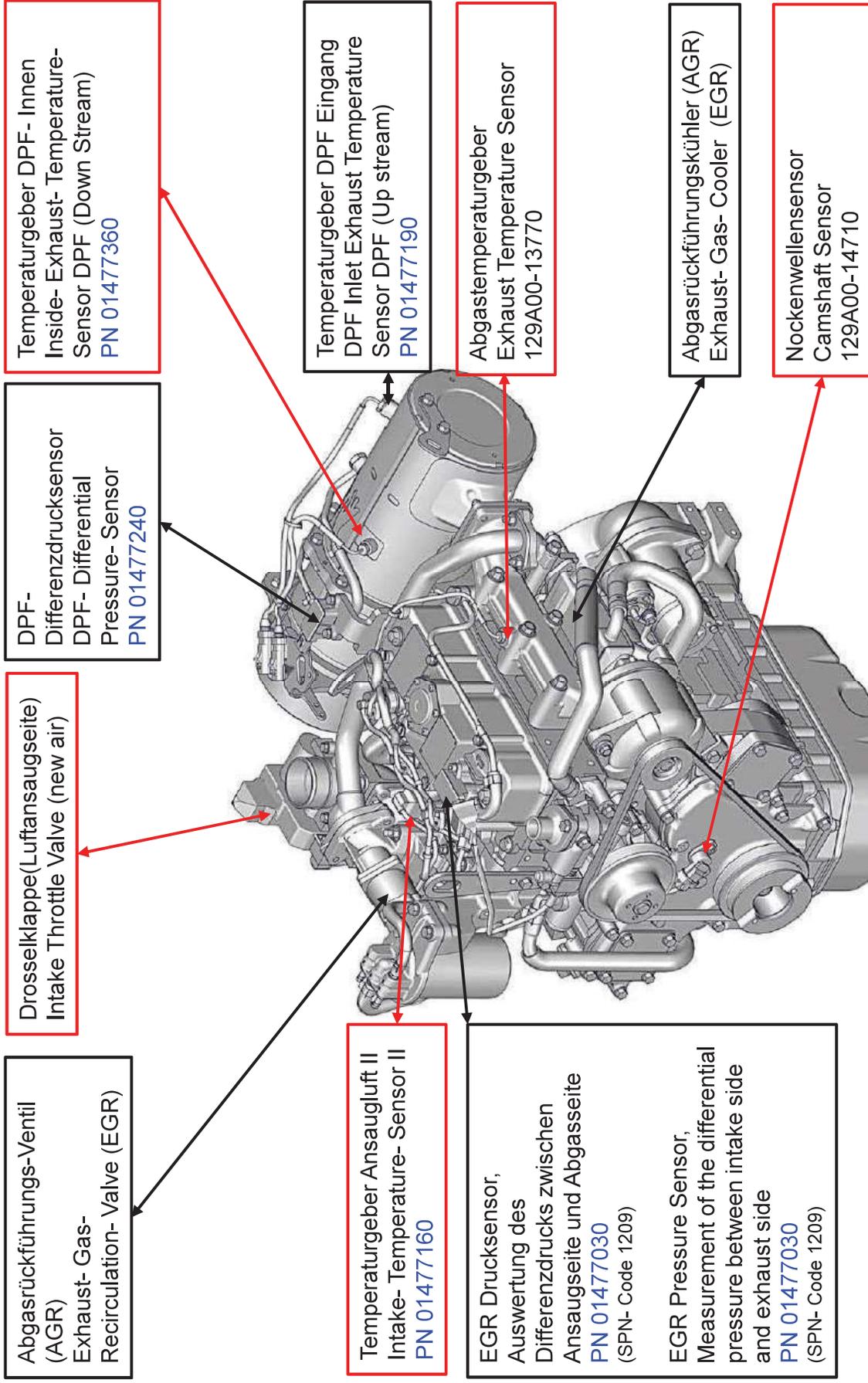
Abgasrückführungsventil (AGR)  
Exhaust- Gas- Recirculation- Valve  
(EGR)



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

Citymaster 650

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



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

Citymaster 650

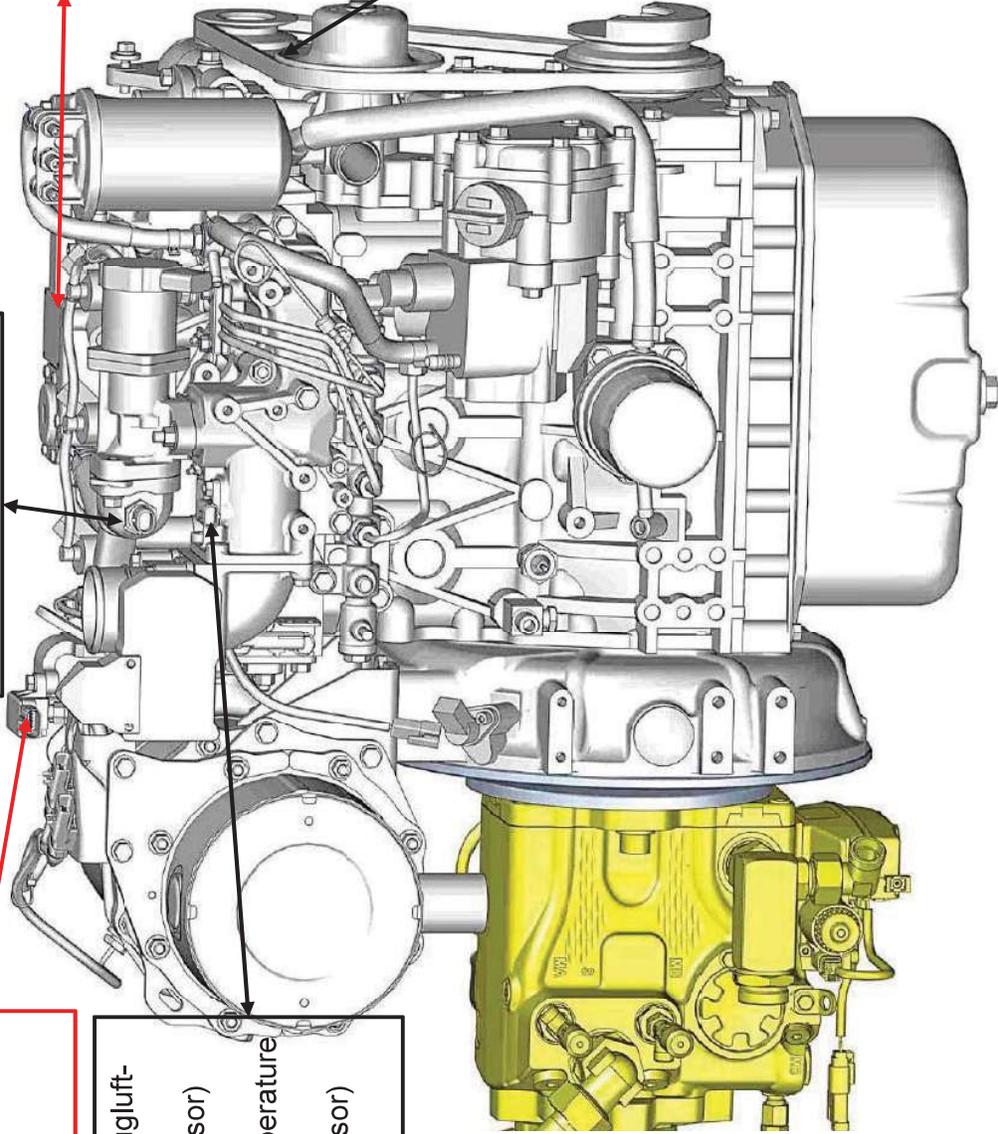
Installation (mounting) position of components and sensors of the exhaust system

Differenzdruck-  
Sensor DPF  
Differential Pressure  
Sensor DPF  
PN 01477240

AGR Temperatursensor  
EGR Temperature Sensor  
PN 01477220

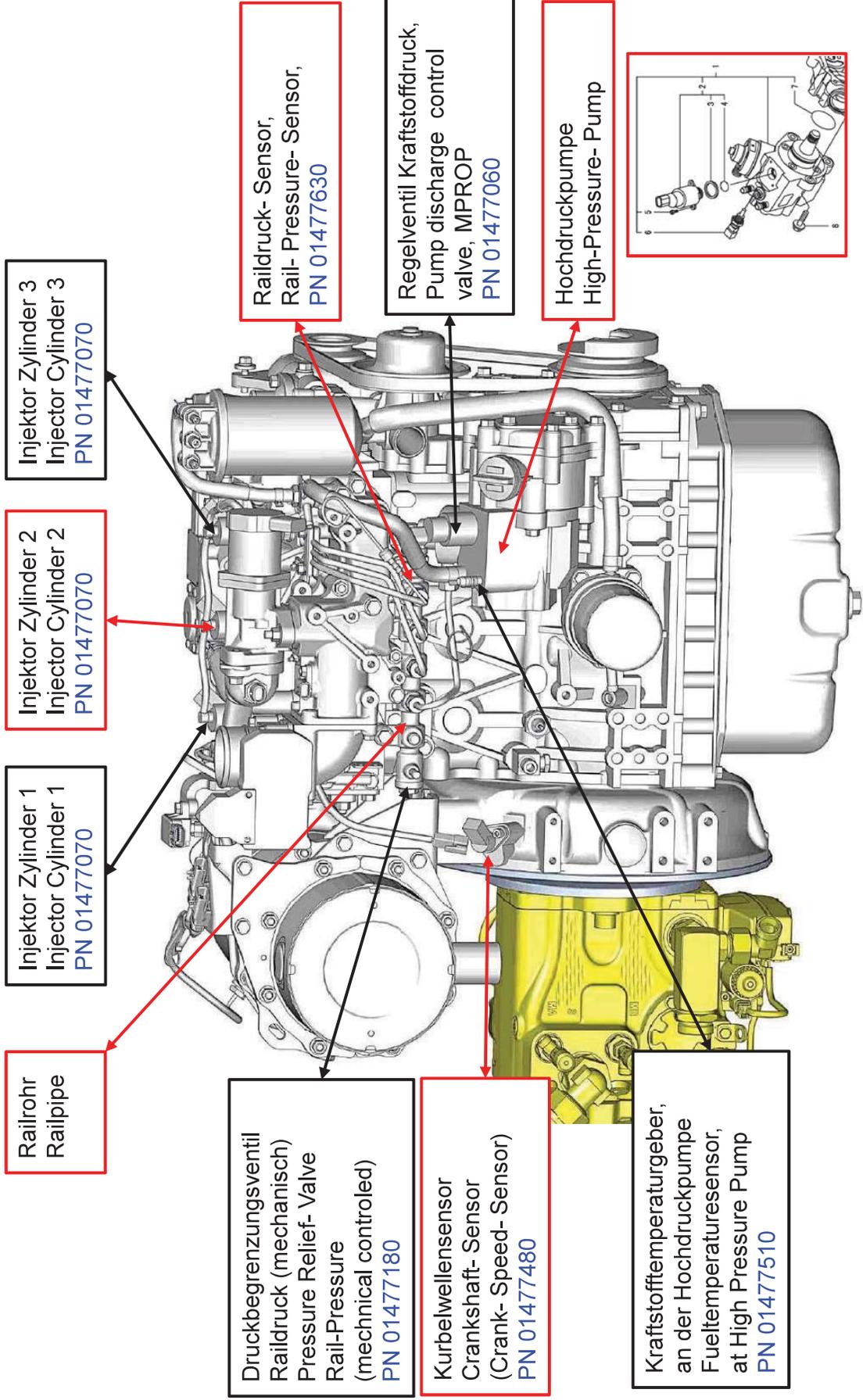
AGR Drucksensor,  
Auswertung des  
Differenzdrucks zwischen  
Ansaugseite und Abgasseite  
PN 01477030  
EGR Pressure Sensor,  
Measurement of the  
differential pressure between  
intake side and exhaust side  
PN 01477030

Sensor-Ansaugluft-  
Temperatur I  
(Ambient- Sensor)  
New- Air-Temperature  
Sensor I  
(Ambient- Sensor)  
129A00-12711

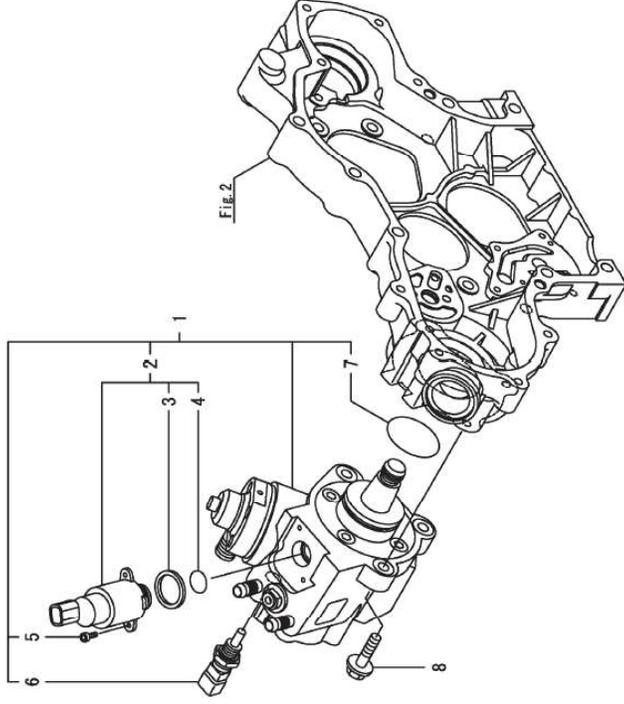


Temperaturgeber Kühlwasser  
an der Wasserpumpe  
Cooling Water Temperature  
Sensor at coolant water  
pump  
PN 01470550

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)

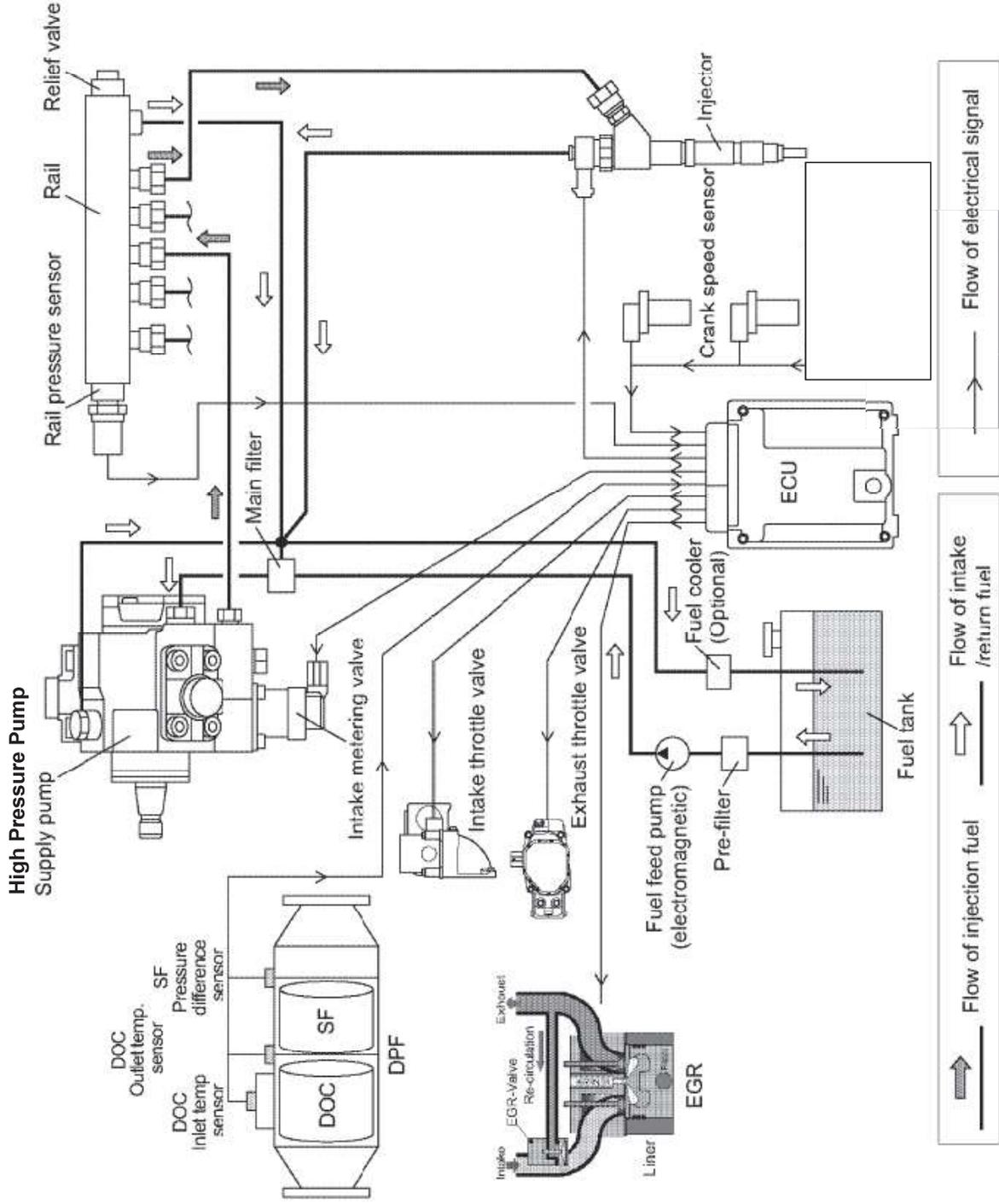


- |   |              |
|---|--------------|
| 1. Hochdruckpumpe kpl; Yanmar Mat.Nr                    | 129A00-51000 |
| 1. High-Pressure- Pump Assy; Yanmar PN                  | 129A00-51000 |
| 2. Regelventil Kraftstoffdruck, MPROP mit Dichtringen;  | PN 01477060  |
| 2. Pump discharge control valve,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

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

Citymaster 650

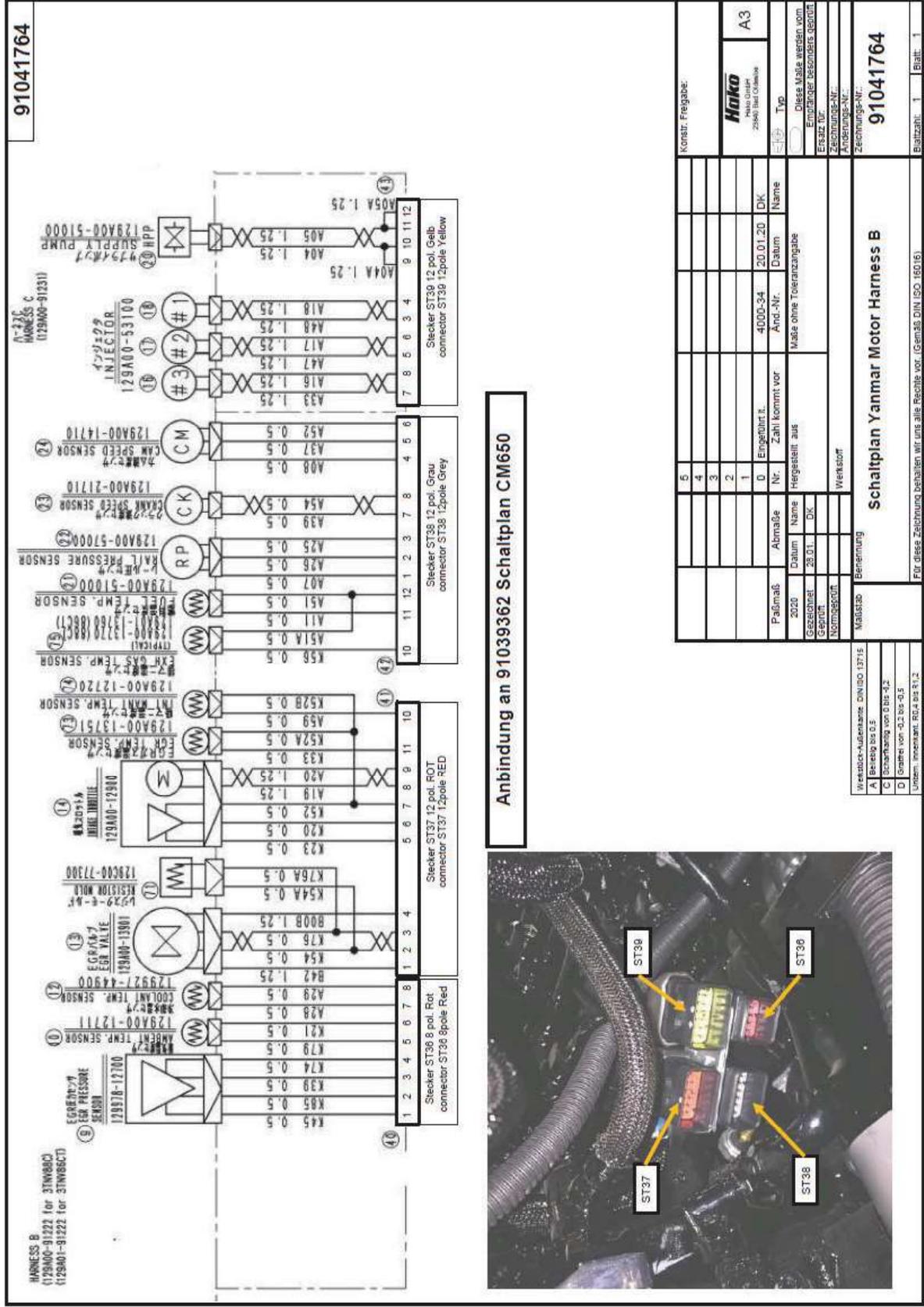
**Electronic Control System**



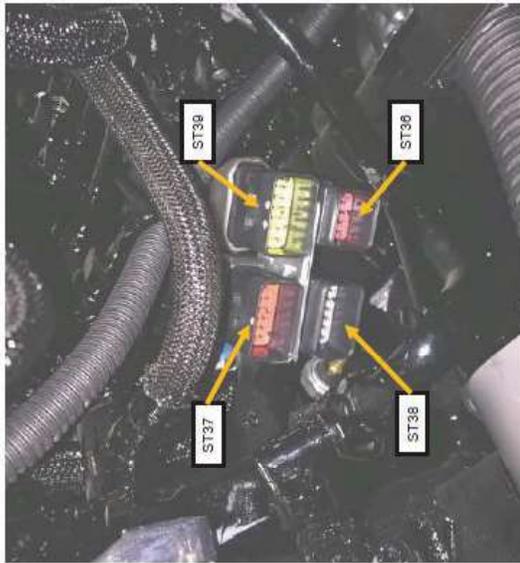
# 9.0.1 Yanmar Engine 3TVN 88C- KHW

## Schaltplan Yanmar Motor

Citymaster 650



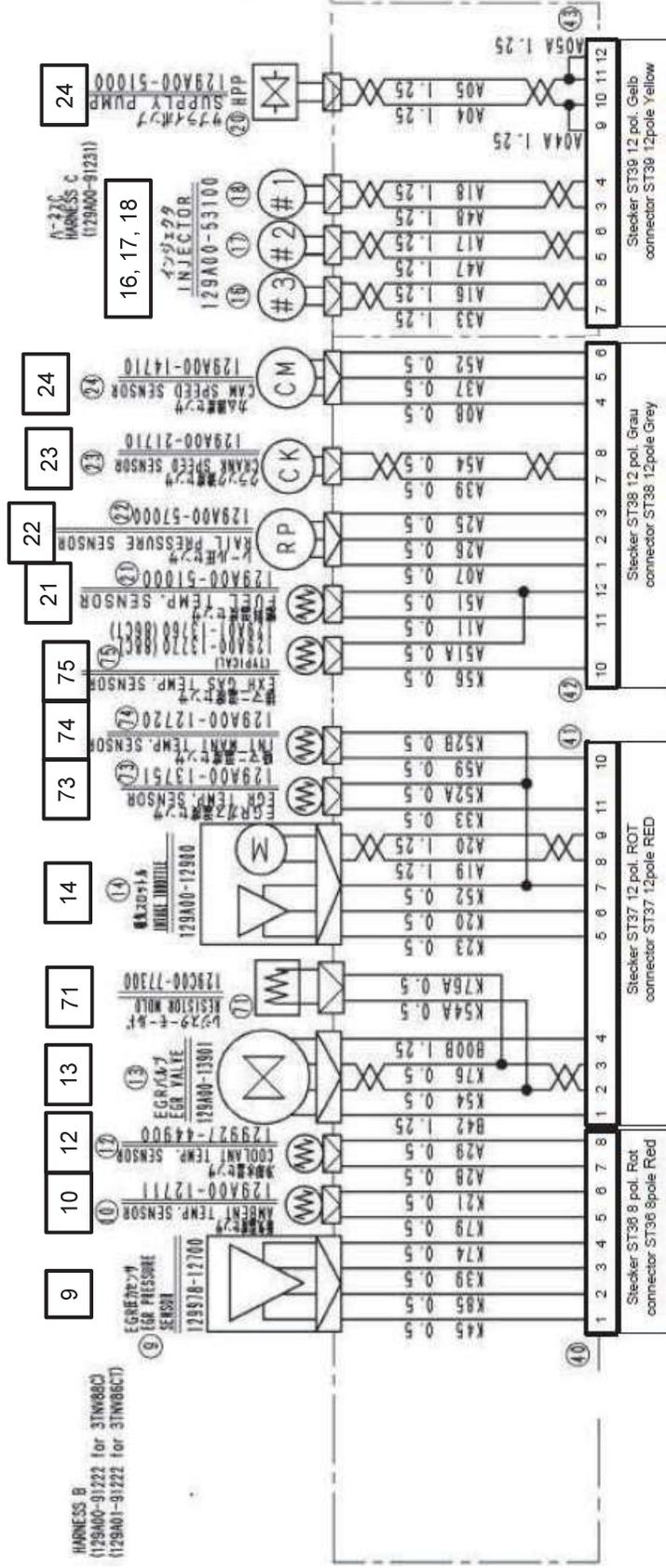
Anbindung an 91039362 Schaltplan CM650



Konstr. Freigabe:		Hako	
A3		28801 Item Change	
Typ		DK	
Diese Maße werden vom		4000-34	
Ersatz für		20.01.20	
Eingränger beschriftet gemäß		Name	
Änderungs-Nr.		Date	
Zeichnungs-Nr.		4000-34	
Blattzahl: 1		Blatt: 1	
Benennung		Schaltplan Yanmar Motor Harness B	
Masse-Nr.		Für diese Zeichnung behalten wir uns alle Rechte vor. (Gemäß DIN ISO 15016)	
Verweise-Nachweise: DIN ISO 13715			
A: Befestigung			
C: Bichtung von D bis -2			
D: Bichtung von -2 bis -3,5			
Umben. Innenmont. R04 bis R12			

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

Citymaster 650

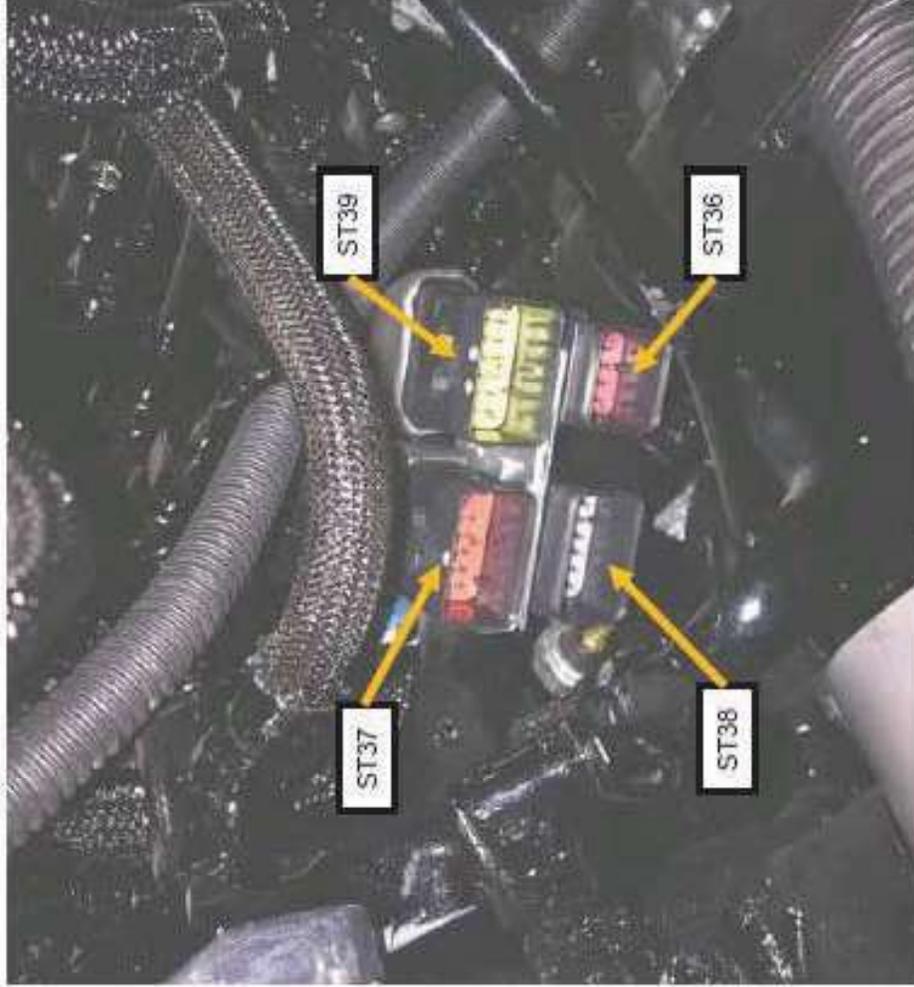


- Pos. 9. EGR Drucksensor- EGR pressure sensor-129978-12700
- Pos. 10. Sensor Ansaugluft (Ambient- Sensor) / New air temperature sensor (Ambient- Sensor)- 129A00-12711
- Pos. 12. Temperaturgeber Kühlwasser an der Wasserpumpe / Cooling water temperature sensor at water pump-129927-44900
- Pos. 13. AGR 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 Temperaturgeber- 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. Temperaturgeber Ansaugluft (II)- Intake- Temperature- Sensor (II.)- 129A00- 17720
- Pos. 75. Abgas temperatur- Sensor- Exhaust- Gas- Temperature Sensor-

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

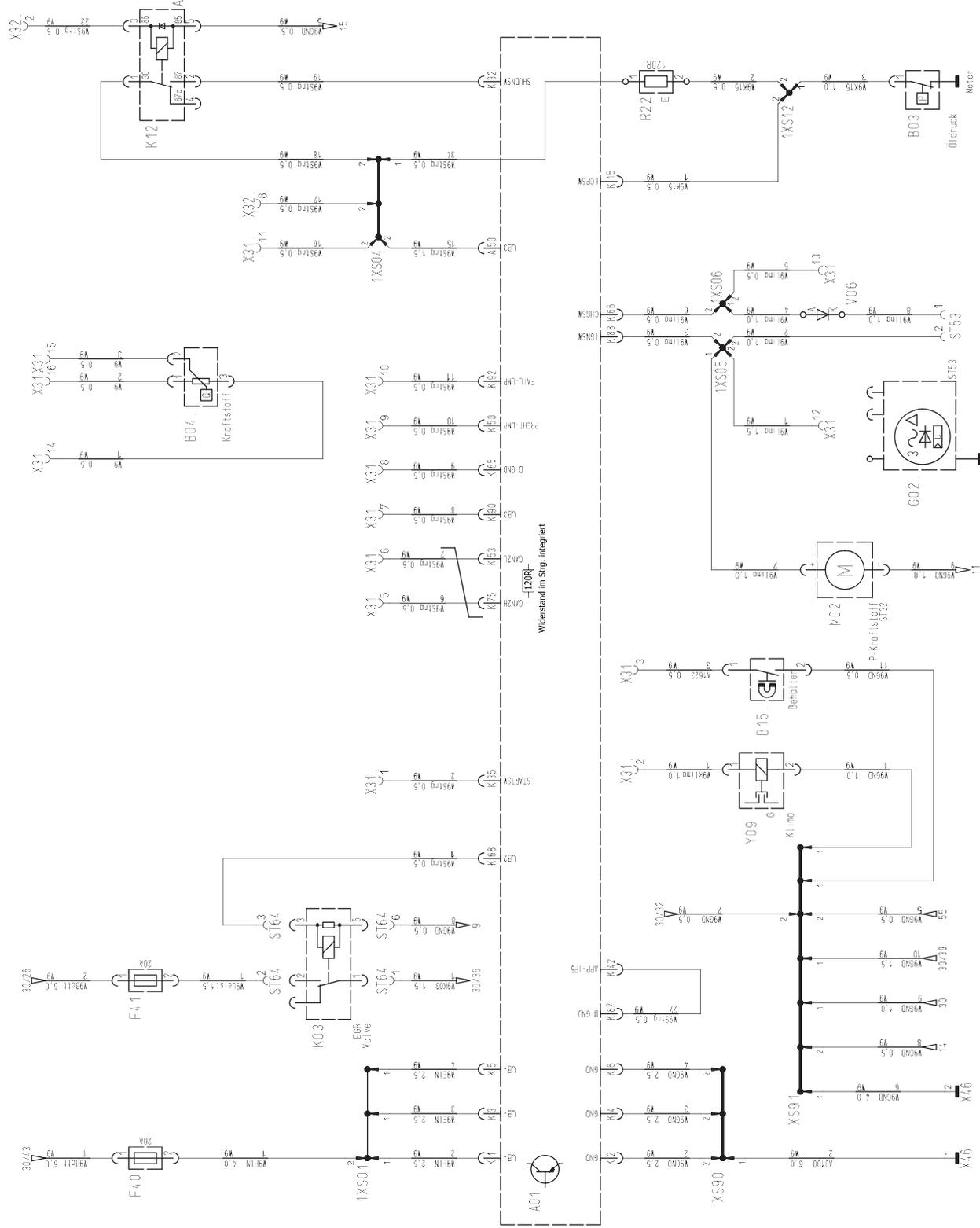
#### Motorbelsätze Yanmar Motor

- Yanmar Motorbelsatz B, mit Stecker ST36 (rot) und 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 Motorbelsatz 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 120Ω/m
- 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 Masseboizen 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)



Name	0650	Name	0650
0 Integrated ecc	4000-34	20.01.20	DK
42 (No) Number changes	Change No	Date	Name
			S. Standard

Schaltplan / circuit diagram  
 For this drawing we reserve all rights (acc. DIN ISO 15006)

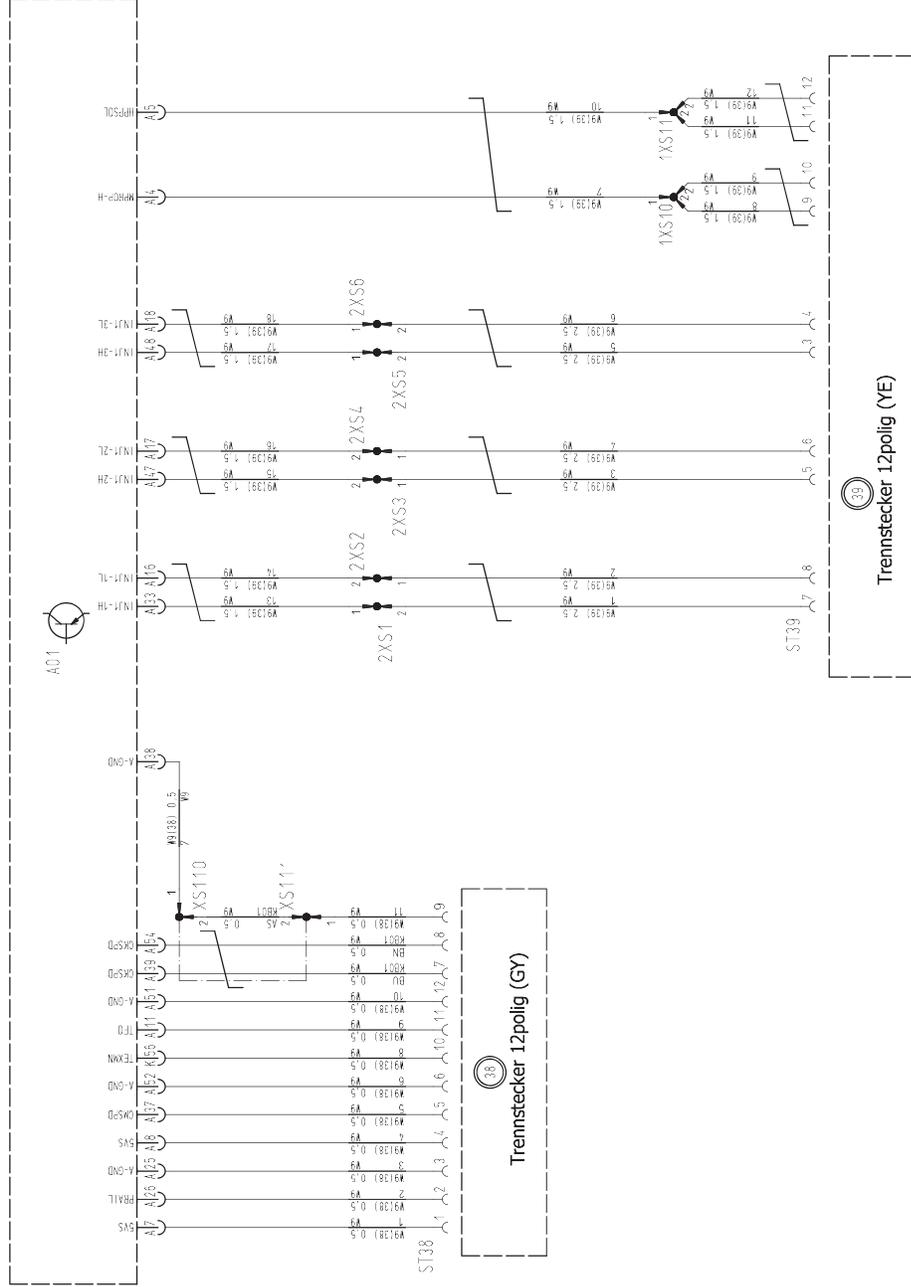
Drawing Number: 91039362  
 Type: K472 Dep: DS  
 No. of. Sh.: 38 Sheet: 29





### Legende

A01	Motorssteuergerät 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

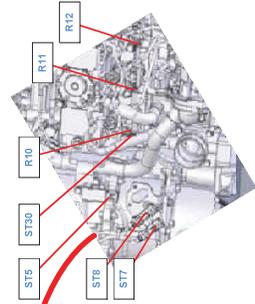


0	Integrated ecc	4000-34	20.11.20	DK	2019	Date	Name
1				DK	2019	21.08	DK
2				DK			

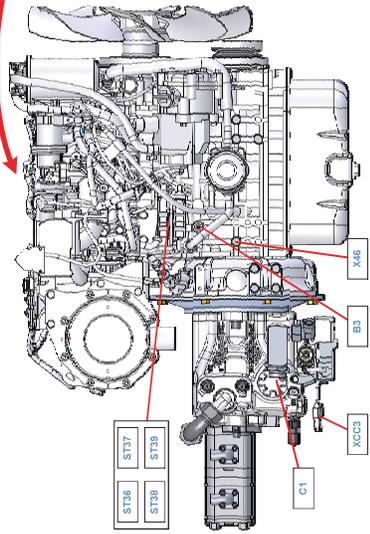
Schaltplan / circuit diagram	
0	For this drawing, we reserve all rights (ecc. DIN ISO 16016)
1	

Drawing Number	
91039362	
KAB1472 Type 1470 Dep. DS	
No. of Sh. 38	Sheet 31

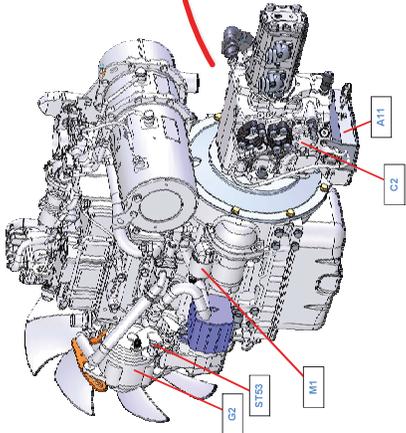
# Hinterwagen rear vehicle



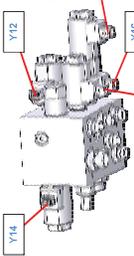
Hydraulik Steuerblockvorderwagen  
hydraulic control block front vehicle



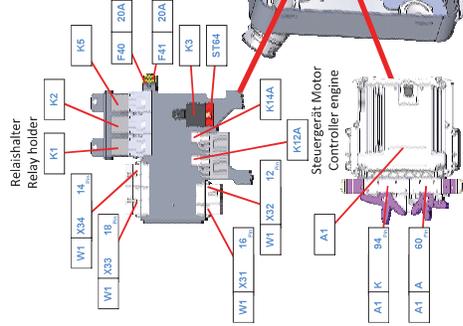
Klimakompressor  
A.C.



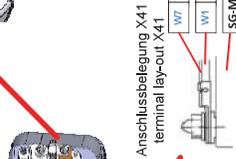
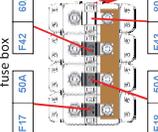
Hydraulik Steuerblock Gebläse, Besenantrieb & Behälter  
hydraulic control block fan, brush power unit & container



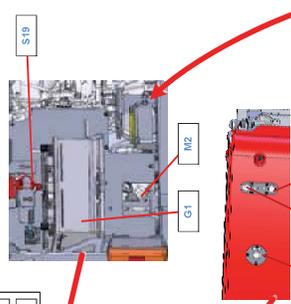
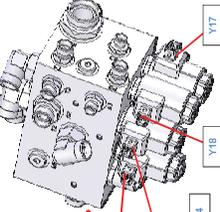
E-Kasten  
E-Box



Sicherungskasten  
fuse box



Anschlussbelegung X41  
terminal lay-out X41



Anschlussbelegung X40  
terminal lay-out X40

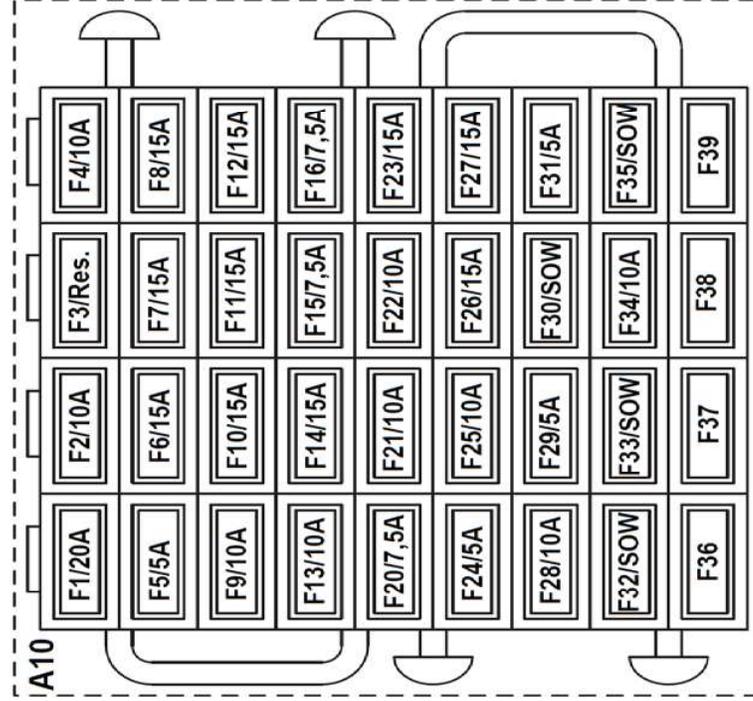


Alle Betriebsmittelkennzeichen unter 10 sind wie folgt zu deuten, Beispiel: P2 = P02  
all equipment indicators below 10 should be interpreted as follows, example: P2 = P02

Freigegeben/rev.		Date		Name		C/M/E50		Schaltplan Circuit diagram		Drawing Number 9103S362	
A2	4	40004	2017-2020	DW/LK	Drwin	1227-2020	LK	Requester for	Engineering Base (E.C.) Type 1473 Dec 2025		Sheet 37
K1		K2		K3		K4		K5		Rev of Sheet/33	
K6		K7		K8		K9		K10		Sheet 37	

### 3.0.1 Elektrik

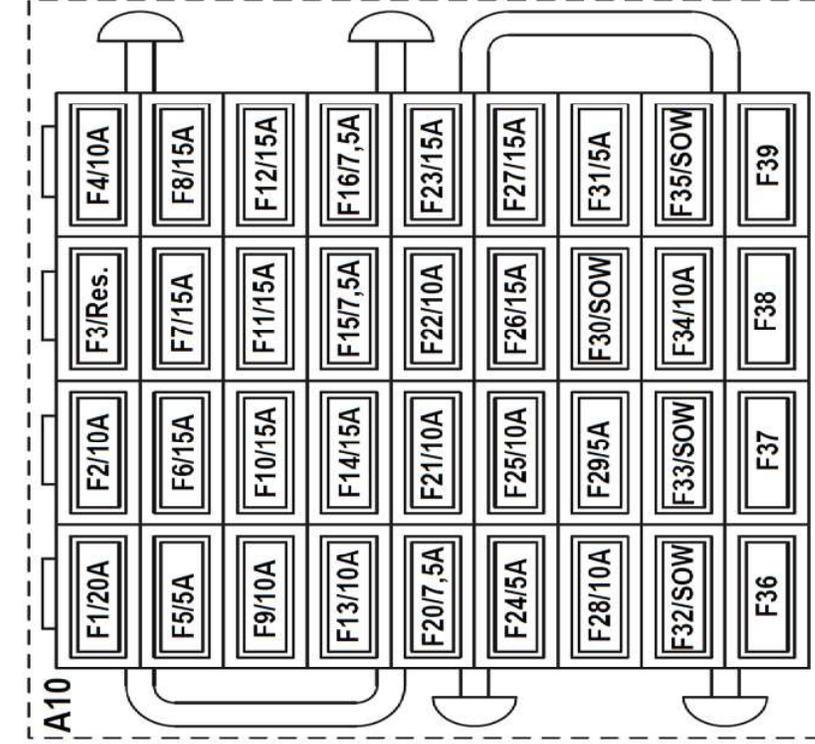
Sicherungskasten in der Kabine, Seitenkonsole rechts / Fuse box in the cab, side console, right



F01, 15A, Klimaanlage, Opt. Spiegelheizung	F01, 15A, Air-con unit, optional mirror heater
F02, 10A, Entlastung Anlassvorgang	F02, 10A, Relief starting process
F03, 10A, Nicht belegt	F03, 10A, Not used
F04, 10A, Radio	F04, 10A, Radio
F05, 5A, Steuergerät Hydraulik	F05, 5A, Control unit hydraulic
F06, 10A, Steuergerät für Fahren, Kraftstoffpumpe	F06, 10A, Control unit Drive, fuel pump
F07, 10A, Wasserpumpe Frischwassersystem	F07, 10A, Water pump, solution system
F08, 15A, Steuergerät Arbeitshydraulik, Hecksteckdose	F08, 15A, Controller working hydraulics
F09, 10A, Scheibenwaschanlage, Steuergerät Hydraulik	F09, 10A, Windscreen washer, Controller hydraulic
F10, 15A, Heizung und Klimaanlage	F10, 15A, Heater, Air Conditioning
F11, 15A, Arbeitsscheinwerfer vorn	F11, 15A, Working lights front
F12, 10A, Hauptscheinwerfer, Nebelschlussleuchte	F12, 10A, Driving lights (headlights)
F13, 10A, Innenbeleuchtung, Rundumkennleuchte (RKL)	F13, 10A, Parking light, flashing beacon (RKL),
F14, 10A, Blinker, Warnblinker	F14, 10A, Indicators, horn
F15, 7.5A, Schlussleuchte (Klemme 58L) und Standlicht (Klemme 57L)	F15, 5A, Parking light, rear light left
F16, 7.5A, Schlussleuchte (Klemme 58R) und Standlicht (Klemme 57R)	F16, 7.5A, Parking light right, rear fog lamp
F20, 7.5A, Anlasser	F20, 7.5A Starter
F21, 10A, Steuergerät Hydraulik, Hupe	F21 10A Controller hydraulic, Horn

### 3.0.1 Elektrik

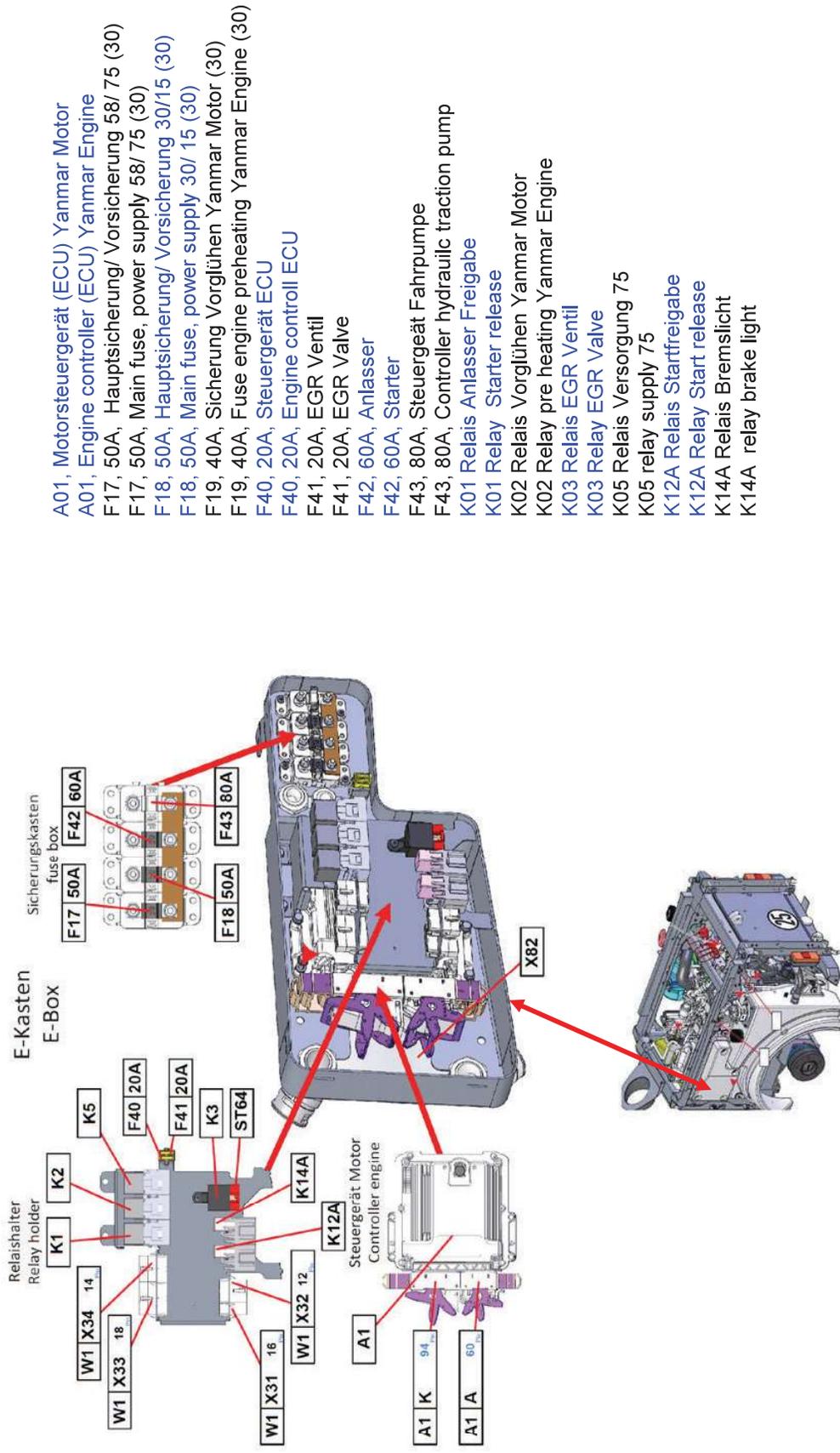
Sicherungskasten in der Kabine, Seitenkonsole rechts / Fuse box in the cab, side console, right



F22, 5A, Steuergerät Hydraulik , Multifunktionsdisplay	F22, 5A, Controller hydraulic multifunction display
F23, 15A, Vorsicherung (F15,F16,F35)	F23, 15A, Preater Fuse (F15,F16,F35)
F24, 5A, Steckdose USB	F24, 5A , T01, USB plug socket
F25, 10A, Arbeitsscheinwerfer Kabine hinten , Bremslicht	F25, 10A Working light back, reversing light
F26, 15A, Radio	F26, 15A Radio
F27, 10A, Steckdose Lenksäule	F27, 10A Socket steering column
F28, 10A, Fahrersitz	F28, 10A Drivers seat
F29, 5A, Fleetrecorder, Steckdose 12 polig X67	F29, 5A Fleetrecorder socket 12 pole X67
F30, nicht belegt	F30, Not used
F31, 5A, Fleetrecorder Steckdose 12 polig X67	F31, 5A Fleetrecorder socket 12 pole X67
F32, nicht belegt	F32, Not used
F33, nicht belegt	F33, Not used
F34, 10A, Steuergerät Fahrpumpe	F34, 10A Controller Drive pump
F35 nicht belegt	F35 Not used
F36, 5A Ersatzsicherung	F36, 5A Spare fuse
F37, 7,5A Ersatzsicherung	F37, 7,5A Spare fuse
F38, 10A, Ersatzsicherung	F38, 10A Spare fuse
F39, 15A Ersatzsicherung	F39, 15A Spare fuse

### 3.0.1 Elektrik

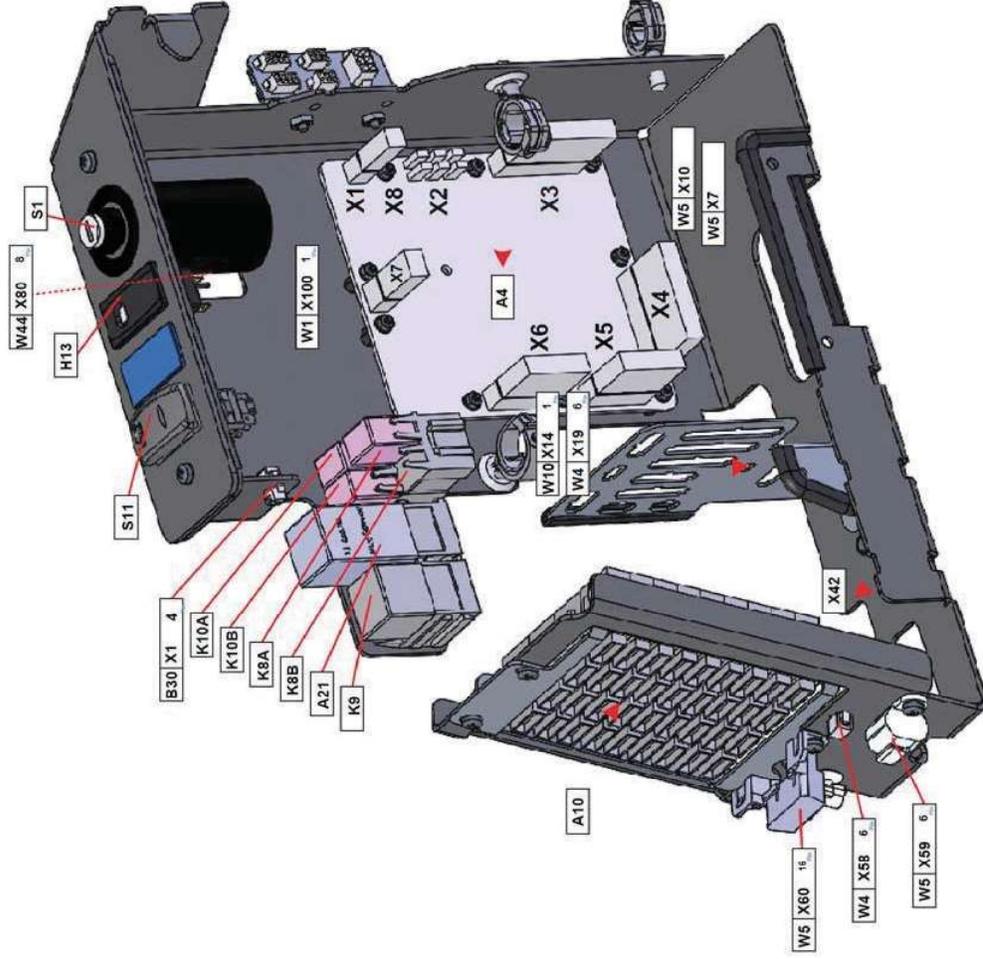
Elektrokasten im Hinterwagen Links - Electric Box rear section , left hand side



### 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				
				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	DTC
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	•		•
	Cam	Abnormal signal	•	-	Under 56 kW	ECU detects abnormal cam signal pattern while crank make 2 rotations.	•	•												ECU keeps engine operation by only crank sensor.	ECU Power OFF	P0341	•		•
		No signal	•	-	Under 56 kW	ECU does not detect cam pulse signal while crank make 2.2 rotations	•	•												ECU keeps engine operation by only crank sensor.	ECU Power OFF	P0342	•		•
		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	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		ECU Power OFF	P02E9	•	•	
		Voltage low	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		ECU Power OFF	P02E8	•	•	
	EGR low-pressure side sensor (Suction air pressure)	Voltage high	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		ECU Power OFF	P0238	•	•	
		Voltage low	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		ECU Power OFF	P0237	•	•	





# ELECTRONIC CONTROL SYSTEM

Item 1	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 (15minutes)	Failure bank injection stop	Failure cylinder injection stop	Note	Under 56 kW	DTC	MIL	RSL
Sensor	Atmospheric 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	•	•														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		•		•
	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 shutdown 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		•	
CPU	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	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 (15minutes)	Failure bank injection stop	Failure cylinder injection stop	Note	Under 56 kW	DTC	MIL	RSL	AWL
CRS	Rail pressure fault	Over-pres- sure rail error	•	Rail pressure sensor is normal operation (No failure detection)	Rail pressure is more than 170 [MPa]	•															ECU Power OFF	P0088	•	•						
		Rail pres- sure deviation error when actual pres- sure is too low	•	Rail pressure sensor is normal operation (No failure detection)	Actual rail pressure is less than target rail pres- sure, the difference between those pressure is more than 20 [MPa]	•																ECU Power OFF	P0094		•	•				
		Rail pres- sure deviation error when actual pres- sure is too high	•	Rail pressure sensor is normal operation (No failure detection)	Actual rail pressure is more than target rail pressure, the difference in those pressure is more than 20 [MPa]	•																	ECU Power OFF	P0093		•	•			
		PLV	PLV open- valve	•	-	PLV (pressure control valve) open-valve detected	•																ECU Power OFF	P000F		•	•			
The others	Overspeed	Overrota- tion	•	-	When actual engine speed is more than Rated Speed + 300 min <sup>-1</sup>	•																ECU Power OFF	P0219		•	•				
		Suction air throttle driven circuit	•	(under confirmation)	Detection of no-load (disconnection) of H bridge		•	•		•		•										ECU Power OFF	P0660		•	•			Throttle valve is full- opened by stopping energizing to the throttle.	
Actuator	Suction air throttle driven circuit	Power supply short-cir- cuit of driving output 1	•	(under confirmation)	Detection of power supply short-circuit on output plug of H bridge 1		•	•		•	•											ECU Power OFF	P1658		•	•				
		Power supply short-cir- cuit of driving output 2	•	(under confirmation)	Detection of power supply short-circuit on output plug of H bridge 2		•	•		•	•												ECU Power OFF	P1661		•	•			
		GND short- circuit of driving output 1	•	(under confirmation)	Detection of GND short- circuit on output plug of H bridge 1		•	•		•	•												ECU Power OFF	P1659		•	•			
		GND short- circuit of driving output 2	•	(under confirmation)	Detection of GND short- circuit on output plug of H bridge 2		•	•		•	•													ECU Power OFF	P1662		•	•		
		TSC1 (CAN message)	Reception message time out error	◆	• After 2 seconds from when key switch has been turned on • ECU does not control starter • Key switch is not turned off • ECU power supply is more than 10V	ECU does not receive the message for TSC1																		ECU Power OFF	U0292		•		•	
Communication	Y_ECR1 (CAN message)	Reception message time out error	◆	• After 2 seconds from when key switch has been turned on • ECU does not control starter • Key switch is not turned off • ECU power supply is more than 10V	ECU does not receive the message for Y_ECR1																	ECU Power OFF	U1292		•		•		Fail safe action is applied to application menu.	
		Y_EC (CAN message)	TBD																											



# ELECTRONIC CONTROL SYSTEM

Item 1	Item 2	Fault	Applica- tion model	Failure decision		Fail safe action													Recovery timing	Fault code												
				Under 56 kW	Prerequisite condition	Detection condition	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 (15minutes)	Failure bank injection stop	Failure cylinder injection stop	Note	Under 56 kW	DTC	MIL	RSL	AWL		
ECU	ECU internal failure	WDA/ABE communication error		(under confirmation)	(under confirmation)	•																	ECU Power OFF	P1607	•	•						
		CY146 SPI communication error		(under confirmation)	(under confirmation)	•																		ECU Power OFF	P1613		•	•				
	ECU internal failure	CY320 SPI communication error		(under confirmation)	(under confirmation)	•																		ECU Power OFF	P1615		•	•				
		R2S2 MSC communication error		(under confirmation)	(under confirmation)	•																		ECU Power OFF	P1616		•	•				
		Sensor power supply 1 voltage: too high		(under confirmation)	(under confirmation)	•																		ECU Power OFF	P1608		•	•				
		Sensor power supply 1 voltage: too low		(under confirmation)	(under confirmation)	•																			ECU Power OFF	P1617		•	•			
		Sensor power supply 1 (5 V): Voltage error		(under confirmation)	(under confirmation)																				ECU Power OFF	P1609			•	•		
		Sensor power supply 2 (5 V): Voltage error		(under confirmation)	(under confirmation)																				ECU Power OFF	P1618			•	•		
		Sensor power supply 3 (5 V): Voltage error		(under confirmation)	(under confirmation)																				ECU Power OFF	P1619			•	•		
		Internal sensor power supply: Voltage-low		(under confirmation)	(under confirmation)	•																			ECU Power OFF	P1624			•	•		
		Actuator driver circuit 1VB short		(under confirmation)	(under confirmation)																				ECU Power OFF	P160A			•	•		
		Actuator driver circuit 2VB short		(under confirmation)	(under confirmation)																				ECU Power OFF	P1625			•	•		
		Actuator driver circuit 1GND short		(under confirmation)	(under confirmation)																				ECU Power OFF	P1626			•	•		
		Actuator driver circuit 2GND short		(under confirmation)	(under confirmation)																				ECU Power OFF	P1633			•	•		
		ECU soft reset 1		(under confirmation)	(under confirmation)																				ECU Power OFF	P160B			•	•		
		ECU soft reset 2		(under confirmation)	(under confirmation)																				ECU Power OFF	P1636			•	•		
		ECU soft reset 3		(under confirmation)	(under confirmation)																				ECU Power OFF	P1637			•	•		
		WDA/ABE shut off (Too low voltage)		(under confirmation)	(under confirmation)	•																			ECU Power OFF	P160D			•	•		
		WDA/ABE shut off (Too high voltage)		(under confirmation)	(under confirmation)	•																			ECU Power OFF	P1639			•	•		

# ELECTRONIC CONTROL SYSTEM

Item 1	Item 2	Fault	Application model	Failure decision		Fail safe action														Recovery timing	Fault code	Lamp information						
				Under 56 kW	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
ECU	ECU internal failure	WDA/WBE shut off (Operation malfunction)		(under confirmation)	(under confirmation)	•																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)	<b>nicht vorhanden</b>				(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)	<b>nicht vorhanden</b>				(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 finishes when starter relay ON or engine speed is more than 45 rpm	Charge switch is turned off	(Selectable)	<b>nicht vorhanden</b>				(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)	<b>nicht vorhanden</b>				(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)	<b>keine Reaktion</b>				(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)	<b>keine Reaktion</b>				(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			Part	State	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	MII + RSI	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					Error item		Reference page	
P code	SPN		FMI	Number of the lamp flashes	Part	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
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 PI V4 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

P code	DTC code			Number of the lamp flashes	Part	Error item	Reference page		
	SPN		FMI				Description	Failure diagnosis	
	Decima number	Hexadec-imal number	Decima 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	
	Decimal number	Hexadecimal number	Decimal 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	7F94F	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	–	