Product: Kubota V3800-CR-TE4 V3800-CR-TIE4 DIAGNOSIS MANUAL
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DM

DIAGNOSIS MANUAL
COMMON RAIL SYSTEM

V3800-CR-TE4, V3800-CR-TIE4
(FOR TRACTOR)

Kubota

KiSC issued 09, 2020 A

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Record of Revisions

For pdf, use search function {Search word} to find the all revised locations.

Last digit of the Code No.	Month of Revision	Main Revised Point and Corrective Measures {Search word}	Reference Page
1	2018.04	Adding the information of M5001 Utility Narrow series.	–
2	2020.09	Adding the information of M5-AUS series.	–

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I INFORMATION

INFORMATION

CONTENTS

1. SAFETY FIRST I-1

1. SAFETY FIRST

⚠ SAFETY FIRST

- **This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully.**
- **It is essential that you read the instructions and safety regulations before you attempt to repair or use this unit.**

⚠ DANGER
- **Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.**

⚠ WARNING
- **Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.**

⚠ CAUTION
- **Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.**

■ IMPORTANT
- **Indicates that equipment or property damage could result if instructions are not followed.**

■ NOTE
- **Gives helpful information.**

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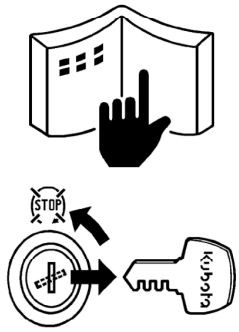

IBM001A

IBM011A

BEFORE SERVICING AND REPAIRING

- Read all instructions and safety instructions in this manual and on your machine safety decals.
- Clean the work area and machine.
- Park the machine on a firm and level ground.
- Allow the engine to cool before proceeding.
- Stop the engine, and remove the key.
- Disconnect the battery negative cable.
- Hang a **"DO NOT OPERATE"**tag in operator station.

9Y1200192INI0002US0

SAFETY STARTING

- Do not start the engine by shorting across starter terminals or bypassing the safety start switch.
- Unauthorized modifications to the engine may impair the function and / or safety and affect engine life.

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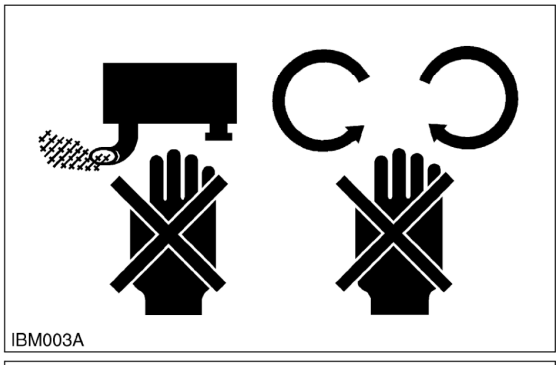
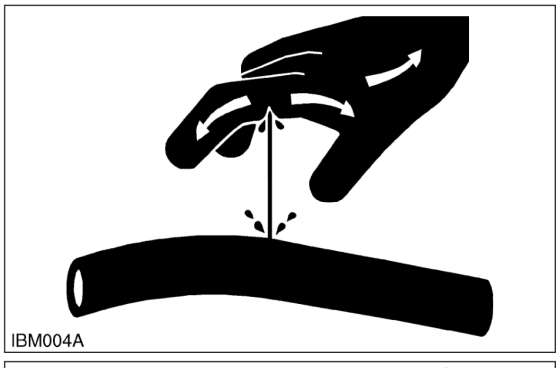

IBM003A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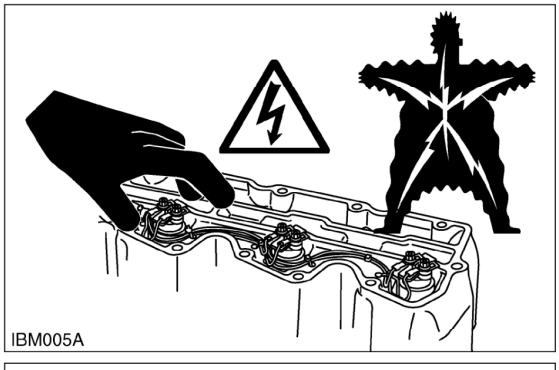
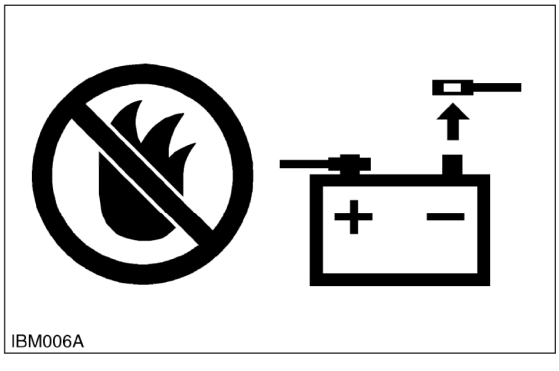

IBM005A


IBM006A

SAFETY WORKING

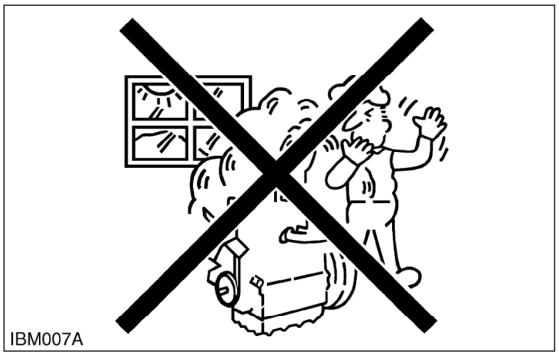
- Do not work on the machine while under the influence of alcohol, medication, or other substances or while fatigued.
- Wear close fitting clothing and safety equipment appropriate to the job.
- Use tools appropriate to the work. Makeshift tools, parts, and procedures are not recommended.
- When servicing is performed together by two or more persons, take care to perform all work safely.
- Do not touch the rotating or hot parts while the engine is running.
- Never remove the radiator cap while the engine is running, or immediately after stopping. Otherwise, hot water will spout out from radiator. Only remove radiator cap when cool enough to touch with bare hands. Slowly loosen the cap to first stop to relieve pressure before removing completely.
- Escaping fluid (fuel or hydraulic oil) under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or fuel lines. Tighten all connections before applying pressure.
- Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.
- Do not open high-pressure fuel system.
  High-pressure fluid remaining in fuel lines can cause serious injury. Do not disconnect or attempt to repair fuel lines, sensors, or any other components between the high-pressure fuel feed pump and injectors on engines with high pressure common rail fuel system.
- High voltage exceeding 100 V is generated in the ECU and injector.
  Pay sufficient caution to electric shock when performing work activities.

9Y1200192INI0010US0

AVOID FIRES

- Fuel is extremely flammable and explosive under certain conditions. Do not smoke or allow flames or sparks in your working area.
- To avoid sparks from an accidental short circuit, always disconnect the battery negative cable first and connect it last.
- Battery gas can explode. Keep sparks and open flame away from the top of battery, especially when charging the battery.
- Make sure that no fuel has been spilled on the engine.

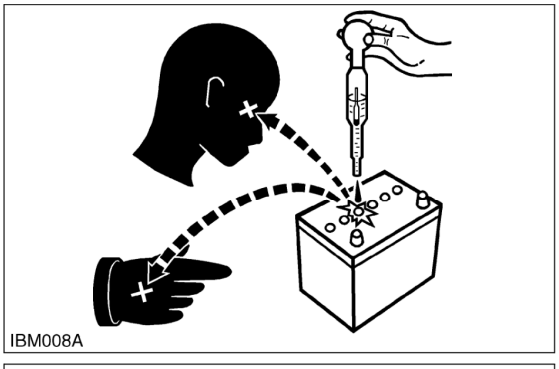
9Y1200192INI0005US0


IBM007A

VENTILATE WORK AREA

- If the engine must be running to do some work, make sure the area is well ventilated. Never run the engine in a closed area. The exhaust gas contains poisonous carbon monoxide.

9Y1200192INI0006US0


IBM008A

PREVENT ACID BURNS

- Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, clothing and cause blindness if splashed into eyes. Keep electrolyte away from eyes, hands and clothing. If you spill electrolyte on yourself, flush with water, and get medical attention immediately.

9Y1200192INI0007US0

IBM009A

DISPOSE OF FLUIDS PROPERLY

- Do not pour fluids into the ground, down a drain, or into a stream, pond, or lake. Observe relevant environmental protection regulations when disposing of oil, fuel, coolant, electrolyte and other harmful waste.

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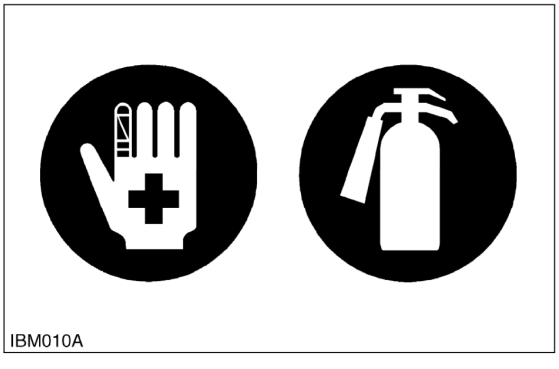
IBM010A

PREPARE FOR EMERGENCIES

- Keep a first aid kit and fire extinguisher handy at all times.
- Keep emergency numbers for doctors, ambulance service, hospital and fire department near your telephone.

9Y1200192INI0009US0

1 COMMON RAIL SYSTEM

MECHANISM

CONTENTS

1. BASIC SYSTEM INFORMATION 1-M1
   [1] SYSTEM CONFIGURATION 1-M1
   [2] FUEL SYSTEM 1-M2
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      (1) System Wiring Diagram 1-M4
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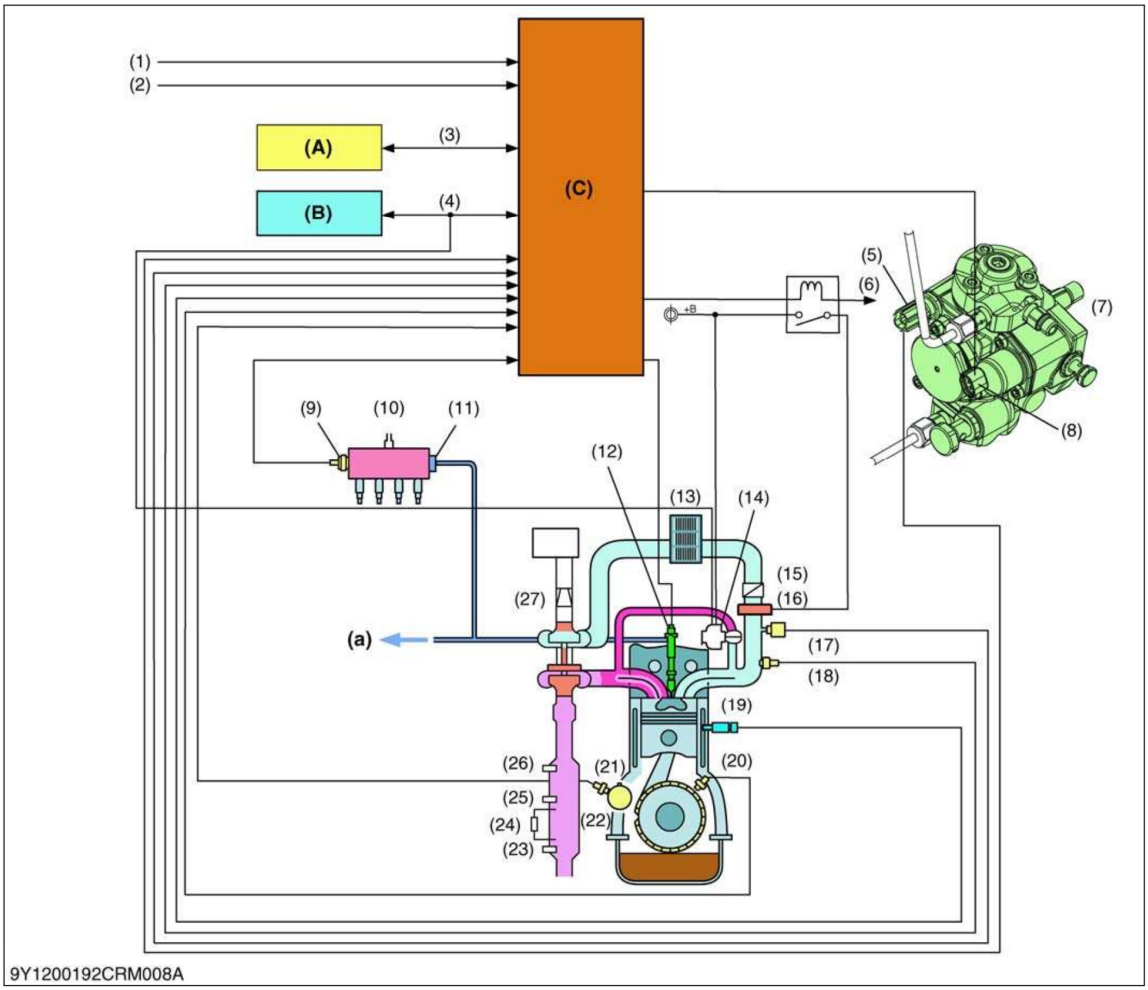
1. BASIC SYSTEM INFORMATION

[1] SYSTEM CONFIGURATION



(1) Key Switch ON Signal
(2) Starter Switch Signal
(3) CAN Communication for tractor (Accelerator Position Signal*, Neutral Switch*, Machine Travel Speed Signal*)
(4) CAN Communication for Service
(5) Fuel Temperature Sensor
(6) Air Heater Relay
(7) Supply Pump
(8) SCV (Suction Control Valve)
(9) Rail Pressure Sensor
(10) Rail
(11) Pressure Limiter
(12) Injector
(13) Inter Cooler
(14) EGR DC Motor
(15) Intake Throttle Valve
(16) Intake Air Heater
(17) Boost Pressure Sensor
(18) Intake Air Temperature Sensor
(19) Coolant Temperature Sensor
(20) Crankshaft Position Sensor
(21) Camshaft Position Sensor
(22) Diesel Particulate Filter (Hereinafter Referred To As The "DPF") Muffler
(23) Exhaust Gas Temperature Sensor2 (T2) (DPF Outlet Exhaust Gas Temperature)
(24) Differential Pressure Sensor (DPF Differential Pressure) (ΔP)
(25) Exhaust Gas Temperature Sensor1 (T1) (DPF Inlet Exhaust Gas Temperature)
(26) Exhaust Gas Temperature Sensor0 (T0) (DOC Inlet Exhaust Gas Temperature)
(27) Mass Air Flow Sensor

(A) CAN2 Connector (For Tractor)
(B) CAN1 Connector (For Service)
(C) Engine ECU
(a) To Fuel Tank

■ **NOTE**

- **The signals marked with * are CAN communication.**

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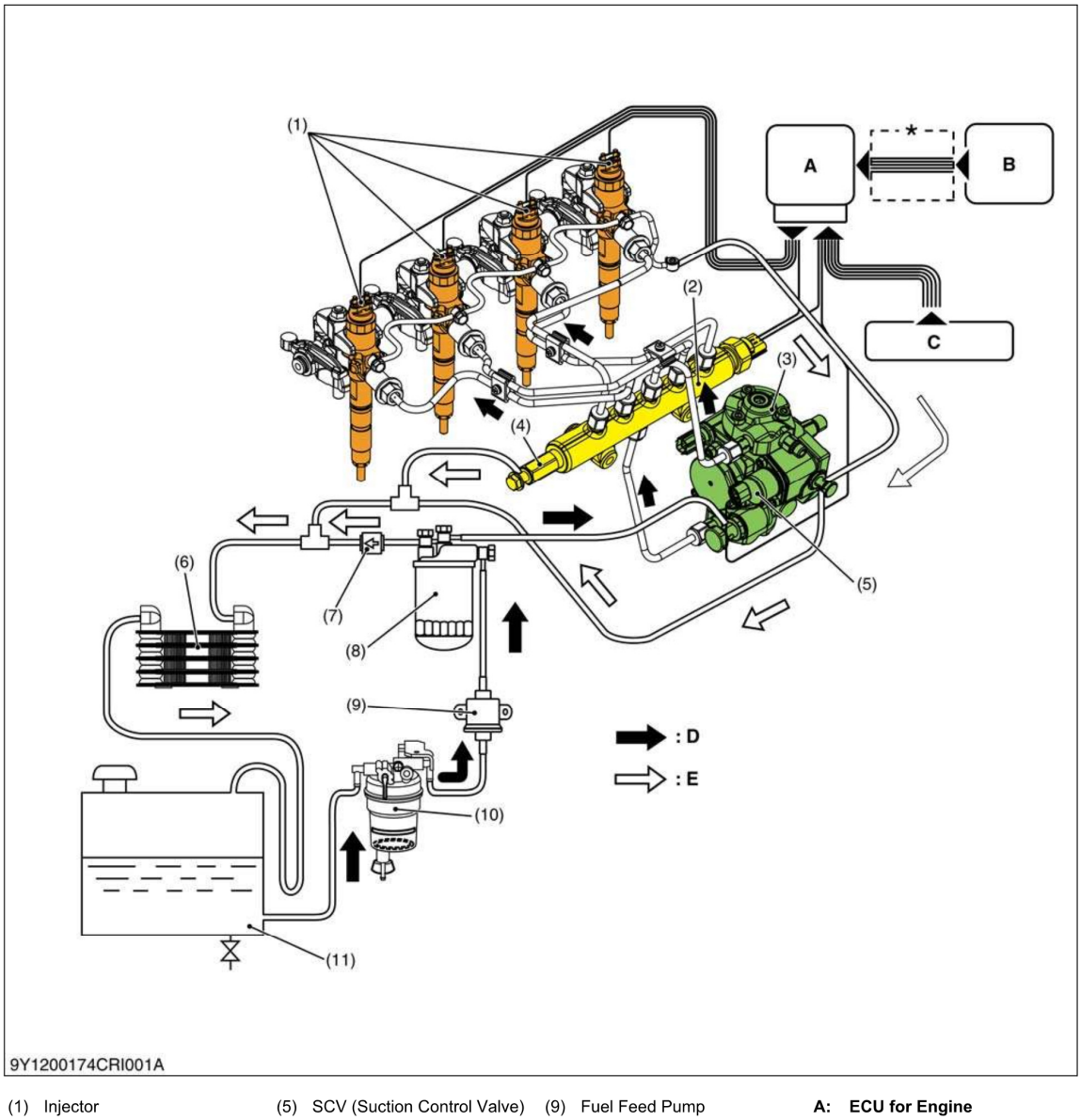
[2] FUEL SYSTEM



(1) Injector
(2) Rail
(3) Supply Pump
(4) Pressure Limiter
(5) SCV (Suction Control Valve)
(6) Fuel Cooler
(7) Check Valve
(8) Fuel Filter
(9) Fuel Feed Pump
(10) Water Separator
(11) Fuel Tank

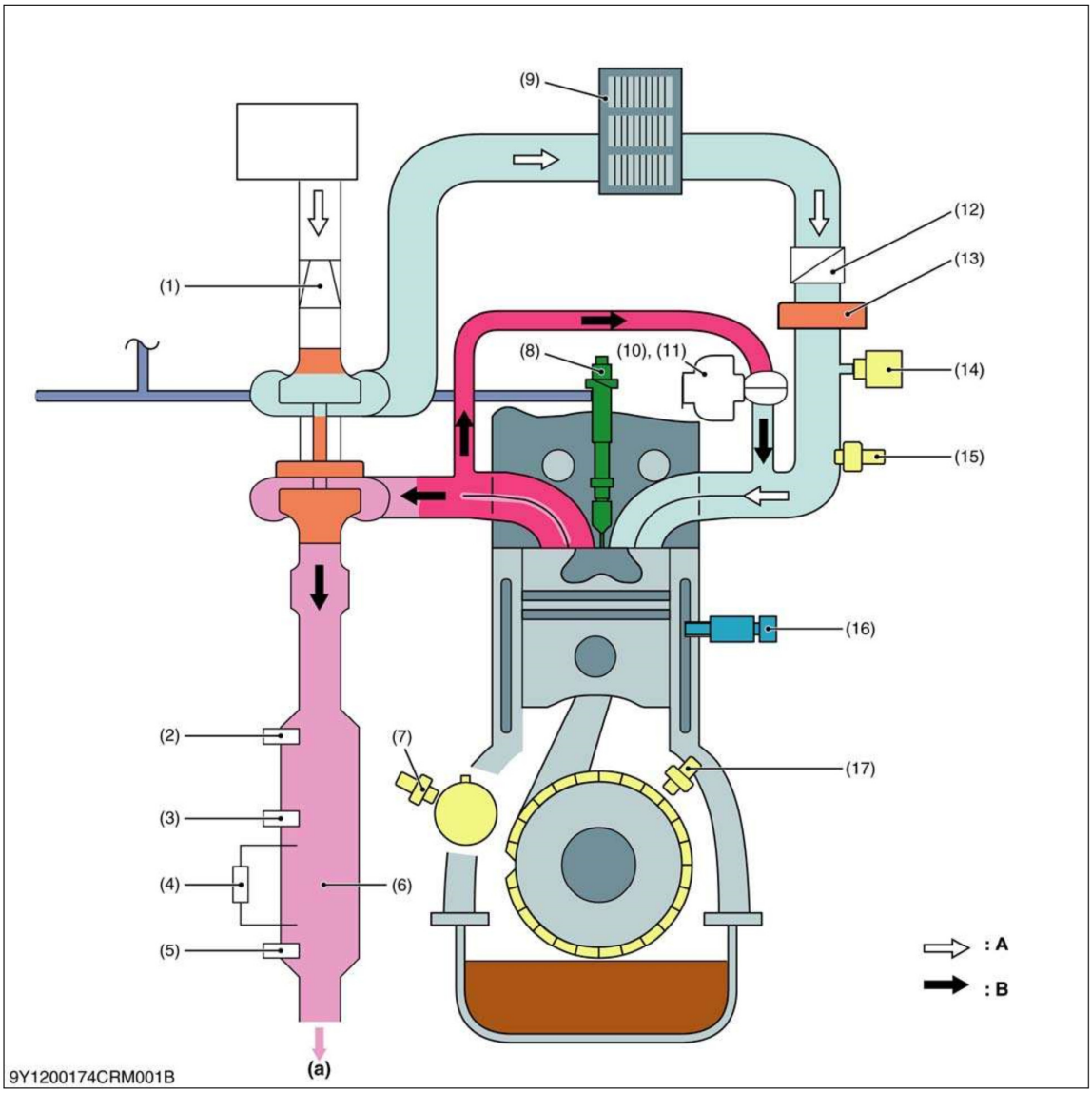
A: ECU for Engine
B: ECU for Tractor
C: Sensor
D: Injected Fuel Flow
E: Returned Fuel Flow

■ **NOTE**

- **The signals marked with * are CAN communication.**

9Y1200192CRM0002US0

[3] INTAKE AND EXHAUST SYSTEM



(1) Mass Air Flow Sensor
(2) Exhaust Gas Temperature Sensor0 (T0) (DOC Inlet Exhaust Gas Temperature)
(3) Exhaust Gas Temperature Sensor1 (T1) (DPF Inlet Exhaust Gas Temperature)
(4) Differential Pressure Sensor (DPF Differential Pressure) (ΔP)
(5) Exhaust Gas Temperature Sensor2 (T2) (DPF Outlet Exhaust Gas Temperature)
(6) Diesel Particulate Filter (Hereinafter Referred To As The "DPF") Muffler
(7) Camshaft Position Sensor
(8) Injector
(9) Inter Cooler
(10) EGR DC Motor
(11) EGR Lift Sensor
(12) Intake Throttle Valve
(13) Intake Air Heater
(14) Boost Pressure Sensor
(15) Intake Air Temperature Sensor
(16) Coolant Temperature Sensor
(17) Crankshaft Position Sensor

A: Intake Air Flow
B: Exhaust Gas Flow

(a) To Muffler

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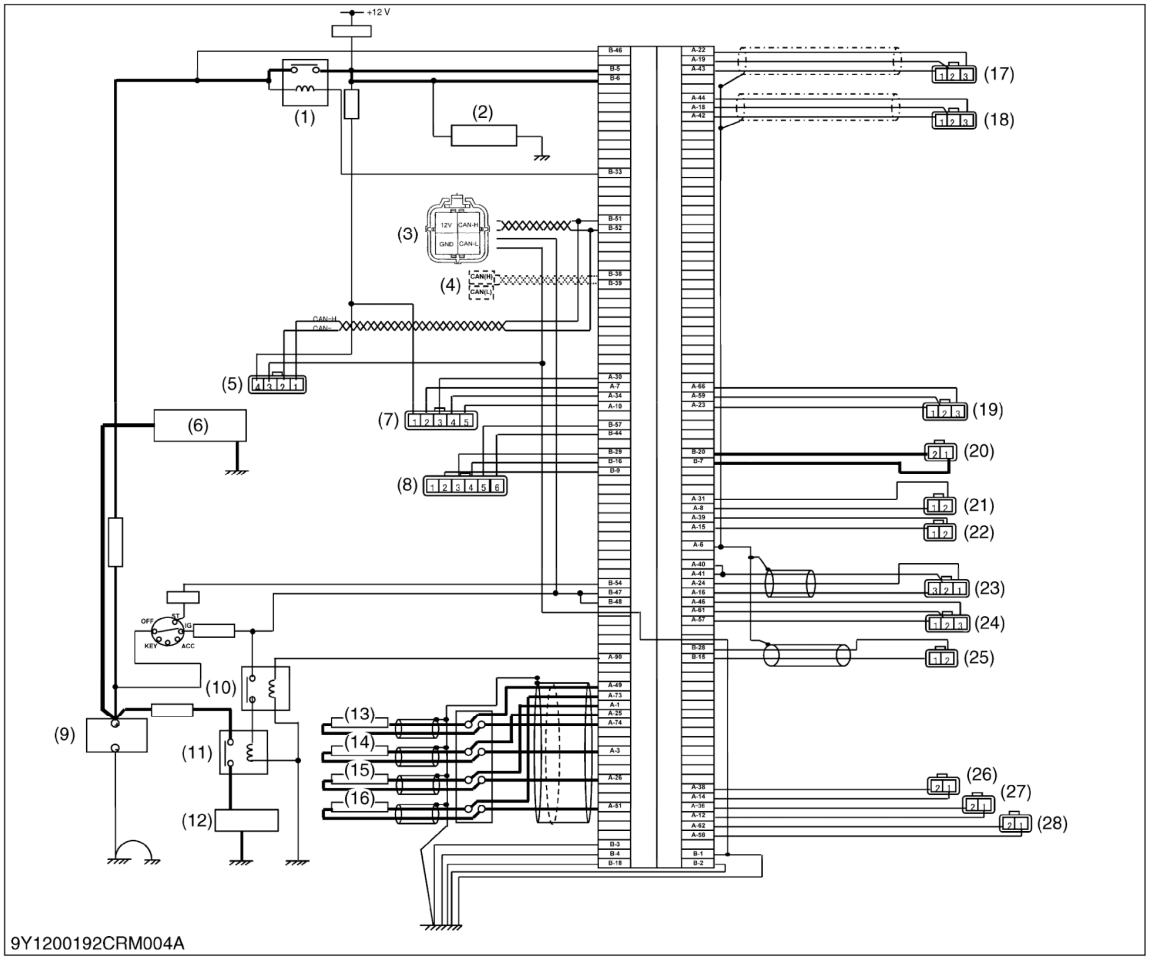
[4] WIRING DIAGRAM

(1) System Wiring Diagram



(1) Main Relay
(2) Fuel Feed Pump
(3) CAN1 Connector (For Service)
(4) CAN2 Connector (For Tractor)
(5) EGR Valve
(6) Starter
(7) Mass Air Flow Sensor
(8) Intake Throttle Valve
(9) Battery
(10) Air Heater Relay
(11) Air Heater Pre Relay
(12) Intake Air Heater
(13) Injector 1
(14) Injector 2
(15) Injector 3
(16) Injector 4
(17) Crankshaft Position Sensor
(18) Camshaft Position Sensor
(19) DPF Differential Pressure Sensor (ΔP)
(20) SCV (Suction Control Valve)
(21) Fuel Temperature Sensor
(22) Coolant Temperature Sensor
(23) Rail Pressure Sensor
(24) Boost Pressure Sensor
(25) Intake Air Temperature Sensor
(26) DPF Exhaust Gas Temperature Sensor (T0)
(27) DPF Exhaust Gas Temperature Sensor (T1)
(28) DPF Exhaust Gas Temperature Sensor (T2)

DPF: Diesel Particulate Filter

9Y1200192CRM0022US0

[5] AVAILABLE DATA MONITOR SIGNALS (LEVEL 2)

(1) Monitor Items

Classification		Signal Name	Unit	Terminal Name	Terminal No.
Input	Pulse / Rotary signal	Engine speed active flag	–	–	–
		Cam speed active flag	–	–	–
		Engine speed	min^{-1} (rpm)	NE	A-43
		Machine speed *	km/h	–	–
	Analog signal	Accelerator pedal position	%	–	–
		Accelerator pedal position sensor 1 output voltage *	V	–	–
		Accelerator pedal position sensor 2 output voltage *	V	–	–
		Boost pressure	kPa	–	–
		Boost pressure sensor output voltage	V	PIM	A-61
		Fuel temperature	°C	–	–
		Fuel temperature sensor output voltage	V	THF	A-31
		Coolant temperature	°C	–	–
		Coolant temperature sensor output voltage	V	THW	A-39
		Intake air temperature	°C	–	–
		Intake air temperature sensor output voltage	V	THA	B-28
		Atmospheric pressure	kPa	–	–
		Atmospheric pressure sensor output voltage	V	PATM	–
		Battery voltage	V	+BP	B-5, B-6
	Digital signal	Key switch	–	IG-SW	B-47, B-48
		Starter switch	–	STA-SW	B-54
		Neutral switch *	–	–	–

■ **NOTE**

- **The signals marked with * are inputs from ECU for machine through CAN. Terminal names and terminal numbers have become invalid.**

9Y1200192CRM0013US0

Classification		Signal Name	Unit	Terminal Name	Terminal No.
Output	Basic control signal	Final fuel injection quantity	mm^3/st	–	–
		Target rail pressure	MPa	–	–
		Actual rail pressure MPa	MPa	–	–
		Rail pressure sensor output voltage	V	PFUEL 1/2	A-40 / A-41
		Target suction control valve (SCV) current	mA	–	–
		Actual suction control valve (SCV) current	mA	SCV+ / −	B-20 / B-7
		Pump learning condition	–	–	–
		Pump difference learning correction value	mA	–	–
		Pressure feedback integral guard flag	–	–	–
		Engine stop flag	–	–	–
		Low temperature start mode flag	–	–	–
		Registration history (#1 cylinder)	–	–	–
		Registration history (#2 cylinder)	–	–	–
		Registration history (#3 cylinder)	–	–	–
		Registration history (#4 cylinder)	–	–	–
		Number of registrations (#1 cylinder)	–	–	–
		Number of registrations (#2 cylinder)	–	–	–
		Number of registrations (#3 cylinder)	–	–	–
		Number of registrations (#4 cylinder)	–	–	–
	Actuator	Exhaust gas recirculation (EGR) valve target position	%	–	–
		Exhaust gas recirculation (EGR) valve actual position	%	–	–
		Exhaust gas recirculation (EGR) position sensor output	–	–	(CAN)
		Air heater relay	–	GLRY	A-90

9Y1200192CRM0028US0

Classification		Signal Name	Unit	Terminal Name	Terminal No.
Output	DPF data	Differential pressure 1 output voltage	V	DPS	A-66
		Exhaust gas temperature 0 output voltage	V	IDOC	A-38
		Exhaust gas temperature 1 output voltage	V	ODOC	A-36
		Exhaust gas temperature 2 output voltage	V	ODPF	A-62
		Intake air temperature built-in MAF output voltage	V	IATS	A-34
		Intake throttle valve lift output voltage	V	ITS	B-29
		Differential pressure 1	kPa	–	–
		Exhaust gas temperature 0	°C	–	–
		Exhaust gas temperature 1	°C	–	–
		Exhaust gas temperature 2	°C	–	–
		Mass air flow for intake throttle	kg/h	–	–
		Intake air temperature built-in MAF	°C	–	–
		Target intake throttle valve opening	%	–	–
		Intake throttle final duty control quantity	%	–	–
		Intake throttle valve lift	%	–	–
		PM sedimentation quantity 1	mg	–	–
		PM sedimentation quantity 2	mg	–	–
		Final fuel injection quantity multiplication quantity	L	–	–
		Target mass air flow	kg/h	–	–
		Pump learning end time	h	–	–
		Hour meter	h	–	–
		DPF auto regeneration last active time	sec	–	–
		Regeneration running time	min	–	–
		Source address of TSC1	–	–	–
		Parking SW	–	–	–
		Neutral SW	–	–	–
		DPF auto regeneration inhibit SW	–	–	–
		DPF manual regeneration force SW	–	–	–
		Oil pressure SW	–	–	–
		Target speed of isochronous control	min^{-1} (rpm)	–	–
		DPF regeneration control level	–	–	–
		DPF regeneration control status	–	–	–

9Y1200192CRM0015US0

(2) Normal Value

Classification		Signal Name	Unit	Engine Stops	During Start-Up	Idling	During Acceleration	During No-load Maximum Speed
Input	Pulse / Rotary signal	Engine speed	min^{-1} (rpm)	0	0 → 800 (Ordinary temperature)	Approx. 800 (After warm-up)	Approx. 800 → 2700	Approx. 2700 (After warm-up)
		Engine speed active flag	–	OFF	ON	ON	ON	ON
		Cam speed active flag	–	OFF	ON	ON	ON	ON
		Machine speed	km/h	Sensor unused by CAN input				
	Analog signal	Final accelerator pedal position opening	%	0	0	0	0 → 100	100
		Accelerator pedal position sensor 1 output voltage	V	Sensor unused by CAN input				
		Accelerator pedal position sensor 2 output voltage	V					
		Boost pressure	kPa	Approx. 100	Approx. 100	Approx. 100	–	–
		Boost pressure sensor output voltage	V	Approx. 1.0	Approx. 1.0	Approx. 1.0	–	–
		Fuel temperature	°C	Representative value: Approx. 20 °C (68 °F) → Approx. 2.4 V Representative value: Approx. 40 °C (104 °F) → Approx. 1.5 V				
		Fuel temperature sensor output voltage	V					
		Coolant temperature	°C	Representative value: Approx. 20 °C (68 °F) → Approx. 2.4 V Representative value: Approx. 80 °C (176 °F) → Approx. 0.5 V				
		Coolant temperature sensor voltage output	V					
		Intake air temperature	°C	Representative value: Approx. 20 °C (68 °F) → Approx. 2.4 V Representative value: Approx. 40 °C (104 °F) → Approx. 1.5 V				
		Intake air temperature sensor output voltage	V					
		Atmospheric pressure	kPa	Representative value: Approx. 100 kPa → 3.7 V (Depending on the atmospheric pressure)				
		Atmospheric pressure sensor output voltage	V					
		Battery voltage	V	When stopped: Approx. 12.5 V When operating: Approx. 14 V (Depends on the battery charging condition, whether or not there is a load voltage, rotation speed)				
	Digital signal	Key Switch	–	ON	ON	ON	ON	ON
		Start switch	–	OFF	ON	OFF	OFF	OFF
		Neutral switch	–	Sensor unused by CAN input				

9Y1200192CRM0016US0

Classification		Signal Name	Unit	Engine Stops	During Start-Up	Idling	During Accelera-tion	During No-load Maximum Speed
Out-put	Basic control signal	Final fuel injection quantity	mm^3 /st	0 (Indication value - 50)	0 → 120 (Ordinary tempera-ture)	Approx. 12 (After warm-up)	Approx. 12 → 75 (After warm-up)	Approx. 30 (After warm-up)
		Target rail pressure	MPa	Depends on the rotation speed, load (After warm-up) When idling: Approx. 40 to 50 MPa (410 to 500 kgf/cm^2, 5800 to 7200 psi) During no-load maximum speed: 95.0 to 115 MPa (969 to 1170 kgf/cm^2, 13800 to 116600 psi) During acceleration : 95.0 to 130 MPa (969 to 1320 kgf/cm^2, 13800 to 18800 psi)				
		Actual rail pressure Mpa	MPa	–	Approx. the same as the target value (Follow to the target value)			
		Rail pressure sensor output voltage	V	Depends on the rotation speed, load (After warm-up) When stopped: Approx. 1.0 V When idling: 1.65 to 1.80 V During no-load maximum speed: 2.50 to 2.85 V During acceleration: 2.5 to 3.3 V				
		Target suction control valve (SCV) current	mA	–	1700 to 2000	Approx. 1800	Approx. 1400	Approx. 1600
		Actual suction control valve (SCV) current	mA	Approx. the same as the target value (Follow to the target value)				
		Pump learning condition	–	Normally 2 or 3*1 Indicates the following depending on the learning status: 255 (Default value), 1 (Provisional learning completion), 0 (Actual learning), 2 (Actual learning completion), 3 (Relearning)				
		Pump deviation learning correction value	mA	±200 mA (Guideline *2)				
		Pressure feedback integral guard flag	–	Normally OFF				
		Engine stop flag	–	ON	OFF	OFF	OFF	OFF
		Low temperature start mode flag	–	OFF	ON	OFF	OFF	OFF

■ **NOTE**

- ***1: Very occasionally, it does not shift from 3 to 2. If there is an engine malfunction on the status above, perform the forced-relearning.**
- ***2: As the following value of A varies depending on pump, the table above is for guideline. If the value of A has a wider gap than the initial learning value, there may be out of the range of the above table.**
  A net normal value is the value that provided by the forced-learning several times: Compared with A
  12 V spec: A - 100 ≤ normal value ≤ A + 50
  The current shall be used as a reference (guideline) only as this value varies depending on the pump used.

Classification		Signal Name	Unit	Engine Stops	During Start-Up	Idling	During Acceleration	During No-load Maximum Speed
Output	Actuator	Exhaust gas recirculation (EGR) valve target position	%	Depends on the rotation speed, load and temperature				
		Exhaust gas recirculation (EGR) valve actual position	%	Approx. the same as the target EGR position (Follow to the target value)				
		Exhaust gas recirculation (EGR) position sensor output	–	16 to 106 (CAN communication data) (Valve lift : 0 to 10 mm)				
		Air heater relay	–	Only during cold start-up (before-and-after): ON				
	DPF data	Differential pressure 1	kPa	Input range : –1.7 to 34.5 kPa Output range : 0.5 to 4.5 V				
		Differential pressure 1 sensor output voltage	V					
		Exhaust gas temperature 0	°C	Representative value: Approx. 100 °C (212 °F) → Approx. 4.4 V Representative value : Approx. 250 °C (482 °F) → Approx. 2.3 V				
		Exhaust gas temperature 0 sensor output voltage	V					
		Exhaust gas temperature 1	°C	Representative value : Approx. 100 °C (212 °F) → Approx. 4.4 V Representative value : Approx. 250 °C (482 °F) → Approx. 2.3 V				
		Exhaust gas temperature 1 sensor output voltage	V					
		Exhaust gas temperature 2	°C	Representative value : Approx. 100 °C (212 °F) → Approx. 4.4 V Representative value : Approx. 250 °C (482 °F) → Approx. 2.3 V				
		Exhaust gas temperature 2 sensor output voltage	V					
		Intake air temperature built-in MAF	°C	Representative value : Approx. 20 °C (68 °F) →Approx. 3.1 V Representative value : Approx. 80 °C (176 °F) → Approx. 0.9 V				
		Intake air temperature built-in MAF sensor output voltage	V					
		Mass air flow for intake throttle	kg/h	12.96 to 698.4 (1.239 to 4.598 V)				
		Intake throttle valve lift	%	100 (Full open)	100 (Full open)	100 to 0		
		Intake throttle valve lift output voltage	V	Approx. 0.5 V	Approx. 0.5 V	0.5 to 4.375 V		

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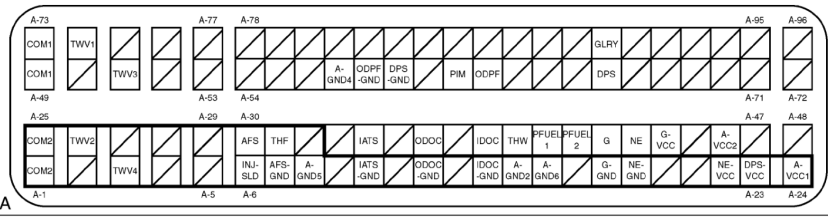
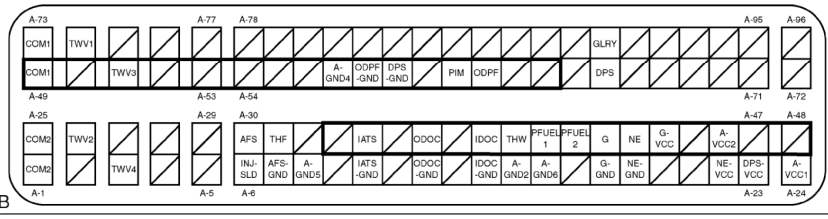
[6] ECU TERMINAL LAYOUT

(1) ECU Terminal Layout 1 (A: 96 Pins)



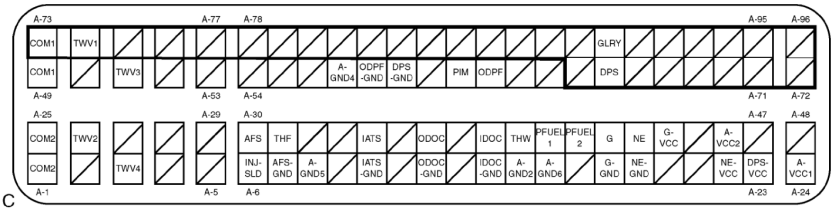
9Y1200192CRM001A

No.	Terminal Name	Signal Name
A-1	COM2	INJ COMMON2
A-2	–	–
A-3	TWV4	INJ4 DRV TWV4
A-4	–	–
A-5	–	–
A-6	INJ-SLD	SHILD-GND
A-7	AFS-GND	AIR FLOW SENSOR GND
A-8	A-GND5	FUEL TEMPERATURE SENSOR GND
A-9	–	–
A-10	IATS-GND	INTAKE AIR TEMPERATURE SENSOR (AFS) GND
A-11	–	–
A-12	ODOC-GND	OUTLET DOC TEMP GND (EXHAUST GAS TEMPERATURE T1 GND)
A-13	–	–
A-14	IDOC-GND	INLET DOC TEMP GND (EXHAUST GAS TEMPERATURE T0 GND)
A-15	A-GND2	COOLANT TEMPERATURE SENSOR GND
A-16	A-GND6	RAIL PRESSURE SENSOR GND
A-17	–	–
A-18	G-GND	CAMSHAFT POSITION SENSOR GND
A-19	NE-GND	CRANKSHAFT POSITION SENSOR GND
A-20	–	–
A-21	–	–
A-22	NE-VCC	CRANKSHAFT POSITION SENSOR VCC
A-23	DPS-VCC	DIFFERENTIAL PRESSURE SENSOR VCC
A-24	A-VCC1	RAIL PRESSURE SENSOR VCC
A-25	COM2	INJ COMMON2
A-26	TWV2	INJ2 DRV TWV2
A-27	–	–
A-28	–	–
A-29	–	–
A-30	AFS	AIR FLOW SENSOR
A-31	THF	FUEL TEMPERATURE SENSOR
A-32	–	–



9Y1200192CRM001B

No.	Terminal Name	Signal Name
A-33	–	–
A-34	IATS	INTAKE AIR TEMPERATURE SENSOR (AFS)
A-35	–	–
A-36	ODOC	OUTLET DOC TEMP (EXHAUST GAS TEMPERATURE T1)
A-37	–	–
A-38	IDOC	INLET DOC TEMP (EXHAUST GAS TEMPERATURE T0)
A-39	THW	COOLANT TEMPERATURE SENSOR
A-40	PFUEL1	RAIL PRESSURE SENSOR 1
A-41	PFUEL2	RAIL PRESSURE SENSOR 2
A-42	G	CAMSHAFT POSITION SENSOR
A-43	NE	CRANKSHAFT POSITION SENSOR
A-44	G-VCC	CAMSHAFT POSITION SENSOR VCC
A-45	–	–
A-46	A-VCC2	BOOST PRESSURE SENSOR VCC
A-47	–	–
A-48	–	–
A-49	COM1	INJ COMMON1
A-50	–	–
A-51	TWV3	INJ3 DRV TWV3
A-52	–	–
A-53	–	–
A-54	–	–
A-55	–	–
A-56	–	–
A-57	A-GND4	BOOST PRESSURE SENSOR GND
A-58	ODPF-GND	OUTLET DPF TEMP GND (EXHAUST GAS TEMPERATURE (T2) GND)
A-59	DPS-GND	DIFFERENTIAL PRESSURE SENSOR GND
A-60	–	–
A-61	PIM	BOOST PRESSURE SENSOR
A-62	ODPF	OUTLET DPF TEMP (EXHAUST GAS TEMPERATURE (T2))
A-63	–	–
A-64	–	–



9Y1200192CRM001C

No.	Terminal Name	Signal Name
A-65	–	–
A-66	DPS	DIFFERENTIAL PRESSURE SENSOR
A-67	–	–
A-68	–	–
A-69	–	–
A-70	–	–
A-71	–	–
A-72	–	–
A-73	COM1	INJ COMMON1
A-74	TWV1	INJ1 DRV TWV1
A-75	–	–
A-76	–	–
A-77	–	–
A-78	–	–
A-79	–	–
A-80	–	–
A-81	–	–
A-82	–	–
A-83	–	–
A-84	–	–
A-85	–	–
A-86	–	–
A-87	–	–
A-88	–	–
A-89	–	–
A-90	GLRY	AIR HEATER RELAY
A-91	–	–
A-92	–	–
A-93	–	–
A-94	–	–
A-95	–	–
A-96	–	–

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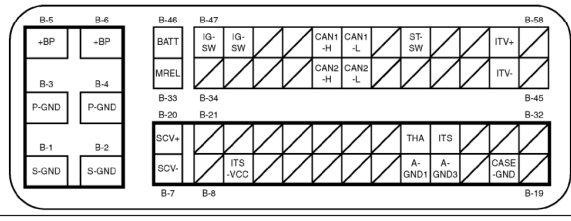
(2) ECU Terminal Layout 2 (B: 58 Pins)



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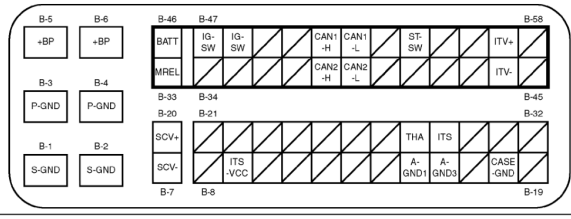
No.	Terminal Name	Signal Name
B-1	S-GND	SIGNAL GND
B-2	S-GND	SIGNAL GND
B-3	P-GND	POWER GND
B-4	P-GND	POWER GND
B-5	+BP	+BP
B-6	+BP	+BP
B-7	SCV−	SUCTION CONTROL VALVE (−)
B-8	–	–
B-9	ITS-VCC	INTAKE THROTTLE POSITION SENSOR VCC
B-10	–	–
B-11	–	–
B-12	–	–
B-13	–	–
B-14	–	–
B-15	A-GND1	INTAKE AIR TEMPERATURE SENSOR GND
B-16	A-GND3	INTAKE THROTTLE POSITION SENSOR GND
B-17	–	–
B-18	CASE-GND	CASE GND
B-19	–	–
B-20	SCV+	SUCTION CONTROL VALVE (+)
B-21	–	–
B-22	–	–
B-23	–	–
B-24	–	–
B-25	–	–
B-26	–	–
B-27	–	–
B-28	THA	INTAKE AIR TEMPERATURE SENSOR
B-29	ITS	INTAKE THROTTLE POSITION SENSOR
B-30	–	–
B-31	–	–
B-32	–	–



9Y1200192CRM002B

No.	Terminal Name	Signal Name
B-33	MREL	MAIN RELAY
B-34	–	–
B-35	–	–
B-36	–	–
B-37	–	–
B-38	CAN2-H	CAN2-H (FOR MACHINE)
B-39	CAN2-L	CAN2-L (FOR MACHINE)
B-40	–	–
B-41	–	–
B-42	–	–
B-43	–	–
B-44	ITV−	INTAKE THROTTLE VALVE MOTOR (−)
B-45	–	–
B-46	BATT	BATTERY VOLTAGE
B-47	IG-SW	IGNITION SWITCH
B-48	IG-SW	IGNITION SWITCH
B-49	–	–
B-50	–	–
B-51	CAN1-H	CAN1-H (FOR SERVICE)
B-52	CAN1-L	CAN1-L (FOR SERVICE)
B-53	–	–
B-54	ST-SW	STARTER SWITCH
B-55	–	–
B-56	–	–
B-57	ITV+	INTAKE THROTTLE VALVE MOTOR (+)
B-58	–	–

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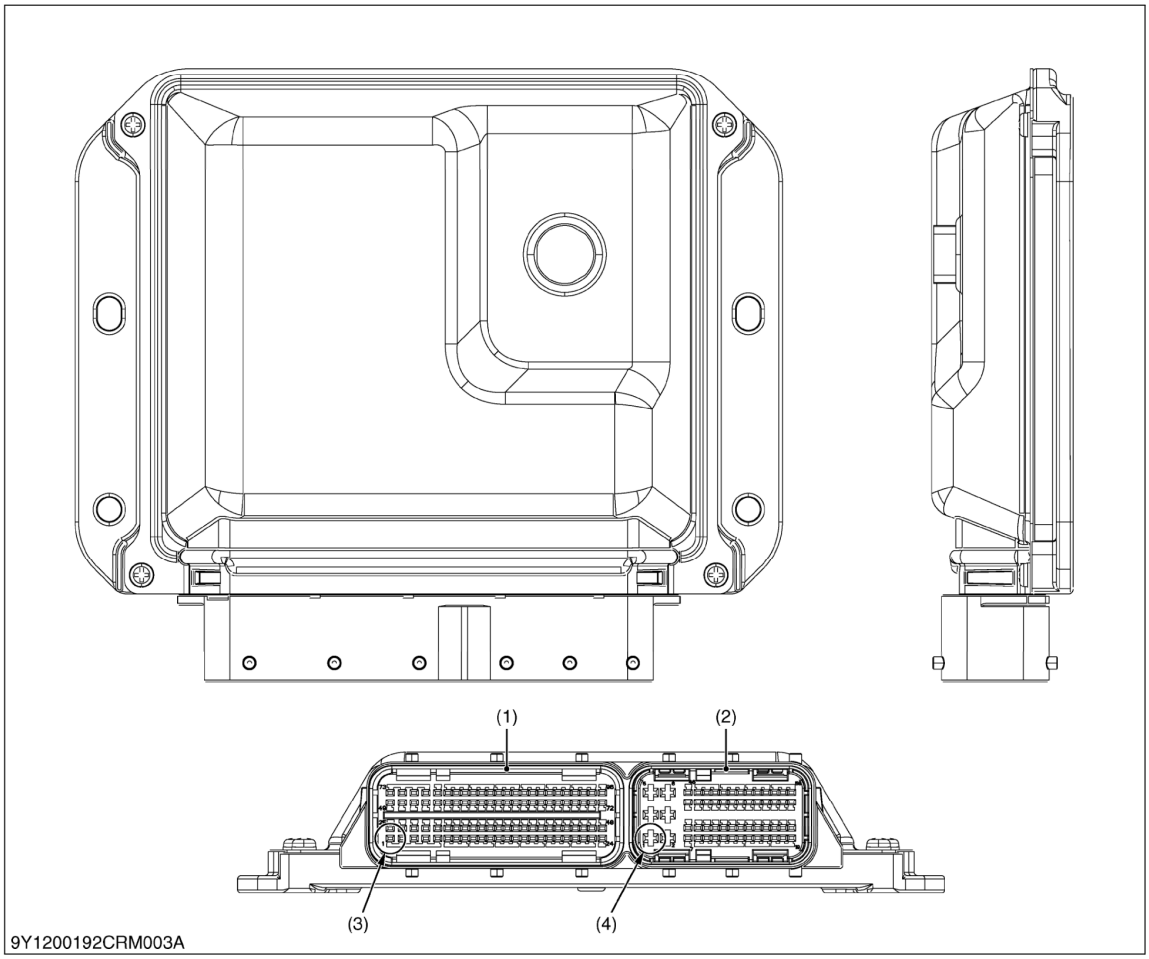

(1) ECU Connector 1 (96 Pin) (2) ECU Connector 2 (58 Pin) (3) A-1 Pin Position (4) B-1 Pin Position

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SERVICING

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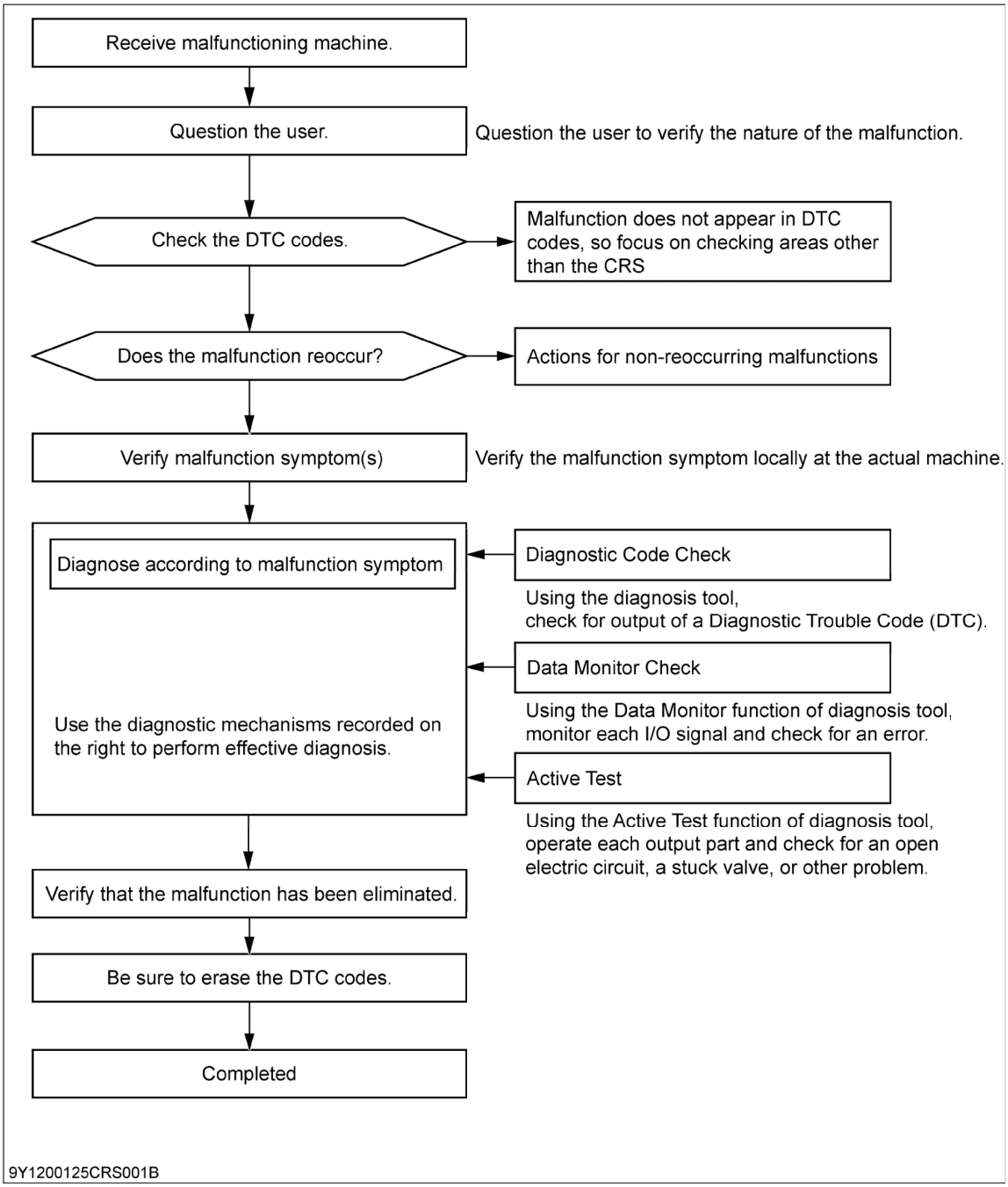
1. GENERAL

[1] OVERALL DIAGNOSTIC PROCEDURE



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Product: Kubota V3800-CR-TE4 V3800-CR-TIE4 DIAGNOSIS MANUAL
Full Download: https://www.arepairmanual.com/downloads/kubota-v3800-cr-te4-v3800-cr-tie4-diagnosis-manual/

[2] QUESTIONING

- Use the trouble check sheet to ensure that the customer's explanation is fully understood.
- Accurately judge information concerning the malfunction.
  Grasp the situation firmly, using five 5W1H (Who, What, When, Where, Why, How) as a basis.
  Ex: Low ambient temperature, starting, normal conditions, proximity to engine, metallic noise, etc.

(Reference)

Do not ask random questions. Ask questions that will aid in narrowing down the possible malfunctioning system while making educated guesses based on the malfunction symptoms.

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Questioning Points

What?	Malfunction symptom.
When?	Date, time, frequency of occurrence.
Where?	Field conditions.
What were conditions like at the time of malfunction?	Driving conditions, operating conditions, weather.
What happened?	Type of malfunction.

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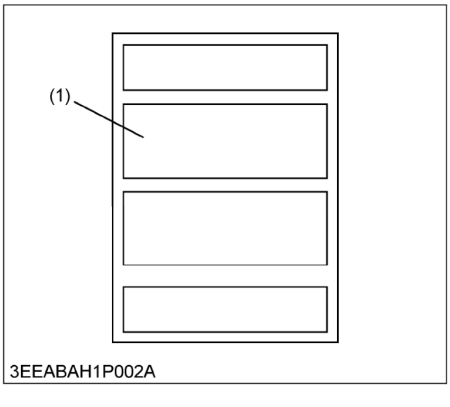

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Trouble Check Sheet for KUBOTA Common Rail System

When the machine is received from the customer, it is necessary to verify the "malfunction symptoms" and the "generated malfunction data" with the customer. This is performed based on the trouble check sheet.

(1) Trouble Check Sheet

Because:

- The malfunction symptom may not be reproduced at the workshop.
- The customer's complaint does not always match the malfunction.
- If the person performing repairs is not working from the correct malfunction symptoms, man-hours will be wasted.

The question chart can aid the service person in diagnosing, repairing and verifying repair work.

9Y1200192CRS0004US0

Sample of manual. Download All 349 pages at:
https://www.arepairmanual.com/downloads/kubota-v3800-cr-te4-v3800-cr-tie4-diagnosis-manual/