



LGMG North America Inc.

Maintenance Manual

T65J/T85J

Mobile Elevating Work Platform

ANSI



WARNING

Before operation and maintenance, the drivers and service personnel shall always read and thoroughly understand all information in this manual. Failure to do so may result in, fatal accidents or personal injury.

This manual must be kept with this machine at all times.

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Foreword

Thank you for choosing to use this Mobile Elevating Work Platform from LGMG North America. This machine is designed according to A92.20-2018. The information specified in this manual is intended for the safe and proper operation of this machine for its' intended purpose.

For maximum performance and utilization of this machine, thoroughly read and understand all the information in this manual before starting, operating, or performing maintenance on this machine.

Due to continuous product improvements, LGMG North America reserves the right to make specification changes without any prior notifications. For any updated information, contact LGMG North America.

Ensure all preventive maintenance to the machine is performed according to the interval specified in the maintenance schedule.

Keep this manual with this machine for reference at all times. When the ownership of this machine is transferred, this manual shall be transferred with this machine. This manual must be replaced immediately if it is lost, damaged, or becomes illegible.

This manual is copyrighted material. The reproduction or copy of this manual is not allowed without the written approval of LGMG North America.

The information, technical specifications and drawings in this manual are the latest available when this manual is issued. Due to continuous improvement, LGMG North America reserves the right to change the technical specifications and machine design without notice. If any specifications and information in the manual are not consistent with your machine, please contact the service department of LGMG North America.

WARNING

Only personnel who have been properly trained and qualified to operate or maintain this machine can operate, repair and maintain this machine.

Improper operation, maintenance, and repair are dangerous and can cause personal injury and death.

Before any operation or maintenance, the operator shall thoroughly read this manual. Do not operate, perform any maintenance or make any repairs on this machine before reading and understanding this manual.

The user shall load the platform strictly according to the load rating of the platform. Do not overload the platform or make any modifications to the platform without permission from LGMG North America.

The operation regulations and preventions in this manual are only applicable for the specified use of this machine.

Safety Precautions

The operator of this machine shall understand and follow the existing safety regulations of state and local governments. If these are unavailable, the safety instructions in this manual shall be followed.

To help prevent accidents, read and understand all warnings and precautions in this manual before operation or performing maintenance.

It is impossible to foresee every possible hazard and the safety instructions in this manual may not cover all safety prevention measures. Always ensure the safety of all personnel and protect the machine against any damage. If unable to confirm the safety of some operations, contact LGMG North America.

The operation & maintenance prevention measures listed in this manual are only applicable to the specified uses of this machine. LGMG North America assumes no responsibility if this machine is used beyond the range of this manual. The user and the operator shall be responsible for the safety of such operations.

Do not perform any operation forbidden in this manual in any situation.

The following signal words are applicable for identifying the level of safety information in this manual.



An imminent situation, that if not avoided, will result in severe injuries or death. This is also applicable to situations that will cause serious machine damage, if not avoided.



A potentially dangerous situation, that if not avoided, may result in severe injuries or death. This is also applicable to situations that may cause serious machine damage, if not avoided.



A situation, that if not avoided, may result in minor or intermediate injury. This is also applicable to situations that may cause machine damage or shorten machine service life.



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Chapter 1 Maintenance



1.1 Compliance

- 1) You accept the proper training of safety operation and machine maintenance, and have corresponding aptitudes.
- 2) It is necessary to read, understand and adhere to all safety regulations of this manual, safety regulations of workplace and applicable laws and regulations of government.
- 3) Protective articles, such as safety helmet, safety belt, work shoes, goggles and protective clothing, have been equipped all over the body, and the physical state is excellent.
- 4) Operators can only conduct conventional inspection and maintenance items as specified in this manual.
- 5) Only technical maintenance personnel who are trained and get corresponding certificates may complete scheduled maintenance.
- 6) Waste and old materials shall be disposed according to government regulations and work site rules.
- 7) Only LGMG North America approved parts and consumables can be used.
- 8) Function test shall be always conducted upon maintenance.

1.2 Inspecting the Pivoting Support

- 1) The turntable shall rotate smoothly without jamming, and meshing play between the turntable bearing and the swing gearbox is measured using a feeler gauge, which shall be between 0.2mm and 0.3mm. Measurement is conducted every 250 h or quarterly.
 - Unscrew bolt 6 and locking nut 5
 - Turn adjusting bolt 4 to adjust the position of the swing gearbox
 - Measure play between the turntable bearing and the swing gearbox using a feeler gauge

- If the play ranges from 0.2mm to 0.3mm, tighten lock nut 5 and bolt 6
 - Measure play between the turntable bearing and the swing gearbox again to verify the measurement
 - Tighten bolt 6, and torque to $(595 \pm 5) \text{N} \cdot \text{m}$.
- 2) Check lubrication in the turntable bearing and the swing gearbox at intervals of 100 hours. It is necessary for maintaining performance and maintenance life to lubricate the turntable bearing frequently. Incorrect lubrication will cause damage to components. As shown in Figure 11-1, find the grease port 3 on the side of the bearing, swing the turntable multiple times while filling grease until grease overflows from the upper and lower fixed surfaces of the bearing. Lubricating grease must be: Lubrication EP2 or equivalent.
 - 3) Inspect the lubrication of the turntable bearing and the swing gearbox, if necessary, clean the gear surface, and recoat with grease.



Caution: In the case of an extremely dirty working environment, increase the oil filling frequency.

1.3 Inspecting the Boom Wear Pad

- 1) Inspect the wear pad every 1,000 h or yearly.
- 2) The wear pad is located on the housing surface and inner wall of the boom to reduce friction. It is necessary for safe operation of the machine to maintain the wear pad in good condition. Continuous use of wear pads that are extremely worn will result in damage to components and unsafe operating conditions.
- 3) Extend the boom to check if the wear pad loosens, if the wear pad loosens, torque the securing bolt to: 28Nm. Inspect play between the wear pad and the boom, if the play is more than 1mm, arrange shims to

achieve zero play and zero drag. Part numbers of components and parts of shims: 2522000188 and 2522000314. Refer to the Parts Manual, and select the correct parts.. Upon installation of the shims, it is necessary to extend the boom multiple times to eliminate potential binding.

1.4 Inspecting the Wire Rope

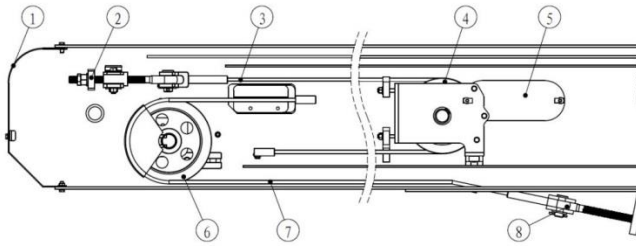


Figure 11-2 Boom Telescope System

1. Cover Plate
2. Extend Rope Anchor
3. Extend Rope
4. Extension Pulley Block
5. Cover Plate
6. Retract Pulley Block
7. Retract Rope
8. Retract Rope Anchor

After long-term operation of equipment, the wire rope will stretch, resulting in boom sections not synchronized, separation of wire rope from pulley, boom shaking during extension, contact of wire rope to inner wall of boom sections or rubbing between wire rope and inner wall of the boom and other problems. It is necessary to conduct periodic checks on the condition of the wire rope. Inspect the stretching wire rope for stretching every 250 h or quarterly.

- 1) Raise the boom to horizontal, extend the boom, and inspect if the second-section and third-section booms are synchronized in the extension process of the boom. If the third-section boom lags behind the second-section boom, this means the wire rope is loose.
- 2) Raise the boom to horizontal, extend the boom, and inspect whether or not the third-section boom shakes or if there is "flap"

sound from the wire rope whipping the inside of the boom section during extension. If this happens, it indicates the wire rope is loose.

- 3) Remove the rear cover plate (1) of the boom, and see if the extend rope anchor (2) deflects to one side. See if the retract rope anchor (8) deflects to one side. If deflection exists, it means the wire rope is loose.
- 4) Raise the boom to horizontal, extend the boom completely, remove the rear cover plate (1) and the side cover plate (5), and visually inspect for wear on the extension pulley block (4,) the retract pulley block (6), the extend rope (3) and the retract rope (7). The pulley shall be fixed firmly secured without play, non-uniform wear of the pulley groove shall be less than 3mm, and the wear of the pulley flange shall be smaller than 10% of the original wall thickness. There must be no loosening, breaks, and serious corrosion in the wire rope. During extension and retracting, there must be no flapping in the pulley. In the case of any abnormalities, stop using the machine immediately and tag out the machine.

1.5 Inspecting the Drive Hub Oil Level

- 1) Inspect the oil level of the drive hubs every 250 h or quarterly. Improper oil level will result in reduced performance. Continuous use will result in damage to components.
- 2) Inspect oil level

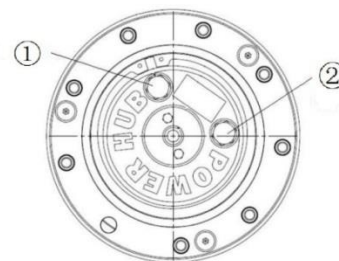


Figure 11-3 Traveling slowdown
1. Oil filler 2. Viewing port

- Drive the machine until one plug is located at the horizontal position as shown as shown in Figure 11-3.
- Remove the viewing port plug at the

horizontal position, and inspect oil level.

- Result: Oil level shall be flush with the bottom of the viewing port.
- If necessary, add oil at the oil filler until the oil level is flush with the bottom of the viewing port, select gear oil by referring to Machine Specifications section.
- Coat the plugs with pipe thread sealant and install the plugs.
- Repeat this step for every drive hub.

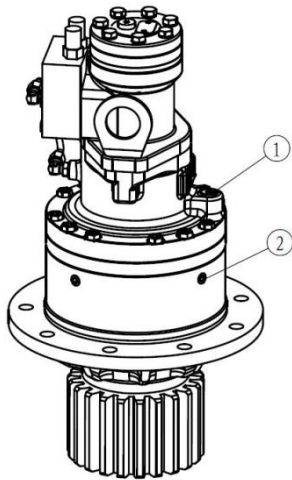


Figure 11-4 Swing Gearbox
1. Oil filler 2. Viewing port

3) Inspect oil level of swing gearbox

- Remove the plug on the side and inspect the oil level, as shown in Figure 11-4.

Result: Oil level shall be flush with viewing port (2).

- If necessary, add gear oil at the oil filler plug until the oil level is flush with the bottom of the viewing port, select gear oil by referring to the Machine Specifications section.
 - Coat the plugs with pipe thread sealant and install the plugs.
- 4) Replace lubricant after the first 50h of use, then every 1,000 h or yearly.

1.6 Inspecting the Hydraulic Oil And Filter

- 1) Inspect hydraulic oil level every 8 h or every day.



Caution: Perform this step when the boom is in the retracted position.

- Park the vehicle on the flat site. Fully retract the boom.

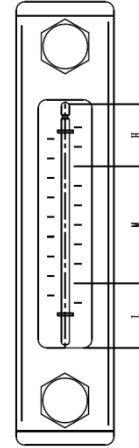


Figure 11-5 Oil Level Sight Gauge

- Examine the oil level on the hydraulic oil tank, i.e., level shall fall within the M range shown as Figure 11-5, and in the case of level lower than L, it is necessary to add hydraulic oil.
- 2) Inspect hydraulic oil leakage every 8 h or daily.



Caution: Personal injury danger, i.e., leaking hydraulic oil can penetrate or burn skin. Wear goggles and protective gloves.

- Leakage of high-pressure oil may be invisible to eyes, use cardboard or wooden boards as a search tool for hydraulic oil leakage. Hands shall be prohibited from being used for leakage confirmation. Inspect oil drops or residual oil on the following components:
- Hydraulic oil tank, filter, pump, hydraulic oil cylinder, motor, reduction gear, valve block and hydraulic tubing.
- Inspect oil drops or residual oil at the following areas:

Rear of boom, fly jib, upper side of turntable, upper and lower sides of chassis, and ground

underneath equipment.

- 1) Test or replace hydraulic oil every 2,000 h or every two years.



Caution: If the oil isn't replaced

after the two year interval, it must be tested quarterly and replaced when it no longer passes the testing.

- 1) Replace hydraulic oil suction filter, oil return filter and high pressure filter every 500 h or every 6 months. Replace oil suction filter, oil return filter and high pressure filter after first 50 h of use. It is necessary to replace the hydraulic filter to maintain performance and service life of the machine. Dirt or a clogged filter may cause performance degradation of hydraulic components, and continuous use will cause damage to components. In dirty work environments it is necessary to increase the change intervals..

1.7 Check for Engine Oil Level



Do not operate on running

engines! No smoking and open fires! Be careful when contacting with high temperature engine oil. Danger of scalding!



When operating on the oil system,

pay attention to the surface cleaning. Carefully clean all areas involved. Blow wet parts with compressed air.



Please observe the safety

regulations for engine oil and relevant

local regulations. Dispose of spilled engine oil and filter elements as required. Waste oil cannot penetrate into the ground.



Test run shall be carried out after

each operation. At the same time, pay attention to the sealing and lubricating oil pressure, and then check the engine oil level.

Check the engine oil level every 8 hours or every day.

Insufficient or excessive engine oil may cause damage to the engine. The engine oil level can only be checked when the engine is placed horizontally and closed. If the engine is hot, close the engine and check the engine oil level 5 minutes later. Check it immediately if the engine is cooled.

- 1) Insert the oil measuring rod and clean it with a piece of clean and fiber-free cloth.
- 2) Insert the oil measuring rod into the bottom.
- 3) Pull out the oil measuring rod and read the value of engine oil level.
- 4) The engine oil level shall always be between MIN and MAX!

Fill up to the maximum liquid level if necessary.

1.8 Replacement of Engine Oil and Filter



Do not operate on running

engines! No smoking and open fires! Be careful when contacting with high temperature engine oil. Danger of scalding!



When operating on the oil system,

pay attention to the surface cleaning. Carefully clean all areas involved. Blow

wet parts with compressed air.

⚠ Please observe the safety

regulations for engine oil and relevant local regulations. Dispose of spilled engine oil and filter elements as required. Waste oil cannot penetrate into the ground.

⚠ Test run shall be carried out after

each operation. At the same time, pay attention to the sealing and lubrication oil pressure, and then check the engine oil level.

It is available in the first 50-100 hours, and the engine oil and filter shall be replaced every 1000 hours or a year. (If the ambient temperature continues to be below -10°C. (14 ° F) or the temperature of engine oil is below 60°C (84 ° F), or the sulphur content in the diesel fuel is 0.5 - 1%, the oil change period is reduced by a half; if the engine oil does not reach the replacement interval period within a year, the oil shall be replaced at least once a year.)

⚠ Danger of burn, be careful of

high-temperature engine parts and oil, contacting with high temperature engine oil and/or engine parts will cause severe burns.

⚠ Perform the function after engine

warm up to normal operation temperature.

Replacement of engine oil-Kubota engine

⚠ After the filter element is replaced,

be sure to keep the engine idling at a low speed for at least 3-5 minutes, so

that the engine has been lubricated before being put into operation.

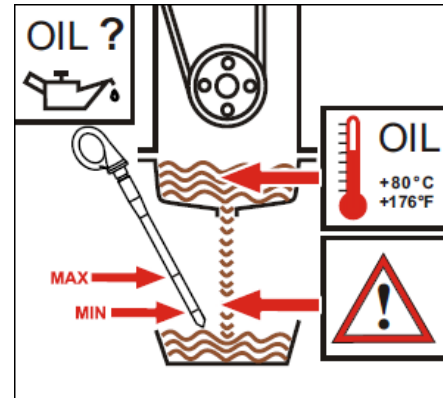


Figure 11-8

- 1) Warm up and run the engine (engine oil temperature > 80°C).
- 2) Place the engine horizontally.
- 3) Shut down the engine.
- 4) Place the container under the engine oil drain plug.
- 5) Screw off the engine oil drain plug to drain the old engine oil.
- 6) Install the new seal ring for the engine oil drain plug and screw in and tighten it.
- 7) Add engine oil at the engine oil filler.
- 8) Warm up and run the engine (engine oil temperature > 80°C).
- 9) Place the engine horizontally.
- 10) Check the engine oil level and fill it if necessary.

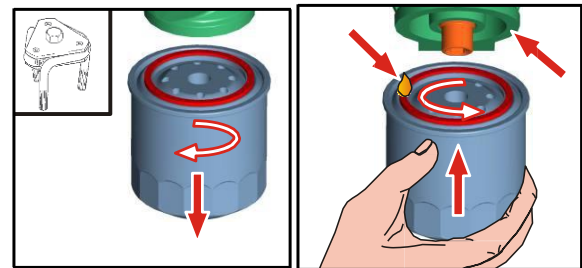


Figure 11-9

Replacement of the Engine Oil Filter

The engine oil filter element must also be replaced every time the engine oil is replaced.

⚠ Never fill the filter in advance. There

is risk of contamination.

- 1) If a torsion stopper is installed, remove the clamping clamp (optional).
- 2) Release and unscrew the filter element with a wrench.
- 3) Contain the oil that was drained.
- 4) Clean the sealing surface of the filter holder with a clean fiber-free wiper.
- 5) Apply a thin layer of engine oil to the seal ring of the new filter.
- 6) Screw in a new filter manually until seal fit and tighten it with 10-12 Nm.

Tighten the torque.

- 7) Fix the clamping clamp of a torsion stopper (optional).

1.9 Check for Fuel Leakage

 **The engine must be shut down!**

No smoking and open fires!

Be careful when contacting high temperature fuel!

Please observe the safety regulations for fuel and relevant local regulations. Dispose of spilled fuel and filter elements in accordance with national regulations. The fuel cannot seep into the ground.

Visually check for fuel leakage every 8 hours or every day.

 **There is danger of explosion and**

fire. The fuel of the engine is combustible. Check the position of the machine. When this step is performed, the machine shall be away from the heater, spark, flame, and open and well-ventilated areas with burning tobacco. A qualified fire extinguisher shall be placed in an easily accessible place.

 **There is danger of explosion and fire. If fuel leaks, prevent any additional person from entering the area or operating the equipment. Repair the leakage immediately.**

1.10 Discharge Fuel Filter

 **Risk of explosion and fire. Engine fuel is combustible. The position where the equipment is located shall be inspected. When the step is executed, equipment shall be located in an open and well-ventilated area that keeps away from the heater, spark, flame and burning tobacco. A qualified fire extinguisher shall be placed at the location that is easily accessible.**

 **Perform the step when the engine flames out.**

Check and drain the fuel filter every 8 hours or every day.

- 1) Shut down the engine, and find the fuel filter.
- 2) Disconnect cable connection.
- 3) Loosen the drainage plug located at the bottom of the filter cartridge, allowing the water drained to an appropriate container. Once any fuel starts to flow out, screw down the drainage plug immediately.
- 4) Wipe up any fuel that may be splashed.
- 5) Start the engine from the ground control and inspect whether or not there is leakage in the fuel filter.

 **Risk of explosion and fire. Where there is fuel leakage, prevent any irrelevant personnel from entering the area and strictly prohibit operating the**

equipment. Repair the leak immediately.

1.11 Replacement of the Fuel filter

 The engine must be shut down!

No smoking and open fires!

Be careful when contacting high temperature fuel!

 Do not release the injection

pipeline or the high-pressure oil pipeline when the engine is running.

 Carefully clean all areas involved

in cleaning. Blow wet parts with compressed air.

 Please observe the safety

regulations for fuel and relevant local regulations. Dispose of spilled fuel and filter elements in accordance with national regulations. The fuel cannot seep into the ground.

 After completing the operation on

the fuel system, exhaust the system, perform the trial operation and check the seal performance.

It is available in the first 50 hours, and it will be replaced every 500 hours, or quarters, but an increase in the number of replacement filters is required for the extremely dirty work environment.

 There is danger of explosion and fire. The fuel of the engine is combustible. Check the position of the machine. Execution

When this step is performed, the machine shall be away from the heater, spark, flame, and open and well-ventilated areas with burning tobacco.

A qualified fire extinguisher shall be placed in an easily accessible place.

 Never fill the filter in advance.

There is risk of contamination.

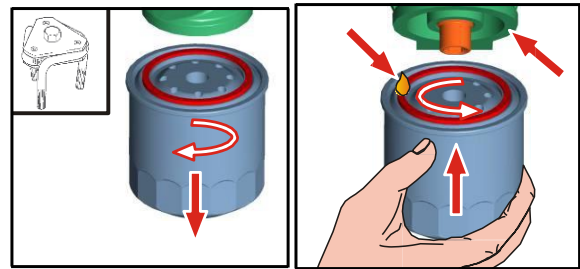


Figure 11-10

- 1) If a torsion stopper is installed, remove the clamping clamp (optional).
 - 2) Release and unscrew the filter element with a wrench.
 - 3) Contain the diesel fuel drained.
 - 4) Clean the sealing surface of the filter holder with a clean fiber-free wiper.
 - 5) Apply a thin layer of diesel to the seal ring of the new filter.
 - 6) Screw in a new filter manually until seal fit and tighten it with 10-12 Nm.
- Tighten the torque.
- 7) Fix the clamping clamp of a torsion stopper (optional).
 - 8) Exhaust the fuel system.

1.12 Check for Engine Air Filter

Check the maintenance indicator for the air filter every 8 hours or every day.



Perform this step when the engine is turned off.



Figure 11-11

Check the maintenance indicator of the air filter. When the transparency of the indicator turns red, filter element needs to be maintained and cleaned or replaced.

1.13 Cleaning or Replacement of Air Filter

Clean it every 500 hours or half a year.



Do not operate on running engines!



Be sure to pay attention to the

cleanliness of the external surface when operating on the engine suction system, and close the suction inlet when necessary. The old filter elements are handled in an environmentally friendly manner.

Cleaning of air filter



Do not clean the filter element (3)

with gasoline or high temperature liquid, or replace the filter element.

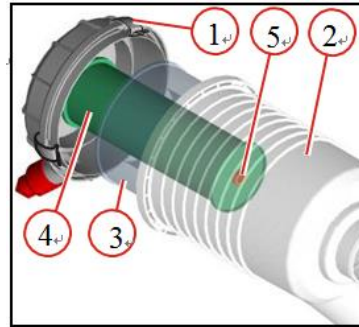


Figure 11-12

- 1) Open the locating plate (1).
- 2) Remove the filter cover (2) and screw off the filter element (3).
- 3) Filter element (3): For slight contamination, purge with dry compressed air (maximum 5 bar) from inside to outside for cleaning (general cleaning times are no more than 5 times);

Replace it in case of serious contamination.

Replacement of the Safety Filter Tube of the Air Filter



Never clean the safety filter tube (4).

- 1) Screw off the hexagon bolt (5) and the safety filter tube (4).
- 2) Install the new safety filter tube and screw on the hexagon bolt.
- 3) Install the filter element (3), place the outer cover (2) and fix it with the positioning plate.

1.14 Check for Coolant Liquid Level

Check the coolant liquid level every 8 hours or every day.



The coolant at high temperature has the risk of scald.

The cooling system is under pressure! The cover can only be opened in the cooling state.

Coolant must have a specified concentration of cooling system protectant!

Please observe the safety regulations for coolant and relevant local regulations.

Dispose of the spilled coolant as specified, without leaving it on the ground.

Never run the engine without coolant, even if it's a very short time.

- 1) Carefully open the cover for the cooling system.
- 2) The coolant liquid level shall always be between min and max! Fill up to the maximum liquid level if necessary.

1.15 Filling or Replacement of Engine Coolant

Replace it every 2,000 hours or two years.



The coolant at high temperature has the risk of scald.

The cooling system is under pressure! The cover can only be opened in the cooling state.

Coolant must have a specified concentration of cooling system protectant!

Please observe the safety regulations for coolant and relevant local regulations.

Dispose of the spilled coolant as specified, without leaving it on the ground.

Never run the engine without coolant, even if it's a very short time.

Draining of the Cooling System

- 1) Carefully open the cooler cover.
- 2) Place the receiving container under the coolant interface.
- 3) Drain the coolant.
- 4) Reconnect and tighten the coolant interface.
- 5) Close the cooler cover.

Filling of the Coolant

- 1) Carefully open the cover for the cooling

system.

- 2) Loosen the cooler exhaust bolts that may be present.
- 3) Fill the coolant to max or the filling limit position.
- 4) Open the possible heater and switch to the maximum gear, to fill the heating circuit and exhaust.
- 5) Close the cooler cover.
- 6) Run the engine to the running temperature.
- 7) Shut down the engine.
- 8) Check the coolant liquid level when the engine is cooled, and fill it to max if necessary.

1.16 Check for Engine Belt

Check it every 8 hours or every day.



Only when the engine is stationary can the belt drive operation be carried out.



There is danger of burn. Be cautious of high-temperature engine components. Contact with them may cause serious burn.

Belt Check

- 1) Visually inspect whether all belt drives for damage.
- 2) Replace damaged components.
- 3) Reinstall the protector if necessary.
- 4) When it is a new belt, check whether the position is correct. After running for 15 minutes, check the tension.

Replacement of belt

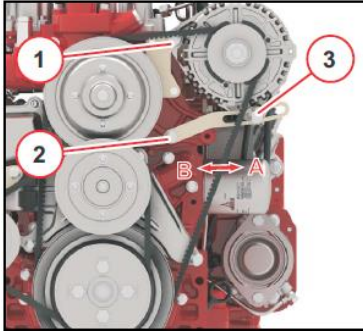


Figure 11-13

- 1) Loosen bolts (1,2,3) and nuts.
- 2) Move the engine in direction B, until the belt is loose.
- 3) Remove the old belt, and install a new one.
- 4) Move the engine in direction A until the correct belt tension is reached.
- 5) Check the belt tension.
- 6) Tighten the bolts and nuts.

1.17 Regular Maintenance

Maintenance items with period of a quarter, a year, and two years must be completed by qualified staff upon training in maintenance of the machine in accordance with procedures in the machine maintenance manual. For machines that are idle for more than three months, quarterly check must be performed before they can be re-used.

1.18 Inspecting the battery



Danger: Explosion Danger!

Electric Shock Danger! Burn Danger!

Keep away from fire, remove all rings, watches and other jewelry. If necessary, wear goggles, protective gloves and protective clothing. Avoid contacting overflowed electrolyte, and neutralize any overflowed electrolyte with sodium bicarbonate solution.



It is crucial for machine performance and security-related operations to keep the battery in proper condition. Improper voltage or damaged cables and wires may cause damage to components and danger. Inspect the battery every 8 hours or daily.

- Ensure the battery hold down hardware is secure.
- Inspect the battery cables for corrosion.
- Inspect for fluid leaks, and whether or not the battery is dry and clean.
- As shown in Figure 11-7, inspect the color of the battery hydrometer (if applicable):

Hydrometer Color	Meaning and Handling Method
White	Lack of battery fluid, please shut down the machine, and stop using
Black	Lack of electricity
Green	Measure the voltage of each battery, and voltage lower than 11V indicates damage to battery; and voltage between 12.4V and 12.7V indicates that the battery is in good state

Table 11-1 Color and description of hydrometer color

- If the battery hydrometer's color is green, and voltage is more than 12V, but cannot drive the starter, further check the battery circuits by personnel with machine maintenance training and certified to perform such work.



Caution: If charging the battery with an external power supply, only

use a charger accepted by LGMG North America.

11.9 Periodic maintenance

- 1) Maintenance items every quarter, every year and every two years must be performed by personnel with machine maintenance training and certified to perform such work.
- 2) A machine not used for a time exceeding three months must not be put into use again until a quarterly inspection and maintenance have been performed.



Figure 11-7 Battery hydrometer

1.19 Engine fault table

Faults	Cause	Measures
Engine does not start or is difficult to start	Not disconnected (if possible)	Check coupling
Engine does not start and diagnostic lamp flashes	Fuel tank empty	Tanks
	Fuel suction pipe blocked	Check
	Below starting limit temperature	Check
	Cold starting device	Check/replace
	Wrong SAE viscosity class of the engine lubricating oil	Change the lubricating oil
	Fuel quality does not comply with operating manual	Change the fuel
	Battery defective or discharged	Check battery
	Cable connection to starter loose or oxidized	Check cable connections
	Starter defective or pinion does not engage	Check starter
	Air filter clogged / turbocharger defective	Check/replace
	Air in fuel system	Vent fuel system
	Compression pressure too low	Check compression pressure
	Exhaust gas backpressure too high	Check
	Injection line leaks	Check injection line
	High-pressure pump defective	Check/replace
Engine does not start and diagnostic lamp flashes	Engine electronics prevents starting	Check error according to error code and eliminate error if necessary
Engine starts, but runs irregularly or fails	Exhaust gas backpressure too high	Check
	Compression pressure too low	Check compression pressure
	Cold starting device	Check/replace
	Air in fuel system	Vent
	Fuel filter contaminated	Clean
	Fuel quality does not comply with operating manual	Change the fuel
	Injector defective	Change
	Injection line leaks	Check injection line
	Engine cable harness defective	Check/replace
Speed changes are possible and diagnostic lamp lights up	Engine electronics has detected a system error and activates an equivalent speed	Check error according to error code and eliminate error if necessary
Engine becomes excessively hot. Temperature warning system activates	Vent line blocked	Clean
	Lube oil cooler defective	Check/replace
	Lube oil filter contaminated on the air or lube oil side	Change
	Lube oil level too high	Check lube oil level, if necessary drain off.
	Lubricating oil level too low	Fill up lube oil



	Injector defective	Change
	Coolant heat exchanger soiled	Clean
	Defective cooling water pump (torn or loose V-belt)	Check whether torn or loose
	Low coolant	Fill up
	Resistance in cooling system is too high / flow volume too low	Check the cooling system
	Fan / viscous coupling defective, V-belt torn or loose	Check/replace/tension
	Charge air line leaking	Check charge air line
	Charge air cooler soiled	Check/clean
	Air filter clogged / turbocharger defective	Check/replace
	Air filter maintenance switch / maintenance indicator defective	Check/replace
	Fan defective/V-rib belt torn or loose	Check fan/V-belt, change if necessary
	Exhaust gas backpressure too high	Check
	Throttle valve defective	Check/replace
	Coolant temperature transmitter	Check/replace
	Coolant thermostat defective	Check/replace
	Coolant cover defective	Check/replace
Engine output is deficient	Lube oil level too high	Check lube oil level, if necessary drain off.
	Fuel suction temperature too high	Check the system
	Fuel quality does not comply with operating manual	Change the fuel
	Air filter clogged / turbocharger defective	Check/replace
	Air filter maintenance switch / maintenance indicator defective	Check/replace
	Fan defective/V-rib belt torn or loose	Check fan/V-belt, change if necessary
	Charge air line leaking	Check charge air line
	Charge air cooler soiled	Clean
	Injection line leaks	Check injection line
	Injector defective	Change
	Throttle valve defective	Check/replace
	Exhaust gas recirculation, actuator defective	Check/replace
	Exhaust gas backpressure too high	Check/clean
	Exhaust gas turbocharger defective	Change
Engine performs poorly and diagnostic lamp lights	Engine electronics reduce performance	Please contact your LGMG partner
Engine does not run on all cylinders	Injection line leaks	Check injection line
	Injector defective	Change
	Compression pressure too low	Check compression pressure
	Engine cable harness defective	Check/replace
Engine lubricating oil pressure is	Lubricating oil level too low	Fill up lube oil

nonexistent or excessively low	Excessive inclination of engine	Check engine mounting / reduce inclination
	Wrong SAE viscosity class of the engine lubricating oil	Change the lubricating oil
	Lubricating oil pressure sensor defective	Check/replace
	Lubricating oil control valve jammed	Check/clean
	Lubricating oil suction pipe blocked	Check/clean
Engine lubricating oil consumption excessive	Lube oil level too high	Check lube oil level, if necessary drain off
	Excessive inclination of engine	Check engine mounting / reduce inclination
	Crankcase breather	Check/replace
Lubricating oil in the exhaust system	Engine operated continuously with too low a load (< 20-30%)	Check load factor
	Valve shaft seals defective	Check/replace
	Exhaust gas turbocharger defective	Check/replace
Engine producing blue smoke	Lube oil level too high	Check lube oil level, if necessary drain off
	Excessive inclination of engine	Check engine mounting / reduce inclination
Engine producing blue smoke	Lube oil level too high	Check lube oil level, if necessary drain off
	Excessive inclination of engine	Check engine mounting / reduce inclination
Engine producing white smoke	Fuel quality does not comply with operating manual	Change the fuel
	Injector defective	Change
	Condensation	Warm up engine so that water residues evaporate
Engine producing black smoke	Air filter clogged / turbocharger defective	Check/replace
	Air filter maintenance switch / maintenance indicator defective	Check/replace
	Charge air line leaking	Check charge air line
	Injector defective	Change
Engine shutdown frequently	Air filter clogged / turbocharger defective	Check/replace
	Charge air line leaking	Check charge air line
	Injector defective	Change
	Differential pressure of flow meter defective	Change
	Nox sensor defective	Change
	Differential pressure sensor of diesel particulate filter is issuing an implausible signal	Change
	Differential pressure line added	Clean

1.20 Engine fault Codes

DTC-Code	FTB	SPN	FMI	Error Identification
1088	0	4781	0	DPF soot load exceeded warning level.
1089	0	4781	16	Too much standstill time in short time interval.
1090	0	10156	0	The standstill-regeneration mode time exceeds the short-limit.
1091	0	3735	16	Standstill required and no successful standstill longer than escalation threshold 2.
1092	0	3735	0	Standstill required and no successful standstill longer than escalation threshold 2.
1093	0	4766	1	Regeneration temperature in standstill main phase not reached.
1102	0	171	2	Static plausibility check failed for EnvT_t. Temperature shows a deviation from expected value at cold start conditions.
1113	0	102	0	SRC high in manifold pressure sensor Bank1.
1114	0	102	1	SRC low in manifold pressure sensor Bank1.
1115	0	102	3	DFC for plausibility check for maximum threshold of the pressure sensor of the intake manifold - Bank 1.
1116	0	102	4	DFC for plausibility check for minimum threshold of the pressure sensor of the intake manifold - Bank 2.
1118	0	102	1	DFC for physical range check for minimum threshold of the pressure sensor of the intake manifold - Bank 2
1121	0	102	2	DFC for signal variation check for pressure sensor of the intake manifold - Bank 2.
1122	0	102	0	Intake air pressure valve sensor, warning condition exceeded.
1123	0	102	1	Intake air pressure valve sensor, shutoff condition exceeded.
1124	0	1209	2	Pressure turbine upstream differs from ambient pressure while engine not running.
1125	0	1209	15	Pressure turbine upstream above upper limit.
1126	0	1176	1	Pressure turbine upstream below lower limit.
1127	0	1209	2	Pressure turbine upstream stuck check failed. Pressure does not change between engine operating points.
1130	0	1209	3	Diagnostic fault check for SRC high for outlet-valve downstream pressure.
1131	0	1209	4	Diagnostic fault check for SRC low for outlet-valve downstream pressure.
1134	0	3251	3	DFC to report an error in case of signal line Short circuitrd to battery.
1135	0	3251	4	DFC to report an error in case of signal line Short circuitrd to ground.
1136	0	3251	14	DFC for reporting communication error.
1137	0	3251	14	DFC for reporting data error.
1138	0	3251	14	DFC for reporting fast channel1 error.
1139	0	3251	14	DFC for reporting fast channel 2 signal range error.
1149	0	3251	2	Particle filter difference pressure value not plausible.
1150	0	3251	0	Particle filter difference pressure above shut off threshold.



DTC-Code	FTB	SPN	FMI	Error Identification
1151	0	3251	16	Particle filter difference pressure above warning threshold.
1152	0	3251	1	Particle filter difference pressure below shut off threshold.
1153	0	3251	18	Particle filter difference pressure below warning threshold.
1161	0	5571	16	The pressure relief valve (PRV) has reached the number of allowed activations.
1162	0	5571	2	Pressure relief valve is forced to open, perform pressure increase.
1163	0	5571	2	Pressure Relief Valve (PRV) forced to open. Performed by pressure increase.
1164	0	5571	16	Pressure Relief Valve (PRV) forced to open. Shutoff conditions.
1165	0	5571	15	Pressure Relief Valve (PRV) forced to open. Warning conditions.
1166	0	5571	0	Open Pressure Relief Valve (PRV) was detected.
1167	0	5571	2	Unexpected opening of the pressure relief valve.
1168	0	5571	2	Successful PRV opening cannot be ensured.
1169	0	5571	13	Averaged rail pressure after PRV opening is outside the expected tolerance range.
1170	0	5571	16	Open time of Pressure Relief Valve (PRV) for wear out monitoring had exceeded.
1171	0	94	1	Fuel pressure build up during engine start not successful.
1172	0	1347	5	Electrical fuel pre - supply pump; open load.
1174	0	1347	3	Electrical fuel pre - supply pump; short circuit to battery.
1175	0	1347	4	Electrical fuel pre - supply pump. Short circuit to ground.
119	0	1231	14	Error generated from DemEvent ComCILBusOffNode_APPL_CAN: CAN Busoff Error for Application CAN.
1190	0	7103	13	Rail pressure below setpoint, speed-dependent threshold exceeded.
1191	0	7103	13	Railpressure metering unit: Fuel quantity balance is disrupted.
1194	0	7103	13	Negative rail pressure governor deviation at zero delivery by metering unit.
1195	0	7103	1	Rail pressure value is below minimum rail pressure threshold.
1197	0	7103	0	Maximum rail pressure exceeded.
1198	0	7103	2	Setpoint of metering unit in overrun mode not plausible.
120	0	639	14	Error generated from DemEvent ComCILBusOffNode_PT_CAN: CAN Busoff Error for Powertrain CAN.
1200	0	5357	14	Shut-off due to undershoot of minimum rail pressure.
1202	0	157	0	Maximum rail pressure exceeded in limp home mode.
1208	0	157	3	Sensor error rail pressure. Sensor voltage above upper limit.
1209	0	157	4	Sensor error rail pressure. Sensor voltage below lower limit.



DTC-Code	FTB	SPN	FMI	Error Identification
121	0	520252	2	Wrong checksum in the CAN message EAT Control.
1212	0	629	12	Error generated from DemEvent RBA_IOEXTLIB_KEEPAIVE_DRV: KeepAlive error during runtime at an external device.
1213	0	629	12	Error generated from DemEvent RBA_IOEXTLIB_KEEPAIVE_INI: KeepAlive error during initialisation phase at an external device.
1215	0	629	12	DFC generated from DemEvent rba_MemDiag_MemReadErr: Read diagnosis error for non volatile memory.
1216	0	629	12	DFC generated from DemEvent rba_MemDiag_MemWrErr: Write diagnosis error for non volatile memory.
1218	0	629	12	DFC generated from DemEvent rba_MultiStackTrace_Threshold: Stack memory threshold overrun.
1219	0	629	12	DFC generated from DemEvent rba_SyC_IrrSwOffTrigEngRun_Event: Observation Counter Irregular Switch Off Counter Triggered by Engine Running.
122	0	4207	2	Checksum fault.
123	0	4207	2	Checksum fault.
1233	0	5826	15	NCD Inducement level 1 for EU.
1235	0	5826	0	NCD Inducement level 2 for EU.
1236	0	5826	14	NCD Pretrigger for inducement level 2.
124	0	4207	2	Checksum fault.
125	0	4207	2	Checksum fault.
1274	0	91	3	Sensor error accelerator pedal (channel 1), short circuit to battery.
1275	0	2623	3	Sensor error accelerator pedal (channel 2), short circuit to battery.
1276	0	29	3	Signal Range Check High for remote APP signal 1.
1277	0	2625	3	Short circuit to battery of remote accelerator pedal signal 2.
1280	0	91	4	Sensor error accelerator pedal (channel 1), short circuit to ground.
1281	0	2623	4	Sensor error accelerator pedal (channel 2), short circuit to ground.
1282	0	29	4	Signal Range Check Low for remote APP signal 1.
1283	0	2625	4	Short circuit to ground of remote accelerator pedal signal 2.
1289	0	3509	14	Failure of sensor supply voltage 1.
1290	0	3509	0	DFC generated from DemEvent SSpMon1OV: Overvoltage error at sensor supply 1 .
1291	0	3509	6	DFC generated from DemEvent SSpMon1SCG: Short circuit to ground error at sensor supply 1.
1292	0	3509	1	DFC generated from DemEvent SSpMon1UV: Undervoltage error at sensor supply 1 .
1293	0	3510	14	Failure of sensor supply voltage 2.
1294	0	3510	0	DFC generated from DemEvent SSpMon2OV: Overvoltage error at sensor supply 2.
1295	0	3510	6	DFC generated from DemEvent SSpMon2SCG: Short circuit to ground error at sensor supply 2.



DTC-Code	FTB	SPN	FMI	Error Identification
1296	0	3510	1	DFC generated from DemEvent SSpMon2UV: Undervoltage error at sensor supply 2.
1306	0	677	3	Starter relay high side. Short circuit to battery.
1307	0	677	4	Starter relay high side. Short circuit to ground.
1308	0	677	5	Starter relay low side no load error.
1310	0	677	3	Starter relay low side short circuit to battery.
1311	0	677	4	Starter relay low side short circuit to ground.
1323	0	91	11	Plausibility error between APP1 and APP2 or APP1 and idle switch.
1326	0	29	11	In case of dual analog accelerator pedal, it is the plausibility check between RmtAPP1 and RmtAPP2 and in case of potentiometer switch accelerator pedal, it is the plausibility check between APP1 and idle switch.
1346	0	1041	14	Terminal 50 was operated too long.
1354	0	105	0	High charged air cooler temperature. Warning threshold exceeded.
1355	0	105	0	High charged air cooler temperature. Shut off threshold exceeded.
1357	0	1136	0	Physical range check high for ECU temperature.
1358	0	1136	1	Physical range check low for ECU temperature.
1359	0	1136	15	Signal Range Check Maximum for ECU temperature sensor.
1360	0	1136	17	Signal Range Check Minimum for ECU temperature sensor.
1361	0	1136	2	Diagnostic Fault Check for TECU sensor plausibility.
1362	0	412	15	Physical Range Check high for EGR cooler downstream temperature.
1363	0	412	17	Physical Range Check low for EGR cooler downstream temperature.
1364	0	412	3	Electrical error EGR cooler downstream temperature. Signal range check high.
1365	0	412	4	Electrical error EGR cooler downstream temperature. Signal range check low.
1372	0	51	5	Throttle valve, open load.
1375	0	51	3	Throttle valve, short circuit to battery1.
1376	0	51	3	Throttle valve, short circuit to battery2.
1377	0	51	4	Throttle valve, short circuit to ground1.
1378	0	51	4	Throttle valve, short circuit to ground2.
1379	0	51	6	Throttle valve, over load.
1382	0	51	7	Status of diagnostic fault check valve jammed closed.
1383	0	51	7	Status of diagnostic fault check valve jammed opened.
1391	0	51	3	Throttle valve, short circuit to battery.
1392	0	51	4	Throttle valve, short circuit to ground.
1397	0	105	0	TIntkVUs_t above upper limit.
1398	0	105	1	TIntkVUs_t below lower limit.



DTC-Code	FTB	SPN	FMI	Error Identification
1399	0	4766	2	Dynamic plausibility check for TOxiCatDs_t failed. Temperature difference between ToxiCatUs_t and ToxiCatDs_t too high.
1400	0	4766	2	Plausibility check for TOxiCatDs_t failed. Temperature is too low.
1401	0	4766	15	Temperature downstream DOC, temperature above upper warning threshold.
1402	0	4766	3	Sensor error exhaust gas temperature downstream (DOC); signal range check high.
1403	0	4766	4	Sensor error exhaust gas temperature downstream (DOC); signal range check low.
1404	0	4765	2	Temperature upstream DOC, plausibility error.
1405	0	4765	15	Temperature upstream DOC, temperature above upper warning threshold .
1406	0	4765	3	Sensor error exhaust gas temperature upstream (DOC); signal range check high.
1407	0	4765	4	Sensor error exhaust gas temperature upstream (DOC); signal range check low.
1408	0	4765	2	Stuck check for TOxiCatUs_t failed. Temperature does not change anymore.
142	0	520256	9	Timeout of EAT Control Receive Message. The message is not received.
144	0	523211	9	Timeout error of CAN-Receive-Frame EBC1.
154	0	523212	9	Timeout error of CAN-Receive-Frame ComEngPrt. Engine Protection.
1540	0	520254	8	The standstill-regeneration mode time exceeds the long limit threshold.
1541	0	520255	2	Hoses connected to the dp DPF SENT sensor inverted. Swap the hoses.
155	0	523741	14	Engine shut off request through CAN.
1587	0	97	0	Water in fuel level prefilter; maximum value exceeded.
188	0	523240	9	Timeout CAN-message FunModCtl. Function Mode Control.
219	0	520253	2	Rolling counter fault CAN message EAT Control.
220	0	4206	2	Fault check for Rolling Counter of TSC1AE
221	0	4206	2	Fault check for Rolling Counter of TSC1AR
222	0	4206	2	Fault check for Rolling Counter of TSC1TE
223	0	4206	2	Fault check for Rolling Counter of TSC1TR
349	0	3349	0	Timeout error of CAN-Receive-Frame Active TSC1AE.
350	0	3349	0	Timeout error of CAN-Receive-Frame Passive TSC1AE.
351	0	3349	0	Timeout error of CAN-Receive-Frame Active TSC1AR.
352	0	3349	0	Timeout error of CAN-Receive-Frame Passive TSC1AR.
353	0	3349	0	Timeout error of CAN-Receive-Frame TSC1TE - active.
354	0	3349	0	Short circuit to ground error.



DTC-Code	FTB	SPN	FMI	Error Identification
355	0	3349	0	Timeout error of CAN-Receive-Frame TSC1TR.
356	0	3349	0	Passive timeout error of CAN-Receive-Frame TSC1TR.
361	0	3349	0	Timeout error of CAN-Receive-Frame TSC1AE. Traction Control.
363	0	3349	0	Timeout error of CAN-Receive-Frame TSC1AR. Retarder.
365	0	3349	0	Timeout error of CAN-Receive-Frame TSC1TE. Setpoint.
367	0	3349	0	Timeout Error of CAN-Receive-Frame TSC1TR; control signal.
38	0	1485	3	Short circuit to battery error.
39	0	1485	3	Short circuit to battery error of actuator relay 2.
40	0	1485	3	Short circuit to battery of actuator relay 3.
41	0	1485	4	Short circuit to ground error.
42	0	1485	4	Short circuit to ground of actuator relay 2.
43	0	1485	4	Short circuit to ground of actuator relay 3.
48	0	168	0	Physical range check high for battery voltage.
49	0	168	1	Physical range check low for battery voltage.
50	0	168	3	Sensor battery voltage error; signal range check is high.
51	0	168	4	Sensor battery voltage error; signal range check is low.
516	0	523982	0	Powerstage diagnosis disabled. High battery voltage.
517	0	523982	1	Powerstage diagnosis disabled. Low battery voltage.
52	0	168	0	High battery voltage; warning threshold is exceeded.
567	0	27	5	EGR valve, open load.
570	0	27	3	EGR valve, short circuit to battery1.
571	0	27	3	EGR valve, short circuit to battery2.
572	0	27	4	EGR valve, short circuit to ground1.
573	0	27	4	EGR valve, short circuit to ground2.
574	0	27	6	EGR valve, over load.
577	0	27	7	Status of diagnostic fault check valve jammed closed.
578	0	27	7	Status of diagnostic fault check valve jammed opened.
582	0	5763	3	EGR valve, short circuit to battery.
583	0	5763	4	EGR valve, short circuit to ground.
586	0	3055	14	Internal software error ECU. Injection cut off.
587	0	190	0	Engine speed above warning threshold. Overspeed detection in component engine protection.
588	0	190	0	Engine speed above warning threshold (FOC-Level 1).
589	0	190	0	Engine speed above warning threshold (FOC-Level 2).
590	0	190	0	Engine speed above warning threshold (Overrun Mode).



DTC-Code	FTB	SPN	FMI	Error Identification
610	0	171	15	Environment temperature sensor, temperature above upper physical threshold.
613	0	171	3	Sensor error SCR-System environment temperature. DPF-System air inlet temperature, signal range check high.
614	0	171	4	Sensor error SCR-System environment temperature. DPF-System air inlet temperature, signal range check low.
615	0	723	8	Sensor camshaft speed, disturbed signal.
616	0	723	14	Sensor camshaft detection. Out of range, signal disrupted, no signal.
617	0	723	13	Offset angle between crank- and camshaft-sensor is too large.
618	0	4201	8	Sensor crankshaft detection. Out of range, signal disrupted or no signal.
619	0	4201	14	Speed detection, out of range, signal disrupted or no signal.
68	0	1669	14	Error generated from DemEvent CAN_E_TIMEOUT: CAN Hardware registers are not updated within the expected time.
70	0	110	2	Defect fault check for dynamic plausibility test.
709	0	97	3	DFC SAE J1939 error.
710	0	97	4	Sensor error water in fuel, signal range check low.
721	0	94	15	Low fuel pressure system, max. physical range exceeded.
723	0	94	3	Sensor error low fuel pressure, signal range check high.
724	0	94	4	Sensor error low fuel pressure, signal range check low.
725	0	94	1	Low fuel pressure system, warning threshold exceeded.
726	0	94	1	Low fuel pressure, shut off threshold exceeded.
75	0	110	3	Sensor error coolant temperature; Signal range check high.
76	0	110	4	Sensor error coolant temperature; Signal range check low.
77	0	110	0	High coolant temperature; Warning threshold exceeded.
78	0	110	0	Coolant temperature; System reaction initiated.
797	0	676	12	Cold start aid relay error.
798	0	676	5	Cold start aid relay: Open load.
799	0	676	5	Cold start aid relay: Open load.
80	0	411	2	Intake air massflow not in expected range.
803	0	676	3	Intake Air Heater Device: Short circuit to battery.
805	0	676	4	Powerstage on CJ945, short circuit to ground.
807	0	2797	14	Number of possible injections limited by the injection valve.
815	0	2797	4	Booster voltage too low.
816	0	5358	5	Open load on the power stage of injection valve 0.
817	0	5359	5	Open load on the power stage of injection valve 1.
818	0	5360	5	Open load on the power stage of injection valve 2.
819	0	5361	5	Open load on the power stage of injection valve 3.
820	0	5362	5	Open load on the power stage of injection valve 4.



DTC-Code	FTB	SPN	FMI	Error Identification
821	0	5363	5	Open load on the power stage of injection valve 5.
822	0	2797	6	Short circuit of the HDEV power stage high-side (bank0 error).
823	0	2798	6	Short circuit of the HDEV power stage high-side (bank1 error).
824	0	5358	6	Short circuit of the power stage low-side (cylinder error 0).
825	0	5359	6	Short circuit of the power stage low-side (cylinder error 1).
826	0	5360	6	Short circuit of the power stage low-side (cylinder error 2).
827	0	5361	6	Short circuit of the power stage low-side (cylinder error 3).
828	0	5362	6	Short circuit of the power stage low-side (cylinder error 4).
829	0	5363	6	Short circuit of the power stage low-side (cylinder error 5).
83	0	111	1	Coolant level too low.
830	0	5358	6	Short circuit between high-side and low-side of the power stage (high-side non plausible error).
831	0	5359	6	Short circuit between high-side and low-side of the power stage (high-side non plausible error).
832	0	5360	6	Short circuit between high-side and low-side of the power stage (high-side non plausible error).
833	0	5361	6	Short circuit between high-side and low-side of the power stage (high-side non plausible error).
834	0	5362	6	Short circuit between high-side and low-side of the power stage (high-side non plausible error).
835	0	5363	6	Short circuit between high-side and low-side of the power stage (high-side non plausible error).
836	0	105	3	Signal Range Check high for intake valve upstream temperature.
837	0	105	4	Signal Range Check Low for intake valve upstream temperature.
838	0	2797	14	Check of missing injector adjustment value programming (IMA) injector 1.
839	0	2798	14	Check of missing injector adjustment value programming (IMA) injector 2.
840	0	4257	14	Check of missing injector adjustment value programming (IMA) injector 3.
841	0	4258	14	Check of missing injector adjustment value programming (IMA) injector 4.
853	0	0	0	
854	0	7103	5	Open load diagnosis of MeUn power stage.
855	0	7103	3	Short circuit to battery on the high side power stage of MeUn.
856	0	7103	3	Short circuit to battery on the low side power stage of MeUn.
857	0	7103	4	Short circuit to ground on the high side power stage of MeUn.
858	0	7103	4	Short circuit to ground on the low side power stage of MeUn.
859	0	7103	6	Short circuit between high side and low side power stage of MeUn.
868	0	629	12	Function monitoring: fault of ECU ADC - Null Load Test Pulse.
869	0	629	12	Function monitoring: fault of ECU ADC - test voltage.



DTC-Code	FTB	SPN	FMI	Error Identification
870	0	629	12	DFC to indicate ICO request from MoCSOP module.
871	0	91	14	Function monitoring: Monitoring of accelerator pedal position.
875	0	190	2	Function monitoring: fault of engine speed check.
876	0	5357	2	Diagnostic fault check to report the plausibility error between level 1 energizing time and level 2 information.
877	0	5441	2	Diagnostic fault check to report the error due to plausibility between the injection begin v/s injection type.
878	0	5357	2	Diagnostic fault check to report the error due to non plausibility in ZFC
879	0	523612	12	Diagnosis fault check to report the error to demand for an ICO due to an error in the Pol2 shut-off.
88	0	598	10	No clutch edge within calibrated time.
880	0	523612	12	Diagnosis fault check to report the error to demand for an ICO due to an error in the Pol3 efficiency factor.
881	0	523612	12	Diagnosis fault check to report the error to demand for an ICO due to an error in change of EOM.
882	0	5357	2	Diagnosis fault check to report the error to demand for an ICO due to an error in total torque relevant quantity.
883	0	5357	2	Diagnostic fault check to report the error due to injection quantity correction.
884	0	5442	2	Diagnostic fault check to report the plausibility error in rail pressure monitoring.
885	0	29	2	DFC to report the fault in Remote APP plausibility check.
886	0	677	2	Function monitoring: fault of ECU powertrain active.
887	0	513	2	DFC to report the fault in energizing time comparison.
888	0	513	2	DFC to report fault in torque comparison error.
889	0	520250	2	Function monitoring: error in the post-build selectable monitoring.
890	0	629	12	Status of the EMM alarm FCCU0 which is read out of the FCCU hardware module.
891	0	629	12	Internal ECU error.
893	0	629	12	Internal ECU error.
894	0	629	12	Internal ECU error.
895	0	629	12	Internal ECU error.
896	0	629	12	Internal ECU error.
897	0	629	12	Internal ECU error.
898	0	629	12	Internal ECU error.
899	0	629	12	Internal ECU error.
900	0	629	12	Internal ECU error.
901	0	629	12	Internal ECU error.
902	0	629	12	Internal ECU error.
903	0	629	12	Internal ECU error.



DTC-Code	FTB	SPN	FMI	Error Identification
904	0	629	12	Internal ECU error.
905	0	629	12	Internal ECU error.
906	0	629	12	Internal ECU error.
907	0	629	12	Internal ECU error.
908	0	629	12	Internal ECU error.
909	0	629	12	Internal ECU error.
91	0	1109	2	Engine shut off demand ignored.
910	0	629	12	Internal ECU error.
911	0	629	12	Internal ECU error.
912	0	629	12	Internal ECU error.
913	0	629	12	Internal ECU error.
914	0	629	12	Internal ECU error.
915	0	629	12	Internal ECU error.
916	0	629	12	Internal ECU error.
917	0	629	12	Internal ECU error.
918	0	629	12	Internal ECU error.
919	0	629	12	Internal ECU error.
92	0	1109	14	Shut off request from supervisory monitoring function.
920	0	629	12	Internal ECU error.
921	0	629	12	Internal ECU error.
922	0	629	12	Internal ECU error.
923	0	629	12	Internal ECU error.
924	0	629	12	Internal ECU error.
925	0	629	12	Internal ECU error.
926	0	629	12	Internal ECU error.
927	0	629	12	Internal ECU error.
928	0	629	12	Internal ECU error.
929	0	629	12	Internal ECU error.
930	0	629	12	Internal ECU error.
931	0	629	12	Internal ECU error.
932	0	629	12	Internal ECU error.
933	0	629	12	Internal ECU error.
935	0	629	12	Internal ECU error.
936	0	629	12	Internal ECU error.
937	0	629	12	Internal ECU error.
938	0	629	12	Internal ECU error.
939	0	629	12	Internal ECU error.



DTC-Code	FTB	SPN	FMI	Error Identification
940	0	629	12	Internal ECU error.
941	0	629	12	Internal ECU error.
942	0	629	12	Internal ECU error.
943	0	629	12	Internal ECU error.
944	0	629	12	Internal ECU error.
945	0	629	12	Internal ECU error.
996	0	629	12	Diagnostic fault check to report ABE active state.
997	0	629	12	Function monitoring: fault of ECU, WDA active by inquiry/response communication.
998	0	629	12	Function monitoring: fault of ECU, Error Pin active suspicion of HW fault.
999	0	629	12	Function monitoring: fault of ECU, WDA active by overvoltage detection.

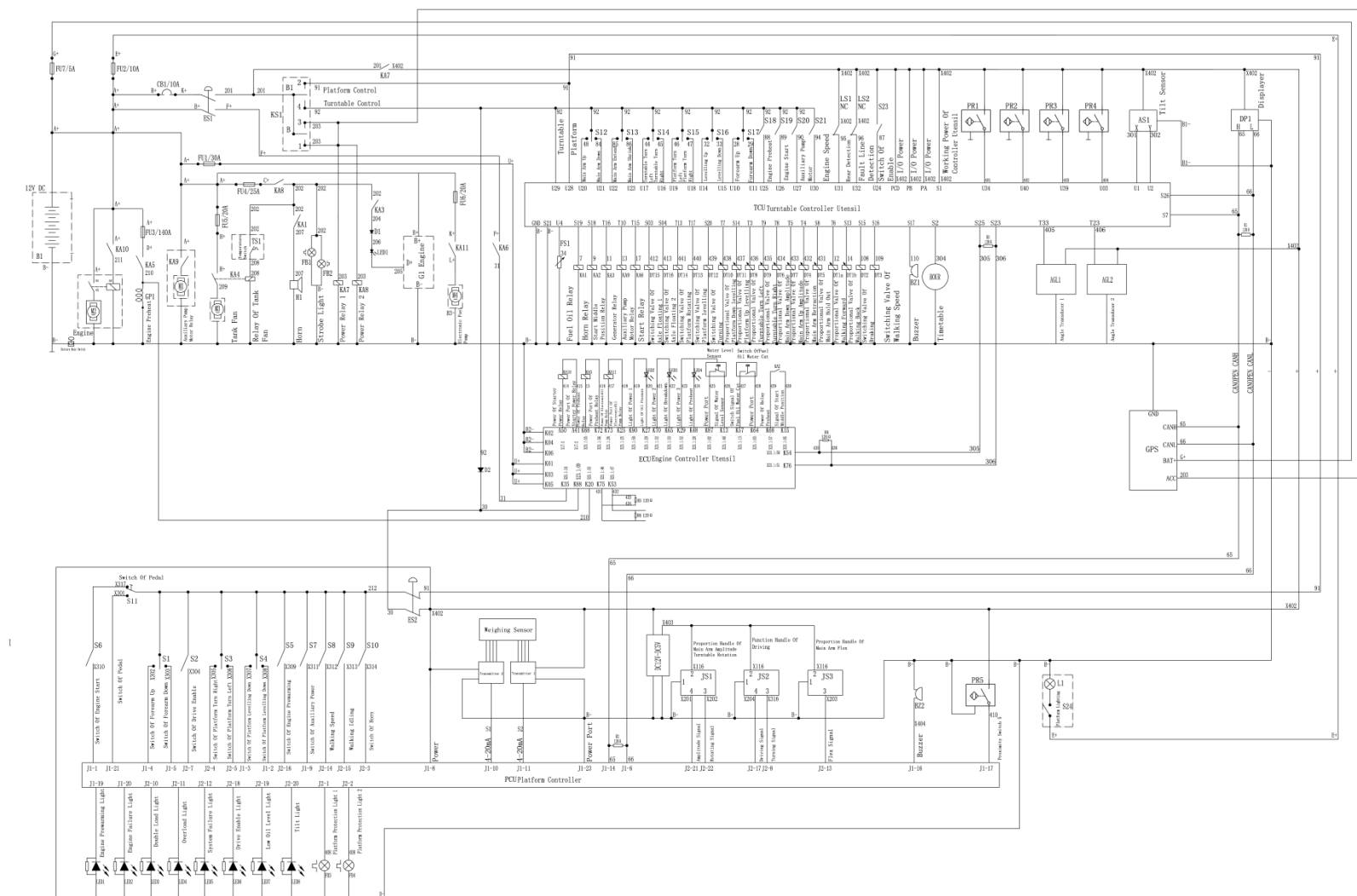




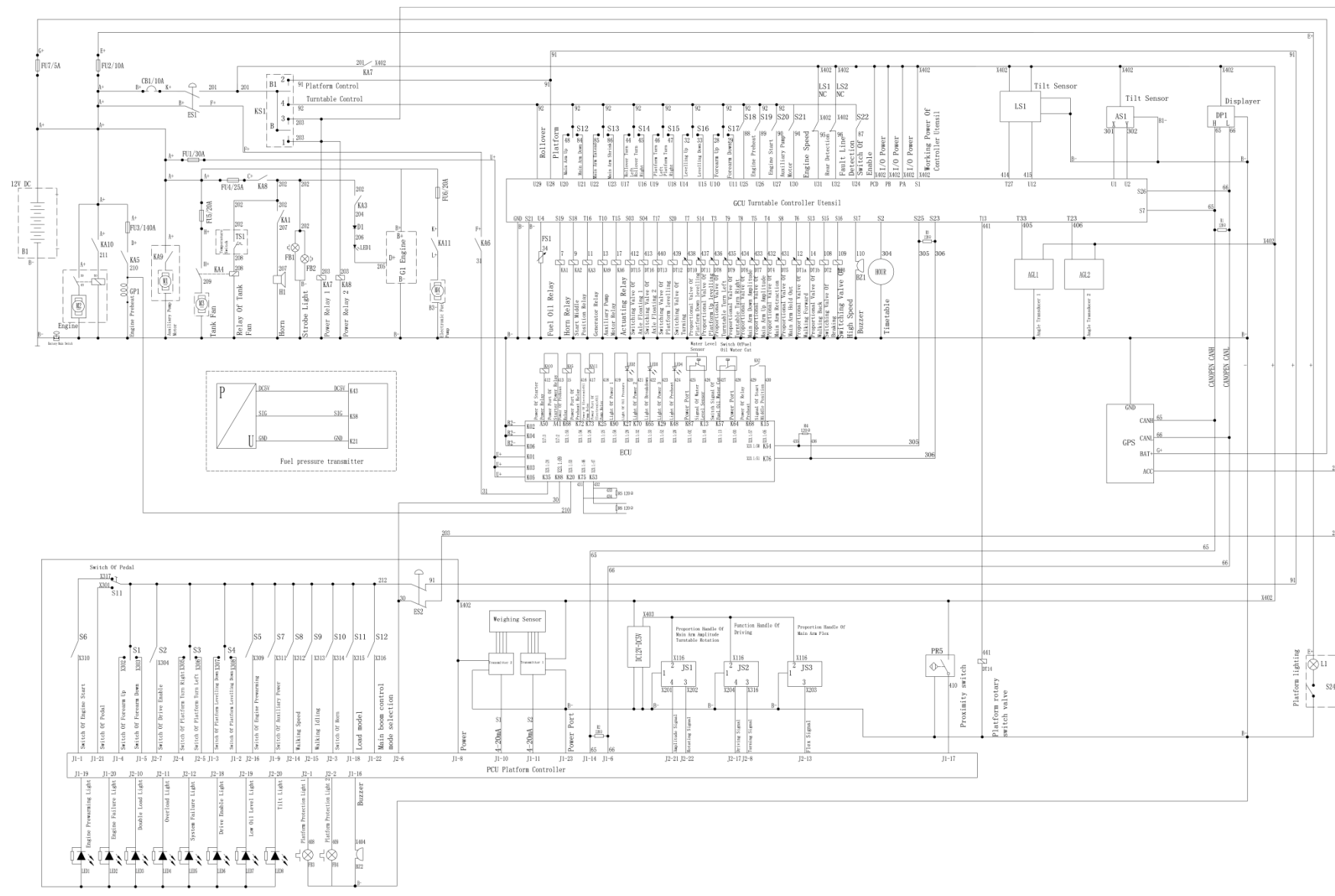
Chapter 2 Schematics



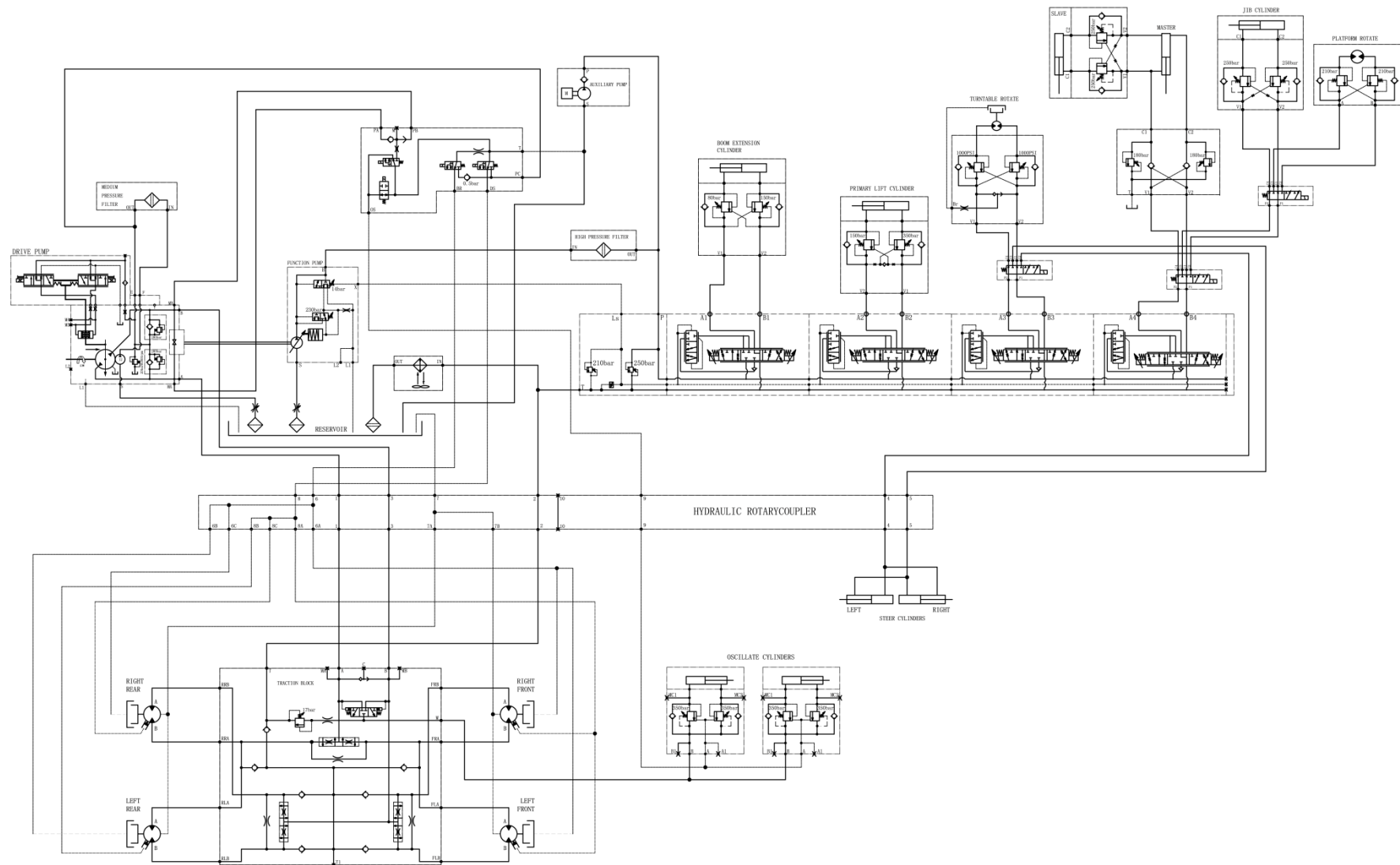
Electric schematic-T65J



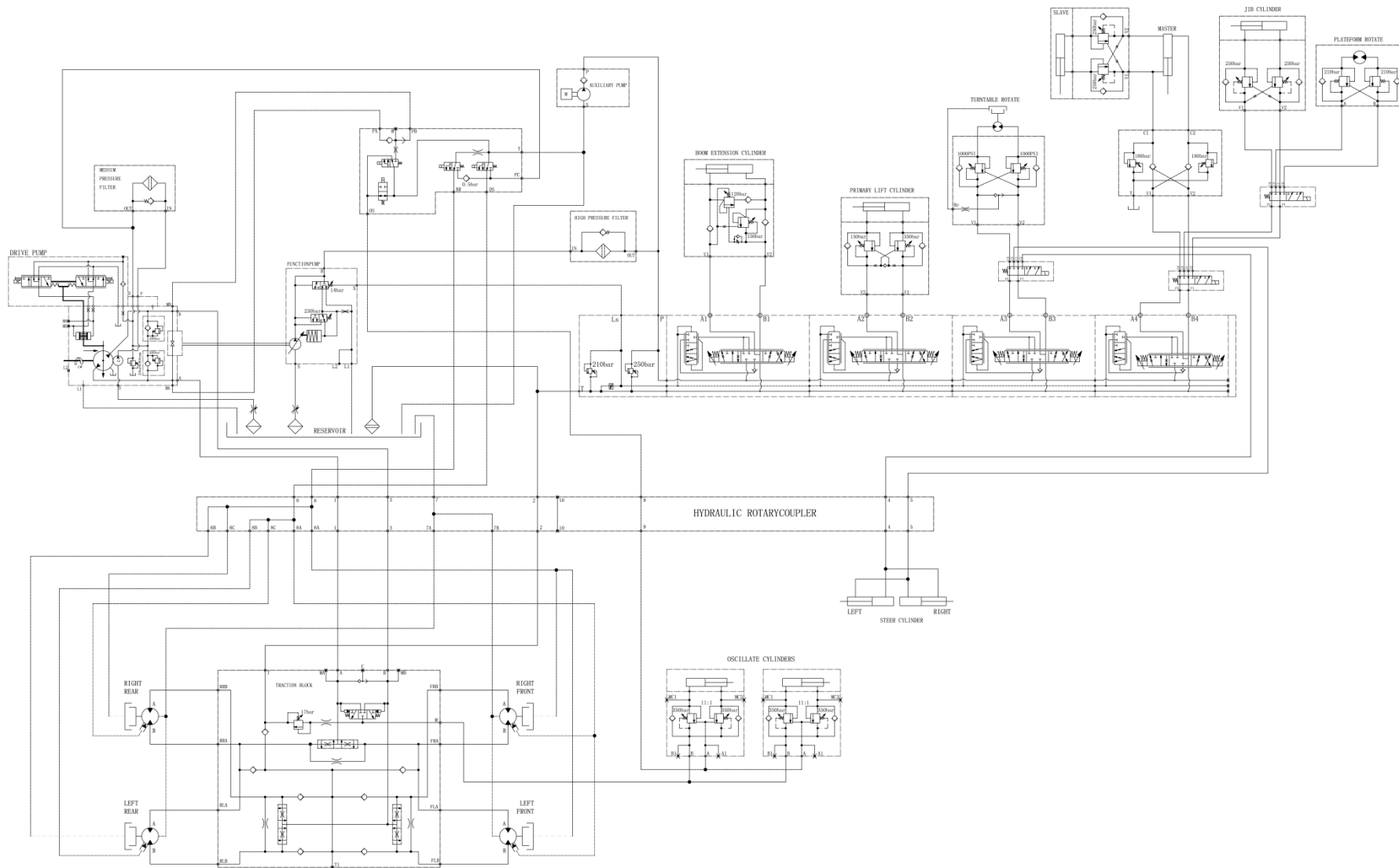
Electric schematic-T85J



Hydraulic schematic-T65J



Hydraulic schematic-T85J



California Proposition 65



WARNING

Operating, servicing and maintaining this equipment can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. These chemicals can be emitted from or contained in other various parts and systems, fluids and some component wear by-products. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your equipment and vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your equipment or vehicle and after operation. For more information go to www.P65Warnings.ca.gov/passenger-vehicle.

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to www.P65warnings.ca.gov/diesel.

T65J/T85J
Mobile Elevating Work Platform
Maintenance Manual

Third Edition – September 2020



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