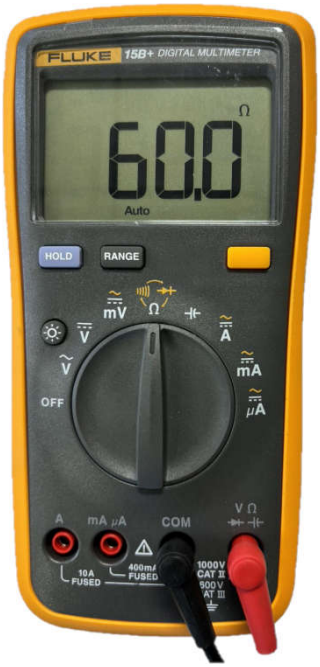
CRZ42 G2 Trouble Shooting And FAQ List

目录

Tools：Computer、CAN DEBUG TOOL（ERP: R0203845-00） 、16-Pin adapter（ERP: R0203075-00）、Jack、Multimeter.

CAN DEBUG TOOL（ERP: R0203845-00）| 16-Pin adapter（ERP: R0203075-00）



Jack | Multimeter

PMU2 - Overtemperature-Level1

Stop the vehicle for a period of time to allow it to cool down, if the fault still have after restarting, replace the battery compartment.

PMU10 - PMU loop fault

At least one channel in the battery compartment is unable to discharge, but the performance will not decrease, vehicle still can be worked.

If you feel a decrease in mowing performance with this fault code, the battery compartment should be replaced.

PMU11 - PMU minor fault

There have occurred a over-current(Level 1) or over-temperature(Level 1) fault. The vehicle's performance will be limited with this code, but this fault can be restored, no need to pay attention.

PMU12 - PMU major fault

Check：Use "ToolsForCAN" to identify the detail fault -

1. "PreCharge Function Error" of PMU12

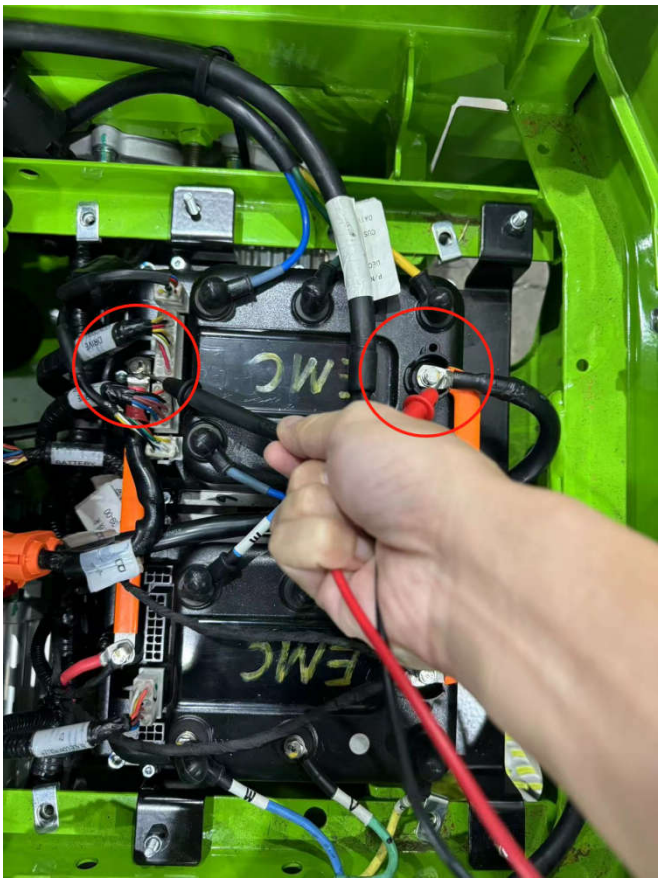
PMU FAULT LIST PART1

Function	Status			
Avg Curr Overcurr	◉ 0：Normal	○ 1：Avg Curr L1	○ 2：Avg Curr L2	○ 3：Spare
PMUNeg. MOSOvertemp	◉ 0：Normal	○ 1：OvertempL1	○ 2：OvertempL2	○ 3：NTCError
Peak Curr Overcurr	◉ 0：Normal	○ 1：Error		
Feedback Curr Overcurr	◉ 0：Normal	○ 1：Error		
PreCharge Function	○ 0：Normal	◉ 1：Error		
PMUSoftware Auth	◉ 0：Normal	○ 1：Error		
PMU Undervoltage Error	◉ 0：Normal	○ 1：Error		
PMU Overvoltage Error	◉ 0：Normal	○ 1：Error		

① Adjust the dial position of a multimeter to the diode position to measure the diode value of the traction controller's B+ and B- as shown in the picture below(Red lead to black wire, black lead to red wire).

a. If the value is approximately equal to 0.7±0.2V， you should replace a new battery box.

b. Otherwise follow the steps.

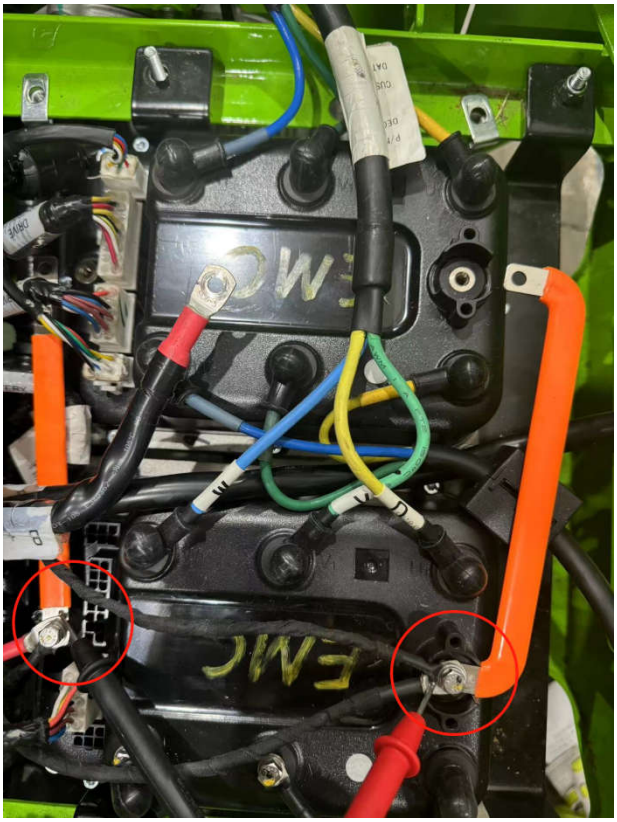


Correct value should be approximately equal to 0.7±0.2V

② Disconnect the traction controller's B+ and B- wires and use a multimeter to measure the diode value as shown in the picture below(Red lead to negative electrode, black lead to positive electrode).

a. If the value is approximately equal to 0.7±0.2V, you should replace traction controller.

b. Otherwise follow the steps.

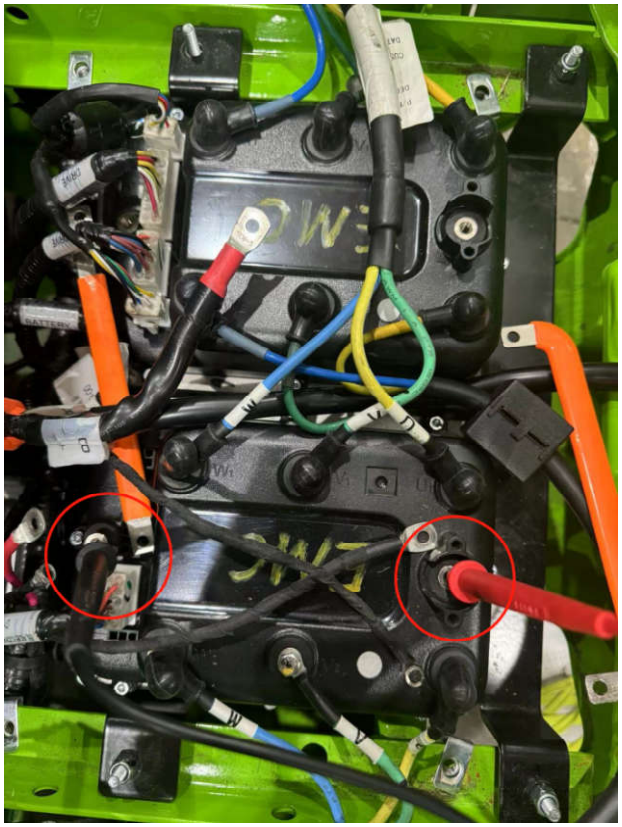


Correct value should be approximately equal to 0.7±0.2V

③ Disconnect the blade controller's B+ and B- wires and use a multimeter to measure the diode value of the blade controller as the picture showed below(Red lead to negative electrode, black lead to positive electrode).

a. If the value is approximately equal to 0.7±0.2V, you should replace the DC-DC.

b. Otherwise replace the blade controller.



Correct value should be approximately equal to 0.7±0.2V

2. Other errors of PMU12

   Replace the battery compartment.

PMU13 - PMU no available battery

1. Make sure that the inserted batteries are correct, not mixed with different voltage platform.
2. Replace the battery compartment.

PMU35 - Overtemperature-Level2

Stop the vehicle for a period of time to allow it to cool down, if the fault still have after restarting, replace the battery compartment.

PMU36 - Undervoltage

1. Charge the batteries.
2. Make sure the battery compartment on the correct platform is used.
3. Replace the battery compartment.

PMU37 - Overvoltage

1. Make sure the battery compartment on the correct platform is used.
2. Replace the battery compartment.

PMU38 - Power supply output failure

Disconnect the power harness from battery compartment:

1. If the fault code disappeared, follow the “PMU12” trouble shooting guide to find the detail issue.
2. Otherwise, replace the battery compartment.

PMU41 - No battery pack available

1. Make sure that the inserted batteries are correct, not mixed with different voltage platform.
2. Replace the battery compartment.

PMU46 - Relay（MOS） error

Replace the battery compartment.

PMU47 - Pre-charge error

Follow the “PreCharge Function Error” of PMU12 trouble shooting guide to find the detail issue.

PMU48 - Pre-charge hardware error

Replace the battery compartment.

PMU49 - Negative MOSFET temperature sensor error

Replace the battery compartment.

PMU52 - Current sensor error

Replace the battery compartment.

PMU57 - KSI Pre-MOS error

Replace the battery compartment.

PMU59 - KSI MOS error

Replace the battery compartment.

PMU61 - Battery pack 1 does not match

1. Make sure that the inserted battery in cabin 1 is correct, not mixed with different voltage platform.
2. Replace the battery compartment.

PMU62 - Battery pack 2 does not match

1. Make sure that the inserted battery in cabin 2 is correct, not mixed with different voltage platform.
2. Replace the battery compartment.

PMU63 - Battery pack 3 does not match

1. Make sure that the inserted battery in cabin 3 is correct, not mixed with different voltage platform.
2. Replace the battery compartment.

PMU64 - Battery pack 4 does not match

1. Make sure that the inserted battery in cabin 4 is correct, not mixed with different voltage platform.
2. Replace the battery compartment.

PMU65 - Battery pack 5 does not match

1. Make sure that the inserted battery in cabin 5 is correct, not mixed with different voltage platform.
2. Replace the battery compartment.

PMU66 - Battery pack 6 does not match

1. Make sure that the inserted battery in cabin 6 is correct, not mixed with different voltage platform.
2. Replace the battery compartment.

PMU67 - Abnormal charging status

1. Check if the charger's input plug is properly plugged in.
2. Check if the vehicle can be powered on and worked properly:
   ① Can't be powered on and worked, then replace the battery compartment.
   ② Otherwise, replace the charge socket.

TR2/TL2 - Drive motor stalled

1. TR2

① Turn off the power, use a jack to lift the vehicle's rear wheels, disengage the manual parking brake, try to rotate the rear wheel of right side.

a. If the wheel can't be rotated, replace the right traction motor.

b. Otherwise follow the steps below.

② Swap the M5 terminals of left and right traction motors' phase harness(Totally six screws) and swap the 6 pins encoder sensor connectors.

a. If still have TR2 fault code, replace the traction controller.

b. If fault code change to TL2, you should replace the right traction motor.

2. TL2

① Turn off the power, use a jack to lift the vehicle's rear wheels, disengage the manual parking brake, try to rotate the rear wheel of left side.

a. If the wheel can't be rotated, replace the left traction motor.

b. Otherwise follow the steps below.

② Swap the M5 terminals of left and right traction motors' phase harness(Totally six screws) and swap the 6 pins encoder sensor connectors.

a. If still have TL2 fault code, replace the traction controller.

b. If fault code change to TR2, you should replace the left traction motor.

TR4/TL4 - Motor overspeed protection

1. TR4

Swap the M5 terminals of left and right traction motors' phase harness(Totally six screws) and swap the 6 pins encoder sensor connectors.

a. If still have TR4 fault code, replace the traction controller.

b. If fault code change to TL4, you should replace the right traction motor.

2. TL4

Swap the M5 terminals of left and right traction motors' phase harness(Totally six screws) and swap the 6 pins encoder sensor connectors.

a. If still have TL4 fault code, replace the traction controller.

b. If fault code change to TR4, you should replace the left traction motor.

TR5/TL5 - Motor encoder error

1. TR6

Swap the M5 terminals of left and right traction motors' phase harness(Totally six screws) and swap the 6 pins encoder sensor connectors.

a. If still have TR6 fault code, replace the traction controller.

b. If fault code change to TL6, you should replace the right traction motor.

2. TL6

Swap the M5 terminals of left and right traction motors' phase harness(Totally six screws) and swap the 6 pins encoder sensor connectors.

a. If still have TL6 fault code, replace the traction controller.

b. If fault code change to TR6, you should replace the left traction motor.

TR6/TL6 - Controller phase loss

1. TR6

Swap the M5 terminals of left and right traction motors' phase harness(Totally six screws) and swap the 6 pins encoder sensor connectors.

a. If still have TR6 fault code, replace the traction controller.

b. If fault code change to TL6, you should replace the right traction motor.

2. TL6

Swap the M5 terminals of left and right traction motors' phase harness(Totally six screws) and swap the 6 pins encoder sensor connectors.

a. If still have TL6 fault code, replace the traction controller.

b. If fault code change to TR6, you should replace the left traction motor.

TR7/TL7 - MOSFET error

Replace the traction controller.

TR8/TL8 - Controller undervoltage

① Charge the batteries.

② Make sure the controller on the correct platform is used.

③ Flash the right firmware to the traction controller. 60V and 80V platform have different firmware.

④ Replace the traction controller.

TR9/TL9 - Controller overvoltage

① Make sure the controller on the correct platform is used.

② Flash the right firmware to the traction controller. 60V and 80V platform have different firmware.

③ Replace the traction controller.

TR12/TL12 - Motor overtemperature

1. Stop the vehicle for a period of time to allow it to cool down, if the fault still have after restarting, follow the steps below.

Swap the M5 terminals of left and right traction motors' phase harness(Totally six screws) and swap the 6 pins encoder sensor connectors.

① TR12

a. If still have TR12 fault code, replace the traction controller.

b. If fault code change to TL12, you should replace the left traction motor.

② TL12

a. If still have TL12 fault code, replace the traction controller.

b. If fault code change to TR12, you should replace the right traction motor.

TR13/TL13 - Controller overtemperature

Stop the vehicle for a period of time to allow it to cool down, if the fault still have after restarting, replace the traction controller.

TR14/TL14 - Software Overcurrent

1. TR14

Swap the M5 terminals of left and right traction motors' phase harness(Totally six screws) and swap the 6 pins encoder sensor connectors.

a. If still have TR14 fault code, replace the traction controller.

b. If fault code change to TL14, you should replace the right traction motor.

2. TL14

Swap the M5 terminals of left and right traction motors' phase harness(Totally six screws) and swap the 6 pins encoder sensor connectors.

a. If still have TL14 fault code, replace the traction controller.

b. If fault code change to TR14, you should replace the left traction motor.

TR15/TL15 - Hardware Overcurrent

1. TR15

Swap the M5 terminals of left and right traction motors' phase harness(Totally six screws) and swap the 6 pins encoder sensor connectors.

a. If still have TR15 fault code, replace the traction controller.

b. If fault code change to TL15, you should replace the right traction motor.

2. TL15

Swap the M5 terminals of left and right traction motors' phase harness(Totally six screws) and swap the 6 pins encoder sensor connectors.

a. If still have TL15 fault code, replace the traction controller.

b. If fault code change to TR15, you should replace the left traction motor.

TR16/TL16 - Potentiometer error

Check：Use “ToolsForCAN” to read the value of right/left potentiometer -

① If the value is larger than 4.6 or smaller than 0.2, replace the right/left potentiometer.

② Replace the traction controller.

③ Replace the control harness.

TR19/TL19 - Operating sequence error

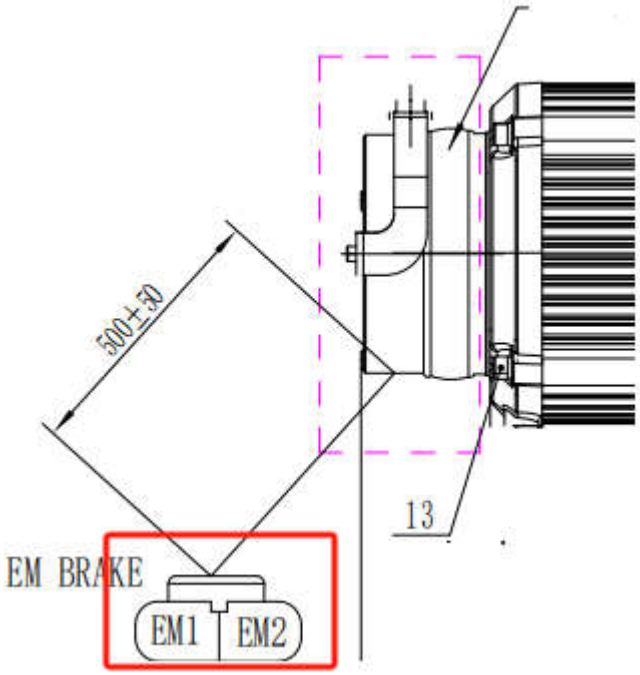
Check：Use “ToolsForCAN” to identify the status of switches and potentiometer -

Make sure there have no operations before sitting on the seat. The status should meet the table below before operating.

Switch & Controllers	State
Seat Switch	ON
Left Parking Switch	ON
Right Parking Switch	ON
PTO Switch	OFF
Left Potentionmeter 2. 40	2.3~2.5V
Right Potentionmeter 2. 40	2.3~2.5V
Left Traction Controller	No Fault
Right Traction Controller	No Fault
PMU	No Fault

TR22/TL22 - Electromagnetic valve error

Measure the resistance of the right/left electromagnetic brake.



1. The value is within the range(40~200Ω).

Swap the left and right traction motors' EM brake connectors.

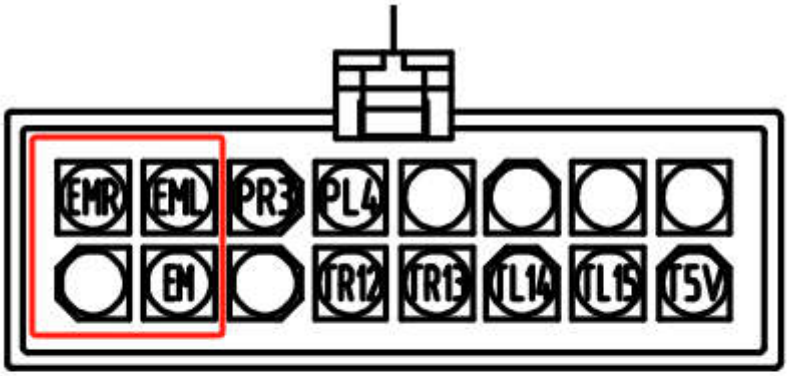
① If still have TR22/TL22 fault code

a. Check if the pins of the traction controller are bent or retracted, if can be fixed, try to fix them.

b. Check if the pins of the connector of the harness side are bent or retracted, if can be fixed, try to fix them, otherwise, replace the control harness.

供应商	名称	型号
TE	外壳	282104-1
	端子	282404-1
	单线密封	281934-4

供应商	名称	型号
TE	外壳	282104-1
	端子	282404-1
	单线密封	281934-4



DRIVE CONTROLLER			打胶
供应商	名称	型号	
TE	外壳	794824-1	
	端子	770904-1	
	接口密封	1-1586362-6	

c. Replace the traction controller.

② If TR22/TL22 disappeared and get a TL22/TR22 fault code, replace the right/left traction motor.

2. The value is not within the range(40~200Ω).

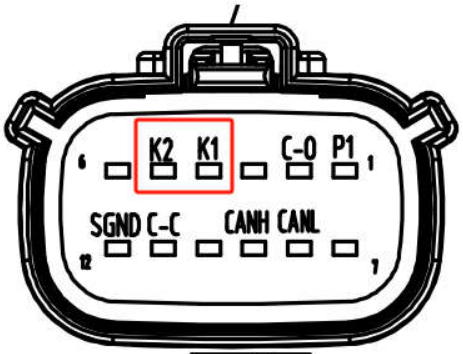
Replace the right/left traction motor.

TR23/TL23 - Battery compartment (PMU)communication error

1. Check the pins of connector of the battery compartment side:

a. If the pins of the traction controller are bent or retracted, if can be fixed, try to fix them.

b. Replace the battery compartment.



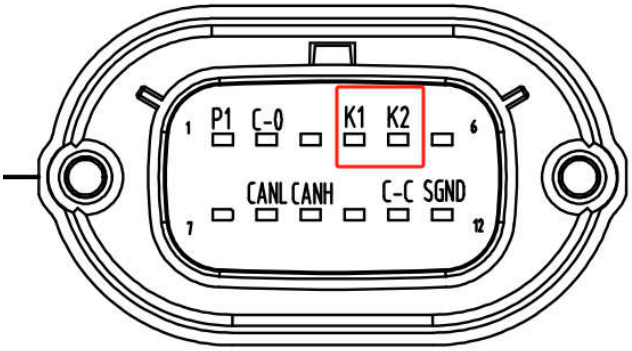
BATTERY 12 LOGIC		
供应商	名称	型号
MOLEX	外壳	334721206
	端子	330122002
	盲塞	343450001

2. Check the pins of the connector of the harness side:

a. If the pins of are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.

供应商	名称	型号
MOLEX	外壳	477259010
	端子	330000002



TR24/TL24 - Battery compartment (PMU) shutdown

1. If you turn off the vehicle, you will get this fault code, it's normal.

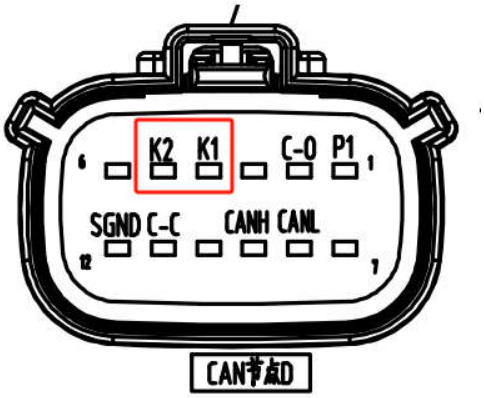
2. Otherwise:

① Check if the connector of the key switch is connected well.

② Check the pins of connector of the battery compartment side:

a. If the pins of the traction controller are bent or retracted, if can be fixed, try to fix them.

b. Replace the battery compartment.



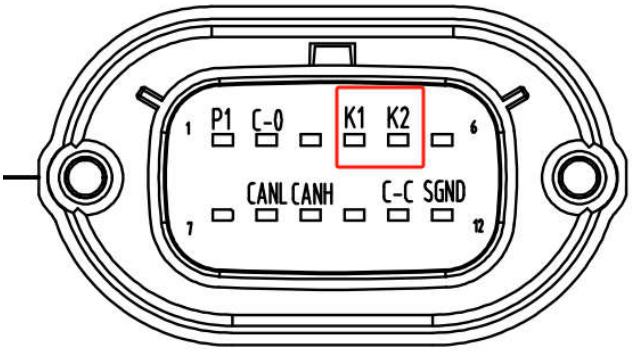
BATTERY 12 LOGIC		
供应商	名称	型号
MOLEX	外壳	334721206
	端子	330122002
	盲堵	343450001

③ Check the pins of the connector of the harness side:

a. If the pins of are bent or retracted, if can be fixed, try to fix them.

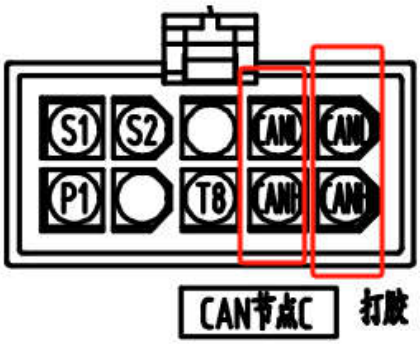
b. Replace the control harness.

供应商	名称	型号
MOLEX	外壳	477259010
	端子	330000002



TR25/TL25 - CAN timeout error - left drive

Use multimeter to measure the resistance from the traction controller's 10 pins connector as the picture below.



DRIVE CONTROLLER		
供应商	名称	型号
TE	外壳	794781-1
	端子	770904-1
	接口密封	1-794772-0

① If the resistance is around 60 Ohms(CANH to CANL):

a. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.

b. Replace the traction controller.

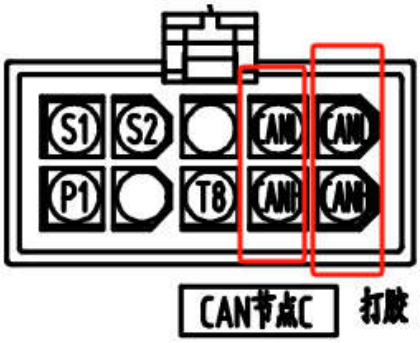
② Otherwise:

a. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.

TR26/TL26 - CAN timeout error - right drive

Use multimeter to measure the resistance from the traction controller's 10 pins connector as the picture below.



DRIVE CONTROLLER		
供应商	名称	型号
TE	外壳	794781-1
	端子	770904-1
	接口密封	1-794772-0

① If the resistance is around 60 Ohms(CANH to CANL):

a. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.

b. Replace the traction controller.

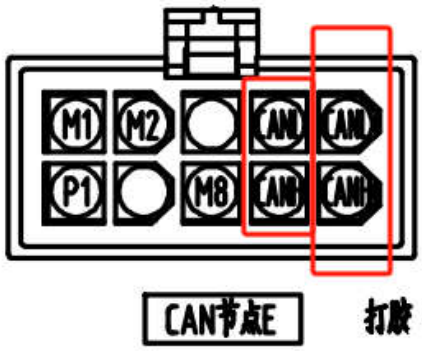
② Otherwise:

a. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.

TR27/TL27 - CAN timeout error - left blade

Use multimeter to measure the resistance from the blade controller's 10 pins connector as the picture below.



BLADE CONTROLLER		
供应商	名称	型号
TE	外壳	794781-1
	端子	770904-1
	接口密封	1-794772-0

① If the resistance is around 60 Ohms(CANH to CANL):

a. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.

b. Replace the blade controller.

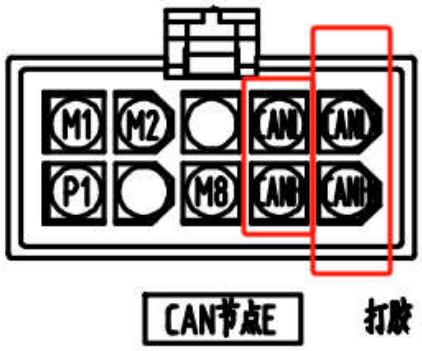
② Otherwise:

a. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.

TR29/TL29 - CAN timeout error - right blade

Use multimeter to measure the resistance from the blade controller's 10 pins connector as the picture below.



BLADE CONTROLLER		
供应商	名称	型号
TE	外壳	794781-1
	端子	770904-1
	接口密封	1-794772-0

① If the resistance is around 60 Ohms(CANH to CANL):

a. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.

b. Replace the blade controller.

② Otherwise:

a. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.

TR30/TL30 - Power off warning

TR31/TL31 - Seat switch verification error

1. Check if the connector of the seat switch is connected well.
2. Check the pins of connector of the traction controller's side:

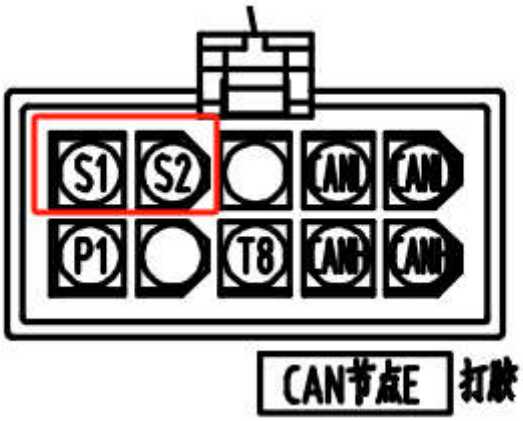
a. If the pins of the traction controller are bent or retracted, if can be fixed, try to fix them.

b. Replace the traction controller.

3. Check the pins of the connector of the harness side:

a. If the pins of are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.



DRIVE CONTROLLER		
供应商	名称	型号
TE	外壳	794781-1
	端子	770904-1
	接口密封	1-794772-0

4. Replace the seat switch.

TR32/TL32 - Software authentication error

Replace the traction controller.

MR2/ML2 - Drive motor stalled

1. MR2

① Turn off the power, try to rotate the right side blade.

a. If the wheel can't be rotated, replace the right blade motor.

b. Otherwise follow the steps below.

② Swap the M5 terminals of left and right blade motors' phase harness(Totally six screws).

a. If still have MR2 fault code, replace the blade controller.

b. If fault code change to ML2, you should replace the right blade motor.

2. ML2

① Turn off the power, try to rotate the left side blade.

a. If the wheel can't be rotated, replace the left blade motor.

b. Otherwise follow the steps below.

② Swap the M5 terminals of left and right blade motors' phase harness(Totally six screws).

a. If still have ML2 fault code, replace the blade controller.

b. If fault code change to MR2, you should replace the left blade motor.

MR3/ML3 - Blade motor low speed

1. MR3

Swap the M5 terminals of left and right blade motors' phase harness(Totally six screws).

a. If still have MR3 fault code, replace the blade controller.

b. If fault code change to ML3, you should replace the right blade motor.

2. ML3

Swap the M5 terminals of left and right blade motors' phase harness(Totally six screws).

a. If still have ML3 fault code, replace the blade controller.

b. If fault code change to MR3, you should replace the left blade motor.

MR4/ML4 - Blade motor over speed

1. MR4

Swap the M5 terminals of left and right blade motors' phase harness(Totally six screws).

a. If still have MR4 fault code, replace the blade controller.

b. If fault code change to ML4, you should replace the right blade motor.

2. ML4

Swap the M5 terminals of left and right blade motors' phase harness(Totally six screws).

a. If still have ML4 fault code, replace the blade controller.

b. If fault code change to MR4, you should replace the left blade motor.

MR6/ML6 - Controller phase loss

1. MR6

Swap the M5 terminals of left and right blade motors' phase harness(Totally six screws).

a. If still have MR6 fault code, replace the blade controller.

b. If fault code change to ML6, you should replace the right blade motor.

2. ML6

Swap the M5 terminals of left and right blade motors' phase harness(Totally six screws).

a. If still have ML6 fault code, replace the blade controller.

b. If fault code change to MR6, you should replace the left blade motor.

MR7/ML7 - MOSFET error

Replace the blade controller.

MR8/ML8 - Controller undervoltage

① Charge the batteries.

② Make sure the controller on the correct platform is used.

③ Flash the right firmware to the blade controller. 60V and 80V platform have different firmware.

④ Replace the blade controller.

MR9/ML9 - Controller overvoltage

① Make sure the controller on the correct platform is used.

② Flash the right firmware to the blade controller. 60V and 80V platform have different firmware.

③ Replace the blade controller.

MR13/ML13 - Controller overtemperature

Stop the vehicle for a period of time to allow it to cool down, if the fault still have after restarting, replace the blade controller.

MR14/ML14 - Software overcurrent

1. MR14

Swap the M5 terminals of left and right blade motors' phase harness(Totally six screws).

a. If still have MR14 fault code, replace the blade controller.

b. If fault code change to ML14, you should replace the right blade motor.

2. ML14

Swap the M5 terminals of left and right blade motors' phase harness(Totally six screws).

a. If still have ML14 fault code, replace the blade controller.

b. If fault code change to MR14, you should replace the left blade motor.

MR15/ML15 - Hardware overcurrent

1. MR15

Swap the M5 terminals of left and right blade motors' phase harness(Totally six screws).

a. If still have MR15 fault code, replace the blade controller.

b. If fault code change to ML15, you should replace the right blade motor.

2. ML15

Swap the M5 terminals of left and right blade motors' phase harness(Totally six screws).

a. If still have ML15 fault code, replace the blade controller.

b. If fault code change to MR15, you should replace the left blade motor.

MR19/ML19 - Operating sequence error

1. Make sure the blade switch is on the "OFF" position, then try to turn on the blade again.
2. Check if the connector of the blade switch is connected well.
3. Check the pins of connector of the blade controller's side:

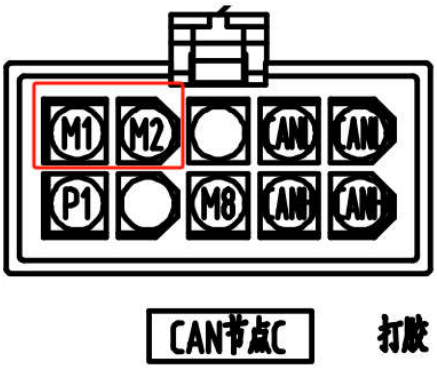
a. If the pins of the blade controller are bent or retracted, if can be fixed, try to fix them.

b. Replace the blade controller.

4. Check the pins of the connector of the harness side:

a. If the pins of are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.

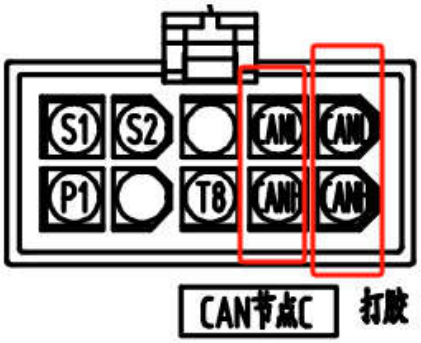


BLADE CONTROLLER		
供应商	名称	型号
TE	外壳	794781-1
	端子	770904-1
	接口密封	1-794772-0

5. Replace the blade switch,

MR25/ML25 - CAN timeout error - left drive

Use multimeter to measure the resistance from the traction controller's 10 pins connector as the picture below.



DRIVE CONTROLLER		
供应商	名称	型号
TE	外壳	794781-1
	端子	770904-1
	接口密封	1-794772-0

① If the resistance is around 60 Ohms(CANH to CANL):

a. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.

b. Replace the traction controller.

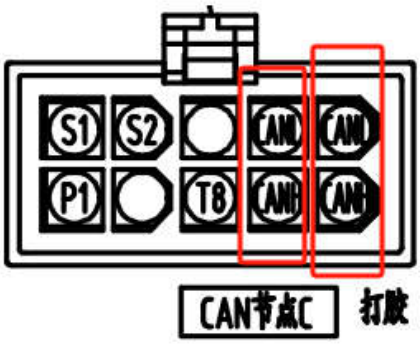
② Otherwise:

a. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.

MR26/ML26 - CAN timeout error - right drive

Use multimeter to measure the resistance from the traction controller's 10 pins connector as the picture below.



DRIVE CONTROLLER		
供应商	名称	型号
TE	外壳	794781-1
	端子	770904-1
	接口密封	1-794772-0

① If the resistance is around 60 Ohms(CANH to CANL):

a. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.

b. Replace the traction controller.

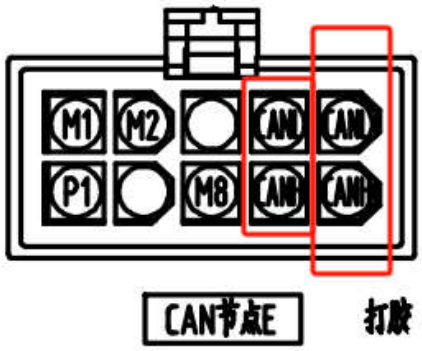
② Otherwise:

a. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.

MR27/ML27 - CAN timeout error - left blade

Use multimeter to measure the resistance from the blade controller's 10 pins connector as the picture below.



BLADE CONTROLLER		
供应商	名称	型号
TE	外壳	794781-1
	端子	770904-1
	接口密封	1-794772-0

① If the resistance is around 60 Ohms(CANH to CANL):

a. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.

b. Replace the blade controller.

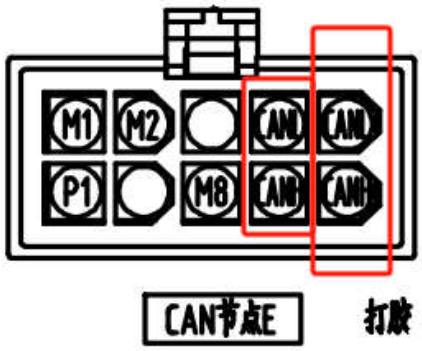
② Otherwise:

a. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.

MR29/ML29 - CAN timeout error - right blade

Use multimeter to measure the resistance from the blade controller's 10 pins connector as the picture below.



BLADE CONTROLLER		
供应商	名称	型号
TE	外壳	794781-1
	端子	770904-1
	接口密封	1-794772-0

① If the resistance is around 60 Ohms(CANH to CANL):

a. Check if the pins of connector of controller side are bent or retracted, if can be fixed, try to fix them.

b. Replace the blade controller.

② Otherwise:

a. Check if the pins of the connector are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.

MR31/ML31 - Blade switch verification error

1. Check if the connector of the blade switch is connected well.
2. Check the pins of connector of the blade controller's side:

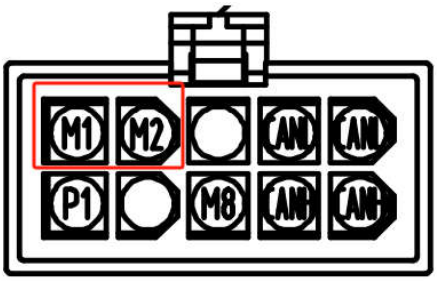
a. If the pins of the blade controller are bent or retracted, if can be fixed, try to fix them.

b. Replace the blade controller.

3. Check the pins of the connector of the harness side:

a. If the pins of are bent or retracted, if can be fixed, try to fix them.

b. Replace the control harness.



CAN节点C　　打胶

BLADE CONTROLLER		
供应商	名称	型号
TE	外壳	794781-1
	端子	770904-1
	接口密封	1-794772-0

4. Replace the blade switch,

MR32/ML32 - Software authentication error

Replace the blade controller.