CRT42 G2 Trouble Shooting And FAQ List

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

T11 - Overvoltage

1. Check if the battery pack is compatible with the vehicle;

① If the battery pack is not compatible, it needs to be replaced with a matching one;

2. If the above method does not resolve the issue, the battery compartment will be replaced directly;

T12 - 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 controller(Combination of blades and traction).

T13 - Controller self-test error

Replace the controller(Combination of blades and traction).

T14 - Drive motor stalled

Turn off the power, use a jack to lift the vehicle's rear wheels, disengage the foot parking brake, try to rotate the rear wheels.

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

b. Otherwise replace the controller(Combination of blades and traction).

T15 - Motor encoder error

Check if the Hall sensor connector of the controller is properly connected.

① If the connection is abnormal, adjust the motor's Hall sensor connector and then restart the system.

② If the connection is normal, replace the controller(Combination of blades and traction).

T16 - Controller driver circuit error

Replace the controller(Combination of blades and traction).

T17 - Drive part of 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 controller(Combination of blades and traction).

T18 - Drive motor overheat

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.

Check if the Hall sensor connector of the controller is properly connected.

① If the connection is abnormal, adjust the motor's Hall sensor connector and then restart the system.

② If the connection is normal, replace the controller(Combination of blades and traction).

T21 - Temperature sensor of the drive motor abnormal

Check if the Hall sensor connector of the controller is properly connected.

① If the connection is abnormal, adjust the motor's Hall sensor connector and then restart the system.

② If the connection is normal, replace the controller(Combination of blades and traction).

T22 - Drive part of controller hardware overcurrent

1. The load is too high. Please reduce the load and try operating the vehicle again.
2. If the fault still have even during normal operation, replace the controller(Combination of blades and traction).
3. Replace the traction motor.

T23 - Pre-charge error

Disconnect the controller‘s B+ and B- wires and use a multimeter to measure the diode value (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 controller.

Correct value should be approximately equal to 0.7±0.2V

T25 - Drive software overcurrent

1. The load is too high. Please reduce the load and try operating the vehicle again.
2. If the fault still have even during normal operation, replace the controller(Combination of blades and traction).
3. Replace the traction motor.

T26 - Drive MOS error

Replace the controller(Combination of blades and traction).

T27 - Motor phase loss

1. Check if the motor wires are properly connected;

① If there is a break in the wire or the wire has come loose, reconnect the wires properly;

② To test if the motor is functioning normally, use a multimeter to measure the motor phase lines;

2. If both the motor wires and the motor are normal, then replace the drive controller;

T28 - Drive controller overtemp

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

V14 - Reverse mowing operation sequence incorrect

1. When you need to mow in reverse, please press the reverse mowing button.
2. There is a short circuit inside the button, replace the button.
3. Replace the controller(Combination of blades and traction).

V15 - Vehicle self-test error

1. Before starting the vehicle, check that the brake is in the engaged position.
2. Before starting the vehicle, set the blade switch to the off position and check if the blade switch is connected correctly.
3. Before starting the vehicle, place the DNR (Drive-Neutral-Reverse) switch in the N (Neutral) position.
4. Check that the connector under the seat is connected properly.
5. Do not press the cruise control button when starting the vehicle.
6. Do not tread the accelerator pedal when starting the vehicle.

V16 - Operation sequence incorrect

Return the accelerator pedal and blade switch to the initial position. If the fault cannot be restored normally, check the accelerator;

① If the throttle sensor is abnormal, replace the throttle sensor directly;

② If there is no abnormality with the throttle sensor, check whether the blade switch is functioning normally. If it is not normal, replace the blade switch;

V17 - SPI communication error

Replace the controller(Combination of blades and traction).

V18 - Accelerator error

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

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

② Replace the controller(Combination of blades and traction).

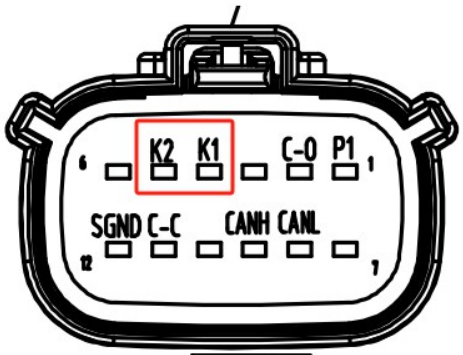
③ Replace the control harness.

V21 - PMU CAN 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.



CAN节点D

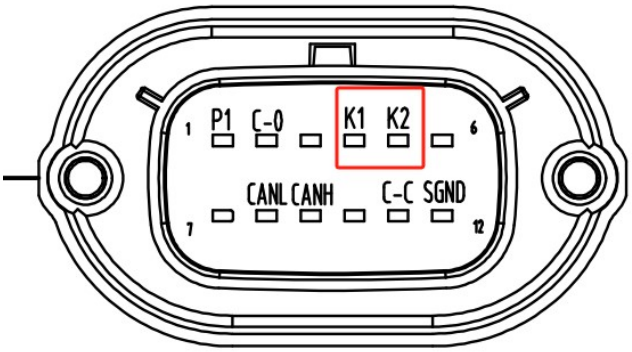
BATTERY 12 LOGIC		
供应商	名称	型号
MOLEX	外壳	334721206
	塘子	330122002
	盲塞	343450001

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



V23 - Seat switch abnormal

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

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

b. Replace the controller(Combination of blades and traction).

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.

4. Replace the seat switch.

V24 - Insufficient battery packs available, functionality may be limited

Please insert more battery packs.

ML3/MR3 - Blade software overcurrent

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 controller(Combination of blades and traction).

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 controller(Combination of blades and traction).

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

ML4/MR4 - Blade motor stalled

1. MR4

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 MR4 fault code, replace the controller(Combination of blades and traction).

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

2. ML4

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 ML4 fault code, replace the controller(Combination of blades and traction).

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

ML6/MR6 - Blade MOS error

Replace the controller(Combination of blades and traction).

ML7/MR7 - Blade motor phase loss

1. MR7

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

a. If still have MR7 fault code, replace the controller(Combination of blades and traction).

b. If fault code change to ML7, you should replace the right blade motor.

2. ML7

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

a. If still have ML7 fault code, replace the controller(Combination of blades and traction).

b. If fault code change to MR7, you should replace the left blade motor.

ML9/MR9 -Blade 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 controller(Combination of blades and traction).

ML14/MR14 - Blade hardware overcurrent error

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 controller(Combination of blades and traction).

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 controller(Combination of blades and traction).

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

ML15/MR15 - Blade failed to start

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

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

b. Replace the controller(Combination of blades and traction).

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.

4. Replace the blade switch.

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 controller's B+ and B- (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 controller's B+ and B- wires and use a multimeter to measure the diode value (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 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.