

ERROR CODES

DRAWBAR

| Error code | Term | Error description | Possible causes |
|------------|--------------------------------|--|----------------------|
| 01E080 | Faulty function of the drawbar | The unit can be moved with the tiller upright | Fault on the drawbar |
| 01E081 | Button for lifting the forks | The button cannot be activated | Fault on the drawbar |
| 01E082 | Button to lower the forks | The button cannot be activated | Fault on the drawbar |
| 01E083 | No power supply | "No power supply" message "Power supply timeout" message | Battery |
| 01E084 | Master controller | The driving switch is not in the 0-position at start-up | Fault on the drawbar |
| 01E085 | Motor control | Communication with the engine control unit is faulty / not present | Motor control |

CONTROL

| Error code | Term | Possible causes | Impact | Troubleshooting |
|-------------|--------------------------|--|--|---------------------------------|
| 20E000 | LOW_BDI | The battery charge falls below the programmed threshold | Engine speed reduces | Troubleshoot |
| 20E001 | PUMP_SRO_FAULT | Raise or lower switch is pressed before switching on | Switch off the buttons | Troubleshoot |
| 20E002 | SRO_FAULT | Impermissible sequence of KSI, brake and drive inputs | Sequencing errors | Troubleshoot |
| 20E003 | HPD_FAULT | 1. Incorrect sequence of gas and locking input 2. The emergency reverse has been completed, but the throttle was not put in neutral | Sequencing error / Throttle valve | Troubleshoot |
| 20E004 | WIRING_FAULT | 1. Incorrectly adjusted throttle valve 2. Broken throttle or defective throttle mechanism Throttle mechanism Throttle = driving switch (rocker) | Throttle valve | Troubleshoot Control circuit |
| 20E005 | THROTTLE_FAULT | 1. Throttle input wire is open or short-circuited 2. Throttle potentiometer defective | Switch off the throttle, switch off the main relay | Troubleshoot |
| 20E006 | PRECHARGE_FAULT | Controller defective | Switching off the throttle | Troubleshoot Control circuit |
| 20E007 | MAIN_DRIVER_FAULT | 1. Internal relay coil is broken 2. Internal relay driver is open or had a short circuit | Switch off the throttle; switch off the main relay | Control circuit |
| 20E008 | MAIN_RELAY_WELDED | 1. Internal relay welded (short circuit) 2. Controller defective | Switch off the throttle, switch off the main relay | Control circuit |
| 20E009 | MAIN_RELAY_DNC | 1. Relay does not close. 2. Contacts in the relay are oxidised | Switch off the throttle, switch off the main relay | Control circuit |
| 20E001 1 | BRAKE_OFF_FAULT | 1. Short circuit from the electromagnetic brake driver 2. Coil of the electromagnetic brake is open | Switch off the throttle; Close the motor armature briefly | Troubleshoot |
| 20E001 2 | MOTOR_OVER_TEMPERATURE | The engine runs hot | Reduce motor speed | Troubleshoot |
| 20E009 | BATTERY_DISCONNECT_FAULT | 1. Battery is not connected 2. Poor connection to the battery terminals | Switch off the throttle input; Switch off the brake switch; Short-circuit the motor armature | Troubleshoot Control circuit |
| 20E009 | BRAKE_ON_FAULT | 1. Electromagnetic brake driver short-circuited 2. Electromagnetic brake coil faulty | Switch off the throttle input; Close the motor armature briefly | Troubleshoot |
| 20E014 | CURRENT_SENSE_FAULT | Controller defective | Switch off the throttle input; Switch off the main relay and the EM brake driver; Switch off the control unit | Control circuit |
| 20E015 | HARDWARE_FAULT | 1. Motor voltage does not correspond to the throttle requirement 2. Failure of the control | Switch off the throttle input; Switch off main relay and EM brake driver; Switch off full bridge driver | Troubleshoot Control circuit |
| 20E016 | SOFTWARE_FAULT | 1. Software defective 2. Controller defective | Switch off the throttle input; Switch off the main relay and the EM brake driver; Switch off the full bridge driver | Control circuit |
| 20E017 | PARAMETER_CHANGE_FAULT | 1. A parameter value that requires power is change (e.g. throttle type, interlock type, driver type, EMR type, pump SRO type, AUX switch input type) 2. Parameters are reset to the default settings. | Switching off the throttle input; Switching off main relay and EM brake driver; Switch off full-bridge driver; Switch off driver 1 and driver 2 | Control circuit |

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| 20E018 | MOTOR_SHORT | The motor wires are short-circuited | Switch off throttle input; Switch off main relay and EM brake driver; Switching off the full bridge driver | Control circuit |
| 20E019 | MOTOR_OPEN | 1. Motor wiring open 2. Faulty wiring of the motor cables 3. Controller defective | Switch off throttle input; Switch off main relay and EM brake driver | Control circuit |
| 20E021 | MOTOR_TEMP_HOT_CUTBACK | 1. Excessive load on the vehicle 2. The controller operates at extremely high temperatures | Current limit setback starts at 80 °C | Pause use |
| 20E022 | CONTROLLER_OVERTEMP_CUTBACK | 1. Excessive load on the vehicle 2. The controller operates at high temperature | Current limit setback starts at 80 °C | Heat sink temperature < 80 °C |
| 20E023 | CONTROLLER_UNDERTEMP | 1. The controller operates at extremely low temperatures 2. The temperature sensor is defective | Current limit The setback starts at -10 °C and is reduced to 50 % at -25 °C | Temperature above -20 °C |
| 20E024 | CONTROLLER_SEVERE_OVERTEMP | 1. Excessive load on the vehicle 2. The controller operates at high temperature | Current limit switch-off | Heat sink temperature < 105 ° |
| 20E025 | OVERVOLTAGE_CUTBACK | 1. Battery voltage > overvoltage cut-off point 2. Vehicle operation with charger connected 3. Intermittent battery connection | Current limitation setback | Battery voltage < Overvoltage Setback point |
| 20E026 | SEVERE_OVERVOLTAGE | 1. Battery voltage > 34.0 V 2. Vehicle in operation with connected charger 3. Intermittent battery connection | Switch off the throttle input; Switch off EM brake driver; Short circuit motor armature | Battery voltage < 34.0 V |
| 20E027 | UNDERVOLTAGE_CUTBACK | 1. Battery voltage < 16.8 V 2. Poor connection to battery or controller | Current limit value reduction | Battery voltage > 16.8 V |
| 20E028 | SEVERE_UNDERVOLTAGE | Battery voltage < 13.8 V | Switch off throttle Input; EM switch off brake driver; Short-circuiting the motor armature | Battery voltage > 13.8 V |
| 20E029 | PARAMETER_FAULT | 1. The CRC of the parameters is not calculated correctly 2. Controller defective | Switch off throttle input; Switch off main relay and EM brake driver; Switching off the full-bridge driver | Control circuit |
| 20E030 | GAGE_PDO_TIMEOUT | Communication between the 1212C and the meter has stopped | - | Control circuit |
| 20E032 | PDO_TIMEOUT | Communication between the 1212C and the CAN connector has been stopped | Switch off the throttle; Switch off driver 1 and driver 2 off | Control circuit |
| 20E033 | LIFT_DRIVER_FAULT | Pump contactor line connection is open or short-circuited | Switch off the driver | Control circuit |
| 20E034 | LOWER_DRIVER_FAULT | Connection of the electric valve drive is open or short-circuited | Switch off the driver | Control circuit |
| 20E036 | BMS_PDO_TIMEOUT | Communication between the 1212C and the BMS has been stopped | - | Control circuit |
| 20E036 | EMR_SEQUENCING_FAULT | The belly button is pressed before the KSI is on | Switch off throttle Input; EM switch off brake driver; Short-circuiting the motor armature | Remedy the fault by releasing the belly button |
| 20E038 | TILLER_HANDSHAKE_FAILED | 1. The adjustment failed at start-up 2. Check of the ring buffer failed | Switching off the throttle valve | Control circuit |