# e-Stroke GEN 1 Trailer System Trouble Shooting Guide

## *e-Stroke Fault Indication*



| Item # | Fault Type | CCM Active Fault Indication | Foot Brake Application Condition | Parking Brake Condition | Solution Key # on Page 2 |
|---|---|---|---|---|---|
| 1 | Power Source | System status LED does not come on | All Conditions | All Conditions | 1,2,3,4,5 |
| 2 | Power Source | System status LED does not come on and wheel LED's are solid ORANGE. | All Conditions | All Conditions | 4,24 |
| 3 | Power Source | System status LED repeatedly flashes RED then GREEN, or is not a constant GREEN | No foot brake application | All Conditions | 3,4 |
| 4 | Power Source | Trailer CCM does not communicate with Tractor CCM or E-Link device | All Conditions | All Conditions | 29, 30 |
| 5 | Dragging Brake | CCM wheel LED flashes slow RED blink indicating dragging brake. | No foot brake application | Parking brakes released | 15,8,11,16,12,19,20 |
| 6 | Dragging Brake | All CCM wheel LEDs flash slow RED blink indicating dragging brake. | No foot brake application | Parking brakes released | 12 |
| 7 | Dragging Brake | All CCM wheel LEDs (for wheels with tandem parking brakes only) flash slow RED blink indicating dragging brake. | No foot brake application | Parking brakes released | 15 |
| 8 | Over-Stroke | CCM wheel LED flashes rapid RED blink indicating over-stroke condition. | Actuate foot brake to 95-100 psi | Parking brakes released | 13,19,21 |
| 9 | Over-Stroke | CCM wheel LED flashes rapid RED blink indicating over-stroke condition. | No foot brake application | Parking brakes released | 17 |
| 10 | Non-Functioning | CCM wheel LED flashes alternating RED/GREEN blink indicating non-functioning brake. | Foot brake application over 15 psi | Parking brakes released | 14,7 |
| 11 | Faulty Sensor | CCM wheel LED flashes ORANGE blink indicating a faulty sensor condition. | All Conditions | All Conditions | 9,10,17,25 |
| 12 | Faulty LED | One or more, but not all, CCM wheel LEDs display a slow GREEN blink. | All Conditions | All Conditions | 22 |
| 13 | Faulty LED | One or more, but not all, CCM wheel LEDs do not light. | All Conditions | All conditions | 23 |
| 14 * | Faulty Sensor Cable | Dragging brake fault, One or more LED's | No foot brake application | Parking brakes released | |
| | | No fault , ALL LED's GREEN | With foot brake application | Parking brakes released | 26 |
| 15 * | Faulty Sensor Cable | Dragging brake fault, One or more LED's | No foot brake application | Parking brakes released | |
| | | Over stroke fault, One or more LED's | With foot brake application | Parking brakes released | 28 |
| 16 * | Faulty Air System or parking brake | All LED's indicate a non functioning fault code (RED and GREEN) | No foot brake application | Parking brake released | |
| | | ALL LED's are GREEN. | With foot brake application | Parking brake released | 7,14 |

*= Both lines must be true.

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| Item # | Recommended Test to Perform or Action to Take | Page 2 of 2 |
|---|---|---|
| 1 | Make sure Tractor ignition switch is turned on. | |
| 2 | Test for open circuit at the power source connection in the CCM Power Supply Cable. | |
| 3 | Check CCM Power Cable for electrical shorts, cut wires, or damaged connectors. Replace damaged cable with approved MGM CCM Power Cable or Power Lead | |
| 4 | Test Trailer Blue wire system voltage. Voltage must be between 10-30 volts DC. | |
| 5 | Make certain all connectors are properly plugged in so the connector body tabs are locked | |
| 6 | Inspect brake actuator sensor to ensure it is completely inserted into the stone shield all the way to the sensor stop tabs. | |
| 7 | Faulty connection (CCM) to the vehicle brake light circuit. | |
| 8 | Brake actuator push-rod must be perpendicular to the bottom of the non-pressure housing within ±3°. If greater than 3°, check to be sure actuator mounting bolts are in correct bracket holes (or if centered in bracket holes). Install actuator into correct holes, or loosen and reposition until aligned. | |
| 9 | Inspect brake actuator sensor and connector for physical damage. Replace sensor as needed. | |
| 10 | Measure continuity of brake actuator sensor with digital meter: RED (positive) to BLACK (negative) wires. Reading should be 12k to 16k ohms. Replace sensor if damaged. | |
| 11 | Inspect brake actuator for improperly cut push-rod (too short). With yoke pin removed, push-rod should not retract. | |
| 12 | Make sure there is no pressure in the service brake system. Check for faulty system air valve or for air leaking past push-rod air seal in at least one of the vehicle's parking brakes. | |
| 13 | Measure stroke of the actuator to validate over-stroke condition. | |
| 14 | Inspect brake actuator for movement when service brake is applied. If no movement detected, check for ruptured diaphragm, system air leak, or faulty ABS valve. | |
| 15 | Make sure parking brake system air pressure is at least 95 psi. | |
| 16 | Check for rusted or worn foundation brake components. | |
| 17 | Unplug brake actuator sensor assembly at wheel and plug in new sensor. If LED stops flashing slow RED, install new sensor. | |
| 18 | Unplug brake actuator sensor harness and connect new sensor harness. If LED stops flashing slow RED, install new sensor harness. | |
| 19 | Check brakes for damage to sleeve on push-rod. Damaged or loose sleeve will inadvertently affect unit calibration. Replace with new brake if either is detected. | |
| 20 | With parking brakes released and no air pressure applied to service brakes, inspect plastic sleeve on push-rod. If push-rod angle is greater than ±3°, the plastic sleeve may hang up on the plastic stone shield inside the unit. This can prevent the pushrod from fully retracting to zero stroke. | |
| 21 | Automatic slack adjuster may need to be adjusted or replaced. Be sure service brake is not applied and parking brake is released and push-rod is fully retracted to zero stroke. | |
| 22 | Faulty CCM wheel LED - RED side only is burned out. | |
| 23 | Faulty CCM wheel LED - LED is completely burned out. | |
| 24 | Faulty CCM - Internal Power Supply. | |
| 25 | Faulty connection to wheel sensor, red wire open circuit connection. (broken wire near sensor connector) Repair or replace | |
| 26 | Faulty connection to wheel sensor, black wire open circuit connection. (broken wire near sensor connector) Repair or replace | |
| 27 | Faulty connection to wheel sensor, green wire open circuit connection. (broken wire near sensor connector) Repair or replace | |
| 28 | Fault due to partial short or corrosion path in wire connections to wheel sensor, green wire to black wire circuit path. | |
| 29 | CCM Power is not connected to Tractor or Trailer Blue power wire. Reference SAE J 560 8.4 table 4. | |
| 30 | Fault due to corrosion path in wire connections at Trailer to Tractor connectors.. | |