

SERVICE MANUAL BULLETIN

This Service Manual Bulletin is prepared by the Publications Department of New Flyer Industries Canada ULC. Refer to details below.

SMB-179

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APPLICABILITY					
VEHICLE LENGTH	<input type="checkbox"/> 30ft.	<input type="checkbox"/> 35ft.	<input type="checkbox"/> 40ft.	<input type="checkbox"/> 60ft.	<input checked="" type="checkbox"/> ALL
VEHICLE TYPE	<input checked="" type="checkbox"/> Xcelsior®	<input type="checkbox"/> MiDi®	<input type="checkbox"/> Invero®	<input type="checkbox"/> ALL	
	<input type="checkbox"/> Low Floor	<input type="checkbox"/> High Floor			
FUEL TYPE	<input type="checkbox"/> Diesel	<input type="checkbox"/> Diesel/Electric	<input type="checkbox"/> CNG	<input type="checkbox"/> LNG	<input checked="" type="checkbox"/> ALL
	<input type="checkbox"/> Fuel Cell	<input type="checkbox"/> Trolley/Electric	<input type="checkbox"/> Battery/Electric		
SUBJECT	E - Stroke Troubleshooting - Disc Brakes				
SECTION TITLE	9 - Electrical System				
DETAILS	<p>This bulletin provides revised OEM (MGM) information on the E-Stroke troubleshooting charts.</p> <p>The information supersedes any prior information on this subject already provided in your New Flyer Service Manual.</p> <p>Make this Service Bulletin available to service personnel to inform them of changed information.</p>				

1. E-Stroke Troubleshooting


E-STROKE TROUBLESHOOTING			
FAULT TYPE	FAULT SYMPTOM	POSSIBLE CAUSE	RECOMMENDED ACTIONS
Power Source	System Warning Light does not illuminate.	Electrical	1, 3, 4
Power Source	Warning Light stays on or unable to access CCM using diagnostic tool.	Electrical	1, 2, 3, 4
Dragging Brake	CCM indicates dragging brake: Left and Right of same Axle.	Air Control	5, 6, 8
Dragging Brake	CCM indicates dragging brake on (1) wheel end only.	Foundation Brake	6, 7, 10, 11, 12
Non-Functioning	CCM indicates non-functioning brakes on left and right.	Air Control	8
Non-Functioning	CCM indicates non-functioning brake on a single axle.	Foundation Brake	6, 7, 9, 10, 11, 12
CCM indicates Over Stroke Condition	CCM indicates out of adjustment condition. Excess actuator stroke with pressure between 12-50 psi.	Foundation Brake	6, 7
Non-Functioning and Over-Stroke Fault	A combination of multiple Non-Functioning, Over-Stroke, and Drag faults on one wheel end.	Foundation Brake	See Low Caliper Running Clearance
Low Caliper Running Clearance	Low caliper running clearance fault detected (Non-Function/Over Stroke faults may be recorded for Wheel End as well).	Foundation Brake	7, 10, 11
Sensor Fault	CCM indicates Active Sensor Fault or Erratic Fault Conditions on same wheel.	Electrical	10, 11

E-STROKE TROUBLESHOOTING			
FAULT TYPE	FAULT SYMPTOM	POSSIBLE CAUSE	RECOMMENDED ACTIONS
Pressure Transducer	Pressure Transducer Fault or Non-Functioning Fault Reported for Multiple Axles.	Electrical	11

1.1. E-Stroke Troubleshooting Actions

E-STROKE TROUBLESHOOTING ACTIONS	
RECOMMENDED ACTION KEY	RECOMMENDED ACTIONS
1. Verify System Input Power	Verify Master Run Switch is in DAY-RUN or NIGHT-RUN
	Verify Input Power is turned ON.
	Verify System is NOT connected to Battery Power.
	Verify e-STROKE CCM power source is properly functioning
	Check CCM Power Cable for Electrical Shorts, Cut Wires, or Damaged Connectors.
	Test Vehicle System Voltage. e-STROKE System Input Voltage must be between 10-30 Volts DC.
2. Verify J1939 Connection	Check CCM J1939 connection.
	Verify CCM is configured for J1939 data network speed (250kbs vs 500 kbs).
	Check for e-STROKE on network diagram in Vehicle Electrical Schematics
3. Verify Warning Light Operation	Check for faulty warning lamp by applying signal voltage to test. NOTE: <i>CCM will "Blink" a voltage signal from the Alarm Output during start up.</i>
	Verify Multiplexing system is working

4. Possible CCM Malfunction	CCM Alarm output constant voltage, Warning Light remains On after Start Up indicates CCM is not operating properly.
	Lack of warning light bulb check after System Power (Recommended Action 1) and Warning Light (Recommended Action 3) are verified indicates CCM is not operating.
5. Possible Vehicle Operator Error	Parking Brakes applied while vehicle is moving.
6. Inspect Foundation Brake and Caliper for mechanical or operational issue	Verify that caliper lever arm fully returns back to starting position and does not remain applied.
	Inspect Foundation Brake and Caliper for seized components (i.e. caliper guide pins).
	Inspect Caliper and Actuator Boots/Seals for damage or tears.
	Inspect Brake Pad Linings for irregularities or damage (i.e. foreign material stuck in pads, excessive pad wear or part of pad missing).
7. Inspect Caliper Running Clearance Adjustment	Verify Caliper Adjustment refer to Section 1 or Section 2 of this Manual for procedure
	Verify caliper adjuster operation. Refer to Section 1 or 2 of this manual for Adjuster Check Procedure.
	Running Clearance below (0.030") may reduce actuator stroke resulting in Non-Function Faults reported. 👉 NOTE: <i>Potential causes: 1) Caliper Adjuster Malfunctioning 2) Incorrect clearance set at pad service 3) New lining expansion during initial heat cycle.</i>
8. Possible Service Brake Air Control Issue	Check for Dirt, Moisture, or Ice in Air System (Air Line or Valve blockage).
	Confirm Proper Operation of Interlocks Function (Apply/Release).
	Confirm Proper QR Valve Operation (Apply/Release).
	Confirm Valve Control Wiring. Refer to Vehicle System Drawings
9. Brake Actuator Inspection	Check Brake Chamber for Service Diaphragm leak.
	Check Parking Brake Spring Chamber for Leak (Diaphragm or Piston)
	👉 NOTE: <i>Refer to the PM section of this Manual for Brake Chamber Inspection procedures.</i>

10. Inspect Sensor Harness and Connectors	Check cable and wires for loss of connection, damage, cuts, pinch's, corrosion, shorts.
	Check Exterior Wheel End.
	Check CCM connectors for Damaged/Bent/Loose Terminals, Corrosion. Ensure connector is fully installed into CCM.
	Check Harness Connections at Artic Joint (if applicable).
	Drag Fault could be from broken ground wire.
11. Verify Sensor Condition and Operation	Confirm correct Wheel End Location by unplugging Exterior Sensor Connector (>60 sec) and confirm Sensor Fault at correct wheel w/Diagnostic Tool (I.e. Front Left Wheel End should show Sensor Fault on Axle 1 Left).
	Inspect Sensor for damage or Signs of Corrosion.
	Verify Sensor Voltage function. Check sensor voltage at CCM connector with system power and wheels chocked. Test green signal wire to black ground wire. Brakes Released 0.1-1.99 VDC, Brakes Applied >2.00 VDC. Sensor Fault if <0.10 VDC after 60 Seconds. Sensor Power: Red power wire to black ground wire. Voltage should read >4.8 VDC.
	Pressure Transducer: Inspect e-STROKE Pressure Transducer and wiring. Use Diagnostic Tool to verify Pressure Transducer read < 0.3 psi with NO brake application.
12. Inspect e-STROKE Brake Actuator Piston Rod Reflective Target	Remove Brake Actuator and inspect Piston Rod Ball End Reflective Target Material for Grease, Dirt or Damage.
	<p>Clean Grease from Piston Rod Reflective Targets with clean/dry rag.</p> <div style="text-align: center;">  <p>DO NOT use solvents.</p> </div> <p>NOTE: <i>Grease on the Black or Red targets can cause a Drag Fault indication.</i></p>