

## EF Turbo Series 400-500k BTU Input

Error Code	Definition	Service Action	Possible Parts Needed
No Display	No power to the unit or switch is off	<ul style="list-style-type: none"> <li>Verify proper supply voltage, grounding, and polarity</li> <li>Check all electrical connections</li> <li>Check power switch</li> </ul>	<ol style="list-style-type: none"> <li>Power switch</li> <li>Control board</li> <li>Display</li> </ol>
A00	Extended Blocking (hold) fault - blocking fault present for more than 20 hours in a row	<ul style="list-style-type: none"> <li>Check the "E" fault history for the most recent blocking fault.</li> </ul>	
A01	Ignition Lockout after 3 attempts	<ul style="list-style-type: none"> <li>Verify ignition sequence</li> <li>Clean spark rod</li> <li>Clean flame sensor</li> </ul>	<ol style="list-style-type: none"> <li>Burner</li> <li>Spark rod</li> <li>Control board</li> </ol>
A05	Gas valve relay fault	<ul style="list-style-type: none"> <li>Check that the black and white wires to the quick connects are properly connected to the transformer.</li> <li>Check that the black, white and green wires from the transformer are properly routed to J13 at the control board.</li> </ul>	<ol style="list-style-type: none"> <li>Transformer</li> <li>Control board</li> <li>Gas valve</li> </ol>
A06	Safety relay fault	<ul style="list-style-type: none"> <li>Check all electrical connections</li> <li>Verify proper supply voltage, grounding, and polarity</li> </ul>	<ol style="list-style-type: none"> <li>Control board</li> </ol>
A08	Fan fault - fan speed more than 300 RPM from the target speed	<ul style="list-style-type: none"> <li>Verify proper supply voltage, grounding, and polarity</li> <li>Check for vent/intake restriction</li> <li>Clear condensate</li> <li>Verify 13-30 VDC between red and blue wires on blower 5 wire communication harness</li> <li>Check blower wire harness continuity and connections</li> <li>Check blower modulation wire harness continuity and connections</li> </ul>	<ol style="list-style-type: none"> <li>Blower</li> <li>Control board</li> <li>Burner</li> </ol>
A09-A14, A16, A19, A22, A23, A27-A30	Control board internal fault	<ul style="list-style-type: none"> <li>Verify proper supply voltage, grounding, and polarity</li> <li>Check all electrical connections</li> </ul>	<ol style="list-style-type: none"> <li>Control board</li> </ol>
A18	High water temp lockout (above 190F)	<ul style="list-style-type: none"> <li>Check if tank temperature exceeds setpoint</li> <li>Measure resistance of temp sensor</li> <li>Check wire harness and connections</li> <li>Verify no heat migration in plumbing system</li> </ul>	<ol style="list-style-type: none"> <li>Tank temperature sensor</li> <li>Control board</li> </ol>
A20	Flame is detected 10 seconds after gas valve is closed	<ul style="list-style-type: none"> <li>Check flame sensor/wire for short, damage, or moisture</li> </ul>	<ol style="list-style-type: none"> <li>Flame sensor</li> <li>Flame sensor wire</li> </ol>
A21	Flame is detected before call for heat	<ul style="list-style-type: none"> <li>Check flame sensor/wire for short, damage, or moisture</li> </ul>	<ol style="list-style-type: none"> <li>Power switch flame sensor</li> <li>Flame sensor wire</li> </ol>
A24	Flame fail lockout - signal lost ten times during one call for heat	<ul style="list-style-type: none"> <li>Inspect flame sensor &amp; wire, clean flame sensor</li> <li>Check supply gas pressure static/dynamic</li> <li>Inspect burner for debris</li> <li>Check for vent/intake restriction</li> <li>Clear condensate</li> </ul>	<ol style="list-style-type: none"> <li>Flame sensor</li> <li>Flame sensor wire</li> <li>Burner</li> </ol>
A36	Blocked intake/exhaust lockout - E36 occurred 3 times in 10 minute period	<ul style="list-style-type: none"> <li>Verify if normally closed intake or exhaust pressure switch has opened</li> <li>Check for vent/intake restriction</li> <li>Check for condensate blockage</li> <li>Verify vent length is within specification</li> </ul>	<ol style="list-style-type: none"> <li>Exhaust pressure switch</li> <li>Intake pressure switch</li> </ol>
A38	Low gas pressure lockout - E38 occurred 3 times in 10 minute period	<ul style="list-style-type: none"> <li>If gas supply pressure is above 3.5" W.C., verify the normally open gas pressure switch is closed.</li> <li>Check supply gas pressure static/dynamic</li> <li>Ensure proper gas line/regulator sizing</li> </ul>	<ol style="list-style-type: none"> <li>Supply gas pressure switch</li> </ol>

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E34 - E38 E43, E47	Control board internal fault	<ul style="list-style-type: none"> <li>• Verify proper supply voltage, grounding, and polarity</li> <li>• Check all electrical connections</li> <li>• Eliminate/replace any components that are wet or damaged</li> </ul>	1. Control board
E35	Flame sensed out of normal sequence	<ul style="list-style-type: none"> <li>• Check flame sensor/wire for short, damage, or moisture</li> </ul>	1. Flame sensor 2. Flame sensor wire
E36	Intake or exhaust NC pressure switch is open	<ul style="list-style-type: none"> <li>• Verify if normally closed intake or exhaust pressure switch has opened</li> <li>• Check for vent/intake restriction</li> <li>• Check for condensate blockage</li> <li>• Verify vent length is within specification</li> </ul>	1. Exhaust pressure switch 2. Intake pressure switch
E38	Low gas pressure	<ul style="list-style-type: none"> <li>• If gas supply pressure is above 3.5" W.C., verify the normally open gas pressure switch is closed.</li> <li>• Check supply gas pressure static/dynamic</li> <li>• Ensure proper gas line/regulator sizing</li> </ul>	1. Supply gas pressure switch
E39	Exhaust temperature limit	<ul style="list-style-type: none"> <li>• Check if exhaust temperature is above 158°F</li> <li>• Measure resistance of exhaust temp sensor</li> <li>• Check for vent/intake restriction</li> <li>• Check for condensate blockage</li> <li>• Verify vent length is within specification</li> </ul>	1. Exhaust temperature sensor
E44	Phase fault	<ul style="list-style-type: none"> <li>• Verify proper supply voltage, grounding, and polarity</li> <li>• Check all electrical connections</li> </ul>	1. Control board
E46	Earth ground fault	<ul style="list-style-type: none"> <li>• Verify proper supply voltage, grounding, and polarity</li> <li>• Check all electrical connections</li> </ul>	1. Control board
E51, E52	Water temperature sensor is open	<ul style="list-style-type: none"> <li>• Measure resistance of water temp sensor</li> <li>• Check wire harness for damage, ensure connections are secure and free of moisture</li> </ul>	1. Water temp sensor
E59, E60	Water temperature sensor is shorted	<ul style="list-style-type: none"> <li>• Measure resistance of water temp sensor</li> <li>• Check wire harness for damage, ensure connections are secure and free of moisture</li> </ul>	1. Water temp sensor
E65	Exhaust temperature sensor is shorted	<ul style="list-style-type: none"> <li>• Measure resistance of exhaust temp sensor</li> <li>• Check wire harness for damage, ensure connections are secure and free of moisture</li> </ul>	1. Exhaust temp sensor
E66	Display reset button ("i" button) error	<ul style="list-style-type: none"> <li>• Check the display, wires, and connections for damage, ensure they are clean and free of moisture</li> </ul>	1. Display
E72	Appliance SEL fault	<ul style="list-style-type: none"> <li>• Control board and display mismatch. Verify the labels on the control board and display match.</li> </ul>	1. Display 2. Control board
E76, E77, E79, E81	Blower Communication fault	<ul style="list-style-type: none"> <li>• Verify proper supply voltage, grounding, and polarity</li> <li>• Check for vent/intake restriction</li> <li>• Clear condensate</li> <li>• Verify 13-30 VDC between red and blue wires on blower 5 wire communication harness</li> <li>• Check blower wire harness continuity and connections</li> <li>• Check blower modulation wire harness continuity and connections</li> </ul>	1. Blower 2. Control board 3. Burner