

Group:	17 – Intake & Exhaust
Warranty Code:	113
Bulletin No.:	SB-12-002
Issue Date:	10-04-2012

S E R V I C E B U L L E T I N

Subject: Flame Temperature Sensor Replacement Guidelines

1. RELEVANT MODELS:

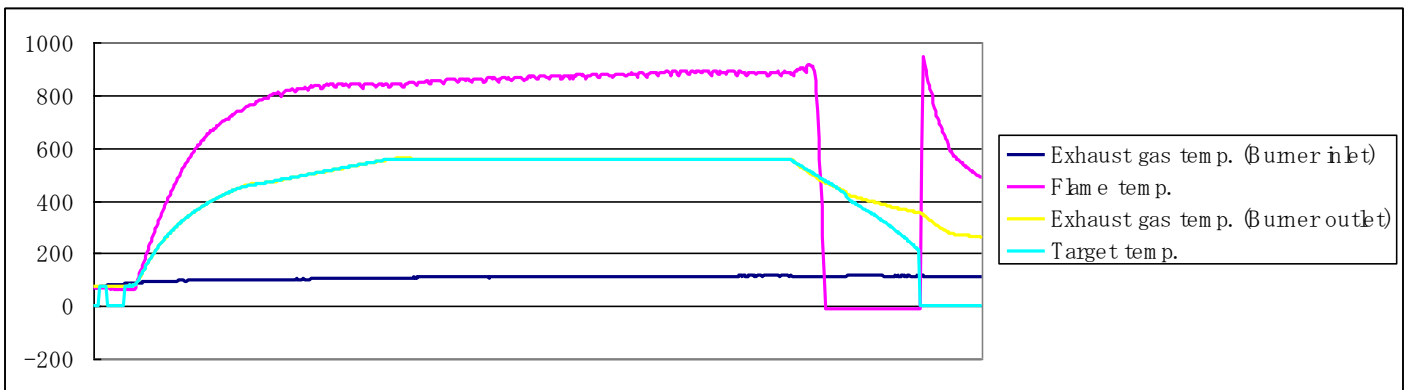
All 2011MY, 2012MY and 2013MY (238, 258, 268, 338) are affected.

2. CONDITION:

Many Flame Temperature Sensors are being replaced for burner failure (as shown below) but in many cases the sensor itself is not the issue. Please follow the guidelines in this bulletin to determine whether the sensor should be replaced.

For example, in the case of the flame temperature indicating 0° Celsius on the burner monitor screen, as shown in the sample data below, or indicated as above 4000° Celsius in the event log (except at the ignition or misfire event) it is not a malfunction of the sensor but is just a temporary misrecognition of the sensor. It does not cause the burner to fail.

[Sample of HinoDX data monitor]



The monitoring value of flame temp sensor falls to 0° Celsius temporarily, but this is not a malfunction of the sensor.

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Guideline for Flame Temperature Sensor Replacement

Case #1:

DTC P141B, P141C, P141D (flame temp. sensor fault code) are detected, and determined to need replacement of the flame temperature sensor after being diagnosed by each DTC trouble shooting procedure in the workshop manual.

Case #2:

DTC P2030 (misfire 3 times in a row) detected, and confirmed abnormal flame temperature **at misfire occurrence event** (see attached example).

1. Flame Temperature Sensor is causing misfire and MIL is ON

TR hours	Event	Flame temp
88 34 34	EECU_REQUEST_START_AUTO_REGEN	254
88 35 59	FAILED IGNITION (MISFIRE)	4036
88 45 58	EECU_REQUEST_START_AUTO_REGEN	4036
88 51 15	FAILED IGNITION (MISFIRE)	4036
89 01 15	EECU_REQUEST_START_AUTO_REGEN	4036
89 06 20	FAILED IGNITION (MISFIRE)	4036
89 06 30	CAV_STUCK_CLOSED_BP_MONI(P2441)	4036

Abnormal value at "MISFIRE" event.
(Definition >=4000° Celsius ONLY when misfire is detected)

2. Flame Temperature Sensor is functional and **NOT** causing misfire

TR hours	Event	Flame temp
356 26 56	EECU_REQUEST_START_AUTO_REGEN	293
356 32 15	IGNITION SUCCESS	278
356 40 15	EECU_REQUEST_STOP_REGEN	1004
356 41 32	LOST FLAME (during cooldown, ignore)	4036

IGNITION SUCCESS
This should be ignored because this value is not confirmed at ignition (or misfire) event. This value is detected at "LOST FLAME" during cool down. The sensor is still functional to detect flame.

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SERVICE BULLETIN

NOTE: If the sensor is in normal condition, the flame temperature value will be almost the same value as prior event, which is commanding burner operation.

TR hours	Event	Flame temp
883434	EECU_REQUEST_START_AUTO_REGEN	254
883559	FAILED_IGNITION (MISFIRE)	4036
884558	EECU_REQUEST_START_AUTO_REGEN	4036
885115	FAILED_IGNITION (MISFIRE)	4036
890115	EECU_REQUEST_START_AUTO_REGEN	4036
890620	FAILED_IGNITION (MISFIRE)	4036
890630	CAV_STUCK_CLOSED_BP_MONI(P2441)	4036

The difference of value is large
=>The sensor may be abnormal

TR hours	Event	Flame temp
3562656	EECU_REQUEST_START_AUTO_REGEN	293
3563215	IGNITION_SUCCESS	278
3564015	EECU_REQUEST_STOP_REGEN	1004
3564132	LOST FLAME (during cooldown, ignore)	4036

The difference of value is small.