SECTION : 413-13a Reverse Camera

VEHICLE APPLICATION : 2008.0 Falcon

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DESCRIPTION AND OPERATION

The system consists of a wide angle camera mounted under the appliqué above the rear license plate which interfaces with the Interior Command Centre (ICC) screen. When reversing, the system uses the ICC screen to display a real-time image of the area immediately to the rear of the vehicle.

When the reverse gear is selected the camera itself is powered immediately by the ICC. After a further delay of approximately 1.0 second, the ICC switches the rear camera image which overrides any image currently displayed. If sonar is fitted to the vehicle the Piano Key 6 is used to toggle between camera and sonar images. With every Ignition cycle the default image is camera, however the customer preferred image is retained until the ignition is switched off.

Along with the camera image the ICC overlays warning text atcthe bottom of the ICC screen of **"WARNING - CHECK YOUR SURROUNDINGS"**

Once the reverse gear is deselected the ICC display switches back to the previous input signal (vehicle information or navigation).

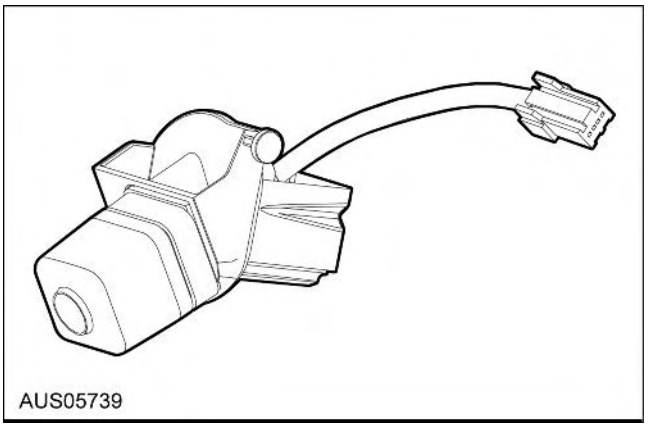
The ICC provides a 6V regulated power supply to the camera that is only enabled when the reverse gear is selected.

Camera Connectors Pin Out

Please refer to Wiring Diagrams, Chapter 100-700

Removal and Installation of Camera

The rear camera location is under the rear licence lamp bezel at a suitable angle so as to permit the rear bumper to be seen at the bottom edge of the TFT screen.



For removal of the camera for service please refer to Section 501 -08 under removal of appliqué.

NOTE: Take special care not to damage camera once appliqué is removed.

DIAGNOSIS AND TESTING

Symptom Chart

ICC does not display Camera image but displays warning text

Condition	Source	Action
The ICC screen does not display camera, just black screen, but warning message is displayed.	#1- Wire Harness	Not connected (Camera Interconnection) see pin point test. Pin point test check pin out of wire harness.
	#2 - Camera	Inspect camera for impact type damage, replace if damaged. Inspect camera pin out on both camera and harness side. Measure camera pin resistances

The camera function is abnormal

Condition	Source	Action
The screen image is blurred	Camera	Clean off dust / dirt from camera, wrap clean with soft cloth not to scratch lens.
The screen image is angled	Camera	Check fitment of camera bracket assembly

Display not functioning

Condition	Source	Action
Does not display Navigation screen with IGN ON, REV OFF, NAVI ON		Refer to ICC and navigation diagnostic section (Section 415)

DIAGNOSIS AND TESTING (Continued)

Pinpoint Tests

The camera will not function without a valid 6V power supply and appropriate signal connections intact. If the camera does not operate, begin by determining whether it is properly connected and whether there is good electrical conductivity between the camera and the ICC. All voltage measurements must be taken while ignition key is in ignition position and reverse selected or the ICC set to camera mode diagnostically.

PINPOINT TEST A : CAMERA FITTED TO VEHICLE, SCREEN BLACK WITH WARNING MESSAGE WHEN IN REVERSE.

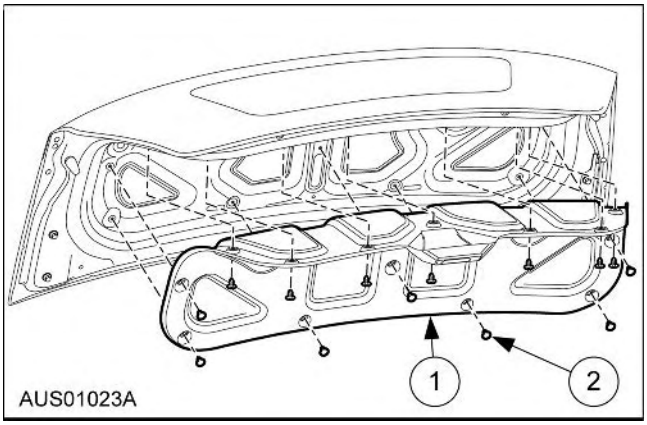
Test Step		Result / Action to Take
A1	**CHECK THE CAMERA CONNECTION TO THE DECK LID**	
	Remove the deck lid trim (If fitted). Disconnect camera from deck lid wiring. Measure the voltage across the camera connector C-930 between power and ground with the vehicle in reverse, circuit 1800 (Red) and circuit 1801 (Black) using a suitable voltmeter. Refer to 8R29 schematics page 501-09-00-3. **Is the voltage in the range 5.8 - 6.2 volts?**	**Yes** GO to A4. **No** Check the wiring.
A2	**TEST THE CONTINUITY OF CAMERA SIGNAL WIRING**	
	Remove ICC cap on the top of ICC. Remove the display module 1 connector C-932. Check continuity between circuit 1807A on the display module 1 connector C-932 and 1807B on the camera connector C-930. Refer to 8R29 schematics page 501-09-00-3. Check continuity between circuit 1808A on the display module 1 connector C-932 and 1808B on the camera connector C-930. Refer to 8R29 schematics page 501-09-00-3 **Is the continuity OK?**	**Yes** All wiring connections are complete. Inspect the camera. **No** Refer to 8R29 Schematics page 501-09-00-3 to find the location of open circuit.
A3	**TEST THE CONTINUITY OF CAMERA POWER WIRING.**	
	1. Remove ICC cap on the top of ICC. 2. Remove the display module 1 connector C-932. 3. Check the continuity between circuit TC1 on the display module 1 connector C-932 and 1800 on the camera connector C-930. Refer to 8R29 schematics page 501-09-00-3. **Is the continuity OK?**	**Yes** All wiring connections are complete. Inspect the module. **No** Refer to 8R29 schematics page 501-09-00-3 to find the location of the open circuit.

REMOVAL AND INSTALLATION

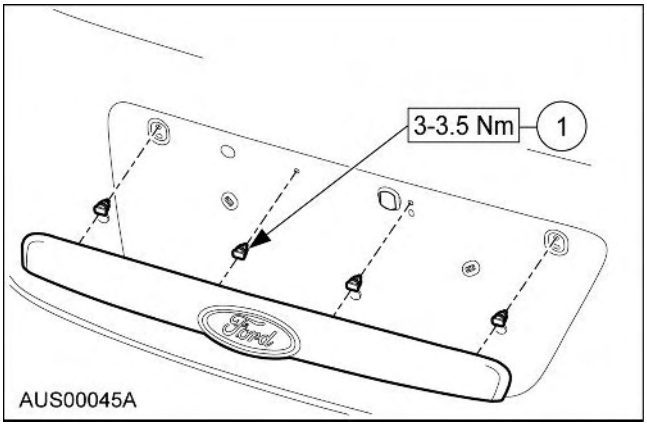
Reverse Camera

Removal

1. Remove deck lid trim (if fitted).
2. Disconnect reverse camera loom and luggage compartment lamp loom. For additional information refer to section 501-08 (Exterior Trim and Ornamentation).

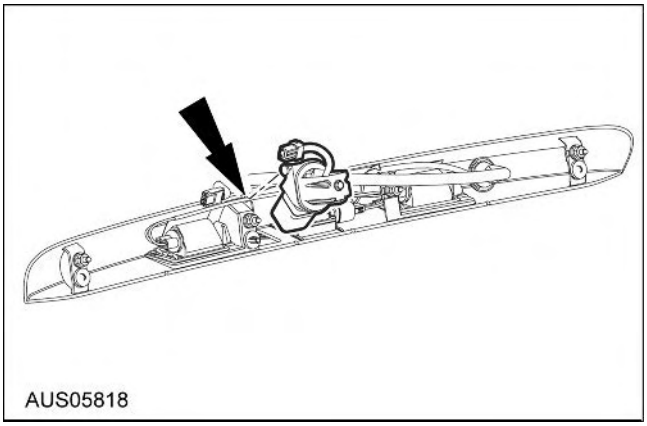


3. Remove appliqué from deck lid. For additional information refer to section 501-08 (Exterior Trim and Ornamentation).



4. Remove reverse camera from appliqué by disengaging the clip from the keyhole.

   NOTE: Take special care not to damage camera once appliqué is removed.



Installation

1. To install, reverse the procedure.