

INSTALLATION INSTRUCTIONS

Rear Vision System – Liftgate Emblem Camera Mirror Display 2009-2012 Ford Flex (Kit part number 1008-9527)

Kit Contents:

- Mirror
- Liftgate Emblem Mount with Camera
- Interior (shorter) Harness
- Chassis (longer) Harness
- 2 Foam pieces (if needed and optional)
- 1 bag containing: Ford Emblem
- 1 bag containing:
 - 2 Liftgate emblem retainers
 - 2 Mounting Screws
- 1 bag containing:
 - 25 Wire Ties (short)
 - Z-Tech (in a white bottle)
- 1 bag containing:
 - 1 Template (along with these instructions)
 - 2 Wire Ties (long and optional)

Tools Required:

- T15, T20, and T30 Torx Drivers
- 5.5mm, 7mm, 8mm, and 10mm Sockets
- Flat Head Screwdriver
- Phillips Screwdriver
- Plastic Trim Removal tool
- Pliers
- Razor Knife or scissors
- Wire Cutters
- Soldering Iron
- Small Brush

Additional Tools:

- Drill Bit
- 1¾ inch Center Hole Saw
- Flat Metal File
- Round File or Deburring Tool
- Mirror Removal Tool # OTC8200

NOTE: We strive to provide accurate and up-to-date installation instructions. For the latest full color instructions, as well as an installation video (use relevant portions of 1008-9520), please visit www.brandmotion.com

PRE-INSTALLATION VEHICLE CHECKLIST

Before beginning, determine how the vehicle is equipped and check appropriate boxes:

Determine whether the vehicle has the required two mounting holes and a camera harness opening behind the existing liftgate emblem. Refer to Steps 2-4 to remove inner liftgate panel, and use supplied 1008-9100-04 template to confirm whether the required holes are present in the panel.

- No, use supplied 1008-9100-04 template to position the holes to drill and/or cut the liftgate.
- Yes, proceed to Section 2.

- Vehicle has Sync microphone built into the rear view mirror (refer to Section 7). To retain Sync function, Brandmotion Kit #5000-PESMVR external microphone must be installed.
- Vehicle does NOT have an auto dimming inside mirror (refer to Section 8).

Determine the connector style used on the existing inside rearview mirror:
7-pin or 10-pin. For additional information, please see Section 6.

Determine the existing inside rearview mirror retention method:
T20 Torx screw or clip style. If clip style, the Mirror Removal Tool # OTC8200 (available from Brandmotion.com and Ford dealers) or similar specialty tool, is required. For additional information, see Section 4.

- Check kit contents are complete against the list above.

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INSTALLATION INSTRUCTIONS

Section 1: Camera Mount Preparation

1. Remove grommets from the supplied chassis harness and camera harness. Remove tape and, taking care not to cut the supplied wiring, cut grommets off with a razor knife, scissors, or wire cutters (Figure 1). Discard grommets.

Figure 1



2. Raise liftgate. Using a plastic trim removal tool, pry off the two red plastic reflectors in the lower edge of the liftgate to expose four retaining screws (Figure 2).

Figure 2



3. Unfasten the four screws with a Phillips screwdriver and pry up on the edges of the liftgate lower trim panel to release it from the liftgate. Remove liftgate lower trim panel and set aside (Figure 3).

Figure 3



4. Remove upper liftgate trim and set aside.

5. If equipped with power liftgate opener, remove the top end of the power gas strut by prying off the bolt cover with a plastic trim tool to access one 10mm bolt. Use a 10mm socket to remove and push free end of strut aside.

6. From the inside of the liftgate, verify whether two square mounting holes and a central camera pass through opening are present behind the factory emblem. If not, it will be necessary to drill and square two holes for camera mount retainers and a cut an opening for the camera and harness (Steps 10 & 11).

7. Close the liftgate. Taking care not to damage the body panel, insert plastic trim removal tool into the base of existing emblem to pry it off (Figure 4).

Figure 4



INSTALLATION INSTRUCTIONS

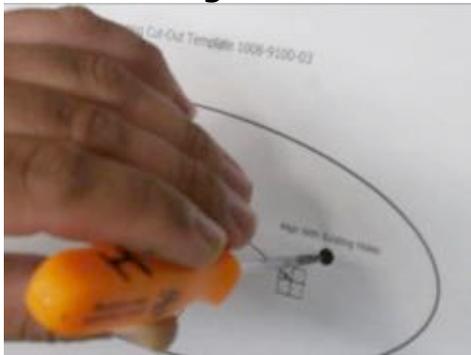
Section 1: Camera Mount Preparation continued

8. Remove any adhesive remaining on the liftgate.

9. If two camera mounting holes and a camera harness opening were present in the existing liftgate, proceed to Section 2. If not, align the supplied 1008-9100-04 template to the two existing emblem locating holes and camera harness opening.

10. Mark and center punch the location for the two retaining clip holes (Figure 5).

Figure 5



11. Drill the two retaining clip holes with a 3/8-inch drill bit. Use a small flat file to square the drilled holes for the retaining clips (recommended method). Alternate method: Drill the two holes with a 1/8-inch drill bit and use sheet metal screws (not supplied in kit) to secure the camera mount.

12. Apply supplied Z-tech to exposed bare metal with a small brush, and insert supplied retaining clips (Figure 6).

Figure 6



13. Mark, center punch, and drill a pilot hole for the camera mount harness opening (Figure 7). Using a 1 $\frac{3}{4}$ inch hole saw, cut the camera harness opening. Trial fit camera mount and file opening as necessary.

Figure 7



14. Clean the rough edges of the opening with a round file or deburring tool.

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Section 2: Camera Installation

15. Test fit the camera mount in the factory tailgate opening. If the camera mount does not fit flush, determine where the mount is contacting the edges of the opening and use a flat metal file to enlarge it. Work slowly, checking often for fit.

16. Clean the rough edges of the enlarged opening with a deburring tool or round file.

17. Apply supplied Z-tech to any exposed bare metal with a small brush (Figure 8).

Figure 8



18. Route the camera harness through liftgate opening.

19. Using the two supplied 7mm screws, attach camera mount to liftgate (Figure 9).

Figure 9



20. Route the light gray connector end of the camera harness along the inner liftgate structure toward the driver side of the liftgate opening.

INSTALLATION INSTRUCTIONS

Section 3: Chassis Harness Installation

21. Using a plastic trim removal tool, loosen two access covers in the D-pillar trim panel to expose two 7mm bolts (Figure 10)

Figure 10



22. Remove the two bolts with a 7mm socket, and loosen the driver side upper D-pillar trim panel by peeling back weather stripping slightly and releasing the retaining clips (Figure 11).

Figure 11



23. If necessary, use a razor knife to cut a small slit in the liftgate wiring grommet to assist in the routing of the chassis harness wiring through the grommet.

24. Run the small black connector end of the chassis harness through the opening you cut in the grommet and out through the other open end of the grommet. A pair of pliers may be required to pull the connector and harness through the opening (Figure 12).

Figure 12



25. Route the light gray chassis harness camera connector end toward the light gray connector on the camera harness and connect (Figure 13).

Figure 13



INSTALLATION INSTRUCTIONS

Section 3: Chassis Harness Installation continued

26. Pull down rear edge of headliner slightly to route chassis harness inside and towards the driver side D-pillar.

27. Remove driver side C-pillar trim panel with a trim removal tool (Figure 14).

Figure 14



28. Partially unclip driver side lower quarter panel trim.

29. Route chassis harness forward taking care not to bind the cable when replacing the trim.

30. Remove the driver side rear door sill plate with a trim tool.

31. Loosen driver side rear door weather strip.

32. Remove 5.5mm screw and loosen driver side lower C-pillar trim.

33. Loosen driver side lower B-pillar trim panel with hands.

34. Continue routing chassis harness forward, taking care not to pinch wiring between trim pieces.

35. Remove the driver side front door sill plate with a trim tool.

36. Route remainder of chassis harness towards dash.

INSTALLATION INSTRUCTIONS

Section 4: Mirror Removal

37. Start the vehicle and note location of compass display. Remove the connector from the inside rearview mirror (Figure 15).

Figure 15



38. If the compass display on the dash shows (- -) the compass module must be relocated. This operation is described in Section 6.

39. Verify mirror mount retention method. If the vehicle mirror is retained with a screw, use a T20 Torx driver to remove the screw that attaches the existing rear view mirror to the windshield (Figure 16).

Figure 16



40. If the vehicle mirror is retained with a clip, use Mirror Removal Tool # OTC8200 available from Brandmotion.com or Ford dealers to release the mirror (Figure 17).

Figure 17



CAUTION: Removing the mirror from can cause damage to the windshield. **It is highly recommended to contact either a Ford dealership or an automotive glass replacement company to perform this task.**

41. Slide the mirror upward to remove and set aside.

INSTALLATION INSTRUCTIONS

Section 5: Interior Harness Installation

42. Remove driver side dash panel end cap by pulling away weather-stripping. Pry end panel to release clips from the dash panel.

43. Remove both sun visor anchors (either side of roof console) by removing two bolts with a T15 socket.

44. Loosen driver side A-pillar molding with hands and then remove the driver side lower kick panel.

45. Loosen headliner at top of windshield with hands to remove the clips from the sheet metal. Then route supplied interior harness towards mirror mount (Figure 18).

Figure 18



46. Route the supplied interior harness down the driver side A-pillar (Figure 19).

Figure 19



INSTALLATION INSTRUCTIONS

Section 6A: Removing the Compass Circuit Board (if required)

Follow the steps in Section 6A only if your compass displayed '- -' when the mirror connector was removed in Section 4.

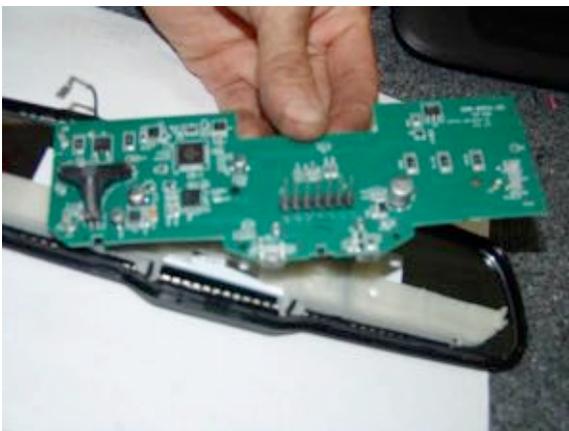
47. Pry mirror apart with a screwdriver (Figure 20).

Figure 20



48. Remove the circuit board from the mirror by disengaging both connectors. Mark the top of the circuit board with a permanent marker to insure proper plug connection later (Figure 21).

Figure 21



49. Wrap the mirror circuit board in the supplied foam pieces, and cut an opening for the connector terminals (Figure 22).

Figure 22



50. Make sure ignition is off. Remove the original vehicle mirror harness connector by cutting the harness wires 2 inches from the connector. Cut wires one at a time and strip the insulation from each as these will be spliced to the supplied interior harness.

INSTALLATION INSTRUCTIONS

Section 6B: Compass Wiring for Vehicles with 7-pin Mirror Connector

51. On the supplied interior harness, near the black 10 pin connector, locate the seven loose wires. Isolate and tape over the loose orange and white wires on the interior harness as they will not be used. Using Connector C911 pinout diagram opposite, splice the remaining five wires to the vehicle mirror harness wires where the mirror connector was removed in Section 4 as follows:

- Splice the supplied interior harness black ground wire to the loose vehicle mirror ground wire that was in pin 3.
- Splice the supplied interior harness green reverse wire to the loose vehicle mirror reverse wire that was in pin 2.
- Splice the supplied interior harness pink ignition wire to the loose vehicle mirror ignition wire that was in pin 1.
- Splice the supplied interior harness red compass (+) to the loose vehicle mirror compass (+) wire that was in pin 6.
- Splice the supplied interior harness yellow compass (-) to the loose vehicle mirror compass (-) wire that was in pin 7.

52. If you removed the compass circuit board, per section 6A, on the supplied interior harness, near the black 6 pin connector, locate the five loose wires. Using Connector C911 pinout diagram opposite, splice these five wires to the vehicle mirror harness connector removed in Section 4 as follows:

- Splice the supplied interior harness black ground wire to the vehicle mirror connector ground wire. (pin 3)
- Splice the supplied interior harness green reverse wire to the vehicle mirror connector reverse wire. (pin 2)
- Splice the supplied interior harness pink ignition wire to the vehicle mirror connector ignition wire. (pin 1)
- Splice the supplied interior harness red compass (+) wire to the vehicle mirror connector compass (+) wire. (pin 6)
- Splice the supplied interior harness yellow compass (-) wire to the vehicle mirror connector wire. (pin 7)
- If you did not remove the compass circuit board, isolate the five loose wires with electrical tape, as they will not be used.

NOTE: If reverse signal does not exist in pin 2 of 7-pin mirror C911 connector (see diagram below), follow directions in Section 8 to connect reverse.

| Connector: | Description | | Color | Supplied Interior Harness Color | |
|------------|-----------------------------------|---------------|-------|---------------------------------|------------|
| C911 | AUTO-DIMMING INTERIOR MIRROR UNIT | | BK | | |
| | Pin | Circuit | Gauge | Circuit Function | |
| | 1 | CBP41 (BU) | 20 | FUSE - 41 OR CIRCUIT BREAKER | Pink |
| | 2 | CLS10 (GN-BN) | 20 | RELAY - REVERSE | Green |
| | 3 | GD133 (BK) | 20 | GROUND - PILLAR A LEFT | Black |
| | 4 | * | * | Not Used | |
| | 5 | * | * | Not Used | |
| | 6 | VMC31 (GY-BU) | 22 | COMPASS MOD. # + | Red (+) |
| | 7 | VMC30 (BU-GY) | 22 | COMPASS MOD. # - | Yellow (-) |

NOTE: Circuit colors shown may vary depending on model and year. Verify pin locations and check circuit for proper function using a digital volt-ohm meter.

INSTALLATION INSTRUCTIONS

Section 6C: Compass Wiring for Vehicles with 10-pin Mirror Connector

53. On the supplied interior harness, near the black 10 pin connector, locate the seven loose wires. Isolate and tape over the loose orange and white wires as they will not be used. Using Connector C925 pinout diagram opposite, splice the remaining six wires to the vehicle mirror harness wires where the mirror connector was removed in Section 4 as follows:

- Splice the supplied interior harness black ground wire to the loose vehicle mirror ground wire that was in pin 10.
- Splice the supplied interior harness green reverse wire to the loose vehicle mirror reverse wire that was in pin 3.
- Splice the supplied interior harness pink ignition wire to the loose vehicle mirror ignition wire that was in pin 1.
- Splice the supplied interior harness red compass (+) to the loose vehicle mirror compass (+) wire that was in pin 6.
- If populated, splice the supplied interior harness yellow compass (-) to the loose vehicle mirror compass (-) wire that was in pin 2.

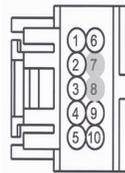
54. If you removed the compass circuit board, per section 6A, on the supplied interior harness, near the black 6 pin connector, locate the five short wires. Using Connector C925 pinout diagram opposite, splice the remaining four wires to the vehicle mirror harness connector removed in Section 4 as follows:

- Splice the supplied interior harness black ground wire to the vehicle mirror connector ground wire. (pin 10).
- Splice the supplied interior harness green reverse wire to the vehicle mirror connector reverse wire. (pin 3).
- Splice the supplied interior harness pink ignition wire to the vehicle mirror connector ignition wire. (pin 1)
- Splice the supplied interior harness yellow compass (-) wire to the vehicle mirror connector compass (-) wire. (pin 2).
- Splice the supplied interior harness red compass (+) wire to the vehicle mirror connector compass (+) wire. (pin 6).

- If you did not remove the compass circuit board, isolate the five loose wires with electrical tape, as they will not be used.

NOTE: If reverse signal does not exist in Pin 3 of 10-pin mirror C925 connector (see diagram below), then follow directions in Section 8 to connect reverse.

| Connector: | Description | Color |
|-------------|-----------------------------------|-------|
| C925 | AUTO-DIMMING INTERIOR MIRROR UNIT | BK |



| Pin | Circuit | Gauge | Circuit Function | Supplied Interior Harness Color |
|-----|---------------|-------|----------------------------------|---------------------------------|
| 1 | CBP41 (BU) | 20 | FUSE - 41 OR CIRCUIT BREAKER | Pink (12V + Ignition) |
| 2 | VMC30 (BU-GY) | 22 | COMPASS MOD. # - | Yellow (-) |
| 3 | CLS10 (GN-BN) | 20 | RELAY - REVERSE LAMP! | Green |
| 4 | VMM13 (YE-GN) | 22 | MICROPHONE - PHONE/VOICE CONTROL | |
| 5 | RMM13 (BU) | 22 | MICROPHONE - PHONE/VOICE CONTROL | |
| 6 | VMC31 (GY-BU) | 22 | COMPASS MOD. # + | Red (+) |
| 7 | * | * | Not Used | |
| 8 | * | * | Not Used | |
| 9 | DMN13 (NONE) | 20 | CTRL MOD. - AUDIO # VOICE SHIELD | |
| 10 | GD133 (BK) | 20 | GROUND - PILLAR A LEFT | Black |

NOTE: Circuit colors shown may vary depending on model and year. Verify pin locations and check circuit for proper function using a digital volt-ohm meter.

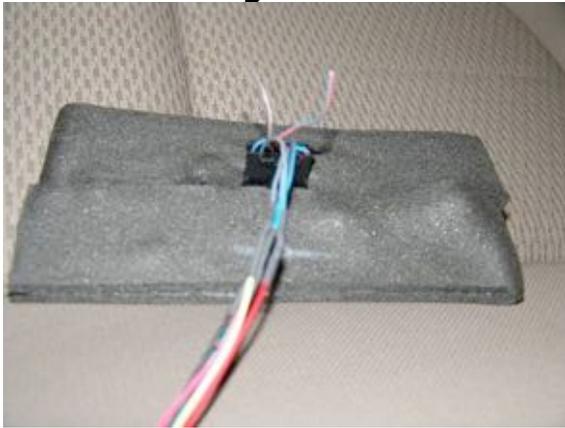
INSTALLATION INSTRUCTIONS

Section 6D: Relocating the Compass Circuit Board (if required)

Follow the steps in section 6D only if your compass displayed '- -' when the mirror connector was removed in Section 4.

55. Solder all connections and cover with heat shrink tubing or electrical tape. Plug connector into mirror circuit board. Maintain the original connector orientation: retaining tab to top side of board (Figure 23).

Figure 23



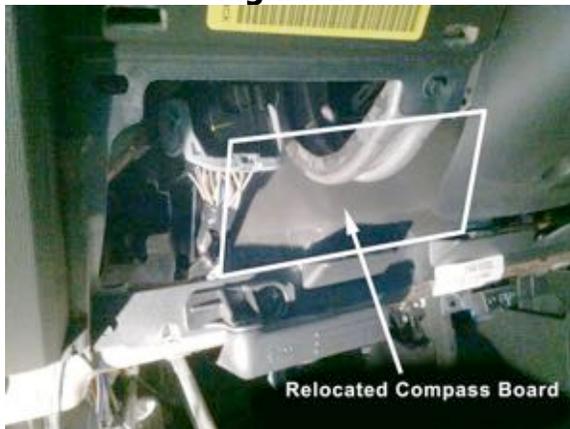
58. Make certain the mirror circuit board is orientated in the same direction it was installed in the mirror: connector facing forward and towards the bottom. This verification is required for the compass to read correctly.

59. Secure the circuit board to the existing cross dash harness with the two supplied long wire ties.

56. Remove driver side knee bolster trim by removing three screws with a 7mm socket. Pull panel by hand to release mounting clips.

57. Place the mirror circuit board connector under the dash as shown (Figure 24).

Figure 24



INSTALLATION INSTRUCTIONS

Section 7: Replacing the Sync Microphone (if required)

Follow the steps on this page only for inside rear view mirrors with built-in Sync microphone. To retain mic function, Brandmotion Kit #5000-PESMVR must be installed.

60. Splice the supplied microphone harness to the vehicle mirror harness by following the next ten steps and referring to Diagram E on the next page. **Note:** Isolate the black, green and pink wires at the black 6 pin connector end of the supplied interior harness with electrical tape as they will not be used.

- Splice the black ground wire from the supplied interior harness black 10 pin connector end to the wire in pin 10 of the vehicle mirror harness connector.
- Splice the green reverse wire from the supplied interior harness black 10 pin connector end to the wire in pin 3 of the vehicle mirror harness connector.
- Splice the pink ignition wire from the supplied interior harness black 10 pin connector end to the wire in pin 1 of the vehicle mirror harness connector.
- Tape up the orange wire.
- Tape up the white wire.
- Splice the red positive (+) compass wire from the supplied interior harness black 10 pin connector end to the wire in pin 6 of the vehicle mirror harness connector.
- Splice the yellow negative (-) compass wire from the supplied interior harness black 10 pin connector end to the wire in pin 2 of the vehicle mirror harness connector.
- Splice the yellow open wire from the microphone harness (supplied separately) to the wire in pin 4 of the vehicle mirror harness connector.
- Splice the black ground wire from the microphone harness (supplied separately) to the wires in pins 5 and 10 of the vehicle mirror harness connector.
- Splice the blue 12V positive (+) wire from the microphone harness (supplied separately) to the wire in pin 1 of the vehicle mirror harness.

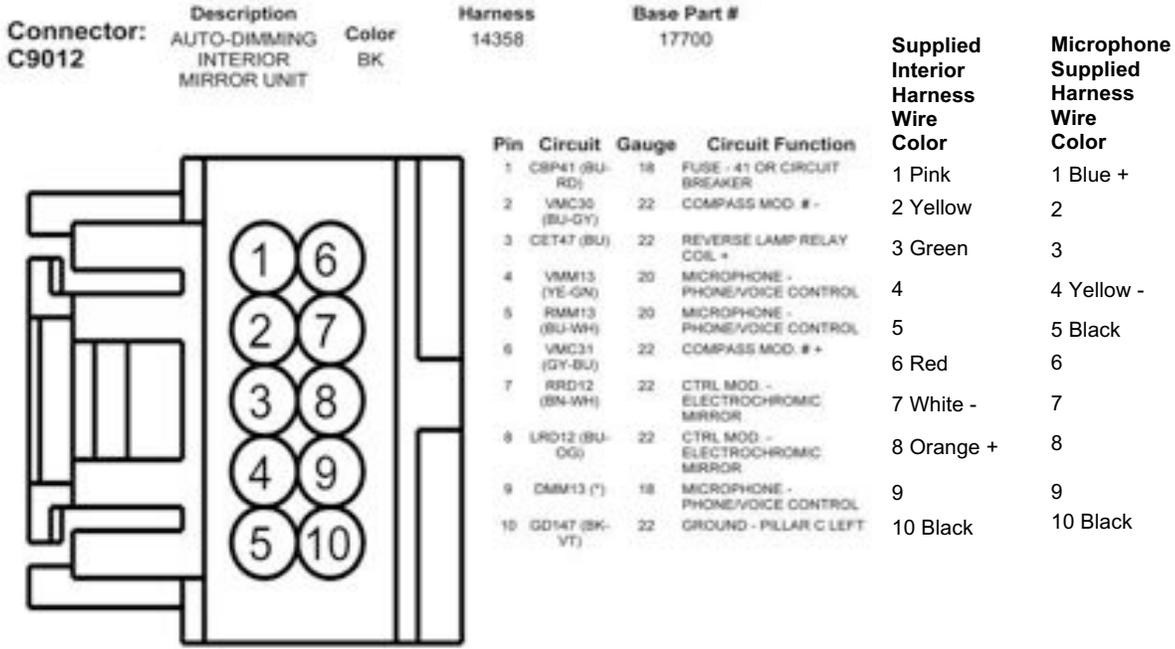
61. Cover all connections with electrical tape or heat shrink.

62. Place the microphone in a convenient place on A-pillar or in headliner.

INSTALLATION INSTRUCTIONS

Section 7: Replacing the Sync Microphone continued (if required)

Auto Dimming With Built In Sync Microphone Mirror Pinout DIAGRAM E



INSTALLATION INSTRUCTIONS

Section 8: Ignition, Reverse and Ground Locations – Vehicles with Inside Rear View Mirrors without Auto Dimming (if required) Follow these steps only if vehicle does not have an auto dimming inside rear view mirror.

61. Remove the driver side door sill plate with a trim tool, just disengaging the two clips from the sheet metal and remove driver side kick panel.

62. Isolate the seven wires near the black 10-pin mirror connector on the supplied interior harness with electrical tape along with the red and yellow wires near the black 6-pin connector.

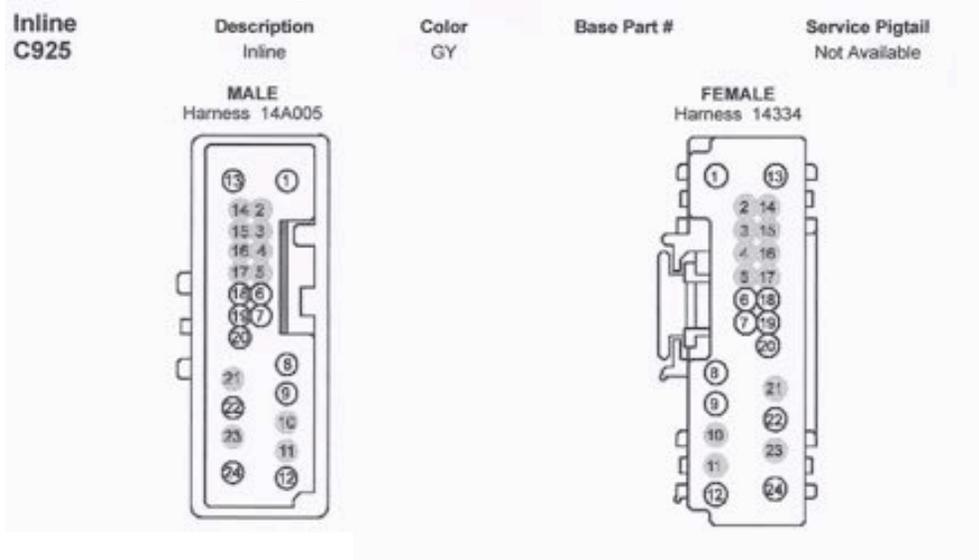
63. Route the supplied interior harness green, pink, and black wires along the vehicle dash harness. Secure using wire ties wherever possible at 2 inch intervals.

64. Splice the green reverse wire from the supplied interior harness black 6-pin connector end to the wire listed below. Cover the connection with tape or heat shrink tubing.

65. Attach the black ground wire eyelet from the supplied interior harness black 6-pin connector end to sheet metal in the driver side kick panel with a screw using an 8mm socket.

66. Splice the pink ignition wire from the supplied interior harness black 6-pin connector end to the wire color listed below. Solder and cover the connection with tape or heat shrink tubing.

Reverse Lamp Relay Location – Connector C925 – 2009-2012 Ford Flex



| Pin | Circuit | Gauge | Qualifier | Pin Circuit Function | Supplied Interior Harness Color |
|-----|---------------|-------|-----------|--|---------------------------------|
| 1 | SBP19 (BU-RD) | 14 | | | |
| 2 | * | * | | | |
| 3 | * | * | | | |
| 4 | * | * | | | |
| 5 | * | * | | | |
| 6 | VMC31 (GY-BU) | 22 | | | |
| 7 | VMM13 (YE-GN) | 22 | | | |
| 8 | CLS10 (GN-BN) | 20 | | 8 Relay – Reverse Lamps | Green |
| 9 | VLN33 (GY-VT) | 20 | | | |
| 10 | * | * | | | |
| 11 | * | * | | | |
| 12 | GD133 (BK) | 20 | | 12 Ground – A Pillar Left | Black |
| 13 | CBP41 (BU) | 20 | | 13 Fuse – 41 or Circuit Breaker | Pink (12V + Ignition) |
| 14 | * | * | | | |
| 15 | * | * | | | |
| 16 | * | * | | | |
| 17 | * | * | | | |
| 18 | VMC30 (BU-GY) | 22 | | | |
| 19 | RMM13 (BU) | 22 | | | |
| 20 | DMM13 (NONE) | 20 | | | |
| 21 | * | * | | | |
| 22 | CLN09 (YE-GN) | 18 | 14A005 | | |
| 22 | CLN09 (YE-GN) | 20 | 14334 | | |
| 23 | * | * | | | |
| 24 | GD133 (BK) | 14 | | 24 Ground – Pillar A Left | Black |

INSTALLATION INSTRUCTIONS

Section 9: Supplied Mirror Installation

67. Plug the 16-pin connector from the supplied interior harness into the supplied mirror (Figure 25).

Figure 25



68. Install the supplied mirror on the mounting button and slide it downwards. Secure by tightening the T20 Torx screw to 1.8 Nm (16 lb-in.), while not exceeding 2.2 Nm (19.5 lb-in.).

69. Start vehicle with foot on brake and shift into reverse to check camera operation. If all the connections are correct, you will see an image displayed on the left side of the supplied mirror.

70. Use supplied wire ties approximately every two inches to secure camera harness to existing vehicle wiring inside the liftgate.

71. Secure any other loose harness wiring using supplied wire ties.

72. Reinstall all previously removed interior and exterior parts.

73. Press the supplied emblem into the liftgate camera mount.

INSTALLATION INSTRUCTIONS

Section 10: Reference – Supplied Harness Pinouts

6-pin connector pinouts

| PIN # | FUNCTION | CAMERA HARNESS COLOR | CHASSIS HARNESS COLOR | INTERIOR HARNESS COLOR |
|--------------|-----------------|-----------------------------|------------------------------|-------------------------------|
| 1 | Video (+) | White | White | Gray/Dark Blue |
| 2 | Shield | Blue | Blue | White |
| 3 | Reverse | Green | Green | Green |
| 4 | Video (-) | Brown | Brown | Gray/Orange |
| 5 | Ground | Black | Black | Black |
| 6 | Ignition | Red | Red | Pink |

| Loose wires provided in the Supplied Wire Harness | |
|--|-------------------|
| Function | Wire color |
| Ground (-) | Black |
| Reverse signal 12V | Green |
| Ignition 12V | Pink |
| Compass (+) | Red |
| Compass (-) | Yellow |
| Auto dimming (+) | Orange |
| Auto dimming (-) | White |
