ELECTRICAL—TH!NK NEIGHBOR HIGH VOLTAGE HARNESS WIRE SPLICE KIT—SERVICE TIPS

Article No. 04-3-2

THINK: 2002 TH!NK NEIGHBOR

ISSUE

Some TH!NK Neighbor vehicles may require wire harness repairs that until now were not allowed. With the introduction of the Rotunda Wire Splice Kit (164-R5903), harness repairs that previously required an entire harness replacement, now can be completed by using this approved procedure.

ACTION

Refer to the Service Tips below for wire repair techniques that can be used on the TH!NK Neighbor.

SERVICE TIPS

WARNING

SOLDERING IS NOT ALLOWED ON THE HIGH VOLTAGE WIRE HARNESS.

WARNING

CONTINUE TO USE ALL APPROPRIATE HIGH VOLTAGE SAFETY PROCEDURES WHEN WORKING ON AN ELECTRIC VEHICLE.

WARNING

THE BATTERY PACK CONTAINS HIGH-VOLTAGE COMPONENTS AND WIRING. HIGH- VOLTAGE INSULATED SAFETY GLOVES AND FACE SHIELD MUST BE WORN WHEN PERFORMING THE FOLLOWING POWER SHUT DOWN PROCEDURE. FAILURE TO FOLLOW THIS WARNING MAY RESULT IN SEVERE PERSONAL INJURY OR DEATH.

WARNING

THE BATTERY PACK MUST BE DISABLED AND THE POWER SHUT DOWN PROCEDURE FOLLOWED BEFORE ANY WIRE REPAIRS CAN BE PERFORMED.

DISABLE BATTERY PACK

1. Remove key from ignition.
2. Remove both seat cushions.
3. Turn service disconnect switch (SDS) to the off position.
4. Remove seat belt access panel.
5. Remove seat stanchion covers.
6. Remove seat belt buckle bolts.
7. Remove both front seats.
8. Split the battery pack by removing the battery cable between battery 2 & 3, and 4 & 5 (Figure 8).
9. Wrap the ends of the battery cables with electrical tape.

NOTE

WIRE SPLICE TOOL KIT PART NUMBER 164-R5903 IS THE KIT REFERENCED IN THIS MESSAGE.

CRIMP PROCEDURE FOR 10 TO 22 AGW DIAMETER WIRE

1. Strip 6.35 mm (1/4″) of insulation from pigtail wire end unless butt connector is already supplied on the pigtail. Wire stripping must be done so that the splices are staggered at least 25.40 mm (1″) apart (Figure 1). Take care not to nick or cut wire strands. Pull wire straight from stripper. If wire is pulled at an angle, wire strands may be cut off. If more than one (1) strand is cut off during stripping, cut off the end and re-strip.

NOTE

THE STRIP LENGTH WILL VARY DEPENDING ON THE BUTT SPLICE AND WIRE IN HARNESS. LONGER STRIP LENGTHS ARE REQUIRED WHEN THE WIRE NEEDS TO BE FOLDED TO MATE WITH THE BUTT SPLICE. REFER TO (FIGURE 7) CHART FOR STRIP LENGTHS AND FOLDING TECHNIQUES.

2. Slide heat shrink tubing onto one (1) of the wire ends to be crimped (must be at least 25.40 mm (1″) away from stripped end (Figure 2)).
3. Identify the appropriate crimping chamber of the Rotunda 164-R5901 Pro-Crimper by matching the wire size on the dies with the wire size stamped on the butt splice (Figure 3). Hold the crimping tool so the identified wire sizes are facing you. Squeeze tool handles together until the ratchet releases, then allow the jaws of the tool to open fully.
4. Center one (1) end of the butt splice on the appropriate crimping chamber. If visible, be sure to place the brazed seam of the butt splice toward the indenter (Figure 4).
5. Hold the butt splice in place and squeeze the tool handles together until ratchet engages sufficiently to hold the butt splice in position (typically one (1) or two (2) clicks). DO NOT deform the butt splice.
6. Insert stripped wire into the butt splice, making sure the insulation on wire does not enter the butt splice (Figure 4).
7. Holding the wire in place, squeeze tool handles together until ratchet releases. Allow tool handles to open, then remove crimped butt splice.
8. To crimp the other half of the splice, reposition the un-crimped wire barrel in the same crimping chamber, and repeat Steps 3-8. If splice cannot be turned for crimping the other half, turn the tool around.
9. Check for acceptable crimp.
    a. Crimp should be centered on each end of the butt slice. It is acceptable for crimp to be slightly off center, but not off the end of the butt splice (Figure 5 A).
    b. Wire insulation should not enter butt splice. Wire is flush with or extends slightly beyond end of butt splice (Figure 5 B).
    c. Wire should be visible through inspection hole of splices (Figure 5 C).
10. Evenly position heat shrink tubing over wire repair (Figure 6).

NOTE
OVERLAP TUBING ON BOTH WIRES.

11. Use a shielded heat gun to heat the entire length of the heat shrink tubing until the hot melt appears from both ends of the tubing. Durability of a heat shrink tubing splice is dependent on the hot melt that will appear from both ends of the tube. The hot melt forms an adhesive seal between the wire insulation and the heat shrink tubing, which prevents air and moisture from entering the butt splice location (Figure 6).
12. Reassemble the battery pack.

WARNING
BATTERIES MUST BE REASSEMBLED IN THE EXACT ORDER THEY WERE DISABLED, REFER TO (FIGURE 8).

13. Remove tape form cable ends.
14. Install battery cables with battery clamp nuts. Torque to 12-15 N•m (107-132 lb-in).
15. Install seats. Torque to 20-30 N•m (15-22 lb-ft).
16. Install seat belt buckles. Torque to 26-34 N•m (19-25 lb-ft).
17. Install stanchion covers. Torque to 20-24 N•m (15-18 lb-ft).
18. Install seat belt access panel.
19. Turn service disconnect switch on.
20. Install both seat cushions.

PART NUMBER	PART NAME
164-R5903	Wire Splice Kit (Rotunda)
164-R5901	Pro-Crimper (Rotunda)

OTHER APPLICABLE ARTICLES: NONE
WARRANTY STATUS: Eligible Under Provisions Of New Vehicle Limited Warranty Coverage

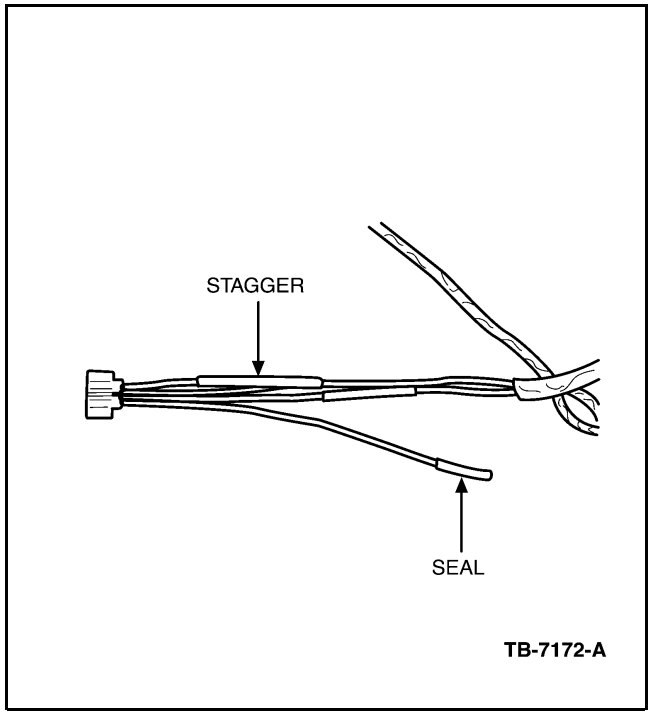

Figure 1 - Article 04-3-2

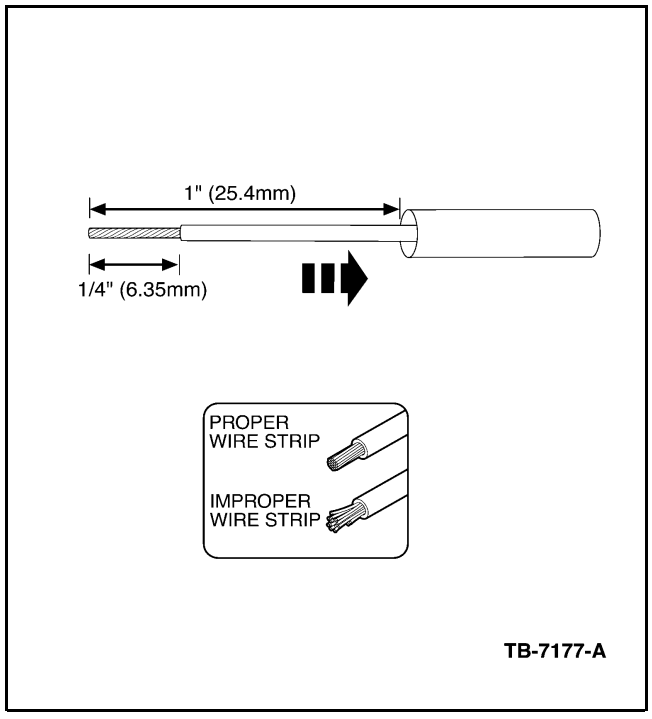

Figure 2 - Article 04-3-2

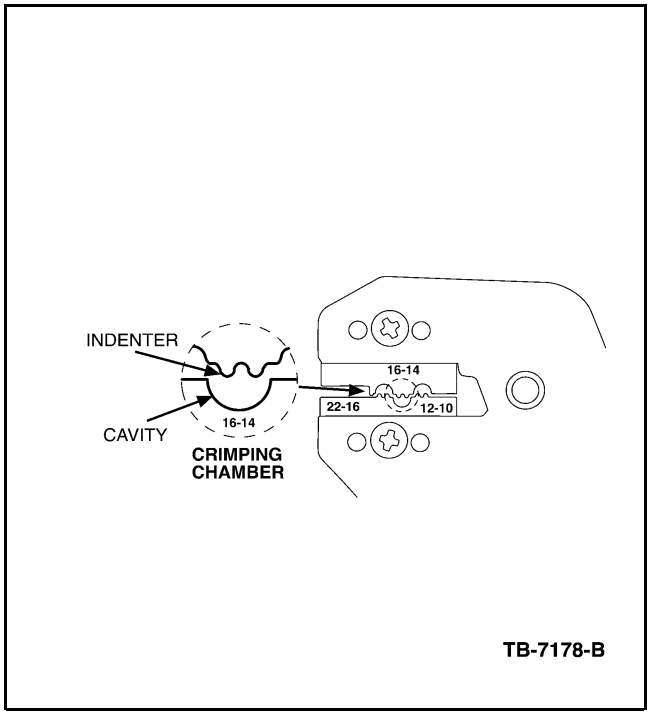

Figure 3 - Article 04-3-2

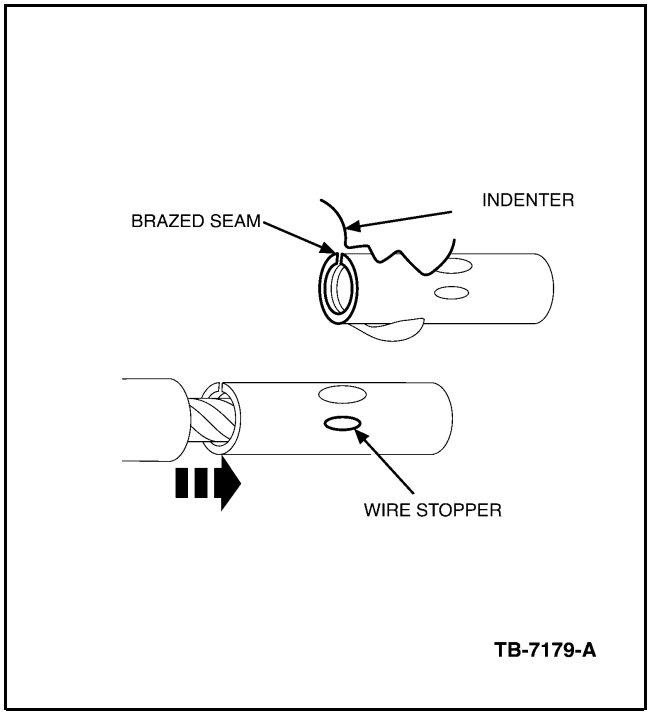

Figure 4 - Article 04-3-2

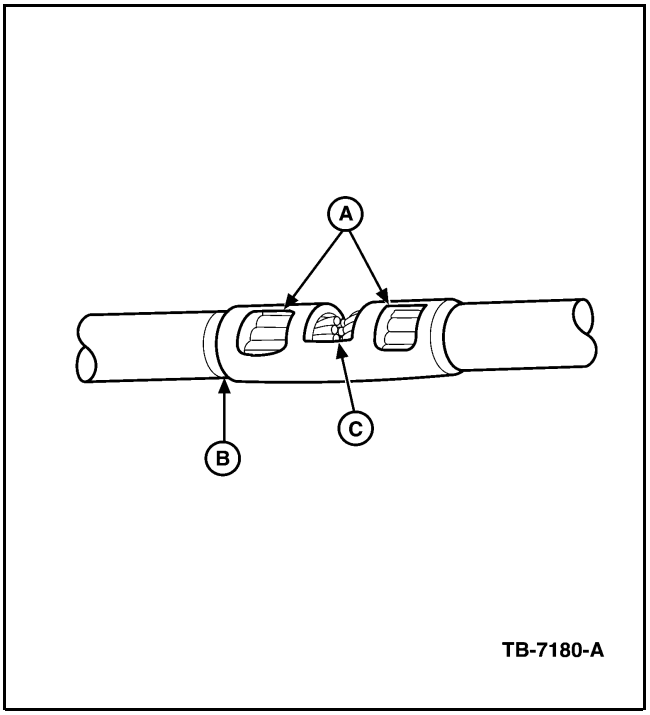

Figure 5 - Article 04-3-2

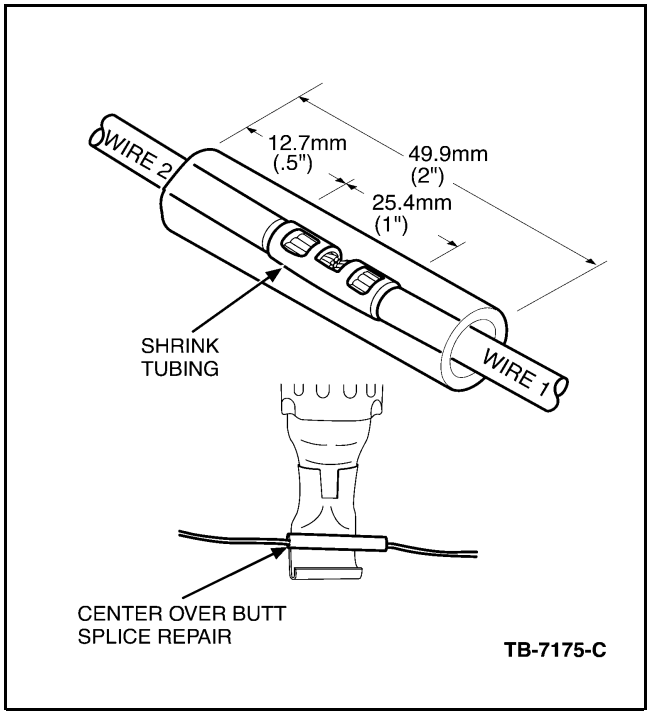

Figure 6 - Article 04-3-2

Wire Gauge Size

Butt Splice as stamped	10	12	14	16	18	20	22	24
22-18		1/4" strip, cut 9 strands	1/4" strip, cut 2 strands	1/4" strip, no fold	1/4" strip, no fold	1/4" strip, no fold	5/8" strip, fold 2x dia.	1" strip, fold 3x dia.
16-14	1/4" strip, cut 7 strands	1/4" strip, no fold	1/4" strip, no fold	1/4" strip, no fold	5/8" strip, fold 2x dia.	1" strip, fold 3x dia.	1 1/4" strip, fold 4x dia.	
12-10	1/4" strip, no fold	1/4" strip, no fold	5/8" strip, fold 2x dia.	1" strip, fold 3x dia.	1 1/4" strip, fold 4x dia.			

Pigtail Only

Both Pigtail and Wire Harness

Wire Harness Only

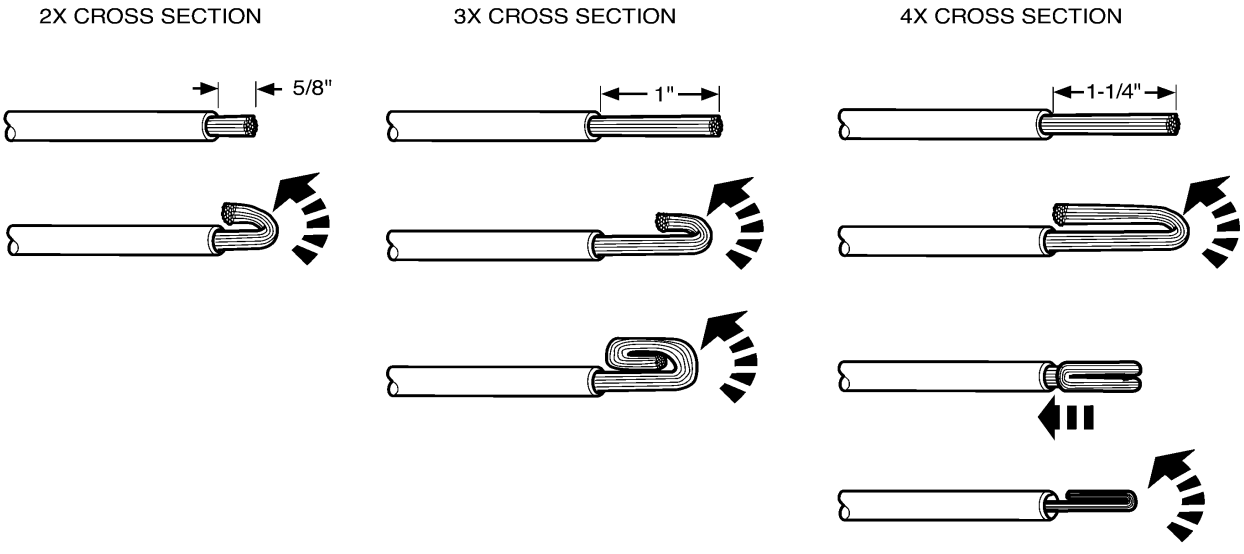

Figure 7 - Article 04-3-2

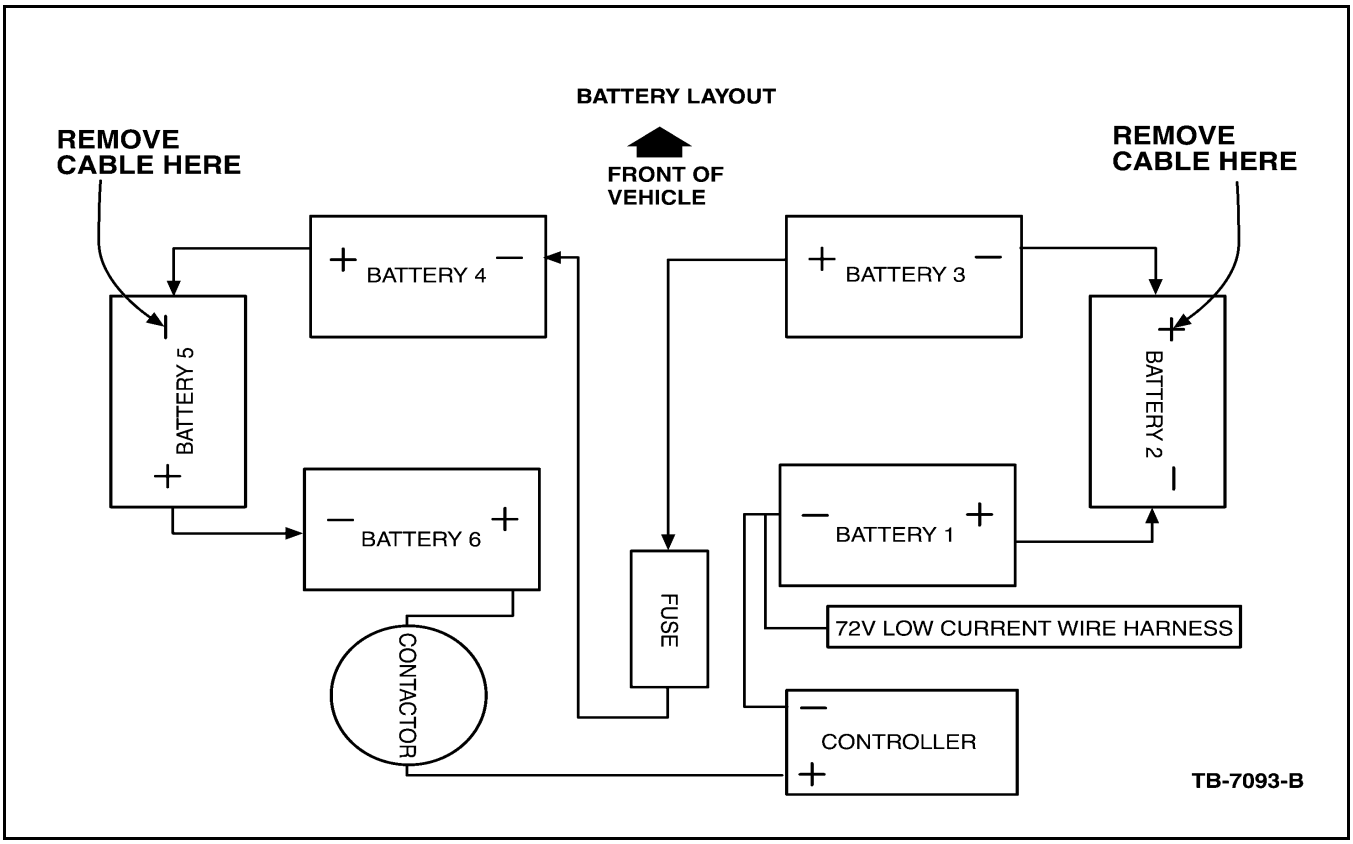

Figure 8 - Article 04-3-2