

Air Bag Systems: Service and Repair

PYROTECHNIC DEVICE DISPOSAL

Disposal of Deployable Devices and Pyrotechnic Devices That Are Undeployed/Inoperative

NOTE: All inoperative air bag modules and safety belt pretensioners have been placed on the Mandatory Return List. All discolored or damaged air bag modules must be treated the same as any inoperative live air bag being returned.

1. Depower the system.
2. Remove the undeployed/inoperative device.
3. **NOTE:** When installing a new air bag module, a prepaid return postcard is provided with the replacement air bag module. The serial number for the new part and the vehicle identification number (VIN) must be recorded and sent to Ford Motor Company.

If installing a new air bag module record the necessary information and return the inoperative air bag module to Ford Motor Company.

Disposal of Deployable Devices and Pyrotechnic Devices That Are Deployed

1. Depower the system.
2. Remove the deployed device.
3. **NOTE:** If a dual stage driver or passenger air bag module has deployed due to a crash event, the air bag module requires manual deployment to make sure both stages have deployed before scrapping the vehicle or disposing of the air bag module. To determine if a vehicle is equipped with dual stage driver or passenger air bag modules, refer to the Description and Operation.

Dispose of the deployed device in the same manner as any other part to be scrapped.

Disposal of Deployable Devices and Pyrotechnic Devices That Require Manual Deployment

1. Safety and environmental concerns require consideration and treatment of restraints system deployable and pyrotechnic devices when disposing of vehicles, deployable devices or pyrotechnic devices. Deploying deployable and pyrotechnic devices before scrapping a vehicle or the device eliminates the potential for hazardous exposures or reactions during processing. If special handling procedures are followed, deployable and pyrotechnic devices can be deployed safely and recycled with the vehicle, shipped separately to a recycling facility or disposed of safely.

NOTE: To determine the deployable devices a vehicle is equipped with, refer to the Description and Operation.

A vehicle equipped with any of the following deployable devices requires manual deployment of the devices before scrapping the vehicle or component.

- Driver air bag module
- Passenger air bag module
- Seat side air bag modules
- Safety canopy modules
- Side air curtain modules

2. **NOTE:** To determine the pyrotechnic devices a vehicle is equipped with, refer to the Description and Operation.

A vehicle equipped with any of the following pyrotechnic devices requires manual deployment of the devices before scrapping the vehicle or component.

- Safety belt buckle pretensioners
- Safety belt retractor pretensioners
- Adaptive load limiting retractors
- Deployable steering column

3. **NOTE:** To determine if a vehicle is equipped with dual stage driver or passenger air bag modules, refer to the Description and Operation.

If a dual stage driver or passenger air bag module has deployed due to a crash event, the air bag module requires manual deployment to make sure both stages have deployed before scrapping the vehicle or disposing of the air bag module.

Driver Air Bag Module, Passenger Air Bag Module and Seat Side Air Bag Modules - Remote Deployment

WARNING:

- Always wear safety glasses when repairing an air bag supplemental restraint system (SRS) vehicle and when handling an air bag module. This will reduce the risk of injury in the event of an accidental deployment.
- Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.
- Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment.
- Do not set a live air bag module down with the trim cover face down. This will reduce the risk of injury in the event of an accidental

deployment.

- Carry a live seat side air bag module with the air bag and tear seam pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment.
- Deployment is to be carried out outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud report which occurs when the air bag is deployed, hearing protection is required.
- After deployment, the air bag surface can contain deposits of sodium hydroxide, a product of the gas generant combustion that is irritating to the skin. Wash your hands with soap and water afterwards.

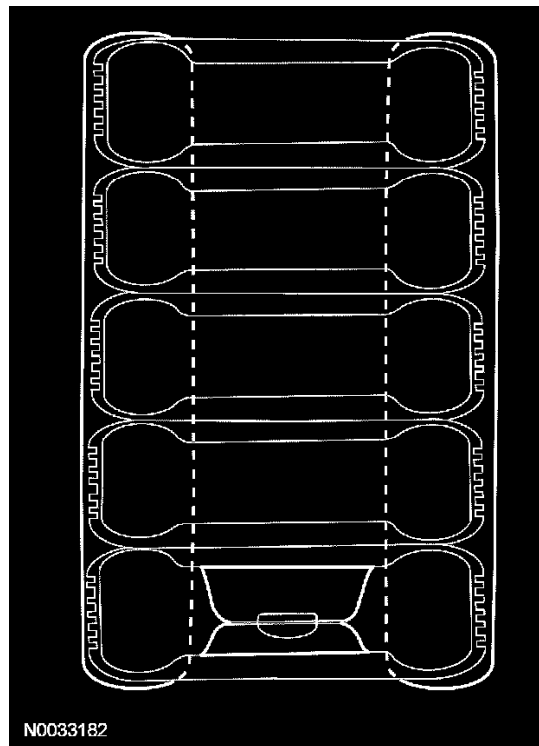
NOTE:

- For air bag modules with multiple squibs, all the squibs on the air bag module must be deployed.
- Some driver and passenger front air bags have 2 deployment stages. After a crash event it is possible that Stage 1 has deployed and Stage 2 has not.

If a front air bag module has deployed, it is mandatory that the front air bag module be remotely deployed using the appropriate air bag disposal procedure.

- A typical air bag disposal is shown that is similar for all vehicles.

All driver, passenger and seat side air bag modules

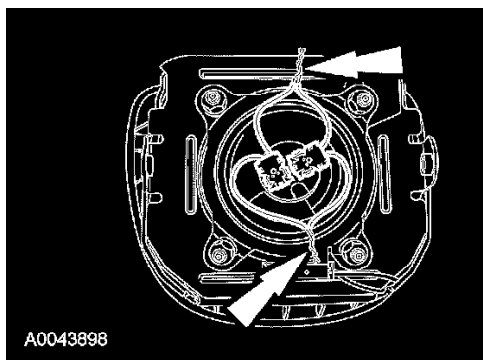


1. Make a container to house the air bag module for deployment.
 - **NOTE:** The tires must be of sufficient size to accommodate the air bag module.

Obtain a tire and wheel assembly and an additional 4 tires (without wheels) of the same size.

 - With the tire and wheel assembly on the bottom, stack the tires.
 - Securely tie all of the tires together.
2. Depower the system.
3. Remove the air bag module.
4. **NOTE:** If the air bag module does not have a hard-wired pigtail, it will be necessary to cut the wires and connector(s) from the vehicle wire harness and reconnect to the air bag module.

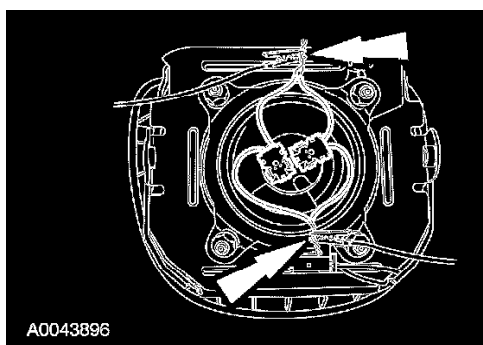
Cut each of the air bag module wires near the electrical connector that connects to the vehicle wire harness.
5. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.



6. **NOTE:** Typical driver air bag module with 2 squibs shown, other air bag modules with multiple squibs similar.

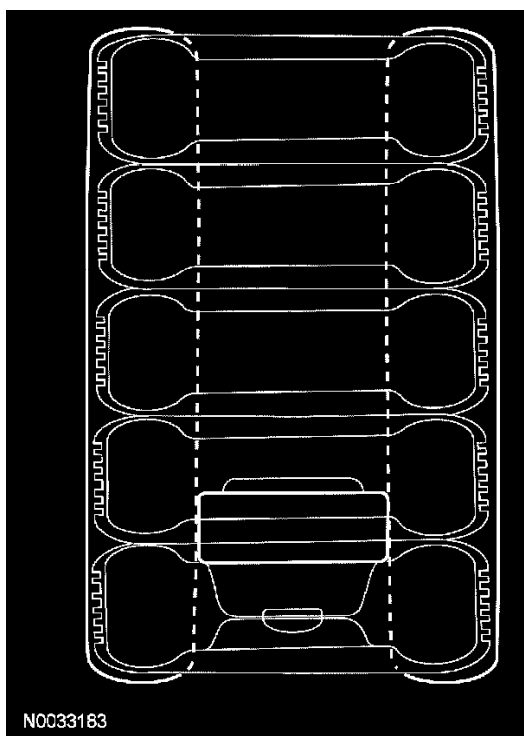
For air bag modules with multiple squibs, twist together a wire from each squib then repeat for the remaining wires from each squib.

7. Make a jumper harness to deploy the air bag module.
- Obtain 2 wires (20 gauge minimum) at least **9.14 meters (30 feet)** long and strip both ends of each wire.
 - At one end of the jumper harness, connect the wires together.



8. Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the air bag module or to the twisted-together wires if multiple squibs. Use tape or other insulating material to make sure that the leads do not make contact with each other.

Driver air bag modules



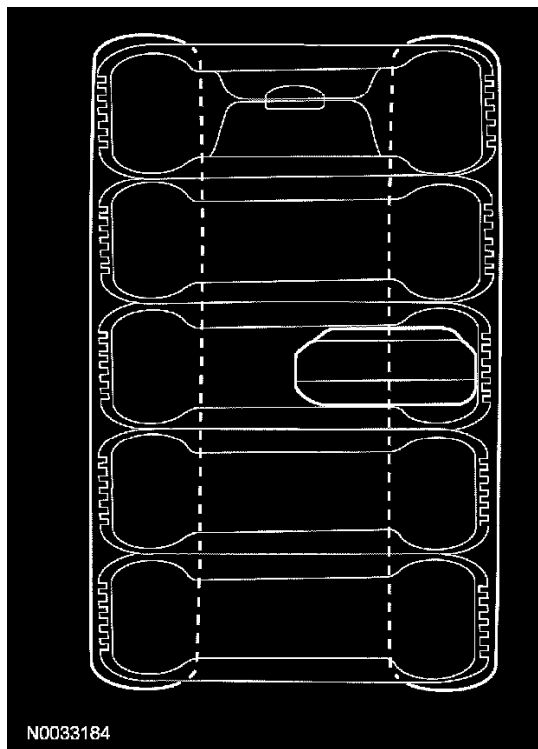
9. **NOTE:** Make sure to maintain the connections to the air bag module.

With the stack of tires upright and the wheel on the bottom, carefully place the driver air bag module, with the trim cover facing up, on the wheel.

Passenger and seat side air bag modules

10. **NOTE:** Make sure to maintain the connections to the air bag module.

Tip the stack of tires on its side and place the air bag module inside the center tire, making sure that there are 2 tires beneath the tire containing the air bag module and 2 tires (including the tire and wheel assembly) above the tire containing the air bag module.



11. Place the tire stack upright, with the wheel on top.

All driver, passenger and seat side air bag modules

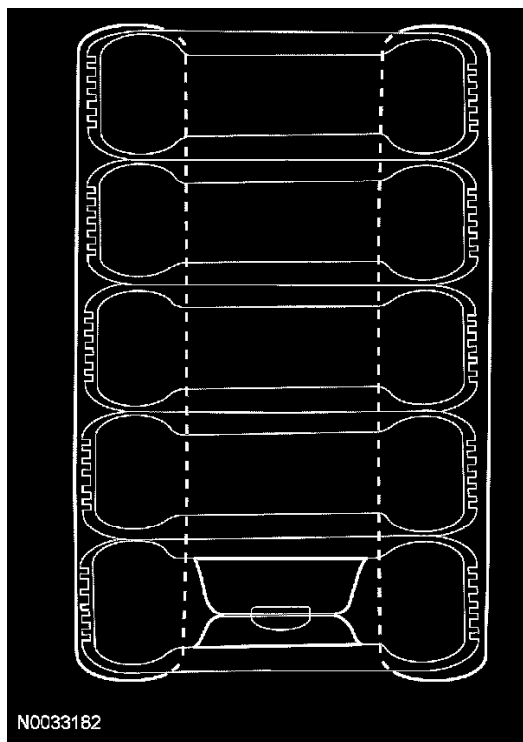
12. Remain at least **9.14 meters (30 feet)** away from the air bag module.
13. From the end of the jumper harness that is not connected to the air bag module, disconnect the 2 wires of the jumper harness from each other.
14. Deploy the air bag module by touching the ends of the 2 wires of the jumper harness to the terminals of a **12-volt** battery.
15. To allow for cooling, wait at least **10 minutes** before approaching the deployed air bag module.
16. Dispose of the deployed air bag module in the same manner as any other part to be scrapped.

Safety Belt Buckle Pretensioners, Safety Belt Retractor Pretensioners and Adaptive Load Limiting Safety Belt Retractors - Remote Deployment

WARNING:

- The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.
- Deployment is to be carried out outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud report which occurs when the pretensioner or adaptive load limiting retractor is deployed, hearing protection is required.

NOTE: A typical safety belt buckle and retractor disposal is shown that is similar for all vehicles.



1. Make a container to house the safety belt buckle or retractor for deployment.

- **NOTE:** The tires must be of sufficient size to accommodate the safety belt buckle or retractor.

Obtain a tire and wheel assembly and an additional 4 tires (without wheels) of the same size.

- With the tire and wheel assembly on the bottom, stack the tires.
- Securely tie all of the tires together.

2. Depower the system.

3. Remove the safety belt buckle or retractor.

- When deploying a safety belt buckle pretensioner, install a nut and bolt of sufficient length and of the same diameter as was used to retain it to the seat.

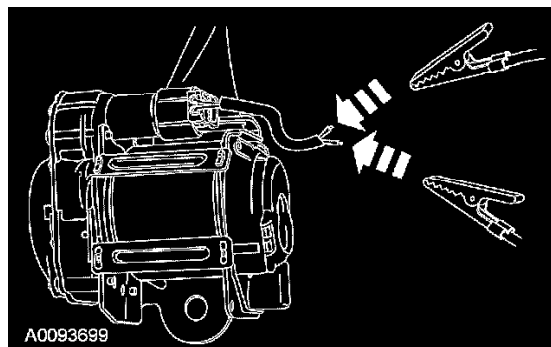
4. **NOTE:** If the safety belt buckle or retractor does not have a hard-wired pigtail, it will be necessary to cut the wires and connector(s) from the vehicle wire harness and reconnect to the safety belt buckle or retractor.

Cut each of the safety belt buckle or retractor wires near the electrical connector that connects to the vehicle wire harness.

5. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.

6. Make a jumper harness to deploy the safety belt buckle or retractor.

- Obtain 2 wires (20 gauge minimum) at least **9.14 meters (30 feet)** long and strip both ends of each wire.
- At one end of the jumper harness, connect the wires together.

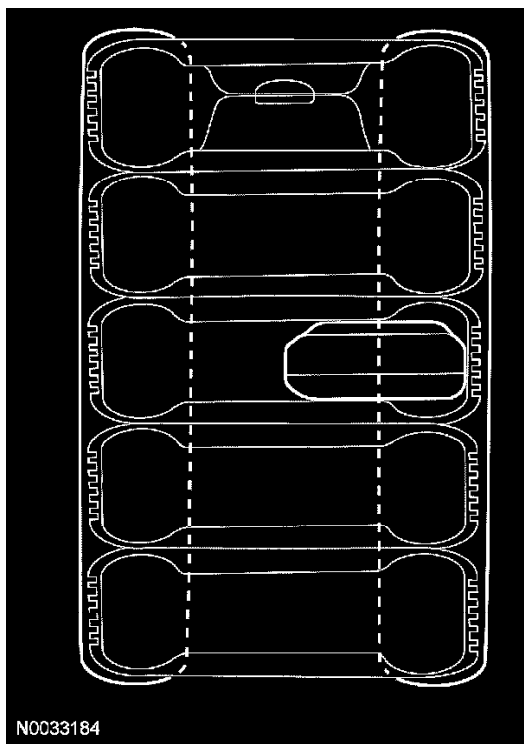


7. **NOTE:** Typical safety belt retractor pretensioner shown, other safety belt buckle pretensioners and load limiting retractors similar.

Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the safety belt buckle or retractor. Use tape or other insulating material to make sure that the leads do not make contact with each other.

8. **NOTE:** Make sure to maintain the connections to the safety belt buckle or retractor.

Tip the stack of tires on its side and place the safety belt buckle or retractor inside the center tire, making sure that there are 2 tires beneath the tire containing the safety belt buckle or retractor and 2 tires (including the tire and wheel assembly) above the tire containing the safety belt buckle or retractor.



9. Place the tire stack upright, with the wheel on top.
10. Remain at least **9.14 meters (30 feet)** away from the safety belt buckle or retractor.
11. From the end of the jumper harness that is not connected to the safety belt buckle or retractor, disconnect the 2 wires of the jumper harness from each other.
12. Deploy the safety belt buckle or retractor by touching the ends of the 2 wires of the jumper harness to the terminals of a **12-volt** battery.
13. To allow for cooling, wait at least **10 minutes** before approaching the deployed safety belt buckle or retractor.
14. Dispose of the deployed safety belt buckle or retractor in the same manner as any other part to be scrapped.

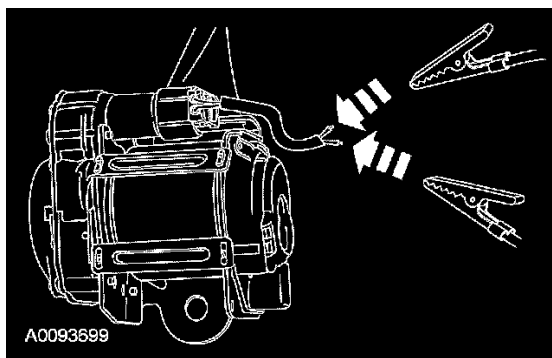
Safety Belt Buckle Pretensioners, Safety Belt Retractor Pretensioners and Load Limiting Safety Belt Retractors - In-Vehicle Deployment

WARNING:

- **The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.**
- **Deployment is to be carried out outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud report which occurs when the pretensioner or adaptive load limiting retractor is deployed, hearing protection is required.**

NOTE: A typical safety belt buckle and retractor disposal is shown that is similar for all vehicles.

1. Depower the system.
2. Access the safety belt buckle or retractor electrical connectors.
3. Cut each of the safety belt buckle or retractor wires, leaving at least **4 inches** to work with.
4. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.
5. Make a jumper harness to deploy the safety belt buckle or retractor.
 - Obtain 2 wires (20 gauge minimum) at least **9.14 meters (30 feet)** long and strip both ends of each wire.
 - At one end of the jumper harness, connect the wires together.



6. **NOTE:** Typical safety belt retractor pretensioner shown, other safety belt buckle pretensioners and load limiting retractors are similar.

Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the safety belt buckle or retractor. Use tape or other insulating material to make sure that the leads do not make contact with each other.

7. Remain at least **9.14 meters (30 feet)** away from the safety belt buckle or retractor.
8. From the end of the jumper harness that is not connected to the safety belt buckle or retractor, disconnect the 2 wires of the jumper harness from each other.
9. Deploy the safety belt buckle or retractor by touching the ends of the 2 wires of the jumper harness to the terminals of a **12-volt** battery.
10. To allow for cooling, wait at least **10 minutes** before approaching the deployed safety belt buckle or retractor.
11. Dispose of the deployed safety belt buckle or retractor in the same manner as any other part to be scrapped.

Safety Canopy Modules and Side Air Curtain Modules - In-Vehicle Deployment

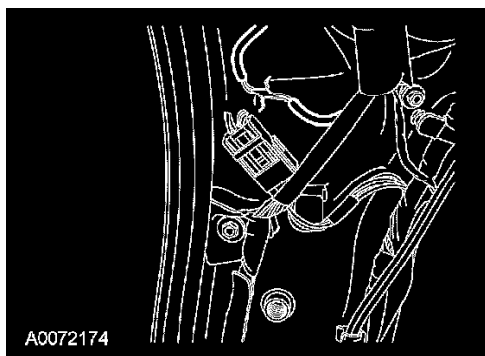
WARNING:

- Always wear safety glasses when repairing an air bag supplemental restraint system (SRS) vehicle and when handling an air bag module. This will reduce the risk of injury in the event of an accidental deployment.
- After deployment, the air bag surface can contain deposits of sodium hydroxide, a product of the gas generant combustion that is irritating to the skin. Wash your hands with soap and water afterwards.
- Deployment is to be carried out outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud report which occurs when the safety canopy or side air curtain is deployed, hearing protection is required.

NOTE:

- The safety canopy module deployment for a scrapped vehicle will occur in its installed position in the vehicle.
- A typical safety canopy module disposal is shown that is similar for all vehicles.

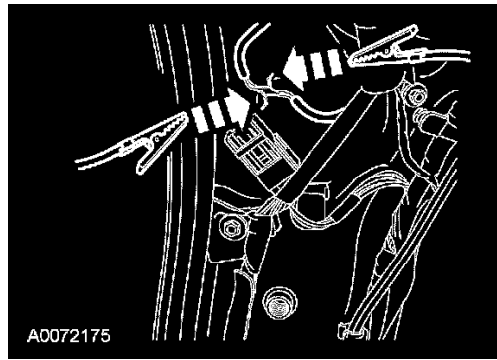
1. Depower the system.
2. Access the safety canopy/side air curtain module electrical connectors.
3. Cut each of the safety canopy/side air curtain module wires leaving at least **4 inches** to work with.
4. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.



5. **NOTE:** Typical safety canopy/side air curtain module with 2 squibs shown, other safety canopy/side air curtain modules with 2 squibs are similar.

For safety canopy/side air curtain modules with multiple squibs, twist together a wire from each squib then repeat for the remaining wires from each squib.

6. Make a jumper harness to deploy the safety canopy/side air curtain module.
 - Obtain 2 wires (20 gauge minimum) at least **9.14 meters (30 feet)** long and strip both ends of each wire.
 - At one end of the jumper harness, connect the wires together.



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7. Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the safety canopy/side air curtain module or to the twisted-together wires if multiple squibs. Use tape or other insulating material to make sure that the leads do not make contact with each other.
8. From the end of the jumper harness that is not connected to the safety canopy/side air curtain module, disconnect the 2 wires of the jumper harness from each other.
9. Deploy the safety canopy/side air curtain module by touching the ends of the 2 wires of the jumper harness to the terminals of a **12-volt** battery.
10. To allow for cooling, wait at least **10 minutes** before approaching the deployed safety canopy/side air curtain module.
11. Dispose of the deployed safety canopy/side air curtain module in the same manner as any other part to be scrapped.

Deployable Steering Column - In-Vehicle Deployment

WARNING:

- Always wear safety glasses when repairing an air bag supplemental restraint system (SRS) vehicle and when handling an air bag module. This will reduce the risk of injury in the event of an accidental deployment.
- Deployment is to be carried out outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud report which occurs when the deployable steering column is deployed, hearing protection is required.

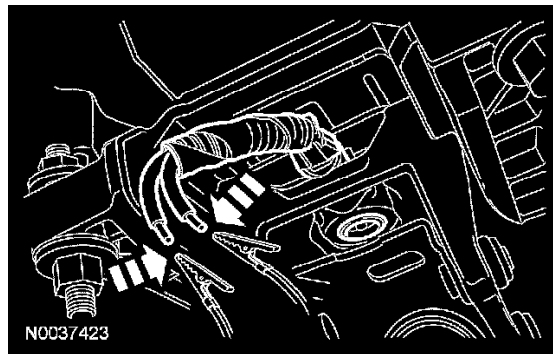
1. Depower the system.
2. **NOTE:** It may be necessary to lower or remove the deployable steering column from the instrument panel to access the deployable steering column electrical connector.

Access the deployable steering column electrical connector.

3. **NOTE:** If the deployable steering column does not have a hard-wired pigtail, it will be necessary to cut the wires and connector(s) from the vehicle wire harness and reconnect to the deployable steering column.

Cut each of the deployable steering column wires, leaving at least **4 inches** to work with.

4. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.
5. Make a jumper harness to deploy the deployable steering column.
 - Obtain 2 wires (20 gauge minimum) at least **9.14 meters (30 feet)** long and strip both ends of each wire.
 - At one end of the jumper harness, connect the wires together.



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6. Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the deployable steering column. Use tape or other insulating material to make sure that the leads do not make contact with each other.
7. Remain at least **9.14 meters (30 feet)** away from the deployable steering column.
8. From the end of the jumper harness that is not connected to the deployable steering column, disconnect the 2 wires of the jumper harness from each other.

9. Deploy the deployable steering column by touching the ends of the 2 wires of the jumper harness to the terminals of a **12-volt** battery.
10. To allow for cooling, wait at least **10 minutes** before approaching the deployed steering column.
11. Dispose of the deployed steering column in the same manner as any other part to be scrapped.