

Body Repair Tech Note: Using Flow Form Rivets

Body Repair Tech Notes provide information about Tesla-approved methods and practices for body repair. These instructions assume knowledge of motor vehicle and high voltage electrical component repairs, and should only be executed by trained professionals. Tesla assumes no liability for injury or property damage due to a failure to properly follow these instructions or for repairs attempted by unqualified individuals.

This Body Repair Tech Note supersedes BR-18-92-001, dated 23-Feb-18. Each content change is marked by a vertical line in the left margin. Discard the previous version and replace it with this one.

To install the flow form rivets specified in a Tesla structural repair procedure, use the information in this document to perform the following steps:

1. Prepare the panels for installation.
2. Select an approved riveter and associated dies to install the flow form rivets.

Flow form rivets can also be used as an alternative to self-piercing rivets (SPRs) in any Tesla structural repair procedure that specifies the use of SPRs. This includes situations where there might not be sufficient room for the installation of SPRs because panels have been previously replaced.

To use flow form rivets in place of SPRs, use the information in this document to perform the following steps:

1. Select the correct flow form rivet for the thickness of the panel stack.
2. Prepare the panels for installation.
3. Select an approved riveter and associated dies to install the flow form rivets.

Selecting the Correct Rivet

Each flow form rivet approved for use in Tesla structural repairs is designed for a specific grip range, based on the length of the rivet.

NOTE: All flow form rivets approved for use in Tesla structural repairs have a body diameter of 8 mm.

Perform the steps listed below to determine the correct flow form rivet for a given panel stack.








1. Use a caliper to measure the total thickness of the panel stack (Figure 1).



Figure 1

2. Use the information in the table below to find the flow form rivet where the measured thickness of the panel stack falls within the grip range of the rivet.

NOTE: When the measured thickness of the panel stack is within the grip range of two flow form rivets, it is recommended to use the longer rivet.

Flow Form Rivet	Grip Range (mm)	Fastener Symbol	Tesla Part Number
S08	1.3 – 2.5		1069328-00-A
S18	2.3 – 3.5		1069329-00-A
S28	3.35 – 4.10		1069330-00-A
S38	4.0 – 5.15		1069331-00-A
S48	5.0 – 6.1		1069332-00-A
S58	6.0 – 7.2		1069333-00-A
S68	7.1 – 8.3		1069334-00-A

All part numbers were current at the time of publication. Use the revisions listed or later, unless otherwise specified in the Parts Manual. The fastener symbols listed are the symbols used in the Body Repair Manual.

Preparing the Panels for Installation

Flow form rivets require 8 mm holes in the panel for installation. The holes can either be punched with a riveter designed for punching 8 mm holes in metal panel stacks, or they can drilled with an 8 mm (5/16 in) bit.

NOTE: When drilling holes, the edges of the holes must be deburred before installing the flow form rivets.

Selecting an Approved Riveter and Dies

Select one of the approved riveters and dies listed below to install flow form rivets.

NOTE: Refer to the appropriate tool instructions for more information on how to properly install a flow form rivet with a specific riveter.

Riveter		Required Installation Pressure (kN)	Approved Dies
Manufacturer	Model		
Wieländer + Schill	XPress 800	60	C3, C4, C5 from Wieländer + Schill
TKR	PNP 90 UN 2.0	60	
	PNP 90 XT ²	60	
ProSpot	PR-5	50	FF-8-1, FF-8-2, FF-8-3
Böllhoff	HTF 50 SPR Tool	50	Flow Form Punch Assembly (55003226514), Flow Form Die (95300285166)

For feedback on the accuracy of this document, email BodyRepair@tesla.com.