

## Body Repair Tech Note: Approved Fasteners and Fastener Installation Tools for Structural Repairs

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-16-92-001 R4, dated 10-Nov-17. Each content change is marked by a vertical line in the left margin. Discard the previous version and replace it with this one.

The following fasteners are approved for structural repairs on Tesla vehicles:

- [Standard Rivets](#)
- [Countersunk Rivets](#)
- [Structural Bulb Rivets](#)
- [Structural Flange Rivets](#)
- [Self-Piercing Rivets](#)
- [Flow Form Rivets](#)
- [BOMs](#) (blind, oversize mechanically locked fasteners)
- [Pin and Collars](#)

**⚠ WARNING:** Use only approved fasteners sourced from Tesla when performing structural repairs on Tesla vehicles. The use of non-approved fasteners might compromise the integrity of the repair and vehicle safety, as well as affecting whether Tesla supports the vehicle.











All Tesla rivets and BOMs come in packs of 10. All pin and collars come in packs of 5 pins and 5 collars. When ordering fasteners, make sure to order in multiples of 5 or 10. For example, for a procedure that requires 1–10 rivets, order 10 rivets, and for a procedure that requires 11–20 rivets, order 20 rivets.

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.







## Approved Fastener Installation Tools

Use the table below to determine which of the approved fastener installation tools can be used to install which types of approved fasteners.

**NOTE:** Additional attachments and fittings might be required for some of these tools to install certain fasteners. Refer to the appropriate section for the specific fastener type, or contact your tool distributor for more information.

Fastener Installation Tool	Fasteners					
	SPRs 	Flow Form Rivets 	BOMs 	Pin and Collars 	4.8 and 6.5 mm Blind Rivets 	8 mm Blind Rivets 
XPress 800 Tool 	✓	✓	✓	✓	✓	✓
ProSpot PR-5 	✓	✓	✓		✓	✓
Huck 254 Pneumatic Installation Tool 			✓	✓		✓
Böhlhoff HTF 50 SPR Tool 	✓					
TKR PNP 90 UN 2.0		✓			✓	
TKR PNP 90 XT <sup>2</sup>		✓			✓	

## Standard Rivets

<b>Standard Rivet Information</b> 				
Fastener Type	Fastener Symbol	Part Name	Part Description	Part Number
Rivet, 4.8 mm		Rivet, 4.8mm, 1.6–6.9mm	RIVET 4.8MM, 1.6–6.9MM	1028719-00-A
Structural Rivet, 6.5 mm short		Rivet, 6.5mm, 2.0–9.5mm	RIVET 6.5MM, 2.0–9.5MM	1028408-00-A
Structural Rivet, 6.5 mm medium		Str.Cmmn Riv 6.5 3–13.5	RIVET 6.5MM, 3.0–13.5MM	1062559-00-A
Structural Rivet, 6.5 mm long		Rivet, 6.5 mm, 2.0–15.9mm	RIVET 6.5MM, 2.0–15.9MM	1028409-00-A
Structural Rivet, 5/16 in		Rivet, 5/16 in, 4.0–7.0mm	BLIND RIVET 5/16"x4.0-7.0	1058710-00-A





All standard rivets can be installed with a standard rivet gun, except for the 5/16 in structural rivet. Refer to the tooling requirements on the [Tesla Service website](#) for more information on recommended standard rivet guns.

To install 5/16 in structural rivets, use one of the tools listed in the “[Approved Fastener Installation Tools](#)” section of this document along with the appropriate attachments listed below.

	Tool		
	XPress	ProSpot	Huck
<b>Attachment to Use</b>	BR-80 attachment with Huck nose 99-3307	PR-PA20 + PPA-N5	Huck nose 99-3307

## Countersunk Rivets



Countersunk rivets are used in situations where the rivet head needs to sit flush with the body panel.

Countersunk Rivet Information 				
Fastener Type	Fastener Symbol	Part Name	Part Description	Part Number
Countersunk Rivet, 4.8 mm short		Sm Ctsk Rvt,4.8 Alu/Stl2.0-3.1mm QTY10	COUNTERSUNK RIVET 4.8MM, 2.0–3.1MM	1069308-00-A
Structural Countersunk Rivet, 4.8 mm long		St Ctsk Rvt,4.8 Alu/Stl3.18-8.41QTY10	COUNTERSUNK RIVET 4.8MM, 3.18–8.41MM	1069326-00-A
Structural Countersunk Rivet, 6.5 mm		St Ctsk Rvt,6.5 Alu/Stl4.06-12.07 QTY10	COUNTERSUNK RIVET 6.5MM, 4.06–12.07MM	1069327-00-A

Use the Microstop Countersink kit (Tesla part number 1133101-00-A) to countersink the holes before installing the countersunk rivets. Adjust the depth of the tool so that the head of the rivet is flush with the surrounding panel. Refer to the [Microstop Countersink kit instructions](#) for more information.



## Structural Bulb Rivet

Structural bulb rivets are used where clearance with trim is an issue or when replacing a short rivet, as the back portion of the bulb rivet is smaller than a regular structural rivet. Structural bulb rivets can typically be used in thin sheet metal applications where the total thickness of the panels is 4.5 mm or less.

Structural Bulb Rivet Information 				
Fastener Type	Fastener Symbol	Part Name	Part Description	Part Number
Structural Bulb Rivet, 6.5 mm		Str. Bulb Riv6.5 Stl Zn 2- 4.5 Qty10	BULB RIVET 6.5MM, 2.0– 4.5MM	1063943-00-A












## Structural Flange Rivet

Structural flange rivets are used where the hole in the part is too large for a conventional rivet head.

Structural Flange Rivet Information 				
Fastener Type	Fastener Symbol	Part Name	Part Description	Part Number
Structural Flange Rivet, 6.5 mm		Str Lrg Flg Riv6.5 Stl Zn 2-15.9 Qty10	FLANGE RIVET 6.5MM, 2.0–15.9MM	1062558-00-A

## Self-Piercing Rivets

Self-piercing rivets (SPRs) are designed to be used in applications where the total number of panels is 3 or less. Whenever possible, install SPRs so that the SPR goes through the thinner panel first.









Self-Piercing Rivet Information 				
Fastener Type	Fastener Symbol	Part Name	Part Description	Part Number
SPR, 5x4		SPR Rivet C 5x4 H4 SKR	SELF-PIERCING RIVET C 5X4 H4 SKR	1026936-00-A
SPR, 5x4.5		SPR Rivet C 5x4.5 H4 SKR	SELF-PIERCING RIVET C 5X4.5 H4 SKR	1026938-00-A
SPR, 5x5		SPR Rivet C 5x5 H4 SKR	SELF-PIERCING RIVET C 5X5 H4 SKR	1026939-00-A
SPR, 5x6 H4		SPR Rivet C 5x6 H4 SKR	SELF-PIERCING RIVET C 5X6 H4 SKR	1026940-00-A
SPR, 5x6 H2		SPR Rivet C 5x6 H2 SKR	SELF-PIERCING RIVET C 5X6 H2 SKR	1026941-00-A
SPR, 5x6.5		SPR Rivet C 5x6.5 H4 SKR	SELF-PIERCING RIVET C 5X6.5 H4 SKR	1026942-00-A
SPR, 5x7		SPR Rivet C 5x7 H4 SKR	SELF-PIERCING RIVET C 5X7 H4 SKR	1026943-00-A
SPR, 5x8 SKR		SPR Rivet K 5x8 H4 SKR	SELF-PIERCING RIVET C 5X8 H4 SKR	1026944-00-A
SPR, 5x8 SK		SPR Rivet P 5x8 H4 SK	SELF-PIERCING RIVET C 5X8 H4 SK	1026945-00-A
SPR, 5x9		SPR Rivet K 5x9 H4 SKR	SELF-PIERCING RIVET C 5X9 H4 SKR	1028629-00-A

To install SPRs, use one of the tools listed in the [“Approved Fastener Installation Tools”](#) section of this document along with the appropriate die. For the ProSpot tool, use table below to determine the appropriate die based on the Böllhoff die listed in the Body Repair Manual procedure.

	Tool		
	Böllhoff (Use Die Specified in Procedure)	ProSpot (Use Die Corresponding to Böllhoff Die Specified in Procedure)	XPress
SPR Die to Use	FM 110 0108	T1	F5 adaptor with the Böllhoff die specified in the procedure
	SM 085 0125	T2	
	FM 090 2120	T3	
	KA 075 2113	T4	
	SM 070 0056	T5	
	FM 100 2022	T6	
	SM 120 0050	T7	

## Flow Form Rivets

For areas likely to have repeat repairs, flow form rivets can be used in place of SPRs so that additional holes do not have to be created in the body panel(s). Refer to [BR-18-92-001](#), “Using Flow Form Rivets” for more information.

Flow Form Rivet Information 				
Fastener Type	Fastener Symbol	Part Name	Part Description	Part Number
Flow Form Rivet, S08		Flw Frm Rvt,S08-8mmSt.Stl 1.3-2.5 Qty10	FLOW FORM RIVET S08 KIT 8MM, 1.3–2.5MM	1069328-00-A
Flow Form Rivet, S18		Flw Frm Rvt,S18-8mmSt.Stl 2.3-5.5 Qty10	FLOW FORM RIVET S18 KIT 8MM, 2.3–3.5MM	1069329-00-A
Flow Form Rivet, S28		Flw Frm Rvt,S28-8mmSt.Stl3.35-4.10 Qty10	FLOW FORM RIVET S28 KIT 8MM, 3.35–4.10MM	1069330-00-A
Flow Form Rivet, S38		Flw Frm Rvt,S38-8mmSt.Stl 4.0-5.15 Qty10	FLOW FORM RIVET S38 KIT 8MM, 4.0–5.15MM	1069331-00-A
Flow Form Rivet, S48		Flw Frm Rvt,S48-8mmSt.Stl 5.0-6.1 Qty10	FLOW FORM RIVET S48 KIT 8MM, 5.0–6.1MM	1069332-00-A
Flow Form Rivet, S58		Flw Frm Rvt,S58-8mmSt.Stl 6.0-7.2 Qty10	FLOW FORM RIVET S58 KIT 8MM, 6.0–7.2MM	1069333-00-A
Flow Form Rivet, S68		Flw Frm Rvt,S68-8mmSt.Stl 7.1-8.3 Qty10	FLOW FORM RIVET S68 KIT 8MM, 7.1–8.3MM	1069334-00-A


To install flow form rivets, use one of the tools listed in the [“Approved Fastener Installation Tools”](#) section of this document along with the appropriate die and at the installation pressure listed below.

**NOTE:** The C3, C4, and C5 dies for use with the XPress and the TKR riveters are available from Wieländer + Schill.

	Flow Form Rivet Size	Tool		
		XPress	TKR	ProSpot
Flow Form Rivet Dies to Use	S08 and S18	C3 holding die with a C4 forming die	C3 holding die with a C4 forming die	FF-8-1 holding die with an FF-8-2 forming die
	S28–S68	C5 holding die with a C4 forming die	C5 holding die with a C4 forming die	FF-8-3 holding die with an FF-8-2 forming die
Required Installation Pressure (kN)	N/A	60	60	50

## BOMs

BOMs (blind, oversize mechanically locked fastener) are available in 5/16 in diameter.




BOM Information 				
Fastener Type	Fastener Symbol	Part Name	Part Description	Part Number
BOM, 5/16 in		BOM5/16 Stl Zinc Grip7.95-11.1 Qty 5	BOM, 5/16 in (7.9MM) Kit, 7.95–11.10MM	1062555-00-A

To install BOMs, use one of the tools listed in the [“Approved Fastener Installation Tools”](#) section of this document along with the appropriate attachment listed below.

	Tool		
	XPress	ProSpot	Huck
Attachment to Use	BR-80 attachment with Huck nose 99-769	PR-PA38-BOM	Huck nose 99-769

## Pin and Collars

Pin and collar fasteners are available in 1/4 in and 5/16 in diameters.

Pin and Collar Information 				
Fastener Type	Fastener Symbol	Part Name	Part Description	Part Number
Pin and Collar, 1/4 in		Pin&Collar 1/4 Stl Zinc 1.6-15.9 Qty5	PIN AND COLLAR, 1/4 in (6.5MM) Kit, 2.0–15.9MM	1062557-00-A
Pin and Collar, 5/16 in		Pin&Collar5/16 Stl Znc 3.2-19.1 Qty5	PIN AND COLLAR, 5/16 in (7.9MM) Kit, 3.2–19.1MM	1062556-00-A

To install pin and collars, use one of the tools listed in the [“Approved Fastener Installation Tools”](#) section of this document along with the appropriate attachment listed below.

	Pin and Collar Size	Tool	
		XPress	Huck
Attachment to Use	1/4 in	BR-80 attachment with Huck nose 99-3207	Huck nose 99-3207
	5/16 in	BR-80 attachment with Huck nose 99-1439	Huck nose 99-1439

For feedback on the accuracy of this document, email [BodyRepair@tesla.com](mailto:BodyRepair@tesla.com).