

# Tuk-Rivet® Punched rivet system



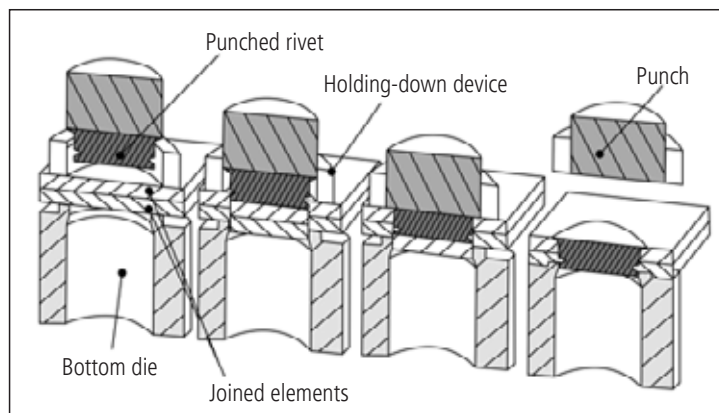
## The process

Punch riveting with a solid rivet permits one or more joined elements such as semi-finished product types, sheet, profile and cast components to be fastened together.

During this process, the workpieces are clamped to the bottom die by the hold-down device. They are then punched by the solid Tuk-Rivet® that acts at the same time as the blanking die. When the stop-point is reached both the hold-down device and rivet punch are flush with the workpiece surface.

As a result of the compressive force applied by the rivet punch and the hold-down device the shape of the bottom die forces material into the peripheral shank groove in the Tuk-Rivet®.

This acts against the flow of material generated by the rivet punch and hold-down device.



Schematic sequence diagram

Fig. 1

## Field of application

Wherever connections of thin metal mouldings with a high loading capacity have to be produced quickly, the Tuk-Rivet® is the ideal fastening element.

- For joining workpieces made of aluminium to steel as well as rustproof and acid proof sheet steels.
- For joining thin-walled components made of aluminium to sheet steels.
- For joining thick and thin sheets, whereby the lower sheet should have a minimum thickness of 0.9 mm.

## Product characteristics

- Accurate production quality
- Largely flush finish on both sides
- Self-punching, no hole punching problems, reduced installation costs
- High-strength connection
- Ideal for plastic-coated or surface-treated parts
- Suitable for steel, stainless steel and light alloy sheet
- Replaces spot welding, no environmental pollution
- Integration possible in production lines, no separate workplace required
- The rivet head is covered by painting, no additional work stage required
- Hybrid construction possible
- Greater material thickness difference can be processed with multi-zone rivet



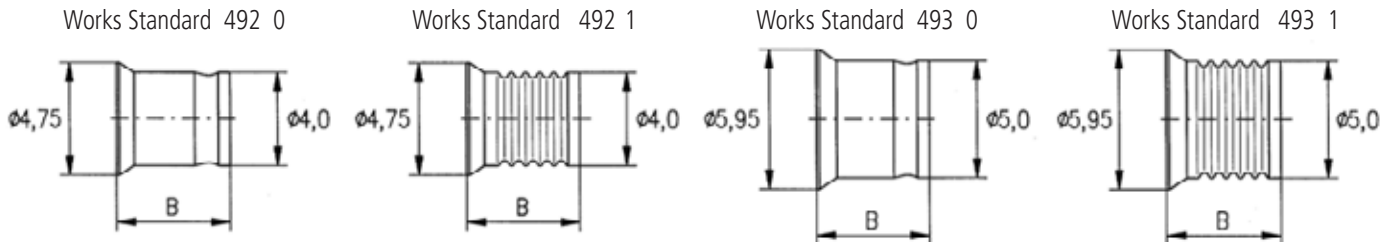
**Punched rivet  
Multi-zone punched rivet  
self-riveting**

**Tuk-Rivet®**  
Works Standard  
492 / 492 1 / 493 / 493 1

**Application**

Tuk-Rivet® is a punched rivet made of rust and acid proof material or steel for the manufacture of highly

load resistant riveted joints in thin section components.



Article number	for total material-thickness		Length B
	Works Standard 492 0 / 493 0	Works Standard 492 1 / 493 1	
49. .00 003 ...	2,5 mm – 2,7 mm	2,1 mm – 2,7 mm	2,7
49. .00 004 ...	2,8 mm – 3,0 mm	1,8 mm – 3,0 mm	3,0
49. .00 005 ...	3,1 mm – 3,3 mm	2,1 mm – 3,3 mm	3,3
49. .00 006 ...	3,4 mm – 3,6 mm	1,8 mm – 3,6 mm	3,6
49. .00 007 ...	3,7 mm – 3,9 mm	2,1 mm – 3,9 mm	3,9
49. .00 008 ...	4,0 mm – 4,2 mm	1,8 mm – 4,2 mm	4,2
49. .00 009 ...	4,3 mm – 4,5 mm	2,1 mm – 4,5 mm	4,5
49. .00 010 ...	4,6 mm – 4,8 mm	2,4 mm – 4,8 mm	4,8
49. .00 011 ...	4,9 mm – 5,1 mm	2,7 mm – 5,1 mm	5,1
49. .00 012 ...	5,2 mm – 5,4 mm	3,0 mm – 5,4 mm	5,4
49. .00 013 ...	5,5 mm – 5,7 mm	3,3 mm – 5,7 mm	5,7
49. .00 014 ...	5,8 mm – 6,0 mm	3,6 mm – 6,0 mm	6,0
49. .00 015 ...	6,1 mm – 6,3 mm	3,9 mm – 6,3 mm	6,3
49. .00 016 ...	6,4 mm – 6,6 mm	4,2 mm – 6,6 mm	6,6
49. .00 017 ...	6,7 mm – 6,9 mm	4,5 mm – 6,9 mm	6,9
49. .00 018 ...	7,1 mm – 7,2 mm	4,8 mm – 7,2 mm	7,2
49. .00 019 ...	7,3 mm – 7,5 mm	5,1 mm – 7,5 mm	7,5

Minimum thickness for lower material: ≥ 0,9 mm

**Example for locating the article number**

Stainless steel Tuk-Rivet® for 3.0 mm total material-thickness, Works Standard 492 0:  
Tuk-Rivet® 492 000 004.900

**Materials**

Steel, tempered, zink/nickel-plated, transparent passivated  
Stainless steel, hardened  
Other finishes upon request

Article no. (**fourth** group of digits) ... .. 243  
Article no. (**fourth** group of digits) ... .. 900

**Tolerances**

ISO 2768-m

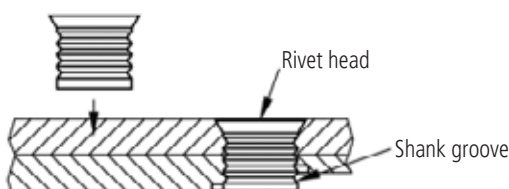


Fig. 2

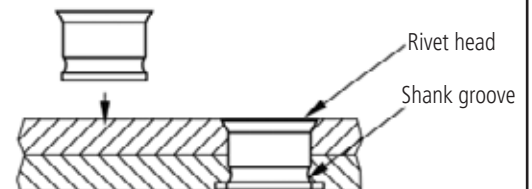
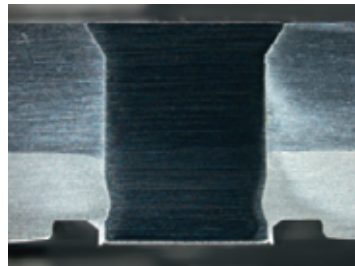
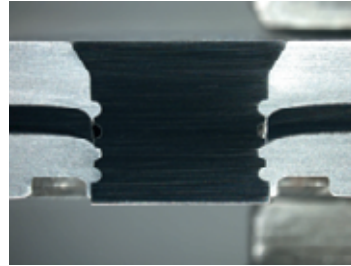


Fig. 3

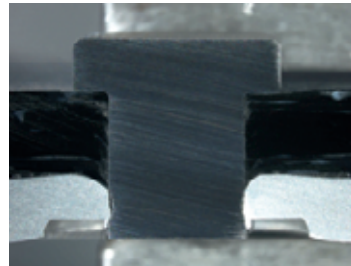
## Punching Rivet and Composites ...

Multigrade Rivet according to  
Works Standard 492 1  
Light-alloy  $t = 1,7 \text{ mm} +$   
22MnB5  $t = 0,8 \text{ mm} +$   
Light-alloy  $t = 1,7 \text{ mm}$



Punching Rivet according to  
Works Standard 492 0  
Magnesium  $t = 3,0 \text{ mm} +$   
Light-alloy  $t = 2,0 \text{ mm}$

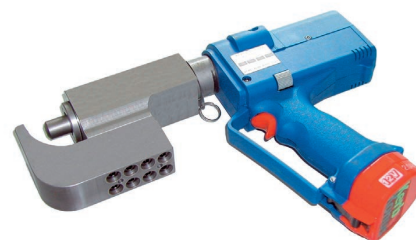
Special Rivet according to  
Works Standard 492 0  
FRP  $t = 2,3 \text{ mm} +$   
Light-alloy  $t = 1,7 \text{ mm}$



## Repair with Hand Riveter ...

For small piece numbers or repair jobs, a rechargeable battery-operated manual riveter can be used together with suitable solid punched rivets. One battery charge is sufficient for around 300 riveting operations.

A full charge takes around 60 minutes. The riveter can also be operated directly from a 230V mains connection. The riveting operation requires access on both sides.



Battery Hand Riveter



**Enquiry data sheet**  
Punched rivet / Multi-zone punched rivet

**Fax to KerbKonus**  
**+49 9621 679444**

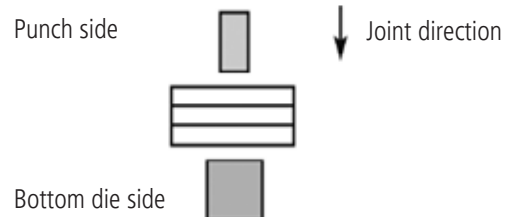
Enquiry from: \_\_\_\_\_  
Project: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Company: \_\_\_\_\_  
Mr/Ms: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_  
Piece no.: \_\_\_\_\_

Enquiry number: \_\_\_\_\_  
Project number: \_\_\_\_\_  
Contact: \_\_\_\_\_  
KerbKonus: \_\_\_\_\_  
Mr/Ms: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_  
Quotation submitted on: \_\_\_\_\_  
Initial sample on: \_\_\_\_\_  
Pilot series on: \_\_\_\_\_  
Series start on: \_\_\_\_\_

I require    A quotation      
                  A sample          
                  Technical advice

**1. Application**

	Material	Surface	Thickness
Sheet 1			
Sheet 2			
Sheet 3			



Number of joints/component: \_\_\_\_\_

**2. Requirements**

Joint stress exposure: Direction:  Shear tension     Peel tension     Cross tension  
Type:  Static     Vibratory     Force [N]  
Bottom die projection admissible:  yes     no  
Corrosion requirements

**3. Accessibility**

Flange width  
Length of rivet points  
Disturbance points/Obstacles  
(Drawings/sketches)

**Strength values table  
see overleaf**

**4. Punched rivet geometry**

Length  
 Works Standard 492 0     Works Standard 492 1  
 Works Standard 493 0     Works Standard 493 1

Schematic diagram    Schematic diagram    Schematic diagram

**5. Machine design**

C frame:     Balancer     Stationary     Robot  
Special tool:     Integrated in press     Special purpose machine  
Operation using:     Foot pedal     Hand switch     Two-hand switching

**6. Production**

Pcs./year:    Running time:    Cycle time:

\_\_\_\_\_  
Date/Signature

Please cut off and fax to KerbKonus: +49 9621 679444

## ... Strength values for Data sheet enquiry

Strength values

Material	Thickness above [mm]	Thickness below [mm]	Shear tension [kN]	Cross tension [kN]	Peel tension [kN]
1.4016	1,5	1,5	5,4	2,5	1,3
1.4301	1,5	1,5	6,0	2,8	1,5
1.4003	2,0	2,0	6,8	3,7	2,2
1.4301	2,0	2,0	7,0	3,2	2,0
H260	1,5	1,5	3,5		1,2
H420	1,5	1,5	4,8		1,7
H340	2,0	2,0	5,8		2,1
H420	2,5	2,5	7,5		2,8
AlMg 3 / Al - DG	2,0	2,2	2,7		
Al Mg 3	2,0	2,0	2,6		
Bondal 1.4301	1,5	2,5	5,0	2,4	
H300	1,5	1,5	4,6	1,6	1,4
DC 04	1,5	1,5	3,5	1,4	1,1
AlMg5Mn	1,5	1,5	2,7	1,2	0,8
AC120	1,5	1,5	2,6	1,2	0,8

## ... Instantly recognisable setting guide for optimum Tuk-Rivet® connections

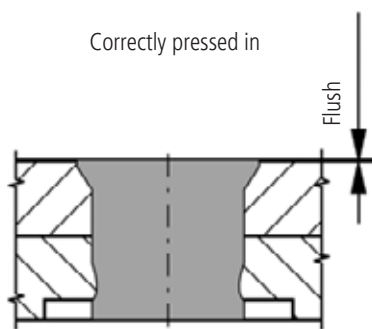


Fig. 4

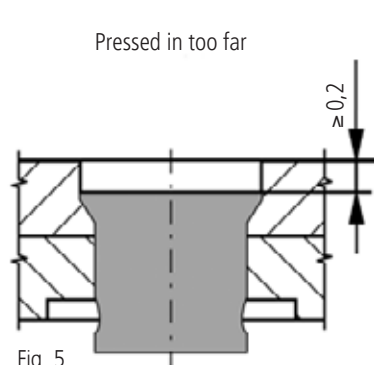


Fig. 5

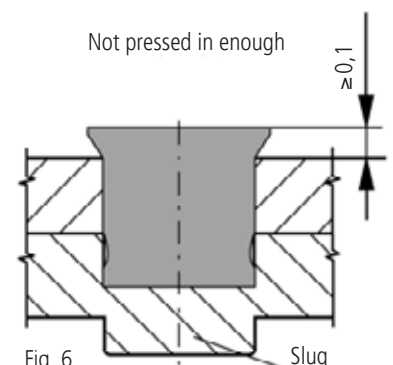


Fig. 6

Rivet too short/sheet thickness too great

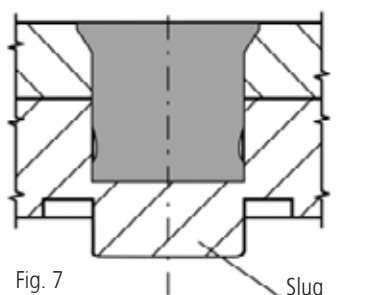


Fig. 7

Rivet too long/sheet thickness too low

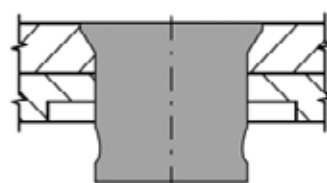


Fig. 8

Rivet length OK  
No embossing – insufficient embossing force

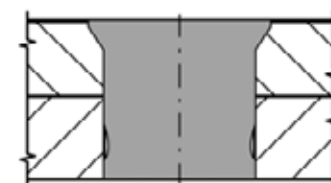


Fig. 9