

# Service Procedures

## Rivet Nuts

TB-001\_2

A 'Rivet Nut' is a one piece fastener installed 'blind' from one side of the machine body/framework. The rivet nut 1-A is compressed so that a section of its shank forms an 'upset' against the machine body/framework, leaving a durable thread 1-B.

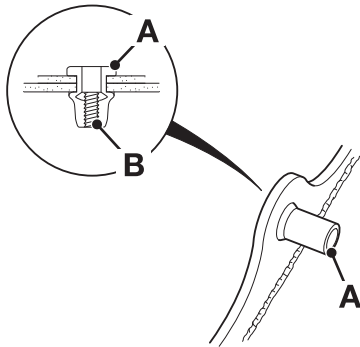


Fig 1.

Rivet nuts are fitted to various parts of the machine body and framework. They are used in a number of applications, for instance, hose clamp and hydraulic valve retention etc.

Various sized rivet nuts are available. → [Table 1. Specifications](#) (□ B-1) to determine the size of rivet nut to be used for particular applications.

If for any reason a new rivet nut requires fitting, then the correct installation procedure must be followed. → [Fitting Procedure](#) (□ B-2).

**Note:** In an emergency, and if no installation tool is available, it is possible to fit a rivet nut by using a nut and bolt the same thread diameter as the rivet nut being installed. However, this is not the recommended method.

Table 1. Specifications

Rivet Nut Thread Diameter	Rivet Nut Outside Diameter	Material Thickness	Rivet Length (Total)	Drill Hole Dia.
M5	7	0.25 - 3.00	14.00	7.10
		3.00 - 5.50	17.00	
M6	9	0.50 - 3.00	16.00	9.10
		3.00 - 5.50	19.00	
M8	11	0.50 - 3.00	18.00	11.10
		3.00 - 5.50	21.00	
M10	13	1.00 - 3.50	23.00	13.10
		3.50 - 6.00	26.00	

**Note:** All dimensions in mm

### Fitting Procedure

- 1 Drill a hole in the machine body/framework where the rivet nut is to be fitted. De-burr hole edges.
- 2 Screw the rivet nut onto the mandrel of the installation tool. The bottom of the mandrel should be in line with the bottom of the rivet nut **2-A**.

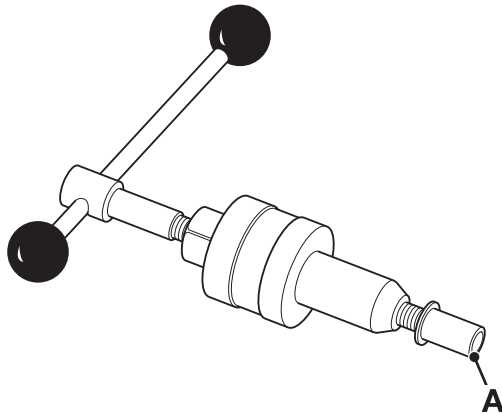


Fig 2.

- 3 Wind the body of the installation tool down the threaded mandrel until it touches the head of the rivet nut **3-B**.

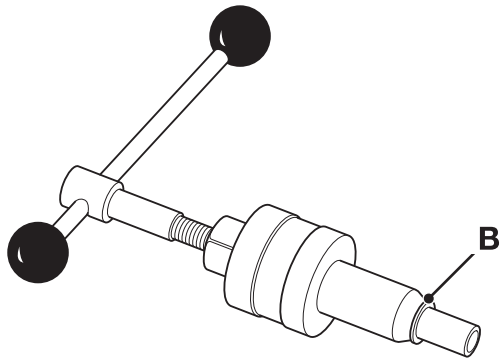


Fig 3.

- 4 Insert the rivet nut (assembled to the tool) into the hole drilled in step 1.
- 5 Hold handle **4-C** and at the same time draw the mandrel into the installation tool by turning nut **4-D**. The rivet nut will contract in length and form an 'upset'

(smooth bulge) seating itself against the body/framework **4-E**.

**Note:** The thread of the rivet nut must not be stripped, take care when 'upsetting' the rivet nut.

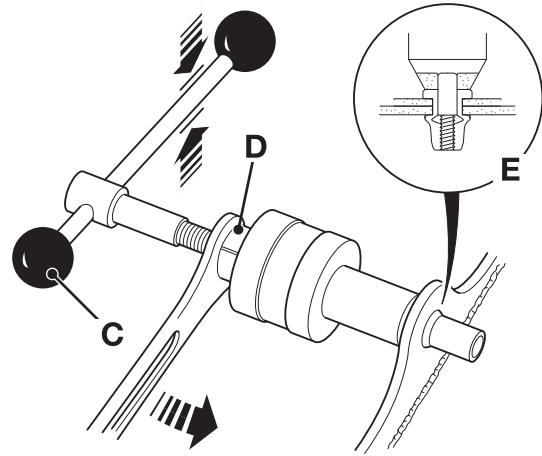
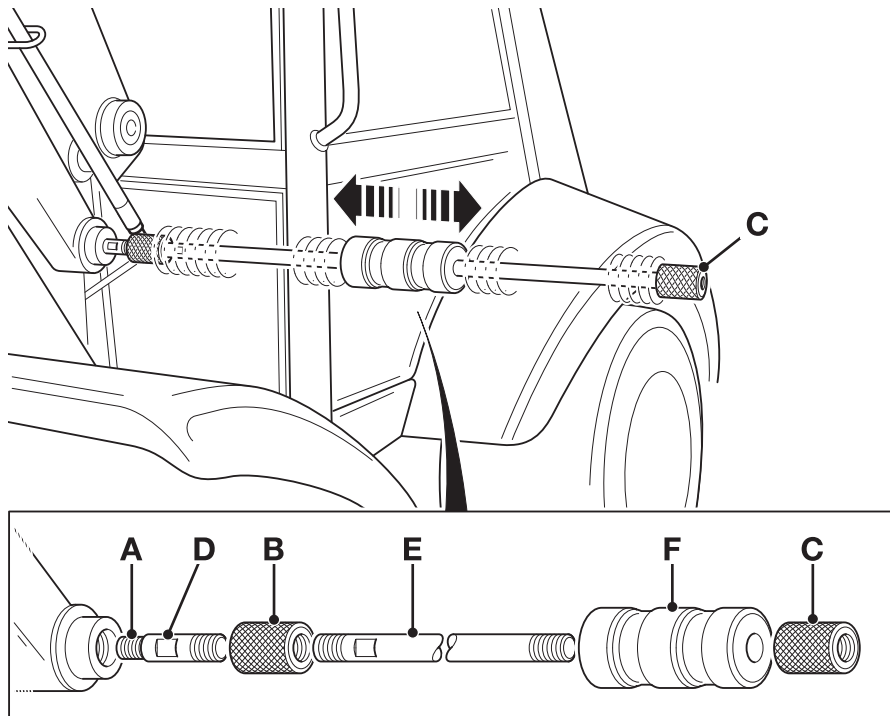


Fig 4.

- 6 Remove the installation tool.

## Slide Hammer Kit

TB-003



**Fig 5. Typical M/c. Installation**

The slide hammer kit is used to remove pivot pins that must be extracted, i.e. cannot be 'knocked through'. The purpose of this description is to explain how the kit and the various components are used to remove the pivot pins.

The adaptors **5-A** that form part of the kit have a screwed thread at each end. One of the threads will always be M20 size, this is to accommodate the end stops, items **5-B** and **5-C**. The other end of the adaptor will have varying thread sizes to suit the different size of threads in the pivot pins.

### Fitting Procedure

- 1 Prepare the pivot pin, for instance, if fitted, remove the pivot pin retaining bolt.
- 2 Determine the thread size of the pivot pin and then fit the appropriate adaptor **5-A** as shown. Use the spanner flats **5-D** to securely fit the adaptor.
- 3 Fit an end stop **5-B** onto the other end of the adaptor (M20 thread size), make sure that the adaptor threads are fully engaged.
- 4 Fit the 'slide bar' **5-E** into the end stop. Again make sure that the threads are fully engaged.
- 5 Fit the 'slide hammer', item **5-F**, onto the slide bar as shown.
- 6 Finally, fit another end stop, item **5-C**, at the end of the slide bar, as shown. The slide hammer kit is now ready to use.
- 7 To extract the pivot pin, slide the hammer along the bar until it contacts end stop **5-C**. Repeat this step until the pivot pin is released.
- 8 To remove the slide hammer kit, reverse steps 2 to 7.

## Glazing

### Direct Glazing

TB-002\_6

The following procedures explain how to correctly remove and install panes of glass that are directly bonded to the cab frame apertures. When carrying out the procedures, relevant safety precautions must be taken.

- 1 Always wear safety glasses during both removal and replacement.
- 2 Use protective gloves - heavy duty leather gauntlet type gloves when cutting out the broken glass; 'non-slip' type gloves when handling/moving panes of glass; surgical type gloves when using the polyurethane adhesives.
- 3 Wear protective overalls.
- 4 Do not smoke - the activators and primers used in the procedures are highly flammable.
- 5 Do not attempt to handle or move panes of glass unless you are using glass lifters.

Several special tools are required to successfully complete the removal and replacement procedures. Reference is made to the tools in the text. The majority of these tools can be obtained locally and the remainder from JCB Service (see **Service Tools**).

The work must only be carried out in a dry, frost free environment. A protective canopy may be required or the machine/frame must be moved to a sheltered area. In damp or wet conditions, hinged doors and window frames can be removed from the machine and taken to a more suitable (dry) environment.

Glass should not be replaced at temperatures below 5°C (41°F).

### WARNING

**Laminated glass must be handled with extra care to prevent breakage. Wherever possible, store and handle it in a vertical attitude. When placing or lifting the glass in a horizontal attitude it must be supported over its whole area, not just at the edges.**

BF-1-8\_1

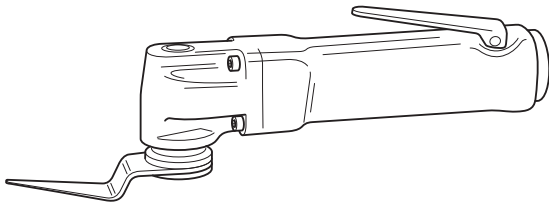
### Removing the Broken Glass and Old Sealant

### WARNING

**Always wear safety glasses when removing or installing screen glass. Never use a power operated knife when removing the sealant around a toughened glass screen. The action of the knife could cause particles of glass to be thrown with sufficient force to cause serious injury, even when safety glasses are being worn. Use only hand operated tools when working with toughened glass.**

BF-2-3\_1

- 1 Position the machine on level ground and apply the park brake. Stop the engine. Put protective covers over the cab seat and control pedestals.
- 2 If a laminated pane breaks it will stay in one piece even though the glass is cracked. A toughened pane will shatter and fall apart. The method of removal of the glass depends upon which type it is.
  - a Laminated glass - leave installed until the old sealant has been cut away, after which it will be possible to lift the broken screen away from its frame housing in one piece.
  - b Toughened glass - remove as much of the shattered glass as possible prior to cutting out the old sealant.
- 3 Cut out the old sealant, leaving approximately 1 to 2 mm on the cab frame. There are several tools and techniques for doing this:
  - a Pneumatic Knife. → [Fig 6. \(□ B-5\)](#). This provides one of the easiest methods of removing the sealant around laminated glass. The tool, powered by compressed air, should be sourced locally.



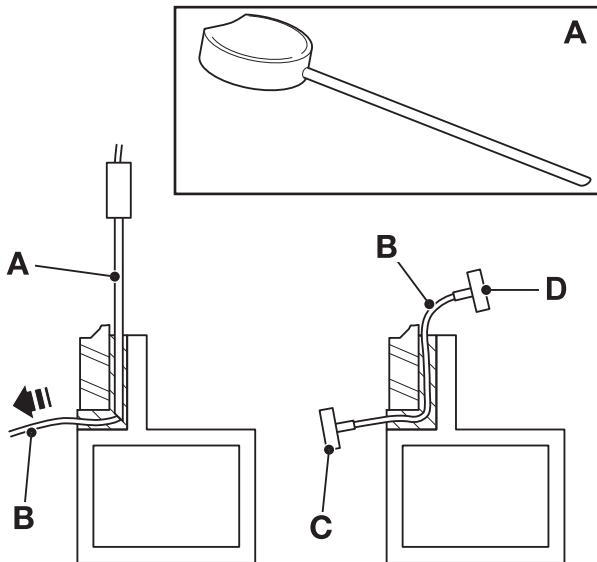
**Fig 6. Pneumatic Knife**

- i Press the handle to start the knife blade oscillating.

**Important:** This tool must not be used on toughened glass.

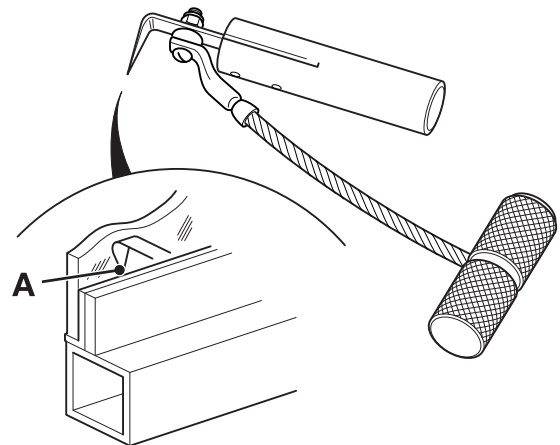
- ii Insert the knife blade into the sealant.
  - iii Slowly move the knife along the sealant with the blade positioned as close to the glass as possible. Do not allow the knife blade to overheat or the sealant will melt.
- b Braided Cutting Wire and Handles. [⇒ Fig 7. \(□ B-5\)](#). This method uses a 3-core wire, a wire starter tube and two handles.

- i Insert the steel tube **A** into the old sealant on the inside of the glass.



**Fig 7. Braided Cutting Wire and Handles**

- ii Insert the braided cutting wire **B** down the centre of the steel tube. If necessary, from the outside, cut out local sealant at the point of the tube to gain access to the wire.
  - iii Using suitable pliers, pull the cutting wire through the sealant to the outer side of the glass.
  - iv Secure the end of the braided cutting wire (found on the outer side of the glass) in the special handle **C**.
  - v Slowly remove the steel tube **A**.
  - vi Secure the second end of the braided cutting wire in the special handle **D**.
  - vii Move the cutting wire backwards and forwards in a sawing motion and at the same time gently push or pull the wire to cut through the old sealant.
- c Cut-out Knife. [⇒ Fig 8. \(□ B-5\)](#). The cut-out knife can be used as a left handed or right handed tool.



**Fig 8. Cut-out Knife**

- i Insert the knife blade into the sealant.
- ii Make sure that the blade of the knife is against the glass **A**. [⇒ Fig 8. \(□ B-5\)](#).
- iii Use the 'pull-handle' to pull the knife along and cut out the old sealant.