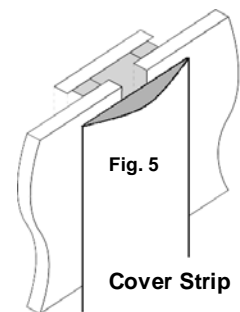


Recommendations and Guidelines for Removal of Direct Glazed Glass from Buses, Coach Bodies, Trucks and Trains.

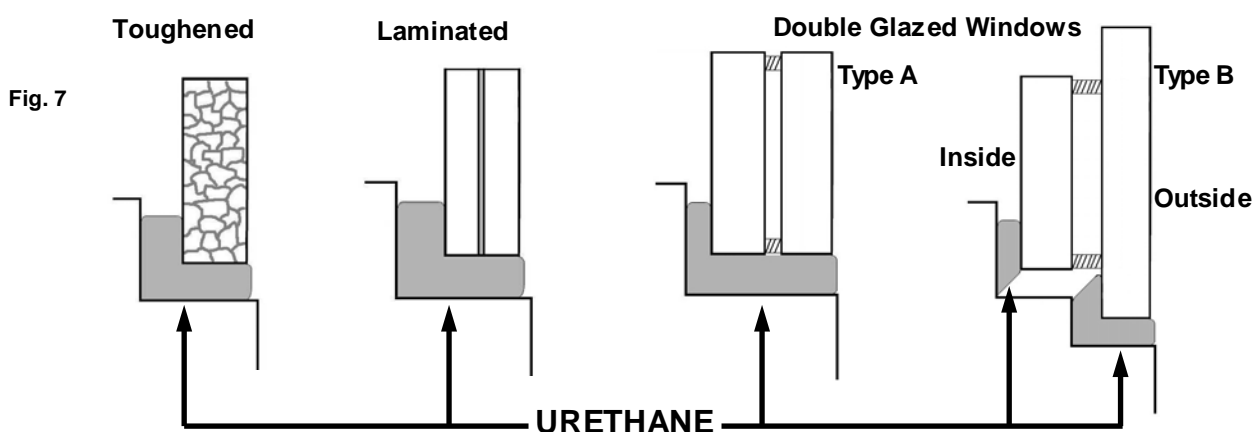


1. Preparation is important, ensure there is adequate lighting and suitable elevated work platforms are used for efficient and safe working and glass handling.
2. Before cutting out glass, always check that a replacement glass is the correct size and specifications.
3. If needed, apply required protection to the work area by means of covers or masking tape to the interior/exterior trimmings, mouldings or paintwork.
4. Prepare all tools, equipment, materials and adhesive products needed for the job.
5. If necessary, remove any mouldings, cover strips, trims or interior fittings to allow blade access to the urethane bond area. e.g. If cutting off cover strips fitted over adjoining glass edges, WK6 blades can be used in manual handles or BTB power tools. Always put radius side of blade against the glass. The blade will hug cover strip, avoiding blade tip damaging the glass edges.
6. Use air pressure to blow away any loose dirt or rubbish around cutting area to maximise visibility (and efficiency) and avoid possible damage caused by dirt and grit mixed in with cutting lubrication.



NOTE: WEAR PROTECTIVE GLOVES AND SAFETY GLASSES AT ALL TIMES.

7. Identify the glass installation and plan for the cut out procedure, e.g. Is glass Toughened/Laminated/Double Glazed.
 - a. Interior cut out where external removal is not possible.
 - b. Exterior cut out where entry under glass edge is possible.
 - c. Cut out from the inside and the outside e.g. Double-glazed



8. Check thoroughly for electric connections or other components that maybe hidden or attached to the glass or located close to the cutting area.
9. Select appropriate cutting blades and ensure that the blades are sharp
10. For effective cutting (especially on wide urethane), spraying a cutting lubricant to the cutting area is very important. Use either a cutting lubricant approved by your urethane manufacturer or just use plain water. Lubrication will also avoid build up of heat.
11. Spray cutting lubrication frequently during the cut out, to the inside and the outside of the cutting area where possible.



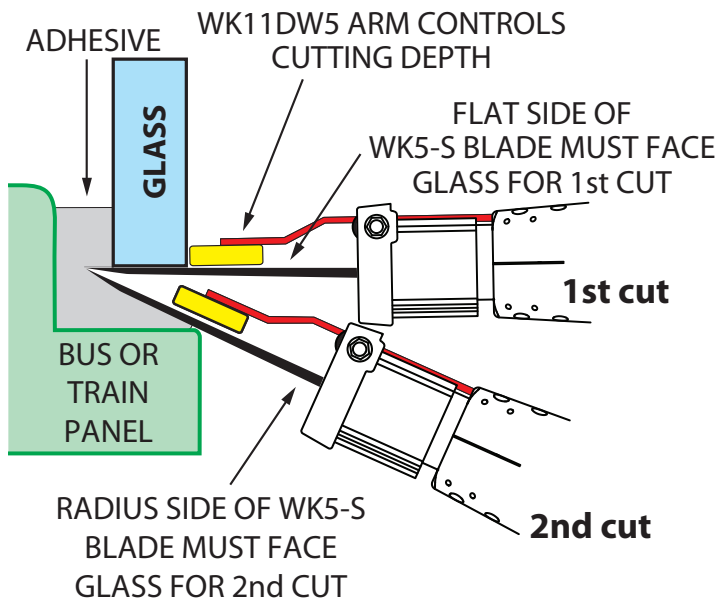
Fig. 9

BACKFILL ADHESIVE REMOVAL

12. When the glass edge is surrounded by urethane backfill, a separation from the glass edge must be created prior to the cut out procedure.
You MUST firstly perform the following points 12A or 12B.

12A

Fit a WK5S Blade in the Power Tool (can also be used with WK7L Manual Handle). Cut a 'V' Channel in the backfill. Apply first cut with flat side of blade against glass edge, operating at approx. 45° angle. Apply a second cut in the adhesive to create a 'V' cut to expose and release glass edge. This may be between the glass edge and the vehicle body or between two glass edges.



12B

Using a WK17 backfill blade in the power tool, create a U-Shape cavity to expose the glass edge.

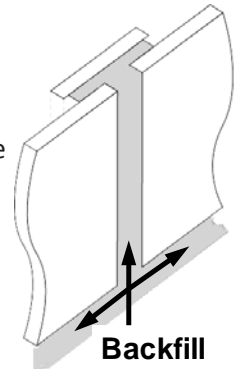
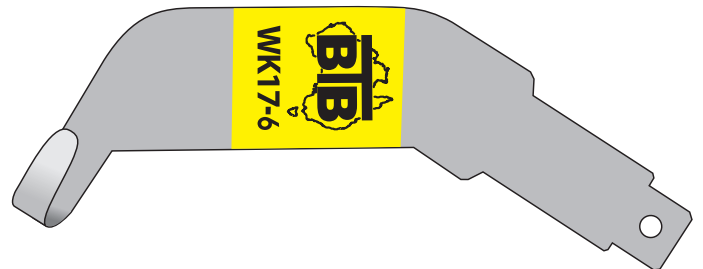
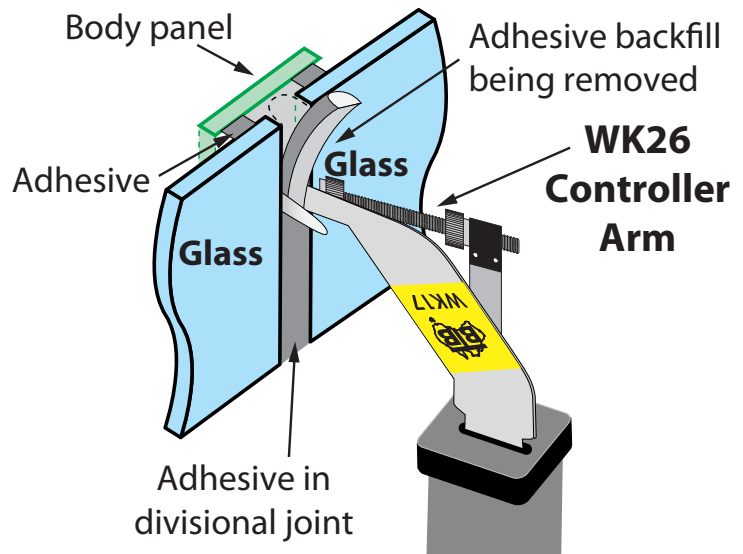


Fig. 12



CUT OUT PROCEDURE

13. Apply appropriate vacuum/suction cups to glass in readiness for glass release and lift-out
14. **IMPORTANT – CUT OUT GLASS IN THE FOLLOWING ORDER**
These glasses are normally large, heavy, and expensive if undamaged and needing to be reinstalled.
To avoid accidental glass fall-out, start the cut out at one point along the bottom or sides, work progressively from that point in each direction. Fully release/cut away the glass except for:



DSC148K
(2 x DSC148)



WK420

LEAVE A SMALL UNCUT SECTION AT TOP CENTRE OF GLASS TO RETAIN GLASS IN THE VEHICLE.

If necessary, insert plastic paddles or other blades into the pre-cut area to carefully wedge the glass away from the body as cutting progresses to assist glass separation.

15. Cut Out from the Inside or Outside (or both).
 - a. Inside Cutting using Regular/Serrated Blades.
Select appropriate blade, normally WK4Z-S or other optional/longer blades when necessary. Use a continuous non-stop cutting action, progressively separating the glass from the urethane.

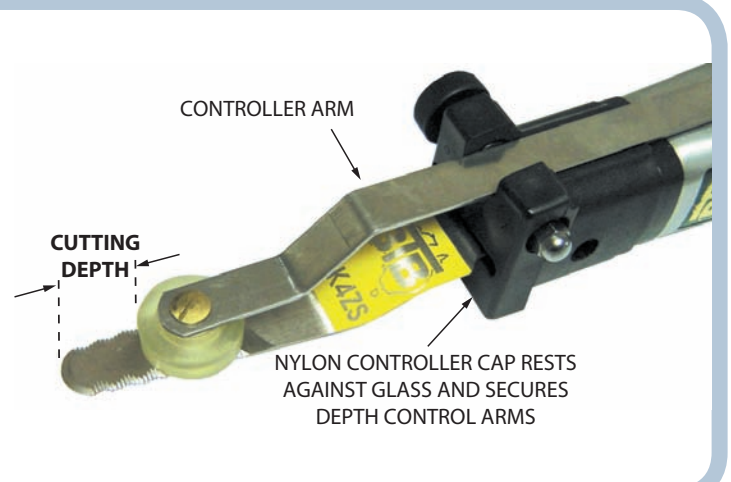


15" (375mm) WK1X Long blade in BTB Tool for very long reach cutting applications

NOTE: Use cutting depth control arms to avoid blade tip hitting the body - and more specifically when cutting out a glass that adjoins another.
(also refer Fig. 5 & Fig. 12)

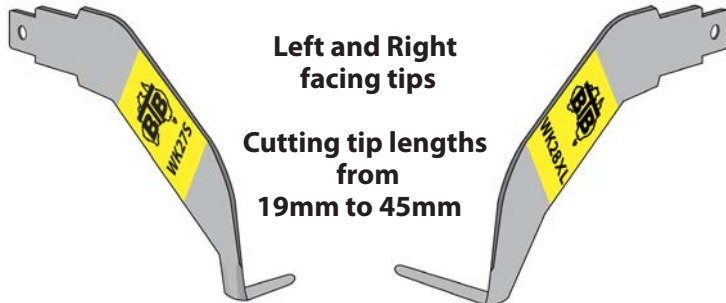


WK4Z-S short blade in BTB Tool with WK11BW5 cutting depth control arm fitted



b. Outside Cutting using BTB Powered Cold Knife Blades (WK27 & WK28 Range)

Ensure there is enough clear way or cavity to insert blade and operate under glass edge. i.e. backfill has been sufficiently removed (refer point 12)



NOTE: It may be effective to use the “S” (Short Tip) blades first, then change to the longer tip blades (M, L or XL) to progressively and more efficiently cut away hard or wide urethane.

TOTAL GLASS RELEASE

When glass is completely released along the bottom, sides and top corners, prepare for lift-out and then cut remaining urethane along the top.

WARNING: IF THE BACKFILL HAS NOT BEEN PROPERLY CUT AWAY FROM THE EDGE OF THE GLASS, THE REMOVAL WILL BE VERY DIFFICULT

16. If necessary (from inside the vehicle) use a blade (WK3 pictured) in a manual handle to separate any remaining stringers of urethane.



LIFTING OUT OF GLASS

17. Be prepared that the glass may be heavy. Ensure suction cups are properly attached and capable of carrying the load.

PINCHWELD TRIMMING

18. Trim the excess adhesive from the vehicle pinchweld with BTB's WK6 range of pinchweld trimming blades. These blades can be used either in the WK7 or WK7L manual handles or in the BTB power tools for wider and harder urethane beads. This will leave a thin, even layer of adhesive for rebonding the replacement glass.



PRODUCT INFORMATION

19. A Training DVD is included with every toolkit purchase and is also available upon request (available in 6 languages). A specific bus/truck/rail glass removal guidelines video and other videos can also be viewed on BTB's website, where you will also find further hints, tips & product information.

PRODUCT TRAINING

20. Hands-on training can be arranged subject to location. Further technical advice and data may also be available upon request. Contact BTB or your BTB distributor for further information.

