

Rescue equipment

**Holmatro**

**Practical Cutting Techniques**



**Practical Cutting Techniques – Introduction**



This document is designed to assist rescuers with the correct techniques for using Holmatro NCT cutters during training scenarios and extrication. By following the simple steps detailed below you will achieve safer, quicker and easier extrications, whilst at the same time extending the life of your equipment by greatly reducing the possibility of damage.

We will look at techniques to achieve surrounding and penetrating cuts as well as looking at options for dealing with vehicle hinges.

The information contained in this document must be used in conjunction with your local standard operating procedures and if you are in any doubt, please contact your training/education department for more guidance.

**Safety**



**Important**

Before commencing work, please ensure you are wearing the correct personal protective equipment required by your rescue organisation.

**Minimum standard**

- Full fire fighting/rescue kit
- Cut resistant gloves
- Protective boots
- Helmet, with visor
- Eye protection



**Basic cutting principles – Surrounding cut**



- Always expose interior vehicle trim before cutting
- Always try and cut at 90° angles
- Always allow your tool to freely move during cutting
- Never allow your hose/coupling to contact the vehicle during cutting operations
- If your tool cannot freely move, reposition
- Always monitor blade tips and ensure they have space to move forward

**Interior trim on B-pillar removed and pillar exposed before cutting**



**Interior trim at base of A-pillar removed before cutting commences**



Exposing interior trim allows you to identify the safest area to cut. You must identify airbag inflators and seatbelt pretensioners and avoid cutting these areas.

You can also identify the exact areas of strength.

Identifying substantial construction features such as seat belt anchor bolts and height adjustment rails will allow you to position your cutters away from such areas and ensure a quicker and easier cut.

**Remember: The trim does not have to be fully removed, but you must be satisfied that you can cut safely.**

Cutting B-pillar



Tool presented to vehicle  
at 90°

Cutting pillars - Surrounding cuts



Alternative



Tool presented to vehicle  
at 90°



Alternative

Tool presented to vehicle  
at 90°



**Basic cutting principles – Penetrating cuts**



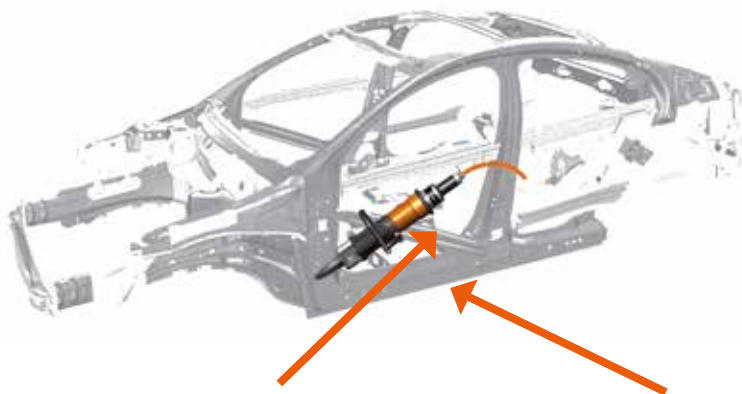
Making relief cuts in A- and B-pillars usually involves PENETRATING cuts.

Great care and attention must be given to your tool whilst performing such cuts. You must:

- Ensure the tool has room to move freely ensuring the cylinder does not contact any part of the vehicle
- Always monitor your tips
- Ensure the tool does not twist, if this occurs, STOP and reposition
- Such relief cuts require you to ensure the hose and coupling do not contact any part of the vehicle during the cut



**A-pillar – Relief cuts**



**Ensure tool and hose can move freely and will not contact any part of the vehicle during cutting operation.**

**Ensure tool does not contact sill**

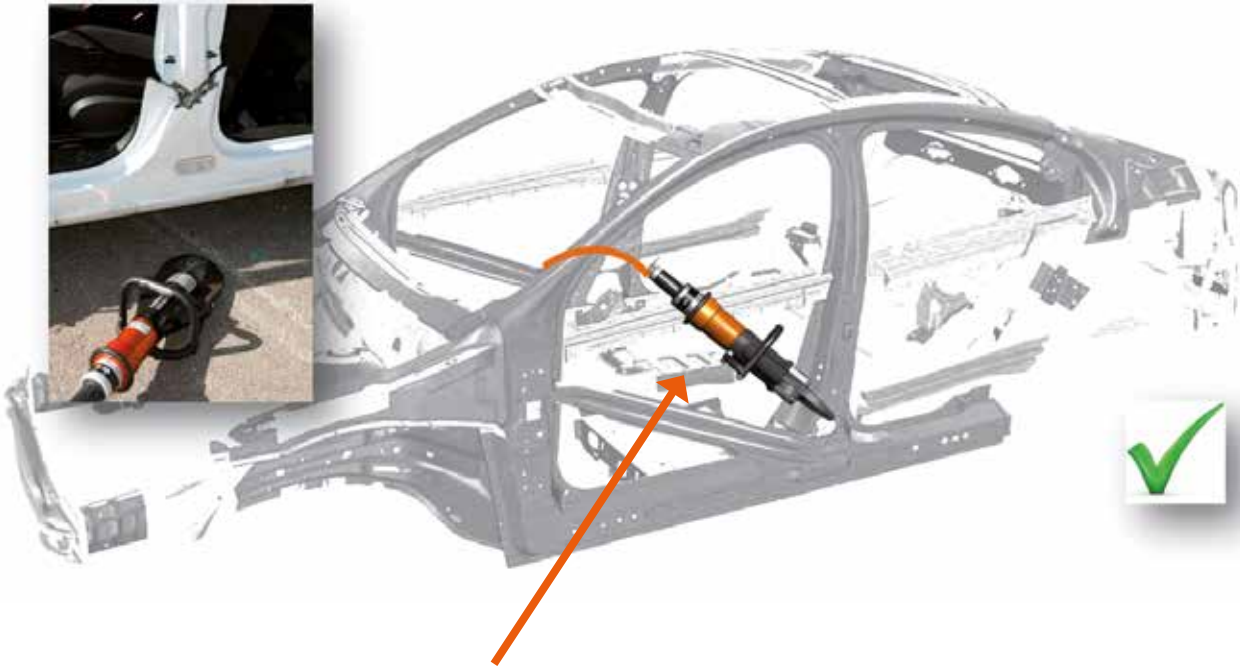


**Do not cut hinge construction**

**Manage hose and coupling**



**B-pillar - Relief cuts**



**Ensure tool and hose can move freely and will not contact any part of the vehicle during cutting operation**

**Manage hose and coupling**

**Do not cut hinge construction**



**Dealing with hinges - Spreading**



Hinges can either be completely spread off, or they can be dealt with by a combination of spreading (to create space) and then cutting.

The correct method of spreading is quick and effective. Spreading a closed door by exposing the hinges and then spreading from top to bottom (top hinge, check strap and then bottom hinge) means the door is always moving away from the passenger compartment.



✓ Front door closed: once you have exposed the hinges, the door can be removed by use of a spreader alone.

**Dealing with hinges - Cutting**



**Open front door:  
No room for blades to  
move and surround  
hinge construction.  
May damage blades**

Because NCT cutters are designed to position themselves to cut at the recess of the blades (where the maximum force is located) the blades **MUST** have room to move whilst cutting and be able to fully surround the hinge. If space is not created, the force will be concentrated on the cutter tips causing them to twist. If this happens the blades may be 'side loaded' due to forces applied when they contact the A-pillar and the door.



**Creating space by  
spreading allows  
the cutter blades to  
fully surround the  
hinge construction,  
therefore cutting with  
maximum force**

**Cutting Techniques - Summary**

- Adopting the correct technique will ensure safe, quick and easy extrications and extend tool life by reducing risk of damage.
- Always expose trim before cutting.
- Whether you are performing surrounding or penetrating cuts, always ensure the tool and hose can freely move, repositioning if necessary.
- Always carefully monitor your blades and in particular, blade tips.
- Creating space around hinges will ensure the cutters work most efficiently, reducing the risk of damage.





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