

**Rescue** equipment

**Holmatro**

**New Car Technology** Cutters NCT™ II



 **holmatro**  
mastering power

**The conflict between safety and accessibility**

Car manufacturers continuously invest in New Car Technology: the application of stronger materials, reinforced constructions and advanced safety systems in vehicles. With these measures they aim to obtain high ratings in NCAP\* crash tests, which guarantee optimum occupant safety during an impact. However, the safer vehicles get, the more difficult it becomes to get access to occupants trapped after an accident. In other words: New Car Technology causes a conflict between safety and accessibility.

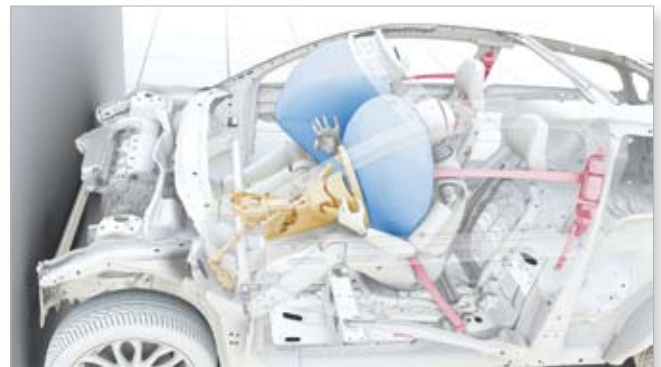
\* = New Car Assessment Programme

**New Car Technology developments**

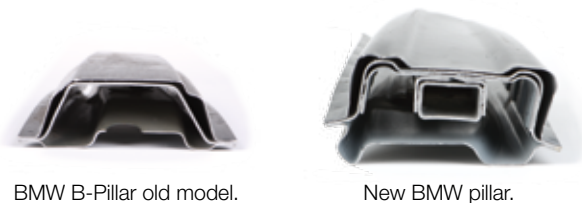
New Car Technology (NCT) can be divided into two types of developments: safety systems and material & construction.

**Safety systems** include - but are not limited to - all types of airbags, seatbelt pre-tensioners, anti-lock braking systems (ABS), traction control systems (TCS), electronic stability control (ESC) and speed limitation devices.

**Material & construction** developments show the use of more and/or thicker layers of steel to reinforce car constructions. Alternatively, so-called ultra high-strength steels such as Boron are applied for this purpose and can for instance be found in A- and B-pillars, roof rails, rocker panels and door collision beams.



Internal safety systems such as airbags and seatbelt pre-tensioners are activated on impact.



BMW B-Pillar old model.

New BMW pillar.

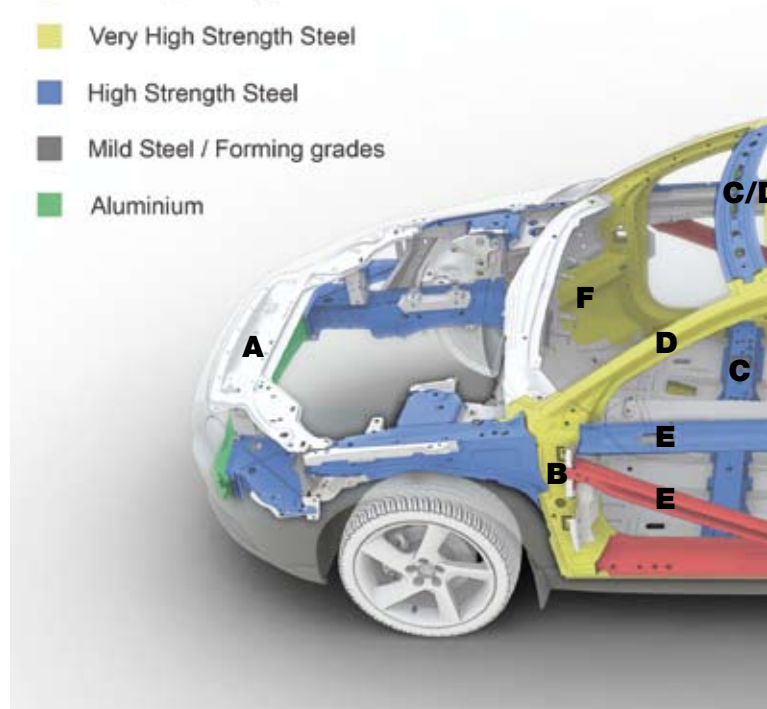


More examples of new and strong pillar constructions.

- Ultra High Strength Steel
- Extra High Strength Steel
- Very High Strength Steel
- High Strength Steel
- Mild Steel / Forming grades
- Aluminium



A growing number of vehicles score the maximum 5-star rating in the NCAP crash tests, including many compact cars.







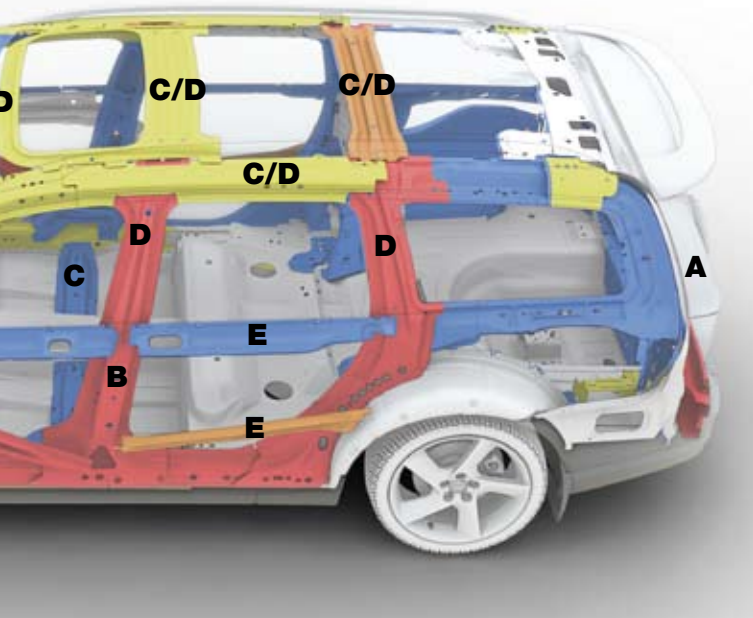
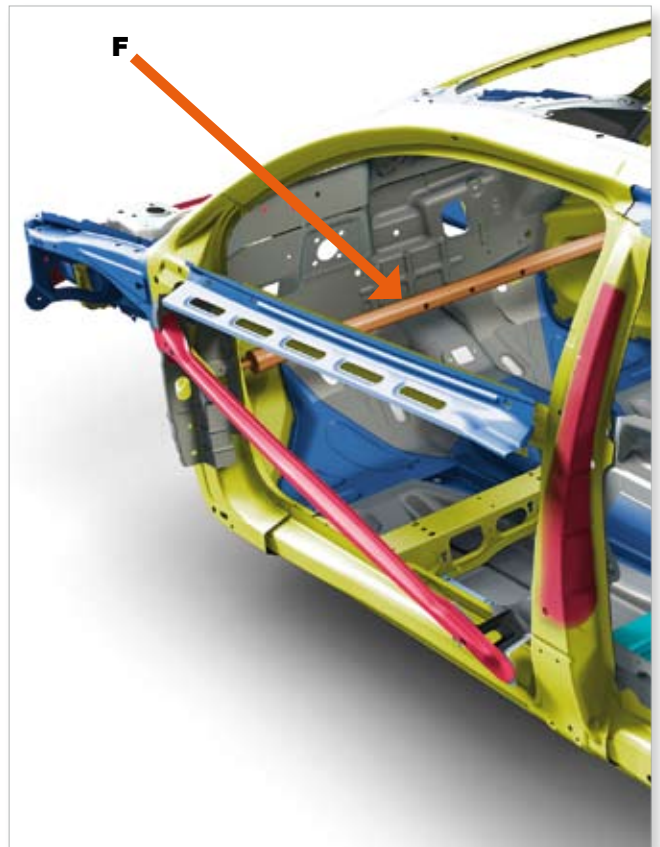
Door reinforcement to protect against side impacts. **(E)**



Passenger cell protected by reinforced construction. **(D)**



Crumple zone activated on impact. **(A)**



- A:** Crumple zones commonly used in the vehicle's front and rear to absorb the energy of a crash.
- B:** Door hinges and latches designed to keep doors closed during an impact.
- C:** Chassis and roof structure designed to transfer crash energy around the passenger cell.
- D:** High-strength steel reinforced pillars and roof structure provide structural strength to the passenger cell.
- E:** Doors are reinforced with high-strength steel intrusion bars to protect against side impacts.
- F:** Dashboard reinforcement bars to prevent intrusion during both frontal and side impacts.

**The solution**



New Car Technology developments present rescuers with the ongoing challenge of choosing the right tools and techniques for vehicle extrication. To help them face this challenge Holmatro has developed the next generation of New Car Technology cutters tested on the latest car prototypes: NCT™ II. These cutters are specially designed to cut the high-strength materials and reinforced constructions found in modern vehicles.



Holmatro has contact with various car manufacturers to test its NCT™ II cutters on the constructions of brand new car prototypes.



NCT™ II cutters also perform penetrating cuts with ease.



Holmatro's New Car Technology cutters are designed to surround and cut the wide, deep and reinforced pillars of the latest car models.



**Why NCT™ II cutters?**

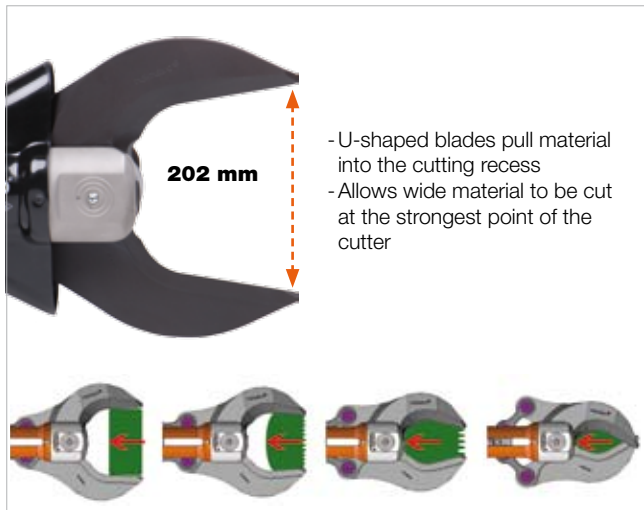
Extensive cutting tests on the latest car prototypes show that power alone is not enough. That is why our NCT™ II cutters focus on a better cutting performance. This is achieved by combining three basic principles:

- 1. **Advanced blade design**
  - 2. **Flat central i-Bolt construction**
  - 3. **More hydraulic cutting force**
- } = **The best cutting performance**

**1. Advanced blade design**

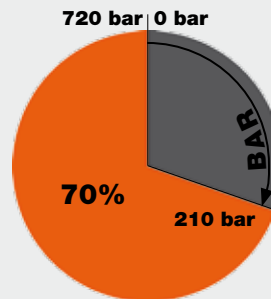
Holmatro's revolutionary NCT™ II blades, with their characteristic 90° blade angle, have a huge opening at the tips. This enables them to surround the wide and deep pillars of modern cars with ease.

These U-shaped blades automatically pull the material into the cutter's recess which is the point with the highest cutting force. The result: a superior cutting performance. Modern vehicle constructions and new hard materials are cut with far more efficiently and at a much lower working pressure than possible with general purpose (GP) type blades.



**Reserve for the future**

**NCT™ blades**

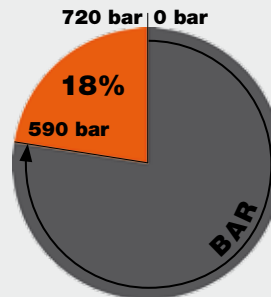


Indicative pressure needed to cut a B-pillar of a 2010 car prototype with Holmatro NCT™ blades.

Excess capacity with a cutter with Holmatro NCT™ blades (70%).



**GP blades**



Indicative pressure needed to cut a B-pillar of a 2010 car prototype with conventional GP blades.

Excess capacity with a cutter with GP blades (18%).



High-strength materials are pulled into the cutting recess to be cut at the strongest point of the cutter.

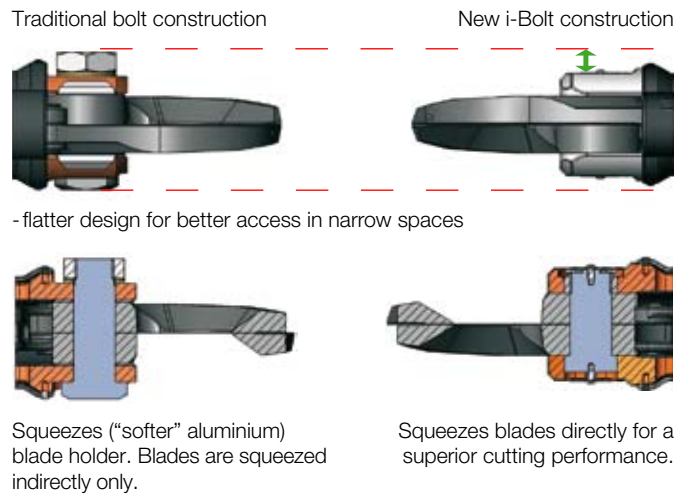
**2. Flat central i-Bolt construction**

The construction of a tool is essential for achieving the best possible performance. For this reason Holmatro developed the i-Bolt. This new central bolt construction squeezes the blades together more tightly, resulting in minimum blade separation and an improved cutting performance.

The much flatter design of the i-Bolt also provides better access in narrow spaces. Its stainless steel cover protects the bolt and blade holder against damage.



Better access to narrow spaces thanks to flat i-Bolt design.



**3. More hydraulic cutting force**

One needs power to cut the hard materials and reinforced construction of modern cars. Besides this, rescue operations ask for speed and ease of use. In the NCT™ cutter range Holmatro created more hydraulic cutting force with the same maximum working pressure (720 bar). Through the use of innovative materials the weight of these stronger tools was even slightly reduced, without any loss of their additional power.





CU 4055 C NCT™ II



CU 4050 C NCT™ II



CU 4035 C NCT™ II

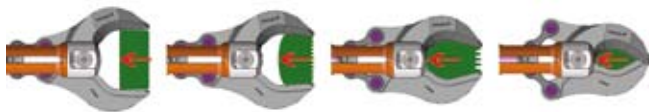
**NCT™ II Cutters - New Car Technology**

specifications		CU 4035 C NCT™ II	CU 4035 NCT™ II	CU 4050 C NCT™ II	CU 4050 NCT™ II	CU 4055 C NCT II	CU 4055 NCT II
equipped with		CORE™	dual hoses	CORE™	dual hoses	CORE™	dual hoses
article number		150.012.095	150.012.088	150.012.094	150.012.093	150.012.166	150.012.167
EN 13204 classification		AC145E-13.8	AC145E-14.9	BC165H-18.0	BC165H-19.1	CC202H-19.6	CC202H-20.7
max. working pressure	bar / MPa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
blade opening	mm	159	159	181	181	202	202
cutting force	kN / t	355 / 36.2	355 / 36.2	927 / 94.5	927 / 94.5	1018 / 103.8	1018 / 103.8
round bar (acc. to EN 13204)	mm	32	32	41	41	41	41
weight, ready for use	kg	13.8	14.9	18.0	19.1	19.6	20.7
dimensions (A x B x C)	mm	714 x 270 x 202	749 x 270 x 202	775 x 270 x 218	810 x 270 x 218	805 x 270 x 218	840 x 270 x 218
required oil contents (effective)	cc	83	83	163	163	163	163
i-Bolt technology		√	√	√	√	√	√
carrying handle with integrated lighting		√	√	√	√	√	√
safety factor pigtail hoses		--	4:1 = 2880 bar	--	4:1 = 2880 bar	--	4:1 = 2880 bar
temperature range		-20°C - +55°C					
hydraulic safety factor		2 x max. working pressure of 720 bar = 1440 bar					
endurance test tool		1000 cycles of biting at 720 bar in material that cannot be cut					
endurance test dead man's handle		6000 cycles					

Tested according to EN 13204 and NFPA 1936.

**Features / Benefits**

**Improved blade design - NCT™ II**



- pulls material towards the strongest point of the cutter
- cuts 41 mm round bar (CU 4050 / 4055) according to EN 13204

**Unmatched performance**



- cuts all modern, strong and complex pillar constructions.
- tested on the latest car models

**Time saving New Car Technology**



- one cut for even the widest and deepest B- or C-pillar





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