

## 05 HURST HP CUTTERS

+ RELIABLE

+ ERGONOMIC

+ PERFORMANCE



# 06 HURST CUTTING TECHNOLOGY

## The Science Behind Cutting Capability

With intuitive blade designs engineered to pull material to the center of the blades, industry leading cutting force at the point of attack and leading ergonomic design, Hurst Jaws of Life® cutters are undeniably the industry standard.

Years ago industry challengers began hyping “maximum cutting force” as the key selling point when considering cutters. This created an inaccurate standard of – the more force, the better.

This focus on “maximum cutting force” has created confusion in the marketplace regarding how cutting forces are calculated, why advertised cutting forces may vary from National Fire Protection Agency (NFPA) guidelines, and how some manufacturers inflate cutting force measurements for marketing purposes. For true comparison of cutting capability rescuers should utilize the NFPA cutter ratings.

	A	B	C		D	E
MATERIAL CATEGORY	ROUND BAR	FLAT BAR	ROUND PIPE		SQUARE TUBE	ANGLE IRON
MATERIAL	A-36 Hot-rolled	A-36	Schedule 40 A-53 Grade B		A-500 Grade B	A-36
	Diameter	Thickness x Width	Nominal Size	OD x Wall Thickness	Dimension x Wall Thickness	Square Dimension x Thickness
PERFORMANCE LEVEL	(in.)	(in. x in.)	(in.)	(in. x in.)	(in. x in.)	(in. x in.)
1	3/8	1/4 x 1/2	3/8	0.68 x 0.09	1/2 x 0.06	1/2 x 1/8
2	1/2	1/4 x 1	3/4	1.05 x 0.11	1 3/4 x 0.06	1 x 1/8
3	5/8	1/4 x 2	1	1.32 x 0.13	1 x 0.08	1 1/4 x 3/16
4	3/4	1/4 x 3	1 1/4	1.66 x 0.14	1 1/4 x 0.12	1 1/2 x 3/16
5	7/8	1/4 x 4	1 1/2	1.90 x 0.15	1 1/2 x 0.12	1 1/2 x 1/4
6	1	3/8 x 3	2	2.38 x 0.15	1 3/4 x 0.12	1 3/4 x 1/4
7	1 1/4	3/8 x 4	2 1/2	2.88 x 0.20	2 x 0.15	1 1/2 x 3/8
8	1 1/2	3/8 x 5	3	3.50 x 0.22	2 1/2 x 0.19	2 x 3/8
9	1 3/4	3/8 x 6	3 1/2	4.00 x 0.23	3 x 0.19	2 1/2 x 3/8

In the Hurst Jaws of Life® testing lab, our engineers calculate force measurements based on known facts, and then conduct real-world tests with production-grade tools to verify the data. And finally, we make sure our products are tested, retested, and tested again, until we are completely certain they can handle even the toughest emergency rescues.

## Cutting Force at the Right Point

Today’s modern vehicles use highly advanced types of steel in their construction. These highly reinforced structures do not compress into a tight bundle like the A-Posts, Roof Rails and B-Posts of passenger vehicles built in the 80s and 90s. Instead, when the cutter blades make contact with the high-strength outer layer of steel in today’s significantly larger posts, they are immediately up against the ultra-high-strength press-hardened Boron sheet metal and Martensite Boron Steel which lines the inside diameter of the structure. This means that when cutting large diameter posts on today’s vehicles, maximum cutting energy is required at the tips of the blades at near full open position.



2005 Subaru

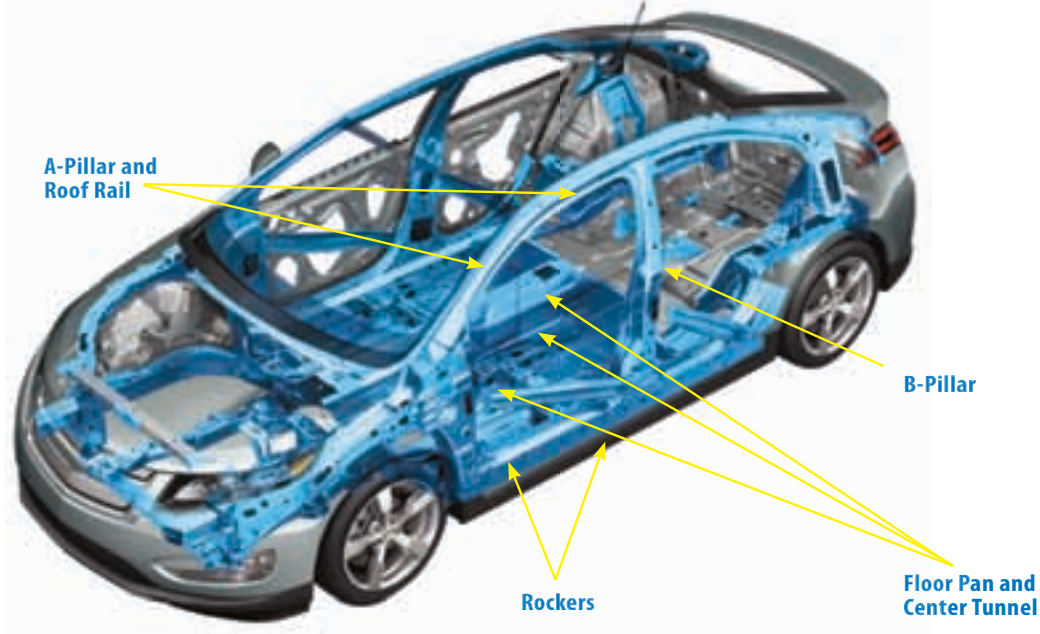


2011 Mercedes

These advanced types of steel do not cut. And, compression of these structures is limited, which results in fracturing at greater than half their original diameter.

## 07 HURST CUTTING TECHNOLOGY

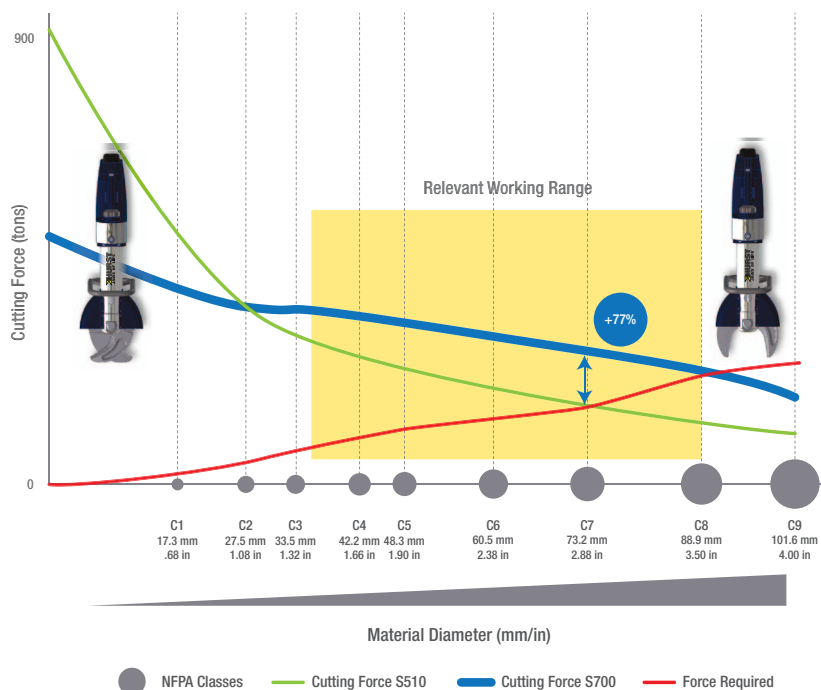
### WHERE IS HIGH-STRENGTH STEEL TYPICALLY FOUND IN TODAY'S VEHICLES?



Note: Locations and characteristics of high-strength steel may vary depending on the vehicle. These material variations may include any combination of Martensite steel, Boron press-hardened steel, ultra-high-strength steel, high-strength steel and dual-phase steel.

### Maximum Cutting Force

Most of the hydraulic cutters on the market today achieve their advertised maximum cutting force as the blades' leading edges cross each other nearest to the blades' pivot point. This means the cutter's weakest point is when the blades are in the full open position.



### CUTTING PERFORMANCE

The Hurst Jaws of Life® S 700 Series cutter offers up to 77% more cutting power exactly where profiles of a car body are cut. The theoretical maximum cutting force for many cutters applies at a material diameter close to zero, which is an irrelevant figure in real world applications. It also shows that maximum forces for traditional cutters apply at small material diameters where the force which is required to cut the material is very low (red line).

## 08 HURST S 700



### More Cutting Force in the Relevant Work Area

Most of the hydraulic cutters on the market today achieve their advertised maximum cutting force as the blades' leading edges cross each other nearest to the blades' pivot point. This means the cutter's weakest point is when the blades are in the full open position.

The **Hurst Jaws of Life® S 700 Series** cutter design has improved blade geometry, which enables the tool's blades to attain their maximum cutting capability at a 5-inch opening. The blades on the S 700 Series cutter feature a 7.3-inch opening in the fully open position and are specifically shaped to generate a high degree of power at the tip of the blade, making them more suitable for cutting the larger diameters and stronger steel being encountered by rescuers today.

The blade tip on the new S 700 Series cutter features a punch-like design which aids in cutting the highly reinforced areas of the A Pillar-posts and B-posts while maintaining the tool's position outside the vehicle. Featuring three distinct cutting angles, as the S 700 cutter blades close, blade angles change, improving draw of the post material to the strongest cutting area at the rear of the blades.

The S 700 Series' extrication capabilities include shipboard damage control, structural collapse, aircraft egress and hundreds of other real world challenges.

### SPECIFICATIONS

<b>HP CUTTER</b>	<b>S 700</b>
<b>PART #</b>	272081000
<b>LENGTH (IN/MM)</b>	31.1/790
<b>WIDTH (IN/MM)</b>	11.8/300
<b>HEIGHT (IN/MM)</b>	10.2/258
<b>WEIGHT (LBS/KGS)</b>	47/21.3
<b>OPENING (IN/MM)</b>	7.3/185
<b>NFPA CUTTER RATING</b>	A8/B9/C8/D9/E9

## 09 HURST S 510



### Versatile Designs, Large Blade Openings, Long Cutting Blades

The **S 510** cutter is the ideal tool for vehicular emergencies. Featuring versatile designs, including large blade opening and long cutting edges, this tool will help you quickly and safely remove trapped passengers from all types of vehicles - from modern passenger cars to heavy-duty rescue operations.

### SPECIFICATIONS

<b>HP CUTTERS</b>	<b>S 510</b>
<b>PART #</b>	272040000
<b>LENGTH (IN/MM)</b>	30.4/772
<b>WIDTH (IN/MM)</b>	9.6/245
<b>HEIGHT (IN/MM)</b>	6.7/170
<b>WEIGHT (LBS/KGS)</b>	42.2/19.1
<b>OPENING (IN/MM)</b>	7.1/180
<b>NFPA CUTTER RATING</b>	A8/B9/C7/D8/E9

# <sup>10</sup> HURST S 120, S 311



## Lightweight Rescue Cutters with Exceptional Power

The **S 311** cutters provide emergency personnel with a light-weight option featuring the same intuitive blade design as the S 500 series cutters.



The **S 120** cutter delivers exceptional power and versatility for rescue operations in confined spaces and is ideal for cutting steering wheels, pedals and other metal constructions in tight places.

## SPECIFICATIONS

HP CUTTERS	S 120	S 311
PART #	272001000	272020000
LENGTH (IN/MM)	13.6/346	27.8/705
WIDTH (IN/MM)	5.1/130	8.3/211
HEIGHT (IN/MM)	3.43/87	6.3/160
WEIGHT (LBS/KGS)	9.5/4.3	30.7/13.9
OPENING (IN/MM)	2.1/53	5.9/150
NFPA CUTTER RATING	A4/B3/C2/D3/E3	A7/B8/C6/D7/E7