

mtl



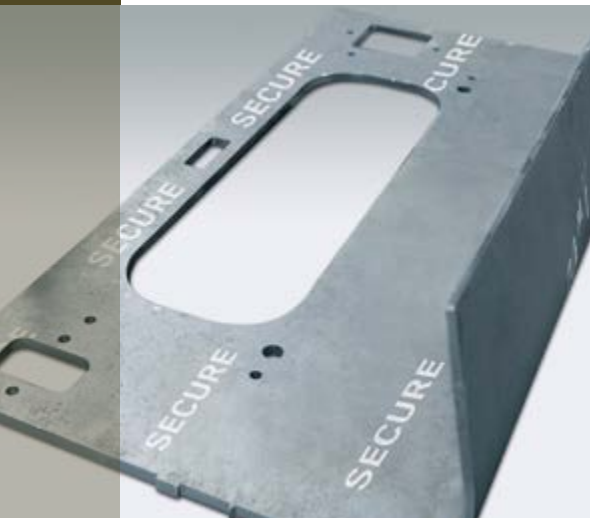
# DEFENCE & SECURITY

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## VEHICLE ARMOUR | INFRASTRUCTURE PROTECTION

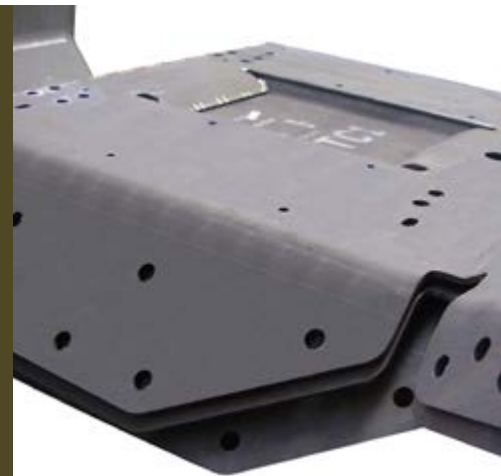
mtl supports its customers by taking an existing platform or concept and developing this through prototyping, blast/ballistic validation and volume manufacture. mtl can provide steel, aluminium and titanium armour parts. We can create fully fabricated, painted and assembled vehicle hulls.

### DFM DESIGN FOR MANUFACTURE



Our DFM team has over 30 years' experience in both design and blast & ballistic protection. At mtl we utilise the latest design & simulation software and can accommodate CATIA, SOLIDWORKS etc.

MTL is a partner of choice for many major defence OEM's. These global OEM's have saved several million pounds over the past few years as a result of using our DFM service.



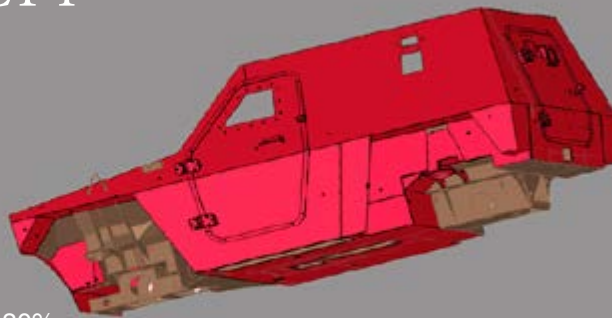
### DFM PROJECT 1

#### Armoured Hull

- Original design in multiple pieces
- High welding content
- Complicated assembly process

#### DFM Review

- Piece parts reduced by 30%
- Increased protection
- Reduced cost & weight



### DFM PROJECT 2

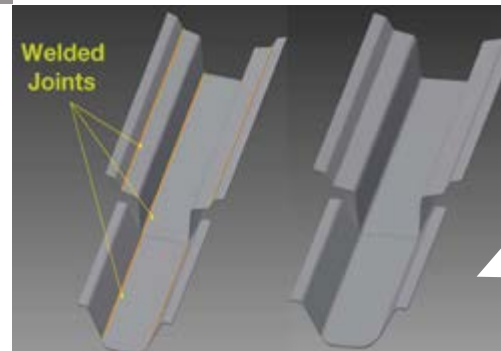
#### Firewall

- Original design in multiple pieces
- Tolerance hard to achieve
- Lower protection due to welding

#### DFM Review

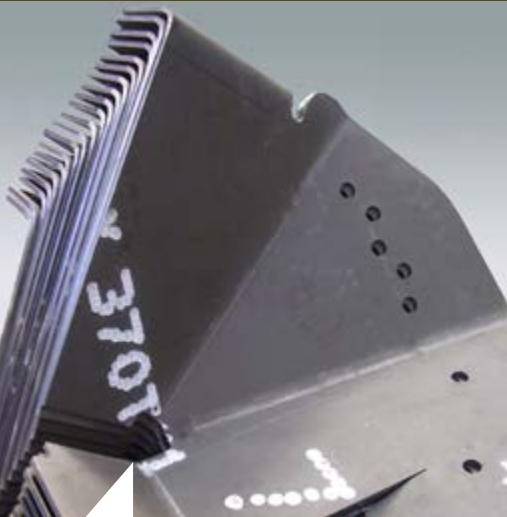
- New design now in one piece
- Enhanced protection
- Reduced cost & weight

lighter,  
stronger,  
better protected,  
lower cost.



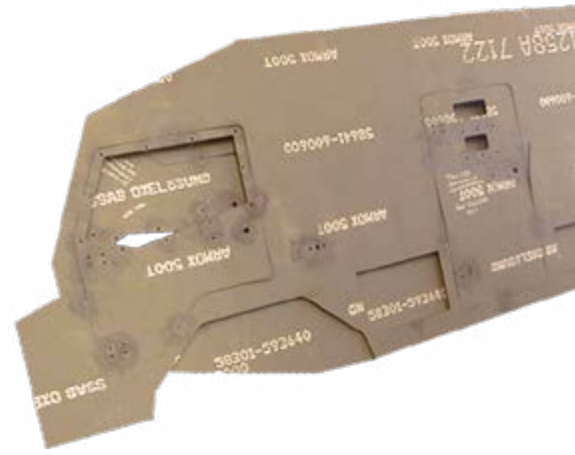
We are accredited to the global industry standards which include ISO 9001:2008, ISO 3834-2, TL 2350-000.





## VEHICLE KITS

MTL has won several high profile contracts to supply specialist armoured fabrications. Projects typically use a variety of our capabilities including waterjet & laser cutting, machining, fabrication, painting and kitting.



## STOCK

We have a wide range of material in stock at any given time, plus easy access to strategic stock from all European and American mills. We stock everything from quenched and tempered steels, armoured steels, aluminium and titanium, all ready for processing.



## COLD FORMING

Our knowledge of cold forming armoured steels allows us to work with our customers to reduce the number of parts by pressing areas which have historically been welded.

We have the capability to press components up to 7.2m in length and up to 640 tonnes.



## ROBOTIC WELDED HULLS

High volume hull manufacture is a specialist service offered by mtl through the use of our robotic welding system. This system ensures a 90 degree down weld on each ballistic joint. Through utilisation of this technology, we can create significant cost savings for the defence industry.



## DFM PROJECT 3

### 8x8 Vehicle Hull Floor

- Originally in 11 pieces
- Multiple weak points
- Expensive to manufacture

### DFM Review

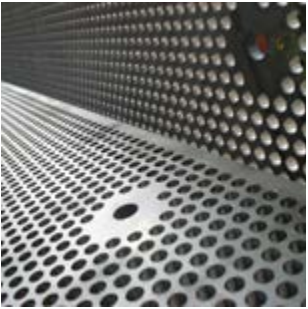
- New design now in one piece
- Protection levels increased
- Reduced cost & weight





## SURVIVABILITY

Our team has its own survivability expert with over 25 years' experience and can offer advice on different metallic based solutions for both blast & ballistic applications as well as add-on armour integration.



## IMPAS<sup>®</sup>

### WEIGHT SAVING PROTECTION

IMPAS has been developed as a light weight steel armour solution for both hull build and add-on armour panels.

IMPAS has an excellent multi-hit capability compared with ceramic and composite materials. Bespoke panels can be manufactured to any shape or size and delivered rapidly with no restrictions or minimum order quantities. Our systems are currently in service on various vehicle platforms around the world.

## ADVANTAGES

- > Protection up to STANAG L5
- > Excellent multi-hit capability
- > Rapid manufacture
- > Lower cost than ceramic composites
- > Weight comparable to ceramics
- > No restriction on panel size
- > No minimum order size
- > Panels can be supplied cold formed
- > Panels can be machined and welded



# Capability

## HI-TECH MANUFACTURING IN-HOUSE



### WELDING & FABRICATION

- > 150 skilled welders/fabricators
- > 11 robotic welding cells



Our Messer bevel laser is the largest in the UK and is able to cut bevel weld preps up to 20m long & 25mm thick, resulting in major cost savings for our global customer base.

### PRESSING

Our robotic press handling system is 5x faster than a manual press.

The angle checking device can achieve +/- 0.5 degree accuracy, ensuring consistent precision.

We have 23 press brakes in-house.



Robotic press handling system

### LASER & PLASMA CUTTING

- > 23 Laser Cutting Machines
- > 2 High-Definition Plasma Cutters
- > 2 Tube Lasers
- > 1 Robotic Plasma Tube Cutter



### WATERJET CUTTING

- > 4 dynamic waterjet machines
- > Cut any material up to 200mm thick
- > Accuracy that matches machined tolerances of +/- 0.1mm



### SURFACE TREATMENT & FINISHING

- > Powder Coating
- > 2 automatic reciprocators
- > 4 stage in-line pre-treatment plant
- > Shot Blasting
- > Wet Painting

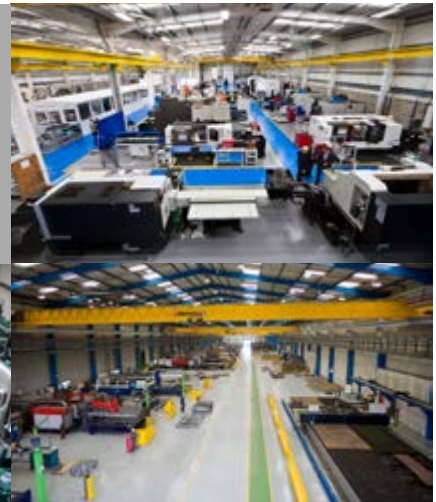


### MACHINING

- > 33,000 sq. ft. factory
- > 40+ CNC machining centres
- > CNC turning
- > CNC milling

# WEC Group at a glance

**600,000 SQ FT**  
of Manufacturing Floorspace



**800**

Highly Skilled Staff

**10**

Manufacturing Sites

**15**

Specialist Divisions



**150** Skilled Welders

Blackburn  
with Darwen

Leeds

Liverpool

Sheffield



**60** Apprentices

**30** Profiling Machines

**23** Press Brakes

**40** CNC Machines

**11** Robot Welders

**mtl**

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