

ADVANCED METAL FORMING AT JC METALWORKS



JC Metalworks is a leading provider of advanced metal forming services, offering a comprehensive range of techniques to meet the most demanding requirements. Our experienced engineers and skilled operators utilise state-of-the-art equipment to transform raw materials into complex and precise components. We are committed to providing our customers with the highest quality products and services and constantly innovating to develop new and better ways to form sheet metal.

We can form a wide variety of metals, including mild steel, aluminium galvanised, zintec and stainless steel.



Understanding the factors affecting bending consistency

Bending is a critical process in metal fabrication, and even the slightest inconsistency can significantly impact the final product. Our team of experienced operatives possess a deep understanding of the various factors that can contribute to bending inconsistencies. These factors include:

- **Material properties:** Different materials have different springback characteristics, which can affect the final bend angle.
- **Tooling condition:** Worn or damaged tooling can lead to inconsistencies in bend radius and angle.
- **Machine settings:** Improper machine settings can cause variations in bending force and speed, which can also affect bend consistency.





Rigorous inspection process for consistent quality

JC Metalworks is ISO 9001:2015 & ISO 14001:2015, ISO certified by Advanced Certification Limited, a UKAS Accredited Certification Body number 8872.

We employ a rigorous inspection process to ensure that our products consistently meet the highest standards of precision and reliability. Our seasoned technical lead heads-up this process. They have extensive experience identifying and correcting bending inconsistencies. Our inspection process involves the following:

- **Examining a part from every batch of material:** This allows us to identify any potential inconsistencies in material properties before they affect the entire batch.
- **Considering all relevant factors:** Our technical lead considers all relevant factors, such as spring back and bending radius, when inspecting parts.
- **Providing corrective action:** If any inconsistencies are identified, our technical lead will provide corrective action to ensure that subsequent parts are produced within the specified tolerances.



Advanced equipment for precision metal forming

Our exceptional capabilities redefine the possibilities of design. Our skilled technicians utilise cutting-edge equipment and techniques to achieve accurate bends, curves, and contours, ensuring optimal strength, functionality, and a flawless finish in the final product.

We invest in state-of-the-art technology to bring your designs to life. A range of advanced equipment backs our metal forming capabilities, each offering unique technical advantages:

SALAVAGNINI AUTOMATIC PANEL BENDER

KEY BENEFITS:

- **Boosts productivity:** Automates panel bending tasks, enabling faster production. It can also fold parts that press brakes cannot.
- **Enhances accuracy:** Utilises sophisticated control systems for bending precision of even intricate shapes.
- **Embraces versatility:** Bends a wide range of materials and shapes using a single machine, minimising equipment costs.
- **Elevates quality:** Produces consistent, high-quality parts, meeting the specifications accurately.
- **Improved sustainability:** Reduces waste and energy consumption.



LVD EASY FORM PRESS BRAKES

KEY BENEFITS:

- › **Enhanced productivity and efficiency:** High-speed operations and advanced automation features for rapid cycle times and increased output.
- › **Unmatched precision and repeatability:** Sophisticated control systems that guarantee precise bending angles and consistent results for even complex shapes.
- › **Reduced setup times and changeovers:** Quick-change tooling systems minimise downtime and allow rapid tool changes.
- › **Versatility to handle diverse materials and shapes:** Designed to handle a wide range of materials and accommodate a variety of shapes and sizes, making them suitable for a broad spectrum of sheet metal fabrication applications.
- › **Safe handling:** The bending machine features a bending arm for safer handling of large, heavy metal parts enabling to bend up to 4 metre long metal panels.



HRB-ATC AMADA MACHINE »»»»

The HRB-ATC Amada machine is a high-speed, high-precision CNC press brake that offers a number of benefits:

- **Increased productivity:** Operates at speeds of up to 40 strokes per minute, significantly faster than traditional press brakes. This helps to increase productivity by up to 20%.
- **Improved accuracy:** Equipped with several features that help ensure accurate bending, such as a laser pointer and a back gauge with a resolution of 0.001 inches.
- **Reduced setup time:** Equipped with an automatic tool changer (ATC) that can change tools in as little as 10 seconds. This helps to reduce setup time by up to 80%.
- **Versatility:** Bends a wide variety of materials, including steel, aluminium, and stainless steel. Forms and bends a wide variety of shapes, including boxes, channels, and angles.

Precision and Reliability: Delivers consistently accurate bends, even for intricate shapes and challenging materials, ensuring high-quality formed parts.

- **Enhanced productivity and efficiency:** Servo-electric drives, high-speed operation, and user-friendly interfaces maximise productivity and minimise downtime, enabling rapid cycle times and reduced setup times.
- **Versatility for diverse materials and shapes:** Handles a wide range of materials and shapes, making it suitable for a broad spectrum of metal fabrication applications.
- **Reduced waste and improved quality:** Precision and repeatability minimise scrap and rework, reducing material costs and improving product quality.

**AMADA PRESS
BRAKES
(3 MACHINES):**
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NUT AND BOLT INSERTION

Our forming department is equipped with two Haeger Machines. Nut and bolt insertion is a crucial aspect of sheet metal fabrication, as it ensures the structural integrity and functionality of various assemblies. The method of insertion chosen depends on factors such as material thickness, required strength, and desired aesthetic appearance.

Haeger machines, designed specifically for this task, have revolutionised insertion, offering a range of advantages over traditional methods.

Haeger machines offer several key advantages:

- **Speed and efficiency:** These machines operate at high speeds, significantly reducing insertion times and increasing productivity.
- **Versatility:** They can handle a wide range of materials, including steel, aluminium, and stainless steel, catering to diverse applications.
- **Precision and accuracy:** They ensure precise and consistent insertion.
- **Strength and durability:** The self-clinching process creates solid and vibration-resistant connections that can withstand demanding applications.
- **Aesthetic appeal:** The fasteners provide a clean and aesthetically pleasing appearance, enhancing the overall design of the assembled product.
- **Environmental friendly:** These machines eliminate the need for welding or adhesives, reducing environmental impact.

PARTNERING FOR EXCELLENCE

Choose JC Metalworks as your partner in precision metal forming. Our commitment to quality, combined with advanced equipment and skilled technicians, sets us apart in delivering exceptional results.

MACHINE

SPECIFICATION TABLES

MACHINE	SALVAGNINI P4LEAN-2516 PANEL BENDER
TECHNICAL SPECIFICATION	
Max Sheet Length	2790mm
Max Sheet Width	1520 mm
Max Diagonal	2800 mm
Max Bend Length	2500 mm
Max Bend Height	160 mm
Minimum Material Thickness	0.5 mm
Max Thickness & Bend Angle (Steel) (mm)	3.2 ($\pm 90^\circ$) 2.5 ($\pm 130^\circ$) 2.1 ($\pm 135^\circ$)
Max Thickness & Bend Angle (Stainless Steel) (mm)	2.5 ($\pm 90^\circ$) 2.1 ($\pm 125^\circ$) 1.6 ($\pm 133^\circ$)
Max Thickness & Bend Angle (Aluminium) (mm)	4.0 ($\pm 90^\circ$) 3.5 ($\pm 120^\circ$) 3.0 ($\pm 135^\circ$)
Tooling	Universal Bending Tool Open Hem Closed Hem Joggle
Features	Self-Loading Reliable and Consistent Forming Short Set Up Times Quick, Efficient Cycle Times Offline Programming

MACHINE	LVD 4.0M EASY FORM R SERIES PRESS BRAKE
TECHNICAL SPECIFICATION	
Max Sheet Length	4000mm
Max Sheet Width	4000 mm
Max Bend Length	4000 mm
Max Bend Height	200 mm* (*Dependant on Geometry)
Minimum Material Thickness	0.5 mm
Max Thickness, Bend Angle, Bend Length & Min Fold Depth (Steel) (mm)	8.0 ($\pm 90^\circ$) 2000mm 39mm 5 ($\pm 90^\circ$) 2000mm 39mm 3 ($\pm 130^\circ$) 2000mm 13mm 2.5 ($\pm 150^\circ$) 4000mm 10.5mm 2.0 ($\pm 150^\circ$) 4000mm 8.1mm* to 4.1mm* (*Depending on Thickness)
Max Thickness, Bend Angle, Bend Length & Min Fold Depth (Steel) (mm)	8.0 ($\pm 90^\circ$) 2000mm 39mm 5 ($\pm 90^\circ$) 2000mm 39mm 3 ($\pm 130^\circ$) 2000mm 13mm 2.5 ($\pm 150^\circ$) 4000mm 10.5mm 2.0 ($\pm 150^\circ$) 4000mm 8.1mm* to 4.1mm* (*Depending on Thickness)

Max Thickness, Bend Angle, Bend Length & Min Fold Depth (Steel) (mm)	8.0 (±90°) 2000mm 39mm 5 (±90°) 2000mm 39mm 3 (±130°) 2000mm 13mm 2.5 (±150°) 4000mm 10.5mm 2.0 (±150°) 4000mm 8.1mm* to 4.1mm* (*Depending on Thickness)
Tooling	Various Standard Air Bend Tooling Radius 10, 15, 20 & 25 Hemming Tool
Features	Bend accuracy ±0.3° Offline programming Sheet follower (Lifting Aid)

MACHINE	AMADA HRB-1003ATCPRESS BRAKE
TECHNICAL SPECIFICATION	
Max Sheet Length	3000mm
Max Sheet Width	1500 mm
Max Bend Length	3000 mm
Max Bend Height	200 mm* (*Dependant on Geometry)
Minimum Material Thickness	0.5 mm
Max Thickness, Bend Angle, Bend Length & Min Fold Depth (Steel) (mm)	8.0 (±90°) 1000mm 45mm 5 (±90°) 1500mm 45mm 3 (±130°) 3000mm 13mm 2.5 (±150°) 3000mm 10.5mm 2.0 (±150°) 3000mm 8.1mm* to 4.1mm* (*Depending on Thickness)
Max Thickness & Bend Angle (Stainless Steel) (mm)	8.0 (±90°) 1000mm 45mm 5 (±90°) 1500mm 45mm 3 (±130°) 3000mm 13mm 2.5 (±150°) 3000mm 10.5mm 2.0 (±150°) 3000mm 8.1mm* to 4.1mm* (*Depending on Thickness)
Max Thickness & Bend Angle (Aluminium) (mm)	8.0 (±90°) 1000mm 45mm 5 (±90°) 1500mm 45mm 3 (±130°) 3000mm 13mm 2.5 (±150°) 3000mm 10.5mm 2.0 (±150°) 3000mm 8.1mm* to 4.1mm* (*Depending on Thickness)
Tooling	Various Standard Air Bend Tooling Radius 10, 15, 20 & 25
Features	Angle Control and Measuring System Offline programming Automatic Tool Changer Auto Crowning

MACHINE	AMADA HFEI 3M PRESS BRAKE
TECHNICAL SPECIFICATION	
Max Sheet Length	3000mm
Max Sheet Width	1500 mm
Max Bend Length	3000 mm
Max Bend Height	200 mm* (*Dependant on Geometry)
Minimum Material Thickness	0.5 mm
Max Thickness, Bend Angle, Bend Length & Min Fold Depth (Steel) (mm)	8.0 (±90°) 1000mm 45mm 5 (±90°) 1500mm 45mm 3 (±130°) 3000mm 13mm 2.5 (±150°) 3000mm 10.5mm 2.0 (±150°) 3000mm 8.1mm* to 4.1mm* (*Depending on Thickness)

Max Thickness & Bend Angle (Stainless Steel) (mm)	8.0 (±90°) 1000mm 45mm 5 (±90°) 1500mm 45mm 3 (±130°) 3000mm 13mm 2.5 (±150°) 3000mm 10.5mm 2.0 (±150°) 3000mm 8.1mm* to 4.1mm* (*Depending on Thickness)
Max Thickness & Bend Angle (Aluminium) (mm)	8.0 (±90°) 1000mm 45mm 5 (±90°) 1500mm 45mm 3 (±130°) 3000mm 13mm 2.5 (±150°) 3000mm 10.5mm 2.0 (±150°) 3000mm 8.1mm* to 4.1mm* (*Depending on Thickness)
Tooling	Various Standard Air Bend Tooling Radius 10, 15, 20 & 25 Hemming Tool (1.5m Max Length)
Features	Bend accuracy ±0.3° Offline programming

MACHINE	AMADA HFEI 2.5M PRESS BRAKE
TECHNICAL SPECIFICATION	
Max Sheet Length	2500mm
Max Sheet Width	1500 mm
Max Bend Length	2500 mm
Max Bend Height	200 mm* (*Dependant on Geometry)
Minimum Material Thickness	0.5 mm
Max Thickness, Bend Angle, Bend Length & Min Fold Depth (Steel) (mm)	8.0 (±90°) 1000mm 45mm 5 (±90°) 1500mm 45mm 3 (±130°) 3000mm 13mm 2.5 (±150°) 3000mm 10.5mm 2.0 (±150°) 3000mm 8.1mm* to 4.1mm* (*Depending on Thickness)
Max Thickness & Bend Angle (Stainless Steel) (mm)	8.0 (±90°) 1000mm 45mm 5 (±90°) 1500mm 45mm 3 (±130°) 3000mm 13mm 2.5 (±150°) 3000mm 10.5mm 2.0 (±150°) 3000mm 8.1mm* to 4.1mm* (*Depending on Thickness)
Max Thickness & Bend Angle (Aluminium) (mm)	8.0 (±90°) 1000mm 45mm 5 (±90°) 1500mm 45mm 3 (±130°) 3000mm 13mm 2.5 (±150°) 3000mm 10.5mm 2.0 (±150°) 3000mm 8.1mm* to 4.1mm* (*Depending on Thickness)
Tooling	Various Standard Air Bend Tooling Radius 10, 15, 20 & 25 Hemming Tool (1.5m Max Length)
Features	Bend accuracy ±0.3° Offline programming

MACHINE	618 & 824 (x2) HAEGER INSERTION MACHINE
TECHNICAL SPECIFICATION	
Clinching Capability	1mm to 6mm
Fastener range	M2 to M10
Stroke Length	0mm to 220mm
Edge to Insertion point	600mm
Features	4 Tool Stations

**Choose JC Metalworks for welding solutions
that exceed expectations. Contact us today to
discuss your project requirements and
experience the difference of working with a
trusted leader in metal fabrication.**

**Call us at 01509 233280 or email us at
sales@jcmetalworks.co.uk
and we'll be happy to assist you.**

