



FREE

**Buyers Guide
When buying a
Tube Bending Machine**

(RRP: £9,997.00 + Vat)

Buyers Guide

When purchasing a tube bending machine.

As a buyer of production tube bending equipment, you will at some point need to decide on what to purchase when expanding or developing your tube bending department. Deciding on purchasing tube bending equipment involves a great deal of thought on many levels. Making the decision to add machinery of any kind is not one that is made overnight. It is a calculated process that involves looking at the current work in process and future work expected. In tube manufacturing, efficiency and flexibility are decisive factors in meeting the requirements of constantly changing market conditions.

You have what might be considered a mine field of options.

New CNC	Used CNC	Refurbished CNC
Are available in variable styles includes multi axis hydraulic driven, Hybrid, All Electric and now Bi-Directional right & left hand bending in process machines	Often when you purchase out of date technology on used machines direct from the previous owner – all you are often doing is purchasing other people’s problems.	The decision to buy refurbished equipment is easy if modern up to date CNC controller and software is already installed on the machine.

Semi-Automatic machines (NC)

Many tube bending companies have moved away from using low-tech’ one axes NC (Numerically Controlled) manually operated machines in favour of three or more axes CNC tube bending machines. Whether you are manufacturing your own inhouse products or are a contract bending company supplying small batch or large volume tubular parts a CNC tube bending machine is the best option.

Changing bending tooling takes about the same amount of time on either style machine. Programme setting however can be time consuming on a semi-automatic machine that uses mechanical distance between bends and rotational positioning stops.

Developing or recalling bending programmes from a CNC machine’s memory or via your local network takes just seconds, saving you valuable production time and money.

Buyer’s guide:

1. **CNC mandrel tube bending machines** - tube bending machine designs and software as moved on in leaps and bounds taking the science of tube bending to new higher levels, including:
 - a. Hydraulic mandrel tube bending machines.
 - b. Hybrid - 50% Electric - 50% Hydraulic
 - c. All Electric – 100%
 - d. Bi-Directional Right & Left-Hand bending in the same bending process.
 - e. All capable of single and multi-axes, fixed radius, and variable radius mandrel tube bending. Takes production cell manufacturing to an even higher level:

- f. **Production Cell Automation.** Automatic loading and off-loading systems, seam detection, sequential bending and marking, auto washing systems, punching, and slotting, internal and external deburring, and a host of other production cell apparatus. The least number of times the tube is manually handled during tube manipulation processing and allowing technology to maximise the number of bends and other operations to maximise profits.
 - g. **Software Technology** allows for J.I.T. (Just in time) bending and sequential bending is just one of many advantages. Systems like this are used extensively in industries when a “Kit” is required, a simple example would be a bending exhaust systems - down pipe, one or two middle pipes and tail pipe. All bent in sequence which means little or no bent stock is required, just straight tube and call off the parts as and when required in whatever volume.
 - h. **A typical Automatic Sequential Production Cell System would flow and include the following:**
 - Cut to length tube or from random length and automatic cutting to length.
 - Auto-load into tube bending machine and bent with just one handling.
 - Automatically transported to end former – one end or two.
 - Automatically transported to deburring
 - Automatically transported to washing / cleaning machine system.
 - Automatically transported to an optical measuring system.
 - Automatically exit from production cell.
 - A finished part every few seconds manufactured automatically. All production programme settings can be saved, edited, and recalled within seconds. All of this means being able to reduce the number of times a tubular part is handled saving time, storage space and boosting profitability.
2. **The Fiscal Impact.** It is important to consider that buying a used CNC tube bending machine/s can save between 30-50% (or even more) over the cost of new machine. When purchasing used machines, the first and most notable reason is typically the savings. Whereas for a popular size new machine you might expect to invest £250,000 for a modern-day CNC machine. A similar used machine just a few years older might sell for half that price, or even less. That leaves loads of room for Re-Controlling upgrades, maintenance, tidying up or repairs that may be necessary, and still shows a substantial saving over new. Furthermore, the cost savings frees up capital for other things like personnel, material or other machinery needed.
3. **Inspect Your Equipment.** Whatever machine you decide to purchase, be sure you know the issues it may have by inspecting it, if you don't want to do it yourself, then get one of your team trained and delegate it or better still outsource it and have one of our specialist engineers inspect it for you. A report will be prepared for you along with recommendations if any are necessary. All too often, CNC tube bending machines are discarded for the simple reason of no support for old, often proprietary control systems. Mechanical elements such as bearings, bushings, linkages, gears, ball-screws, and

hydraulics are easily repaired or replaced but the electronics are not. However, we have solutions.

4. **Purchased on price** and not best fit for the job with little or no support and backup. Some machine manufacturers and suppliers are happy to offer light weight machines with minimal technology to meet a price and not best fit for the job, full of risk and often little or no service, support, or backup. Purchasing a lightweight capacity machine with little or no modern control technology is a mistake. Today, manufacturers supplying tubular parts are operating within a highly competitive marketplace and must be able to change direction at the click of a switch and reduce manual input.
5. **Purchasing old, out of date technology** on used machines direct from the previous owner – all you are often doing is purchasing other people’s problems. Used machinery can be found on most reselling and/or industrial auction sites. Do not even consider this type of machine unless it has been professionally inspected. Otherwise, you could find yourself purchasing other people’s expensive problems.
6. **High volume or small batch bending?** – CNC or semi-automatic? a rule of thumb mindset should be to look for the least number of times you manually handle any manufactured tubular parts. All-this-being-said, you might not need all the bells and whistles or, you already have an old CNC or semi-automatic machine and need service, support, and backup. This is what we do and will happily offer to provide supportable systems and upgrade your tube bending machine/s with 21st century technology.
7. **Major advantage of CNC** Many people think CNC tube bending machines are only for high volume bending. This is because of a lack of understanding. A CNC bending machine is perfect for small batch bending, particularly if using the same size tube and bending tooling. It takes just seconds to recall a bending programme or to input new bending coordinates saving time and reduces errors eliminating time waste and scrap.
8. **If you know** exactly what you are looking for, how to purchase it, inspect it, move it, and put it into service, then you are one of the very few. We recommend speaking to one of our tube bending experts at Tube & Pipe Bending Machines Ltd. We can not only discuss your unique needs but recommend processes that may work better for your specific requirements and budget. We offer a variety of consultation and inspection options to help you get it right.
9. **Re-Control – Re-Imagine – Re-Furbish.** If the machine you have identified needs to be upgraded. We have the features, flexibility, and skill sets to bring new life to any tube bending machine with any number of CNC axes, be-it a standalone machine or part of a fully functioning production cell with robot load/off load and other production-cell apparatus. **Phenix Supercharged CNC Controllers and Superfast Software is a Major game changer.** A Controller and software that lives up to its promise and reputation, Guaranteed! Phenix is an Open and Expandable, Efficient and Economical Intuitive System that unlocks and reenergises the power of digital on your dated, out of warranty CNC tube bending machine/s.