



Gregson Induction Benders

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Advantages of Gregson Induction Benders

Free standing:

All of our machines are free standing consequently the bending moments are contained within the machine chassis. This vastly reduces the need for foundation work, only one or two trenches are required for drainage and services. The advantages of this are that it reduces installation costs and time, not to mention a degree of portability for shop installations.

Portable

Within our current machine range up to 16" x 2.5" wall x 5D radius we can offer a portable machine. All of the bending moments are confined to the machine structure they do not require any foundation work. They are designed to bend both left and right hand for compound bending (reducing butt welds on site) They can be taken to site on a truck and erected within a day. The power source can be provided from a diesel generator or local mains supply. All ancillary equipment such as cooler, hydraulics, air and water can be provided from a separate skid mounted unit, also trucked out to site. The structural shapes or pipe spools can now be bent on site this gives many advantages:

- Reduction in transportation costs, as straight sections are less costly to ship to site than bent material.
- Any final modifications to the pipework configuration or structure can easily be changed on site.
- Spools or structural bends that would not be practical to ship via truck due to high constraints can be produced.
- Plant hire could be a consideration accompanied by one of your experienced operators for big contracts.
- Ship or barge operations at sea can also be considered with slight modification to the machine for maritime use. (salt water environment)

Compound bending

As mentioned above, up to 16" diameter, the Gregson machine can produce complex spools, in any direction. This means the machine has the capability to bend left and right hand regardless of tangent length between or at the start of any bend. The advantage are:

- Reduction in man-hours on site.
- Reduction in NDT (non-destructive testing) costs on site.
- Reduction of butt welds on site (cost savings)
- Increased system integrity. Lower maintenance costs during the life of the structure)

Inductor coil design:

The Gregson Induction coil assemblies are a unique design and have been developed over the years to give maximum efficiency and bending configuration flexibility.

The inductor coil itself is independently internally cooled with de-ionised water and sufficient flow to remain cool at maximum power output. Its cross sectional shape concentrates the magnetic field where it is needed to quickly heat the material to be bent. To reduce down time during tooling change the coils are fitted with non ferrous quick disconnect couplings on de-ionised, air and water supplies. To achieve the desired metallurgical results from the bend the assemblies can be configured to suit the cooling time of the material. Quench can be potable water, de-ionised water or air and the heat zone can be increased or decreased to suit the wall thickness of the material. Ovality and wall thinning can be controlled by quick adjustments to the air and water elements. The air and water nozzles are removable so that they can be cleaned and aligned to ensure a linear heat pattern. The inductor coil is also fitted with a holster to house the fibre optic pyrometer for accurate pipe temperature readout. Closed loop control can be fitted between the output signal of the pyrometer and generator output power to ensure accurate temperature during the bending cycle.

Top or end loading:

All of our machines are top or end loading, this means there is no restriction in the length of pipe or structural steel to be bent. Double random's and beyond are no problems. The machines can be loaded via overhead crane or direct from the stockyard via rollers. The advantage in this is that loading times are reduced to achieve maximum throughput.

Infinite bend radius:

All Induction benders have an infinitely variable bend radius but our machine can have an infinite bend radius. In other words it has no restriction in size of bend radius other than the confines of the workshop. This can be achieved one of two ways, either by using a loose section of pivot track which can be located beyond the machine's pivot track or by using the unique 3rd roller mechanism. The loose section of pivot track will accommodate the machine's pivot assembly and can be fixed to the shop floor with rawl bolts. With a simple extended radius arm the machine can now swing long radius bends. If the bend radius is much greater than this will allow, then a 3rd roller mechanism can be used. The 3rd roller simply controls a rate of deflection using electro hydraulics to achieve the accuracy. The roller mounts on the machine pivot track and hydraulic power is provided via two quick disconnect couplings. The radius is simply programmed into this unit then automatically monitored continuously during the bending cycle.

Easy to operate:

Our machines have evolved based on our experiences of running the equipment in the early days of the company. This experience has dictated our design philosophy in the machines we produce today. This machine does not require highly trained technicians to run it, service it or maintain it.

Composite arrangements:

The composite arrangements have been very popular, basically it consists of two machines with one set of ancillary equipment. Combinations of machines can be married together to share the induction generator, hydraulics, air and water supplies. This is a very cost-effective way of increasing your bending capabilities with an initial minimum capital outlay.

For example:

A kit comprising of:

- 2" – 10" machine
- 10" – 30" machine
- One 750kw generator
- One hydraulic power unit
- One cooler
- One quench water system

The above gives you the capability to bend from 2" – 30" dia pipe but you only pay for one set of ancillary equipment. The hydraulics are arranged so that you can load and unload one machine while the other is in bending mode. This option can be retro fitted to existing installations or split into two separate installations as your business expands.

Low tooling costs:

Compared to other types of pipe and structural bending machines the induction bender's tooling is very cost effective. The tooling consists of clamp inserts (simple steel fabrications) and an induction coil assembly to suit the material to be bent. We have found that most of our customers generally make the tooling in house, as it is so simple. Special inductor coils and inserts can however be supplied to your specifications on request.

Flexible software:

We can supply software to cover our full range of machines. The software is always compatible with the latest Windows package and will run on most desktop PC's. The package includes machine settings for any given pipe bend configuration. It will predict the ovality, wall thinning and compression of the material during bending cycle. It can provide the estimating department with bending times and produce a drawing

of the bend, with any end preparation necessary. The current software covers carbon steels only but can be adapted for austenetic steels in the future.