



Specialist Line Pipe Processing Technology



In recent years the name Radyne has gained recognition as a solutions provider to producers of Oil and Gas pipe throughout the world. Radyne is a brand known for provision of high levels of technical expertise and process knowledge on applications calling for onshore line pipe induction heating, prior to surface coating.

To maintain the long term integrity of high cost transnational, trans-continental or subsea pipelines, oil and gas producers continue to demand more from API line pipe producers. In addition to calling for the use of higher grade steels multi-layer surface pipe coating including FBE (Fusion Bonded Epoxy) is now demanded in order to satisfy higher, more stringent specifications. The above coating process is also applied during the production of high quality water pipe.

Radyne engineers have designed and manufactured a comprehensive range of induction heating power supplies for use on pipe coating applications. With over 50 years' experience in design and manufacture of solid-state power supplies, the Radyne approach to the market is dual-fold with a fully proven range of power supplies with capacities ranging from 5kW up to 7MW.

TC series – Parallel output/current fed technology
VIP series – Series output/voltage fed technology
TC and VIP series power supplies offer either 6-pulse or 12-pulse operation. They present a series of distinct benefits, which, depending on the type of installation, will determine precisely which configuration is more applicable to a prospective customer's requirements.

The result of the Radyne dual-fold approach is total flexibility.

A current fed TC series inverter can be configured with an add-on remote capacitor bank. Tapping changes are quick and easy to implement enabling easy operation with a range of different coil sizes including those designed specifically for High-Q applications, such as small diameter pipe.

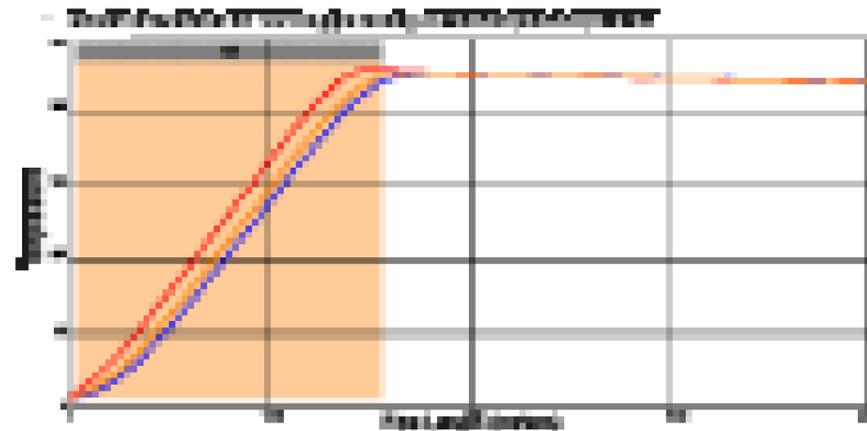
A voltage fed VIP series inverter will operate with fewer coils making it ideal for customers with a requirement to induction heat several different pipe diameters during a single shift without the need for tapping and/or coil changes. Higher productivity will result from minimal interruptions on the line.

Typical onshore line pipe processing requirements include the following:-

- Continuous line pipe induction heating (pre-and post-surface shot blasting process)
- Pre heating prior to the application of multi-layer pipe coating (typically three layers with FBE, adhesive and Polythene applied to international standards)
- Induction drying of line pipe section (after internal coating process)

Our specialists have considerable experience in the application of bespoke design software, developed by engineers at Inductotherm to ensure efficient coil design, selection of the optimum frequency and precise calculation of the induction heating power that is required for a specific pipe diameter and wall thickness.

During heating and coating of line pipe (even at sub-zero ambient conditions), temperature should be continuously monitored to ensure the correct surface temperature is achieved and maintained during the process.



Simulated temperature along pipe moving at 0.4m per minute

Pipe Diameters: 50mm (2") to 3050mm (120")
 Wall Thickness: 5mm (0.197") to 50mm (1.97")
 Continuous Pipe Sections 8 to 12m
 Delta T: 200°C (min) / 280°C (max)
 Line Speeds: Typically 200 to 350m²/hr

Induction Heating for Pipe Bending

Our specialists have considerable experience with the application of Radyne induction heating systems used on pipe bending applications for a wide range of materials including all grades of carbon steel, stainless steel and nickel alloy steel.

Precise control of induction heating power with automatic load matching provides greater adjustment of heat penetration and helps to achieve the optimum bending speed. The result is minimal ovality and change in pipe wall thickness.

Unlike gas-powered systems, induction heat is fast, clean and more efficient.

Offshore Heating & Coating Applications

The name Radyne has earned a reputation as a leading global specialist in the design, manufacture and supply of high quality induction heating systems to the Oil and Gas sector worldwide.

Known for their world class pipe heat and coat expertise, Radyne products have gained a strong international reputation in Field Joint Processing technology with in depth applications experience on the following:-

- Field joint processing technology
- Girth weld heat and coat technology
- Pre- and post-weld heat treatment
- J-lay & S-lay heat coat solutions
- Fully portable, containerised systems
- Quad and double-joint rack technology
- Pre-heating for application of shrink sleeve

