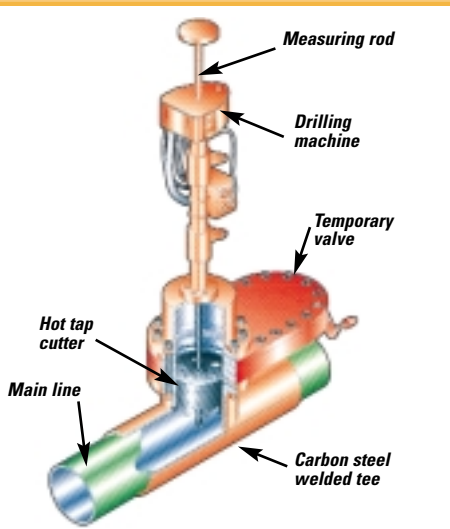


Furmanite Specialist Hot Tapping Techniques



Serving Every Sector

- Fossil, hydro and nuclear power generation
- Offshore oil and gas production
- Refineries and petrochemical plants
- Pharmaceutical plants
- Gas transmission and distribution lines
- Food processing plants
- Steel industry
- Pulp and paper plants

Engineering Support

Furmanite's extensive engineering resources enable us to provide a comprehensive hot tapping service package offering a totally engineered solution.

The service may include sites visit to establish the best option for the positioning of the hot tapping hardware, for example where space is limited, manufacture of the hardware installation and testing, through to hot tapping the connection ready for use.



The cost-effective way to make the connection on pressurised systems

Furmanite has many years of experience in working on pressurised systems and has developed a variety of specialist hot tapping techniques to enable modification or repair of pipeline systems without the need for shutdown or interruption of production.



Hot Tapping is a technique employed by Furmanite for making a connection to piping or vessels while the existing system is operating under pressure.

The technique utilises a drilling machine which consists of a mechanically driven boring bar driving a cutting tool, a valve which may be temporary or permanent depending on the application, which allows the drilling machine to be removed following completion of the cutting operation and a welded or bolted tee assembly designed to contain the system pressure and provide the branched outlet.

Furmanite's Hot Tapping service covers operations ranging from small bore emergency applications, to larger planned modifications carried out to operating plant. In all cases the pressure containing

hardware is designed and manufactured to and used in conjunction with the appropriate hot tapping equipment.

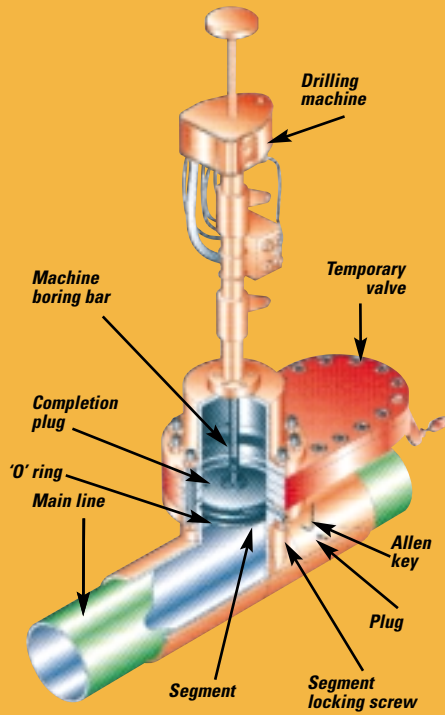
Furmanite holds a complete series of hot tapping equipment suitable for working on pipeline pressures of up to 100 bar g at 38°C or up to 48 bar g at 370°C.

Tapping sizes range from 6mm to 1000mm and can be either size on size, reduced branch taps or tank taps, e.g. a 300mm tap on a 15 metre diameter vessel.

Our equipment is capable of performing hot taps into most kinds of products such as hydrocarbons, natural gas, water, steam and heavy oils.

FURMANITE
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Valve Recovery



Following the line plugging process, the drilling machine can be used once again to lower the completion plug through the valve and into its final position. Segment locking screws secure the plug while the boring bar is retracted. The drilling machine is then removed, followed by the temporary valve, and a flange fitted over the completion plug to complete the seal.

Furmanite – Line plugging

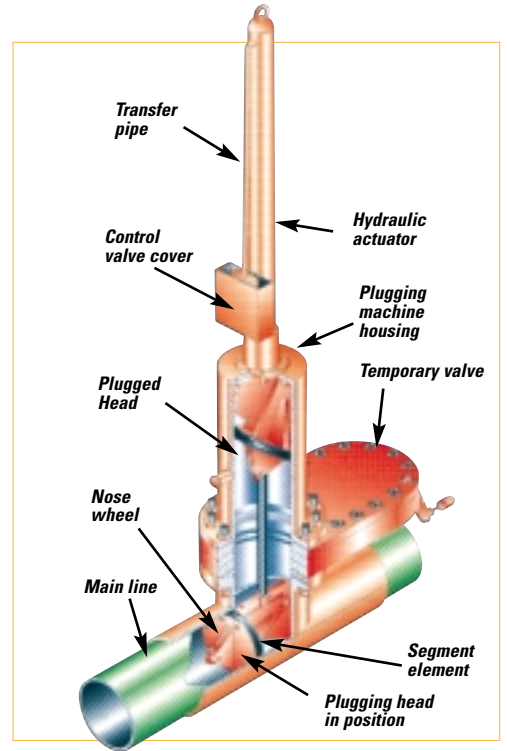
Masters of Technique

Line plugging provides an effective shut off to pressurised pipes and vessels and is used to isolate systems for repair or modification.

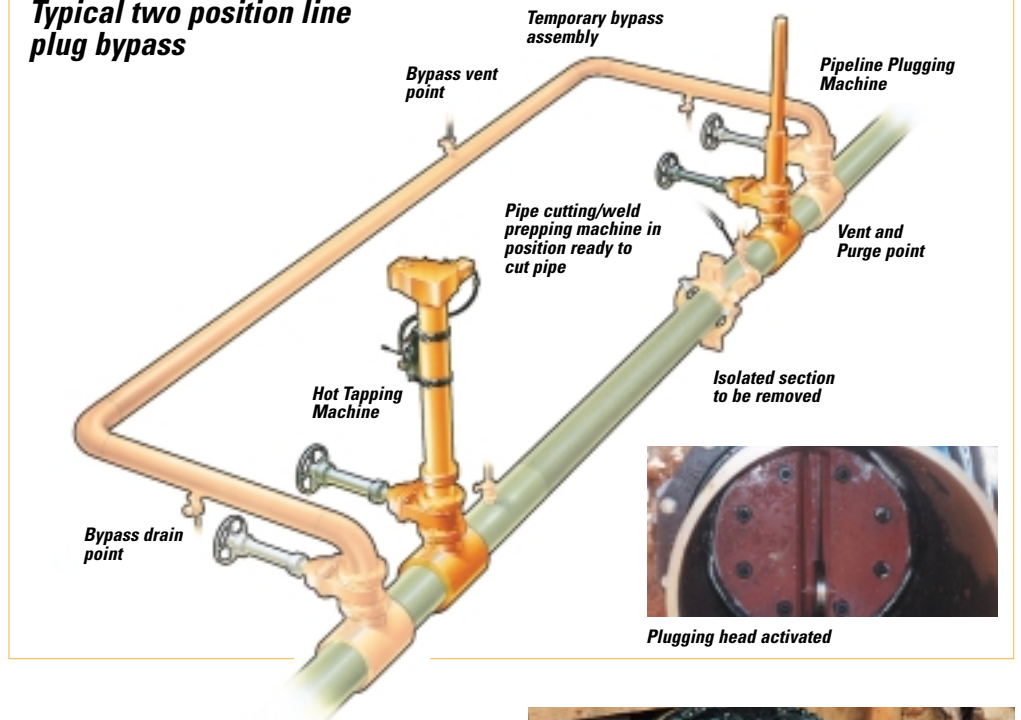
The plugging operation commences with a size on size hot tapping connection via the fitting, which includes a branched outlet allowing the temporary valve to be recovered once the operation is complete.

In addition the line plugging equipment consists of a plugging head, which is inserted into the line by an actuator.

Once the head has entered the line, it rotates and locks into position and subsequently blocks the line pressure. Line plugging equipment is available in sizes from 50mm to 900mm as a standard service and larger sizes by consultation.



Typical two position line plug bypass



Full Encirclement Tees

Furmanite can manufacture in-house a full range of mechanical and weldable hot tap and line plugging tees.



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