

Manufacturing Electrofusion Fittings Using Technology from AHP PLASTIK MAKINA

Description



Electrofusion Fittings Solutions from AHP PLASTIK MAKINA

Manufacture of Electro-fusion Fittings Using the AHP Engineering Systems and Production Methods

Production Methods

>EF Fittings=> 1.Socket Fittings 2.Saddle Fittings

>Socket Fittings Production=>

1.(Injection of Insert Part)+(Wire Winding of Insert)+(Injection of the Body of the Fittings)

2.(Winding of Metal Insert)+(Injection of Body of the Fitting)

3.(Injection of the Body of the Fitting)+(Wire Laying)

>Saddle Fittings Production=>

1.(Injection of Pad Insert Part)+(Wire Winding of Insert)+(Injection of the Body of the Fittings)

2.(Injection of Pad Insert Part)+(Wire Laying of Insert)+(Injection of the Body of the Fittings)

What is Socket Wire Laying?

>Internal Diameter is Sized

>A helical groove is formed in the internal surface of a moulded fitting or section of pipe(for making PE couplers from PE pipe)

>Resistance wire is laid in the groove

Whole process will be done in one CNC machine

Wire Laying Benefits

Reduced injection moulding <> Increased utilisation of cycle times moulding machines

Moulded fittings are in a stable <> Produces high tolerance condition during wire laying products

Improved welding tolerance <> Increased strength of weld between pipe and fitting

Computer controlled process <> Giving flexibility and reduced setting time

Process reduces capital <> Reduces setting times and set-up costs is easy to operate

Production Overview

Fittings are designed in accordance with:

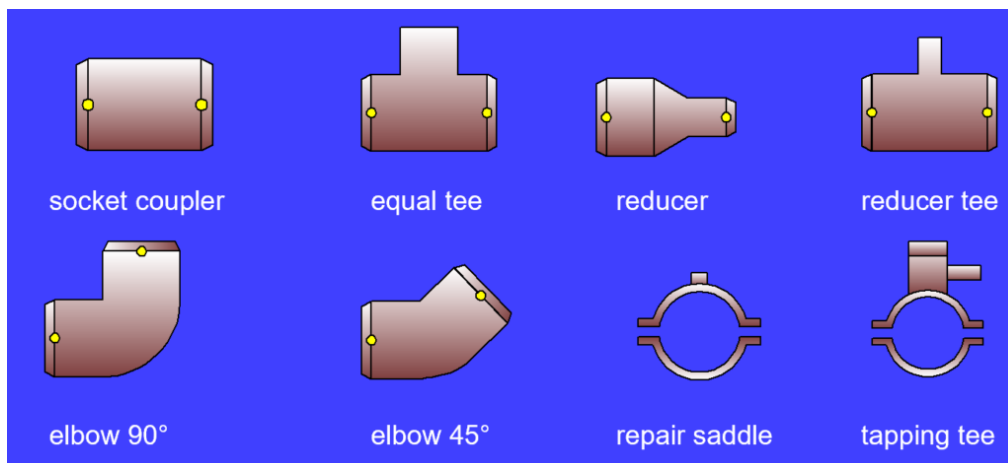
>ISO Standard 8085-3-2001 (E), EN1555-3:1999 and EN12201

>Fittings are socket and saddle type with resistance wires inserted into contact faces

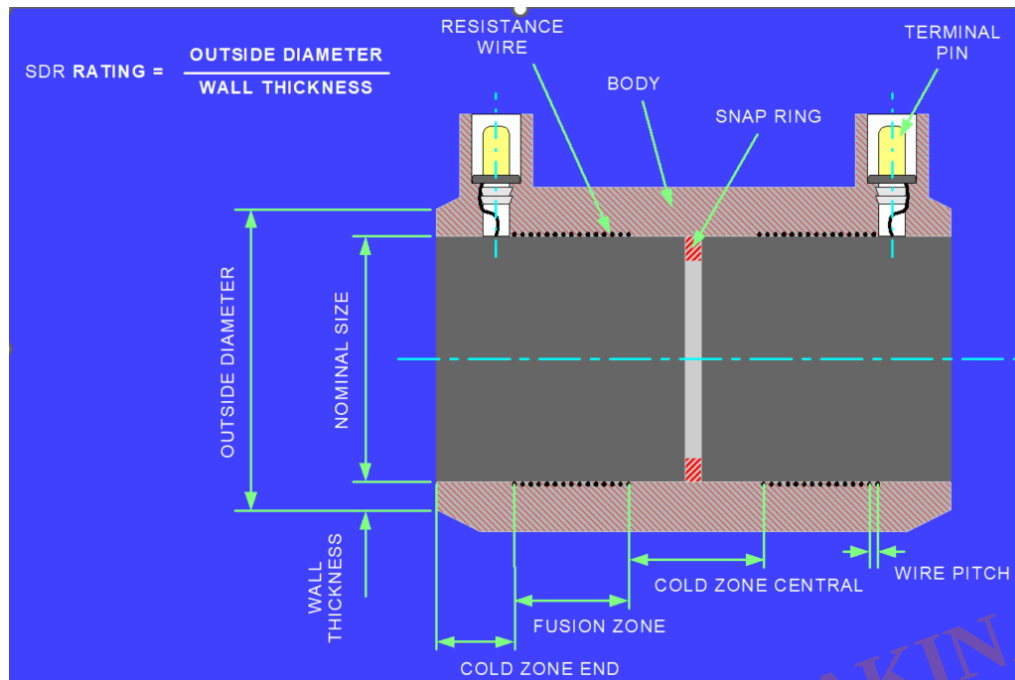
>Equipment is CNC controlled so the design specifications can be changed during testing

Electrofusion Terminology

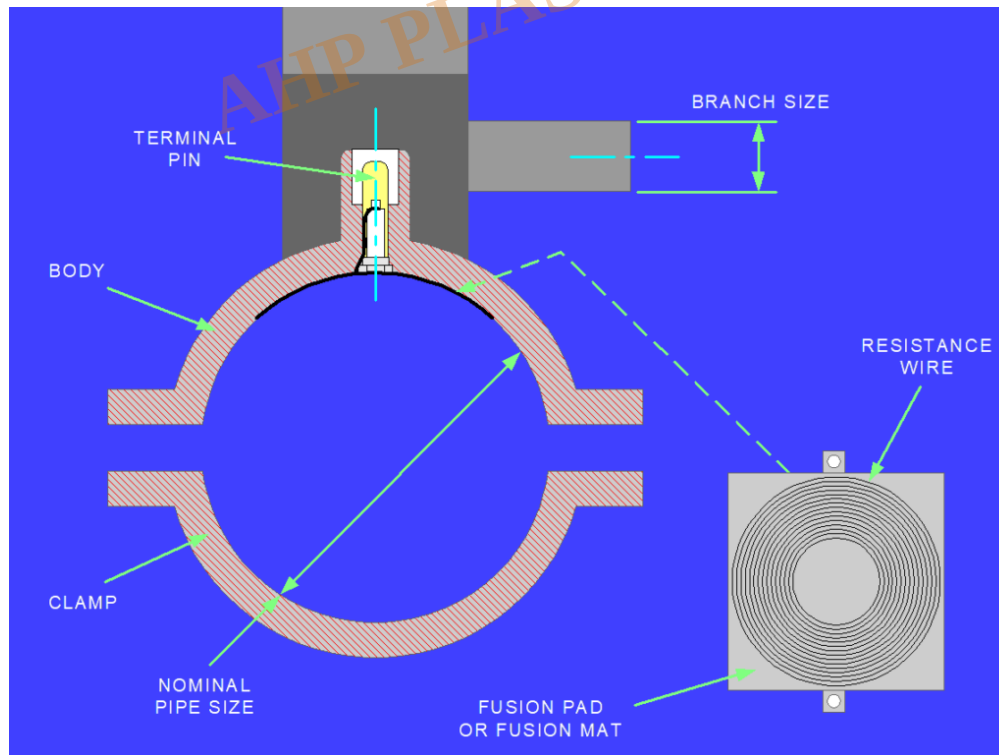
Types:



Socket Coupler

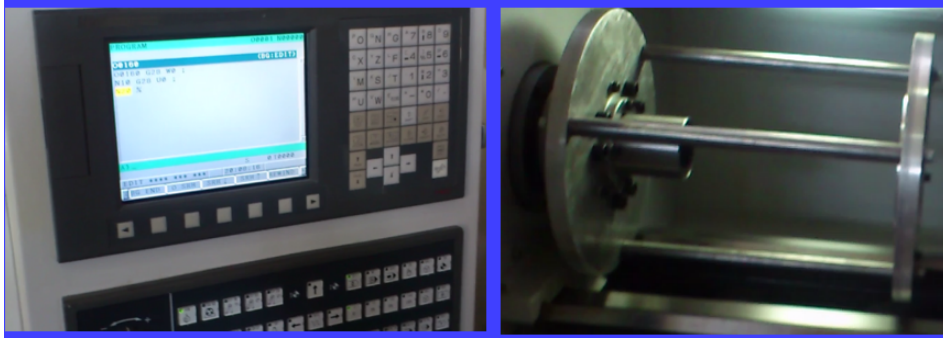


Tapping tee



Equipment Description

- >Horizontal wire laying machines with FANUC or SIEMENS CNC controllers
- >Design layout allows easy access for set-up and component loading using hydraulic grips or pneumatic grips
- >3-axis CNC control system enables optimum production cycle times and repeatability



Basic Machine Operation

- >Special fixtures located on main spindle of wire laying machine
- >Moulded fittings or pipe sections are manually loaded into fixtures and automatically gripped by hydraulic or pneumatic system
- >Each fixture is suitable for a range of fittings by only changing end holders of main fixtures

Boring and Wire Laying

In 3 main steps:

- > Boring and Chamfering
- > Wire Laying Cycle
- > Final Boring

Control System

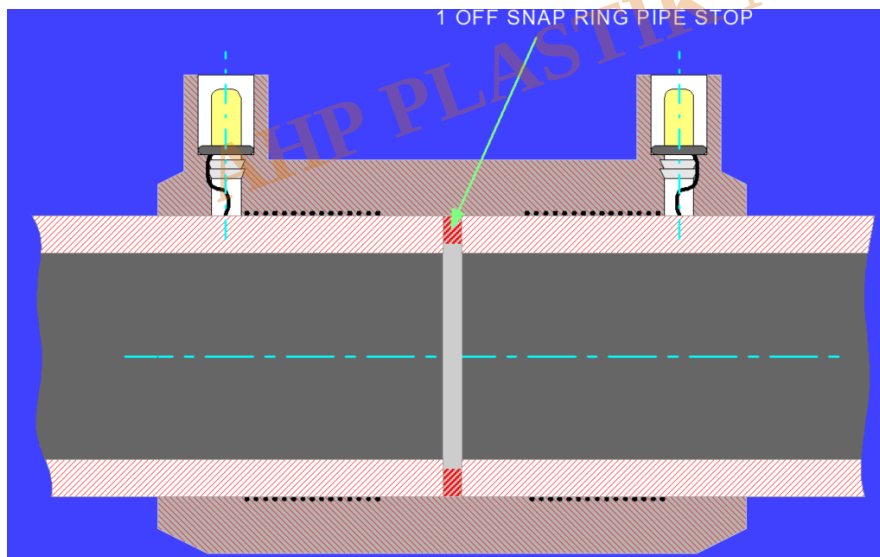
- >The CNC system is pre-programmed for the production of each fitting
- >Changes can easily be carried out by the operator to incorporate any modifications required in production cycle
- >Machines have a memory to store each fitting data

Operating Sequence

- >The fitting is manually loaded into the main fixture
- >The boring cycle starts at high speed to bore the internal diameter
- >The machine is programmed to stop the laying tool at the first termination point
- >The wire is manually hooked through the termination hole
- >A program is then run which lays wire into the inside surface of the fitting
- >The cycle stops when the laying tool reached to the second termination hole
- >The wire is manually pulled through the second termination hole
- >The boring bar finishes boring to remove any excess material

Snap Ring

- >The boring bar is doing 3 jobs at the same time: boring+making the slot for stop ring+wire laying
- >The snap ring is pushed into the bore of the fitting until it engages with the machined groove



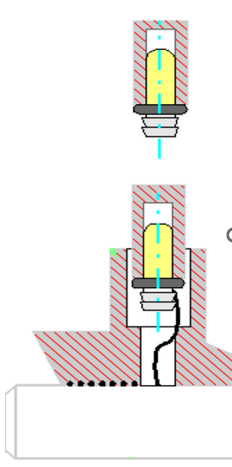
Terminal Pin Mounting

Procedure for Socket Fittings

- 1.Load terminal pin into press tool
- 2.Trim wire to length inside terminal housing

3.Place fitting onto mandrel

4.Press terminal pin into fitting



AHP WL200 Horizontal Wire Laying **Typical Fitting Capacity**

sockets / couplers : **25 to 180mm I/D**

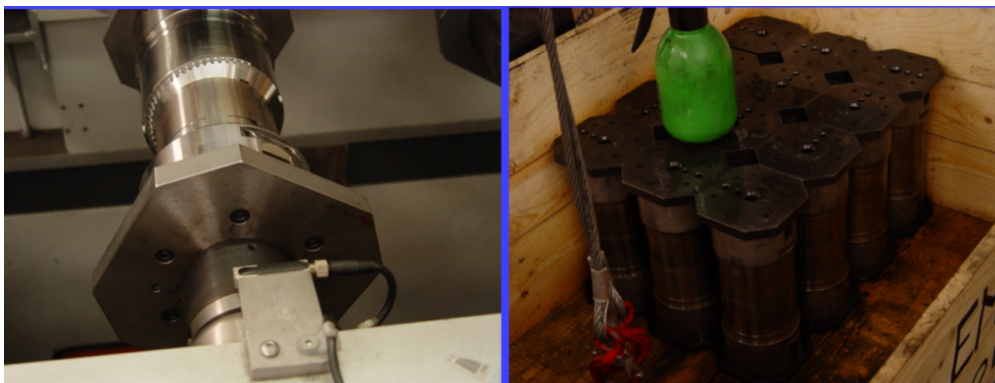
elbows : **25 to 90mm I/D**

tees (equal) : **25 to 90mm I/D**

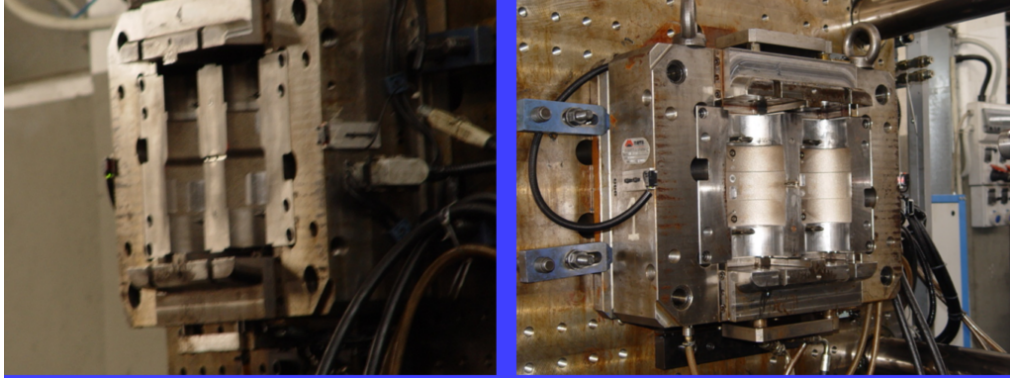
reducers : **25 to 180mm I/D**

Metal Mandrel Process

•Mandrel Winding



•Mandrel put in the mold



- Take out the mandrel to cooling station and taking mandrel out from injected coupler



Technology Consultancy

AHP can offer an electrofusion technology consultancy program

a comprehensive guide to producing electrofusion fittings, and includes CAD design of fittings and relevant components, as well as preliminary electrical data

Package Includes

Component Design

- > Fittings design drawings
- > drawings of terminal pins, snap rings and other associated items
- > initial electrical characteristics, including wire type and size, fusion details and fitting resistance details
- > finished drawings of components

>AHP Barcode Creator Software

- > software for creating 24-bit barcodes (coding is carried out according to ISO/TR 13950)

>Technical Support

- > 12 months technical support by fax or e-mail



[CNC Wire Laying for Electrofusion Fittings](#)

[CNC Wire Winding for Electrofusion Fittings](#)

[Metal Mandrel CNC Wire Winding Machine for Electrofusion Couplers 20-63mm \(Single Head\)](#)

[Semi-Automatic Wire Winding Machine for Pads of Electrofusion Saddles \(Tapping Tees\)](#)

[Technology Consultancy of Manufacturing Electrofusion Fittings- Couplers, Tees of 20-160mm](#)

Category

1. Technology