

## 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:

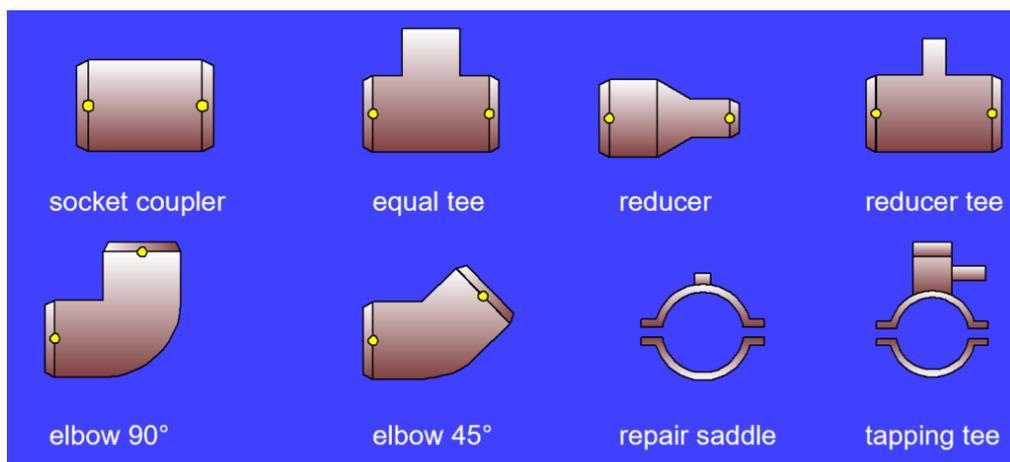
>ISO Standard 8085-3-2001 (E), EN1555-3:1999 and EN12201

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

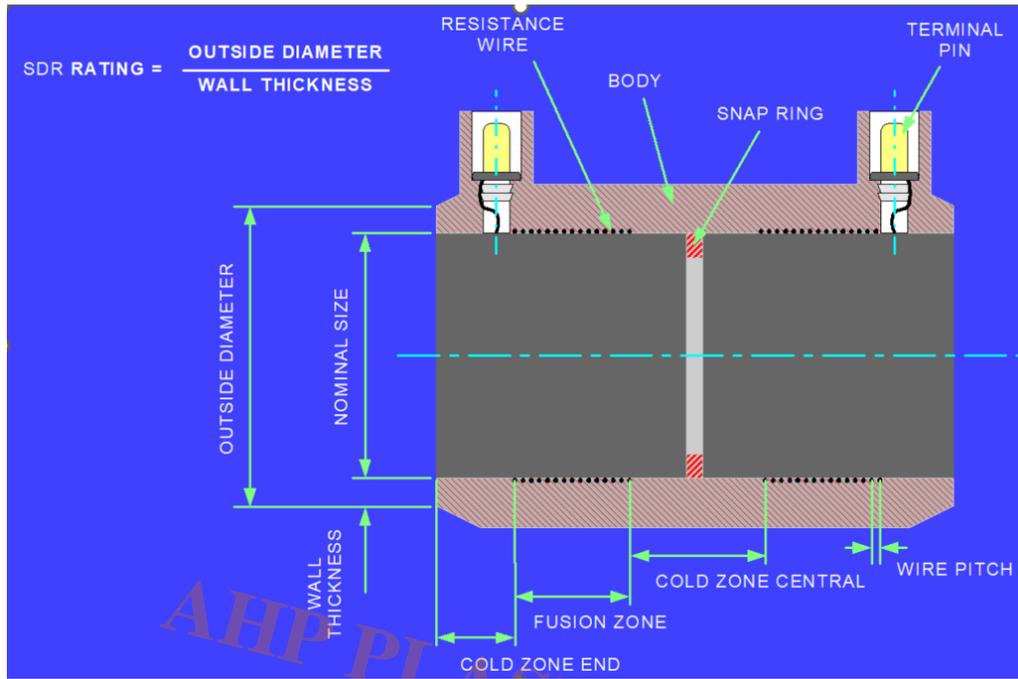
>Equipment is CNC controlled so the design specifications can be changed during testing

**Electrofusion Terminology**

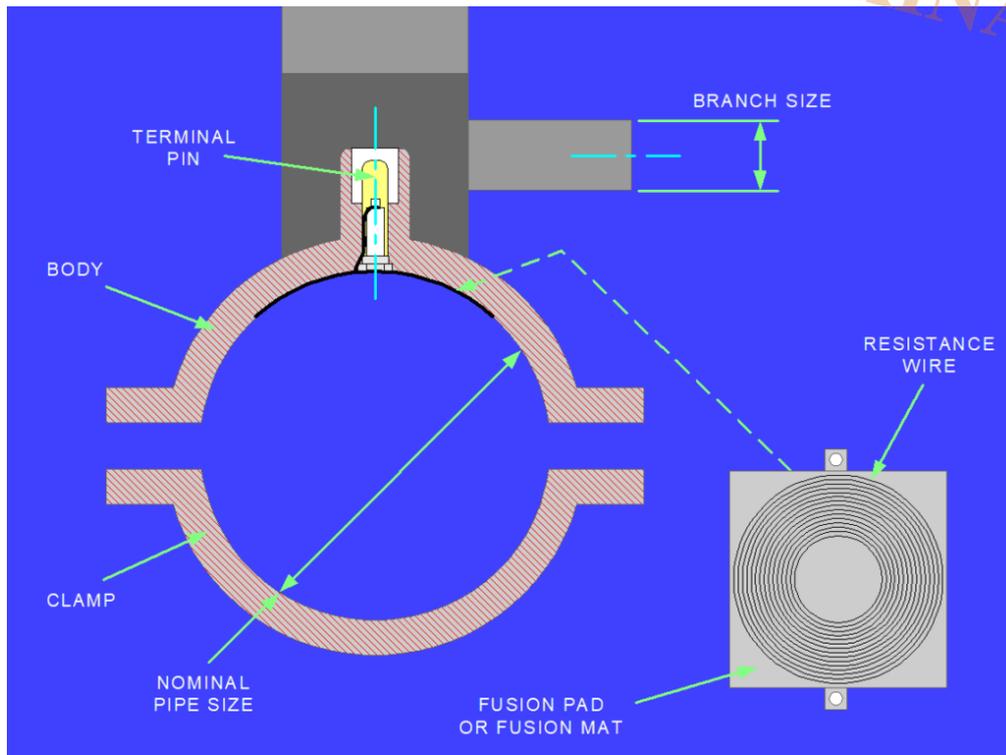
Types:



**Socket Coupler**



### Tapping tee

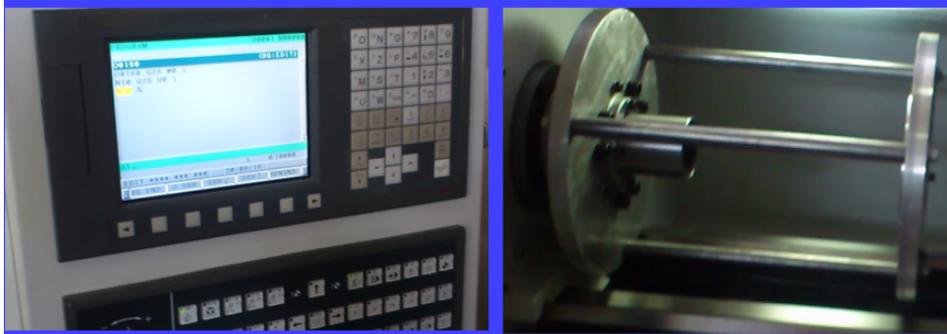


### Equipment Description

>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

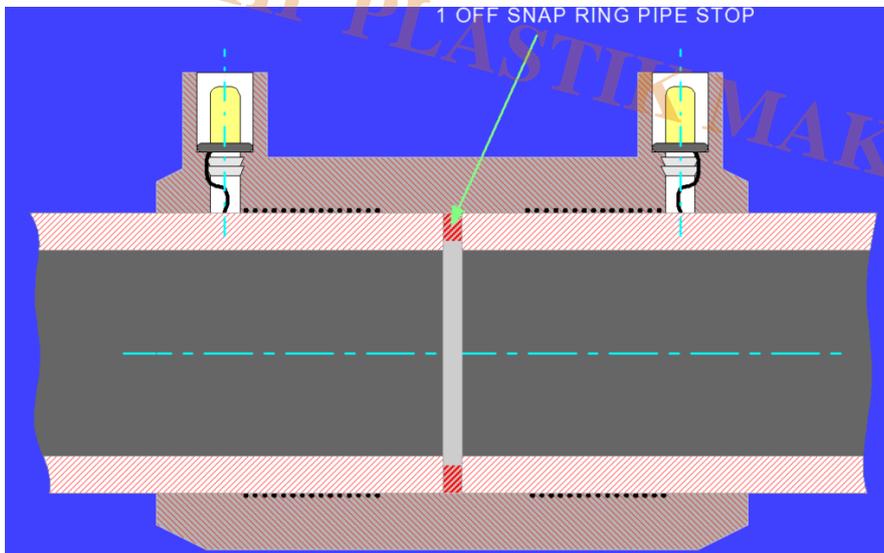
>The fitting is manually loaded into the main fixture

>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**

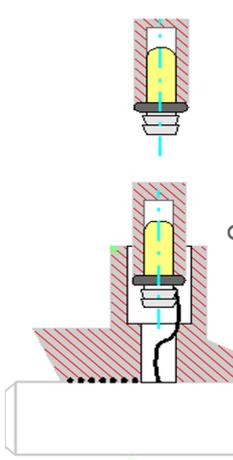
- >The boring bar is doing 3 jobs at the same time: boring+making the slot for stop ring+wire laying
- >The snap ring is pushed into the bore of the fitting until it engages with the machined groove



### **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

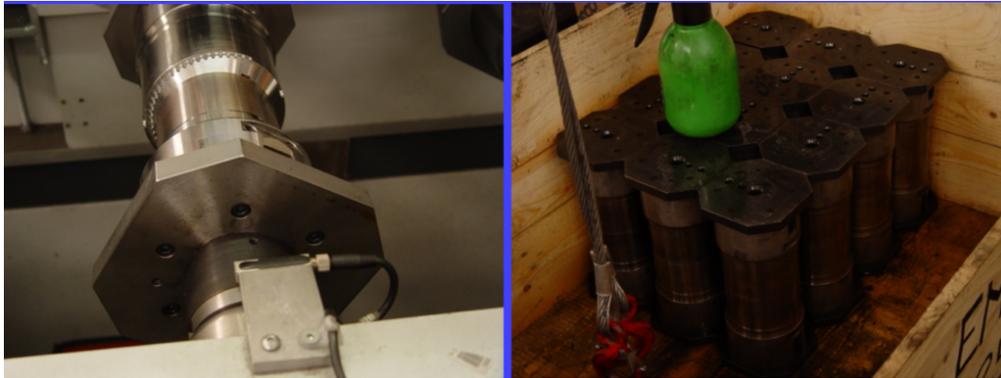


**AHP WL200 Horizontal Wire Laying**  
**Typical Fitting Capacity**

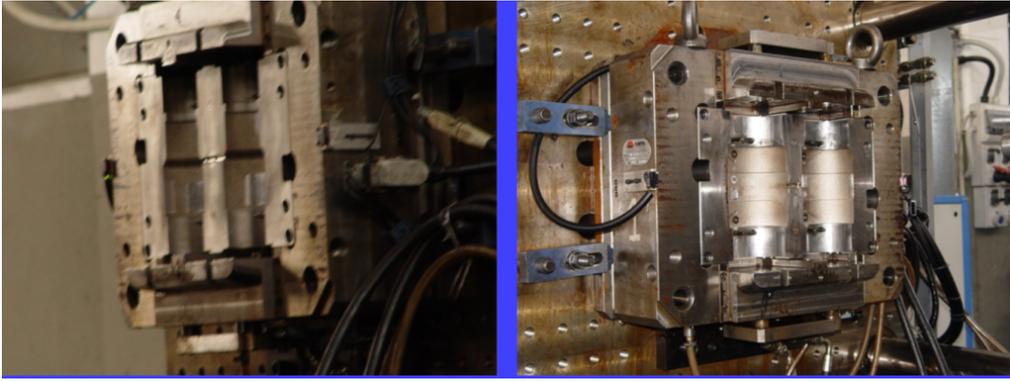
- sockets / couplers : 25 to 180mm I/D
- elbows : 25 to 90mm I/D
- tees (equal) : 25 to 90mm I/D
- reducers : 25 to 180mm I/D

**Metal Mandrel Process**

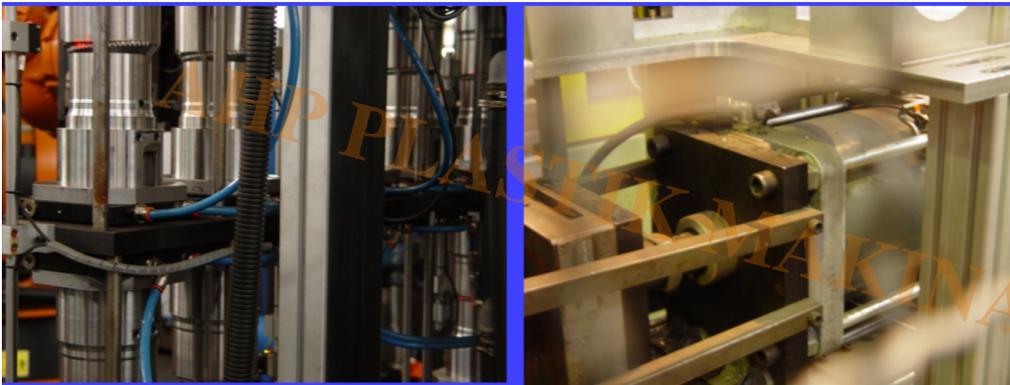
â€¢Mandrel Winding



â€¢Mandrel put in the mold



â€¢ 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](#)

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[CNC Wire Winding for Electrofusion Fittings](#)

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

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

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

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### Category

1. Technology