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Welding Technology Expert &
Intelligent Manufacturer

HUAJIN WELDER

ماكينات اللحام HDPE - أجياد

HDPE Welding Machine “AJYAD”

HUAJIN WELDER

قائمة الأسـعار - ديسمبر ٢٠٢٠

Price List - December 2020

الوكـيل الوحـيد

EPSILON

AGENCIES AND DISTRIBUTION

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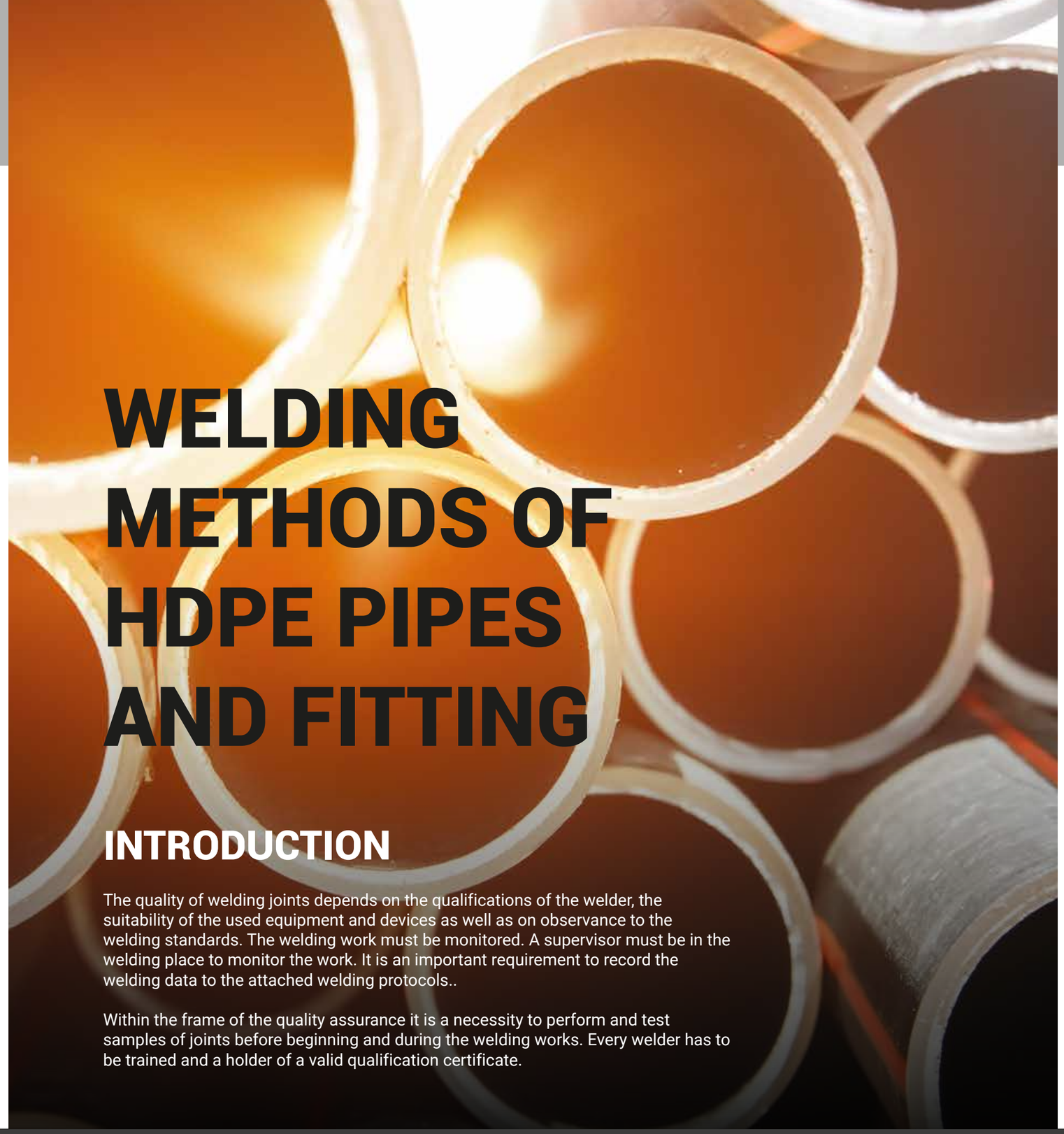


WELDING METHODS OF HDPE PIPES AND FITTING

INTRODUCTION

The quality of welding joints depends on the qualifications of the welder, the suitability of the used equipment and devices as well as on observance to the welding standards. The welding work must be monitored. A supervisor must be in the welding place to monitor the work. It is an important requirement to record the welding data to the attached welding protocols..

Within the frame of the quality assurance it is a necessity to perform and test samples of joints before beginning and during the welding works. Every welder has to be trained and a holder of a valid qualification certificate.

BUTT WELDING

PRECAUTIONS

The welding zone must be protected against bad weather influences (e.g. moisture and temperatures below + 5 °C). A cooling down during the welding process by ventilation has to be avoided by closing the pipe-ends during welding.

Pipes from coils are oval immediately after uncoiling. The pipe end must be prepared before welding, e. g. by careful heating up with a hot-air equipment and use of a suitable clamping and/or rerounding device.

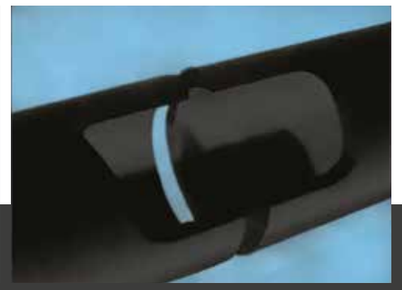
The connection zones of the components to be welded must be undamaged and have to be free of contaminations (dirt, oil, shavings).

DESCRIPTION OF BUTT WELDING

Butt-welding is a method, which is used to join pipes and fittings of the same diameter and wall thickness. In this process, the contact faces of the components are planed so that a perfect contact is achieved, then heated to the melting temperature, and then melted contact faces are joint under pressure. Welding pressure, temperature and time is adjusted so that the physical and chemical properties of the original material are retained.

At the butt welding method, the connection zones of the components to be welded are aligned on the heated tool (alignment), heated up to the welding temperature with reduced pressure (heating-up) and joined under pressure (joining) after removal of the heated tool (tool removal).

A good quality butt-welded joint assures that the joint strength is the same as valid for the original pipe itself. And in order to achieve a good quality joint, welding parameters (temperature, pressure and time) should be adjusted carefully.



PREPARATION

Before starting the welding process, the welding temperature set on the heated tool is to be checked. This is done by means of an infrared thermometer. For adjusting a thermic balance, the heated tool may be inserted 10 minutes after reaching the set temperature.

To ensure an optimum welding connection, the heated tool has to be cleaned with an absorbent, non-fuzzy and non-coloured paper before every welding operation. The heated tool must be free of damages in the working zone.

The joining forces and joining pressures have to be specified for the machines to be used. These can be based on manufacturer information, calculated or measured values. Additionally, at the welding of pipes, the workpiece moving force resp. moving pressure is taken from the indicator of the welding machine during the slow displacement of the part to be welded and have to be added to the prior determined joining force resp. joining pressure.

The joining areas have to be planed with a clean and grease-free tool directly before the welding, so that they are plane-parallel in clamped condition. Permissible gap width under alignment pressure is shown in the next Table.

Pipe outside diameter ΦD mm	Gap width mm
≤ 355	0.5
400 ... < 630	1.0
630 ... < 800	1.3
800 ... ≤ 1000	1.5
> 1000	2.0

Maximum gap width between the treated welding zones.

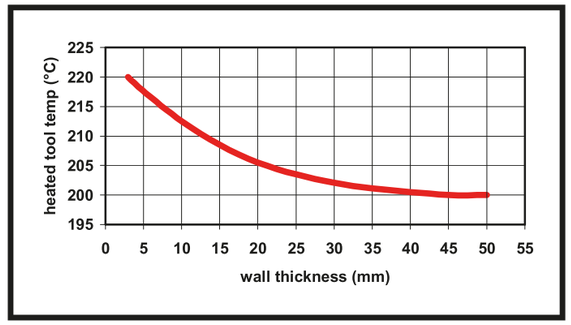
Both the gap width and the misalignment have to be controlled. The misalignment of the joining areas on the pipe outside resp. sheet may not pass the permissible size of 0.1 x wall thickness.

The treated (planed) welding areas should be neither dirtied nor touched by hand, as a retreatment would be necessary then. Shavings fallen into the pipe have to be removed.

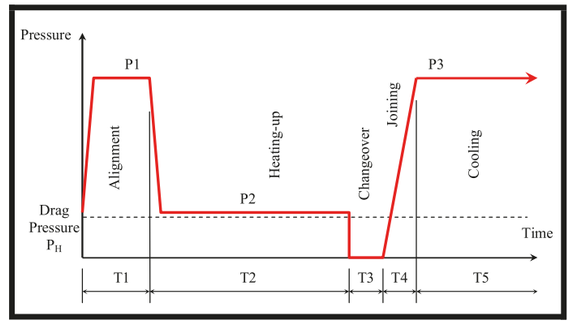
Pipe treatment

WELDING PROCEDURE

In butt welding the welding areas are heated-up to the welding temperature by means of the heated tool and joined under pressure after removing the heated tool. The heated tool temperature is 200 to 220 °C. In principle the upper temperature limit is to aspired for smaller wall thickness, the lower temperature limit for bigger ones (see grap 1). The different stages of the process are illustrated in graph 2.



Graph 1:
Recommended values for the heated tool temperatures subject to the wallthickness.



Graph 2:
Process stages of butt welding.

Alignment:
The joining areas of the welding components are aligned to the heated tool until all areas are plane-parallel on the heated tool. This fact is visible on the kind of beads. The alignment is finished when the bead heights have reached the mentioned values in table 2, column 2 on the total pipe circumference. The alignment pressure (P1) of 0.15 N/mm² effects during the total alignment process. The welder should determine or calculate the manometer pressure according to the instructions given by the manufacturer of the welding machine to get the required interfacial pressure.

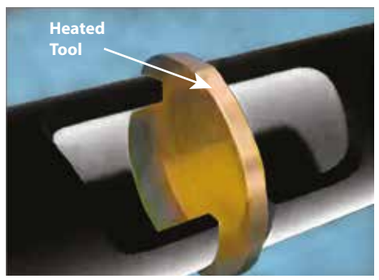


Figure 3:
Inserting the heated tool.

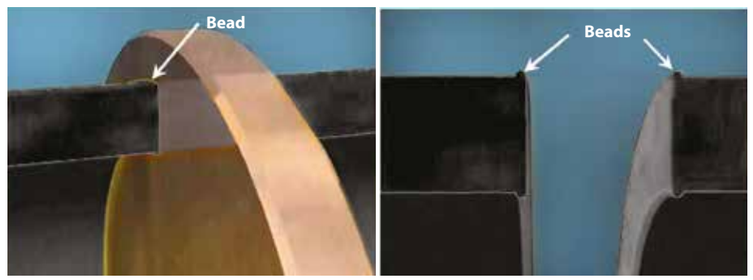


Figure 4:
Bead shapes during and after alignment.

Heating-up:

For heating-up, the joining areas must contact the heated tool with low pressure. The pressure is reduced to nearly zero (P2 ≤ 0.02 N/mm²). During heating-up, the heat penetrates the joining areas and the welding temperature is reached. Heating-up times are mentioned in table 2, column 3.

Removal of heated tool:

After heating-up, the joining areas are to be detached from the heated tool. The heated tool should be withdrawn in such a way that the heated joining areas are neither damaged nor contaminated. The joining areas should be joined together quickly until directly before the contact. The changeover time should be as short as possible (see table 2, column 4), as otherwise the plastified areas will cool down. The welding joint quality would be influenced negatively.

Joining:

The areas to be welded should meet with a speed of nearly zero. The demanded joining pressure is built possibly linear (Graph 2). The required times are shown in table 2, column 5. The joining pressure is P3 0,15±0,01 N/mm2.

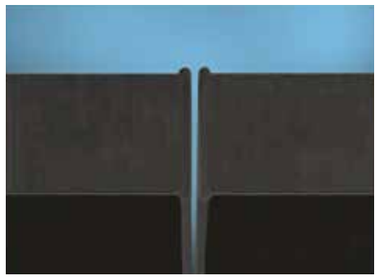


Figure 5:
After the heating-up, closing the pipes face to face and joining them under pressure.

Cooling:

The joining pressure (P3) has to be kept during the cooling time T5 (see table 2, column 5). After joining, a regular double-bead must appear. The bead size shows the regularity of the weldings. Different beads could be caused by different melt flow behaviour of the connected materials. K must always be larger than 0 (see figure 5).

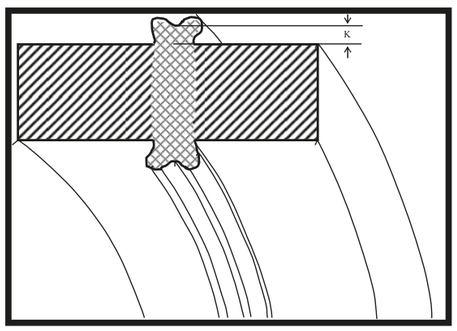


Figure 6:
Bead detail.

Table 2:
Recommended values for the heated tool butt welding of pipes, fittings and sheets made from PE-HD, at an outside temperature of approximately 20 °C and moderate air flow (interim values have to be interpolated).

1	2	3	4	5	
	Alignment	Heating-up	Changeover	Joining	
Nominal wall thickness	Bead height on heated tool at the end of the alignment time (alignment with 0.15 N/mm²)	Heating-up time 10xwallthickness (heating-up with ≤ 0.02 N/mm²)		Joining pressure build-up time	Cooling time under joining pressure p=0.15 N/mm² ±0.01
mm	mm (minimum)	s	s (maximum time)	s	min (minimum values)
4,5	0,5	45	5	5	6
4,5 ... 7	1,0	45 ... 70	5 ... 6	5 ... 6	6 ... 10
7 ... 12	1,5	70 ... 120	6 ... 8	6 ... 8	10 ... 16
12 ... 19	2,0	120 ... 190	8 ... 10	8 ... 11	16 ... 24
19 ... 26	2,5	190 ... 260	10 ... 12	11 ... 14	24 ... 32
26 ... 37	3,0	260 ... 370	12 ... 16	14 ... 19	32 ... 45
37 ... 50	3,5	370 ... 500	16 ... 20	19 ... 25	45 ... 60
50 ... 70	4,0	500 ... 700	20 ... 25	25 ... 35	60 ... 80

Not: The welding work must be repeated when the welder carrys out any value which is not mentioned in tabulated values and/or procedure.

HEATED TOOL BUTT WELDING OF TAPPING TEES

Heated tool butt weldings of tapping tees have to be carried out with the help of welding fixtures.

DESCRIPTION OF METHOD

The connection zones of pipe and tapping tee are aligned and heated up by means of a shaped heated tool under alignment pressure. After withdrawal of the shaped heated tool the joining faces are joined under joining pressure.

PREPARATION OF WELDING

Before starting of the welding process, the welding temperature set on the heated tool is to be checked. This is done by means of an infrared thermometer. For adjusting a thermic balance, the heated tool may be inserted 10 minutes after reaching the set temperature.

To ensure an optimum welding connection, the heated tool has to be cleaned with an absorbent, non-fuzzy and non-coloured paper before every welding operation. The heated tool must be free of damages in the working zone.

Prior to clamping into the welding equipment the joining surface of the pipe has to be scraped by trimming blade or another suitable tool. Shavings have to be removed e. g. by a brush or a paper.

The treated welding areas should be neither dirtied nor touched by hand, as a retreatment would be necessary then.

The roundness of the pipe is to be made by the clamps of the welding equipment or corresponding rerounding devices. The fit of the tapping tee face is to be controlled.

The joining forces and joining pressures have to be specified for the machines to be used. These can be based on manufacturer information, calculated or measured values.

WELDING PROCEDURE

The heated tool, heated to the welding temperature (250 to 270 °C), is introduced between the welding components, and is pressed with an alignment pressure of 0.15 N/mm² to pipe and tapping tee.

After beads have formed (table 3, column 1) the specific set pressure for heating up is reduced to ≤ 0.02 N/mm². The heating time depends on data provided by the manufacturer of the fitting.

When the heating time is elapsed the shaped heating tool is to be withdrawn so, that the heated joining faces are neither damaged or contaminated. The joining areas should be joined together promptly after. The changeover time should be as short as possible (maximum value see table 3, column 3).

After complete cooling the welding fixture is allowed to be removed.

1		**Alignment** under p = 0.15 N/mm² Bead height on heated tool at the end of the alignment time **mm** (minimum value)	1.0
2		**Heating-up** under p ≤ 0.02 N/mm² Heating-up time **s**	according to manufacturers data
3		**Changeover** maximum time **s**	10
4	joining	Joining pressure build-up time **s**	5
5	joining	Cooling time under joining pressure p = 0.15 N/mm² **min** (minimum value)	15

Table 3:
Recommended values for the heated tool butt welding of tapping tees made from PE-HD at ambient temperature of 20 °C and at moderate air flow.

ELECTROFUSION WELDING

DESCRIPTION OF METHOD

The joining areas, that means the pipe surface and the inside of the fitting, are overlapped and the resistance wire inside the fitting (heating-coils) are heated up by electric current (Plastification). The weld is caused by the effect of heat expansion (joint pressure) during the welding time (see figure 7).

WELDING EQUIPMENT

The welding equipment has to supply the required voltage for the electrofusion-joint. The device must switch off as soon as the necessary quantity of heat has been fed to the welding zone. The welding equipment must be adjusted to the Electrofusion fittings.

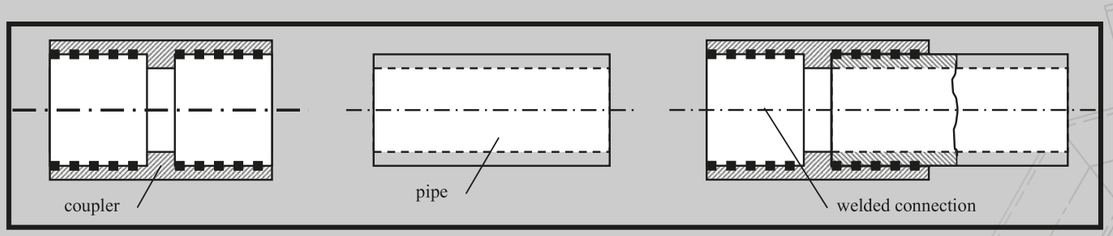


Figure 7: Electrofusion welding (principle).

PREPARATION OF WELDING

Clean surfaces are very important for the fabrication of perfect welding joints. The end of the pipe must be of nominal diameter in the area of the heating coil. The pipe surface has to be scraped in the welding zone and the pipe end has to be burred outside.

Ovality must not exceed 1.5 % of the outer diameter in the welding zone. If necessary, corresponding rerounding devices have to be used. The preparation of the joining areas has to be done immediately prior to the welding process.

ELECTROFUSION WELDING OF FITTINGS

The welding zone of the pipe has to be treated mechanically.

If a clean surface by scraping cannot be guaranteed, the surface –as far as required by the fitting manufacturer– and the welding areas of the fitting have to be carefully cleaned by means of degreasing agents (e. g. technical clean spirit) and absorbent, non-fuzzy and non-coloured paper. Ovality must not exceed 1.5 % of the outer diameter in the welding zone.

Use a marking or suitable device so that the plug in depth of the pipe can be checked. The fitting must not be canted or pushed into the end of the pipe using force.

The contact sleeves for connecting the welding cable must be located so that they are easily accessible.

The pipe ends have to be treated according to the instructions of the fitting manufacturer.

ELECTROFUSION WELDING OF TAPPING TEES

The welding zone of the pipe has to be treated mechanically.
If a clean surface by scraping cannot be guaranteed, the surface –as far as required by the tapping tee manufacturer– and the welding areas of the tapping tee have to be carefully cleaned by means of degreasing agents (e. g. technical clean spirit) and absorbent, non-fuzzy and non- coloured paper. Clamp the tapping tee onto the pipe using suitable devices.

Ovality must not exceed 1.5 % of the outer diameter in the welding zone. If necessary, corresponding rerounding devices have to be used.

WELDING PROCEDURE

The welding equipment is connected by a cable with the part to be welded. The welding cable has to be placed without weight loaded. The contact areas must be clean. The required data of the fitting or tapping tee for the welding process are taken automatically by the welding equipment or must be inserted. After starting the welding process it is finished automatically.

The welding time is usually shown on the welding equipment. It has to be inserted to the welding protocol as also other shown data from the welding machine, as far as no data record is done.

The parts to be welded have to be secured by suitable measures resp. devices against change of position. The connection may be moved only after cooling down. The fitting resp. mounting manufacturer supplies corresponding information.

SOCKET WELDING

DESCRIPTION OF METHOD

In heated tool socket welding (see figure 8), pipe and pipeline component are welded in overlapped condition. Pipe end and fitting are heated up to welding temperature by a socket or spigot-shaped heated tool and subsequently joined together.

Heating tools and fittings are dimensionally adapted so that on joining a joining pressure will be built-up. Heated tool socket welding can be performed manually up to 50 mm pipe diameter. At diameters as from 63 mm, a welding device is required because of the higher joining force.

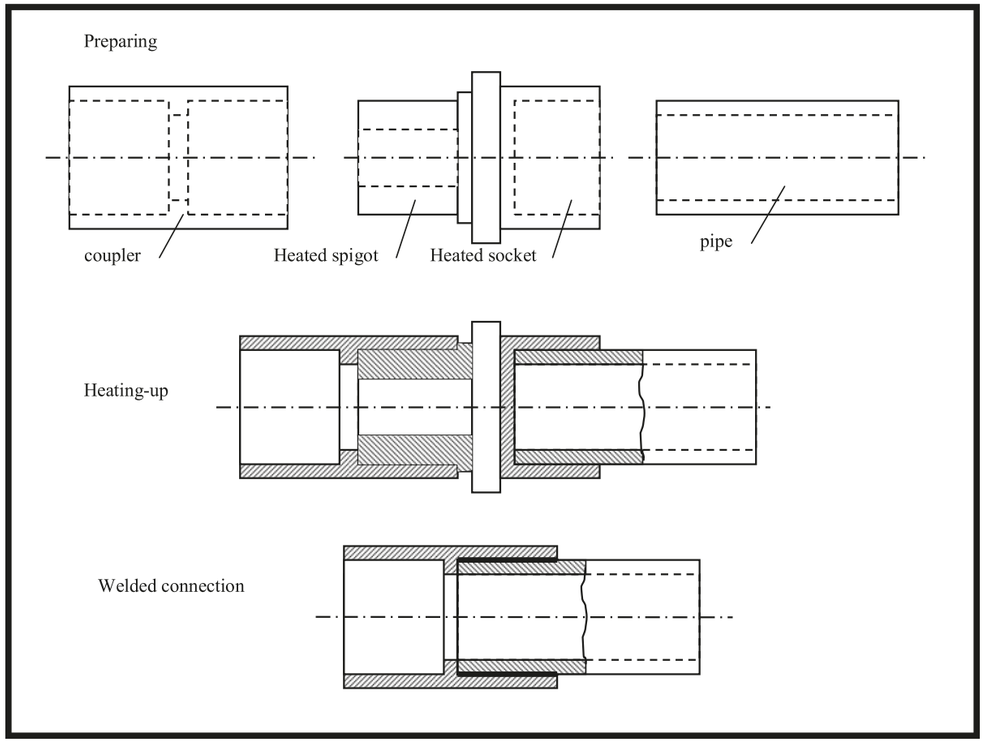


Figure 8: Heated tool socket welding (principle).

WELDING DEVICE

The heated tools are heated electrically and are coated antiadhesively.

PREPARATION OF WELDING

The treatment of the joining areas of the welding components should take place immediately before welding is started. The pipe end has to be bevelled according to figure 9 and table 4.

The joining area of the pipe is to be treated according to the manufacturers guidelines. At manual weldings the insert depth is to be marked on the pipe with distance l according to table 4 afterwards.

The inside of the fitting has to be cleaned thoroughly with a degreasing agent (e. g. technical clean spirit) and absorbent, non-fuzzy and non-coloured paper.

Before welding starts, the welding temperature (250 up to 270 °C) set on the heated tool has to be controlled. This checking is done by means of a fast-indicating surface temperature measuring device (infrared thermometer). The heated tool may be inserted 10 minutes after reaching the set temperature at the earliest.

Heating socket and heating spigot must be free of contaminations and should be cleaned before welding with an absorbent, non-fuzzy and non-coloured paper. The anti-adhesive coating of the heating spigot and heating socket must be free of damages in the welding area.

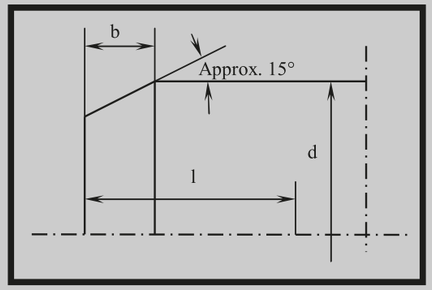


Figure 9: Bevelling of the pipe end.

Insert depth l (mm)	13	14	15	17	18	20	26	29	32	35	38
Pipe chamfer b (mm)	2						3				
Pipe diameter d (mm)	16	20	25	32	40	50	63	75	90	110	125

Table 4: Values for pipe chamfer and insert depth.

WELDING PROCEDURE

For the purpose of heating, fitting and pipe are pushed swiftly and axially until the stop at machine welding resp. until the mark at manual welding onto the devices fitted on the heated tool and held there. It has to be avoided that the pipe is pushed onto the end of the heating socket. Afterwards, the heating-up time starts according to the time values in table 5, column 2.

After the heating time has elapsed, fitting and pipe should be withdrawn sharply from the heated tool and pushed together immediately without any twisting until the stop or mark (maximum adjusting time see table 5, column 3).

At manual weldings the joined components have to be fixed according to the time mentioned in table 5, column 4. The connection may be loaded by further installation works only after cooling time is over (table 5, column 5).

1	2		3	4	5
Pipe outside diameter mm	Heating-up time s for PN 10 SDR 11[2)]	for PN 6 SDR 17.6[2)]	changeover (maximum time) s	Cooling fixed s	total min
16	5		4	6	2
20	5		4	6	2
25	7	[1)]	4	10	2
32	8	[1)]	6	10	4
40	12	[1)]	6	20	4
50	12	[1)]	6	20	4
63	24	[1)]	8	30	6
75	30	15	8	30	6
90	40	22	8	40	6
110	50	30	10	50	8
125	60	35	10	60	8
[1)] Due to the low wall thickness, the welding method is not recommended					
[2)] Standard Dimension Ratio ~ d/s					

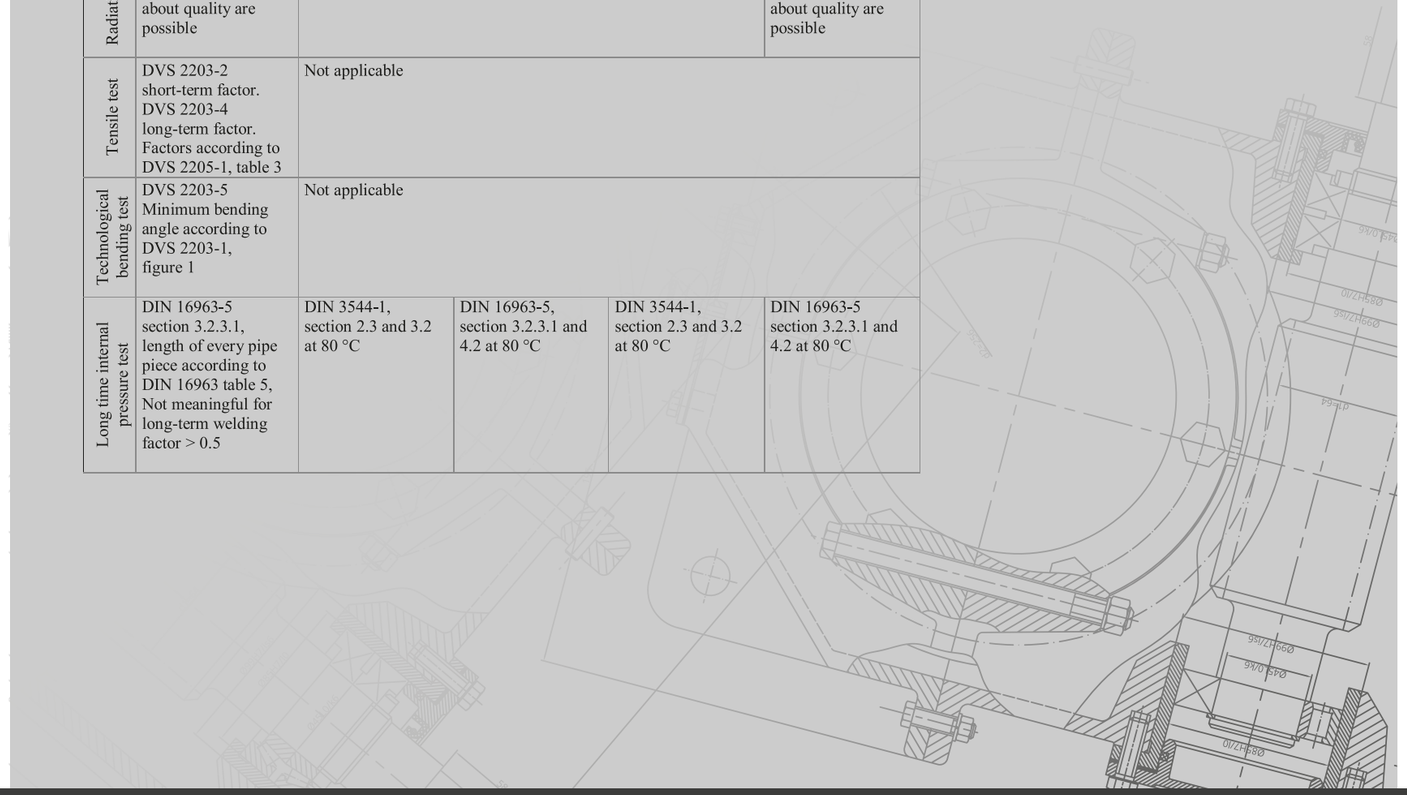
Table 5: Recommended values for the heated tool socket welding of pipes and pipeline components made from PE-HD, at ambient temperature of 20 °C and at moderate air flow.

TESTING OF WELDING JOINTS

Various tests can be used to test the quality of individual welding processes. Differentiation is made between destructive and nondestructive tests. Details of these are contained in table 6.

Tests and sampling can be carried out prior to or during welding work according to agreement.

Test method	heated tool butt welding		Electrofusion welding		heated tool socket welding
	pipes, fittings	tapping tees	fittings	tapping tees	
Visual test	DVS 2202-1 table 1, cont. no, 1-9	welded joint even formed and existing on the whole circumference	DVS 2202-1 table 3, cont. no. 1-5	DVS 2202-1 table 3, cont. no. 6+7	DVS 2202-1 table 2, cont. no. 1-5
	The mechanical treatment of the pipe surface has to be visible out-Side of the welding area				
Radiation test	Applicable Statement about e.g. Holes, not about quality are possible	No meaningful			Applicable Statement about e.g. Holes, not about quality are possible
Tensile test	DVS 2203-2 short-term factor. DVS 2203-4 long-term factor. Factors according to DVS 2205-1, table 3	Not applicable			
Technological bending test	DVS 2203-5 Minimum bending angle according to DVS 2203-1, figure 1	Not applicable			
Long time internal pressure test	DIN 16963-5 section 3.2.3.1, length of every pipe piece according to DIN 16963 table 5, Not meaningful for long-term welding factor > 0.5	DIN 3544-1, section 2.3 and 3.2 at 80 °C	DIN 16963-5, section 3.2.3.1 and 4.2 at 80 °C	DIN 3544-1, section 2.3 and 3.2 at 80 °C	DIN 16963-5 section 3.2.3.1 and 4.2 at 80 °C



APPENDIX:

BUTT WELDING PROCESSING INSTRUCTIONS (SHORT VERSION)

1. Take care for allowed working conditions, e. g. welding tent.
2. Connect the welding equipment to the net or alternating current generator and control the function.
3. Adjust and clamp the parts to be welded under easy axial movement e. g. by dollies.
4. Treatment of connection areas, at pipes e. g. by planing tool.
5. Take off the planing tool at the pipe welding machine.
6. Remove shaves from the welding area (broom, brush, paper).
7. Close the pipe ends against air movement.
8. Check the plane-parallelity by coming together with the joining areas (maximum gap width according table 1).
9. Check the misalignment (maximum 0,1 x wall thickness).
10. Check the heated tool temperature subject to the wallthickness (figure 3)
11. Clean the heated tool with non-fuzzy paper.
12. Read the moving pressure resp. moving force from the pipe welding machine and insert it to the welding protocol.
13. Determine the value for aligning, heating-up and joining pressure.
14. Fix the guide values according table 2.
15. Set the heated tool to the welding position.
16. Align the welding areas to the heated tool until a bead arises (according table 2, column 2).
17. Heating-up with reduced pressure ≤ 0.02 N/mm², heating-up time according table 2, column 3).
18. Remove the connection areas to be welded from the heated tool after finished heating-up time and remove it from the welding position.
19. The joining areas should be joined together within the changeover time (table 2, column 4) immediately until directly before the contact. At contacting, they have to meet with a speed of nearly zero. Build-up a linear joining pressure (table 2, column 5) immediately afterwards.
20. After joining with pressure 0.15 N/mm², a bead must exist. According figure 5, K has to be > 0 on every section.
21. Cooling down under joining pressure according table 2, column 5.
22. Declamping of the welded parts after cooling time.
23. Complete the welding protocol.

HEATED TOOL WELDING OF TAPPING TEES (SHORT VERSION)

1. Take care for allowed working conditions, e.g. welding tent.
2. Control the function of the welding equipment.
3. Ensure the roundness of the pipe by the clamps of the welding equipment or corresponding rerounding devices
4. Adjust and clamp the parts to be welded under easy axial movement e. g. by dollies.
5. Scrape the pipe surface.
6. Fix the welding equipment onto the pipe.
7. Choose the correct-shaped heating tool.
8. Clamp and adjust the tapping tee.
9. Clean the treated pipe surface –as far as it is contaminated– and the heated tool by means of degreasing agents (e.g. technical clean spirit) and absorbent, non-fuzzy and noncoloured paper.
10. Determine forces for alignment and joining (table of manufacturer).
11. Check the welding temperature (250 to 270 °C).
12. Set the heated tool to the welding position.
13. Align the welding areas to the heated tool until a bead of 1 mm arises.
14. Heating-up with reduced pressure ≤ 0.02 N/mm², heating-up time according to manufacturer's data.
15. Remove the connection areas to be welded from the heated tool after heating-up time finished and remove it from the welding position.
16. The joining areas should be joined together within the changeover time of a maximum of 10 seconds.
17. Build up joining pressure within 5 seconds.
18. Cooling down under joining pressure, minimum 15 minutes.
19. Declamping of the welded parts after cooling time.
20. Complete the welding protocol.

ELECTROFUSION WELDING OF FITTINGS (SHORT VERSION)

1. Create permitted working conditions, e.g. welding tent.
2. Connect welding unit to the mains or the AC generator and check function.
3. Deburr outer edges of pipe ends cut off at right angles (for connection with fittings).
4. Ensure that pipe ends are round using rerounding clamps, permitted ovality up to 1.5% of outer diameter.
5. Process pipe surface in the welding zone with a scraping tool.
6. If soiled, clean the processed pipe surface and, if applicable depending on manufacturer's instructions, the fitting or tapping tee accessory thoroughly with a degreasing agent (e.g. technically pure alcohol with 99.8% ethyl alcohol, < 0,1% water in original container) and unused, absorbent, non-fuzzy and non-dyed paper.
7. Push pipe into fitting and check insertion depth by marking or using suitable device.
8. Connect cable to fitting. Cable must be free of weight load.
9. Where applicable, check settings/displays on the welding unit.
10. Carry out welding process according to manufacturer's instructions.
11. Disconnect cable from fitting.
12. Observe cooling down time according to manufacturer's instructions.
13. Complete the welding protocol form.

ELECTROFUSION WELDING OF TAPPING TEES (SHORT VERSION)

1. Create permitted working conditions, e.g. welding tent
2. Connect welding unit to the mains or the a.c. generator and check function
3. Ensure that pipe is round using rerounding clamps, permitted ovality up to 1.5% of outer diameter
4. Process pipe surface mechanically in welding zone.
5. If soiled, clean the process pipe surface and, if applicable depending on manufacturer's instructions, the fitting or tapping tee accessory thoroughly with a degreasing agent (e.g. technically pure alcohol with 99.8% ethyl alcohol, < 0.1% water in original container) and unused, absorbent, non-fuzzy and non-dyed paper
6. Fasten tapping tee onto the pipe
7. Connect cable to tapping tee. Cable must be free of weight load.
8. Where applicable, check settings/displays on the welding unit.
9. Carry out welding process according to manufacturer's instructions
10. Disconnect cable from tapping tee
11. Observe cooling time according to manufacturer's instructions
12. Complete the welding protocol form.

HEATED TOOL SOCKET WELDING (SHORT VERSION)

1. Take care for allowed working conditions, e. g. welding tent.
2. Connect the welding equipment to the net or alternating current generator and control the function.
3. Clean the heating tools by non-fuzzy paper.
4. Check the welding temperature (250 to 270 °C).
5. The inside of the fitting has to be cleaned by means of a degreasing agent (e.g. technical clean spirit) and absorbent, non-fuzzy and non-coloured paper.
6. Treat the rectangular cut pipe end according figure 8 and table 4, resp. to the fitting manufacturer instruction.
7. Insert the fitting and pipe simultaneously into the heating spigot resp. the heating socket. The pipe end may not contact the end of the heating socket.
8. Keep the heating-up time according table 5, column 2.
9. Pull off the fitting and pipe and push them swiftly and axially together to the stop resp. mark (maximum adjusting time see table 5, column 3) and held this position (see table 5, column 4).
10. Cool down the connection. Mechanical load of the connection only after finished cooling time according table 5, column 5.
11. Complete the welding protocol.

ماكينات لحام بولي ايثيلين - هيدروليك
HDPE WELDING MACHINE – HYDRAULIC

HDC160
Butt Fusion Welding Machine

ماكينة لحام بولي ايثيلين هيدروليك ١٦٠ مم

HDC160 Technology Information					
Welding Range: 40mm, 50mm, 63mm, 75mm, 90mm, 110mm, 125mm, 140mm, 160mm					
Package Size: 93*54*51 cm 67*51*51 cm 2 Plywood Cases					
Total Volume: 0.430m³		Net Weight: 90kgs		Gross Weight: 111kgs	
	Basic Frame	Heating Plate	Milling Cutter	Support	Hydraulic Unit
Size	82*44*40 cm	37*5*35 cm	31*24*32 cm	30*18.5*42 cm	58*47*47 cm
Weight	38kgs	3kgs	6kgs	1.5kgs	41.5kgs
Power	2.65KW/220V				

HDC200
Butt Fusion Welding Machine

ماكينة لحام بولي ايثيلين هيدروليك ٢٠٠ مم

HDC200 Technology Information					
Welding Range: 63mm, 75mm, 90mm, 110mm, 125mm, 140mm, 160mm, 180mm, 200mm					
Package Size: 93*54*51 cm 73*51*51 cm 2 Plywood Cases					
Total Volume: 0.446m³		Net Weight: 96.4kgs		Gross Weight: 116.4kgs	
	Basic Frame	Heating Plate	Milling Cutter	Support	Hydraulic Unit
Size	85*48*44 cm	37*5*40 cm	35*36*35 cm	33.5*18.5*46 cm	58*47*47 cm
Weight	42kgs	3.8kgs	7kgs	2.1kgs	41.5kgs
Power	3.25KW/220V				

HDC250
Butt Fusion Welding Machine

ماكينة لحام بولي ايثيلين هيدروليك ٢٥٠ مم

HDC250 Technology Information					
Welding Range: 75mm, 90mm, 110mm, 125mm, 140mm, 160mm, 180mm, 200mm, 225mm, 250mm					
Package Size: 96*55*50 cm 65.5*50*52 cm 56*54*64.5 cm 3 Plywood Cases					
Total Volume: 0.629m³		Net Weight: 119.1kgs		Gross Weight: 147.6kgs	
	Basic Frame	Heating Plate	Milling Cutter	Support	Hydraulic Unit
Size	85*53*43 cm	44*5.5*47 cm	36*47*47 cm	39*28*56.5 cm	58*47*47 cm
Weight	52kgs	5.5kgs	17.5kgs	2.6kgs	41.5kgs
Power	3.95KW/220V				

HDC315
Butt Fusion Welding Machine

ماكينة لحام بولي ايثيلين هيدروليك ٣١٥ مم

HDC315 Technology Information					
Welding Range: 90mm,110mm, 125mm, 140mm, 160mm, 180mm, 200mm, 225mm, 250mm, 280mm, 315mm					
Package Size: 99*65*61 cm 74*71*66 cm 2 Plywood Cases					
Total Volume: 0.740m³		Net Weight: 154.8kgs		Gross Weight: 187.3kgs	
	Basic Frame	Heating Plate	Milling Cutter	Support	Hydraulic Unit
Size	94*62*60 cm	44*5*53 cm	59*38*58 cm	48*28.5*56.5 cm	58*47*47 cm
Weight	80kgs	7.8kgs	22kgs	3.5kgs	41.5kgs
Power	4.95KW/220V				

ماكينات لحام بولي ايثيلين - هيدروليك
HDPE WELDING MACHINE – HYDRAULIC

HDC450
Butt Fusion Welding Machine

ماكينة لحام بولي ايثيلين هيدروليك ٤٥٠ مم

HDC450 Technology Information						
Welding Range: 180mm, 200mm, 225mm, 250mm, 280mm, 315mm, 355mm, 400mm, 450mm						
Package Size: 131*90*96 cm 94*55*123 cm 74.5*54*48 cm 3 Plywood Cases						
Total Volume: 1.970m³		Net Weight: 347kgs		Gross Weight: 400kgs		
	Basic Frame	Heating Plate	Milling Cutter	Support	Hydraulic Unit	Electric Unit
Size	120*74*79 cm	71*10*70 cm	63*16*98 cm	50*50*60 cm	58*46*45 cm	38*20*43 cm
Weight	200kgs	16kgs	59kgs	13kgs	49kgs	10kgs
Power	8.2KW/380V					

HDC630
Butt Fusion Welding Machine

ماكينة لحام بولي ايثيلين هيدروليك ٦٣٠ مم

HDC630 Technology Information						
Welding Range: 315mm, 355mm, 400mm, 450mm, 500mm, 560mm, 630mm						
Package Size: 143*100*105 cm 140*109*65 cm 74*50*45 cm 3 Plywood Cases						
Total Volume: 2.660m³		Net Weight: 540kgs		Gross Weight: 645kgs		
	Basic Frame	Heating Plate	Milling Cutter	Support	Hydraulic Unit	Electric Unit
Size	131*97*92 cm	91*7*100 cm	78*29*109 cm	63*58*71 cm	58*46*45 cm	38*20*43 cm
Weight	330kgs	34kgs	103kgs	14kgs	49kgs	10kgs
Power	12.2KW/380V					

HDC500
Butt Fusion Welding Machine

ماكينة لحام بولي ايثيلين هيدروليك ٥٠٠ مم

HDC500 Technology Information						
Welding Range: 180mm, 200mm, 225mm, 250mm, 280mm, 315mm, 355mm, 400mm, 450mm, 500mm						
Package Size: 145*98*98 cm 128*108*68 cm 74.5*54*48 cm 3 Plywood Cases						
Total Volume: 2.526m³		Net Weight: 388kgs		Gross Weight: 480kgs		
	Basic Frame	Heating Plate	Milling Cutter	Support	Hydraulic Unit	Electric Unit
Size	120*83*84 cm	70*8*75 cm	68*18*105 cm	50.5*50.5*62 cm	58*46*45 cm	38*20*43 cm
Weight	225kgs	20kgs	71kgs	13kgs	49kgs	10kgs
Power	9.5KW/380V					

HDC800
Butt Fusion Welding Machine

ماكينة لحام بولي ايثيلين هيدروليك ٨٠٠ مم

HDC800 Technology Information						
Welding Range: 450mm, 500mm, 560mm, 630mm, 710mm, 800mm						
Package Size: 186*135*135 cm 187*136*76 cm 83*60*56 cm 3 Plywood Cases						
Total Volume: 5.602m³		Net Weight: 1175kgs		Gross Weight: 1345kgs		
	Basic Frame	Heating Plate	Milling Cutter	Support	Hydraulic Unit	Electric Unit
Size	175*130*128 cm	98*9*104 cm	97*36*150 cm	81*67*90 cm	74*50*45 cm	38*20*43 cm
Weight	802kgs	61kgs	202kgs	48kgs	52kgs	10kgs
Power	15.8KW/380V					

ماكينات لحام بولي ايثيلين يدوي ٤ كلامب
HDPE WELDING MACHINES

ماكينات لحام بولي ايثيلين - هيدروليك
HDPE WELDING MACHINE – HYDRAULIC

HDC1000
Butt Fusion Welding Machine

ماكينة لحام بولي ايثيلين هيدروليك ١٠٠٠ مم

HDC1000 Technology Information						
Welding Range: 630mm, 710mm, 800mm, 900mm, 1000mm						
Package Size: 242*204*177 cm 213*90*135 cm 85*62*52 cm 3 Plywood Cases						
Total Volume: 11.602m³		Net Weight: 1876kgs			Gross Weight: 2100kgs	
	Basic Frame	Heating Plate	Milling Cutter	Support	Hydraulic Unit	Electric Unit
Size	200*160*160 cm	122*10*135 cm	110*34*170 cm	117*76*99 cm	74*50*45 cm	38*20*43 cm
Weight	1300kgs	84kgs	320kgs	110kgs	52kgs	10kgs
Power	22.4KW/380V					

HDC1200
Butt Fusion Welding Machine

ماكينة لحام بولي ايثيلين هيدروليك ١٢٠٠ مم

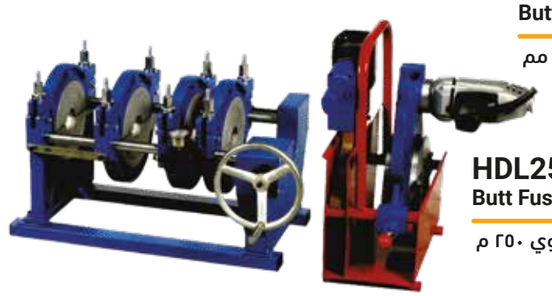
HDC1200 Technology Information						
Welding Range: 630mm, 710mm, 800mm, 900mm, 1000mm, 1200mm						
Package Size: 234*205*230cm, 238*135*125*cm, 120*66*55cm 3 Plywood Cases						
Total Volume: 15.5m³		Net Weight: 3315 kgs			Gross Weight: 3730 kgs	
	Basic Frame	Heating Plate	Milling Cutter	Support	Hydraulic Unit	Electric Unit
Size	220*155*180cm	174*142*10cm	205*145*26cm	130*114*108cm	100*58*39cm	100*58*39cm
Weight	2200 kgs	130 kgs	595 kgs	200 kgs	190 kgs	190 kgs
Power	22.4KW/380V					

HDL200-4M
Butt Fusion Welding Machine

ماكينة لحام بولي ايثيلين يدوي ٢٠٠ مم

HDL250-4M
Butt Fusion Welding Machine

ماكينة لحام بولي ايثيلين يدوي ٢٥٠ م



HDL200-4M Technology Information				
Welding Range: 63mm, 75mm, 90mm, 110mm, 125mm, 140mm, 160mm, 180mm, 200mm				
Package Size: 77*60*57 cm 1 Plywood Cases				
Total Volume: 0.264m³	Net Weight: 51.7kgs		Gross Weight: 66.2kgs	
	Basic Frame	Heating Plate	Milling Cutter	Support
Size	74*64*43 cm	31*6*39 cm	38*26*36 cm	33.5*18.5*46 cm
Weight	39kgs	3.6kgs	7kgs	2.1kgs
Power	2.5KW/220V			

HDL250-4M Technology Information				
Welding Range: 75mm, 90mm, 110mm, 125mm, 140mm, 160mm, 180mm, 200mm, 225mm, 250mm				
Package Size: 105*75*70 cm 1 Plywood Cases				
Total Volume: 0.552m³	Net Weight: 110.6kgs		Gross Weight: 130.6kgs	
	Basic Frame	Heating Plate	Milling Cutter	Support
Size	88*77*47 cm	44*5.5*47 cm	36*47*47 cm	39*28*56.5 cm
Weight	85kgs	5.5kgs	17.5kgs	2.6kgs
Power	3KW/220V			

ماكينات لحام بولي ايثيلين الكتروفيوجن
HDPE WELDING MACHINES - ELECTROFUSION

HDM500
Electrofusion Welding Machine

ماكينة لحام بولي ايثيلين الكتروفيوجن ٥٠٠ مم

HDM500			
Welding Range	**Input Voltage**	**Frequency**	**Output Power**
20mm–500mm	190V~240V	40HZ–60HZ	4KW
Output Voltage	**Control Type**		**Time Adjust Range**
10V~48V	Constant Current/Constant Volt		1~9999 Second
Time Deviation	**Relative Humidity**		**Weight**
≤1%	≤80%		25kgs

قطع غيار مكـــــن اللحـــــام
HDPE WELDING MACHINE – SPARE PARTS

Electric Drill (160-200mm) موتور لماكينة التسوية (١٦٠ - ٢٠٠مم)	
Electric Drill (250-355mm) موتور لماكينة التسوية (٢٥٠ - ٣٥٥مم)	
Electric Drill (400-630mm) موتور لماكينة التسوية (٤٠٠ - ٦٣٠مم)	
Electric Drill (800-1000mm) موتور لماكينة التسوية (٨٠٠ - ١٠٠٠مم)	
Electric Drill (1200mm) موتور لماكينة التسوية (١٢٠٠مم)	

Contactor (160-315mm) كونتاكتور (١٦٠ - ٣١٥مم)	
Contactor (400-630mm) كونتاكتور (٤٠٠ - ٦٣٠مم)	
Contactor (800mm) كونتاكتور (٨٠٠ مم)	
Contactor (1000mm) كونتاكتور (١٠٠٠مم)	
Contactor (1200mm) كونتاكتور (١٢٠٠مم)	

محبس هايدروليك للرجوع Reversing Valve	

موصل سريع Quick Connector	

Blade 160mm زوج شفرة ١٦٠ مم	
Blade 200mm زوج شفرة ٢٠٠ مم	
Blade 250mm زوج شفرة ٢٥٠ مم	
Blade 315mm زوج شفرة ٣١٥ مم	
Blade 450mm زوج شفرة ٤٥٠ مم	
Blade 630mm زوج شفرة ٦٣٠ مم	
Blade 800mm زوج شفرة ٨٠٠ مم	
Blade 1000mm زوج شفرة ١٠٠٠ مم	
Blade 1200mm زوج شفرة ١٢٠٠ مم	

Bolt and Nut (450-500mm) مسمار بالصامولة (٤٥٠ -٥٠٠مم)	
Bolt and Nut (630mm) مسمار بالصامولة (٦٣٠ مم)	
Bolt and Nut (800mm) مسمار بالصامولة (٨٠٠ مم)	
Bolt and Nut (1000mm) مسمار بالصامولة (١٠٠٠ مم)	
Bolt and Nut (1200mm) مسمار بالصامولة (١٢٠٠ مم)	

Thermocouple (160-315mm) سلك حراري للسخان (١٦٠ - ٣١٥مم)	
Thermocouple (400-630mm) سلك حراري للسخان (٤٠٠ - ٦٣٠مم)	
Thermocouple (800-1200mm) سلك حراري للسخان (٨٠٠ - ١٢٠٠مم)	

شهادة ضمان المنتج
WELDING MACHINE CERTIFICATE

١- قائمة الاسعار سارية من تاريخ ٢٠٢٠/١٢/١، حتى اشعار آخر.
٢- الأسعار شاملة ضريبة المبيعات.
٣- الشركة توفر قطع الغيار والإرشادات الفنية.
٤- ماكينات اللحام مضمونة لمدة ١٨٠ يوم من تاريخ الشراء ضد عيوب الصناعة

قطع غيار مكـــن اللحـــام
HDPE WELDING MACHINE – SPARE PARTS

مسمار بالصامولة (٣١٥ - ٣٥٥مم) Bolt x Nut (315 - 355mm)	
عداد التحكم في الضغط Pressure Controller	
مسمار بالصامولة ذهبي (١٦٠ - ٢٥٠مم) Golden Bolt x Nut (160 - 250mm)	
Digital Volt Gauge عداد قياس الكهرباء	
Cable with Socket (160-355mm) كابل كهرباء بالسوكيت (١٦٠ - ٣٥٥مم)	
Cable with Socket (400 -630mm) كابل كهرباء بالسوكيت (٤٠٠ - ٦٣٠مم)	
Digital Display Temperature Control عداد ديجيتال مقياس الحرارة	
Scanner اسكانر ماكينة لحام الكتروفيوجين	
ميكرو سويتش Micro Switch	

NOTE