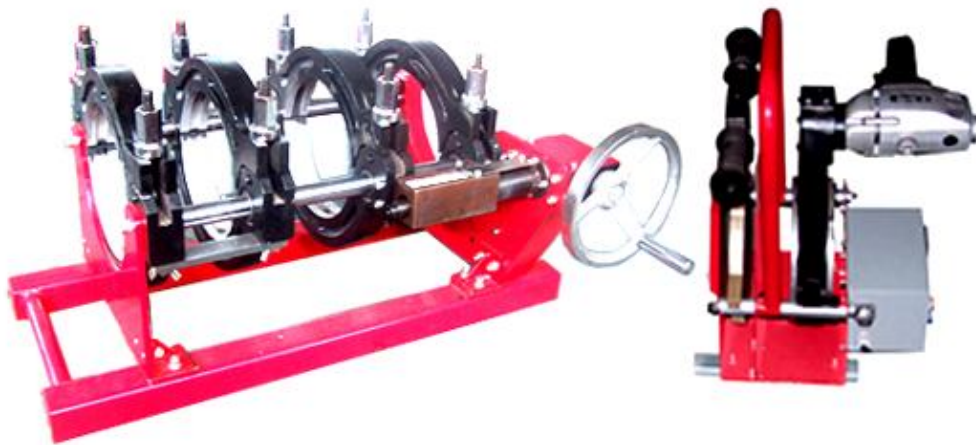


SHDS200

BUTT FUSION MACHINE

OPERATION MANUAL



WUXI SHENGDA PLASTIC PIPES WELDING MACHINE CO., LTD

Contents










1. Brief.....	3
2. Safety	3
3. Applicable Range and Technical Parameter	4
4. Special Description	4
5. Introduction of Machine.....	5
6. Instruction for Use.....	5
7. Reference Welding Standard (DVS2207-1-1995)	7

1. Brief

Along with the property of PE material continuous perfecting and raising, PE pipes are extensively used in gas and water supply, sewage disposal, chemical industry, mine and so on.

For more than ten years, our factory has been researching and developing SH series plastics pipe butt fusion machine that is suit for PE, PP, and PVDF. We have fulfilled the techniques requirements of ISO12176-1. Our products have outstanding features in convenience, reliability, safety and lower price.

Today, our products include nine kinds and over than 20 types that can be applied to plastics pipe construction and make fittings in workshop as follow:

-  SHS series socket welder
-  SHDS series manual butt fusion machine
-  SHD series butt fusion machine
-  SHDA series Auto-butt fusion machine
-  SHM series saddle fusion machine
-  SHG series workshop butt fusion machine
-  SJC series band saw
-  SC series pipe cutter
-  Series special tools

This manual is for SHDS200 plastic pipe manual butt fusion welding machine. In order to avoid any kind of accident caused by electrical or mechanical units, it is suggested to read and act in accordance with the safety rules and maintenance rules before operating the machine.

2. Safety

2.1 safety marks

The following marks are fixed to the machine:

Hot! Keep distance from parts with this sign, for they are very hot!

No approaching! Moving parts can crush. Keep fingers, feet, arms, legs, and head out of the jaw area between the moving tables.



3. Applicable Range and Technical Parameter

Type	SHDS200
Materials	PE, PP and PVDF
Range of diameter × thickness	200mm× 11.76mm
Ambient temp.	-5~45℃
Power supply	220V±10%, 50 Hz
Total current	10.5A
Total power	2.0 KW
Include: Heating plate	1.2 KW
Planning tool	0.8 KW
Max. Temperature	< 270℃
Difference in surface temperature of heating plate	± 5℃
Max. fusion pressure	1040N
Total weight (kg)	94KG

4. Special Description

Before operating the machine, anyone should read this description carefully and keep it well to ensure the equipment and operator's safety, as well as others' safety.

4.1 This machine can not be used to weld no-description materials; otherwise the machine may be damaged or result in accident.

4.2 Don't use the machine in a place with potential hazard of explosion

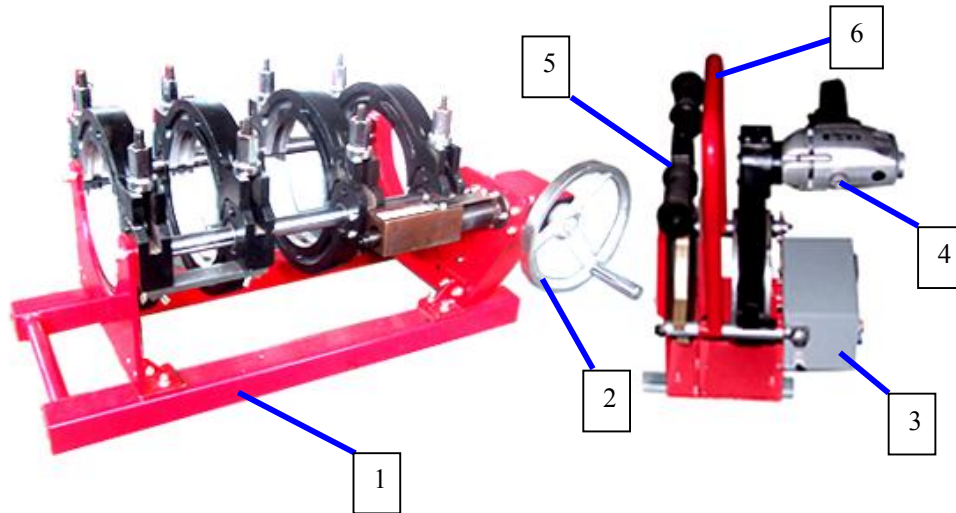
4.3 The machine should be operated by responsible, qualified and trained personnel.

4.4 The machine should be operated on a dry area. The protective measures should be adopted when it is used in rain or on wet ground.

4.5 The input power is within 220V±10%, 50 Hz. If extended input line is used, the line must have enough lead section.

5. Introduction of Machine

The machine consists of basic frame, heating plate, planing tool and support.



1. Basic frame	2. handle wheel	3. electric box
4. planing tool	5. heating plate	6. support

6. Instruction for Use

6.1 The whole equipment should be placed on a stable and dry plane to operate.

6.2 Before operation make sure the following things:

The power supply is the specified according to the butt fusion machine

Power line is not broken or worn

The blades of planing tool are sharp

All instruments are normal

All necessary parts and tools are available

The machine is in good conditions

6.3 Place appropriate inserts according to outside diameter of pipe /fitting

6.4 Welding procedure

6.4.1. Before welding, firstly, check if there are scratches or fissures on the surface of pipes/fitting. If the depth of scratches or fissures exceeds 10% of the wall thickness, remove the scratches or fissures.

6.4.2 Clean the inside and outside surface of pipe end to be welded.

6.4.3 Place the pipes/fitting and keep the elongated length of pipes/fitting ends to be welded be equal (as short as possible). Another end of pipe should be supported by rollers to reduce friction. Fasten the screws of clamps to fix the pipes/fitting.

6.4.4 Place the planing tool, switch it on and close the pipes/fitting ends by operating two driver rods

against the planing tool until continuous and homogenous shavings appear from both sides. Separate the frame, switch off the planing tool and remove it. The shavings thickness should be within 0.2~0.5 mm and it can be adjusted by adjusting the height of the planing tool blades.

6.4.5 Close the pipes/fitting ends and check the alignment. The misalignment should not exceed 10% of the wall thickness, and it could be improved by loosening or tightening the screws of clamps. The gap between two pipe ends should not exceed 10% of wall thickness; otherwise the pipes/fittings should be planed again.

6.4.6 Clear the dust and slit on heating plate (Don't scratch PTFE layer on the surface of heating plate).

6.4.7 Put the heating plate into frame after it have got the required temperature. Raise the pressure up to specified by acting on the handle till the bead reach required height.

6.4.8 Reduce the pressure to a value which is enough to keep both sides touching with heating plate for specified time.

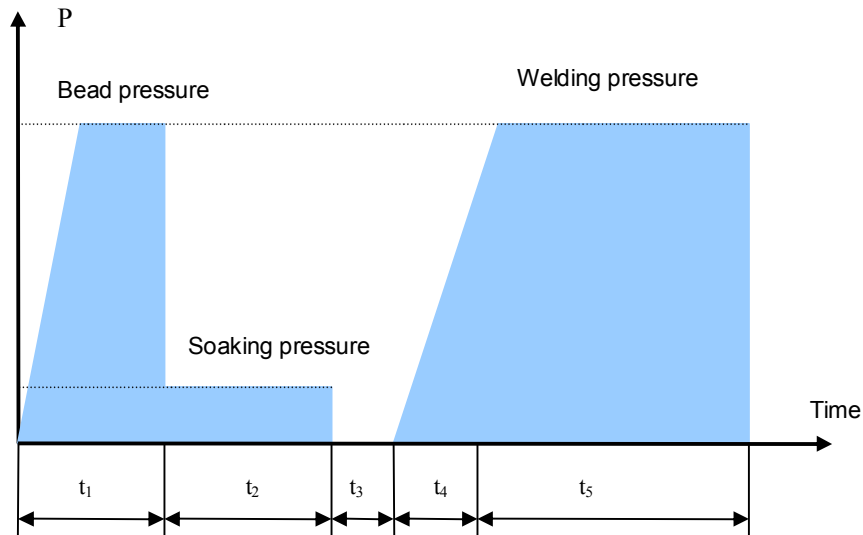
6.4.9 When the time is over separate the frame and remove the heating plate, join the two sides as quickly as possible.

6.4.10 Increase the pressure until the required bead appears. Fasten the lock device to keep the joint cool down by itself. Finally open clamps and take out the jointed pipe.

6.4.11 Check visually the joint. The joint should be smooth symmetry, and the bottom of groove between the beads should not be lower than the pipe surface. The misalignment of two beads should not exceed 10% of the wall thickness, or the welding is bad.

7. Reference Welding Standard (DVS2207-1-1995)

7.1 Because of differences in welding standard and PE material, the time and pressure vary in different phases of welding. It suggests that the actual welding parameters should be offered by pipes and fittings' manufacturer.



Wall thickness (mm)	Bead height (mm)	Bead build-up pressure (MPa)	Soaking time t_2 (sec)	Soaking pressure (MPa)	Change-over time t_3 (sec)	Pressure build-up time t_4 (sec)	Welding pressure (MPa)	Cooling time t_5 (min)
0~4.5	0.5	0.15	45	≤0.02	5	5	0.15±0.01	6
4.5~7	1.0	0.15	45~70	≤0.02	5~6	5~6	0.15±0.01	6~10
7~12	1.5	0.15	70~120	≤0.02	6~8	6~8	0.15±0.01	10~16
12~19	2.0	0.15	120~190	≤0.02	8~10	8~11	0.15±0.01	16~24

Remark: Bead build-up pressure and welding pressure in the form is the recommended interface pressure, the pressure gauge should be calculated with the following formula.

Expressions:

Welding pressure (Mpa) = (Section of welding pipe × 0.15N/mm²) / (2 × 8 × 8 × 3.14) + Drag pressure

Here, 1Mpa=1N/mm²