

Jackman

FUSION EQUIPMENT™

Plastic Pipe Socket Fusion Welding

INSTRUCTIONS

JAC-SERIES

Jac-063 1/2" - 2" Capacity

Jac-125 1/2" - 4" Capacity

Contents

Introduction ----- Page 1

Product Detail ----- Page 1

Product Operation ----- Page 2

Technical Data ----- Page 3 - 4

Getting Started -----Page 5

MDPE & HDPE Fusion Instructions -----Page 6

PPR Fusion Instructions----- Page 7-8

Safety Tips ----- Page 9

Service ----- Page 9

Introduction

The Jackman series of Socket Fusion tools offer innovative solutions for heating and joining plastic pipes & fittings, including HDPE, MDPE, PPR, PP, PB and PVDF. The tools are composed of a quality electric heating plate, and electric controller and a comfortable nylon plastic handle shell. The digital series JAC model displays a digital controller and screen, along with a analog thermometer for improving the accuracy of the heating temperature . The temperature range can be set on demand for different types of plastic pipe & fittings. The temperature will be adjusted and updated automatically when using the toll in extreme weather conditions. An alarm will sound if the tool temperature becomes too hot. These safeguards will ensure proper fusion parameters.

*** Please read these instructions carefully to ensure safe operation ***

Product Detail – JAC Series

- A) Handle Shell
- B) Digital controller with temperature display screen including following keys:
- C) "RDY" and " HEAT" Indicator lamp, ↓key , ↑Key, ← key, and SET Key
- D) Heat insulation cover
- E) Heating Plate
- F) Supporting stand
- G) Analog Thermometer

Important

To switch between F Fahrenheit and C Celsius hold the SET button down and within 2 seconds press the down arrow ↓key once. Decimal point between the digits indicate the welder is set to Celsius.

Product Operation – JAC Series

The suggestion temperature for below pipe:

PP-R 500°F

PB 464°F

HDPE 500+/- 10°F

To switch between F Fahrenheit and C Celsius hold the SET button down and within 2 seconds press the down arrow \downarrow key once. Decimal point between the digits indicate the welder is set to Celsius.

Setting the temperature

Setting the temperature: Press the key "SET". The unit will display the original set temperature.

The unit figure (0- digit) will flash. By pressing the \uparrow Key or $\uparrow\downarrow$ Key , you can adjust the unit figure. To adjust the data on the decimal figure (00-digit), press the \leftarrow Key. Once the decimal figure begins to flash, press \uparrow Key or \downarrow Key to adjust. Press the \leftarrow Key to adjust the unit and decimal figure. The temperature range is fixed. The maximum is 534°F and the minimum is 392°F. Once the temperature setting is complete, press the "SET" key once again. The tool is ready to work.

Over-heating alarm:

The tool will sound an alarm if the temperature rises above 534°F. If this happens, the power must be switched off. After troubleshooting, the tool can be turned back on.

Change the fuse:

The tool is equipped with a fuse. If a short circuit occurs, the fuse will protect the tool. If the display does not power up, check to see if the fuse has been blown. If the fuse is bad, eliminate the cause, and then change the fuse.

Temperature compensates automatically:

This tool has a function that will automatically compensate for external temperature. When the external temperature drops below 44°F, the tool will increase the set temperature by 10°F. When the external temperature rises above 86°F, the tool will decrease the set temperature 8°F. If there is a wide fluctuation in external temperature, the tool temperature can be manually set to appropriate temperature.

This set temperature:

This tool has been set to a temperature of 500°F at the factory.

JAC-Series Welder Technical data

Table 1 Fusion Tools

Specification and Model number	Input Volt	Frequency	Rated Watt	Surface temperature of welding sockets & spigots	Time to reach specified temperature
	V~	Hz	W	°F	min
JAC-063	110/120	(60) 50	800	392-534	10
JAC-125	110/120	(60) 50	1200	392-534	10

MDPE & HDPE Technical Data

Table 2 Fusing Standards for MDPE and HDPE Pipe/ Fittings

Socket Fusion Time Cycles				
Pipe Size	MDPE PE2708 Yellow Gas Pipe		HDPE PE4710 Black Pipe	
	Heating Time seconds	Cooling Time seconds	Heating Time seconds	Cooling time seconds
1/2" CTS	5 - 6	30	8 - 10	30
3/4" CTS	7 - 8	30	10 - 12	30
1" CTS	9 - 10	30	12 - 14	30
1/2" IPS	5 - 6	30	8 - 10	30
3/4" IPS	8 - 10	30	12 - 14	30
1" IPS	10 - 12	30	14 - 16	30
1-1/4" IPS	12 - 14	45	18 - 20	60
1-1/2" IPS	12 - 14	45	18 - 20	60
2" IPS	16 - 20	45	22 - 26	60
3" IPS	20 - 25	45	25 - 30	75
4" IPS	25 - 30	60	30 - 35	75

Note: If the surrounding temperature is below 5°F, the heating time should be increased by 5%.

Getting Started

A) Installing welding sockets & spigots : According to specifications, install welding sockets with hex key screws. Do not tighten too firmly, as the screw thread may become damaged. Be careful when changing the welding sockets while they are hot. The disassembled welding sockets should be stored appropriately. Be careful not to damage the surface coat of welding sockets, as it will cause the pipe to stick, and may impact the quality of fusion and reduce the lifetime of the welding sockets.

B) Using the stand: The fusion tool is equipped with special supporting stand that can hold the fusion tool firmly in place. The operator can stand on the supporting stand when using the tool, allowing for steady operation.

MDPE & HDPE Fusion Instructions

1. Cut pipe squarely.
2. Chamfer pipe end. Remove burrs and chips inside pipe ends.
3. Utilize proper depth gauge and cold ring to ensure correct insertion depth and pipe roundness.
4. Clean the pipe and fittings with clean cloth and isopropyl alcohol to remove all contaminants.
5. Verify the proper heating temperature.
6. Insert the fittings and pipe into the heater plate, making sure to insert the pipe completely into the female socket and the fitting completely onto the male socket.
7. Apply heat for the time listed on Table 2.
8. Remove the pipe and fitting from the heater plate, being careful not to torque or twist the pipe fitting.
9. Quickly check melt to ensure melt is complete. All surfaces should indicate contact with heater. If unsatisfactory, destroy fitting and repeat steps 1-8.
10. Insert pipe into fittings until cold ring is flush with the fitting. Do not twist or rotate.
11. Allow joint to cool for proper cooling time. Be sure to maintain pressure while cooling.
12. Allowing the joint to cool to the touch before removing the cold ring. Inspect the joint for quality.

PPR Fusion Data & Instructions

Table 3 Fusing Standards for PPR Pipe/ Fittings

Pipe Size	Depth of insertion (Type A)	Heating Time (seconds)		Initial Cooling time (seconds)	Total Cooling (minutes)
		SDR 11 SDR 7.3	SDR 17		
1/2" (20mm)	0.55" (14mm)	5	NA	30	2
3/4" (25mm)	0.59" (15mm)	7	NA	30	2
1" (32mm)	0.65" (16.5mm)	8	NA	30	4
1-1/4" (40mm)	0.71" (18mm)	12	NA	30	4
1-1/2" (50mm)	0.79" (20mm)	18	NA	30	6
2" (63mm)	0.94" (24mm)	24	10	30	6
2-1/2" (75mm)	1.02" (26mm)	30	15	60	6
3" (90mm)	1.14" (29mm)	40	22	60	6
4" (110mm)	1.28" (32.5mm)	50	30	60	8
5" (125mm)	1.38" (35mm)	60	35	75	8

PPR Fusion Instructions

This is a general guide to socket fusion. Please reference the pipe manufacture for specific heating time and insertion depths.

1. Cut pipe squarely. Assemble the male and female heating adapters on the JAC- Series welder then connect the welder to the power source.
2. Cut squarely and remove burrs or chips inside pipe ends.
3. Use the multi size metric chamfer to bevel the pipe to produce a 15°bevel.
4. Make a mark on the pipe for the insertion depth on the pipe for type A sockets according to table 3.
5. Clean the pipe and fittings with a clean cloth and isopropyl alcohol.
6. Verify the proper heating temperature.
7. Insert the fittings and pipe simultaneously into the heater plate, making sure to insert the pipe completely into the female socket and the fitting completely onto the male socket.
8. Apply heat for the time listed on table 3.
9. Remove the pipe and fitting from the heater plate, being careful not to torque or twist the pipe fitting. Insert the pipe into the female fitting aligning with the reference longitudinal and not over inserting the pipe past the previously marked depth.
10. Allow joint to cool for proper cooling time. Be sure to maintain support and pressure during the initial cooling time. Allow the joint to cool the total cooling time before any rough handling or stress is put on the joint.

Safety Tips

- A) When the tool is not used but it is heating or cooling, it should be placed on the supporting stand.
- B) Gloves should be worn when operating the heater.
- C) Do not open the handle shell of the fusion tool to avoid electric shock and damage the tool.
- D) The fusion tool cannot be used in the rain. Avoid contact with water and other liquids.
- E) If the electric wires are damaged, send in to Jackman for repair.

When you are finished fusing, unplug and allow the tool to cool prior to placing the heater back into the case.

Service

The JAC series portable socket fusion tool is safe, convenient, and reliable. It is guaranteed for two years. Owner should store the instructions and refer to them before operation.

- A) The factory will repair the fusion tool, should the tool fail due to quality issues, within 2 years of the purchase date.
- B) Any tools that have been misused will not be covered under the warranty.
- C) For service issues, please contact Jackman or visit www.Jackmanfusion.com.

Warranty

Warranty Receipt

Customer's name _____

Tel _____

Purchase date _____

Address _____

Serial # _____

Model _____

Jackman Fusion Equipment

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