WARRANTY CERTIFICATE

LIMITED WARRANTY

Hayes Industrial Solutions Inc. warrants all products distributed. All products have 12 months warranty against manufacturer's defects from the date of purchase from Hayes Industrial Solutions Inc. or Hayes Industrial Solutions Inc. authorized dealers. Furthermore, this warranty only covers factory defects.

RETURN OF GOODS

Buyer must receive written authorization from Hayes Industrial Solutions Inc. or Hayes Industrial Solutions Inc. authorized dealer before any returns. The goods must be in the same condition as received. The buyer has 15 days to request a return of goods after the date of the purchase. Buyer is responsible for return freight for any reason other than manufacturer's defects.

IMPROVEMENT

Hayes Industrial Solutions Inc. reserves the right to make any changes in or improvements on its products without incurring any liability or obligation to update or change previously sold machines and/or the accessories.

PROPRIETARY RIGHTS

All proprietary rights pertaining to the design, colors, and branding, are exclusively the property of Hayes Industrial Solutions Inc.

HAYES INDUSTRIAL SOLUTIONS INC

Heating Tool Model No:_____ **Inspector:** _____

Heater Serial No.: _____ **Date Tested:** _____

Factory Setting ℃ / °F: _____

HAYES Welding Solutions CE

Hayes Digital Socket Fusion Pipe Welder

HY Series

DESCRIPTION

The HAYES digital socket fusion pipe welder (heating tool) is suitable for joining a variety of thermoplastic pipes and fittings for different applications in the industry. This machine can weld HDPE (Polyethylene), PP-R (Polypropylene), PB (Polybutene).

Our machines are durable, affordable and efficient; they maximize the plastic pipe fusion procedures while reducing fusion costs. Our welding equipment is designed and manufactured according to the American international standard ASTM F2620.

We offer a variety of options for each pipe size that you need to weld. Our goal is to offer our customers outstanding guaranteed pipe welding tools and equipment for a very competitive price.

We have a specialized team with knowledge in fusion procedures and maintenance experience. We make the shipping process easy and we stand by our product. At Hayes Industrial Solutions customer satisfaction is our #1 priority.

Refer to the pipe manufacturer's recommended procedures for the welding parameters.

PROCEDURE / APPLICATION

The socket fusion technique consists of simultaneously heating both the external surface of the pipe end and the internal surface of the socket fitting until the material reaches the recommended fusion temperature.

KIT SPECIFICATION

Heating Tool Kit			
Standard Kit (Inches)	***HY-1KIT***	***HY-2KIT***	***HY-4KIT***
	4 heating faces included: ½"CTS ½"IPS ¾"IPS 1"IPS	*6 IPS heating faces included: ½" ¾" 1" 1-1/4" 1-1/2" 2" IPS*	*3 IPS heating faces included: 2" 3" 4" IPS*
Metric Kit (Millimeters)	***HY-32KIT***	***HY-63KIT***	***HY-110KIT***
	3 heating faces included: 20 25 32 mm	*6 heating faces included: 20 25 32 40 50 63 mm*	*3 heating faces included: 75 90 110 mm*
Weight and dimensions-Kit	*6 LBS / 15 X 10 X 5 Inches*	*17 LBS / 17 X 10 X 5 Inches*	*25 LBS / 17 X 10 X 5 Inches*

What is include in the kit?

1 Steel case
1 Heating tool
Heating faces (mm or inches)
Support stands
Cap screw pins
User Manual

HEATING FACES SPECIFICATION

Our Inches heating faces are manufactured according to the American international standard ASTM F1056.
Metric ones follow the European Standard DVS 2207.

Standard (In.)	Ref.	Metric (mm)	Ref.
½"CTS	SK1/2C	20mm	SK20
½"IPS	SK1/2I	25mm	SK25
¾"IPS	SK3/4	32mm	SK32
1"IPS	SK1	40mm	SK40
1-1/4"IPS	SK1-1/4	50mm	SK50
1-1/2"IPS	SK1-1/2	63mm	SK63
2"IPS	SK2	75mm	SK75
3"IPS	SK3	90mm	SK90
4"IPS	SK4	110mm	SK110

Please confirm your pipe specifications.

¡WARNING!
Avoid Injury
This unit must be operated by trained personnel only.

Industrial Safety
RISK MATRIX

Be alert and report anything that you see, feel, smell or hear differently than expected, or that you think is unsafe.

SOURCE: Heating tool and heating faces

Do not adjust temperature above 300℃ or 575 °F. This can result in damage to the heater components and the non-stick surfaces.

HAZARD	RISK	RISK CONTROL
ELECTRICAL 	**Electrocution**	• Make sure to use a power source with the correct voltage and current capacity. • Connect to a 110V grounded power source only. • Keep the cables away from chemical agents or water.
THERMAL 	**Risk of fire**	• Do not use the machine in atmospheres with explosion risk, due to the presence of gases, flammable vapors, etc • Wear protective gloves. Never touch the surface of the heating tool or heating faces when they are hot. • Move the heating plate cautiously when it is hot and carefully remove the heating faces.
	Burn Risk	

IMPORTANT NOTES

- ✓ Skill and knowledge are required to obtain a good quality joint.
- ✓ Ensure you select the proper temperature (Celsius/Fahrenheit) according to the pipe manufacturer's recommendation.

HOW TO COVERT °F TO °C

1°F = -17.22 °C (?) °C = (X°F – 32 * 5/9) = °C
1°C = 33.8 °F (?) °F = (X°C * 9/5 + 32) = °F

- ✓ It is important to know the technical information before you use your heating tool.
- ✓ When welding, if a temperature adjustment is needed, please turn off the heating tool first and turn it on again to adjust the new temperature.
  Adjustment of the temperature when it is already set will damage the temperature control components.
- ✓ It is recommended to use an insulated heater bag to store the heating tool when it is hot.

NON-STICK COATING

Coated surfaces have been treated to reduce polymer adhesion. If the polymer adheres to the heating plate, lightly wipe with a clean cotton cloth to remove. Do not use a wire brush or an abrasive.

WELDING PARAMETERS

Pipe and fitting manufacturers have established qualified fusion procedures which should be followed precisely. You should obtain a copy of the pipe manufacturer's procedures or appropriate joining standard for the pipe being fused.

HEATER TEMPERATURE

To meet pipe manufacture's temperature specifications, the surface temperature of the ***heating face*** should be measured with a surface pyrometer prior to initial use and at reasonable time intervals thereafter.
Ensure you test the temperature on the surface of the heating face and not on the heating plate itself. The heater's built-in thermometer indicates internal temperature and should only be use for reference.

TECHNICAL INFORMATION
HEATING TOOL SPECIFICATION

	HY-1/32	HY-2/63	HY-4/110
Heating Tool			
Capable of welding inches and millimeters pipe (Heating faces are sold separately)			
Working range (Inches)	½" CTS – 1" IPS	½" CTS – 2" IPS	½" CTS – 4" IPS
Working range (mm)	16 – 32 mm	16 – 63 mm	16 – 110 mm
Power	600W	800W	1000W
Voltage range	110V	110V	110V
Frequency	50 / 60Hz	50 / 60Hz	50 / 60Hz
Display Temperature	Fahrenheit	Fahrenheit	Fahrenheit
Temperature control range	0 – 608°F	0 – 608°F	0 – 608°F
Temperature setting range	68°F - 554°F	68°F - 554°F	68°F - 554°F
Factory Setting	500 ± 10°F	500 ± 10°F	500 ± 10°F
Warning Temperature	599°F	599°F	599°F
Socket temperature range	500 ± 10°F	500 ± 10°F	500 ± 10°F
Environment temperature	-68°F - 140°F	-68°F - 140°F	-68°F - 140°F
Relative humidity	45% - 95%	45% - 95%	45% - 95%
Insurability Resistance	≥1MΩ	≥1MΩ	≥1MΩ
Leakage Current	≦5Ma	≦5Ma	≦5Ma
Weight and dimensions (Heating tool/packing)	2LBS 15Oz / 17 X 8 X 6 Inch	4LBS / 17 X 8 X 6 Inch	4LBS 3Oz / 17 X 8 X 6 Inch

TOOL FEATURES

- ✓ Durable and efficient to maximize the pipe fusion
- ✓ Heat resistant aluminum heating plate
- ✓ Voltage protection
- ✓ Digital temperature screen
- ✓ Adjustable temperature control
- ✓ Ergonomic heat-insulated plastic handle
- ✓ Different working ranges

USER'S MANUAL

Hayes Digital Socket Fusion Pipe Welder
(Before use, please read the manual carefully)

ABOUT THIS MANUAL

This manual is only a manufacturer´s guide. It does not take the place of proper training by qualified instructors and does not exceed the experience of a professional. The information in this manual is operational and cannot cover all the situations that may occur in the field such as environment temperature, pipe material, thickness, selected welding standard, etc.

BEFORE THE WELDING PROCESS

A. Cut and chamfer the pipe.
B. Place the cold ring at the proper depth on the pipe as determined by the depth gauge.
C. Attach the coated heating faces to the heating tool when the tool is cold.
D. Connect to a 110V grounded power source only and begin operating the welding machine. Permit enough preheating to stabilize the temperature.

MACHINE SET UP

- Push **ON/OFF** button to power unit up.
- Set the desired temperature by pressing the SET button and then using the "up/down arrow" buttons to choose the proper temperature and then press SET button again to start the heating process.
- Red light displays when the unit is in process of heating up.
- Green light displays when the unit has reached the desired temperature.

WELDING PROCESS

Put the pipes and fittings into the heating faces, remove pipes and the fittings from the heating faces when they reach the proper heating time. Connect the pipes and fittings together until the bead is formed.

SOCKET FUSION TIME CYCLES

American National Standard - ASTM F2620
Polyethylene (PE)

Temperature: 490 - 510 °F / 254 - 266 ℃

PIPE SIZE		PE80 MDPE Medium Density Polyethylene - PE 2406/PE 2708			PE100 HDPE High Density Polyethylene - PE 3408/PE 3608/PE 4710		
Pipe Size		Heating Time	Fusion Time	Cooling Time	Heating Time	Fusion Time	Cooling Time
Inches	mm	Sec.		Sec.	Sec.		Sec.
1/2"CTS	16	6-7	Immediate	30	6-10	Immediate	30
1/2"IPS	20	6-7	Immediate	30	6-10	Immediate	30
3/4"	25	6-7	Immediate	30	6-10	Immediate	30
1"	32	10-12	Immediate	30	15-17	Immediate	30
1 1/4"	40	12-14	Immediate	45	18-21	Immediate	60
1 1/2"	50	14-17	Immediate	45	20-23	Immediate	60
2"	63	16-19	Immediate	45	24-28	Immediate	60
2 1/2"	75	18-20	Immediate	45	24-28	Immediate	60
3"	90	20-24	Immediate	60	28-32	Immediate	75
4"	110	24-29	Immediate	60	32-37	Immediate	75

* Allow the joint to cool an additional five (5) minutes before exposing the joint to any type of stresses.

NOTE: Some recommend using a 50-60 grit emery or garnet cloth to roughen the outside of the pipe and inside of the fitting as a means of minimizing any possible skin interface when making the fusion. Sandpaper is not recommended for this purpose, as it might disintegrate and contaminate the joint interface.

Pipe chamfer(c) and Insert depth (d)

Pipe Size (s)		Pipe Chamfer (c)	Insert depth (d)
Inches	mm		
1/2"CTS	16	2 mm	13 mm
1/2"IPS	20		14 mm
3/4"	25		15 mm
1"	32		17 mm
1 1/4"	40		18 mm
1 1/2"	50		20 mm
2"	63	3 mm	26 mm
2 1/2"	75		29 mm
3"	90		32 mm
4"	110		35 mm