CALL TOLL FREE 877-742-2878 FOR SALES AND SUPPORT

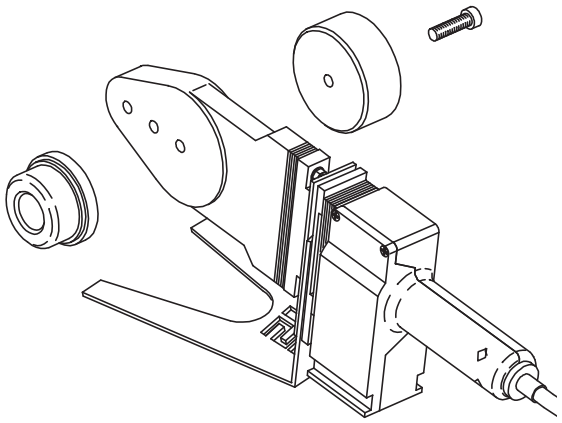
Return to BurtProcess.com

www.SimtechUSA.com

# Socket Fusion Hand Tool

# Operation & Maintenance Manual

*Corrosion Resistant Fluid and Air Handling Systems.*



## Description

The Simtech portable socket fusion machines are available in two size ranges ½″-2″ (20mm to 63mm) and ½″ – 4″ (20mm to 110mm) in both IPS and metric sizes. Each unit come completes with an electric heating plate, digital temperature controller, durable plastic handle, two position metal bench mounting bracket and heater stand. The unit also includes a side handle handle attachment and heater bushing tools. A convenient carry case provides protection and safety while not in use.

½″-2″ Tool is 110v / 800 w
½″-4″ Tool is 110v / 1200 w

220v Avaliable upon request

## Safety Rules

The use of electrical components is always a potential danger. In order to avoid any kind of accident caused by electrical sources it's strongly suggested to read and follow carefully the following safety rules before operating the machine.

- The working area must be clean.
- Do not use machine in rain, inclement weather or close to flammable liquids.
- Always use the machine in a fixed and safe position.
- The machine is operated by 110 Volts therefore be sure that the power supply plug is supplied with the safety devices according to the standard requirements also check that the power supply will be on the range of maximum 10% of the machine's nominal tension.
- Regularly check the cables and the plug. If the cable needs to be replaced, please contact factory.
- Never unplug the power supply by pulling the cable.
- Never carry the machine by the cable.
- Before using the machine, always check that the handle is dry.
- The heater is extremely hot, it's strongly suggested to use suitable gloves.
- Before packing away the machine, wait for the complete cooling of the heating surface.


**SIMTECH**
**Phone: 877-777-2467 • Fax: 215-547-9129**
www.SimtechUSA.com



20mm through 63mm:
Electrical requirements: 110/1Ph/60Hz .Unit includes: Metal carrying case, Table stand, Table clamp stand, Adjusting tools and fasteners.
PTFE heater bushings 20mm, 25mm, 32mm, 40mm, 50mm, and 63mm sold separately



20mm through 110mm:
Electrical requirements: 110/1Ph/60Hz .Unit includes: Metal carrying case, Table stand, Table clamp stand, Adjusting tools and fasteners.
PTFE heater bushings 20mm, 25mm, 32mm, 40mm, 50mm, 63mm, 75mm, 90mm, and 110mm sold separately



**SIMTECH**
**Phone: 877-777-2467 • Fax: 215-547-9129**
www.SimtechUSA.com

• Unpack the machine, put it in the support, and assemble the PTFE coated bushes of the required diameter. ( The diameter is clearly stamped on the bushes themselves)

• Make sure the Table vice is firmly mounted on the work bench and insert and secure the Hand Tool.

• Should supplied Cord length be insufficient, a standard 110V extension should be used.

• Select the right size bushing, corresponding to the size of the pipe and fitting to be welded.

• When facing the tool, position the female bushing on the right side of the tool and the male bushing on the left side.

• Line up the holes in the center of the bushing with the hole in the center of the heat plate.

• Put the allen bolt through the female bushing first then the heat plate and finally thread it into the male bushing.

• Use an allen wrench to ensure that both bushings are securely fastened to the heat plate.

• Plug the hand tool into a 110V socket; the green power light and the yellow temperature indicator light will go on.

• Select the appropriate temperature (260C) You can set the required temperature by pushing the up/down arrows.

• Wait until the yellow temperature indicator light goes off before proceeding with the weld.

• Pipe must be cut square and the end must be chamfered. The fitting interior should be thoroughly cleaned using a cleaning agent. The pipe end should be chamfered on the outside.

• Pipe insertion depth must be marked from chamfered end as follow:

| Pipe OD | Insert Depth |
|---|---|
| 20mm / ½” | 0.63 |
| 25mm / ¾” | 0.7 |
| 32mm / 1” | 0.78 |
| 40mm 1¼” | 0.86 |
| 50mm / 1½” | 0.94 |
| 63mm / 2” | 1.14 |

• Fitting and pipe should be pushed axially against the abutment (fitting) or the marking (pipe) and should be held there.

• The parts to be welded should be heated in accordance with the information and time given in the Socket Weld Reference Value chart.

• After the heating time, the fitting and pipes should be withdrawn from the heater element abruptly and without twisting. They should be pushed together right up to the mark or the abutment.

• After observing the “Total Cooling Time” your joint is now ready to take on full pressure (equal to the rating of the pipe and fitting).

• Clean the internal part of the fitting and the external part of the pipe with acetone or alcohol. ( Dirt or grease damage the weld)

**DO NOT USE ACETONE OR ANY OTHER CLEANING AGENTS ON THE BUSHINGS.**


**SIMTECH**
**Phone: 877-777-2467 • Fax: 215-547-9129**
www.SimtechUSA.com

Standard values for socket welding of pipe and fittings at an ambient temperature of 20°C (70°F) and at a moderate air flow. Welding temperature for all methods: 255°C - 270°C (490°F - 520°F)

## PP Socket Welding Times

| | | | | | DVS 2207-11 |
|---|---|---|---|---|---|
| **Pipe** | | **Insertion Time** | **Maximum Change Over Time** | **Cooling Time** | |
| OD (Inches) | OD (MM) | SDR11 (sec) | (sec) | Clamped (sec) | Cooling Time (min) |
| 3/8” | 16 | 5 | 4 | 6 | 2 |
| ½” | 20 | 5 | 4 | 6 | 2 |
| ¾” | 25 | 7 | 4 | 10 | 2 |
| 1” | 32 | 8 | 6 | 10 | 4 |
| 1¼” | 40 | 12 | 6 | 20 | 4 |
| 1½” | 50 | 18 | 6 | 20 | 4 |
| 2” | 63 | 24 | 8 | 30 | 6 |
| 2½” | 75 | 30 | 8 | 30 | 6 |
| 3” | 90 | 40 | 8 | 40 | 6 |
| 4” | 110 | 50 | 10 | 50 | 8 |

## PVDF Socket Welding Times

| | | | | | DVS 2207-15 |
|---|---|---|---|---|---|
| **Pipe** | | **Insertion Time** | **Maximum Change Over Time** | **Cooling Time** | |
| OD (Inches) | OD (MM) | SDR21 (sec) | (sec) | Clamped (sec) | Cooling Time (min) |
| 3/8” | 16 | 4 | 4 | 6 | 2 |
| ½” | 20 | 6 | 4 | 6 | 2 |
| ¾” | 25 | 8 | 4 | 6 | 2 |
| 1” | 32 | 10 | 4 | 12 | 4 |
| 1¼” | 40 | 12 | 4 | 12 | 4 |
| 1½” | 50 | 18 | 4 | 12 | 4 |
| 2” | 63 | 20 | 6 | 18 | 6 |
| 2½” | 75 | 22 | 6 | 18 | 6 |
| 3” | 90 | 25 | 6 | 18 | 6 |
| 4” | 110 | 30 | 6 | 24 | 8 |



**SIMTECH**
**Phone: 877-777-2467 • Fax: 215-547-9129**
www.SimtechUSA.com

Notes

•Although the indicator light is off when you first insert pipe and fittings into the bushings, it will probably light as soon as the 'cold' pipe and fitting touch the bushings. This is natural and you can proceed with your weld. Just make sure that light is off before inserting.

• If at the end of any weld there is any material left onto the bushing just use a clean wipe to remove it from the Teflon coated surface of the bushing.

• If the material is left onto the bushing after all welds performed check the following:

a) Your pre-heating time (you are heating too long);
b) Your temperature setting may be too high (you have a ±10°C window to adjust your temperature)

**WARNING:**
This tool operates at elevated temperature. Direct contact, even brief, with any heated parts (plates or bushings) can result in severe burns to unprotected skin.


**SIMTECH**
**Phone: 877-777-2467 • Fax: 215-547-9129**
www.SimtechUSA.com

# Notes



**SIMTECH**
**Phone: 877-777-2467 • Fax: 215-547-9129**
www.SimtechUSA.com

***Simtech Industrial Products, Inc.***
47-A Runway Road, Levittown, PA 19057
Phone: 215-547-0444 Fax: 215-547-9129
E-mail: info@SimtechUSA.com
Web site: www.SimtechUSA.com

## WARRANTY

Simtech Industrial Products, Inc. products are warranted to be free from defects in materials and workmanship for one (1) year from date of shipment. No claim shall be permitted under this warranty unless Buyer gives Simtech Industrial Products, Inc. written notice of all respects in which Buyer claims the product to be defective. Notice must be received within ten (10) days from the date which the Buyer discovers, or should have discovered the defect. Buyer shall give Simtech Industrial Products, Inc. a reasonable opportunity to inspect the product after notice has been given. This warranty shall not apply to any products or components, which have been subjected to abnormal use, negligence or accident.

Seller's sole obligation under this warranty shall be limited solely on the repair or replacement, as elected by Simtech Industrial Products, Inc., of defective or nonconforming material. To the maximum extent permitted by law, Buyer irrevocably waives all claims for money damages relating to the condition, use and performance of the goods purchased. In no event shall Simtech Industrial Products, Inc. liability exceed the purchase price of the product sold by Simtech Industrial Products, Inc.

In no event, whether because of a breach of warranty or representation or any other cause, whether based upon contract, tort, warranty or otherwise, arising out of the performance or nonperformance by seller of its obligations under this agreement or with respect to the products sold pursuant here to; shall seller be liable for lost earnings, income or profits or indirect, incidental, liquidated or consequential damages.

The implied warranties of merchantability and fitness for a particular purpose except as set forth in this warranty, express or implied, are hereby disclaimed and excluded. Nothing shall be construed as an additional warranty unless specifically designated as such in writing and signed by Simtech Industrial Products, Inc.

Simtech Industrial Products, Inc. reserves the right, in its discretion, at any time and from time to time, to make changes to any specification, data or information contained herein.