OPERATING INSTRUCTIONS:

Please read operating instructions carefully before use and keep for future reference. This heat weld gun is designed for welding seams in solid vinyl or linoleum sheet goods only. Do not use this heat weld gun for stripping paint or purposes not described in this manual. See the back side for additional warnings related to paint removal.

ELECTRICAL SAFETY:

Before use, check the heat weld gun's power supply cord and plug as well as any extension cord to be used with the heat gun for electrical and mechanical damage.

This heat weld gun has a two-pin polarized plug. One pin is wider than the other. To reduce the risk of electric shock, this plug is intended to be inserted into a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician. Do not modify the plug in any way.

Any extension cord to be used with this heat weld gun should be minimum 16 AWG.

The voltage rating stated on the heat weld gun must correspond to the supply voltage. This heat weld gun requires high amperage (approximately 13 AMPS). Be aware of the circuit breaker capacity of all outlets used.

For your protection, we strongly recommend that the heat weld gun be connected to a GFCI (ground fault circuit interrupter) type electrical outlet.

Keep the heat weld gun away from water, liquids or any damp and wet conditions, which can cause electrocution. Use only in dry, indoor areas. Store indoors in a dry place.

WARNING: when opening the heat weld gun's housing, electrically live components and connections are exposed. For this reason, before opening it, unplug the heat weld gun to ensure that it is disconnected from power.

GENERAL SAFETY:

WARNING: the heat weld gun can produce extremely hot air (up to 1290°F). Incorrect use can present a fire and explosion hazard, especially when used near combustible materials and explosive gasses. When hot, do not touch the heat weld gun's element housing, any nozzle surfaces, or tips that may be attached, or any heated welding rod being used with the heat weld gun, as these all can cause severe burns. Allow all these to fully cool before touching.

WARNING: use caution to not overheat materials that are being heated using the heat weld gun. Heat can ignite materials, including materials that are not in view.

Do not point the hot air flow of the heat weld gun or the heated welding rod being used with the heat weld gun in the direction of people or animals.

This heat weld gun is not to be used by children. The heat weld gun may only be used by qualified specialists or people working under the supervision of qualified specialists. The heat weld gun should not be left unattended. After use, cool the element by following the cooling procedure (see back).

Wear safety glasses, ear plugs, and a dust mask when using this heat weld gun.

Before changing the pencil-tip nozzle or welding tip, allow the gun to fully cool. To prevent burns, use pliers to grip the nozzle and tips.

Improper assembly may result in a hot nozzle or tip falling off. Follow nozzle and tip assembly instructions below.

Use caution setting the heat weld gun down after welding. Hot air blows until the heat weld gun is turned off. The element housing, nozzle and tip are hot long after the heat weld gun is turned off, and can burn the floor or skin.

A test seam is always advisable before welding the actual floor. For beginning users, slower welding speeds on lower heat are advisable.

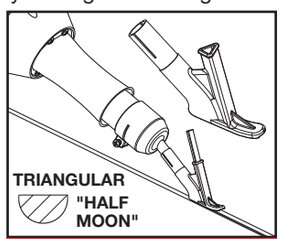
After cooling, unplug the heat weld gun when not in use.

JOBSITE PREPARATION:

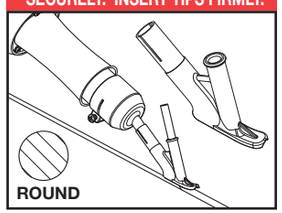
Check that the groove meets the flooring manufacturer's specifications for depth and shape. Absent specifications, vinyl seams should be grooved between ½ to ⅔ of either a.) the thickness of the wear layer on materials with a backing, or b.) the thickness of the material in vinyl backed products. Linoleum seams are grooved down to, but not into, the jute backing. The groove must be centered on the original seamline and full at the bottom, or the bottom of the seam will be thin and weak. Check concrete subfloors for moisture and that adhesive is dry. Excess moisture compromises the weld. Clean the groove of all debris especially cuttings from the groover before welding. If a groove is left open too long on a jobsite, contamination can cause weld failure. Use only manufacturer approved welding rod.

NOZZLE ASSEMBLY:

Fully cool the heat gun. Place the pencil tip nozzle (No. 963) on the nozzle of the heat gun. Tighten the screw securely. Failure to tighten the screw may result in the hot nozzle falling off during use. This can cause a severe burn or damage the floor.



TIGHTEN NOZZLE SCREW SECURELY. INSERT TIPS FIRMLY.

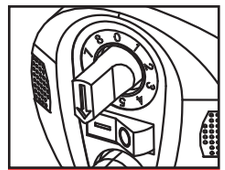


TIP ASSEMBLY:

Fully cool the heat gun. This heat gun comes with two tips. The triangular tip (No. 961) has a triangular-shaped channel for feeding triangular or "half moon" ("half round") welding rod. When welding this type of rod, the triangular point must go down into the groove, and the flat must face up. The round tip (No. 962) has a round channel for round welding rod. This tip should be used on round rod only.

Insert the proper tip into the end of the pencil tip nozzle and press firmly into the nozzle. Failure to press into position may result in the hot tip falling out of the nozzle during use. This can cause a severe burn or damage the floor.

TEMPERATURE CONTROL:



POWER ON - HEAT SETTING 5

The heat weld gun has a switch to turn the power on or off, and a dial labelled with nine heat settings for setting the output temperature. Setting 0 is for lowest temperature, and 9 is for highest. The approximate temperature for each setting is shown on the chart (see back). Output temperature can vary based on the ambient air temperature and the type of nozzle and tips that are used.

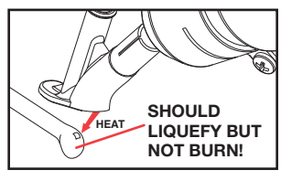
Under normal conditions, with ambient air about 70°F, for beginning users, a heat setting of about 5 is good to start. Switch on power and turn the dial to the desired setting to begin heating. Allow the heat weld gun to preheat for at least 3 minutes before beginning any weld.

When finished welding, cool the element by following the cooling procedure (see back).

TEST SEAM, SEAM SPEED, AND TIP CONTROL:

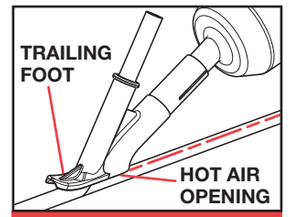
Many factors affect the performance of the heat weld gun, including ambient air, subfloor temperature, flooring material, welding rod characteristics, extension cord gauge and length, and supply amperage. A test seam before each job is the only way to ensure proper performance.

Before making a test seam, proper temperature can be estimated by putting the welding rod in front of the speed tip and watching the results. The rod should start to liquefy but should not burn. Once you adjust for proper melting, it is easier to adjust for other factors with the test seam.



For a complete weld of the seam area, the groove must be pre-heated by the hot air opening at the bottom of the tip, and the welding rod must be pre-heated while inside the tip.

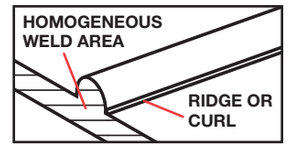
The hot air opening towards the back of the tip should be kept parallel with the floor. This is pre-heating the groove. If the opening is too close, it may burn the floor. If the opening is too far from the groove, it will not sufficiently pre-heat the groove. Keep the opening centered over the groove to ensure both sides are sufficiently pre-heated. Holding it more towards one side than the other results in weakness on the other side. Use the trailing foot to press the melted rod into the groove. Too much pressure on the trailing foot will overstretch the rod, causing shrinkage. Keep the trailing foot constantly on the back of the welding rod.



KEEP OPENING PARALLEL WITH THE GROOVE BOTTOM AND TRAILING FOOT ON THE BACK OF THE ROD

The correct combination of temperature, welding speed, and pressure will create a weld that forms a tiny ridge or curl on both sides of the seam, caused by slight rod material flow. Look for this at all times while seaming.

Cut a cross section of the test seam with a knife. If the section is welded into a homogeneous single piece, with no cracks, will withstand bending, and will not easily pull apart, the weld is successful.



SEAM WELDING PROCEDURE:

Pre-cut the welding rod to an adequate length for the length of your seam INCLUDING ENOUGH ROD FOR COVES ON EITHER END, then lay it out along the seamline. Make certain there is plenty of extension cord, and that there is nothing in the way.

Start the weld as close to the wall as possible, but at least one inch from any coved area, which is done afterwards.

At the start of the weld, the open groove must be quickly pre-heated without any welding rod in the tip. Quickly thereafter, insert the welding rod in the nozzle until it extends out beneath the trailing foot. Ensure the rod is melted, then press it in the groove with the trailing foot. Begin moving down the seam. Follow instructions above for speed and nozzle position. Constantly feed rod.

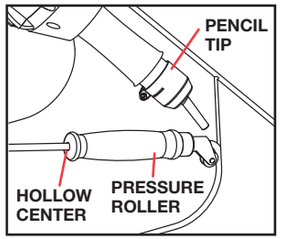
Stop the weld as close as possible to the wall, leaving at least one inch of the floor unwelded at any cove area. Leave the excess rod connected to the seam as you will need it to restart the weld in the cove procedure (below).

COVE PROCEDURE:

To weld coves, a separate pressure roller (Crain No. 987) is required (not included). Fully cool the heat weld gun following the cooling procedure (see back).

Feed the excess end of the welding rod into the hol-

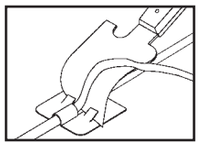
low center of the pressure roller. Press the roller onto the back of the welding rod. Use the open end of the pencil tip nozzle to heat the welding rod and the groove. Proceed with the roller all the way up the coved area.



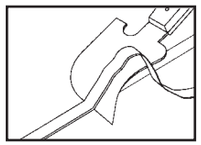
SKIVING AND FINISHING:

Wait for the weld to cool completely, generally at least 20 minutes. Skiving too soon results in a severely concaved seam area. Skiving is done with a quarter moon knife (Crain No. 985). Note: only the bottom side of a quarter moon knife is sharpened. The bottom side should always face down.

Use a trim guide (Crain No. 986) with a quarter moon knife for the first pass. For the second pass, use only the quarter moon knife. This takes practice on a test seam. Too low an angle causes the knife to climb out of the rod and too high an angle causes the knife to dig into the floor. Use as smooth and continuous a motion as possible. Interruptions, starts and stops will result in a rough seam that will be more visible after the floor is polished.



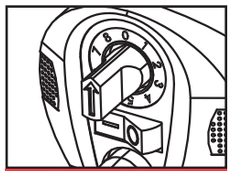
FIRST PASS WITH TRIM GUIDE



REMOVE ON SECOND PASS

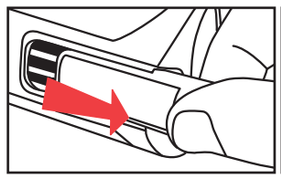
COOLING PROCEDURE:

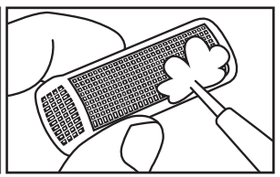
When finished welding, turn the dial to setting zero and allow the fan to cool the element for at least 5 minutes before switching the heat weld gun off. Switch the heat gun off and unplug it from power.



CLEANING FILTERS:

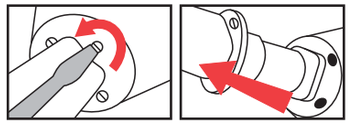
The heat weld gun has removable air filters positioned at the back of the motor housing. Push the filter out by pushing it towards the back of the plastic motor housing. Once removed, the filters can be cleaned by blowing out with compressed air.





CHANGING ELEMENT:

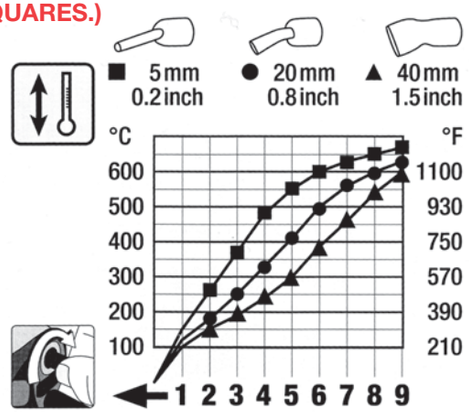
To change element, remove four screws that fasten the steel element cover to the plastic housing. Afterwards, the element cover pulls off, and the element is easily changed.



SPECIFICATIONS:

MODEL NO:	969 HEAT WELD GUN
VOLTAGE:	120 VOLTS AC 60 Hz
AMPERAGE:	APPROX. 13 AMPS
WATTAGE:	1600 WATTS
TEMP. RANGE:	variable 104 - 1290°F
AIR FLOW:	Maximum 8.48 CFM

APPROXIMATE TEMPERATURE SETTINGS: (THESE VARY BY NOZZLE TYPE. CRAIN NO. 963 PENCIL TIP NOZZLE DENOTED BY SQUARES.)



GUARANTEE

This Crain No. 969 Heat Weld Gun is guaranteed to be free of defects in workmanship and quality of materials for a period of 1 year. Any parts of this Heat Weld Gun found defective subject to the guarantee will be replaced at no charge. Credit in full or part cannot be extended by the distributor, nor will a new Heat Weld Gun be given as a replacement or loaner. Heat Weld Guns subject to this warranty must be accompanied by same, returned freight PREPAID to Milpitas, CA, and must be in assembled condition. Heat gun elements are not covered by this guarantee.

DATE OF MFG. _____

IMPORTANT SAFETY INSTRUCTIONS READ THESE INSTRUCTIONS!

WARNING: Extreme care should be taken when stripping paint. The peeling, residue and vapors of paint may contain lead, which is poisonous. Any pre-1977 paint may contain lead and paint applied to homes prior to 1950 is likely to contain lead. Once deposited on surfaces, hand to mouth contact can result in the ingestion of lead. Exposure to even low levels of lead can cause irreversible brain and nervous system damage; young and unborn children are particularly vulnerable.

Before beginning any paint removal process you should determine whether the paint you are removing contains lead. This can be done by your local health department or by a professional who uses a paint analyzer to check the lead content of the paint to be removed. **LEAD-BASED PAINT SHOULD ONLY BE REMOVED BY A PROFESSIONAL AND SHOULD NOT BE REMOVED USING A HEAT GUN.**

Persons removing paint should follow these guidelines:

1. Move the work outdoors. If this is not possible, keep the work area well ventilated. Open the windows and put an exhaust fan in one of them. Be sure the fan is moving the air from inside to outside.

2. Remove or cover any carpets, rugs, furniture, clothing, cooking utensils and air ducts.

3. Place drop cloths in the work area to catch any paint chips or peelings. Wear protective clothing such as extra work shirts, overalls and hats.

4. Work in one room at a time. Furnishings should be removed or placed in the center of the room and covered. Work areas should be sealed off from the rest of the dwelling by sealing doorways with drop cloths.

5. Children, pregnant or potentially pregnant women, and nursing mothers should not be present in the work area until the work is done and all clean-up is complete.

6. Wear a dust respirator mask or a dual filter (dust and fume) respirator mask which has been approved by the Occupational Safety and Health Administration (OSHA), the National Institute of Safety and Health (NIOSH), or the United States Bureau of Mines. These masks and replaceable filters are readily available at major hardware stores. Be sure the mask fits. Beards and facial hair may keep masks from sealing properly. Change filters often. **DISPOSABLE PAPER MASKS ARE NOT ADEQUATE.**

7. Use caution when operating the heat gun. Keep the heat gun moving, as excessive heat will generate fumes which can be inhaled by the operator.

8. Keep food and drink out of the work area. Wash hands, arms and face and rinse mouth before eating or drinking. Do not smoke, or chew gum or tobacco in the work area.

9. Clean-up all removed paint and dust by wet-mopping the floors. Use a wet cloth to clean all walls, sills, and other surface where paint or dust is clinging. DO NOT SWEEP, DRY DUST OR VACUUM. Use a high phosphate detergent or trisodium phosphate (TSP) to wash and mop areas.

10. At the end of each work session put the paint chips and debris in a double plastic bag, close it with tape or twist ties, and dispose of properly.

11. Remove protective clothing and work shoes in the work area to avoid carrying dust in to the rest of the dwelling. Wash work clothes separately. Wipe shoes off with wet rag that is then washed with the work clothes. Wash hair and body thoroughly with soap and water.

SAVE THESE INSTRUCTIONS!

CRAIN CUTTER CO., INC.

Milpitas, CA 95035 TEL: (408) 946-6100

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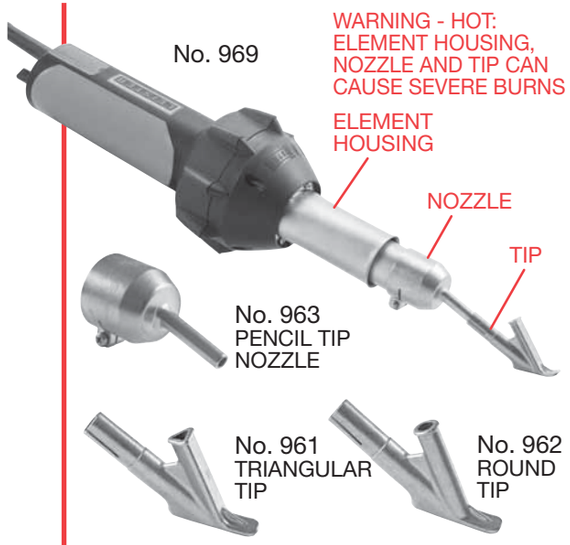
INSTRUCTION MANUAL



CRAIN

No. 969 HEAT WELD GUN

⚠ WARNINGS:

- **THIS TOOL REACHES TEMPERATURES UP TO 1290°F, WHICH CAN CAUSE SEVERE BURNS. DO NOT TOUCH HOT PARTS (LABELED IN RED ABOVE). NEVER POINT THE HOT AIR FLOW AT YOURSELF OR OTHERS.**
- **TIGHTEN NOZZLE ON THE GUN AND PRESS THE TIPS FIRMLY INTO THE NOZZLE. OTHERWISE PARTS MAY FALL OFF AND CAUSE SEVERE BURNS.**
- **TEST SEAMS ARE ALWAYS ADVISABLE.**
- **WHEN DONE WELDING, TURN THE HEAT TO ZERO AND RUN FAN FOR AT LEAST 5 MINUTES TO COOL ELEMENT. FAILURE TO DO SO CAUSES ELEMENT FAILURE.**