

OPERATING INSTRUCTIONS
for
Gold-Print™
Model SPR-20
Screen and Stencil Printer

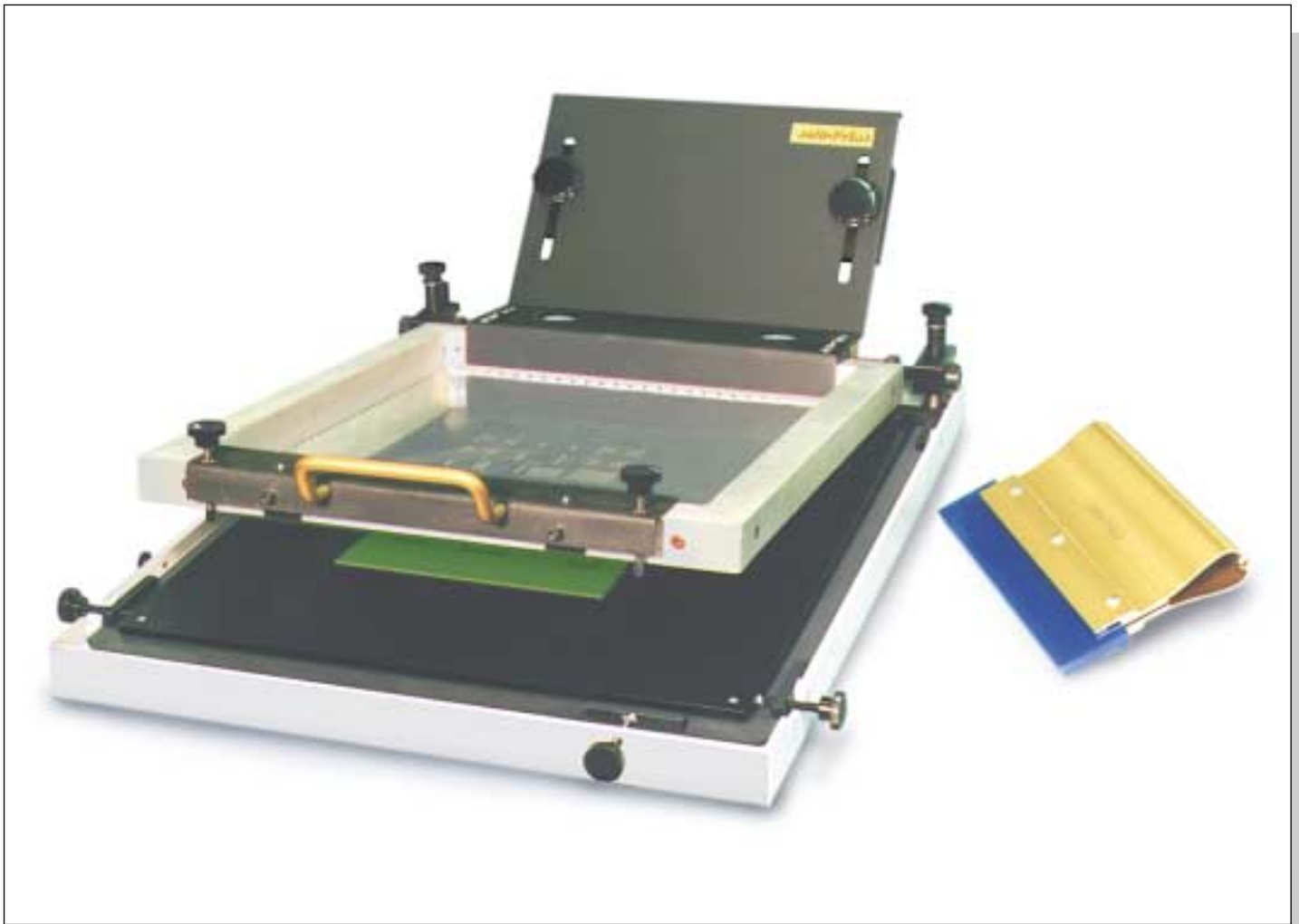


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INSTALLATION

The model SPR-20 is a manual stencil or screen printer requiring no air or electricity for operation. The SPR-20 should be placed on a sturdy work table approximately 28" from the floor to provide a comfortable area for the operator.

The Printer is packed in its carton with the frame, base unit, and the counterweight disassembled for shipping. Remove the items carefully from carton.

System Inventory:

1. Base unit
2. One (1) tubular or (1) foil frame
3. Counterweight assembly with:
 - a. One (1) weight for tubular frame
 - b. Two (2) weights for foil frame
4. Four (4) 1/4-20 3/8 flat head mounting screws (in bag)
5. Two (2) socket head cap screws (in bag)
6. One (1) 5/32 allen key (plus 1/8" allen key for foil frame only)
7. One (1) squeegee

Assemble the SPR-20 unit as follows: (Refer to Fig. 2)

1. Mount the counterweight assembly to the 2 bronze blocks at the rear of base unit using four (4) 1/4-20 3/8" flat head mounting screws.
2. Align stencil frame in "U" bracket of counterweight assembly and position frame flush with top of bracket.
3. To secure frame, insert and tighten two (2) socket head cap screws, one at bottom rear of each bronze mounting block. Tighten with 5/32 allen key.
4. Slide counterweight until screen balances and remains stationary in the upright position. Secure in position with lock knobs. (This can be easily adjusted during printing set-up.)

X, Y, Z AND THETA ADJUSTMENTS - Refer to Illustrations on Pg. 6

To align the circuit board to the hole pattern on the stencil, the SPR-20 is equipped with registration control knobs.

Z-AXIS CONTROLS

Z-Axis, or the height of the screen above the board, is referred to as the stand-off height.

To adjust the rear stand-off height:

1. Turn left and right rear Z Axis Thumb Screws simultaneously to move rear frame up and down.
 - a. Simultaneous clockwise turning will lower the rear stand-off height.
 - b. Simultaneous counter-clockwise turning will raise the rear stand-off height.

To adjust the front stand-off height:

1. Turn the top thumb screws (front left and right) to raise or lower each corner.
 - a. Simultaneous clockwise turning will raise the front stand-off height.
 - b. Simultaneous counter-clockwise turning will lower the front stand-off height.
2. Manually tighten both locknuts.

Before the printing operation, it is recommended to test for even stand-off height. Use a feeler gauge at the 4 corners of the screen or stencil frame to confirm a uniform stand-off height above the PCB. Fine tune as necessary.

Y AXIS CONTROL

On the front of the unit, the black knob controls the Y-axis (front and back) movement for board-to-screen fine registration.

1. Turning the Y Axis Knob clockwise will move the pressure plate towards the rear of the machine.
2. Turning the knob counter-clockwise move the pressure plate towards the front of the machine.

THETA CONTROLS

1. Turning the left Theta Knob counter-clockwise, then turning the right Theta Knob clockwise will cause the pressure plate to rotate clockwise.
2. Turning the right Theta Knob counter-clockwise, then turning the left Theta Knob clockwise will cause the pressure plate to rotate counter-clockwise.

X AXIS CONTROLS

1. To move frame from left to right
 - a. Turn right rear X Axis Knob toward operator which unlocks position
 - b. Turn the left rear X Axis Knob toward operator to make left to right adjustment.
 - c. Then turn right rear knob away from operator to re-lock position.
2. To move frame from right to left
 - a. Turn left rear X Axis Knob away from operator which unlocks position
 - b. Turn right rear X Axis Knob away from operator to make right to left adjustment.
 - c. Then turn left rear knob toward operator to re-lock position.

NOTE: Align the stencil with the pads on the substrate by looking through the screen or stencil openings while turning the appropriate axis control knob(s). Ensure that the pressure plate is locked in place (check by trying to move the plate manually). Several test prints are recommended to verify fine registration.

CIRCUIT BOARD POSITIONING

The locating method recommended for the SPR-20 is use of a straight edge left or right and a stop pin (block) towards the rear. Ensure that these stops are below the height of the board. Attach the stops with double face tape. Surround the board on all 4 sides with blank boards the same exact thickness as the board that is to be printed*.

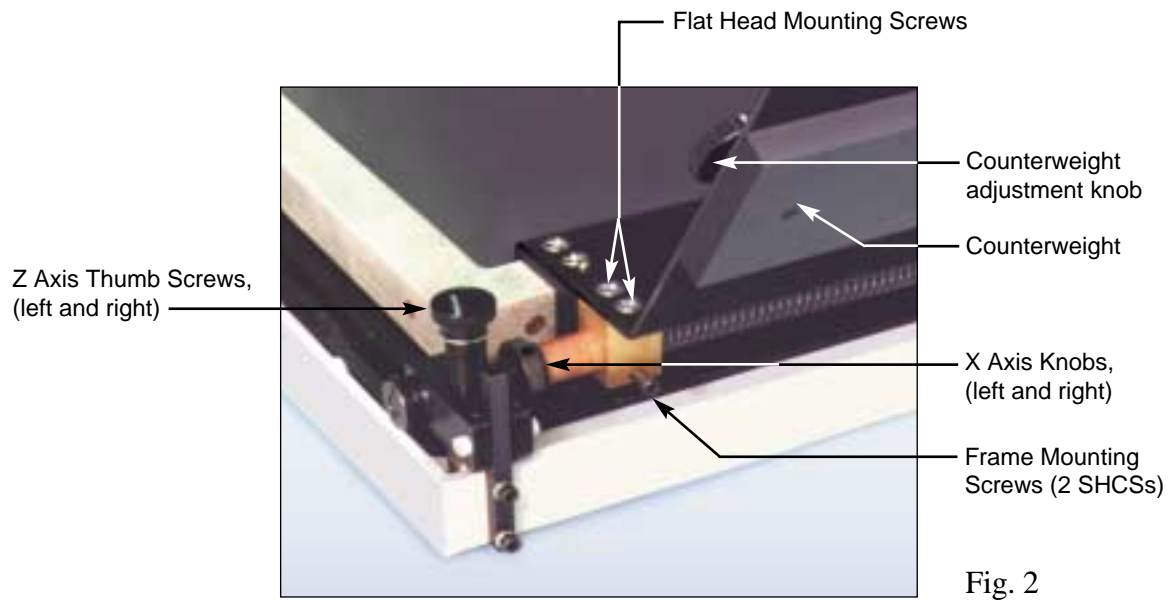
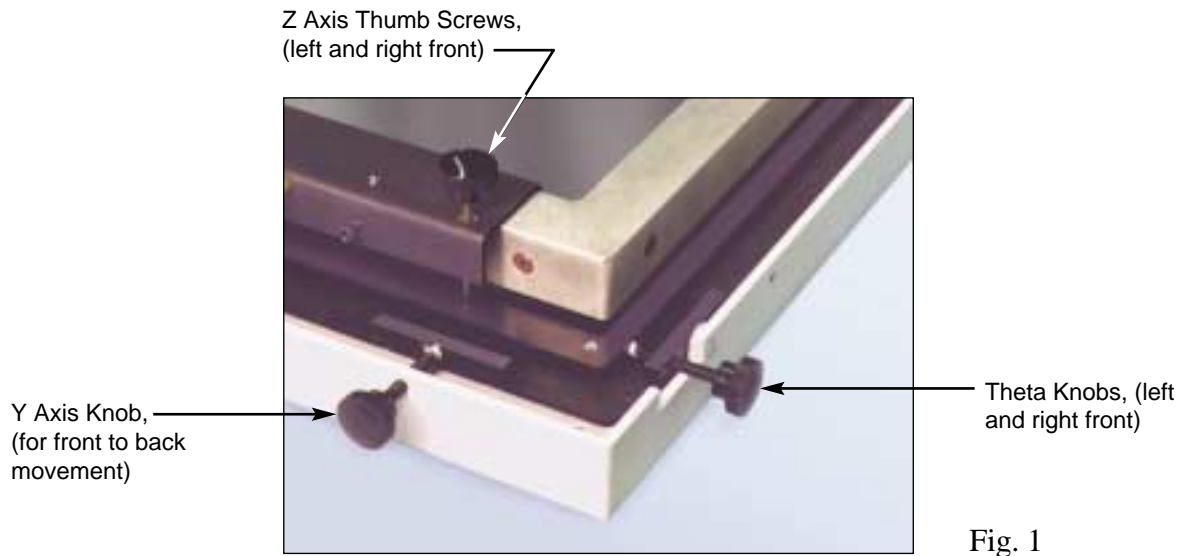
1. Position circuit board on pressure plate, visually align as close as possible to line up with holes in stencil
2. Raise stencil.
4. With board in position, attach 2 "L" stops at rear corners of board with tape on each corner (ensure snug fit)
3. For fine stencil to board adjustment, refer to X, Y and Ø alignment on pages 4 & 5.

For small production runs, the board stops can be two blank boards similar to the ones to be printed arranged in an "L" shape (right or left) and double stick taped to the pressure plate. Because of variations in edge registration of some boards, it may be necessary to do a visual alignment before each print. Ensure that the surrounding boards are the same height as the ones to be printed. Use masking tape on the pressure plate to shim the board to the correct height. Each strip of masking tape is approximately .006" thick.

NOTE: For pin positioning of circuit boards, contact factory for recommended methods.

*If using a screen, foil or untensioned stencil, it's important to support the area around the PCB with boards of identical thickness to prevent screen damage. This step is optional with a tensioned stencil.

ILLUSTRATIONS



MAINTENANCE

1. Clean the unit thoroughly after each use. Use solvent to remove any ink or paste deposits.
2. Clean paste off of clear positioning sheet after each use.
3. The unit will give you years of reliable service. Lubrication is not necessary.