OPERATING INSTRUCTIONS

FOR

MODEL SPR-25

Manual Stencil Printer
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I. INSTALLATION

The model SPR-25 is a manual stencil or screen printer requiring no electricity for operation. The SPR-25 should be placed on a sturdy work table approximately 28” from the floor to provide a comfortable area for the operator. Use leveling feet to eliminate movement on the bench during printing and to level screen/stencil to Printing plate.

The SPR-25 is packed in its carton with the frame attached. Unbolt 4 screws from under carton. These holes in the base of the printer will be used to insert the 4 leveling feet. Remove from carton by lifting base plate assembly. DO NOT REMOVE FROM CARTON BY LIFTING SCREEN FRAME.

Remove all items from the packing crate:

1. One SPR-25-stencil printer
2. One tubular frame (or foil frame option)
3. One dual squeegee
4. Four (4) leveling feet
5. Lexan™ print alignment fixture
6. One 3/32 hex key
7. One operator manual
II. SET-UP

A. Installing Screen or Stencil Frame:
   1. Loosen the front and back Universal Frame Holders via thumbscrews and slide so that the frame will be centered in the printer. Frame holders/clamps will adjust to frames between 1-1/8" and 1-1/2" thick and to any frame smaller than 23" x 23" O.D.
   2. Secure frame by tightening Frame Clamps. Tighten 4 locking thumb screws to secure Universal Frame Holders.

D. Registering Board:
   1. Lift stencil frame to up position.
   2. Position clear Lexan sheet provided using the two brackets at rear of Print Deck.
   3. Lower stencil frame to "down" position
   4. Use squeegee to apply paste over stencil to clear sheet.
   5. Lift clear sheet enough to "roughly" place circuit board on Print Deck (match up pads on board to paste on clear sheet). Remove clear sheet without moving board.
   6. Slide Board Stops to touch all edges of PCB. (refer to Figs. 1, 2, & 3)
   7. Tighten Board Stops in their slots using 3/32” hex key.
   8. Adjust height of print deck beneath frame with Z axis knob. The tensioned* stencil can be flush on the board or slightly above the board surface.
   9. Using the X,Y and Ø -axis adjustment knobs on the front and sides of the machine, register the pattern of the stencil apertures to the pads on the board. Final registration can be done most accurately by looking directly down on the stencil while moving the plate. (Refer to X, Y and Ø adjustments in sections III. & IV.)

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

*If using a screen or untensioned stencil, it’s important to support the area around the PCB with boards of identical thickness to prevent screen damage.
Fig. 1

Board Stop Slides (6)

Print Deck (pressure plate)

Fig. 2

Slide Board Stops up to board on all edges

Fig. 3

Tighten all Board Stop Slides around board using 3/32” hex key
III. Z-AXIS ADJUSTMENT

A. The height of the stencil above the board, is referred to as the stand-off height.

B. Print Deck leveling is factory preset. Insure that stencil printer leveling feet are set properly to level printer (use level). If the stencil plane to print deck plane is not parallel, consult factory.

C. To adjust the stand-off height, turn the Z Axis Adjustor knob (front at right) clockwise to raise the print deck and counter-clockwise to lower the print deck.

IV. X, Y AND THETA ADJUSTMENTS

A. To align the circuit board to the hole pattern on the stencil, the SPR-25 is equipped with registration control knobs that provide ±0.5" of movement in the X axis and Y axis and ± 5º diagonally (theta rotation).

B. On the front of the unit, the 2 adjustment knobs (left and center) control the Y-axis (front and back) and the theta (skew) for board-to-stencil fine registration.

C. Turning the Y knobs simultaneously clockwise will move the Print Deck towards the front of the machine. Turning the Y knobs simultaneously counter-clockwise will move the Print Deck towards the rear of the machine.

D. Turning the left Y knob counter-clockwise while turning the right Y knob clockwise will cause the Print Deck to rotate clockwise. Turning the right Y knob counter-clockwise while turning the left Y knob clockwise will cause the Print Deck to rotate counter-clockwise.

E. The adjustment knob on the right side of the unit controls the X-axis (side to side) movement of the Print Deck. Turning the X axis knob clockwise moves the Print Deck from left-to-right, and turning counter-clockwise moves the Print Deck right-to-left.

F. 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). Several test prints are recommended to verify fine registration.

V. DUAL SQUEEGEE ANGLE ADJUSTMENT

A. Loosen socket head cap screw and adjust up or down to change the angle-of-attack.

B. Tighten socket head cap screw.
VI. MAINTENANCE

1. Clean the unit thoroughly after each use. Use solvent to remove any ink or paste deposits.
2. The unit will give you years of reliable service. Lubrication is not necessary.
3. If any problems arise please contact APS at 215-938-1000

VII. ILLUSTRATION
VIII. SPR-25 VACUUM PLATE ATTACHMENT

A. Position plate so that manifold is towards the rear, and 4 corner holes line up.

B. Attach vacuum plate to Print Deck using four (4) screws provided at each corner into pre-tapped holes.

C. Attach a shop-vac or other source of vacuum to 1" hose fitting.

D. Cover vacuum air holes around board to maximize the available vacuum.
IX. ATTACHING SPR-25 PRINTER TO STAND OPTION

- 4 Leveling feet
- 2 front Socket Head Cap Screws (short)
- 2 front spacers (short)
- 2 rear spacers (long)
- 2 rear Socket Head Cap Screws (long)