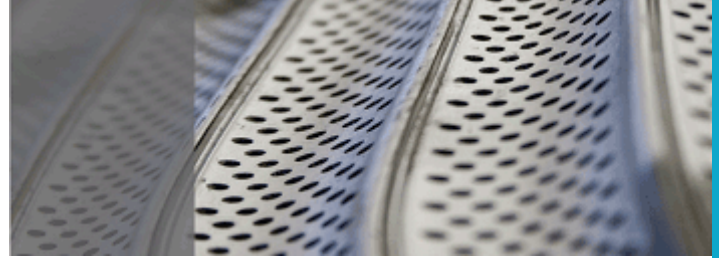


CHEMCUT

Model 604 and Model 605 Mechanical Finishing Systems



Model 604



Model 605

Chemcut's Mechanical Finishing Systems offer quick, uniform, precise, lower-cost deburring of panels following drilling or punching operations. The systems include oscillating abrasive wheels (Two in Model 604, Four in Model 605), high pressure rinsing and heated air drying. These systems deburr both sides of the work fast and uniformly without warpage or abrasive wheel loading. Copper dust problems of dry machines are completely eliminated and no cleaning compound residues remain. High pressure water removes trapped debris from drilled or punched holes for thorough rinsing.

Advantages

Variable Speed Mandrels provide automatic increases in wheel speed to compensate for wheel wear. This increases production and reduces cost.

Easy Wheel Change makes it possible to replace any abrasive wheel in less than 15 minutes.

High Pressure Rinse removes trapped debris from drilled or punched holes to assure thorough rinsing. 120 psi (827 kPa) is standard, 500 psi (3450 kPa) is optional.

Heated Air Drying provides fast, complete drying of the surfaces and holes.

Keyed Spray Tubes are easily removed for nozzle cleaning, and key markings insure proper reinstallation.

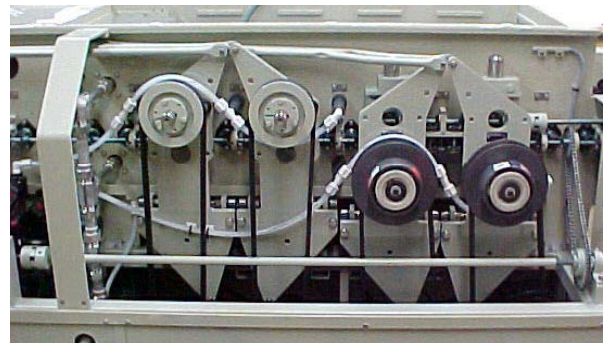
Centralized Controls located at the input end of the system are identified and grouped by function.

Programmed Shutdown automatically eliminates water logging of wheels.

Easy Access is provided by snap-on PVC covers. No tools needed.

Construction

Systems are constructed with stainless steel, PVC, brass and elastomers for internal components. A welded and epoxy painted steel tubing frame provides rugged, heavy duty stability. For durability, one piece siderails and ½-inch diameter conveyor rods are used throughout. The conveyor line shaft is covered and protected by drive clutches.



Rugged drive components typical of both systems can be seen in this rear view of the 605. Shown are the geared line shaft conveyor drive, high pressure rinse plumbing, and components of the four variable speed mandrel drives.

Applications

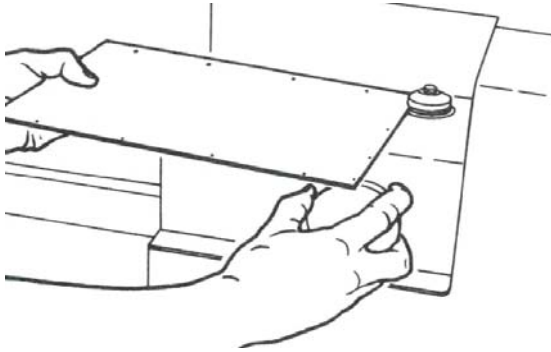
Chemcut Mechanical Finishing Systems produce excellent surface finishes following drilling or punching operations in the production of circuit boards. They can also be used for decorative finishing and mechanical cleaning of metal panels in stamping and chemical machining operations.

Installation requires only simple electrical, water and drain connections. The compact design occupies a minimal amount of floor space and makes these units suitable for a wide range of facilities.

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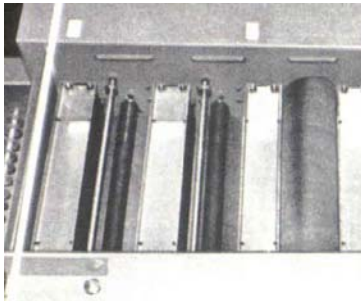
1. Caliper Adjustment.

Gauging calipers adjust the back-up roll for the thickness of the material. To set, the operator simply inserts a sample workpiece into the caliper and turns the adjusting wheel. It is not necessary to read controls to accomplish this adjustment. For convenience, the caliper adjustments are located on both sides of the unit, however, since the calipers are mechanically connected and move together, the operator needs to only use the front adjustment.



2. Ceramic Back-up Rollers

Unlike ordinary rollers, which wear and cause inconsistent deburring, ceramic rollers do not wear from wheel contact. Since ceramic rollers eliminate wear (flat spots), which lead to missed areas in the work piece, a better production rate is assured.



3. Variable Speed Mandrels.

Variable mandrels automatically increase wheel speed (sfpm) to compensate for wheel wear. This permits operation with a constant conveyor speed even though the wheel has worn from its original 6 inch diameter (152 mm). With this exclusive Chemcut feature, wheel life is increased and the operating cost is lowered. A visible gauge indicates wheel wear.



4. Mandrel Adjusters (Hand wheels).

Convenient hand wheels provide precise adjustment of wheel pressure on the workpiece. The adjusting wheel is calibrated so that one complete turn equals 0.010 inches of vertical travel of the mandrel. The adjusting wheel is divided into 10 increments so that each increment represents a mandrel movement of 0.001 inch. This convenient control provides the operator with a precise vertical adjustment of the brush, which is critical for accurate machine finishing.

Another exclusive Chemcut feature is that the clockwise adjustment of the hand wheel always moves the deburring wheel towards the work. Thus, a clockwise turn moves the top wheel down and the bottom wheel up. This feature enables the operator to avoid confusion as to the direction of wheel travel. Ammeters show drive motor loading from zero to 125% for each mandrel.



5. Pre-and Post Brush Cooling.

Coolant water is delivered to both sides of each brush. This minimizes the chance for overheating or board warpage and completely eliminates the possibility of copper dust problems.

6. Automatic Programmed Shutdown.

Automatic programmed shutdown eliminates water-logging of wheels, because wheel rotation continues for two minutes after water flow is stopped. This feature eliminates the need for the operator to shut off the water and run the machine to spin the wheels and remove water. (The water must be removed from the wheels as it will drain to the bottom and cause the wheel to be out of balance when operation is resumed). Thus, this automatic feature assures accurate wheel balance by eliminating any operator responsibility for the shutdown sequence.

7. Rinsing

To provide thorough rinsing, these systems use a boosted pressure spray that dislodges and carries away debris from the panel surfaces and holes. A water pressure booster pump provides an 80 psi pressure boost above supply pressure.

The Model 604 has two rinse spray tubes, one above and one below the work piece, providing a total of 14 nozzles. The 605 has four spray tubes, two above and two below, with 28 nozzles spraying the work.

Both machines offer an optional 500 psi rinse package for even high pressure rinsing.

8. Drying

Adequate drying is provided by six heated air tubes, three above and three below the work piece, with a total of 6.5 kW of heat. Heated air drying provides more complete and efficient drying of the holes in the panel.

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Chemcut Mechanical Finishing Systems

System Installation Specifications

Model 604

System Dimensions:

- Length 90 in (2286 mm)
- Width 52 in (1320 mm)
- Height 49 in (1245 mm)
- Conveyor Height 38.5 in (978 mm)

System Weight(approximate):

- Dry Weight 1780 lbs. (808 kg)
- Shipping Weight skidded: 2070 lbs. (940 kg)
- Crated: 2470 lbs. (1121 kg)

Power Requirement(estimated without 500 psi rinse):

Standard Voltages 190-208, 220-240, 380-415,
440-480 volts 3 phase, 50/60 Hz, ~22 kVA

Water Requirements:

- 8 gpm at 40 psi (57 liters/min.),
20 psi operating pressure required.
- Water Inlet ¾ in .NPT (13 mm) male
- Drain 2 in. NPT (50.8 mm) male

Model 605

System Dimensions:

- 108 in (2743 mm)
- 52 in (1320 mm)
- 49 in (1245 mm)
- 38.5 in (978 mm)

System Weight(approximate):

- Dry Weight 2650 lbs. (1203 kg)
- Shipping Weight skidded: 3350 lbs. (1521 kg)
- Crated: 3650 lbs. (1657 kg)

Power Requirement(estimated without 500 psi rinse):

Standard Voltages 190-208, 220-240, 380-415,
440-480 volts 3 phase, 50/60 Hz, ~35 kVA

Water Requirements:

- 15 gpm at 40 psi (57 liters/min.), 20 psi operating pressure
required.
- Water Inlet 1 in .NPT (25.4 mm) male
- Drain 2 in. NPT (50.8 mm) male

System Process Specifications

Conveyor System

- Conveyor Type: Replaceable rubber drive rollers
and wheels 0.250 in. x 1.937 in. (6.35 mm x 49.2 mm)
- Conveyor Drive: Geared line shaft, ¼ hp. (0.18 kW)
- DC Motor, 115 Volts.
- Conveyor Speed: Variable to 12 fpm (3.65 m/min)
- Actual Width: 26 in. (660 mm)
- Working Width: 24 in. (610 mm)

Panel Size

- Length: min 8.5 in. (216 mm), max 24 in. (610 mm)
- Width: min 4.0 in. (102 mm), max any length
- Thick: min 0.015 in (0.38 mm), to max 0.250 in. (6.35 mm)

Wheel Or Brushes

- Wheel or Brush type: Chemcut bristle brush standard
- Wheel or Brush size: 6 in. (152.4 mm) O.D.x24 ½" (622 mm) length.
- Brush Drive: Two 5 hp, 3 phase motors
- Oscillation: Stroke=0.250 in (6.35 mm),
Rate(fixed)=115 cycles/min.
Motor=1/3 hp.(.25kW) AC

Water Rinse

80 psi boost above supply pressure

Heated Air Drying

5 hp (3.7kW) Blower, 6.5 kW Heaters

Conveyor System

- Conveyor Type: Replaceable rubber drive rollers
and wheels 0.250 in. x 1.937 in. (6.35 mm x 49.2 mm)
- Conveyor Drive: Geared line shaft, ½ hp. (0.37 kW)
- DC Motor, 115 Volts.
- Conveyor Speed: Variable to 15 fpm (4.57m/min)
- Actual Width: 26 in. (660 mm)
- Working Width: 24 in. (610 mm)

Panel Size

- Length: min 8.5 in. (216 mm), max 24 in. (610 mm)
- Width: min 4.0 in. (102 mm), max any length
- Thick: min 0.015 in (0.38 mm), to max 0.250 in. (6.35 mm)

Wheel Or Brushes

- Wheel or Brush type: Chemcut bristle brush standard
- Wheel or Brush size: 6 in. (152.4 mm) O.D.x24 ½" (622 mm) length.
- Brush Drive: Four 5 hp, 3 phase motors
- Oscillation: Stroke=0.250 in (6.35 mm),
Rate(fixed)=115 cycles/min.
Motor=1/3 hp.(.25kW) AC

Water Rinse

80 psi boost above supply pressure

Heated Air Drying

5 hp (3.7kW) Blower, 6.5 kW Heaters