DEVMASTER MKI 24"

INSTRUCTION MANUAL

Serial N°--------

02/96
CONTENTS

1 General specifications
2 Description
3 Installation
4 Operation
5 Maintenance
6 Warranty
7 Drawings and parts lists
1. **GENERAL**

1.1. **Parts identification:** there are two different methods for identifying the same part:

1.2. Each part appearing in a drawing may be identified, by the drawing number (five digits) followed by the number as shown in the same drawing.  
Example: 06043/6  
This means: part shown as 6 on drawing 06043, i.e. transport wheel.  
This is the method used in the instructions of this manual.

1.3. Each drawing is followed by a "legend" where each part is described and identified with a pos. number (6 in the above example) as well as a ref. number (46054 in the example).

1.4. This is the real number which identifies the part in question. The same part may appear in a different drawing or in a different manual (= machine) where it may be identified with a different pos. number (example drawing 06041 pos. 6) but the same ref. number (46054) will be given.

1.2. **Specifications**

- Maximum panel width: 660 mm
- Maximum panel thickness: 5mm
- Minimum panel thickness: 0.1 mm (innerlayers of multilayers)
- Conveyor speed: 0-5,5 m/min
- First development:  
  length of chamber: 1210 mm  
  capacity of tank: 240 litres  
- Second development:  
  length of chamber 220 mm  
  capacity of tank: 65 litres  
- Workspace: see drawings 06019 and 05760
- Overall dimensions:  
  width: 1500 mm  
  length: 3410 mm  
  height: 1300 mm
Approximate net weight: 1300 kg (1600 with drier)

Approximate gross weight: 1600 kg (1900 with drier)

Electric power supply 35 kW 380 Volts, three-phase, 50 Hz
(others upon request)

Water consumption: 500 700 litres/hour
(2 to 3 /cm²)
DESCRIPTION

The machine has been specifically designed for processing aqueous dry-films by means of alkaline solutions and ensures perfect development of the dry-films of this type, used in the manufacture of printed circuit boards.

2.1. General information

The DEVMASTER is the result of close collaboration with the leading manufacturers of p.c. boards and includes our long experience in this field. This unit features the well-known advantages of our machines such as: highest efficiency, ease of maintenance, quick replacement of all parts. Main material used in construction is stainless steel. The basic frame is of a self-supporting design and consists of 3 mm thick stainless steel, bent and welded to final shape to give the highest chemical and mechanical resistance. The developing and washing sections are sealed by means of a large tempered glass cover. This cover with spring loaded supports can be easily opened for check-ups and maintenance. The machine is delivered ready to operate and needs only very simple connections to power, water supply and drain. A stainless steel bottom tray is provided as a built-in item and allows easy and fast installation without any particular preparation of the floor. The adjustable feet on the machine compensate for any unevenness of the floor.
The materials to be processed are transported through the following stations:

2.2. Description of stations (see DWG.06021)

2.2.1. Free input conveyor "A": length 660 mm

This consists of six driven stainless steel shafts with rubber wheels.

2.2.2. Separating chamber "B": length 110 mm

2.2.3. First developing chamber "C": length 1210 mm

Most of the coating to be removed from the boards will come off at this stage.

Characteristics:

Two heaters 4000 W each
Two centrifugal pumps 3 kW each
Spray pressure roughly 2.5 to 2.7 bar
Pump capacity roughly 300 l/min.
Two cooling coils controlled by solenoid valve
Level control with two points of intervention: drain of waste solution at maximum level and alarm with protection of heaters at minimum level.

2.2.4. Second developing chamber "D": length 220 mm

The boards must be completely cleaned before leaving this station. Fresh solution is fed into this chamber and cascades into the first developing chamber.

Characteristics:

One heater: 4000 W
One centrifugal pump 1,5 kW
Spray pressure 2.5 to 2.7 bar
Pump capacity roughly 100 l/min.
Low level alarm for heater protection
one cooling coil controlled by solenoid valve
2.2.5. First rinse chamber "E": length 330 mm
Rinse water is recirculated by means of a centrifugal pump and water is renewed in cascade from rinse chamber "F".

2.2.6. Second rinse chamber "F": length 330 mm
Rinse water is recirculated by means of a centrifugal pump and water is renewed in cascade from rinse chamber "G".

2.2.7. Third rinse chamber "G": length 330 mm
Rinse water is recirculated by means of a centrifugal pump and is renewed with water coming from the mains through. Water comes in thorough solenoid valve and flow meter. The solenoid valve is controlled by the board sensor on input conveyor for effective usage.

2.2.8. Squeegee section "H": length 220 mm
The boards are squeezed in this section and leave the machine partially dry.