APV

# APV Baker

## OPERATION AND MAINTENANCE MANUAL

# Electronic Hard Candy Depositor

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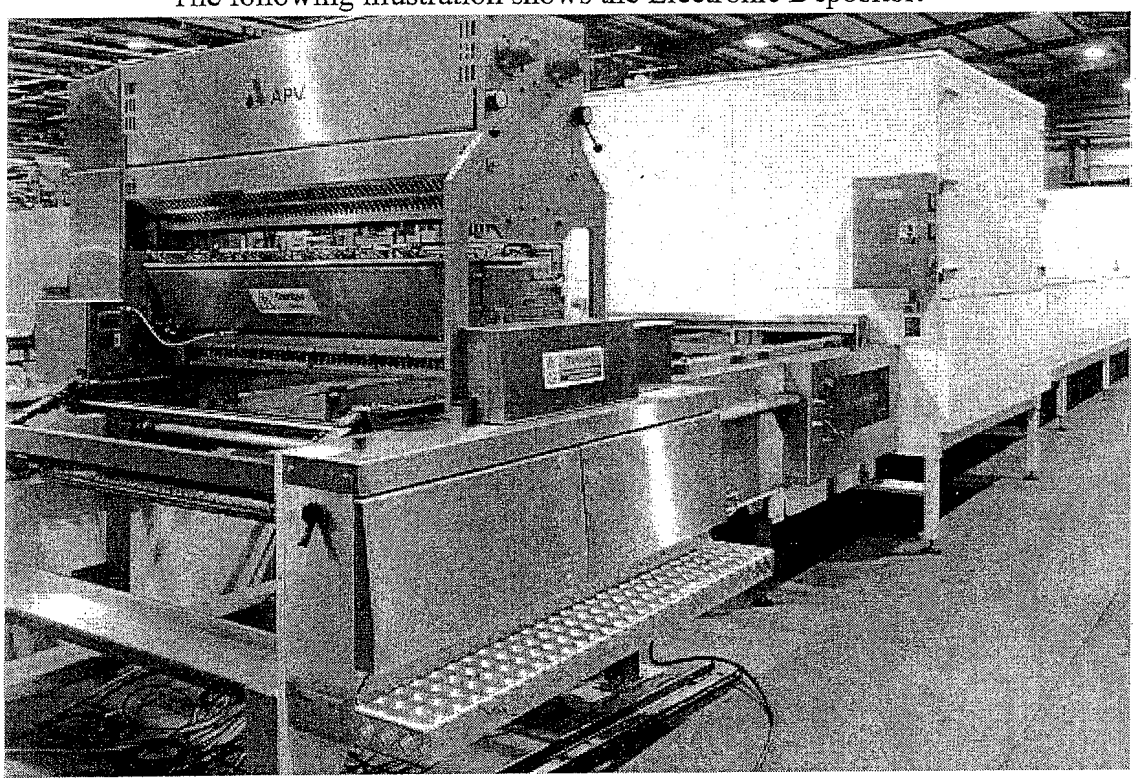
An Invensys company

The following illustration shows the Electronic Depositor.



## 13.1 General

The Electronic Depositor is designed to form either solid hard candy or solid two colour striped hard candy products on an automatic and continuous basis.

The specification of the product is as follows:

| | |
|---|---|
| Piece shape | Round with dimple 0.91" dia. 0.3636" thick |
| Pumps per row | 40 |
| Rows per deposit | 2 |
| Pieces per stroke | 80 |
| Strokes per minute | 70 (stripe)<br>70 (solid) |
| Nominal piece rate | 5600 pieces/minute |
| **Two colour stripe** | |
| Nominal piece weight | 4.4 gms |
| Output | 1478 kg/hr (3252 lb/hr) |
| Nominal piece weight | 5.0 gms |
| Output | 1680 kg/hr (3696 lb/hr) |

**Single colour solid**

| | |
|---|---|
| Nominal piece weight | 3.9 gms |
| Output | 1008 kg/hr (2217 lb/hr) |

The plant consists of a continuously moving mould circuit, the moulds being located on two continuous matched chains. A depositing head is mounted over the mould circuit and reciprocates to maintain registration with the mould cavities during each depositing stroke. The depositing mechanism consists of a series of volumetric pumps operating submerged in a hopper of cooked syrup. Each piston can be individually adjusted for weight control when the machine is stationery, and the total deposited weight of all the pistons together can be adjusted whilst the machine is operating.

The moulds travel through an integral cooling tunnel after the syrup has been deposited into the moulds. When the sweets have solidified they are ejected on to a discharge conveyor in a random manner.

The depositing bridge and hopper can be operated in two modes:

- For the production of solid hard confectionery, and
- For production of solid striped hard confectionery.

In the main, it is constructed of painted mild steel with polyurethane skinned exterior covers. Its operation is controlled from a free-standing electrical control panel situated close to the machine.

## 13.2 General Operation

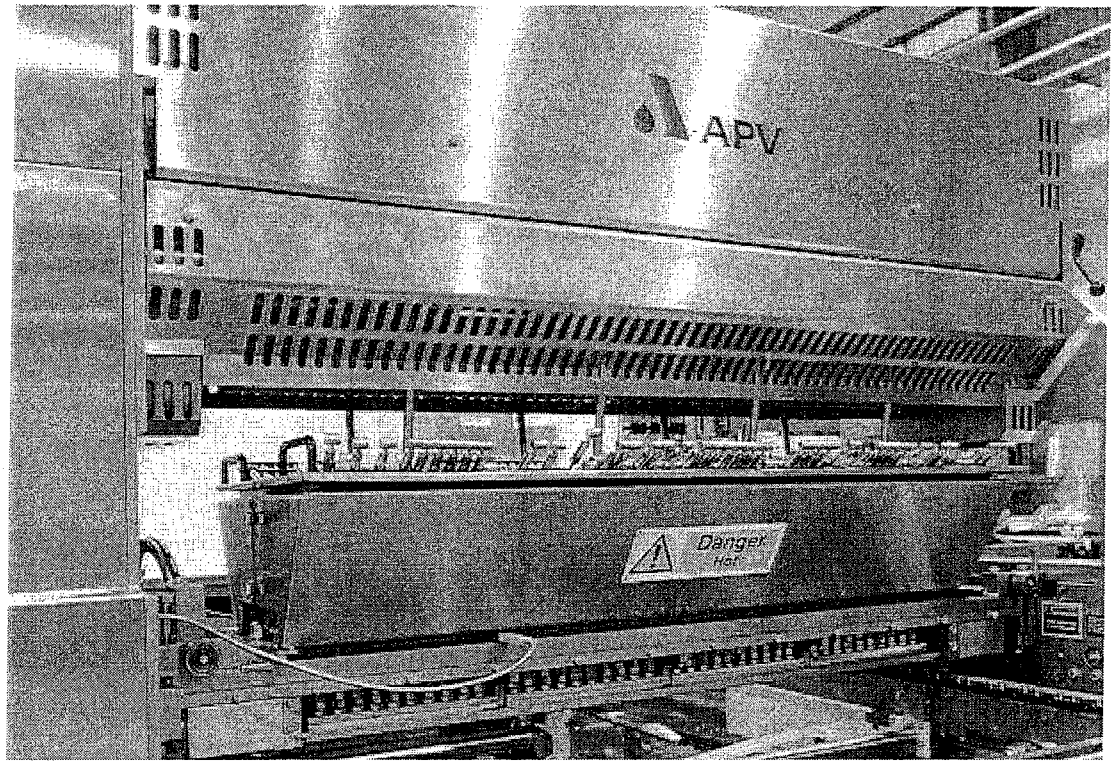
The Depositor deposits the cooked syrup into individual moulds which are then passed through a refrigerated cooling tunnel to solidify the syrup. After cooling, the individual candies are automatically de-moulded to give final units of product which can then be wrapped or processed further.

The Depositor consists of the following:

- A moving Depositor Head comprising a Bridge and Hopper Assembly. There are two depositing hopper sets, one for solids only and the other for striped product. In addition, a 2.0 metre extension section is provided for later retrofit of a three compartment head arrangement.
- A covered insulated mould circuit with refrigeration evaporation coil.
- Air circulation fans.
- A full set of rigid carrier type candy moulds.
- An automatic ejection device onto a discharge conveyor.

## 13.3 Description

### *Bridge and Hopper Assembly*




The Bridge Assembly, known as the head, houses the two vertical pump axes, with their respective servo drive motors, and the bridge traverse servo drive motor. The three servo drive motors have built-in planetary gearboxes and are controlled by a 1394 Turbo Computer System. Timing belts are used to drive each axis.