

The DiscMaster™ Spraying System



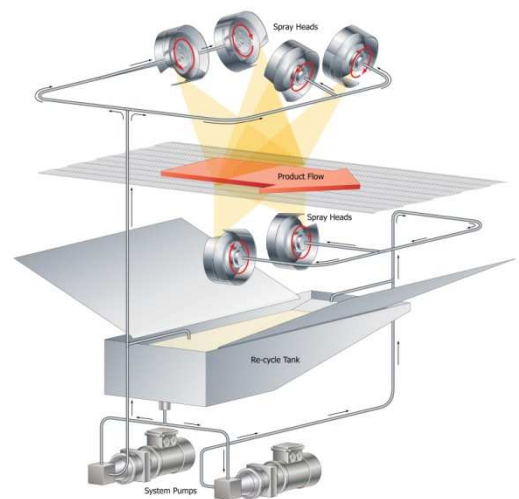
The **DiscMaster™ Series of Spraying Machines** has been designed as the versatile system of choice for the small to medium scale business. It provides the important economies of scale and manufacturing flexibility that such operations demand. The high operational up-time is achieved by its blockage resistant spray delivery system; this coupled with easy maintenance access, minimises down time and delivers a quick ROI for business managers. Transportable on castors for easy relocation within the factory; it can be used as either a stand-alone offline unit or integrated within a small production facility.

Configured during manufacture to provide either Top, Top & Sides or All Over Full Spray Coverage; these machines utilise the same proven spinning disc spray technology, previously associated with the professional level equipment. For operation at other than ambient temperature control, the heating/chiller packs can maintain the unit at the appropriate temperature; for either heated or chilled spraying operations.

Operationally, the DiscMaster™ offers high repeatable precision in the application of spray material previously unavailable at this level. Precision Inverter/Motor Control Systems provide digital vernier control to the Spinning Disc Speed, Pump Speed and the Conveyor Speed; allowing full control over the droplet formation and deposition of the spray material. Recording the setting of the digital potentiometer for each of the key control systems provides a unique digital signature for each machine set-up.

Product changeovers can be quickly accommodated; by entering the signature code into the machine for the appropriate machine configuration. The precision accuracy inherent in the system ensures it correctly returns to an identical set up as the last batch for that particular product. A proportion of the pump output is returned directly to the reservoir tank, which provides:-

- Improved precision in the control of the spray application rate
- Continuous recirculation, which inhibits the separation of emulsions.
- Enhanced temperature stabilisation of the spray material.



Schematic of a DiscMaster™ DN6TB Spray System

Operational Benefits

- **High Throughput**

Saturn's systems can maintain a consistent even density of product coverage, even with higher conveyor speeds. The spinning disc technology, which is a nozzle-less application method; is resistant to those frustrating, unscheduled line stoppages necessary to cope with the blockages and uneven spread patterns experienced elsewhere. The orifice in a spinning disc system is 6.0 mm.

Precision, control, quality and reliability are essential components in modern manufacturing dynamics; the system's synergy ensures a speedy return on the capital investment.

- **Full Product Coverage**

We provide a full range of products that accommodate coverage options from "Top Only" to 'Total Coverage'. The desired product spray can range from single disc machines; which give single side coverage to a product. Multiple discs can be positioned above and below the product conveyor line, and angled to provide desired total product coverage.

- **Bespoke Product meets your Exact Requirements.**

Saturn Spraying Systems Ltd offers bespoke manufacturing solutions, which are based upon our patented spinning disc technology. Since it is a bespoke solution, there are no compromises or work rounds which can affect the dynamics of the production system. We are able to provide varying degrees of product coverage; from 'Top Only' to 'Total Coverage', within our product range.

- **Quick Production Changeovers**

Incrementing/decrementing the code on the digital potentiometers alters the performance of the system's conveyors and pumps to the individual level required. On a non-dedicated production line; our precision incremental control ensures perfect re-registration of the system set-up from one production batch to another.

- **Protecting the Working Environment**

In order to achieve greater product throughput; nozzle spraying systems often need to use higher line air pressures to maintain the cover density. Unfortunately, there is a hazard of spray atomisation which requires careful control and even on occasion; expensive extraction equipment to maintain a safe work environment. Saturn's patented spinning disc technology has none of these drawbacks and is often seen as the safe, environmentally friendly, spray coating system to choose for modern work environments.

System Construction

Built as a single integral unit with removable access panels and stainless steel pipe work; the DiscMaster™ is designed for ease of cleaning and maintenance. When configured for both top and bottom spraying; the minimum working height of the conveyor belt will be 1050 mm. The width of the machine can be selected to suit either the application or the existing conveyor belt width. The machine series can accommodate line widths from 300 mm to 700 mm. The maximum number of spray-heads on the top is four, with two spray-heads fitted underneath. The Standard Length of the machine is 1000 mm. Conveyor belts can be either stainless steel wire enrobing for loose product or chain drive for trays. The maximum width belt available with the DiscMaster™ series is 700 mm.

System Materials

The machine is constructed in stainless steel grade 304; with pipework in 316 grade steel. All components in direct contact with the material being sprayed and the product; are in stainless steel or other food quality materials. The design ensures all areas of the machine are fully accessible for cleaning and every effort is made to ensure; that the hygiene aspects of the machine are to the highest possible standard. All electrical components will be protected to IP65. Pump and conveyor drives are to a minimum of IP56.

System Electrical Requirements

These machines require a single phase mains power connection for operation. The equipment will be configured to work with the standard single phase voltage systems, in the country of operation. Note: If a Temperature Control System is integrated into the unit; then a 3 phase supply will be required.

UK Power Requirements: 240V Single Phase 50Hz & Earth

System Configuration Options

- **Low Sensor Level & Beacon**

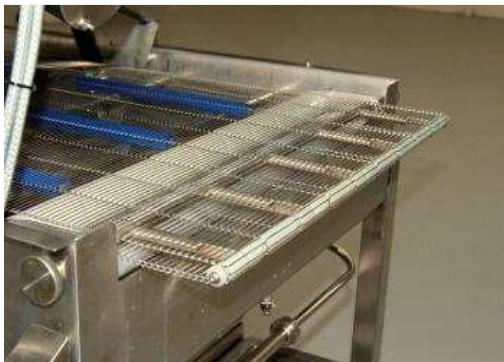
A visual warning by an amber flashing beacon indicates that the reservoir requires topping up. The beacon is associated with a reservoir level sensing device; which triggers the beacon, when the level of the reservoir falls below a recommended level.

- **Extended Conveyor**

When used in a standalone offline configuration; extending the length of the conveyor in-feed and out-feed sections, allows trays and/or loose products to be loaded and off-loaded with ease.

- **Conveyor Snub Nose**

Snub Noses extensions on either the in-feed or out-feed conveyors sections, provide one of the versatile interface requirements for mating with adjacent conveyor systems. Below is a 100 mm Snub Nose extension on the out-feed conveyor, choosing the appropriate snub nose diameter is important in the product transfer.



- **Conveyor Mist Covers**

This option is highly recommended when the machine is used for the spraying of oils. The covers provide a simple mechanism to reduce the entry aperture of the spraying machine to the minimum clearance necessary for the product to transit the machine. This effectively contains any misting within the body of the machine. Oil mist falls out of suspension and is re-cycled through the machine as normal.

- **Sealed Stainless Steel IP66 Disc Motors**

The standard disc motors supplied is an IP56 motor with a cast aluminium body. A stainless steel shroud is provided for additional water protection as well as cosmetic appeal. However, as an option an IP66 Stainless Steel motors is available, which affords an additional level of protection during hose pipe cleaning regimes, and has a cosmetically pleasing finish.

Specialists in Food Spraying Technology

Saturn Spraying Systems L^{td}. is a global supplier noted for its high quality innovative solutions in food spraying applications. Saturn is at the very forefront of spinning disc spray technology, and is therefore able to provide the most cost effective solutions to challenging applications. We are committed to maintaining a high level of quality in all of our processes, from personal contact, design, fabrication through to our after sales support. With our customer first approach, we provide sound, objective advice.



Saturn Spraying Systems Limited

Unit 3, 13 Cobham Road
Ferndown Industrial Estate
Wimborne
Dorset
BH21 7PE

Call: +44 1202 891863

Fax: +44 1202 871543

Email: sales@saturnspraying.com

Website: www.saturnspraying.com