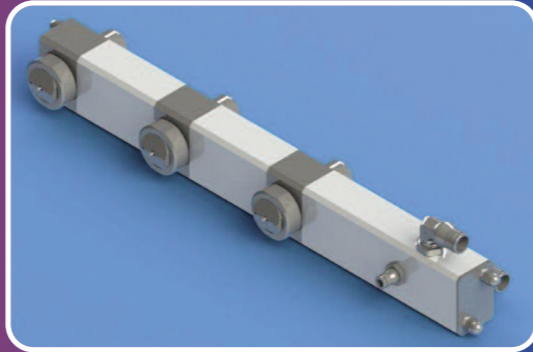


DELAVAN[®] VCN Air Atomising spray manifold

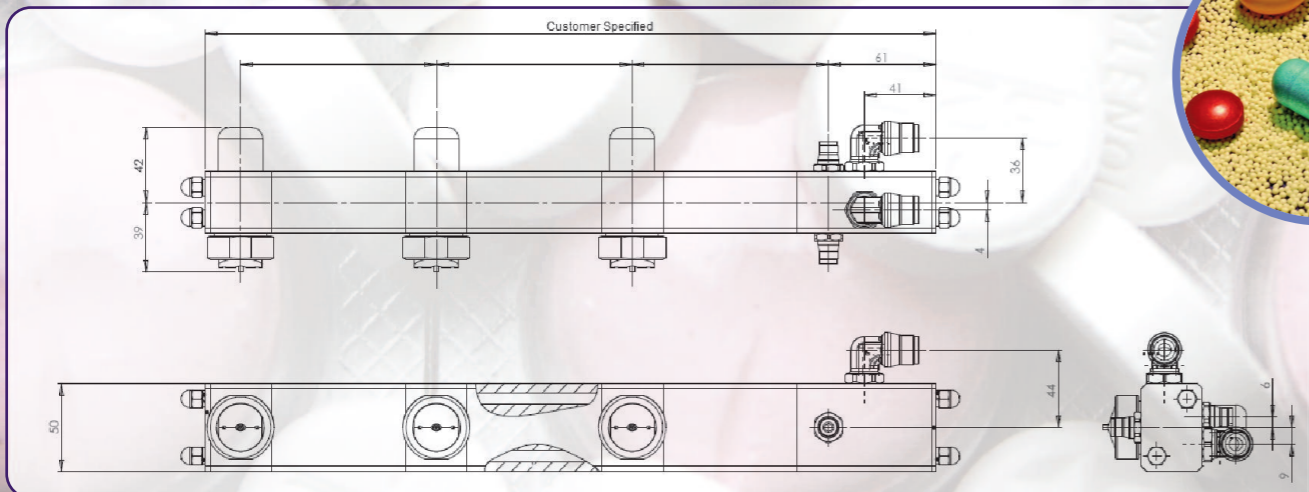
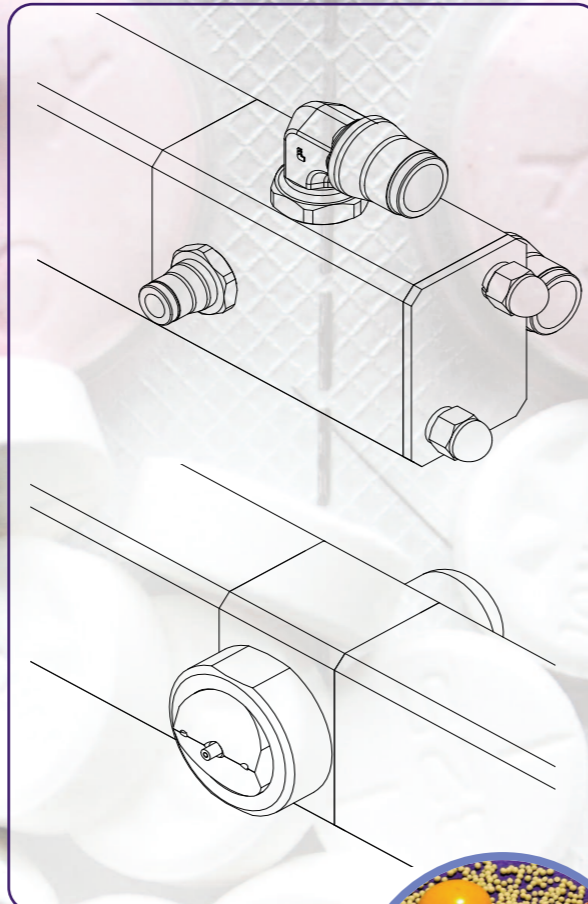


Delavan is a company founded in 1935 that has always stood for quality, flexibility and reliability.

Today, Delavan Spray Technologies is a world leader in the design and manufacture of high quality airless and air atomised nozzles and fluid handling systems. This experience is essential in meeting the ever-stringent requirements of its customers within the pharmaceutical industry.

To complement our existing range of VCN Nozzles we have produced a manifold with the following advantages and benefits.

- Compact manifold and nozzle designs eliminating external feed pipes reducing complexity over traditional spray manifolds
- Designs available to suit single or multiple nozzle set ups
- Uses lightweight materials to reduce the overall weight of the nozzle assembly for ease of maintenance and installation
- Various inlet connections and designs available to suit specific requirements
- Manufactured to the same high quality as our standard VCN Nozzles
- Metering set combinations available for the full range of VCN Nozzles (0.8mm - 2.3mm)



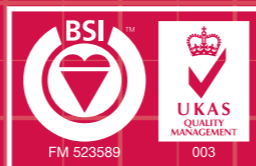
VCN Pro Variable Coating Nozzle

Product Guide



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VCN Pro

A new product with a LONG HISTORY of

Total Control

Delavan's new Variable Coating Nozzle offers total control for demanding applications including those in the pharmaceutical, food and engineering industries. The VCN's design allows the width of the spray, the atomising air and the flow of the liquid all to be controlled independently and remotely. The specially designed Air Cap reduces the build up of product, enabling longer production runs with reduced maintenance.

Delavan has been making precision nozzles for more than 65 years and we have designed and manufactured high technology, variable width, tablet coating nozzles for a major pharmaceutical equipment manufacturer for the last 15 years.

Our latest Variable Coating Nozzle takes our technical leadership one step further by offering class leading atomisation, superior droplet control and a host of advanced user-focused innovations.

Variable Spray Width

- Variable spray width
 - Optimises the wetted area
 - Minimises the risk of localised over wetting.
 - Maintains the optimum internozzle distance for all common coating media
- Spray width is remotely controllable and is easy to adjust either manually, via a pressure regulator or automatically from a control panel.
- Setting is uniform between nozzles and consistent each time the nozzle is operated - ideal for repeatable, automatic control in a multi nozzle configuration.
- Low air consumption minimises running costs

Liquid Shut Off

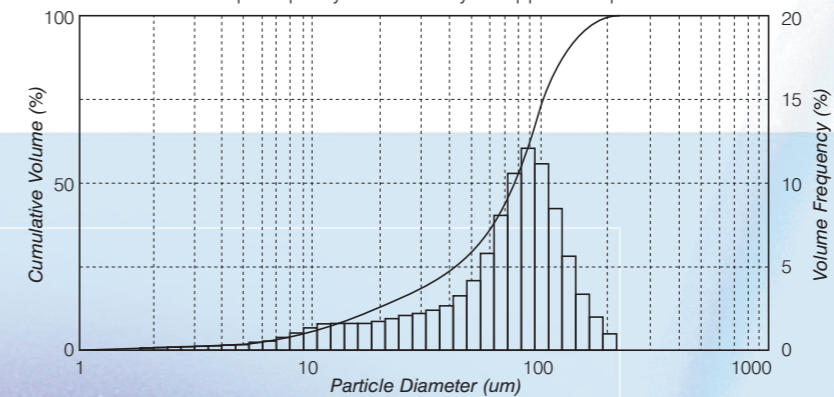
- The flow of the liquid can be shut off automatically to avoid dripping.
- A special shut off sealing kit is available for use with low viscosity liquids.

Total Droplet Control

Consistency – Each VCN produces the same droplet spectrum throughout the run, every run.

Accuracy – Our technical expertise guarantees a closely controlled droplet spectrum

Adaptability - The VCN Unit is available in sizes ranging from 0.8 to 2.5mm and will cope with a wide variety of coating media. If you need help to specify a nozzle for your application please contact us.



This graph shows the control and accuracy of the VCN's droplet spectrum. This graph was generated on a Malvern Instruments, Insitac laser diffraction droplet analyser. The Delavan VCN was spraying a typical tablet coating medium with a viscosity of approximately 200 cP.

Nozzle Number	Orifice diameter (mm)	Liquid capacity (lh) on water at 0.7 bar atomising air	
		0.35 bar	1.0 bar
VCN Pro 0.8	0.8	9	15
VCN Pro 1.0	1.0	14	26
VCN Pro 1.2	1.2	21	40
VCN Pro 1.4	1.4	29	54
VCN Pro 1.6	1.6	37	72
VCN Pro 1.8	1.8	46	91
VCN Pro 2.0	2.0	57	112
VCN Pro 2.3	2.3	76	148
VCN Pro 2.5	2.5	89	175

Quality Assurance & Certification

Inspection

- All parts are manufactured on our world class CNC machinery and inspected at every stage of manufacture in our ISO9001 manufacturing facility.
- Every complete unit is tested and individually serial numbered prior to despatch.

Characterisation Certificate

We are also able to offer a full material certificate with each nozzle (nominal charge). Droplet size characterisation data can be provided on a cost covering basis.

Cleaning & Service

- Special Anti Bearding Air Cap design reduces build up of coating material during the run.
- Compact aerodynamic design reduces disturbance of the rotating air in the drum, giving more coating media on the product resulting in less cleaning and wastage.
- Rapid strip-down and re-assembly saves time between batches.
- Push in connectors eliminate the need for special tools.
- Clearly marked ports speed up re-connection and reduce operator error.
- All parts can be ultrasonically cleaned.
- New design avoids entrapment of dirt and organisms
- All wetted metal parts are 316 Stainless Steel.
- Seals can be provided in a number of FDA approved materials to suit various coating media.
- No additional parts required for inter-connection – comes complete with push in connectors.

Other Applications

Our Variable Coating Nozzle can be used in a wide variety of applications – wherever good control over a viscous media is required.

Speckling of confectionery

A custom designed system was commissioned for a leading, high-volume, confectionery manufacturer. The system used a Variable Coating Nozzle to produce a consistent, aesthetically pleasing, speckled effect on chocolate eggs.

Wax coating on metal boxes

A major container manufacturer required a nozzle bank to coat metal sheets with a light wax prior to being formed into box shapes. The Variable Coating Nozzle gives them accurate coating control and a spray width that can be changed to suit the product being formed.

Ice cream, roofing tiles, steel mandrels, multicore data cables, chocolate and bread are some of the products that are being successfully coated by Delavan's Variable Coating Nozzle.

