GOODRICH

DELAVAN®
Spray Technologies

Variable Coating Nozzle

Product Guide

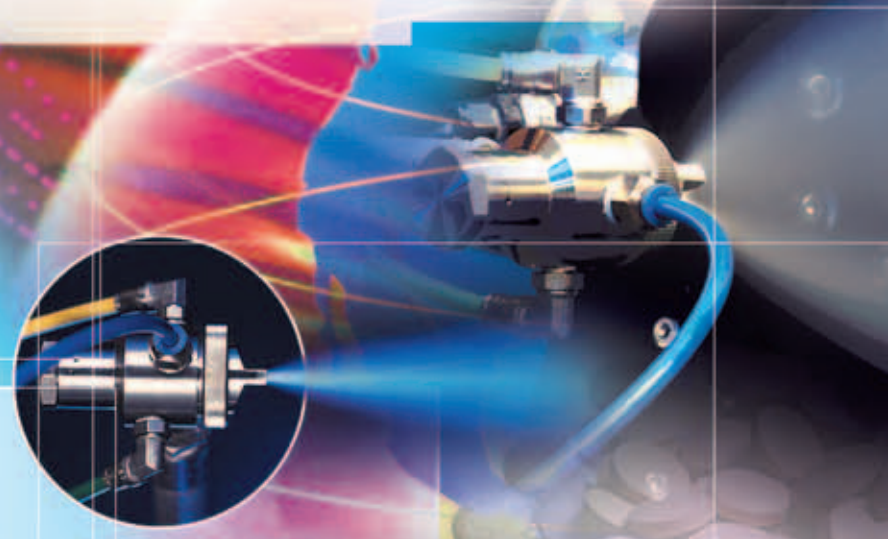
VCN

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.

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, Insitec 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 0.8	0.8	9	15
VCN 1.0	1.0	14	26
VCN 1.2	1.2	21	40
VCN 1.4	1.4	29	54
VCN 1.6	1.6	37	72
VCN 1.8	1.8	46	91
VCN 2.0	2.0	57	112
VCN 2.3	2.3	76	148
VCN 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 Air-Cap design reduces build-up of coating material during the run.
- Compact design reduces disturbance of the rotating air in the drum – gives more media on the product, less wastage and less cleaning.
- 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.
- Design avoids entrapment of dirt or 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.

Ordering Information

Complete Kits

Complete Kit with Push Fit Connections

Contains: 1 Body with 1/4" BSPP atomising air inlet and 3 push fit connections, 5-Small Seals (PTFE), 5-Large Seals (EPDM), 5-Small Seals (PVDF), 1 Spare Air Cap, 1 Spare Needle, 1 Needle Extraction Tool, 1 Liquid Tip Spanner.

Part Number: **W18820-xx**

Please specify Liquid Tip Size required 0.8 - 2.5mm

Complete Kit with Threaded Connections

Contains: 1 Body with threaded connections, 5-Small Seals (PTFE), 5-Large Seals (EPDM), 5-Small Seals (PVDF), 1 Spare Air Cap, 1 Spare Needle, 1 Needle Extraction Tool, 1 Liquid Tip Spanner.

Part Number: **W18800-xx**

Please specify Liquid Tip Size required 0.8 - 2.5mm

Spare Parts

Standard Seal & Spring Kit

Contains: 5-Small Seals (PTFE), 5-Large Seals (EPDM), 5-Small Seals (PVDF), 1 Spring.

Part Number: **W18813**

Needle/Liquid Tip Kit

Contains: 1 Needle, 1 Liquid Tip fitted with Seal (Silicone).

Part Number: **W18816**

Air Cap

Contains: 1 Air Cap.

Part Number: **W18801**

Please specify Liquid Tip Size of the Nozzle

Knurled Ring

Contains: 1 Knurled Ring.

Part Number: **W09406**

End Cap

Contains: 1 End Cap.

Part Number: **W18807**

Spring

Contains: 1 Spring.

Part Number: **W08435-5**

Needle Head

Contains: 1 Needle Head.

Part Number: **W18806**

Metering Set

Contains: 1 Air Cap, 1 Liquid Tip fitted with Seal (Silicone), 1 Needle.

Part Number: **W18811-xx**

Please specify Liquid Tip Size required 0.8 - 2.5mm

Tools

Needle Extraction Tool

Contains: 1 Needle Extraction Tool.

Part Number: **W18815**

Liquid Tip Spanner

Contains: 1 Liquid Spanner

Part Number: **W18814**

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ISO 9001 WCS Certificate No. 3291

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