

DRIP-PRO™

Safety Check Valve

Reducing scorched particle contamination and post shut drip



Spray Nozzle Engineering
www.spraydrysafety.co.nz



DRIP-PRO™

Hi-Flo Gen 4

Advancing Spray Dry Nozzle
Anti-Drip Technology
Safer & Smarter

Reduce scorched particles & dripping with longer run times

A little history, a big advance



The Drip-Pro™ - a new valve and a safer nozzle system

A call from a spray drier OEM revealed a problem with nozzle drips which resulted in scorched particle deposits at the fluid bed and post shut dripping, compromising the quality of the milk powder.

The challenge issued was to develop an anti-drip check valve which would function reliably within the milk fluid path & difficult service conditions encountered.

We soon discovered this same problem was extremely common to many other customer's driers, for all drier and commodity types.

The result of our work was the unique Drip Pro™ patented design,

which alleviated these problems of drips & reliability, proving to be a great success.

As a result, OEMs set to work converting many existing plants with this first generation valve (GEN 1).

Positive user feedback set the stage for the evolution of what has become the industries best performing anti-drip spray dry valve.

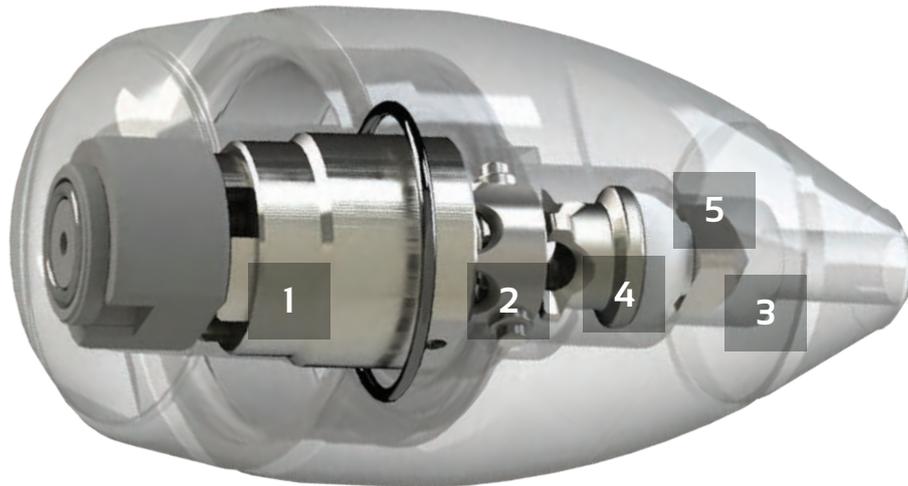
The Drip-Pro™ Hi-Flo GEN 4 is designed for high solids, viscous products such as nutritionals & others, where long run times without blockage is required.

We have pioneered new replaceable 'Sealing-Face' technology, removing problematic outdated metal to metal sealing.



A new smarter approach to spray drying

Improved pressure risk management and safety from one assembly



The new Drip-Pro™ valve - a safer nozzle when combined with Click & Dry™

Spray Nozzle Engineering has been an industry leader in safe spray dry nozzle design technology. For two decades they have partnered industries to design a complete spray dry nozzle system that improves quality, ensures code compliance and reduces risk and costs. The Click & Dry™ system incorporating the Drip-Pro™ check valve, is the latest in the spray dry safety family of safer spraying solutions.

1 Various valve spring options

allows optimised spring pressure and seal combinations for longer seal life and reliable shut off. Customise your opening/closing pressures to suit your applications.

2 Patented high flow spring cage

with bayonet action keeps valve parts contained in nozzle body during swirl and disc changes along with keeping valve components concentric for reliable action. Full flow design in ports ensure longer run times and reduced fouling.

3 Unique patented removable seal guide

keeps seals concentric for reliable seating & sealing whilst allowing the use of our unique replaceable seal inserts which increase valve body seat life and suit your product application.

4 Integrated new Drip-Pro™ Hi-Flo GEN 4

Check Valve with replaceable seal not only allows a number of sealing options but its new high flow design runs longer than previous designs and is easily removed for cleaning. This 'open-port' design can be run on all drier types.

5 Low cost replaceable soft seal

is available in a range of materials and ensures improved sealing without damage to the nozzle body seat. Avoiding seat damage prevents expensive replacement of nozzle bodies, particularly when welded or using old metal to metal seal designs.

Need a custom valve solution?

Spray Nozzle Engineering can customise a valve to meet your production and process. contact us today to discuss your needs.



Our development

The Drip-Pro™ story

began 10 years ago with a call from one of the worlds largest spray dryer OEM's.

They had a problem with nozzle drips during commissioning of a new plant which resulted in scorched particle deposits at the fluid bed.

This greatly compromised the quality of the end product which in this case, was milk powder.

The challenge

they posed was to develop an anti-drip check valve which would function reliably in the difficult service conditions of the milk fluid path.

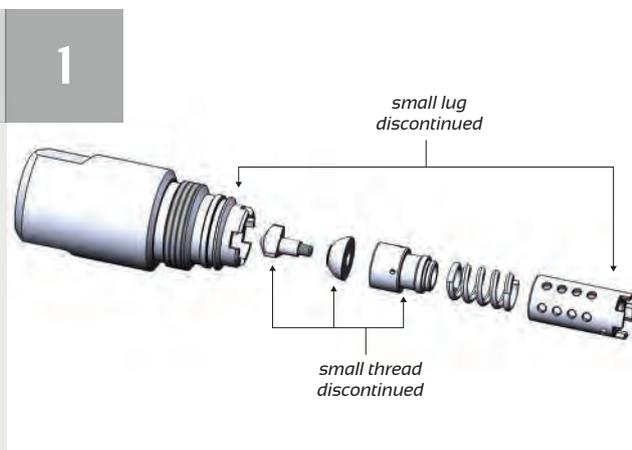
We soon discovered that many had tried and failed in developing a reliable valve for spray dry nozzles, however with our detailed knowledge of these service problems, we set to work on a new valve design which would satisfy these difficult conditions.

The result

was our unique Drip-Pro™ patented design which proved such a success that the OEM set about converting many existing plants in our region with this first generation valve (GEN 1).

The resultant end user feed back regarding product quality improvements,

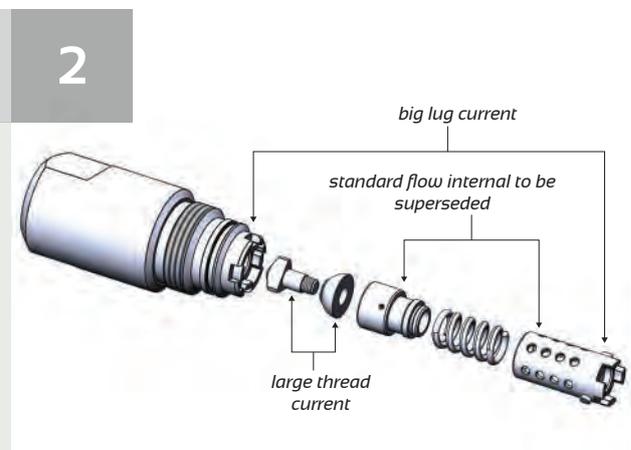
set the stage for the evolution of what has become the industries best performing anti-drip spray dry valve.



GEN 1 small lug

(fully superseded)

Our first valve was the Click&Dry™ with Drip-Pro™ GEN 1 valve which was accepted as one of the first spray dryer valves in the industry to deliver reliable operation over a full shift run without blockages. Age alone dictates full replacement of this early version.

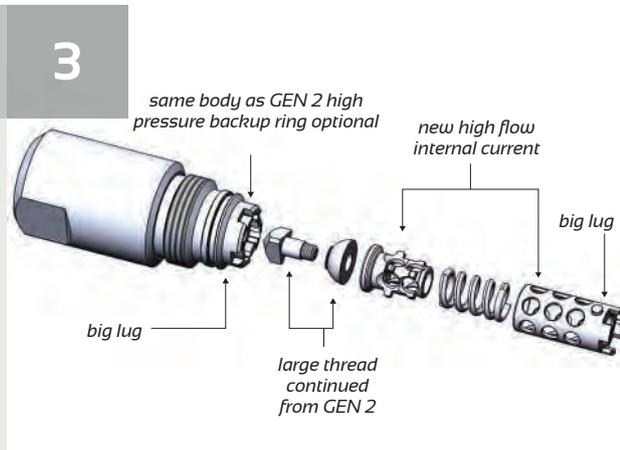


GEN 2 big lug

(Valve body & spring cage superseded)

The Drip-Pro™ GEN 2 valve introduced improvements in component durability with an expanded range of spring pressures & seal materials. This was achieved with larger body/cage lugs & threads, allowing the Drip-Pro™ GEN 2 far greater longevity than its predecessor. Inspect body for wear & damage, replace as required & upgrade to GEN 3 internals.

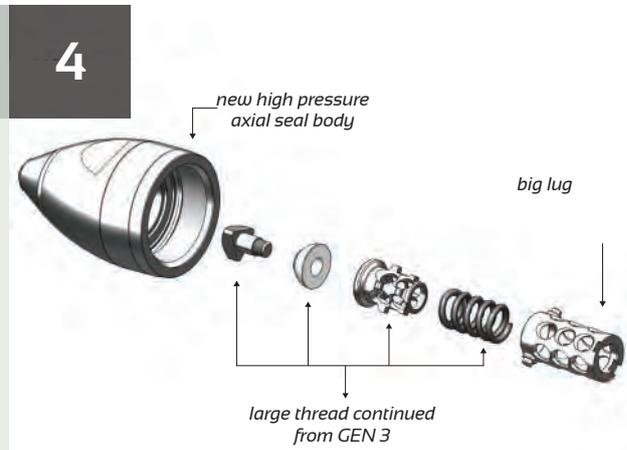
Our development



GEN 3

(Superior high flow, long run performance)

The new Drip-Pro™ Hi-Flo GEN 3 was created to meet the higher productivity demands of the spray dry industry today, not only to meet the demand for higher flow rates, but to also meet the requirements of longer run times. The increased flow was achieved with changing two low cost interchangeable internal components allowing the user to keep the same body as previously used.



GEN 4 - latest version

(superior high flow, long run performance)

The new Drip-Pro™ Hi-Flo GEN 4 was created to meet the higher productivity demands of the spray dry industry today, not only to meet the demand for higher flow rates, but to also meet the requirements of longer run times. The increased flow was achieved with changing two low cost interchangeable internal components allowing the user to keep the same body as previously used so Upgrading to the new Drip-Pro™ Hi-Flo Gen 4 is easy!

Case study



One of our customers couldn't find a Non-Drip Valve to run 17 – 19 hours on Viscous I.F and nutritional.

The answer was Drip-Pro™ GEN 4, the most advanced Spray Dry Nozzle Anti-Drip Valve on the market.

After 17 hours, valves still performed to stop dripping even on highly viscous concentrate.

Upgrade to GEN 4



Are you still running GEN 1 or GEN 2 Check valves?

Now with the GEN 4 you get greater flow, stronger location system within the body and ease of use.

Contact us today on how to upgrade to the latest improved powder quality check valve technology .

10 facts on Spray Dry Safety



The 10 facts on spray dry safety handbook is a new approach to helping drier owners, operators & OEMs to identify risks in operations and nozzle designs used in high pressure spray drying.

A valuable training guide for all stake holders. Speak to us today for a free copy and consultation about process improvement.

Dairy industry award for process excellence outcome

Ahead in dairy innovation



Built for your drier

A whole range catered to make it work



Free consultation
speak to us today for an
upgrade or a free assessment



Our nozzle range

No matter what your drier size or type, we've got you covered

The MAXI range



The Maxi

The MAXI is a heavy duty design with optional Drip-pro™ drip control check valve reducing scorched particles with longer run times. All this with maximum code compliance.



The SuperMaxi

The SuperMaxi provides all of the pressure compliance benefits of The Maxi with additional large robust threads & super duty dual skirt seal face protection. The clasp system is the world's first with 'component concentricity control', ensuring better quality of spray performance.

The MINI range



The Mini

Hi-Flo Mini provides all of the pressure compliance benefits in a smaller & lighter package. Designed for compact inlet drier types & long life with short lance driers.



The ShortMini

The ShortMini provides all the similar benefits of the Mini, meeting pressure requirements with its compact body. The 'shortest' safest nozzle on the market today.

Compliant - Safer - Improved quality

Safer Smarter Drier Nozzles & Check Valve System

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