

Binks DVX Sales Presentation

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CARLISLE FLUID TECHNOLOGIES | PROPRIETARY



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Agenda

- Understanding the problem.
Analysis of problems with atomization
- Making the leap.
How we have revolutionized atomization
- Key features and value proposition of the
Binks DVX gun range



The Binks DVX?

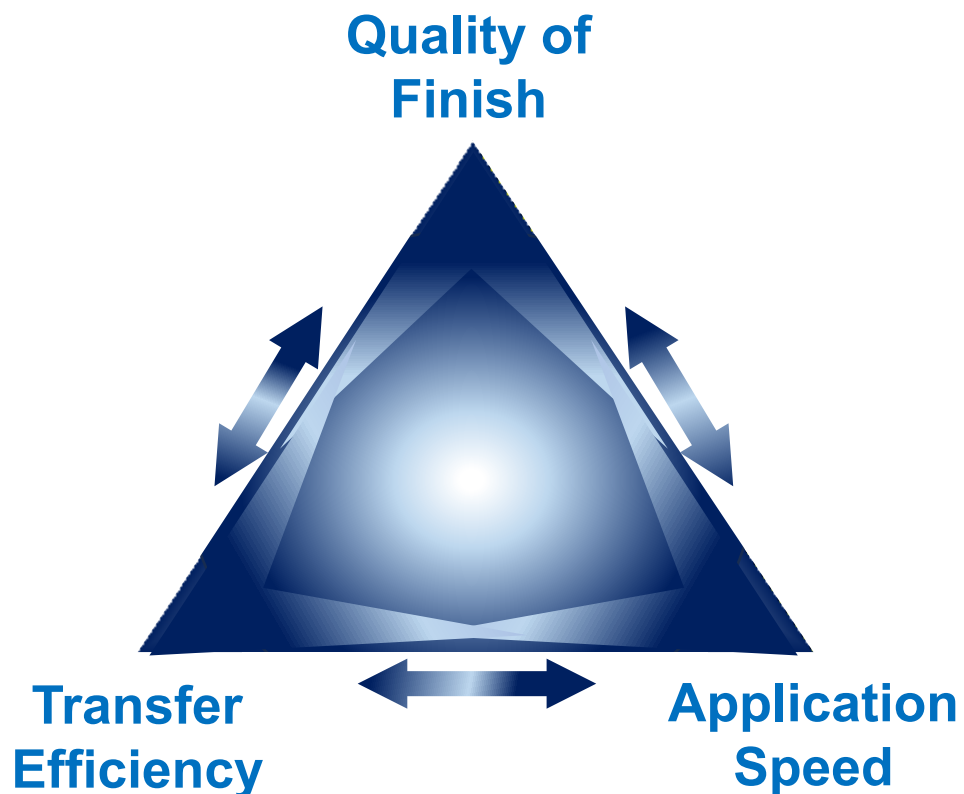
**Industrial
Focus**

The BINKS logo, featuring the word "BINKS" in a bold, blue, italicized sans-serif font with a registered trademark symbol (®) at the end.

**Automotive
Refinish Focus**

The DEVILBISS logo, featuring the word "DEVILBISS" in a bold, orange, italicized sans-serif font with a registered trademark symbol (®) at the end, and the words "AUTOMOTIVE REFINISHING" in a smaller, black, sans-serif font underneath.

Our Product Design Focus (Critical to Success)



- Better finish
- Faster application
- Higher Transfer Efficiency
- Improved balance and ergonomics
- Easy to clean and maintain
- Simple to install
- Fewest parts & configurations but widest capabilities

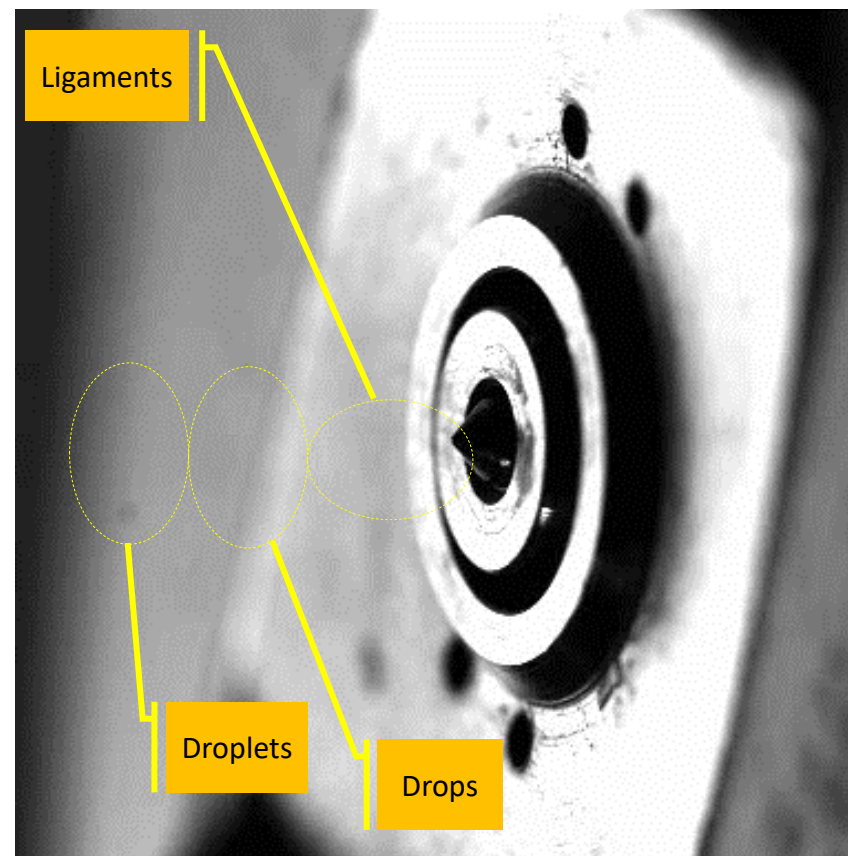
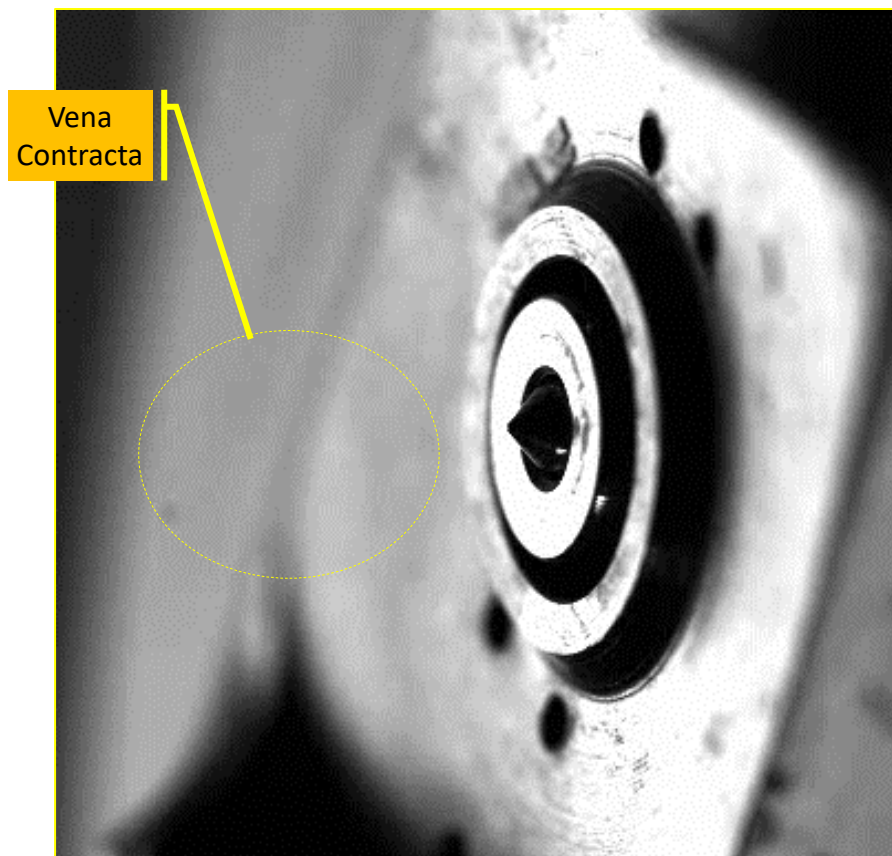
Our Goal: Revolutionize Transfer efficiency, quality of finish, speed and ease of application

Understanding the problem

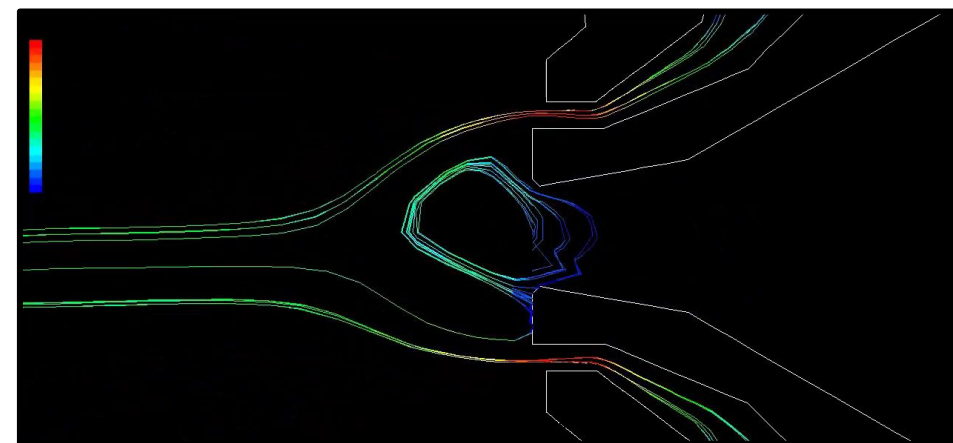
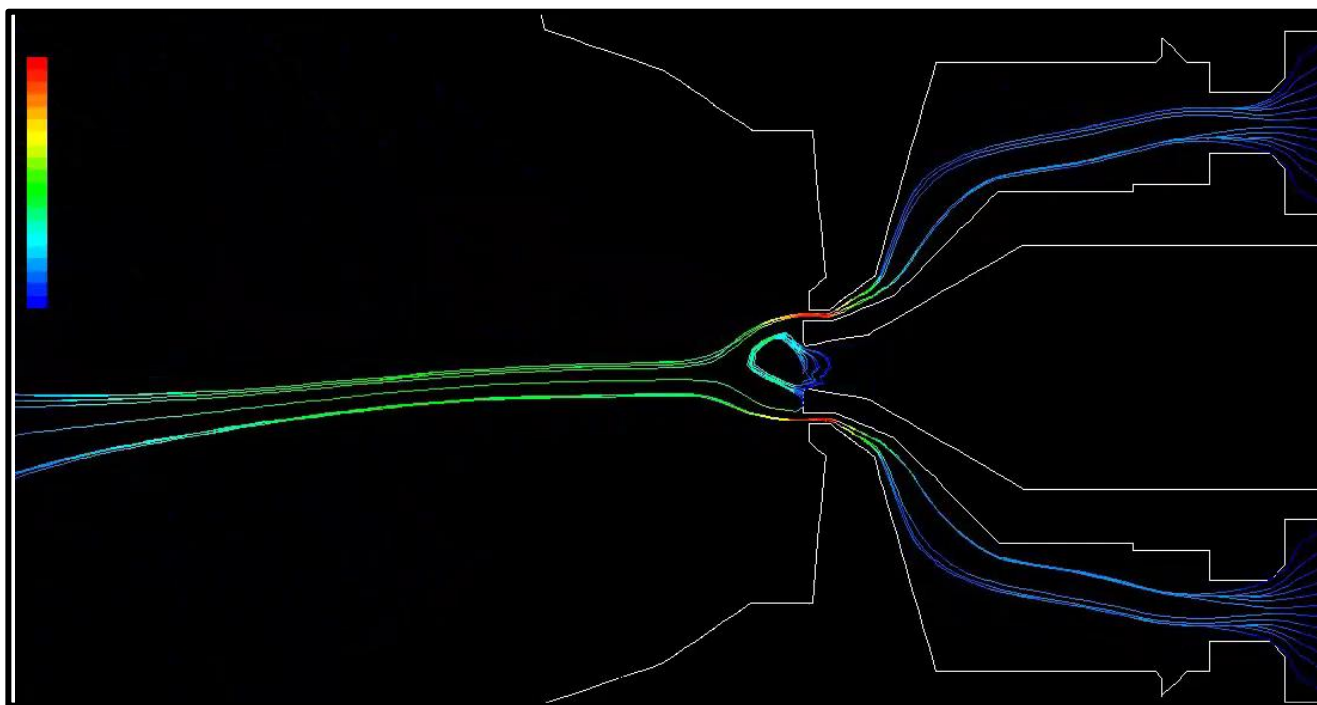
Analysis of problems with atomization

What happens at the nozzle when you pull the trigger?

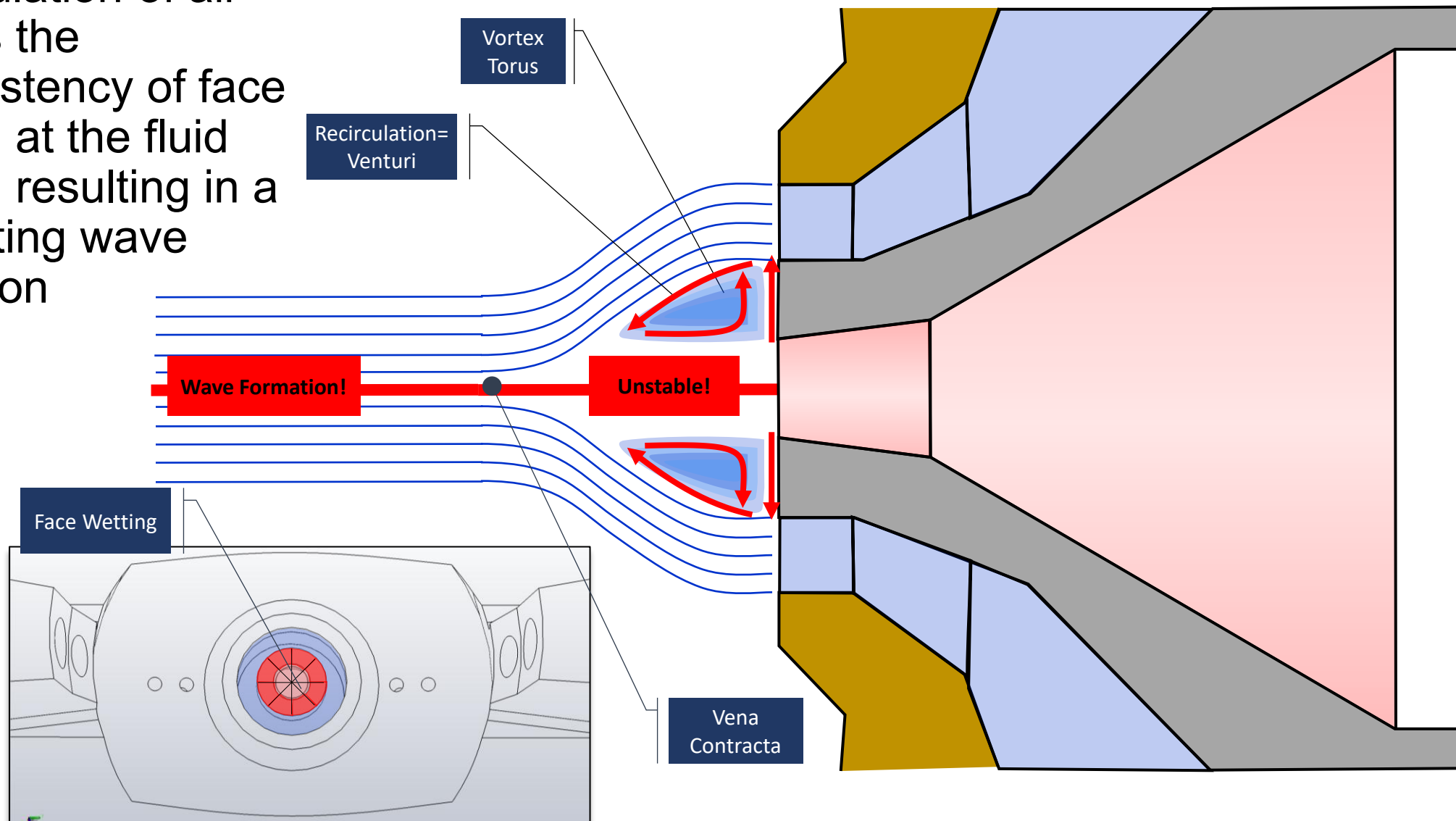
High speed photography uncovered uneven face loading of solvent and water-based paint at fluid nozzle



Computational fluid dynamic software confirmed fluctuations caused by common industry fluid nozzle design



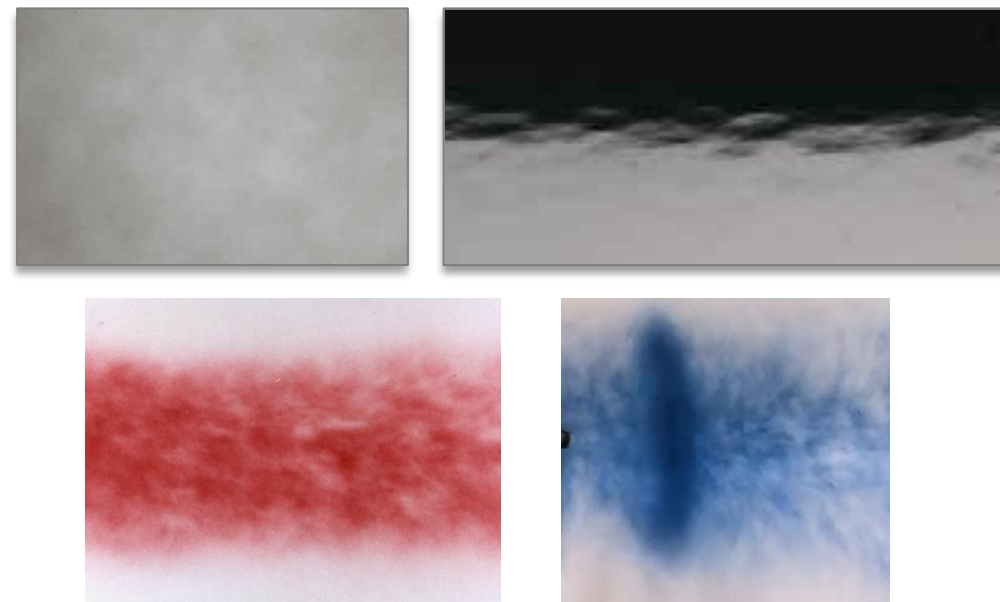
Recirculation of air causes the inconsistency of face wetting at the fluid nozzle, resulting in a fluctuating wave formation



The Plume Wave problem viewed from multiple angles using high speed photography



What does Plume Wave & Magnification cause?



This can be a source of orange peel and mottling due to the light and heavy parts within the spray pattern

Solid Colors

'Orange Peel', Gloss, Definition of Image (DOI), Haze

Metallics & Special Effect

'Cloudiness', 'Mottle', 'Standup', 'Banding', 'Striping', Sparkle, Graininess

Side Effect: Air Cap Contamination



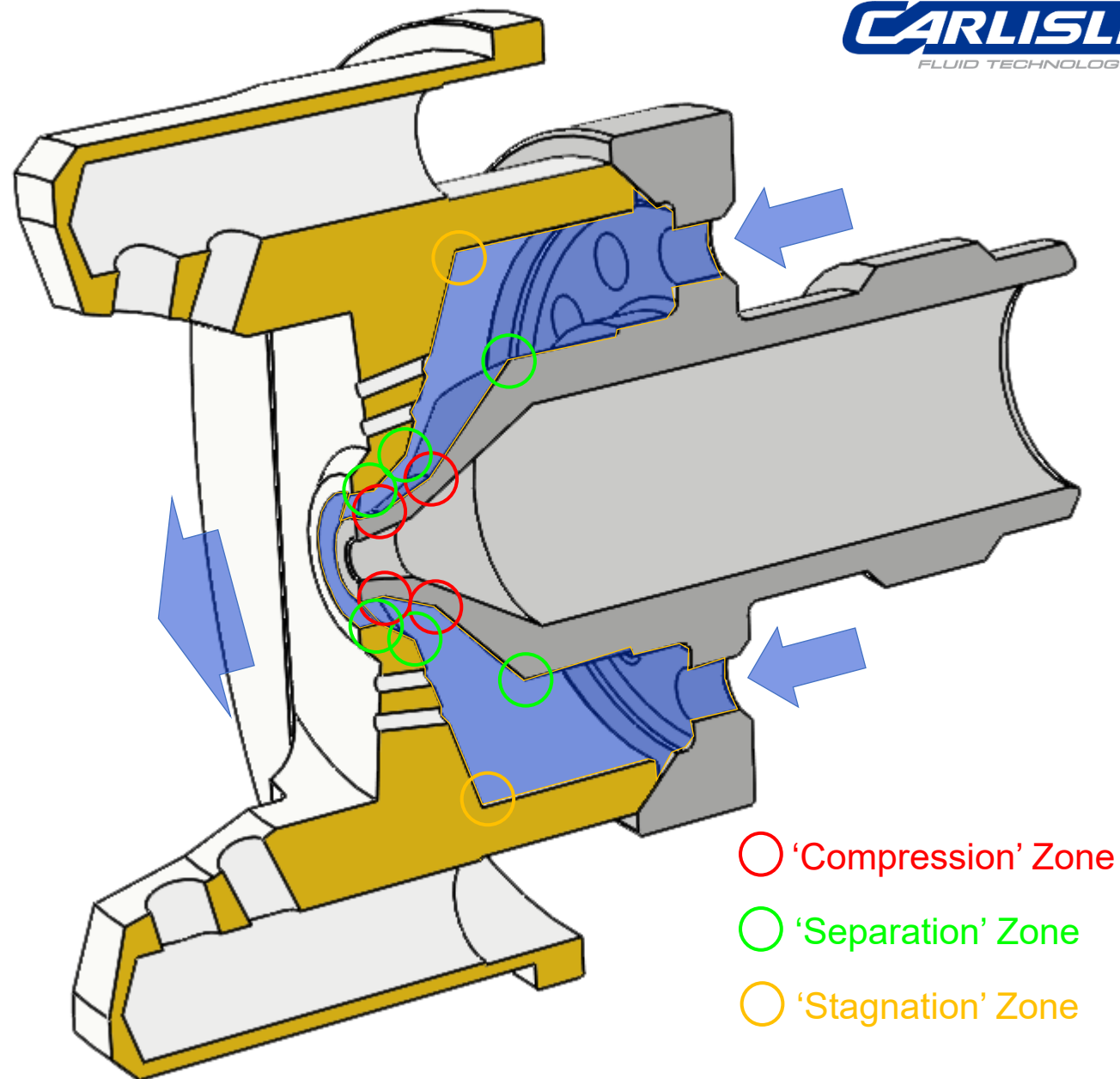
Common Symptoms

- One side of cap contaminated more than the other
- Fluid tip face heavily covered

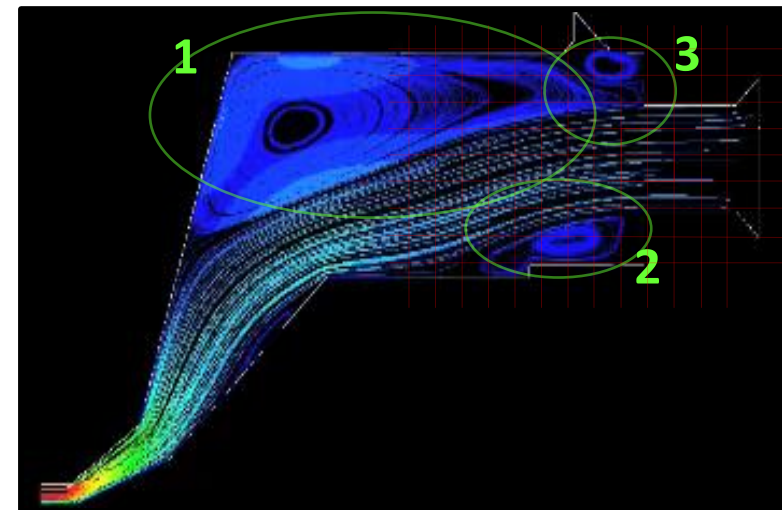
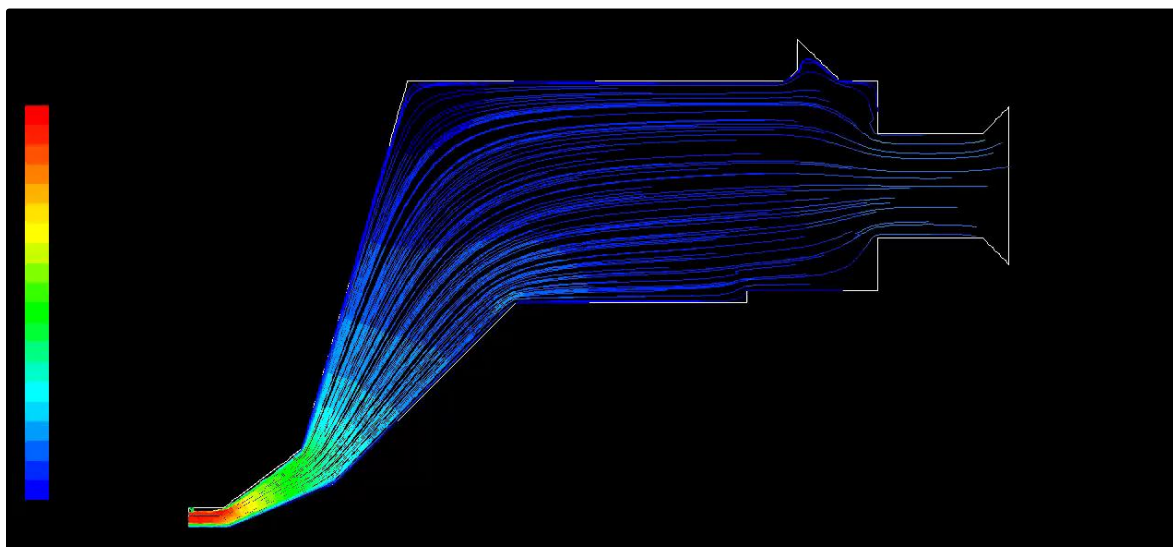
Problem causes

- Low fluid flow
- Fast Evaporating Solvent
- Plastics Industry
- Small Fluid tip Size
- Fluid Needle used for fluid control
- Water based coating

Past Aircap Designs



What else is going on inside the aircap?

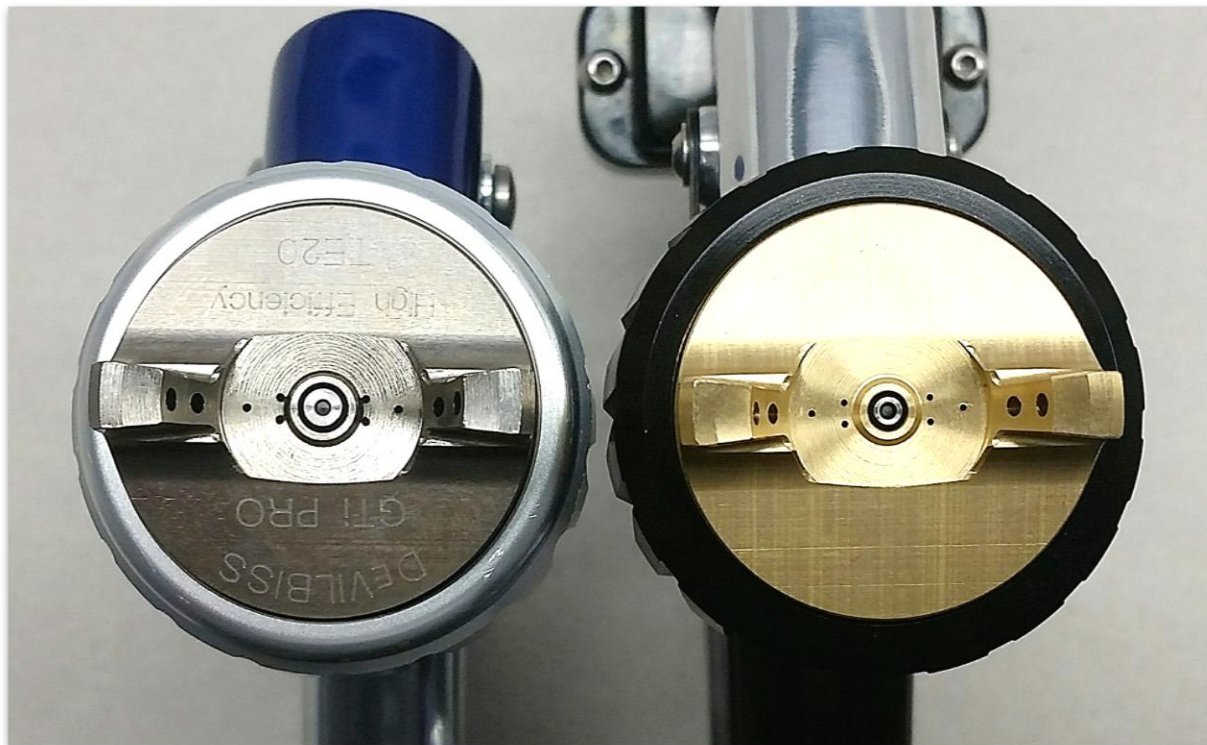


Velocity Profile Simulation of legacy designs shows significant areas of recirculating air

Making the leap
Delivering a revolution in atomization

Turbulence Control

Reduce the Face Area, Reduce the Problem?



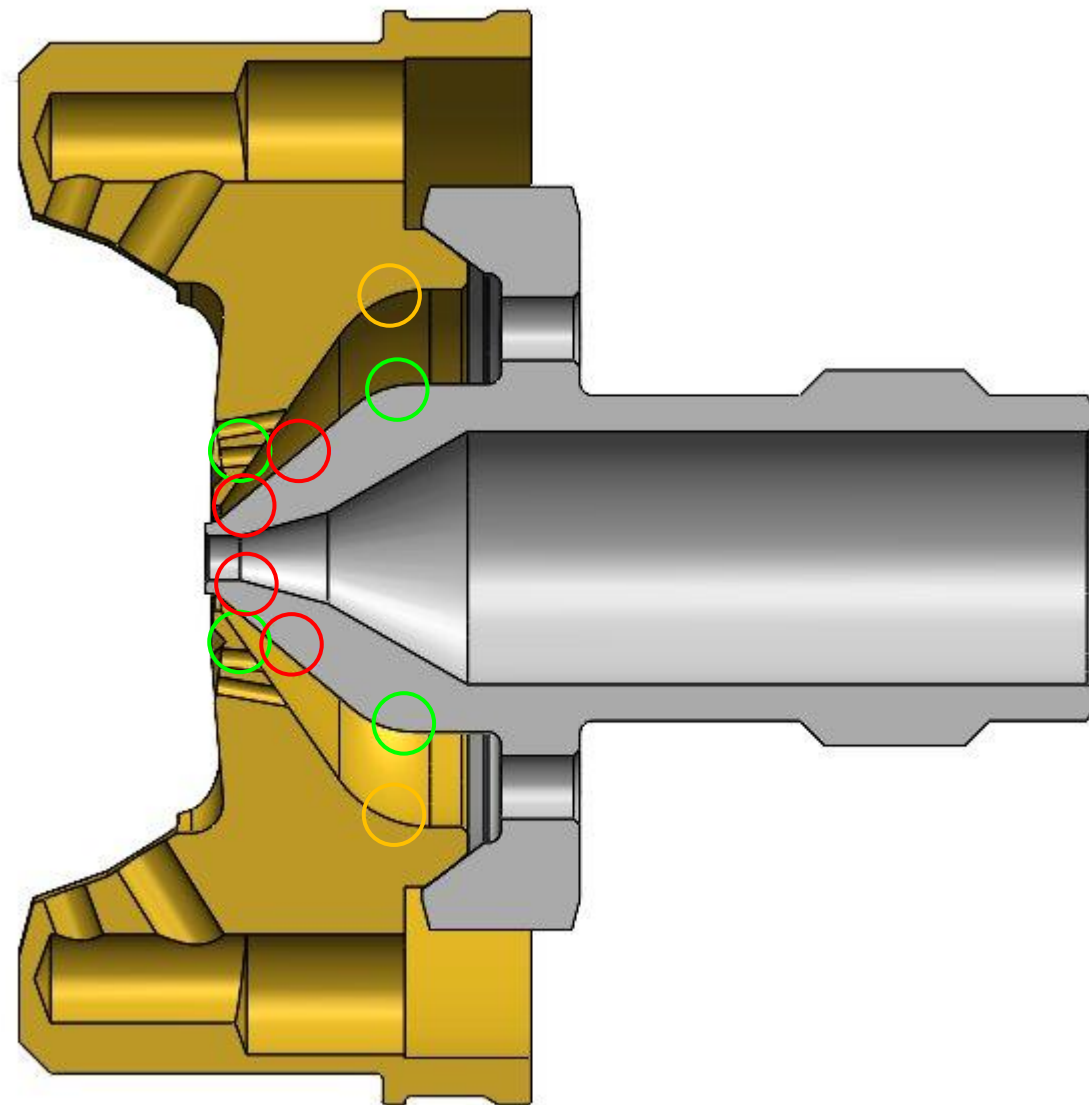
Reducing the face area doesn't always make the fluid more consistent across the face.
Developing each specific nozzle for the inner diameter size (1.0, 1.4, etc.) allows
consistency of fluid across the tip face.

DVX Front End Dynamics



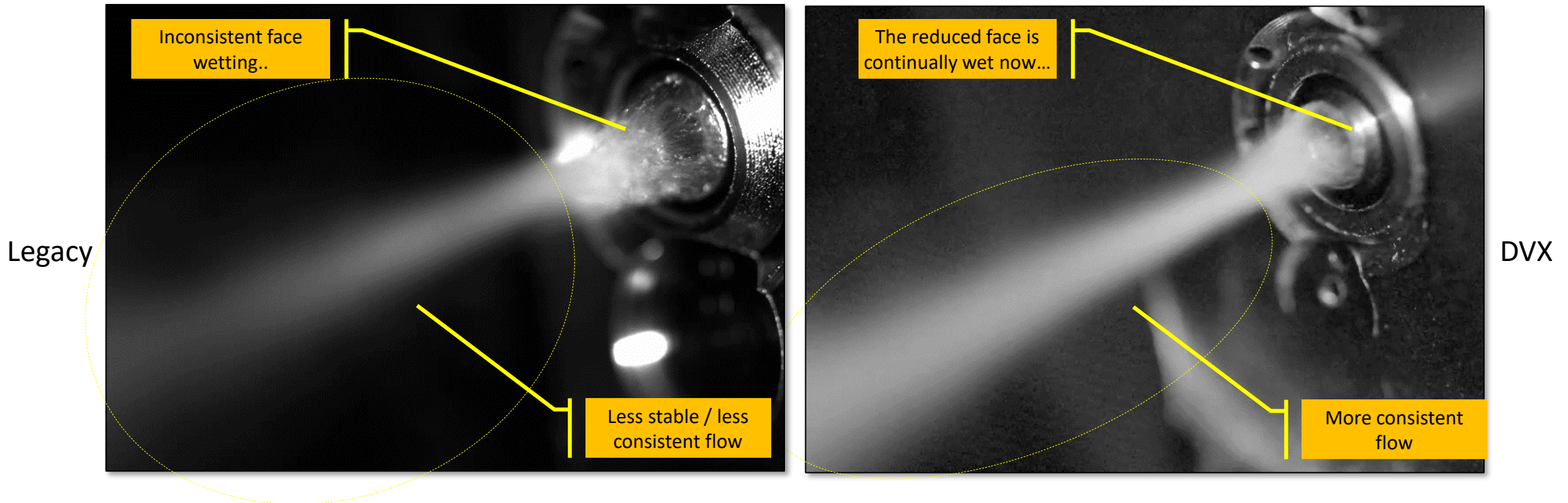
In DVX we have eliminated corners that create

- Compression Zones
- Separation Zones
- Stagnation Zones

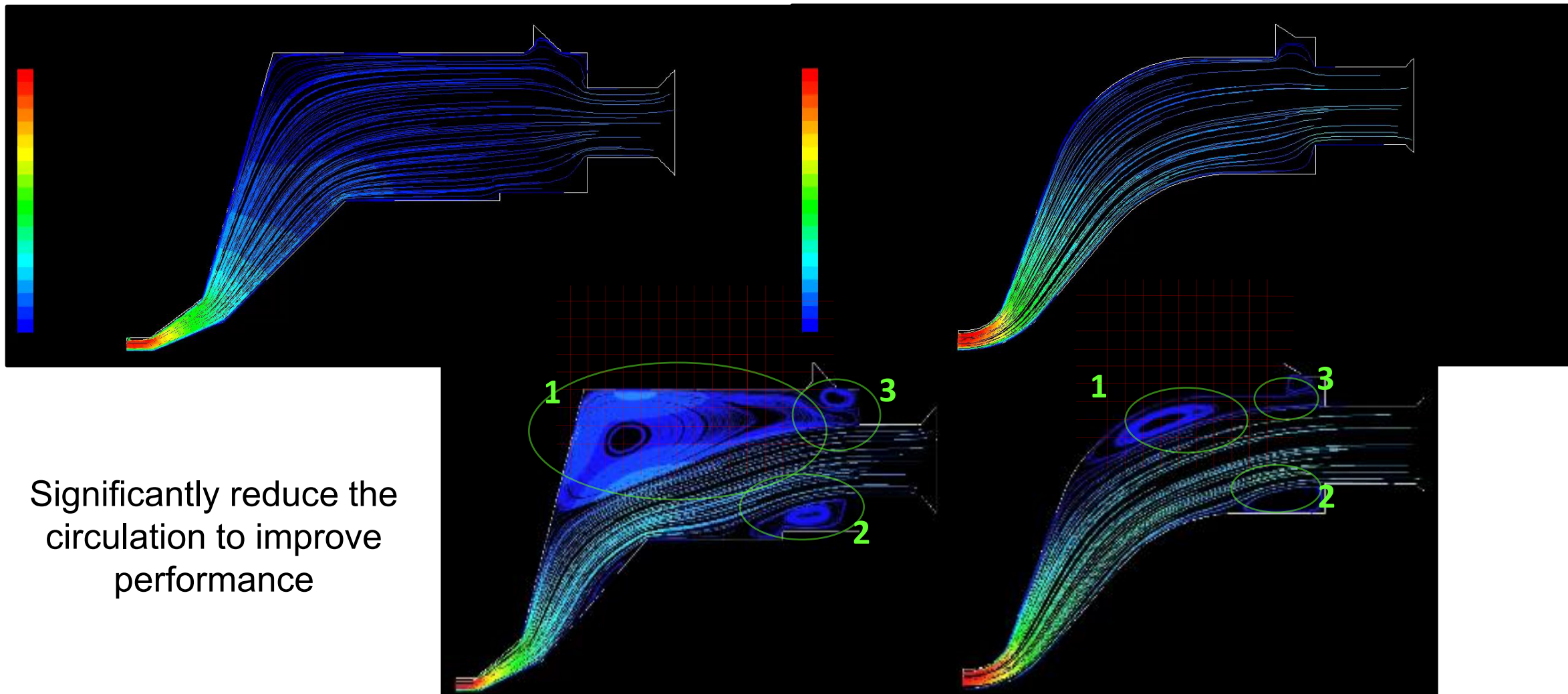


What difference does it make?

Atomization. Large vs reduced face area



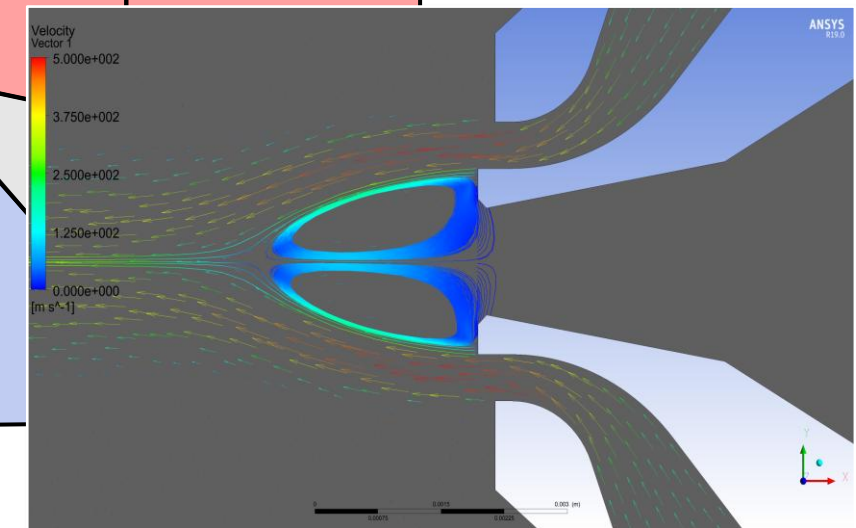
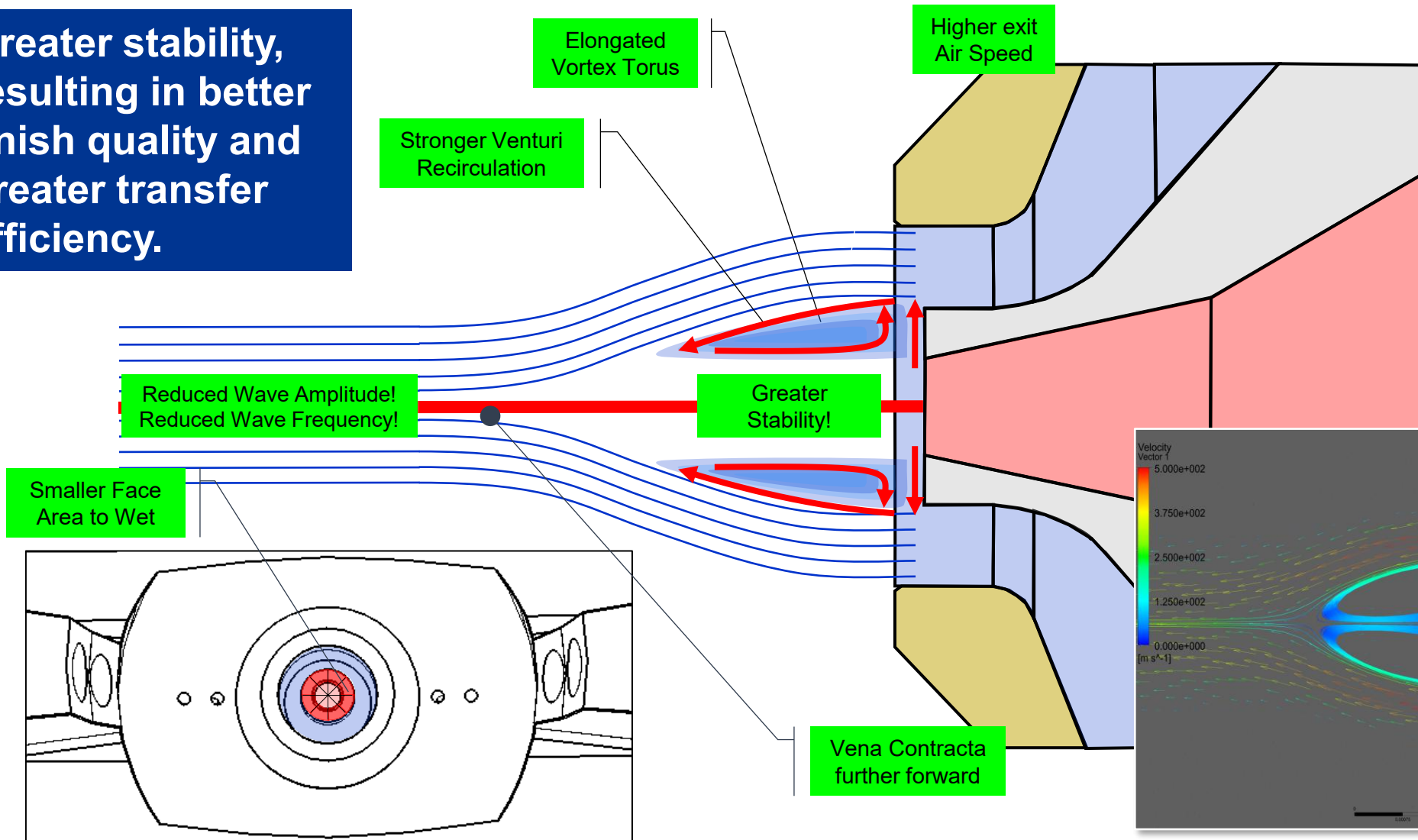
Velocity Profile Simulation



Significantly reduce the circulation to improve performance

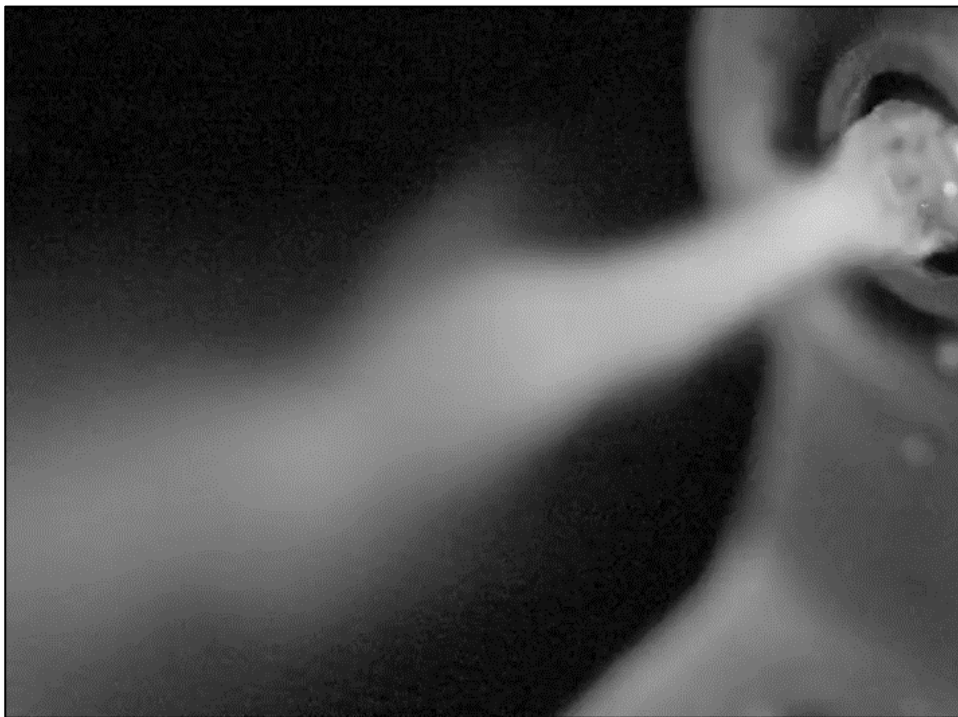
What improvements do we see?

**Greater stability,
resulting in better
finish quality and
greater transfer
efficiency.**



Not just theory! Improvements you can see.

Leading
Competitor



3VX™



Larger, more uniform patterns

Lab & Beta testing shows consistency at higher air pressures.
Aircaps sizes better align with low/high viscosity & low/high flow rates.

DVX P1
@ 2.0 Bar
325 x 90 mm
12.5" pattern



DVX P2
@ 2.0 Bar
420 x 80 mm
15" pattern



DVX P3
@ 2.0 Bar
425 x 90 mm
17" pattern



What do all these changes result in with the DVX?

Better Air Spray Finish Quality

- Reduced Orange Peel
- Eliminate mottling
- Most consistent pattern in the market
- Capable of handling large range of materials across three pressure air caps and two gravity air caps

Faster Application

- High flow rate capabilities
- Large, consistent pattern size allow for fewer passes (smaller overlaps)
- Reduced downtime
 - Easy To Clean
 - Less material buildup at air cap

Improved Transfer Efficiency

- Reduced material and air usage
- Works at low and high inlet air pressures to dial in exactly what you need
- Sprays consistently at 2 bar to help users reduce their air consumption



Value Proposition & Key Features

Value Proposition – BEST IN CLASS PRODUCT.

For liquid finishing professionals that demand nothing less than the ultimate in finish and efficiency performance in industrial spraying applications, we are proud to present the all-new DVX range of manual and automatic spray gun applicators.

A seamless integration of 375 years collective experience, from cutting-edge atomization technology and engineering to superior quality and design, the DVX represents a leap in atomization technology that provides :

- **Improved transfer efficiency**
- **Higher quality of finish**
- **Faster speed of application**



The DVX range features Turbulence Control™ and HVLP PLUS technology in an easy selection of Aircaps and fluid nozzles across manual and auto gun configurations to maximize flow rate efficiency, precision and spray finish quality.

What options do we offer in the DVX range?

DVX Pressure



DVX Gravity



DVX Auto



Who and What is the DVX designed for?

Target (Industrial) Markets



- **Job coaters (metal and plastic substrates)**
- Metal fabrication & direct to metal applications
- **Agricultural / Heavy Machinery**
- Automotive/Tier 1/Tier 2
- **Aerospace & Defense**
- Yacht & Pleasure Boats
- **Wood**

Target Applications

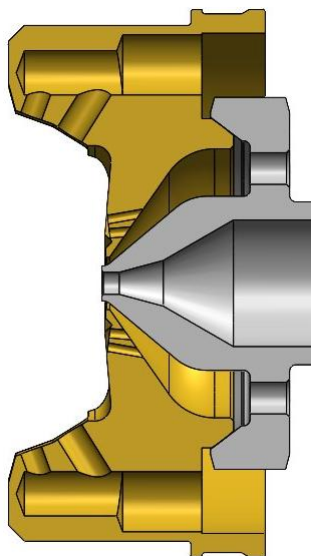


- **Low Pressure air spray, liquid coatings**
- 16-50 seconds on zahn 2 (10-120 centipoise)
10-45 seconds DIN 4
- **60-600 cc's/min (2-20 ounces/min)**
- Spray patterns up to 460mm (18 inches)
- **Water & solvent borne (Manual guns - Anodized fluid passages, Auto-S.S.)**
- High solid polyurethanes, epoxies, non-ceramic enamels

Compact Full-Size Gun Rationalization

What's different about the DVX?

NEW FRONT END ARCHITECTURE



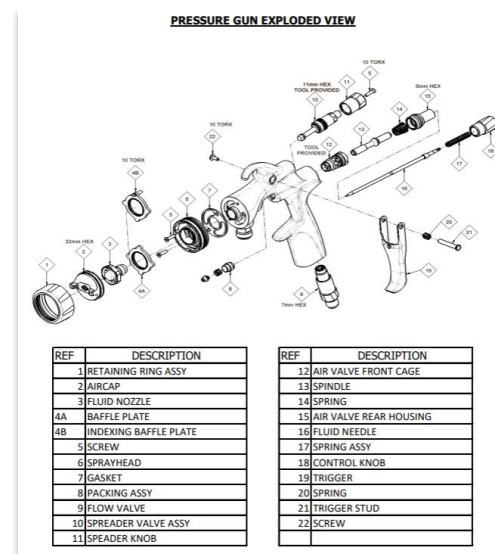
NEW DESIGNS



EASIER TO ORDER



MORE DURABLE & EASIER TO MAINTAIN



SIGNIFICANT REDUCTIONS IN AIR CONSUMPTION

P1 Air cap=: 250L/min (8.8 scfm) at 2.0 bar (29 psi) Air inlet Pressure

Key features and what they mean for the user

QUICK RELEASE AIR CAP WITH ORIENTATION LOCK (Manual and Auto guns)

Fast and easy aircap selection, fitting and removal with orientation lock.

= Less time setting up and more consistent spraying

RECONFIGURED AIR ADJUSTING VALVE

Air inlet and the air-adjusting valve into a single “co-axial” component and places it in an ergonomic location with 12x sensitivity for precise air control adjustments and smoother air flow through the spray gun.

= Reduced air consumption and easier setup

RE-DESIGNED TRIGGER (Manual guns)

Innovative trigger design to remove sideways and rotary play from the trigger action, while maintaining a comfortable fit and feel.

=Improved comfort for the user

NEW MANIFOLD DESIGN (Auto gun)

Cam-lock quick release, easier spaced fluid and air inlets. Installation is improved with adaptable air adjustments for remote/manual fan and atomization adjustments, single air inlet adjustments, and circulation plugs standard.

= Simpler maintenance and installation

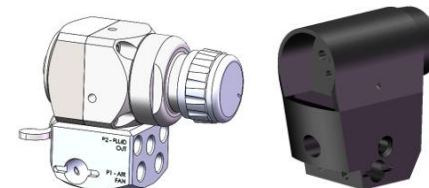


Key features and what they mean for the user

NEW GUN BODY DESIGNS

Smoother surfaces, reduced contours and fewer features on the gun body surface

= Quicker, easier cleaning and less downtime



IMPROVED WETTED FLUID SECTIONS

Redesigned internal features help to reduce paint build up and improve material flushing

= Improved reliability and less downtime



SIMPLIFIED USER CONTROLS

Easier to use with improved cleaning characteristics

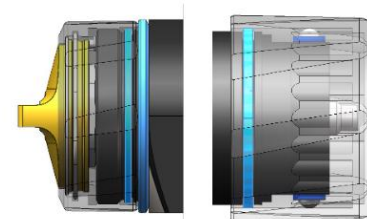
= Faster setup and less downtime



NEW SEALS

Addition of new seals to further limit possible material ingress

=Reduced downtime



REAR BODY SECTION (Auto gun)

Packing can be removed without dismantling body. Rear body section can be detached without removing rear knob. Revised needle end allows easier removal. Threaded holes allow simpler removal of piston without air.

=Faster and easier maintenance



Air Cap Technology

HVLP PLUS: Simplified Air cap Range with HVLP PLUS Technology offers a broader scope of performance capabilities.

	Pressure (Manual and Auto) aircaps							
AIR CAP*	P1 CAP		P2 CAP				P3 CAP	
FLUID FLOWS (cc/min)	Up to 200		200-500				300-600	
FLUID N. SIZE	0.8	1.0	1.2	1.4	1.6	1.7	1.8	2.0
NEEDLE**	SN1 / NN1		SN2 / NN2				SN3/NN3	

Gravity aircaps							
G1 CAP					G2 CAP		
Up to 231					238-316		
1.1	1.2	1.3	1.4	1.5	1.6	1.8	2.0
SN1					SN2		



3 caps instead of >17 on some legacy pressure guns (2 caps on the DVX Gravity)

Easier selection – Easier to understand - Reduced SKU count

Innovation *Applied*

Air Cap Performance Guide

DVXA and DVXP

Part No.	Air Cap & Type		***Recommended Air Inlet Pressure	Air Consumption	**Typical Fan Pattern Size
DVXP-130-P1-K	P1	HVLP PLUS	2.0 bar [29 psi]	250 L/min [8.8 scfm]	330 mm [13 in]
DVXP-130-P2-K	P2	HVLP PLUS	2.0 bar [29 psi]	315 L/min [11.1 scfm]	350 mm [13.75 in]
DVXP-130-P3-K	P3	HVLP PLUS	2.0 bar [29 psi]	325 L/min [11.4 scfm]	380 mm [15 in]

DXVG

Part Number	Air Cap & Type		***Recommended Air Inlet Pressure	Air Consumption	Typical Fan Pattern Size**
DXVG-130-G1-K	G1	HVLP PLUS	2.0 bar [29 psi]	315 L/min [11.1 scfm]	300 mm [11.8 in]
DXVG-130-G2-K	G2	HVLP PLUS	2.0 bar [29 psi]	340 L/min [12.0 scfm]	330 mm [13.0 in]

** Fan pattern size @ 200mm [8"] distance.

Accessories



DVX Gravity

- DeKups Disposable Cups
- Gravity Cups
- *Lock Out Fluid Knob*
- *Lock Out Spreader Valve*
- *Manual Gun Saddle*
- *Nitride nozzles/needles*
- *Plastic tip needles*



DVX Pressure

- Adjustable Air Inlet
- *Lock Out Fluid Knob*
- *Lock Out Spreader Valve*
- *Manual Gun Saddle*
- *Nitride nozzles/needles*
- *Plastic tip needles*



DVX Auto

- Lever
- Fluid Connections
- Fixed Rear Housing
- Mounting Adaptors
- *Low Profile Manifold*
- *Nitride nozzles/needles*
- *Plastic tip needles*

Recap

Best Finish Quality & Faster Application & Improved TE & Easier Use & Maintenance & Simpler Ordering



Questions?

Thank You!

