DEVILBISS_®



AGMD Po

Cross Reference Air Caps Guide



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Introduction and Quick Reference Guide

Introduction

The AGMD Pro has been setting new benchmarks for improved 'transfer efficiency' and reduced air consumption since its launch. Our engineers have brought together the acknowledged market leading atomisation technology from the GTi Pro hand gun and blended this with our latest, cutting edge automatic spray gun design. The result is a high performance gun which easily exceeds European environmental requirements and will provide years of trouble free production.

The AGMD Pro offers a number of advanced, fully compliant air cap options. This handy guide is to help you choose the perfect set up to meet and requirements and gain maximum performance and production efficiency. It also provides the recommended replacement packages for those who are upgrading from existing DeVilbiss AGMD installations.

Further technical and training information is available on-line at www.finishingbrands.eu .

QUICK REFERENCE REPLACEMENT AIR CAP GUIDE





ORIGINAL	REPLAC	CEMENT			
AGMD AIR CAP	AGMD PRO	O AIR CAP			
	PRIMARY CHOICE	SECONDARY CHOICE			
	. Hilliputt Gridio	5255N374KT 6H6I62			
CONVENTIONAL	TRANS TEC	TRANS TEC			
AGMD-765CS	AGMDPRO-102-TE30C	AGMDPRO-102-TE30C			
CONVENTIONAL	TRANS TEC	CONVENTIONAL			
AGMD-797CS	AGMDPRO-102-TE40C	AGMDPRO-102-C3C			
TRANS TEC	TRANS TEC	-			
AGMD-122C	AGMDPRO-102-TE30C	-			
NEW TRANS TECH® (HIGH EFFICIENCY) AIRCAPS					
	AGMDPRO-102-TE40SC				
	AGMDFRO-102-1E403C				
	PRO-102-R40				

AGMDPRO-102-TE50C

797CS



Used on Gun Type: AGMD Pressure Feed Automatic Spray Gun

Used Over Fluid Nozzles:	Size (mm)	AGMD Fluid Needle	Fluid Needle Construction
*AV-4915-E	1.8	AGMD-420-E-POL	Polished Stainless
*AV-4915-FF	1.4	AGMD-420-FZ-POL	Polished Stainless
*AV-4915-FX	1.1	AGMD-420-FZ-POL	Polished Stainless
*AV-4915-FZ	1.2	AGMD-420-FZ-POL	Polished Stainless
*AV-4915-G	0.7	AGMD-420-G-POL	Polished Stainless
*AV-4915-H	0.5	AGMD-420-H-POL	Polished Stainless

#797C Air Cap:

Type: Conventional **External Mix**

C

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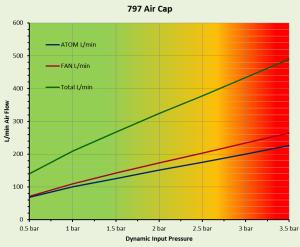
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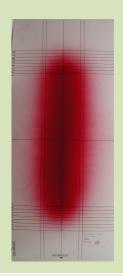
m Z

TIONAL

Air Consumption Graph (measured using JGA gun with 1.4mm fluid nozzle) 797 Air Cap



Spray Pattern



Pattern Shape:

Straight side/tapered ends

Design Target Distance: 250mm (10")

Approximate Fan Size: 390mm long x 90mm wide @ 500 ml/min using 30 sec Din4 @ 200mm (8")

Target Distance 490mm long x 120mm wide @ 500 ml/min using 30 sec Din4 @ 300mm (12") Target Distance

Typical Applications:

Wood, General Industrial, Metal, Ceramic, Vitreous Enamel, Lubricants, Adhesive, Plastic, Aerospace, Military, Decorative, Construction, Light Marine, Release Agent, Wax

Typical Fluid Flow Specification:

Medium to Large scale application Air Cap. 250-600 ml/min

Viscosity Range Sprayed:

15 to 40 sec Din4

Material Supply:

Pressure Feed

Original design specification: Automotive OEM solvent-based coatings 2.5—4.0 bar normal air inlet pressure

Materials of Construction Electroless Nickel Plated Brass Air Cap and Retaining Ring

Part Number: AV-4239-797CS Certified Air Cap and retaining ring

Notes:

* AV-4915 Fluid Tips have Nylon Inserts

765CS



Used on Gun Type: AGMD Pressure Feed Automatic Spray Gun

Used Over Fluid Nozzles:	Size (mm)	AGMD Fluid Needle	Fluid Needle Construction
*AV-4915-E	1.8	AGMD-420-E-POL	Polished Stainless
*AV-4915-FF	1.4	AGMD-420-FZ-POL	Polished Stainless
*AV-4915-FX	1.1	AGMD-420-FZ-POL	Polished Stainless
*AV-4915-FZ	1.2	AGMD-420-FZ-POL	Polished Stainless
*AV-4915-G	0.7	AGMD-420-G-POL	Polished Stainless

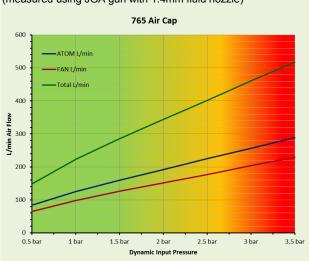
#765C Air Cap:

Type:Conventional External Mix

CONVENTIONAL

Air Consumption Graph

(measured using JGA gun with 1.4mm fluid nozzle)



Spray Pattern



Pattern Shape:

Straight Side/Tapered Ends

Design Target Distance: 250mm (10")

Approximate Max Fan Size:

330mm long x 90mm wide @ 320 ml/min using 30 sec Din4 @ 200mm (8") Target Distance

400mm long x 120mm wide @ 320 ml/min using 30 sec Din4 @ 300mm (12") Target Distance

Typical Applications:

Wood, Automotive OEM, General Industrial, Metal, Ceramic, Vitreous Enamel, Lubricants, Adhesive, Plastic, Aerospace, Construction, Release Agent, Wax

Typical Fluid Flow Specification:

Medium to large scale application Air Cap. 250-500 ml/min

Viscosity Range Sprayed:

15 to 40 sec Din4

Material Supply:

Pressure Feed

Original design specification: Solvent-based coatings

2.5 – 4.0 bar nominal air inlet pressure

Materials of Construction Electroless Nickel Plated Brass Air Cap and Retaining Ring

Part Number: AV-4239-765C Certified Air Cap and retaining ring

Notes:

*AV-4915 Fluid Tips have nylon inserts



Used on Gun Type:

AGMD Pressure Feed Automatic Spray Gun

Used Over Fluid Nozzles:	Size (mm)		Fluid Needle Construction
*AV-4920-FF	1.4	AGMD-420-FZ-POL	Polished Stainless
*AV-4920-FX	1.1	AGMD-420-FX-POL	Polished Stainless

#122C Air Cap:

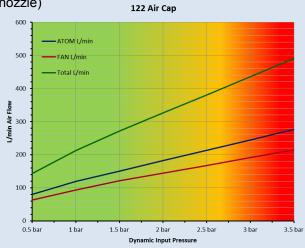
Type:

TRANS-TECH

Trans-Tech Compliant **External Mix**

Air Consumption Graph

(measured using GTI Pro Lite gun with 1.4mm fluid nozzle)



Spray Pattern



Pattern Shape:

Medium Ellipse

Design Target Distance: 200mm (8")

Approximate Fan Size: 300mm long x 90mm wide @ 280 ml/min using 30 sec Din 4 @ 200mm (8") target distance

400mm long x 120mm wide @ 280 ml/min using 30 sec Din 4 @ 300mm (12") target distance

Typical Applications:

Wood, Automotive OEM, General Industrial, Metal, 250 – 450 ml/min Lubricants, Adhesive, Plastic, Aerospace, Military, Release Agent

Typical Fluid Flow Specification:

Small to Medium scale application Air Cap.

Viscosity Range Sprayed:

18 to 50 sec Din 4

Fluid Supply: Pressure Feed

Original design specification:

Solvent-based & water-based coatings. Medium elliptical pattern, Small to

medium production

2-3 bar dynamic inlet Pressure

Materials of Construction

Electroless Nickel Plated Brass Air Cap and Retaining Ring

Part Number: AGMD-122C Certified Air Cap and retaining ring

Notes:

*AV-4920 Fluid Tips have Nylon Inserts

C3C



Used on Gun Type: AGMDPRO Pressure Feed Automatic Spray Gun

Used Over Fluid Nozzles:	AGMDPRO Fluid Needle	Fluid Needle Construction
AGMDPRO-205-085	AGMDPRO-301-085-10	Stainless Steel
	AGMDPRO-301P-085-10	Plastic Tip
AGMDPRO-205-10	AGMDPRO-301-085-10	Stainless Steel
	AGMDPRO-301P-085-10	Plastic Tip
AGMDPRO-205-12	AGMDPRO-301-12-14	Stainless Steel
	AGMDPRO-301P-12-14	Plastic Tip
AGMDPRO-205-14	AGMDPRO-301-12-14	Stainless Steel
	AGMDPRO-301P-12-14	Plastic Tip

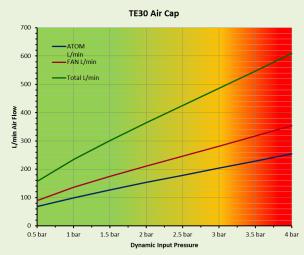
#C3 Air Cap:

Type:Conventional
External Mix

CONVENTIONAL

Air Consumption Graph

(measured using JGA gun with 1.4mm fluid nozzle)



Spray Pattern

Pattern Shape:

Straight Side/Tapered Ends

Design Target Distance: 250mm (10")

Approximate Fan Size: 420mm long x 90mm wide @ 400 ml/min using 30 sec Din4 @ 200mm (8") Target Distance

500mm long x 130mm wide @ 400 ml/min using 30 sec Din4 @ 300mm (12") Target Distance

Typical Applications:

Wood, General Industrial, Automotive OEM, Metal, Ceramic, Vitreous Enamel, Lubricants, Adhesive, Plastic, Aerospace, Military, Decorative, Construction, Release Agent, Wax

Typical Fluid Flow Specification:

Medium to Large scale application Air Cap. 250-600 ml/min

Viscosity Range Sprayed:

15 to 40 sec Din4

Material Supply:

Pressure Feed

Original design specification: Solvent-based coatings

2.5 – 4.0 bar nominal air inlet pressure

Materials of Construction Electroless Nickel Plated Brass Air Cap

Anodized Aluminium Retaining Ring

Part Number: AGMDPRO-102-C3C Certified Air Cap and retaining ring

Notes:

AGMDPRO-102-C3-T Test Air Cap also available

HV30C



Used on Gun Type: AGMDPRO Pressure Feed Automatic Spray

Gun

Used Over Fluid Nozzles:

PRO-205-12

AGMDPRO-301-12-14

AGMDPRO-301P-12-14

Plastic Tip

PRO-205-14

AGMDPRO-301P-12-14

AGMDPRO-301P-12-14

Plastic Tip

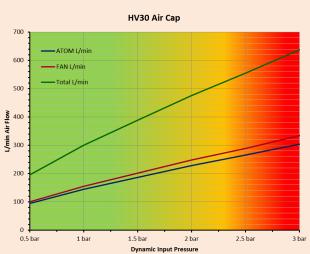
Plastic Tip

#HV30 Air Cap

Type :High Volume Low Pressure. External Mix

Air Consumption Graph

(Measured using GTI Pro Lite with 1.3mm Fluid nozzle)



Spray Pattern

Pattern Shape:

Short Ellipse

Design Target Distance: 200mm (8")

Approximate Fan Size: 340mm long x 90mm wide @ 360 ml/min using 30 sec Din 4 @ 200mm (8") target distance

440mm long x 125mm wide @ 360 ml/min using 30 sec Din 4 @ 300mm (10") target distance

Typical Applications:

Wood, OEM Automotive, General Industrial, Metal, Plastic, Aerospace, Military, Release Agent

Typical Fluid Flow Specification:

Small to Medium scale application Air Cap. 160 – 200 ml/min

Viscosity Range Sprayed:

15 to 25 sec Din 4

Fluid Supply:

Suction, Gravity & Pressure Feed

Original design specification: Solventbased coatings. Medium Elliptical pattern, Small to medium

production 2-3 bar dynamic inlet Pressure

Materials of Construction Electroless Nickel Plated Brass Air Cap

Anodized Aluminium Retaining Ring

Part Number: AGMDPRO-102-HV30C Certified Air Cap and retaining ring

Notes:

AGMDPRO-102-TE30-T Test Air Cap also available

TE30C



Used on Gun Type:

AGMDPRO Pressure Feed Automatic Spray Gun

Used Over Fluid Nozzles:	AGMDPRO Fluid Needle	Fluid Needle Construction	
PRO-250-085	AGMDPRO-301-085-10	Stainless Steel	
	AGMDPRO-301P-085-10	Plastic Tip	
PRO-250-10	AGMDPRO-301-085-10	Stainless Steel	
	AGMDPRO-301P-085-10	Plastic Tip	
PRO-250-12	AGMDPRO-301-12-14	Stainless Steel	
	AGMDPRO-301P-12-14	Plastic Tip	
PRO-250-14	AGMDPRO-301-12-14	Stainless Steel	
	AGMDPRO-301P-12-14	Plastic Tip	

#TE30 Air Cap:

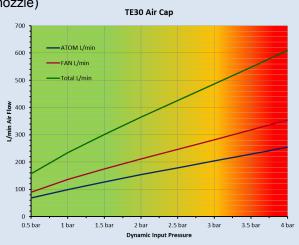
Type:

TRANS-TECH

Trans-Tech Compliant External Mix

Air Consumption Graph

(measured using GTI Pro Lite gun with 1.4mm fluid nozzle)



Spray Pattern

Pattern Shape:

Short Ellipse

Design Target Distance: 200mm (8")

Approximate Fan Size: 340mm long x 90mm wide @ 360 ml/min using 30 sec Din 4 @ 200mm (8") target distance

440mm long x 125mm wide @ 360 ml/min using 30 sec Din 4 @ 300mm (10") target distance

Typical Applications:

Wood, OEM Automotive, General Industrial, Metal, 200 – 300 ml/min Plastic, Aerospace, Military, Release Agent

Typical Fluid Flow Specification:

Small to Medium scale application Air Cap. 200 – 300 ml/min

Viscosity Range Sprayed:

15 to 30 sec Din 4

Fluid Supply:

Pressure Feed

Original design specification: Solvent-based coatings. Medium elliptical pattern

Small to medium production 2-3 bar dynamic inlet Pressure

Materials of Construction Electroless Nickel Plated Brass Air Cap

Anodized Aluminium Retaining Ring

Part Number: AGMDPRO-102-TE30C Certified Air Cap and retaining ring

Notes:

AGMDPRO-102-TE30-T Test Air Cap also available

TE40C



Used on Gun Type:

AGMDPRO Pressure Feed Automatic Spray Gun

Used Over Fluid Nozzles:	AGMDPRO Fluid Needle	Fluid Needle Construction
PRO-250-085	AGMDPRO-301-085-10	Stainless Steel
	AGMDPRO-301P-085-10	Plastic Tip
PRO-250-10	AGMDPRO-301-085-10	Stainless Steel
	AGMDPRO-301P-085-10	Plastic Tip
PRO-250-12	AGMDPRO-301-12-14	Stainless Steel
	AGMDPRO-301P-12-14	Plastic Tip
PRO-250-14	AGMDPRO-301-12-14	Stainless Steel
	AGMDPRO-301P-12-14	Plastic Tip

#TE40 Air Cap:

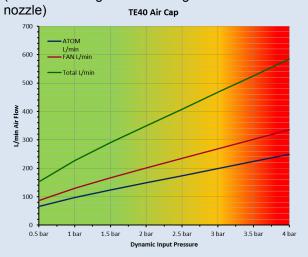
Type:

TRANS-TECH

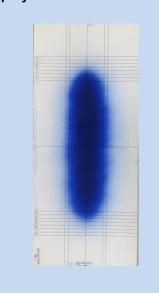
Trans-Tech Compliant External Mix

Air Consumption Graph

(measured using GTI Pro Lite gun with 1.4mm fluid



Spray Pattern



Pattern Shape:

Straight sides/tapered ends

Design Target Distance: 250mm (10")

Approximate Fan Size: 410mm long x 100mm wide @ 440 ml/min using 30 sec Din 4 @ 200mm (8") target distance

540mm long x 130mm wide @ 440 ml/min using 30 sec Din 4 @ 300mm (12") target distance

Typical Applications:

Wood, General Industrial, Metal, Lubricants, Adhesive, Plastic, Automotive OEM, Aerospace, Military, Release Agent

Typical Fluid Flow Specification:

Small to Medium scale application Air Cap 200 - 300 ml/min

Viscosity Range Sprayed:

16 to 35 sec Din 4

Fluid Supply:

Pressure Feed

Original design specification: Solvent-based & water-based coatings

Small to medium production 2 to 4 bar dynamic inlet pressure

Materials of Construction Electroless Nickel Plated Brass Air Cap and Retaining Ring

Part Number: AGMDPRO-102-TE40C Certified Air Cap and retaining ring

Notes:

AGMDPRO-102-TE40-T Test Air Cap also available

TE40SC



Used on Gun AGMDPRO Pressure Feed Automatic Spray Gun Type:

Used Over Fluid Nozzles:		Fluid Needle Construction
PRO-205-05	AGMDPRO-301-05-07	Stainless Steel

#TE40SC Air Cap:

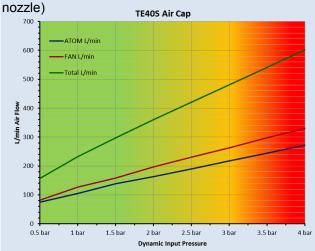
Type:

TRANS-TECH

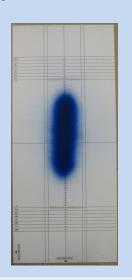
Trans-Tech Compliant External Mix

Air Consumption Graph

(measured using GTI Pro Lite gun with 1.4mm fluid



Spray Pattern



Pattern Shape:

Straight sides/rounded ends

Design Target Distance: 200mm (8")

Approximate Fan Size: 230mm long x 60mm wide @ 110 ml/min using 30 sec Din 4 @ 200mm (8") target distance

Typical Applications:

Automotive Tier 1 Supply Chain

Typical Fluid Flow Specification:

Small scale application Air Cap 100 - 300 ml/min

Viscosity Range Sprayed:

15 to 45 sec Din 4

Fluid Supply:

Pressure Feed

Original design specification: Solvent-based & water-based coatings

Small to medium production 2 to 4 bar dynamic inlet pressure

Materials of Construction Electroless Nickel Plated Brass Air Cap

Anodized Aluminium Retaining Ring

Part Number: AGMDPRO-102-TE40SC Certified Air Cap and retaining ring

Notes:

*AGMDPRO-102-TE40-T Test Air Cap also available

TE50C



Used on Gun Type:

AGMDPRO Pressure Feed Automatic Spray Gun

Used Over Fluid Nozzles:	AGMDPRO Fluid Needle	Fluid Needle Construction
PRO-250-085	AGMDPRO-301-085-10	Stainless Steel
	AGMDPRO-301P-085-10	Plastic Tip
PRO-250-10	AGMDPRO-301-085-10	Stainless Steel
	AGMDPRO-301P-085-10	Plastic Tip
PRO-250-12	AGMDPRO-301-12-14	Stainless Steel
	AGMDPRO-301P-12-14	Plastic Tip
PRO-250-14	AGMDPRO-301-12-14	Stainless Steel
	AGMDPRO-301P-12-14	Plastic Tip

#TE50 Air Cap:

Type:

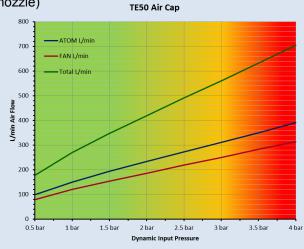
TRANS-TECH

Trans-Tech Compliant External Mix

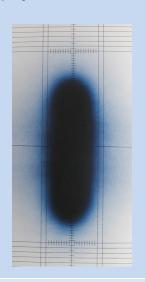
Air Consumption Graph

(measured using GTI Pro Lite gun with 1.4mm fluid nozzle)

TESO Air Cap



Spray Pattern



Pattern Shape:

Straight sides/tapered ends

Design Target Distance: 200mm (8")

Approximate Fan Size: 350mm long x 85mm wide @ 480 ml/min using 30 sec Din 4 @ 200mm (8") target distance

420mm long x 120mm wide @ 480 ml/min using 30 sec Din 4 @ 300mm (10") target distance

Typical Applications:

General Industrial, Automotive OEM, Metal, Adhesive, Plastic, Aerospace, Military

Typical Fluid Flow Specification:

Medium to high scale application Air Cap. 250 – 400 ml/min

Viscosity Range Sprayed:

20 to 45 sec Din 4

Fluid Supply:

Pressure Feed

Original design specification:

Water-based coatings
Medium to high production
2 to 4 bar dynamic inlet pressure

Materials of Construction

Electroless Nickel Plated Brass Air Construction

Electroless Nickel Plated Brass Air Cap
Anodized Aluminium Retaining Ring

Part Number: AGMDPRO-102-TE50C Certified Air Cap and retaining ring

Notes:

AGMDPRO-102-TE50-T Test Air Cap also available

TE40R



Used on Gun Type:

AGMDPRO Pressure Feed Automatic Spray Gun

Used Over Fluid Nozzles:	AGMDPRO Fluid Needle	Fluid Needle Construction
PRO-205-05*	AGMDPRO-301-05-07	Stainless Steel
PRO-205-10	AGMDPRO-301-085-10	Stainless Steel
	AGMDPRO-301P-085-10	Plastic Tip
PRO-205-16*	AGMDPRO-301-16-18	Stainless Steel
PRO-205-18*	AGMDPRO-301-16-18	Stainless Steel

#TE40R Air Cap:

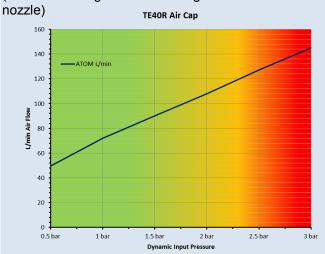
Type:

TRANS-TECH

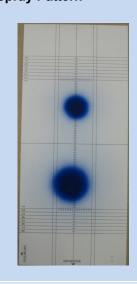
Trans-Tech Compliant External Mix

Air Consumption Graph

(measured using GTI Pro Lite P gun with 1.4mm fluid



Spray Pattern



Pattern Shape:

Round

Design Target Distance: 200mm (8")

Approximate Fan Size: 70mm dia @ 240 ml/min using 30 sec Din 4 @ 200mm (8") target distance

95mm dia @ 240 ml/min using 30 sec Din 4 @ 300mm (10") target distance

Typical Applications:

Automotive OEM and Tier 1 Supply Chain

Typical Fluid Flow Specification:

Small scale application Air Cap. 100 – 250 ml/min

Viscosity Range Sprayed:

15 to 45 sec Din 4

Fluid Supply:

Pressure Feed

Original design specification: Solvent based anti-corrosion coatings.

Small to medium production. 2 to 4 bar dynamic inlet Pressure.

Materials of Construction Electroless Nickel Plated Brass Air Cap

Anodized Aluminium Retaining Ring

Part Number: PRO-102-R40 Air Cap and retaining ring

Notes:

* Currently untested with this set-up

A Guide to Spray Technology

Conventional, HVLP and Trans-Tech (High Efficiency) are all members of the Air Atomisation family, but each technology has slightly different operating parameters. Here is a very quick explanation of the various technologies involved.



Conventional Air Atomising



This was the most established method of air atomizing used on spray guns prior to the introduction of

Environmental Legislation. It uses high velocity air jets to produce a very high atomization power. However this air speed results in a lower Transfer Efficiency due to the considerable overspray, 'bounce-back' or 'spray fog' caused. Air Pressure inside the Air Cap during use is typically 2 to 4 bar (30 to 60 psi) with an air volume consumption of 170 to 700 L/min (6 to 25 cfm). With the introduction of Environmental Legislation governing atomization and transfer efficiency, Conventional technologies are being superseded by the more advance solutions of HVLP and Transtec.

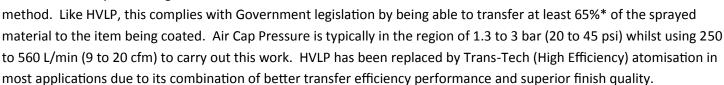
High Volume Low Pressure (HVLP)

Although not a new technology, this method first became important in the early 1990's when Environmental Legislation started to be introduced. It uses larger air volumes (300 to 840 L/min or 11 to 30 cfm) at low pressure to atomize the coating. It has a much higher Transfer Efficiency than conventional Air Atomization due to the lower pressure air and decreased overspray. However, the droplet sizes produced tend to be slightly

larger, sometimes resulting in a lower quality finish. Officially, HVLP is limited by Government Environmental Legislation to a maximum of 0.7 bar (10psi) atomizing pressure.

Trans-Tech (High Efficiency)

This equipment type was first seen in the mid 1990's and is a mixture of Conventional and HVLP atomization methods. Trans-Tech or High Efficiency air caps makes more energy available for the atomization process but gives a higher transfer efficiency of coating material than the conventional air atomization









^{* (}BSEN 13966 Determination of Transfer Efficiency of atomizing and spraying equipment for liquid coating materials).

Spray Pattern Faults and Troubleshooting



Split Spray Pattern

A C E H J



Split Spray Pattern

A C E H J



Burst Pattern F K



Banana L M



Centre Heavy

B D F I K

Μ.

Fluid Nozzle hole or front face partially blocked or damaged



Centre Heavy

FG



One end heavy

L M

Fault Possible solution A. Horn Air Pressure too high Decrease using control knob В. Horn air Pressure too low Increase using control knob or regulator Pressure Air Input Pressure to gun too high Decrease regulator Pressure Air Input Pressure to gun too low Increase Fluid flow too low Increase fluid flow – larger Nozzle or increase Pressure F. Fluid flow too high Decrease fluid flow - smaller Nozzle decrease Pressure Decrease fluid flow or increase Fluid Nozzle size Fluid flow too high for Fluid Nozzle size used Fluid Viscosity too low for air Pressure used Increase viscosity or decrease air Pressure Н. Fluid Viscosity too high Decrease viscosity or increase air Pressure J. Wrong Air Cap selected – lower fluid flow version required Select alternative Air Cap K. Wrong Air Cap Selected – Higher fluid flow version required Select alternative Air Cap L. Hole in Air Cap partially blocked or damaged Clean or replace Air Cap

Clean or replace Fluid Nozzle











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