

# DEVILBISS

Compact  
by DEVILBISS

SB-E-2-534 ISS.06

CE Ex II 2 G X

## Operation Manual

Advanced - Conventional Gravity  
Feed Spraygun



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P 1 - 12

## Operation Manual COMPACT – Gravity Feed Spraygun

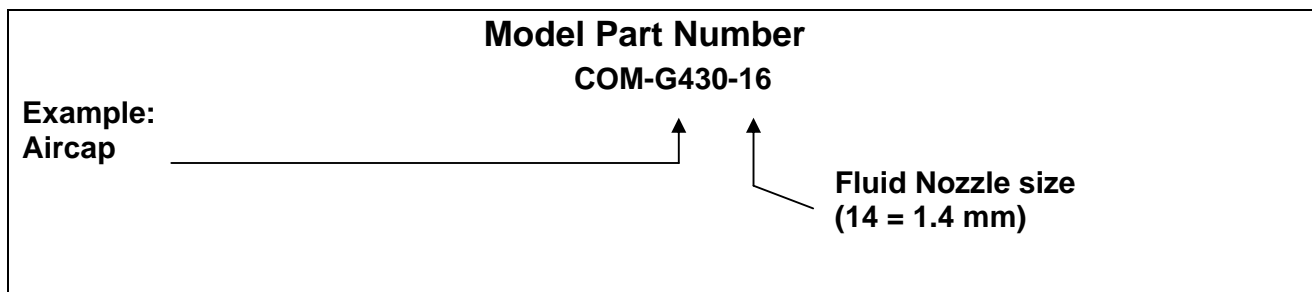
### Important

Read and follow all instructions and Safety Precautions before using this equipment

### Description

The Compact Gravity feed Spraygun Kit complies to ATEX regulations **94/9/EC**, protection level;  
**II 2 G X, Suitable for use in Zones 1 and 2**

**Important:** : *These Sprayguns are suitable for use with solvent based materials. These guns are not designed for use with highly corrosive and/or abrasive materials and if used with such materials it must be expected that the need for cleaning and/or replacement of parts will be increased. If there is any doubt regarding the suitability of a specific material contact your local Distributor or ITW Finishing direct.*



### EC Declaration of Conformity

We, **ITW Finishing UK, Ringwood Rd, Bournemouth, Dorset, BH11 9LH, UK**, as the manufacturer of the **Spray gun model Compact**, declare, under our sole responsibility, that the equipment to which this document relates is in conformity with the following standards or other normative documents:

**BS EN 292-1 PARTS 1 & 2: 1991, BS EN 1953: 1999**; and thereby conform to the protection requirements of Council Directive **98/37/EEC** relating to **Machinery Safety Directive**, and: **EN 13463-1:2001**, council Directive **94/9/EC** relating to **Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres protection level II 2 G X**.

For HVLP and Trans-Tech Aircaps these products comply with the requirements of the EPA guidelines, PG6/34, PG6/20 and PG6/23 achieving transfer efficiency in excess of 65%.

**B. Holt**, General Manager  
30<sup>th</sup> June 2003



ITW Finishing Systems and Products reserve the right to modify equipment specification without prior notice.

## SAFETY WARNINGS

### Fire and explosion

Solvents and coating materials can be highly flammable or combustible when sprayed. **ALWAYS refer to the coating material suppliers instructions and COSHH sheets before using this equipment.**



Users must comply with all local and national codes of practice and insurance company requirements governing ventilation, fire precautions, operation and house-keeping of working areas.



**This equipment, as supplied, is NOT suitable for use with Halogenated Hydrocarbons.**



Static electricity can be generated by fluid and/or air passing through hoses, by the spraying process and by cleaning non-conductive parts with cloths. To prevent ignition sources from static discharges, earth continuity must be maintained to the spray gun and other metallic equipment used. It is essential to use conductive air and/or fluid hoses.



### Personal Protective Equipment



*Toxic vapours – When sprayed, certain materials may be poisonous, create irritation or be otherwise harmful to health. Always read all labels, safety data sheets and follow any recommendations for the material before spraying. **If in doubt, contact your material supplier.***



The use of respiratory protective equipment is recommended at all times. The type of equipment must be compatible with the material being sprayed.



Always wear eye protection when spraying or cleaning the spray gun.



Gloves must be worn when spraying or cleaning the equipment.



**T**raini**ng** – Personnel should be given adequate training in the safe use of spraying equipment.

### Misuse

Never aim a spray gun at any part of the body.

Never exceed the max. recommended safe working pressure for the equipment.

The fitting of non-recommended or non-original spares may create hazards.

Before cleaning or maintenance, all pressure must be isolated and relieved from the equipment.

The product should be cleaned using a gun-washing machine. However, this equipment should not be left inside gun-washing machines for prolonged periods of time.

### Noise Levels

The A-weighted sound level of spray guns may exceed 85 dB (A) depending on the set-up being used. Details of actual noise levels are available on request. It is recommended that ear protection is worn at all times when spraying.



### Operating

Spray equipment using high pressures may be subject to recoil forces. Under certain circumstances, such forces could result in repetitive strain injury to the operator.

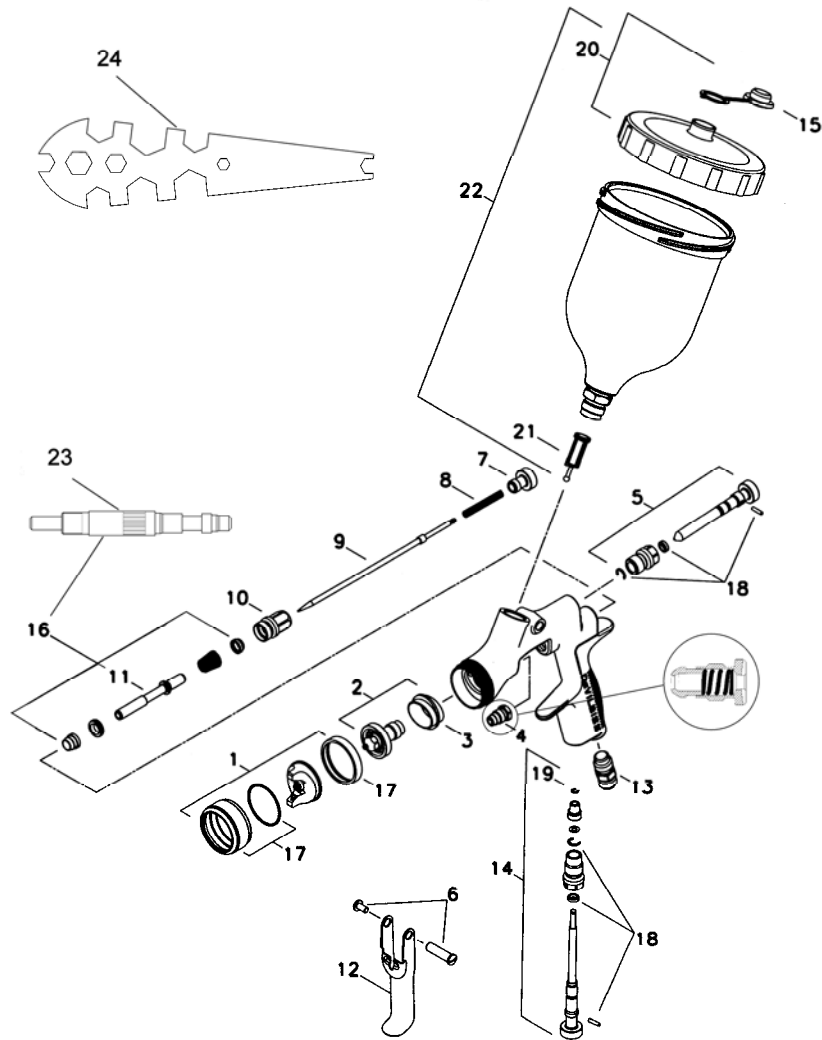
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## Parts List

	Ref. No	Description	Part Number	Qty	Options
	1	Air Cap/Retaining ring	See Selection Chart		
	2	Nozzle	See Selection Chart		
*+	3	Separator	SP-626-K5	5	
*+	4	Packing	GTI-445-K2	2	
	5	Spreader Valve	SP-403-K	1	
	6	Stud and Screw	GTI-408-K5	5	
	7	Needle Adjusting Screw	SP-614-K	1	
*+	8	Spring	SP-622-K5	1	
+	9	Needle	See Selection Chart		
	10	Airvalve housing + seal	SP-612-K	1	
*+	11	Spindle		1	
	12	Trigger	SP-617-K	1	
	13	Connector	SP-611-K	1	
	14	Airflow Valve	SP-402-K	1	
	15	Drip Check Lid kit of 5	GFC-2-K5	1	
+	16	Air Valve Service Kit	SPK-101-K	1	
	17	Retaining Ring and Seals	SPK-102-K	1	
*+	18	Spreader/ Cheater Service Kit	GTI-428-K5	5	
	19	Circlip	25746-007-K5	5	
+	20	Cup Lid	GFC-501	1	
	21	Filter	KGP-5	1	
	22	1/2 Ltr Gravity Cup Kit	GFC-501		
*	23	Air Valve assembly Tool			
	24	Spanner	SPN-5		
		Spraygun Service Kit (parts included marked + )	SPK-401-**	1	,13,14, 16,18,20,22 e.g ** =14 =1.4 mm
		Spraygun Service Kit (parts included marked * )	SPK-402-**	1	,13,14, 16,18,20,22 e.g ** =14 =1.4 mm

## CHART : AIR CAPS / NOZZLES AND NEEDLE COMBINATIONS

		AIR CAP/ RETAINING RING SP-100-***- K      e.g *** = 430				
		CONVENTIONAL		HVLP	TRANS -TECH	
		430,497,443,	470	505	510,522,523,513,	590
<b>Nozzle</b>	SP-200S-**-K e.g ** =14 =1.4mm	085,10,12,13,14, 16,18,20,22		085,10,12,13,14, 16,18,20,22	085,10,12,13, 14,16,18,20,22	
<b>Needle</b>	SP-300S-**-K e.g ** =14 =1.4mm	085,10,12,13,14,16, 18,20,22,28		085,10,12,13, 14,16,18,20,22	085,10,12,13, 14,16,18,20,22	05,07,10
<b>Needle Plastic tipped</b>	SP-300P-**-K e.g ** =14 =1.4mm	10, 12, 14		10, 12, 14	10, 12, 14	10
<b>Nozzle Hardened</b>	SP-200N-**-K e.g ** =14 =1.4mm	14,18, 22		14,18, 22	14,18, 22	
<b>Nozzle Hardened ( Air Cap 470 only)</b>	SP-247N-**-K e.g ** =22 =2.2mm		22,28			
<b>Needle Hardened</b>	SP-300N-**-K e.g ** =14 =1.4mm	14,18,22	22,28	14, 18, 22	14, 18, 22	
<b>Nozzle (Air Cap 590 only)</b>	SP-259S-**-K e.g ** =10 =1.0mm					05,07,10
<b>Nozzle ( Air Cap 470 only)</b>	SP-247S-**-K e.g ** =22 =2.2mm		22,28			



## Specification

Air supply connection -	Universal 1/4" BSP and NPS
Maximum static Air inlet pressure -	$P_1 = 12 \text{ bar (175 psi)}$
Nominal gun Air inlet pressure - with gun triggered	3 bar (44 psi)
Maximum Service temperature	40°C
Gun Weight -	583 g
<b>Materials of Construction</b>	
Gun body	Aluminium
Nozzle	Stainless Steel
Needle	Stainless Steel
Fluid Inlet / Fluid Passages	Stainless Steel / PTFE
Trigger	Nickel Plated Steel
Cup	Acetal (Anti-static)
Cup Lid	Acetal (Anti-static)

## Installation

**Important:** To ensure that this equipment reaches you in first class condition, protective coatings have been used. **Flush the equipment through with a suitable solvent before use.**

1. Attach air hose to connector (13). Recommended hose size 8 mm bore. The hose must be conductive and electrical bond from the spraygun to earth should be checked with an ohm meter. A resistance of less than  $10^6$  Ohms is recommended.
2. Air supply should be filtered and regulated.
3. Attach Cup assembly (22) by screwing into the Fluid Inlet of the spraygun. Tighen when fully home.

## Operation

1. Mix coating material to manufacturers instructions.
2. Fill the cup with the required amount of material. Fill to no more than 25mm (1") from the top of the cup. **DO NOT OVERFILL.**
3. Attach Cup Lid.
4. Turn needle adjusting screw (7) clockwise to prevent movement.
5. Turn spreader valve (5) counter-clockwise to fully open.
6. Adjust inlet air pressure to give 3 bar (44 psi) at the gun inlet with the gun triggered. (*pressure gauge attachment shown under Accessories is recommended for this*).
7. Turn needle adjusting screw counter clockwise until first thread shows.
8. Test spray. If the finish is too dry reduce airflow by reducing air inlet pressure or by the Airflow Valve (14). Screw the Adjusting Knob (14) in to reduce pressure.
9. If finish is too wet reduce fluid flow by turning needle screw (7) clockwise. If atomisation is too coarse, increase inlet air pressure. If too fine reduce inlet pressure.
10. The pattern size can be reduced by turning adjusting valve (5) clockwise.
11. Hold gun perpendicular to surface being sprayed. Arcing or tilting may result in uneven coating.
12. The recommended spray distance is 150-200 mm (6"-8").
13. Spray edges first. Overlap each stroke a minimum of 50%. Move gun at a constant speed.
14. Always turn off air supply and relieve pressure when gun is not in use.

## Preventative Maintenance

1. Turn off air and relieve pressure in the supply lines, or if using QD system, disconnect from airline.
2. Remove Cup Lid (20) and empty coating material into a suitable container. Clean the gun and cup, preferably in a gun wash machine. Clean the cup.
3. Check the breather hole in the Lid and the Drip Check Lid is not blocked.
4. Remove air cap (1) and clean. If any of the holes in the cap are blocked with coating material use a toothpick to clean. Never use metal wire which could damage the cap and produce distorted spray patterns
5. Ensure the tip of the nozzle (2) is clean and free from damage. Build up of dried paint can distort the spray pattern.
6. Lubrication – stud/screw (6), needle (9) and air valve (11) should be oiled each day.

## Replacement of Parts

**Nozzle (2) and Needle (9)** – Remove parts in the following order: 7, 8, 9, 1 and 2. Replace any worn or damaged parts and re-assemble in reverse order. Recommended tightening torque for nozzle (2) 9.5-12 Nm (80-100 lbf in).

**Packing** – Remove parts 7, 8, 9. Unscrew cartridge (4). Fit new cartridge finger tight. Re-assemble parts 9, 8, and 7 and tighten cartridge (4) with spanner sufficient to seal but to allow free movement of needle. Lubricate with gun oil.

### **Air Valve Seal Kit (16) - (Refer to photos 1 to 28 and fig 2)**

1. Remove Adjusting Knob (7), Spring (8), and Needle (9).
2. Loosen Housing (10).
3. Remove Housing (10) and Airvalve Spring.
4. Remove Valve (11).
5. Using Service Tool SPN-7, engage groove behind the Valve Seat.
6. Remove Valve Seat.
7. Push out the Front Airvalve Seal with a finger.
8. Turn the Gun upside down and let the Seal fall out.
9. Fit New Front Seal to Service Tool.
10. Fit new Seal to gunbody and press firmly to ensure Seal is engaged.
11. Fit New Valve Seat to Service Tool. Groove must face outwards.
12. Fit Valve Seat to Gunbody.
13. Remove Rear Airvalve Seal from housing (10) with a hooked instrument.
14. Fit new Seal to Service Tool.
15. Fit Seal to Housing (10).
16. Replace Valve (11).
17. Replace Valve Spring and screw in Housing (10).
18. Tighten Housing.
19. Fit Needle (9).
20. Fit Spring (8) and Knob (7).
21. Adjust Needle Packing (4) with Spanner sufficient to seal but to allow free movement of needle. Lubricate with gun oil.

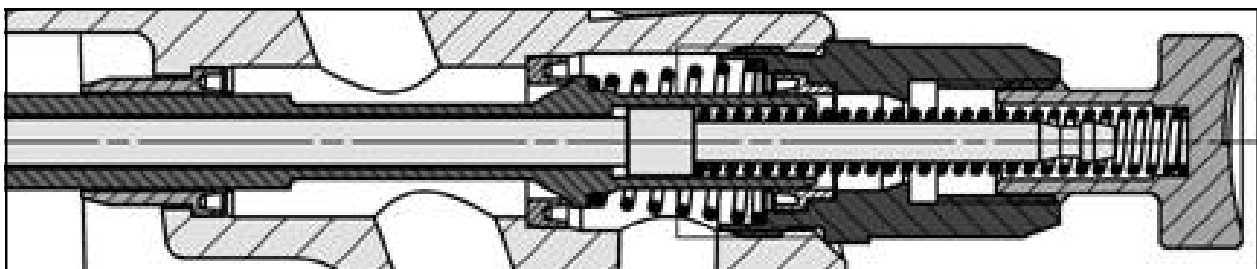
**Spreader valve (5)** – **Caution:** always ensure that the valve is in the fully open position by turning screw fully counter-clockwise before fitting to body.

### **Air cap / Nozzle Selection**

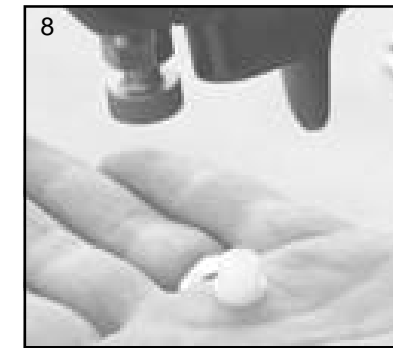
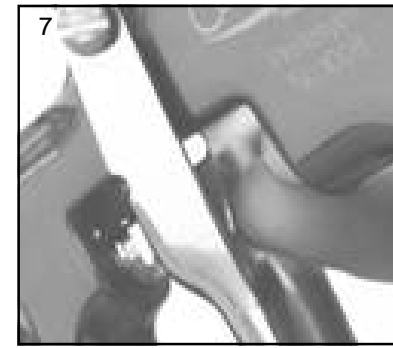
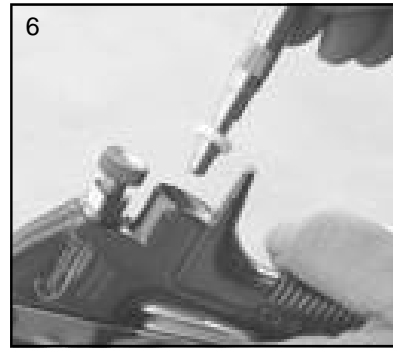
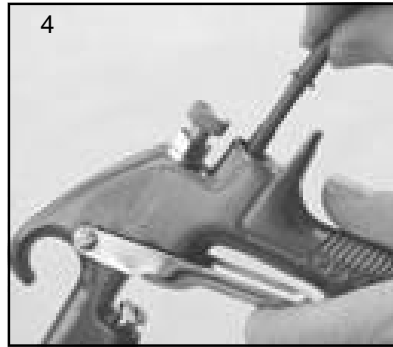
Refer to coating material manufacturers recommendations or ITW Finishing UK Website:

[www.itweuropeanfinishing.com](http://www.itweuropeanfinishing.com)

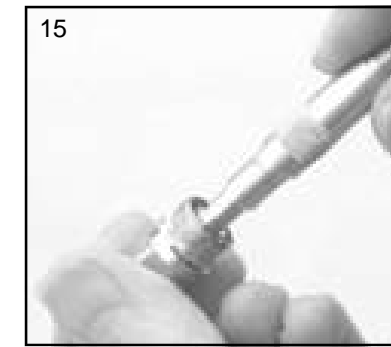
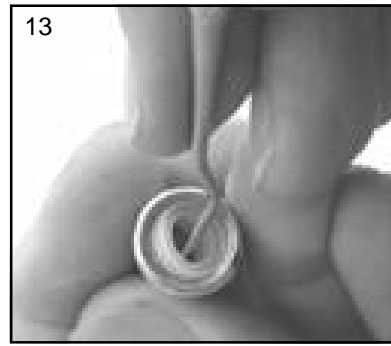
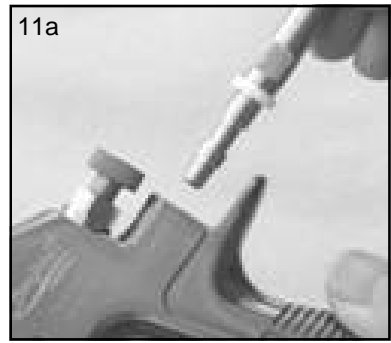
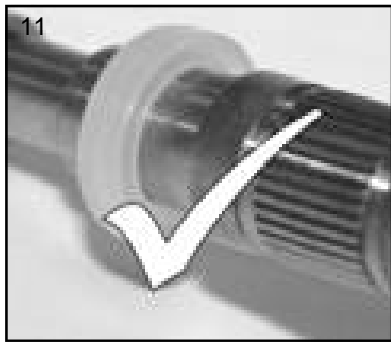
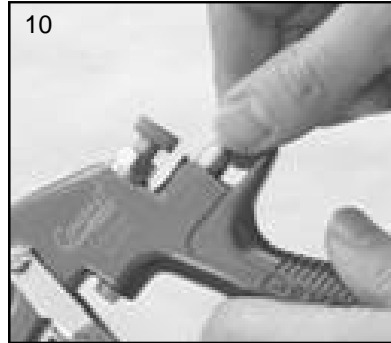
FIG 2

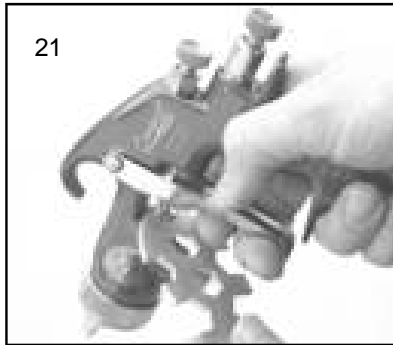
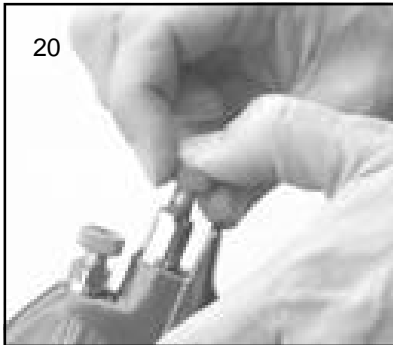
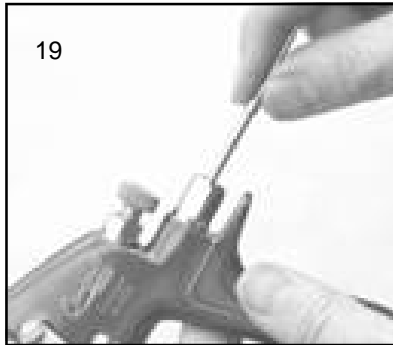
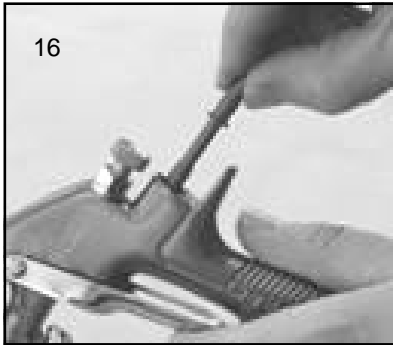






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## Accessories

**Spanner** – order SPN-5

**Cleaning Brush** – order 4900-5-1-K3

**Regulator/Gauge Attachment** - order HAV-501-B or DGI-501-BAR

**Pressure gauge Attachment** – order GA-515

**Gun Mounted Regulator** – order DVR-501

**Spraygun Lubricant** - order GL-1-K10

### **BINKS** DVP 1:1 RATIO DIAPHRAGM PUMP PACKAGES



- Rapid delivery of up to 17 litres per minute (max)
- Even material flow at up to 60 cycles/minute
- Economic air consumption at pressures up to 7 bar (100 psi)
- Corrosion resistant models for ceramic/abrasive materials
- Functions as a material transfer or delivery pump
- Choice of pail, wall, tripod or cart mounted outfits
- ATEX/CE approved.

### **PRESSURE FEED TANKS & CUPS**

- Sizes to suit all applications
- 10, 40 & 60 litre capacity tanks complete with nylon inner container for easy colour changes and cleaning
- Stainless steel and mild steel options
- Compatible with your standard gun and hose connections
- Remote pressure cups – aluminium and stainless steel options
- 2 litre capacity
- ATEX/CE approved.



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[www.itwifeuro.com](http://www.itwifeuro.com)

ITW Finishing Systems and Products  
Ringwood Road,  
Bournemouth,  
BH11 9LH,  
Angleterre  
Tél. : +44 (0)1202 571111  
Fax : +44 (0)1202 581940  
Site web : <http://www.itweuropeanfinishing.com>

ITW Automotive Finishing UK  
Anchorbrook Industrial Estate  
Lockside  
Aldridge,  
Walsall,  
Royaume-Uni  
Tél. : +44 (0)1922 423700  
Fax : +44 (0)1922 423705  
Site web :  
<http://www.itweuropeanfinishing.com>

ITW Finishing Systems and Products is a Division of ITW Ltd. Reg. Office:  
Admiral House,  
St Leonard's Road,  
Windsor,  
Berkshire,  
SL4 3BL,  
UK  
Registered in England: No 559693 Vat No 619 5461 24