

## Operation Manual

### SRI – Gravity Spray Gun





# DEVILBISS



## Operation Manual

Devilbiss SRi – Gravity Spray Gun

**Important**

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

## Description

The Devilbiss SRi is a small gravity-fed spray gun designed for spraying spot repairs and small areas. It is approved to ATEX regulations 94/9/EC, protection level;

**II 2 G X. Suitable for use in Zones 1 and 2**

**Important:** *These spray guns are suitable for use with both water-based and solvent-based coating materials. The design uses EPA compliant atomising (Devilbiss Trans-Tech®) technology to reduce overspray and improve coating efficiency. Nozzles and needles are manufactured in stainless steel. 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.*

Example:

**Model Part No.**  
**SRI-G210B-08**

Air Cap No.

Fluid Nozzle Size  
(08 = 0,8 mm)

## EC Declaration of Conformity

We, ITW Finishing UK, Ringwood Rd, Bournemouth, Dorset, BH11 9LH, UK, as the manufacturer of the **Spray gun model SRi**, 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 **98/392/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**.

This product also complies with the requirements of the EPA guidelines, PG6/34.

Transfer efficiency certificates are available on request.

**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.

**Training** – 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

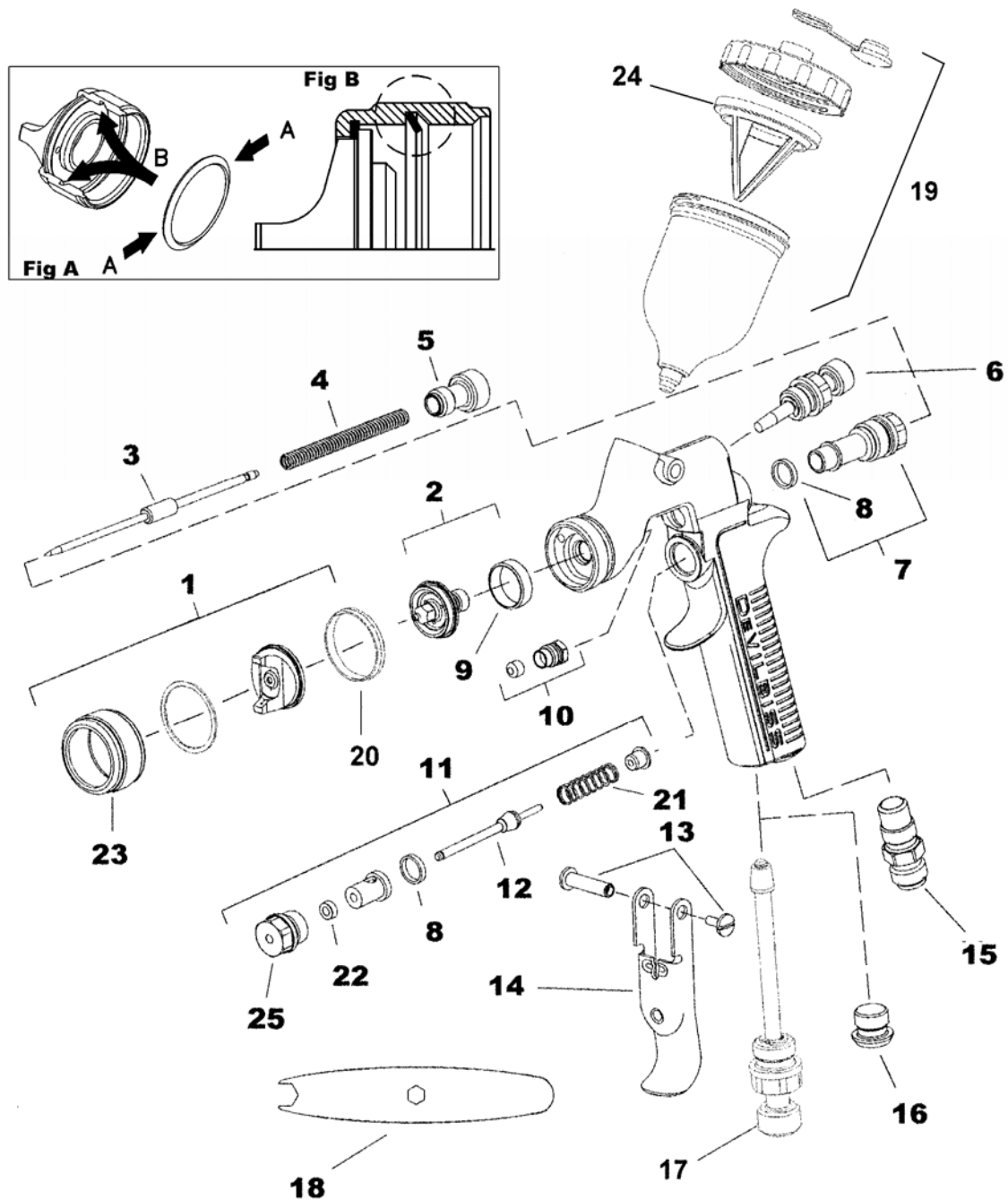
Spray equipment using high pressures may be subject to recoil forces. Under certain circumstances, such forces could result in repetitive strain injury to the operator.

## Parts List

Ref. No	Description	Part Number	Qty
1	Air cap/Retaining ring HVLP	SRI-407-205	1
	Air cap/Retaining ring compliant	SRI-407-210	1
+2	Nozzle 0.7 mm seal	SRI-2-07-K	1
	Nozzle 0.8 mm seal	SRI-2-08-K	1
	Nozzle 1.0 mm seal	SRI-2-10-K	1
	Nozzle 1.2 mm seal	SRI-2-12-K	1
+3	Needle for 1.0 and 1.2 mm nozzle	SRI-3-K	1
	Needle for 0.7 and 0.8 mm nozzle	SRI-37-K	1
*4	Needle spring	SRI-18-K2	1
5	Needle adjusting knob	SRI-19-K2	1
6	Spreader valve	SRI-401-K	1
7	Body bushing and seal kit	SRI-17-K	1
*8	Seal	SRI-16-K5	1
*9	Separator	SRI-6-K5	1
*10	Needle packing – Kit of 3	SRI-411-K3	1
11	Air-valve assembly	SRI-404-K	1
12	Air-valve stem assembly	-	1
13	Trigger stud and screw kit	SRI-412-K	1
14	Trigger	SRI-9-K	1
15	Air inlet adaptor	SRI-20-K	1
16	Blanking plug (to replace air flow valve)	SRI-21	1
17	Air flow valve	SRI-402-K	1
*18	Spanner	SRI-50-K2	1
19	Cup and lid	SRI-510	1
*20	Air cap seal	SRI-35-K5	1
*21	Air-valve spring	SRI-23-K2	1
*22	Air-valve seal	-	1
23	Retaining ring	-	1
24	Filter – Kit of 3	SRI-42-K3	1
25	Air-valve body	-	1

Parts marked with \* are contained in the service kit  
+

SRI-416  
SRI-440-07



Patent No 2372465 (GB)

## Specification

Air supply connection -	Universal ¼" BSP and NPS (M)
Maximum static air inlet pressure -	P1 = 9 bar (130 psi)
Nominal gun air inlet pressure with gun triggered -	2 bar (29 psi)
Gun weight (with cup and lid) -	390 g
Maximum service temperature -	40°C

## Materials of Construction for Wetted Parts

Gun body	-	Anodised aluminium
Nozzle	-	Stainless steel
Needle	-	Stainless steel
Cup	-	Anti-static acetal
Cup lid	-	Anti-static acetal

## Installation

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

1. Attach air hose to connector (15). Recommended hose size 8 mm bore. The hose must be conductive and electrical bond from the spray gun to earth should be checked with an ohmmeter. A resistance of less than  $10^6\Omega$  is recommended.
2. Air supply should be filtered and regulated.

## Operation

1. Mix coating material to manufacturers instructions.
2. Screw cup (19) to gun. Do not over tighten.
3. Place the filter (24) in the cup and fill to required level with paint, or use funnel (SRI-17) and use paper filter. Screw on lid.
4. Turn needle adjusting screw (5) fully clockwise to shut off fluid (for setting up air supply pressure). Turn spreader valve (6) counter-clockwise to fully open.
5. Attach air supply to gun and adjust inlet air pressure up to 2 bar (29psi) at the gun inlet with the gun triggered. (pressure gauge attachments shown under Accessories are recommended for this).
6. Turn needle adjusting screw anti-clockwise 2 turns to find the mid position.
7. Test spray. If the finish is too dry, reduce air flow by reducing inlet pressure. If finish is too wet, reduce fluid flow by turning needle screw (5) clockwise. If atomisation is too coarse, increase inlet air pressure. If too fine, reduce inlet pressure.
8. The pattern size can be reduced by turning spreader valve (6) clockwise.
9. Hold gun perpendicular to surface being sprayed. Arcing or tilting may result in uneven coating.
10. The recommended spray distance is 75-150 mm (3"-6").
11. Spray edges first. Overlap each stroke a minimum of 50%. Move gun at a constant speed.
12. Always turn off air supply and relieve pressure when gun is not in use.

### Air Flow Valve (17)

1. The air flow valve (17) is fitted to reduce the inlet pressure through the gun. Screw the adjusting knob clockwise to reduce pressure.

## Preventative Maintenance

1. Turn off air supply and relieve pressure in the airline or, if using QD system, disconnect from airline.
2. Empty coating material into a suitable container and clean the gun and cup, preferably in a gun wash machine.
3. **IMPORTANT– the cup must not be cleaned or rubbed with a dry cloth or paper. It is possible to generate a static charge by rubbing which, if discharged to an earthed object, could create an incendive spark and cause solvent vapours to ignite. Only use a dampened cloth or antistatic wipes if additional cleaning is required within a hazardous area.**
4. Remove air cap 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 is clean and free from damage. Build-up of dried paint can distort the spray pattern.
6. Lubrication – stud/screw (12/13), needle (3) and air-valve (11) should be oiled each day.

## Replacement of Parts

**Spanner (18)** – The spanner is provided for removal of the nozzle (2) with the centre hex and the adjustment of the needle packing (10) with the open end.

**Air cap (1)** – Unscrew air cap from the spray gun. Remove seal (20). Remove air cap from the retaining ring (23). Clean air cap and ring. Re-assemble air cap to retaining ring (23). Fit new seal (20) as in Fig A on exploded view, by lightly squeezing and inserting into the ring. Make sure the seal is fitted the correct way round as in Fig B.

**Nozzle (2) and needle (3)** – Remove parts in the following order: (5), (4), (3), (1), (2) and (9). Replace any worn or damaged parts and re-assemble in reverse order. It is recommended that the separator (9) is replaced whenever the tip (2) is removed. Recommended tightening torque for nozzle (2) 9 Nm (80 lbf in).

**Packing (10)** – Remove parts (5), (4), (3). Unscrew cartridge (10). Fit new cartridge finger tight. Re-assemble parts (3), (4), and (5) and tighten cartridge (10) with spanner (18) sufficient to seal but to allow free movement of needle. Lubricate with gun oil.

**Air-valve (11)** – Remove trigger (14). Remove body (25) and withdraw complete valve. Remove rear bush, spring and stem assembly. Remove the air-valve cage from the valve body and remove seal (22). Replace new seal (22), making sure the seal is correctly fitted with the lip facing inwards. Remove old seal (8) from body if left in place. Place new seal (8) on the cage before replacement of the valve assembly. Slide stem assembly (12) into the cage assembly, fit the spring (21) on the valve head and fit collar. Fit complete assembly to gun body.

**Spreader valve (6) – 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)

## Accessories

**Air cap, tip and needle set** – SRi-450-\*\*\*-\*\* (\*\* = Air cap No, \*\* = Tip size)

**Spanner** – SRi-50-K2

**Cleaning brush** – SRi-65-K2

**Service kit** – SRi-416

**Gun-mounted regulator with mini QD** – HAV-601

**Lubricant** – GL-1-K10

**SRi-478-K3** Black cup and lid set (3 sets) – suitable for use with UV curing paints.

**SRi-51-K12** Funnel kit of 12

**SRi-100** – Gun Carry tray  
(Guns not included)



**SRi-42-K3**  
Filter kit of  
3



**SRi-410** – Carry case for  
up to 3 Guns, with SRi-  
100 Tray



**Roundspray air cap – SRi-407-200**

HVLP mode – Air inlet pressure = 1.2 Bar (17.5 PSI)

Tanstech mode – Air inlet pressure = 2 bar (29 PSI)

Approx spot size = Ø40mm

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