Spare parts list for Automatic Spray Guns

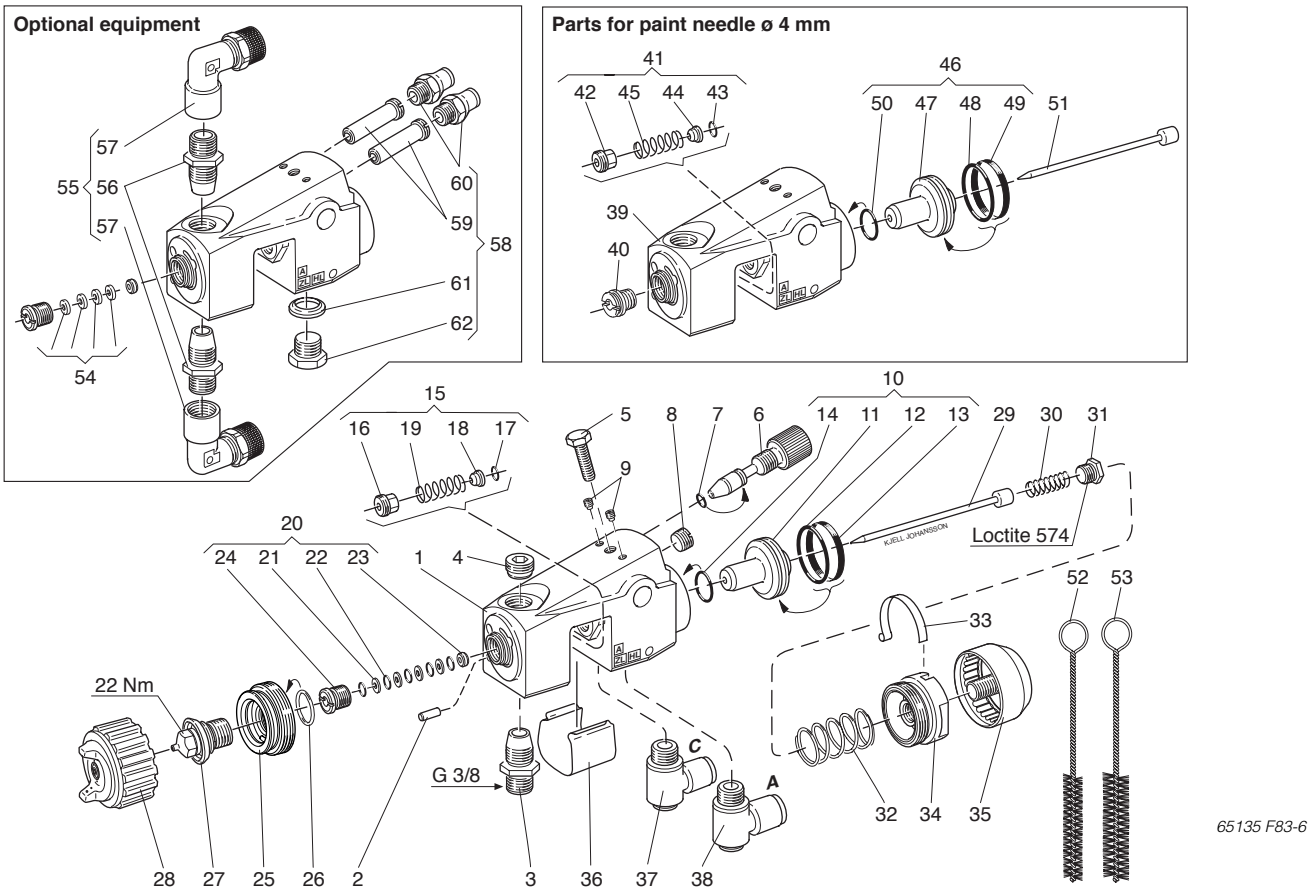
Stainless steel version

Ecco 60AS-3
Ecco 60AS-4

ECCO FINISHING
ESL 12/03-09

Ecco 60AS-3 = Paint needle diam. 3 mm.
Ecco 60AS-4 = Paint needle diam. 4 mm.

Part numbers **in bold type** designate consumption parts.



Service set for 60AS-3 6003 6572 00 Consisting of parts with ref. Nos. 7, 12, 13, 14, 17, 18, 21 (Qty 4), 22 (Qty 5), and 26.

Service set for 60AS-4 6003 6572 04 Consisting of parts with ref. Nos. 7, 26, 40, 43, 44, 48, 49 and 50.

Ref. No.	Part number	Qty 60AS -3	-4	Description
1	6004 0082 15	1	–	Body
2	0101 4131 00[b]	1	1	Pin (CP 4h6 x 10 S)
3	6101 5021 00	1	1	Nipple (M14 x 1 / G 3/8 S.S.)
4	6101 3742 00	1	1	Plug (M14 x 1)
5	0147 1323 03[a]	1	1	Screw (M6S 8 x 20 fz)
6	6003 5799 00	1	1	Control knob
7	0663 6112 00[e]	1	1	O-ring (5.1 x 1.6 70 IRH)
8	6003 9627 00[c]	1	1	Plug
9	0192 1168 00[a]	2	2	Set screw (T6SS 4 x 6)
10	6003 5796 80	1	–	Piston, compl.
11	6003 5796 00	1	–	– Piston
12	0663 2102 88[e]	1	–	– O-ring (21.82 x 3.53 FPM)
13	6003 5795 00[e]	1	–	– Glyd ring
14	0663 3118 00[e]	1	–	– O-ring (11.3 x 2.4 FPM)
15	6003 5784 81[f]	1	–	Set screw, compl.
16	6003 5784 00	1	–	– Set screw
17	0663 7110 00[e]	1	–	– O-ring (3.1 x 1.6 FPM)
18	6003 5785 00[e]	1	–	– Wiper
19	6003 5847 00[g]	1	–	– Spring (S.S.)
20	**6103 1751 80**	1	–	Packing set
21	6103 1751 00[e]	4	–	– Packing (PTFE)
22	0663 7110 00[e]	5	–	– O-ring (3.1 x 1.6 FPM)
23	6003 5783 00	1	–	– Sleeve
24	6003 5845 00	1	–	– Packing screw
25	**6102 1214 00**	1	1	Distribution ring, compl.
26	6101 1724 00[e]	1	1	– O-ring (PTFE)
27	(see page 2)	1	1	Paint nozzle
28	(see page 2)	1	1	Air cap
29	(see page 2)	1	–	Paint needle ø 3 mm
30	6003 5789 00	1	1	Spring (S.S.)
31	6003 5790 00[d]	1	1	Screw
32	6003 5794 46	1	1	Spring (S.S.)
33	6003 5791 00	1	1	Spring
34	6003 5797 00	1	1	Spring housing
35	6003 5798 15	1	1	Control knob
36	6003 5800 00	1	1	Cover
37	6003 9827 42	1	1	Elbow coupling (G 1/4-8)
38	6003 9827 52	1	1	Elbow coupling (G 1/4-10)
39	6004 0082 04	–	1	Body
40	**6103 3131 00**[e]	–	1	Packing screw(SS/HD500)
41	6003 5784 84	–	1	Set screw, compl.
42	6003 5784 00	–	1	– Set screw
43	0663 9004 12[e]	–	1	– O-ring (4.1 x 0.6 FPM)
44	6003 5785 04[e]	–	1	– Wiper
45	6003 5847 00	–	1	– Spring (S.S.)
46	6003 5796 84	–	1	Piston, compl.
47	6003 5796 00	–	1	– Piston
48	0663 2102 88[e]	–	1	– O-ring (21.82 x 3.53 FPM)
49	6003 5795 00[e]	–	1	– Glyd ring
50	0663 3118 00[e]	–	1	– O-ring (11.3 x 2.4 FPM)
51	(see page 2)	–	1	Paint needle ø 4 mm
52	6000 8004 00	1	1	Cleaning brush (ø 10 mm)
53	6000 8001 00	1	1	Cleaning brush (ø 17 mm)
	Optional equipment			
54	**6003 7035 80**	1	–	Packing set (leather)
55	6003 9670 00	1	1	Paint circulation set
56	6102 9314 46	2	2	– Nipple (M14 x 1 / G 1/4)
57	6003 9827 92[a]	2	2	– Coupling (PA ø10/8 mm)
58	6003 6691 80	1	1	Remote control set
59	6003 6691 00	2	2	– Insert
60	6003 9820 41	2	2	– Coupling (PA ø 8/6 mm)
61	**6803 2003 00**	1	1	– Sealing
62	6000 8679 00	1	1	– Plug

[a]Loctite 225 / [b]Loctite 243 / [c]Loctite 542 / [d]Loctite 574 / [e]Including in service set.
[f]6003 5784 80 for gun before 2001-12 / [g]6003 5793 00 for gun before 2001-12.

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Nozzle combinations

Paint nozzle			Paint needle				Air cap	
			Stainless steel ø 3 mm		Stainless steel ø 4 mm			
Orifice diameter mm	Stainless steel Designation	Part number	Designation	Part number	Designation ([a])	Part number	Designation ([b])	Part number
0.8	0.8	**6001 0241 00**	A001 HA001[d]	**6003 5810 00** **6003 9593 00**	A004	**6003 5786 06**	M070	**6101 3291 00**
0.8	B0.8	**6001 0966 00**	A001 HA001[d]	**6003 5810 00** **6003 9593 00**	A004	**6003 5786 06**	T272	**6101 2599 00**
1.1	1.1	**6001 1068 00**	A001 HA001[d]	**6003 5810 00** **6003 9593 00**	A004	**6003 5786 06**	T278	**6101 5614 00**
1.2	1.2	**6001 0276 00**	A01	**6003 5786 00**	A04	**6003 5786 04**	170 M170	**6101 2588 00** **6101 3292 00**
1.3 1.3	1.3 H1.3[c]	**6001 0999 00** **6001 1092 00**	A01 HA01[d]	**6003 5786 00** **6003 6563 00**	A04 HA04[d]	**6003 5786 04** **6003 6563 04**	273 275 T272	**6103 3159 00** **6101 2590 00** **6101 2599 00**
1.5 1.5	1.5 P1.5[a]	**6103 1303 00** **6102 9720 00**	A01 HA01[d]	**6003 5786 00** **6003 6563 00**	A04 HA04[d]	**6003 5786 04** **6003 6563 04**	T272 F371	**6101 2599 00** **6101 2609 00**
1.8 1.8	1.8 H1.8[c]	**6000 9140 00** **6001 0768 00**	A01 HA01[d]	**6003 5786 00** **6003 6563 00**	A04 HA04[d]	**6003 5786 04** **6003 6563 04**	270 M270 275 T272 T274	**6101 2589 00** **6101 3293 00** **6101 2590 00** **6101 2599 00** **6101 2602 00**
2.1 2.1	2.1 H2.1[c]	**6000 9141 00** **6000 9876 00**	A01 HA01[d]	**6003 5786 00** **6003 6563 00**	A04 HA04[d]	**6003 5786 04** **6003 6563 04**	375 M370 T374	**6101 2591 00** **6101 3294 00** **6101 2603 00**
2.7 2.7	2.7 H2.7[c]	**6000 9142 00** **6000 9877 00**	A01 HA01[d]	**6003 5786 00** **6003 6563 00**	A04 HA04[d]	**6003 5786 04** **6003 6563 04**	475 M470 T474	**6101 2592 00** **6101 3295 00** **6101 2604 00**

[a] The letter "P" before the designation denotes nylon design.
[b] Air caps for round spray with "M" in the designation should be used together with stop ring 6101 3298 00.
[c] The letter "H" before the figures (e.g., H1.8) denotes tungsten-carbide design.
[d] The letter "H" before the designation denotes tungsten-carbide design tip.
[e] Paint needle with cylindrical point (self-cleaning tip).

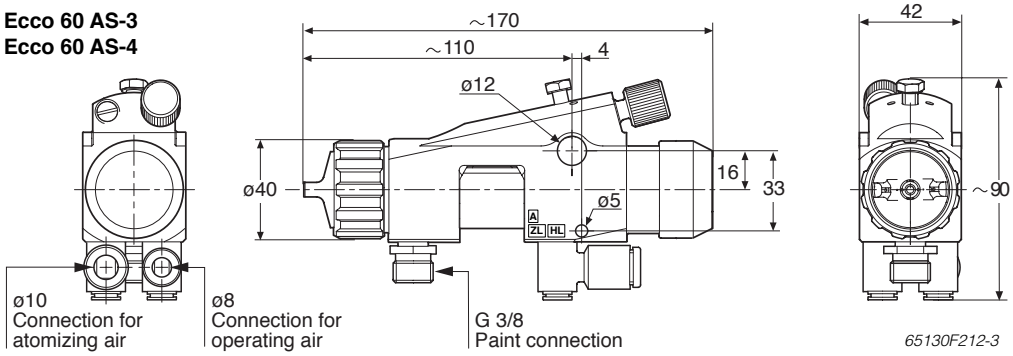
Automatic Spray guns with needle diam. 3 mm

Spray guns		Air cap	Paint nozzle		Paint needle	Air consumption
Ordering No.	Type	Type	Type	Orifice diam. mm	Stainless steel Type	l/min at 4 bar
8611 6160 62	Ecco 60AS 1.1/T278/A001	T278	1.1	1.1	A 001	470
8611 6160 63	Ecco 60AS 1.3/T272/A01	T272	1.3	1.3	A 01	480
8611 6160 67	Ecco 60AS 1.5/T272/A01	T272	1.5	1.5	A 01	480
8611 6160 68	Ecco 60AS 1.8/T272/A01	T272	1.8	1.8	A 01	480
8611 6160 69	Ecco 60AS 2.1/T374/A01	T374	2.1	2.1	A 01	510
8611 6160 70	Ecco 60AS 2.7/T474/A01	T474	2.7	2.7	A 01	510

Automatic Spray guns with needle diam. 4 mm

Spray guns		Air cap	Paint nozzle		Paint needle	Air consumption
Ordering No.	Type	Type	Tungsten-carbide Type	Orifice diam. mm	Tungsten-carbide Type	l/min at 4 bar
8611 6063 13	Ecco 60AS 1.5/T272/HA04	T272	H1.5	1.5	HA 04	480
8611 6063 18	Ecco 60AS 1.8/T272/HA04	T272	H1.8	1.8	HA 04	480
8611 6063 21	Ecco 60AS 2.1/T374/HA04	T374	H2.1	2.1	HA 04	510

Ecco 60 AS-3
Ecco 60 AS-4



Measurements in millimetres

Operator's Instructions

☐ Use Ecco genuine parts and accessories only for best function and safety.

☐ Before starting, read through **all instructions** carefully.

Principal data

Type Ecco	Max. working pressure bar	Min./Max. control air pressure bar	Atomizing air pressure bar
60AS-3	7	4/7	2-6
60AS-4	7	4/7	2-6

Important

WARNING

Do not use halogenated hydrocarbons in coating application equipment where aluminium or galvanized parts come in contact with the solvent or coating material. Halogenated hydrocarbons e.g. 1,1,1-thrichloroethane and methylene chloride react, violently with such parts, causing corrosion and danger for explosion.

WARNING

The high velocity flow of air and liquids through hoses and nozzles may develop static electricity. Be sure that the equipment, object being sprayed, spraybooth, paint and waste container are properly grounded to prevent static discharge or sparks.

WARNING

As the equipment works under pressure the utmost care must be observed during the work. Bearing this in mind, never aim the spray gun at a person or towards any part of the body In the event of personal injury caused by the spraying pressure, immediate medical attention is essential. Before carrying out any adjustment or repair, the equipment must be switched off and the paint pressure relieved.

Paint spraying

CAUTION

Inhalation of paint, paint dust and solvent is not healthy. Make sure an approved spraybooth is used. The operator must use personal protection-breathing mask or fresh air hood.

Operation

- Install and operate the spray gun according to fig. 1.
- Blow the paint and air hoses clean before connection.
- Check that all connections are tight.
- Keep the spray gun clean and lubricate moving parts at regular intervals.
- Lubricants for surface-treatment equipment must **not** contain silicon.
- In the event of leakage around the paint needle, tighten the packing screw (16 fig. 2). After tightening, check that fluid needle is pushed forward by the spring force.
- For short standstill periods, for instance over a night, it will suffice to clean the air and paint nozzles on the outside. If a two-component paint is used, however, the gun **must be flushed through immediately** with solvent. This must also be done if the gun is to remain unused for a longer period of time.
- When cleaning the air cap and the paint nozzle, use a soft brush or rag dipped in solvent. Do not place the entire gun in solvent, as the oil on the lubricated parts would be dissolved. Blow the air cap dry with compressed air from both sides.
- Never use iron or steel wire to clean air holes and ducts in the nozzles.
- When assessing the reaction time of the connected spray gun (the time from the start impulse until spraying commences) the reaction time of the control valve must be taken into consideration.
- Recommend size for control valve:
  – Control valve, 3-way, G 1/4. Min. flow area 28 mm^2. Mechanically, pneumatically or electrically actuated.

How to operate

Note:

Valve orifice inside three-way solenoid valve should be minimum ø 4 mm and also operating air hose length should be within 10 m with the inner diameter more than ø 6 mm to avoid delayed operation and any kind of failure.

Recommended paint viscosity differs according to paint properties and painting conditions. 15 to 23 sec./Ford cup 4 is recommendable.

The gun is operate at low air pressure, high transfer efficiency will not be obtained if the spray distance is to far.

Set the spray distance from the gun to the work piece as near as possible within the range of 150-300 mm.

Air caps

The air caps are tested and certified according to the SEAVA method. This gives a "finger print" of the spray pattern on each air cap. For further information please contact your supplier.

The retaining ring for the air cap shall only be tightened with hand force. No tools are required. Especially important when a cap cleaner is used.

Air caps can be sent back for checking and comparity the performance. For further interesting please contact your supplier.

Connections and controls (see fig. 1)

3 Paint hose connection.
Hose: Inside dia. 6.3 mm (1/4") or 9.5 mm (3/8").

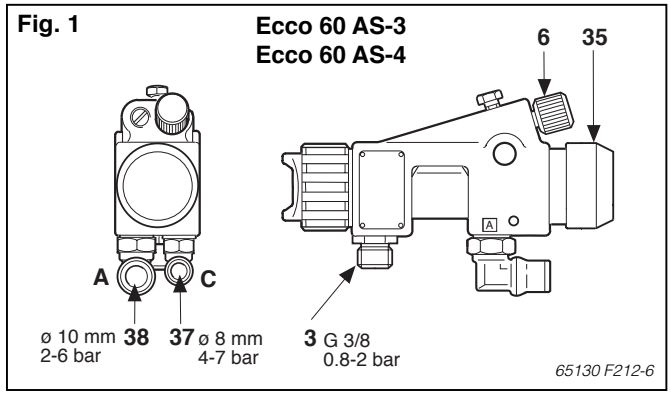
6 Fan width adjusting. If the knob is screwed all the way in a round fan will be obtained other positions give broad fans.

35 Paint flow adjusting. Clockwise turning result in a smaller paint flow and counter-clockwise turning increases the flow. The fluid flow is regulated in the first instance by the choice of paint nozzle and paint pressure.

37 **C**= Control air hose connection.
Hose: Nylon tube ø 6/8 mm, max. length 7.5 m.

38 **A**= Atomizing air hose connection.
Hose: Nylon tube ø 8/10 mm.

Fig. 1 **Ecco 60 AS-3**
Ecco 60 AS-4



Disassembly - Reassembly (See fig.page 1)
(See also fig.2 and 3)

VARNING

Before any intervention on the spray gun, shot off the compressed air supply and depressurize the by controlling the opening of the spray gun.

Needle packing and needle

1. Unscrew the control knob (35) and spring housing (34) and remove the spring (32).
2. Hold the entire needle and piston (10 for 60AS-3) (46 for 60AS-4) and pull it towards the back.
3. Unscrew the screw (31) from the piston (10 for 60AS-3) (47 for 60AS-4) and remove the spring (30) and paint needle (29).
4. Remove the air cap (28), and the paint nozzle (27).
5. Remove the cover (36) and the set screw (16 for 60AS-3) (42 for 60AS-4).
6. Remove the packing screw (24 for 60AS-3) (40 for 60AS-4).
7. Pry out the packing set (20 for 60AS-3).
8. Clean everything well with cleaning agent and then blow out with air.
8. Fit the new packings set (20 for 60AS-3).
9. Re-fit the needle and piston assembly (10, 29, 30, 31 for 60AS-3) (46, 51, 30, 31 for 60AS-4).
10. Tightening the set screw (16 for 60AS-3) until contact is reached between the packing set (20 for 60AS-3).
11. Re-fit the spring (32), spring house (34) with the spring (33) and the control knob (35).
12. Re-fit the paint nozzle (27) (screwing torque 22 Nm) and the air cap (28) by hand.

Before reassembling the different components:

- Clean the parts with the appropriate cleaning agent by means of brush.
- Install new seals after having lubricated them with PTFE grease.
- Install new parts if necessary.

Distribution ring

1. Remove the air cap (28) and the paint nozzle (27).
2. Remove the distribution ring (25) by screwing on the air cap (28) a few turns. Withdraw the distribution ring axially from the body.
3. Re-fit the distribution ring (25) by mating it with a guide pin (2) in the body.
4. Re-fit the paint nozzle (27) (with torque 22 Nm) and re-fit the air cap (28) (tighten by hand).

Troubleshooting

Introduction

Always commence troubleshooting by checking the general condition of the spray gun. This can most easily be determined by test spraying, which provides an opportunity for checking the spray pattern and capacity, air leakage and gasket leakage.

Types of problems

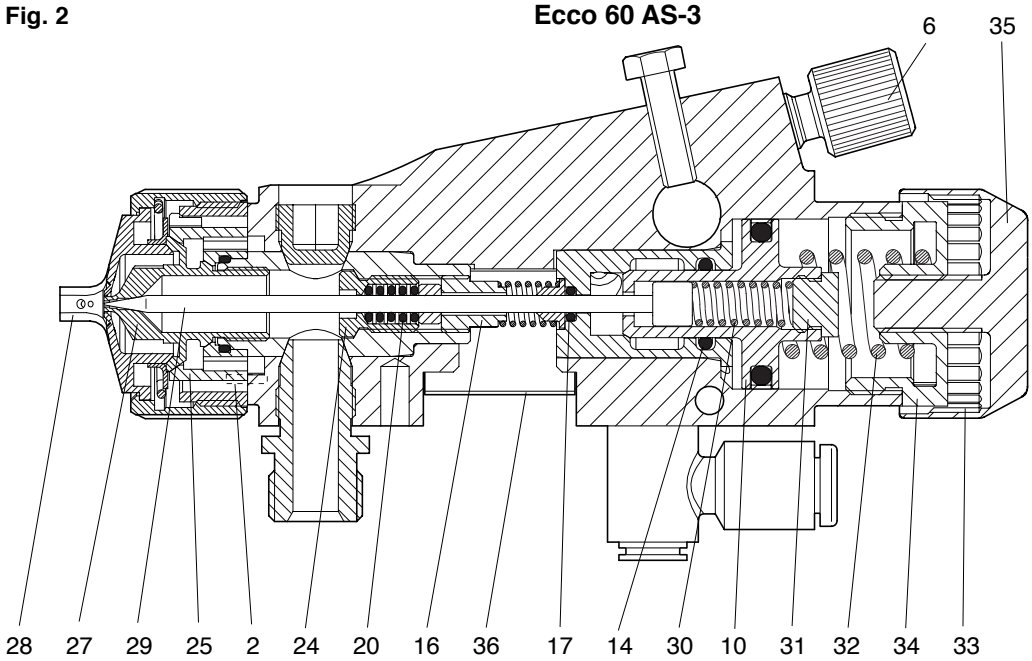
Collection of information which makes it possible to identify the error symptoms applicable to the spray gun in the event of malfunctioning is a matter of vital importance. Identification of symptoms makes it possible to decide whether the spray gun itself is the direct cause of the malfunctioning or if this may have been caused by an external factor.

The following external factors can cause malfunctioning and should be thoroughly checked:

1. The quality of the air, i.e. content of moisture, dirt particles and oil.
2. The quality of the paint, i.e. its viscosity, purity. etc.
3 The air and paint pressure in relation to viscosity of the paint and nozzle combination used.
4. The size of the air/paint hoses.

Troubleshooting chart (see page 6)

Fig. 2 **Ecco 60 AS-3**



2. Pin
6. Control knob
Fan with adjusting
10. Piston
14 O-ring
16. Set screw
17 O-ring
20. Packing set
24. Packing screw
25. Distribution ring
27. Paint nozzle
28. Air cap
29. Paint needle
30. Spring
31. Screw
32. Spring
33. Spring
34. Spring housing
35. Control knob
Paint flow adjusting
36. Cover

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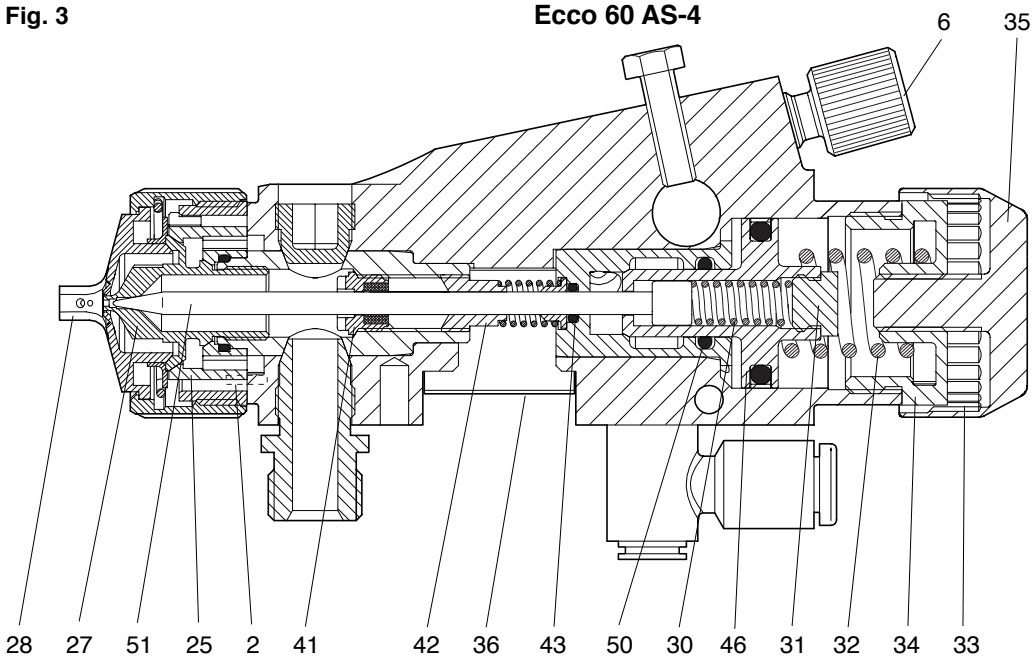
Fig. 3 **Ecco 60 AS-4**



2. Pin
6. Control knob
Fan with adjusting
25. Distribution ring
27. Paint nozzle
28. Air cap
30. Spring
31. Screw
32. Spring
33. Spring
34. Spring housing
35. Control knob
Paint flow adjusting
36. Cover
40. Packing screw
42. Set screw
44 O-ring
46 Piston
50 O-ring
51. Paint needle

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Troubleshoouting chart

Correct Spray Pattern

Spray Pattern	Cause	Remedy
 **Asymmetrical to the left or to the right**	a) Dried paint on holes for atomizing air. b) Damage to holes for atomizing air. c) Air cap not sufficiently tightened.	a) Dried paint on holes for atomizing air. Clean the air holes, use appropriate cleaning agent and a soft brush. b) Damage to holes for atomizing air. Replace the air cap with a new one. c) Air cap not sufficiently tightened. Tighten the air cap properly by hand.
 **Distorted in the middle**	a) Damage to the tip of the paint nozzle. b) The pressure of the atomizing air in relation to the viscosity of the paint.	a) Fit a new paint nozzle. b) Adjust the air pressure of the atomizing air.
 **Narrowing off in the middle**	a) Wrong nozzle combination. b) Fan air pressurer too high. c) Paint viscosity unsuitable. d) Incorrect spray angle.	a) Select a new nozzle combination suitable for the viscosity of paint. b) Reduce the pressure of the fan air. c) Adjust the viscosity of the paint. d) Adjust the angle with the fan width control.
 **Irregular spray (spitting)**	a) Paint needle gasket leaky. b) Damaged O-ring in distributor ring. c) Paint nozzle not tightened. d) Dirt on sealing surfaces of paint nozzle and distributor ring. e) Paint hose connection not tightened. f) Paint hose defective.	a) Adjust the packing screws. If this does not suffice, change the paint needle gaskets. b) Change the O-ring in the distributor ring. c) Tighten the paint nozzle. d) Clean the sealing surfaces of the paint nozzle and distributor ring with solvent and blow clean. e) Tighten the paint hose connection. f) Change the paint hose.

Paint leaking - Air leaking	Cause	Remedy
Paint leaking	Worn needle packings and/or needle.	Replace damaged parts with new ones.
Air leaking when the piston (10 for 60AS-3) (46 for 60AS-4) is operating.	Worn or damaged 0-rings (14 and 17 for 60AS-3) (43 and 50 for 60AS-4).	Replace damaged parts with new ones.
Paint leaking through the paint nozzle when the gun is closed.	Pollution between the needle and the nozzle or needle and nozzle worn or damaged.	Unscrew air cap (28) and nozzle (27). Clean carefully and check for any sign of damages or wear.

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