

Operating Manual for FINE-SPRAY gun W 3/FZ-Duo



Read this manual carefully before installing, operating or servicing this spray gun.
Keep always handy for further use.

1 Introduction

The FINE-SPRAY gun **W 3/FZ-Duo** is designed and constructed for finest application of thin materials f.i. release agents, colours or other fluids of low viscosity. Depending on air cap this spray gun sprays in a round- or flatspray. Spray guns are precision tools. Always keep clean and observe minimum instructions to maintain a long useful life of the gun.

2 Safety

2.1 Duties of the user

- The user must read this operating manual carefully before performing any operations.
- Applications and service operations should not be carried out if the user is not absolutely sure of the purpose and consequence of the operations.

2.2 Definitive Use

The spray gun W 3 FZ-Duo is a high performance spray gun; It is suitable for thin sprayable materials f.i. release agents. It is not suitable for spraying aggressive fluids, like acids, alkaline solutions, cleaning agents, chemicals. When you are not sure, if your fluid is suitable for spraying please contact the manufacturer.



Warning!

Do not use any solvents, cleaning liquids or coating materials containing 1,1,1 Trichlormethane or Methylen Chloride i.e. agents of the group of chlorinated hydrocarbons. These chemicals may react with aluminium, anodised or zinc plated parts. The chemical reaction may be explosive.

2.3 Warning against Danger

This operating manual warns users of operations which may put their health at risk. The warnings are indicated by combinations of text and symbols corresponding to the different danger classes.

WARNING!

Signs a possible danger situation.
If you don't avoid, death or severe injuries can follow.

CAUTION!

Indicates a situation which may be dangerous.
Failure to heed the caution may result in personal injury. This indication is also used where material damage is possible.

IMPORTANT!

Indicates tips for usage and other helpful information.

3 Function Description

Your new spray gun **W 3/FZ-Duo** has been thoroughly tested before leaving the factory. No more adjustment is necessary prior to setting up spray operation. If fluid output, however, requires to be regulated individually, apply needle regulator (24.1) and counter nut (23.1) for quantity of fluid flow. To spray with a spray gun definite volume of atomising air and a definite pressure of materials is needed. The needle will be opened by activating the trigger and the material flows out of from the nozzle. The air pressure atomises the material and forms it to a jet.

The needle function is: Opening by trigger and closing by spring force.

3.1 Set up gun as follows

- Connect Duo-hose (twin hose for atomising air and fluid) to material pressure tank or other means of feeding fluid and to compressor.
Translucent part of hose : for fluid (gun connection "M")
Blue part of hose : for atomising air (gun connection "AIR")
- Set atomising air pressure to required spray droplet sizes by reducing valve (not part of the spray gun).
- Set material pressure to required material outlet and spray droplet sizes by a 2. reducing valve (not part of the spray gun).



IMPORTANT!

Fluid output can be regulated individually, apply needle regulator (24.1) and counter nut (23.1) for quantity of fluid flow.

Turning needle regulator right : less fluid flow
Turning needle regulator left : more fluid flow

When you are sure of fluid flow open trigger (19.1). Spray operation starts. You will notice that you receive so called "pre-air" prior to opening fluid flow when pulling the trigger. When releasing trigger you still have "purging-air" after needle has closed nozzle and fluid flow was stopped. This prevents that fluid forms drop instead of the desired atomisation.



IMPORTANT!

After spray operation give a short period of time "pre-air" respectively "purging-air". This prevents that material blocked the nozzle.

3.2 Operating Information

- Depending on viscosity of fluid nozzle bores are available in 0,2 ; 0,3 ; 0,5 ; 0,8 and 1,0mm Ø (only one size of air cap is required).
- Standard version of gun has flat spray pattern air cap with approx. 60° sprayangle (3.1.1). If round spray is required, just replace air cap by a round spray air cap (3.1.2).
- Flat spray air cap can be positioned for horizontal, vertical or any in between position of jet. For special air caps with other sprayangles please contact the manufacturer.



CAUTION!

Never point the spray gun against persons. Wearing eye protecting is strongly recommended. Spraying procedures cause noises depending on the used pressure. If necessary, wearing of ear protection is recommended.



WARNING!

Danger caused by combustible and noxious spraying material. Safety instructions on fluid can and material data of fluid manufacturer must definitely be observed.

Don't smoke when spraying paints or solvents which have combustible properties. All electrical installations within the spraying area must be explosion proof. Observe working safety regulations in respect of protective clothing (masks, clothing, ear protection, etc.).

4 Service

4.1 Cleaning



WARNING!

Danger caused by combustible and noxious spraying material. Safety instructions on fluid can and material data of fluid manufacturer must definitely be observed.



WARNING!

Before opening the spray gun it has to be disconnected from the air supply and from the material supply. Otherwise ejected elements can cause danger.

To clean the gun, spray solvent until pure solvent leaves nozzle. Do not submerge entire gun in solvent. At longer working interruptions it is advisable to clean air cap and nozzle by putting these parts only into solvent. If necessary, use soft brush. To clean small drill hoses, use our special nozzle cleaning needles. Moving parts and threads should always be greased slightly.

4.2 Changing nozzle set

A nozzle set includes needle (1.1.1), nozzle (2.1.1) and air cap (3.1.1 or 3.1.2). If nozzle size is to be changed, always change all three parts. Change the complete set also when only one of the parts is defect.

- 1. Remove screw (21.1)
- 2. Pull out valve spring (20.1)
- 3. Pull out needle/valve cartridge
- 4. Unscrew the collar ring (4.1.1), remove air cap (3.1.1 or 3.1.2)
- 5. Unscrew nozzle (2.1.1)

Re-assemble in reverse order.

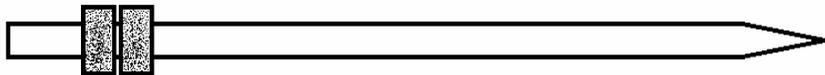
4.3 Dis-assembling needle/valve cartridge

- 1. Remove screw (21.1)
- 2. Pull out valve spring (20.1)
- 3. Pull out needle/valve cartridge
- 4. Unscrew valve lock (18.1)
- 5. Pull out needle spring (17.1)
- 6. Pull out needle (1.1.1)

Re-assemble in reserve order. **OBSERVE!!!**

Needle nuts (16.1) must be counter-screwed in such a position where “pre-“ and “purging-air” work.

The correct position of needle nuts (16.1) on needle or extension needle is 8,8 - 9,0mm from the end of the needle.

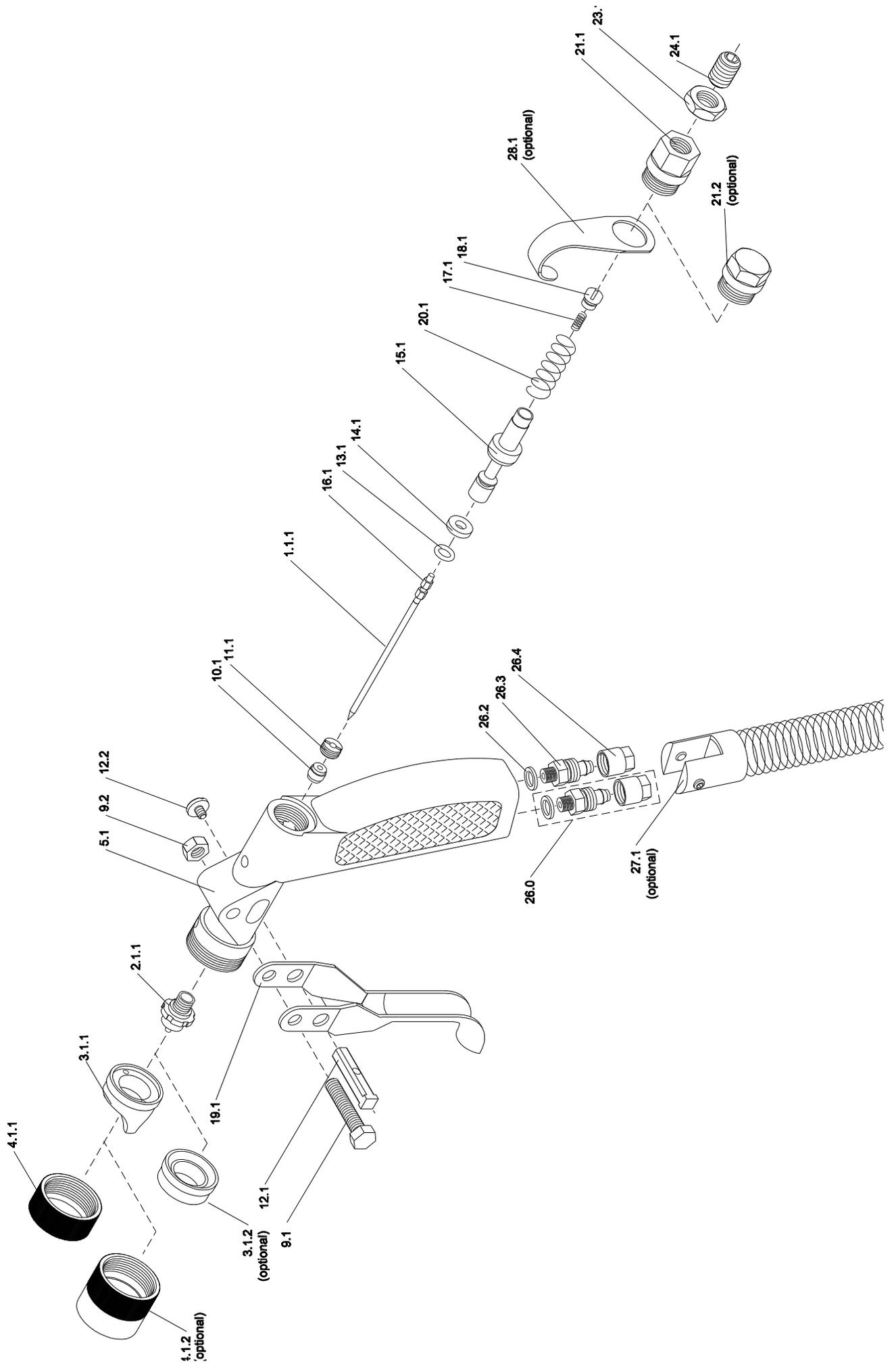


**8,8 -
9,0 mm**

5 Cause of faults

Before starting maintenance or repair work, ensure that all air operated tools are disconnected from the air supply!

- **If drops form on the trigger**
the needle gasket (10.1) is worn respectively loose and must slightly be retightened. For that purpose remove needle/valve cartridge (see chapter "4.3"). Then unscrew screw (12.2) and take out needle driver (12.1). Using a small screw driver turn stuffing box (11.1) gently clockwise and try if needle is sliding smoothly again within the tightening gasket.
- **If drops form on the nozzle,**
either needle or nozzle is worn and should be replaced. Or needle is not closed properly f.i. because of particle residues within nozzle. Cleaning the needle/valve cartridge with solvent (see chapter "4.3").
- **If there is an uneven and not steady spray jet**
make sure that nozzle is screwed in tight. Other reason could also be dirt residue within air cap. Cleaning air cap with solvent.
- **Air blowing constantly**
Although trigger released. O-Ring (13.1) and/or washer (14.1) worn and to be exchanged. Or needle nuts are not counter-screwed in correct position (see chapter "4.3").



6 Sparepartslist

draw.-no.	part no.	Qty.	Description
1.1.1	*	1	needle, stainless steel (part no. see overleaf)
2.1.1	*	1	nozzle, stainless steel (part no. see overleaf)
3.1.1	*	1	air cap, flat spray (part no. see overleaf)
3.1.2	*	1	air cap, round spray (part no. see overleaf)
4.1.1	410028	1	collar ring
4.1.2	410014	1	protecting ring 19mm (optional)
5.1	510010	1	gun body
9.1	610036	1	screw
9.2	410013	1	cap nut
10.1	640062	1	needle gasket (PTFE)
11.1	810002	1	stuffing box
12.1	320002	1	needle driver
12.2	610035	1	screw
13.1	640036	1	o-ring
14.1	640008	1	washer
15.1	380010	1	air valve
16.1	410026	2	needle nut
17.1	820005	1	needle spring
18.1	610001	1	valve lock
19.1	190006	1	trigger
20.1	820024	1	valve spring
21.1	220057	1	screw
21.2	220150	1	blocked lock (optional)
23.1	410008	1	counter nut
24.1	610029	1	needle regulator
26.0	220021	2	hose socket, complete
26.2	640080	2	washer
26.3	220055	2	hose socket
26.4	410030	2	nut
27.1	500019	1	buckling guard, complete (optional)
28.1	910004	1	hook (optional)

* Part no. see page 8.
Please specify diameter: 0,2/0,3/0,5/0,8/1,0 mm Ø

7 Technical data

weight	: approx. 240 g
air consumption	: approx. 90ltr./min. (at 3 bar and 0,5mm nozzle)
max. material pressure	: 4 bar
max. atomising air pressure	: 6 bar

Special designs on request. Technical alterations reserved. State of engineering: August 2000

6.1 part no. of needles, nozzles and air caps

*needle		
draw no.	part no.	Description
1.1.1	110073	needle 0,2/0,3mm
1.1.1	110074	needle 0,5mm
1.1.1	110075	needle 0,8mm
1.1.1	110076	needle 1,0mm
1.1.1	110077	needle 1,2mm
1.1.1	110078	needle 1,5mm

*nozzle		
draw no.	part no.	Description
2.1.1	210063	nozzle 0,3mm
2.1.1	210064	nozzle 0,5mm
2.1.1	210065	nozzle 0,8mm
2.1.1	210066	nozzle 1,0mm
2.1.1	210067	nozzle 1,2mm
2.1.1	210068	nozzle 1,5mm
2.1.2	210069	nozzle 0,2mm

*air cap / flat spray 45°		
draw no.	part no.	Description
3.1.1	310038	for nozzle 0,2 - 1,0mm
3.1.1	310039	for nozzle 1,2 - 1,5mm

* air cap / flat spray 60° (standard)		
draw no.	part no.	Description
3.1.1	310032	for nozzle 0,2 - 1,0mm
3.1.1	310033	for nozzle 1,2 - 1,5mm

* air cap / flat spray 90°		
draw no.	part no.	Description
3.1.1	310036	for nozzle 0,2 - 1,0mm
3.1.1	310037	for nozzle 1,2 - 1,5mm

* air cap / round spray 15°		
draw no.	part no.	Description
3.1.2	310034	for nozzle 0,2 - 1,0mm
3.1.2	310035	for nozzle 1,2 - 1,5mm