Operating manual
for
Automatic-sprayvalve
KA-2 / SW
for quick release adapter

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

1 Introduction

The automatic spray valve **KA 2 / SW for quick release adapter** (quick release adapter is not included in delivery) 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 valve sprays in flat- or roundspray. Depending on viscosity of fluid, the application can be adjusted individually via nozzle dimension, atomizing air pressure and material pressure. The supply of atomizing air, control air and material is done by the quick release adapter. Spray valves are precision tools. Always keep clean and observe minimum instructions to maintain a long usefull life of the valve.

2 Safety

2.1 Duties of the user

- The user must read this service manual carefully before performing any operations.
- Application 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 automatic spray valve **KA 2 / SW for quick release adapter** is a pneumatically controlled spray valve for continuous or intermittend use. It is suitable for sprayable materials. It is not suitable for spraying aggressive or heated materials. In case of doubt, contact the manufacturer.

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 dangerous 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

The spray valve **KA 2 / SW for quick release adapter** is pneumatically controlled: air open; spring return. Complete supply of atomizing air, control air and fluid is raised by the quick release adapter (not included in delivery).
The spraying material is to be fed via pressure tank or pump. The separate controlled atomizing air atomizes the material to a spray jet. Depending on mounted air cap valve sprays a flat- or roundspray jet.

4 Installation

The **KA 2 / SW for quick release adapter** can be installed in any position. To attach securely a 10mm bore is provided within quick release adapter (not included in delivery).
Distance to spraying surface varies width of application. Vibrations of the valve caused by fast intermitting cycles require solid and massive installation. Vibration of the equipped machine to the valve should be limited as far as possible.

4.1 Hose connection

see operating manual „quick release adapter type KA-2“

Before Starting:

- When connecting the pressure hoses to the spray valve, ensure that all the connection screws are tight.
- Follow the application notes of the spraying material manufacturer.

4.2 Operating instructions

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

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

Do not smoke when spraying paints or solvents which have combustible properties. All electrical installations within the spraying area must be explosionproof. Observe working safety regulations in respect of protective clothing (masks, clothing, ear protection, etc.)
The valve **KA 2 / SW for quick release adapter** needs 3 - 6 bar pressure for control air. The atomizing air should be 0,5 - 6 bar. The maximum material pressure is 3 bar. If higher material pressure is necessary, please observe the regulations of the professional/trade association having liability for industrial safety and insurance.
When you are certain, that fluid pressure stands up to the nozzle, actuate 2/2-way solenoid valve for atomizing air. After that actuate 3/2-way solenoid valve for control air. This way you receive socalled "pre-air" prior to opening fluid flow. After each cycle solenoids are to be actuated in reverse order, so you will still have "purging-air" after needle has closed nozzle and fluid flow was stopped. This prevents fluid to form out drops instead of being atomized. Set working pressure of atomizing air and fluid pressure according to required spray droplet sizes. Two seperate pressure reducers must be available, if fluid is fed via pressure tank.
Standard version of valve has aircap, flatspray. If round spray cone jet is required, install aircap, roundspray. Flat spray air cap can be positioned for horizontal, vertical or any in between position of jet. Depending on viscosity of fluid, different nozzle diameters are available in:
0,2 / 0,3 / 0,5 / 0,8 / 1,0 / 1,2 / 1,5 / 2,0 and 2,5mm Ø.

IMPORTANT!
Fluid flow can be regulated with regulating screw (9).
turn right : less fluid flow
turn left : more fluid flow

IMPORTANT!
Wrong handling can damage nozzle and needle. Reduce fluid flow (clockwise turn of regulating screw) only when fluid flows throught nozzle. After fluid flow is nil, never turn regulating screw (9) further right.

For longer working interruptions and if the fluid is under pressure, it can stay in valve.

5 Repair and Maintenance

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

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

WARNING!
Before opening the spray valve it has to be disconnected from the air and fluid supply. Otherwise ejected elements can cause danger.

These spray valves are high precision tools. Always keep clean and observe minimum instructions to maintain a long and useful life of valve.
We recommend lubricating moveable parts regularly, and greasing threads, especially the nozzle threads, when replacing or cleaning the nozzle.

5.1 Cleaning

To clean valve, spray solvent until pure solvent leaves nozzle. Do not submerge entire valve 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 a soft brush. Moving parts and threads should alway be greased slightly.
The spray valve should be cleaned using an appropiate thinner. To clean small drill holes, use our special nozzle cleaning needles.

5.2 Possible case of failure: Needle sticks

- Check, if sufficient control air pressure is supplied (3 - 6 bar).
- Check, if o-ring (7.1) is in propper order.
- Check, if needle (1.0) is dirted by f.i. glue residues or sticks within needle gasket (6)
- Check, if minimum of travel of needle is set.

5.3 Changing the nozzle set

IMPORTANT!
Nozzles, gaskets and gasket seats can be damaged. Do not use metallical aid to remove and insert those parts.

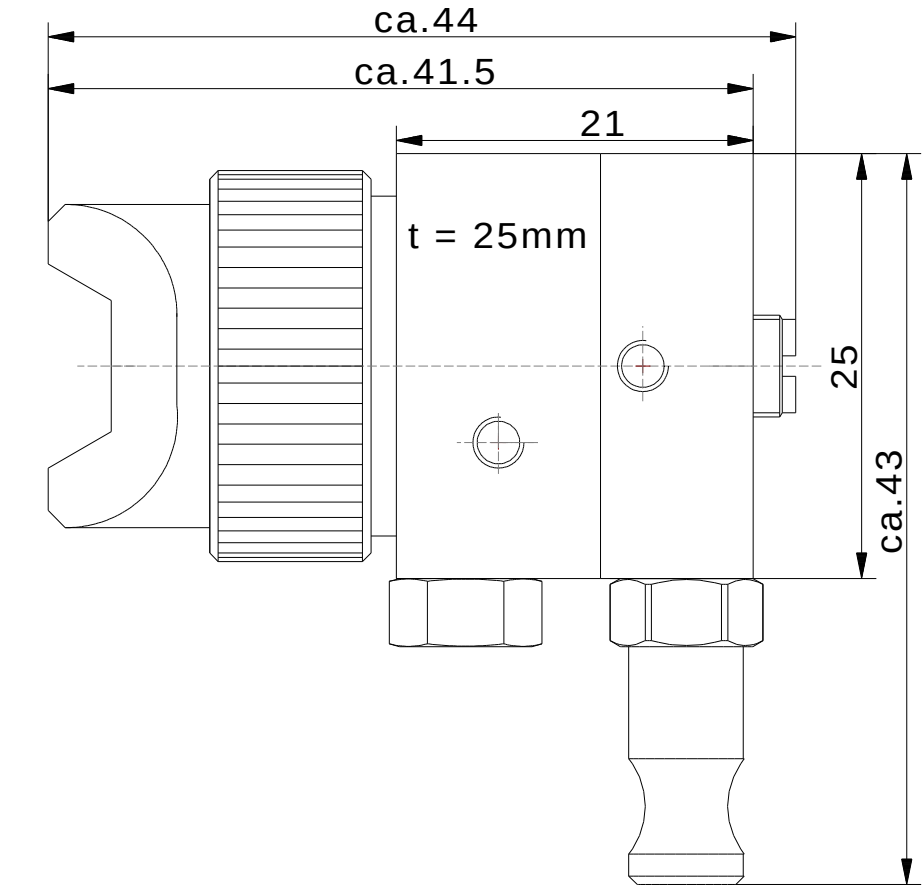
A nozzle set includes needle (7), nozzle (3) and air cap (2.0 or 2.1).
If nozzle size is to be changed, always change all these three parts. Change the complete set also when only one of the parts is defect.

- Take off closing plate (11) by unscrewing screws (12).
- Pull out needle spring (8) and needle (7).
- Take off aircap (2.0 or 2.1) after unscrewing collar ring (1).
- Screw out nozzle (3) with wrench size 6. Before unscrewing nozzle, please observe that needle is never under spring pressure.

Reassemble in reverse order.
To prevent damage to the needle seat during replacement, the needle (7) must only be inserted into firmly installed nozzle.

5.4 Changing needle gasket

After pulling out needle (7) (see "Changing the nozzle set"), needle gasket (6) can be taken out of the valve body by means of using a pointed object. Re-assemble by laying the new gasket into the provided slot. Also the o-ring (7.1) can be changed now easy on the piston.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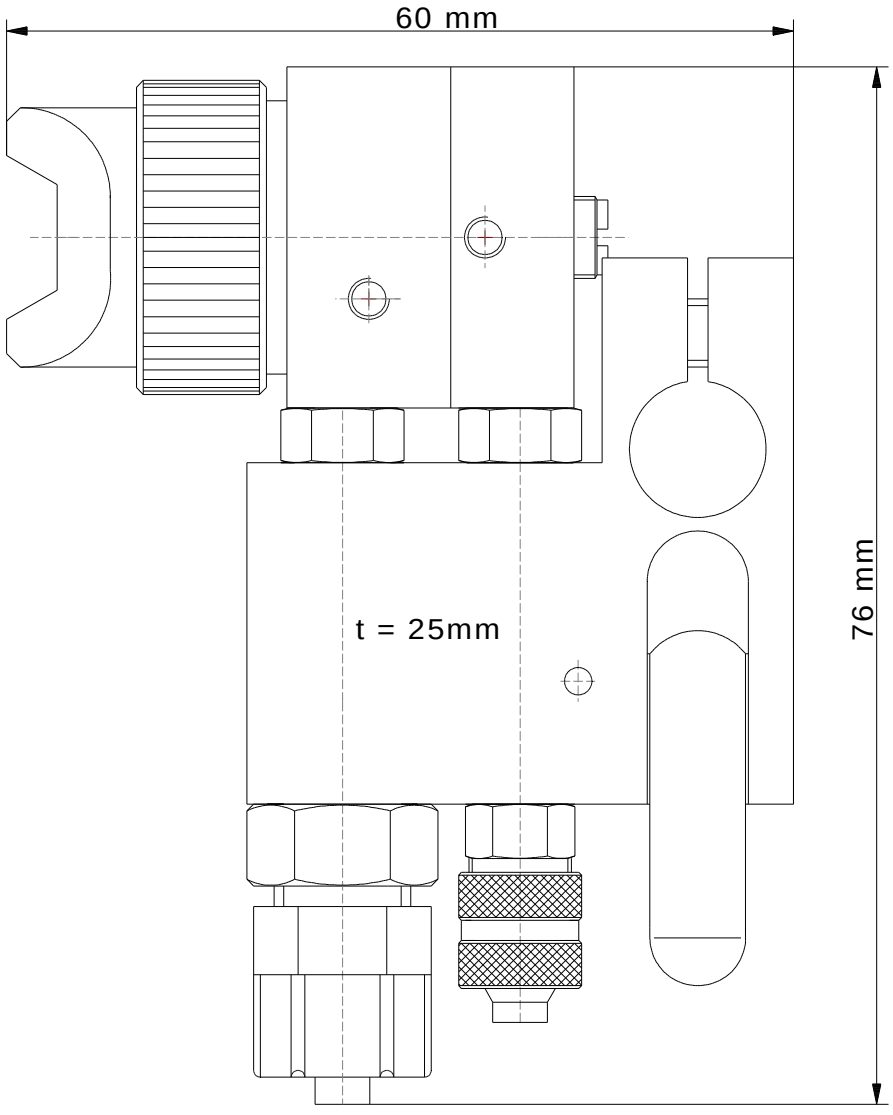
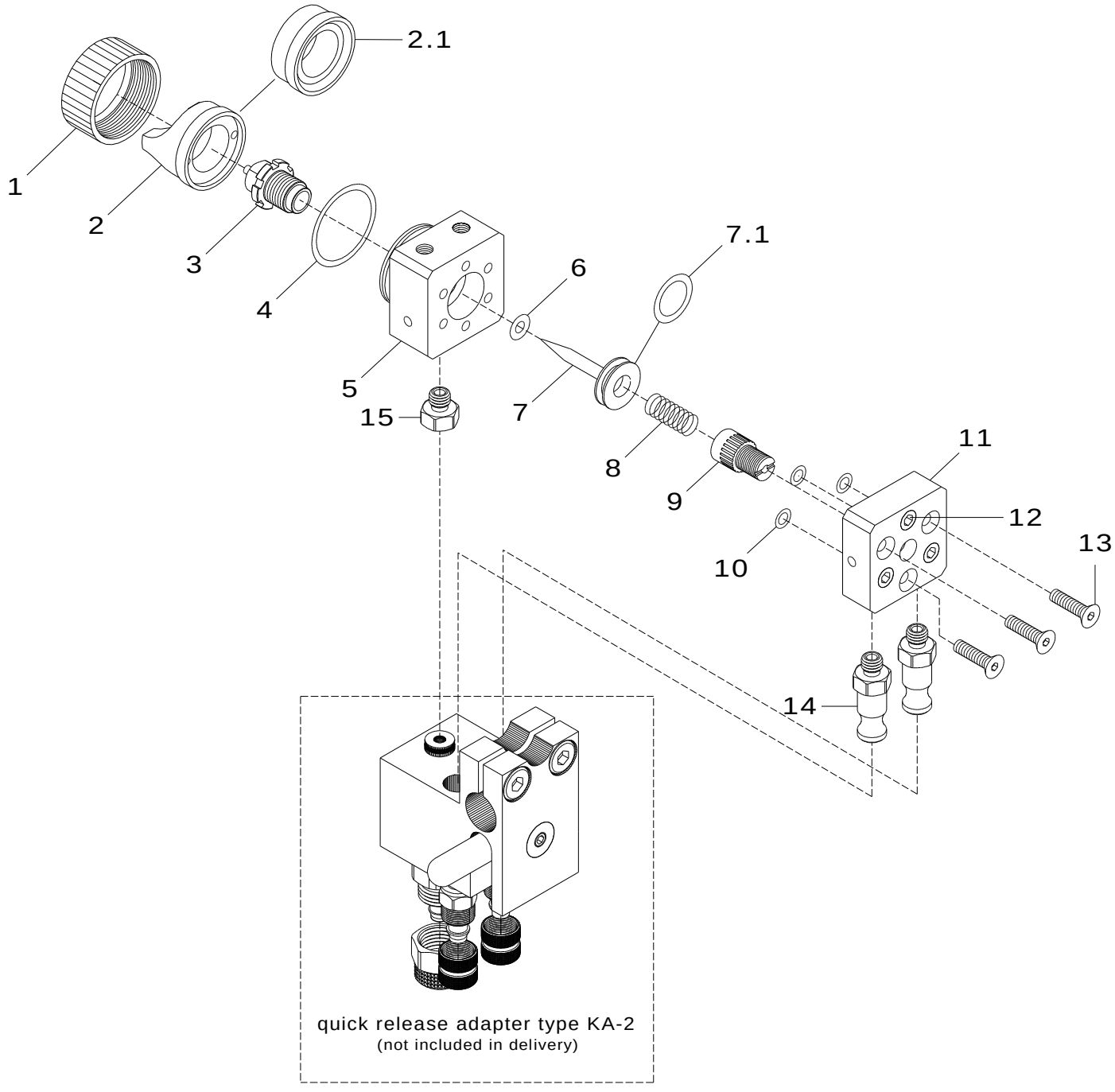
ca.41.5
21
t = 25mm
25
ca.43


60 mm
t = 25mm
76 mm



quick release adapter type KA-2
(not included in delivery)

6 Sparepartslist

draw.-no.	part no.	Qty.	Description
1	410028	1	collar ring
2	*	1	aircap, flatspray (part no. see overleef)
2.1	*	1	aircap, roundspray (part no. see overleef)
3	*	1	nozzle, stainless steel (part no. see overleef)
4	640006	1	o-ring 18 x 1,5mm
5	510027	1	valve body, stainless steel, complete 25x25x18mm
6	640026	1	o-ring 2,9 x 1,78mm
7	*	1	needle, stainless steel, complete (part no. see overleef)
7.1	640366	1	o-ring
8	820017	1	needle spring
9	610090	1	regulating screw
10	640000	3	o-ring
11	510028	1	closing plate, stainless steel
12	610021	3	lock screw
13	610052	3	mounting screw
14	220554	2	air connection for quick release adapter, M5 22,5mm
15	220555	1	material connection for quick release adapter, M5

* part. no. see next pages.
When ordering nozzles, needles and air caps, please indicate nozzle dimension.
Available dimensions: 0,2 / 0,3 / 0,5 / 0,8 / 1,0 / 1,2 / 1,5 / 2,0 and 2,5mm ∅

7 Technical data

measurements:

with aircap, flatspray	= 44mm length x 43mm x 25mm (without quick release adapter)
with aircap, roundspray	= 41mm length x 43mm x 25mm (without quick release adapter)
weight	= approx. 140g
air consumption	= approx. 103 ltr. (at 3 bar, 0,5mm nozzle and 2m hose)
pressure for control air	= 3 – 6 bar
pressure for atomizing air	= 0,5 – 6 bar
material pressure	= max. 3 bar

Special designs on request. Technical alterations reserved. June 2004

8 Manufacturer declaration

The spray valve **KA 2 / SW for quick release adapter** were constructed and produced by ALFRED SCHÜTZE Apparatebau GmbH, Hannoversche Straße 69-71, 28309 Bremen-Germany in accordance with the guidelines and standards of DIN EN 292. This spray valve can be combined with other modules or machines, which comply to DIN EN 292, without limiting the conformity.

Place	Date	Signature of manufacturer
Bremen	17.06.2004	

6.1 part no. of needles, nozzles and air caps

*needle		
draw no.	part no.	Description
7	110155	0,2/0,3mm
7	110156	0,5mm
7	110157	0,8mm
7	110158	1,0mm
7	110159	1,2mm
7	110160	1,5mm
7	110161	2,0mm
7	110162	2,5mm

*nozzle		
draw no.	part no.	Description
2	210110	0,2mm
2	210111	0,3mm
2	210112	0,5mm
2	210113	0,8mm
2	210114	1,0mm
2	210115	1,2mm
2	210116	1,5mm
2	210117	2,0mm
2	210118	2,5mm

*air cap / flat spray 45°		
draw no.	part no.	Description
1.0	310038	for nozzle 0,2 - 1,0mm
1.0	310039	for nozzle 1,2 - 1,8mm

* air cap / flat spray 60° (standard)		
draw no.	part no.	Description
1.0	310032	for nozzle 0,2 - 1,0mm
1.0	310033	for nozzle 1,2 - 1,8mm
1.0	310079	for nozzle 2,0mm
1.0	310090	for nozzle 2,5mm

* air cap / flat spray 90°		
draw no.	part no.	Description
1.0	310036	for nozzle 0,2 - 1,0mm
1.0	310037	for nozzle 1,2 - 1,8mm
1.0	310166	for nozzle 2,0mm
1.0	310167	for nozzle 2,5mm

* air cap / round spray 15°		
draw no.	part no.	Description
1.1	310034	for nozzle 0,2 - 1,0mm
1.1	310035	for nozzle 1,2 - 1,8mm
1.1	310080	for nozzle 2,0mm
1.1	310091	for nozzle 2,5mm