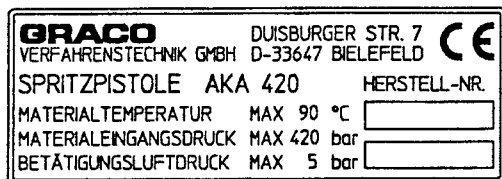


SPRAY GUN A KA 420

Pneumatically operated automatic spray gun for airless atomization of liquid materials.



The original manufacturer's nameplate is located on the spray gun. Please compare the specifications and complete if necessary.

Read and understand the operator manual and the safety instructions before taking into operation

In this manual important information is marked with the following symbols.



Information affecting your safety



Important operational direction

Keep user information for future reference

CONTENTS OF THE USER INFORMATION

	Page
<u>OPERATING INSTRUCTIONS</u>	
CORRECT USE	2
FUNCTIONAL DIAGRAM	2
PRODUCT DESCRIPTION	3
SUITABILITY, MATERIAL	3
TECHNICAL DATA	4
Key	
Data	
Material in contact with the fluid	
Dimensions, Connection thread	
Mounting the gun	
LIST OF TOOLS	6
START-UP	7
IMPORTANT INFORMATION CONCERNING START-UP AND OPERATION	8
OPERATION	8
MAINTENANCE AND INSPECTION, REPAIR	8
TORQUE MOMENTS	9
TROUBLESHOOTING	9
FOOTNOTE	10
REPAIR PARTS SET	10
ACCESSORIES	11
Includes:	
<u>TEST CERTIFICATE</u> (final inspection)	
<u>DECLARATION OF CONFORMITY</u>	
Replacement for issue of 02.97	

Subject to change

Continued on pages 1 to 11

Prepared 28.10.99 Stengele

Approved 12.11.99 Kuhn

USER INFORMATION

- OPERATING INSTRUCTIONS -

Issued 10.99

B.2.30.95-B

CORRECT USE

The spray gun A KA 420 is exclusively manufactured for normal use in surface technology (for spraying coating substances) or for similar work.

Any other purpose above and beyond this, is considered as incorrect use. We are not liable for any damage or injury resulting from this; the user will bear sole liability in such cases.

Correct use includes observing operating, maintenance and inspection conditions and regulations laid down by us.

The spray gun A KA 420 may only be installed, maintained and repaired by personnel familiar with, and trained to recognize the inherent dangers.

The relevant accident prevention regulations as well as safety and medical rules must be respected.

Unilateral changes to the spray gun will cause us to waive our responsibility for any damage or injury caused.

The user is responsible for correct attachment/installation.

FUNCTIONAL DIAGRAM

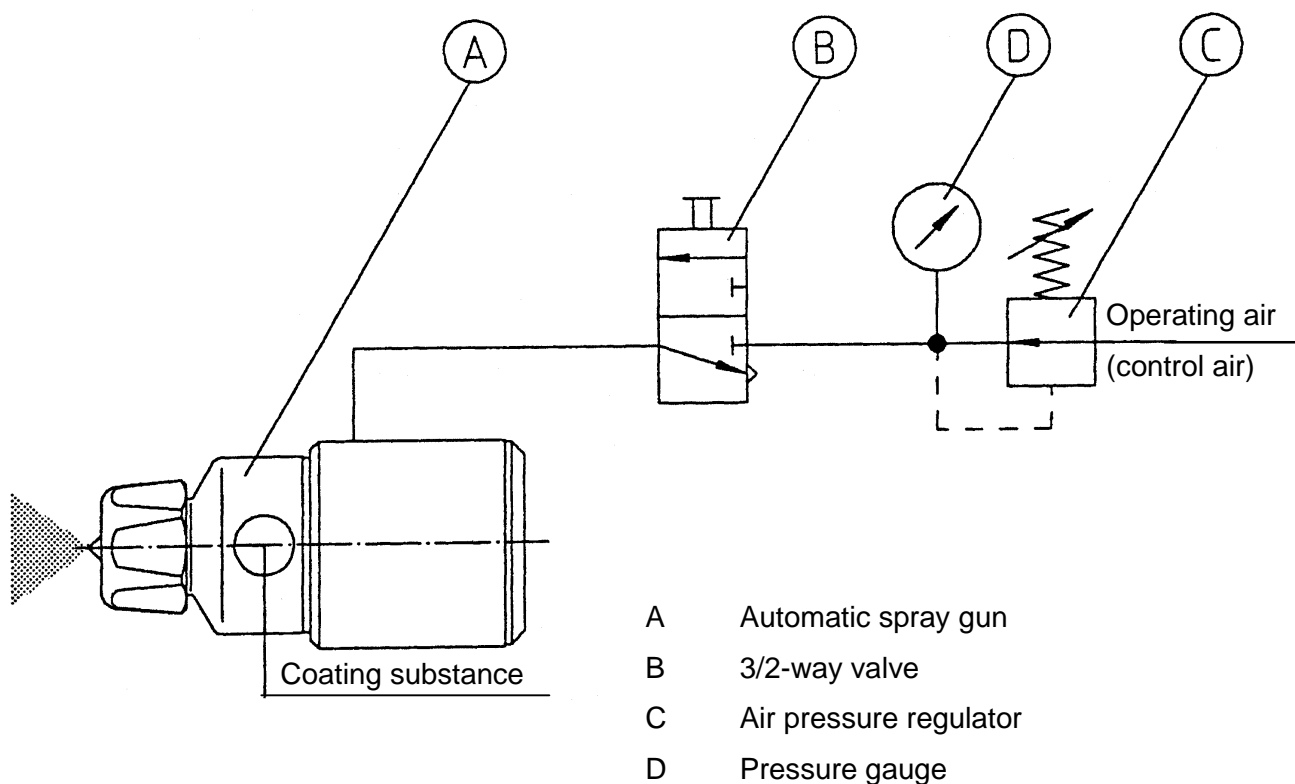


Fig. 1

PRODUCT DESCRIPTION

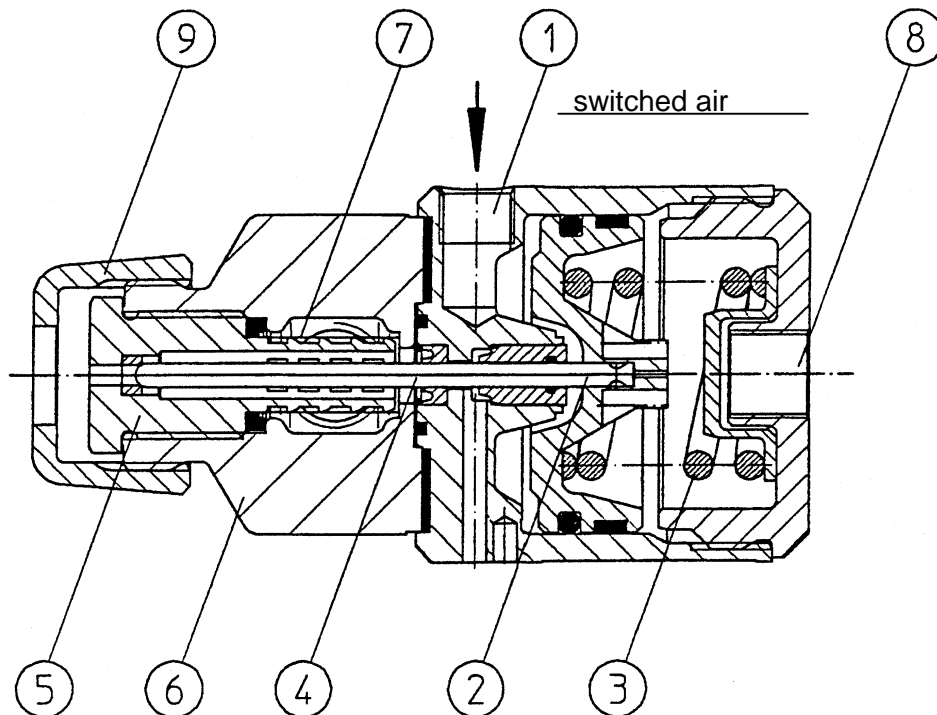


Fig. 2

The spray gun A KA 420 is operated pneumatically.

When switched on, the control air ① opens the fluid valve ②.

When switched off, the fluid valve is closed by the pressure spring ③.

The parts in contact with the fluid are suitable for water-based paints (stainless steel).

The needle ④ is completely made of hardened steel.

The valve seat (diffuser) ⑤ and the gun body ⑥ are designed in such a way that a filter element ⑦ of varying mesh size can be incorporated, and that an additional filter element does not obstruct the flow of fluid through the spray gun.

The spray gun is fixed centrally at the rear end ⑧.

The union nut ⑨ belongs to the spray gun.

Fan jet nozzles, pre-atomizer, filter elements and connections should be specified separately by the operator.

COMPATIBILITY, MATERIAL

FLUID	Compatibility
Neutral	highly suitable
Corrosive	highly suitable
Abrasive	suitable under certain conditions
Acidic	suitable under certain conditions
Inflammable ¹⁾	highly suitable

¹⁾ Hazard classes AI, AII, AIII: the spray gun should be properly grounded.

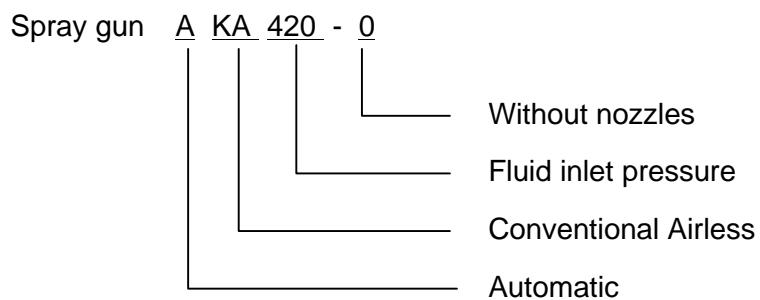
Please consult us when processing highly abrasive and aggressive materials.

Kinematic viscosity in mm ² /s	Compatibility
up to 500	highly suitable
500 to 750	suitable
over 750	suitable under certain conditions (application must be tested)

Solids content	Compatibility
low	highly suitable
low to 1 %	suitable
medium 1 to 6 %	suitable under certain conditions
over 6%	suitable under certain conditions
over 50%	not suitable

TECHNICAL DATA

KEY TO DESIGNATION



DATA

Spray gun AKA 420 (basic version)

Part nbr.: 79331 006002

Fluid inlet pressure	max. permissible	420	bar
Fluid temperature	max. perm.	80	°C
Operating air pressure	max. perm.	5	bar
Recommended switching frequency		160	Strokes/min
Mesh size of the filter elements		0.08 0.18 0.30	
Weight of the spray gun without accessories		450	g

MATERIALS IN CONTACT WITH THE FLUID

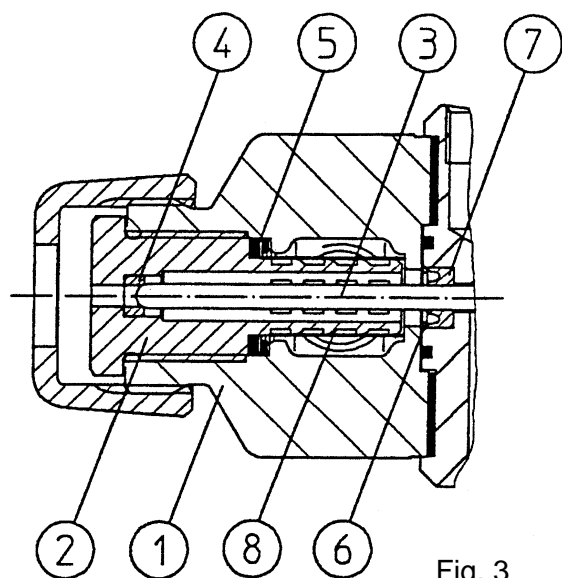


Fig. 3

Pos.	Description	Material
1	Gun body	SST 1.4305
2	Valve seat (diffuser)	SST 1.4305
3	Needle	Hardened steel
4	Seat	Hardened steel
5	Profile sealing ring	POM
6	Spacer	POM
7	Grooved ring	PE
8	Filter element	SST

Materials that contain chlorinated hydrocarbons such as trichloro-ethane or methylene chloride react with aluminum to form metal-organic compounds.



These compounds are explosive and extremely caustic.

– The use is not permissible

GROUNDING, CONNECTION THREAD

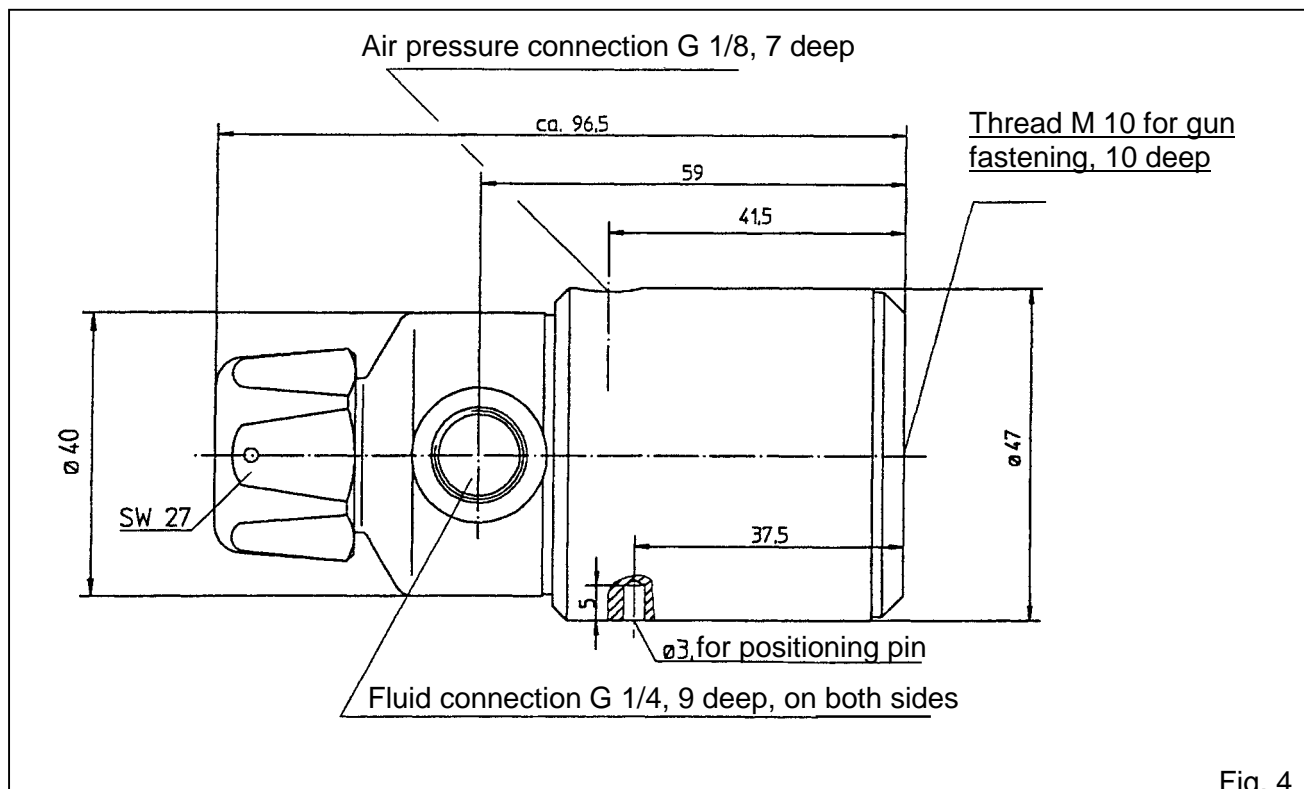
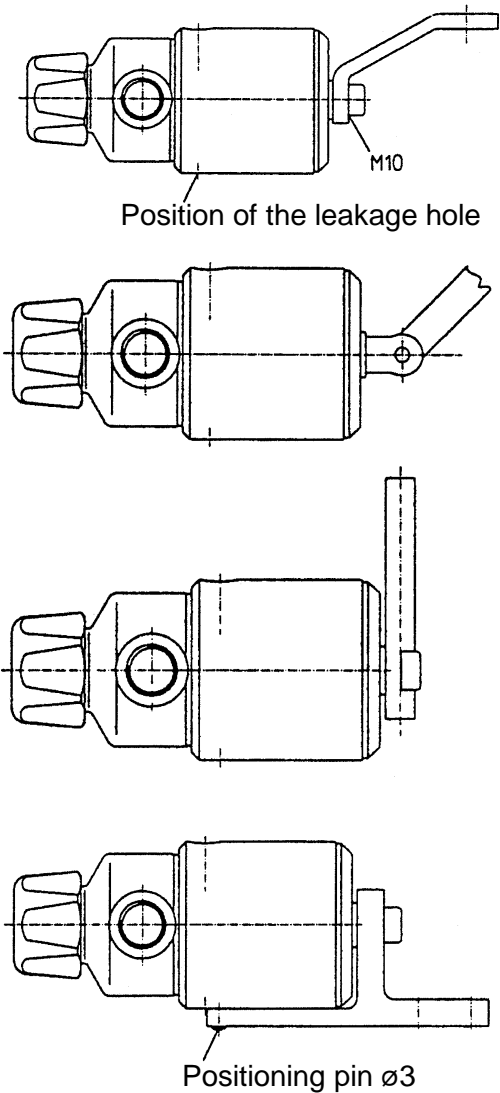


Fig. 4

Nominal diameter of the pressure air hose preferred DN 6; hose length < 1.5 m DN 4.

MOUNTING THE GUN

- centrally at the rear end



- on a bracket,
- on a reciprocating arm
- by means of a rod
- on a stationary support

Fig. 5

LIST OF TOOLS

Tools for the spray gun in its basic version

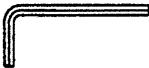
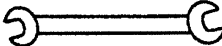
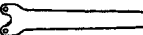

			
Allen Screw DIN 911	Open-end spanner DIN 895	Spanner DIN 3116	Drift Part nbr. 70641 001002
SW 4	SW 27	A 20	Special tool

Fig. 6

Tools for the spray gun accessories

Open-end spanner DIN 895

- SW11 Air pressure connection (plug-in screw connection for DN 4)
- SW12 Air pressure connection (plug-in screw connection for DN 4)
- SW15 Fluid connection (angle)

Allen Screw DIN 941

- SW6 Fluid connection (screw plug)

START-UP

Fasten spray gun

The threaded connection M 10 must be locked.

The leakage holes should point downwards.

Connect hoses and hose line(s)

Then check for tightness.

Install the in-line filter element

Automatic spray guns are delivered without filter elements.

Filter elements must be installed later (the choice of mesh size depends on spray tip used).



Before removing the valve seat (diffuser) the needle must be brought into the opened position.

Switching on the control air (Pos. 1, page 3), does this.

- Then
- Screw out the valve seat (diffuser)
 - Put the filter element ③ on to the valve seat (diffuser) ①
- Note the mounting position of the profile sealing ring ②

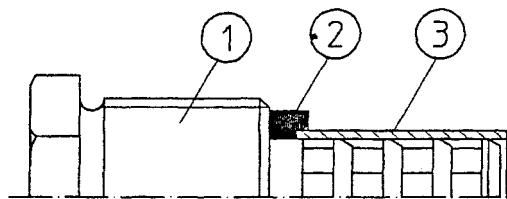


Fig. 7

- Install the valve seat (diffuser) with the filter element
- The needle is in the opened position

Install the nozzles

- Put the nozzle in the union nut, align at the gun and tighten (pay attention to the tightening torque).

Do not use any additional seals (The nozzle with pre-atomizer is self-sealing).



With older nozzles without pre-atomizers, a sealing washer should be installed instead of the pre-atomizer.

IMPORTANT INFORMATION CONCERNING START-UP AND OPERATION



During prolonged operating pauses and/or during shutdown, no energy potential (fluid and/or air pressure and/or electricity) should be present at the spray gun.



The working area of the spray gun must be protected.



The recommendations of the manufacturer of the fluid should be observed.

OPERATION

Do not exceed the specified technical data (page 4).

MAINTENANCE AND INSPECTION

- The automatic spray gun A KA 420 requires little maintenance.
- Flush thoroughly before operating pauses.
- Drain the condensed water every day from the filter or filter regulator if there is no automatic water drainage in the compressed air supply to the spray gun.
- Regularly dismantle the filter element and thoroughly clean.
 - The cleaning interval depends on the coating substance and must be determined by the user.
- Check leakage behavior (air or material escaping from the leakage hole) at regular intervals – e.g. once a week.
 - The seals should be replaced if substantial amounts of air and fluid are escaping.
Loosen the sealing plug (cover) with spanner DIN 3116-A20.
By screwing in a tapping screw DIN 7981-ST4,2 the complete bearing bushing. ① and the grooved ring ② can be simply removed.

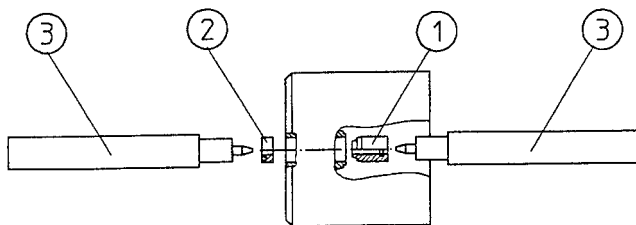


Fig. 8

The complete bearing bushing ① and the grooved ring ② are installed using the drift ③, Part nbr. 70641 001002.



The parts should be lightly greased before assembly.

– We recommend “grease OKS 270” (Tube 100g, Part nbr. 70950 003001).

- The service life of the hose lines is adversely affected, and thus shortened, by surrounding influences (oxygen in air, temperature, light, etc.), even if correctly handled.

It is recommended that they undergo regular visual checks and occasional checking of performance.

As a precaution, the hose lines should be replaced by new ones at intervals set by the operator (after 2 to 3 years).



NEVER dismantle a spray gun that is under pressure.

TIGHTENING TORQUE

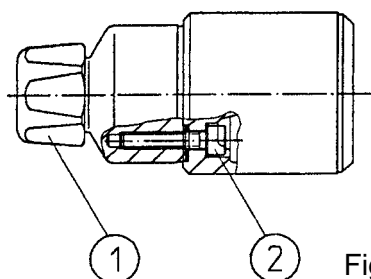


Fig. 9

Pos.	Thread	Material	Tightening torque
1	M24 x 1.5	X12CrMoS17	25 Nm
2	M 5	8.8	7 Nm

TROUBLESHOOTING

BREAKDOWN ANALYSIS				
Component group	Nature of defect	Defect symptoms	Possible cause	Counter measure
Nozzle, filter element	Irregular fluid delivery	Change in the spray pattern, no application of fluid	Nozzle or pre-atomizer obstructed, filter element clogged up.	Clean nozzle, pre-atomizer and filter element
Sealing system (needle seal, piston seal)	Leakage at the body of the gun	Air or fluid escaping from the leakage holes	Seal(s) worn	Replace seals
Air connections	Spray gun does not work	No switching	Air supply interrupted	Check the plug connection and air hose

FOOTNOTE

The spray gun is intended for attachment/installation to/in a machine for surface technology. The start-up is prohibited until it has been established that the machine in/to, which the spray gun is to be installed/attached, conforms to the provisions of the EU directive on machines in the version 93/44/EEC.

LIST OF REPAIR PARTS

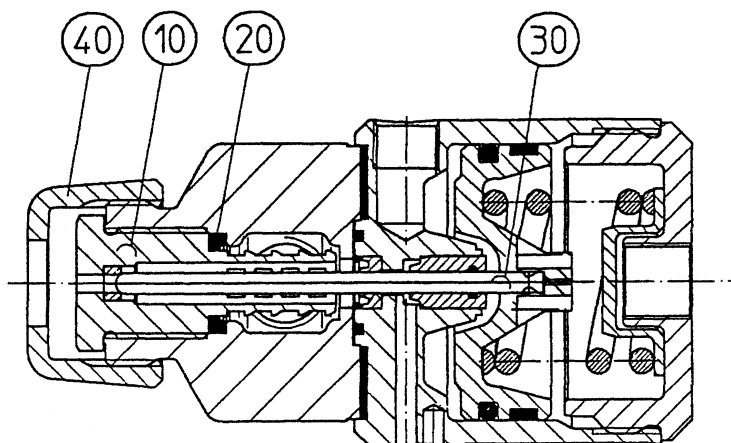


Fig. 10

Replacement part set, fluid valve				Part nbr. 79978 040001
Pos. 10	1 off	Valve seat (diffuser) complete	M 16 x 1 x 38.5	
Pos. 20	1 off	Profile sealing ring	9.5 x 14 x 3.2	
Pos. 30	1 off	Needle complete	D 3 L 66.5	

Repair kit				
Pos. 40	1 off	Union nut	M 24 x 1.5	76089 080002

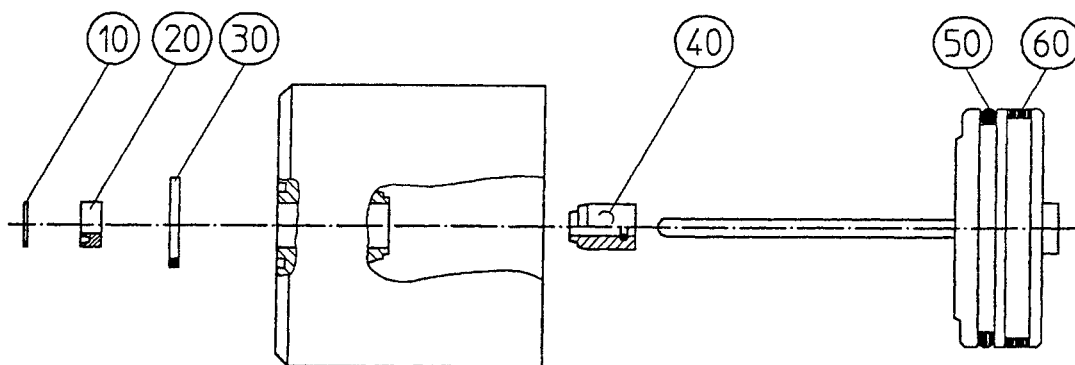


Fig. 11

Replacement part set, seals				Part nbr. 79978 041001
Pos. 10	1 off	Spacer	6 x 7.5 x 0.6	
Pos. 20	1 off	Grooved ring	3 x 7.5 x 3.35	
Pos. 30	1 off	Seal	15 x 12 x 1.5	
Pos. 40	1 off	Bearing bushing complete	3.1 x 7.6 x 11	
Pos. 50	1 off	O-ring	36 x 2.5B	
Pos. 60	1 off	Bearing	4 x 1.55 x 118	

ACCESSORIES

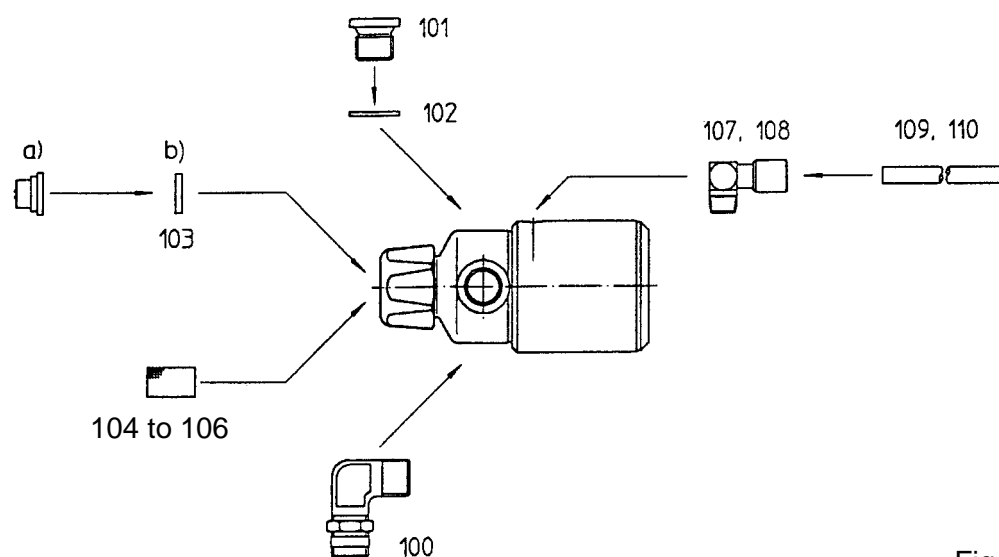


Fig. 12

Pos.	Description	Material	Notes	Part nbr.
100	Elbow	SST	6 - G 1/4	77214 009003
101	Fixing screw	SST	G 1/4 A	74035 024090
102	Seal	POM	A 14 x 18 x 1.5	76188 031008
103	Sealing washer ^{a)}			
104	Filter element	-	Mesh size 0.08	77646 039002
105	Filter element	-	Mesh size 0.18	77646 039003
106	Filter element	-	Mesh size 0.30	77646 039004
107	Bolted connection-W	CuZn	G 1/8 taper - 6 NW 4	75202 001004
108	Bolted connection-W	CuZn	G 1/8 taper - 8 NW 6	75202 001005
109	Hose	PUR	6/4 x L ^{b)}	70346 057003
110	Hose	PUR	8/6 x L ^{b)}	70346 057004

a) Nozzles with pre-atomizer and sealing washers according to the catalogue

b) Specify L in m for fluidhose lines according to the catalogue

Order Example

Please lay out each order as follows:

Description	Pos. No.	Part nbr.
Elbow	100	77214 009003

GRACO N.V.
 Industrieterrein "Oude Bunders"
 Loc. 2206 - Slakweidestraat 31
 3630 Maasmechelen - Belgium
 Tel. : 32 89 770 700
 Fax: 32 89 770 777

GRACO STANDARD WARRANTY

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the repaid return of equipment claimed to be defective to an authorized Graco distributor for verification of claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

Graco does not extend its warranty to accessories, appliances, materials or components which are sold by Graco but are not manufactured by Graco and makes no guarantee, however implied, with regard to the brand capability and suitability for a certain purpose. These parts sold by Graco but not manufactured by Graco (such as electric motors, switches, hoses, etc.) are covered by the warranties of the respective manufacturers. Graco will support the buyer in enforcing any warranty claim with the proviso that in no event can Graco be made liable for indirect, incidental, special or consequential damages which arise from the supply of appliances by Graco under the conditions governed by these provisions, or the supply, performance or use of any products or other goods which are sold under the conditions governed by these provisions, whether as the result of breach of contract, breach of warranty, negligence on the part of Graco or for any other reason.

GRACO N.V.

Industrieterrein "Oude Bunders"

Loc. 2206 - Slakweidestraat 31

3630 Maasmechelen – Belgium

Tel.: 32 89 770 700 Fax: 32 89 770 777

