

Bersch & Fratscher GmbH

Service Manual for OPTIMA ATM IV 1600

1. Putting into operation

1.1. Air connection

Connect atomizer air (spraying air) to connection thread G ¼" 3635.4-6 marked with **SP** on the gun body. Pressure of atomizer air **2,5 bar** (36 PSI).

Connect control air to connection thread G ¼" 3635.4-6 marked with **ST** on the gun body. Pressure of control air **not below 3,5 bar** (50 PSI) **and not above 6,0 bar** (85 PSI).

1.2. Paint connection

Material connection 1600 - 17 at the front side section of the gun.

1.3. Operation of the gun

The atomizer air connection **SP** should be constantly under pressure. The control air on the connection **ST** is adjusted by a valve (roll lever-, foot- or hand valve), maximum 3,5 – 6,0 bar.

Attention

Only use valves and stop-cocks with vent at the control air connection **ST** (e.g. three-way- roll lever valves, etc.)

Otherwise atomizer air pressure is growing up in case of closed control air and opens the piston axle 1600 – U6 with paint needle 1600 - 18.

1.4. Jet regulation

The right adjustment screw – marked with **F** on the gun body – effects a fully adjustable jet regulation from round- / to flat jet and vice versa.

Clockwise rotation (right)	-	closes the flat jet air
Counter clockwise rotation (left)	-	opens the flat jet air.

The left adjustment screw – marked with **R** on the gun body – effects a fully adjustable round jet regulation by means of airflow regulation.

Clockwise rotation (right)	-	less atomizer air
Counter clockwise rotation (left)	-	more atomizer air.

1.5. Flat jet direction adjustment

- Release gland nut on the air cap .
- Turn the noses of air cap in an optional position.
- Tighten gland nut.

1.6 Adjustment of pre-air

- Unscrew the locking cap 1600 – U2.
- Remove the needle nut 1583-19 with a wrench SW 6
- Turn the stroke nut of pre-air 1583-10 with a wrench SW 6, until there is a margin of about 2 mm between the pre-air stroke nut 1583 –10 and the piston axle 1600 – U6.

2. Maintenance

2.1. Cleaning

Right after each operation or in case of longer breaks the spray gun should be scavenged with solvent (cleaner) corresponding to the used paint, until the cleaning agent comes clear out of the spray gun.

Don't put the spray gun into a solvent bath!!!

2.2. Lubrication

O-rings, piston guide and piston collar are to be lubricated daily with silicone free oil respectively silicone free thin grease.

Locking cap 1600 – U2 has to be removed when greasing the piston gasket.

Put a small amount of oil into the connection **ST** or to controller air.

Turn the jet width adjustment to the left until the O – ring can be seen.

2.3. Cleaning of the nozzle

Unscrew air cap no. and clean it.

Unlock the nozzle with a wrench , remove and clean it (use only clean solvents).

3. Changing respectively replacement of parts

3.1. Paint needle

Unscrew locking cap 1600 - U2 and remove the paint needle backwards.

3.2. Paint needle sealing

In case of leakage tighten needle packing gland 1134 - 31 or replace the Teflon seal 1134 - 30 and O-Ring 104 - 0020.

3.3. Nozzle

As stated under point 2.3

3.4. Piston seals

Unscrew gland nut 112 – 54, remove locking cap 1600 – U2.

Attention

Pressure springs are prestressed slightly.

Pre-air stroke nut 1583 – 10 and hexagon nut 1583 – 19 should be screwed off from paint needle 1602 - 3.

Remove hexagon nut M5, unlock screw 1600 - 24 until piston axle 1600 – U6 can be taken out.

Remove jam nut 1587 – 5

Take off sealing case 1587 – U4 and replace it

Take off piston collar 1001 – 17.

3.5. Square-rings 1231-14

Exchange of the sealing 1231 – 14 and the sealing ring inside of the piston axle can only done by manufacturer (Bersch & Fratscher GmbH).

Attention

After mounting of the complete piston axis 1600 – U6 the screw 1600 - 24 on gun body Has to be locked again tight and countered with the hexagonal nut M 5.

In the case of screwing on and off the locking cap 1600 – U2, the raster with threaded bolt 1600 – U2 – 2 has to be opened.

4. General safety instructions

The spray gun has to be held in any case in such a way that the spray stream is directed away from the user. In addition it has to be taken care, that the spraying direction is the same direction as the exhaust air of the spray booth. Permissible deviation +/- 90 °.

Never spray against the exhaust direction ! The spray gun **must not** be used in localities **without** exhaust air system. It is only to be used in well-ventilated areas with regard to health, fire and explosion dangers.

For - personal protective suits - the instructions of the paint manufacturers are to be considered.

Never direct the spray stream against human beings or animals

Solvents and thinner could provoke corrosive reactions in extreme cases. In case of interruptions of the work, especially quitting the working place, it is important to interrupt the air in the supply line (let no rest spray material in the used equipment)

Pay attention:


The use of halogen hydrocarbon may provoke chemical reactions of the high-pressure spray gun or of galvanic treated parts of the spray gun, which could be responsible for an oxidation of parts - a process that could happen in a form of explosion.

This is the reason for the user to **avoid in any case** solvents or thinner, which contains parts of the following substances:

- **Fluor hydrocarbons (FKW):**
- Trichlorfluormenthan (R-11)
- 1.1.2 - Trichlor - - 1.2.2 - Fluorethan (R-113)
- 1.1.2.2 - Tetrachlor - - 1.2 - Difluorethan (R-112)
- **Chloride hydrocarbons (CKW):**
- Tetrachlorethen - (Perchlorethylen)
- Trichlorethen - (Trichlorethylen)
- Dichlormethan - (Methylenchlorid)

These substances coming together with water change into acids, which corrode the surface of the spray gun and parts of it. Never let your spray gun become contact with any acids or lacquer remove agents. Even repeated regenerated solvents can get acid-lade with increasing level of water. **So please take care, that you use solvents without acids.**

For a damage which results from a **non-observance** of these instructions, **BERSCH & FRATSCHER GmbH** is not able to give any liability.

CE 07	DECLARATION OF CONFORMITY according to the EC-Guide-Line Machines	
-------	---	---

<p>We, manufacturer</p> <p>BEFRAG Bersch & Fratscher GmbH Spezialfabrik für Lackiertechnik 63791 Karlstein declare under our sole responsibility that the product Spray Gun OPTIMA ATM IV 1600</p> <ul style="list-style-type: none"> • Conform with the relevant regulations of the EC-machine guideline (98/37/EG), including their changes at this time period. • Conform with further relevant regulations of the EC-machine guideline including their changes at this time period. <ul style="list-style-type: none"> → Directive 94/9/EC – Equipment in explosion endangered environments. Use in zone 1; equipment of category 2 • following harmonized standards (or parts from this) were used. <ul style="list-style-type: none"> → DIN EN 292 Part 1 and 2: Safety of machines, basic terms, general formation guiding. → EN 349 Minimum distances to avoid stem presses. → EN 23741 Noise formation → EN 457 Noise protection regulations. • following national technical standards and specifications were used.
--

- pr EN 614-1 Ergonomic formation basic principles.
- pr EN 349 Engineering safety regulations.
- pr EN 1953 Spraying apparatus for coating materials – Safety requirements.



Karlstein, den 24.04.2007

Unterschrift (Bernward Keller, head of department spraying machines)

SPARE PARTS LIST OPTIMA ATM IV No. 1600

Part-No.	Description	Part-No.	Description
104-009	O-ring 16 x 2.0 (2x)	1600-U2	Locking cap complete w. raster
104-020	O-ring 4.0 x 1.2 (2x)	1600-U2-1	Locking cap complete
1001-17	Piston collar	1600-U2-2	Heater with threaded bolt
112-43	Gland nut	1600-U4	Regulation complete (2x)
1134-30	Sealing (2x)	1600-U6	Piston axle complete
1134-31	Needle packing gland	1600-2	Connection piece
		1600-5	Stop ball
1171-2	Air cap	1600-7	Piston axle
1170-3	Fluid nozzle	1600-10	Paint guidance tube
1170-4	Gland nut	1600-11	Bolt nut
1170-5	Sealing	1600-12	Counter washer
		1600-13	Piston take up
1231-14	Square-ring (2x)	1600-14	Locking screw (2x)
1240-63	Sealing (2x)	1600-15	Regulation screw (2x)
1583-10	Pie-air stroke nut	1600-17	Regulation insert (2x)
1583-18	Hexagon nut M 3,5	1600-18	Material connection (2x)
1587-U4	Sealing cake	1600-19	Paint needle
1587-5	Lam nut	1600-24	Washer spring (6x)
		1600-26	Screw
1592-12	Compression spring	1600-28	Sealing (2x)
1592-13	Compression spring	1600-27	Bushing (2x)
1592-14	Sealing ring		
1592-3	Lightening nut	3635-A6	Coupling

Bersch & Fratscher GmbH
 Seligenstädter Straße
 D-63791 Karlstein
 Phone: +49 6188 / 787 0
 Fax: +49 6188 / 7341