



LEADING IN PRODUCTION EFFICIENCY

EcoGun 2100 Manual Spray Gun Air Assist

Operating instructions

MSG00004EN, V01



www.durr.com

N36220002V

TABLE OF CONTENTS

1	Product overview	4			
	1.1 Overview.....	4			
	1.2 Short description.....	4			
2	About this document	4			
	2.1 Information about the document.....	4			
	2.2 Scope of the document.....	5			
	2.3 Hotline and Contact.....	5			
3	Safety	5			
	3.1 Explanation of symbols.....	5			
	3.2 Intended use.....	5			
	3.3 Staff qualification.....	6			
	3.4 Personal protective equipment.....	6			
	3.5 Residual risks.....	6			
4	Transport, packaging and storage	7			
	4.1 Transport inspection.....	7			
	4.2 Handling of packaging material.....	7			
	4.3 Storage.....	7			
5	Assembly	7			
	5.1 Requirements for the installation point.....	7			
	5.2 Assembly.....	8			
6	Commissioning	8			
7	Operation	9			
	7.1 Safety recommendations.....	9			
	7.2 Checks.....	9			
	7.3 Adjust.....	9			
	7.3.1 Withdrawal force.....	9			
	7.3.2 Pilot air.....	10			
	7.3.3 Spray pattern.....	10			
	7.4 Painting.....	12			
	7.5 Securing	12			
	7.6 Rinsing.....	12			
	7.6.1 Safety recommendations. .	12			
	7.6.2 General notes.....	13			
	7.6.3 Rinsing spray gun.....	13			
8	Cleaning and maintenance	13			
	8.1 Safety recommendations.....	13			
	8.2 Cleaning.....	14			
	8.3 Maintenance.....	15			
	8.3.1 Maintenance schedule.....	15			
	8.4 Dismantle and assemble.	15			
	8.4.1 Remove the filter.....	16			
	8.4.2 Installing filter.....	17			
	8.4.3 Removing needle.....	18			
	8.4.4 Installing the needle.....	18			
	8.4.5 Dismantling the nozzle.....	18			
	8.4.6 Installing the nozzle.....	18			
	8.4.7 Removing packing seal.....	19			
	8.4.8 Installing packing seal.....	19			
9	Faults	21			
	9.1 Defects table.....	21			
	9.2 Troubleshooting.....	22			
	9.2.1 Replace the needle.....	22			
	9.2.2 Replace nozzle.....	23			
	9.2.3 Replace seal retainer screw and sealing rings....	23			
	9.2.4 Replacing packing seal.....	23			
	9.2.5 Replace sealing disc.....	24			
	9.2.6 Replace valve pin seal.....	24			
	9.2.7 Replace O-ring on the circular jet control	25			
10	Disassembly and Disposal	25			
	10.1 Safety recommendations... ..	25			
	10.2 Disassembly.....	25			
	10.3 Disposal.....	26			
11	Technical data	26			
	11.1 Dimensions and weight.....	26			
	11.2 Connections.....	26			
	11.3 Operating conditions.....	26			
	11.4 Emissions.....	26			
	11.5 Operating values.....	26			

11.6	Compressed air.....	27
11.7	Operating and auxiliary materials.....	27
11.8	Material specification.....	27
12	Replacement parts and acces- sories.....	28
12.1	Replacement parts.....	28
12.2	Tools.....	31
12.3	Accessories.....	32
12.4	Order.....	33

1 Product overview

1.1 Overview

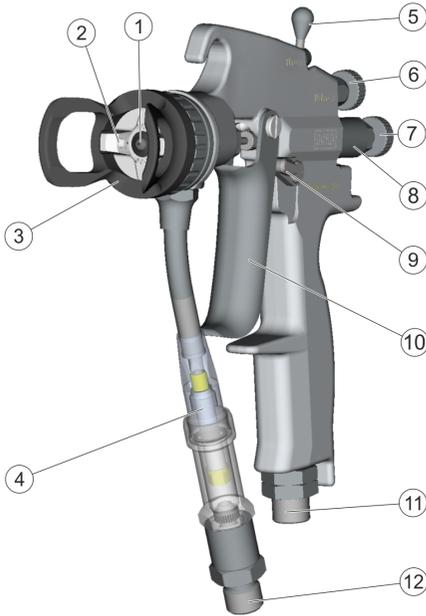


Fig. 1: Overview

- 1 Nozzle
- 2 Air cap
- 3 Screw cap
- 4 Filter
- 5 Flat jet control
- 6 Circular jet control
- 7 Withdrawal force control
- 8 Plug
- 9 Retainer
- 10 Trigger
- 11 Air connection, rotatable
- 12 Material connection, ball bearing mounted

1.2 Short description

The spray gun is for coating surfaces with or without compressed air. The atomized coating material is fed through high pressure lines.

The following factors influence the spray jet and on the spray pattern:

- » Alignment of the air cap
- » Atomizer air pressure
The higher the atomizer pressure, the finer is the atomization and the softer are the spray pattern edges.
- » Material pressure
The higher the material pressure, the higher the material flow and thus the finer the atomization.
The lower the material pressure, the higher is the efficiency and the smaller is the overspray generated.
- » Nozzle size
The higher the bore diameter, the more the material flowing out.
The greater the angle, the broader is the spray pattern.

2 About this document

2.1 Information about the document

This document facilitates safe handling of the product.

- » Read the document before beginning any work.
- » The document must be kept readily accessible and close to the place of use for use in the future.
- » The document must be included if the product is transferred.
- » Always follow specifications such as instructions for use and safety tips.
- » Images are there to help general understanding and can differ from the actual product.

2.2 Scope of the document

The scope of the document is as follows:

Product name	EcoGun 2100
Material number	N36220002V
Product versions	all

2.3 Hotline and Contact

If you have queries or would like technical information, please contact your dealer or sales partner.

3 Safety

3.1 Explanation of symbols

This manual contains the following notes:



DANGER!

High risk situation that can lead to serious injuries or death.



WARNING!

Medium risk situation that can lead to serious injuries or death.



CAUTION!

Low risk situation that can lead to minor injuries.



NOTICE!

Situations that can lead to material damage.



ENVIRONMENT!

Situations that can lead to environmental damage.



Further information and recommendations.

3.2 Intended use

Use

The material pressure level high pressure spray gun **Eco Gun 2100** with pump support in the high-pressure range is meant exclusively for hand guided coating of surfaces with water-based and solvent-based paints, within the specified technical data ↗ 11 "Technical data".

Wrong Use

Wrong use of the pump poses a risk of death:

- » Do not aim the spray gun at people or animals.
- » Do not reach into spray jet.
- » Do not atomize liquid nitrogen.
- » Only use the spray gun with components approved for the use by Dürr Systems GmbH.
- » Only use approved materials. Observe the safety data sheets.
- » Do not attempt to make conversions or changes on your own.

EX labelling

II 2G T60°C X

- II - Device group II: all areas except mining
- 2G - Device category 2 for gas
- T60 °C - Surface temperature, max. 60 °C
- X - Specific operating conditions for safe operation

The following conditions must be observed for safe operation with inflammable materials:

- » The spray gun must be grounded via the lines and pump.
- » Only use conductive hoses.
- » It must be ensured that static electricity can be discharged.

3.3 Staff qualification



WARNING!

Risk of injury in the event of inadequate qualification!

If inadequately qualified staff does not estimate the danger of risk correctly, there can be danger to life.

- All activities must be conducted exclusively by people who possess the qualifications below:

This manual is intended for qualified personnel in the industry possessing at least the following knowledge:

- » Safe operation of application stations
- » Fundamentals of electrical engineering, hydraulics and pneumatics:
- » Safe handling of the used material, operating and auxiliary materials
- » Training for operation, servicing, and troubleshooting

To acquire and deepen the said knowledge, Dürr Systems GmbH offers training. ↪ 2.3 “Hotline and Contact”

3.4 Personal protective equipment

Electrostatic discharge

When working in explosion-prone areas, the personal protective equipment must be conductive and must meet the requirements of DIN EN 62340-5-1. Approved Personal protective equipment is identified with the ESD-Symbol.



Wear the following personal protective equipment when working:



3.5 Residual risks

Explosion

Sparks, open flames and hot surfaces can cause explosions in explosive atmospheres. Serious injuries and death can result.

- » Perform all maintenance away from explosive atmospheres.
- » Do not use any sources of ignition and no open light.
- » Do not smoke.
- » Ground the product.
- » Ground the work piece to be coated.

Flammable materials can cause a fire or an explosion.

- » Ensure that the flashpoint of the cleaning agent is at least 5 K above the ambient temperature.
- » Pay attention to the explosion group of the material, cleaning and rinsing agent.
- » Ensure that technical ventilation and fire protection equipment are in operation.
- » Do not use any sources of ignition and no open light.
- » Do not smoke.
- » Observe the safety data sheets.

Transport, packaging and storage

Material

If you come in contact with hazardous liquids or vapors, it can cause serious injury or death can result.

- » Ensure the technical ventilation is operational.
- » Observe the safety data sheets.
- » Wear specified protective clothing.

Pressure

Material can escape with high pressure and penetrate the body. Death or serious injuries may ensue.

Before working on the product:

- » Disconnect the system with the product from compressed air and material supply.
- » Relieve the lines.
- » Secure the system against being switched on again.

Noise

The noise during normal operation may cause severe hearing damage.

- » Wear hearing protection.
- » Do not spend more time than necessary in the work area.

Hot surfaces

During normal operation the surfaces of components can get extremely hot. Burn injuries can happen on contact.

Before carrying out any work:

- » Check the temperature.
- » Do not touch hot surfaces.
- » Let components cool down.
- » Wear protective gloves

4 Transport, packaging and storage

4.1 Transport inspection

Inspect delivery on receipt for completeness and integrity.

Report defects immediately. ↪ 2.3 "Hotline and Contact"

4.2 Handling of packaging material



ENVIRONMENT!

Environmental damage due to wrong disposal

Wrongly disposed packaging material may not be re-used or recycled. It harms the environment.

- Dispose of material no longer required in an environment-friendly manner.
- Observe local disposal specifications.

4.3 Storage

Requirements for the warehouse:

- » Do not store outdoors.
- » Store in a dry and dust-free place.
- » Do not expose to aggressive media.
- » Protect from solar radiation.
- » Avoid mechanical vibrations.
- » Temperature: 10 °C to 40 °C
- » Relative humidity: 35 % to 90 %

5 Assembly

5.1 Requirements for the installation point

- » It must be possible to disconnect the compressed air supply and material feed to the spray gun and to secure it from being switched back on.
- » The compressed air supply must be adjustable.
- » Lines, seals and screw connections must be designed to conform to the spray gun requirements ↪ 11 "Technical data".
- » The workplace must have a technical ventilation.
- » A hook or a lug must be provided for hanging the spray gun.

Working environment and grounding

Flooring of the working areas must be anti-static, according to DIN EN 50050-1:2014-03, measurement according to DIN EN 1081:1998-04.

5.2 Assembly

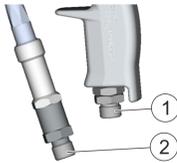


Fig. 2: Connect spray gun

Observe the technical data at assembly ↪ 11.2 “Connections”:

- WARNING!**
Sources of ignition may cause explosions!

Ensure a non-explosive atmosphere.

- Screw-in the air supply line into air connection (1).

Pay attention to the details about compressed air quality ↪ 11.6 “Compressed air”. Higher compressed air quality raises the spray quality and extends the life span of the spray gun.

- Screw-in material feed into material connection (2).

- WARNING!**
Statically charges components may cause explosions during operation!

Ensure that the work piece and the spray gun are grounded via the lines and pump.

- Connect lines

Select filter for Color tube

NOTICE!

Discoloration due to residual paint particles in the filter

Use filters only for one color.

Machine values of the filter must be lower than the nozzle holes.

6 Commissioning

- Tilt Down the retainer lever.
- Pull the trigger of the spray gun without material.
- Check for correct opening and closing of the needle.
- Ensure that horns and atomizer air is ready.
- Rinse the nozzle ↪ 7.6 “Rinsing”.
- Enable material feed and create a spray pattern image on a test surface.

Material throughput and spray pattern depend on the size of the nozzle, the material viscosity and the material pressure.

7 Operation

7.1 Safety recommendations



WARNING!

Danger of fire and explosion

Flammable materials can cause a fire or an explosion.

- Ensure that the flashpoint of the cleaning agent is at least 5 K above the ambient temperature.
- Pay attention to the explosion group of the material, cleaning and rinsing agent.
- Ensure that technical ventilation and fire protection equipment are in operation.
- Do not use any sources of ignition and no open light.
- Do not smoke.
- Observe the safety data sheets.



WARNING!

Risk of harmful or irritant substances

If you come in contact with hazardous liquids or vapors, it can cause serious injury or death can result.

- Ensure the technical ventilation is operational.
- Observe the safety data sheets.
- Wear specified protective clothing.

7.2 Checks

- » All hoses are in order.
- » All connections are in order.
- » The air valve is clean.
- » The spray gun is clean.
- » The connection between the material connection and the tapering seal on the material feed line is correct.

7.3 Adjust

7.3.1 Withdrawal force

Protective equipment:

- » Protective workwear
- » Respiratory protection, ambience-dependent
- » Eye protection
- » Use ear protection
- » Protective gloves
- » Safety boots

1. Select nozzle ↪ “Select nozzle”.
2. Align spray jet ↪ “Align spray jet”
3. Setting the material pressure



Keep the material pressure as low as possible. Lower material pressure reduces the wear on the nozzle and increases the efficiency coefficient of the spray gun.

4. Adjusting flat jet ↪ “Adjusting flat jet”
5. Adjusting circular jet ↪ “Adjusting circular jet”

For easier operation of the spray gun, adjust the withdrawal force to the material pressure. You can adjust the withdrawal force to the material pressure. You can adjust the material pressure from about 80 to 250 bar.



Fig. 3: Adjusting the withdrawal force

Perform one of the following steps:

1. Completely rotate in adjusting screw (1) with material pressure of 250 bar.
⇒ This raises the withdrawal force.
2. Completely rotate out adjusting screw (1) with material pressure of 80 bar.
⇒ This reduces the withdrawal force.
3. Select an intermediate position of the adjusting screw (1) with material pressure of 80 to 250 bar.

7.3.2 Pilot air

To avoid drop formation, set the pilot air when driving the withdrawal lever.

1. Secure spray gun ↪ 7.5 “Securing”.
2. Remove needle ↪ 8.4.3 “Removing needle.”.

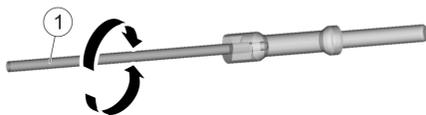


Fig. 4: Rotate the needle in/out

3. Rotate the needle (1) out.
⇒ Pilot air is increased.

4. Rotate the needle (1) in.
⇒ Pilot air is reduced.
5. Install the needle ↪ 8.4.4 “Installing the needle.”.

7.3.3 Spray pattern

Select nozzle

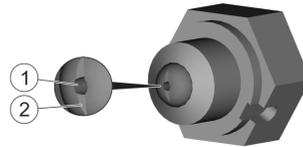


Fig. 5: Select nozzle

Observe the following when selecting the nozzle:

- » The higher the bore diameter, the more the material flowing out.
- » The greater the angle, the broader is the spray pattern.

1. Select a suitable nozzle.
2. Select an air valve suitable for the nozzle.
3. Install the nozzle ↪ 8.4.6 “Installing the nozzle”.

Align spray jet

The spray pattern is set correctly, if a horizontal or vertical spray jet is in the form of an ellipse. The position of the air valve and of the nozzle determines the direction of the spray pattern.

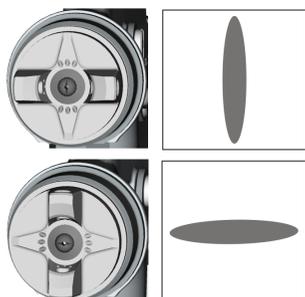


Fig. 6: Alignment of the air valve

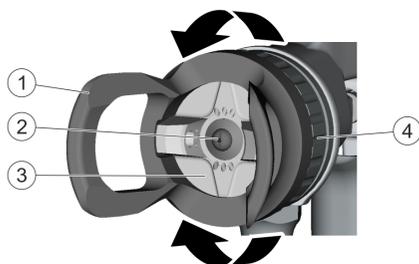


Fig. 7: Align spray jet

1. Tilt up retainer lever by 90°.
 - ⇒ The spray gun is locked.
2. Tighten cap nut (4).
3. Rotate screening (2) in clockwise direction into the required position.
 - ⇒ The air valve (3) and the nozzle (2) rotate along.
4. Tilt down retainer lever by 90°.
 - ⇒ The spray gun is unlocked.

Adjusting flat jet

The atomizer air is mixed with the material jet via the flat jet control.

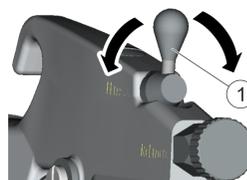


Fig. 8: Adjusting flat jet

Perform one of the following steps:

1. Tilt lever (1) to the right.
 - ⇒ Less atomizer air is mixed. The atomization is low.
2. Tilt lever (1) to the left.
 - ⇒ More atomizer air is mixed. The atomization is high.

Adjusting circular jet

The atomizer air is mixed at the air valve from the side via the circular jet control.



Fig. 9: Adjusting circular jet

Perform one of the following steps:

1. Turn the adjusting screw (1) to the right.
 - ⇒ Less atomizer air is mixed. Circular jet is set to low.
2. Turn the adjusting screw (1) to the left.
 - ⇒ More atomizer air is mixed. Circular jet is set to strong.

7.4 Painting

Protective equipment:

- » Protective workwear
- » Respiratory protection, ambience-dependent
- » Eye protection
- » Use ear protection
- » Protective gloves
- » Safety boots

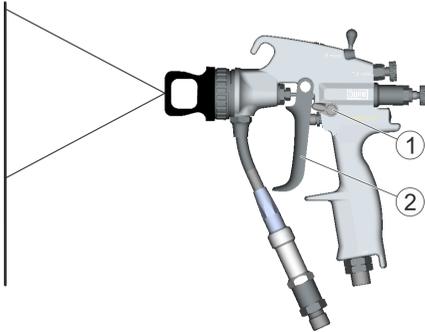


Fig. 10: Painting process

1. Tilt up retainer lever (1) by 90°.
 - ⇒ The spray gun is unlocked.
2. Drive trigger (2) up to the first center of pressure.
 - ⇒ Pilot air starts.
3. Drive the trigger (2) completely.
 - ⇒ High pressure spray medium starts.
4. Guide the spray gun in a 90° angle at a distance of 25 to max. 30 cm from the surface to be coated.

The distance can vary for effect coatings.

5. Repeat Step 2.

6. After completing the coating process, tilt the retainer lever down by 90°.

⇒ The spray gun is locked.

To avoid formation of drops after completing the painting process, leave the pilot air valve open for another 1-2 seconds.

7.5 Securing

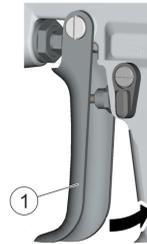


Fig. 11: Secure spray gun.

1. Rinsing spray gun ↪ 7.6 "Rinsing".
2. Set pump pressure to 0 bar and /or switch off pump for material and compressed air.
3. Drive trigger (1) completely.
 - ⇒ Pump and hoses are released.

7.6 Rinsing

7.6.1 Safety recommendations

NOTICE!

Material damage due to unsuitable rinsing agent

If the rinsing agent reacts chemically with the components or the material, components get damaged.

- Use only the rinsing agents that are compatible with the components and the material.
- Refer to safety data sheet of material manufacturer.

7.6.2 General notes

Rinsing

- » Use fluid to remove inner soiling from components.

Cleaning

- » Remove outer soiling from components.

7.6.3 Rinsing spray gun

Rinse the spray gun.

- » After end of work
- » Before every change of material
- » Prior to cleaning
- » Prior to dismantling
- » Before a long time of non-use
- » Before placing in storage

 Rinsing intervals depend on the material used.

1.



WARNING!

Danger from harmful or irritant substances

Avoid contact with material and rinsing agent.

2. Ensure proper disposal of the exiting material and rinsing agent.
3. Unscrew compressed air supply line from the compressed air connection.
4. Rinse the spray gun with an appropriate rinsing agent until the rinsing agent runs clean without any material residue.

8 Cleaning and maintenance

8.1 Safety recommendations



WARNING!

Danger of fire and explosion

Flammable materials can cause a fire or an explosion.

- Ensure that the flashpoint of the cleaning agent is at least 5 K above the ambient temperature.
- Pay attention to the explosion group of the material, cleaning and rinsing agent.
- Ensure that technical ventilation and fire protection equipment are in operation.
- Do not use any sources of ignition and no open light.
- Do not smoke.
- Observe the safety data sheets.



WARNING!

Risk of injury from unsuitable replacement parts in potentially explosive atmospheres

If you use replacement parts that do not comply with the provisions of the ATEX guidelines, the replacement parts can cause explosions in an explosion-prone atmosphere. Serious injuries and death can result.

- Only use original replacement parts.

**WARNING!****Risk of harmful or irritant substances**

If you come in contact with hazardous liquids or vapors, it can cause serious injury or death can result.

- Ensure the technical ventilation is operational.
- Observe the safety data sheets.
- Wear specified protective clothing.

**WARNING!****Risk of injury due to escaping material**

Material can escape with high pressure and penetrate the body. Death or serious injuries may ensue.

Before working on the product:

- Disconnect the system with the product from compressed air and material supply.
- Relieve the lines.
- Secure the system against being switched on again.

**NOTICE!****Material damage due to unsuitable cleaning agent**

Unsuitable cleaning agents can damage the product.

- Only use suitable cleaning agents approved by the material manufacturer.
- Observe the safety data sheets.
- Place heavily soiled components into a cleaning bath.
 - For cleaning baths, use only electrically non-conductive containers.
 - Do not use ultrasound baths.

- » Use alcohol (isopropanol, n-butanol) for water-based paint.
- » Remove dried water-based paint residue with a manufacturer approved thinner.
- » When cleaning with solvent, do not spray into a closed container. An explosive gas-air mixture can form inside closed containers.

**NOTICE!****Damage due to unsuitable cleaning tools**

Unsuitable cleaning tools can damage the surface of the product.

- Only use cloths, soft brushes and paint-brushes.
- Do not use abrasive cleaning tools.
- Do not use compressed air for cleaning.
- Do not use any thinner spray guns.
- Do not use high pressure for cleaning agents.

8.2 Cleaning

Clean the nozzle

Clean the nozzle after each change of material.

1. Dismantling the nozzle ↪ 8.4.5 “Dismantling the nozzle”.
2. Blow compressed air through the air valve from the front.
3. Place nozzle in a cleaning bath.
4. Install the nozzle ↪ 8.4.6 “Installing the nozzle”.

Cleaning filter

Clean the filter thoroughly as required to avoid encrustation of the deposits. Encrusted deposits make removal difficult.

Cleaning and maintenance

1. Remove the filter ↪ 8.4.1 "Remove the filter".
2. Clean the filter with a brush.

Do not use wire brushes.

If the filter is clogged up to 20% after cleaning, replace the filter ↪ 8.4.1 "Remove the filter".

3. Install filter ↪ 8.4.2 "Installing filter".
4. Dismantling the nozzle ↪ 8.4.5 "Dismantling the nozzle".
5. Rinse the spray gun briefly without nozzle ↪ 7.6 "Rinsing".
6. Install the nozzle ↪ 8.4.6 "Installing the nozzle".

8.3 Maintenance

8.3.1 Maintenance schedule

The intervals of some maintenance work depend on the used materials and can be adapted to the operating condition.

Interval	Maintenance work
after each use	Rinse spray gun ↪ 7.6 "Rinsing".
After every material and paint change	Clean nozzle (4) und Filter (46).
weekly / after each disassembly	Check grounding of connections and lines.
3-months / after every uninstallation/ after every thorough cleaning with solvent	Lubricate needle blade (53).
	Lubricate O-ring on the air regulation (13).
	Lubricate bearing of the trigger (29).
	Lubricate bearing of the retainer lever (22).

The position numbers of the components refer to the chapter ↪ 12.1 "Replacement parts".

Lubrication

NOTICE!

Only use silicone-free oil or grease.

8.4 Dismantle and assemble.

8.4.1 Remove the filter.

Remove small filters.

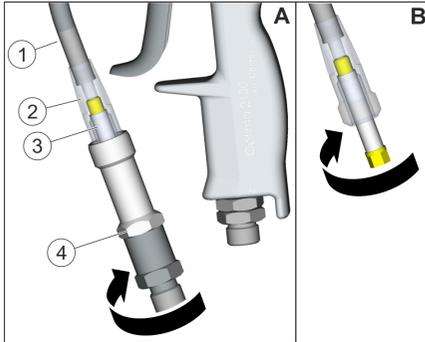


Fig. 12: Remove small filter.

1. Secure spray gun \hookrightarrow 7.5 "Securing".
 2. Unscrew material connection (4) on the key surface with the spanner SW17 mm and simultaneously hold it to the upper color tube (1) with spanner SW 11 mm.
 3. Thread out filter (2) downwards from the lower color tube (3).
- \Rightarrow Removal of filter is complete.

Remove the large filter.

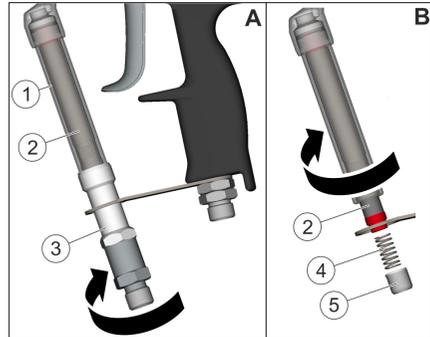


Fig. 13: Remove the large filter.

1. Secure spray gun \hookrightarrow 7.5 "Securing".
 2. Unscrew material connection (3) on the key surface with the spanner SW17 mm and simultaneously hold it to the paint tube (1) with spanner SW 13 mm.
 3. Remove the sleeve (5).
 4. Remove the spring (4).
 5. Thread out filter (2) downwards from the paint tube.
- \Rightarrow Removal of filter is complete.

8.4.2 Installing filter

Install small filter.

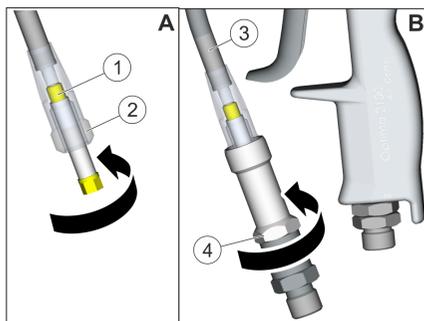


Fig. 14: Install small filter.

1. Thread-in filter (1) into the lower paint tube (2).
 - ⇒ Filter projects out of the paint tube by about 18 mm. Installation of filter is complete.
2. Screw material connection (4) on the lower paint tube (2) with the spanner SW17 mm and simultaneously hold it to the upper paint tube (3) with spanner SW 11 mm.
3. Dismantling the nozzle ↪ 8.4.5 “Dismantling the nozzle”.
4. Rinse the spray gun briefly without nozzle ↪ 7.6 “Rinsing”.
5. Install the nozzle ↪ 8.4.6 “Installing the nozzle”.

Installing large filter

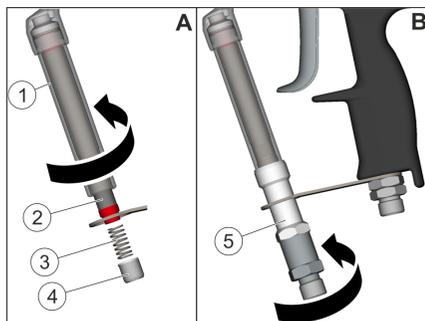


Fig. 15: Installing large filter

1. Insert filter (2) into the paint tube (1).
 - ⇒ Filter projects out of the paint tube by about 4 mm. Installation of filter is complete.
2. Insert spring (3).
3. Insert sleeve (4).
4. Screw material connection (5) on the paint tube (1) with the spanner SW17 mm and simultaneously hold it to the paint tube (1) with spanner SW 13 mm.
5. Dismantling the nozzle ↪ 8.4.5 “Dismantling the nozzle”.
6. Rinse the spray gun briefly without nozzle ↪ 7.6 “Rinsing”.
7. Install the nozzle ↪ 8.4.6 “Installing the nozzle”.

8.4.3 Removing needle.

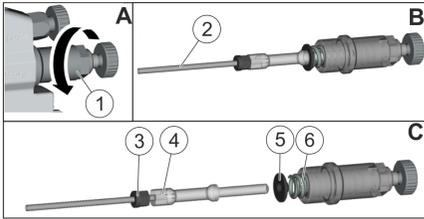


Fig. 16: Removing needle.

1. Secure spray gun ↙ 7.5 "Securing".
2. Unscrew plug (1).
3. Pull out needle (2) with spring (6) and pressure disc (5) on rear part of the needle (4).
⇒ Removal of needle is complete.

8.4.4 Installing the needle.

Removal of needle is complete.

1. Pull out needle driver (3) and simultaneously hold it against the rear part of the needle (4).
2. Insert the pressure disc (5).
3. Insert Compression spring (6).
4. Screw-in plug (1).
5. Pull out plug (1).
⇒ Installation of needle is complete.

8.4.5 Dismantling the nozzle

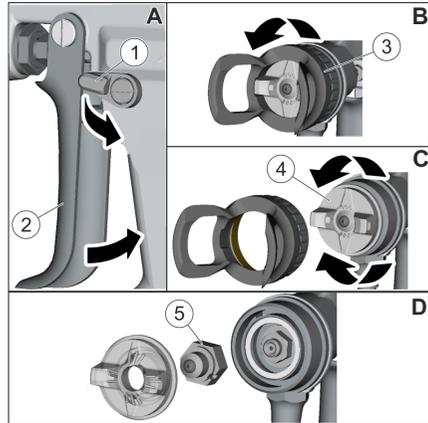


Fig. 17: Dismantling the nozzle

1. Secure spray gun ↙ 7.5 "Securing".
2. Thread-off cap nut (3) with air valve (4).
3. Remove nozzle (5).
⇒ Removal of nozzle is complete.

8.4.6 Installing the nozzle

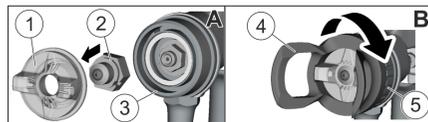


Fig. 18: Installing the nozzle

Removal of nozzle is complete.

1. Insert nozzle (2) into the air valve (1).
2. Push in air valve (1) with nozzle (2) into the inlet for material supply (3).
3. Screw-on cap nut (5) and tighten it.

4. Rotate screening (4) in clockwise direction into the required position.

⇒ Air valve (1) is aligned.

Installation of nozzle is complete.

8.4.7 Removing packing seal.

The packing seal consists of the following components:

- » 3x cap seals
- » 3x O-Ring

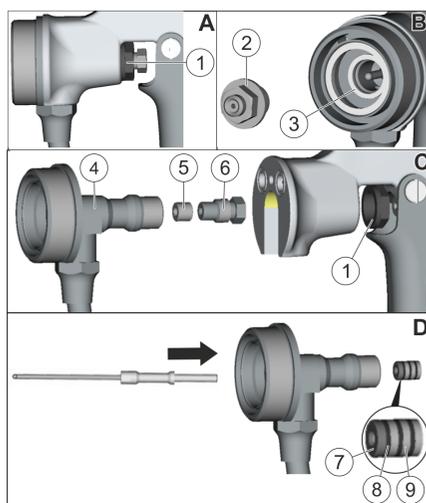


Fig. 19: Removing packing seal.

- » The spray gun is locked.
- » Removal of nozzle is complete.
- » Removal of needle is complete.

1. Unscrew seal retainer screw (2) with box wrench SW 10 mm.
2. Remove the sealing ring (3).
3. Thread out hexagonal nut (1).

4. Pull out inlet for material supply (4) towards the front.

⇒ Hexagon nut falls out

5. Thread out seal (6).
6. Remove spacing sleeve (5).
7. Press with the back of the needle against the sealing disc (7) and push out the cap seal (9) and O-rings (8).

8.4.8 Installing packing seal

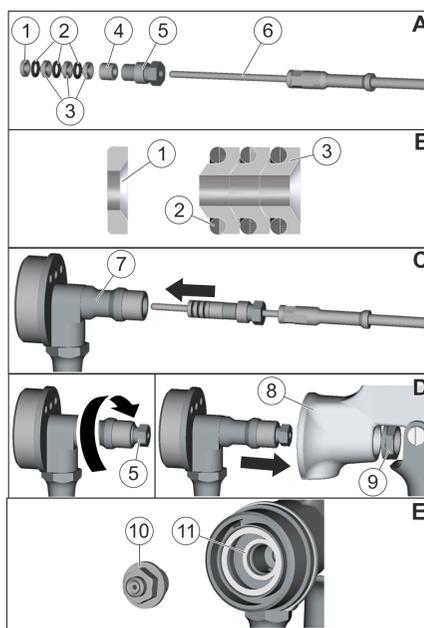


Fig. 20: Installing packing seal

- » Removal of nozzle is complete.
- » Removal of needle is complete.
- 1. Pull up seal (5) and spacing sleeve (4) on the needle (6).
- 2. Pull up cap seal (3) with the bevels to the needle and O-rings (2) alternating on the needle (6).
- 3. Pull up sealing disc (1) with bevel to O-ring (2) on the needle (6).
- 4. Introduce needle into the inlet for material supply (7).
- 5. Lightly screw-in seal (5).



Do not tighten the seal too much, so that the needle can be guided in.

- 6. Pull out needle.
- 7. Insert inlet for material supply (7) into the housing (8).
- 8. Place hexagon nut (9) on the inlet for material supply (7) and tighten.
- 9. Insert sealing screw (10) and sealing ring (11).
- 10. Screw-in sealing screw (10).
- 11. Installing the nozzle ↪ 8.4.6 "Installing the nozzle".
- 12. Installing the needle ↪ 8.4.4 "Installing the needle".
- 13. Tighten the seal (5) by hand.

9 Faults

9.1 Defects table

Fault description	Cause	Remedy
Paint flow reduces.	Filter clogged.	Cleaning filter (41, 46) ↪ “Cleaning filter”.
	Viscosity of the material too high.	Thin down the spraying material.
	Material pressure too low	Raise the air intake pressure of the pump.
Uneven spray jet	Blocked nozzle	↪ “Clean the nozzle”, ↪ 9.2.2 “Replace nozzle”.
	Filter in the spray gun clogged.	Clean or replace filter (41, 46) ↪ “Cleaning filter”.
	Nozzle worn out.	↪ 9.2.2 “Replace nozzle”.
	Viscosity of the material too high.	Thin down the spraying material.
	Too little or no atomizer air.	Open air control (12) ↪ “Adjusting flat jet”
	Air openings on the air valve (2) soiled.	Clean with plastic brush. Do not use wire brushes.
	Atomizer air pressure too high or too low.	Set the atomizer air pressure on the circular jet control (14) ↪ “Adjusting circular jet”.
Spray gun blows.	Valve defect	Replace valve (19).
	Seal worn out.	↪ 9.2.6 “Replace valve pin seal”.
	Valve spring has lost its tension.	Replace valve spring (16).
Air escapes on the flat jet control.	O-ring (13) not tight.	Replace O-ring ↪ 9.2.7 “Replace O-ring on the circular jet control .”.
Colorations occur.	Residual paint particles in the filter	Replace filter (41,46) ↪ 8.4.1 “Remove the filter.”.
Spray gun sprays on closing.	Sealing disc or needle ball	Replace seal retainer screw (6) ↪ 9.2.3 “Replace seal retainer screw and sealing rings.” or needle ↪ 9.2.1 “Replace the needle”.

Fault description	Cause	Remedy
	Needle spring has lost its tension.	Replace needle spring (57) ↪ 8.4.3 "Removing needle."
	Needle plug tightened too much, needle cannot move.	↪ 9.2.4 "Replacing packing seal".
	Needle- and needle seal soiled	↪ 9.2.4 "Replacing packing seal". Clean the needle. ↪ 8.1 "Safety recommendations".
	Seal retainer screw worn out	↪ 9.2.3 "Replace seal retainer screw and sealing rings."
Material escapes at the needle plug.	Seal tightened too lightly.	Tighten seal (52).
	Needle seal worn out.	↪ 9.2.4 "Replacing packing seal".
Paint gun has too little or no air.	Needle driver position has been displaced.	Adjust pilot air again. ↪ 7.3.2 "Pilot air"
Spray pattern too small	Nozzle worn out.	↪ 9.2.2 "Replace nozzle".
	Atomizer air pressure too high	Reduce the atomizer air pressure on the circular jet control ↪ "Adjusting circular jet".
Too little paint.	Filter clogged	Clean or replace filter ↪ 8.4.1 "Remove the filter."
Retainer lever is difficult to move.	Lever bearing too dry	Lubricate lever bearing (22).
Retainer lever is difficult to drive.	Lever bearing too dry	Lubricate lever bearing (29).



The item number of the components are listed in chapter ↪ 12.1 "Replacement parts".

9.2 Troubleshooting

9.2.1 Replace the needle

1. Remove needle ↪ 8.4.3 "Removing needle."
2. Unscrew needle driver (3) using spanner SW 6 and simultaneously hold it against the rear part of the needle (4).
3. Insert new needle with existing spring and pressure disc.

4. Installing the needle ↪ 8.4.4 "Installing the needle."

9.2.2 Replace nozzle

If the spray pattern is 25% smaller than original, the nozzle is worn out.

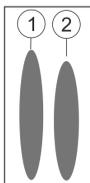


Fig. 21: Spray pattern

- 1 Nozzle in order
 - 2 Nozzle worn out.
1. Dismantling the nozzle ↪ 8.4.5 "Dismantling the nozzle".

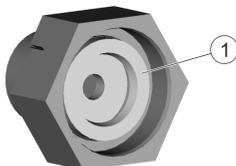


Fig. 22: Check seal

2. Check the seal (1) for damages and replace it if necessary.
3. Installing new nozzle ↪ 8.4.6 "Installing the nozzle".

9.2.3 Replace seal retainer screw and sealing rings.

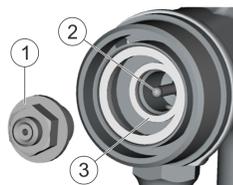


Fig. 23: Replace seal retainer screw.

1. Remove the nozzle ↪ 8.4.5 "Dismantling the nozzle".
2. Remove needle ↪ 8.4.3 "Removing needle".
3. Unscrew seal retainer screw (1) with box wrench SW 10 mm.
4. Replace seal retainer screw (1)sealing ring (3).
5. Check needle ball (2) for damages.
6. Screw-in seal retainer screw (1) and tighten.
7. Installing the needle ↪ 8.4.4 "Installing the needle".
8. Installing the nozzle ↪ 8.4.6 "Installing the nozzle".

9.2.4 Replacing packing seal

1. Remove needle ↪ 8.4.3 "Removing needle".
2. Remove nozzle ↪ 8.4.5 "Dismantling the nozzle".
3. Removing packing seal ↪ 8.4.7 "Removing packing seal".
4. Replacing packing seal
5. Installing packing seal ↪ 8.4.7 "Removing packing seal".

6. Installing the nozzle ↪ 8.4.6 "Installing the nozzle".
7. Installing the needle ↪ 8.4.4 "Installing the needle".

9.2.5 Replace sealing disc.

1. Remove needle ↪ 8.4.3 "Removing needle".
2. Remove nozzle ↪ 8.4.5 "Dismantling the nozzle".
3. Removing packing seal ↪ 8.4.7 "Removing packing seal".
4. Replace sealing disc.
5. Installing packing seal ↪ 8.4.8 "Installing packing seal".
6. Installing nozzle ↪ 8.4.6 "Installing the nozzle".
7. Installing needle ↪ 8.4.4 "Installing the needle".

9.2.6 Replace valve pin seal

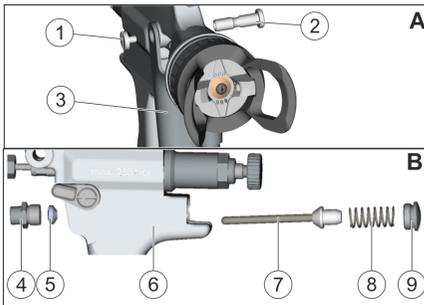


Fig. 24: Replace valve pin seal

1. Remove needle ↪ 8.4.3 "Removing needle".

2. Release lever screw (1) and simultaneously hold it to the lever axis (2) using slotted screwdriver.
⇒ Trigger (3) is released.
3. Unscrew valve gland (4).
4. Unscrew the sealing screw (9).
5. Remove compression spring (8).
6. Pull out valve pin (7).
7. Replace seal (5).
8. Insert valve pin (7) into the housing (6).
9. Clean sealing screw (9).



Only use silicone-free cleaning agents.

10. Wet sealing screw (9) with the sealing compound.
11. Insert compression spring (8).
12. Thread-in sealing screw (9).
13. Screw-in valve gland (4).
14. Place Trigger (3).
15. Insert lever axle (2).
16. Release lever screw (1) and simultaneously hold it to the lever axle (2) using slotted screwdriver.

9.2.7 Replace O-ring on the circular jet control .

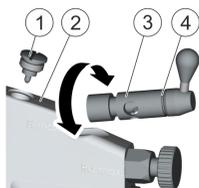


Fig. 25: Replace O-ring on the circular jet control .

1. Secure spray gun ↪ 7.5 “Securing” .
2. Unscrew the sealing screw (1).
3. Thread off flat jet control (3).
4. Pull out O-Ring (4).
5. Wet new O-ring (4) with oil.
6. Pull up new O-ring (4).
7. Thread in flat jet control (3) into the housing (2).
⇒ Flat jet control latches in.
8. Clean sealing screw (1) ↪ 8.1 “Safety recommendations”.
9. Wet sealing screw (1) with the sealing compound.
10. Thread-in sealing screw (1).

10 Disassembly and Disposal

10.1 Safety recommendations



WARNING!

Risk of injury due to escaping material

Material can escape with high pressure and penetrate the body. Death or serious injuries may ensue.

Before working on the product:

- Disconnect the system with the product from compressed air and material supply.
- Relieve the lines.
- Secure the system against being switched on again.

10.2 Disassembly

1. Rinse ↪ 7.6 “Rinsing”.
2. Disconnect compressed air and material feed and secure them from being switched on again.



NOTICE!

Release connections using suitable tool.

3. Disconnect all lines.

10.3 Disposal



ENVIRONMENT!

Environmental damage caused by improper disposal

Improper disposal threatens the environment and prevents reuse and recycling.

- Always dispose of components in accordance with their characteristic.
- Collect leaked out operating and auxiliary materials completely.
- Dispose of operating and auxiliary materials according to the disposal provisions in force.
- If in doubt, consult local waste disposal authorities.

11 Technical data

11.1 Dimensions and weight

Weight

Detail	Value
Weight with small filter	598 g

11.2 Connections

Detail	Value
Air connection	G 1/4" NPT 1/4"
Material connection	G 1/4" NPSM 1/4" M16 x 1.5

11.3 Operating conditions

Detail	Value
Maximum allowable material temperature when operating with protective gloves	40 °C

Detail	Value
Maximum allowable material temperature when operating with heat-resistant protective gloves	60 °C

11.4 Emissions

Emission sound pressure level L_{pA} , A – according to EN 14462

Circular jet/ value
» 1.0 bar = 67 dB
» 1.5 bar = 71 dB
» 2.5 bar = 78 dB
Uncertainty K_{pA} 5 dB

Flat jet / value
» 1.0 bar = 69 dB
» 1.5 bar = 74 dB
» 2.5 bar = 79 dB
Uncertainty K_{pA} 5 dB

11.5 Operating values

Detail	Value
Max. atomizer air pressure	8 bar
Recommended operating pressure	1.5 – 3 bar
Max. material pressure	250 bar

Technical data

Air consumption

Circular jet

1.0 bar = 5.0 cbm/h = 84.0 NI/min

2.0 bar = 8.1 cbm/h = 136.0 NI/min

3.0 bar = 11.1 cbm/h = 185.0 NI/min

Flat jet

1.0 bar = 4.3 cbm/h = 72.0 NI/min

2.0 bar = 6.9 cbm/h = 115.0 NI/min

3.0 bar = 9.2 cbm/h = 154.0 NI/min

Material consumption

Material consumption values depend on the nozzle hole and the pump pressure.

Material throughput values

Detail	Value
Operating pressure	100 bar
Nozzle size	0.23 mm
Material viscosity	45 sec. DIN 4 mm/20 °C
Material throughput	0.26 l/min

The characteristic curve shows the relation between the nozzle diameter of the spray gun and the material throughput.

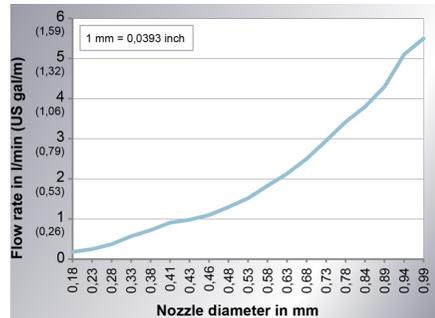


Fig. 26: Characteristic curve

11.6 Compressed air

Quality of compressed air

- » Purity classes ISO 8573-1:2010 1:4:1
- » Limitations for purity class 4 (pressure dew point max.):
 - » $\leq -3\text{ °C @ }7\text{ bar absolute}$
 - » $\leq +1\text{ °C @ }9\text{ bar absolute}$
 - » $\leq +3\text{ °C @ }11\text{ bar absolute}$

11.7 Operating and auxiliary materials

Material	Specification
Seal lubricant	Klüber Syntheso GLEP1

11.8 Material specification

Suitable Material:

- » Water-based paints
- » Solvent based paints

12 Replacement parts and accessories

12.1 Replacement parts

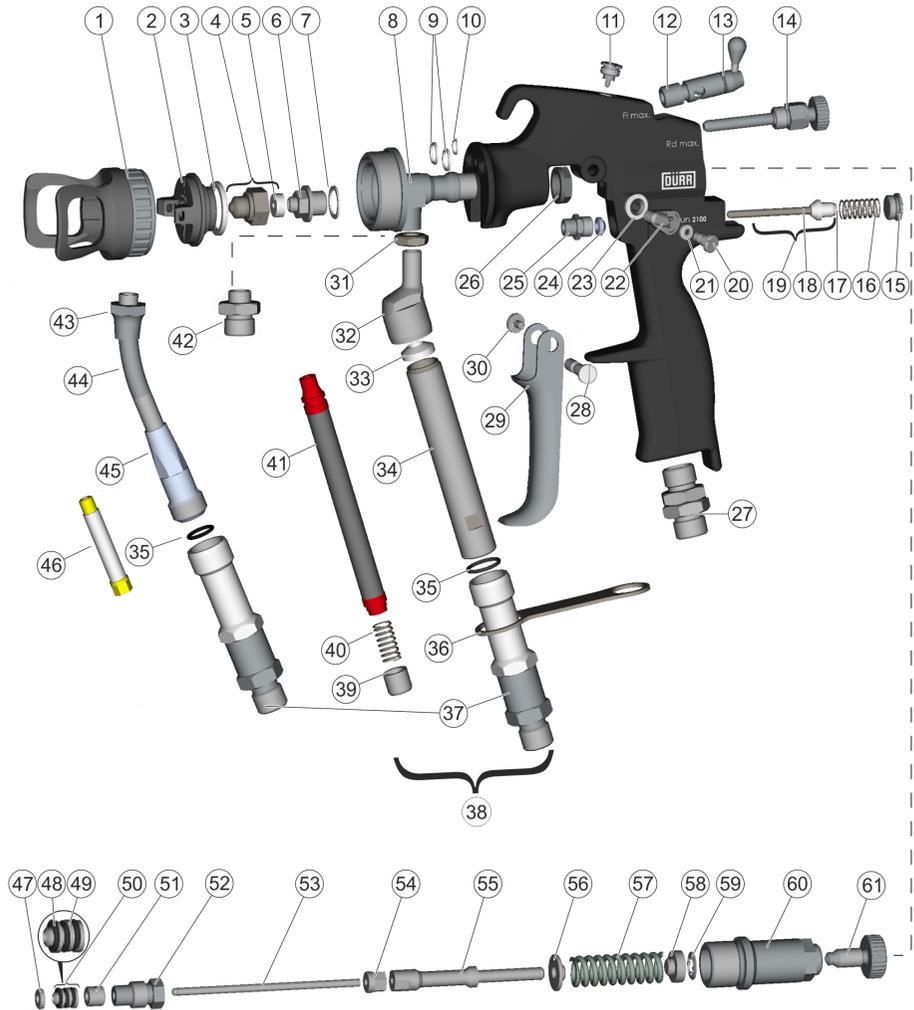


Fig. 27: EcoGun 2100

Item	Description	Number	Material number
1	Screw cap with spray jet screening	1	M60020002
2	Air valve 10 - 30°	1	M35030077
	Air valve 40 - 90°	1	M35030078
3	Seal	1	
4	Nozzle	1	
5	Seal	1	
6	Seal retainer screw	1	
7	Sealing ring, aluminum	1	
8	Material supply inlet	1	
9	Seal	2	
10	O-Ring 3.5 x 1.0 VITON	1	
11	Sealing screw	1	
12	Flat jet control	1	
13	O-Ring 7.0 x 1.0	1	
14	Circular jet control	1	
15	Sealing screw M10 x 1	1	
16	Compression spring Valve	1	
17	Sealing on valve	1	
18	Valve pin	1	
19	Valve, complete	1	
20	Screw	1	
21	O-Ring 4.0 x 1.2 VITON	1	
22	Locking / Retainer lever	1	
23	Spacer	1	
24	Seal	1	
25	Valve gland	1	
26	Hex nut Needle	1	

Item	Description	Number	Material number
27	Air connection G 1/4"	1	M01200001
	Air connection NPT 1/4"	1	M01200002
28	Lever axle	1	
29	Trigger	1	
30	Lever screw	1	
31	Hex nut material connection	1	
32	Paint tube connection	1	
33	Seal	1	
34	Color tube	1	
35	O-Ring 12 x 1.5 VITON	1	
36	Paint tube support bracket	1	
37	Connection medium, rotatable NPSM 1/4"	1	M01010188
	Connection medium, rotatable NPSM 1/4"	1	M01010182
	Connection medium, rotatable M16 x 1.5	1	M01010181
38	Color tube complete NPSM 1/4" with filter	1	
39	Tube	1	
40	Compression spring Filter	1	
41	Filter / screen 200 msh red	1	M13060010
	Filter / screen 100 msh yellow	1	M13060011
	Filter / screen 50 msh white	1	M13060012
	Filter / screen 30 msh white	1	M13060013
42	Reducer nipple M8x1 NPSM 1/4"		M56100465
	Reduction nipple M8x1 / G1/4"		M56100466
43	Locknut	1	
44	Color tube top	1	
45	Color tube bottom	1	
46	Filter / screen 295 msh red	1	M13060007

Item	Description	Number	Material number
	Filter / screen 150 msh yellow	1	M13060008
	Filter / screen 80 msh white	1	M13060009
47	Sealing disc.	1	
48	O-Ring 4.0 x 1.2 VITON	3	
49	Cap seal	3	
50	Spacing sleeve	1	
51	Packing seal, 6-piece	1	
52	Needle plug	1	
53	Needle piece	1	
54	Needle driver	1	
55	Needle piece rear	1	
56	Pressure disc, large	1	
57	Compression spring Needle	1	
58	Pressure disc, small	1	
59	Notched ring ZA 4.0	1	
60	Plug	1	
61	Adjusting screw	1	

12.2 Tools

Following tool kit is included in the scope of supply.

Description	Components	Material #
Tool kit	Double open end wrench 6 x 7 2 pcs., single head wrench SW 8 mm	N36960039

12.3 Accessories

Following repair sets are not included in the scope of supply and can be ordered separately:

Filter sets

Description	Components	Material #
Filter set 30	Compression spring (40), sleeve (39), Filter / screen 630 µm 30 msh green (41)	N36960032
Filter set 50	Compression spring (40), sleeve (39), Filter / screen 320 µm 50 msh white (41)	N36960033
Filter set 100	Compression spring (40), sleeve (39), Filter / screen 160 µm 100 msh yellow (41)	N36960034
Filter set 200	Compression spring (40), sleeve (39), Filter / screen 65 µm 200 msh red (41)	N36960035

Repair sets

Description	Components	Material #
Repair Set	Retaining screw (6), air control flat jet (12), sealing screw (11), sealing screw M10 x 1 (15), compression spring Valve (16), Valve pin (18), Valve gland (25), Lever axle (28), lever screw (30), needle piece (53), compression spring needle (57)	N36960028
Seal set	Seal (3), Seal (5), Sealing ring, aluminum (7), Seal 2 pcs. (9), O-Ring 3.5 x 1.0 VITON 2 pcs. (10), O-Ring 7.0 x 1.0 (13), Seal valve (17), Seal 2 pcs. (24), Seal (33), O-Ring 12 x 1.5 VITON (35), O-Ring 4.0 x 1.2 VITON 4 pcs. (48), Cap seal 3 pcs. (49)	N36960029
Trigger, complete	Lever axle (28), Trigger (29), Lever screw (30)	N36960030
Locking Mechanism	Screw (20), O-Ring 4.0 x 1.2 VITON (21), Locking mechanism- /Retainer lever (22), Washer (23)	N36960031
Closure	Notched ring ZA 4.0 (59), Plug (60), Adjusting screw (61)	N36960036
Valve pin set	Compression spring (16), Valve complete (19), Seal (24), Valve gland (25), Sealing screw (15)	N36960066

Description	Components	Material #
Compression spring set	Pressure disc, large (56), Compression spring Needle (57)	N36960067
Needle, complete	Washer (47),spacing sleeve (51), packing seal, 6 parts (50),needle plug (52),needle (53), needle actuator(54)	N36960068

12.4 Order



WARNING!

Risk of injury from unsuitable replacement parts in potentially explosive atmospheres

If you use replacement parts that do not comply with the provisions of the ATEX guidelines, the replacement parts can cause explosions in an explosion-prone atmosphere. Serious injuries and death can result.

- Only use original replacement parts.

Ordering replacement parts, tools and accessories as well as information on product that are listed without order number ↪ 2.3 "Hotline and Contact".

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