

solo[®]

424 NOVA

Original instructions

Notice originale

Manual original

Backpack sprayer

Pulvérisateur à dos

**Pulverizador de
mochila**

en

fr

es

Attention!

Read this instruction manual carefully before first operation and strictly observe the safety regulations!

Attention !

Lire attentivement le présent manuel avant la première mise en service et observer impérativement les consignes de sécurité !

Atención!

¡Lea atentamente este manual de empleo antes de la primera puesta en funcionamiento y respete imprescindiblemente las prescripciones de seguridad!



CE

Original instructions

Changes to the scope of supply in form, technology and equipment are reserved. No claims can be derived from any information and figures in these original instructions.

The original packaging and, at the end of its service life, the sprayer must be properly disposed of according to the local environmental regulations.

The machine can be subject to national rulings for regular review by designated offices, as specified in directive 2009/128/EC.

1 EC declaration of conformity

SOLO Kleinmotoren GmbH,
Stuttgarter Straße 41, D-71069 Sindelfingen,
Germany declares that the back spraying unit type **NOVA 424** from production date 11/2017 onwards - corresponds to the relevant provisions of directive 2006/42/EC of the European parliament and the council from 17 May 2006 about machinery and directive 2009/127/EC.

Sindelfingen, 01 November 2017



Wolfgang Emmerich, SOLO Kleinmotoren GmbH,
Stuttgarter Straße 41, D-71069 Sindelfingen
(managing director and documentation officer)

2 Scope of delivery

- Basic unit with hand valve and pressure hose
- Spray tube
- Pre-installed nozzle assembly incl. nozzle
- Assembly parts cap but, O-ring
- Carrying belt and attachment pin
- Pump lever

3 Wear parts

The following wear parts are not subject to the manufacturer's guarantee:

* All rubber parts that come into contact with spraying liquid, * nozzles, * filters, * seals, * diaphragms, * sleeves

4 Warranty

Please observe that specific warranty conditions are valid in some countries. In doubt, ask your vendor.

No guarantee can be granted for any damage caused by:

- Non-observation of the original instructions.
- Omission of necessary maintenance and cleaning work.
- Wear and tear from regular use
- Use of unapproved working tools.

- Use of force, improper treatment, abuse or accident.
 - Manipulations by non-qualified persons or from improper repair attempts.
 - Unauthorized modifications to the device.
 - Use of unsuitable spare parts or non-genuine spare parts.
 - Use of unapproved chemicals or dilutions.
 - Damage caused by use in the rental business.
- Any warranty work must be performed by one of our authorised specialist vendors. Cleaning, care and standard adjustments are not accepted as warranty services.

For Australia only: Supplementary warranty notes specifically for Australia

To make a claim, contact Clayton Engineering, 26 French Ave, Brendale, Q, 4500 on phone 1300 798 022 or email sales@claytonengineering.com.au. You will be asked to provide proof of purchase and then will be instructed on the procedure for repairing or replacement of the product under warranty. All costs incurred for repair or replace, and additional claims can be discussed at this stage.

This warranty is provided in addition to other rights and remedies you have under law: Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

5 Symbols



Read the original instructions thoroughly.



DANGER! Non-observation of the original instructions may potentially cause fatal injury.



Wear the prescribed protective clothing.



Wear protective gloves.



Wear facial protection (e.g. goggles).



Wear breathing protection.



No smoking.



No open fire.



Minimum distance from other persons: 15 m [approx. 16 yards]

6 Safety provisions

6.1 Intended use / applications

- Use the sprayer only for the application of liquid herbicides, pesticides and weed killers as well as liquid fertilisers that are available from the authorised specialist trade and approved by local/national authorities for use with portable spraying devices and for the application of clean water.
- Strictly observe the guide lines provided by the chemical manufacturer.
- Application areas are in farming, tree nurseries, forest operations, orchards, vineyards, market gardens, as well as glasshouse cultures with sufficient ventilation and venting.
- The backpack sprayer must not be used for any other purpose or for the application of liquids not mentioned above. In particular, no aggressive, acid- or solvent-containing liquids, disinfectants and waterproofing agents must be applied.
- Never use any liquids with temperatures above 40 °C [104 °F].
- We will disclose the materials used for the sprayer on request.

6.2 General safety notes

Read the original instructions before first use and keep it in a safe place.

Non-observation of information provided in these original instructions may potentially be fatal; the user is liable for any damage, direct or consequential, caused by this.

The original instructions must be kept on hand at the site of use of the sprayer at all times.

It must be read by all who are charged with any work with and on the device (including for maintenance, care and repair).

- Have safe use shown and explained to you by a SOLO specialist vendor.
- Persons under the age of 18 must only work under supervision with this sprayer.
- Keep persons and animals away from the working area. Never spray in the direction of any persons, animals or objects that could be hurt or damaged.
- This sprayer must only be passed on to persons who are familiar with this model, its operation and the original instructions.
- If you work with this sprayer, you should be physically fit, rested and healthy.
- Do not use the sprayer while under the influence of alcohol, drugs or medication.
- Never make any changes to existing safety provisions and operating parts.
- Only use the sprayer when it is operationally safe to do so. Check the sprayer before every use according to chap. 10.1.

- Replace damaged parts without delay. Only use SOLO genuine spare parts.
- Only use factory approved accessories and attachments for this sprayer.
- Empty and clean the sprayer according to the information in chap. 10.4 for this. Prevent unauthorised access to the machine.

6.3 Safe handling of spraying liquids

- Follow suitable procedures and use collection containers to prevent any contamination of the environment, the public waterways and/or storm water systems from chemical agents and cleaners. This can happen while mixing, filling, using, emptying, cleaning or during transport.
- Always collect chemical spray liquids and cleaners (including residues) in suitable containers and return them to collection points specified by the municipal administration.
- In case of skin or eye contact, rinse or flush the affected body parts with plenty of clean water. Seek medical advice without delay.
- Contaminated clothing should be changed at once.
- Never eat or drink while handling spray liquids
- If you feel nauseous during work, or if you are excessively fatigued, stop working at once. If the condition persists, seek medical advice without delay.
- Never permit children or persons work with or handle spraying liquids if they are not familiar with these substances.
- Never fill different spray solutions into the spray tank.
- The description of the kind of spray solution used must be attached to the device and must be updated with every change of the spraying solution.
- When changing the spray solution, clean the spray tank and all parts that come in contact with the spray solution. Operate the sprayer with clear water first before filling the spray tank with the different spray solution.
- At the end of work, empty and clean the sprayer according to chap. 10.4, clean your face and hands thoroughly, take off work clothing and wash it regularly.

6.4 When transporting the sprayer

- The device must be securely strapped down when transported on vehicles.
- Prevent leakages of spraying agents. The liquid tank of the sprayer and all liquid carrying hoses must be inspected regularly for leaks.

6.5 Work clothing /personal protection equipment (PPE)



Suitable and approved protective clothing that protects all body parts from contact with the spray solution must be worn.

- Wear firm shoes with good gripping soles.



- Wear protective gloves with a slip-proof palm.



- Use facial protection (e.g. protective goggles).



- Always wear a breathing mask. when working in dense, tall plants, greenhouses, troughs or trenches and when using dangerous spraying agents.

6.6 Before and during work

- Before starting work, always check the entire device for operational safety according to chap. 10.1.
- The sprayer must only be operated by one person. There must be no other person within a radius of 15m [approx. 16 yards].
- Always ensure sufficient air exchange in dense plant growth, in greenhouses, troughs or trenches.
- Always stay within calling distance from other persons that may provide help in emergency.
- Take regular working breaks to prevent fatigue.
- Do not smoke at the workplace.

6.7 Maintenance, repair and storage

Only perform maintenance and repair work yourself that is described in these original instructions. All other work must be carried out by an authorised specialist workshop.

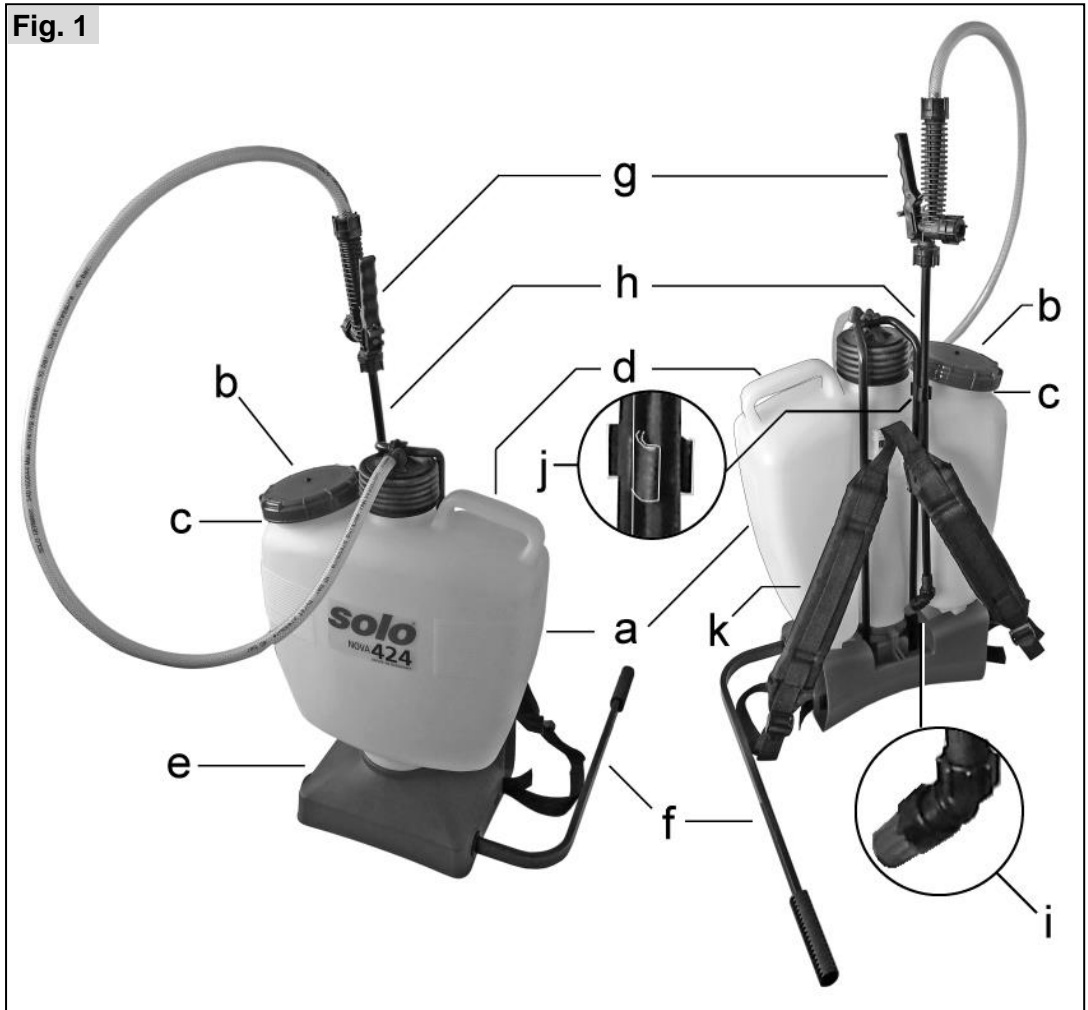
- Do not service, repair or store the sprayer near open fire.
- Before any maintenance and repair work, release the pressure in the pressure chamber inside the tank. To do this, hold the spray wand in the liquid tank or in a suitable container until the liquid flow stops.
- The pressure hose, hand valve, spray wand and nozzle assembly must only be unscrewed when the sprayer is depressurised.

7 Work preparation

Fig. 1:

- a. Spray tank
- b. Tank lid
- c. Tank lid screwed to the filling socket (c)
- d. Carry handle
- e. Standing foot
- f. Pump lever
- g. Hand valve
- h. Spray wand
- i. Nozzle attachment
- j. Spray tube holder
- k. Carrying belt

Fig. 1



7.1 Assembly

Assembly of the spraying wand (h):

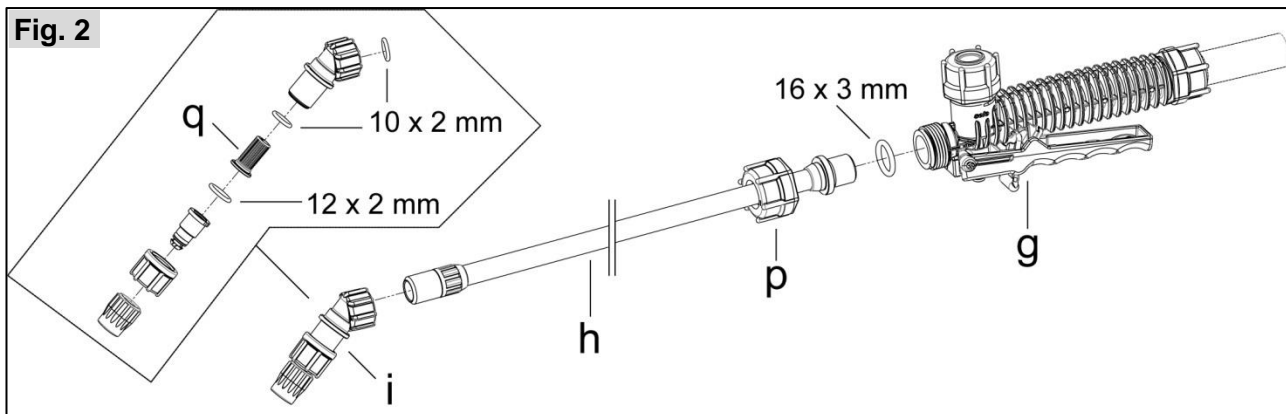
Fig. 2

- Start the cap nut (p) evenly and screw the spray tube with the O-ring (16x3 mm) onto the hand valve (g) hand-tight without tools.
- Screw the nozzle attachment (i) onto the spray tube hand-tight without tools.

Fig. 1:

- Outside of work, the spraying wand (h) is attached to the spraying wand holder (j).

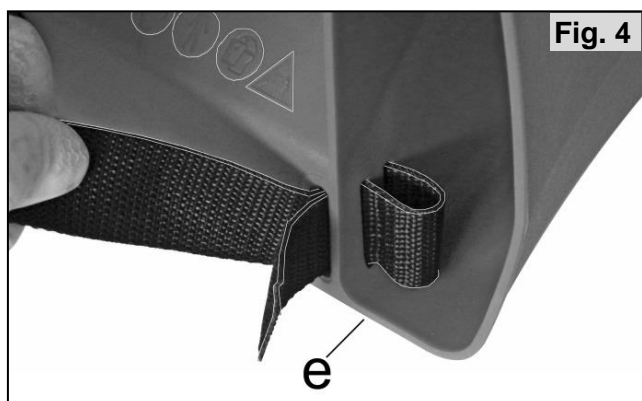
Fig. 2



Assembly carrying belt



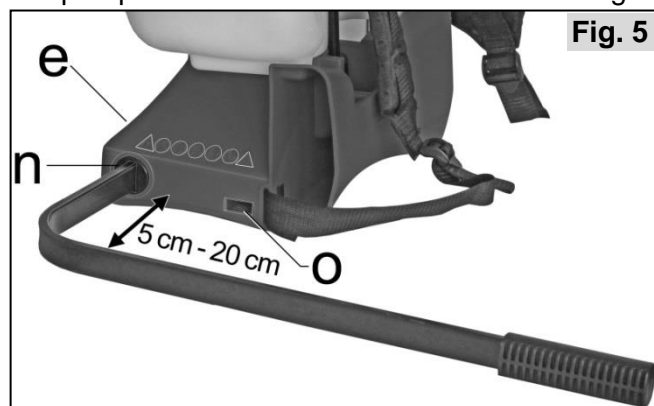
- Thread the upper loop of the carrying belt (**k**), through one of the three attachment ribs from above depending on body size, so that the two clamping sliders (**l**) are on the outside.
- Secure the loop with the attachment pin (**m**) from below.



- Thread the ends of each carrying belt through the specified slits in the standing base (**e**).
- Tighten the belt.

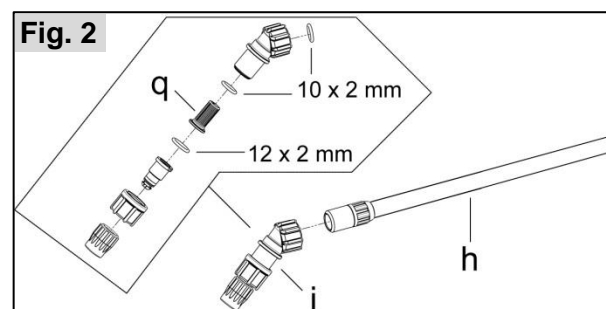
Assembly of the pump lever (**f**):

The pump lever can be attached to the left or right.

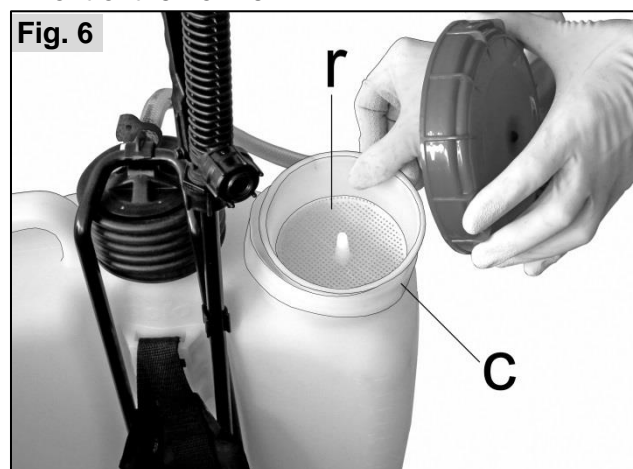


- Push the pump lever into the guide (**n**) at the standing base (**e**) from the desired side, so that the pump handle points backwards (next to the user when the device is carried on the back). For ergonomic adjustment, the pump lever can be pushed into the device base to different degrees so that the distance from the standing base is between 5 cm and max. 20 cm.
- When not working, the pump lever can be pushed into the rear opening (**o**) at the standing base for space-saving storage.

7.2 Filter and filling screen



The nozzle assembly (**i**) includes a filter (**q**) insert in front of the nozzle.

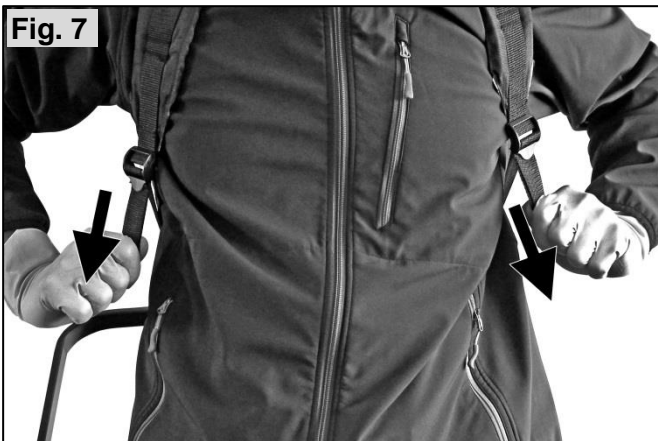


The basket in the filling neck (**c**) of the liquid tank contains a filter screen (**r**).

The nozzle filter and the inlet filler screen must always be used when working with the backpack sprayer.

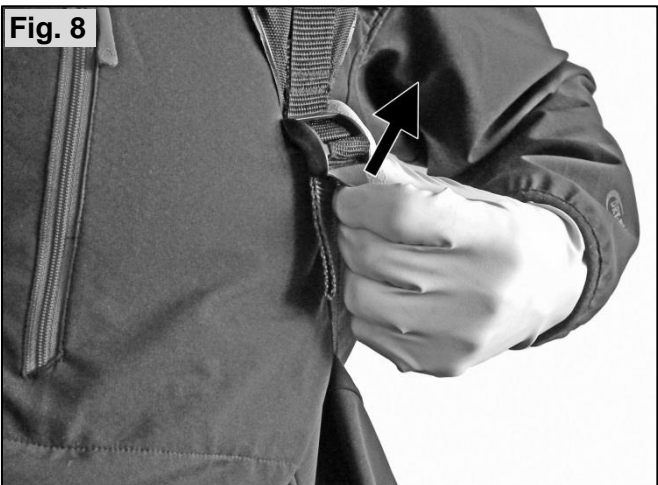
7.3 Length adjustment of the carrying straps

Fig. 7



Pulling down the two strap ends will tighten the carrying straps.

Fig. 8



Pulling the two belt ends upwards will loosen the carrying strap.

7.4 Test run

Before its initial use, the sprayer should be tested according to chapter 10.2.

8 Preparing the spray liquid and filling the spray tank

Prepare the spray liquid according to the instructions of the chemical manufacturer. Always prepare the spray liquid outdoors, never in living quarters, stables or storage rooms for food and animal feed.

When filling the spray tank, always use the filler basket with the integrated filter screen (r).

Fill the tank no further than to the upper-most mark on the side of the spray tank.

Overfilling the tank or spills can contaminate public waterways, rain- and storm water channel and must be avoided.

Wipe off spilled spray liquid without delay.

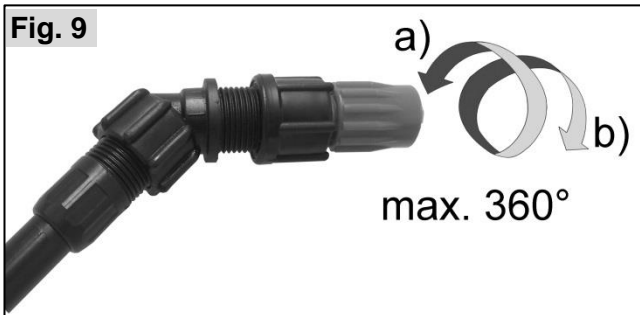
9 Use of the backpack sprayer

9.1 Spraying

- Do not use the sprayer in wind or rain.
- Check the direction of the air movement before starting work and spray with the air movement, not against it.
- Do not spray towards persons, animals, open doors and windows, cars or other objects that may be hurt or damaged by the spray.
- Ensure that only the actual spray target will be wetted. Always aim to obtain even and homogenous distribution of the spray on the treated surfaces.

Nozzle adjustment:

Fig. 9

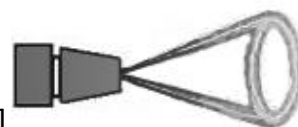


a) Nozzle closed

→ hollow cone

Delivery rate at 2 bar:

0.55 l/min [0.145 USgal/min]



b) Nozzle open

(1/2 turn 180° until

max. 1 turn, 360°)

→ coarse and narrow jet

Delivery rate at 2 bar: 1.45 l/min [0.383 USgal/min]

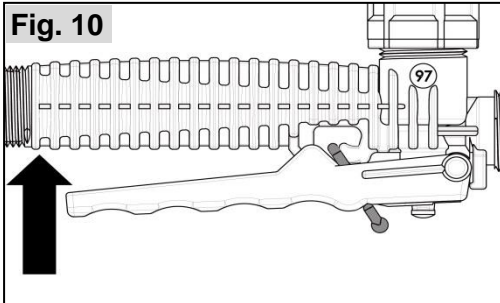


Pumping and spraying:

Draw in and pressurize the liquid in the pump with quick pump lever strokes.

Hold the spray wand with the hand valve.

Fig. 10



To spray, depress the hand lever on the valve.

Release the hand valve lever to stop spraying.

To spray the underside of leaves, lightly loosen the spray wand cap nut and turn the wand hand tighten again.

An uneven spray picture or reduced spray output from the nozzle may require cleaning of the nozzle filter insert and nozzle (chap.10.4) or the replacement of these parts (chap. 10.3).

9.2 Disposal of residual spray volume

Residual spray volumes of less than 100 ml [6.8 oz] are no longer pumped effectively. Either add more spray formula and continue spraying or, when finishing off, dilute the residual volume with 2 litres [68 oz] of clean water and apply to the already treated area.

At the end of the work, empty and clean the sprayer according to chap. 10.4, wash face and hands thoroughly and take off the work clothing. Work clothing requires regular washing.

10 Maintenance, cleaning and storage

10.1 Maintenance plan

Before starting work:

- Check the entire sprayer is operationally safe by:
 - Visual inspection of the sprayer
 - Checking the tightness of all parts (at maximum admissible pressure with the hand valve opened and closed).
 - Checking the working of all functional parts (pump lever, hand valve).
 - Checking the hoses and their screw connections.
 - Visual inspection of the filter screen in the filler basket.

After the end of work, when changing the spray formula, whenever required:

- Cleaning the spray tank chap. 10.4
- Cleaning the nozzles and filters chap. 10.4
- Cleaning the filter screen in the filler basket chap. 10.4

Whenever required:

- Greasing the tank lid seal chap. 10.5

10.2 Test run

When the spraying season starts and then every month, the following items must be checked in a test run with clean water:

- Tightness of all sprayer parts at maximum admissible pressure with the hand valve opened and closed
- Function of all working parts (hand valve, pump lever)
- Dosage and distribution accuracy

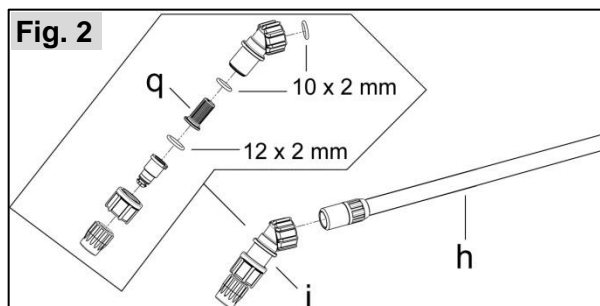
In case of irregularities, damage, leaks or limited function, do not use the sprayer but have it checked in a specialist workshop without delay.

10.3 Replace the spray nozzle and/or filter

- Flush the nozzle assembly with clean water.
- Unscrew the nozzle assembly.
- Clean the O-rings, filter insert and spray nozzle with clean water and soft brush. Do not blow out the spray nozzle by mouth! Do not clean nozzles

with any hard objects!

- Replace the nozzle with a new nozzle and/or new filter insert.



- Screw the parts of the nozzle assembly back together.

10.4 Empty the spray tank and clean all the parts in the spray delivery system to the nozzle

Empty the spray tank, flush with clean water all parts in the delivery system to the nozzle and the filter screen in the filler basket.

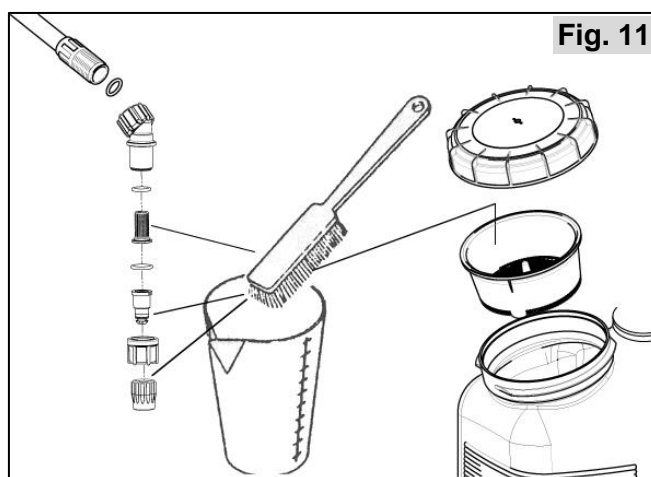
Give special attention to the wear parts such as nozzles, filters and seals.

Observe the cleaning notes in the original user manual for the chemical.

Never use any aggressive, acid- or solvent-containing cleaning agents (e.g. petrol).

After cleaning, let the spray tank dry in the open air.

Clean the spraying nozzle, filter and filling screen:



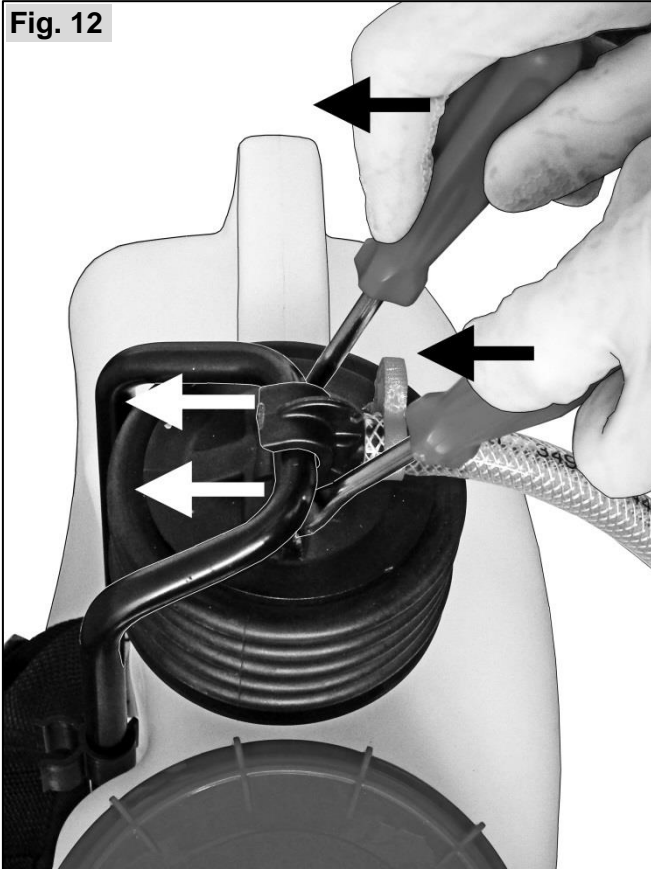
- Flush the nozzle assembly with clean water.
- Unscrew the nozzle assembly.
- Clean the O-rings, filter insert, spray nozzle and filling screen with clean water and a soft brush. Never blow out the spray nozzle with the mouth! Never clean nozzles with hard objects!
- Screw the parts of the nozzle assembly back together (Fig. 2).

10.5 Greasing the piston seal

With the pump going stiffly:

Only perform maintenance work when depressurised and with the spraying agent tank empty.

Fig. 12



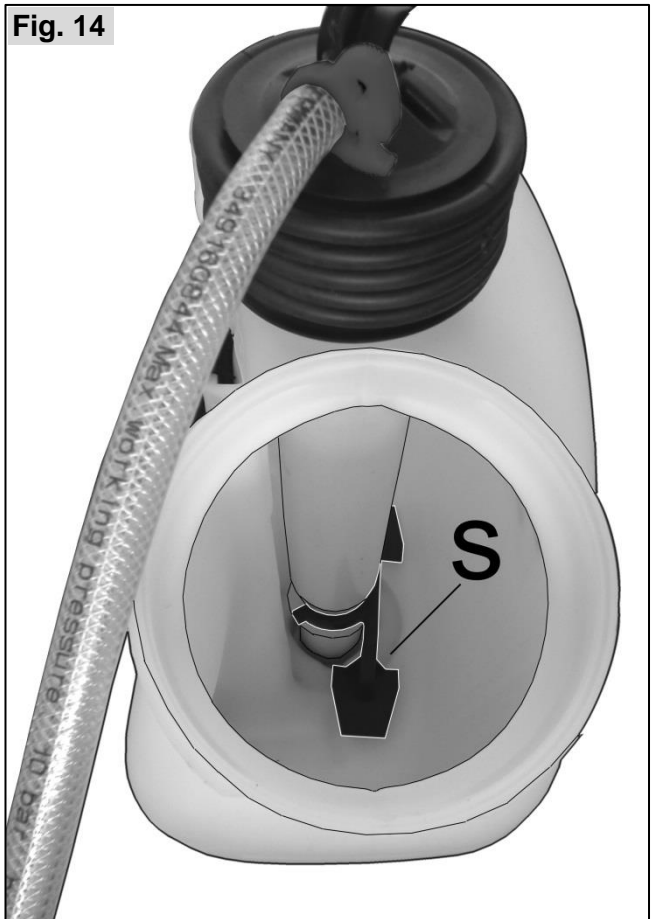
- Lever the lifting rods out of the clamp with two screwdrivers.

Fig. 13



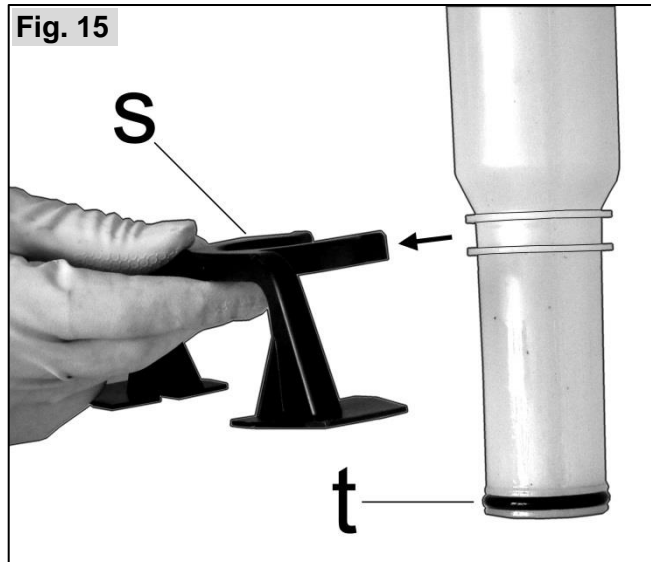
- Push the fold tube up.
- Unscrew the tank lid.
- Take out the filling screen.

Fig. 14



- Reach into the spraying agent tank with one hand and remove the stirrer (s) from the piston.
- Lift the piston out of the spraying agent tank upwards.

Fig. 15



- Wet the piston seal (t) with silicone grease.
- Reassemble the back sprayer in the reverse order.

10.6 Down periods and storage

Empty and clean the sprayer according to chap. 10.4.

Keep the sprayer protected from sunlight in a dry, frost-free and secure location at a temperature of max. 35 °C [95 °F].

No open fireplaces or similar must be nearby.

Prevent unauthorised use – especially by children.

11 Type plate



- a: Name and address of the manufacturer
- b: Product description
- c: Type designation
- d: Serial number
- e: Manufacturing month/year
- f: Weight (ready for operation, empty)
- g: Weight (ready for operation, with max. fill level)
- h: Maximum fill level of the spraying agent tank
- i: Volume of the spray tank
- j: Maximum permitted operating pressure
- k: Maximum permitted operating temperature
- l: Maximum application volume (with standard spraying nozzle at max. operating pressure)

12 Technical data

Spray tank:	Total volume	17.8 l [4.7 gal]
	Max. fill volume	16.0 l [4.2 gal]
Residual volume, (remaining liquid in tank that cannot be used)		< 100 ml [3.4 oz]
Pump system		Piston pump
Maximum permitted operating pressure		4.0 bar [58 psi]
Pressure chamber capacity		1.1 l [37.2 oz]
Stroke volume		86,7 cm ³ [5.29 cu.in]
Permissible operating temperature		0–40 °C [32–104 °F]
Pressure hose:	Length	1,300 mm [51.2"]
Maximum application volume (with standard spraying nozzle at 4 bar [58 psi])		1,95 l/min [0.515 USgal/min]
Filter insert:	Mesh gauge	0.8 mm [0.031"]
Filling screen:	Mesh gauge	2.0 mm [0.079"]
Weight:	Ready for operation, empty	5.1 kg [11.2 lbs]
	Ready for operation, with max. filling volume	21,1 kg [46.5 lbs]
Dimensions (without spray wand, Pump lever and pressure hose):	height	610 mm [24.0"]
	Width	390 mm [15.4"]
	Depth	245 mm [9.6"]

Application volumes (l/min [USgal/min])/* **optimal operating pressure** by using the corresponding nozzle:

Spray pressure	1 bar [15 psi]	2 bar [29 psi]	3 bar [44 psi]	4 bar [58 psi]
Nozzle				
High reach jet, adjustable	0.44 - 1.10 [0.116–0.291]	* 0.55 – 1.45 [0.145–0.383]	0.66 – 1.75 [0.174–0.462]	0.75 – 1.95 [0.198–0.515]