



Dear Owner

In buying a Kuhn machine you have chosen wisely. Into it have gone years of thought, research and improvement. You will find, as have thousands of owners all over the world, that you have the best that engineering skill and actual field testing can produce. You have purchased a dependable machine, but only through proper care and operation can you expect to receive the performance and long service built into it. This manual contains all the necessary information for you to receive full efficiency from your machine. The performance you get from this machine is largely dependent on how well you read and understand this manual and apply this knowledge. Please DO NOT ASSUME YOU KNOW HOW TO OPERATE AND MAINTAIN YOUR MACHINE before reading this manual carefully. KEEP THIS MANUAL AVAILABLE FOR REFERENCE. Pass it on to the next owner if you re-sell the machine. Your KUHN dealer can offer a complete line of genuine KUHN service parts. These parts are manufactured and carefully inspected in the same factory that builds the machine to assure high quality and accurate fitting of any necessary replacements.

■ About improvements

We are continually striving to improve our products. It therefore reserves the right to make improvements or changes when it becomes practical to do so, without incurring any obligations to make changes or additions to the equipment sold previously.

■ Designated use of the machine

The MANOPUL D15 sprayer must only be used for the work for which it has been designed:

- The spraying of fluid products used in the agricultural domain on low cultivations or for the maintenance of green spaces and communes.

■ Document illustrations

The illustrations in this manual are based on one machine model and in a given configuration.

Safety

■ Introduction

The machine must only be operated, maintained and repaired by competent persons who are familiar with machines' specifications and operation and aware of safety regulations for preventing accidents. The operator must imperatively respect safety instructions in this manual and in the warnings posted on the machine. The operator is also obliged to respect current legislation concerning accident prevention, work safety and public traffic circulation. The manufacturer is not held liable for any damage resulting from machine applications other than those specified by the manufacturer.

■ Read and follow the safety instructions

Before using the machine, carefully read all the safety instructions in this manual and the warnings placed on the machine. Should you have any difficulties in understanding certain parts in this manual, please contact your KUHN dealer.

■ Phytosanitary products

Keep phytosanitary products away from children. During use of phytosanitary products, do not smoke or eat. Comply with the product instructions and directions for use. Beware of their noxiousness to wildlife and insects, especially pollinating insects. Store crop protection products in a place with a leakproof floor enabling to recover product leaks. Rinse phytosanitary product containers and incorporate the rinsing dilution in the sprayer tank, prior to the treatment. Rinse and pierce packagings to prevent them from being reused. Drain booms and tank bottoms on the treated cultivation or on another authorized cultivation, preventing run-off. Empty far from rivers, temporary pools, ponds, wells, catch systems and residential areas. In any case, conform with the current legislation.

English

■ Body protection

Wear waterproof clothing whenever there is a risk of splashing from or contact with crop protection products, even in diluted form. Wear specific protective clothing (suit, gloves, boots, glasses, mask) when handling phytosanitary products.

Gloves

Wear gloves resisting to the various components contained in the products (ultranitrile gloves). Neoprene gloves are required in the presence of ketone in the formulations. Replace gloves as soon as they present signs of wear.

Masks

Anti-dust masks do not protect sufficiently against phytosanitary products. Wear a respiratory protection when preparing the spray mixture or spraying certain products. Check that the respiratory protections are fitted with filters. Replace respiratory protection at least once per year.

Machine specifications

1. Description and glossary

- 1: Lever
- 2: Spray gun
- 3: Pressure gauge
- 4: Hose
- 5: Strap
- 6: Tank



English

2. Technical specifications

Dimensions: Width 0.19 m (7'5")

Length 0.38 m (3')

Height 0.50 m (7'7")

Tank: Nominal volume 15 L (4 US gal)

Real volume 16 L (4.2 US gal)

Weight (Unladen) 4.3 kg (9.5 lb)

Operating temperature: Minimum 5 °C (41° F)

Maximum 40° C (104 °F)

Flow: Minimum 0.6 L/min (0.16 US gal/min)

Maximum 2.4 L/min (0.63 US gal/min)

Operating pressure: Low pressure from 1 to 1.5 bar (from 14.5 to 22 psi)

High pressure from 3 to 4 bar (from 44 to 58 psi)

Telescopic spray lance: Lance length 1.20 m (4')

Hose length 2 m (6'7")

Machine use

Certain crop treatment products are very aggressive with regards to materials that build the sprayer. The use of these products can cause malfunctions. These products are known to cause damage to spraying circuits:

- Trifluraline (Example: Tréflan)
- Alachlore (Example: Lasso)
- Phenmédiphame (Example: Betanal)
- Ethofumesate (Example: Tramat)
- Diclofop-méthyl (Example: Illoxan)



This list is not exhaustive.



When using this type of product, rinse the whole spraying circuit. Do not keep the solution contained in this type of product for more than 5 hours in the sprayer.

Do not mix products. Scrupulously follow the manufacturer's instructions.

1. Filling



Do not insert filler hose in the tank to prevent any product return in the waterworks system.



- Remove filler plug (1).
- Fill tank with clean water up to half its capacity.
- Pour the treatment product to mix:
 - Scrupulously follow the manufacturer's instructions.
- Fill with clean water, capacity 15 L (4 US gal).
- Make sure the mixture is mixed smoothly.
- Reinstall filler plug (1).



2. Pressurizing

- Select pressure.



Position a : from 1 to 1.5 bar (from 14.5 to 22 psi)

Position b: from 3 to 4 bar (from 44 to 58 psi)

a**b**

- Activate pump to increase the pressure in the circuit.



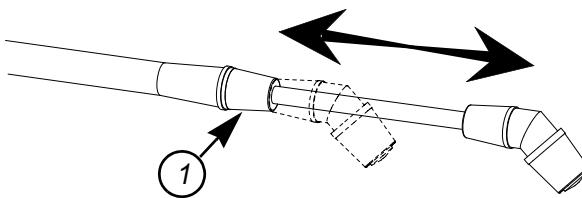
3. Spraying



Do not treat when the wind is too strong, in conformity with the legislation in force.

Use an adequate anti-drift device.

- Detach the lance.
 - Loosen nut (1).
 - Extend the telescopic lance.
 - Tighten nut (1).
 - Activate lance lever.
-
- Loosen nut (1).
 - Retract the telescopic lance.
 - Tighten nut (1).
 - Attach the lance.



4. Rinsing



Rinse the booms and tank over the treated area, making sure there is no run-off. Do not exceed the maximum authorized dose.

The main tank and the spraying circuit must be rinsed between 2 treatments with different products.

- Remove filler plug (1).
- Fully empty the tank.
- Fill tank with clean water up to half its capacity.
- Reinstall filler plug (1).
- Shake the tank.
- Pressurize the tank.
- Activate lance lever.
- Wait for 30 seconds.

- Repeat procedure if necessary.



5. Emptying the tank



Empty the equipment on the sprayed cultivation or on an authorized cultivation, making sure to avoid run-off.

In any case, conform with the current legislation.

- Remove filler plug (1).
- Fully empty the tank.
- Reinstall filler plug (1).



Maintenance and storage

1. Frequency chart

	Each time the machine is used	At the end of each season
Cleaning the machine		
- Tank - Filters - Nozzles	✓	✓
Maintenance		
- Water circuit - Nozzle flow	✓	✓

English

2. Cleaning the machine



Clean the machine on treated crop or on another authorized crop, preventing run-off. Only wash the sprayer with clean water.



■ Tank

- Rinse spraying circuit.
- Fully empty the tank.
- Rinse the machine on the outside.

■ Filters

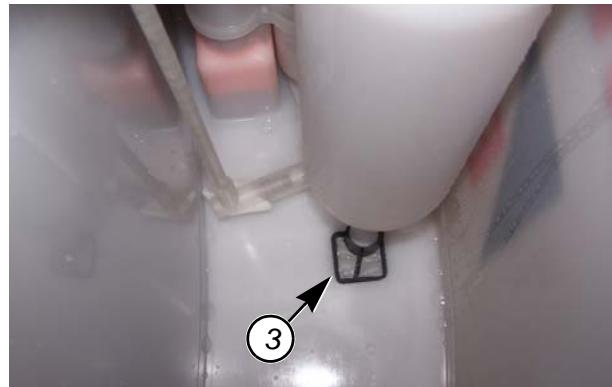
Sieve

- Remove filler plug (1).
- Remove filter (2).
- Clean filter (2).



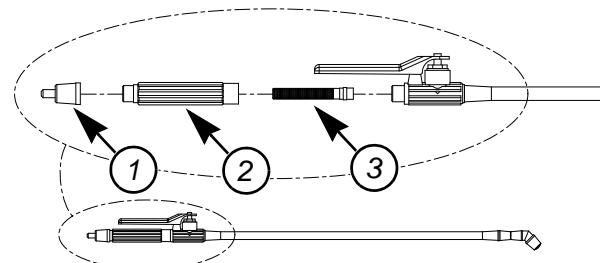
Filter

- Remove filter (3).
- Clean filter (3).
- Reassemble the unit.



Lance filter

- Remove nut (1).
- Remove handle (2).
- Clean filter (3).
- Reassemble the unit.
- Check good sealing.



■ Nozzles



Do not blow on the nozzle using your mouth to unclog it.

Do not use a metal item to unclog the nozzle.

- Clean the nozzles with water (with a brush) and with compressed air.

3. Maintenance



Immediately replace worn or damaged parts with genuine KUHN parts.



■ Water circuit

- Check condition of pipes, replace them if damaged.
- Check filter sealing.

■ Pressure gauge

Check the condition of the pressure gauge and do not hesitate to replace it if necessary.

■ Nozzle flow

- Rinse spraying circuit.
- Clean the filter(s). Clean the nozzles.
- Fill tank with clean water up to half its capacity.
- Select on the nozzle flow chart, the theoretical flow value of a nozzle, for a pressure of 3.5 bar (51 psi).
- Pressurize the tank.
- Place a test tube underneath the nozzle.
- Activate lance lever.
- Wait for 60 seconds.
- Measure the volume collected in the test tube.
- Calculate the nozzle output. The nozzle flow is equal to the volume collected in the container in 1 minute.
- If the difference between the theoretical nozzle output and the measured output exceeds 10%, replace the nozzle.

4. Storage

■ At the end of each season

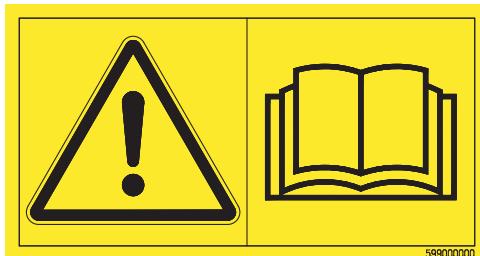
- Clean the machine thoroughly.
- Immediately replace worn or damaged parts with genuine KUHN parts.
- Put the machine under cover in a dry place.

■ Protect machine from frost

- Rinse spraying circuit.
- Fully empty the tank.
- Store the machine in an frost free area.

■ At the start of each season

- Re-read the operators' manual.
- Make sure that all protection devices are in place and in good condition.
- Replace nozzles and filters.
- Rinse spraying circuit.



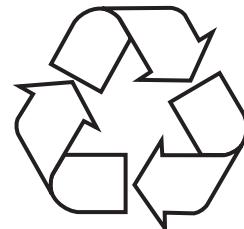
5. Machine recycling

In case of recycling, the machine will have to be recycled in conformity with the legislation in force in the country concerned.

Prior to proceeding with the recycling, remove all plastic or rubber parts, electric or electronic equipment.

Collect possible residual oil and give it to an appropriate processing center.

Parts only made up of plastic, aluminium, steel can be recycled if they are collected by an appropriate center.



Trouble shooting guide

English

■ Problem	■ Cause	■ Remedy
No lance spraying.	Clogged filter(s).	Clean the filter(s). Make sure there are no foreign bodies.
	Unprimed pump.	Check the level of liquid remaining in the tank.
	Suction tube crushed or punctured.	Replace suction tube.
Insufficient pressure.	Clogged filter(s).	Clean the filter(s). Make sure there are no foreign bodies.
Foam formation.	Air inlet during suction.	Check suction circuit.
The pressure on the gauge drops.	Clogged filter(s).	Clean the filter(s).
The pressure on the manometer oscillates.	Faulty pressure gauge.	Replace the oil pressure gauge.

Limited warranty

KUHN S.A. 4, Impasse des Fabriques, 67706 SAVERNE Cedex FRANCE (hereinafter called "the Company") warrants, in accordance with the provisions below, to each retail purchaser of a new KUHN equipment from an authorized KUHN dealer, that such equipment is, at the time of delivery to such purchaser, free from defects in material and workmanship, and that such equipment is covered under this Limited Warranty providing the machine is used and serviced in accordance with the recommendations in the Operator's manual.

This Limited Warranty covers the equipment for a period of one year starting from the date the equipment is delivered to the retail purchaser and during this period up to a limit of 500 hours of use.

The date of invoice to the retail purchaser and the registration of the machine by the dealer are taken as evidence of delivery of the machine.

This Limited Warranty covers the reimbursement (or repair) of components as well as labor charges incurred, based on the Company warranty labor rate and allowable time for repair.

■ These conditions are subject to the following exceptions:

- Parts of the machine which are not of KUHN manufacture, such as tires, PTO shafts, slip clutches, hydraulic cylinders, etc. are not covered by this Limited Warranty, but are subject to the warranty of the original manufacturer.
Warranty claims applying to these types of parts must be submitted in the same way as if they were parts manufactured by KUHN. However, compensation will be paid in accordance with the warranty agreement of the manufacturer concerned, in as much as the latter justifies such a claim.
- This Limited Warranty does not apply to failure through normal wear and tear, to damage resulting from negligence or from lack of inspection, from misuse, from lack of maintenance and/or if the machine has been involved in an accident, lent out or used for purposes other than those for which it was intended by the Company.
- This Limited Warranty will not apply to any product that has been altered or modified in any way without the express permission of the Company, or if parts and/or equipment not approved by Kuhn are used on a machine manufactured by the Company and/or if repairs have been carried out by anyone other than an authorized KUHN dealer.
- The Company shall not be responsible for any damage to the machine or its equipment in transit or handling by any common carrier, within or without the Warranty period. Machines, equipment and parts are transported at owner's risk.
- The Company cannot be held responsible for any claims or injuries to the owner or to any third party, nor to any resulting responsibility.
- Also, on no account can the Company be held liable for incidental or consequential damages (including loss of anticipated profits) or for any impairment due to a failure, a latent defect or a breakdown of the machine.

■ The customer will be responsible for and bear the costs of:

- Normal maintenance such as greasing, maintenance of oil levels, minor adjustments, etc.
- Dealer travel time, or travelling costs to and from the machine.
- Transporting machines, equipment or parts to the repair site and returning them to the user site.
- Parts defined as normal wearing items such as, but not limited to belts, blades, discs, knives, shares, tines, tine holders, slip clutches, etc. that are not covered by the Limited Warranty.

- The machine has been put in service by the dealer according to our instructions.
- The machine has been registered on line via extranet - www.kuhn.com or the warranty/product registration form has been completed and returned to the address indicated on the form as soon as the machine had been delivered to the retail purchaser.
- The warranty claim is completed on line via extranet - www.kuhn.com or submitted on a KUHN warranty claim form and returned to the Company within one month after the date of failure or the date of problem becoming apparent.
- The claim must be completed by the dealer and following information must be mentioned.
 - **Dealer's name and address**
 - **Name and address of retail purchaser**
 - **Exact type of machine**
 - **Machine serial number**
 - **Date of delivery to the retail purchaser**
 - **Date of failure**
 - **Number of hours of use or area (hectares, acres) worked**
 - **Power of tractor used**
 - **PTO speed (if applicable)**
 - **Detailed description and estimated cause of the failure**
 - **Quantity, reference number and name of the damaged parts**
 - **Invoice number and invoicing date for replacement parts.**
- The dealer has stored the damaged parts safely and labelled them clearly so that they can be recognised and returned to the Company if requested. They must be retained until a credit note has been issued to cover the parts. Carriage charges for the return of said parts are borne by the sender.
- The machine has been used and maintained according to the instructions in the operator's manual. The quality and quantity of lubricants used must always be in accordance with Company specifications.
- The safety measures mentioned in the Operator's manual and on the machine itself have been followed, and all the guards and protective elements, of whatever nature, have been inspected regularly and maintained in perfect working order.
- The judgment of the Company in all case of claims under this Limited Warranty shall be final and conclusive and the retail purchaser agrees to accept its decisions.
- If damaged parts have been returned to the Company and Warranty is refused , the dealer is allowed a period of 1 month from the date of receiving our letter of decision to request the return of the damaged parts to the dealer site.

■ Further conditions: limits of application and responsibility

- This Limited Warranty can not be assigned or transferred to anyone without the prior written consent of the Company.
- Authorized KUHN Dealers have no right or authority to assume any obligation or take any decision on the Company's behalf, whether expressly or tacitly.
- Technical assistance given by the Company or its agents for repairing or operating equipment does not lead to any responsibility on the Company's behalf and cannot under any circumstances bring novation or derogation to the conditions of the present Limited Warranty.
- The Company reserves the right to incorporate changes in its machines without prior notice and without obligation to apply these changes to machines previously manufactured.
- Moreover, because of the constant progress in technology, no guarantee is given to the descriptions of equipment published in any document by the Company.
- The present Limited Warranty excludes any other responsibility, whether legal or conventional, express or implied, and there are no warranties extending beyond those defined herein.