

# MEASURE UNIT FOR CLEANLOAD NEXUS

FOR CONNECTION TO CLEANLOAD NEXUS  
CLOSED TRANSFER SYSTEM  
PROTOTYPE

DRAFT INSTALLATION & OPERATION MANUAL



# CONTENTS

1. .... SAFETY INFORMATION .....	2
2..... PARTS INCLUDED.....	2
3..... SPECIFICATION .....	2
4..... LAYOUT .....	3
5..... DESCRIPTION & INTENDED USES.....	3
6.....INSTALLATION .....	3
7..... OPERATION .....	4
8 ..... CLEANING & MAINTENANCE .....	5
9..... TROUBLESHOOTING.....	6
10. .... SPARE PARTS LIST .....	6

# 1. SAFETY INFORMATION

READ THESE INSTRUCTIONS AND THEN KEEP THEM FOR REFERENCE: This manual contains important instructions that should be followed during installation, operation and routine maintenance of the Measure Unit.

## SAFETY SYMBOLS

**!** This is the safety alert symbol. When you see this symbol do not ignore it! Look for one of the following signal words and be alert to the potential for personal injury:

**▲ DANGER** Warns about hazards that could cause serious personal injury, death or major property damage.

**▲ WARNING** Warns about hazards that could cause serious personal injury, death or major property damage.

**▲ CAUTION** Warns about hazards that could cause serious personal injury or property damage.

The word **NOTE** indicates special instructions that are important but not related specifically to hazards.

## GENERAL SAFETY

Carefully read and follow all safety instructions in this manual and on the Measure Unit itself. Failure to comply with the safety/operating instructions could result in personal injury and/or property damage and could lead to the loss of any claims for damages.

Ensure that you understand the Measure Unit applications, limitations, and potential hazards. Keep safety labels fixed to the Measure Unit and in good condition. Replace any missing or damaged labels.

**▲ WARNING** The mounting and connections of the Measure Unit must be done by professionals who are trained in repair and maintenance of the sprayer.

- **▲ WARNING** When mounting the Measure Unit on the sprayer only use hoses and fittings that meet the recommended specifications of the sprayer manufacturer.
- Only use pipe, hose, and hose fittings that have not been used before and meet the stated maximum pressure ratings of the Cleanload Nexus and Measure Unit. Check all hoses for weakness or signs of wear before each use.
- **▲ WARNING** Regulations and recommendations for personal protective equipment (PPE) must be complied with.

When operating the Measure Unit, always use the Personal Protective Equipment (PPE) that is recommended on the agrochemical label.



If no specific PPE is required by the agrochemical label wear gloves, protective glasses and a chemical resistant apron or overall when operating, maintaining or servicing the Measure Unit.

### Before using the Measure Unit:

- Ensure that the Measure Unit is mounted securely on the sprayer or other mounting location.
- Always comply with regulations when choosing a suitable site for filling the sprayer with chemical.

- **▲ DANGER** Ensure that all hoses are correctly and securely connected, and that the sprayer's suction is operating.
- Do not operate the Measure Unit at pressures outside of the range given in this manual.
- Only operate the Measure Unit at temperatures between 0° and 60°C (32° to 140°F).
- **▲ WARNING** Do not dismantle or modify the Measure Unit.
- Defective components and assemblies must be replaced immediately. Repairs and replacements should only be carried out by those trained on the Measure Unit and competent in repair and maintenance of the sprayer. Use original spare parts for replacement only.

### After using the Measure Unit:

- **▲ CAUTION** Always clean the Measure Unit according to the instructions.
- Comply with regulations on cleaning sprayers when cleaning the Measure Unit, pay particular attention to cleaning when changing between products and crops.
- Do not leave concentrated agrochemicals in the Measure Unit for extended periods.
- Store the Measure Unit under protected, frost-free conditions and make it inaccessible to children and animals at all times.
- Do not attempt to maintain or repair the Measure Unit without the required training, tools and parts as any substitute could result in damage and failure.

### ▲ CAUTION Hazardous substances alert

1. Always drain and clean the Measure Unit before storage, servicing or disassembling for any reason.
2. Always drain and clean the Measure Unit prior to returning to a service agent for maintenance or repair.
3. Before attempting to carry out any maintenance or repair, make sure that you are wearing appropriate PPE.

## 2. PARTS INCLUDED

- Measuring Unit, including 1/2" rinse hose connected
- 270 mm length of 1" black hose for connecting to Cleanload Nexus
- 2 x 25 mm Hose Clamps
- 1 x Tee Fitting to connect rinse water hoses
- Right angle Mounting bracket and bolts

## 3. SPECIFICATION

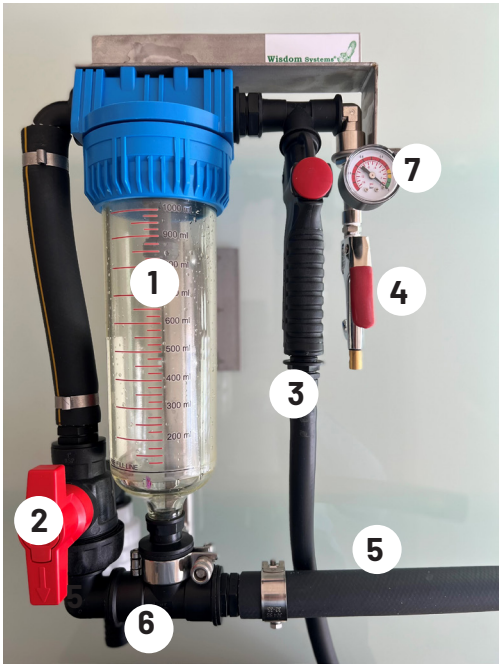
Model:	Measure Unit (prototype)
Part Number:	Order prototypes under pt no: SPL-AG
Rinse water pressure working range:	3.5 -7.0* bar (Optimum > 5.0 bar)
Venturi suction working range:	- 0.3 to - 0.4 bar
Weight:	4 kg

\* Higher pressure than this should be restricted.

Additional identification information is recorded on the label fixed to the Measure Unit mounting bracket.

4. LAYOUT

**NOTE:** The Measure Unit is designed to be connected to the sprayer suction supply that is used for the induction bowl. It must also be connected to a source of clean rinse water.



1	Calibrated Measuring Vessel
2	Suction Direction Valve
3	Rinse Water Supply Hose (1/2") and Valve/Trigger
4	Air Inlet Control
5	Connecting Hose (1") to Cleanload Nexus outlet
6	Suction Hose (1") to venturi/inductor
7	Suction gauge (optimum performance when in yellow zone)

5. DESCRIPTION & INTENDED USES

The Measure Unit is intended for transferring liquid agrochemical products from Cleanload Nexus closed transfer coupler into the main tank of agricultural crop protection sprayers.

Misuse:

Any other uses are considered misuses and are prohibited. Contact Pentair or your local sprayer service agent with any questions regarding specific acceptable uses.

Do not operate outside of the recommended pressure and environmental ranges.

6. INSTALLATION  
Mounting the Measure Unit

Always connect the Cleanload Nexus outlet to the Measure Unit using the 270 mm of black Connecting Hose (5) and hoseclips that are provided. This is the optimum way to connect to allow safe and effective measurement and transfer.

The Measure Unit must be mounted securely onto a stable base either on the sprayer to a bench, wall or a stand using the bracket and bolts supplied. It should not move when valves are operated.

In all cases, ensure that the bracket is secure and will withstand a

load of at least 10 kg.

Connecting the Measure Unit

- The Measure Unit should be fitted to the Suction Outlet of a Cleanload Nexus that has been installed as directed.
- The Measure Unit must be mounted slightly above the point that the Suction Hose exits the Cleanload Nexus, other than a slight upward slope there should be no bends in this hose.



**⚠ WARNING** When installing the Measure Unit ensure that the hoses are securely connected to Cleanload Nexus..

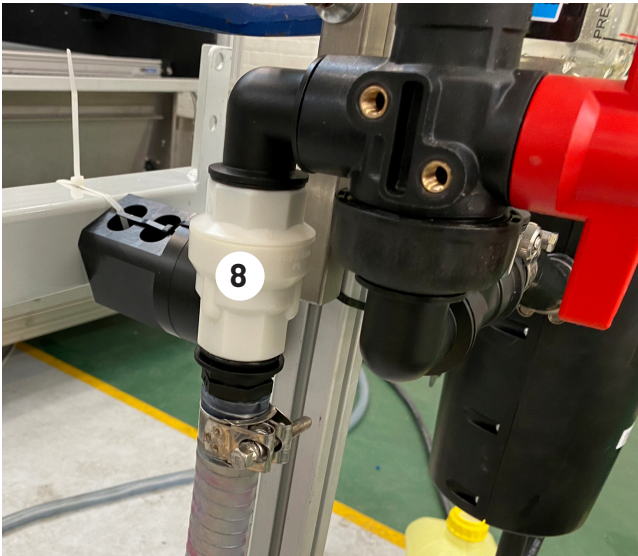
**NOTE:** Do not use any other hose or connections to the Cleanload Nexus since this increases the chance of air becoming trapped in the hose which will affect performance of the system.

If you are in any doubt about connecting the Measure Unit to Cleanload Nexus and the Sprayer suction, always consult your sprayer dealer or service agent for advice.

**⚠ CAUTION** If mounting the Measure Unit permanently on the sprayer, ensure that it is protected against mud, dust and impact from branches, machinery etc.

The back port from the Check Valve (8) must be connected to the sprayers chemical induction system (the same as is used by the induction bowl).

- **NOTE:** The Cleanload Nexus plumbing diagram (Refer to section 5.2 of the Cleanload Nexus Installation and Operating Manual) shows a required Check Valve. This is already fitted on the outlet from the Measure Unit.



8	Check Valve.
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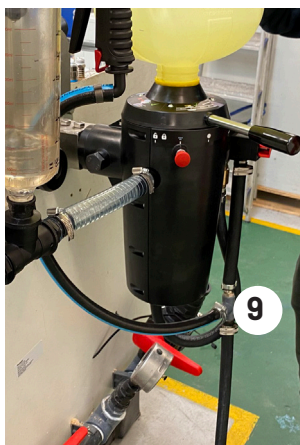
- **⚠ WARNING** The Measure Unit must always be connected to the sprayer suction to ensure effective emptying.
- The optimum vacuum suction when measuring part containers is between -0.3 and -0.4 bar.
- **⚠ WARNING** Always ensure that the Suction Hose is secured and does not present a hazard when transporting.
- **⚠ WARNING** Replace the Suction Hose if it is damaged or badly stained.

**⚠ CAUTION** The connection between the Check Valve (8) and the sprayers chemical induction system must not include any obstructions or controls that might close off the outlet of the Measure Unit while in use.

The Rinse Water Valve & Trigger (3) must be connected to a clean water supply such as that which already supplies the induction bowl and Cleanload Nexus.

A rinse water hose (1/2") is supplied already connected. This should be teed into the Cleanload Nexus rinse water supply hose (16 mm) at any convenient position using the TeeFitting supplied (9).

NOTE: This is the hose that connects to the front hosetaile on Cleanload Nexus and NOT the internal rinse hose.



9 Tee Fitting installed into Rinse Water Supply line

**⚠ WARNING** Always ensure that the Rinse Water Supply Hose is secured and does not present a hazard when using or transporting the Cleanload Nexus. and Measure Unit.

**⚠ WARNING** Ensure the hose is securely connected before turning on the water supply.

**NOTE:** If a Dry Break coupling is used to connect and disconnect the Measure Unit and Cleanload Nexus to and from the sprayer disconnect the rinse water supply BEFORE disconnecting the suction hose that is connected to the Check Valve (8).

## 7. OPERATION

Before using, ensure that the Measure Unit is on a level surface and not tilted or inclined.

When one or more containers needs to be partially emptied, do this first before the complete containers. Chemical cannot be returned back into the container from the Measure Unit. If a mistake is made empty the container fully and attempt a more careful measure with a subsequent container.

**NOTE:** Prior to measuring chemical, it is recommended to practice controlling the flow using a container filled with water.

At suction between -0.3 and -0.4 bar, the flow can be easily controlled. Reduce the pump speed or reduce the pressure in the induction system to achieve this level which can be checked on the gauge (7). Optimum performance is in the yellow zone.

## Pre-fill the Measure Unit

Connect the agrochemical container according to the instructions in section 6.2 of the Cleanload Nexus Installation and Operating Manual.

Move the handle to the Measure position as shown:



At this point, the outlet from the Cleanload Nexus is closed and the Cleanload Nexus rinse function is disabled. No air or liquid will pass to the Measure Unit from the Cleanload Nexus.

	<p>Rotate the Suction Direction Valve (2) so the arrow is pointing upwards (measure position)</p>
	<p>Squeeze the Rinse Trigger (3) until the water level reaches the PRE-FILL LINE.</p>

If the level rises above the Pre-fill line it can be reduced or emptied by rotating the Suction Direction Valve (2) back to the bottom (Transfer) position and then back to the top position when ready.

## Dispense the required amount

Once there is water at the Pre-Fill level and it is stable, move the Operating Handle of the Cleanload Nexus carefully into the Measuring zone as shown:



The exact point that flow begins **will depend on the sprayer** set up. Move the handle slowly and incrementally while closely observing the level in the Measuring Vessel (1) for flow to begin.

**NOTE:** Be patient and make small movements of the handle (for example by tapping it). It is best to let the flow move slowly once it begins.

**NOTE:** Flow will start abruptly if the Cleanload Nexus handle is rotated too far.

As the liquid approaches the desired calibration mark, move the Cleanload Nexus Operating Handle slowly back to the left. The flow will stop when the handle passes the beginning of the measuring zone as shown below:





The Operating Handle should be stopped at the Measure position as shown below:



If additional measured quantity is required, this pre-fill and dispense process can be repeated as many times as required.

## Empty and rinse the Measure Unit

To empty the contents of the Measuring Vessel once it contains the required quantity of chemical:

	<p>Rotate the Suction Direction Valve back to the bottom position (Transfer to tank).</p>
	<p>Speed the emptying of the Measuring Vessel by squeezing the Air Inlet Control trigger (4).</p> <p>Now squeeze the Rinse Water Trigger (3) for 20 seconds or until the Measure Vessel is visibly clean.</p>

## Rinse the outside of the container cap

The outside of the container can now be carried out according to the instructions in section 6.3 of the Cleanload Nexus Installation and Operating Manual.

**CAUTION** This rinse procedure also removes chemical residue from the internal parts of Cleanload Nexus, so it must always be carried out correctly to eliminate the risk of contamination.

## 8. CLEANING & MAINTENANCE

**NOTE:** This final rinse should be carried out even if no measurement has been made and only full containers have been loaded and immediately after the Cleanload Nexus has been cleaned by passing 10L of clean water through it.

### Cleaning the Measure Unit

**NOTE:** The Measure Unit is NOT automatically cleaned when using any of the sprayers cleaning programs.

Pay special attention to cleaning when changing crops and/or chemical product.

Always carry out this procedure after the last container has been dispensed, into the tank and before commencing spraying.

This will ensure that the Measure Unit and all hoses are clean prior to spraying.

	<p>Rotate the Suction Direction Valve so the arrow is pointing upwards (measure position)</p>
	<p>Operate the Rinse Trigger (3) until the Measuring Vessel completely fills and overflows.</p>
	<p>Now rotate the Suction Direction Valve back to the bottom position (Transfer to tank).</p>
	<p>Squeeze the Air Inlet Control trigger (4) to help emptying.</p>

**NOTE:** With the Measure Unit attached, during normal operation of Cleanload Nexus (non-measuring) you may experience a small surge of chemical into the measuring vessel as it passes to tank. This can be minimised by pausing at the Red Knob position before fully rotating the operating handle of Cleanload Nexus

**CAUTION** When disconnecting the suction hose from the sprayer. Residues might be left in the hoses and on connections. Always remove the rinse water supply connection first.

**NOTE:** Introduce any cleaning product solutions into the sprayer through the Cleanload Nexus and Measure Unit to ensure all internal surfaces receive the solution before further dilution in the sprayer.

### Storing the Measure Unit

It is recommended that Measure Unit is disconnected and removed from the sprayer or mounting location when it will not be used for some time and placed in storage.

**NOTE:** It may stay connected to the Cleanload Nexus.

Follow the guidelines for storage of Cleanload Nexus as shown in Section 7.2 of the Cleanload Nexus Installation and Operating manual.

Always follow the cleaning instructions prior to storage.

Winterise the Measure Unit using the same materials and process recommended for the sprayer.

Store securely in frost free conditions, inaccessible to children and animals.

## Maintenance of the Measure Unit

Before each use, check the hose condition and tightness of connections. If any connections show signs of wear or damage, they should be replaced.

When rinsing with water at the end of use, observe carefully for leaks.

Inspect for visible chemical residue contamination and if necessary rectify by following the cleaning instructions.

The Measuring Vessel (1) may be replaced if it becomes too stained.

## 9. TROUBLESHOOTING

During Pre-Fill, if the level will not settle or foaming is observed, check all connections for possible air leaks. Ensure the Operating Handle of the Cleanload Nexus is in the correct (Measure) position.



If the flow cannot be controlled, operate the handle in smaller increments and ensure the suction level is set to between -0.3 and -0.4 bar (in the yellow zone of the suction gauge (7)).

If the Measuring Vessel does not drain quickly and the Air Inlet Control (4) does not improve this, check the suction is adequate and not obstructed.

If the rinse pressure is not adequate to clean the Measuring vessel, check the rinse pressure is at least 3.5 bar. Do not attempt to rinse the Cleanload Nexus and the Measure Unit at the same time as this will reduce the rinsing power and efficiency.

## 10. SPARE PARTS

To be determined following field testing

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