## **CROPLANDS**

# OPERATORS MANUAL QUANTUM MIST SMART SPRAYER RECAPTURE SYSTEM

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This mini-manual (HT-OMRECAP2-A) completely replaces the Recapture section (8) of the full and original HT-OMSMART-A sprayer operators manual.

# STOP

**BEFORE COMMENCING** 

operation, **ENSURE** you read & understand this manual, its contents, and any additional information supplied.



## **INTRODUCTION**

## **GENERAL MANAGER'S WELCOME**



Sill

Sean Mulvaney
General Manager

#### Dear Customer

Congratulations on the purchase of your new Croplands Sprayer. Croplands have been in the business of building sprayer equipment since 1972. For 50 years we have been supplying sprayers to farmers, contractors, growers and all our customers involved in growing crops and in the control of pests and diseases.

Croplands is a wholly owned subsidiary of Nufarm Ltd, the largest supplier of crop protection chemicals for Australasia, and one of the fastest growing global suppliers world-wide.

At Croplands, we pride ourselves on our commitment to supplying machinery that is at the forefront of the industry's needs. We believe we can back up our products and through constant research and development, bring to you the best equipment you can find.

We welcome any feedback from you about our equipment.

On the back cover you will find our contact details, and locations where our staff can be reached during business hours. After hours, you can email us and expect a reply the following morning.

Please read this manual in its entirety before you operate your sprayer. This will ensure you have a trouble free start up.

We trust you will get years of good use from your Croplands Sprayer.

Yours Sincerely

#### Sean Mulvaney General Manager

Croplands has taken steps to ensure this operator's manual is as current and as accurate as possible. Due to the ever-changing markets of cropping and farming, Croplands is constantly striving to be at the forefront of innovation and technology. While the information in this manual is considered accurate at the time of writing, Croplands reserves the right to change this information without notice. Croplands will not accept liability for any inaccuracy in this publication, or changes forthwith.

## **CONTENTS**

#### **ABOUT THIS MANUAL**

This manual provides description, set-up and operating instructions for version 2 of the Smart Spray Recapture system, as an add-on function to the Smart Spray models.

Please pass on this manual on with the sprayer at the time of resale for use by the new owner.

This manual, HT-OMRECAP2-A was first published in October 2022 and replaces section 8 and part of section 11 (drawings) in the full Smart Spray manual HT-OMSMART-A. Check on-line as there may be more recent revisions of these manuals. Plumbing schematic (page 22) updated November 2022.

## SECTION 1 QUANTUM MIST / SMART SPRAY RECAPTURE SYSTEM

This section replaces the Recapture Section (8) of the original HT-OMSMART-A sprayer operators manual.

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## SECTION 2 ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

This section replaces the relevant Recapture system drawings within Section 11 of the original HT-OMSMART-A sprayer operators manual.

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#### **SMART SPRAY RECAPTURE SYSTEM V2**

#### Available as an optional extra

The Croplands Quantum Smart Sprayers can be fitted with the Smart Spray Recapture System to reduce drift and capture / return "over spray" back to tank.

Version 2 (mid 2022) features a simpler and easier to service Recapture (plumbing) system.

Photo below is with full 2 row Recapture system, showing inner and outer screens with "awnings".

- 2-row full Recapture (inner & outer).
- NOT available for 3-row sprayers.
- Simple but effective recapture system using venturi suction & basket filtration
- Sprayer can be converted back to a "normal" 2-row sprayer in 1 or 2 hours (assuming lifting equipment is at hand).



#### **HOW IT WORKS**

The fan over-spray is collected in the screen positioned opposite, with the spray penetrating the porous front screen, hitting the solid back panel and falling to the collection trough at the base of each screen assembly.

The over-spray that traditionally escapes is contained by the awning (often nicknamed the bus stop) and is very effective at reducing drift.

Spray captured in the trough is sucked back to tank via a venturi system.

#### Pump & Venturi

Recapture sprayers are equipped with an AR250 pump (in lieu of the normal AR185) due to the extra flow requirements of the venturi system.

Each "boom" side (6mm) venturi requires around 24 L/min at 8 bar, and each "inner" (3.5mm) venturi requires 8 L/min at 8 bar system pressure (total of 64 L/min at 8 bar).

The venturi system is active at all times the sprayer is spraying, and continues to empty the capture troughs for another 20 seconds after spraying has stopped.

#### **Filtering**

The 3D woven front screen plays an important role as the first line of filtration by preventing much of the larger debris from entering the liquid system. Recaptured spray is returned to the main tank via the tank lid & filter basket.

#### **Controls**

Along with normal spray operations, the Fusion controller is configured to control the venturi timing and also monitor recapture performance via a tank level sensor / readout.

# **SECTION 1 SMART SPRAY RECAPTURE SYSTEM V2**

#### **INNER RECAPTURE SCREENS**

The inner recapture screens comprise of a folded stainless steel frame and capture trough to which is fitted an impervious backing and porous front "screen".

The frame is fabricated from welded stainless steel, with a deep stainless-steel trough to collect the recaptured spray.

Due to the shape of the trough's inner lip, taper and drain point, there is a left and right hand assembly.

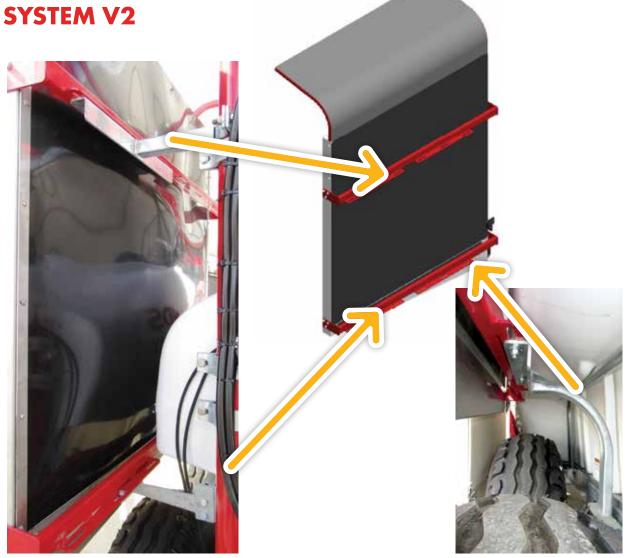
The frame is attached to the sprayer in 3 places via brackets mounted to the axle and the rear tower.

The rear panel is black polyethylene plastic and held in place by stainless steel battens. Note the panel is prone to distortion due to expansion & contraction from temperature changes.

The porous 3D woven front screen (essentially the heart of the system) is held to the frame via stainless steel battens slid into sown pockets. In some versions there is also a velcro strip along the top edge.

The awning (bus stop) is fabricated from a steel frame plus impervious UV stabilised polyester fabric which is attached via velcro and self tapping screws. This assembly is then bolted to the frame.

Note that the awning was originally designed to reduce over-spray in wide row spacing applications. It will not fit every configuration and in very narrow row spacings it might need removal (as parking the booms is impossible). In some applications (it varies from model to model) the narrow row parking can be accomplished by flattening the top angle of the awning



#### **SMART SPRAY RECAPTURE SYSTEM V2**

#### **OUTER / BOOM RECAPTURE SCREEN**

The outer boom / over-row frame is fabricated from welded RHS steel, galvanised and fitted with a deep stainless-steel trough at the base to collect the recaptured spray.

The trough can be drained or cleaned via a fork fitting at the lowest (mid) point of the trough.

The trough also has a connection point to a tie rod back to the fan frame.

Due to the shape of the trough's inner lip, drain point and tie rod connection point there is a left and right hand assembly.

The rear panel is sown from an impervious UV stabilised polyester fabric and held in place by stainless steel battens.

The woven front screen is held to the frame via stainless steel battens slid into sown pockets. In some versions there is also a velcro strip along the top edge.

The awning (bus stop) is fabricated from a steel frame covered with an impervious vinyl fabric which is attached via velcro and self tapping screws. This assembly is then be bolted to the frame.

The assembled outer boom / over-row recapture frame (including trough), plus the "awning" (bus stop) plus front & rear screens is attached to the sprayer via the twin "Fan Frame Hanger".

- A. The "twin hanger" connection to the boom arm. (Refer Section 5 of full manual for extra information).
- B. Fan frame connection to the "twin hanger". The fan orientation towards the inner recapture frame is adjustable.

- C. Recapture screen connection to the "twin hanger".The screens orientation towards the fans is adjustable.
- D. The "swivel heads" are designed to allow a breakaway motion if hitting an obstacle whilst traveling forwards.
- E. A tie rod connects the fan frame to the recapture frame. This ensures both the fans and screen breakaway together.
- F. Suction / drain connection.

Note the photo is of a sprayer configured for 2.4m row spacing. As a consequence the inner awning has been removed to enable parking.



#### **SMART SPRAY RECAPTURE SYSTEM V2**

#### **PLUMBING SYSTEM**

Recaptured spray is collected in the stainless steel troughs at the base of each screen (F). From there it is sucked back to tank via a venturi system (K) and delivered to the tank via the filter basket (L).

Flow to the section valves at the rear of the sprayer comes from the filter manifold (plus dump etc) at the front of the sprayer (G).

At the rear this delivery hose is T'eed to the flow meter / section valves manifold (H) before going to supply the recapture manifolds (left & right) (J).

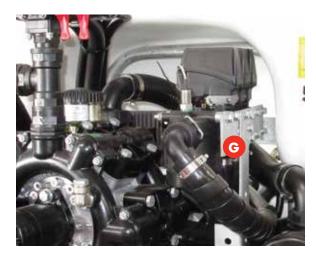
The venturi system (K) is active at all times the sprayer is spraying, and continues to empty the capture troughs for another 20 seconds after spraying has stopped.

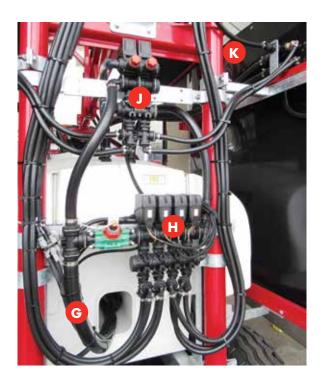


Each "boom" side (6mm) venturi requires around 24 L/min at 8 bar, and each "inner" (3.5mm) venturi requires 8 L/min at 8 bar system pressure (total of 64 L/min at 8 bar). The flow will vary up and down with pressure. Minimum recommended operating pressure is 5 bar.

Each recapture section valve (left and right) is equipped with a metering valve (part of J) to minimise any pressure variations from on and off. Refer to "Controls & Operation".

If at any stage the recapture effectiveness is reduced (i.e. a trough overflows), check the hose from trough to venturi for a blockage.



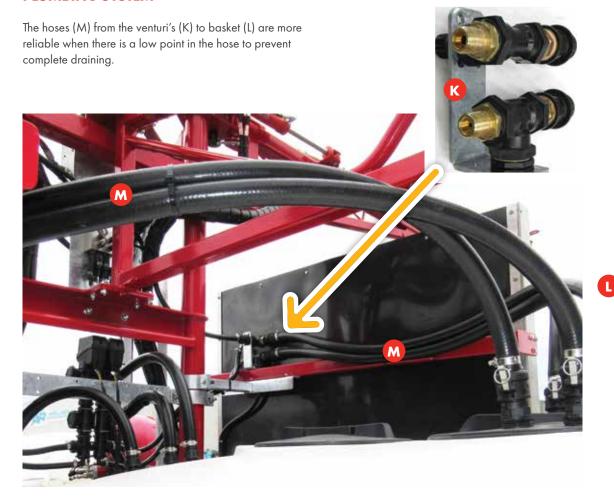


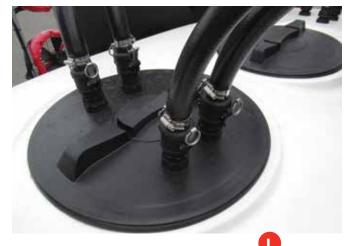
At the start of each day's spraying it's recommended to disconnect the trough (forked fitting) hose (F) and spray / flush the unit with clean water.

At some times (i.e. cap fall) it may be necessary to flush more frequently. Same applies to the lid basket filter.

## **SMART SPRAY RECAPTURE SYSTEM V2**

#### **PLUMBING SYSTEM**







#### **SMART SPRAY RECAPTURE SYSTEM V2**

#### **CONFIGURATION**

There are multiple adjustment points to facilitate the optimum set-up of the recapture screens etc.

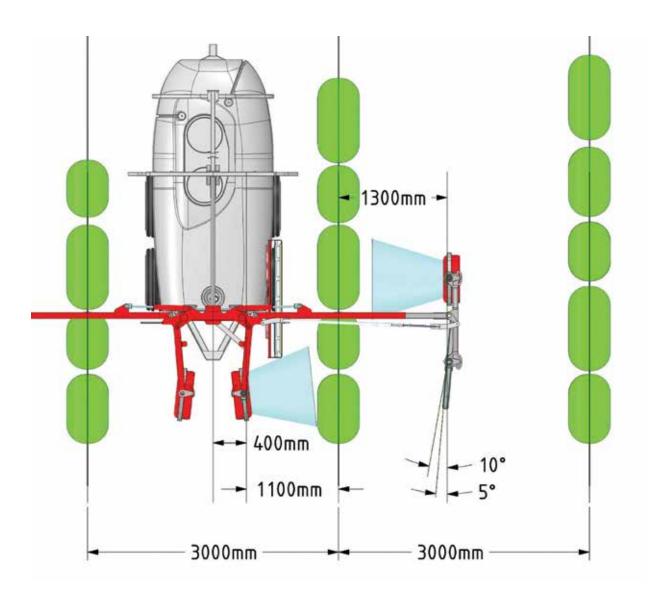
For maximum efficiency always ensure the spray plumes are directed towards the recapture screens, ideally just forward of centre (to account for travel speed). Inner row fans will require a forwards angle.

For best alignment use the main boom arm fully open and adjust the boom slide (and push-pull rod) to match row width (refer page 37 of full manual).

For row spacings less than 2.7m the awnings "bus stops" may clash whilst parking and may require the removal of the inner awning. Refer to photos on the following page.

The Recapture system is more effective when the boom side screen is angled  $5 \sim 10$  degrees angle inwards – with the trailing edge of the screen set closer to the sprayer. This may require an adjustment to the boom parking bracket to enable this angle when parked (refer photo next page).

Refer to the sketch for the recommended configuration for a 3 metre row spacing.



### **SMART SPRAY RECAPTURE SYSTEM V2**



The photo left shows a Recapture sprayer in the maximum row width, parked position - there is none of the recommended screen angle (refer sketch on the previous page) in order to have some parked clearance between screen and tank (circled).

Below is similar but with 2.4m row spacing and inner awning removed with outer screen parked tight against the inner awning.



#### **SMART SPRAY RECAPTURE SYSTEM V2**

## TO RECONFIGURE AS A "STANDARD" SPRAYER

**Safety First** - perform this task (or change back) using suitable lifting device(s).

The recapture system is at it's peak effectiveness early in the season when there is less foliage. If required the sprayer can be converted to a conventional cover sprayer for late season operation. As this will also impact drift, some operators may leave the inner screens in place and remove the outer / over row screen.

Disconnect and cap the plumbing system as required.

Generally this is best done at the recapture manifold where fork fitting caps can be used in lieu of the line that goes to the venturi.

#### **OUTER / BOOM SCREEN REMOVAL**

Disconnect the bottom tie rod (fan frame to screen frame) (E).

Remove the top collar and drop out the whole recapture + swivel head assembly, (1). Move to storage.

Repeat the same for the Fan Frame + swivel head (2) (remove tie rod and top collar) and support close by (a second crane is handy). Note the hydraulic & spray hoses will still be connected.

The "double hanger" can now be removed once the push-pull tie rod (etc) has been disconnected.

The fan frame + swivel head etc can now be reinstalled at the end of the boom arm as pictured (3).

Reconnect the push-pull rod. Note the photos are showing open and closed orientation of the fan frame to boom arm.

Check the opening and closing / parking of the boom arm and fan frame. Fan frame alignment is adjusted at the threaded rod ends of the pull rod. DOUBLE CHECK that the push-pull rod has clear travel.

Tidy up the hydraulic & spray line hoses as required.

#### **INNER SCREEN REMOVAL**

Removal of the inner screen is much simpler than the outer screens.

Once the spray plumbing has been removed / tidied away it's simply a task of disconnecting (with the weight safely supported) from the 3 mounting brackets.

If required, remove or protect the brackets to make the safe.





#### **SMART SPRAY RECAPTURE SYSTEM V2**

#### **SECTION CONTROLS**

The Croplands Fusion Controller system for Recapture uses 4 section valves for Left Tier 1 and 2 and Right Tier 1 and 2. All on for Tier 3



PLUS (refer photo p.8), Left Recapture and Right Recapture section valves on a separate manifold including metering valves and distribution to the venturi systems.

Each Recapture section valve (left and right) is equipped with a metering valve to minimizes any pressure variations from on and off. These have been pre-set and tested at the factory.

Note that high volume Tier 3 spraying at higher pressures (eg. 1500 L/Ha at 10 bar) may exceed venturi flow (recapture) capabilities.



To set the metering valves:

- 1. Run all (6) sections close to normal spraying pressure eg. 7 bar (refer p. 59, step 5 of full manual).
- 2. Then proceed to turn off one of the Recapture sections ....

Monitor the overall system pressure (gauge at the front of the sprayer) - adjust the red knob until the pressure returns to the original setting.

Note, wait 20 seconds for the recapture valve to close before adjusting the red knob.

Turn the section back on and monitor for pressure changes - might need a partial adjustment.

- 3. Repeat with the other section.
- 4. Repeat at a higher pressure, eg. 9 bar and a lower pressure, eg. 5 bar.

Note the actual value assigned to each red knob, whilst likely to be similar, isn't important.



#### **SMART SPRAY RECAPTURE SYSTEM V2**

#### **FUSION CONTROLLER SET-UP**

The Fusion controller needs to be configured for Recapture. Normally this will have been pre-set at the factory.

Repeated here for those who choose to change sprayer configuration between early and late season. Also refer to the Fusion manual. Some Recapture features shown here are not included in the standard Fusion manual.

1. Enter the System Menu - press and hold for 10 seconds, then press again to enter the menu system.



2. Select Adjust.



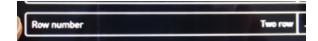
3. Select Parameter Setup.



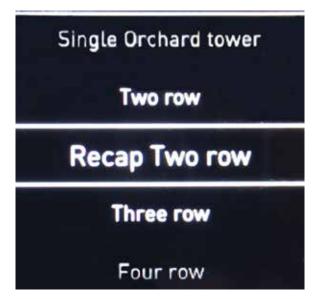
4 This will require a PIN number, try 4321.



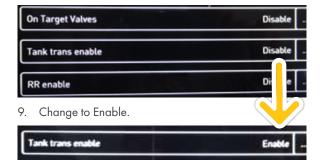
- 5. Then tap Parameter Setup again.
- 6. Select Row Number.



7. Select RECAP TWO Row.



8. Select Tank Trans Enable.



The front screen will change to depict Recap on.

#### **SMART SPRAY RECAPTURE SYSTEM V2**

Displayed on the front screen is a bar chart showing the live tank level as per what the tank level sensor is reading.



#### **TANK LEVEL SENSOR**

All sprayers supplied with a Recapture system are fitted with a (load cell) tank volume sensor. This enables the Fusion controller to correlate tank level vs flow meter usage.



Press the FILL button to activate the tank volume screen.

Rcap Value, shown in white (circled in blue) must be active.





Remember to reset the tank volume value at the start of a spray session / after each filling. To set, slide the bar and watch the value. With a full tank the value should match the value presented by the load cell.

Yellow indicates the Recapture system is TURNED OFF



Press the TOTAL button to activate the tank volume screen.

The Recapture percentage is now visible at the bottom of screen.





RV means Remaining Volume and this is what the tank level sensor is reading.

A good trick for setting the correct tank level is to look at the RV reading in the Total screen as this shows the tank level as per the tank level sensor and then set the slider bar in the Fill screen to the same amount as the RV reading.

#### **SMART SPRAY RECAPTURE SYSTEM V2**

#### **OPERATION**

General spray functions are the same as per the Smart Spray or Fusion manuals.

For Recapture operation, once the system is set to active (see previous page), the venturi system is automatically activated in conjunction with spraying operations. For example ....

..... whenever the left hand side spray sections, the left hand recapture is also activated, and the same applies to the right hand side.

Unique to the Recap system, when the spray sections are turned off, the recapture system / master dump valve(s) will remain active for a further 20 seconds before shutting down. This enables any spray that's accumulated in the troughs to be fully emptied. In some cases a small pressure spike may occur as the spray sections close. A benefit of this system is that full spray pressure is available at the start of every row (assuming turning is less than 20 seconds).

#### **RECAPTURE QUICK ON / OFF**

For times where the operator wishes to temporarily turn off the Recapture system, go to

the FILL function, and turn off the Recap - note Yellow = OFF







#### **RECAPTURE - OPERATIONAL TIPS**

- Courser droplets work best for maximum recapture rates. Hollowcone 40 degree nozzles are recommended as a "standard" option.
  - Dual spray rings allow operators to use one of the spray rings as a specialist nozzle ring for early season / Recapture. Spraying should always be done in conjunction with an agronomist.
- Keep the screens & trough clean and flushed. Much easier to keep clean after each spray than to clean out built up residue at a later stage. If the sprayer is exposed to the weather, rain can quickly fill the capture troughs.
- For maximum efficiency always ensure the spray plumes are directed towards the recapture screens, ideally just forward of centre (to account for travel speed).
- Consider turning off the recovery system and run recaptured spray to waste if you suspect that the spray is being contaminated with dust, weed seeds or other foreign material.
- It's recommended that canopies that are already wet with dew or contain moisture should not be sprayed / recaptured.
- Be especially vigilant of keeping the Recapture filter basket clean.
- Some applications may require an anti foaming agent.
- The capture troughs can be drained or cleaned via a fork fitting at the suction pick-up points.

## **ASSEMBLY DRAWINGS, PARTS & SCHEMATICS V2**

#### KH-5116R

#### **RH INNER RECAPTURE SCREEN ASSY**

Smart Sprayer, see KH-5116L for LH side.

## **NOTE**

Drawings are for illustration purpose only - refer to sprayer for actual plumbing. Parts listed are indicative of the sprayer type.

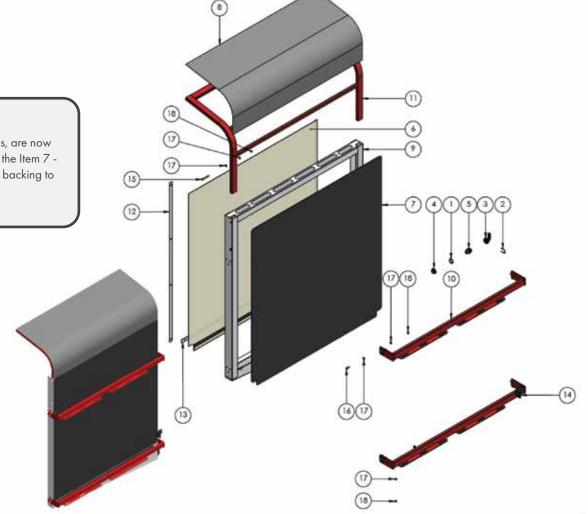
Items in italics or without a part number are non stocked items and may need to be specially ordered.

For further parts information refer to: www.croplands.com.au

#### **ITEM 12**

Stainless steel straps, are now also used to attach the Item 7 - black polyethylene backing to the frame.

ITEM NO.	PART NUMBER	DESCRIPTION	QIY.
- 1	AG40003	FLAT SEAL 3/4" EPDM	1
2	A010003	MANIFOLD FORK T3	1
3	A1190320	ELBOW T3F D.20	1
4	A205030	BACK NUT 3/4"	1
5	A249133	HOSETAIL T3M 3/4M	1
6	HP-325-01	RECAPTURE SCREEN MESH INNER	1
7	HP-325-02	RECAPTURE BACKING INNER	- 1
8	HP-325-03	RECAPTURE AWNING INNER	1
9	HP-325-07R	RECAPTURE FRAME INNER RH	1
10	HP-325-07-1R	RECAPTURE FRAME MOUNT INNER RH	2
11	HP-325-08-1	RECAPTURE CANOPY INNER	1
12	HP-325-08-2	RECAPTURE STRAP VERTICAL INNER	2
13	HP-325-08-3	RECAPTURE STRAP HORIZONTAL INNER	- 1
14	HP-325-12	BRACKET RECAPTURE FILTER	1
15	M8X65BOLT	M8 X 65 HEX HEAD BOLT HT ZP	4
16	M8X25	M8 X 25 SET SCREW HT ZP	12
17	M8FWASHER	M8 FLAT WASHER ZP	34
18	MSNNUT	M8 NYLOC NUT HT 7P	18



## **ASSEMBLY DRAWINGS, PARTS & SCHEMATICS V2**

#### KH-5117R

#### **RH OUTER (BOOM) RECAPTURE SCREEN ASSY**

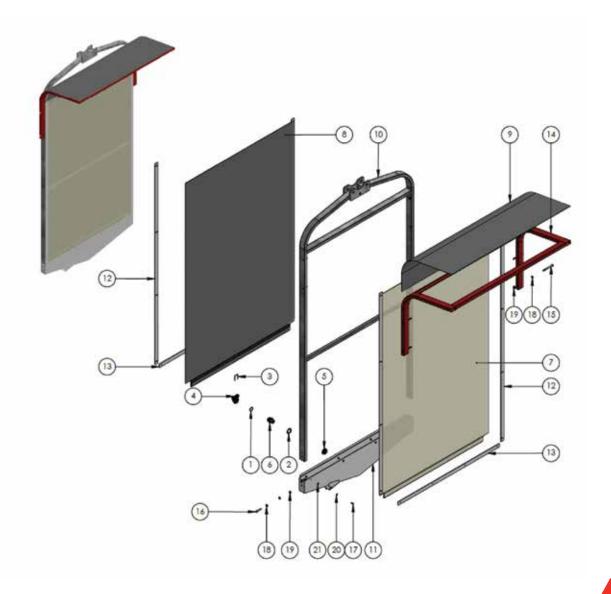
Smart Sprayer, including removable awning (bus stop).

## **NOTE**

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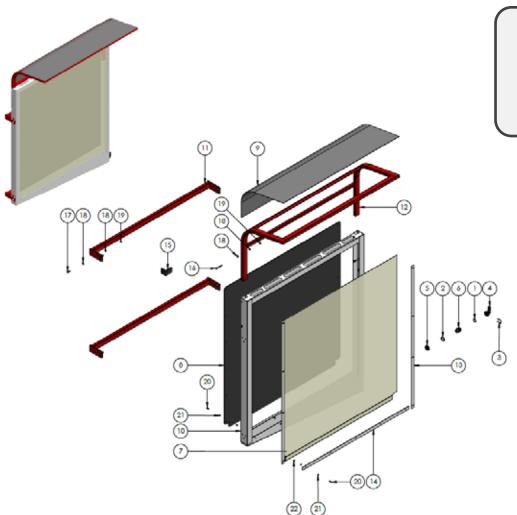
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	AG11058	O-RING	1
2	AG40003	FLAT SEAL 3/4" EPDM	1
3	A010003	MANIFOLD FORK T3	- 1
4	A1190320	ELBOW T3F D.20	- 1
5	A205030	BACK NUT 3/4"	- 1
6	A249133	HOSETAIL T3M 3/4M	- 1
7	HP-325-04	SCREEN MESH OUTER RECAPTURE	1
8	HP-325-05	SCREEN BACK OUTER RECAPTURE	1
9	HP-325-06	AWNING OUTER RECAPTURE	1
10	HP-325-09	RECAPTURE FRAME OUTER	1
11	HP-325-09-1R	RECAPTURE TROUGH LH	1
12	HP-325-09-2	RECAPTURE VERTICAL STRAP OUTER	4
13	HP-325-09-3	RECAPTURE STRAP HORIZONTAL OUTER	2
14	HP-325-10	RECAPTURE CANOPY OUTER	1
15	M8X90BOLT	M8 X 90 HEX HEAD BOLT ZP	4
16	M8X45BOLT	M8 X 45 HEX HEAD BOLT HT ZP	4
17	M6X16SSSCREW	M6 X 16 SET SCREW SS	8
18	M8FWASHER	M8 FLAT WASHER ZP	16
19	M8NNUT	M8 NYLOC NUT HT ZP	8
20	MOFWASHER	M6 FLAT WASHER ZP	16
21	M6NNUT	M6 NYLOC NUT HT ZP	8



## **ASSEMBLY DRAWINGS, PARTS & SCHEMATICS V2**

## KH-5116L LH INNER RECAPTURE SCREEN ASSY

Smart Sprayer, see KH-5116R for RH side.



#### **ITEM 13**

Stainless steel straps, are now also used to attach the Item 8 - black polyethylene backing to the frame.

## NOTE

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4	A1190320	ELBOW T3F D.20	1
5	A205030	BACK NUT 3/4"	1
6	A249133	HOSETAIL T3M 3/4M	1
7	HP-325-01	RECAPTURE SCREEN MESH INNER	1
8	HP-325-02	RECAPTURE BACKING INNER	1
9	HP-325-03	RECAPTURE AWNING INNER	1
10	HP-325-07L	RECAPTURE FRAME INNER LH	1
11	HP-325-07-1L	RECAPTURE FRAME MOUNT INNER LH	2
12	HP-325-08-1	RECAPTURE CANOPY INNER	1
13	HP-325-08-2	RECAPTURE STRAP VERTICAL INNER	2
14	HP-325-08-3	RECAPTURE STRAP HORIZONTAL INNER	1
15	HP-325-12	BRACKET RECAPTURE FILTER	1
16	M8X65BOLT	M8 X 65 HEX HEAD BOLT HT ZP	4
17	M8X25	M8 X 25 SET SCREW HT ZP	12
18	M8FWASHER	M8 FLAT WASHER ZP	32
19	M8NNUT	M8 NYLOC NUT HT ZP	16
20	M6X16SSSCREW	M6 X 16 SET SCREW SS	10
21	MóFWASHER	M6 FLAT WASHER ZP	20
22	M6NNUT	M6 NYLOC NUT HT ZP	10

## **ASSEMBLY DRAWINGS, PARTS & SCHEMATICS V2**

#### KH-5117L

#### **LH OUTER (BOOM) RECAPTURE SCREEN ASSY**

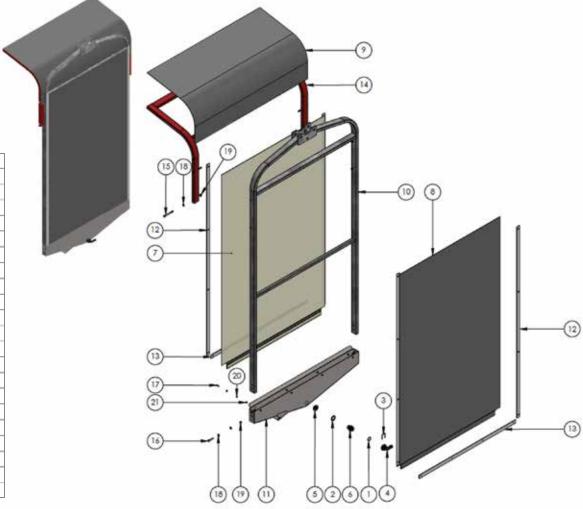
Smart Sprayer, including removable awning (bus stop).

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5	A205030	BACK NUT 3/4"	1
6	A249133	HOSETAIL T3M 3/4M	1
7	HP-325-04	SCREEN MESH OUTER RECAPTURE	1
8	HP-325-05	SCREEN BACK OUTER RECAPTURE	1
9	HP-325-06	AWNING OUTER RECAPTURE	1
10	HP-325-09	RECAPTURE FRAME OUTER	1
11	HP-325-09-1L	RECAPTURE TROUGH LH	1
12	HP-325-09-2	RECAPTURE VERTICAL STRAP OUTER	4
13	HP-325-09-3	RECAPTURE STRAP HORIZONTAL OUTER	2
14	HP-325-10	RECAPTURE CANOPY OUTER	1
15	M8X90BOLT	M8 X 90 HEX HEAD BOLT ZP	4
16	M8X45BOLT	M8 X 45 HEX HEAD BOLT HT ZP	4
17	M6X16SSSCREW	M6 X 16 SET SCREW SS	8
18	M8FWASHER	M8 FLAT WASHER ZP	16
19	M8NNUT	M8 NYLOC NUT HT ZP	8
20	MOFWASHER	M6 FLAT WASHER ZP	16
21	MONNUT	M6 NYLOC NUT HT ZP	8



## **ASSEMBLY DRAWINGS, PARTS & SCHEMATICS V2**

#### **SECTION VALVES / FLOW METER MANIFOLD DWG**

This drawing is unavailable at the time of publication. If required, check the Croplands web site for an updated file or contact Croplands customer support.

## **NOTE**

Drawings are for illustration purpose only - refer to sprayer for actual plumbing. Parts listed are indicative of the sprayer type.

Items in italics or without a part number are non stocked items and may need to be specially ordered.

## **ASSEMBLY DRAWINGS, PARTS & SCHEMATICS V2**

#### **RECAPTURE SECTION & METERING VALVE MANIFOLD DWG**

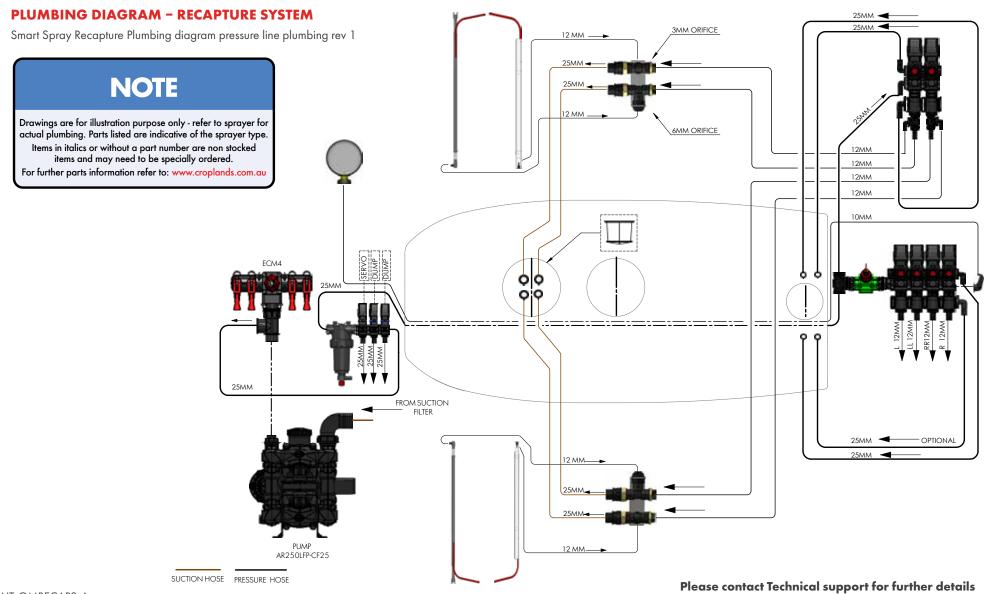
This drawing is unavailable at the time of publication. If required, check the Croplands web site for an updated file or contact Croplands customer support.

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## **ASSEMBLY DRAWINGS, PARTS & SCHEMATICS V2**



## **ASSEMBLY DRAWINGS, PARTS & SCHEMATICS V2**

#### **PLUMBING DIAGRAM - VENTURI ASSEMBLY**

This drawing is unavailable at the time of publication. If required, check the Croplands web site for an updated file or contact Croplands customer support.

#### **MOUNTING BRACKET DIAGRAMS (INNER SCREEN ATTACHMENT TO TOWER & AXLE)**

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