

# OPERATORS MANUAL CROPLANDS TRAILED 300 SPRAYERS

[www.croplands.com.au](http://www.croplands.com.au)

**CROPLANDS**  
**OPTIMA™**

## MODELS:

UA300B/20.1S

UA300B/20S/4BX

UA300B/20S/6BX

UA300B/20S/XTKIT

UA300B/20/HR20G

UA300B/30/HR30G

UA300B/303/MVB5

UA300B/30/100RC

Attach product bar code here

# STOP

Before commencing  
operation, ensure you  
read & understand this  
manual, its contents,  
and any additional  
information  
supplied!



Part No. GP-OMUA300B-A

## WELCOME



Congratulations on the purchase of your new Croplands sprayer.

Croplands has been in the business of building and selling spraying equipment since 1972. For over 45 years we have been supplying spray equipment 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 in 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 page 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.

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## IMPORTANT INFORMATION

### Foreword

Croplands Equipment is a subsidiary of Nufarm Australia Ltd and operates as Croplands Equipment Pty Ltd in Australia and Croplands Equipment Ltd in New Zealand. Croplands are a leading manufacturer and supplier of spraying equipment.

This operator's manual covers the Croplands' Optima range of UA300B Trailed 300 litre sprayers.

Manufactured to a high standard for use in Agriculture and Horticulture, every effort has been made to include all information needed for the correct use of your trailed 300 litre sprayer.

### About This Manual

This manual provides assembly, setting up, operating and maintenance instructions for the UA300B trailed sprayer. All models of the UA300B are in the Identification and/or in the Specification Chapter. Some model types also have different options available. Some features explained in this manual may not be applicable to your model.

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

This manual, UA300B, was published in December 2017.

Check online as there may be more recent revisions of this manual.

As the owner of a Croplands product, please read this manual thoroughly to fully familiarise yourself with all aspects of the safe and correct operation of your trailed 300 litre sprayer. Maintenance information and useful tips have been included. We trust you will use these tips to get the best from your trailed 300 litre sprayer..



## WARNING

**Read and understand this operators' manual before operating the UA300B trailed sprayer.**

## Terminology

These terms/symbols used throughout this manual:

### NOTE

To convey useful operating information.



### CAUTION

To highlight potential injury or machinery damage.



### WARNING

To stress potential dangers and the importance of personal safety.



### DANGER

Probability of death or serious injury if accident occurs.

## Before Operating Your Sprayer

1. Before attempting to use your sprayer, make sure you read the Operator's Manual and properly understand:

- » All Safety Issues
- » Operation, set up & pre-delivery instructions

- » Calibration of the sprayer
- » Sprayer Maintenance

2. Read and follow instructions on chemical manufacturers' labels.

3. Always wear applicable protective clothing.

## Warranty Policy

### NOTE

For full conditions of warranty and warranty policy, please see the Warranty & Pre-Delivery booklet provided with this sprayer.

Refer to your Croplands Warranty and Pre-delivery Booklet supplied with your trailed 300 litre sprayer. Always make contact with your Croplands Dealer first and foremost for warranty matters.

## SAFETY INFORMATION



**Maximum recommended slope for safe operation is 10 degrees**

### **Rules for safe use of your 300 litre trailed sprayer**

- » Always read your operator's manual thoroughly before fitting or operating the sprayer. Accidents occur every year because of careless use of farm chemicals and farm machinery. You can avoid these hazards by observing these safety instructions.
- » Dispose of all chemical containers as per instructions on label. Failure to do so could result in contaminating the environment with chemicals.
- » Inspect hose and hose connections daily. Always wear rubber gloves when tightening connections. Damaged, loose or worn hoses could result in operator being exposed to toxic chemicals, which could result in serious illness or faulty sprayer operation.
- » Always use the proper application rate. To ensure proper application rate calibrate sprayer correctly. The wrong application rate of a pesticide or herbicide concentration that is too high may expose the operator and the environment to danger.
- » Be sure to disconnect all power connections (if applicable) before attempting welding repairs.
- » Check the sprayer, prior to each use, for any loose bolts, hydraulic or mechanical connections. These precautions can prevent injury to personnel and damage to equipment.
- » Use only genuine Croplands parts for any necessary replacement. All parts are important to the equipment design. Homemade parts may look the same but might be dangerous in operation.
- » Follow the chemical manufacturer's precautions before cleaning the sprayer. Exposure to chemicals could result in serious illness or death.
- » Always wear gloves and wash the sprayer before doing any disassembly repair work. Chemical residues on the machine parts could contaminate operator or service personnel causing serious illness.
- » Always relieve system pressure before doing any work on the sprayer. Failure to do so could cause operator to be exposed to spray of chemical resulting in serious injury or machine damage.
- » Always be sure all guards are properly installed on machine before operating. Failure to do so could result in entanglement in moving parts resulting in serious injury to operator.
- » Do not ride on machine when in motion. This is an unsafe practice and can lead to serious injury should the rider fall from the sprayer or tractor.
- » Always stand well clear of sprayer when operating. Any particle or spray drift is dangerous and may be hazardous to humans.
- » Injury can result if hands, or any part of the body is in the way during the folding of the boom on the sprayer (if fitted). Pinch points exist and are highlighted in the boom manual supplied with your sprayer (if it is fitted with a boom), or covered briefly in the operational section of this manual.

- » Do not disconnect any hoses nozzles or filters while the sprayer is operating. Disconnecting components while under pressure will result in uncontrolled spray discharge, which may be hazardous.
- » Should any welding be required on the steel parts of the sprayer, always clean the sprayer and disconnect the power before doing any repairs. Cover rubber hoses, and all other flammable parts. Keep a fire extinguisher near the sprayer when welding. Have good ventilation when grinding or welding painted or galvanised parts. Wear dust mask when grinding. Toxic dust or gas can be produced.

## SAFETY DECALS

<b>WARNING</b>	<p>Never operate your sprayer with a loose rim, wheel or axle.</p> <p>Anytime wheel nuts are loosened, retighten to specified torque.</p>
<p><b>ENSURE ALL WHEEL NUTS ARE TIGHT BEFORE USE.</b></p> <p>Failure to do so may result in a serious accident.</p>	XD-175

	<b>CAUTION</b>	<p><b>WATER FOR OPERATOR WASHING ONLY</b></p> <p><b>DO NOT DRINK</b></p>	Croplands Equipment Pty Ltd XD-1249V
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<b>WARNING</b>	Croplands Equipment Pty Ltd XD-123V
<p><b>OPERATION INSTRUCTIONS</b></p> <p>FOR SAFETY PROCEDURES READ THE OPERATORS MANUAL.</p> <p>STOP THE ENGINE AND REMOVE THE IGNITION KEY BEFORE (AND AFTER) WORKING ON THE MACHINE.</p> <p>DO NOT START THE MACHINE WITHOUT ENSURING ALL PEOPLE ARE WELL CLEAR OF WORKING PARTS. SOUND THE HORN BEFORE START UP</p> <p><b>FAILURE TO OPERATE CORRECTLY MAY RESULT IN SERIOUS INJURY OR DEATH!</b></p>	

<b>WARNING</b>	Croplands Equipment Pty Ltd XD-126V
<p>DO NOT FILL THE TANK IN EXCESS OF THE CARRYING CAPACITY OF THE VEHICLE WITH WHICH THE TANK WILL BE USED, AS SPECIFIED BY THE VEHICLE MANUFACTURER.</p> <p>1 Litre of water = 1 Kg      50 Litres of water = 50 Kg</p> <p>DO NOT EXCEED THE VEHICLE MANUFACTURERS SPECIFIED SAFE LOAD CARRYING AND TOWING CAPACITIES.</p> <p>READ THE OPERATORS INSTRUCTION MANUAL AND CHECK UNLADEN WEIGHT BEFORE ATTACHING OR USING THIS PRODUCT.</p>	

<b>WARNING</b>	Croplands Equipment Pty Ltd XD-123V
<p><b>SAFETY INSTRUCTIONS</b></p> <ol style="list-style-type: none"> <li>1. Read your operator's manual thoroughly before operating the sprayer.</li> <li>2. Inspect hoses, connections and nozzles daily.</li> <li>3. Clean filters regularly.</li> <li>4. Always follow correct maintenance schedules outlined in operator's manuals</li> <li>5. Always read chemical manufacturers labels before use.</li> <li>6. Always observe all warnings on chemical products.</li> <li>7. Regularly check all nuts and bolts are tight.</li> <li>8. Always wear appropriate gloves and wash sprayer down before doing any repair or maintenance work.</li> <li>9. Do not ride on sprayer when moving.</li> <li>10. Keep clear of moving parts when sprayer is operating.</li> <li>11. Always keep guards in place when sprayer is operating.</li> <li>12. Be sure tank lid is closed before operating basket mixing facility.</li> <li>13. Stand well clear of sprayer when operating.</li> <li>14. Do not disconnect hoses, nozzles or filters while sprayer is operating.</li> </ol> <p><b>FAILURE TO FOLLOW THE ABOVE INSTRUCTIONS MAY RESULT IN SERIOUS INJURY OR DEATH.</b></p>	

## PRODUCT IDENTIFICATION



Whenever possible, use the serial number of the UA300B trailed sprayer when requesting service or parts information.

Where a serial plate is not provided or is no longer on the unit, use the part number from the bar code affixed to this manual or the Warranty & Pre-delivery booklet.

## SPECIFICATIONS

### Tank

The Croplands UA300B tank is constructed from a UV stabilised, medium density polythene for low distortion qualities and impact resistance. A screw down main lid is installed on all models and comes standard with a basket strainer. A hand wash tank is fitted standard for operator safety and can be used to clean the suction filter in the field if needed. A deep sump provides excellent suction and allows the tank to completely drain.

### Pumps

Croplands uses positive displacement diaphragm pumps – either 12-volt powered for smaller models, or petrol powered higher capacity AR pumps for the nursery and vineyard models. The size and output of pumps vary depending on the machine specifications ordered.

The pump model and pump serial number is located on the pump itself. The plate shows the name of the manufacturer, type and model of the pump, serial number, maximum working pressure and other requirements. For further information on parts for your pump, refer to the parts section on the Croplands website. Use the pump model as the reference.

### Hose reels

On 12-volt models, the handy alloy manual reel is mounted above the tank with 20 metres of 10mm hose and a spray lance. The petrol powered AR Pump models have a manual steel reel with either 20 or 30 metres of 10mm hose fitted and a higher pressure rated spray lance. The UA300B/20/100RC is fitted with the remote rewind Retraspray reel.

### Booms

Boom options include:

- » 3, 4 or 6 metre MBX manual cross-fold booms
- » Covered boom for under-tree or under-vine spraying
- » Vertiboom for vineyard spraying
- » XT X-Tender boomless nozzle kit

A separate boom manual will be supplied if your UA300B is fitted with a spray boom

### Controls

Standard on the 12-volt models is a pressure regulator mounted on the pump outlet to regulate pressure & flow. Liquid not required for the boom or reel is bypassed back to tank. A pressure gauge is provided. An electric on/off switch is provided in the power loom.

On the models with an AR petrol powered 25 or 32 L/min pump, the pressure regulating valves is either mounted on the pump, or remotely operated with hoses provided to go to the towing vehicle. This regulating PRV has taps for boom or hose reel control and a pressure relief system.

## Filtration

Refer to the table below for filtration point information. Other combinations are available to order.

Tank lid strainer:	18 mesh
Suction filter:	50 mesh
Boom nozzle strainers (if fitted):	50 mesh

## UA300B MODELS – SPECIFIC MODEL INFORMATION

### 12-volt powered models

#### 1. UA300B/20.1S

- » 300 litre polyethylene tank with full sump for complete draining
- » 6 litre hand-wash tank for operator safety
- » Steel chassis with bolt-on fixed axle
- » Fully sealed bearings on steel hubs with 22 x 11-8 flotation tyres
- » Adjustable length drawbar with tow coupling
- » Parking stand with clip to secure in folded-up position
- » Alloy hose reel with 20 metres of high quality spray hose and spray lance
- » 12-volt Shurflo 4-diaphragm pump with heavy duty loom to connect to a reliable 12-volt power source\*
- » Pressure regulating valve with gauge
- » Easy-access suction filter
- » Tank drain tap
- » General use – spot spraying
- » Warranty booklet
- » Operation manual
- » Safety decals integrated into tank

\* Recommended to be hooked straight to battery

This model is the base unit for models 2, 3 and 4 described below or can be used as a spot-sprayer only.

### Honda Petrol powered models

#### 2. UA300B/20S/XPKIT

Uses base model UA300B/20S.1 (as described in option 1, above) with the addition of:

- » XT Boom kit comprising of a left and right
- » X-Tender boomless nozzle on an adjustable-angle swivel – mounted on the rear sub-frame (pictured P 2)

This option is ideal for spraying in areas where a boom may not be practical.

#### 3. UA300B/20S/4BX

Uses base model UA300B/20S.1 (as described in option 1, above) with the addition of:

- » A 4-metre MBX cross-fold boom, with 8 nozzles, mounted on the rear sub-frame.

An ideal sprayer for a lifestyle property where weed control in pastures is required along with spot spraying when needed.

#### 4. UA300B/20S/6BX

Uses base model UA300B/20S.1 (as described in option 1, above) with the addition of:

- » A 6-metre MBX cross-fold boom, with 8 nozzles, mounted on the rear sub-frame.

An ideal sprayer for a lifestyle property where weed control in pastures is required along with spot spraying when needed



Left: Filter screen on 12-volt model

Right: Filter screen on motorised model

## Honda Petrol powered models

### 5. UA300B/20/HR20G

- » 300 litre polyethylene tank with full sump for complete draining
- » 6 litre hand-wash tank for operator safety
- » Steel chassis with bolt-on fixed axle
- » Fully sealed bearings on steel hubs with 22 x 11-8 flotation tyres
- » Adjustable length drawbar with tow coupling
- » Parking stand with clip to secure in folded-up position
- » Steel hose reel with 20 metres of high quality spray hose and spray lance
- » Honda GX200-powered AR252 diaphragm pump, 0.25 bar rated
- » Pressure regulating valve with gauge mounted on the pump
- » Easy-access suction filter
- » Tank drain tap
- » Warranty booklet
- » Operation manual
- » Safety decals integrated into tank

This model is an ideal nursery or glasshouse sprayer where fitting a boom may also be useful around the property.

### 6. UA300B/20/HR30G

- » 300 litre polyethylene tank with full sump for complete draining
- » 6 litre hand-wash tank for operator safety
- » Steel chassis with bolt-on fixed axle
- » Fully sealed bearings on steel hubs with 22 x 11-8 flotation tyres
- » Adjustable length drawbar with tow coupling
- » Parking stand with clip to secure in folded-up position
- » Heavy-duty steel hose reel with 30 metres of high quality spray hose and AA30L-PP spray gun
- » Honda GX200-powered AR252 diaphragm pump, 0.25 bar rated
- » Pressure regulating valve with gauge mounted on the pump
- » Easy-access suction filter
- » Tank drain tap
- » Warranty booklet
- » Operation manual
- » Safety decals integrated into tank
- » Warranty booklet
- » Operation manual
- » Safety decals integrated into tank

For use around nurseries and for council applications where additional hose is needed

### 7. US300B/303/MVB5

- » 300 litre polyethylene tank with full sump for complete draining
- » 6 litre hand-wash tank for operator safety
- » Steel chassis with bolt-on fixed axle
- » Fully sealed bearings on steel hubs with 22 x 11-8 flotation tyres
- » Adjustable length drawbar with tow coupling
- » Parking stand with clip to secure in folded-up position
- » Easy-access suction filter
- » Tank drain tap
- » 5-nozzle per side adjustable Vertiboom mounted on rear sub-frame for spraying vertical targets (commonly grape vines) - nozzles are adjustable for direction and spray angle
- » Honda GX200-powered AR303 triple-diaphragm positive displacement pump, 0.40 Bar rated, 32 l/min open-flow
- » 2-tap controls on remote-mount PRV for left and right shut off of the Vertiboom
- » Warranty booklet
- » Operation manual
- » Safety decals integrated into tank

This model is most commonly used in small vineyards but would be suitable for any trellis-type crop

### 8. US300B/20/100RC

Uses the base model UA300B/20/HR20G (as described in option 6, above) with the addition of:

- » Remote control auto-rewind Retraspray reel fitted with 100 metres of Supa-slip hose and a Turbo400 spray gun.

For use in applications where a long length of hose is required, such as glasshouses for hand-spraying, or for council work where inaccessible areas require spot spraying of difficult weeds

### 9. US300B/303/HR30G

- » Honda GX200-powered AR303 triple-diaphragm positive displacement pump, 0.40 Bar rated, 32 l/min open-flow
- » Pump-mount pressure regulating valve with 50 mesh suction filter on the suction side of the pump
- » Heavy-duty steel hose reel, 30 metres of high quality 10mm spray hose and Braglia Turbo400 gun

All other features (tank, wheels, axle, manuals etc) are consistent on this model with the UA300B/20/HR20G. For use around nurseries and for council applications where additional hose is needed along with higher spraying pressure



**UA300B/20S/4BX** The most popular 12-volt model



**UA300B/303/MVB5** Popular for vineyards

## STANDARD FIT EQUIPMENT

### MBX03 and MBX04

A Separate boom manual will be supplied. General product information as described in the specification table above

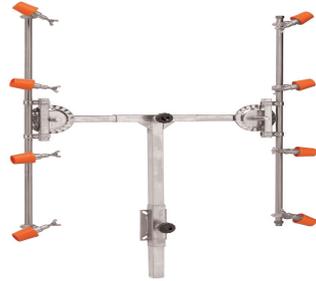
### MBX06

A Separate boom manual will be supplied. General product information as described in the specification table above



### Vertiboom

A Separate boom manual will be supplied. General product information as described in the specification table above



### MSCL-2 Covered boom

A Separate boom manual will be supplied. The covered boom can be fitted in lieu of the MBX03 or MBX04 booms for protected weed-spraying in horticultural crops such as grapes.



### XT boom kit

A Separate boom manual will be supplied. General product information as described in the specification table above.



## Hose reels

General product information as described in the specification above.



Heavy duty hose reel with Turbo400 gun

## RSRL2-100RC Retraspray reel

A separate Retraspray manual will be supplied.  
General product information as described in the specification table above.



## NOTE

For more information on hose reels and the model fitted to your sprayer, please see the Croplands website under 'hose reels'.



Standard hose reel for 12-volt models



Hose reel fitted to model UA300B/20/HR20G

## PRE-OPERATION

**It is important to set up your sprayer & try it out with water prior to going spraying.**

### INITIAL SET UP: 12-VOLT MODELS

1. Set preferred drawbar length & drawbar coupling adjustment.

In most cases, if towing with 4-wheeler ATV vehicle, the short drawbar position will be adequate.

For RTV or larger vehicles such as utility vehicles, the longer drawbar position is preferred. Steps to adjust drawbar position are shown in figures 1, 2 & 3.

Ensure the tow-ball is correctly adjusted and fitted to your tow-ball. Ensure the adjustment nut allows for the coupling to fit snugly on the ball without being too tight. Once in the right position, tighten the lock nut. When correctly adjusted, the locking pin will be simple and easy to click into place (figure 4b).



Figure 1: Drawbar position short and long



Figure 2: Undo locking bolt



Figure 3: Undo stand and adjust length. Reverse steps 2 and 3 once length is decided.



Figure 4: Adjust coupler for fit by adjusting bolt as pictured above. Tighten enough to ensure the coupler cannot jump off the towball when the lever is secure.



Figure 4a: Locking lever adjustment



Figure 4b: Ensure pin can be secured



Figure 4c: Ensure lock nut is tightened once adjustment is complete



## WARNING

Always ensure the towing coupler is securely locked using the lever & pin. Failure to do so could result in your trailed sprayer becoming un-hooked while towing!

2. Power connection. The UA300B 12-volt models are all supplied with a heavy duty power cable.

Connect this power cable to a reliable 12-volt battery. A direct-to-battery connection is preferred as this uses the heavy duty loom for the best power supply. Using permanent connections attached to the battery terminals is preferred - these are not supplied, but ask your Croplands dealer to assist with this battery connection unless you are capable of doing so yourself.

The standard loom is supplied with alligator-type battery clamps which will suffice provided there is room for this type of connection, and that they can be securely attached to the battery terminals. (figure 6).

It is possible to have a male power socket fitted to the loom to plug into a standard vehicle 12-volt connection, but before doing so ensure the socket connection on the vehicle can supply a minimum of 12 volts and that the circuit has a minimum of a 20-amp fuse installed.

For the pump to perform correctly, strong and continuous power supply is a must.

The standard loom is fitted with a protective fuse to ensure the pump is protected from incorrect set up of the power supply (figure 7).



**Figure 5: Heavy duty loom and waterproof connections**



**Figure 6: Alligator clips - for connection to your 12-volt battery**



**Figure 7: Fuse - integrated into the loom**



**Figure 7a: Rocker switch - for starting & stopping the pump on 12-volt models**

3. Check wheel nuts are secure and tight are secure and tight (figure 8).

4. Have a quick check of all other bolts and nuts on the sprayer and tighten if necessary (figure 9).

These will have been factory set, but it is worth taking the time to have a quick check.



Figure 8: Check wheel nuts for tightness periodically



Figure 9: Check bolts & nuts

5. If your UA300B trailing sprayer is fitted with a boom, refer to the boom manual for any information relating to initial start-up.

<b>⚠ WARNING</b>	Never operate your sprayer with a loose rim, wheel or axle.
	Anytime wheel nuts are loosened, retighten to specified torque.
<b>ENSURE ALL WHEEL NUTS ARE TIGHT BEFORE USE.</b>	
Failure to do so may result in a serious accident.	<b>CROPLANDS</b> XD-175

**INITIAL SET UP:  
HONDA-POWERED AR PUMP MODELS**

1. Follow the same initial set up steps as for the 12-volt model in the above table for steps 1 - Drawbar & coupling adjustment; 3- Check wheel nuts; 4 - check all other bolts & nuts for tightness, and 5 - if a boom is fitted, read the boom manual

2. Engine & pump check: The Honda GX200 engine will have been pre-checked for operation at the factory. However, it is recommended you check the oil level (figure 10) as per the separate Honda manual supplied with your UA300B sprayer. Ensure the correct fuel is used & adequate fuel is added to the fuel tank for operation.

Check the oil level in the pump - the sight glass has indications marked as to min/max oil level for correct operation (figure 11).

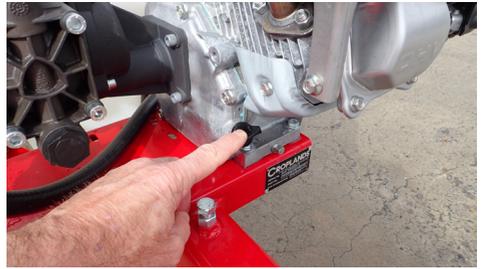
Check the oil level in the pump gearbox. On the UA300B models fitted with an AR252 pump, this can be done using the side port - the oil is to be filled until the level reaches this point (figure 12).

On the models UA300B/303/MVB5 and UA300B/30/HR30G, the gearbox will have a dipstick provided in the kit with the sprayer that is to be installed by removing the red plastic plug and installing the dipstick (figure 12a).

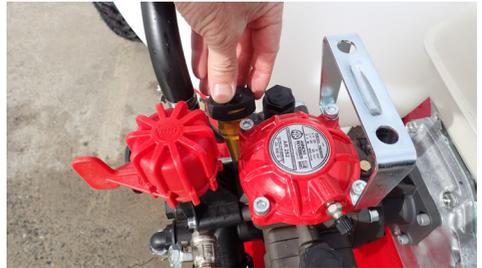
Familiarize yourself with the engine controls - choke, on/off, engine speed control and starter pull-chord (figure 13).

Familiarize yourself with the pressure control unit. If you have model UA300B/303/MVB5 with the Vertiboom fitted for spraying vines or trellis crops, mount the remote PRV safely on the towing vehicle. (see P18, figure 14a and 14b).

Once these steps are complete, move to the operational section.



**Figure 10: Oil level check**



**Figure 11: Check pump oil level**



**Figure 12: Check gearbox oil level**



**Figure 12a: Install the dipstick in the AR303 or AR30 pump gearbox by removing the red plug**



Figure 13: Choke & fuel on/off controls



14a: Mount the remote ARG140 pressure regulator/control unit in a convenient location for the operator



14b: Ensure the taps for left right control are accessible

## NOTE

This manual-tap control **MUST NOT** be used inside a cab tractor.



## WARNING

Never run the Honda motor in an enclosed area. Carbon Monoxide is produced by petrol engines when running and can cause serious health problems or death!



## CAUTION

The law states that manual tap controls are **NOT** to be used inside a cab. For model UA300B/303/MVB5 with a remote mount pressure relief and pressure adjustment valve, ensure your towing vehicle is an open cab vehicle.

**STEPS FOR INITIAL FAMILIARISATION  
PRIOR TO SPRAYING THE FIRST TIME:  
12-VOLT MODELS**

1. Once the 12-volt power supply to your vehicle is secure and working, fill the sprayer with some clean water (50 litres would be sufficient for initial familiarization).

Check the ball valve is on the suction position (figure 15), and flick the rocker switch on the power loom to the "on" position. The pump should prime quickly and liquid will bypass through the pressure control to the tank.

2. Turn the selector ball valve on the control side of the pump to the reel position (figure 16). Test the spray lance by taking it from the holder and squeezing the trigger gun.

Adjust the pressure for the lance to a MAXIMUM of 3-bar on the gauge using the dial on the Pressure regulating valve (figure 17).

For spot spraying applications, 2-3 bar will be all that is required.

Do not exceed 3 bar pressure or damage to the pump may occur.



**CAUTION**

**Do not exceed 3 bar on the pressure gauge for the spray lance. Damage to the pump may occur!**

**NOTE**

**If using the reel and lance for extended periods, while not spraying, switch the pump off using the rocker switch on the loom.**



Figure 15: Ball valve in the suction position



Figure 16: Ball valve in the hose reel position



Figure 17: Adjust pressure



Figure 18: Boom position

3. If you have a boom fitted to your UA300B trailing sprayer, turn the selector ball-valve to the boom position (figure 18). Water should now spray from the nozzles. Adjust the spraying pressure to a MAXIMUM of 2 bar pressure for boom spraying.

Whilst the pump is running, check all the nozzles to ensure the spray pattern is uniform and check there are no leaks from boom joints, fittings or the nozzle bodies. Consult your spray boom manual for more information.

4. Switch the rocker switch on the power loom to the off position. Your UA300B sprayer should stop spraying. This is the way you will control the spray boom whilst operating in the field. Ensure the switch can be located close to your hands when in use.

### STEPS FOR INITIAL FAMILIARISATION PRIOR TO SPRAYING THE FIRST TIME: HONDA-POWERED AR PUMP MODELS

1. During initial set up you will have checked the oil & fuel levels and controls on the Honda GX200 engine. Fill the sprayer with some clean water (50 litres would be sufficient for initial familiarization).

Check the ball valve is on the suction position (figure 15), and start the engine using the pull-chord. It may require some choke at the beginning but once warm, the engine should not require further choke to start.

2. The AR252 pump model is capable of up to 25-bar pressure. However, for spot spraying with the standard reel, 10 bar is the maximum recommended spray pressure for use with the RL10 lance (see figure 19). Turn on the tap on the PRV control unit on the pump (figure 20) and squeeze the trigger on the RL10 lance.

Adjust spraying pressure from 3 to 10 bar (depending on what you feel is needed for your application). (figure 21). Adjust the spray pattern on the end of the RL10 lance to the desired pattern for the application - to do this you simply turn the end of the nozzle and adjust the spray angle accordingly.



Figure 19: 10 bar maximum pressure for RL10 operation

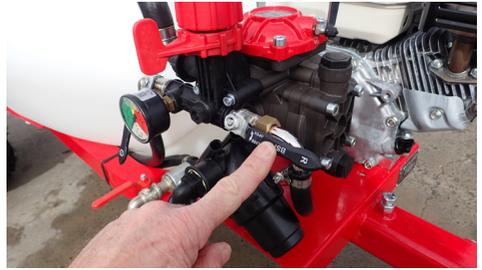


Figure 20: Turn valve on to reel



Figure 21: Adjust pressure as required



## CAUTION

**Maximum recommended spray pressure with the RL10 spray lance is 10 bar. Exceeding this pressure may damage the spray lance seals.**

3. If your UA300B trailing 300 sprayer is fitted with a boom, reduce the pressure on the PRV to 2-3 bar. (figure 21).

Turn off the tap to the spray reel and turn on the tap to the boom (figure 22).

Re-check the boom pressure and adjust to 2 to 3 bar.

While the pump is running, check all the nozzles to ensure the spray pattern is uniform and check there are no leaks from boom joints, fittings or the nozzle bodies. Consult your spray boom manual for more information.

4. For the Honda powered AR303 model UA300B sprayer with Honda GX200 engine, follow the same steps as 1 above.

The AR303 is capable of spraying pressure up to 40-bar. However, it is unlikely you will ever need this pressure for spraying. Maximum recommended pressure using the AR303 pump with the heavy-duty reel is 30 bar.

Following the same procedure as step 2 above as described with the AR252 pump, test the Turbo400 spray gun and adjust the pressure to 20-bar to start with.

Adjust the spray pattern to suit the application you are planning to carry out.

The orange "cone" on the Turbo400 gun is normally pulled back for spot spraying application. (figure 23).

For nursery spraying, where a "fog" spray is useful, the cone can be pulled right forward (figure 24).

5. For the model UA300B/303/MVB5 trailing sprayer fitted with the Honda GX200 engine, AR303 pump and Vertiboom, the following steps should be followed:

The control unit will be a remote PRV with hoses running forward to allow it to be used on an open tractor or ATV/RTV vehicle.

As mentioned in the set up section, this control unit should be fixed to the towing vehicle in a position where the operator can easily use it to control the Vertiboom (figure 25).

Follow the same steps as step 1 above to start the Honda engine.

Turn the taps on individually to test the spray pattern on the left and right side of the Vertiboom (figure 25a). Adjust the spray pressure to 30-bar (figure 26)

It is recommended that the spray pressure does not exceed 30 bar. Use the separate tables provided with your sprayer to determine the pressure, speed of travel and nozzle size to achieve your desired spray rate.



Figure 22: Boom tap



Figure 23: Pull back the orange cone cover for normal spraying



Figure 24: For creating a “fog” spray, pull the orange cone cover forward



Figure 25: The remote PRV (Pressure control unit) should be fitted to the towing vehicle



Figure 25a: Turn the left & right taps on individually to test spray pattern



Figure 26: It is recommended not to exceed 30 bar spraying pressure

VERTIBOOM NOZZLE CALIBRATION CHART			
Hole Diameter (nozzle size)	Performance	Pressure	
		15 bar	30 bar
1.0	Litres per min	1.8	2.6
	Cone angle	30°	35°
	Max. Throw	2.1m	2.4m
1.2	Litres per min	2.4	3.4
	Cone angle	35°	40°
	Max. Throw	2.3m	2.7m
1.5	Litres per min	3.4	4.8
	Cone angle	40°	45°
	Max. Throw	2.6m	3.0m
1.8	Litres per min	3.9	5.5
	Cone angle	50°	55°
	Max. Throw	2.9m	3.3m
2.0	Litres per min	4.5	6.3
	Cone angle	55°	60°
	Max. Throw	3.1m	3.5m
2.3	Litres per min	5.3	7.5
	Cone angle	60°	65°
	Max. Throw	3.4m	4.0m



Spray pattern for vines should be adjusted for good spray coverage

## SPRAYING INFORMATION AND CALIBRATION

This section also provides information relevant to Calibrations in section 7

### When to spray

Spraying results are best when the wind speed and the temperature are low but the relative humidity is reasonably high. An ideal time is at sun up or nearing the end of the day when these conditions are more likely to occur.

For more information, contact Croplands about our SprayWise® program, or purchase a copy of the SprayWise Application Guide from Croplands. Also, the use of the WINDMATE™ Wind meter would be of excellent value to anyone doing regular spraying.

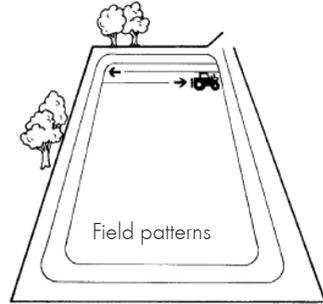
### Field patterns

For the best coverage, spray two swath widths around the outer perimeter of the field as shown in the diagram. This establishes a good headland and will give you adequate room to turn around. Turn the booms off when you come back on to the headland to prevent over spraying and wastage. Using a guidance system such as GPS or foam markers can prevent overlaps and ensure you get better coverage.

### Ground Speed

Modern tractors or vehicles should have sufficient speed accuracy for sprayers of this size. To check the speed, fill the tank and open the boom to simulate usual spraying conditions. See section 7 to learn how calculate ground speed if your tractor or vehicle does not have a reliable speedometer.

For spraying with a UU300B trailing sprayer, the speed will you can safely & accurately spray at will depend on the conditions, terrain, and product being applied. In general, speeds of 5 to 12 km/hr are most often within the range for small trailed sprayers.



### Spray Quality

Spray quality is becoming extremely important for the correct application of chemicals. Refer to your advisor, local DPI or check the Croplands Buyers Guide for more information. Many chemical labels now specify the spray quality required for the product being used. Loosely, spray quality falls into a droplet range of:

- » Ultra Coarse
- » Extremely Coarse
- » Very Coarse
- » Coarse
- » Medium
- » Fine
- » Very fine



## CAUTION

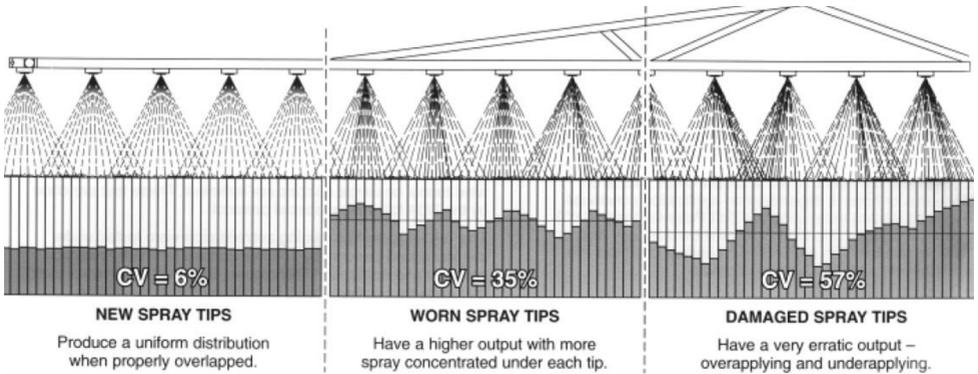
**Most spray applications will fall into the Medium to Very Coarse range, depending on the application. Talk to a qualified Agronomist or Advisor if uncertain.**

## Nozzle spacing and height

Nozzles overlap should be 50% at the point of contact with the spraying surface. Croplands booms operate with a nozzle spacing of 500mm (50cm) with nozzles slightly offset to avoid interference. Nozzles are supplied with 110° angled patterns. The recognized height to achieve the required 50% overlap is 400mm-500mm for 110° nozzles (measured from the target to be sprayed).

## Spray pattern and uniformity

Your nozzle spray pattern, overlap and uniformity need to be monitored and can be tested in the following manner. Keep a spare new nozzle to with which you can compare the other nozzles on your unit. Place the new nozzle at a central point on the boom and fill the tank with fresh, clean water and switch the boom on. Examine the spray patterns against a dark background and replace any that show signs of damage or sufficient wear as shown below.



## BOOM SPRAYER CALIBRATION

**For MBX Cross-fold booms and MSCL-2 covered boom if fitted to the UA300B model supplied**

Each Croplands boom is fitted standard with non-drip nozzle bodies so that when the liquid flow is switched off, the bodies will not drip. Supplied on all Croplands' booms are AirMix air-induction ultra-low drift nozzles - now an industry standard to reduce the likelihood of spray drift.

The liquid flow to the boom can be stopped & started as required (such as when turning at headlands or where the operator does not want to spray) by using either the on/off rocker switch fitted in the loom on the 12-volt models of the UA300B trailing sprayer, or by the manual taps fitted to the pressure regulator on the Honda-powered models.

To ensure the right application of herbicide or crop protection product is applied to the target crop, the user should calibrate the UA300B trailing sprayer to ensure the correct application rate is used for the chemical being used.

The information for the product to be applied (spray target rate and spray quality) is usually supplied by the chemical manufacturer on their product label. Alternatively, a trained agronomist should be consulted.

### CAUTION

**Do not operate a sprayer without calibration or before calibration has been completed.**

Part of the calibration process is to determine the flow required to meet the required target spray rate, and this information can be used to determine what speed of travel will best suit your application and what nozzle and spraying pressure to use.

Failure to calibrate a sprayer before operating may result in ineffective or crop damage.

NOTE

**Check the current Croplands Optima Buyers Guide for Nozzle information, or purchase a copy of the Nufarm Spraywise™ Spray Application Guide.**

### WARNING

**Always only use clean water when calibrating or checking a sprayer. Never calibrate with chemical present in the tank. Failure to follow this instruction can lead to poisoning and serious illness.**

### Calibration

To accurately apply crop protection or herbicides through a spray boom, the following procedure should be undertaken.

1. Measure your speed of travel.
2. Check the nozzle spacing, and
3. Select an appropriate nozzle for the product being applied, and check nozzle output in Litres per minute (L/min), along with spraying pressure.

## 1. Speed of travel

Check your tractor or vehicle speed. If you have an accurate speedometer, this will suffice. If not, measure the distance you have travelled in one minute in metres, and divide this by 16.7:

- » e.g. 120 metres travelled in one minute  $\div 16.7 = 7.18$  km/hour.
- » If this is impractical, measure the distance travelled in 30 seconds, double it, and then divide by 16.7.
- » Repeat at least twice, from a running start, to ensure accuracy.

## 2. Nozzle spacing

Standard nozzle spacing on a Croplands boom is 50cm. This is also an industry standard for the use of 110 degree nozzle tips as fitted standard to Croplands booms.

### NOTE

**Nozzle spray patterns and spray angles should be visually checked for accuracy and the nozzle replaced if not spraying correctly.**

## 3. Select Nozzle Type & Size

Select the Nozzle Type & Size according to:

- » Chemical recommendations.
- » Application rate required.
- » Pressure setting.
- » Swath width.
- » Chosen speed of travel (Use actual speed of travel, refer to step 1).

The right nozzle, application rate, spray quality and nozzle pressure will best be advised by your agronomist or consulting with the manufacturer of the product you are applying. The Croplands calibration guide covers these options in more detail.

Included on page 28 is a basic nozzle chart to show nozzle sizes, outputs and application rates at varying speeds.

**4. Select Nozzle Type & Size according to:**

- » Chemical recommendations
- » Application rate required
- » Pressure setting
- » Swath width
- » Chosen speed of travel. (Use actual speed of travel, refer to step 1).

**5. Fit the selected nozzles to the boom as per the nozzle manufacturers specifications.**

**6. Check the nozzle accuracy as outlined above in spraying information.**

**7. Add the correct amount of chemical to the tank as per the directions on the chemical label.**

**8. Adjust the boom height to suit your nozzles as explained in section 6 “nozzle spacing and height”.**

**9. Don't forget to record your data for future reference.**

**NOTE**

**To find more information on how to calibrate a boom for varying application rates:**

- » Purchase a copy of our **Spraywise Broadacre Application Guide**
- » Refer to the Croplands web site at **www.croplands.com.au** or
- » Contact the Croplands Customer Service or
- » **Technical Support: Phone 1300 650 724.**

**BROADCAST AND TURF APPLICATIONS FOR THE UA300B MODELS WITH MBX03, MBX04 AND MBX06 BOOMS FITTED**

**LITRES/HA AT 50CM NOZZLE SPACING**

Nozzle type	Pressure bar	Flow rate l/min	5 kph	6 kph	7 kph	8 kph	10 kph	12 kph	16 kph
<b>110-015 STANDARD</b>	1.0	0.346	81.6	68.0	48.3	51.0	40.8	34.0	25.5
	1.5	0.424	101	84.0	72.0	63.0	50.4	42.0	31.5
	2.0	0.490	115	96.0	82.3	72.0	57.6	48.0	36.0
<b>110-02</b>	1.0	0.462	110	92.0	78.9	69.0	55.2	46.0	34.5
	1.5	0.566	134	112	96.0	84.0	67.2	56.0	42.0
	2.0	0.653	156	130	111	97.5	78.0	65.0	48.8

## DAILY START UP AND USEFUL FORMULA

### Daily start up procedure

A careful, common sense approach to water quality, mixing of chemicals and care of filters, hoses and tank will ensure trouble free spraying.

To ensure trouble free operation, follow the procedure below at the start of each day:

1. Ensure that no solids enter the system to block or damage pump or nozzles.
2. Check that suction line filter is clean and not damaged. It should be checked & cleaned regularly. Be careful not to damage or deform the mesh or O-Ring while cleaning and refitting the suction line filter. If a filter screen is damaged, replace with a new screen.



3. Put enough clean water into the spray tank to operate the pump and hand gun or boom (if fitted). The tank can be fully filled once your start up check is completed.

4. Activate the pump - for 12-volt models, ensure your power loom is correctly connected to your battery source. For Honda-powered AR pump models, ensure adequate fuel is in the fuel tank for the spraying job.

5. If fitted, adjust the pressure relief valve to obtain the required pressure. Excess liquid will bypass back to the tank. Once the pressure is set, it is normal for minor fluctuations to show on the pressure gauge when switching the hand gun or boom on & off if you have these options fitted. For more information on your pressure control unit, refer to Page 20.



### Check that hoses and clamps do not leak

6. Check that all hoses, hose clamps and connections do not leak. Repair or replace damaged components.
7. Read and follow the instructions on the chemical manufacturers label before mixing and adding chemicals to the spray tank. For safety information refer to section 3 in this manual.
8. Add chemical to the tank and proceed with your spraying application.



## CAUTION

**Do not add chemicals to the spray tank until the initial start-up or daily start-up procedure has been carried out. This avoids having a tank full of chemical mix and then finding a sprayer problem.**

## Operating Pointers

While spraying continually observe that:

1. Adequate operating pressure is being maintained.
2. Your hand gun coverage is correct and constant for effective cover and that your nozzle is operating correctly (if you have a hose reel & gun fitted).
3. Periodically check and clean filters - between tanks is ideal
4. Your boom height is maintained at the correct height above your target (if you have a boom fitted).
5. Avoid going too slow because over application will occur. Conversely, avoid going to fast because under application will occur. Refer to your calibration information.

## Useful Formula

### 1. Calculating the Tank Spray Area

Use this formula to calculate the area each tank full of spray will cover.

$$\text{Area Covered (ha)} = \frac{\text{Tank Volume (litres)}}{\text{Spray Application Rate (L/ha)}}$$

eg. 
$$\frac{300 \text{ (litres)}}{100 \text{ (L/ha)}} = 3 \text{ hectares.}$$

### 2. Calculating the Total Liquid Volum Required

Use this formula to calculate the amount of spray liquid required to spray a given area.

$$\text{Total Liquid Volume Required (litres)} = \text{Area (ha)} \times \text{Spray Application Rate (L/ha)}$$

eg. 
$$2 \text{ (Ha)} \times 100 \text{ (L/ha)} = 200 \text{ litres required}$$

# MAINTENANCE

## DAILY MAINTENANCE

In the first few days of sprayer usage, thoroughly check the machine before starting each day of spraying. Check all nuts and bolts and check plumbing for leaks. Ensure your vehicle battery is fully charged if you are using the 12-volt UA300B model for your spraying job.

### Pump - Honda-powered AR models

Check the oil level on the pump sight gauge and top up with SAE 20/40 multi grade engine oil if needed.

### Filters

It is important to clean filters daily as they can have a major impact on your sprayer's performance. Wash them out with a soft brush and constantly check for holes or tears. Clean the suction filter every time the tank is filled and at the end of the days spraying. Make sure O rings are in good condition and grease them with O ring grease in necessary. Clean out nozzle filters if installed. See page 9 for picture of the suction filter screen for each model.

## NOTE

Also refer to your Honda Manual supplied with your sprayer for engine maintenance.

## CAUTION

ALWAYS FLUSH PUMP WITH FRESH WATER AFTER USE

Failure to flush with fresh water may result in damage to the pump and reduced pump performance.



### Spray lines

Never leave chemicals in the tank or the pump. Rinse the tank out completely with fresh water and operate machine to clear all spray lines. Remove boom lines caps if you have a boom fitted and flush boom lines.



## CAUTION

Do not leave water in the machine, particularly in cooler climes as this can freeze and ruin the pump.

## ANNUAL MAINTENANCE

### General sprayer care

When spraying season has finished, clean the machine completely.

Check all electrical fuses as these can easily blow if corroded in the off season.

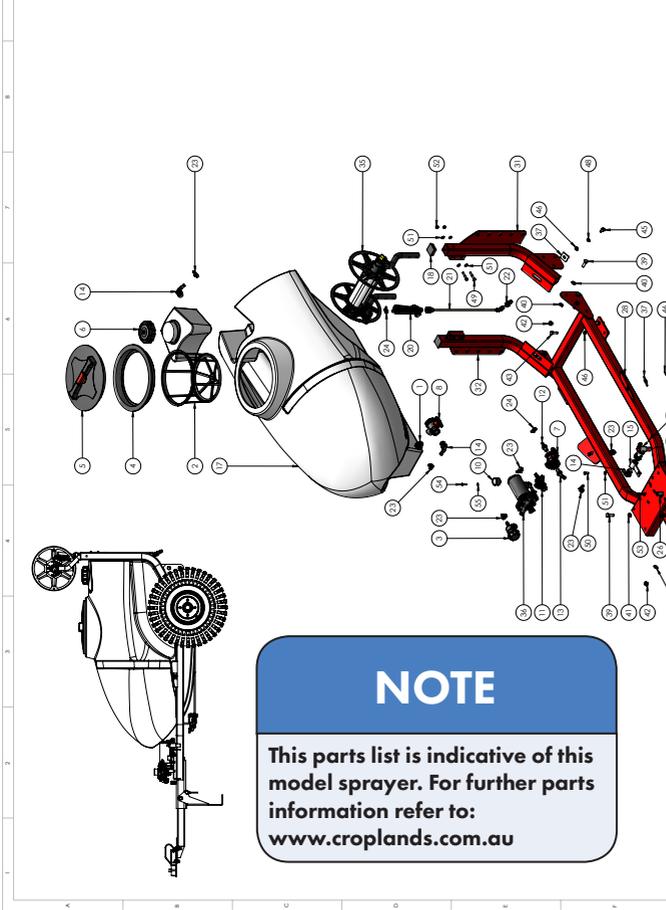
### Pump - Honda-powered AR models

Flush and drain the pump completely before storage. Check the valves and diaphragms for wear and damage before the start of the new season. Set the air pressure in the chamber to around 10 - 20% of the usual operating pressure. Drain the oil before the commencement of the next season and replace completely with new oil (SAE 20/40 multi grade engine oil).

### 12-volt pump

Ensure the pump is drained of liquid by undoing the inlet & outlet hoses. Also ensure the pump is fully flushed after every spray.

ITEM NO.	QTY.	DESCRIPTION
1	1	SHUT OFF VALVE
2	1	FILTER BAGKIT MEDIUM 2.5MM HEP
3	1	FILTER 1/2 BLACK PP 3MMSH
4	1	LE RINGS 350MM MEDIUM
5	1	LE RINGS 350MM MEDIUM
6	1	LE 4 C/W BREAKER & SEAL
7	1	BALL VALVE P/N 1/2 3 WAY
8	1	PP HANDWASH 1/2 5MM TAIL
9	1	ASS 331 B
10	1	CHANGE AMMUNO 0-BAAR
11	1	PP 1/2 1/4 TAIL
12	1	PP 1/2 1/4 TAIL
13	1	ELBOW 1/2 1/4 TAIL 1/2 BARB
14	1	ELBOW 3/4 MALE 1/2
15	1	PP 1/2 1/4 TAIL
16	1	PP SOCKET
17	1	PP 3/8 X 1/4
18	1	PP 1/2 1/4
19	1	PP 1/2 1/4
20	1	SHUT OFF VALVE 1/2 1/4 HOSE
21	1	BRASS LANCE 105CM CURVED
22	1	PP 1/2 1/4
23	1	PP 1/2 1/4
24	1	HOSE CLAMP 20MM 1/2 NORMA DROE
25	1	PP 1/2 1/4
26	1	SPACER PP 3/8 X 1/2
27	1	WHEEL AND BRM ATV
28	1	UP 2018 1P
29	1	UP 2018 1P
30	1	UP 2018 3P
31	1	UP 2018 4P
32	1	UP 2018 1P
33	1	UP 2018 3P
34	1	AXLE SWAM ROUND 800L#E 60L#D
35	1	AXLE SWAM ROUND 3500L#E 8 L#D
36	1	SHOCK 201MM TRAMP
37	1	40MM SQUARE WASHER
38	1	SHOCK 201MM TRAMP
39	1	W/2 PLAT WASHER 2P
40	1	W/2 PLAT WASHER 2P
41	1	W/2 PLAT WASHER 2P
42	1	M/2 PLAT WASHER 2P
43	1	M/2 PLAT WASHER 2P
44	1	M/2 PLAT WASHER 2P
45	1	M/2 PLAT WASHER 2P
46	1	M/2 PLAT WASHER 2P
47	1	M/2 PLAT WASHER 2P
48	1	M/2 PLAT WASHER 2P
49	1	M/2 PLAT WASHER 2P
50	1	M/2 PLAT WASHER 2P
51	1	M/2 PLAT WASHER 2P
52	1	M/2 PLAT WASHER 2P
53	1	M/2 PLAT WASHER 2P
54	1	M/2 PLAT WASHER 2P
55	1	M/2 PLAT WASHER 2P
56	1	M/2 PLAT WASHER 2P



**NOTE**

This parts list is indicative of this model sprayer. For further parts information refer to: [www.croplands.com.au](http://www.croplands.com.au)

UA 3000 15 PARTS ILLUSTRATION  
THIS DIAGRAM IS FOR ILLUSTRATION PURPOSES ONLY.  
PLEASE REFER TO THE PARTS LIST.

ITEM NO.	QTY.	DESCRIPTION
1	1	SHUT OFF VALVE
2	1	FILTER BAGKIT MEDIUM 2.5MM HEP
3	1	FILTER 1/2 BLACK PP 3MMSH
4	1	LE RINGS 350MM MEDIUM
5	1	LE RINGS 350MM MEDIUM
6	1	LE 4 C/W BREAKER & SEAL
7	1	BALL VALVE P/N 1/2 3 WAY
8	1	PP HANDWASH 1/2 5MM TAIL
9	1	ASS 331 B
10	1	CHANGE AMMUNO 0-BAAR
11	1	PP 1/2 1/4 TAIL
12	1	PP 1/2 1/4 TAIL
13	1	ELBOW 1/2 1/4 TAIL 1/2 BARB
14	1	ELBOW 3/4 MALE 1/2
15	1	PP 1/2 1/4 TAIL
16	1	PP SOCKET
17	1	PP 3/8 X 1/4
18	1	PP 1/2 1/4
19	1	PP 1/2 1/4
20	1	SHUT OFF VALVE 1/2 1/4 HOSE
21	1	BRASS LANCE 105CM CURVED
22	1	PP 1/2 1/4
23	1	PP 1/2 1/4
24	1	HOSE CLAMP 20MM 1/2 NORMA DROE
25	1	PP 1/2 1/4
26	1	SPACER PP 3/8 X 1/2
27	1	WHEEL AND BRM ATV
28	1	UP 2018 1P
29	1	UP 2018 1P
30	1	UP 2018 3P
31	1	UP 2018 4P
32	1	UP 2018 1P
33	1	UP 2018 3P
34	1	AXLE SWAM ROUND 800L#E 60L#D
35	1	AXLE SWAM ROUND 3500L#E 8 L#D
36	1	SHOCK 201MM TRAMP
37	1	40MM SQUARE WASHER
38	1	SHOCK 201MM TRAMP
39	1	W/2 PLAT WASHER 2P
40	1	W/2 PLAT WASHER 2P
41	1	W/2 PLAT WASHER 2P
42	1	M/2 PLAT WASHER 2P
43	1	M/2 PLAT WASHER 2P
44	1	M/2 PLAT WASHER 2P
45	1	M/2 PLAT WASHER 2P
46	1	M/2 PLAT WASHER 2P
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55	1	M/2 PLAT WASHER 2P
56	1	M/2 PLAT WASHER 2P

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dealer section on the Croplands website