

CROPLANDS

OPERATORS MANUAL
PEGASUS
8000

WWW.CROPLANDS.COM.AU

STOP

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



INTRODUCTION

GENERAL MANAGER'S WELCOME



A handwritten signature in black ink, which appears to read 'Sean Mulvaney'.

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 over 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.

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SECTION 1

IMPORTANT INFORMATION

ABOUT THIS MANUAL

This manual provides assembly, setting up, operating and maintenance instructions for the Croplands Pegasus 8000 sprayer.

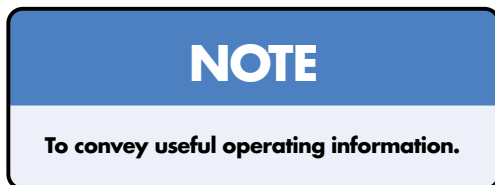
In addition to this manual, the sprayer will be delivered with the General Safety Manual (GP-SAFE-A) and where applicable, manuals for pumps, controllers etc. For details not covered by the manuals, please contact Technical Support on 1300 650 724.

Some features and options explained in this manual may not be installed on your sprayer.

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

This December 2022 updated edition of the Pegasus 8000 manual is a modernised version featuring improved readability and updated Sections 1 and 2. Thereafter the content is near identical to the original BT-POM8001110 Rev 2 edition of this manual plus the new BT-PRIME option.

Check online as there may be more recent revisions of this manual. www.croplands.com.au



TERMINOLOGY

These terms/symbols used throughout this manual:



NOTE	This Note sign is in place to convey useful information and will help you to identify the best possible way to operate the machine.
CAUTION	This Caution sign shows the potential for incident. An incident may include damage to the machine itself, or possible injury to the operator.
WARNING	This Warning sign shows the potential for risk or injury and highlights the need for steps to be taken to protect ones safety.
DANGER	This Danger sign will be used in areas where the highest risk is present. Always read the information on these signs and ensure you are taking steps to prevent risk or injury.



BEFORE OPERATING YOUR SPRAYER

Before attempting to use your sprayer, make sure you read all Operator Manuals for this sprayer including but not limited to:

This Operator's Manual, the Pegasus 8000 Operators (panel) Quick Start Guide, **and all other supplied manuals** for items such as Pumps and PTO etc.

And properly understand:

- All Safety Issues.
- Assembly & Installation instructions.
- Calibration of the sprayer.
- Sprayer Operation.
- Sprayer Maintenance.



SECTION 1

IMPORTANT INFORMATION

WARRANTY POLICY

Each sprayer will be delivered with a Specifications, Safety, Warranty & Delivery Booklet which includes:

- the sprayer's specification sheet including the sprayer's unique serial number,
- a safety induction checklist,
- a delivery checklist and customer induction,
- the Croplands Warranty policy and warranty registration form.

Always contact your Croplands Dealer first and foremost for warranty matters.

NOTE

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

CROPLANDS

SPRAYER SPECIFICATIONS SAFETY, WARRANTY & DELIVERY BROADACRE

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GP-WARB-B

INCLUDES SAFETY INDUCTION

SECTION 2

SAFETY

SAFETY FIRST

Please read and understand all supplied manuals, guides and safety decals before operating this sprayer. This includes the **Croplands Operators Safety Manual** – as pictured here.

This manual is available on the Croplands Web site, or for printed versions contact Croplands customer support and ask for part number GP-SAFE-A (or later version if available).



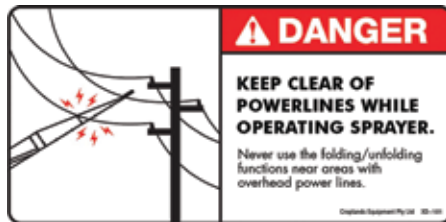
SECTION 2

SAFETY

SAFETY SIGNS AND DECALS

All signs and decals for sprayer safety and operation must be maintained in good order and replaced if damaged or missing. Most Croplands labels have a part number printed on the decal to aid identification and replacement.

Some examples are shown below.



Part No: XD-181



Part No: XD -125V



Part No: XD-190



Part No: XD-125



Part No: XD -123V



Part No: XD -126V



Part No: XD -175



Part No: XD -176



Part No: XD-182



Part No: XD -177



Part No: XD -103



Part No: XD-178



Part No: XD -124V

SECTION 3

PRODUCT IDENTIFICATION, SHIPPING & SPECIFICATION



GENERAL DESCRIPTION & SPECIFICATIONS

Tank

8000 litre polyethylene tank with hinged lid, filling strainer, top/bottom fill point, dual agitators and sparge tube, direct chemical induction and dual tanks rinsing jets.

Calibrated sight gauge fitted. UV and chemical resistant finish. Separate 35 litre hand-wash tank fitted for safety.

Chassis

Strong, fabricated wide rail chassis, fully welded for maximum strength. Fitted standard with load sensing, adjustable width (2.5 – 3 metres), air-ride suspension axle. Adjustable height drawbar complete with cast swivel eye and safety chain including ARDS air-ride drawbar system, with a hydraulically adjustable, heavy duty jacking stand.

Wheels & Tyres

710/70R x 42 standard on 8000 litre model

Mudguards & Mudflaps optional

Pump

AR positive displacement 6 diaphragm pump, chemical resistant, rated to 20bar. Normal operating range 1 – 8bar.

Standard output 250 L/min (at zero pressure). Hydraulic drive standard, complete with pressure compensated flow control to minimise chance of pump over-speed, and pump rpm sensor.

Filtration

Five filtration points:

- Basket (18mesh)
- Filling filter (32mesh)
- Suction filter (50mesh)
- Pressure filter (100mesh)
- Nozzle filters (50 or 100mesh)

Controller & boom Valves

Arag Bravo 180S fully automatic spray rate controller fitted. Five electric (motorized) boom section valves fitted as standard with optional 7 or 9 sections, and electric fence-jet nozzle. Arag paddlewheel type flowmeter, with Banjo motor dump and servo valve fitted.

Optional Arag IBX ISOBUS or Raven control systems. Adaptation to GS2 and Trimble systems also available.

Boom & Lift

30, 33 & 36 metre boom options.

Booms constructed of high quality steel in a lattice design, epoxy powder coat finish for chemical resistance. Self returning breakaways fitted to outer boom arms. Pendulum type selflevelling operation with yaw spring suspension on boom centre section.

Stainless steel boom tubes with single non-drip bodies and airmix air induction nozzles standard. Triplex bodies or dual spray lines optional. Full hydraulic fold with independent outer fold standard, winglift optional. Parallelogram boom lift fitted with nitrogen charged accumulator for added boom suspension.

Agitation

Dual supra-flow agitators with pump bypass agitation through sparge tube aids agitation and mixing.

Chemical Handling

Integrated 100litre chemical mixer/induction hopper fitted with a drop-leg device. Options include a chemical suction / rinse probe, enviro transfer kit and Direct chemical injection systems.

Flushing & Controls

Easy to use operator control station fitted with rotary selection valves. A 700 litre flush tank is fitted for maximum sprayer flushing capability. Independent boom flushing included standard.

SECTION 3

PRODUCT IDENTIFICATION, SHIPPING & SPECIFICATION



8000 litre Pegasus with 710/70 Single Wheels

SHIPPING INFORMATION

The following shipping information is provided, however variations can occur without prior notification.

Approx Weight

Model	Approx Dry Weight
8000 Litre	6450Kg (36m boom)
Drawbar (dry, parked)	960 kg

Maximum Towing Speed

Do not exceed 30 km/h when towing on roads.

Dimensions (approx)

Model	W x L x H (boom folded)
8000 Litre	3.46m x 9.65m x 3.99m



Pic 1: Sprayer serial number plate

PRODUCT IDENTIFICATION

Always use the serial number of the sprayer when requesting service information or when ordering spare parts.

Different models (identification made by serial number) may use different parts, or it may be necessary to use a different service procedure for specific operations.

SPRAYER SERIAL NUMBER PLATE

The Pegasus serial number plate is located on the chassis above the drawbar mounting pin (refer pic 1).

This plate shows the name of manufacturer, sprayer code, serial number and date of manufacture.

PUMP SERIAL NUMBER PLATE

The pump serial number plate is located on the pump (refer pic 2).

This plate shows name of manufacturer, serial number, type of pump, year of manufacture, maximum flow rate and maximum working pressure of the pump.



Pic 2: Pump serial number plate

SPRAY RATE CONTROLLER

The spray rate controller supplied with your sprayer may, depending on model, be either a single console or may also have a separate electronic control module. The serial number plate is usually on the back of the console (refer pic 3).

In either case, both console and module should be identified with individual serial numbers.



Pic 3: Spray Rate Controller serial plate

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SECTION 4

PRE-OPERATION



Fully assembled Pegasus ex factory

HOOK-UP

Assembly Instructions

The Pegasus 8000 is fully assembled from the factory with exception to the Electronic controllers, applicable looms and safety chain.

The air-ride axle and drawbar suspensions should be inflated before setting the hitch height – refer to instructions on page 16.

For correct setup of your electronic controls please refer to page 15.

For information regarding correct setup for your hydraulic connections please refer to pages 11 & 12.

Connect the Pegasus to the Tractor

Five steps are initially required to hook up the Pegasus 8000 to your tractor.

1. Connect the hydraulic hoses for the sprayer hydraulic controls and spray pump to the tractor.

2. Connect the Pegasus hitch to the tractor drawbar and connect safety chain.
3. Install the spray rate control and hydraulic control consoles to the tractor.
4. Connect all power leads direct to the battery.
5. Activate the air-ride suspension system and set sprayer ride height.



Hydraulic connectors for sprayer

Connect Hydraulic Hoses to the Tractor

Connect the 2 x pairs of hydraulic hoses to the tractor's hydraulic remote couplers.

ENSURE the 3/4" remote coupler is connected to a direct return to tank connection on the tractor to eliminate back pressure in the sprayer hydraulic return line. Your tractor dealer may be required to assist with this connection.



Lever for Jacking Leg operation

One pair of hoses is for the sprayer hydraulic functions, namely:

- A. Jacking leg
- B. Boom lift and fold
- C. Hydraulic drive fill pump (if fitted)

The other pair is for the hydraulic drive operation of the spray pump.

- A. To operate the hydraulic jacking leg:
 - i. Ensure the applicable tractor remote lever is engaged
 - ii. Operate the 'jacking leg' lever to raise or lower jacking leg

SECTION 4

PRE-OPERATION



Hydraulic control switchbox for sprayer

Your sprayer is fitted with an electric/hydraulic system, for the boom fold and lift functions, thus providing for the operation of sprayer hydraulic functions from a single bank of tractor remotes.



WARNING

Prior to operating the boom hydraulics, ensure sprayer tow hitch is securely connected to the tractor drawbar.

- B. To operate the boom hydraulic functions:
- Install the electric/hydraulic control console in the cab in a suitable location.
 - Ensure power leads are connected to the battery terminals (see page 15 - auxiliary power leads)
 - Connect the round AMP connectors at drawbar.
 - When the boom fold and lift hydraulic system is hooked up correctly, engage the applicable tractor remote lever and test the boom hydraulic functions.



WARNING

Ensure your working/testing area is clear of bystanders before operating boom hydraulic functions.

- C. If your sprayer is fitted with the optional hydraulic drive fill pump:
- Ensure the applicable tractor remote lever is engaged
 - Operate the 'fill pump' lever to operate the filling pump (refer to page 26 for fill pump operation)



200PHY Hydraulic Drive Fill Pump

Connect Hydraulic Drive Spray Pump to the Tractor

Your sprayer is fitted with a hydraulic drive spray pump. This system features a pressure compensated flow control valve to minimise chance of pump overspeed (maximum pump operating speed not to exceed 550 rpm), and to allow for easy reduction of pump speed during some chemical transfer operations.



Spray pump rpm flow control valve

- A. To operate the sprayer's hydraulic drive spray pump:
- Connect the hydraulic pressure and tank hoses to your tractor remote.
 - Ensure the flow control knob on the flow control valve of the hydraulic motor is fully opened (anti-clockwise).
 - Engage the applicable tractor remote lever to operate spray pump.
 - Confirm spray pump does not exceed 550rpm.
 - Pump speed can be slowed by turning flow control valve clockwise until desired operating rpm is achieved.

NOTE

Please read the following page to ensure your know if your tractor has open or closed centre hydraulics. This is very important to ensure your pump drive works correctly.

SECTION 4

PRE-OPERATION



OPEN CENTRE VS CLOSED CENTRE HYDRAULICS

For the best operation of your hydraulic-drive Diaphragm pump or hydraulic-drive filling pump, there are some adjustments that can be made by your dealer on your tractor hydraulics for best performance & lower heat generation to protect your tractor.

In general terms, there are three systems, which are described below:

Open Centre Systems

In an open centre system, the hydraulic pump on the tractor puts out a constant flow. If the pump puts out more oil than the hydraulic drive motor can use, a portion of the oil must be bypassed around the motor.

When the oil is bypassed around a loop and does no work, the energy put into it by the pump turns into heat. Therefore, the amount of oil bypassed should be kept to a minimum.

Tractor adjustments may be necessary, consult your dealer if you are unsure.

Closed Centre (Pressure Compensated) Systems

The closed centre pressure-compensated system has a variable displacement pump which will deliver flow at the necessary rate to maintain a specified pressure.

It is best to have the pump operating at around 1800 to 2100 psi with the relatively low-flow hydraulic drive motor fitted to the Pegasus (if fitted).

Tractor adjustments may be necessary, consult your dealer if you are unsure.



Closed Centre Load Sensing Systems (Flow and Pressure Compensating)

The closed centre flow-compensated system is a variation of the pressure compensated system, designed primarily for more efficient operation and the generation of less heat.

It works on the principle of maintaining a constant pressure drop from the pump to the work port of the selector valve.

Any variation in the demand at the motor will cause a change in flow.

The system senses this change in flow due to the change in pressure drop across the valve, and causes the pump to

compensate by varying the pump flow. No restrictor is required in the pressure line and no oil is bypassed.

Check with your dealer to see if your tractor has this system.



Adjustable height tow hitch

Connect the Tow Hitch to the Tractor Drawbar

To connect the sprayer to a suitable tractor:

- i. Check Pegasus is level fore and aft. The front platform should be level and the rear parallelogram vertical. If not, adjust the jacking leg until this is achieved.
- ii. Align the Pegasus tow hitch with the tractor drawbar.



SECTION 4

PRE-OPERATION

- iii. If the tow hitch is higher or lower than the tractor, adjust the height of the tow hitch to match the height of the tractor.

NOTE

The hitch adjustment is best completed with both the drawbar and axle Air-ride suspension inflated to working height.

- iv. Ensure the drawbar pivot pin for ARDS operation is greased.
- v. Connect the safety chain between the sprayer and the tractor.



Bolt-on hitch can be adjusted to suit most tractors



WARNING

Ensure Wheel Nuts are tight before every use and after wheels have been removed.
Torque Setting = 600Nm



Bravo 180S Broadacre controller

Install the Spray Rate Controller

The Spray Rate Controller supplied from Croplands, has been fitted and tested to your sprayer at the factory and disconnected and packed for transit.

To fit the Spray Controller

- i. Unpack the monitor and cables.

- ii. Connect the leads at the rear of the Spray Controller (actual connections will vary from controller to controller).



- iii. Fit the Spray Controller console into the tractor cab in a convenient and safe location for the operator.
- iv. Connect and lock together the main loom couplings at the rear of the tractor.



Connect the main loom couplings

SECTION 4

PRE-OPERATION

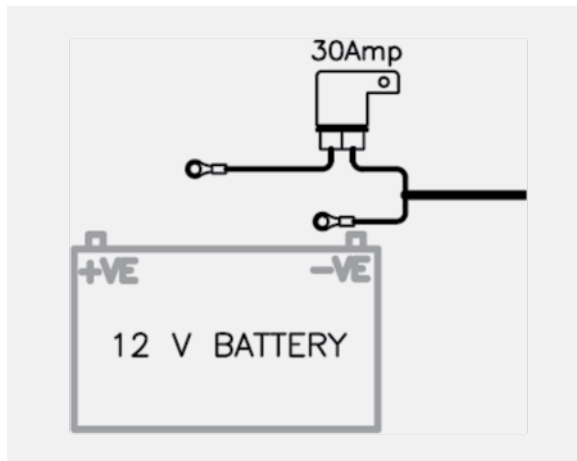
NOTE

For operating instructions for the model of spray controller you have been supplied, refer to the controller manual supplied separately.

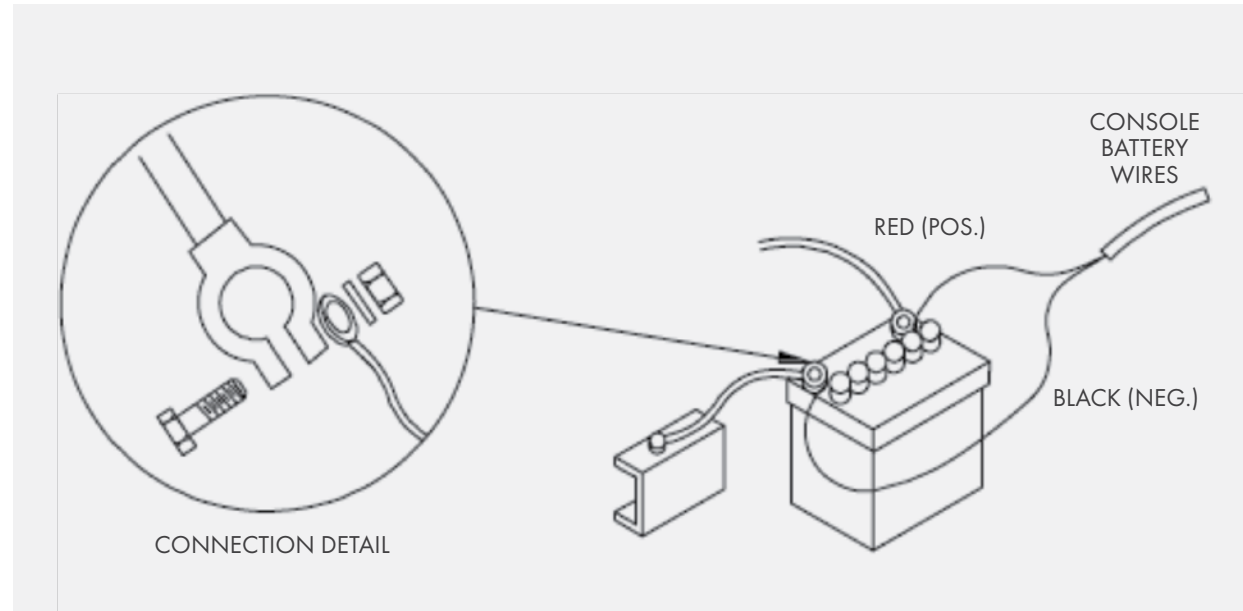
Connect all Power Leads

Connect all power leads **directly to the battery**, namely the:

- Spray Controller leads
- Hydraulic controller leads
- Air-ride compressor leads



Fused power supply for Spray Controls and Air-ride Compressor



ONE 12-VOLT BATTERY



WARNING

Make absolutely certain that:

- Red leads are connected to the positive terminal, and
- Black leads are connected to the negative terminal.

Damage can occur to units if power leads are reversed or incorrectly fitted.

SECTION 4

PRE-OPERATION



Sprayer Air-Ride System

Activate the Air-Ride Suspension System

Your sprayer is fitted with a 12volt electric air compressor, complete with a pressure activation switch for supplying air pressure to the Air-Ride system.

The power to the compressor is energised through a relay system when the Spray Rate Controller is turned on, and the Air System pressure is lower than the preset cut-in pressure of the switch (approx 70psi).

- i. Ensure the air reservoir drain valve is shut.
- ii. Connect the power leads for the Air-Ride system – refer to instructions on page 15.
- iii. Power up the correctly installed Spray Rate Control Monitor.
- iv. The air reservoir pressure reading on gauge will increase.

There are two systems within the Air- Ride suspension for your sprayer.

1. The A.R.D.S setup provides suspension for the tow hitch of the sprayer.



Air Ride Drawbar System fitted standard

- i. Ensure the drain valve for the tow hitch air spring is closed.
- ii. Set the pressure control valve to required pressure – higher pressure = more rigid suspension (approx 35psi starting point).



ARDS pressure control and drain valve

2. Independent ride leveller valves control the ride height for the axle Air-Ride and drawbar ARDS suspension.
 - i. Ensure the ride leveller valve control levers are correctly attached.
 - ii. Adjust control rod to set required ride height for suspension.



ARDS ride leveler valve



Adjust ride height to top of drawbar bump rubber



Adjust ride leveler valves as necessary to obtain correct Axle air bag ride height.

SECTION 4

PRE-OPERATION

UN-HOOK

Unhitching the Pegasus from the Tractor

To disconnect the Pegasus sprayer from the tractor, follow procedure as laid out below:

1. Ensure the booms arms are in the fully folded in position. **THIS IS IMPERATIVE FOR SAFE UN-HOOKING OF THE SPRAYER.**



WARNING

Boom arms MUST be in the folded position prior to parking and un-hooking the sprayer. Failure to complete this operation correctly MAY result in INJURY or even DEATH.

2. Locate the sprayer on level ground.
3. Lower the hydraulic jacking leg using the lever on the sprayer.



Lower Jacking leg for parking

4. Disconnect all electrical looms.



Disconnect Electrical connectors



Disconnect electrical connectors

5. Disconnect all hydraulic hoses and fit dust covers to hydraulic connectors.



Disconnect hydraulic hoses

6. Unlock and remove the tractor drawbar pin.

NOTE

Fit dust covers to hydraulic remote connectors to avoid dirt/dust contamination.

SECTION 4

PRE-OPERATION

MAIN CONTROLS & FUNCTIONS

The location of the Pegasus main control panel facilitates easy access of all control points for filling, mixing, spraying and cleaning functions.

- A. Pump Suction Valve (Long Lever) – RED Arrow
- B. System Re-Circ Valve (Short Lever) – Yellow Arrow
- C. Spray / Boom Flush Switch
- D. Bypass Valve
- E. Spray systems Pressure Gauge
- F. Pressure Relief Valve
- G. Fill Valve
- H. Optional Enviro Transfer Connector
- I. Fresh Water Tap
- J. Agitator Valves



SECTION 4

PRE-OPERATION

- K. Chem-Hopper Rinse Valve
- L. Optional Chemical Probe Rinse Connection
- M. Chem-Hopper Drop Down Lever
- N. Optional Chemical Probe Suction Connection
- O. Chem-Hopper Drain Valve
- P. Chem-Hopper Fill Valve
- Q. Product Tank Drain Valve



SECTION 4

PRE-OPERATION



Read Operator's Manuals before operating sprayer.

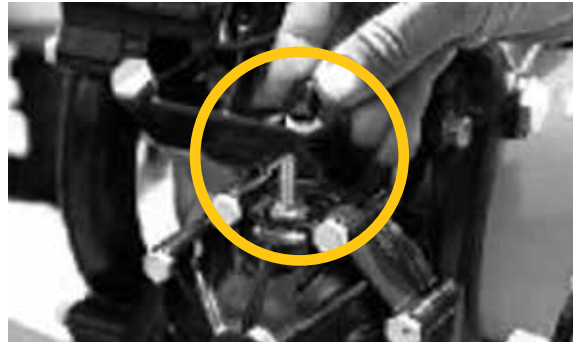
PRE-OPERATION CHECK

1. Read all Operator's manuals supplied with sprayer thoroughly, before attempting to use this machine.
2. Read and follow instructions on chemical manufacturer's labels.
3. Always wear applicable protective clothing.
4. Check that all maintenance and setup procedures have been followed.
5. Check all plumbing and fittings to ensure they are tight, not damaged or leaking.
6. Check hydraulic connections are correct and not leaking.



Check pump oil level

7. Check oil level in diaphragm spray pump.



Check the pump air chamber psi.

8. Check air pressure in the diaphragm pump air chamber is 70 – 100 kPa (10 - 15 psi). As a guideline this air pressure should be approx 10% of spraying pressure.

NOTE

IMPORTANT: Clean the suction filter out after initial use. Whilst all precautions are taken during assembly, it is possible to get filings in the tank and lines.

9. Check the suction filter is clean. Thoroughly clean the suction filter after initial use.
10. Check the pressure filter(s) are clean. Thoroughly clean the pressure filter(s) out after initial use, and nozzles if necessary.



Check the suction filter is clean



Check the pressure filter is clean

NOTE

IMPORTANT: Clean all pressure filters after initial use. Whilst all precautions are taken during assembly, it is possible to get filings in the tank and lines. These will accumulate in the filter during first use.

SECTION 4

PRE-OPERATION



BA7000psi adjust keys

Check the Spray Controller Operation

The Automatic Spray Rate Controller controls all aspects of the spray rate application, within the given set of operating parameters applicable to nozzle selection.

To operate the Spray Rate Controller:

1. Connect Pegasus to the tractor (refer to instructions - "Hook Up" from page 11).
2. Fill with an appropriate quantity of clean water into the spray tank (refer to instructions pages (25 ~ 26)).
3. Set the pump suction valve to "Spray" position (refer to Operator Panel Quick-start Guide).
4. Set the yellow re-circ valve to "Spray".
5. Set the Spray/Boom Flush switch to "Spray".
6. Set the Bypass Valve to "Spray".



Sprayer control panel



Adjust pressure relief valve



Tank drain valve in spray position

7. Follow the instructions in the Spray Rate Controller instruction manual to calibrate and operate the controller.
8. Ensure the Spray Rate Controller is switched on and in MANUAL mode, with the master switch to the HOLD position.
9. Engage the applicable hydraulic remote lever to operate the spray pump.

All liquid currently being pumped is passed through the Bypass Valve and back into the tank. The system is not pressurized and the tank agitators are not working.

10. Switch all boom sections on and switch the controller to the RUN position. Water should now be flowing out the nozzles.
11. Use the " ^ " up arrow to increase the system pressure to the maximum (this should take a few seconds)
12. When the maximum pressure is reached, adjust the manual pressure relief valve setting to the maximum required pressure setting (approx 2 bar above desired spraying pressure). We recommend the maximum working pressure be set at 8 BAR (120 psi).
13. Use the " v " down arrow to reduce the pressure to normal spraying pressure 2 – 4 BAR (30 – 60 psi).

! WARNING

DO NOT have pesticides in the spraytank when checking the sprayer.

NOTE

It is recommended to complete this section with the boom open in the spraying position.

SECTION 4

PRE-OPERATION



Bravo 180S Quick start guide

14. Check the tank agitator valves are open, and visually check that both tank agitators are working.
- 15 Turn the controller master switch ON & OFF to confirm that all boom sections are working.



Tank Agitator valves in the "OFF" position

16. Turn the fenceline* (if fitted) nozzle ON & OFF to confirm that it is working correctly. NOTE: The relative boom section to which the fenceline nozzle is fitted will also need to be turned ON.

17. Whilst water is being pumped through boom and spraying out nozzles, check for any leaks or blockages throughout the sprayer.

Check all hoses, connections, valves, filters boom fittings etc.

Confirm all nozzles are operating correctly.

Rectify any problems.

18. On completion of checking the spraying operation, place the master switch and boom switches in the OFF position.



Operation Valve to Activate Chem-Hopper

19. Whilst the pump is still running, it is recommended to check the operation of the Chem-hopper (for detailed instruction on chem.-hopper operation refer to page ?).
20. Set the Spray/Boom Flush switch to "Boom Flush".
21. Set the Operation Valve to "Activate Chem-Hopper".

22. Fill Chem-hopper with water.



Fill Chem-hopper Valve

23. Open Chem-hopper drain valve to confirm venturi suction is working.

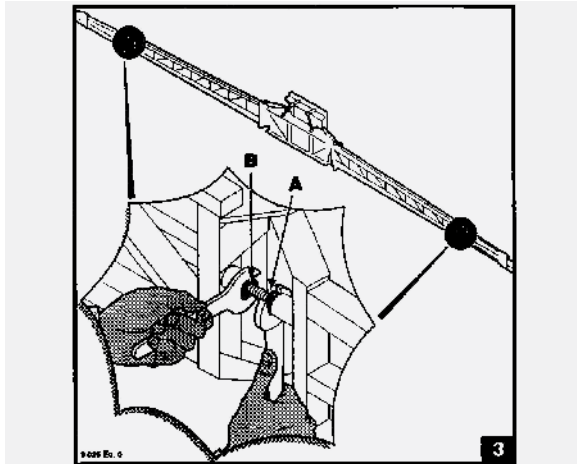
24. On completion of checking the sprayer, disengage the applicable hydraulic lever to stop the spray pump, and ensure the Spray Rate Controller is switched OFF.



Chem-hopper drain valve

SECTION 4

PRE-OPERATION

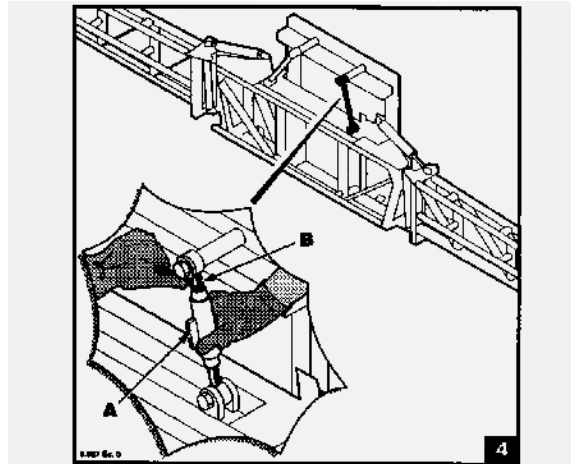


BOOM ADJUSTMENT - 30M

2. Wing Extension Alignment

After inner wing alignment is completed, align the wing extensions by:

1. Loosening the lock nuts B, shown in figure 3 above.
2. Tighten or loosen adjusting screws (A) until the wing extensions are aligned with the inner wings.
3. Tighten lock nuts (B), after alignment is finalised.



3. Balancing Device Alignment

The boom is fitted with an adjustable connecting rod which allows the boom to tilt $0^\circ \pm 3^\circ$ on the horizontal axis.

Adjust the boom to the require horizontal plane by:

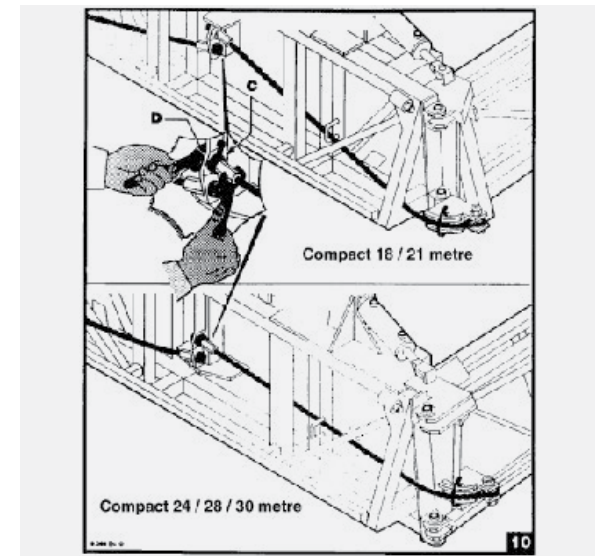
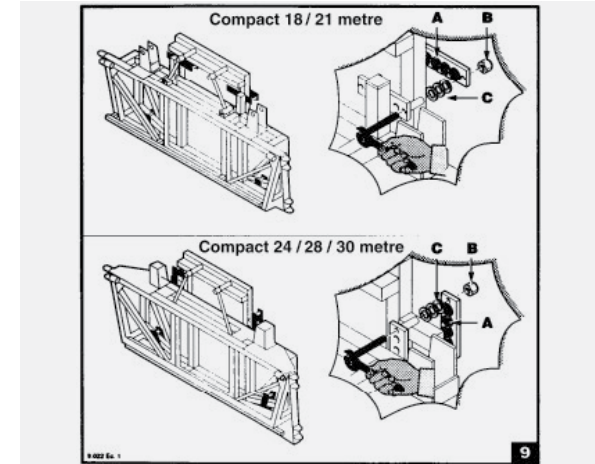
1. Loosening the lock nuts (B,) shown in figure 4 above.
2. Turn the turnbuckle (A) as required.
3. Tighten the lock nut (B).

4. Backlash Between Sliding

The balancing device oscillation must be adjusted so that the surfaces slide freely and without backlash.

To eliminate backlash:

1. Tighten nuts (B), shown in figure 9 above.
2. If necessary, depending on wear of sliding pads (A), remove spring sections (C) as needed to take up the wear and remove backlash.



SECTION 4

PRE-OPERATION

5. Locking the Balancing Device Adjustment

The ropes of the wing balancing device must be tight.

To adjust the balancing device:

1. Fold the wings to transport position
2. Tighten the ropes by adjusting the nuts (D), shown in figure 10 above.
3. Move the lock (C) closer and lock it with its screw.



Take the pressure off the boom by nudging the boom forward.

BOOM ADJUSTMENT - 36M

To adjust the boom alignments on your 36 metre boom on the Pegasus, follow the instructions.

These instructions are for adjustments you can do as the spring tensions change over time.

Not all steps may be necessary, but it is a good idea to check them as you make adjustments as required.

To adjust the boom:

Step 1: Horizontal Leveling

Take the pressure off the boom (as shown above left) using a forklift or other lifting mechanism. Make sure this is done on ground which is as level as possible.

- A. First, adjust the main Boom arm Rod or Hydraulic ram (shown above) to set the boom to level.

For a G-Var wing lift boom, this is done by turning the large self locking nut with a large spanner on the spring end as shown until desired level is met.



Adjust the nut, until the desired level is found.

You will need to have the hydraulic rams at maximum length to ensure an accurate setting.

For standard booms adjust the nut in the same place (as shown above left), until the desired level is found.

- B. Secondly, relieve the weight from the boom. This adjustment is done using a turnbuckle. Unlock the lock nut so it is free from the sleeve.

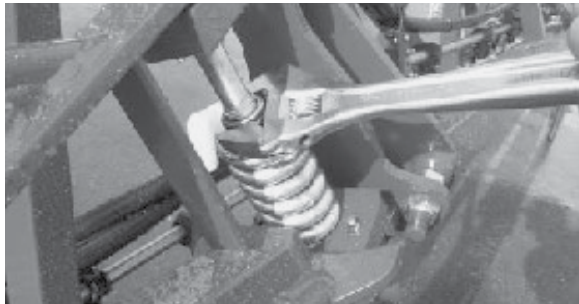
Using a large spanner, adjust the sleeve until the boom is at the desired level, then re-lock the lock nut to secure in place (as shown below).



Adjust the sleeve until the boom is at the desired level then re-lock the lock nut to secure in place.

SECTION 4

PRE-OPERATION



Finally, adjust the breakaway arm to the desired breakaway pressure

- C. The final horizontal adjustment is the breakaway arm. Adjust this to the desired breakaway pressure.

NOTE

The initial boom alignment is carried out at the factory and checked by your dealer.

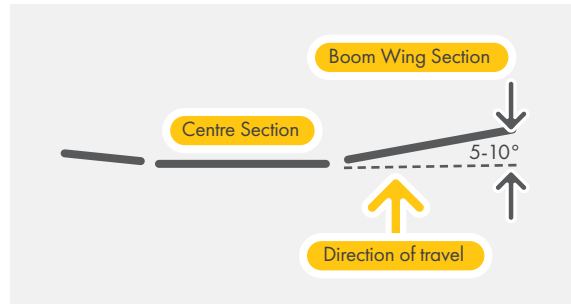
NOTE

Leave hydraulic pressure on the extension side of ram to assist preventing rod from turning during adjustment.

Step 2: Yaw adjustment

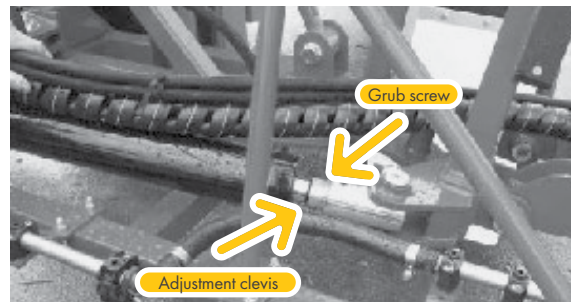
The second step towards accurately adjusting your boom is to set where the boom sits when fully opened into the spraying position.

This is the Yaw adjustment which means it is adjusted on a vertical axis or pivot point, setting the boom in a forward or backward direction.

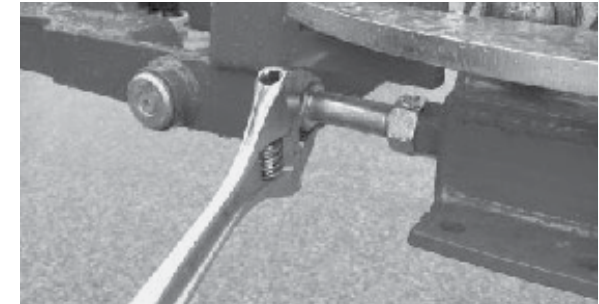


Ensure the boom wing is slightly forward in relation to the centre section (approx 5-10 degrees).
The ideal position for each wing is slightly forward (approx 5-10 degrees) of the centre section (as shown in the diagram above).

- A. Adjust the clevis on the rod end of the inner fold ram at the centre section to bring the boom forward into desired position.
Firstly, you will need to relieve the pressure on the rams by loosening the ram fittings on one cylinder and releasing some oil.
Remove the grub screws and adjust the clevis to set the boom Yaw position.
Return the grub screws to lock the setting in place (shown below).



Remove the grub screws & adjust the clevis, then, return the grub screws to lock the setting in place.



Set the bolt stopper to stop the boom at the position required.

- B. The next adjustment in the outer fold pivots is just a matter of winding out and locking the bolt in place as shown. Set the bolt stopper to stop the boom at the position required (shown above).



Lock the nuts in place when set correctly.

- C. Set the breakaway position by tightening and loosening the matching bolts on either side of the boom. Lock the nuts in place when set correctly (shown above).

CAUTION

When releasing oil from and cylinders, be sure to cover the fittings with a cloth to prevent oil from spraying out, as it is hazardous.

SECTION 4

PRE-OPERATION



Adjust the turnbuckle sleeve until the centre section is level.

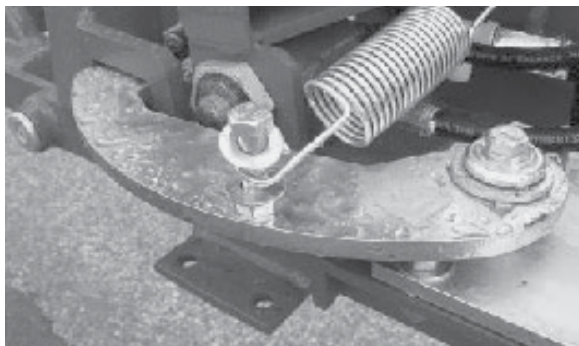
Step 3: Boom tilt adjustment

The next setting is the tilt adjustment which dictates the level position of the booms and centre section as a whole. This is very important to get right so that the centre section is level before spraying.

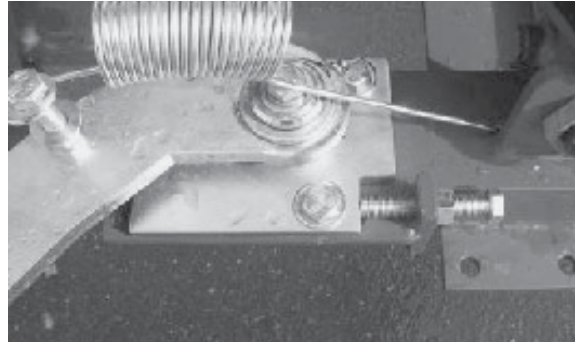
To adjust undo the lock nut on the turnbuckle.

Adjust the turnbuckle sleeve (as shown above) until the centre section is level.

Lock the nut back in place to secure the setting.



When locked the hook part of the locking lever should be in contact with the front edge of the slot.



Loosen the lock nuts and then adjust the horizontal bolt to position the plate in the correct setting.

Step 4: Outer arm locking plate

The final setting is the outer arm locking plate. This is to keep the boom locked in place while spraying.

When locked the hook part of the locking lever should be in contact with the front edge of the slot (as shown above) to ensure no movement during spraying.

To adjust this, loosen the lock nuts and then adjust the horizontal bolt (shown above) to position the plate in the correct setting.

SECTION 4

PRE-OPERATION

BOOM OPERATION - ALL SIZES

Unfolding & folding the Spray Boom

Understand the safety precautions below before operating the folding mechanism of the spray boom.

- Lock the balancing device (if the unit is provided with hydraulic locking).

WARNING

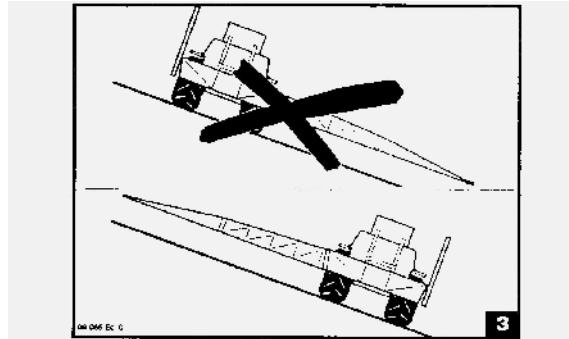
Make sure there are no people, things or power lines within range of the spray boom when folding or unfolding.

- For vehicle stability, always unfold the up hill side boom before unfolding down hill side boom, see figure 3 above.
- For vehicle stability, always fold the down hill side boom before folding up hill side boom.
- Never operate with the down hill side boom lowered and up hill side boom folded.

CAUTION

If working on steep terrain, please note the following:

- **Lock the balancing device (if the unit is provided with hydraulic locking).**
- **For vehicle stability, always unfold the up hill side boom before unfolding down hill side boom, see figure 3 above .**



Boom in raised position

CAUTION

If working on steep terrain, please note the following:

- **For vehicle stability, always fold the down hill side boom before folding up hill side boom.**
- **Never operate with the down hill side boom lowered and up hill side boom folded.**



Boom in lowered position.

To operate the boom:

1. Use the tractor remote controls to fold and unfold the spray boom.
2. Use the tractor remote controls to raise and lower the spray boom height as required.

SECTION 5

SPRAYER OPERATION

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SECTION 5

SPRAYER OPERATION

FILLING

Filling the Pegasus Tanks

The Pegasus 8000 has three water tanks fitted.

1. The Main Spray Tank can be filled either through the tank lid or using the bottom filling system.
2. The Flush Tank is recommended to be filled through the bottom filling system as access to the tank lid may be difficult.
3. The Fresh Water (hand wash) Tank can be filled through the fresh water tank lid.

Use clean, fresh water (preferably rainwater), free of suspended organic matter or clay, as some chemicals are de-activated when they contact these materials.

Always calculate the correct water quantity required, and when filling, allow sufficient water for adding and mixing chemicals. If necessary top up the tank to required quantity after adding chemicals.

- A. Flush tank
- B. Spray tank
- C. Freshwater tank



Open the main tank lid for top filling

SECTION 5

SPRAYER OPERATION

Bottom Filling

The bottom-fill facility requires a pressured water source and can be used to fill the main spray tank, flush tank and provide filling water to activate the chem-hopper whilst continuing to fill the main spray tank.

To fill tanks using the bottom fill:



Ensure Bottom Fill filter is clean

- A. Clean the bottom fill filter
- B. Connect the filling hose to the bottom fill inlet connector
- C. Rotate the selector lever of the "FILLING VALVE" so the red arrow is pointing to the "Fill Main Tank" position.
Fill the main spray tank with the required amount of water.
- D. Rotate the selector lever of the "FILLING VALVE" so the red arrow is pointing to the "Fill Flush Tank" position.
Fill the flush tank with water.



Fill the Main Spray Tank



Fill the Flush Tank

- E. Rotate the selector lever of the "FILLING VALVE" so the red arrow is pointing to the "Fill- Activate Chem-hopper" position.

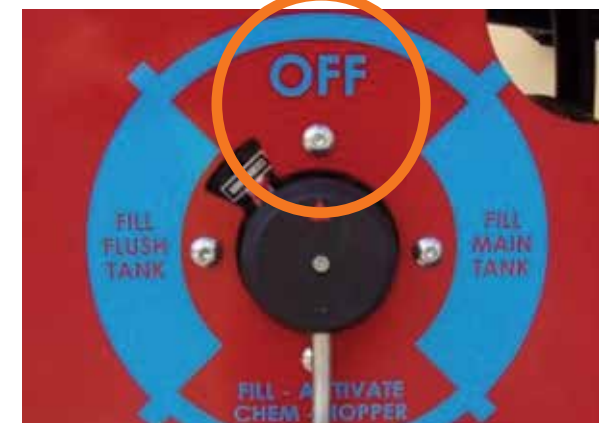
This position activates the venturi for the chem-hopper and also supplies filling water to the fill, rinse and drum rinse features of the chem-hopper.

Filling water passes through the venturi and into the main tank when this position is selected.

Add the chemical as required to the chem-hopper (refer to page 38 ~ 40 for chem-hopper operation).



Activate the Chem-Hopper



Turn the Filling Valve OFF

SECTION 5

SPRAYER OPERATION

F. Rotate the selector lever of the "FILLING VALVE" so the red arrow is pointing to the "Off" position.

This position shuts the filling valve.

G. Disconnect the filling hose and replace the bottom fill inlet cap.



Fill Pump & fill Flowmeter (optional)

Operating the Optional Filling Pump

- Connect your filling hose from the water source (tank, filling station, dam etc) to the camlock coupling of the pump inlet.
- Ensure the filling pump is primed with water prior to engaging the hydraulic lever.
- Engage the applicable tractor hydraulic lever, ensure the required position is selected on the "Filling Valve" and then engage the "Fill Pump" hydraulic lever on the sprayer.

D. Fill tanks as required as per previous instruction.

E. When filling is complete, disengage the "fill Pump" hydraulic lever, disconnect the filling hose and replace the pump inlet camlock cap.



Lever for Fill Pump operation(if fitted)



Operating the Orion Filling Flow-meter

Power is supplied from the sensor power supply of the main spray rate controller, so no additional power is required.

EU=litres/min

US=Gallon/min

Changing Mode

A. If the setting must be changed, hold down both keys until the **SET** screen appears

B. Press one of the two keys to change the working mode

C. Confirm choice by holding down both keys until the **SAVE** screen appears

The Orion Filling Flow-meter should be set in **MODE 1** for easiest operation.

This allows the unit to be used as a 'flow-rate' reader as well as a 'total flow' meter.

Changing Unit of measurement

A. Press one of the keys until the **unit** screen appears

B. Press one of the two keys to change the working mode

C. Confirm choice by holding down both keys until the **SAVE** screen appears

SECTION 5

SPRAYER OPERATION

Fill the sprayer from the filling pump or your filling station. Instant flowreading can be indicated or total flowreading.



WARNING

Always wear protective gloves when cleaning filters containing toxic chemicals.

FILTERS

Top Filling the Fresh Water (hand-wash) Tank

The Pegasus includes a 35 litre fresh water tank for personal safety when operating the sprayer in the field.

Always fill the fresh water tank before spraying.

To fill the fresh water tank:

- Unscrew the tank lid.
- Fill the tank using only clean, fresh water.
- Replace & tighten the lid after filling.

Cleaning Filters

Filters are used to stop solids entering the liquid system and blocking lines, nozzles or damaging the pump.

The Pegasus is fitted with five filtration points as standard:

- Main Tank Basket Filter (18mesh)
- Filling Filter (32mesh)
- Suction Filter (50mesh)
- Pressure Filter (80mesh)
- Nozzle Filters (50mesh)

There are also optional boom section in-line filters available.

Always ensure the basket filter is in place when filling the main tank through the lid.

All filters should be cleaned regularly or after each spraying period

If the filter screen is damaged, replace with a new screen.



Clean the bottom-fill filter regularly

Bottom-Fill Filter

The bottom fill filter should be cleaned before each filling of the sprayer.

To clean the bottom-fill filter:

- Completely stop all sprayer operations.
- Rotate the selector lever of the 'Filling Valve' so the red arrow is pointing to the "OFF" position.
- Unscrew the filter bowl retaining ring, and remove the filter screen.
- Thoroughly clean the screen and bowl before re-assembling the filter.



Clean the suction filter regularly

Suction Filter

The suction filter should be cleaned regularly or after each spray tank has been emptied.

To clean the suction filter:

- Completely stop all sprayer operations.
- Rotate the selector lever of the "Pump Suction Valve" so the red arrow is pointing to the "OFF" position.

SECTION 5

SPRAYER OPERATION

3. Open the drain valve on the filter housing to break the vacuum and drain filter.
4. Unscrew the filter bowl retaining ring, and remove filter screen.
5. Thoroughly clean the screen and bowl before re-assembling the filter.



Lever the pump suction valve

NOTE

Be careful not to damage or deform the mesh or O-ring while cleaning and refitting the filters.

6. Close the filter drain valve, and return the "Pump Suction Valve" to the required position.



Clean pressure filter regularly

Pressure Filters

The pressure line filter should be cleaned regularly, or after each spray tank has been emptied.

To clean the pressure filter:

1. Completely stop all sprayer operations and ensure the spray rate controller is in the "hold" position.
2. Ensure there is no pressure in the pressure line (open drain valve on the main pressure gauge to remove pressure).



Remove pressure from spray system with Gauge Drain Valve

3. Unscrew filter bowl retaining ring and remove filter screen.
4. Inspect the screen for damage.
5. Thoroughly clean the screen and bowl before re-assembling the filter.



Open boom line drain taps to remove

Nozzle Filters

Nozzle filters should be cleaned regularly and when nozzle spray pattern is affected by blockage.

To clean the nozzle filters:

1. Completely stop all sprayer operations and ensure the spray rate controller is in the "hold" position.
2. Ensure all pressure is removed from spray lines by opening the boom line drain valves.
3. Remove nozzle cap with nozzle and nozzle filter.
4. Thoroughly clean nozzle filter and nozzle if required before re-fitting the nozzle filter, nozzle and cap.

SECTION 5

SPRAYER OPERATION



Clean nozzle filters regularly

NOTE

In some circumstances you may find the nozzle filters are best not used. If your nozzle filters continuously block, check that your main pressure filter is not torn or that the product you are using is not the cause.

Boom Section Filters (if fitted)

Each boom section can be fitted with an optional in-line boom filter, which should be cleaned regularly or after each spray tank has been emptied.

To clean the boom section filters:

1. Completely stop all sprayer operations.



Clean optional boom section filters (if fitted)

2. Ensure all pressure is removed from the spray lines by opening the boom line drain valves.
3. Unscrew filter bowl retaining ring and remove filter screen.
4. Inspect the screen for damage.
5. Thoroughly clean the screen and bowl before re-assembling the filter.

AGITATION

Tank Agitation

When chemical is added to the spray tank, the pump and agitators must be operating at all times to ensure chemical does not settle.

The Pegasus is fitted with a front and rear venturi type agitator, along with a re-circulating 'sparge' tube for additional tank bypass agitation.

If agitation causes too much foaming in the tank, try closing off one of the venturi agitator's to reduce foaming.



Front and Rear Tank agitators fitted standard

Sparge Tube Agitation

The sparge tube distributes bypass flow from the sprayer servo valve along the bottom of the main spray tank.

The bypass flow from the servo can also be returned through the pump suction filter, if the flow is not wanted back to the main tank during some sprayer operations (see Boom Flush mode page 40).



Sparge tube fitted in main tank

SECTION 5

SPRAYER OPERATION



Spray mode with re-circ lever (yellow arrow) to Spray diverts flow to the Sparge Tube

Re-circulating Flow (Yellow Arrow Lever)

The return flow from the servo valve can be directed either through the sparge tube for additional agitation, or, 're-circulated' back through the pump suction.

To operate the 're-circ' valve:

1. Rotate the selector lever of the "PUMP SUCTION VALVE" so the yellow arrow points to the "Spray" position.
This diverts all bypass flow from the servo valve through the sparge tube.
2. Rotate the selector lever of the "Pump Suction Valve" so the yellow arrow is pointing to the "Boom Flush" position.
This diverts all bypass flow from the servo valve to the spray pump suction, thus isolating the tank from any return flow through the sparge tube.



Spray mode lever to Boom Flush isolates sparge tube and diverts flow to the pump suction

CLEANING

Flushing the Pegasus

The Pegasus 8000 is equipped with a flush tank for cleaning the sprayer when changing chemicals, and at the end of the spraying day. For the separate "Boom and System Flush" only refer to page 43.

1. Ensure the site for flushing and cleaning the Pegasus meets with environment and statutory regulations.
2. Open the tank Drain Valve to drain any remaining spray mixture from the tank.
3. Fill the Flush tank with water.
4. Rotate the selection lever of the 'Pump Suction Valve' so the "Red" arrow is pointing to the 'FLUSH' position.
5. Rotate the 'Re-circ Valve' so the "Yellow" arrow is pointing to the 'SPRAY' position. (This diverts bypass flow to the sparge tube).



Open the tank drain valve to drain the main spray tank.

6. Rotate the 'Operation Valve' to the "TANK FLUSH" position.
7. Ensure the 'SPRAY/BOOM FLUSH' switch is in the 'BOOM FLUSH' position.
8. Start the tractor and place sprayer controls in start up position according to Controller operating instruction.



Pump suction valve (red arrow) to 'Flush' and Re-circ valve (yellow arrow) to 'Spray'

SECTION 5

SPRAYER OPERATION



'Operation Valve' to 'Tank Flush' position

9. Unfold the boom and activate all sections – at this point there will be no discharge from nozzles as further operator panel operations required.
10. Engage product pump hydraulic control to start product pump.
All pumped liquid is now being discharged into the tank through the tank rinse nozzles and agitators (with 'Agitator Lever Valves' in the on position).

NOTE

Ensure the drained mixture is disposed of as required by law. Read chemical instructions.

11. Rotate the 'Operation Valve' lever to the 'SPRAY' position, which will flush through the 'sparge tube'.
12. Rotate the selection lever of the 'Re-circ Valve' so the "Yellow" arrow is pointing to the 'BOOM FLUSH' position. (This will return bypass flow through the pump suction).



'SPRAY' gauge line flush tap

13. Rotate the 'Operation Valve' lever to the 'ACTIVATE CHEM- HOPPER' position, this will enable the chem-hopper to be flushed (refer to chem.-hopper operation on page 38).
14. Rotate the 'Operation Valve' lever to the 'BOOM FLUSH' position, which will direct flow through the spray tubes.
15. Whilst flushing spray tubes and nozzles, open drain valve at rear of 'SPRAY' pressure gauge to flush the gauge line.
16. Manually open each boom spray tube flush tap individually to flush boom spray tubes.
17. On completion of flushing, shut down all controls and disengage spray pump hydraulic control.
18. Remove and clean the suction filter and screen, then reassemble.
19. Remove and clean the pressure filter and screen, then reassemble.
20. Remove and clean the boom section filters and screens, then reassemble.

21. Adjust valves/switch back to 'SPRAY' mode and close drain valves.
22. Wash down the outside of the sprayer and boom.



Nufarm Tank and Equipment Cleaner.

Using Tank and Equipment Cleaners

If a cleaning agent is required (refer to chemical label)), first completely flush the Pegasus with fresh water as outlined in previous steps 1 – 21:

1. Fill the spray tank with fresh water to the desired level.
2. Add cleaning agent into the spray tank (use according to instructions on label).
3. Confirm the sprayer 'Operator Panel' is set up to the 'SPRAY' position (refer 'Quick Start Guide).
4. Check the Agitator valves are open.
5. Complete previous steps 5 – 19.
6. If you require the cleaning agent to 'soak' or 'stand' for a period, completely shut down the sprayer for this period.

SECTION 5

SPRAYER OPERATION



Agitators in the 'ON' position

7. Repeat steps 9 – 15 after soaking period is completed.
8. On completion of flushing, shut down all controls and disengage spray pump hydraulic control.
9. Open the spray tank 'Drain' valve.
10. After the tank is drained, completely flush the Pegasus as per previous steps 1 – 21.



Clean suction filter



Clean main pressure filter

NOTE

It is recommended to complete this section with the boom open in the spraying position.

SECTION 5

SPRAYER OPERATION

BT-PRIME FOR PEGASUS; PRIME – RECIRCULATION - FLUSH

Pegasus models, BT-PRIME. This is an advanced plumbing system that features high volume Boom Prime – Recirculation – Reverse Flush, for

- Improved spray efficiency (boom lines are always fully charged, ready to spray)
- Reduced lag times, wear and tear on the main pressure regulator (servo) valve
- Instant nozzle shut-off's

Standard* fitment for Pegasus 8000 & 7000 models.

The BT-PRIME system is designed to aid agitation and ensure the boom is fully primed with fresh chemical from the very first headland spray hence increasing sprayer efficiency and productivity whilst also reducing product wastage and minimising environmental impact.

Pegasus 8000's existing multiple boom flush taps are replaced by a "flush to tank" or "flush to ground" ball valves (as used on all BT-Prime's).

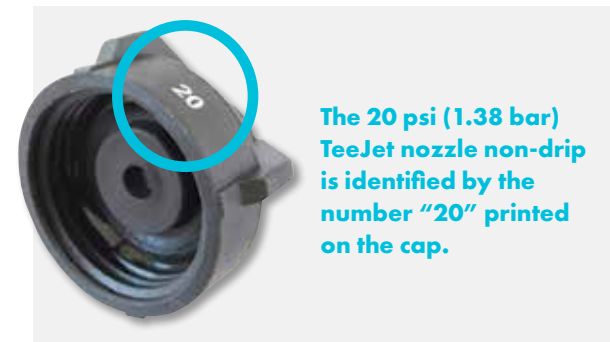
OVERVIEW

Wherever this system is installed, the plumbing system will utilise Metering and Bleeder valves fitted to the boom section valves.

Metering devices maintain a constant pressure when either turned on or off. Farmers using GPS Section Control will notice the rapid response turning nozzles on at the correct pressure for better application.



The 1.4 Bar Arag nozzle non-drip is identified by the grey coloured insert.



The 20 psi (1.38 bar) TeeJet nozzle non-drip is identified by the number "20" printed on the cap.

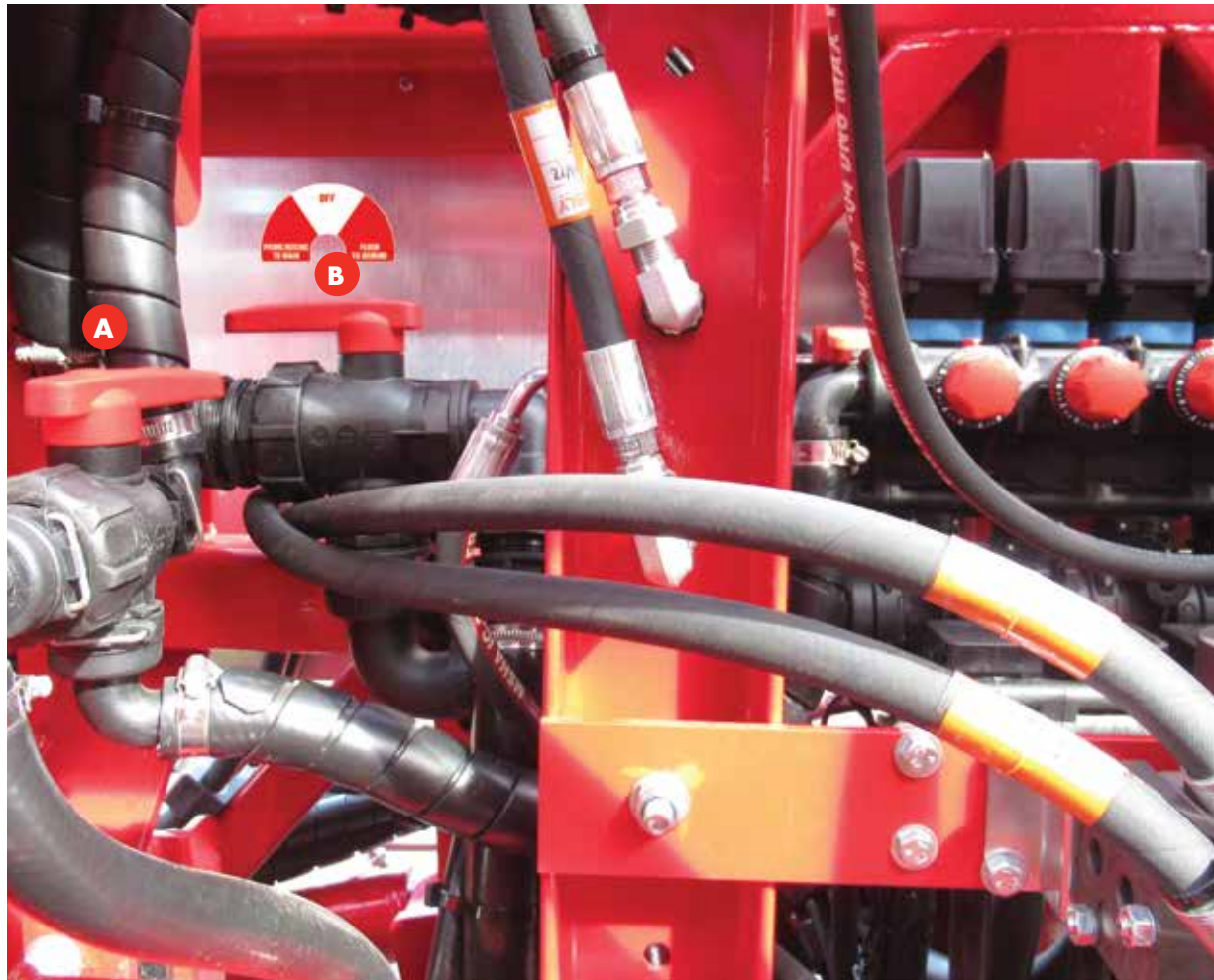
(This system replaces the "conventional" controls whereby the pressure regulating (servo) valve slowly chases the pressure demands as sections turn on and off).

Bleeder Valves rapidly dump the residual boom line pressure trapped between the Boom Section valves and the 1.4 bar non-drip valves at the nozzle body (note this is 1.4 bar opening / 1.0 bar closing). Operators will notice fast boom section shut off with little dripping.

1.4 Bar Nozzle non-drip valves are fitted as standard to the BT-PRIME system, it might be Arag or TeeJet.

SECTION 5

SPRAYER OPERATION



The system recirculates fluid from the outside of the boom towards the centre within seconds, ensuring the tank mix is correct from the very first spray.

Flushing the boom is safe and efficient with the system reverse flushing from the outside of the boom through the boom section valves, returning to the main tank ... or to ground via a single tap which is more efficient and safer (compared to a tap at the end of each boom section).

Note the Pegasus 8000 uses dual taps - one for the metering valves and the other for the bleeders.

Activation; the system is activated via the controller master switch being set to OFF in the tractor cab making it safe and efficient for the operator.

- A** Ball valve A (bleeders) is shown in the prime / recirculate / flush to main tank position.
- B** Ball valve B (metering) is shown in the prime / recirculate / flush to main tank position.

SECTION 5

SPRAYER OPERATION



A Ball valve A (bleeders) is shown in the prime / recirculate / flush to main tank position. **B** Ball valve B (metering) is shown in the prime / recirculate / flush to main tank position.

OPERATION

- SETTING the Metering valves** (constant pressure regulating valves).

Having well-adjusted metering valves will significantly improve the main servo valve's functionality and life cycle. Generally, the metering will only require checking when making a major change in nozzle size.

Setting up or testing is best done with fresh water in the main tank.

- Pump on. Turn all sections ON (in spray mode).
- Set the system pressure to slightly above expected operational pressures – say 4 or 5 Bar.

- The **“secret”** is to set each section one by one. Individually turn OFF each section and see what happens to the pressure. Adjust the metering valve (red knob) until the pressure comes back to chosen pressure (i.e. 5 bar). Once set, turn the section back on – the pressure shouldn't change.
 - Where possible (not on 8000 model) a pressure gauge is connected to the filter / bank of section valves to make this process easier from the back of the sprayer. Flow goes back to tank.
 - The actual number indicated on the metering valve is not important as can be seen below.
- Continue this process for all sections, one at a time.

- Once completed, perform a final check by turning section(s) on and off at random. The pressure should always stay the same.
 - The **PRIME** / Recirculation system is automatically operational once the pump is running, section valves off and the rate controller master switch is OFF.
 - FLUSHING** (Quick **flush of nozzles** to ground).
 - Select the fresh water source (Flushing tank).
 - Perform a conventional boom flush – Master on, all boom sections on.
 - REVERSE FLOW FLUSH** (Flush of lines)
 - Turn sections valves OFF, turn Master OFF. The full reverse flow flush is now active, flushing to either the main tank or ground (as per images below).
 - The BT-PRIME system has a Flushing ball valve located at the rear of the sprayer. Select either “flush to ground”, or “flush (Prime / Recirc) to main (tank)”, as required.
 - Upon completion of reverse flushing, turn the flushing ball valve back to “Prime/Recirc to main tank”. Note this is the normal ball valve position for a Quick flush of the nozzles to ground – as per point #3.
 - Refer to Operators manual for tank rinse, agitator rinse and tank draining functions.
- NOTE: With the BT-Prime option, there are no individual boom flushing taps fitted to the boom (including Pegasus 8000). Clean filters regularly.

SECTION 5

SPRAYER OPERATION

CHEMICAL MIXING

Unfolding & folding the Spray Boom

Understand the safety precautions below before operating the folding mechanism of the spray boom.



Accurately measure the amount of chemical

Calculate Water & Chemical Quantities

Before spraying it is necessary to calculate the exact quantities of water and chemical needed to spray the required area. The following formula may be useful:

1. **For chemical rates** expressed in litres or kg per hectare (land area), calculate the amount of chemical required using the following formula:

$$\text{Chemicals required (litres)} = \frac{\text{Tank Volume (L)} \times \text{Recommended Chemical Rate (L/Ha)}}{\text{Spray Application Rate (L/Ha)}}$$

$$\frac{\text{eg. } [4000 \times 3]}{50} = 240 \text{ litres}$$

2. **For volume of mixture required** to spray the selected area, calculate the liquid required using the following formula:

$$\text{Tank Volume Required (litres)} = \text{Area (Ha)} \times \text{Spray Application Rate (L/Ha)}$$

$$\frac{\text{eg. } 300 \times 50}{1} = 15,000 \text{ litres}$$

3. **For area covered by given volume of mixture**, calculate the area using the following formula:

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

$$\frac{\text{eg. } 4,000}{50} = 80 \text{ hectares}$$

NOTE

IMPORTANT: Be sure to mix only enough spray mixture to cover the area required. Avoid wastage and problems of needless chemical disposal.

Adding Chemical To Spray Tank

Chemical can be added to the spray tank using the chem-hopper, and/or if fitted, the optional Chemical Probe using either the Filling System or the Sprayer Product Pump.

1. Use Fill System and Chem-hopper

To add chemical to the spray tank using the filling system to operate the chem-hopper as follows:

- A. Connect filling hose to the fill system or to the optional fill pump.
- B. Rotate the 'Fill Valve' lever to the "FILL – ACTIVATE CHEM-HOPPER" position.
- C. Unlock the chem-hopper down down leg by pulling the latch lever. Hold onto the handle and pull chem-hopper out and down to the filling position.



Unlock the Chem-hopper with latch handle

- D. Activate the filling pump and commence filling main spray tank. The chem-hopper now has water available from the filling pump.

SECTION 5

SPRAYER OPERATION



Lower chem-hopper to filling position

- E. Open chem-hopper lid and add chemical powder/ liquid to the hopper.
- F. If required open the 'Hopper Fill' valve as necessary



Open chem-hopper transfer valve

to provide water for mixing chemical in the chem-hopper.

- G. Once desired amount of chemical powder/liquid is added to the chem-hopper, open the transfer valve at the bottom of the chem-hopper. Chemical is now transferred directly into the main tank via the chem-hopper venturi system.



'Fill Valve' to 'FILL - ACTIVATE CHEM-HOPPER'

- H. To rinse the chem-hopper, close the 'Hopper Fill' valve. Close the chem-hopper lid and then activate the 'Hopper Rinse' valve.
- I. After rinsing is complete, close the 'Hopper Rinse' valve and then open chem-hopper lid.
- J. Once chem-hopper is empty, close the chem-hopper transfer valve and the chem-hopper lid.
- K. Lift the chem-hopper back into the transport position ensuring the latch locks the chem-hopper in the upper position.
- L. Rotate the 'Fill Valve' lever to the 'FILL MAIN TANK' position and continue filling the spray tank to the desired level.

NOTE

IMPORTANT! Ensure agitation of spray tank continues after chemical is added to the spray tank.



Pump suction valve (red arrow) to 'Spray' and Recirc valve (yellow arrow) to 'Spray'



'Operation Valve' to 'ACTIVATE CHEM-HOPPER' position

2. Use Product/Spray Pump and Chem-hopper

To add chemical to the spray tank using the product pump spray system to operate the chem-hopper as follows:

- A. Make sure there is sufficient water added to the main spray tank.
- B. Rotate the 'Suction Valve' lever so the red arrow is pointing to the "SPRAY" position.

SECTION 5

SPRAYER OPERATION

C. Rotate the 'Re-circ Valve' so the yellow arrow is pointing to the 'SPRAY' position



Move switch to 'BOOM FLUSH' position

D. Rotate the 'Operation Valve' lever to the 'SPRAY' position.

E. Ensure the switch is in the 'BOOM FLUSH' position.

F. Start the tractor and engage product pump hydraulic control to start product pump.

G. Unlock the chem-hopper drop down leg by pulling the latch lever. Hold onto the handle and pull chem-hopper out and down to the filling position.

H. Rotate the 'Operation Valve' lever to the 'ACTIVATE CHEM- HOPPER' position.



WARNING

The water used to operate the chem-hopper with the spray pump may contain chemicals. Ensure proper safety precautions are taken to avoid chemical contact.

I. Repeat steps "e – k" from previous page (3.16).

J. Rotate the "Operation Valve" to 'SPRAY' position.

K. Return switch to the 'SPRAY' position.

3. Use Optional Chemical Probe

Chemical can be added to the main tank using the optional Chemical Probe by connecting the Probe and Probe rinse connectors to the connectors on the hopper and then using either **1. Filling Pump Mode** by following steps a – d on page 38 or **2. Product Pump Mode** following steps A–H on page 39 as follows:

A. Connect the Probe and Probe rinse connectors to the connectors on the hopper.



Connect Probe and Probe Rinse

B. Repeat steps depending on mode of operation as per above

C. Place the probe in the chemical container and open the probe valve to transfer chemical into the spray tank.



Open Probe valve to transfer mixture to spray tank

D. Use the Probe Rinse gun to rinse the container while the Probe valve is open.

E. Close the Probe valve when the chemical transfer is completed.



Close probe valve

F. Lift the chem-hopper back into transport position ensuring the latch locks the chem-hopper in the upper position

SECTION 5

SPRAYER OPERATION

- G. Follow steps for **1. Filling Pump Mode** by following steps 'I' on page 38 or **2. Product Pump Mode** following steps 'J—K' on page 39 to return to spraying position.

NOTE

IMPORTANT! Ensure agitation of spray tank continues after chemical is added to the spray tank.

4. Use Optional Enviro- Transfer Coupler

The Enviro-transfer kit is a volumetric filling system designed to transfer chemicals directly from Envirodrums into the Chem-hopper on the Pegasus using the sprayer product pump.

WARNING

The operator must not leave the Enviro-transfer kit unattended while filling. Over-filling and chemical spillage could result if the unit is unattended during the transfer process. The system is only suitable for liquid transfer.

Pump speed required to operate the Enviro transfer option is approx 350rpm.

Pump speed can be controlled following instructions on page 12.

Remember to return the pump to normal operating rpm after chemical transfer is complete.



Connect Enviro hose to CHEM-PROBE

Ensure the Enviro coupler hose is connected to the camlock of the Chem- Probe connection on the Operator Panel.

1. Follow steps "A—F" on page 39.
2. Unclip the Micromatic coupler from the docking (rinse) fitting on the sprayer and clip it onto the envirodrum containing the chemical you intend to use.
3. Simultaneously operate the Pump Suction Valve lever (red arrow) and the Operation Valve lever as follows:
 - a. Rotate Suction Valve to 'CHEM-PROBE' position
 - b. Rotate Operation Valve to 'TRANSFER TO CHEM-HOPPER' position.

Chemical will **immediately** begin to be transferred into the Chem-hopper.



Unclip Micromatic coupler from docking point

4. Once the desired volume of chemical is transferred into the chem-hopper, simultaneously operate the Pump Suction Valve lever (red arrow) and the Operation Valve lever as follows:
 - a. Rotate Suction Valve to 'SPRAY' position
 - b. Rotate Operation Valve to 'ACTIVATE CHEM-HOPPER' position.

Chemical can now be transferred from the chem-hopper into the main spray tank.



Clip the Micromatic coupler to the Envirodrum

SECTION 5

SPRAYER OPERATION

- Follow steps “G–I” on page 38 to transfer chemical from chem-hopper to spray tank.

CAUTION

Do not operate the pump at full speed when filling with the Enviro-transfer, otherwise damage to plumbing may result.

NOTE

IMPORTANT! Ensure agitation of spray tank continues after chemical is added to the spray tank.

Chemical can now be transferred from the chem-hopper into the main spray tank.



Unclip Micromatic coupler from Envirodrum

- Unclip the Micromatic coupler from the Envirodrum and clip it back into the docking fitting, ensuring it is fully located.

The docking fitting has a flushing hose plumbed direct to the flushing fresh water tank.



Connect Micromatic coupler to Docking point for rinsing

- By rotating the two valve levers simultaneously back to the chemical transfer position [refer step 3) on page 3.19] for approximately 30 – 60 seconds, you can flush the Micromatic couplers and hoses with fresh water.

This is imperative to avoid any future contamination.

- After rinsing is complete rotate to valve levers back as per step 4) on page 39.
- Once chemical transfer is complete:
 - Rotate Operation Valve to SPRAY position
 - Switch back to SPRAY position.
 - Adjust product pump back to normal operating rpm
 - Lift the chem-hopper back into the transport position ensuring the latch locks the chem-hopper in the upper position.



Simultaneously rotate Suction & Operation Valve

CAUTION

Always flush the Micromatic fittings & hose with fresh water after each use to avoid any future contamination.

WARNING

The operator **must not leave the Enviro-transfer kit unattended while filling. Over-filling and chemical spillage could result if the unit is unattended during the transfer process. The system is only suitable for liquid transfer.**

SECTION 5

SPRAYER OPERATION

BOOM FLUSHING

Flush Boom & Spraying system

The Pegasus is equipped with a feature that enables the spraying lines and spraying system to be flushed with fresh water whilst not returning any additional flush water to the main spray tank.

Leaving product standing in the main spray tank may cause chemical settling issues and is not recommended though is sometimes necessary if weather or machinery problems means spraying needs to be interrupted without emptying the spray tank.

If spraying is interrupted and chemical mix is to be left in the main tank, it is recommended to flush chemical from the spraying system and boom lines to avoid premature wear or failure of components and seals in this system.

NOTE

Ensure the drained mixture is disposed of as required by law. Read chemical instructions.

Flush the Spray Lines and System

1. Ensure the Flush Tank is full of clean water (refer page 30).
2. Rotate the Suction Valve lever so the red arrow is pointing to the 'FLUSH' position.



Suction valve to FLUSH, Re-circ to BOOM FLUSH

3. Rotate the Re-circ Valve so the yellow arrow is pointing to the 'BOOM FLUSH' position.
4. Switch to 'BOOM FLUSH' position.



Switch to BOOM FLUSH

5. Rotate the Operation Valve to the 'BOOM FLUSH' position.



Operation Valve to BOOM FLUSH

6. Ensure Agitators levers are in the OFF position.
7. Start the tractor and place sprayer controls in start up position according to Controller operating instruction.
8. Turn all boom section switches on and place run/hold to RUN, and controller to MANUAL mode to ensure all boom section valves are open.
9. Unfold the boom.
10. Engage product pump hydraulic control to start product pump.

The pump will now be delivering water from the Flush tank out through the spray lines only.

All bypass flow is recirculated back through the suction side of the pump.

NOTE

It is recommended to complete this section with the boom open in the spraying position.

SECTION 5

SPRAYER OPERATION

11. On completion of flushing, shut down all controls and disengage spray pump hydraulic control.
12. Clean all filters.
13. Rotate the Suction Valve lever so the red arrow is pointing to the OFF position. Leave suction valve in OFF position until spraying is to resume.
14. Adjust other valves and switches back to 'SPRAY' mode.

AIR BAG SUSPENSION - AXLE

Air-ride Suspension

The Pegasus 8000 is fully equipped with Air-ride suspension, with air bags fitted to the axle and drawbar. The Air ride system comprises a compressor, air reservoir, safety and regulating valves and switch, airbags and ride height levelling valves.



Air Reservoir and Compressor

When filling the sprayer with water the air ride system automatically increases the pressure in the air bags to carry the extra load.

Conversely as the spray tank is emptied, the air ride system automatically decreases the pressure in the air bags adjusting to the lighter load.



Adjust to ride height with main tank 50% full

Airbag Ride Height

The ride height of the axle airbags is factory preset to approximately 320mm from the top of the of the airbag to the bottom of the mounting plate on the axle.

Ride height under load should be between 300 – 320mm.

This will need to be set prior to operation as air is exhausted from air bags prior to transporting.

Air Ride Valve Operation

The air ride valves operate by increasing or decreasing air pressure in the airbags to compensate for load.

Airbag Ride Height Adjustment

To raise (increase pressure in) an airbag:

1. Slacken the clamp on the rubber bush on the vertical valve rode, and
2. Raise the end of the horizontal rod slightly (approx 20mm). Air will be heard entering the bag through the valve.
3. When the ride height of both bags is even and at desired position, adjust the rod through the rubber bush to horizontal and tighten the clamp.

To lower (decrease pressure in) an airbag:

1. Slacken the clamp on the rubber bush on the vertical valve rode, and
2. Lower the end of the horizontal rod slightly (approx 20mm). Air will be heard exhausting the bag through the valve.
3. When the ride height of both bags is even and at desired position, adjust the rod through the rubber bush to horizontal and tighten the clamp.



Loosen clamp on vertical rod to adjust

SECTION 5

SPRAYER OPERATION

AIRBAG SUSPENSION – DRAW BAR

ARDS Drawbar Suspension

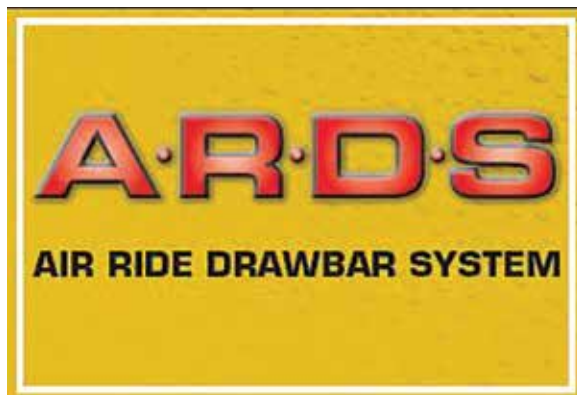
The Drawbar is equipped with an airbag along with shock absorber and rubber bump stop to provide unparalleled ride for the Pegasus 8000.

As with the axle airbag suspension the drawbar airbag is fitted with a ride height leveling valve to maintain the set ride height during operation of the sprayer.

Airbag Ride Height

The ride height of the drawbar airbag is factory preset to provide approximately 30mm of clearance between the top of drawbar and the rubber bump stop located above top of drawbar.

This should be adjusted prior to operation and checked periodically.



Air ride drawbar provides unparalleled ride



Draw bar air bag fitted at rear of drawbar

Air Ride Valve Operation

The air ride valve is supplied with regulated air pressure, which the regulator needs to be preset at approx 40psi prior to adjusting ride height of drawbar airbag.

Adjust the ride height as per ride height adjustment on page 44.



Air pressure regulator for drawbar airbag

Air Ride System

The Air Ride system is supplied air from a heavy duty 12 volt relay powered air compressor.

A 120psi pressure switch is fitted to prevent the system from over pressurizing by cutting power to the compressor, along with a safety valve fitted to the reservoir.

A drain valve is fitted to both the air reservoir and the front airbag and must be closed prior to operation of the air ride system.

The relay is powered direct from a 12 volt battery and is switched by activating the spray rate controller.

SECTION 5

SPRAYER OPERATION

OPERATING POINTERS

Operating Methodology for Broadacre Spraying

It is always preferable to spray travelling across the wind direction.

This minimises any drift effect caused by the wind especially with flat fan nozzles because the wind only hits the narrow end of the pattern rather than the full face of the fan spray.

It also maximises the effect of the wind forcing droplets downwards into contact with the target.

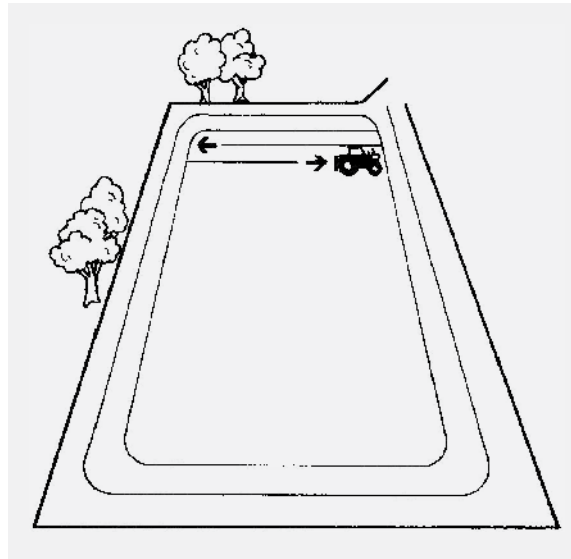
Travelling with the wind increases the tendency of spray droplets to float away from the target, and travelling against the wind effectively multiplies the force of the wind (depending on speeds) increasing drift and reducing target contact.

Proceed to Spray

Once the chemical mixture is in the tank, proceed to spray:

1. Adjust the pressure to the correct operating pressure by adjusting pressure (up or down) according to the instructions of the Controller.
2. Turn spray booms ON and OFF as required to spray according to the instructions of the controller fitted.

Refer to page 21 for spray controller operating instructions.



Operating Pointers

While spraying, continually observe that:

1. Engine and Pump speed are correct.
2. Correct operating pressure is being maintained.
3. Ground speed is correct and within the operating range of the nozzles and application rates selected.
4. Pegasus spray nozzles are operating correctly and aimed toward the targeted foliage.



CAUTION

Running a diaphragm pump faster than specified will not improve performance, but will damage and wear out moving parts. Warranty will be made void by speeds in excess of those indicated on the pump name plate.

NOTE

Refer to page 27 for BOOM OPERATION pointers.

SECTION 6

SPRAYER CALIBRATION

CALIBRATION PROCEDURE



SprayWise Broadacre Application Handbook



SprayWise Logbook

Proper calibration considers all spraying variables

Applying the correct amount of chemical to a crop is only possible if:

- the sprayer is calibrated correctly
- the sprayer is operated correctly
- the sprayer is maintained correctly

The variables of spray application (distance, time, working width, liquid and chemical volumes) must be measured and controlled accurately to ensure chemicals are applied at the correct rate.

Automatic spray controllers measure and control the variables of speed and flow rate to give constant application.

However proper nozzle selection, checking calibration of nozzles, speed and flow rate as well as correct mixing of chemicals must be done to ensure the accuracy and performance of the sprayer and its controller.

Accurate calibration is essential to ensure uniform application of the recommended dose of chemical to the target.

Proper calibration involves setting up the sprayer (nozzle selection, pressure, speed), calculating chemical and water rates and measuring the performance of the sprayer itself. Only then can you be totally confident in applying chemical correctly.

Fully Automatic Spray Rate Controller

The fully automatic spray rate controller maintains the application rate (set by the operator) when operated in AUTO mode.

The controller monitors speed of travel (speed sensor) and flow rate (flow meter) and automatically adjusts flow rate (via a servo valve) to maintain correct application rate irrespective of speed variations within the limits of the nozzles used.

Important:

1. It should be remembered that the spray controller does not eliminate the necessity to measure and check the accuracy of nozzle spray patterns and outputs. These must be checked regularly to ensure correct and uniform application rates because nozzles will wear with use.
2. Flow meters used by the controller also needs to be checked and calibrated on a regular basis.

NOTE

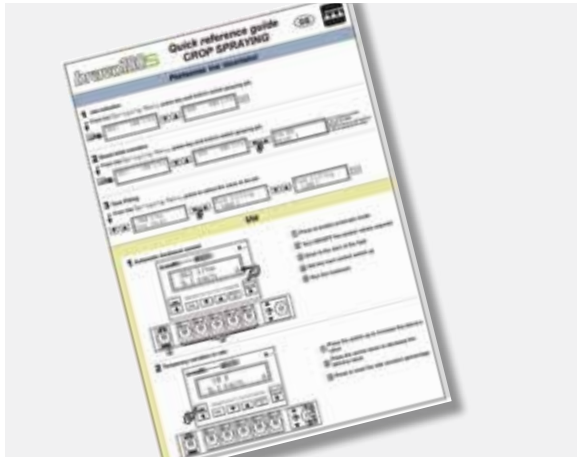
Use your own experience or a registered rate calibration consultant to determine effective application rates in litres per hectare.



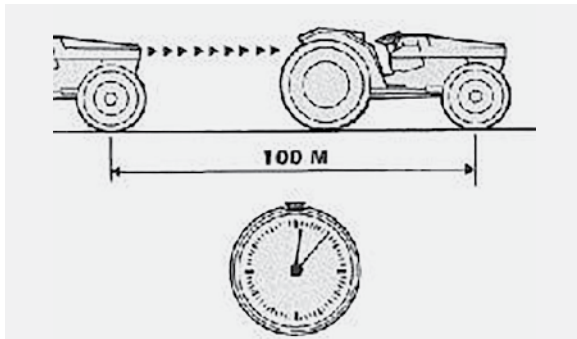
Bravo 180S Broadacre

SECTION 6

SPRAYER CALIBRATION



See the Automatic Spray Rate Controller Operator's Manual for detailed information and calibrating procedures specific to your spray controller.



Determine the actual speed of travel

For accurate spray rate application, follow this calibration procedure:

Step 1:

Ensure Equipment is in Good Working Order

Tank, pump, boom, filters and nozzles must be clean, free of leakage and functioning properly.

Follow the pre-operation checklist, maintenance and operating instructions in this manual.

Install, calibrate and operate the spray rate controller according to the spray controller Installation/Operation manual supplied separately.

Step 2:

Determining the Actual Speed of Travel

Your Pegasus has been factory set with a speed calibration number. This should be fine-tuned prior to commencement of spraying and checked by your dealer. This is done by travelling a known distance (usually 100 metres) and comparing the distance measured by the Spray Controller to the known distance. If there is a discrepancy, the Spray Controller Manual explains how to easily adjust the calibration number.

Step 3:

Measure Swath Width

The spray rate controller requires the boom width to be entered for each of the boom sections fitted to your sprayer.

Measure the nozzle spacing and multiply nozzle spacing by the number of nozzles on each boom section to establish the width of each boom section.

- eg, 0.5m x 5 nozzles = 2.5m
- 0.5m x 6 nozzles = 3.0m
- 0.5m x 7 nozzles = 3.5m

Step 4:

Select Nozzle Type & Size

Select nozzle type and size according to:

- Chemical recommendations
- Application rate required
- Swath width
- Chosen speed of travel.
(Use actual speed of travel for application)

Two methods of selecting nozzle output are:

1. Use the charts on pages 52 & 53 OR the manufacturer's nozzle chart
2. Calculate required nozzle flow rate.



Air-mix Nozzles fitted standard

SPRAY QUALITY (µm range)	DROPLET SIZE CLASSIFICATION	NOZZLE TYPE	APPLICATION
EXTREMELY COARSE (> 500 µm)	XC	Super TX (Refer p. 30)	Some soil applied herbicides & some translocated herbicides (use if drift control is paramount over efficacy)
VERY COARSE (300-500 µm)	VC	Velocity (Refer p. 30) Squirt (Refer p. 30)	Translocated herbicides, soil applied herbicides
COARSE (200-300 µm)	C	Super (Refer p. 30)	Translocated herbicides, soil applied herbicides
MEDIUM (150-200 µm)	M	Super (Refer p. 30) Super 02 (Refer p. 30)	Contact herbicides, fungicides and insecticides
FINE (100-150 µm)	F	Super 03 (Refer p. 30)	Some fungicides and insecticides
VERY FINE (75-100 µm)	VF	Super 04 (Refer p. 30)	Specialist application

SECTION 6

SPRAYER CALIBRATION

1. Use this manual's chart Or Nozzle Manufacturer's Chart.

Using the charts on pages 52 & 53 OR the nozzle manufacturer's chart, reference:

- Application rate (eg 50 l/ha)
- Speed of travel (eg 16 km/h)
- Spray Quality (eg coarse droplet)
- Pressure setting (eg 2.5 bar), find the nearest nozzle to suit your requirements.

Also confirm the speed variation available for the selected nozzle for applying the same rate.

It is usually best to select a mid range pressure as this will allow the spray rate controller to adjust pressure up or down when speed variations occur.

Nozzle	bar	l/min	l/ha							
			4 km/h	5 km/h	6 km/h	7 km/h	8 km/h	10 km/h	12 km/h	
XR0001 XR11001 (100 mesh)	1.0	0.23	69.0	55.2	46.0	39.4	34.5	27.6	23.0	
	1.5	0.28	84.0	67.2	56.0	48.0	42.0	33.6	28.0	
	2.0	0.32	96.0	76.8	64.0	54.9	48.0	38.4	32.0	
XR0015 XR11001 (100 mesh)	0.42	0.48	144.0	115.2	96.0	81.6	72.0	57.6	48.0	
	0.59	0.68	204.0	163.2	136.0	115.2	100.8	80.6	67.2	
	0.68	0.78	234.0	187.2	156.0	132.0	115.2	91.2	76.8	
XR0002 XR11002 (50 mesh)	0.46	0.56	168.0	134.4	112.0	94.4	84.0	67.2	56.0	
	0.56	0.65	192.0	153.6	128.0	108.8	97.5	78.0	65.0	
	0.65	0.75	228.0	182.4	152.0	128.0	112.5	90.0	75.0	

l/min column on nozzle chart –courtesy Teejet

2. Calculate Required Nozzle Flow Rate.

If you know the following:

- The required application rate.
- Actual speed of application.
- Swath width.
- Total number of nozzles on the boom.

The following formula can be used to establish required flow rate per nozzle:

$$\text{Nozzle Flow Rate} = \frac{\text{Speed (km/h)} \times \text{Swath Width (m)} \times \text{Application Rate (l/ha)}}{600 \div \text{Number of Nozzles}}$$

eg. $[(16 \times 30 \times 50) \div 600] \div 61$
= 0.65 l/min per each nozzle

Now using the nozzle chart look down the nozzle capacity column (l/min) and select a nozzle to suit the required output and pressure.

Step 5:

Fit the Selected Nozzles to the Boom

Fit the selected nozzles to the boom as per manufacturer's specifications.

If nozzle strainers are fitted ensure they are sized according to nozzle specification.



Ensure nozzle filter size suits nozzle

NOTE

All nozzles have a pressure and flow rate range to achieve the best results. Ensure you have selected the nozzle which best suits your application to avoid any problems.



Do not use mixed pesticides for testing. Use only clean water. Use of pesticides when testing is hazardous to your health.

Step 6 (Recommended):

Check Nozzle Accuracy and Determine Nozzle Output

Test the actual output of the nozzles using the following procedure:

1. Ensure there is adequate water in the spray tank.
IMPORTANT: Do not use mixed pesticides for testing.
2. Start the sprayer and set the spray controller master switch into MANUAL position, activate boom sections and adjust operating pressure so specified output from nozzle can be measured.
3. Collect and measure the volume of spray from one nozzle and compare it to the recommended output.
IMPORTANT: If the boom is not fitted with new nozzles, fit one new nozzle and use it to set the flow and pressure setting.

SECTION 6

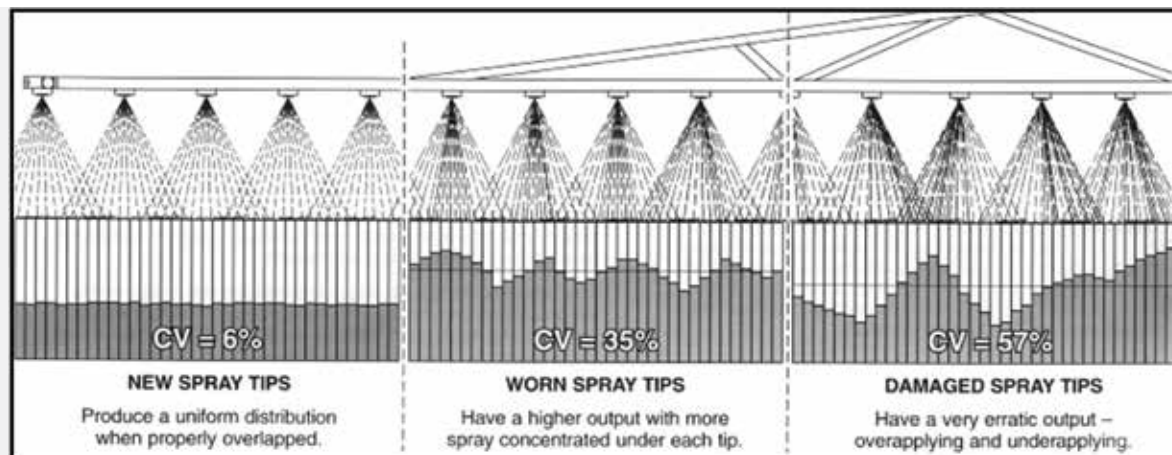
SPRAYER CALIBRATION



Test the actual output of the nozzles

This sets the standard flow rate, pressure setting and spray pattern with which to test the performance of other nozzles.

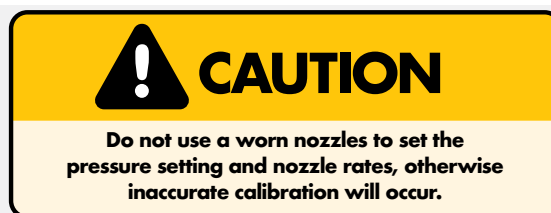
4. Collect and measure the volume of spray from each nozzle for one minute in a calibrated container. Specially designed nozzle testing equipment such as nozzle flow testers, can be used to simplify nozzle calibration.
5. Visually check nozzle spray patterns and spray angle for accuracy and, if necessary, replace any faulty nozzles.
6. Discard and replace any nozzle that deviates more than 10% from the specified output (eg with a 0.65 l/min specification – discard any nozzles 0.58 l/min and under or 0.71 l/min and over.
7. Check replacement nozzles by collecting and measuring output from each nozzle.
8. Record the output of each nozzle on the boom. Add the outputs together to get the total flow required for the boom.



9. This amount should correlate to the flow reading on the Spray Rate Controller.

Total spray output =

$$\text{l/min per nozzle} \times \text{number of nozzles}$$
 eg.
$$\frac{0.65 \text{ l/min} \times 61 \text{ nozzles}}{= 39.65 \text{ l/min total flow}}$$



Step 7:

Calculate Application Rate

When operating the Spray Rate controller, the controller automatically calculates and shows the rate of application using the following formula:

$$\text{Application Rate (l/ha)} = \frac{\text{Spray Output (l/min)} \times 600}{\text{Speed (km/h)} \times \text{Swath Width (m)}}$$

eg.
$$\frac{[39.65 \times 600]}{[16 \times 30.5]} = 48.75 \text{ l/ha}$$

Step 8:

If Tested Application Rate is not Satisfactory

In **Auto mode** – if application rate is not being achieved:

SECTION 6

SPRAYER CALIBRATION

- A. Operating pressure will climb if nozzles are too small or blocked or if wrong nozzle strainers are fitted.
- B. Too high operating speed will also contribute to excessive pressure.
- C. Likewise if the pressure filter is blocked (even partially), you may experience too high pressure.
- D. Operating pressure will fall if nozzles are too large or speed is too slow.

Make adjustments as necessary to suit the operating requirements.

Step 9:

Add the Correct Amount of Chemical to the Tank

1. **For Land area rates** – (litres or Kg per hectare), use the following formula:

$$\text{Chemical Required (litres)} = \frac{\text{Tank Volume (litres)} \times \text{Recommended Chemical Rate (l/ha)}}{\div \text{Spray Application Rate (l/ha)}}$$

eg, $\frac{[2000 \times 2.0] \div 50}{= 80 \text{ Litres}}$

NOTE

Mix only the amount required. Avoid wastage and the problem of needless chemical disposal.

2. **If chemical recommendation is given in water volume rates** use the following formula:

$$\text{Chemical Required (litres)} = \frac{\text{Tank Volume (litres)} \times \text{Recommended Chemical Rate (l/100 litres)}}{\div 100}$$

eg. $\frac{[2000 \times 4] \div 100}{= 80 \text{ Litres}}$

3. **For land area covered** use the following formula:

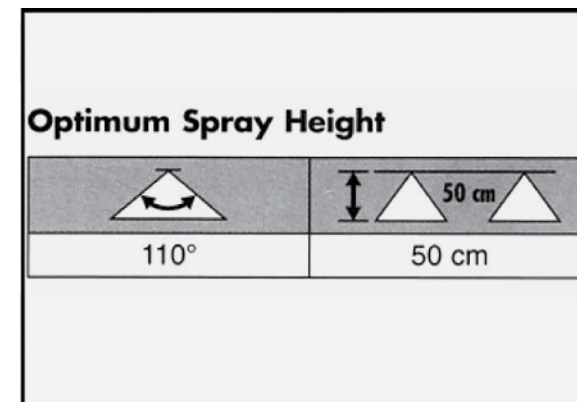
$$\text{Area Covered (Ha)} = \frac{\text{Tank Volume (litres)} \div \text{Spray Application Rate (l/ha)}}{\div 100}$$

eg. $\frac{2000 \div 50}{= 40 \text{ hectares}}$

4. **For tank volume required** use the following formula:
Tank Volume Required (litres) =

$$\text{Tank Volume Required (litres)} = \frac{\text{Area (Ha)} \times \text{Spray Application Rate (l/ha)}}{\div 100}$$

eg. $\frac{20 \times 50}{= 1000 \text{ litres}}$



Boom Height – courtesy Teejet

Step 10:

Adjust Boom Height

Boom height should be adjusted to suit the type of nozzle used, terrain and crop or soil being sprayed.

Minimum boom height recommendations depend on the nozzle spray angle and nozzle spacing. Refer to nozzle chart recommendations.

Step 11:

Record All Data for Future Reference

Record all your calibration data on the work sheets given at the end of this section.

Photocopy the worksheets to obtain the number of work sheets required.

NOTE

Full instructions of controller operation are contained in your separate Controller Manual.

SECTION 6

SPRAYER CALIBRATION

AIR-MIX & TURBODROP® NOZZLE CHART

Application Rate (l/ha with km/h @ 50cm nozzle spacing)																	
Nozzle Type	Pressure Bar	Flow Rate l/min	4	6	8	10	12	14	16	18	20	22	24	26	28	30	35
110-015	1	0.231	46.2	46.2	34.7	27.7	23.1	19.8	17.3	15.4	13.9	12.6	11.6	10.7	9.9	9.24	7.92
	1.5	0.283	84.9	56.6	42.5	34	28.3	24.3	21.2	18.9	17	15.4	14.2	13.1	12.1	11.3	9.7
	2	0.327	98.1	65.4	49.1	39.2	32.7	28	24.5	21.8	19.6	17.8	16.4	15.1	14	13.1	11.2
	3	0.4	120	80	60	48	40	34.3	30	26.7	24	21.8	20	18.5	17.1	16	13.7
	4	0.462	139	92.4	69.3	55.4	46.2	39.6	34.7	30.8	27.7	25.2	23.1	21.3	19.8	18.5	15.8
	5	0.517	155	103	77.6	62	51.7	44.3	38.8	34.5	31	28.2	25.9	23.9	22.2	20.7	17.7
	6	0.566	170	113	84.9	67.9	56.6	48.5	42.5	37.7	34	30.9	28.3	26.1	24.3	22.6	19.4
110-015	1	0.346	69.2	69.2	51.9	41.5	34.6	29.7	26	23.1	20.8	18.9	17.3	16	14.8	13.8	11.9
	1.5	0.424	127	84.8	63.6	50.9	42.4	36.3	31.8	28.3	25.4	23.1	21.2	19.6	18.2	17	14.5
	2	0.49	147	98	73.5	58.8	49	42	36.8	32.7	29.4	26.7	24.5	22.6	21	19.6	16.8
	3	0.6	180	120	90	72	60	51.4	45	40	36	32.7	30	27.7	25.7	24	20.6
	4	0.693	208	139	104	83.2	69.3	59.4	52	46.2	41.6	37.8	34.7	32	29.7	27.7	23.8
	5	0.775	233	155	116	93	77.5	66.4	58.1	51.7	46.5	42.3	38.8	35.8	33.2	31	26.6
	6	0.849	255	170	127	102	84.9	72.8	63.7	56.6	50.9	46.3	42.5	39.2	36.4	34	29.1
110-02	1	0.462	92.4	92.4	69.3	55.4	46.2	39.6	34.7	30.8	27.7	25.2	23.1	21.3	19.8	18.5	15.8
	1.5	0.566	170	113	84.9	67.9	56.6	48.5	42.5	37.7	34	30.9	28.3	26.1	24.3	22.6	19.4
	2	0.653	196	131	98	78.4	65.3	56	49	43.5	39.2	35.6	32.7	30.1	28	26.1	22.4
	3	0.8	240	160	120	96	80	68.6	60	53.3	48	43.6	40	36.9	34.3	32	27.4
	4	0.924	277	185	139	111	92.4	79.2	69.3	61.6	55.4	50.4	46.2	42.6	39.6	37	31.7
	5	1.033	310	207	155	124	103	88.5	77.5	68.9	62	56.3	51.7	47.7	44.3	41.3	35.4
	6	1.131	339	226	170	136	113	96.9	84.8	75.4	67.9	61.7	56.6	52.2	48.5	45.2	38.8
110-025	1	0.577	115	115	86.6	69.2	57.7	49.5	43.3	38.5	34.6	31.5	28.9	26.6	24.7	23.1	19.8
	1.5	0.707	212	141	106	84.8	70.7	60.6	53	47.1	42.4	38.6	35.4	32.6	30.3	28.3	24.2
	2	0.816	245	163	122	97.9	81.6	69.9	61.2	54.4	49	44.5	40.8	37.7	35	32.6	28
	3	1	300	200	150	120	100	85.7	75	66.7	60	54.5	50	46.2	42.9	40	34.3
	4	1.154	346	231	173	138	115	98.9	86.6	76.9	69.2	62.9	57.7	53.3	49.5	46.2	39.6
	5	1.291	387	258	194	155	129	111	96.8	86.1	77.5	70.4	64.6	59.6	55.3	51.6	44.3
	6	1.414	424	283	212	170	141	121	106	94.3	84.8	77.1	70.7	65.3	60.6	56.6	48.5

SECTION 6

SPRAYER CALIBRATION

AIR-MIX & TURBODROP® NOZZLE CHART

Application Rate (l/ha with km/h @ 50cm nozzle spacing)																	
Nozzle Type	Pressure Bar	Flow Rate l/min	4	6	8	10	12	14	16	18	20	22	24	26	28	30	35
110-03	1	0.693	139	139	104	83.2	69.3	59.4	52	46.2	41.6	37.8	34.7	32	29.7	27.7	23.8
	1.5	0.849	255	170	127	102	84.9	72.8	63.7	56.6	50.9	46.3	42.5	39.2	36.4	34	29.1
	2	0.98	294	196	147	118	98	84	73.5	65.3	58.8	53.5	49	45.2	42	39.2	33.6
	3	1.2	360	240	180	144	120	103	90	80	72	65.5	60	55.4	51.4	48	41.1
	4	1.386	416	277	208	166	139	119	104	92.4	83.2	75.6	69.3	64	59.4	55.4	47.5
	5	1.549	465	310	232	186	155	133	116	103	92.9	84.5	77.5	71.5	66.4	62	53.1
	6	1.697	509	339	255	204	170	145	127	113	102	92.6	84.9	78.3	72.7	67.9	58.2
110-04	1	0.924	185	185	139	111	92.4	79.2	69.3	61.6	55.4	50.4	46.2	42.6	39.6	37	31.7
	1.5	1.113	334	223	167	134	111	95.4	83.5	74.2	66.8	60.7	55.7	51.4	47.7	44.5	38.2
	2	1.306	392	261	196	157	131	112	98	87.1	78.4	71.2	65.3	60.3	56	52.2	44.8
	3	1.6	480	320	240	192	160	137	120	107	96	87.3	80	73.8	68.6	64	54.9
	4	1.848	554	370	277	222	185	158	139	123	111	101	92.4	85.3	79.2	73.9	63.4
	5	2.066	620	413	310	248	207	177	155	138	124	113	103	95.4	88.5	82.6	70.8
	6	2.263	679	453	339	272	226	194	170	151	136	123	113	104	97	90.5	77.6
110-05	1	1.155	231	231	173	139	116	99	86.6	77	69.3	63	57.8	53.3	49.5	46.2	39.6
	1.5	1.414	424	283	212	170	141	121	106	94.3	84.8	77.1	70.7	65.3	60.6	56.6	48.5
	2	1.633	490	327	245	196	163	140	122	109	98	89.1	81.7	75.4	70	65.3	56
	3	2	600	400	300	240	200	171	150	133	120	109	100	92.3	85.7	80	68.6
	4	2.309	693	462	346	277	231	198	173	154	139	126	115	107	99	92.4	79.2
	5	2.582	775	516	387	310	258	221	194	172	155	141	129	119	111	103	88.5
	6	2.828	848	566	424	339	283	242	212	189	170	154	141	131	121	113	97
110-06	1	1.386	277	277	208	166	139	119	104	92.4	83.2	75.6	69.3	64	59.4	55.4	47.5
	1.5	1.697	509	339	255	204	170	145	127	113	102	92.6	84.9	78.3	72.7	67.9	58.2
	2	1.96	588	392	294	235	196	168	147	131	118	107	98	90.5	84	78.4	67.2
	3	2.4	720	480	360	288	240	206	180	160	144	131	120	111	103	96	82.3
	4	2.771	831	554	416	333	277	238	208	185	166	151	139	128	119	111	95
	5	3.098	929	620	465	372	310	266	232	207	186	169	155	143	133	124	106
	6	3.394	1018	679	509	407	339	291	255	226	204	185	170	157	145	136	116

SECTION 6

SPRAYER CALIBRATION

CALIBRATION WORK SHEET

Step 1

Check the Sprayer is in Good Working Order

Step 2

Determine Actual Speed of Travel

Follow Instructions on page 51 (Speed Calibration).

Tractor model	
Gear	
Range	
Dual power	
Engine RPM	
Speed in Km/h	

Step 3

Measure Boom Widths

Boom section 1:	
Boom section 2:	
Boom section 3:	
Boom section 4:	
Boom section 5:	
Boom section 6:	
Boom section 7:	

Step 4

Select Nozzle Type & Size

Chemical:	
Type of Nozzle:	
Pressure Setting:	
Travel speed (km/hr):	
Total number of nozzles to be used:	

Nozzle Flow Rate (l/min) =
Speed (km/hr) x Swath Width (m) x Application
Rate (l/ha) ÷ 600 ÷ Number of nozzles

$$\begin{array}{c} \boxed{} \times \boxed{} \times \boxed{} \div 600 \div \boxed{} \\ = \boxed{} \text{ l/min for each nozzle} \end{array}$$

Step 5

Fit Selected Nozzles to Boom

Nozzle Type:	
Nozzle Size:	
Nozzle Colour:	

Step 6

Check Nozzle Accuracy & Determine Nozzle Output

Thoroughly check nozzles & test the actual output of each nozzle.

Pressure Setting:	
Individual Nozzle Outputs:	
Sum of Nozzle Outputs:	

Step 7

Calculate Application Rate

The spray Controller automatically calculates and shows the rate of application.

Application Rate (l/ha) =
Spray Output (l/min) x 600 ÷ Speed (km/hr)
x Swath Width (m)

$$\begin{array}{c} [\boxed{} \times 600] \div [\boxed{} \times \boxed{}] \\ = \boxed{} \end{array}$$

Step 8

If Tested Application is Not Satisfactory - Make Changes & Repeat Procedure

Step 9

Add Correct Amount of Chemical

Chemical:	
Water Quantity:	
Chemical Added:	

Step 10

Boom Height

Step 11

Record Data

Date	
Farm location	
Crop to be sprayed	
Spray Volume litres/ha	
Nozzle type	
Nozzle size & colour	
No. of nozzles used	
Nozzle pressure	
Tested Output in l/min	
Actual Litres/Hectare	

SECTION 6

SPRAYER CALIBRATION

CALIBRATION WORK SHEET

Step 1

Check the Sprayer is in Good Working Order

Step 2

Determine Actual Speed of Travel

Follow Instructions on page 51 (Speed Calibration).

Tractor model	
Gear	
Range	
Dual power	
Engine RPM	
Speed in Km/h	

Step 3

Measure Boom Widths

Boom section 1:	
Boom section 2:	
Boom section 3:	
Boom section 4:	
Boom section 5:	
Boom section 6:	
Boom section 7:	

Step 4

Select Nozzle Type & Size

Chemical:	
Type of Nozzle:	
Pressure Setting:	
Travel speed (km/hr):	
Total number of nozzles to be used:	

Nozzle Flow Rate (l/min) =
Speed (km/hr) x Swath Width (m) x Application
Rate (l/ha) ÷ 600 ÷ Number of nozzles

$$\boxed{} \times \boxed{} \times \boxed{} \div 600 \div \boxed{}$$

$$= \boxed{} \text{ l/min for each nozzle}$$

Step 5

Fit Selected Nozzles to Boom

Nozzle Type:	
Nozzle Size:	
Nozzle Colour:	

Step 6

Check Nozzle Accuracy & Determine Nozzle Output

Thoroughly check nozzles & test the actual output of each nozzle.

Pressure Setting:	
Individual Nozzle Outputs:	
Sum of Nozzle Outputs:	

Step 7

Calculate Application Rate

The spray Controller automatically calculates and shows the rate of application.

Application Rate (l/ha) =
Spray Output (l/min) x 600 ÷ Speed (km/hr)
x Swath Width (m)

$$[\boxed{} \times 600] \div [\boxed{} \times \boxed{}]$$

$$= \boxed{}$$

Step 8

If Tested Application is Not Satisfactory - Make Changes & Repeat Procedure

Step 9

Add Correct Amount of Chemical

Chemical:	
Water Quantity:	
Chemical Added:	

Step 10

Boom Height

Step 11

Record Data

Date	
Farm location	
Crop to be sprayed	
Spray Volume litres/ha	
Nozzle type	
Nozzle size & colour	
No. of nozzles used	
Nozzle pressure	
Tested Output in l/min	
Actual Litres/Hectare	

SECTION 6

SPRAYER CALIBRATION

CALIBRATION WORK SHEET

Step 1

Check the Sprayer is in Good Working Order

Step 2

Determine Actual Speed of Travel

Follow Instructions on page 51 (Speed Calibration).

Tractor model	
Gear	
Range	
Dual power	
Engine RPM	
Speed in Km/h	

Step 3

Measure Boom Widths

Boom section 1:	
Boom section 2:	
Boom section 3:	
Boom section 4:	
Boom section 5:	
Boom section 6:	
Boom section 7:	

Step 4

Select Nozzle Type & Size

Chemical:	
Type of Nozzle:	
Pressure Setting:	
Travel speed (km/hr):	
Total number of nozzles to be used:	

Nozzle Flow Rate (l/min) =
Speed (km/hr) x Swath Width (m) x Application
Rate (l/ha) ÷ 600 ÷ Number of nozzles

$$\boxed{} \times \boxed{} \times \boxed{} \div 600 \div \boxed{}$$

$$= \boxed{} \text{ l/min for each nozzle}$$

Step 5

Fit Selected Nozzles to Boom

Nozzle Type:	
Nozzle Size:	
Nozzle Colour:	

Step 6

Check Nozzle Accuracy & Determine Nozzle Output

Thoroughly check nozzles & test the actual output of each nozzle.

Pressure Setting:	
Individual Nozzle Outputs:	
Sum of Nozzle Outputs:	

Step 7

Calculate Application Rate

The spray Controller automatically calculates and shows the rate of application.

Application Rate (l/ha) =
Spray Output (l/min) x 600 ÷ Speed (km/hr)
x Swath Width (m)

$$[\boxed{} \times 600] \div [\boxed{} \times \boxed{}]$$

$$= \boxed{}$$

Step 8

If Tested Application is Not Satisfactory - Make Changes & Repeat Procedure

Step 9

Add Correct Amount of Chemical

Chemical:	
Water Quantity:	
Chemical Added:	

Step 10

Boom Height

Step 11

Record Data

Date	
Farm location	
Crop to be sprayed	
Spray Volume litres/ha	
Nozzle type	
Nozzle size & colour	
No. of nozzles used	
Nozzle pressure	
Tested Output in l/min	
Actual Litres/Hectare	

SECTION 6

SPRAYER CALIBRATION

CALIBRATION WORK SHEET

Step 1

Check the Sprayer is in Good Working Order

Step 2

Determine Actual Speed of Travel

Follow Instructions on page 51 (Speed Calibration).

Tractor model	
Gear	
Range	
Dual power	
Engine RPM	
Speed in Km/h	

Step 3

Measure Boom Widths

Boom section 1:	
Boom section 2:	
Boom section 3:	
Boom section 4:	
Boom section 5:	
Boom section 6:	
Boom section 7:	

Step 4

Select Nozzle Type & Size

Chemical:	
Type of Nozzle:	
Pressure Setting:	
Travel speed (km/hr):	
Total number of nozzles to be used:	

Nozzle Flow Rate (l/min) =
Speed (km/hr) x Swath Width (m) x Application
Rate (l/ha) ÷ 600 ÷ Number of nozzles

$$\boxed{} \times \boxed{} \times \boxed{} \div 600 \div \boxed{}$$

$$= \boxed{} \text{ l/min for each nozzle}$$

Step 5

Fit Selected Nozzles to Boom

Nozzle Type:	
Nozzle Size:	
Nozzle Colour:	

Step 6

Check Nozzle Accuracy & Determine Nozzle Output

Thoroughly check nozzles & test the actual output of each nozzle.

Pressure Setting:	
Individual Nozzle Outputs:	
Sum of Nozzle Outputs:	

Step 7

Calculate Application Rate

The spray Controller automatically calculates and shows the rate of application.

Application Rate (l/ha) =
Spray Output (l/min) x 600 ÷ Speed (km/hr)
x Swath Width (m)

$$[\boxed{} \times 600] \div [\boxed{} \times \boxed{}]$$

$$= \boxed{}$$

Step 8

If Tested Application is Not Satisfactory - Make Changes & Repeat Procedure

Step 9

Add Correct Amount of Chemical

Chemical:	
Water Quantity:	
Chemical Added:	

Step 10

Boom Height

Step 11

Record Data

Date	
Farm location	
Crop to be sprayed	
Spray Volume litres/ha	
Nozzle type	
Nozzle size & colour	
No. of nozzles used	
Nozzle pressure	
Tested Output in l/min	
Actual Litres/Hectare	

SECTION 7

LUBRICATION & MAINTENANCE

GREASING & SERVICE PROCEDURES

Greasing & Service Procedures

1. Clean suction line filter with each tank load.
2. Clean filling strainer after each tank fill if necessary.
3. Clean pressure line filter.
4. Clean boom section filters.
5. Check tyre pressure (320kPa – 46psi)
6. Check wheel nuts tight (600Nm)
7. Clean WOLF paddle wheel flowmeter
8. Grease all boom joints
9. Grease parallelogram lift pivot pins
10. Grease ARDS drawbar pivot point, swivel tow eye and jacking leg
11. Check diaphragm pump oil level
12. Inspect sprayer hydraulic hoses for signs of wear or abrasion
13. Open air reservoir drain valve to remove condensation

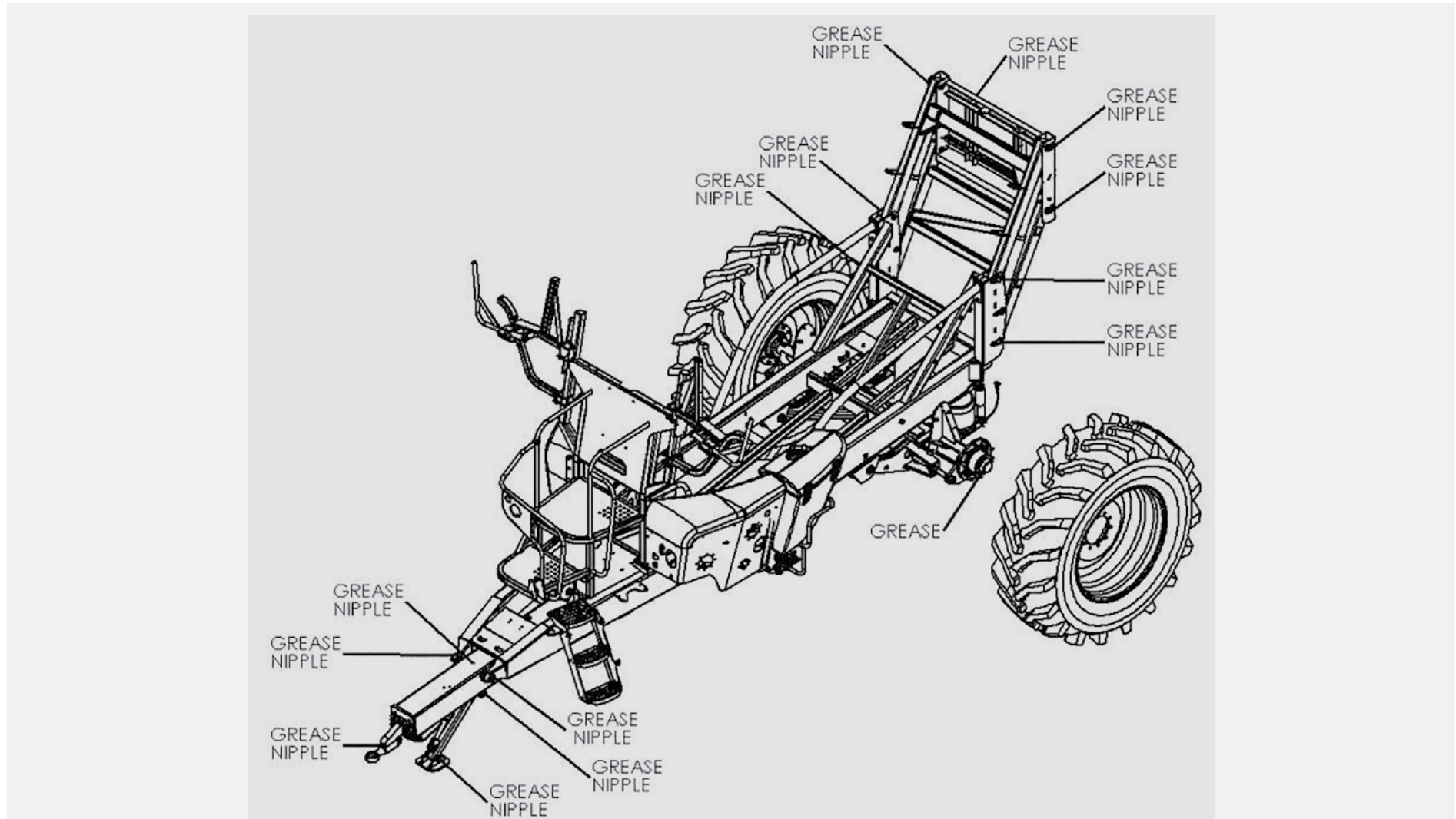
Every 250 hours OR Every Season – whichever is sooner

1. Re-pack wheel bearings with grease.
2. Change air filter for Air –ride system compressor
3. Grease all tank lids with rubber grease
4. Check all electrical connectors for corrosion – apply dielectric grease to connector seals
5. Inspect sprayer hoses for signs of wear or abrasion
6. Inspect Air-ride axle and adjust if necessary
7. Change diaphragm pump oil
8. Inspect diaphragm pump air chamber, diaphragms and valves for wear.

SECTION 7

LUBRICATION & MAINTENANCE

GREASE POINT DIAGRAMS



SECTION 7

LUBRICATION & MAINTENANCE

DIAPHRAGM PUMPS

Diaphragm pump maintenance

Annovi & Reverberi (A&R) pumps are of the piston-diaphragm type. All parts in contact with the spray liquid, which are subject to corrosion, are protected, making them ideal for spraying (herbicides, insecticides, fungicides, fertilisers, etc.), disinfection and washing.

Daily Before Starting the Pump

1. Check that oil is visible in sight glass (half way up) and top up if necessary with good clean motor oil 20W/30 or 20W/40.
2. Clean all sprayer filters. Blocked or semi blocked filters place extra stress on diaphragms.
3. Start with zero pressure and the pump will self prime immediately and clear air locks in suction line.

Daily after Use

1. Flush pump with clean water.
2. Drain filters and clean. A high percentage of pump failures are due to blocked filters.

Every 50 Hours

Check surge chamber pressure and adjust as follows:

- Air pressure 70-100kPa (10- 15psi)
[Should be 10-20% of operating pressure].

Vibration of the delivery hose usually indicates that the air pressure in the surge chamber is incorrect.

The main cause of surge chamber diaphragm fracture is low pressure in this chamber.

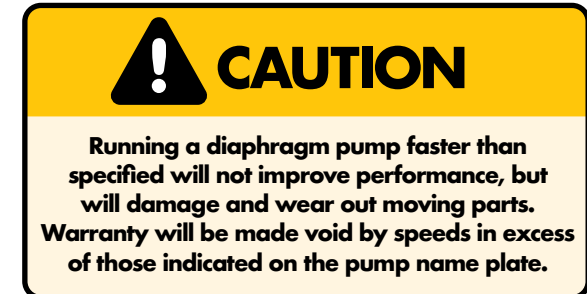
Surge chamber pressure can be checked with an ordinary tyre gauge.

The above pressure range is a guide to the correct pressure.

However, if difficulties recur, adjust the pressure until an even flow is obtained from the pump (no pulsing of liquid at operating RPM). The pressure is best increased with a bicycle pump.

Every 250 hours or Every Season - Whichever Comes Sooner

1. Change oil and refill with 20W/30 oil.
Attention should be made to remove trapped air behind the diaphragms by rocking from side to side as instructed.
It is also good practise to run the pump for 10 minutes without pressure, and then, top up with oil before working the pump.
2. When changing the pump oil, check diaphragms and replace them if they are showing signs of wear.
This is normally a pre-season maintenance procedure which can be done easily as no special tools are required.
You can avoid unnecessary down time in spraying seasons by carrying out the proper maintenance.
3. Also check inlet and outlet valves and replace if worn. Worn valves not only reduce the output of the pump, but may reduce the life of the diaphragms.



Excessive Diaphragm Failure

If you have excessive diaphragm failure check the following points. These will cause failure of diaphragms due to added stress or chemical attack.

1. **Most Important** - Pump not being flushed out daily with clean water after use.
2. Oil level too low allowing air between piston and diaphragm.
3. Air leaks in suction line.
4. Restricted suction line.
5. Restriction through suction filter.
6. Not cleaning suction filter regularly.
7. Worn suction and discharge valves.
8. Bypass line too small to carry full capacity of pump.
9. In cold climates - frozen suction/ discharge lines or water remaining in the pump after flushing.
10. Incorrect air setting or no air in air chamber.
11. Agitator excessively restricting bypass from pump.

SECTION 7

LUBRICATION & MAINTENANCE

12. Diaphragm material construction incorrect for chemical or solution being pumped.
13. Chemicals containing toluene or other aggressive solvents may require viton diaphragms - particularly if the pump is not properly flushed after use.

Pre-Season Servicing

For thorough pre-season servicing - check all aspects of the Pegasus and its operating components as outlined in the pre-delivery check list.

Pump Storage and Corrosion Protection

1. Warm Climates

If you operate in a warm climate with no chance of frost in the winter, you will not have any problems with frost damage.

If you are storing your sprayer between seasons, ensure your pump has been thoroughly flushed with clean water. A good idea is to run a mixture of 1% solution of summer mineral spraying oil through the pump and plumbing system. Summer spraying oil is water-soluble oil such as DC-Tron. This will coat and protect all internal pump parts. Ensure this mixture is flushed out before spraying commences in the new season.

2. Cold Climates

For prolonged storage, an anti-freeze mixture can be flushed through the pump. Ensure this is thoroughly flushed out prior to the commencement of spraying again.

If the pump is being stored overnight and a risk of freezing is imminent, drain all liquid from the pump and lines, including boom lines.

FILTERS

Filter Maintenance

Clean filters ensure that no solids enter the spraying system to block or damage pump or nozzles.



Drain Filter housing before opening

ALL filters should be cleaned regularly or after each spraying period. The filter screens should also be inspected at this time to ensure there are no signs of tears or screen degradation.

Filter seals should be thoroughly washed in warm soap water and lubricated prior to re-assembly of the filter.

Suction Filter

The suction filter should be cleaned regularly, or after each spray tank has been emptied.

Bottom-Fill Filter

The bottom-fill filter should be cleaned regularly, or after each spray tank has been filled.



Clean Bottom-fill filter

Pressure Filter

The pressure filters should be cleaned regularly, or after each tank has been emptied.



Remove and clean pressure filter



SECTION 7

LUBRICATION & MAINTENANCE



Remove and clean boom section filters

Boom Section Filters

The boom section filters should be cleaned regularly, or after each spray tank has been emptied.

Air Filter

The Air-ride air filter should be cleaned regularly, and at least every 250 hours or annually, whichever is sooner.

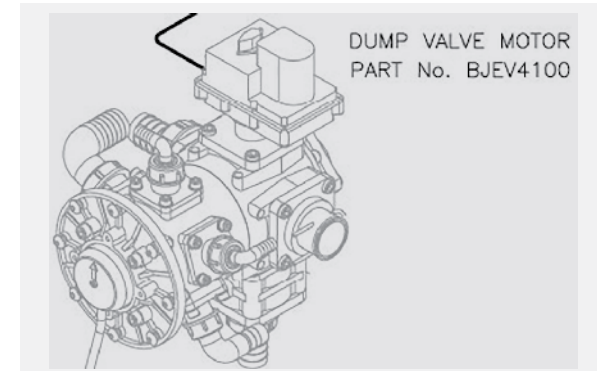


5 Section Boom control motor valve

MOTOR VALVES & NOZZLE BODIES

Electric Motor Valve Maintenance

1. Flush system with clean water after each day's use, especially when using wettable powders.
2. Clean and drain the system for storage.
3. Do not apply lubricating oils or other petroleum based lubricants to the valves, as this may cause swelling to the rubber seals.
4. Check with chemical manufacturer to ensure chemical compatibility with valve parts.
5. Check the ON/OFF operation of valves periodically, especially if nozzles cannot be seen whilst operating.
6. Visually check electrical connections to ensure they are clean and secure.



Pressure Control Servo Valve Motor

1. Operate spray rate controller pressure adjusting switch and confirm servo valve motor rotates in both directions (increase and decrease).
2. Ensure replacement motor is the correct speed of operation (6 sec).

Dump (bypass) Valve Motor

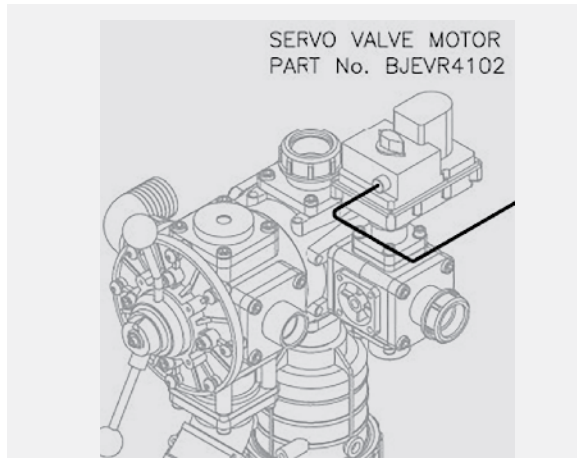
1. Operate spray rate controller to activate all boom sections with the Operator Panel set up to the "SPRAY" position (NOTE: Spray Pump does not need to be operating).
2. Operate the "SPRAY/BOOM FLUSH" switch on the Operator Panel.

Dump valve indicator should move to 'Open' position when in "SPRAY" position and 'Closed' position when in "BOOM FLUSH" position

3. Ensure replacement motor is correct speed of operation (1.25 sec).

SECTION 7

LUBRICATION & MAINTENANCE



Non-Drip Diaphragm Nozzle Bodies

Non-drip diaphragms should be cleaned regularly to prevent dripping from nozzles.

To clean the non-drip diaphragms:

1. Completely stop all sprayer functions.
2. Open boom line drain taps
3. Unscrew and remove the diaphragm cap
4. Remove and clean any sediment off the diaphragm – replace diaphragm if damaged
5. Ensure spring/plunger assembly in cap operates correctly
6. Refit diaphragm into cap
7. Refit the diaphragm cap and carefully tighten
8. Close boom line drain valves and test system to confirm non-drip operation.



Remove & clean non-drip diaphragms

NOTE

Do not over tighten the diaphragm cap. Over tightening the cap may impede flow through the diaphragm.

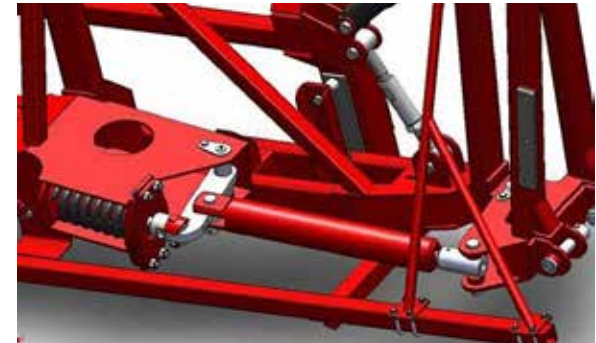
BOOMS

Boom Maintenance

Careful and regular boom maintenance will assist in providing a good, long operational life.

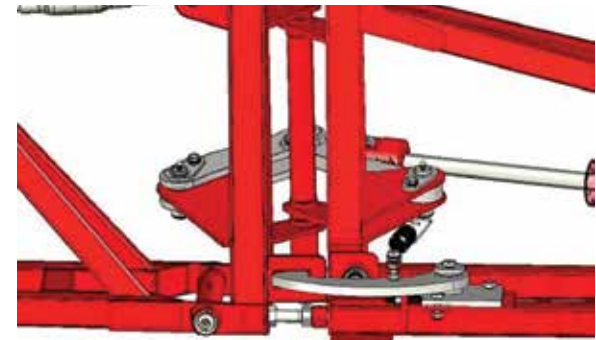
Daily Maintenance

Clean the boom at the end of each working day or whenever the sprayer is stopped for periods of time exceeding one hour. Rinse the plumbing lines and let clean (flush) water flow from the nozzles. Clean external surfaces with high pressure wash.



Inspect inner fold and yaw spring assembly

Ensure nozzles and nozzle bodies are correctly fixed and sealed when operating, also confirm non-drip mechanism is working.



Ensure adequate tension is applied by lock out lever and stop bolt

SECTION 7

LUBRICATION & MAINTENANCE

Inner Fold Pivot

The inner boom fold is designed to incorporate the 'Yaw' (fore and aft motion) suspension of the 33/36m boom, which means it is constantly moving during operation.

Ensure all pins are secure and hydraulic cylinder adjusting clevis is locked with grub screws.

Outer Fold Pivot

The outer fold is designed to be held securely by hydraulic pressure when in the open position to prevent movement.

Ensure the hinge joint is held securely against stop bolts and lock out lever (if fitted).



Adjust breakaway spring tension as necessary

Breakaway Arm

The breakaway arms are double acting (forwards and backwards motion) with a spring load return to centre assembly.

Ensure spring tension is maintained to provide correct operation of the breakaway arm.

NOTE

It is recommended to complete this section with the boom open in the spraying position.

Every 50 Hours Maintenance

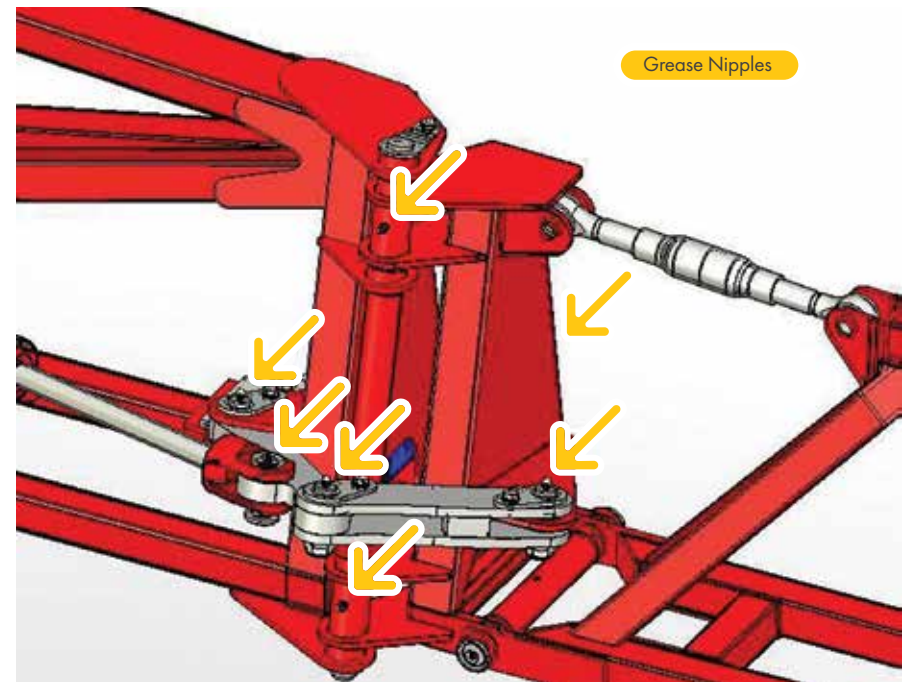
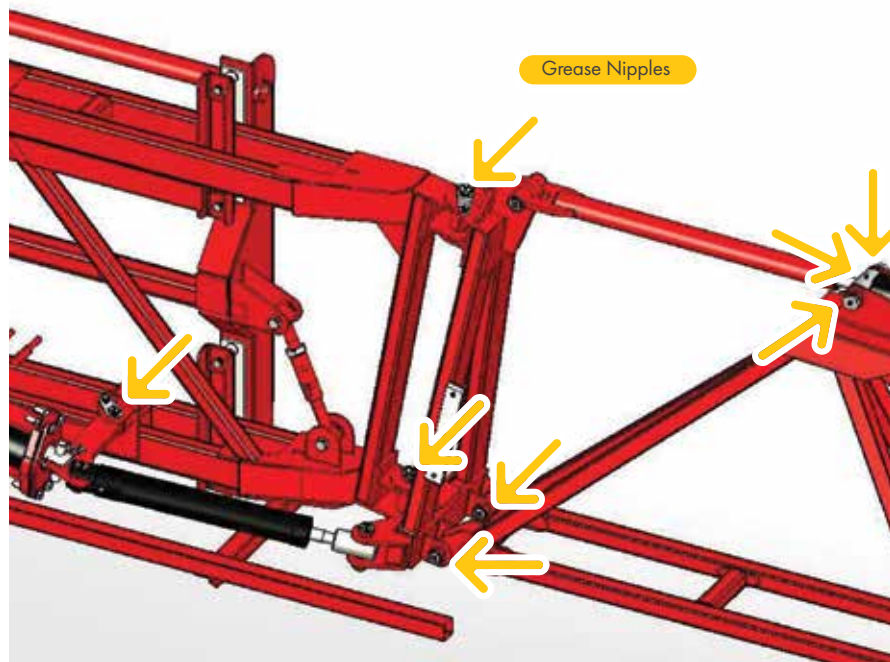
1. Ensure all screws, retaining clips and ties are intact and tight.
2. Clean and apply protective coating to damaged painted parts.
3. Check all joints and fold pivots operate properly and are correctly greased.
4. Grease sprayer parallelogram lift pivot points and ARDS drawbar pivots.
5. Grease all boom pivot points.
6. Ensure correct spring tension applied to breakaway arm springs.

SECTION 7

LUBRICATION & MAINTENANCE

Periodical Maintenance

1. Check all hydraulic hoses and fittings for wear and replace if necessary.
2. Check breakaway spring's tension and cables for wear and replace if necessary.
3. Check 'Yaw' position of boom and reset if required.
4. Before storage thoroughly clean and flush entire sprayer both internally and externally.



SECTION 7

LUBRICATION & MAINTENANCE

AIR-RIDE SUSPENSION

Trailing Arm Front Hinge

The pivot bush of the trailing arm assembly can be replaced when worn.

It is recommended to contact your dealer for assistance when the bushes need to be replaced as this process requires removing the axle trailing arm assembly from the sprayer, and as such should only be completed by suitably trained service technicians.



Axle Air-Ride Suspension System

Air Reservoir Drain Valve

The air reservoir features a drain valve fitted to the bottom of the air reservoir.

The valve should be used regularly to remove any condensation build up from the air system.

To remove moisture from the air reservoir:

1. Disconnect power from the 12volt air compressor.
2. Open drain valve until all moisture is removed from the air reservoir.

3. Close drain valve.
4. Reconnect power supply to the 12volt compressor and run compressor to recharge to air system.



Air reservoir drain valve

Ride Leveling Adjustable Linkage Assembly

To assemble the adjustable linkage of the air levelling valve:

1. Insert the ¼" straight rod (A) into the rubber dampener link (B) and tighten the clamp (C).
2. Insert the lever arm (F – ¼" rod with 90deg bend) into the valve making sure the centre punch on the cam face is pointing toward the vertical linkage.
3. Tighten the cap screw (G) to 5 ft/lbs.
4. Attach the rubber dampener (D) and clamp (E). Do not tighten until installation and setup is complete.

Note: To select the right or left hand position, hold the valve and rotate lever (F) to the desired position.

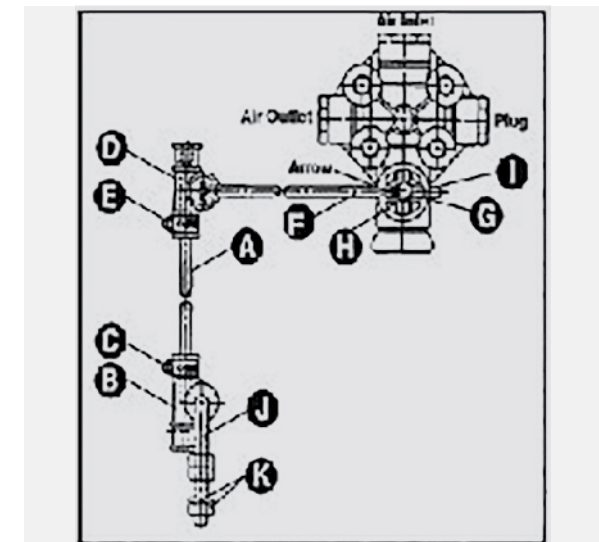
The Pegasus air ride suspensions uses variable length lever arms.

Tuning the valve to your suspension is done by increasing

or decreasing to obtain optimum performance when the lever arm approaches 45deg maximum up or down from a neutral horizontal position (refer pages 16, 47 ~ 48).



Axle air leveling Valve with adjustable linkage



Ride Level Valve assembly illustration

SECTION 8

TROUBLESHOOTING

DIAPHRAGM PUMP PROBLEMS

PROBLEM	PROBABLE CAUSE	REMEDY
A. Pump does not draw or deliver liquid. Pressure gauge fluctuates badly	1. One or more valves are not seating properly.	1. Clean valve seating.
	2. The pump is sucking in air through suction line.	2. Examine the suction hose and ensure it is firmly secured.
	3. Air has not been entirely evacuated from the pump.	3. Rotate the pump with outlet hose and taps open.
	4. Blocked suction filter.	4. Clean suction filter.
	5. Damaged or worn suction valves.	5. Replace suction valves.
B. Liquid flow is irregular (Also check items under A)	1. The air in the air chamber of the pump is incorrectly set.	1. Check pressure in air chamber of pump. Set at 210-280Kpa (30-40 psi).
	2. Diaphragm split.	2. Replace diaphragm.
	3. Damaged or worn valves.	3. Replace valves.
	4. Foreign matter holding valves open.	4. Clean valves.
C. Pump delivers insufficient pressure	1. Regulating valve: <ul style="list-style-type: none"> • Sticking open • Not set for pressure • Damaged or worn seat or spring 	1. Fix the regulator: <ul style="list-style-type: none"> • Unstick the valves • Set the pressure • Replace the spring
	2. Cylinder diaphragm ruptured.	2. Replace diaphragms.
	3. Pump valves blocked, worn or damaged.	3. 4. Unblock valves and or replace.
	4. Spray nozzles worn, missing or exceed pump capacity.	Replace spray nozzles with appropriate size.
D. Output drops & pump is noisy	1. Oil level is too low.	1. Top up with oil to correct level (1/2 way up the sump sight glass).
E. Oil being discharged through delivery line or discoloured oil in sight glass of pump	1. One or more diaphragms split or ruptured.	1. Immediately drain oil from pump and flush to remove all spray residues from sump. Remove pump heads & fit new diaphragms. Fill to correct level with motor oil 20W/30.

SECTION 8

TROUBLESHOOTING

DIAPHRAGM PUMP PROBLEMS

PROBLEM	PROBABLE CAUSE	REMEDY
SUCTION SIDE OF PUMP		
F. Suction hose vibration	1. Air getting into suction.	1. Seal all joints securely with tape or stag. Firm up clamps.
G. Pump valves hammering	1. Suction tap partly turned off.	1. Turn tap fully on.
	2. Suction strainer(s) blocked.	2. Clean filters.
H. No water flow on suction hose	1. Obstruction in tank or suction line.	1. Clean foreign material from tank & suction line.
DISCHARGE SIDE OF PUMP		
I. Pressure gauge pointer swings violently	1. Pressure control valve spindle doesn't move easily.	1. Lubricate with light oil or C.R.C.
J. AR control valve leaking from spindle	1. Split diaphragm or O-rings.	1. Remove 4 body set screws, replace diaphragm and O-rings.
K. Pressure gauge showing correct working pressure no pressure at nozzle	Burst discharge line.	Replace discharge line.
	Blocked discharge filter where fitted.	Clean discharge filter.
	O-ring(s) jamming flow in discharge line.	Clean discharge line of foreign materials.
	Ants, wasps build nests in discharge line or nozzles.	Clean nozzles of foreign materials with tooth brush

SECTION 8

TROUBLESHOOTING

GENERAL SPRAYER PROBLEMS

PROBLEM	PROBABLE CAUSE	REMEDY
A. No spray when turned on	1. Filter on the inlet side of the pump blocked.	1. Dismantle, clean & re-assemble.
	2. Faulty pump.	2. Change pump.
B. Sprays for short time only	1. Air inlet to tank blocked.	1. Clean air vent.
	2. Filter on suction side of pump blocking or blocked.	2. Dismantle, clean & re-assemble the filter. If filter problem persists, clean out the tank & start again.
C. Spray is uneven around the boom	1. Some nozzle filters or tips are blocked.	1. Remove, clean & check. Check output & for streaks.
	2. Nozzle tips worn.	2. Check nozzle output, replace worn nozzles.
	3. Different pressure along the boom.	3. Remove a nozzle in each boom section & check that flow rate is the same. If different, check for blockages.
D. Pressure going up - output going down	1. Nozzle filters blocking.	1. Dismantle, clean & refit. Check pressure returns to normal. Check all filters and spray mixture.
E. Pressure falling	1. Filter on suction side blocked.	1. Dismantle & clean the filter.
	2. Nozzle tips worn.	2. Check nozzle output, replace worn nozzles.
	3. Pressure gauge faulty.	3. Check with new pressure gauge.
	4. Pump worn.	4. Repair or replace the pump.
F. Spray pattern narrow	1. Pressure too low.	1. Check that the correct nozzles are being used.
	2. Pressure too low & spluttering.	2. Check that the tank is not empty. If not, there is an air leak between the pump & tank or in the pump. Check plumbing & repair.
G. Foam in the tank	1. Too much agitation.	1. Check that the return line is at the bottom of the tank. Partly close agitation and valve.
H. Spray pattern streaky	1. Nozzle partly blocked.	1. Remove & clean. If it continues, the nozzle is damaged. Replace with same size tip, check flow rate of replacement nozzle.

SECTION 8

TROUBLESHOOTING

HYDRAULIC PUMP DRIVE PROBLEMS

PROBLEM	PROBABLE CAUSE	REMEDY
A. Hydraulic system overheating	1. Improper hydraulic motor size.	1. Refer to pump selection guide to determine proper size for your system.
	2. Bypass adjustment screw set to bypass too much oil.	2. Close adjustment screw on side of hydraulic motor to lessen the amount of bypassing oil.
	3. Insufficient hydraulic hose size.	3. Check hydraulic hose size. Hose should be at least ½". For large open-centre systems ¾".

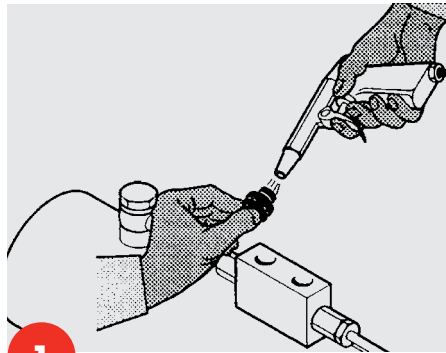
AIRBAG SUSPENSION PROBLEMS

PROBLEM	PROBABLE CAUSE	REMEDY
A. Air compressor runs constantly	1. Air leakage in the system.	1. Find the air leak. Test by using full air pressure and applying soapy water. Fix any air leaks. Use Loctite 569 on all air threads.
B. Airbags lose pressure (when left standing for less than a week)	1. Air leakage in the system.	1. Find the air leak by using soapy water to test. Fix any air leaks.
	2. Uneven valve settings.	2. Adjust the valve settings (see pages 47 ~ 48).
	3. Leaky/dirty valve.	3. Drain air chamber. Clean/replace the valve.
C. Airbags not responsive	1. Worn linkage grommets.	1. Replace worn grommets.
	2. Hard, non-pliable grommets.	2. Replace new pliable grommets.
	3. Grommets loose on rods.	3. Tighten loose grommets.

SECTION 8

TROUBLESHOOTING

BOOM PROBLEMS



1

Problem:

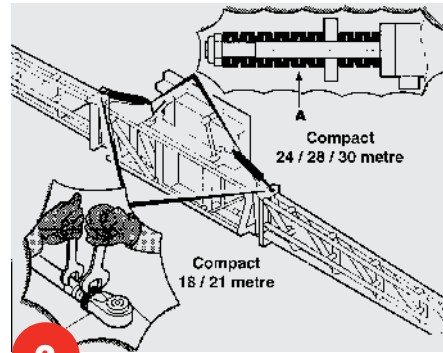
The boom unfolds halfway and then stops.

Probable Cause:

Impurity in calibrated joint during assembly of cylinders.

Remedy:

Disassemble joints and clean, shown in figure 1.



2

Problem:

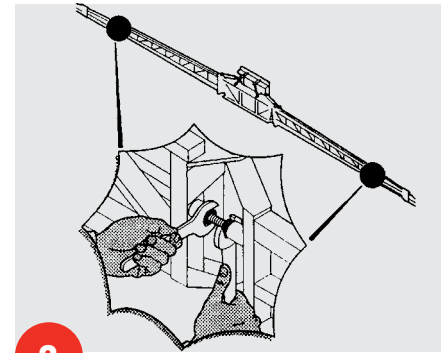
The boom does not align when unfolding.

Probable Cause:

1. Ball joint of the unfolding cylinder not adjusted.
2. Shock absorber springs (A) not adjusted or damaged.

Remedy:

1. Adjust the joint according to the "Wing Alignment" instructions on pages 24 ~ 27.



3

Problem:

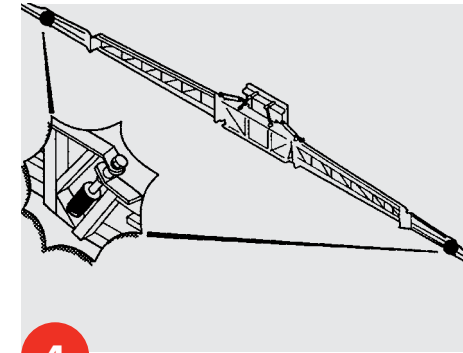
The wing extensions do not align when folding.

Probable Cause:

Stop bolt not adjusted.

Remedy:

Adjust the screw to obtain alignment, as shown in figure 3.



4

Problem:

The ball joint of the wing extension moves during the unfolding and folding operation.

Probable Cause:

Loose joint.

Remedy:

Compress the spring, as shown in figure 4.

SECTION 8

TROUBLESHOOTING

MOTOR VALVE PROBLEMS

PROBLEM	PROBABLE CAUSE	REMEDY
A. Boom line valve opens when it should be closed and closes when it should be open	1. Wiring incorrect.	1. Reverse polarity of valve by changing wires at the valve cap.
B. Water leaks past valve when valve is shut	1. Worn seat.	Replace seat/hosetail and/or valve system if necessary.
C. Valve won't operate	1. No power to valve.	1. Check all connections, supply - loom.
	2. Motor failure.	2. Replace motor.
	3. Valve clogged.	3. Clean internals of valve and/or put a new valve kit in the valve.
D. Servo valve not regulating flow	1. Valve jamming.	1. Clean our valve or replace.
	2. No power.	2. Check all power leads and supply, or replace motor.
	3. Valve clogged.	3. Clean out valve and/or put a new valve kit in the valve.
E. Dump valve not releasing pressure in system on shut-off	1. No power to valve.	1. Check power supply and all connections.
	2. Valve motor failed.	2. Check motor and replace if required.
	3. Dump-line blocked.	3. Clean valve and return line.

SECTION 9

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

ALL PARTS INFORMATION is now listed on the Croplands website:

- Go to croplands.com.au
- Search in the Parts Information section linked to the home page.

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

NOTE

Contact Croplands Technical Support for further information:
1300 650 724

AR250 PUMP	77	33/36M BOOM GVAR / WING LIFT	98
CBLOOM/BA70 OVERVIEW	79	33/36M BOOM WINGLIFT & OUTER WING FOLD	99
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CBLOOM/GS2 OVERVIEW	81	GBCOMPL-30C CENTRE SECTION 30.5 METRE BOOM SELF LEVELLING PARTS	101
CBLOOM/COMP OVERVIEW	82	GBCOMPL-305-LHA OR RHA - BOOM NON GVAR & GVAR 30M	102
KB-8009 AIRRIDE SYSTEM LIQUID FILLING SYSTEM	83	GBG016255 30.5M SKID (PAIR)	106
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LIQUID CONTROL SYSTEM CONTROL PANEL	85	AB19100-AA - 33/36M - CENTRE SECTION	108
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33/36M BOOM STANDARD FOLD	93		
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SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

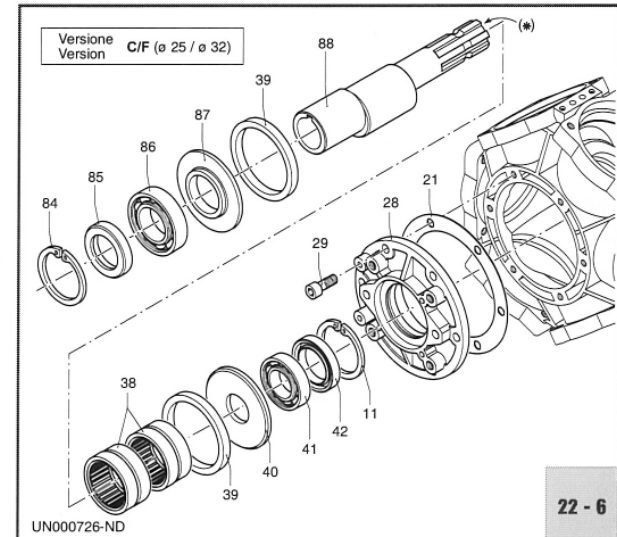
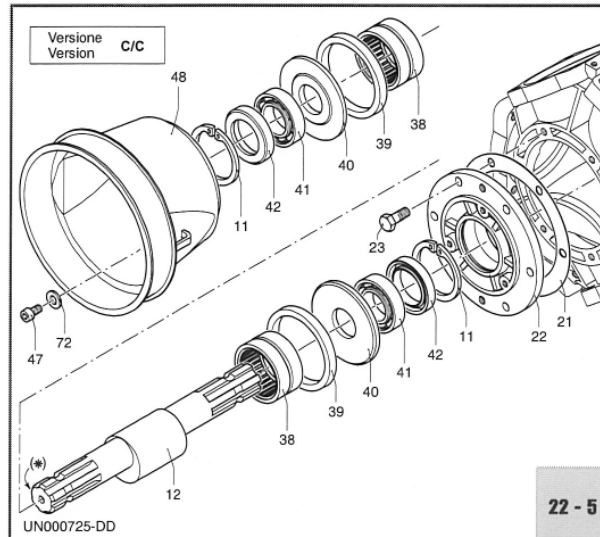
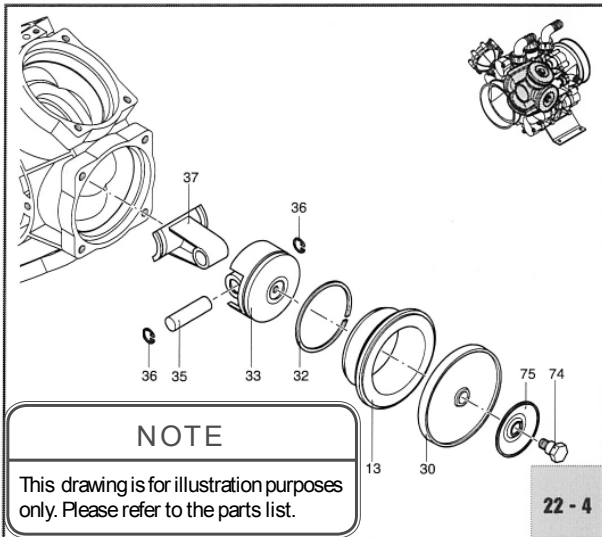
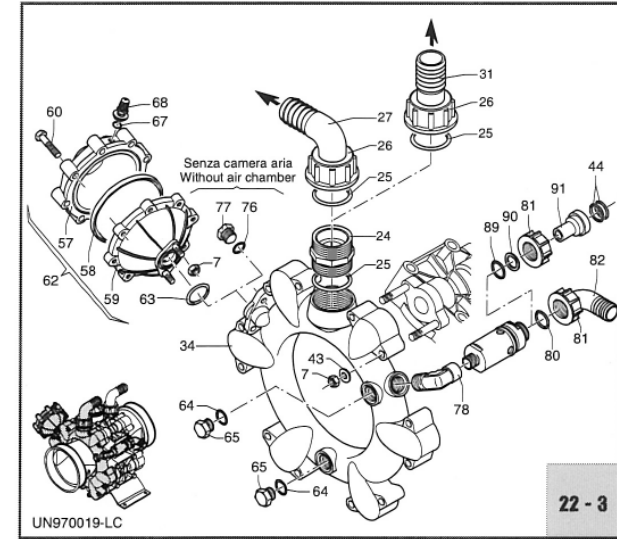
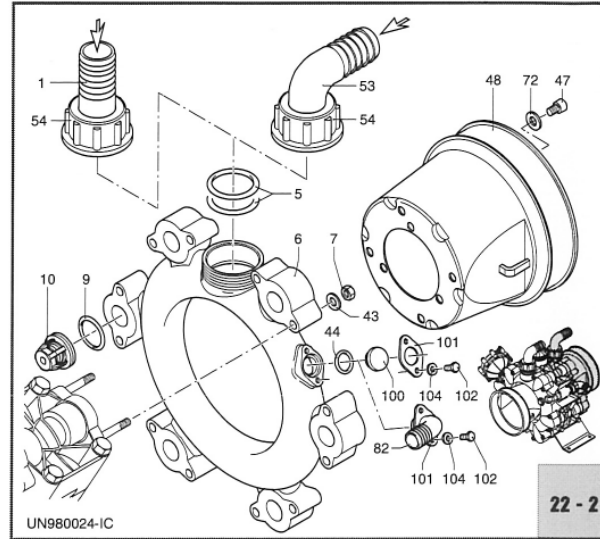
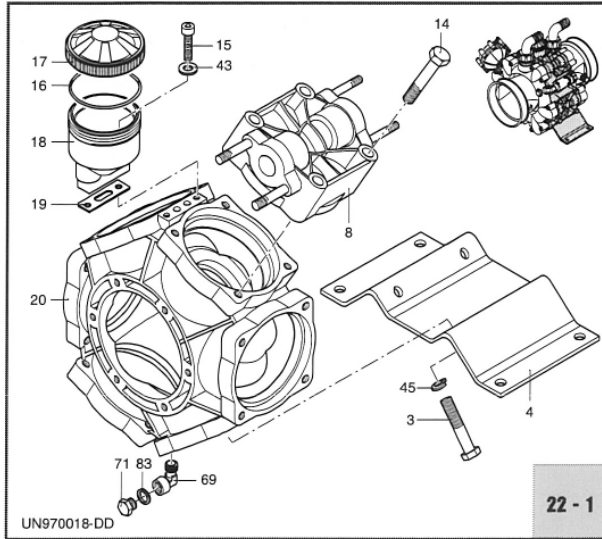
AR250 PUMP

NOTE

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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



Please contact Technical support for further details

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

Pos	Part No	Description	Qty
1	AR750870	<i>ø 50 Hose tail</i>	1
	AR750730	<i>ø 60 Hose tail</i>	1
3	AR750071	<i>M12 x 70 Bolt</i>	4
4	AR750200	Base plate	1
5	AR750740	74 x 3.53 O-Ring	2
6	AR750860	Suction manifold	1
7	AR380242	<i>Nut</i>	26
8	AR750100	Head	6
9	AR680070	O-Ring	12
10	AR759051	Complete valve	12
11	AR200390	Circlip	2
12	AR750170	Crankshaft AR 250 bp (AU)	1
13	AR750110	<i>Sleeve AR 250 bp</i>	6
14	AR750061	<i>M 12x65 Bolt</i>	20
15	AR680350	M8 x 35 Bolt	2
16	AR1040060	O-Ring	1
17	AR750057	<i>Black oil tank cap AR 250 bp</i>	1
18	AR750030	Oil tank	1
19	AR750040	Gasket	1
20	AR750010	Pump body	1
21	AR680250	Gasket	1
22	AR680020	<i>Shaft support</i>	1
23	AR160672	<i>M 10x25 Bolt</i>	6
24	AR540530	1"1/4-1"3/4 G (M) Threaded adapter	1
25	AR250310	O-Ring	2
26	AR540540	1"3/4 G Ring nut	1
27	AR392130	<i>ø 35 Elbow</i>	1
28	AR2420180	<i>Shaft support</i>	1
29	AR621500	<i>M10 x 25 Bolt</i>	6
30	AR550084	<i>Diaphragm - VITON</i>	6
	AR550086	Diaphragm - HPDS (Recommended)	6
31	AR391930	<i>ø 35 Hose tail Optional</i>	1
32	AR500260	Piston ring	6

Pos	Part No	Description	Qty
33	AR750122	Piston 80mm	6
34	AR750420	Manifold	1
35	AR160700	Pin	6
36	AR160691	Pin circlip	12
37	AR750140	<i>Connecting rod</i>	6
38	AR750090	Roller bearing	2
39	AR750130	Con rod ring	2
40	AR540040	<i>Spacer washer</i>	2
41	AR230350	Bearing	2
42	AR160740	Seal Ring 35 x 52 x 12mm	2
43	AR380243	<i>Washer</i>	26
44	AR480440	O-Ring	3
45	AR250143	<i>Washer</i>	4
47	AR850251	<i>M8 x 12 Bolt</i>	6
48	AR1500350	Shaft guard	2
53	AR750850	<i>ø 50 Elbow AR 250 bp</i>	1
54	AR750710	2"1/2 G Ring nut	1
57	AR620232	<i>Upper air chamber</i>	1
58	AR550190	Semi air chamber - RUBBER	1
	AR550192	<i>Semi air chamber - VITON</i>	1
	AR550193	<i>Semi air chamber - HPDS</i>	1
59	AR680180	Lower air chamber	1
60	AR621781	<i>M8 x 40 Bolt</i>	8
62	AR1552	Complete air chamber	1
63	AR390290	O-Ring	1
64	AR180101	O-Ring	2
65	AR330173	<i>1/2" G Plug</i>	2
67	AR650542	Gasket	1
68	AR180020	Air valve	1

NOTE

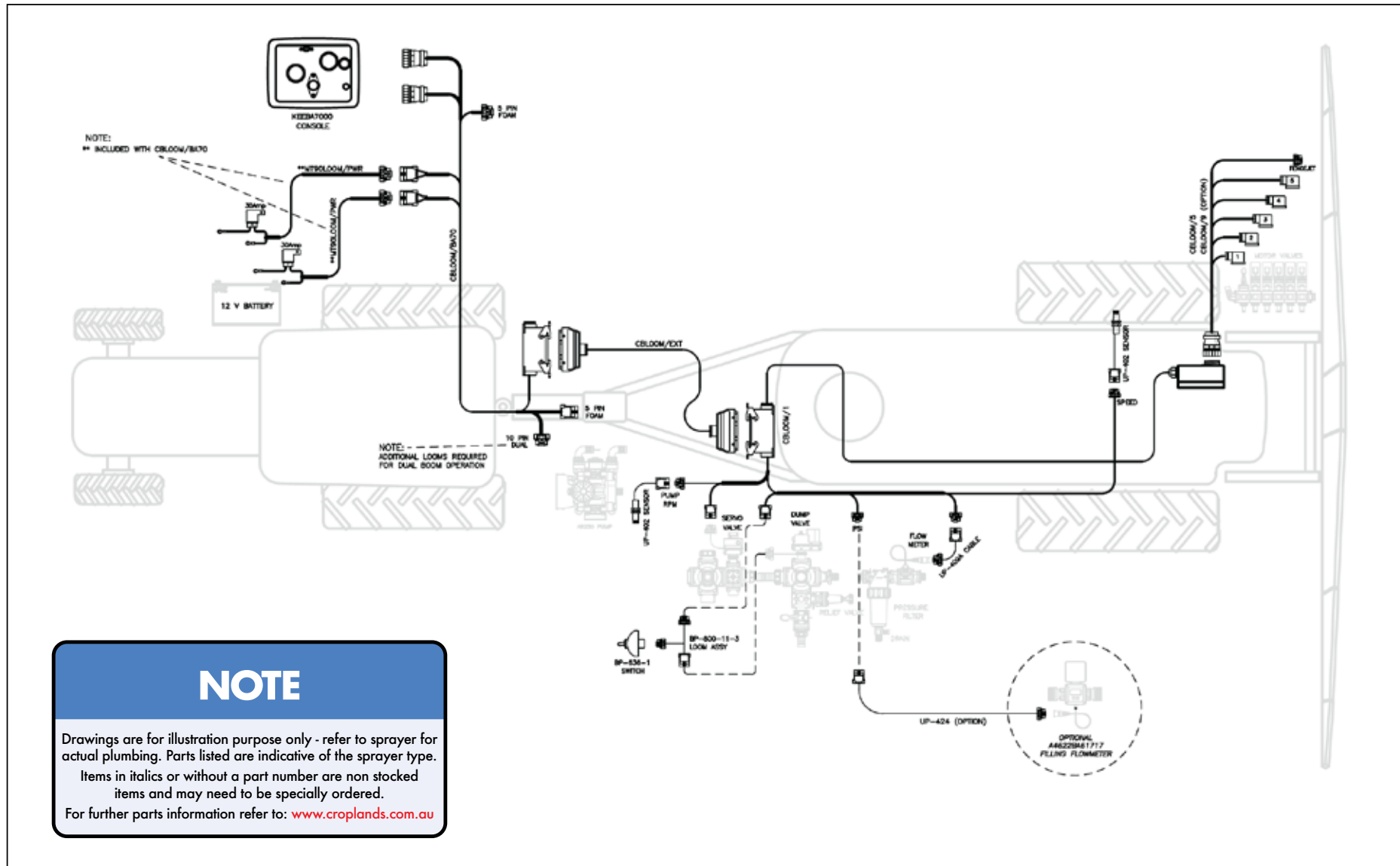
Parts in Italics are non-stocked items and may need to be ordered.

Please contact Technical support for further details

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

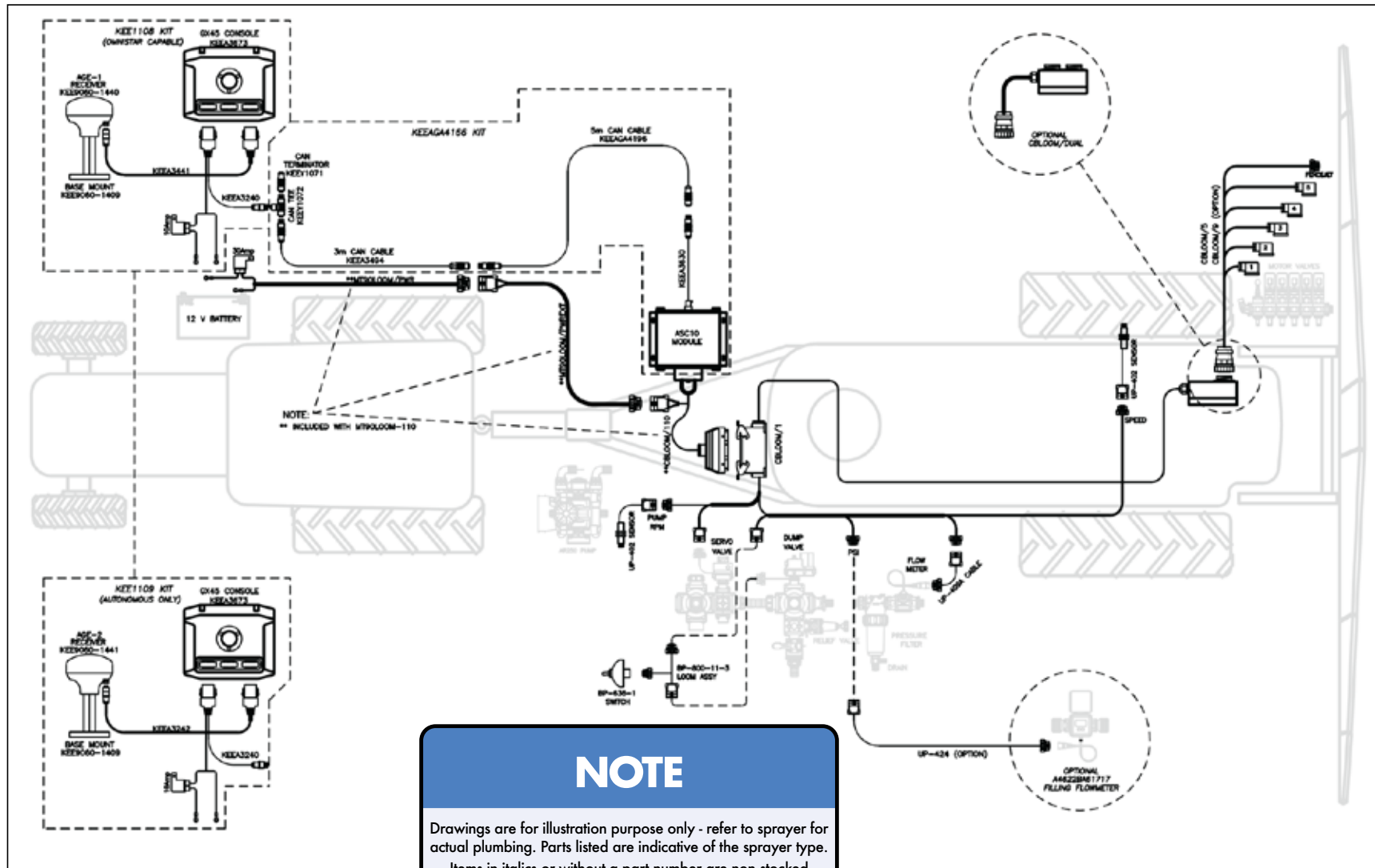
CBLOOM/BA70 OVERVIEW



SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

CBLOOM/110 OVERVIEW



NOTE

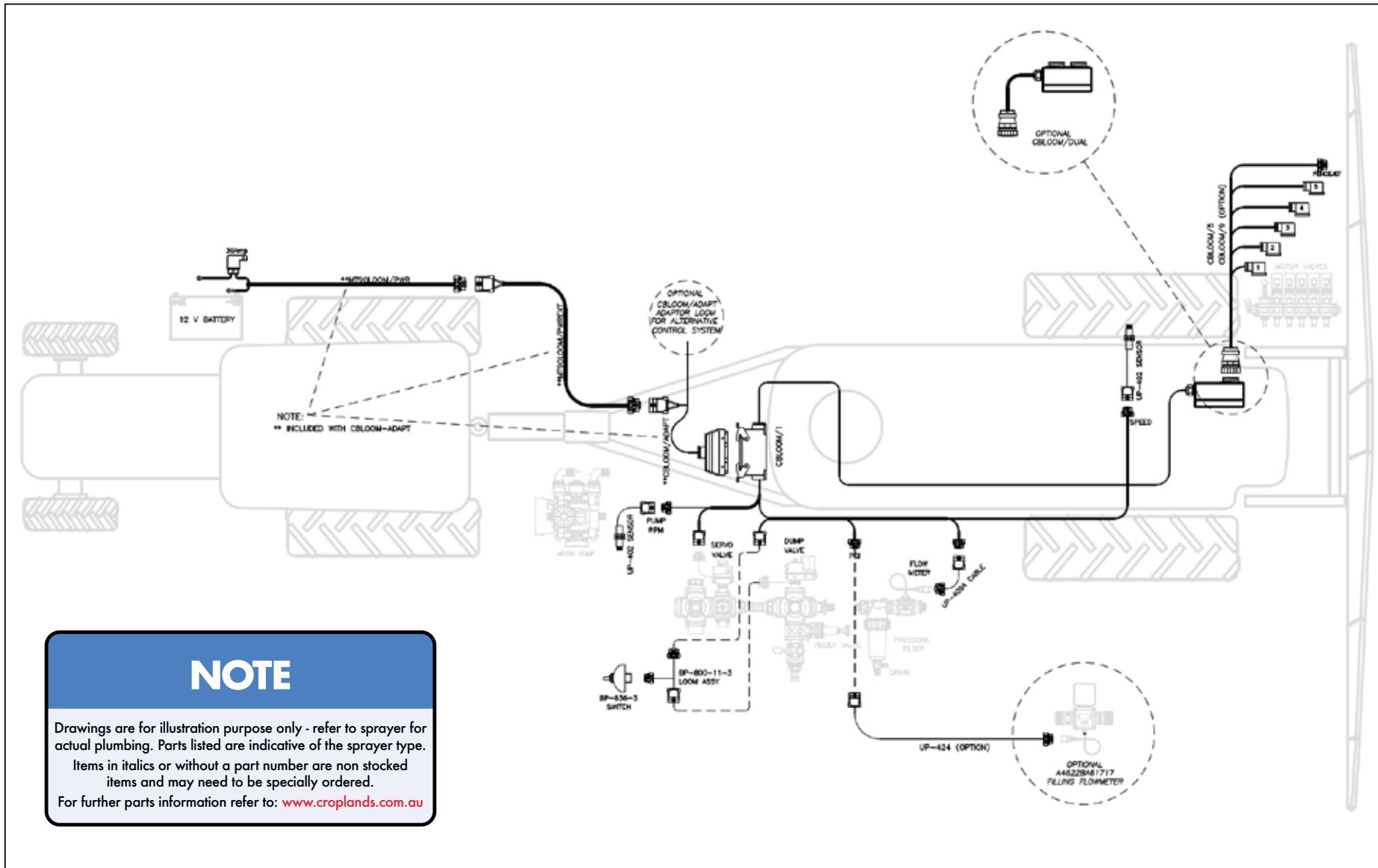
Drawings are for illustration purpose only - refer to sprayer for actual plumbing. Parts listed are indicative of the sprayer type. Items in italics or without a part number are non stocked items and may need to be specially ordered. For further parts information refer to: www.croplands.com.au

Please contact Technical support for further details

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

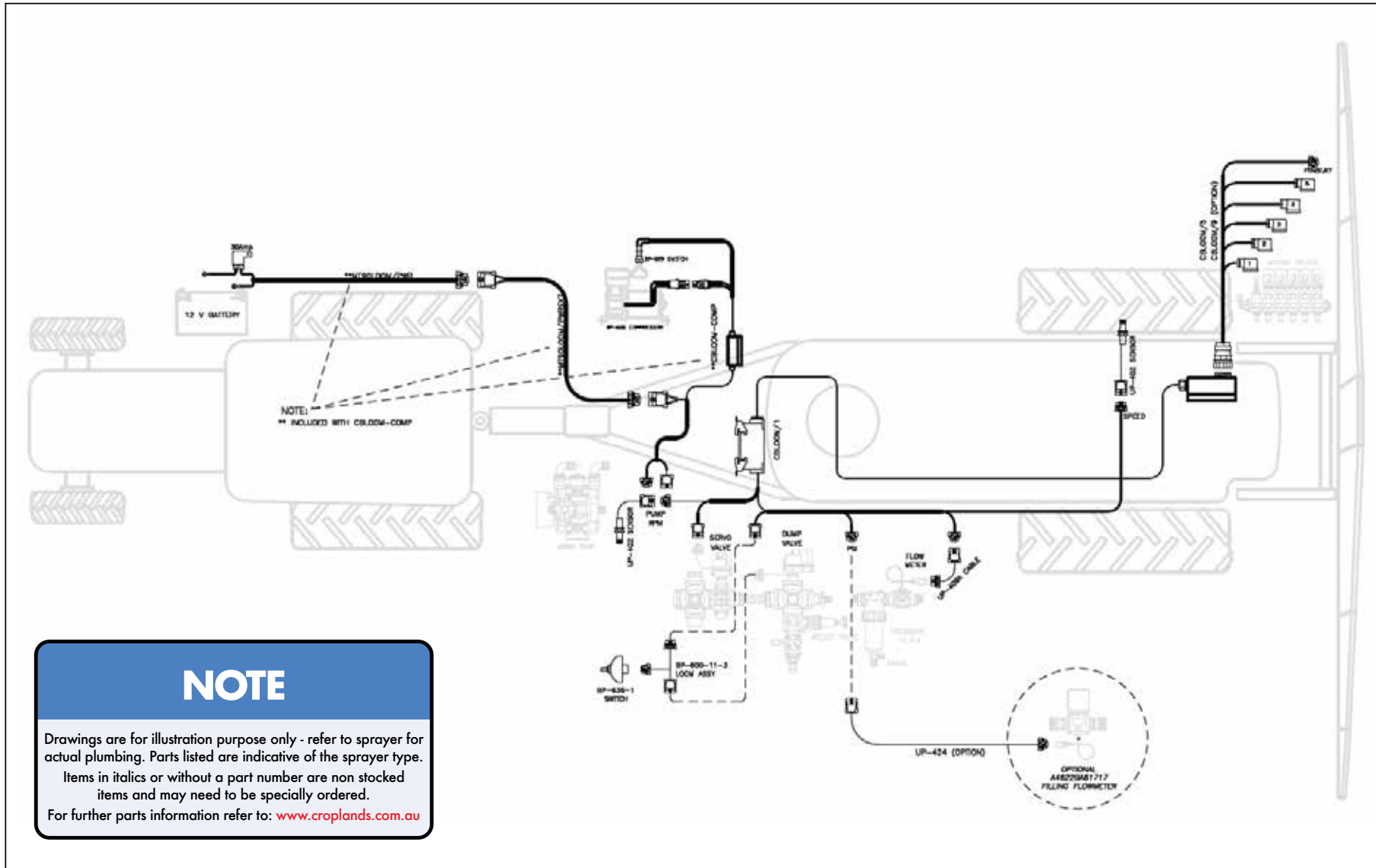
CBLOOM/GS2 OVERVIEW



SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

CBLOOM/COMP OVERVIEW



Please contact Technical support for further details

SECTION 10

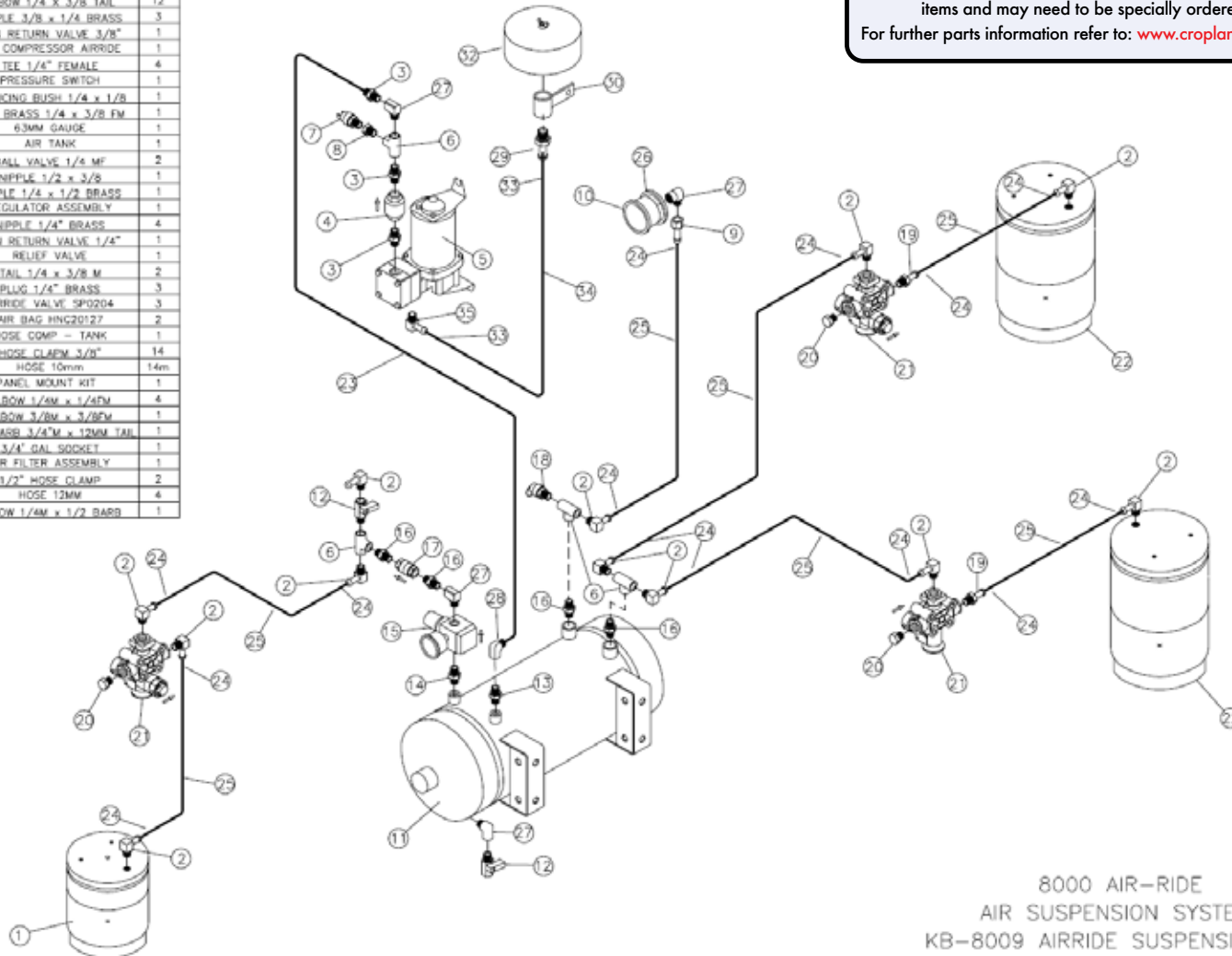
ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

KB-8009 AIRRIDE SYSTEM

NOTE

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ITEM	PART NUMBER	DESCRIPTION	QTY.
1	BP-6088	AIRRAG SPRING S-21208	1
2	TFEL1438	ELBOW 1/4 X 3/8 TAIL	12
3	TFM3814	NIPPLE 3/8 X 1/4 BRASS	3
4	FM-NRV	NON RETURN VALVE 3/8"	1
5	BP-606	AIR COMPRESSOR AIRRIDE	1
6	TFI1414FF	TEE 1/4" FEMALE	4
7	BP-609	PRESSURE SWITCH	1
8	TRB1418NPT	REDUCING BUSH 1/4 X 1/8	1
9	TFA1438F	TAIL BRASS 1/4 X 3/8 FM	1
10	L-01421	63MM GAUGE	1
11	BP-620A	AIR TANK	1
12	BALL14MF2M	BALL VALVE 1/4 MF	2
13	TFM1238	NIPPLE 1/2 X 3/8	1
14	TFM1412	NIPPLE 1/4 X 1/2 BRASS	1
15	FM-403	REGULATOR ASSEMBLY	1
16	TFM1414	NIPPLE 1/4" BRASS	4
17	FM-NRV14	NON RETURN VALVE 1/4"	1
18	BP-622	RELIEF VALVE	1
19	TFA1438	TAIL 1/4 X 3/8 M	2
20	TFP14	PLUG 1/4" BRASS	3
21	BP-610	AIRRIDE VALVE SP0204	3
22	BP-808	AIR BAG HING20127	2
23	BP-854	HOSE COMP - TANK	1
24	TR38HC	HOSE CLAMP 3/8"	14
25	HPW10	HOSE 10mm	14m
26	PR71-6	PANEL MOUNT KIT	1
27	TFEL1414MF	ELBOW 1/4M X 1/4FM	4
28	TFEL3838MF	ELBOW 3/8M X 3/8FM	1
29	A-A3412	HOSEBARR 3/4" X 12MM TAIL	1
30	FM-FD SOCKET	3/4" GAL SOCKET	1
32	BP-623	AIR FILTER ASSEMBLY	1
33	TR12HC	1/2" HOSE CLAMP	2
34	HPW12	HOSE 12MM	4
35	TFEL1412	ELBOW 1/4M X 1/2 BARR	1

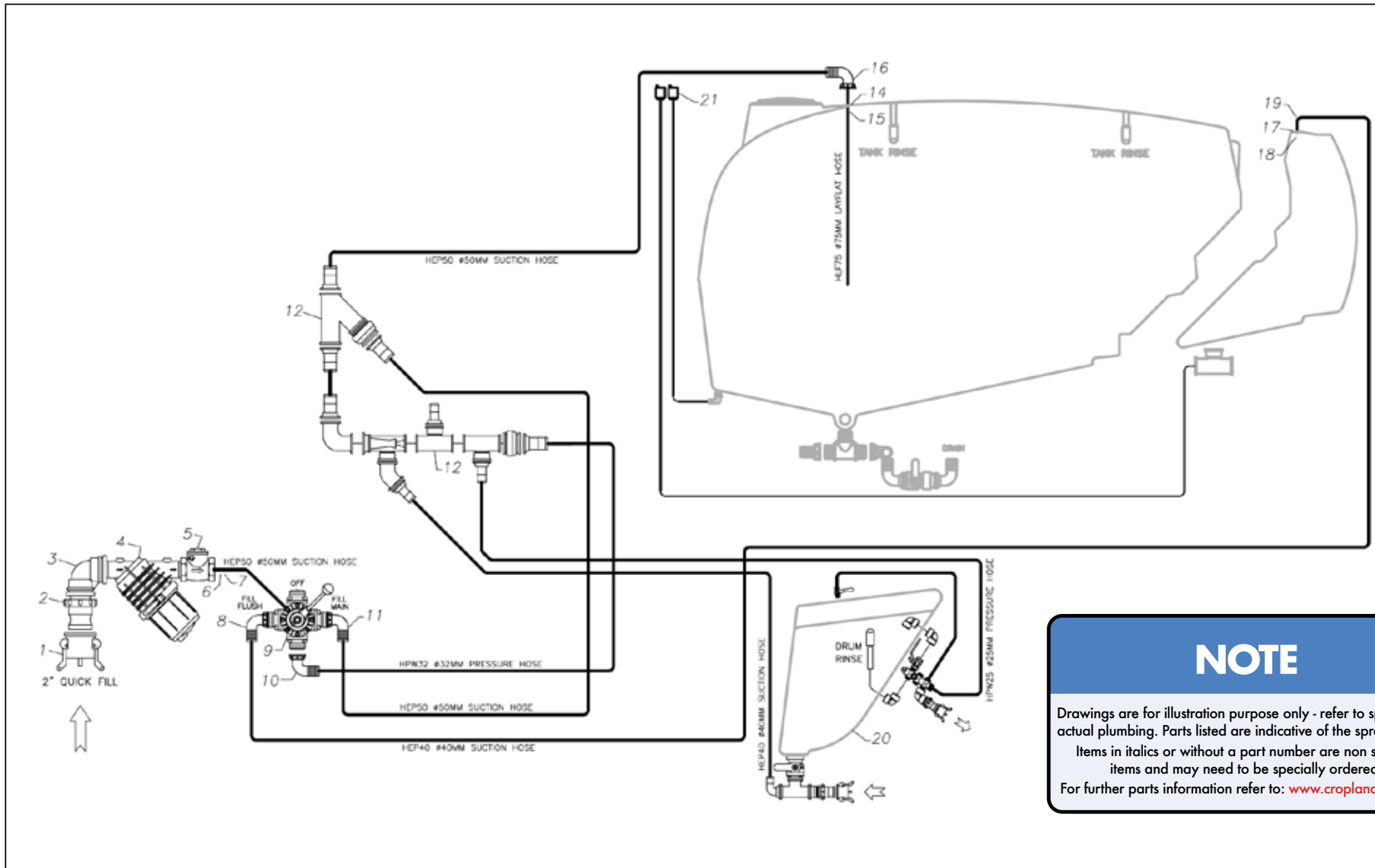


8000 AIR-RIDE
AIR SUSPENSION SYSTEM
KB-8009 AIRRIDE SUSPENSION KIT

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

LIQUID FILLING SYSTEM



NOTE

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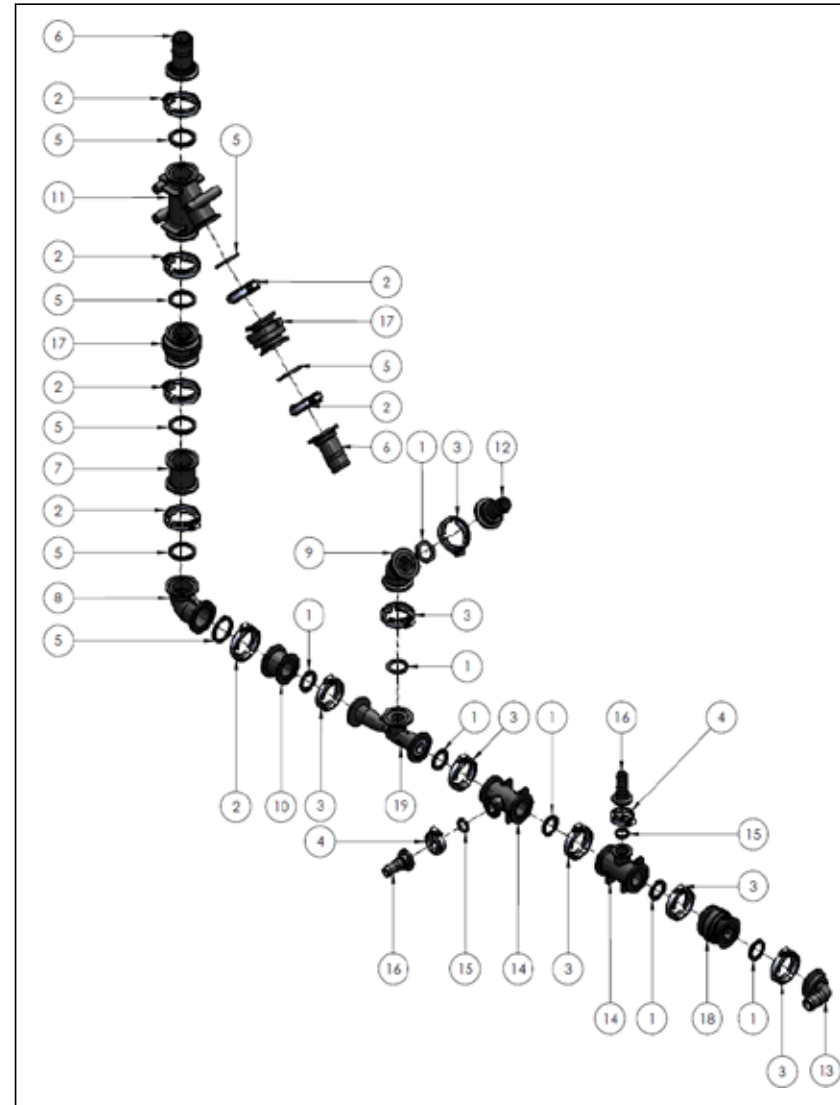
SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

HOPPER VENTURI MANIFOLD

NOTE

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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BJ150G	GASKET EPDM 200 SERIES	7
2	BJFC220	WORM SCREW CLAMP 2" FP	7
3	BJFC200	WORM SCREW CLAMP 2"	7
4	BJFC100	WORM SCREW CLAMP FLANGE 1" FP	2
5	BJM221G	MANIFOLD GASKET 2" FP RIB EPDM	7
6	BJM220BRB	MANIFOLD BARB 2" X 2" FP FLANGE	2
7	BJM220CPG	FULL PORT FLANGE 2"	1
8	RJM220CPG90	MANIFOLD COUPLING 2" FP X 2" FP	1
9	BJM200CPG45	FLANGE 2" 45 DEGREE	1
10	BJM220200CPG	MANIFOLD REDUCER 220 X 200	1
11	BJM220Y45	Y FLANGE 2" FULL PORT 45	1
12	BJM200150BRB	MANIFOLD BARB 2" X 1 1/2"	1
13	RJM200125RRB90	MANIFOLD FLOW 2" X 1 1/4" BARB	1
14	BJM200100TEE	MANIFOLD TEE 2" X 1"	2
15	BJM101G	MANIFOLD GASKET 1" RIB EPDM	2
16	BJM100BRB	FLANGE TO 1" BARB	2
17	BJMVCV220	MANIFOLD CHECK VALVE ASSY 2" FP	2
18	BJMVCV200	MANIFOLD CHECK VALVE ASSY 2"	1
19	BJMHV200	FLANGED VENTURI 1 1/2" HV150FLA	1

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

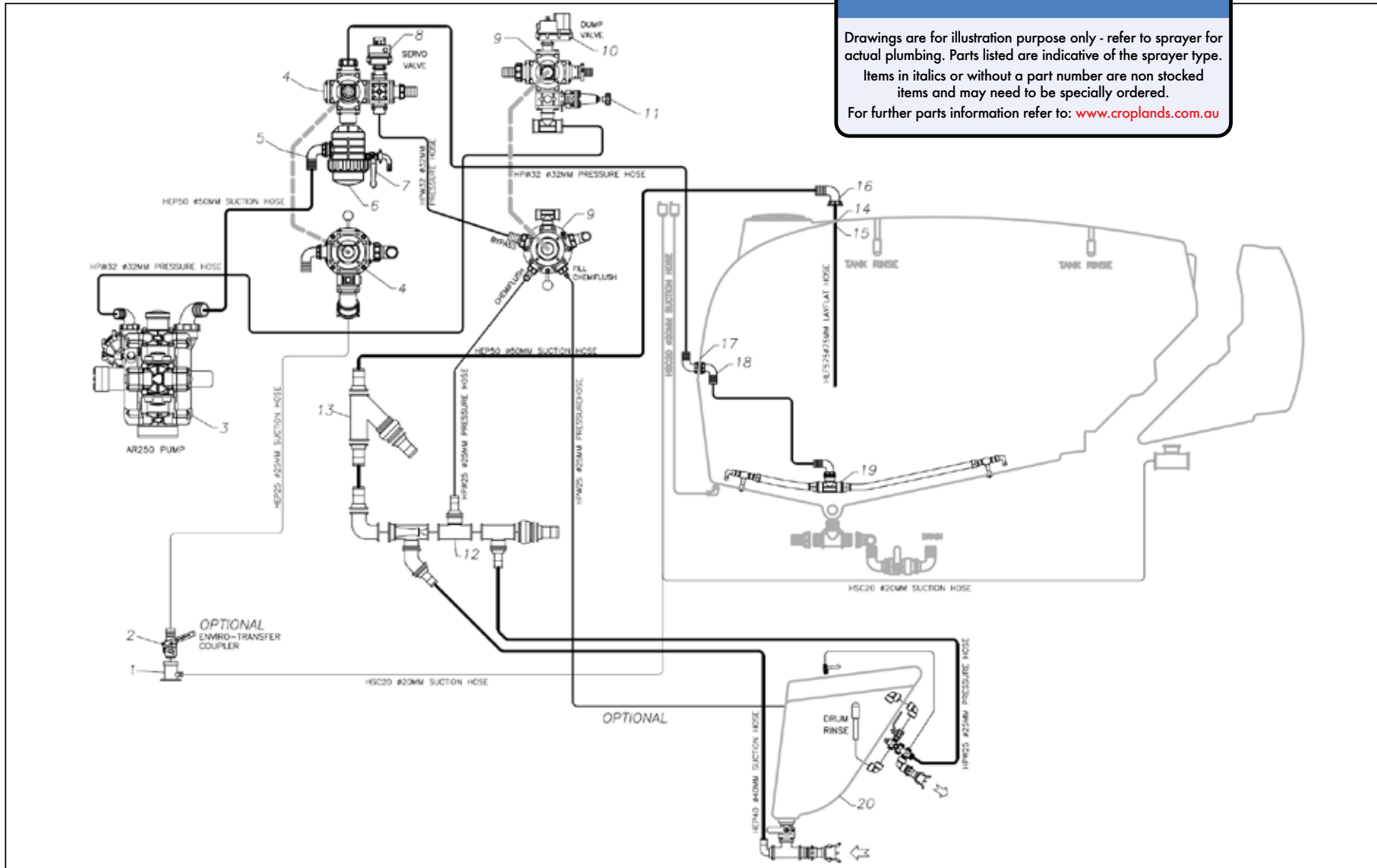
CHEMICAL TRANSFER SYSTEM

NOTE

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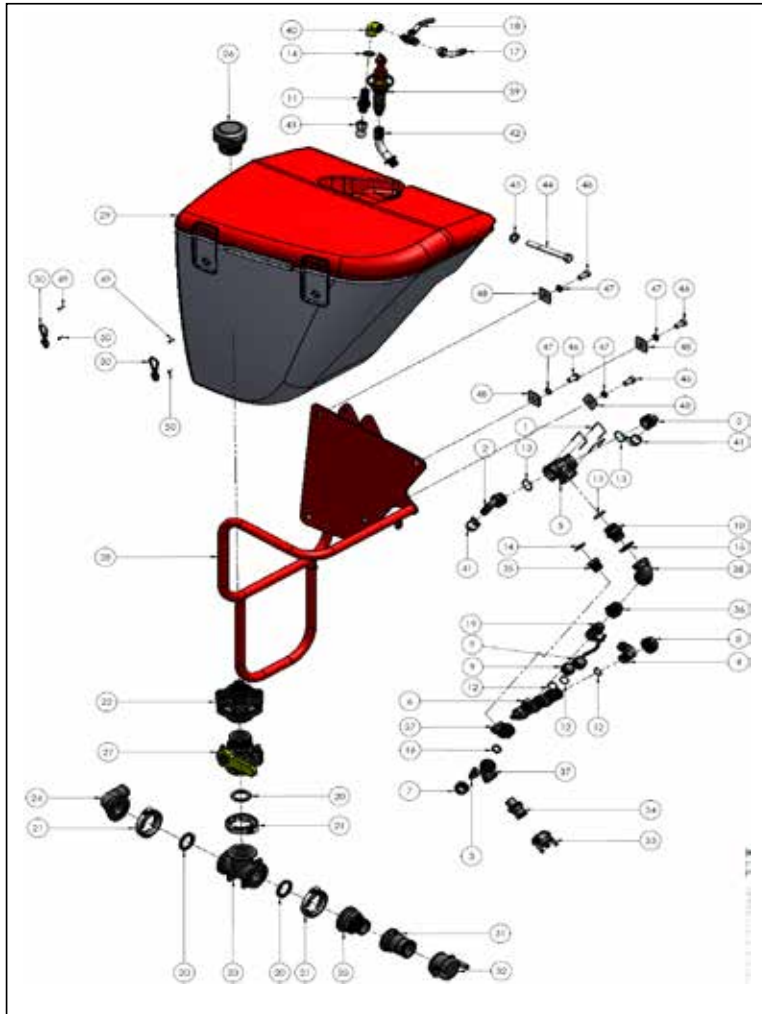


Please contact Technical support for further details

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

CHEMICAL-HOPPER



NOTE

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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	A010004	MANIFOLD FORK T4	3
2	A119420	ELBOW T4M .20	2
3	A115313	ELBOW 13MM X FLAT SEAT	1
4	A116425	ELBOW 0.25 FOR FLY	1
5	A139044	TEE T4F	1
6	A152643	FITTING 6 WAY	1
7	A200090	FLY NUT 3/4"	1
8	A200040	FLY NUT 1"	1
9	A210090	CAP BLANK 3/4"	2
10	A249144	HOSETAIL T4M 1" M	1
11	A250021	NIPPLE 1/2"	1
12	AG10041	O RING 1"	3
13	AG11054V	O RING VITON	3
14	AG40002	FLAT SEAL 1/2" EPDM	2
15	AG40004	FLAT SEAL 1" EPDM	1
16	AG40013	FLAT SEAL EPDM 25DIA	1
17	B163.604.13	ELBOW 1/2" C/W HEX NUT 1/2"	1
18	B165.1501.7	BALL VALVE 1/2" X 1/2" LH	1
19	B176.1501.11	BALL VALVE 3/4" MALE FEMALE	1
20	BJ150G	GASKET 1 1/2"	3
21	BJFC200	NORM CLAMP FLANGE 2"	3
22	BJBF2008D	FLANGE TANK FITTING 2"	1
23	BJM200TEE	MANIFOLD TEE 2"	1
24	BJM2001S08R890	MANIFOLD ELBOW 2" X 1 1/2" BARB	1
25	BJM2001S0MPT	MANIFOLD 2" FLANGE- 1 1/2" MALE	1
26	BJVC200	ANTI VORTEX FITTING 2"	1
27	BJV3MT200CF	BALL VALVE 2" STUBBY FLANGE	1
28	BP-800-11-2	HOPPER BRACKET	1
29	BP-811	HOPPER TANK, 100LT PEGASUS 8000	1
30	BP-811-1	ELASTIC TIE DOWN WITH ROUND HOOK	2
31	K-150-A	CAMLOCK 1 1/2" FEMALE THREAD "A"	1
32	K-150-CAP	CAMLOCK 1 1/2" CAP "DC" POLY	1
33	K-075-CAP	CAMLOCK 3/4" CAP "DC" POLY GLASS	1
34	K-075-F	CAMLOCK 3/4" MALE THREAD "F" POLY	1
35	PH4121	REDUCING BUSH 3/4" X 1/2"	1
36	PH4132	REDUCING BUSH 1" X 3/4"	1
37	PH4622	ELBOW 3/4" FEMALE	2
38	PH4632	ELBOW 1"	1
39	POL6M41169V	RINSING NOZZLE WITH SOV	1
40	TFEL1212F	ELBOW 1/2" BSPF X 1/2" BSPF	1
41	TR34HC	HOSE CLAMP 20MM 3/4" WORM DRIVE	2
42	UP-142B	STEM RINSING NOZZLE 100LT HOPPER	1
43	V3M-1/2-44	RINSING NOZZLE	1
44	M14X150	M14 X 150 BOLT HT 2P	2
45	M14FWASHER	M14 FLAT WASHER 2P	2
46	M12X25	M12 X 25 SET SCREW HT 2P	4
47	M12SWASHER	M12 SPRING WASHER 2P	4
48	40SQWASHER	40MM SQUARE WASHER	4
49	M4X16CSSCREW	M4 X 16 COUNTER SUNK HEAD SCREW S/S	2
50	M4X12BHSREW	M4 X 12 BUTION HEAD SCREW S/S	2

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

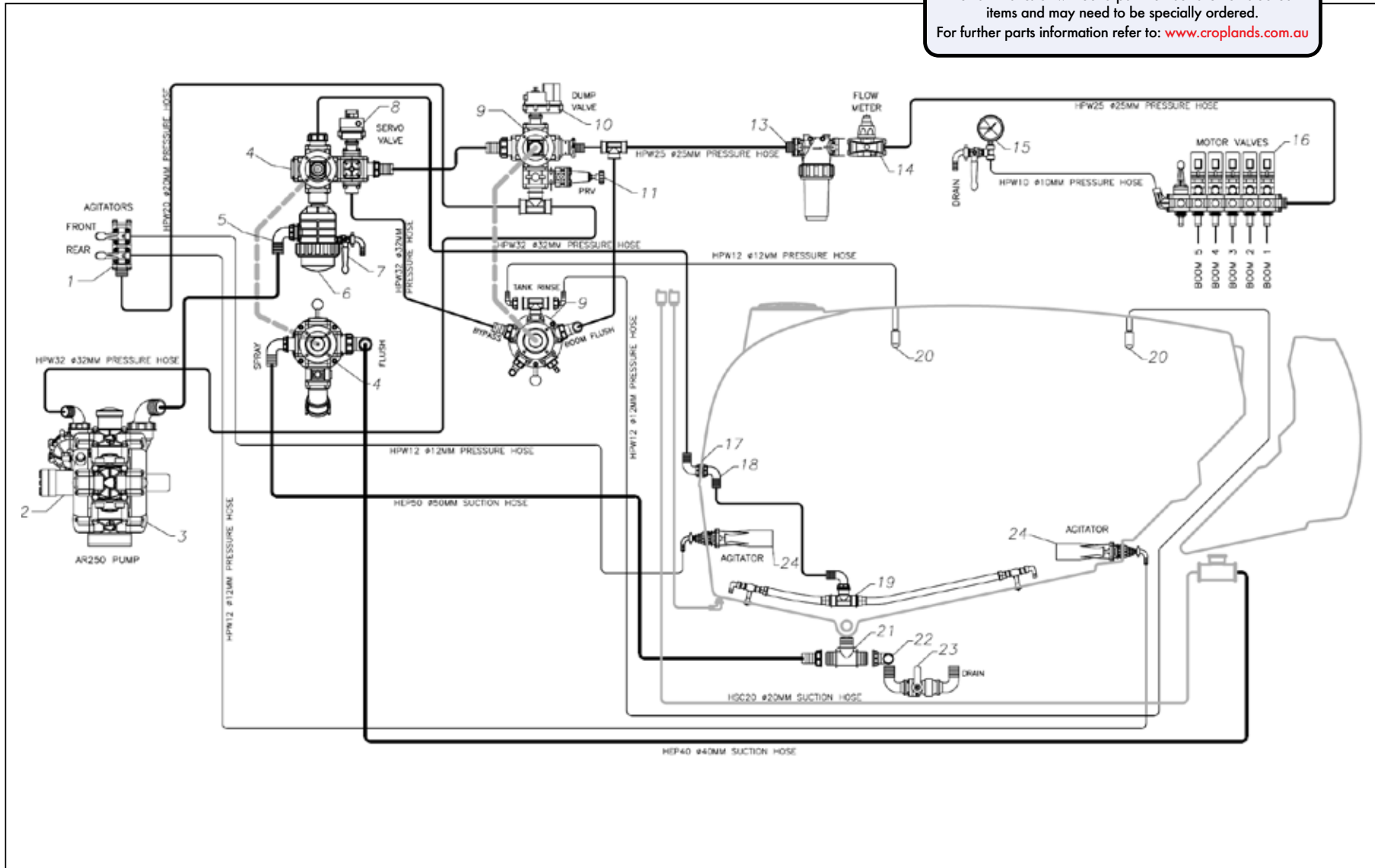
LIQUID CONTROL SYSTEM

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SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

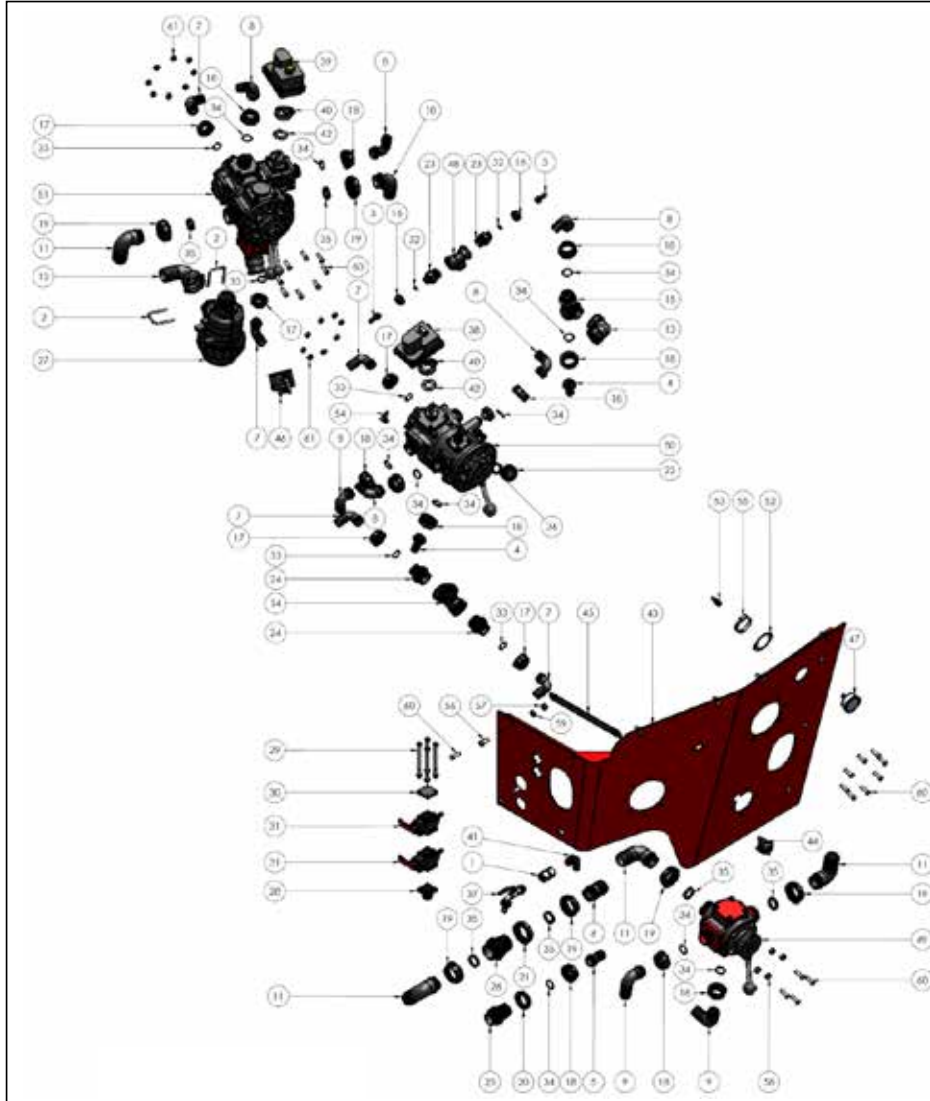
CONTROL PANEL

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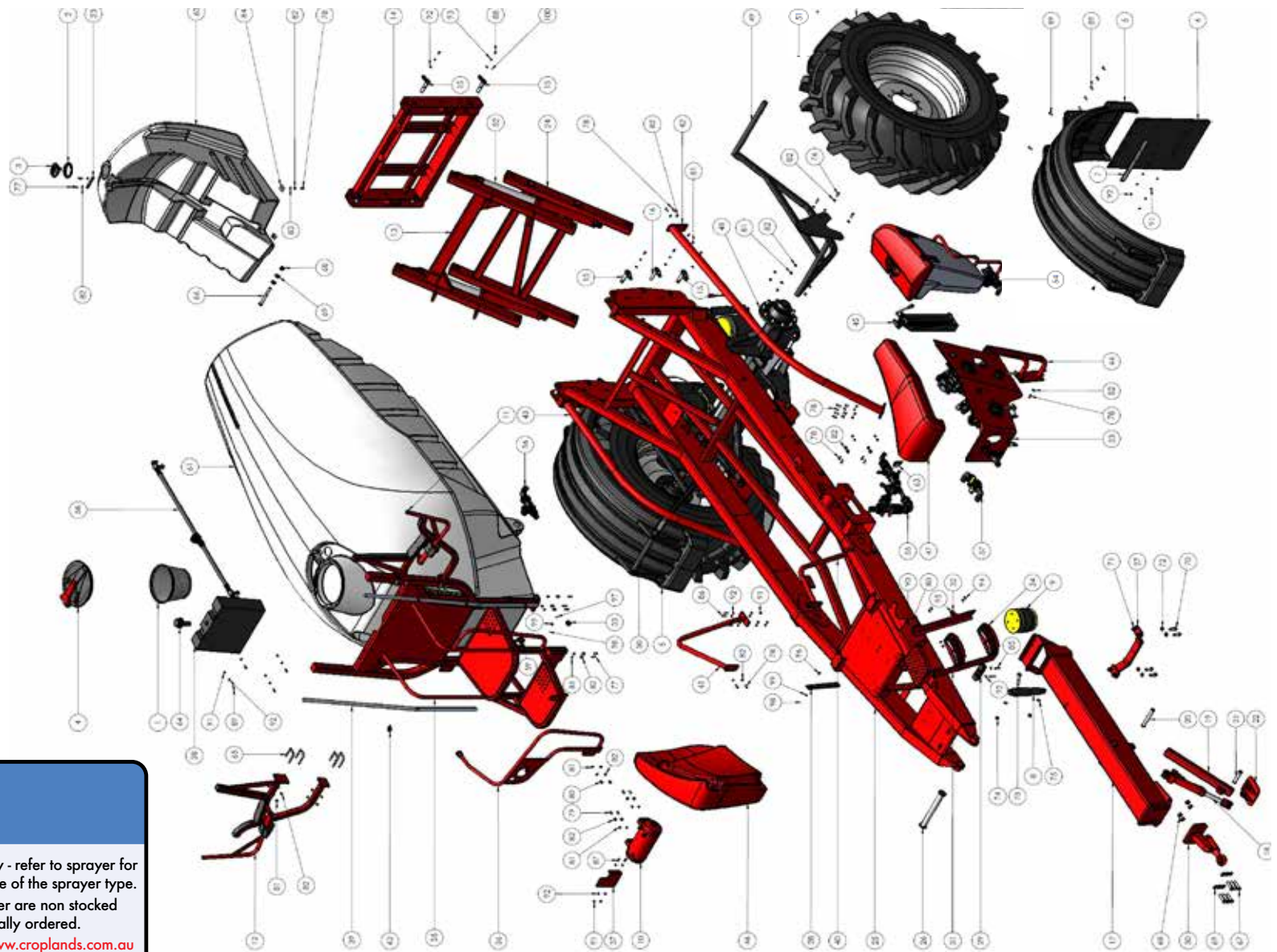


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	A-C5340D	SOCKET BSP 3/4" NYLON	1
2	A010007	FORK D.5 INTRN.5P	2
3	A106313	TAIL 3/4" TO 13MM	2
4	A104625	TAIL 1 1/2" TO 25MM	2
5	A106633	TAIL 1 1/2" TO 32MM	1
6	A106750	TAIL 2" TO 50MM	1
7	A116533	ELBOW 1 1/4" - 32MM HOSE	5
8	A116633	ELBOW (32MM HOSE)	6
9	A116640	ELBOW 1 1/2"	2
10	A116740	ELBOW	1
11	A116750	ELBOW 2"	4
12	A1190750	ELBOW 1/2" D.50	1
13	A120065	ELBOW 1 1/2" X 1 1/2" FEMALE THREAD	1
14	A130060	TEE 1 1/2" X 1 1/2" FEMALE THREAD	1
15	A1312090	TEE 1 1/2" MALE	1
16	A200030	FLY NUT 3/4"	2
17	A200050	FLY NUT 1 1/4"	5
18	A200060	FLY NUT 1 1/2"	11
19	A200070	FLY NUT 2"	6
20	A205060	BACK NUT 1 1/2"	1
21	A205070	BACK NUT 2"	1
22	A210050	BLANK CAP 1 1/4"	1
23	A245034	NIPPLE 1" - 3/4" REDUCING	2
24	A2450065	REDUCER NIPPLE 1 1/2"-1 1/4"	2
25	A250061	NIPPLE 1 1/2"	1
26	A250071	NIPPLE 2"	1
27	A3160F3	FILTER SECTION 17 50MM	1
28	A463000 D40	FLANGE 463 SERIES F BSP	1
29	A463000 Y20	BOUNTING EE 2 VALVE	1
30	A463011 120	CLOSED ADAPTOR	1
31	A463051	VALVE MANUAL 13MM TAIL	2
32	AG100031	O RING 3/4"	2
33	AG100051	O RING 1 1/4"	5
34	AG100061	O RING 1 1/2"	11
35	AG100071	O RING 2"	12
36	AG40003	FLAT SEAL 3/4" EPDM	1
37	B411348B	BALL BEARING 3/4"	1
38	B4EVR100	MOTOR ON/OFF VALVE 1.25SEC 3 WIRE	1
39	B4EVR102	MOTOR/SERVO VALVE 6 SECTION 2 WIRE	1
40	B4EVC100	WORM SCREW CLAMP FLANGE 1" FF	2
41	B41B075-50	ELBOW 3/4" NPT X 3/4" BARB	1
42	B4MVR004	GASSET ELECTRIC MOTOR	2
43	BP-000-11	PANEL VALVE	1
44	BP-000-11-3	SWITCH & LOCK ASSY BOOM FLUSH	1
45	BP-006-1	BOLTING PLATE COVER	3
46	E-200-CAF	CAMELOCK 2" CAP "DC" POLY GLASS	1
47	L-G1401	GAINGE 63MM D-1400KPA 1/4" CRN	1
48	PH4530	TEE 1" FEMALE THREAD	1
49	POLV10290600	POLYMAC 2" 5 WAY VALVE	1
50	POLV102C4000	VALVE DOUBLE PRESSURE	1
51	POLV102C7000	VALVE DOUBLE SUCTION	1
52	PR21-6	PANEL MOUNT KIT 63MM	1
53	TA11438F	TAIL BRASS 1/4" BSP X 3/8" TAIL	1
54	TPE11438	ELBOW 1/4" BSP X 3/8" TAIL	1
55	TR2HC	HOSE CLAMP 50MM 2" WORM DRIVE	1
56	M12X30BH6SCREW	M12 X 30 BUTTON HEAD SCREW S/S	5
57	M12NUT	M12 NYLOC NUT HI ZP	5
58	M12HNUT	M12 HBX NUT HI ZP	4
59	M12FWASHER	M12 FLAT WASHER ZP	5
60	M10X35BH6SCREW	M10 X 35 BUTTON HEAD SCREW S/S	26
61	M10NUT	M10 HBX NUT HI ZP	16

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

CHASSIS, TANK & WHEELS



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SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

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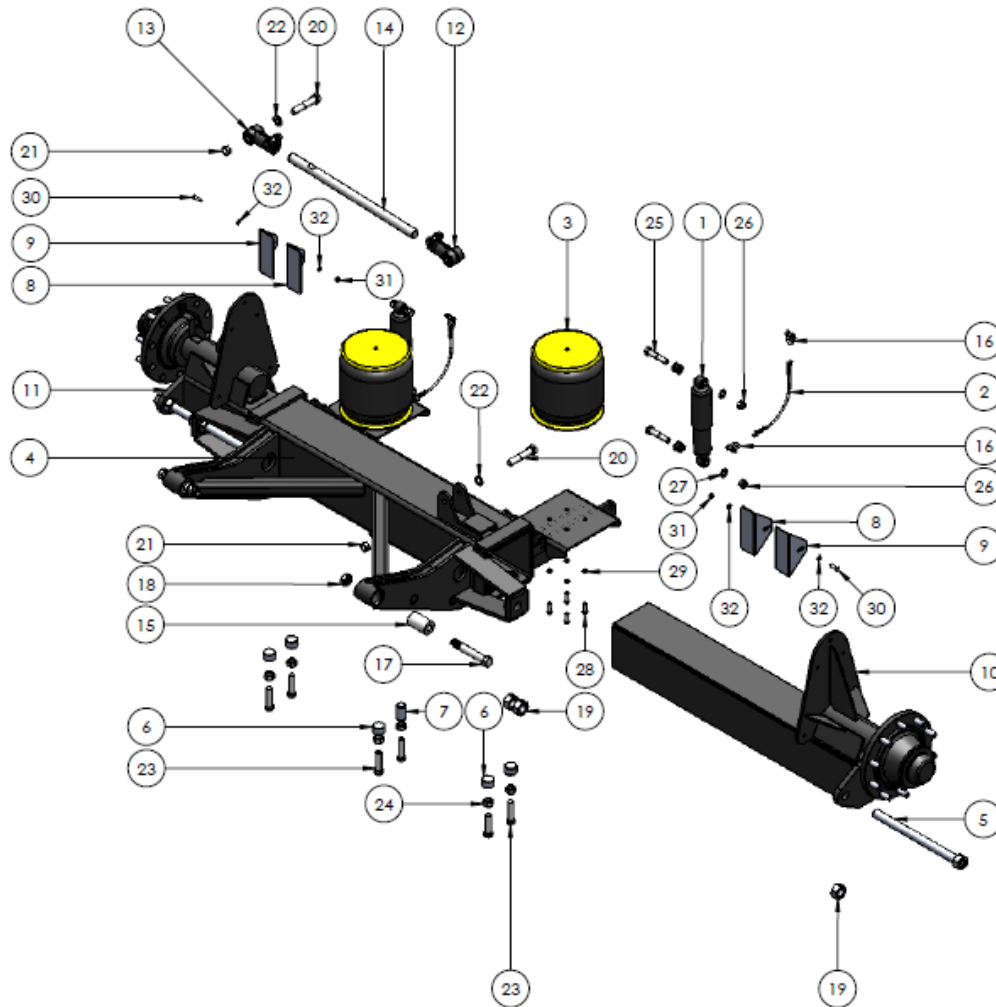
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	A300130	FILTER BASKET LARGE 254MM DEEP	1
2	A350401	LID RING 159MM	1
3	A352002	LID BREATHER SPRING VALVES	1
4	A356060	LID HINGED 180 DEGREE 455MM	1
5	BP-524D	MUDGUARD POLY 1150MM RADIUS	2
6	BP-542B	MUDFLAP 720 X 900 BLACK	2
7	BP-542B-1	MUDFLAP STRAP	2
8	BP-607	SHOCK ABSORBER AIR RIDE P126	1
9	BP-608B	AIRBAG SPRING	1
10	BP-620	AIR TANK HK JADE	1
11	BP-700-13L	PARKING BRACKET L.H. 33/36M AB191	1
12	BP-700-13R	PARKING BRACKET RH 33/36 AB191	1
13	BP-700-8A	UPPER PARALLELOGRAM ARM PEGASUS	1
14	BP-700-8C	REAR PARALLELOGRAM SECTION PEGASUS	1
15	BP-700-9AA	PIN 30MM X 155MM HAYLITE	8
16	BP-700-9BA	PIN 1" DIA X 155MM HAYLITE	2
17	BP-800-1	DRAWBAR 8000LT PEGASUS	1
18	BP-800-1-1	HYDRAULIC CYLINDER 2.5 X 8 JACK STAND	1
19	BP-800-1-2	DROP LEG ARM 8000LT PEGASUS	1
20	BP-800-1-2-1	PIN DROP LEG UPPER 8000LT PEGASUS	1
21	BP-800-1-2-2	DROP LEG BOTTOM PIN	1
22	BP-800-1-3	DROP LEG SWIVEL 8000LT PEGASUS	1
23	BP-800-12	PIN FLUSH TANK	1
24	BP-800-13	PARALLELOGRAM H FRAME LOWER 8000LT	1
25	BP-800-2	CHASSIS 8000LT PEGASUS	1
26	BP-800-2-1	PIN DRAWBAR 8000LT PEGASUS	1
27	BP-800-2-2	BRACKET MOUNTING AIRBAG DRAWBAR	1
28	BP-800-2-3	WEAR PAD DRAWBAR	2
29	BP-800-2-4	RUBBER BUFFER DRAWBAR 57601	1
30	BP-800-3	TOW EYE SWIVEL 8000LT PEGASUS	1
31	BP-800-4L	SIDE FRAME STEP LH	1
32	BP-800-4R	SIDE FRAME STEP RH	1
33	BP-800-4-1	STEP BUMPER (0666-002/0666-001)	1
34	BP-800-4-2	STEP CAST 8000LT PEGASUS	2
35	BP-800-6	PLATFORM 8000LT PEGASUS	1
36	BP-800-6-1	HAND RAIL PLATFORM	1
37	BP-800-6-2	BRACKET MOUNTING AIR COMPRESSOR	1
38	BP-800-6-4	TANK HAND WASH 35LT	1
39	BP-800-6-5	PERSPEX TUBE 38.1 X 34.9 X 3000MM	2
40	BP-800-7	LEFT FRONT RAIL	1
41	BP-800-8	SIDE RAIL FRONT RH	1
42	BP-800-9	SIDE RAIL REAR LH	1
43	BP-800-10	SIDE RAIL REAR RH	1
44	BP-800-11-1	BRACKET PANEL & HOPPER	1
45	BP-800-11-4	DROPDOWN BRACKET 8000LT PEGASUS	1
46	BP-805	TOOLBOX SIDE PANEL 8000LT PEGASUS	1
47	BP-806	VALVE PANEL COVER FIBREGLASS	1
48	BP-809	AIR RIDE ASSEMBLY 8000LT PEGASUS	1
49	BP-809-5L	MUDGUARD BRACKET LH	1
50	BP-809-5R	MUDGUARD BRACKET RH	1

51	BP-810	WHEEL ASSY 710 X 42 70R	2
52	HP-019B	PTE HYD DISPLACEMENT CYLINDER 3.0 X 20	2
53	KB-8001-2	PANEL SUB ASSEMBLY KIT	1
54	KB-8003	HOPPER 100LT 8000LT PEGASUS	1
55	KB-8004	HOPPER VENTURI MANIFOLD SUB ASSY	1
56	KB-8005	SUMP SUCTION & DRAIN KIT	1
57	KB-8006	SUMP DRAIN KIT	1
58	KB-8007	SPARGE TUBE KIT	1
59	L-H9556	RINSING SOCKET K2DV1-002	1
60	P600A-RAW	TANK 600LT FLUSHING TANK 8000 PEGASUS	1
61	P8000-RAW	TANK 8000LT POLY RAW PEGASUS	1
62	TR3GU138W5	F CLAMP 38MM RUBBER SLEEVE S/S	6
63	UP-134	U-BOLT EXHAUST CLAMP C11 2 3/8"	1
64	UP-167A	PLASTIC CAP W/ STRAINER STAUFF	1
65	XBMBB75	U-BOLT 75MM X 10	8
66	M24X220	M24 X 220 HEX BOLT HT ZP	1
67	M24X90	M24 X 90 HEX SCREW HT ZP	6
68	M24NNUT	M24 NYLOC NUT ZP	7
69	M24FWASHER	M24 FLAT WASHER ZP	14
70	M20X65	M20 X 65 SET SCREW HT ZP	4
71	M20NNUT	M20 NYLOC NUT HT ZP	4
72	M20FWASHER	M20 FLAT WASHER ZP	8
73	0.75X100UNCBOLT	3/4" X 4" UNC BOLT HT ZP	1
74	0.75UNCNNUT	3/4" UNC NYLOC NUT HT ZP	2
75	0.75FWASHER	3/4" FLAT WASHER ZP	7
76	M12X45	M12 X 45 SET SCREW HT ZP	8
77	M12X40	M12 X 40 SET SCREW HT ZP	13
78	M12X35	M12 X 35 SET SCREW HT ZP	26
79	M12X30	M12 X 30 SET SCREW HT ZP	4
80	M12X30BHSCREW	M12 X 30 BUTTON HEAD SCREW S/S	4
81	M12NNUT	M12 NYLOC NUT HT ZP	67
82	M12FWASHER	M12 FLAT WASHER ZP	118
83	M12SWASHER	M12 SPRING WASHER ZP	2
84	S0SQWASHER	50MM SQUARE WASHER	2
85	M10X60BOLT	M10 X 60 BOLT HT ZP	2
86	M10X35	M10 X 35 SET SCREW HT ZP	8
87	M10X30	M10 X 30 SET SCREW HT ZP	2
88	M10X20	M10 X 20 SET SCREW HT ZP	10
89	M10X35BHSCREW	M10 X 35 BUTTON HEAD SCREW S/S	22
90	M10X20SHSCREW	M10 X 20 SOCKET HEAD SCREW S/S	2
91	M10NNUT	M10 NYLOC NUT HT ZP	32
92	M10FWASHER	M10 FLAT WASHER ZP	58
93	M10SWASHER	M10 SPRING WASHER ZP	10
94	M8X30BHSCREW	M8 X 30 BUTTON HEAD SCREW S/S	8
95	M6X25	M6 X 25 BOLT S/S	1
96	M6CSHEADSCREW	M6 X 25 COUNTER SUNK HEAD SCREW	8
97	M6X20BHSCREW	M6 X 20 BUTTON HEAD SCREW S/S	1
98	M6NNUT	M6 NYLOC NUT	10
99	M6FWASHER	M6 FLAT WASHER ZP	12
100	M6GNIPPLE	M6 GREASE NIPPLE	10

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

AXLE



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BP-607	SHOCK ABSORBER AIR RIDE P126	2
2	BP-617A	LIMIT ROPE 6.3MM X 420LG	2
3	BP-808	AIR BAG HNC20127	2
4	BP-809-1	AXLE HOUSING- 8000LT PEGASUS	1
5	BP-809-1-2-13	M36 THREADED ROD	2
6	BP-809-1-1-19	AXLE LOCK BLOCK	5
7	BP-809-1-1-21	SPIGOT	1
8	BP-809-1-1-23	PACKER PLATE 5MM	2
9	BP-809-1-1-24	PACKER PLATE 3MM	2
10	BP-809-1-2L	STUB AXLE ASSEMBLY LH	1
11	BP-809-1-3R	STUB AXLE ASSEMBLY RH	1
12	BP-809-2L	TIE ROD END LH BUSHED 7/8"	1
13	BP-809-2R	TIE ROD END RH BUSHED 7/8"	1
14	BP-809-3	SUSPENSION TIE ROD	1
15	BP-809-4	FLEXIBLE BUSH AIR RIDE SUSPENSION	2
16	MP-564	DEE SHACKLE SIZE 10	4
17	WT1234	AIR RIDE AXLE BOLT M30 X 190	2
18	WT1235NL	AIR RIDE AXLE NYLOC NUT M30	2
19	M36HNUT	M36 HEX NUT	6
20	1.00X5UNCBOLT	1/2" X 1 1/2" UNC BOLT HT ZP	2
21	1.00UNCNUT	1" UNC HEX HALF NUT	2
22	1.00FWASHER	1" FLAT WASHER ZP	2
23	M24X75	M24 X 75 HEX SCREW HT ZP	6
24	M24HNUT	M24 HEX NUT HT ZP	6
25	0.75X100UNCBOLT	3/4" X 4" UNC BOLT HT ZP	4
26	0.75UNCNUT	3/4" UNC NYLOC NUT HT ZP	4
27	0.75FWASHER	3/4" FLAT WASHER ZP	20
28	0.50X1.50UNCSCREW	1/2" X 1 1/2" UNC SCREW HT ZP	8
29	M12SWASHER	M12 SPRING WASHER ZP	8
30	M10X40	M10 X 40 SET SCREW HT ZP	2
31	M10NNUT	M10 NYLOC NUT HT ZP	2
32	M10FWASHER	M10 FLAT WASHER ZP	4

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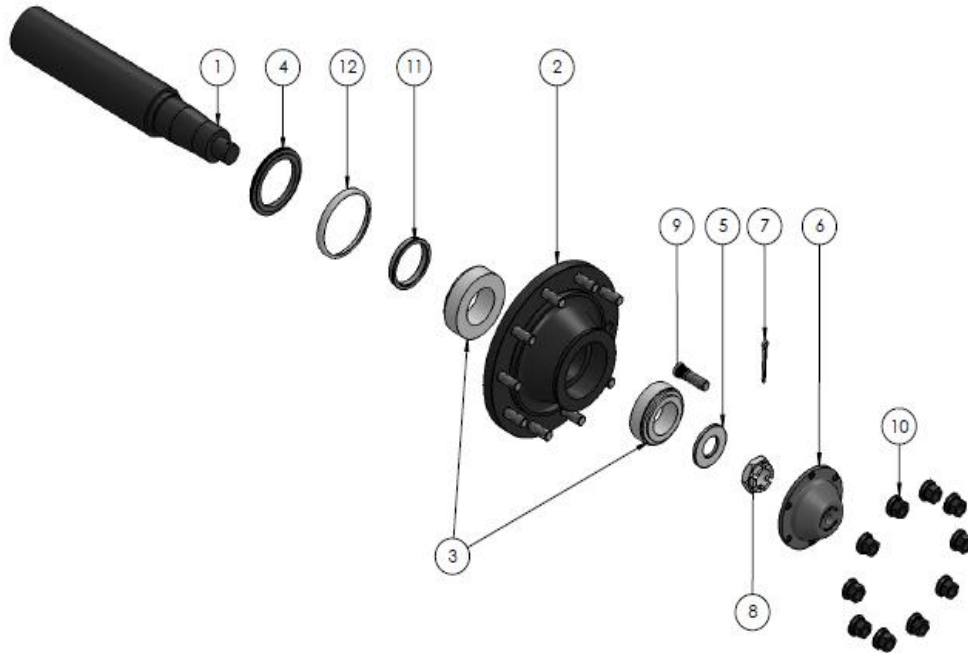
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SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

STUB-AXLE



STUB AXLE BP-809-1

Item	Part No.	Description
1	BP-809-1-1	STUB 110 ROUND x 627LG
2	BP-809-1-2	WHEELHUB 10/335 PCD
3	BP-809-1-3	BEARING Kit 33217/33215
4	BP-809-1-4	TRIPLE LIP SEAL 150x110x12mm
5	BP-809-1-5	WASHER O/D 96x8
6	BP-809-1-6	DUST CAP (6 screws items 13 and 14)
7	BP-809-1-7	SPLIT PIN 80x8mm
8	BP-809-1-8	SLOTTED NUT M45 X 2
9	BP-809-1-9	WHEEL STUD M22x1.5x85
10	BP-809-1-10	WHEEL NUT M22x1.5
11	BP-809-1-11	SEAL RING 95x110.5x16.5mm
12	BP-809-1-12	WEAR RING (to suit triple lip seal)
13	BP-809-1-13	SOCKET HEAD CAP SCREWS M8x20 (<i>not shown</i>)
14	BP-809-1-14	M8 RIB LOCK WASHERS (<i>not shown</i>)

NOTE

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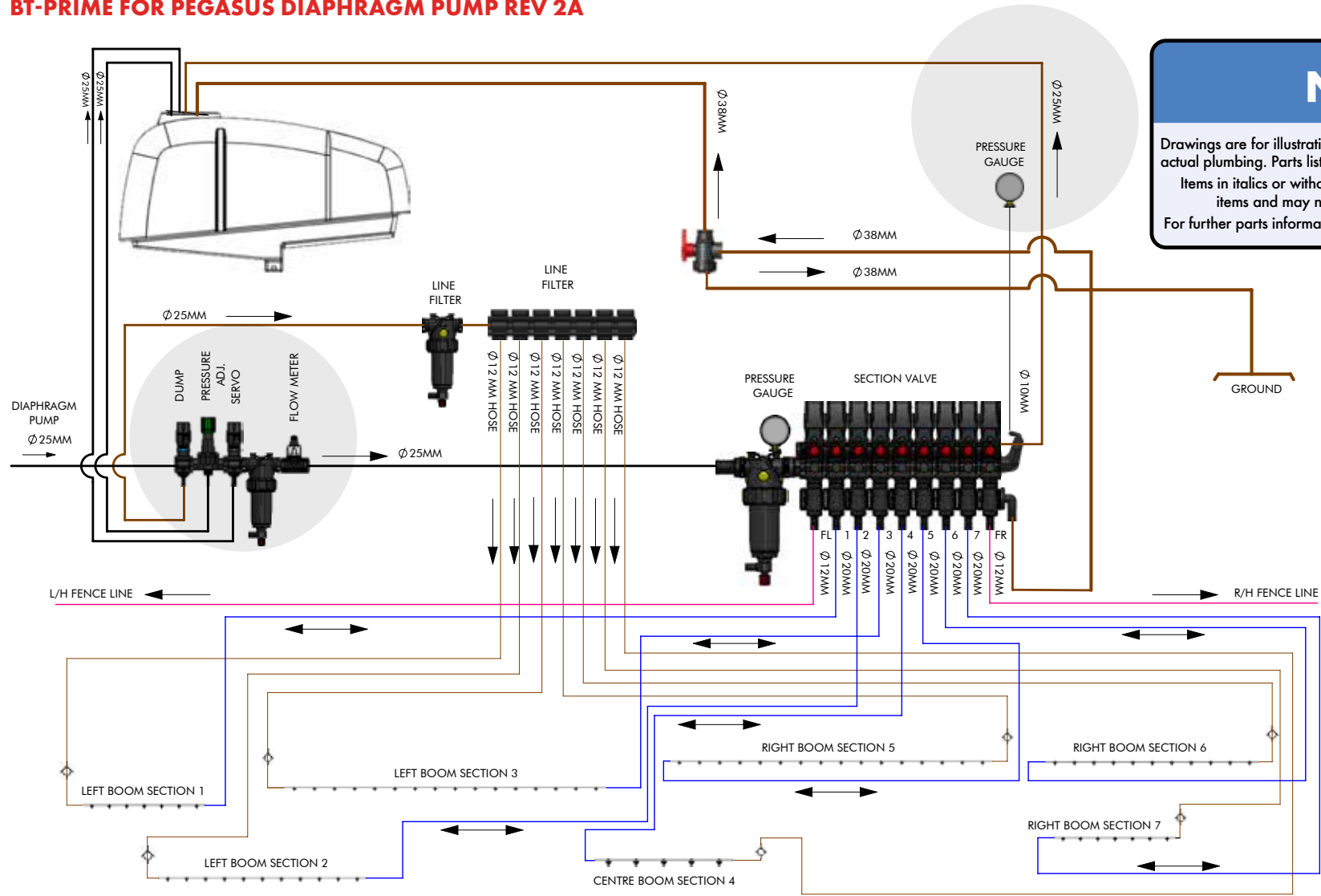
Items in italics or without a part number are non stocked items and may need to be specially ordered.

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

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

BT-PRIME FOR PEGASUS DIAPHRAGM PUMP REV 2A



NOTE

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This schematic is from the Pegasus 4000 ~ 7000 range. Whilst the concept remains the same, grey zone areas denoted plumbing variations to the Pegasus 8000. Refer to pages 38 ~ 40.

PRIMING LINE SPRAY LINE

YELLOW FILTER PN - A32621135.

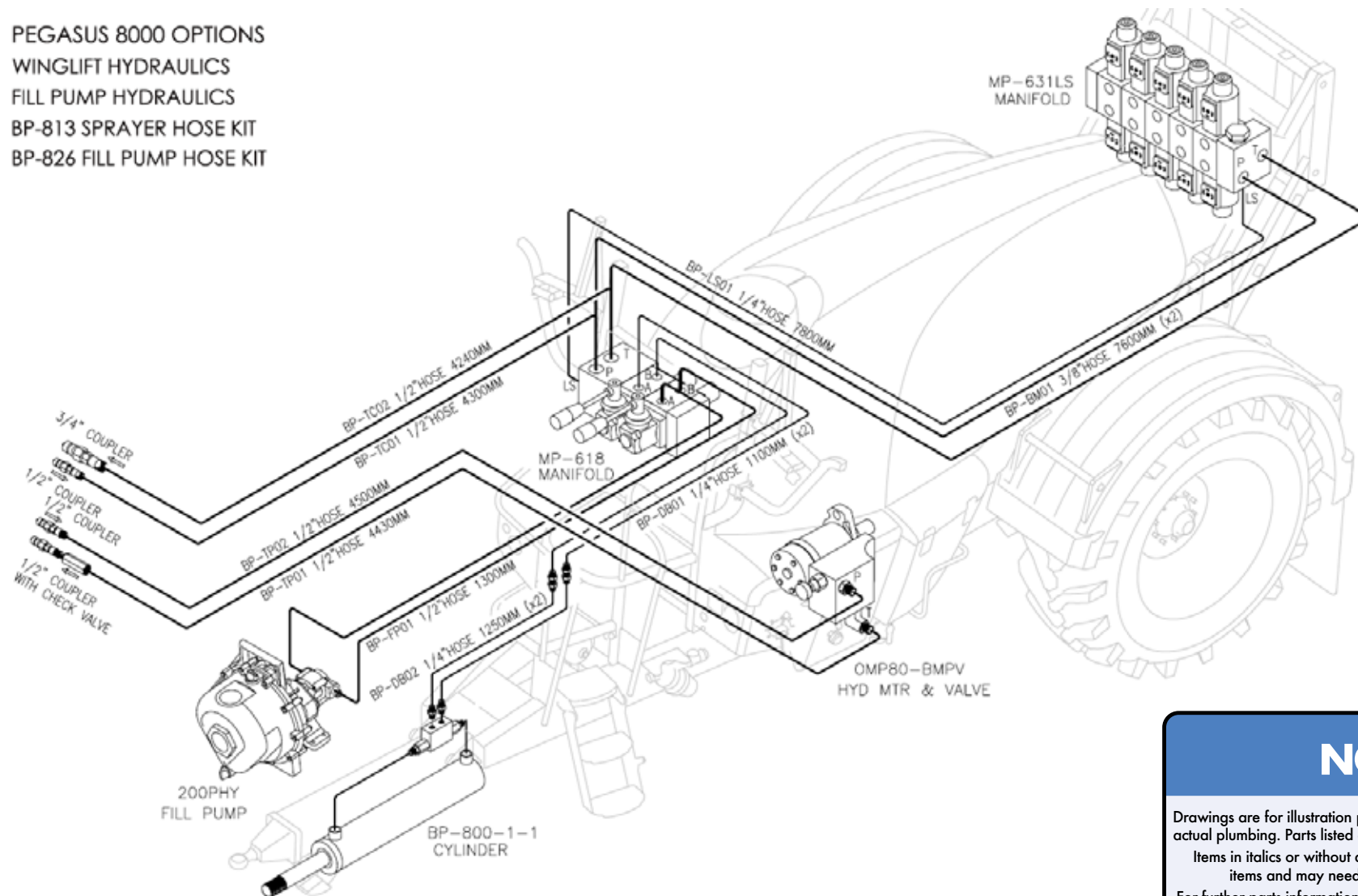
EACH NOZZLE BODY IS FITTED WITH 1.4 BAR / 20 PSI CHECK VALVE

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

HYDRAULIC LAYOUT

PEGASUS 8000 OPTIONS
WINGLIFT HYDRAULICS
FILL PUMP HYDRAULICS
BP-813 SPRAYER HOSE KIT
BP-826 FILL PUMP HOSE KIT



NOTE

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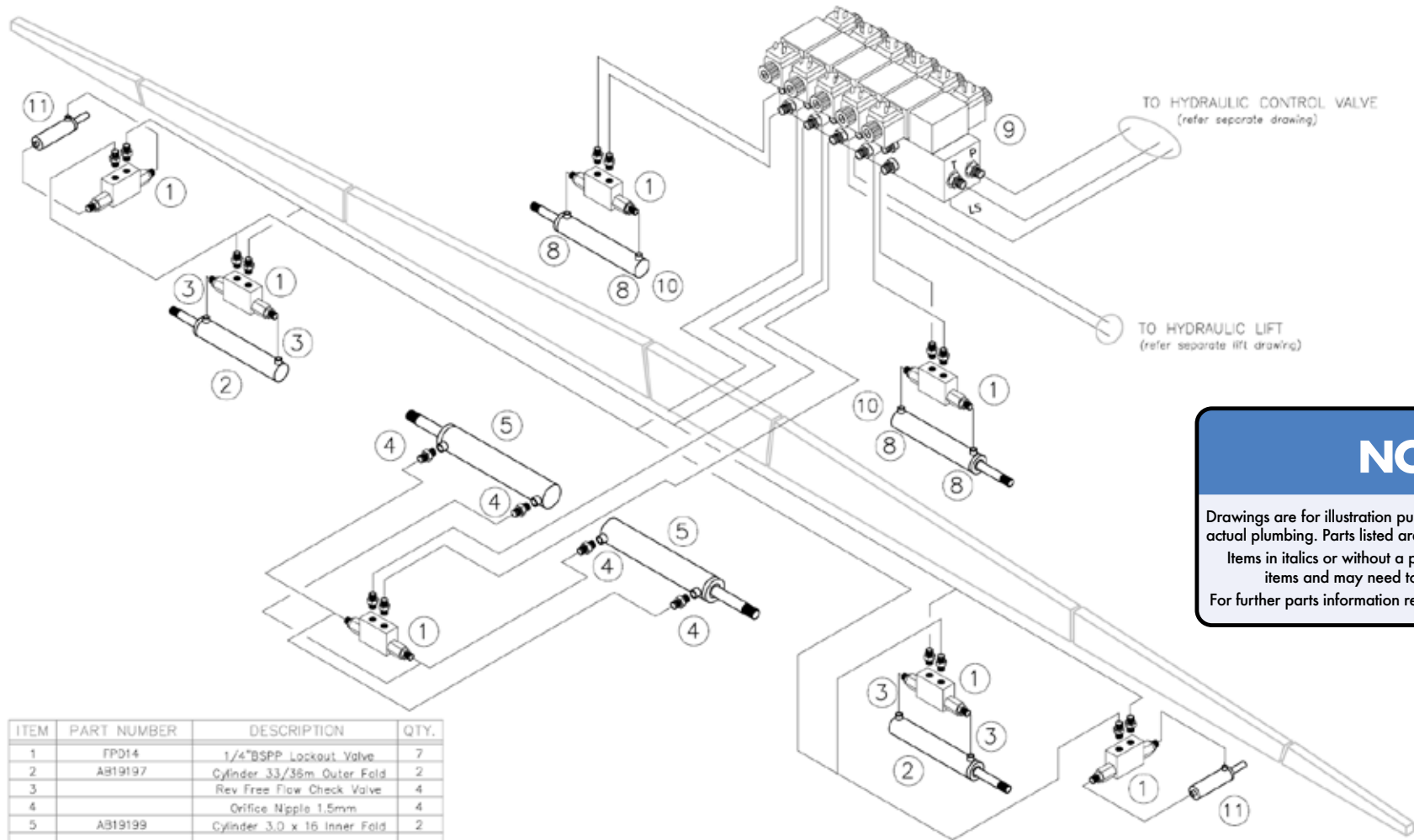
Items in *italics* or without a part number are non stocked items and may need to be specially ordered.

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

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

HYDRAULICS



NOTE

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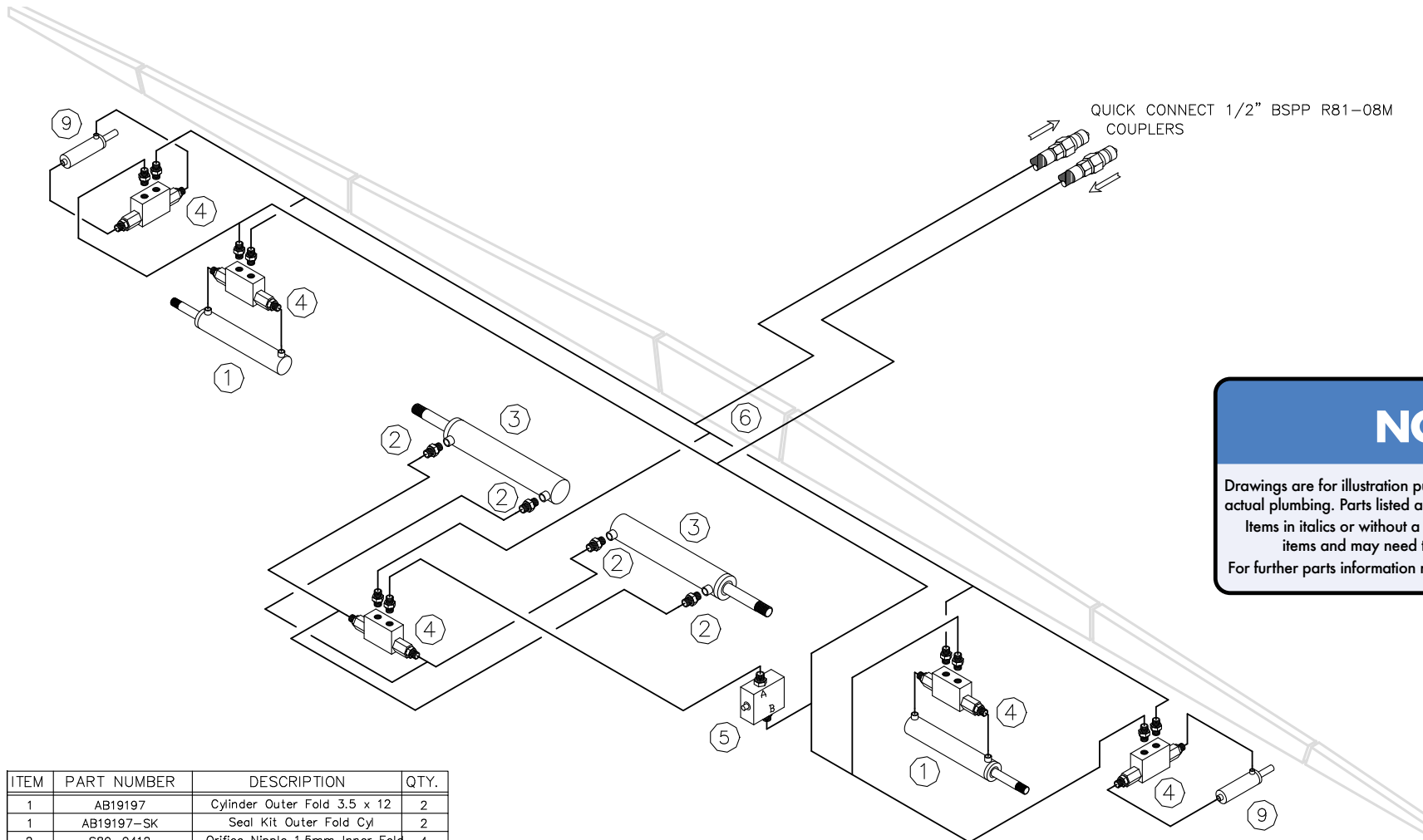
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	FPD14	1/4"BSPP Lockout Valve	7
2	AB19197	Cylinder 33/36m Outer Fold	2
3		Rev Free Flow Check Valve	4
4		Orifice Nipple 1.5mm	4
5	AB19199	Cylinder 3.0 x 16 Inner Fold	2
8		Orifice Nipple 1.5mm	4
9	MP-631LS	Hyd Valve Manifold 5 Function	1
10	AD19100-A-3	Cylinder 33/36m G-var	2
11	AB20800	Hyd Cylinder Outer fold Lock	2

33/36m BOOM G-VAR OPTION
HYDRAULIC FOLD WITH WINGLIFT OPTION

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

33/36M BOOM STANDARD FOLD



NOTE

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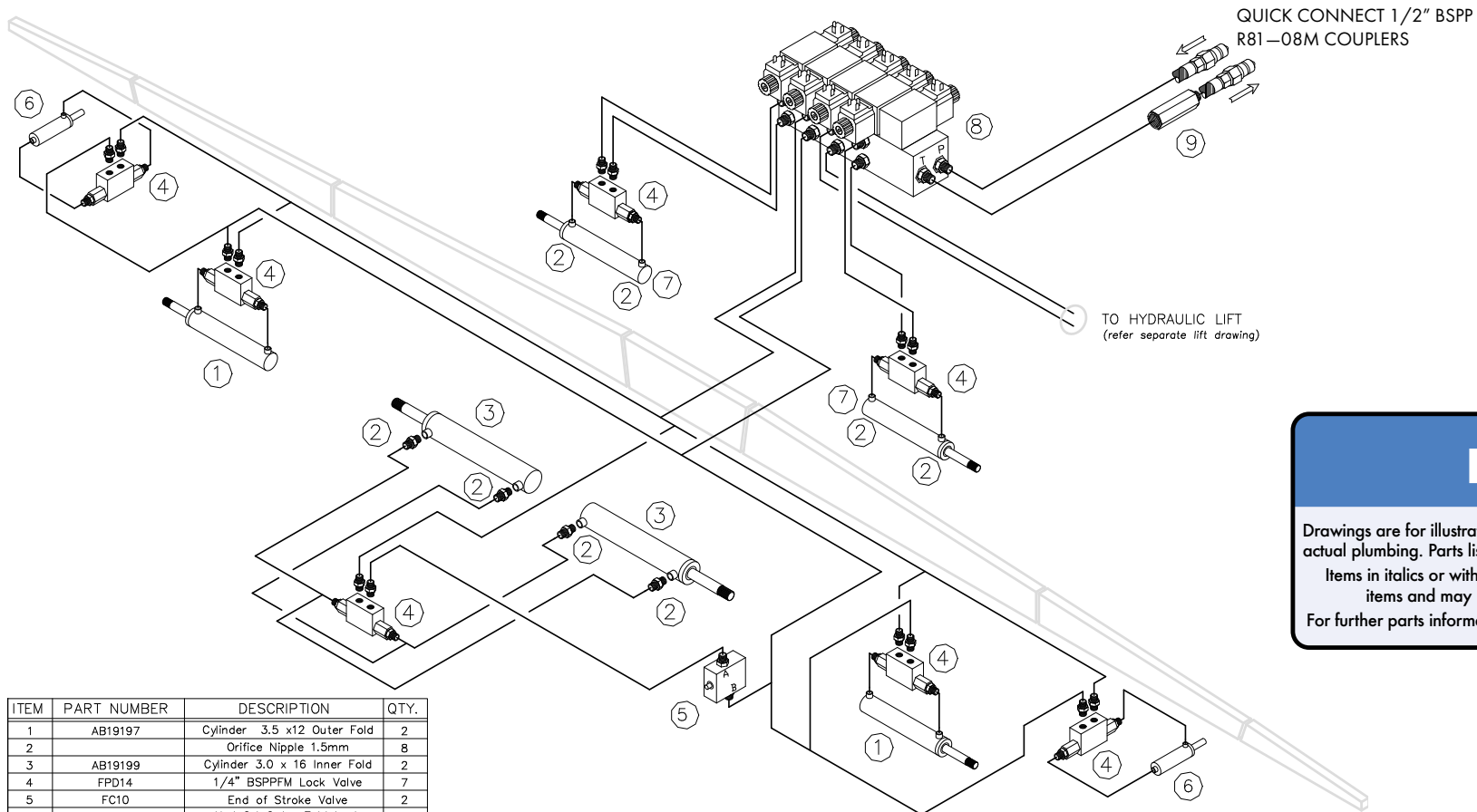
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	AB19197	Cylinder Outer Fold 3.5 x 12	2
1	AB19197-SK	Seal Kit Outer Fold Cyl	2
2	S89-0412	Orifice Nipple 1.5mm Inner Fold	4
3	AB19199	Cylinder 3.0 x 16 Inner Fold	2
3	AB19199-SK	Seal Kit Inner Fold Cyl	2
4	FPD14	1/4"BSPPFM Lock Valve	5
5	FC10	End of Stroke Valve	1
6	S44-0606	Bulkhead Nipple	2
7	AB20800	Hyd Cylinder Outer Fold Lock	2

Please contact Technical support for further details

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

33/36M BOOM GVAR / WING LIFT



NOTE

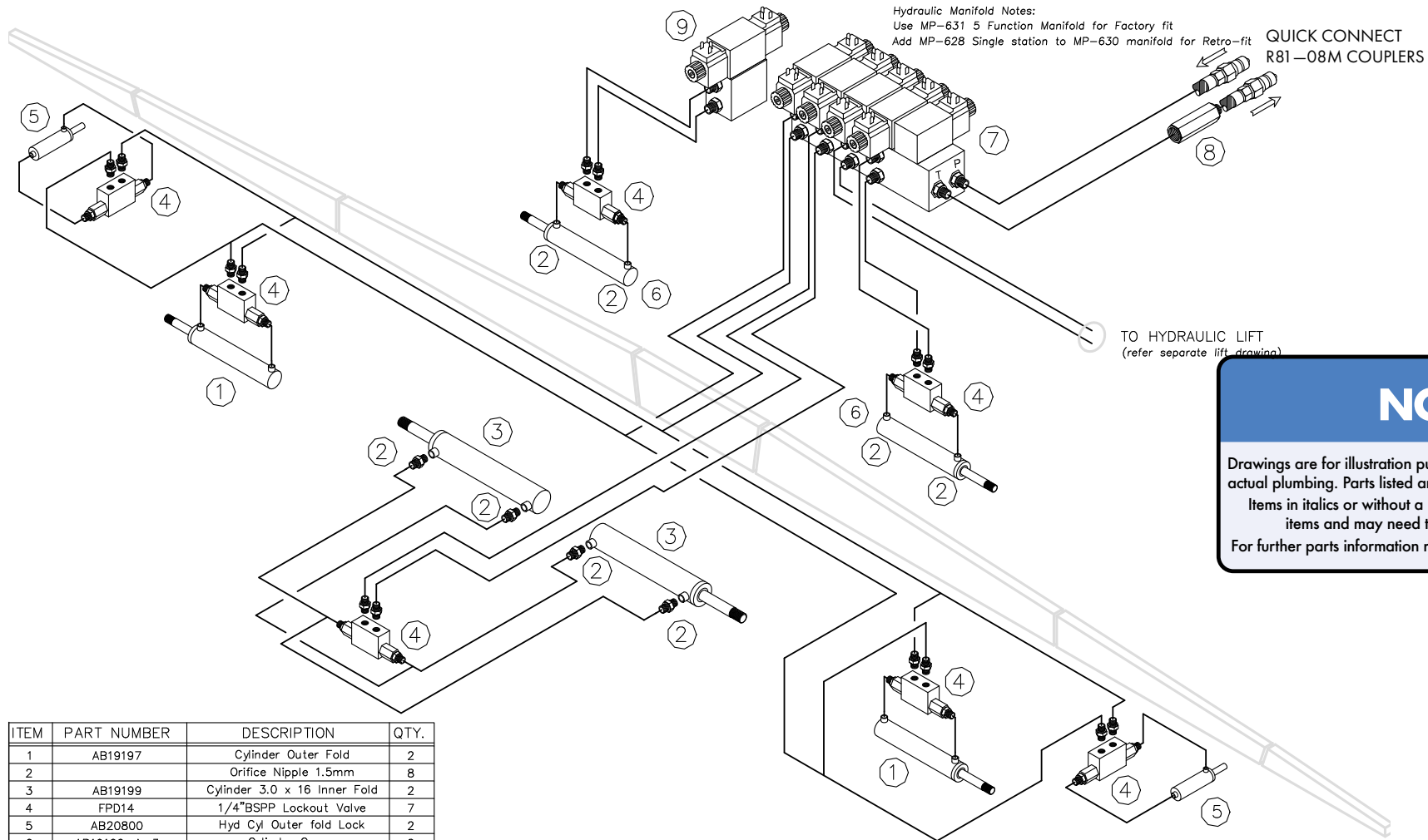
Drawings are for illustration purpose only - refer to sprayer for actual plumbing. Parts listed are indicative of the sprayer type. Items in *italics* or without a part number are non stocked items and may need to be specially ordered. For further parts information refer to: www.croplands.com.au

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	AB19197	Cylinder 3.5 x12 Outer Fold	2
2		Orifice Nipple 1.5mm	8
3	AB19199	Cylinder 3.0 x 16 Inner Fold	2
4	FPD14	1/4" BSPPFM Lock Valve	7
5	FC10	End of Stroke Valve	2
6	AB20800	Hyd Cyl Outer Fold Lock	2
7	AB19100-A-3	Cylinder G-Var	2
8	MP-630	Hyd Valve Manifold 4 Function	1
8	MP-630-1	Hyd Valve Dump	1
8	MP-630-2	Hyd Valve Double Acting	4
8	MP-630-3	Valve Coil 12v	9
9	RCV-0808	1/2" BSPP Inline Check Valve	1

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

33/36M BOOM WINGLIFT & OUTER WING FOLD



NOTE

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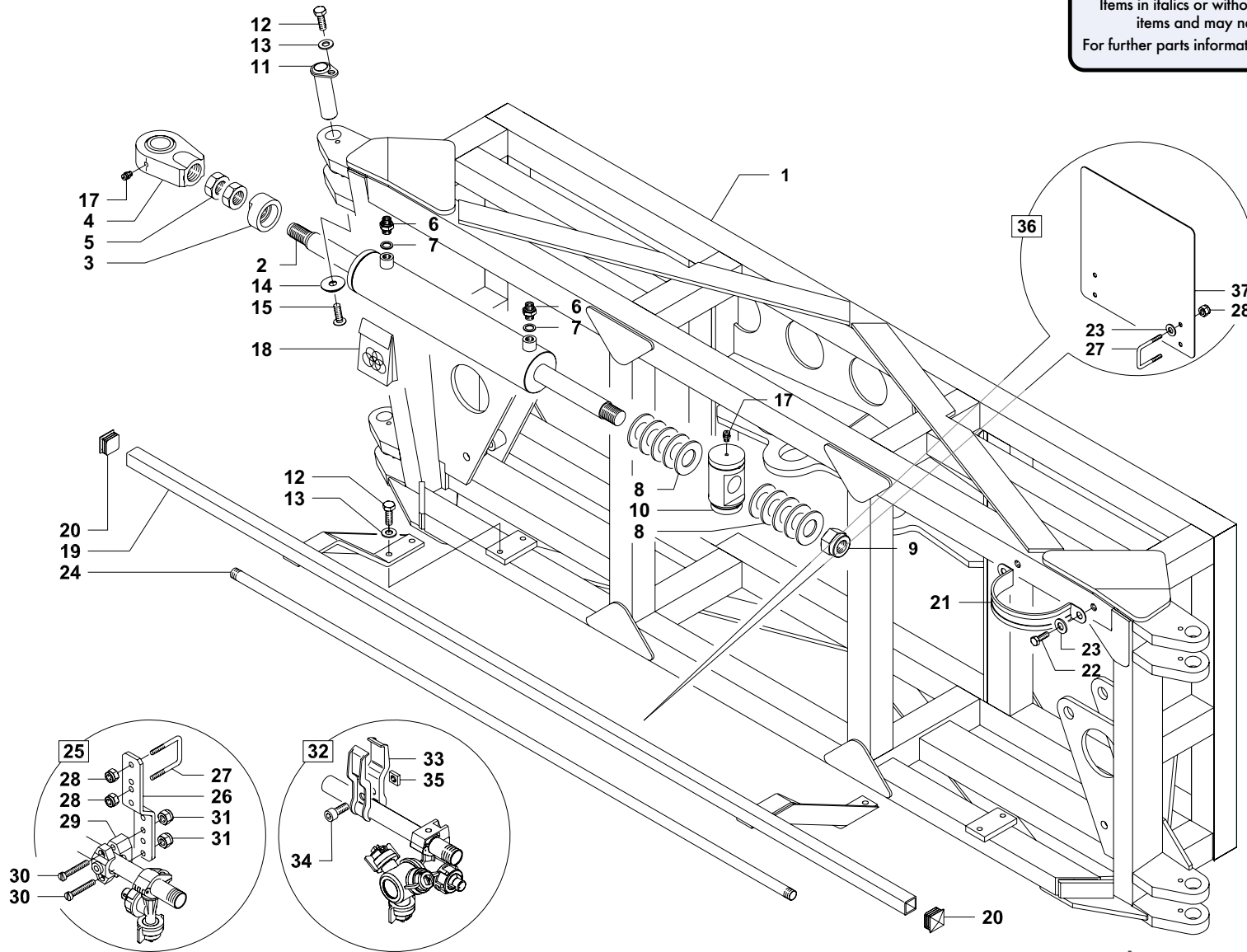
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	AB19197	Cylinder Outer Fold	2
2		Orifice Nipple 1.5mm	8
3	AB19199	Cylinder 3.0 x 16 Inner Fold	2
4	FPD14	1/4"BSPP Lockout Valve	7
5	AB20800	Hyd Cyl Outer fold Lock	2
6	AB19100-A-3	Cylinder G-var	2
7	MP-631	Hyd Valve Manifold 4 Function	1
7	MP-630-1	Hyd Dump Valve	1
7	MP-630-2	Hyd Valve Double Acting	5
7	MP-630-3	Valve Coil 12V	11
8	RCV-0808	1/2"BSPP Inline Check Valve	1
9	MP-628	Hyd Vv Single Station	1

Please contact Technical support for further details

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

GBCOMPL-30C CENTRE SECTION



NOTE

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

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

30.5 METRE BOOM CENTRE SECTION PARTS

Pos	Part No	Description	Qty
1	<i>GBBG001108</i>	<i>30m CENTRE SECTION</i>	1
2	GB703570018V	HYDRAULIC RAM	2
3	<i>GB500300032V</i>	<i>M30 SPACER NUT</i>	2
4	GBBG001752	M30 BALL JOINT	2
5	<i>GB905215028Z</i>	<i>M30 LOCK NUT</i>	4
6	GB570500011Z	1/4" NIPPLE 1.5 ORIFICE	4
7	<i>GB50243113</i>	<i>COPPER WASHER</i>	4
8	GB913671040	BELLVILLE WASHER	152
9		M30 NYLOC NUT (ZINC)	2
10	<i>GB500100127Z</i>	<i>CYLINDER MOUNT</i>	2
11	GBBG000024	PIN	4
12		M10 x 20mm BOLT (ZINC)	8
13		10mm SPRING WASHER	8
14	GB500400004Z	COUNTERSUNK WASHER	4
15	GB900710025Z	COUNTERSUNK SCREW	4
17	<i>GB919800020</i>	<i>GREASE NIPPLE</i>	4
18	GB001117	SEAL KIT	1
19	<i>GB201800415V</i>	<i>C/SEC RAIL MOUNT BRACKET</i>	1
20	<i>GB950130030</i>	<i>END CAP</i>	2
21	<i>GB950200059</i>	<i>CABLE RETAINER</i>	2
22		M6 x 16mm BOLT (ZINC) 8.8	8
23		M6 x 18mm WASHER (ZINC)	8
24	GB5505000500	5 HOLE SPRAY RAIL	1
25	GB999900100	SPRAY RAIL MOUNT KIT	3
26	<i>GB201800418V</i>	<i>SPRAY RAIL MOUNT BRACKET</i>	3
27	<i>GB500500004Z</i>	<i>M6 U BOLT</i>	3
28		M6 NYLOC NUT (ZINC)	6
29	<i>GBA00425130</i>	<i>2 PIECE RAIL CLAMP</i>	3
30		M6 x 40mm SCREW STAINLESS	6
31		M6 NYLOC NUT STAINLESS	6

Pos	Part No	Description	Qty
36	<i>GB999900467</i>	<i>WARNING LABEL PLATE KIT</i>	1
37	<i>GB201800065V</i>	<i>WARNING LABEL PLATE</i>	1

NOTE

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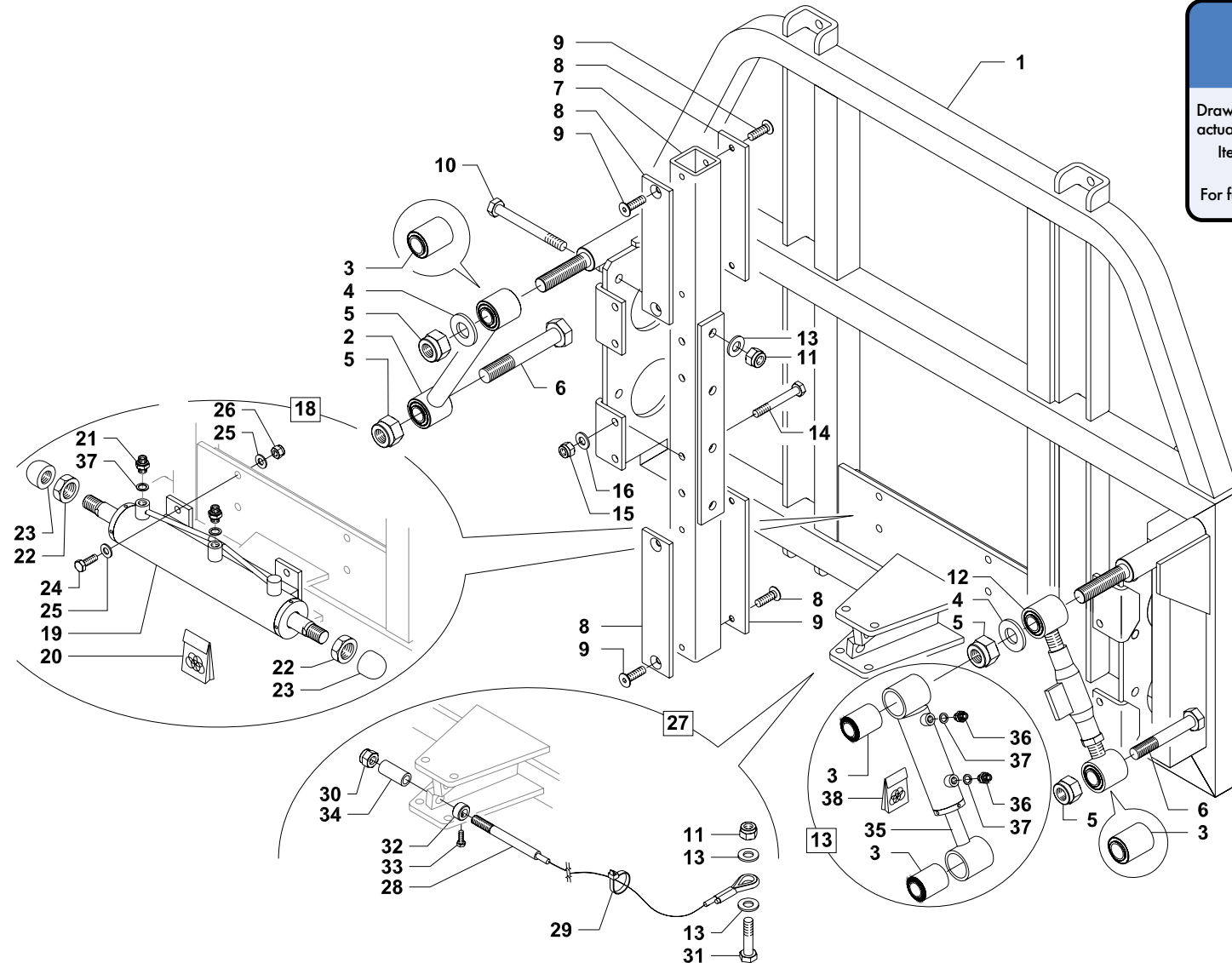
NOTE

Parts in italics are non-stock items and may need to be ordered.

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

GBCOMPL-30C CENTRE SECTION



NOTE

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

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

30.5 METRE BOOM SELF LEVELLING PARTS

Pos	Part No	Description	Qty
1	<i>GB382000050V</i>	<i>SELF LEVELLING FRAME</i>	1
2	GB993806001V	TIE ROD ASSY.	2
3	GB950300004	FLEXIBLE BUSH	4
4	GB500400019Z	M24 WASHER	4
5	GB905400024	M24 NYLOC NUT	4
6		M24 x130mm BOLT (ZINC) 8.8	2
7	<i>GB382000075V</i>	<i>WEAR PAD BRACE</i>	2
8	GB382000078	WEAR PAD	8
9	GB900710025Z	COUNTERSUNK SCREW	16
10		M14 x 100mm BOLT (ZINC) 8.8	8
11		M14 NYLOC NUT (ZINC)	12
12	GB993806002Z	ADJUSTABLE TIE ROD ASSY.	1
13		M14 WASHER (ZINC)	12
14		M12 x 90 BOLT (ZINC) 8.8	8
15		M12 NYLOC NUT (ZINC)	8
16		M12 WASHER (ZINC)	16
18	GB997000018	LOCK RAM KIT	1
19	<i>GB702550023V</i>	<i>LOCK RAM</i>	1
20	<i>GB996000179</i>	<i>SEAL KIT</i>	1
21	GB570500011Z	1/4" NIPPLE 1.5 ORIFICE	2
22	GB905200022Z	M22 NUT	2
23	GB501100007	LOCKING RAM END PIECE	2
24		M10 x25mm BOLT (ZINC) 8.8	4
25		M10 WASHER (ZINC)	8
26		M10 NYLOC NUT (ZINC)	4
27	<i>GBBG001395</i>	<i>STRAINER WIRE KIT</i>	1
28	<i>GB500700069</i>	<i>STRAINER WIRE</i>	2
29		CABLE TIE	8
30		M14 NUT FINE THREAD (1.5)	2
31		M14 x 60mm BOLT (ZINC) 8.8	2
32	<i>GB919800061Z</i>	<i>LOCKING COLLAR</i>	2
33		M6 x20mm BOLT (ZINC)	2

Pos	Part No	Description	Qty
34	<i>GBBG001396</i>	<i>SPACER</i>	2
35	<i>GB702550031V</i>	<i>LEVELLING RAM</i>	1
36	GB570500007Z	1/4" NIPPLE 0.7 ORIFICE	2
37	<i>GB600500001</i>	<i>COPPER WASHER</i>	4
38	<i>GB996000192</i>	<i>SEAL KIT</i>	1

NOTE

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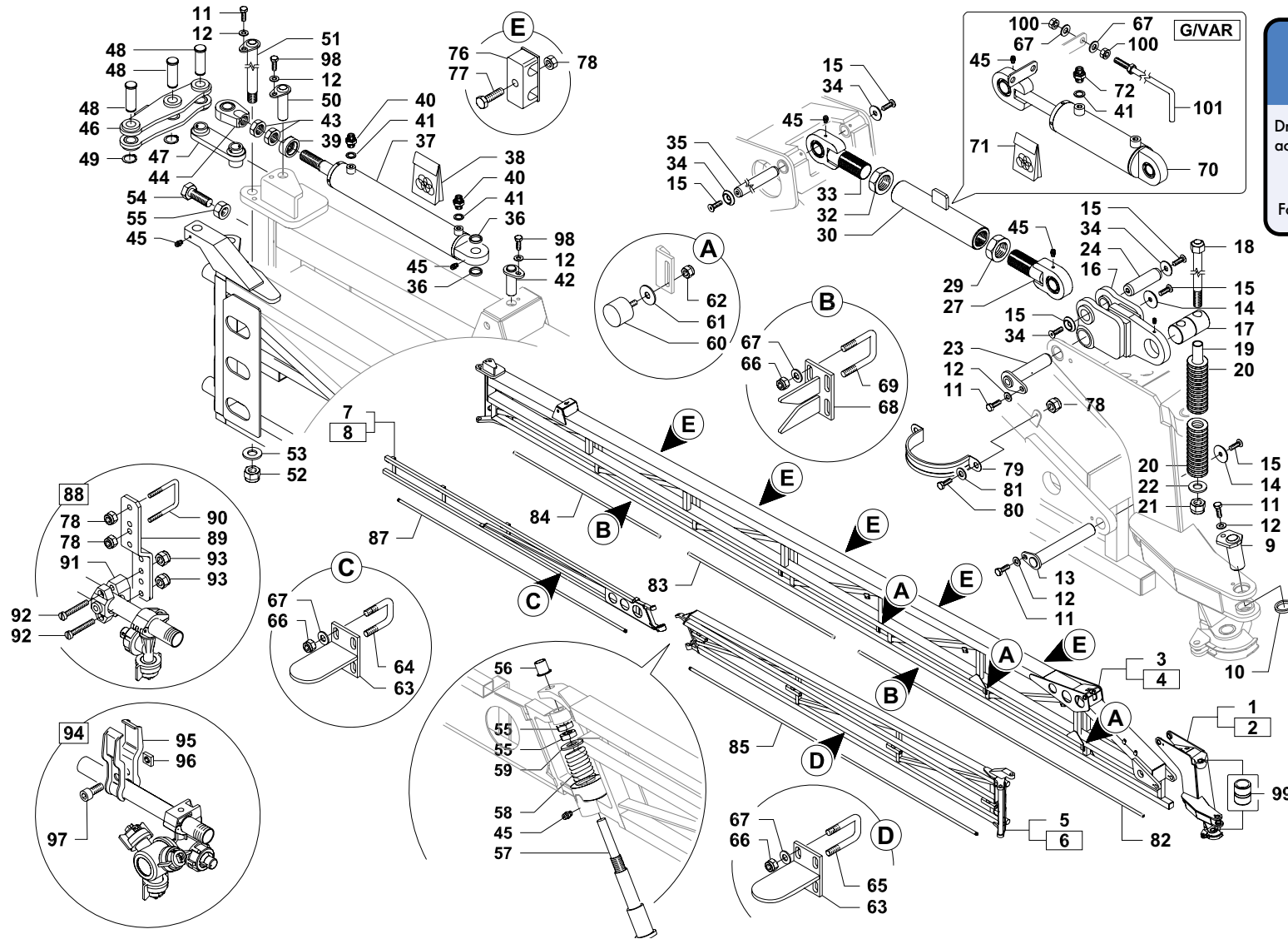
NOTE

Parts in italics are non-stock items and may need to be ordered.

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

GBCOMPL-305-LHA OR RHA - BOOM NON GVAR & GVAR 30M



NOTE

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SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

GBCOMPL-305-LHA OR RHA - BOOM NON GVAR & GVAR 30M

NOTE

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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

Pos	Part No	Description	Qty
1	<i>GBBG026414</i>	<i>INNER PIVOT R/H V2</i>	1
2	<i>GBBG026415</i>	<i>INNER PIVOT L/H V2</i>	1
3	<i>GBBG025150</i>	<i>INNER BOOM ARM R/H V2</i>	1
4	<i>GBBG025151</i>	<i>INNER BOOM ARM L/H V2</i>	1
5	GB023000050V	OUTER BOOM ARM R/H	1
6	GB023000051V	OUTER BOOM ARM L/H	1
7	GB022800080V	BREAKAWAY ARM R/H	1
8	GB022800081V	BREAKAWAY ARM L/H	1
9	GB392000330V	PIN	2
10	GB392000335Z	SPACER	2
11	GB900110025Z	M10 x 20mm BOLT (ZINC) 8.8	10
12	GB907200010Z	10mm SPRING WASHER	12
13	GB500100144VR	BOTTOM PIN	2
14	GB500400008Z	COUNTERSUNK WASHER	4
15	GB900710025Z	COUNTERSUNK SCREW	12
16	GBBG006429	PIN HOUSING	2
17	<i>GB500100145Z</i>	<i>STRAINER PIN</i>	2
18	<i>GB023200209Z</i>	<i>STRAINING BOLT</i>	2
19	<i>GB500200037Z</i>	<i>SLEEVE</i>	2
20	GB919900043V	SPRING	4
21	<i>GB905400020</i>	<i>M30 NYLOC NUT (ZINC)</i>	2
22	<i>GB907120046Z</i>	<i>M30 WASHER (ZINC)</i>	2
23	GB500100058V	PIN	2
24	GB500100044	PIN	2
27	GBBG017659	L/H BALL JOINT	2
29	GBBG017662	M30 NUT L/H THREAD	2
30	GBBG017657	DUAL THREADED TURNBUCKLE	2
32	GBBG017660	M30 NUT R/H THREAD	2
33	GBBG017658	R/H BALL JOINT	2
34	GB500400004Z	COUNTERSUNK WASHER	8
35	GBBG006427	PIN	2
36	GB500200029Z	SPACER	4
37	<i>GBBG024772</i>	<i>HYDRAULIC RAM</i>	2
38	<i>GBBG024776</i>	<i>SEAL KIT</i>	2
39	GB003273	M27 SPACER LOCK NUT	2
40	GB570500010Z	1/4" NIPPLE 1.0 ORIFICE	4
41	GB600500001	COPPER WASHER	6*
42	GB500100055V	PIN	2
43	GB905220027Z	M27 PLAIN NUT (ZINC)	4
44	GB920100043Z	BALL JOINT M27	2
45	<i>GB919800020</i>	<i>GREASE NIPPLE</i>	14*
46	GB006461	LINK ARM	4
47	<i>GB023200216V</i>	<i>LINK PIVOT</i>	2
48	GB006426	PIN	6
49	GB000187	CIRCLIP	6
50	GB500100110V	PIN	2
51	GB500100146V	PIN	2
52	GB905400024	M24 NYLOC NUT (ZINC)	2
53	<i>GB907025044Z</i>	<i>M24 WASHER (ZINC)</i>	2

Pos	Part No	Description	Qty
54	GB900124050Z	M24 BOLT	2
55	GB905200024Z	M24 PLAIN NUT (ZINC)	6
56	GB500200049	CAP WASHER	2
57	GB500100111Z	BREAKAWAY PIN	2
58	GB919900023Z	BREAKAWAY SPRING	2
59	GB500400019Z	M24 WASHER (LARGE)	2
60	GB950200004	RUBBER STOPPER 20mm	4
60	GB950200001	RUBBER STOPPER 30mm	2
61	<i>GB90710824Z</i>	<i>M8 X 24mm WASHER</i>	6
62	<i>GB905400008</i>	<i>M8 NYLOC NUT (ZINC)</i>	6
63	<i>GB022400053V</i>	<i>WING SUPPORT MALE</i>	2
64	XBMBB32	32mm U BOLT	4
65	XBMBB	40mm U BOLT	4
66	<i>GB905400010</i>	<i>M10 NYLOC NUT (ZINC)</i>	16
67	GB907010021Z	M10 WASHER (ZINC)	18*
68	<i>GB022400054V</i>	<i>WING SUPPORT FEMALE</i>	2
69	XBMBB50	50mm U BOLT	8
70	GBBG006474	GVAR RAM	2
70	MP-610/30-2	LOCK VALVE KIT FOR GVAR RAM	2
71	GB996000418	SEAL KIT	2
72	GB570500011Z	1/4" NIPPLE 1.5 ORIFICE	2
76	GB950200058	HOSE RETAINER	10
77	GB900306035Z	M6 x 35mm BOLT (ZINC)	10
78	<i>GB905300006</i>	<i>M6 NYLOC NUT (ZINC)</i>	66
79	<i>GB950200059</i>	<i>CABLE RETAINER</i>	2
80	<i>GB900106016Z</i>	<i>M6 x 35mm BOLT (ZINC)</i>	4
81	<i>GB907106018Z</i>	<i>M6 NYLOC NUT (ZINC)</i>	4
82/83	GB550400500	4 HOLE SPRAY RAIL	4
84/85	GB550700500	7 HOLE SPRAY RAIL	4
87	GB550600500	6 HOLE SPRAY RAIL	2
88	GB999900100	SPRAY RAIL SUPPORT KIT	26
89	<i>GB201800418V</i>	<i>SPRAY RAIL BRACKET</i>	26
90	<i>GB500500004Z</i>	<i>M6 U BOLT</i>	26
91	A425130	2 PIECE RAIL CLAMP	26
92	<i>GB904506040X</i>	<i>M6 x 40mm SCREW STAINLESS</i>	52
93	<i>GB905400006X</i>	<i>M6 NYLOC NUT STAINLESS</i>	52
98	<i>GB900110020Z</i>	<i>BOLT</i>	2
99	GBBG000067	BUSHING	2
100	<i>GB905100010Z</i>	<i>M10 PLAIN NUT (ZINC)</i>	4
101	<i>GB27160045V</i>	<i>LEVELLER SIGHT GAUGE</i>	2

* Quantities may vary between Gvar and Standard Booms

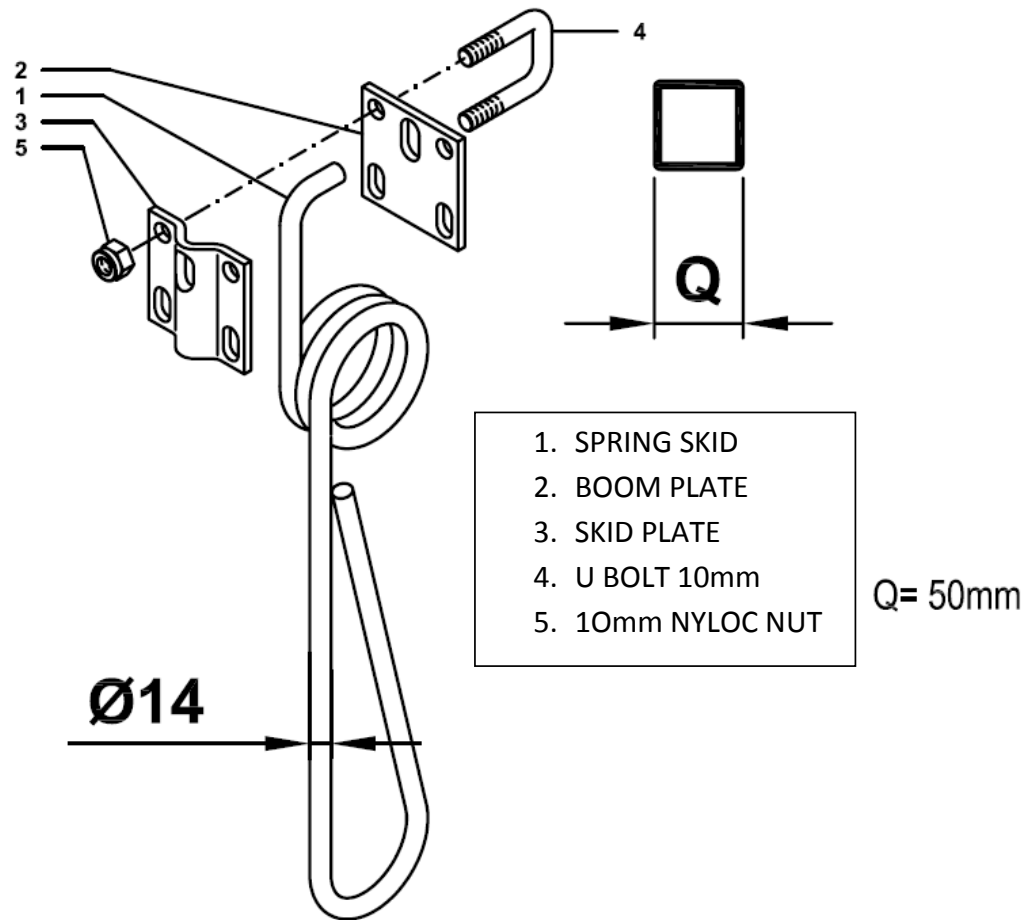
NOTE

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SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

GBG016255 30.5M SKID (PAIR)



NOTE

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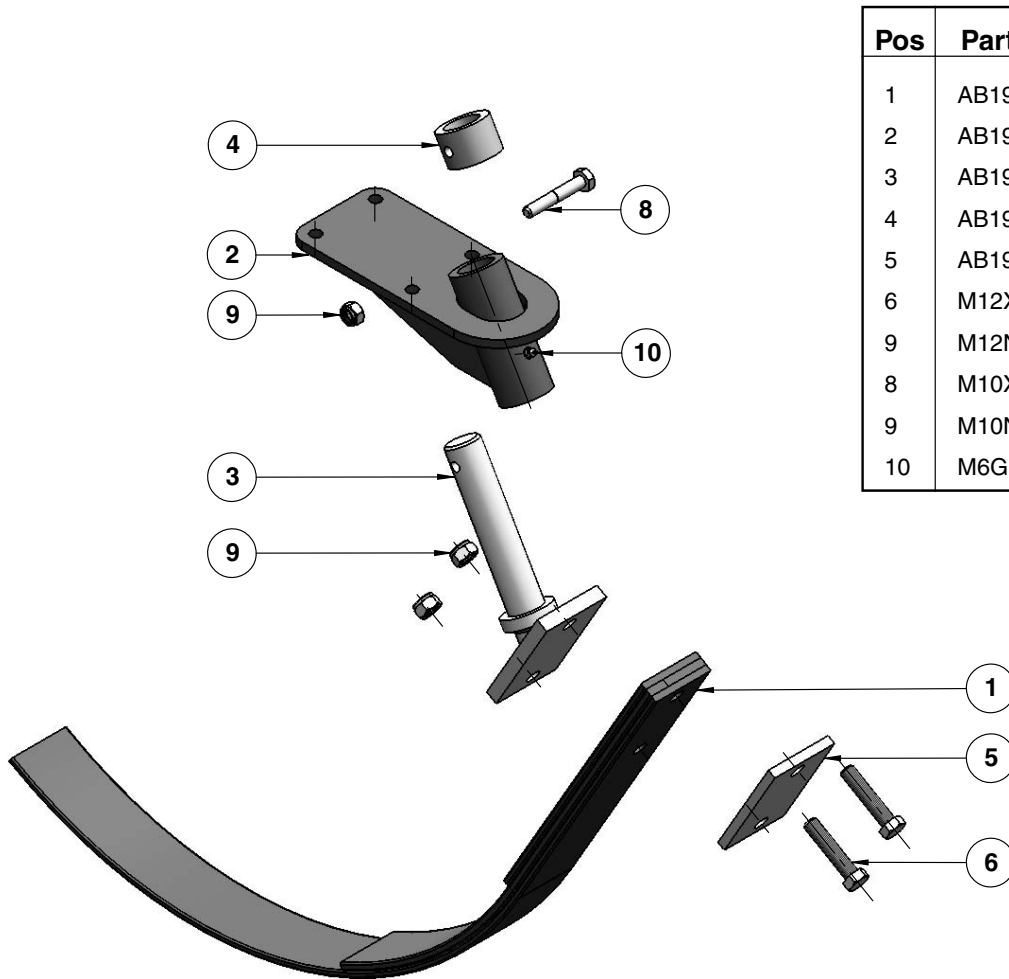
Items in *italics* or without a part number are non stocked items and may need to be specially ordered.

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

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

AB19196 33/36M - SKID ASSEMBLY



Pos	Part No	Description	Qty
1	AB19196-1	SKID SET 3 PIECE	1
2	AB19196-2	SKID MOUNT 36M BOOM FEMALE	1
3	AB19196-3	SKID MOUNT SHAFT AB191 BOOM	1
4	AB19196-4	COLLAR DIA 30MM	1
5	AB19196-6	SKID LEAF CLAMP	1
6	M12X55	M12 X 55 SET SCREW HT ZP	2
9	M12NNUT	M12 NYLOC NUT	2
8	M10X60BOLT	M10 X 60 BOLT HT ZP	1
9	M10NNUT	M10 NYLOC NUT HT ZP	1
10	M6GNIPPLE	M6 GREASE NIPPLE	1

NOTE

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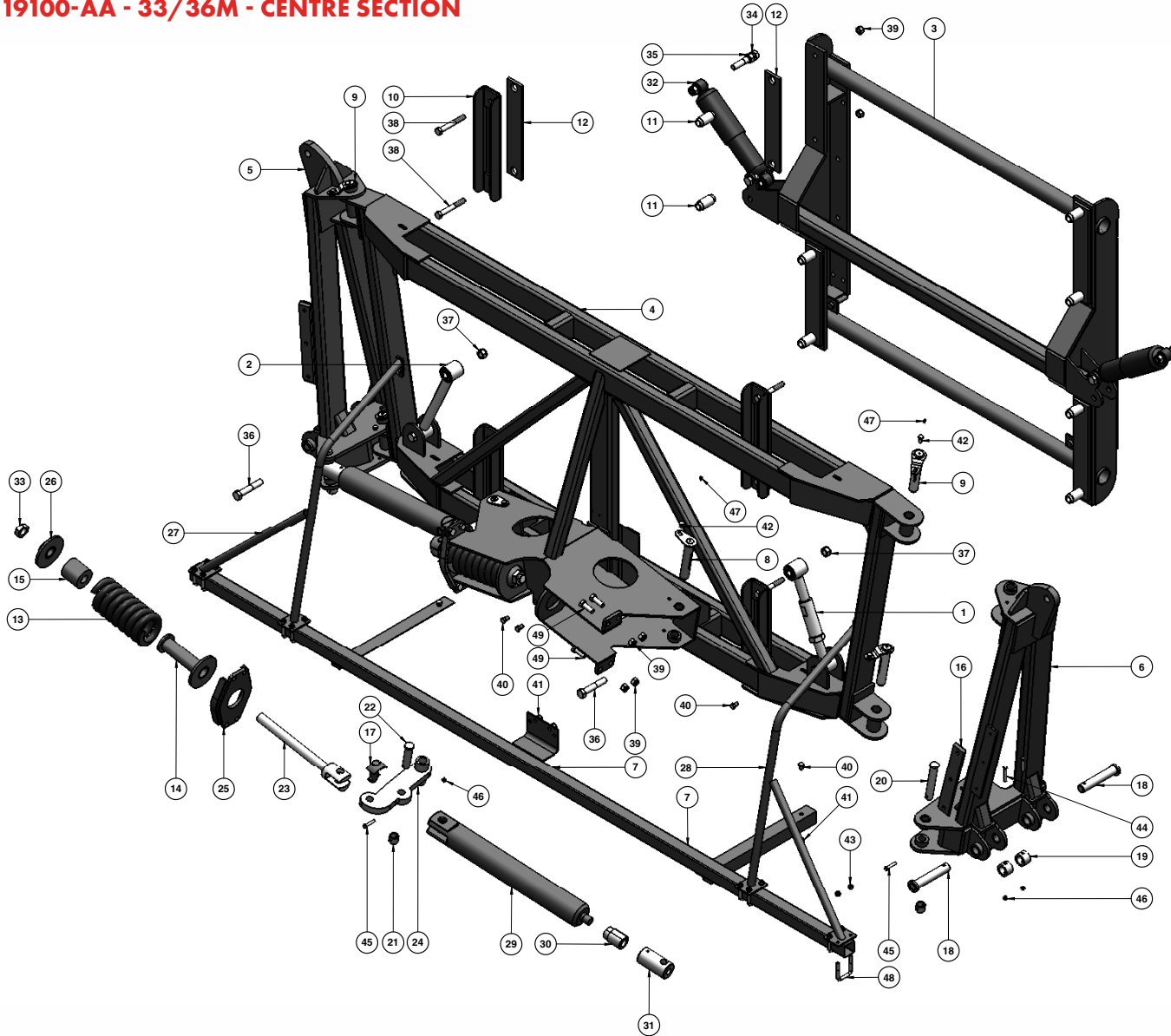
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SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

AB19100-AA - 33/36M - CENTRE SECTION



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SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

AB19100-AA - 33/36M - CENTRE SECTION/HANGER V2

NOTE

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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

Pos	Part No	Description	Qty
1	AB191-100	SELF LEVELLER ADJUSTER	1
2	AB191-101	SELF LEVELLER FIXED ARM	1
3	AB19101	CENTRE SECTION HANGER	1
4	AB19102A	CENTRE SECTION MAIN FRAME	1
5	AB19103BL	INNER FOLD PIVOT L.H.	1
6	AB19103BR	INNER FOLD PIVOT R.H.	1
7	AB19108	CENTRE SPRAY BAR SUPPORT	1
8	AB19120A	PIN Z BAR PIVOT	2
9	AB19120	INNER FOLD PIVOT PIN	4
10	AB19121	WEAR PAD SUPPORT	4
11	AB19122	WEAR PAD SPACER	8
12	AB19123	WEAR PAD SELF LEVELLER	8
13	AB19127	SPRING YAW CENTRE FRAME	2
14	AB19131A	SPRING BUFFER HOLDER	2
15	AB19131A-1	BUFFER POLY URETHANE	2
16	AB19143	BOOM FOLD STOP PAD	2
17	AB19156C	CYLINDER CLEVIS BOOM PIN VER 2	2
18	AB19183-130	PIN FIRST ARM 164 X 30	4
19	AB19183-2	COLLAR DIA 30MM	4
20	AB19184-125	PIN FOLD CYLINDER 155 X 25.4	2
21	AB19184-2	COLLAR DIA 25.4MM	4
22	AB19184-70	PIN FOLD CYLINDER 100 X 25.4	2
23	AB19191B	PIN YAW SPRING CLEVIS END	2
24	AB19192F	INNER FOLD Z BAR	2
25	AB19193	YAW SPRING CLAMP	2
26	AB19194A	SPRING BUFFER HOLDER	2
27	AB19195L	BOOM PROTECTION L.H.	1
28	AB19195R	BOOM PROTECTION R.H.	1

Pos	Part No	Description	Qty
29	AB19199	CYLINDER INNER FOLD 3" X 16" EZFIT	2
30	AB19199-M	ROD END MALE INNER FOLD CYLINDER	2
31	AB19199-F	ROD END FEMALE INNER FOLD CYLINDER	2
32	BP-607	SHOCK ABSORBER AIR RIDE P126	2
33	1.25NNUTUNF	1 1/4" UNF LOCK NUT	2
34	0.75X100UNCBOLT	3/4" X 4" UNC BOLT HT ZP	4
35	0.75UNCNNUT	3/4" UNC NYLOC NUT HT ZP	6
36	M20X110BOLT	M20 X 110 HEX HEAD BOLT HT ZP	4
37	M20NNUT	M20 NYLOC NUT HT ZP	4
38	M16X120BOLT	M16 X 120 HEX HEAD BOLT HT ZP	8
39	M16NNUT	M16 NYLOC NUT HT ZP 1	6
40	M12X20	M12 X 20 HEX HEAD SET SCREW HT ZP	6
41	M12NNUT	M12 NYLOC NUT HT ZP	4
42	M10X20	M10 X 20 SET SCREW HT ZP	6
43	M10NNUT	M10 NYLOC NUT HT ZP 1	6
44	M8X55BOLT	M8 X 55 HEX HEAD BOLT HT ZP	4
45	M8X45BOLT	M8 X 45 HEX HEAD BOLT HT ZP	4
46	M8NNUT	M8 NYLOC NUT HT ZP	8
47	M6GNIPPLE	M6 GREASE NIPPLE	6
48	XBMBB50	U-BOLT 50MM X 10	8
49	M16X45	M16 X 45 HEX HEAD SET SCREW HT ZP	8

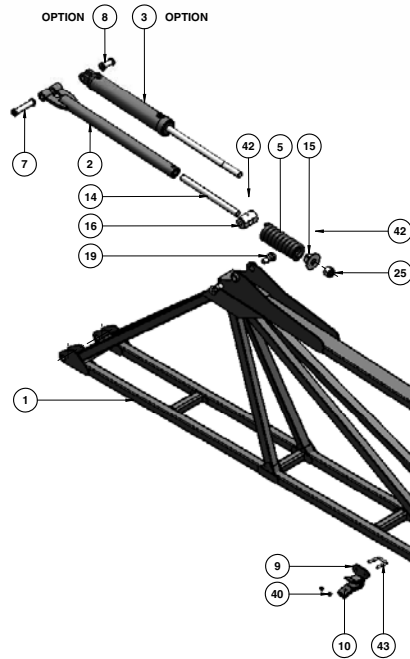
NOTE

Parts in italics are non-stock items and may need to be ordered.

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

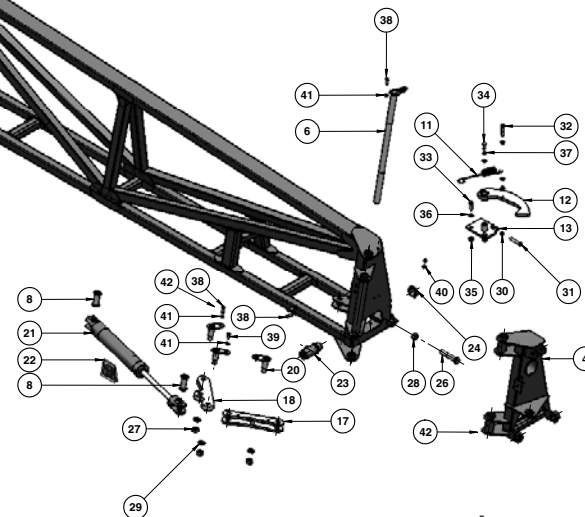
33/36M BOOM INNER ARM



PART NUMBER	DESCRIPTION
AB19100-BR-33	33M RIGHTHAND BOOM ARM COMPLETE
AB19100-BR-36	36M RIGHTHAND BOOM ARM COMPLETE
AB19100-BL-33	33M LEFTHAND BOOM ARM COMPLETE
AB19100-BL-36	36M LEFTHAND BOOM ARM COMPLETE

NOTE

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



Please contact Technical support for further details

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

NOTE

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

Pos	Part No	Description	Qty
1	AB19107R	FIRST ARM R.H. 33/36M	1
	AB19107L	FIRST ARM L.H. 33/36M	1
2	AB19100-A-2	FIXED WINGTIP ADJUSTMENT	1
3	AB19100-A-3	HYDRAULIC WINGTIP ADJUSTMENT	1
4	AB19113CR	FOLD PIVOT OUTER R.H.	1
	AB19113CL	FOLD PIVOT OUTER L.H.	1
5	AB19135	PIN 36M 1ST ARM TO 2ND	1
6	AB19150-130	PIN 130 X 30	1
7	AB19150-65	PIN 65 X 25.4	3
8	AB19157A	BRACKET OUTER BOOM	1
9	AB19157A <i>pad</i>	PAD OUTER BOOM SUPPORT	1
10	AB19159	SPRING LOCK ARM	1
11	AB19160R	ARM HINGE LOCK R.H.	1
	AB19160L	ARM HINGE LOCK L.H.	1
12	AB19161R	PLATE HINGE LOCK RH	1
	AB19161L	PLATE HINGE LOCK L.H.	1
13	AB19163	ROD G-FIX	1
14	AB19164	SPRING RETAINER PLATE	1
15	AB19165	PIVOT BLOCK	1
16	AB19178	ARM FOLD PIVOT OUTER	1
17	AB19179	LINK PLATE OUTER FOLD RAM	1
18	AB19180	PIN PIVOT BLOCK	2
19	AB19181	PIN OUTER FOLD SCISSOR JOINT	3
20	AB19197	CYLINDER OUTER FOLD 3.5 X 12	1
21	AB19197-SK	SEAL KIT HP-016 CYLINDER	1
22	AB20800	CYLINDER FOLD LOCK 35 X 38.1	1
23	AB20800-1	LOCK NUT 1 1/4" BSP	1
24	1.25UNFNUT	1 1/4" UNF NYLOC NUT	1

Pos	Part No	Description	Qty
25	M20X100BOLT	M20 X 100 HEX HEAD BOLT HT ZP	1
26	M20NNUT	M20 NYLOC NUT HT ZP	3
27	M20HNUIT	M20 HALF NUT ZP	1
28	M20FWASHER	M20 FLAT WASHER ZP	3
29	M12HNUIT	M12 HEX NUT HT ZP	2
30	M12X70	M12 X 70 SET SCREW HT ZP	1
31	M12X60BOLT	M12 X 60 BOLT HT ZP	1
32	M12X40	M12 X 40 SET SCREW HT ZP	3
33	M12X25	M12 X 25 SET SCREW HT ZP	1
34	M12NNUT	M12 NYLOC NUT HT ZP	3
35	M12FWASHER	M12 FLAT WASHER ZP	12
36	M12SWASHER	M12 SPRING WASHER ZP	1
37	M10X30	M10 X 30 SET SCREW HT ZP	4
38	M10X20	M10 X 20 SET SCREW HT ZP	2
39	M10NNUT	M10 NYLOC NUT HT ZP	6
40	M10FWASHER	M10 FLAT WASHER ZP	8
41	M6GNIPPLE	M6 GREASE NIPPLE	11
42	XBMBB50	U-BOLT 50MM X 10	1

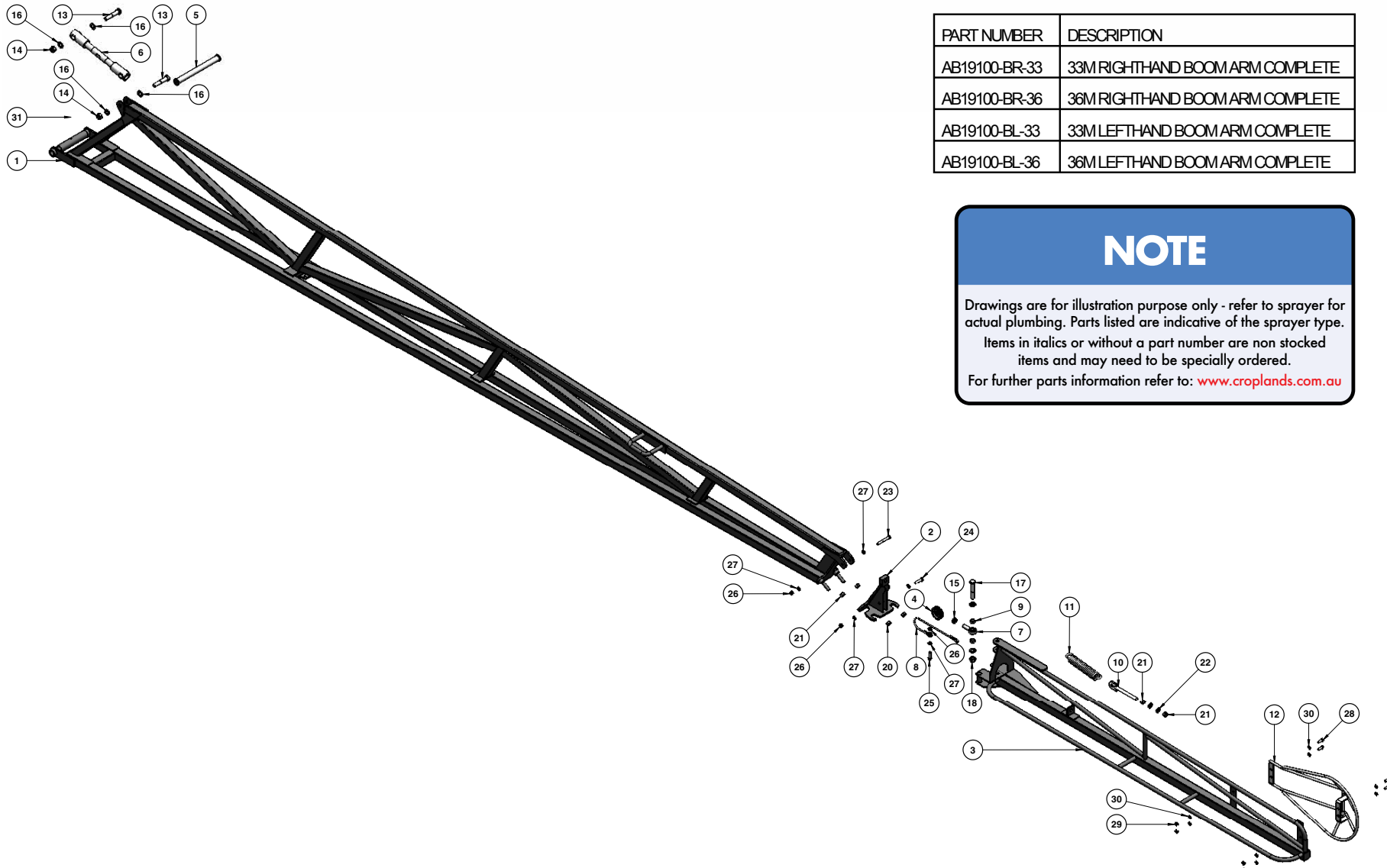
NOTE

Parts in *italics* are non-stock items and may need to be ordered.

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

33/36M BOOM OUTER ARM & BREAKAWAY



PART NUMBER	DESCRIPTION
AB19100-BR-33	33M RIGHTHAND BOOM ARM COMPLETE
AB19100-BR-36	36M RIGHTHAND BOOM ARM COMPLETE
AB19100-BL-33	33M LEFTHAND BOOM ARM COMPLETE
AB19100-BL-36	36M LEFTHAND BOOM ARM COMPLETE

NOTE

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Please contact Technical support for further details

SECTION 10

ASSEMBLY DRAWINGS, PARTS & SCHEMATICS

COMPLETE LEFT/RIGHT BOOM ARM 33/36M

NOTE

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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

Pos	Part No	Description	Qty
1	AB19109AL	BOOM ARM OUTER LH 36M	1
	AB19109AR	BOOM ARM OUTER RH 36M	1
	AB19110L	BOOM ARM OUTER LH 33M	1
	AB19110R	BOOM ARM OUTER LH 33M	1
2	AB19111A	BREAK-AWAY HITCH	1
3	AB19106AL	BREAK-AWAY TIP	1
4	AB19126-5	PULLEY	1
5	AB19152-330A	PIN OUTER BOOM SUPPORT	1
6	AB21200A	TOP LINK ADJUSTMENT	1
	AB21200A-1	BUSH	2
7	AB19126-4	MALE ROD END	1
8	AB19126-6	CABLE, PULLEY	1
9	AB19126-7	SPACER BUSH	2
10	MP-413	ADJUSTABLE SPRING HITCH	1
11	MP-519	SPRING	1
12	MP-598A	PROTECTION BRACKET FENCELINE V2	1
13	0.75X100UNCBOLT	3/4" X 4" UNC BOLT HT ZP	2
14	0.75UNCNNUT	3/4" UNC NYLOC NUT HT ZP	2
15	0.75UNFHNNUT	3/4" UNF HEX HALF NUT	1
16	0.75FWASHER	3/4" FLAT WASHER ZP	4
17	M20X100BOLT	M20 X 100 HEX HEAD BOLT HT ZP	1
18	M20NNUT	M20 NYLOC NUT HT ZP	1
19	M20FWASHER	M20 FLAT WASHER ZP	2
20	M16NNUT	M16 NYLOC NUT HT ZP	2
21	M16HNUT	M16 HEX NUT HT ZP	4
22	M16FWASHER	M16 FLAT WASHER ZP	2
23	M12X90	M12 X 90 BOLT HT ZP	1
24	M12X50	M12 X 50 SET SCREW HT ZP	1
25	M12X40	M12 X 40 HEX HEAD SET SCREW HT ZP	1
26	M12NNUT	M12 NYLOC NUT HT ZP	3
27	M12FWASHER	M12 FLAT WASHER ZP	7
28	M10X30	M10 X 30 SET SCREW HT ZP	4
29	M10NNUT	M10 NYLOC NUT HT ZP	4

Pos	Part No	Description	Qty
30	M10FWASHER	M10 FLAT WASHER ZP	8
31	M6GNIPPLE	M6 GREASE NIPPLE	1
<div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center; margin: 0;">NOTE</p> <p style="text-align: center; margin: 0;">Parts in italics are non-stock items and may need to be ordered.</p> </div>			
AB19106A-(L or R)-KIT - Complete Breakaway Assembly			
2	AB19111A	BREAK-AWAY HITCH	1
3	AB19106AL	BREAK-AWAY TIP	1
4	AB19126-5	PULLEY	1
7	AB19126-4	MALE ROD END	1
8	AB19126-6	AB19126-6 CABLE, PULLEY	1
9	AB19126-7	SPACER BUSH	2
10	MP-413	ADJUSTABLE SPRING HITCH	1
11	MP-519	SPRING	1
15	0.75UNFHNNUT	3/4" UNF HEX HALF NUT	1
17	M20X100BOLT	M20 X 100 HEX HEAD BOLT HT ZP	1
18	M20NNUT	M20 NYLOC NUT HT ZP	1
20	M16NNUT	M16 NYLOC NUT HT ZP	2
21	M16HNUT	M16 HEX NUT HT ZP	4
22	M16FWASHER	M16 FLAT WASHER ZP	2
24	M12X50	M12 X 50 SET SCREW HT ZP	1
25	M12X40	M12 X 40 HEX HEAD SET SCREW HT ZP	1
26	M12NNUT	M12 NYLOC NUT HT ZP	3
27	M12FWASHER	M12 FLAT WASHER ZP	7
28	M10X30	M10 X 30 SET SCREW HT ZP	4
29	M10NNUT	M10 NYLOC NUT HT ZP	4
30	M10FWASHER	M10 FLAT WASHER ZP	8

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