

3PL Work Ready

Operator's & Parts Manual



450L - 6m Boom GA4907151

600L - 6m Boom GA4907156

800L - 8m Boom GA4907161

800L - 8m Boom GA4907162

1000L - 10m Boom GA4907166

1000L - 10m Boom GA4907163

GA8700165 REV 2.0 APR 16



GOLDACRES
Australia's World Class Sprayers

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General Information and Specs

General

The 3PL Work Ready linkage is ideal for the small acreage and hard to get areas. Our 3PL Work Ready range can be used to deliver water or chemical to your crops. Our 3PL Work Ready range are durable with a steel frame and our tanks are industrial grade UV protected polyethylene with a sump for complete draining. Our range allows you to mix and spray chemical with a 6m to 10m boom width and 450L to 1000L.

Know Your Sprayer

Getting to know your sprayer prior to operation is crucial in the safe and efficient operation of this equipment. Take the time to familiarise yourself with all the standard and optional components fitted to your sprayer, not only do you need to know where key components are located on your machine you need to become competent in the correct operation of these components prior to spraying operation.

It is also important to become familiar with common spraying methods and common spraying terms prior to using this sprayer for the first time

Chassis:

The chassis is an all steel construction, that is fully welded for superior strength. The chassis is shot blasted, primed and then protected by the Goldacres paint process for excellent chemical resistance and durability.

Paint Colours:

Steel work: G13 Dark Green

Tank:

All tanks are constructed from UV resistant polyethylene. Polyethylene tanks have a very high chemical resistance.

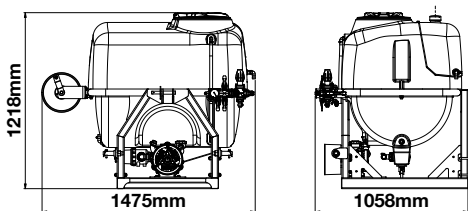
Due to the rotomoulding process, there can be a variance in the overall dimensions of the tank which in turn results in variations to the tank capacity. For this reason, calibration markings should be used as a guide only.

WARNINGS

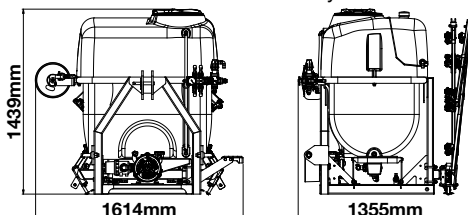
See page 46 for more info.

Dimensions

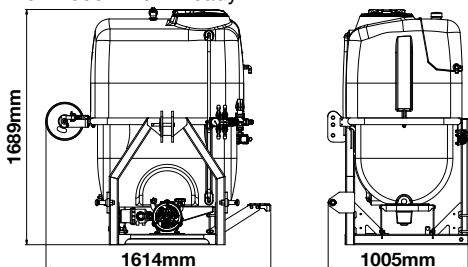
3PL 450L Work Ready



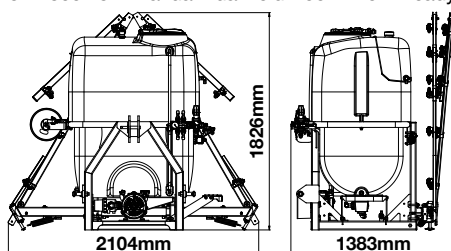
3PL 600L 6m Boom Work Ready



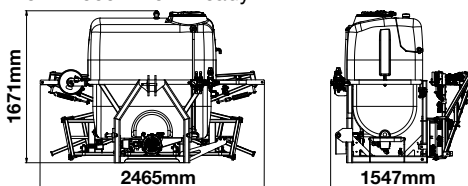
3PL 800L Work Ready



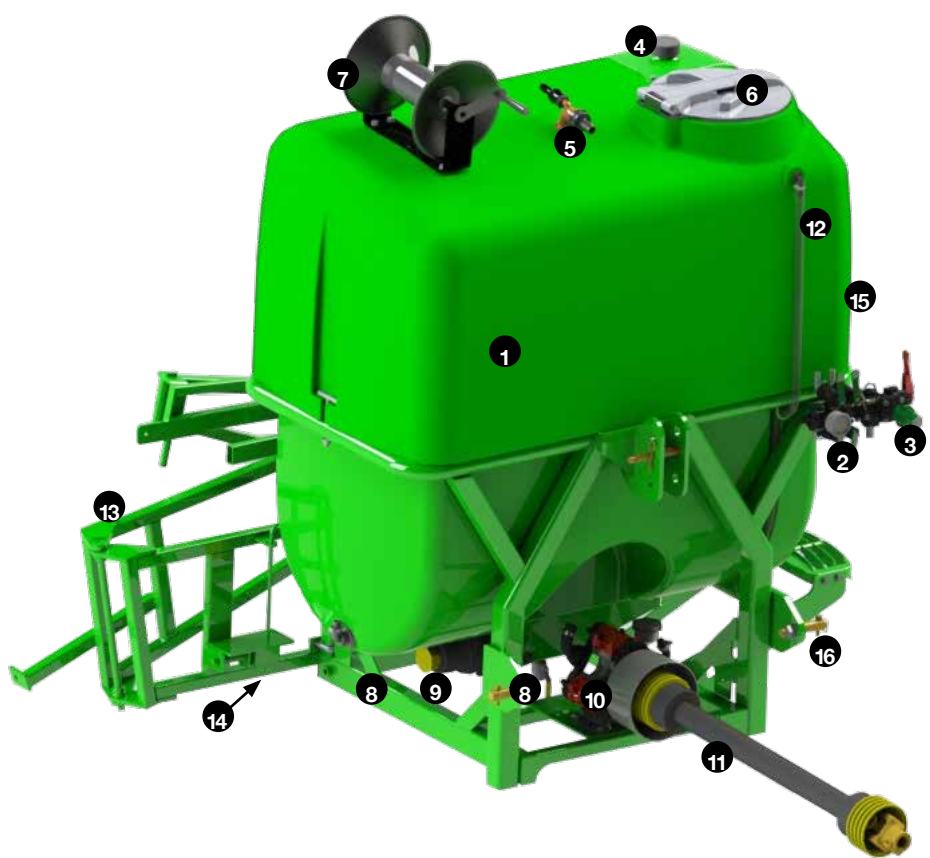
3PL 800L 8m Manual Dual Fold Boom Work Ready



3PL 1000L Work Ready



Key Features



Ref No	Function
1	Main Tank
2	Boom Section Levers
3	Pressure Adjustment
4	Fresh Water Hand Wash
5	Venturi (if fitted)
6	Main Tank Lid
7	30m Hose Reel
8	Main Tank Drain

Ref No	Function
9	Suction Filter
10	Zeta 70 Pump
11	PTO Shaft
12	Wet Sight Tube
13	Boom
14	Nozzles
15	Chem Probe (on rear if fitted)
16	3PL Pins

Operation

Common Spraying Methods

To ensure complete coverage in general field applications, Goldacres suggest that two spray swaths (depending on boom size fitted) are completed around the outside perimeter of the field. After completing the outside laps you will now have a wide headland on which to turn when completing the remaining sections moving up and down the length of the field. To avoid over application of chemical, switch off boom sections as you pass over the already completed headland section.

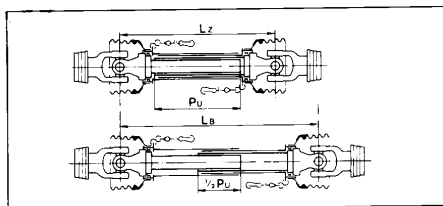
NOTE:

Variations in field sizes, shapes and terrain may require a change in the spraying method. Please use the most appropriate method that is safe and suitable for your application.

First time set up procedure (Water test only)

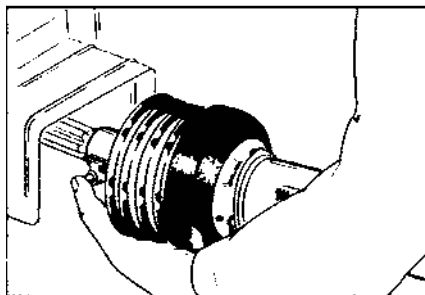
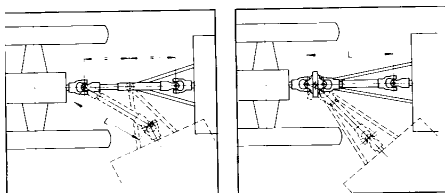
The Goldacres 3PL Work Ready sprayer has been designed for connection to Category 1 and 2 linkages.

1. Remove from pallet (if attached) and position on a solid, flat surface.
2. Lower the tractors linkage arms to a height appropriate for connection to the sprayer's lower linkage pins, and then connect the tractors top link to the top linkage pin of the sprayer.
3. Make sure that all securing pins are in place prior to raising 3PL.
4. Lift 3PL to intended spray height and then adjust linkage top link to level the sprayer.
5. Fit PTO shaft as per the following Instructions: When hitching a sprayer, especially for the first time, the following critical points concerning the PTO shaft must be considered: **MAXIMUM OPERATING LENGTH LB** Try to obtain the greatest possible overlap.

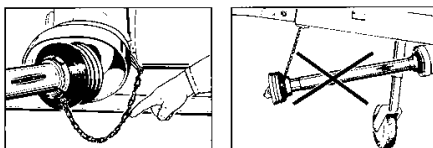


In its working position, the PTO shaft must not be extended by more than half the profile overlap P_u available when fully compressed L_z .

Chains

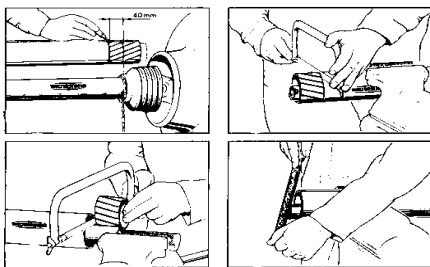


Chains must be fitted so as to allow sufficient articulation of the shaft in all working positions. The PTO shaft must not be suspended from the chain.



PTO Shaft Length Adjustment

- To adjust the length:
- 1 Hold the half-shafts next to each other in the shortest working position and mark them.
 - 2 Shorten inner and outer guard tubes equally.
 - 3 Shorten inner and outer sliding profiles by the same length as the guard tubes.
 - 4 Round off all sharp edges and remove burrs.
 - 5 Grease sliding profiles before reassembling.



CAUTION: When attaching shaft to sprayer and tractor, always ensure all guard covers are in place. Operate the PTO slowly when the PTO shaft is first attached to assess installation. Care should be taken when engaging the clutch so that sudden loading, which can result in pump damage and gear wear, is avoided. Ideally the pump should start from zero pressure. It is essential to maintain lubrication schedule while PTO shaft is in use.

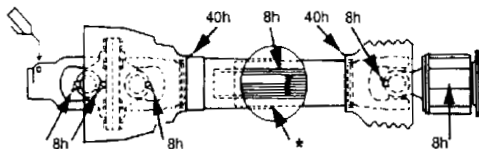
PTO Shaft Lubrication

Proper grease is essential for the sprayer to operate with maximum effectiveness and life-expectancy.

CAUTION:

Never lubricate the PTO shaft while it is running. It is important to keep the lubricant and lubricant applicator clean. Wipe all dirt from the fittings before use. Goldacres recommends that multi-purpose grease should be used for all lubrications.

The figures mentioned below refer to the frequency (in hours) of lubrication for the respective grease nipple locations.



- Pull shaft apart - apply grease to inside of outer Telescopic profile
6. Check pump oil level prior to engaging PTO.
 7. Fill the tank with a quantity of water sufficient to test spray unit for leaks.
 8. Unfold the boom as per the boom folding instructions in this manual
 9. Make sure the pressure relief valve is backed off prior to engaging PTO.
 10. Visually check that all fittings are in place and secure and taps are in working positions.
 11. Ensure that all taps are in the off position and bypass back to tank is open. All boom taps should be in the off position.

CAUTION:

Do not run diaphragm pumps above 540 R.P.M.

12. To start the pump, engage the PTO at the lowest revs possible and then gradually increase revs until the pump reaches its operating speed.
13. Set the pressure relief valve to the desired spraying pressure. Once PTO has been engaged and is running at 540RPM.
14. Gradually turn on individual boom sections, until all sections are engaged.
15. Adjust pressure to suit desired spraying rate.
16. Run unit at operating speed until contents of tank are dispersed.
17. Take note of any water leaks, and tighten fittings to rectify the problem immediately.

Manual Controls

A general explanation of manual controller functions are as follows:

Pressure Relief Valve

The pressure relief valve provides relief when the pressure exceeds a pre-determined value. Altering the adjusting stem will affect the setting at which the relief valve will come into operation. Turning the stem clockwise will increase the pressure relief setting. The pressure gauge gives indication of the delivery pressure to the boom or gunjet.

Bypass Valve

The controller features a bypass / dump valve. To pressurise the system to use the hose reel, boom etc., close the dump valve, the lever needs to be pulled out. To open the dump valve and allow all flow to return to tank under very low pressure, the dump valve needs to be pushed back against the tank.

Boom / Attachment Levers

The boom/attachment levers (number fitted dependent on options specified) open or close flow to the appropriate boom section/s or attachment/s as labeled. Pull the lever to the ON position in order to direct flow from the pump to the required function. Push the lever to the OFF position to stop flow going to the attachment that is now not required.

- 1. Pressure regulator
- 2. Bypass Lever
- 3. Hose reel on/off lever
- 4. Venturi on/off lever (when fitted)
- 5. Boom Right on/off Lever
- 6. Boom Left on/off Lever
- 7. Bypass
- 8. Pressure gauge



Specifications	L/min	GPM
Flow Rate	180	47.5
	Bar	PSI
Pressure - Max	20	290
No. of Outlet	2/3/4	
Suggested for Pump Models	RO 110, ZETA 70, ZETA 85, ZETA 100, ZETA 140, ZETA 170 KAPPA 25, KAPPA 32, KAPPA 40, KAPPA 50, KAPPA 33, KAPPA 43, KAPPA 53, KAPPA 55, KAPPA 65, KAPPA 75, KAPPA 100.	

Sprayers fitted with Geoline Electric controls

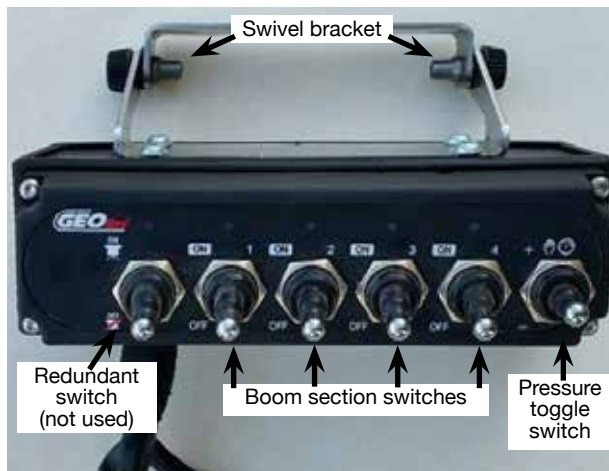
General information

Electric controllers allow for on/off switching of individual boom sections, as well as a pressure adjustment toggle to increase or decrease the operating pressure of the boom.

Geoline console

There is a redundant switch on the early control boxes that is not wired into any valve, and therefore does not perform a function at this stage.

Picture 1 shows the Geoline control panel, the boom section switches (control box comes standard with 4 boom section switches, although commonly only 2 or 3 are used) and the pressure increase/decrease toggle switch.



During operation, a red LED light illuminates when the corresponding boom switch is turned on to indicate operation.

It is important that the console is mounted in the cabin in such a way that it cannot work loose and become a projectile in the event of sudden braking or an accident. A swivel bracket is supplied with the console to facilitate easy mounting.

The console has two separate cables coming from it, one being the power cable which is required to be connected straight to a 12V battery. The positive power wire is fitted with a

15A fuse. It is important that this fuse remain in the wiring loom when wiring into the tractor as a safety protection fuse for both tractor and console. Picture 2 shows the wiring associated



The second wiring loom coming from the console connects to the wiring harness mounted on the sprayer. It is important to route the sprayer harness into the tractor through the appropriate rubber cabin grommets, and ensure the harness is located firmly. Bringing the harness through the back window of the tractor, then closing the window can cause damage to the wires within the harness over time. Also allowing the harness to rub alongside the drivers seat has been known to cause breakages in the wiring harness.

Control station

As well as the electric controls fitted to the sprayer for boom operation, a manual control station remains on the sprayer to allow for the operation of any other accessories fitted to the machine including the hose reel, venturi probe and agitator. The operation of the probe and hose reel are covered in other sections of the manual.

The control manifold also features 2 pressure gauges, one representing bypass pressure and the other boom spray line pressure.

Testing has shown that there is a pressure loss between the pressure gauge on the manual regulator and the pressure at the spray nozzles, hence the second pressure gauge, which is plumbed into the motorised valves at the back of the sprayer.

When using the spray boom, please follow the gauge labelled 'spray pressure', and when using the hose reel, venturi probe etc, please follow the 'bypass pressure' gauge.

Picture 3 shows the control station, and the taps fitted.



Picture 3, showing the control station. All taps are closed, and the dump valve is open providing low pressure agitation.

Dump valve

A dump valve and manual pressure regulator are also fitted to the control station. The dump valve enables all pump delivery to bypass back to the tank under low pressure. The dump valve should be opened when wanting to agitate the tank when not spraying. It is also a good practise when starting the sprayer to have the dump valve open. To open the dump valve, simply push the red handle back towards the tank. To close the dump valve, pull the red handle forwards bringing the handle out.

All sprayer functions including boom operation, hose reel or suction probe will not operate with the dump valve open to bypass (picture 3 showing the dump valve open).

Pressure regulator

The manual pressure relief valve provides pressure adjustment for the various sprayer functions (picture 4 shows the pressure regulator). To increase the pressure for hand gun operation, or operating the venturi probe for instance, turn the pressure regulator clockwise, which will wind more pressure on the spring inside the regulator.

Any adjustment to the pressure setting of the relief valve will correspond with a change in the pressure gauge reading fitted to the control station.

It is advisable to set the pressure regulator at around 7 bar pressure for boom spray operation, and use the electric pressure toggle switch on the control console to adjust the pressure back down to the desired spraying pressure.



Picture 4, manual pressure regulator with directional indicators.

Control station taps

Bypass tap

All flow to the sprayer's boom and electric pressure regulator is controlled by the bypass tap. When wanting to spray with the boom, ensure the dump valve is closed (pressurised) and the bypass tap is open. Picture 5 shows the bypass tap open.



Picture 5 showing the bypass tap open for spraying.

Electric Valves

The electric valves that control the boom section switching along with the electric bypass valve are located below the tank, between the tank and boom. The electric bypass valve will regulate the amount of bypass back to the spray tank.

The boom section valves are wired and plumbed in the same sequence as the control console, with section 1 being the left section.



Troubleshooting

DISPLAY	CAUSE	SOLUTION
The LED's illuminate on the console, but the valves do not open.	Connectors not connected or unplugged.	Connect the connectors in the correct way.
The LED's are off and the valves are not working.	Fuse burnt out.	Replace fuse and check for power / wiring issues.
	No power supply.	Replace fuse and check for power / wiring issues.
	Reversed power supply cable.	Check the power supply connection.
The switches are OFF but the valves are open.	Power supply on box reversed.	Check the power supply cable connection on box.

Calibrating your sprayer

Any sprayer should be calibrated regularly to ensure minimal error in the application rate. A nozzle selection chart indicates what application rates are to be expected but variations due to nozzle wear, ground speed error and pressure irregularities can result in large application rate errors.

Goldacres suggest the use of a current TeeJet nozzle selection catalogue for reference to nozzle sizes, outputs, spray patterns and general spraying information. For more technical information on the function of spray nozzles and factors affecting their performance you can also use the TeeJet "User's guide to spray nozzles".

The TeeJet nozzle selection catalogue and Users guide to spray nozzles are available from Goldacres dealers or as a free download from the TeeJet website. www.teejet.com

Application Rate

The application rate depends on the following:

Spray pressure - increasing pressure increases application rate and reducing pressure reduces application rate

Speed of travel - increasing speed reduces application rate and reducing speed increases application rate

Nozzle size - increasing the nozzle size increases the application rate.

Ground Speed

The ground speed read out on modern tractors should be sufficiently accurate for spraying but if in doubt check it for accuracy by the following method.

Measure and mark a distance of 100 metres. Fill the sprayer with water and engage the PTO to simulate normal spraying conditions. Approach the starting mark at the required spraying speed and accurately measure the time in seconds to reach the finishing mark. The ground speed can be calculated as follows.

Application rate (L/Ha) = $\frac{\text{Nozzle output (l/min)} \times 10,000}{\text{Spray width (m)} \times \text{speed (m/min)}}$

Nozzle Selection

Refer to the chemical manufacturer's

information to determine the recommended application rate in litres per hectare (l/ha) for your particular situation. Then determine the speed in kilometres per hour (km/hr) at which you intend to spray, taking into consideration the ground conditions of the area to be sprayed. Using the appropriate chart for your boom select the most suitable nozzle to use.

Nozzle Calibration

As part of your daily sprayer calibration, Goldacres suggests that you carry out a jug test to ensure the spray nozzles you are using are delivering the correct amount of chemical, as stated in your nozzle supplier's rate chart.

The method of carrying out the jug test is as follows:

You will need:

- A calibrated measuring container that can measure the medium in litres, in 10 ml increments. e.g. 0.45 Lt.
- A timing device showing seconds.
- A pressure gauge mounted at the nozzle tip to verify the system pressure being delivered at the nozzle. Goldacres part number QJ4676-1/4-NYR will mount a suitable gauge to the nozzle body bayonet fitting. (Not including gauge).

NOTE: There may be a noticeable difference between pressure shown on main spray pressure gauge on sprayer and the gauge installed on the boom. This is due to pressure loss through the circuit.

1. Check the plumbing system for kinked or obstructed hoses and repair or replace any hoses that restrict the normal flow of the liquid.
2. Start your sprayer
 - a. For sprayers not fitted with a spray application controller, set the boom operating pressure to the pressure at which you expect to spray.
 - b. For sprayers fitted with a spray application controller, initiate a 'self test' procedure and set the application rate and speed to the settings depicted in your "Rate Chart" at which you expect to spray.

3. Then place the jug under one of the nozzles, for 60 seconds (exactly) and then record the volume of liquid collected.
4. Repeat the test over a representative sample of the jets in each boom section
5. Compare the volume collected from each nozzle to the stated volume in your rate chart. It should be no more than plus or minus 10% of the volume stated in your Nozzle Supplier's rate chart
6. In the event that any of your nozzles do not deliver the required volume, a further investigation is required which may include, but not be limited to:
 - a. Cleaning the nozzles, using the method recommended by the nozzle supplier.
 - b. Replacing the nozzles.
 - c. TeeJet advise that nozzles that flow greater than +10% of their stated volume are 'worn out' and should be replaced.
 - d. Cleaning nozzle filters.
 - e. Replacing filters.
 - f. Replacing pump diaphragms.
 - g. Replacing the pump.
 - h. Ensuring that the application rate required does not exceed the maximum flow and pressure parameters of the sprayer.

Tasks prior to spraying

CAUTION: Before using this equipment with a chemical mix, read, and understand, the instructions on the chemical label. The first time setup procedure should be carried out as a water test only prior to any chemical being added to the tank and applied. Following the initial set up procedure being followed, there are several important checks to be carried out prior to starting spraying.

1. Inspect the sprayer to ensure there is no damage or wear which could lead to injury, further damage or reduce its performance.
2. Check all bolts and nuts to make sure they are tight and secure.
3. Carry out scheduled lubrication.
4. Fit PTO shaft and fit protective cover and chains.
5. Make sure the sprayer is securely hitched (i.e. PTO shaft is properly fitted and tractor linkage arms are securely attached to the sprayer);
6. Ensure that the two lower linkage arms are secure and do not sway
7. Fill the flush water tank (where fitted) and hand wash tank with an appropriate amount of clean water.
8. Clean all filters and nozzles.
9. Fill main tank with a quantity (approx 10% of total tank volume) of fresh water.
10. Test the pump with clean water. To start the pump, engage the PTO at the lowest revs possible and then gradually increase revs until the pump reaches its operating speed. Do not exceed 540 RPM.
11. Check nozzle patterns for irregularities. If there are irregularities, clean the nozzles and/or replace. If the problem persists they could be worn so remove and replace.
12. For optimal sprayer set-up, the operator needs to be aware of the correct nozzle, the correct speed at which to travel and the appropriate rate per hectare to apply the product. For this information, refer to the chemical label, the supplier of the product and the TeeJet catalogue.
13. Check all hoses and fittings for leaks or

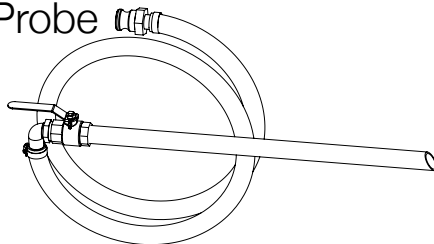
damage.

14. Follow the chemical label and ensure that you follow the specified mixing procedure for addition of chemicals to main tank.
15. When mixing procedure has been followed, fill main tank with appropriate quantity of water required for task at hand.

WARNING: When filling tanks with water, 1 litre of water will add 1kg of weight. Some chemicals weigh more than water, therefore it is the operators responsibility to ensure the loaded weight of the sprayer does not exceed the towing and / or carrying capacity of the vehicle.

16. You are now ready to start using the sprayer.

Operating the Chem Probe



Overview

A simple method of transferring chemical into the sprayer tank is via the chemical probe.

The chemical probe enables the chemicals to be transferred with minimal exposure to the operator. The probe is used in conjunction with the Venturi filler (located on the top of the tank) which creates the required suction on the pressure side of the pump.

The viscosity of the chemical being transferred will affect the rate of suction flow and hence the amount of time required to transfer the chemical. Water and air have low viscosities whereas molasses is an example of a highly viscous liquid. The higher the viscosity of the liquid, the longer it takes to transfer via the chemical probe. If the viscosity of a chemical is such that it takes too long to transfer, dilute the chemical with water, which will reduce the viscosity, and then transfer the solution.

The chemical should be transferred after about 20% to 50% of the required water quantity has been added to the sprayer tank. This will ensure that agitation takes place when the remaining water is added.

The end of the probe is not flat so that the probe, when placed flat against the bottom of the container, will not restrict the flow of chemical.

Operation

WARNING: It is critical that the chemical probe venturi continues to operate for a minimum of 30 seconds following use. This will ensure that no chemical is left in the line prior to the probe being disconnected.

NOTE: This item is intended for the induction of liquid chemicals only.

To operate the chemical probe:

1. Add 20 percent of the tank's volume of clean water to the main spray tank. Initially there needs to be a sufficient amount of water in the tank in order for the pump delivery to create the venturi effect via the venturi filler.
2. Open the Bypass on the controller.
3. To start the pump, engage the PTO at the lowest revs possible and then gradually increase revs until the pump reaches its operating speed. Do not exceed 540 RPM.
4. Ensure that the green handle on the controller for the Chem Probe is pulled up.
5. Connect probe via cam lever fitting.
6. Open the ball valve above the cam lever fitting
7. Close all other flip valves and move the Bypass valve to CLOSED..
8. The pump needs to generate at least 100 psi delivery pressure. Do not run the pump faster than 540 RPM. The higher the pump delivery pressure, the greater the venturi suction and the quicker the probe will transfer the chemical. The delivery pressure should not exceed 120 psi as determined by the pressure relief valve setting.
9. Place probe in chemical.
10. 'OPEN' the valve on the probe.
11. The chemical should be now transferring to the sprayer tank via the venturi filler.
12. When all of the chemical has been transferred, rinse the chemical container with water and transfer the rinsate to the sprayer tank via the probe. This should ensure that the entire chemical is transferred and that the probe, venturi filler and connecting suction hose are cleaned. Induct clean water to rinse probe vacuum

hose.

13. When finished, close the valve on the probe.
14. Close the Chem Probe flip lever.
15. OPEN the Bypass valve, this will keep the chemical agitated until sprayed.
- 16 Close the ball valve above the cam lever fitting, and disconnect the probe from the cam lever.

NOTE: Once chemical has been transferred into the main spray tank the sprayer should always be agitating until spraying begins.

Transporting the Sprayer

Make sure the vehicle has sufficient lifting and braking capacity to carry the sprayer. All relevant transport regulations must be adhered to when transporting the sprayer. (ie: speed regulations, oversize signs, flashing light, etc.) It is the operator's responsibility to know the relevant regulations. Make sure the sprayer is securely hitched to the tractor 3PL.

- Ensure that the boom is securely supported when travelling and that the tail indicator lights on the sprayer are connected via the 7-pin trailer plug (if fitted on sprayer)

CAUTION: Take care when reversing the tractor with the sprayer attached. If driver visibility is restricted use another adult, with a clear view to the rear of the sprayer, to give reversing directions.

CAUTION: It is the operator's responsibility to know the tare weight and gross weight of the sprayer. Contact your Goldacres dealer to ascertain a more precise tare weight for your sprayer if unsure. If any alterations are made to the sprayer, it is the operator's responsibility to know the tare weight and the gross weight of the modified sprayer at all times.

End of spraying day tasks

NOTE: Empty the spray tank by disposing of any residual spray in the appropriate manner. Use the flush water tank or refill the tank with approximately 10% of the tank volume of fresh water to flush the pump and boom. The following steps should be adhered to: Unfold the boom in an area convenient to dispose of residual chemical (an area where chemical can not run-off into above ground or sub surface water courses).

- Operate the diaphragm pump at idle revs
- Open the Boom Supply Ball Valves, and allow to rinse for a sufficient amount of time.
- Close the Boom Supply Ball Valves, and open the Hose Reel Ball Valve to rinse hand gun line (where fitted).
- Run sprayer until fresh water contents has been flushed through the system.
- When the tank has been emptied, shut off the pump drive by either disengaging the PTO, or closing the hydraulic supply.
- To clean and decontaminate the sprayer, follow the instructions provided on the chemical label for appropriate decontamination procedure.
- Clean all filters.
- Clean all nozzles.

CAUTION: If the sprayer is left attached to the tractor when parking the sprayer, make sure the tractor park brake is applied, the engine turned off and the sprayer lowered onto the ground. If the sprayer is to be disconnected from the tractor: Ensure the main tank and any other tanks fitted are empty.

- Lower the sprayer to release the weight off the linkage arms (the sprayer may need lowering onto a pallet or several large pieces of timber).
- Adjust the top linkage arm until it becomes loose, then remove from sprayer.
- Loosen the stabilising chains on the linkage arms, then detach arms from the sprayer.
- Disconnect all lines between the sprayer

and the tractor (i.e. hydraulic lines, foam marker lines, etc.)

- Remove the PTO shaft from both the sprayer and the tractor.

NOTE: Store the sprayer in a suitable location to prevent freezing. If the sprayer is to be left where freezing may occur, cover the pump and flow meter with a material bag and empty pump and flow meter of all water (run the pump dry for 15-20 seconds). Make sure any ice has thawed before using sprayer.

End of Season Tasks

If the sprayer is to be stored for a long period of time without use, there are several tasks that need to be performed. Clean the sprayer thoroughly as described under

“End of Spraying Day Tasks”.

- With the sprayer attached to the tractor, carry out a thorough observation to determine if there is any damage to the sprayer.
- Park the sprayer in a position where it will not be affected by frosts, and preferably out of direct sunlight.
- Ensure all tanks are empty.
- Lower the sprayer to release the weight off the linkage arms (the sprayer may need lowering onto a pallet or several large pieces of timber).
- Adjust the top linkage arm until it becomes loose, then remove from sprayer.
- Loosen the stabilising chains on the linkage arms, then detach arms from the sprayer.
- Disconnect all lines between the sprayer and the tractor (i.e. hydraulic lines, foam marker lines, etc.).
- Remove the PTO shaft from both the sprayer and the tractor.
- Periodically check the sprayer to ensure frosts and/or vermin are not damaging the machine.

Manual Folding Booms

General information

The boom fitted as standard is part of the Goldacres range of “folding booms” which are available in sizes from 3 metres to 8 metres. These booms are constructed from RHS for strength, the wings fold in for transport, and jet bodies are mounted on stainless steel brackets behind the boom for protection.

All booms, regardless of their design and operating width, present certain safety hazards in their operation. Please ensure that you have read all safety precautions as included in this manual and take particular note of those re-listed below.

WARNINGS

- Never stand within the radius of boom wings.
- Keep clear of overhead obstructions.
- CRUSH HAZARD - Keep hands clear of moving parts when carrying out boom fold and unfold sequences.

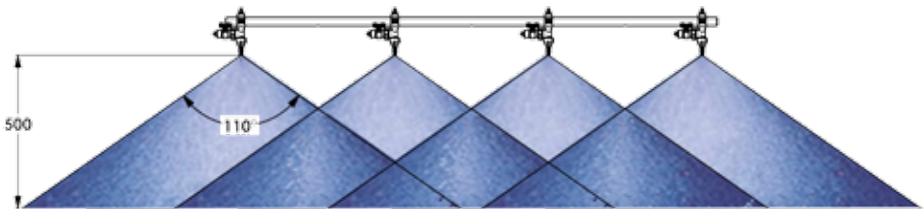
CAUTIONS

- Always ensure that there is adequate room for the boom to open.
- Always ensure that the boom is adequately supported when transporting.

Boom Height

The standard nozzle spacing on Goldacres booms is 500 mm. For this spacing, the optimum height the boom should be from the object to be sprayed (with a 110° fan angle nozzle) is 500 mm.

There will be adequate spray coverage if the nozzles are higher than this but this increases the potential for drift. The spray pattern is affected by many factors not limited to, but including, gravity, pressure, chemical composition and droplet size so the pattern does not extend to the full theoretical coverage. Refer to the TeeJet nozzle selection catalogue for further information on spray application and nozzle technology.



Boom height adjustment

For boom height adjustment, loosen the nuts on the U-bolts clamping the boom to the main frame.

Raise or lower the boom to the desired height and then re-tighten the nuts on the U-bolts.

6-8m Boom Operating instructions for folding booms

1. Starting with the boom in the closed position. Remove the linch pins from the supports holding the wings.



2. Un-fold both wings, and then fit the linch pins into the holes near the fold points.



3. Pull the right boom out first, pull the wing against the spring in an out and down manner until open and resting against the stop plate with the adjustment bolt. Then repeat on the left hand boom.
4. With both wings folded out into the open position check that the boom is aligned correctly.

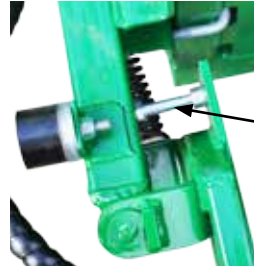


5. If not aligned correctly, adjust position with the adjustment bolts as necessary. The boom arms are to be in line by eye.



Folding boom lubrication

Folding booms have a grease nipple fitted at each pivot point. Grease these points regularly with quality multi purpose grease



**Boom
adjustment
bolt**



Crossover boom

General information

The Goldacres “Cross Over” design booms are constructed as a trussed boom from RHS with bi-folding wings for ease of transport. Jet bodies are mounted on stainless steel brackets behind the boom for protection.



Unfold instructions

1. Remove the outer fold pin.



2. Open the left inner wing out from the fold clamp, and then replace the fold pin into position to avoid misplacement. Fold the wing out until the lock pin engages.



3. Remove the second fold pin.



4. Open the right inner wing out from the fold clamp, and then replace the fold pin into position to avoid misplacement. Fold the wing out until the lock pin engages.
5. Open the outer wings (Fig. 5) against the spring action.



Crossover boom

Fold instructions

1. Close both outer wings against the spring action.



2. Release the right hand boom by rotating the boom lock lever and close right inner wing.



3. Remove the inner fold pin located on the boom mount frame.



4. Close right wing into frame.
5. Replace clip.



6. Release the left hand boom by rotating the boom lock lever and close left inner wing.



7. Remove the outer fold pin



8. Close the left inner wing.



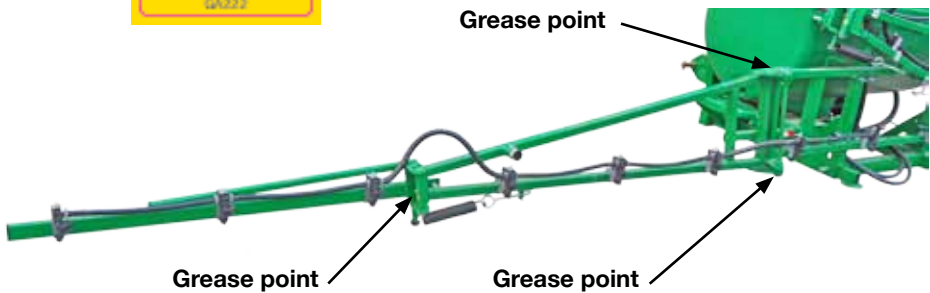
9. Replace clip.



Crossover boom lubrication

Grease points

The boom hinging points all have grease nipples located for the ease of application. The below decal is located near all grease nipples.



Filters

General Information

WARNING:

Ensure that operator's wear the appropriate PPE when cleaning filters. It is essential to maintain all filters, and filter screens, in good condition. Filter screens that are not regularly cleaned can severely impede the flow and thus affect delivery pressure.

If the screen is in any way damaged, it can allow foreign material into the pumping system which can result in damage to the pump, solenoids, valves and nozzle tips. If the screen is not properly fitted, it can allow air into the pumping lines which will reduce the performance of the pump. The filter screen should be cleaned after every spraying operation. The best way to clean the filter screen is with a soft brush or compressed air after washing the entire chemical residue from the pump.

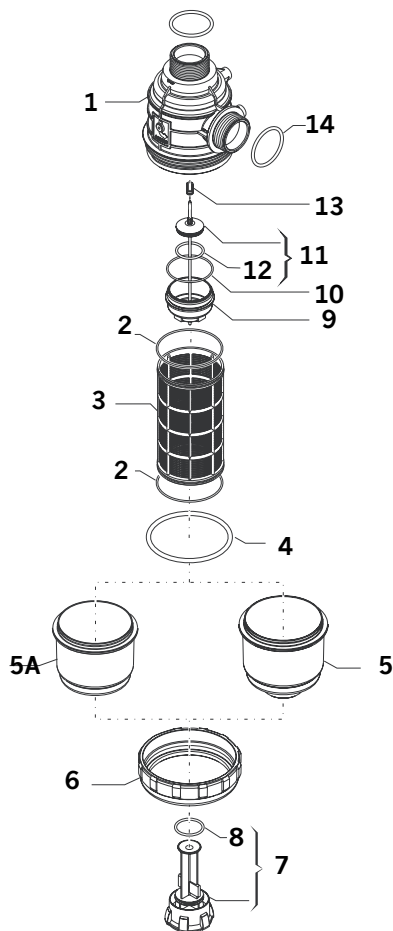
Safety Shut-Off Valve

The safety shut off valve enables the filter bowl to be removed while automatically shutting off the supply line to the filter. As the filter bowl is removed (with the bowl cap), the valve plunger seats so as to seal off the filter from the supply line. Replacing the filter bowl unseats the valve plunger and thus opens the supply line to the filter.

314 Suction filter

To clean the suction filter:

1. Wear all necessary protective clothing;
2. Ensure the pump is turned off
3. Carefully unscrew filter nut and remove bowl;
4. Remove screen and clean (with a soft brush or compressed air);
5. Check for damage to screen, bowl, body and 'o' ring;
6. Place screen back in position;
7. Make sure 'o' ring is in position for proper seal;
8. Replace bowl and screw nut on;
9. Do not over-tighten nut.



Item	Part No.	Description
1	3142160.010	Suction filter body 1½"
2	314300.060	O Ring 71.1x2.6
3	3142003.030 31420035.030	Blue screen (50 mesh) Grey screen (80 mesh)
4	3142000.050	O Ring 94.6 x 5.3
5A	3142000.020	Suction filter bowl
5	3142400.020	Suction filter bowl valve version
6	314000.040	Suction filter nut
7	3142400.060	Bowl cap
8	462300.230	O Ring 31.0x2.5 Viton
9	3142400.070	Valve body
10	460000.190	O Ring 56.8x2.6
11	3142400.080	Valve plunger
12	462300.550V	O Ring 29.7x3.5 Viton
13	314400.090	Valve spring
14	G11023	O Ring

Diaphragm Pumps

CAUTION: Never overfill pump with oil as damage to seals & oil bowl may result. Do not operate diaphragm pumps above 540 RPM.

NOTE: The pump will perform optimally operating between 400 and 540 RPM. At lower speeds excessive pulsation will occur, while pump and diaphragm damage can result at higher revs. Diaphragm pumps are a positive displacement pump that utilises a number of rubber diaphragms and non-return check valves to pump (displace) the fluid. Diaphragm pumps are fitted as standard equipment on all Goldacres sprayers and are very well suited to chemical spraying applications. To ensure that you get the most from your pump, using it correctly and carrying out periodic maintenance are essential in obtaining the best possible performance from your sprayer. Please follow the following guidelines for safe and efficient use:

1. When the pump is operating, the oil should be visible in the bowl.
2. Whilst the pump is running, frequently check the oil level and colour.

NOTE: A change in either colour or level indicates probable damage to diaphragm or valves.

Stop the Pump Immediately.

3. Inspect all hoses to make sure they are the correct size, fitted securely and that there is no restriction or leaking.
4. Do not start the pump with the pump delivery under pressure.
5. Make sure that the pump PTO shaft cover is fitted correctly to prevent accidental injury.
6. Make sure the strainer in the suction filter is clean and correctly installed.
7. Regularly lubricate the PTO shaft according to recommendations (see "PTO SHAFT") to prevent the shaft from binding.
8. Always flush pump with clean water at the end of each spraying day. Prolonged chemical contact can severely damage seals and diaphragms.
9. Regularly check the pump mounting bolts.

10. Change the pump oil after the first 50 hours of operation and then after every 300-350 hours. Be careful to use the correct oil (use SAE 30W40 motor oil) and do not overfill. Rotate pump manually (by hand) to remove air locks when filling with oil.

11. Do not leave water in pump if sprayer is to be left in a cold environment. The water may freeze and cause damage to pump if pumping is attempted while water is frozen. Empty pump of all water (run the pump dry for 15-20 seconds) and cover pump (i.e. with bag) to ensure this situation does not arise. If this has not been done and there is a possibility there may be frozen water in the pump and/or in the lines, wait until any ice has completely thawed before using pump.

NOTE: Ensure that the pump can be turned over by hand before starting.

Pump Diaphragms

The pump diaphragms are wearing components that need to be replaced during the life of the pump. Life expectancy depends upon the operation and maintenance and its suitability for the task.

- Pump diaphragms should be replaced prior to diaphragm failure.
- For large operations, where the sprayer is used extensively, the pump should be reconditioned once a season, including replacing diaphragms, seals and valve springs.
- It is recommended to keep a spare pump repair kit (including diaphragms, seals, valve o-rings and springs) on hand in case of a breakdown. The main causes of premature diaphragm failure are:
- Blocked or incorrectly fitted suction filter restricting flow to the pump.
- Incorrect air damper chamber pressure.
- Running pump at speeds greater than 540 RPM.
- Exceeding the pressure limit of the pump.
- Failure to wash chemicals from pump after use.
- Incompatibility of the diaphragm material and the chemicals used.
- Insufficient lubrication of PTO shaft or binding of PTO shaft which can cause a side thrust to the internal components of the pump and overheat the pump and diaphragms. A change of oil colour indicates a pump problem. The oil should be regularly monitored when spraying so that any problem is detected as soon as possible. If the oil goes milky in colour, it is likely the diaphragm has been damaged and the spray mixture has come into contact with the oil. If the oil goes black (or dark grey), it is likely the pump has overheated, possibly due to the PTO shaft binding through insufficient lubrication.

To replace a side diaphragm:

When side diaphragms require replacement it is normal practice to replace the air damper diaphragm as well.

1. Flush pump with clean water to remove chemical residue, then flush with appropriate decontaminating agent (refer to chemical label for decontamination instructions).
2. Run pump dry for 15-20 seconds to remove water.
3. Remove all air from air damper chamber by pushing in air valve.
4. Remove pump from sprayer.
5. Remove pump manifolds and pump heads.
6. Drain oil from pump.

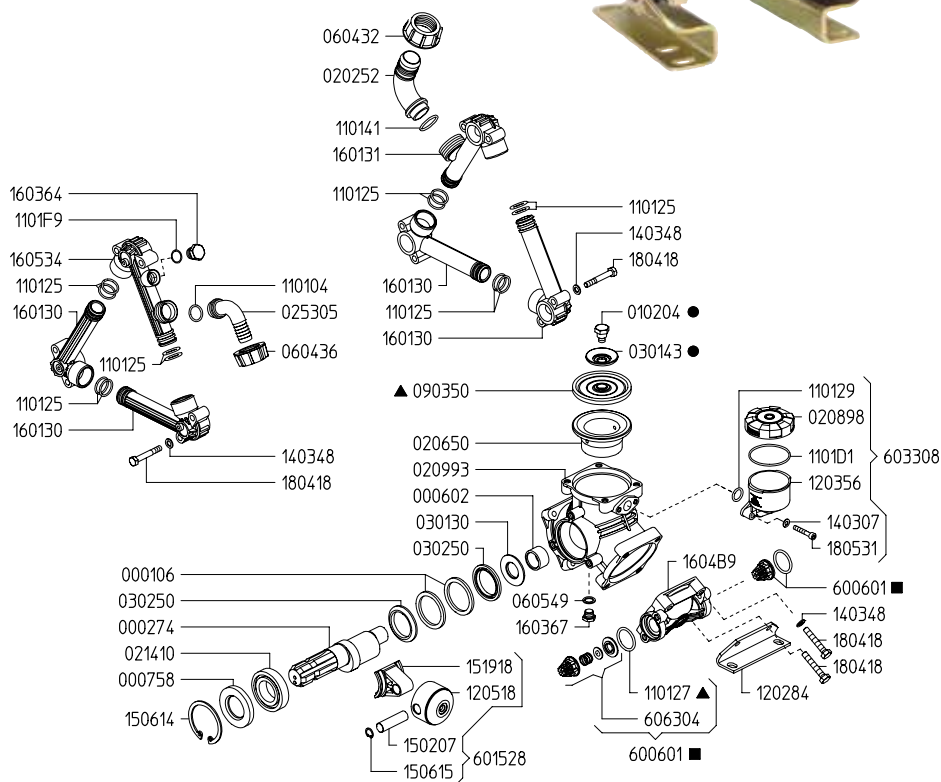
NOTE: Carefully note the position and orientation of all heads, manifolds and valves when disassembling pump. Failure to reassemble correctly will result in severe pump damage.

7. Remove diaphragms.
8. Remove cylinder sleeves.
9. Flush inside of pump with diesel.
10. Visually inspect inner workings of pump.
11. Reassemble with new diaphragms (must be correct diaphragms) once satisfied with condition of pump.
12. Refill with oil. Rotate pump manually (by hand) to remove air locks. Do not overfill.

Udor Zeta 70 Diaphragm Pump

Specifications

Max Pump Capacity	70.5 L/min
Max Pump Speed	540 RPM
Max Pressure Capacity	20 BAR (290 PSI)
Max Power Requirement	3.0 HP
Oil Type	SAE 30W40



Spare part kits

Part No	Description
KIT-ZETA70-C	Udor Zeta 70 Complete Kit
KIT-ZETA70-D	Udor Zeta 70 diaphragm kit

Troubleshooting

The troubleshooting information is provided as a reference when your sprayer is not functioning correctly.

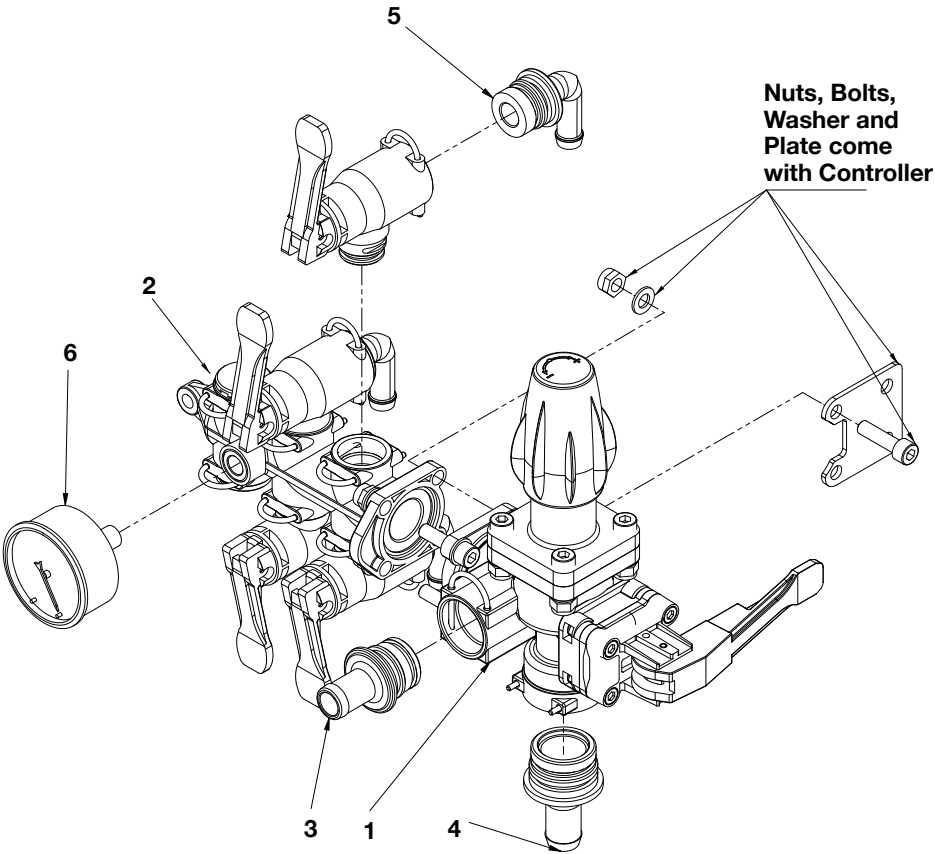
To ensure that you receive the best possible service, it is recommended that you exhaust all applicable troubleshooting solutions shown prior to calling your dealer, or Goldacres, for service advice.

Diaphragm pump

Problem	Common Causes	Common Solution
Pressure and flow rate are too low	Excessive bypass on pressure manifold	Check the pressure relief valve setting on pressure manifold.
	Supply to pump is restricted	Close the ball valve labelled bypass, if the pressure increases on the pump gauge there is a problem with the control valve
		Measure the flow per minute coming out of one nozzle and check the nozzle chart for the corresponding flow.
		Suction filter may be blocked
		Check tank sump and suction line blockages
		Check suction line for air leaks
		Check pump speed
		Check oil for colour change. If the oil appears milky, a diaphragm will be damaged and needs to be replaced.
		Check valves in pump.
Pressure and flow rate are too high	Bypass line is restricted or blocked..	Check for restriction in bypass line.
		Check pump speed is not too fast.
The pressure on my gauge is higher than the nozzle flow indicates	Blocked filters of nozzles	Check and clean all pressure and nozzle filters
	Flow loss due to resistance in lines, valves and filters.	
The flow rate is correct but my pressure is too low or high.	Nozzles	Check nozzle chart for correct nozzle size.
Pressure fluctuation	Air leak on suction side of pump	Check suction pump for air leaks
	Incorrect pump speed	Adjust pump speed so it is between 400 -540rpm
	Faulty pump valves	Replace pump valves

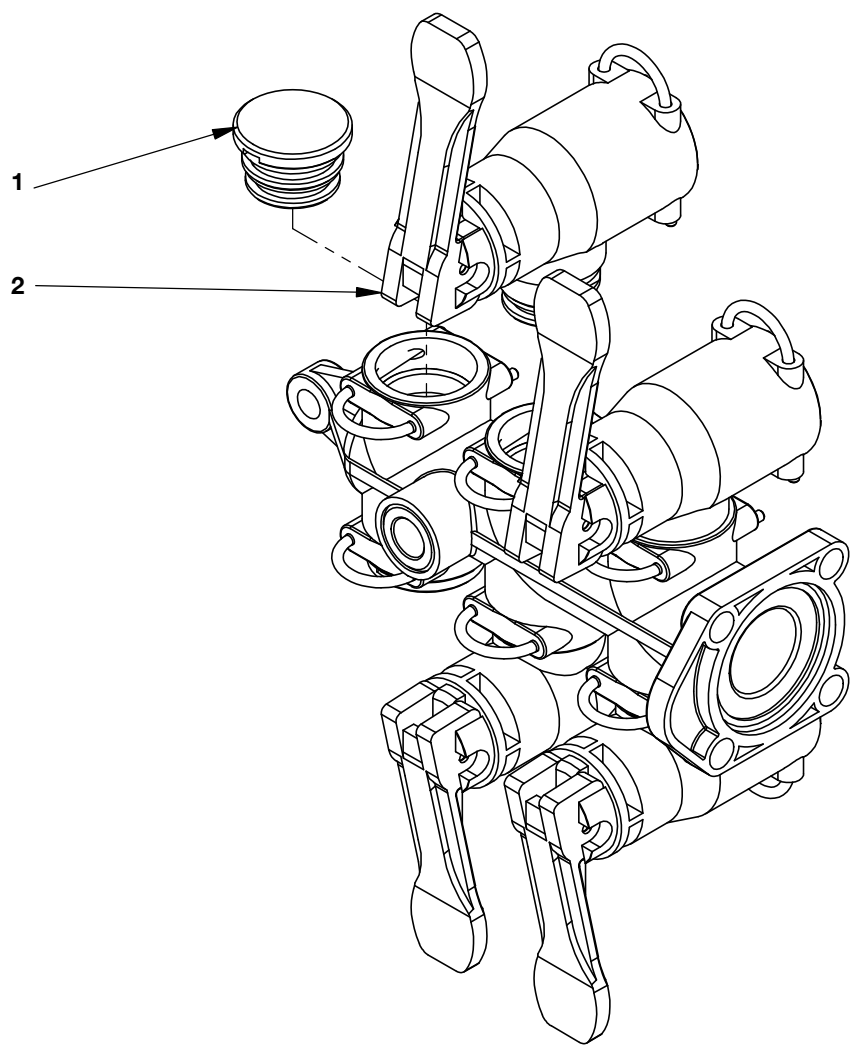
Problem	Common Causes	Common Solution
Pump pressure pulsating	Air accumulator pressure is incorrect	Reset the pressure in air accumulator
	Air accumulator diaphragm has a leak	Replace air accumulator diaphragm
	Incorrect pump speed	Adjust pump speed so it is between 400 - 540rpm
	Air leak on suction side of pump	Check pump suction for air leaks
Pump oil is becoming milky	Cracked diaphragm	Replace all diaphragms
Pump oil is changing colour and becoming black or dark grey	Pump is overheating	Check pump speed and oil level
Pump is noisy	Low oil level	Refill or replace oil
	Air accumulator pressure set incorrectly	Recharge air accumulator to specified pressure
	Insufficient lubrication on PTO shaft	Grease PTO shaft Replace all bearings
	Damaged pump valves	Replace pump valves
	Pump suction line has air leak or is restricted	Clean suction filter and check for leaks in suction lines
Pump housing or mountings cracked	PTO shaft not sliding freely or incorrect length	Check PTO shaft length and lubricate
	Extremely cold weather can cause liquid in the pump to freeze	Check for ice in the pump and let defrost if required
	The shaft is too long	Shorten shaft
Damaged universal joint	PTO shaft is inadequately lubricated	Lubricate PTO shaft and uni joints
PTO shaft bent or vibrating excessively	PTO shaft is too short	Replace PTO shaft

Geo-Line Controller



Pos	Part No	Description	Qty
1	GA2000085	Main Manual Control Valve, Adjustable presure Relief, Geoline	1
2	GA2000086	Plumbing Manifold, 4-6 Sections, Geoline	1
3	GA2000053	Plumbing fitting, Hose barb 19mm, With oring, Inlet, Geoline	1
4	GA2000054	Plumbing fitting, Hose barb 19mm, With oring, Bypass, Geoline	1
5	GA2000056	Plumbing fitting, Hose barb 13mm, elbow, With oring, outlet, Geoline	4
6	GA5020735	Pressure Gauge, Rear Mount, 25 Bar, ¼", Coloured scale, Geoline	1

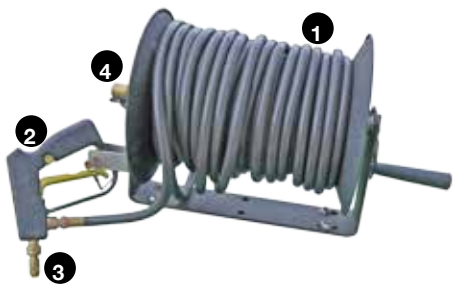
Geo-Line Controller



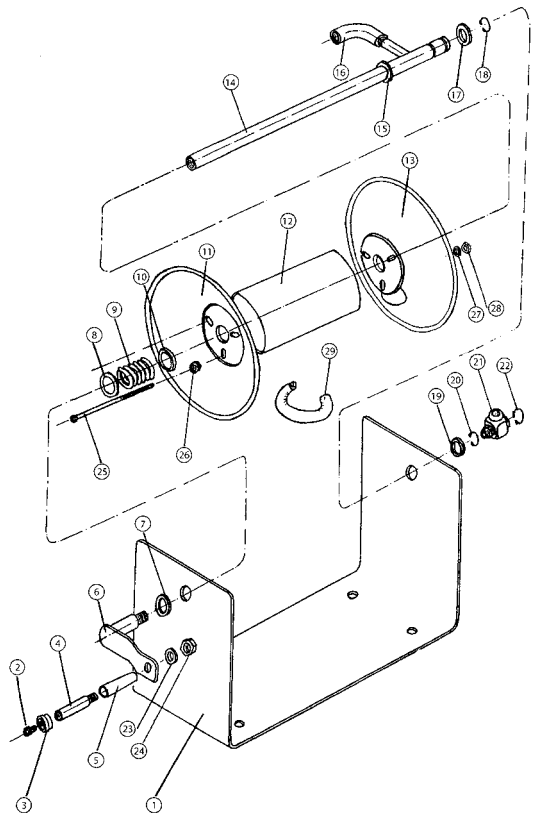
Pos	Part No	Description	Qty
1	GA2000058	Plumbing fitting, plug, Geoline	2
2	GA2000087	Modular Valve, Geoline, Suits Geoline manifold GA2000086	4

30mt manual hose reel

Ref. No	Part No	Description
1	GA5066080	30 Mt manual hose reel
2	GA4900546	AA30L GunJet with adjustable brass ConeJet
3	5500X18	Adjustable ConeJet
4	GA5020875	Male tailpiece 1/4" thread x 1/2" barb



Part No	Description	Qty
1	Base	1
2	Screw	1
3	Rubber Sleeve	1
4	Handle	1
5	Handle Sleeve	1
6	Link Lever	1
7	Washer	1
8	Washer	1
9	Spring	1
10	Washer	1
11	Flange A	1
12	Sleeve	1
13	Flange B	1
14	Axle	1
15	Fixed Washer	1
16	Outlet Fitting	1
17	Washer	1
18	Spring Washer	1
19	Washer	1
20	Spring Washer	1
21	Swivel Valve (Inc. 2 valve O-ring)	1
22	Spring Washer	1
23	Washer	1
24	Nut	1
25	Screw	1
26	Washer	1
27	Washer	1
28	Nut	1
29	30m x 10mm Hose	1

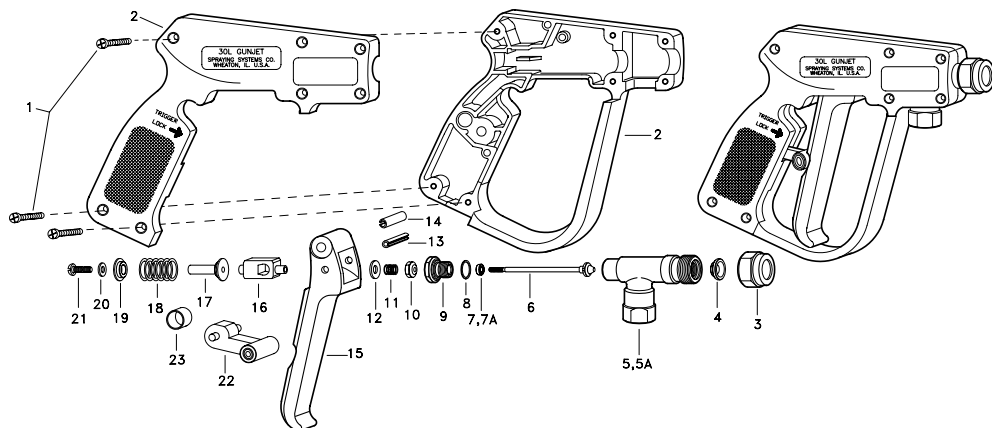


AA30L GunJet

The gunjet trigger needs to be locked via the trigger lock when not in use to prevent the gunjet from spraying inadvertently.

No. AAB30L-¼, GunJet Spray Gun (BSPT Threads)

AB30L-Kit - Spare Parts Kit (Includes all items marked with * and item 7)

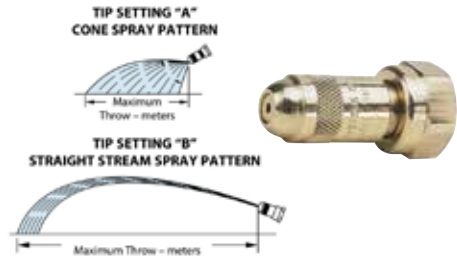


Item	Part No.	Description
1	CP17103-11/16-302SS	Screw, Type 302 Stainless Steel (7 Req'd)
2	CP19684-1-NYB	Right and Left hand Housing Set, Nylon (Black)
3	CP7890-INP	Cap, Steel, Nickel Plated
* 4	CP7490-BRTEF	Valve Seat, Brass and Teflon
5	CP22136	Inlet Body, Brass (For Model 30L-¼)
5A	CPB22136	Inlet Body, Brass (For Model B30L-¼)
* 6	CP22137-BR302S	Stem Sub-Assembly, Brass and Type 302 SS
7	CP14255-1-BU	Cup Packing, Buna-N
7A	CP14255-1-VI	Cup Packing, Viton
* 8	CP19812	Gasket, Brass
9	CP19811	Packing Screw, Brass
10	CP7484-SS	Stem Nut, SS
11	CP7489-302SS	Trigger Stop Spring, Type 302 SS
12	CP7622-302SS	#6 Burr, Type 302 SS
13	CP17720-420SS	Roll Pin, Type 420 SS
14	CP19820-420SS	Roll Pin, Type 420 SS
15	CP17703-NY	Trigger, Nylon (Yellow)
16	CP19810	Trigger Guide, Brass
17	CP19815	Spring Guide, Brass
* 18	CP22138-302SS	Spring, Type 302 SS
19	CP19816	Spring Retainer, Brass
20	CP19819-SS	Washer, Type 18-8 SS
21	CP19818-SS	Screw, Type 18-8 SS
22	CP19806-NY	Trigger Lock, Nylon (Yellow)
23	CP19805-CE	Lock Spring Ring, Celcon

Adjustable ConeJet Nozzle

The adjustable brass ConeJet nozzle rotates through a half turn to provide spray selection from wide angle, finely atomized cone spray to a straight stream spray.

Tip settings “A” and “B” represent two extreme points of rotation in tip adjustment.



Adjustable Conjet Tip No.	Performance	Liquid Pressure (bar)							
		1.5		2		3		4	
5500-X18	Capacity - l/min	0.79	2.61	0.98	3.18	1.14	3.67	1.40	4.54
	Spray angle °	71	-	75	-	77	-	78	-
	Max throw m	1.2	11.6	1.2	12.8	1.2	13.3	1.2	13.0
5500-X22	Capacity - l/min	0.98	3.14	1.21	3.79	1.40	4.54	1.70	5.30
	Spray angle °	71	-	75	-	78	-	79	-
	Max throw m	1.2	11.7	1.40	13.0	1.5	13.6	1.5	13.2
5500-X26	Capacity - l/min	1.17	3.71	1.4	4.54	1.63	5.30	2.01	6.43
	Spray angle °	72	-	76	-	78	-	79	-
	Max throw m	1.4	11.6	1.5	13.1	1.5	13.7	1.7	13.3

Safety Decals

Understanding safety decals and their purpose assists in the safe operation of your sprayer. Safety decals are there for your protection and it is the responsibility of the owner operator to replace damaged and/or missing safety decals.

Regularly review safety decals with operators.

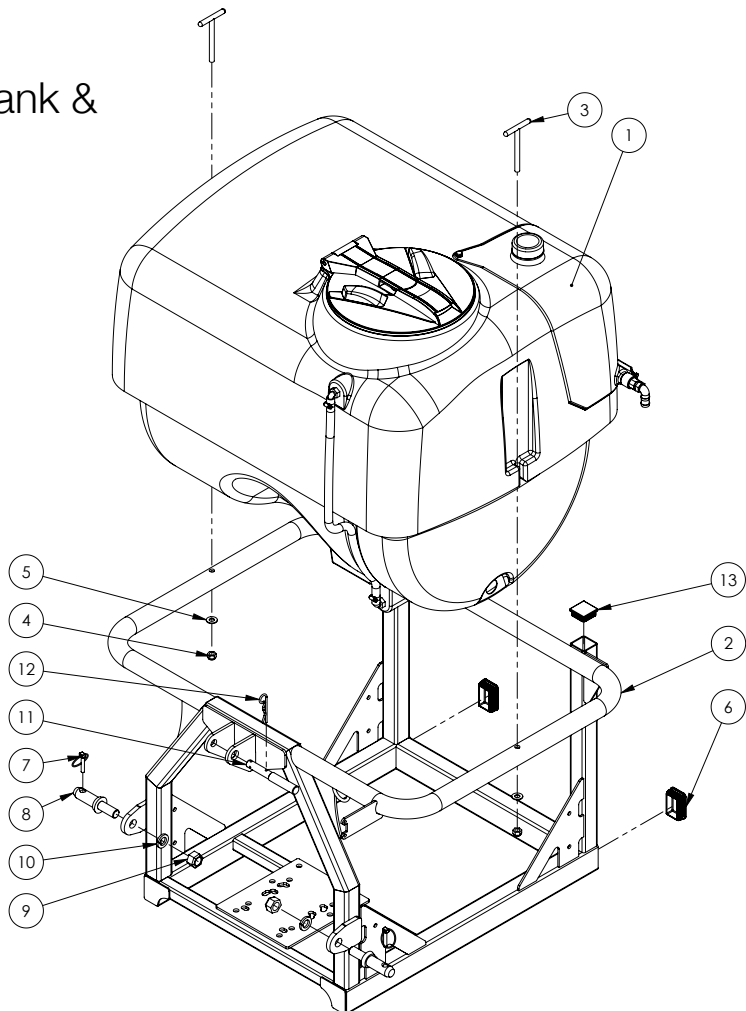
It is very important to ensure that all new machine components and replacement parts include current hazard identification decals.

Replacement safety decals can be ordered from all Goldacres dealers.



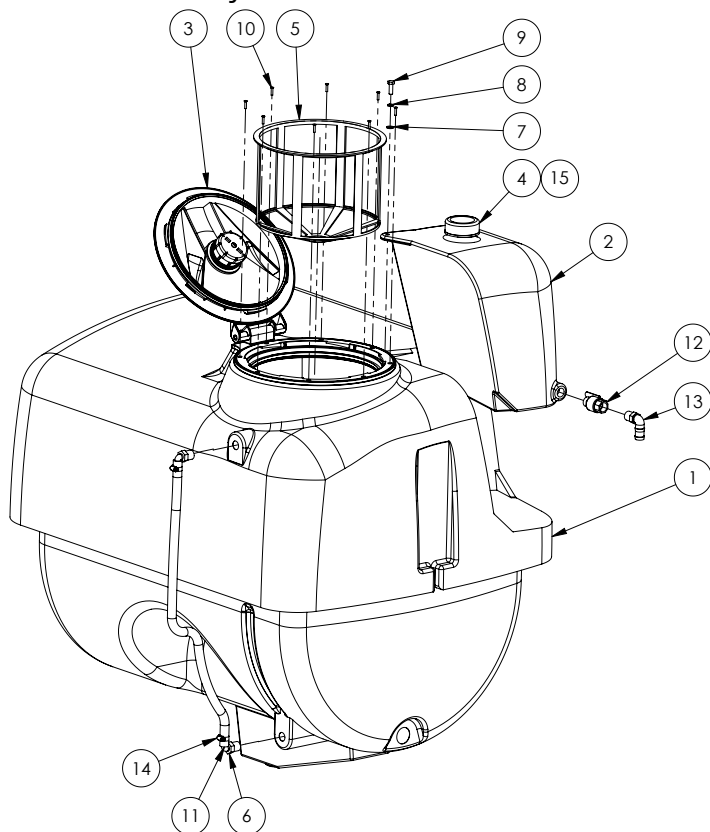
Part No	Description
GA8700166	3PL 2015 Work Ready Base Kit
GA8700167	3PL 450 Tank Decal
GA8700168	3PL 600 Tank Decal
GA8700169	3PL 800 Tank Decal
GA8700170	3PL 1000 Tank Decal

450L Tank & Frame



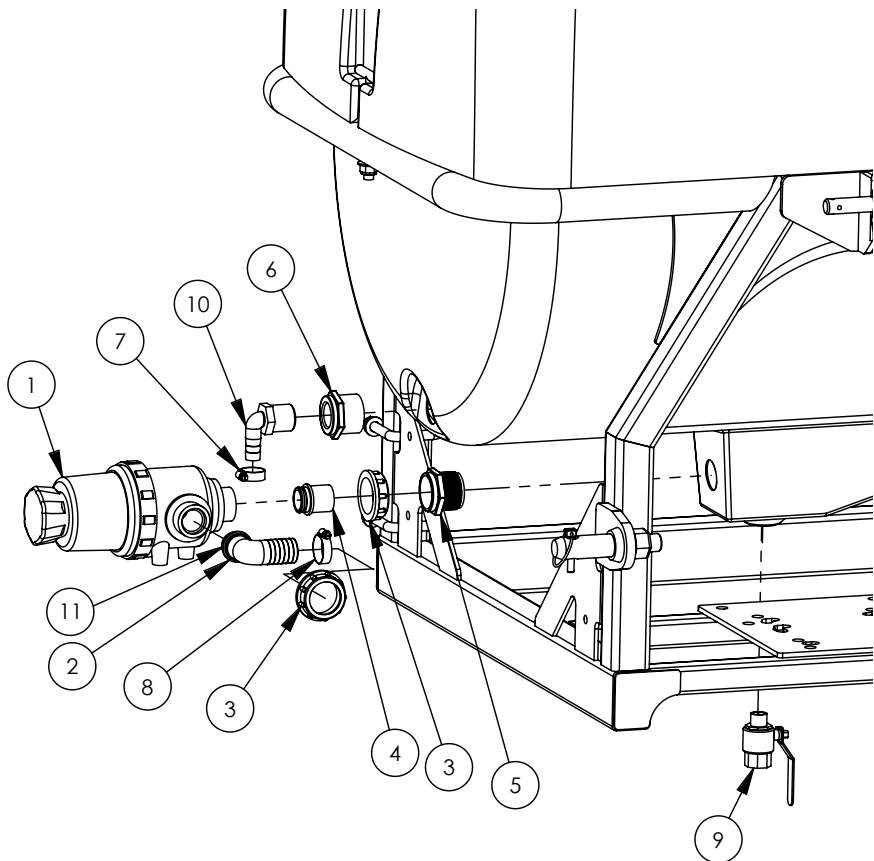
Pos	Part No	Description	Qty
1	GA4906600	Tank Assembly, 450L, 3PL, 2014	1
2	GA4660215	3 Point Linkage Sprayer Frame 450L Retail Ready 2014	1
3	GA5071830	T Bolt, M12 x 130mm Long x 90mm Wide	2
4	GA5012461	Nut M12 Nyloc ZP	2
5	GA5000587	Washer 12mm Flat ZP Heavy Duty	2
6	GA5071885	Tube Insert, 75 x 50 x 1.6 – 4, Rectangular, Plastic, Black	2
7	GA5010905	Linch pin, 7/16" OD x 45 long	2
8	GA5010511	Implement Pin, Cat 2	2
9	GA5004529	Nut 7/8" UNF Nyloc ZP	2
10	GA5020645	Washer 22mm Spring SS	2
11	GA5016789	Top Link Pin, Dual Cat.	1
12	GA5007197	Clip R type 4 mm ZP S12	1
13	GA5003783	50 x 50mm Square Tube Insert, Black	2

450L Tank Assembly



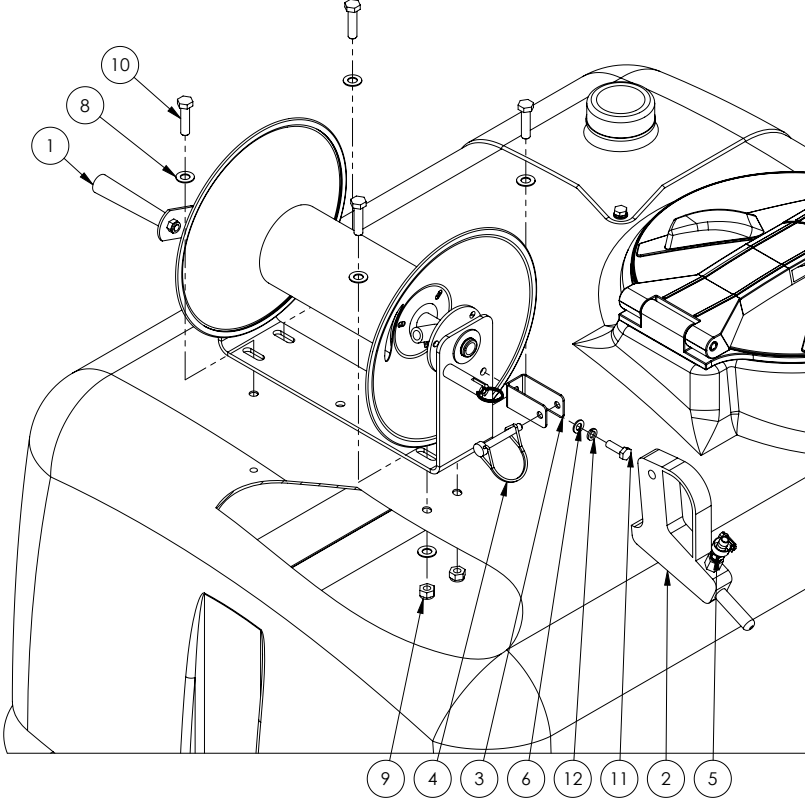
Pos	Part No	Description	Qty
1	GA5071255	Tank, 450L 3 Point Linkage 2014	1
2	GA5071275	Tank, Handwash 3 Point Linkage 2014	1
3	356040	Hinged lid D.355 Flat surface	1
4	GA5009157	Cap, Suit exacta foam tank, O-ring not included	1
5	300120	Basket Filter D 302 x 254	1
6	HB050-90	Hose Barb Elbow ½"	2
7	GA5003643	Washer 8mm Flat HD SS	1
8	GA5004919	Washer 8mm Spring SS	1
9	GA5004713	Bolt M8 x 25	1
10	GA5069815	Screw M4 x 20 C/Sunk phillip head - Zinc	8
11	HOS12WSIGHT	Hose, 12mm, Clear, Wire reinforced	1
12	GA5020295	Ball valve, 12mm male thread x 12mm female thread, Lever handle	1
13	HB050-075-90	Hose barb, Elbow, 90 degree, ½" male thread x ¾" hose,	1
14	GA5000469	Hose Clamp ½" SS	2
15	GA5009187	O-ring, 60 x 5.5, suits exacta tank cap	1

450L Filter & Drain



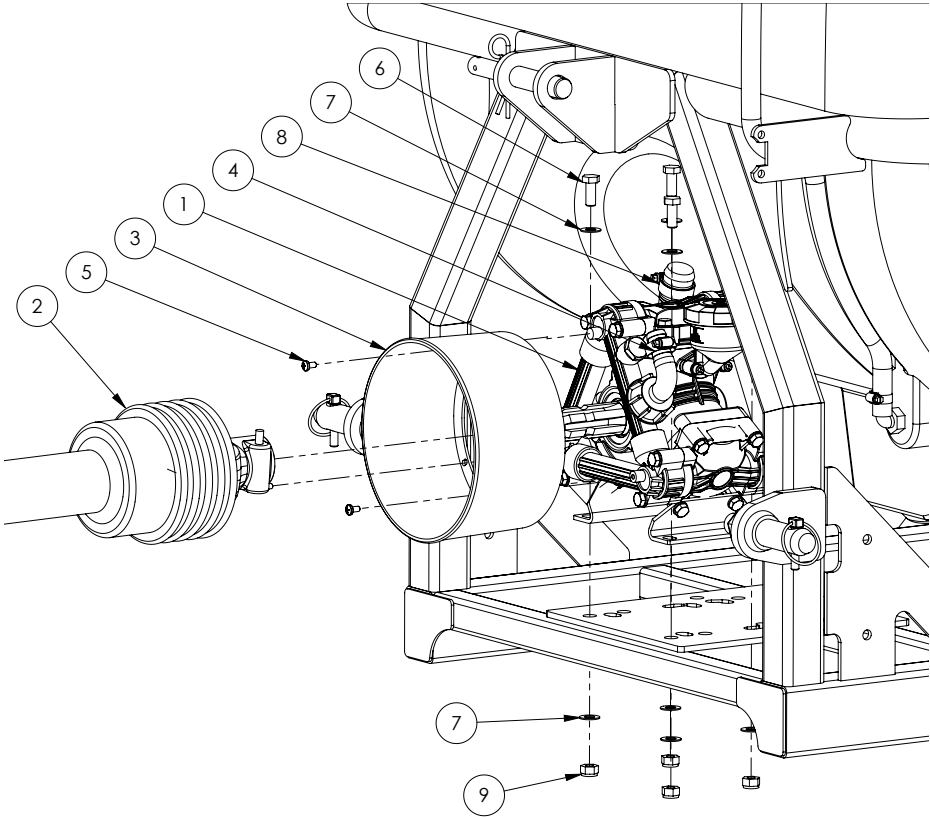
Pos	Part No	Description	Qty
1	3142463	Suction filter 1½" Includes valve, 50 Mircon	1
2	116633	Hose barb, Elbow, 90 degree, 1½" Fly nut end x 32 mm hose	1
3	2002060	1½" Fly Nut	2
4	265065	Coupling 1¼" for fly nut 1½"	1
5	RB150125	Reducing bush 1½" to 1¼"	1
6	RB150100	Reducing bush, 1½" male thread x 1" female thread	1
7	GA5000999	Hose Clamp ¾" SS	1
8	GA5002783	Hose Clamp 2" SS (40-60/12W)	1
9	GA5018317	Valve, Ball, 20mm thread male / female inlet / outlet, Lever handle, SS	1
10	HB100-075-90	1"MPT x ¾" Hose Shank - 90 Degree	1
11	G10061	O-ring, 30 x 3.0	2

30M Hose Reel Mounting



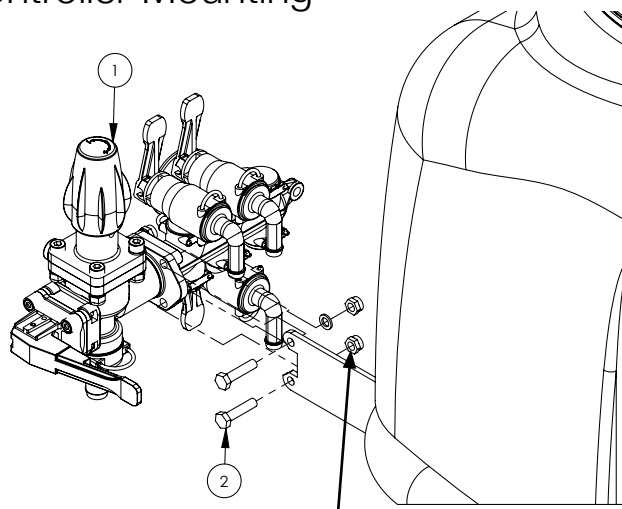
Pos	Part No	Description	Qty
1	GA5066080	Hose reel, 30m ¾" hose, manual rewind	1
2	GA4900546	Gunjet, AA30, adjustable nozzle, with fittings	1
3	GA4534635	Bracket Nozzle suit small booms	1
4	GA5013003	Pipe lynch pin, 8 OD x 60 long	1
5	GA5000469	Hose Clamp ½" SS	1
6	GA5003643	Washer 8mm Flat HD SS	2
7	GA5052590	Nut M8 Nyloc SS	1
8	GA5000115	Washer 10mm Flat SS	8
9	GA5051445	Nut M10 Nyloc SS	4
10	GA5006079	Bolt M10 x 40 SS	4
11	GA5004713	Bolt M8 x 25 SS A2-70	1
12	GA5004919	Washer 8mm Spring SS	1

PTO Pump Mounting



Pos	Part No	Description	Qty
1	Zeta 70 1C	Pump , Diaphragm type, Zeta 70 PTO shaft drive	1
2	GA4900714	PTO drive shaft std angle 1.05m	1
3	121913	PTO cover	1
4	GA5000999	Hose Clamp ¾" SS	1
5	GA5014827	Screw, Pan Head, 12 Gauge x ½", ZP	3
6	GA5066162	Bolt M10 x 25 SS	4
7	GA5000115	Washer 10mm Flat SS	8
8	GA5002783	Hose Clamp 2" SS (40-60/12W)	1
9	GA5000141	Nut M10 Nyloc	4

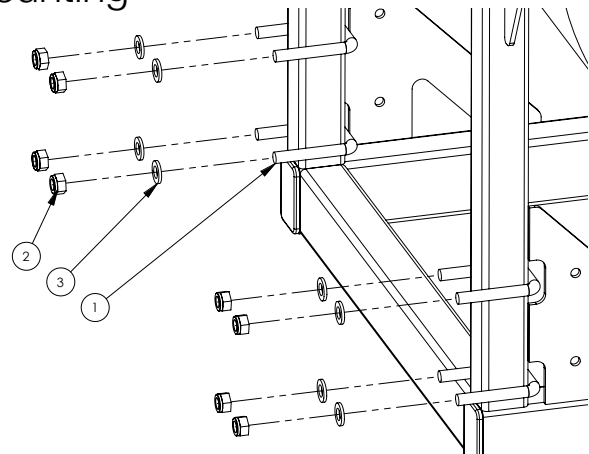
Spray Controller Mounting



Use washer and nuts which are on the controller to mount to the frame plate

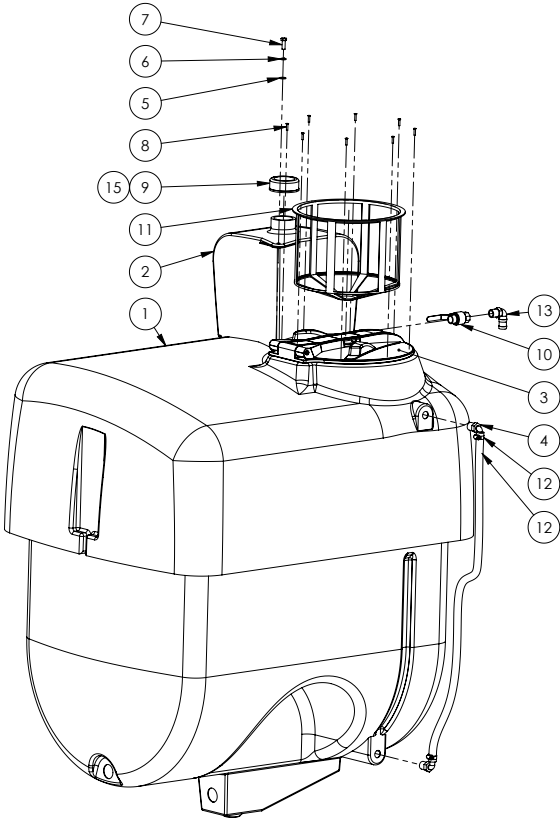
Pos	Part No	Description	Qty
1	GA2000051	Pressure control valve, manual, constant, 4 way, Geoline	1
2	GA5011481	Bolt M8 x 35 Gr8.8 ZP	2

Boom Mounting



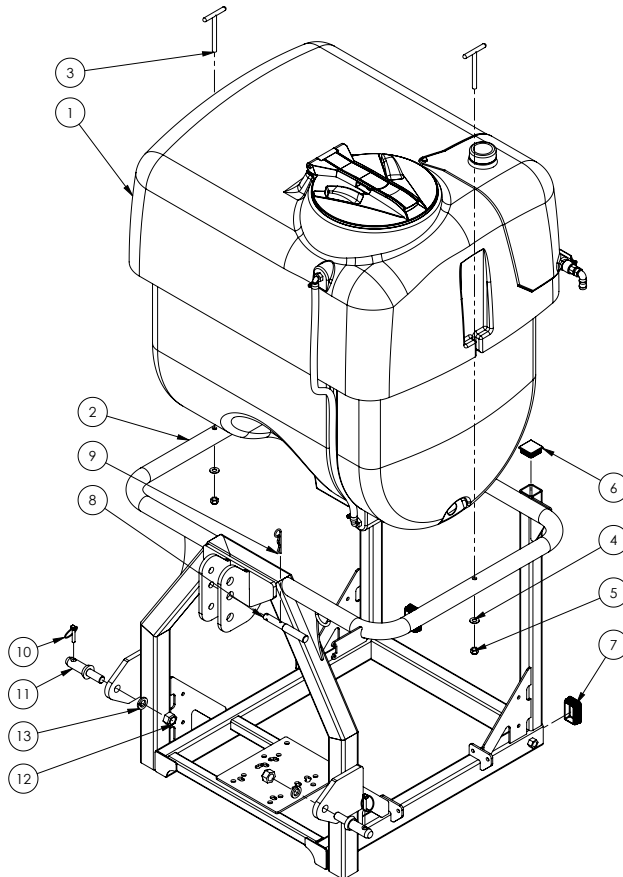
Pos	Part No	Description	Qty
1	GA5011251	U-Bolt M12 x 52 x 80 Square Top	4
2	GA5012461	Nut M12 Nyloc ZP	8
3	GA5000577	Washer 12mm Flat SS HD	8

600L Tank Assembly



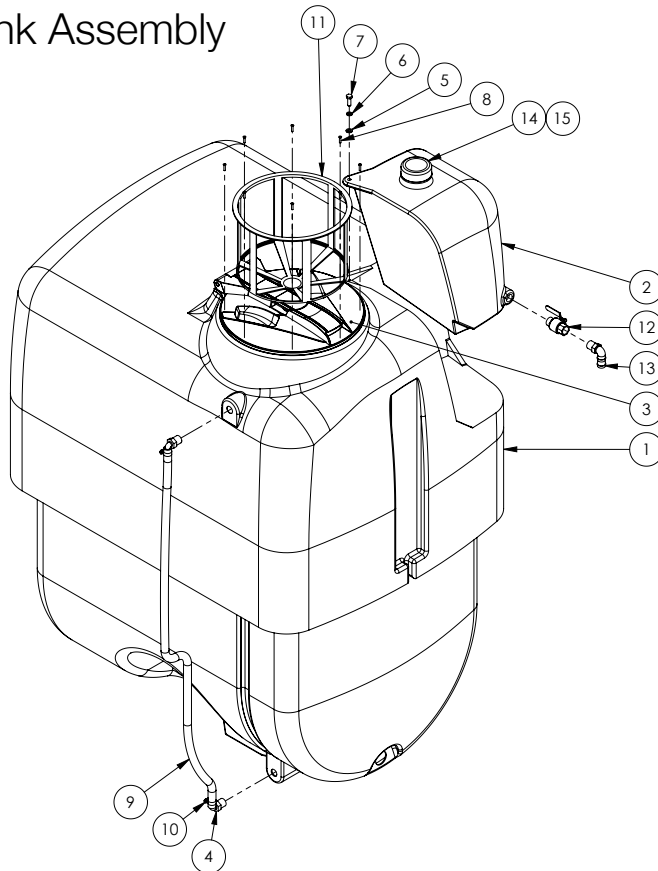
Pos	Part No	Description	Qty
1	GA5071260	Tank, 600L 3 Point Linkage 2014	1
2	GA5071275	Tank, Handwash 3 Point Linkage 2014	1
3	356040	Hinged lid D.355 Flat surface	1
4	HB050-90	Hose Barb Elbow ½"	2
5	GA5003643	Washer 8mm Flat HD SS	1
6	GA5004919	Washer 8mm Spring SS	1
7	GA5004713	Bolt M8 x 25	1
8	GA5069815	Screw M4 x 20 C/Sunk phillip head - Zinc	8
9	GA5009157	Cap, Suit exacta foam tank, O-ring not included	1
10	GA5020295	Ball valve, 12mm male thread x 12mm female thread, Lever handle	1
11	300120	Basket Filter D 302 x 254	1
12	HOS12WSIGHT	Hose, 12mm, Clear, Wire reinforced	1.2
13	HB050-075-90	Hose barb, Elbow, 90 degree, ½" male thread x ¾" hose	1
14	GA5000469	Hose Clamp ½" SS	2
15	GA5009187	O-ring, 60 x 5.5, suits exacta tank cap	1

600L Tank & Frame



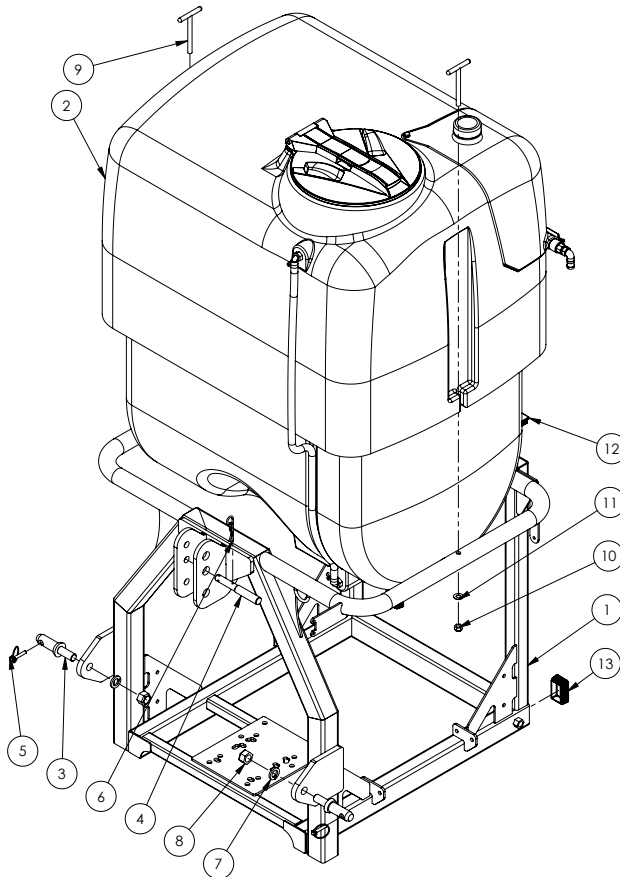
Pos	Part No	Description	Qty
1	GA4906605	Tank Assembly 600L 3PL 2014	1
2	GA4660210	3 Point Linkage Sprayer Frame 600L and 800L Retail Ready 2014	1
3	GA5071830	T Bolt, M12 x 130mm Long x 90mm Wide	2
4	GA5000587	Washer 12mm Flat ZP Heavy Duty	2
5	GA5012461	Nut M12 Nyloc ZP	2
6	GA5003783	Tube insert 50 x 50 square, black	2
7	GA5071885	Tube Insert, 75 x 50 x 1.6 – 4, Rectangular, Plastic, Black	2
8	GA5016789	Top Link Pin, Dual Cat.	1
9	GA5007197	Clip R type 4 mm ZP S12	1
10	GA5010905	Linch pin, 7/16" OD x 45 long	2
11	GA5010511	Implement Pin, Cat 2	2
12	GA5004529	Nut 7/8" UNF Nyloc ZP	2
13	GA5020645	Washer 22mm Spring SS	2

800L Tank Assembly



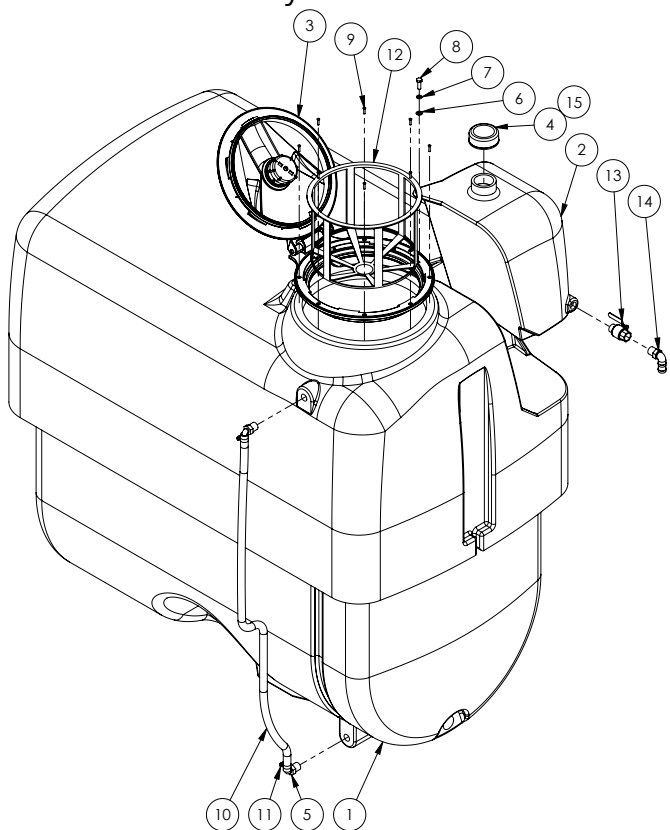
Pos	Part No	Description	Qty
1	GA5071265	Tank, 800L 3 Point Linkage 2014	1
2	GA5071275	Tank, Handwash 3 Point Linkage 2014	1
3	356040	Hinged lid D.355 Flat surface	1
4	HB050-90	Hose Barb Elbow ½"	2
5	GA5003643	Washer 8mm Flat HD SS	1
6	GA5004919	Washer 8mm Spring SS	1
7	GA5004713	Bolt M8 x 25	1
8	GA5069815	Screw M4 x 20 C/Sunk phillip head - Zinc	8
9	HOS12WSIGHT	Hose, 12mm, Clear, Wire reinforced	1.2
10	GA5000469	Hose Clamp ½" SS	2
11	300120	Basket Filter D 302 x 254	1
12	GA5020295	Ball valve, 12mm male thread x 12mm female thread, Lever handle	1
13	HB050-075-90	Hose barb, Elbow, 90 degree, ½" male thread x ¾" hose	1
14	GA5009157	Cap, Suit exacta foam tank, O-ring not included	1
15	GA5009187	O-ring, 60 x 5.5, suits exacta tank cap	1

800L Tank & Frame



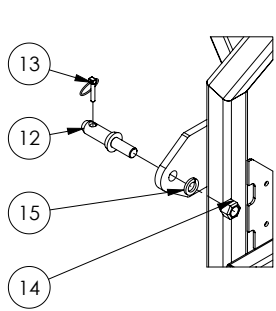
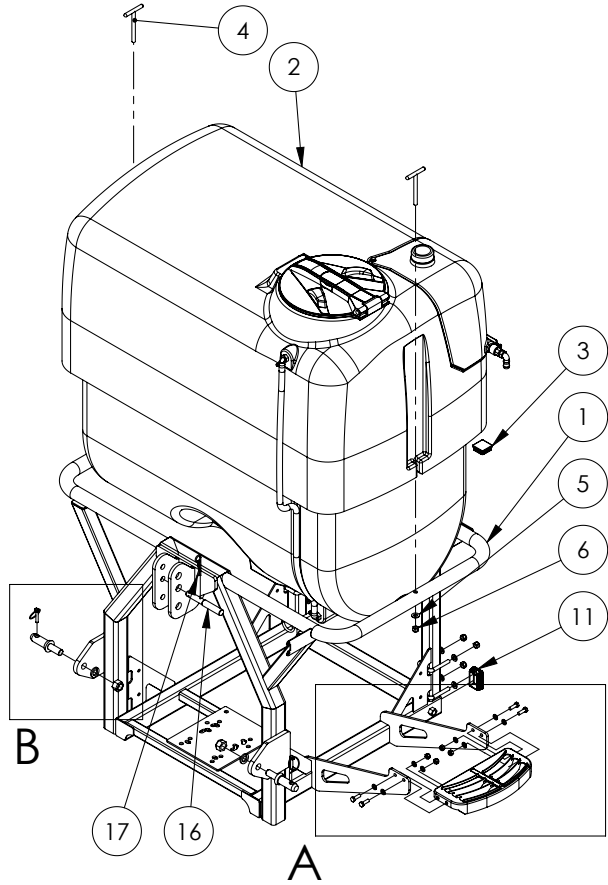
Pos	Part No	Description	Qty
1	GA4660210	3 Point Linkage Sprayer Frame 600L and 800L Retail Ready 2014	1
2	GA4906610	Tank Assembly 800L 3PL 2014	1
3	GA5010511	Implement Pin, Cat 2	2
4	GA5016789	Top Link Pin, Dual Cat.	1
5	GA5010905	Linch pin, 7/16" OD x 45 long	2
6	GA5007197	Clip R type 4 mm ZP S12	1
7	GA5020645	Washer 22mm Flat Spring SS	2
8	GA5004529	Nut 7/8" UNF nyloc ZP	2
9	GA5071830	T Bolt, M12 x 130mm Long x 90mm Wide	2
10	GA5012461	Nut 12mm Nyloc ZP	2
11	GA5000587	Washer 12mm Flat ZP Heavy Duty	2
12	GA5003783	Tube insert, 50 x 50 square, black	2
13	GA5071885	Tube Insert, 75 x 50 x 1.6 – 4, Rectangular, Plastic, Black	2

1000L Tank Assembly

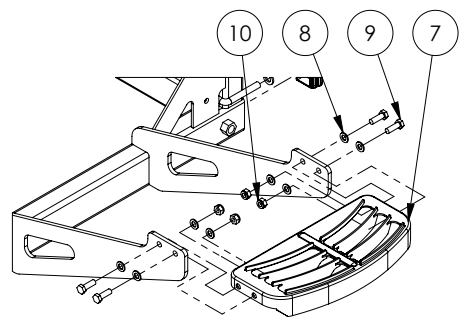


Pos	Part No	Description	Qty
1	GA5071270	Tank, 1000L 3 Point Linkage 2014	1
2	GA5071275	Tank, Handwash 3 Point Linkage 2014	1
3	356040	Hinged lid D.355, Flat surface	1
4	GA5009157	Cap, Suit exacta foam tank, O-ring not included	1
5	HB050-90	Hose Barb Elbow ½"	2
6	GA5003643	Washer 8mm Flat HD SS	1
7	GA5004919	Washer 8mm Spring SS	1
8	GA5004713	Bolt M8 x 25	1
9	GA5069815	Screw M4 x 20 C/Sunk phillip head - Zinc	8
10	HOS12WSIGHT	Hose, 12mm, Clear, Wire reinforced	1.2
11	GA5000469	Hose Clamp ½" SS	2
12	300120	Basket Filter D 302 x 254	1
13	GA5020295	Ball valve, 12mm male thread x 12mm female thread, Lever handle	1
14	HB050-075-90	Hose barb, Elbow, 90 degree, ½" male thread x ¾" hose	1
15	GA5009187	O-ring, 60 x 5.5, suits exacta tank cap	1

1000L Tank & Frame



Detail B

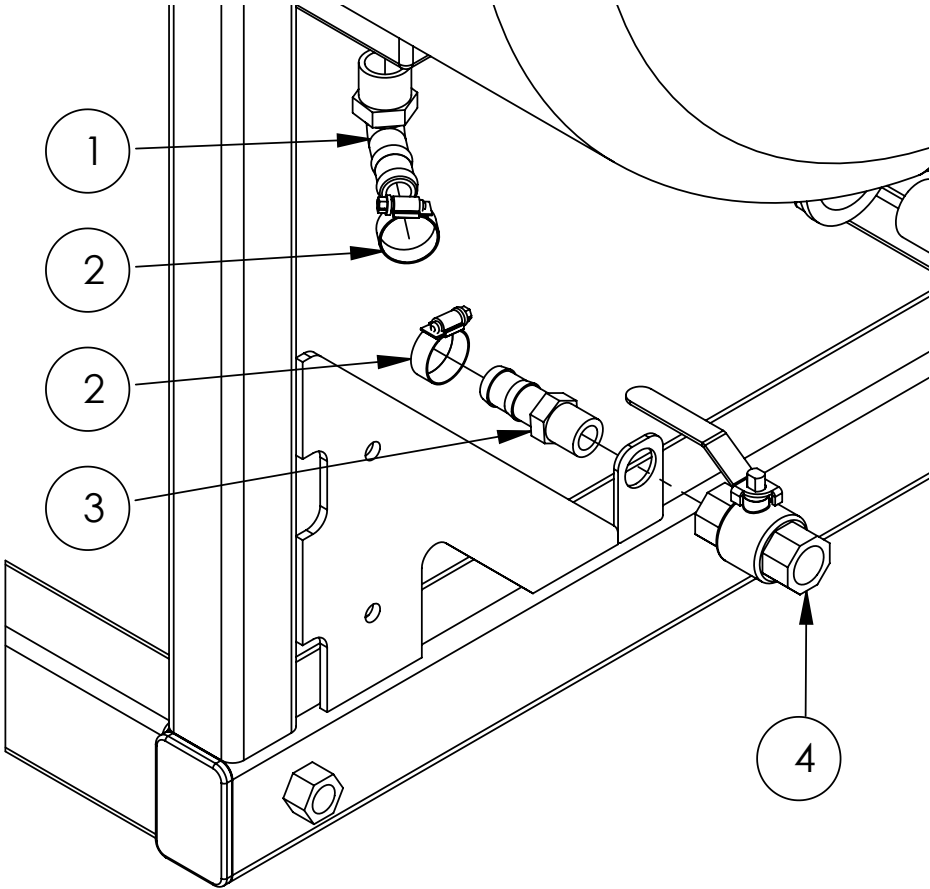


Detail A

1000L Tank & Frame

Pos	Part No	Description	Qty
1	GA4660220	3 Point Linkage Sprayer Frame 1000L Retail Ready 2014	1
2	GA4906615	Tank Assembly, 1000L, 3PL, 2014	1
3	GA5003783	50 x 50 square tube insert black	2
4	GA5071830	T Bolt, M12 x 130mm Long x 90mm Wide	2
5	GA5000587	Washer 12mm Flat ZP Heavy Duty	2
6	GA5012461	Nut M12 Nyloc ZP	10
7	GA5070520	Pressed Step	1
8	GA5000117	Washer 10mm SS Heavy duty	8
9	GA5065455	Bolt M10 x 30 ZP GR8.8	4
10	GA5000141	Nut M10 Nyloc	4
11	GA5071885	Tube Insert, 75 x 50 x 1.6 – 4, Rectangular, Plastic, Black	2
12	GA5010511	Implement Pin, Cat 2	2
13	GA5010905	Linch pin, 7/16" OD x 45 long	2
14	GA5004529	Nut 7/8" UNF nyloc ZP	2
15	GA5020645	Washer 22mm Spring SS	2
16	GA5016789	Top Link Pin, Dual Cat.	1
17	GA5007197	Clip R type 4 mm ZP S12	1
18	GA5011251	U-Bolt M12 x 52 x 80 Square Top	4
19	GA5000577	Washer 12mm Flat SS HD	8

600L, 800L, 1000L Drain

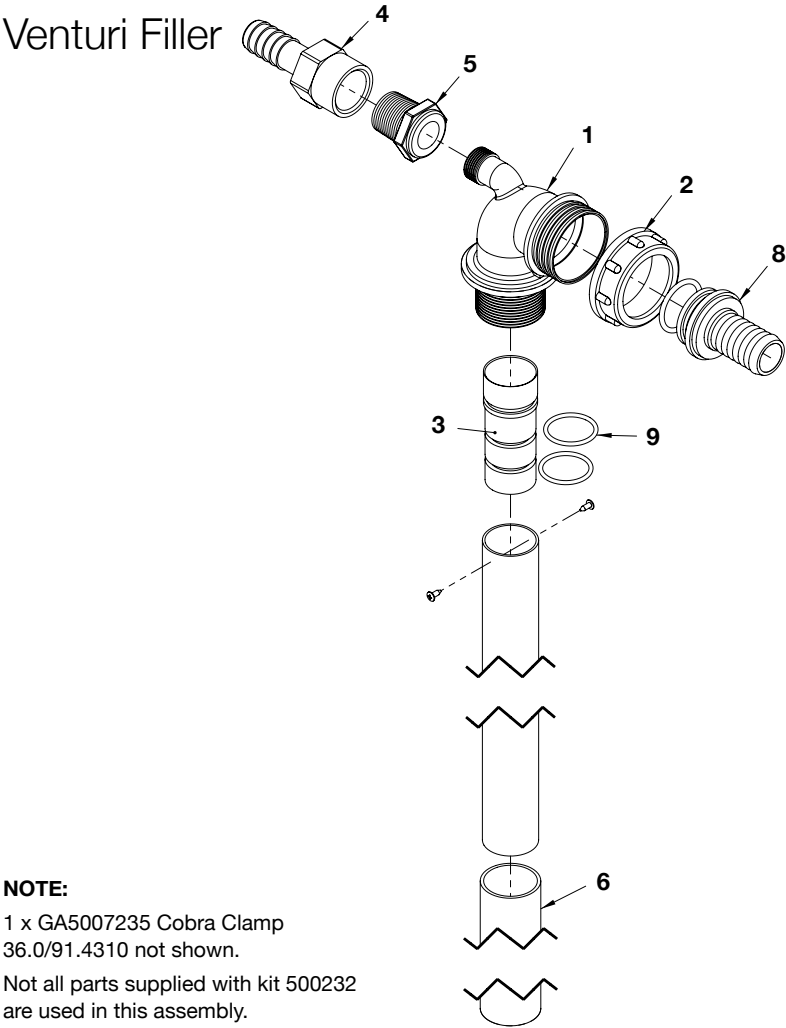


Pos	Part No	Description	Qty
1	HB075-90	Hose barb, Elbow, 90 degree, 3/4" male thread x 3/4" hose	1
2	GA5000999	Hose Clamp 3/4" SS	4
3	HB050-075	Hose Barb 1/2" to 3/4"	1
4	GA5018309	Valve, Ball, 12mm female thread inlet/outlet, Lever handle, SS	1

This diagram illustrates the exploded view of the water inlet assembly. The components are numbered as follows:

- 1: Water inlet hose
- 2: Hose clamp
- 3: Hose clamp
- 4: Hose clamp
- 5: Hose clamp
- 6: Hose clamp
- 7: Water inlet valve
- 8: Water inlet valve
- 9: Hose clamp
- 10: Hose clamp

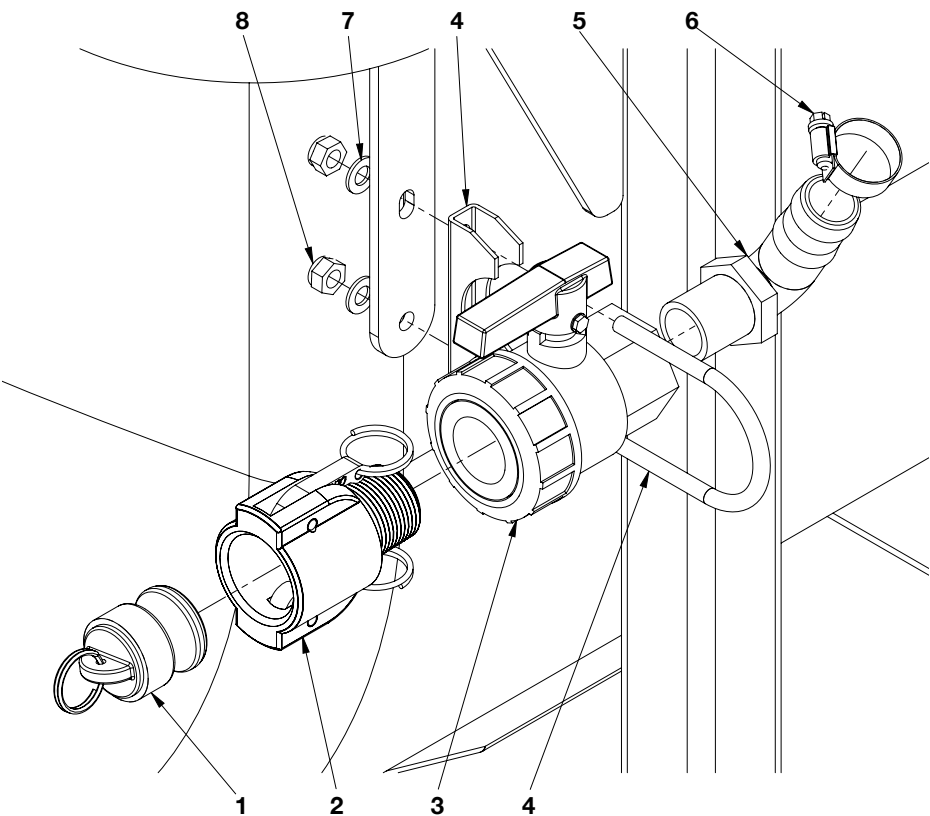
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GA4903086 - Pre assembled Venturi Filler

Item No.	Part No.	Description	Qty.
1	500232	Venturi Filler, not assembled	1
2	500200-050	Nut	1
3	MACH0022	Jet for Arag venturi	1
4	HBFO75	Hose barb female 3/4"	1
5	RB075050	Poly Pipe Reducer Bush 3/4" x 1/2"	1
6	GA5050205	Hose Lay flat Blue - 32mm cut 405mm	1
7	G10061	O-Ring 29 x 3mm	1
8	106625	Hosetail D.25 for Flynut 1 1/2"	1
9	GA5049125	O-ring, 23.4 x 3.53, BS213	2

Chem Probe Assembly



Item No.	Part No.	Description	Qty.
1	100125PL	Cam lever, Male plug, Suits 1" & 1¼" couplings	1
2	100B	Cam lever, 1" female coupler, 1" male thread	1
3	UV100FP	Ball Valve 1"	1
4	GA5006705	Exhaust Clamp C8 2"	1
5	HB075-100-90	Hose barb ¾" x 1" x 90 Degree	1
6	GA5000999	Hose clamp ¾" SS	1
7	GA5003643	Washer 8mm Flat HD SS	2
8	GA5052590	Nut M8 Nyloc SS	2

Safety

General

The following pages outline important safety information. At Goldacres safety is a high priority. These safety and warning instructions **MUST** be followed to ensure the safe operation of your Goldacres equipment.

Explanation of key terms used in this operator's manual are:

DANGER - You will be killed or seriously hurt if you don't follow instructions

WARNING - You can be seriously hurt if you don't follow instructions

CAUTION - You can be hurt if you don't follow instructions

NOTE - Is used to notify people of installation, operation or maintenance information that is important but not hazard related.

The Operator

All operators of this equipment should be adequately trained in the safe operation of this equipment. It is important that all operator's have read and fully understand the operators manual prior to using this equipment.

All new operators should be trained in an area without bystanders or obstructions and become familiar with the sprayer prior to operation.

Safety Precautions

DANGER

- Puncture Hazard. Always keep body, head and hands away from sharp edges

WARNINGS

- Any unauthorised modifications to this equipment may affect its function and create a serious safety risk.
- Never attempt to clean parts or nozzles, by blowing with mouth.
- Never attempt to siphon chemicals, or substances, by sucking.
- It is imperative that the vehicle manufacturer's specifications be

checked and all instructions for use when transporting, or towing, be adhered to at all times.

- Do not use the pump in a gaseous or hazardous environment or near combustible material.
- Do not use the pump in an enclosed area, engine exhaust could build up and cause asphyxiation.
- Care should be taken when transferring liquid into the tank to ensure that the gross weight of the equipment does not exceed the safe working load for the operator.
- Water weighs 1kg per litre, however conversion factors must be used when spraying liquids that are heavier or lighter than water. Example: liquid urea has a density of 1.28 kg/L and will therefore be significantly heavier than water if the tank is filled completely.
- Regularly check the pump mounting bolts. (The pump will always vibrate to some degree when operating, and this may work the bolts loose.)
- Suitable care should be taken when driving with the equipment attached to the vehicle. Consideration should be given to both the carrying capacity of the vehicle and the gradient of the terrain when determining the speed at which the vehicle can be driven safely.
- Ensure that the maximum speed of the vehicle, when loaded, is within the vehicle manufacturers limitations.
- Ensure equipment is securely fastened, or attached, to the vehicle at all times.
- Keep clear of overhead obstructions - especially powerlines as contact can be fatal.
- Never work under a raised boom unless properly supported and secure.
- Do not use access steps or ladders on this equipment unless it is safely supported on solid blocks or by vehicle attachment. If unsupported, the equipment can become unstable and may become likely to tip

Pinch Points

- Always be alert whenever you place your

fingers, hands, toes, or feet between any objects

- Loose clothing, jewelry, and hair can be pulled into pinch points. Accordingly, wear snug clothing, remove jewelry, and tie long hair back or secure under a cap before working in the vicinity of pinch point hazards
- Watch your hands and fingers when opening or closing boom sections

Fluids Under Pressure

Fluids escaping from high pressure lines can cause serious injury to skin. Hydraulic oil can easily penetrate human skin. This hazard can be avoided by relieving the pressure in the system. Do not disconnect any hoses, nozzles or filters while equipment is operating. Disconnecting these components while under pressure may result in uncontrolled fluid discharge which may be hazardous. When the repair is complete ensure that all fittings and lines are secured before re-applying pressure.

Entanglement in Rotating Drive Lines

Rotating drives can cause serious injury or even death when entanglement occurs. Keep hands, feet, hair and clothing away from all moving parts to prevent injury. Never operate this machine with covers, shrouds, or guards removed. To reduce the risk of entanglement, ensure that the appropriate PPE is worn and ensure that all other clothing is not loose fitting.

Air Borne Particles

Always stand well clear of equipment during operation. Any spray drift is dangerous and may be hazardous to humans.

When heating and welding components, ensure that all paint and other such materials are removed.

Often hazardous air borne particles and fumes are generated from welding and heating.

When sanding the machine, work in a well ventilated area and wear an approved respirator.

If a solvent is used to remove paint and other substances, wash the area with soap and water to neutralise the work area.

Do Not Carry Passengers

Do not stand or carry passengers on the steps or platform when the equipment is in motion or when the booms are being folded or unfolded.

CAUTIONS

- A supply of fresh water should be with the equipment at all times.
- Standard polyethylene tanks are not designed for use with diesel fuel or any flammable liquid.
- Do not use this machine in ambient temperatures exceeding 40 degrees Celsius.
- Each individual boom section has a maximum delivery of 35 litres per minute with clean filters fitted.
- The maximum combined flow of all boom sections is limited to 140 litres per minute, or 50% of the pump flow whichever is the lesser amount, with clean filters.
- Do not exceed the maximum spraying pressure of 8 Bar.
- Ensure that all bolts are tightened and secured before operation.
- Where fitted, care should be taken to never overfill the diaphragm pump with oil or operate at speeds exceeding 540 rpm.
- Where fitted, always ensure that the boom is securely supported when travelling
- Do not use access steps or ladders on this equipment unless it is safely supported.

NOTES

- Always read and understand the operator's manual prior to operation of this equipment.
- It is the responsibility of the operator to ensure that there are no decals missing from the equipment and that any damaged or missing decals are replaced prior to operation.
- Goldacres equipment ordered or operated, outside the guideline limitations may not be warranted by Goldacres for successful performance. Operators working outside these limitations do so at their own risk, unless specific advice has been sought from and provided by Goldacres in writing.
- Inspect the equipment thoroughly for damage and wear before operation.

- Do not operate the equipment while under the influence of any drugs, alcohol or if excessively tired.
- Make sure that the equipment complies with all relevant road regulations when transporting.
- After reading the operator's manual if there is any thing that you do not understand please contact your Goldacres dealer or Goldacres.

Fluids under pressure

Do not disconnect any hoses, nozzles or filters while equipment is operating. Disconnecting these components while under pressure may result in uncontrolled fluid discharge which may be hazardous.

When the repair is complete ensure that all fittings and lines are secured before re-applying pressure.

Slippery Surfaces

- The surface of the platform has raised portions to stop slipping.
- The platform surface needs to be kept clean of mud and other material to help stop slipping.

Main Tank

- Danger - Confined space do not enter.
- Do not enter the tank for any purpose.

Safe Use Of Chemicals

The safe use of Ag chemicals with this equipment is the responsibility of the owner/operators. All operators should be trained in the safe use of Ag chemicals. Goldacres suggest that a relevant course is completed by owners/operators prior to operation of this equipment as a spray unit.

Personal Protective Equipment (PPE)

Always wear close fitting clothing and safety equipment designed for the job.

Chemicals can be harmful to humans, appropriate PPE should be used when handling chemicals. Always refer to the chemical manufacturers label for guidelines on the appropriate PPE to use with the chemicals you are using.

- Exposure to loud noise over an extended period can cause impairment or loss of hearing. Be active in the conservation of your hearing and wear appropriate hearing protection at all times.

Airborne Particles

- Always stand well clear of equipment during operation.
- Any spray drift is dangerous and may be hazardous to humans.

Goldacres also suggest that you read and understand the following Australian standards:

- Australian Standard for Chemical protective clothing AS3765
- Australian Standard for Respiratory protection devices AS1715

Warranty

How to make a warranty claim

In the event of a fault or breakdown with your product, that you believe to be a warranty issue, the following steps must be taken.

1. Ensure that you have read the Operator's Manual and gone through the troubleshooting procedure.
2. If you continue to experience problems then please contact Goldacres on 03 5342 6399. The operator will advise the method of warranty service for your product.

Goldacres Warranty Statement

This warranty is the only warranty applicable to Goldacres new products (Products) and to the maximum extent as permitted by law, is expressly in lieu of any other conditions or warranties expressed or implied in relation to the Product.

In Australia, Goldacres Products come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

This Warranty gives you additional protection for your Goldacres product and identifies a preferred approach to resolving warranty claims which will be the quickest and simplest for all parties subject to the exclusions, terms and conditions below.

Goldacres warrants its authorized Dealers who in turn warrants the original purchaser (Owner) that each new Goldacres Product will be free from proven defect in materials and workmanship for twelve (12) months from the date of delivery to the first owner according to conditions outlined herein.

Subject only to legislative obligations to the contrary, Goldacres shall not be liable for incidental or consequential damage resulting from ownership or use of a Product.

Goldacres does not authorize any person to create for it any other obligation or liability in connection with these products.

The repair of the defective Product qualifying under this warranty will be performed without charge for labour and parts by any authorized Goldacres service outlet within a reasonable time following the delivery of the Product, at the cost of the owner, to the service outlet / place of business advised

Goldacres in its absolute discretion may choose to pay the cost of replacement or repair of the product.

If the Product will be repaired or replaced, using parts as supplied by Goldacres, repair may include, at Goldacres discretion, the replacement of parts with functionally equivalent remanufactured, reconditioned or new parts.

Goldacres may request failed parts to be returned to the factory.

Conditions of Warranty Coverage

The warranty covers only conditions resulting directly from defects in workmanship or materials used under normal use and service conditions.

The Warranty is not transferable.

The owner is responsible for the performance of regular maintenance and service as specified in the owner's / operators manual applicable to the product. Failure to follow regular maintenance as advised may

invalidate the warranty.

The owner must provide the Goldacres Dealer with prompt written notice of the defect (within 14 days of it occurring) and allow reasonable time for repair and/ or replacement.

Goldacres warranty cover excludes:

- Claims resulting from misuse, use of incompatible chemical or fluids, exceeding the Product's specifications including overloading, impact damage, negligence, accidental damage or failure to perform recommended service or service intervals or use the Product with good care.
- Failure due to faulty or inadequate electrical sources of power. 12 volt power sources must be checked for suitability to operate the product.
- The time taken to remove and re-install warranted parts, products or components fitted to other than Goldacres brand products will not be covered by Goldacres Warranty. Only labour and parts directly attributable to the repair of the Goldacres unit is covered.
- The cleaning of parts or products before or after the warranty repair. Cleaning time is considered a customer expense.
- Any Goldacres Product which has been repaired by other than an authorized Goldacres dealer in a way which, in the sole and absolute judgment of Goldacres, adversely affects its performance or reliability.
- The replacement of maintenance items such as diaphragms, batteries, belts, etc.
- Loss of time, inconvenience, loss of use of the product, liability to third parties or any other consequential damages including damage to crops, profits or revenue, other commercial losses inconvenience or cost of rental or replacement equipment.
- Incidental costs associated with a warranty repair including any travel costs, out of hours labour charges, transportation costs, freight costs or any communications costs.
- Goldacres products purchased at auction or in used condition.

Procedure for claiming:

Claims must be made through a Goldacres Dealer. To make a claim under this Warranty, you should

- Contact your local Goldacres Dealer,
- Phone 1300 301 853 to locate a Goldacres Dealer.

Owners returning products to a Goldacres Dealer will require the original Dealer tax invoice, a copy of the tax invoice or delivery docket and any instruction manuals, information booklets or guides that were shipped with the Product.

Terms and Conditions

Interpretation

1. In terms and conditions:
 - (1) "Goldacres" means Goldacres Trading Pty. Ltd. A.C.N. 061 306 732 trading as Goldacres Agricultural Equipment (its successors and assigns) which is the seller of the Goods;
 - (2) "Purchaser" means the purchaser of the Goods;
 - (3) "Goods" means the products and, if any, the services sold or provided by Goldacres to the Purchaser;
 - (4) "GST Act" and "GST" are given the meanings referred to in a New Tax System (Goods and Services Tax) Act 1999.
 - (5) "PPSA" means the Personal Property Securities Act 2009 (Cth) (as amended);
 - (6) Nothing in these terms and conditions shall be read or applied so as to exclude, restrict or modify or have the effect of excluding, restricting or modifying, any condition, warranty, guarantee, right or remedy implied by law (including the Competition and Consumer Act 2010) and which by law cannot be excluded, restricted or modified.

General

2. (1) The Goods and all other products or services provided by Goldacres are provided subject to these terms and conditions. These terms and conditions and any terms and conditions incorporated herein by virtue of clause 3 hereto shall prevail over all other terms and conditions of the Purchaser or otherwise to the extent of any inconsistency.
- (2) These terms and conditions may not be modified or amended without the expressed written consent of Goldacres endorsed by the Managing Director of Goldacres Trading P/L.

Additional Terms and Conditions

3. From time to time Goldacres may provide additional or extended warranties in respect of certain goods and/or services. Where such additional or extended warranties are provided to a Purchaser in writing they will be incorporated into these terms and conditions provided that in the event of any inconsistency between these terms and conditions and the terms of any additional or extended warranty, the provisions of the additional or extended warranty shall prevail.

Goldacres quotations.

4. Unless previously withdrawn, Goldacres quotations are open for acceptance within the period stated therein or, when no period is stated, with 14 days only of the quotation date. Goldacres reserves the right to refuse any order based on any quotation within 7 days of receipt of the order.

Packing

5. The cost of any special packing and packing materials used in relation to the Goods shall be at the Purchaser's expense notwithstanding that such cost may have been omitted from any quotation.

Shortage

6. The Purchaser waives any claim for shortage of any Goods delivered if a claim in respect thereof has not been lodged with Goldacres within (7) seven days from the date of receipt of the Goods by the Purchaser.

Specifications, etc. Catalogues, etc. Quantities

7. All specifications, (including but not limited to: drawings, particulars of weights, volumes, capacities, dimensions, load factors) are approximate only and any deviation shall not be taken to vitiate any contract with Goldacres or form any claim against Goldacres. The descriptions, illustrations, and performances contained in catalogues, price lists and other advertising matter do not form part of the contract of sale of the Goods. Where specifications, drawings or other particulars are supplied by the Purchaser, Goldacres' price is made on estimates of quantities required. Should there be any adjustments in quantities above or below the quantities estimated by Goldacres and set out in a quotation, then any such increase or decrease shall be adjusted on a unit rate basis according to unit prices set out in the quotation.

Performance, Capacities, Chemicals, Liquids, Application Methods, Environmental Effects

8. Any performance, volumes, and/or capacity figures given by Goldacres are estimates only. Goldacres shall be under no liability for damages for failure to obtain such figures unless specifically guaranteed in writing and any such written guarantee shall be subject to the recognised tolerances applicable to such figures. The suitability of chemicals and other liquids for any application and the application methods and the environmental effects shall be the sole decision and responsibility of the Purchaser and the user of the Goods. Goldacres gives no warranty as to the suitability of any chemicals or other liquids for any application, nor the application methods nor the environmental effects, which may result from the use of the Goods. Goldacres shall be under no liability for damages arising out of the use of any chemicals, liquids, or mixtures in the Goods nor for any application, nor for the application methods nor for the environmental effects, which may result from the use of the Goods.

Delivery/Service Times

9. The delivery times and service times made known to the Purchaser are estimates only and Goldacres shall not be liable for late delivery, non-delivery or delay and under no circumstances shall Goldacres be liable for any loss, damage or delay occasioned by the Purchaser or its customers arising from the late or non-delivery or late installation of the Goods.

Loss or damage in transit

10. Goldacres is not responsible for any loss or damage to Goods in transit. Goldacres shall render the Purchaser such assistance as may be necessary to press claims on carriers provided that the Purchaser shall have notified Goldacres and the carriers immediately the loss or damage is discovered on receipt of Goods and shall lodge a claim on the carrier within three days of the date of receipt of the Goods. Insurance of Goods in transit is the responsibility of the Purchaser.

Limit of Liability

11. (1) Goldacres liability for Goods manufactured by it is limited to:
 - (a) where the law implies consumer guarantees into these terms and conditions pursuant to Part 3.2 Division 1 of Schedule 2 to the Competition and Consumer Act 2010 (Cth) ("consumer guarantees") which cannot be excluded and Goldacres breaches a consumer guarantee, the loss and damage the Purchaser is entitled to at law which cannot be excluded by these terms and conditions;

and, in all other cases

- (b) making good any defects by repairing the same or at Goldacres option by replacement within a period not exceeding either 1000 hours or twelve calendar months, whichever comes first, after the Goods have been dispatched provided that:
 - (i) the defects have arisen solely from faulty materials or workmanship;
 - (ii) the Goods have not received maltreatment, inattention or interference;
 - (iii) accessories of any kind used by the Purchaser are manufactured or approved by Goldacres;
 - (iv) where applicable, the seals on the Goods remain unbroken;
 - (v) there has been no improper adjustment, calibration or operation;
 - (vi) the use of accessories including consumables, hardware or software (not manufactured by Goldacres) has been approved in writing by Goldacres;
 - (vii) no contamination or leakage has been caused or induced;
 - (viii) any modification to the Goods have been authorised in writing by Goldacres;
 - (ix) there has been no inadequate or incorrect use, storage, handling or application of the Goods;
 - (x) there has been no use or operation of the Goods outside of the physical, electrical or environmental specifications of the Goods;
 - (xi) there has been no inadequate or incorrect site preparations;
 - (xii) there has been no inadequate or improper maintenance of the Goods;
 - (xiii) it has not been caused by fair wear and tear; and
 - (xiv) firstly the Goods have been thoroughly inspected and any damage (from whatever cause) to the Goods (and in particular – the structure, welding, seams, bolts, booms) has been repaired prior to the Goods being operated, used driven or moved and on each occasion the tanks are filled; and
 - (xv) there has been no failure to comply with the requirements of all present or future laws or regulations relating to the Goods and/or the use and/or the operation of the Goods; and there has been no failure to maintain a record of hours of operation (which record shall contain full details of all inspections, repairs and maintenance) and produce same to Goldacres at the time of the claim;
 - (xvii) the defective Goods or any damaged part of the Goods are promptly returned free of cost to Goldacres or a representative of Goldacres;
 - (xviii) all warranty related repairs have been carried out with the prior authorisation of Goldacres;
- (2) If Goods or any part thereof are not manufactured by Goldacres, in particular engines, engine accessories, transmissions, transfer cases, differentials, tyres, tubes, batteries, radios and UHF's, the guarantee of the manufacturer thereof shall be accepted by the Purchaser and is the only guarantee given to the Purchaser in respect of the Goods or that part provided always that this clause does not seek to exclude the consumer guarantees;
- (3) In the case of hydraulic systems, Goldacres shall replace defective parts in accordance with clause 11(i) of these conditions, provided that the failure of the part was not related to contamination within the system, Goldacres shall not be liable for labour in the case of repairing hydraulic system defects;
- (4) Goldacres will not accept liability for damage attributed to fair wear and tear including but not limited to fair wear and tear to nozzles, chains, belts, filters, brake pads, polyethylene bushes and liquid pump valves, valve O-rings, diaphragms and seals;
- (5) Goldacres shall not be liable for and the Purchaser releases Goldacres from any claims in respect of faulty or defective design of any Goods supplied unless such a design has been wholly prepared by Goldacres and the responsibility for any claim has been specifically accepted by Goldacres in writing and in any event Goldacres liability hereunder shall be strictly limited to the replacement of defective parts in accordance with paragraph 11(i) of these conditions provided always that this clause does not seek to exclude the consumer guarantees;
- (6) Except as provided herein, all express and implied warranties, guarantees and conditions under statute or general law as to the merchantability, description, quality, suitability or fitness of the Goods for any purpose or as to design, assembly, installation, materials or workmanship or otherwise are hereby expressly excluded and Goldacres shall not be liable for physical or financial injury, loss or damage or for consequential loss or damage of any kind arising out of the supply, layout, assembly, installation or operation of the Goods or arising out of Goldacres negligence or in any other way whatsoever;
- (7) The benefit of any warranty provided under these terms and conditions shall only be available to the Purchaser and shall not be transferable by the Purchaser;
- (8) The warranties provided under these terms and conditions do not extend to second hand or used Goods that may be sold by Goldacres.
12. Goldacres liability for breach of a consumer guarantee is hereby limited (in the case of goods and services not used for personal, domestic or household purposes) to:
 - (1) in the case of Goods, any one or more of the following:
 - (a) the replacement of the Goods or the supply of equivalent Goods;
 - (b) the repair of the Goods;
 - (c) the payment of the cost of replacing the Goods or acquiring the equivalent Goods;
 - (d) the payment of having the Goods repaired; or
 - (2) in the case of services;
 - (a) the supplying of the services again; or
 - (b) the payment of the cost of having the services supplied again.

Prices

13. (1) Unless otherwise stated in writing by Goldacres, all prices quoted by Goldacres are inclusive of GST for supplies within Australia and exclusive of GST for exports outside of Australia. Prices quoted are those ruling at the time of quotation or the date the price is given and are based on rates of freight, insurance, customs, duties, taxes, exchange, shipping expenses, sorting and stacking charges, cartage, cost of materials and other charges affecting the cost of production ruling on that date and any alterations thereto either before acceptance of or during currency of the contract shall be to the Purchaser's account.
- (2) For the purpose of 38-185 of the GST Act, the day upon which the seller gives the invoice for the supply shall be the date of the invoice.

Payment

14. (1) The purchase price in relation to the Goods and the cost of the service shall be payable without deduction and or set off and payment thereof shall be made on or before the

- thirteenth day of the month following the delivery of the Goods or performance of the services unless other terms of payment are expressly stated in writing.
- (2) A decreasing or increasing adjustment and or the issuing of an adjustment note, pursuant to Division 21 and Division 29-C of the GST Act, shall not, in any way, constitute a release, waiver, and or forgiveness of the debt incurred by the Purchaser.

Interest on overdue payments

15. If Goldacres is not paid for any Goods or services on the due date specified in this agreement without prejudice to any other right or remedy, all outstanding money shall bear interest at the rate set, pursuant to the Penalty Interest Rates Act, Victoria, 1986, as such money, together with interest shall be recoverable forthwith from the Purchaser.

Rights in relation to Goods.

16. (1) At all times until the Debts have been paid in full the Purchaser shall be responsible for any loss or damage occasioned to the supplied Goods howsoever occasioned on a strict liability basis and shall indemnify Goldacres against any such loss or damage and shall insure and keep insured the Goods in the name of both the purchaser and Goldacres against such loss or damage to the full extent of the purchase price and shall provide a copy of such Insurance Policy to Goldacres.
- (2) The Purchaser shall have the right to resell Goods but only as fiduciary agent and trustee for Goldacres by way of bona fide sale at full market value and in the ordinary course of its business.
- (3) Until all the Debts have been paid in full:
- (a) the Purchaser shall take custody of the Goods as trustee, fiduciary agent and bailee for Goldacres;
- (b) the Purchaser shall keep the Goods separate from any other goods and properly marked, stored, protected and insured;
- (c) the Purchaser must hold all of the money it receives ("Proceeds"):
- (i) from the sale of any property into which Goods supplied have been incorporated; and
- (ii) from the sale of Goods or provision of services including the Goods supplied by the Goldacres as bailee, fiduciary agent and trustee for Goldacres, but the Purchaser need not hold on trust any money exceeding the amount of the Debts at the time the money is received.
- (d) The Purchaser expressly acknowledges that it is bound by the fiduciary obligation created in the preceding paragraph and acknowledges that:
- (i) it must hold the Proceeds on trust for Goldacres;
- (ii) it must place the whole of the Proceeds in an account separate from its own moneys (the "Proceeds Account");
- (iii) it must maintain the Proceeds Account separate from its own moneys at all times.
- (iv) it must maintain proper records for the Proceeds Account.
- (v) it must not assign or encumber any book debts arising from sales made in circumstances set out in clauses 16(c)(i) and (ii) or do any other act in derogation of Goldacres' legal or beneficial interests; and
- (vi) it must account to Goldacres on demand for all moneys standing to the credit of such account.
- (e) For the purposes of identification of different consignments of Goods purchased from Goldacres and receipt of Proceeds, the Purchaser agrees that the principle of "Last In, First Out" shall be applied to any items that cannot be distinguished.
- (f) Goldacres may trace the Proceeds in equity.
- (4) Goldacres may at any time, without notice to the Purchaser and without prejudice to any other rights which it may have against the Purchaser, terminate any contract connected with the Goods and the bailment referred to in clause 16(3) and enter upon any premises owned or occupied by the Purchaser where Goldacres reasonably believes the Goods may be stored, and repossess the Goods without liability for any damaged caused, and subsequently dispose of the Goods at Goldacres' discretion if:
- (a) the Debts are not paid in accordance with these terms and conditions or any other contract or arrangement between Goldacres and the Purchaser; or
- (b) Goldacres receives notice of or reasonably believes that:
- (i) a third person may attempt to levy execution against the Goods; or
- (ii) the Purchaser is insolvent (within the meaning of the Corporations Act 2001) or bankrupt; or
- (iii) the Purchaser has entered into any arrangement or composition with its creditors, gone into liquidation, or has appointed a receiver, a receiver and manager or administrator.
- (5) If after repossession under clause 16(4) Goldacres sells the Goods, Goldacres shall account to the Purchaser for any proceeds of sale (less expenses of repossession and sale) that exceeds the amount of the outstanding Debts.
- (6) If any Goods belonging to Goldacres are disposed of by the Purchaser or an insurance claim is made in respect of them, Goldacres shall be entitled to trace the sale or insurance proceeds, which proceeds shall be held by the Purchaser in a separate bank account on trust for Goldacres.
- (7) The Purchaser agrees and acknowledges that in the event it sells Goods to a third party on account, it will include in its terms and conditions of sale a provision under which the Purchaser retains title to the Goods until such time that the total amount due in respect of the Goods and all monies owing to the Purchaser have been paid in full by that third party debtor. The Purchaser also agrees and acknowledges that in these instances, it will register its PMSI in accordance with the PPSA in respect of its security interest in the Goods.

PPSA provisions

17. (1) The Purchaser acknowledges that these terms and conditions constitute a security agreement for the purposes of section 20 of the PPSA and that a security interest exists in all Goods (and any associated Proceeds from their sale) previously supplied by Goldacres to the Purchaser (if any) and in all future Goods (and any associated Proceeds from their sale) that may be supplied to the Purchaser by Goldacres.
- (2) The Purchaser acknowledges that Goldacres has a first ranking purchase money security interest ("PMSI") (as defined in section 14 of the PPSA) in the Goods and the Purchaser must not jeopardise such ranking (whether by act or omission).
- (3) The Purchaser acknowledges that it has received value as at the date of first delivery of the Goods and has not agreed to postpone the time for attachment of the security interest (as defined in the PPSA) granted to Goldacres under these terms and conditions.
- (4) The Purchaser will execute documents and do such further acts as may be required by Goldacres to register the security interest granted to Goldacres under these terms and conditions under the PPSA.

- (5) Until ownership of the Goods passes, the Purchaser must not give to Goldacres a written demand or allow any other person to give Goldacres a written demand requiring Goldacres to register a financing change statement under the PPSA in respect of Goldacres' interest in the Goods.
- (6) The Purchaser must indemnify Goldacres and on demand reimburse Goldacres for all costs and expenses incurred by Goldacres in respect of these terms and conditions including but not limited to Goldacres registering its security interest in the Goods, lodging, discharging or amending any financing statement or financing change statement, or otherwise complying with the PPSA.
- (7) The Purchaser agrees (other than as provided in these terms and conditions) not to sell, lease, mortgage, deal with, dispose of or create or attempt to create any other security interest in or affecting the Goods unless and until the Purchaser's Debts have been satisfied.
- (8) The Purchaser waives its rights under the following provisions of Chapter 4 of the PPSA:
- (a) to receive a notice on enforcement action against liquid assets (section 121(4)),
- (b) to receive a notice to seize collateral (section 123);
- (c) to receive a notice of disposal of Goods by Goldacres purchasing the Goods (section 129);
- (d) to receive a notice to dispose of Goods (section 130);
- (e) to receive a statement of account following disposal of Goods (section 132(2));
- (f) to receive a statement of account if no disposal of Goods for each 6 month period (section 132(4));
- (g) to receive notice of any proposal of Goldacres to retain Goods (section 135(2));
- (h) to object to any proposal of Goldacres to either retain or dispose of Goods (section 137(2));
- (i) to redeem the Goods (section 142);
- (j) to reinstate the security agreement (section 143);
- (k) to receive a notice of any verification statement (section 157(1) and section 157(3));
- (9) The rights Goldacres may have under the PPSA are supplementary and in addition to those set out in these terms and conditions and do not derogate from the rights and remedies of Goldacres under these terms and conditions or under any other statute or under general law.
- (10) The Purchaser must give 10 business days prior written notice of any proposed change in the Purchaser's name or other identifying characteristics and details.

Purchasers property

18. Any property of the Purchaser under Goldacres' custody or control shall be entirely at the Purchaser's risk as regards loss or damage caused to the property or by it.

Storage

19. Goldacres reserves the right to make a reasonable charge for storage if delivery instructions are not provided by the Purchaser within (14) fourteen days of a request by Goldacres for such information.

Returned Goods

20. Goldacres shall not be under any obligation to accept Goods returned by the Purchaser and will do so only on terms to be agreed in writing in each individual case.

Goods sold

21. All Goods to be supplied by Goldacres shall be described on the purchase order agreed by Goldacres and the Purchaser and the description on such purchase order modified as so agreed shall prevail over other descriptions including any Purchaser's specification or enquiry.

Cancellation

22. No order may be cancelled except with the consent in writing and on terms, which will indemnify Goldacres against all losses.

No waiver

23. The failure of any party to enforce the provisions of these terms and conditions or to exercise any rights expressed in these terms and conditions shall not be a waiver of such provisions or rights and shall not affect the enforcement of this agreement. The exercise by any party of any of its rights expressed in this agreement shall not preclude or prejudice such party from exercising the same or any other rights it may have irrespective of any previous action taken by that party.

Force Majeure

24. If by reason of any fact, circumstance, matter or thing beyond the reasonable control of Goldacres is unable to perform in whole or in part any obligation under these terms and conditions then Goldacres shall be relieved of that obligation under these terms and conditions to the extent and for the period that it is so unable to perform and shall not be liable to the Purchaser in respect of such inability.

Passing of risk

25. Risk in the Goods shall pass to the Purchaser upon delivery of the Goods to the Purchaser or collection of the Goods by the Purchaser's agent or carrier as the case may be.

Exclusion of liability

26. To the extent permitted by law Goldacres shall not be liable to the Purchaser in contract or in tort arising out of, or in connection with, or relating to, the performance of the Goods or any breach of these conditions or any fact, matter or thing relating to the Goods or error (whether or not it is negligent or a breach of contract) in information supplied to the Purchaser or a user before or after the date of the Purchaser's or user's use of the Goods and Goldacres shall be under no liability for damages arising out of the use of any chemicals, liquids, or mixtures in the Goods, nor for any application, not for the application methods nor for the environmental effects, which may result therefrom or from the use of the Goods.

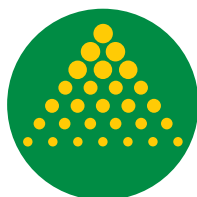
Exclusion of representations and arrangements

27. To the extent permitted by law the terms and conditions supersede and exclude all prior and other discussions, representations (contractual or otherwise) and arrangements relating to the supply of the Goods or any part thereof including, but without limiting the generality of the foregoing, those relating to the performance of the Goods or any part thereof or the results that ought to be expected from using the Goods.

Place of contract

28. The contract for sale of the Goods and the provision of the services is made in the State of Victoria and the Purchaser agrees to submit all disputes arising with Goldacres to the courts of such State and any court competent to hear appeals therefrom.

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GOLDACRES

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