TransTank®
INTERNATIONAL

Operator's Product HandBook

GlidePath™

Trailed Boom Sprayer

"HELPING TO DEVELOP AND PROTECT THE LAND"

Contents

Disclaimer

All information, illustrations, and specifications contained in this manual are based on the latest product information available at the time of this publication's printing. TransTank International (TTi) reserves the right to alter and substitute specifications and methods at any time, in line with our commitment to continuous improvement.

No patent liability is assumed with respect to the use of information contained within this manual. While every precaution has been taken in the preparation of this manual, TTi assumes no responsibility for errors or omissions.

Thank you for purchasing a TTi GlidePath™ Spray Trailer with Folding Boom (GlidePath), which will provide many years of reliable service when operated and maintained in accordance with this manual.

TTi manufacture two GlidePath capacities, 1,000 and 1,200 litre tanks. The GlidePath is supplied complete with a Bertolini pump powered by a genuine Honda GX200 engine, all mounted on a robust, heavy duty galvanised steel trailer. Both braked (road registerable) and unbraked versions of the trailer are available.

Standard inclusions are a 20 litre handwash/flush tank with tap and a 3-way pressure regulator and gauge for accurate spraying. The GlidePath is available with a range of options, including spray booms, 30m or 50m hose reels, a foam marker kit, GPS system, electric start for the pump engine and remote electrical control switches.

This manual describes the operation, driving stability and maintenance procedures applicable to all units, noting additional requirements to options where necessary.

All TTi GlidePath tanks are rotationally moulded from quality polyethylene, purpose designed and manufactured to high standards. The GlidePath is specifically designed to be towed by your vehicle and used for everything from herbicide to pesticide spraying.

The GlidePath unit is supplied complete, tested and ready to hitch to your vehicle or tractor. TTi warrants that the GlidePath has been designed and built for its intended purpose as a pesticide/herbicide spray unit.

The owner is responsible to ensure that the equipment is operated in accordance with this manual, with Australian WorkSafe requirements, applicable road rules and local council regulations. TTi is not liable for any loss, injury or death resulting from the failure to observe all safe working regulations as required by law.

Included with your GlidePath unit are the following documents:

- Operator's Handbook (this manual, which includes the Warranty Registration Card)
- Honda petrol engine handbook
- Bertolini pump data sheet (includes link to download pump manual). TTi recommends that you download this manual.
- Tank Quality Check Form. This is your verification that the unit has been quality checked, and verifies the serial number affixed to the unit.

Safety

This manual is intended for use by personnel experienced in the use of this and similar equipment. Read and understand this manual before attempting to operate or perform routine maintenance on this equipment. Your safety is of prime priority.

A WARNING highlights an essential operating or maintenance procedure, practice, condition or statement, which, if not strictly observed, could result in injury or death of personnel, or long-term health hazards.

A CAUTION highlights an essential operating or maintenance procedure, practice, condition or statement, which, if not observed, could result in damage or destruction of equipment.

A NOTE highlights or clarifies an essential systems description, operating or maintenance procedure, condition or statement.

General Safety Instructions

1. This unit is designed and manufactured solely for the purpose of carrying and spraying herbicides and pesticides. Under no circumstances should it be used for any other purpose. It must never be used for transporting fuel.
2. Only authorised and trained personnel are to operate this equipment. Operators must have read and fully understood this manual before operating the GlidePath unit.
3. Do not operate the GlidePath anywhere near bystanders, livestock, watercourses or any non-targeted vegetation that may be in danger from spray drift contamination.
4. Wind direction and speed must be taken into account, as windy conditions may endanger the operator or damage to adjacent non-target vegetation. Avoid spraying on hot and sunny days or when wind speed exceeds 6.5km/h.
5. Do not operate this equipment while under the influence of alcohol or any drugs that could impair your capabilities in any way.
6. PPE appropriate to the chemicals being used must be worn at all times when operating the GlidePath. As a minimum, the PPE should include coveralls, gloves and boots. A face shield and PVC apron are recommended depending on the task. It is recommended that the following documents should be read and understood by the operator:
   - Australian Standard for Chemical protective clothing AS3765
   - Australian Standard for Respiratory protection devices AS1715
7. Ensure the capacity of the tow vehicle is suitable for the loaded mass of the GlidePath. Refer to the vehicle's operator manual for safe working loads, correct securing points and relevant safety instructions. Do not exceed the carrying and braking capacity as specified by the vehicle manufacturer. As a guide, one litre of water weights one kilogram (kg), therefore a full 1,000 litre GlidePath will weigh in excess of 1,200kg without options.
8. Care should be taken at all times, particularly when operating on rough or steep terrain. Drivers should be aware of fluid surge affecting the vehicle's centre of gravity.

9. The GlidePath must never be left unattended while being filled with fluids.
10. Do not operate the pump when there is no fluid in the tank.
11. Do not disconnect any hoses, nozzles or filters while the equipment is operating. Disconnecting any components while under pressure may result in uncontrolled fluid discharge which may be hazardous.
12. Ensure any electrical connections are properly configured, to prevent damage such as shorting or reverse polarity.
13. At completion of operation, turn the pump off and relieve any residual pressure by squeezing the optionally fitted spray gun trigger or opening a spray boom valve.
14. At completion of the operation, decontaminate the GlidePath tank and spray lines. Drain any residue chemicals and store in a sealed container. Dispose of any unwanted chemicals and tank rinse residue in accordance with current environmental and workplace health and safety regulations.
15. The GlidePath has safety labels affixed to various locations on the unit. These labels should be kept clean and legible, and replaced if damaged.
16. Any unauthorised modifications to this equipment may affect its function and create a serious safety risk. Any unauthorised modifications will void any warranty on the unit.

General Information

Specifications

Tank	UV stabilised, chemical resistant polyethylene tank complete –1,000 and 1,200 litre capacities, fully drainable. A 20L handwash/flush tank with tap
Trailer	Fully welded and galvanised heavy duty steel frame, single axle with 15" Sunraysia wheels with 6-stud pattern and adjustable boom height settings.
Standard Equipment	Honda GX200 engine coupled to Bertolini pump delivering 75L/min
	3-way pressure regulator and gauge
Options	Pinnacle™ Self-leveling steel booms, with 8m, 10m and 12m spray swath
	30m hose on hose reel with spray gun
	50m SuperReel™ with auto-rewind with spray gun
	Double-sided foam marker kit with solenoid control
	TeeJet Matrix 430 GPS Guidance System
	Remote control solenoid operated ON-OFF switch unit
	Remote control solenoid operated 3-way pressure regulator and ON-OFF switch unit
	Electric start for Honda GX200 engine
	Tank level gauge

Description

The TTi GlidePath Spray Trailer is designed to carry and distribute herbicides or pesticides using an integral pump and various fluid dispensing systems. The GlidePath is available with the following options

- 8m, 10m or 12m Pinnacle Self-leveling Boom:
- 30m hose on hose reel with spray gun
- 50m auto-rewind SuperReel with spray gun
- Electric start for the Honda engine
- Double-sided foam marker kit with solenoid control
- TeeJet Matrix 430 GPS Guidance System
- Remote control solenoid operated ON-OFF switch unit
- Remote control solenoid operated 3-way regulator and ON-OFF switch unit

The GlidePath has the following features, refer to Figure 1.

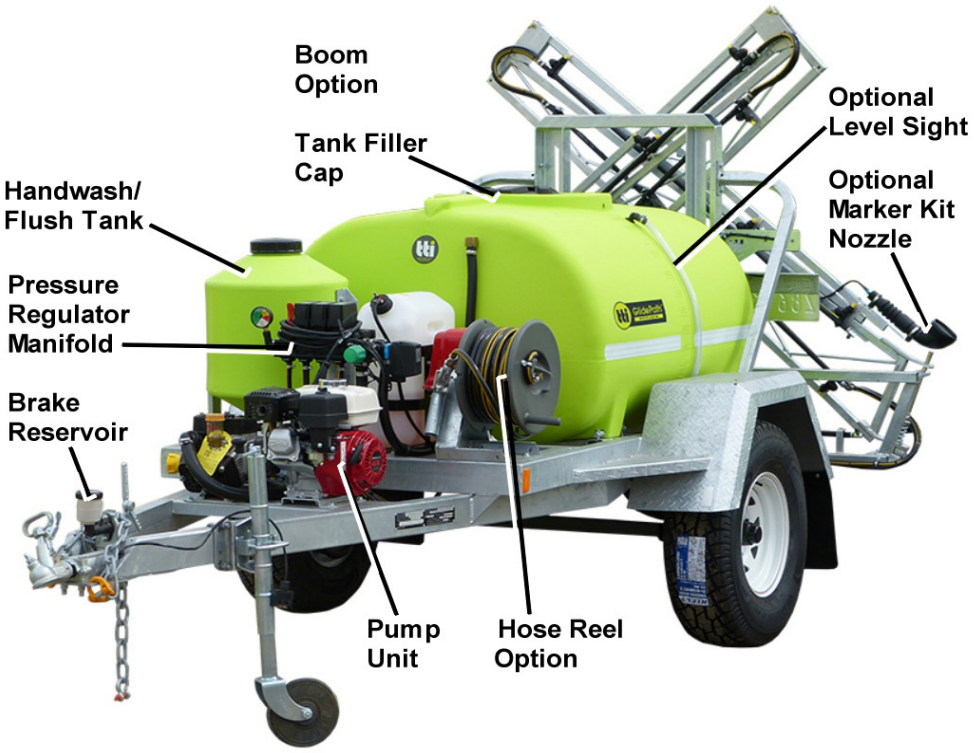


Figure 1 – Component Identification – GlidePath with hose reel, boom and foam marker kit options

Pump

The GlidePath is fitted with a Bertolini 75L/min pump driven directly by a Honda GX200 petrol engine. If the optional spray boom or spray gun is not in operation when the pump is running, the fluid bypasses back into the tank.

8m, 10m and 12m Pinnacle Self-leveling Booms

The Pinnacle galvanised boom has steel plate protected non-drip nozzles fitted with TeeJet AIXR Air Induction spray tips. The boom incorporates a break-away feature to prevent damage if the unit hits an obstacle, and easily folds for transportation and storage. The boom structure incorporates a self-leveling mechanism to take into account uneven terrain. From the driver's seat, the operator can start and stop spray operations using the optional electrically operated solenoid valve on the 3-way regulator.

Foam Marker Kit

An optional Foam Marker Kit is available for the GlidePath and includes a 20L container with a spray nozzle mounted on each end of the boom. With the container filled with a rich soapy water solution, the electrically actuated solenoid valve operates at factory-set intervals to discharge a short burst of foam onto the ground. This provides a visual indication of the spray swath run, enabling accurate coverage for the next, adjacent pass.

Power for the solenoid valve is provided by the tow vehicle's electrical system via the supplied cable and controller.

30m Hose Reel and Spray Gun

The GlidePath has an optional manually operated hose reel containing 30m of 10mm diameter hose connected to a trigger actuated PowerJet spray gun with adjustable brass nozzle. The hose is pulled out manually from the reel and retracted using the handle on the side. The spray gun is stowed in a holder incorporated in the galvanised steel frame.

The nozzle adjusts from jet through to mist sprays by rotating the nozzle head. When the trigger is squeezed, the fluid is discharged; when the trigger is released, the fluid bypasses back into the tank.

50m SuperReel and Spray Gun

The electrically operated SuperReel hose reel contains 50m of FrictionFreeTM hose connected to a trigger actuated Turbo spray gun with adjustable nozzle. The hose is pulled out manually from the SuperReel and electrically retracted using the supplied remote control. An Anderson plug is fitted to the rear of the SuperReel, ready for connection to a 12-volt power supply.

The spray gun nozzle adjusts from jet through to mist sprays by adjustment of the lever adjacent to the trigger. When the trigger is squeezed, the fluid is discharged; when the trigger is released, the fluid bypasses back into the tank.

Pressure Regulator

A pressure regulator and pressure gauge are mounted to the trailer's galvanised steel frame to control line pressure and prevent pump cavitation. The regulator is adjustable depending on the operation requirements – for boom spraying, the regulator is to be set to approximately 3 bar; with spot spraying via the optional hose the regulator is set to approximately 5 bar.

Manually Operated Valves

Manually operated 3-way valves are incorporated into the pressure regulator manifold, enabling individual adjustment of boom spray operation and the optional hose reel.

Solenoid Operated Valve

An optional electrically operated solenoid valve can be mounted on the pressure regulator manifold and turns the entire manifold either ON or OFF via a remote control single switch unit.

The pressure regulator manifold can be optionally fully equipped with solenoid operated valve controllers, enabling the 3-way valves to be operated individually, as well as the entire manifold via the remote control 4-switch unit.

Suction Filter

A filter is installed on the suction line below the tank and protected by a guard incorporated into the steel frame. The filter has a removeable filter element for easy cleaning.

Pump Engine Battery

With the optioned electric pump start upgrade, a separate, dedicated 12-volt battery is installed on the trailer behind the pump unit.

Trailer

The trailer frame is an all steel, fully welded construction and hot dip galvanised for corrosion resistance. The frame has additional welded gussets for added strength and filled-in chequer plate mudguards to protect the tank. The single solid axle is fitted with 6-stud 15-inch Sunraysia wheels and available as unbraked or braked (registerable) with hydraulic brakes.

The boom mount incorporates vertical slots, enabling the boom to be easily adjusted in height.

Tank

All TTi tanks are constructed from UV stabilised, chemical resistant, virgin material polyethylene. The tank is fully drainable and has an internal basket strainer under the filling cap.

Tank Level Indicator

An optional level sight tube is fitted to the side of the tank and provides an accurate level indication of fluid within the tank.

Flush Tank

The 20-litre flush tank is mounted in front of the GlidePath tank. A 3-way control valve draws water from the flush tank through the lines and optional hose reel. The main tank can be then flushed with clean water by removing the suction line from the sump.

Machine Limitations

The GlidePath units are subject to operating limitations. It is the operator's responsibility to ensure that this equipment is being operated safely and within these limitations.

Driving Stability

The GlidePath unit is heavy when filled with fluid. To maintain stability while operating this unit:

- Ensure the trailer tyres are inflated to their correct pressure at all times. Underinflated tyres can cause excessive lateral motion of the tyre, which may cause a rollover.
- Allow extra room for braking and turning when the tank is full.
- Ensure any side gradient (slope) is accounted for, especially when the GlidePath tank is full, as the trailer may have a higher centre of gravity.

Spray Boom Calibration

Accurate calibration is an essential element of any spraying function as it ensures that the chemical is applied at the rate specified on the product label. Application in excess of the recommended rate may be dangerous, can damage crops and is uneconomical.

Calibration must be carried out:

- When spraying for the first time with new spray equipment
- At the beginning of each season
- After changes of nozzle tips, spraying pressure or vehicle speed
- After every 100 hectares of spraying

PPE appropriate to the chemicals being used must be worn at all times when calibrating the GlidePath. As a minimum, the PPE should include coveralls, gloves and boots. A face shield and PVC apron are recommended.

Calibration Procedure

Check the label on the chemical container for the application rate and recommended spray nozzle type, refer to Figure 2, which shows the TeeJet AIXR nozzle application chart. To apply a specific rate of chemical to the target surface, work out the:

- total sprayer output,
- travel speed, and
- the swath width.

Using these parameters, the application rate is calculated as follows.

Measure Total sprayer output [L/min]

Set the pressure at the correct level for spraying determined by the type of nozzles. All nozzles used for spraying should be left on. For initial trials, set the pressure regulator at approximately 2 bar and adjust as needed.

- Fill the spray tank with clean water, refer to Filling the GlidePath Tank procedure below. Run the sprayer at the correct pressure with all nozzles operating.
- Place a measuring jug under first nozzle for one minute, then measure how much water is in the jug.
- Repeat for all nozzles. Nozzle output should not vary by more than 10%. If it does, the nozzle could be worn or damaged and should be replaced.
- Add all the jug measurements to find the total sprayer output in litres per minute.

Measure the travel speed [km/h]

The normal speed for spraying with small boom sprayers is 4–10 km/h. The slower the travel, the higher the application rate. Adjust travel speed to suit ground conditions.

- Measure how many seconds it takes to travel 100 metres with the sprayer attached and half full.
- Calculate your travel speed by inserting the time in seconds into the following formula: *Travel speed (km/h) = distance travelled in metres (say 100m) x3.6 / Time taken (in seconds)*

Calculate spray application rate [L/Ha]

First, measure the swath width in metres. For general broadcast spraying, the swath width is equal to the number of nozzles multiplied by the nozzle spacing. For band spraying, the swath width is equal to the total of all the band widths. Calculate the application rate using the following formula:

Application rate *(L/ha) = (600 x total sprayer output (L/min)) / (swath width (m) x travel speed (km/h))*

Example: If total sprayer output is 5 L/min, speed is 8 km/h, and swath width is 4m, the application rate = (600 x 5 = 62.5 L/ha)/(4 x 8)

If the application rate is less than specified, increase the pressure and repeat calibration to achieve the correct rate. Once the required rate is achieved, note the following parameters for future reference when using this particular chemical:

- Nozzle Fitted
- Type (Drop Size)
- Application Rate
- Spray Pressure
- Forward Speed.

	bar	DROP SIZE	LERAP RATINGS	CAPACITY ONE NOZZLE IN L/MIN	l/ha 50 cm 5 km/h	6 km/h	7 km/h	8 km/h	10 km/h	12 km/h	16 km/h	18 km/h	20 km/h	CAP PART NUMBER
AIXR110015 (100)	1.0	XC	–	0.34	81.6	68.0	58.3	51.0	40.8	34.0	25.5	22.7	20.4	114441A-*CELR
	2.0	C	–	0.48	115	96.0	82.3	72.0	57.6	48.0	36.0	32.0	28.8	
	3.0	C	–	0.59	142	118	101	88.5	70.8	59.0	44.3	39.3	35.4	
	4.0	M	–	0.68	163	136	117	102	81.6	68.0	51.0	45.3	40.8	
	5.0	M	–	0.76	182	152	130	114	91.2	76.0	57.0	50.7	45.6	
	6.0	M	–	0.83	199	166	142	125	99.6	83.0	62.3	55.3	49.8	
AIXR11002 (50)	1.0	XC	–	0.46	110	92.0	78.9	69.0	55.2	46.0	34.5	30.7	27.6	
	2.0	VC	–	0.65	156	130	111	97.5	78.0	65.0	48.8	43.3	39.0	
	3.0	C	–	0.79	190	158	135	119	94.8	79.0	59.3	52.7	47.4	
	4.0	M	–	0.91	218	182	156	137	109	91.0	68.3	60.7	54.6	
	5.0	M	–	1.02	245	204	175	153	122	102	76.5	68.0	61.2	
	6.0	M	–	1.12	269	224	192	168	134	112	84.0	74.7	67.2	
AIXR110025 (50)	1.0	XC	**	0.57	137	114	97.7	85.5	68.4	57.0	42.8	38.0	34.2	
	2.0	VC	**	0.81	194	162	139	122	97.2	81.0	60.8	54.0	48.6	
	3.0	VC	**	0.99	238	198	170	149	119	99.0	74.3	66.0	59.4	
	4.0	C	**	1.14	274	228	195	171	137	114	85.5	76.0	68.4	
	5.0	C	**	1.28	307	256	219	192	154	128	96.0	85.3	76.8	
	6.0	M	–	1.40	336	280	240	210	168	140	105	93.3	84.0	
AIXR11003 (50)	1.0	XC	**	0.68	163	136	117	102	81.6	68.0	51.0	45.3	40.8	
	2.0	VC	**	0.96	230	192	165	144	115	96.0	72.0	64.0	57.6	
	3.0	VC	**	1.18	283	236	202	177	142	118	88.5	78.7	70.8	
	4.0	C	**	1.36	326	272	233	204	163	136	102	90.7	81.6	
	5.0	C	**	1.52	365	304	261	228	182	152	114	101	91.2	
	6.0	M	–	1.67	401	334	286	251	200	167	125	111	100	
AIXR11004 (50)	1.0	UC	***	0.91	218	182	156	137	109	91.0	68.3	60.7	54.6	
	2.0	XC	**	1.29	310	258	221	194	155	129	96.8	86.0	77.4	
	3.0	VC	**	1.58	379	316	271	237	190	158	119	105	94.8	
	4.0	VC	**	1.82	437	364	312	273	218	182	137	121	109	
	5.0	C	**	2.04	490	408	350	306	245	204	153	136	122	
	6.0	C	–	2.23	535	446	382	335	268	223	167	149	134	
AIXR11005 (50)	1.0	UC	***	1.14	274	228	195	171	137	114	85.5	76.0	68.4	
	2.0	XC	***	1.61	386	322	276	242	193	161	121	107	96.6	
	3.0	VC	**	1.97	473	394	338	296	236	197	148	131	118	
	4.0	VC	**	2.27	545	454	389	341	272	227	170	151	136	
	5.0	C	**	2.54	610	508	435	381	305	254	191	169	152	
	6.0	C	–	2.79	670	558	478	419	335	279	209	186	167	
AIXR11006 (50)	1.0	UC	***	1.37	329	274	235	206	164	137	103	91.3	82.2	
	2.0	XC	***	1.94	466	388	333	291	233	194	146	129	116	
	3.0	VC	***	2.37	569	474	406	356	284	237	178	158	142	
	4.0	VC	**	2.74	658	548	470	411	329	274	206	183	164	
	5.0	C	**	3.06	734	612	525	459	367	306	230	204	184	
	6.0	C	–	3.35	804	670	574	503	402	335	251	223	201	
AIXR11008 (50)	1.0	UC	–	1.82	437	364	312	273	218	182	137	121	109	114443A-*CELR
	2.0	XC	–	2.58	619	516	442	387	310	258	194	172	155	
	3.0	VC	–	3.16	758	632	542	474	379	316	237	211	190	
	4.0	VC	–	3.65	876	730	626	548	438	365	274	243	219	
	5.0	VC	–	4.08	979	816	699	612	490	408	306	272	245	
	6.0	C	–	4.47	1073	894	766	671	536	447	335	298	268	
AIXR11010	1.0	UC	–	2.28	547	456	391	342	274	228	171	152	137	
	2.0	UC	–	3.23	775	646	554	485	388	323	242	215	194	
	3.0	XC	–	3.95	948	790	677	593	474	395	296	263	237	
	4.0	VC	–	4.56	1094	912	782	684	547	456	342	304	274	
	5.0	VC	–	5.10	1224	1020	874	765	612	510	383	340	306	
	6.0	VC	–	5.59	1342	1118	958	839	671	559	419	373	335	

NOTE: Always double check your application rates. Tabulations are based on spraying water at 21°C.

DROPLET SIZE CATEGORIES

XF	VF	F	M	C	VC	XC	UC
EXTREMELY FINE	VERY FINE	FINE	MEDIUM	COARSE	VERY COARSE	EXTREMELY COARSE	ULTRA COARSE

Droplet size may vary with nozzle capacity, spray angle and spray pressure.

Figure 2 – AIXR Application Chart

GlidePath Operating Instructions

Before First Use

Your GlidePath Spray Trailer is delivered assembled and ready to be connected to your tow vehicle or tractor. Before use, it needs to be set up using the following instructions:

- Complete the warranty registration online at www.tti.com.au/warranty-registration, or use the Warranty Registration Card at the back of this handbook.
- Store this handbook, along with the Tank Quality Check Form and pump unit's manual in a safe and easily accessible place for future reference.

WARNING! The operator must fully understand all aspects of this handbook. Do not operate the GlidePath unit if you are unfamiliar with its operation until you have read this handbook.

- Read and thoroughly understand this handbook, paying particular attention to all safety requirements, before using the GlidePath for the first time.
- Check that all fittings, valves, hoses and electrical leads are secure following transit, and are not damaged in any way.
- Inspect the tank for any damage or abrasions that may occur during transit.

CAUTION! The GlidePath unit must be securely attached to the tow vehicle. Failure to do so may result in the unit breaking away from the moving vehicle. Warranty is conditional on the unit being correctly coupled.

- Connect the GlidePath to the tow vehicle, ensuring the tow hitch engages correctly and locks in place. Connect the safety chains using rated D-shackles.
- Connect the 7-pin trailer plug to the tow vehicle, ensuring it locks firmly. Check lights and indicators operate correctly.

CAUTION! Ensure any electrical connections are configured correctly to prevent shorting or reverse polarity. Warranty is conditional on the electrical systems being correctly connected.

- If optioned, install the remote control solenoid switch unit (Figure 3) at a suitable location near the driver's seat, then connect the cable to the vehicle's power supply. Connect the other end to the solenoid switch(es) at the regulator manifold.

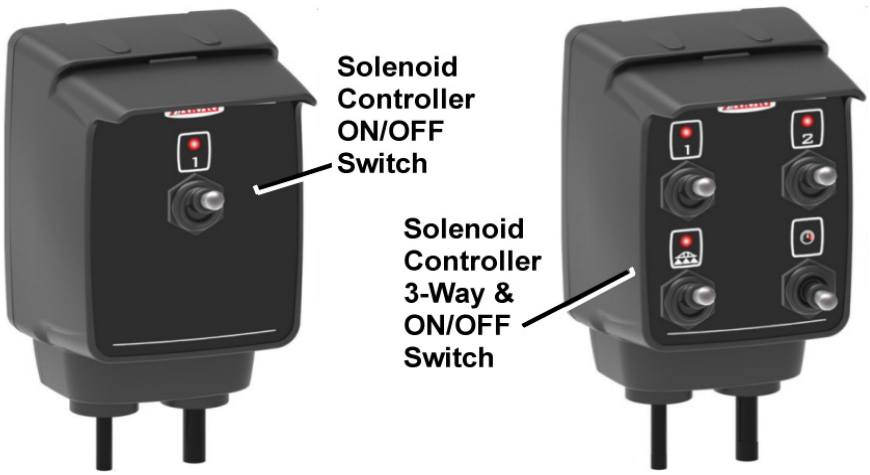


Figure 3 – Optional Remote Control Solenoid Operated Switch Units

- If the optional Foam Marker Kit is provided, install the electrical cable and connect it to the vehicle's power supply via the cable's plug, refer to Figure 4.

Figure 4 – Optional Foam Marker Kit Electrical Cables and Controller

- It is recommended that at first use, the GlidePath is filled with water for calibration purposes and for the operator to become familiar with the characteristics of the unit. Refer to the Calibration Procedure to set up the unit for first use; and each time there are different spray parameters required.

Filling the GlidePath Tank

WARNING! Ensure the filling area is in an open, well-ventilated space if filling with chemicals. Follow the instructions provided with the chemicals or the applicable Safety Data Sheet.

Mixing and filling the GlidePath unit should be undertaken at a carefully chosen site, away from any risk of spillages draining into water courses or into environmentally sensitive areas. Children and animals must always be kept away from mixing and filling operations.

The GlidePath's tank is filled as follows:

NOTE! Ensure the manually operated isolating valve for the boom is CLOSED.

- Check that the boom's manual isolating valve is CLOSED, or the optional electrically controlled solenoid valve is OFF.
- Open the tank filler by twisting and lifting the cap.
- Withdraw the internal basket strainer and inspect it for any debris. Clean it if required and reinstall it into the top of the tank.
- Follow the chemical manufacturer's instructions and safety precautions carefully, taking note of the order in which the products are to be added to the tank.
- Measure the correct quantities of chemicals using clean measuring containers specifically for this purpose only, then add the chemicals to the tank.
- Rinse out the measuring containers and any empty containers and pour all rinsing liquid into the GlidePath tank.

CAUTION! Do not overfill the tank. This may result in chemical spillage.

CAUTION! The GlidePath must never be left unattended while being filled with fluid.

- Top up the tank with water to the required level, ensuring it is not overfilled.
- Thoroughly mix the contents by stirring with a suitable paddle or starting the pump to allow recirculation through the pump and back into the tank. Ensure the hose operation lever is in the closed (BYPASS) position.
- Upon completion of filling the GlidePath tank, replace the filler cap and twist to tighten.
- Wash off any spillage from outside the tank.
- Close the chemical supply containers and store appropriately. Any empty containers must be thoroughly rinsed and set aside for collection and disposal in compliance with environmental and work safety requirements.

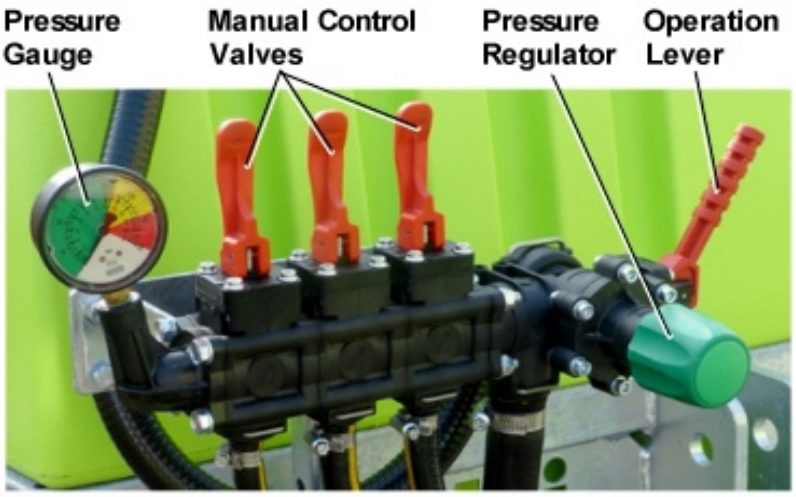
Operating Instructions

The GlidePath is started and operated as follows:

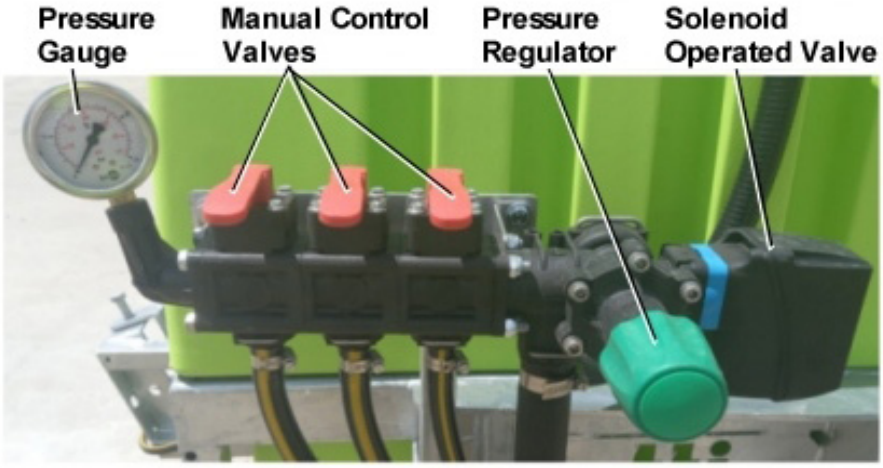
- Confirm the tank contains the required chemical or water quantity.

NOTE! Ensure the pressure regulator is set to the minimum position.

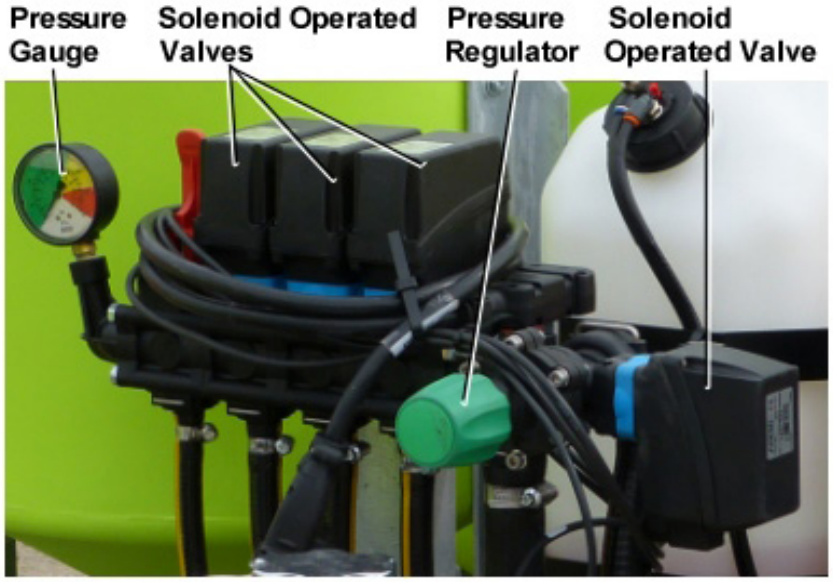
- At the pump, check that the pressure regulator is set to the minimum position by turning the knob anti-clockwise, refer to Figure 5.



Full Manual Control



Manual Control 3-way Valves, Solenoid Control Manifold



Fully Solenoid Control

Figure 5 – Pressure Regulator Options

- Check that the operation lever is in the closed (BYPASS) position.
- Check that the spray boom isolating valve(s) adjacent to the tank is in the CLOSED position.
- Open the ball valve on the tank's discharge line.
- Start the pump using the following procedure:
  - Turn the fuel lever to ON, refer to Figure 6.
  - If the engine is cold, turn the choke lever to ON.

CAUTION! Ensure the engine's throttle is set to idle if the engine is cold. Do not adjust the throttle to maximum speed until the engine has warmed up.

- Set the throttle lever to idle for cold starting. If restarting a warm engine, the throttle can be left at normal engine operating speed.
- For a manual start engine, turn the power switch to ON. Pull the recoil starter handle until the engine starts, then back off the choke lever to OFF.
- For an optional electric start engine, insert the key and switch the engine to ON and START. When the engine starts, release the key, which will return to the ON position. Back off the choke lever to OFF.
- Once the engine is warmed up, adjust the throttle to increase the engine speed to normal operating revs. With the engine running, the pump will operate with the fluid bypassing back into the GlidePath's tank.
- When the engine needs to be stopped, turn the power switch to the OFF position.

Figure 6 – Petrol Engine Start-up Procedure

- With the pump running, turn the pressure regulator knob clockwise to the required pressure – approximately 3 bar for spray boom operation. If the optional hose reel is fitted, approximately 5 bar is required for hose operation. Refer to the calibration procedure described above for the actual required pressure setting
- For spraying operations, refer to:
  - Hose Spray Operation
  - Spray Boom Operation

If the GlidePath is not going to be used within the next few hours, shut the system down by turning the engine's fuel tap to OFF.

Hose Spray Operation

Set up and operation of the optional 30m hose reel or 50m SuperReel spray system is conducted as follows:

WARNING! Suitable PPE must be worn by the operator when conducting manual hose spraying operations.

WARNING! Do not spray in windy conditions, where spray drift contamination may occur.

Position the tractor with the GlidePath unit at a suitable point of the operations area.

NOTE! Ensure the manually operated isolating valve to the boom is CLOSED.

- For the GlidePath fitted with manually operated spray booms, ensure the isolating valve on the pressure regulator manifold is in the CLOSED position.
- Check that the pressure regulator is set to its minimum setting. Start up the pump as detailed above. The fluid will now be circulating through the system and returning to the tank via the bypass circuit.
- Set the pressure regulator to approximately 5 bar – this can be fine-tuned as required.

CAUTION! Ensure not to over-run the hose when pulling it out from the reel, as this may damage the hose or the fittings.

- Pull the hose from the GlidePath's optional hose reel to unwind it.
- Turn the operation lever from BYPASS to ON, which will now pressurise the hose.
- Aim the hose's spray gun in the required direction and squeeze the trigger. Adjust the spray pattern by rotating the brass nozzle tip or gun lever, depending on spray gun type.
- Use a constant speed when spraying and release the trigger at the end of each swath or change of direction, to prevent overdosing. Work in parallel lines when spraying large areas, rather than swinging from side to side.
- At the end of the task, release the spray gun trigger and switch the operation lever to BYPASS. The fluid will automatically recirculate through the system and return to the tank via the bypass circuit until the pump is switched OFF.
- Turn the pump OFF and then aim the spray gun in the required direction and squeeze the trigger. This will release the residual pressure in the hose, which will result in a small amount of fluid discharging.
- With the hose pressure released, the hose is ready to stow back on the GlidePath's hose reel, refer to Figure 7. For the optional 30m reel, turn the handle at the side of the hose reel to wind it onto the spool, guiding the hose as necessary to ensure even distribution across the width of the reel. Allow enough slack in the hose to stow the spray gun in its holder on the side of the tank. The reel has a four-position locking device to prevent the hose unwinding during transit.
- For the optional 50m SuperReel, press the button on the remote control supplied with the SuperReel to start retracting the hose, refer to Figure 8. The hose will wind on to the reel's spool, guided by the integrated fairlead. Release the button when the hose is retracted, allowing enough slack in the hose to stow the spray gun in its holder beside the SuperReel.

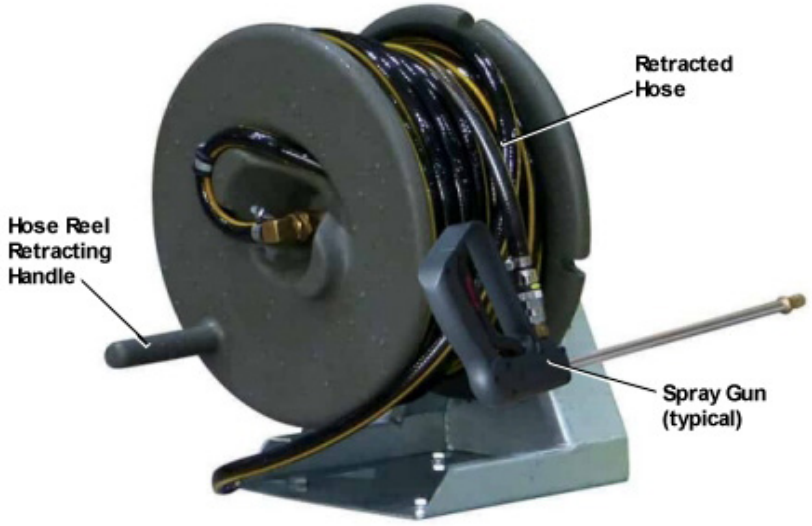


Figure 7 – Optional 30m Hose Reel

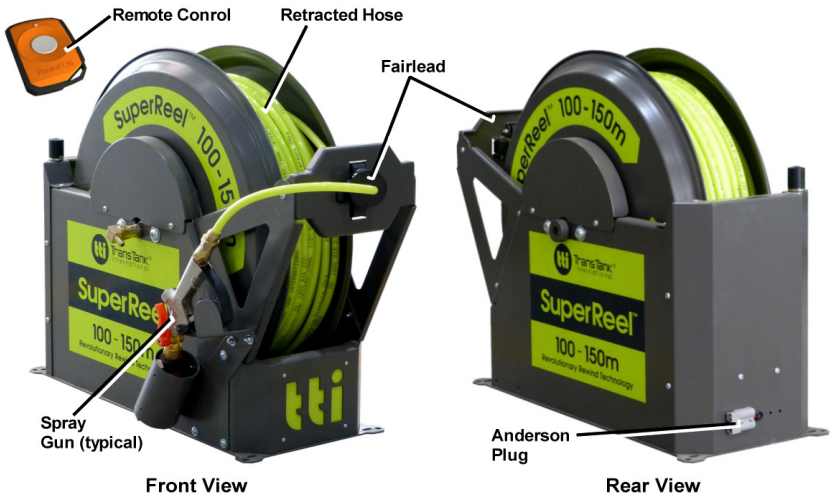


Figure 8 – Optional 50m SuperReel

Spray Boom Operation

WARNING! Before commencing spraying, plan the work effectively to minimise potential contamination of adjacent areas.

The Spray Boom options supplied do not require any adjustments prior to operation once calibrated for the task. The spraying operation is conducted as follows:

WARNING! Do not spray in windy conditions, where spray drift contamination may occur. Spray drift can be reduced by lower nozzle height, lower pressures or by fitting larger nozzles.

- Position the vehicle at the starting point of the operations area.
- At the boom, fold out each of the two boom extensions fully, ensuring they each “click” into place at the end of their travel.
- Start the pump by following the procedure described above. The fluid will recirculate through the system and return to the tank via the bypass circuit until the boom is set into operation.

- Set the pressure regulator to the correct setting as determined during calibration.
- At the pressure regulator manifold, turn the required valve(s) to ON, refer to Figure 5.
- Turn the operation lever from BYPASS to ON, or if supplied, from the driver's seat, turn the optional control solenoid operated switch to ON (Figure 9). The fluid will now start to discharge from the boom spray nozzles.
- Commence driving the tow vehicle at the speed determined during calibration to achieve the required spray outcome.
- If fitted, at the end of each swath or before turning around, switch the solenoid valve's switch to OFF. When commencing the next swath, turn the switch back to ON.

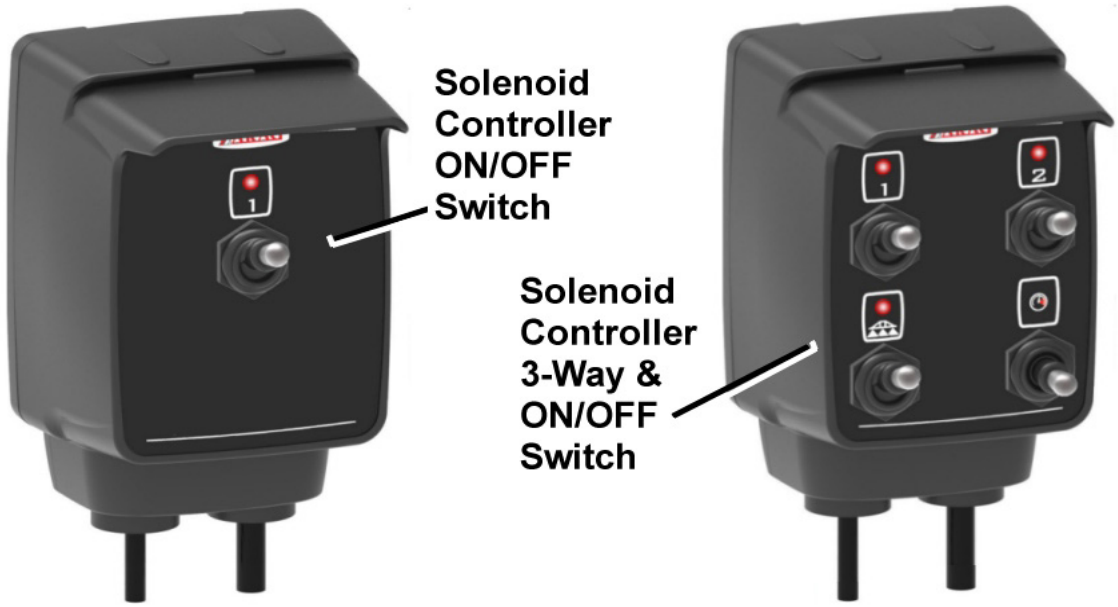


Figure 9 – Remote Control Solenoid Operated ON-OFF Switch Unit

Foam Marker Kit Operation

The Foam Marker Kit, available as an option for the GlidePath, is operated as follows:

- Connect the electrical cable to a suitable supply on the vehicle, refer to Figure 4.
- Fill the marker container with a rich soapy water solution such that it achieves a dense foam when ejected from the nozzle.
- From the driver's seat, turn the solenoid valve's switch from the central OFF position to either the left or right ON position, refer to Figure 10. The foam will now start to discharge in timed intervals from the selected nozzle at the end of the boom.
- Start the spraying operation as described above.
- Commence driving the tractor at the speed determined during calibration to achieve the required spray outcome. The foam will mark the edge of the current swath, enabling accurate alignment with the next swath, ensuring there is minimal overlap and no missed areas.

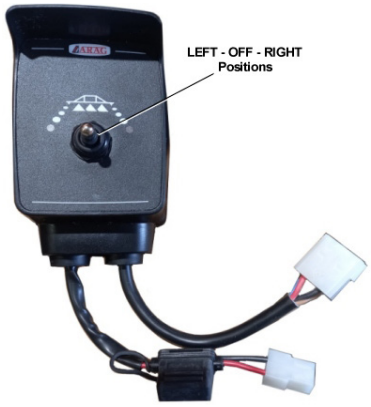


Figure 10 – Optional Foam Marker Controller

Clean-up and Decontamination

After use, the GlidePath unit must be thoroughly decontaminated inside and outside – including the pump, boom and optional hose and spray gun – to avoid damage to crops from any harmful pesticide spray residues. Decontamination also prevents sprayer corrosion and abrasion.

Cleaning the GlidePath should be undertaken at a carefully chosen site, away from any risk of spillages draining into watercourses or into environmentally sensitive areas. The following describes the normal cleaning procedure, followed by the cleaning procedure where the optional flush tank is fitted to the GlidePath unit.

Cleaning Procedure

The recommended decontamination procedure is as follows:

WARNING! Suitable PPE must be worn by the operator when cleaning and decontaminating the GlidePath unit. Follow the instructions provided with the chemicals or the applicable Safety Data Sheet.

WARNING! Ensure the cleaning area is in an open, well-ventilated space, and any flushing water is captured to prevent runoff into watercourses or into environmentally sensitive areas.

After spraying operations are complete, drain any residual fluid by opening the suction filter housing adjacent to the bottom of the tank, refer to Figure 11. Capture and dispose or store any fluid in accordance with environmental and work safety requirements.

Figure 11 – Suction Filter (typical)

- Rinse out the tank with several changes of water, plus a recommended cleaning fluid. Where it can be reached internally, use a brush to scrub the inside of the tank.
- Operate the GlidePath unit with clean water, using both the spray boom and hose (as applicable), to ensure no chemical residue remains.
- Unscrew the suction filter cover and remove the filter screen and gasket. Soak the filter screen in clean water, brushing carefully with a nozzle brush. When re-assembling, ensure the gasket is in position.
- Ensure that the tank's basket strainer is free from chemical residue or debris.
- Nozzles, nozzle filters, nozzle caps and gaskets should be cleaned by soaking in water, brushing with a nozzle brush and allowed to dry. Do not blow through the nozzles or use wire or pins to clear any blockages.
- Dispose of all rinsing water in compliance with environmental and work safety requirements.

Cleaning Procedure using Flush Tank

Cleaning of the GlidePath unit fitted with the optional flush tank is conducted in a similar manner to the cleaning procedure described above, but noting the following:

- Ensure the flush tank contains water and the main GlidePath tank is empty.
- With the tractor's engine running, engage the PTO output to operate the GlidePath's pump.
- Adjacent to the optional hose reel, the 3-way valve handle should be pointing towards the tractor, refer to Figure 12. To draw water from the flush tank, move the valve handle to the upright position.

Figure 12 – Flush Tank Operation

- At the pressure regulator manifold, individually turn each valve to ON for approximately 30 seconds or until each line is fully flushed.
- Once each line is fully flushed, direct the remaining flush tank water into the GlidePath's main tank by turning the operation lever to BYPASS.
- Drain the GlidePath's main tank by opening the suction filter housing adjacent to the bottom of the tank, refer to Figure 11.

If the GlidePath unit is to be stored for an extended period, thoroughly clean and decontaminate the unit as described above. Ensure it is allowed to dry, the tank and all lines empty and not pressurised then store it in a well ventilated area.

CAUTION! The GlidePath sprayer may be unstable once disconnected from the tractor. Ensure it is suitably supported to prevent damage from falling over.

If the GlidePath is to be removed from the tractor, disconnect it in the opposite order to mounting, as described in the Before First Use section above. Ensure the unit is securely chocked once removed from the tractor.

Maintenance

Your GlidePath Professional Sprayer requires minimal maintenance but regular cleaning and checks will ensure safe and reliable service over its lifetime. Periodic checks and inspections will identify any potential issues, enabling timely rectification and minimising downtime.

Periodic Checks

The following checks and cleaning operations should be undertaken on a regular basis (at least annually). The frequency of these activities will depend on the nature of the operating environment and the operational hours of the GlidePath unit. Refer to the maintenance schedule tables below for details of maintenance intervals, noting that any petrol engine tasks are related to the GlidePath deluxe only.

- Clean the unit and inspect it for any signs of damage or wear. Replace any safety labels if they are damaged or illegible.
- Check all fittings are firmly secured, tighten if necessary.
- Unwind the optionally fitted hose fully to check that hose is in good order. Pressurise the line and check operation of spray gun nozzle. Rewind the hose onto the hose reel.
- Check the pump's oil level weekly, top up as required. Inspect of any signs of oil leaks around the pump.
- Check all electrical cables and fittings for any sign of damage.
- If the GlidePath is to be stored for an extended period, thoroughly clean and decontaminate the unit as described above. Ensure it is allowed to dry, the tank and all lines empty and not pressurised then store it in a well ventilated area.

Maintenance Schedule

The following tasks are be conducted in accordance with each of the schedules. All scheduled tasks are to be undertaken concurrently. For example, at the three month maintenance interval, all task listed are to be undertaken, in addition to the daily, weekly and monthly tasks.

NOTE! Maintenance is important. Keep a record of all maintenance tasks conducted on the GlidePath unit.

TTi recommends photocopying these schedules in order to keep a detailed log of all maintenance tasks. A copy of these schedules will be required to support any warranty claim.

Daily tasks

The following tasks are to be undertaken daily, or prior to each use, of the GlidePath unit.

#	Task	Notes
1	Inspect the GlidePath unit for any signs of damage or wear	Clean, repair or replace
2	Check electrical plug connection	Test function of solenoid valve(s)
3	Check plug connections and test lights/indicators	Test function of trailer lights
4	Check fuel	Top up as required
5	Inspect engine's air filter and housing for dust	Clean, replace as necessary

Weekly tasks

The following tasks are to be undertaken each week or 10 operating hours, whichever occurs first.

#	Task	Date	Signed
1	All Daily tasks		
2	Remove and clean the engine's air filter		
3	Check engine oil level, top up as required		
4	Check pump oil level, top up as required (refer to Figure 13)		

Monthly tasks

The following tasks are to be undertaken each month or 20 operating hours, whichever occurs first.

#	Task	Date	Signed
1	All Daily and Weekly tasks		
2	Check tyre pressures are 36psi (248kPa or 2.48 Bar)		
3	Visually inspect tyres for wear or damage		
4	Check wheel nut tension		
5	Visually inspect suspension components		
6	Visually inspect hydraulic brake lines, check for leaks, top up reservoir as required		
7	Check optional hose and hose reel by unwinding fully		
8	* Change pump engine oil (and filter, if fitted) (first change, thereafter every six months or 100 operating hours)		

Three Monthly tasks

The following tasks are to be undertaken every three months or 50 operating hours, whichever occurs first.

#	Task	Date	Signed
1	All Daily, Weekly and Monthly tasks		
2	* Re-tension axle U-bolts (first time, thereafter every six months or 100 operating hours)		
3	Inspect the air filter, replace if clogged or damaged		
4	Check all hoses, fasteners, nozzles and fittings		

Six Monthly tasks

The following tasks are to be undertaken every six months or 100 operating hours, whichever occurs first.

#	Task	Date	Signed
1	All Daily, Weekly, Monthly and 3-Monthly tasks		
2	Change engine oil (and filter, if fitted)		
3	Inspect spark plug		
4	Check tension on axle U-bolts and suspension components		
5	Lubricate grease nipples on suspension shackles and trailer hitch (hydraulic brake version)		

Twelve Monthly tasks

The following tasks are to be undertaken every twelve months or 200 operating hours, whichever occurs first.

#	Task	Date	Signed
1	All Daily, Weekly, Monthly, 3-Monthly & 6-Monthly tasks		
2	Check the battery condition (if fitted)		
3	Replace the engine's air filter		
4	Drain and flush the fuel tank		
5	Replace the engine's fuel filter		
6	Replace the spark plug		
7	Inspect brake shoe wear and adjustment (if fitted)		

Two-Yearly tasks

The following tasks are to be undertaken every 24 months or 500 operating hours, whichever occurs first.

#	Task	Date	Signed
1	All Daily, Weekly, Monthly, 3-Monthly, 6-Monthly and 12-Monthly tasks		
2	Disassembly, clean and repack wheel bearings		
3	Replace pump check valves and diaphragms		
4	Disassembly, clean and repack wheel bearings		
5	Change brake fluid and bleed brakes (hydraulic braked version)		

Maintenance Tasks

The following tasks must be undertaken on a periodic basis to ensure your GlidePath Spray Trailer's ongoing reliability.

CAUTION! In dusty, dirty or smoky environments, cleaning, inspection and servicing of the unit on a regular basis is essential. The cleaning, inspection and servicing must be undertaken more frequently in harsh conditions to avoid damage or destruction of equipment.

The frequency of these activities will depend on the nature of the operating environment and the operational hours of the GlidePath but as a minimum, the following tasks should be undertaken annually.

Engine-driven Pump

- Unscrew the suction filter cover (refer to Figure 11) and remove the filter screen and gasket. Soak the filter screen in clean water, brushing carefully with a nozzle brush. When re-assembling, ensure the gasket is in position.
- Refer to the pump manual (downloaded via link on supplied data sheet), drain and replace the pump oil in accordance with the manufacturer's recommendations (refer to Figure 13).
- Replace the pump's check valves and diaphragms in accordance with the manufacturer's recommendations.

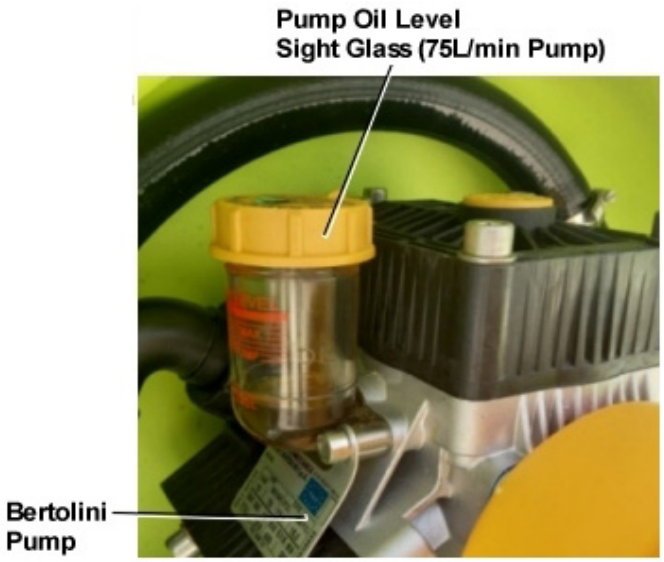


Figure 13 – Bertolini Pump

Trouble Shooting

If a fault develops with your GlidePath unit, the following trouble shooting tables provides guidance to identify and rectify the problem.

Pump

Problem	Possible cause	Remedy
Pump will not prime	Air leak on suction line	Tighten or replace fittings
Pressure drops or fluctuates during operation	Suction line restriction	Remove restriction
	Pump sucks air	Tighten or replace fittings
No pressure	Broken regulator spring	Replace regulator spring
Engine will not crank (electric start petrol engine option)	Flat battery	Check battery state-of-charge
	Melted fusible link/circuit breaker	Replace fusible link/breaker
	Loose Connections	Clean and tighten connections
	Faulty Ignition Switch	Check switch operation, replace as needed
	Faulty magnetic, relay, neutral start or clutch switches	Check and replace as needed
	Mechanical problem in engine	Check engine
	Problem in theft deterrent system	Check service manual for system tests
Engine cranks too slowly to start	Weak Battery	Check battery and charge as needed
	Loose or corroded connections	Clean and tighten connections
	Faulty starter motor	Test Starter
	Mechanical problems with engine or starter	Check engine and starter, replace worn out parts
Starter keeps running	Damaged pinion or ring gear	Check gears for wear or damage
	Faulty plunger in magnetic switch	Test starter pull-in and hold-in coils
	Faulty ignition switch or control circuit	Check switch and circuit components
	Binding ignition key	Check key for damage
Starter spins, but engine will not crank	Faulty over-running clutch	Check over-running clutch for proper operation
	Damaged or worn pinion gear or ring gear	Check gears for damage and wear; replace as needed
Starter does not engage/ disengage properly	Faulty magnetic switch	Bench test starter
	Damaged or worn pinion gear or ring gear	Check gears for damage and wear; replace as needed

Risk Assessment

Task	Hazard	Risk	Control Measure/Mitigation
Check weather conditions	Manual handling; slips, trips or falls	Low	• Wear PPE as per chemical requirements SDS – coveralls, gloves, safety footwear, glasses & respirator • Follow safe manual handling techniques: don't lift on your own if >20kg, bend knees & keep back straight.
Mix chemicals (if applicable) and fill spray tank	As above, spray drift, chemical spillage, emission of vapours or flammability: weather, untrained visitors	Medium	• As above • User trained in relevant chemical mixing & administration course, e.g, Chem Cert; • Follow relevant Environmental Protection Authority requirements; • Fire extinguisher nearby; • Keep visitors away from job location unless wearing full PPE.
Check the Spray Unit and tow vehicle is safe before use, i.e. where applicable: - wheel nuts, tire pressure, bearings, tow hitch, etc. Use spray unit as per instructions in manual	As above; loss of load; heat & cold; noise; exceed load limit of vehicle; hose entanglement; exhaust fumes; terrain & slopes;	High	• As above • wear clothes to suit heat & cold; • Wear hearing protection if noise >85 dBa; • Follow the manufacturer 's safe operation instruction for the vehicle and the spray unit • Don't overload - water weighs 1kg for every 1 litre • Secure load to vehicle; • Keep hose tidy; • Put unit brakes on
Clean up, maintenance & storage	As above	Low	• As above; • Continue to wear PPE for clean up; • Store unit in a dry, well ventilated area.

Warranty

Your rights under the law

Our goods 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.

About this document

This document sets out the terms of the defects warranty that we offer to retail purchasers of our goods, including components, parts, and accessories (referred to as "products" in this document). We offer this defects warranty in addition to the consumer guarantees referred to above. Nothing in this document excludes or reduces your rights under those consumer guarantees.

What this warranty covers

This warranty covers defects in materials or workmanship (or both) which are found to be present in our products, other than the defects in the parts and components listed below.

What this warranty does not cover

This warranty does not cover defects or damage caused by your negligence, your failure to follow instructions (including incorrect assembly or mounting by you), or the improper use, maintenance, or abuse of the products.

This warranty does not cover engines, gearboxes, pumps, or regulators. These come with separate warranties from their manufacturers. By offering this defects warranty, we do not assume any additional obligations or liability on behalf of those manufacturers beyond what we must do to comply with the consumer guarantees referred to above.

How long this warranty lasts for

Except in the case of products used for rental purposes, the period of our defects warranty is as follows for our various products:

Tanks (non-diesel), excluding frames	25 Years
Steel frames	5 Years
Other TTi Manufactured Components	1 Year

This warranty lasts for one year from the date of your retail purchase of the products, unless it is used for rental purposes, in which case this warranty is limited to 90 days.

What we will do if you make a claim under this warranty

If you make a claim under this warranty, we will consider it in good faith. If we agree that the products are covered by this warranty and are defective, we will either (at our option) repair or replace them without charge to you.

What you must do (and not do) to entitle you to a claim under this warranty

You must be able to provide proof of purchase, either by providing details of your warranty registration or a purchase receipt.

You must not repair or modify (or allow the repair or modification of) the products without prior authorisation from us. Further, you must not use any non-genuine parts with the products. Doing any of these things will void this defects warranty.

How to make a claim under this warranty

If you believe that you have a claim under this warranty, please contact your reseller, or contact us using the following details:

Name:	**Trans Tank International**
Postal Address:	**PO Box 137 Nathalia, VIC, 3683**
Physical Address:	**Murray Valley Highway, Nathalia, VIC, 3638**
Phone:	**1800 816 277**
Email:	**ProductSupport@tti.com.au**

You must make the defective products available for inspection by returning them to us, and (if requested to do so) by making them available for inspection by us on site beforehand. You must ensure that the products are made safe for transportation and inspection, including by cleaning them thoroughly to remove any chemical residues. All returned products must be accompanied by a completed Return Goods Note. Please contact us using the details displayed above for a copy of this document.

Who is responsible for expenses for claims made under this warranty

You are responsible for any expenses associated with the warranty claim, including transportation, charges made for service calls, and clean-up time.

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INTERNATIONAL

SCAN HERE!

1800 816 277

sales@tti.com.au

PO Box 137, Nathalia, VIC, 3638

Murray Valley Hwy, Nathalia, VIC 3638

Proudly Built By:	Quality Checked By:
_____	_____
_____ _____	_____ _____
Signature Date	Signature Date

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