

FireDefence[™]

Portable Fire Fighting Unit



“HELPING TO DEVELOP AND PROTECT THE LAND”

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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 FireDefence[™] Slip-On Fire Fighting Unit (FireDefence), which will provide many years of reliable service when operated and maintained in accordance with this manual.

TTi manufacture a range of FireDefence units, from 600 through to 1,000 litre tanks, supplied with a petrol driven pump. This manual describes the operation, driving stability and maintenance procedures applicable to all units.

All TTi FireDefence tanks are rotationally moulded from quality polyethylene, purpose designed and manufactured to high standards. The FireDefence is a slip-on unit for the back of a utility or trailer and designed for firefighting activities.

The FireDefence unit is supplied complete, tested and ready to go. TTi recommends that only water be used in the FireDefence unit. TTi warrants that the FireDefence has been designed and built for its intended purpose for firefighting.

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 FireDefence unit is the following documents:

- Operator's Handbook (this manual, which includes the Warranty Registration Card)
- Integral Honda Petrol engine and Davey pump manufacturer's handbooks
- 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.



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 pumping water for firefighting duties. Under no circumstances should it be used for any other purpose. It must never be used for transporting fuel or chemicals.
2. Only authorised and trained personnel are to operate this equipment. Operators must have read and fully understood this manual before operating the FireDefence unit.
3. Do not operate this equipment while under the influence of alcohol or any drugs that could impair your capabilities in any way.
4. Personal Protection Equipment (PPE) must be worn when refuelling or operating the pump on the FireDefence. Exposure to excessive noise over an extended period can cause impairment or loss of hearing.
5. Avoid unleaded petrol contact with skin and eyes, and avoid breathing vapours or mists. Refer to the relevant Safety Data Sheet (SDS).
6. Any spillage of fuel while refilling the pump engine's tank should be immediately cleaned up and the materials used in the clean-up disposed of safely and in accordance with relevant regulations applying to the safe use, storage and disposal of fuel.
7. Ensure the capacity of the vehicle is suitable for the loaded mass of the FireDefence. Refer to the vehicle's operator manual for safe working loads 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 weighs one kilogram (kg), therefore a full 600 litre FireDefence unit will weigh in excess of 650kg.
8. The unit must be securely restrained on the vehicle. Ensure all fasteners are tightened and secure before operation.
9. The FireDefence must never be left unattended while being filled with water.
10. Do not operate the pump when there is no water 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 water discharge which may be hazardous.
12. Care should be taken at all times, particularly when operating on rough or steep terrain. Drivers should be aware of fluid surge affecting the centre of gravity.
13. The FireDefence has safety labels affixed to various locations on the unit. These labels should be kept clean and legible, and replaced if damaged.
14. 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 resistant polyethylene tank (600 to 1,000 litre capacity), complete with LiquidLocker™ Baffle Safety System
Standard Equipment	LiquidLocker™ Baffle Safety System Honda GX160 petrol engine with Davey pump delivering 500L/min 36m 19mm fire hose reel with adjustable nozzle Pressure regulator Large tank lid for standpipe filling 6m tank bottom fill kit via integral pump
Options	Fully welded and galvanised steel frame with forklift pockets, complete with steel retaining straps Davey twin impeller pump 20m spring rewind hose reel

Description

The TTi FireDefence is designed to carry and distribute water using a self-contained pump and firefighting hose system. The low-profile FireDefence design offers a low centre of gravity for safety and has the following features, refer to Figure 1.

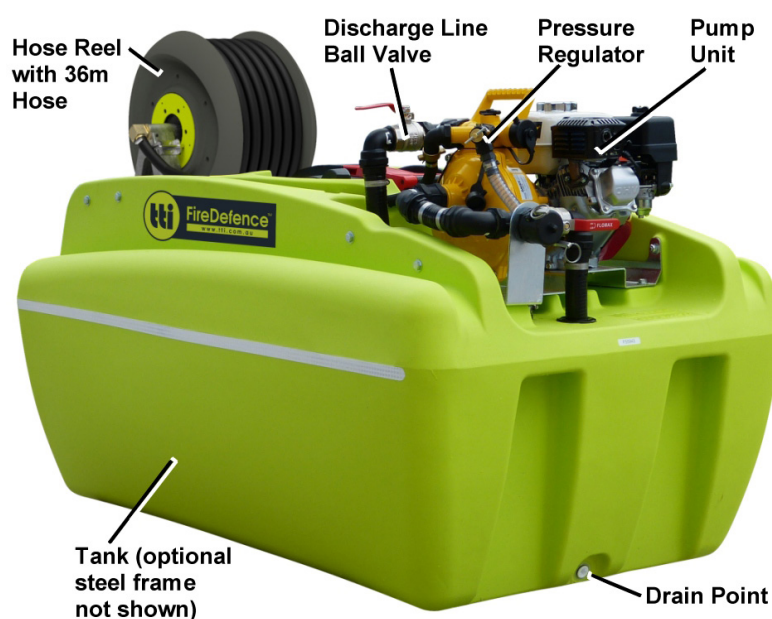


Figure 1 – Component Identification

Tank

All TTI tanks are constructed from UV stabilised, virgin material polyethylene. Due to the rotational moulding process, there may be a small variance in the overall dimensions of the tank, therefore, calibration markings should be used as a guide only. All FireDefence tanks are fully drainable and include the LiquidLocker baffle system.

LiquidLocker Safety Baffle System

The LiquidLocker baffle system within the tank demonstrates measurable improvements in braking performance and dynamic stability and controllability. The system has been independently tested, with the report available upon request.

Pressure Regulator

A pressure regulator is fitted to the pump discharge flange to control line pressure and prevent pump cavitation. The factory-set regulator feeds excess water back to the tank and is set to relieve at 50 – 60 psi.

Hose Reel

Each FireDefence is fitted with a 36m 19mm diameter fire hose mounted on a manually operated heavy duty hose reel. The hose is fitted with an adjustable nozzle which locates in a securing bracket on the hose reel support when the hose is stowed. The nozzle adjusts from closed through to jet and mist sprays, depending on requirement.

A spring rewind hose reel fitted with 20m of 19mm diameter fire hose with adjustable nozzle is available as an upgrade from the standard reel.

Pump

The FireDefence is fitted with a Davey firefighting pump as standard. The pump is coupled to a Honda GX160 recoil (pull) start engine, capable of delivering 500L/min. A Davey twin impeller pump is optionally available as an upgrade.

Suction Fill Hose Kit

Each FireDefence is supplied with a 6m suction quick fill hose. The hose is fitted with a filter at one end and a camlock coupling on the opposite end, for direct connection to the pump.

Steel Frame

Available as an option is a fully welded and hot dip galvanised for corrosion resistance steel frame. The frame incorporates forklift pockets for easy loading and unloading from the vehicle. Included with this option are steel retaining straps, to secure the FireDefence to the frame.

Ball Control Valves

The FireDefence has a ball control valve fitted on the discharge and suction lines of the tank. The suction line valve isolates the tank from the pump, enabling filling via the suction fill kit.

Machine Limitations

The FireAttack unit is subject to operating limitations. It is the operators' responsibility to ensure that this equipment is being operated safely and within these limitations.

Driving Stability

The FireAttack unit is heavy when filled with water. To maintain stability while operating this unit:

- Ensure the vehicle's 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 FireAttack tank is full, as the unit will have a higher centre of gravity.

Operating Instructions

Before first use

Your FireDefence Slip-On Fire Fighting Unit is delivered fully assembled. 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 the provided leather pouch, in a safe and easily accessible place for future reference.



NOTE! The operator must fully understand all aspects of this handbook. Do not operate the FireDefence 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 FireDefence 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.



CAUTION! The unit must be securely mounted to the vehicle. Failure to do so may result in the unit moving or falling off the moving vehicle. Warranty is conditional on the unit being correctly mounted.

- Position your FireDefence onto the vehicle and mount securely to the tray. If using tie-down straps, they must be rated to at least the total mass of the unit when filled with water. If the optional steel frame is supplied, the integrated tank frame may be bolted to the vehicle.



CAUTION! The engine must be inspected and prepared in accordance with the manufacturer. Failure to fulfil this requirement may void the engine's warranty.

- Prepare the pump engine in accordance with the Honda manual supplied with your FireDefence unit. Fill the fuel tank with fresh unleaded petrol.

Filling the Tank

The FireDefence tank can be filled in either of the following two ways:



NOTE! The FireDefence unit is designed for water use only. It must not be used for chemicals or fuel.

- Standpipe filling method using a standpipe or hose to fill directly into the top of the tank via the large filling lid.
- Bottom filling method, using the pump to draw water from a dam or other source.

Standpipe Filling Operation

The FireDefence tank is filled by gravity from an overhead standpipe or supply hose as follows:

- Remove the filling lid from the tank's top opening.
- Position the FireAttack unit's top-mounted fill point under the standpipe, or insert a supply hose.
- Open the water supply's valve and allow water to flow into the tank.



CAUTION! To prevent overflow, do not leave the filling operation unattended.

- Observe the water level directly in the tank. When the tank is filled, close the water supply's valve.
- Upon completion of filling, replace the tank's filling lid.

Bottom Filling Operation

The tank is filled by drawing water using the FireDefence's pump as follows, refer to Figure 2:



CAUTION! Ensure the ball valves have been correctly set prior to commencing the filling operation, and that all camlock fittings are securely engaged and fully locked.

- Ensure the ball valve on the suction line from the tank to the pump is closed.
- Remove the camlock cap from the tee port on the suction line.
- Position the FireDefence unit adjacent to a water supply, such as a dam.
- Attach the supplied bottom fill hose's camlock end to the pump's suction tee port.
- Place the filter end of the bottom fill hose into the water source. Ensure the filter is deep enough in the water to prevent it sucking air.
- Open the tank's filler lid, to watch the level of water as the tank is filled.

- Open the ball valve on the discharge line from the pump – this line is now connected to the tank.
- If required, prime the pump by unscrewing the cap at the top of the pump and filling it with water. Once full, replace the cap and tighten firmly.
- Referring to the Pump Operation Procedure, start the pump.
- Ensure the pump is drawing water and discharging it into the FireDefence's tank.



CAUTION! To prevent overflow, do not leave the filling operation unattended.

- Observe the water level directly in the tank. When the tank is filled, stop the pump.
- Close the ball valve on the pump's discharge line.
- Close the tank's filler lid.
- Disconnect the bottom fill hose from the pump's suction tee port.
- Reinstall the camlock cap to the pump's suction tee port.
- Open the ball valve on suction line from the tank to the pump.
- Drain and clean the bottom fill hose, then stow it in a convenient location for future use.

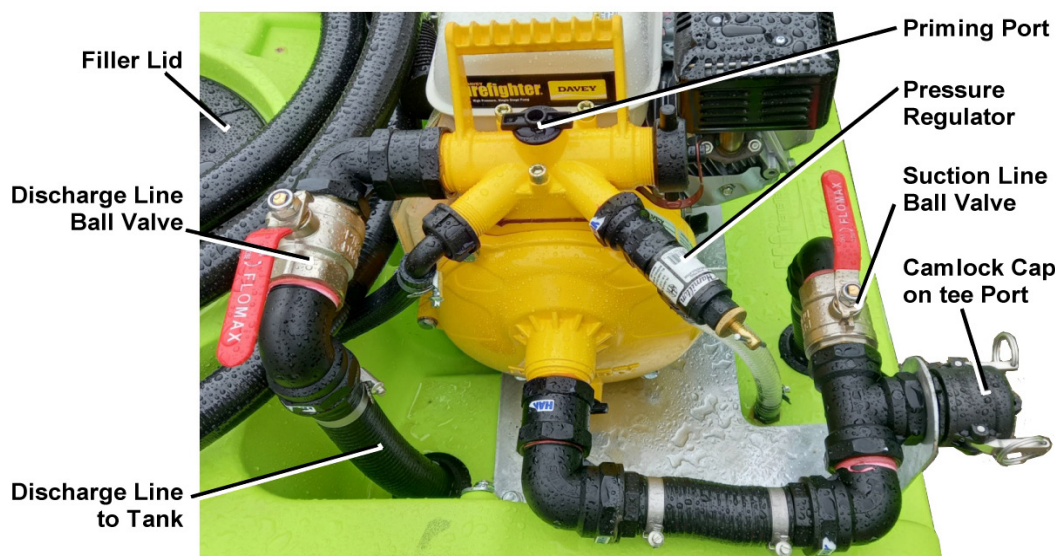


Figure 2 – Tank Filling Operation

Pump Operation Procedure

The FireDefence's petrol pump engine is started as follows, refer to Figure 3:

- Open the ball valve on the suction hose at the bottom of the tank.
- Turn the fuel lever to ON.
- 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.
- Turn the power switch to ON. Pull the recoil starter handle until the engine starts, then back off the choke lever to OFF.



CAUTION! Until the hose nozzle is opened, water will circulate through the pump and bypass back into the tank.

- Once the engine is warmed up, adjust the throttle to increase the engine speed to normal operating revs.
- When the engine needs to be stopped, turn the power switch to the OFF position.
- Close the ball valve on the suction line from the tank.

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



Figure 3 – Engine Start-up

FireDefence Operation

Initial Operation Set Up

The FireDefence Slip-On Fire Fighting Unit is operated as follows:

- Fill the tank from an appropriate water source, refer to the Filling the Tank procedure above.
- Open the ball valve on the suction line from the tank.
- Ensure the ball valve on the pump's discharge line is closed.
- If required, prime the pump by unscrewing the cap at the top of the pump and filling it with water. Once full, replace the cap and tighten firmly.
- Start the pump's engine (referring to the Pump Operation Procedure above) and allow to warm up. The regulator (bypass valve) fitted to the pump will divert the water back into the tank.



CAUTION! To prevent damage, do not operate the pump for more than five minutes with the hose nozzle closed.

- Unlock the hose reel and release the hose's nozzle from its retaining bracket. Pull out the length of fire hose required.
- Adjust the pump engine's speed to achieve the optimum flow rate.
- Open the fire hose's nozzle by rotating it to achieve the desired spray pattern.
- Upon completion of the task, close the fire hose nozzle and turn the pump engine to OFF, referring to the Pump Operation Procedure above.
- Open the fire hose nozzle again to release the residual pressure.
- Rewind the hose onto the reel by manually winding the handle on the side of the reel. Close the nozzle and lock the nozzle back into its bracket.
- Close the ball valve on the suction hose from the tank.

Risk Assessment

Task	Hazard	Risk	Control Measure/Mitigation
Partially fill the tank with water, start the pump & test	Manual handling; slips, trips or falls; petrol; fumes; fingers jammed	Medium	Concentrate on task; follow safe manual handling techniques: • Don't lift on your own if > 20kg, bend knees & keep back straight; Keep fingers clear; • Keep unit at least 8m away from overhead powerlines; • Fire extinguisher nearby; • Follow warning stickers on tanks; Wear PPE for petrol fumes; mask & gloves
Check weather conditions	Manual handling; slips, trips or falls	Low	• Follow safe manual handling techniques: don't lift on your own if >20kg, bend knees & keep back straight.
Use fire fighting unit.	As above; loss of load; heat & cold; noise; exceed load limit of vehicle; hose entanglement; exhaust fumes; terrain & slopes; run over by unit	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 unit • Don't overload - water weighs 1kg for every 1 litre • Secure unit to vehicle; • Keep hose tidy.
Clean up, maintenance & storage	As above	Low	As above; • Wear PPE for clean up; • Store unit in a dry, well ventilated area.
Burn risk	Hot exhaust/muffler	Medium	• Do not reach over hot exhaust • Do not service engine while hot • Wear appropriate PPE

Maintenance

Your FireDefence Slip-On Fire Fighting Unit 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



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 following checks and cleaning operations should be undertaken on a regular basis. The frequency of these activities will depend on the nature of the operating environment and the operational hours of the FireDefence unit. Refer to the maintenance schedule tables below for details of maintenance intervals.

- 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 hoses, fasteners and fittings are firmly secured, tighten if necessary.
- Unwind the hose from the reel fully to check that hose is in good order. Pressurise the line and check operation of spray nozzle. Rewind the hose onto the reel, ensuring it retracts all the way.
- Check the engine's oil level weekly. Top up as required.
- Check for any signs of fuel or oil leaks. If detected, investigate and rectify immediately.
- If the FireDefence is to be stored for an extended period, ensure the tank and all pipelines are empty and are not pressurised. Store the unit in a clean, dry and well-ventilated area.

Maintenance Schedule

The following tasks are to 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 tasks listed are to be undertaken, in addition to the daily, weekly and monthly tasks.



CAUTION! Maintenance is important. Keep a record of all maintenance tasks conducted on the FireDefence 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 FireAttack unit.

#	Task	Notes
1	Inspect the FireAttack for any signs of damage or wear	Clean, repair or replace
2	Check fuel	Top up as required
3	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		

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 hose and hose reel by unwinding fully		
3	* 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	Check security of unit's tie-down/mounting connections		
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		

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	Replace the engine's air filter		
3	Drain and flush the fuel tank		
4	Replace the engine's fuel filter		
5	Replace the spark plug		

Two Years 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		

Trouble Shooting

If a fault develops with the DieselCaptain, the following trouble shooting table provides guidance to identify and rectify the problem.

Problem	Possible cause	Remedy
Pump will not feed water	Ball valve closed on outlet/s	Open ball valve/s
	Hose nozzle closed	Open hose nozzle
Engine will not crank	Loose Connections	Clean and tighten connections
	Faulty ON/OFF Switch	Check switch operation, replace as needed
	Mechanical problem in engine	Check Engine

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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SCAN HERE!

1800 816 277

sales@tti.com.au

PO Box 137, Nathalia, VIC, 3638

Murray Valley Hwy, Nathalia, VIC 3638

Proudly Built By:

Signature

Date

Quality Checked By:

Signature

Date

www.tti.com.au