

600 LITRE ENGINE DRIVEN SPRAYER



USER MANUAL

INDEX

	Section:		Description:	Page No:
	1		Introduction	3
	2		Safety First	4
			HSE Information Sheet	5-9
	3		In the interest of safety DO NOT	10
	4		In the interest of safety DO	10
	5		Instruction and warning decals	11
	6		Transport and lifting	12
	7		Operating instructions and adjustments	12-13
	8		Protective clothing	14
	9		Spray control and operating instructions	15-17
	10		Practical spraying guidelines	18
	11		Cleaning the sprayer	19-20
	12		Specification	21
	13		Parts diagram and parts list	22-28
	14		Logic Manufacturers product owner guarantee	29
			LOGIC: Declaration of conformity	30

SERIAL NO:

Date of purchase:

IMPORTANT INFORMATION: Fill in immediately. Use when ordering replacement spare parts or additional optional extras

With the purchase of your LOGIC **TS** SPRAYER you have made an excellent choice.

This sprayer should give first class service for a long time, if used correctly, and maintained as described in this manual.

The LOGIC **TS** SPRAYER has been designed as a 'one piece' unit to allow quick attachment and easy operation.

Fitted with a powerful Honda engine to drive the diaphragm pump to ensure an adequate pressure for high output spraying.

Height adjustment is easily altered, and the broadcast nozzles option make the machine very manoeuvrable around any obstacles.

Lightweight materials have been used without sacrificing strength and performance, making it ideal for both professional and domestic users.

If, after reading this manual there are any queries, please get in touch, we will be pleased to help.

NORTH & EXPORT
LOGIC MANUFACTURING LTD
Foundry Industrial Estate
Bridge End, Hexham
Northumberland NE46 4JL
Tel: 01434 606661 Fax: 01434 608143
E-mail: sales@LogicToday.co.uk
www.LogicToday.co.uk

SOUTH
LOGIC MH LTD - New Whiteway Works,
Fossecross Industrial Estate
Chedworth, Cheltenham
Gloucestershire GL54 4NW
Tel: 01285 720930 Fax: 01285 720840
E-mail: sales@LogicToday.co.uk
www.LogicToday.co.uk

1. Read this manual carefully, make sure only authorised personnel use this machine and have read these instructions.
2. Read the engine and pump manual carefully.
2. Follow all safety advice stated in the operating instructions.
3. Make sure all safety guards and devices are in position and are functional.
4. Observe all safety instructions issued by the chemical manufacturer and the Health and Safety Executive.
5. Make sure spectators are at a safe distance from the working machine, especially when working close to roads and footpaths used by the public.
6. Have a clean working area while filling the tank.
7. Check that all nuts, bolts and fittings are secure before starting, and check at regular intervals during operation.
8. Never allow passengers.
9. After hitting an obstacle, stop the machine and check for damage.
10. Use suitable ear protection.
11. Always carry a supply of clean water (min 15 litres) for immediate wash down if any accidental contamination occurs.

Safe use of all-terrain vehicles (ATVs) in agriculture and forestry

HSE information sheet

Agriculture Information Sheet No 33 (Revision 1)

Introduction

This information sheet gives advice on the safe use of ATVs. It covers the two main types used in off-road working in agriculture, forestry and the land-based industries, namely:

- **Sit-astride ATVs:** Any motorised vehicle designed to travel on four low-pressure tyres on unpaved surfaces, with a seat designed to be straddled by the operator and with handlebars for steering control (see Figure 1). These vehicles are intended to be used by a single operator without a passenger. They may also be referred to as quad bikes.
- **Side-by-side ATVs:** Small utility vehicles in which the driver and passenger sit alongside each other in conventional (ie sit-in) seats (see Figure 2). Most side-by-side vehicles are capable of carrying two occupants in this way; however, some vehicles are equipped with a second row of seating (and can therefore carry four occupants), while others have bench-style seats allowing up to three people to be seated in a row. The majority of side-by-side vehicles have four wheels, although six-wheel and full and partially tracked versions are also available. There is usually a cargo bed behind the seating area. Side-by-side ATVs are sometimes referred to as utility vehicles (UTVs) or rough terrain utility vehicles (RTVs).

ATVs are usually fitted with a tow hitch and are capable of towing a load such as a trailer, a trailed appliance or other equipment.

Hazards

Both types of ATV are designed to cope with a wide variety of terrain types, including steep slopes, but if used outside their safe operating parameters they can very rapidly become unstable. The main causes of serious or fatal injury associated with ATVs are from:

- being thrown off during vehicle overturns or after loss of control;

- collisions with structures, trees, other vehicles etc;
- being trapped/asphyxiated under an overturned machine;
- pedestrians being struck or run over by ATVs.

Contributory factors/underlying causes of accidents and injury with ATVs can include:

- lack of formal operator training and/or experience;
- incorrect/lack of appropriate head protection;
- excessive speed;
- age of the operator;
- carrying a passenger on a sit-astride ATV;
- unbalanced loads or overloading;
- tipping on a bank, ditch, rut or bump;
- loss of control on a steep slope combined with other factors, eg ground or load conditions;
- towing excessive loads with unbraked equipment;
- poor maintenance, eg faulty brakes, incorrect tyre pressures etc.

Control measures for sit-astride ATVs

Training

It is a legal requirement for employers to provide adequate training for employees who use work equipment such as ATVs, and to make sure that only employees who have received appropriate training in their safe use, including the use of any towed equipment or attachments, are permitted to ride them. The same requirements apply to the self-employed.

You can get details of suitable training courses from franchised ATV dealers, manufacturers' websites, EASI (European ATV Safety Institute), the British Off Road Driving Association (BORDA) and through colleges and training providers.

When purchasing a new or used machine from a franchised dealer an industry-led scheme offers customers free training – see 'Useful contacts'.

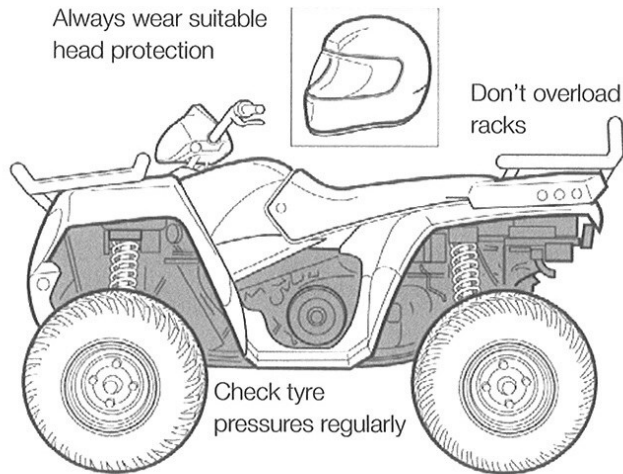


Figure 1 Example of a sit-astride ATV

Personal protective equipment – the importance of head protection

Sit-astride ATVs are not fitted with either a cab or roll bar, so your only protection is what you wear. Head protection is vital. Many ATV fatalities in the UK have been caused by head injuries. Helmets would certainly have prevented most of, if not all, these deaths. You should always wear a helmet when riding an ATV.

Helmet types suitable for ATV operations, depending on the circumstances, are motorcycle helmets, equestrian helmets, specialist ATV helmets, cycle helmets and mountaineering helmets. All helmets should be manufactured and tested in accordance with the current relevant EN/BS standard, have a chinstrap and be capable of being used with suitable eye protection. The type of helmet chosen should be based on an assessment of the circumstances in which the ATV will be used, eg the types of surface travelled over and anticipated speeds. The harder the surface and higher the speed the greater the degree of protection needed. NB: Forestry helmets and industrial hard hats are not acceptable for any ATV operations.

Wear clothing that is strong and covers your arms and legs. Gloves are useful for protection and handlebar muffs can help to keep hands warm in cold weather for good control of the ATV. Wear sturdy, ankle-covering footwear, eg boots or wellingtons that are strong, supportive and have good wet grip.

Protect your eyes from insects and branches with either a visor or goggles.

Passengers

The long seat on a conventional sit-astride ATV is to allow operators to shift their body weight backwards and forwards for different slope conditions,

a technique known as 'active' riding. It is **not** for carrying passengers. Manufacturers often display a sign on machines prohibiting passengers and this message is also repeated in operator manuals.

Do not carry a passenger in a trailer behind an ATV as any movement can make the machine unstable, particularly with independent rear suspension and trailers with axles wider than the ATV.

Some machines have received European Community Whole Vehicle Type Approval, allowing them to be ridden on the public highway. Some of these machines are designed to carry passengers. Such machines may not be suitable for carrying a passenger when used in off-road situations, eg on sloping ground, as the operator may not be able to use active riding techniques to maintain machine stability. Such machines may not have a locking differential and may not provide an acceptable level of traction to ensure safety in certain off-road conditions.

Before using an ATV you should assess the suitability of the machine for the intended tasks and working environment.

Route planning and stability

Accidents can occur where ATVs are driven on new routes over steep ground for the first time, or are carrying or dragging destabilising loads. When travelling over rough terrain, get to know your own ground and stick to planned routes where possible. Walk new routes if necessary to check for hidden obstructions, hollows or other hazards. Allow for changes in ground conditions and for the destabilising effect of loads or attachments.

Safety checks and maintenance

Off-road use is especially harsh on equipment so it is essential to carry out safety checks and maintenance in accordance with the manufacturer's recommendations. In particular, pre-ride safety checks should always include:

- tyre pressures. These are low, eg typically around 2–7 psi, so even a 1 psi (0.07 kg/cm²) difference in pressure can cause vehicle control problems. Use a gauge that is designed for measuring and displaying low pressures – usually supplied with the ATV;
- brakes and throttle. Check that the brakes give a safe straight stop and that the throttle operates smoothly in all steering positions. Brakes can have a relatively short life in farming or forestry environments and need frequent cleaning, regular adjustment and proper maintenance.

Safe riding methods

On sit-astride ATVs rider positioning is vital to operate them correctly. The position of the rider on the machine needs to be changed depending on the terrain and motion. Riders must have the ability to move and balance the momentum of the ATV with their own body weight. Plan routes (and review the plan if a route is used regularly) to assess risks.

The following advice is no substitute for formal training.

- Most ATVs have no differential and so do not handle in the same way as other machines. This means that when you turn, the ATV tries to keep going in a straight line.
- When cornering on an ATV with no differential, or with the differential lock engaged, where your body weight needs to be positioned depends on how sharp the corner is and on how fast you are going. Correct body position allows you to transfer weight to the outside of the turn through the footrests while maintaining balance with the torso. This lets the inside wheels skid slightly allowing the ATV to make the turn properly.
- You must understand how the transmission system of your machine will affect engine braking for both riding on slopes and recovery of stalled ATVs.
- When riding across a slope, keep your weight on the uphill side of the ATV.
- When going downhill, slide your weight backwards, select a low gear and use engine braking, reducing the need to use the brakes.
- When going uphill, it is important to review the route before starting the climb. Move your weight forwards and maintain a steady speed. It is important to shift your body weight forwards as much as possible. If necessary, stand up and lean forward, keeping both feet on the footrests at all times and always maintain momentum.
- Avoid sudden increases in speed. This is a common cause of rearward overturning accidents, even from a standing start on flat ground where there is good grip.
- Never put your foot onto the ground to stabilise an ATV when riding, but shift your weight across the ATV away from the imbalance.
- Always read the owner's manual.
- When selecting trailed equipment look for:
 - over-run brakes;
 - a swivel hitch drawbar;
 - bead lock rims on wheels;
 - a low centre of gravity and a wide wheel track;
 - a long drawbar;
 - attachment points for securing a load.
- Check the weight ratio between your ATV and its trailed load. This needs to be assessed for each operation. As a general guide, on level ground braked trailed equipment can be a maximum of four times the unladen weight of the ATV. For unbraked trailed equipment the maximum should be twice the unladen weight. These loads should be reduced when working on slopes, uneven ground or poor surface conditions. Follow the manufacturer's advice for your particular machine.
- Weight transfer is also important. Stability and resistance to jackknifing is improved if some load is transferred onto the ATV's drawbar. Approximately 10% of the gross weight of the loaded trailer is recommended, but this should not exceed the manufacturer's drawbar loading limit. Remember that weight transfer can change dramatically when you start going up or down hill.
- When selecting mounted equipment, make sure it is within the manufacturer's approved weight limit, with a low centre of gravity and controls which are easy to operate but do not create a hazard. Where equipment is added to one end of the machine, add ballast at the other end to maintain stability.
- Loads carried on racks must be well secured, eg with ratchet straps, and be evenly balanced between the front and rear, except where they are deliberately altered to aid stability when going up or down a slope. Maximum weights that can be carried should be specified in the operator's manual and may be marked on the machine. These should not be exceeded.
- Only tow a load from the hitch point. Loads towed from other points, such as the rear rack, have caused sudden rear overturning even on slight slopes or with slight acceleration. Do not use ropes or chains to drag a load; they can become caught on a wheel. This may lead to entanglement with the brake cable, causing unexpected braking.

Using sprayers

- Sprayers should be fitted with an induction hopper unless the filling point is less than 1.5 m from the ground and within 0.3 m from the edge of the sprayer. A separate clean water tank for washing must be provided containing at least 15 litres of clean water and a tap that allows the water to run without being continuously pressed.
- When buying a sprayer look for a low centre of gravity and internal baffles to reduce liquid surge and improve stability when turning on slopes.

Trailed equipment and loads

Ensure all riders know the manufacturer's recommended towing capacity and drawbar loading limit. Always operate within these requirements. Remember that your ability to control the ATV by your body movements will be considerably reduced when carrying a load or towing a trailer.

- ATVs should only be used with rear-mounted spray booms or other equipment that reduces the risk of pesticide exposure to the operator.
- Do not hold a spraying lance while riding your ATV as you need two hands for safe control.

Accessories

Beware of the potential dangers of accessories which are not approved by manufacturers, eg home-made gun racks and boxes. Either use accessories supplied/approved by manufacturers or seek their advice as to the suitability of those sourced elsewhere.

Any weight added above the centre of gravity will decrease the ATV's stability, eg feed hoppers/dispensers fixed above the rear rack.

Children

- Never carry a child as a passenger. It is illegal and will reduce your ability to control the ATV.
- Children under 13 years old are prohibited from using an ATV for work. Over-13s should only ride ATVs of an appropriate size and power after formal training on a low-power ATV.
- Children under 16 years old are prohibited from using most adult-sized machines. Check and adhere to the manufacturer's minimum age recommendations for your ATV; this information may be displayed on the machine and in operator manuals. Similar restrictions apply to side-by-side machines.
- The ratio of a child's weight to that of the ATV is significant, as weight transfer is the key to safe handling.
- In the event of an overturn, a child may be crushed by the weight of an adult-sized ATV. They may be unable to lift it off unaided.

Roll-over protective structures (ROPS)

- HSE's current advice is that roll-over protective structures (ROPS or crush protection devices) are not recommended for sit-astride ATVs. Research has shown that they may lead to an increased risk of injury in the event of an overturn by either preventing the operator from separating from the machine or striking the operator as the machine overturns.
- Lap straps/seat restraints should not be fitted. They prevent active riding and would be potentially lethal without a full cab or roll cage.
- Weather cabs on sit-astride ATVs restrict a rider's ability to jump clear in an overturn. The rider is likely to be crushed within the cab unless it is strong enough to withstand the forces involved. Carefully assess the risks for your particular

conditions of use before fitting any such structure and consult the manufacturer for information.

Side-by-side ATVs

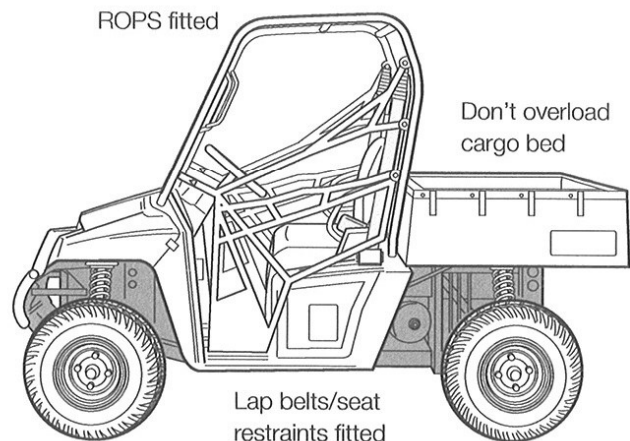


Figure 2 Example of a side-by-side ATV

Utility side-by-side ATVs are used for many of the same purposes as tractors and designed for similar work activities, ie off-road use on difficult terrain. They have conventional sit-in seats, and the main controls comprise a steering wheel and pedals. The driver does not need to use weight transfer to steer or to control stability. Nevertheless, the correct distribution of weight on-board the vehicle is important, particularly when carrying a load or on uneven surfaces. Loads carried on the cargo bed should not exceed the recommended weight and should be secured against movement.

Training

The legal requirements for training are the same as for the sit-astride ATVs.

ROPS and seat belts

The requirements for these machines are quite different to those of sit-astride ATVs:

- To reduce the risk of injury in the event of a roll-over or other incident, side-by-side vehicles require lap belts/seat restraints as well as ROPS that essentially form a protective structure around the seating area. The compartment is usually open, although some vehicles are fitted with a windscreen and/or side doors. The driver and all passengers should be protected by ROPS and wear lap belts.
- Where a machine is amphibious and used on deep water as opposed to marshland, then the seat restraints (and possibly ROPS) could increase the

overall risk rather than reduce it. In this case, do not use seat restraints while on the water. Assess the risk from the roll frame according to its design and the likelihood of trapping the occupants if the machine should sink.

© *Crown copyright* If you wish to reuse this information visit www.hse.gov.uk/copyright.htm for details. First published 05/99.

Parking

If you have to park on a slope, always park across it unless it is too steep. Accidents have occurred when machines have run down slopes because of poor brake maintenance or application, particularly while they are being loaded and movement or the increase in weight has set the machine in motion.

Useful contacts

EASI®, the European All-Terrain Vehicle Safety Institute, is a not-for-profit organisation which provides safety training courses for ATV riders.

EASI's UK operation is sponsored by a number of ATV manufacturers and delivers a programme of specialist ATV training courses which are designed to improve rider skills, safety levels and awareness of the capabilities of ATV machines.

Buyers who purchase a new or used ATV from one of these manufacturers via an authorised UK dealer are eligible for **free** or highly subsidised training, subject to qualifying terms, conditions and availability. See www.quadsafety.org/ for details.

Training is also available from other organisations, such as the British Off Road Driving Association (BORDA). See www.borda.org.uk for details.

Further information

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

This leaflet is available at:
www.hse.gov.uk/pubns/ais33.htm.



This symbol means **WARNING** or **CAUTION**. Personal safety or damage will be at risk if these instructions are ignored. Most accidents are caused by neglect or carelessness. Avoid needless accidents by following the safety precautions listed below. If unsure of any safety issues do not hesitate to contact Logic Manufacturing Ltd or HSE.

3

IN THE INTEREST OF SAFETY: DO NOT

DO NOT – Operate the SPRAYER unless you have read this entire manual.

DO NOT - Operate the SPRAYER if any part of the machine is defective, replace any parts before use.

DO NOT – Touch moving parts.

DO NOT – Exceed sensible speeds.

DO NOT – Handle chemicals with out the correct training e.g.: completed 'PA1safe use of pesticides' and 'PA2 Boom crop sprayer' courses.

4

IN THE INTEREST OF SAFETY: DO

DO – Follow all manufactures guidelines.

DO – Attach to a suitable vehicle.

DO - Follow all manufactures service instructions.

DO – Be aware of travelling conditions – Do not exceed sensible speeds.

DO – Slow down when turning corners

DO – Follow all safety instructions in this manual.

DO - Make sure spectators are a safe distance when operating, especially when travelling in areas used by the public or animals.

DO – Make sure all nuts, bolts and fittings are secure before using, and check at regular intervals during operation.

DO – Avoid excessive steep slopes or adverse ground conditions.



For more information on safe operating and practical spraying guidelines please see page 17.

LOGIC		Manufacturing Ltd. Foundry Industrial Estate Bridge End, Hexham, Northumberland UK Tel: +44(0)1434 606661 Fax: +44(0)1434 608143 www.LogicToday.co.uk sales@LogicToday.co.uk		CE	
MODEL / TYPE				YEAR	201
MAXIMUM GROSS MASS		KG	UNLADEN MASS		KG
MAXIMUM DRAWBAR MASS		KG			

WP05



THIS PRODUCT IS PROTECTED BY **DESIGN RIGHT**

WS36



**DO NOT CARRY
FLAMMABLE
LIQUIDS**



The above decals should be located on your sprayer. If any of the above decals are not located on your sprayer or are damaged in any way contact Logic for some replacement decals before use.

6 TRANSPORTING AND LIFTING

Ensure the vehicle used to lift and transport the SPRAYER has the necessary lifting and loading capacity. Follow all vehicle manufactures guidelines for lifting. Unladen weights are clearly marked on the Manufactures plate attached to the SPRAYER framework. Check the lifting weight complies with the vehicle lifting limits

When lifting the SPRAYER for transporting / delivery purposes always ensure to locate the lifting straps on each of the four corners ensuring the straps/chains are all the same length before lifting, or if using forklift tines ensure the SPRAYER is secure on the tines before lifting.

7 OPERATING INSTRUCTIONS AND ADJUSTMENTS

INITIAL CHECK

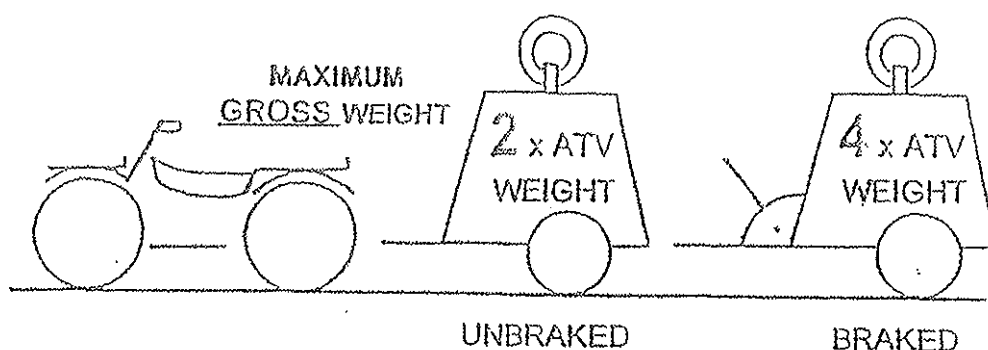
Make sure that all nuts, bolts and fixings are securely fixed and that all packaging materials e.g. wire bands, tape, etc, have been removed, especially from the inside of the tank.

The TS625 Sprayer can be towed by any suitable vehicle from UTV's to Landrovers to 4x4 pickups to compact tractor although it is ideally suited to ATV's and is attached by a 50mm Swivel ball hitch.

WEIGHTS AND LOADING RECOMMENDATIONS

To comply with the weight restrictions detailed on the HSE information sheet. The following guidance must be fully understood and used.

An ATV can tow up to twice its own weight on an unbraked trailer or up to 4 times its own weight with a braked trailer.



For Unladen, Laden and Gross weights of the sprayer please refer to the specification table in section 12 on page 21. Alternatively look at the manufacturers plate on the sprayer.

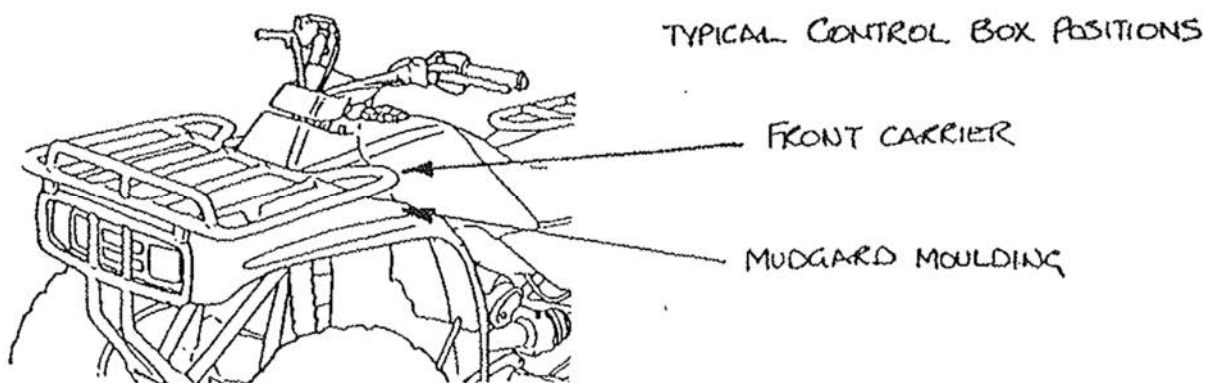
When towed behind other suitable vehicles refer to the vehicle operator manual and appropriate regulations for guide lines.



NOTE: The maximum gross weight of the sprayer should never be exceeded.

ATV ATTACHMENT PROCEDURE

- a. Carefully attach the sprayer swivel hitch drawbar to the ATV tow ball.
- b. Slide the height adjustment shaft of the boom sections up through the mounting bracket at the rear of the sprayer tank. Set at the required operating height.
- c. Secure the boom with the hand screw.
- d. Connect the coupling on the boom hose to the main supply hose.
- e. Connect the electrical valve lead to the socket mounted on the ATV rear rack. The control box can be mounted on the front or rear rack in a reachable distance from the operator. The control box comes with excess cable length to allow it to be fitted to a UTV or 4 x 4 easily.



- f. Check that the tank-emptying bung is in position and secure. Adjustment is made by screwing in or out the over centre locking tab.

SAFEGUARD AGAINST ACCIDENTS OR PROSECUTION

NOTE When using Chemicals of any kind refer to the relative COSHH (Control of substances hazardous to health) report for protective clothing usage.

Individual items can be replaced as required.



COVERALL COMPLETE WITH HOOD

Strong, lightweight and chemical resistant
Wash frequently, comfortable to wear.
Hose down after use or if splashed with chemical.



GOGGLES

The latest chemical resistant fitted with indirect vents.
BS2092



VISOR AND BROW GUARD

Provides splash protection to operators eyes and face. BS2092



RESPIRATOR

Protects against organic vapours dust and fumes c/w cartridges F6
Pre filters and facelets
BS2091



APRON

Tough, lightweight
hose down if splashed with chemical. For handling materials of low toxicity.



1 PR RUBBER GAUNTLETS

1 PR NITRILE GLOVES

Flexible lightweight resistant to most solvents BS1651.

NOT SHOWN - 1 x 500ml bottle of eyewash.

9 SPRAYER CONTROLS AND OPERATING INSTRUCTIONS

FIRST TIME ONLY

Fill the tank with a small quantity of water; spray out, without nozzle in position. This will flush out any particles associated with manufacture.

NORMAL OPERATING INSTRUCTIONS

Fill the tank with approximately half the expected volume of clean water. Follow the instructions below to spray out a small quantity of water to check the boom nozzles are not blocked or that the hand lance is working correctly before adding any chemical.

NOTE Before starting the engine read the engine manual and carry out the appropriate checks.

- a. Start the engine, this starts the pump.
- b. Switch the sprayer from agitation to spray on the control box.
- c. Check the spraying pressure on the gauge and alter according to spraying requirements using the regulating valve (refer to the spraying chart in the special spraying pocket guide supplied for recommended pressure). Increase the engine RPM if the desired pressure can not be achieved.

Once the operator is familiar with the controls and is satisfied with the workings of the sprayer, switch the control box to agitate which increases the agitation of the tank contents. (hold the switch for 2 seconds)

- d. Carefully add the chemicals to the tank.

NOTE The instructions on the chemical pack must be followed carefully.

- e. Top up with clean water to the required volume of spray mixture.



Stir the chemical / water mixture well, in the tank, with a suitable clean stirrer, before setting off to the spraying site.

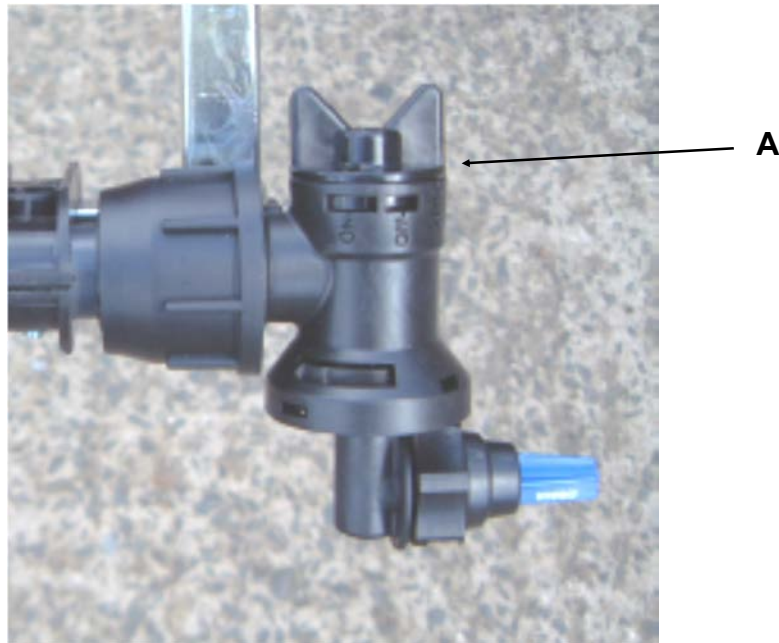
NOTE Keep the pump switched on during filling and travelling to the spraying site to allow maximum agitation.

- f. Adjust boom height to suit the target area (see pocket guide)
- g. Select the appropriate forward speed (see spray chart)
- h. Switch the control box to spray whilst travelling forward. (hold the switch for 2 seconds)
- i. Check the operating pressure on the gauge and adjust with the regulating valve if necessary.
- j. During spraying, use the control box switch to stop and start the spraying procedure.
- k. Turn off the engine to stop the pump when the tank is empty.

SPRAY BOOM EASY FIT EEZIFIT NOZZLE HOLDERS

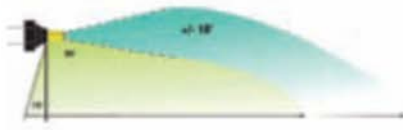
A feature of these nozzle holders is that individual nozzles can be turned on or off by turning the valve (**A**) indicated below. Hold the Nozzle holder with one hand and carefully turn the valve to **ON** or **OFF** through 2/3 of the valves movement, full turn anti-clockwise will allow removal of the valve for cleaning.

This feature allows easy spray pattern change for different conditions, and safe cleaning of jets when calibrating the sprayer.



RUNNING THE PUMP DRY

One of the benefits of using the pump type of the **TS625** is that the pump CANNOT be damaged by running it dry.



Hypro XT Nozzles for boomless spraying

For applications where it is not possible to use a conventional spray boom or to extend spraying width at the boom end. Throws a coarse, even spray flat fan pattern up to 4.9 metres.

Ideal for use in forests or pastureland where there are obstructions to spraying. Available with threaded stainless steel body or with Integral FastCap® bayonet attachment (sizes 010, 020, 024, and 043 only).

APPLICATION RATES L/HA AT KM/H															SWATH WIDTH (M) @ 3BAR	XT THREAD
PART NUMBER		BARL/MIN		4	5	6	7	8	10	12	14	16	18	20		
Green	XT010 & XT010FC	2	3.2	124	99	83	71	62	50	41	35	31	28	25	3.9	¼"
		3	3.9	152	121	101	87	76	61	51	43	38	34	30		
		4	4.6	175	140	117	100	88	70	58	50	44	39	35		
Blue	XT020 & XT020FC	2	6.4	201	161	134	115	101	81	67	58	50	45	40	4.8	¼"
		3	7.9	247	197	165	141	123	99	82	71	62	55	49		
		4	9.1	265	228	190	163	142	114	95	81	71	63	57		
Yellow	XT024 & XT024FC	2	7.7	237	189	158	135	118	95	79	68	59	53	47	4.9	¼"
		3	9.5	290	232	193	166	145	116	97	83	73	64	58		
		4	10.9	335	268	223	191	167	134	112	96	84	74	67		
Orange	XT043 & XT043FC	2	13.9	473	378	315	270	236	189	158	135	118	105	95	4.4	⅜"
		3	17.0	579	463	386	331	289	232	193	165	145	129	116		
		4	19.6	668	535	446	382	334	267	223	191	167	149	134		
Red	XT080	2	25.8	992	793	661	567	496	397	331	283	248	220	198	3.9	½"
		3	31.6	1215	972	810	694	607	486	405	347	304	270	243		
		4	36.5	1403	1122	935	802	701	561	468	401	351	312	281		
White	XT167	2	53.8	1878	1502	1252	1073	939	751	626	537	469	417	376	4.3	¾"
		3	65.9	2300	1840	1533	1314	1150	920	767	657	575	511	460		
		4	76.1	2656	2125	1771	1518	1328	1062	885	759	664	590	531		
Grey	XT215	2	69.3	2122	1697	1414	1212	1061	849	707	606	530	471	424	4.9	¾"
		3	84.9	2598	2079	1732	1485	1299	1039	866	742	650	577	520		
		4	98.0	3000	2400	2000	1715	1500	1200	1000	857	750	667	600		

Application rates are based on the swath widths listed at 3 bar pressure and boom Height 1.2m. Use the following calculation if using a different swath.

$$L/ha = \frac{L/min \times 600}{KM/H \times swath \ width}$$

Ordering - Use codes shown. (FC = Fastcap Option). Holder available, part no. 15Q3570A

Flow rates are based on water, allowance must be made for liquids of different viscosity and specific gravity, (e.g. liquid fertiliser). For calculation see p.36.



Page taken from Hypro Crop Spraying Pocket Guide.

The Unladen weight of your sprayer will be clearly marked on the manufactures plate on the sprayer frame work; you will need this weight to calculate the total Gross weight of your sprayer.



1 Litre of water weighs 1kg

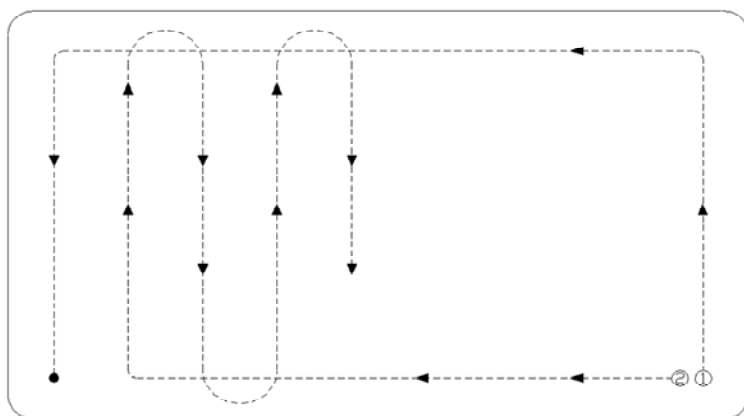
Be aware of loading limits when filling the sprayer and the restrictions that may exist for carrying platforms stipulated by the vehicle manufacturer.

Assess the difficulty of ground conditions to be sprayed e.g. Slopes or undulating terrain.

Restrict/reduce sprayer loadings to remain safe at all times and within vehicle limits.

IMPORTANT RULES WHEN SPRAYING

1. Completely understand the workings of the sprayer
2. understand the requirements of the task
3. Have the correct training to use the sprayer/chemicals (PA1 & PA2 certificates)
4. Wear the correct protective clothing
5. Take extreme care when loading the sprayer with chemical
6. Operate the booms at the correct target height
7. Apply chemicals in a responsible manner to avoid 'spray drift' and water course contamination (See wind speed chart further on in this manual)
8. Always spray at 90 degrees to the wind direction and turn in to the wind wherever possible.



FIELD EXAMPLE:

WIND DIRECTION



Stage 1: headland
Stage 2: Complete headland and spray across wind direction

9. Take care when cleaning out the sprayer not to contaminate yourself or the environment
10. Take extra care when using pesticides
11. Seek training if you are unsure about anything



Do not disregard the manufacturers spraying guidelines for inclusion and application rates etc.

Do not spray in the same direction as the wind.

Do not hold a spraying lance while driving the ATV.

It is very important to observe a strict cleaning and maintenance routine when finishing spraying, at the end of the day, or at the end of the season, also when changing from one chemical to another.



Sprayer washings can be a danger to humans and all types of animals.

TO CLEAN THE SPRAYER AFTER USE

1. Fill half full with clean water.
2. Add a measured quantity of proprietary chemical cleaner to the tank.
3. Using the correct gauntlet type protective gloves, and suitable nylon brush, scrub the upper and inside surfaces of the tank.
4. Switch on the pump to spray out through the boom or hand lance.
5. Fill the tank with a small quantity of clean water and spray out, to flush the system.

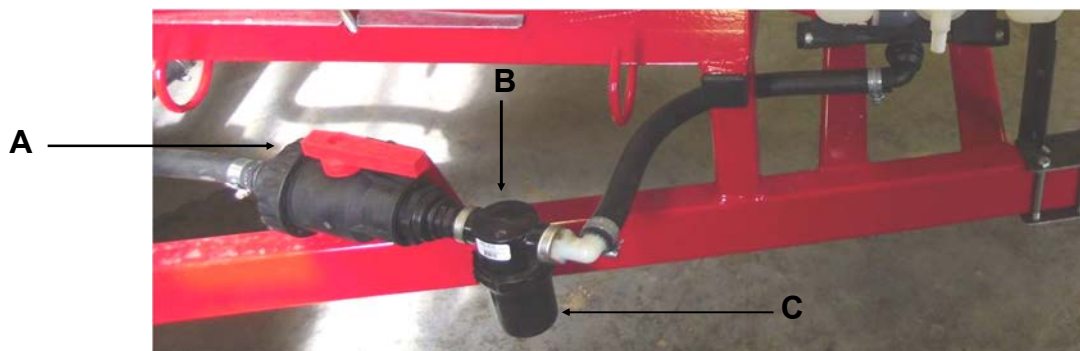


Make sure washings from the sprayer do not contaminate waterways etc.

FILTER

There is only one inline filter on the TPS Sprayer range. (See image below) The filter should be cleaned on a regular basis.

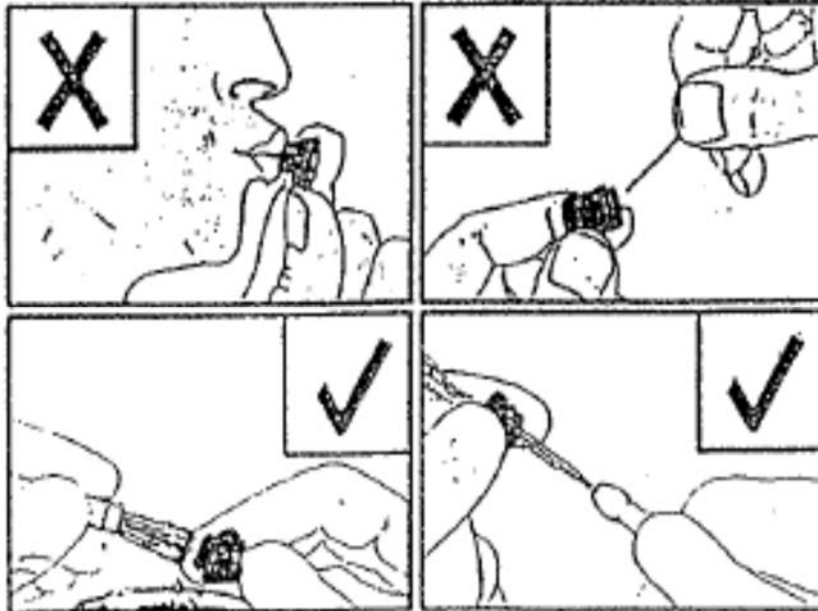
1. Turn off the chemical supply using the isolation valve (A) turn through 90°
2. Take hold of the filter unit (B) with one hand and carefully unscrew the sediment bowl (C) with your other hand.
3. Remove the cylindrical mesh from the upper housing and carefully clean using clean water or cleaning agent.
4. Clean out the sediment bowl with clean water and cloth.
5. Re-assemble the mesh and sediment bowl onto the filter unit. Ensure that the 'O' ring on the sediment bowl housing is not lost or damaged.
6. Turn on the chemical supply from the isolation valve (A).



NOZZLES

Nozzles should be regularly cleaned in water and detergent, use a fine brush or air jet if particles become lodged in the aperture.

If nozzles become slightly worn or damaged, replace immediately to avoid inaccurate spraying patterns.



OUT OF SEASON OR WINTER STORAGE

When the spraying season is finished special care should be taken before the sprayer is put away.

1. Clean the sprayer thoroughly as described in "cleaning the sprayer".
2. Spray out as normal. Run the system dry and drain the tank sump using the bung.
3. Unscrew the pressure-regulating valve (this relieves the springs inside ensuring a longer life)
4. Check that none of the hoses are stored with sharp bends or nipped at any point. (Replace any hoses that are showing signs of wear, it will save valuable time during the spraying season).
5. Follow the engine manual for engine winter storage instructions.
6. Ensure the hand wash tank is drained

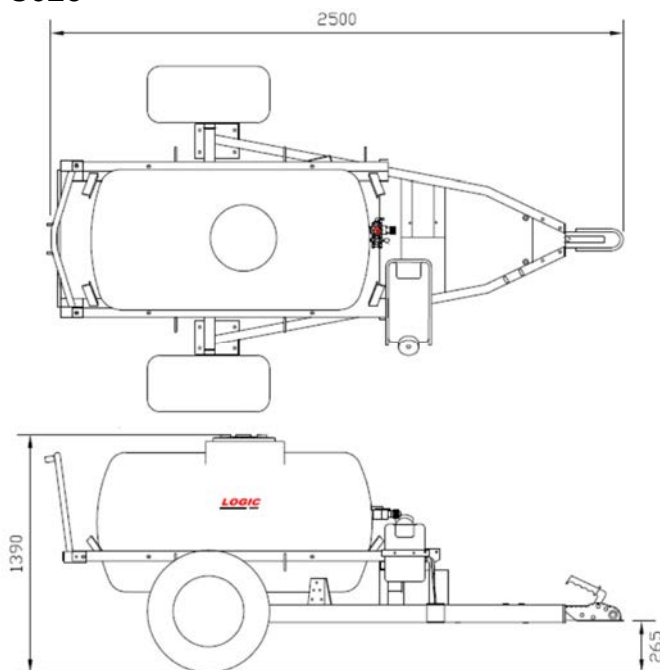
FROST PRECAUTIONS.

In climates where freezing is possible precautions should be taken to protect the pipe work and fittings.

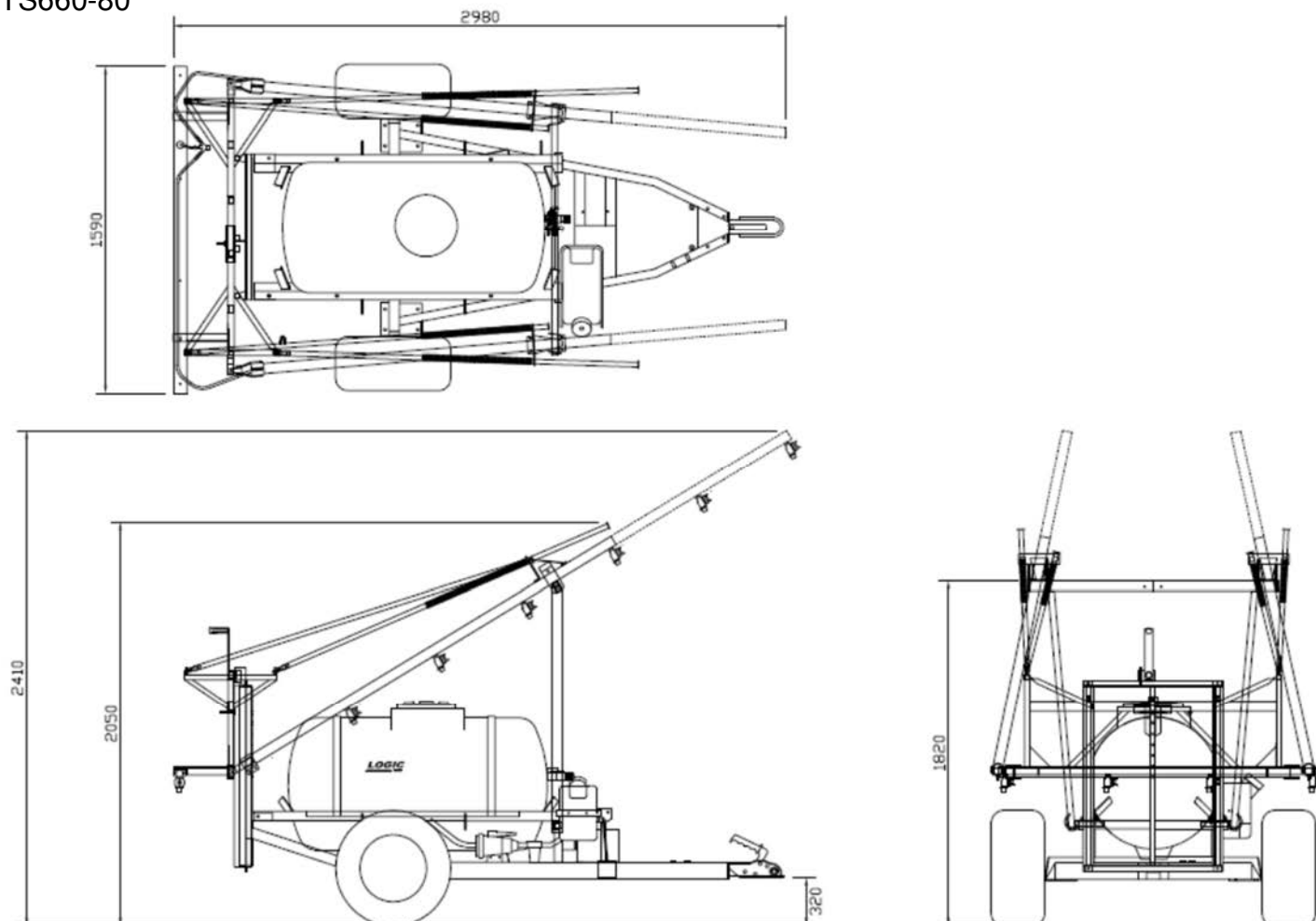
1. Mix about 10 litres of anti-freeze mixture (approx. 33%) pour into the tank and spray out as normal. Run the system dry and drain the tank sump using the bung.
2. Unscrew the pressure-regulating valve (This relieves the springs inside, ensuring a longer life).

	TS625	TS660	TS680
Max machine length	2500mm		2980mm
Max machine width	540mm	1590mm	
Max machine height	1390mm	2050mm	2410mm
Ground clearance	320mm		
Tank capacity	600 litres		
Hitch	50mm ball swivel coupling		
Pump/ Drive	Engine driven diaphragm pump		
Wheel/ Tyre	23x10.5-12		
Max speed	20mph		
Unladen weight	200kg	240kg	
Laden Weight	800kg	855kg	

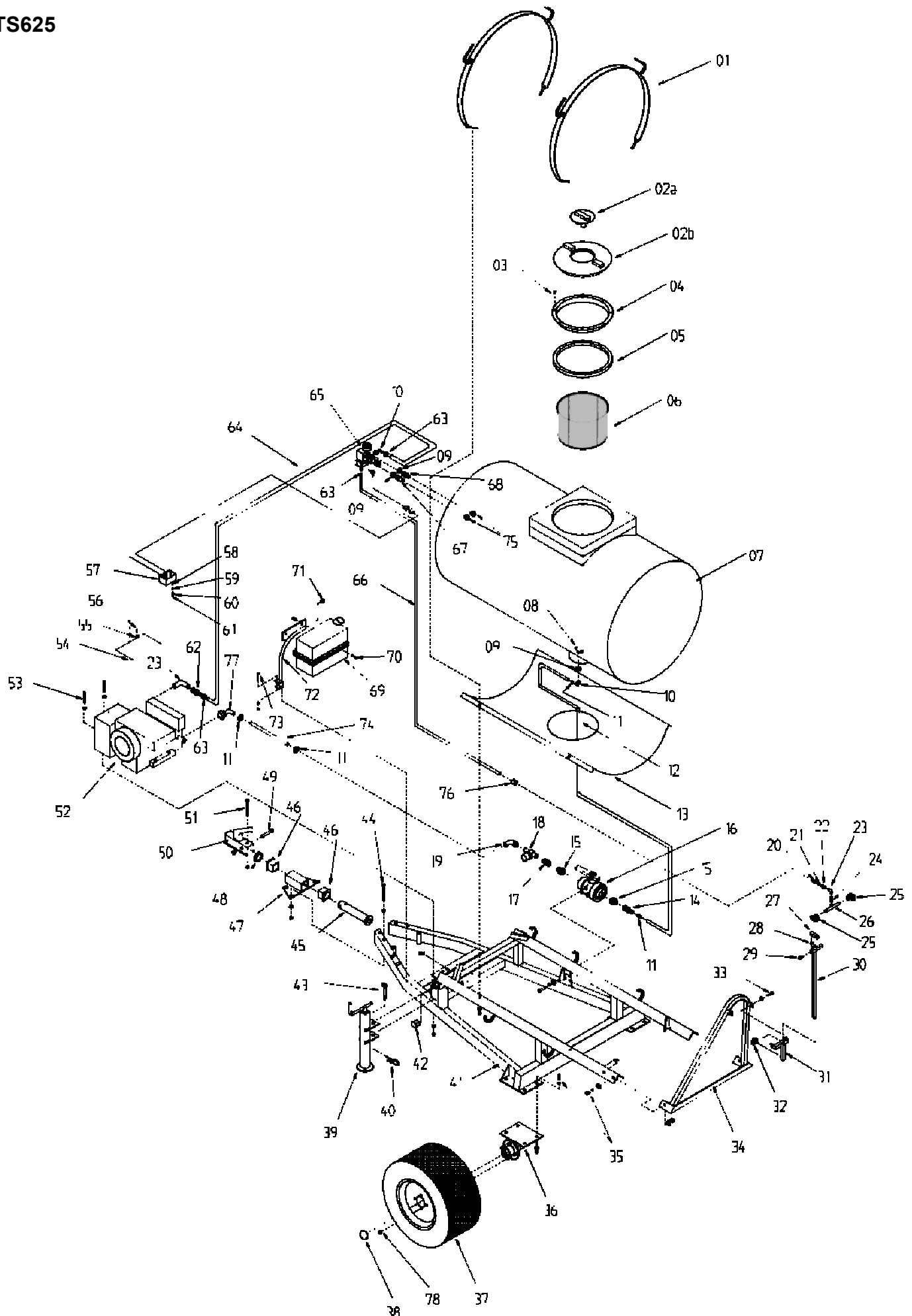
TS625



TS660-80

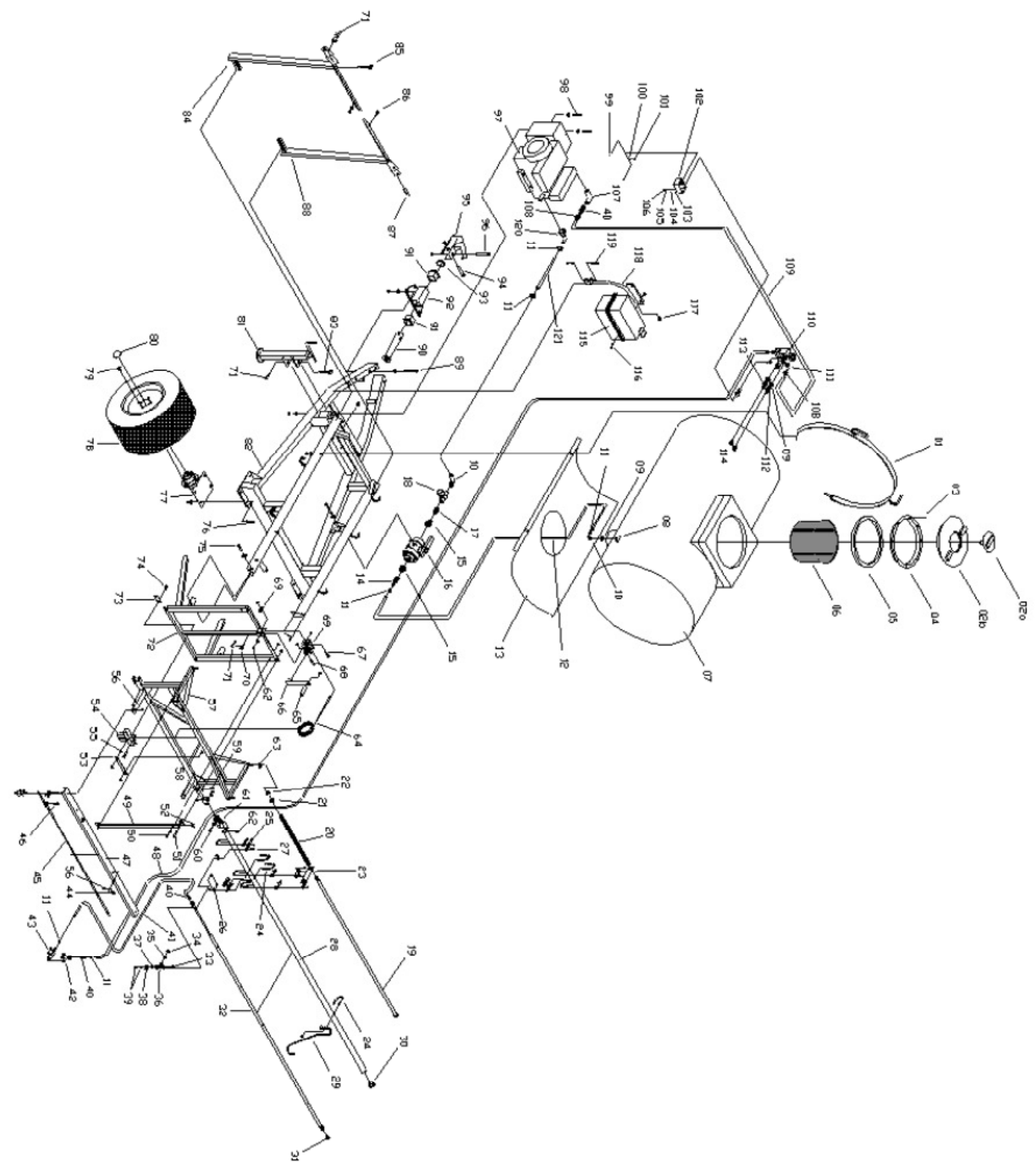


TS625



Item	Part Number	Description
001	SLB601-02	Tank Straps 600 Litre
002a	SLB601-1004	Tank Lid C/W Vent
002b	SLB601-1005	Screw cap Insert
003	FSP05016	S/Screw Pan HD M5 X 16
004	SLB601-1003	Filler Neck Ring
005	SLB601-1002	Filler Neck Seal
006	SLB601-1001	Tank Strainer
007	SLB601-01	Tank 600 Litre
008	MTF-058	T Piece 3/4" F Socket X 3/4" FB
009	MSU-G010	Gasket flat 39.5 X 27.5 X 2.5mm
010	MTF-522	Elbow 3/4" Barb X 3/4" MBSP
011	FCH2232	Clip Hose Jub 22 – 32 MM
012	TS621-13	Hose Tank To Tap
013	SLB600-01	Tank Cradle
014	MTF-112	Hose Con 19mm Barb X 3/4" M Th
015	MTF-053	Reducing Nipple 1 1/2 M X 3/4
016	SLB101-18	1 1/2 X 1 1/2 On/Off Valve
017	MTF-011	Nipple: 3/4 M X 3/4 M
018	MTF-531	Filter 3/4 F 80 Mesh
019	MTF-522	Elbow 3/4" Barb X 3/4 MBSP
020	OBS101-12	Hose Conn Q/R .5 Male Threaded
021	OBS101-1001	Lurmark Spray Jet Seal
022	MTF-010	Nipple 1/2" M X 3/4" M Bsp
023	OBS125-31	Threaded Elbow 1/2" F X 1/2" F
024	OBS125-32	M/M Hex Nipple
025	MSU-N050	Nozzle Holder: Fastcap Xt End
026	TS621-11A	Spray line
027	OBS101-08	Sp/Line Clamp No Bolt No Foam
028	MSU-F003	Foam Pad Double Sided 20 X 20 Mm
029	FIP019019	Insert Plastic 3/4 X 3/4 X 15 MM
030	TS621-03A	Spray Line Sliding Assembly
031	TS621-05A	Spray Line Clamping Bracket
032	OBS135-17	Hand Wheel
033	FSH08025,FWF08,FNN08	S/Screw M8 X 25, Flat Washer, Nyloc Nut
034	SLB620-40A	Rear Hoop Assembly
035	FSH12035,FWF12,FNN12	S/Screw M12 X 35, Flat Washers , Nyloc Nut
036	SA350L/SA350R	Stub Axle L/H / R/H
037	WT831	WI/Ty 23 X 10.5-12 All Trail - W811
038	SA200-1010	End Cap 52 Mm
039	SLB620-05A	Jack Assembly
040	FCG03064	Clip R 3 X 64 MM
041	SLB600-02A	Chassis Assembly
042	FIP040040	Insert Plastic 40 X 40 X 26-4 Mm
043	SLB600-07SS	Jack Fixing Pin SS 304
044	FBH12110,FWF12,FNN12	Bolt M12 X 110, Flat Washer, Nyloc Nut
045	CM100-04	Swivel Hitch Draw Tube

Item	Part Number	Description
046	CM100-03A	Swivel Hitch Nylon Bush
047	CM220	Coupling S/Hitch Bolt On SLB600X
048	CM100-01A	Swivel Hitch Thrust Washer
049	FBH12070,FNN12	Bolt M12 X 70,Nyloc Nut
050	C900	Coupling 50 Mm H/D Winterhoff
051	FBH12065,FNN12,	Bolt M12 X 65,Nyloc Nut
052	EHP600	Engine Honda Pump Ar252 Diaphr
053	FBH08040,FWF08,FNN08	Bolt M8 X 40,Flat Washer, Nyloc Nut
054	S216-052	6.4 Ring Terminal
055	ME-F003	Fuse Holder Blade Type
056	ME-F016	Fuse 03 Amp Blade Type
057	TS621-20A	Control Box Electro Valve
058	FWS06	Washer Spring M6
059	FWR06020	Washer Repair M6 20 OD
060	FCF22	Clip Fix Rubber Lined 22.2 MM
061	FNP06	Nut Plain M6
062	OBS125-41	Hose Tail 1/2
063	FHC1720	Hose Clamp (Crimp) 17-20 MM
064	TS621-15	Hose Pump To Pressure/Con
065	MTF-601	Valve Electro Control Assembly
066	TS621-14	Hose Pressure/Con To Spray line
067	OBS135-03	Male Control Mounting
068	OBS135-02	Female Control Mounting
069	MSU-H200	Hand Wash Tank Assembly 15 Ltr
070	FSH08035,FWF08,FNN08	S/Screw M8 X 35, Flat Washer, Nyloc Nut
071	FIP022015	Insert Plastic 22.2 X 1.25/1.5 MM
072	TS621-07A	Clean Water Mounting Bracket
073	FBH08100	Bolt M8 X 100, Flat Washer, Nyloc Nut
074	TS621-12	Hose Filter To Pump
075	OBS125-1025	Backnut ½ ARAG
076	OBS125-49	Hose Conn Q/R .5 Female Grip On
077	MTF-521	Elbow 19 mm Barb X ¾" F Thread
078	SA135-1012	Wheel Nut



Item	Part Number	Description
001	SLB601-02	Tank Straps 600 Litre
002a	SLB601-1005	Screw cap Insert
002b	SLB601-1004	Tank Lid C/W Vent
003	FSP05016	S/Screw Pan HD M5 X 16
004	SLB601-1003	Filler Neck Ring
005	SLB601-1002	Filler Neck Seal
006	SLB601-1001	Tank Strainer
007	SLB601-01	Tank 600 Litre
008	MTF-058	T Piece ¾" F Socket X ¾"FB
009	MSU-G010	Gasket Flat 39.5 X 27.5 X 2.5M
010	MTF-522	Elbow ¾" Barb X ¾" MBSP
011	FCH2232	Clip Hose Jub 22 – 32 MM
012	TS621-13	Hose Tank To Tap
013	SLB600-01	Tank Cradle
014	MTF-112	Hose Con 19mm Barb X ¾" M Th
015	MTF-053	Reducing Nipple 1 ½ M X ¾
016	SLB101-18	1 ½ X 1 ½ On/Off Valve
017	MTF-011	Nipple: ¾ M X ¾ M
018	MTF-531	Filter ¾ F 80 Mesh
019	TS660-53A	Break Back Spring Tube
020	TS660-48	Break Back Spring
021	FWF20037	Flat Washer M20 X 37 X 2
022	FCH1524	Clip Hose Jub 15-24
023	TS660-08A	Boom Support Bracket
024	FCA51	Clamp Exhaust 51 mm
025	TS660-15	Spray Line Mounting Plate
026	TS660-12	Boom Support Base Plate
027	FSH06030	S/Screw Hex Head M6 X 30
028	TS660-52	Boom Tube (6M)
	TS680-01	Boom Tube (8M)
029	TS660-16A	Boom 'J' Skid
030	FIP048032	Insert Plastic 48.3 OD X 3.2
031	OBS103-25	Spray line Plug
032	TS660-57	Spay line 6M
	TS680-02	Spray line 8M
033	OBS101-1009	Eezifit Jet Body 'O' Ring
034	OBS101-1033	Pressure Disc Assembly For Eezifit 3
035	OBS101-1014	Diaphragm For Eezifit 3 Body
036	OBS101-1013	Lurmark Eezifit 3 Jet Body
037	OBS101-1011	Lurmark Eezifit 3 Cap Seal
038	OBS101-1012	Lurmark Bayonet Cap (Green)
039	OBS101-1015	Lurmark 15 Gallon Jet ISO
	OBS101-1020	Lurmark 20 Gallon Jet ISO
040	OBS125-41	Hose Tail ½"
041	TS660-63,TS660-64,TS660-65	Boom Supply Hose Left, Right, Centre Boom
042	MTF-140	45 Deg 4 Way ½" Female 1 Male 3
043	MTF-042	Tap ½" FNPT X ½" Hose Barb

Item	Part Number	Description
044	FCF19	Clip Fix Rubber Lined 19 MM
045	TS660-59	Centre Spray Line
046	MTF-075	Hose tail Elbow ½" M X ½"
047	TS660-41	Centre Boom Channel
048	TS621-14	Hose Pressure/Con To Spray line
049	TS660-02A	Mounting Slide Upright
050	FBH10110,FWF10,FNN10	Bolt M10 X 110, Flat Washers, Nyloc Nut
051	FBH10030,FWF10,FNN10	Bolt M10 X 30, Flat Washers, Nyloc Nut
052	FIP025025	Plastic Insert 25 X 25
053	TS660-28	Levelling Link
054	TS660-27A	Frame Locking Spacer
055	FSH08050	S/Screw M8 X 50
056	FSH06020SS,FWF06SS,FNN06SS	S/Screw M6 X 20, Flat Washers, Nyloc Nut
057	TS660-01A	Mount Assembly
058	TS660-29	Boom Middle Joint
059	FBH1090,FWF10,FNN10	Bolt M10 X 90, Flat Washers, Nyloc Nut
060	FBH1060,FWF10,FNN10	Bolt M10 X 60, Flat Washers, Nyloc Nut
061	TS660-19A	Boom Clamp
062	FSH08025,FWF08,FNN08	S/Screw M8 X 25, Flat Washers, Nyloc Nut
063	FSX08-A	Shackle 'D' Galv 8MM
064	TS660-55	Boom Lifting Rope
065	MSU-H001	Handle Revolving M12
066	TS660-58A	Winch Handle Arm
067	FBH16045,FNN16	Bolt M16 X 45, Nyloc Nut
068	FBH12060,FWF12,FNN12	Bolt M12 X 60,Flat Washer, Nyloc Nut
069	MSU-W010	Winch R/H
070	PDS350-032	Selector Pin
071	FCG03064	Clip R 3 X 64 MM
072	TS660-03A	Main Mounting
073	TS660-42	Frame Locking Plate
074	FBH08050,FWF08,FNN08	Bolt M8 X 50, Flat Washers, Nyloc Nut
075	FSH12035,FWF12,FNN12	S/Screw M12 X 35,Flat Washers , Nyloc Nut
076	FSH12045,FWF12,FNN12	S/Screw M12 X 45,Flat Washers , Nyloc Nut
077	SA350L/SA350R	Stub Axle L/H / R/H
078	WT831	WI/Ty 23 X 10.5-12 All Trail - W811
079	SA135-1012	Wheel Nut
080	SA200-1010	End Cap 52 MM
081	SLB620-05A	Jack Assembly
082	TS660-04A	Chassis Assembly
083	SLB600-07SS	Jack Fixing Pin
084	TS660-34LA	Boom Transport Leg L/H
085	TS660-23A	Boom Transport Pin
086	FBH08045,FWF08,FNN08	Bolt M8 X 45, Flat Washers, Nyloc Nut
087	FIP050030	Insert Plastic 50 X 30 26-32
088	TS660-34RA	Boom Transport Leg R/H
089	FBH12110,FWF12,FNN12	Bolt M12 X 110,Flat Washer, Nyloc Nut

Item	Part Number	Description
090	CM100-04	Swivel Hitch Draw Tube
091	CM100-03A	Swivel Hitch Nylon Bush
092	CM220	Coupling S/Hitch Bolt On SLB600X
093	CM100-01A	Swivel Hitch Thrust Washer
094	FBH12070,FNN12	Bolt M12 X 70,Nyloc Nut
095	C900	Coupling 50 MM H/D Winterhoff
096	FBH12065,FNN12,	Bolt M12 X 65,Nyloc Nut
097	EHP600	Engine Honda Pump Ar252 Diaphr
098	FBH08040,FWF08,FNN08	Bolt M8 X 40,Flat Washer, Nyloc Nut
099	S216-052	6.4 Ring Terminal
100	ME-F003	Fuse Holder Blade Type
101	ME-F016	Fuse 03 Amp Blade Type
102	TS621-20A	Control Box Electro Valve
103	FWS06	Washer Spring M6
104	FWR06020	Washer Repair M6 20 OD
105	FCF22	Clip Fix Rubber Lined 22.2 MM
106	FNP06	Nut Plain M6
107	OBS125-31	Threaded Elbow ½" F X ½" F
108	FHC1720	Hose Clamp (Crimp) 17-20MM
109	TS621-15	Hose Pump To Pressure/Con
110	MTF-601	Valve Electro Control Assembly
111	OBS135-12	½" BSP X ½" Barb Elbow
112	OBS135-02	Female Control Mounting
113	OBS135-03	Male Control Mounting
114	OBS125-1025	Backnut ½" ARAG
115	MSU-H200	Hand Wash Tank Assembly 15 LTR
116	FSH08035,FWF08,FNN08	S/Screw M8 X 35, Flat Washer, Nyloc Nut
117	FIP022015	Insert Plastic 22.2 X 1.25/1.5 MM
118	TS621-07A	Clean Water Mounting Bracket
119	FBH08100	Bolt M8 X 100, Flat Washer, Nyloc Nut
120	MTF-251	Elbow 19 MM Barb X ¾" F Thread
121	TS621-12	Hose Filter To Pump

This Logic Manufacturing product is guaranteed against faulty workmanship and materials for a period of 12 months from the date of purchase.

On Engine-Powered equipment, the engine manufactures guarantee will apply, any claims being subject to their terms and conditions.

All claims must be made in writing within 28 days of the alleged failure.

All claims must be made through the dealer who originally supplied the machine.

Any defective parts must be kept for inspection and if requested, sent to the factory or dealer.

The customer must bring equipment for repair to the dealer.

This guarantee becomes void if unauthorised modifications have been made, or if parts not manufactured, supplied or approved by Logic Manufacturing have been fitted to the machine.

We accept no liability for normal wear and tear, misuse or abuse, or where recommended maintenance has not been carried out.

All guarantee work must be authorised by Logic manufacturing prior to any work being done. Work carried out without our consent may not be reimbursed.



DECLARATION OF CONFORMITY
93 / 44 EEC



LOGIC MANUFACTURING LTD

Foundry Industrial Estate
Bridge End
HEXHAM
Northumberland

Product Type: **TS625-660-680**

Covered By Technical File Number: **CE – TS621**

Serial Number:

Standards and Regulations Used:

The Supply of Machinery (Safety) Regulations 1992
HSE Guide Lines on ATV Equipment (Agric Sheet No. 33)

Place of Issue: **United Kingdom**

Name of Authorised Representative: **S A WEIR**

Position of Authorised Representative: **PRODUCT DEVELOPMENT MANAGER**

Declaration,

I declare that as the authorised representative, the above information in relation to the supply / manufacture of this product, is in conformity with the stated standards and other related documents following the provisions of 93/68EEC directives

Signature of Authorised Representative

Date: **14/05/2014**