



— PERFECTION IN EVERY LINE —



SUPATURF TLS LINE MARKING MACHINE

INTRODUCTION

IMPORTANT – Please read this manual before use.

This is essential if you are to learn how to operate this equipment correctly. Failure to do so could result in personal injury or equipment damage.

This manual should be considered a permanent part of the equipment and should remain with the machinery if sold on.

WARRANTY

Warranty is provided as part of Supaturfs support package for customers who operate their equipment as described in this manual. This warranty provides you, the customer, with assurances that Supaturf will back its products where defects appear within the warranty period. Should the equipment be abused or modified to change its performance beyond the original specification, the warranty will become void.

INTENDED USE / DISCLAIMER

This Supaturf TLS is designed for use as a line marker. The intended use is for line marking sports fields or applying turf dyes using the correct spray boom accessory. Use in any other way is considered as contrary to the intended use. The manufacturer accepts no liability for damage or injury resulting from misuse and these risks must be borne solely by the user.

This Supaturf TLS machine should be operated, serviced and repaired by persons familiar with its characteristics and acquainted with the relevant safety features (accident prevention).

RECOMMENDED PRODUCTS LIST FOR SUPATURF TLS LINE MARKERS

Supaturf Line Marking Liquids:

Supa Stadia, Supa Stadia ECO and Supa Stadia Colours

Cleaning Liquids:

Supaflush.

Material Safety Data Sheets for all the above products are available on request, or online at

www.supaturf.co.za

SECTION 1 – INTRODUCING THE SUPATURF TLS LINE MARKER

Thank you for choosing the Supaturf TLS battery operated spray line marking machine.

The TLS machine is the culmination of our years of experience in designing and building market leading line marking machinery. The TLS is a simple to use, no compromise build quality machine. Combined with its simple but rugged design, it ensures ease of maintenance and ultimate usability. As with all our Supaturf machines they are manufactured in England to a professional grade quality, and are fully guaranteed by Supaturf, the leading innovative force in sports line marking.

The TLS provides a heavy duty rechargeable battery power pack that will operate for up to 4½ hours (approx 14 pitches) from a single charge of its battery. Please note that these timings have been measured under test conditions in our research and development facility using equipment operating at optimum performance. With proper maintenance and operation you can expect to achieve these results throughout the life of the battery.

SECTION 2 – MACHINE SET UP

Your machine is supplied fully assembled and tested. First it is advisable to check that you have everything you need to start line marking. You should have received:

1. Supaturf TLS machine.
2. Battery charger.
3. Mixing bucket.
4. Mixing paddle.
5. 100ml bottle of Supaflush.
6. Envelope containing this manual and a quality control check list.
7. Side marking attachment.
8. Set of marking discs.

PREPARING THE SUPATURF TLS FOR USE

Please refer to the guide pictures at the back of this manual so that you can use them as a guide while reading this manual.

To remove the Supaturf TLS from the box two people are recommended to lift the machine from its packaging. All you need to do is start spraying is affix the handlebar onto the base of the machine and secure it at the chosen height. To locate the handle bar into the block, loosely place the block connectors over the two handle bar shafts on the machine chassis. Feed the handle bar into the block connectors underneath the handle bar shafts. When handlebars are at the preferred height position tighten down the hand wheels to secure the handlebar into position (see figure 1 on page 18).

It is important to charge the battery. There may still be some charge in the battery but it is advisable to charge the unit overnight before commencing spraying. To do this connect the TLS charger plug which is located on the back panel of the machine, to the charger lead on the supplied battery charger ensuring the connection is secure. Plug the charger into a convenient mains electrical socket. Turn the mains power on and leave to charge for at least 6 hours. When the battery is fully charged, the charge complete light will be displayed, please refer to the instructions that came with the charger for more detailed information. Disconnect the charger from the mains and disconnect the charger lead from the TLS charger plug. Relocate the charger lead into its storage position at the back of the machine.

WARNING:

Always charge the battery in a well ventilated area. Never charge the battery in an enclosed container (see battery care section on page 10 for further information).

SECTION 3 – USING THE SUPATURF TLS

Note: Section 10 gives training checklist for new operatives.

Once the machine has been set up as detailed in SECTION 2 you can mark out your pitch without delay. First you will need to choose which Supaturf line marking liquid you wish to use (see SECTION 5), and using the mixing bucket supplied, dilute the liquid to the desired concentration and thoroughly mix the marking liquid with the water. Dilution rates are recommended for each product - please stay within these guidelines. The Supaturf TLS guarantee is only valid if Supaturf liquids are used in the prescribed way.

WARNING:

To avoid splashing of line marking liquid into eyes, eye protection and gloves should be used whilst handling and pouring line marking materials. In the event of spillage, refer to the Material Safety Data Sheet for the line marking material being used.

Filling the Tank

Unscrew the tank cap from the 30 litre tank (the 30 litre tank is the large white tank and not the tank in the centre of the machine) the pre-mixed line marking liquid is then poured into the tank to the desired level. It is important to always fill the tank through the basket filter found in the top of the tank to stop large particles or foreign matter, such as grass, from entering the spray system. The maximum capacity of the tank is 30 litres. As a guide, a typical football pitch with a 3 inch line would require approximately 7-8 litres of diluted liquid for a single pass, walking at an average speed of 2.2 mph. At this brisk pace the TLS is capable of marking 4 average size football pitches on one full tank.

It may be necessary to purge any trapped air through the system. This can be done in the following way. Once the tank has been filled with the required amount of diluted line marking liquid, switch the machine on for 10 to 20 seconds (ensuring a suitable container is available to capture the spray liquid if necessary). After this time the spray should become solid with no air in the system and the spray pattern should be steady with no 'fluttering' evident. If not then there is still air in the system that will need to be purged via the 2 port bleed valve on the tube above the spray head. Hold the bleed valve between your fingers with one hand and pull the valve away from the spray head with the other, whilst holding the blue spring loaded plastic end back. This will disconnect the 2 port bleed valve from the spray head. Making sure that the 2 port bleed valve is open, switch on the machine and allow the liquid to run out (again a suitable container should be used to catch the liquid). Once the air has been exhausted (allow 15 to 20 seconds to ensure that all air has been expelled) switch off the machine. Reconnect the 2 port bleed valve to the spray head connector. This is done by pushing the pipe back into the valve.

Line Width Adjustment

The width of the line is adjusted by raising or lowering the spray arm until the desired width is obtained. This is adjusted by unscrewing the hand wheel on the spray arm clamp and adjusting the height and spray nozzle position as required. Width can also be changed by a ¼ turn of the spray head. It is recommended that a typical line is sprayed from a position set centrally between the front wheels, but it is possible to adjust the position of the whole spray nozzle assembly such that the line can be sprayed outside the left hand wheel with the side marking attachment fitted.

Marking your First Lines

IMPORTANT

To familiarise yourself with the operation of the machine it is worthwhile to use a suitable area where the operation can be rehearsed. The spray nozzle is connected to an instant shut-off valve, which is activated by the pressure generated as soon as the pump starts working. As soon as the switch is switched to the on position, a fan of liquid will come from the spray nozzle and as soon as the switch is switched to the off position the fan will stop instantly without drips.

The pitch to be lined out should be planned and possibly stringed out in advance (or similar) and the TLS should be adjusted to your satisfaction prior to use. When spraying, you should walk at a consistent pace and ensure that you do not step on the line after it is sprayed, as this may result in a series of white footprints.

Side Marking

To mark lines from either the left or right hand side of the machine:

1. First undo the hand wheel on the spray arm clamp and remove the whole assembly of the spray arm and spray arm clamp.
2. Now undo the small thumbscrew on the d-clamp located on either the left or right side middle axle. Leave this clamp located over the hole on the middle axle on the desired side of the machine.
3. Take the side marking attachment and insert the reduced end into the middle axle tube and re-tighten the small thumbscrew down so that the side marking attachment is held securely in place.
4. Locate the spray arm clamp over the square spray arm pillar on the side marking attachment and retighten the spray arm clamp in place at the desired position and height.
5. Remove the 8mm tube from the top of the bleeding valve. Feed the 8mm pipe through the “p” clip on the side of the machine, leaving the bleed valve on top of the spray head.
6. Connect the coiled hose provided to the 8mm tube, which is now on the side of the machine using the 8mm straight connector supplied on the coiled hose. Now connect the other end of the coiled hose into the bleeding valve on the spray head.
7. The side attachment is now ready to use. (see fig 3 on page 19)

When marking in the side position ensure that the rear wheel will not run over the line, as the marking liquid will still be wet.

Marking circles

The wheels of the TLS are configured on a shorter front axle and a longer rear axle, which result in the front wheels being inset by about a half wheel width. This makes marking circles easier.

When spraying lines at 90 degrees to recently sprayed lines it is advisable to stop the machine when its wheels are just in front of the existing line and “walk” the wheels over the line to avoid the wheels becoming contaminated with marking liquid that hasn’t dried. As a guide you could expect Supaturf line marking liquid to dry within 15 to 20 minutes in direct hot sunshine but this could take considerably longer subject to prevailing weather conditions. It is best to be cautious.

Note: When the machine is on site and not in use, make sure not to leave it on a slope, as it is not fitted with a parking brake.

WARNING:

If the machine is going to be lifted onto a vehicle after line marking for use at another site, the machine should be lifted by two people. Alternatively loading ramps may be used to ensure the operator's safety.

SECTION 4 - MAINTAINING YOUR SUPATURF TLS

Clean your line-marking machine after every use. There are 2 methods of cleaning as described below. It is vitally important (and a condition of your guarantee) that your TLS is thoroughly cleaned after every use to ensure the long life of the spraying components of the machine.

It is recommended that Supaflush be used to further aid the cleaning of the machine.

CLEANING PROCESS

Daily Clean

The TLS has been designed with an integral cleaning system to ensure ease of use when flushing the system and to ensure that maximum performance is always achieved from the machine. The cleaning system is designed to be simple, easy to use but very effective

To fill the wash tank:

The wash tank is the small tank located in the centre of the machine that has its own lid. To fill this, simply remove the tank lid and, ensuring the basket filter is in place, add water to the tank.

This tank will hold roughly 6 litres of water.

It is recommended that 75mls of Supaflush cleaning solution be added to this tank to maximise the cleaning potential of the machine.

To operate the cleaning system:

1. Switch off the TLS by the switch located on the handle.
2. Simply turn the grey cleaning valve tap, in an anti clockwise motion, from the paint/spray position to the water/clean position.
3. Switch the TLS on by the switch on the handle, and spray as normal for at least one minute, or until the liquid being sprayed is clean and free from paint. Once clean, near clear water is spraying, and you can turn off the machine.
4. To start line marking again, simply turn the lever, in a clockwise motion, to the paint/spray position and switch the TLS on.

Note:

The cleaning valve only operates in the directions as described above. Trying to operate the valve in any other way may cause damage to the valve and its internal mechanisms.

Strainers:

There are two strainers on the Supaturf TLS, one on the paint line and one on the water line, both of these are located at the back of the machine behind the rear access panel.

To clean the paint & water line strainers:

1. Undo the hand wheel on the back of the machine, and lower the access panel
2. Locate the strainer intended to be cleaned.
3. Take hold of the strainer, clear bowl section in one hand, and the main white plastic section in another. Unscrew the clear bowl from the main part.
4. Remove the filter mesh and clean off all the paint residues or algae/debris etc, OR replace with a new mesh if damaged. Rinse out any paint residues or algae/debris from the clear bowl, making sure the rubber seal doesn't get lost.
5. Replace the mesh and screw the clear bowl back onto the strainer, making sure that the small rubber seal is inside the bowl.
6. Lift the access panel back up and do up the hand wheel at the back of the machine.

Note: The water should not be left in the wash tank for a period of more than two weeks before being used/replaced as this may cause an algae build up which may affect the performance of the machine when in cleaning mode.

Cleaning process 2: monthly clean.

This process must be carried out monthly when the machine is being used weekly or biweekly.

1. Empty left over product out of the tank by either, disconnecting the paint supply line from the nozzle assembly at the front of the machine and spraying the tank contents into a drum or bucket, OR undo the tank drain plug located at the rear of the machine.
2. Switch the machine on and spray out any marking material remaining in the pipe-work.
3. Place the machine in a suitable area for cleaning, remove the lid and basket filter from the main tank and remove the tank drain plug if not already removed. Using a hose pipe and tap pressure, spray water into and around the inside of the tank, periodically tipping the machine on its back wheels. This will allow the washings to drain down to the tank sump and out through the drain plug exit at the rear of the machine. Copious amounts of water should be used to remove the marking liquid residue from the insides of the tank.
4. When the tank is seen to be thoroughly clean replace the tank drain plug back into position at the rear of the machine (***always ensure that the drain plug seal is present and has not been lost during cleaning***) and relocate the tank basket filter and lid. Also relocate the nozzle tip and filter in position ensuring they are thoroughly clean. Nozzles should be cleaned using a soft toothbrush and water. Never use a pin or similar to clean debris from a nozzle as this will damage the spray pattern and calibration of the nozzle. Nozzles should be replaced regularly see section ***Replacement of spray nozzle and/or filter*** on page 8.
5. Place into the main tank a solution of 3 litres of water and 50mls of Supaflush cleaner. Ensure the grey operate lever is in the paint/spray position and spray the contents out through the nozzle by switching on the master on/off switch on the handlebar
6. Check that both the paint and water filters are clean and clear. If not, remove and clean or replace the filter mesh inside the filter housing

NOTE: Always use eye protection and gloves when using Supaflush cleaner. In the event of spillage refer to the Supaflush Material Safety Data Sheet. Dispose of waste water through the appropriate channels

WARNING:

Solvent based material should never be used to wash the machine or tank this will damage the machine and invalidate the guarantee whilst potentially creating an explosive environment.

In the event of frost and/or exposure to very low temperatures, do not leave residue-cleaning water in the tank and pump as this can freeze and damage the machine.

Replacement of spray nozzle and/or filter:

Spray nozzles and filters are consumable items and need to be cleaned or replaced on a regular basis. The timing of this depends upon the amount of usage but as a general guide, we would expect the average user to clean the filter every week, and replace it every 3-6 months. Replace the spray nozzle tip when the spray pattern is damaged. Spray nozzle tips should be replaced at least once every 3-6 months.

Replacement is a simple process. Look at the exploded diagram in the inset illustration (see page 18). The filter is item marked **F** and the spray nozzle is the item marked **G**. To access the nozzle turn the nozzle cap (**H** in the inset illustration (see page 18) one half turn anti-clockwise. The filter, sealing washer and nozzle can now be removed and replaced if required. Re-assembly is a simple reversal of this process.

Replacement of the in line blade fuse:

If for whatever reason the pump draws too much power, the in-line fuse will blow at 5 amps to protect the wiring loom. The fuse is located on the wiring loom behind the back access panel of the machine. To access the fuse remove the back panel by loosening the hand wheel at the rear of the machine, then pull the back panel downwards. The fuse will be on the orange wire coming from the terminal block on the right hand side, and will have a black cover on it. Open the fuse cover and pull out the fuse. After checking, replace with a new fuse. Close the fuse cover and relocate the back panel, and tighten the hand wheel back into place. See figure 2 on page 15 for fuse holder.

WARNING:

Always replace the fuse with the same rated 5-amp blade fuse. Check wiring loom for and signs of wiring insulation damage.

Always take care when handling the wires. Excessive pulling on the wires may cause them to become disconnected or damaged and will affect the running of the machine.

General battery safety measures

Always charge the battery in a well-ventilated area. Never charge the battery in a closed container. Do not attempt to open the battery casing. In the unlikely event of the battery leaking and sulphuric acid electrolyte coming into contact with skin or clothing, wash off immediately with water.

Should the electrode come into contact with skin or clothing, wash off immediately with copious amounts of water and consult a doctor. The battery should be regularly checked for cracks/damage to the casing and if any damage is found, always replace the battery. Always dispose of used batteries through appropriate collection or recycling channels.

These batteries are kept at peak condition if they are recharged before they are fully discharged. It is not a problem if fully discharged occasionally, but it should not be the norm if you want to gain the longest life possible from the battery.

Note: Charge the battery at least every 3 months, even when not in use.

The Supaturf TLS battery units have an operational life of approximately 200 to 500 charge cycles. Depending on your rate of usage, you will be able to approximate the life of your battery. The battery unit is fully guaranteed for one year. Always put your battery on charge until the green charge complete light has lit on the charger unit, regardless of the level of charge required.

Pump Care

The pump unit used on the Supaturf TLS is exclusive to Supaturf machines and has been specifically designed for this application. They will not require any internal maintenance as long as the machine is properly cleaned after every use. The pumps are self-priming and will not be damaged by short periods of dry running.

If you experience any problems with the pump, it is recommended that you return the unit to the factory for inspection. This service will be free within the guarantee period and a small charge will be made thereafter.

SECTION 5 – SUPATURF LINE MARKING LIQUIDS

Supaturf line marking liquids have been specially formulated to be applied through Supaturf spray markers and produce the longest lasting sports line there is to date.

The particle size of the suspended solids within marking liquids is critical to the effective running of the pump and spray parts on Supaturf machines. For this reason it is recommended that only Supaturf line marking liquids are used as they have been specially formulated to provide optimum performance. Supaturf white spray marking liquids come in 2 grades, being Supa Stadia and Supa Stadia ECO. The finest quality is Supa Stadia ECO. All liquids can be diluted to achieve the desired quality of line and for example, the Supa Stadia ECO can be diluted up to 20:1 with water, although a 12:1 rate is more typically used.

* For best results when mixing, always add the line marking liquid to water.

Supa Stadia line marking liquid is available in 12.5 litre drums. Supa Stadia ECO is available in 5 litre drums due to its super concentrated formulation. For details of these premium line marking liquids, please contact Supaturf's main dealer or go to the website, www.supaturf.co.za

SECTION 6 - THE SUPATURF TLS GUARANTEE

The Supaturf TLS machines are fully guaranteed for 12 months from the time of purchase. This guarantee covers all aspects of malfunctioning, but does not cover damage to the machine or component parts caused by misuse. Also, the guarantee is only valid if Supaturf line marking liquids are used in the machine and the machine is cleaned after each use.

SECTION 7 - SUPATURF TLS STORAGE

Before long-term storage of a TLS, the machine should be thoroughly cleaned both internally and externally (for cleaning see section 4 page 6, Maintaining your Supaturf TLS). After cleaning, the machine should be checked for any frame damage or rusting. Any damaged part/s should be replaced. When your TLS is not being used and is in storage over winter or summer the battery must be fully charged before storage. After every period of no more than 3 months in storage the battery should be fully charged again. This will ensure maximum battery life.

Always store your TLS in a dry, damp free environment.

SECTION 8 – ACCESSORIES

The TLS has a range of accessories as follows:-

1. The Athletics marker, which allows three lines to be marked in one pass.
2. The Spray Boom, This allows the TLS to spray turf dyes onto sports pitches.

Athletics marker



Spray boom



Spare Parts.

A full range of spares is available for the Supaturf TLS. These are listed in Section 11 on page 17. When ordering please use the order code stated in the table. These order codes are shown on the

illustration on page 18 for identification. There is also a spare parts locator on our website www.supaturf.co.za .

SECTION 9 – TLS SPECIFICATIONS

Weights and dimensions:

TLS 33 (boxed) 36Kg

Box dimensions 100cm by 58cm by 56cm

Statistics:

Tank capacity	30 litres
Wash tank capacity	6 Litres
Pump specification	Shurflo 8006 – 294 – 219
Electrical system	12 volt
TLS 33 battery	12 volt 18 amp hour cyclic use battery
Charger rated at	1.7 amp output
Machine length with handlebars extended	151cm
Machine length to back of side bars	112cm
Machine width	60cm
Machine height (handlebar upright)	104cm
Fuse rating	5 amp blade fuse

SECTION 10 - OPERATORS TRAINING CHECK LIST

Before using a TLS machine, refer to the section below to ensure the machine performance is optimised and to check the user is competent with the machine.

Familiarisation:

Working of controls (section 3)

Understanding of the Material Safety Data Sheets for recommended products used with the TLS.

Operator's safety and caution information contained in this manual is understood.

Operational Features (section 3).

How to switch the machine on and off

How to raise and lower the spray nozzle assembly for desired line width.

How to safely mix line marking liquids (section 3)

How to mark your first lines.

How to fill and empty the tank - including the lifting on and off of a transport vehicle.

Cleaning procedures after use (section 4).

Recommended safety equipment that should be worn when cleaning the machine after use (section 4).

How to clean the machine after use

How to clean nozzles and filters.

Routine maintenance.

Battery condition checks (see battery care section and safety instructions for battery handling).

Frame condition check.

Supaturf TLS Trouble Shooting Guide:

This easy to use trouble-shooting guide is designed to assist you should your TLS machine not work properly. Experience shows that many problems can be resolved with a little knowledge without the need to return the machine for repair or servicing. Part of this trouble-shooting guide refers to the use of an electrical multi meter. If an electrical multi meter is not available for use then contact Supaturf directly for further advice. When asked to refer to figures, look on pages 15 & 16.

Note: Blocked spray nozzles are regarded as a maintenance issue and not a machine fault. Before following the trouble-shooting guide make sure that the TLS main tank is clean and has at least 5 litres of clean water in it. The machine's battery should be fully charged and all electrical and flow connections have been visually checked to ensure that nothing is loose. To check that the battery is fully charged put the TLS on charge as described in section 2 of this manual.

Trouble Shooting Guide:

Figure 1.



Figure 1 shows how to determine if the Shurflo pump motor is operational. Disconnect the bullet connectors from the wires leading from the pump see figure 5. The wires are colour coded black and red. Touch the red wire to the positive (red) terminal and the black wire to the negative (black) terminal on the battery as per figure 1.

Figure 2.

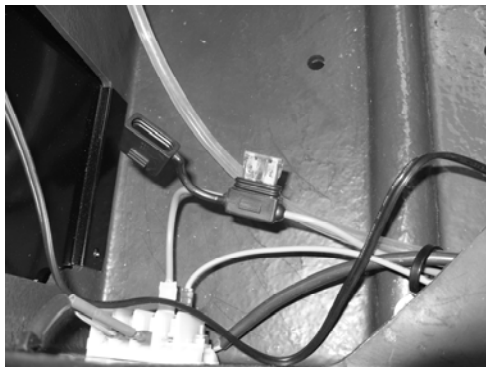


Figure 2 shows the location of the 5-amp blade fuse with the fuse cover removed. The 5-amp blade fuse is translucent and can be easily checked to confirm whether the fuse has been damaged.

Figure 3.

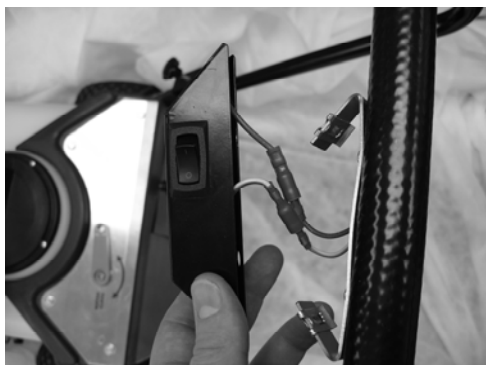


Figure 3 shows the TLS switch bracket removed and the exposed bullet connectors.

Figure 4.

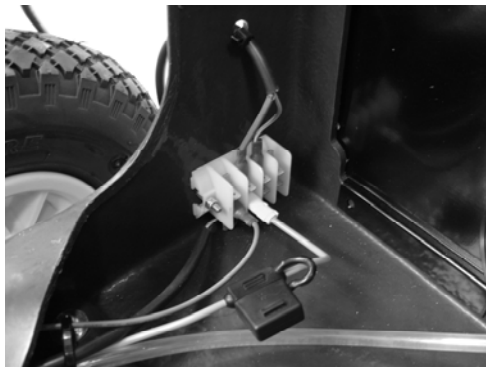


Figure 4 shows the bullet connectors leading from the handle bar to the wiring loom located on the Terminal block.

Figure 5.

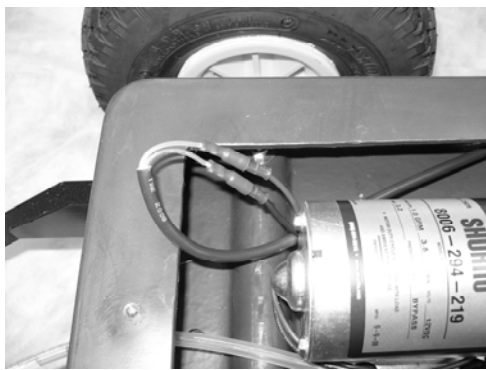


Figure 5 shows the bullet connectors leading to the pump, these may be tucked under the pump.

Figure 6.



Figure 6 shows the in-line 8mm 2 port bleeding valve that connects the pump outlet to the spray head.

SUPATURF TLS SPARE PARTS LISTINGS

Description of Replacement spare parts	Order Code
Handle bar complete with switch	12105
Wheel	00522
Tank/Chassis (no markings)	13081/12020
Spray arm complete with nozzle assembly	12141
Front axle complete with R pins, washers & starlock caps	12137
Rear axle complete with R pins, washers & starlock caps	12136
Pack of 5 nozzle tips (marked as G on the page 18)	00214
Pack of 5 nozzle filters (marked as F on the page 18)	00247
Pack of 5 Nozzle Seals	00275
Nozzle Cap (marked as H on page 18)	00440
Spray valve (DCV) without nozzle, filter, cap or seal	00212
Spray arm pillar	12181
Right Handlebar brace (from front of the machine)	13044
Left Handlebar brace (from front of the machine)	13044
Tank lid	13009
Battery charger unit ZA	11395ZA
Battery	00226
Pump	00228
Switch – complete	00283
8 mm tube (per metre)	00470
Strainer 8mm complete with fittings	00474
Strainer 8mm with no fittings	00477
Wiring loom	13095
Hand wheel for handle bar	12157
Spray arm clamp	12173
Spray arm clamp hand wheel	12157
2 port bleeding valve	13062
Marking disc attachment	02066



Figure 1.

Hand wheels and brackets to secure handlebar into position.

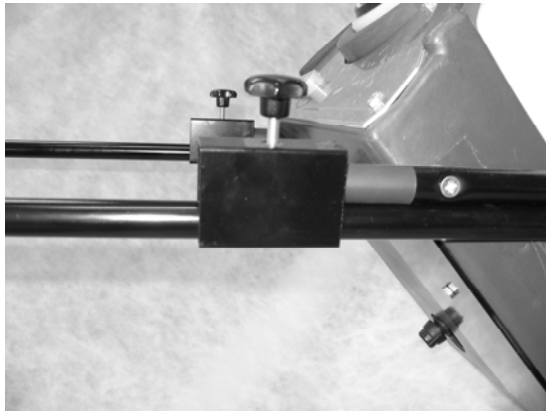
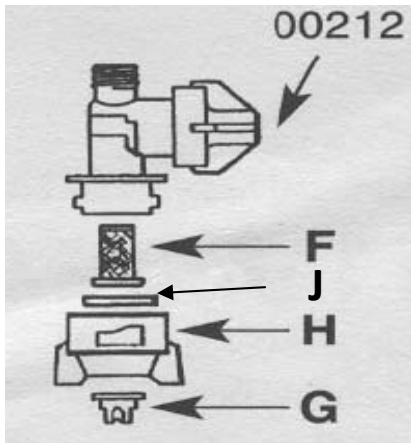


Figure 2.

Spray nozzle exploded diagram



F = 00480

J = 00432

H = 00440

G = 00481

Figure 3.

Side marking attachment.





ADVANCED SPRAYING SYSTEMS FROM



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