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DESCRIPTION

The VARIDOME is a shrouded, low-volume sprayer for inter row weed control in crops.

The VARIDOME is a tractor mounted, spinning disc, Controlled Droplet Application (CDA) sprayer, designed for the application of herbicides at low water volumes. It is powered by the vehicles 12 volt battery. Liquid is supplied via a 12 volt diaphragm pump through colour coded feed nozzles. Electric motors spin the rotary atomiser discs to produce uniform sized droplets beneath the Vegemiser shroud therefore minimising any risk of spray drift.

The Vegemiser units are attached to round tubular bars and then mounted onto a toolbar. The Vegemisers are adjustable for width to enable treatments of gaps between rows of crop and also the wheeling width. They can treat gaps and wheeling's which vary from between 8 cm through to 80 cm and any width in between. They are also adjustable across the width of the toolbar to allow for different crop spacing's.

The number of Vegemisers fitted to the VARIDOME will vary depending on the row spacing of the crop to be treated, number of rows of crop per bed, etc., etc.

For the purpose of this instruction manual, where the Varidome is stated as a ’Standard Varidome’ this is deemed to be a 6-metre, 3-bed unit fitted with a total of 10 Vegemisers, supplied with a 300 litre tank and fitted with hydraulically folding wings.

KEY ADVANTAGES

- Sprays right up to the shoulder on both sides of the bed for a totals treatment
- Fully shrouded
- Minimises drift
- Wider spraying window
- Low volume
- High work rate - up to three times faster than a ’conventional’ sprayer
- Various configurations available to suit your specific crop, row spacings, etc.

SPECIFICATION (STANDARD VARIDOME)

Overall Dimensions:	Weight (unladen)	2500 Kilograms
	Weight (laden)	2800 Kilograms
	Working width	5940mm (19'6")
	Transport width	2100mm (6'9")
	Depth	1800mm (5'10")
	Working height	1860mm (6'1")
	Transport height	3440mm (11'3")
Materials of construction:	Frame - painted steel	
Mounting:	Three point linkage, front or rear	
Spray Tank:	300 litres HDPE (with graduations)	
Wash Tanks (2):	Hand wash, 20 Litre	
Spray Pump:	Self priming, 12 volt diaphragm pump, operated by 12 volt power supply which is usually the vehicle battery	
Pump output:	Max output:	18.9 Lpm - Max
	Max pressure:	45 Psi (3.1 bar) - Max
	Amps:	13 amps
Power requirements:	12 volt DC battery (usually from the vehicle)	
Operating pressure:	The Varidome is preset to operate at 20 Psi (1.5 bar) through the CDA Atomiser as fitted to each Vegemiser.	
Current consumption:	13.0 amp	
Application method:	16 x Vegemisers (standard machine)	
Control Units:	Each Vegemiser unit is fitted with a dedicated flow control module and a CDA head monitoring system, on/off switches to each head and a main system on/off switch.	

SAFETY / HAZARDS

Read this manual carefully before using the machine

Safety Notes

You must understand and follow the instructions in this manual. You must observe all relevant laws and regulations. Remember—never assume always check and if in doubt ask. Yours and others health and safety may be at risk.

WARNING

Warnings call attention to instructions that need to be followed precisely to avoid a hazardous situation.

CAUTION

Cautions call attention to instructions that must be followed precisely to avoid damage to the machine.

Safety Check List

In addition to warnings in this chapter, specific warnings are given throughout this handbook. This section is designed to give a safety code for use of the machine generally and for operation and maintenance practices.

SAFETY NOTES

Operating Safety

WARNING

Ensure all guards are kept in their proper condition and are in their correct position. If and safety decals or guards are damaged, they should be replaced immediately.

WARNING

Do not permit any person to ride on the machine in addition to the driver.

WARNING

The machine should never be driven at speeds in excess of 40 Km/h (25 mph) on the road. The top speed of the machine may be restricted by the choice of the wheel equipment. Reversing at high speed can cause accidents. Always drive at a safe speed to suit working conditions.

WARNING

Before using the machine always ensure all scheduled maintenance tasks have been carried out in accordance with this handbook and that any inspections required have been carried out. A defective machine can injure you or others. Do not operate a machine, which is defective or has missing parts.

CAUTION

Keep the machine controls clean and dry. Your hands and feet could slide off slippery controls. If that happens you will lose control of the machine.

WARNING

Working can cause accidents in poor visibility. Keep windows clear, and use your lights to improve visibility. Do not operate the machine if you cannot see properly.

WARNING

Always ensure that your speed is low enough to allow a safe stopping distance in the event of an emergency (allowing for maximum load)

SAFETY NOTES

Maintenance Safety

WARNING

Always ensure engine is stopped before attempting to undertake any work on the machine. Before carrying out any work on the machine ensure it is cleaned of chemical residue. Also inform others you are working on the machine to ensure it is not started or moved whilst work is being carried out. Remove the ignition key and leave a notice in the cab and around the machine to inform others. Follow any safety guidelines laid down in this handbook specific to the operation you carry out as yours and others safety depend on it.
Remember - Never assume always check and if in doubt ask!

WARNING

Hose the machine down regularly to remove chemical residue.

WARNING

Breathing in exhaust gases can harm and possibly kill you. Do not operate the machine in confined areas without ensuring that there is adequate ventilation.

WARNING

Understand the electrical circuit before connecting or disconnecting an electrical component. A wrong connection can cause injury and damage the machine.

WARNING

Ensure any chemical residue is disposed of in accordance with the guidelines provided by the chemical manufacture.

WARNING

Fine jets of hydraulic fluid at high pressure can penetrate the skin. Do not use your fingers to check for hydraulic leaks. Do not put your face close to suspected leaks. If hydraulic fluid penetrates your skin seek medical attention immediately. Damaged hydraulic hoses can cause fatal accidents. Inspect the hoses regularly and replace any which are damaged in any way.

WARNING

HAZARDS

The hazards in crop spraying fall into four broad groups. To the operator, the crop, the machine and the environment. These can and do overlap.

Hazards to the Operator

These can arise from careless filling, poor product mixing leading to system blockages and the need to clear these blockages. The disposal of the resultant material. Adjustment to the mechanics of the machine when both in the field and stationary. Spending time in the cab with contaminated overalls and boots. Not determining and wearing the correct P.P.E for the products use.

Hazards to the Crop

These can arise from both under and overdose of the material in use. Underdose often means the use of the same or another product again. Overdose sometimes can kill the crop being sprayed; sometimes the next crop in the field is impaired by inaccurate work on headlands and narrow sections. With some products narrow sections would be best not sprayed. This would remove the problem of residue effecting the following crop from the unlawful overdose of the current crop. Headland accuracy in this respect can be improved by spraying the headland with 1 1/2 bouts or 2 1/2 bouts of the boom, leaving a wheel mark indicating the applied edge and the shut off mark.

There is a drift hazard to the next crop if it is sensitive to product being used. There is hazard to the crop from not determining the optimum spray quality for the product in use and selecting a water volume and forward speed that are most likely to optimise the product used and it's investment. These can be seen in both crop contamination and resultant yield.

Hazards to the Machine

Hazards to the machine come from about frequently from inattention when in work resulting in impact with objects, moving and stationary. The constant use of settings, which are a the top end of the range for components on the machine, will bring about component failure more quickly than those that do not reach these limits. Machine break downs can often come from high road speeds on poor roads and long distances.

CAUTION

Hazards to the Environment

Hazards to the environment from the spraying operation are well documented in numerous publications from the B.A.A, H.S.E, N.F.U, E.A and others. The next crop, hedge bottom, gardens, watercourses etc, are some of the sensitive areas. The Enviromist system was developed to reduce drift, by means of a protective hood over the sprayer. The operator should take note of the conditions, this will also reduce the likelihood of drift.

Always keep a detailed notebook of settings and mixtures, both good and bad. The bad ones are the most important to record.

SAFETY

Using agrochemicals is a hazardous process. Operators should comply with all relevant legislation and/or regulations governing the use of agrochemicals and should use appropriate personal protective equipment (see 'OPERATOR PROTECTION'). Never use the VARIDOME in potentially explosive atmospheres or attempt to spray flammable liquid through it.

When spraying, observe safe distances from inhabited areas, water, streets, sport-centres, parks, etc.

Always read the product label carefully to discover:-

- approved applications
- maximum dose rates
- maximum number of treatments
- operator protection required
- necessary environmental protection measures

N.B. 'Dose rate' refers to the amount of chemical product applied per hectare.

Never eat, drink, or smoke when working with agrochemicals. After using agrochemicals or handling equipment wash your hands thoroughly. Keep people (especially children) and animals out of areas being sprayed.

Always store agrochemicals safely to protect people and animals, and to safeguard the environment (take special care to avoid water pollution). See 'SPRAYING' sections for guidelines on safe use of the FLEXI-DOME in operation.

OPERATOR PROTECTION

Always wear the protective clothing items listed on the product label for mixing and filling. The minimum protective clothing required for operating with the VARIDOME is:

- rubber gloves
- boots/shoes and long trousers
- eye protection
- long sleeved shirt

Note:
Acoustic information: the sound pressure level at the operator's ear does not exceed 70 dB(A).

N.B Protective clothing can be stored in the locker provided at the rear of the machine.

CHEMICALS

With the VARIDOME herbicides are usually applied in 50—100 litres total spray volume per hectare. These are lower volumes than recommended for high volume application. Use the minimum dose rate recommended on the label for the intended treatment and add water to make up to the volume required for application with the VARIDOME See the 'Reduced Volume' guidelines in the Code of Practice for using Plant Protection Products (section 4.6.4)

Micron do not generally recommend using spray mixes more than ten times the maximum concentration recommended for high volume application. The safest product and lowest dose rate appropriate for the treatment should be used at all times.

Do not use herbicide concentrations greater than the maximum recommended on the label (unless specific training or recommendations have been given) if the label:

- specifically prohibits use of 'Reduced Volumes' i.e. increased concentrations;
- has a statutory requirement for use of personal protective equipment when using the diluted product at high volumes (N.B. this will appear in the statutory box on the label); or
- carries one of the following hazard ratings: 'very toxic', 'toxic' or 'corrosive'

CHEMICAL USAGE

The VARIDOME has been designed primarily for use in horticulture. Materials used in its construction will withstand standard products conventionally used for horticultural spraying. Other uses are not recommended and Micron will not be held liable for any damage caused by the use of aggressive, dense and/or viscous chemical products. The VARIDOME is not designed to apply liquid fertilisers.

Prohibited usage:

The VARIDOME **MUST NOT** be used to apply the following types of products:

- any kind of paint
- any kind of solvent or thinner
- any kind of fuel or lubricant
- diesel or any kind of gasoline
- any kind of inflammable liquid
- animal and human feeds
- liquids containing granules or large particles
- mixtures of non-compatible chemical products
- liquid or suspended fertilisers with insoluble granules
- liquids at temperatures higher than 40^{O} C
- any products that are not detailed in the specific use of the machine

MIXING AND FILLING

Test with Clean Water

Before the first treatment it is recommended to carry out a test with clean water in order to check the correct operation of the sprayer and familiarise yourself with how the sprayer works.

Filling the Tank

In order to protect people, animals and the environment agricultural sprayers should only be filled indirectly by open and free falling water, particularly when filling from the water mains. This is to avoid any possible contamination of the water supply by reverse suction of the filling pipe back into the water source. The filling tube must not come into contact with the liquid inside the tank and it must discharge onto the upper edge of the filling opening through the filter located in opening.

The tank is equipped with graduations indicating the quantity of liquid inside the tank. This is designed to be read when the sprayer is on level ground.

Mixing

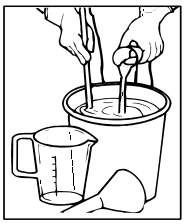
Good mixing and a good agitation before and during the spraying operation are very important

Mixing and filling is generally the most hazardous process in the spraying operation.

Always follow the label instructions. **Only** mix enough spray for the area to be treated to avoid the need for disposal of unused spray mix.

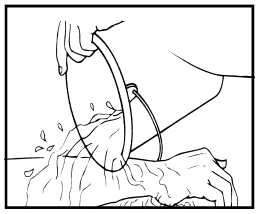
Handle products carefully wearing appropriate protective clothing, gloves, eye protection, etc as detailed on the product label .

It is important that all necessary protective safety clothing is used for mixing and filling operations.



In case of eye contact or swallowing consult a doctor remembering to take the product label. for a correct distribution of agrochemicals onto the crop.

Always thoroughly wash hands and any exposed skin.



In order to achieve adequate mixing of products in the tank prior to spraying, agitate the tank by using the agitator kit supplied.

CALIBRATION

The VARIDOME is a band sprayer using a number of shrouded Vegemisers. It is designed to ensure complete coverage of inter-row widths and wheelings and, as such, calibration can be quite complex.

To simplify calibration Micron recommend setting a standard flow rate per Vegemiser and then varying the volume application rate by adjusting vehicle speed. Applied dose rate can be altered by adjusting the concentration of the spray mix.

The table below shows the volume application rate (litres/hectare), at different forward speeds, when using the Vegemisers 80mm as primarily used in the VARIDOME when set to apply 20 litres per hour (setting 20 on the flow monitors). Vehicle speed may vary dependent on crop, bed structure, etc. but generally Micron does not recommend exceeding a forward speed of more than 5 kph when using the VARIDOME.

The total treated hectares covered per tank load, and the amount of chemical required per tank fill, can be calculated using the formula shown.

NB. Ensure that you are not mixing and applying greater than ten times the maximum concentration advised on the product label for high volume applications (see Chemicals).

CALIBRATION

PLEASE REFER TO CALIBRATION CHART ON PAGE 11

Formula for calculating Application Rate in Litres per Sprayed Hectare:

LPH = Litres per Hour (as per the flow meter reading)
KPH = Kilometres per Hour

$$\text{Band spraying formulae: L/min per nozzle} = \frac{\text{Application rate (L/ha)} \times \text{Forward speed (Km/h)} \times \text{Band width (metres)}}{600}$$

Calibration chart for Vegemiser (based 0n band spraying)

Nozzle Flow (L/min)	Speed (Km/h)	Band width (Metres)	Application rate L/ha	Flow meter Reading (l/hr)
0.017	5	0.08	25.00	1.000
0.019	5	0.09	25.00	1.125
0.021	5	0.10	25.00	1.250
0.025	5	0.12	25.00	1.500
0.031	5	0.15	25.00	1.875
0.042	5	0.20	25.00	2.500
0.052	5	0.25	25.00	3.125
0.063	5	0.30	25.00	3.750
0.073	5	0.35	25.00	4.375
0.083	5	0.40	25.00	5.000
0.094	5	0.45	25.00	5.625
0.104	5	0.50	25.00	6.250
0.125	5	0.60	25.00	7.500
0.146	5	0.70	25.00	8.750
0.167	5	0.80	25.00	10.000
0.188	5	0.90	25.00	11.250
0.020	6	0.08	25.00	1.200
0.023	6	0.09	25.00	1.350
0.025	6	0.10	25.00	1.500
0.030	6	0.12	25.00	1.800
0.038	6	0.15	25.00	2.250
0.050	6	0.20	25.00	3.000
0.063	6	0.25	25.00	3.750
0.075	6	0.30	25.00	4.500
0.088	6	0.35	25.00	5.250
0.100	6	0.40	25.00	6.000
0.113	6	0.45	25.00	6.750
0.125	6	0.50	25.00	7.500
0.150	6	0.60	25.00	9.000
0.175	6	0.70	25.00	10.500
0.200	6	0.80	25.00	12.000
0.225	6	0.90	25.00	13.500

Nozzle Flow (L/min)	Speed (Km/h)	Band width (Metres)	Application rate L/ha	Flow meter Reading (l/hr)
0.020	5	0.08	30.00	1.200
0.023	5	0.09	30.00	1.350
0.025	5	0.10	30.00	1.500
0.030	5	0.12	30.00	1.800
0.038	5	0.15	30.00	2.250
0.050	5	0.20	30.00	3.000
0.063	5	0.25	30.00	3.750
0.075	5	0.30	30.00	4.500
0.088	5	0.35	30.00	5.250
0.100	5	0.40	30.00	6.000
0.113	5	0.45	30.00	6.750
0.125	5	0.50	30.00	7.500
0.150	5	0.60	30.00	9.000
0.175	5	0.70	30.00	10.500
0.200	5	0.80	30.00	12.000
0.225	5	0.90	30.00	13.500
0.024	6	0.08	30.00	1.440
0.027	6	0.09	30.00	1.620
0.030	6	0.10	30.00	1.800
0.036	6	0.12	30.00	2.160
0.045	6	0.15	30.00	2.700
0.060	6	0.20	30.00	3.600
0.075	6	0.25	30.00	4.500
0.090	6	0.30	30.00	5.400
0.105	6	0.35	30.00	6.300
0.120	6	0.40	30.00	7.200
0.135	6	0.45	30.00	8.100
0.150	6	0.50	30.00	9.000
0.180	6	0.60	30.00	10.800
0.210	6	0.70	30.00	12.600
0.240	6	0.80	30.00	14.400
0.270	6	0.90	30.00	16.200

MOUNTING INSTRUCTIONS

Preliminary Checks

When you receive your VARIDOME check that the sprayer is complete. If any parts are damaged or missing, refer to your supplier or to Micron Sprayers Limited.

Machine transport and handling

If it is necessary to lift the machine, use proper fabric slings and hoists or bridge crane with sufficient lifting capability.

Only lift or move the machine when the tank is empty. If there is liquid in the tank, the machine will be heavier and the liquid shifting could alter the centre of gravity causing uncontrolled movement.

Do not lift the machine with a fork lift truck unless it is secured.

Do not stand under the machine when it is suspended in the air.

Mounting on the tractor

Before mounting on any vehicle ensure that the vehicle is suitable for this purpose. A suitable vehicle should:

- be capable of sustaining the weight of the sprayer when full and ready to work (i.e. 2800Kg). Failure to meet this specification is dangerous as it could lead to loss of sensitivity on the steering and consequently the possibility of overturning on sloping ground.
- possess a three point linkage capable of bearing the weight of the sprayer when full (i.e. 2800Kg).

If in doubt as to the suitability of the vehicle refer to the manufacturer.

- Adjust the length of the top link so that the sprayer is horizontal in the working position.

The VARIDOME is designed to be mounted on the FRONT (where the tractor has a 3 point linkage) or on the REAR of the vehicle. When it is not mounted on a vehicle the support stands provided with the machine must be used.

CAUTION:

When attaching the VARIDOME to the tractor using the three point linkage, be aware of any moving parts on the vehicle.

INSTALLATION PROCEDURES

Always refer to items shown on photographs or exploded parts drawings for ease of identification of parts during installation.

The tool bar is fitted with 3 point linkage CAT.2 pins which suit most tractors.

The VARIDOME is factory calibrated prior to delivery..

The VARIDOME is fitted with the relevant number of Back plates to suit the number of Vegemisers fitted to the machine.

Connection

- Before attempting to connect the VARIDOME to a power supply ensure the main in-line switch is in the 'OFF' position.

- Connection of the Back plate to the 12 volt power supply of the vehicle may be direct to the battery on the vehicle or other direct 12 volt supply point.

- Connect the positive (+) lead to the positive terminal of the battery and the negative (-) lead to the negative terminal of the battery.

Each Vegemiser spray head has its own Control Unit and these are then mounted onto the Back plate. To mount the Control Units carry out the following procedure:

- Ensure that the main in-line switch is in the 'OFF' position and then insert the plug (as fitted to the bottom of the Control Unit) into a socket (as fitted on the upper face of the Back plate) whilst at the same time fixing the clip (as attached to the back of the Control Unit) between the locating lugs on the Back plate and pushing firmly downwards..

- Connect the quick release hose plug of the Control Unit to one of the connectors on the front of the Back plate.

- Turn all the Control Unit switches to the 'OFF' position then turn the main In-line Switch 'ON'. Now turn each Control Unit 'ON' and 'OFF' in turn to check that the power connection is effective and that the pump is operating. **Visually check** that the rotary atomiser disc under the Vegemiser is spinning (See: OPERATIONS) and that the amber light on each control unit is glowing.

  Note: The lights will go up to full brilliance on start up and then settle to a constant brightness as the electric motor achieve working speed.

  WARNING: Do not run the equipment with the indicator lights on the Control Unit by-passed or with globes of incorrect value (see label on the top of the control unit) otherwise damage to the electric motors may result.

- Secure all hoses in a manner so as not to cause obstruction to the operator or any moving parts.

- Hose assemblies have been designed to suit a wide range of vehicle types. If your configuration requires less hose than provided, any surplus, if not secured, may become caught in machinery, ex posing the operator to a potentially hazardous situation. Any spare hose length should be coiled and secured with the cable tie provided

  WARNING: Failure to secure hoses may result in injury to the operator and/or damage to equipment. Chemical spills are also possible.

- Adjust Vegemisers for the actual bed width (See: FIELD ADJUSTMENTS).

OPERATION

Before spraying:

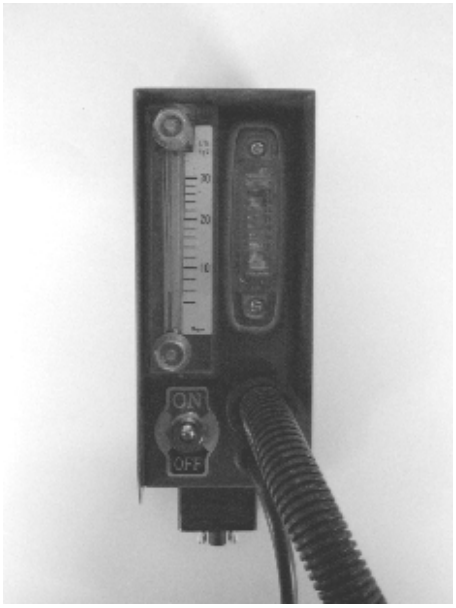
Prior to filling the VARIDOME in readiness for spraying it is recommended that you follow these procedures to check that everything is working correctly.

- Place a small amount of clean water in the spray tank, ensuring the filter element is in place when filling. Failure to use the filter will increase the likelihood of blockages from contaminated water.
- Open the return tap to tank, to the fully open position to reduce the amount of pressure within the system on initial start up.
- Turn the main in-line switch to the '**ON**' position (marked with a red dot)
- Turn the individual switches on the control units to the '**ON**' position to purge all the air from the system.
- Check that all the spray heads under the Vegemisers are working correctly. The atomiser disc of each spray head should be spinning and spreading a very fine mist to the edge of the Vegemiser shroud.
- Check that all pre-operation checks have been carried out. (See: CHECKING PROCEDURES)
- Check all plumbing and fittings to ensure there is no damage or leaks.
- Check that tank, filters, lines and feed nozzles are free from obstruction.

To operate the VARIDOME

- Turn the main in-line switch to the 'ON' position (marked with a red dot).
- Turn the main On/Off valve to the 'ON' position..
- Open the return valve to tank, to the fully open position to reduce the amount of pressure within the system on initial start up.
- Gradually close the return valve until you reach the required pressure on the pressure gauge.

- To operate the sprayer, turn the in-line switch on each Control Unit to the 'ON' position and adjust the flow on the gauges to 20 litres per hour using the pressure return valve. Each Vegemiser is controlled by its own Control Unit.



- The floating ball in the flow meter on the Control Unit not only indicates to the operator that the spray head is working but gives an indication of the flow rate to that operating head **IN LITRES PER HOUR.**.

N.B If the ball drops whilst the VARIDOME is in operation then something is wrong and the chemical is not being supplied as required. If this occurs stop the unit immediately and rectify the problem before attempting to spray again (See: TROUBLE SHOOTING) .

FIELD ADJUSTMENT

Before starting operations, the VARIDOME must to be attached to the front or rear of the vehicle using the 3 point linkage (See: MOUNTING INSTRUCTIONS). Adjust the top link so that the frame is level. Attach the 300 litre tank to the front or rear of the vehicle using the 3-point linkage attachment.

The individual Vegemisers then need to be set up to suit the gaps and wheelings to be treated. For best results this needs to be done in the actual beds themselves.

The **BOOMS** are secured in place by a retaining bar, located at the front of the sprayer.

VERY IMPORTANT NOTE.

The Retaining bar **MUST BE USED WHEN THE VARIDOME IS BEING TRANSPORTED** and **MUST BE REMOVED BEFORE ATTEMPTING TO OPERATE THE HYDRALIC BOOMS.**

When the sprayer is ready for use, it is important to lift the 2 stand legs.

N.B. Failure to lift the support legs may cause severe damage to the beds and/or the crop.

FIELD ADJUSTMENT

The complete VARIDOME sprayer can now be lifted off the ground and taken into the beds where the final adjustment to the Vegemisers spray heads can take place. Before entering the beds, lower the VARIDOME onto the ground and adjust the Vegemisers in a position so that the vehicle can be driven into the beds

With the vehicle now in the rows, the final adjustment to the heads can be done by using the following steps.

Adjusting the Vegemisers to the beds

Each Vegemiser is fitted with a vertical support arm allowing for adjustment of both height and width, these lock into position using the mounting tube clamp bolt.

On each Vegemiser use the vertical adjustment bar to set the height. Lower the Vegemisers into the rows so that the bottom edge is approximately 25mm (1”) from the top of the beds to prevent any spray drift escaping due to uneven beds.

WARNING:

- **If a Vegemiser is set too low, constant contact between the Vegemiser and the ground may result in permanent deforming of the shroud and/or rubber skirt and may cause the edges of the rubber skirt to split, which in turn may lead to spray drift escaping from within the shroud. There is also the additional risk of debris interfering with the operation of the Vegemiser.**

TROUBLE SHOOTING

PROBLEM	PROBABLE CAUSE	REMEDY
1. System will not start	a. Power off b. Control Unit not plugged in c. Power disconnected d. Blown fuse	a. Turn power on at both the main In-line Switch and Control Unit. b. Push plug firmly into socket c. Reconnect. d. Check electrical system and replace fuse.
2. Flow not visible in flow meter	a. Float stuck b. Tank empty. c. Pump not working. d. Blockage. e. Spray lines disconnected. f. Air blockage in lines g. Not cleaned correctly when last used.	a. Free float - See: **ENVIROMIST MANUAL** b. Refill tank. c. See: 3 d. Remove blockage. See**: CHECKING PROCEDURES FOR PUMP AND CLEARING BLOCKAGES** e. Reconnect lines - avoid contact with spray. f. Bleed air out of the lines. g. See: **END OF DAY MAINTENANCE**
3. Pump not working	a. Power disconnected b. Pump failure	a. Check and reconnect. b. Repair or replace pump See: **CHECKING PROCEDURES FOR PUMP AND CLEARING BLOCKAGES**
4. Flow rate too low	a. Partial blockage in line b. Pump faulty c. Pump spring missing or damaged.	a. Remove blockage. b. Repair pump. c. Replace spring in pump See: **CHECKING PROCEDURES FOR PUMP AND CLEARING BLOCKAGES**
5. Flow rate too high	a. Shut off valve closed. b. Incorrect feed nozzle used c. Pump pressure too high	a. Open valve. b. Install correct feed nozzle. c. Reduce pressure to 20 Psi (1.5bar)
6. Indicator Light does not glow	a. Power disconnected b. Fuse blown c. Spray head failure d. Indicator Light faulty. e. Short circuit to earth between spray head and lamp assembly	a. Check and reconnect. b. Check wiring and replace fuse (12 volt 10 amp) c. Check electrical circuit and replace motor if necessary. d. Check and replace if necessary. See: **ENVIROMIST MANUAL** e. Check and repair
7. Spray head not running power on, indicator light on	a. Above normal brilliance of indicator light shows a short circuit between wires on applicator. b. Disc jammed	a. Check for short circuit and repair accordingly. If short circuit is in spray head, replace motor. b. Check to see that no obstruction is stopping the disc from turning. e.g.. twigs, grass etc.

CHECKING PROCEDURES FOR PUMP AND CLEARING BLOCKAGES

SAFETY PRECAUTIONS:

- **BE SURE** to wear suitable protective clothing.
- **BE SURE** to use a suitable container to catch spray liquid if necessary.
- **MAKE CERTAIN** that there is ample liquid in the tank.

Ensure that all electrical plugs are in place and the battery connections are firm. Turn the main inline switch **ON**, turn the Control Unit switches **ON,** the pump motor should now be working.

PUMP NOT RUNNING

- Wire the pump directly up to the battery, if the pump works then check all the wiring until the fault is found.

- If the pump still does not work then contact the supplier for advice or replace the pump.

If the pump does work check that the bypass valve is open and check that there is flow back to the tank.

IF THERE IS NO FLOW BACK TO THE TANK make sure the bypass valve is fully open and the in-line filter is not blocked. If there is still no flow then the pump may need to be serviced or replaced.

IF THERE IS NO FLOW TO THE VEGEMISER remove the feed nozzle from the Vegemiser and clean the nozzle, preferably with air, and then refit the nozzle and check the flow.

NEVER BLOW THROUGH THE FEED NOZZLES

AFTER SPRAYING

Sprayer Washing

After use wash all equipment thoroughly both inside and outside. Contaminated equipment may be harmful to people, animals and the environment.

System wash

The sprayer is equipped with a system wash tank which must be filled with clean water. This is used to rinse the intake circuit, delivery filter, pump, Control Units and CDA units contained within the Vegemiser units.

- Wash chemical containers well using correct equipment and rinse repeatedly with clean water. Dispose of washing residues in accordance with regulations.
- Collect washed containers and dispose of them properly. Do not leave empty pesticide containers in the environment and do not re-use them for any other purpose. It is advisable to make a hole in the bottom of containers when they are empty to prevent re-use.
- Carefully wash sprayers after use and dispose of washing residues in accordance with regulations.
- Store products safely in a secure designated area and keep out of the reach of children.
- All protective clothing should be washed separately from other clothes and stored. Contaminated gloves should be washed inside and out.

WE STRONGLY RECOMMEND DAILY RINSING OF THE TANK AND EQUIPMENT WITH CLEAN WATER AFTER ANY USE.

N.B Any chemical left over for along period should be stored in a appropriate container and disposed of in accordance with regulations

<u>Never</u> attempt to clean the CDA atomisers with a pressure washer as this may damage the electric motors.

END OF DAY MAINTENANCE

- Empty tank completely, observing all safety precautions.
- Flush out tank with clean water and detergent (tank wash), run the sprayer to flush the lines and CDA atomisers for at least two minutes.
- Carefully and thoroughly hose down the sprayer, taking particular care to prevent water entering the clear vent tube at the top of each spray head then allow the spray head to spin dry for a few seconds by disconnecting the liquid supply at the Back plate.
- If for any reason it is suspected that water has entered the motor housing, dismantle and dry it. Reassemble, remembering to replace the two springs on top of the motor, otherwise the motor will not work.
- Winter storage—make up an anti-freeze mixture, put into the sprayer tank and run the pump for a short while to ensure the mixture had got into the plumbing, elbows, etc. to help to prevent any frost damage.

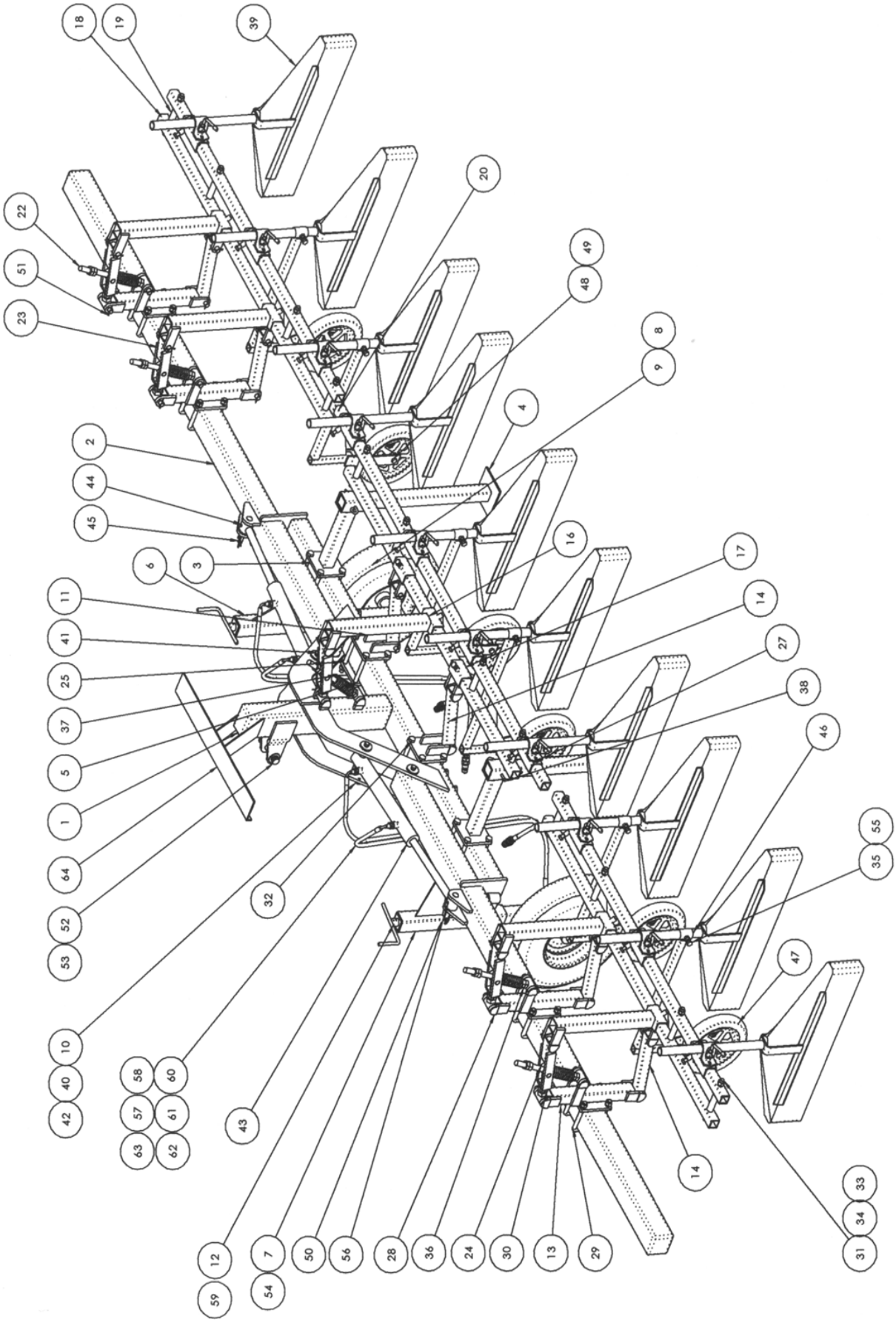
DO NOT USE A POWER WASHER TO CLEAN THE SPRAY HEADS!

CAREFULLY HOSE DOWN ONLY.

VARIDOME PARTS LIST.

ITEM NO.	PART NO.	DESCRIPTION	QTY	ITEM NO.	PART NO.	DESCRIPTION	QTY
1	7349	BOOM CENTRE	1	33	7386	WASHER M16 SPRING	44
2	7350	BOOM OUTER	2	34	7384	NUT M16	44
3	7355	STAND MOUNTING BRACKET	2	35	6565	SCREW M12 x 40	23
4	7356	STAND	2	36	7385	NUT M20	20
5	7364	CLAMP PLATE	2	37	7375	SPRING TENSION	5
6	7354	WHEEL MOUNTING BRACKET L	1	38	7378	PIN SECURING	2
7	7371	WHEEL MOUNT ING BRACKET R	1	39	FRAA3 74-18	VEGEMISER 80MM	10
8	7353	WHEEL AXLE	2	40	6897	SCREW M8 x 12	4
9	6555	WHEEL & TYRE 400MM DIA	2	41	5967	BOLT M12 x 90 HEX HD	4
10	7366	PIN CYLINDER END	4	42	5972	WASHER M10 SPRING	4
11	7368	RAIL LINK MOUNT BRACKET REAR INNER	2	43	7387	CYLINDER HYDRAULIC	2
12	7373	WHEELADJUSTMENT SCREW	2	44		CYLINDER ROD END	2
13	7369	RAIL LINK BRACKET REAR	4	45	7365	PIN CYLINDER ROD END	2
14	7357	LINK FIXED BOTTOM	6	46	7367	BRACKER GUIDE WHEEL	6
15	7359	RAIL MOUNTING BRACKET FRONT OUTER	4	47	7388	WHEEL GUIDE	6
16	7360	RAIL MOUNTING BRACKET FRONT INNER	1	48	6563	BOLT M12 x 80 HEX HD	6
17	7370	RAIL LINK MOUNT BRACKET FRONT INNER	2	49	5177	NUT M12 NYLOC	6
18	7351	RAIL SHORT	5	50	6554	LYNCH PIN	5
19	7212	SPACER	12	51	6720	COTTER PIN 1/8 x 1-1 1/2”	27
20	7352	RAIL LONG	1	52	7389	PIN TOP LINK (CAT 2—25.4 x 102)	1
21	7362	LINK ADJUSTER SHORT	5	53	6733	WASHER M27	2
22	7361	LINK ADJUSTER LONG	5	54	7390	SCREW WHEEL ADJUSTMENT	2
23	7358	LINK ADJUSTABLE TOP	5	55	6134	NUT M12	6
24	7381	7381 BUSH LINK ADJUSTABLE TOP	5	56	7391	SCREW M8 x 8 GRUB	2
25	7379	DOUBLE SHEAR LOWER LINK PIN	2	57	6034	SEAL 3/8” BSP BONDED	4
26	7380	WASHER M12 x 50 x 6	4	58	7085	ADAPTOR 1/4 x 3/8” BSP M/M	4
27	7209	CLAMP BRACKET SHORT	10	59	7392	ROLL PIN M5 x 30	2
28	7363	LINK RETAINING PIN	27	60	7393	HOSE 1/4 BSPM x 2M, 1/4” BSP 90^0 DEG SWF	4
29	7374	U-BOLT M16 x 140mm	8	61	7394	ADAPTOR 1/4 x 1/2” BSP M/M	4
30	7382	NUT M24	5	62	6303	SEAL 1/2” BSP BONDED	4
31	7383	BOLT M16 x 200 HEX	12	63	7041	COUPLER 1/2” BSPP HYDRAULIC SERIES A	4
32	6954	BOLT M16 x 180 HEX	16	64	7395	BRACKET ATOMISER CONTROL UNIT	1

VARIDOME PARTS DIAGRAM.



DECLARATION OF CONFORMITY

Name of manufacturer or supplier:	Micron Sprayers Ltd.
Full postal address:	Bromyard Industrial Estate, Bromyard, Herefordshire, HR7 4HS
Country of origin:	England
Post code:	HR7 4HS
Description of Product:	Battery powered agricultural spraying machine.
Name and model number of machine:	VARIDOME
Place of Issue:	Bromyard, England
Name of authorised representative:	G. S. Povey
Position of authorised Representative:	Joint Managing Director

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 requirements of the Machinery Directive 89/392/EEC as amended by 91/368/EEC, 93/44/EEC, 93/68/EEC and 98/37/EC and complies with the relevant essential health and safety requirements.

Signature of authorised Representative: