

AU9000E ULV COLD FOGGING MACHINE

**Operator's Manual and
Parts Catalogue**



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1 INTRODUCTION

The Micronair AU9000E is a vehicle-mounted ULV cold fogging machine developed specifically for the control of adult mosquitoes, flies and similar pests using both conventional and water-based products.

The AU9000E provides excellent control of droplet size and liquid flow rate, whilst being easy to operate and maintain. It is intended for use by municipalities, pest control contractors, health authorities and similar organisations requiring reliable, cost-effective pest control.

The fogger uses a reliable 10 HP Briggs & Stratton four-stroke engine with electric start, driving a powerful 180 m³/hour blower. Two atomiser fogging heads can be independently oriented both horizontally and vertically to achieve a wide swath width and to provide optimum coverage of the target.

All controls are operated from inside the vehicle cab for maximum operator safety. The fogger incorporates many unique safety features, including an air pressure sensor to stop the liquid pump in the event of the engine stopping or a failure of the blower. The flow of product is controlled by a ten-position switch on the control box in the cab to ensure precise and repeatable flow rates

All pipework and components in contact with product are manufactured from chemical resistant materials. The main tank has a wide aperture for ease of filling and a drain valve for easy and safe emptying after use. A 10 litre flushing tank is provided to enable liquid to be purged from the pump, hoses and atomiser heads after use.

The engine and blower are mounted on a rigid base frame to ensure smooth running and reliable operation, even in extreme conditions. The frame is provided with mounting holes and provision for lifting with a fork truck for secure installation and ease of handling.

The AU9000E has been independently tested and conforms to the latest U.N. World Health Organisation (WHO) specification for vehicle mounted equipment.

2 SPECIFICATION

Dimensions:	Length 900 mm, width 850 mm, height 900 mm excluding atomiser heads (1200 mm including atomiser heads)
Fog release height:	1200 mm above vehicle bed
Weight:	145 kg (tanks empty)
Engine:	10 HP Briggs & Stratton Vanguard single cylinder 4-stroke with electric start from control box in the vehicle cab or switch on the engine
Fuel:	Standard 95 octane unleaded petrol (gasoline)
Fuel tank:	3.3 litre capacity steel tank with splashproof filler cap
Running time:	1¼ hours approx. at full throttle
Blower:	180 m ³ /hour capacity side channel blower running at 3100 RPM

Fogging Atomisers (2):	Stainless steel body with vortical nozzle				
Droplet size:	15 – 20 μm VMD for oil-based ULV products 20 – 25 μm VMD for water-based ULV products (Actual VMD will depend on formulation properties)				
Output rate:	Adjustable 0 – 1.4 l/min (total from both atomiser heads)				
Output adjustment:	By in cab electronic control				
Main tank:	60 litre capacity HDPE construction with 200 mm diameter filling aperture and cap with splashproof vent				
Flushing tank:	10 litre capacity HDPE construction with 100 mm diameter filling aperture				
Electrical power:	12 VDC @ 5 A max (fogging), 60 A (engine start)				
Power source:	12 V vehicle battery				
Control box:	Mounted in cab of vehicle				
	<table border="0"> <tr> <td>Switches:</td> <td>Engine start/stop Engine throttle Liquid pump</td> </tr> <tr> <td>Indicators:</td> <td>Air pressure Liquid pressure</td> </tr> </table>	Switches:	Engine start/stop Engine throttle Liquid pump	Indicators:	Air pressure Liquid pressure
Switches:	Engine start/stop Engine throttle Liquid pump				
Indicators:	Air pressure Liquid pressure				
Mounting on vehicle:	By M10 bolts through universal mounting base				

3 INSTALLATION

3.1 Installation on Vehicle

The AU9000E is designed for installation on the bed of a pick-up truck, small lorry or similar vehicle. It may also be mounted on a trailer towed behind a vehicle.

The procedure to mount the fogger is as follows:

1. Position the atomiser head mast on the vertical member of the frame at the rear of the fogger with the atomiser heads facing backwards and secure in position with the two M6 bolts, nuts and washers provided.
2. Connect the liquid feed hose to the fitting on the pump outlet and two air tubes to the air manifold at the base of the fogger. Secure the air tubes with the hose clips provided.
3. Position the fogger on the bed of the vehicle so that it is as far back as possible without the frame of the machine touching the tailgate. The atomiser heads should protrude slightly behind the vehicle if possible. The fogger can be positioned either in the centre of the bed of the vehicle or can be moved to one side to allow easy access and space to carry additional items.

IMPORTANT: If installing the fogger on a light-weight vehicle or trailer, it must be positioned such that the weight of the machine does not affect the stability or roadworthiness of the vehicle.

4. Adjust the position of the fogger so that the mounting holes in the frame align with suitable positions to drill holes in the vehicle bed. If the bed is made from corrugated metal, the base members of the frame should be in contact with the tops of the corrugations adjacent to the mounting holes. If corrugations or other obstructions on the vehicle bed prevent sufficient contact with the fogger frame, a sheet of waterproof plywood at least 12 mm (1/2") thick or steel at least 3 mm (1/8") thick can be fitted under the machine. Alternatively mount the fogger on the wooden pallet as supplied with the units packaging.
5. Mark and drill at least four 11 mm (7/16") diameter holes in the vehicle bed to align with holes in the frame. There must be at least one hole at each end of the frame on each side of the fogger.

IMPORTANT: Before drilling any holes, ensure that the area under the vehicle bed is clear of fuel lines, tanks, electrical items or structure that could be damaged or weakened by drilling.

6. Bolt the fogger to the bed of the vehicle with the M10 bolts, nuts and washers supplied (or use longer bolts if necessary). The square steel packers (5992) provided with the kit should be used under the nuts to spread the load on the underside of the bed. Alternative packers may be made and used if necessary.
7. As an alternative to permanently mounting the fogger on the vehicle bed it is possible to lash the unit down using ratchet straps around the fogger frame – one strap either side. If installing in this way, it should be checked that the straps do not interfere with the operation of the unit in any way and care shall be taken that they do not interfere with plumbing or the actuator.

3.2 Electrical Installation



Fig. 1 – Control Box in Cab of Vehicle

1. Route the cable from the fogger unit in the rear of the vehicle to the driver's cab. Whenever possible, pass the cable and its protective conduit through existing holes provided for electrical wiring. If necessary, new holes should be drilled for the cable. All holes should be protected with plastic or rubber bushings to prevent chafing of the cable.
2. Unplug the fuse assembly EX6329/100 on the end of the grey battery cable protruding from the protective conduit. The black plastic locking tab on one side of the connector must be pressed down before pulling it apart.
3. Route the battery cable from the cab to the vehicle battery. Ensure that this cable is protected by plastic or rubber bushes if it passes through holes or adjacent to sharp edges.
4. Connect the ring tag on the red wire of the fuse assembly to the positive (+) battery terminal.
5. Connect the ring tag on the black wire of the fuse assembly to the negative (-) battery terminal or the vehicle ground adjacent to the battery.
6. Plug the connector on the battery cable into the socket on the fuse assembly.
7. Secure the cables and fuse assembly so that they cannot move against sharp edges or hot surfaces. Note that the fuse holder can be held in position by pushing its securing pegs into 5 mm (3/16") holes.
8. Position the control box in the cab of the vehicle (see Fig. 1). This should be adjacent to the driver or the fogger operator's seat.
9. Route the black cable from the protective conduit to the connector on the control box. Insert the connector and secure by twisting the locking ring a quarter turn clockwise.

IMPORTANT: The box and cable must be positioned so as not to obstruct the movement of occupants of the cab, not to obstruct the vision of the driver and not to cause a hazard in the event of an accident.

3.3 Engine Oil

The fogger is shipped with no oil in the engine. The engine must be filled with 10W-30 multigrade oil as described in the Briggs & Stratton Owner's Manual. The oil capacity is approximately 0.8 litres.

IMPORTANT: The engine incorporates a low oil sensor that disables the ignition if the oil falls below the minimum level. The oil level should be allowed to stabilise for about 15 minutes after filling before checking and topping up if necessary. Over-filling with oil can cause the engine to run very hot and can cause it to run intermittently and stop. See Fault Finding table in section 7.10.

See section 7.2 for further details.

4 OPERATION

This section describes the normal operation of the fogger. It is important that the machine is calibrated prior to use (see section 6).

IMPORTANT: Hearing protection must be worn when working within 2 m (6 feet) of the fogger whilst the engine is running – see Health & Safety section.

Labels and functions of valves, controls, switches and indicator lights are shown in ***bold italics***. All references to left, right, rear and front are with respect to the vehicle (i.e. as viewed from the rear of the vehicle with the fogger installed, looking forward).

4.1 Before Operation

1. Prior to the commencement of fogging, a treatment plan must be drawn up. This must define the route of the vehicle. Whenever possible, the vehicle should travel at 90 degrees to the prevailing wind and each pass must be upwind of the previous pass so as to avoid driving through the fog. The distance between each vehicle pass will normally be determined by the layout of streets or buildings, (see calibration instructions in section 6). The treatment plan must also define the speed of the vehicle whilst fogging and must clearly identify any areas that are not to be fogged.
2. Adjust the horizontal direction and the vertical elevation of both atomiser heads to suit the target. Normally, one head would be angled 30° – 45° above the horizontal to give maximum vertical coverage. The other head can either be angled below the horizontal to reach targets near ground level or can be angled upwards to maximise the effective swath width of the fogger.

4.2 Filling

1. Ensure that the ***Drain*** valve is CLOSED, the ***Main Tank*** valve is OPEN, and the ***Flushing Tank*** valve is closed – see Fig. 2. Note that all valves are closed when the handle is at right angles to the valve body and open when the handle is parallel with the valve body.

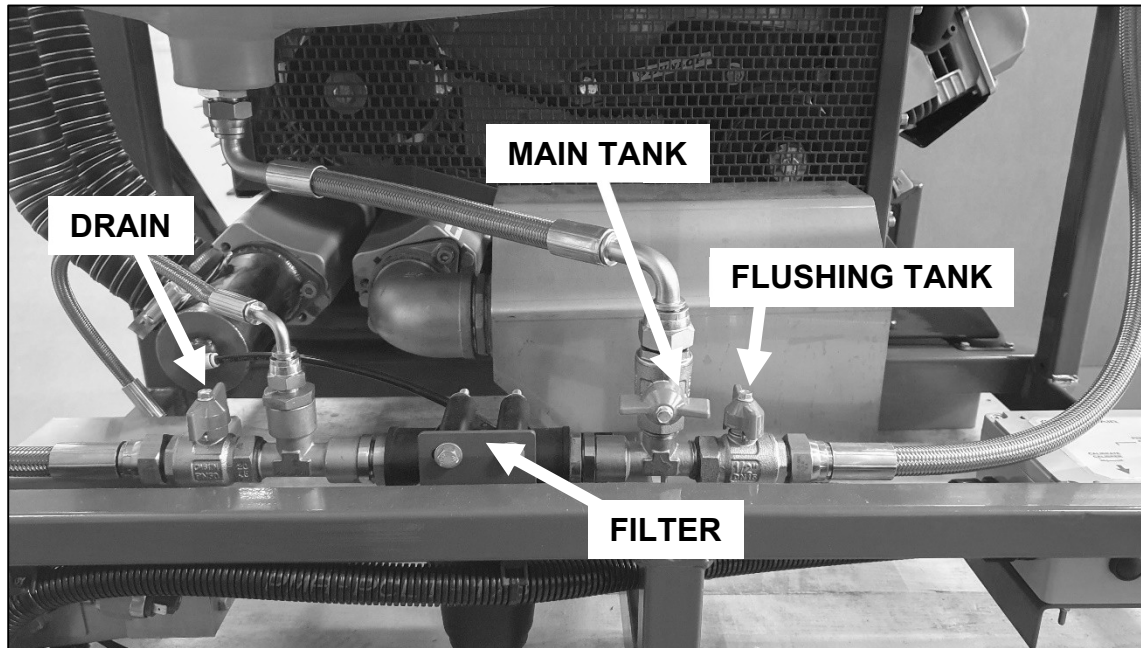


Fig. 2 – Valves & Filter Under Tank

2. Fill the main tank with the required amount of product. If necessary, this should already have been mixed in accordance with the manufacturer's approved instructions. The filler (basket) filter in the tank should be in position during filling. The quantity of product put into the tank should be limited to the amount required for the fogging job or 60 litres maximum (around 15 US Gal), whichever is less.
3. Replace the tank filler cap firmly after filling.
4. Fill the fuel tank with the required amount of petrol (gasoline). The maximum capacity of the tank is 3.3 litres. Use only standard 95 octane unleaded petrol (gasoline).

IMPORTANT: Do not over-fill the fuel tank.

5. Replace the fuel tank cap firmly after filling.

4.3 Starting Engine

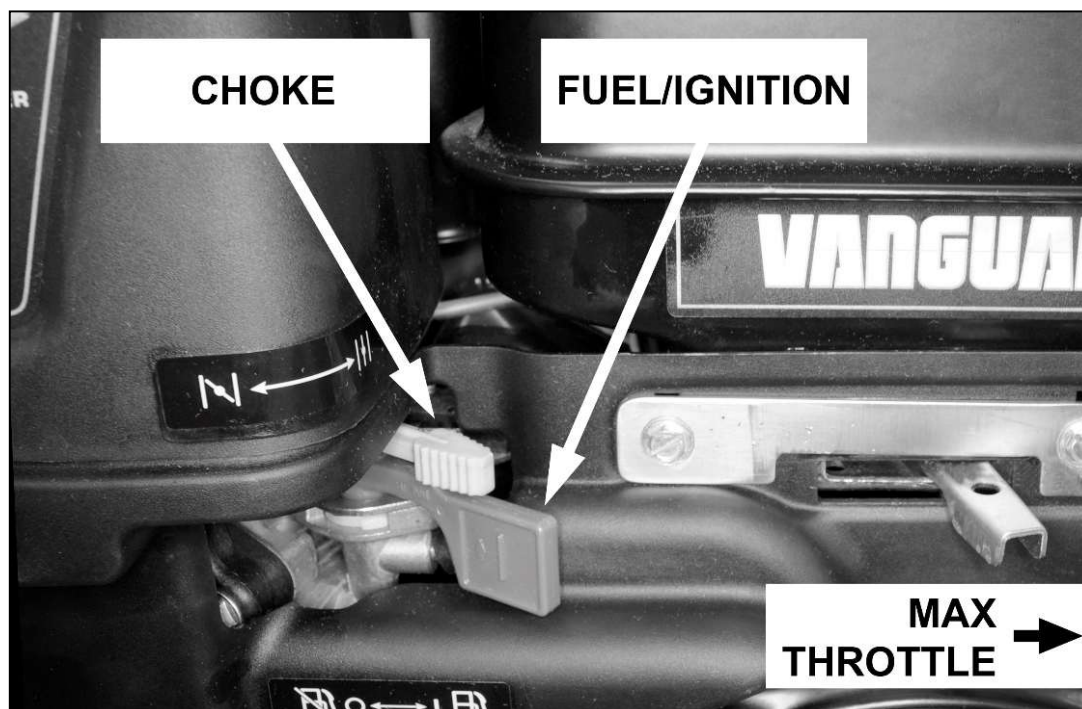





Fig. 3 – Engine Controls

1. Ensure that the switches on the fogger control box in the cab are set as follows:
 - **Pump:** OFF
 - **Throttle:** MAX
2. Move the red combined **Fuel Valve** and **Ignition** lever on the engine to the fully OPEN position (I ) – see Fig. 3.
3. Set the grey **Choke** lever on the engine to the OPEN position (| † |).
4. Move the **Engine** switch on the control box to the START position until the engine starts and then allow the switch to return to the centre RUN position. Alternatively, the engine can be started by the key operated START () switch on the engine or by means of the manual starter cord. If using the manual starter, set the **Choke** lever to the CLOSED position (|  |) and pull on the engine starter cord to start the engine. Note that the cord should not be pulled completely out. The cord or starter mechanism could be damaged if the cord is pulled against its end stop. When starting the engine, pull the starter cord slowly until resistance is felt, allow the cord to retract and then pull rapidly to avoid kickback. After about 10 seconds, slowly move the **Choke** lever to the OPEN position (| † |).

IMPORTANT: If starting the engine with the key operated starter switch or the manual starter the **Engine** switch on the control box must be set to RUN and not to STOP.


5. Set the **Throttle** switch on the control box to IDLE.


4.4 Fogging Procedure

IMPORTANT: Product must only be fogged whilst the vehicle is moving within the treatment area.

1. Set the valves on the fogger as follows:
 - **Main Tank** valve OPEN
 - **Flushing Tank** valve CLOSED
 - **Drain** valve CLOSED
2. Ensure that the fogger is correctly calibrated according to the requirements of the treatment plan (see section 6).
3. When the vehicle reaches the beginning of the first pass in the treatment area:
 - Set the **Throttle** switch to MAX – the **Air** indicator should illuminate.
 - Set the **Pump** switch to ON – the **Pump** pressure indicator should illuminate.
4. Visually check that both atomiser heads are operating (note that there may be a delay of a few seconds when the pump is turned on the first time and air is purged from the pipework).
5. When the vehicle reaches the end of a fogging pass (or is upwind of an area not to be fogged or if it is necessary to stop the vehicle for a short time):
 - Set the **Pump** switch to OFF.
 - Leave the **Throttle** switch in the MAX position.
6. At the end of a treatment block:
 - Set the **Pump** switch to OFF.
 - Set the **Throttle** switch to IDLE.
7. The indicator lights on the control panel should be checked whilst fogging. Both green lights should be illuminated when the fogger is operating normally. Abnormal indications are as follows:
 - **Air** indicator not illuminated when **Throttle** switch is set to MAX – engine stopped or out of fuel.
 - **Pump** pressure indicator not illuminated when **Pump** switch is ON – **Throttle** switch not set to MAX or blower not operating (see above). This is a safety feature to prevent fogging when there is insufficient air output for correct atomisation.
 - **Pump** pressure indicator not illuminated when **Pump** switch is ON – main tank empty.

See also Fault Finding table in section 7.10 for other causes of abnormal operation or indications.

8. Stop the engine at the end of the job by setting the **Engine** switch on the control box to the STOP position and then moving the red **Fuel Valve and Ignition** lever to the fully closed position (). In an emergency the engine can be stopped by moving the red **Fuel Valve and Ignition** lever to

the fully closed position ( O). This overrides the **Engine** switch on the control box.

4.5 Emptying of Main Tank

Whenever possible, only the amount of product mix required for a job should be put into the tank and all product mix should be used within the treatment area. However, if product mix remains at the end of a job, it should not be left in the tank and, if retained after draining, should be used the next day preferably. The procedure to empty the tank is as follows:

1. Position a container of adequate capacity below the level of the bottom of the main tank and put the free end of the drain hose into the container.
2. OPEN the **Drain** valve until all liquid has been drained from the fogger.
3. CLOSE the **Drain** valve and stow the drain hose.
4. Store or dispose of the product mix drained from the fogger according to the instructions on the label and statutory requirements.

4.6 Flushing of Fogger

The fogger should be flushed out at the end of each fogging operation so as to remove product from the pipework, pump and atomisers. The machine is fitted with a 10 l capacity flushing tank to hold a suitable cleaning agent. Kerosene (diesel) should be used to flush oil or solvent based ULV formulations. Water should only be used to flush water miscible formulations. The fogger must always be flushed whilst in the treatment area so as to avoid contamination elsewhere. The procedure to flush the fogger is as follows:

1. Set the valves on the fogger as follows:
 - **Main Tank** valve CLOSED
 - **Flushing Tank** valve OPEN
 - **Drain** valve CLOSED
2. Drive the vehicle within the treatment area and fog about 2 l of liquid from the flushing tank, following the procedure in section 4.4 above. It is important that the vehicle should be moving at the normal operating speed whilst flushing so as to avoid applying a high concentration of contaminated flushing liquid in one place.

5 HEALTH & SAFETY

Legislation regarding the application of insecticides or other products that are potentially harmful to individuals or the environment varies considerably between countries. Operators using pest control products and equipment must ensure they are working within the regulations applicable to their area.

Irrespective of legislation, Micron Sprayers Limited advise the users of their equipment that all possible care must be taken to ensure the health and safety of the user and personnel in the vicinity of the fogging operation.

The following recommendations are for guidance only and do not exclude any statutory requirement:

1. The application of each product should follow the recommendations of the manufacturer. Extreme care should be taken to prevent product coming into contact with the operator or any target where contamination could have an adverse effect. This includes contact via skin, eyes or inhalation.
2. Ensure that the equipment is correctly calibrated for the product being used.
3. Suitable protective clothing, gloves, eye protection and masks must be worn when mixing or working with or near harmful products and operators must adhere to all relevant handling precautions and regulations.
4. Hearing protection must be worn whilst standing within 2 m (6 feet) of the fogger when the engine is running. Hearing protection should not be worn by personnel in the vehicle cab.
5. The doors and windows of the vehicle cab should be kept closed whilst the fogger is operating.
6. The fogger should never be operated whilst the vehicle is travelling downwind (i.e. wind blowing from behind).
7. The entire fogger unit and all ancillary equipment must be thoroughly cleaned out after use or before maintenance.
8. All product residues must be safely stored or disposed of.
9. All used product containers must be safely disposed of in accordance with local regulations and requirements.
10. First aid and washing facilities must always be available and personnel must be trained in their use.

6 CALIBRATION

6.1 Calculation of Output from the Fogger

The total output (flow rate) from the fogger unit (both atomiser heads) must be calculated according to the average distance between successive vehicle fogging passes (track spacing) and the speed of the vehicle. These must be determined in advance and recorded in the treatment plan (see section 4.1 above).

IMPORTANT: The track spacing must always be used when calculating the output from the fogger to determine volume per unit area applied.

The area treated by the fogger per minute is calculated from the formula:

$$\text{Flow (l/ min)} = \frac{\text{Track spacing (m)} \times \text{Speed (Km/hr)} \times \text{Application rate (l/ha)}}{600}$$

The coverage for typical operating conditions is shown in Table 1.

If the product is diluted before use, the volume application rate refers to the total volume of the diluted mixture, not to the undiluted product.

Example:

$$\begin{aligned} \text{Track spacing:} & \quad 50 \text{ m} \\ \text{Vehicle speed:} & \quad 15 \text{ Km/hr} \\ \text{Application rate:} & \quad 0.5 \text{ l/ha} \\ \text{Flow from fogger (l/min)} & = \frac{50 \text{ m} \times 15 \text{ kph} \times 0.5 \text{ l/ha}}{600} \\ & = 0.625 \text{ l/min} \end{aligned}$$

The output from each of the two atomiser heads is half the total output from the machine ($0.625 \div 2 = 0.312$ l/min in the example above).

To calculate the coverage (ha/min treated) simply use the formula

$$\text{Coverage (ha/min)} = \frac{\text{Vehicle Speed (kph)} \times \text{Track Spacing (m)}}{600}$$

Speed (km/ hr)	Track Spacing (m)								
	20	30	40	50	60	70	80	90	100
10	0.33	0.50	0.67	0.83	1.00	1.17	1.33	1.50	1.67
12	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00
14	0.47	0.70	0.93	1.17	1.40	1.63	1.87	2.10	2.33
16	0.53	0.80	1.07	1.33	1.60	1.87	2.13	2.40	2.67
18	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70	3.00
20	0.67	1.00	1.33	1.67	2.00	2.33	2.67	3.00	3.33
22	0.73	1.10	1.47	1.83	2.20	2.57	2.93	3.30	3.67
24	0.80	1.20	1.60	2.00	2.40	2.80	3.20	3.60	4.00
26	0.87	1.30	1.73	2.17	2.60	3.03	3.47	3.90	4.33
28	0.93	1.40	1.87	2.33	2.80	3.27	3.73	4.20	4.67
30	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00

Table 1 – Coverage of Fogger in Hectares/minute

6.2 Adjustment of Output from the Fogger

Liquid is delivered to the atomiser heads by a positive displacement gear pump. The speed of the pump (and hence the flow rate) is set by an electronic regulator in the control box in the cab. The flow rate is adjusted by a 10-position rotary

switch. A guide to total flow expected from the fogger (i.e. from both atomiser heads) for each of the switch positions is shown in Tables 2 and 3 below:

Switch Position	Total Flow (l/min) Water-based	Total Flow (l/min) Oil-Based
1	0.07	0.15
2	0.11	0.20
3	0.17	0.25
4	0.26	0.35
5	0.35	0.45
6	0.45	0.55
7	0.63	0.71
8	0.83	0.92
9	1.01	1.11
10	1.34	1.41

Table 2 – Expected flow from atomisers (with series 39 high flow pump head)

Switch Position	Total Flow (l/min) Water-based	Total Flow (l/min) Oil-based
1	0.075	0.090
2	0.095	0.115
3	0.125	0.150
4	0.160	0.205
5	0.210	0.250
6	0.265	0.320
7	0.350	0.420
8	0.450	0.535
9	0.540	0.630
10	0.700	0.790

Table 3 – Expected from atomisers (with series 20 low flow pump head)

To ensure accurate calibration the flow from each atomiser head should be measured before use with the product to be used. The procedure to measure the output is as follows:

1. Set the **Flow** switch on the control box to the setting that gives the flow rate closest to the required total output from the fogger.

2. Put at least 10 l of the product to be fogged into the product tank.
3. Adjust both atomiser heads to their lowest vertical position (i.e. both heads pointing downwards below the horizontal).
4. Start the engine of the vehicle and leave it running during the calibration check. This is to ensure that the vehicle battery is being charged and its voltage is the same as when driving.

IMPORTANT: The engine of the fogger must NOT be run during calibration.

5. Set the **Pump** switch on the control box to ON.
6. Place or hold a bucket or other large container under each atomiser head.
7. Press and hold the **Calibrate** switch on the box at the right hand side of the fogger (see Fig. 4) until a steady stream of liquid comes from each atomiser head.

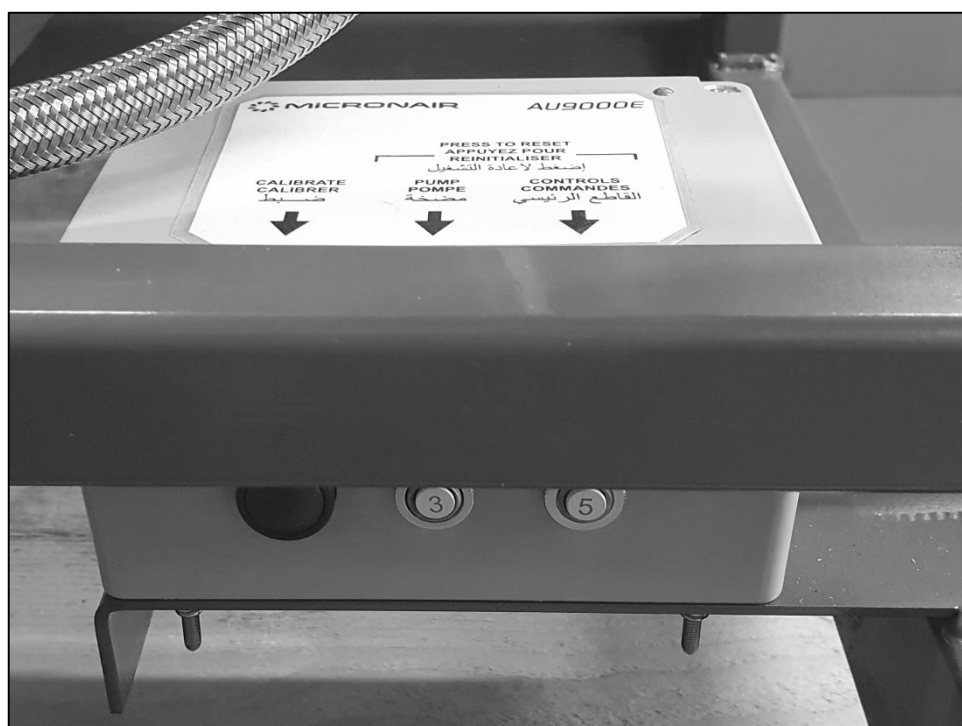


Fig. 4 – Calibration Switch on Junction Box

8. Place a graduated jug or measuring cylinder under each atomiser head and collect liquid for a measured time (typically 1 or 2 minutes, depending upon the flow rate and the size of the measuring container). See Fig. 5.
9. Release the **Calibrate** switch.
10. Check the volumes of liquid collected. The amounts in each container should not differ by more than about 10%. Put the liquid from both heads into one graduated jug or measuring cylinder and measure the total volume collected. Divide this by the time for the measurement to obtain the total flow rate from the fogger.

11. Compare the measured flow rate with the rate required for the application rate of the product mix (see section 6.1 above). If there is a significant difference adjust the FLOW switch to a higher or lower setting and repeat steps (6) – (10) above.

IMPORTANT: Wear gloves, protective clothing and eye protection when calibrating the fogger. Return liquid collected from the sprayheads to the main tank and wash all measuring containers etc after use.



Fig. 5 – Flow Calibration Check

7 MAINTENANCE

7.1 General



The AU9000E vehicle mounted ULV cold fogger is constructed from durable, chemical resistant materials and will give long service if it is correctly used and maintained. In addition to the specific maintenance instructions in the sections below, the following procedures must be followed:

1. The product tank must be emptied after use if the fogger is not to be used again within a period of 12 hours. See section 4.5.
2. The fogger must be flushed after each fogging operation and before it is put into long term storage between seasons. See section 4.6.

IMPORTANT: ALWAYS Make sure fuel valve is CLOSED after use and no fuel left in tank before storage.

3. All external surfaces of the fogger should be cleaned after use to remove any chemical residues, dust etc. The machine should normally be cleaned with a cloth soaked with water and detergent. In the event of severe contamination with oil-based chemicals, a cloth soaked in kerosene or diesel can be used first. Do not use a high-pressure hose or steam cleaner as this could force water into electrical and other vulnerable components.

IMPORTANT: Wear gloves and eye protection when cleaning the fogger and dispose of contaminated materials safely.

4. The fogger should be protected from rain and prolonged direct sunlight when not in use, either by parking the vehicle under cover or by covering the machine with a protective sheet.
5. The fuel tank should be emptied if the fogger is not to be used for more than one month. This can be done by closing the fuel valve, removing the brass drain screw at the bottom of the carburettor float chamber and then opening the valve to drain the fuel into a suitable container. The brass drain screw should then be refitted.
6. After emptying the fuel tank, the engine should be run to use up all fuel in the pipework and carburettor. The procedure is as follows:
 - i. Start the engine normally (see section 4.3).
 - ii. Slowly move the red combined **Fuel Valve** and **Ignition** lever on the engine towards the CLOSED ( O) position until the Ignition switch just operates. Before the engine stops, move the lever back slightly so that the engine continues to run.
 - iii. Wait for all fuel in the carburettor and hoses to be exhausted and for the engine to stop.
 - iv. Move the red combined **Fuel Valve** and **Ignition** lever to the fully CLOSED ( O) position.

7.2 Engine

Full maintenance instructions for the Briggs and Stratton Vanguard engine are given in the engine Owner's Manual supplied with each fogger. Additional information will be found on the Briggs & Stratton web site at <http://www.vanguardengines.com/engines/Single%20Cylinder/vanguard-100-gross-hp/>

The following maintenance schedule is applicable to engines operating in a typical urban environment. Service intervals should be reduced when operating in dusty conditions.

Item	Action	Normal service interval – carry out action at each calendar interval or number of operating hours, whichever comes first				
		Each use	First 5 hours	Every 25 hours or 1 yr	Every 50 hours or 1 yr	Every year
Engine oil	Check level	✓				
	Change		✓ [1]		✓ [1]	
Air cleaner	Check	✓				
	Clean			✓ [2]		
	Replace					✓ [3]
Spark plug	Check/clean				✓ [4]	
	Replace					✓
Running/idle speed	Check/adjust					✓ [5]
Valve clearance	Check/adjust					✓ [6]
Fuel filter	Check				✓	
	Replace					✓
Fuel line	Check & replace if necessary	Every 2 years [7]				

Table 4 – Engine Maintenance Schedule

Notes:

[1] Recommended oil for engine: SAE 10W-30 multigrade (suitable for -15 °C – +40 °C ambient temperature). Oil capacity 0.8 l (approx.).

[2] Reduce service interval to 1 month or 25 hours (or less if necessary) in dusty conditions.

[3] Replace paper element only (not foam pre-cleaner).

[4] Set gap to 0.030" (0.75 mm). Plug type Champion RC12YC/130-526, NGK BCPR5ES/130-914 or Denso Q16PR-U/130-954.

[5] Running speed 3200 RPM ± 150 RPM, idle speed 2000 RPM ± 150 RPM.

[6] Clearances: inlet 0.004" – 0.006" (0.10 – 0.15 mm), exhaust 0.009" – 0.011" (0.23 – 0.28 mm).

[7] Replace only with approved petrol (gasoline) fuel hose.

The engine oil level should be checked with the dipstick on the yellow filler cap – see Fig. 6.

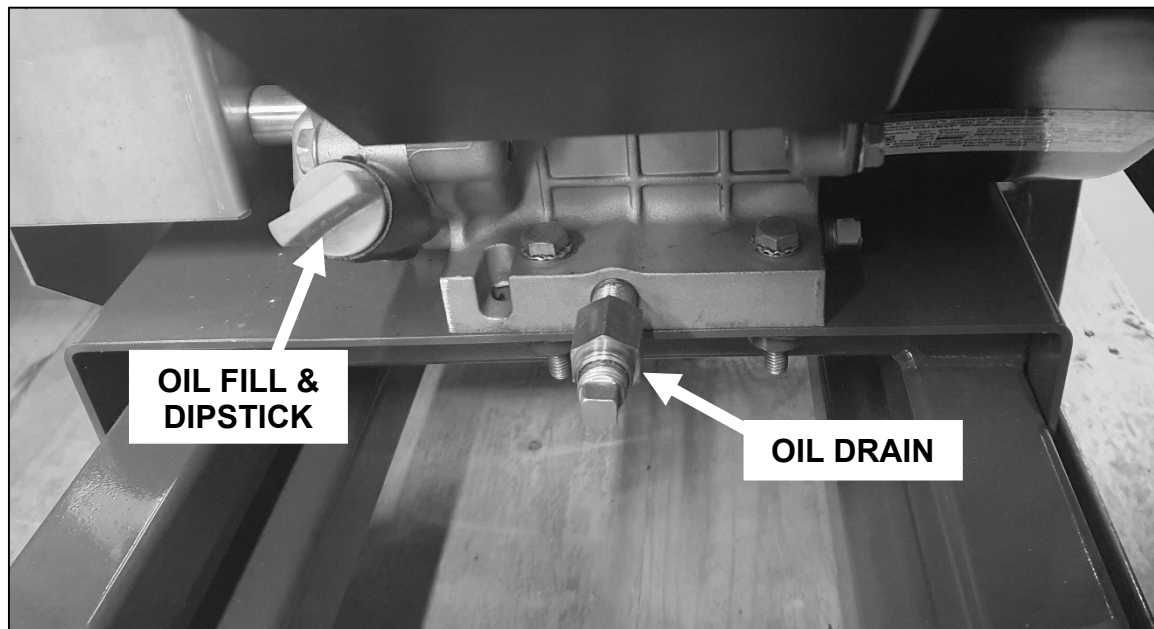


Fig. 6 – Engine Oil Filler and Drain

The procedure to drain the engine oil is as follows:

1. Run the engine for 2 – 3 minutes to warm the oil. Stop the engine.
2. Place a shallow container with a capacity of at least 1 litre under the oil drain fitting.
3. Remove the drain plug and allow all the oil to drain from the engine.
4. Replace the drain plug before re-filling the engine with oil.

7.3 Engine Throttle Linkage

The engine throttle is operated by an electric actuator via a stainless steel sprung rod. The throttle lever on the engine should move fully to its maximum position when the **Throttle** switch on the control box is set to MAX. The operation of the throttle linkage should be checked after each 50 hours of operation and any adjustment made as necessary. The procedure is as follows:

1. Connect the fogger to a battery or 12 V power supply. Do not run the engine of the fogger.
2. Move the **Throttle** switch on the control box from IDLE to MAX. Check that the throttle lever moves to the right.

3. Check for any free movement of the throttle lever on the engine. The lever should be held just against its end stop by the actuator rod.

7.4 Blower Drive Belts

The blower of the fogger is driven from the engine via a centrifugal clutch and two V-belts. The condition and tension of the belts should be checked after the first 20 hours of operation with new belts and every 50 hours thereafter. The procedure to check and tension the belts is as follows:

1. Remove the guards by unscrewing the M6 securing screws (shown without frame and tanks for clarity).

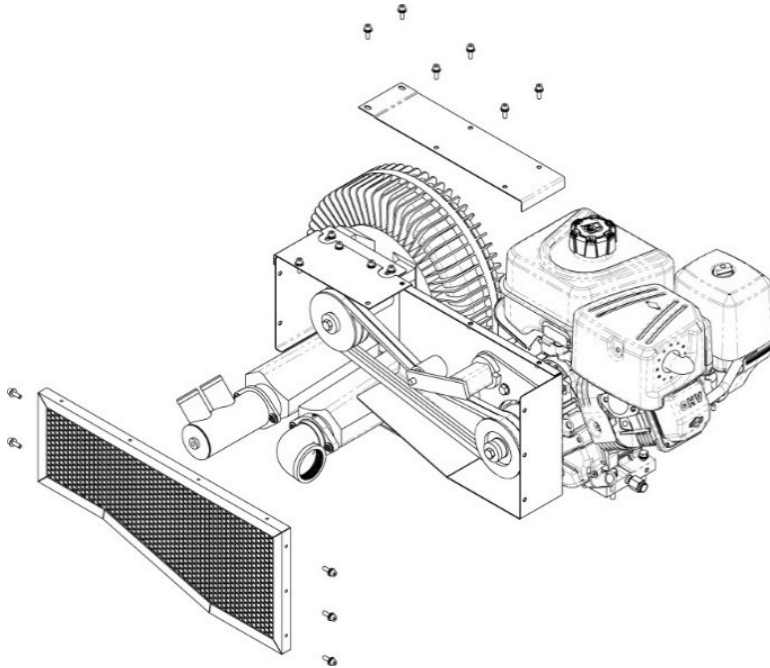


Fig. 7 – Removal of Belt Guards

2. Visually check the condition of the belts. Belts should be replaced if they show any signs of fraying or delamination or if they are running at the bottom of the grooves in the pulleys.



Fig. 8 – Belt Tension Check

3. Apply firm finger pressure (approx. 1 kg) to the centre of the lower part of each belt. Each should deflect by about 15 mm and the deflections both belts should be equal. See Fig. 7.
4. If the deflection of the belts is excessive, they must be tensioned as follows:

5. Slacken the belt tensioner retaining bolt. See Fig. 8.

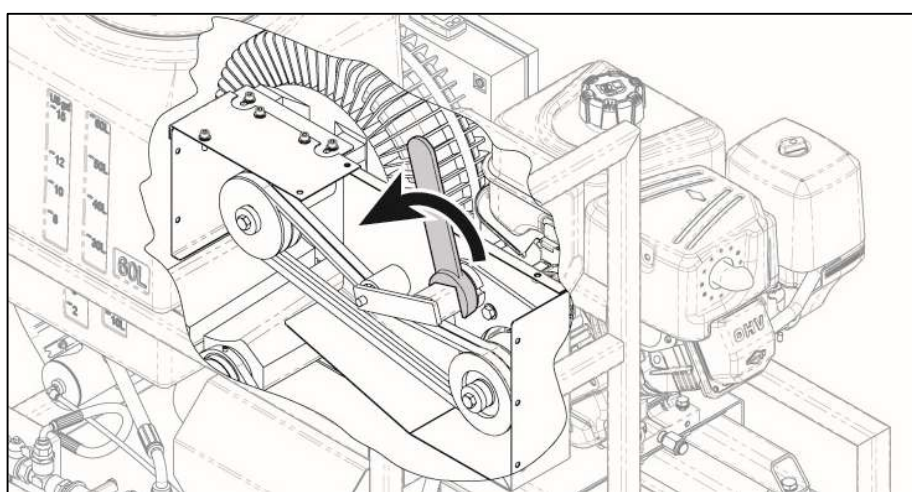
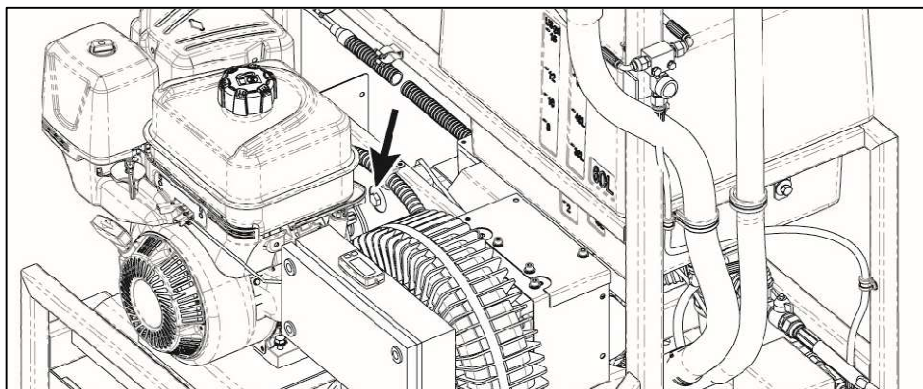


Fig. 9 – Belt Tensioner Adjustment

6. With an open ended or adjustable spanner, rotate the tensioner body counterclockwise to add pressure to the drive belts.
7. Hold pressure on the tensioner and re-tighten the retaining bolt.
8. Recheck the belt tension.
9. If there is significant difference in the tension of the 2 belts the belts should be replaced.

7.5 Air Filter

The air filter on the inlet to the blower should be checked at the beginning of each season and every 25 hours thereafter (or more frequently if operating in dusty conditions). The procedure is as follows:

1. Remove the filter cover, retained by 4 bolts.

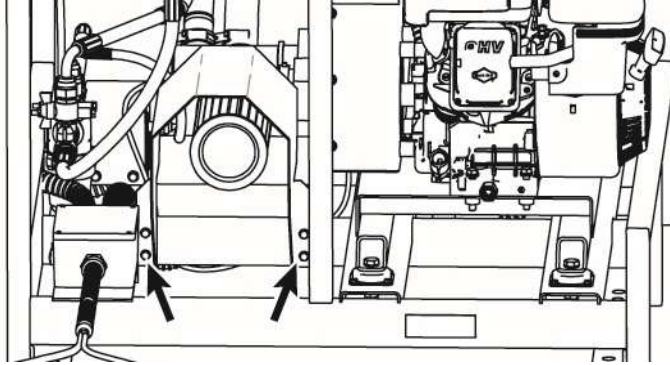


Fig. 10 – Filter Cover Bolt Locations

2. Unscrew the air filter counterclockwise

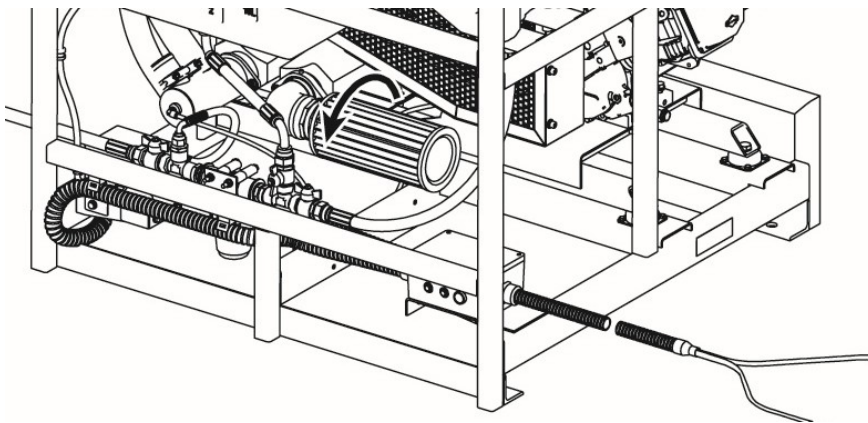


Fig. 11 – Air Filter (Cover Removed)

3. Clean the filter by blowing compressed air from the inside until all dust and contamination is removed from the element.

IMPORTANT: Only clean the filter with compressed air. Do not wash the element with water or solvent.

If the element is damaged or badly contaminated it must be replaced.

7.6 Atomiser Heads

The atomiser heads contain no internal moving parts. The following should be checked before use:

- 1 Condition of air hoses. Hoses should be replaced if they are worn or damaged.
- 2 Security of locking knobs at vertical and horizontal adjustments. The red fibre friction washers must be in place between the moving parts.

- 3 The drain holes at either end of the underside of each head should be clear. These holes can be checked and cleaned with a piece of small diameter wire.
- 4 The flow of liquid should be approximately equal ($\pm 10\%$) from both atomiser heads. Low flow from one head indicates blockage of the feed nozzle inside the vortex generator in one or both heads. To clean the feed nozzle, proceed as follows:
- 5 Unscrew the two bolts that retain the front plate stainless aperture on the atomiser head with an 8 mm socket or spanner. A second spanner is required at the rear to assist in removing these bolts.
- 6 Remove the entire front plate assembly exposing the feed nozzle. Place a small cloth or rag into the air tube inlet to prevent the nozzle accidentally getting dropped into the air tube.

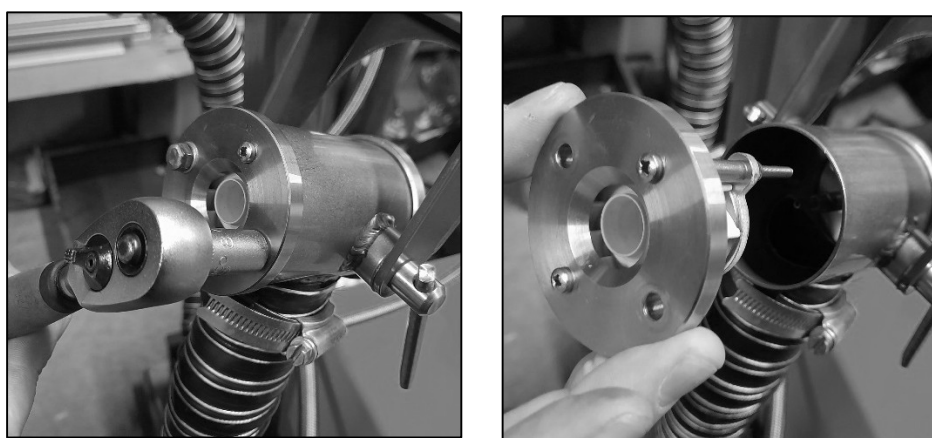


Fig. 12 – Removal of Atomiser Head Front Face

- 7 Remove the feed nozzle with a 5 mm extended socket or nut runner. Check for blockages and blow through with compressed air.



Fig. 13 – Removal of Atomiser Feed Nozzle

- 8 Inspect the front plate and vortical air shear atomiser assembly for any damage or blockages.
- 9 Re-assemble the component parts beginning with the feed nozzle and then atomiser assembly taking care to remove any cloth or rag inserted into the air tube opening.

- 10 Add a small amount of kerosene in the main tank, place containers under the heads, set the **Pump** switch to ON and press the **Calibrate** button until kerosene flows from the heads. Check that the flow from each head is unobstructed and that the flow rates are approximately equal.

7.7 Air Pressure Switch

The fogger is fitted with an air pressure switch to detect proper operation of the blower. The switch operates the **Air** indicator on the control box and also enables the pump. The pump will not run unless the air pressure switch is closed and the **Air** indicator is illuminated. If the indicator and pump do not operate correctly the switch must be adjusted as follows:

1. Open the junction box on the fogger frame by removing the four lid screws – see Fig. 4.
2. Start the engine of the fogger but do not operate the pump.
3. Set the **Throttle** switch on the control box to IDLE.
4. Locate the pressure switch in the junction box – see Fig. 10. Using a 2 mm hexagon (Allen) key rotate the adjusting screw until the **Air** indicator on the control box is just extinguished. Turning the screw anticlockwise will cause the indicator to illuminate and turning it clockwise will cause it to extinguish.
5. Set the **Throttle** control to MAX. The **Air** indicator should illuminate.
6. Rotate the adjusting screw clockwise until the **Air** indicator is just extinguished. Note the amount of rotation of the screw required for this adjustment.
7. Rotate the adjusting screw anticlockwise by half the amount noted in step (6).
8. Move the **Throttle** switch between the IDLE and MAX settings and check the **Air** indicator illuminates at the MAX setting and is extinguished at IDLE.

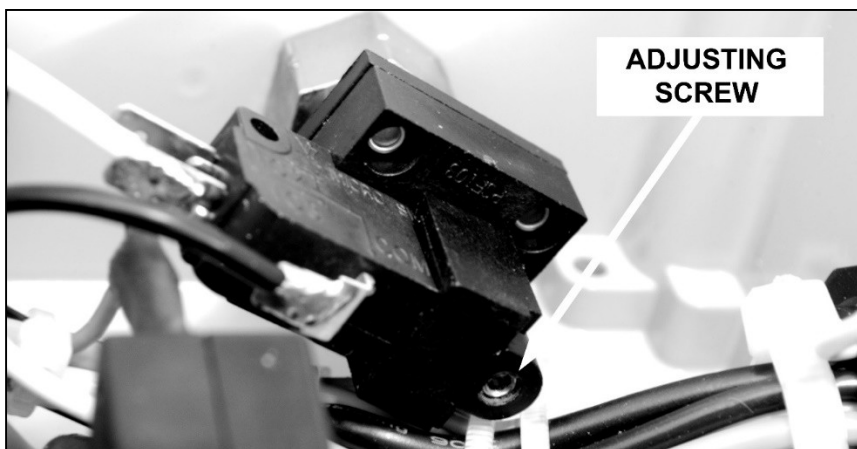


Fig. 14 – Air Pressure Switch in Junction Box

7.8 Pump, Pipework and Filter

The liquid pump used on the AU9000E fogger is a gear pump magnetically coupled to an electric motor. As the pump has a magnetic coupling there is no shaft seal to wear or leak. The pump head contains no user serviceable parts and should be replaced as a complete assembly.

All hoses have a PTFE lining with a braided stainless steel outer covering and crimped end fittings. Hoses cannot be repaired if they are damaged and must be replaced with the appropriate Micronair spare parts.

There is a 50 mesh filter in the liquid pipe between the tank and the pump (see Fig. 2). This should be checked and cleaned after the first month (or 20 hours) use of the fogger and then every three months or after each 50 hours of operation, whichever occurs first. The procedure to clean the filter is as follows:

1. CLOSE both tank isolating valves (see Fig. 2).
2. Place a shallow container with at least 0.5 l capacity under the bowl of the filter.
3. Unscrew the filter bowl and remove the filter screen.
4. Clean the filter screen and the inside of the filter bowl.
5. Check the condition of the O-rings around the filter screen and on the outside of the filter body (adjacent to the thread for the bowl). Replace any damaged or swollen O-rings.
6. Fit the screen inside the bowl and screw the bowl onto the filter body. Do not over-tighten the thread.
7. OPEN the isolating valve of the tank to be used.

IMPORTANT: Wear gloves and eye protection when working on the pump, filter or pipework. Re-use any clean product mix drained from the system by returning to tank and dispose of any contaminated residues, cleaning cloths etc safely.

7.9 Pump Pressure Switch

The fogger is fitted with a pressure switch to detect proper operation of the pump. The switch operates the **Pump** indicator on the control box when the pump is producing sufficient pressure to deliver liquid to the atomiser heads. If the **Pump** indicator does not operate correctly the switch must be adjusted as follows:

1. Locate the pressure switch mounted on the T-piece at the outlet of the pump – see Fig. 11. Slide the black cover away from the switch body, taking care not to disconnect the two wires.
2. Put some kerosene or water in the flushing tank. Close the **Main Tank** valve and Open the **Flushing** tank valve.

3. Put a bucket or container under each atomiser head.
4. Set the **Pump** switch on the control box to ON and the **Flow** switch to POSITION 1.
5. Using a flat screwdriver rotate the adjusting screw on the end of the switch until the **Pump** indicator on the control box is just extinguished. Turning the screw anticlockwise will cause the indicator to illuminate and turning it clockwise will cause it to extinguish.
6. Set the **Pump** control to ON and ensure that liquid is flowing from both atomiser heads. The **Pump** indicator should illuminate.

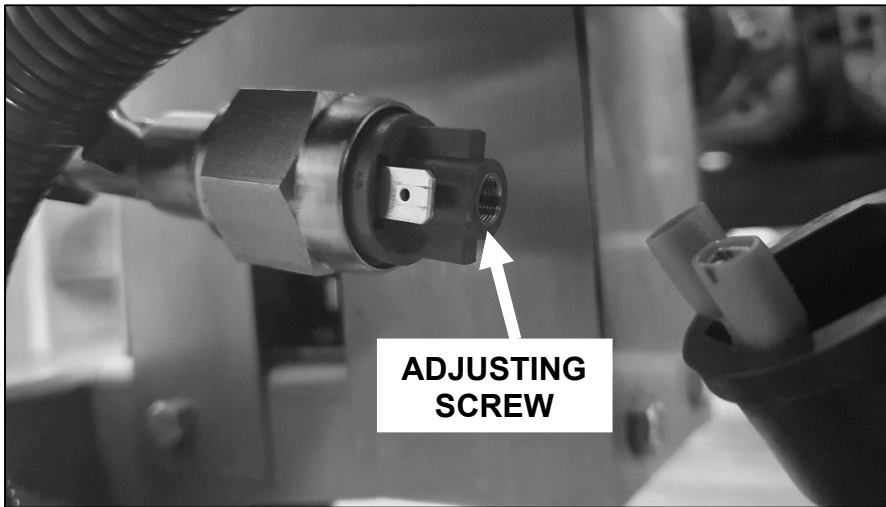


Fig. 15 – Pump Pressure Switch

7. Rotate the adjusting screw clockwise until the **Pump** indicator is just extinguished. Note the amount of rotation of the screw required for this adjustment.
8. Rotate the adjusting screw anticlockwise by half the amount noted in step (7).
9. Move the **Pump** switch between the OFF and ON settings and check the **Pump** indicator illuminates at the ON setting and is extinguished at OFF.

7.10 Fault Finding

Problem	Possible Cause	Action
Engine does not start	Choke OPEN (when using manual starter)	Set choke lever to CLOSED position until after engine starts
	Throttle set to IDLE	Set throttle switch to MAX
	Spark plug oiled, damaged or gap incorrectly set	Check and adjust, clean or replace spark plug

	Oil level low	Check oil level and add oil if necessary
	Carburettor flooded	CLOSE fuel valve, OPEN choke, set throttle to IDLE and pull starter cord 10 times. Leave for 5 minutes and then OPEN fuel valve and start engine normally
Engine starts but runs intermittently or stops	Choke left CLOSED	Set choke lever to OPEN
	Oil level too high	Drain oil to MAX level on dipstick
	Oil level low (level switch operates intermittently, especially when driving over rough ground)	Check oil level and add oil to MAX level on dipstick
	Blocked fuel filter	Replace fuel filter
	Fuel level low	Add fuel (note that at least 0.5 l of fuel is required for reliable operation when driving over rough ground)
	Fuel valve closed	Open fuel valve
	Blocked engine air filter	Clean engine air filter
No output from either atomiser head with pump ON (pump pressure indicator OFF)	Spark plug oiled, damaged or gap incorrectly set	Check and adjust, clean or replace spark plug
	Tank isolation valve CLOSED	OPEN valve
	Main liquid filter blocked	Clean main liquid filter
	Check valve or check valve filter blocked	Remove check valve and filter, clean and replace
	Pump motor not operating	Check voltage at pump leads. If voltage is present repair or replace pump, if not investigate electrical system and controller
Pump motor operating, but no flow from pump (magnetic pump coupling slipping)	Dismantle pump and check for internal blockage etc	

	Air pressure switch not operating (pump only operates when there is air pressure from blower)	Ensure that throttle switch is set to MAX Check operation of air pressure switch and adjust or replace if necessary
No output from either atomiser head with pump ON (pump pressure indicator ON)	Blockage in atomiser heads or pipework on outlet side of pump	Clear blockage
No or reduced output from one atomiser head	Atomiser feed nozzle blocked	Open head and clean feed nozzle (check both atomiser heads)
Long delay between switching pump ON and output from atomiser heads	Check valve is not stuck open Flow rate is too low	Remove check valve and clean Increase flow if application parameters permit

8 PARTS LISTS

The parts lists are provided in a second booklet and lists parts for the frame, tanks, blower, atomiser head, pump, pipework and control system. A full parts list and maintenance manual for the Briggs & Stratton 10 HP Vanguard engine can be downloaded from the B&S web site at:

<http://bsintek.basco.com/BriggsDocumentDisplay/default.aspx?filename=29jnxDX.WFzXFix2>

8.1 Frame and Tanks

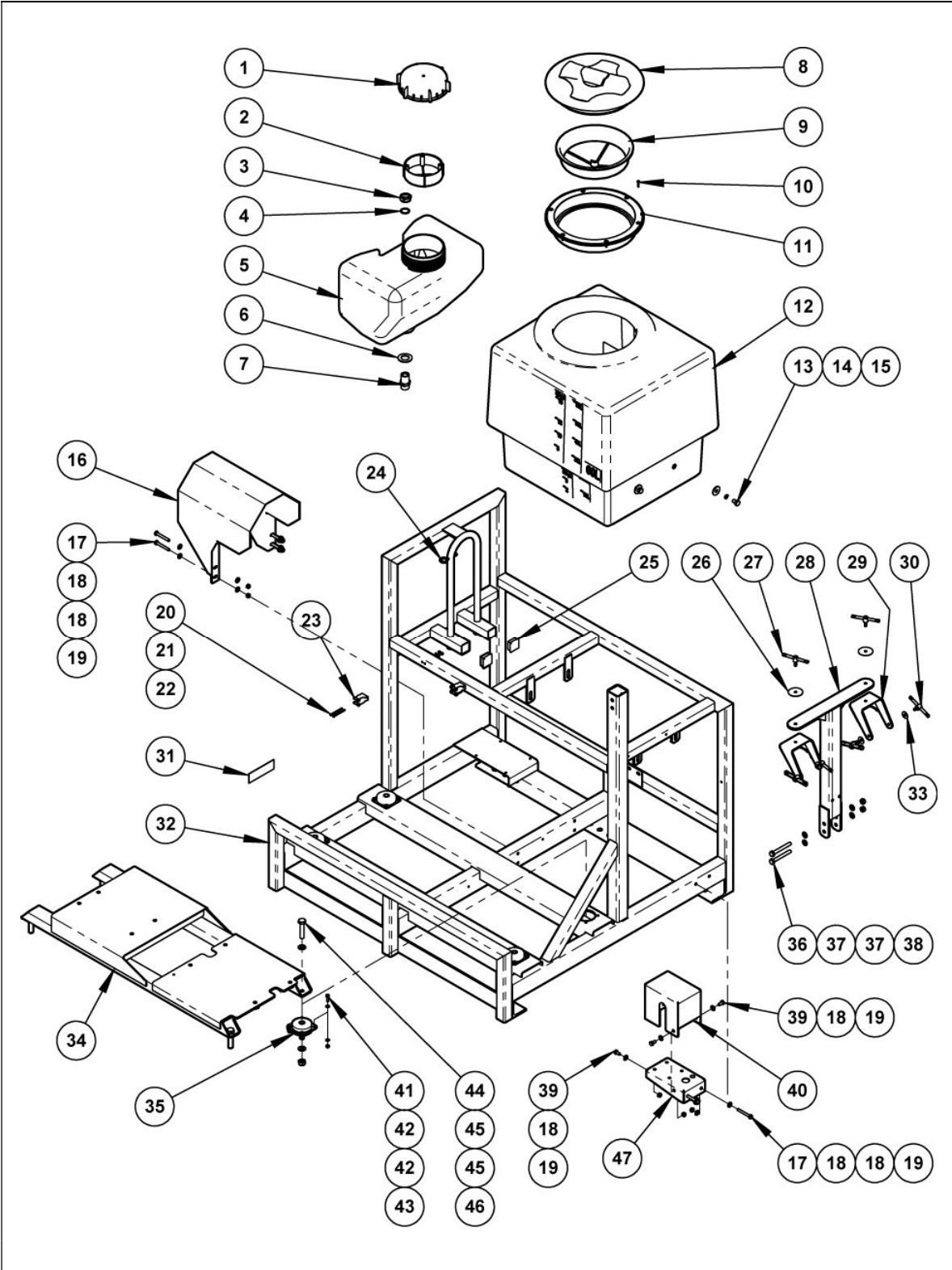


Fig 16 – Frame and Tanks

Frame and Tanks – Parts List

ITEM	PART NO.	DESCRIPTION	QTY.
1	5208A	CAP ASSEMBLY	1
2	5449	FILTER BOWL	1
3	6797	NUT 1/2" BSP	1
4	6721	O-RING. BS116, VITON. BLACK	1
5	CBP4084	TANK 8 LITRE	1
6	6027	WASHER, M20 FLAT	1
7	CBP2892	ADAPTER 1/2" X 1/2" BSP MM	1
8	AJ6201A	TANK LID AND AIR VENT	1
9	CBP4077	FILTER, BASKET, 187 DIA X 60 DEEP	1
10	CBP3896	SCREW, NO.6 X 22 MM	6
11	CBP4078	RING, TANK LID, 250	1
12	12832	TANK, 60L, HDPE, (YELLOW)	1
13	6897	SCREW, M8x12, SS	4
14	CBP2237	WASHER M8 SPRING	4
15	CBP3557	WASHER, M8, PENNY, 25 MM S/S	4
16	CBP4075	COVER, FILTER, AU9000E	1
17	6026	BOLT M6 x 45 HEX	6
18	5966	WASHER M6. PLAIN, SS	16
19	5984	NUT, M6 NYLOC	10
20	5977	SCREW M3 X 40 MM	4
21	5974	WASHER M3	4
22	5976	NUT M3 NYLOC	4
23	5960	CLIP ROLLER JAW (16–19 MM)	2
24	5671	CLIP R	1
25	5914	INSERT 30 X 30 SQUARE	2
26	EX7319	FIBRE WASHER, BRACKET MOUNTING, 1.5" DIA	2
27	EX7472	TOMMY SCREW, 15 MM, AU9000E	2
28	EX7300	MAST EXTENSION	1
29	EX7304	SPRAY-HEAD BRACKET	2
30	EX7473	TOMMY SCREW, 10 MM, AU9000E	4

Frame and Tanks Continued

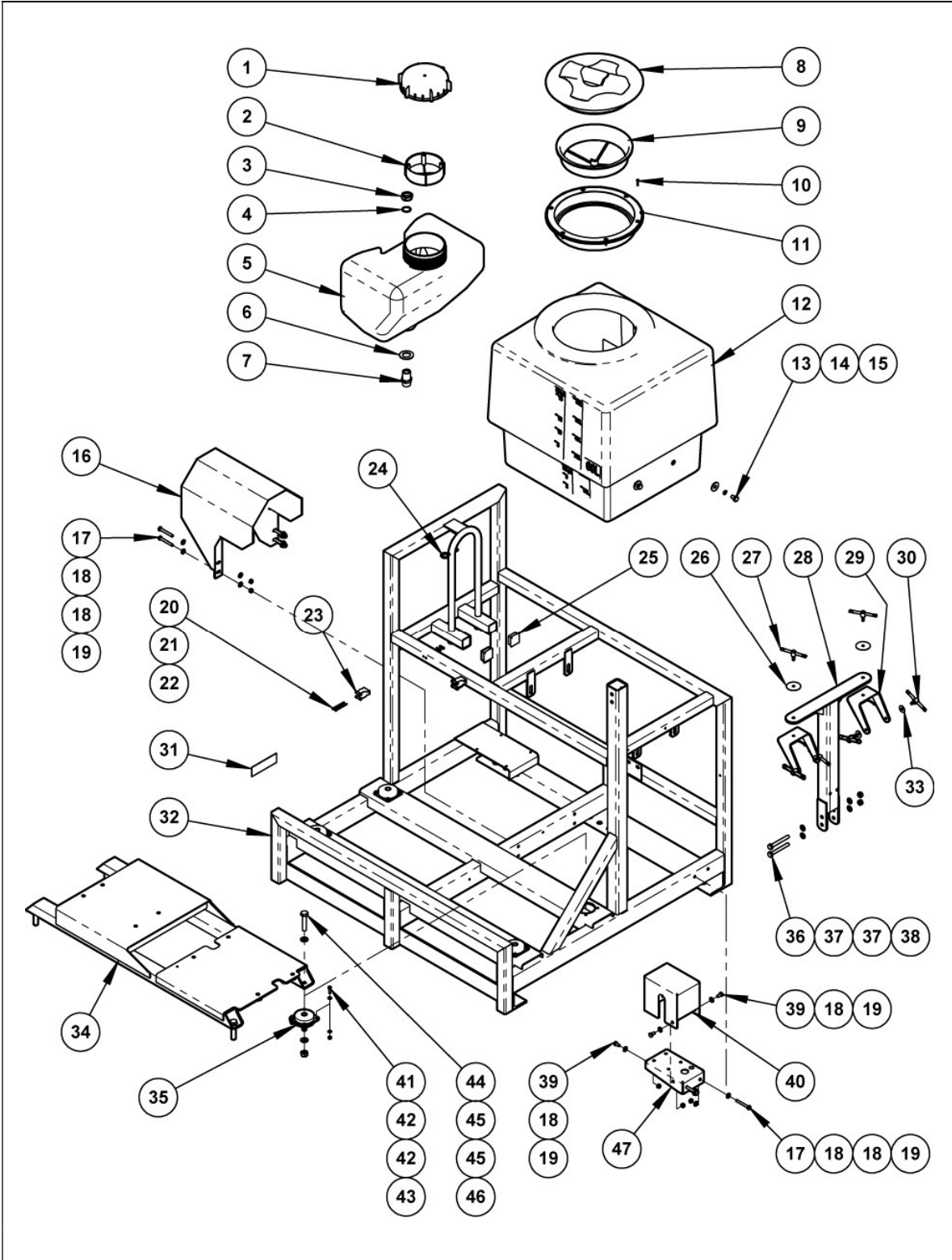


Fig. 17 – Frame and Tanks Continued

Frame and Tanks Continued – Parts List

ITEM	PART NO.	DESCRIPTION	QTY.
31	CBP2813	LABEL - SERIAL NUMBER PLATE	1
32	EX7664	FRAME, AU9000E	1
33	EX7318	FIBRE WASHER, 3/4" DIA	4
34	EX7655	BRACKET, ENGINE MOUNT, AU9000E	1
35	CBP4083	MOUNT, ANTIVIBRATION, AU9000E	4
36	CBP3527	BOLT, M8 x 65 MM, HEX HEAD	2
37	6900	WASHER, M8	4
38	CBP2267	M8 x 1.25 MM NYLOC NUT, STAINLESS STEEL	2
39	CBP2233	SCREW M6 x 12 SET, HEX SS	4
40	CBP4072	COVER, PUMP	1
41	CBP2209	SCREW M5 x 16	16
42	CBP2211	WASHER, M5, ST STL	32
43	CBP2210	NUT, M5 NYLOC, ST STL	16
44	CBP2235	BOLT, M10 x 50 MM HEX, S/S	4
45	CBP2228	WASHER, M10 PLAIN, ST STL	8
46	CBP2230	NUT, M10 NYLOC, S/S	4
47	CBP4071	BRACKET, PUMP	1
48	EX7402	LABEL SET, FRAME, AU9000E (not shown)	1

8.2 Engine and Blower

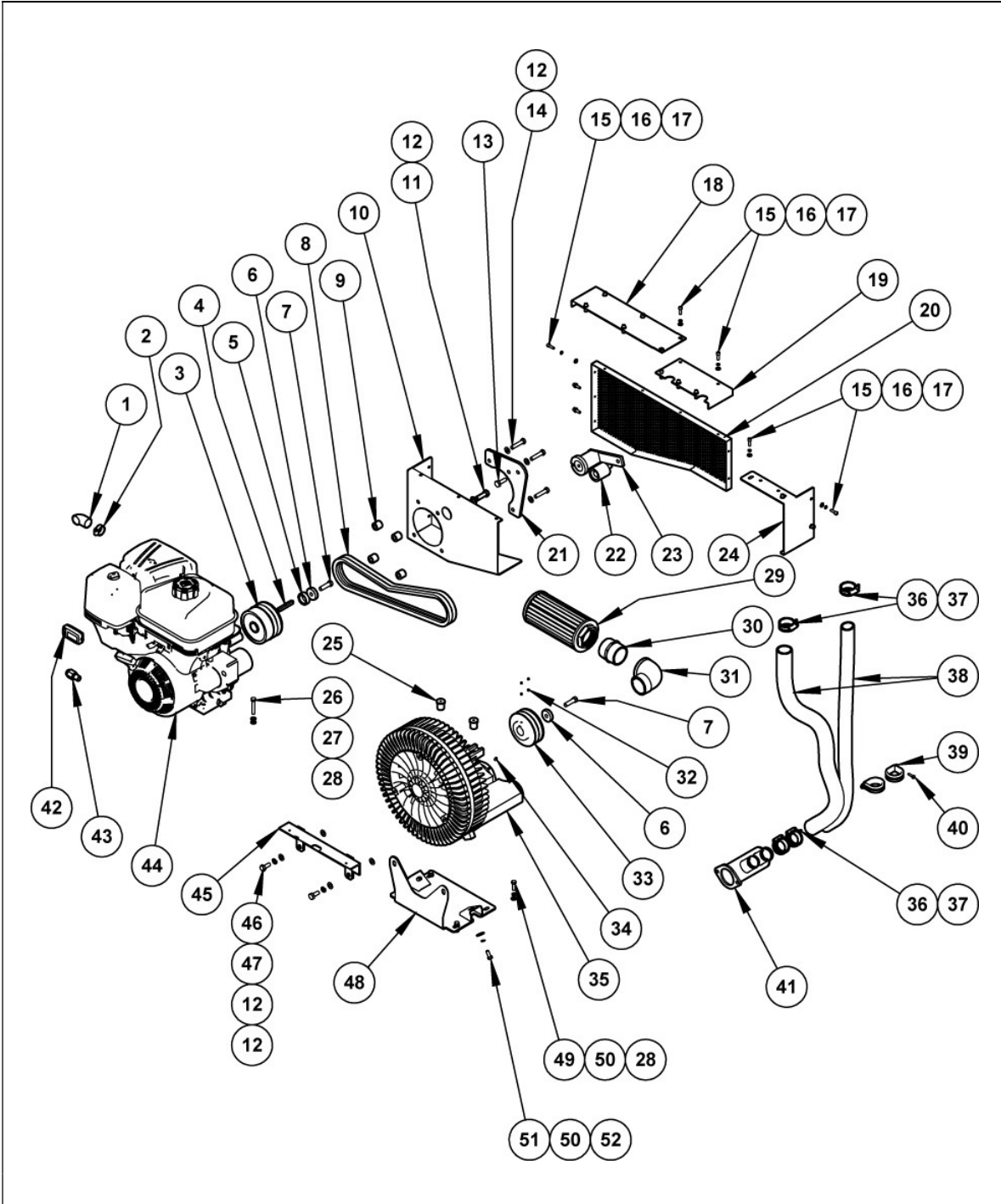


Fig. 18 – Engine and Blower

Engine and Blower – Parts List

ITEM	PART NO.	DESCRIPTION	QTY.
1	EX7636	EXHAUST ASSEMBLY, AU9000E	1
2	CBP13	CLIP, JUBILEE, 1 X 1 3.8"	1
3	CBP4057	CENTRIFUGAL CLUTCH, 1", TWIN GROOVE	1
4	EX6443	KEY, ENGINE SHAFT	1
5	-	SPACER, (SUPPLIED WITH CLUTCH - ITEM 3)	1
6	EX7331	SPACER BUSH, ENGINE AND BLOWER SHAFT	2
7	CBP2807	BOLT, 7/16" x 20 UNF, 1.5" LONG, HEX HEAD	2
8	CBP4085	BELT 'V', SPA 1120	2
9	EX7614	SPACER, FAN-BELT TENSIONER, AU9000E	4
10	CBP4067	BRACKET, RH, FAN-BELT GUARD, AU9000E	1
11	EX7635	BOLT, 3/8" UNC x 35 MM SS, HEX	1
12	CBP2228	WASHER, M10 PLAIN, ST STL	8
13	6293	SCREW, M10x30, HEX HD.	1
14	CBP3856	BOLT 3/8" UNC X 45 MM	3
15	CBP3530	M6 x 20 SKT-HD SCREW	16
16	CBP2429	WASHER, M6, SPRING COIL	16
17	5966	WASHER M6. PLAIN, SS	16
18	CBP4070	COVER, BELT TENSION, AU9000E	1
19	CBP4069	COVER, BELT INSPECTION AU9000E	1
20	EX7613	COVER, FRONT, FAN-BELT GUARD, AU9000E	1
21	CBP4066	PLATE, BELT TENSIONER, AU9000E	1
22	CBP4087	ROLLER, BELT TENSIONER	1
23	CBP4086	TENSIONER, BELT	1
24	CBP4068	BRACKET, LH, FAN-BELT GUARD, AU9000E	1
25	EX7615	SPACER, FAN-BELT COVER, AU9000E	2
26	CBP3540	M8 x 60 MM, HEX HEAD, BOLT	4
27	6301	WASHER, M8, SHAKEPROOF, EXTERNAL, SS	4
28	6900	WASHER, M8	8
29	CBP4059	FILTER, AIR, 2" BSPF	1
30	CBP4081	COUPLING, NIPPLE, 2" BSPT M-M,	1

Engine and Blower Continued

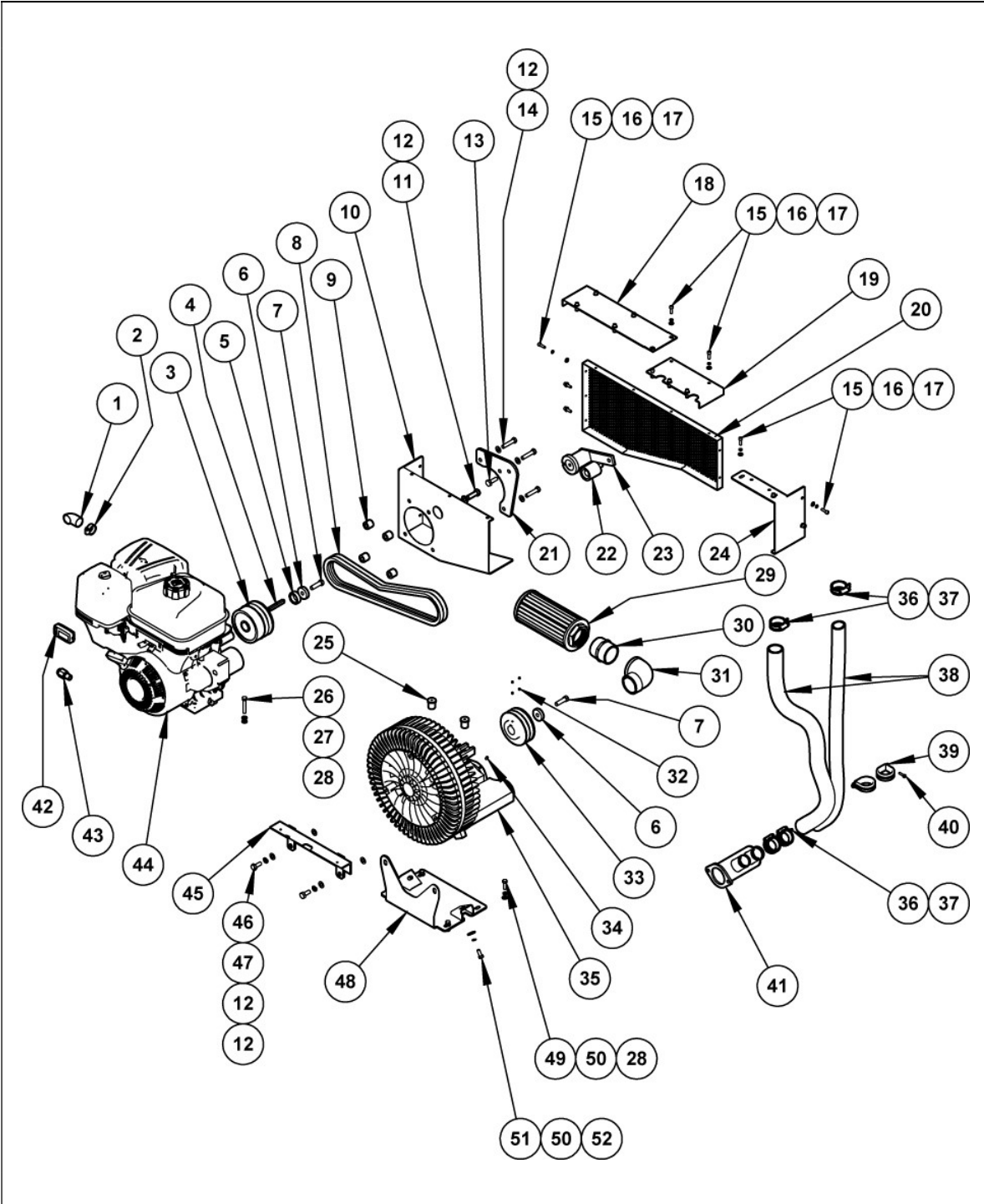


Fig. 19 – Engine and Blower Continued

Engine and Blower Continued– Parts List

ITEM	PART NO.	DESCRIPTION	QTY.
31	CBP4080	ELBOW, 2", 90°, M-F, ST-STL	1
32	CBP3372	SCREW, GRUB M5 x 5	4
33	EX7627	PULLEY, 'V' - SPA, 100 PITCH DIA, MODIFIED	1
34	CBP1507	GRUBSCREW M6 x 10 SCK HD	1
35	CBP4058	BLOWER, SIDE CHANNEL, CCW, AU9000E	1
36	CBP15	JUBILEE CLIP, 2A	4
37	CBP4053	RUBBER SLEEVE	4
38	CBP3517	HOSE, 40 MM ID DUCTING NEOPRENE LINED	2
39	CBP3897	CLIP, P 45 MM BLACK STAINLESS STEEL P	2
40	CBP2093	M5 x 20 PAN HEAD SCREW	1
41	EX7621	TUBE, AIR OUTLET, AU9000E	1
42	CBP4100	TACHOMETER, RPM AND HOUR, ENGINE	1
43	EX7637	OIL DRAIN EXTENSION AU9000E	1
44	CBP3570	ENGINE, 10HP VANGUARD, ELECTRIC START	1
45	EX7625	BRACKET, MOUNTING, ACTUATOR	1
46	CBP2227	SCREW, M10x25 HEX HD, S/S (A2)	2
47	CBP2236	WASHER M10 SPRING	2
48	CBP4065	BRACKET, FAN MOUNT, AU9000E	1
49	10822	SCREW M8x25	4
50	CBP2237	WASHER M8 SPRING	6
51	CBP3528	SCREW M8 X 20 S/S	2
52	CBP3557	WASHER, M8, PENNY, 25MM S/S	2

8.3 Electrical Components

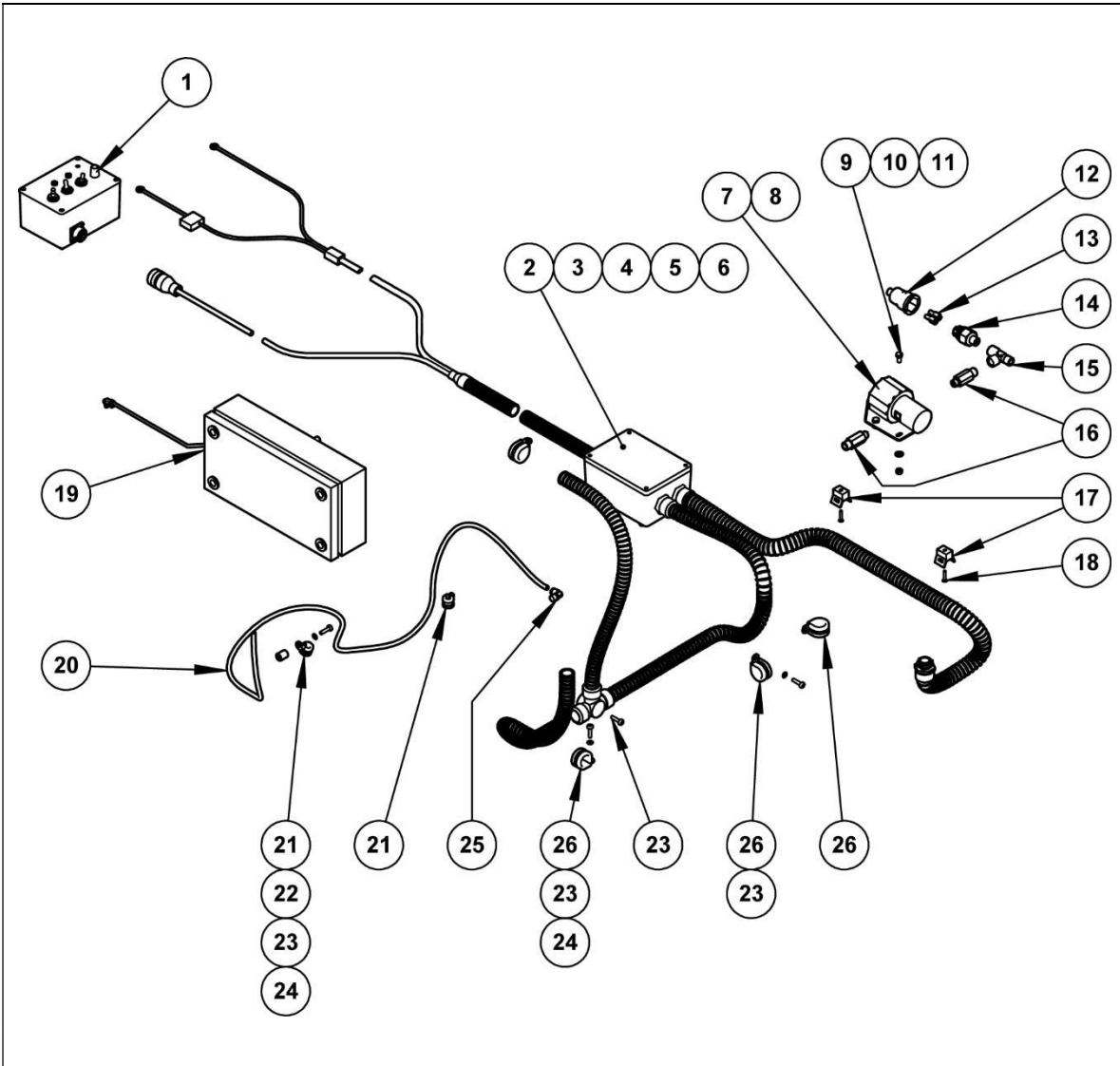


Fig. 20 – Electrical Components

Electrical Components – Parts List

ITEM	PART NO.	DESCRIPTION	QTY.
1	EX7657	CONTROL BOX ASSEMBLY, AU9000E	1
2	EX7656	JUNCTION BOX, AU9000E	1
3	CBP2607	M4 x 16 PAN HD POZI SCREW	4
4	6730	WASHER PLAIN M4	4
5	CBP2608	NUT, M4, NYLOC, STAINLESS STEEL	4
6	CBP3312_7	TERMINAL STRIP, 7 WAY	1
7	CBP4060	PUMP, AU9000E	1
8	CBP3910	PUMP(LOW_FLOW), AU9000E	1
9	CBP2233	SCREW M6 x 12 SET, HEX SS	4
10	5966	WASHER M6. PLAIN, SS	4
11	5984	NUT, M6 NYLOC	4
12	CBP2857	BOOT FOR PRESSURE SWITCH	1
13	CBP3226	RECEPTACLE, 6.35 X 0.8, RED	2
14	CBP2742	SWITCH, PRESSURE, 1-4BSPT, ADJUSTABLE,	1
15	CBP2766	TEE, 1/4"BSP, M-F-F TEE PIECE	1
16	EX7620	ADAPTOR, PUMP	2
17	CBP3904	CLIP, CONDUIT CABLE MOUNT	2
18	CBP3501	SCREW, M4 x 20 MM, CSK, POZI, A2 ST STL	2
19	See Chap. 8.4	ENCLOSURE, ACTUATOR ASSEMBLY	1
20	CBP2802	NYLON TUBE, 6 MM OD X 4 MM ID, BLACK	1
21	CBP350	CLIP, P 10 MM BLACK STAINLESS STEEL P	2
22	EX7619	SPACER, P CLIP	1
23	CBP2093	M5 x 20 PAN HEAD SCREW	4
24	CBP2211	WASHER, M5, ST STL	
25	CBP4091	ELBOW, 1/8" BSP X 6 MM	1
26	CBP3500	CLIP, P 25 MM BLACK STAINLESS STEEL P	4
27	CBP2288	GROMMET, SWITCH WIRE (not shown)	

8.4 Throttle Actuator Enclosure

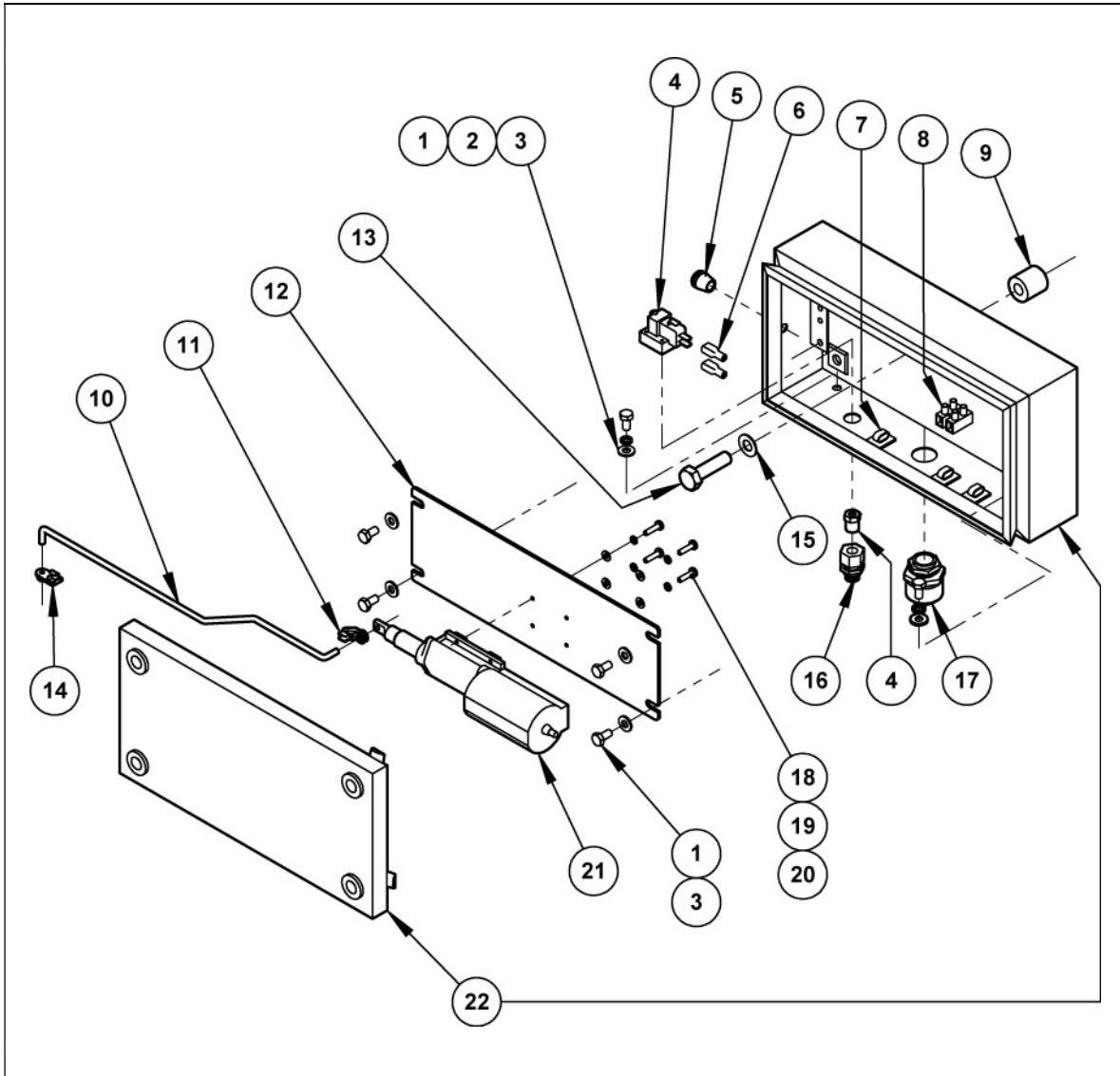


Fig. 21 – Throttle Actuator Enclosure

Throttle Actuator Enclosure – Parts List

ITEM	PART NO.	DESCRIPTION	QTY.
1	CBP2233	SCREW M6 x 12 SET, HEX SS	6
2	CBP2429	WASHER, M6, SPRING COIL	2
3	5966	WASHER M6. PLAIN, SS	6
4	EX7325	PRESSURE SWITCH ASSEMBLY	1
5	CBP2288	GROMMET 3915A	1
6	CBP4108	RECEPTACLE 4.8 x 0.5 RED	2
7	CBP3903	CLIP, 9MM OPEN ARM	3
8	CBP3312_2	TERMINAL STRIP, 2 WAY	1
9	EX7622	BUSH, ACTUATOR	1
10	EX7616	ROD, THROTTLE ACTUATOR AU9000E	1
11	CBP4090	LINKAGE CLIP	1
12	CBP4073	PLATE, MOUNTING, ACTUATOR ENCLOSURE	1
13	CBP2317	BOLT, M10x40 HEX HD, S/S (A2)	1
14	CBP4089	LINKAGE CLIP 6.2	1
15	CBP2228	WASHER, M10 PLAIN, ST STL	1
16	CBP3520	BULKHEAD FITTING, 6 MM	1
17	CBP2865	GLAND, CABLE, 20 MM DIA	1
18	CBP2607	M4 x 16 PAN HD POZI SCREW	4
19	CBP1566	WASHER, M4, SPRING COIL	4
20	CBP2609	WASHER PLAIN M4	4
21	CBP4062	ACTUATOR, LINEAR, 30 STROKE, 12 V DC	1
22	EX7617	ENCLOSURE, 300 x 150 x 120 (STEEL)	1

8.5 Plumbing

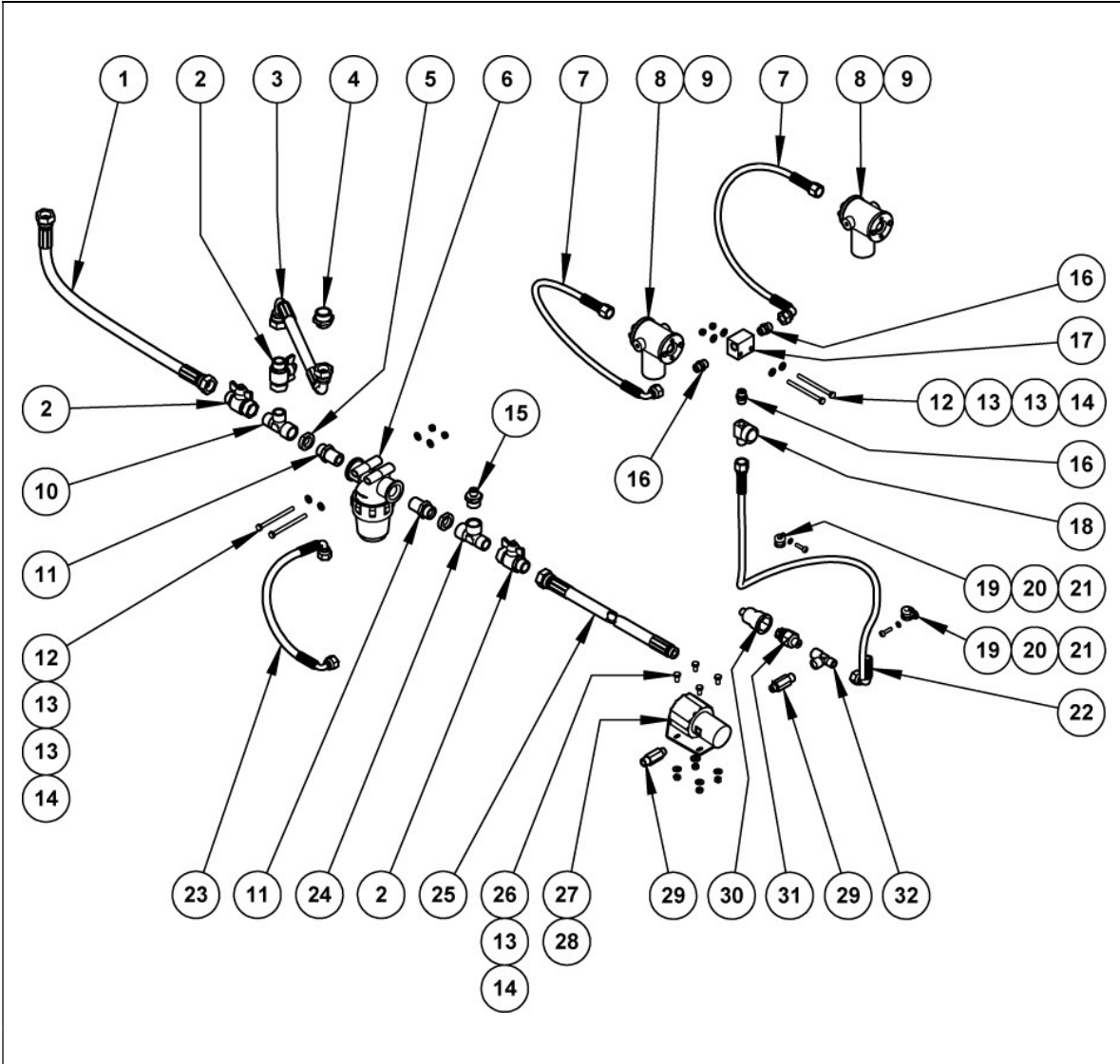


Fig. 22 – Plumbing

Plumbing – Parts List

ITEM	PART NO.	DESCRIPTION	QTY.
1	EX7629	HOSE, 1/2", FLUSHING TANK TO FILTER	1
2	5900	VALVE 1/2"BSPM X 1/2" BSPF T-BAR	3
3	EX7628	HOSE, 1/2", MAIN TANK	1
4	CBP2903	ADAPTER 1/2"BSP-3/4"BSP, M/M, BRASS	1
5	EX7624	LOCKING NUT, FILTER CONNECTOR	2
6	5881A	FILTER, 1/2" BSP (F), COMPLETE	1
7	EX7632	HOSE, 1/4", MANIFOLD TO SPRAY HEAD	2
8	EX7665	SPRAY-HEAD ASSEMBLY (HIGH FLOW)	2
9	EX7666	SPRAY-HEAD ASSEMBLY (LOW FLOW)	2
10	CBP2507	1/2" BSP F-M-M TEE PIECE	1
11	EX7623	ADAPTOR, 1/2" X 1/2" BSPM /M, FILTER	2
12	5968	BOLT M6x80 HEX	4
13	5966	WASHER M6. PLAIN, SS	12
14	5984	NUT, M6 NYLOC	8
15	EX7634	ADAPTOR	1
16	6777	ADAPTOR, 1/4" BSPP x 1/4"BSPT, M/M, BRASS	3
17	EX7316	MANIFOLD BLOCK	1
18	EX7469	CHECK VALVE, VITON DIAPHRAGM, AU9000E	1
19	CBP350	CLIP, P 10 MM BLACK STAINLESS STEEL P	2
20	CBP2093	M5 x 20 PAN HEAD SCREW	2
21	CBP2211	WASHER, M5, ST STL	2
22	EX7631	HOSE, 1/4", PUMP TO MANIFOLD	1
23	EX7630	Hose, 1/4", FILTER TO PUMP, AU9000E	1
24	CBP2874	1/2" BSP F-F-M TEE PIECE	1
25	EX7633	HOSE, DRAIN, FOGGER/AU8115 1/2" STRAIGHT	1
26	CBP2233	SCREW M6 x 12 SET, HEX SS	4
27	CBP4060	PUMP, AU9000E	1
28	CBP3910	PUMP (LOW-FLOW), AU9000E	1
29	EX7620	ADAPTOR, PUMP	2
30	CBP2857	BOOT FOR PRESSURE SWITCH	1
31	CBP2742	SWITCH, PRESSURE, 1-4BSPT, ADJUSTABLE	1
32	CBP2766	TEE, 1/4"BSP, M-F-F TEE PIECE	1

8.6 Spray Head High and Low Flow

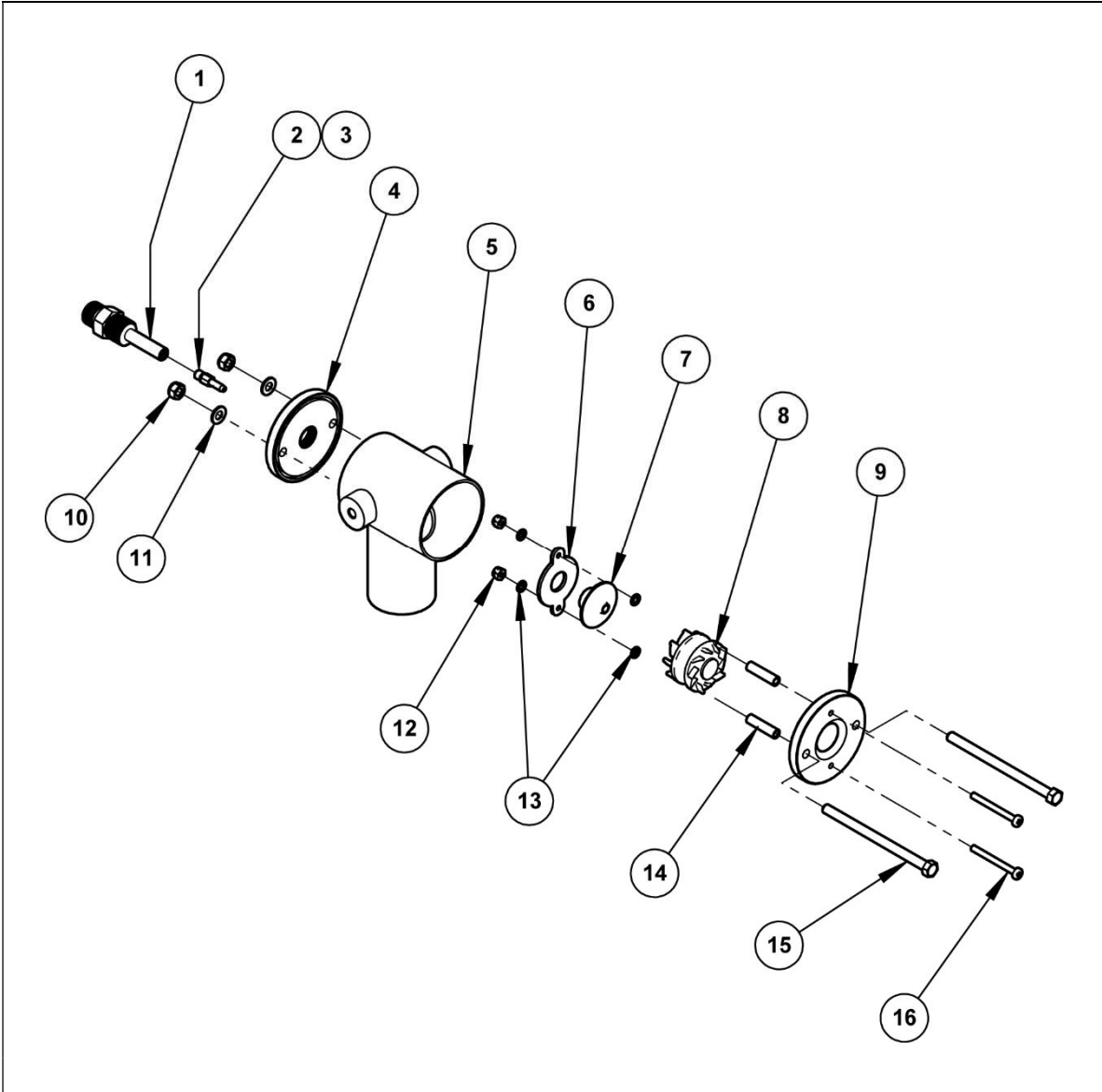


Fig. 23 – Spray Head High and Low Flow

Spray Head High and Low Flow – Parts List

ITEM	PART NO.	DESCRIPTION	QTY.
1	EX6658	ADAPTOR, LIQUID LINE FEED	1
2	T-4519-1.6mm	FEED NOZZLE, 1.6 MM, BRASS (HIGH FLOW)	1
3	T-4519-1.1mm	FEED NOZZLE, 1.1 MM, BRASS (LOW FLOW)	1
4	EX6657	REAR PLATE, INLET, THREADED	1
5	EX7266	BODY ASSEMBLY, HEAD	1
6	EX6659	PLATE, NOZZLE CONE HOLDER, AU9000E HEAD	1
7	EX6664	AIRFLOW CONE, HEAD, AU9000E	1
8	CBP3510	AIR BAFFLE	1
9	EX7267	FRONT PLATE, OUTLET	1
10	CBP2210	NUT, M5 NYLOC, ST STL	2
11	CBP2211	WASHER, M5, ST STL	2
12	5976	NUT M3 NYLOC	2
13	CBP3291	WASHER, M3 SHAKEPROOF	4
14	EX7328	SPACER	2
15	EX7355	SCREW, M5 x 80 MM, HEX HEAD, ST STL	2
16	EX6679	SCREW, M3 x 35, ST STL, PAN HEAD	2

8.7 Filter

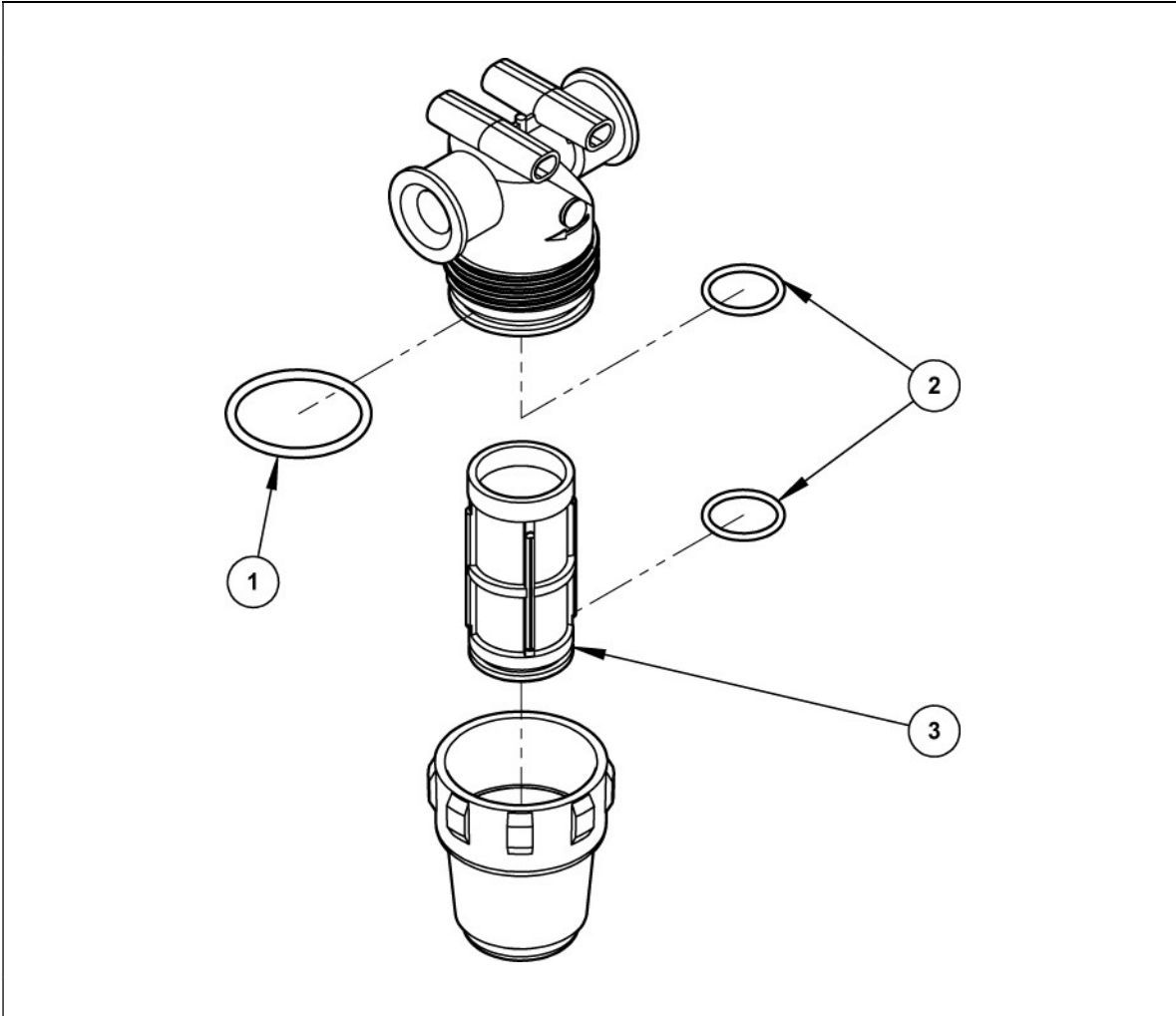


Fig.24 – Filter

ITEM	PART NO.	DESCRIPTION	QTY.
1	AJ6146	O' RING, BS226, VITON	1
2	5403	O RING, BS 121 VITON	2
3	LF5136	SCREEN	1

9 ELECTRICAL SCHEMATIC

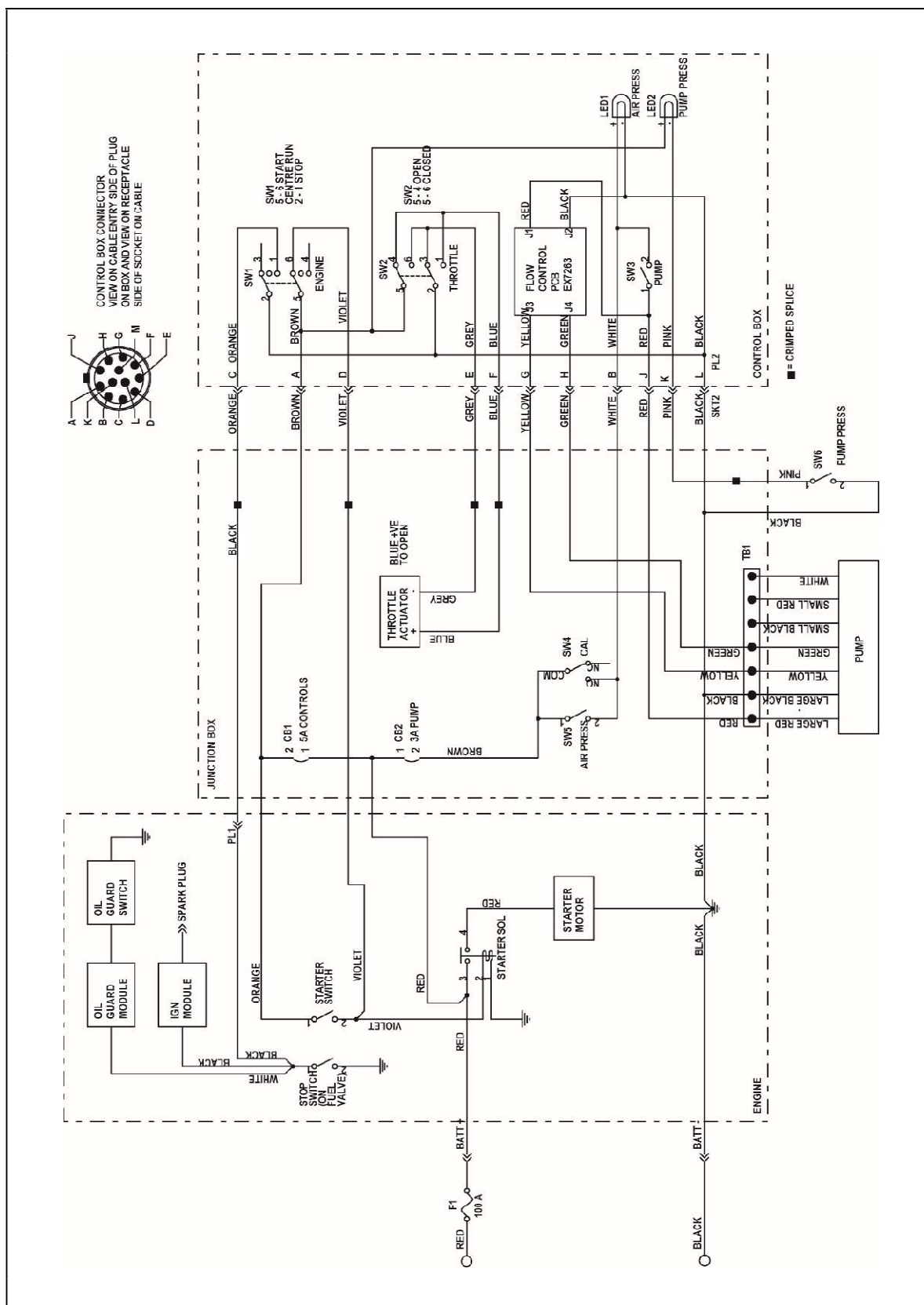


Fig. 25 – Electrical Schematic

10 WARRANTY

Micron Sprayers Limited give a one year warranty covering all parts of the fogger except the engine. The warranty period commences upon the delivery of the fogger to the customer. The warranty is subject to the following conditions:

1. The fogger must have been correctly installed on the vehicle and operated in accordance with the instructions in this handbook.
2. The fogger must have been maintained in accordance with the maintenance schedules in this handbook.
3. Only genuine Micron spare parts should have been fitted and no components should have been subject to unauthorised repair.
4. The fogger must have been emptied and cleaned after use and must have been kept under cover and not exposed to extreme weather conditions when not in use.

Micron Sprayers undertake to replace or repair (at its sole discretion) any components that fail as a consequence of faulty materials or workmanship. This warranty is limited to the repair or replacement of components only. Micron Sprayers Limited are not responsible for any labour costs associated with the replacement of faulty components.

The engine (but not the blower or centrifugal coupling) is covered directly by Briggs & Stratton's worldwide warranty. The local Briggs and Stratton service centre should be contacted in the event of a warranty claim relating to the engine.

Appendix A CONVERSION FACTORS

1 yard	= 3 feet	= 0.91 metre
1 metre	= 39.37 inches	= 1.09 yards
1 statute mile	= 0.87 nautical mile	= 1.61 kilometres
1 nautical mile	= 1.15 statute mile	= 1.85 kilometres
1 kilometre	= 0.62 statute mile	= 0.54 nautical mile
1 statute mile	= 1760 yards	= 5280 feet
1 nautical mile	= 2027 yards	= 6081 feet
1 kilometre	= 1094 yards	= 3282 feet
1 metre/sec	= 2.237 miles per hr	= 196.9 ft/min
1 acre	= 43560 sq feet	= 4840 sq yards
1 acre	= 4047 sq metres	= 0.40 hectare
1 hectare	= 107600 sq feet	= 11955 sq yards
1 hectare	= 10000 sq metres	= 2.47 acres
1 sq mile	= 640 acres	= 259 hectares
1 sq kilometre	= 247 acres	= 100 hectares
1 US gal	= 0.83 Imp gal	= 3.78 litres
1 Imp gal	= 1.20 US gals	= 4.54 litres
1 litre	= 0.26 US gal	= 0.22 Imp gal
1 US pint	= 16 US fl ounces	= 0.47 litres
1 Imp pint	= 20 Imp fl ounces	= 0.57 litre
1 US fl ounce/acre	= 1.04 Imp fl ounce/acre	= 73.04 ml/hectare
1 ml/hectare	= 0.0137 US fl oz/acre	= 0.0142 Imp fl oz/acre
1 US gal/acre	= 8 US pint/acre	= 9.45 litres/hectare
1 Imp gal/acre	= 8 Imp pints/acre	= 11.35 litres/hectare
1 litre/hectare	= 0.11 US gal/acre	= 0.081 Imp gal/acre
1 pound	= 16 ounces	= 0.45 kilogram
1 kilogram	= 2.20 pounds	= 35.3 ounces
1 ounce	= 28.35 grams	
1 pound/sq inch	= 0.068 atmosphere	= 0.067 bar
1 atmosphere	= 14.70 pounds/sq in	= 1.01 bar
1 bar	= 14.50 pounds/sq in	= 0.98 atmosphere
1 kilopascal	= 0.01 bar	= 0.145 pounds/sq in

Every care has been taken in the design of this equipment and the preparation of this Handbook. However, Micron Sprayers Limited cannot accept responsibility for errors or the consequences thereof. The user must satisfy himself that the equipment is suited to his needs, is performing according to his requirements and that all statutory requirements and regulations are being complied with.

