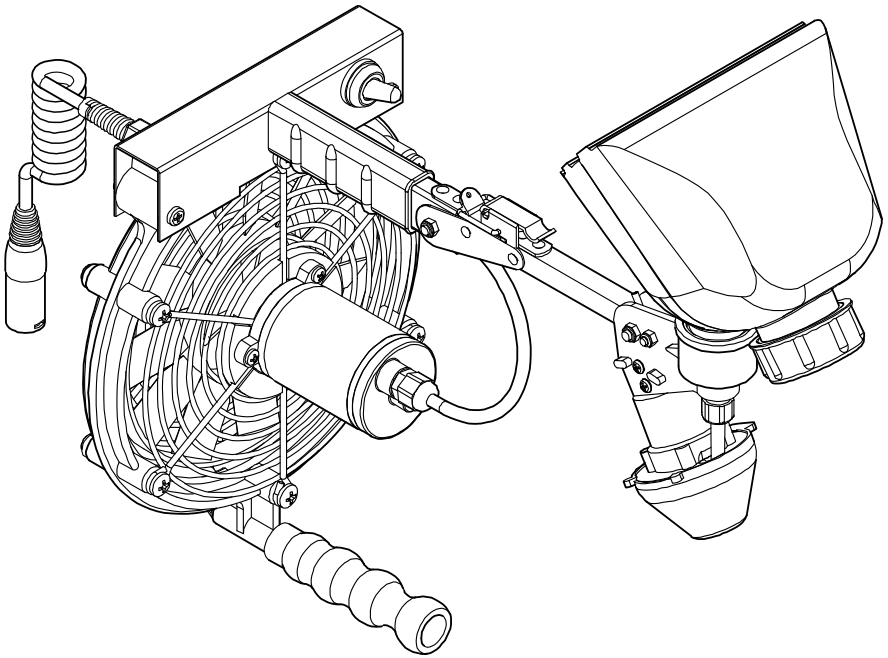




UlvaVac



Instruction Manual

Publication Part Number: 9010

Revision: 1

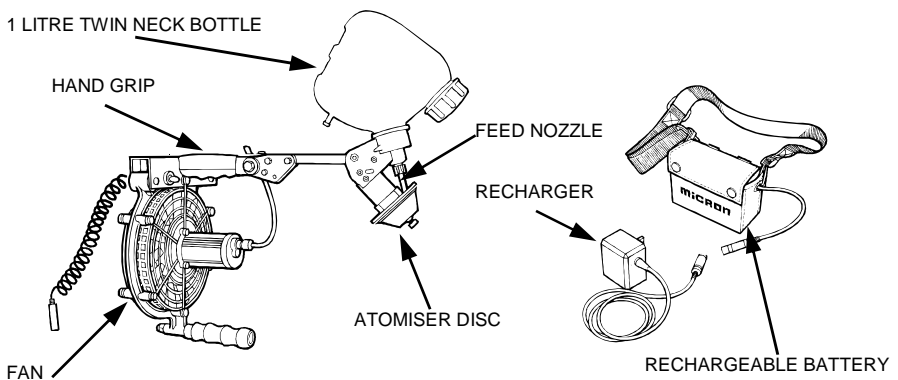
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DESCRIPTION

The UlvaVac is a professional spray applicator for poultry vaccination. The sprayer incorporates a spinning disc atomiser to control accurately spray droplet size, a process referred to as Controlled Droplet Application (CDA) which is essential for the efficient delivery of spray vaccine. Spray droplets are dispersed in a turbulent airstream to ensure even distribution to all birds. The sprayer consists of a one litre spray reservoir, colour coded liquid feed nozzles to control flow rate, atomiser spray head with spinning disc, electrically operated fan to disperse spray and 12V battery for power with recharging unit.

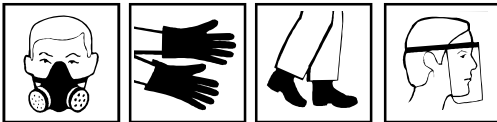
The UlvaVac can be used for vaccination of broilers, layers and turkeys and is recommended for vaccination against respiratory diseases such as Infectious Bronchitis, Turkey Rhinotracheitis and Newcastle Disease. Low spray volumes of 1-2 litres per house are normally applied allowing operators to treat up to 30,000 broilers, for example, in less than 20 minutes. The method of atomisation used by the UlvaVac gives precise control over droplet size, ensuring accurate delivery of vaccine to the eye and upper respiratory tract. Post-vaccinal reaction caused by the production of very small droplets is minimised. The precise control over droplet size also allows the use of low spray volumes which significantly reduces the time spent for both vaccine preparation and application, ensuring minimal disturbance to birds.



OPERATOR PROTECTION

Follow label and data sheet recommendations supplied with the vaccines to ensure operators are not exposed to potential eye and lung irritants during spraying.

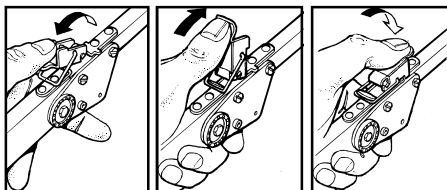
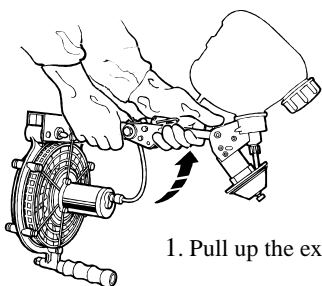
It is recommended that a filter face mask/respirator with goggles or eye shield, disposable overall and rubber boots are worn to maintain good hygiene.



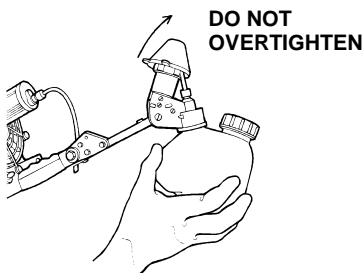
PREPARING FOR SPRAYING

WARNING: Sick birds should not be vaccinated. Seek professional help in this case.

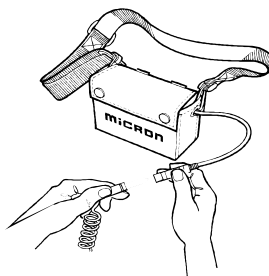
The sprayer is delivered in a folded form. To assemble ready for spraying:



1. Pull up the extension arm and lock in place, as shown.



2. Attach the bottle by screwing into the bottle holder. Remove the atomiser protective cover and check by hand that the atomiser disc spins freely.



3. Plug the sprayer into the battery and switch on to check smooth running of the atomiser disc and fan.

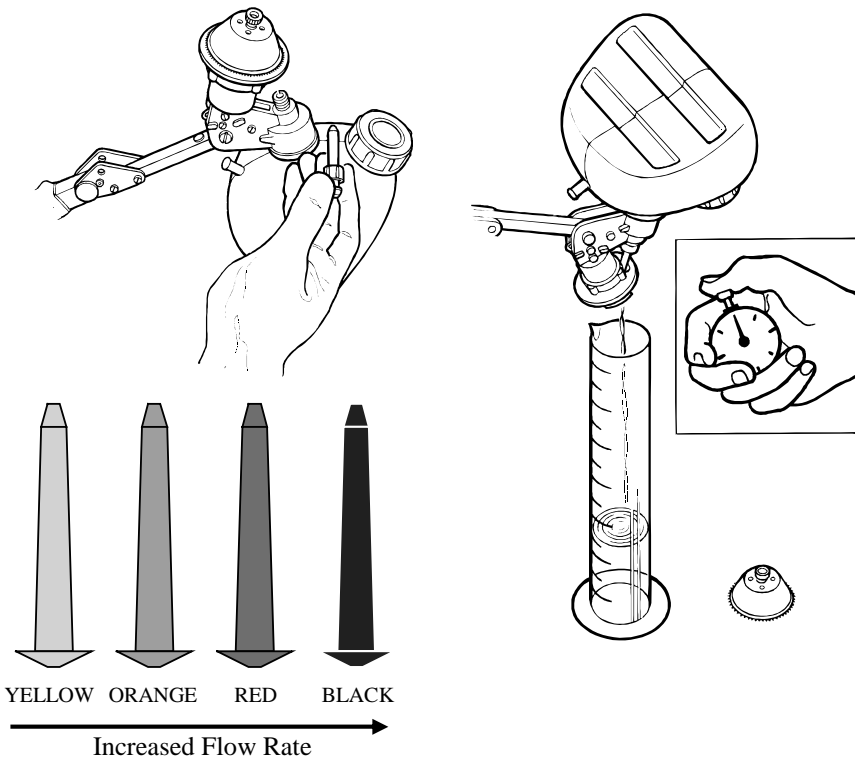
TIP: Before spraying for the first time with the UlvaVac operation should be checked using only water (see 'BEFORE SPRAYING').

CALIBRATION

The spray droplet sizes produced by the UlvaVac have been accurately measured. The sprayer is capable of producing a very uniform size range of droplets suitable for the delivery of respirable spray vaccines. Spraying should be carried out on a time and volume basis rather than solely a volume per thousand birds. The more time spent spraying the birds the better the vaccine coverage. However, the time allowed for spraying is determined by the length of time during which the shed/house ventilation can be inoperative.

Nozzle selection

Choose the appropriate nozzle required for your application or refer to recommendation from your vaccine supplier. To change nozzle and measure flow rate unscrew union nut and refit alternative nozzle. Measure output over 1 minute with disc removed.



Nozzle flow rates (with water) are:-

Nozzle	Flow Rate	Spray volume (ml) applied in		
		10 min	15 min	20 min
Yellow	45 ml/min in	450	675	900
Orange	60 ml/min in	600	900	1200
Red	90 ml/min in	900	1350	1800
Black	150 ml/min in	1500	2250	3000

Example 1:

To spray a house containing 30,000 ten day old broilers, depending on ambient temperature, the ventilation can be shut down for approximately 20 minutes without stressing the birds.

In 20 minutes the yellow nozzle will spray approximately 900 ml.

30,000 doses should be mixed in 900 ml of fresh distilled water and the vaccine sprayed on the birds for 20 minutes.

Example 2:

To spray a house containing 8,000 twelve week old broiler breeders, depending on ambient temperature, the ventilation can be shut down for approximately 20 minutes without stressing the birds.

In 20 minutes the yellow nozzle will spray approximately 900 ml.

8,000 doses of vaccine should be mixed in 900 ml of fresh distilled water and the vaccine sprayed on the birds for 20 minutes.

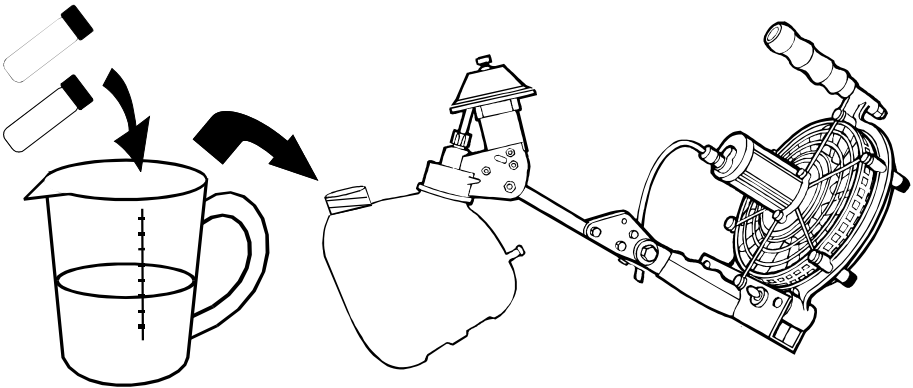
PREPARING THE VACCINE

Use a clean, disinfectant free, non-metallic calibrated jug for preparing the vaccine mixture. Only use fresh clean distilled or de-ionised water for mixing with vaccine.

Make sure there are adequate washing facilities available for personal cleaning after vaccination i.e. warm water for soap and disinfectant.

Ensure appropriate protective clothing and equipment is worn according to vaccine manufacturers instructions.

1. Read the label carefully and then follow the vaccine manufacturers instructions. If necessary take advice from the vaccine supplier or your veterinarian. Make sure you have a sufficient number of doses to treat all birds.
2. Calculate the volume of water required to vaccinate the birds according to nozzle used and time of application (see 'CALIBRATION').
3. If spraying for the first time carry out a trial run spraying the birds with water only to ensure you apply the correct volume.
4. Wash hands to make sure they are clean and free from soap and disinfectant. Measure volume of distilled or de-ionised water required in the jug.



5. Remove the metal caps from all vaccine bottles. Submerge the vaccine bottles one by one, remove rubber stoppers under the water and then rinse each bottle to remove all live vaccines before discarding empty bottle.
6. Transfer the mix to the spray bottle. Replace bottle cap.

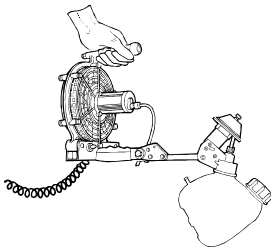
SPRAY VACCINATING

Before Spraying:

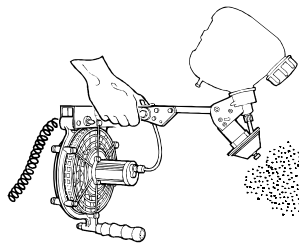
1. Wear recommended protective clothing (see 'OPERATOR PROTECTION').
2. Plan a route before spraying (see below).
3. Stand the sprayer on a firm, clean, flat surface and screw in the bottle.
4. Prepare vaccine mixture and add to the spray bottle (see 'PREPARING THE VACCINE').
5. Before spraying turn off all ventilation fans and dim the lights as low as possible whilst still being able to see obstacles in the shed/house. In naturally lighted houses it may be beneficial to vaccinate when darkness has fallen.

During Spraying:

6. To begin spraying: with the machine in the resting position, switch on the fan and atomiser and then turn the sprayer over to invert the bottom and commence liquid flow. Start walking along planned route. Hold the sprayer to one side and walk slowly through the birds.



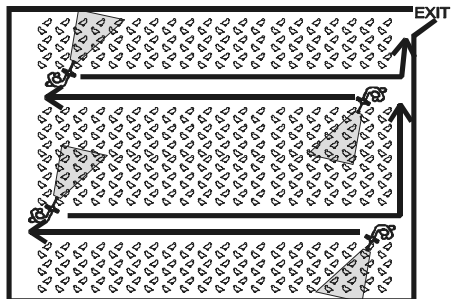
UlvaVac in Resting Position



UlvaVac in spraying position

Non-caged birds

1. Following a logical and systematic route up and down the house. Divide birds into groups whilst walking through them. Always walk towards the door. Move slowly through the birds with the machine held down at arms length directed slightly downwards at the birds (as a general guide, it is useful to aim the machine at birds approximately three metres in front of you).



2. As you walk hold the sprayer to one side covering a strip about three metres wide on each side of you. It is possible to see birds reacting by shaking their heads as the vaccine reaches them.
3. Continue walking through the birds until all the vaccine has been sprayed. Walk through the same birds more than once if necessary.

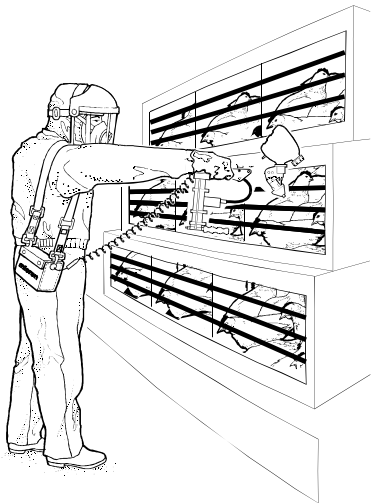


TIP: Where stocking densities are low, it may be necessary to pen birds into smaller areas in order to ensure ease of coverage.

Caged birds

Walk slowly along the front of each row of cages spraying directly at each cage. If possible spray from at least two metres away. It may be useful to walk through the house with the fan switched on but without vaccine whilst the ventilation is still in operation in order to clear as much dust from the cages prior to vaccination.

In order to minimise stress to the birds during hot weather it is preferable to carry out vaccination early in the day at the coolest time. Locking ventilation on full for a period of time prior to vaccination in order to lower the temperature may also be useful during periods of hot weather.

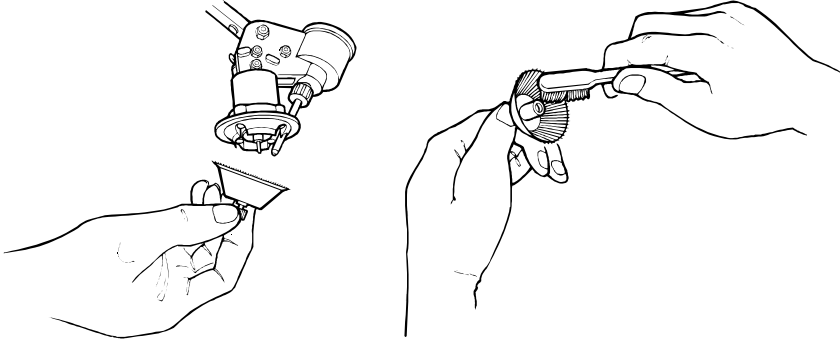


IMPORTANT: RESTORE VENTILATION AND LIGHTS IMMEDIATELY AFTER VACCINATING.

To stop spraying at any stage invert the sprayer to the resting position.

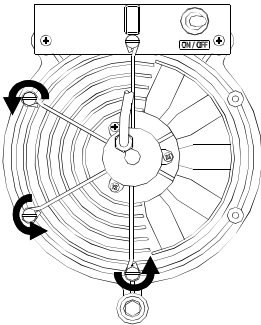
CLEANING AND MAINTENANCE

1. After vaccination is complete, wash out any residues in the spray bottle with clean water. It is also recommended to spray out a little water to clean the disc and nozzle. Occasionally it may be necessary to remove the atomiser disc and clean with a soft brush.

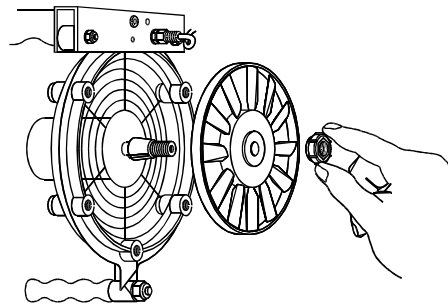


IMPORTANT: DO NOT USE DISINFECTANT IN THE VACCINE BOTTLE OR ON THE ATOMISER HEAD

2. Brush off poultry dust immediately from surfaces of sprayer and wipe down with a damp cloth.
3. After prolonged use, deposits will accumulate on the fan and guard so it is necessary to thoroughly clean these items to maintain good hygiene conditions especially if spray equipment is transferred from one shed to another.



Unlock the fan guard by turning the quick release slotted fasteners through a quarter turn with a screwdriver or small coin. Remove the guard and immerse in water cleaning all surfaces with a soft brush.



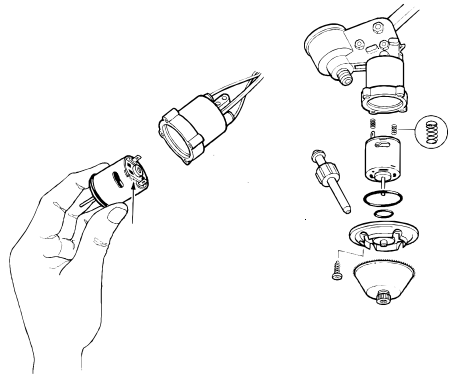
Remove the fan by partly unscrewing the locking nut and freeing the fan assembly from the motor shaft. Immerse in water and clean all surfaces with a soft brush.

STORAGE

Before storing the UlvaVac for long periods clean the fan guard with a small brush to remove any deposits and wipe the metal components with an oily rag to help combat corrosion. To prolong the life of the spray head disassemble the spray head and clean all electrical contacts with a wire brush or similar. Also check the motor for corrosion. Ensure that the motor is dry before storage, and lubricate with a light oil. Store the sprayer in a clean dry place away from direct sunlight and preferably in a dust-proof container. The battery should be stored in a cool dry place.

TO REMOVE THE SPRAY HEAD MOTOR

Remove the atomiser disc and feed nozzle, then the four screws in the motor housing and detach the motor front plate. Then remove the motor by its shaft. Reassemble with a new motor (if necessary), making sure that the 'O' ring seals (part nos. 5403 and 5398) and terminal connecting springs are correctly positioned – and that the polarity is correct N.B. the positive terminal has a small mark and should be connected to the red wire. Also check that the small nylon air vent tube is repositioned correctly in the extension tube.



THE BATTERY

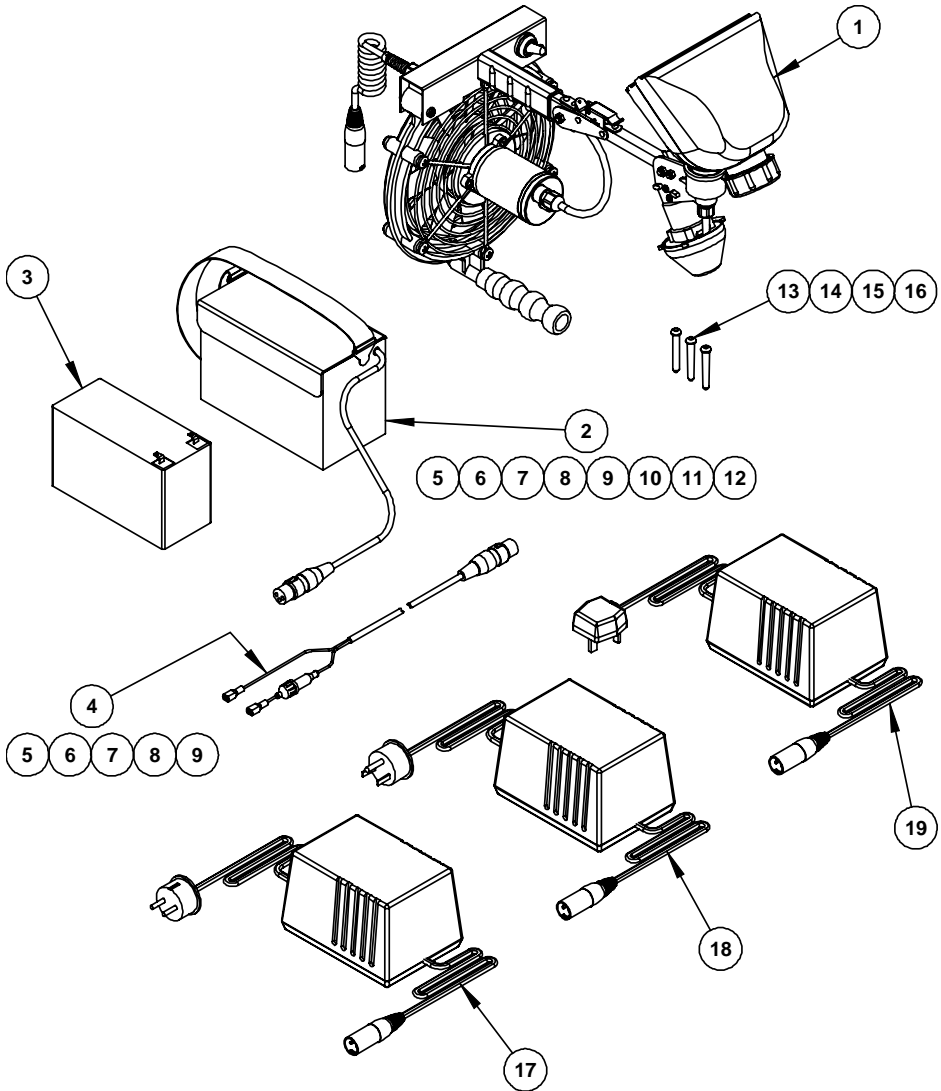
The Micron battery supplied is a Fiam 12V lead acid, sealed, maintenance-free 7.2 amp hr 12V D.C. - non-spillable type. Do not check electrolyte specific gravity or add water, which will permanently damage the battery. When recharging the battery using the charger supplied, connect the charger into the battery socket (after unplugging the ULVAVAC from the battery) and then switch on at the mains.

The minimum charging time should be 12 hours and if the battery is discharged fully, then 24 hours is recommended. The charger will indicate when the battery is fully charged. Continuous charging by the charger supplied will not damage the battery.

NB. Always charge the battery before storing for long periods.

If the ULVAVAC is used with other 12V D.C. batteries or rechargers consult the manufacturer for recharging information.

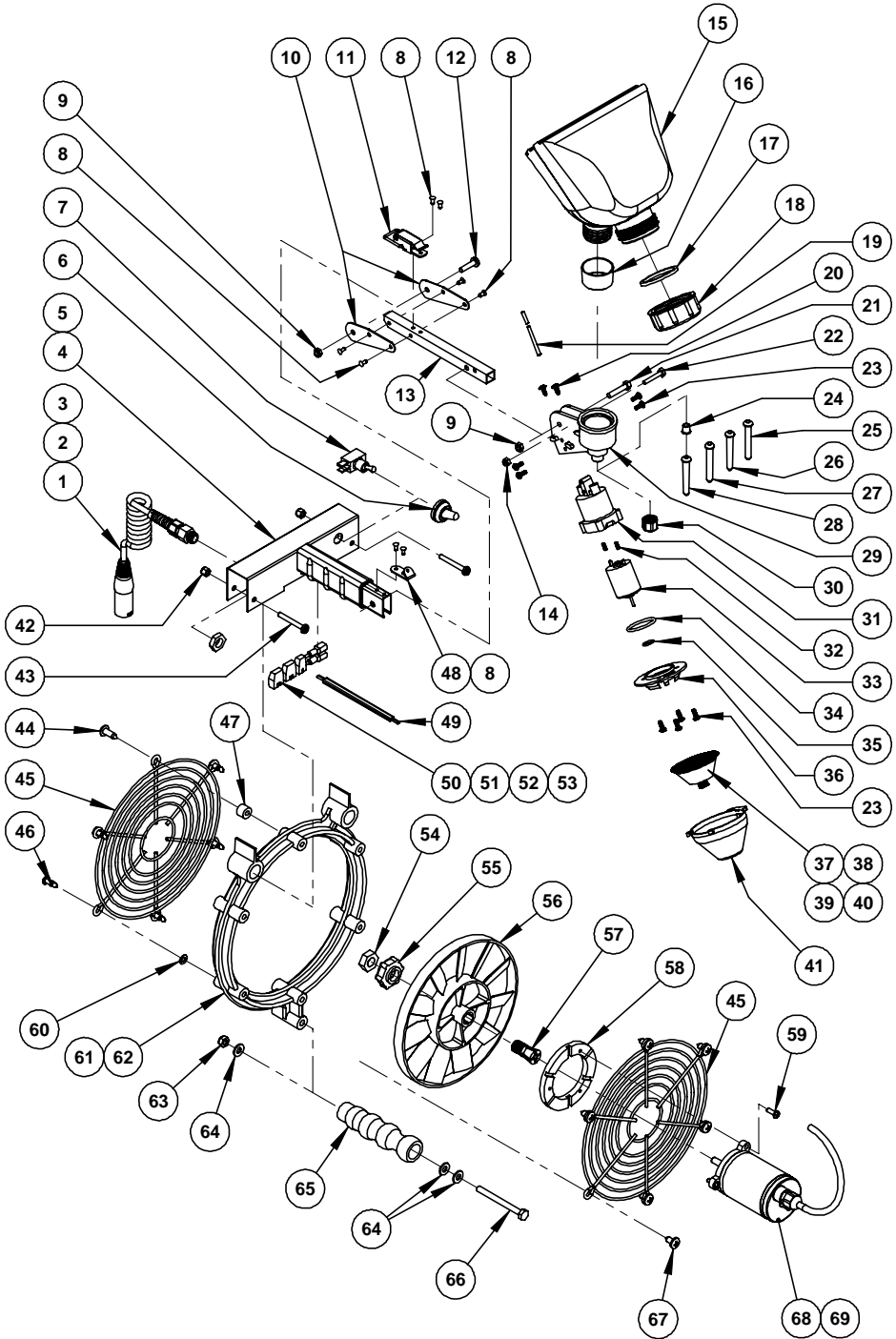
PARTS DIAGRAM



PARTS LIST

ITEM	MICRON PART NO.	MERIAL PART NO.	DESCRIPTION
-	-	UF1001	ULVAVAC, COMPLETE
1	See Page 14	UF100	ULVAVAC ASSEMBLY
2	ULV/204	UF103	ULVAVAC BATTERY POUCH ASSEMBLY
3	5503	UF102	BATTERY 12V 7AH/20HR
4	ULV/206	UF108	BATTERY LEAD ASSEMBLY
5	5730		CABLE TWIN CORE 1.0MM ROUND
6	9724		HEAT SHRINK TUBING, 8 mm x 25 mm
7	5500		RECEPTACLE, 4.8 X 0.8, RED
8	5501		FUSE HOLDER, IN LINE
9	5502		FUSE 5 AMP 20MM ANTI-SURGE
10	5574		SOCKET, LINE
11	5941		ULVAVAC BATTERY POUCH
12	6018		CABLE TIE
13	5385		FEED NOZZLE (RED)
14	5386		FEED NOZZLE (BLACK)
15	5384		FEED NOZZLE (ORANGE)
16	5383		FEED NOZZLE (YELLOW)
17	ULV/203		BATTERY CHARGER, 230V, EU TYPE
18	ULV/202	UF104	BATTERY CHARGER, 110V, US TYPE
19	ULV/207		BATTERY CHARGER, 240V/12V (UK)

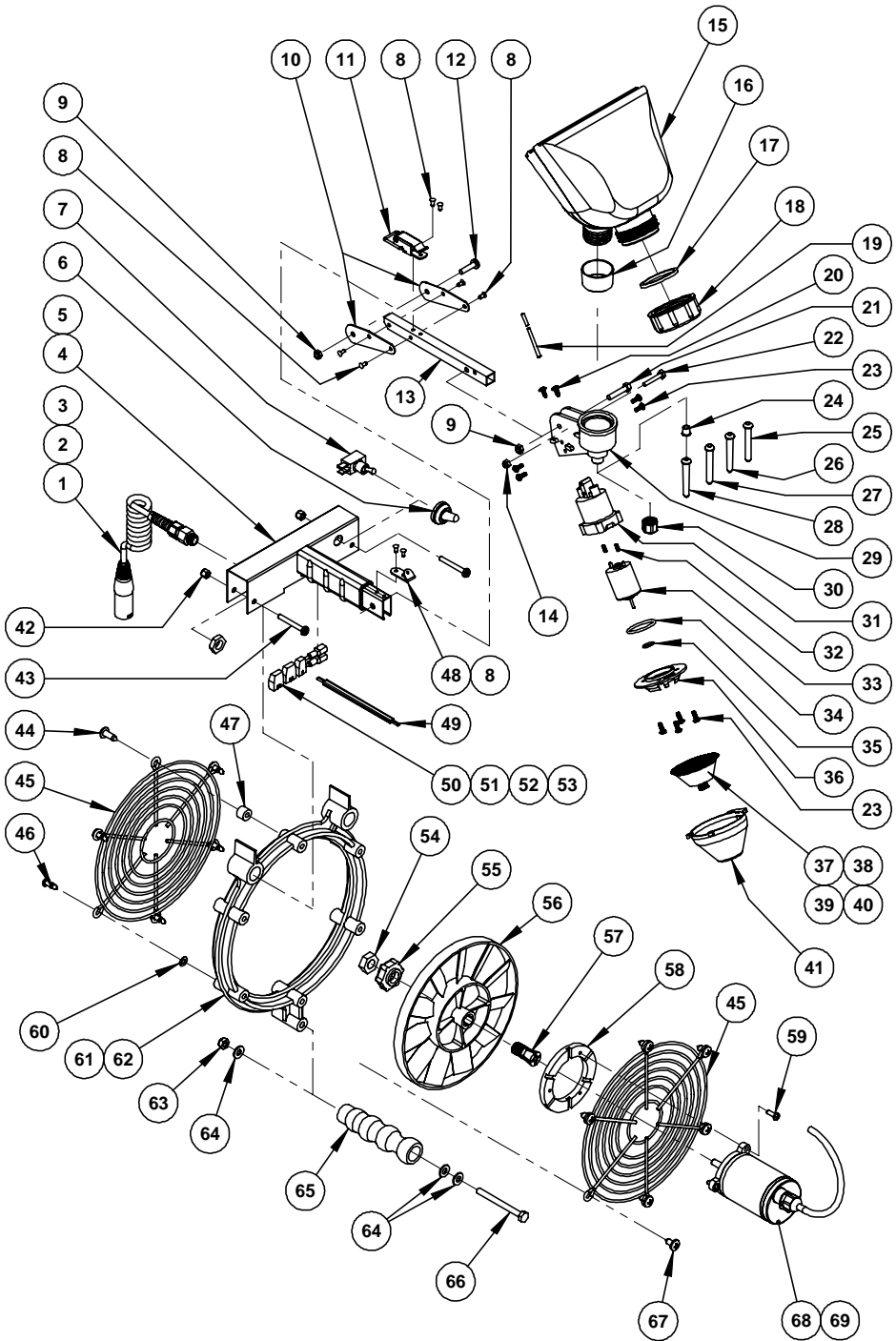
PARTS DIAGRAM



PARTS LIST

ITEM	MICRON PART NO.	MERIAL PART NO.	DESCRIPTION	QTY.
1	5080	UF125	COILED CABLE	1
2	5573	UF118	LINE PLUG	1
3	5437/5438		GLAND, STRAIN RELIEF, BLACK, PG7	1
4	4532	UF133	HANDLE FRAME ASSEMBLY	1
5	4533	UF131	PVC GRIP	1
6	5491	UF211	SWITCH COVER	1
7	T-6011	UF210	SWITCH 10AMP	1
8	4829		RIVET	8
9	5112		NUT M5 NYLOC	2
10	7404		BRACKET HEAD SUPPORT	2
11	5550	UF122	FASTENER	1
12	5886		SCREW M5 X 20	1
13	5444	UF134	EXT TUBE	1
14	6729		NUT M4	1
15	5265	UF203	BOTTLE, 1 LITRE TWIN NECK	1
16	3216		BOTTLE CAP	1
17	5353		CORK SEAL	1
18	4489		BOTTLE CAP	1
19	3512_15		AIR VENT TUBE - 0.15M	1
20	4646		SCREW, S/T NO.6X3/8" PZ. FL.HD. AB	2
21	5029		SCREW M5	1
22	6256		SCREW M4 X 25	1
23	5399		SCREW, S/T NO.6X3/8" PZ PAN HD. B	8
24	5371	UF251	NOZZLE SEAL	1
25	5384	UF258	FEED NOZZLE (ORANGE)	1
26	5383	UF257	FEED NOZZLE (YELLOW)	1
27	5385	UF259	FEED NOZZLE (RED)	1
28	5386	UF260	FEED NOZZLE (BLACK)	1
29	5365RG	UF224	BOTTLE HOLDER	1
30	5369	UF250	UNION NUT	1
31	5367RG	UF206	MOTOR HOUSING	1
32	4457		SPRING	2
33	5320	UF220	MOTOR, ULVA PLUS	1
34	5403		O RING, BS 121 VITON	1
35	5398		O RING, BS 012 VITON	1

PARTS DIAGRAM



PARTS LIST

ITEM	MICRON PART NO.	MERIAL PART NO.	DESCRIPTION	QTY.
36	5366RG		MOTOR FRONT PLATE (GREEN)	1
37	5373A	UF205	ATOMISER DISC ASSEMBLY	1
38	5407		WASHER	1
39	5373		ATOMISER	1
40	5372	UF252	DISC FIXING SCREW	1
41	5396RG	UF111	PROTECTIVE COVER	1
42	4516		NUT 3/16" WHIT NYLOC	2
43	4527		SCREW 3/16" X 1-1/2" WHIT	2
44	5124		SCREW NO.14X3/4" PANHEAD	1
45	3152	UF129	FAN GUARD	2
46	5832	UF302	STUD, OVAL SLOTTED	5
47	5860	UF304	SPACER	1
48	5549		CATCH PLATE	1
49	4629_42	UF116	WIRE, FLAT TWIN .05MM-0.42M	1
50	6782		CONNECTOR, PUSH IN, 3-WAY, 20 AMP	2
51	4368_5		WIRE 1.0MM X 50MM LONG RED	2
52	7347		CONNECTOR, PUSH IN, 2-WAY, 20 AMP	1
53	6388		RECEPTACLE 1/4" F	2
54	5837		NUT M12, THIN	1
55	5828		NUT THUMB	1
56	5826	UF300	FAN 11 BLADE, TAPER BORE	1
57	5827		TAPER-LOCK COLLET	1
58	4947		MOUNTING PLATE, FAN MOTOR	1
59	4677		SCREW NO.8 X 1/2" (B)	3
60	5833		RETAINER	5
61	5831		RECEPTACLE, PUSH IN	5
62	5834	UF130	MAIN FRAME	1
63	5984		NUT, M6 NYLOC	1
64	5966		WASHER M6	3
65	4542	UF153	HANDLE	1
66	6669		BOLT M6 X 65 HEX	1
67	4802		SCREW NO.14X1/2" PANHEAD	6
68	5097	UF119	MOTOR 12 VOLT	1
69	5835		LABEL (MERIAL)	1

TROUBLESHOOTING

A) Atomiser disc spins but does not spray or sprays irregularly. **Check:**

- the feed nozzle. If the feed nozzle is incorrectly fitted refit, if it is blocked remove and soak in soapy water.
- the atomiser disc is clean and undamaged. Clean or replace.

B) Atomiser disc fails to spin or spins unevenly. **Check:**

- that the battery plug and socket are firmly fitted and connections are free from dirt.
- the condition of the battery. Recharge or replace if necessary.
- that the battery fuse is in good condition. Replace if necessary. The start-up current of the UlvaVac is over 10 amps therefore a 5 amp anti-surge fuse is recommended.
- that electrical terminals and contact points on the spray head are clean and that electrical wires are not broken or corroded.
- if the atomiser disc is rubbing on the motor base plate or the motor shaft is bent. Replace the disc or motor (see 'TO REMOVE SPRAY HEAD MOTOR') if necessary.
- the motor for corrosion or obvious signs of wear. Replace if necessary.

C) Liquid leaks from the bottle holder on the spray head. **Check:**

- the bottle cap is fitted on correctly and the cork washer is in place.
- the feed nozzle. If the feed nozzle is incorrectly fitted refit it, if it is blocked remove and soak in soapy water.

D) Atomiser disc runs but the fan does not turn. After disconnecting the machine from the battery **check:**

- that the fan turns freely. If it does then the electrical contacts in the handle should be checked. If they are in good condition then the fan motor may need replacing.

E) Fan turns but the atomiser does not. **Check:**

- the electrical contacts in the handle and at the spray head. If they appear clean and in good condition then check the motor (see 'TO REMOVE SPRAY HEAD MOTOR'). The motor can be tested by connecting the '+' and '-' terminals on the top of the motor to the battery. N.B. The '+' terminal is marked by a small dot.

F) Atomiser disc and fan fail to turn or turn slowly. **Check:**

- the battery fuse. Replace if necessary. The start-up current of the UlvaVac is over 10 amps therefore a 5 amp anti-surge fuse is recommended.
- the connections at the plug and socket are not broken or shorted. Repair or replace if necessary.

DECLARATION OF CONFORMITY
DECLARATION

Name of manufacturer or supplier: Micron Sprayers Ltd.

Full postal address: Bromyard Industrial Estate,
BROMYARD, Herefordshire

Country of origin: England

Post code: HR7 4HS

Description of Product: Battery powered, hand-held
agricultural spraying
machine.

Name and model number of machine: ULVAVAC


Place of Issue: Bromyard, England

Name of authorised representative: G. S. Povey

Position of authorised Representative: Joint Managing Director

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 2006/42/EC and complies with the relevant essential health and safety requirements.

Signature of authorised Representative:



NOTES

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