



## ULV+ Liquid Applicator

Manufactured by  
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## USER MANUAL

**The kit consists of: -**  
**Control Box with digital display**  
**55 litre Tank with filter basket**  
**Two stainless steel mounting brackets**  
**Peristaltic pump**  
**Motor gearbox with control sensor**  
**3 way valve**  
**7.5 metres of tubing**  
**1.5 metre Power cable**  
**1m drain tube**  
**8 metre pump to control cable.**  
**Nozzle**

### The applicator tank

The tank is translucent so the level of additive can be seen. Level guide stickers at the front of the tank show approximately how many litres of liquid are in the tank. These can be viewed from the front and the side.

The peristaltic pump assembly is housed in the pump chamber. This has a acrylic cover fitted to prevent the ingress of water and dust. The applicator should not be used, other than for testing with this removed.

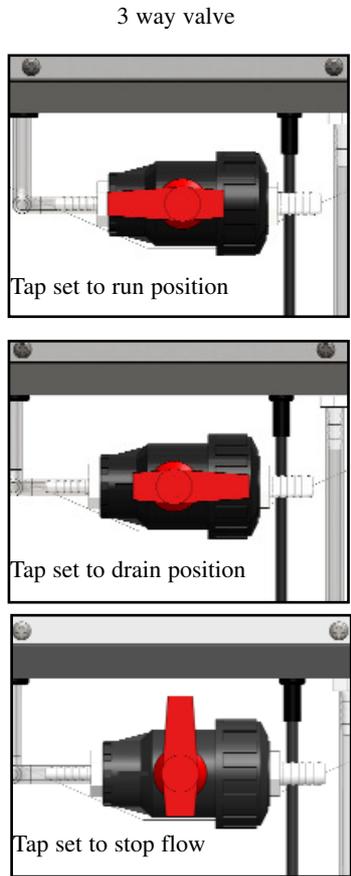
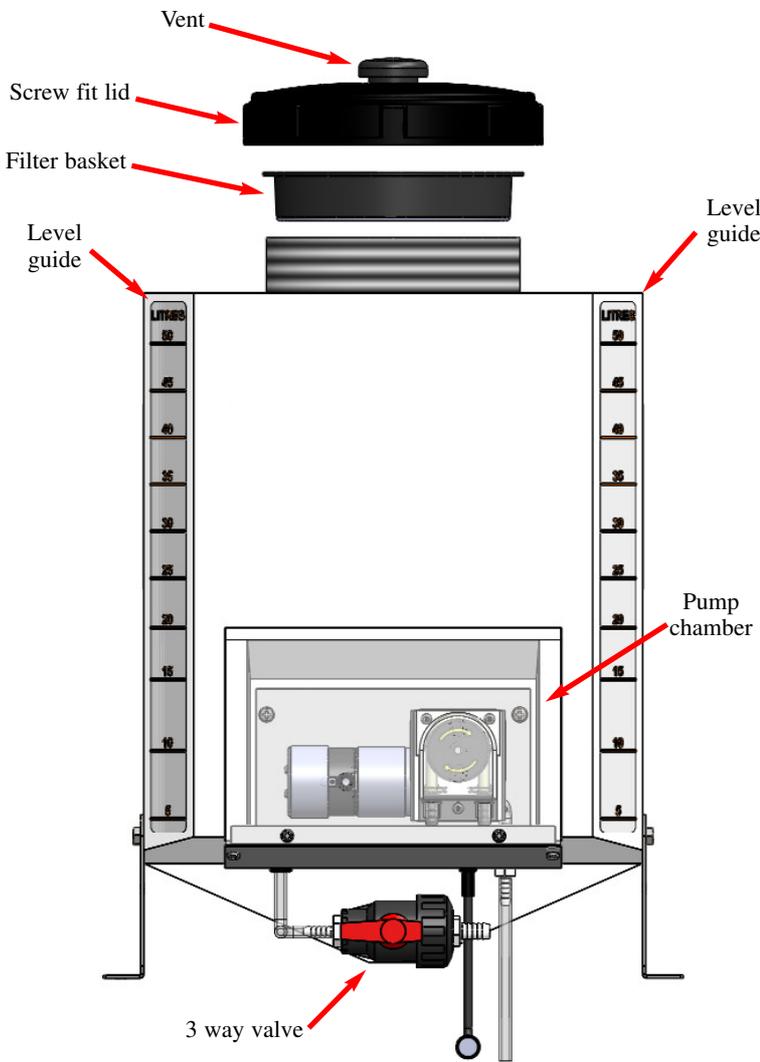
There is a 3 way valve at the bottom of the tank and its operating handle will point in the direction of flow.

When turned to the left, flow from is the tank to the pump. (Run position)

When turned to the right, liquid can be drained from the tank.

When in the upright position flow is stopped.

There is a 200mm opening at the top of the tank with a screw fit lid with vent. ***(The applicator is shipped without the lid vent fitted. This must be fitted to the lid before use.)*** In the neck of the tank is a removable filter basket, always keep this in place when filling to prevent debris from entering the tank.

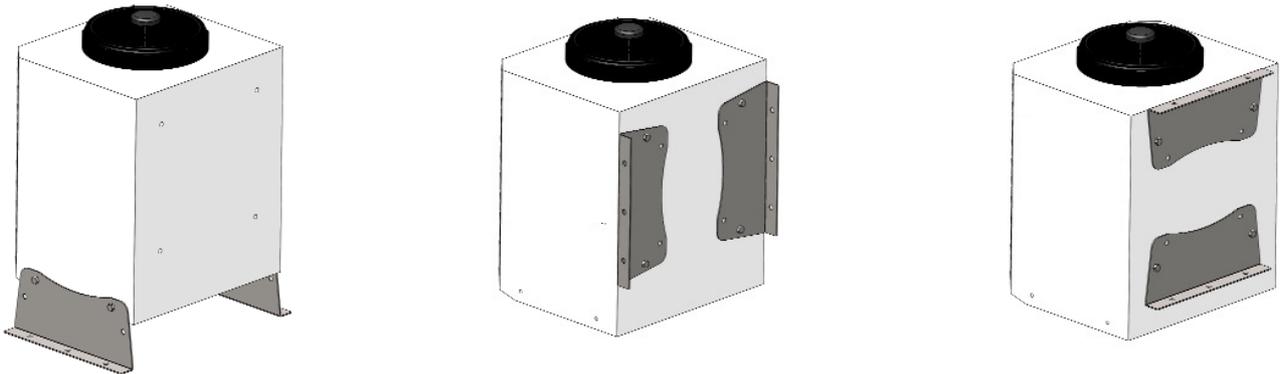


## Mounting the applicator

Mount the tank upright using the two stainless steel mounting brackets, these can be attached in several different positions depending on how you want to mount the tank on to your forage harvester. The brackets are held in place with M8 x 12 bolts. Ensure the mounting surface is secure and will support the weight of the tank when full. (60kg)

The brackets can be attached in any position where there are two corresponding M8 inserts. The brackets have three holes in their base for securing to the forage harvester.

## Mounting bracket positioning options

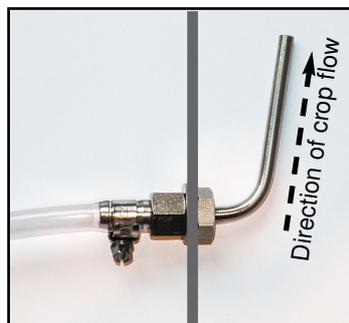
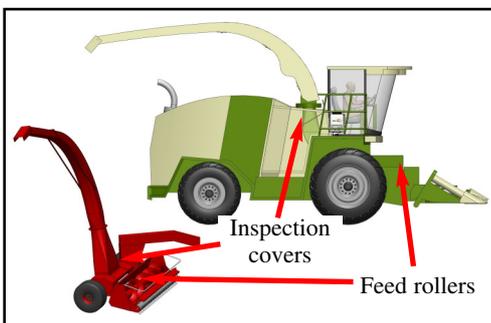


## Application point - We recommend that you should consult with your additive supplier for advice!

The application point will depend on the machine you are fitting to. The nozzle supplied can be fitted into one of the inspection/cleaning covers on the lower side of the chute or behind the accelerator pointing up the chute in the direction of flow. It can also be mounted over the feed rollers. Delivery of the additive is open flow and a fan jet should not be used.

*Field comparative assessments of ultra low volume application show that the air speed generated in the chute of self propelled forager and trailed forager is over 68m/s which produces a venturi effect meaning that the additive is 'pulled out' of the tube as a very fine fog of bacteria. The droplet size is much smaller than when the bacteria is sprayed on at normal volumes, which in turn means that with the turbulence of the forager the bacterial spread is much better than you actually achieve with standard application.*

Route the tubing from pump housing to the application point. Avoid sharp edges and hot spots and leave enough slack around and pivot points for turning.



If fitting the nozzle into one of the inspection/cleaning cover on the lower side of the chute, drill a hole in the centre of the cover and screw the nozzle in place, pointing up the chute in the direction of flow.

## Installing the control box

Mount the control box in the cab. There are mounting holes in the back plate of the control box that can be used for this. The control box is not water proof and avoid mounting it where it could be subjected to extreme vibrations.

Allow space for the connector to be plugged in to the control box.

## Applicator care and maintenance

To keep you applicator running trouble free we recommend the following: -

### NEVER USE HIGH PRESSURE AIR OR WATER TO CLEAR A BLOCKAGE

Using high pressure air or water will damage the pipe work

### FLUSH THE SYSTEM WITH CLEAN WATER AT THE END OF EACH DAY

Drain any excess additive from the tank and place clean water in the tank and run the applicator at full speed to flush any residual additive out of the system. This will stop the build up of sludge in the bottom of the tank and pipe work.

(If your harvester is wired to use the pause function you can run the applicator at full speed in static mode by plugging the power lead and pump lead together)

FLUSH THE SYSTEM WITH HOT WATER If you suspect a blockage. Hot water (not boiling) can help break down any sediment in the pipe work more effectively than cold water.

### DO NOT CLEAN THE OUTSIDE OF APPLICATOR WITH HIGH PRESSURE WATER

Avoid spraying water directly at the outside of the applicator as it could get inside the motor cover and cause corrosion to the motor or electrical components.

### AVOID DAMAGE TO WIRING AND PIPE WORK.

Always route pipe work and cable so they do not get worn through or pinched.

### STORING YOUR APPLICATOR WHEN NOT IN USE

If not using the applicator for long periods it is important to make sure that it is thoroughly flushed through with clean water. DO NOT store with additive left in it as it will most likely cause blockages.

Store over winter completely empty where it can not be affected by freezing conditions.

Remove the two screws holding the pump housing in place and lift the pump housing up to prevent the peristaltic tube from being pinched in the one place deforming it.

It is recommended that a new peristaltic tube is fitted at the beginning of the season.

## Fault finding

Pause displayed on control box	If wired for pause mode the header will normally need to be down and the forage harvester moving forward. If not the the table sensor the green/yellow wire in the power lead must be connected to a 12-volt supply with the brown wire.
Liquid is siphoning .	Check for air leaks in the system The peristaltic tube could be split The pump housing may not pressed firmly down on the peristaltic tube.
The pump is running at maximum	Make sure your harvesting rate is not set too high for the application rate. Check that the pump connector is fully pushed in to the control box. The sensor assembly should be firmly secured to the pump motor. Remove the sensor housing and make sure the magnet is secured to the motor shaft.
Pump working but no liquid being dispensed	Check the 3 way valve is in the run position. Check the peristaltic tube is being squeezed properly by the rotor in the pump housing. Check for any restriction or breaks in the tubing. Check for blockages in the system.
The control box does not power up	Check that the power cable is wired correctly. There is a 10 Amp fuse inside the control box, check that this has not blown. If it has check all the wiring before replacing. In the event of control box failure the power socket and pump plug can be connected together causing the pump to run at maximum. This will give an application rate of approximately 300 ml/minute so your additive will need to be diluted/mixed to match your harvesting rate. <b>ONLY DO THIS IF YOU ARE SURE THAT THE PUMP IS NOT AT FAULT AND YOUR POWER LEAD IS CONNECTED TO A FUSED (MAX 10A) SUPPLY</b>

## WARRANTY

Provided installation is carried according to these instructions a warranty of 1 year from date of delivery applies. This covers faulty manufacture only and does not cover wear and tear through normal use or mechanical or chemical damage that has occurred to parts through misuse or unauthorised attempts to repair the unit. In the case of faulty manufacture, claims are limited to repair of the unit and its return to the customer.

## TECHNICAL DATA

Supply Voltage	12V/DC (10.6V DC to 16.4V/DC)
Current consumption	2.8A
Fuse rating	10A
Output signal to pump	PWM approx 1.4 KHz
Dimensions of tank assembly (WxDxH)	470mm x 385mm x 630mm
Capacity of the tank	55 Litres

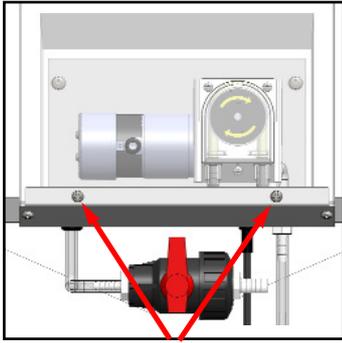
## REPAIRS AND SPARES

Selmech Supplies Ltd, 19 Norton Enterprise Park, Whittle Road, Churchfields, Salisbury, Wiltshire, SP2 7YS.

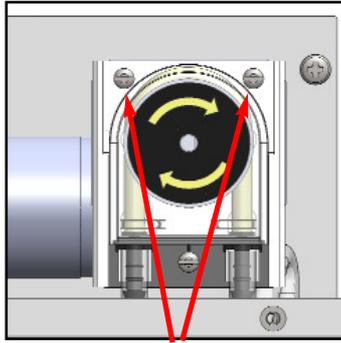
Tel: +44 (0) 1722 413 440. Email: admin@selmechsupplies.co.uk. Web: www.selmechsupplies.co.uk

## Changing the peristaltic tube (Santoprene tube 4.8mm I/D x 8mm O/D)

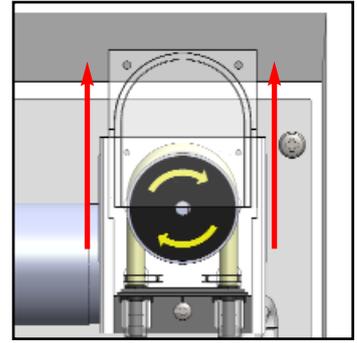
*Note! On later models the spring clips are replaced by tie wraps*



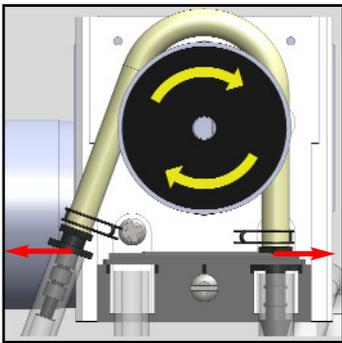
Turn 3 way valve to stop flow. Remove the 2 M5 screws holding the pump chamber cover in place and remove cover to access the pump.



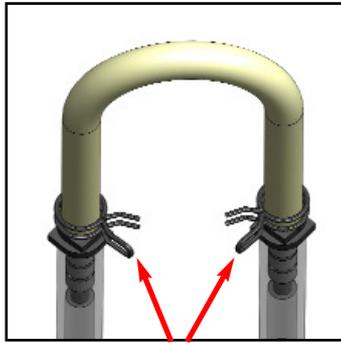
Remove the two M4 screws holding the pump housing in place.



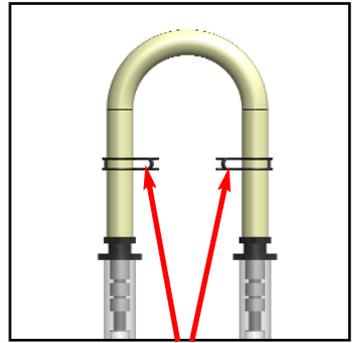
Slide the pump housing upwards and then towards you to remove it.



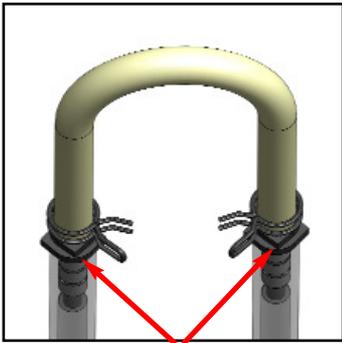
The peristaltic tube set can be removed from the tube set mount by sliding each hose tail outward off of the holder.



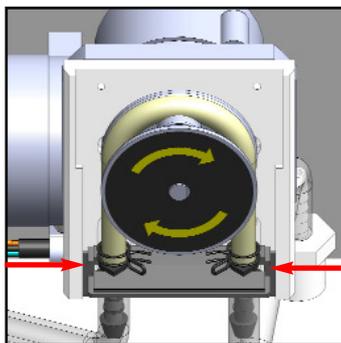
With a pair of pliers squeeze the spring clips together and slide up the peristaltic tube and pull the peristaltic tube from the hose tails. If tie wraps fitted remove by cutting.



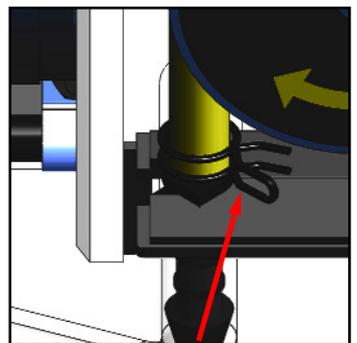
Slide the spring clips onto the new tube and push the tube fully on to the hose tails reposition the spring clips to hold the tube. Or fit new tie wraps if used.



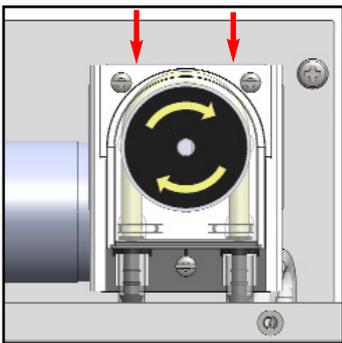
The upper points of the hose tail location groves must not be sticking outward as they will foul on the pump housing.



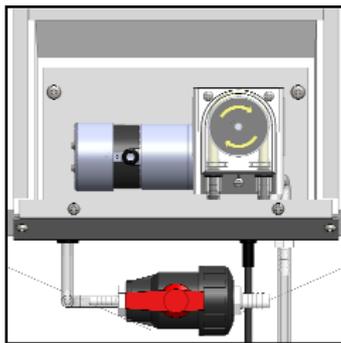
Position the peristaltic tube over the rotor and slide the hose tails in to the mount slots. Check the peristaltic tube is aligned and not twisted.



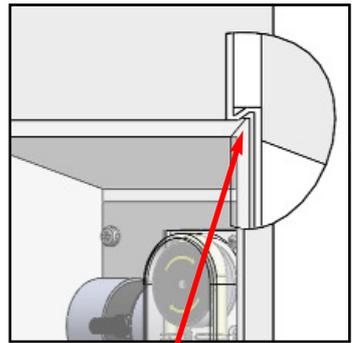
If fitted adjust the spring clips so that they won't interfere with the pump housing.



Slide the pump housing onto the pump head back plate. Tighten the screws whilst applying firm downward pressure on the pump housing

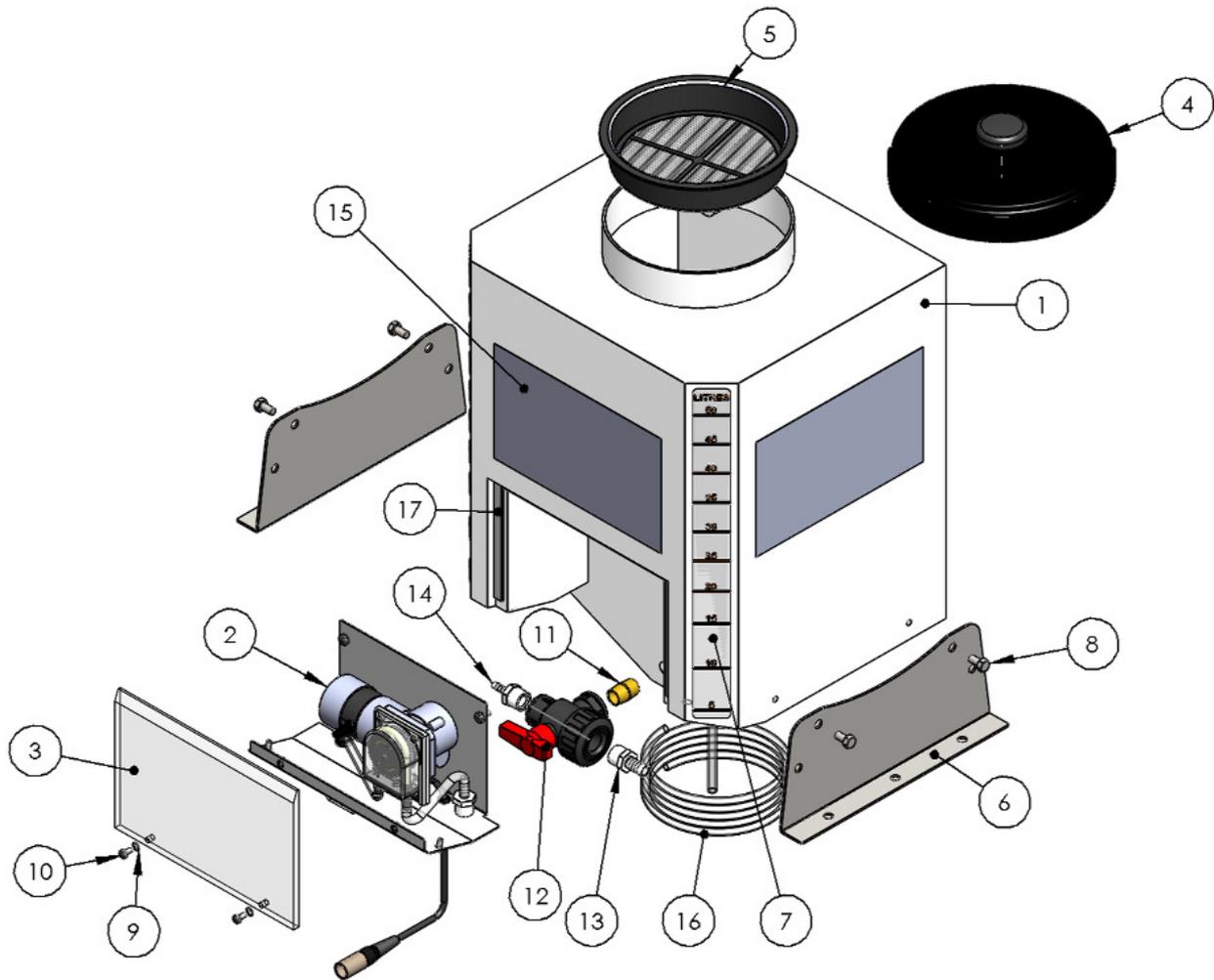


Set the 3 way to run and with liquid in tank run the pump to check the rotor is turning OK and prime the system.



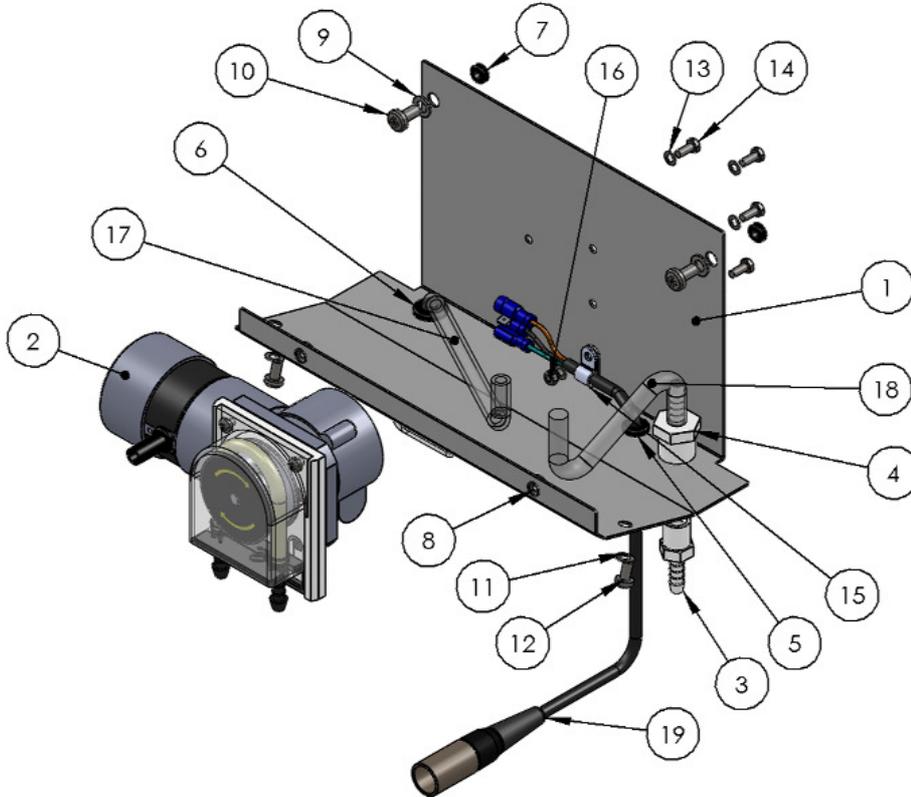
To refit the chamber cover slide upwards locating the angle end in the groove at the top, fit screws and tighten.

## ULV General assembly parts list



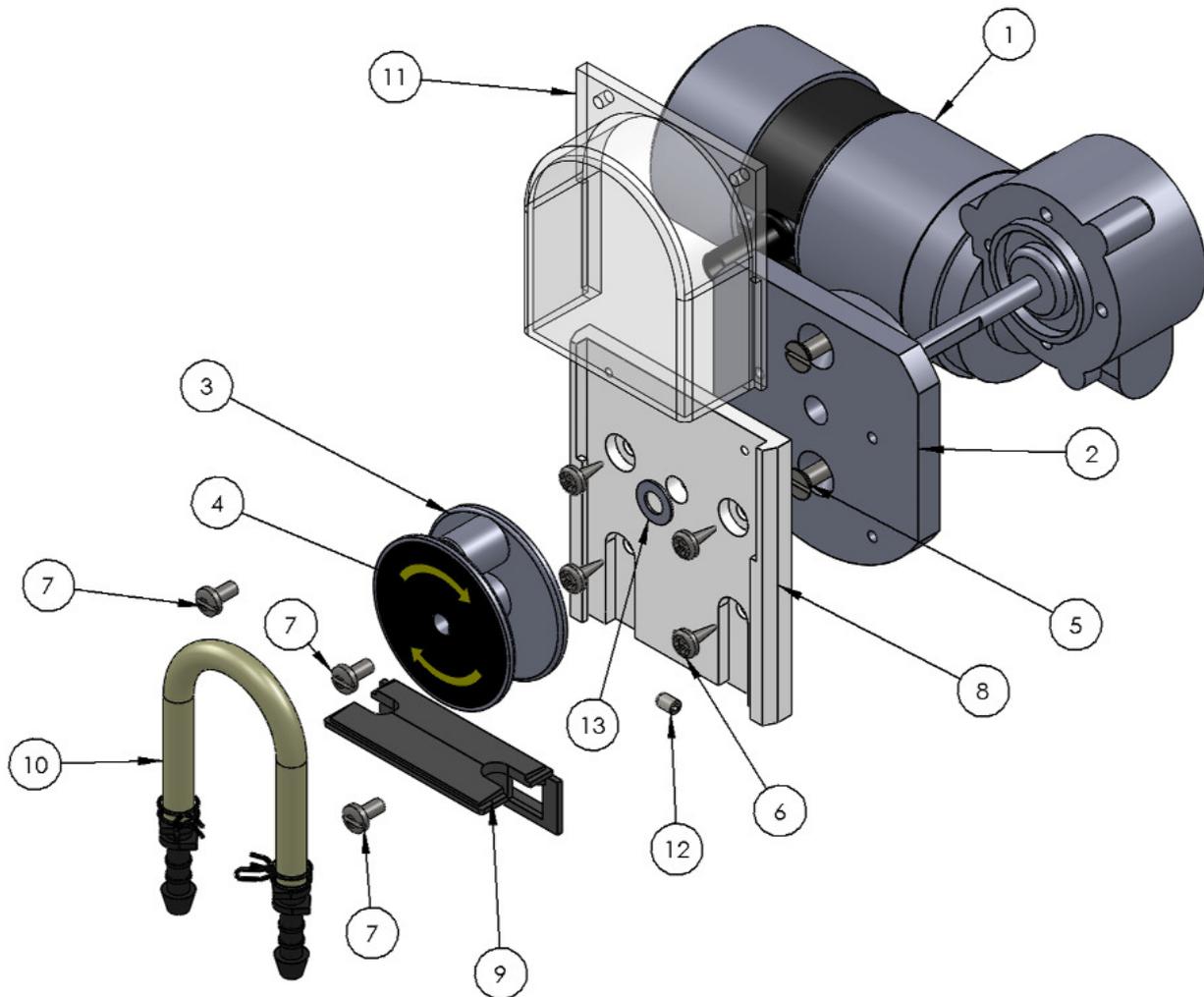
ITEM NO	DESCRIPTION	QTY
1	SELMECH ULV TANK	1
2	PUMP/MOTOR ASSEMBLY	1
3	PUMP CHAMBER WINDOW	1
4	8 IN TANK LID ASSEMBLY	1
5	8 IN TANK SIEVE	1
6	MOUNTING BRACKETS	2
7	FILL LEVEL LABEL	2
8	M8X16MM SS HEX BOLT	4
9	M5 PLN WASHER	2
10	M5X10 POSI SCREW	2
11	1/2 INCH CLOSE TAPER NIPPLE	1
12	3 WAY VALVE ASSEMBLY	1
13	1/2IN MALE TO 1/2IN HOSE TAIL	1
14	1/2IN BSP MALE TO 1/4IN HOSE TAIL	1
15	DECALS	3
16	7.5M 6mm I/D APPLICATION TUBE	1
17	PUMP CHAMBER GASKET	1

## Pump mounting bracket assembly parts list



ITEM NO	DESCRIPTION	QTY
1	MOTOR/PUMP MOUNTING BRACKET	1
2	MOTOR PUMP ASSEMBLY	1
3	1/4IN BSP MALE - 1/4IN HOSE TAIL	1
4	1/4IN BSP FEMALE TO 1/4 IN HOSE TAIL	1
5	ROUND SLEEVED GROMMET	1
6	ROUND CABLE GROMMET	2
7	ROUND GROMMET	2
8	M5 SS HANKBUSH	2
9	M6 PLN WASHER	2
10	M6X12MM POSI SCREW	2
11	M5 PLN WASHER	2
12	M5X10 POSI SCREW	2
13	M5 PLN WASHER	5
14	M4 X 10 SS SCREW	4
15	NYLON 6.6 P CLIP 6.4mm DIAM	1
16	M4 FULL NUT	1
17	INLET TUBE 340MM	1
18	OUTLET TUBE 230MM	1
19	3 POLE XLR PLUG AND LEAD	1

**ULV motor/pump assembly parts list**



ITEM NO	DESCRIPTION	QTY
1	MOTOR AND SENSOR ASSEMBLY	1
2	MOTOR TO PUMP MOUNTING BUSH	1
3	PUMP ROTOR	1
4	ROTATION LABEL	1
5	M5X25mm SS COUNTER SUNK SCREW	2
6	NO.8X12mm POZI HEAD SELF TAP SCREW	4
7	M4 X 8 SS SLOT SCREW	3
8	PUMP HEAD BACK PLATE	1
9	TUBE SET MOUNT	1
10	TUBE SET	1
11	PUMP HOUSING	1
12	M4X6MM GRUB SCREW	1
13	ROTOR SLIP WASHER (not always fitted)	1