

### DESCRIPTION

The Magnum applicator is very versatile and suitable for use with balers or forage harvesters using 1, 2 or 3 nozzles. It comes supplied to fit 2 nozzles which is sufficient for balers with a 1.5 metre wide pick-up reel. Two nozzles are also enough for balers with a 2 metre wide pick-up provided they are directed into the area just before the bale chamber where the width is only 1.5 metres. Three nozzles may be required for square balers due to their faster work rate. An accessory kit is available to provide the extra nozzle. With forage harvesters it can be used with either 1 or 2 nozzles depending on their position.

### SUPPLIED

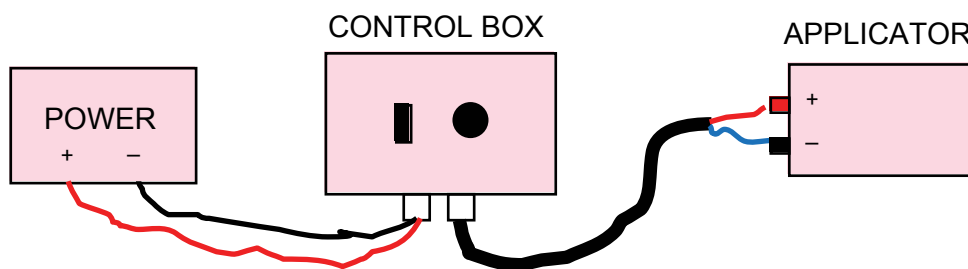
1. 400 litre tank with 19 litres/min pump mounted in cradle
2. 9 metres reinforced PVC tubing
3. Fully variable control box
4. Pressure gauge
5. 2 nozzle bodies + set of nozzles
6. 2 brackets with clamps
7. Fitting guidelines/calibration chart/parts diagram

### FITTING

The applicator operates from the tractor electrical system, which must have a 12v DC supply. It is important to ensure that maximum output is being produced by the tractor, otherwise applicator output will be reduced and damage to the applicator may result.

1. The tank cradle is usually fitted either on the front of the tractor or on the baler itself.
2. The pressure gauge can be fitted in any convenient place between the pump and nozzles as long as it is clearly visible from the tractor cab. If it is mounted on the baler, uncoupling the baler and tractor is straightforward and no further joins in the tubing will be required.
3. Fit the control box in an easily accessible place in the tractor cab. Connect the thick black flex to the pump (red/brown; black/blue) via the spade connectors and the red and black wires to the power supply.
4. Connect the control box to the battery and pump as shown below
5. Nozzles: For round balers use the bracket and U-clamps provided, position the 2 nozzles about 50 cm apart, 40-50 cm above the pick-up reel. For square balers which have a faster work rate, three nozzles will probably be required to cover the full width of the pickup. For forage harvesters a single nozzle is usually mounted to spray into the chopping box or chute although two can be mounted above the pickup. ***In all cases the aim should be to cover the full width of the pickup reel, to ensure optimum coverage.***
6. Connect the remaining length of cable to the 'battery' end of the control box (red to red +ve, black to black -ve).
7. Before using for the first time wash the inside of the tank with a hose to remove any particles that might block the filter. Remove the water through the drain at the base of the tank.

**WARNING: IT IS ESSENTIAL TO ENSURE THAT THE BATTERY LEADS ARE CONNECTED TO THE END OF THE CONTROL BOX MARKED 'BATTERY' AS WRONG CONNECTION WILL CAUSE DAMAGE.**



## CONTROL BOX

The applicator is controlled from the tractor cab using the control box. Switch the unit ON/OFF using the switch and use the round knob to control the flow (see Calibration Chart).

*The control box is protected from overload by a 10 amp fuse. Under no circumstances should this fuse be replaced by any other type of fuse or serious damage could occur, either to the applicator or even to the tractor's electrical circuits.*

## OPERATION

1. Select the correct size of nozzle from the Calibration Chart and fit into the nozzle body - ensure it fits tightly. Check the PVC tubing for damage and that the connections are secure and the right way round (never run the pump in reverse).
2. Make sure there is some additive in the tank (never run the pump dry).
3. Switch the pump ON at the control box and adjust the variable knob to give the required flow rate (see Calibration Chart).

## OUTPUT

The Magnum is capable of up to 19 litres/minute (open flow) provided the electrical supply is adequate. Attachment of tubing, pressure gauge, nozzles, etc will reduce this.

## CALCULATING THE FLOW RATE REQUIRED

Measure the time taken to fill a trailer or make a bale. **Only include actual loading time, not time taken turning, etc.**

Calculate the flow rate required as follows:

1. Harvest rate (tonnes/min) =  $\frac{\text{weight of grass in trailer or bales (tonnes)}}{\text{time to fill trailer or make bales (mins)}}$
2. Flow rate (litres/min) = harvest rate (tonnes/min) x required application rate (litres/tonne)

Choose the control box setting in the table below that is closest to the flow rate determined above.

## CHOOSING THE CORRECT NOZZLES AND CONTROL BOX SETTING

Do this by choosing the value in the table below that is closest to the flow rate derived from the table above. Then read off the nozzle size required (Hypro DeflectTip) and the pressure (psi) that will be needed to maintain the correct flow rate. For example, to achieve a flow rate of 1.6 litres/min using 2 nozzles will require 2 blue DT 1.5 nozzles and a pump pressure of 15 psi. If more than one nozzle size would provide the correct flow rate, choose the smaller one with the higher pressure as this will give a more constant flow.

**NB. The following table is intended as a guide only - individual calibration should always be carried out.**

## Flow rate (litres/min)

Nozzle	Pressure (psi) with 2 nozzles						Pressure (psi) with 1 nozzle					
	10	15	20	25	30	35	10	15	20	25	30	35
Lt Green DT 7.5	-	4.8	6.2	-	-	-	3.0	3.5	4.0	4.7	6.2	8.0
White DT 4.0	3.3	3.8	4.2	4.6	-	-	-	2.1	2.2	2.4	2.6	2.7
Brown DT 2.5	2.2	2.6	2.9	3.2	3.5	3.7	1.2	1.4	1.5	1.6	1.7	1.9
Blue DT 1.5	1.3	1.6	1.8	2.0	2.2	2.3	-	0.8	0.9	1.0	1.2	1.3
Green DT 0.75	-	0.8	0.9	1.0	1.1	1.2	-	-	0.5	0.5	0.6	0.7

## MAINTENANCE

1. Always flush out the system with clean water after use. This is especially important at the end of the season.
2. Never allow the pump to stand for long storage periods while filled with additive.
3. Store in a clean, dry place.
4. Never use a higher rated fuse.
5. Do not allow the tubing to become kinked.

## TROUBLESHOOTING

Fault	Possible causes	Remedy
Motor not running	Wires incorrectly connected or damaged	Check all connections
	Fuse blown	Replace fuse. Check for reasons blown before restarting
	Defective motor	Contact Team Sprayers
Motor runs but no output	Pump leads wrongly connected	Swop connectors
	Nozzle blocked	Clean nozzle
	Tube kinked	Remove kink & re-route tubing
	Filter blocked	Clean filter
Motor runs/poor output	Nozzle blocked	Clean nozzle
	Nozzle too small	Replace with larger nozzle
	Tubing kinked	Remove kink & re-route tubing
	Tubing split	Replace tubing
	Tank empty	Fill tank
Wrong application rate	Wrong nozzle size and/or control box setting	Consult calibration chart – NB. Calibration chart gives approximate flow rates only - carry out proper calibration
	Control box malfunctioning	Contact Team Sprayers

## WARRANTY

The Magnum applicator is guaranteed against failure that can be attributed to faulty workmanship for a period of 12 months from the date of delivery provided that only recommended products are being applied and the recommended installation and maintenance instructions have been observed. Tampering with the components of the Magnum applicator will invalidate this guarantee. The applicator manufacturer, Team Sprayers, reserves the right to change the applicator specification at any time without notice to allow for improvements or modifications to its design.

**THE WARRANTY IS VOID IF THE APPLICATOR IS USED WITH ACID PRODUCTS.**

**REPAIRS & SPARES**

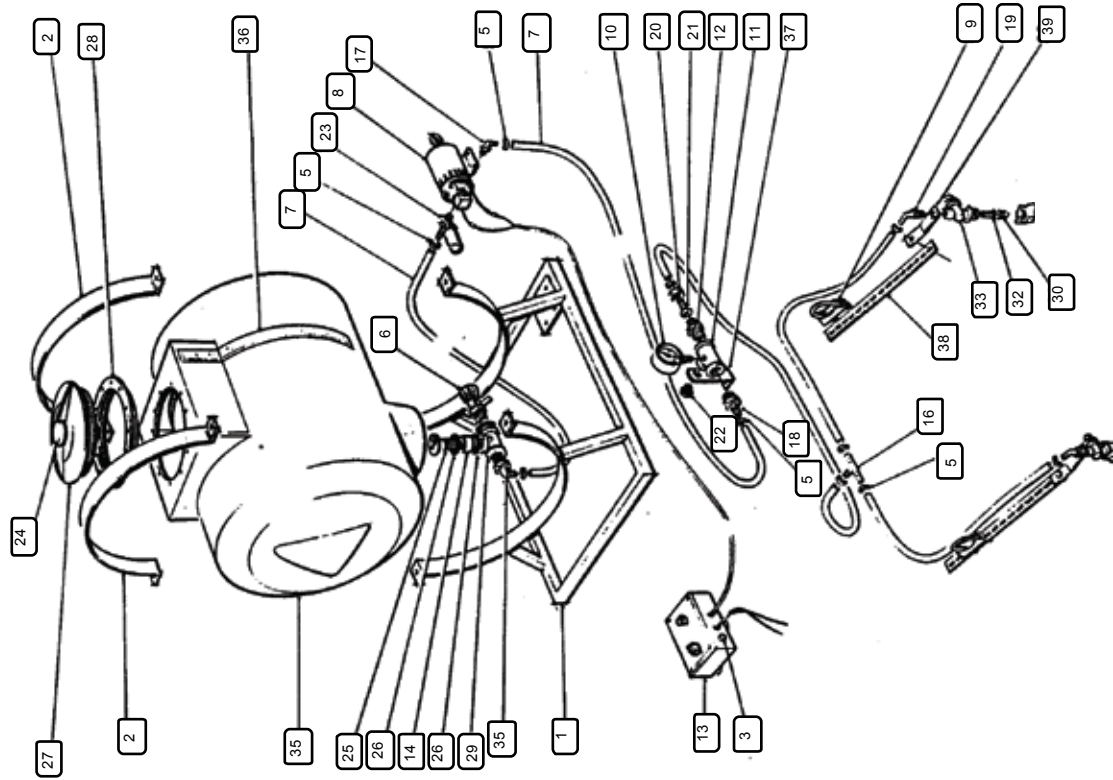
TEAM SPRAYERS LTD, Unit 3, Lancaster Way Business Park, Witchford, Ely, Cambs, CB6 3NW  
Tel: +44 (0)1353-661211; Fax: +44 (0)1353-666642. Email: sales@team-sprayers.com

For more information on 'Eco' Applicators contact:



Freephone | 0800 919808 Email | [info@ecosyl.com](mailto:info@ecosyl.com) Visit | [www.ecosyl.com](http://www.ecosyl.com)

# MAGNUM Applicator Parts List



Part No.	Description	Quantity
1	Chassis	1
2	Tank strap	2
3	10 amp fuse	1
5	Hose clip	10
6	Drain tap	1
7	Hose	9 metres
8	Pump	1
9	Clamp	2
10	Pressure gauge	1
11	Tee piece	1
12	Male/Male adaptor	1
13	Control box (complete)	1
14	Plastic spacer	1
15	Hosebarb elbow	1
16	Hosebarb tee	1
17	Hosebarb elbow	3
18	Hosebarb	1
19	Hosebarb elbow	2
20	Nut	1
21	Hosebarb	1
22	Blanking plug	1
23	Filter (complete)	1
24	Lid breather	1
25	Tank outlet	1
26	Gasket	2
27	Tank lid (complete)	1
28	Neck ring	1
29	Tee piece	1
30	Tip (green – DT0.75)	2
	Tip (blue – DT1.5)	2
	Tip (brown – DT2.5)	2
	Tip (white – DT4.0)	2
	Tip (light green – DT7.5)	2
32	Nozzle filter	2
33	DVC body (complete)	2
35	400 litre tank	1
36	Contents scale	1
37	Bracket	1
38	Nozzle arm	2
39	Nozzle bracket	2

Spare parts available from:

TEAM SPRAYERS LTD, Unit 3, Lancaster Way Business Park, Witchford, Ely, Cambs, CB6 3NW  
 Tel:+44 (0)1353-661211; Fax: +44 (0)1353-666642. Email: sales@team-sprayers.com