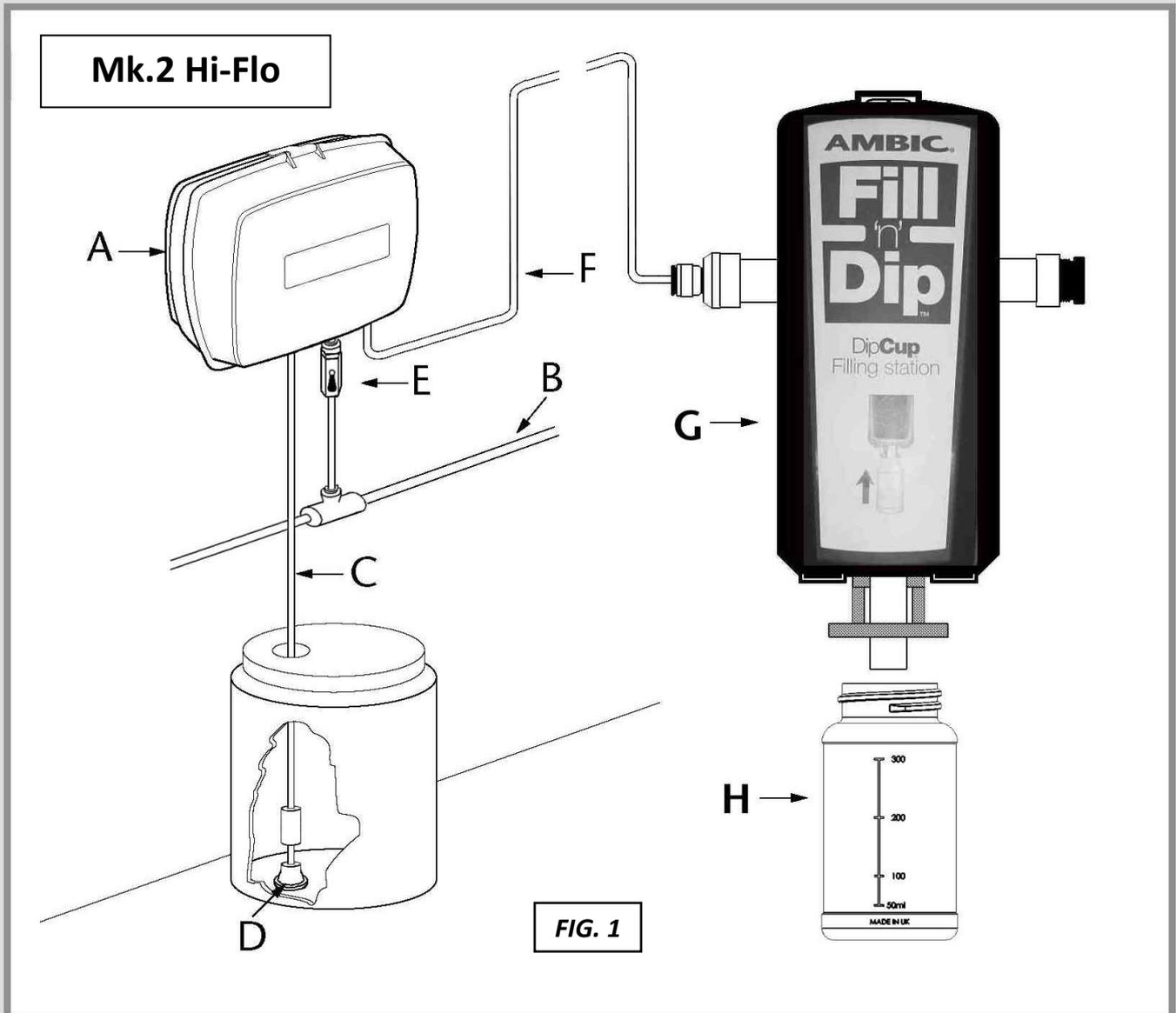


AMBIC®

FILL 'n' DIP™



OPERATING INSTRUCTIONS

leading best practice in livestock health management

PNEUMATIC DIP CUP FILLING SYSTEM

IMPORTANT - SAFETY

The Pneumatic Dip Cup Filling system is designed exclusively for use in milking installations. Any application outside the use described in this operating manual will be taken to be not in accordance with the intended purpose. The manufacturer/supplier will not be held responsible for any losses arising as a result of such use; the user will take full responsibility for use.

Use in accordance with the intended purpose also includes complying with the operating manual and the conditions for inspection and maintenance.

ATTENTION!

Whilst in operation the installation is under an operating pressure of 2 to 4 bar (30-60 psi)! Do not allow dip to come into contact with your eyes! If you do, rinse with copious amounts of water and seek medical attention!

**ALWAYS ISOLATE FROM COMPRESSED AIR SUPPLY & DE-PRESSURISE DISPENSING SYSTEM,
BY DRAINING LIQUID FROM DISPENSER, BEFORE SERVICING UNIT.**

INTRODUCTION - Fill'n'Dip™ System

The Ambic Fill'n'Dip™ system is designed for filling dip cups safely by avoiding the need to handle drums of chemical. The system comprises a pneumatically-operated power unit which sucks up chemical direct from the drum and pumps it to one, or more, dispenser units. The operator simply places the bottle to be filled underneath the outlet tube of a Fill'n'Dip™ dispenser unit and raises the bottle to contact the actuator. Chemical is dispensed into the bottle all the while upward pressure is maintained on the actuator and when the bottle is full the operator simply withdraws the bottle downwards, allowing any drips to fall into the bottle. Using chemical of normal viscosity range (i.e. similar to water), the whole process can be accomplished in a few seconds – “thicker” chemicals may dispense at a slower rate and/or require a higher operating pressure; some thickened “Barrier” dips may prove impossible to pump.

INSTALLATION of Fill'n'Dip™ System

For general layout refer to (Fig. 1) on Front Cover.

Position Power Unit (A) not more than 1.8 metres (6 ft) above the base of the Chemical Container, in a dry, dust free environment, which is adequately ventilated and with easy access to a regulated supply line for dry, clean Compressed Air.

The Power Unit (A) is supplied with Chemical Inlet tube/filter (D) and Air Inlet Control Valve (E) packed separately and is designed to affix to a wall using 2 screws (supplied). Having unclipped the case cover, roughly position the unit on the wall before marking the position of the screw slots (using drilling template). Drill holes and affix unit to the wall securely using the 2 x screws and plugs supplied, ensuring that the screws properly engage with the slots in the back plate of the Power Unit (A).

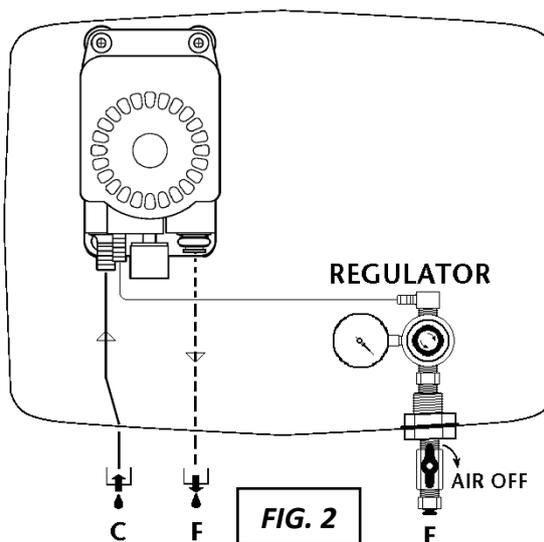
Before final mounting, take the Chemical Inlet tube with filter and guide the open end of tube through the Left-hand 16mm (5/8”) diameter hole in the Power Unit base to push fully onto the barbed connector near the rear of the pump (directly in line with the hole). Take the Air Inlet Control Valve (E) and screw it into the brass entry fitting on the Power Unit base, using PTFE (or other suitable) thread sealant to ensure an air-tight connection (refer to Fig. 2).

COMPRESSED AIR SUPPLY

The unit requires a supply of “dry”, clean compressed air at 3-5 bar (45-70 psi) capable of providing air flow rates of up to 20 Litres/minute (precise air flow demand will depend both on actual operating pressure and filling demand/frequency - i.e. number of bottles filled and frequency). It is essential that the compressed air supply has a drier and/or water separation system in the air distribution system – failure of pumps due to water in the air chamber will NOT be covered by warranty.

WARNING - Before attempting to connect to the compressed air distribution line, isolate the air supply from the compressor and ensure that the line is de-pressurised.

The unit is supplied with an On/Off valve (packed separately), whose inlet (E in Fig. 2) comprises a Push-fit fitting to accept ¼” outside diameter (Nylon/PU) tubing suitable for compressed air use. This tubing (not supplied) connects into the compressed air supply line, using fittings appropriate to the size and type of air supply line. Route the tube so as to avoid sharp bends. Cut tube cleanly at right-angles, to the correct length and make the connection by pushing the tube firmly into the fitting (E - see opposite) – tube may be released from the fitting by pushing the collet towards the fitting, whilst pulling the tube out of the fitting. Secure the tube with appropriate Clips or Cable Ties (but do NOT over-tighten).



CHEMICAL INTAKE

Having attached the Chemical Inlet tube/filter to the pump port (FIG 2), drop the tube into the Chemical Container and slide down the white plastic weight so that the Intake Filter (D) rests on the bottom of the Chemical Container.

CHEMICAL OUTPUT LINE

The kit includes 15 metres (50 ft) of 3/8” outside diameter LDPE tubing for use as the output line to the dispenser unit(s). This is connected into the power unit as follows:-

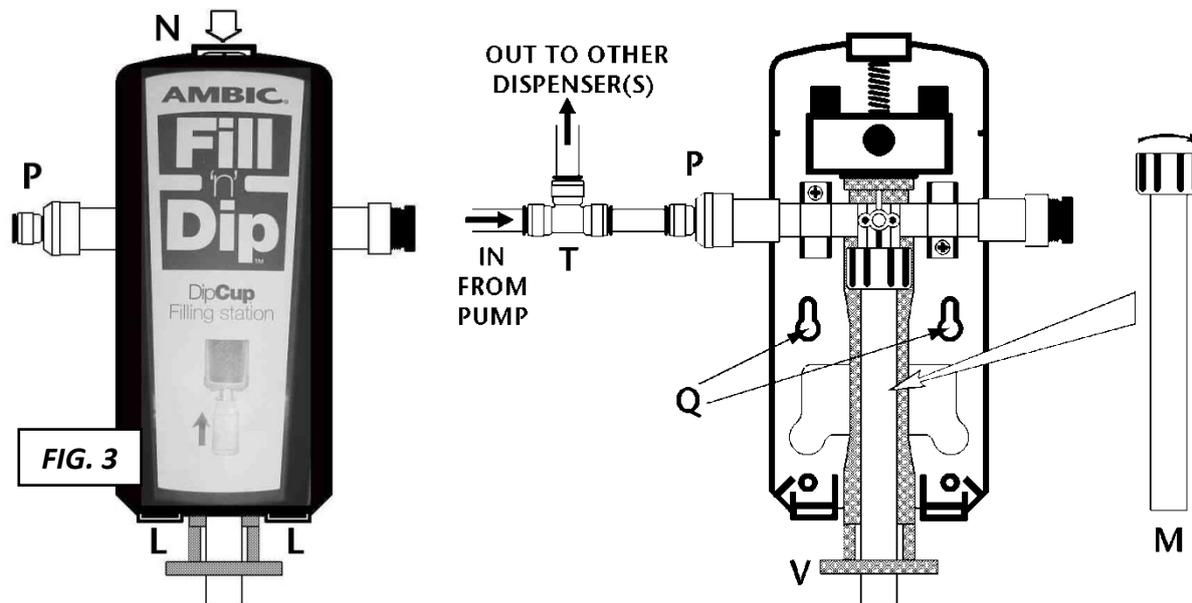
- Cut the end of the tubing square, then feed into the bottom of the base via the outlet port (FIG. 2 F), passing the tube through the 14mm diameter hole to left of centre.
- Feed the tube through the 14mm diameter hole, passing in front of the air supply tube from the Air Regulator and up to the (Right-Hand) Inlet fitting on the pump.
- Push the tube into the push-fit (OUT) fitting on the pump making sure that it is pushed well home (refer to FIG. 5).
- Make sure that any loop in the tubing outside the case is NOT too tight a bend to avoid kinking tube.

CONNECTION TO THE Fill'n'Dip™ DISPENSER UNIT

Determine position(s) of Dispenser (Fig. 1 - G) and refer to Fig. 3 for the unpacking and fixing details. Each Dispenser is designed to fix onto a flat vertical surface using the 2 x screws and wall plugs provided. When packed in the box, the dispensing tube (M) may be packed separately and this must be assembled onto the unit before installation and use.

THE Fill'n'Dip™ DISPENSER UNIT

First remove the case lid by pressing down on lug (N) at the top and lifting the case lid forward from the top to free it from the lugs (L) at the bottom. To fit the delivery tube (M), first feed the end of the tube through the hole in the centre of the dispensing valve actuator (V). Make sure that the silicone washer is correctly seated within the nut of the dispensing tube then locate it on the threaded section (central above the Mounting Holes - Q) and tighten firmly finger-tight.



Affix the Dispenser Unit by 2 screws through the mounting holes (Q). Drill the holes, fit the screws and slot the unit into place, tightening the screws fully once the unit is in place with screws in the slotted section of the mounting holes.

The Chemical Output line from the Power unit enters the Dispenser via a push-fit connection (P) on the left of the unit and should be routed from the Power unit so as to avoid sharp bends, whilst keeping the total length of tubing as short as possible. Strap the tubing to a suitable support using Clips or Cable Ties (do NOT over-tighten Cable Ties).

MULTIPLE Fill'n'Dip™ DISPENSERS

Where it is required to have more than one dispenser unit, up to 3 additional dispensing units may be powered from the same Power Unit – although flow rate will drop and bottle fill time increase if more than two dispensers are used simultaneously (especially when using the more viscous chemicals). For additional Dispensers, a T-piece (T) is placed in the distribution line for each additional Dispenser unit. When using the more viscous chemicals, it is recommended that the total length of distribution line does not exceed 15 metres (50ft) to minimise bottle filling times (which will increase as the distribution tubing is lengthened).

INITIAL START UP

When installation is complete, before switching on the Compressed Air Supply to the Power Unit, check that all push-fit connections have been fully pushed home. Turn On the Compressed Air Supply to the Power Unit. The pump should start pumping rapidly slowing to a stop, once primed with liquid and having reached full output pressure, within 1 minute.

CAUTION: There will be some air in the system, so be prepared for some spluttering (and possibly foaming) when filling the first bottle with Chemical (see overleaf).

Excessive splashing and foaming can be reduced by reducing the Pumping Pressure – see overleaf.

OPERATION

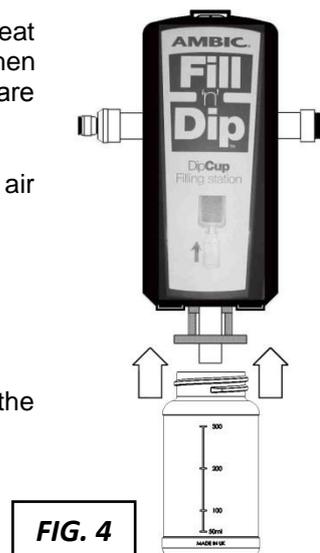
This system is suitable for use with any low viscosity recognised Teat Disinfectant except Sodium Hypochlorite and Peroxyacetic Acid. When using concentrates, ensure that the manufacturers' dilution instructions are followed. Agitation may, periodically, be required.

Important: Replenish disinfectant supply before it runs out to prevent air entering the system.

FILLING A BOTTLE (see FIG. 4 opposite)

With air pressure switched On and the system primed with liquid:-

- Place the bottle below the Outlet Tube
- Push upwards so that the Top rim of the bottle presses against the Actuator
- Allow bottle to fill to desired level
- Release upwards pressure on Actuator
- Allow any drips to fall into the bottle before removing bottle.



ADJUSTING THE OUTPUT FLOW/RATE

The Power Unit has an internal adjustable Pressure Regulator (see FIG. 2) - which is initially set up to regulate at approximately 2.4 Bar (35 psi); this is normally more than sufficient for most dip chemicals, but can be adjusted to suit the chemical and desired dispensing rate. The output pressure at the Dispenser is practically identical to that of the compressed Air Pressure after the internal regulator and the pump automatically stops pumping once this Pressure has been achieved. The internal regulator can be adjusted as follows:-

- Pull the black knurled adjusting knob vertically upwards towards you until it clicks.
- Turn CLOCKWISE to INCREASE Pressure; ANTI-clockwise to DECREASE Pressure.
- Air Pressure level is indicated on the Gauge of the Regulator; however, when making the adjustment, with the system fully pressurised, a reduced pressure may not be observed until liquid is withdrawn from a dispensing unit.
- When the desired operating pressure has been set, push adjusting knob back until it clicks to lock the setting.

WARNING: DO NOT SET PRESSURE HIGHER THAN 5.4 Bar (80psi); as this will cause permanent damage to the pump and invalidate any warranty.

WARNING: The pump will NOT operate if Air Pressure is set at or falls below 1.3 Bar (20psi).

END OF MILKING When milking is complete, isolate the unit from the air supply by turning the valve (FIG. 1 E) to the "Off" position. Additionally, venting the air supply line will minimise loss of fluid in the event that a dispenser unit is accidentally operated.

MAINTENANCE

WARNING - Before attempting to undertake any cleaning or maintenance ALWAYS ISOLATE THE POWER UNIT FROM THE COMPRESSED AIR SUPPLY and ensure that both the compressed air distribution line and Dip Cup Filling output line is de-pressurised.

CLEANING

Regular DAILY cleaning, using a soft cloth with warm detergent solution, is recommended.

It is recommended that the system be flushed out at regular intervals using warm water – this is particularly important when changing from one type of chemical to another.

If using viscous/thicker or "Barrier" type chemicals the system should be flushed out more frequently (at least once-Monthly) using hot (45°) water, as this will minimise the risk of chemicals congealing in the system causing slow dispensing and leading to blockages.

WORKING ON THE POWER UNIT

Turn Off and de-pressurise the compressed air supply (E) BEFORE disconnecting it from the unit. Ensure that the pump is completely de-pressurised BEFORE disconnecting chemical inlet and outlet tubes.

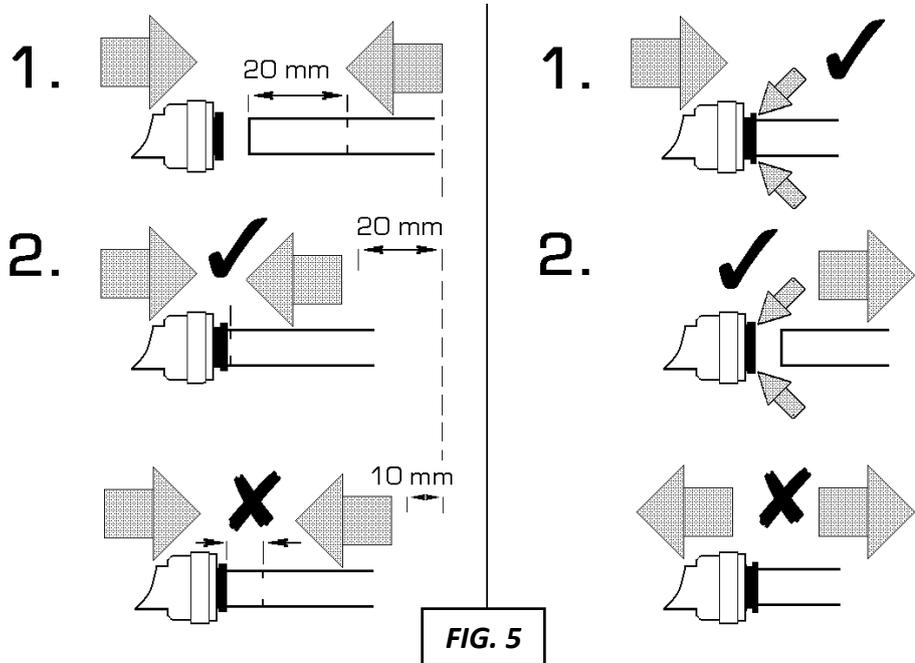
Lift the Power Unit off the wall and remove it to a safe and convenient working surface.

All entry ports into the Pump are “quick-release” and sealed by O-rings. They can be easily released by moving the appropriate release tab away from the entry port (for Liquid Inlet/Outlet the tab is BELOW the entry; for Compressed Air entry lift the tab above the entry fitting).

DISPENSER UNIT

Ensure that the compressed air supply (E) is turned “Off” and that the pump and Chemical Output line from the Power unit is completely de-pressurised BEFORE disconnecting the Chemical inlet tube (see FIG. 5 opposite).

Remove cover of unit (see FIG. 3), loosen mounting screws to allow unit to be lifted off and taken to a convenient working surface.



Problems with debris or chemical residues may necessitate dismantling to clean thoroughly. Otherwise, the Seal/diaphragm kit is the most likely solution to most problems – especially if the unit has been in use for some time.

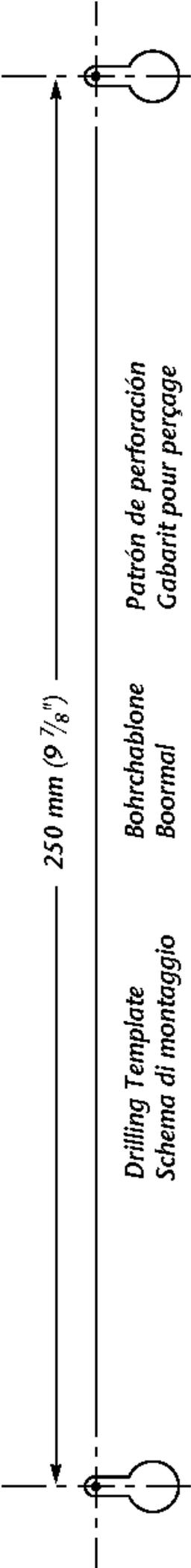
For troubleshooting chart, please refer to next page.

TECHNICAL DATA

Power Source	Dry Compressed Air	3 - 5.4 Bar (40 - 80 psi)
Maximum No. of Dispensers operated simultaneously		2
Typical Chemical* Fill Time (300ml bottle)		7-12 seconds @ 2.5 Bar (35 psi)
	(*Iodophor spray/dip chemical)	
Maximum No. of Dispensers per Power Unit		4
Air Consumption- maximum (actual consumption will depend on extent of demand from Chemical Output line)		20 l/min
Maximum length of Chemical Output Line		20 m (65 ft)
Output Pressure (dependent on air supply pressure at power unit)		2-4 Bar (30- 60 psi)

TROUBLESHOOTING

FAULT	CAUSE	REMEDY
1. Unit does not dispense Liquid 2. - Pump does NOT operate	a. Compressor, or air isolating valve not switched On. b. Compressor line not airtight c. Constricted Compressed Air Supply Pipe (E) d. Pump faulty	a. Switch "On" Compressor and/or isolating valve b. Check air tubing system for leaks. c. Check for kinks and overtightened Cable Ties d. Check pump and repair or replace
3. Unit does not dispense Liquid - Pump Operates continuously	a. Chemical Container is empty b. Intake Filter (D) blocked, or leak in Inlet tubing/connections c. Unsuitable chemical being used d. Pump faulty	a. Fill Container b. Clean Filter. Check Inlet tubing for leaks and rectify. c. Change to suitable (less viscous) Teat Disinfectant d. Check pump and repair or replace
4. Unit does not dispense Liquid - Pump Operates then stops	a. Chemical Output Line (F) blocked b. Constricted Compressed Air Supply Pipe (E) c. Pump faulty	a. Clear blockage and/or check for constrictions, kinks and tight Cable Ties b. Check for kinks and over-tightened Cable Ties c. Check pump and repair or replace
5. Dispenser drips from outlet tube, or very slow to dispense Chemical	a. Chemical Output Line (F) blocked b. Unsuitable chemical being used c. Dispenser dirty or internal seals/diaphragm faulty	a. Clear blockage b. Change to suitable (less viscous) Teat Disinfectant c. Flush out dispenser with clean water, dismantle and check/replace seals & diaphragm
6. Chemical running out of Power Unit	a. Loose Connector/tube b. Defective pump	a. Locate leak and rectify. b. Check Unit and repair or replace
7. Chemical leaks into Air line	Pump faulty	Immediately de-pressurise and disconnect air line. Repair or replace defective parts.



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