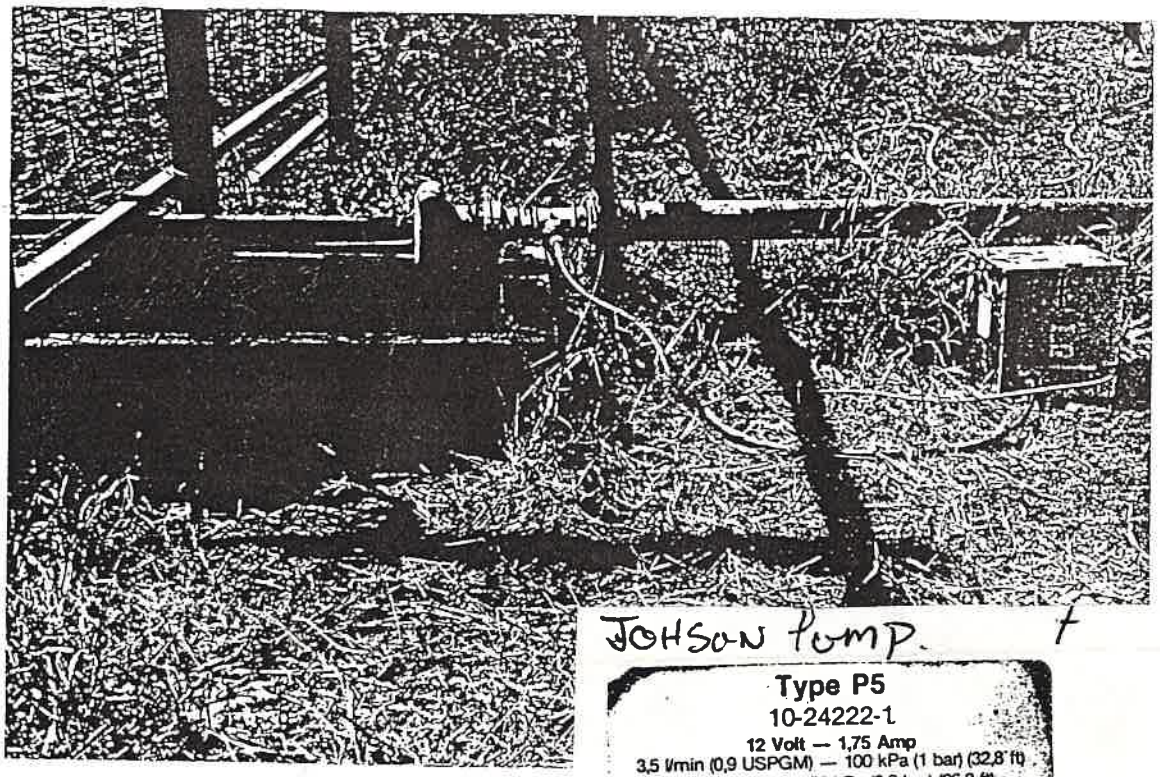
MANU ELECTRONICS

NORPRIM DISPENSER

INSTALLATION AND OPERATING MANUAL



JOHSON PUMP.

Type P5
10-24222-1
12 Volt — 1,75 Amp
3,5 l/min (0,9 USPGM) — 100 kPa (1 bar) (32,8 ft)
Shut in pressure 80 kPa (0,8 bar) (26,2 ft)
Shut off pressure 150 kPa (1,5 bar) (49,2 ft)
Use 5 Amps fuse

[redacted]

PSI
100 KPA ÷ 7 = 14 PSI

NORPRIM DISPENSER

INSTALLATION AND OPERATING MANUAL

The NORPRIM DISPENSER package normally will contain:

Main unit containing:

1. Electronic control box
2. Solid state battery
3. 12v pump

Paddle wheel flow sensor plus brass adaptor and locking nut

Galvanised pipe section (of specified size depending on size of water supply).

5 watt solar panel 6 A.HOUR

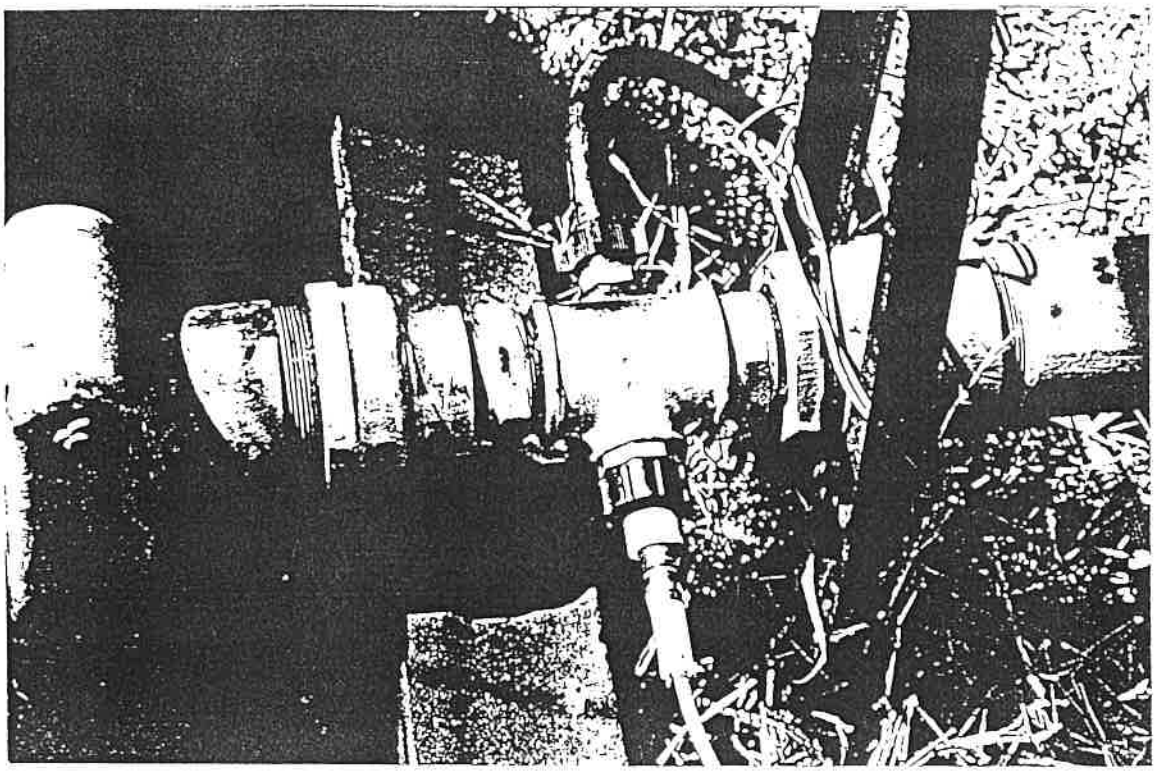
Attached 3/4" T piece and tap with nutrient line attachment. Tap is included to enable filling nutrient tank from existing water supply.

Length of 1/2" garden hose, in-line filter and hose clips.

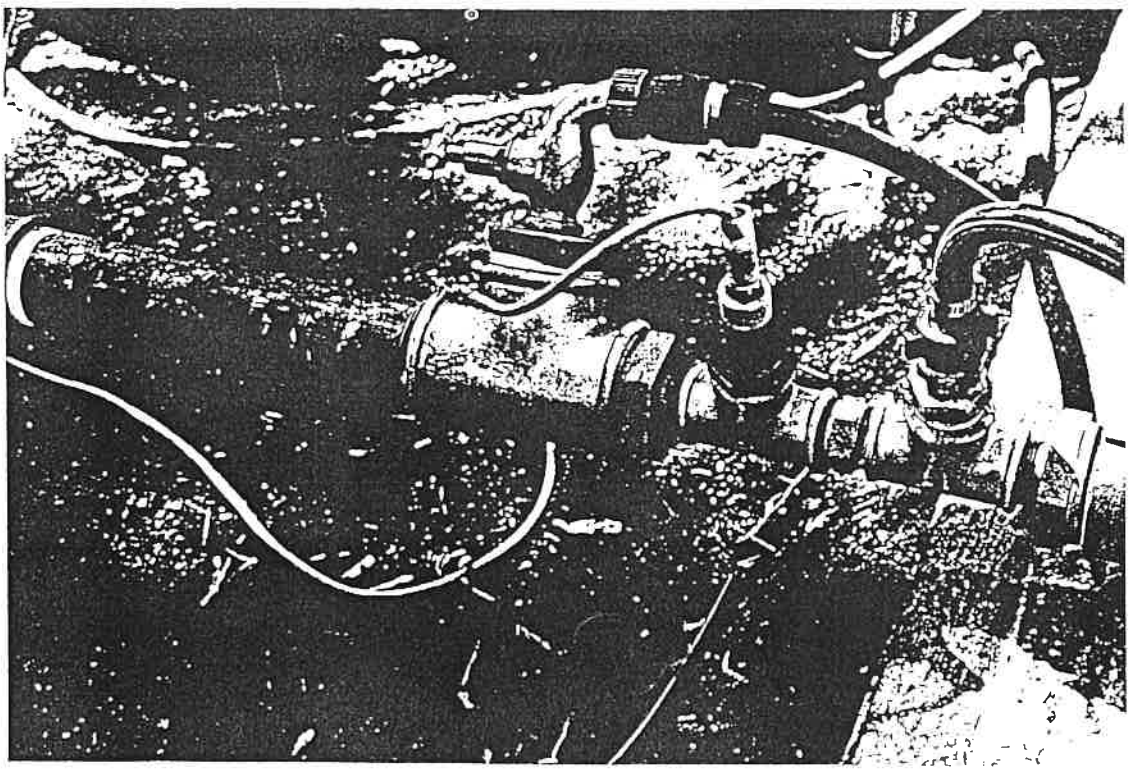
The NORPRIM DISPENSER can be installed in a variety of situations.

1. On the water trough, immediately behind the float valve.
2. In line, between the tank/turkey nest and trough.
3. In a reticulation system, servicing more than one trough.
4. Between the bore and tank for both windmill and motor installations.

A TYPICAL INSTALLATION AT THE TROUGH



AN IN-LINE SITUATION REMOTE FROM THE TROUGH



Normally, when the unit is installed at the trough or in-line between the tank and trough, the pipe diameter must be reduced to increase rate of water flow over the paddle wheel.
eg. in a 3" line, a 2" section will be supplied
if a 2" line, then a 1" fitting will be used.

IF FLOW IS 1Lt/Sec 2" LINE IS FINE.

When ordering, it is important to specify pipe size so that the correct size section can be supplied.

The pipe section will normally be a 2" reducing T piece, with a 1" offshoot for the flow meter opposite a 3/4" nipple brazed onto the T piece for attachment of the nutrient line.

When the line is reduced from 2", a 1" cross-over is supplied with one offshoot for the flow meter and the opposite outlet reduced to 3/4" for the nutrient line.

CALIBRATION FOR PIPE SIZE

When an order is placed and a pipe size stipulated, the unit will be calibrated for the specified pipe prior to delivery. If, at any time, the unit is installed on a pipe of different diameter from the initial size, then the unit must be recalibrated to suit the new pipe size.

Recalibration is carried out by opening the electronic control box (unscrewing 4 screws, one in each corner of box) and locating two side by side 10 position switches in the middle of the circuit board (see following photograph.) Ensure the box is correctly orientated when setting the switches. The setting on these two switches will depend on the pipe size stipulated at time of order:

Pipe Size inches	mm	Rotary switch settings T U
1	25	6 8
1.5	40	3 0
2	50	2 0
3	80	0 7
4	100	0 4

Note in the photograph, the position of the two rotary switches and that the left hand one is TENS and the right hand one is UNITS so that for a 1" pipe fitting, the left switch is on 6 and the right one on 8.
You will note the red central arrows, which can be turned to their appropriate position with a small screw driver. In the photograph, the left hand arrow is on 3 and the right on 0, so the unit is set at 30 for a 1.5" pipe.

When opening the unit to change calibration settings, please make sure the interior is kept clean and dry and that the unit is securely closed and sealed when finished.

SYDNEY 02,93481425 - 4573132.

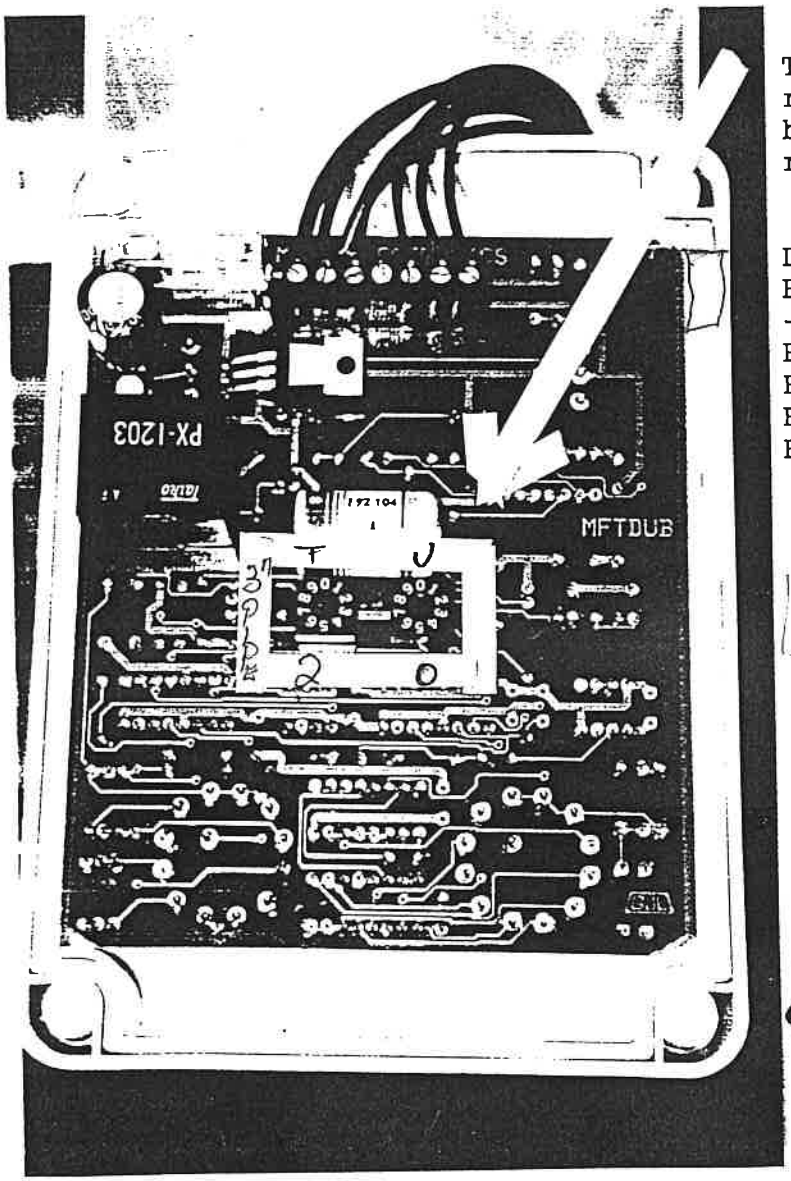
TONEY MANU

ALEX 02, 99381425

K28611

WIRING OF THE MEDICATOR

The units will normally be supplied fully wired except that the lead from the solar panel will need to be connected to the battery. In case wiring needs to be disconnected, then the following illustrates the wiring arrangement.



There are seven leads running to the control box. From left to right, they are:

Dose pump +ve
Battery +ve
-ve pump/batt
Blank
Blue - shield
Brown - power
Black - pulse

MANU ELECTRONICS
UNIT H-104
OLD PITT WATER
BROOKVALE
SYDNEY 2100

MANU ELECTRONICS

900 l.

50% UREA = 3 x 50 KG BAG
40% MAP = 1 x 50 KG BAG
10% SULPHATE AMMONIA = 1 x 25 KG BAG

02,99054324 TONEY,

HOSE CONNECTION

Connect the pump outlet at the front of the box to the 3/4" nipple on the pipe section insert.

The pump inlet at the back of the box is connected to the nutrient tank outlet. The in-line filter is inserted in this line.

27-3-96

ALEX

PUMP CUT OUT AFTER HOSE

NUTRIENT TANK

Depending on the number of cattle watering at the bore, any suitable fibreglass, plastic or lined iron tank will serve as a nutrient tank.

A minimum size of 500 litres is desirable.

The tank should have a large opening in the top (minimum 300 mm) to enable mixing of the dry nutrient mix.

The dispenser unit should be located at the same level as the base of the nutrient tank.

At this stage, the following steps should have been taken:

1. Pipe section installed into line

2. Nutrient hose attached to 3/4" nipple on pipe section and to outlet from nutrient pump

3. Paddle wheel flow sensor with brass adaptor (1") set in pipe section opposite nutrient line fitting

4. Suitable nutrient tank connected to inlet fitting on nutrient pump. In-line filter installed.

5. Solar panel mounted and connected to battery in dispenser box.

3/4" Welded Nipple Outlet water or and Nutrient Feed.

The T piece and tap included in the nutrient line attachment allow filling of the nutrient tank.

ELECTRONIC CONTROL BOX

The control box will have been calibrated to the pipe section supplied with the unit.

The controls on the box are as follows:

Top right hand: On/off switch

Top left hand: Reset button for LCD reading litres of water.

Centre of box: Two lights. The left light is on when the paddle wheel is turning.
The right hand light comes on when the nutrient pump operates.

SECOND Bottom right hand: Timer for nutrient pump.

LITRES Bottom left hand: Pump initiation setting. Sets the number of litres at which the nutrient pump will initiate.

JOHSON Pump 7

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PSI

100 KPA ÷ 7 =

NUTRIENT DOSAGE RATE

TANK MIXING RATE

Dawson Dispensers can supply premixed nutrient mixtures for all feed situations. These formulations are designed to be mixed with water at the rate of:

1 bag (~~40 kg~~ 50 KG) per ~~120~~ 150 litres of water. (900 LITER = 6 × 50 KG BAGS PREMIX)
(" " = 7.5 BAGS × 40 KG " ")

This makes 160 litres of liquid nutrient mix.

We recommend that only DAWSON FEED MIXTURES be fed through the dispenser.

Users wishing to feed other basic nutrient such as urea will need to calculate rates separately.

INITIAL MIXING RATE

When introducing nutrients into the drinking water, half strength mixes should be used initially so the first filling of the nutrient tank will be at the rate of:

1/2 bag (20 kg) per 120 litres of water.

Following this initial charging, the tank can be topped up at the full rate.

The standard settings on the unit should be:

≈ 5ml/LITRE. ~~5ml~~ FOR 1 LITER.

	Pump initiation	Timer
Hot weather	60 litres	3 sec = 300 mls NUTRIENT.
Cool/cold weather	50 litres	3 sec

These settings apply to both DAWSON DRY FEED MIX and DAWSON GREEN FEED MIX.

The settings are based on an average cow of 350 kg with a water intake of 100 ml per kilogram liveweight, resulting in a daily water intake of 35 litres.

In normal installations of low head, the nutrient pump delivers 100 mls per second so the settings on the timer (dose cycle) represent both seconds and 100 mls.

WARNINGS

DO NOT FEED OTHER SUPPLEMENTS TO ANIMALS DRINKING MEDICATED WATER.

DO NOT ALLOW WATER SUPPLIES TO GO DRY. NUTRIENT MIX MAY SYPHON INTO THE WATER TROUGH. SHOULDN'T.

DO NOT ELEVATE THE NUTRIENT TANK. NUTRIENT TANK AND CONTROL UNIT MUST BE AS LOW AS POSSIBLE IN RELATION TO TROUGH.

HEAD IN WATER SUPPLY MUST ALWAYS BE GREATER THAN HEAD IN NUTRIENT SUPPLY.

Poly Tank. 900 LITERS = 200 GALLONS ≈ $290

The NORPRIM DISPENSER was developed within the Northern Territory Department of Primary Industry and Fisheries and commercialisation was assisted by the Department of Industries and Development.

32,000 GAL TANK (160 GALLONS)
(144,000 LITERS) = (720 LITERS NUTR)
AS91/0185

5,000 GALL 20,000 LITER TANK

TOTAL 25 KG MIX

9

900 L TANK

50% UREA 150K x 40K BAG x 4 = 160K
30% MAP 90K x 25K " x 3 = 75K
20% SALP 60K x 50K " x 1 = 50K
300K 285K
15K
300

NORPRIM.
WATER MEDICATOR NOTES

The nutrient mix when made up in 100 kg lots consists of. 32,000

UREA	50 kgs	12½ KG	5,000 GALLON	75 KG
* TECHNICAL GRADE M.A.P.	30 kgs	7½ KG		45 KG
SULPHATE OF AMMONIA	20 kgs	5 KG		30 KG
	100	25 KG		150 KG

When green feed is available to stock the M.A.P. is increased to 50 kgs and the UREA dropped to 30 kgs.

The nutrients are mixed at the rate of **50** kgs to **150** litres of water. 100K 300L. 6x50 KG = 900L.

At this rate the nutrient will be consumed at approximately 4 kgs per 100 head per day or 16 litres of mixture per 100 head per day.

For every 60 litres of water measured 300 mls of nutrient is added.

Maintenance should be carried out on a regular basis.

1. Once monthly remove and ensure the flow meter is running freely. If the paddle wheel has a build up of salts it should be soaked in a weak acid solution or vinegar to clear it.

   Never remove the flow meter by pulling on the cable. For ease of removal and fitting the body of the flow meter should be lubricated with vaseline or grease. body only not axle

2. Clean the filter between the nutrient tank and unit monthly.

3. Compare nutrient usage to water usage frequently to ensure the unit is operating correctly. Do this by reading the digital meter inside the unit and estimating nutrient usage.

   For each 200 litres of water registered one litre of nutrient is used. (900L TANK = 180,000 L)

900L.

3x 50KG UREA $33-70
1K 50KG MAP $97-50
½x 50KG SMP $22-10
$

DAWSON UNIT $1,700 + 1,000L POLLY TANK $300 = $2,000

5,000 GALL POLLY TANK ALICE $1,970, ADELAIDE.

TANK: $220-70 ÷ 6 : $36.

AAVK030

125K