

# Access Static Dilutor



## Specification

Code:	<b>ADS</b>
Capacity:	9 litres
Flow rate:	300 – 2,300 l/h
Jets:	100:1, 50:1, 25:1, 10:1

## Safety advice

Trapped air is dangerous, always ensure there is no air trapped in the bottle or hoses. Always ensure local water regulations are observed if connecting to drinking water supplies.

Avoid leaving the unit operational for long periods in strong sunlight.

Protect the dilutor from frost.

Always observe fertiliser manufacturers instructions.

Never operate the dilutor at pressures in excess of 2.5 bar.

Never use 'trigger' type on/off valves as turning valves on and off very quickly can create pressure waves that burst the dilutor bottle.

# What's in the box?

- Plastic bottle.
- Bag containing, instructions, spare boss 'O' ring, label.
- Bag containing, head/boss, connection fittings, jets.

## Getting started

Fit the brass hose connections to the head.

Fit orange downtube onto grey downtube in boss.

Fit the black barbed connector onto end of orange downtube, select and push on coloured jet securely.

(10:1 Grey jet requires additional black adaptor)



## Spare parts/accessories

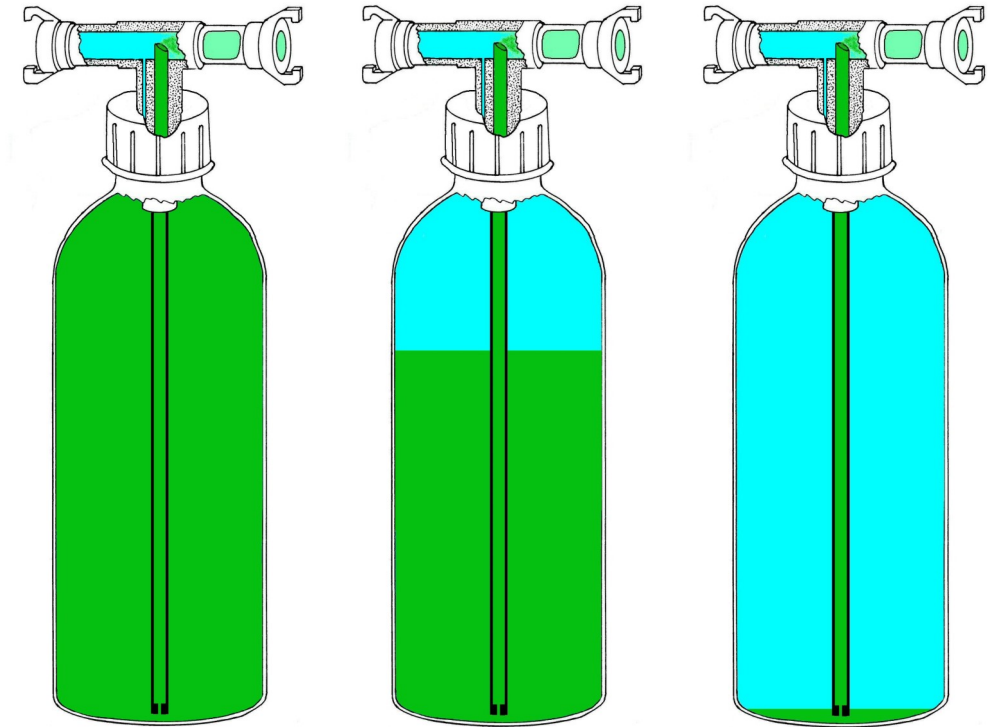
	BOTTLE	HEAD/BOSS	JET/TUBE PACK	PRESSURE
ADS	ADS-BTL	ADS-HBA	ADS-JTP	AD-PR

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**Where water pressure can exceed 2.5 bar a pressure regulator must be fitted. AD-PR will ensure the correct inlet pressure.**



# ADS operation details



## How the dilutor works

The dilutor consists of a strong plastic bottle and a metering head with venturi. As the water flows past the venturi, concentrated fertilizer is drawn up into the water flow. A metering jet regulates the dilution ratio. Very little pressure is lost during operation.

As concentrated fertilizer is removed from the bottle, plain water enters to replace it. As this is less dense than the concentrated fertilizer it will sit on top. The division between the concentrated fertilizer and the plain water should be visible through the side of the bottle.

To save wasting fertilizer, choose a jet ratio appropriate to the amount of feeding required as the dilutor must not be moved once started or left overnight.

# Operating instructions

## 1 Remove head/boss assembly (A)

Disconnect supply hoses if fitted.  
Unscrew head/boss anti-clockwise.



## 2 Put fertilizer into empty bottle (B)

Bottle must be filled to **brim** with concentrated fertiliser mix - see page 4.  
Ensure fertilizer is well mixed.



## 3 Replace head/boss assembly (C)

Ensure downtube/jet is secure and not kinked. Securely hand tighten ensuring 'O' ring is in place.  
Connect supply hoses ensuring flow is as arrow on head.



## 4 Slowly turn on the water supply

Ensure supply hoses are not kinked and any downstream valves are open  
**before** turning water supply on.

## 5 Whilst feeding

The concentrated fertilizer level will slowly drop.  
Do not move/disturb the bottle whilst feeding or leave filled overnight.

## 6 When feeding has finished

Disconnect the supply pipes from the Dilutor. Empty bottle and flush out all residue with clean water.

# Making up the concentrated fertilizer

Jet colour	%	Ratio	Make fertilizer concentrate:	This Jet will add fertilizer to:
Purple	1%	100:1	100 times stronger	870 litres of water
Light Blue	2%	50:1	50 times stronger	435 litres of water
Dark Blue	4%	25:1	25 times stronger	218 litres of water
Grey	10%	10:1	10 times stronger	87 litres of water

## In bottle method

To make the fertilizer concentrate in the bottle (nominal capacity 9 litres), the following calculation must be made:

### **Manufacturers final application rate per litre x Jet size x 9**

For example, if the fertilizer instructions state 'add 0.5ml to 1 litre of water' and the 50:1 jet (fertilizer concentrate 50x stronger) is being used, the amount of concentrated fertilizer to add would be:

$$\frac{0.5\text{ml}}{1 \text{ litre}} \times 50 \times 9 = 225\text{ml}$$

Put the 225ml of concentrated fertilizer into the bottle, fill to the brim with plain water and ensure the contents are well mixed.

## Stock solution method

To make up a stock solution the calculation is the same, but instead of multiplying by 9 (nominal capacity) multiply by the amount of stock solution required. To make 25 litres of stock solution the calculation would be:

$$\frac{0.5\text{ml}}{1 \text{ litre}} \times 50 \times 25 = 625\text{ml}$$

Make up the remainder of the 25 litres with plain water. Using this method the dilutor would be filled with the stock solution.

## Stock solution method - commercial fertilizers

Commercial fertilizer manufacturers usually tell you to make up a stock solution by, for example, dissolving 1kg in 10 litres, then applying this to the plants at 200:1, 100:1, etc. Make up this stock solution and then use the table below to indicate how many litres of concentrated feed to put in the bottle. Fill the remainder of the bottle with plain water and ensure the contents are well mixed.

Stock strength	100:1 Jet	50:1 Jet	25:1 Jet	10:1 Jet
100:1	Full	4.35	2.18	0.87
200:1	4.35	2.18	1.09	0.44
250:1	3.48	1.74	0.87	0.35
500:1	1.74	0.87	0.44	0.17

# TROUBLESHOOTING

The Access static Dilutor provides a simple and cost effective solution to plant feeding. With no moving parts there are also limited things to go wrong. If you are having problems follow our the troubleshooting checklist below:

## Dilutor not working

1. Is the tube/jet fitted correctly or blocked?
2. Is the fertilizer fully dissolved?
3. Is the direction of flow as the head indicates?
4. Is the water flow between its specified min/max range?
5. Was the bottle filled to the brim?
6. Is the fertiliser denser than water?  
(1 litre must weigh more than 1kg)
7. Has the bottle been moved or been left overnight?

## Bottle leaks water

If water is weeping from the relief valve then the pressure is **too high**. Reduce the supply pressure or fit a pressure regulator (**AD-PR**) to the dilutor. Ensure the water supply pressure is 2.5 bar or below at all times.

If the bottle itself is leaking, it has been over-pressurised and needs replacing.

If the dilutor is leaking at the boss. Remove head/boss assembly check condition of the 'O' ring if damaged replace (smear Vaseline on seal and refit) re-tighten head securely.

## Problem fertilizers

Before purchasing, check with the fertiliser manufacturer to ensure that the fertiliser will fully dissolve at the concentration you require (eg 50:1), as it is sometimes difficult to get crystalline fertilizers to fully dissolve at the higher concentration rates.

Make sure that the fertilizer is denser than water (1 litre must weigh more than 1kg)

## **Light coloured fertilizers**

To see what the water should look like when it comes out of the dilutor, take some of the concentrated fertilizer and dilute it (50 times if using the 50:1 jet). If the colour is too light to see, add a colouring agent to the concentrated fertilizer. Food dye often makes a good colouring agent.

## **End of season care**

At the end of the season disconnect the feeder/dilutor from any supply pipes, remove head and jet if fitted and flush with plain water. Flush out bottle thoroughly and store in a frost free environment.

# Important operational notes

The Access range of dilutors offer a simple and cost effective solution to liquid feeding. Using a simple venturi design with no moving parts it gives accurate proportional dilution of any water soluble feed within its flow range.

The Access dilutor range gives the benefits of more sophisticated injectors at a fraction of the cost. However, because of this, there are design limitations. Because the container is made of polythene it will flex when put under excessive pressure, which will cause leakage of seals or damage to the bottle itself. **The maximum pressure is 2.5 bar.** If you have a higher pressure than this, an injector would be more suitable.

## **To ensure the bottle is not over pressurised the following guidelines MUST BE OBSERVED:**

1. The bottle should not be subjected to pressures in excess of 2.5 bar. Note: do not rely on the bottle relief valve to keep the pressure below this.
2. During operation the water should be turned on/off at the supply side only and no valve should be turned off, even momentarily, on the outlet side. If using a lance or gun on the end of the hose the valve/lever must be set/locked in the fully open position.
3. During operation ensure any hose connected to the outlet side doesn't get trapped or kinked as this will cause a back pressure surge inside the bottle.
4. Use a pressure regulator on the inlet side of the dilutor if your supply pressure could exceed 3.0 bar Note: pressure regulators only work when there is sufficient flow, so they will not work at static flow - see note 2.
5. If fitting the dilutor inline of an irrigation system ensure there is always sufficient flow through it and never fit solenoid valves on the outlet side.

**Failure to comply with these instructions will result in bottle failure - this is not covered by the warranty**

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