Data Sheet

# Vision deionisers

**RS stock numbers 437-008, 437-014**

## Principle of operation

The Vision 125 and 250 are compact wall mounted deionisers designed to meet the needs of users who require low volumes of purified water.

Feed water passes via the inlet tap at the bottom of the unit into the Vision cartridge which contains ion exchange resin. As the water passes through the cartridge it is purified and then passes out of the unit via the outlet spout.

The quality of the purified water is monitored/indicated by a colour change window on the side of the cartridge. New cartridges display a blue/green colour resin which gradually turns brown from bottom to top as the resin exhausts. The cartridge will produce ultra pure water with a conductivity of less than 1µS/cm until the point indicated by the blue arrow is reached. It will then continue to produce pure water with a conductivity of less than 10µS/cm until all of the exhaustion window has turned brown. Once exhausted the cartridge should be replaced immediately.

## Water purity

Ultra-pure water produced by the Vision 125 and 250 is almost entirely free of dissolved mineral salts, including silica, and will have a neutral pH since the dissolved $CO_2$ will have been removed. From an inorganic standpoint ultra-pure water will conform to international pharmacopoeia and laboratory grade specifications for purified water.

For less critical applications the Vision 125 and 250 are producing pure water at the end of each cartridge run, extending its life by approximately 25%. Pure water is similar to ultra pure water although $CO_2$ and silica will be present.

## Installation specification

### Inlet

Feed water: Cold potable water, free from suspended solids. Maximum inlet pressure – 6 bar (90 psi), minimum inlet pressure – 0.7 bar (10 psi). If water supply pressure exceeds 6 bar, a pressure reducing valve must be fitted. Supply line should be fitted with a suitable isolating valve.

### Outlet

Water quality: Better than 1mΩ-cm (1µS/cm)

Maximum flowrate: 60 litres/hr at 6 bar feed pressure.

### Dimensions

| | Vision 125 **RS** stock no. 437-008 | Vision 250 **RS** stock no. 437-014 |
|---|---|---|
| Height | 385mm | 600mm |
| Width | 92mm | 92mm |
| Depth | 110mm | 110mm |
| Weight: Cartridge only | 1.8kg | 3.0kg |
| Cartridge fittings | 2.5kg | 4.2kg |

## Technical specification

| | Ultra pure water | Pure water |
|---|---|---|
| **Water analysis** | | |
| Conductivity | 1-0.1µS/cm | 10-1µS/cm |
| Resistivity | 1-10MΩ-cm | 0.1-1MΩ-cm |
| Silica | <0.05ppm (mg/l) | Not removed |
| Carbon dioxide | <0.5ppm (mg/l) | Not removed |
| Trace dissolved metals | <0.001ppm (mg/l) | <0.005 ppm (mg/l) |
| Residual solids | <0.5ppm (mg/l) | <5ppm (mg/l) |
| Average pH | Neutral | 4-7 |
| Max flow rate | 60l/h | 60l/h |
| Max input pressure | 6 Bar (90psi) | 6 Bar (90psi) |
| Connections | ½ BSP/Hosetail | ½ BSP/Hosetail |

**Output data**

The output of the unit is dependent upon the quality of the influent water. The table below is intended as a guide, but for complete accuracy a water analysis is essential.

| TDS PPM (mg/1) | | Output in litres | | |
|---|---|---|---|---|
| | <1µS/cm | <10µS/cm | <1µS/cm | <10µS/cm |
| 50 | 640 | 800 | 1280 | 1600 |
| 150 | 220 | 270 | 440 | 540 |
| 250 | 130 | 160 | 260 | 320 |
| 350 | 90 | 115 | 180 | 230 |
| 450 | 72 | 90 | 144 | 180 |
| 550 | 58 | 72 | 116 | 145 |

| | | **RS** stock no 437-008 (Vision 125) | **RS** stock no 437-014 (Vision 250) |
|---|---|---|---|
| Cartridge capacity | < 1µs/cm | 32,000 litres/ppm TDS | 64,000 litres/ppm TDS |
| | < 10µs/cm | 40,000 litres/ppm TDS | 80,000 litres/ppm TDS |

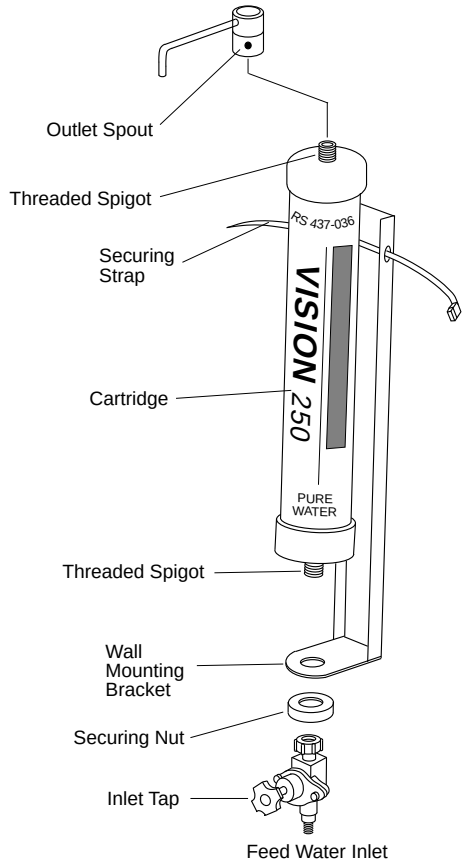
## Installation

The unit should ideally be situated over a sink or drain and adjacent to a suitable cold potable water supply.

1. Place the wall mounting brackets at the desired location (ensure sufficient clearance is allowed below the bottom of the bracket, minimum 300mm, to enable fitment of inlet tap and feed water pipe) and mark position of top keyhole fixing point.
2. Fit no. 8 × 1½ long wood screw into wall at position marked in step 1 and then hang wall mounting bracket onto screw. With bracket positioned vertically mark position of bottom fixing hole and fit screw to secure bracket firmly to wall.
3. Locate cartridge securing strap into wall bracket by passing through slots provided at the top of the bracket. (Figure 1).

   **Note:** Ribbed side of strap should be forward.
4. Unpack the new Vision cartridge from its sealed bag and remove red coloured protective caps from each end.
5. Next attach the outlet spout to the top of the cartridge (Figure 1). The outlet fittings are a banjo type fitting with one half being able to swivel freely. To fit to the cartridge, the knurled part of the outlet fitting should be held in one hand and the cartridge screwed 'clockwise' into the fitting until resistance is felt against the O ring inside the outlet fitting. **Do not overtighten.**
6. Having fitted the spout to the outlet of the cartridge, the cartridge can now be fitted to the wall mounting bracket. Ensure window is facing forward and that the spout is also positioned forwards. Locate car-

Figure 1



tridge onto wall bracket by passing threaded spigot on the bottom of the cartridge through the hole at the base of the wall bracket. The cartridge end cap will now rest against the bracket, and the securing nut (Figure 1) can now be screwed ''clockwise'' onto the threaded spigot protruding through the underneath of the wall mounting bracket. **Do not overtighten**, firm hand tight is sufficient to secure cartridge to bracket.

7. The top of the cartridge can now be secured to the wall bracket by use of the strap fitted earlier in step 3.
8. Fit inlet tap to the bottom of the unit by screwing the running nut on the inlet tap assembly to the threaded spigot which can be seen protruding through the centre of the securing nut fitted in step 6. **Note:** Ensure white sealing washer is in place inside the end of the threaded spigot.
9. Connect feed water supply to the inlet tap hose tail using ½ in diameter bore reinforced hose and secure with hose clip.
10. The unit has now been installed and is ready for use.

## Operation

1. Ensure unit inlet tap is closed.
2. Turn on water supply to unit.
3. The outlet spout can be swivelled to desired dispensing position, hold a convenient container under spout and slowly open unit inlet tap. Water will now flow into the unit, and once all the air has been expelled from the cartridge, a steady flow of purified water will be obtained from the spout. To stop flow simply close unit inlet tap.
   **Note:** Ensure all the air is expelled from the cartridge before closing pistol lever.
4. The unit is now in an operating condition and may be used as required, until such time as the colour change occurs in the exhaustion window and all the resin has changed from a blue/green colour to brown at the desired reject point of either 1 or 10µS/cm as marked on the window. This colour change indicates that the cartridge is exhausted and needs replacing.

## Cartridge replacement

1. Close the water inlet tap.
2. Relieve pressure from unit by depressing pistol outlet valve if fitted.
3. Remove inlet tap from bottom of cartridge.
4. Remove the securing strap from the top of the cartridge. The strap is a releasable type and has a tab moulded into the head, which, when depressed, enables the strap to be released and removed from the unit.
5. Remove securing nut from bottom of cartridge.
6. The cartridge can now be removed from wall bracket and outlet spout assembly can be unscrewed from the top of the cartridge.
7. The exhausted cartridge can now be disposed of.
8. Unpack a new cartridge. Supplied with each cartridge is a new securing strap which should be fitted into the slots provided in the frame.
9. Fit new cartridge as detailed in installation steps 4 to 11.

## Cartridge replacement service

1. Ensure similar cartridge is used for replacement as that originally supplied with your Vision 125/250 unit.
2. The following replacement cartridges are available:

| **RS** stock no. | For model |
|---|---|
| 437-020 | 125 (**RS** stock no. 437-008) |
| 437-036 | 250 (**RS** stock no. 437-014) |

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