



Portable Dosing Unit

CHEMIDOSE LIMITED



For the Chlorination and De-Chlorination
of potable water delivery pipework

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Introduction

Chemidose Limited has developed this simple Chlorination / De-Chlorination unit to provide an easy way to disinfect potable water delivery pipework.

It is a requirement to chlorinate potable delivery pipework to 50ppm and hold in the pipe for a minimum of one hour. Traditionally, the pipe is then flushed to waste to bring the residual chlorine levels back down to an acceptable level (0.5 – 1 mg/l). This can result in hundreds of litres of heavily chlorinated water running to waste.

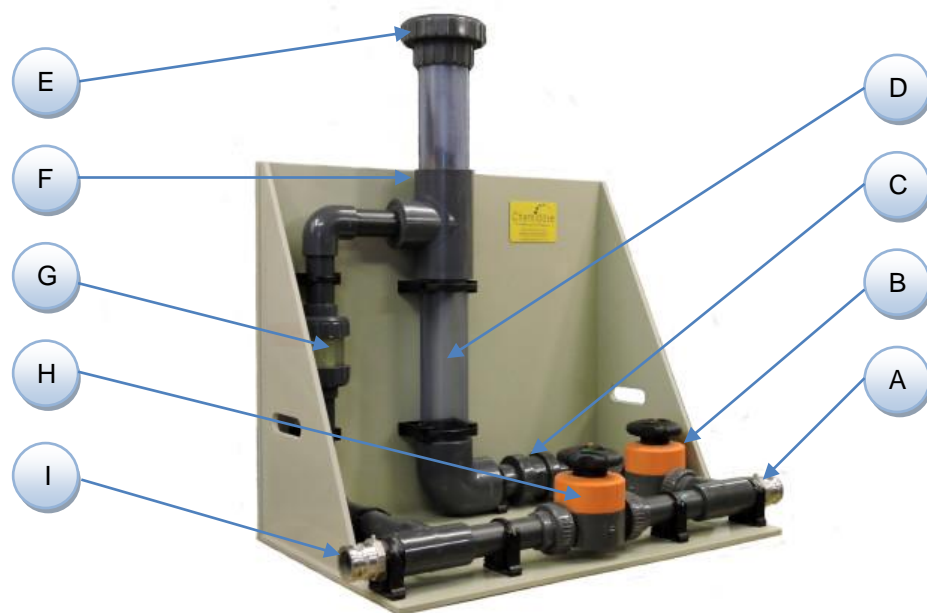
By using De-Chlorination tablets (Sodium Sulphite) after the chlorination process, the residual chlorine levels can be knocked back using less water and with less environmental impact.

The unit has been designed and tested using Hi-Chlon[®] and D-Chlor[®] tablets.

Chemical usage calculation

Chlorination	$(\text{m}^3 \text{ of water} \times \text{ppm}) / 700 = \text{kg of Hi-Chlon tablets needed}$
De-Chlorination	$(\text{m}^3 \text{ of water} \times \text{ppm}) / 500 = \text{kg of D-Chlor tablets needed}$

Main components



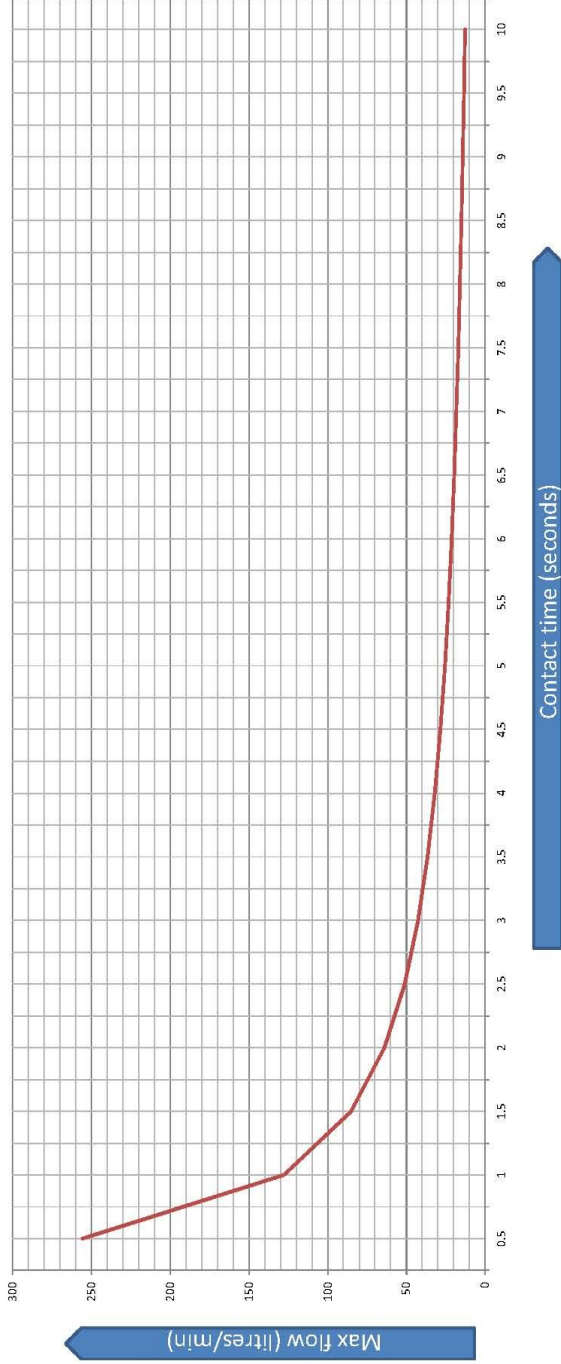
- A. 2" inlet camlock
- B. Dose control diaphragm valve
- C. One-way check valve
- D. Tablet holder
- E. Screw cap
- F. Minimum fill level to ensure maximum contact time
- G. Filter unit
- H. Flow control diaphragm valve
- I. 2" outlet camlock

Example De-Chlorination rates

Dechlorination unit flow rates



Contact time (s)	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Max flow (l/min)	255.6	127.8	85.2	65.2	51.1	42.6	36.5	32.0	28.4	25.6	23.2	21.3	19.7	18.3	17.0	16.0	15.0	14.2	13.5	12.8



Calculations

Volume of water below outlet = 3.77 litres (based on 10cm dia @ 48cm high)
 Volume of tablets (assuming vertical stack) = 1.64 litres (based on 6.6cm dia @ 48cm high)
 Approximate water volume circulating around tablets is 3.77 - 1.64 = 2.13 litres