



SCHEMATIC INSTALLATION LAYOUT

Atlas 'Jupiter' water softeners use the ion exchange principal for the removal of hardness in water exchanging the Calcium and Magnesium ions, which cause the hardness condition, with Sodium ions using the medium of a strong cationic resin bed. The filter bed is regenerated at regular intervals using Sodium Chloride (Brine) solution by a backwash process during which the removal hardness ions are flushed to waste. All softeners include the following:-

- Strong GRP reinforced polyethylene resin tank designed for long life.
- Polyethylene brine tank with drain piping.
- Control valve that automatically cycles the regeneration process on either a volume or time elapsed basis depending upon parameter specifications. Regeneration can be programmed according to operating conditions.
- A filter charge of cationic ion exchange resin.

Atlas 'Jupiter' water softeners are quality units designed for continuous operation in small flow requirements including domestic, process and industrial applications. The combined features of simplicity of operation and robust design make them an ideal solution for all softening requirements.

SOFTENER SIZING

Softeners are rated by their exchange capacity, which is in the quantity of Calcium that is removable between regenerations and is determined by the resin performance and resin capacity. Equipment sizing is then computed on the basis of the raw water hardness and the required brine regeneration period, 24hrs being the minimum.

For example the Jupiter 30AVL has an exchange capacity of 2250mg CaCO₃ and for water of 200ppm CaCO₃ hardness the treatment volume is $2250/200 = 11.25\text{m}^3$ between regenerations. Assuming a 10 hour operating period/day and daily regeneration the required flow rate is 1 m³/hr.

Note that softening performance is reduced by increased TDS levels and it is necessary to compute compensated hardness when TDS levels exceed 400ppm as follows:- $\text{Compensated Hardness (ppmCaCO}_3\text{)} = \frac{\text{Measured Hardness (ppmCaCO}_3\text{)} \times 9000}{9000 - \text{TDS level (ppm)}}$

OPERATING CONDITIONS

Raw Water Appearance: Clear

Temperature Range: 5°-40°

Iron: <0.1ppm

Min Inlet Pressure: 2Bar

Chlorine: <0.5ppm

Max Operating Pressure: 6 Bar

EQUIPMENT SPECIFICATIONS

Model	Resin Capacity (ltr)	Exchange Capacity*	Brine Consumption (kg)	Recommended Max. Flow Rate (m ³ /hr)	Outlet	Dimensions (mm)				Weight (kg)
						L	D	H	W	
JUPITER 30AVL	30	2250	4.5	1.8	¾"	1087	264	790	380	40
JUPITER 70AVL	70	5250	13	3	1"	1588	338	825	565	82

* Exchange capacities may vary depending on resin used

