

## Fruit Juice

### Process description

The AMT System introduces a completely new way of pasteurising fruit juice.

The ingredients such as fresh fruit and berries, water and sugar may be premixed and pumped directly through the AMT System.

Operating temperatures can be varied depending on the product required. Trials have shown that up to 85°C, the treated juice tastes the same as fresh and all of the antioxidants remain unaltered. This is unique.

The juice may then be fed directly and aseptically from the AMT System into a conventional filling machine or packaging line and rapidly chilled.

**Results from a trial undertaken at Queen Margaret University indicate that the AMT method of pasteurisation is the same or better than High Pressure Pasteurisation.**

### Versatility

The scalable and modular nature of the AMT System allows a wide range of production capacities to be catered for.

The smallest machine the **AMT 150** is capable of producing 150 litres of pasteurised juice per hour. The large **AMT 1500** is capable of pasteurising approximately 1500 litres per hour of juice (equivalent to 9000 litres in a 6 hour shift).

Virtually any mix that can be pumped through a 50mm pipe may be cooked using the AMT System.

The easily cleaned cooking chamber in the AMT System allows a range of products to be cooked using the same machine with little time lost between recipes.



### The advantages of pasteurising fruit juice using the AMT System

#### Improved product

- In taste tests, the pasteurised/sterilised juice was indistinguishable from the raw juice
- Better retention of colour and micronutrients such as anti-oxidants and vitamins
- Longer shelf life  
Ambient > 30 days

#### Cost Reduction

- Low installation costs & small foot print
- Juicing and pasteurisation/sterilisation can be carried out in one process

#### Versatility

- The same machine can be used for a range of fruit products such as jam, smoothies and coulis

*'Global leader in the use of microwaves to heat and condition liquids, suspensions and semi solids'*

## The AMT System of “Volumetric Heating” presents a unique technique to deliver microwave energy deep into liquids on a continuous basis and on an industrial scale.

The AMT system allows practically any material that can be pumped through a 50mm diameter pipe to be heated and conditioned using microwaves. The heart of the system is a unique wave guide which allows magnetrons of varying power output to focus their energy uniformly across the entire cross-sectional area of any microwave transparent tube. The AMT mixing system keeps even the thickest liquids moving and ensures rapid and even heating.

### Design Features

- There are no hot metal surfaces for difficult materials to stick to (eg milk, egg, blood)
- The unique AMT mixing device ensures even flow and cooking of the most viscous fluids
- The cooking chamber may be made of any microwave transparent material and can be optimised for the temperature and pressures required
- By adjusting the number, spacing and size of the microwave sources the cooking system is highly scalable
- Fine control of temperature ( $\pm 1^{\circ}\text{C}$ ) is achieved by automatically varying the flow rate of the integrated pump
- Compact design fabricated in stainless steel
- Easily and quickly cleaned
- Batch processes may be made continuous
- Potential to create new or enhanced products
- No ancillary equipment or controls required

For further information about demonstrations of the AMT system or to trial the technology, please contact BESTPUMP on 0845 467 2378 or email [info@bestpump.co.uk](mailto:info@bestpump.co.uk)

*The AMT System can offer significant carbon reductions over conventional methods of cooking. AMT can help provide an independent assessment of how these savings can be converted into economic benefits.*

#### Disclaimer

Our technical advice - whether verbal in writing or by way of trials - is given in good faith but without warranty, and this also applies where proprietary rights of third parties are involved. It does not release you from the obligation to test equipment supplied by us as to their suitability for the intended process and uses. The application, use of our equipment is beyond our control and therefore, entirely your own responsibility.