

## Automobile & Auto Ancillary Process Requirements of Hot Water

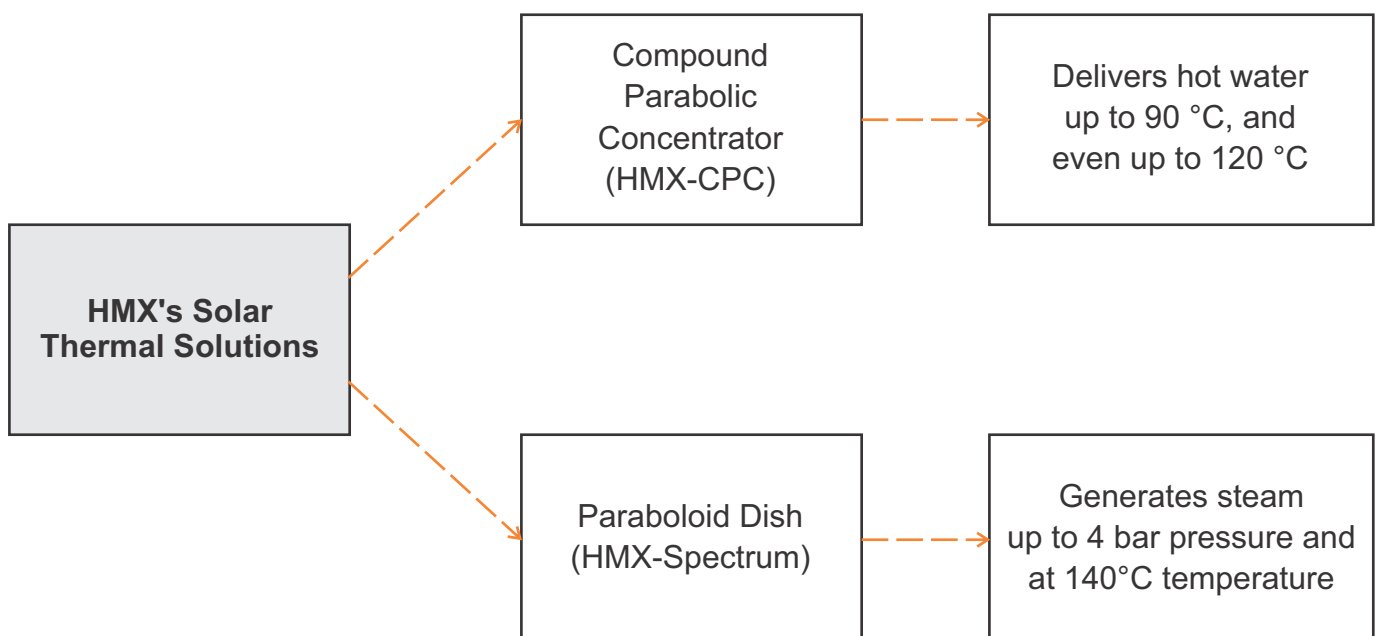
Manufacturing of automobiles and auto components involves several processes where hot water is used. Some typical hot water applications in the automobile industry involve hot water from 60 °C to 80 °C and steam @ 2-3 bar pressure.

- Paint shop - Degreasing: Range 60 °C to 80 °C
- Paint shop - Pretreatment: Range 60 °C to 80 °C
- Paint shop - Phosphating: Range 60 °C to 80 °C
- Paint shop - Spraying: Range 60 °C to 80 °C
- Paint shop - DIP water rinse: Range 60 °C to 80 °C
- Washing/cleaning & degreasing: Range 70 °C to 85 °C
- Kitchen utensil washing: Range 60 °C to 75 °C
- Steam cooking for boiling: Steam @ 2-3 bar pressure
- DG set preheating water: Range 60 °C to 65 °C
- Other low-pressure steam or high temperature hot water applications

Many automobile/auto component manufacturers use conventional hot water and steam generating systems with electricity/LPG/CNG/PNG or diesel as fuel. The rise in conventional fuel prices has therefore frequently influence their operational costs motivating them to explore renewable energy to reduce their dependence on these conventional fuels. They are also interested in using renewables and reduce their carbon footprint.

### Solar Thermal Systems & Solutions

The Sun is an inexhaustible, free source of energy as the Earth receives plentiful solar radiation. HMX's hot water and steam generators based on Concentrated Solar Technology (CST) harness the power of the Sun for industrial and commercial process heat applications. Steam or hot water from solar thermal sources can seamlessly supplement baseload heat from the existing systems. HMX's unique approach integrates conventional energy sources with solar energy, reducing fuel consumption and saving fuel costs without reducing reliability. Further benefit is the reduction of air pollution, a lower carbon footprint, and enhanced fuel security.



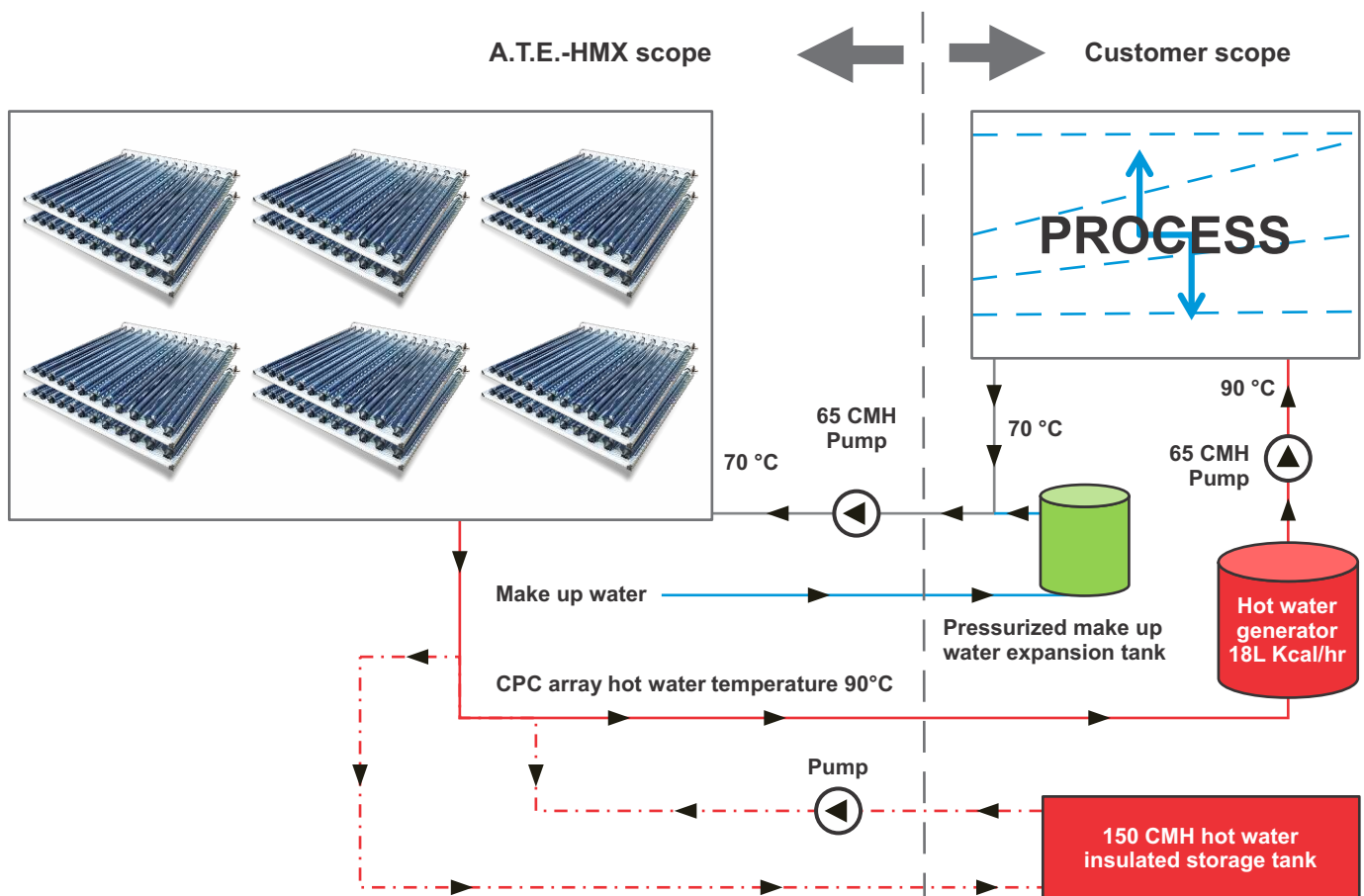
## Compound Parabolic Concentrator

Compound Parabolic Concentrators (CPC) are ideal for large scale medium temperature hot water applications up to 90 °C, and even up to 120 °C in case of pressurized systems. Thus CPC is suitable for a variety of industrial sectors and applications. HMX CPC is designed based on technology from the Ritter Gruppe, Germany. CPCs are available in two sizes: CPC 45 and CPC 70.



## Typical Scheme

Solar hot water for paint shop



Proposed scheme of hot water generation from Solar energy for a paint shop

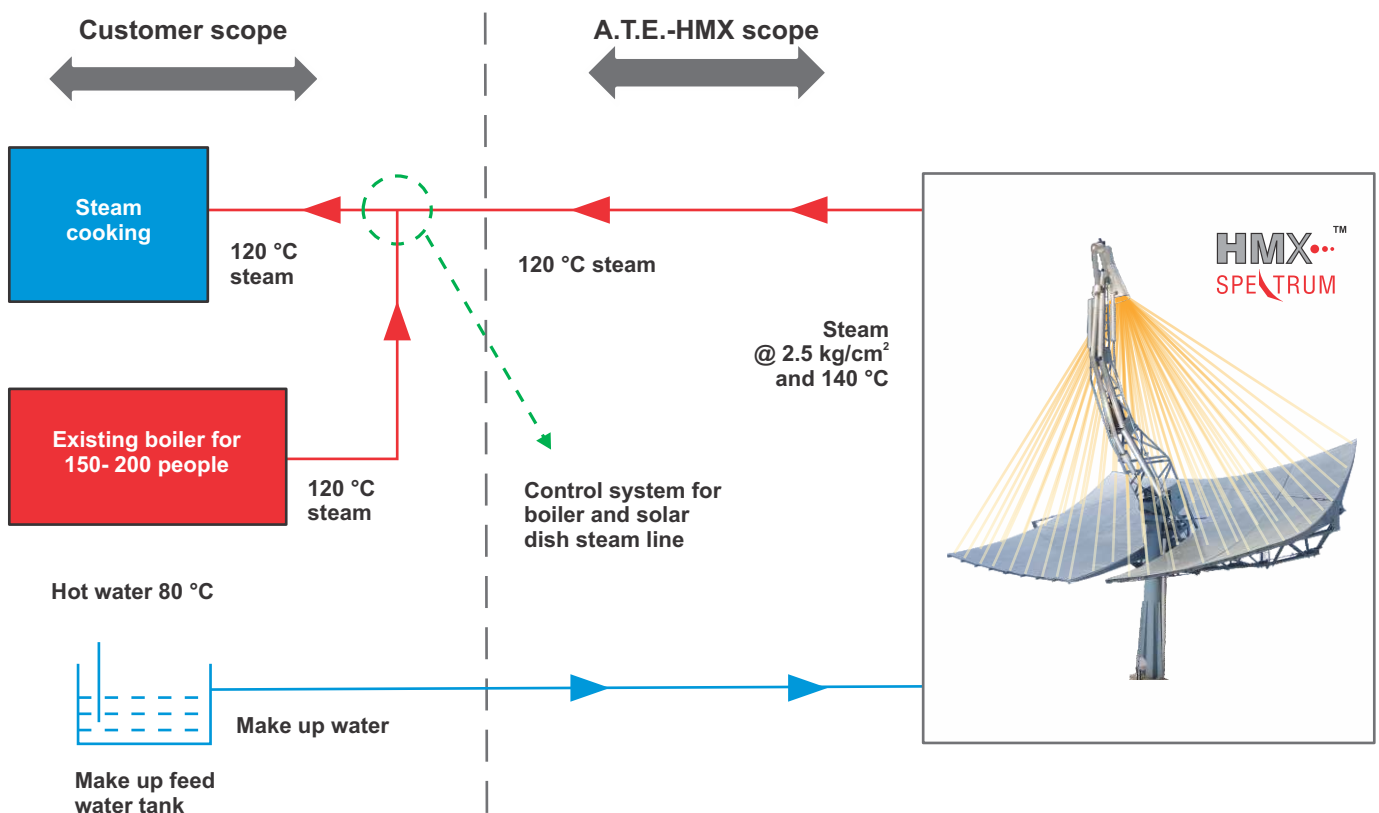
## Paraboloid Dish

HMX-Spectrum is designed for generating steam up to 4 bar (g). It is a double axis paraboloid dish concentrator with solar grade mirrors as reflectors which tract the Sun precisely throughout its motion on a daily as well as seasonal basis. HMX-Spectrum paraboloid dishes are available in 25 m<sup>2</sup> and 50 m<sup>2</sup> sizes.



## Typical Scheme

### Solar steam cooking



### Steam generation from solar energy for cooking

## Brief about HMX

HMX's passion and commitment to sustainability has led us to develop energy efficient technologies and products which includes solar thermal and cooling solutions for industrial and commercial applications. Our solar thermal solutions are based on concentrated solar thermal (CST) technology which are ideal for low pressure steam and process heating applications. For more than 15 years, HMX has further provided effective, reliable and cost-effective cooling solutions for varied applications around the country.

## About A.T.E.

Founded in 1939, A.T.E. Group has evolved into a multifaceted engineering group offering world-class products and solutions in textile engineering, wastewater treatment, cooling and heating, Industrial IoT solutions, value added equipment for textiles, packaging, etc.