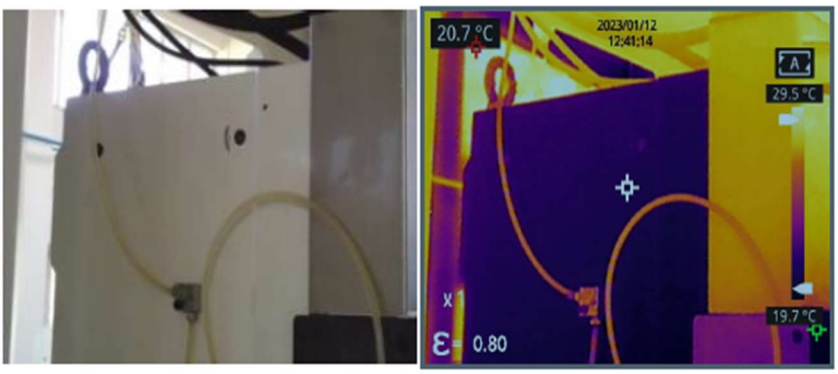
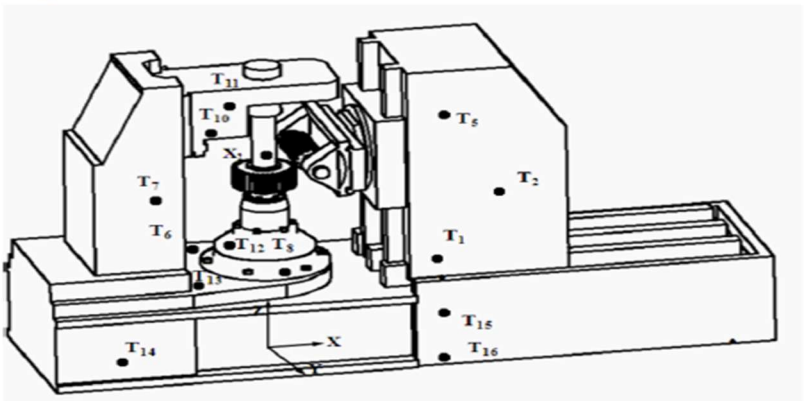
STANLAY™	**APPLICATION NOTE**
S300N THERMAL IMAGING CAMERA	**Nimble Machines**

Application requirement: **Thermal error prediction in CNC hobbing machine.**	**Solution:** **Algorithm development based on temperature data provided by identifying thermal hot spots using S300N thermal imaging camera.**

Customer Name: Nimble Machines (A Strategic Business Unit of UCAM Pvt Ltd.)
Service Provider: NA

Application requirement: Application of thermal camera in thermal error prediction in CNC Hobbing machine Focused on developing a math based thermal error compensation algorithm that can predict the deviation in the cutting tool and work piece during machining of the gears due to thermal errors.	**Solution:** The input to this algorithm is the temperature data that is provided by the temperature sensors mounted at critical points or hot spots on the machine. In order to locate these hotspots, S300N-IRThermal camera was used. Thermal images of various locations in and around the machine were capture using this S300N IR camera and the images were later analysed to find the hotspots. **Figure1** shows one of the images captured in the machine, showing the temperature gradient map in the captured region.  **Figure 1: Thermal image taken on gear hobbing machine** Based on the identified hotspots, RTD sensors were mounted at these locations to obtain continuous temperature data that will be used to build and test the Thermal compensation model. **Figure 2** shows the typical example of how the hotspots identified by the S300N IR thermal camera were used to determine the locations for RTD sensor mounting.  **Figure 2: Locations for mounting RTD sensors**

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