

## All Round Solutions from Kemet

Kemet introduced their first spherical lapping and polishing machine in 2004, primarily for the medical industry where at the time, the best hip replacement system available relied on balls and cups with a roundness and sphericity of <math><0.002\text{mm}</math>. The big problem at that time was not machining a spherical to these standards, the challenge was to produce a perfect blemish free mirror polish whilst still maintaining these tight tolerances.

The result from this first application was the Kemet SPM, a twin station lapping and polishing machine that could either be used as a standalone system, or as a secondary supporting machine for an existing machining centre that, on its own, would not be able to generate the scratch free mirror polish that the industry demanded. The SPM has capacity for a spherical from 20mm $\varnothing$  up to around 60mm $\varnothing$  and can be either a ball or cup. The 2-stage process takes around 7 minutes per stage and produces a blemish free mirror polish using a combination of a special polishing pad and Kemet's ISO 9001: 2015 accredited diamond compound.

Following the success of the SPM, more spherical applications were received by Kemet. However, many of these were simply to replace manual hand matching of spherical forms and it became clear that the SPM was not a natural solution, particularly because most of these new Aerospace applications did not require to be polished. To meet this new requirement Kemet developed the KemiSphere, a benchtop single station machine and now the KemiSphere II, a PLC controlled benchtop machine with optional pressure system and fully programmable HMI.

These machines provide an extremely economical repeatable way of processing spherical forms to a huge variety of surface finishes and can process a range of different materials either to be lapped as an individual component, or to match lap spherical forms together. It can be very difficult to document or validate a process that is currently being performed by hand so in these cases the KemiSphere II provides a perfect solution. The HMI allows component specific programs to be stored with drive speeds, sweep angles, process times and pressures. Kemet also offer to prove a process within their testing labs producing test data and samples so that all questions can be answered prior to even ordering a machine. This also means that machines are typically delivered pre-programmed ready for use whatever the application.

If you need help achieving a particular geometry or surface finish on a spherical component contact Kemet on Tel: 01622 755287, Email: [Sales@Kemet.co.uk](mailto:Sales@Kemet.co.uk), Web: [www.Kemet.co.uk](http://www.Kemet.co.uk)

