

Innovative tooling systems for cheap and accurate ends and shells

Multi-stage tooling

- Production sequence: Cutting of the round, forming of the inner geometry in several stages, number of stages depending on profile, shaping of countersink depth without tensile forces from the inner geometry.
- Manufacture of top and bottom ends with optimised profile in all material grades, from SR material to the hardest DR material.
- Minimisation of material thinning in critical areas. Performance optimisation for top and bottom ends in respect of buckle, distension and vacuum pull back, lacquer-preserving top and bottom end production.

Thermo compensating tooling

- Production sequence: Cutting of the round, forming of the inner geometry and the countersink depth with movement compensation by pneumatic spring assemblies, depending on the required force by compressed air or nitrogen.
- Manufacture of shells and bottom ends with narrow tolerance in all material grades, from SR material to DR material.
- Minimisation of the dimensional change in the critical areas of shells and ends caused by thermal changes of the press and the press tool.
- Minimisation of spring back effects, especially for DR material.

Multi-stage thermo compensating tooling

- Production sequence: Cutting of the round, forming of the inner geometry in several stages, number of stages depending on profile, shaping of countersink depth without tensile forces from the inner geometry, with movement compensation by pneumatic spring assemblies, depending on the required force by compressed air or nitrogen.
- Manufacture of ends and shells with optimised profile and with narrow tolerance in all material grades, from SR material to the hardest DR material.
- Minimisation of material thinning in critical areas. Performance optimisation for top and bottom ends in respect of buckle, distension and vacuum pull back. Lacquer-preserving top and bottom end production. Minimisation of the dimensional change in the critical areas of shells and ends caused by thermal changes of the press and the press tool. Minimisation of spring back effects, especially for DR material.