

# Technical Disclosure Commons

---

Defensive Publications Series

---

December 2019

## SHINING CHAMFER/SURFACE PROCESS BY COMBINING INSERT MOLDING WITH THIXO MOLDING

HP INC

Follow this and additional works at: [https://www.tdcommons.org/dpubs\\_series](https://www.tdcommons.org/dpubs_series)

---

### Recommended Citation

INC, HP, "SHINING CHAMFER/SURFACE PROCESS BY COMBINING INSERT MOLDING WITH THIXO MOLDING", Technical Disclosure Commons, (December 19, 2019)  
[https://www.tdcommons.org/dpubs\\_series/2789](https://www.tdcommons.org/dpubs_series/2789)



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

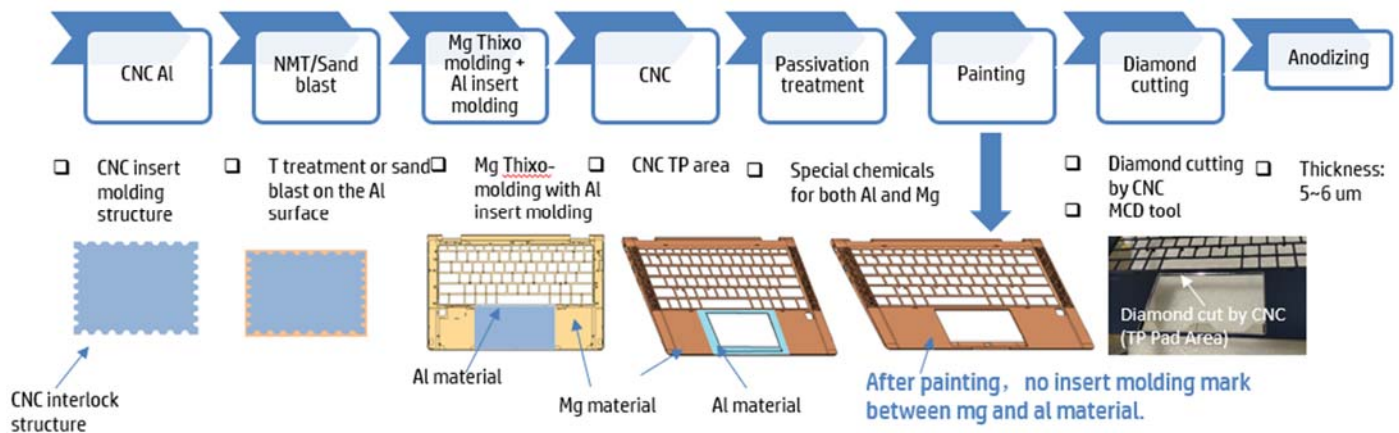
# Shining Chamfer/Surface Process by Combining insert molding with Thixo molding

## Prior Design

When we make a shining chamfer/surface in magnesium part, the cutting chamfer/surface is easily fogging and corroded. We take some actions to avoid the fogging and corrosion. This patent is an overall effective solution. Prior shining chamfer/surface is used in Al metal parts, not in magnesium material. Because Mg material is easily corroded and cutting chamfer/surface is not shining than Al material. Prior solution is using chemical conversion and ED (Electro Deposition) to protect cutting surface and avoid corrosion, keep the shining surface as same as Al material part.

## Example of Design Feature and Drawing

The new solution is to insert molding 6063 Al block with Thixo molding Mg at shining chamfer area, and then doing diamond cut on Al material. It can solve easily corrosion issue of Mg material and achieve better shining surface, firstly we use CNC process to cut the insert molding structure and T treatment or sand blast on the Al surface, then combine Al and Mg using Thixo-molding especially for Touch Pad area or others area that need to do diamond cut area, then we use CNC process cut others feature, then we do the passivation treatment using specially chemicals for both Al and Mg, then we do the painting as surface treatment, After painting, there are no insert molding mark between mg and al material, then we do the diamond cut using MCD cutter, it should be in the AL area, then we do the anodizing process with 2~4 um to cover diamond cut area.



## Advantages

This solution Shining chamfer/surface to decorate the painting/coating surface for better metallic feeling in Magnesium parts, Easy and simple process (compared another chemical protective solution). No corrosion risk (compared another solution which doing diamond cut for shining chamfer on Mg material), Keep same shining level as original Al part

*Disclosed by Jerry Chuang, Jack Hsu, Feng Gu, and Qiu Feng Yu, HP Inc.*