Cost Saving through Blanking Operation Transformation

When I began analyzing the performance of our press shop, I applied **Total Productive Maintenance (TPM) principles** to identify hidden losses. A detailed root-cause analysis revealed that a disproportionately high share of material waste, downtime, and die-related issues originated from the **deep drawing process**. While essential for certain geometries, deep drawing was being overused for components that did not strictly require it.

Deep drawing has inherent drawbacks compared to **blanking**: higher material consumption due to larger allowances, longer cycle times as multiple forming stages are required, and frequent die maintenance because of elevated stresses. Over time, these translated into **hidden costs**—scrap generation, energy inefficiencies, and operator fatigue.

I conducted a review of **component geometries and flow paths**, questioning whether certain parts could be re-engineered to bypass deep drawing entirely. By redesigning the part layout and optimizing tolerances, we successfully transitioned several components from deep drawing to blanking. This shift unlocked a cascade of benefits:

- **Material efficiency:** With blanking, parts could be more tightly nested in sheet stock, directly reducing raw material waste.
- **Cycle-time reduction:** Blanking required fewer strokes per part, improving overall throughput.
- **Lower tool wear:** Dies experienced less stress, extending maintenance intervals and lowering downtime.
- **Operational stability:** Machine utilization improved, and the risk of unplanned stoppages decreased.

The results were tangible and measurable. Scrap generation was **substantially reduced**, press-line proficiency increased, and raw material costs dropped. By maximizing equipment efficiency and minimizing downtime, the intervention delivered **quantifiable savings** while boosting worker morale by reducing tool-change interruptions.