Lubricants in the Manufacturing of BRKT-L_PNG-TO-CWL-SD-LH / BRKT-L_PNG-TO-CWL-SD-RH
Introduction
The BRKT-L_PNG-TO-CWL-SD-LH and BRKT-L_PNG-TO-CWL-SD-RH are left- and right-hand brackets that secure the panel to the cowl side of a vehicle body. These brackets play a vital role in maintaining vehicle structural stability, NVH (Noise, Vibration, Harshness) control, and safety during impacts. Their production involves blanking, stamping, forming, trimming, piercing, welding, and surface finishing of high-strength or galvanized steel. In each step, the correct lubricants improve productivity, surface finish, and durability.
1. Importance of Lubricants in Bracket Manufacturing
Tooling Protection: Reduces die wear during stamping and bending of bracket shapes.

Formability Support: Ensures smooth metal flow during complex bends and bracket contours.

Surface Integrity: Prevents scratches and galling on visible or coated areas.

Weld Readiness: Leaves minimal residue to avoid weld contamination.

Corrosion Protection: Guards semi-finished and finished brackets before paint shop entry.

2. Types of Lubricants Used
Process Stage
Lubricant Type
Benefits
Blanking & Stamping
Water-soluble emulsions or semi-synthetic stamping oils
Smooth forming, reduced die wear, residue-free finish
Forming & Bending
Heavy-duty polymer-based drawing lubricants or dry-film coatings
Prevents tearing/cracking, precise bracket geometry
Trimming & Piercing
Light cutting oils / water-miscible coolants
Clean cuts, longer punch life, burr reduction
Welding Preparation
Low-residue stamping lubricants
Contamination-free welds, improved joint strength
Assembly Fitment
Anti-wear/anti-vibration greases
Prevents squeaks, improves NVH performance
Storage & Corrosion Protection
Solvent-cutback or oil-based rust preventives
Shields brackets from oxidation before painting
3. Benefits for Manufacturers
Extended Tool & Die Life → Reduced downtime and maintenance costs.

Better Form Accuracy → Consistent bracket dimensions and fitment.

Enhanced Surface Finish → Scratch-free and paint-ready surfaces.

Improved Welding Quality → Stronger, defect-free welds.

Efficient Production → Low-residue lubricants reduce cleaning needs.

4. Current Trends in Bracket Lubrication
Dry Film & Pre-Coated Coil Sheets → Replace liquid oils, improving forming and reducing cleaning.

Biodegradable & Low-VOC Lubricants → Support sustainability and compliance with environmental standards.

Automated Spray & Roller Systems → Ensure precise lubricant application, reduce waste.

Hybrid Lubricants (Forming + Rust Protection) → Combine lubrication and corrosion resistance in one step.

PRESS TYPE	**: MINSTER 400-ton mechanical press.**
PART DESCRIPTION	**: BRKT L/PNG TO CWL SD LH. / BRKT L/PNG TO CWL SD RH**
MATERIAL	**: CR HSLA 420LA HD50G/50GU coil.**
MATERIAL THICKNESS	**: 0.965 – 1.04mm thick.**
PROCESS	**: 6-stage progressive die – "2-off".**
IRMCO LUBRICANT USED	**: IRMCO FLUIDS® 980 109 or EV1@20%**
LUBRICANT APPLICATION	**: Spray applied at stage 1/2 interface - every stroke.**
PROCESS SPEED	**: 22 SPM.**

BENEFIT

REPLACING COOLANT
PARTS NOT WASHED AND PACKED IMMEDIATELY, COMPLETELY DRY
DIRECT SPOT WELDING
TOOL MAINTENANCE ELIMINATED