

Lubricants in the Manufacturing of BRKT – SIDE STEP

Introduction

The BRKT – SIDE STEP (Side Step Bracket) is a critical support component used to mount the side step assembly on vehicles, especially SUVs, pickups, and commercial vehicles. It must handle high static and dynamic loads, resist corrosion, and maintain dimensional accuracy for proper alignment. Manufacturing typically involves blanking, stamping, bending, trimming, piercing, welding, and surface finishing of high-strength or coated steels. To ensure high performance and production efficiency, the choice of lubricants is essential at every stage.

1. Importance of Lubricants in Side Step Bracket Manufacturing

Protects Tools & Dies: Reduces friction and galling during stamping and bending.

Improves Formability: Allows smooth metal flow during bracket shaping.

Enhances Surface Quality: Minimizes scratches, marks, and deformation.

Ensures Weldability: Low-residue lubricants prevent weld porosity and weak joints.

Prevents Corrosion: Temporary rust protection before paint shop entry or assembly.

2. Types of Lubricants Used

Process Stage

Lubricant Type

Key Benefits

Blanking & Stamping

Water-soluble emulsions or semi-synthetic stamping oils

Smooth forming, reduced die wear, residue-free finish

Forming & Bending

Polymer-based or dry-film drawing lubricants

Prevents cracks, accurate bends, clean surfaces

Trimming & Piercing

Light cutting oils or water-miscible coolants

Sharp edges, burr control, extended punch/die life

Welding & Assembly

Low-residue lubricants / anti-spatter fluids

Strong welds, minimal contamination, smoother assembly

Fitment & NVH Control

Anti-vibration/anti-wear greases

Reduces squeaks, improves load distribution

Storage & Corrosion Protection

Solvent-cutback rust preventives or thin-oil coatings

Shields brackets during storage and transport

3. Benefits for Manufacturers

Extended Tool Life → Lower cost from reduced wear and fewer refurbishments.

Dimensional Accuracy → Consistent forming for reliable bracket fitment.

Superior Weld Quality → Clean, strong joints for safety-critical parts.

Lower Cleaning Costs → Easy wash-off lubricants reduce chemical use.

Corrosion-Free Handling → Brackets stay protected until painting or assembly.

4. Current Trends in Lubrication

Dry-Film & Pre-Coated Steel Sheets → Eliminate liquid oils and degreasing.

Biodegradable Lubricants → Non-chlorinated, eco-friendly solutions for sustainability.

Automated Application Systems → Precise spraying/rolling reduces waste.

Hybrid Lubricants → Combine lubrication and corrosion protection in one step.



PRESS TYPE	: MINSTER 600-ton mechanical press.
PART DESCRIPTION	: BRKT, SIDE STEP.
MATERIAL	: SP7810 - 1.20mm nominal thickness.
IRMCO LUBRICANT USED	: IRMCO FLUIDS® 980 109@10% or EV1@15%
METHOD OF APPLICATION	: Applied heavily as a stream of fluid to top of coil entering die every stroke. Optimized later via IRMCO to reduce volume by 45%.
PROCESS	: 16-stageS.
PRESS SPEED	: 25 SPM.



BENEFIT
REPLACING ANOTHER POLYMER OILY PRODUCT
PRICE PER PART REDUCED OF 147%
PARTS NOT WASHED AND PACKED IMMEDIATELY, COMPLETELY DRY