Lubricants in the Manufacturing of COLLAR – STIFF – L/R – CF – CONN -
Introduction
The COLLAR – STIFF – L/R – CF – CONN is a collar stiffener component used in the center floor connector section of a vehicle. It strengthens the connection between the floor pan and frame members, ensuring structural rigidity, crash resistance, and proper load distribution. Manufacturing this stiffener requires blanking, stamping, trimming, piercing, welding, and assembly of high-strength steel sheets. To achieve durability and production efficiency, the correct choice of lubricants is essential.
1. Importance of Lubricants in Collar Stiffener Production
Tool & Die Protection: Reduces wear and galling during stamping of collar-shaped parts.

Formability: Improves material flow, ensuring accurate collar geometry.

Surface Protection: Prevents scratches, galling, and deformation.

Weldability: Ensures weld areas remain clean and residue-free for strong joints.

Corrosion Prevention: Protects collar stiffeners during handling and storage before final coating.

2. Types of Lubricants Used
Stage
Lubricant Type
Key Benefits
Blanking & Stamping
Water-soluble or semi-synthetic stamping lubricants
Smooth forming, reduced die wear, easy wash-off
Collar Forming & Drawing
Polymer-based drawing lubricants / dry-film coatings
Prevents tearing, ensures precise collar shapes
Trimming & Piercing
Light cutting oils or water-miscible coolants
Clean cuts, burr control, longer punch/die life
Welding & Joining
Low-residue lubricants
Strong, contamination-free welds
Assembly Fitment
Anti-wear/anti-squeak greases
Smooth installation, NVH reduction
Storage & Corrosion Protection
Solvent-based rust preventives or thin-oil coatings
Prevents oxidation before painting
3. Benefits for Manufacturers
Extended Tooling Life → Lower cost of maintenance and downtime.

Improved Form Accuracy → Precise collar stiffener geometry for reliable floor connection.

Superior Weld Quality → Strong, defect-free joints.

Lower Cleaning Costs → Easy-to-remove lubricants reduce degreasing effort.

Structural Reliability → Rust protection ensures durability before final assembly.

4. Current Trends in Lubrication
Dry-Film & Pre-Coated Blanks → Reduce liquid lubricant use and improve forming consistency.

Eco-Friendly Lubricants → Biodegradable, low-VOC formulations for sustainability.

Automated Spray & Roller Systems → Optimized application, reduced waste.

Minimum Quantity Lubrication (MQL) → Efficient lubrication for piercing and trimming.

PRESS TYPE	: CMC BLISS 600-ton mechanical press.
PART DESCRIPTION	: COLLAR STIFF L/R CF CONN.
MATERIAL	: JAC270C60 2.286mm nominal thickness.
RMCO 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 45%.
PROCESS	: 8-stage, "2-off" progressive die (R/L).
PRESS SPEED	: 20 SPM.

BENEFIT

REPLACING ANOTHER POLYMER OILY PRODUCT
PRICE PER PART REDUCED OF 75%
PARTS NOT WASHED AND PACKED IMMEDIATELY, COMPLETELY DRY