

Lubricants in the Manufacturing of Inlet Cone Components

Introduction

The Inlet Cone is a critical exhaust system component that connects exhaust pipes to mufflers, catalytic converters, or expansion chambers. Its conical shape ensures smooth exhaust gas flow, reduced back pressure, and proper alignment within the exhaust assembly. Inlet cones are typically manufactured from stainless steel or aluminized steel and must withstand high temperatures, vibration, and corrosive gases.

Manufacturing processes include sheet blanking, cone forming/rolling, tube expansion, welding, and surface finishing, where the correct selection of lubricants is essential for accuracy, tool protection, and weld quality.

1. Why Lubricants Are Essential in Inlet Cone Manufacturing

During forming and joining operations, lubrication plays a key role in:

Reducing Friction & Tool Wear → Protects rolling dies, mandrels, and forming tools

Ensuring Smooth Cone Forming → Prevents cracking, thinning, and surface damage

Maintaining Surface Finish → Avoids scratches and galling on stainless steel

Improving Weld Quality → Low-residue lubricants keep weld zones clean

Providing Temporary Corrosion Protection → Safeguards parts before coating or assembly

2. Types of Lubricants Used

Process Stage

Typical Lubricant

Key Benefits

Sheet Blanking & Cutting

Light cutting oils / water-miscible coolants

Clean edges, burr control

Cone Forming / Rolling

Synthetic or polymer-based forming lubricants

Smooth shaping, reduced thinning

Tube Expansion & Sizing

High-performance expansion lubricants

Uniform expansion, dimensional accuracy

Welding Preparation

Low-residue, weld-compatible lubricants

Strong, porosity-free welds

Assembly Fitment

High-temperature anti-seize compounds

Easy assembly, heat resistance

Storage & Handling

Thin-film rust preventive oils

Short-term corrosion protection

3. Benefits for Manufacturers

Consistent Cone Geometry → Accurate fitment within exhaust systems

Extended Tool Life → Reduced wear on forming and rolling equipment

Improved Weld Integrity → Clean joints for long-term durability

Reduced Scrap Rates → Stable forming of stainless and coated steels

High Thermal Reliability → Components perform under exhaust heat cycles

4. Current Trends in Inlet Cone Lubrication

Water-Based Synthetic Lubricants → Cleaner operations and easy wash-off

Low-VOC & Chlorine-Free Formulations → Environmentally compliant solutions

Dry-Film Forming Lubricants → Minimal residue, ideal for welding

Automated Lubrication Systems → Precise dosing, reduced lubricant consumption

Inlet Cone

Description:	536-U11 or 586-U11		
Product:	536-U11	Company:	Walker - Elkhart, IN
Industry:	Automotive Tier One	Material:	Stainless Steel
Thickness:	1.791	Concentration:	
Author:		Tags:	409
Date:	Feb 19, 2002		

