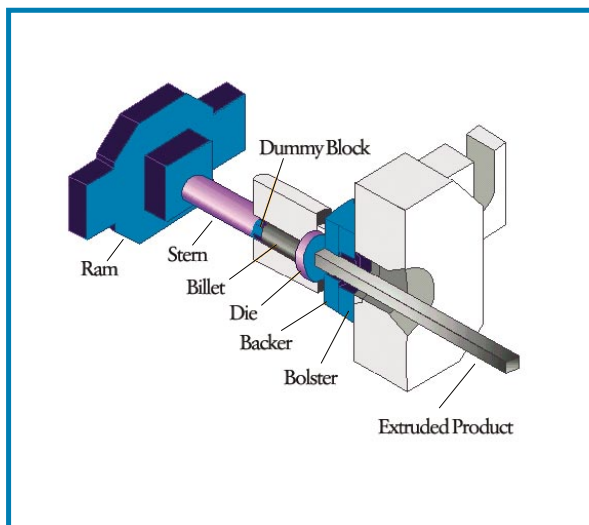


Extrud-AL™ Die Inerting Technology by Air Liquide

Extrud-AL die inerting technology ensures maximum productivity and quality in the aluminum industry. Through Air Liquide America's innovation, metallurgical expertise and process solutions, extruders with Extrud-AL technology can increase die life and achieve faster extrusion rates.

Extrud-AL modifies and improves the current use of nitrogen-based die "cooling" technologies by strategically incorporating the proper gas, phase properties and analytical methods into the die inerting process.



Extrud-AL inertes all of the critical areas of the extrusion press in order to maximize life and reduce product surface defects.

Features:

- Simple delivery system (no recirculators)
- Bulk supply option allows for intermittent use (product tier option) and virtually no moving parts
- No special machining or reworking of die tooling required

Benefits:

- Improved productivity (extrusion rate increase of up to 30%)
- Die run life increased two-fold
- Improved surface finish (bright/anodized)
- Die clean-up reduced or eliminated
- Enhanced shape integrity



AIR LIQUIDE

™

Method:

Extrud-AL technology utilizes high-purity argon or nitrogen (gaseous or liquid) to purge the atmosphere from the exit side of the die through the platen tunnel. Oxides, which normally appear on the surface of the extrudate, are the main source of surface imperfections such as hot tears and die lines. By inerting these areas with Extrud-AL, oxides are completely eliminated. In addition, exiting gases, both nitrogen or argon, provide convective cooling of the extrudate thus minimizing dimensional distortion on light, irregular shapes, as well as hollows.

Reference Data:

Product	Gas Consumption (SCFH equivalent)	Extrusion Speeds	Die Run Life	Surface Quality	Die Condition After Run
Architectural Aluminum (6063)	500-1000	+30%	+60 Billets	50% Less Buffing	No Polishing Required
Structural Aluminum (6061)	600-800	+25%	+75 Billets	Bright - No Die Lines	No Polishing Required

Bottom Line Savings:

Extrud-AL impacts and improves all areas of the extrusion operation, from productivity and quality to process capability. As a result, users realize returns of 30 to 50 times the operational costs associated with the cutting-edge technology of Extrud-AL.



Extrud-AL
Technology

VS.

Standard
Nitrogen-Based
Die Cooling



About Air Liquide

Air Liquide is the world's leading industrial gas company. We are a full-capability supplier with a broad product line, including argon, hydrogen, nitrogen, oxygen, carbon dioxide, ozone, high-purity specialty grades, controlled atmosphere systems, gas characterization and safety instrumentation.



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