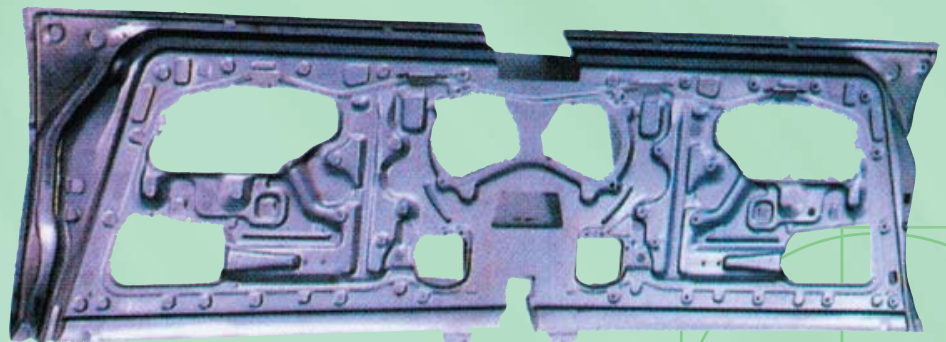
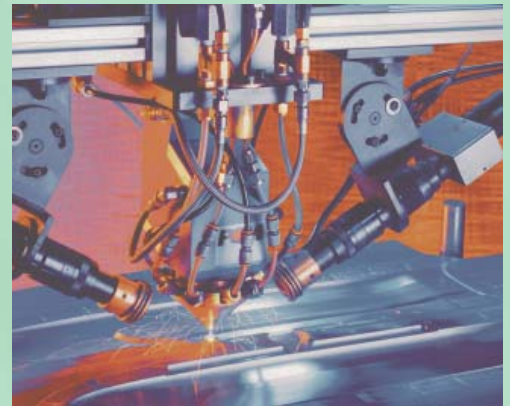




Combining cost and speed advantages
of Far East tool manufacture with full USA support

Metal Forming Dies

Manufacture & Repair



USA Team and Facilities.

Full USA support

At JUNGWOO USA we combine a high level of local USA customer support for our molds and dies, with high speed, low cost Far East manufacturing.

For our customers we are an extension of their technical team. We provide the comfort of them knowing that their molds and dies will be-

- USA project managed by a team with a long track record.
- To the correct USA quality standards.
- Delivered on time.
- Built fast – most within 60 days or less.
- The best value for money dies at high quality.
- Warranted for a full year, for all molds and dies.
- Supported by a USA engineer at USA and Far East mold / die trials.



USA support team

We have a USA team of project managers, die designers, engineers and die support engineers. Our facilities in South Carolina and Ohio allow us to do full mold and die engineering changes in the USA if required.



USA support centers South Carolina and Ohio



USA –DMD technology for new dies & repair.

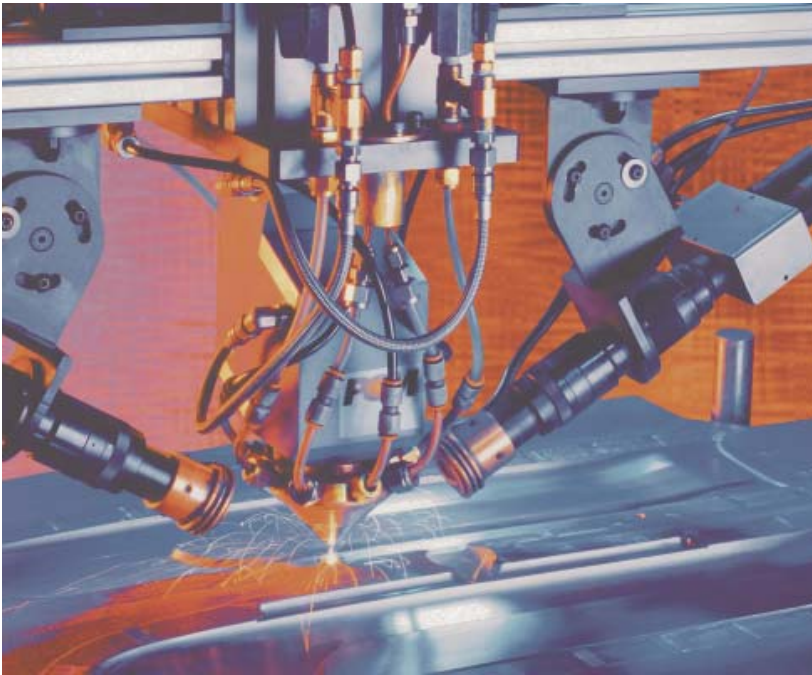
Direct Metal Deposition The (DMD) process

DMD Technology

DMD is a CNC-based additive metal process. The combination of high power CO₂ laser technology and powder metallurgy allows us to add a variety of materials, up to 1/2" thick, to a standard block of steel. The control and consistency of the process creates a strong metallurgical bond between base metal and deposited metal with minimal dilution into the substrate.



What DMD can do for your dies



Extended life - for new and old dies

Using the DMD process, the surface or edges created on a new die can be done with super-hard alloys that possess high hardness (up to 62 HRC) and exceptional resistance to abrasion. The main die block remains traditional 'ductile steel', and only the surface or edge is modified by deposition of hard abrasion resistant alloys. This combination prevents cracking of the block while in service. The core absorbs shock, and the hard edge cuts through the work piece.

Use of the DMD technology combined with our traditional stamping die making, allows us manufacture dies that have up to 10 X the cutting edge life of traditional stamping dies.

Die repair

Either complete areas of a die can be rebuilt with DMD, or replacing the edges of an existing block with DMD can extend the life of a die. We typically cut a 0.040"-0.100" chamfer along the die trim edge, and re-form the new 3D edge along the perimeter of the block with hardened DMD steel alloys.



Die manufacturing facility Seoul - South Korea.

- Established 1970
- Employees 320
- 12 designers
- 180,000 sq. ft.
- In-house sampling
- ISO 9001
- QS 9000



Types of metal forming dies

- Full production dies
- Prototype dies
- Simple dies
- Progressive dies
- Transfer/Tandem dies
- Complex 3D form dies

Dies built for:

- Automotive
- Domestic appliance
- Business machines
- Industrial products
- Lawn and Garden products

Far East manufacturing

JUNGWOO have been providing tooling to the USA and Europe for over 20 years. All manufacturing sites in Asia work to the highest build and material standards, with the latest 3D technology.

Design and Quality.

Die Design

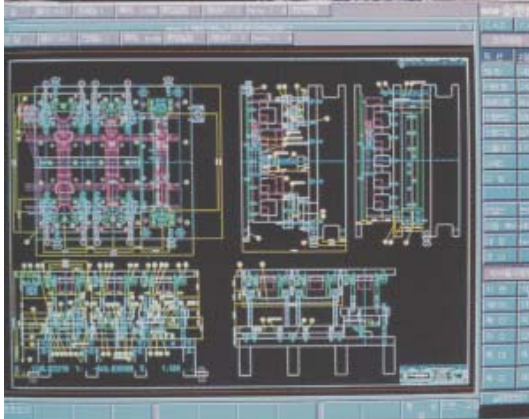
- 2D & 3D CAD design
- Pro-Engineer
- Unigraphics



Quality assurance

People, processes and procedures are to the highest standards. We manufacture dies for some of the most demanding customers in the automotive and industrial product market sectors.

- Capability Studies
- Statistical Process Control (SPC)
- PPAP
- ISO 9001 certified in 1996
- ISO 9002 certified in 1997
- QS 9000 certified in 2002 for automotive stamped parts



Die Manufacture.

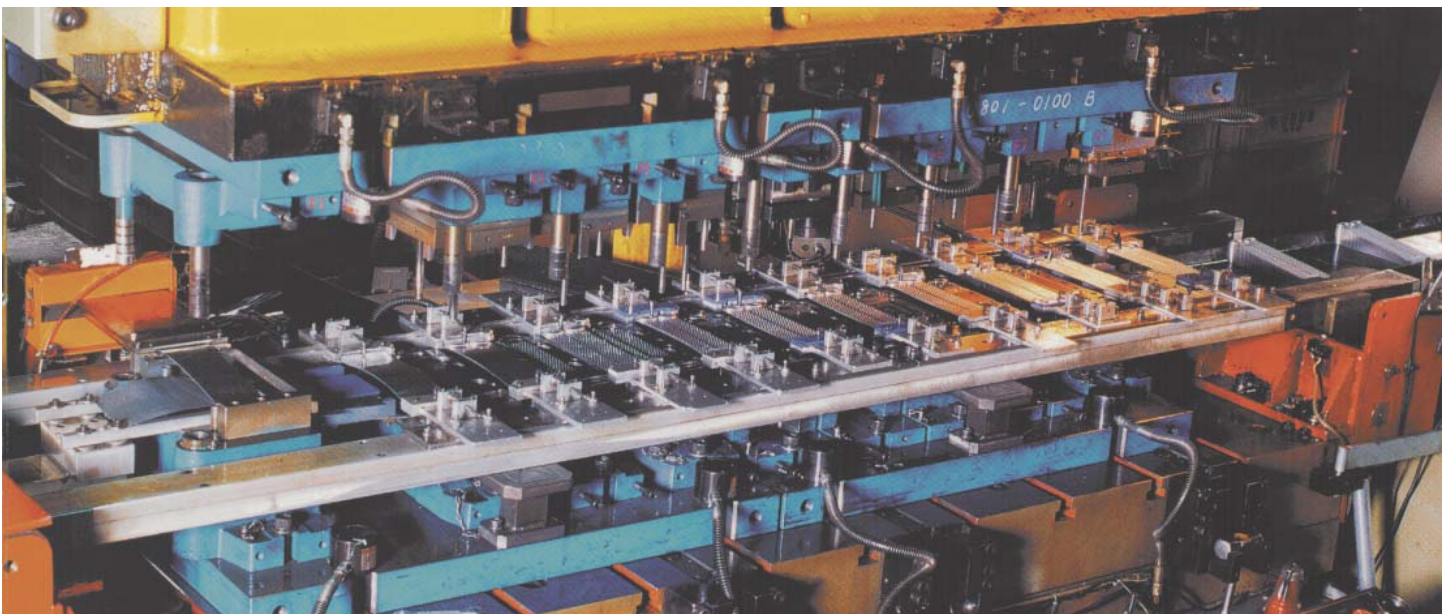
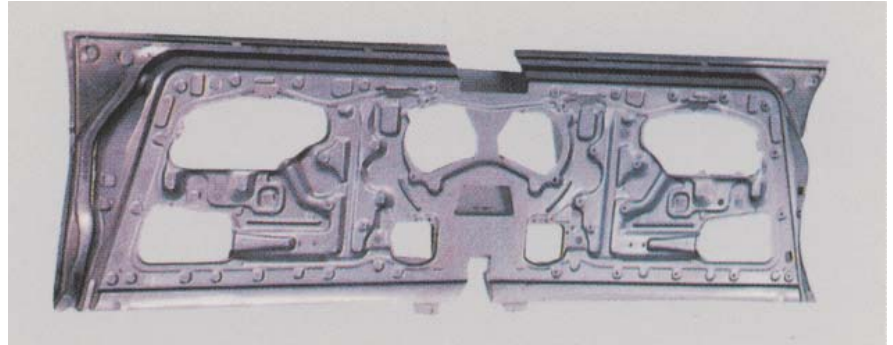
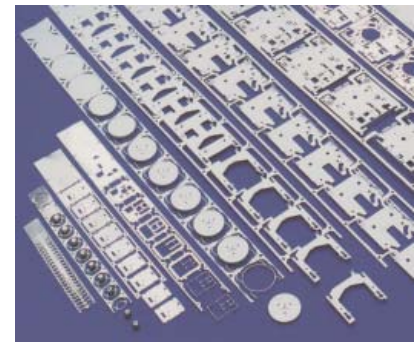
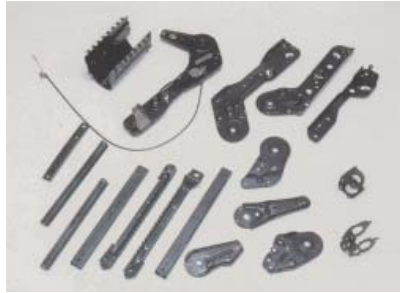
Die manufacturing equipment

- Jig Grinding
- Jig Boring
- 3D CNC
- Wire EDM
- Planner Milling
- Forming Grinders
- I/D O/D Cylindrical Grinding
- Surface Grinding
- Vertical Milling
- Horizontal Milling
- Multiple test presses



Die Building Experience.

- Automotive 3D formed panels
- High precision strip components
- Fully formed 3D enclosures
- Heavy Gage components
- Parts formed in Steel, Aluminum Copper and Plated steels.
- 500+ dies built annually



**Plastic Injection
mold tooling**

**Metal die casting
dies**

**Metal forming /
stamping dies**



South Korea - Seoul



Europe - UK



USA - South Carolina



China - Shenzhen

One Global Team

Combining USA and European customer support
with cost and speed advantages of Far East manufacture.



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