Roll Forming Machinery
Stretch Bending, R-Bending

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During roll forming process, coil is fed through consecutive sets of forming rollers for forming and fabricating from plate to sectional shape. As those forming processes are rendered sequentially, product appearance and precision are at the high level. Mass production guarantees excellent cost reductions.

To ensure parts precision, we design sectional shapes and perform structure analysis of steel, analyze sectional shape, its functions, accuracy of shape, and study complex shapes of multi-functional structures.
## Development of Equipment Roll Forming Equipment Production Stages

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
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<tbody>
<tr>
<td>Design</td>
<td>Design flower drawing using roll forming software and company’s project experience</td>
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| Verification  | Verification of flower drawing by simulation  
|               | Confirmation of forming stages                                                                                                              |
| Roller Design | Drawing of 2D and 3D roller dies                                                                                                             |
| Fabrication   | Fabrication of roller dies                                                                                                                  |
| Trial and Fine Tuning | Part trial and fine tuning by tools and jigs verification                                                                                     |
| Re-Verification | Re-verify analysis results and quality management                                                                                             |
Development of Equipment Roll Forming Line Layout

1. Door frame, Guide glass, Window Strip Rails

2. Ultra High Tensile Material: Bumper beam, Side sill, Seat Rail, Cross MBR

3. Combined extrusion parts: Door Belt Mold, Door Roof, Wind Shield
Roll Formed Sectional Profiles
Roll Forming Machine

Customized Roll Forming Machinery for high precision parts production for automotive, aerospace, railway industries. Used for the production of door frame rail, automotive window track, bumper, chassis component, cross member, mat rocker.

Research Engineering

- Design and fabrication of equipment using CAD system
- Design and fabricate equipment and forming roll
- Forming linear shape and curved shape
- Full process using stretch bending or rotary bending
- Develop facilities and fixtures for production
Rotary Bending M/C

Rotary Bending Machinery is developed for large vehicle door and large curvature chassis of automotive doors with a consideration for accurate bending.

- Design and fabrication of equipment using CAD system
- Design and fabricate equipment and bending die
- Bending for rapid curvature diameter
- Develop door for luxury leisure car
- Develop facilities and fixtures for production

Research Engineering
Stretch Bending M/C

Stretch Bending Machinery is used to fabricate chassis for automobile doors. It is commonly used to produce curvature diameter. We supply 2 types of rotary stretch bending machinery: small (for molding) and large (for chassis).

- Design and fabrication of equipment using CAD system
- Design and fabricate equipment and bending die
- Bending for large and gentle curvature. For general purpose
- Develop facilities and fixtures for production
Supporting M/C

3D Cutting Machine

Lancing & Piercing Machine

Corner Notching Machine

Corner Bending Machine
Main Applications

Automotive Roll Formed Parts
1. Seat Rail

Automotive Seat Rail

Roll forming process guarantees high quality rail function by diversifying structure of seat rails. For cost reductions and productivity improvement, seat rails of passenger cars have been produced using roll forming process, changed from press process.

Design & Research

- Product design, structure analysis and simulation using CAD (CATIA)
- Design and fabrication of forming roll
- Study and verify product application of product with new high tensile steel plate materials
- Apply track accuracy and welding technology for assembly welding
- Develop facilities and fixtures related to production
2. Door Frame

Automotive Door Frame

Door Frame rails require strong structure to ensure passengers’ safety in case of a collision. It also provides space to locate door glass and guidance for opening window. Door frame rails have to decrease wind noise or friction noise through door gap. Door frame rails require an integrated production technologies including a precise welding method.

Design & Research

- Product design and structure analysis using CAD (CATIA) system
- Design and fabricate forming roll
- Design and fabricate stretch bending facilities and mold
- Develop facilities and fixtures for production
3. Bumper Back Beam

Automotive Bumper Back Beam

Bumper is installed to allow deforming of vehicle body and to ensure passengers’ safety. Following the light weight trend, bumpers are nowadays produced using roll forming technology. Roll formed bumpers feature such advantages as cost reduction, light weight and increased strength.

Design & Research

- Product design and structure analysis using CAD SYSTEM
- Design and manufacture of forming rolls
- Research on the application of new material for the high-tension steel plate
- Design and manufacture of ASSY welding jigs, and reflection of technology examination, including welding deformation
- Development of overall production-related equipment and dies & jigs

Collision Test
4. Other Roll For-ed Parts

- Roll Formed Parts
  - Guide Rail
  - Fan Shroud
  - SUS Molding
  - Door Channels
**Domestic:** Hyundai Kia, Renault, Samsung Motors, SsangYong Motors, Daewoo Bus

**Overseas:** GM, Ford, Toyota, Honda, Suzuki, Isuzu, Mitsubishi, Beijing Hyundai
Contractors: Minth Group, Faltec, Ingress, TMS, O.F.