2022 Honda Civic

Jill Fuel
Honda Development and Manufacturing of America – Indiana Auto Plant
Honda Global Presence and US Operations

- North American Auto Development Center
- Manufacturing Management Center
- Marysville Auto Plant
- Performance Manufacturing Center
- East Liberty Auto Plant
- Anna Engine Plant
- Transmission Plant (located in Ohio)

- Indiana Auto Plant
- Alabama Auto Plant
- Transmission Plant (located in GA)
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<th><strong>Honda Development and Manufacturing of America</strong></th>
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<td><strong>Location</strong></td>
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<td><strong>Started production</strong></td>
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<td><strong>Plant size</strong></td>
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<tr>
<td><strong>Capital investment</strong></td>
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<td><strong>Annual capacity</strong></td>
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<td><strong>Products</strong></td>
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*Images of Honda vehicles and plant location.*
Civic Family of Vehicles

Sedan

Hatchback

Si

Type R
History and Future of Hatchback

1st. 1972
2nd. 1979
3rd. 1983
4th. 1987
5th. 1991
6th. 1995
7th. 2000
8th. 2005
9th. 2011
10th. 2015
11th. 2021
Variation between Sedan and Hatchback

- **ALUM HOOD**: Common
- **FR DOOR**: Common
- **RR DOOR**: Hatchback Exclusive
- **ROOF**: Hatchback Exclusive
- **Side Panel**: Hatchback Exclusive
- **Resin TAIL GATE**: Hatchback Exclusive

[Diagram of car showing variations]
### Civic Structural Improvements

**19% improvement in torsional rigidity and 17% increase in stiffness to rear suspension mount points**

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<th>Structural enhancements</th>
<th>Advanced adhesives</th>
<th>Lightweight metals</th>
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<td>Rigidity improvements in various areas</td>
<td>10 times more structural adhesive applied to critical areas</td>
<td>Aluminum and high-tensile material applied throughout</td>
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- **Tunnel structure**
- **Rear circular structure**
- **Lattice frame**
- **Front circular structure**
Civic Structural Improvements

Enhanced Advanced Compatibility Engineering™ (ACE™) body structure will meet future regulations

IMPROVED CRASH COMPATIBILITY WITH LARGER VEHICLES

- **New dashboard cross member**
  - Reduces deformation of feet area during collision

- **New cross section bumper beam**
  - Minimizes collapse during collision, and allows for a short overhang

- **Wheel arch stiffener added**
  - Reduces deformation in side collisions

- **New upper pillow design**
  - Reduces cabin deformation

- **Reinforced side frame end**
  - Reduces deformation

- **New upper member design**
  - Improves energy absorption

Enhanced Advanced Compatibility Engineering™ (ACE™) body structure will meet future regulations.
Civic Pedestrian Safety

Designed to mitigate pedestrian injuries

Head protection enhanced with embossed hood

Shock absorption for thigh area

Shock absorption for lower leg and knee area
2022 Honda Civic Body Structure

Parts %

High Strength Steel Areas

- 29% Galvannealed Commercial Steel
- 16% High Carbon Alloy Steel
- 14% Tensile Strength Dual Phase Steel (Hot Rolled)
- 13% High Strength with Excellent Formability (Hot Rolled)
- 13% Advanced High Strength Steel with Formability (Cold Rolled)
- 12% Very High Strength Steel (Cold Rolled)
- 10% Ultra High Strength Steel (Hot Rolled)
11th Generation Civic Characteristics

- Sharp character line runs length of car
- Faster roofline and shorter rear overhang for a sporty profile
- Pulled back A-Pillars (~2-inches)
- More visibility and open feeling with new rear quarter window
- 1-inch lower fender height

Length: 179.8-inches
Width: 70.9-inches
Height: 55.7-inches
11th Generation Civic Manufacturing Changepoints

- Aluminum Hood
- Plastic Bulkhead
- New Instrument Panel
- High Performance Adhesive
- Laser Braze Roof
- Tailgate
  - Change from Steel to Resin
- Rear Wheel Arch Roller Hem
- Side Panel Structure 3→4 piece
- Spray Foam

Hinges included

[Image of car and components]
11th Generation Civic Hatchback Tailgate

**Purpose**

**Balance between weight reduction and attractive styling**

**Weight Reduction by 20%**
- Fuel efficiency/CO2 impact
- Improved handling with lowering the center of gravity

**Design Quality**
- Actualization of attractive styling by forming
- Seamless design with integrated parts

**Achievement method**

**Steel gate**
- Upr spoiler
- Mid spoiler
- License Garn
- T/G Comp.
- T/G lining

**Resin gate**
- Skin (PP+GF)
- Adhesive
- Frame (PP+GF)
- STIFF
11th Generation Civic Characteristics

Strong shoulders and widened rear track emphasize stability

Laser brazing technology

Hemmed rear wheel arches

Previous Civic
Molding

2022 Civic
Laser Brazing

Wide, planted stance
Wider Track: +0.5-inch
2022 Honda Civic Technology – Laser Braze Roof

Background – Sleek Cabin Design

◆ Marketability improvement of Roof Molding area
  • Unify color of Roof Molding and BODY (Continuity)
  • Simplify Roof Molding structure/Continuity of design surface

※Laser Brazing

Simple structure
Surface continuity

Black Molding
Colored Molding
No Molding

Same color as BODY

OUTER
ROOF
Manufacturing Efficiency

- Honda–original 2-beam laser tool
  - Front Beam: Preheating to remove GA layer (cleans)
  - Rear Beam: Braze with Cu alloy filler material
- Process time: 44.5 seconds/unit (1000 UPD/line)
2022 Honda Civic Technology – Laser Braze Roof

Quality

- Seam tracking system with **Servo Robot**
- Welding heat control
- 2 pass polishing
- No pre-cleaning of flanges
- Smooth condition for customer

Durability

**Structural braze** improves body rigidity
2022 Honda Civic Technology – Laser Braze Roof
2022 Honda Civic Technology – Wheel Arch Hemming

**HEM**

**TOOL**

**ARCH-HEM DIE,JIG&ROLLER**

**ARCH-HEM DIE,JIG**

**ARCH-HEM ROLLER**

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**Crimping + adhesive**

<table>
<thead>
<tr>
<th>Forming runner</th>
<th>One pass</th>
<th>Two passes</th>
<th>Three passes</th>
<th>Four passes</th>
<th>Five passes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five passes</td>
<td>90= &gt;60</td>
<td>60= &gt;45</td>
<td>45= &gt;30</td>
<td>30= &gt;U</td>
<td>U= &gt;roped</td>
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High Performance Adhesive

**General Material Properties**

- Increased Rigidity with Optimal Adhesive Application
- Applications in Stitch or Continuous Bead
Civic Safety
2022 CIVIC
NORTH AMERICAN CAR OF THE YEAR
HONDA
The Power of Dreams
FOR MORE INFORMATION

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