The All-New 2018 Honda Odyssey

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2018 Honda Odyssey Body Development Leader
Honda R&D Americas, Inc.
STUNNINGLY EASY

EASY FAMILY FUNCTION

Focus Points
Easy Child Care
Easy to Keep Clean
Easy to Access

Build Upon
Strengths
Easy to Drive
Easy to Use
Comfortable
Spacious & Versatile

STUNNING APPEAL

Premium
Progressive
Sporty

EASY to LOVE

Best FE
Best VFM

EASY on The
WALLET & MIND

Best Safety
Best DQR
Top Consumer Ratings

EASY to BE ME

Relax &
Recharge
Premium / Progressive / Sporty

TAILORED SECTIONS WITH Refined Detailing
ADVANCED IMAGE WITH UNEXPECTED MOTIFS
DYNAMIC LINES, STANCE AND PROPORTIONS

EASY TO RECOGNIZE AS ODYSSEY

PROFILE:
1. TAPERED ROOF LINE
2. DISTINCTIVE DLO GESTURE
3. BEST WHEEL TO BODY PROPORTION
4. FAST BACKLIGHT ANGLE

FRONT/REAR STANCE:
5. BEST H TO W PROPORTION
6. SPORTY STANCE
7. PREMIUM SEDAN TUMBLEHOME

PLAN VIEW:
8. REARWARD TAPERING CABIN
Package | Overview

* Overall Width 1965 (-30)

- Quarter Window Moved To Door for Improved Cornering Visibility
- Maintain Best-in-Class Low Step-in Height
- Maintain Winning 3rd Row Package
- + 50 Cargo Space

Measurements in millimeters

940 (NC)
3000 (NC)
1220 (+10)
5160 (+10)
Package | Cargo

Programmable Height with Stop & Hold

Improved Tailgate Opening
Greater Large Module Usability

Roof-Mounted Mech

Hands-Free Access Power Tailgate

Previous Odyssey
New Odyssey

4 X 8’ Sheet

Total Volume (cu ft)

<table>
<thead>
<tr>
<th></th>
<th>New</th>
<th>Previous</th>
<th>Sienna</th>
<th>Pacifica</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>70.0</td>
<td>70.5</td>
<td>61.5</td>
<td>66.0</td>
</tr>
</tbody>
</table>

Based on Honda internal data
Problem: 3rd Row Access with Child Seats

Not Enough Space for Ingress/Egress
- Child seats block ingress/egress path, especially rear-facing
- Child seats defeat current 3rd row ingress/egress seat functions: tip-slide, fold-down

Solution: Magic Slide Seat

Big Space Even with Child Seat Installed
- Easy-to-use lateral slide feature
- Integrated 3-point belts
- Easy access to/from 3rd row even with a rear-facing child seat
Easy Pass Through Variation

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center Pass Through Mode</td>
<td>Normal pass through as minivan</td>
</tr>
<tr>
<td>Wide Pass Through Mode</td>
<td>Easy pass through as new Odyssey</td>
</tr>
<tr>
<td>Super Pass Through Mode</td>
<td>Excellent pass that’s best in class</td>
</tr>
</tbody>
</table>

Additional details:
- Normal pass through as minivan
- Easy pass through as new Odyssey
- Excellent pass that’s best in class
Primary Benefits: **Easy to Access, Easy Child Care, Versatility**

**Access Mode**
- Easy access to 3rd row seat; easy front seat access to infant

**Buddy Mode**
- Equally centered, maximum intrusion space for two, equal line-of-sight to rear entertainment screen, equal 3rd row access from slide doors

**Wide Mode**
- Separation Zone
- Center Pass-Thru
New Odyssey Grand Concept

EASY TO DRIVE

EASY TO DRIVE

Easy to Use

COMFORTABLE

Spacious & Versatile

Focus Points

Easy Child Care
Easy to Keep Clean
Easy to Access

Build Upon Strengths

EASY TO DRIVE

Easy to Go

EASY TO TURN

EASY TO PLACE & PARK

Premium Progressive Sporty

STUNNING

APPEAL

EASY to LOVE

Best FE
Best VFM

EASY on the
WALLET & MIND

Best Safety
Best DQR
Top Consumer Ratings

EASY to BE ME

Relax & Recharge

Easy to Communicate

COMFORTABLE

EASY to RELAX

EASY to COMMUNICATE
EASY TO DRIVE | COMFORTABLE

- High Precision Steering
- Confident Maneuverability
- Reduced Driver Work
- Smooth Shifting (10AT)
- Isolate Road Inputs & Noise
Dynamics | Key Enabling Technologies

- Dual Pinion EPS
- Suspension Rigidity & Control
- Body
Odyssey Chassis Overview

All new chassis, based on light duty truck platform

Front
MacPherson Strut Suspension

Odyssey First
• Dual-Pinion Electronic Power Steering
  • Aluminum Control Arms
  • Floating Subframe
  • Active Engine Mounts

Wheelbase 3000 mm
(Extended from SUV Applications)
Track 1710 mm

• Compact Fuel & Exhaust Systems Packaging
• 18” Wheels Standard
  (Optional 19”)
Maximize Maneuverability & Steering Ease

- Dual pinion EPS steering system supports top class low & mid speed maneuverability
- Rear chassis kinematics support high speed stability

Based on Honda internal data

*Data for Pacifica unavailable
Dynamics | Key Enabling Technologies

Dual Pinion EPS

Suspension Rigidity & Control

Body
**Customer benefit: Low, flat floor comfort & ingress/egress**

- **Modified Platform Area**
- **Ride Height -35 mm (from Pilot)**

**New Structure**

- Tailgate opening is 24% taller than SUV platform base
- Minivan floor frame requires compact rear suspension
Odyssey Chassis – Rear

All new chassis, based on light duty truck platform

Rear
Trailing Arm suspension

Odyssey First
• Compact Trailing Arm + Rear Stabilizer Bar

• Compact Floating Subframe
# Rear Suspension Choice

<table>
<thead>
<tr>
<th></th>
<th>Previous Odyssey Suspension</th>
<th>Twist Beam Concept</th>
<th>New Compact Trailing Arm Suspension</th>
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</thead>
<tbody>
<tr>
<td>Package Compaction Prospects</td>
<td>Poor</td>
<td>Fair</td>
<td>Excellent</td>
</tr>
<tr>
<td>Ride Quality</td>
<td>Good</td>
<td>Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>Maneuverability, Handling</td>
<td>Good</td>
<td>Fair</td>
<td>Excellent</td>
</tr>
<tr>
<td>NVH</td>
<td>Good</td>
<td>Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>Construction Efficiency (Wt)</td>
<td>Good</td>
<td>Good</td>
<td>Excellent</td>
</tr>
</tbody>
</table>
Rear Chassis Packaging – Width

Damper nested within wheel stroke envelope

Fender Width: Down 30 mm
(Previous: 1995 mm, New: 1965 mm)

Interior Width: No change: Still wide enough for plywood
(4 ft)

Track (Tread) Width: Down 27 mm
(Previous: 1735 mm, New: 1708 mm)
Minimize Workload & Maximize Performance

- **EASY TO PLACE & PARK**
  - Package Compaction
  - Ride Quality

- **EASY TO TURN**
  - Maneuverability, Handling

- **EASY TO RELAX & CRUISE**
  - NVH
  - Construction Efficiency (Wt)

**Features**

- Better Roll Control
- Better Camber Rigidity
- Better Aligning Rigidity
- Better Lateral Rigidity
- Better Longitudinal Compliance

+55%
Dynamics | Key Enabling Technologies

Dual Pinion EPS

Suspension Rigidity & Control

Body
Platform Safety Concept

Full Front Collision
Efficient Load Management

Next-Gen Advanced Compatibility Engineering™ (ACE™)

New Multi-Connection Bumper Beam

Cabin structure manages front, side roof & rear collisions

Tailor Welded Hot Stamp Door Ring
Body Platform

New Odyssey Body Platform Optimization

- Spare Tire Storage
- Improved Side Sill Section
- Rear Inner/C Pillar Construction
- Frame to Cabin Connection
- Increased Structural Adhesive
Challenge: Minivan Front Floor Spare Tire Storage

The 1st front floor C/Mbr, crossmember A, was strengthened to resist front collision loads.
Challenge: Slide Door Side Sill Construction

Platform Concept
Continuous side sill structure manages front, side & rear collisions.

- Reducing the opening results in a stronger, continuous section across the slide door opening thus maintaining the platform concept.

Previous

Discontinuous Section

New Odyssey

Continuous Section
Body Platform

C Pillar Construction

1. Improved joint at upper C pillar from previous
2. Created closed section for height of C pillar
3. C pillar section wraps corner of door opening, connects to sill section

• Joint Optimization Software was used to define key connection areas
Rear Inner/C Pillar Construction

- C-shaped frame allows better transfer of suspension loads into floor
- Suspension load paths transfer into both C and D pillar sections
- Entirely new section and load path from previous
- Consistent and efficient D pillar section
The Rear Frame Section was rotated from a “U” section to a “C” section to improve the connection of the cabin & frame together in load transfer.
Increased Structural Adhesive

- Application of HPA equivalent to 5 kg worth of weight in stampings

New (+22 m)

+10% Torsion

+10% Rear Lateral

Improved ride & handling with virtually no weight up
## Rear Torsion Comparison

<table>
<thead>
<tr>
<th>Previous Odyssey</th>
<th>New Odyssey</th>
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<tbody>
<tr>
<td><img src="image1" alt="Previous Odyssey Image" /></td>
<td><img src="image2" alt="New Odyssey Image" /></td>
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</table>

Subcase 400 (rdla) : Static Analysis : Frame 0
① Improved Energy management by creating uninterrupted joints that transfer load more smoothly.
② Application of a Laser Tailor Welded Blank which allows efficient use of thickness where needed.
③ Overlapped front pillar upper and lower stiffeners to further reduce weight by eliminating internal reinforcement.
High rigidity, light weight body through advanced material application

-34 kg (From previous Odyssey)
Summary
High body rigidity improvement & big weight down

- 49% Tire Patch Lateral
- 54% Damper Torsion
- 67% Damper Bending
- 61% Global Torsion
- 44% Rear

Based on Honda internal data

-34 kg
(From Previous Odyssey)
Road Isolation – Focus Areas

- Body Control (Roll · Pitch · Heave)
- Floor Vibration
- Impact G-feeling
- Overall Cabin Quietness

Ride Comfort

Based on Honda internal data
Body | Cabin Quietness

- Improved Body Rigidity
- Triple Door Seals
- Acoustic Spray Foam
- Improved Carpet
- Acoustic Glass

<table>
<thead>
<tr>
<th>Comfortable</th>
<th>Ride</th>
<th>Cabin Quietness</th>
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<tr>
<td></td>
<td></td>
<td>+1P</td>
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<tr>
<td></td>
<td>-1P</td>
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Wind Noise (Driver Seat)

- Elite
- EXL

Road Noise (Driver Seat)

- Pacifica
- Previous
- EXL
- Elite

Road Noise (3rd Row)

- Previous
- EXL
- Elite

*Data for Sienna unavailable

Based on Honda internal data
**Safety Summary**

**Honda Sensing™**

- Adaptive Cruise Control
- Lane Keeping Assist System
- Road Departure Mitigation
- CMBS (Vehicles & Pedestrians)
- Forward Collision Warning
- Lane Departure Warning

**Blind Spot Information System**

*Honda Sensing™ & BSI are Standard on All Grades Except LX*

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**New Driver & Passenger Knee Airbags**

*Honda First Passenger Knee Airbag*

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<table>
<thead>
<tr>
<th>Rating Organization</th>
<th>Item</th>
<th>Prev</th>
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<tr>
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<tr>
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<td>Driver</td>
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