

INTRODUCTION

How to Use This Manual

This manual is divided into multiple sections. The first page of each section is marked with a black tab that lines up with its corresponding thumb index tab on this page and the back cover. You can quickly find the first page of each section without looking through a full table of contents. The symbols printed at the top corner of each page can also be used as a quick reference system.


Each section includes:




1. A table of contents, or an exploded view index showing:
 - Parts disassembly sequence.
 - Bolt torques and thread sizes.
 - Page references to descriptions in text.
2. Disassembly/assembly procedures and tools.
3. Inspection.
4. Testing/troubleshooting.
5. Repair.
6. Adjustments.

Safety Messages

Your safety, and the safety of others, is very important. To help you make informed decisions, we have provided safety messages, and other safety information throughout this manual. Of course, it is not practical or possible to warn you about all the hazards associated with servicing this vehicle. You must use your own good judgment.

You will find important safety information in a variety of forms including:

- **Safety Labels** — on the vehicle.
- **Safety Messages** — preceded by a safety alert symbol  and one of three signal words, DANGER, WARNING, or CAUTION. These signal words mean:

-  **DANGER** You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.
-  **WARNING** You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.
-  **CAUTION** You CAN be HURT if you don't follow instructions.

- **Instructions** — how to service this vehicle correctly and safely.


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


As you read this manual, you will find information that is preceded by a **NOTICE** symbol. The purpose of this message is to help prevent damage to your vehicle, other property, or the environment.

First Edition 10/2011
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Specifications apply to USA and Canada

Honda Motor Co., Ltd.
Service Publication Office

As sections with * include SRS and IMA components; special precautions are required when servicing.

 marked sections are not included in this manual, see Volume 2.

General Information	
Specifications	specs
Maintenance	
*Engine Electrical	
*Engine Mechanical	
Engine Cooling	
*Fuel and Emissions	
IMA System	
*Transaxle	
*Steering	
Suspension (Including TPMS)	
*Brakes (Including VSA)	
*Body	
*Heating, Ventilation, and Air Conditioning	
*Body Electrical	
*Audio, Navigation, and Telematics	
*Restraints	

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

The CR-Z SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items requires special precautions and tools, and should be done by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags, side airbags, side curtain airbags, and/or seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, or side impact sensors, especially when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned to LOCK (0); otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

INTEGRATED MOTOR ASSIST (IMA) SYSTEM

IMA components are located in this area. The IMA is a high-voltage system. The high voltage cables and their covers are identified by orange coloring. The safety labels are attached to high voltage and other related parts (see page 1-7). You must be familiar with the IMA system before working around it. Make sure you have read the Service Precautions in the IMA section before doing repairs or service (see page 12-3).



General Information

General Information

Chassis and Paint Codes

'11 Model	1-2
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Identification Number Locations	1-6
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General Information

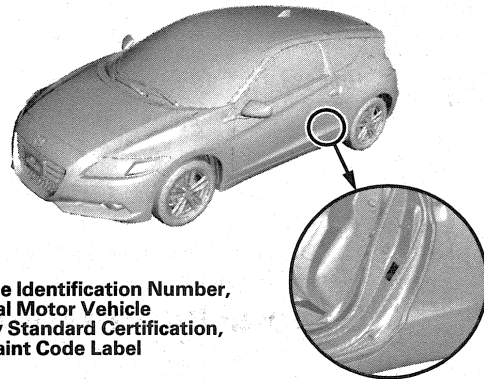
Chassis and Paint Codes - '11 Model

Vehicle Identification Number

JHM ZF1 C 4 * B S 000001

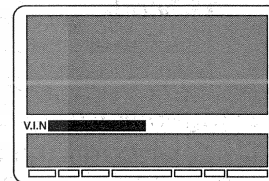
a b c d e f g h

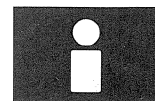
- a. Manufacturer, Make and Type of Vehicle**
JHM: Honda Motor Co., Ltd.
Honda passenger vehicle
- b. Line, Body and Engine Type**
ZF1: CR-Z/LEA1
- c. Body Type and Transmission Type**
C: 2-door Hatchback/6-speed Manual
D: 2-door Hatchback/CVT
- d. Vehicle Grade (Series)**
USA models
4: CR-Z
6: CR-Z EX
Canada models
6: CR-Z
- e. Check Digit**
- f. Model Year**
B: '11
- g. Factory Code**
S: Suzuka Factory in Japan
- h. Serial Number**
000001 —: USA models
800001 —: Canada models



Vehicle Identification Number,
Federal Motor Vehicle
Safety Standard Certification,
and Paint Code Label

Vehicle Identification Number,
Canadian Motor Vehicle
Safety Standard Certification,
and Paint Code Label





Engine Number

LEA1 - 1000001

a b

a. Engine Type
LEA1: 1.5 L SOHC i-VTEC Sequential Multiport Fuel-injected engine

b. Serial Number

Motor Number

MF6 - 1000001

a b

a. Motor Type
MF6: DC brushless-3 phases

b. Serial Number

Transmission Number

STXM - 1000001

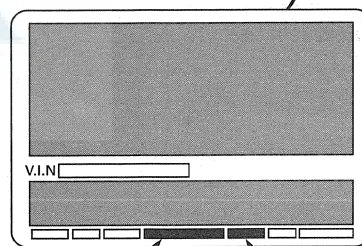
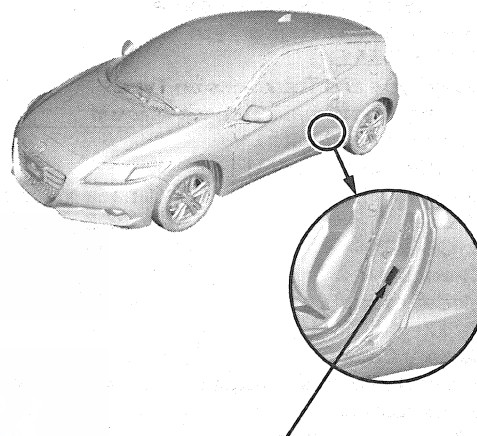
a b

a. Transmission Type
STXM: 6-speed Manual
STYA: CVT

b. Serial Number

Paint Code

Code	Color	USA models	Canada models
NH-624P	Premium White Pearl	<input type="radio"/>	<input type="radio"/>
NH-642M	Storm Silver Metallic	<input type="radio"/>	<input type="radio"/>
NH-731P	Crystal Black Pearl	<input type="radio"/>	<input type="radio"/>
BG-57P	North Shore Blue Pearl	<input type="radio"/>	<input type="radio"/>
R-81	Milano Red	<input type="radio"/>	<input type="radio"/>



PAINT CODE

INTERIOR COLOR CODE

General Information

Chassis and Paint Codes - '12 Model

Vehicle Identification Number

J	H	M	Z	F	1	C	4	*	C	S	0	0	0	0	0	1
a	b	c	d	e	f	g	h									

a. Manufacturer, Make and Type of Vehicle
 JHM: Honda Motor Co., Ltd.
 Honda passenger vehicle

b. Line, Body and Engine Type
 ZF1: CR-Z/LEA1

c. Body Type and Transmission Type
 C: 2-door Hatchback/6-speed Manual
 D: 2-door Hatchback/CVT

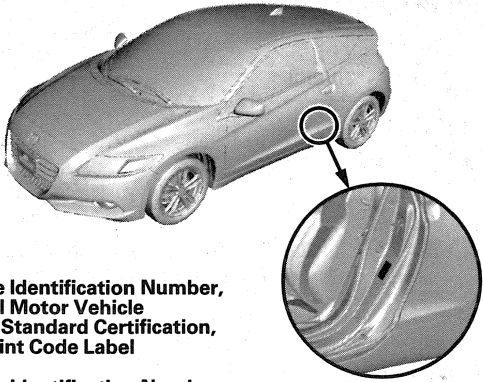
d. Vehicle Grade (Series)
 USA models
 4: CR-Z
 6: CR-Z EX
 Canada models
 6: CR-Z

e. Check Digit

f. Model Year
 C: '12

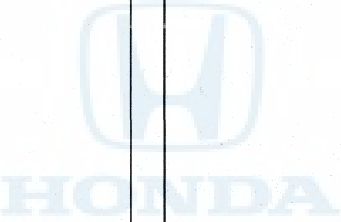
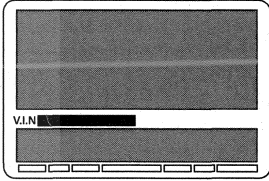
g. Factory Code
 S: Suzuka Factory in Japan

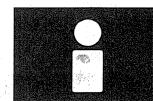
h. Serial Number
 000001 —: USA models
 800001 —: Canada models



Vehicle Identification Number, Federal Motor Vehicle Safety Standard Certification, and Paint Code Label

Vehicle Identification Number, Canadian Motor Vehicle Safety Standard Certification, and Paint Code Label





Engine Number

LEA1 - 2000001

a b

a. Engine Type
LEA1: 1.5 L SOHC i-VTEC Sequential Multiport Fuel-injected engine

b. Serial Number

Motor Number

MF6 - 1000001

a b

a. Motor Type
MF6: DC brushless-3 phases

b. Serial Number

Transmission Number

STXM - 2000001

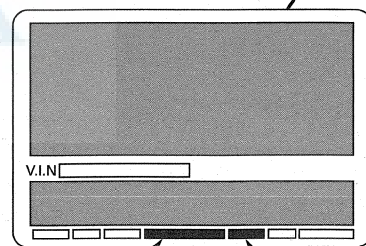
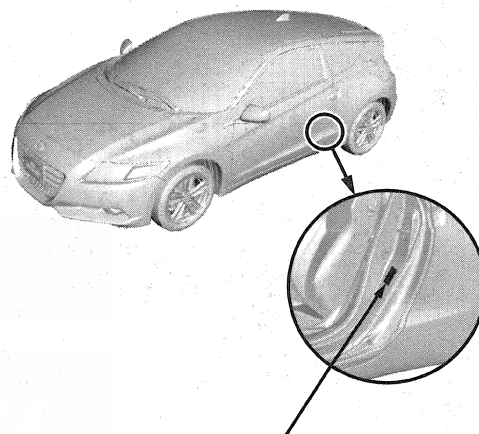
a b

a. Transmission Type
STXM: 6-speed Manual
STYA: CVT

b. Serial Number

Paint Code

Code	Color	USA models	Canada models
NH-624P	Premium White Pearl	<input type="radio"/>	<input type="radio"/>
NH-642M	Storm Silver Metallic	<input type="radio"/>	<input type="radio"/>
NH-731P	Crystal Black Pearl	<input type="radio"/>	<input type="radio"/>
BG-57P	North Shore Blue Pearl	<input type="radio"/>	
R-81	Milano Red	<input type="radio"/>	<input type="radio"/>



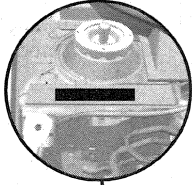
PAINT CODE

INTERIOR COLOR CODE

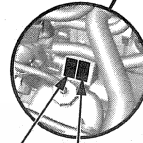
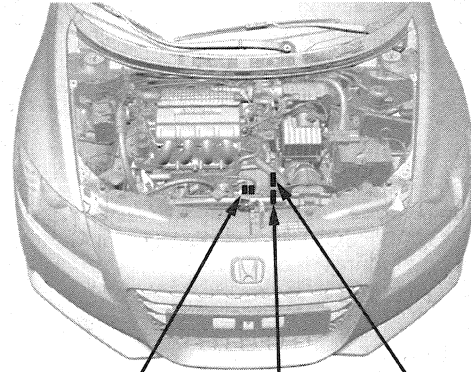
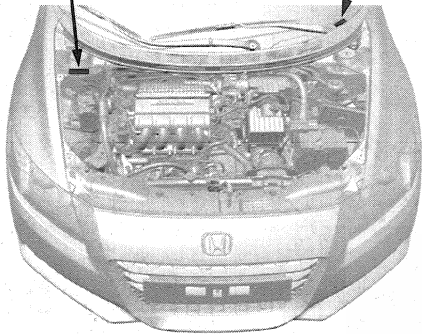
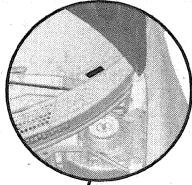
General Information

Identification Number Locations

Vehicle Identification Number (VIN)

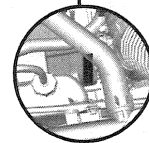


Vehicle Identification Number (VIN)

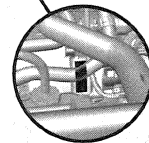


Engine Number

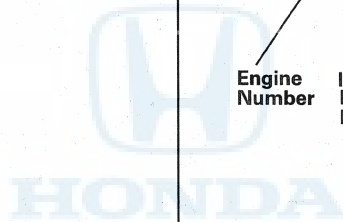
IMA Motor Number

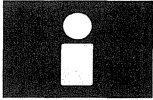


Continuously Variable Transmission (CVT) Number



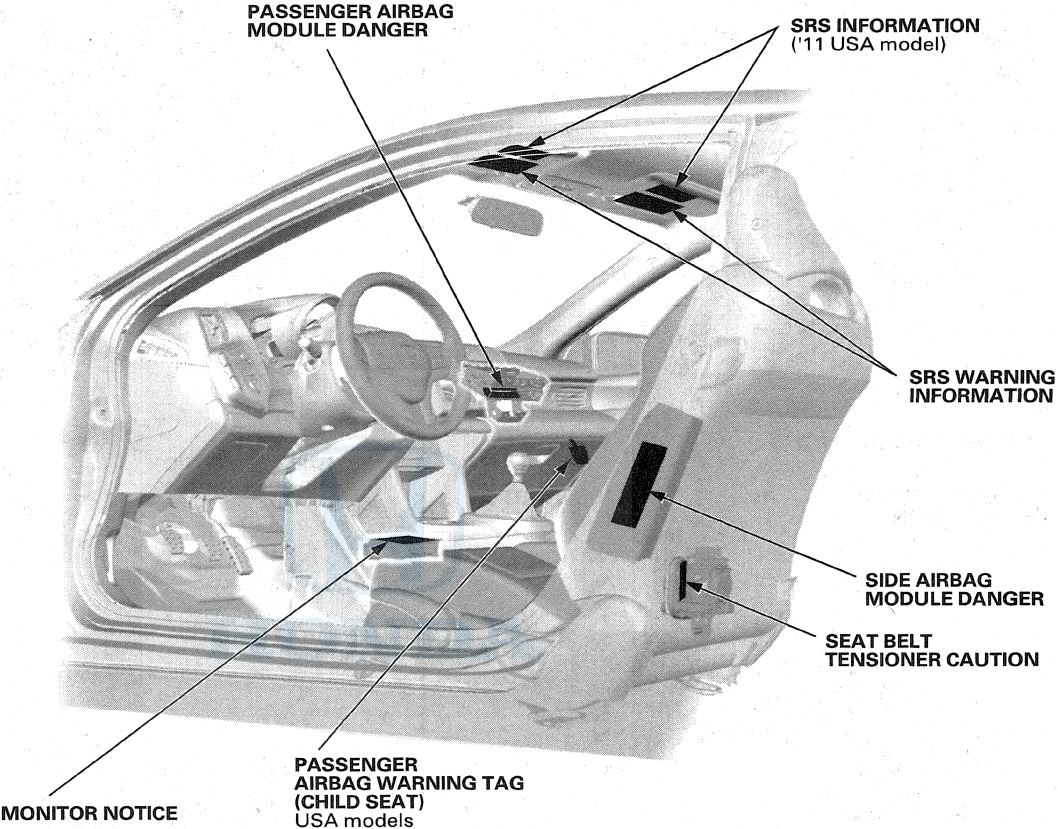
Manual Transmission Number



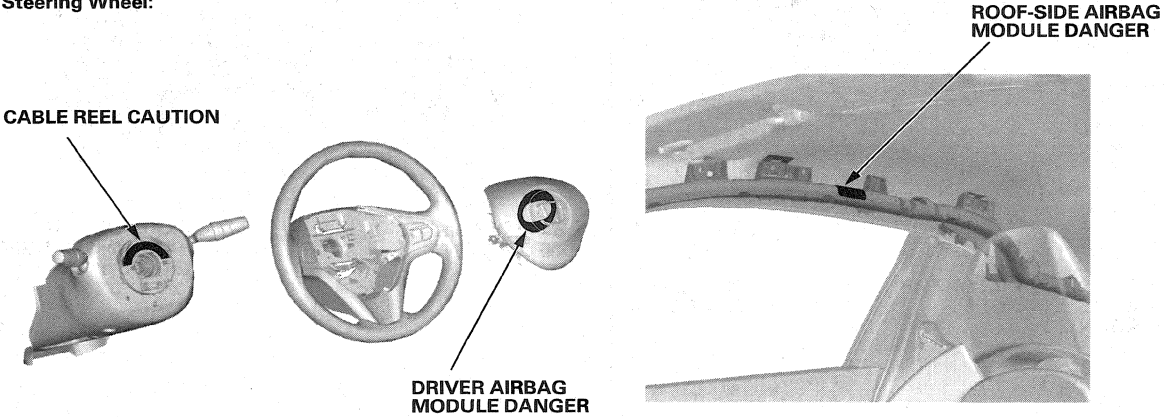


Danger/Warning/Caution Label Locations

Passenger's Compartment:



Steering Wheel:

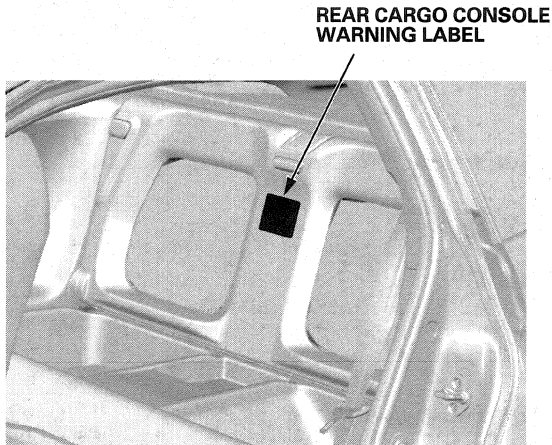


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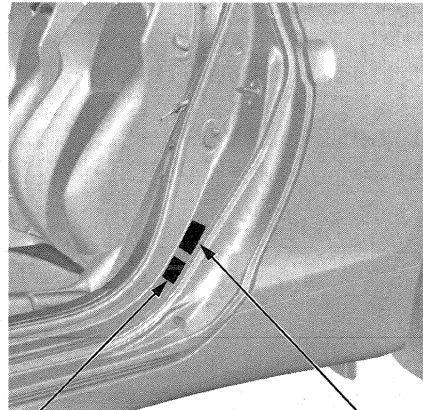
General Information

Danger/Warning/Caution Label Locations (cont'd)

Rear Compartment:



Doorjamb Area:



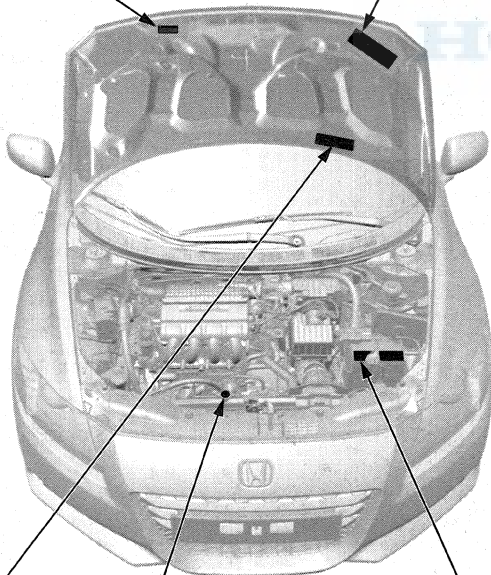
TIRE INFORMATION
Located on driver's doorjamb

SIDE AIRBAG CAUTION
Located on driver's and passenger's doorjamb

Engine Compartment:

AIR CONDITIONING INFORMATION

EMISSION CONTROL INFORMATION and ENGINE COOLANT INFORMATION



BATTERY DISPOSAL INFORMATION

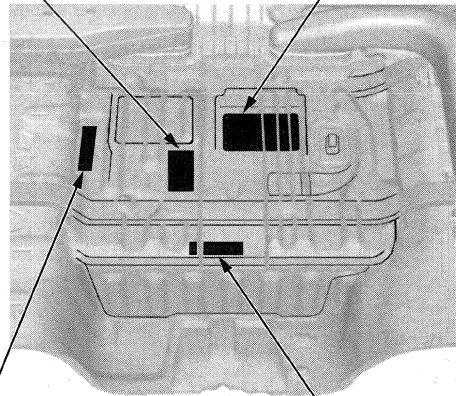
RADIATOR CAP DANGER

BATTERY DANGER

Cargo Area:

HIGH VOLTAGE WARNING

BATTERY HANDLING INFORMATION
Located on battery



BATTERY DISPOSAL INFORMATION

HIGH VOLTAGE HANDLING DANGER
Located on battery



Under-Hood Emission Control Label

Emission Group Identification

Example:

INFORMATION	VEHICLE EMISSION CONTROL INFORMATION		
<p>◆THE FACTORY INSTALLED LONG-LIFE COOLANT MUST BE REPLENISHED ACCORDING TO MAINTENANCE SCHEDULES TO KEEP IT AT 10 YEARS OR 100,000 KILOMETERS (62,000 MILES) FIRST, THEREAFTER EVERY 4 YEARS.</p> <p>◆WHEN ADDING OR REPLACING THE COOLANT, ALWAYS USE HONDA RECOMMENDED LONG-LIFE ANTIFREEZE/COLANT TYPE 2. THIS COOLANT IS PRE-MIXED WITH 50% DISTILLED WATER. IT DOES NOT REQUIRE ANY ADDITIONAL MIXING.</p> <p>◆DO NOT DILUTE THE COOLANT. THE LIFE OF THE ENGINE MAY BE SHORTENED OTHERWISE.</p> <p>◆CHECK OR ADD THE COOLANT AT THE SERVICE PANE. NOT THE BATTERY.</p> <p>◆FOR FURTHER INFORMATION ON THE COOLING SYSTEM, READ THE OWNER'S MANUAL OR CHECK WITH YOUR HONDA DEALER.</p>	<p>CONFORMS TO REGULATIONS : 2011MY HEV</p> <p>U.S. EPA: T292 LDV OBD: CA 0BD 11 FUEL: GASOLINE</p> <p>ARD: LEV II SUBLEV / AT PZEV PC OBD: CA 0BD 11 FUEL: GASOLINE</p> <p>WU-TWC, TWC, A/F SENSOR, HO2S, EGR, SF1</p>		
	<p>HONDA MOTOR CO., LTD.</p>	<p>RTW-ADD</p>	<p>SHINRYO1, 51D3 SHINRYO09HVZA V. 5L</p>

'11 Model

CONFORMS TO REGULATIONS: 2011 MY HEV

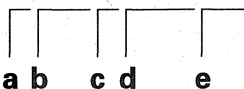
'12 Model

CONFORMS TO REGULATIONS: 2012 MY HEV

Test Group and Evaporative Family

Test Group:

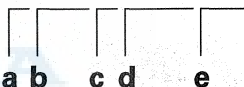
B HNX V 01.5 1D3



- a. Model Year
B: '11
C: '12
- b. Manufacturer Subcode
HNX: Honda
- c. Family Type
V: LDV
- d. Displacement Group
e. Sequence Characters
1D3: '11 model
6D2: '12 model

Evaporative Family:

B HNX R 0096 VZA



- a. Model Year
B: '11
C: '12
- b. Manufacturer Subcode
HNX: Honda
- c. Family Type
R: Refueling
- d. Canister Working Capacity Group
e. Sequence Characters
VZA: '11 model
VZB: '12 model

General Information

Lift and Support Points

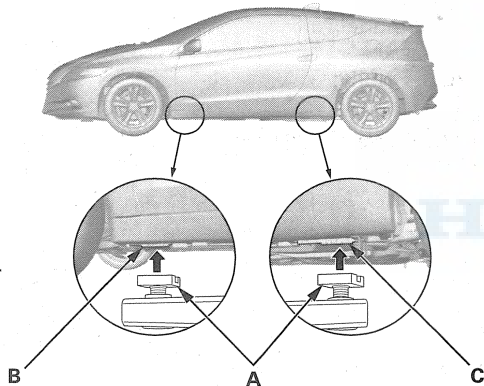
NOTE: If you are going to remove heavy components such as suspension or the IMA battery from the rear of the vehicle, first support the front of the vehicle with tall safety stands. When substantial weight is removed from the rear of the vehicle, the center of gravity can change, causing the vehicle to tip forward on the lift.

Vehicle Lift

1. Position the lift pads (A), under the vehicle's front support points (B) and rear support points (C).

NOTICE

- This vehicle has low ground clearance. To avoid damaging the vehicle, make sure there is enough clearance around the support points.
- Be sure the lift pads are properly placed to avoid damaging the vehicle.



2. Raise the lift a few inches, and rock the vehicle gently to be sure it is firmly supported.
3. Raise the lift to its full height, and inspect the vehicle support points for solid contact with the lift pads.

Safety Stands

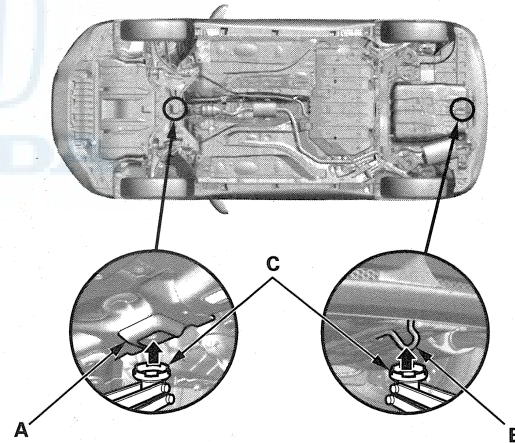
To support the vehicle on safety stands, use the same support points as for a vehicle lift. Always use safety stands when working on or under any vehicle that is supported only by a jack.

Floor Jack

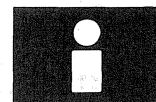
1. When lifting the front of the vehicle, set the parking brake. When lifting the rear of the vehicle, put the shift lever in reverse for manual transmission, or in P for CVT.
2. Block the wheels that are not being lifted.
3. Position the floor jack under the front jacking bracket (A) or the rear jacking bracket (B). Center the jacking bracket on the jack lift platform (C), and jack up the vehicle high enough to fit the safety stands under it.

NOTICE

- This vehicle has low ground clearance. To avoid damaging the vehicle, make sure there is enough clearance around the support points.
- Be sure the floor jack is properly placed to avoid damaging the vehicle.



4. Position the safety stands under the support points, and adjust them so the vehicle is level side-to-side.
5. Lower the vehicle onto the stands.



Towing

If the vehicle needs to be towed, call a professional towing service. Never tow the vehicle behind another vehicle with just a rope or chain. It is very dangerous.

Emergency Towing

There are three popular methods of towing a vehicle.

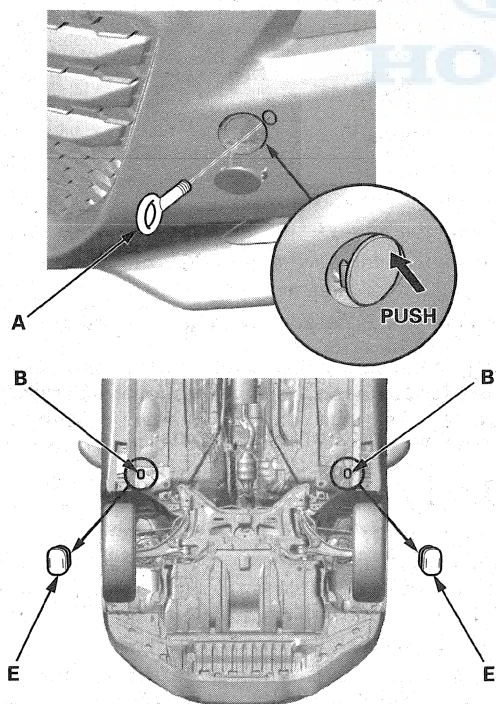
Flat-bed Tow Truck Equipment — The operator loads the vehicle on the back of a flat-bed tow truck. **This is the best way of transporting the vehicle.**

To accommodate the flat-bed tow truck equipment, the vehicle is equipped with a detachable front towing hook (A), front tie down hook slots (B), a rear towing hook (C), and rear tie down hook slots (D).

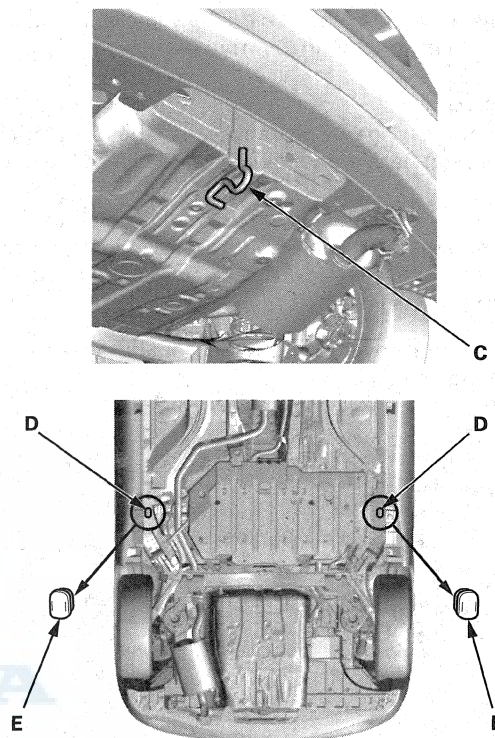
The towing hooks can be used with a winch to pull the vehicle onto the flat-bed tow truck, and the tie down hook slots can be used to secure the vehicle to the flat-bed tow truck.

NOTE: The tie down hook slots has rubber plugs (E) over the openings. Be sure to reinstall the plugs after use.

Front:



Rear:



(cont'd)

General Information

Towing (cont'd)

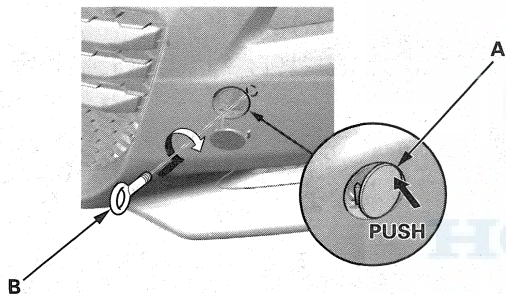
Front Towing Hook Installation

The detachable front towing hook is for towing very short distances, such as freeing the vehicle. The hook attaches to the anchor in the front bumper.

NOTICE

- To avoid damage to the vehicle, use the towing hook for straight flat ground towing only. Do not tow on an angle.
- Do not use the detachable tow hook as a tie down for securing the vehicle on a flat-bed tow truck. To secure the vehicle on a flat-bed tow truck, use the tie down hook slots provided.

1. Remove the cover (A) from the front bumper by pushing its edge.



2. Remove the detachable towing hook from the tool kit under the cargo area floor.
3. Screw in the detachable towing hook (B), and tighten it securely by hand.

Wheel Lift Equipment — The tow truck uses two pivoting arms that go under the tires (front or rear) and lifts them off the ground. The other two wheels remain on the ground. **This is an acceptable way of towing the vehicle.**

Sling-type Equipment — The tow truck uses metal cables with hooks on the ends. These hooks go around parts of the frame or suspension, and the cables lift that end of the vehicle off the ground. The vehicle's suspension and body can be seriously damaged if this method of towing is attempted. **This method of towing the vehicle is unacceptable.**

If the vehicle cannot be transported by a flat-bed tow truck, it should be towed with the front wheels off the ground. If the vehicle is damaged, and must be towed with the front wheels on the ground, or with all four wheels on the ground, do this:

Manual Transmission

- Release the parking brake.
- Shift the transmission to neutral.
- Leave the ignition switch in ACCESSORY (I) so the steering wheel does not lock.
- Make sure all accessories are turned off to minimize battery current draw.

CVT

- Release the parking brake.
- Start the engine.
- Shift to D, then to N.
- Turn off the engine.
- Leave the ignition switch in ACCESSORY (I) so the steering wheel does not lock.
- Make sure all accessories are turned off to minimize battery current draw.

It is best to tow the vehicle no farther than 50 miles (80 km), and keep the vehicle speed below 35 mph (55 km/h).

NOTICE

- Improper towing preparation will damage the transmission. Follow the above procedure exactly. If you cannot shift the transmission or start the engine (CVT model), the vehicle must be transported on a flat-bed tow truck.
- Trying to lift or tow the vehicle by the bumpers will cause serious damage. The bumpers are not designed to support the vehicle's weight.



Parts Marking

To deter vehicle theft, certain major components are marked with the vehicle identification number (VIN). Original parts have self-adhesive labels. Replacement body parts have generic self-adhesive labels. These labels should not be removed. The original engine or transmission VIN plates are not transferable to the replacement engine or transmission.

NOTE: Be careful not to damage the parts marking labels during body repair. Mask the labels before repairing the part.

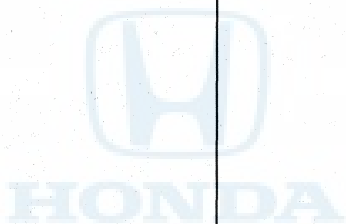
Service Precautions

IMA System

The CR-Z has an Auto-Stop system that shuts the engine off under certain conditions to improve fuel economy when the vehicle comes to a stop. In Auto-Stop mode, driver input, such as releasing the brake pedal, causes the engine to restart.

Before servicing the CR-Z, turn the ignition switch to LOCK (0), and remove the key so the engine cannot be started.

Before doing any service on the CR-Z's IMA system, make sure to turn the battery module switch OFF and wait at least 5 minutes before working on the vehicle (see page 12-3).



Specifications

Standards and Service Limits2-2

Torque Summary

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Standards and Service Limits

Engine Electrical

Item	Measurement	Qualification	Standard or New	Service Limit
Ignition coil	Rated voltage		12 V	
	Firing order		1-3-4-2	
Spark plug	Type	NGK ('11 model)	DIFR6A13G	
		NGK ('12 model)	DIFR6D13	
		DENSO	DK20PR-D13	
	Gap		1.2-1.3 mm (0.047-0.051 in)	-
Ignition timing	At idle Check the red mark	M/T in neutral, CVT in N or P	10 ± 2 ° BTDC	
Starter	Output		1.0 kW	
	Commutator mica depth		0.40-0.50 mm (0.0157-0.0197 in)	0.15 mm (0.0059 in)
	Commutator runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	Commutator O.D.		28.0-28.1 mm (1.102-1.106 in)	27.5 mm (1.083 in)
	Brush length		11.1-11.5 mm (0.437-0.453 in)	4.3 mm (0.169 in)

Engine Assembly

Item	Measurement	Qualification	Standard or New	Service Limit
Compression	Pressure (checked with engine starter cranking at wide-open throttle)	Minimum	-	980 kPa (9.99 kgf/cm ² , 142.1 psi)
		Maximum variation	-	200 kPa (2.04 kgf/cm ² , 29.0 psi)

Cylinder Head

Item	Measurement	Qualification	Standard or New	Service Limit	
Head	Warpage		0.08 mm (0.003 in) max.	-	
	Height		119.9-120.1 mm (4.720-4.728 in)	-	
Camshaft	End play		0.05-0.25 mm (0.0020-0.0098 in)	0.5 mm (0.020 in)	
	Camshaft-to-holder oil clearance		0.045-0.084 mm (0.00177-0.00331 in)	0.100 mm (0.00394 in)	
	Total runout		0.03 mm (0.0012 in) max.	0.04 mm (0.0016 in)	
	Cam lobe height	Intake PRI		34.945 mm (1.37578 in)	-
		Intake SEC		30.529 mm (1.20193 in)	-
Exhaust			35.614 mm (1.40212 in)	-	
Valve	Clearance (cold)	Intake	0.15-0.19 mm (0.006-0.007 in)	-	
		Exhaust	0.26-0.30 mm (0.011-0.011 in)	-	
	Stem O.D.	Intake	5.48-5.49 mm (0.2157-0.2161 in)	5.45 mm (0.2146 in)	
		Exhaust	5.45-5.46 mm (0.2146-0.2150 in)	5.42 mm (0.2134 in)	
	Stem-to-guide clearance	Intake	0.02-0.05 mm (0.0008-0.0020 in)	0.08 mm (0.0031 in)	
		Exhaust	0.05-0.08 mm (0.0020-0.0031 in)	0.11 mm (0.0043 in)	
Valve seat	Width	Intake	0.850-1.150 mm (0.03346-0.04528 in)	1.60 mm (0.0630 in)	
		Exhaust	1.250-1.550 mm (0.04921-0.06102 in)	2.00 mm (0.0787 in)	
	Stem installed height	Intake	46.1-46.5 mm (1.815-1.831 in)	46.8 mm (1.843 in)	
		Exhaust	46.2-46.6 mm (1.819-1.835 in)	46.9 mm (1.846 in)	
Valve guide	Installed height	Intake	15.85-16.35 mm (0.6240-0.6437 in)	-	
		Exhaust	15.85-16.35 mm (0.6240-0.6437 in)	-	
Rocker arm	Arm-to-shaft clearance	Intake	0.019-0.050 mm (0.00075-0.00197 in)	0.08 mm (0.0031 in)	
		Exhaust	0.019-0.050 mm (0.00075-0.00197 in)	0.08 mm (0.0031 in)	

Engine Block

Item	Measurement	Qualification	Standard or New	Service Limit
Block	Warpage of deck		0.07 mm (0.002 in) max.	—
	Bore diameter		73.000—73.015 mm (2.87401—2.87460 in)	73.065 mm (2.87657 in)
	Bore taper	Difference between first and third measurement	—	0.05 mm (0.0020 in)
	Reboring limit		—	0.25 mm (0.0098 in)
Piston	Skirt O.D. at 16 mm (0.63 in) from bottom of skirt		72.98—72.99 mm (2.8732—2.8736 in)	72.97 mm (2.8728 in)
	Clearance in cylinder		0.010—0.035 mm (0.00039—0.00138 in)	0.05 mm (0.0020 in)
Piston ring	Ring-to-groove clearance	Top (RIKEN)	0.065—0.090 mm (0.003—0.003 in)	0.15 mm (0.005 in)
		Top (NIPPON)	0.061—0.090 mm (0.003—0.003 in)	0.15 mm (0.005 in)
		Second	0.030—0.055 mm (0.002—0.002 in)	0.12 mm (0.004 in)
	Ring end gap	Top	0.15—0.30 mm (0.006—0.011 in)	0.60 mm (0.023 in)
		Second (RIKEN)	0.30—0.42 mm (0.012—0.016 in)	0.65 mm (0.025 in)
		Second (NIPPON)	0.35—0.50 mm (0.014—0.019 in)	0.65 mm (0.025 in)
		Oil	0.20—0.70 mm (0.008—0.027 in)	0.80 mm (0.031 in)
Piston pin	O.D.		17.996—18.000 mm (0.70850—0.70866 in)	—
	Pin-to-piston clearance		0.010—0.017 mm (0.00039—0.00067 in)	—
Connecting rod	Pin-to-rod clearance		-0.036—-0.019 mm (-0.00142—-0.00075 in)	—
	Small end bore diameter		17.964—17.977 mm (0.70724—0.70775 in)	—
	Big end bore diameter		43.0 mm (1.693 in)	—
	End play		0.15—0.35 mm (0.006—0.013 in)	0.40 mm (0.015 in)
Crankshaft	Main journal diameter		49.976—50.000 mm (1.96756—1.96850 in)	—
	Rod journal diameter		39.976—40.000 mm (1.57386—1.57480 in)	—
	Rod/main journal taper		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	Rod/main journal out-of-round		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	End play		0.10—0.35 mm (0.0039—0.0138 in)	0.45 mm (0.0177 in)
	Total runout		0.03 mm (0.0012 in) max.	0.04 mm (0.0016 in)
Crankshaft bearing	Main bearing-to-journal oil clearance		0.016—0.034 mm (0.00063—0.00134 in)	0.050 mm (0.00197 in)
	Connecting rod bearing-to-journal oil clearance		0.020—0.038 mm (0.00079—0.00150 in)	0.050 mm (0.00197 in)

Engine Lubrication

Item	Measurement	Qualification	Standard or New	Service Limit	
Engine oil	Capacity	Engine overhaul	4.2 L (4.4 US qt)	—	
		Oil change including filter	3.6 L (3.8 US qt)	—	
		Oil change without filter	3.4 L (3.6 US qt)	—	
Oil pump	Inner rotor-to-outer rotor radial clearance		0.06—0.16 mm (0.003—0.006 in)	0.20 mm (0.007 in)	
	Pump housing-to-outer rotor radial clearance		0.100—0.175 mm (0.004—0.006 in)	0.20 mm (0.007 in)	
	Pump housing-to-rotor axial clearance		0.02—0.06 mm (0.001—0.002 in)	0.15 mm (0.005 in)	
	Oil pressure with oil temperature at 176 °F (80 °C)	At idle		69 kPa (0.70 kgf/cm ² , 10.0 psi) min.	—
		At 3,000 rpm		343 kPa (3.50 kgf/cm ² , 49.8 psi) min.	—

Standards and Service Limits

Cooling System

Item	Measurement	Qualification	Standard or New	Service Limit
Radiator	Coolant capacities (including engine, heater, hoses, and reservoir) (M/T model)	Engine overhaul	4.92 L (1.300 US gal)	—
		Coolant change	4.42 L (1.168 US gal)	—
	Coolant capacities (including engine, heater, hoses, and reservoir) (CVT model)	Engine overhaul	4.84 L (1.279 US gal)	—
		Coolant change	4.35 L (1.149 US gal)	—
	Coolant type		Honda Long Life Antifreeze/Coolant Type 2	
Coolant reservoir	Coolant capacity		0.44 L (0.116 US gal)	—
Radiator cap	Opening pressure		93.3–122.7 kPa (0.951–1.251 kgf/cm ² , 13.53–17.79 psi)	—
Thermostat	Opening temperature	Begins to open	169–176 °F (76–80 °C)	—
		Fully open	194 °F (90 °C)	—
	Valve lift at fully open		8.0 mm (0.315 in) min.	—
Drive belt	Tension		Auto-tensioner	

Fuel and Emissions

Item	Measurement	Qualification	Standard or New	Service Limit
Fuel pressure regulator	Pressure with fuel pressure gauge connected		320–370 kPa (3.3–3.8 kgf/cm ² , 47–54 psi)	—
Fuel tank	Capacity		40 L (10.6 US gal)	—
Engine idle	Idle speed without load	M/T in neutral, CVT in N or P	750 ± 50 rpm	
	Idle speed with high electrical load	M/T in neutral, CVT in N or P	750 ± 50 rpm	

Clutch

Item	Measurement	Qualification	Standard or New	Service Limit
Clutch pedal	Height from floor	With clutch pedal pad cover	203.3 mm (8.004 in)	—
		Without clutch pedal pad cover	201.5 mm (7.933 in)	—
	Stroke		120–130 mm (4.72–5.12 in)	—
	Play		4.5–18.5 mm (0.177–0.728 in)	—
Disengagement height from the floor		With clutch pedal pad cover	117.5 mm (4.626 in)	—
		Without clutch pedal pad cover	115.7 mm (4.555 in)	—
Flywheel	Runout on clutch mating surface		0.05 mm (0.0020 in) max.	0.15 mm (0.0059 in)
Clutch disc	Rivet head depth		1.2–1.7 mm (0.047–0.067 in)	0.4 mm (0.016 in)
	Thickness		8.3–9.0 mm (0.327–0.354 in)	6.5 mm (0.256 in)
Pressure plate	Warpage		0.03 mm (0.001 in) max.	0.15 mm (0.005 in)
	Evenness of the height of the diaphragm spring fingers		0.6 mm (0.024 in) max.	0.8 mm (0.031 in)

Manual Transmission and M/T Differential

Item	Measurement	Qualification	Standard or New	Service Limit
Manual transmission fluid	Capacity: use Honda MTF	Fluid change	1.4 L (1.5 US qt)	—
		Overhaul	1.6 L (1.7 US qt)	—



Manual Transmission and M/T Differential (cont'd)

Item	Measurement	Qualification	Standard or New	Service Limit
Mainshaft	End play		0.11—0.18 mm (0.0043—0.0071 in)	Adjust
	Diameter of bushing contact area		18.800—18.850 mm (0.74016—0.74212 in)	18.750 mm (0.73819 in)
	Diameter of ball bearing contact area (clutch housing side)		25.977—25.990 mm (1.02271—1.02323 in)	25.920 mm (1.02047 in)
	Diameter of needle bearing contact area		34.984—35.000 mm (1.37732—1.37795 in)	34.930 mm (1.37519 in)
	Diameter of ball bearing contact area (transmission housing side)		24.987—25.000 mm (0.98374—0.98425 in)	24.930 mm (0.98149 in)
	Diameter of 4th/5th gear distance collar contact area		28.992—29.005 mm (1.14142—1.14193 in)	28.930 mm (1.13897 in)
	Runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
Mainshaft 3rd gear	I.D.		39.009—39.025 mm (1.53578—1.53641 in)	38.95 mm (1.5335 in)
	Clearance	2nd—3rd	0.06—0.21 mm (0.003—0.008 in)	0.30 mm (0.011 in)
	Thickness		27.02—27.07 mm (1.0638—1.0657 in)	26.95 mm (1.0610 in)
Mainshaft 4th gear	I.D.		39.009—39.025 mm (1.53578—1.53641 in)	38.95 mm (1.5335 in)
	End play (distance collar side)		0.06—0.19 mm (0.0024—0.0075 in)	0.28 mm (0.0110 in)
	Thickness		25.52—25.57 mm (1.0047—1.0067 in)	25.45 mm (1.0020 in)
Mainshaft 5th gear	I.D.		39.009—39.025 mm (1.53578—1.53641 in)	38.95 mm (1.5335 in)
	End play (distance collar side)		0.06—0.14 mm (0.0024—0.0055 in)	0.23 mm (0.0091 in)
	Thickness		22.42—22.47 mm (0.8827—0.8846 in)	22.35 mm (0.8799 in)
Mainshaft 6th gear	I.D.		35.009—35.025 mm (1.37830—1.37893 in)	35.09 mm (1.3815 in)
	End play (ball bearing side)		0.06—0.16 mm (0.003—0.006 in)	0.25 mm (0.009 in)
	Thickness		23.92—23.97 mm (0.9417—0.9437 in)	23.85 mm (0.9390 in)
Mainshaft 4th/5th gear distance collar	I.D.		29.014—29.024 mm (1.14228—1.14267 in)	29.03 mm (1.1429 in)
	O.D.		34.989—35.000 mm (1.37752—1.37795 in)	34.940 mm (1.37559 in)
	Overall length		48.97—49.03 mm (1.9279—1.9303 in)	—
	Length of needle bearing contact area	4th, 5th	22.53—22.56 mm (0.8870—0.8882 in)	—
Mainshaft 6th gear distance collar	I.D.		25.00—25.01 mm (0.9843—0.9846 in)	25.02 mm (0.9850 in)
	O.D.		30.989—31.000 mm (1.22004—1.22047 in)	30.940 mm (1.21811 in)
	Length		24.03—24.08 mm (0.9461—0.9480 in)	—
Countershaft	Diameter of needle bearing contact area (clutch housing side)		34.000—34.015 mm (1.33858—1.33917 in)	33.950 mm (1.33661 in)
	Diameter of ball bearing contact area (transmission housing side)		26.020—26.033 mm (1.02441—1.02492 in)	25.970 mm (1.02244 in)
	Diameter of 1st gear distance collar contact area		38.987—39.000 mm (1.53492—1.53543 in)	38.940 mm (1.53307 in)
	Runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	32 mm shim-to-bearing inner race clearance		0.04—0.10 mm (0.002—0.003 in)	Adjust
Countershaft 1st, 2nd gear	I.D.		48.509—48.525 mm (1.90980—1.91043 in)	48.58 mm (1.9126 in)
	Clearance	2nd—3rd	0.06—0.14 mm (0.003—0.005 in)	0.23 mm (0.009 in)
	End play	1st	0.06—0.21 mm (0.003—0.008 in)	0.25 mm (0.009 in)
	Thickness	1st	27.42—27.47 mm (1.0795—1.0815 in)	27.35 mm (1.0768 in)
2nd		26.42—26.47 mm (1.0402—1.0421 in)	26.35 mm (1.0374 in)	
Countershaft 1st gear distance collar	I.D.		39.00—39.01 mm (1.5354—1.5358 in)	39.02 mm (1.5362 in)
	O.D.		44.489—44.500 mm (1.75153—1.75196 in)	44.44 mm (1.7496 in)
	Overall length		30.40—30.44 mm (1.1968—1.1984 in)	—
	Length of needle bearing contact area		26.53—26.58 mm (1.0445—1.0465 in)	—
Countershaft 2nd gear distance collar	I.D.		39.00—39.01 mm (1.5354—1.5358 in)	39.02 mm (1.5362 in)
	O.D.		44.489—44.500 mm (1.75153—1.75196 in)	44.44 mm (1.7496 in)
	Length		26.53—26.56 mm (1.0445—1.0457 in)	—