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NISSAN VERSA

MODEL C11 SERIES

QUICK REFERENCE INDEX

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	FL Fuel System
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	PG Power Supply, Ground & Circuit Elements
	MA Maintenance
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L MAINTENANCE	

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FOREWORD

This manual contains maintenance and repair procedures for the 2010 NISSAN VERSA.

In order to assure your safety and the efficient functioning of the vehicle, this manual should be read thoroughly. It is especially important that the PRECAUTIONS in the GI section be completely understood before starting any repair task.

All information in this manual is based on the latest product information at the time of publication. The right is reserved to make changes in specifications and methods at any time without notice.

IMPORTANT SAFETY NOTICE

The proper performance of service is essential for both the safety of the technician and the efficient functioning of the vehicle.

The service methods in this Service Manual are described in such a manner that the service may be performed safely and accurately. Service varies with the procedures used, the skills of the technician and the tools and parts available. Accordingly, anyone using service procedures, tools or parts which are not specifically recommended by NISSAN must first be completely satisfied that neither personal safety nor the vehicle's safety will be jeopardized by the service method selected.



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Technical Publications Department



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SERVICE MANUAL: Model: _____ Year: _____

PUBLICATION NO. (Refer to Quick Reference Index): _____

Please describe any Service Manual issues or problems in detail:

Page number(s) _____ *Note: Please include a copy of each page, marked with your comments.*

Are the trouble diagnosis procedures logical and easy to use? (circle your answer) YES NO

If no, what page number(s)? _____ *Note: Please include a copy of each page, marked with your comments.*

Please describe the issue or problem in detail: _____

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QUICK REFERENCE CHART: VERSA

Engine Tune-up Data: HR16DE

INFOID:000000005779646

GENERAL SPECIFICATIONS

Engine type		HR16DE
Cylinder arrangement		In-line 4
Displacement cm ³ (cu in)		1,598 (97.51)
Bore and stroke mm (in)		78.0 x 83.6 (3.071 x 3.291)
Valve arrangement		DOHC
Firing order		1-3-4-2
Number of piston rings	Compression	2
	Oil	1
Number of main bearings		5
Compression ratio		10.7
Compression pressure kPa (bar, kg/cm ² , psi)/200 rpm	Standard	1,510 (15.1, 15.4, 219)
	Minimum	1,265 (12.65, 12.9, 183)
	Differential limit between cylinders	6.2 (0.06, 0.06, 0.9)
Valve timing (Intake valve timing control - "ON")		JPBIA0552ZZ

Unit: degree

a	b	c	d	e	f
208	228	-11 (24)	59 (24)	4	24

Drive Belts

INFOID:0000000005779647

BELT DEFLECTION:

Location		Deflection adjustment *			Unit: mm (in)
		Used belt		New belt	
		Limit	After adjusted		
Drive belt	With A/C models	8.2 (0.323)	4.8 - 5.3 (0.19 - 0.21)	4.1 - 4.4 (0.161 - 0.173)	
	Without A/C models	7.4 (0.291)	4.3 - 4.7 (0.17 - 0.19)	3.7 - 3.9 (0.146 - 0.154)	
Applied pushing force		98 N (10 kg, 22 lb)			

*: When engine is cold.

BELT TENSION AND FREQUENCY:

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Location		Tension adjustment *		Unit: N (kg, lb)	Frequency adjustment *		Unit: Hz
		Used belt		New belt	Used belt		New belt
		Limit	After adjusted		Limit	After adjusted	
Drive belt	With A/C models	500 (51.0, 112)	876 - 964 (89.4 - 98.3, 197 - 217)	1064 - 1152 (108.5 - 117.5, 239 - 259)	173	229 - 239	253.5 - 261.5
	Without A/C models	500 (51.0, 112)	876 - 964 (89.4 - 98.3, 197 - 217)	1064 - 1152 (108.5 - 117.5, 239 - 259)	194	257.5 - 267.5	283 - 293

*: When engine is cold.

Spark Plug

INFOID:0000000005779648

SPARK PLUG

Unit: mm (in)

Make	Denso
Standard type*	FXE20HE-11
Gap (Nominal)	1.1 (0.043)

*: Always check with the Parts Department for the latest parts information

Engine Tune-up Data: MR18DE

INFOID:0000000005779645

GENERAL SPECIFICATIONS

Engine type		MR18DE
Cylinder arrangement		In-line 4
Displacement	cm ³ (cu in)	1,797 (109.65)
Bore and stroke	mm (in)	84.0 x 81.1 (3.307 x 3.192)
Valve arrangement		DOHC
Firing order		1-3-4-2
Number of piston rings	Compression	2
	Oil	1
Compression ratio		9.9
Compression pressure kPa (bar, kg/cm ² , psi) / 250 rpm	Standard	1,500 (15.0, 15.3, 217.6)
	Minimum	1,200 (12.0, 12.2, 174)
	Differential limit between cylinders	100 (1.0, 1.0, 15)

DRIVE BELT

Tension of drive belt	Auto adjustment by auto-tensioner
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SPARK PLUG

Unit: mm (in)

Make	DENSO
Standard type*	FXE20HR11
Spark plug gap	Nominal: 1.1 (0.043)

*: Always check with the Parts Department for the latest parts information

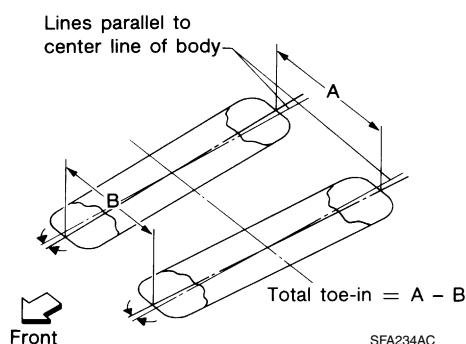
QUICK REFERENCE CHART: VERSA

2010

Front Wheel Alignment (Unladen*)

INFOID:000000005779642

Market		United States and Canada	
Tire size		P185/65R15, P195/55R16	
Camber Degree minute (Decimal degree)	RH	Minimum	- 0° 55' (- 0.92°)
		Nominal	- 0° 10' (- 0.17°)
		Maximum	0° 35' (0.58°)
	LH	Minimum	- 0° 55' (- 0.92°)
		Nominal	- 0° 10' (- 0.17°)
		Maximum	0° 35' (0.58°)
	Left or right difference (LH - RH)	Minimum	-0° 33' (-0.55°)
		Nominal	0° 0' (0°)
		Maximum	0° 33' (0.55°)
Caster Degree minute (Decimal degree)	RH	Minimum	4° 05' (4.08°)
		Nominal	4° 50' (4.83°)
		Maximum	5° 35' (5.58°)
	LH	Minimum	3° 55' (3.92°)
		Nominal	4° 40' (4.67°)
		Maximum	5° 25' (5.42°)
	Left or right difference (LH - RH)	Minimum	-0° 45' (-0.75°)
		Nominal	-0° 12' (-0.20°)
		Maximum	0° 21' (0.35°)
Kingpin inclination Degree minute (Decimal degree)		Minimum	9° 10' (9.17°)
		Nominal	9° 55' (9.92°)
		Maximum	10° 40' (10.67°)



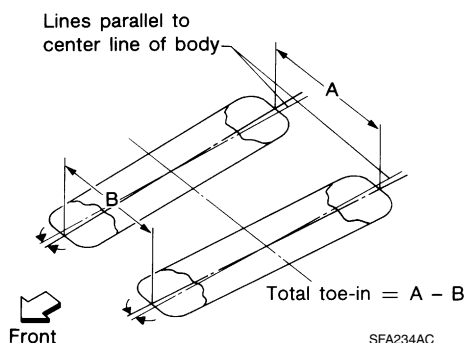
Total toe-in	Distance (A - B)	Minimum	0 mm (0 in)
		Nominal	1 mm (0.04 in)
		Maximum	2 mm (0.08 in)
	Angle (left or right, each side) Degree minute second (Decimal degree)	Minimum	0° 0' 0" (0°)
		Nominal	0° 2' 42" (0.05°)
		Maximum	0° 5' 24" (0.09°)

*: Fuel, engine coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

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Market		United States and Canada	
Tire size		P185/65R14	
Camber Degree minute (Decimal degree)	RH	Minimum	- 0° 50' (- 0.83°)
		Nominal	- 0° 5' (- 0.08°)
		Maximum	0° 40' (0.67°)
	LH	Minimum	- 0° 50' (- 0.83°)
		Nominal	- 0° 5' (- 0.08°)
		Maximum	0° 40' (0.67°)
	Left or right difference (LH - RH)	Minimum	-0° 33' (-0.55°)
		Nominal	-0° 0' (-0°)
		Maximum	0° 33' (0.55°)
Caster Degree minute (Decimal degree)	RH	Minimum	3° 45' (3.75°)
		Nominal	4° 30' (4.50°)
		Maximum	5° 15' (5.25°)
	LH	Minimum	3° 35' (3.58°)
		Nominal	4° 20' (4.33°)
		Maximum	5° 5' (5.08°)
	Left or right difference (LH - RH)	Minimum	-0° 45' (-0.75°)
		Nominal	-0° 12' (-0.20°)
		Maximum	0° 21' (0.35°)
Kingpin inclination Degree minute (Decimal degree)		Minimum	9° 5' (9.08°)
		Nominal	9° 50' (9.83°)
		Maximum	10° 35' (10.58°)



Total toe-in	Distance (A - B)	Minimum	0 mm (0 in)
		Nominal	1 mm (0.04 in)
		Maximum	2 mm (0.08 in)
	Angle (left or right, each side) Degree minute (Decimal degree)	Minimum	0° 0' 0" (0°)
		Nominal	0° 2' 42" (0.05°)
		Maximum	0° 5' 24" (0.09°)

*: Fuel, engine coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

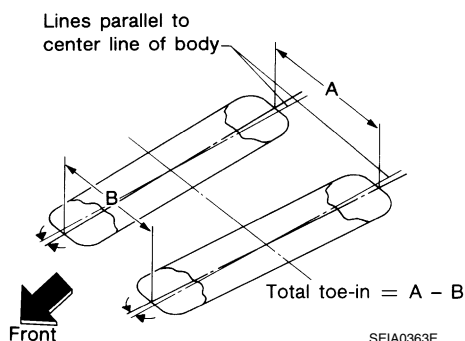
QUICK REFERENCE CHART: VERSA

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Rear Wheel Alignment (Unladen*)

INFOID:000000005779640

Market		United States and Canada	
Tire size		P185/65R15, P195/55R16	P185/65R14
Camber Degree minute (Decimal degree)	Minimum	− 2° 0' 30" (− 2.01°)	− 2° 1' 0" (− 2.02°)
	Nominal	− 1° 30' 30" (− 1.51°)	− 1° 31' 0" (− 1.52°)
	Maximum	− 1° 0' 30" (− 1.01°)	− 1° 1' 0" (− 1.02°)

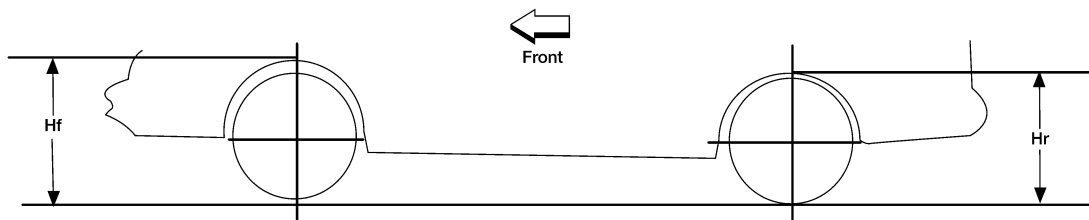


Total toe-in	Distance (A - B)	Minimum	−1.0 mm (−0.039 in)	−2.3 mm −0.091 in)
		Nominal	3.0 mm (0.118 in)	1.7 mm (0.067 in)
		Maximum	7.0 mm (0.276 in)	5.7 mm (0.224 in)
	Angle (left or right, each side) Degree minute (Decimal degree)	Minimum	−0° 2' 30" (−0.04°)	−0° 6' 0" (−0.10°)
		Nominal	0° 8' 30" (0.14°)	0° 5' 0" (0.08°)
		Maximum	0° 19' 0" (0.32°)	0° 15' 30" (0.26°)

*: Fuel, engine coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

Wheelarch Height (Unladen*)

INFOID:000000005779641



Tire size	P185/65R14	P185/65R15		P195/55R16
Market	United States and Canada	United States	Canada	United States
Front (Hf)	677 (26.65)	685 mm (26.97 in)	685 (26.97)	686 (27.01)
Rear (Hr)	681 (26.81)	682 mm (26.85 in)	683 (26.89)	683 (26.89)

*: Fuel, engine coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

Brake Specification

INFOID:000000005779638

HR16DE

Type	With ABS only or VDC/TCS/ABS	Without ABS
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Front brake	Brake model	AD22VK	
	Cylinder bore diameter	53.97 mm (2.125 in)	
	Pad Length × width × thickness	115.0 mm × 41.0 mm × 9.0 mm (4.528 in × 1.614 in × 0.354 in)	
	Rotor outer diameter × thickness	260 mm × 22.0 mm (10.24 in × 0.866 in)	
Rear brake	Brake model	LT20	
	Cylinder bore diameter	15.87 mm (0.625 in)	17.46 mm (0.687 in)
	Drum inner diameter	203 mm (7.992 in)	
Master cylinder	Cylinder bore diameter	22.22 mm (0.875 in)	
Brake booster	Booster model	C255	
	Diaphragm diameter	255 mm (10.04 in)	
Recommended brake fluid		DOT 3	

MR18DE

Front brake	Brake model	CLZ25VF	
	Cylinder bore diameter	57.2 mm (2.252 in)	
	Pad Length × width × thickness	125.6 mm × 48.0 mm × 9.5 mm (4.945 in × 1.890 in × 0.374 in)	
	Rotor outer diameter × thickness	280 mm × 24.0 mm (11.02 in × 0.945 in)	
Rear brake	Brake model	LT23	
	Cylinder bore diameter	19.06 mm (0.750 in)	
	Drum inner diameter	228.6 mm (9.000 in)	
Master cylinder	Cylinder bore diameter	23.81 ± 0.015 mm (0.937 ± 0.001 in)	
Brake booster	Booster model	C255	
	Diaphragm diameter	255 mm (10.04 in)	
Recommended brake fluid		DOT 3	

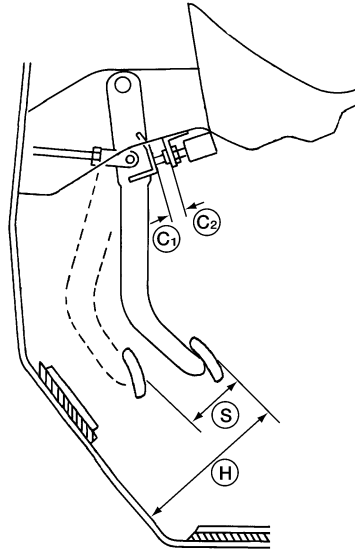
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Brake Pedal

INFOID:000000005779639

Unit: mm (in)



AWFIA0433ZZ

H	Brake pedal free height (from dash panel top surface)	A/T, CVT model	172.4 - 182.4 (6.79 - 7.18)
		M/T model	162.3 - 172.3 (6.39 - 6.78)
S	Brake pedal full stroke [under a force of 490 N (50 kg-f, 110 lb-f) with the engine running]	A/T, CVT model	133 (5.24)
		M/T model	133 (5.24)
C1	Clearance between the threaded end of stop lamp switch and pedal stopper		0.74 - 1.96 (0.0291 - 0.0772)
C2	Clearance between the threaded end of ASCD switch and pedal stopper		0.74 - 1.96 (0.0291 - 0.0772)

Front Disc Brake

INFOID:000000005779636

Unit: mm (in)

Brake model		AD22VK
Brake pad	Standard thickness (new)	9.0 (0.354)
	Repair limit thickness	2.0 (0.079)
Disc rotor	Standard thickness (new)	22.0 (0.866)
	Repair limit thickness	20.0 (0.787)
	Runout limit	0.06 (0.0024)
	Maximum uneven wear (measured at 8 positions)	0.02 mm (0.0008 in) or less

Unit: mm (in)

Brake model		CLZ25VF
Brake pad	Standard thickness (new)	9.5 (0.374)
	Repair limit thickness	2.0 (0.079)
Disc rotor	Standard thickness (new)	24.0 (0.945)
	Repair limit thickness	22.0 (0.866)
	Runout limit (measured at 10.0 mm (0.394 in) inside the disc edge)	0.04 (0.0016)
	Maximum uneven wear (measured at 8 positions)	0.02 mm (0.0008 in) or less

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Rear Drum Brake

INFOID:000000005779637

Unit: mm (in)

Brake model		LT20
Brake lining	Standard thickness (new)	4.0 (0.157)
	Repair limit thickness	1.5 (0.059)
Drum	Standard inner diameter (new)	203 (7.992)
	Repair limit inner diameter	204.5 (8.051)

Unit: mm (in)

Brake model		LT23
Brake lining	Standard thickness (new)	4.0 (0.157)
	Repair limit thickness	1.5 (0.059)
Drum	Standard inner diameter (new)	228.6 (9.000)
	Repair limit inner diameter	230.0 (9.055)

Fluids and Lubricants

INFOID:000000005779635

Description			Capacity (Approximate)		
			Liter	US measure	Imp measure
Fuel			50.0	13 1/4 gal	11 gal
Engine oil Drain and refill	With oil filter change	HR16DE	3.0	3 1/8 qt	2 5/8 qt
		MR18DE	4.1	4 3/8 qt	3 5/8 qt
	Without oil filter change	HR16DE	2.8	3 qt	2 1/2 qt
		MR18DE	3.9	4 1/8 qt	3 3/8 qt
Dry engine (engine overhaul)		HR16DE	3.5	3 3/4 qt	3 1/8 qt
		MR18DE	4.9	5 1/8 qt	4 3/8 qt
Cooling system (with reservoir at max level)		HR16DE	6.3	6 5/8 qt	5 1/2 qt
		MR18DE	6.8	7 1/4 qt	6 qt
Manual transaxle fluid (MTF)		5MT	2.6	5 1/2 pt	4 5/8 pt
		6MT	2.0	4 1/4 pt	3 1/2 pt
Automatic transaxle fluid (ATF)		HR16DE	7.7	8 1/8 qt	6 3/4 qt
		MR18DE	7.9	8 3/8 qt	7 qt
CVT fluid		RE0F08B	7.4	7 7/8 qt	6 1/2 qt
Brake and clutch fluid			—	—	—
Multi-purpose grease			—	—	—
Windshield washer fluid			4.5	4 3/4 qt	4 qt
Air conditioning system refrigerant			0.45 ± 0.05 kg	0.99 ± 0.11 lb	0.99 ± 0.11 lb
Air conditioning system oil		MR18DE Type 1 and HR16DE	120 m ℓ	4.1 fl oz	4.2 fl oz
		MR18DE Type 2	100 m ℓ	3.4 fl oz	3.5 fl oz