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NISSAN VERSA

MODEL C11 SERIES

QUICK REFERENCE INDEX

A GENERAL INFORMATION	GI General Information
B ENGINE	EM Engine Mechanical
	LU Engine Lubrication System
	CO Engine Cooling System
	EC Engine Control System
	FL Fuel System
	EX Exhaust System
	ACC Accelerator Control System
C TRANSMISSION/ TRANSAXLE	CL Clutch System
	MT Manual Transaxle
	AT Automatic Transaxle
	CVT CVT
D DRIVELINE/AXLE	FAX Front Axle
	RAX Rear Axle
E SUSPENSION	FSU Front Suspension
	RSU Rear Suspension
	WT Road Wheels & Tires
F BRAKES	BR Brake System
	PB Parking Brake System
	BRC Brake Control System
	PS Power Steering System
G STEERING	STC Steering Control System
H RESTRAINTS	SB Seat Belts
	SRS Supplemental Restraint System (SRS)
	BL Body, Lock & Security System
I BODY	GW Glasses, Window System & Mirrors
	RF Roof
	EI Exterior & Interior
	IP Instrument Panel
	SE Seat
	MTC Manual Air Conditioner
J AIR CONDITIONER	SC Starting & Charging System
K ELECTRICAL	LT Lighting System
	DI Driver Information System
	WW Wiper, Washer & Horn
	BCS Body Control System
	LAN LAN System
	AV Audio Visual, Navigation & Telephone System
	ACS Auto Cruise Control System
	PG Power Supply, Ground & Circuit Elements
	MA Maintenance
L MAINTENANCE	

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M

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FOREWORD

This manual contains maintenance and repair procedures for the 2011 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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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.*

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QUICK REFERENCE INDEX: VERSA

Engine Tune-up Data: HR16DE

INFOID:000000006444573

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:000000006444574

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:

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:000000006444575

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:000000006444572

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)

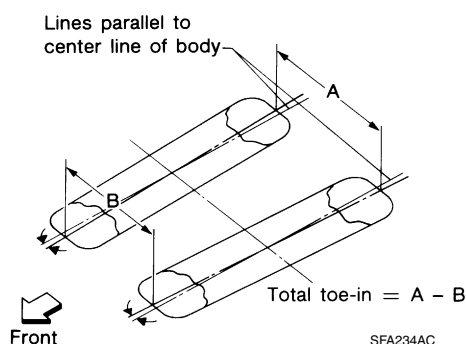
Make	DENSO
Standard type*	FXE20HR11
Spark plug gap	Nominal: 1.1 (0.043)

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

Front Wheel Alignment (Unladen*)

INFOID:000000006444571

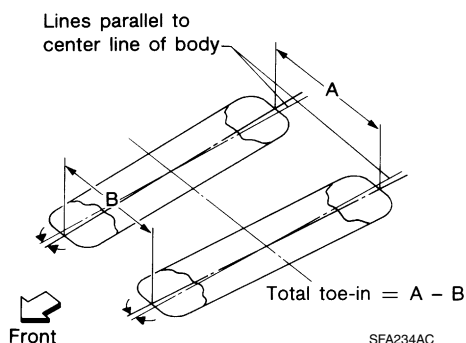
Market		United States and Canada	
Tire size		P185/65R15, P195/55R16	
Camber Degree minute (Decimal degree)	RH	Minimum	- 0° 55' (- 0.92°)
		Nominal	- 0° 10' (- 0.17°)
		Maximum	0° 35' (0.58°)
	LH	Minimum	- 0° 55' (- 0.92°)
		Nominal	- 0° 10' (- 0.17°)
		Maximum	0° 35' (0.58°)
	Left or right difference (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.

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 (RH - LH)	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 (RH - LH)	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°)



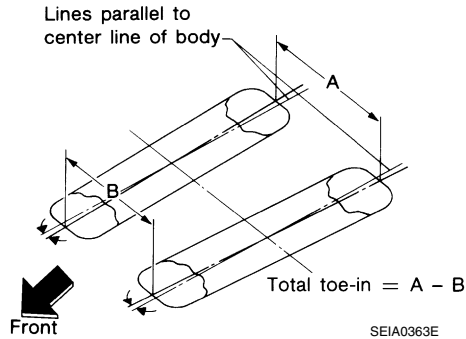
Total toe-in	Distance (A - B)	Minimum	0 mm (0 in)
		Nominal	1 mm (0.04 in)
		Maximum	2 mm (0.08 in)
	Angle (left or right, each side) Degree minute (Decimal degree)	Minimum	0° 0' 0" (0°)
		Nominal	0° 2' 42" (0.05°)
		Maximum	0° 5' 24" (0.09°)

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

Rear Wheel Alignment (Unladen*)

INFOID:000000006444569

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°)



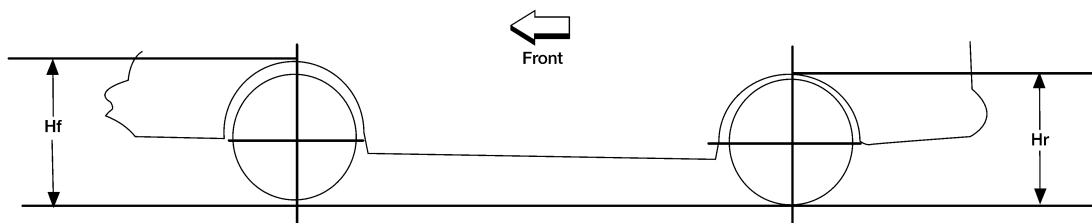
Total toe-in	Distance (A - B)	Minimum	-1.0 mm (-0.039 in)	-2.3 mm (-0.091 in)
		Nominal	3.0 mm (0.118 in)	1.7 mm (0.067 in)
		Maximum	7.0 mm (0.276 in)	5.7 mm (0.224 in)
	Angle (left or right, each side) Degree minute (Decimal degree)	Minimum	-0° 2' 30" (-0.04°)	-0° 6' 0" (-0.10°)
		Nominal	0° 8' 30" (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:000000006444570

Unit: mm (in)



LEIA0085E

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

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

Brake Specifications

INFOID:000000006444567

HR16DE

QUICK REFERENCE INDEX: VERSA

2011

Type		With ABS or VDC/TCS/ABS	Without ABS
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	

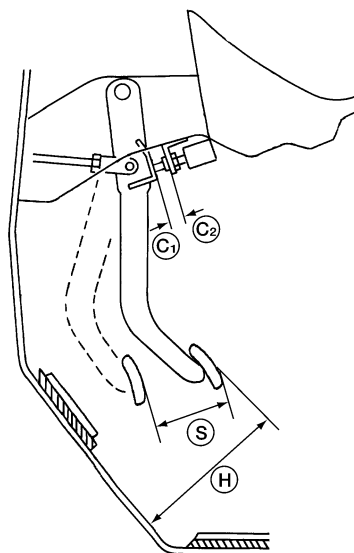
MR18DE

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	

Brake Pedal

INFOID:000000006444568

Unit: mm (in)



AWFIA0557ZZ

Brake pedal free height (H) (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)
Brake pedal full stroke (S)		133 (5.24)
Clearance between the pedal stopper and threaded end of stop lamp switch (C1) and ASCD cancel switch (C2), if equipped		0.74 - 1.96 (0.0291 - 0.0772)

Front Disc Brake

INFOID:000000006444565

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	0.07 (0.0028)
	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)	0.07 (0.0028)
	Maximum uneven wear (measured at 8 positions)	0.02 mm (0.0008 in) or less

Rear Drum Brake

INFOID:000000006444566

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:000000006444564

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	6.9	7 1/4 qt	6 1/8 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