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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
C ELECTRIC POWER TRAIN	STR	Starting System
	ACC	Accelerator Control System
D TRANSMISSION & DRIVELINE	TM	Transaxle & Transmission
	DLN	Driveline
	FAX	Front Axle
	RAX	Rear Axle
E SUSPENSION	FSU	Front Suspension
	RSU	Rear Suspension
F BRAKES	WT	Road Wheels & Tires
	BR	Brake System
	PB	Parking Brake System
	BRC	Brake Control System
G STEERING	ST	Steering System
	STC	Steering Control System
H RESTRAINTS	SB	Seat Belt
	SBC	Seat Belt Control System
	SR	SRS Airbag
	SRC	SRS Airbag Control System
I VENTILATION, HEATER & AIR CONDITIONER	VTL	Ventilation System
	HA	Heater & Air Conditioning System
	HAC	Heater & Air Conditioning Control System
J BODY INTERIOR	INT	Interior
	IP	Instrument Panel
	SE	Seat
	ADP	Automatic Drive Positioner
K BODY EXTERIOR, DOORS, ROOF & VEHICLE SECURITY	DLK	Door & Lock
	SEC	Security Control System
	GW	Glass & Window System
	PWC	Power Window Control System
	RF	Roof
L DRIVER CONTROLS	EXT	Exterior
	BRM	Body Repair
	MIR	Mirrors
	EXL	Exterior Lighting System
	INL	Interior Lighting System
	WW	Wiper & Washer
	DEF	Defogger
M ELECTRICAL & POWER CONTROL	HRN	Horn
	PWO	Power Outlet
	BCS	Body Control System
	LAN	LAN System
	PCS	Power Control System
N DRIVER INFORMATION & MULTIMEDIA	CHG	Charging System
	PG	Power Supply, Ground & Circuit Elements
	MWI	Meter, Warning Lamp & Indicator
	WCS	Warning Chime System
O CRUISE CONTROL & DRIVER ASSISTANCE	AV	Audio, Visual & Navigation System
	CCS	Cruise Control System
	DAS	Driver Assistance System
P MAINTENANCE	DMS	Drive Mode System
	MA	Maintenance



INFINITI[®]
M
 MODEL Y51 SERIES

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FOREWORD

This manual contains maintenance and repair procedure for the 2012 INFINITI M.

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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What information should be included in INFINITI Service Manuals to better support you in servicing or repairing customer vehicles?

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**QUICK REFERENCE CHART M
ENGINE TUNE-UP DATA (VQ37VHR)**

PF0:00000

Engine model		VQ37VHR
Firing order		1-2-3-4-5-6
Idle speed A/T (In "P or N" position)	rpm	650 ± 50
Ignition timing (BTDC at idle speed)		10° ± 2°
Tensions of drive belt		Auto adjustment by auto tensioner
Radiator cap relief pressure	kPa (kg/cm ² , psi)	
	Standard	122.3 - 151.7 (1.2 - 1.5, 18 - 22)
	Limit	107 (1.1, 16)
Cooling system leakage testing pressure	kPa (kg/cm ² , psi)	157 (1.6, 23)
Compression pressure	kPa (kg/cm ² , psi)/rpm	
	Standard	1,667 - 2,354 (17 - 24, 242 - 341)/200
	Minimum	1,226 (12.5, 178)/200
	Differential limit between cylinders	98 (1.0, 14)/200
Spark plug (Iridium-tipped type)	Make	DENSO
	Standard type	FXE24HR11
	Gap (Nominal)	mm (in) 1.1 (0.043)

ENGINE TUNE-UP DATA (VK56VD)

Engine model		VK56VD	
Firing order		1-8-7-3-6-5-4-2	
Idle speed A/T (In "P or N" position)	rpm	600 ± 50 (Without 4WAS) 675 ± 50 (With 4WAS)	
Ignition timing (BTDC at idle speed)		11° ± 2°	
Tensions of drive belt		Auto adjustment by auto tensioner	
Radiator cap relief pressure	kPa (kg/cm ² , psi)		
	Standard	122.3 - 151.7 (1.2 - 1.5, 18 - 22)	
	Limit	107 (1.1, 16)	
Cooling system leakage testing pressure	kPa (kg/cm ² , psi)	157 (1.6, 23)	
Compression pressure	kPa (kg/cm ² , psi)/rpm		
	Standard	1,667 (17, 242)/200	
	Minimum	1,422 (14.5, 206)/200	
	Differential limit between cylinders	98 (1.0, 14)/200	
Spark plug (Iridium-tipped type)	Make	NGK	
	Standard type	DILKAR7B11	
	Gap	mm (in)	
		Standard	1.1 (0.043)
	Limit	1.25 (0.049)	

FRONT WHEEL ALIGNMENT
2WD

ELS0003X

Item		Standard	
Wheel size		18 inch	20 inch
Camber Degree minute (Decimal degree)	Minimum	-0° 55' (-0.91°)	-1° 00' (-1.00°)
	Nominal	-0° 10' (-0.17°)	-0° 15' (-0.25°)
	Maximum	0° 35' (0.58°)	0° 30' (0.50°)
	Left and right difference	0° 33' (0.55°) or less	
Caster Degree minute (Decimal degree)	Minimum	3° 10' (3.17°)	
	Nominal	4° 30' (4.50°)	
	Maximum	5° 50' (5.83°)	
	Left and right difference	0° 39' (0.65°) or less	
Kingpin inclination Degree minute (Decimal degree)	Minimum	6° 25' (6.42°)	6° 30' (6.50°)
	Nominal	7° 10' (7.17°)	7° 15' (7.25°)
	Maximum	7° 55' (7.91°)	8° 00' (8.00°)
Toe-in Total toe-in Distance	Minimum	Out 1 mm (Out 0.03 in)	
	Nominal	In 1 mm (In 0.04 in)	
	Maximum	In 3 mm (In 0.11 in)	

Measure value under unladen* conditions.

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

AWD

Item		Standard	
Camber Degree minute (Decimal degree)	Minimum	-0° 50' (-0.83°)	
	Nominal	-0° 05' (-0.08°)	
	Maximum	0° 40' (0.66°)	
	Left and right difference	0° 33' (0.55°) or less	
Caster Degree minute (Decimal degree)	Minimum	2° 40' (2.67°)	
	Nominal	4° 00' (4.00°)	
	Maximum	5° 20' (5.33°)	
	Left and right difference	0° 39' (0.65°) or less	
Kingpin inclination Degree minute (Decimal degree)	Minimum	6° 20' (6.34°)	
	Nominal	7° 05' (7.08°)	
	Maximum	7° 50' (7.83°)	
Toe-in Total toe-in Distance	Minimum	Out 1 mm (Out 0.03 in)	
	Nominal	In 1 mm (In 0.04 in)	
	Maximum	In 3 mm (In 0.11 in)	

Measure value under unladen* conditions.

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

REAR WHEEL ALIGNMENT

ELS0003Y

Item		Standard	
		2WD	AWD
Axle type			
Camber Degree minute (Decimal degree)	Minimum	-1° 30' (-1.50°)	-1° 00' (-1.00°)
	Nominal	-1° 00' (-1.00°)	-0° 30' (-0.50°)
	Maximum	-0° 30' (-0.50°)	0° 00' (0.00°)
Toe-in Total toe-in Distance	Minimum	0 mm (0 in)	
	Nominal	In 2.9 mm (In 0.114 in)	
	Maximum	In 5.8 mm (In 0.228 in)	

Measure value under unladen* conditions.

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

BRAKE PEDAL

Unit: mm (in)

Depressed brake pedal height (H1)	170.5 - 180.5 (6.71 - 7.11)
Brake pedal reserve height (H2) [Depressing 490 N (50 kg, 110 lb) while turning the engine ON]	110.32 (4.34) or more

FRONT DISC BRAKE

2 Piston Type

Unit: mm (in)

Brake pad	Wear limit thickness	2.0 (0.079)
Disc rotor	Wear limit thickness	26.0 (1.024)

4 Piston Type

Unit: mm (in)

Brake pad	Wear limit thickness	2.0 (0.079)
Disc rotor	Wear limit thickness	30.0 (1.181)

REAR DISC BRAKE

1 Piston Type

Unit: mm (in)

Brake pad	Wear limit thickness	2.0 (0.079)
Disc rotor	Wear limit thickness	14.0 (0.551)

2 Piston Type

Unit: mm (in)

Brake pad	Wear limit thickness	2.0 (0.079)
Disc rotor	Wear limit thickness	18.0 (0.709)

QUICK REFERENCE CHART M

2012

REFILL CAPACITIES

ELS00040

UNIT		Liter	US measure		
Fuel tank		75.6	20 gal		
Engine coolant (With reservoir tank) at MAX level		VQ37VHR	8.4	8-7/8 qt	
		VK56VD	10.9	11-4/8 qt	
Engine oil	VQ37VHR	Drain and refill			
		With oil filter change		4.9	5-1/8 qt
		Without oil filter change		4.6	4-7/8 qt
		Dry engine (Overhaul)		5.7	6 qt
	VK56VD	Drain and refill			
		With oil filter change	2WD	6.0	6-3/8 qt
			AWD	6.1	6-4/8 qt
		Without oil filter change	2WD	5.7	6 qt
			AWD	5.8	6-1/8 qt
		Dry engine (Overhaul)		7.2	7-5/8 qt
Transmission		VQ37VHR	9.2	9-3/4 qt	
		VK56VD	10	10-5/8 qt	
Transfer		1.0	2-1/8 pt		
Final drive	Front		0.65	1-3/8 pt	
	Rear	VQ37VHR	1.4	3 pt	
		VK56VD	1.15	2-3/8 pt	
Power steering system		1.0	1-1/8 qt		
Air conditioning system	Compressor oil		0.15	5.07 fl oz	
	Refrigerant		0.55 kg	1.21 lb	