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QX56

MODEL JA60 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
	STR Starting System
C HYBRID	ACC Accelerator Control System
	HBC Hybrid Control System
	HBB Hybrid Battery System
	HBR Hybrid Brake System
D TRANSMISSION & DRIVE-LINE	TM Transaxle & Transmission
	DLN Driveline
	FAX Front Axle
	RAX Rear Axle
E SUSPENSION	FSU Front Suspension
	RSU Rear Suspension
	SCS Suspension Control System
	WT Road Wheels & Tires
	BR Brake System
F BRAKES	PB Parking Brake System
	BRC Brake Control System
	ST Steering System
G STEERING	STC Steering Control System
	SB Seat Belt
H RESTRAINTS	SBC Seat Belt Control System
	SR SRS Airbag
	SRC SRS Airbag Control System
	VTL Ventilation System
I VENTILATION, HEATER & AIR CONDITIONER	HA Heater & Air Conditioning System
	HAC Heater & Air Conditioning Control System
	INT Interior
J BODY INTERIOR	IP Instrument Panel
	SE Seat
	ADP Automatic Drive Postioner
	AP Adjustable Pedal
	DLK Door & Lock
	SEC Security Control System
K BODY EXTERIOR, DOORS, ROOF & VEHICLE SECURITY	GW Glass & Window System
	PWC Power Window Control System
	RF Roof
	EXT Exterior
	BRM Body Repair Manual
	MIR Mirrors
	EXL Exterior Lighting System
	INL Interior Lighting System
L DRIVER CONTROLS	WW Wiper & Washer
	DEF Defogger
	HRN Horn
	PWO Power Outlet
	BCS Body Control System
	LAN LAN System
	PCS Power Control System
	CHG Charging System
M ELECTRICAL & POWER CONTROL	PG Power Supply, Ground & Circuit Elements
	MWI Meter, Warning Lamp & Indicator
	WCS Warning Chime System
	SN Sonar System
	AV Audio, Visual & Navigation System
O CRUISE CONTROL	CCS Cruise Control System
P MAINTENANCE	MA Maintenance

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FOREWORD

This manual contains maintenance and repair procedure for the 2009 INFINITI QX56.

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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INFINITI®

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Technical Service Information
39001 Sunrise Drive, P.O. Box 9200
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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: _____

Is the organization of the manual clear and easy to follow? (circle your answer) YES NO

Please comment: _____

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

DATE: _____ YOUR NAME: _____ POSITION: _____

DEALER: _____ DEALER NO.: _____ ADDRESS: _____

CITY: _____ STATE/PROV./COUNTRY: _____ ZIP/POSTAL CODE: _____

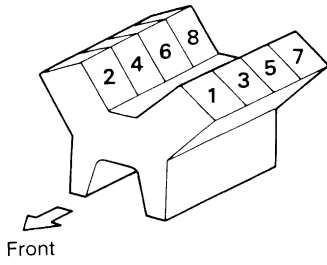
QUICK REFERENCE CHART: QX56

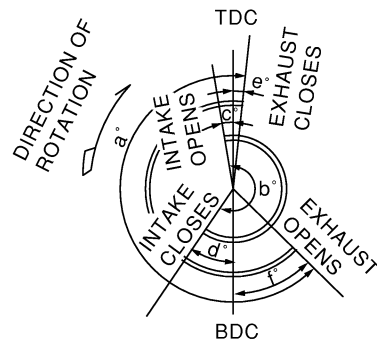
Engine Tune-up Data

INFOID:000000005987162

GENERAL SPECIFICATIONS

Cylinder arrangement		V-8
Displacement $\text{cm}^3(\text{in}^3)$		5,552 (338.80)
Bore and stroke mm (in)		98 x 92 (3.86 x 3.62)
Valve arrangement		DOHC
Firing order		1-8-7-3-6-5-4-2
Number of piston rings	Compression	2
	Oil	1
Number of main bearings		5
Compression ratio		9.8:1
Compression pressure $\text{kPa (kg/cm}^2, \text{psi)/rpm}$	Standard	1,520 (15.5, 220)/200
	Minimum	1,324 (13.5, 192)/200
	Differential limit between cylinders	98 (1.0, 14)/200

Cylinder number	 SEM957C
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Valve timing	 PBIC0187E
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Unit: degree

a	b	c	d	e	f
244°	232°	-8°	60°	10°	54°

DRIVE BELTS

Tension of drive belts	Auto adjustment by auto tensioner
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SPARK PLUG

QUICK REFERENCE CHART: QX56

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Unit: mm (in)

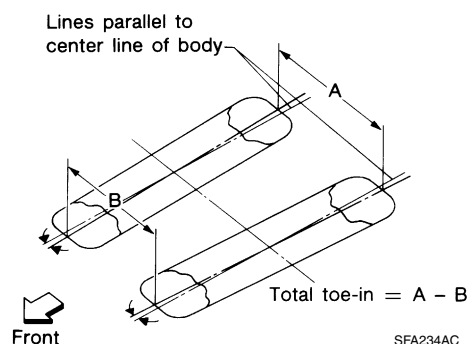
Make	NGK
Model	Standard model
Standard type*	DILFR5A-11
Gap (Nominal)	1.1 (0.043)

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

Front Wheel Alignment (Unladen*¹)

INFOID:000000005987161

Drive type		2WD	4WD
Camber*6 Degree minute (decimal degree)	Minimum	-0° 51' (-0.85°)	-0° 33' (-0.55°)
	Nominal	-0° 6' (-0.10°)	0° 12' (0.20°)
	Maximum	0° 39' (0.65°)	0° 57' (0.95°)
	Cross camber	0° 45' (0.75°) or less	0° 45' (0.75°) or less
Caster Degree minute (decimal degree)	Minimum	3° 15' (3.25°)	2° 45' (2.75°)
	Nominal	4° 0' (4.00°)	3° 30' (3.50°)
	Maximum	4° 45' (4.75°)	4° 15' (4.25°)
	Cross caster	0° 45' (0.75°) or less	0° 45' (0.75°) or less
Kingpin inclination Degree minute (decimal degree)		13° 32' (13.53°)	13° 13' (13.22°)



Total toe-in	Distance (A – B)	Minimum	1.8 mm (0.07 in)	1.8 mm (0.07 in)
		Nominal	2.8 mm (0.11 in)	2.8 mm (0.11 in)
		Maximum	3.8 mm (0.15 in)	3.8 mm (0.15 in)
	Angle (left side or right side) Degree minute (decimal degree)	Minimum	0° 3' (0.05°)	0° 3' (0.05°)
		Nominal	0° 5' (0.08°)	0° 5' (0.08°)
		Maximum	0° 7' (0.12°)	0° 7' (0.12°)
Wheel turning angle (full turn)	Inside Degree minute (decimal degree)		34° 31' – 38° 31' *2 (34.52° – 38.52°)	34° 44' – 38° 44' *4 (34.73° – 38.73°)
	Outside Degree minute (decimal degree)		30° 59' – 34° 59' *3 (30.98° – 34.98°)	30° 29' – 34° 29' *5 (30.48° – 34.48°)

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

*2: Target value 37° 31' (37.52°)

*3: Target value 33° 59' (33.98°)

*4: Target value 37° 44' (37.73°)

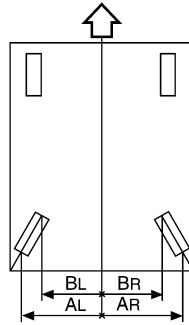
*5: Target value 33° 29' (33.48°)

*6 Some vehicles may not be equipped with straight (non-adjustable) lower link bolts and washers. In order to adjust camber and caster on these vehicles, first replace the lower link bolts and washers with adjustable (cam) bolts and washers

Rear Wheel Alignment (Unladen^{*1})

INFOID:000000005987159

Applied model			Without air leveling	With air leveling
Camber Degree minute (decimal degree)		Minimum	- 0° 25' (- 0.4°)	- 1° 0' (- 1°)
		Nominal	0° 5' (0.1°)	- 0° 30' (- 0.5°)
		Maximum	0° 35' (0.6°)	0° 0' (0°)
		Cross camber	0° 45' (0.75°) or less	



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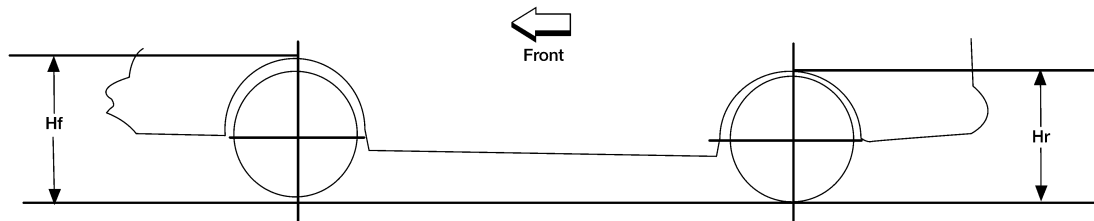
Toe-in	Distance	Toe-in (left side or right side) AL - BL or AR - BR mm (in)  :Front	Minimum	- 2.4 mm (- 0.094 in)	0 mm (0 in)
			Nominal	0.9 mm (0.035 in)	3.3 mm (0.130 in)
			Maximum	4.2 mm (0.165 in)	6.6 mm (0.260 in)
		Cross toe (AL - BL) - (AR - BR) mm (in)			2 mm (0.079 in) or less
	Angle	Toe angle (left side or right side) Degree minute (Decimal degree)	Minimum	- 0° 5' (- 0.08°)	0° 0' (0°)
			Nominal	0° 2' (0.03°)	0° 7' (0.11°)
			Maximum	0° 9' (0.14°)	0° 14' (0.22°)
Cross toe Degree minute (Decimal degree)			0° 8' (0.14°) or less		

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

Wheelarch Height (Unladen^{*1})

INFOID:000000005987160

Unit: mm (in)



LEIA0085E

Suspension type	Air leveling ^{*2}	
Applied model	2WD	4WD
Front wheelarch height (Hf)	920 (36.22)	937 (36.89)
Rear wheelarch height (Hr)	917 (36.10)	937 (36.89)

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

*2: Verify the vehicle height. If vehicle height is not within ± 10 mm (0.39 in) of the specification, perform the control unit initialization procedure.

Brake Specifications

INFOID:000000005987157

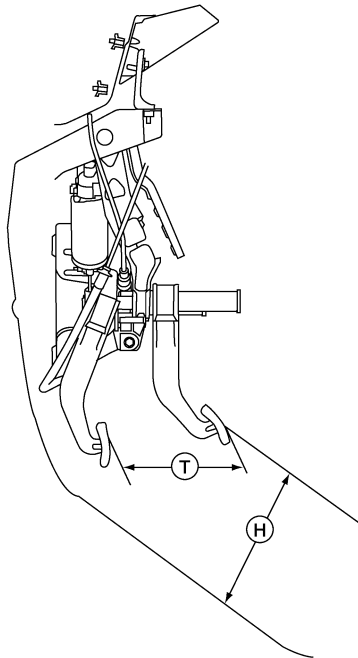
Unit: mm (in)

Front brake	Brake model	AD41VA
	Rotor outer diameter × thickness	350 x 30 (13.78 x 1.181)
	Pad Length × width × thickness	151.6 x 56.5 x 12.0 (5.97 x 2.22 x 0.476)
	Cylinder bore diameter	50.8 (2.00)
Rear brake	Brake model	AD14VE
	Rotor outer diameter × thickness	320 x 14 (12.60 x 0.551)
	Pad Length × width × thickness	83.0 x 33.0 x 12.0 (3.268 x 1.299 x 0.472)
	Cylinder bore diameter	48 (1.89)
Control valve	Valve model	Electric brake force distribution
Brake booster	Booster model	C215T
	Diaphragm diameter	215 (8.46)

Brake Pedal

INFOID:000000005987158

Unit: mm (in)



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Pedal free height (H) with pedal in forward most position	182.3 - 192.3 (7.18 - 7.57)
Pedal travel (T)	153.3 (6.04)
Stop lamp switch and ASCD cancel switch threaded end to brake pedal bracket gap	0.74 - 1.96 (0.029 - 0.077)

CAUTION:

When equipped with adjustable pedal, the pedal must be in the forward most position (closest to the floor) for pedal height adjustment.

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Front Disc Brake

INFOID:000000005987155

Unit: mm (in)

Brake model		AD41VA
Brake pad	Standard thickness (new)	12.0 (0.476)
	Repair limit thickness	1.0 (0.039)
Disc rotor	Standard thickness (new)	30 (1.181)
	Repair limit thickness	28.5 (1.122)
	Maximum uneven wear (measured at 8 positions)	0.015 (0.0006)
	Runout limit (with it attached to the vehicle)	0.03 (0.001)

Rear Disc Brake

INFOID:000000005987156

Unit: mm (in)

Brake model		AD14VE
Brake pad	Standard thickness (new)	12.0 (0.472)
	Repair limit thickness	1.0 (0.039)
Disc rotor	Standard thickness (new)	14.0 (0.551)
	Repair limit thickness	12.5 (0.492)
	Maximum uneven wear (measured at 8 positions)	0.015 (0.0006)
	Runout limit (with it attached to the vehicle)	0.05 (0.002)

Fluids and Lubricants

INFOID:000000005987154

Description		Capacity (Approximate)		
		Metric	US measure	Imp measure
Fuel		105.8 ℓ	28 gal	23 1/4 gal
Engine oil Drain and refill	With oil filter change	6.5 ℓ	6 7/8 qt	5 3/4 qt
	Without oil filter change	6.2 ℓ	6 1/2 qt	5 1/2 qt
Dry engine (engine overhaul)		7.6 ℓ	8 qt	6 3/4 qt
Cooling system	With reservoir at MAX level	14.4 ℓ	15 1/4 qt	12 5/8 qt
Automatic transmission fluid (ATF)		10.6 ℓ	11 1/4 qt	9 3/8 qt
Rear differential gear oil		1.75 ℓ	3 3/4 pt	3 1/8 pt
Transfer fluid		3.0 ℓ	3 1/8 qt	2 5/8 qt
Front differential gear oil		1.6 ℓ	3 3/8 pt	2 7/8 pt
Power steering fluid (PSF)		1.0 ℓ	1 1/8 qt	7/8 qt
Brake fluid		—	—	—
Brake grease		—	—	—
Multi-purpose grease		—	—	—
Windshield washer fluid		4.5 ℓ	4 3/4 qt	4 qt
Air conditioning system refrigerant		1.08 ± 0.05 kg	2.38 ± 0.11 lb	2.38 ± 0.11 lb
Air conditioning system oil		290 m ℓ	9.8 fl oz	10.2 fl oz