

QUICK REFERENCE INDEX



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	FL Fuel System
	EX Exhaust System
	STR Starting System
	ACC Accelerator Control System
C ELECTRIC POWER TRAIN	
D TRANSMISSION & DRIVELINE	
	TM Transaxle & Transmission
	DLN Driveline
	FAX Front Axle
	RAX Rear Axle
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	RSU Rear Suspension
	SCS Suspension Control System
	WT Road Wheels & Tires
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I VENTILATION, HEATER & AIR CONDITIONER	VTL Ventilation System
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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
	EXT Exterior
	BRM Body Repair
L DRIVER CONTROLS	MIR Mirrors
	EXL Exterior Lighting System
	INL Interior Lighting System
	VW Wiper & Washer
	DEF Defogger
	HRN Horn
M ELECTRICAL & POWER CONTROL	PWO Power Outlet
	BCS Body Control System
	LAN LAN System
	PCS Power Control System
	CHG Charging System
	PG Power Supply, Ground & Circuit Elements
N DRIVER INFORMATION & MULTIMEDIA	MWI Meter, Warning Lamp & Indicator
	WCS Warning Chime System
	AV Audio, Visual & Navigation System
O CRUISE CONTROL & DRIVER ASSISTANCE	CCS Cruise Control System
	DAS Driver Assistance System
	DMS Drive Mode System
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FOREWORD

This manual contains maintenance and repair procedure for the 2016 INFINITI Q50.

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:

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

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QUICK REFERENCE CHART Q50
ENGINE TUNE-UP DATA (VR30DDTT)

PF0:00000

Engine model		VR30DDTT
Firing order		1-2-3-4-5-6
Idle speed (In "P" or "N" position)	rpm	650 ± 50
Ignition timing (BTDC at idle speed) (In "P" or "N" position)		10° ± 2°
Tensions of drive belt		Belt tension is not necessary, as it is automatically adjusted by drive belt 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)	200 (2.04, 29)
Compression pressure	kPa (kg/cm ² , psi)	
Standard		1,667 - 2,354 (17 - 24, 242 - 341)
Minimum		1,226 (12.5, 178)
Differential limit between cylinders		98 (1.0, 14)
Spark plug (Iridium-tipped type)	Make	DENSO
	Standard type	FXE24HR11
	Gap (Nominal)	1.1 (0.043)

ENGINE TUNE-UP DATA (2.0L TURBO GASOLINE ENGINE)

Engine model		2.0L TURBO GASOLINE ENGINE
Firing order		1-3-4-2
Idle speed (In "P" or "N" position)	rpm	750
Ignition timing (BTDC at idle speed) (In "P" or "N" position)		(-15°) - (+20°)
Tensions of drive belt		Belt tension is not necessary, as it is automatically adjusted by drive belt auto-tensioner.
Radiator cap relief pressure	kPa (kg/cm ² , psi)	
Standard	Stage1	130.0 - 150.0 (1.33 - 1.53, 18.85 - 21.75)
	Stage2	180.0 - 220.0 (1.84 - 2.24, 26.1 - 31.9)
Testing pressure		140.0 (1.42, 20.3)
Cooling system leakage testing pressure	kPa (kg/cm ² , psi)	196.0 (1.99, 28.4)
Compression pressure	kPa (kg/cm ² , psi)	
Standard		1,550 (15.81, 224.75)
Minimum		1,150 (11.73, 166.75)
Differential limit between cylinders		150 (1.53, 21.75)
Spark plug (Iridium-tipped type)	Make	DENSO
	Standard type	SILZKFR8C7S
	Gap (Nominal)	mm (in)

FRONT WHEEL ALIGNMENT

VR30DDTT (2WD MODELS FOR USA AND CANADA)

WARNING:

If the vehicle is equipped with the ICC system and the rear toe has been adjusted during a wheel alignment, the ICC sensor must be aligned.

Except Premium Sport Grade

Item		Standard	
Camber Degree minute (Decimal degree)	Minimum	−1° 10′ (−1.16°)	
	Nominal	−0° 25′ (−0.42°)	
	Maximum	0° 20′ (0.33°)	
	Left and right difference	0° 30′ (0.50°) or less	
Caster Degree minute (Decimal degree)	Minimum	3° 15′ (3.25°)	
	Nominal	4° 35′ (4.58°)	
	Maximum	5° 55′ (5.91°)	
	Left and right difference	0° 30′ (0.50°) or less	
Kingpin inclination Degree minute (Decimal degree)	Minimum	6° 40′ (6.67°)	
	Nominal	7° 25′ (7.42°)	
	Maximum	8° 10′ (8.16°)	
Toe-in	Total toe-in Distance	Minimum	Out 1 mm (Out 0.03 in)
		Nominal	In 2 mm (In 0.08 in)
		Maximum	In 3 mm (In 0.11 in)
	Total toe-angle Degree minute (Decimal degree)	Minimum	Out 0° 05′ 02″ (Out 0.08°)
		Nominal	In 0° 05′ 02″ (In 0.08°)
		Maximum	In 0° 15′ 07″ (In 0.25°)

Measure value under unladen* conditions.

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

Premium Sport Grade

Item		Standard	
Tire Size	Front	245/40RF19	245/40RF19
	Rear		265/35RF19
Camber Degree minute (Decimal degree)	Minimum	-1° 05' (-1.08°)	
	Nominal	-0° 20' (-0.33°)	
	Maximum	0° 25' (0.41°)	
	Left and right difference	0° 30' (0.50°) or less	
Caster Degree minute (Decimal degree)	Minimum	3° 20' (3.34°)	3° 25' (3.42°)
	Nominal	4° 40' (4.67°)	4° 45' (4.75°)
	Maximum	6° 00' (6.00°)	6° 05' (6.08°)
	Left and right difference	0° 30' (0.50°) or less	
Kingpin inclination Degree minute (Decimal degree)	Minimum	6° 35' (6.59°)	
	Nominal	7° 20' (7.33°)	
	Maximum	8° 05' (8.08°)	
Toe-in	Total toe-in Distance	Minimum	Out 1 mm (Out 0.03 in)
		Nominal	In 2 mm (In 0.08 in)
		Maximum	In 3 mm (In 0.11 in)
	Total toe-angle Degree minute (Decimal degree)	Minimum	Out 0° 05' 02" (Out 0.08°)
		Nominal	In 0° 05' 02" (In 0.08°)
		Maximum	In 0° 15' 07" (In 0.25°)

Measure value under unladen* conditions.

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

VR30DDTT (2WD MODELS EXCEPT FOR USA AND CANADA)**WARNING:**

If the vehicle is equipped with the ICC system and the rear toe has been adjusted during a wheel alignment, the ICC sensor must be aligned.

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° 30′ (0.50°) or less	
Caster Degree minute (Decimal degree)	Minimum	3° 00′ (3.00°)	
	Nominal	4° 20′ (4.33°)	
	Maximum	5° 40′ (5.66°)	
	Left and right difference	0° 30′ (0.50°) 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 2 mm (In 0.08 in)
		Maximum	In 3 mm (In 0.11 in)
	Total toe-angle Degree minute (Decimal degree)	Minimum	Out 0° 05′ 02″ (Out 0.08°)
		Nominal	In 0° 05′ 02″ (In 0.08°)
		Maximum	In 0° 15′ 07″ (In 0.25°)

Measure value under unladen* conditions.

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

2.0L TURBO GASOLINE ENGINE (2WD MODELS)**WARNING:**

If the vehicle is equipped with the ICC system and the rear toe has been adjusted during a wheel alignment, the ICC sensor must be aligned.

Item		Standard	
Camber Degree minute (Decimal degree)	Minimum	−1° 20′ (−1.33°)	
	Nominal	−0° 35′ (−0.58°)	
	Maximum	0° 10′ (0.16°)	
	Left and right difference	0° 30′ (0.50°) or less	
Caster Degree minute (Decimal degree)	Minimum	3° 00′ (3.00°)	
	Nominal	4° 20′ (4.33°)	
	Maximum	5° 40′ (5.66°)	
	Left and right difference	0° 30′ (0.50°) or less	
Kingpin inclination Degree minute (Decimal degree)	Minimum	6° 45′ (6.75°)	
	Nominal	7° 30′ (7.50°)	
	Maximum	8° 15′ (8.25°)	
Toe-in	Total toe-in Distance	Minimum	Out 1 mm (Out 0.03 in)
		Nominal	In 2 mm (In 0.08 in)
		Maximum	In 3 mm (In 0.11 in)
	Total toe angle Degree minute (Decimal Degree)	Minimum	Out 0° 05′ 02″ (Out 0.08°)
		Nominal	In 0° 05′ 02″ (In 0.08°)
		Maximum	In 0° 15′ 07″ (In 0.25°)

Measure value under unladen* conditions.

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

VR30DDTT (AWD MODELS)**WARNING:**

If the vehicle is equipped with the ICC system and the rear toe has been adjusted during a wheel alignment, the ICC sensor must be aligned.

Item		Standard	
Camber Degree minute (Decimal degree)	Minimum	−1° 20′ (−1.33°)	
	Nominal	−0° 35′ (−0.58°)	
	Maximum	0° 10′ (0.16°)	
	Left and right difference	0° 30′ (0.50°) or less	
Caster Degree minute (Decimal degree)	Minimum	2° 55′ (2.92°)	
	Nominal	4° 15′ (4.25°)	
	Maximum	5° 35′ (5.58°)	
	Left and right difference	0° 30′ (0.50°) or less	
Kingpin inclination Degree minute (Decimal degree)	Minimum	6° 45′ (6.75°)	
	Nominal	7° 30′ (7.50°)	
	Maximum	8° 15′ (8.25°)	
Toe-in	Total toe-in Distance	Minimum	Out 1 mm (Out 0.03 in)
		Nominal	In 2 mm (In 0.08 in)
		Maximum	In 3 mm (In 0.11 in)
	Total toe-angle Degree minute (Decimal degree)	Minimum	Out 0° 05′ 02″ (Out 0.08°)
		Nominal	In 0° 05′ 02″ (In 0.08°)
		Maximum	In 0° 15′ 07″ (In 0.25°)

Measure value under unladen* conditions.

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

2.0L TURBO GASOLINE ENGINE (AWD MODELS)**WARNING:**

If the vehicle is equipped with the ICC system and the rear toe has been adjusted during a wheel alignment, the ICC sensor must be aligned.

Item		Standard	
Camber Degree minute (Decimal degree)	Minimum	−1° 20′ (−1.33°)	
	Nominal	−0° 35′ (−0.58°)	
	Maximum	0° 10′ (0.16°)	
	Left and right difference	0° 30′ (0.50°) or less	
Caster Degree minute (Decimal degree)	Minimum	3° 00′ (3.00°)	
	Nominal	4° 20′ (4.33°)	
	Maximum	5° 40′ (5.66°)	
	Left and right difference	0° 30′ (0.50°) or less	
Kingpin inclination Degree minute (Decimal degree)	Minimum	6° 45′ (6.75°)	
	Nominal	7° 30′ (7.50°)	
	Maximum	8° 15′ (8.25°)	
Toe-in	Total toe-in Distance	Minimum	Out 1 mm (Out 0.03 in)
		Nominal	In 2 mm (In 0.08 in)
		Maximum	In 3 mm (In 0.11 in)
	Total toe-angle Degree minute (Decimal degree)	Minimum	Out 0° 05′ 02″ (Out 0.08°)
		Nominal	In 0° 05′ 02″ (In 0.08°)
		Maximum	In 0° 15′ 07″ (In 0.25°)

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**VR30DDTT (2WD MODELS FOR USA AND CANADA)****WARNING:**

If the vehicle is equipped with the ICC system and the rear toe has been adjusted during a wheel alignment, the ICC sensor must be aligned.

Except Premium Sport Grade

Item			Standard
Camber Degree minute (Decimal degree)	Minimum		-1° 40' (-1.66°)
	Nominal		-1° 10' (-1.17°)
	Maximum		-0° 40' (-0.67°)
Toe-in	Total toe-in Distance	Minimum	0 mm (0 in)
		Nominal	In 2.8 mm (In 0.110 in)
		Maximum	In 5.6 mm (In 0.220 in)
	Total toe-angle Degree minute (Decimal degree)	Minimum	0° 00' (0.00°)
		Nominal	In 0° 14' (In 0.23°)
		Maximum	In 0° 28' (In 0.46°)

Measure value under unladen* conditions.

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

Premium Sport Grade

Item			Standard	
Tire Size	Front	245/40RF19	245/40RF19	
	Rear		265/35RF19	
Camber Degree minute (Decimal degree)	Minimum		-1° 40' (-1.66°)	
	Nominal		-1° 10' (-1.17°)	
	Maximum		-0° 40' (-0.67°)	
Toe-in	Total toe-in Distance	Minimum	0 mm (0 in)	0 mm (0 in)
		Nominal	In 2.8 mm (In 0.110 in)	In 2.7 mm (In 0.106 in)
		Maximum	In 5.6 mm (In 0.220 in)	In 5.4 mm (In 0.210 in)
	Total toe-angle Degree minute (Decimal degree)	Minimum	0° 00' (0.00°)	
		Nominal	In 0° 14' (In 0.23°)	
		Maximum	In 0° 28' (In 0.46°)	

Measure value under unladen* conditions.

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

VR30DDTT (2WD MODELS EXCEPT FOR USA AND CANADA)**WARNING:**

If the vehicle is equipped with the ICC system and the rear toe has been adjusted during a wheel alignment, the ICC sensor must be aligned.

Item			Standard
Camber Degree minute (Decimal degree)	Minimum		-1° 25' (-1.41°)
	Nominal		-0° 55' (-0.92°)
	Maximum		-0° 25' (-0.42°)
Toe-in	Total toe-in Distance	Minimum	0 mm (0 in)
		Nominal	In 2.8 mm (In 0.110 in)
		Maximum	In 5.6 mm (In 0.220 in)
	Total toe-angle Degree minute (Decimal degree)	Minimum	0° 00' (0.00°)
		Nominal	In 0° 14' (In 0.23°)
		Maximum	In 0° 28' (In 0.46°)

Measure value under unladen* conditions.

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

VR30DDTT (AWD MODELS)**WARNING:**

If the vehicle is equipped with the ICC system and the rear toe has been adjusted during a wheel alignment, the ICC sensor must be aligned.

Item			Standard
Camber Degree minute (Decimal degree)	Minimum		-1° 40' (-1.66°)
	Nominal		-1° 10' (-1.17°)
	Maximum		-0° 40' (-0.67°)
Toe-in	Total toe-in Distance	Minimum	0 mm (0 in)
		Nominal	In 2.8 mm (In 0.110 in)
		Maximum	In 5.6 mm (In 0.220 in)
	Total toe-angle Degree minute (Decimal degree)	Minimum	0° 00' (0.00°)
		Nominal	In 0° 14' (In 0.23°)
		Maximum	In 0° 28' (In 0.46°)

Measure value under unladen* conditions.

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

2.0L TURBO GASOLINE ENGINE**WARNING:**

If the vehicle is equipped with the ICC system and the rear toe has been adjusted during a wheel alignment, the ICC sensor must be aligned.

Item			Standard
Camber Degree minute (Decimal degree)	Minimum		-1° 25' (-1.41°)
	Nominal		-0° 55' (-0.92°)
	Maximum		-0° 25' (-0.42°)
Toe-in	Total toe-in Distance	Minimum	0 mm (0 in)
		Nominal	In 2.8 mm (In 0.110 in)
		Maximum	In 5.6 mm (In 0.220 in)
	Total toe-angle Degree minute (Decimal degree)	Minimum	0° 00' (0.00°)
		Nominal	In 0° 14' (In 0.23°)
		Maximum	In 0° 28' (In 0.46°)

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)

Item	Standard
Brake pedal height	183.0 - 193.0 (7.20 - 7.60)
Depressed brake pedal height [Depressing 490 N (50 kg, 110 lb) while turning the engine ON]	126.0 (4.96) or more

FRONT DISC BRAKE**2 Piston Type**

Unit: mm (in)

Item		Limit
Brake pad	Wear thickness	1.5 (0.059)
	Wear thickness	26.0 (1.024)
Disc rotor	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Runout (with it attached to the vehicle)	0.035 (0.0014)

4 Piston Type

Unit: mm (in)

Item		Limit
Brake pad	Wear thickness	2.0 (0.079)
	Wear thickness	30.0 (1.181)
Disc rotor	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Runout (with it attached to the vehicle)	0.035 (0.0014)

REAR DISC BRAKE**1 Piston Type**

Unit: mm (in)

Item		Limit
Brake pad	Wear thickness	2.0 (0.079)
	Wear thickness	14.0 (0.551)
Disc rotor	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Runout (with it attached to the vehicle)	0.055 (0.0022)

2 Piston Type

Unit: mm (in)

Item		Limit
Brake pad	Wear thickness	2.0 (0.079)
	Wear thickness	18.0 (0.709)
Disc rotor	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Runout (with it attached to the vehicle)	0.055 (0.0022)

REFILL CAPACITIES

UNIT			Liter	US measure	
Fuel tank		VR30DDTT	75.6	20 gal	
		2.0L turbo gasoline engine	76.0	20-1/8 gal	
Engine coolant capacity [With reservoir tank ("MAX" level)]		VR30DDTT	9.3	9-7/8 qt	
		2.0L turbo gasoline engine	9.0	9-4/8 qt	
Engine oil	Drain and refill				
	With oil filter change	VR30DDTT (2WD models)		4.6	4-7/8 qt
		VR30DDTT (AWD models)		5.2	5-4/8 qt
		2.0L turbo gasoline engine (2WD models)		6.3	6-5/8 qt
		2.0L turbo gasoline engine (AWD models)		6.6	7 qt
	Without oil filter change	VR30DDTT (2WD models)		4.8	5-1/8 qt
		VR30DDTT (AWD models)		5.4	5-6/8 qt
		2.0L turbo gasoline engine (2WD models)		5.8	6-1/8 qt
		2.0L turbo gasoline engine (AWD models)		6.1	6-4/8 qt
	Dry engine (Overhaul)	VR30DDTT (2WD models)	Oil cooler (Air cooling type)	6.1	6-4/8 qt
			Oil cooler (Water cooling type)	6.6	7 qt
		VR30DDTT (AWD models)	Oil cooler (Air cooling type)	5.7	6 qt
			Oil cooler (Water cooling type)	6.2	6-4/8 qt
		2.0L turbo gasoline engine (2WD models)		—	—
		2.0L turbo gasoline engine (AWD models)		—	—
Transmission			10.1	10-5/8 qt	
Transfer			1.0	2-1/8 pt	
Final drive	Front		0.65	1-3/8 pt	
	Rear		1.05	2-1/4 pt	
Power steering system (HYDRAULIC PUMP ELECTRIC P/S)			1.0	1-1/8 qt	
Air conditioning system	Compressor oil	VR30DDTT	0.09	3.0 fl oz	
		2.0L turbo gasoline engine	0.12	4.1 fl oz	
	Refrigerant		0.5 kg	1.1 lb	