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NISSAN ALTIMA

MODEL L32 SERIES

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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
	STR Starting System
	ACC Accelerator Control System
C HYBRID	HBC Hybrid Control System
	HBB Hybrid Battery System
	HBR Hybrid Brake System
D TRANSMISSION & DRIVE-LINE	CL Clutch
	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
F BRAKES	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
	EXT Exterior
	BRM Body Repair Manual
L DRIVER CONTROLS	MIR Mirrors
	EXL Exterior Lighting System
	INL Interior Lighting System
	WW 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
	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 2010 NISSAN ALTIMA.

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.*

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

DATE: _____ YOUR NAME: _____ POSITION: _____

DEALER: _____ DEALER NO.: _____ ADDRESS: _____

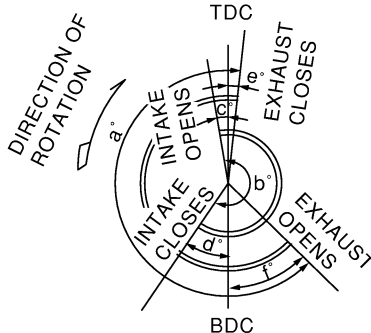
CITY: _____ STATE/PROV./COUNTRY: _____ ZIP/POSTAL CODE: _____

SQUICK REFERENCE CHART: ALTIMA

Engine Tune-up Data: QR25DE

INFOID:000000005825228

GENERAL SPECIFICATIONS

Cylinder arrangement		In-line 4			
Displacement cm ³ (in ³)		2,488 (151.82)			
Bore and stroke mm. (in)		89.0 x 100 (3.50 x 3.94)			
Valve arrangement		DOHC			
Firing order		1-3-4-2			
Number of piston rings	Compression	2			
	Oil	1			
Compression ratio		9.5:1			
Compression pressure kPa (kg/cm ² , psi) / 250 rpm	Standard	1,250 (12.8, 181.3)			
	Minimum	1,060 (10.8, 153.7)			
	Differential limit between cylinders 100 (1.0, 14)				
Valve timing					
Unit: degree					
a	b	c	d	e	f
220°	232°	-12°	64°	10°	30°

DRIVE BELTS

Tension of drive belts	Auto adjustment by auto tensioner
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SPARK PLUG

Unit: mm. (in)

Make		NGK
Type*	Standard	DILKAR6A-11
Gap (nominal)		1.1 (0.043)

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

Engine Tune-up Data: VQ35DE

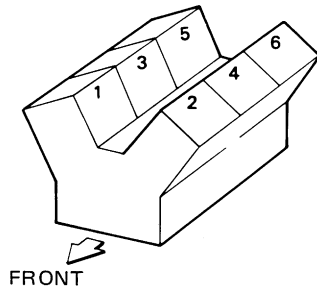
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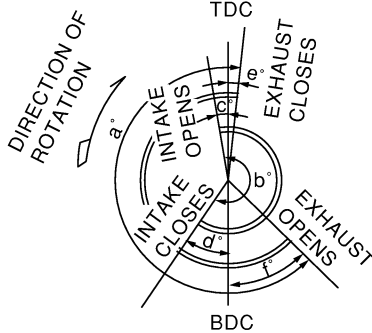
GENERAL SPECIFICATIONS

SQUICK REFERENCE CHART: ALTIMA

2010

Cylinder arrangement		V-6
Displacement cm^3 (cu in)		3,498 (213.45)
Bore and stroke mm (in)		95.5 x 81.4 (3.760 x 3.205)
Valve arrangement		DOHC
Firing order		1-2-3-4-5-6
Number of piston rings	Compression	2
	Oil	1
Number of main bearings		4
Compression ratio		10.3:1
Compression pressure kPa (kg/cm ² , psi)/300 rpm	Standard	1,275 (13.0, 185)
	Minimum	981 (10.0, 142)
	Differential limit between cylinders	98 (1.0, 14)

Cylinder number	 FRONT SEM713A
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Valve timing (Valve timing control - "OFF")	 PBIC0187E
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Unit: degree

a	b	c	d	e	f
240	240	-10	70	10	50

Drive Belt

INFOID:0000000005825226

DRIVE BELT

Tension of drive belt	Belt tension is not necessary, as it is automatically adjusted by drive belt auto-tensioner.
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Spark Plug

INFOID:0000000005825227

SPARK PLUG

Unit: mm (in)

Make	DENSO
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SQUICK REFERENCE CHART: ALTIMA

2010

Standard type*	FXE22HR11	
Gap	Standard	1.1 (0.043)

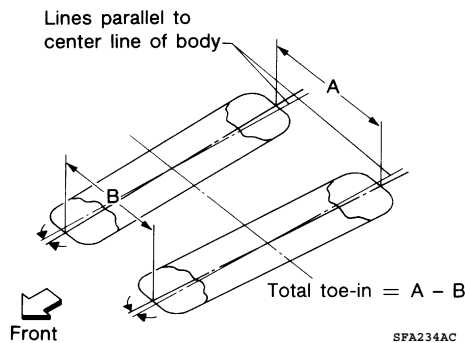
*: Always check with the Parts Department for the latest parts information

Front Wheel Alignment (Unladen*)

INFOID:000000005825224

SEDAN

Market			USA/Canada		Mexico	
Engine type			QR25DE and VQ35DE		QR25DE and VQ35DE	
Tire size			P215/ 60R16	P215/ 55R17	P215/ 60R16	P215/ 55R17
Camber Degree minute (Decimal degree)	LH	Minimum	-1°15' (-1.25°)		-1°09' (-1.15°)	
		Nominal	-0°30' (-0.50°)		-0°24' (-0.40°)	
		Maximum	0°15' (0.25°)		0°21' (0.35°)	
	RH	Minimum	-1°30' (-1.50°)		-1°24' (-1.40°)	
		Nominal	-0°45' (-0.75°)		-0°39' (-0.65°)	
		Maximum	0°00' (0.00°)		-0°06' (-0.10°)	
	Left and right difference		-0°15'± 0° 33' (-0.25°± 0.55°)			
Caster Degree minute (Decimal degree)	Minimum	4°09' (4.15°)		3°54' (3.90°)		
	Nominal	4°54' (4.90°)		4°39' (4.65°)		
	Maximum	5°39' (5.65°)		5°24' (5.40°)		
	Left and right difference	± 0° 33' (± 0.55°)				
Kingpin offset Degree minute (Decimal degree)	Minimum	12°00' (12.00°)		11°45' (11.75°)		
	Nominal	12°45' (12.75°)		12°30' (12.50°)		
	Maximum	13°30' (13.50°)		13°15' (13.25°)		



Total toe-in	Distance (A - B)	Minimum	0 mm
		Nominal	1 mm
		Maximum	2 mm
	Angle (left or right, each side) Degree minute (Degree)	Minimum	0°00' (0.00°)
		Nominal	0°02' (0.03°)
		Maximum	0°04' (0.07°)

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

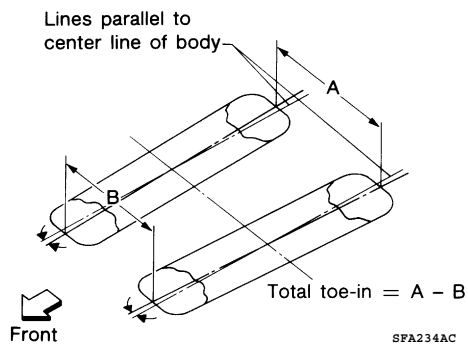
COUPE

Market	USA/Canada			Mexico
Engine type	QR25DE and VQ35DE			VQ35DE
Tire size	P215/60R16	P215/55R17	P235/45R18	P235/45R18

SQUICK REFERENCE CHART: ALTIMA

2010

Camber Degree minute (Decimal de- gree)	LH	Minimum	-1°15′ (-1.25°)	-1°09′ (-1.15°)
		Nominal	-0°30′ (-0.50°)	-0°24′ (-0.40°)
		Maximum	0°15′ (0.25°)	0°21′ (0.35°)
	RH	Minimum	-1°30′ (-1.50°)	-1°24′ (-1.40°)
		Nominal	-0°45′ (-0.75°)	-0°39′ (-0.65°)
		Maximum	0°00′ (0.00°)	-0°06′ (-0.10°)
	Left and right difference		-0°15′± 0° 33′ (-0.25°± 0.55°)	
Caster Degree minute (Decimal degree)		Minimum	3°51′ (3.85°)	3°57′ (3.95°)
		Nominal	4°36′ (4.60°)	4°42′ (4.70°)
		Maximum	5°21′ (5.35°)	5°27′ (5.45°)
		Left and right difference	± 0° 33′ (± 0.55°)	
Kingpin offset Degree minute (Decimal degree)		Minimum	12°00′ (12.00°)	11°50′ (11.83°)
		Nominal	12°45′ (12.75°)	12°35′ (12.58°)
		Maximum	13°30′ (13.50°)	13°20′ (13.33°)



Total toe-in	Distance (A - B)	Minimum	0 mm
		Nominal	1 mm
		Maximum	2 mm
	Angle (left or right, each side) Degree minute (Degree)	Minimum	0°00' (0.00°)
		Nominal	0°02' (0.03°)
		Maximum	0°04' (0.07°)

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

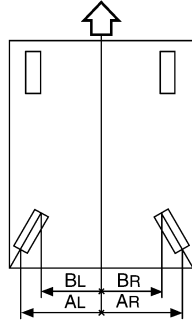
Rear Wheel Alignment (Unladen★)

INFOID:000000005825222

Sedan

SQUICK REFERENCE CHART: ALTIMA

2010

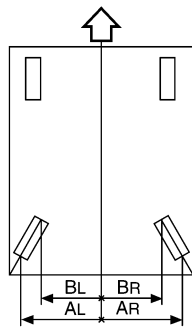


ALBTA00592Z

Market			USA and Canada	Mexico
Camber Degree minute (Decimal degree)		Minimum	-1° 07' (-1.12°)	-0° 17' 30" (-0.298°)
		Nominal	-0° 37' (-0.612°)	0° 12' 0" (0.202°)
		Maximum	-0° 07' (-0.12°)	0° 42' 0" (0.702°)
Total toe-in	Distance difference between RH and LH side (AR - BR) - (AL - BL) ↔ Front mm (in)	Minimum	-2 (-0.08)	
		Nominal	0 (0)	
		Maximum	2 (0.08)	
	Angle difference between RH and LH side Degree minute (decimal degree)	Minimum	-0° 5' (-0.08°)	
		Nominal	0° 00' (0.00°)	
		Maximum	0° 5' (0.08°)	
	Angle (left or right) Degree minute (decimal degree)		0° 6' (0.110°)	0° 6' 0" (0.108°)

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

Coupe



ALBTA00592Z

Market			All
Camber Degree minute (Decimal degree)		Minimum	-0° 35' (-0.584°)
		Nominal	-0° 5' (-0.084°)
		Maximum	0° 24' 45" (0.416°)

SQUICK REFERENCE CHART: ALTIMA

2010

Total toe-in	Distance difference between RH and LH side (AR - BR) - (AL - BL) ↔: Front mm (in)	Minimum	-2 (-0.08)
		Nominal	0 (0)
		Maximum	2 (0.08)
	Angle difference between RH and LH side Degree minute (decimal degree)	Minimum	-0° 5' (-0.08°)
		Nominal	0° 00' (0.00°)
		Maximum	0° 5' (0.08°)
	Angle (left or right) Degree minute (decimal degree)		0° 6' (0.112°)

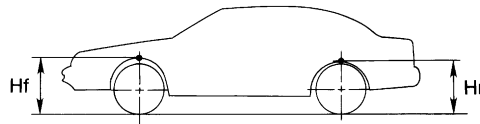
*: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

Wheelarch Height (Unladen*1)

INFOID:000000005825223

SEDAN (QR25DE)

Unit: mm (in)



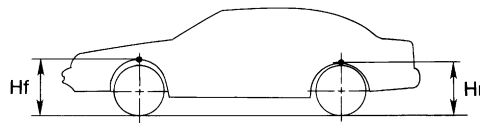
SFA818A

Market	USA		Canada	Mexico
Tire size	P215/60R16		P215/60R16	P215/60R16
Front (Hf)	717 (28.23)		715 (28.15)	727 (28.62)
Rear (Hr)	711 (27.99)		715 (28.15)	731 (28.78)

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

SEDAN (VQ35DE)

Unit: mm (in)



SFA818A

Market	USA		Canada		Mexico
Tire size	P215/60R16	P215/55R17	P215/60R16	P215/55R17	P215/55R17
Front (Hf)	716 (28.19)	715 (28.15)	714 (28.11)	716 (28.19)	725 (28.54)
Rear (Hr)	711 (27.99)	711 (27.99)	715 (28.15)	711 (27.99)	731 (28.78)

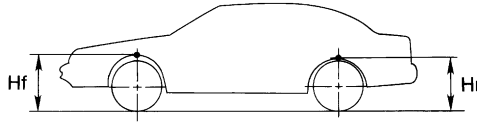
*1: Fuel, engine coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

COUPE

SQUICK REFERENCE CHART: ALTIMA

2010

Unit: mm (in)



SFA918A

Market	USA		Canada		Mexico
Engine	QR25DE	VQ35DE	QR25DE	VQ35DE	VQ35DE
Tire size	P215/55R17	P235/45R18	P215/55R17	P235/45R18	P235/45R18
Front (Hf)	—	713 (28.07)	—	711(27.99)	723 (28.46)
Rear (Hr)	—	722 (28.43)	—	726 (28.58)	722 (28.43)

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

Brake Specifications

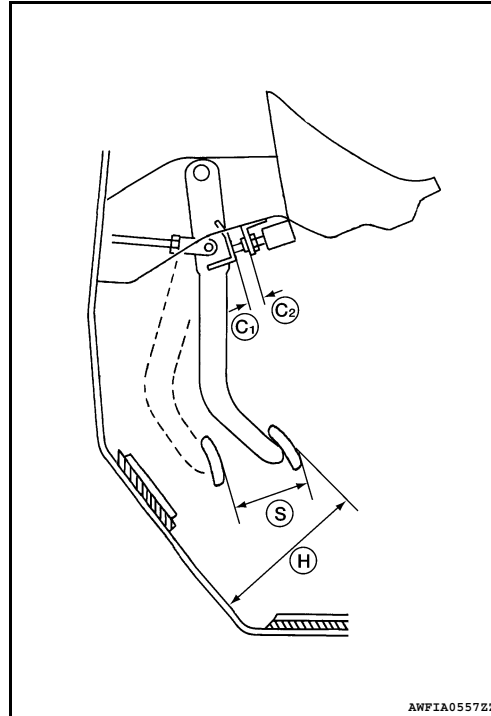
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Unit: mm (in)

Front brake	Brake model	Kiriu
	Cylinder bore diameter	57.2 (2.25)
	Pad length × width × thickness	126.5 × 52 × 11 (4.98 × 2.047 × 0.433)
	Rotor outer diameter × thickness	296 × 26 (11.65 × 1.024)
Rear brake	Brake model	Kiriu
	Cylinder bore diameter	34.93 (1.375)
	Pad length × width × thickness	83 × 33 × 8.5 (3.268 × 1.299 × 0.335)
	Rotor outer diameter × thickness	292 × 9 (11.50 × 0.354)
Master cylinder	Cylinder bore diameter	25.4 (1)
Control valve	Valve model	Electric brake force distribution
Brake booster	Booster model	Bosch
	Diaphragm diameter	280 (11)
Recommended brake fluid		DOT 3

Brake Pedal

INFOID:000000005825221



Brake pedal height (H) (from dash lower panel top surface)	CVT	190.7 - 202.7 mm (7.51 - 7.98 in)
	M/T	181.3 - 193.3 mm (7.14 - 7.61 in)
Brake pedal full stroke (S)	CVT	130 mm (5.12 in)
	M/T	130 mm (5.12 in)
Clearance between stopper bracket and threaded end of the stop lamp switch and ASCD cancel switch (C1 and C2)		0.74 - 1.96 mm (0.0291 - 0.0772 in)

Front Disc Brake

INFOID:000000005825218

Brake model		Kiriu
Brake pad	Standard thickness (new)	11.0 mm (0.433 in)
	Wear limit thickness	2.0 mm (0.079 in)
Disc rotor	Standard thickness (new)	26.0 mm (1.024 in)
	Wear limit thickness	24.0 mm (0.945 in)
	Thickness variation (measured at 8 positions)	0.015 mm (0.0006 in)
	Maximum runout (with it attached to the vehicle)	0.040 mm (0.0016 in)

Rear Disc Brake

INFOID:000000005825219

Brake model		Kiriu
Brake pad	Standard thickness (new)	8.5 mm (0.335 in)
	Wear limit thickness	1.0 mm (0.039 in)
Disc rotor	Standard thickness (new)	9.0 mm (0.354 in)
	Wear limit thickness	8.0 mm (0.315 in)
	Thickness variation (measured at 8 positions)	0.015 mm (0.0006 in)
	Maximum runout (with it attached to the vehicle)	0.05 mm (0.0020 in)

SQUICK REFERENCE CHART: ALTIMA

2010

FOR USA AND CANADA

FOR USA AND CANADA : Fluids and Lubricants

INFOID:000000005825211

Description		Capacity (Approximate)		
		Liter	US measure	Imp measure
Fuel	QR25DE	75.6	20 gal	16-5/8 gal
	VQ35DE			
Engine oil Drain and refill	With oil filter change	QR25DE	4 7/8 qt	4 qt
		VQ35DE	5 1/8 qt	4 1/4 qt
	Without oil filter change	QR25DE	4 1/2 qt	3 3/4 qt
		VQ35DE	4 3/4 qt	4 qt
Dry engine (engine overhaul)	QR25DE	5.4	5 3/4 qt	4 3/4 qt
	VQ35DE	5.3	5 5/8 qt	4 5/8 qt
Cooling system with reservoir tank	QR25DE	7.7	8 1/8 qt	6 3/4 qt
	VQ35DE	9.0	9 1/2 qt	7 7/8 qt
CVT fluid	RE0F09B	10.2	10 6/8 qt	9 qt
	RE0F10A	7.3	7 3/4 qt	6 3/8
Manual transaxle fluid (MTF)		1.7	3 5/8 pt	3 pt
Power steering fluid (PSF)		1.0	1 1/8 qt	7/8 qt
Brake and clutch fluids		—	—	—
Brake grease		—	—	—
Brake pad plate grease		—	—	—
Multi-purpose grease		—	—	—
Air conditioning system refrigerant		0.55 ± 0.025 kg	1.21 ± 0.055 lb	0.55 ± 0.025 kg
Air conditioning system oil		150 mℓ	5.03 fl oz	5.3 fl oz
Windshield washer fluid		—	—	—

FOR MEXICO

FOR MEXICO : Fluids and Lubricants

INFOID:000000005825213

QR25DE

Description		Capacity (Approximate)	
		Liter	Imp measure
Engine oil Drain and refill	With oil filter change	4.6	4 qt
	Without oil filter change	4.3	3 3/4 qt
Dry engine (engine overhaul)		5.4	4 3/4 qt
Cooling system with reservoir tank		7.7	6 3/4 qt
CVT fluid	RE0F09B	10.2	9 qt
	RE0F10B	7.3	6 3/8
Power steering fluid (PSF)		1.0	7/8 qt
Brake fluids		—	—
Multi-purpose grease		—	—

SQUICK REFERENCE CHART: ALTIMA

2010

VQ35DE

Description		Capacity (Approximate)	
		Liter	Imp measure
Engine oil Drain and refill	With oil filter change	4.8	4 1/4 qt
	Without oil filter change	4.5	4 qt
Dry engine (engine overhaul)		5.3	4 5/8 qt
Cooling system with reservoir tank		9.0	7 7/8 qt
CVT fluid	RE0F09B	10.2	9 qt
	RE0F10B	7.3	6 3/8
Power steering fluid (PSF)		1.0	7/8 qt
Brake fluids		—	—
Multi-purpose grease		—	—