	QUICK REFERENCE INDEX		
Edition: July 2005	A GENERAL INFORMATION	GI General Information	
Revision: November 2006	B ENGINE	EM Engine Mechanical	
Publication No. SM6E-1L31U1		LU Engine Lubrication System	
		CO Engine Cooling System	B
		EC Engine Control System	i <u>Bee</u>
		FL Fuel System	
		EX Exhaust System	
		ACC Accelerator Control System	
	C TRANSMISSION/	CL Clutch	i D
	TRANSAXLE	MT Manual Transaxle	j <u>Bar</u>
		AT Automatic Transaxle	
	D DRIVELINE/AXLE	FAX Front Axle	
		RAX Rear Axle	
	E SUSPENSION	FSU Front Suspension	F
		RSU Rear Suspension	
		WT Road Wheels & Tires	G
	F BRAKES	BR Brake System	
		PB Parking Brake System	
		BRC Brake Control System	
	G STEERING	PS Power Steering System	للككيك ا
NISSAN	H RESTRAINTS	SB Seat Belts	
		SRS Supplemental Restraint System (SRS)	
ALTIMA	I BODY	BL Body, Lock & Security System	
		GW Glasses, Window System & Mirrors	i 🖪 🛛
MODEL L31 SERIES		RF Roof	
		El Exterior & Interior	
		IP Instrument Panel	
		SE Seat	ورجي آ
	J AIR CONDITIONER	ATC Automatic Air Conditioner	
		MTC Manual Air Conditioner	
	K ELECTRICAL	SC Starting & Charging System	
		LT Lighting System	
		DI Driver Information System	
		WW Wiper, Washer & Horn	I
		BCS Body Control System	
		LAN LAN System	
		AV Audio Visual & Telephone System	
		ACS Auto Cruise Control System	
		PG Power Supply, Ground & Circuit Elements	
	L MAINTENANCE	MA Maintenance	
	M INDEX	IDX Alphabetical Index	

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FOREWORD

This manual contains maintenance and repair procedures for the 2006 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.



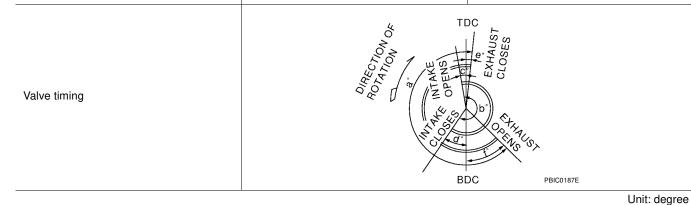
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QUICK REFERENCE CHART: ALTIMA (EQUIPPED WITH 2.5L QR25DE ENGINE)

Engine Tune-Up Data

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
	Standard	1,250 (12.8, 181.3)
Compression pressure	Minimum	1,060 (10.8, 153.7)
kPa (kg/cm ² , psi) / 250 rpm	Differential limit between cylinders	100 (1.0, 14)



						e
	а	b	С	d	е	f
-	224°	244°	0°	64°	3 °	41°

Drive Belt Deflection and Tension

Tension of drive belts	Auto adjustment by auto-tensioner

Spark Plugs (Double Platinum Tipped)

Make		NGK
	Standard	PLFR5A-11
Туре	Hot	PLFR4A-11
	Cold	PLFR6A-11
Plug gap (nominal)		1.1 mm (0.043 in)

2006

ELS001PZ

2006

Market Engine Model		United Stated and Canada	Mexico	
		QR25DE	QR25DE	
		Base/S	Base/S	
Tire size		215/60R16	215/60R16	
Camber		Minimum	-1°00′ (-1.00°)	-0°40′ (-0.67°)
Degree minute (o	decimal degree)	Nominal	-0°15′ (-0.25°)	0°05′ (0.08°)
		Maximum	0°30′ (0.50°)	0°50′ (0.83°)
		Left and right difference	45′ (0.75°) or less	
Caster		Minimum	2°05′ (2.08°)	1°55′ (1.92°)
Degree minute (o	decimal degree)	Nominal	2°50′ (2.83°)	2°40′ (2.67°)
		Maximum	3°35′ (3.58°)	3°25′ (3.42°)
		Left and right difference	45′ (0.75°) or less	
Kingpin inclinatio		Minimum	13°50′ (13.83°)	13°10′ (13.17°)
Degree minute (o	decimal degree)	Nominal	14°35′ (14.58°)	13°55′ (13.93°)
		Maximum	15°20′ (15.33°)	14°40′ (14.67°)
Total toe-in		Minimum	-0.5 (-0.02)	0.0 (0.00)
	Distance (A – B) mm (in)	Nominal	0.5 (0.02)	1.0 (0.04)
		Maximum	1.5 (0.06)	2.0 (0.08)
	Angle (left, right)	Minimum	-0°04′ (-0.07°)	-0°03′ (-0.05°)
	Degree minute (decimal	Nominal	0°02′ (0.03°)	0°03′ (0.03°)
	degree)	Maximum	0°08′ (0.13°)	0°09′ (0.15°)
Wheel turning	Inside	Minimum	34°30′ (3	34.5°)
angle Full turn*2	Degree minute (decimal degree)	Nominal	38°00′ (38.0°)	
		Maximum	39°00′ (3	39.0°)
	Outside Degree minute (decimal degree)	Nominal	30°30′ ((30.5°)

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

*2: On power steering models, wheel turning force (at circumference of steering wheel) of 98 to 147 N (10 to 15 kg, 22 to 33 lb) with engine idle.

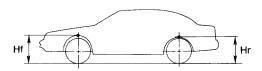
2006

			United States and Canad-	Maxiaa
Market			United States and Canada	Mexico
	Engine		QR25DE	QR25DE
	Model		Base / S	Base / S
Camber Degree minute (Decimal degree) Maximum		Minimum	-0° 04′ (-0.07°)	-0° 30' (0.50°)
		Nominal	-0° 34′ (-0.57°)	0° 0' (0°)
		Maximum	-0° 64′ (-1.07°)	0° 30' (0.50°)
		B	A	
			Total toe-in = A - B	
	1	Front	SFA234AC	1.0 (0.05)
	Distance (A – B)	Minimum	SFA234AC 2.4 (0.09)	1.3 (0.05)
	Distance (A – B) mm (in)		SFA234AC 2.4 (0.09) 3.9 (0.15)	2.8 (0.11)
		Minimum	SFA234AC 2.4 (0.09)	
	mm (in)	Minimum Nominal	SFA234AC 2.4 (0.09) 3.9 (0.15)	2.8 (0.11) 4.3 (0.17)
Total toe-in	mm (in) Distance difference between RH and LH side	Minimum Nominal Maximum	SFA234AC 2.4 (0.09) 3.9 (0.15) 5.4 (0.21)	2.8 (0.11) 4.3 (0.17) 08)
Total toe-in	mm (in) Distance difference	Minimum Nominal Maximum Minimum	SFA234AC 2.4 (0.09) 3.9 (0.15) 5.4 (0.21) -2 (-0.0	2.8 (0.11) 4.3 (0.17) 08)
Total toe-in	mm (in) Distance difference between RH and LH side mm (in)	MinimumNominalMaximumMinimumNominal	SFA234AC 2.4 (0.09) 3.9 (0.15) 5.4 (0.21) -2 (-0.0 0 (0)	2.8 (0.11) 4.3 (0.17) 08)
Total toe-in	mm (in) Distance difference between RH and LH side	Minimum Nominal Maximum Minimum Nominal Nominal Maximum	SFA234AC 2.4 (0.09) 3.9 (0.15) 5.4 (0.21) -2 (-0.0 0 (0) 2 (0.08)	2.8 (0.11) 4.3 (0.17) 08)

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

Wheelarch Height (Unladen*)

EES0024U Unit: mm (in)



	SFA818A	
Market	United States and Canada	Mexico
Engine	QR25DE	QR25DE
Model	Base/S	Base/S
Tire size	215/60R16	215/60R16
Front (Hf)	722 (28.43)	742 (29.21)
Rear (Hr)	695 (27.36)	715 (28.15)

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



2006

Brake			ELS00102 Unit: mm (in)
	Brake model		CLZ25VD disc brake
Franklander	Cylinder bore diameter		57.2 (2.25)
Front brake	Pad Length × width × thic	ckness	125.6 × 46 × 11 (4.94 × 1.81 × 0.43)
	Rotor outer diameter × th	nickness	297 × 24 (11.7 × 0.94)
	Brake model		AD9A disc brake
D	Cylinder bore diameter		34.9 (1.3740)
Rear brake	Pad Length × width × thic	ckness	89.1 × 39.5 × 10 (3.508 × 1.555 × 0.31)
	Rotor outer diameter \times th	nickness	292 × 9 (11.5 × 0.35)
Master cylinder	Cylinder bore diameter		23.81 (15/16)
Control valve	Screw in type		30 × 0.4 (1.18 × 0.02)
	Booster model		M215T
Brake booster		Primary	230 (9.06)
	Diaphragm diameter	Secondary	205 (8.07)
Recommended brake	fluid		Genuine NISSAN Super Heavy Duty Brake Fluid or equivalent DOT 3 (US FMVSS No. 16)

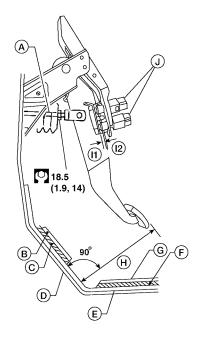
Disc Brake - Repair Limits

Unit: mm (in)

Brake model		CLZ25VD (Front)	AD9A (Rear)
Pad wear limit	Minimum thickness	2.0 (0.079)	1.5 (0.059)
Rotor repair limit	Maximum runout	0.07 (0.0028)	
	Minimum thickness	22.0 (0.866)	8.0 (0.31)
	Maximum thickness variation (at least 8 positions)	0.015 (0	.0006)

Brake Pedal

Unit: mm (in)



2006

Pedal play	3 - 11 (0.12 - 0.43)	
Clearance "I1" or "I2" between pedal stopper and threaded end of stop lamp switch or ASCD switch		0.74 - 1.96 (0.0291 - 0.0772)
{50 kg-f, 110 lb-f) "H"	A/T	More than 90.3 (3.55)
Pedal height (with engine running, brake pedal force 490 N	M/T	More than 84 (3.31)
	A/T	173.1 - 183.1 (6.81 - 7.21)
Free height "H"*	M/T	164.1 - 174.1 (6.46 - 6.85)

*: Measured from surface of dash reinforcement panel to surface of pedal pad

- A: Input rod
- B: Floor carpet
- C: Dash Insulator
- D: Floor Panel
- E: Dash reinforcement panel
- F: Dash insulator
- G: Floor carpet
- I1, I2: Gap

J: Stop lamp switch and ASCD switch

Refill Capacities

ELS001Q3

Description		C	apacity (Approxima	te)
Description		Liter US measure Imp measu		Imp measure
Fuel		75.6	20 gal	16 5/8 gal
Engine oil	With oil filter change	4.2	4 1/2 qt	3 3/4 qt
Drain and refill	Without oil filter change	4.0	4 1/4 qt	3 1/2 qt
Dry engine (engine overhaul)		4.6	4 7/8 qt	4 qt
Cooling system	With reservoir at MAX level	7.6	2 gal	1 5/8 gal
Manual transaxle fluid (MTF)		2.2	2 3/8 qt	2 qt
Automatic transaxle (4A/T) fluid (ATF)		9.2	9 3/4 qt	8 1/8 qt
Power steering fluid (PSF)		1.0	2 1/8 pt	1 3/4 pt
Air conditioning system refrigerant		$0.50\pm0.025~\text{kg}$	$1.10\pm0.055~\text{lb}$	$1.10\pm0.055~\text{lb}$
Air conditioning system oil		150 m ℓ	5.03 fl oz	5.01 fl oz

QUICK REFERENCE CHART: ALTIMA (EQUIPPED WITH 3.5L VQ35DE ENGINE)

Engine Tune-Up Data

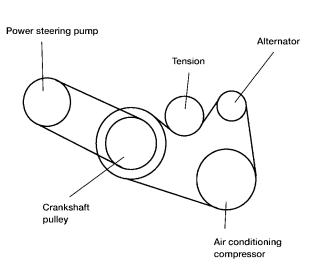
Cylinder arrangemen	t			V	/-6
Displacement cm ³	(in ³)			3,498 ((213.45)
Bore and stroke mn	n (in)			95.5 x 81.4 ((3.76 x 3.205)
Valve arrangement		DOHC			OHC
Firing order				1-2-3	-4-5-6
Number of piston ring		Compression			2
	J 5	Oil			1
Number of main bear	rings				4
Compression ratio				10	.0:1
		Standard		1,275 (1	3.0, 185)
Compression pressu		Minimum 981 (10.0, 142			0.0, 142)
kPa (kg/cm ² , psi)/30	0 rpm	Differential limit 98 (1.0, 14)			.0, 14)
			FRONT	SEM713A	
Valve timing (IVTC - 0	OFF)		POLATE INTAKE	STATTA	
		1			Unit: degree
а	b	с	d	е	f
240°	238°	- 6°	64°	8 °	52°

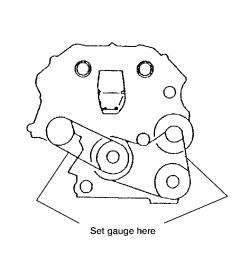
2006

ELS001Q4

2006

Drive Belt Deflection and Tension





						LBIA0076E
	Deflection adjust	tment	Unit: mm (in)	Tension adjustme	ent*	Unit: N (kg, lb)
	Use	ed belt	New belt	Use	ed belt	New belt
	Limit	After adjustment	New Deit	Limit	After adjustment	New Deit
Alternator and air conditioning compressor	7 (0.28)	4.2 - 4.6 (0.17 - 0.18)	3.7 - 4.1 (0.15 - 0.16)	294 (30, 66)	730 - 818 (74.5 - 83.5, 164 - 184)	838 - 926 (85.5 - 94.5, 188 - 208)
Power steering pump	11 (0.43)	7.3 - 8 (0.29 - 0.30)	6.5 - 7.2 (0.26 - 0.28)	196 (20, 44)	495 - 583 (50.5 - 59.5, 111 - 131)	603 - 691 (61.5 - 70.5, 135.6 - 155.4)
Applied pushing force		98 N (10 kg, 22 lb)			_	

*: If belt tension gauge cannot be installed at check points shown, check drive belt tension at different location on the belt.

Spark Plugs (Double Platinum Tipped)

Make		NGK
	Standard	PLFR5A-11
Туре	Hot	PLFR4A-11
	Cold	PLFR6A-11
Gap (nominal)		1.1 mm (0.043 in)

2006

Market			United	States and	Canada	Mexico
Engine			VQ35DE		VQ35DE	
Model			SL	SE	SE-R	SE
Tire size			215/ 60R16	215/ 55R17	225/ 45R18	215/55R17
Camber		Minimum	-	-1°00′ (–1.00)°)	-0°40′ (-0.67°)
Degree minute	e (Decimal degree)	Nominal	-	-0°15′ (-0.25	o°)	0°05′ (0.08°)
		Maximum		0°30′ (0.50°)	0°50′ (0.83°)
		Left and right difference	45	oʻ (0.75°) or l	ess	45' (0.75°) or less
Caster		Minimum		2°05′ (2.08°)	1°55′ (1.92°)
Degree minute	e (Decimal degree)	Nominal		2°50′ (2.83°)		2°40′ (2.67°)
		Maximum	3°35′ (3.58°)		3°25′ (3.42°)	
		Left and right difference	45' (0.75°) or less		45' (0.75°) or les	
Kingpin inclination		Minimum	13°50′ (13.83°)		13°10′ (13.17°)	
Degree minute	e (Decimal degree)	Nominal	14°35′ (14.58°)		13°55′ (13.93°)	
		Maximum	15°20′ (15.33°)		14°40′ (14.67°)	
Total toe-in		Minimum	-0.5 (-0.02)		0.0 (0.00)	
	Distance (A – B) mm (in)	Nominal	0.5 (0.02)		1.0 (0.04)	
		Maximum		1.5 (0.06)		2.0 (0.08)
	Angle (left, right)	Minimum	-	-0°04′ (-0.07°)		-0°03′ (-0.05°)
	Degree minute (Decimal	Nominal		0°02′ (0.03°)	0°03′ (0.03°)
	degree)	Maximum		0°08′ (0.13°)	0°09′ (0.15°)
Wheel turning angle		Minimum	32°00′	(32.0°)	31°00′ (31.0°)	32°00′ (32.0°)
-	Inside Degree minute (Decimal degree)	Nominal	35°30′	(35.5°)	34°30′ (34.5°)	35°30′ (35.5°)
uegree)		Maximum	36°30′	(36.5°)	35°30′ (35.5°)	36°30′ (36.5°)
	Outside Degree minute (Decimal degree)	Nominal	29°00′	(29.0°)	29°00′ (29.0°)	29°00′ (29.0°)

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

*2: On power steering models, wheel turning force (at circumference of steering wheel) of 98 to 147 N (10 to 15 kg, 22 to 33 lb) with engine idle.

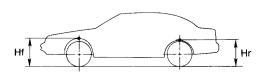
2006

Rear Wh	eel Alignment (Unladen'	*)			ELS001Q	
Market			United State	s and Canada	Mexico	
Engine			VQ	35DE	VQ35DE	
Model			SL / SE	SE-R	SE	
		Minimum	-0° 2' (-0.03°)	-0° 13' (-0.22°)	-0° 30' (0.50°)	
Camber Degree minut	te (Decimal degree)	Nominal	-0° 32′ (-0.53°)	-0° 43′ (-0.72°)	0° 0' (0°)	
Degree mind		Maximum	-1° 2′ (-1.03°)	-1° 13′ (-1.22°)	0° 30' (0.50°)	
	Front	B	Total toe-in = $A - B$ SFA234AC	2.2 (0.00)	1.2 (0.05)	
	Distance (A – B)	-	2.4 (0.09)	2.3 (0.09)	1.3 (0.05)	
	mm (in)	Nominal	3.9 (0.15)	3.8 (0.15)	2.8 (0.11)	
	Distance difference	Maximum Minimum	5.4 (0.21)	5.4 (0.21) 5.3 (0.21) 4.3 (0.7) -2 (-0.08)		
Total toe-in between RH and LH side		Nominal		0 (0)		
			2 (0.08)			
	mm (in)	Maximum		2 (0.08)		
	mm (in)	Maximum Minimum	0° 6′	2 (0.08) (0.10°)	0° 3' (0.05°)	
					0° 3' (0.05°) 0° 7' (0.12°)	

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

Wheelarch Height (Unladen*)

EES001C1 Unit: mm (in)



	SFA818A					
Market	U	United States and Canada				
Engine		VQ35DE				
Model	SL	SE	SE-R	SE		
Tire size	215/60R16	215/55R17	225/45R18	215/55R17		
Front (Hf)	717 (28.23)	722 (28.43)	721 (28.39)	741 (29.17)		
Rear (Hr)	696 (27.40)	701 (27.60)	695 (27.36)	718 (28.27)		

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

2006

Brake				ELS001Q7 Unit: mm (in)
	Brake model		CLZ25VD disc brake	CLZ25VE disc brake
	Cylinder bore diameter		57.2	(2.25)
Front brake	Pad Length \times width \times thickness	S	$\begin{array}{c} 125.6 \times 46 \times 11 \\ (4.94 \times 1.81 \times 0.43) \end{array}$	$\begin{array}{c} 111.0 \times 62.5 \times 9.5 \\ (4.37 \times 2.46 \times 0.37) \end{array}$
	Rotor outer diameter \times th	ickness	297 × 24 (11.7 × 0.94)	320×28 (12.6×1.10)
	Brake model		AD9A di	isc brake
	Cylinder bore diameter		34.9 (1	1.3740)
Rear brake	Pad Length \times width \times thickness	SS	89.1 × 39.5 × 10 (3.508 × 1.555 × 0.31)	
	Rotor outer diameter × th	ickness	ness 292 × 9 (11.5 × 0.35)	
Master cylinder	Cylinder bore diameter		23.81	(15/16)
Control valve	Screw in type		30 × 0.4 (1	.18 × 0.02)
	Booster model		M2	15T
Brake booster	Diantana dia matan	Primary	230 ((9.06)
	Diaphragm diameter	Secondary	205 ((8.07)
Recommended bra	ake fluid	1		/ Duty Brake Fluid or equivalent //VSS No. 116)

Disc Brake - Repair Limits

Brake model		CLZ25VD	CLZ25VE	AD9A	
Pad wear limit	Minimum thickness	2.0 (1.5 (0.059)		
	Maximum runout	0.07 (0.0028)			
Rotor repair limit	Minimum thickness	22.0 (0.866) 26.0 (1.02) 8.0 (0.5			
Maximum thickness variati (at least 8 positions)			0.015 (0.0006)		

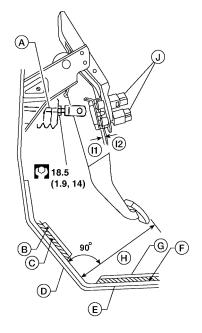
Unit: mm (in)

Drake

2006

Brake Pedal

Unit: mm (in)



WFIA0423E

Free height "H"*	M/T	164.1 - 174.1 (6.46 - 6.85)
Free neight Fr	A/T	173.1 - 183.1 (6.81 - 7.21)
Pedal height (with engine running, brake pedal force 490	M/T	More than 84 (3.31)
{50 kg-f, 110 lb-f) "H"	A/T	More than 90.3 (3.55)
Clearance "I1" or "I2" between pedal stopper and threaded er ASCD switch	nd of stop lamp switch or	0.74 - 1.96 (0.0291 - 0.0772)
Pedal play		3 - 11 (0.12 - 0.43)

*: Measured from surface of dash reinforcement panel to surface of pedal pad

- A: Input rod
- B: Floor carpet
- C: Dash Insulator
- D: Floor Panel
- E: Dash reinforcement panel
- F: Dash insulator
- G: Floor carpet
- I1, I2: Gap
- J: Stop lamp switch and ASCD switch

2006

Refill Capacities				ELS00	
Description		Capacity (Approximate)			
Description		Liter US measure Imp meas			
Fuel		75.6	20 gal	16 5/8 gal	
Engine oil	With oil filter change	4.2	4 1/2 qt	3 3/4 qt	
Drain and refill	Without oil filter change	4.0	4 1/4 qt	3 1/2 qt	
Dry engine (engine overhaul)	· · · · · · · · · · · · · · · · · · ·	4.6	4 7/8 qt	4 qt	
Cooling system	With reservoir at MAX level	8.2	2 1/8 gal	1 3/4 gal	
Manual transaxle fluid (MTF)		2.2	2 3/8 qt	2 qt	
Automatic transaxle (5A/T) fl	uid (ATF)	7.3	7 3/4 qt	6 3/8 qt	
Power steering fluid (PSF)		1.0	2 1/8 pt	1 3/4 pt	
Air conditioning system refrig	erant	$0.50\pm0.025~\text{kg}$	$1.10\pm0.055~\text{lb}$	1.10 ± 0.055 l	
Air conditioning system oil		150 m ℓ	5.03 fl oz	5.01 fl oz	