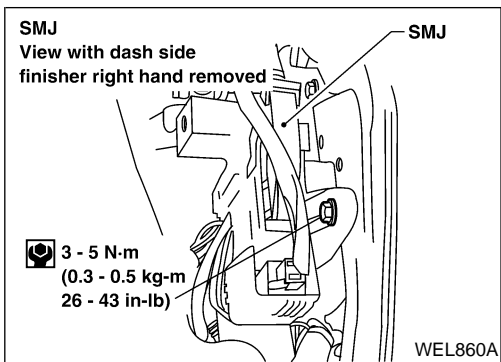


SUPER MULTIPLE JUNCTION (SMJ)

Installation



Installation

Securely fit and lock SMJ connectors. Tighten harness bracket bolt to the specified torque. ^{NGEL0146}

 : 3 - 5 N-m (0.3 - 0.5 kg-m, 26 - 43 in-lb)

GI

MA

EM

LC

EC

FE

CL

MT

AT

TF

PD

AX

SU

BR

ST

RS

BT

HA

SC

EL

IDX

SUPER MULTIPLE JUNCTION (SMJ)

Terminal Arrangement

Terminal Arrangement

NGEL0147

MAIN HARNESS

(M65)

24B	23B	22B	21B	20B	19B	18B	17B	16B	15B	14B	13B	12B	11B	10B	9B	8B	7B	6B	5B	4B	3B	2B	1B
24A	23A	22A	21A	20A	19A	18A	17A	16A	15A	14A	13A	12A	11A	10A	9A	8A	7A	6A	5A	4A	3A	2A	1A



24A	23A	22A	21A	20A	19A	18A	17A	16A	15A	14A	13A	12A	11A	10A	9A	8A	7A	6A	5A	4A	3A	2A	1A
24B	23B	22B	21B	20B	19B	18B	17B	16B	15B	14B	13B	12B	11B	10B	9B	8B	7B	6B	5B	4B	3B	2B	1B

(E43)

ENGINE ROOM HARNESS

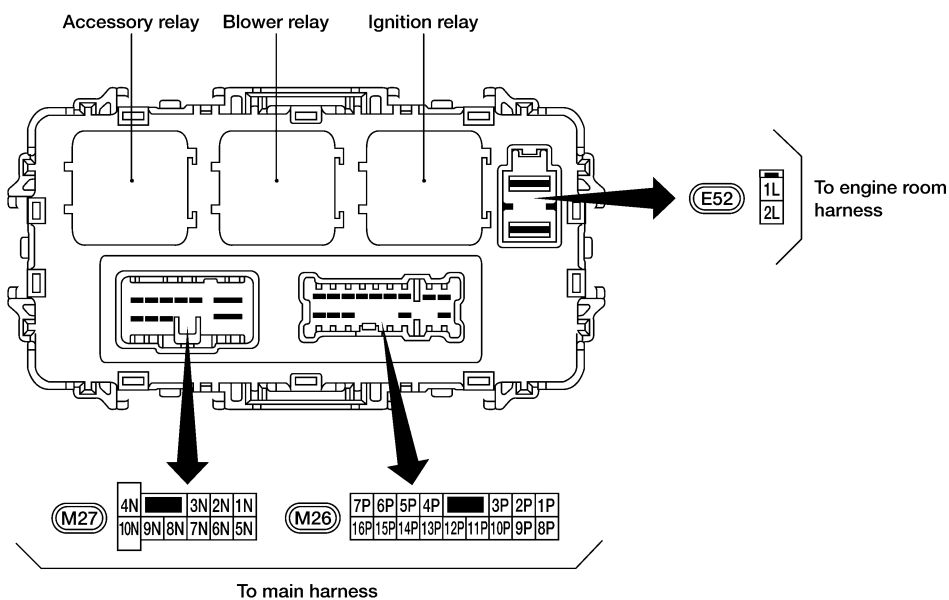
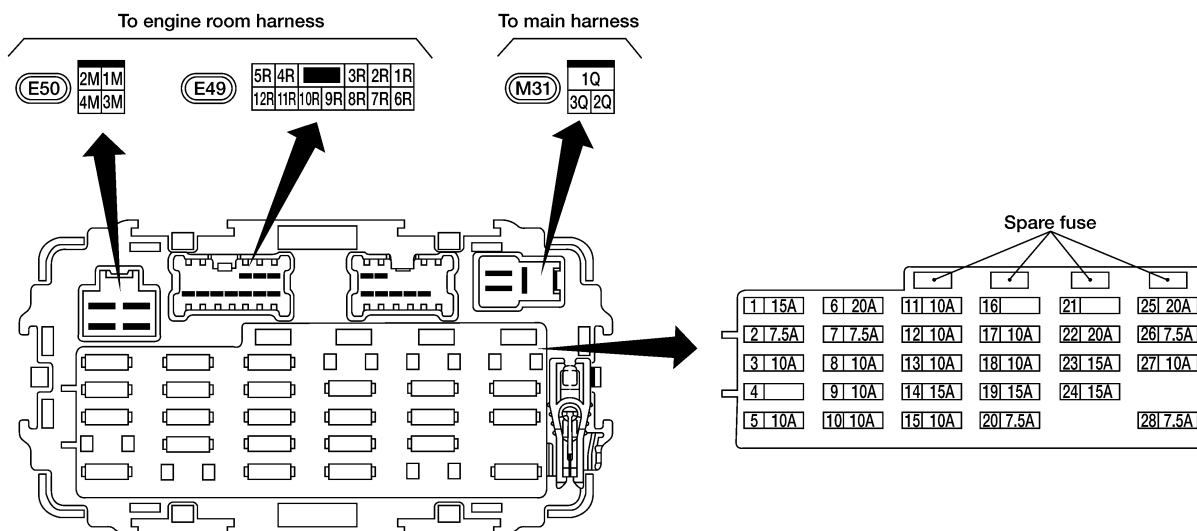
AEL646B

FUSE BLOCK — JUNCTION BOX (J/B)

Terminal Arrangement

Terminal Arrangement

NGEL0148



GI
MA
EM
LC
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WEL913A

EL

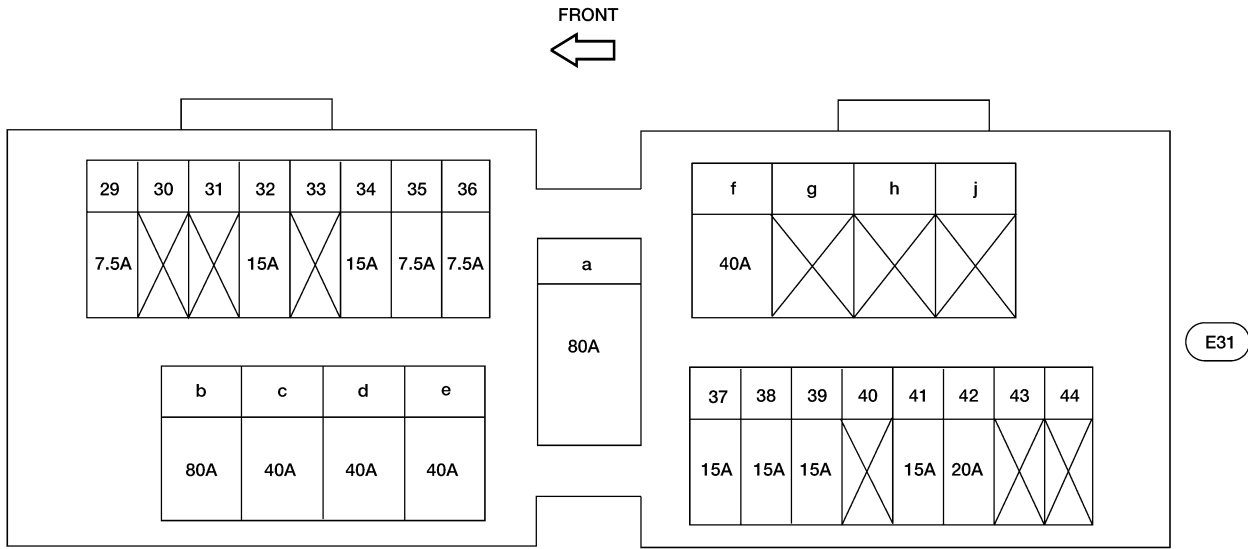
FUSE AND FUSIBLE LINK BOX

Terminal Arrangement

Terminal Arrangement

NGEL0149

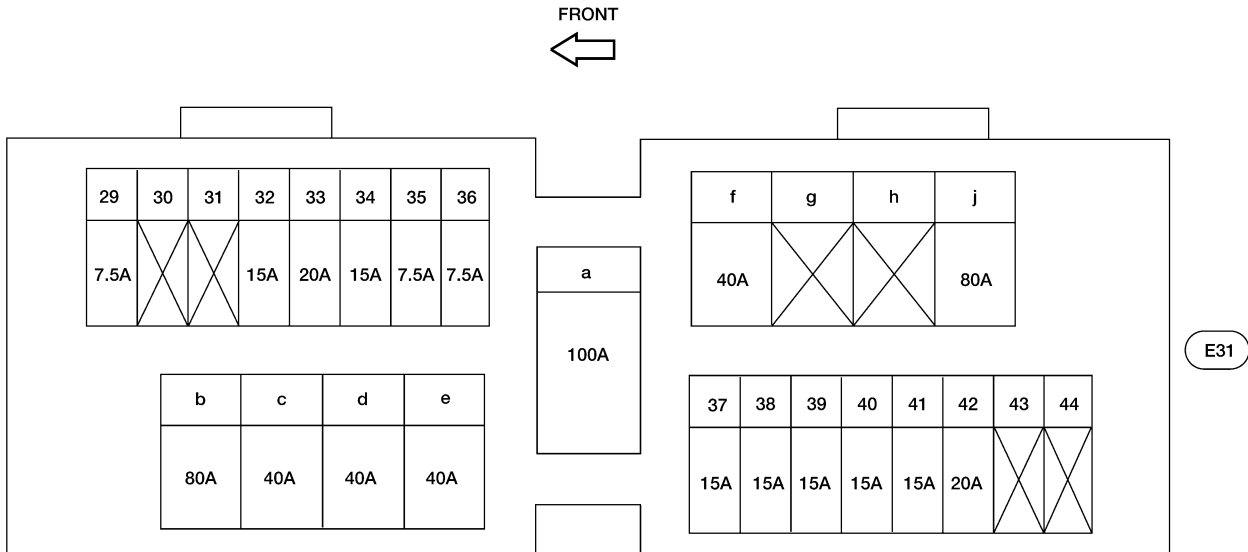
For KA24DE



No. 29 - 44: FUSE

a - j: FUSIBLE LINK

For VG33E and VG33ER



No. 29 - 44: FUSE

a - j: FUSIBLE LINK

WEL914A

Terminal Arrangement

NGEL0198

GI

MA

EM

LC

EC

FE

CL

MT

AT

TF

PD

AX

SU

BR

ST

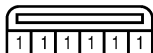
RS

BT

HA

SC

JOINT CONNECTOR - 1 (F31)



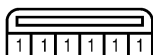
(GRAY)

JOINT CONNECTOR - 2 (F32)



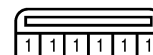
(GRAY)

For VG33E and VG33ER models
JOINT CONNECTOR - 3 (F33)



(GRAY)

For VG33E and VG33ER models
JOINT CONNECTOR - 4 (F34)



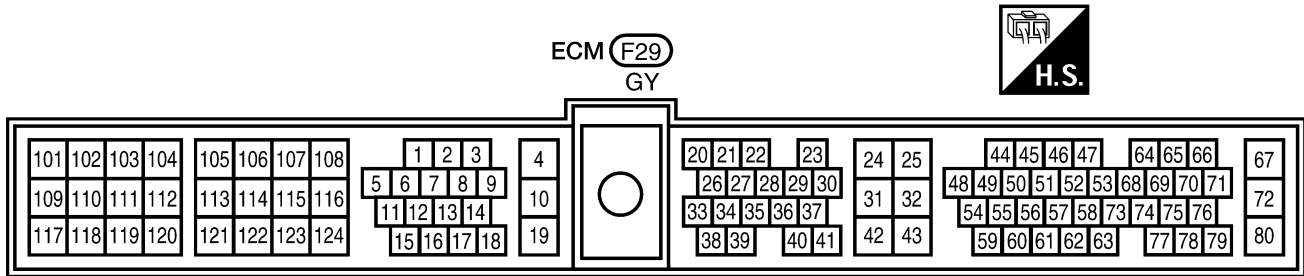
(GRAY)

ELECTRICAL UNITS

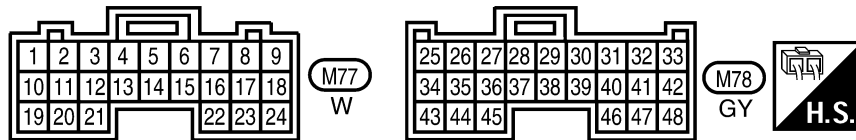
Terminal Arrangement

Terminal Arrangement

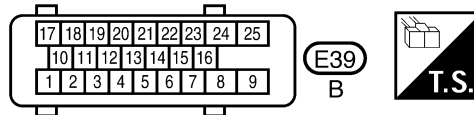
NGEL0150



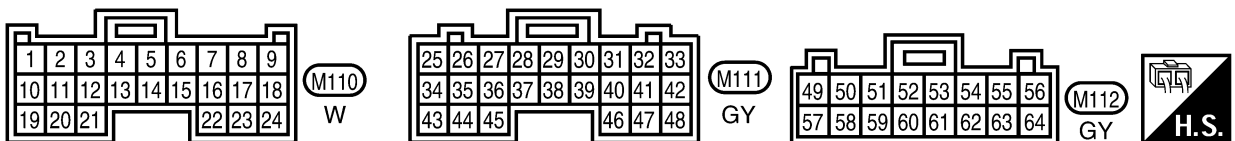
TCM (TRANSMISSION CONTROL MODULE)



ABS ACTUATOR AND ELECTRIC UNIT
(CONTROL UNIT)



SMART ENTRANCE CONTROL UNIT



WEL863A

QUICK REFERENCE CHART: XTERRA 2002

ENGINE TUNE-UP DATA

Engine model	KA24DE		
Firing order	1-3-4-2		
Idle speed rpm	800° ± 50		
MT (in neutral)			
Ignition timing (degree B.T.D.C. at idle speed)	20° ± 2°		
CO% at idle	Idle mixture screw is preset and sealed at factory		
Spark plug	NGK (Double Platinum Tipped)		
Type	Standard	PFR5G-11	
	Cold	PFR6G-11	
Gap	mm (in)	1.1 (0.043)	
Drive belt deflection (Cold)	mm (in)	Used belt	
		Limit	Deflection after adjustment
Generator	17 (0.67)	10 - 12 (0.39 - 0.47)	8 - 10 (0.31 - 0.39)
Air conditioner compressor	16 (0.63)	10 - 12 (0.39 - 0.47)	8 - 10 (0.31 - 0.39)
Power steering oil pump	17 (0.67)	10 - 13 (0.39 - 0.51)	8 - 10 (0.31 - 0.39)
Drive belt tension	N (kg, lb)	Used belt	
		Limit	Tension after adjustment
Generator	222.4 (22.7, 50)	355.8 - 444.8 (36.3-45.4, 80-100)	489.3 - 578.2 (49.9-59.0, 110-130)
Air conditioner compressor	200.2 (20.4, 45)	355.8 - 444.8 (36.3-45.4, 80-100)	489.3 - 578.2 (49.9-59.0, 110-130)
Power steering oil pump	222.4 (22.7, 50)	355.8 - 444.8 (36.3-45.4, 80-100)	489.3 - 578.2 (49.9-59.0, 110-130)
Applied pushing force	N (kg, lb)	98 (10, 22)	
Radiator cap relief pressure	kPa (kg/cm ² , psi)	78 - 98 (0.8 - 1.0, 11 - 14)	
Cooling system leakage testing pressure	kPa (kg/cm ² , psi)	157 (1.6, 23)	
Compression pressure	Standard	1,226 (12.5, 178)/300	
	Minimum	1,030 (10.5, 149)/300	
Tightening torque		N-m	kg-m
		ft-lb	
Spark plug		20 - 29	2.0 - 3.0
Oil pan drain plug		29 - 39	3.0 - 4.0

EQUIPPED WITH KA 24DE ENGINE

BRAKE

Disc brake	
Pad minimum thickness	2.0 (0.079)
Rotor repair limit	
Runout	0.07 (0.0028)
Minimum thickness	26.0 (1.024)
Drum brake	
Lining minimum thickness	1.5 (0.059)
Drum repair limit	
Maximum inner diameter	296.5 (11.67)
Parking brake	
Number of notches*2	5 - 6

*1 At pulling force: 196 N (20 kg, 44 lb)

FRONT WHEEL BEARING

	Model	
Item	2WD	
Lock nut tightening torque	34 - 39 (3.5 - 4.0, 25 - 29)	
N • m (kg•m, ft-lb)		
Preload (At hub bolt)	N (kg, lb)	New seal
		Used seal
		9.8 - 28.4 (1.0 - 2.9, 2.2 - 6.4)
		9.8 - 23.5 (1.0 - 2.4, 2.2 - 5.3)

REFILL CAPACITIES

	Unit	Liter	US measure
Fuel tank		73.5	19.4 gal
Coolant (with reservoir)	2WD	7.3	7-3/4 qt
	2WD MT		
Engine	2WD	With oil filter	3.5
		Without oil filter	3.3
	Dry engine (engine overhaul)	4.1	
Transmission	M/T	2WD	2.0
Final drive	Rear	C200	1.5
Manual steering system		0.62	2-3/8 qt
Power steering system		0.9 - 1.0	30.4-33.8 fl oz
Air conditioning system	Lubricant	0.2	6.8 fl oz
	Refrigerant *	0.6 - 0.7 kg	1.32 - 1.54 lb

*R-134a

FRONT WHEEL ALIGNMENT (Unladen*1)

		2WD	
Camber	Degree minute (Decimal degree)	Minimum	0°03' (0.05°)
		Nominal	0°33' (0.55°)
		Maximum	1°03' (1.05°)
		Left and right difference	45' (0.75°) or less
Caster	Degree minute (Decimal degree)	Minimum	2°04' (2.07°)
		Nominal	2°34' (2.57°)
		Maximum	3°04' (3.07°)
		Left and right difference	45' (0.75°) or less
Kingpin inclination	Degree minute (Decimal degree)	Minimum	10°23' (10.38°)
		Nominal	10°53' (10.88°)
		Maximum	11°23' (11.38°)
Total toe-in	Distance (A - B) mm (in)	Minimum	3 (0.12)
		Nominal	4 (0.16)
		Maximum	5 (0.20)
	Angle (left plus right)	Minimum	15' (0.25°)
Degree minute (Decimal degree)	Nominal	20' (0.33°)	
	Maximum	25' (0.42°)	
	Wheel turning angle	Inside	Except P265/70R15
P265/70R15			
Minimum			32°48' (32.80°)
Degree minute (Decimal degree)		Nominal	34°48' (34.80°)
		Maximum	34°48' (34.80°)
		Outside	Minimum
Nominal	33°00' (33.00°)		
Maximum	33°00' (33.00°)		

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

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

QUICK REFERENCE CHART: XTERRA 2002

ENGINE TUNE-UP DATA

Engine model	VG33E			
Firing order	1-2-3-4-5-6			
Idle speed	rpm			
MT (in neutral)		750° ± 50		
A/T (in "P" or "N" position)		750° ± 50		
Ignition timing (degree B.T.D.C. at idle speed)	10° ± 2°			
CO% at idle	Idle mixture screw is preset and sealed at factory			
Spark plug	NGK (Double Platinum Tipped)			
Type	Hot	PFR4G-11		
	Standard	PFR5G-11		
	Cold	PFR6G-11		
Gap	mm (in)	1.1 (0.043)		
Drive belt deflection (Cold)	mm (in)	Used belt		
		Limit	Deflection after adjustment	
	Generator	11 (0.43)	7 - 8 (0.24 - 0.31)	6 - 7 (0.24 - 0.28)
		Air conditioner compressor	18 (0.71)	12 - 13 (0.47 - 0.51)
Power steering oil pump	15 (0.59)	9.5 - 10.5 (0.374 - 0.413)	8 - 9 (0.31 - 0.35)	
Drive belt tension	N (kg, lb)	Used belt		
		Limit	Tension after adjustment	
	Generator	226 (23, 51)	554.1-642.4(56.5-65.5, 124.6-144.4)	671.8-760.0(68.5-77.5, 151.0-170.9)
		Air conditioner compressor	196 (20, 44)	495.3-583.5(50.5-59.5, 111.4-131.2)
Power steering oil pump	275 (28, 62)	554.1-642.4(56.5-65.5, 124.6-144.4)	671.8-760.0(68.5-77.5, 151.0-170.9)	
Applied pressed force	N (kg, lb)	98 (10, 22)		
Radiator cap relief pressure	kPa (kg/cm ² , psi)	78 - 98 (0.8 - 1.0, 11 - 14)		
Cooling system leakage testing pressure	kPa (kg/cm ² , psi)	157 (1.6, 23)		
Compression pressure	Standard	1,196 (12.2, 173)/300		
	Minimum	883 (9.0, 128)/300		
Tightening torque	N-m	kg-m	ft-lb	
	Spark plug	20 - 29	2.0 - 3.0	14 - 22
Oil pan drain plug	29 - 39	3.0 - 4.0	22 - 29	

FRONT WHEEL ALIGNMENT (Unladen*1)

		2WD		4WD					
		Minimum	Nominal	Maximum	Left and right difference	Minimum	Nominal	Maximum	Left and right difference
Camber	Degree minute (Decimal degree)	Minimum	0°03' (0.05°)	0°06' (0.10°)					
		Nominal	0°33' (0.55°)	0°36' (0.60°)					
		Maximum	1°03' (1.05°)	1°06' (1.10°)					
		Left and right difference	45' (0.75°) or less	45' (0.75°) or less					
Caster	Degree minute (Decimal degree)	Minimum	2°04' (2.07°)	1°40' (1.67°)					
		Nominal	2°34' (2.57°)	2°10' (2.17°)					
		Maximum	3°04' (3.07°)	2°40' (2.67°)					
		Left and right difference	45' (0.75°) or less	45' (0.75°) or less					
Kingpin inclination	Degree minute (Decimal degree)	Minimum	10°23' (10.38°)	10°18' (10.30°)					
		Nominal	10°53' (10.88°)	10°48' (10.80°)					
		Maximum	11°23' (11.38°)	11°18' (11.30°)					
Total toe-in	Distance (A - B) mm (in)	Minimum	3 (0.12)	3 (0.12)					
		Nominal	4 (0.16)	4 (0.16)					
		Maximum	5 (0.20)	5 (0.20)					
	Angle (left plus right)	Minimum	15' (0.25°)	15' (0.25°)					
Wheel turning angle	Degree minute (Decimal degree)	Inside	Minimum	32°48' (32.80°)	30°48' (30.80°)	33°06' (33.10°)	31°00' (31.00°)		
			Nominal	34°48' (34.80°)	32°48' (32.80°)	35°06' (35.10°)	33°00' (33.00°)		
		Maximum	34°48' (34.80°)	32°48' (32.80°)	35°06' (35.10°)	33°00' (33.00°)			
	Outside	Minimum	31°00' (31.00°)	28°42' (28.70°)	31°12' (31.20°)	29°00' (29.00°)			
Maximum		33°00' (33.00°)	30°42' (30.70°)	33°12' (33.20°)	31°00' (31.00°)				
Full turn *2	Degree minute (Decimal degree)	Minimum	33°00' (33.00°)	30°42' (30.70°)	33°12' (33.20°)	31°00' (31.00°)*			

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

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

EQUIPPED WITH VG33E ENGINE

BRAKE

		Unit: mm (in)
Disc brake	Pad minimum thickness	2.0 (0.079)
	Rotor repair limit	
	Runout	0.07 (0.0028)
	Minimum thickness	26.0 (1.024)
Drum brake	Lining minimum thickness	1.5 (0.059)
	Drum repair limit	
	Maximum inner diameter	296.5 (11.67)
Parking brake	Number of notches*2	5 - 6

*1 At pulling force: 196 N (20 kg, 44 lb)

FRONT WHEEL BEARING

Item	Model				
	2WD		4WD		
Lock nut tightening torque	34 - 39 (3.5 - 4.0, 25 - 29)		—		
N • m (kg•m, ft-lb)					
Preload (At hub bolt)	N (kg, lb)	New seal	9.8 - 28.4 (1.0 - 2.9, 2.2 - 6.4)	Wheel bearing Tightening torque N • m (kg•m, ft-lb)	78 - 98 (8-10, 58 - 72)
		Used seal	9.8 - 23.5 (1.0 - 2.4, 2.2 - 5.3)	Retightening torque after loosening wheel bearing lock nut N•m (kg•m, ft-lb)	0.5 - 1.5 (0.05 - 0.15, 0.4 - 1.1)
			Axial end play mm (in)	0(0)	
			Turning angle degree	15° - 30°	
			Wheel bearing preload at wheel hub bolt N (kg, lb)	7.06 - 20.99 (0.72 - 2.14, 1.59 - 4.72)	

REFILL CAPACITIES

Unit	Liter	US measure		
Fuel tank	73.5	19.4 gal		
Coolant (with reservoir)	AT & MT	10.95		
		11-5/8 qt		
Engine	With oil filter	3.3	3-1/2 qt	
	Without oil filter	3.0	3-1/8 qt	
	Dry engine (engine overhaul)	3.8	4 qt	
Transmission	M/T	2WD	2.8	5-7/8 pt
		4WD	5.1	10-3/4 pt
	A/T	2WD	8.3	8-3/4 qt
		4WD	8.5	9 qt
Transfer	4WD	2.2	2-3/8 qt	
Final drive	Rear	H233B	2.8	5-7/8 pt
	Front	R200A	1.75	3-3/4 pt
Manual steering system		0.62	1-3/8 pt	
Power steering system		1.0 - 1.1	33.8 - 37.2 fl oz	
Air conditioning system	Lubricant	0.2	6.8 fl oz	
	Refrigerant *	0.6 - 0.7 kg	1.32 - 1.54 lb	

*R-134a

QUICK REFERENCE CHART: XTERRA 2002

ENGINE TUNE-UP DATA

Engine model	VG33E		
Firing order	1-2-3-4-5-6		
Idle speed rpm	750° ± 50		
MT (in neutral)	750° ± 50		
A/T (in "P" or "N" position)	10° ± 1°		
Ignition timing (degree B.T.D.C. at idle speed)	Idle mixture screw is preset and sealed at factory		
CO% at idle	NGK (Double Platinum Tipped)		
Spark plug	Hot PFR5G-11		
Type	Standard	PFR6G-11	
	Cold	PFR7G-11	
Gap	mm (in)	1.1 (0.043)	
Drive belt deflection (Cold)	mm (in)	Used belt	
		Limit	Deflection after adjustment
Generator	11 (0.43)	7 - 8 (0.24 - 0.31)	6 - 7 (0.24 - 0.28)
Air conditioner compressor and	16.5 (0.65)	9.5 - 10.5 (0.374 - 0.413)	8.5 - 9.5 (0.33 - 0.39)
Power steering oil pump Supercharger	15 (0.59)	9.5 - 10.5 (0.374 - 0.413)	8 - 9 (0.31 - 0.35)
Drive belt tension N (kg, lb)	Used belt	Tension of new belt	
		Limit	Tension after adjustment
Generator	226 (23, 51)	554.1-642.4 (56.5-65.5, 124.6-144.4)	671.8-760.0 (68.5-77.5, 151.0-170.9)
Power steering oil pump Supercharger	294 (30, 66)	730-818 (75.5-83.5, 166.5-184.1)	838-926 (85.5-94.5, 188.5-208.4)
Power steering oil pump	275 (28, 62)	554.1-642.4 (56.5-65.5, 124.6-144.4)	671.8-760.0 (68.5-77.5, 151.0-170.9)
Applied pressed force	N (kg, lb)	98 (10, 22)	
Radiator cap relief pressure	kPa (kg/cm ² , psi)	78 - 98 (0.8 - 1.0, 11 - 14)	
Cooling system leakage testing pressure	kPa (kg/cm ² , psi)	157 (1.6, 23)	
Compression pressure kPa (kg/cm ² , psi)/rpm	Standard	1,196 (12.2, 173)/300	
	Minimum	883 (9.0, 128)/300	
Tightening torque	N-m	kg-m	ft-lb
	Spark plug	20 - 29	2.0 - 3.0
Oil pan drain plug	29 - 39	3.0 - 4.0	22 - 29

FRONT WHEEL ALIGNMENT (Unladen*1)

		2WD		4WD		
Camber	Degree minute (Decimal degree)	Minimum	0°33' (0.05°)	0°06' (0.10°)		
		Nominal	0°33' (0.55°)	0°36' (0.60°)		
		Maximum	1°03' (1.05°)	1°06' (1.10°)		
		Left and right difference	45' (0.75°) or less	45' (0.75°) or less		
Caster	Degree minute (Decimal degree)	Minimum	2°04' (2.07°)	1°40' (1.67°)		
		Nominal	2°34' (2.57°)	2°10' (2.17°)		
		Maximum	3°04' (3.07°)	2°40' (2.67°)		
		Left and right difference	45' (0.75°) or less	45' (0.75°) or less		
Kingpin inclination	Degree minute (Decimal degree)	Minimum	10°23' (10.38°)	10°18' (10.30°)		
		Nominal	10°53' (10.88°)	10°48' (10.80°)		
		Maximum	11°23' (11.38°)	11°18' (11.30°)		
Total toe-in	Distance (A - B) mm (in)	Minimum	3' (0.12")	3' (0.12")		
		Nominal	4' (0.16")	4' (0.16")		
		Maximum	5' (0.20")	5' (0.20")		
	Angle (left plus right)	Minimum	15' (0.25°)	15' (0.25°)		
		Nominal	20' (0.33°)	20' (0.33°)		
	Maximum	25' (0.42°)	25' (0.42°)			
Wheel turning angle	Inside	Except P265/70R15	P265/70R15	Except P265/70R15	P265/70R15	
		Minimum	32°48' (32.80°)	30°48' (30.80°)	33°06' (33.10°)	31°00' (31.00°)
		Nominal	34°48' (34.80°)	32°48' (32.80°)	35°06' (35.10°)	33°00' (33.00°)
	Outside	Minimum	31°00' (31.00°)	28°42' (28.70°)	31°12' (31.20°)	29°00' (29.00°)
		Nominal	33°00' (33.00°)	30°42' (30.70°)	33°12' (33.20°)	31°00' (31.00°)
	Maximum	33°00' (33.00°)	30°42' (30.70°)	33°12' (33.20°)	31°00' (31.00°)*	

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

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

EQUIPPED WITH VG33ER ENGINE

BRAKE

Disc brake		Unit: mm (in)
Pad minimum thickness	2.0 (0.079)	
Rotor repair limit Runout	0.07 (0.0028)	
Minimum thickness	26.0 (1.024)	
Drum brake		
Lining minimum thickness	1.5 (0.059)	
Drum repair limit Maximum inner diameter	296.5 (11.67)	
Parking brake		
Number of notches*2	5 - 6	

*1 At pulling force: 196 N (20 kg, 44 lb)

FRONT WHEEL BEARING

Item	Model			
	2WD		4WD	
Lock nut tightening torque N • m (kg•m, ft-lb)	34 - 39 (3.5 - 4.0, 25 - 29)		—	
Preload (At hub bolt) N (kg, lb)	New seal	9.8 - 28.4 (1.0 - 2.9, 2.2 - 6.4)	Wheel bearing Tightening torque N • m (kg•m, ft-lb)	78 - 98 (8-10, 58 - 72)
			Retightening torque after loosening wheel bearing lock nut N•m (kg•m, ft-lb)	0.5 - 1.5 (0.05 - 0.15, 0.4 - 1.1)
	Used seal	9.8 - 23.5 (1.0 - 2.4, 2.2 - 5.3)	Axial end play mm (in)	0(0)
			Turning angle degree	15° - 30°
			Wheel bearing preload at wheel hub bolt N (kg, lb)	7.06 - 20.99 (0.72 - 2.14, 1.59 - 4.72)

REFILL CAPACITIES

		Unit	Liter	US measure
Fuel tank			73.5	19.4 gal
Coolant (with reservoir)		AT & MT	10.95	11-5/8 qt
Engine	Dry engine (engine overhaul)	With oil filter	3.3	3-1/2 qt
		Without oil filter	3.0	3-1/8 qt
			3.8	4 qt
Transmission	M/T	2WD	2.8	5-7/8 pt
		4WD	5.1	10-3/4 pt
	A/T	2WD	8.3	8-3/4 qt
		4WD	8.5	9 qt
Transfer		4WD	2.2	2-3/8 qt
Final drive	Rear	H233B	2.8	5-7/8 pt
	Front	R200A	1.75	3-3/4 pt
Manual steering system			0.62	1-3/8 pt
Power steering system			1.0 - 1.1	33.8 - 37.2 fl oz
Air conditioning system	Lubricant		0.2	6.8 fl oz
	Refrigerant *		0.6 - 0.7 kg	1.32 - 1.54 lb

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