

2004-2016



SERVICE MANUAL

TRX500FM1/FM2/FM5/FM6/FM7

TRX500FE1/FE2

TRX500FA5/FA6/FA7

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MEMO



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GENERAL INFORMATION

SERVICE RULES

1. Use Honda Genuine or Honda-recommended parts and lubricants or their equivalents. Parts that don't meet Honda's design specifications may cause damage to the vehicle.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Use only metric tools when servicing the vehicle. Metric bolts, nuts and screws are not interchangeable with English fasteners.
4. Install new gaskets, O-rings, cotter pins, and lock plates when reassembling.
5. When tightening bolts or nuts, begin with the larger diameter or inner bolt first. Then tighten to the specified torque diagonally in incremental steps unless a particular sequence is specified.
6. Clean parts in cleaning solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
7. After reassembly, check all parts for proper installation and operation.
8. Route all electrical wires as shown in the Cable & Harness Routing (page 1-26).
9. Do not bend or twist control cables. Damaged control cables will not operate smoothly and may stick or bind.
10. Do not tow your ATV behind a car or other vehicle.

ABBREVIATION

Throughout this manual, the following abbreviations are used to identify the respective parts or systems.

Abbrev. term	Full term
2WD	2 Wheel Drive
4WD	4 Wheel Drive
CKP sensor	Crankshaft Position sensor
DCT	Dual Clutch Transmission
DLC	Data Link Connector
DTC	Diagnostic Trouble Code
ECM (FM models)	Engine Control Module
ECT sensor	Engine Coolant Temperature sensor
ECU	Electric Control Unit
EEPROM	Electrically Erasable Programmable Read Only Memory
EPS	Electric Power Steering
ESP	Electric Shift Program
IACV	Idle Air Control Valve
IAT sensor	Intake Air Temperature sensor
LCD	Liquid Crystal Display
MAP sensor	Manifold Absolute Pressure sensor
MCS	Motorcycle Communication System
MIL	Malfunction Indicator Lamp
PCM (FE/FA models)	Powertrain Control Module
PGM-FI	Programmed Fuel Injection
SCS service connector	Service Check Short service connector
TP sensor	Throttle Position sensor
VS sensor	Vehicle Speed sensor

DESTINATION CODE

Throughout this manual, the following codes are used to identify individual types for each region.

DESTINATION CODE	REGION
AC	U.S.A.
CM	Canada

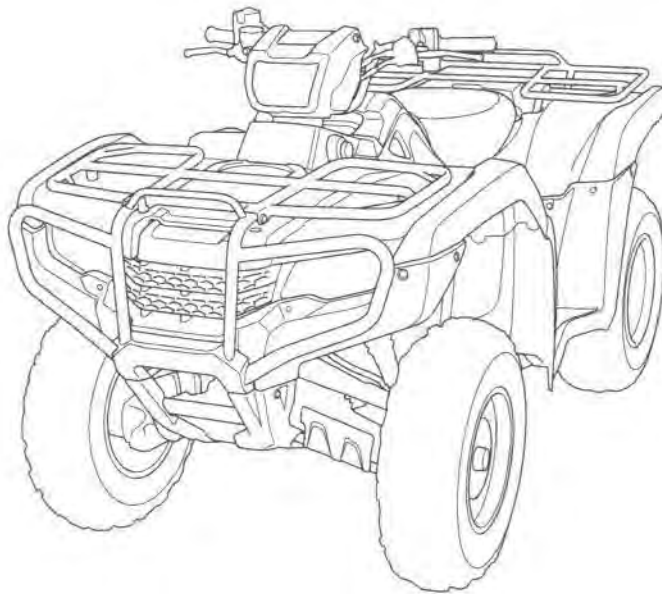
MODEL IDENTIFICATION

This manual covers 10 types of TRX500 models:

- FM1 – Left foot operated gearshift
- FM2 – Left foot operated gearshift/Electric Power Steering (EPS)
- FM5 – Left foot operated gearshift/Independent rear suspension
- FM6 – Left foot operated gearshift/Electric Power Steering (EPS)/Independent rear suspension
- FM7 – Left foot operated gearshift/Electric Power Steering (EPS)/Independent rear suspension/Aluminum wheel
- FE1 – Electric shift program (ESP)
- FE2 – Electric shift program (ESP)/Electric Power Steering (EPS)
- FA5 – Dual clutch transmission (DCT)/Independent rear suspension
- FA6 – Dual clutch transmission (DCT)/Electric Power Steering (EPS)/Independent rear suspension
- FA7 – Dual clutch transmission (DCT)/Electric Power Steering (EPS)/Independent rear suspension/Aluminum wheel

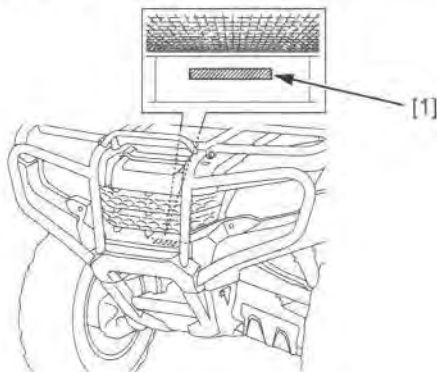
Be sure to refer to the procedure that pertains to the appropriate version of the TRX500.

'14 model shown:



SERIAL NUMBERS/LABELS

The Vehicle Identification Number (VIN) [1] is stamped on the front side of the frame through the front fender.



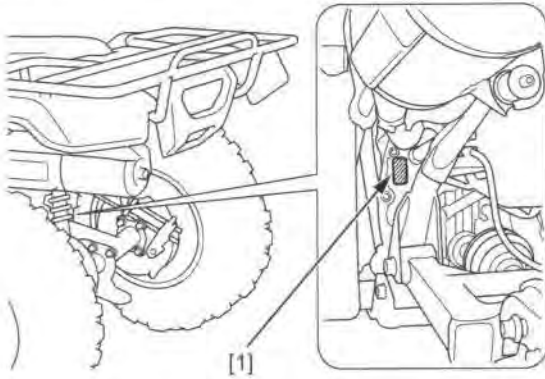
The throttle body identification number [1] is stamped on the lower side of the throttle body.



GENERAL INFORMATION

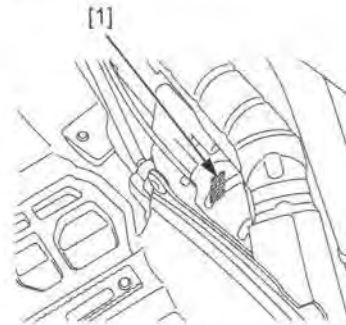
FM/FE models:

The engine serial number [1] is stamped on the left side of the rear crankcase.



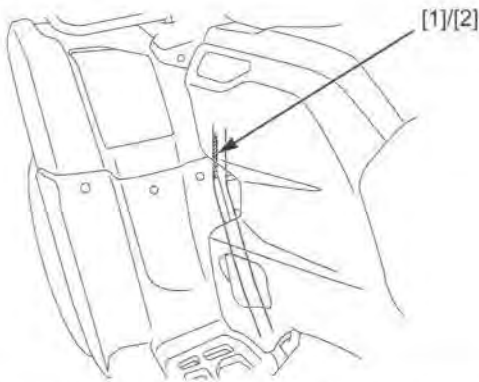
FA models:

The engine serial number [1] is stamped on the upper side of the rear crankcase.



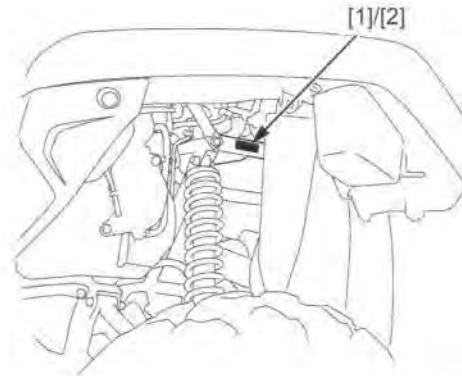
FM1/FM2/FE1/FE2:

The certification label [1] (U.S.A. type) or safety certification label [2] (Canada type) is attached on the left front frame down pipe.

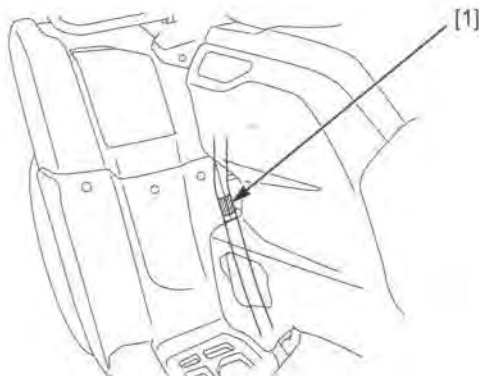


FM5/FM6/FM7/FA5/FA6/FA7:

The certification label [1] (U.S.A. type) or safety certification label [2] (Canada type) is attached on the left front frame pipe.



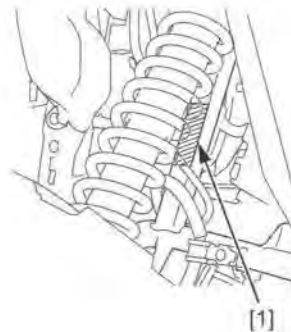
The color label [1] is attached on the left front frame down pipe. When ordering color-coded parts, always specify the designated color code.



The vehicle emission control information label [1] is attached on the left front frame pipe.

- U.S.A. and Canada type [1]
- Canada type [2]

U.S.A. and Canada type:



Canada type:



SPECIFICATIONS

GENERAL SPECIFICATIONS

DIMENSIONS		ITEM	SPECIFICATIONS
Overall length	FM1/FM2/FE1/FE2	2,103 mm (82.8 in)	
	FM5/FM6/FM7/FA5/FA6/FA7	2,147 mm (84.5 in)	
Overall width		1,205 mm (47.4 in)	
Overall height	FM1/FM2/FE1/FE2	1,219 mm (48.0 in)	
	FM5/FM6/FM7/FA5/FA6/FA7	1,235 mm (48.6 in)	
Wheelbase	FM1/FM2/FE1/FE2	1,268 mm (49.9 in)	
	FM5/FM6/FM7/FA5/FA6/FA7	1,292 mm (50.9 in)	
Front tread	FM1/FM2/FE1/FE2	910 mm (35.8 in)	
	FM5/FM6/FM7/FA5/FA6/FA7	920 mm (36.2 in)	
Rear tread	FM1/FM2/FE1/FE2	920 mm (36.2 in)	
	FM5/FM6/FM7/FA5/FA6/FA7	936 mm (36.9 in)	
Seat height	FM1/FM2/FE1/FE2	869 mm (34.2 in)	
	FM5/FM6/FM7/FA5/FA6/FA7	909 mm (35.8 in)	
Footpeg height	FM1/FM2/FE1/FE2	358 mm (14.1 in)	
	FM5/FM6/FM7/FA5/FA6/FA7	377 mm (14.8 in)	
Ground clearance	FM1/FM2/FE1/FE2	190 mm (7.5 in)	
	FM5/FM6/FM7/FA5/FA6/FA7	239 mm (9.4 in)	
Curb weight	FM1	AC: 286 kg (631 lbs) CM: 287 kg (633 lbs)	
	FE1	AC: 286 kg (631 lbs)	
	FM2	AC: 292 kg (644 lbs)	
		CM: 293 kg (646 lbs)	
	FE2	AC: 293 kg (646 lbs)	
		CM: 294 kg (648 lbs)	
	FM5	AC: 307 kg (677 lbs)	
		CM: 308 kg (679 lbs)	
	FM6	AC: 313 kg (690 lbs)	
		CM: 314 kg (692 lbs)	
	FM7	AC: 309 kg (681 lbs)	
		CM: 311 kg (686 lbs)	
	FA5	AC: 319 kg (703 lbs)	
	FA6	AC: 326 kg (719 lbs)	
CM: 327 kg (721 lbs)			
FA7	AC: 323 kg (712 lbs)		
	CM: 325 kg (716 lbs)		
Maximum weight capacity	FM1/FM2/FE1/FE2	250 kg (551 lbs)	
	FM5/FM6/FM7/FA5/FA6/FA7	260 kg (573 lbs)	

GENERAL INFORMATION

ITEM		SPECIFICATIONS		
FRAME	Frame type	Double cradle		
	Front suspension	Double wishbone		
	Front wheel travel	185 mm (7.3 in)		
	Front damper	Double tube		
	Rear suspension	FM1/FM2/FE1/FE2	Swingarm (trailing type)	
		FM5/FM6/FM7/FA5/FA6/FA7	Double wishbone	
	Rear wheel travel	FM1/FM2/FE1/FE2	185 mm (7.3 in)	
		FM5/FM6/FM7/FA5/FA6/FA7	215 mm (8.5 in)	
	Rear damper	Double tube		
	Front tire size	AT25 x 8-12 **		
	Rear tire size	AT25 x 10-12 **		
	Front rim size	12 x 6.0 AT		
	Rear rim size	12 x 7.5 AT		
	Front tire brand	FM1/FM2/FE1/FE2	M975 (MAXXIS)	
		FM5/FM6/FM7/FA5/FA6/FA7	MU25 (MAXXIS)	
	Rear tire brand	FM1/FM2/FE1/FE2	M978 (MAXXIS)	
		FM5/FM6/FM7/FA5/FA6/FA7	MU26 (MAXXIS)	
	Front brake		Hydraulic disc brake	
	Rear brake	FM1/FM2/FE1/FE2	Mechanical drum brake	
		FM5/FM6/FM7/FA5/FA6/FA7	Hydraulic disc brake	
	Caster angle	FM1/FM2/FE1/FE2	2°	
		FM5/FM6/FM7/FA5/FA6/FA7	1°	
	Trail length	FM1/FM2/FE1/FE2	6.0 mm (0.24 in)	
		FM5/FM6/FM7/FA5/FA6/FA7	- 1.0 mm (0.04 in)	
Front camber angle	FM1/FM2/FE1/FE2	0°		
	FM5/FM6/FM7/FA5/FA6/FA7	0.1°		
Rear camber angle	FM5/FM6/FM7/FA5/FA6/FA7	- 0.2°		
Fuel tank capacity		14.7 liters (3.88 US gal, 3.23 Imp gal)		
Fuel tank reserve capacity		4.9 liters (1.29 US gal, 1.08 Imp gal)		
ENGINE	Cylinder arrangement	Single cylinder, longitudinally installed		
	Bore and stroke	92.0 x 71.5 mm (3.62 x 2.81 in)		
	Displacement	475 cm ³ (29.0 cu-in)		
	Compression ratio	9.5:1		
	Valve train	OHV		
	Intake valve	opens: at 1 mm (0.04 in) lift	FM/FE models	9° BTDC
			FA models	5° BTDC
		closes: at 1 mm (0.04 in) lift	FM/FE models	46° ABDC
			FA models	50° ABDC
	Exhaust valve	opens: at 1 mm (0.04 in) lift	FM/FE models	46° BBDC
			FA models	42° BBDC
		closes: at 1 mm (0.04 in) lift	FM/FE models	4° ATDC
			FA models	8° ATDC
	Lubrication system		Forced pressure and wet sump	
	Oil pump type		Trochoid	
	Cooling system		Liquid cooled	
	Air filtration		Oiled double urethane foam	
Engine dry weight	FM1/FM2	51.4 kg (113.3 lbs)		
	FE1/FE2	52.4 kg (115.5 lbs)		
	FM5/FM6/ FM7	AC: 51.4 kg (113.3 lbs)		
		CM: 52.5 kg (115.7 lbs)		
	FA5	62.1 kg (136.9 lbs)		
	FA6/FA7	AC: 62.1 kg (136.9 lbs)		
CM: 63.2 kg (139.3 lbs)				
FUEL DELIVERY SYSTEM	Type	PGM-FI		
	Throttle bore	36 mm (1.4 in)		

GENERAL INFORMATION

ITEM		SPECIFICATIONS	
DRIVE TRAIN (FM/FE models)	Clutch system	Centrifugal and multi-plate, wet	
	Clutch operation system	Automatic	
	Transmission	Constant mesh, 5-speeds with reverse	
	Primary reduction	2.103 (61/29)	
	Secondary reduction	1.875 (30/16)	
	Final reduction	Front	3.231 (42/13)
		Rear	3.154 (41/13)
	Gear ratio	1st	4.230 (55/13)
		2nd	2.388 (43/18)
		3rd	1.608 (37/23)
		4th	1.178 (33/28)
		5th	0.848 (28/33)
		Reverse	5.743 (48/13 x 28/18)
Gearshift pattern	Pattern	R - N - 1 - 2 - 3 - 4 - 5	
	FM models	Left foot operated return system	
	FE models	Electric shift (left hand operated) return system	
DRIVE TRAIN (FA models)	Clutch system	Centrifugal and 2 multi-plate wet clutches	
	Clutch operation system	Automatic	
	Transmission	Automatic, 5-speeds with reverse	
	Primary reduction	2.680 (67/25)	
	Secondary reduction	1.520 (38/25)	
	Final reduction	Front	3.230 (42/13)
		Rear	3.153 (41/13)
	Transmission gear ratio	1st	3.058 (52/17)
		2nd	2.157 (41/19)
		3rd	1.588 (27/17)
		4th	1.181 (26/22)
		5th	0.848 (28/33)
		Reverse	3.996 (45/16 x 27/19)
	Transmission gearshift pattern	R - N - 1 - 2 - 3 - 4 - 5 Automatic and Electric shift (left hand operated) return system	
	Sub transmission gear ratio	L	2.187 (35/16)
D		1.520 (38/25)	
Sub transmission gearshift pattern	L - D Lever operated system		
ELECTRICAL	Ignition system	Full transistorized ignition	
	Starting system	AC	Electric starter motor
		CM	Electric starter motor and emergency recoil stater
	Charging system	Triple phase output alternator	
	Regulator/rectifier	FET shorted, triple phase full wave rectification	
	Lighting system	Battery	

PGM-FI SYSTEM SPECIFICATIONS

ITEM	SPECIFICATIONS
IAT sensor resistance (40°C/104°F)	2.2 - 2.7 kΩ
ECT sensor resistance (20°C/68°F)	1.0 - 1.3 kΩ
Fuel injector resistance (20°C/68°F)	11.1 - 12.3 Ω

IGNITION SYSTEM SPECIFICATIONS

ITEM	SPECIFICATIONS
Spark plug	BKR5E-11 (NGK), K16PR-U11 (DENSO)
Spark plug gap	1.0 - 1.1 mm (0.039 - 0.043 in)
Ignition coil primary peak voltage	100 V minimum
Ignition pulse generator peak voltage	0.7 V minimum
Ignition timing ("F" mark)	10° BTDC at idle

GENERAL INFORMATION

FUEL SYSTEM SPECIFICATIONS

ITEM	SPECIFICATIONS
Throttle body identification number	GQ3QA
Idle speed	1,400 ± 100 rpm
Throttle lever freeplay	3 – 8 mm (0.1 – 0.3 in)
Fuel pressure at idle	331 – 367 kPa (3.4 – 3.7 kgf/cm ² , 48 – 53 psi)
Fuel pump flow (at 12 V)	356 cm ³ (12.0 US oz, 12.5 Imp oz) minimum/10 seconds

COOLING SYSTEM SPECIFICATIONS

ITEM	SPECIFICATIONS	
Coolant capacity	Radiator and engine	1.54 liters (1.63 US qt, 1.36 Imp qt)
	Reserve tank	0.15 liter (0.16 US qt, 0.13 Imp qt)
Radiator cap relief pressure	108 – 137 kPa (1.1 – 1.4 kgf/cm ² , 16 – 20 psi)	
Thermostat	Begin to open	80 – 84°C (176 – 183°F)
	Fully open	95°C (203°F)
	Valve lift	8 mm (0.3 in) minimum at 95°C (203°F)
Recommended antifreeze	Pro Honda HP Coolant or an equivalent high quality ethylene glycol antifreeze containing corrosion protection inhibitors	
Standard coolant concentration	1:1 mixture with distilled water	

LUBRICATION SYSTEM SPECIFICATIONS

ITEM		STANDARD	SERVICE LIMIT
Engine oil capacity	FM/FE models	After draining	2.9 liters (3.1 US qt, 2.6 Imp qt)
		After draining/filter change	3.0 liters (3.2 US qt, 2.6 Imp qt)
		After disassembly	3.3 liters (3.5 US qt, 2.9 Imp qt)
	FA models	After draining	3.6 liters (3.8 US qt, 3.2 Imp qt)
		After draining/filter change	3.8 liters (4.0 US qt, 3.3 Imp qt)
		After disassembly	4.4 liters (4.6 US qt, 3.8 Imp qt)
Recommended engine oil		Pro Honda GN4 4-stroke oil (U.S.A. and Canada) or equivalent motorcycle oil API service classification: SG or higher (except oils labeled as energy conserving on the circular API service label) JASO T 903 standard: MA Viscosity: SAE 10W-30	–
Oil pressure at 5,000 min ⁻¹ (rpm) (80°C/176°F)		510 kPa (5.2 kgf/cm ² , 74 psi)	–
Oil pump	Tip clearance	0.15 (0.006)	0.20 (0.008)

Unit: mm (in)

CYLINDER HEAD/VALVE SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD		SERVICE LIMIT
Cylinder compression at 450 rpm		680 kPa (6.9 kgf/cm ² , 99 psi)		-
Valve clearance		IN	0.15 ± 0.02 (0.006 ± 0.001)	-
		EX	0.23 ± 0.02 (0.009 ± 0.001)	-
Valve, valve guide	Valve stem O.D.	IN	5.975 – 5.990 (0.2352 – 0.2358)	5.95 (0.234)
		EX	5.955 – 5.970 (0.2344 – 0.2350)	5.93 (0.233)
	Valve guide I.D.	IN/EX	6.000 – 6.012 (0.2362 – 0.2367)	6.02 (0.237)
	Valve guide projection above cylinder head	IN/EX	14.8 – 15.0 (0.58 – 0.59)	-
Valve seat width		IN/EX	1.2 (0.05)	1.5 (0.06)
Valve spring	Free length	Inner	42.94 (1.691)	42.08 (1.657)
		Outer	43.63 (1.718)	42.76 (1.683)
Rocker arm	Arm I.D.	IN/EX	12.000 – 12.018 (0.4724 – 0.4731)	12.05 (0.474)
	Shaft O.D.	IN/EX	11.966 – 11.984 (0.4711 – 0.4718)	-
Camshaft and cam follower	Cam lobe height	IN	35.9400 – 36.1800 (1.41496 – 1.42441)	35.74 (1.407)
		EX	35.6811 – 35.9211 (1.40476 – 1.41421)	35.48 (1.397)
	Cam follower O.D.	IN/EX	22.467 – 22.482 (0.8845 – 0.8851)	22.46 (0.884)
	Follower bore I.D.	IN/EX	22.510 – 22.526 (0.8862 – 0.8868)	22.54 (0.887)
Cylinder head warpage		-		0.10 (0.004)

CYLINDER/PISTON SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD		SERVICE LIMIT
Cylinder	I.D.	92.000 – 92.010 (3.6220 – 3.6224)		92.10 (3.626)
	Out-of-round	-		0.10 (0.004)
Piston, piston pin, piston ring	Piston O.D. at 15 (0.6) from bottom		91.970 – 91.990 (3.6209 – 3.6216)	91.90 (3.618)
	Piston pin hole I.D.		19.002 – 19.008 (0.7481 – 0.7483)	19.04 (0.750)
	Piston pin O.D.		18.994 – 19.000 (0.7478 – 0.7480)	18.96 (0.746)
	Piston ring end gap	Top	0.15 – 0.30 (0.006 – 0.012)	0.5 (0.02)
		Second	0.30 – 0.45 (0.012 – 0.018)	0.6 (0.02)
		Oil (side rail)	0.20 – 0.70 (0.008 – 0.028)	0.9 (0.04)
	Piston ring-to-ring groove clearance	Top	0.030 – 0.060 (0.0012 – 0.0024)	0.09 (0.004)
Second		0.030 – 0.060 (0.0012 – 0.0024)	0.09 (0.004)	
Connecting rod small end I.D.		19.020 – 19.041 (0.7488 – 0.7496)		19.07 (0.751)

CLUTCH/GEARSHIFT LINKAGE SPECIFICATIONS (FM/FE models)

Unit: mm (in)

ITEM		STANDARD		SERVICE LIMIT
Centrifugal clutch	Drum I.D.		150.0 – 150.2 (5.906 – 5.913)	150.4 (5.92)
	Weight lining thickness		2.0 (0.08)	1.3 (0.05)
	Clutch spring height		2.96 (0.117)	2.84 (0.112)
	Clutch weight spring free length		24.72 (0.973)	25.7 (1.01)
Change clutch	Spring free length	FM1/FM2	52.2 (2.06)	50.7 (2.00)
		FE1/FE2	46.8 (1.84)	45.3 (1.78)
	Disc thickness		2.62 – 2.78 (0.103 – 0.109)	2.3 (0.09)
	Plate warpage		-	0.20 (0.008)
	Outer I.D.		29.000 – 29.021 (1.1417 – 1.1426)	-
	Outer guide	I.D.	22.000 – 22.021 (0.8661 – 0.8670)	-
		O.D.	28.959 – 28.980 (1.1401 – 1.1409)	-
Mainshaft O.D. at clutch outer guide		21.967 – 21.980 (0.8648 – 0.8654)	-	
Primary drive gear	Gear I.D.		29.000 – 29.021 (1.1417 – 1.1426)	29.05 (1.144)
	Crankshaft O.D. at drive gear		28.959 – 28.980 (1.1401 – 1.1409)	28.93 (1.139)

GENERAL INFORMATION

DUAL CLUTCH TRANSMISSION SPECIFICATIONS (FA models)

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Centrifugal clutch	Drum I.D.	140.0 – 140.2 (5.512 – 5.520)	140.4 (5.53)
	Weight lining thickness	2.0 (0.08)	1.3 (0.05)
	Clutch spring height	3.8 (0.15)	3.68 (0.145)
	Clutch weight spring free length	24.65 (0.970)	25.6 (1.01)
Oil pressure at 5,000 rpm (80°C/176°F)	Line	510 kPa (5.2 kgf/cm ² , 74 psi)	–
	Shift clutch	510 kPa (5.2 kgf/cm ² , 74 psi)	–
Shift clutch	Initial clearance	1st	0.70 – 0.90 (0.028 – 0.035)
		2nd	0.65 – 0.95 (0.026 – 0.037)
	Disc thickness	1.88 – 2.00 (0.074 – 0.079)	worn out lining
	Plate thickness	1.55 – 1.65 (0.061 – 0.065)	discoloration
Primary drive gear	Gear I.D.	29.000 – 29.021 (1.1417 – 1.1426)	–
	Crankshaft O.D. at drive gear	28.959 – 28.980 (1.1401 – 1.1409)	–

SUB-TRANSMISSION SPECIFICATIONS (FA models)

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Shift fork	Claw thickness	4.93 – 5.00 (0.194 – 0.197)	–
Transmission	Gear I.D.	Low, drive	23.000 – 23.021 (0.9055 – 0.9063)
		Low, drive	22.959 – 22.980 (0.9039 – 0.9047)
	Gear bushing O.D.	Low, drive	20.000 – 20.021 (0.7874 – 0.7882)
	Sub-transmission shaft O.D.	at Low, drive	19.959 – 19.980 (0.7858 – 0.7866)

ALTERNATOR/STARTER CLUTCH SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Starter driven gear boss	O.D.	51.705 – 51.718 (2.0356 – 2.0361)	–
	I.D.	31.946 – 31.962 (1.2577 – 1.2583)	–
Crankshaft O.D. at starter driven gear		31.884 – 31.900 (1.2553 – 1.2559)	31.85 (1.254)

CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER SPECIFICATIONS

FM/FE models:

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Reverse selector lever freeplay		2 – 4 (0.1 – 0.2)	–
Shift fork	I.D.	Front, rear	13.000 – 13.021 (0.5118 – 0.5126)
		Center	13.000 – 13.018 (0.5118 – 0.5125)
	Claw thickness	4.93 – 5.00 (0.194 – 0.197)	–
	Shaft O.D.	12.966 – 12.984 (0.5105 – 0.5112)	–
Transmission	Gear I.D.	M3	25.000 – 25.021 (0.9843 – 0.9851)
		M5	20.000 – 20.021 (0.7874 – 0.7882)
		C1, C2, C4, CR	28.020 – 28.041 (1.1031 – 1.1040)
		Reverse idle	13.000 – 13.021 (0.5118 – 0.5126)
		–	–
	Gear bushing O.D.	M3	24.959 – 24.980 (0.9826 – 0.9835)
		M5	19.966 – 19.984 (0.7861 – 0.7868)
		C2	27.984 – 28.005 (1.1017 – 1.1026)
		C1, C4, CR	27.979 – 28.000 (1.1015 – 1.1024)
	Gear bushing I.D.	M3	22.000 – 22.021 (0.8661 – 0.8670)
		M5	17.016 – 17.034 (0.6699 – 0.6706)
		C4	25.000 – 25.021 (0.9843 – 0.9851)
	Mainshaft O.D.	at M3	21.959 – 21.980 (0.8645 – 0.8654)
at M5		16.976 – 16.987 (0.6683 – 0.6688)	
Countershaft O.D.	at C4	24.959 – 24.980 (0.9826 – 0.9835)	
Reverse idle shaft O.D.	–	12.966 – 12.984 (0.5105 – 0.5112)	
Crankshaft	Runout	–	0.15 (0.006)
	Big end side clearance	0.05 – 0.65 (0.002 – 0.026)	0.8 (0.03)
	Big end radial clearance	0.006 – 0.018 (0.0002 – 0.0007)	0.05 (0.002)
	–	–	–

FA models:

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Reverse selector lever freeplay		2 – 4 (0.1 – 0.2)	–
Shift fork	I.D.	13.000 – 13.018 (0.5118 – 0.5125)	–
	Claw thickness	5.93 – 6.00 (0.233 – 0.236)	–
	Shaft O.D.	12.966 – 12.984 (0.5105 – 0.5112)	–
Transmission	Gear I.D.	M1	20.000 – 20.021 (0.7874 – 0.7882)
		M3	25.000 – 25.021 (0.9843 – 0.9851)
		C2, C4, CR	28.020 – 28.041 (1.1031 – 1.1040)
		C5	31.000 – 31.025 (1.2205 – 1.2215)
		Reverse idle	13.000 – 13.018 (0.5118 – 0.5125)
	Gear bushing O.D.	M1	19.966 – 19.984 (0.7861 – 0.7868)
		M3	24.959 – 24.980 (0.9826 – 0.9835)
		C2/CR	27.979 – 28.000 (1.1015 – 1.1024)
		C4	27.984 – 28.005 (1.1017 – 1.1026)
		C5	30.950 – 30.975 (1.2185 – 1.2195)
	Gear bushing I.D.	M1	17.000 – 17.018 (0.6692 – 0.6700)
		M3	22.000 – 22.021 (0.8661 – 0.8670)
		C2/CR	25.000 – 25.013 (0.9843 – 0.9848)
		C5	28.000 – 28.021 (1.1024 – 1.1032)
	Mainshaft O.D.	at M1	16.976 – 16.987 (0.6683 – 0.6688)
		at M3	21.959 – 21.980 (0.8645 – 0.8654)
Countershaft O.D.	at C2/CR	24.959 – 24.980 (0.9826 – 0.9835)	
	at C5	27.959 – 27.980 (1.1007 – 1.1016)	
Reverse idle shaft O.D.		12.966 – 12.984 (0.5105 – 0.5112)	–
Crankshaft	Runout	–	0.15 (0.006)
	Big end side clearance	0.05 – 0.65 (0.002 – 0.026)	0.8 (0.03)
	Big end radial clearance	0.006 – 0.018 (0.0002 – 0.0007)	0.05 (0.002)

FRONT WHEEL/SUSPENSION/STEERING SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Cold tire pressure	Standard	30 kPa (0.30 kgf/cm ² , 4.4 psi)	–
	With cargo	30 kPa (0.30 kgf/cm ² , 4.4 psi)	–
Tie-rod distance between the ball joints	FM/FE models	387.9 (15.27)	–
	FA models	388.4 (15.29)	–
Toe	Toe-out: 25 ± 15 (1.0 ± 0.6)		–

REAR WHEEL/SUSPENSION SPECIFICATIONS

ITEM		STANDARD	SERVICE LIMIT
Cold tire pressure	Standard	30 kPa (0.30 kgf/cm ² , 4.4 psi)	–
	With cargo	30 kPa (0.30 kgf/cm ² , 4.4 psi)	–

GENERAL INFORMATION

BRAKE SYSTEM SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Front brake	Recommended brake fluid	Honda DOT 4 brake fluid	-
	Disc thickness	3.3 - 3.7 (0.13 - 0.15)	3.0 (0.12)
	Disc runout	-	0.30 (0.012)
	Master cylinder I.D.	14.000 - 14.043 (0.5512 - 0.5529)	-
	Master piston O.D.	13.957 - 13.984 (0.5495 - 0.5506)	-
	Caliper cylinder I.D.	32.030 - 32.080 (1.2610 - 1.2630)	-
	Caliper piston O.D.	31.948 - 31.998 (1.2578 - 1.2598)	-
Rear brake (FM1/FM2/ FE1/FE2)	Rear (parking) brake lever freeplay	15 - 20 (0.6 - 0.8)	-
	Rear brake pedal freeplay	15 - 20 (0.6 - 0.8)	-
	Rear brake drum I.D.	160.0 - 160.2 (6.30 - 6.31)	161.0 (6.34)
Rear brake (FM5/FM6/ FM7/FA5/FA6/ FA7)	Rear (parking) brake lever freeplay	25 - 30 (1.0 - 1.2)	-
	Recommended brake fluid	Honda DOT 4 brake fluid	-
	Disc thickness	7.3 - 7.7 (0.29 - 0.30)	6.0 (0.24)
	Disc runout	-	0.30 (0.012)
	Master cylinder I.D.	15.870 - 15.913 (0.6248 - 0.6265)	-
	Master piston O.D.	15.827 - 15.854 (0.6231 - 0.6242)	-
	Caliper cylinder I.D.	30.230 - 30.280 (1.1902 - 1.1921)	-
	Caliper piston O.D.	30.165 - 30.198 (1.1876 - 1.1889)	-

FRONT DRIVING MECHANISM SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Front final drive	Oil capacity	After draining	325 cm ³ (11.0 US oz, 11.4 Imp oz)
		After disassembly	370 cm ³ (12.5 US oz, 13.0 Imp oz)
	Recommended oil	Honda shaft drive oil or equivalent hypoid gear oil, SAE 80W90	-
	Gear backlash	0.05 - 0.25 (0.002 - 0.010)	0.4 (0.02)
	Backlash difference	-	0.2 (0.01)
	Slip torque	14 - 17 N·m (1.45 - 1.75 kgf·m, 10 - 13 lbf·ft)	12 N·m (1.2 kgf·m, 9 lbf·ft)
	Face cam-to-housing distance	3.3 - 3.7 (0.13 - 0.15)	3.3 (0.13)
	Differential ring gear depth	6.55 - 6.65 (0.258 - 0.262)	6.55 (0.258)
	Cone spring free height	2.8 (0.11)	2.6 (0.10)

REAR DRIVING MECHANISM SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Axle runout (FM1/FM2/FE1/FE2)		-	3.0 (0.12)
Rear final drive	Oil capacity (FM1/FM2/ FE1/FE2)	After draining	85 cm ³ (2.9 US oz, 3.0 Imp oz)
		After disassembly	100 cm ³ (3.4 US oz, 3.5 Imp oz)
	Oil capacity (FM5/FM6/ FM7/FA5/FA6/ FA7)	After draining	125 cm ³ (4.2 US oz, 4.4 Imp oz)
		After disassembly	145 cm ³ (4.9 US oz, 5.5 Imp oz)
	Recommended oil	Honda shaft drive oil or equivalent hypoid gear oil, SAE 80W90	-
	Gear backlash	0.05 - 0.25 (0.002 - 0.010)	0.4 (0.02)
	Backlash difference	-	0.2 (0.01)
Ring gear-to-stop pin clearance	0.3 - 0.6 (0.01 - 0.02)	-	

BATTERY/CHARGING SYSTEM SPECIFICATIONS

ITEM		SPECIFICATIONS	
Battery	Type	GYZ16H	
	Capacity	12 V – 16 Ah (10 HR)/12 V – 16.8Ah (20 HR)	
	Current leakage	FM1/FM2/FE1/FE2	1 mA max.
		FM5/FM6/FM7/FA5/FA6/FA7	0.31 mA max.
	Voltage (20°C/68°F)	Fully charged	13.0 – 13.2 V
		Needs charging	Below 12.4 V
	Charging current	Normal	1.6 A x 5 – 10 h
Quick		8.0 A x 1.0 h	
Alternator	Capacity	FM/FE models	0.481 kW/5,000 rpm
		FA models	0.595 kW/5,000 rpm
	Charging coil resistance (20°C/68°F)		0.1 – 1.0 Ω

LIGHTS/METERS/SWITCHES SPECIFICATIONS

ITEM		SPECIFICATIONS	
Bulbs	Headlight (high/low beam)	12 V - 35/35 W x 2	
	Assist headlight	FM1/FM2/FE1/FE2	12 V - 45 W
		FM5/FM6/FM7/FA5/FA6/FA7	12 V - 50 W
	Brake/taillight	LED	
	Neutral indicator	LED	
	Reverse indicator	LED	
	High coolant temperature indicator	LED	
	MIL	LED	
	Meter light	LED	
	EPS indicator (FM2/FM6/FM7/FE2/FA6/FA7)	LED	
	Differential lock indicator	LED	
Fuse	Main fuse	40 A	
	Sub-fuse	FM1/FM2/FM5	20 A x 4, 10 A x 2
		FE/FA models	30 A x 1, 20 A x 3, 10 A x 2
		FM6/FM7	20 A x 3, 10 A x 2
EPS fuse	FM2/FE2/FM6/FM7/FA6/FA7	40 A	

TORQUE VALUES

STANDARD TORQUE VALUES

FASTENER TYPE	TORQUE N·m (kgf·m, lbf·ft)	FASTENER TYPE	TORQUE N·m (kgf·m, lbf·ft)
5 mm bolt and nut	5.2 (0.5, 3.8)	5 mm screw	4.2 (0.4, 3.1)
6 mm bolt and nut (Include SH flange bolt)	10 (1.0, 7)	6 mm screw	9 (0.9, 6.6)
		6 mm flange bolt and nut (Include 8 mm head, large flange bolt)	12 (1.2, 9)
8 mm bolt and nut	22 (2.2, 16)	8 mm flange bolt and nut	27 (2.8, 20)
10 mm bolt and nut	34 (3.5, 25)	10 mm flange bolt and nut	39 (4.0, 29)
12 mm bolt and nut	54 (5.5, 40)		

GENERAL INFORMATION

ENGINE & FRAME TORQUE VALUES

- Torque specifications listed below are for important fasteners.
- Others should be tightened to standard torque values listed above.

FRAME/BODY PANELS/EXHAUST SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Step bracket nut	8	8	32 (3.3, 24)	
Muffler cover bolt	2	6	12 (1.2, 9)	
Exhaust pipe cover band screw	2	—	2.0 (0.2, 1.5)	
Exhaust pipe cover rear band screw (FM5/FM6/FM7/FA5/FA6/FA7)	1	—	3.2 (0.3, 2.4)	
Front muffler cover band screw (FM1/FM2/FE1/FE2)	1	—	2.0 (0.2, 1.5)	
Front muffler cover band screw (FM5/FM6/FM7/FA5/FA6/FA7)	1	—	3.2 (0.3, 2.4)	
Muffler cover band screw	2	—	3.2 (0.3, 2.4)	
Exhaust pipe stud bolt	2	8	6 (0.6, 4.4)	See page 2-13

MAINTENANCE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Spark plug	1	14	22 (2.2, 16)	
Valve adjusting screw lock nut	2	6	17 (1.7, 13)	
Valve adjusting hole cap	2	36	12 (1.2, 9)	
Timing hole cap	1	14	10 (1.0, 7)	
Engine oil drain bolt	1	12	25 (2.5, 18)	
Rear final gear case oil check bolt (FM1/FM2/FE1/FE2)	1	8	12 (1.2, 9)	
Rear final gear case oil filler cap	1	30	12 (1.2, 9)	
Rear final gear case oil drain bolt	1	8	12 (1.2, 9)	
Front final gear case oil filler cap	1	30	12 (1.2, 9)	
Front final gear case oil drain bolt	1	8	12 (1.2, 9)	
Range select cable lock nut (FA5/ FA6/FA7)	2	14	26 (2.7, 19)	
Front master cylinder reservoir cap screw	2	4	2.0 (0.2, 1.5)	
Rear brake master cylinder push rod joint lock nut (FM5/FM6/FM7/FA5/ FA6/FA7)	1	8	17 (1.7, 13)	
Tie-rod lock nut (knuckle side)	2	12	54 (5.5, 40)	See page 3-31
Tie-rod lock nut (steering arm side)	2	12	54 (5.5, 40)	Left hand threads. See page 3-31

PGM-FI SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Sensor unit torx screw (T25)	3	5	3.4 (0.3, 2.5)	
ECT sensor	1	10	12 (1.2, 9)	
Bank angle sensor mounting bolt	2	6	10 (1.0, 7)	
O ₂ sensor	1	12	24.5 (2.5, 18)	

IGNITION SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Timing hole cap	1	14	10 (1.0, 7)	

ELECTRIC STARTER

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Starter motor case bolt	2	5	4.9 (0.5, 3.6)	
Negative brush set screw	1	5	3.7 (0.4, 2.7)	

FUEL SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Harness clip stay screw	1	5	3.4 (0.3, 2.5)	
Fuel hose clamp stay screw	1	5	3.4 (0.3, 2.5)	
Insulator band screw (Cylinder head side)	1	5	–	See page 7-21
Insulator band screw (Throttle body side)	1	5	–	See page 7-22
Throttle drum cover screw	1	4	1.8 (0.2, 1.3)	
IACV torx screw (T20)	2	4	2.1 (0.2, 1.5)	
Fuel injector mounting bolt	2	5	5.1 (0.5, 3.8)	

COOLING SYSTEM

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Water hose band screw	8	–	–	See page 8-8
Cooling fan nut	1	5	2.7 (0.3, 2.0)	Apply locking agent to the threads.
Fan motor bolt	3	5	5.2 (0.5, 3.8)	
Fan motor stay bolt	3	6	8.4 (0.9, 6.2)	

CYLINDER HEAD/VALVE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Cylinder head nut	4	10	48 (4.9, 35)	Apply engine oil to the threads and seating surface.
Upper engine hanger nut (frame side)	1	10	63 (6.4, 46)	
Upper engine hanger bolt (engine side)	2	8	32 (3.3, 24)	
Cam chain tensioner pivot bolt	1	6	12 (1.2, 9)	Apply locking agent to the threads. Coating width: 8.0 ± 1.0 mm (0.31 ± 0.04 in) except 2.0 ± 1.0 mm (0.08 ± 0.04 in) from tip
Spark plug	1	14	22 (2.2, 16)	
ECT sensor	1	10	12 (1.2, 9)	

CYLINDER/PISTON

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Cylinder stud bolt	4	10	12 (1.2, 9)	See page 11-5

GENERAL INFORMATION

CLUTCH/GEARSHIFT LINKAGE (FM/FE models)

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Centrifugal clutch lock nut	1	20	118 (12.0, 87)	Lock nut: replace with a new one. Apply engine oil to the threads and seating surface. Stake.
Change clutch lock nut	1	18	108 (11.0, 80)	Lock nut: replace with a new one. Apply engine oil to the threads and seating surface. Stake.
Clutch spring bolt	4	6	13 (1.3, 10)	
Gearshift spindle return spring pin	1	8	22 (2.2, 16)	Apply locking agent to the threads. Coating width: 6.5 ± 1.0 mm (0.26 ± 0.04 in) except 3.0 – 4.0 mm (0.12 – 0.16 in) from tip
Gearshift cam bolt	1	6	16 (1.6, 12)	Apply locking agent to the threads. Coating width: 6.5 ± 1.0 mm (0.26 ± 0.04 in) except 3.0 – 4.0 mm (0.12 – 0.16 in) from tip
Shift drum stopper arm pivot bolt	1	6	12 (1.2, 9)	Apply locking agent to the threads. Coating width: 8.0 ± 1.0 mm (0.31 ± 0.04 in) except 2.0 ± 1.0 mm (0.08 ± 0.04 in) from tip
Gearshift spindle A stopper bolt (FM models)	1	8	27 (2.8, 20)	Apply locking agent to the threads. Coating width: 6.5 ± 1.0 mm (0.26 ± 0.04 in) except 6.0 – 8.0 mm (0.24 – 0.31 in) from tip

DUAL CLUTCH TRANSMISSION (FA models)

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Centrifugal clutch lock nut	1	20	118 (12.0, 87)	Lock nut: replace with a new one. Apply engine oil to the threads. Stake.
Oil feed pipe setting cap	1	24	21 (2.1, 15)	
Orifice relief valve socket bolt	1	10	34 (3.5, 25)	Do not remove unless necessary.
Sealing bolt	1	8	16 (1.6, 12)	Do not remove unless necessary.
Gear shift spindle return spring pin	1	8	22 (2.2, 16)	Apply locking agent to the threads. Coating width: 6.5 ± 1.0 mm (0.26 ± 0.04 in) except 3.0 – 4.0 mm (0.12 – 0.16 in) from tip
Shift clutch lock nut	1	18	108 (11.0, 80)	Lock nut: replace with a new one. Apply engine oil to the threads and seating surface. Stake.
Shift drum stopper arm pivot bolt	1	6	12 (1.2, 9)	Apply locking agent to the threads. Coating width: 8.0 ± 1.0 mm (0.31 ± 0.04 in) except 2.0 ± 1.0 mm (0.08 ± 0.04 in) from tip
Shift drum center bolt	1	8	23 (2.3, 17)	Apply locking agent to the threads. Coating width: 6.5 ± 1.0 mm (0.26 ± 0.04 in) except 3.0 – 4.0 mm (0.12 – 0.16 in) from tip
Shift drum guide plate bolt	2	6	12 (1.2, 9)	Apply locking agent to the threads. Coating width: 6.5 ± 1.0 mm (0.26 ± 0.04 in) except 3.0 – 4.0 mm (0.12 – 0.16 in) from tip
Shift spindle angle sensor socket bolt	2	5	6 (0.6, 4.4)	Apply locking agent to the threads. Coating width: 5.0 ± 1.0 mm (0.2 ± 0.04 in) except 1.0 – 2.0 mm (0.04 – 0.08 in) from tip

GENERAL INFORMATION

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Shift drum position switch wire clamp bolt	2	6	12 (1.2, 9)	Apply locking agent to the threads. Coating width: 6.5 ± 1.0 mm (0.26 ± 0.04 in) except 3.0 – 4.0 mm (0.12 – 0.16 in) from tip
Shift drum position switch retaining bolt	1	6	12 (1.2, 9)	Apply locking agent to the threads. Coating width: 6.5 ± 1.0 mm (0.26 ± 0.04 in) except 1.0 – 2.0 mm (0.04 – 0.08 in) from tip
EOT sensor	1	10	18 (1.8, 13)	
Reverse switch	1	10	13 (1.3, 10)	
Rear VS sensor mounting bolt	1	6	10 (1.0, 7)	

SUB-TRANSMISSION (FA models)

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Rear sub-frame lower mounting nut	2	12	130 (13.3, 96)	Lock nut: replace with a new one.
Rear sub-frame rear mounting nut	1	12	130 (13.3, 96)	Lock nut: replace with a new one.
Range select lever pivot nut	1	8	21 (2.1, 15)	
Range select arm socket bolt	1	6	12 (1.2, 9)	
Range select gate special bolt	2	6	12 (1.2, 9)	
Setting cap	1	18	18 (1.8, 13)	
Shift arm pinch bolt	1	6	16 (1.6, 12)	

ALTERNATOR/STARTER CLUTCH

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Starter clutch bolt (T40)	6	8	37 (3.8, 27)	Apply locking agent to the threads. Coating width: 6.5 ± 1.0 mm (0.26 ± 0.04 in) except 3.0 – 4.0 mm (0.12 – 0.16 in) from tip
Flywheel bolt (U.S.A. type)	1	12	108 (11.0, 80)	Apply engine oil to the threads and seating surface.
Flywheel/driven pulley bolt (Canada type)	1	12	108 (11.0, 80)	Apply engine oil to the threads and seating surface.
CKP sensor bolt	2	5	6 (0.6, 4.4)	Apply locking agent to the threads. Coating width: 6.0 ± 1.0 mm (0.24 ± 0.04 in) except 1.0 – 3.0 mm (0.04 – 0.12 in) from tip
Stator mounting bolt (FM/FE models)	4	6	12 (1.2, 9)	
Stator mounting bolt (FA models)	4	6	10 (1.0, 7)	

CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Shift drum bearing set plate (FA models)	2	6	12 (1.2, 9)	Apply locking agent to the threads. Coating width: 5.0 ± 1.0 mm (0.2 ± 0.04 in) except 1.0 – 3.0 mm (0.04 – 0.12 in) from tip

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