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## TECHNICAL DATA

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## 0. MEASUREMENTS

Item		Specification
Overall length	mm (in)	4,290 (168.9)
Overall width	mm (in)	1,690 (66.5)
Overall height	mm (in)	1,265 (49.8)
Wheelbase	mm (in)	2,430 (95.7)
Tread	mm (in)	Front
		Rear
		1,450 (57.1)
		1,440 (56.7)

## 1. ENGINE

Engine model			RE 13B				
Item			RE 13B				
Type			Rotary engine				
Displacement			654 x 2 (40.0 x 2)				
Number of rotors and arrangement			2 rotors, longitudinal				
Combustion chamber type			Bath tub				
Compression ratio			9.4 : 1				
Port timing	Intake	Open	Primary	32°ATDC			
			Secondary	32°ATDC			
			Auxiliary	45°ATDC			
		Close	Primary	40°ABDC			
			Secondary	30°ABDC			
			Auxiliary	80°ABDC			
	Exhaust	Open	75°BBDC				
		Close	48°ATDC				
Compression pressure			Limit	588 (6.0, 85.2)—250			
kPa (kg/cm <sup>2</sup> , psi)—rpm			Limit of difference between chambers	147 (1.5, 21.3)—250			
Side housing (Front, intermediate and rear housing)			Distortion limit	mm (in)	0.04 (0.0016)		
			Side seal wear limit	mm (in)	0.10 (0.0039)		
			Side seal wear limit, overlapping oil seal wear	mm (in)	0.01 (0.0004)		
			Side seal wear limit, outside oil seal wear	mm (in)	0.10 (0.0039)		
			Oil seal wear limit	mm (in)	0.02 (0.0008)		
Rotor housing			Width	mm (in)	79.970 ~ 80.010 (3.1485 ~ 3.1500)		
			Difference limit of width	mm (in)	0.06 (0.0024)		
Rotor			Width (Rand)	mm (in)	79.80 ~ 79.85 (3.142 ~ 3.144)		
			Clearance of side hous- ing and rotor	mm (in)	Standard	0.12 ~ 0.21 (0.0047 ~ 0.0083)	
				mm (in)	Limit	0.10 (0.0039)	
			Diameter of corner seal groove	mm (in)	11.000 ~ 11.018 (0.4331 ~ 0.04338)		
			Width of side seal groove	mm (in)	0.714 ~ 0.739 (0.0281 ~ 0.0291)		
Width of apex seal groove	mm (in)	1.995 ~ 2.012 (0.0785 ~ 0.0792)					
Apex seal and spring			Width	mm (in)	1.910 ~ 1.939 (0.0752 ~ 0.0763)		
			Hight (upper and lower)	mm (in)	Standard	8.0 (0.315)	
					Limit	6.5 (0.256)	
			Clearance of apex seal and rotor groove	mm (in)	Standard	0.062 ~ 0.102 (0.0024 ~ 0.0040)	
					Limit	0.15 (0.0059)	
			Warpage limit (With two pieces)			0.06 (0.0024)	
			Spring free height	mm	Long	Standard	6.25 (0.246)
						Limit	4.6 (0.181)
Short	Standard	3.3 (0.130)					
	Limit	1.7 (0.067)					

Item		Engine model	RE 13B
Side seal and spring	Thickness	mm (in)	0.661 ~ 0.686 (0.0260 ~ 0.0270)
	Clearance of side seal and rotor groove mm (in)	Standard	0.028 ~ 0.078 (0.0011 ~ 0.0031)
		Limit	0.10 (0.0039)
	Height	mm (in)	2.85 ~ 3.15 (0.1122 ~ 0.1240)
	Protrusion limit	mm (in)	0.50 (0.020)
Clearance of side seal and corner seal mm (in)	Standard	0.05 ~ 0.15 (0.0020 ~ 0.0059)	
	Limit	0.40 (0.016)	
Corner seal and spring	Outer diameter	mm (in)	10.990 ~ 11.014 (0.4327 ~ 0.4336)
	Height	mm (in)	6.8 ~ 7.0 (0.268 ~ 0.276)
	Protrusion limit	mm (in)	0.50 (0.020)
Rotor oil seal and spring	Height	mm (in)	5.6 ~ 5.8 (0.220 ~ 0.228)
	Width limit of oil seal lip	mm (in)	0.50 (0.020)
	Protrusion limit	mm (in)	0.50 (0.020)
Main bearing	Inner diameter	mm (in)	43.025 ~ 43.050 (1.6939 ~ 1.6949)
Rotor bearing	Inner diameter	mm (in)	74.025 ~ 74.050 (2.9144 ~ 2.9154)
Eccentric shaft	Eccentricity of rotor	mm (in)	15 (0.59)
	Run-out limit	mm (in)	0.12 (0.0047)
	End-play mm (in)	Standard	0.040 ~ 0.070 (0.0016 ~ 0.0028)
		Limit	0.09 (0.0035)
	Main journal diameter	mm (in)	42.970 ~ 42.985 (1.6918 ~ 1.6923)
	Clearance of main journal mm (in)	Standard	0.04 ~ 0.08 (0.0016 ~ 0.0031)
		Limit	0.10 (0.0039)
Rotor journal diameter	mm (in)	73.970 ~ 73.985 (2.9122 ~ 2.9128)	
Clearance of rotor journal mm (in)	Standard	0.04 ~ 0.08 (0.0016 ~ 0.0031)	
	Limit	0.10 (0.0039)	
Drive belt deflection mm (in)-N(kg, lb)	Alternator		13 ~ 17 (0.51 ~ 0.67)
	Air pump		11 ~ 13 (0.43 ~ 0.51)
	A/C compressor		6 ~ 8 (0.24 ~ 0.32)
	P/S pump		11 ~ 13 (0.43 ~ 0.51)

TIGHTENING TORQUE	Nm	m-kg	ft-lb
Front stationary gear plate	16 ~ 23	1.6 ~ 2.3	12 ~ 17
Rear stationary gear	16 ~ 23	1.6 ~ 2.3	12 ~ 17
Tension bolt	31 ~ 39	3.2 ~ 4.0	23 ~ 29
Flywheel lock bolt (M/T)	390 ~ 490	40 ~ 50	290 ~ 360
Counter weight lock bolt (A/T)	390 ~ 490	40 ~ 50	290 ~ 360
Drive gear (A/T)	43 ~ 61	4.4 ~ 6.2	32 ~ 45
Oil pump	7 ~ 10	0.7 ~ 1.0	5.1 ~ 7.2
Oil pump driven sprocket	31 ~ 46	3.2 ~ 4.7	23 ~ 34
Front cover	16 ~ 23	1.6 ~ 2.3	12 ~ 17
Eccentric shaft lock bolt	108 ~ 132	11 ~ 13.5	80 ~ 98
Oil pressure control plug	39 ~ 49	4.0 ~ 5.0	29 ~ 36
Pressure regulator valve	88 ~ 108	9.0 ~ 11	65 ~ 80
Oil strainer	7 ~ 10	0.7 ~ 1.0	5.1 ~ 7.2
Oil pan	8 ~ 11	0.8 ~ 1.1	5.8 ~ 8.0
Right engine bracket	63 ~ 93	6.4 ~ 9.5	46 ~ 69
EGR valve	19 ~ 25	1.9 ~ 2.6	14 ~ 19
Vacuum piping	19 ~ 25	1.9 ~ 2.6	14 ~ 19
Water pump	18 ~ 26	1.8 ~ 2.7	13 ~ 20
Eccentric shaft pulley	8 ~ 11	0.8 ~ 1.1	5.8 ~ 8.0
Metering oil pump	8 ~ 11	0.8 ~ 1.1	5.8 ~ 8.0
Intake manifold	19 ~ 25	1.9 ~ 2.6	14 ~ 19
Exhaust manifold	31 ~ 46	3.2 ~ 4.7	23 ~ 34
Exhaust manifold absorber	8 ~ 11	0.8 ~ 1.1	5.8 ~ 8.0

TIGHTENING TORQUE		N-m	m-kg	ft-lb
Primary fuel injector bracket		19~25	1.9~2.6	14~19
Throttle and dynamic chamber	To intake manifold, and with side stay	19~25	1.9~2.6	14~19
	With rear stay	19~25	1.9~2.6	14~19
Housing oil nozzle		16~23	1.6~2.3	12~17
Manifold oil nozzle		16~23	1.6~2.3	12~17
Metering oil tube (to pump)		10~14	1.0~1.4	7.2~10.1
Clutch disc cover		18~26	1.8~2.7	13~20
Alternator strap		16~23	1.6~2.3	12~17
Alternator	Long bolt	37~52	3.8~5.3	27~38
	Short bolt	24~30	2.4~3.1	17~22
Air pump bracket		19~25	1.9~2.6	14~19
Air pump strap		19~25	1.9~2.6	14~19
Air pump	Long bolt	16~23	1.6~2.3	12~17
	Short bolt	24~30	2.4~3.1	17~22
Crank angle sensor		8~11	0.8~1.1	5.8~8.0
Oil filter body		8~11	0.8~1.1	5.8~8.0
Spark plug		13~18	1.3~1.8	9.4~13
Left engine bracket		55~80	5.6~8.2	41~59
A/C compressor, P/S pump bracket	M10	31~46	3.2~4.7	23~34
	M12	55~80	5.6~8.2	41~59

## 2. LUBRICATION SYSTEM

Item		Engine model	RE 13B
Oil pump	Type		Forced-fed
	Lobe clearance of outer rotor and inner rotor mm (in)	Standard	0.03~0.12 (0.0012~0.0047)
		Limit	0.15 (0.0059)
	Clearance of outer rotor and pump body mm (in)	Standard	0.20~0.25 (0.0079~0.098)
		Limit	0.30 (0.0118)
	End float mm (in)	Standard	0.03~0.13 (0.0012~0.0051)
Limit		0.15 (0.0059)	
Pressure control valve	Relief pressure kPa (kg/cm <sup>2</sup> , psi)		1080 (11.0, 156)
Oil cooler	Type		Air cooled, with bypass valve
	Relief temperature °C (°F)		60~65 (140~149) or below
	Relief pressure dif. kPa (kg/cm <sup>2</sup> , psi)		349 (3.56, 50) at 60°C (140°F)
Regulator valve	Relief pressure kPa (kg/cm <sup>2</sup> , psi)		490 (5.0, 71)
Oil filter	Type		Full flow, paper element
	Relief pressure dif. kPa (kg/cm <sup>2</sup> , psi)		98 (1.0, 14)
Eccentric shaft bypass valve	Relief temperature °C (°F)		60 (140) or below
Metering oil pump	Rod end clearance mm (in)		0~1 (0~0.039)
	Oil discharge (for one nozzle) cc (cu in)/2,000 rpm/5 min		0.17~0.25 (0.01~0.02)
Engine oil	Capacity liters (US qt, Imp qt)	Total (dry engine)	5.8 (6.1, 5.1)
		Oil pan	4.4 (4.7, 3.9)
		Oil filter	0.3 (0.32, 0.26)
	Classification		API service "Fuel efficient" SF
	-10°C (15°F) or over		20W-40, 20W-50
	-25~30°C (-10~85°F)		10W-30
	-25°C (-10°F) or over		10W-40, 10W-50
0°C (32°F) or below		5W-30	

TIGHTENING TORQUE		N-m	m-kg	ft-lb
Oil filter			By hand	
Oil pump		7~10	0.7~1.0	5.1~7.2
Oil pressure gauge		11~16	1.1~1.6	8~12
Metering oil pump		8~11	0.8~1.1	5.8~8.0
Housing oil nozzle		16~23	1.6~2.3	12~17
Manifold oil nozzle		16~23	1.6~2.3	12~17
Metering oil tube (to pump)		10~14	1.0~1.4	7.2~10.1
Oil cooler		7~10	0.7~1.0	5.1~7.2
Oil cooler inlet pipe	To front cover	44~54	4.5~5.5	33~40
	To oil cooler	44~55	4.5~5.6	33~41
Oil cooler outlet pipe	To oil cooler	54~69	5.5~7.0	40~51
	To rear housing	54~78	5.5~8.0	40~58
Oil pressure control valve		39~49	4.0~5.0	29~36

3. COOLING SYSTEM

Item		Engine model	RE 13B		
Cooling method			Water cooled, forced circulation		
Water pump	Type		Centrifugal impeller		
	Pulley ratio (Speed)		1 : 1.23		
Thermostat	Type		Wax, bottom bypass		
	Opening temperature °C (°F)		80.5~83.5 (177~183)		
	Full open temperature °C(°F)		95 (203)		
	Full open lift mm (in)		8~10 (0.315~0.394)		
Radiator	Type		Corrugated fin		
Coolant filler cap	Relief pressure kPa (kg/cm <sup>2</sup> , psi)		73~103 (0.75~1.05, 10.7 14.9)		
Cooling fan	Cooling fan		Thermo-modulated		
	Number of blades		8		
	Outer diameter mm (in)		390 (15.35)		
Electrical fan	Type		Electrical		
	Capacity W		90		
	Number of blades		5		
	Outer diameter mm (in)		255 (10.04)		
Fan belt	Deflection at 98N (10 kg, 22 lb) mm (in)	For alternator	13~17 (0.51~0.67)		
		For air pump	11~13 (0.43~0.51)		
Coolant	Capacity liters (US qt, Imp qt)		7.3 (7.7, 6.4)		
Anti-freeze solution	Mixture		Mixture percentage %		Specific gravity at 20°C (68°F)
	Protection		Water	Solution	
	Above -4°C (25°)		80	20	1.028
	Above -16°C (3°)		65	35	1.054
	Above -26°C (-15°F)		55	45	1.066
Above -40°C (-40°)		45	55	1.078	

TIGHTENING TORQUE		N-m	m-kg	ft-lb
Water pump		18~26	1.8~2.7	13~20
Water pump shaft housing		20~23	2.0~2.3	14~17
Thermostat cover		16~23	1.6~2.3	12~17
Water thermo-switch		20~25	2.0~2.5	14.5~18.1
Cooling fan		8~11	0.8~1.1	5.8~8.0
Temperature gauge unit		7~8	0.7~0.8	5.1~5.8
Coolant level sensor		1.5~3.0	0.15~0.30	1.1~2.2
Radiator switch		6~12	0.6~1.2	4.3~8.7

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TIGHTENING TORQUE	N-m	m-kg	ft-lb
Electrical fan	8~12	0.8~1.2	5.8~8.7
Radiator	16~21	1.6~2.1	12~15

## 4. FUEL SYSTEM

Item	Specification	
Fuel tank capacity liter (US gal, Imp. gal)	63 (16.6, 13.9)	
Fuel filter	Type Nylon 6—164 and 45 mesh	
Fuel pump	Type Motor	
	Fuel pressure kPa (kg/cm <sup>2</sup> , psi)	441~488 (4.50~5.99, 63.99~85.18)
	Feeding capacity cc/min. (US qt./min., lim., qt./min)	1300 (1.41, 1.17)
Pressure regulator	Type Diaphragm	
	Fuel pressure kPa (kg/cm <sup>2</sup> , psi)	200~260 (2.04~2.65, 29.00—37.68)
Throttle chamber	Type Horizontal-draft (2 stage, 3 barrel)	
Throttle diameter	Primary mm (in)	45 (1.772)
	Secondary mm (in)	45 (1.772) x 2
Idle speed	rpm	730~770 (with BAC valve)
Air cleaner element	Long life dry	
Sub-zero starting assist fluid	Anti freeze 90% Water 10%	

TIGHTENING TORQUE	N-m (m-kg ft-lb)
Intake manifold	19~26 (1.95~2.65, 14~19)
Exhaust manifold	32~47 (3.26~4.79, 23~34)

## 5. ENGINE ELECTRICAL SYSTEM

Item	Engine model	13B		
<b>Charging system</b>				
Battery	Type	Maintenance free, 50D20L, 65D23L (For Federal and Canada)		
	Voltage	V 12		
	Capacity	Ah 55 (65D23L) 50 (50D20L)		
	Specific gravity at 20°C (68°F)	Recharge at Fully charged	1.220 (50D29L) 1.230 (65D23L) 1.280	
	Charging current	A	Max. 5	
	Alternator	Type	A/C type	
Voltage-capacity		V-A	12—70	
Pulley ratio			1 : 2.08	
No-load test		Voltage	V	13.5
		Current	A	20 55 66
		Speed	rpm	1,300 2,500 5,000
Load test		Current	A	Min. 55
		Speed	rpm	2,500
Regulated voltage		Alternator (Engine) speed rpm		5,000
		In no-load	V	14.4~15.0
Brush	Number		2	
	Length mm (in)	Standard	16.5 (0.650)	
		Limit	8 (0.315)	
	Spring force	N(kg, lb)	2.9~4.3 (0.3~0.44, 0.66~0.968)	

Item		Engine model	13B	
<b>Starting system</b>				
Starter	Type	Coaxial reduction		
	Voltage	V	12	
	Output	kW	1.2 (M/T) 2.0 (A/T)	
	Free running test	Voltage	V	11
		Current	A	Max. 90
		Speed	rpm	Min. 3,000
	Lock test	Voltage	V	4
		Current	A	Min. 780 (M/T) Min. 980 (A/T)
		Torque N·m (m·kg, ft·lb)	Min. 17.6 (1.79, 13.0) (M/T), Min. 22.5 (2.29, 16.6) (A/T)	
	Brush	Number	4	
		Length mm (in)	Standard	17.5 (0.689)
			Limit	10.0 (0.394)
	Spring force	N (kg, lb)	13.7 ~ 23.5 (1.4 ~ 2.4, 3.08 ~ 5.28)	
	Mica depth mm (in)	Standard	0.5 ~ 0.8 (0.02 ~ 0.031)	
Limit		0.2 (0.08)		
Pinion gap (magnetic clutch engaged)	mm (in)	0.5 ~ 2.0 (0.02 ~ 0.08)		
Operation of magnetic switch	Max. 8V			
<b>Ignition system</b>				
Ignition timing	Leading	ATDC	5°	
	Trailing	ATDC	20°	
Timing mark location	Eccentric shaft pulley			
Spark plug	Type	DENSO	Leading : S-29A Trailing : S-31A	
		NGK	Leading : SD10A Trailing : SD11A	
	Gap	mm (in)	2.0 (0.08)	
Ignition coil	Resistance	Primary Ω	0.2 ~ 1.0	
High-tension lead	Resistance perlm. (3.3 ft)	Ω	16,000/m	
Crank angle	G ① — G ②	Ω	110 ~ 210	
sensor resistance	Ne ① — Ne ②	Ω	110 ~ 210	

Item		Engine model	13B
V belt	Deflection	New	12 ~ 13 (0.472 ~ 0.512)
		Old	13 ~ 14 (0.512 ~ 0.551)

TIGHTENING TORQUE	N·m	m·kg	ft·lb
Spark plug	13 ~ 18	1.3 ~ 1.8	9.4 ~ 13
Starter (Bolt)	37.2 ~ 62.7	3.8 ~ 6.4	27 ~ 46
B terminal	9.8 ~ 11.2	1.0 ~ 1.2	7.2 ~ 8.7
Alternator (long bolt)	37.3 ~ 62.8	3.8 ~ 6.4	27.5 ~ 46.3

## 6. CLUTCH

Item	Specification	
Clutch pedal	Free play (at pedal pad)	mm (in) 0.6 ~ 3.0 (0.02 ~ 0.12)
	Engagement height (from floor)	mm (in) More than 82 (3.23)
Master cylinder	Bore	mm (in) 15.87 (0.6248)
	Clearance between piston and bore	
	Standard	mm (in) 0.032 ~ 0.102 (0.0013 ~ 0.0040)
	Limit	mm (in) 0.15 (0.0059)



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Item		Specification
Release cylinder	Bore	
	Clearance between piston and bore	
	Standard mm (in)	0.040 ~ 0.125 (0.0016 ~ 0.0049)
	Limit mm (in)	0.15 (0.0059)
Clutch disc	Thickness limit mm (in)	7.0 (0.2756)
	Rivet depth limit mm (in)	0.3 (0.0118)
	Lateral run-out limit mm (in)	1.0 (0.0394)
Diaphragm	Finger out of alignment	
	Limit mm (in)	1.0 (0.0394)
	Finger groove wear depth	
	Limit mm (in)	1.0 (0.0394)

## 7A. MANUAL TRANSMISSION

Item		Specification
Gear ratio	First	3.475
	Second	2.002
	Third	1.366
	Fourth	1.000
	Fifth	0.711
	Reverse	3.493
Oil capacity	liters (US qt, Imp. qt.)	2.0 (2.1, 1.8)
Main shaft	Max. permissible run-out mm (in)	0.03 (0.0012)
	Clearance between main shaft and gear (or bush) Wear limit mm (in)	0.15 (0.0059)
Reverse idle gear	Clearance between reverse idle gear bush and shaft Wear limit mm (in)	0.15 (0.0059)
Shift fork and rod	Clearance between shift fork and clutch sleeve Wear limit mm (in)	0.5 (0.0197)
	Clearance between shift rod gate and control lever Wear limit mm (in)	0.8 (0.0315)
Synchronizer ring	Clearance between synchronizer ring and side of gear when fitted	
	Standard mm (in)	1.5 (0.0591)
	Wear limit mm (in)	0.8 (0.0315)
Lubricant	Above -18°C (0°F)	A.P.I. Service GL-4 or GL-5 SAE90
	Below -18°C (0°F)	A.P.I. Service GL-4 or GL-5 SAE80W
	All seasons	A.P.I. Service GL-4 or GL-5 SAE80W-90

TIGHTENING TORQUE		N-m	m-kg	ft-lb
Plug for interlock pin hole		10 ~ 15	1.0 ~ 1.5	7 ~ 11
Control lever to control rod end		8 ~ 12	0.8 ~ 1.2	6 ~ 9
Shift fork set bolts		12 ~ 16	1.2 ~ 1.6	9 ~ 12
Shift rod end		8 ~ 12	0.8 ~ 1.2	6 ~ 9
Main shaft lock nut		130 ~ 210	13.3 ~ 21.4	94 ~ 152
Top switch		25 ~ 35	2.5 ~ 3.6	18 ~ 25
Overdrive switch		25 ~ 35	2.5 ~ 3.6	18 ~ 25
Back-up light switch		25 ~ 35	2.5 ~ 3.6	18 ~ 25
Speedometer driven gear		8 ~ 11	0.8 ~ 1.1	6 ~ 8
Bearing cover	6T bolts	16 ~ 23	1.6 ~ 2.3	12 ~ 17
	8T bolts	18 ~ 27	1.8 ~ 2.8	13 ~ 20

7B AUTOMATIC TRANSMISSION

Item		Model	L4N71B				
Gear ratio	First		2.841				
	Second		1.541				
	Third		1.000				
	OD (Fourth)		0.720				
	Reverse		2.400				
Fluid	Type		M2C33F (Type F)				
	Capacity	liters (US qt, Imp. qt)	7.5 (7.9, 6.6)				
Oil pump	Body clearance	Standard	0.02 ~ 0.04 (0.00078 ~ 0.0015)				
		Limit	0.08 (0.0031)				
	Tip clearance	Standard	0.14 ~ 0.21 (0.0055 ~ 0.0082)				
		Limit	0.25 (0.0098)				
	Side clearance	Standard	0.05 ~ 0.20 (0.0019 ~ 0.0078)				
		Limit	0.25 (0.0098)				
	Seal ring and groove clearance	Standard	0.04 ~ 0.16 (0.0015 ~ 0.0062)				
		Limit	0.40 (0.015)				
Direct clutch	Total clearance	mm (in)	1.6 ~ 1.8 (0.062 ~ 0.070)				
	Retaining plate size	mm (in)	7.2 (0.28), 7.4 (0.29), 7.6 (0.30), 7.8 (0.307), 8.0 (0.315), 8.2 (0.32)				
	End play	mm (in)	0.5 ~ 0.8 (0.019 ~ 0.031)				
	Thrust washer size	mm (in)	1.3 (0.051), 1.5 (0.059), 1.7 (0.066), 1.9 (0.074), 2.1 (0.082), 2.3 (0.090), 2.5 (0.098), 2.7 (0.106)				
Front clutch	Total clearance	mm (in)	1.6 ~ 1.8 (0.062 ~ 0.070)				
	Retaining plate size	mm (in)	7.2 (0.28), 7.4 (0.29), 7.6 (0.30), 7.8 (0.307), 8.0 (0.315), 8.2 (0.32)				
	End play	mm (in)	0.5 ~ 0.8 (0.019 ~ 0.031)				
	Thrust washer size	mm (in)	1.3 (0.051), 1.5 (0.059), 1.7 (0.066), 1.9 (0.074), 2.1 (0.082), 2.3 (0.090), 2.5 (0.098), 2.7 (0.106)				
Rear clutch	Total clearance	mm (in)	0.8 ~ 1.5 (0.031 ~ 0.059)				
Low and reverse brake	Total clearance	mm (in)	0.8 ~ 1.05 (0.031 ~ 0.041)				
	Retaining plate variation size	mm (in)	7.2 (0.28), 7.4 (0.29), 7.6 (0.30) 7.8 (0.307), 8.0 (0.315), 8.2 (0.32)				
		mm (in)	0.25 ~ 0.50 (0.0098 ~ 0.019)				
OD gear train	Bearing race variation size	mm (in)	1.2 (0.047), 1.4 (0.055), 1.6 (0.062), 1.8 (0.070), 2.0 (0.078), 2.2 (0.086)				
		mm (in)	0.25 ~ 0.50 (0.0098 ~ 0.019)				
Gear assembly	Bearing race variation size	mm (in)	1.2 (0.047), 1.4 (0.055), 1.6 (0.062), 1.8 (0.070), 2.0 (0.078), 2.2 (0.086)				
		mm (in)	0.2 ~ 0.7 (0.0078 ~ 0.0275)				
	Planetary play limit	Standard Limit	0.8 (0.0314)				
Valve spring			Outer dia. mm (in)	Free length mm (in)	No. of Coils	Wire dia. mm (in)	Color
Control valve body	Pressure regulator		11.7 (0.46)	43.0 (1.69)	15.0	1.2 (0.047)	—
	1-2 Shift		6.55 (0.26)	32.0 (1.26)	18.7	0.55 (0.022)	—
	2-3 Shift		6.9 (0.27)	39.0 (1.55)	19.1	0.7 (0.028)	—
	3-4 Shift		7.3 (0.29)	25.0 (0.98)	13.0	0.9 (0.035)	—
	Throttle back up		7.3 (0.29)	31.8 (1.25)	15.5	0.8 (0.031)	—
	Solenoid down shift		5.55 (0.22)	21.9 (0.86)	14.0	0.55 (0.022)	—
	2nd Lock		5.55 (0.22)	33.5 (1.32)	18.0	0.55 (0.022)	—
	Throttle relief		6.5 (0.26)	26.8 (1.06)	16.0	0.90 (0.035)	—
	Orifice check		5.0 (0.20)	15.5 (0.61)	12.0	0.23 (0.0091)	—
3-2 Timing		7.5 (0.30)	23.2 (0.91)	10.8	0.80 (0.031)	—	

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	Outer dia. mm (in)	Free length mm (in)	No. of Coils	Wire dia. mm (in)	Color
OD control	4.95 (0.19)	23.0 (0.91)	14.8	0.65 (0.026)	—
Lock up control	5.5 (0.22)	24.7 (0.97)	15.5	0.7 (0.03)	—
Accumulator piston	14.85 (0.58)	39.7 (1.56)	9.3	1.8 (0.07)	—
2nd Band servo	Return	—	38.7 (1.52)	—	3.5 (0.14)
	Cushion	14.9 (0.59)	42.8 (1.69)	11.2	2.3 (0.09)
Primary governor valve	8.75 (0.34)	21.8 (0.86)	7.0	0.45 (0.018)	—
Secondary governor valve	9.2 (0.36)	25.2 (0.99)	7.5	0.7 (0.028)	—

Shift speed		
Throttle condition (Manifold vacuum)	Gear	Vehicle speed km/h (mph)
Fully opened 0 ~ 100 mm-Hg 0 ~ 3.94 in-Hg	D <sub>1</sub> → D <sub>2</sub>	54 ~ 61 (34 ~ 38)
	D <sub>2</sub> → D <sub>3</sub>	99 ~ 106 (62 ~ 66)
	D <sub>3</sub> → D <sub>2</sub>	91 ~ 98 (57 ~ 61)
	D <sub>2</sub> → D <sub>1</sub>	40 ~ 46 (25 ~ 29)
Half throttle 190 ~ 210 mm-Hg 7.41 ~ 8.19 in-Hg	D <sub>1</sub> → D <sub>2</sub>	11 ~ 18 (7 ~ 11)
	D <sub>2</sub> → D <sub>3</sub>	30 ~ 37 (19 ~ 23)
	D <sub>3</sub> → D <sub>4</sub>	48 ~ 54 (30 ~ 34)
Fully closed	D <sub>2</sub> → D <sub>1</sub>	11 ~ 18 (7 ~ 11)
	1 <sub>2</sub> → 1 <sub>1</sub>	38 ~ 45 (24 ~ 28)
Lock up on		71 ~ 77 (44 ~ 48)
Governor pressure		
Vehicle speed	km/h (mph)	Pressure kPa (kg/cm <sup>2</sup> , psi)
30 (19)		69 ~ 128 (0.7 ~ 1.3, 10 ~ 18)
55 (34)		147 ~ 226 (1.5 ~ 2.3, 21 ~ 33)
85 (53)		196 ~ 392 (2.0 ~ 4.0, 28 ~ 57)
Line pressure		
Shift position	Engine speed	Pressure kPa (kg/cm <sup>2</sup> , psi)
R	Idle	392 ~ 686 (4.0 ~ 7.0, 57 ~ 100)
	Stall	1,569 ~ 1,863 (16.0 ~ 19.0, 229 ~ 272)
D	Idle	294 ~ 392 (3.0 ~ 4.0, 43 ~ 57)
	Stall	883 ~ 1,079 (9.0 ~ 11.0, 129 ~ 157)
2	Idle	785 ~ 1,177 (8.0 ~ 12.0, 114 ~ 171)
	Stall	785 ~ 1,177 (8.0 ~ 12.0, 114 ~ 171)
Engine stall revolution	rpm	2,000 ~ 2,300
Vacuum diaphragm	Clearance between body and throttle valve mm (in)	Adjusting rod length mm (in)
	Below 25.65 (1.0099)	29.0 (1.14)
	25.65 ~ 26.15 (1.0099 ~ 1.0295)	29.5 (1.16)
	26.15 ~ 26.65 (1.0295 ~ 1.0492)	30.0 (1.18)
	26.65 ~ 27.15 (1.0492 ~ 1.0689)	30.5 (1.20)
	27.15 (1.0689) or over	31.0 (1.22)

TIGHTENING TORQUE	N-m	m-kg	ft-lb
Drive plate to engine	81 ~ 93	8.3 ~ 9.5	60 ~ 69
Drive plate to torque converter	34	3.5	25
Converter housing to engine	31 ~ 46	3.2 ~ 4.7	23 ~ 34
Converter housing to transmission case	44 ~ 54	4.5 ~ 5.5	33 ~ 40
Extension housing to transmission case	20 ~ 25	2.0 ~ 2.5	15 ~ 18
Oil pan	4.9 ~ 6.9	0.5 ~ 0.7	3.6 ~ 5.1
Piston stem (when adjusting band brake)	12 ~ 15	1.2 ~ 1.5	8.7 ~ 11
Piston stem lock nut	15 ~ 39	1.5 ~ 4.0	11 ~ 29
Servo piston retainer	6.9 ~ 8.8	0.7 ~ 0.9	5.1 ~ 6.5

TIGHTENING TORQUE	N-m	m-kg	ft-lb
One-way clutch inner race	13~18	1.3~1.8	9.4~13.0
Control valve body to transmission case	5.4~7.4	0.55~0.75	4.0~5.4
Lower valve body to upper valve body	2.5~3.4	0.25~0.35	1.8~2.5
Side plate to control valve body	2.5~3.4	0.25~0.35	1.8~2.5
Reamer bolt of control valve body	4.9~6.9	0.5~0.7	3.6~5.1
Oil strainer	2.9~3.9	0.3~0.4	2.1~2.9
Governor valve body to oil distributor	4.9~6.9	0.5~0.7	3.6~5.1
Oil pump cover	5.9~8.8	0.6~0.9	4.3~6.5
Drum support	5.9~8.8	0.6~0.9	4.3~6.5
Inhibitor switch	4.9~6.9	0.5~0.7	3.6~5.1
Manual shaft lock nut	29~39	3.0~4.0	22~29
Oil cooler pipe set bolt	24~35	2.4~3.6	17~26
Oil pressure test plug	4.9~9.8	0.5~1.0	3.6~7.2
Actuator for parking rod to extension housing	7.8~11	0.8~1.1	5.8~8.0

## 8. PROPELLER SHAFT

Item	Specification
Max. permissible runout mm (in)	0.4 (0.016)
Max. permissible imbalance at 4,000 rpm cm-gr (in oz.)	M/T 10 (0.14)
	A/T 15 (0.21)
Universal joint journal swinging torque N.m (cm-kg, in-lb)	0.3~9.8 (3~10, 26~8.6)

TIGHTENING TORQUE	N-m	m-kg	ft-lb
Propeller shaft to companion flange	49~59	5.0~6.0	36~43

## 9. REAR AXLE

Item	Specification	
Reduction ratio M/T (A/T)	4.100 (3.909)	
Backlash of ring gear and pinion mm (in)	0.09~0.11 (0.0035~0.0043)	
Pinion bearing preload (without pinion oil seal) N-m (in-lb)	0.9~1.4 (7.8~12.2)	
Backlash at side gear and pinion gear mm (in)	0~0.1 (0~0.0039)	
Rear wheel bearing end play mm (in)	0~0.1 (0~0.0039)	
Lubricant	Standard diff. Above -18°C (0°F)	A.P.I. Service GL-5 SAE90
	Standard diff. Below -18°C (0°F)	A.P.I. Service GL-5 SAE80W
	Limited slip diff.	A.P.I. Service GL-5 SAE90 (Special Lubricant For Limited Slip Differentials)
Oil capacity	Standard diff. liters (US qt, Imp. qt)	1.3 (1.4, 1.1)
	Limited slip diff. liters (US qt, Imp. qt)	1.3 (1.4, 1.1)
"L" (case spread) mm (in)	185.43~185.50 (7.3004~7.3033)	

TIGHTENING TORQUE	N-m	m-kg	ft-lb
Rear gear	69~83	7.0~8.5	51~61
Differential side bearing caps	37~52	3.8~5.3	27~38
Companion flange to pinion	128~177	13.0~18.0	94~130
Differential carrier and case	23~26	2.3~2.7	17~20
Differential carrier mounting	88~105	9.0~10.7	65~77

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TIGHTENING TORQUE	N-m	m-kg	ft-lb
Differential member	74 ~ 93	7.5 ~ 9.5	54 ~ 69
Sub link	74 ~ 93	7.5 ~ 9.5	54 ~ 69
Driveshaft (differential side)	54 ~ 64	5.5 ~ 6.5	40 ~ 47

## 10A. MANUAL STEERING

Item	Specification
Type	Rack and pinion
Gear ratio	$\infty$ (infinite)
Free play of steering wheel (Turning direction) Standard	5 ~ 20 (0.2 ~ 0.8)
Steering wheel effort (Front wheel alignment) N(kg, lb)	5 ~ 8 (0.5 ~ 0.8; 1 ~ 2)
Toe-in mm (in)	3 ± 3 (0.12 ± 0.12)
Camber angle	0°20'
Caster angle	4°40'
King-pin angle	13°45'
Trail mm (in)	14.3 (0.52)
Backlash between rack and pinion	0
Pinion preload (spring scale) OZ (g)	3.5 ~ 10.6 (100 ~ 300)

TIGHTENING TORQUE	N-m	m-kg	ft-lb
Steering wheel nut	39 ~ 49	4.0 ~ 5.0	29 ~ 36
Gear housing to frame	31 ~ 46	3.2 ~ 4.7	23 ~ 34
Tie-rod end to lower arm	29 ~ 44	3.0 ~ 4.5	22 ~ 33
Tie-rod to rack	69 ~ 98	7 ~ 10	51 ~ 72
Pinion lock nut	39 ~ 59	4.0 ~ 6.0	29 ~ 43
Adjust cover lock nut	39 ~ 59	4.0 ~ 6.0	29 ~ 43

## 10B. POWER STEERING

Item	Specification
Type	Rack and pinion
Reduction ratio	$\infty$ (infinite)
Steering wheel effort	Vehicle speed 0 km/h (0 mph) N (kg, lb) 13.7 ~ 20.6 (1.4 ~ 2.1, 3.1 ~ 4.6) Vehicle speed 45 km/h (30 mph) N (kg, lb) 22 (2.2, 4.8) min.
Pinion rotation torque (spring gauge reading) g (oz)	700 ~ 1,300 (24.7 ~ 45.9)
Fluid	ATF TYPE F (M2C33-F)

TIGHTENING TORQUE	N-m	m-kg	ft-lb
Steering wheel nut	39 ~ 49	4.0 ~ 5.0	29 ~ 36
Gear housing to frame	31 ~ 46	3.2 ~ 4.7	23 ~ 34
Tie-rod end to lower arm	29 ~ 44	3.0 ~ 4.5	22 ~ 33
Tie-rod to rack	69 ~ 98	7 ~ 10	51 ~ 72
Pinion lock nut	20 ~ 29	2.0 ~ 3.0	14 ~ 22
Oil pump body to bracket	31 ~ 36	3.2 ~ 3.7	23 ~ 27
Oil pump pulley and shaft	39 ~ 49	4.0 ~ 5.0	29 ~ 36
Suction pipe	14 ~ 18	1.4 ~ 1.8	10 ~ 13
Rear cover	31 ~ 42	3.2 ~ 4.3	23 ~ 31

TIGHTENING TORQUE	N-m	m-kg	ft-lb
Tank reservoir	14 ~ 18	1.4 ~ 1.8	10 ~ 13
Pressure switch	20 ~ 39	2.0 ~ 3.0	15 ~ 22
Step valve	69 ~ 79	7.0 ~ 8.0	51 ~ 58

## 11. BRAKING SYSTEM

Item	Specification	
Brake pedal	Height mm (in) 205 <sup>+5</sup> / <sub>0</sub> (0.07 <sup>+0.2</sup> / <sub>0</sub> )	
	Free play mm (in) 4 ~ 7 (0.16 ~ 0.28)	
	Reserve travel mm (in) (Clearance when pedal is depressed) More than 100 (3.94)	
Master cylinder	Type Tandem	
	Bore mm (in) 22.22 (0.875)	
	Fluid type FMVSS116, DOT-3 or 4, or SAEJ1703a	
Front brake	Type Disc	
	Thickness of pad mm (in)	Standard 11.0 (0.43)
		Limit 3.0 (0.12)
	Thickness of disc plate mm (in)	Standard 22.0 (0.87)
		Limit 20.0 (0.79)
	Disc plate run-out mm (in) 0.1 (0.004)	
Wheel cylinder bore mm (in)	50.8 (2.0).....For 14 in. wheel vehicle 36.1 (1.42).....For 15 in. wheel vehicle	
Rear brake	Type Disc	
	Thickness of pad mm (in)	Standard 8.0 (0.31)
		Limit 1.0 (0.04)
	Thickness of disc plate mm (in)	10.0 (0.40).....For 14 in. wheel vehicle 20.0 (0.79).....For 15 in. wheel vehicle
		8.0 (0.31).....For 14 in. wheel vehicle 18.0 (0.71).....For 15 in. wheel vehicle
	Disc plate run-out mm (in) 0.1 (0.004)	
Wheel cylinder bore mm (in) 34.9 (1.37)		
Parking brake	Type Auto adjustment, rear brake	
	Lever notches (Pulled at 98 N (10 kg, 22 lb) ) 4 ~ 5	
Power brake unit	Diameter mm (in) 203.2 (8).....For 14 in. wheel vehicle 228.6 (9).....For 15 in. wheel vehicle	
	Clearance between master cylinder and brake unit mm (in) 0.1 ~ 0.3 (0.004 ~ 0.012)	
	Fluid pressure per treading force kPa (kg/cm <sup>2</sup> , psi)/N (kg, lb) More than 2,158 (22, 312)/196 (20, 44) at 0 mm Hg (0 in-Hg) More than 8,339 (85, 1,209)/196 (20, 44) at 500 mm Hg (19.7 in-Hg).....For 15 in. wheel vehicle More than 7,063 (72, 1,24)/196 (20, 44) at 500 mmHg (19.7 in-Hg).....For 14 in. wheel vehicle	
Rear wheel hydraulic control system	Type Proportioning bypass valve	
	Bend portion (Rear brake pressure) kPa (kg/cm <sup>2</sup> , psi) 2,600 ~ 3,286 (26.5 ~ 33.5, 377 ~ 476)	

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TIGHTENING TORQUE		N-m	m-kg	ft-lb
Lock pin bolt	Front..... Only for 14 in. wheel vehicle	31 ~ 41	3.2 ~ 4.2	23 ~ 30
	Rear	29 ~ 41	3.0 ~ 4.2	22 ~ 30
Front caliper..... Only for 15 in. wheel vehicle		78 ~ 98	8.0 ~ 10.0	58 ~ 72
Mounting support	Front..... Only for 14 in. wheel vehicle	78 ~ 98	8.0 ~ 10.0	58 ~ 72
	Rear	44 ~ 54	4.5 ~ 5.5	33 ~ 40
Master cylinder to power brake unit		9.8 ~ 16	1.0 ~ 1.6	7.2 ~ 12
Dust cover to knuckle spindle or triaxial floating hub (outer)		16 ~ 23	1.6 ~ 2.3	12 ~ 17

## 12. WHEELS AND TIRES

Item		Specifications
Wheel	Run-out mm (in)	Radial 0.4 (0.02) Lateral 0.4 (0.02)
	Offset mm (in)	40 (1.57)
	Size	6-JJ x 15, 5.5-JJ x 14
	Pitch circle diameter mm (in)	114.3 (4.50)
	Tire	Size 205/60 VR15, 185/70 HR 14 or 185/70R1487H Inflation pressure kPa (kg/cm <sup>2</sup> , psi) 216 (2.2, 32)
Wheel and tire	Run-out limit mm (in)	Radial 2.0 (0.08) Lateral 2.0 (0.08)
	Unbalance limit	N (g, lb) 0.2 (20, 0.04)

TIGHTENING TORQUE	N-m	m-kg	ft-lb
Wheel lug nut	90 ~ 120	9.0 ~ 12.0	65 ~ 87

## 13. SUSPENSION

### Front Suspension

Item		Specifications	
Suspension type		Strut	
Springs	Type	Coil	
	Wire diameter mm (in)	Right	12.0 (0.47), *11.8 (0.46)
		Left	12.2 (0.48), *12.0 (0.47)
	Coil diameter mm (in)	Right	147.0 (5.79), *146.8 (5.78)
		Left	147.2 (5.80), *147.0 (5.79)
	Free length mm (in)	Right	355.5 (14.0), *327.0 (12.9)
		Left	366.0 (14.4), *336.5 (13.2)
	Coil number	Right	5.83, *5.31
Left		6.05, *5.51	
Stabilizer	Type	Torsion bar	
	Diameter mm (in)	22.0 (0.87), *24.0 (0.94)	
Ball joint preload		N (kg, lb) 20 ~ 34 (2.0 ~ 3.5, 4.4 ~ 7.7)	

\* For harder suspension

## Rear Suspension

Item		Specifications
Suspension type		Multilink Semi-trailing
Springs	Type	Coil
	Wire diameter	mm (in) 9.9 (0.39), *10.1 (0.39)
	Coil diameter	mm (in) 84.6 (3.33), *84.4 (3.32)
	Free length	mm (in) 367 (14.45), *355 (14.0)
	Coil number	10.81, *10.79
Stabilizer	Type	Torsion bar
	Diameter	mm (in) 13 (0.51)
Toe-in		mm (in) 0 ± 3 (0 ± 0.12)

\*For harder suspension

TIGHTENING TORQUE		N-m	m-kg	ft-lb	
Front	Shock absorber piston rod to mounting block		20 ~ 28	2.0 ~ 2.9	14 ~ 21
	Mounting block to suspension tower		23 ~ 29	2.3 ~ 3.0	17 ~ 22
	Shock absorber to knuckle		93 ~ 117	9.5 ~ 11.9	69 ~ 86
	Lower arm to cross member	Front	63 ~ 93	6.4 ~ 9.5	46 ~ 69
		Rear	59 ~ 74	6.0 ~ 7.5	43 ~ 54
	Cross member to body		93 ~ 117	9.5 ~ 11.9	69 ~ 86
	Stabilizer bracket		18 ~ 26	1.8 ~ 2.7	13 ~ 20
	Stabilizer control link to stabilizer or lower arm		36 ~ 50	3.7 ~ 5.1	27 ~ 37
Ball joint to lower arm		93 ~ 117	9.5 ~ 11.9	69 ~ 86	
Rear	Shock absorber piston rod to mounting block		34 ~ 50	3.5 ~ 5.1	25 ~ 37
	Mounting block to suspension tower		23 ~ 29	2.3 ~ 3.0	17 ~ 22
	Shock absorber to trailing arm		63 ~ 93	6.4 ~ 9.5	46 ~ 69
	Stabilizer bracket		36 ~ 54	3.7 ~ 5.5	27 ~ 40
	Stabilizer control link to stabilizer or trailing arm		36 ~ 54	3.7 ~ 5.5	27 ~ 40
	Subframe to body		98 ~ 128	10 ~ 13	72 ~ 94
	Trailing arm to subframe		63 ~ 95	6.4 ~ 9.7	46 ~ 70
	Trailing arm to control link		36 ~ 54	3.7 ~ 5.5	27 ~ 40
	Control link to subframe		36 ~ 54	3.7 ~ 5.5	27 ~ 40
	Lateral link		29 ~ 44	3.0 ~ 4.5	22 ~ 33
	Sublink		74 ~ 93	7.5 ~ 9.5	54 ~ 69
	Triaxial floating hub (inner) to triaxial floating hub (outer)	Upper	63 ~ 93	6.4 ~ 9.5	46 ~ 69
Middle		112 ~ 151	11.4 ~ 15.4	82 ~ 111	
Lower		63 ~ 93	6.4 ~ 9.5	46 ~ 69	

## 15. BODY ELECTRICAL SYSTEM

Item		Specification (W) (SAE TRADE NO.)
Front exterior lights	Headlight	Halogen 65/35 (HP6054)
		Standard 65/55 (6052)
	Turn signal/Parking light 27/8 (1157)	
	Side marker light 3.8 (194)	
Rear exterior lights	Back-up light 27 (1156)	
	License plate light 7.5 (89)	
	Stop/Tail light 27/8 (1157)	
	High mounted stop light 27 (1156)	
	Turn signal light 27 (1156)	
	Side marker light 3.8 (194)	



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Item		Specification (W) (SAE TRADE No.)
Interior lights	Interior light	10
	Glove compartment light	3.4 (158)
	Luggage compartment light	5
	Map light	5
	Courtesy light	3.4 (158)
Indicator and warning lights	Shift up	3.4 (158)
	Alternator	1.4
	Brake	1.4
	Add. coolant	1.4
	Cooling fan	1.4
	Fuel	1.4
	Hazard	3.4 (158)
	High beam	3.4 (158)
	Over heat exhaust system	1.4
	Front doors	1.4
	Main	1.4
	Cruise	1.4
	Seat belt	1.4
	Engine oil level	1.4
	Rear glass hatch	1.4
	Stop	1.4
	Turn signal	3.4
	Washer level	1.4
O/D OFF	1.4	
Security light	3.4	
Illumination lights	Automatic selector	3.4 (158)
	Cigarette lighter	3.4 (158)
	Door key	1.4
	Ignition key	3.4
	Meter	3.4