TECHNICAL DATA

76G30X-001

30 TECHNICAL DATA

0. MEASUREMENT

Item \ Engine model		Coupe/MX-6	Sedan	Hatchback
Overall length	mm (in)	4,450 (175.2)	4,515 (177.8)	4,515 (177.8)
Overall width	mm (in)	1,690 (66.5)	1,690 (66.5)	1,690 (66.5)
Overall height (14 inch/13 inch)	mm (in)	1,360 (53.5)/1,345 (52.9)	1,410 (55.5)/1,395 (54.9)	1,375 (54.1)/1,360 (53.5)
Wheel base	mm (in)	2,515 (99.0)	2,575 (101.4)	2,575 (101.4)
Tread (14 inch/13 inch) mm (in)	Front	1,455 (57.3)/1,460 (57.5)	1,455 (57.3)/(1,460 (57.5)	1,455 (57.3)/1,460 (57.5)
	Rear	1,465 (57.7)/1,455 (57.3)	1,465 (57.7)/1,455 (57.3)	1,465 (57.7)/1,455 (57.3)

1A. ENGINE (SOHC)
12-valve

Item \ Engine model			FE 12-valve
Type			Gasoline, 4-cycle
Cylinder arrangement and number			In-line, 4-cylinders
Type of combustion chamber			Pentroof
Valve system			OHC, belt-driven
Bore x Stroke	mm (in)		86.0 x 86.0 (3.39 x 3.39)
Total piston displacement	cc (cu in)		1,998 (121.9)
Compression ratio			9.5 : 1
Compression pressure kPa (kg/cm², psi)-rpm	Standard		1,422 (14.5, 206)—280
	Minimum		996 (10.2, 144)—280
	Maximum difference between cylinders		196 (2.0, 28)
Valve timing	IN	Open BTDC	14°
		Close ABDC	56°
	EX	Open BBDC	69°
		Close ATDC	13°
Valve clearance	mm (in)	IN	0; Maintenance free
		EX	0; Maintenance free
Cylinder head			
Height	mm (in)		91.95—92.05 (3.620—3.624)
Distortion	mm (in)	Maximum	0.15 (0.006)
Grinding limit	mm (in)	Maximum	0.20 (0.008)
Valve and valve guide			
Valve head diameter	mm (in)	IN	32.4—32.6 (1.276—1.283)
		EX	33.9—34.1 (1.335—1.343)
Valve head thickness (margin)	mm (in)	IN	0.8—1.2 (0.031—0.047)
		EX	1.3—1.7 (0.051—0.067)
Valve face angle		IN	45°
		EX	45°
Valve length mm (in)	IN	Standard	115.81 (4.5594)
		Minimum	115.31 (4.5398)
	EX	Standard	116.21 (4.5752)
		Minimum	115.71 (4.5555)
Valve stem diameter	mm (in)	IN	6.970—6.985 (0.2744—0.2750)
		EX	6.965—6.980 (0.2742—0.2748)
Guide inner diameter	mm (in)	IN	7.01—7.03 (0.2760—0.2768)
		EX	7.01—7.03 (0.2760—0.2768)
Valve stem to guide clearance	mm (in)	IN	0.025—0.060 (0.0010—0.0024)
		EX	0.030—0.065 (0.0012—0.0026)
		Maximum	0.20 (0.0079)
Guide projection (Height "A")	mm (in)		19.8—20.3 (0.780—0.799)

Item \ Engine model			FE 12-valve
Valve seat			
Seat angle		IN	45°
		EX	45°
Seat contact width mm (in)		IN	1.2—1.6 (0.047—0.063)
		EX	1.2—1.6 (0.047—0.063)
Seat sinking (Measure valve protruding length) mm (in)	IN	Standard	50.2 (1.976)
		Maximum	51.0 (2.008)
	EX	Standard	50.2 (1.976)
		Maximum	51.0 (2.008)
Valve spring			
Free length mm (in)	IN	Standard	49.5 (1.949)
		Minimum	49.0 (1.929)
	EX	Standard	50.4 (1.984)
		Minimum	48.7 (1.917)
Out-of-square mm (in)		Maximum	1.8 (0.071)
Setting load/height N (kg, lb)/mm (in)		IN	203—230 (20.7—23.4, 45.5—51.5)/41 (1.614)
		EX	240—272 (24.5—27.7, 53.9—60.9)/41 (1.614)
Camshaft			
Cam lobe height mm (in)	IN	Standard	41.290—41.390 (1.6256—1.6295)
		Minimum	41.140 (1.6197)
	EX	Standard	41.797—41.897 (1.6455—1.6495)
		Minimum	41.647 (1.6396)
Journal diameter mm (in)	Front and Rear (No. 1,5)		31.940—31.965 (1.2575—1.2585)
	Center (No. 2,3,4)		31.910—31.935 (1.2563—1.2573)
	Out-of-round	Maximum	0.05 (0.002)
Camshaft bearing oil clearance mm (in)	Front and Rear (No. 1,5)		0.035—0.085 (0.0014—0.0033)
	Center (No. 2,3,4)		0.065—0.115 (0.0026—0.0045)
		Maximum	0.15 (0.0059)
Camshaft runout mm (in)		Maximum	0.03 (0.0012)
Camshaft end play mm (in)		Standard	0.08—0.16 (0.003—0.006)
		Maximum	0.20 (0.008)
Rocker arm and rocker arm shaft			
Rocker arm inner diameter mm (in)			19.000—19.033 (0.748—0.749)
Rocker arm shaft diameter mm (in)			18.959—18.980 (0.746—0.747)
Rocker arm to shaft clearance mm (in)		Standard	0.020—0.074 (0.0008—0.0029)
		Maximum	0.10 (0.004)
Cylinder block			
Height mm (in)			289.0 (11.38)
Distortion mm (in)		Maximum	0.15 (0.006)
Grinding limit mm (in)			0.20 (0.008)
Cylinder bore diameter mm (in)	Standard		86.000—86.019 (3.3858—3.3866)
	0.25 (0.010) oversize		86.250—86.269 (3.3957—3.3964)
	0.50 (0.020) oversize		86.500—86.519 (3.4055—3.4062)
Cylinder bore taper and out-of-round mm (in)		Maximum	0.019 (0.0007)
Piston			
Piston diameter measured at 90° to pin bore axis and 18.0 mm (0.709 in) below oil ring groove mm (in)	Standard		85.944—85.964 (3.3836—3.3844)
	0.25 (0.010) oversize		86.194—86.214 (3.3935—3.3942)
	0.50 (0.020) oversize		86.444—86.464 (3.4033—3.4041)
Piston to cylinder clearance mm (in)		Standard	0.036—0.075 (0.0014—0.0030)
		Maximum	0.15 (0.0059)
Piston ring			
Thickness mm (in)		Top	1.47—1.49 (0.0579—0.0587)
		Second	1.47—1.49 (0.0579—0.0587)

Item / Engine model			FE 12-valve
End gap measured in cylinder mm (in)		Top	0.20—0.35 (0.008—0.0138)
		Second	0.15—0.30 (0.006—0.012)
		Oil (rail)	0.20—0.70 (0.008—0.0276)
		Maximum	1.0 (0.039)
Ring groove width in piston mm (in)		Top	1.52—1.54 (0.0598—0.0606)
		Second	1.52—1.54 (0.0598—0.0606)
		Oil	4.02—4.04 (0.1583—0.1591)
Clearance of piston ring to ring groove mm (in)		Top	0.03—0.07 (0.0012—0.0028)
		Second	0.03—0.07 (0.0012—0.0028)
		Maximum	0.15 (0.006)
Piston pin			
Diameter mm (in)			21.974—21.980 (0.8651—0.8654)
Interference in connecting rod mm (in)			0.013—0.037 (0.0005—0.0015)
Piston to piston pin clearance mm (in)			0.008—0.024 (0.0003—0.0009)
Installation pressure N (kg, lb)			4,900—14,700 (500—1,500, 1,100—3,300)
Connecting rod and connecting rod bearing			
Length (Center to center) mm (in)			151.95—152.05 (5.982—5.986)
Twisting and bending mm (in)			0.06 (0.0024) max.
Small end bore mm (in)			21.943—21.961 (0.8640—0.8646)
Big end bore mm (in)			54.002—54.017 (2.1261—2.1266)
Big end width mm (in)			26.838—26.890 (1.0566—1.0587)
Connecting rod side clearance mm (in)		Standard	0.110—0.262 (0.004—0.010)
		Maximum	0.30 (0.012)
Crankshaft			
Crankshaft runout mm (in)		Maximum	0.03 (0.0012)
Main journal diameter mm (in)	Standard size		59.937—59.955 (2.3597—2.3604)
	0.25 (0.010) undersize	Standard	59.693—59.711 (2.3501—2.3508)
		No.3	59.687—59.705 (2.3499—2.3506)
	0.50 (0.020) undersize	No. 1,2,4,5	59.443—59.461 (2.3403—2.3410)
		No. 3	59.437—59.455 (2.3400—2.3407)
	0.75 (0.030) undersize	No. 1,2,4,5	59.193—59.211 (2.3304—2.3311)
		No. 3	59.187—59.205 (2.3302—2.3309)
Main journal taper and out-of-round mm (in)		Maximum	0.05 (0.0020)
Crankpin diameter mm (in)	Standard		50.940—50.955 (2.0055—2.0061)
	0.25 (0.010) undersize		50.690—50.705 (1.9957—1.9963)
	0.50 (0.020) undersize		50.440—50.455 (1.9858—1.9864)
	0.75 (0.030) undersize		50.190—50.205 (1.9760—1.9766)
Crankpin taper and out-of-round mm (in)		Maximum	0.05 (0.0020)
Main bearing			
Main journal bearing oil clearance mm (in)	No. 1,2,4,5	Standard	0.025—0.043 (0.0010—0.0017)
		Maximum	0.08 (0.0031)
	No. 3	Standard	0.031—0.049 (0.0012—0.0019)
		Maximum	0.08 (0.0031)
Available undersize bearing mm (in)			0.25 (0.010), 0.50 (0.020), 0.75 (0.030)
Crankpin bearing			
Crankpin bearing oil clearance mm (in)		Standard	0.027—0.067 (0.0011—0.0026)
		Maximum	0.10 (0.0039)
Available undersize bearing mm (in)			0.25 (0.010), 0.50 (0.020), 0.75 (0.030)
Thrust bearing (center main bearing)			
Crankshaft end play mm (in)		Standard	0.08—0.18 (0.0031—0.0071)
		Maximum	0.30 (0.0118)
Bearing width mm (in)	Standard		27.94—27.99 (1.100—1.102)
	0.25 (0.010) oversize		28.04—28.09 (1.104—1.106)
	0.50 (0.020) oversize		28.12—28.17 (1.107—1.109)
	0.75 (0.030) oversize		28.20—28.25 (1.110—1.112)

Item \ Engine model	FE 12-valve
Timing belt	
Belt deflection mm (in)/98 N (10 kg, 22 lb)	5.5—6.5 (0.22—0.26)

8-valve

Item \ Engine model			FE 8-valve ECE	FE 8-valve Middle East General	F8 ECE	F8 General	F6
Type			Gasoline, 4-cycle				
Cylinder arrangement and number			In-line, 4-cylinders				
Type of combustion chamber			Multispherical				
Valve system			OHC, belt-driven				
Bore x Stroke mm (in)			86.0 x 86.0 (3.39 x 3.39)		86.0 x 77.0 (3.39 x 3.03)		81.0 x 77.0 (3.19 x 3.03)
Total piston displacement cc (cu in)			1,998 (121.9)		1,789 (109.1)		1,587 (96.8)
Compression ratio			8.6 : 1				9.0 : 1
Compression pressure kPa (kg/cm², psi)-rpm	Standard		1,275 (13.0, 185)—270				1,128 (11.5, 164)—270
	Minimum		893 (9.1, 129)—270				790 (8.1, 114)—270
	Maximum difference between cylinders		196 (2.0, 28)				
Valve timing	IN	Open BTDC	16°	20°		17°	
		Close ABDC	54°	65°		56°	
	EX	Open BBDC	54°	65°		64°	
		Close ATDC	16°	20°		15°	
Valve clearance mm (in)		IN	0.30 (0.012)				
		EX	0.30 (0.012)				
Cylinder head							
Height mm (in)			91.95—92.05 (3.620—3.624)				
Distortion mm (in)		Maximum	0.15 (0.006)				
Grinding limit mm (in)		Maximum	0.20 (0.008)				
Valve and valve guide							
Valve head diameter mm (in)		IN	43.9—44.1 (1.728—1.736)				
		EX	35.9—36.1 (1.413—1.421)				
Valve head thickness (margin) mm (in)		IN	0.8—1.2 (0.031—0.047)				
		EX	1.3—1.7 (0.051—0.067)				
Valve face angle		IN	45°				
		EX	45°				
Valve length mm (in)	IN	Standard	111.89 (4.4051)				
		Minimum	111.39 (4.3854)				
	EX	Standard	111.69 (4.3972)				
		Minimum	111.19 (4.3776)				
Valve stem diameter mm (in)		IN	8.030—8.045 (0.3161—0.3167)				
		EX	8.025—8.040 (0.3159—0.3165)				
Guide inner diameter mm (in)		IN	8.07—8.09 (0.3177—0.3185)				
		EX	8.07—8.09 (0.3177—0.3185)				
Valve stem to guide clearance mm (in)		IN	0.025—0.060 (0.0010—0.0024)				
		EX	0.030—0.065 (0.0012—0.0026)				
		Maximum	0.20 (0.0079)				
Guide projection (Height "A") mm (in)			19.1—19.6 (0.752—0.772)				

Item \ Engine model			FE 8-valve ECE	FE 8-valve Middle East General	F8	F6
Valve seat						
Seat angle		IN	45°			
		EX	45°			
Seat contact width mm (in)		IN	1.2—1.6 (0.047—0.063)			
		EX	1.2—1.6 (0.047—0.063)			
Seat sinking (Measure valve protruding length) mm (in)	IN	Standard	46.5 (1.831)			
		Maximum	48.0 (1.890)			
	EX	Standard	46.5 (1.831)			
		Maximum	48.0 (1.890)			
Valve spring						
Free length mm (in)	Outer	Standard	52.0 (2.047)	51.2 (2.016)	52.0 (2.047)	
		Minimum	51.5 (2.028)	50.6 (1.992)	51.5 (2.028)	
	Inner	Standard	44.0 (1.732)	45.7 (1.799)	44.0 (1.732)	
		Minimum	43.3 (1.705)	43.7 (1.720)	43.3 (1.705)	
Out-of-square mm (in)		Maximum	1.8 (0.071)			
Setting load/height N (kg, lb)/mm (in)		Outer	128 (13.1, 29)/136.5 (1.44)	124 (12.7, 28)/136.5 (1.44)	128 (13.1, 29)/36.5 (1.44)	
		Inner	189 (19.2, 42)/141 (1.61)	193 (19.6, 43)/141 (1.61)	189 (19.2, 42)/41 (1.61)	
Camshaft						
Cam lobe height mm (in)	IN	Standard	38.107—38.207 (1.5003—1.5042)			
		Minimum	37.957 (1.4944)			
	EX	Standard	38.110—38.210 (1.5004—1.5043)			
		Minimum	37.960 (1.4945)			
Journal diameter mm (in)	Front and Rear (No. 1,5)		31.940—32.035 (1.2575—1.2612)			
	Center (No. 2,3,4)		31.910—32.065 (1.2563—1.2624)			
	Out-of-round	Maximum	0.05 (0.002)			
Camshaft bearing oil clearance mm (in)	Front and Rear (No. 1,5)		0.035—0.085 (0.0014—0.0033)			
	Center (No. 2,3,4)		0.065—0.115 (0.0026—0.0045)			
		Maximum	0.15 (0.0059)			
Camshaft runout mm (in)		Maximum	0.03 (0.0012)			
Camshaft end play mm (in)		Standard	0.08—0.16 (0.003—0.006)			
		Maximum	0.20 (0.008)			
Rocker arm and rocker arm shaft						
Rocker arm inner diameter mm (in)			16.000—16.027 (0.6299—0.6310)			
Rocker arm shaft diameter mm (in)			15.966—15.984 (0.6286—0.6293)			
Rocker arm to shaft clearance mm (in)		Standard	0.016—0.061 (0.0006—0.0024)			
		Maximum	0.10 (0.004)			
Cylinder block						
Height mm (in)			289.0 (11.38)		268.5 (10.57)	
Distortion mm (in)		Maximum	0.15 (0.006)			
Grinding limit mm (in)			0.20 (0.008)			
Cylinder bore diameter mm (in)	Standard		86.000—86.019 (3.3858—3.3866)			81.000—81.019 (3.1890—3.1897)
	0.25 (0.010) oversize		86.250—86.269 (3.3957—3.3964)			81.250—81.269 (3.1988—3.1996)
	0.50 (0.020) oversize		86.500—86.519 (3.4055—3.4062)			81.500—81.519 (3.2087—3.2094)
	0.75 (0.030) oversize		—			81.750—81.769 (3.2185—3.2192)
	1.00 (0.039) oversize		—			82.000—82.019 (3.2283—3.2291)
Cylinder bore taper and out-of-round mm (in)		Maximum	0.019 (0.0007)			
Piston						
Piston diameter measured at 90° to pin bore axis and 18.0 mm (0.709 in) below oil ring groove mm (in)	Standard		85.944—85.964 (3.3836—3.3844)			80.944—80.964 (3.1868—3.1876)
	0.25 (0.010) oversize		86.194—86.214 (3.3935—3.3942)			81.194—81.214 (3.1966—3.1974)
	0.50 (0.020) oversize		86.444—86.464 (3.4033—3.4041)			81.444—81.464 (3.2065—3.2072)

Item			Engine model: FE 8-valve ECE	FE 8-valve Middle East General	F8	F6
	0.75 (0.030) oversize		—			81.694—81.714 (3.2163—3.2171)
	1.00 (0.039) oversize		—			81.944—81.964 (3.2261—3.2269)
Piston and cylinder clearance mm (in)		Standard	0.036—0.075 (0.0014—0.0030)			
		Maximum	0.15 (0.0059)			
Piston ring						
Thickness mm (in)		Top	1.47—1.49 (0.0579—0.0587)			
		Second	1.47—1.49 (0.0579—0.0587)			
End gap measured in cylinder mm (in)		Top	0.20—0.35 (0.008—0.0138)			
		Second	0.15—0.30 (0.006—0.012)			
		Oil (rail)	0.20—0.70 (0.008—0.0276)			
		Maximum	1.0 (0.039)			
Ring groove width in piston mm (in)		Top	1.52—1.54 (0.0598—0.0606)			
		Second	1.52—1.54 (0.0598—0.0606)			
		Oil	4.02—4.04 (0.1583—0.1591)			
Clearance of piston ring to ring groove mm (in)		Top	0.03—0.07 (0.0012—0.0028)			
		Second	0.03—0.07 (0.0012—0.0028)			
		Maximum	0.15 (0.006)			
Piston pin						
Diameter mm (in)			21.974—21.980 (0.8651—0.8654)			
Interference in connecting rod mm (in)			0.013—0.037 (0.0005—0.0015)			
Piston to piston pin clearance mm (in)			0.008—0.024 (0.0003—0.0009)			
Installation pressure N (kg, lb)			4,900—14,700 (500—1,500, 1,100—3,300)			
Connecting rod and connecting rod bearing						
Length (Center to center) mm (in)			151.95—152.05 (5.982—5.986)			135.95—136.05 (5.352—5.356)
Twisting and bending mm (in)			0.06 (0.0024) max.			
Small end bore mm (in)			21.943—21.961 (0.8640—0.8646)			
Big end bore mm (in)			54.002—54.017 (2.1261—2.1266)			
Big end width mm (in)			26.838—26.890 (1.0566—1.0587)			
Connecting rod side clearance mm (in)		Standard	0.110—0.262 (0.004—0.010)			
		Maximum	0.30 (0.012)			
Crankshaft						
Crankshaft runout mm (in)		Maximum	0.03 (0.0012)			
Main journal diameter mm (in)	Standard size		59.937—59.955 (2.3597—2.3604)			
	0.25 (0.010) undersize	Standard	59.693—59.711 (2.3051—2.3508)			
		No. 3	59.687—59.705 (2.3499—2.3506)			
	0.50 (0.020) undersize	No. 1,2,4,5	59.443—59.461 (2.3403—2.3410)			
		No. 3	59.437—59.455 (2.3400—2.3407)			
	0.75 (0.030) undersize	No. 1,2,4,5	59.193—59.211 (2.3304—2.3311)			
		No. 3	59.187—59.205 (2.3302—2.3309)			
Main journal taper and out-of-round mm (in)		Maximum	0.05 (0.0020)			
Crankpin diameter mm (in)	Standard		50.940—50.955 (2.0055—2.0061)			
	0.25 (0.010) undersize		50.690—50.705 (1.9957—1.9963)			
	0.50 (0.020) undersize		50.440—50.455 (1.9858—1.9864)			
	0.75 (0.030) undersize		50.190—50.205 (1.9760—1.9766)			
Crankpin taper and out-of-round mm (in)		Maximum	0.05 (0.0020)			
Main bearing						
Main journal bearing oil clearance mm (in)	No. 1,2,4,5	Standard	0.025—0.043 (0.0010—0.0017)			
		Maximum	0.08 (0.0031)			
	No. 3	Standard	0.031—0.049 (0.0012—0.0019)			
		Maximum	0.08 (0.0031)			
Available undersize bearing mm (in)			0.25 (0.010), 0.50 (0.020), 0.75 (0.030)			
Crankpin bearing						
Crankpin bearing oil clearance mm (in)		Standard	0.027—0.067(0.0011—0.0026)			
		Maximum	0.10 (0.0039)			
Available undersize bearing mm (in)			0.25 (0.010), 0.50 (0.020), 0.75 (0.030)			

Item \ Engine model			FE 8-valve		F8	F6
			ECE	Middle East General		
Thrust bearing (center main bearing)						
Crankshaft end play	mm (in)	Standard	0.08—0.18 (0.0031—0.0071)			
		Maximum	0.30 (0.0118)			
Bearing width mm (in)	Standard		27.94—27.99 (1.100—1.102)			
	0.25 (0.010) oversize		28.04—28.09 (1.104—1.106)			
	0.05 (0.020) oversize		28.12—28.17 (1.107—1.109)			
	0.75 (0.030) oversize		28.20—28.25 (1.110—1.112)			
Timing belt						
Belt deflection	mm (in)/98 N (10 kg, 22 lb)		5.5—6.5 (0.22—0.26)		4.0—5.0 (0.16—0.20)	

1B. ENGINE (DOHC)

Item \ Engine model			FE DOHC	
			Leaded fuel	Unleaded fuel
Type			Gasoline, 4-cycle	
Cylinder arrangement and number			In-line, 4-cylinders	
Type of combustion chamber			Pentroof	
Valve system			OHC, belt-driven	
Bore x Stroke	mm (in)		86.0 x 86.0 (3.39 x 3.39)	
Total piston displacement	cc (cu in)		1,998 (121.9)	
Compression ratio			10.0 : 1	9.2 : 1
Compression pressure kPa (kg/cm^2, psi)-rpm	Standard		1,422 (14.5, 206)—290	1,373 (14.0, 199)—310
	Minimum		996 (10.2, 144)—290	961 (9.8, 139)—310
	Maximum difference between cylinders		196 (2.0, 28)	
Valve timing	IN	Open BTDC	10°	10°
		Close ABDC	60°	55°
	EX	Open BBDC	60°	55°
		Close ATDC	10°	10°
Valve clearance	mm (in)	IN	0; Maintenance free	
		EX	0; Maintenance free	
Cylinder head				
Height	mm (in)		133.95—134.05 (5.274—5.278)	
Distortion	mm (in)	Maximum	0.15 (0.006)	
Grinding	mm (in)	Maximum	0.20 (0.008)	
HLA to cylinder head clearance	mm (in)	Standard	0.025—0.066 (0.0010—0.0026)	
		Maximum	0.18 (0.0071)	
Valve and valve guide				
Valve head diameter	mm (in)	IN	33.6—33.8 (1.323—1.331)	
		EX	28.8—29.0 (1.134—1.142)	
Valve head thickness (margin)	mm (in)	IN	1.0—1.7 (0.039—0.067)	
		EX	1.1—1.7 (0.043—0.067)	
Valve face angle		IN	45°	
		EX	45°	
Valve length mm (in)	IN	Standard	103.18 (4.0622)	
		Minimum	102.68 (4.0425)	
	EX	Standard	103.94 (4.0921)	
		Minimum	103.44 (4.0724)	
Valve stem diameter	mm (in)	IN	5.970—5.985 (0.2350—0.2356)	
		EX	5.965—5.980 (0.2348—0.2354)	
Guide inner diameter	mm (in)	IN	6.01—6.03 (0.2366—0.2374)	
		EX	6.01—6.03 (0.2366—0.2374)	
Valve stem to guide clearance	mm (in)	IN	0.025—0.060 (0.0010—0.0024)	
		EX	0.030—0.065 (0.0012—0.0026)	
		Maximum	0.20 (0.0079)	
Guide projection (Height "A")	mm (in)		11.4—11.9 (0.449—0.469)	

Item \ Engine model			FE DOHC	
			Leaded fuel	Unleaded fuel
Valve seat				
Seat angle		IN	45°	
		EX	45°	
Seat contact width mm (in)		IN	1.2—1.6 (0.047—0.063)	
		EX	1.2—1.6 (0.047—0.063)	
Seat sinking (Measure valve protruding length) mm (in)	IN	Standard	36.8 (1.449)	
		Maximum	37.8 (1.488)	
	EX	Standard	36.8 (1.449)	
		Maximum	37.8 (1.488)	
Valve spring				
Free length mm (in)	Outer	Standard	39.1 (1.539)	
		Minimum	38.7 (1.524)	
	Inner	Standard	38.0 (1.496)	
		Minimum	37.7 (1.484)	
Out-of-square mm (in)		Maximum	Outer.....1.4 (0.055), Inner.....1.3 (0.051)	
Setting load/height N (kg, lb)/mm (in)		Outer	78 (8.0, 17.6)/31.5 (1.240)	
		Inner	123 (12.5, 27.5)/33.0 (1.299)	
Camshaft				
Cam lobe height mm (in)	IN	Standard	45.005—45.105 (1.772—1.776)	45.002—45.102 (1.772—1.776)
		Minimum	44.855 (1.7659)	44.852 (1.7658)
	EX	Standard	45.005—.45.105 (1.772—1.776)	45.002—45.102 (1.772—1.776)
		Minimum	44.855 (1.7659)	44.852 (1.7658)
Journal diameter mm (in)			29.940—29.965 (1.1787—1.1797)	
	Out-of-round	Maximum	0.05 (0.002)	
Camshaft bearing oil clearance mm (in)			0.035—0.085 (0.0014—0.0033)	
		Maximum	0.15 (0.0059)	
Camshaft runout mm (in)		Maximum	0.03 (0.0012)	
Camshaft end play mm (in)		Standard	0.08—0.10 (0.003—0.004)	
		Maximum	0.20 (0.008)	
Cylinder block				
Height mm (in)			289.0 (11.38)	
Distortion mm (in)		Maximum	0.15 (0.006)	
Grinding limit mm (in)			0.20 (0.008)	
Cylinder bore diameter mm (in)	Standard		86.000—86.019 (3.3858—3.3866)	
	0.25 (0.010) oversize		86.250—86.269 (3.3957—3.3964)	
	0.50 (0.020) oversize		86.500—86.519 (3.4055—3.4062)	
Cylinder bore taper and out-of-round mm (in)		Maximum	0.019 (0.0007)	
Piston				
Piston diameter measured at 90° to pin bore axis and 18.0 mm (0.709 in) below oil ring groove mm (in)	Standard		85.944—85.964 (3.3836—3.3834)	
	0.25 (0.010) oversize		86.194—86.214 (3.3935—3.3942)	
	0.50 (0.020) oversize		86.444—86.464 (3.4033—3.4041)	
Piston to cylinder clearance mm (in)		Standard	0.036—0.075 (0.0014—0.0030)	
		Maximum	0.15 (0.0059)	
Piston ring				
Thickness mm (in)		Top	1.47—1.49 (0.0579—0.0587)	
		Second	1.47—1.49 (0.0579—0.0587)	

Item	Engine model		FE DOHC	
			Leaded fuel	Unleaded fuel
End gap measured in cylinder mm (in)		Top	0.20—0.35 (0.008—0.0138)	
		Second	0.15—0.30 (0.006—0.012)	
		Oil (rail)	0.20—0.70 (0.008—0.0276)	
		Maximum	1.0 (0.039)	
Ring groove width in piston mm (in)		Top	1.52—1.54 (0.0598—0.0606)	
		Second	1.52—1.54 (0.0598—0.0606)	
		Oil	4.02—4.04 (0.1583—0.1591)	
Clearance of piston ring to ring groove mm (in)		Top	0.03—0.07 (0.0012—0.0028)	
		Second	0.03—0.07 (0.0012—0.0028)	
		Maximum	0.15 (0.006)	
Piston pin				
Diameter mm (in)			21.987—21.993 (0.8656—0.8659)	
Connecting rod to piston pin clearance mm (in)			0.010—0.027 (0.0004—0.0011)	
Piston to piston pin clearance mm (in)			−0.005—0.011 (−0.0002—0.0004)	
Connecting rod and connecting rod bearing				
Length (Center and center) mm (in)			149.95—150.05 (5.904—5.907)	
Twisting and bending mm (in)			0.06 (0.0024) max.	
Small end bore mm (in)			22.003—22.014 (0.8663—0.8667)	
Big end bore mm (in)			54.002—54.017 (2.1261—2.1266)	
Big end width mm (in)			26.838—26.890 (1.0566—1.0587)	
Connecting rod side clearance mm (in)		Standard	0.110—0.262 (0.004—0.010)	
		Maximum	0.30 (0.012)	
Crankshaft				
Crankshaft runout mm (in)		Maximum	0.03 (0.0012)	
Main journal diameter mm (in)	Standard size		59.937—59.955 (2.3597—2.3604)	
	0.25 (0.010) undersize	Standard	59.693—59.711 (2.3051—2.3508)	
		No. 3	59.687—59.705 (2.3499—2.3506)	
	0.50 (0.020) undersize	No. 1,2,4,5	59.443—59.461 (2.3403—2.3410)	
		No. 3	59.437—59.455 (2.3400—2.3407)	
	0.75 (0.030) undersize	No. 1,2,4,5	59.193—59.211 (2.3304—2.3311)	
		No. 3	59.187—59.205 (2.3302—2.3309)	
Main journal taper and out-of-round mm (in)		Maximum	0.05 (0.0020)	
Crankpin diameter mm (in)	Standard		50.940—50.955 (2.0055—2.0061)	
	0.25 (0.010) undersize		50.690—50.705 (1.9957—1.9963)	
	0.50 (0.020) undersize		50.440—50.455 (1.9858—1.9864)	
	0.75 (0.030) undersize		50.190—50.205 (1.9760—1.9766)	
Crankpin taper and out-of-round mm (in)		Maximum	0.05 (0.0020)	
Main bearing				
Main journal bearing oil clearance mm (in)	No. 1,2,4,5	Standard	0.025—0.043 (0.0010—0.0017)	
		Maximum	0.08 (0.0031)	
	No. 3	Standard	0.031—0.049 (0.0012—0.0019)	
		Maximum	0.08 (0.0031)	
Available undersize bearing mm (in)			0.25 (0.010), 0.50 (0.020), 0.75 (0.030)	
Crankpin bearing				
Crankpin bearing oil clearance mm (in)		Standard	0.027—0.067 (0.0011—0.0026)	
		Maximum	0.10 (0.0039)	
Available undersize bearing mm (in)			0.25 (0.010), 0.50 (0.020), 0.75 (0.030)	
Thrust bearing (center main bearing)				
Crankshaft end play mm (in)		Standard	0.08—0.18 (0.0031—0.0071)	
		Maximum	0.30 (0.0118)	
Bearing width mm (in)	Standard		27.94—27.99 (1.100—1.102)	
	0.25 (0.010) oversize		28.04—28.09 (1.104—1.106)	
	0.50 (0.020) oversize		28.12—28.17 (1.107—1.109)	
	0.75 (0.030) oversize		28.20—28.25 (1.110—1.112)	
Timing belt				
Belt deflection mm (in)/98 N (10 kg, 22 lb)			7.5—8.5 (0.30—0.33)	

1C. ENGINE (DIESEL)

Item \ Engine model				RF-CX	RF-N
Type				Diesel, 4-cycle	
Cylinder arrangement and number				In-line, 4-cylinders	
Type of combustion chamber				Swirl chamber	
Valve system				OHC, belt-driven	
Bore x Stroke			mm (in)	86.0 x 86.0 (3.39 x 3.39)	
Total piston displacement			cc (cu in)	1,998 (121.9)	
Compression ratio				21.1 : 1	22.7 : 1
Compression pressure kPa (kg/cm^2, psi)-rpm	Standard			2,943 (30, 427)-200	
	Minimum			2,649 (27, 384)-200	
	Maximum difference between cylinders			294 (3.0, 43)	
Valve timing	IN	Open	BTDC	13°	13°
		Close	ABDC	15°	39°
	EX	Open	BBDC	60°	60°
		Close	ATDC	8°	8°
Valve clearance			mm (in)	IN	Cold: 0.25 (0.010), Warm: 0.30 (0.012)
				EX	Cold: 0.35 (0.014), Warm: 0.40 (0.016)
Cylinder head					
Height			mm (in)	133.9—134.1 (5.272—5.280)	
Distortion			mm (in)	0.10 (0.004) max.	
Length of cylinder head bolt below head			mm (in)	Standard	113.2—113.8 (4.457—4.480)
				Maximum	114.5 (4.508)
Combustion chamber insert					
Recession			mm (in)	0.020 (0.0008)	
Projection			mm (in)	0.005 (0.0001)	
Valve and valve guide					
Valve head diameter			mm (in)	IN	39.3—39.5 (1.547—1.555)	40.9—41.1 (1.610—1.618)
				EX	35.0—35.2 (1.378—1.386)	35.9—36.1 (1.413—1.421)
Valve head thickness (margin)			mm (in)	IN	1.80 (0.071)	0.80 (0.031)
				EX	1.65 (0.065)	0.80 (0.031)
Valve face angle				IN	60°	45°
				EX	45°	
Valve length			mm (in)	IN	106.9 (4.209)	
				EX	106.8 (4.205)	
Valve stem diameter			mm (in)	IN	7.970—7.985 (0.3138—0.3144)	
				EX	7.965—7.980 (0.3136—0.3142)	
Guide inner diameter			mm (in)	IN	8.025—8.045 (0.3159—0.3167)	
				EX	8.025—8.045 (0.3159—0.3167)	
Valve stem to guide clearance			mm (in)	IN	0.040—0.075 (0.0016—0.0030)	
				EX	0.045—0.080 (0.0018—0.0031)	
				Maximum	0.1 (0.004)	
Guide projection (Height "A")			mm (in)	8.3—8.8 (0.327—0.346)	
Valve seat					
Seat angle				IN	60°	45°
				EX	45°	
Seat contact width			mm (in)	IN	1.4—1.8 (0.055—0.071)	1.7—2.3 (0.067—0.091)
				EX	1.64—2.04 (0.065—0.080)	1.7—2.3 (0.067—0.091)
Seat sinking (Measure valve recession) mm (in)	IN			Standard	0.75—1.05 (0.030—0.041)	
				Maximum	2.55 (0.100)	
	EX			Standard	0.75—1.05 (0.030—0.041)	
				Maximum	2.55 (0.100)	
Valve spring					
Free length			mm (in)	Standard	45.11 (1.776)	
				Minimum	44.8 (1.764)	

Item \ Engine model			RF-CX	RF-N
Out-of-square		mm (in)	1.6 (0.063)/2° max.	
Setting load/height		N (kg, lb)/mm (in)	275 (28.0, 62)/39.0 (1.535)	
Tappet				
Tappet outer diameter		mm (in)	34.95—34.97 (1.3764—1.3768)	
Tappet hole diameter		mm (in)	34.99—35.01 (1.3776—1.3787)	
Tappet to tappet hole clearance		mm (in) Standard	0.02—0.06 (0.0008—0.0024)	
		Maximum	0.10 (0.004)	
Camshaft and camshaft caps				
Cam lobe height mm (in)	IN	Standard	42.521 (1.6741)	44.306 (1.7443)
		Minimum	42.11 (1.658)	43.90 (1.728)
	EX	Standard	45.300 (1.7835)	
		Minimum	44.90 (1.768)	
Journal diameter		mm (in) Standard	31.959—31.975 (1.2582—1.2589)	
		Out-of-round	0.05 (0.0020) max.	
Camshaft bearing oil clearance		mm (in) Standard	0.025—0.066 (0.0010—0.0026)	
		Maximum	0.10 (0.004)	
Camshaft run-out (deflection)		mm (in)	0.10 (0.004) max.	
Camshaft end play		mm (in) Standard	0.02—0.15 (0.0008—0.0059)	
		Maximum	0.20 (0.008)	
Cylinder block				
Height		mm (in)	301.5 (11.87)	
Distortion		mm (in)	0.10 (0.004) max.	
Cylinder bore diameter mm (in)	Standard size		86.000—86.022 (3.3858—3.3867)	
	0.25 (0.010) oversize		86.250—86.272 (3.3957—3.3965)	
	0.50 (0.020) oversize		86.500—86.522 (3.4055—3.4064)	
Cylinder bore taper and out-of-round		mm (in)	0.022 (0.0009) max.	
Piston				
Piston diameter (Measured at 90° to pin bore axis and 19 mm (0.75 in) above the bottom of piston) mm (in)	Standard size		85.957—85.983 (3.3841—3.3852)	
	0.25 (0.010) oversize		86.207—86.233 (3.3940—3.3950)	
	0.50 (0.020) oversize		86.457—86.483 (3.4038—3.4048)	
Piston and cylinder clearance		mm (in) Standard	0.032—0.050 (0.0013—0.0020)	
		Maximum	0.15 (0.0059)	
Piston ring				
Thickness		mm (in) Top	1.97—1.99 (0.0776—0.0783)	
		Second	1.97—1.99 (0.0776—0.0783)	
End gap (measured in the cylinder) mm (in)		Top	0.20—0.35 (0.008—0.014)	0.20—0.40 (0.008—0.016)
		Second	0.20—0.35 (0.008—0.014)	0.20—0.40 (0.008—0.016)
		Oil (rail)	0.20—0.40 (0.008—0.016)	
		Maximum	1.0 (0.039)	
Ring groove width in piston		mm (in) Top	2.17—2.19 (0.0854—0.0862)	2.04—2.06 (0.0803—0.0811)
		Second	2.03—2.05 (0.0799—0.0807)	
		Oil	4.02—4.04 (0.1583—0.1591)	
Clearance of piston ring to ring groove mm (in)		Top	0.18—0.22 (0.0071—0.0087)	0.05—0.09 (0.0020—0.0035)
		Second	0.04—0.08 (0.0016—0.0031)	
		Maximum	0.2 (0.008)	
Piston pin				
Piston pin hole diameter (in piston)			29.997—30.007 (1.1810—1.1814)	24.997—25.007 (0.9841—0.9845)
Diameter		mm (in)	29.994—30.000 (1.1809—1.1811)	24.994—25.000 (0.9840—0.9843)
Clearance in connecting rod bushing		mm (in)	0.05 (0.002) max.	

Item \ Engine model			RF-CX	RF-N
Connecting rod and connecting rod bearing				
Length (Center to center)		mm (in)	151.95—152.05 (5.9823—5.9862)	
Maximum twisting and bending		mm (in)	0.080 (0.0031) per 50 (1.969)	
Small end bushing inner diameter		mm (in)	30.014—30.030 (1.1817—1.1823)	25.014—25.030 (0.9848—0.9854)
Big end bore		mm (in)	54.002—54.017 (2.1261—2.1266)	
Big end width		mm (in)	25.900—26.100 (1.0197—1.0276)	
Connecting rod side clearance		mm (in)	Standard	0.11—0.262 (0.0043—0.0103)
			Maximum	0.30 (0.012)
Crankshaft				
Crankshaft runout		mm (in)	0.05 (0.002) max.	
Main journal diameter	Standard size	mm (in)	Standard	59.937—59.955 (2.3597—2.3604)
			Minimum	59.89 (2.358)
	0.25 (0.010) undersize		Standard	59.687—59.705 (2.3499—2.3506)
			Minimum	59.64 (2.348)
	0.50 (0.020) undersize		Standard	59.437—59.455 (2.3400—2.3407)
			Minimum	59.39 (2.338)
	0.75 (0.030) undersize		Standard	59.187—59.205 (2.3302—2.3309)
			Minimum	59.14 (2.328)
Main journal taper and out-of-round		mm (in)	0.05 (0.002) max.	
Crankpin diameter	Standard size	mm (in)	Standard	50.940—50.955 (2.0055—2.0061)
			Minimum	50.89 (2.004)
	0.25 (0.010) undersize		Standard	50.690—50.705 (1.9957—1.9963)
			Minimum	50.64 (1.994)
	0.50 (0.020) undersize		Standard	50.440—50.455 (1.9858—1.9864)
			Minimum	50.39 (1.984)
	0.75 (0.030) undersize		Standard	50.190—50.205 (1.9760—1.9766)
			Minimum	50.14 (1.974)
Crankpin taper and out-of-round		mm (in)	0.05 (0.002) max.	
Main bearing				
Main journal bearing oil clearance		mm (in)	Standard	0.031—0.050 (0.0012—0.0020)
			Maximum	0.08 (0.0031)
Available undersize bearing		mm (in)	0.25 (0.010), 0.50 (0.020), 0.75 (0.030)	
Crankpin bearing				
Crankpin bearing oil clearance		mm (in)	Standard	0.027—0.055 (0.0011—0.0022)
			Maximum	0.08 (0.0031)
Available undersize bearing		mm (in)	0.25 (0.010), 0.50 (0.020), 0.75 (0.030)	
Thrust bearing (center main bearing)				
Crankshaft end play		mm (in)	Standard	0.04—0.282 (0.0016—0.0111)
			Maximum	0.30 (0.012)
Bearing width	Standard size	mm (in)	2.00—2.05 (0.0787—0.0807)	
	Oversize		2.175—2.225 (0.0856—0.0876)	
Timing belt				
Deflection		mm (in)/N (kg, lb)	9.0—11.5 (0.35—0.45)/98 (10, 22)	
Drive belt deflection				
Alternator		mm (in)	New	8—10 (0.31—0.39)
			Used	9—11 (0.35—0.43)
A/C compressor		mm (in)	New	8.5—9.5 (0.33—0.37)
			Used	9.5—10.5 (0.37—0.41)
Vacuum pump		mm (in)	New	7.5—8.5 (0.30—0.33)
			Used	8.5—9.5 (0.33—0.37)
P/S pump with vacuum pump		mm (in)	New	6.5—7.5 (0.26—0.30)
			Used	7.0—8.0 (0.28—0.31)
Pressure wave supercharger		mm (in)	New	4.0—5.0 (0.16—0.20)
			Used	4.5—5.5 (0.18—0.22)

2A. LUBRICATION SYSTEM (GASOLINE)

Item \ Engine model			FE DOHC	F6, F8, FE SOHC
Lubrication method			Force-fed	
Oil pump				
Type			Trochoid gear	Crescent gear
Regulated pressure	kPa (kg/cm², psi)		490 (5.0, 71)	392 (4.0, 57)
Oil pressure	kPa (kg/cm², psi)	1,000 rpm	147—245 (1.5—2.5, 21—36)	
		3,000 rpm	343—441 (3.5—4.5, 50—64)	294—392 (3.0—4.0, 43—57)
Inner rotor tooth tip to outer rotor clearance	mm (in)	Standard	0.044—0.084 (0.0017—0.0033)	—
		Maximum	0.18 (0.0071)	
Outer rotor to body clearance	mm (in)	Standard	0.09—0.176 (0.0035—0.0069)	
		Maximum	0.20 (0.008)	
Side clearance	mm (in)	Standard	0.03—0.09 (0.0012—0.0035)	
		Maximum	0.10 (0.004)	
Inner gear tooth tip to crescent clearance	mm (in)	Standar	—	0.267—0.38 (0.011—0.015)
		Maximum		0.40 (0.016)
Outer gear tooth tip to crescent clearance	mm (in)	Standard		0.20—0.32 (0.008—0.0126)
		Maximum		0.35 (0.0138)
Outer gear to body clearance	mm (in)	Standard		0.09—0.184 (0.0035—0.0072)
		Maximum		0.20 (0.008)
Side clearance	mm (in)	Standard		0.03—0.063 (0.0012—0.0025)
		Maximum		0.10 (0.004)
Oil filter				
Type			Full flow, paper element	
Relief pressure differential	kPa (kg/cm², psi)		78—118 (0.8—1.2, 11—17)	
Oil cooler				
Type			Water cooled	
Oil pressure switch				
Activation pressure	kPa (kg/cm², psi)		29 (0.3, 4.3)	
Engine oil				
Capacity	liters (US qt, Imp qt)	Total (dry engine)	4.3 (4.5, 3.8)	
		Oil pan	3.6 (3.8, 3.2)	
		Oil filter	0.2 (0.21, 0.18)	0.3 (0.32, 0.26)
Grade (API service)			SD, SE, or SF	
Viscosity number	30°C (86°F) or over		SAE 40	
	0°C—40°C (32°F—104°F)		SAE 30	
	−10°C—20°C (14°F—68°F)		SAE 20W-20	
	−10°C—50°C (14°F—122°F) or over		SAE 20W-40 or 20W-50	
	−25°C—30°C (−13°F—86°F)		SAE 10W-30	
	−25°C—50°C (−13°F—122°F) or over		SAE 10W-40 or 10W-50	
	0°C—30°C (32°F—−22°F) or below		SAE 5W-30	
	−20°C (—4°F) or below		SAE 5W-20	

2B. LUBRICATION SYSTEM (DIESEL)

Item \ Engine moded			RF-CX	RF-N
Lubrication method			Force-fed type	
Oil pump				
Type			Trochoid gear	
Gear width		mm (in)	7 (0.28)	
Regulated pressure		kPa (kg/cm², psi)	510—618 (5.2—6.3, 74—90)	
Oil pressure	kPa (kg/cm², psi)	1,000 rpm	147—245 (1.5—2.5, 21—36)	
		3,000 rpm	343—441 (3.5—4.5, 50—64)	
Inner rotor tooth tip to outer rotor clearance	mm (in)	Standard	0.2 (0.008) or less	
		Maximum	0.24 (0.009)	
Outer rotor to pump body clearance	mm (in)	Standard	0.09—0.184 (0.0035—0.0071)	
		Maximum	0.22 (0.009)	
Side clearance	mm (in)	Standard	0.03—0.09 (0.0012—0.0036)	
		Maximum	0.14 (0.006)	
Oil filter				
Type			Combined, paper element	
Relief pressure differential		kPa (kg/cm², psi)	78—118 (0.8—1.2, 11—17)	
Oil cooler				
Type			Water cooled, 10 layer	Water cooled, 4 layer
Oil filter body				
Regulated pressure		kPa (kg/cm², psi)	402—481 (4.1—4.9, 58—70)	
Oil cooler relief pressure differential		kPa (kg/cm², psi)	177—216 (1.8—2.2, 26—31)	
Oil pressure switch				
Activation pressure		kPa (kg/cm², psi)	20—39 (0.2—0.4, 2.8—5.7)	
Engine oil				
Capacity	liters (US qt, Imp qt)	Total (dry engine)	6.1 (6.4, 5.4)	
		Oil pan	5.0 (5.3, 4.4)	
		Oil filter	0.5 (0.52, 0.44)	
Grade		API service	CC	CC, CD
Viscosity number	40°C or over (104°F) or over		SAE 40	
	0°C—40°C (32°F—100°F)		SAE 30	
	−10°C—35°C (15°F—90°F)		SAE 15W-40	
	−10°C—25°C (15°F—77°F)		SAE 20W-20	
	−25°C—30°C (−18°F—86°F)		SAE 10W-30	
	−20°C or below (4°F or below)		SAE 5W-30	

30 TECHNICAL DATA

3A. COOLING SYSTEM (GASOLINE)

Item \ Engine model			FE DOHC	F6, F8, FE SOHC	
				ECE, Hong Kong Singapore	Middle East General
Cooling method			Water-cooled, forced circulation		
Water pump					
Type			Centrifugal, timing belt driven		
Impeller diameter	mm (in)		70 (2.76)		
Number of impeller blades			6		
Speed ratio			1 : 1.00	1 : 1.05	
Water seal type			Unified mechanical seal		
Thermostat					
Type			Wax, 2-stage	Wax	
Start to open	°C (°F)		Sub: 83.5–86.5 (182–188) Main: 86.5–89.5 (188–193)	86.5–89.5 (188–193)	80.5–83.5 (177–182)
Full open	°C (°F)		100 (212)		95 (203)
Lift	mm (in)		Sub: 1.5 (0.06) min. Main: 8.0 (0.31) min.	8.5 (0.33) min.	
Radiator					
Type			Corrugated fin		
Cap opening valve pressure	kPa (kg/cm², psi)		74—103 (0.75—1.05, 11—15)		
Cooling system pressure	kPa (kg/cm², psi)		103 (1.05, 15)		
Cooling fan					
Type			Electric		
Capacity	W	MTX	80		
		ATX	—	120	
Current	A	MTX	5.6—7.6		
		ATX	—	8.0—11.0	
Number of blades			4		
Outer diameter	mm (in)	MTX	320 (12.6)		
		ATX	340 (13.4)		
Switching temperature OFF → ON	°C(°F)		97 (207)		91 (196)
Coolant					
Capacity	liters (US qt, Imp qt)	With heater	7.5 (7.9, 6.6)		
		Without heater	7.0 (7.4, 6.2)		
Antifreeze solution	Protection		Mixture percentage (volume) %		Specific gravity of mixture at 20°C (68°F)
			Water	Solution	
	Above −16°C (3°F)		65	35	1.054
	Above −26°C (−15°F)		55	45	1.066
	Above −40°C (−40°F)		45	55	1.078

3B. COOLING SYSTEM (DIESEL)

Item \ Engine model			RF-CX, RF-N		
Cooling method			Water-cooled, forced circulation		
Water pump					
Type			Centrifugal, timing belt driven		
Water seal type			Unified mechanical seal		
Thermostat					
Type			Wax, two stage		
Start to open	°C (°F)		Main valve: 86.5—89.5 (188—193)	Sub valve: 78.5—81.5 (173—179)	
Full open lift	mm (in)/°C (°F)		Main valve: 8.0 (0.31) min./100 (212)	Sub valve: 1.5 (0.06) min./100 (212)	
Radiator					
Type			Corrugated fin		
Cap opening valve pressure	kPa (kg/cm^2, psi)		74—103 (0.75—1.05, 11—15)		
Cooling circuit checking pressure	kPa (kg/cm^2, psi)		103 (1.05, 15)		
Cooling fan					
Type			Electric		
Number of blade			4		
Outer diameter	mm (in)		340 (13.4)		
Switching temperature OFF → ON	°C (°F)		91 (196)		
Voltage	V		12		
Capacity	W-A		120—8.0-11.0		
Coolant					
Capacity liters (US qt, Imp qt)		With heater	9.5 (10.0, 8.4)		
		Without heater	9.0 (9.5, 7.9)		
Antifreeze solution	Protection		Mixture percentage (Volume)		Specific gravity of mixture at 20°C (68°F)
			Water	Solution	
	Above −16°C (3°F)		65	35	1.054
	Above −26°C (−15°F)		55	45	1.066
	Above −40°C (−40°F)		45	55	1.078

4A. FUEL AND EMISSION CONTROL SYSTEM (CARBURETOR)
F6 and F8 Engine

Engine				F6		F8	
Spec.				General	Singapore	General	ECE, Hong Kong, & Singapore
Idle speed rpm		MTX		800 $^{+50}_{0}$			
		ATX (in N range)		—	950 $^{+50}_{0}$	900 $^{+50}_{0}$	
CO concentration %				2.0 ± 0.5			
Carburetor							
Type				Down draft, two barrel			
Throat diameter mm (in)		Primary		30 (1.18)			
		Secondary		34 (1.34)			
Venturi diameter mm (in)		Primary		23.5 (0.93)			
		Secondary		29.0 (1.14)			
Main nozzle mm (in)		Primary		2.6 (0.10)			
		Secondary		2.8 (0.11)			
Main jet mm (in)		Primary	MTX	1.10 (0.0433)	1.09 (0.0429)	1.14 (0.045)	
			ATX		1.08 (0.0425)	1.12 (0.044)	
		Secondary		1.50 (0.059)			
Main air bleed mm (in)		Primary	MTX	0.60 (0.024)	0.60 (0.024)	0.55 (0.022)	
			ATX		0.80 (0.031)	0.60 (0.024)	
		Secondary		0.50 (0.020)			
Slow jet mm (in)		Primary		0.48 (0.019)	0.46 (0.018)		
		Secondary		1.00 (0.039)		1.10 (0.043)	
Slow air bleed mm (in)	Primary	No. 1		0.80 (0.031)			
		No. 2		1.90 (0.075)			
	Secondary	No. 1		1.00 (0.039)		0.80 (0.031)	
		No. 2		0.50 (0.020)			
Power jet mm (in)				0.50 (0.020)			
Fast idle adjustment mm (in) Clearance between primary throttle valve and bore				1.40—1.76(0.055—0.069)		MTX: 0.48—0.64 (0.019—0.025) ATX: 0.56—0.72 (0.022—0.028)	
Float level adjustment mm (in)	Max. fuel flow "L"			44 (17.3)			
	Clearance between float and air horn without gasket						
	Fuel stop "H"			12.5 (0.49)			
	Clearance between float and air horn/without gasket; float lowered by own weight						
Choke breaker diaphragm mmHg (in Hg)		Start		180—240 (7.1—9.5)		100—160 (3.9—6.3)	
		Stop		290—350 (11.4—13.8)		220—280 (8.7—11.0)	
Choke opener mmHg (in Hg)		Start		—	35—65 (1.4—2.6)	—	35—65 (1.4—2.6)
		Stop		—	130—190 (5.1—7.5)	—	130—190 (5.1—7.5)
Accelerator linkage							
Free play of cable at carburetor mm (in)				1—3 (0.039—0.118)			
Fuel tank							
Capacity Liters (US gal, Imp gal)				60 (15.9, 13.2)			
Fuel pump							
Type				Mechanical pump			
Delivery pressure kPa (kg/cm², psi)				20—26 (0.20—0.27, 2.8—3.8)			
Feeding capacity cc/min (cu in/min)				More than 860 (52.5) at idle			
Fuel filter							
Type				Paper element with magnet			
Air cleaner							
Fresh-Hot switching				Manual	Diaphragm type		
Element type				Oil permeated paper			
Fuel specification				Leaded regular			

FE Engine

Engine				8 Valve		12 Valve	8 Valve
Spec.				**General**	**Middle East**	**ECE, Hong Kong, & Singapore**	**Unleaded Fuel (West Germany)**
Idle speed	rpm		MTX	800 $^{+50}_{0}$			850
			ATX	900 $^{+50}_{0}$ (in N range)			
CO concentration			%	2.0 ± 0.5			
Carburetor							
Type				Down draft, two barrel			
Throat diameter	mm (in)	Primary		30 (1.18)			
		Secondary		34 (1.34)			
Venturi diameter	mm (in)	Primary		23.5 (0.93)			
		Secondary		29.0 (1.14)			
Main nozzle	mm (in)	Primary		2.6 (0.10)			
		Secondary		2.8 (0.11)			
Main jet	mm (in)	Primary	MTX	1.14 (0.045)	1.09 (0.0429)	1.14 (0.045)	1.09 (0.0429)
			ATX	1.12 (0.044)	1.08 (0.0425)	1.12 (0.044)	
		Secondary		1.55 (0.061)	1.50 (0.059)	1.55 (0.061)	1.50 (0.059)
Main air bleed	mm (in)	Primary	MTX	0.50 (0.020)	0.60 (0.024)	0.50 (0.020)	0.50 (0.020)
			ATX	0.55 (0.022)	0.80 (0.031)	0.55 (0.022)	
		Secondary		0.50 (0.020)			
Slow jet	mm (in)	Primary		0.46 (0.018)			
		Secondary	MTX	1.10 (0.043)	1.00 (0.039)	1.10 (0.043)	0.90 (0.035)
			ATX				1.00 (0.031)
Slow air bleed	mm (in)	Primary	No. 1	0.80 (0.031)			
			No. 2	1.90 (0.075)			
		Secondary	No. 1	0.80 (0.031)	1.00 (0.039)	0.80 (0.031)	1.00 (0.039)
			No. 2	0.50 (0.020)			
Power jet	mm (in)		MTX	0.50 (0.020)			0.50 (0.020)
			ATX				0.40 (0.016)
Fast idle adjustment Clearance between primary throttle valve and bore	mm (in)		MTX	0.48—0.64 (0.019—0.025)	1.40—1.76 (0.055—0.069)	0.48—0.64 (0.019—0.025)	1.40—1.76 (0.055—0.069)
			ATX	0.56—0.72 (0.022—0.028)		0.56—0.72 (0.022—0.028)	
Float level adjustment	mm (in)	Max. fuel flow "L" Clearance between float and air horn without gasket		44 (17.3)			
		Fuel stop "H" Clearance between float and air horn without gasket float lowered by own weight		12.5 (0.49)			
Choke breaker diaphragm	mmHg (in Hg)	Start		100—160 (3.9—6.3)	180—240 (7.1—9.4)	100—160 (3.9—6.3)	180—240 (7.1—9.4)
		Stop		220—280 (8.7—11.0)	290—350 (11.4—13.8)	220—280 (8.7—11.0)	290—350 (11.4—13.8)
Choke opener	mmHg (in Hg)	Start		—	80—120 (3.1—8.7)	30—70 (1.2—2.8)	—
		Stop		—	220—280 (8.7—11.0)	130—190 (5.1—7.5)	—
Accelerator linkage							
Free play of cable at carburetor	mm (in)			1—3 (0.039—0.118)			
Fuel tank							
Capacity	Liters (US gal, Imp gal)			60 (15.9, 13.2)			
Fuel pump							
Type				Mechanical pump			
Delivery pressure	kPa (kg/cm², psi)			20—26 (0.20—0.27, 2.8—3.8)		20—29 (0.20—0.30, 2.8—4.3)	20—26 (0.20—0.27, 28—38)
Feeding capacity	cc/min (cu in/min)			More than 860 (52.5) at idle			
Fuel filter							
Type				Paper element with magnet			
Air cleaner							
Fresh-Hot switching				Diaphragm	Manual	Diaphragm	Bimetal
Element type				Oil permeated paper			
Fuel specification				Leaded super Unleaded super	Leaded regular	Leaded super Unleaded super	Unleaded regular

4B. FUEL AND EMISSION CONTROL SYSTEMS (FUEL INJECTION FE)

Item			Specifications
Fuel tank capacity	Liters (US gal, Imp gal)		60 (15.9, 13.2)
Fuel pump	Type		In-tank, electric motor
	Fuel pressure kPa (kg/cm², psi)		441—588 (4.5—6.0, 64—85)
	Feeding capacity cc (cu in)/10 sec.		220 (13.4) min.
Air cleaner	Element type		Oil permeated
Accelerator cable	Deflection mm (in)		1—3 (0.04—0.12)
Idle speed	rpm		ATX: 800 $^{+50}_{0}$ (Neutral), ATX: 900 $^{+50}_{0}$ (P range)
Dash pot	Adjustment speed rpm		1,900—2,100
EGR control valve	Starts to open mmHg (in Hg)		40—60 (1.6—2.4)
Air control valve	Starts to open mmHg (in Hg)		180—280 (7.1—11)
Water thermo valve	Opened °C (°F)		Higher than 46—54 (115—129)
Water thermo switch	Opened At radiator °C (°F)		Lower than 15—19 (59—66)
Vacuum switch valve	Starts to open mmHg (in Hg)		66—106 (2.6—4.2)
Water thermo sensor	Resistance	-20°C (-4°F) kΩ	14.5—17.8
		20°C (68°F) kΩ	2.2—2.7
		80°C (176°F) kΩ	0.28—0.35
Throttle sensor	Resistance at fully closed	B ↔ C kΩ	4—6
		A ↔ B Ω	Approx. 500
	Resistance at fully opened	A ↔ B kΩ	Approx. 4.5
	Setting	Closed at mm (in)	0.4 (0.0157)
		Open at mm (in)	0.55 (0.022)
Air flow meter	Resistance of full closed	E_2 ↔ Vs Ω	More than 20
		E_2 ↔ Vc Ω	100—300
		E_2 ↔ V_B Ω	200—400
		E_1 ↔ Fc Ω	∞
	Resistance at full open	E_1 ↔ Fc Ω	0
Intake air thermo sensor	Resistance	-20°C (-4°F) kΩ	13.6—18.4
		20°C (68°F) kΩ	2.21—2.69
		60°C (140°F) kΩ	0.493—0.667
Pressure regulator	Regulating pressure	At idling kPa (kg/cm², psi)	235—275 (2.4—2.8, 34—40)
Injector	Injection amount cc (cu in)/15 sec.		38—53 (2.3—3.2)
	Resistance Ω		12—16
Circuit opening relay	Resistance	STA ↔ E_1 Ω	15—30
		B ↔ Fc Ω	80—150
Fuel			Unleaded gasoline

4C. FUEL AND EMISSION CONTROL SYSTEM (FE DOHC)

Item \ Engine model			Unleaded fuel	Leaded fuel
Idle speed		rpm	With test connector grounded 750 ± 50	
Throttle body				
Type			Horizotal draft (2-barrel)	
Throat diameter	mm (in)	No.1	46 (1.8)	
		No. 2	40 (1.6)	
Fuel pump				
Type			Impeller (in tank)	
Output pressure		kPa (kg/cm², psi)	Main pump: 441—588 (4.5—6.0, 64—85) Transfer pump: 20—25 (0.20—0.25, 2.8—3.6)	
Feeding capacity		cc (cu in)/10 seconds	Main pump: 220 (13.4) min. Transfer pump: 190 (11.6) min.	
Fuel filter				
Type	Low-pressure side		Nylon element	
	High-pressure side		Paper element	
Pressure regulator				
Type			Diaphragm	
Regulating pressure		kPa (kg/cm², psi)	235—275 (2.4—2.8, 34—40)	
Injector				
Type			High-ohmic	
Type of drive			Voltage	
Resistance		Ω	12—16	
Injection amount		cc (cu in)/15 seconds	66—91 (4.03—5.55)	
Idle speed control valve				
Solenoid resistance		Ω	6.3—9.9	
Fuel tank				
Capacity		liters (US gal, Imp gal)	60 (15.9, 13.2) 57 (15.0, 12.5): 4-wheel steering vehicle	
Air cleaner				
Element type			Dry	
Fuel				
Specification			Unleaded (95 RON or more)	Leaded (95 RON or more)

4D. FUEL AND EMISSION CONTROL SYSTEM (DIESEL)

Item \ Engine model			RF-CX	RF-N
Idle speed		rpm	720 $^{+30}_{-20}$	
Fuel injection pump	Type		VE Type	
	Plunger diameter	mm (in)	9.0 (0.35)	8.0 (0.31)
	Cam height	mm (in)	2.2 (0.08)	
	Governor		Half all speed governor	
	Injection timing		ATDC 1°	TDC 0°
	Cam lift at injection timing	mm (in)	1 (0.04)	
Injection nozzle	Type		Throttle	
	Number of nozzle and diameter	mm (in)	1.0 (0.04) x 1	
	Injection pressure	kPa (kg/cm^2, psi)	13,240 (135, 1,920)	
Free play of cable at injection pump		mm (in)	1.0—3.0 (0.04—0.12)	
Fuel tank capacity		liters (Us gal, Imp gal)	60 (15.9, 13.2)	
Fuel filter type			Cartridge, paper element	
Air cleaner element type			Cartridge, paper element	
Fast idle speed (A/C ON)		rpm	700—750	
Cold start device	Engine speed	rpm	1,100 at below 0°C (32°F)	
	Advance degree	0°C (32°F)	6°	
		60°C (140°F)	0°	

5. ENGINE ELECTRICAL SYSTEM
Gasoline Engine

Item \ Engine			F6	F8	FE (8 VALVE)	FE (12 VALVE)	FE (DOHC)
Battery	Voltage V		12, Negative ground				
	Type and capacity (20 hour rate)		34B19L(S) (33 Ah): General 50D20L (50 Ah), 55D23L (60 Ah): ECE				
Alternator	Type		A.C.				
	Output V—A		12—70				
	Regulator type		Transistorized (built-in IC regulator)				
	Regulated voltage V		14.1—14.7				
	Brush length mm (in)	Standard	16.5 (0.650)				
		Minimum	8.0 (0.315)				
	Drive belt tension mm (in)/98 N (10 kg, 22 lb)		New: 6—8 (0.24—0.32), Used: 7—9 (0.28—0.35)				
Starter	Type		Coaxial reduction: Middle East & General (FE · carburetor) Non-reduction: Others				
	Output V—kW		12—0.85	12—0.95		12—1.4	12—0.95
	Brush length mm (in)	Standard	17.0 (0.669)		Unleaded fuel 17.0 (0.669) Others 17.5 (0.689)	17.0 (0.669)	
		Minimum	11.5 (0.453)		Unleaded fuel 11.5 (0.453) Others 10.0 (0.394)	11.5 (0.453)	
Ignition timing			6 ± 1° BTDC (Vacuum hose disconnected)				12 ± 1° BTDC (Test connector grounded)
Distributor	Type		Fully transistorized (HEI)				Electronic spark advance
	Centrifugal spark advance (crank angle/engine speed) degree/rpm		F6 –2—2/1,000 6—10/2,100 14—18/6,100 F8 –2—2/1,000 10—14/2,100 18—22/6,100 FE (8 VALVE)—Carburetor Unleaded fuel (MTX) –2—2/1,760 12—16/3,360 22—26/5,320 (ATX) –2—2/1,300 12—16/3,360 22—26/5,320 Others –2—2/1,460 10—14/2,540 22—26/5,540 FE (12 VALVE)—Carburetor –2—2/1,200 10—14/2,400 10—14/4,000 16—20/5,000 FE—Fuel injection (except FE DOHC) –2—2/1,000 10—14/2,600 10—14/4,600 16—20/5,800				

Item \ Engine		F6	F8	FE (8 VALVE)	FE (12 VALVE)	FE (DOHC)
Distributor	Vacuum spark advance (Crank angle/Vacuum) degree/mmHg (inHg)	F6 and F8 –2—2/100 6—10/300 FE (8 VALVE)—Carburetor Unleade fuel –2—2/120 8—12/245 Others (MTX) –2—2/100 16—20/250 (ATX) –2—2/100 10—14/200 FE (12 VALVE)—Carburetor –2—2/120 11—15/300 FE—Fuel injection (except FE DOHC) [A chamber] –2—2/125 18—22/300 [B chamber] –2—2/125 –6—–10/200				
Spark plug	Type	FE (8 VALVE)* NGK: BPR5ES-11, BPR6ES-11 Nippon Denso: W16EXR-U11, W20EXR-U11 Others NGK: BPR5ES, BPR6ES Nippon Denso: W16EXR-U, W20EXR-U			NGK: BCPR5E, BCPR6E Nippon Denso: Q16PR-U, Q20PR-U	NGK: Unleaded fuel BCPR5E-11 BCPR6E-11 BCPR7E-11 Leaded fuel BCPR5E BCPR6E
	Plug gap mm (in)	0.75—0.85 (0.030—0.033), FE (8 VALVE)* 1.0—1.1 (0.039—0.043)			0.7—0.8 (0.028—0.031)	1.0—1.1 (0.039—0.043)*1 0.7—0.8 (0.028—0.031)*2
Firing order		1—3—4—2				

Diesel Engine

Item \ Engine			RF-N	RF-CX
Battery	Voltage V		12, Negative ground	
	Type and capacity (20 hour rate)		80D26L (65) 50D20L, 50D20R (50)—ECE	80D26L (65) 65D23L, 65D23R (55)
Alternator	Type		A.C.	
	Output V—A		12—70	12—75
	Regulator type		Transistorized (built-in IC regulator)	
	Regulated voltage V		14.1—14.7	
	Brush length mm (in)	Standard	16.5 (0.650)	21.5 (0.846)
		Minimum	8.0 (0.315)	8.0 (0.315)
	Drive belt tension mm (in)/98 N (10 kg, 92 lb)		New: 9—11 (0.35—0.43), Used: 12—14 (0.47—0.55)	
Starter	Type		Reduction	
	Output V—kW		12—2.0, 12—2.2 (Cold area)	
	Brush length mm (in)	Standard	2.0 kW: 17.0 (0.669), 2.2 kW: 18.0 (0.709)	
		Minimum	2.0 kW: 11.0 (0.453), 2.2 kW: 11.0 (0.453)	
Firing order			1—3—4—2	

*1 Unleaded fuel model
*2 Leaded fuel model

6. CLUTCH

Item \ Engine model			F6	F8	FE	FE DOHC	RF-N	RF-CX
Clutch control								
Type			Hydraulic					
Master cylinder inner diameter		mm (in)	15.87 (0.625)					
Release cylinder inner diameter		mm (in)	19.05 (0.750)					
Clutch fluid type			DOT-3 or DOT-4, FMVSS 116, or SAE J1703					
Clutch pedal								
Type			Suspended					
Pedal ratio		LHD	6.00					
		RHD	5.96					
Full stroke		mm (in)	135 (5.31)					
Height		mm (in)	216.5—221.5 (8.524—8.720)					
Free play		mm (in)	5—13 (0.20—0.51)					
Distance to floor when clutch fully disengaged		LHD	68 (2.7) or more					
mm (in)		RHD	85 (3.3) or more					
Flywheel								
Deflection		mm (in)	0.2 (0.008) max.					
Grinding limit		mm (in)	0.5 (0.020) max.					
Clutch disc								
Type			Single dry plate					
Set load N (kg, lb)		General	3434 (350, 770)	3846 (392, 862)	4316 (440, 968)		3846 (392, 862)	—
		ECE (Except UK)	—	4022 (410, 902)	4611 (470, 1034)		4022 (410, 902)	
		UK	—	3846 (392, 862)	4611 (470, 1034)	4316 (440, 968)	3846 (392, 862)	4022 (410, 902)
Runout		mm (in)	1.0 (0.039) max.					
Wear limit		mm (in)	0.3 (0.012) from rivet head					
Outer diameter		mm (in)	200 (7.874)	215 (8.465)	225 (8.858)			
Inner diameter		mm (in)	130 (5.118)	150 (5.906)				
Facing thickness mm (in)	Flywheel side		3.5 (0.14)					
	Pressure plate side	General	4.1 (0.16)					—
		ECE (Except UK)	—	3.8 (0.15)				
		UK	—	4.1 (0.16)	3.8 (0.15)	4.1 (0.16)		3.8 (0.15)
Clutch cover								
Type			Diaphragm spring					
Runout		mm (in)	0.05 (0.0020) max.					
Grinding limit		mm (in)	0.5 (0.020)					

7A. MANUAL TRANSAXLE

Item \ Engine model			FE DOHC Leaded	FE DOHC Unleaded	F6	FE 12 valve	FE 8 valve Carb.	FE 8 valve FI	F8	RF-N	RF-CX
Transmission											
Shift lever position			Floor shift								
Gear ratio	First		3.307								
	Second		1.833								
	Third		1.310				1.233				1.161
	Fourth		1.030				0.970			0.914	0.861
	Fifth		0.837				0.795			0.755	0.680
	Reverse		3.166								
Oil capacity	liters US qt, Imp qt		3.35 (3.6, 3.0)								
Fluid type			ATF: DEXRON-II Above 0°F: API GL-4 or GL-5 SAE80W—90 or SAE90								
Clearance											
Clearance of lever and reverse idle gear mm (in)	Standard		0.1—0.32 (0.004—0.013)								
	Wear limit		0.5 (0.020)								
Clearance of shift fork and clutch hub sleeve mm (in)	Standard		0.2—0.4 (0.008—0.016)								
	Wear limit		0.5 (0.020)								
Clearance of synchronizer ring and gear mm (in)	Standard		1.5 (0.059)								
	Wear limit		0.8 (0.021)								
Gear thrust clearance mm (in)	First	Standard	0.05—0.28 (0.002—0.011)								
		Limit	0.3 (0.020)								
	Second	Standard	0.18—0.46 (0.007—0.018)								
		Limit	0.5 (0.02)								
	Third	Standard	0.05—0.20 (0.002—0.008)								
		Limit	0.25 (0.010)								
	Fourth	Standard	0.17—0.37 (0.0064—0.014)								
		Limit	0.4 (0.016)								
Bearing preload of primary shaft gear			Primary shaft 0.1—0.25 N·m (1.0—2.5 cm-kg, 0.86—2.18 in-lb) Secondary shaft 0.2—0.4 N·m (2.0—4.0 cm-kg, 1.7—3.4 in-lb)								
Bearing preload adjust shim mm (in)			0.25 (0.010), 0.30 (0.012), 0.35 (0.014), 0.40 (0.016), 0.45 (0.018), 0.50 (0.020), 0.55 (0.022), 0.60 (0.024), 0.65 (0.026), 0.70 (0.028), 0.75 (0.030), 0.80 (0.031)								
Drive and differential											
Final gear	Type		Helical gear								
	Reduction ratio		4.105	3.850			4.105	3.850			4.150
Side bearing preload			1.4—2.0 N·m (14—20 cm-kg, 12—17 in-lb)								
Bearing preload adjust shim mm (in)			0.10 (0.004), 0.15 (0.006), 0.20 (0.008), 0.25 (0.010), 0.30 (0.012), 0.35 (0.014), 0.40 (0.016), 0.45 (0.018), 0.50 (0.020), 0.55 (0.022), 0.60 (0.024), 0.65 (0.026), 0.70 (0.028), 0.75 (0.030), 0.80 (0.031), 0.85 (0.033), 0.90 (0.035), 0.95 (0.037), 1.00 (0.039), 1.05 (0.041), 1.10 (0.043), 1.15 (0.045), 1.20 (0.047)								
Backlash of side gear and pinion gear mm (in)			0—0.1 (0—0.004)								

7B. AUTOMATIC TRANSAXLE (ELECTRONICALLY CONTROLLED AND 4-SPEED)

Item	Model		G4A-EL (EC-AT)	G4A-HL (4-Speed)	
				FE engine	F8 engine
Gear ratio	1st		2.800		
	2nd		1.540		
	3rd		1.000		
	4th (OD)		0.700		
	Reverse		2.333		
Oil capacity	liters (US qt, Imp qt)		6.2 (6.6, 5.4)		
Fluid type			ATF Dexron II or M III		
Fluid level with the engine idling in P			Between F and L marks on gauge		
Stall speed					
After brake-in	D, S, L	rpm	2170—2270	2430—2530	2180—2280
	R	rpm	2130—2230	2390—2490	2140—2240
Time lag					
N → D		sec	0.5—1.0	0.4—1.2	
N → R		sec	0.5—1.0	0.4—1.5	
Line pressure					
D, S, L	Idle	kPa (kg/cm^2, psi)	353—432 (3.6—4.4, 51—63)	350—490 (3.6—5.0, 51—71)	
	Stall	kPa (kg/cm^2, psi)	873—1,040 (8.4—10.6, 127—151)	980—1230 (10.0—12.5, 142—178)	
R	Idle	kPa (kg/cm^2, psi)	598—942 (6.1—9.6, 87—137)	600—830 (6.1—8.5, 87—121)	
	Stall	kPa (kg/cm^2, psi)	1,668—2,011 (17.0—20.5, 242—292)	1470—1960 (15.0—20.0, 213—284)	
Throttle pressure					
D	Idle	kPa (kg/cm^2, psi)	39—88 (0.4—0.9, 6—13)	83—113 (0.85—1.15, 12—16)	
	Stall	kPa (kg/cm^2, psi)	471—589 (4.8—6.0, 68—85)	540—610 (5.5—6.2, 78—88)	
Governor pressure					
D	30 km/h (19 mph)	kPa (kg/cm^2, psi)	—	79—114 (0.81—1.16, 12—16)	82—117 (0.84—1.19, 12—17)
	55 km/h (34 mph)	kPa (kg/cm^2, psi)	—	146—190 (1.49—1.94, 21—28)	157—201 (1.60—2.05, 23—29)
	85 km/h (53 mph)	kPa (kg/cm^2, psi)	—	276—339 (2.81—3.46, 40—49)	302—366 (3.08—3.73, 44—53)

Shift point (G4A-EL)

Range Mode		Throttle condition (Throttle sensor voltage)	Shifting	Drum speed rpm	Vehicle speed km/h (mph)
Power	D	Fully opened (4.3 volt)	$D_1 \rightarrow D_2$	4930—5480	54—60 (33—37)
			$D_2 \rightarrow D_3$	5120—5520	102—110 (63—68)
			$D_3 \rightarrow OD$	5380—5710	165—175 (102—109)
		Half throttle (1.6—2.2 volt)	$D_1 \rightarrow D_2$	3470—4180	38—45 (24—28)
			$D_2 \rightarrow D_3$	4020—4420	80—88 (50—55)
			$D_3 \rightarrow OD$	3820—4530	117—139 (73—86)
			Lock-up ON (OD)	2670—3170	117—139 (73—86)
			Lock-up OFF(OD)	2510—2970	110—130 (68—81)
			$OD \rightarrow D_3$	2150—2630	94—115 (58—71)
			$D_3 \rightarrow D_2$	2020—2410	62—74 (38—46)
		Kick-down	$OD \rightarrow D_3$	3490—3720	153—163 (95—101)
			$OD \rightarrow D_2$	2050—2240	90—98 (56—61)
			$OD \rightarrow D_1$	980—1120	43—49 (27—30)
			$D_3 \rightarrow D_2$	2940—3200	90—98 (56—61)
			$D_3 \rightarrow D_1$	1400—1500	43—46 (27—29)
			$D_2 \rightarrow D_1$	2160—2300	43—46 (27—29)
Economy		Fully opened (4.3 volt)	$D_1 \rightarrow D_2$	4470—5020	49—55 (30—34)
			$D_2 \rightarrow D_3$	4770—5170	95—103 (59—64)
			$D_3 \rightarrow OD$	5380—5710	165—175 (102—109)
		Half throttle (1.6—2.2 volt)	$D_1 \rightarrow D_2$	2830—3380	31—37 (19—23)
			$D_2 \rightarrow D_3$	2960—3120	59—68 (37—42)
			$D_3 \rightarrow OD$	2870—3460	88—106 (55—66)
			Lock-up ON (OD)	2010—2420	88—106 (55—66)
			Lock-up OFF (OD)	1940—2310	85—101 (53—63)
			$OD \rightarrow D_3$	1600—1960	70—86 (43—53)
			$D_3 \rightarrow D_2$	1240—1570	38—48 (24—30)
		Kick-down	$OD \rightarrow D_3$	3490—3720	153—163 (95—101)
			$OD \rightarrow D_2$	1960—2150	86—94 (53—58)
			$OD \rightarrow D_1$	980—1120	43—49 (27—30)
			$D_3 \rightarrow D_2$	2800—3070	86—94 (53—58)
			$D_3 \rightarrow D_1$	1400—1600	43—49 (27—30)
			$D_2 \rightarrow D_1$	2160—2460	43—49 (27—30)
S		Fully opened (4.3 volt)	$S_1 \rightarrow S_2$	4930—5480	54—60 (33—37)
			$S_2 \rightarrow S_3$	5120—5520	102—110 (63—68)
			$S_4 \rightarrow S_3$	3720—3950	163—173 (101—107)
			$S_3 \rightarrow S_2$	2940—3200	90—98 (56—61)
			$S_2 \rightarrow S_1$	2160—2310	43—46 (27—29)
		Half throttle (1.6—2.2 volt)	$S_1 \rightarrow S_2$	3470—4180	38—45 (24—28)
			$S_2 \rightarrow S_3$	4020—4420	80—88 (50—55)
			$S_4 \rightarrow S_3$	3720—3950	163—173 (101—107)
			$S_3 \rightarrow S_2$	2020—2410	62—74 (38—46)
L		Fully opened (4.3 volt)	$L_1 \rightarrow L_1$	4930—5480	54—60 (33—37)
			$L_2 \rightarrow L_1$	2160—2310	43—46 (27—29)
		Half throttle (1.6—2.2 volt)	$L_1 \rightarrow L_2$	3470—4180	38—45 (24—28)
Hold	D	—	$D_2 \rightarrow D_3$	850—1160	17—23 (11—14)
			$D_3 \rightarrow D_2$	230—420	7—13 (4—8)
	S	Fully closed (0.5 volt)	$OD \rightarrow D_3$	3720—3950	163—173 (101—107)
			$S_3 \rightarrow S_2$	2940—3200	90—98 (56—61)
	L		$L_2 \rightarrow L_1$	2160—2460	43—49 (27—30)

Shift point (G4A-HL)

Range	Throttle condition	Shifting	Vehicle speed km/h (mph)	
			FE engine	F8 engine
D	Fully opened	1st → 2nd	50—65 (31—40)	47—62 (29—38)
		2nd → 3rd	100—115 (62—71)	94—109 (58—68)
	Half throttle (1/2)	1st → 2nd	17—32 (11—20)	16—31 (10—19)
		2nd → 3rd	42—57 (26—35)	
		3rd → OD	79—94 (49—58)	74—89 (46—55)
		Lock-up	74—89 (46—55)	
	Kick-down	OD → 3rd	More than 88 (55)	More than 82 (51)
		OD → 2nd	34—103 (21—64)	33—97 (20—60)
		OD → 1st	27—49 (17—30)	26—48 (16—30)
		3rd → 2nd	34—103 (21—64)	33—97 (20—60)
		3rd → 1st	11—49 (7—30)	10—48 (6—30)
		2nd → 1st	4—49 (2—30)	3—48 (2—30)
1	Fully opened	1st → 2nd	56—71 (35—44)	52—67 (32—42)
	Half throttle	1st → 2nd	56—71 (35—44)	52—67 (32—42)
	Kick-down	2nd → 1st	46—61 (29—38)	43—58 (27—36)
D	Fully opened	3rd lock-up	106—121 (66—75)	100—115 (62—71)

Item / Model			G4A-EL (EC-AT)	G4A-HL (4-speed)	
				FE engine	F8 engine
Torque converter					
Stall torque ratio			1.700—1.900 : 1	1.900—2.100 : 1	
Bushing diameter	mm (in)	Standard	53.030 (2.088)		
		Maximum	53.076 (2.090)		
Oil pump					
Clearance					
Cam ring to oil pump cover	mm (in)	Standard	0.005—0.020 (0.0002—0.0008)		
		Maximum	0.080 (0.003)		
Rotor to oil pump cover	mm (in)	Standard	0.005—0.020 (0.0002—0.0008)		
		Maximum	0.030 (0.0012)		
Vane to oil pump cover	mm (in)	Standard	0.015—0.050 (0.0006—0.0020)		
		Maximum	0.080 (0.003)		
Seal pin to oil pump cover	mm (in)	Standard	0.005—0.020 (0.0002—0.0008)		
		Maximum	0.060 (0.002)		
Vane to rotor groove	mm (in)	Standard	0.010—0.045 (0.0004—0.0018)		
		Maximum	0.065 (0.0026)		
Sleeve outer diameter	mm (in)	Standard	28.00 (0.102)		
Rotor bushing in inner diameter	mm (in)	Standard	28.00 (1.102)		
		Maximum	28.05 (1.104)		
Seal pin outer diameter	mm (in)	Standard	5.00 (0.197)		
		Minimum	4.90 (0.193)		
Guide ring outer diameter	mm (in)	Standard	57.85 (2.278)		
		Minimum	57.70 (2.272)		
Valve outer diameter	mm (in)	Standard	12.00 (0.472)		
		Minimum	11.86 (0.467)		

Item		Model	G4A-EL (EC-AT)	G4A-HL (4-speed)	
				FE engine	F8 engine
Forward clutch					
Number of drive/driven plate			3/3		
Drive plate thickness	mm (in)	Standard	1.6 (0.063)		
		Minimum	1.4 (0.055)		
Forward clutch clearance		mm (in)	1.0—1.2 (0.040—0.047)		
Retaining plate sizes		mm (in)	5.9 (0.232), 6.1 (0.240), 6.3 (0.248), 6.5 (0.256), 6.7 (0.264), 8.9 (0.350)		
Coasting clutch					
Number of drive/driven plates			2/2		
Drive plate thickness	mm (in)	Standard	1.6 (0.063)		
		Minimum	1.4 (0.055)		
Coasting clutch clearance		mm (in)	1.0—1.2 (0.040—0.047)		
Retaining plate sizes		mm (in)	4.6 (0.181), 4.8 (0.189), 5.0 (0.197), 5.2 (0.205), 5.4 (0.213), 5.6 (0.220)		
Return spring free length		mm (in)	29.8 (1.173)		
Reverse clutch					
Number of drive/driven plates			2/2		
Driven plate thickness	mm (in)	Standard	1.6 (0.063)		
		Minimum	1.4 (0.055)		
Reverse clutch clearance		mm (in)	2.1—2.4 (0.083—0.094)		
Retaining plate sizes		mm (in)	6.6 (0.260), 6.8 (0.268), 7.0 (0.276), 7.2 (0.283), 7.4 (0.291), 7.6 (0.299)		
3-4 clutch					
Number of drive/driven plates			5/5	4/4	
Drive plate thickness	mm (in)	Standard	1.6 (0.063)		
		Minimum	1.4 (0.055)		
3-4 clutch clearance		mm (in)	1.3—1.5 (0.051—0.059)		
Retaining plate sizes		mm (in)	3.8 (0.150), 4.0 (0.157), 4.2 (0.165), 4.4 (0.173), 4.6 (0.181), 4.8 (0.189)	4.8 (0.819), 5.0 (0.197), 5.2 (0.205), 5.4 (0.213), 5.6 (0.220)	
Return spring free length		mm (in)	33.2 (1.307)		
Low and reverse brake					
Number of drive/driven plates			3/3	4/4	
Drive plate thickness	mm (in)	Standard	1.6 (0.063)		
		Minimum	1.4 (0.055)		
Low and reverse brake clearance		mm (in)	2.1—2.4 (0.083—0.094)		
Retaining plate sizes		mm (in)	6.8 (0.268), 7.0 (0.276), 7.2 (0.283), 7.4 (0.291), 7.6 (0.299), 7.8 (0.307)	10.0 (0.394), 10.2 (0.402), 10.4 (0.410), 10.6 (0.417), 10.8 (0.425)	
Return spring free length		mm (in)	20.5 (0.807)		
Sun gear drum bushing	mm (in)	Maximum	33.425 (1.316)		
Small sun gear bushing	mm (in)	Maximum	24.021 (0.946)		
Carrier hub					
Clearance between pinion washer and planet carrier	mm (in)	Maximum	0.2—0.7 (0.008—0.028)		
Servo					
Free length of return spring	mm (in)	Standard	43.25 (1.703)	42.0 (1.654)	43.25 (1.703)
2-3 accumulator valve					
2-3 accumulator valve spring	mm (in)	Standard	83.3 mm (3.280)	76.0 (2.992)	

Control valve spring (G4A-EL)

Spring name	Outer dia. mm (in)	Free length mm (in)	Wire dia. mm (in)	Spring color
1-2 accumulator small spring	11.0 (0.433)	88.1 (3.348)	1.4 (0.055)	Gray
1-2 accumulator large spring	16.0 (0.0630)	78.0 (3.071)	2.0 (0.079)	Blue
Bypass, servo control spring	5.0 (0.197)	33.4 (1.315)	0.55 (0.022)	Maroon
2-3 timing spring	8.3 (0.327)	26.5 (1.043)	0.8 (0.031)	—
N-R accumulator rear spring	11.1 (0.437)	62.0 (2.441)	1.2 (0.047)	Light green
N-D accumulator front spring	9.8 (0.386)	52.9 (2.083)	1.0 (0.039)	Brown
Coasting bypass spring	5.8 (0.228)	37.7 (1.484)	0.6 (0.024)	Dark blue
3-2 timing spring	8.2 (0.323)	28.6 (0.126)	0.8 (0.031)	Red
3-2 capacity spring	5.4 (0.213)	30.6 (1.205)	0.5 (0.020)	White
Throttle relief ball spring	6.6 (0.260)	21.6 (0.850)	0.8 (0.031)	—
Pressure modifier spring	8.3 (0.327)	26.5 (1.043)	0.8 (0.031)	—
Low reducing spring	8.7 (0.343)	38.3 (1.508)	0.9 (0.035)	Black
1-2 shift spring	8.7 (0.343)	41.3 (1.626)	1.0 (0.039)	Yellow
2-3, 3-4 shift spring	7.4 (0.291)	36.6 (1.441)	0.8 (0.031)	Gray
Throttle backup spring	9.65 (0.380)	26.9 (1.059)	0.55 (0.022)	Red
Throttle modulator spring	6.3 (0.248)	47.9 (1.886)	0.8 (0.031)	—
Throttle assist spring	5.15 (0.203)	32.3 (1.272)	0.55 (0.022)	Dark green
Throttle spring	5.4 (0.213)	47.2 (1.858)	0.8 (0.031)	Pink
Converter relief ball spring	6.9 (0.272)	24.1 (0.949)	0.9 (0.035)	Maroon
Orifice check valve spring	5.0 (0.197)	12.5 (0.492)	0.23 (0.009)	—
Pressure regulator spring	11.5 (0.453)	26.5 (1.043)	1.0 (0.039)	Maroon
Lock-up control spring	5.0 (0.197)	35.2 (1.386)	0.6 (0.024)	Purple

Control valve springs (G4A-HL)

Spring name		Outer dia. mm (in)	Free length mm (in)	Wire dia. mm (in)	Spring color
1-2 accumulator small spring	F8 engine	9.9 (0.400)	84.7 (3.335)	1.2 (0.047)	Red
1-2 accumulator large spring	FE engine	13.0 (0.512)	73.2 (2.881)	1.8 (0.071)	Pink
	F8 engine	16.0 (0.630)	84.7 (3.335)	2.0 (0.079)	White
Bypass spring		5.0 (0.197)	25.1 (0.988)	0.7 (0.028)	Yellow
Servo control spring		4.9 (0.193)	27.1 (1.067)	0.5 (0.020)	Light blue
2-3 timing spring		8.3 (0.327)	26.5 (1.043)	0.8 (0.031)	—
N-R accumulator rear spring		11.1 (0.437)	68.2 (2.685)	1.0 (0.039)	Blue
N-D accumulator front spring		9.8 (0.386)	60.9 (2.398)	1.1 (0.043)	Yellow
Low reducing spring		8.7 (0.343)	38.3 (1.508)	0.9 (0.035)	Black
OD release spring		6.0 (0.236)	32.6 (1.283)	0.6 (0.024)	Orange
Coasting bypass spring		5.8 (0.228)	31.3 (1.232)	0.6 (0.024)	Yellow
3-2 timing spring		8.2 (0.323)	28.55 (1.124)	0.8 (0.031)	Maroon
3-2 capacity spring		5.55 (0.219)	30.5 (1.201)	0.55 (0.022)	Light green
Throttle relief ball spring		6.6 (0.260)	20.3 (0.799)	0.8 (0.031)	Light green
1-2 shift control spring		5.5 (0.217)	46.0 (1.811)	0.5 (0.020)	Light green
1-2 shift spring		5.0 (0.197)	24.9 (0.980)	0.5 (0.020)	Gray
2-3 shift spring		6.1 (0.240)	39.7 (1.563)	0.65 (0.026)	Pink
3-4 shift spring		6.4 (0.252)	37.0 (1.457)	0.6 (0.024)	—
Throttle backup spring		6.4 (0.252)	33.5 (1.319)	0.6 (0.024)	Pink
Throttle modulator front spring		5.0 (0.197)	27.8 (1.094)	0.6 (0.024)	Red
Throttle modulator rear spring		7.15 (0.281)	30.8 (1.213)	0.85 (0.033)	Red
1 range control spring		6.15 (0.242)	39.2 (1.543)	0.65 (0.026)	White
2 range control spring		3.95 (0.156)	32.1 (1.264)	0.45 (0.018)	—
Kick-down spring		5.4 (0.213)	38.1 (1.500)	0.8 ().031)	—
Throttle assist spring		5.15 (0.203)	32.3 (1.272)	0.55 (0.022)	Dark green
Throttle spring		5.4 (0.213)	48.3 (1.902)	0.8 (0.031)	—
Converter relief ball spring		6.9 (0.272)	24.1 (0.949)	0l9 (0.035)	Maroon
Orifice check valve spring		5.0 (0.197)	12.5 (0.492)	0.23 (0.009)	—

Spring name	Outer dia. mm (in)	Free length mm (in)	Wire dia. mm (in)	Spring color
Pressure regulator spring	9.5 (0.374)	30.7 (1.209)	0.7 (0.028)	—
Lock-up control spring	7.3 (0.287)	46.2 (1.819)	0.8 (0.031)	Blue
Lock-up support spring	6.1 (0.240)	43.5 (1.713)	0.65 (0.026)	Blue
OD lock-up spring	7.1 (0.280)	66.5 (2.618)	0.8 (0.031)	Red

Item \ Model			G4A-EL (EC-AT)	G4A-HL (4-speed)	
				FE engine	F8 engine
Gear assembly					
Total end play		mm (in)	0.25—0.50 (0.010—0.020)		
End play adjust race		mm (in)	1.2 (0.047), 1.4 (0.055), 1.6 (0.063), 1.8 (0.071), 2.0 (0.079), 2.2 (0.087)		
Idle gear bearing preload		N·m (cm-kg, in-lb)	0.03—0.9 (0.3—9.0, 0.26—7.8)		
Preload adjust shims		mm (in)	0.10 (0.004), 0.12 (0.005), 0.14 (0.006), 0.16 (0.0063), 0.18 (0.007), 0.20 (0.008)		
Output gear bearing preload		N·m (cm-kg, in-lb)	0.03—0.9 (0.3—9.0, 0.26—7.8)		
Preload adjust shims		mm (in)	0.10 (0.004), 0.12 (0.005), 0.14 (0.006), 0.16 (0.0063), 0.18 (0.007), 0.20 (0.008), 0.50 (0.020)		
Drive and differential					
Final gear	Type		Helical gear		
	Reduction ratio		3,700 : 1		
Side bearing preload		N·m (cm-kg, in-lb)	2.9—3.9 (30—40, 26—35)		
Preload adjust shims		mm (in)	0.10 (0.004), 0.12 (0.005), 0.14 (0.006), 0.16 (0.0063), 0.18 (0.007), 0.20 (0.008), 0.50 (0.020), 0.70 (0.028), 1.00 (0.039)		
Backlash of side gear and pinion	Standard	mm (in)	0.025—0.1 (0.001—0.004)		
	Maximum		0.5 (0.020)		
Torque converter distance "A" (Refer to page 7B—214)		mm (in)	25 (0.984)		

7C. AUTOMATIC TRANSAXLE (3-SPEED)

Item \ Engine model			FE engine	F6 engine
Model			F3A	
Gear ratio		1st	2.841	
		2nd	1.541	
		3rd	1.000	
		Reverse	2.400	
Oil capacity		Liters (US qt, Imp qt)	6.2 (6.6, 5.5)	
Fluid type			ATF Dexron-II or M-III	
Fluid level with the engine idling at P			Between F and L marks on gauge	
Stall revolution				
After brake in		rpm	2050—2150	1800—2050
Line pressure				
D, 1	Idle	kPa (kg/cm², psi)	294—392 (3—4, 43—57)	
	Stall	kPa (kg/cm², psi)	883—1079 (9—11, 128—156)	
2	Idle	kPa (kg/cm², psi)	785—1177 (8—12, 114—171)	
	Stall	kPa (kg/cm², psi)	785—1177 (8—12, 114—171)	
R	Idle	kPa (kg/cm², psi)	392—687 (4—7, 57—100)	
	Stall	kPa (kg/cm², psi)	1570—1864 (16—19, 228—270)	
Governor pressure				
D	30 km/h (19 mph)	kPa (kg/cm², psi)	78—137 (0.8—1.4, 11—20)	
	50 km/h (31 mph)	kPa (kg/cm², psi)	157—226 (1.6—2.3, 23—33)	
	85 km/h (53 mph)	kPa (kg/cm², psi)	314—402 (3.2—4.1, 46—58)	
Line pressure cut back				
Vacuum of vacuum pump			Governor pressure kPa (kg/cm², psi)	
0 mmHg (0 inHg)			98—157 (1.0—1.6, 14—23)	
200 mmHg (7.87 inHg)			39—98 (0.4 —1.0, 6—14)	
Shift point				
Range	Throttle condition (manifold vacuum)	Shifting	Shift point speed km/h (mph)	
D	Fully opened 0—100 mmHg (0—3.94 inHg)	1st → 2nd	47—57 (29—35)	44—54 (27—33)
		2nd → 3rd	106—119 (66—74)	95—108 (59—67)
		3rd → 2nd	95—103 (59—64)	86—94 (53—58)
		2nd → 1st	35—39 (22—24)	34—38 (21—24)
	Half throttle 130 mmHg (5.12 inHg)	1st → 2nd	18—31 (11—19)	18—31 (11—19)
		2nd → 3rd	39—68 (24—42)	44—73 (27—45)
	Fully closed	2nd → 1st	10—15 (6—9)	10—15 (6—9)
1	Fully closed	2nd → 1st	32—39 (20—24)	33—40 (20—25)
Torque converter				
Stall torque ratio			1.800—2.100 : 1	
Bushing inner diameter		mm (in) Standard	33.000—33.025 (1.299—1.300)	
		mm (in) Maximum	33.075 (1.302)	
Oil pump				
Clearance				
Gear and pump cover		mm (in) Standard	0.02—0.04 (0.0008—0.0016)	
		mm (in) Maximum	0.08 (0.0031)	
Outer gear and crescent		mm (in) Standard	0.14—0.21 (0.0055—0.0083)	
		mm (in) Maximum	0.25 (0.0098)	
Outer gear and housing		mm (in) Standard	0.05—0.20 (0.002—0.0079)	
		mm (in) Maximum	0.25 (0.0098)	
Oil seal ring and ring groove		mm (in) Standard	0.04—0.16 (0.0016—0.0063)	
		mm (in) Maximum	0.40 (0.0157)	
Pump housing sleeve diameter		mm (in) Standard	37.950—37.975 (1.494—1.495)	
		mm (in) Maximum	37.900 (1.492)	
Inner gear bushing inner diameter		mm (in) Standard	38.0—38.025 (1.496—1.497)	
		mm (in) Maximum	38.075 (1.499)	

Item \ Engine model			FE engine	F6 engine
Front clutch				
Number of driven and drive plates			3	
Drive plate thickness	mm (in)	Standard	1.6 (0.063)	
		Minimum	1.4 (0.055)	
Front clutch clearance		mm (in)	1.6—1.8 (0.063—0.071)	
Retaining plate sizes		mm (in)	5.2 (0.205), 5.4 (0.213), 5.6 (0.220), 5.8 (0.228), 6.0 (0.236), 6.2 (0.244)	
Return spring free length		mm (in)	26.2 (1.031)	
Drum bushing inner diameter	mm (in)	Standard	44.000—44.025 (1.732—1.733)	
		Maximum	44.075 (1.735)	
Front clutch drum end play		mm (in)	0.5—0.8 (0.197—0.0315)	
End play adjust shims		mm (in)	1.3 (0.0512), 1.5 (0.0591), 1.7 (0.0669), 1.9 (0.0748), 2.1 (0.0827), 2.3 (0.0906), 2.5 (0.0984), 2.7 (0.1063)	
Rear clutch				
Number of driven and drive plates			4	
Drive plate thickness	mm (in)	Standard	1.6 (0.063)	
		Minimum	1.4 (0.055)	
Rear clutch clearance		mm (in)	0.8—1.0 (0.0315— 0.0394)	
Retaining plate sizes		mm (in)	4.8 (0.189), 5.0 (0.197), 5.2 (0.205), 5.4 (0.213), 5.6 (0.220), 5.8 (0.228), 6.0 (0.236), 6.2 (0.244)	
Return spring free length		mm (in)	26.2 (1.031)	
Low and reverse brake				
Number of low and reverse brake plates			4	
Drive plate thickness	mm (in)	Standard	1.6 (0.063)	
		Minimum	1.4 (0.055)	
Low and reverse brake clearance		mm (in)	0.8—1.05 (0.032—0.041)	
Retaining plate sizes		mm (in)	4.6 (0.181), 4.8 (0.189), 5.0 (0.197), 5.2 (0.205), 5.4 (0.213), 5.6 (0.220)	
Return spring free length		mm (in)	27.7 (1.091)	
Servo				
Return spring free length		mm (in)	48.0 (1.89)	45.5 (1.79)
Governor				
Primary spring	mm (in)	Outer diameter	9.0 (0.354)	
		Free length	17.2 (0.667)	
Secondary spring	mm (in)	Outer diameter	9.25 (0.364)	
		Free length	13.2 (0.520)	
One-way clutch				
Bushing diameter	mm (in)	Standard	129.987—130.013 (5.118—5.119)	
		Maximum	130.063 (5.121)	

Control valve springs			
Spring name	**Outer dia. mm (in)**	**Free length mm (in)**	**Wire dia. mm (in)**
Throttle backup spring	7.3 (0.287)	36.0 (1.417)	0.8 (0.031)
Downshift spring	5.55 (0.219)	21.9 (0.862)	0.55 (0.022)
2-3 shift spring	6.9 (0.272)	41.0 (1.614)	0.7 (0.028)
1-2 shift spring	6.4 (0.252)	31.63 (1.245)	0.4 (0.016)
Second lock spring	5.55 (0.219)	33.5 (1.319)	0.55 (0.022)
Pressure regulator spring	11.7 (0.461)	43.0 (1.693)	1.2 (0.047)
Throttle relief ball spring	7.0 (0.276)	11.2 (0.441)	0.9 (0.035)
Orifice check valve spring	5.0 (0.197)	15.5 (0.610)	0.23 (0.009)

Item \ Engine model			FE engine	F6 engine
Gear assembly				
Total end play		mm (in)	0.25—0.50 (0.010—0.0196)	
End play adjust races		mm (in)	1.2 (0.047), 1.4 (0.055), 1.6 (0.063), 1.8 (0.071), 2.0 (0.079), 2.2 (0.087)	
Idle gear bearing preload		N·m (cm-kg, in-lb)	0.03—0.9 (0.3—9.0, 0.26—7.81)	
Preload adjust shims		mm (in)	0.10 (0.0039), 0.12 (0.0047), 0.14 (0.0055), 0.16 (0.0063), 0.20 (0.0078), 0.50 (0.0196)	
Output gear bearing preload		N·m (cm-kg, in-lb)	0.03—0.9 (0.3—9.0, 0.26—7.81)	
Preload adjust shims		mm (in)	0.10 (0.0039), 0.12 (0.0047), 0.14 (0.0055), 0.16 (0.0063), 0.20 (0.0078), 0.50 (0.0196)	
Drive and differential				
Final gear	Type		Helical gear	
	Reduction ratio		3.450 : 1	3.631 : 1
Side bearing preload		N·m (cm-kg, in-lb)	2.1— 3.0 (21—31, 18—27)	
Preload adjust shims		mm (in)	0.10 (0.004), 0.12 (0.005), 0.14 (0.006), 0.16 (0.0063), 0.18 (0.007), 0.20 (0.008), 0.50 (0.020), 0.70 (0.028), 1.00 (0.039)	
Backlash of side gear and pinion	Standard	mm (in)	0.025—0.1 (0.001— 0.004)	
	Maximum		0.5 (0.020)	
Torque converter distance A (Refer to 7C—118)		mm (in)	20 (0.787)	

9. FRONT AND REAR AXLES

Item \ Transaxle type			MTX		ATX	
			Non-Turbo	Turbo	Non-Turbo	Turbo
Driveshaft						
Joint type		Inside	Ball joint		Tripod joint	
		Outside	Ball joint		Ball joint	
Shaft length	mm (in)	Right	360.0 (14.17)	355.5 (14.00)	355.5 (14.00)	348.8 (13.73)
		Left	360.0 (14.17)	355.5 (14.00)	355.5 (14.00)	348.8 (13.73)
Shaft diameter	mm (in)		24 (0.94)	26 (1.02)	24 (0.94)	26 (1.02)
Front axle						
Front wheel bearing end play	mm (in)		0.2 (0.0079) max.			
Rear axle						
Rear wheel bearing end play	mm (in)		0.2 (0.0079) max.			

10. STEERING SYSTEM

Item \ Type			Manual steering	Power steering
Steering wheel	Outer diameter mm (in)		380 (15.0)	
	Turns lock to lock		4.32	2.93
Steering shaft and joints	Shaft type		Collapsible	
	Joint type		Cross joints (2)	
	Tilt stroke mm (in)		40 (1.6)	
Front steering gear	Type		Rack and pinion	
	Gear ratio		∞ (infinite)	
Power steering fluid	Capacity liter (US quarts, Imp quarts)	2WS	—	0.9 (0.95, 0.79)
		4WS	—	1.0 (1.06, 0.88)
	Type	2WS 4WS	—	Dexron II or M III

11. BRAKING SYSTEM

Item			Specifications
Brake pedal	Height	mm (in)	LHD & RHD 222 $^{+5}_{-0}$ (8.74 $^{+0.2}_{-0}$)
	Free play	mm (in)	4—7 (0.16—0.28)
	Reserve travel (Clearance when pedal is depressed at 589 N (60 kg, 132 lb))	mm (in)	95 (3.74) min.
	Lever ratio		4.2
	Max. stroke	mm (in)	LHD: 136.5 (5.37) RHD: 135 (5.31)
Master cylinder	Type		Tandem
	Bore	mm (in)	22.22 (0.875)
	Fluid type		DOT-3 or 4, or SAE J1703
Front disc brake	Type		Disc (ventilated)
	Thickness of pad mm (in)	Standard	10.0 (0.39)
		Minimum	2.0 (0.08)
	Area of pad	mm² (in²)	4,800 (7.44)
	Outer diameter of disc plate	mm (in)	14 or 15 inch-wheel: 264 (10.39) 13 inch-wheel: 242 (9.53)
	Thickness of disc plate mm (in)	Standard	14 or 15 inch-wheel: 24.0 (0.94) 13 inch-wheel: 20.0 (0.79)
		Minimum	14 or 15 inch-wheel: 22.0 (0.87) 13 inch-wheel: 18.0 (0.71)
	Disc plate runout mm (in)	Maximum	0.1 (0.004)
	Wheel cylinder bore	mm (in)	53.97 (2.125)
Rear drum brake	Type		Leading-trailing
	Clearance between shoe and drum		Self-adjusting
	Thickness of lining mm (in)	Standard	(a): 4.5 (0.18) (b): 5.0 (0.20)
		Minimum	1.0 (0.04)
	Width of lining	mm (in)	(a): 30 (1.18) (b): 25 (0.98)
	Length of lining	mm (in)	(a): 219.3 (8.63) (b): 1919 (7.56)
	Inner diameter of drum mm (in)	Standard	(a): 228.6 (9.00) (b): 200 (7.87)
		Maximum	(a): 230.1 (9.06) (b): 201.5 (7.93)
	Wheel cylinder bore	mm (in)	17.46 (0.687)
Rear disc brake	Type		Disc (solid)
	Thickness of pad mm (in)	Standard	8.0 (0.31)
		Minimum	1.0 (0.04)
	Area of pad	mm² (in²)	2,900 (4.5)
	Outer diameter of disc plate	mm (in)	259 (10.2)
	Thickness of disc plate mm (in)	Standard	10.0 (0.40)
		Minimum	8.0 (0.31)
	Disc plate runout mm (in)	Maximum	0.1 (0.04)
	Wheel cylinder bore	mm (in)	30.2 (1.19)
Parking brake	Type		Center lever
	Lever notches (Pulled at 98N (10 kg, 22 lb))		5—7
Power brake unit	Diameter	mm (in)	238 (9.37)
	Clearance between master cylinder piston and push rod	mm (in)	0 (0)
	Fluid pressure per treading force	kPa (kg/cm², psi)/N (kg, lb)	1,177 (12,171)/196 (20, 44) min. when no vacuum is applied 7,063 (72, 1,024)/196 (20, 44) min. when 500 mmHg (19.7 in Hg) vacuum is applied
Rear wheel hydraulic control devise (system)	Type		Dual proportioning valve (Non-ABS) or ABS
	Switching point	kPa (kg/cm², psi)	Except General LHD and RHD: 1,962 (20, 284) General LHD and RHD: 2,942 (30, 427)

(a): Except 13 inch-wheels in General LHD and RHD vehicles
(b): 13 inch-wheels in General LHD and RHD vehicles

12. WHEEL AND TIRE

Item \ Type			Standard	Temporary spare (if equipped)
Wheel	Size		5-Jx13 5 1/2-JJx14 6JJx15	4-T x 15
	Offset mm (in)		42 (1.65)	53 (2.09)
	Diameter of pitch circle mm (in)		114.3 (4.5)	
	Material		Steel or aluminum alloy	Steel
	Number of fixing nuts	13 inch-wheel	4	4 or 5
		14 inch-wheel	5	
		15 inch-wheel		
Tire	Size	13 inch-wheel	6.45-13-6PR 165SR13 165/80R13 82S 185/70HR13 185/70R13 85H	T125/70D15
		14 inch-wheel	185/70HR14 185/70R14 87H 185/70R14 88H 185/70VR14	
		15 inch-wheel	195/60R15 86H 195/60VR15	
	Air pressure kPa (kg/cm^2, psi)	Front	216 (2.2, 31) or 196 (2.0, 28) Refer to tire labels for applications	412 (4.2, 60)
		Rear	177 (1.8, 26)	
Wheel and tire	Runout mm (in)	Horizontal	Steel wheel: 2.5 (0.098), Alminum alloy wheel: 2.0 (0.079) max.	
		Vertical	2.0 (0.079) max.	
	Unbalance g (oz)	13 inch-wheel	11 (0.39) max.	
		14 inch-wheel	10 (0.35) max.	
		15 inch-wheel	9 (0.32) max.	

13. SUSPENSION

Item		Specification							
Front suspension									
Type		Strut							
Front wheel alignment	Toe-in mm (in)	0 ± 3 (0 ± 0.12)							
	Camber angle	0°17' ± 45'							
	Caster angle	1°13' ± 45'							
	King pin angle	12°47'							
Maximum front steering angle	Inner	36°26'33"							
	Outer	30°59'15"							
Stabilizer	Type	Torsion bar							
	Diameter mm (in)	20.0 (0.79)							
Shock absorbers	Standard suspension	Oil type							
	Auto adjust suspension	Low-pressure gas sealed type							
Coil springs*	Identification color	Orange	Green	Light green	Pink	Brown	Purple	Gray	Blue
	Wire diameter mm (in)	12.5 (0.49)	12.6 (0.49)	12.8 (0.50)	12.9 (0.51)	13.1 (0.52)	13.3 (0.53)	13.6 (0.54)	13.7 (0.54)
	Coil inner diameter mm (in)	147.5 (5.8)							
	Free length mm (in)	344 (13.5)	353 (13.9)	362 (14.3)	370 (14.6)	372 (14.6)	365 (14.4)	350 (13.8)	358 (14.1)
	Coil number	4.99	5.09	5.31	5.42	5.53	5.46	5.34	5.45

* Refer to pages 13—5,6,7 for coil spring applications.

Item			Specification							
Rear suspension										
Type			Strut							
Rear wheel alignment	Toe-in mm (in)	2WS	0 ± 3 (0 ± 0.12)							
		4WS	3 ± 3 (0.12 ± 0.12)							
	Camber angle	2WS	–0°30' ± 45'							
		4WS	0°00' ± 45'							
Maximum rear steering angle (4WS)	Inner		5°00' ± 45'							
	Outer		5°00' ± 45'							
Stabilizer	Type		Torsion bar							
	Diameter mm (in)		16 (0.63)							
Shock absorbers	Standard suspension		Oil type							
	Auto adjust suspension		Low-pressure gas sealed type							
Coil springs*	Identification color		Orange	White	Yellow	Brown	Blue	Green	Red	Pink
	Wire diameter mm (in)		11.6 (0.45)	11.7 (0.46)	11.8 (0.46)	11.9 (0.47)	12.1 (0.48)	12.2 (0.48)	12.4 (0.49)	12.6 (0.50)
	Coil inner diameter mm (in)		127.5 (5.0)							
	Free length mm (in)		297 (11.7)	306 (12.0)	314 (12.4)	323 (12.7)	327 (12.9)	332 (13.1)	336 (13.2)	340 (13.4)
	Coil number		5.44	5.58	5.72	5.87	6.03	6.04	6.21	6.36

* Refer to pages 13—8,9,10 for coil spring applications.

15. BODY ELECTRICAL SYSTEM

Item \ Body type		Specification (W)		
		MX-6/Coupe	Sedan	Hatchback
Front exterior lights	Halogen headlight	60 + 55/55		
	Turn signal light	21		
	Position light	5		
	Side turn signal light	5		
Rear exterior lights	Back-up light	21		
		23 (Middle east)		
	License plate light	5		
	Stop/Tail light	21/5		
	Turn signal light	21		
		23 (Middle east)		
	Rear fog light	21 (ECE)		

Item	Body type	Specification (W) (BULB TRADE NO)		
		MX-6/Coupe	Sedan	Hatchback
Indicator and warning lights	Brake	1.4		
	Oil pressure	1.4		
	Fuel	1.4		
	Washer level	1.4		
	Rear	1.4		
	4WS	—	—	1.4 (ECE)
	Door	1.4		
	Seat belt	1.4		
	ABS	1.4		
	Alternator	1.4		
	High beam	3.4		
	Turn signal	3.4		
	O/D OFF	0.8		
	A/T mode	0.8 (ECE)		
	A/T position	0.8		
Interior lights	Glove compartment light	3.4		
	Interior light	10		
	Luggage compartment light	5		
Illumination lights	Motor	4.8		
	Hazard switch	1.4		
	Cigar lighter	3.4		
	Auto cruise main switch	0.5		
	AAS switch	1.4		
	Rear defroster switch	1.4		
	A/T switch	1.4		
	A/T	3.4		
	IG switch	1.4		

STANDARD BOLT AND NUT TIGHTENING TORQUE

Diameter mm (in)	Pitch mm (in)	4T			6T			8T		
		N·m	m-kg	ft-lb	N·m	m-kg	ft-lb	N·m	m-kg	ft-lb
6 (0.236)	1 (0.039)	4.2—6.2	0.43—0.63	3.1—4.6	6.9—9.8	0.7—1.0	5.0—7.2	7.8—11.8	0.8—1.2	5.8—8.8
8 (0.315)	1.25 (0.049)	9.8—14.7	1.0—1.5	7.2—10.8	16—23	1.6—2.3	12—17	18—26	1.8—2.7	13—20
10 (0.394)	1.25 (0.049)	20—28	2.0—2.9	14—21	31—46	3.2—4.1	23—34	36—54	3.7—5.5	27—40
12 (0.472)	1.5 (0.059)	34—50	3.5—5.1	25—37	55—80	5.6—8.2	41—59	63—93	6.4—9.5	46—69
14 (0.551)	1.5 (0.059)	—	—	—	75—103	7.7—10.5	56—76	102—137	10—14	75—101
16 (0.630)	1.5 (0.059)	—	—	—	116—157	12—16	85—116	156—211	16—22	115—156
18 (0.709)	1.5 (0.059)	—	—	—	167—225	17—23	123—166	221—299	23—31	163—221
20 (0.787)	1.5 (0.059)	—	—	—	231—314	24—32	171—231	308—417	31—43	227—307
22 (0.866)	1.5 (0.059)	—	—	—	314—423	32—43	231—312	417—564	43—58	307—416
24 (0.945)	1.5 (0.059)	—	—	—	475—546	41—56	298—403	536—726	55—74	396—536