

# TECHNICAL DATA

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15UTDX-001

## A. MEASUREMENTS

Item		Measurements	
Overall length	mm (in)	3,948 (155.4)	
Overall width	mm (in)	1,676 (65.9)	
Overall height	mm (in)	1,224 (48.2)	
Wheelbase	mm (in)	2,266 (89.2)	
Tread	Front	mm (in)	1,410 (55.5)
	Rear	mm (in)	1,428 (56.2)

## B. ENGINE

Engine/Transmission			B6 DOHC	
Item			M/T	A/T
Type			Gasoline, 4-cycle	
Cylinder arrangement and number			In-line, 4-cylinders	
Combustion chamber			Pentroof	
Valve system			DOHC, belt-driven 16 valves	
Bore x Stroke	mm (in)	78.0 x 83.6 (3.07 x 3.29)		
Total piston displacement	cc (cu in)	1,597 (97.42)		
Compression ratio			9.4	9.0
Compression pressure kPa (kg/cm <sup>2</sup> , psi)-rpm	Standard		1,324 (13.5, 192)-300	
	Minimum		932 (9.5, 135)-300	
	Maximum difference between each cylinder		196 (2.0, 28)	
Valve timing	IN	Open BTDC	5°	5°
		Close ABDC	51°	40°
	EX	Open BBDC	53°	55°
		Close ATDC	15°	5°
Valve clearance	mm (in)	IN	0: Maintenance-free	
		EX	0: Maintenance-free	
<b>Cylinder head</b>				
Height	mm (in)	133.8—134.0 (5.268—5.276)		
Distortion	mm (in)	0.15 (0.006) max.		
Grinding	mm (in)	0.20 (0.008) max.		
Cylinder head-to-HLA clearance	mm (in)	Standard	0.025—0.066 (0.0010—0.0026)	
		Maximum	0.18 (0.0071)	
<b>Valve and valve guide</b>				
Valve head diameter	mm (in)	IN	30.9—31.1 (1.217—1.224)	
		EX	26.1—26.3 (1.028—1.035)	
Valve head margin thickness	mm (in)	IN	1.0 (0.039)	
		EX	1.0 (0.039)	
Valve face angle			45°	
			45°	
Valve length	IN	Standard	105.29 (4.1452)	
		Minimum	104.79 (4.1256)	
	EX	Standard	105.39 (4.1492)	
		Minimum	104.89 (4.1295)	
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)		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 (0.008)	
Guide projection (Height "A")	mm (in)	IN	16.8—17.4 (0.661—0.685)	
		EX	16.8—17.4 (0.661—0.685)	
<b>Valve seat</b>				
Seat angle			45°	
			45°	

Item		Engine/Transmission		B6 DOHC	
				M/T	A/T
Seat contact width		mm (in)		0.8—1.4 (0.031—0.055)	
Seat sinking	mm (in)	Standard	43.5 (1.713)		
		Maximum	45.0 (1.772)		
<b>Valve spring</b>					
Free length	mm (in)	IN	48.0 (1.890)		
		EX	48.3 (1.902)		
Minimum length		IN	40.0 with a set load of 23.3 $\pm$ 1.75 kg		
		EX	40.0 with a set load of 18.6 $\pm$ 0.93 kg		
Out-of-square	mm (in)	IN	1.68 (0.0661) max.		
		EX	1.69 (0.0665) max.		
Setting load/height	N (kg, lb)/mm (in)	IN	217—246 (22.1—25.1, 48.6—55.2)/40.0 (1.575)		
		EX	174—196 (17.7—20.0, 38.9—44.0)/40.0 (1.575)		
<b>Camshaft</b>					
Cam height	mm (in)	IN	Standard	40.888 (1.6098)	39.984 (1.5741)
			Minimum	40.688 (1.6019)	39.784 (1.5662)
		EX	Standard	40.889 (1.6098)	40.888 (1.6097)
			Minimum	40.689 (1.6019)	40.688 (1.6018)
Journal diameter	mm (in)	Standard (No.1—No.5)	25.940—25.965 (1.0213—1.0222)		
		Out-of-round	0.05 (0.002) max.		
Camshaft bearing oil clearance	mm (in)	Standard (No.1—No.5)	0.035—0.081 (0.0014—0.0032)		
		Maximum	0.15 (0.006)		
Camshaft runout	mm (in)		0.03 (0.0012) max.		
Camshaft end play	mm (in)	Standard	0.07—0.19 (0.0028—0.0075)		
		Maximum	0.20 (0.008)		
<b>Cylinder block</b>					
Height	mm (in)		221.5 (8.720)		
Distortion	mm (in)		0.15 (0.006) max.		
Grinding	mm (in)		0.15 (0.006) max.		
Cylinder bore diameter	mm (in)	Standard size	78.006—78.013 (3.0711—3.0714)		
		0.25 (0.010) oversize	78.256—78.263 (3.0809—3.0812)		
		0.50 (0.020) oversize	78.506—78.513 (3.0908—3.0911)		
Cylinder bore taper and out-of-round	mm (in)		0.019 (0.0007) max.		
<b>Piston</b>					
Piston diameter Measured at 90° to pin bore axis and 16.5mm (0.650 in) below oil ring groove	mm (in)	Standard size	77.954—77.974 (3.0690—3.0698)		
		0.25 (0.010) oversize	78.211—78.217 (3.0792—3.0794)		
		0.50 (0.020) oversize	78.461—78.467 (3.0890—3.0892)		
Piston-to-cylinder clearance	mm (in)	Standard	0.039—0.052 (0.0015—0.0020)		
		Maximum	0.15 (0.006)		
<b>Piston ring</b>					
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	0.15—0.30 (0.006—0.012)		
		Second	0.3—0.45 (0.012—0.018)		
		Oil (rail)	0.20—0.70 (0.008—0.028)		
		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)		
Piston ring-to-ring groove clearance	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)		
<b>Piston pin</b>					
Diameter	mm (in)		19.987—19.993 (0.7869—0.7871)		
Piston-to-piston pin clearance	mm (in)		-0.005—0.013 (-0.0002—0.0005)		
Connecting rod bush-to-piston pin clearance	mm (in)		0.010—0.027 (0.0004—0.0011)		

Item		Engine/Transmission		B6 DOHC	
				M/T	A/T
<b>Connecting rod and connecting rod bearing</b>					
Length (Center to center)		mm (in)		132.85—132.95 (5.230—5.234)	
Bending		mm (in)		0.075 (0.0030) max./50 (1.97)	
Small end bore (Bush inner diameter)		mm (in)		20.003—20.014 (0.7875—0.7880)	
Big end bore		mm (in)		48.000—48.016 (1.8898—1.8904)	
Big end width		mm (in)		21.838—21.890 (0.8598—0.8618)	
Connecting rod side clearance		mm (in)	Standard	0.110—0.262 (0.0043—0.0103)	
			Maximum	0.30 (0.012)	
<b>Crankshaft</b>					
Crankshaft runout		mm (in)		0.04 (0.0016) max.	
Main journal diameter		Standard size	Standard	49.938—49.956 (1.9661—1.9668)	
			Minimum	49.904 (1.9647)	
		0.25 (0.010) undersize	Standard	49.704—49.708 (1.9568—1.9570)	
			Minimum	49.652 (1.9548)	
		0.50 (0.020) undersize	Standard	49.454—49.458 (1.9470—1.9472)	
			Minimum	49.402 (1.9450)	
0.75 (0.030) undersize	Standard	49.204—49.208 (1.9372—1.9373)			
	Minimum	49.152 (1.9351)			
Main journal taper and out-of-round		mm (in)		0.05 (0.0020) max.	
Crankpin diameter		Standard size	Standard	44.940—44.956 (1.7693—1.7699)	
			Minimum	44.908 (1.7680)	
		0.25 (0.010) undersize	Standard	44.690—44.706 (1.7594—1.7601)	
			Minimum	44.658 (1.7582)	
		0.50 (0.020) undersize	Standard	44.440—44.456 (1.7496—1.7502)	
			Minimum	44.408 (1.7483)	
0.75 (0.030) undersize	Standard	44.190—44.206 (1.7398—1.7404)			
	Minimum	44.158 (1.7385)			
Crankpin taper and out-of-round		mm (in)		0.05 (0.0020) max.	
<b>Main bearing</b>					
Main journal bearing oil clearance		mm (in)	Standard	0.018—0.036 (0.0007—0.0014)	
			Maximum	0.10 (0.004)	
Available undersize bearing		mm (in)		0.25 (0.010), 0.50 (0.020), 0.75 (0.030)	
<b>Crankpin bearing</b>					
Crankpin bearing oil clearance		mm (in)	Standard	0.028—0.068 (0.0011—0.0027)	
			Maximum	0.10 (0.004)	
Available undersize bearing		mm (in)		0.25 (0.010), 0.50 (0.020), 0.75 (0.030)	
<b>Thrust bearing</b>					
Crankshaft end play		mm (in)	Standard	0.080—0.282 (0.0031—0.0111)	
			Maximum	0.30 (0.012)	
Bearing width		mm (in)	Standard size	2.500—2.550 (0.0984—0.1004)	
			0.25 (0.010) oversize	2.625—2.675 (0.1033—0.1053)	
			0.50 (0.020) oversize	2.750—2.800 (0.1083—0.1102)	
			0.75 (0.030) oversize	2.875—2.925 (0.1132—0.1152)	
<b>Timing belt</b>					
Belt deflection		mm (in)/98 N (10 kg, 22 lb)		9.0—11.5 (0.35—0.45)	

#### D. LUBRICATION SYSTEM

Item		Engine	B6 DOHC
Lubricating method			Force-fed
<b>Oil pump</b>			
Type			Trochoid gear
Relief pressure		kPa (kg/cm <sup>2</sup> , psi)	343—441 (3.5—4.5, 50—64)
Oil pressure		1,000 rpm	196—294 (2.0—3.0, 28—43)
		3,000 rpm	294—392 (3.0—4.0, 43—57)

Item		Engine	B6 DOHC
Inner rotor tooth tip to outer rotor clearance	mm (in)	Standard	0.02—0.16 (0.0008—0.0063)
		Maximum	0.20 (0.0079)
Outer rotor to body clearance	mm (in)	Standard	0.09—0.18 (0.0035—0.0071)
		Maximum	0.22 (0.0087)
Side clearance	mm (in)	Standard	0.03—0.11 (0.0012—0.0043)
		Maximum	0.14 (0.0055)
<b>Oil filter</b>			
Type		Full-flow, paper element	
Relief pressure differential		kPa (kg/cm <sup>2</sup> , psi)	78—118 (0.8—1.2, 11—17)
<b>Engine oil</b>			
Capacity liters (US qt, Imp qt)	Total (dry engine)		3.6 (3.8, 3.2)
	Oil pan		3.2 (3.4, 2.8)
	Oil filter		0.17 (0.18, 0.15)
Grade		API Service SG (ECII)	
Viscosity number	Above -25°C (-13°F)		SAE 10W-30
	Below 0°C (32°F)		SAE 5W-30

**E. COOLING SYSTEM**

Item		Engine	B6 DOHC
Cooling method		Water-cooled, forced circulation	
<b>Water pump</b>			
Type		Centrifugal, V-belt driven	
Impeller diameter	mm (in)	75 (2.95)	
Number of impeller blades		6	
Speed ratio		1 : 1.05	
Water seal type		Unified mechanical seal	
<b>Thermostat</b>			
Type		Wax, two-stage	
Opening temperature	°C (°F)	Sub: 83.5—86.5 (182—188), Main: 86.5—89.5 (188—193)	
Full-open temperature	°C (°F)	100 (212)	
Full-open lift	mm (in)	Sub: 1.5 (0.06) min., Main: 8.0 (0.31) min.	
<b>Radiator</b>			
Type		Corrugated fin	
Cap valve opening pressure	kPa (kg/cm <sup>2</sup> , psi)	74—103 (0.75—1.05, 11—15)	
Cooling circuit checking pressure	kPa (kg/cm <sup>2</sup> , psi)	103 (1.05, 15)	
<b>Cooling fan</b>			
Type		Electric	
Number of blades		5	
Outer diameter	mm (in)	320 (12.6)	
Switching temperature OFF → ON	°C (°F)	97 (207)	
Capacity	W-V	70-12	
Current	A	5.3—6.5	
<b>Coolant</b>			
Capacity	liters (US qt, Imp qt)	6.0 (6.3, 5.3)	

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Item		Engine	B6 DOHC		
Antifreeze solution	Coolant protection		Volume percentage %		Specific gravity at 20°C (68°F)
			Water	Coolant	
	Above -16°C (3°F)		65	35	
	Above -26°C (-15°F)		55	45	
		Above -40°C (-40°F)	45	55	

## F. FUEL AND EMISSION CONTROL SYSTEMS

Item		Specification		
Idle speed	rpm	850 ± 50 *		
Ignition timing	BTDC	10° ± 1° (M/T) *, 8° ± 1° (A/T) *		
<b>Throttle body</b>				
Type		Horizontal draft		
Throat diameter	mm (in)	55 (2.2)		
<b>Dashpot</b>				
Adjustment speed	rpm	2,500 ± 150		
<b>Airflow meter</b>				
Resistance	E2 ↔ Vs	Fully closed	200—600	
		Fully open	20—1,000	
	E2 ↔ Vc		200—400	
		E2 ↔ THAA (Intake air thermosensor)	-20°C (-4°F)	13,600—18,400
			20°C (68°F)	2,210—2,690
			60°C (140°F)	493—667
E1 ↔ Fc	Fully closed	∞		
	Fully open	0		
<b>Fuel pump</b>				
Type		Impeller (in-tank)		
Output pressure	kPa (kg/cm <sup>2</sup> , psi)	441—589 (4.5—6.0, 64—85)		
<b>Fuel filter</b>				
Type	Low-pressure side	Nylon element		
	High-pressure side	Paper element		
<b>Pressure regulator</b>				
Type		Diaphragm		
Regulating pressure	kPa (kg/cm <sup>2</sup> , psi)	265—314 (2.7—3.2, 38—46)		
<b>Injector</b>				
Type		High-ohmic		
Type of drive		Voltage		
Resistance	Ω	12—16 (at 20°C, 68°F)		
<b>ISC valve (Solenoid valve [Idle speed control])</b>				
Solenoid resistance	Ω	11—13 (at 20°C, 68°F)		
<b>Circuit opening relay</b>				
Resistance	Ω	STA — E1	21—43	
		B — Fc	109—226	
		B — FP	∞	
<b>Solenoid valve (Purge control)</b>				
Solenoid resistance	Ω	23—27 (at 20°C, 68°F)		
<b>Crank angle sensor</b>				
Type		Optical pickup		
<b>Water thermosensor</b>				
Resistance	kΩ	-20°C (-4°F)	14.6—17.8	
		20°C (68°F)	2.2—2.7	
		80°C (176°F)	0.29—0.35	
<b>Air valve</b>				
Opening temperature	°C (°F)	Below 40 (104)		
<b>Fuel tank</b>				
Capacity	liters (US gal, Imp gal)	45 (11.9, 9.9)		

\*...with system selector (49 B019 9A0) test switch at SELF TEST

Item	Specification
<b>Air cleaner</b>	
Element type	Oil permeated
<b>Accelerator cable</b>	
Free play	mm (in) 1—3 (0.039—0.118)
<b>Fuel</b>	
Specification	Unleaded (RON 87 or higher)

**G. ENGINE ELECTRICAL SYSTEM**

Item		Engine	B6 DOHC	
Battery	Voltage	V	12, Negative ground	
	Type and capacity (5-hour rate)		S46A24L(S) (32Ah) Maintenance-free	
Dark current <sup>*1</sup>		mA	20.0	
Alternator	Type		A.C.	
	Output	V-A	12-60 (M/T), 12-65 (A/T)	
	Regulator type		Transistorized (built-in IC regulator)	
	Regulated voltage		14.1—14.7	
	Brush length	mm (in)	Standard	21.5 (0.85)
			Minimum	8 (0.31)
Drive belt tension	mm (in)	New	8—9 (0.31—0.35)	
		Used	9—10 (0.35—0.39)	
Starter	Type		Conventional	
	Output	V-kW	12-0.95	
	Brush length	mm (in)	Standard	17.0 (0.67)
			Minimum	11.5 (0.45)
Ignition system	Type		Electronic spark advance (ESA)	
	Spark advance control		Engine control unit controls sparks advance	
Ignition timing		BTDC	10° ± 1° (M/T) <sup>*2</sup> , 8° ± 1° (A/T) <sup>*2</sup>	
Ignition coil	Type		Molded	
	Primary coil winding	kΩ	0.78—0.94	
	Secondary coil winding	kΩ	11.2—15.2	
Spark plug	Type		NGK: BKR5E-11 Nippon Denso: K16PR-U11 BKR6E-11 (Standard...M/T) K20PR-U11 BKR7E-11 (Standard...M/T, A/T) K22PR-U11	
	Plug gap	mm (in)	1.0—1.1 (0.039—0.043)	
	Firing order		1—3—4—2	

<sup>\*1</sup> Dark current is the constant flow of current while the ignition switch is OFF.  
(i.e. engine control unit, audio etc.)

<sup>\*2</sup>...with system selector (49 B019 9A0) test switch of SELF TEST

TD

**H. CLUTCH**

Item		Engine	B6 DOHC
Clutch control			Hydraulic
<b>Clutch pedal</b>			
Type			Suspended
Pedal ratio			6.13
Full stroke		mm (in)	120 (4.72)
Height (with carpet)		mm (in)	175—185 (6.89—7.28)
Free play		mm (in)	0.6—3.1 (0.02—0.12)
Distance to carpet when clutch fully disengaged		mm (in) Minimum	68 (2.68)
<b>Flywheel</b>			
Runout limit		mm (in)	0.2 (0.008)
<b>Clutch disc</b>			
Type			Single dry plate

Item		Engine	B6 DOHC
Runout limit		mm (in)	0.7 (0.028)
Wear limit		mm (in)	0.3 (0.012) from rivet head
Outer diameter		mm (in)	200 (7.87)
Inner diameter		mm (in)	130 (5.12)
Facing thickness	mm (in)	Flywheel side	3.5 (0.14)
		Pressure plate side	3.5 (0.14)
<b>Clutch cover</b>			
Type			Diaphragm spring
Set load		N (kg, lb)	4,022 (410, 902)

## J. MANUAL TRANSMISSION

Item		Transmission	M-type (M5M-D)
Gear ratio	1st		3.136
	2nd		1.888
	3rd		1.330
	4th		1.000
	5th		0.814
	Reverse		3.758
Oil capacity		liters (US qt, Imp qt)	2.0 (2.1, 1.8)
Mainshaft	Runout	mm (in) Maximum	0.03 (0.0012)
	Clearance between mainshaft and gear (or bush)	mm (in) Wear limit	0.15 (0.006)
Reverse idle gear	Clearance between reverse idle gear bushing and shaft	mm (in) Wear limit	0.15 (0.006)
Shift fork and rod	Clearance between shift fork and clutch sleeve	mm (in) Wear limit	0.5 (0.020)
	Clearance between shift rod gate and control lever	mm (in) Wear limit	0.8 (0.032)
Synchronizer ring	Clearance between synchronizer ring and side of gear when fitted	mm (in) Standard	1.5 (0.059)
		mm (in) Wear limit	0.8 (0.032)
Shift rod (5th/Reverse) spring	Free length	mm (in)	75 (2.953)
Detent ball spring (1st/2nd)	Free length	mm (in)	22.5 (0.886)
Detent ball spring (3rd/4th)	Free length	mm (in)	22.5 (0.886)
Detent ball spring (5th/Reverse)	Free length	mm (in)	17.0 (0.669)
Lubricant	Above 10°C (50°F)		API Service GL-4 or GL-5 SAE 80W-90
	All seasons		API Service GL-4 or GL-5 SAE 75W-90

K. AUTOMATIC TRANSMISSION (HYDRAULICALLY-CONTROLLED)

Item		Transmission	N4A-HL
Torque converter stall torque ratio			1.9 : 1
Gear ratio	1st		2.841
	2nd		1.541
	3rd		1.000
	OD (4th)		0.720
	Reverse		2.400
Automatic transmission fluid (ATF)	Type		DEXRON-II or M-III
	Capacity liters (US qt, Imp qt)	Total	6.7 (7.1, 5.9)
		Oil pan	4.0 (4.2, 3.5)
Engine stall speed	rpm	D, 2, 1, and R ranges	2,600—3,000
Time lag	sec.	N → D range	0.5—1.0
		N → R range	0.5—1.0
Line pressure kPa (kg/cm <sup>2</sup> , psi)	At idle	D and 1 ranges	294—392 (3.0—4.0, 43—57)
		2 range	1,020—1,138 (10.4—11.6, 148—166)
		R range	697—834 (7.1—8.5, 101—121)
	At stall	D and 1 ranges	932—1,128 (9.5—11.5, 135—164)
		2 range	981—1,177 (10.0—12.0, 142—171)
		R range	2,246—2,541 (22.9—25.9, 326—369)
Governor pressure kPa (kg/cm <sup>2</sup> , psi)	Vehicle speed: 30 km/h (19 mph)		78—137 (0.8—1.4, 11—20)
	Vehicle speed: 55 km/h (34 mph)		157—235 (1.6—2.4, 23—34)
	Vehicle speed: 85 km/h (53 mph)		334—432 (3.4—4.4, 48—63)
	Cutback point	Atmospheric pressure	108—167 (1.1—1.7, 16—24)
		200 mmHg (7.87 inHg)	59—118 (0.6—1.2, 9—17)
Oil pump	Body clearance mm (in)	Standard	0.02—0.04 (0.0008—0.0016)
		Maximum	0.08 (0.0031)
	Tip clearance mm (in)	Standard	0.14—0.21 (0.0055—0.0083)
		Maximum	0.25 (0.0098)
	Side clearance mm (in)	Standard	0.05—0.20 (0.0020—0.0079)
		Maximum	0.25 (0.0098)
Drum support	Seal ring and groove clearance mm (in)	Standard	0.04—0.16 (0.0016—0.0063)
		Maximum	0.40 (0.016)
Direct clutch	Number of drive/driven plates		2/2
	Drive plate thickness mm (in)	Standard	1.6 (0.063)
		Minimum	1.4 (0.055)
	Clutch clearance mm (in)		0.2 (0.008) max.
	Side plate size mm (in)		0.4 (0.016), 0.6 (0.024), 0.8 (0.031), 1.0 (0.039), 1.2 (0.047)
	End play mm (in)		0.5—0.8 (0.020—0.031)
	Thrust washer size mm (in)		1.3 (0.051), 1.5 (0.059), 1.7 (0.067), 1.9 (0.075), 2.1 (0.083), 2.3 (0.091), 2.5 (0.098), 2.7 (0.106)
OD planetary gear unit	Pinion clearance mm (in)	Standard	0.2—0.7 (0.008—0.028)
		Maximum	0.8 (0.031)
	Total end play mm (in)		0.25—0.50 (0.0098—0.0197)
	Bearing race size 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)
Front clutch	Number of drive/driven plates		4/5
	Drive plate thickness mm (in)	Standard	1.6 (0.063)
		Minimum	1.4 (0.055)
	Clutch clearance mm (in)		0.9—1.1 (0.035—0.043)
	Retaining plate size mm (in)		5.6 (0.220), 5.8 (0.228), 6.0 (0.236), 6.2 (0.244), 6.4 (0.252), 6.6 (0.260), 6.8 (0.268), 7.0 (0.276)
	End play mm (in)		0.5—0.8 (0.020—0.031)
	Thrust washer size mm (in)		1.3 (0.051), 1.5 (0.059), 1.7 (0.067), 1.9 (0.075), 2.1 (0.083), 2.3 (0.091), 2.5 (0.098), 2.7 (0.106)

TD

Item		Transmission	N4A-HL
Rear clutch	Number of drive/driven plates		6/6
	Drive plate thickness mm (in)	Standard	1.6 (0.063)
		Minimum	1.4 (0.055)
	Clutch clearance mm (in)		0.8—1.0 (0.031—0.039)
	Retaining plate size mm (in)		6.2 (0.244), 6.4 (0.252), 6.6 (0.260), 6.8 (0.268), 7.0 (0.276), 7.2 (0.283), 7.4 (0.291), 7.6 (0.299)
	Total end play mm (in)		0.25—0.50 (0.0098—0.0197)
Bearing race size 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)	
Low and reverse brake	Number of drive/driven plates		4/4
	Drive plate thickness mm (in)	Standard	2.0 (0.079)
		Minimum	1.8 (0.071)
	Clutch clearance mm (in)		0.8—1.05 (0.031—0.041)
Retaining plate size mm (in)		7.8 (0.307), 8.0 (0.315), 8.2 (0.323), 8.4 (0.331), 8.6 (0.339), 8.8 (0.346)	
Front planetary gear	Pinion clearance mm (in)	Standard	0.2—0.7 (0.008—0.028)
		Maximum	0.8 (0.031)
Rear planetary gear	Pinion clearance mm (in)	Standard	0.2—0.7 (0.008—0.028)
		Maximum	0.8 (0.031)
Parking gear (oil distributor)	Seal ring and groove clearance mm (in)	Standard	0.04—0.16 (0.0016—0.0063)
		Maximum	0.40 (0.0157)

**Spring specifications**

Spring	Item	Outer dia. mm (in)	Free length mm (in)	No. of coil	Wire dia. mm (in)
Control valve	Second lock	5.55 (0.219)	33.5 (1.319)	18.0	0.55 (0.022)
	Pressure regulator	11.7 (0.461)	43.0 (1.692)	15.0	1.2 (0.047)
	Down shift	5.55 (0.219)	21.9 (0.862)	14.0	0.55 (0.022)
	Throttle back-up	7.3 (0.287)	36.0 (1.417)	16.0	0.8 (0.031)
	3-4 shift	6.6 (0.260)	30.3 (1.193)	14.6	0.8 (0.031)
	2-3 shift	6.4 (0.252)	39.2 (1.543)	20.0	0.7 (0.028)
	1-2 shift	6.65 (0.262)	26.9 (1.059)	12.2	0.65 (0.026)
	Pressure modifier	8.6 (0.339)	15.5 (0.610)	7.5	0.6 (0.024)
	3-2 timing	7.5 (0.295)	23.2 (0.913)	11.0	0.8 (0.031)
	Throttle relief	6.5 (0.256)	26.8 (1.055)	16.0	0.9 (0.035)
Governor valve	Orifice check	5.0 (0.197)	15.5 (0.610)	12.0	0.23 (0.009)
	Primary	8.75 (0.344)	21.8 (0.858)	7.0	0.45 (0.018)
Oil pump	Secondary	9.25 (0.364)	26.7 (1.051)	9.0	0.75 (0.030)
	Lockup control	5.5 (0.217)	25.0 (0.984)	15.0	0.7 (0.028)
Drum support	OD accumulator	16.0 (0.630)	40.4 (1.591)	9.8	2.6 (0.102)
	OD cancel	4.95 (0.195)	23.0 (0.906)	14.8	0.65 (0.026)
Band servo	OD	26.8 (1.055)	47.0 (1.850)	8.4	2.9 (0.114)
	2ND	28.25 (1.112)	37.0 (1.457)	5.4	3.5 (0.138)
Direct, front, and rear clutches		8.0 (0.315)	30.5 (1.201)	14.5	1.3 (0.051)
Low and reverse brake		—	5.9—6.2 (0.232—0.244)	—	—
Parking rod		7.2 (0.283)	32.0 (1.260)	14.0	0.7 (0.028)

Vehicle speed at gearshift table

Range	Throttle condition (Manifold vacuum)	Shifting	Vehicle speed km/h (mph)
D	Fully opened	D <sub>1</sub> →D <sub>2</sub>	50—56 (31—35)
		D <sub>2</sub> →D <sub>3</sub>	93—99 (58—61)
		OD→D <sub>3</sub>	Above 93 (58)
		D <sub>3</sub> →D <sub>2</sub>	87—93 (54—58)
		D <sub>2</sub> →D <sub>1</sub>	37—43 (23—27)
	Half throttle 200 mmHg (7.87 inHg)	D <sub>1</sub> →D <sub>2</sub>	17—23 (11—14)
		D <sub>2</sub> →D <sub>3</sub>	25—31 (16—19)
		D <sub>3</sub> →OD	44—50 (27—31)
		Lockup ON (OD)	66—72 (41—45)
		Lockup OFF (OD)	60—66 (37—41)
		OD→D <sub>3</sub>	27—33 (17—20)
		D <sub>3</sub> →D <sub>2</sub>	9—15 ( 6— 9)
	Fully closed	D <sub>2</sub> →D <sub>1</sub>	9—15 ( 6— 9)
		D <sub>1</sub> →D <sub>2</sub>	12—18 ( 7—11)
		D <sub>2</sub> →D <sub>3</sub>	22—28 (14—17)
		D <sub>3</sub> →OD	41—47 (25—29)
		OD→D <sub>3</sub>	27—33 (17—20)
	1	—	D <sub>3</sub> →D <sub>2</sub>
D <sub>2</sub> →D <sub>1</sub>			9—15 ( 6— 9)
12→11			38—44 (24—27)

L. PROPELLER SHAFT

Item	Specification
Max. permissible run-out	0.4 (0.016)

M. FRONT AND REAR AXLES

Item		Specifications	
Front axle	Type	Double-wishbone	
	Bearing	Angular ball bearing	
	Wheel bearing play mm (in) Maximum	0.05 (0.002)	
Rear axle	Type	Double-wishbone	
	Bearing	Angular ball bearing	
	Wheel bearing play mm (in) Maximum	0.05 (0.002)	
Differential	Type	Standard	
	Reduction gear	Hypoid gear	
	Reduction ratio	4.300	
	Differential gear	Straight-bevel gear	
	Ring gear size mm (in)	162.16 (6.38)	
	Oil	Grade	API service GL-5
		Viscosity	Above -18°C (0°F): SAE 90 Below -18°C (0°F): SAE 80W
		Capacity liter (Us qt, Imp qt)	0.65 (0.69, 0.57)
	Drive pinion preload (without oil seal) N-m (cm-kg, in-lb)		0.3—0.7 (3—7, 2.6—6.1)
	Backlash mm (in)	Side gear and pinion gear	0—0.1 (0—0.004)
		Final gear	0.09—0.11 (0.0035—0.0043)
Length (Pilot section to pilot section) mm (in)		150.20 $\pm$ 0.063 (5.913 $\pm$ 0.0025)	

## N. STEERING SYSTEM

Item	Type	Manual steering	Power steering
<b>Steering wheel</b>			
Outer diameter	mm (in)	370 (14.6)	
Free play	mm (in)	0—30 (0—1.18)	
Wheel effort	N (kg, lb)	4.9—29.4 (0.5—3.0, 1.1—6.6)	23.5—35.3 (2.4—3.6, 5.3—8.0)
Lock-to-lock	turns	3.36	2.8
<b>Steering Shaft</b>			
Shaft type		Collapsible, non-tilt	
Joint type		2-cross joint	
<b>Power steering system</b>			
Power assist type		Engine speed sensing	
Gear type		Rack-and-pinion	
Gear ratio		∞ (infinite)	
Rack stroke	mm (in)	121.0 (4.76)	
Power steering fluid		ATF DEXRON-II or M-III	
Fluid capacity	liter (US qt, Imp qt)	0.8 (0.85, 0.70)	
Fluid pressure	kPa (kg/cm <sup>2</sup> , psi)	7,603—8,339 (77.5—85.0, 1,102—1,209)	

## P. BRAKING SYSTEM

Item		Specifications	
Brake pedal	Height (with carpet)	mm (in) 171—181 (6.73—7.13)	
	Free play	mm (in) 4—7 (0.16—0.28)	
	Reserve travel (without carpet, clearance when pedal is depressed at 589 N (60 kg, 132 lb))	mm (in) 95 (3.74)	
Master cylinder	Type	Tandem	
	Bore	mm (in) 22.22 (0.87)	
	Fluid type	SAEJ1703 or FMVSS116, DOT-3	
Front brake (Disc)	Type	Disc	
	Thickness of pad	Standard	9.5 (0.37)
		Limit	1.0 (0.04)
	Thickness of disc plate	Standard	18.0 (0.71)
		Limit	16.0 (0.63)
Disc plate runout	mm (in)	0.1 (0.004) max.	
Wheel cylinder bore	mm (in)	51.1 (2.01)	
Rear brake (Disc)	Type	DISC	
	Thickness of pad	Standard	8.0 (0.31)
		Limit	1.0 (0.04)
	Thickness of disc plate	Standard	9 (0.35)
		Limit	7 (0.28)
Wheel cylinder bore	mm (in)	31.75 (1.25)	
Parking brake	Lever notches [Pulled at 98 N (10 kg, 22 lb)]	5—7	
Power brake unit	Type	Single diaphragm	
	Diameter	mm (in) 214 (8.0)	
	Push rod-to-piston clearance	mm (in) When vacuum applied to the unit is approx. 500 mmHg (19.7 inHg) 0.1—0.4mm (0.004—0.016 in)	
Rear wheel hydraulic control system	Fluid pressure per treading force	1,079—1,177 (11—12, 156—171)/196 (20, 44) at 0 mmHg (0 inHg) min.	
	kPa (kg/cm <sup>2</sup> , psi)/N (kg, lb)	5,199—5,494 (53—56, 754—796)/196 (20, 44) at 500 mmHg (19.7 inHg) min.	
Rear wheel hydraulic control system	Type	PBV	
	Bend portion (Rear brake pressure)	kPa (kg/cm <sup>2</sup> , psi) 2,943 (30, 427)	

**Q. WHEELS AND TIRES**

Item	Type	Standard	Temporary spare
Wheel	Size	14 x 5 1/2-JJ	14 x 4T
	Offset mm (in)	45 (1.77)	
	Pitch circle diameter mm (in)	100 (3.94)	
	Material	Aluminum alloy	Steel
Tire	Size	P185/60R14 82H	T115/70D14
	Air pressure kPa (kg/cm <sup>2</sup> , psi)	179 (1.8, 26)	415 (4.2, 60)
Wheel and tire	Runout limit mm (in)	Horizontal	2.0 (0.079)
		Vertical	1.5 (0.059)
	Maximum unbalance (at rim edge) g (oz)		10 (0.35)

**R. SUSPENSION**

Item	Transmission	M/T	A/T
<b>Front suspension</b>			
Type		Double-wishbone	
Stabilizer	Type	Torsion bar	
	Diameter mm (in)	19 (0.75)	
Shock absorbers		Cylindrical double-acting, low-pressure gas charged	
Coil springs	Identification color	Red	White
	Wire diameter mm (in)	10.8 (0.43)	11.0 (0.43)
	Coil inner diameter mm (in)	83 (3.27)	83 (3.27)
	Free length mm (in)	282.5 (11.12)	292.5 (11.52)
	Coil number	5.91	6.32
<b>Rear suspension</b>			
Type		Double-wishbone	
Stabilizer	Type	Torsion bar	
	Diameter mm (in)	12 (0.47)	
Shock absorbers		Cylindrical double-acting, low-pressure gas charged	
Coil springs	Identification color	Blue	Orange
	Wire diameter mm (in)	10.1 (0.40)	10.2 (0.40)
	Coil inner diameter mm (in)	83 (3.27)	83 (3.27)
	Free length mm (in)	339.5 (13.37)	347.5 (13.68)
	Coil number	7.68	7.96
<b>Wheel alignment</b>			
Front wheel alignment (Unladen* <sup>1</sup> )	Total toe-in	mm (in)	3 ± 3 (0.12 ± 0.12)
		degree	0°18' ± 18'
	Maximum steering angle	Inner	37°23' ± 2°
		Outer	32°32' ± 2°
	Camber angle		0°24' ± 45' <sup>*2</sup>
	Caster angle		4°26' ± 45' <sup>*3</sup>
King pin angle		11°20'	
Rear wheel alignment (Unladen* <sup>1</sup> )	Total toe-in	mm (in)	3 ± 3 (0.12 ± 0.12)
		degree	0°18' ± 18'
	Camber angle		-0°43' ± 30' <sup>*2</sup>

\*<sup>1</sup> Fuel tank full; radiator coolant and engine oil at specified level, and spare tire, jack, and tools in designated position.

\*<sup>2</sup> Difference between left and right must not exceed 1°.

\*<sup>3</sup> Difference between left and right must not exceed 1°30'.

## T. BODY ELECTRICAL SYSTEM

Item	Wattage (Bulb trade number)
<b>Instrument cluster lamps</b>	
Beam	3.4
Turn (LH and RH)	3.4
Illumination	3.4
Engine check	1.4
Brake	1.4
Charge	1.4
Belts	1.4
Air bag	1.4
Retractor	1.4
O/D off	1.4
Anti lock	1.4
Washer	1.4
<b>Exterior lights</b>	
Headlights	60/40
Front turn signal/parking lights	27/8 (1157 NA)
Front side marker lights	3.8 (194)
License plate lights	7.5
Rear turn signal lights	27 (1156)
Rear side marker lights	3.8 (194)
Stop/taillights	27/8 (1157)
Back-up lights	27 (1156)
High-mount stoplight	18.4 (921)
<b>Interior lamps</b>	5
<b>Illumination lamps</b>	
Ash tray	3.4
Heater control switch panel	1.4
A/C switch	1.4
Hazard switch	1.4
Cruise control main switch	1.4

## U. HEATER AND AIR CONDITIONING SYSTEM

Item	Specifications
Refrigerant amount g (oz)	800 (28.24)
Compressor oil amount cc (cc in)	80—100 (4.88—6.1)
Refrigerant normal pressure kPa (kg/cm <sup>2</sup> , psi)	Low pressure: 147—294 (1.5—3.0, 21—43) High pressure: 1,177—1,619 (12.0—16.5, 171—235)

## 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—4.7	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