

**DAIHATSU**  
**TYPE CB**  
**ENGINE**

[CB-23, CB-61 & CB-80]

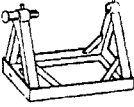


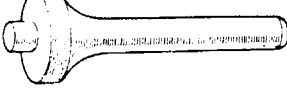




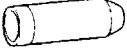

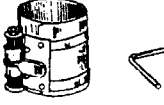
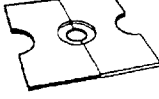

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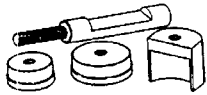
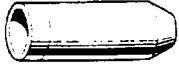



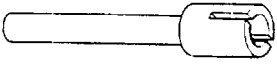






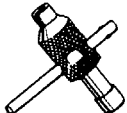
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## APPENDIX

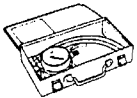


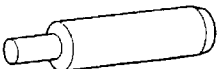


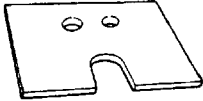
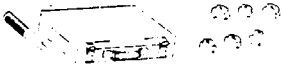
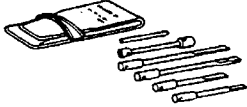
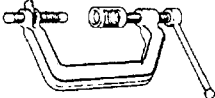


### SST (Special Service Tools)

Illustration	Tool No.	Tool Name
	09219-87202-000	Engine overhaul stand
	09219-87701-000	Engine overhaul attachment
	09210-87701-000	Flywheel holder
	09515-87202-000	Rear axle bearing inner replacer
	09219-87703-000	Cylinder head holder
	09202-87702-000	Valve spring replacer
	09201-87201-000	Valve guide remover & replacer
	09090-04810-000	Engine sling device
	09618-87301-000	Transmission bearing replacer
	09221-25018-000	Piston pin remover & replacer
	09217-87001-000	Piston replacing guide
	09253-87202-000	Water pump bearing anvil
	09214-87701-000	Balance shaft gear anvil

**APPENDIX**

Illustration	Tool No.	Tool Name
	09215-87701-000	Balance shaft gear bearing remover & replacer
	09506-87303-000	Differential drive pinion front bearing con replacer
	09608-87301-000	Axle hub & pinion bearing tool set
	09223-87702-000	Oil seal remover & replacer
	09204-87701-000	Valve rocker shaft puller
	09201-87703-000	Valve stem oil seal replacer
	09992-87704-000	Turbocharger pressure gauge
	09248-87703-000	Valve clearance tool
	09842-87704-000	EFI computer check subharness
	09842-30040-000	EFI inspection wire D
	09842-30050-000	EFI inspection wire A
	09258-00030-000	Hose plug set
	09243-00020-000	Idle adjusting wrench

## APPENDIX

Illustration	Tool No.	Tool Name
	09268-87701-000	Fuel pressure gauge
	09286-46011-000	Injection camshaft bearing cone puller
	09285-76010-000	Injection camshaft bearing cone replacer
	09238-87201-000	Water pump bearing remover & replacer
	09237-87201-000	Water pump seal set remover & replacer
	09238-87701-000	Water pump rotor puller
	09254-87201-000	Water pump bearing receiver
	09608-12010-000	Front hub & drive pinion bearing replacer set
	09860-11011-000	Carburetor driver set
	09202-87002-0A0	Valve cotter attachment NOTE: Can be used as a set with 09202-87002-000
	09202-87002-000	Valve cotter remover & replacer
	09648-87201-000	Drive shaft replacer

WM-13004

**SERVICE SPECIFICATIONS**

**CYLINDER HEAD**

Item	CB-23 & CB-61 engines		CB-80 engine		Remarks	
	Specified value	Allowable limit	Specified value	Allowable limit		
Cylinder head lower gasket surface distortion mm (inch)	—	0.10 (0.0039)	—	0.10 (0.0039)	On CB-23 engine only, recondition can be made, provided that head height limit of 125.7 mm (4.949 inches) is assured.	
Manifold gasket surface distortion mm (inch)	—	0.10 (0.0039)	—	0.10 (0.0039)	Recondition can be made, provided that grinding limit of 0.3 mm (0.012 inch) is not exceeded.	
Valve seat	Seat width mm (inch)	Intake	1.0 - 1.8 (0.039 - 0.071)	—	1.2 - 1.6 (0.047 - 0.063)	—
		Exhaust	1.0 - 1.8 (0.039 - 0.071)	—	1.2 - 1.6 (0.047 - 0.063)	—
	Seat angle		IN 30°-45°-70° EX 20°-45°-60°	—	20°-45°-70°	—
	Valve seat recession allowable limit mm (inch)		—	IN 1.886 (0.0743) EX 2.807 (0.1105)	—	IN 4.23 (0.1665) EX 5.30 (0.2087)
Clearance with valve lifter mm (inch)	—	—	0.015 - 0.046 (0.0006 - 0.0018)	0.07 (0.028)	If limit is exceeded, replace.	

WM-13005

**VALUE GUIDE BUSH**

Item	CB-23 & CB-61 engines		CB-80 engine		Remarks
	Specified value	Allowable limit	Specified value	Allowable limit	
Bush bore diameter mm (inch)	Intake	7.000 - 7.015 (0.2755 - 0.2762)	—	6.010 - 6.025 (0.2366 - 0.2372)	—
	Exhaust	7.000 - 7.015 (0.2755 - 0.2762)	—	6.010 - 6.025 (0.2366 - 0.2372)	—
Valve stem-to-bush clearance mm (inch)	Intake	0.040 - 0.070 (0.00157 - 0.00275)	0.09 (0.00354)	0.025 - 0.060 (0.0009 - 0.0024)	0.08 (0.0031)
	Exhaust	0.045 - 0.075 (0.0018 - 0.0029)	0.10 (0.0039)	0.030 - 0.065 (0.0012 - 0.0026)	0.09 (0.0035)

WM-13006

## APPENDIX

### VALVES

Item		CB-23 & CE-61 engines		CB-80 engine		Remarks
		Specified value	Allowable limit	Specified value	Allowable limit	
Seat width	Intake	1.0 - 1.8 (0.039 - 0.070)	—	1.2 - 1.6 (0.047 - 0.063)	—	
	Exhaust	1.0 - 1.8 (0.039 - 0.070)	—	1.2 - 1.6 (0.047 - 0.063)	—	
Overall length	Intake	101.65 (4.0019)	100.85 (3.970)	107.0 (4.2126)	106.2 (4.1811)	Recondition can be made provided that grinding limit of 0.8 mm (0.031 inch) is not exceeded.
	Exhaust	101.65 (4.0019)	100.85 (3.970)	107.2 (4.2204)	106.4 (4.1890)	
Valve stem outer diameter	Intake	6.945 - 6.960 (0.2734 - 0.2740)	—	5.970 - 5.985 (0.2350 - 0.2356)	—	
	Exhaust	6.940 - 6.955 (0.2732 - 0.2738)	—	5.960 - 5.980 (0.2346 - 0.2354)	—	
Valve head stock thickness	Intake	—	0.8 (0.031)	—	0.7 (0.028)	If thickness becomes less than limit, replace valve.
	Exhaust	—	1.0 (0.039)	—	0.8 (0.031)	

WM-13007

### VALVE SPRING

Item		CB-23 & CB-61 engines		CB-80 engine		Remarks
		Specified value	Allowable limit	Specified value	Allowable limit	
Out-of-squareness (under free state)	mm (inch)	—	1.5 (0.059)	—	1.5 (0.059)	If limit is exceeded, replace.
Free length	mm (inch)	43.3 (1.705)	42 (1.654)	45.9 (1.807)	44.5 (1.752)	If length becomes less than limit, replace.
Spring tension as installed	kg/mm (lb/inch)	25.7/34.9 (56.7/1.374)	22.7/34.9 (50.1/1.374)	40.4/27.67 (89.1/1.09)	34.4/27.67 (75.9/1.09)	If tension drops below limit, replace.

WM-13008

### VALVE ROCKER SHAFT & ROCKER ARM [CB-23 & CB-61 Engines]

Item	CB-23 & CB-61 engines		Remarks
	Specified value	Allowable limit	
Rocker arm bore diameter	mm (inch)	16.000 - 16.018 (0.629 - 0.630)	16.06 (0.632) If bore exceeds limit, replace.
Rocker shaft outer diameter	mm (inch)	15.958 - 15.984 (0.628 - 0.629)	15.93 (0.627) If outer diameter becomes less than limit, replace.
Shaft-to-arm clearance	mm (inch)	0.016 - 0.060 (0.0006 - 0.0024)	0.09 (0.0035) If clearance exceeds limit, replace.

WM-13009

**CYLINDER BLOCK**

Item		CB-23 & CB-61 engines		CB-80 engine		Remarks
		Specified value	Allowable limit	Specified value	Allowable limit	
Top gasket surface distortion mm (inch)		—	0.1 (0.039)	—	0.1 (0.039)	On CB-23 engine only, recondition can be made, provided that block height limit of 200.55 mm (7.896 inches) is assured.
Cylinder bore	Cylinder-to-piston clearance mm (inch)	0.035 - 0.055 (0.0014 - 0.0022)	0.12 (0.0047)	0.045 - 0.065 (0.0018 - 0.0026)	0.12 (0.0047)	If limit is exceeded, recondition.
	Out-of roundness, taper mm (inch)	—	0.1 (0.039)	—	0.1 (0.039)	If limit is exceeded, recondition.

WM-13010

**PISTON, PISTON PIN & PISTON RINGS**

Item			CB-23 & CB-61 engines		CB-80 engine		Remarks
			Specified value	Allowable limit	Specified value	Allowable limit	
Piston-to-cylinder clearance mm (inch)			0.035 - 0.055 (0.0014 - 0.0022)	0.12 (0.0047)	0.045 - 0.065 (0.0018 - 0.0026)	0.12 (0.0047)	If limit is exceeded, recondition.
Piston ring	End gap mm (inch)	Compression No.1	0.20 - 0.40 (0.0078 - 0.0157)	0.7 (0.0276)	0.35 - 0.45 (0.0138 - 0.0177)	0.7 (0.0276)	If limit is exceeded, replace rings as a set.
		Compression No.2	0.20 - 0.35 (0.0078 - 0.0138)	0.7 (0.0276)	0.28 - 0.40 (0.0110 - 0.0157)	0.7 (0.0276)	
		Oil ring	0.20 - 0.80 (0.0079 - 0.0315)	1.1 (0.0433)	0.20 - 0.70 (0.0079 - 0.00276)	1.1 (0.0433)	
	Side Clearance mm (inch)	Compression No.2	0.03 - 0.07 (0.0012 - 0.0028)	0.12 (0.0047)	0.05 - 0.09 (0.0020 - 0.0035)	0.12 (0.0047)	If limit is exceeded, replace.
		Compression No.1	0.02 - 0.06 (0.0012 - 0.0024)	0.12 (0.047)	0.02 - 0.06 (0.0008 - 0.0024)	0.12 (0.047)	
		Oil ring (reference)	0.01 - 0.03 (0.0004 - 0.0012)	—	0.01 - 0.03 (0.0004 - 0.0012)	—	
Piston-to-piston pin oil clearance mm (inch)			—	0.030 (0.0012)	—	0.030 (0.0012)	If clearance exceeds limit, replace piston and piston pin as a set.

WM-13011

**CONNECTING ROD**

Item		CB-23 & CB-61 engines		CB-80 engine		Remarks
		Specified value	Allowable limit	Specified value	Allowable limit	
Bearing oil clearance mm (inch)		0.020 - 0.044 (0.0008 - 0.0017)	0.07 (0.0028)	0.024 - 0.048 (0.0009 - 0.0019)	0.07 (0.0028)	
Big end thrust clearance mm (inch)		[CB-23] 0.15 - 0.25 (0.0059 - 0.0098) [CB-61] 0.15 - 0.33 (0.0059 - 0.0130)	[CB-23] 0.30 (0.0118) [CB-61] 0.38 (0.0149)	0.15 - 0.40 (0.0059 - 0.0157)	0.45 (0.0177)	
Allowable limit of connecting rod	Bend	—	0.05 (0.002)	—	0.05 (0.002)	If limit is exceeded, replace.
	Twist	—	0.05 (0.002)	—	0.05 (0.002)	

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