SUZUKI

HATCH

WITH 800CC ENGINE

SERVICE MANUAL

SUZUKI MIGHTYBOY CLUB OF AUSTRALIA

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FOREWORD

This SERVICE MANUAL provides information on functional and construction details and sets forth the methods of inspecting, checking and servicing for this vehicle. The MANUAL is intended for use by technical personnel engaged in or related to the servicing work on these SUZUKI four-wheel vehicles.

So that the users of these SUZUKI machines will gain maximum benefits the machines are capable of giving and that each machine will serve best with the high performance built into it, it is hoped that this MANUAL will be looked up to as the source of necessary information by each SUZUKI serviceman.

The vehicle manufactured to standard specifications with right hand drive is the main subject matter of this Manual. However, the vehicle distributed in your country might differ in minor respects from the standard-specification and, if they do, it is because some minor modifications (which are of no consequence in most cases as far as servicing is concerned) had to be made to comply with the statutory requirements of your country.

This MANUAL came out of the first printing for this vehicle and does not cover modifications yet to be made, but we assure you that each future printing will turn out an updated manual.

NOTES:
Described in GROUP 22 and 23 of this manual are as follows.

1. **SERVICE MANUAL SUPPLEMENT (For Automatic Transmission) is incorporated in GROUP 22. It describes disassembly, assembly, inspection and adjustment of automatic transmission itself, those parts in the automatic transmission vehicles which are different from those described in GROUP 1 through GROUP 21 due to the modifications for automatic transmission, and their data, inspection and adjustment.**
   For those items which are not included in GROUP 22, refer to the respective GROUPs, 1 through 23.
2. **GROUP 23 describes mainly modifications carried out between Oct., 1980 and March, 1983, their data and other procedures which should be added to the previous GROUPs.**

Be sure to read it thoroughly before your inspection and maintenance work and make effective use of it.

SUZUKI MOTOR CO.,LTD.
Service Publications Department
Overseas Service Division

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1. GENERAL

1–1. Exterior View

(The photo shows standard specification.)

Item / MODEL		HATCH
DIMENSION		
Overall length		3,295 mm (129.7 in.) 10'9.6"
Overall width		1,405 mm (55.3 in.) 4' 7"
Overall height		1,340 mm (52.8 in.) 4' 4.8"
Wheelbase		2,150 mm (84.6 in.)
Tread:	Front	1,215 mm (47.8 in.)
	Rear	1,170 mm (46.1 in.)
Load deck size:		
	Length	955 mm (37.6 in.)
	Width	1,180 mm (46.5 in.)
	Height	775 mm (30.5 in.)
Ground clearance		175 mm (6.9 in.)
WEIGHT		
Curb weight		600 kg (1,323 lbs)
Weight distribution:		
	Front	380 kg (838 lbs)
	Rear	220 kg (485 lbs)
Gross vehicle weight		950 kg (2,094 lbs)
Seating capacity		2 persons
Maximum loading capacity		350 kg (772 lbs) including 2 persons
ENGINE		
Type		4-stroke cycle, water cooled, OHC
Number of cylinders		3
Lubrication system		Wet sump
Bore		68.5 mm (2.70 in.)
Stroke		72.0 mm (2.83 in.)
Piston displacement		796 cm^3 (796 cc, 48.6 cu-in.)
Compression ratio		8.7 : 1
Carburetor		MIKUNI DIDS 2430, single
Air cleaner		Dry type

Item \ MODEL		HATCH
ELECTRICAL		
Ignition timing		7° B.T.D.C. below 900 r/min (rpm)
Standard spark plug		NGK BP5ES NIPPON DENSO W16EX-U
Starter		Magnetic shift type
Generator		Alternator
Battery		NS40S type : 12V 108 kC (30 AH)/20 HR NT60-S4 type : 12V 126 kC (35 AH)/20 HR
Headlight		12V 50/40W
Turn signal light		12V 21W
Clearance light		12V 5W
Parking light		12V 5W
Tail/Brake light		12V 5/21W
Side turn signal light		12V 6W
License plate light		12V 10W
Back up light		12V 21W
Interior light		12V 6W
Meter pilot lights		12V 3.4W
Main fuse		30A
Fuse box		10A, 10A, 15A, 15A, 15A, 15A
POWER TRANSMISSION		
Clutch type		Dry, single disc
Transmission type		4-forward all synchromesh, 1 reverse
Final reduction ratio		4.350
Gear ratios:	Low	3.583
	2nd	2.166
	3rd	1.333
	Top	0.900
	reverse	3.363
WHEEL AND SUSPENSION		
Tire size: Front and rear		145/70 SR12 (Tubeless tire)
Tire pressure	Front	190 kPa (1.9 kg/cm^2, 27 psi)
	Rear	220 kPa (2.2 kg/cm^2, 31 psi)
Suspension type, front		Strut
	rear	Leaf spring

Item \ MODEL		HATCH
STEERING		
Turning radius		4.4 m (14.4 ft)
Steering gear box		Rack and pinion
Toe-in		2 ~ 4 mm (0.079 ~ 0.157 in.)
Camber angle		1° 20′
Caster angle		3° 15′
Trail		13 mm (0.51 in.)
King pin angle		12° 50′
BRAKE SYSTEM		
Type		4-wheel, hydraulic
Wheel brake	Front	Disc brake
	Rear	Leading and trailing
Parking brake		Mechanical, 2-rear wheels
CAPACITIES		
Cooling solution		3.6 ℓ (7.6/6.3 US/Imp pt)
Fuel tank		27.0 ℓ (7.1/5.9 US/Imp gal)
Engine oil		2.5 ℓ (5.3/4.4 US/Imp pt)
Transmission oil		2.0 ℓ (4.2/3.5 US(Imp pt)

1–3. Locations of Engine Number and Body Number

The engine number is punched on the skirt part of the cylinder block under the carburetor.

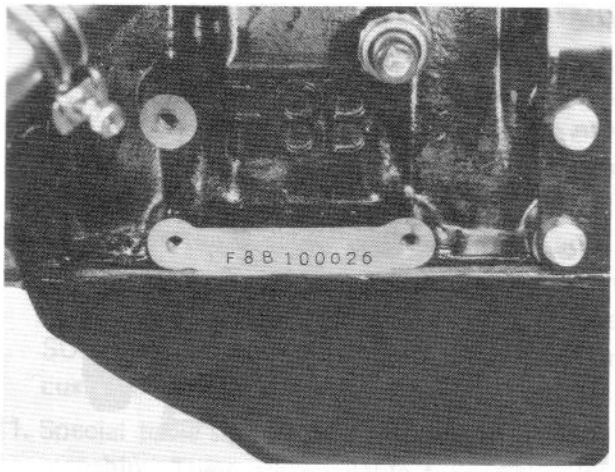


Fig. 1-1 Location of Engine No.

The body number is punched on the body in the engine room as shown below.

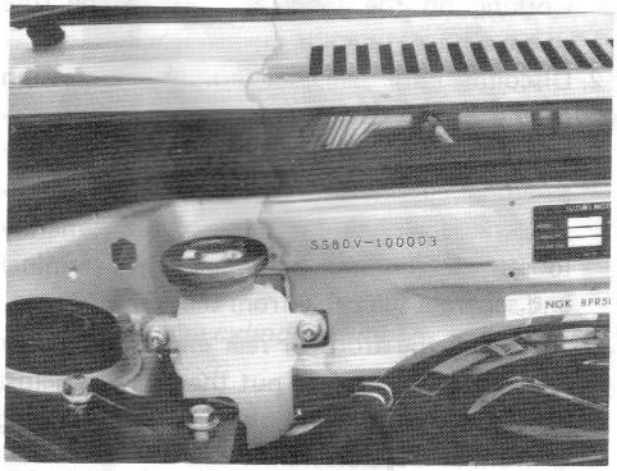


Fig. 1-2 Location of Body No.

1–4. Standard Shop Practices

1. Protect the painted surfaces of the body, and avoid staining or tearing the seats. When working on the fenders and seats, be sure to cover them up with sheets.
2. Disconnect the negative terminal connection of the battery when working on any electrical part or component. This is necessary for avoiding electrical shocks and short-circuiting, and is very simple to accomplish: merely loosen the wing nut on the negative terminal and separate the cable from the terminal post.
3. In raising the front or rear end off the floor by jacking, be sure to put the jack up against the center portion of the rear axle housing or front suspension frame.

Fig. 1-3

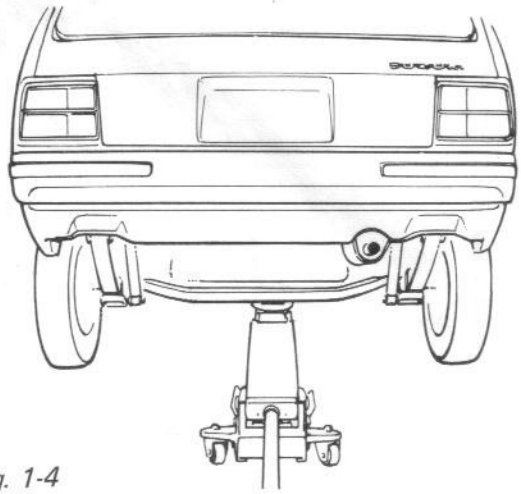


Fig. 1-4

4. To work on the front or rear end raised by jacking, be sure to place the safety stand under the front suspension frame or rear axle to support it in stable condition.

Fig. 1-5

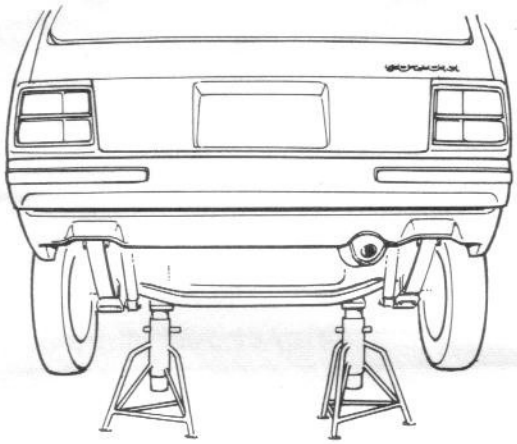


Fig. 1-6

5. Have wheel chocks for ready use in the shop. Chock the wheels securely when raising one end of the machine.
6. Orderliness is a key to successful overhauling. Trays, pans and shelves are needed to set aside the disassembled parts in groups or sets in order to avoid confusion and misplacement. This is particularly important for engine overhauling.
7. Have on hand the liquid packing - SUZUKI BOND No. 4 (99000-31030) - for ready use. This packing dope is an essential item assures leak-free (water and oil) workmanship.

8. Each bolt must be put back to where it was taken from or for which it is intended. Do not depend on your hunch in tightening the bolts for which tightening torque values are specified: be sure to use torque wrenches on those bolts.
9. It is advisable to discard and scrap gaskets and "O" rings removed in disassembly. Use new ones in reassembly, and try not to economize gaskets and "O" rings.
10. Use of Genuine SUZUKI parts is imperative. Use of imitation parts is a big gamble on safety and performance. Use Genuine SUZUKI parts and live up to the trust your customer places on you.
11. Special tools save time and ensure good workmanship: They are available from SUZUKI. Use them where their use is specified.
    Moreover, your own safety is assured by the use of special tools in many of the disassembly and reassembly steps.
12. Refer to the contents of this MANUAL as often as practical, and do each job right as prescribed.

NOTE:
The engine cylinders are identified by numbers. See Fig. 1-7. Counting from the crankshaft pulley side, the cylinders are referred to as No. 1, No. 2 and No. 3 cylinders.

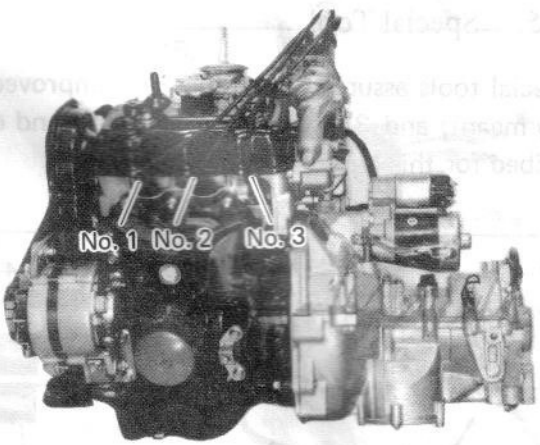
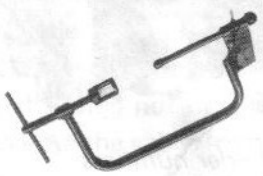
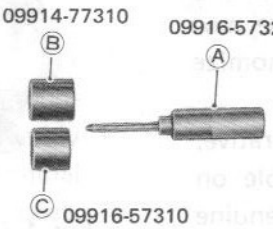
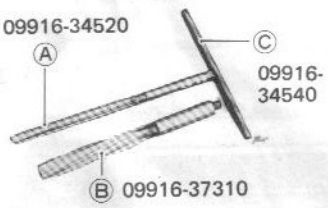
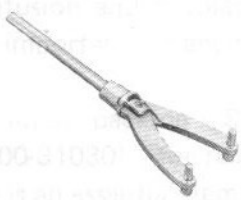
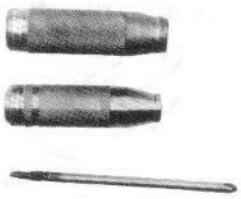
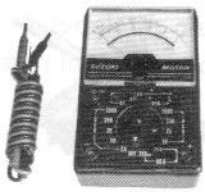
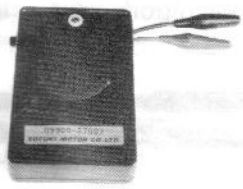
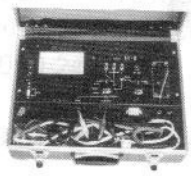
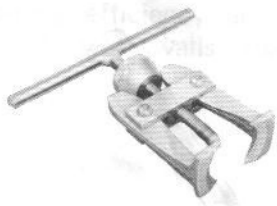
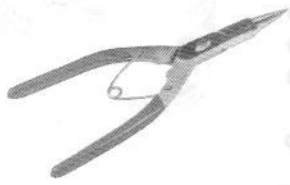


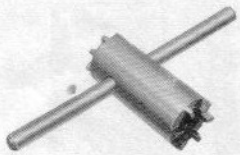
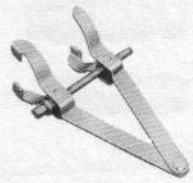
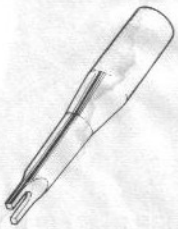
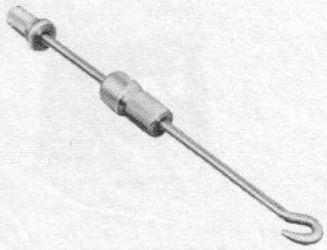
Fig. 1-7 Engine cylinder numbers

1–5. Special Tools

Special tools assure three things: 1) improved workmanship; 2) speedy execution of jobs for which they are meant; and 3) protection of parts and components against damage. Here are the special tools prescribed for this Model:

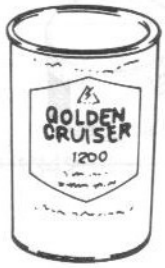
1.  09916-14510 Valve lifter	2.  (A) Valve guide & valve stem seal handle (B) Valve stem seal installer attachment (C) Valve guide installer attachment	3.  09916-44510 Valve guide remover
4.  Valve guide reamer (A) 7 mm dia (B) 12.0 mm dia (C) Handle	5.  09916-84510 Forceps	6.  09916-97820 Flywheel stopper
7.  09915-47310 Oil filter wrench	8.  09916-77310 Piston ring compressor	9.  09915-77310 (09915-77610) Oil pressure gauge Attachment
10.  09915-64510 Compression gauge	11.  09915-67310 Vacuum gauge	12.  09930-40113 Camshaft lock holder

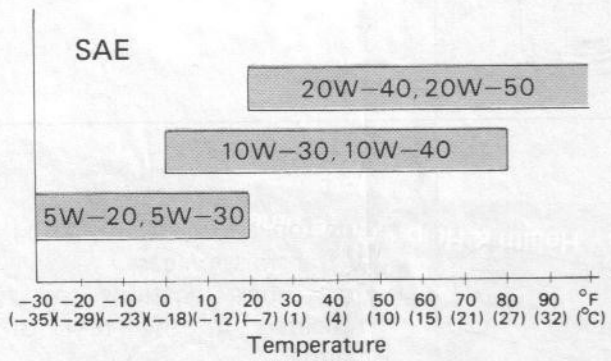
13.  09900-09002 Shock driver set	14.  09900-25002 Pocket tester	15.  09900-27003 Ignition timing tester
16.  09900-28106 Electro tester	17.  09915-27810 Hexagon socket (10 mm)	18.  09913-61110 Bearing puller
19.  09900-06108 Snap ring pliers (closing type)	20.  09900-06107 Snap ring pliers (opening type)	21.  09913-65210 Tie-rod end puller
22.  09913-80112 Bearing installer	23.  09913-75810 Bearing installer	24.  09913-75820 Steering pinion bearing installer
25.  09913-75830 Steering pinion bush installer	26.  09922-55121 Drive shaft installer	27.  09922-85811 Spring pin remover

28.  09923-37810 Clutch center guide	29.  09942-45810 Steering plug setting tool	30.  09943-25810 Coil spring setting tool
31.  09913-17310 Carburetor adjuster	32  09943-17910 Front wheel hub remover	33.  09942-15510 Sliding hammer
34.  09900-27301 Timing light		

1–6. Required Materials

The materials listed below are needed for maintenance work on this vehicle, and should be kept on hand for ready use. In addition, such standard materials as cleaning fluids, lubricants, etc., should also be available. Methods and time of use are discussed in the text of this manual on later pages.

Ref. No.	Material	Use
1.	GOLDEN CRUISER 1200 "Anti-freeze and Summer Coolant" (99000-24120) 	Additive to engine cooling for improving cooling efficiency and for protection of wet walls against rusting.
2.	SUZUKI SUPER GREASE A (99000-25010) 	• For locations indicated in the section dealing with the starter motor. • Clutch release bearing retainer. • Clutch release shaft bushing. • Transmission oil seal. • Differential oil seal. • Steering column. • Gear shifting control lever bushing & seat. • Door window regulator.
3.	SUZUKI GREASE SUPER H (99000-25120) 	Special grease intended for use on constant velocity joint. (Drive shaft joint)
4.	SUZUKI BOND (No. 4) (99000-31030) 	• For top and bottom mating faces of transmission case. • For other locations specifically indicated in the text of this manual.

5.	THREAD-LOCK CEMENT (99000-32040) 	• Timing belt inside cover bolt • Back window hinge screws
6.	SUZUKI SUPER GREASE E (99000-25050) 	• Steering gear case • Steering rack • Steering pinion bush • Steering rack boot
7.	WHEEL BEARING GREASE	• Rear axle spindle cap • Front wheel bearing • Rear wheel bearing
8.	GEAR OIL SAE # 90	• Transmission case 2.0 ltr. (4.2/3.5 US/Imp. pt.) • Transmission gear and bearing.
9.	4-STROKE ENGINE OIL Proper oil viscosity chart  	• For engine oil pan: 2.5 litres (5.3/4.4 US/Imp. pt.) for periodical oil change but 3.0 litres (6.3/5.3 US/Imp. pt.) for refilling at the time of engine overhauling. • Crank journal bearings and thrust plate. • Connecting-rod big-end and small-end bearings. • Camshaft journals and thrust plate. • Rocker shafts. • Oil pump gears. • Pistons and piston rings. • Engine oil seals. • Valve stems. • Accelerator, choke and clutch cables. • Parking brake cable. • Accelerator, brake and clutch pedals. • Door locks and hinges. • Distributor gear.

10.	SEALING COMPOUND 366E (99000-31090)	• Brake backing plate
11.	THREAD LOCK CEMENT SUPER 1342 (99000-32050)	• Timing belt tensioner bolt
12.	BRAKE FLUID "DOT 3, DOT 4" or SAE J1703	• Brake fluid reservoir tank

2. SERVICE DATA

2–1. Tightening Torque Schedule

In threaded fastening parts holding down a component in place, the holding force is preserved primarily in the male and female threads in contact. Screw threads are capable of withstanding this force up to a certain limit. Here occurs the need to tighten them without exceeding the limit, and this need can be met by using torque wrenches.

Fastening parts, for which the limit is specified because their fastening or holding function is critical, is listed below. Use torque wrenches and adhere to the torque specifications when tightening them at the time of periodical inspection or overhauling or servicing.

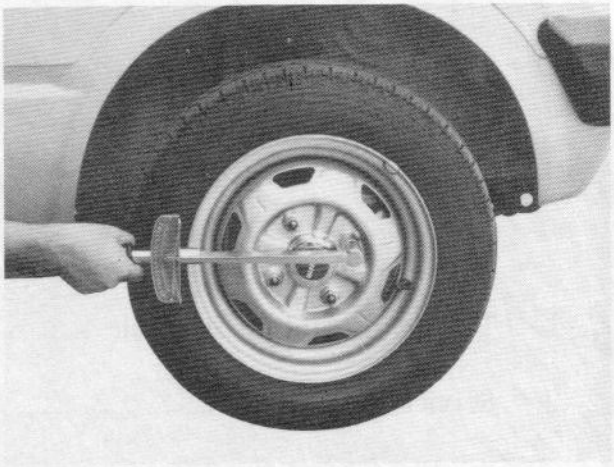


Fig. 2-1

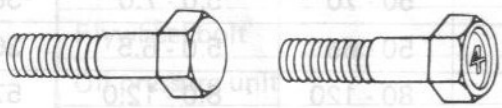
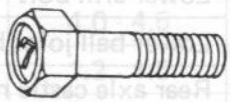
System	Fastening parts	Tightening torque		
		N.m	kg-m	lb-ft
Engine	Cylinder head bolt	55 - 60	5.5 - 6.0	40.0 - 43.0
	Spark plug	20 - 30	2.0 - 3.0	14.5 - 21.5
	Inlet & exhaust manifold nut	18 - 23	1.8 - 2.3	13.0 - 16.5
	Camshaft timing pully bolt	50 - 60	5.0 - 6.0	36.5 - 43.0
	Valve adjusting nut	15 - 20	1.5 - 2.0	11.0 - 14.0
	Timing belt cover bolt	3 - 4	0.3 - 0.4	2.5
	Crankshaft pully bolt	50 - 60	5.0 - 6.0	36.5 - 43.0
	Connecting rod bearing cap nut	28 - 32	2.8 - 3.2	20.5 - 23.0
	Crankshaft bearing cap bolt	43 - 48	4.3 - 4.8	31.5 - 34.5
	Flywheel bolt	40 - 45	4.0 - 4.5	29.0 - 32.5
	Oil pressure unit	12 - 15	1.2 - 1.5	9.0 - 10.5
	Oil filter Ass'y	10 - 15	1.0 - 1.5	7.5 - 10.5
	Oil filter stand	20 - 25	2.0 - 2.5	14.5 - 18.0
	Oil pan bolt	4 - 5	0.4 - 0.5	3.0 - 3.5
	Oil drain plug	20 - 25	2.0 - 2.5	14.5 - 18.0
	Cylinder head cover bolt	4 - 5	0.4 - 0.5	3.0 - 3.5
	Engine suspension frame bolt	40 - 60	4.0 - 6.0	29.0 - 43.0
	Engine mounting frame side nut(L&R)	23 - 28	2.3 - 2.8	16.5 - 20.0
	Engine mounting nut (L & R)	23 - 28	2.3 - 2.8	16.5 - 20.0
	Engine rear mounting nut	23 - 28	2.3 - 2.8	16.5 - 20.0
	Engine suspension frame support bolt	50 - 70	5.0 - 7.0	36.5 - 51.0

System	Fastening parts	Tightening torque		
		N.m	kg-m	lb-ft
Engine	Rocker arm shaft screw	9 - 12	0.9 - 1.2	7.0 - 8.5
	Camshaft thrust plate screw	9 - 12	0.9 - 1.2	7.0 - 8.5
	Oil pump gear plate screw	9 - 12	0.9 - 1.2	7.0 - 8.5
Gearshifting control	Gearshift control rod rear nut	8 - 10	0.8 - 1.0	5.5 - 7.5
	Gearshift control rod front nut	8 - 10	0.8 - 1.0	5.5 - 7.5
	Control lever guide plate bolt	8 - 10	0.8 - 1.0	5.5 - 7.5
	Control lever housing bolt	25 - 40	2.5 - 4.0	18.0 - 29.0
	Control lever housing nut	15 - 20	1.5 - 2.0	10.5 - 14.5
	Extension rod nut	25 - 40	2.5 - 4.0	18.0 - 29.0
Transmission and Differential	Oil drain plug and level plug	30 - 50	3.0 - 5.0	22.0 - 36.0
	Rear mounting bracket bolt	23 - 28	2.3 - 2.8	16.5 - 20.0
	Differential case bolt	80 - 100	8.0 - 10.0	58.0 - 72.0
Suspension	Leaf spring U bolt nut	30 - 45	3.0 - 4.5	21.5 - 33.0
	Leaf spring front nut	45 - 70	4.5 - 7.0	32.5 - 51.0
	Leaf spring shackle pin nut	30 - 55	3.0 - 5.5	21.5 - 40.0
	Front strut support nut	18 - 28	1.8 - 2.8	13.0 - 20.0
	Front strut lock nut	40 - 60	4.0 - 6.0	28.5 - 43.5
	Front strut bracket lock nut	70 - 90	7.0 - 9.0	50.5 - 65.5
	Stabilizer bar castle nut	40 - 90	4.0 - 9.0	28.5 - 65.5
	Stabilizer bar mount bolt	30 - 55	3.0 - 5.5	21.5 - 40.0
	Wheel nut	50 - 70	5.0 - 7.0	36.0 - 51.0
	Drive shaft castle nut	150 - 270	15.0 - 27.0	108.0 - 195.5
	Lower arm bolt	50 - 70	5.0 - 7.0	36.0 - 51.0
	Lower ball joint bolt	50 - 65	5.0 - 6.5	36.0 - 47.0
	Rear axle castle nut	80 - 120	8.0 - 12.0	57.5 - 87.0

System	Fastening parts	Tightening torque		
		N.m	kg-m	lb-ft
Steering	Steering shaft nut	25 - 40	2.5 - 4.0	18.0 - 28.5
	Steering shaft joint bolt	20 - 30	2.0 - 3.0	14.0 - 22.0
	Steering column bolt	11 - 17	1.1 - 1.7	7.5 - 12.5
	Steering gear case bolt	20 - 30	2.0 - 3.0	14.0 - 22.0
	Steering pinion securing nut	55 - 80	5.5 - 8.0	40.0 - 57.5
	Tie rod end lock nut	35 - 55	3.5 - 5.5	25.5 - 39.5
	Tie rod end castle nut	40 - 55	4.0 - 5.5	28.5 - 39.5
Brake	Rear brake backing plate bolt	18 - 28	1.8 - 2.8	13.0 - 20.0
	Brake master cylinder nut	25 - 40	2.5 - 4.0	18.0 - 28.5
	Brake tube union nut	15 - 18	1.5 - 1.8	11.0 - 13.0
	Brake flexible hose nut	20 - 40	2.0 - 4.0	14.5 - 28.5
	Brake pipe 2-way joint bolt	8 - 10	0.8 - 1.0	5.5 - 7.0
	Proportioning valve bolt	8 - 10	0.8 - 1.0	5.5 - 7.0
	Brake bleeder plug	9 - 13	0.9 - 1.3	6.5 - 9.5
	Wheel cylinder mounting nut	7 - 11	0.7 - 1.1	5.0 - 8.0
	Front brake caliper pin bolt	22 - 32	2.2 - 3.2	15.5 - 23.0
	Front brake disc bolt	40 - 60	4.0 - 6.0	28.5 - 43.0
	Front brake carrier bolt	70 -100	7.0 -10.0	50.5 - 72.0
	Brake flexible hose bolt	20 - 25	2.0 - 2.5	14.0 - 18.0

For other bolts and nuts not listed above, refer to this chart:

Tightening Torque

Thread diameter (mm)	 Conventional bolt "4" Marked bolt			 "7" Marked bolt		
	N.m	kg-m	lb-ft	N.m	kg-m	lb-ft
4	1 - 2	0.1 - 0.2	0.7 - 1.5	1.5 - 3.0	0.15 - 0.30	1.0 - 2.2
5	2 - 4	0.2 - 0.4	1.4 - 2.9	3 - 6	0.3 - 0.6	2.1 - 4.5
6	4 - 7	0.4 - 0.7	2.8 - 5.5	8 - 12	0.8 - 1.2	5.5 - 9.0
8	10 - 16	1.0 - 1.6	7.0 - 12.0	18 - 28	1.8 - 2.8	13.0 - 20.5
10	22 - 35	2.2 - 3.5	15.5 - 25.5	40 - 60	4.0 - 6.0	28.5 - 43.5
12	35 - 55	3.5 - 5.5	25.0 - 40.0	70 - 100	7.0 - 10.0	50.5 - 72.5
14	50 - 80	5.0 - 8.0	36.0 - 58.0	110 - 160	11.0 - 16.0	79.5 - 116.0
16	80 - 130	8.0 - 13.0	57.5 - 94.5	170 - 250	17.0 - 25.0	122.5 - 181.0
18	130 - 190	13.0 - 19.0	94.0 - 137.5	200 - 280	20.0 - 28.0	144.5 - 203.0

ENGINE

Item			Standard	Service Limit
Compression pressure			13.5 kg/cm² (192.0 psi) 400 r/min	10.0 kg/cm² (142.2 psi) 400 r/min
	Difference between cylinders		———	1.0 kg/cm² (14.2 psi) 400 r/min
Valve clearance (Inlet, Exhaust)	Cold		0.13 ~ 0.18 mm (0.005 ~ 0.007 in.)	———
	Hot		0.23 ~ 0.28 mm (0.009 ~ 0.011 in.)	———
Ignition Timing			7° B.T.D.C. below 900 r/min (rpm)	———
Cylinder head	Flatness of gasketed surface		———	0.05 mm (0.002 in.)
	Flatness of manifold seat	Inlet	———	0.1 mm (0.004 in.)
		Outlet	———	0.1 mm (0.004 in.)
	Valve seat	Seating width Inlet	1.3 ~ 1.5 mm (0.0512 ~ 0.0590 in.)	———
		Seating width Exhaust	1.3 ~ 1.5 mm (0.0512 ~ 0.0590 in.)	———
		Seating angle	45°	———
Valve, Valve spring & Cam shaft	Camshaft/Journal clearance		0.050 ~ 0.091 mm (0.0020 ~ 0.0036 in.)	0.15 mm (0.0059 in.)
	Camshaft thrust clearance		0.050 ~ 0.150 mm (0.0020 ~ 0.0059 in.)	0.30 mm (0.0118 in.)
	Cam height (Base circle + lift)	Inlet	36.152 mm (1.4233 in.)	36.100 mm (1.4212 in.)
		Exhaust	36.152 mm (1.4233 in.)	36.100 mm (1.4212 in.)
		Fuel pump cam	33.300 mm (1.3110 in.)	33.000 mm (1.2992 in.)
	Camshaft deflection		———	0.10 mm (0.0039 in.)
	Valve stem diameter	Inlet	6.965 ~ 6.980 mm (0.2742 ~ 0.2748 in.)	———
		Exhaust	6.955 ~ 6.970 mm (0.2738 ~ 0.2744 in.)	———
	Valve guide I.D.	Inlet	7.000 ~ 7.015 mm (0.2755 ~ 0.2761 in.)	———
		Exhaust	7.000 ~ 7.015 mm (0.2755 ~ 0.2761 in.)	———
	Valve guide-to-valve stem clearance	Inlet	0.020 ~ 0.050 mm (0.0008 ~ 0.0019 in.)	0.07 mm (0.0027 in.)
		Exhaust	0.030 ~ 0.060 mm (0.0012 ~ 0.0023 in.)	0.09 mm (0.0035 in.)
	Thickness of valve head periphery	Inlet	0.80 ~ 1.20 mm (0.0315 ~ 0.0472 in.)	0.6 mm (0.0236 in.)
		Exhaust	0.80 ~ 1.20 mm (0.0315 ~ 0.0472 in.)	0.7 mm (0.0275 in.)
	Contact width of valve and valve seat	Inlet	1.3 ~ 1.5 mm (0.0512 ~ 0.0590 in.)	———
		Exhaust	1.3 ~ 1.5 mm (0.0512 ~ 0.0590 in.)	———
	Valve spring free length	Inlet	47.7 mm (1.8779 in.)	46.5 mm (1.8307 in.)
		Exhaust	47.7 mm (1.8779 in.)	46.5 mm (1.8307 in.)
	Valve spring preload	Inlet	26 ~ 30 kg (57.3 ~ 66.1 lb) for fitting length 40 mm (1.57 in.)	24 kg (52.9 lb) for fitting length 40 mm (1.57 in.)
		Exhaust	26 ~ 30 kg (57.3 ~ 66.1 lb) for fitting length 40 mm (1.57 in.)	24 kg (52.9 lb) for fitting length 40 mm (1.57 in.)

Item			Standard	Service Limit
Rocker arm shaft and rocker arm	Rocker shaft O.D.		14.965 ~ 14.980 mm (0.589 ~ 0.590 in.)	———
	Rocker arm I.D.		14.985 ~ 15.005 mm (0.590 ~ 0.591 in.)	———
	Shaft-to-arm clearance	Inlet	0.005 ~ 0.040 mm (0.0002 ~ 0.0016 in.)	0.07 mm (0.0027 in.)
		Exhaust	0.005 ~ 0.040 mm (0.0002 ~ 0.0016 in.)	0.07 mm (0.0027 in.)
	Rocker shaft deflection		———	0.06 mm (0.0023 in.)
Cylinder	Flatness of gasketed surface		———	0.05 mm (0.0020 in.)
	Cylinder bore (S.T.D.)		68.505 ~ 68.520 mm (2.6970 ~ 2.6976 in.)	———
	Difference in bore between cylinders		———	0.05 mm (0.0020 in.)
	Wear limit on bore		———	0.05 mm (0.0020 in.)
	Cylinder-to-piston clearance		0.045 ~ 0.055 mm (0.0018 ~ 0.0022 in.)	———
Piston	Piston diameter	Standard	68.450 ~ 68.475 mm (2.6949 ~ 2.6959 in.)	———
		Oversize: 0.25 mm (0.0098in.)	68.700 ~ 68.725 mm (2.7047 ~ 2.7057 in.)	———
		Oversize: 0.50 mm (0.0196in.)	68.950 ~ 68.975 mm (2.7146 ~ 2.7155 in.)	———
	Piston ring groove width	Top ring	1.52 ~ 1.54 mm (0.0598 ~ 0.0606 in.)	———
		2nd ring	1.51 ~ 1.53 mm (0.0594 ~ 0.0602 in.)	———
		Oil ring	2.81 ~ 2.83 mm (0.1106 ~ 0.1114 in.)	———
	Piston pin diameter		15.995 ~ 16.000mm (0.6297 ~ 0.6299 in.)	———
	Piston pin clearance in con. rod		0.003 ~ 0.016 mm (0.0001 ~ 0.0006 in.)	0.05 mm (0.0020 in.)
Piston ring	Piston ring thickness	Top ring	1.47 ~ 1.49 mm (0.0578 ~ 0.0586 in.)	———
		2nd ring	1.47 ~ 1.49 mm (0.0578 ~ 0.0586 in.)	———
		Oil ring	0.45 mm (0.0177 in.)	———
	Ring clearance in groove	Top ring	0.03 ~ 0.07 mm (0.0012 ~ 0.0027 in.)	0.12 mm (0.0047 in.)
		2nd ring	0.02 ~ 0.06mm (0.0008 ~ 0.0023 in.)	0.10 mm (0.0039 in.)
	Piston ring end gap	Top ring	0.15 ~ 0.35 mm (0.0059 ~ 0.0137 in.)	0.7 mm (0.0275 in.)
		2nd ring	0.10 ~ 0.30 mm (0.0039 ~ 0.0118 in.)	0.7 mm (0.0275 in.)
		Oil ring	0.30 ~ 0.90 mm (0.0118 ~ 0.0354 in.)	1.8 mm (0.0708 in.)
Crankshaft	Crankshaft deflection (middle)		———	0.06 mm (0.0023 in.)
	Crank pin diameter		37.985 ~ 38.000mm (1.4954 ~ 1.4960 in.)	———
	Crank pin clearance in con. rod		0.020 ~ 0.040 mm (0.0008 ~ 0.0016 in.)	0.08 mm (0.0031 in.)
	Connecting rod small end bore		16.003 ~ 16.011 mm (0.6300 ~ 0.6303 in.)	———
	Crank journal diameter		49.985 ~ 50.000 mm (1.9679 ~ 1.9685 in.)	———
	Bearing-to-journal clearance		0.020 ~ 0.040 mm (0.0008 ~ 0.0016 in.)	0.08 mm (0.0032 in.)

Item			Standard	Service Limit
Crankshaft	Crankshaft thrust play		0.13 ~ 0.28 mm (0.0051~ 0.0110 in.)	0.35 mm (0.0138 in.)
	Connecting rod big end thrust clearance		0.10 ~ 0.20 mm (0.0039 ~ 0.0078 in.)	0.30 mm (0.0118 in.)
	Connecting rod	Twist	———	0.10 mm (0.0039 in.)
		Bow	———	0.05 mm (0.0020 in.)

CLUTCH & TRANSMISSION

Item			Standard	Service Limit
Clutch	Pedal play		15 - 25 mm (0.6 - 1.0 in.)	———
	Facing wear (Rived head depression)		1.2 mm (0.05 in.)	0.5 mm (0.02 in.)
	Facing-input shaft serration backlash		———	0.5 mm (0.02 in.)
	Clutch release arm play		2 ~ 4 mm (0.08 ~ 0.16 in.)	———
Transmission	Clearance between gears and rings		0.8 ~ 1.2 mm (0.03 ~ 0.05 in.)	0.5 mm (0.02 in.)
	Key slot width of synchronizer ring	Low gear	7.8 mm (0.31 in.)	8.1 mm (0.32 in.)
		Second, third and top gear	9.6 mm (0.38 in.)	9.9 mm (0.39 in.)
	Fork shaft locating spring & Gear shift arm spring	Free length	19.5 mm (0.767 in.)	17.0 mm (0.669 in.)
	Low & second gear backlash		0.10 ~ 0.15 mm (0.0039 ~ 0.0059 in.)	0.3 mm (0.0118 in.)
	Third & top gear backlash		0.15 ~ 0.20 mm (0.0059 ~ 0.0078 in.)	0.3 mm (0.0118 in.)
	Reverse gear-reverse idle gear backlash		0.15 ~ 0.30 mm (0.0059 ~ 0.0118 in.)	0.4 mm (0.0157 in.)

LUBRICATION

Item			Standard	Service Limit
Lubrication	Outer gear periphery clearance in pump case		0.05 ~ 0.10 mm (0.0020 ~ 0.0039 in.)	0.15 mm (0.0059 in.)
	Outer gear tooth clearance in pump case		0.058 ~ 0.310 mm (0.0023 ~ 0.0122 in.)	———
	Inner gear tooth clearance in pump case		0.177 ~ 0.328 mm (0.0070 ~ 0.0129 in.)	———
	Oil pump side clearance (flatness)		0.035 ~ 0.085 mm (0.0014 ~ 0.0033 in.)	0.15 mm (0.0059 in.)
	Oil relief valve spring	Free length	45 mm (1.77 in.)	———
		10.7 mm (0.42 in) Compressive force	6.206 kg (13.681 lb)	5.300 kg (11.684 lb)
	Set pressure of oil pressure switch		0.2 ~ 0.4 kg/cm² (2.84 ~ 5.68 psi)	———

COOLING SYSTEM

Item	Standard	Service Limit
Fan belt tension as deflection under 10 kg (22 lb) push applied to middle point between pulleys	10 ~ 15 mm (0.4 ~ 0.6 in.)	—
Thermostat start-to-open temperature	82°C (179°F)	—
Thermostat full-open temperature	95°C (203°F)	—
Valve lift	8 mm (0.31 in.)	—

DIFFERENTIAL

Item	Standard	Service Limit
Side gear backlash	0.05 ~ 0.10 mm (0.002 ~ 0.004 in.)	—
Final gear backlash	0.08 ~ 0.12 mm (0.003 ~ 0.005 in.)	—

SUSPENSION

Item	Standard	Service Limit
Front coil spring rate	1.48 kg/mm (83 lb/in.)	—
Rear leaf spring rate	2.17 kg/mm (122 lb/in.) *2.6 kg/mm (145.6 lb/in.)	—
Front coil spring free length	352 mm (13.9 in.)	—
Rear leaf spring free height	135.5 mm (5.33 in.) ● 127.5 mm (5.02 in.) *156 mm (6.1 in.)	—
Front strut stroke	135 mm (5.3 in.)	—
Rear shock absorber stroke	160 mm (6.3 in.) *175 mm (6.9 in.)	—

* For rear leaf spring of three-leaf type
● For the right side leaf spring of a left hand steering vehicle.

STEERING SYSTEM

Item		Standard	Service Limit
Gear ratio (gear case)		17.5 : 1	———
Steering angle, inside		38°	———
Steering angle, outside		32°	———
Minimum turning radius		4.4 m (14.4 ft.)	———
Tire inflating pressure	Front	190 kPa (1.9 kg/cm², 27 psi)	———
	Rear	190 kPa (1.9 kg/cm², 27 psi)	———
		*220 kPa (2.2 kg/cm², 31 psi)	———
Toe-in		2 ~ 4 mm (0.079 ~ 0.157 in.)	———
Camber angle		1° 20′	———
Trail		13 mm (0.51 in.)	———
King pin inclination		12° 50′	———
Caster angle		3° 15′	———

* For vehicle with rear leaf spring of three-leaf type

BRAKE

Item	Standard	Service Limit
Brake drum inside diameter	180 mm (7.087 in.)	182 mm (7.165 in.)
Brake drum "out-of-round"	0 mm (0 in.)	0.5 mm (0.02 in.)
Brake lining thickness (lining + shoe rim)	7.0 mm (0.27 in.)	3.0 mm (0.12 in.)
Pedal-to-wall clearance When pedal is depressed at 30 kg (66 lb)	50 mm (1.97 in.)minimum	
Brake disc thickness	11 mm (0.433 in.)	9.5 mm (0.374 in.)
Brake disc deflection	———	0.15 mm (0.006 in.)
Pad thickness (lining + pad rim)	15.5 mm (0.610 in.)	6.5 mm (0.256 in.)

ELECTRICAL

Item		Standard	Service Limit
Ignition system	Ignition timing	7° B.T.D.C. below 900 r/min (rpm)	———
	Ignition order	1 - 3 - 2	———
	Breaker point gap	0.4 - 0.5 mm (0.016 - 0.019 in.)	———
	Cam dwell angle	62°	———
	Condenser capacitance	0.25 microfarad	———
	Ignition coil, Primary winding resistance	About 3 ohm (inclusive of the 1.5-ohm resistor)	———
	Ignition coil; Secondary winding resistance	About 8 kiloohms	———
Starter motor	Voltage	12 Volts	———
	Output	0.6 kw	———
	Rating	30 seconds	———
	Brush length	19 mm (0.75 in.)	12 mm (0.47 in.)
	Number of pinion teeth	9	———
	Commutator diameter	32.5 mm (1.28 in.)	———
	Mica undercut	0.5 - 0.8 mm (0.02 - 0.03 in.)	0.2 mm (0.007 in.)
Charging system	Nominal operating voltage	12 Volts	———
	Maximum alternator output	40A	———
	Effective pulley diameter	65 mm (2.56 in.)	———
	Maximum permissible alternator speed	13,500 r/min (rpm)	———
	Working temperature range	-40 - 80°C (-104 - 176°F)	———
	Rotor; Ring-to-ring circuit resistance	Several ohms	———
	Brush length	13.5 mm (0.53 in.)	5.0 mm (0.20 in.)
	Standard output voltage and current	13.8 - 14.8 Volts, 20 A minimum	———
	Regulated Voltage	13.8 - 14.8 Volts	———
	Voltage-relay cut in Voltage	4.2 ~ 5.2 Volts	———
	Field circuit resistance	Several ohms	———

4. ENGINE

1) The engine is a water-cooled, in-line 3 cylinders, 4-stroke cycle gasoline unit with its S.O.H.C. (single overhead camshaft) valve mechanism arranged for "V"-type valve configuration.

The single overhead camshaft (S.O.H.C.) is mounted over the cylinder head; it is driven from crankshaft through timing belt. Unlike conventional overhead valve (O.H.V.) engines, this engine has no pushrods. Thus, drive for valves is more direct and enables the valves to follow the crankshaft without any delay.

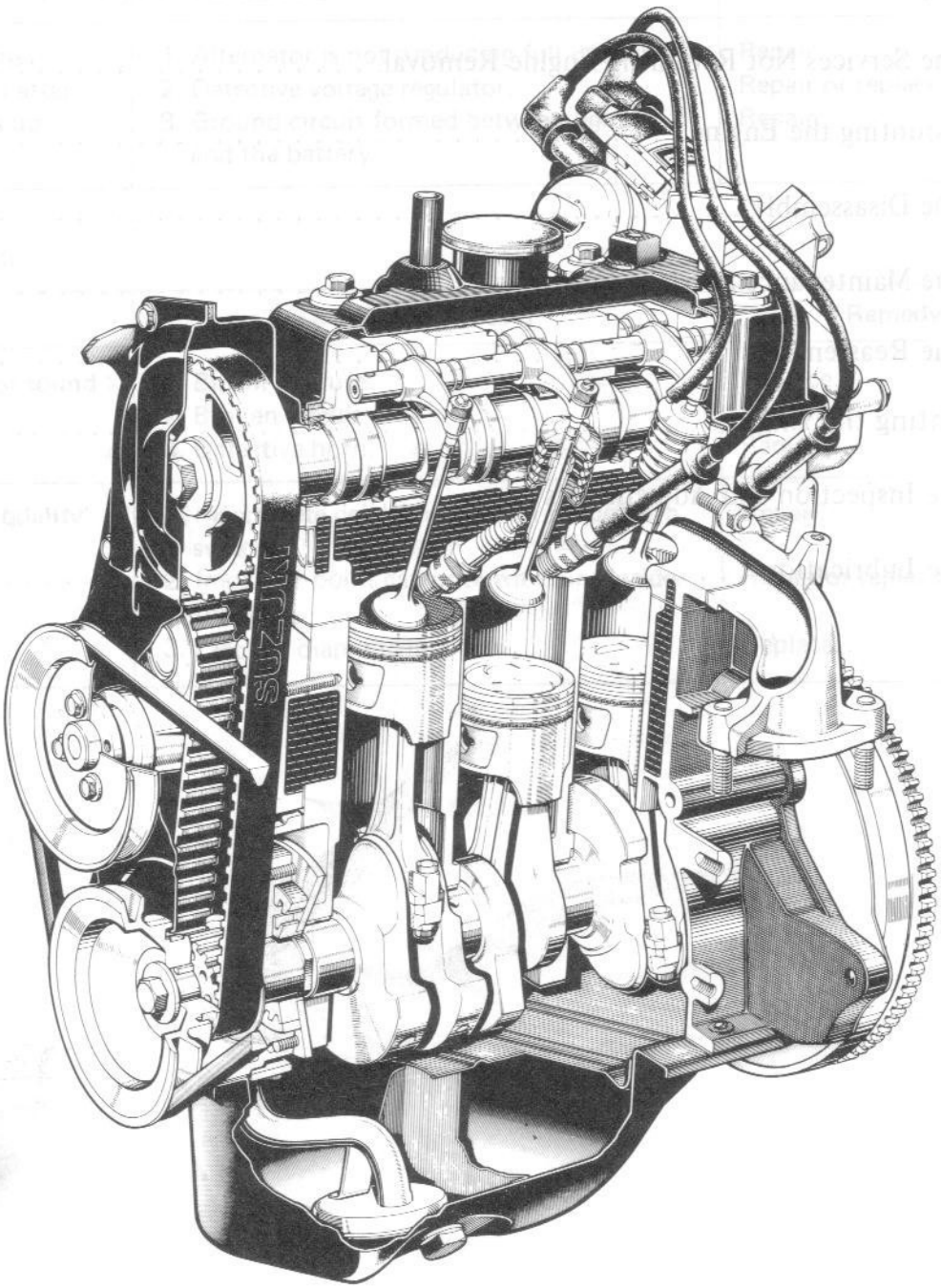


Fig. 4-1