

SERVICE BULLETIN

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INTRODUCTION OF DATSUN (V)B10 SERIES



NISSAN MOTOR CO., LTD.

TOKYO, JAPAN

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I GENERAL SPECIFICATIONS

MODEL		B10		VB10	
		S. T. D.	Deluxe	S. T. D.	Deluxe
Overall length		3,800 mm (149.6 in.)	3,820 mm (150.4 in.)	3,800 mm (149.6 in.)	3,820 mm (150.4 in.)
Overall width		1,445 mm (56.9 in.)		1,445 mm (56.9 in.)	
Overall height		1,345 mm (53.0 in.)		1,385 mm (54.5 in.)	
Wheel base		2,280 mm (89.8 in.)		2,280 mm (93.7 in.)	
Room space	I. L.	1,630 mm (64.2 in.)		1,285 mm (50.6 in.)	
	I. W.	1,255 mm (48.2 in.)		1,160 mm (45.7 in.)	
	I. H.	1,100 mm (43.3 in.)		830 mm (32.7 in.)	
Tread	Front	1,190 mm (46.9 in.)		1,190 mm (46.9 in.)	
	Rear	1,180 mm (46.6 in.)		1,180 mm (46.6 in.)	
Min. road clea.		160 mm (6.3 in.)		170 mm (6.7 in.)	
O.H. to the F. E. w/o. B.		580 mm (22.8 in.)		585 mm 23.0 in.)	
O.H. to the R. E. w/o. B.		875 mm (3.4 in.)		850 mm 3.3 in.)	
Vehicle weight		625 kg (1378 lb.)	645 kg (1422 lb.)	645 kg (1422 lb.)	665 kg (1466 lb.)
Max. I. A.	Right	49°		49°	
	Left	49°		49°	

Max. speed	135 km (100 MPH)	135 km (100 MPH)	130 km (97 MPH)	130 km (97 MPH)
Grade ability $\sin\theta$	0.387	0.379	0.306	0.301
Min. turning radius	4.0 m (13.1 ft.)		4.0 m (13.1 ft.)	
Engine	Model		A10	
	Manufacturer		NISSAN MOTOR CO., LTD.	
	Classification		Gasoline	
	Cooling system		Water Cooled	
	No. of cylinder & arrangement		4 in line	
	Cycle		4	
	Combustion chamber		Wedge	
	Valve arrangement		O. H. V.	
	Bore x Stroke mm		73 x 59 (2.87 x 2.32 in.)	
	Displacement <i>l</i>		0.988 (60.3 cu. in.)	
	Compression ratio		8.5	
	Compression pressure kg/cm (r. p. m.)		12.0/350	
	Max. exploding pressure kg/cm (r. p. m.)		48/4,000	
	Max. mean effective pressure kg/cm (r. p. m.)		9.75/3,600	
	Max. Power HP/r. p. m. (SAE)		62/6,000	
	Max. Torque (SAE) m-kg/r. p. m.		8.5/4,000 (61.5 ft-lb/ 4000 r. p. m.)	
Length x Width x Height mm		547 x 553 x 590		
Weight kg		91.5		
Position		Front		

Engine	Type of Piston		T Slot		
	Material of piston		LO-EX		
	No. of Piston Ring	Pressure Oil	2 1		
	Valve Timing	Intake open		12° B. T. D. C.	
		Intake close		48° A. B. D. C.	
		Exhaust open		50° B. T. D. C.	
		Exhaust close		10° A. T. D. C.	
	Valve Clearance	Intake mm	0.35		
Exhaust mm		0.35			
Starting Method			Starter Motor		
Ignition System	Firing Method		Battery Coil Type		
	Ignition Timing B. T. D. C. / r. p. m.		8° / 600		
	Ignition Order		1-3-4-2		
	Ignition Coil	Type	C14-51		
		Manufacturer	HITACHI		
	Distributor	Type	D412-53		
		Manufacturer	HITACHI		
Type		L45			
Ignition	Spark Plug	Manufacturer	HITACHI		
		Thread mm	14		
		Cap mm	0.7 ~ 0.8		
Fuel System	Carburetor	Type	DCG286-3		
		Manufacturer	HITACHI		
		Throrrle Valve Bore mm	26	28	

Fuel System	Carburetor	Venturi Size	mm	20 x 7	24 x 7	
		Main Jet	mm	0.95	1.40	
		Slow Jet	mm	0.80	0	
		Power Jet	mm	0.60		
		Air Draught		Down		
	Air Cleaner	Type	Paper Element			
		Manufacturer	TSUCHIYA			
	Fuel Pump	Type	Diaphragm			
		Manufacturer	SHOWASEIKI			
		Fuel Tank Capacity	35 (for B10) 30 (for VB10)			
Lubricating System	Lubrication Method	Forced Full Flow				
	Oil Pump Type	Trochoid Type				
	Oil Filter	Paper Filter				
	Oil Pan Capacity	2.5				
Cooling System	Type	Pressure Feed Water Cooled				
	Radiator	Corugated Fin & Tube Type				
	Capacity of Cooling Water	4.5				
	Type of Water Pump	Centrifugal Type				
	Thermostat	Pellet Type				
Battery	Type	N40L				
	Voltage	V	12			
	Capacity	A.H.	40			
	Type	LT125-01				
	Manufacturer	HITACHI				

Generator		Generating Method		Alternator	
		Voltage V		12	
		Capacity W		250	
		Voltage Regulator		TL1Z-10A	
Starter		Type		S114-87	
		Manufacturer		HITACHI	
		Voltage & Power V-HP		12V-1.0	
Transmission device	Clutch	Type		Single dry disc	
		Number of Place		1 (Facing 2)	
		Out. dia. x In. dia. x Thickness mm		160 x 110 x 3.2	
		Total friction area cm ²		212	
	Transmission	Type		3 Forward 1 Reverse All Synchromesh on forward gears	4 Forward 1 Reverse All Synchromesh on forward gears
		Operating Method		Remoto Control	Floor Shift
		Gear Ratio	1st	3.38	3.76
			2nd	1.73	2.17
			3rd	1.00	1.40
			4th		1.00
	Reverse		3.64	3.64	
	Propeller Shaft		Length x Out. dia. x In. dia. mm	1.178 x 63.5 x 60.3	
Type of universal joint		Spicer			

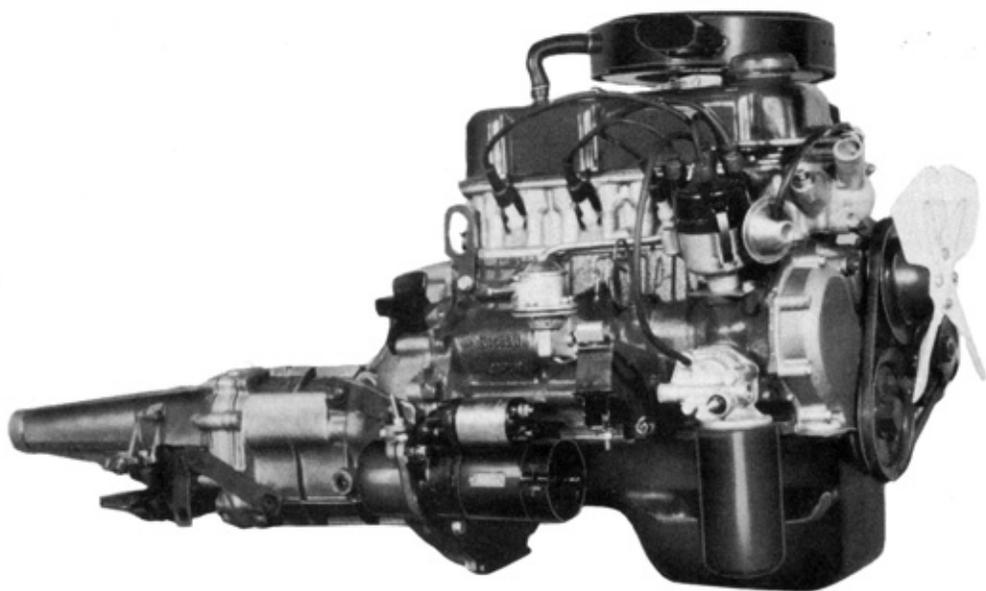
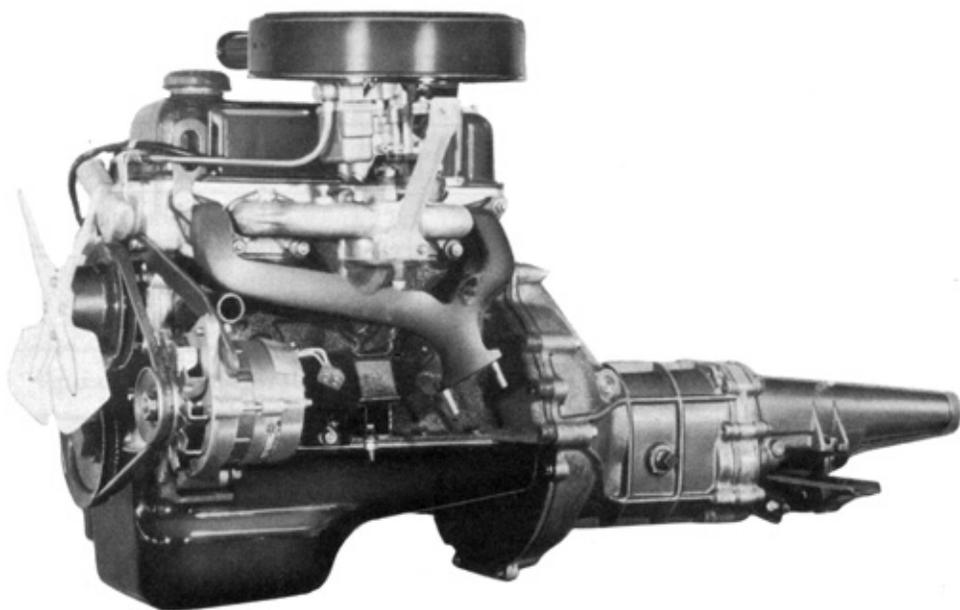
Final gear		Type of gear	Hypoid
		Gear ratio	4.111 (B10) 4.375 (VB10)
Differential gear		Housing Type Type & number of gear	Banjo Type Straight bevel gear 2 Pinion mate 2
Steering	Type of gear		Recirculating ball type
	Gear ratio		15 : 1
	Steering angle	Inner Outer	45° 36°36'
Running Device	Steering wheel diameter mm		400
	Wheel arrangement	Front Rear	2 wheels 2 wheels
	Front axle		Wishbone ball joint type
	Toe-in (unloaded)		2 ~ 3 mm
	Camber (unloaded)		1°45'
	Caster (unloaded)		2°15'
	Inclination angle of king pin		6°30'
	Type of rear axle		Semi-floating type
Brake System	Master Brake	Type	Front: 2 leading Rear : leading and trailing
		Lining dimension (front) mm	35 x 4.8 x 195
		Lining dimension (rear) mm	35 x 4.8 x 195
		Total braking area (f) cm ²	273
		Total braking are (f) cm ²	273
		Inner dia. of drum (f & r) mm	203.2
	Oil Brake	Inner dia. of mater cylinder mm	17.46

Brake System	Oil Brake	Inner dia. of wheel cylinder front mm	20.64
		Inner dia. of wheel cylinder rear mm	20.64
		Max. Oil Pressure kg/cm ²	175
Brake	Parking Brake	Type	Mechanical for rear wheels
		Lining dimension mm	35 x 4.8 x 195
		Total braking area cm ²	273
		Inner dia. of drum mm	203.2
Suspension	Front		Transverse leaf spring
	Spring size Outer diameter x Length mm		976 x 50 x 4-6
	Rear		Semi-elliptic leaf spring
	Spring size Length x Width x Thickness-No. mm		1,150 x 50 x 7-2 (B10) 50 x 7-2 1,150 x 50 x 5-1 (VB10) 50 x 11-1
	Helper spring mm		
	Shock absorber (Front)		Telescopic type double action
	Shock absorber (Rear)		Telescopic type double action

II ENGINE

1. ENGINE

The powerful A10 type engine gives more power, increased torque, smoother running and keener, more flexible all-round performance to your Datsun.



Engine Model	A10
Displacement	988 c. c. (60.3 cu. in.)
Bore x Stroke	73 x 59 mm (2.87 x 2.32 in.)
Compression Ratio	8.5
Max. H. P. (SAE)	62 HP/6000 r. p. m.
Max. Torque (SAE)	61.5 ft-lb/4000 r. p. m.
Weight	91.5 kg

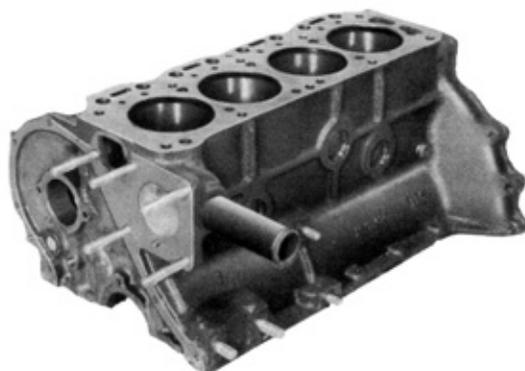
Features

- 1) Positive Crankcase Ventilation system designed to reduce emission of unburned hydrocarbons from the crankcase to the atmosphere.
- 2) Light weight
Use of aluminium in cylinder head and half skirt cylinder block.
- 3) High performance and sufficient durability, five bearing camshaft with short push rods, over-square type engine with large diameter valves.
Adoption of F770 metal which is very durable under high load and high speed.

1-1 Cylinder block

The half skirt type cylinder block made of special cast iron has sufficient rigidity despite its compact and light construction.

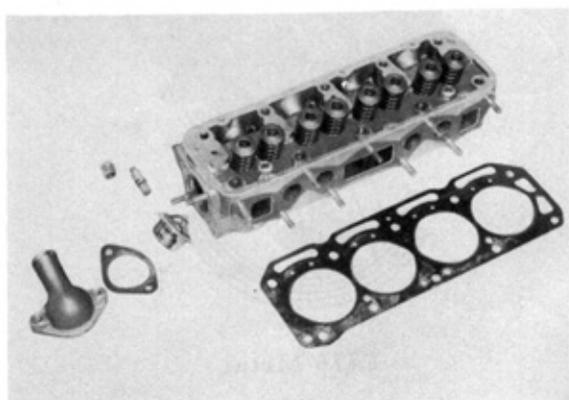
The flange is provided at the rear side of the cylinder block to connect with the transmission without the use of the rear plate.



1-2 Cylinder head and gasket

Aluminium cylinder head for maximum thermal efficiency has wedge type combustion chamber. Aluminium alloy valve seats for intake and special heat resistant alloy for exhaust are of the hot press fit type to the block.

Gasket thickness (free) 1.10 mm (installed) 1.05 mm
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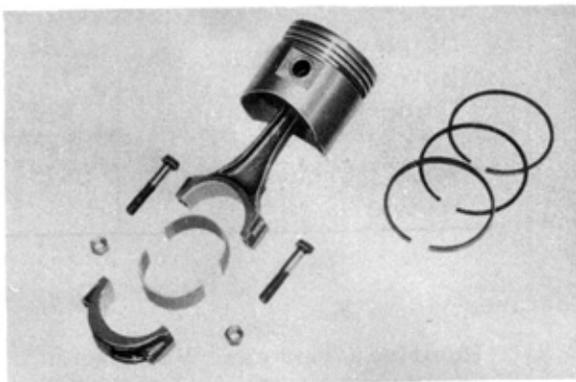


1-3 Piston, piston pin, piston rings and con. rods

The piston is made of LO-EX and of T slot type with sufficient rigidity and strength.

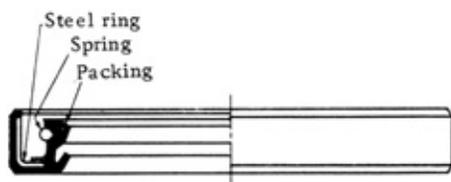
Upper two are compression rings and lower one is oil ring. They are all equal those of J type engine.

The Piston pin is of press-fit type.



1-4 Crankshaft, main bearing caps and bushings

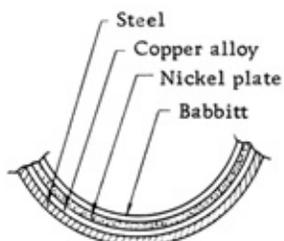
The 3 bearing crankshaft is made of special steel forged. Each crank pin and journal is hardened by high-frequency to secure superior anti-wear. The lip type oil seals are provided for both front and rear.



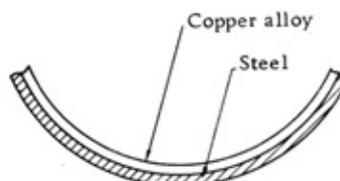
Lip type oil seal



The material of the connecting rod bushings is the F770 metal, and the main bearings are made of the F500 metal.



F770 Metal



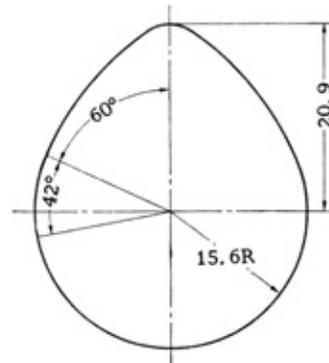
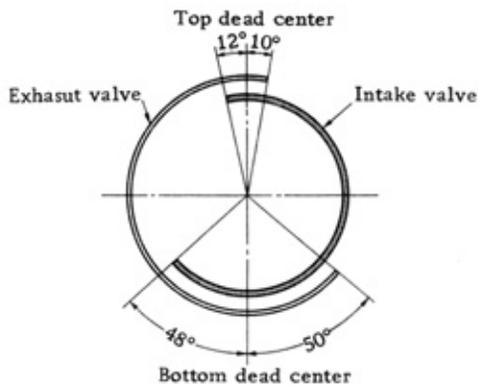
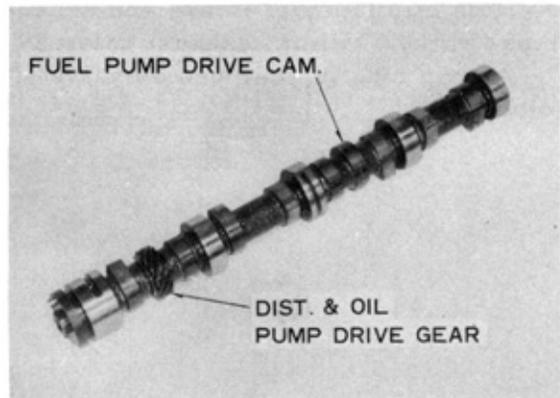
F500 Metal

2. VALVE SYSTEM

2-1 Camshaft

The camshaft is made of special cast iron, supported by 5 bearings.

In the center and front journals, oil grooves are provided for rocker system, and timing chain system.



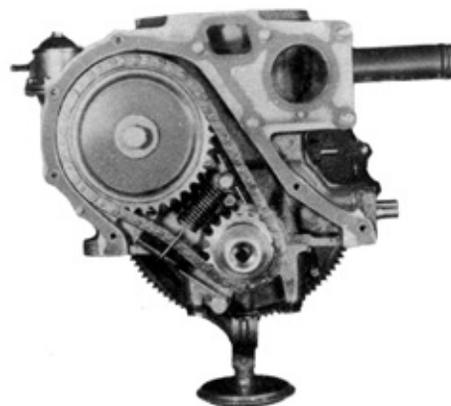
Cam profile

2-2 Cam gear, timing chain and front cover

The cam gear is driven by the roller chain.

Chain guides are provided in both front cover and cylinder block to avoid chain noise.

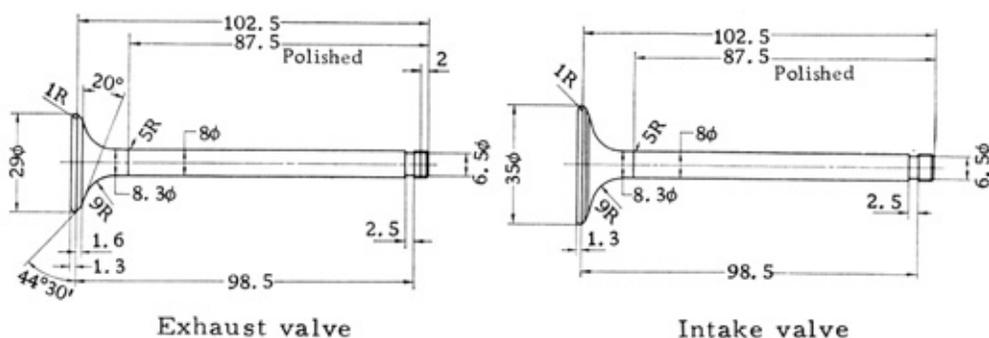
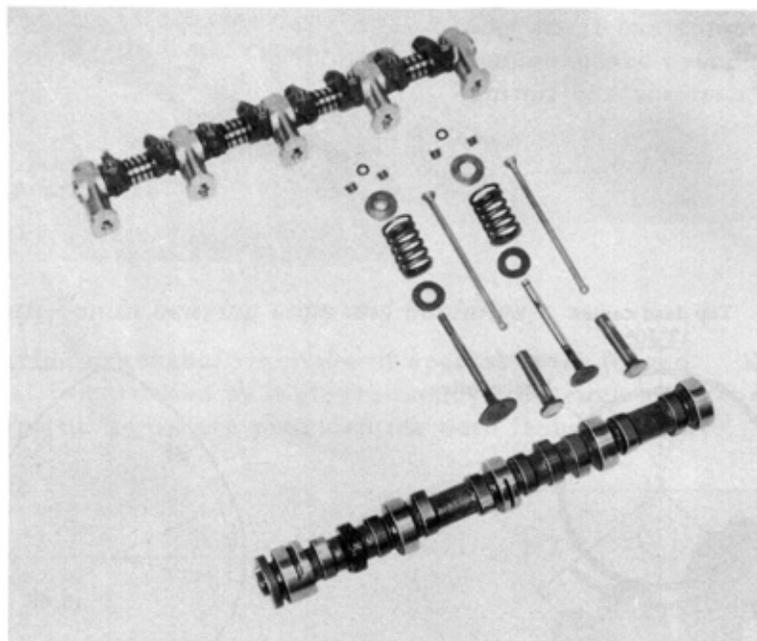
The front cover is made of alminium with crankshaft oil seal.



2-3 Valves and valve springs

High efficiency of intake and exhaust is secured by large diameter; intake valve, 35 mm; exhaust valve 29 mm.

A snap ring is equipped on valve stem top to prevent lubricant from going down.

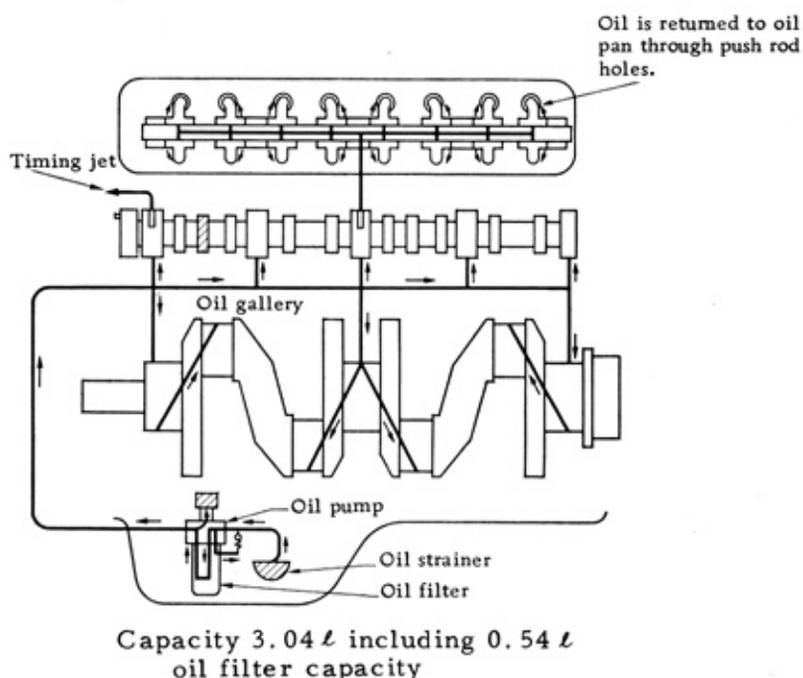


Valve springs effective to prevent vibration and fluttering at high speed are adopted.

Spring Specification

Wire diameter	mm	4.276
Free length	mm	45.7
Coil turns		6.5
Spring constant	kg/mm	4.2
Pressed length	mm/kg	38.5/30.0

3. LUBRICATION SYSTEM

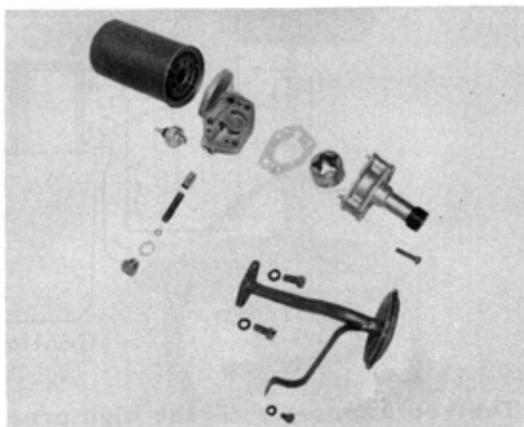


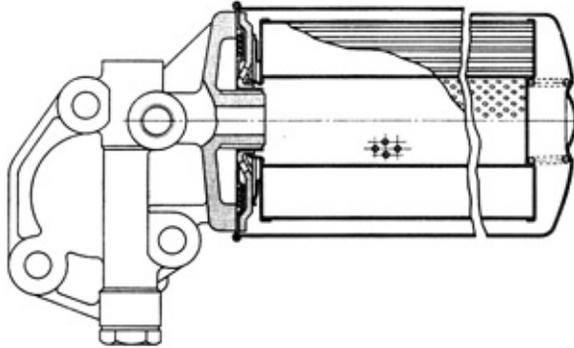
The lubrication system is of force feed type and the oil is once fed from the lubrication pump to the oil filter. The screened oil is then sent to the oil gallery of the cylinder block, and respectively lubricates the bearing of the crank journal, camshaft bearing, con-rod bearing, valve rocker mechanism and timing chain system.

3-1 Oil pump and oil filter

The trochoid gear type pump with a regulator is driven by the camshaft.

The oil filter is of full-flow cartridge type. The first filter element should be replaced to "Service type" at the first 3,000 km (2000 miles) and there after every 10,000 km (6000 miles).

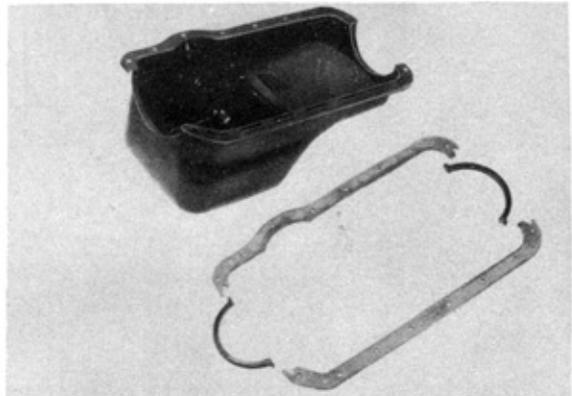




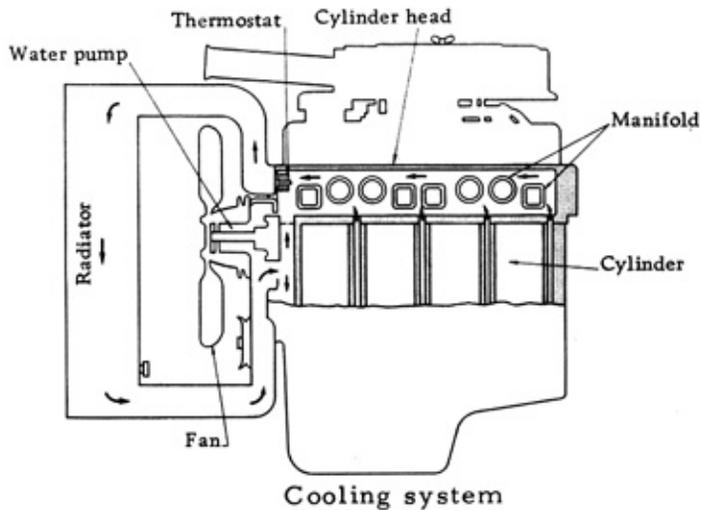
3-2 Oil pan and gasket

The oil pan is made by a press, and has a shape suitable to protect inclination of the oil surface when the car is climbing or turning, and its cooling effect is also superior.

The capacity is 2.5 l .



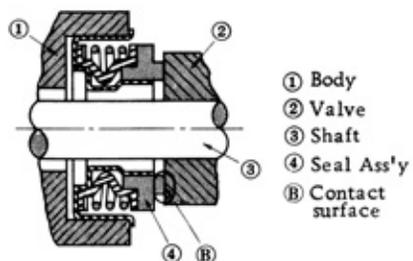
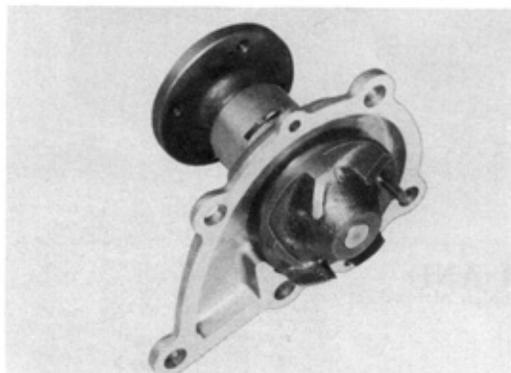
4. COOLING SYSTEM



The cooling system is the high pressure water sealed type and has high cooling effect.

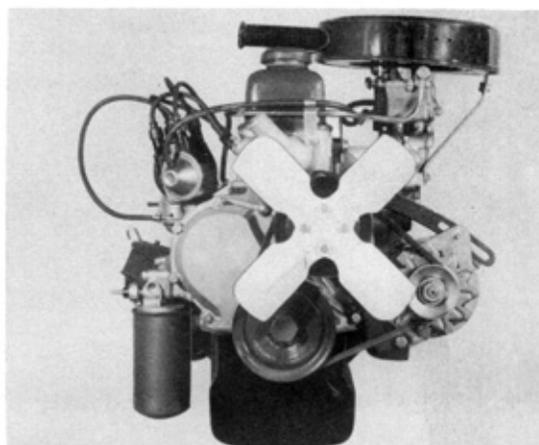
4-1 Water pump

The case is made of aluminium. The volute chamber of the pump is made in one body with the front cover. The bearing and the shaft are designed to have enough durability, and the seal is the high pressure type.



4-2 Fan

The fan with 280 mm diameter is made of steel and has superior ventilation characteristics.



4-3 Thermostat

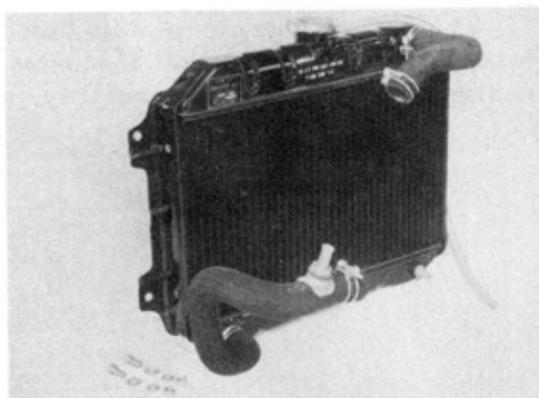
The thermostat is of the pellet type

Opening temperature	82°C (180°F)
Max. lift	8 mm at 95°C (203°F)



4-4 Radiator

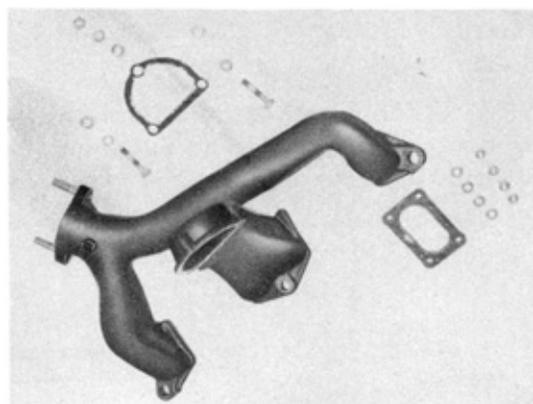
The radiator is the corrugated fin and tube type, and the closed pressure type (0.9 kg/cm²)



5. INTAKE, EXHAUST SYSTEM AND FUEL SYSTEM

5-1 Manifolds

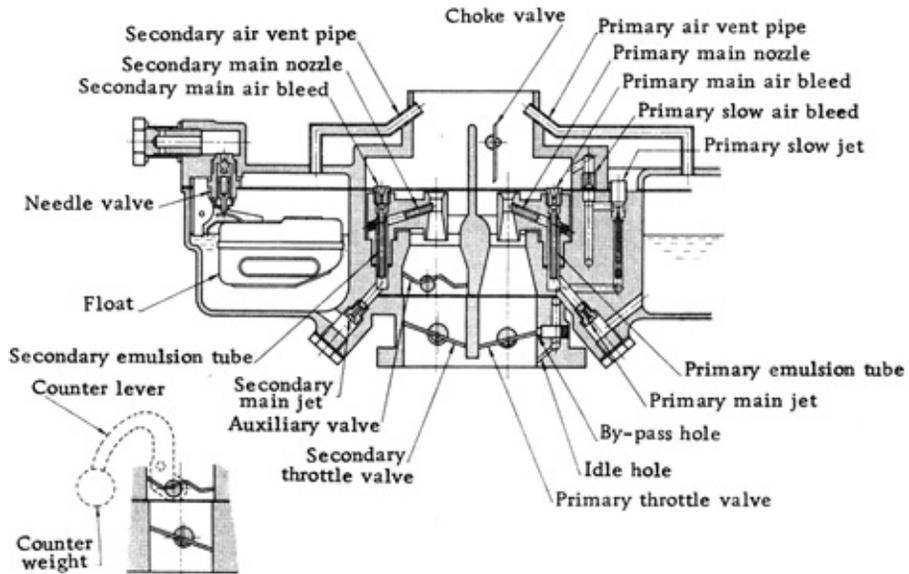
The intake manifold efficient in taking in mixture smoothly is made of aluminum while the exhaust manifold is of cast iron.



5-2 Carburetor

The carburetor is a down draft, 2 barrel type.

Model		HITACHI DCG 286-3	
		Primary	Secondary
Throttle valve bore	mm	26	28
Venture size	mm	20 x 7	24 x 7
Main jet		#95	#140
Main air bleed		#80	#120
Slow jet		#40	
Slow air bleed		#210	
Power jet			#60
Needle valve dia.	mm		1.5



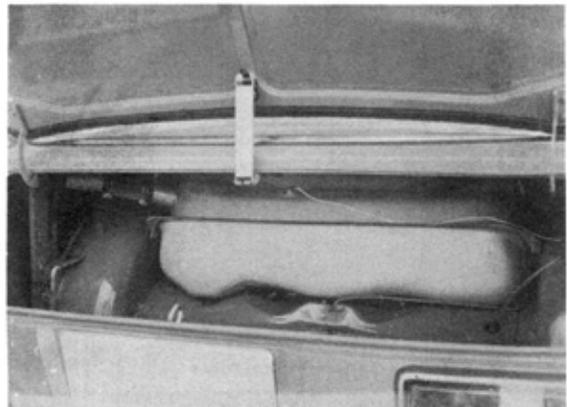
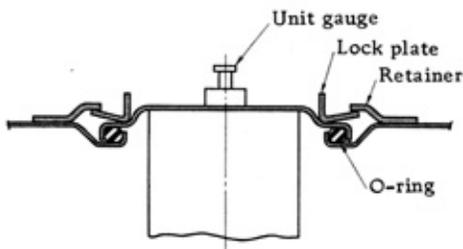
5-3 Air cleaner

The element is of the paper filter or viscous type. Since it has been specially treated there is no need to clean it but it should be replaced every 40,000 km (24,000 miles).



5-4 Fuel tank

A fuel tank of 35 ℓ capacity is placed at the back of the rear seat, while in case of VB10 series. That of 30 ℓ capacity is placed in the left rear wheel house.

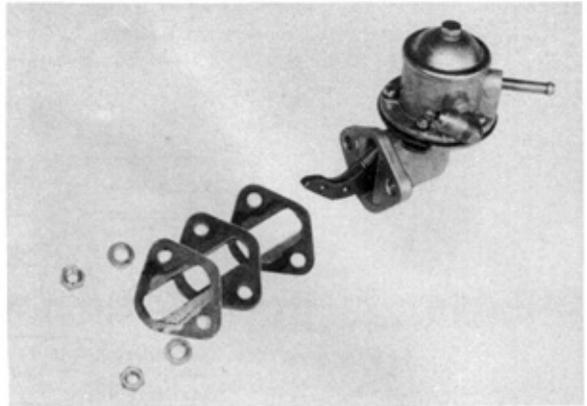


5-5 Fuel pump

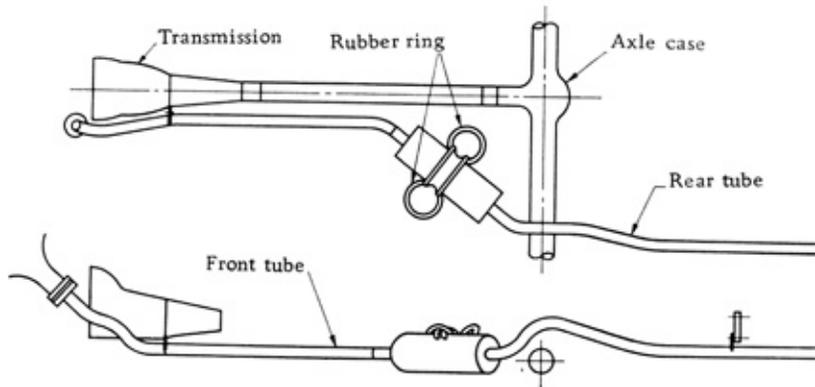
The fuel pump is of diaphragm type driven by the camshaft.

Max. Delivering capacity ~
750 cc/min.

Delivering pressure (vacuum) ~
130 mmHg (at 3000 r. p. m.)

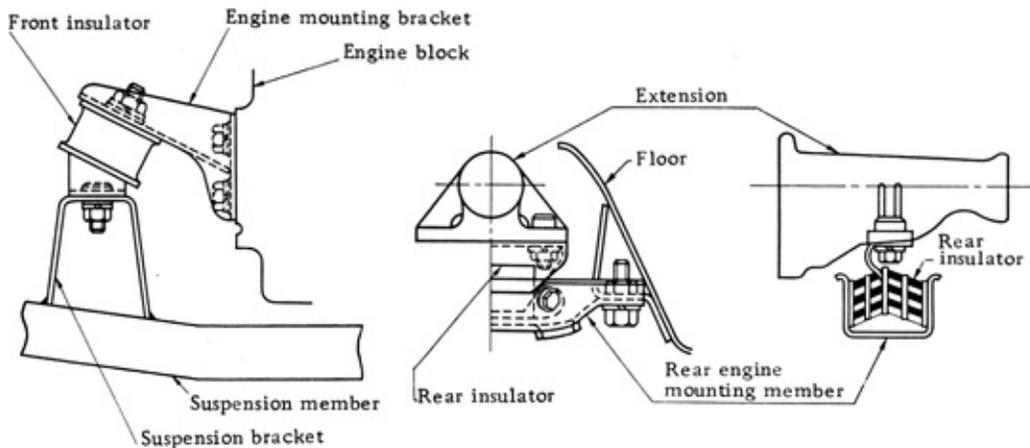


5-6 Exhaust tube and muffler



6. ENGINE MOUNTING

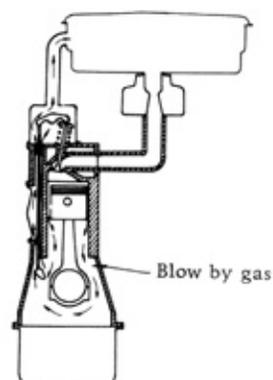
Engine mounting is the three points suspension system, 2 points at the front and one point at the rear.



7. CRANK CASE AIR POLLUTION CONTROL DEVICE

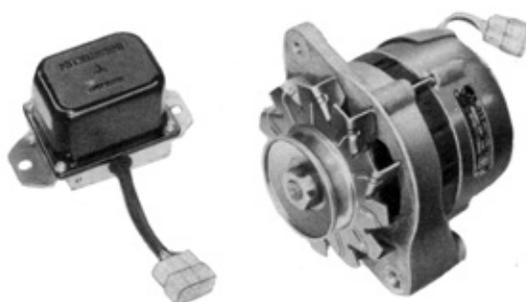
Positive Crankcase Ventilation System is designed to reduce emission of unburned hydrocarbons from the crankcase to the atmosphere.

In this system, blow-by fumes (the unburned mixture and combustion products that pass around the piston rings during the compression stroke and combustion) are drawn from the engine's rocker cover into the air cleaner.



8. ELECTRICAL SYSTEM

8-1 Alternator & regulator



Alternator type & make	HITACHI LT125-02
Ground polarity	⊖ minus ground
Voltage	12V
Capacity	250W
Pulley ratio	1.91
Regulator type & make	HITACHI TL1Z-10A

8-2 Starting motor

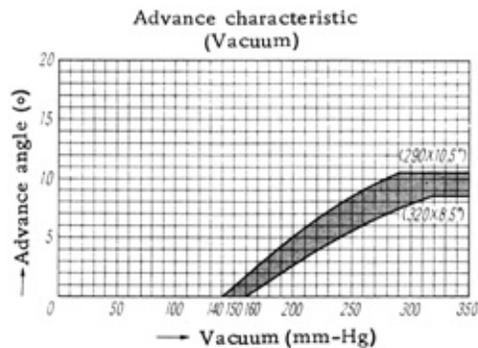
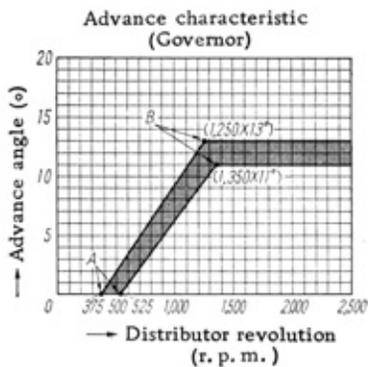
Make and type	HITACHI S114-87
Voltage	12V
Design	4-pole series motor with attached solenoid
Number of pinion teeth	9



8-3 Distributor

Make and type	HITACHI DR12-53
Firing order	1-3-4-2
Ignition timing	8°/600 r. p. m.
Point gap	0.45 ~ 0.55 mm
Point pressure	0.50 ~ 0.65 kg
Condensor capacity	0.22 μ F

Ignition Advance



8-4 Battery

Type	N40L
Volt	12V
Capacity (20hr.)	40Ah
Length x Width x Height	236 x 133 x 232 mm
Location	on hood ledge, right engine side

III CHASSIS

1. CLUTCH

Construction of Clutch

The clutch mechanism is hydraulically operated (L.H. Drive) or mechanically operated (R.H. Drive), and consists of a pressure plate, a disc plate, diaphragm spring and cover assembly.

The cover is bolted to the flywheel and encloses a disc plate, pressure plate, and diaphragm spring.

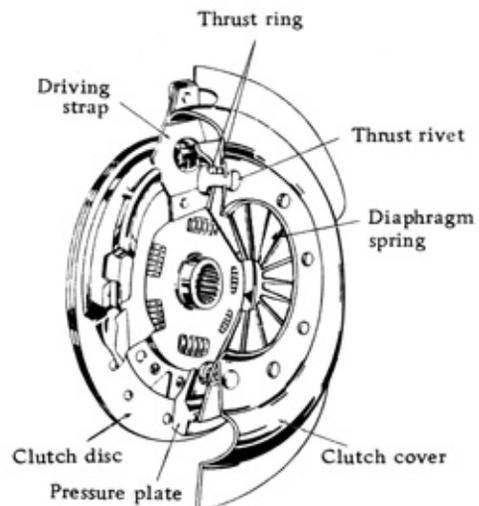
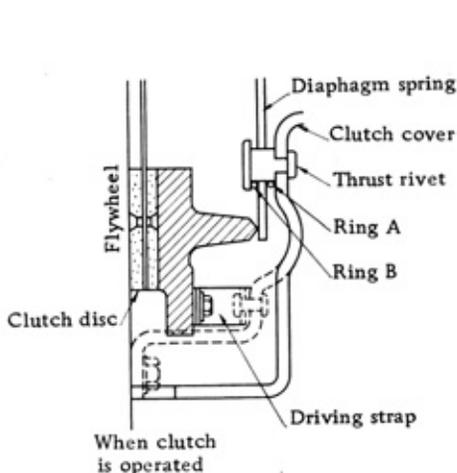
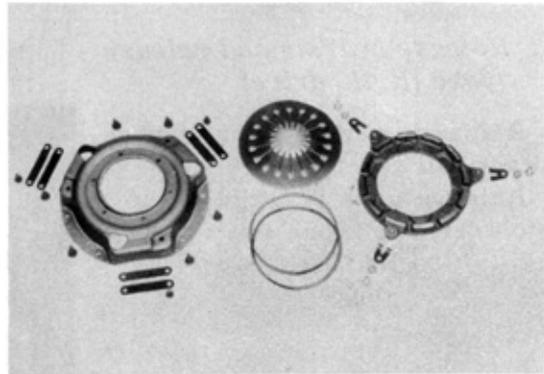
1-1 Clutch cover

The disc plate comprises a splined hub connected to a flexible steel plate by a spring mounted.

The annular friction facings are riveted to the plate and damper springs are assembled around the hub to absorb power shocks and torsional vibration.

The diaphragm spring is interposed between two annular rings which provide fulcrum points for the diaphragm when it is fixed.

The rings and the diaphragm are located and secured to the cover by six equally spaced rivets. Three clips that engage the outer edge of the diaphragm are bolted to the pressure plate. The bolts pass through three straps which are riveted to the inside of the cover, the straps prevent the diaphragm and the pressure plate from rotating in relation to the cover.



A release plate having an annular thrust is fitted to the outer face of the diaphragm and retained by a circlip. The release bearing is graphite and mounted in a cup which fits into the fork of the clutch withdrawal lever. The cup is held in position by the spring retainers.

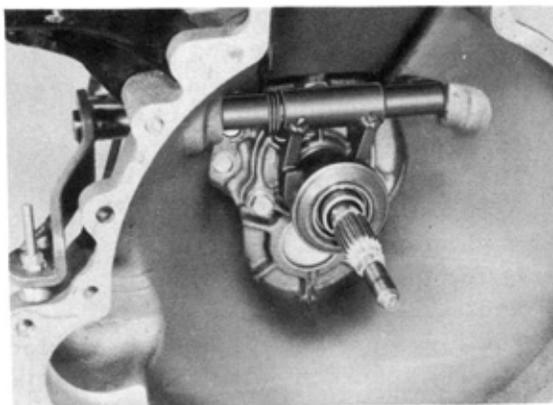
1-2 Clutch disc

Facing material	molded friction material (AKEBONO C40)
Outside dia.	160 mm
Inside dia.	110 mm
Facing thickness	3.2 mm

1-3 Release bearing and release yoke (R. H. drive)

Release bearing is of angular contact ball type.

Release yoke is fitted to the clutch release cross shaft by two pins.



1-4 Clutch operating cylinder

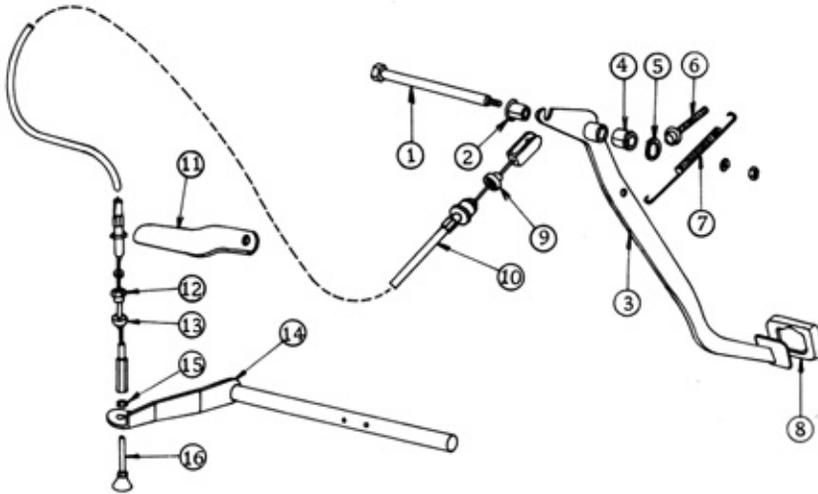
Clutch operating cylinder and master cylinder (L. H. Drive)

Master cylinder-inside dia.	15.87 mm (5/8")
Piston stroke	31.5 mm
Operating cylinder-inside dia.	19.05 mm (3/4")
Piston stroke	23.5 mm

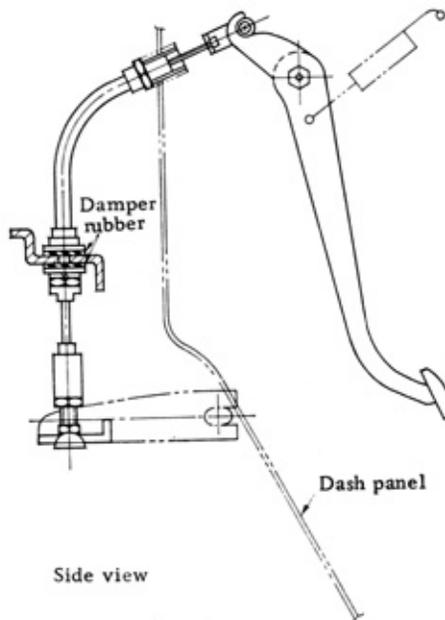
1-5 Clutch control (R.H. drive)

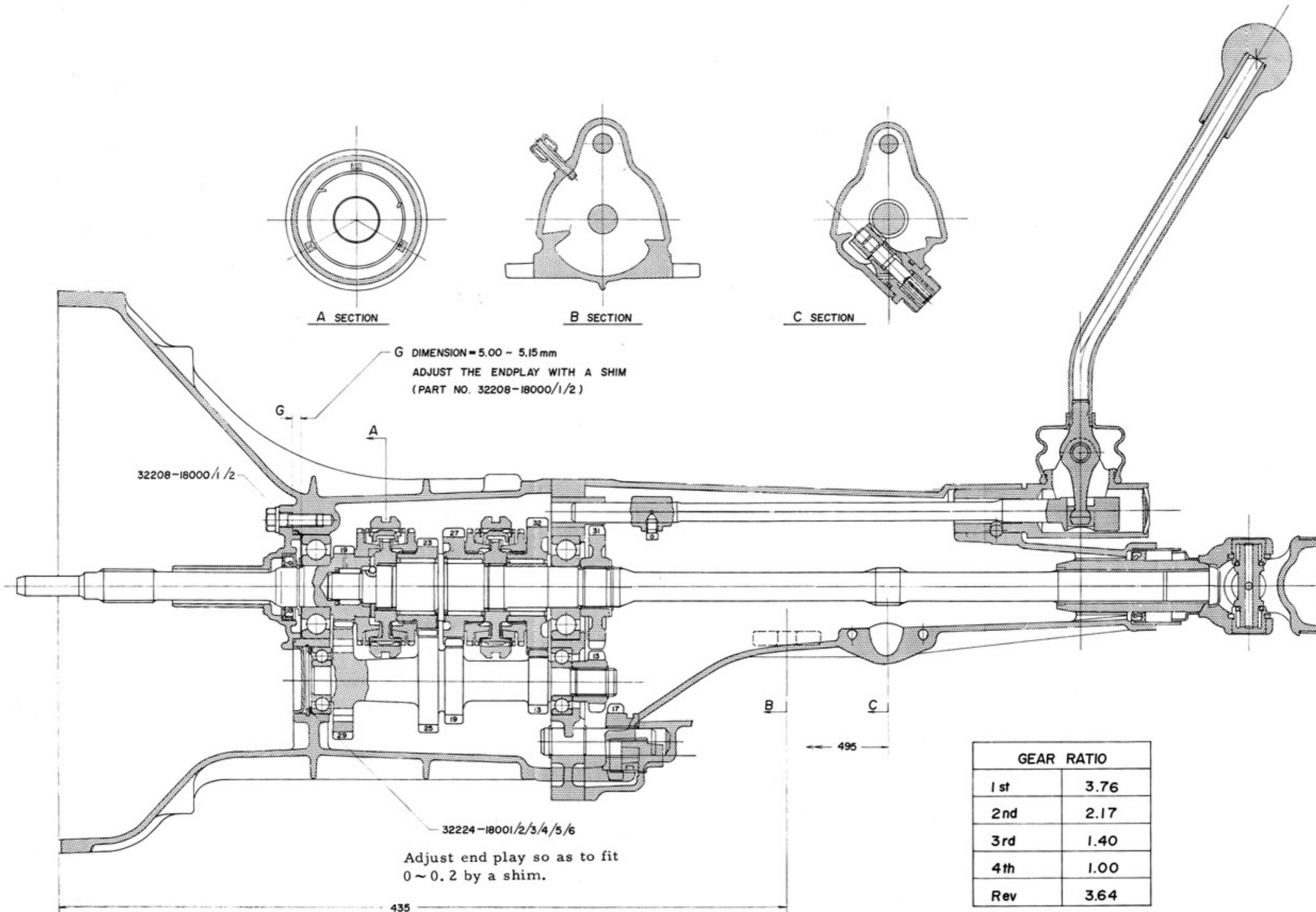
The linkage is mechanically operated with cable.

Clutch Control

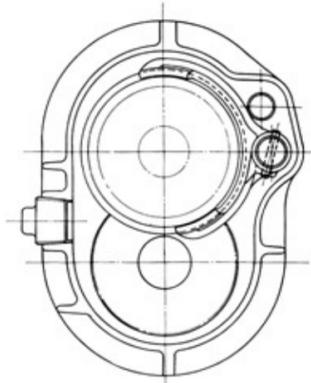
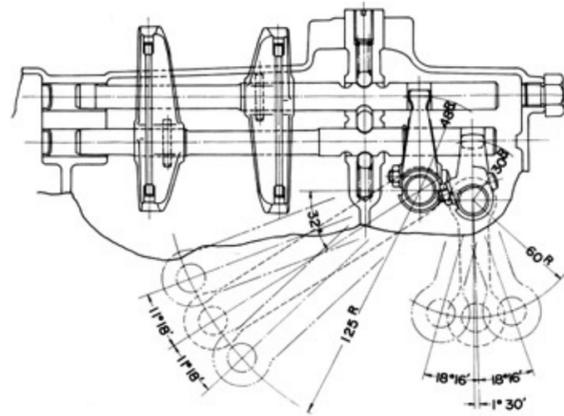


- | | | |
|-------------------|----------------------|----------------------|
| ① Fulcrum pin | ⑦ Return spring | ⑫ Lock nut |
| ② Fulcrum bushing | ⑧ Cover | ⑬ Damper rubber bush |
| ③ Clutch pedal | ⑨ Damper rubber bush | ⑭ Withdrawal lever |
| ④ Fulcrum bushing | ⑩ Operating wire | ⑮ Lock nut |
| ⑤ Seat | ⑪ Lower bracket | ⑯ Operating bolt |
| ⑥ Pedal stopper | | |

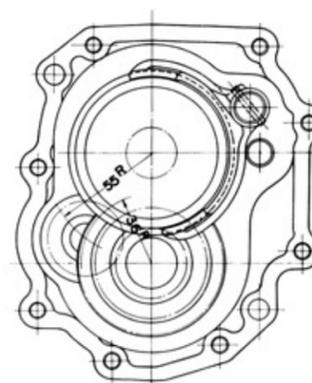




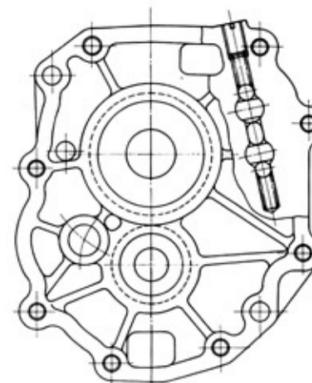
GEAR RATIO	
1st	3.76
2nd	2.17
3rd	1.40
4th	1.00
Rev	3.64



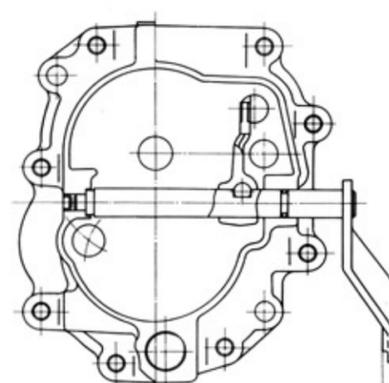
A - A SECTION



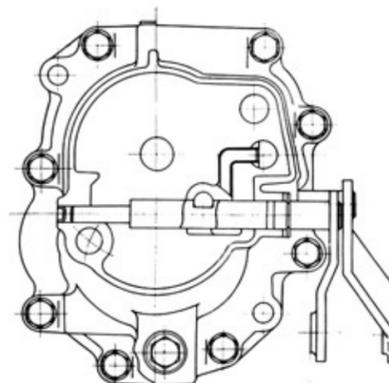
B - B SECTION



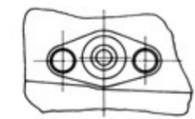
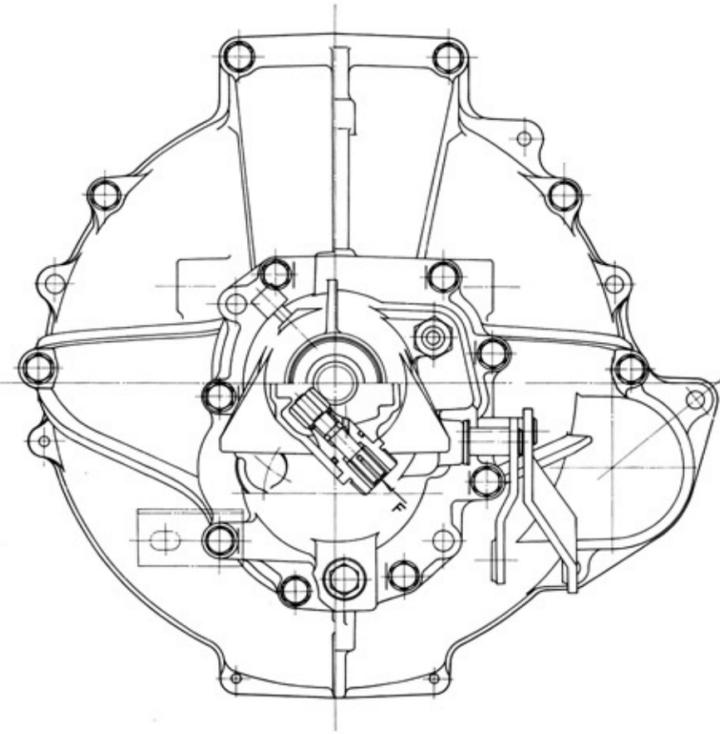
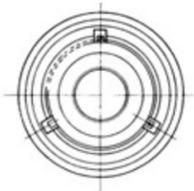
C - C SECTION



D - D SECTION

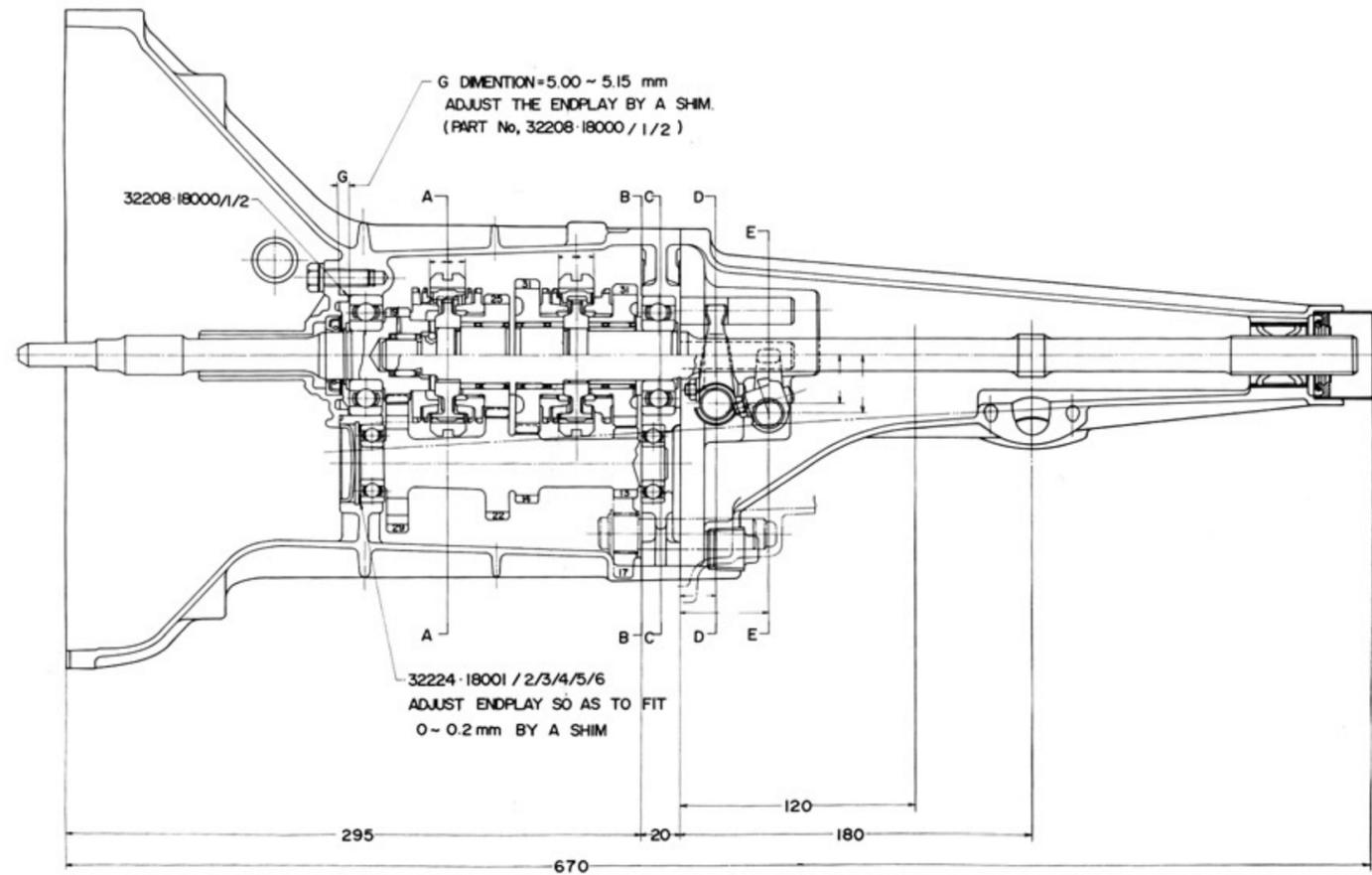


E - E SECTION



F VIEW

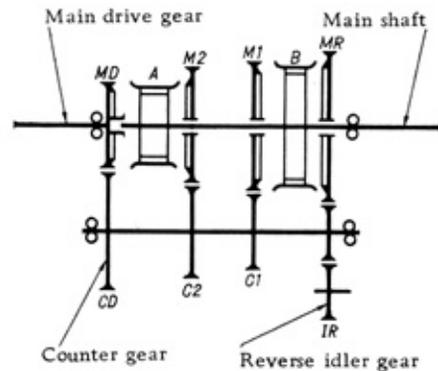
GEAR RATIO	
1 st	3.380
2 nd	1.734
3 rd	1.000
Rev.	3.640



2. TRANSMISSION

The three speed transmission of the warner type synchromesh mechanism is available for only R. H. Drive Car as standard, while the four speed one is available both for L. H. Drive Car as standard and R. H. Drive Car as optional.

The mode of Operation of the warner type synchromesh mechanism is completely same in both 4 speed and 3 speed transmissions so that the following explanation is mainly made in 3 speed transmission.



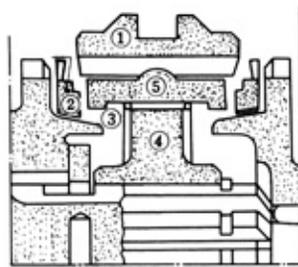
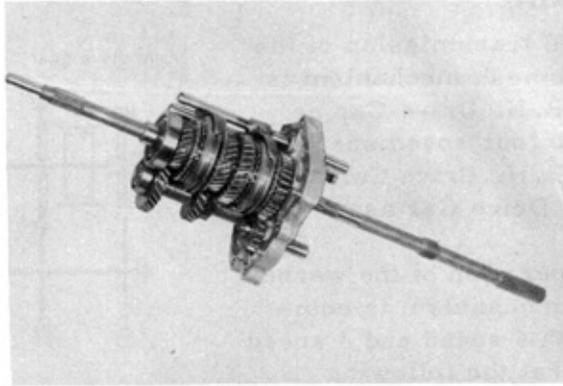
Gear	Symbol	No. of theeth	Type of Gear
Main drive gear	MD	19	helical gear
Main shaft 2nd gear	M2	25	" "
" 1 st "	M1	31	" "
" Rev. "	MR	31	spur "
Counter drive gear	CD	29	helical "
" 2nd "	C2	22	" "
" 1 st "	C1	14	" "
" Rev. "	CR	13	spur "
Reverse idler gear	IR	17	" "

2-1 Synchromesh device

Synchromesh device consists of (1) Synchronizer sleeve, (2) Baulk ring, (3) Spread spring, (4) Synchronizer Hub, (5) Insert. Hub is fitted into the main shaft tightly, having three grooves on its periphery where synchronizer Inserts are inserted respectively, and spread springs push the inserts outwards against the synchronizer sleeve.

The Baulk ring between the hub and the gear has a cone on its inside that engages with a tapered mating cone on the gear, and the cones act as a clutch.

Gears of baukl ring and sleeve are all chamfered at their ends so as to easy gearing.



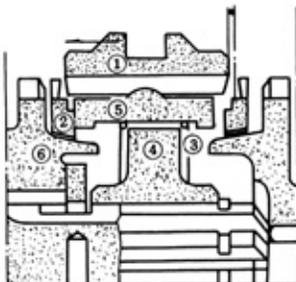
- ① Synchronizer sleeve
- ② Baulk ring
- ③ Spread spring
- ④ Synchronizer hub
- ⑤ Insert

OPERATION

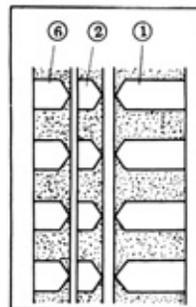
(1st step)

When the sleeve is moved along the mainshaft from its mid-position into the running gear by fork, three inserts located at the inside of the synchronizer hub are moved and strike against the baulk ring.

Accordingly the baulk ring is pressed to the gear, so that the tapered cones of the gear and the ring come into contact with each other, therefore the cones act as a clutch. Upon touching the gear, the ring is speeded up or slowed down as required.



- ① Synchronizer sleeve
- ② Baulk ring
- ③ Spread spring
- ④ Synchronizer hub
- ⑤ Insert
- ⑥ Gear

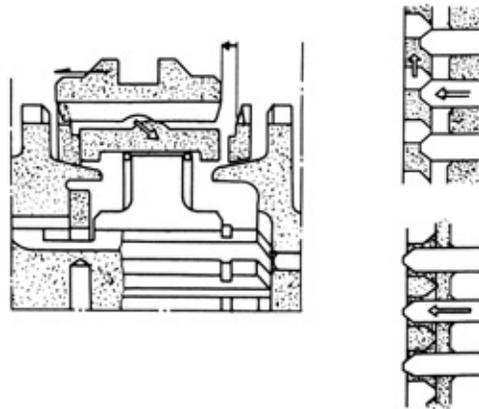


- ⑥ Gear
- ② Baulk ring
- ① Synchronizer sleeve

(2nd step)

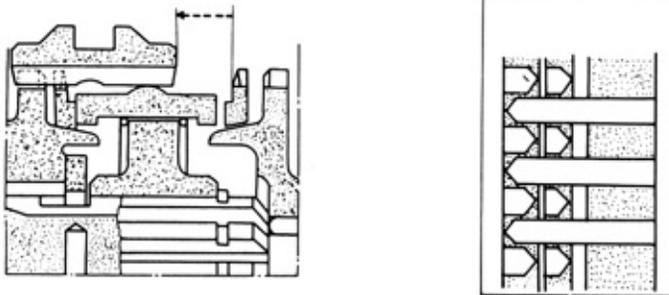
As the sleeve moves further, it goes over the projection of the insert and approaches to the ring. However, splines provided on the inside surface of the sleeve and the gear of the synchronizer ring come into contact at their both ends as shown in Fig. preventing the progression of the sleeve.

But the sliding continues gradually at the chamfered parts of the gears transmitting the rotation power and finally both the sleeve and the baulk ring are synchronized.



(3rd step)

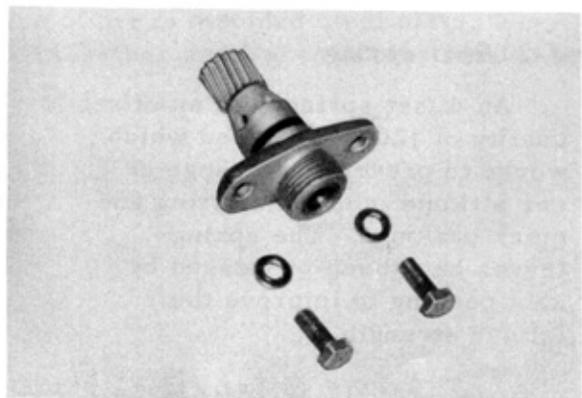
The sleeve and the gear are synchronized in the same way mentioned in the 2nd step.



2-2 Speed meter pinion and drive gear

The Drive gear is provided as one block of the main shaft. The Pinion is made of a steel bar with a pressed-in nylon pinion gear.

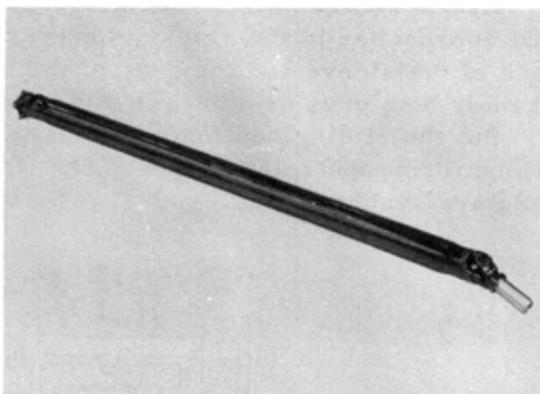
Speed meter final ratio ~ 4.0
(16/4)



3. PROPELLER SHAFT CHASSIS

3-1 Propeller shaft and sleeve yoke

The propeller shaft has a precise balance of moment. (The allowance of unbalance is 15 g-cm/4000 r. p. m.)



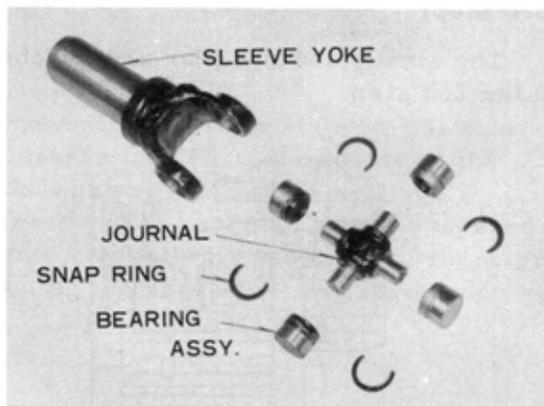
Distance between joints	1178 mm
Tube outer diameter x thickness	63.5 mm x 1.6 mm
Sleeve yoke specification	Involute spline
Outer dia. x inner dia. x pitch	20 x 80 x 1 mm

3-2 Joint

The joint is of the inner snap ring type with the newly designed needle bearing.

Check the joint every 40,000 km (24,000 mile)

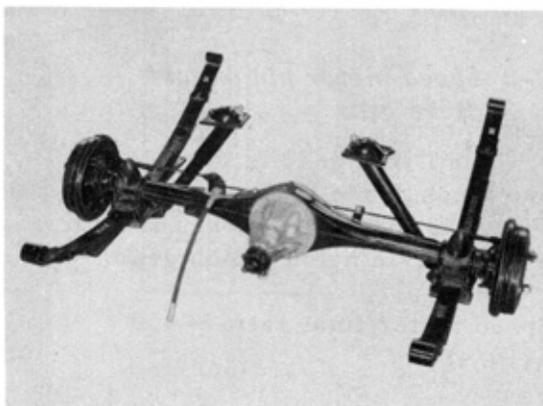
If an abnormal bending (such as a play or noise) is seen, replace the journal & bearing race and make an adjustment by the snap ring.



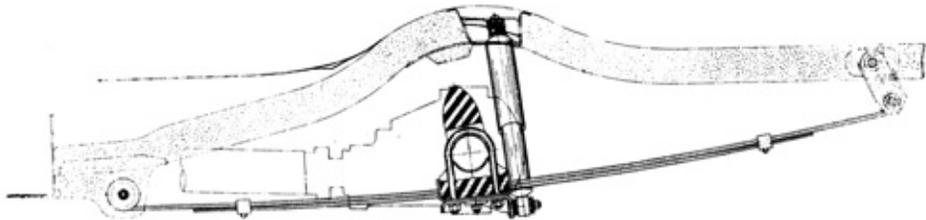
4. REAR AXLE & REAR SUSPENSION

4-1 Rear spring

An offset spring with an offset quality of 120 mm is used which works to prevent the change of car attitude in quick starting and quick braking. The spring leaves have been processed by shot peening to improve their fatigue strength.



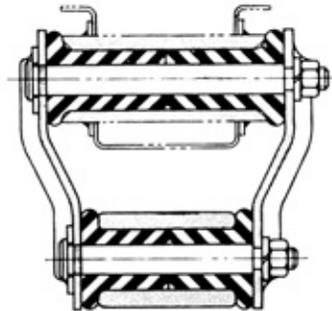
Silent block type rubber bushes are used to prevent creaking noises and to absorb shocks.



Rear suspension

Specification of rear spring

	B10	VB10
Length x width x thickness - leaf number	1150x50x7-2	1150x50x 7-2 50x 5-1 50x11-1
Free camber	156 mm	161.5 mm
Spring constant	1.45 kg/mm	3.95 kg/mm



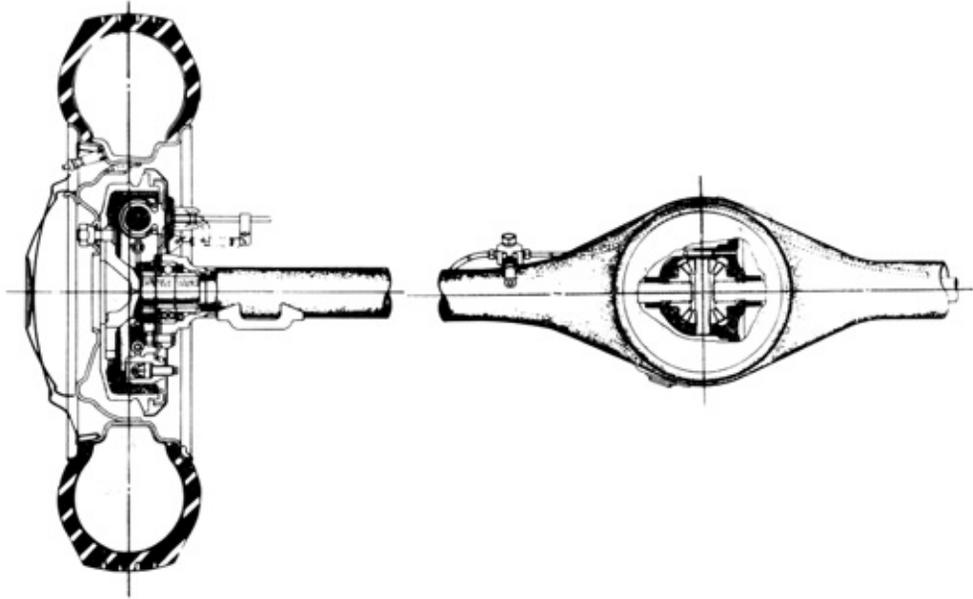
4-2 Rear shock absorber

The rear shock absorber is the double acting telescopic type.

	B10	VB10										
Stroke	160 mm	160 mm										
Damping force (0.3 m/sec)	<table border="0"> <tr> <td rowspan="2" style="font-size: 2em; vertical-align: middle;">{</td> <td style="padding-left: 10px;">pull side</td> <td>70 kg</td> </tr> <tr> <td style="padding-left: 10px;">compressed side</td> <td>25 kg</td> </tr> </table>	{	pull side	70 kg	compressed side	25 kg	<table border="0"> <tr> <td rowspan="2" style="font-size: 2em; vertical-align: middle;">{</td> <td style="padding-left: 10px;">pull side</td> <td>105 kg</td> </tr> <tr> <td style="padding-left: 10px;">compressed side</td> <td>35 kg</td> </tr> </table>	{	pull side	105 kg	compressed side	35 kg
{	pull side		70 kg									
	compressed side	25 kg										
{	pull side	105 kg										
	compressed side	35 kg										

4-3 Rear axle

The rear axle is of the semi-floating type and its axle case is of the pipe banjo type. The housing, made of press moulded steel plate, has had its upper and under parts welded together and had the cover welded on its rear side.



4-4 Rear axle shaft

The rear axle shaft is made of special steel processed by high frequency wave hardening. Its fitted part in the differential side gear is serrated.

The bearing retainer of the axle shaft is a pressed-in collar type.

4-5 Rear wheel bearing

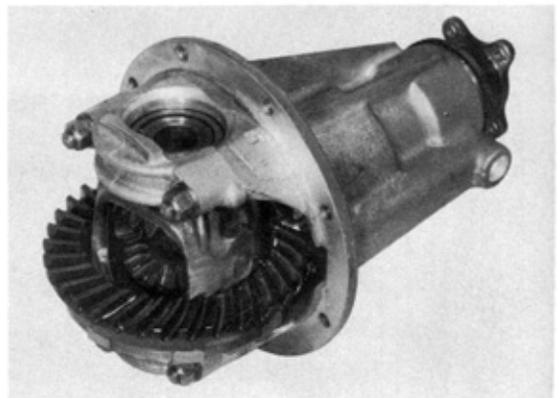
The grease packing type bearing is employed.

The size of the outer race for B10 is 62 mm, while the 72 mm size is used for VB10.

4-6 Gear carrier

For the gear carrier assembly a newly designed unit is employed which contains hypoid gear of 210 mm outer diameter and of 78 mm hypoid offset quantity.

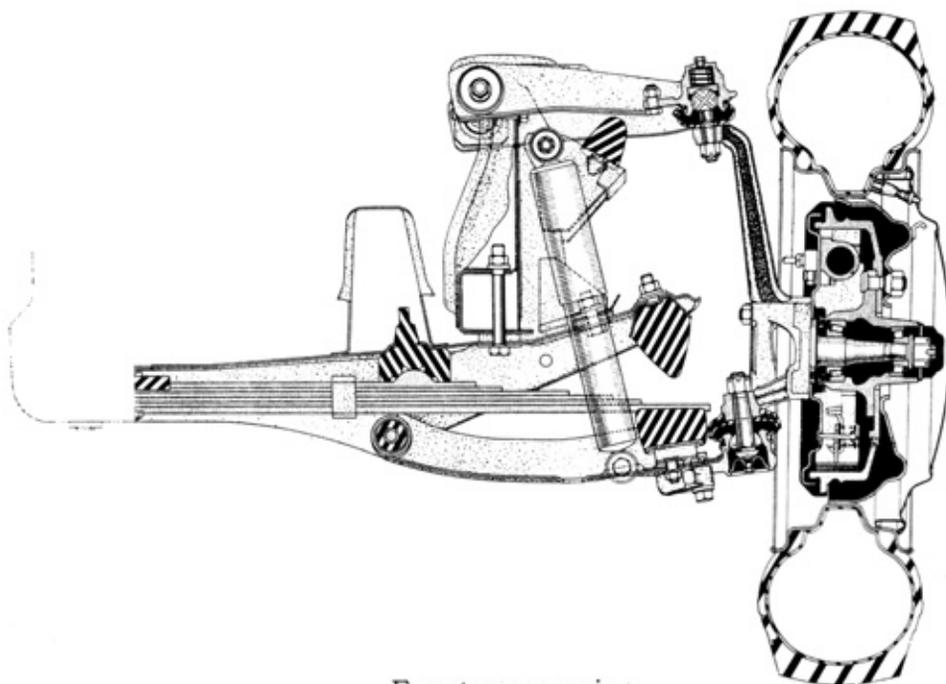
Although the final gear ratio is different between B10 and VB10, the fitting method is completely equal.



	B10	VB10
Final Gear Ratio	37/9 (4.111)	35/8 (4.375)

5. FRONT SUSPENSION & AXLE

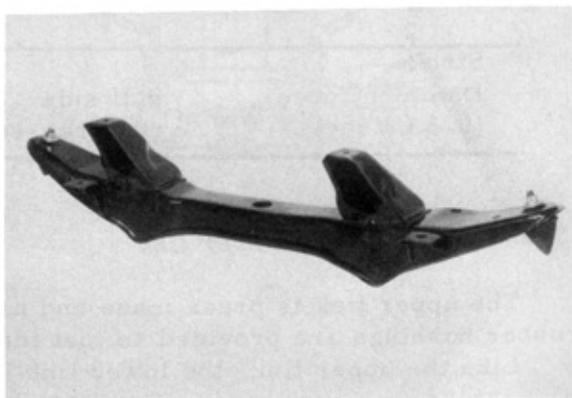
The front suspension is the double wish bone independent type with trapezoidal dual control arms of different length, slanted shock absorbers, transverse leaf spring and tension rods.



Front suspension

5-1 Suspension member

The unit itself is assembled with the rationally designed press parts.



5-2 Front leaf spring

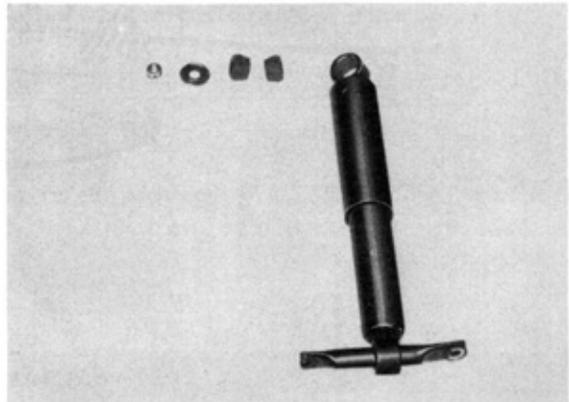
All the leaves are processed by stress peening to improve the fatigue strength.



Length x width x thickness - number	976 x 50 x 4 - 6
Free camber	120 mm
Spring constant	2.05 kg/mm

5-3 Front shock absorber

The front shock absorber is the double acting telescopic type and fixed to the tension rod with X shape pin and upper link bracket.

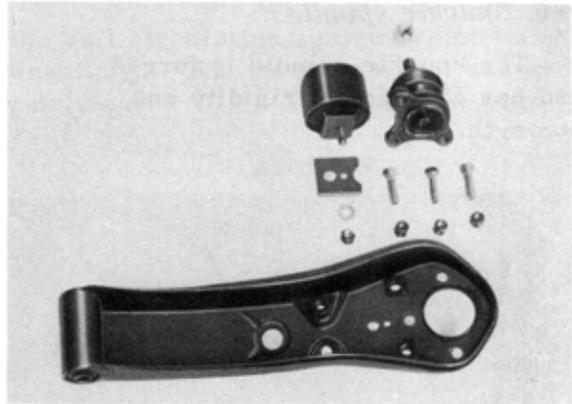
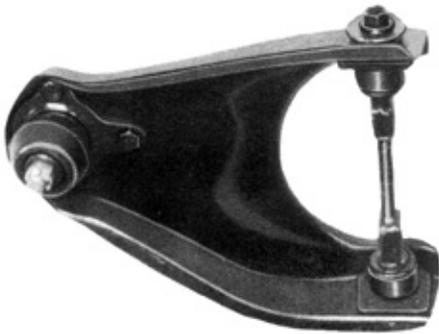


Stroke		130 mm
Damping force (0.3 m/sec)	{ pull side compressed side	58 kg 20 kg

5-4 Upper link and lower link

The upper link is press made and has a high rigidity and strength rubber bushings are provided so that the lubrication is not required.

Like the upper link, the lower link is press made with rubber bushings.

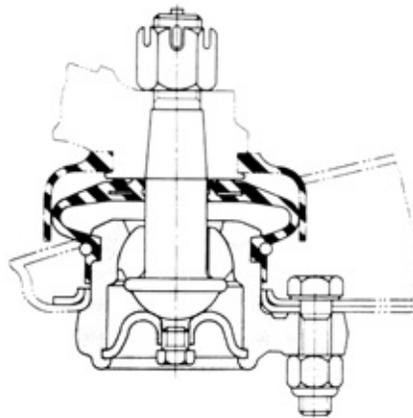
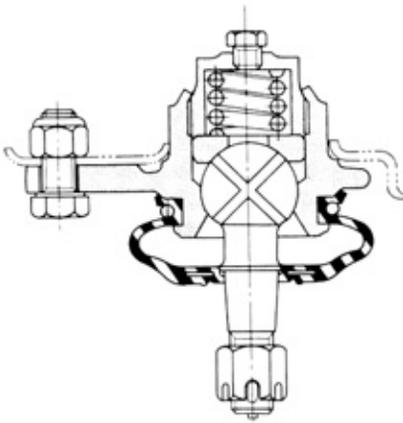


5-5 Upper and lower ball joint

This has a newly designed structure and is made of higher anti-abrasive material. The lubrication, dust-proof and water-proof are all improved greatly. Also the steering was made lighter and the oil supply interval was extended.

The dust cover is made of the poli-urethane rubber and the liquid packing is used for dust and water proof. For the grease the water proof lithium based MP grease is used.

Lubrication interval ~ every 20,000 km or every one year



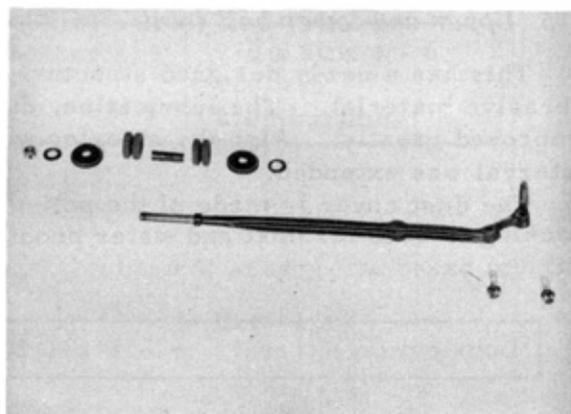
5-6 Knuckle spindle

The knuckle spindle is forged and has a sufficient rigidity and strength.



5-7 Tension rod

The tension rod is forged. The front end is connected to the bracket and the rear is connected to the lower link. The shock absorber is installed to the tension rod and the lower link.

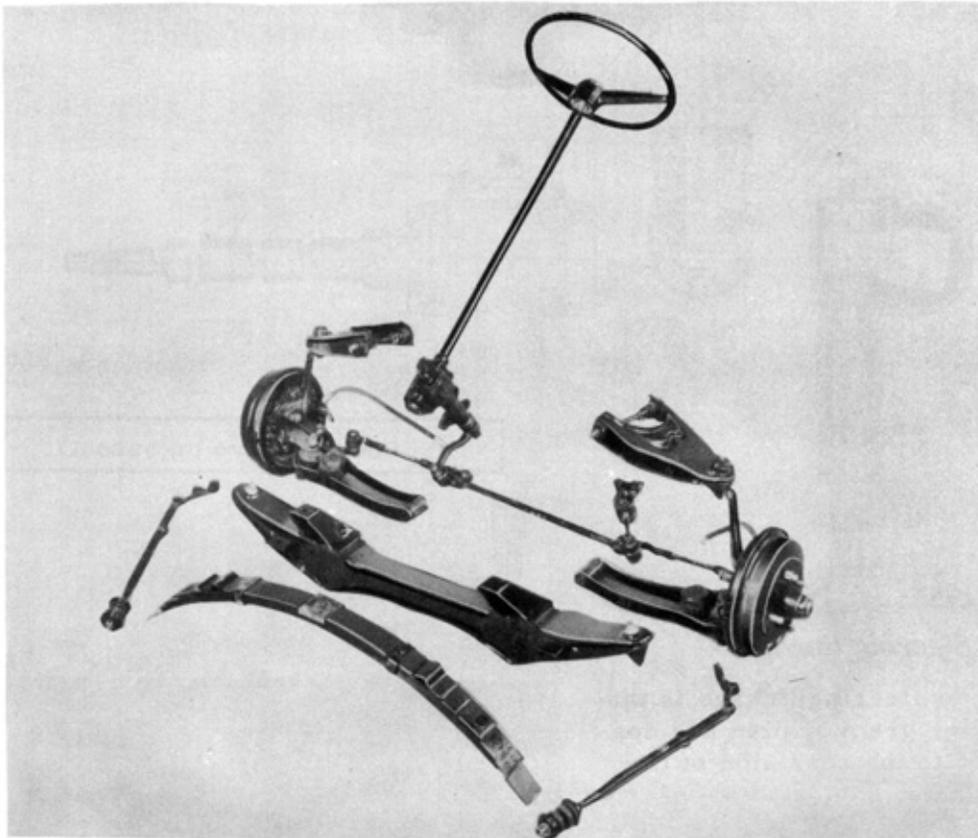


6. ROAD WHEEL & TIRE

		B10	VB10
Tire size	Front	5.50-12-4	5.50-12-4
	Rear	5.50-12-4	5.50-12-6
Rim size		$3\frac{1}{2}J \times 12$	
Pressure	Front	(Normal Speed) 1.2kg/cm ² (High Speed) 1.5kg/cm ²	← ←
	Rear	↑	(Normal Speed) 1.4kg/cm ² (High Speed) 1.7kg/cm ² [Loaded less than 150kg] (Normal Speed) 2.5kg/cm ² (High Speed) 2.7kg/cm ² [Loaded more than 150kg]

7. STEERING

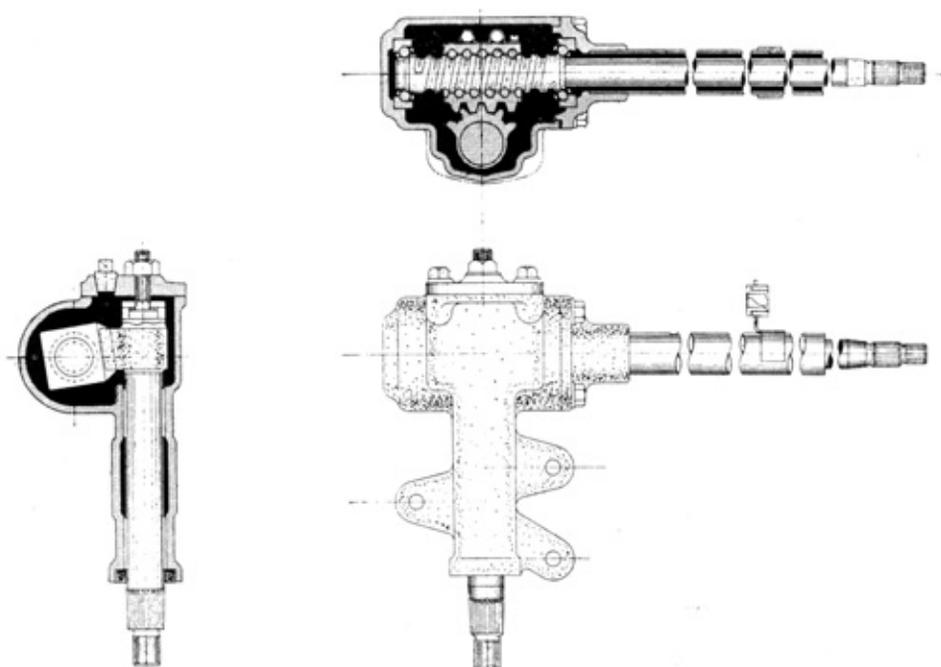
The steering mechanism is of the ball circulation system which has less friction resistance and high durability. The steering wheel has two spokes and is of cone type for easy driving.



Steering type	Recirculating ball type
Gear ratio	15 : 1
Turns of steering (lock to lock)	3.4
Max. steering angle	{ In 45° Out 36°36'
Gear oil	MP #90 0.24 ℓ

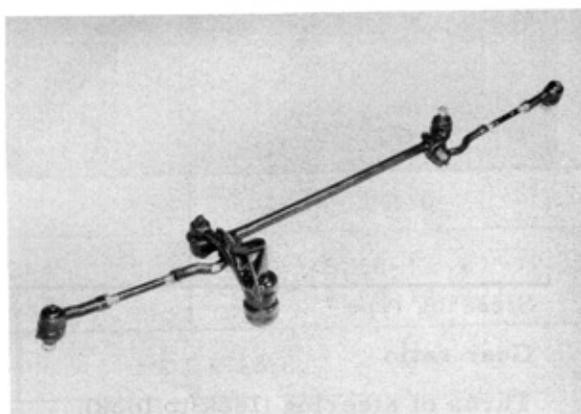
7-1 Steering gear

The steering mechanism is of the recirculating type with 60 steel balls.



7-2 Steering linkage

The steering linkage is the parallelogram system and connected to the rear side of the front axle.

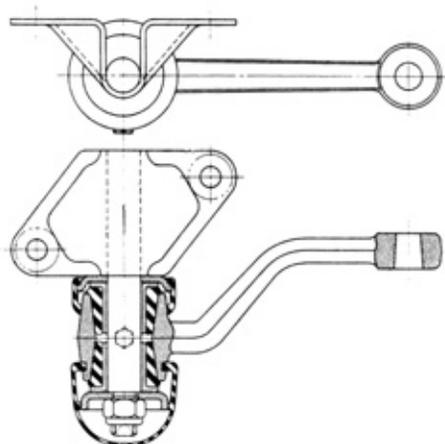


Grease up the joints every 20,000 km

7-3 Idler arm

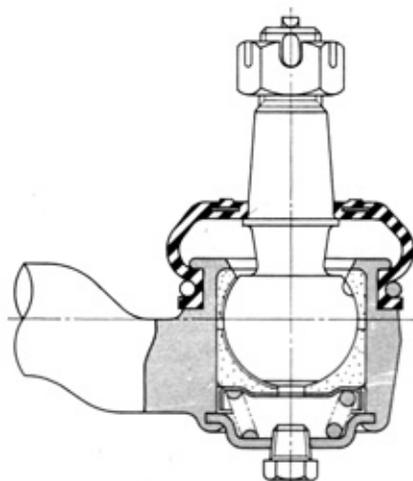
The idler arm is of the torsion rubber type.

Grease up every 20,000 km



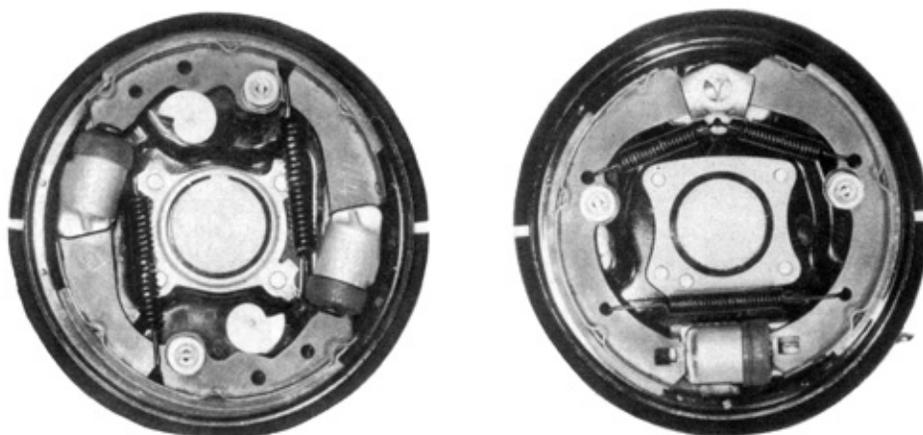
7-4 Ball joint

Grease up every 20,000 km



8. BRAKE SYSTEM

	Front	Rear
Type	2 leading	Leading-trailing
Drum diameter	203.2 mm	203.2 mm
Master cylinder dia.		17.46 mm
Wheel cylinder dia.		20.64 mm
Lining material	Akebono B40	Akebono B40
Lining dimension (L. x W. x Th.)	35 x 195 x 4.8 mm	35 x 195 x 4.8 mm
Lining area	273 cm ²	273 cm ²
Hand brake type		Mechanical for rear wheels.



The hand brake is of mechanical two rear wheel braking type and is equipped with a stick-shaped handle for R.H. Drive and a floor lever type for L.H. Drive.

For every bearing portion nylon-made or electro-sintered alloy bush is used making oiling unnecessary except in overhaul and assembling.

IV BODY

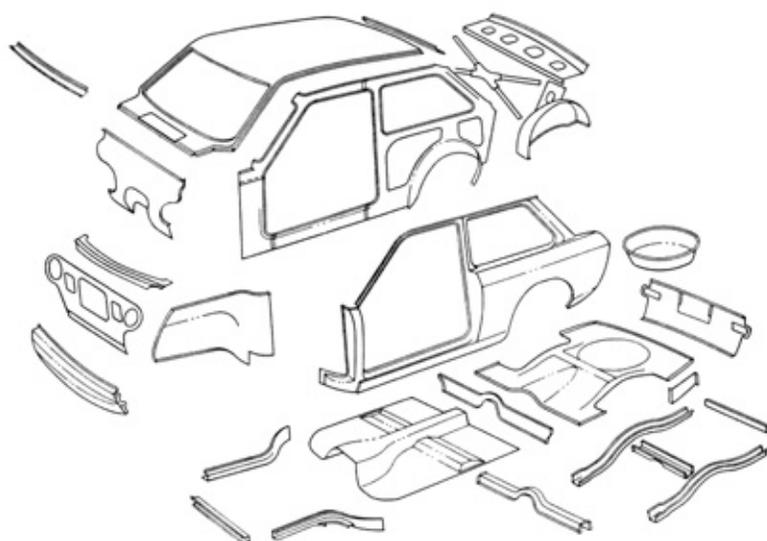
1. BODY CONSTRUCTION

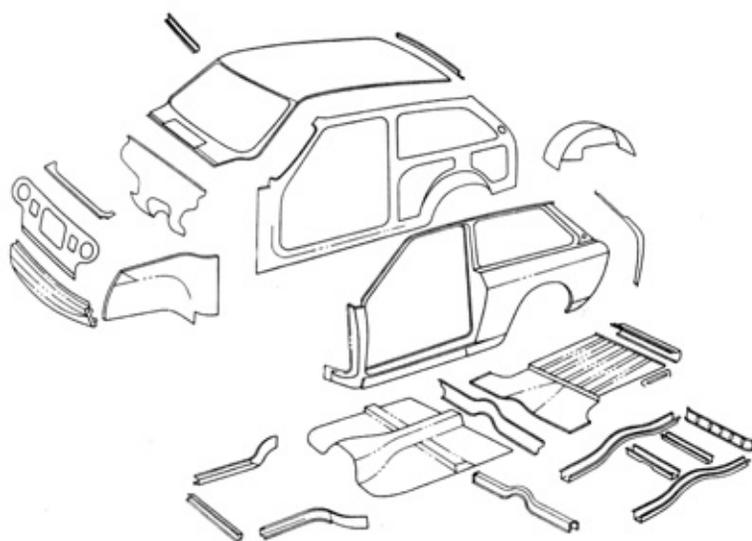
Body construction is the unit construction of light weight yet strong.

The main feature is the large pressed panels compared with other models such as Datsun 1300 and Datsun 2000 (Cedric).

Take body side outer panel for instance.

Rear fender, center pillar, front pillar, rear cover body sill are all combined into one panel, making weight light and increasing rigidity.

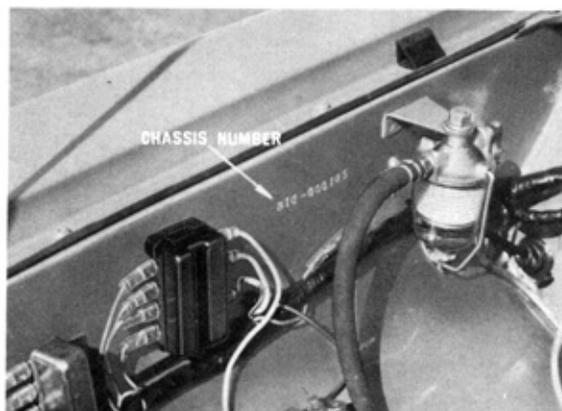




2. FRONT END

The engine compartment is constructed of the dash panel, hoodledge of both side, radiator core support panel. The front apron is welded to the radiator core support panel. The front fenders are fastened by bolts and can be readily removed.

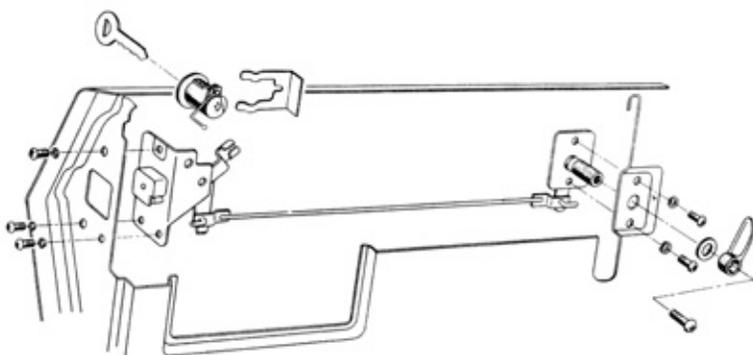
The chassis number is stamped on the right side hoodledge panel.



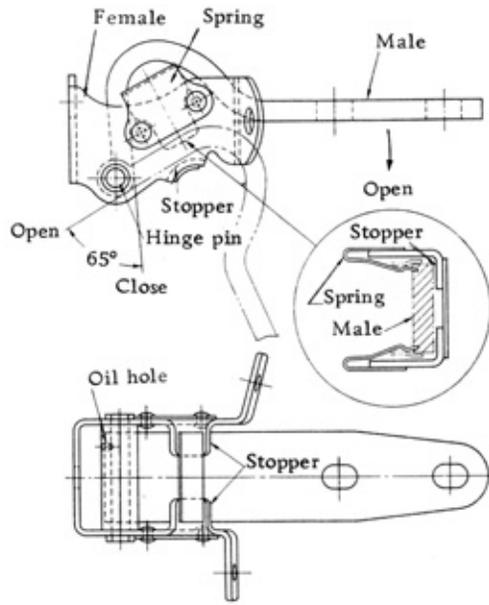
3. DOORS

The door sash is fixed by five bolts. A weather strip of a double combination of rubber and drugget is used to each surface of the top of the door panel to protect against the entry of water and dust. The water which has seeped through the door is drained through the slits provided in the bottom of the door.

The door lock is the lack and pinion combination type.

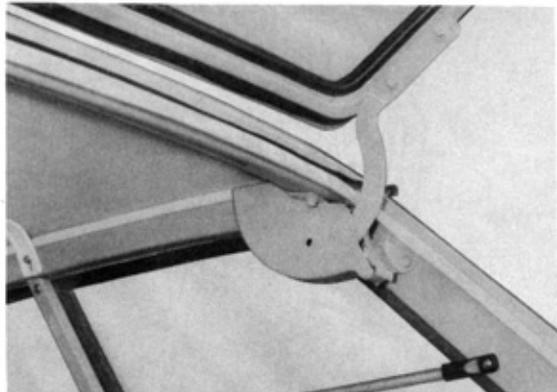
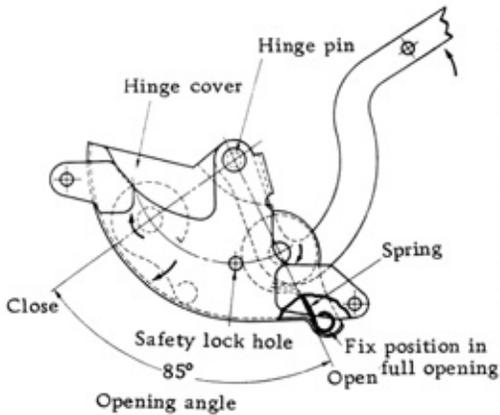


The door hinge is a check stopper and spring built-in type.

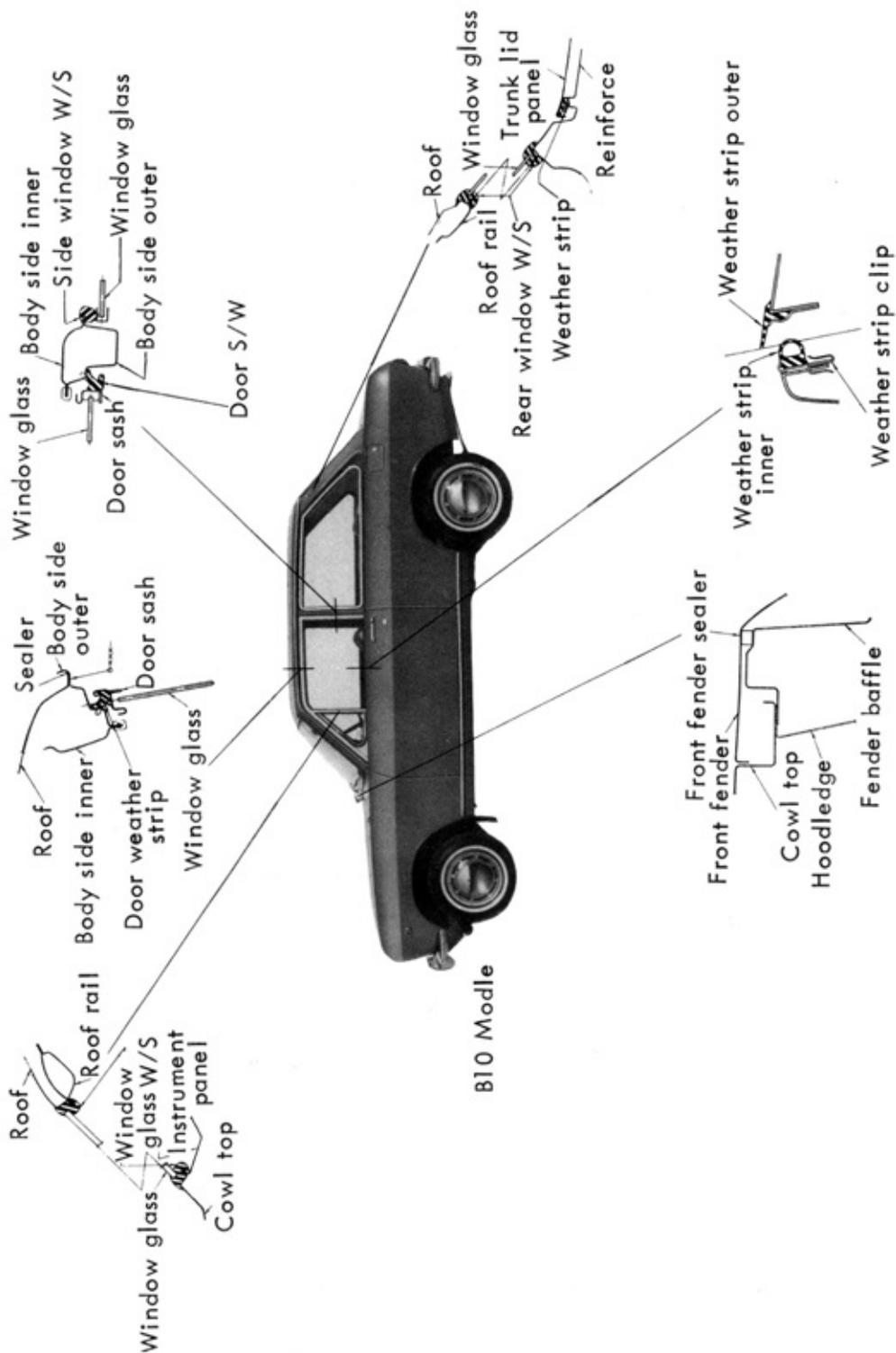


Upper door hinge (left)

The Back door hinges (VB10) are also a spring built-in type, which sustain the back door at the full opening position.

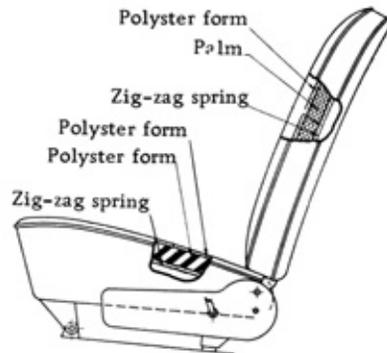


4. GLASS AND WEATHER STRIP



5. SEAT

Construction of the front and rear seats is a press formed frame with zigzag springs and polyester foam mould (pad), the surface being covered with high quality vinyl leather cloth.



6. TRIMMING PARTS

6-1 Dash side trim

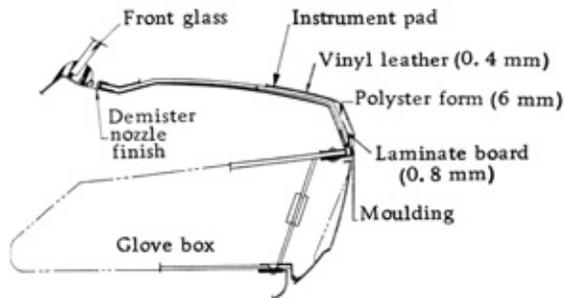
Jute of 4 mm thickness is adhered and vinyl leather is fastened.

6-2 Dash trim

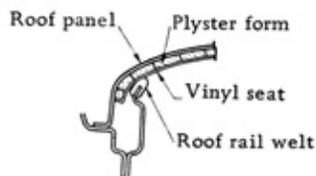
Dash trim is provided with 2 mm thickness proof board and 19 mm thickness glass wool.

6-3 Instrument pad and glove box

Instrument pad and glove box are fixed by screws.

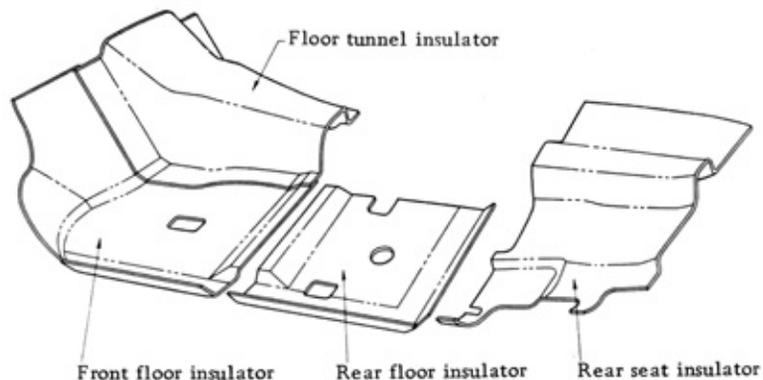


6-4 Head lining

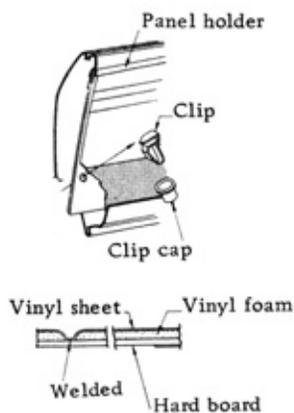


6-5 Floor insulator

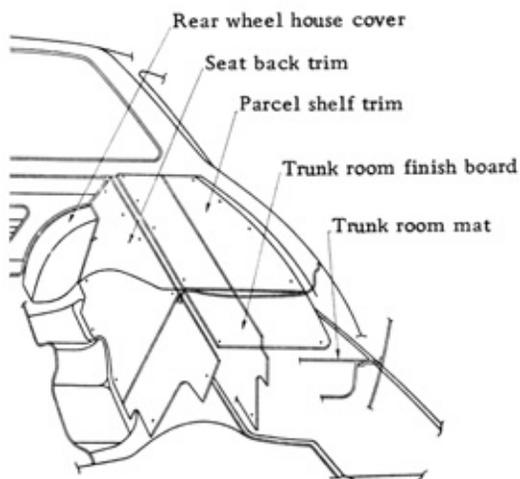
Fusible asphalt insulator is welded against vibration.



6-6 Side finish



6-7 Parcel shelf and seat back trim



V SERVICE SPECIFICATIONS

— Tightening Torque Reference —

	(m-kg)
Engine	
Cylinder head bolts	33.33 ¹ - 4.5 - 4.8
Main bearing cap bolts	5.0 - 5.3
Connecting rod bolts/nuts	3.4 - 3.6
Flywheel bolts	2.5 - 3.0
Cam shaft sprocket	4.0 - 4.5
Rocker shaft bolts	2.0 - 2.3
Water pump nuts	1.2 - 1.3
Oil pump bolts	1.3 - 1.5
Oil pan bolts	0.5 - 0.6
Front cover bolts	0.5 - 0.6
Transmission	
Front cover bolts	1.0 - 1.4
Rear extension bolts	1.6 - 2.2
Front Suspension	
Hub nut (when grease is attached)	2.3 - 2.5
(when grease is not attached)	1.6 - 2.2
Hub rotation	Less than 9 kg-cm
Front shock absorber bolts	2.2 - 2.8
Tension rod nut (front side)	4.0 - 4.5
Tension rod bolts (rear side)	4.2 - 5.3
Suspension member bolts	4.0 - 4.5
Upper ball joint bolts/nuts (upper side)	1.6 - 2.2
Upper ball joint nut (lower side)	3.5 - 4.9
Lower ball joint nut (upper side)	5.5 - 7.6
Lower ball joint bolts/nuts (lower side)	2.0 - 2.8
Upper link spindle bolts	4.2 - 5.3
Lower link pin	4.2 - 5.3
Rear Suspension	
Rear shaft fixing bolts	1.5 - 2.0
Rear shock absorber	2.0 - 2.5
U bolts	3.5 - 4.0
Rear spring front pin	3.5 - 4.0
Rear spring shackle pin	2.0 - 2.5

Gear Carrier

Gear carrier nuts	1.5 - 2.0
Pinion nut	14 - 16.8
Drive gear nuts	3.0 - 3.5
Side bearing cap nuts	4.2 - 4.9

Steering

Steering gear case mounting nuts	6.0
Steering gear case side cover bolts	1.8 - 2.5
Steering gear case rear cover bolts	1.8 - 2.5
Steering gear arm nut	14.0
Nut for cross rod on steering gear arm	3.5 - 4.9
Idler arm mounting nuts	1.9 - 2.6
Nut for side rod on nuckle arm	3.5 - 4.9
Steering wheel nut	4.0 - 4.5

— Specification and Technical data —

Engine

Oil capacity	3.04 ltr.
Cooling water capacity	3.8 ltr. (without heater) 4.5 ltr. (with heater)
Idling	600 rpm
Slack in fan belt	13 - 15 mm
Compression	10 kg/cm at 350 rpm
Spark plug gap	0.7 - 0.8 mm
Distributor point gap	0.45 - 0.55 mm
Spark timing	8°/600 rpm
Idle vacuum	400 mmHg/600 rpm

— Service Specifications —

Cylinder and Cylinder Head

Cylinder head surface flatness		Less than 0.10 mm
Cylinder head gasket thickness	free	1.10 mm
	installed	1.05 mm
Cylinder --- out of round		Less than 0.015 mm
Cylinder bore wear limit		0.2 mm
Piston/cylinder --- clearance		0.03 - 0.04 mm (20°C)

Piston, Piston Pin and Piston Ring

Oversize piston and piston pin

O.S.	Piston	Piston Ring		
		Upper	Lower	Oil
S. T. D.	12012-18000	12041-13200	12043-30000	12046-30800
O.S. - 0.25	12013-18000	12042-13200	12044-30000	12047-30801
O.S. - 0.50	12014-18000	12042-13201	12044-30001	12047-30802
O.S. - 0.75	12015-18000	12042-13202	12044-30002	12047-30803
O.S. - 1.00	12016-18000	12042-13203	12044-30003	12047-30804
O.S. - 1.25	12017-18000	12042-13204	12044-30004	12047-30805
O.S. - 1.50	12018-18000	12042-13205	12044-30005	12047-30806

Compression rings --- side clearance	0.04 - 0.07 mm
Oil ring --- side clearance	0.04 - 0.08 mm
End gap of both compression and oil rings	0.2 - 0.3 mm
Piston/piston pin --- press-fit	1.0 - 1.5 t

Connecting Rod

Difference in weights of con. rods in one engine	Less than 5 gr.
Limit of bent or twist	0.05 mm
Side clearance	0.2 - 0.3 mm
Con. rod bearing clearance	0.01 - 0.05 mm
Crank pin bore diameter	44.961 - 44.974 mm

Con. rod bushing (for replacement)

Part No. & Size	Bushing Thickness	Lapped dia. of crankpin
12111-18000 S. T. D.	1.500-1.508 mm	44.961-44.974 mm
12111-18001 U.S. 0.08	1.540-1.548	44.881-44.984
12111-18002 U.S. 0.12	1.560-1.568	44.841-44.854
12111-18003 U.S. 0.25	1.625-1.633	44.711-44.724
12111-18004 U.S. 0.50	1.750-1.758	44.461-44.474
12111-18005 U.S. 0.75	1.875-1.883	44.211-44.224
12111-18006 U.S. 1.00	2.000-2.008	43.961-43.874

Crank Shaft

Main bearing journal --- out of round	Less than 0.03 mm
Crankpin --- out of round	Less than 0.03 mm
Limit of bent	Less than 0.05 mm
Crank shaft/main bearing --- end play	0.05 - 0.15 mm
Bearing clearance	0.02 - 0.06 mm
limit	0.1 mm

Main bearing bushing (for replacement)

Part No. & Size	Bushing Thickness	Lapped Dia. of Journal
12215-18000 (front & rear) S. T. D. 12247-18000 (center)	1.827-1.835 mm	49.951-49.961 mm
12215-18001 (front & rear) U. S. 0.25 12247-18001 (center)	1.952-1.960 mm	49.701-49.714 mm
12215-18002 (front & rear) U. S. 0.50 12247-18002 (center)	2.077-2.085 mm	49.451-49.464 mm
12215-18003 (front & rear) U. S. 0.75 12247-18003 (center)	2.202-2.210 mm	49.201-49.214 mm
12215-18004 (front & rear) U. S. 1.00 12247-18004 (center)	2.327-2.335 mm	48.951-48.964 mm

Cam Shaft

Clearance	0.03 - 0.07 mm
Limit of bent	0.05 mm
Cam shaft bore in crankcase --- out of roundness	Less than 0.03 mm
End play	0.02 - 0.08 mm
Cam height (Intake and exhaust)	36.45 - 36.55 mm
Wear limit of cam height	0.5 mm

Cam shaft bearing (for replacement)

Size	Cam Shaft Lapped Dimension mm (Bushing Part No.)				
	No. 1 (front)	No. 2	No. 3 (center)	No. 4	No. 5 (rear)
S. T. D.	43.793-43.806 (13005-18001)	43.283-43.296 (13006-18001)	42.783-42.796 (13007-18001)	42.283-42.296 (13008-18001)	41.218-41.231 (13009-18001)
U. S. 0.25	43.543-43.556 (13005-18002)	43.033-43.046 (13006-18002)	42.533-42.546 (13007-18002)	42.033-42.246 (13008-18002)	40.968-40.981 (13009-18002)
U. S. 0.50	43.293-43.306 (13005-18003)	42.783-42.796 (13006-18003)	42.283-42.296 (13007-18003)	41.783-41.796 (13008-18003)	40.718-40.731 (13009-18003)
U. S. 0.75	43.043-43.056 (13005-18004)	42.533-42.546 (13006-18004)	42.033-42.046 (13007-18004)	41.533-41.546 (13008-18004)	40.468-40.481 (13009-18004)

Valve

Face angle (Intake and exhaust)	45° 30'
Valve stem dia.	8.0 mm
Valve stem/guide --- clearance	Intake 0.02 - 0.04 mm
	Exhaust 0.045 - 0.065 mm
Limit	0.1 mm

Valve clearance (with engine hot)	0.35 mm
Interference (Valve guide to cylinder head)	0.02 - 0.04 mm
Interference (Valve seat to cylinder head)	0.06 - 0.09 mm
Valve seat seating depth from valve seat face to cylinder head surface	0.2 mm

Valve seat over-size

	Part No.	Inner Dia. in cylinder head
Intake	11098-18010 O.S.	37.500 - 37.516 mm
	11098-18000 S.T.D.	37.000 - 37.016
Exhaust	11099-18010 O.S.	33.500 - 33.516
	11099-18000 S.T.D.	33.000 - 33.016

Valve guide over-size

	Part No.
Intake	13212-18010 O.S.
	13212-18000 S.T.D.
Exhaust	13213-18010 O.S.
	13213-18000 S.T.D.

(cf) Interference, valve guide/cylinder head --- 0.02 - 0.04 mm

Valve spring	Free length	45.7 mm
	Loaded length	30 kg/38.5 mm 61.2 kg/31.0 mm
Valve lifter	Diameter	22 mm, 12.67 mm
	Length	57 mm
Valve lifter/bore --- clearance	Limit	0.02 - 0.05 mm
		0.15 mm
Rocker arm/rocker arm shaft --- clearance		0.02 - 0.05 mm

Flywheel

Lateral run-out	Less than 0.2 mm
No. of ring gears	105

Thermostat

Opening temperature	82°C
Max. lift	More than 8 mm at 95°C

Oil Pump

Oil pressure	3.5 - 4.0 kg/cm
Shim thickness of oil regulator	0.5 mm
Delivering capacity	19.5 ltr/min. at 3,000 rpm

Fuel Pump

Delivering capacity	750 cc/min. at 3,000 rpm
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Distributor

Make	Hitachi
Type	D412-53
Spark Timing	8/600 rpm
Point Gap	0.45 - 0.55 mm
Point Spring Pressure	500 - 600 gr.
Governor advance	0 - 2 (520 rpm) Max. 13 (1500 rpm)
Vacuum advance	0 - 2 (150 mmHg) Max. 9.5 (305 mmHg)

Clutch

Diaphragm spring height	31.5 mm
Clutch facing wear limit	0.5 mm (Facing to rivet head)
Run-out limit	Less than 0.5 mm
Play at withdrawal lever	1.5 - 2.0 mm
Pedal height	144.5 mm
Free travel	15 - 20 mm

Transmission (3 Speed type)

Backlash	0.05 - 0.1 mm
Speedometer gear ratio	4.00 (16/4)
Thrust clearance Reverse, first driven gear	0.15 - 0.25 mm
Second driven gear	0.1 - 0.35 mm
Top gear	0.1 - 0.35 mm
Front cover adjusting shim No. 1, 2, 3	0.5, 0.2, 0.1 mm
Thrust clearance of counter shaft	0.02 - 0.08 mm
Thrust washer for counter shaft No. 1 - 5	0.8, 0.9, 1.0, 1.1, 1.2, 1.3
Reverse idler gear/bushing --- clearance	0.32 - 0.77 mm
Reverse idler gear/adaptor plate --- clearance	0.1 - 0.5 mm
Snap ring/adaptor clearance	0.1 - 0.4 mm

Differential

		B10	VB10
No. of teeth	Drive pinion	9	8
	Ring gear	37	35
Gear ratio		4.111	4.375

Ring gear/drive pinion --- backlash	0.10 - 0.15 mm
Drive gear --- run-out	Less than 0.08 mm
Drive pinion bearing preload	6 - 8 kg-cm
Side gear backlash	0.1 - 0.2 mm

Drive pinion adjusting shim

Part No.	Thickness
38125-18000	2.30-2.32 mm
38126-18000	2.32-2.34 mm
38127-18000	2.34-2.36 mm
38128-18000	2.36-2.38 mm
38129-18000	2.38-2.40 mm
38130-18000	2.40-2.42 mm
38131-18000	2.42-2.44 mm
38132-18000	2.44-2.46 mm
38133-18000	2.46-2.48 mm
38134-18000	2.48-2.50 mm
38135-18000	2.50-2.52 mm
38136-18000	2.52-2.54 mm
38137-18000	2.54-2.56 mm
38138-18000	2.56-2.58 mm
38139-18000	2.58-2.60 mm

Drive pinion adjusting shim

Part No.	Thickness
38153-18000	0.050 mm
38154-18000	0.075 mm
38155-18000	0.125 mm
38156-18000	0.250 mm
38157-18000	0.500 mm

Drive pinion spacer

Part No.	Thickness
38165-18000	5.75 mm
38166-18000	6.00 mm
38167-18000	6.25 mm

Side gear thrust washer

Part No.	Thickness
38424-18000	0.76-0.81 mm
38424-18001	0.81-0.86 mm
38424-18002	0.86-0.91 mm

Side bearing adjust shim

Part No.	Thickness
38453-18000	0.050 mm
38454-18000	0.075 mm
38455-18000	0.125 mm
38456-18000	0.250 mm
38454-18000	0.500 mm

Steering

Type		Recirculating ball type
Turns of steering wheel lock to lock		3.4
Gear ratio		15 : 1
Angles of wheels at full lock	Front	45°
	Rear	36° 36'
Wheel dia.		400 mm
Wheel play		20 - 25 (on the rim)
Sector shaft/bushing --- clearance		0.12 mm

Worm bearing adjusting shim

Part No.	Thickness
48031-18000	0.05 mm
48032-18000	0.07 mm
48033-18000	0.08 mm
48034-18000	0.10 mm
48035-18000	0.20 mm

Sector shaft adjusting shim

Part No.	Thickness
48131-18000	1.52-1.53 mm
48132-18000	1.55-1.56 mm
48133-18000	1.58-1.59 mm
48134-18000	1.61-1.62 mm
48135-18000	1.64-1.65 mm

