SERVICE BULLETIN

FEB. 1967 VOL. 76

INTRODUCTION OF NEW DATSUN SPORTS CAR SERIES

SR (L) 311-(U)

SP (L) 311-(U)

NISSAN MOTOR CO., LTD.

TOKYO, JAPAN

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SPECIFICATIONS
SP 67—002

PREFACE

The DATSUN SPORTS 2000 with over head camshaft engine and 5 speed transmission has been newly added to the DATSUN SPORTS CAR series.

The feauture of the DATSUN SPORTS 2000 is same to the 1600 except the emblem, however the 2000 demonstrates high driving performance at every time.

This bulletin mainly contains the informations of DATSUN SPORTS 2000 and another informations of partly inproved DATSUN SPORTS 1600.

* marked items are applied only for SR311 series.

DATSUN SPORTS 1600, has been modified on the R engine which is the adoption of 5 bearing and mm size bolts, nuts, screws and studs. Detail informations of R engine's modification are discribed on NISSAN SERVICE BULLETIN VOL. 74.

The improvements and modifications described in this booklet have been applied from following chassis numbers.

SP311	02001
SPL311	11002
SR311	00001
SRL311	00003

CONTENTS

SPECIFICATIONS

Item \ Model				SP(L)311-(U)	SR(L)311-(U)
DIMENSIONS	Vehicle Overall Length		mm (in)	3,955 (155.70)	
	Vehicle Overall Width		mm (in)	1,495 (58.900)	
	Vehicle Overall Height		mm (in)	1,300 (51.574)	
	Interior size of cargo space	Overall Length	mm (in)	750 (29.524)	
		Overall Width	mm (in)	1,275 (50.200)	
		Overall Height	mm (in)	990 (38.976)	
	Tread	Front	mm (in)	1,275 (50.196)	
		Rear	mm (in)	1,200 (47.244)	
	Wheel Base		mm (in)	2,280 (89.800)	
	Min. Road Clearance		mm (in)	145 (5.708)	
	Floor Height				
	Overhang to the Front End (Without Bumper)		mm (in)	620 (24.400)	
	Overhang to the Rear End (Without Bumper)		mm (in)	885 (34.842)	
	Frame Overhang to the Front End		mm (in)	525 (20.700)	
	Frame Overhang to the Rear End		mm (in)	830 (32.677)	
TIRE SIZE	Front			5.60S14-4	
	Rear			5.60S14-4	
WEIGHT	Vehicle Weight		kg (lb)	900 (1,984.1)	910 (2,006.1)
	Seating Capacity			2	
	Max. Payload				

Item \ Model			SP(L)311-(U)	SR(L)311-(U)	
WEIGHT	Vehicle Gross Weight		1010 (2, 226.6)	1020 (2, 248.6)	
	Distribution of Vehicle weight without load	Front kg (lb)	555 (1, 223.5)	565 (1, 245.5)	
		Rear kg (lb)	455 (1, 003.0)		
	Distribution of Vehicle weight with load	Front			
		Rear			
	Chassis Weight kg (lb)		495 (1, 091.2)	505 (1, 113.3)	
	Distribution (Front) kg (lb)		340 (749.56)	350 (771.61)	
	Distribution (Rear) kg (lb)		155 (341.91)		
	Height of Gravity Center mm (in)		470 (18.503)		
PERFORMANCE	Max. Speed km/h (m/h)		170 (106)	SOLEX CARB. 200 (124.3)	SU CARB.
	Fuel Consumption by Paved Flat Road with Max. load (presumptive)	km/ℓ (m/gall.)	12 (28.23)	8 (18.823)	
	Grade Ability Sin θ		0.497	0.56	
	Min. Turning Radius m (ft)		4.9 (16.08)		
	Brake Stopping Distance (50 km/h)		13.5 (44.3)		
ENGINE	Model		R	U20	
	Manufacturer		Nissan		
	Classification of Fuel		Gasoline		
	Cooling System		Water Forced Circulation		
	No. of Cylinder & Arrange		4 in line		
	Cycle		4		
	Combustion Chamber		Wedge Type		

	Item \ Model	SP(L)311-(U)	SR(L)311-(U)	
ENGINE	Bore × Stroke mm (in)	87.2 × 66.8 (3.433 × 2.630)	87.2 × 83 (3.433 × 3.267)	
	Displacement ℓ(cu.in)	1.595 (97.32)	1.982 (120.92)	
	Compression Ratio	9.0	9.5	
	Compression Pressure kg/cm2 (lb/in2)/r.p.m.	12.7 (180.6)/320	11.7 (166.02)/350	
	Max. Exploding Pressure kg/cm2 (lb/in2)/r.p.m.	50 (711.2)/4000	54 (766.26)/5600	
	Max. Mean Effective kg/cm2 (lb/in2)/r.p.m.	10.6 (150.8)/4000	11.5 (163.1)/4800	
	Max. Power B.H.P./r.p.m. (SAE)	96/6000	SOLEX CARB. 150/6000	SU CARB. 135/6000
	Max. Torque m-kg (ft-lb)/r.p.m. (SAE)	14.3 (103)/4000		
	Length × Width × Height mm (in)	635 × 650 × 623 (25 × 25.6 × 24.5)	692 × 641 × 670 (27.24 × 25.23 × 26.37)	
	Weight kg (lb)	155 (341.7)	160 (352.73)	
	Position of Engine	FRONT		
	Type of Piston	AUTO THERMIC TYPE		
	Material of Piston	LO-EX		
	No. of Piston Ring: Pressure	2		
	No. of Piston Ring: Oil	1		
	VALVE TIMING: Intake Open B.T.D.C.	20°	SOLEX CARB. 30°	SU CARB. 18°
	VALVE TIMING: Intake Close A.B.D.C.	56°	70°	58°
	VALVE TIMING: Exhaust Open B.B.D.C.	58°	70°	58°
	VALVE TIMING: Exhaust Close A.T.D.C.	18°	30°	18°

Item \ Model				SP(L)311-(U)	SR(L)311-(U)	
ENGINE	Valve Clearance	Intake	mm (in)	0.43 (0.0169)	0.2 (0.007874)	
		Exhaust	mm (in)	0.43 (0.0169)	0.3 (0.011811)	
IGNITION SYSTEM	Starting Method			MAGNETIC STARTING SYSTEM		
	Ignition Method			BATTERY COIL TYPE		
	Ignition Timing	B.T.D.C./r.p.m.		16°/600	SOLEX CARB. 20°/700	SU CARB. 16°/700
	Firing Order			1-3-4-2		
	IGNITION COIL	Type		Coil : Resistor C6R-50 : 5650R-1500 (HV-13Y : RA-16)		
		Manufacturer		HITACHI (HANSHIN)		
	DISTRIBUTOR	Type		D407-51		
		Manufacturer		HITACHI		
		Ignition Timing Advance System		VACUUM & GOVERNOR		
	SPARK PLUG	Type		B-6E (L-45)		
		Manufacturer		NIHON TOKUSHU TOGYO (HITACHI)		
		Thread	mm (in)	14 (0.551)		
		Gap	mm (in)	0.7 ~ 0.8 (0.027 ~ 0.031)		
FUEL SYSTEM	CARBURETOR	Type		HJB38W	44PHH-2	HJG46W
		Manufacturer		HITACHI	MIKUNI	HITACHI
		Throttle Valve Bore	mm (in)	38	44	46
		Venturi Size	mm (in)	Varibale	OUTER 37 (1.456) INNER 10 (0.3937)	Variable
		Main Jet			#180	

Item \ Model			SP(L)311-(U)	SR(L)311-(U)	
FUEL SYSTEM	Carburetor	Pilot Jet		#60	
		Pump Jet mm (in)		0.30 (0.01181)	
	Air Cleaner	Type & No.	PAPER TYPE		
		Manufacturer	TSUCHIYA		
	Fuel Pump	Type	DIAPHRAGM		
		Manufacturer	SHOWA, KYOSAN		
	Fuel Tank	Capacity of Fuel Tank ℓ	43 (11.36 U.S.gal)		
LUBRICATING SYSTEM	Lubricating Method		FORCED PRESSURE TYPE		
	Oil Pump Type		GEAR TYPE		
	Oil Filter		FULL FLOW TYPE		
	Oil Pan Capacity ℓ(U.S.gal.)		4.1 (1.083)	SOLEX CARB. 7.1 (1.875)	SU CARB. 4.1
COOLING SYSTEM	Type		WATER COOLING CLOSED TYPE		
	Radiator		CORUGATED FIN & TUBE TYPE		
	Capacity of Cooling Water ℓ(U.S.gal.)		8 (2.11)	8.5 (2.245)	
	Type of Water Pump		CENTERIFUGAL TYPE		
	Thermostat		PELLET TYPE		
BATTERY	Type		2SMB or CORVIRO		
	Voltage V		12		
	Capacity A.H.		50 (40... For R/H Car)	50	
Generator	Type		AC300/12 ×2R	AS2030A2	
	Manufacturer		MITSUBISHI		

Item \ Model				SP(L)311-(U)	SR(L)311-(U)
GENERATOR	Generating Method			ALTERNATOR	
	Voltage V			12	
	Capacity Kw			0.3	
	Voltage Regulator			$RL2220B_5$	
STARTER	Type			S114-91	ME-Y_2R
	Manufacturer			HITACHI	MITSUBISHI
	Voltage & Power V-HP			12-1.4	
TRANSMITTING DEVICE	CLUTCH	Type		SINGLE DRY DISC HYDRAULIC OPERATION	
		Number of Plate		(FACING) 2	
		Outdia.×India.×Thickness mm (in)		200 × 130 × 3.5 (7.87 × 5.12 × 0.138)	
		Total Friction Area cm^2 (in^2)		364 (56.42)	
	TRANSMISSION	Type		F4C63L	FS5C71A
		Operating Method		Direct Floor Shift	
		Gear Ratio	1st	3.382	2.957
			2nd	2.013	1.858
			3rd	1.312	1.311
			4th	1.000	1.000
			5th		0.852
			Reverse	3.365	2.922
Propeller Shaft	Length × Outdia × Thickness mm (in)			760×63×59.8 (29.92×2.48×2.35)	838×63.5×1.6 (32.99×24.99×0.06299)
	Type of Universal Joint			63H	63H

Item \ Model				SP(L)311-(U)	SR(L)311-(U)
FINAL GEAR	FIRST GEAR	Type of Gear		HYPOID	
		Gear Ratio		3.889 (OPTION 4.111)	3.700
		Speedometer		16/5 (17/5)	18/6
DIFF GEAR	Housing Type			BANJO	
	Type and Number of Gear			STRAIGHI BEVEL PINION 2 EACH	
STEERING SYSTEM	Type of Gear			CAM AND LEVER	
	Gear Ratio			14.8	
	Steering angle In and Out.			36°16', 28°20'	
	Steering Wheel Dia. (in)			400 (15.75)	
RUNNING DEVICE	Wheel Arrangement			2 FRONT, 2 REAR	
	Front Axle			WISH BONE BALL JOINT TYPE	
	Toe-in mm			2 ~ 3	
	Camber			1°25'	
	Caster			1°30'	
	Inclination Angle of King Pin			6°35'	
	Type of Rear Axle			SEMI-FLOATING TYPE	
SYSTEM OF THE BRAKE	MASTER BRAKE	Type	Front	DISC	
			Rear	LEADING TRAILING	
		Lining Dimension (Front) mm (in)		47.5 × 16.7 × 53.98) (1.87 × 0.66 × 2.125)	
		Lining Dimension (Rear) mm (in)		40 X 4.5 X 215 (1.57 × 0.18 × 8.46)	
		Total Braking Area (Front) cm^2 (in^2)		102.6 (15.9)	

Item \ Model			SP(L)311-(U)	SR(L)311-(U)
SYSTEM OF THE BRAKE	MASTER BRAKE	Total Braking Area (Rear) cm^2 (in^2)	351 (54.4)	
		Dia. of Disc (Front) mm (in)	284 (11.18)	
		Dia. of Drum (Rear) mm (in)	228.6 (90)	
	OIL BRAKE	Inner Dia. of Master Cyl. mm (in)	19.05 (0.75)	
		In dia. of Wheel Cyl. (Front) mm (in)	53.98 (2.125)	
		In dia. of Wheel Cyl. (Rear) mm (in)	19.05 (0.75)	
		Max. Oil Pressure (lb/in^2)kg/cm^2	137 (1948.6)	
	PARKING BRAKE	Type	MECHANICAL FOR REAR WHEEL	
		Lining Dimension mm	40 × 4.5 × 215	
		Total Braking Area cm^2 (in^2)	351 (54.4)	
		In dia. of Drum mm (in)	228.6 (90)	
SUSPENSION	Front		INDEPENDENT COIL SPRING	
	Coil Spring Size Wire dia.×In.dia. of Coil × Free length - No. mm (in)		12.7 × 87.5 × 290 - 6 (0.499 × 3.44 × 11.41 - 6)	
	Rear		PARALLEL SEMI ELLIPTIC	
	Spring Size Length × Width × Thickness - No. mm (in)		$1200 \times 60 \times \begin{matrix} 6-2 \\ 5-2 \end{matrix}$ (47.2 × 2.36 × 0.23)	
	Shock Absorber (Front)		TELESCOPIC DOUBLE ACTION	
	Shock Absorber (Rear)		TELESCOPIC DOUBLE ACTION	
	Stabilizer (Front)		TORSION BAR TYPE	
	Stabilizer (Rear)			

Item \ Model		SP(L)311-(U)	SR(L)311-(U)
FRAME	Type	X MEMBER	
	Section	BOX TYPE	
	Dimension Height × Width × Thickness mm	UPPER 75 × 100 × 1.6 LOWER 25 × 100 × 2.3	

1. ENGINE ✳

1-1 GENERAL EXPLANATION

U20 engine is designed to elevate the performance and durability by adopting over head cam drive system, and is standing on the R engine.

Cylinder bore size is same to R engine, but the cylinder displacement is increased by extending the stroke.

Cam drive mechanism is two stage type with intermediate jack shaft.

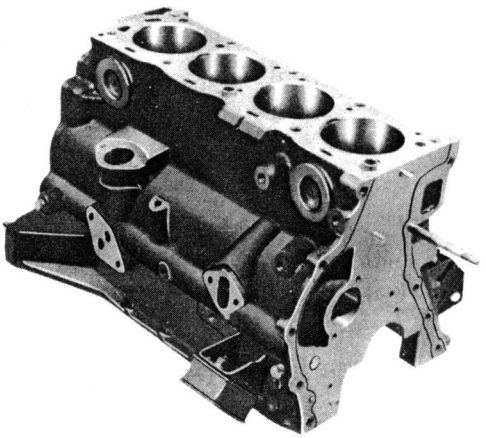
Comparing with 5 bearing R engine, cylinder block and the arrangement of supplementary equipments are fundamentaly same to R engine.

The points of designing the engine are placed on the power and durability at extreme high speed and many special technical devices have been adopted.

On this engine, the SU type carburetor will be equipped as standard, and optionally Solex type carburetor will be equipped in the future, however from February till April on this year the Solex type is only available.

1-2 CYLINDER BLOCK

Tappet chamber is eliminated fundamentaly from the R engine's block and 5 main bearing, 63 mm (2.4803 in.) journal diameter, individual bore and rear flange reinforcement have been adopted.

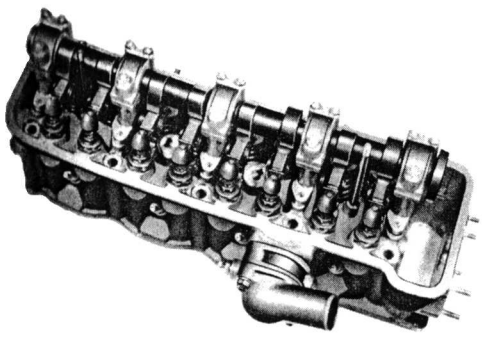


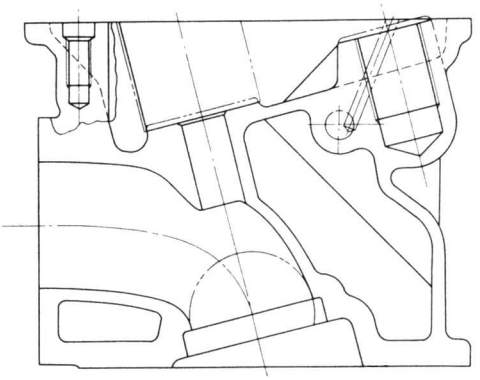
1-3 CYLINDER HEAD

Cylinder head is made from aluminum and front cover is constructed in a body.

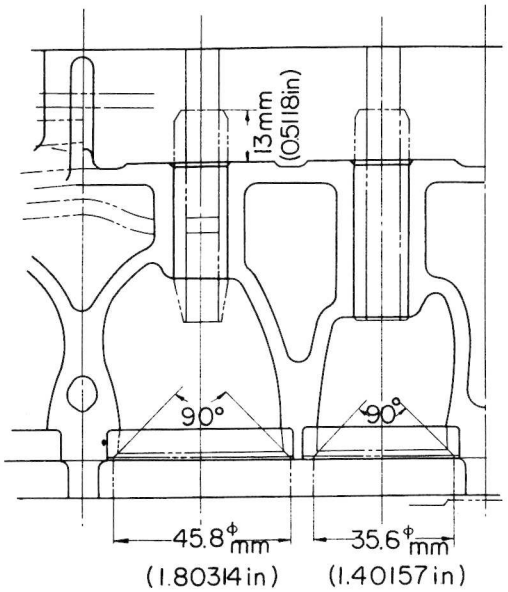
According to the increasment of the engine displacement, valve hole diameter has been enlarged and suction efficiency has been improved.

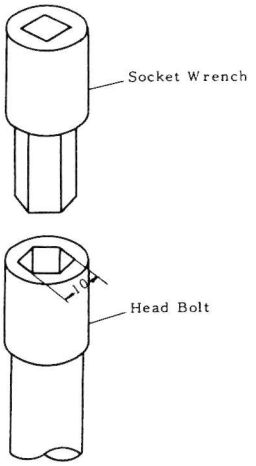
As the head portion of the cylinder head tightning bolts are formed like socket type, exclusive socket wrench should be needed to tighten or release it.



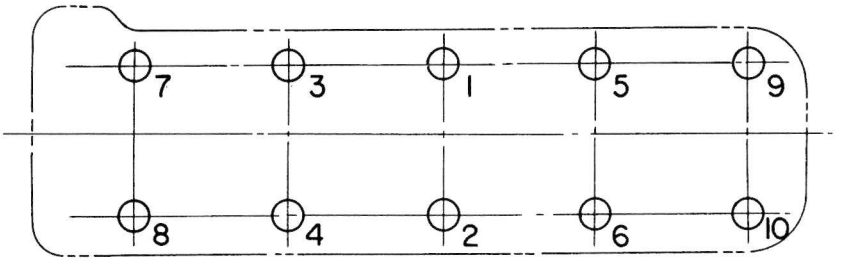


Sectional View of Cylinder Head





Sectional View of the Cylinder Head



Cylinder Head Bolt Tightening Order

Tightening Torque
First Tight 6.0 kg-m (43.38 ft-lb)
Second Tight 8.7 kg-m (62.91 ft-lb)
Final Tight 8.5 ~ 9.0 kg-m (61.46 ~ 65.07 ft-lb)

1-4 CRANK SHAFT

Crank shaft is made from special forged steel and supported 5 main bearings because it has conspicuous high strength and rigidity.

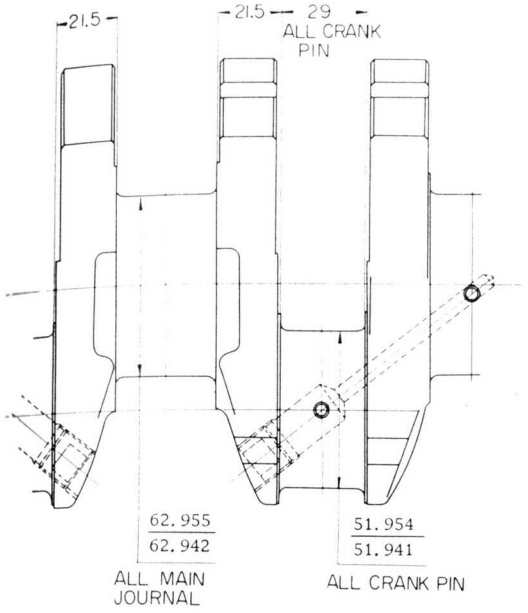
Crank shaft has 8 counter weights and tortional damper so that the vibration of the shaft has been extreamly reduced.

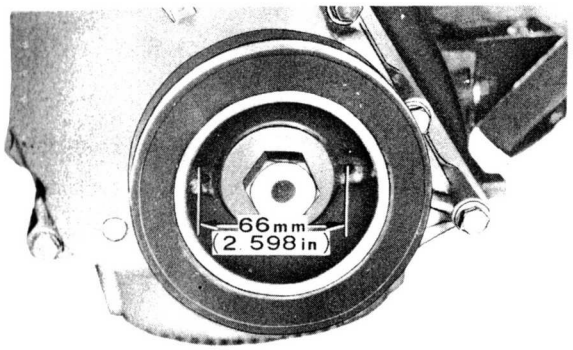
The oil pasage of the shaft is skilfully designed, so the lubrication is in good shape even at high speed engine revolution freed from the contrifugal force.

Vibration damper has been attached in order to reduce the vibration of the crankshaft.

When pulling out the pully from the crankshaft, the periphery of the pully should not be pulled not to damage the damper rubber.

A special tool using the screw hole of the rib should be needed.





Tightening Torque of the Crankshaft Pully 20 kg-m (144.6 ft-lb)

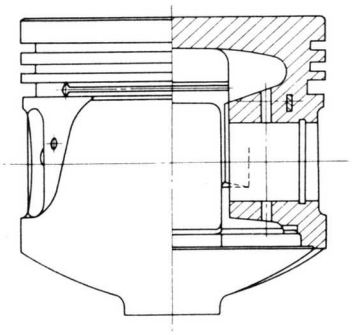
1-5 CONNECTING ROD & PISTON

Big end portion is strengthened and pal nuts has been abolished.

Tightening Torque 9 kg-m (65 ft-lb)

1-6 PISTON

The shape is changed to reduce the inertia force and to elevate its rigidity.



Sectional View of Piston

1-7 PISTON RING & OIL RING

In order to adapt for high speed engine revolution, air-tight character, lubricity and durability are sufficiently considered.

To reduce the weight, the thickness of the 2nd ring has been decreased to 2 mm.

Dimention of Oil Ring

Face pressure	7.0 kg/cm^2	(99.33	lb/in^2)
Face width	0.45mm	(0.01771	in.)
Tension	2.75kg	(6.062	lb.)
Thickness	3.7 mm	(0.1456	in.)

1-8 BEARING

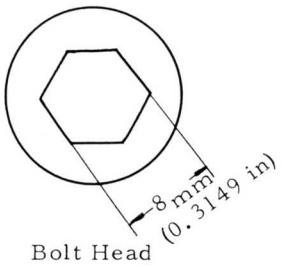
F770 over lay metal is also adopted to elevate the durability.
Thrusting force of the crank shaft is supported by center bearing guard.

Tightening torque 9 kg-m (65 lb-in.)

1-9 FLYWHEEL

The flywheel is same to the R engine's but the number of the fixing bolts have been increased from 6 to 12 and the material of the bolts have been changed to super high-strength steel in order to bear the fluctuation of the inertia torque.

The head shape of the bolt is same to the cylinder head bolt because the socket wrench should be needed.



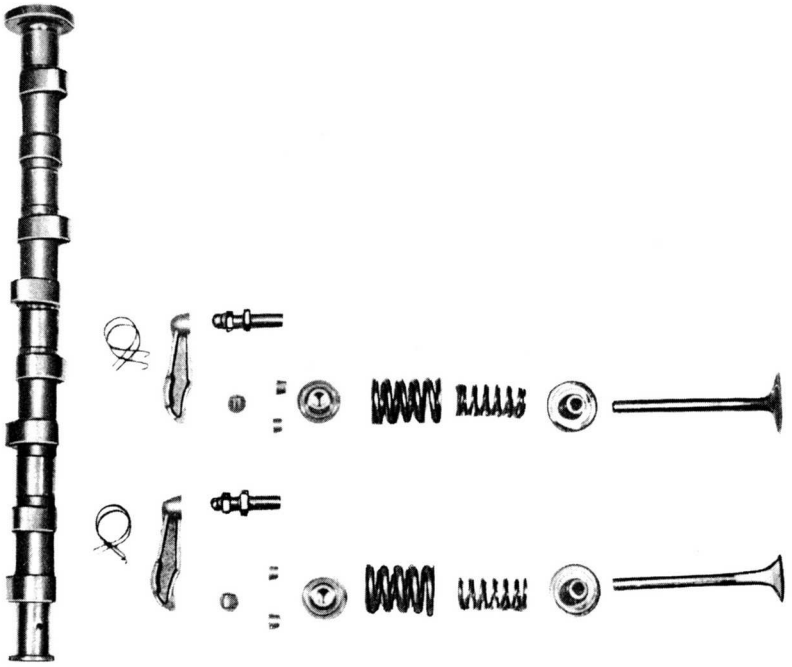
Tightening Torque
8 kg-m (57.85 ft-lb)

1-10 VALVE ROCKER MECHANISM

By adopting O.H.C. system, valve lifter and push rod have been eliminated.

As the rocker arm is directly operated by the camshaft, moving weight is greatly reduced and most desirable performance can be obtained especially at high speed engine revolution.

The rocker arm is forged make and chromium plated in order to gain more long durability.

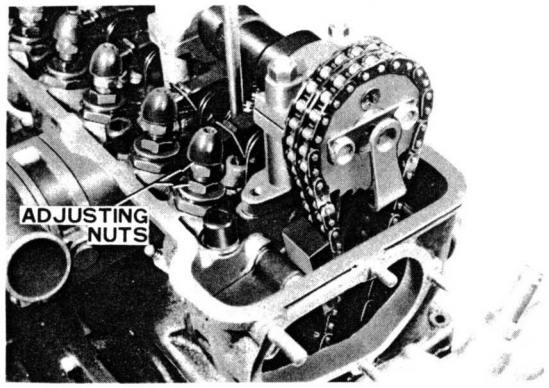


1-11 VALVE CLEARANCE ADJUSTMENT

Because the adjusting parts for valve clearance are moved to the statistic portion, adding to lightening of weight itself, adjustment can be easily done.

Cam bearings and the rubbing surfaces between cam and rocker arms are forcibly lubricated and rocker chamber is filled with much amount of oil when the engine is running.

Therefore, valve clearance adjustment can not be done at running engine. The adjustment should be done on the stopping engine. After warming up the engine, stop it again and check the clearance promptly, if it fits to the warm value and adjust the clearance only when it does not fit the warm value.



Adjusting Value

	In.	Ex.
Warm	0.2mm (0.00787 in)	0.3mm (0.01181 in)

1-12 CAMSHAFT DRIVE MECHANISM

Camshaft drive mechanism is installed on the front side of the engine and camshaft is driven by the chain by way of jack shaft. The chain is adequetly tensioned by the tensioner with check valve and guided by chain guide, because the chain noise is restrained and the engine can be revolved calmly even at high speed.

Timing mark for this engine should be arranged as illustrated in the figure.

Timing mark aligning

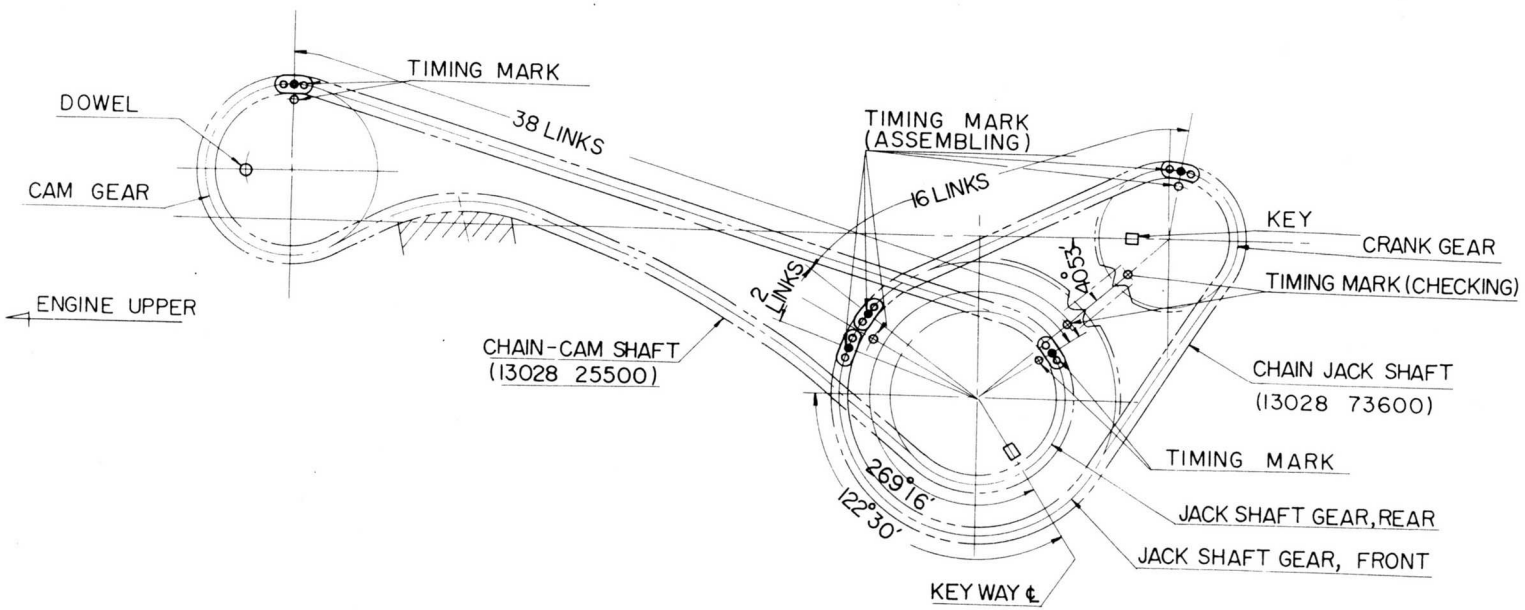
Camshaft chain

Set the dowel mark to straight upper and fit the timing mark of the gear with the chain mark.

Jack shaft chain

When assembling the timing gear train, install the gear and chain so as to fit the mark as illustrated in the figure.

In order to check the gear train after assembling it, crank the engine until the key on the crank shaft is came to be straight upper position and check if the timing mark both crank gear and jack shaft gear come into line on the center line and this time the dowel of cam gear should be on the straight upper position.

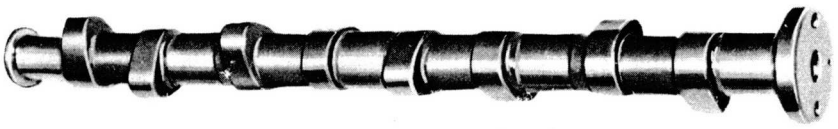


Timing mark aligning

1-13 CAMSHAFT

In order to obtain enough durability for continuing high speed driving, cam profile has been changed and valve timing has also been changed.

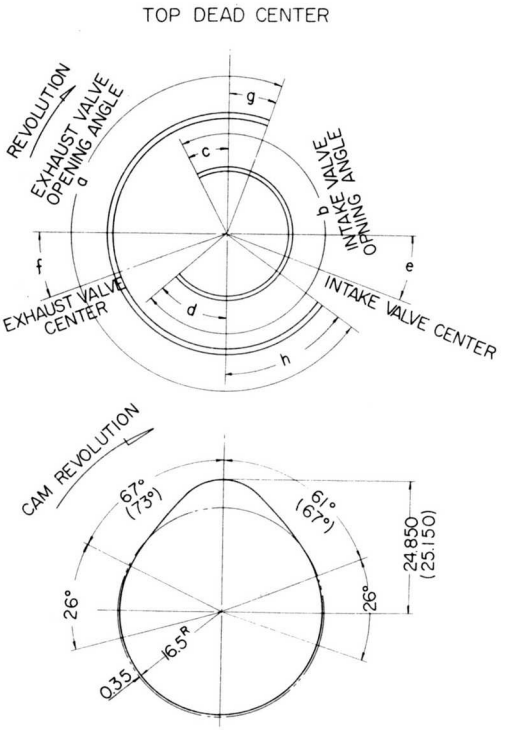
The camshaft is lubricated intermittently taking the timing between the camshaft journal and the bearing, and before pushing down the rocker arms, the oil is supplied to the arm from the camshaft sufficiently.



Cam profile for this engine has two type in accordance with the type of carburetor.

VALVE TIMING DIAGRAM

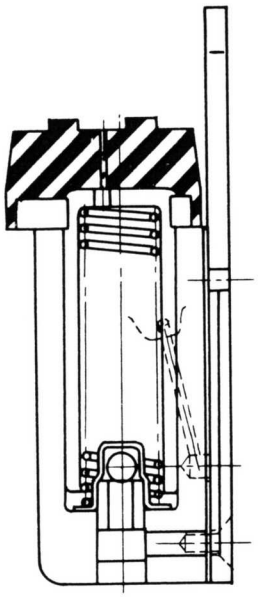
	FOR SU	FOR SOLEX
a	256	280
b	256	280
c	18	30
d	58	70
e	20	20
f	20	20
g	18	30
h	58	70



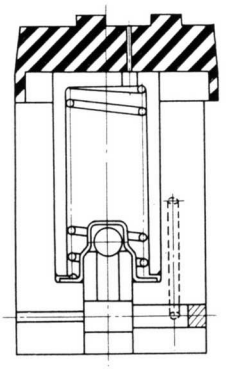
( ) Shows for Solex Carburetor

1-14 CHAIN TENSIONER

By adopting the check valve system, the vibration of the chain is reduced.



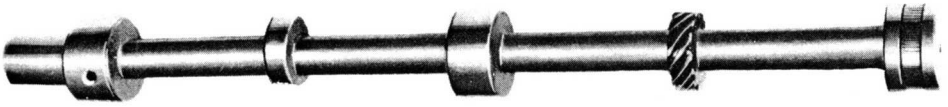
Chain Tensioner Upper



Chain Tensioner Lower

1-15 JACK SHAFT

Cams are eliminated from R engine's camshaft and by this shaft the oil pump, the fuel pump and the distributor are driven.



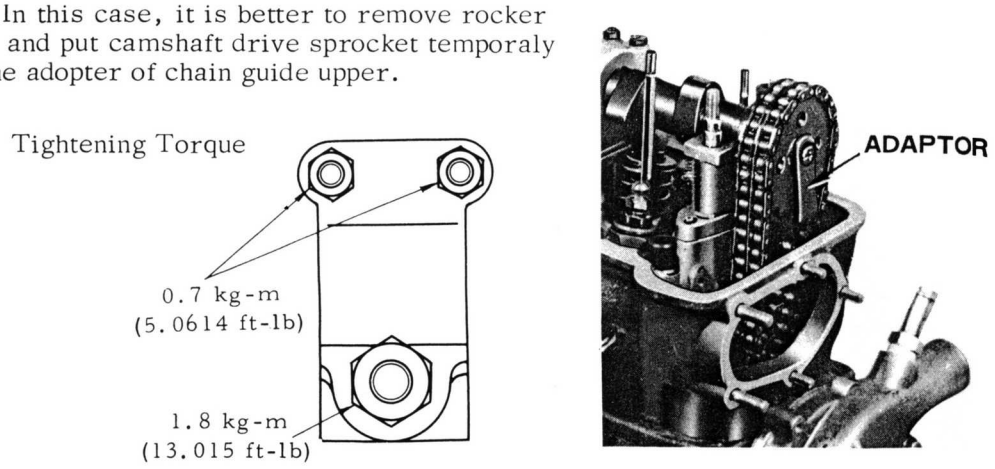
Tightening Torque of the Jack Shaft Gear
4.5 ~ 5.0 kg-m(32.5 ~ 36.1 ft-lb)

1-16 CAMSHAFT BEARING

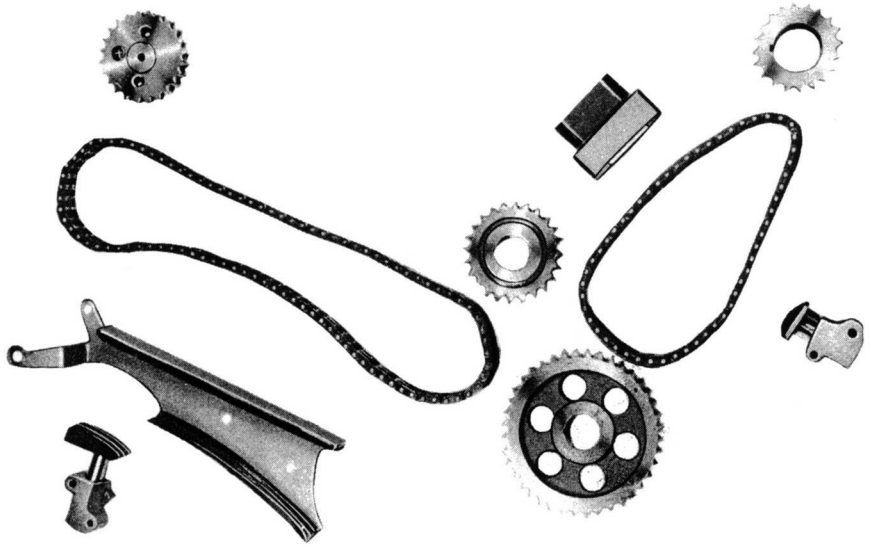
Camshaft bearing is made from alminum and divided type without bushing, so that camshaft changing procedure is extraordinary simplified. When tunning up the engine by replacing carburetor, that is, the replacement can be done as it is on the car.

After the cam change, it may be sufficient only to adjust the rocker arm clearance.

In this case, it is better to remove rocker arm and put camshaft drive sprocket temporaly to the adopter of chain guide upper.

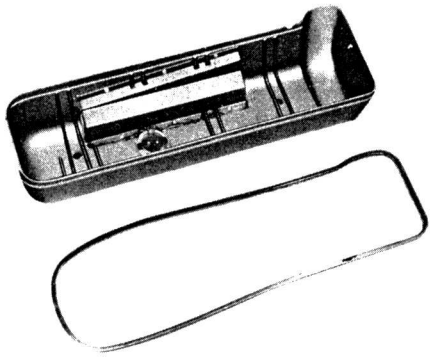


1-17 RELATIVE PARTS FOR CAMSHAFT DRIVE CHAIN



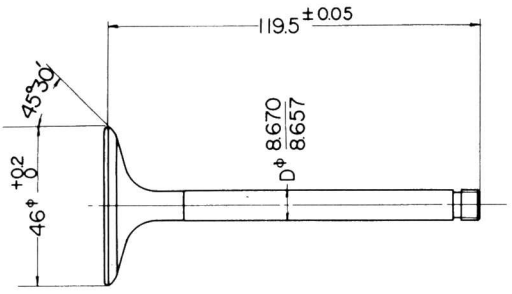
1-18 FRONT COVER

1-19 ROCKER COVER

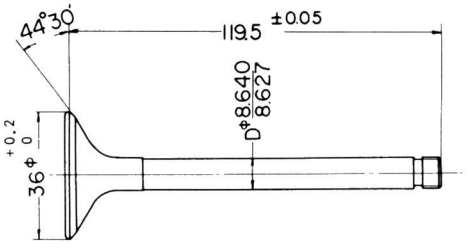


Crank case air pollution control device is installed.

1-20 VALVES



Valve Intake



Valve Exhaust

1-21 VALVE SPRINGS

		Outer Spring	Inner Spring
Mean Coil Diameter		30.4 mm (1.19 in)	21.25 mm (0.83 in)
Free Length		48.4 mm (1.90 in)	49.7 mm (1.95 in)
Installing	Length	41.2 mm (1.61)	39.2 mm (1.54 in)
	Load	32.3 kg (71.2 lb)	13.3 kg (29.3 lb)
Lift		11.6 mm (0.45 in)	11.6 mm (0.45 in)
Lifting	Length	29.6 mm (1.16 in)	27.6 mm (1.08 in)
	Load	76.4 $^{+2.0}_{-4.0}$ (168.4 lb)	29.9 $\pm$1.8 kg (65.9 $\pm$3.3 lb)

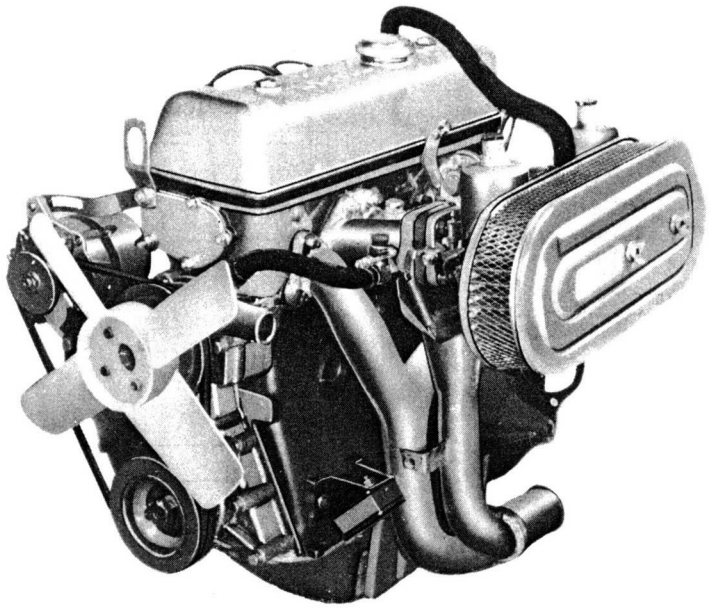
Double valve spring are used in order to prevent the serging of the valves.

1-22 OIL PUMP

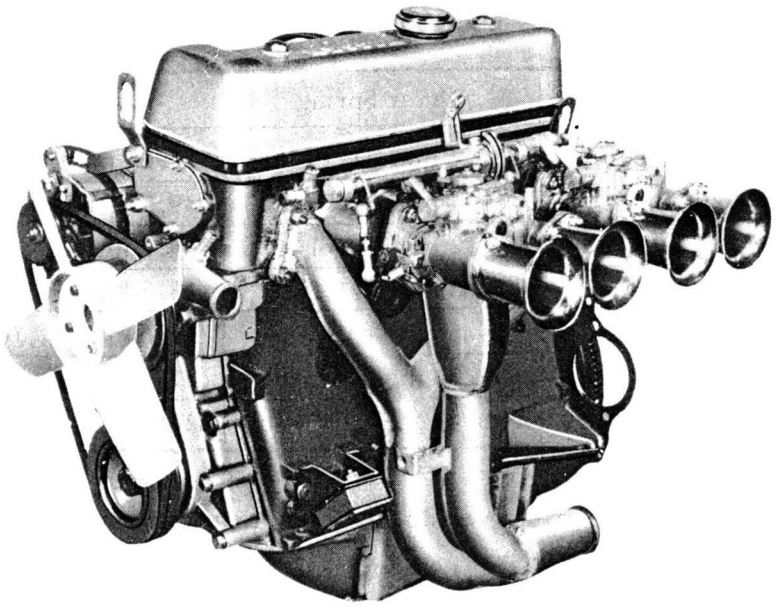
The pumping capacity has been increased by increasing the thickness of

1-23 CARBURETOR

On this engine, SU twin carburetor has been equiped as standard and, Solex carburetor can be equiped optionally.



At the timer of changing carburetor from SU to Solex, the camshaft and intake manifold should be changed at the same time. (Refer to item 1-13.)



a) SU CARBURETOR

HITACHI HJG46 Type carburetor will be equipped in the near future. This carburetor is newly developed having 46 mm (1.8110 in.) diameter and the car equipped this carburetor will be set the pressed steel oil pan and the air cleaner increased in the filter area.
Detail informations of this carburetor will be given after three manths in the NISSAN SERVICE JOURNAL.

b) SOLEX CARBURETOR

Type 44PHH Carburetor is a Solex Carburetor developed for mounting on, in addition to general motor vehicles, sports cars and racing cars requiring severe and high performances.

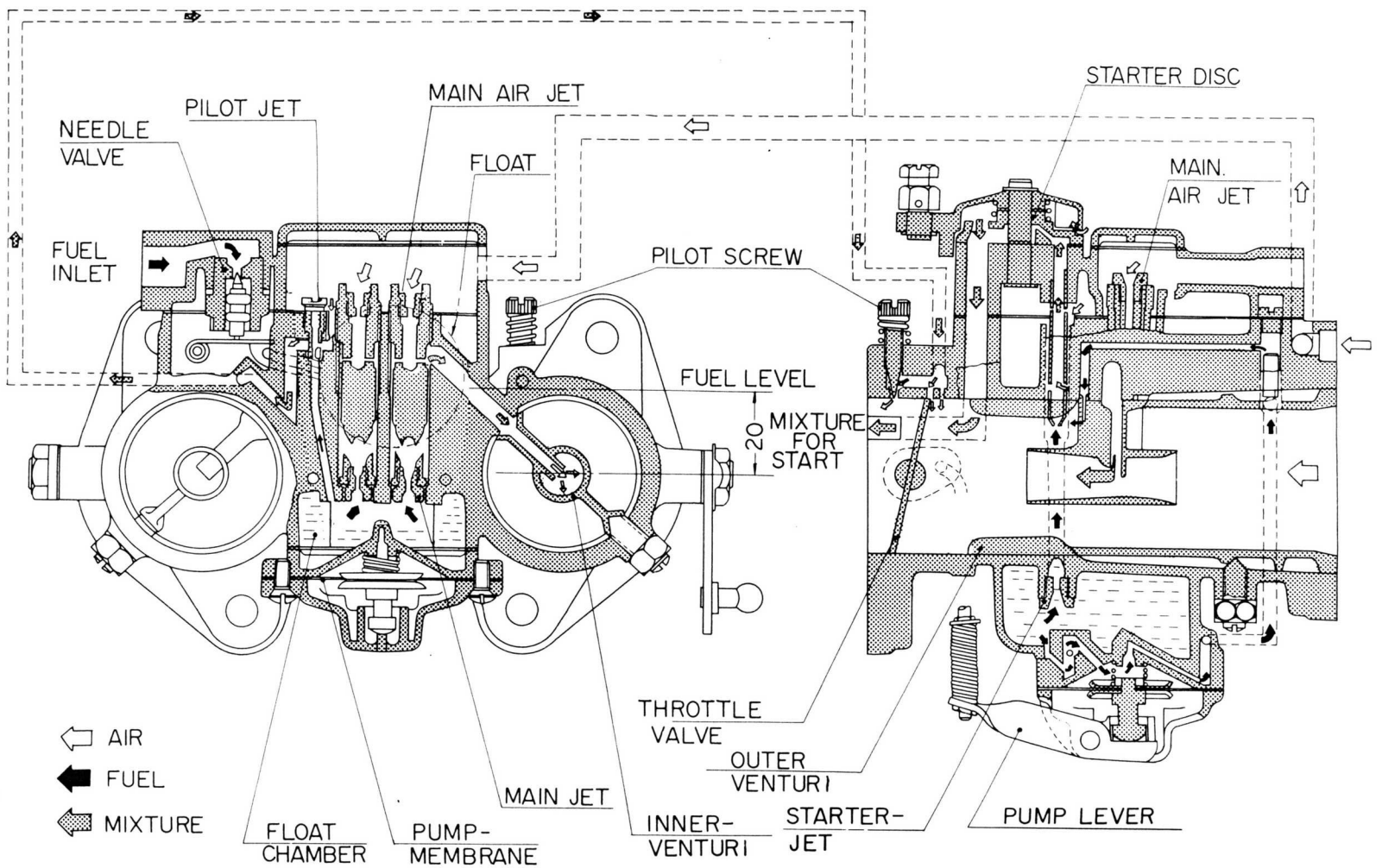
Its outstanding features are as follows:

1. Twin-bodies Carburetor
   So-called Twin-Choke Carburetor, with two suction parts embodied in one carburetor compactly.
2. Durable against inclination
   Designed to let it fully maintain its performances even at excessive inclinations of the fuel level (from lateral turning of the car to quick acceleration). To be more concrete, float hinge is installed at a position free from lowering in performances even at sharp lateral turnings by installing jets at the center part and making the float to the twin bodies type.
3. High in suction efficiency
   Stater is employed for the starting system instead of choke valve to improve suction efficiency.
4. Exchangeable Venturi and Air funnel
   Venturi and air funnel are exchangeable, allowing this carburetor to be a versatile type usable on any types of engines.
5. Easy to adjust
   Major jets are installed concentrated on the center, and can be easily exchanged by removing the jet chamber cover.
6. Equipped with Membrane system of acceleration pump
   Free from causing defective operation due to wear or solidifying, in contrary to piston system.

(1) Explanation on Fuel system diagram

This carburetor is designed to obtain a most optimum spray of mixed gas by combining fuel sucked in by the engine and air in a most optimum ratio, by appropriately combining adjusting parts. Being a twin-choke carburetor, all functional parts are installed in twin, except for float chamber, acceleration pump and starter, which are installed one each but supplies fuel to both sides.

44PHH FUEL FLOW CHART



(1)-1 Slow system

In idling, the mixed gas of the fuel measured at the pilot jet (3) and air measured at the pilot air jet is adjusted by the pilot screw (7) and supplied from pilot outlet. Open the throttle valve slowly, and the mixed gas starts coming out from the by-pass, too. By-pass controls connection from the low-speed.

(1)-2 Medium- and High-speed system

Open throttle valve further, and suction air increases too much and the gas becomes too thin with the fuel from the by-pass only that the fuel will start coming out of the main nozzle. Shifting from by-pass to main nozzle is further improved by the action of the venturi leak hole so that a very smooth shifting from low speed to high-speed can be obtained. In medium- and high-speeds, the fuel is, after being measured at the main jet (11), mixed with the air entering air bleed pipe (5) after being measured at main air jet (4), at the bleed hole, and supplied into choke bore from the nozzle of inner venturi part (12). The density of mixed gas can be adjusted by either changing the size of main jet (11) or changing main air jet (4).

(1)-3 Starting

Pull the stater button of Dash-board (equivalent to general choke button). Starter disk (8) opens by starter lever and the fuel required for starting (measured at starter jet (15)) will be supplied, after being mixed with air, to the engine. At this moment, it is important to avoid pressing accelerator pedal, which will open throttle valve and prevent the engine negative pressure from working into the starter passage effectively.

(2) Explanation on functional parts

(2)-1 Pilot screw

This Screw adjusts the density of mixed gas at idling. To be more precise, it adjusts the amount of mixed gas of the fuel from pilot jet and air coming from pilot air jet, and, by returning the screw from total close, the amount of mixed gas sucked into the engine can be increased (made richer, in actuality.).

(2)-2 Accelerator pump

When accelerator pedal is pressed sharply (Sharp acceleration time), it works and improves acceleration. At sharp acceleration, the fuel to the main system temporarily causes lag against the speed of air being sucked, and this lag is compensated by this accelerator pump. Although there is only one inlet check valve on the accelerator pump, the fuel passage is divided, just before reaching the outlet check valve, into two and each these leads, via respective outlet check valve, to 0.3 ø pump jet provided at one part of inner venturi, from where fuel is shot out.

(2)-3 Starter jet

Starter jet measures, when the starter disk is opened, the fuel necessary for starting.

(3) Method of Adjustment

(3)-1 Idling

Start adjusting after the engine is fully warmed up. Also, be sure, when two carburetors (4-cylinder engine) are equipped, to start adjusting after confirming that throttle valves of all carburetors are opened in unform degree. For this, adjust all throttle valves so that they can fully close under the condition of all throttle stop screws being loosened. Then, return each pilot screws for about one round from total close, screw throttle stop screw in a little and let engine start. Then, after setting engine r.p.m. to about the required idling r.p.m. by throttle stop screws, set it to the highest r.p.m. by opening and closing each pilot screws for about 1/4 rounds separately. After obtaining a little higher engine r.p.m. by doing so, set it to the required idling r.p.m. again by throttle stop screws. Repeat this operation 2 ~ 3 times, and the required idling can be obtained. (Idling r.p.m. 700)

(3)-2 Medium- and high-speed

First, decide venturies. The size of venturi depends on the engine capacity or engine r.p.m. for maximum power. For racing cars largely requiring high speeds, larger venturi is required; but, for general motor vehicles, it is recommended to employ venturi of smaller diameter, instead of larger ones, and increase torque at total-open low-speeds, for easy car running. Therefore, it is necessary to choose two sizes of venturi, one for normal operation and the other for high output, and to decide, for each of them, the most optimum main jet, mainair jet, etc. Make rough adjustment by main jet, and fine adjustments by main air jet. It is necessary to decide the size of air funnel, at the same time.

(3)-3 Accelerator pump

Accelerator pump works for 30 % of the throttle valve opening, by accelerator pedal pushing, beginning from the position where the pedal is first pushed down. It is important that the pump lever is contacting the membrane when the throttle valve is opened full. Failing the pump lever to close full and leaving openning there will result in no acceleration at pedal pushing.

(4) Cautions

(4)-1 Carburetors are shipped to the customer after being fully tested and decided at the maker's factory; so, do not re-adjust them without proper reason. (except for adjustment for tuning up.)

(4)-2 Make carburetor adjustment, only after confirming that

there is no troubles on other than the carburetors.

(4)-3 Make disassembling, erection, etc. with utmost care. Cleaning inside preferably to be made by gasoline and air compressor.

1-24 STARTER MOTOR

The starter motor for U20 engine has been changed from HITACHI MAKE to MITSUBISHI MAKE.

2. CHASSIS

2-1 CLUTCH ✳

Pressure force of the pressure plate has been increased from 465 kg (1025.1 lb) to 600 kg (1322.7 lb).

2-2 TRANSMISSION ✳

This transmission is newly developed 5 speed with over drive gear and devided type. (TYPE FS5C71A)

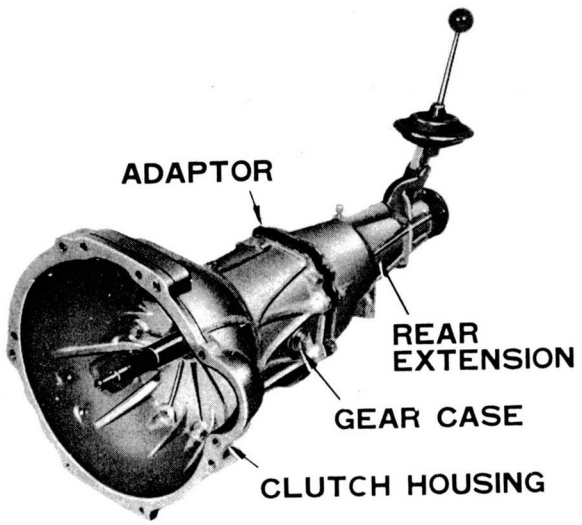
The clutch housing, gear case and rear extention can be easily devided, moreover, as the gear assembly is fixed to the gear case with the adaptor, the gear assembly can be easily taken out from the gear case.

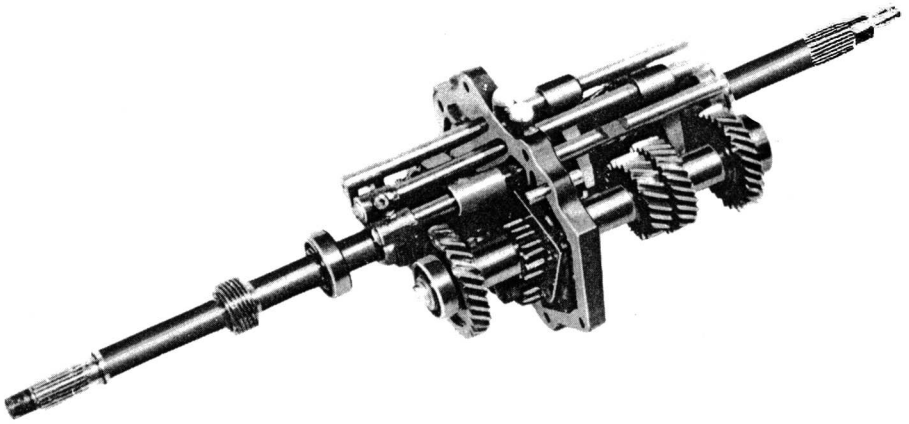
The front cover of the transmission is constructed in a body to the clutch housing and the synchronizing method is servo type as same as former one.

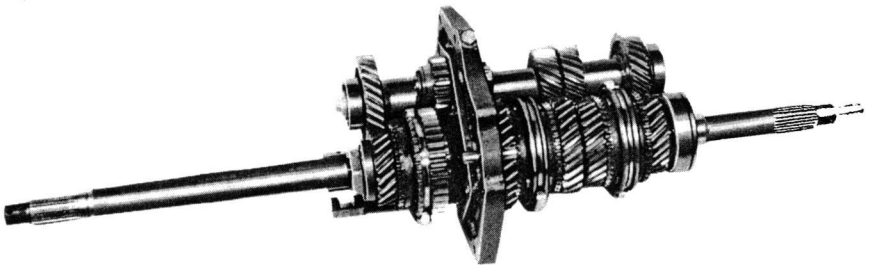
When disassembling the gear assembly, it is better to fit the adaptor to the vise.

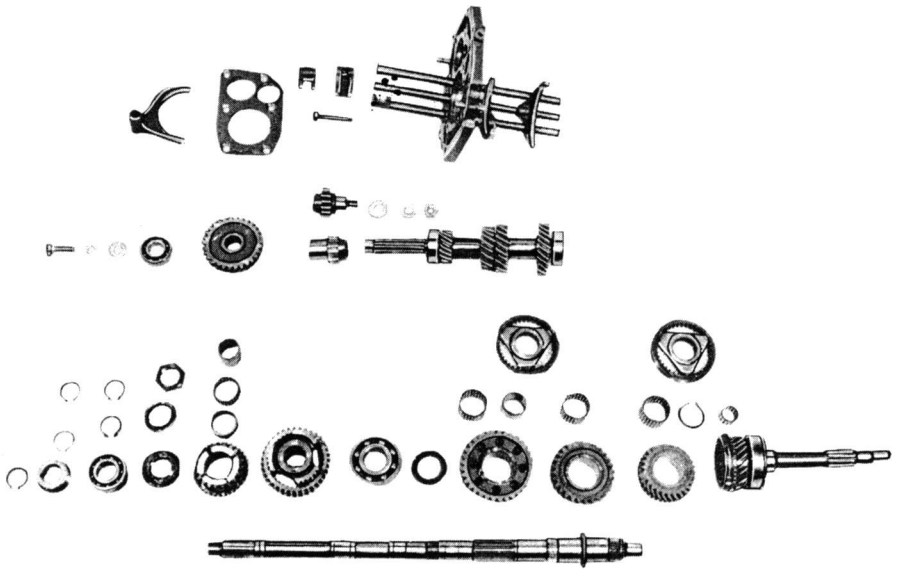
In order to pull out the bearing of the main shaft, a special puller with longer arm should be needed.

The end play of the counter gear shaft and main drive shaft should be kept as possible as small by selecting proper thick shim and washer in the front side of the gear case.



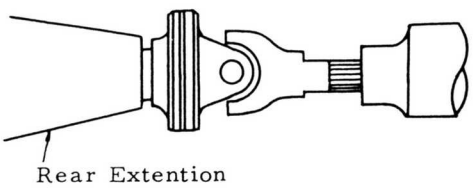






2-3 PROPELLAR SHAFT ✳

The length has been extended from 760 mm (29.921 in.) to 838 mm (32.992 in.) and both end of propellar shaft have been changed to flange type.



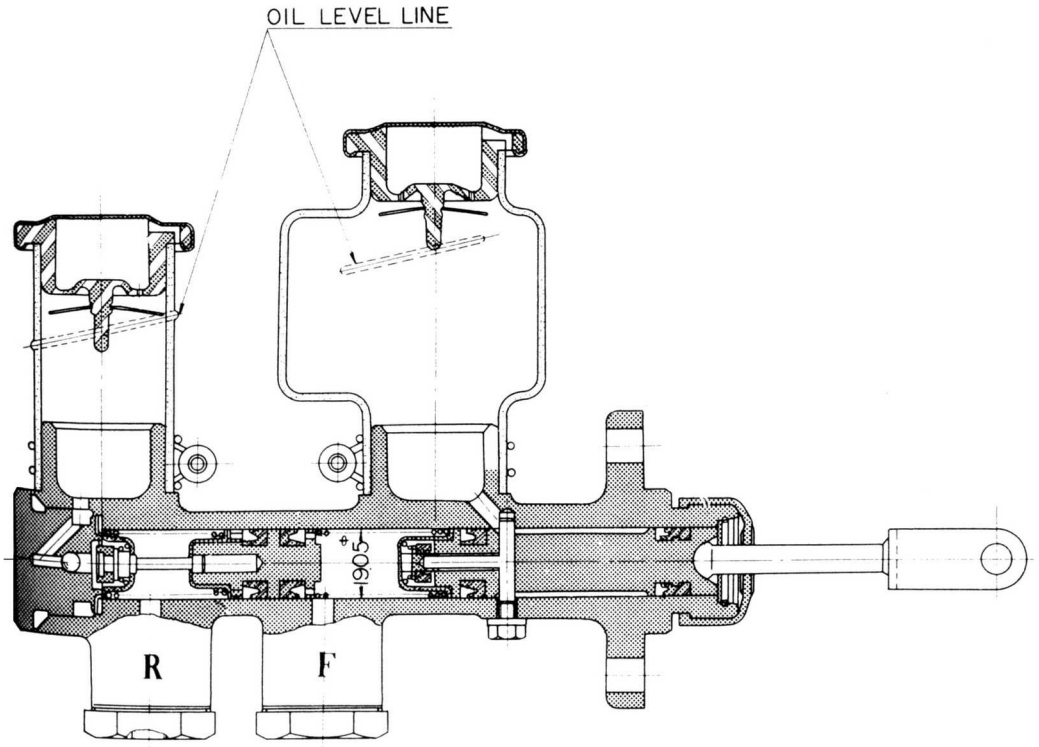
2-4 FINAL DRIVE GEAR ✳

The differential gear for SR311 is same to the SP311 except gear set.

Part Name	Part No.	Remarks
Gear Set	38100 77700	37/10
Ass'y Diff.	38300 25500	3.700

2-5 BRAKE MASTER CYLINDER

Tandem type master cylinder has been installed. Front and rear brakes are applied independently by this master cylinder and even when



one brake fails to operate caused by the leak of brake fluid, another brake can be operated and the car stops safely.

In relation to the adoption of the tandem master cylinder, the stroke of the brake and clutch pedal have been increased from 130 mm to 140 mm,

In relation to adoption of the tandem cylinder, the stop lamp switch has been moved to the brake pedal bracket. This switch is mechanical type.

2-6 BRAKE DRUM

In order to elevate cooling efficiency of the brake drum, newly designed brake drum with aluminum fin has been adopted.

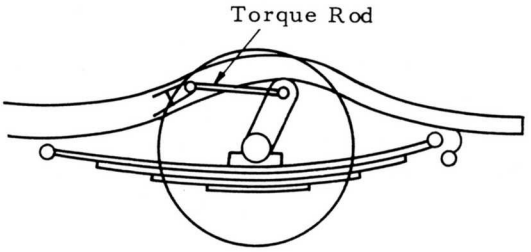
2-7 DISC WHEEL

In order to elevate the running stability of the car at high speed, the size of the rim has been increased.

4-JX14 ——→ 4 1/2-JX14

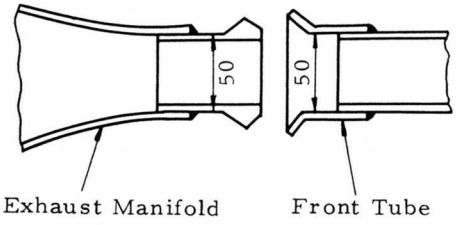
2-8 SUSPENTION

To avoid wing-up movement, the torque rod has been newly installed.



2-9 EXHAUST FRONT TUBE ✳

As the diameter of the exhaust manifold has been enlarged, the end of the front tube has been also enlarged.



2-10 RADIATOR ✳

To elevate the cooling efficiency, the radiator fin has been changed.

The position of radiator cap has been moved to radiator upper tank from the engine. But the position of reservoir tank has not been moved.

2-11 BATTERY

50A.H. (2SMB TYPE) battery has been equipped.
Only SP311-U has been equipped N41 (40A.H.)

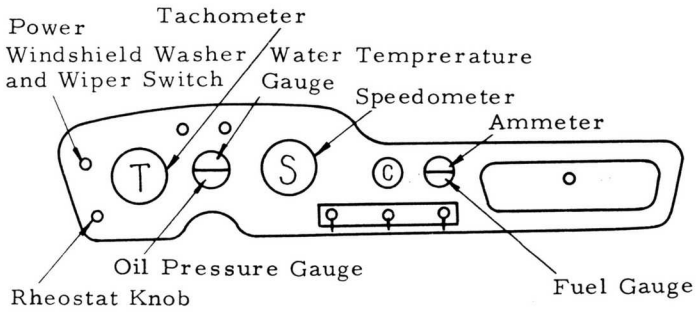
3. BODY

3-1 SEAT BELT ANCHORAGE ✳

To attach three point safety belt, two more anchorages have been installed to the wheel house side and back panel.

3-2 INSTRUMENT PANEL

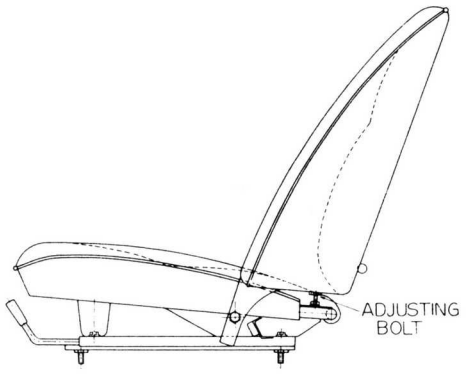
The indication of the speedometer has been raisen to 240 km/h(150M/H) and the color zone of the tachometer has been raisen (red 7000 ~ 8000 r.p.m., yellow 6500 ~7000). Unification of the oil pressure and water temperature gauge, and ammeter and fuel meter have been done. However the color zones of tachometer for 1.6 ℓ car have not been changed.



3-3 TRIM

a) Seat

To obtain more comfortable feeling of the seat, the shape of seat has been changed and the seat back inclination has became to be adjustable ±5°.



b) Sunvisor

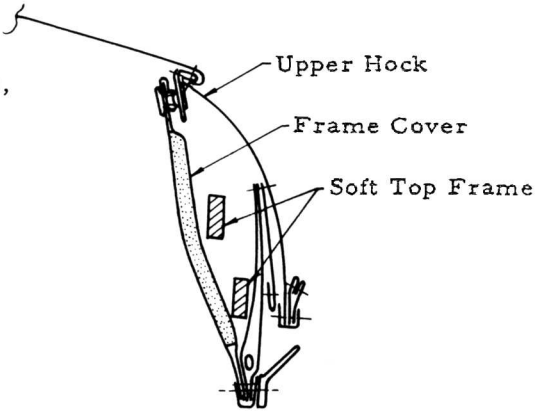
The sunvisor has been newly equipped on both driver and other side.

c) Safety Belt

Three point safety belt has been newly equipped.

d) Soft Top Frame Cover

In order to avoid the impact when driver's head crashed on the soft top frame, urethan paded frame cover has been newly atached. When folding down the soft top, upper hook of the frame cover should be unhooked firstly.



e) 4 way flasher (OPTIONAL)

The 4 ways flasher has became to be able to attach to the SPORTS CAR Series in order to inform the troubles of the car against the other car promptly and to protect the car in trouble from rear end collision by other car, with flashing the 4 lights (Front and Rear directional), at the same time. The switch for this flasher is located under the instru - ment panel.

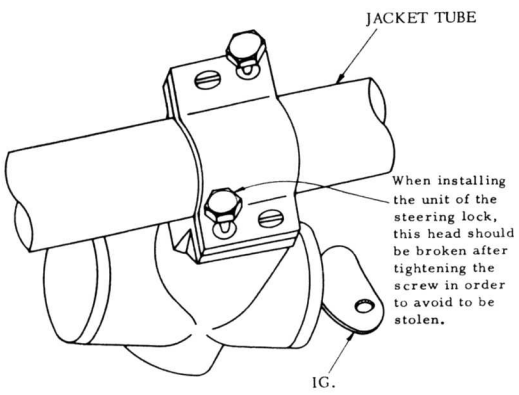
f) Head Restraint (OPTIONAL)

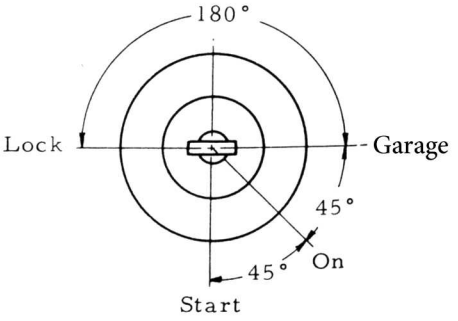
In order to protect the occupants from the injury at a rear end collision, the head restraint have become to be able to attach on the seat back with 3 bolts optionally.

3-4 CONTROL

a) Steering Lock

The steering can be locked only when the key is pulled out in the lock position.





Key Position

This lock has the construction which the spindle projects into the steering shaft and locks the shaft perfectly.

b) Throttle Control

Engine revolution can be controled by pulling the knob which is linked to the accel pedal arm.

c) Power Windshield Washer

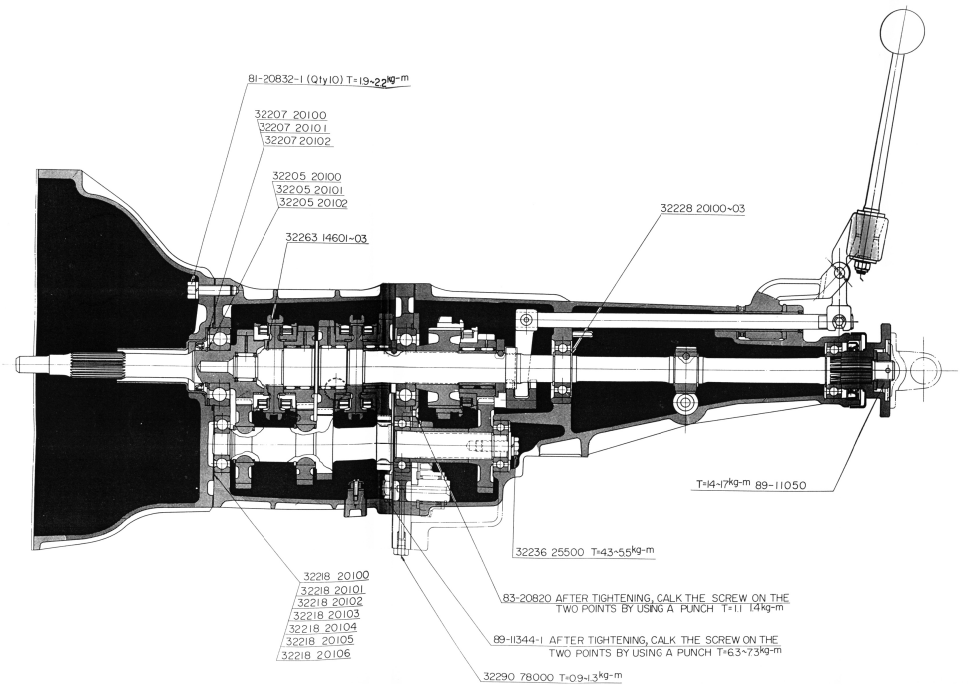
Instead of manual windshield washer pump, power windshield washer pump has been adopted. In relation to this, the tumbler switch for wiper is combined to the power windshield washer switch.

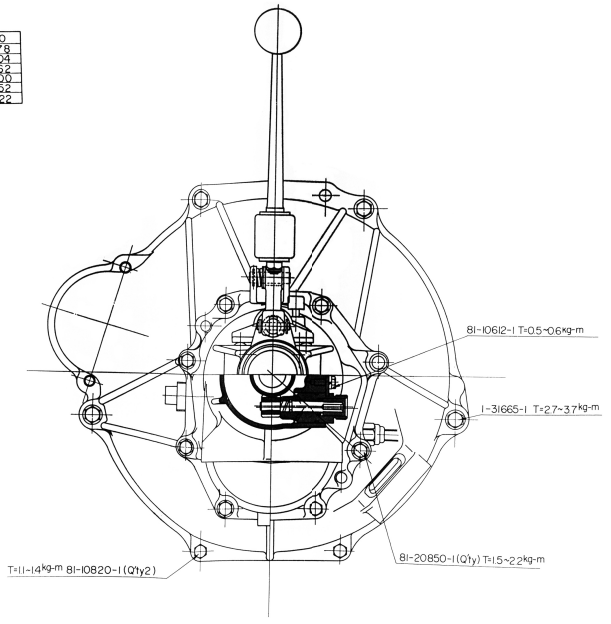
d) Door Lock

Inside handle has been changed to pulling type and the lock system has been changed to knob lock type.

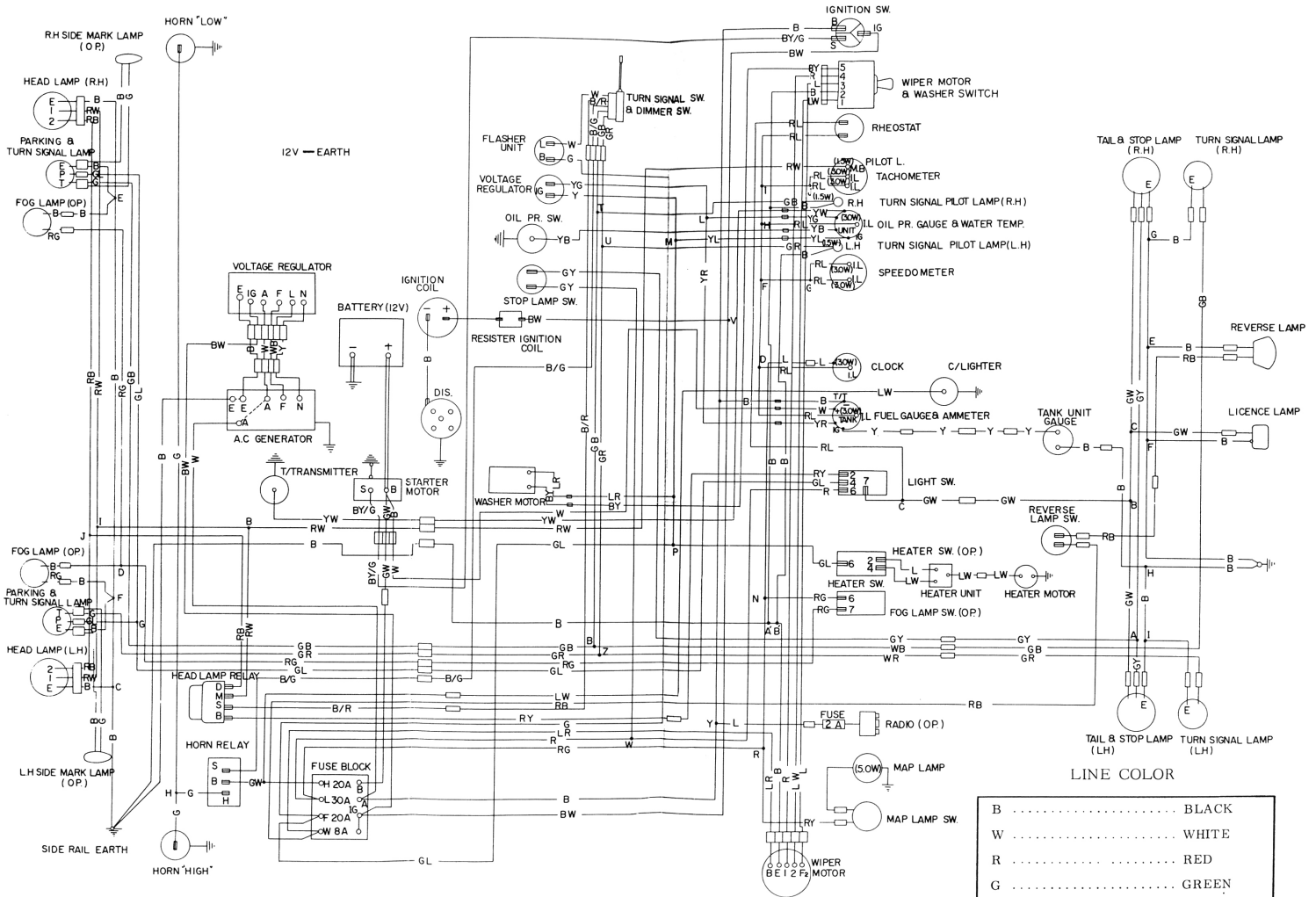
TRANSMISSION TYPE FS5C71A

GEAR RATIO	
1ST	2.678
2ND	1.704
3RD	1.262
4TH	1.000
5TH	0.852
REV	2.922





DATSUN SPORTS WIRING DIAGRAM



OP ..... OPTIONAL PARTS

LINE COLOR

B	BLACK
W	WHITE
R	RED
G	GREEN
Y	YELLOW
L	BLUE