SERVICE BULLETIN

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INTRODUCTION OF R, H20, H30 ENGINE IMPROVEMENT

NISSAN MOTOR CO., LTD.

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SPECIFICATIONS
SP66—013

PREFACE

For standardizing the screw threads of the vehicle to Japanese Industrial Standard, Metric system has been newly adopted for R(1600 cc), H20 (2000 cc), H30(3000 cc) Engine in place of Inch system, applied from under mentioned engine number.

Hereafter Metric system will be adopted for all the screw threads of engine, chassis and body of Nissan's vehicle when,

1. Model is changed.
2. New unit is adopted.
3. New model is produced.

As for R, H20, H30 Engine, Inch system still remains at the following particular parts.

1. Cylinder head bolt
2. Connecting rod bolt
3. Exhaust manifold flange bolt (to fix exhaust tube)
4. Cartridge type oil filter center bolt

The adoption of Metric system is almost submitted to next regulation (Each screw threads of Inch system has been converted to that of Metric system).

Screw threads	1/4 inch	→	6 mm
	5/16 inch	→	8 mm
	3/8 inch	→	10 mm
	7/16 inch	→	10 mm (Exception: Cylinder head bolt)
	1/2 inch	→	12 mm

Therefore be careful in case of dealing with the engine repair.

In connection with the change of the screw threads from Inch system to Metric system, the crankshaft supporting system for R, H20 Engine is changed from 3 bearings system to 5 bearings system to make more reliable engine.

Therefore the new engine gives more silent and flexible all-round performance, especially in high speed running.

This issue was written for the purpose of introducing the major alternation of R, R20, H30 Engine. As for minute parts, refer to the Spare Parts Bulletin No. G-67-80.

APPLIED FROM: In the middle of January 1967 Production.

E/# R-40001
(L)SP311, RL411 Series

H20-60001
(L)130 Series, C240 Series, (L)41

H30-10001
C80 Series

CONTENTS

I METRIC SYSTEM (R,H20,H30 ENGINE)

(Refer to the Spare Parts Bulletin No. G-67-80.)

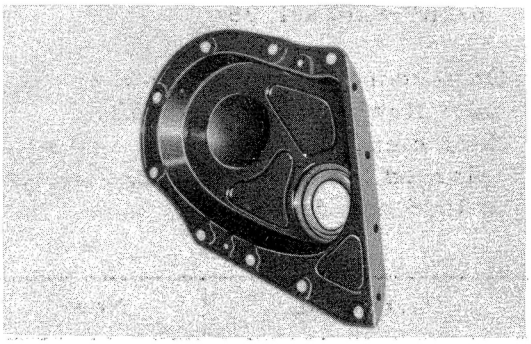
Each screw threads of inch system has been converted to that of metric system as shown following example.

Inch		Metric		
3/8"	⟶	M10	x	1.25
Nominal size (inch)		Nominal size (mm)		Pitch (mm)

I—A PARTS FITTING TO CYLINDER

1. *Front Cover*

As the bolt front cover to cylinder block is enlarged from 1/4 inch to M8 x 1.25, it's clearance hole of front cover and gasket is also enlarged from 7.1mm dia. to 9.0 mm dia.



MODEL H20

Part Name	New	Former	Remark
Ass'y front cover (R)(H30)	13500 66600	13035 15800	
Ass'y front cover (H20)	13500 78200	13035 38700	
Ass'y front cover (H30)	13500 67000	13035 61700	
Gasket front cover (R, H20, H30)	13520 78200	13044 32200	
*Bolts front cover to block (R, H30)	81-20845(5) 81-20840(2) 13541 66600(2)	1-11410-1(9)	1/4"→M8 x 1.25
Bolts front cover to block (H20,H30 Truck)	81-10814(9)	1-11410-1(9)	1/4"→M8 x 1.25
Spring washer (R, H20, H30)	89-15138	9-15114-1	1/4"→8
Stud cover to oil pan	82-26616-1	2-24416-1	1/4"→M6

*New bolts consist of three kinds of ones. ( ): pieces

〔Interchangeability〕 Impossible

2. *Oil Pan*

Bolts oil pan to block and to front cover, or nuts oil pan to front cover

are changed from 1/4 inch to M6 x 1.0. But the clearance holes of oil pan and oil pan drain plug are not changed.

〔Interchangeability〕 Possible with bolts or nuts and washers.

3. *Flywheel*

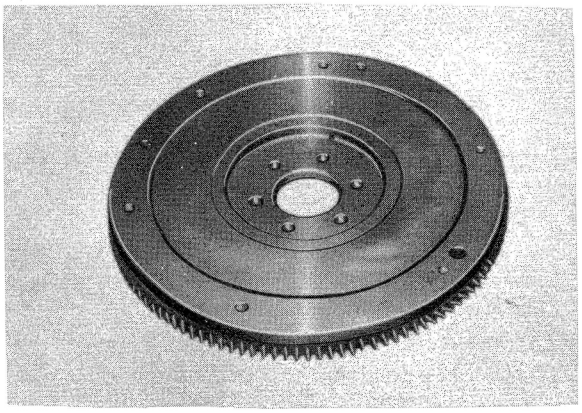
Bolt flywheel to crankshaft

3/8"→M10 x 1.25

Bolt clutch cover to flywheel

5/16"→M8 x 1.25

On account of the change of bolts flywheel to crankshaft, their clearance holes are enlarged from 10 mm dia. to 10.5 mm dia.



MODEL H20

Part Name	New	Former	Remark
Flywheel (R)	12311 18810	12311 14600	
Flywheel (H20)	12311 78200	12311 38700	
Flywheel (H20 Truck)	12311 74700	12311 38900	
Flywheel (H30)	12311 66600	12311 61000	
Flywheel (H30 Truck)	12311 67000	12311 61700	
Bolt flywheel to crankshaft	81-34025	1-34625	3/8"→M10 x 1.25

〔Interchangeability〕 N→F: Possible with bolts
F→N: Impossible

For the engine with automatic transmission, the clearance holes of convertor drive plate and adaptor are changed.

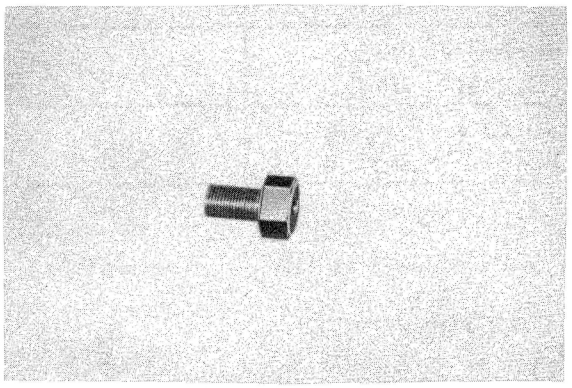
Bolt drive plate fix 3/8"→M10 x 1.25

4. *Drain Cock*

Drain cock is changed to drain plug, but screw threads of the drain plug is not changed. Only the hexagon head of the drain plug is of Metric system.

〔Interchangeability〕

Possible



5. *Fuel Pump*

Studs for fuel pump become of Metric system, but their clearance holes of fuel pump are not changed.

Stud and nut or bolt	5/16"→M8 x 1.25
Washer	5/16"→8 mm

〔Interchangeability〕 Possible

6. *Oil Filter*

Stud and nut	3/8"→M10 x 1.25
Washer	3/8"→10 mm

Center bolt of the cartridge type oil filter is not changed to Metric system and will remain Inch system hereafter.

〔Interchangeability〕 Possible

7. *Water Pump*

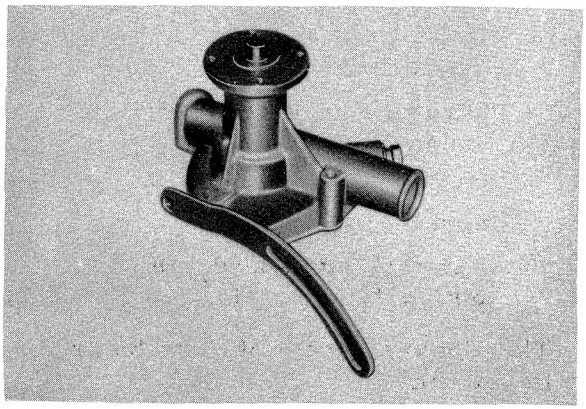
Stud and nut water pump

3/8"→M10 x 1.25

Bolt water pump to block

5/16"→M8 x 1.25

The shape of water pump body is also changed to increase its durability. But the clearance holes have the same diameter as that of former parts.



	Former	New
H20-Truck, R-Sports		
Water pump	21010 66000	→21010 78200
Adjust bar	11715 74000	→11715 74001
H20-Passenger		
Water pump	21010 66000	→21010 66001
Adjust bar	11715 73600	→11715 73601
R		
Water pump	21010 15800	→21010 18810
H30-Passenger		
Water pump	21010 66000	→21010 66001
Adjust bar	23174 66000	→11715 66000

H30

Water pump	21010 66000 → 21010 66001
Adjust bar	23174 61701 → 11715 61700

〔Interchangeability〕 Possible with above parts.

8. *Alternator*

Bolt (and nut) alternator to bracket	5/16" → M8 x 1.25
Bolt (and nut) bracket to block	3/8" → M10 x 1.5
Nut adjust bar to cylinder head	3/8" → M10 x 1.25

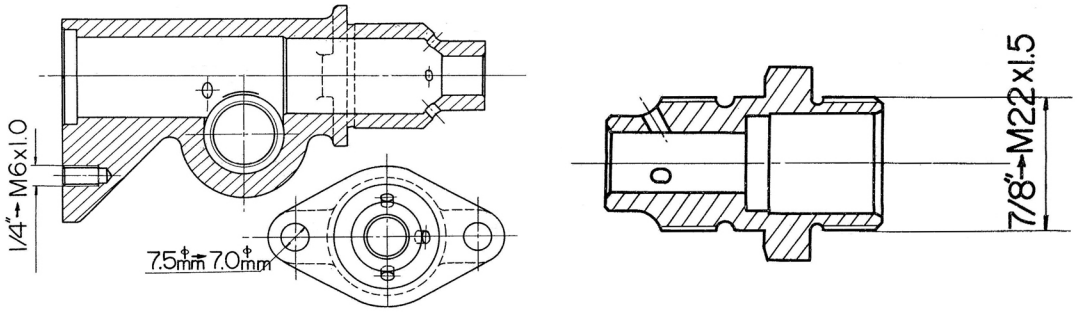
〔Interchangeability〕 Possible with bolts, nuts and washers.

9. *Distributor*

Bolt or nut support to cylinder block	1/4" → M6 x 1.0
Screw fixing distributor to support	1/4" → M6 x 1.0
Pan head eccentric advance screw	1/4" → M6 x 1.0
Ass'y sleeve speedometer pinion (R-Sports)	7/8" → M22 x 1.5

The clearance hole of distributor support is changed from 7.5 mm dia. to 7.0 mm dia.

Part Name	New	Former
Support distributor (R, H20, H30)	22178 73600	22178 71201
Support distributor (R-Sports)	22178 18810	22178 14600



Model SP(L)311 Distributor Support, Pinion Sleeve

〔Interchangeability〕 Possible with bolts or nuts, screws and washers.

10. Starter Motor

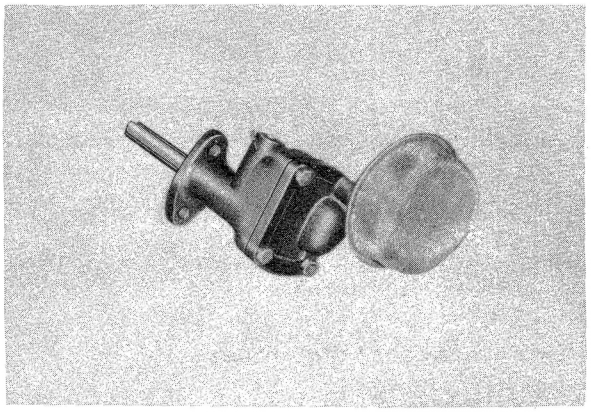
Bolt starter motor fix 3/8" → M10 x 1.5

The clearance holes of starter motor and engine rear plate are not changed.

〔Interchangeability〕 Possible with bolts and washers.

11. Oil Pump and Strainer

All the screw threads of the oil pump body are changed to Metric system.



Bolt cover to body

1/4" → M6 x 1.0

Bolt oil pump to block

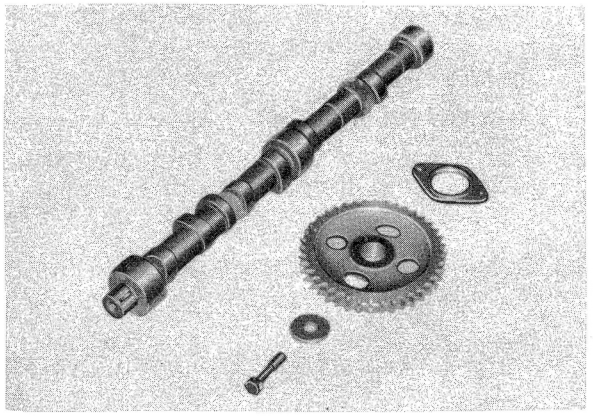
5/16" → M8 x 1.25

〔Interchangeability〕

Possible — New oil pump + New gasket / New oil pump + Former gasket } with bolts and washers

12. Camshaft

Bolt and key for camshaft gear, and screw set of locating camshaft plate are changed. The clearance holes of locating plate are also changed from 7 mm dia. to 6.6 mm dia.



MODEL H20

Bolt camshaft gear

3/8" → M10 x 1.5

Screw set

1/4" → M6 x 1.0

Washer camshaft gear 10 mm dia. → 10.5 mm dia.

Clearance hole of locating plate 7 mm dia. → 6.6 mm dia.

〔Interchangeability〕 Possible with gear, key, bolt, set screw and washers.

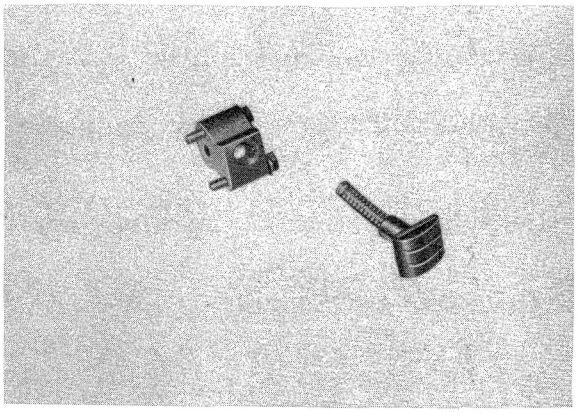
13. Chain Tensioner

Screw set chain tensioner

1/4" → M6 x 1.0

〔Interchangeability〕

Possible with set screw.



14. Engine Mounting

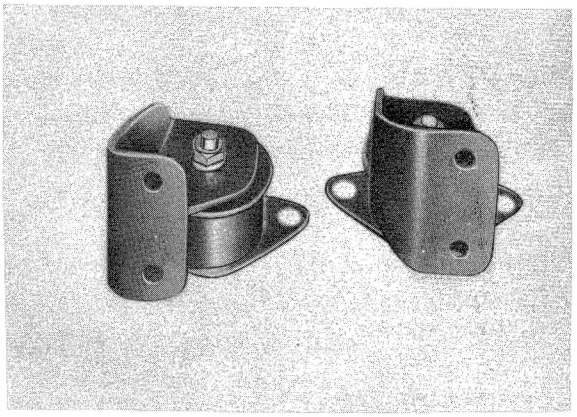
Bolt bracket to cylinder block

3/8" → M10 x 1.5

Bolts bracket to member are not changed.

〔Interchangeability〕

Possible with bolts and washers.



MODEL H20

15. Transmission Case

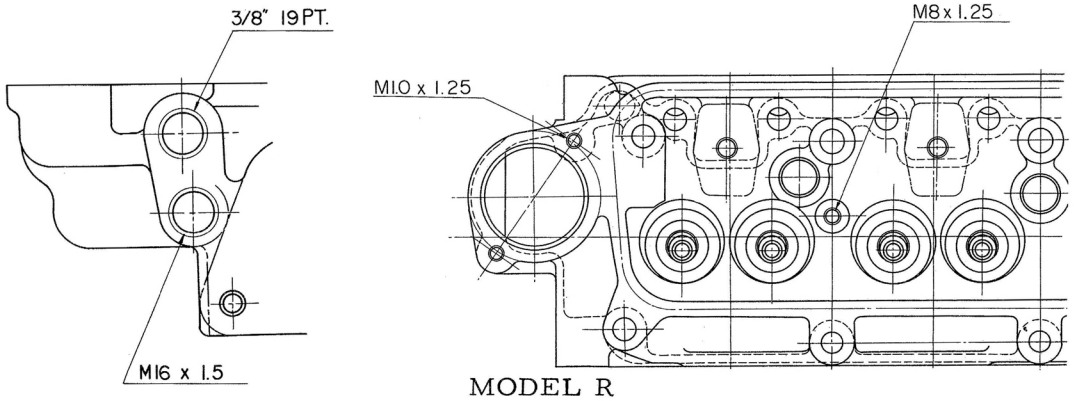
Bolt T/M case to engine block	3/8" → M10 x 1.5
Bolt and nut T/M case to engine rear plate	3/8" → M10 x 1.5

(Interchangeability) Possible with above parts and washers.

I –B CYLINDER HEAD PARTS

Metric system is adopted for the greater part of the screw threads of the cylinder head. But any cylinder head part can almost be interchangeable with bolt, nut, washer and etc.

1. Cylinder Head



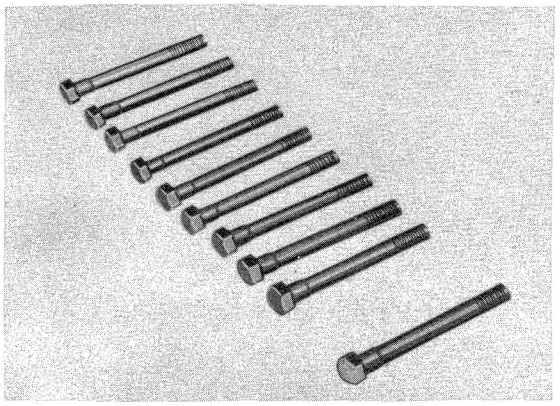
MODEL R

Stud and cap nut rocker cover	5/16" → M8 x 1.25	
Bolt or stud manifold	5/16" → M8 x 1.25	
Bolt water outlet (H20, H30)	5/16" → M8 x 1.0	(H20)
	1.25	(H30)
Stud water outlet (R)	3/8" → M10 x 1.5	
Stud adjust bar (R)	3/8" → M10 x 1.25	
Plug heater outlet hole	5/8" → M16 x 1.5	
Stud or bolt rocker bracket	7/16" → M10 x 1.5	

〔Interchangeability〕

Possible with above parts and valve gear.

The hexagon head of bolt cylinder head fixing becomes of Metric system, but the screw threads of it is unchanged.



Part Name	New	Former
Bolt cylinder head	11056 78200	11056 32200
	11057 78200	11057 32200

2. *Manifold*

The clearance holes of the manifold are same as that of former part. Only the hexagon head of the blind plug becomes of Metric system. But for 41 Series (H20) elbow vacuum connector is changed from 1/8" to 1/4". Inch system still remains at exhaust manifold flange bolt (to fix exhaust tube).

Stud or bolt manifold fix	5/16" → M8 x 1.25
Stud carburetor fix	5/16" → M8 x 1.25
Stud carburetor fix (H30)	3/8" → M10 x 1.5
Stud or bolt I/M to E/M (H20, H30)	5/16" → M8 x 1.25
Stud air cleaner support (H30)	5/16" → M8 x 1.25
Stud stove tube (H20, H30)	1/4" → M8 x 1.0
Screw machine counter weight head control (H20, H30)	N. 10 → M5 x 0.5

〔Interchangeability〕 Possible with bolts, nuts and washers.

3. *Carburetor*

For H20, H30 engine, stud and nut carburetor fixing are changed to Metric system. But for R engine, almost all the screw threads of throttle linkage are shifted from Inch system to Metric system. And screw threads of the bolt fixing air cleaner to carburetor is converted from 5/16 inch to M8 x 1.25.

Stud and nut carburetor to manifold	5/16" → M8 x 1.25
Stud and nut carburetor to manifold (H30)	3/8" → M10 x 1.5
Bolt air cleaner to carburetor (R)	5/16" → M8 x 1.25

〔Interchangeability〕 Possible with above parts and washers.

4. *Air Cleaner*

Bolt air cleaner to carburetor (R)	5/16" → M8 x 1.25
Bolt or nut air cleaner to support (H20, H30)	5/16" → M8 x 1.25
Bolt or nut air cleaner to support (H30 Truck)	5/16" → M6 x 1.0

〔Interchangeability〕 Possible with above parts and washers.

5. *Water Outlet*

Bolt water outlet to cylinder head (R-Sports)	3/8" → M10 x 1.5
Stud water outlet to cylinder head (R)	3/8" → M10 x 1.5
Bolt water outlet to cylinder head (H20, H30)	5/16" → M8 x 1.0

〔Interchangeability〕 Possible with above parts and washers.

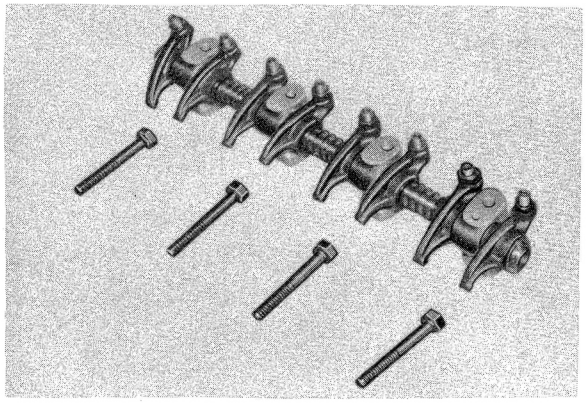
6. *Valve Gear*

Bolt rocker bracket (H20, H30)	7/16" → M10 x 1.5
Stud and nut bracket (R)	7/16" → M10 x 1.5
Screw set rocker shaft (No. 4)	5/16" → M8 x 1.25
Screw threads of valve rocker R/L	7/16" → M10 x 1.25
Adjust screw and nut valve rocker	7/16" → M10 x 1.25

In connection with the change of the rocker bracket bolt, its clearance hole of the rocker bracket is changed from 11.8 mm dia. to 10.8 mm dia.

〔Interchangeability〕

Impossible.



MODEL H20

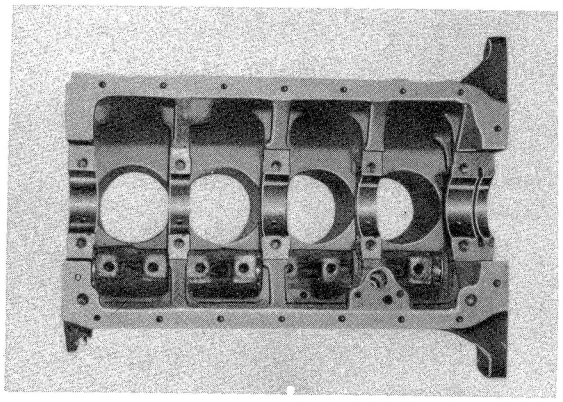
7. *Fan*

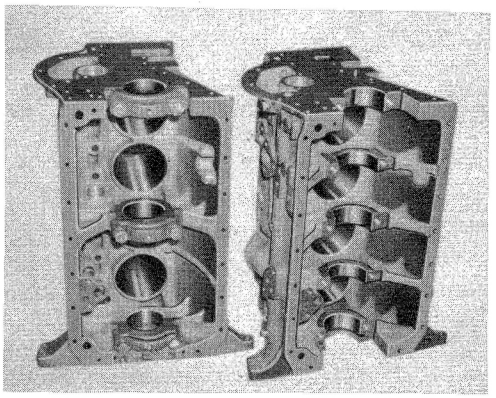
Bolt fan	1/4" → M6 x 1.0

〔Interchangeability〕 Possible with bolts and washers.

II 5 BEARINGS SUPPORTING SYSTAM (R,H20 ENGINE)

1. *Cylinder Block*



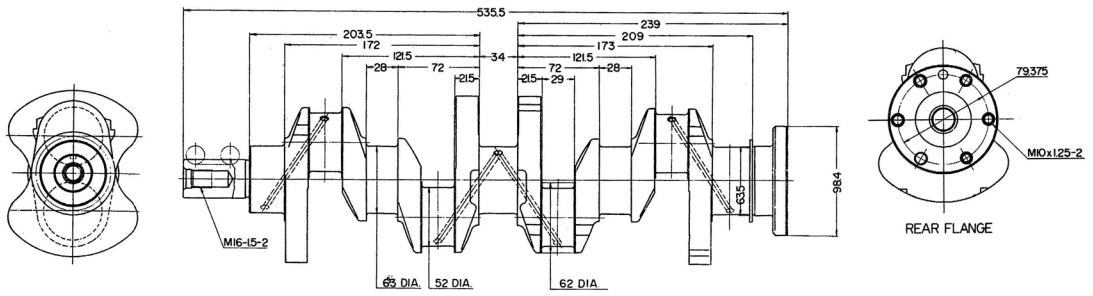


FORMER NEW

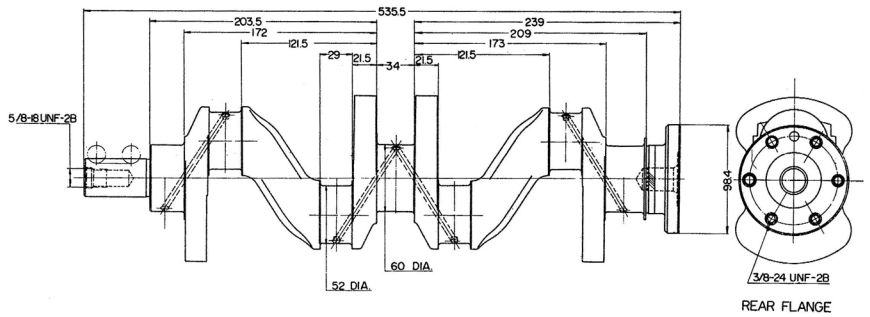
The crankshaft supporting system is changed from 3 bearings system to 5 bearings system. Which gives more smooth and quiet engine revolution.

2. *Crankshaft*

In connection with the adoption of 5 bearing system, diameter of journal of the crankshaft is 3 mm greater than the same parts of the former model.

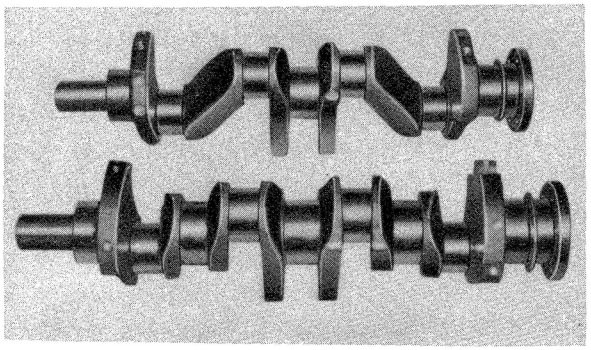


New (MODEL R)



Former (MODEL R)

FORMER



NEW

But connecting rod parts are not changed.

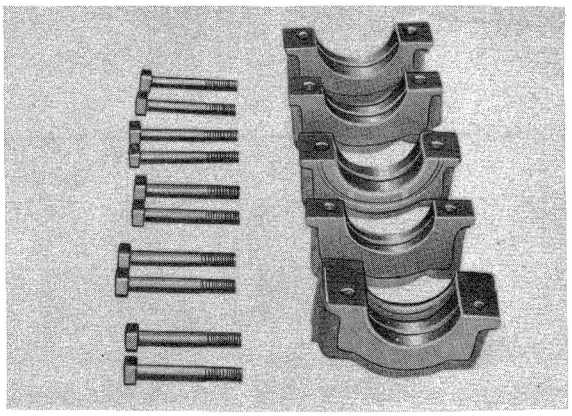
MODEL H20

Part Name	New	Former
Ass'y crankshaft (R)	12200 74710	12200 14600
Ass'y crankshaft (H20)	12200 78200	12200 71200
Oil seal crankshaft rear	12279 61000	12279 32200

〔Interchangeability〕 Impossible.

3. *Main Bearing Caps and Bearings*

Intermediate main bearing caps (#2, #4) are newly adopted.
The length of these caps is 22 mm. And the diameter of the crankshaft journal is increased from 60 mm to 63 mm, so that #1, #2, #3 caps are also changed and have the same measurement as that of H30 type engine.

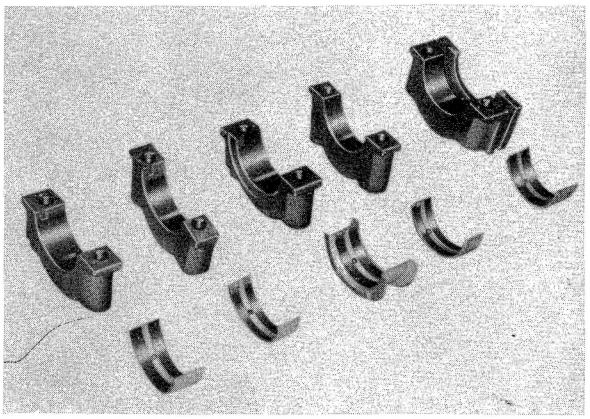


Part Name	New	Former
Cap main bearing #1	12282 78200	12282 38700
Cap main bearing #2, #4	12284 78200	-
Cap main bearing #3	12283 78200	12283 38700
Cap main bearing #5	12286 78200	12286 38700

〔Interchangeability〕 Impossible

Main bearings

The material of the main bearings are made of F770 metal.



MODEL H20

Part Name	New	Former
Set main bearing (R)	12207 78400	12207 73600
Set main bearing (H20)	12207 78200	12207 12200

〔Interchangeability〕 Impossible

Main bearing cap bolts

Main bearing cap bolts are changed from 1/2 inch to M12 x 1.75

4. *Bushing Oil Pump Drive Spindle*

Bushing oil pump drive spindle is changed owing to the change of the cylinder block.

Part Name	New	Former
Bushing oil pump drive spindle	15042 20100	15042 32200

〔Interchangeability〕 Impossible