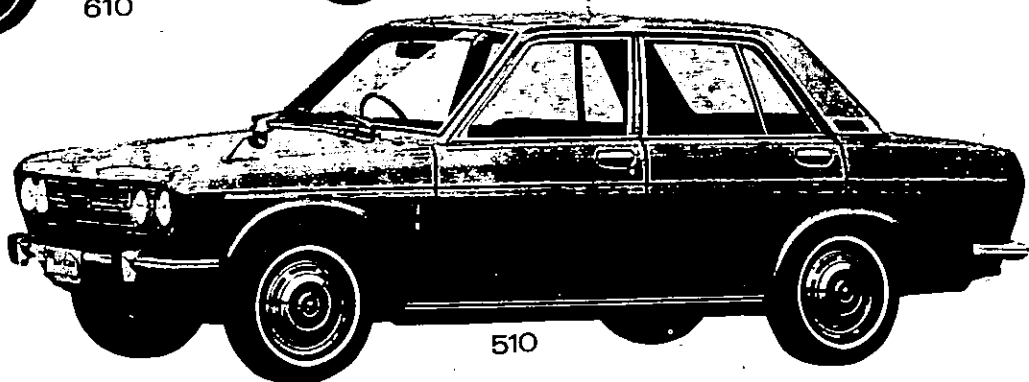
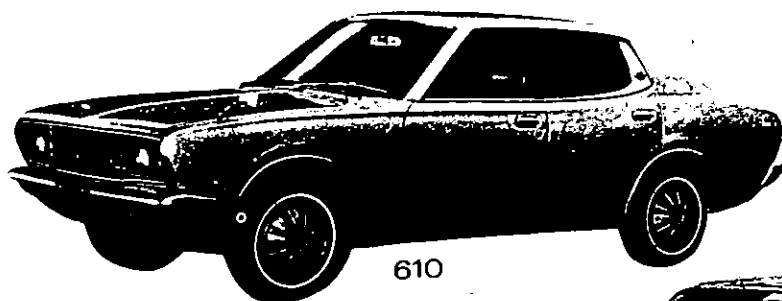




inter europe

WALKS TO THE WORLD

WORKSHOP MANUAL
for
510 series
(1300, 1400, 1600)
DATSUN
610 series
(160B, 180B)



COMPILED AND WRITTEN
BY
C.R.Newton

intereuropa

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History and Type Identification

YOUR MANUFACTURER:

The Nissan Motor Company was founded in 1933 under the name of Jidosha Seizo Co. Ltd. In 1934 the present title was adopted and during 1966 the company merged with Prince Motors - builders of the Skyline and Gloria cars.

With the head office and six main factories near Tokyo, Japan, other 'sister' plants are also in production in various countries throughout the world.

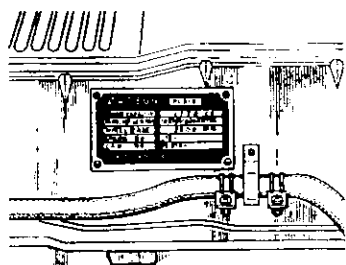
YOUR VEHICLE:

In the early days of the company's history, vehicles constructed were given the trade name DATSON which means SON of DAT: the initials of three of the financial backers forming the syllable DAT. To avoid confusion with a similar Japanese word, the name was eventually changed to DATSUN.

The various models covered in this Manual, together with alternative names used for the world markets, are listed below.

MODELS COVERED

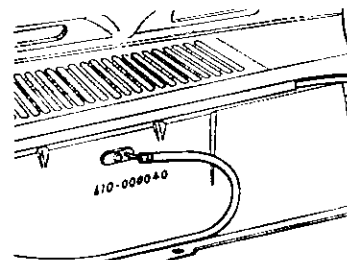
MODEL	ALTERNATIVE IDENT.	ENGINE FITTED	REMARKS
510 SERIES	Datsun 1300	1300 c.c., L.13	Superseded by 1400 c.c. model with L.14 engine.
510 SERIES	Datsun 1400	1400 c.c., L.14	Similar to 1300 c.c. car.
510 SERIES	Datsun 1600	1600 c.c., L.16	Similar to 1300 & 1400 c.c. car.
610 SERIES	Bluebird 160 B	1600 c.c., L.16	In some markets identified as 1600 SSS & 1800 SSS.
610 SERIES	Bluebird 180 B	1800 c.c., L.18	
C30 SERIES	DATSUN 1800	1815 c.c., G18	



Identification plate location



Engine serial and model number



Car serial number location

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Introduction

Our intention in writing this Manual is to provide the reader with all the data and information required to maintain and repair the vehicle. However, it must be realised that special equipment and skills are required in some cases to carry out the work detailed in the text, and we do not recommend that such work be attempted unless the reader possesses the necessary skill and equipment. It would be better to have an **AUTHORISED DEALER** to carry out the work using the special tools and equipment available to his trained staff. He will also be in possession of the genuine spare parts which may be needed for replacement.

The information in the Manual has been checked against that provided by the vehicle manufacturer, and any peculiarities have been mentioned if they depart from usual workshop practice.

A fault finding and trouble shooting chart has been inserted at the end of the Manual to enable the reader to pin point faults and so save time. As it is impossible to include every malfunction, only the more usual ones have been included.

A composite conversion table has also been included at the end of the manual and we would recommend that wherever possible, for greater accuracy, the metric system units are used.

Brevity and simplicity have been our aim in compiling this Manual, relying on the numerous illustrations and clear text to inform and instruct the reader. At the request of the many users of our Manuals, we have slanted the book towards repair and overhaul rather than maintenance.

Although every care has been taken to ensure that the information and data are correct **WE CANNOT ACCEPT ANY LIABILITY FOR INACCURACIES OR OMISSIONS, OR FOR DAMAGE OR MALFUNCTIONS ARISING FROM THE USE OF THIS BOOK, NO MATTER HOW CAUSED.**

Technical Data

	1300	1400	1600	BLUEBIRD 1600	BLUEBIRD 1800	BLUEBIRD 1800 ESTATE
Engine type	L.13	L.14	L.16	L.16	L.18	L.18
Overall length		4,120 (162.20)		4,215 (165.94)		4,280 (168.50)
Overall width		1,560 (61.42)		1,600 (62.99)		
Overall height		1,420 (55.91)	1,410 (55.51)	1,405 (55.31)		1,415 (55.71)
Turning circle dia. - metres (feet)	Superseded	10.2 (33.5)		10.6 (34.8)		
Track - front & rear	by 1400 c.c. car	1,270 (50.0)		1,290 (50.79)	1,310 (51.57)	1,330 (52.36)
Wheelbase		2,420 (95.28)		2,500 (98.43)		
Ground clearance (min)		215 (8.5)	210 (8.27)	185 (7.28)		
Weight (dry)	820 (1,808)	885 (1,951)	930 (2,051)	955 (2,106)	1,000 (2,205)	1,065 (2,348)
Fuel tank capacity		10.1 (12.1)		12.1 (14.5)		
Fuel consumption	35 (29.6)	33.2 (27.7)	28.2 (23.5)	28.2 (23.5)		
Maximum speed	150 (93)	150 (93)	160 (99)	160 (99)	165 (103)	

NOTE: mm. (in.), kg. (lbs.), km./h. (m.p.h.), cubic metres (cu. feet), imp. gals. (U.S. gals.), miles/imp. gal. (miles/U.S. gal)

Engine

INTRODUCTION
ENGINE - Removal
ENGINE - Dismantling
ENGINE - Inspection and Overhaul
VALVES, VALVE GUIDES, VALVE SEAT INSERTS
CAMSHAFT AND CAMSHAFT BEARINGS - Checking
CYLINDER BLOCK
PISTONS AND CONNECTING RODS

INTRODUCTION

The 1400, 1600 cc and 1800 cc engines are four cylinder in-line units with a single overhead camshaft and fully balanced five bearing crankshaft. The valves are operated through rockers which are directly activated by the cam mechanism.

The crankshaft is a special steel forging, with the centre main bearing equipped with thrust washers to take up the end thrust of the crankshaft. The special aluminium pistons are of the strut construction to control thermal expansion and have two compression rings and one combined oil ring.

The gudgeon pins have special hollow steel shafts and are a fully floating fit in the pistons and a press fit in the connecting rods.

The aluminium alloy cylinder head contains wedge type combustion chambers and is fitted with aluminium bronze valve seats for the intake valves and heat resistant steel valve seats for the exhaust valves.

The cast iron camshaft is driven by a double row roller chain from the crankshaft pulley.

The engine is pressure lubricated by a rotor type oil pump which draws oil through an oil strainer into the pump housing and then forces it through a full flow oil filter into the main oil gallery.

ENGINE - Removal

1. Place alignment marks on the bonnet and hinges; remove the bonnet from the vehicle.
2. Drain the cooling system and engine and transmission lubricant. Remove the radiator grille.
3. Disconnect the battery cables and lift out the battery.
4. Detach the upper and lower radiator hoses; remove the radiator mounting bolts and lift the radiator away from the vehicle. The torque converter cooling pipes must be disconnected from the radiator on vehicles fitted with automatic transmission.
5. Remove the cooling fan and pulley, disconnect the fuel pipe from the fuel pump and the heater hoses from the engine attachments.
6. Disconnect the accelerator control linkage and the choke

CRANKSHAFT AND MAIN BEARINGS
CAMSHAFT AND SPROCKET
FLYWHEEL
ENGINE - Assembling
VALVE CLEARANCES - Adjusting
ENGINE LUBRICATION SYSTEM
OIL PUMP
OIL FILTER
CHANGING THE ENGINE OIL

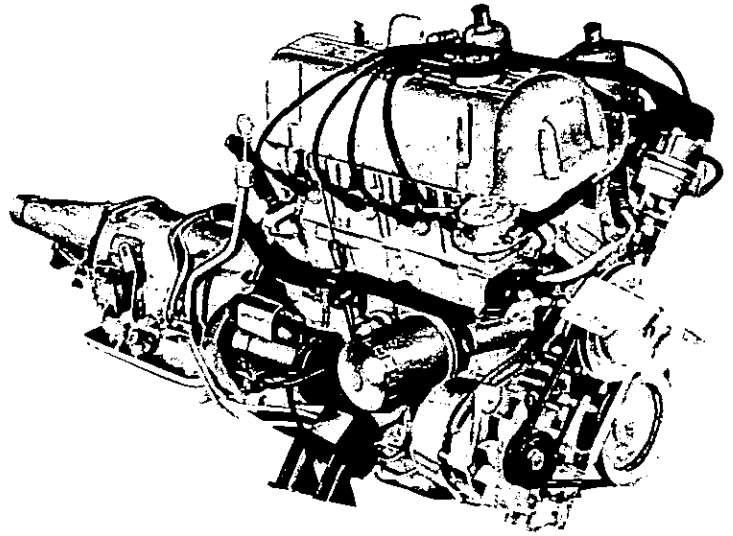
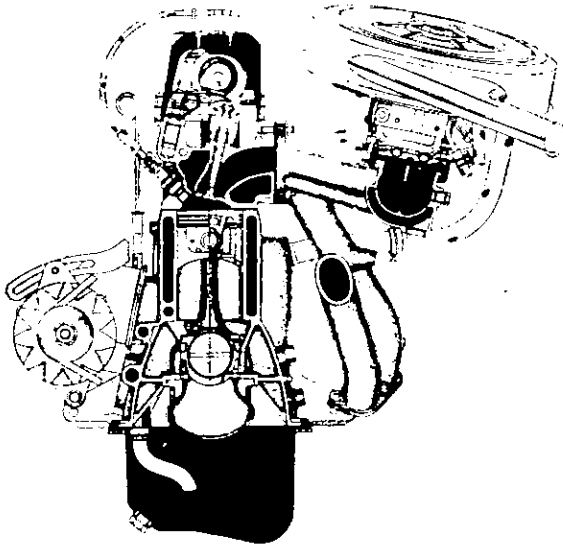
cable from the carburettor.

7. Disconnect the wirings from the starter, alternator, ignition coil, oil pressure switch and temperature sender unit.
8. Remove the clutch slave cylinder (Fig.A.2.) and its return spring.
9. Disconnect the speedometer cable and withdraw the plug connector from the reversing light switch.
10. Disconnect the shift rods and selector rods, and remove the cross shaft assembly as described in the section Gear-box.
11. Disconnect the front exhaust pipe from the exhaust manifold, disconnect the centre pipe from the rear pipe and remove the front pipe, pre-muffler and centre pipe assembly.
12. Disconnect the propeller shaft flange from the companion flange from the gear carrier.
13. Jack up the gearbox slightly and remove the rear engine mounting bracket bolts: remove the mounting cross-member and handbrake cable clamp.
14. Remove the bolts securing the front engine mounting brackets to the crossmember.
15. Attach lifting cable or chains to the hooks installed at the front and rear of the cylinder head. Lower the jack under the gearbox and carefully lift and tilt the engine and gearbox unit. Withdraw the engine and gearbox from the compartment, making sure that it is guided past the accessories installed on the body.

ENGINE - Dismantling

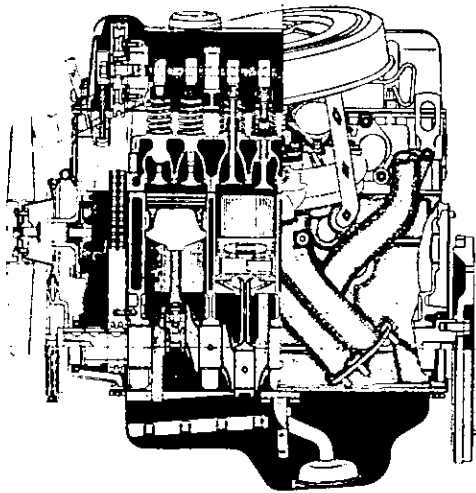
Remove the engine as previously described and carefully clean the exterior surfaces. Check for signs of fuel, oil, or water leaks past the cylinder head and block. Remove the air cleaner, alternator, distributor and starter motor. Plug the carburettor air horn and distributor hole to prevent the ingress of foreign matter.

Remove the gearbox from the engine, drain the engine oil and coolant. Mount the engine in a suitable stand; the special engine attachment ST05260001 and engine ST0501S000 should be used if available (Fig.A.3.).



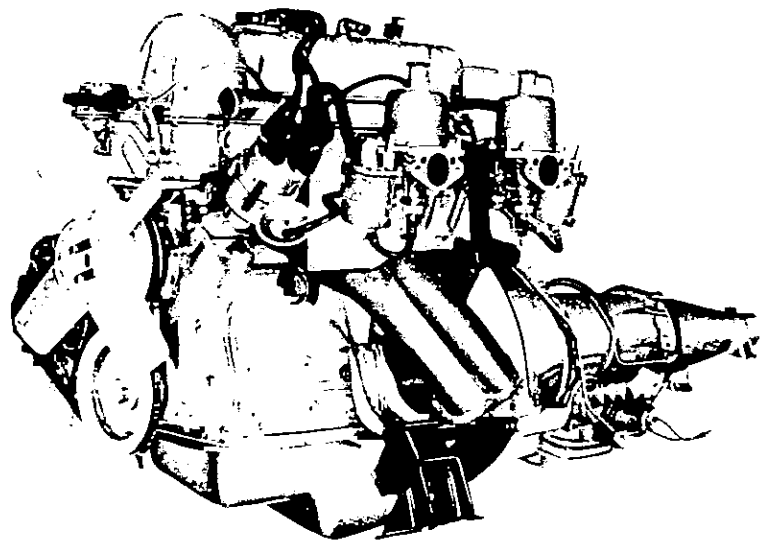
Right side view of engine

610 series
(with SU twin carburettor)



Section through the 1600 c.c. engine.

510 series



Left side view of engine

Fig. A.1 Engine: General

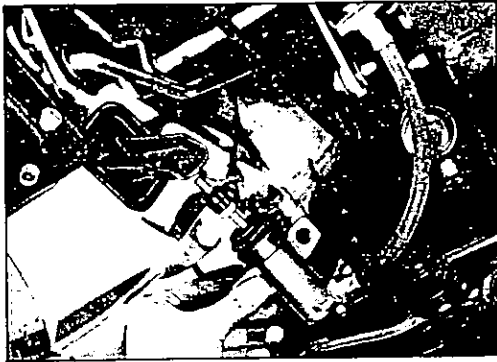


Fig. A.2 Removing the clutch slave cylinder.

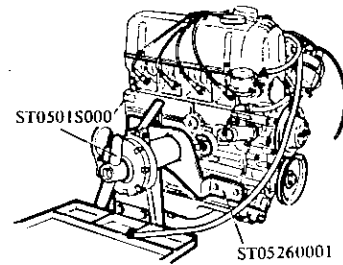


Fig. A.3 Mounting the engine.

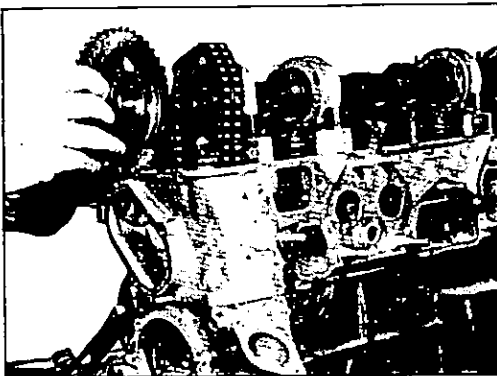


Fig. A.4 Removing the camshaft sprocket.

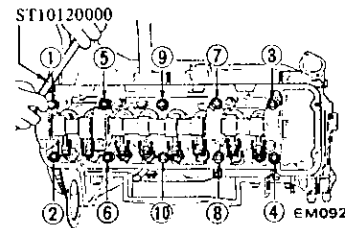


Fig. A.5 Cylinder head bolt removal sequence.

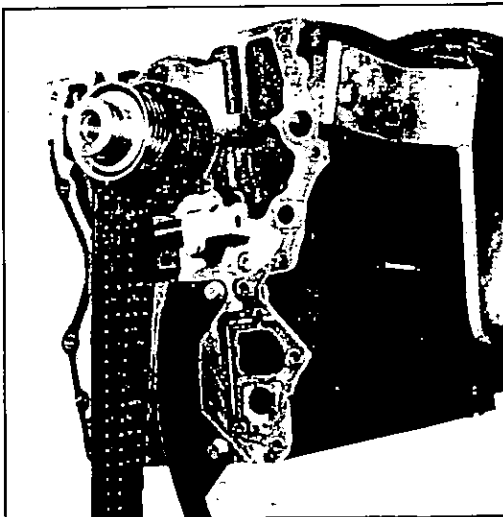


Fig. A.6 Removing the chain tensioner and timing chain.

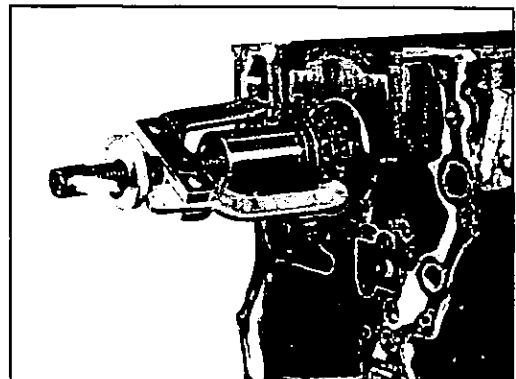


Fig. A.7 Removing the drive sprocket.

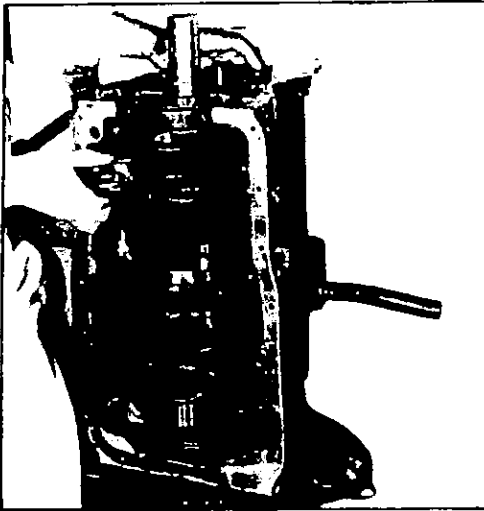


Fig. A.8 Removing the pistons and connecting rods.

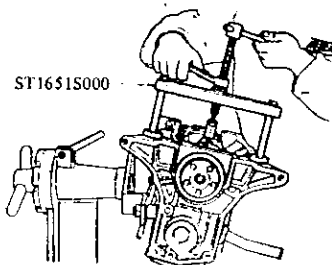


Fig. A.10 Removing the rear main bearing cap.

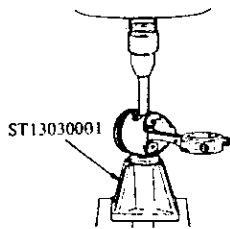


Fig. A.12 Removing the piston pin.

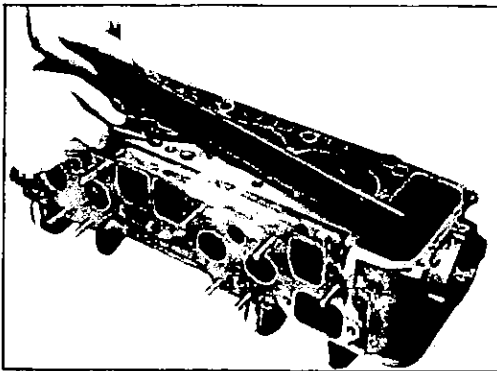


Fig. A.14 Checking the cylinder head joint face.

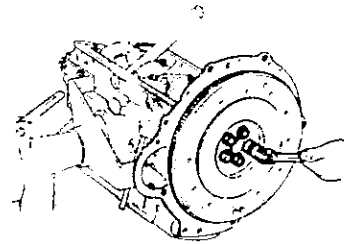


Fig. A.9 Removing the flywheel.

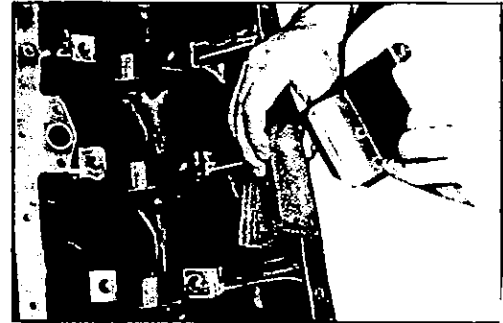


Fig. A.11 Removing the baffle plate and net.

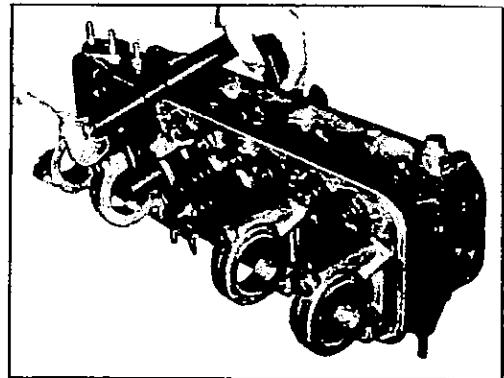


Fig. A.13 Removing the valves.

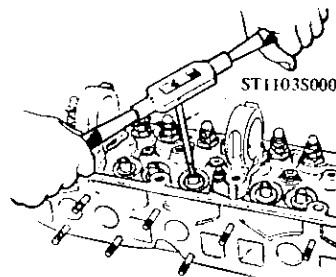


Fig. A.15 Reaming the valve guide.

Remove the fan and pulley, the right hand engine mounting and oil filter. Remove the oil pressure switch. Remove the following items; oil level gauge, spark plugs, thermostat housing, rocker cover, carburettor and inlet and exhaust manifolds.

Remove the clutch assembly as described in the section CLUTCH. Remove the left hand engine mounting, crankshaft pulley, water pump, fuel pump, fuel pump drive cam and camshaft sprocket (See Fig.A.4.). Remove the cylinder head bolts in the sequence shown in Fig.A.5.) and lift off the cylinder head. Invert the engine and remove the oil sump and oil strainer, oil pump and drive spindle assembly, front cover and chain tensioner. Remove the timing chain, oil thrower, crankshaft worm gear and chain drive sprocket. (See Fig.A.6. and A7.).

Remove the connecting rod caps and push the pistons and connecting rods through the top of the bores as shown in Fig. A.8. Keep the connecting rod caps with their respective rods to ensure that they are assembled in their original positions.

Remove the flywheel retaining bolts and withdraw the flywheel (Fig.A.9.). Remove the main bearing caps, using the special puller ST1651S000 to withdraw the centre and rear main bearing caps as shown in Fig.A.10. Remove the rear oil seal and lift out the crankshaft, remove the baffle plate and cylinder block net. (Fig.A.11.). Remove the piston rings with a suitable expander and press out the gudgeon pins under an arbor press, using the special stand ST1300001 as shown in Fig.A.12. Keep the dismantled parts in order so that they can be reassembled in their original positions. Slacken the valve rocker pivot locknut and remove the rocker arms by pressing down the valve springs.

Remove the camshaft taking care not to damage the bearings and cam lobes. Withdraw the valves, using the valve lifter ST12070000 as shown in Fig.A.13.

ENGINE - Inspection and Overhaul Cylinder Head and Valves

Clean all parts thoroughly and remove carbon deposits with a blunt scraper. Remove any rust which has accumulated in the water passages and blow through the oil holes with compressed air to make sure that they are clear.

Measure the joint face of the cylinder head for out of true as shown in Fig.A.14. The surface should be checked at various positions, using a straight edge and feeler gauge. The permissible amount of distortion is 0.05 mm (0.0020 in), or less. If the surface is out of true by more than the limit of 0.1 mm (0.0039 in) it will be necessary to grind the head.

Clean each valve by washing in petrol and carefully examine the stems and heads.

If the stem is worn, damaged or not straight, the valve must be discarded. Check the diameter of the stem with a micrometer. The diameter of the inlet valves should be 7.965 - 7.980 mm (0.3136 - 0.3142 in) and the diameter of the exhaust valves 7.945 - 7.960 mm (0.3128 - 0.3134 in).

If the seating face of the valve is excessively burned, damaged or distorted, it must be discarded. A badly pitted seating face should be refaced on a valve grinding machine, removing only the minimum amount of metal.

Renew the valve if the thickness of the valve head has been reduced by 0.5 mm (0.0197 in), see Technical Data for valve dimensions.

The valve stem tip may be refaced, if necessary, the maximum allowance however is 0.5 mm (0.0197 in).

The valves can be ground-in to their seats, when completely satisfactory. The valve seats and valve guides should be in good condition and must be checked as described in the following paragraphs.

VALVE GUIDES - Replacement

The valve stem to valve guide clearance can be checked by inserting a new valve into the guide. The stem to guide clearance should be 0.020 - 0.053 mm (0.0008 - 0.0021 in) for the inlet valves and 0.040 - 0.073 mm (0.0016 - 0.0029 in) for the exhaust valves. If the clearance exceeds 0.1 mm (0.0039 in) for the inlet valves and the exhaust valves, then new guides should be fitted.

The valve guides are held in position with an interference fit of 0.027 - 0.049 mm (0.0011 - 0.0019 in) and can be removed by means of a press and drift (2 - ton pressure). This operation can be carried out at room temperature, but will be more effectively performed at a higher temperature.

Valve guides are available with oversize diameters of 0.2 mm (0.0079 in) if required. The standard valve guide requires a bore in the cylinder head of 11.985 - 11.996 mm dia. (0.4719 - 0.4723 in dia.) and the oversize valve guide a bore of 12.185 - 12.196 mm dia. (0.4797 - 0.4802 in. dia).

The cylinder head guide bore must be reamed out at normal room temperature.

Heat the cylinder head to a temperature of 150 - 200°C (302 - 392°F) before pressing in the new valve guides. Ream out the bore of the guides to obtain the desired finish and clearance (Fig.A.15.). The special valve guide reamer ST 1103 S000 should be used, if available. Valve guide inner diameters are specified in Technical Data at the end of this section. The valve seat surface must be concentric with the guide bore and can be corrected with the facing tool ST11670000 (Fig.A.16), using the new valve guide as the axis.

VALVE SEAT INSERTS - Replacing

The valve seat inserts should be replaced if they show signs of pitting and excessive wear.

The inserts can be removed by boring out to a depth which will cause them to collapse, although care must be taken not to bore beyond the bottom face of the recess in the cylinder head.

Select the valve seat inserts and check the outer diameters. Machine the recess in the cylinder head to the following dimensions, at room temperature.