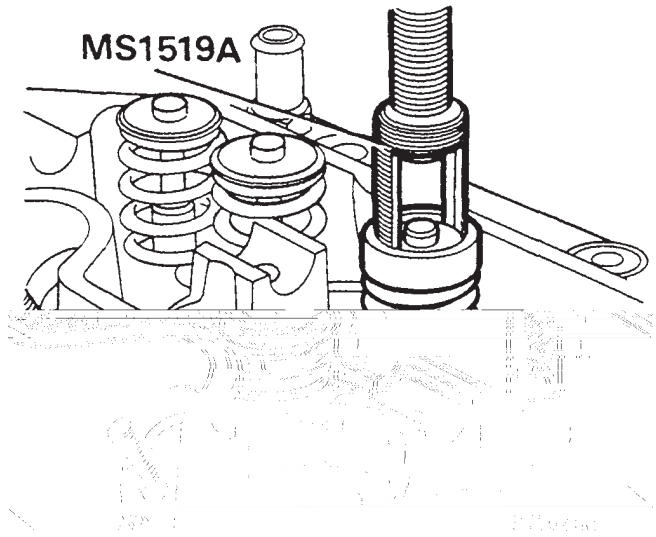
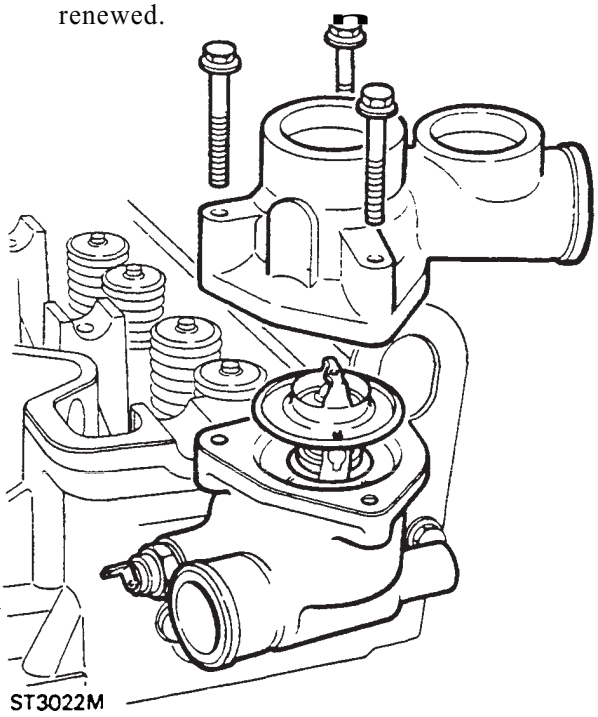
22. Fit a spring and cup to each valve and compress with special service tool MS1519A or a suitable altemative. Retain with the multi-groove cotters ensuring that they are fully located in the valve stem and cup.



Thermostat and housing

23. If necessary remove the temperature transmitter and temperature sensor from the housing.
24. Release the three bolts securing the thermostat cover and lift out the thermostat. The thermostat may be tested by immersing it in hot water of a known temperature and comparing its operation with the temperature range stamped on the flange. Any leakage of wax (which is the colour of copper) from around the center pin of the thermostat, indicates that it is faulty and should be renewed.

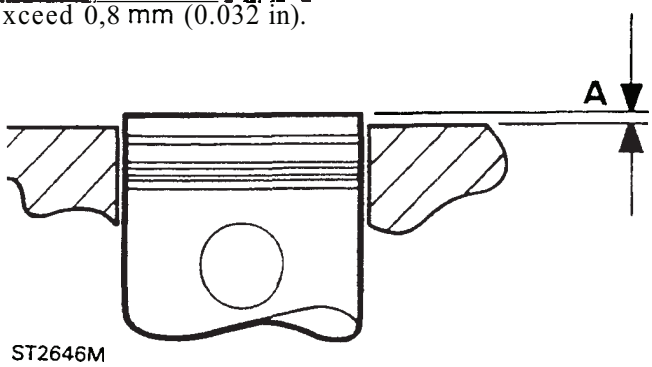


25. The thermostat housing may be removed from the cylinder head at this stage and if necessary the gasket renewed.
26. The "jiggle pin" which allows any air to escape from below the thermostat, may be fitted in any position. Renew the gasket when fitting the thermostat and apply a little Hylomar sealant to the threads of temperature sensor and transmitter before screwing into position.

FITTING CYLINDER HEAD

Piston protrusion and gasket selection

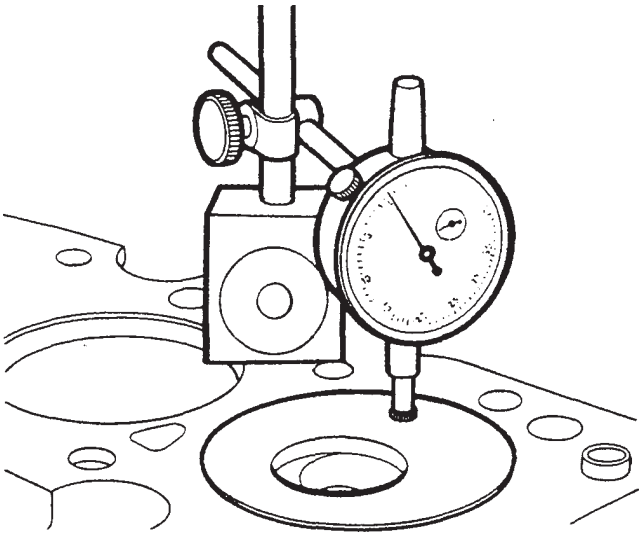
Before fitting the cylinder head, the protrusion of the pistons above the block face must be checked in order that the correct thickness gasket may be selected from the range of three. The height of all the pistons above the cylinder block must be measured and the thickness of the gasket selected is based upon the largest value of dimension **'A'**, as illustrated. This dimension, however, must not exceed 0,8 mm (0.032 in).



Three thicknesses of gasket are available and each size can be recognised by the number of identification holes punched in the side of the gasket as illustrated. The table below gives the details of the gaskets available. The thickness of gasket fitted can be seen when the cylinder head is fitted since the identification holes can be seen protruding from the right hand side of the engine towards the rear.

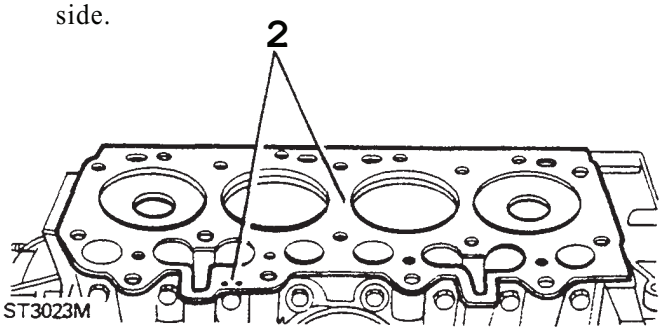
Number of holes	Metric	Imperial	Gasket
			ERR0382
2	0.70 to 0.61	0.024 to 0.0275	ERR038
3	0.80 to 0.71	0.0279 to 0.0314	ERR0384

Clean the cylinder block combustion face and turn the crankshaft so that number one and number four pistons are at . D.C. Use a dial test indicator to determine the highest travel of the piston then zero the gauge and move the stylus over to the cylinder block and note the reading. Repeat the procedure on the remaining pistons. The highest figure obtained will determine the gasket selected.



ST2581M

2. Place the selected the head gasket in position on the cylinder block so that the identification holes are towards the rear on the right-hand side.



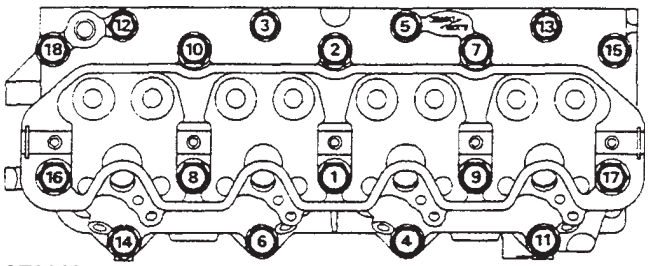
ST3023M

3. Clean the cylinder head face and if preferred, guide studs may be fitted to the cylinder block to facilitate the lowering of the head into position. Locate the head over the two dowels.
4. Lubricate the threads of new bolts, with light oil, and fit to the positions illustrated according to length and diameter. Tighten the bolts down so that the heads just make contact with the cylinder head. Now, in the sequence shown, tighten all the bolts down to 40 Nm with a suitable torque wrench.

Bolt sizes:

M10 locations **3,** 5, 12 and **13**

M12 locations 1, 2, **4,** 6, **7,** 8, **9,** 10, 11, 14, 15, 16, 17, 18



ST2619 M

5. Attach the special service tool degree disc LST122 to a power bar. Make a suitable pointer from welding rod and attach it to a bolt screwed into a rocker shaft securing bolt hol.
6. Tighten all the bolts down through an angle of 60" strictly in the sequence illustrated. As each bolt is tightened scribe a line across the head with a piece of chalk or crayon to identify which bolts have been tightened, then tighten each bolt a further *60"* again in the correct sequence to complete the tightening procedure. Re-positioning of the pointer will, no doubt, be necessary to reach all bolts.

CAUTION: It is important that the double torquing procedure is observed and that on no account should the total angle of 120" be performed in one operation otherwise damage and distortion of the cylinder head may occur.