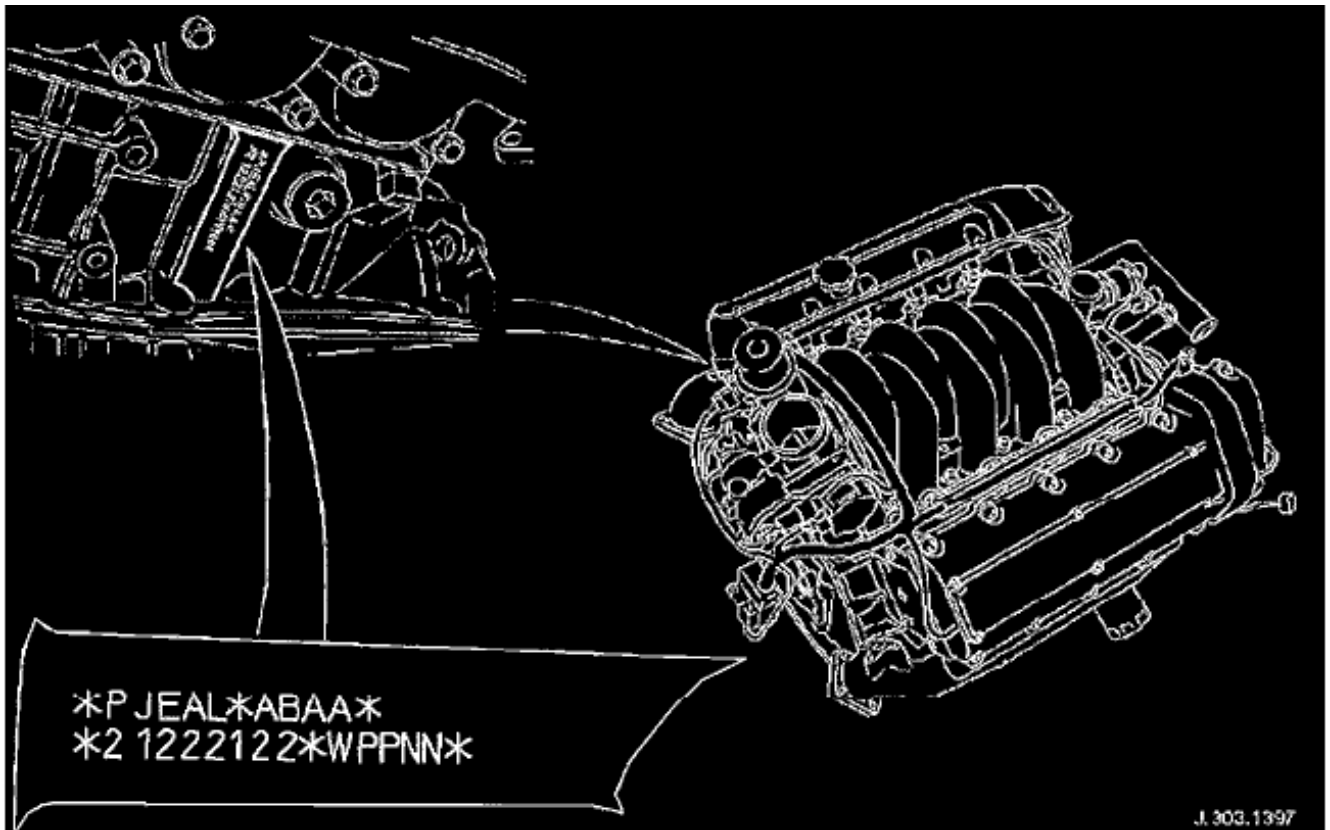


Cylinder and Crankshaft Grading



Example - *PJEAL* - Crankshaft Main Journal Diameter

Read the grade letters from LEFT to RIGHT = FRONT to REAR of engine eg. for this example engine, the crank journal at the front of the engine is grade P. and at the rear is grade L.

The selection of main bearing shells is described in the following chart.

Example - *ABAA* - Crankshaft (Big End Bearing) Crankpin Diameter

Read the grade letters from LEFT to RIGHT = FRONT to REAR of engine eg. for this example engine, the crankpin at the front of the engine is grade A and at the rear is also grade A.

Grade A = 56,000 to 55,994 mm (Bearing Shell Color Code - Blue).

Grade B = 55,994 to 55,988 mm (Bearing Shell Color Code - Green).

Grade C = 55,988 to 55,982 mm (Bearing Shell Color Code - Yellow).

Example - *21222122* - Cylinder Bore and Piston

The cylinder bore grades read from LEFT to RIGHT as follows:

Bank 2 - Cylinder 1, Bank 2 - Cylinder 2, Bank 2 - Cylinder 3, Bank 2 - Cylinder 4, Bank 1 - Cylinder 4, Bank 1 - Cylinder 3, Bank 1 - Cylinder 2, Bank 1 - Cylinder 1. (Note, in earlier publications Bank 1 was described as A-Bank and Bank 2 as B-Bank)

Grade 1 Bore = 85,990 to 86,000 mm.

Grade 2 Bore = 86,000 to 86,010 mm.

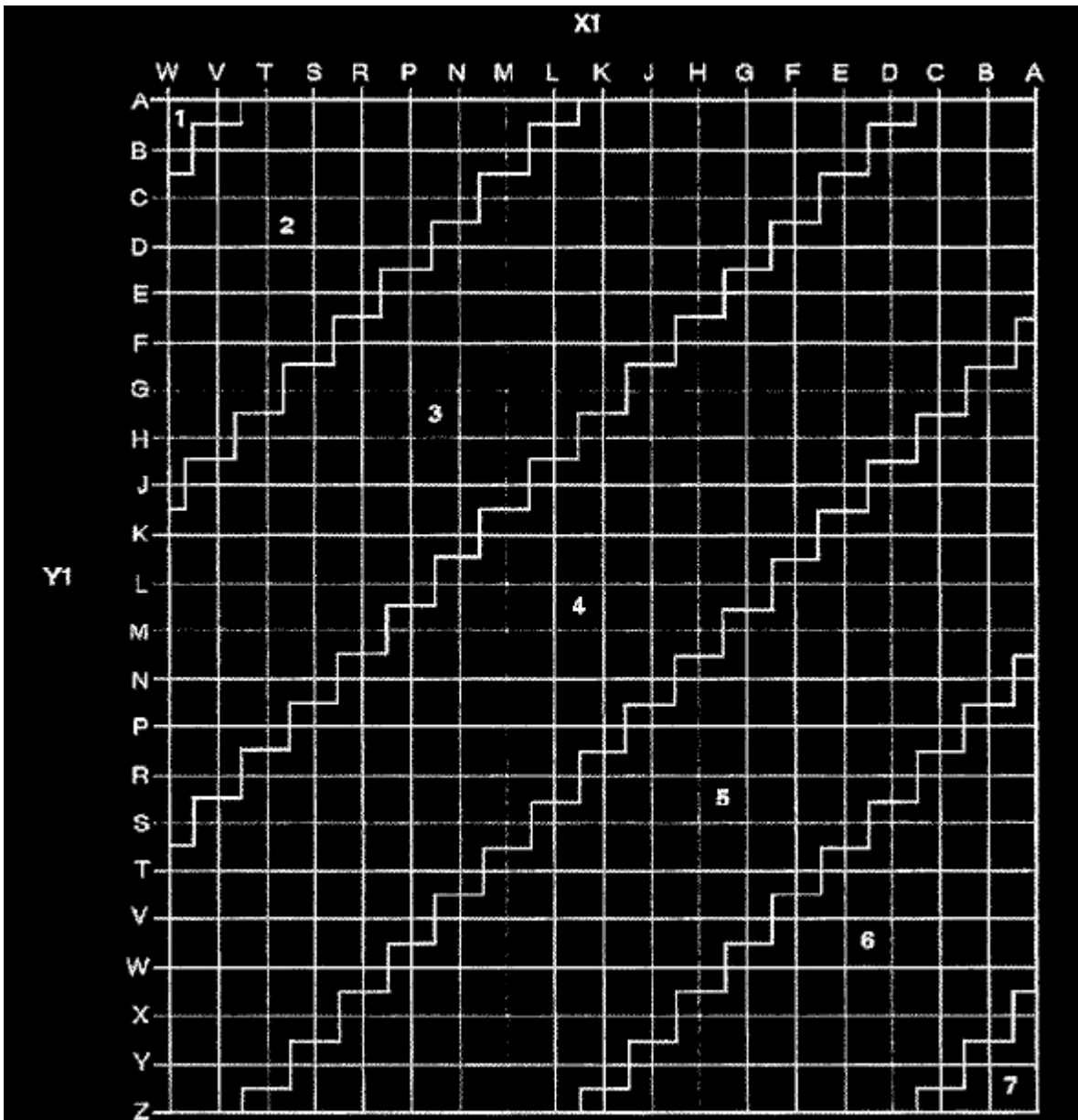
Grade 3 Bore = 86,010 to 86,020 mm.

Example - *WPPNN* - Crankshaft Main Bearing Bore in Cylinder Block

Read the grade letters from LEFT to RIGHT = FRONT to REAR of engine eg. for this example engine, the crank journal bore at the front of the engine is grade W. and at the rear is grade N.

The selection of main bearing shells is described in the following chart.

Crankshaft Main Bearing Shell Selection Chart



The axes on the chart refer to: x1 Crankshaft Bore in Cylinder Block Y1 Crankshaft Journal Diameter

The number in each diagonal band represents a PAIR of colour coded main bearing shells which must be used with a specific journal, depending on the combination of journal diameter and crankshaft bore diameter. The colour codes for each band are as follows:

1- Blue/Green and Blue/Green, 2-Blue/Green and Blue, 3- Blue and Green 4 - Blue and Green, 5 - Green and Green, 6 - Green and Yellow, 7 - Yellow and Yellow.

Consider crankshaft journal 5 (from the example grade markings on the cylinder block) - the cylinder block bore is Grade N and the crankshaft journal diameter is Grade L. From the chart, it will be seen that the point of intersection is in Band 4 which equates to one Blue shell and one Green shell.

When the appropriate pair of colour codes have been selected for a journal, either colour may be installed to the cylinder block or to the bedplate, but, the shell which is to be installed to the cylinder block must have an oil groove and the shell which is to be installed to the bedplate must be plain.