

Crankshaft balancing classes	Combinations of weight classes for connecting rod pair on alternator side	Combinations of weight classes for connecting rod pair on primary drive side
mm	BB+BB / AA+CC*	BB+BB / CC+AA*
NN	CC+CC / BB+DD*	CC+CC / DD+BB*
OO	DD+DD / CC+EE*	DD+DD / EE+CC*
PP	EE+EE / NOT PERMITTED*	EE+EE / NOT PERMITTED*

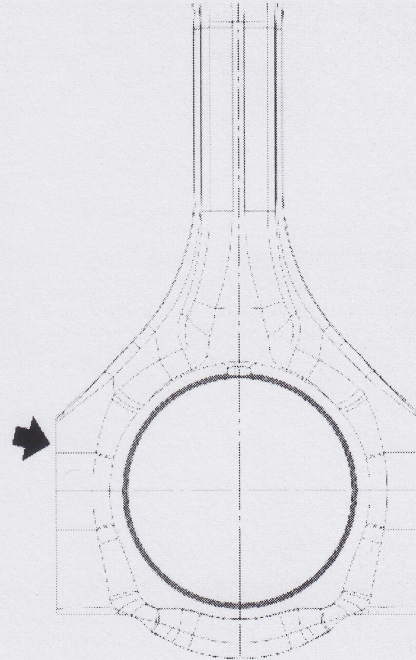
Key:

*Paired selections of mountable weight as alternative to the main selection

WARNING

THE CONNECTING RODS OF A HEAVIER CLASS ARE MOUNTED IN POSITION 2-3

The connecting rod class is stamped on its left side, viewed from the front, from the side with the bevelling on the big end hole.



Bushing selection

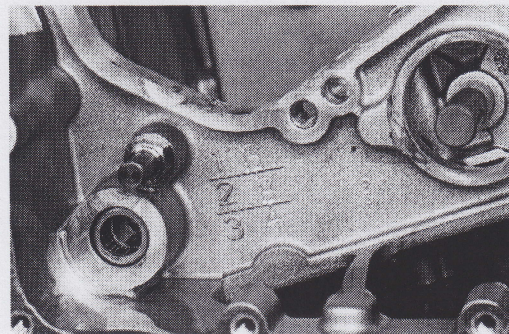
CRANKSHAFT BUSHINGS

CRANKCASE CATEGORY

Three crankcase classes are available (A - B- C) which differentiate in the diameter of the hole in the bearings.

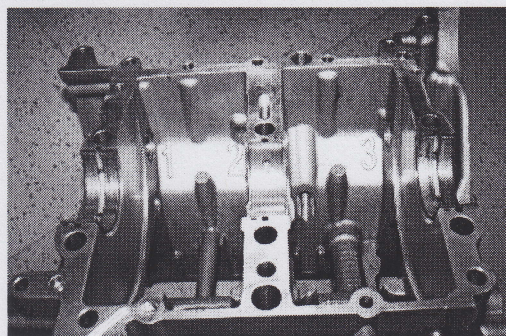
The category is marked on the crankcase, on the right side, in the area below the gearbox.

Different classes of bearings can be used (e.g.: A - B - C or B - B - C or A - B - A).



A number that indicates the position of the main journal is stamped on the crankcase:

1. flywheel side;
2. central;
3. clutch side.



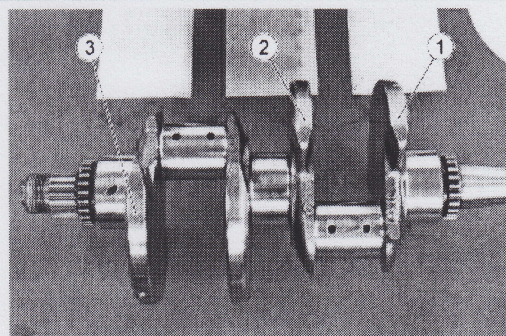
CRANKCASE CATEGORY

Specification	Desc./Quantity
Class A	Bushing seat diameter 52.023 - 52.018 mm (2.0481 - 2.0479 in)
Class B	Bushing seat diameter 52.018 - 52.013 mm (2.0479 - 2.0477 in)
Class C	Bushing seat diameter 52.013 - 52.008 mm (2.0477 - 2.0475 in)

SHAFT CATEGORY

The category of the three crankshaft main journals is stamped on the flat face of the counterweight, as shown in the image.

The three main journals may be of different classes.



CRANKSHAFT CATEGORIES

Specification	Desc./Quantity
Class C	Main journals - diameter: 46.028 - 46.023 mm (1.8121 - 1.8119 in)
Class D	Main journals - diameter: 46.023 - 46.018 mm (1.8119 - 1.8117 in)
Class E	Main journals - diameter: 46.018 - 46.013 mm (1.8117 - 1.8115 in)

Once the categories below are checked:

1. crankcase;
2. flywheel side main journal;
3. centre main journal;
4. clutch side main journal.

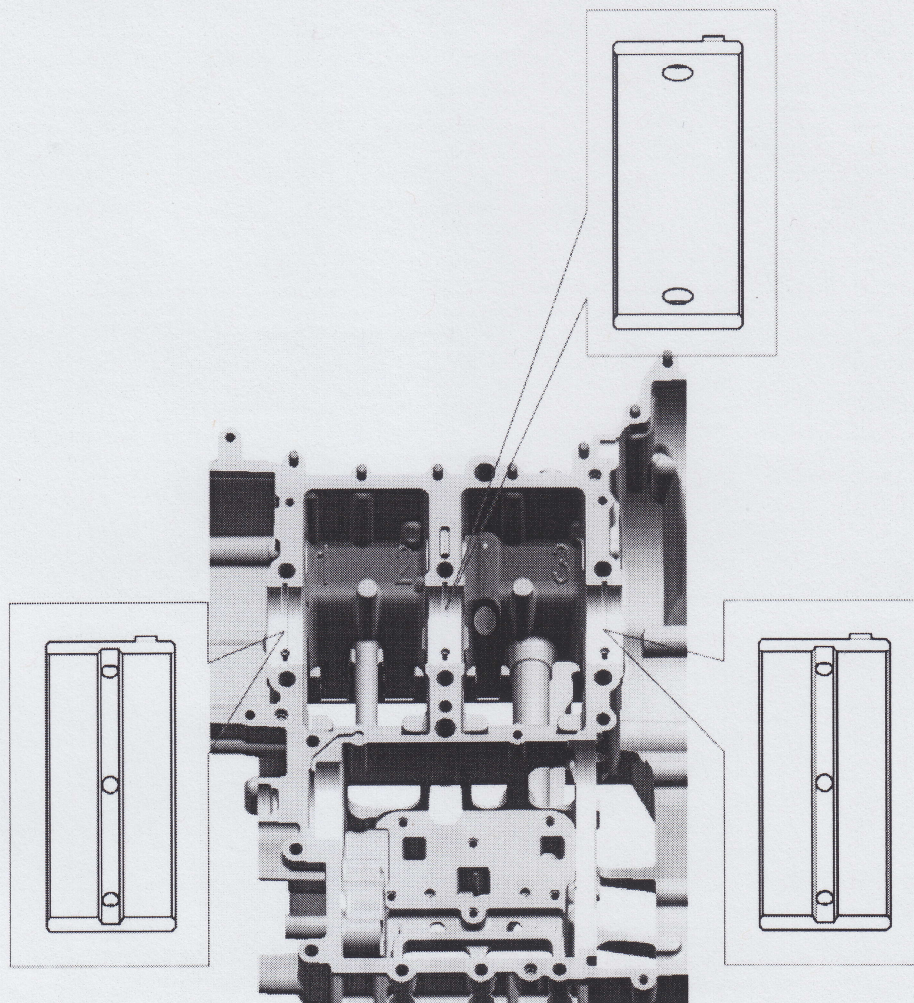
Choose the bushings used for assembly from the following table

CRANKSHAFT BUSHINGS

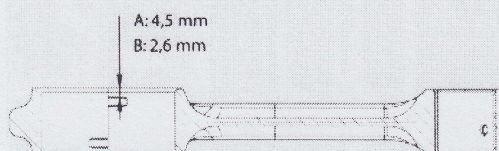
Crankshaft main journal	Class A crankcase	Class B crankcase	Class C crankcase
Class C main journal	Bushing (green)	Bushing (green)	Bushing (yellow)

Crankshaft main journal	Class A crankcase	Class B crankcase	Class C crankcase
Class D main journal	Bushing (black)	Bushing (green)	Bushing (green)
Class E main journal	Bushing (black)	Bushing (black)	Bushing (green)

The flywheel side and clutch side main bearings are different from the central ones and therefore, so are the respective replacement part numbers.



CRANKSHAFT BUSHINGS - CONNECTING RODS



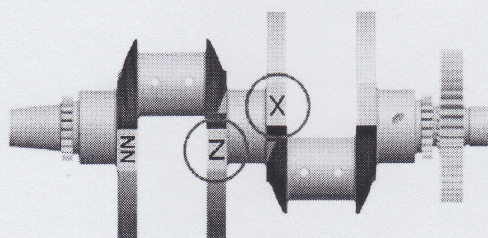
Three types of semi-bushing are available for the connecting rods:

- Blue
- Yellow
- Green

For the coupling of the connecting rod with the crankshaft, according to the engraving on the counterweights, observe the following table:

BUSHINGS THICKNESS

Bushing colours	Thickness
BLUE	1.547 - 1.552 mm
YELLOW	1.552 - 1.557 mm
GREEN	1.557 - 1.562 mm



CONNECTING RODS COUPLING - CRANKSHAFT

Selection connecting rod pin dimension	Big end class 1	Big end class 2	Required clearances class 1	Required clearances class 2
X (35.885 - 35.880 mm)	Blue + Yellow (1)	Yellow + Yellow	0.053 - 0.026 mm	0.053 - 0.027 mm
Y (35.880 - 35.874 mm)	Yellow + Yellow	Yellow + Green (1)	0.054 - 0.026 mm	0.054 - 0.027 mm
Z (35.874 - 35.869 mm)	Yellow + Green (1)	Green + Green	0.054 - 0.027 mm	0.054 - 0.028 mm

Key:

(1) If using bushing of different thickness, install the thickest on the side of the connecting rod shank

BIG END BUSHING REPLACEMENT PROCEDURE

When replacing the big end bushings, make sure that the tang of the semi-bushing is correctly housed in the corresponding notch in the connecting rod stem or cap.

