

Which of the following features would be required in an aluminum alloy, trunk type piston when used in a commercial diesel engine application?

|  |  |
| --- | --- |
|  | full floating wrist pin  |
|  | ring groove insert (Ni-Resist)  |
|  | tin plating  |
|  | chromed pin boss  |

A trunk style piston is a (single, two, three) piece design.

Piston absorbs up to \_\_\_\_\_\_\_\_\_\_\_rejected heat from cylinder gases.

Cam Ground is when an aluminum piston is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when cold to allow for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when the piston is warming up.

A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ designed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is currently used in most OEM engines today.

Monotherm/Mahle vs Alluminum True or False

Monotherm is heavier\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Monotherm is stronger\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Monotherm has less piston slap\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Monotherm is more currently used\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Monotherm is the beez kneez\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Monotherm needs wrist pin bore bushings\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Monotherm has a larger headland volume for better clearances\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Monotherm is more vulnerable to cylinder pressures\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Monotherm improves emissions\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Monotherm has a composite metal version know as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_also a Mahle design.

Articulating pistons have 2 styles\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Articulating pistons have 2 parts \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Articulating pistons are \_\_\_\_\_\_\_\_\_\_\_\_\_than aluminum and Mahle pistons, so other powertrain components have to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

When you have a lighter piston then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ RPMS are possible.

Most common piston crown design is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is another way of describing the toroidal recess in a Mexican hat type piston?

|  |  |
| --- | --- |
|  | crater  |
|  | piston leading edge  |
|  | skirt wall assembly  |
|  | cone  |

Minimal toroidal recess or low turbulence piston crowns are known as\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Label

 

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the most current piston cooling method?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

To little clearance between the cylinder and piston can cause\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Other possible liner failures are.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Viewed from the front, a Cummins ISX rotates clockwise. On which side are the piston major thrust faces be located? Remember left/right is always from the drivers Point of View.

|  |  |
| --- | --- |
|  | front  |
|  | left side  |
|  | right side  |
|  | Rear  |
|  |  |

Which side is the Antithrust as viewed by driver.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Typical ring layout is \_\_\_\_\_\_ compression and \_\_\_\_\_\_\_ oil ring

The major sealing force of compression rings is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Label with shape and (compression or scraper)



\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_

What ring joint best seals cylinder gases?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The oil/scraper ring lubricates on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and scrapes on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Rings are normally stamped with “Top Side” or a \_\_\_\_\_\_\_\_\_\_\_ to label what side goes up.

What links the connecting rod to the piston?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Connecting rods have caps that are separated by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Cracked connecting rods must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. If any damage is done to a cracked connecting rod the rod must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Cracked connecting rods insure perfect \_\_\_\_\_\_\_\_\_\_\_\_\_\_ between rod and cap.

Crankshaft Labeling



How is a crankshaft suspended in a bearing?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A Crankshaft has been damaged by a spun bearing. What would be the recommended OEM repair? Replace Resurface Welding Continue operation if damage is less than .004 in

What is plastigage used for measuring?

|  |  |
| --- | --- |
|  | friction bearing clearance  |
|  | big end side play  |
|  | flywheel runout  |
|  | crankshaft endplay  |

Excessive end play of crankshaft is fixed by the use of oversized \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Replace Viscous Vibration Dampers….\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Replace solid Vibration Dampers….\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Ring Gears are fitted to the flywheel through\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.