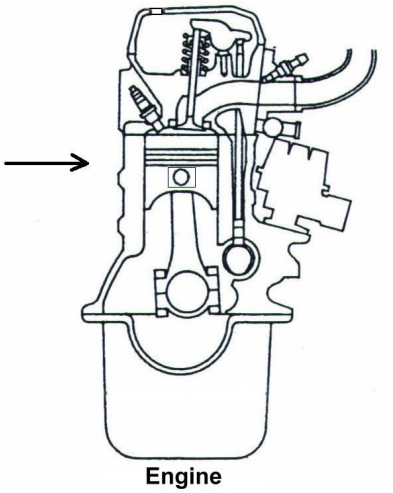
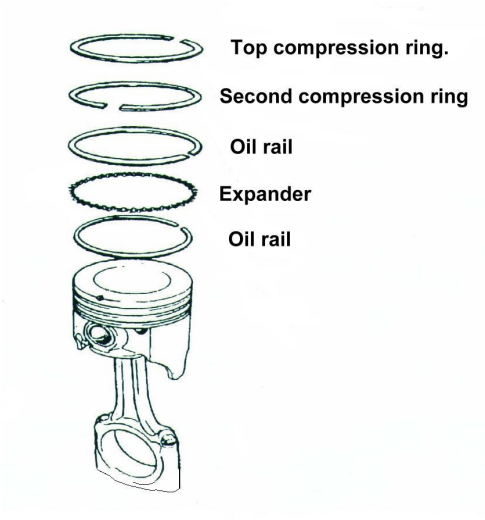
PRODUCT: PISTONS RINGS

WHERE ARE THEY IN THE ENGINE?





WHAT DO THEY DO?

The piston rings are supported by the pistons and its function includes:

- Prevent the passage of combustion gas from the combustion chamber to the crankcase.
- Prevent the passage of lubricating oil from the crankcase to the combustion chamber.
- To provide a heat transfer path from the piston to the cylinder wall. This heat is the result of the combustion process.

WHAT ARE THEY?

Piston rings are narrow circular rings with an end gap so they can be placed over a piston. These can be cast or ductile iron or made from steel. Ductile iron and steel compression rings have superior strength over their cast counterpart. Commonly there are three rings on each piston. Two compression rings and one oil control assembly. The oil control assembly consists of one expander and two rails.

PISTON RINGS: COMMON TERMINOLOGY

- **Ring Gap:**
  Gap left in the piston ring after installation to allow for expansion of the rings due to combustion heat. Also called ring end gap.
- **Moly (Molybdenum) Coated Rings:**
  Special insertion of molybdenum on the outer sealing face of the piston ring to enhance sealing properties and resist wear.
- **Chrome Plated Rings:**
  Chrome plating on the outer sealing face of the piston ring to enhance sealing properties and resist wear.
- **Chromemoly:**
  Chromemoly is a name incorrectly used in describing a premium ring. A ring will either be chrome plated or moly (molybdenum) type, but never both.

PISTON RINGS: COMMON TERMINOLOGY continued

- **Cast Rings:**
  Conventional rings are made from grey flake graphite iron which is suitable for a wide range of applications with good resistance to wear where load conditions are moderate.
- **Steel Rings:**
  Piston rings made of steel are usually nitrided to be compatible with cast iron cylinder bores. Premium rings for high performance engines, also more common in late model O.E. applications.
- **Ductile Iron:**
  High strength Spheroidal Graphite Iron (SGI) ring material that is suitable for high performance use.
- **Proseal:**
  Typically a stock replacement ring to suit many standard and medium performance engines.
- **Premium:**
  Premium ring sets may contain a higher grade ductile iron or steel rings.
- **File Back:**
  Ring set that contains top rings that have zero end gaps on the top compression rings. The engine builder can set the gaps according to their own performance requirements.
- **Keystone Rings:**
  Type of top compression ring that has tapered sides. Predominantly used in diesel engine applications.
- **Trapzoidal Rings**:
  Type of top compression ring that has taper on top side only. Also called ½ keystone rings. Predominantly used in diesel engine applications.

SIZING

- Piston rings are available in either standard size or over size.
- Over size measurements can be either metric or imperial.
- Standard is shortened to STD
- Imperial sizes are written as 020, 030, 040 or 060
- Metric sizes are written as 0.50, 0.75, 1.00 or 1.50
- Imperial sizes can be easily converted to metric and metric to imperial.

Imperial	Metric
020	0.50
030	0.75
040	1.00
060	1.50