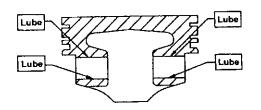
Better Pistons Since 1922

Warranty Disclaimer

Due to the nature of piston applications, the parts sold by United Engine & Machine Co. Inc. are sold without any express warranty or any implied warranty of merchantability or fitness for a particular purpose. UEM shall not, under any circumstances, be liable for any special, incidental or consequential damages, including, but not limited to damage, or loss of profils or revenue, cost of purchased or replacement goods, or claims of customers of the purchaser, which may arise and/or result from sale, installation or use of these parts.

UEM reserves the right to make product improvements or changes without notice and without incurring liability with respect to similar products previously manufactured.

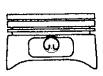
The information contained in this instruction should not be considered absolute. Final decisions concerning the installation and use of these products are ultimately the responsibility of the customer. UEM makes no guarantee of warranty on emissions.

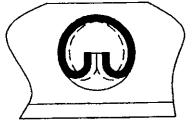


PREVENT PIN GALLING

- High pressure lubricant must be used between the pin and pin bore. Failure to properly lubricate the areas indicated may result in pin seizure.
- 2. It is recommended the connecting rod be heated and the pin fitted by hand to insure no damage occurs to the pin and pin bore. Pressing the pin through the rod eye is not recommended due to possible scutting of the pin surface and pin bore.
- After assembly the pin should move freely in the pin bore.

LOCK RING INSTALLATION





LOCK RING INSTALLATION

- 1. Lockrings should always be installed with their gaps down to take advantage of the largest bearing area to withstand the greater upward inertia forces.
- 2. The compression of the lockring to install in the lock ring grooves should be minimized to avoid the loss of spring tension. Over compresing of the lockring may cause failure.



PISTON FITTING FOR SKIRT COATED PISTONS

- 1. A "C" suffix has been added to the part numbers of pistons with anti-friction dry lubricant.
- 2. The label on the piston container indicates, "COATED" and lists the "Recommended Finished Bore Diameter".
- 3. Pistons that have dry film lubricant applied to the skirts are approximately .001 larger in diameter than uncoated pistons.
- 4. Failure to follow the "Recommended Finished Bore Diameter" can result in piston failure.
- Some piston lands have a machining mark above the pin hole on one side only. The machining mark is made during the skirt finishing operation and in no way affects the pistons function or performance.
- Piston to cylinder clearance:

Honing a cylinder to a finished diameter of the nominal bore size plus the piston over size will provide proper piston to cylinder clearance for normal operation.

Pistons used in severe duty or marine applications may require additional clearance.

Example:

Chevrolet 350 1436 Piston

(4.0000" nominal bore diameter) + (.030" oversize) = 4.0300" Hone the cylinder to 4.0300" for a .030" oversize piston.

It is important that when resizing the cylinders of a metric engine you use millimeter oversizes carried to a six decimal place for finished cylinder diameter calculations.

.25mm = .009843

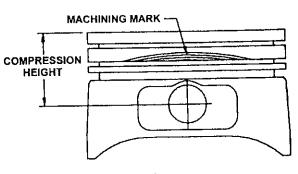
0.5mm = .019685

0.75mm = .029528

1.0mm = .039370

1.5mm = .059055

GENERAL DATA



HYPEREUTECTIC TOP RING GAP PROCEDURE

"H" suffix (hypereutectic) pistons used in high performance, heavy towing or marine applications may require an increase in ring end gap of 20% to 40% of the top ring only. The 2nd and oil ring can use factory recommended end gaps. Failure to provide sufficient top ring end gap will cause a portion of the top ring land to break as the ring ends butt and lock tight in the cylinder. The broken piece will cause further piston or engine damage.



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Example: factory recommended gap = .016 40% increase in gap = (.016 x .40) + .016 = .022 inch

Form UEM-001, Rev 030909