

INSTRUCTIONS FOR INSTALLING PISTON RINGS

415-2187
2271
2341

1. Remove ridge at top of ring travel before pistons are removed from block. Failure to remove ridge will result in damage to top of new ring and bending or breakage of second ring land. If cylinders are excessively tapered or out-of-round they should be reconditioned.
2. Clean pistons thoroughly and remove all carbon from ring grooves so that rings and expanders have proper clearance. Remove carbon from oil drain holes.
3. Check for worn top grooves. If side clearance is greater than .005" for passenger cars or .006" for trucks the groove should be regrooved to accommodate top groove spacer and regular width compressing ring.

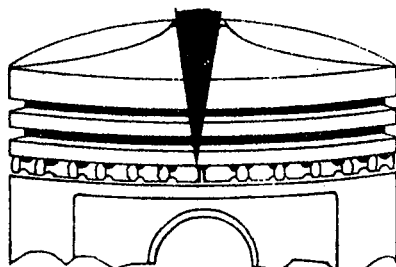
4. Check piston ring end clearance. Check in cylinder near bottom of ring travel. Ring end clearance should be approximately .003" to .004" per inch of cylinder diameter.
5. Preparing Cylinders:
In honing the cylinders a 220 to 280 grit is acceptable. Always wash with water and soap solution to make sure that all grit from honing is removed from cylinder walls. **THIS IS MOST IMPORTANT.**
6. Piston Skirts. If piston skirt clearance is excessive resize by Knurling. Resize to fit cylinders at smallest diameter below ring travel.

STEP No. 1



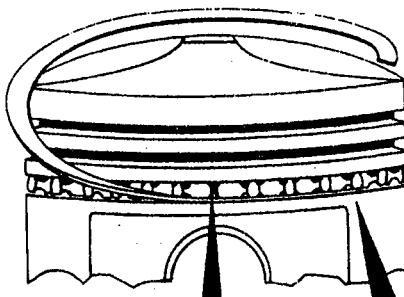
PREVENT OIL PUMPING

See these two colors.



Install Expander-Spacer in cleaned oil ring groove with gap directly above wrist pin hole. Ends of Expander-Spacer to be butted with two different colors visible.

STEP No. 3



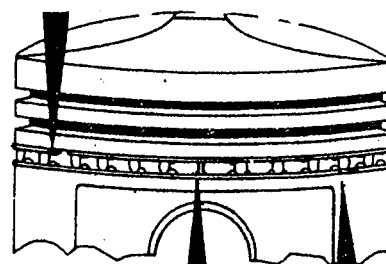
EXPANDER GAP

START RAIL HERE

Install the remaining Steel Rail below the Expander-Spacer. The gap of the Steel Rail should be 1" to 2" to the right of the Expander-Spacer gap.

STEP No. 4

TOP RAIL GAP



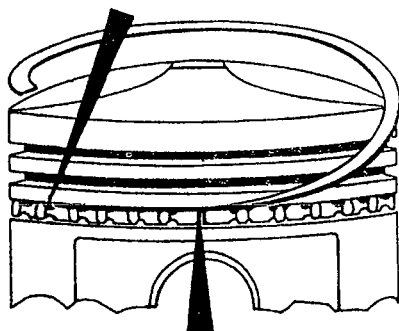
ENDS BUTTED

BOTTOM RAIL GAP

CHECK ASSEMBLY!!!! Make sure that the Expander-Spacer ends have not overlapped and are still in the butted position with two different colors visible.

STEP No. 2

START RAIL HERE



EXPANDER GAP

Install Steel Rail on top side of Expander, making sure Expander-Spacer ends are not overlapped. (Two different colors should be visible at Expander gap). The gap of Steel Rail should be 1" to 2" to left of Expander-Spacer gap.

Be Sure to Check Piston Groove Depths Before Installing Rings on Piston

FOR PISTONS HAVING RING PLACEMENT PINS

Install Expander-Spacer with gap 90° from placement pin with an Expander hump over the pin. Make sure Expander ends are butted.

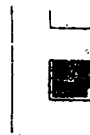
Install top rail, then bottom rail. Start ends of rails at placement pin and work over Expander gap first. When installation is complete and correct the rail gaps will be in alignment with the placement pin and two different colors will be visible at the Expander gap.

This set of PISTON RINGS is engineered for pistons having original factory groove depth specifications. (Some replacement pistons have SHALLOW ring groove depths and these shallow grooves may not take this full-depth set.) **CHECK GROOVE DEPTHS CAREFULLY - IT PAYS.** **TOP MOLY RING MUST NOT BE FILED.**

CAUTION

Final check of oil rings after rails are installed: **BE SURE TWO DIFFERENT COLORS ARE VISIBLE AFTER RING ARE INSTALLED ON PISTON BEFORE APPLYING RING COMPRESSOR.** This indicates expander gap ends are not overlapped. Also, rail gaps must be positioned properly.

Second Groove Install Next



CAUTION !

Outside STEP CUT MUST GO DOWN

Top Groove Install Last



Inside BEVEL MUST GO UP