

## SIERRA INSTALLATION INSTRUCTIONS AND BREAK-IN PROCEDURES

To install pistons in a used block, for best results follow these instructions. Use of ring compressors other than the type supplied by Mercury may cause piston and/or ring damage. The mixing of oversize and standard pistons is permissible. Before installation of the piston the following measurements must be taken.

1. Measure cylinder head for warpage. Warpage cannot exceed 0.004 inch.
2. Check cylinder in two places for out of round. Not to exceed 0.004 inch.
3. Check cylinder taper top to bottom not more than 0.002 inch.
4. Check for oversize not to exceed 0.002 inch.
5. Check piston for out of round 90° from each measurement ¼ of an inch above bottom of skirt. Not to exceed 0.004 inch.
6. To check ring install ring on piston. With ring laying in groove, hold piston being sure ring does not protrude above piston, out of the groove. If it does piston requires further cleaning.
7. Check ring end gap. Standard ring end gap is 0.005 inch per inch of cylinder bore. To figure proper ring end gap multiply cylinder bore time 0.005.

**NOTE:** When rebuilding a power head you should deglaze all cylinders by honing. We recommend the replacement of rings in all cylinders. Lube all pistons and cylinders with 2 cycle oil prior to installation. All piston rod bolts must be replaced and torqued to specification. Cylinder head bolts must be re-torqued after break-in.

### BREAK-IN PROCEDURE

During break-in the use of a TC-W3 oil is recommended. Do not use a synthetic oil during break-in. For early engines where oil is mixed with gas in tank use a ratio of 25 to 1 mixture. For engines with "Auto Blend" or "Advanced Oil Injection" mix oil in the tank at a ratio of 50 to 1 and use "Auto Blend" or "Advanced Oil Injection" system.

**First hour** – for the first ten minutes run engine at a fast idle and check for proper cooling. For the remainder of the first hour run the boat at a planing speed not to exceed 3,000 RPM. Vary the speed and no full throttle or prolonged idle.

**Second hour** – run boat at no more than 4,000 RPM, ¾ throttle. At intervals you may gradually bring throttle up to full throttle for no more than 1-2 minutes. Vary throttle.

**Third through tenth hour** – vary the speed at least every 15 minutes. No sustained full throttle or prolonged idle. Check for proper "Auto Blend" or "Advanced Oil Injection" operation. Retorque heads after 10 hours when heads cool! The use of synthetic oil after break-in is permissible. We recommend the use of Sierra TC-W3 or an O.E. brand equivalent and premium gasoline to reduce the chance of carbon build-up. The use of an "Engine Tuner" carbon remover every 50 hours is also recommended.