



# TITAN™

## COPPER HEAD GASKETS

### Installation Instructions

**Recommended uses:** Racing Engines with Heavy Boost or Nitrous running liquid coolant.

**Note:** O-rings are required in the block or head, Sealant may be used if desired (Copper Coat, SCE p/n G1612).

#### Steps:

1. Before installing head gasket, visually inspect for shipment damage. Sealant beads must be continuous without gaps or scratches.
2. Titan series head gaskets ("T" Prefix) require o-ring combustion seals installed in the head or block. (p/n 31542 o-ring kit) Great care has been taken to allow as much room as possible for o-ring placement, if your o-rings are already in the head or block check to see that the sealant beads are clear of the o-ring.
3. When installing o-rings there are two main considerations for placement.
  - i. The o-ring must be clear of the sealant beads on the gasket. This will determine the maximum outer diameter of the o-ring.
  - ii. The o-ring diameter and location must accommodate bore opening and combustion chamber size and shape this will determine the minimum inside diameter of the o-ring.
4. Recommended o-ring protrusion is not more than 25% of gasket thickness (SEE FIGURE 1). Example: Gasket thickness .043", o-ring protrusion height is .008" to .010". This standard works with all thicknesses that are .050" and less. Gaskets that are thicker than .050" do not require o-ring height more than .012". NOTE: For extreme boost or heavy nitrous an O-ring-Receiver-Groove arrangement is recommended (SEE FIGURE 3). When using a receiver-groove the wire may be higher than 25% of gasket thickness; wire height & width determines receiver groove depth & width by maintaining the relationships in the Figure 3 illustration.
5. If the combustion chamber or bore is so large that the o-rings will be placed less than .100" apart between cylinders, it is advisable to use a "figure 8" pattern for o-rings (SEE FIGURE 2 BELOW). This allows for more even clamp load over the entire head surface.
6. New head studs/bolts are recommended for proper gasket sealing. Threads must be in good condition otherwise replace, a die can be used to remove old sealant and/or rust. Use a tap to clean threads in block. If threads are tapped through the deck, use care in sealing threads to prevent coolant migration up the bolt. If studs are to be used check for proper length so nuts do not "bottom out". Always use quality hardened washers and thread lubricant to prevent thread galling.
7. As with any performance application it is strongly recommended that head bolts/studs be re-torqued. Start the engine and allow it to reach operating temperature without placing any load on the motor. Shut down and allow the motor to cool to ambient temperature. With the engine cold and following the recommended torque sequence, one at a time back each fastener off just enough to relieve the friction set, then re-torque to specified torque value.

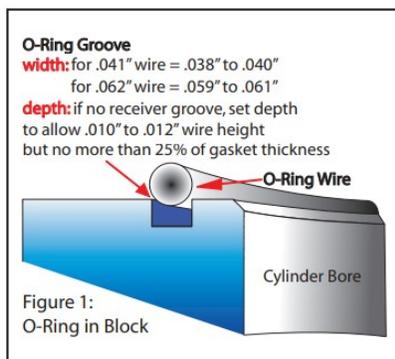


Figure 2: "Figure 8" O-Ring Example  
The Figure 8 pattern is used for large bore engines where deck surface between bores is less than .200". The machined grooves intersect between bores (arrows) where a continuous O-Ring wire is installed, then smaller pieces of wire are fitted tightly at intersect points.

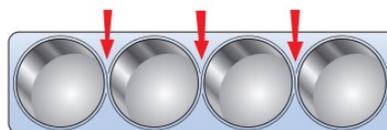


Figure 3: O-Ring Receiver Groove  
**Receiver width** should be 150% of wire width  
**Receiver depth** should be 75% of wire height  
This will force the copper gasket to displace to the corners of the receiver groove forming an effective barrier against leakage in case the head lifts.

