

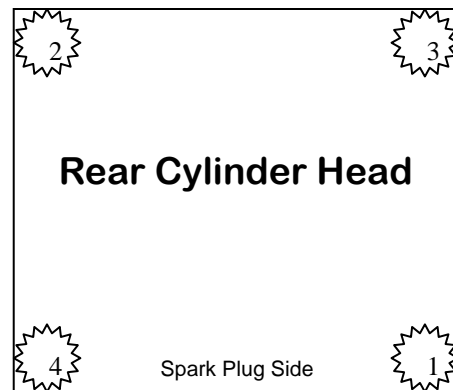
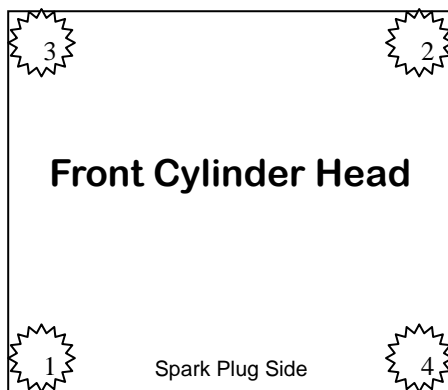
## TOP END ASSEMBLY

**CRITICAL:** Always wear safety glasses.

### Head Bolt Torque Instructions

TP Engineering engines are not the same as other engines. It is imperative that the proper cylinder base gaskets and cylinder head gaskets are installed, and that the cylinder head bolt torque sequence is followed. Failure to follow these instructions entirely may result in gasket failure.

TP Engineering recommends replacing the cylinder base gaskets whenever replacing head gaskets. If your engine uses cylinder base gaskets, coat them with "copper coat" or "Hi-Tack" before installation. For engines with o-ring base gaskets, install them dry, with no oil or coatings.



### Cylinder Head Bolt Installation

- Check and clean head bolt threads.
- Apply thin coat of "Moly Lube" or motor oil to the head bolt threads and the bottom surface of the head bolt washer. This lubrication is necessary to obtain accurate torque values during tightening.
- Install the head gaskets and cylinder heads. Lightly seat the head bolts.
- Tighten the head bolts in sequence to ten (10) ft. lbs. (see above for sequence)
- Tighten the head bolts in sequence to twenty (20) ft. lbs.
- Tighten the head bolts in sequence to one of the following torque values in one continuous motion:
  - If using Moly Lube – thirty (30) ft. lbs.
  - If using motor oil – forty (40) ft. lbs.

### Pushrod Adjustment

Start with front or rear cylinder; bring piston to top dead center of compression stroke; use the mark on the flywheel, or remove spark plug and view piston. Both valves will be closed on the compression stroke.

- Allow sufficient time for hydraulic lifter to bleed down (usually 15-30 minutes) Adjust pushrods to zero lash.
- Further tighten adjusters three full turns, then lock adjusters.
- Rotate crankshaft to bring other piston to TDC, repeat previous two steps.

### Intake Manifold

Lubricate intake manifold gaskets with assembly lube (NOT motor oil). Slide seals onto intake runners. Line up manifold with cylinder heads and start manifold bolts into threads. Gently snug the manifold bolts while watching that seals are not pinched. Tighten bolts evenly, both front and rear. Start engine and make sure there are no intake leaks.

### Spark Plug Gap

Adjust spark plug electrode gap to 0.035".