

## **Assembling Hirth Top End**

Some tips on re-assembly that may be helpful

**VERY IMPORTANT:** When installing the piston on to the connecting rod, note the small arrow imbedded in the top. **THIS ARROW MUST POINT TO THE EXHAUST PORT!** If you put the piston on backwards, the piston and the cylinder will be ruined in about 10 hours of run time. Piston rings must have small gap at the ends pointing up. A size cylinder must be used with A size piston, B cylinder with B piston and C cylinder with C size piston. Make sure all mating surfaces are clean.

**IF IT IS A 2-CARB INLINE ENGINE:** (Or F30 4 carb/Injected). After you have the cylinders on, only snug the nuts tight enough that you can still move the cylinder a little. Now put the exhaust manifold on without gaskets and snug the bolts. This will insure your cylinders are parallel with each other and prevent exhaust leaks. Now, you can torque the cylinder base nuts to 1/3 of full torque. Use a crisscross torque pattern. After 1<sup>st</sup> 1/3 torque pass remove exhaust manifold. Now repeat the same criss-cross pattern to 2/3's torque, then a third pass at full torque (19 ft. lbs.) Once the cylinder is fully torqued, you can install and torque the exhaust manifold with the exhaust gaskets.

Use a criss-cross torque pattern on head bolts also in 1/3 increments. (96 inch pounds) It is very important to use an accurate inch pound torque wrench on heads and spark plugs.

**IF IT IS A SINGLE CARB ENGINE:** (Or F30 2 carb) Procedure is the same as 2 carb except you must use the intake manifold to align cylinders instead of the exhaust manifold. This is important to prevent intake gasket leaks.

Use blue loctite 242 on both the 8mm base nuts and the 6mm intake manifold bolts. **DO NOT** use loctite on the exhaust or head bolts. (It will boil inside the holes)

You may want to consider using Permatex - Hylomar HPF gasket dressing (Part#25249) on all the brown paper type intake gaskets to be sure of your seal. Do not use gasket dressing on used gaskets. (This is optional-gaskets can be installed dry as well) Never use a sealer designed for metal surface sealing on paper gaskets as it cannot cure and will leak. Torque 8mm rubber carb flange bolts to 120 inch pounds.

If piston and rings are new, engine will have to go through break-in again. Cylinder head bolts should be re-torqued within 10 hours. It is important to check the torque of the cylinder base nuts within 10 hours of putting engine back in service. (19 Ft. Lbs.)

Use torque specs in the manual for all fasteners involved.