



FRANZ AND GRUBB  
**VINTAGE ENGINE  
 SPECIALIST**



**5149 STROHM AVENUE NORTH HOLLYWOOD CA 91601 818-505-0340**



## HEPOLITE PISTON RING INSTALLATION NOTES

**PLEASE READ** - this ring set contains a 2 piece oil ring that must be installed correctly

The purpose of piston rings is to seal the combustion chamber, remove heat from the piston itself, and control oil from entering the combustion chamber. Great care must be used during installation to insure success. This premium ring set is comprised of a two piece oil ring with coil spring, a cast iron second compression ring, and pvd faced top compression ring.

### TOP COMPRESSION RING

This top ring has been PVD chromium nitrided on its face. The oval marking on the ring indicates the top and should be installed with the marking towards the combustion chamber.



### SECOND COMPRESSION RING

The second compression ring is coated with a black phosphate, and is marked TOP to indicate that it should also be installed with the marking facing the combustion chamber.

### THE TWO PIECE OIL CONTROL RING

**The most modern oil control ring ever produced for the vintage Triumph!**

There are a few things to know about installing an oil ring with a spring expander. First- **the free gap of the oil ring in the cylinder without the spring installed is not important**, as the actual surface tension comes from the coiled spring behind the ring.

This ring design is superior than one piece as the radial distribution of pressure is even across the circumference of the bore. It is also chrome nitrided on the face for longer life and reduction of friction.

Second- the expander spring has a gap that can be opened slightly to install on the piston. The oil ring is then installed over the spring, **and the spring must be 100% behind the oil ring before the piston is installed.**

**The gap in the expander and the gap in the ring should be 180° apart as shown.**





## PISTON RING INSTALLATION NOTES (continued)

### RING GAP MUST BE CHECKED BEFORE INSTALLATION

To check ring gap insert ring on bore and square it accurately in the cylinder. Check the end gap with a feeler gauge. Adjust gap squarely with a file or ring filing tool. **Be sure to deburr the end of the ring gap after file fitting so no sharp edges are present.** Suggested ring gaps are .004" to .006" per inch of bore for top and second ring. The oil control ring expander creates the tension, so the free gap of the oil ring alone is not important, only that the coil spring is installed correctly.

If re-ringing without boring it is important that you check the ring gap in the least worn part of the cylinder. **RINGS MUST NEVER BE SPIRALED ONTO THE PISTON** To install the rings on the piston open the gap only enough to get it over the piston, while keeping the ring perfectly flat. Never twist or spiral a ring as it will damage the ring, increasing blow-by and reduce oil control.

### CYLINDER FINISH IS IMPORTANT



Cylinder finish is extremely important to the seating of your rings. Talk to your machinist or best resource about what is best for your application. We believe a 220 grit finish will work for this ring set, which can be obtained by using Sunnen M27-J55 (AN 300) stones. With the PVD coated top ring, a 280 grit using M27-J65 stones (AN 500) would work well too.

Make sure your cylinder is absolutely clean before installation, and the rings are not damaged while installing the cylinder. We prefer to lightly lubricate the rings and ring lands with non detergent 30w oil and lightly coat the cylinder bore so it won't rust. Stagger the ring gaps so they are not lined up. **Make sure the expander ring gap is 180 degrees from the oil ring gap.** When compressing rings during final assembly it is imperative that the rings are not scratched, bent, or distorted. Oil on the rings will not harm ring seating, as internet folklore suggests.

### BREAKING IN A NEW SET OF RINGS

There are as many opinions about breaking in rings as there are religions. We don't usually have problems with seating rings mostly due to our level of detail in preparing cylinders, and correct ring installation. **DO NOT** use synthetic oil for break in. Use a conventional oil with no friction modifiers. We use **Penngade1® SAE 30 oil** for break in. **DO NOT** idle the bike any more than necessary on startup. This will do nothing but create heat, which will not be dissipated by the new rings until seated. Rings need compression and a load on them to seat. **DO NOT** lug the engine, ride in abnormally hot weather, or in congested traffic. Vary the engine RPM while keeping between 1500-5000, and go for a short ride. Let the engine cool and check your base nuts, head bolts, and valve adjustment in that order.



### TAKE YOUR TIME AND DO IT RIGHT

If you are uncertain about any of these above procedures, there is a wealth of information about piston rings on the internet. We suggest that you look at different piston ring manufacturers websites for additional information. With the right cylinder preparation, correct end gaps, and proper installation techniques, your rings should break in quickly and provide you with a long service life.

For more technical information or to order parts, please visit

[www.fagengine.com](http://www.fagengine.com)