



PERFORMANCE PRODUCTS, INC.

INSTALLATION INSTRUCTIONS FOR ALUMINUM RODS

Manley aluminum rods are designed and engineered to provide maximum strength and rigidity with minimum weight.

MACHINING RODS

- 1. DO NOT machine bottom of cap for any reason. Any material removed from this area could result in rod failure.
- 2. Should material removal be necessary to balance the assembly, it is recommended to machine corners of the bolt area as pictured below.

GRINDING IN BLOCK

A minimum of 1/16" clearance must be maintained between the connecting rods and engine blocks or camshaft. Be sure you check this before balancing. If extreme clearance problems are encountered it is permissible (but not recommended), to chamfer the bolt head at a 45° angle.

CHECKING CLEARANCES

- 1. Diametrical clearances - Using either micrometers or "Plastigauge", check to be sure you have a minimum of .002" - .003" bearing clearance.
- 2. Side Clearance - Using micrometers or feelers gauges check to be sure you have .025" - .050" side clearance per pair of rods installed. (Actual side clearances however, are subject to variation based on personal preferences of the engine builder).
- 3. Aluminum rods are designed to be run with full flotation wrist pins (we recommend .0008" to .0015"), but are subject to change based on personal preferences.
- 4. Aluminum rods require additional "deck" clearance. A minimum of .055" is recommended for total deck height (including head gasket).

TORQUE SPECIFICATION

Make sure all threads and mating surfaces are clean and well lubricated with 30 weight oil or equivalent. Do not use moly or engine assembly lube. Dry or dirty threads produce increased friction preventing accurate measurement of torque. The rod cap serration must be cleaned and have a light coating of oil applied. Each pair of rod bolts should first be "snugged" up. Then alternating from bolt to bolt, torque successively to 20, 40, 60 and final torque setting. This torqueing sequence assures even tightening of the rod cap and equal stressing of the bolts. Final torque figure is listed below depending on which fastener is supplied.

Rod Bolt Part No.	Diameter	Material	U.H.L.	Torque Value w/ 30 wt. oil During Final Assembly At Manely Performance	Bolt Stretch Value	Recommended Torque Value Range w/30 wt. Oil In ft./lbs.
42244	7/16"	ARP 2000	1.850"	75	.0050" - .0054"	70 - 75
42245	7/16"	ARP 8740	1.800"	70	.0043" - .0047"	65 - 70
42348	3/8"	ARP 8740	1.850"	55	.0040 - .0042"	45 - 55
42353	7/16"	ARP 2000	2.000"	90	.0060" - .0064"	85 - 90

NOTES: 90% OF ALL ROD FAILURES ARE DUE TO ONE OR MORE OF THE FOLLOWING:

- 1. INADEQUATE OIL SUPPLY - Resulting in bearing failure and subsequent rod failure.
- 2. CYLINDER WALL FAILURE - Cylinder wall breakage is an important factor in the destruction of rods, frequently giving the impression that the cylinder was pushed out due to a broken rod, when in actual fact the rod was broken following cylinder wall failure. To reduce cylinder wall failures, overboring of cylinder should be held to a minimum.
- 3. INCORRECT ASSEMBLY - NOTE: Overstretched fasteners are prone to premature failure. Free length of fasteners should be measured and recorded prior to installation. If free length of fasteners increases by more than .001" at any time, the fasteners in question should be replaced immediately or failure may result.

