

CLEARANCES

Bearing clearances are dictated primarily by the bearing, not by the housing bore of the connecting rods. The connecting rod bore determines crush. Bearing clearances vary as to the application, diameter of the journal and bearing design. An approximate factor would be .001 per 1.000" diameter of crankshaft pin measured at the crown of the bearing surface.

Wrist pin to bushing clearance is variable per diameter as well. The following is a reference scale:

WRIST PIN DIAMETER	CLEARANCE	MAXIMUM CLEARANCE
.500 to 0.750"	.0010"	.0016"
.751 to 1.094"	.0012"	.0020"

Prior to disassembly of the connecting rod, number the connecting rod and matching cap. DO NOT use a metal stamp!



GUARANTEE

Technological advances are constantly made in the high performance engine business; many components that are adequate today will be outdated and unacceptable tomorrow. For this reason, we at CP-Carrillo are continually testing our products to assure our customers that we offer the highest quality products. CP-Carrillo's enviable reputation in the industry has led competitors throughout the world to copy our design. Watch for counterfeits. These imitations do not employ our sophisticated methods of certification and inspection. Consequently, these parts cannot approach the high quality component that CP-Carrillo produces. Our obligation to the high performance engine business is that only the finest quality materials, workmanship and inspection procedures are documented and accepted. This is our guarantee to you, our customer.

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MEMBER OF PANKL RACING SYSTEMS



STEEL BOLT INSTRUCTION SHEET

v.42021



CP-CARRILLO FASTENER ASSEMBLY LUBRICANT

The CARRILLO connecting rod is a precision, high strength, quality connecting rod, which when properly installed and maintained, will perform flawlessly in today's racing and highperformance internal combustion engines. We would like to offersome suggestions and specifications that should be helpful inyour installation.

HOW TO APPLY

Spread an adequate amount of the paste on the threads and underhead to obtain a good seal. Paste must not be mixed with grease or oils.

Before handling, read product and safety data sheets for safe use, physical and health hazard information. The material safety data sheet is available at www.cp-carrillo.com. You can also obtain a copy from your sales representative by calling our office.

STEEL BOLTS

All bolts should be lubricated under the head or on the bolt spot face, as well as on the threads. We recommend the bolt lube included for STEEL RODS, or as an alternative, a molybdenum based bolt thread lube. The preferred method to tighten the bolt is using the stretch figure listed in the table below. Measure all bolt lengths loose, then assemble cap to beam, tightening the bolts by hand, and then tighten the bolt until the measured increase in length correlates with the figures below.

An alternate method is torque angle. Per the table below, each bolt must be tightened to the recommended pre-torque and then, in one full motion, to the final angle. Resulting torque should be within the FINAL MIN or FINAL MAX Torque range, as per table. Modern "angular torque wrenches" electronically measure both torque force and angle rotation. For product advice, please contact CP-Carrillo.

We advise AGAINST using a torque-only procedure and an impact gun to start bolts. Please use caution not to cross threads. If not using CP-Carrillo supplied lube you must go by stretch only. For torque-only procedures, please contact CP-Carrillo.

THREAD	TYPE	HEAD MARKING	PRE TORQUE (Imperial)	PRE TORQUE (Metric)	ANGLE	STRETCH RECOMMENDED (Imperial)	STRETCH RECOMMENDED (Metric)	FINAL TORQUE (Imperial)	FINAL TORQUE (Metric)
1/4-28*	CARR	S4	5/10 ftlb	7/14 Nm	28°+/- 2°	.0045 to .0055	0.114 to 0.140	15 to 22 ftlb	20 to 30 Nm
1/4-28*	CARR	S41	5/10 ftlb	7/14 Nm	36°+/-2°	.0040 to .0050	0.102 to 0.127	15 to 25 ftlb	20 to 34 Nm
5/16-24	WMC	H5	10/18 ftlb	14/24 Nm	48°+/-2°	.0060 to .0070	0.152 to 0.178	40 to 55 ftlb	54 to 75 Nm
5/16-24	CARR	S5	10/18 ftlb	14/24 Nm	30°+/-2°	.0050 to .0060	0.127 to 0.152	30 to 45 ftlb	41 to 61 Nm
3/8-24	WMC	H6	10/18 ftlb	14/24 Nm	70°+/-2°	.0065 to .0075	0.165 to 0.190	65 to 95 ftlb	88 to 129 Nm
3/8-24	CARR	S6	10/18 ftlb	14/24 Nm	68°+/-2°	.0060 to .0070	0.152 to 0.178	50 to 80 ftlb	68 to 108 Nm
3/8-24	WMC	H61	10/18 ftlb	14/24 Nm	66°+/-2°	.0060 to .0070	0.152 to 0.178	65 to 80 ftlb	88 to 108 Nm
3/8-24	CARR	S61	10/18 ftlb	14/24 Nm	70°+/-2°	.0060 to .0070	0.152 to 0.178	70 to 100 ftlb	95 to 136 Nm
3/8-24	CARR	S6-x-xxx-PS	10/18 ftlb	14/24 Nm	74°+/-2°	.0065 to .0075	0.165 to 0.190	70 to 100 ftlb	95 to 136 Nm
7/16-20	WMC	H7	10/18 ftlb	14/24 Nm	75°+/-2°	.0075 to .0085	0.190 to 0.216	100 to 130 ftlb	136 to 176 Nm
7/16-20	CARR	S7	10/18 ftlb	14/24 Nm	66°+/-2°	.0060 to .0070	0.152 to 0.178	90 to 120 ftlb	122 to 163 Nm
7/16-20	WMC	H71	10/18 ftlb	14/24 Nm	72°+/-2°	.0065 to .0075	0.165 to 0.190	85 to 115 ftlb	115 to 156 Nm
7/16-20	CARR	S71	10/18 ftlb	14/24 Nm	56°+/-2°	.0045 to .0055	0.114 to 0.140	85 to 110 ftlb	115 to 149 Nm
M8 x 1.0	WMC	HM8	10/18 ftlb	14/24 Nm	38°+/-2°	.0055 to .0065	0.140 to 0.165	25 to 45 ftlb	34 to 61 Nm
M8 x 1.0	CARR	SM8	10/18 ftlb	14/24 Nm	58°+/-2°	.0065 to .0075	0.165 to 0.190	40 to 55 ftlb	54 to 75 Nm
M8 x 1.0	CARR	SM81	10/18 ftlb	14/24 Nm	52°+/-2°	.0050 to .0060	0.127 to 0.152	40 to 55 ftlb	54 to 75 Nm
M9 x 1.0	WMC	HM9	10/18 ftlb	14/24 Nm	50°+/-2°	.0055 to .0065	0.140 to 0.165	50 to 60 ftlb	68 to 81 Nm
M9 x 1.0	CARR	SM9	10/18 ftlb	14/24 Nm	48°+/-2°	.0050 to .0060	0.127 to 0.152	45 to 60 ftlb	61 to 81 Nm
M10 x 1.0	WMC	HM10	10/18 ftlb	14/24 Nm	80°+/-2°	.0065 to .0075	0.165 to 0.190	85 to 105 ftlb	115 to 142 Nm
M10 x 1.0	CARR	SM10	10/18 ftlb	14/24 Nm	72°+/-2°	.0065 to .0075	0.165 to 0.190	75 to 85 ftlb	102 to 115 Nm

PRE TORQUE-angle tightening procedure:

- Tighten each bolt to 10 Ft-Lbs or 14 Nm
- Tighten each bolt to 18 Ft-Lbs or 24 Nm
- Tighten to Angle for corresponding bolt

PRE TORQUE-angle tightening procedure 1/4 bolts:

- Tighten each bolt to 5 Ft-Lbs or 7 Nm
- Tighten each bolt to 10 Ft-Lbs or 14 Nm
- Tighten to Angle for corresponding bolt

DO NOT MAGNAFLUX CP-CARRILLO CONNECTING RODS WITH BOLTS INSTALLED

CP-CARRILLO reserves the right to alter the design or initiate product changes without incurring liability or obligation with respect to similar products previously manufactured by this concern.