



CL Series, Blue Brute Bearing Installation Guide

Please complete the following steps to install QM Blue Brute CL Series bearings.

1. Ensure the shaft is within recommended diameter tolerance shown in Table 1, and that it is straight, clean and free of any burrs or debris.
2. If using an open-end cover, slide open-end cover/seal combination into position on shaft.
3. Apply a thin oil film to shaft and bearing bore.
4. Slide bearing into position on shaft.
5. Tighten the bearing housing mounting bolts.
6. Tighten the locking collar set screws to the torque values shown in Table 2.
7. If using covers:
 - a. Make sure mating surface of cover is clean and dry.
 - b. Using sandpaper, slightly roughen the mating surface of the cover.
 - c. Place a 1/8" - 1/4" bead of polyurethane adhesive sealant on mating surface of the cover.
 - d. Start two tabs of the cover into the cover slots on bearing making sure that the grease fitting on the cover is accessible
 - e. Using a deadblow hammer, drive the remaining tabs into place to lock the cover onto the bearing.

TABLE 1. Recommended shaft tolerances.

Shaft Size	Bearing Number	Tolerance (in)
1-15/16" 2"	50mm 22210	+0.000 / -0.0015
2-3/16" 2-1/4"	- 22211	+0.000 / -0.0015
2-7/16" 2-1/2"	65mm 22213	+0.000 / -0.0015
2-11/16" 2-3/4" 2-15/16" 3"	70mm 75mm 22215	+0.000 / -0.002
3-7/16" 3-1/2"	90mm 22218	+0.000 / -0.003
3-15/16" 4"	100mm 22220	+0.000 / -0.003
4-7/16" 4-1/2"	115mm 22222	+0.000 / -0.005
4-15/16" 5"	130mm 22226	+0.000 / -0.005

TABLE 2. Set screw torque values.

Shaft Size	Bearing Number	Set Screw Size	Torque (in-lbs)
1-15/16" 2"	50mm 22210	3/8"-24TPI	290
2-3/16" 2-1/4"	- 22211	3/8"-24TPI	290
2-7/16" 2-1/2"	65mm 22213	1/2"-20TPI	620
2-11/16" 2-3/4" 2-15/16" 3"	70mm 75mm 22215	1/2"-20TPI	620
3-7/16" 3-1/2"	90mm 22218	1/2"-20TPI	620
3-15/16" 4"	100mm 22220	5/8"-18TPI	1325
4-7/16" 4-1/2"	115mm 22222	5/8"-18TPI	1325
4-15/16" 5"	130mm 22226	5/8"-18TPI	1325

Suggested Lubrication for Bearings

QM Bearings is dedicated to using the highest quality components in everything we do; this is why we use Dow Corning Molykote® G4700 grease. It is a lithium complex extreme pressure synthetic grease that combines the benefits of wide operating temperatures and broad compatibility with varied materials. This grease offers excellent thermal stability through temperatures ranging from -40 F/C to 350 F (177 C). When dealing with extremely high temperature applications, consult a QM Bearings Customer Service Specialist for optional grease recommendations. QM Bearing’s Blue Brute bearings are factory lubricated and are ready for use without additional lubrication. Re-lubrication intervals noted below in Table 3 depend on the type of application, speed, operating temperature and other environmental conditions. Knowledge of a particular application will determine the best re-lubrication interval but use the intervals shown below for general purposes.

TABLE 3. Re-Lubrication Intervals

(Please note: The average manual grease gun will produce approximately one (1) ounce of grease per 33 strokes. Please check with the manufacturer of your grease delivery system for specific information.)

Shaft Size	Bearing Number	Initial Weight (oz)	Relubrication Weight (oz)	Relubrication Interval (Hours of Service Based On RPM and Temperature)												
				100 RPM		250 RPM		500 RPM		1000 RPM		2000 RPM		3000 RPM		
				<160°	>160°	<160°	>160°	<160°	>160°	<160°	>160°	<160°	>160°	<160°	>160°	
1-15/16" 2"	50mm	22210	0.8	0.2	1600	800	1000	500	640	320	240	120	120	60	60	30
2-3/16" 2-1/4"	-	22211	1.0	0.3	1200	600	800	400	440	220	160	80	100	50	60	30
2-7/16" 2-1/2"	65mm	22213	1.4	0.4	1120	560	720	360	360	180	120	60	80	40	40	20
2-11/16" 2-3/4" 2-15/16" 3"	70mm 75mm	22215	2.7	0.7	1040	520	680	340	340	170	100	50	60	30		
3-7/16" 3-1/2"	90mm	22218	3.7	0.9	960	480	600	300	300	150	80	40	40	20		
3-15/16" 4"	100mm	22220	6.5	1.6	840	420	520	260	240	120	60	30	20	16		
4-7/16" 4-1/2"	115mm	22222	7.4	1.9	680	340	440	220	200	100	60	30	20	16		
4-15/16" 5"	130mm	22226	10.6	2.7	560	280	360	180	160	80						

How to Convert a Blue Brute Bearing from Fixed to Expansion (floating)**Flange Cartridge & Flange Block**

1. Make a reference mark on the housing and retaining nut.
2. Loosen teflon tipped set screw that locks the retaining nut in place.
3. Loosen retaining nut by tapping with a hammer and punch, rotating retaining nut counter clockwise one complete revolution.
4. Tighten teflon tipped set screw.

***Please note:** When converting a Blue Brute bearing from fixed to expansion, it is imperative that the unit to be converted to expansion is oriented correctly. Since the insert in a Blue Brute flange bearing is held against either a shoulder or snap ring opposite the housing retaining nut, a flange bearing that has been converted to expansion can only float in the direction of the retaining nut. Based on this the retaining nut must be on the side of the housing opposite the fixed bearing.*

Pillow Block

1. Decide amount and direction of expansion needed. If uni-directional expansion is required, follow directions as outlined above for flange bearings on the nut that is on the side you want the expansion.
2. If multi-directional expansion is required follow the directions as outlined above for flange bearings on both nuts except the rotation should be one-half a revolution on each nut instead of one complete revolution.

How to Convert a Blue Brute Bearing from Expansion (floating) to Fixed**Flange Cartridge & Flange Block**

1. Loosen teflon tipped set screw that locks the retaining nut in place.
2. Tighten retaining nut by tapping with a hammer and punch, rotating retaining nut clockwise until tight. It is not possible to over-tighten the retaining nut.
3. Tighten teflon tipped set screw.

Pillow Block

1. Follow directions above for Flange bearings on both nuts on either side of the housing. If the bearing originally came from the factory as expansion, only one nut will have been rotated out and it will be stamped with an “E” for identification purposes.

***Please Note:** When converting a Blue Brute from expansion to fixed on a bearing that is mounted, the locking collar set screws must be released to allow the insert to move both in the housing and on the shaft.*

North American Locations: Western Canada – Prince George, BC Eastern Canada – Mississauga, ON Western US – Ferndale, WA Southern US – Irving, TX Eastern US – Cuyahoga Falls, OH

QM Bearings designs, manufactures and markets rugged Blue Brute® bearings, Quick-Flex® couplings and rigid compression couplings. The company's precise manufacturing methods and innovative solutions have won over thousands of customers in over 40 countries. For more information, visit www.qmbearings.com for the distributor nearest you or call (800) 661-5568 or (360) 384-6673.