	52100 Steel, Wide Inner Ring, Spherical, Set-Screw	Flange 2-Bolt, Cast Iron	1-Inch Bore	Nickel-Plate	C (open cover) CE (closed cover)
UCFT205-16 =	**UC**	**FT**	**205-16**	**NP**	**C(CE)**
(COMPLETE UNIT)	(BEARING)	(HOUSING)	(BORE SIZE)	(COATING)	(COVERS)

COATINGS, COLORS AND COVERS

BS	Back Seal
MZ2	Zinc Coated Bearing Insert
MZ20	Kanigen Coated Bearing Insert
NP	Nickel-Plate (Copper Nickel Chrome)

BEARING INSERTS

UC	52100 Steel, Wide Inner Ring, Spherical, Set Screw
UCW	52100 Steel, Wide Inner Ring, Spherical, Set Screw
UR	52100 Steel, Wide Inner Ring, Cylindrical, Set Screw
UE	Black Oxide, Wide Inner Ring, Spherical, Accu-Loc
SUE	Black Oxide, Wide Inner Ring, Cylindrical with Snap Ring, Accu-Loc
UCX	52100 Steel, Medium Duty, Wide Inner Ring, Spherical, Set Screw
UG	52100 Steel, Wide Inner Ring, Spherical, Eccentric
UGW	52100 Steel, Wide Inner Ring, Spherical, Eccentric
B	52100 Steel, Narrow Inner Ring, Spherical, Set-Screw
BR	52100 Steel, Narrow Inner Ring, Cylindrical, Set-Screw
KH	52100 Steel, Narrow Inner Ring, Spherical, Eccentric
KHR	52100 Steel, Narrow Inner Ring, Cylindrical, Eccentric
SER	52100 Steel, Wide Inner Ring, Cylindrical w/snap ring, Set Screw
UK	52100 Steel, Spherical, Adapter
K000	52100 Steel, Extra Narrow Inner Ring, Set-Screw
U000	52100 Steel, Extra Narrow Inner Ring, Eccentric
MU000	Stainless Steel, Extra Narrow Inner Ring, Eccentric

SERIES

200	Normal Duty
X00	Medium Duty
300	Heavy Duty
000	Extra Light Duty

HOUSINGS

FT2	2 Bolt Flange, Gray Cast Iron
FL	2 Bolt Flange, Gray Cast Iron
FJT	2 Bolt Flange, Gray Cast Iron
CJTZ	2 Bolt Flange, Gray Cast Iron
LFL	Piloted 2 Bolt Flange, Gray Cast Iron
FX	2 Bolt Flange, Malleable Cast
LCTE	2 Bolt Flange, Malleable Cast
PFL	2 Bolt Flange, Pressed Steel
FA	2 Bolt Adjustable Flange, Gray Cast Iron
NFL	2 Bolt Flange, Thermoplastic
LF (204-205)	2 Bolt Flange, Thermoplastic, Round Bolt Hole
LX (204-205)	2 Bolt Flange, Thermoplastic, Square Bolt Hole
P200	Pillow Block, Gray Cast Iron
LP	Low Base Pillow Block, Gray Cast Iron
AK	Low Base Pillow Block, Gray Cast Iron
EP	Expansion Type Pillow Block, Gray Cast Iron
LLP	Pillow Block, Gray Cast Iron
PP	Pillow Block, Pressed Steel
PR	Rubber Cushioned Pillow Block, Pressed Steel
PW	Pillow Block, Malleable Cast
PPL	Pillow Block, Thermoplastic
TB	Tap Base Pillow Block, Gray Cast Iron
PA	Tap Base Pillow Block, Gray Cast Iron
TBL	Tap Base, Thermoplastic
PH	Pedestal Base Pillow Block, Gray Cast Iron
FB	3 Bolt Flange Bracket, Gray Cast Iron
FK	3 Bolt Flange Bracket, Gray Cast Iron
TM	3 Bolt Flange, Malleable Cast
PF	3 Bolt Flange, Pressed Steel
PFT	3 Bolt Flange, Pressed Steel
FBL	3 Bolt Flange, Thermoplastic
F	4 Bolt Flange, Gray Cast Iron
LF	4 Bolt Flange, Gray Cast Iron
SLF	4 Bolt Flange, Gray Cast Iron
FPL	4 Bolt Flange, Thermoplastic
FC	Piloted Flange Cartridge, Gray Cast Iron
FCS	Piloted Flange Cartridge, Gray Cast Iron
FCF	Piloted Flange Cartridge, Gray Cast Iron
ST	Wide Slot Take-Up, Gray Cast Iron
T	Take-Up, Gray Cast Iron
NST	Narrow Slot Take-Up, Gray Cast Iron
TPL	Take Up, Standard Slot, Thermoplastic
WTPL	Take Up, Wide Slot, Thermoplastic
NTPL	Take Up, Narrow Slot, Thermoplastic
ECH	Hanger Bearing, Gray Cast Iron
HPL	Hanger, Thermoplastic
LC	Cartridge, Gray Cast Iron
C	Cartridge, Gray Cast Iron
PX00	Medium Duty Pillow Block, Gray Cast Iron
FLX	Medium Duty 2 Bolt Flange, Gray Cast Iron
FX00	Medium Duty 4 Bolt Flange, Gray Cast Iron
FCSX	Medium Duty Flange Cartridge, Gray Cast Iron
FCX	Medium Duty Flange Cartridge, Gray Cast Iron
TX00	Medium Duty Take-Up, Gray Cast Iron
P300	Heavy Duty Pillow Block, Gray Cast Iron
P-U	Heavy Duty Pillow Block, Gray Cast Iron
PE-U	Heavy Duty Expansion Pillow Block, Gray Cast Iron
AO	Heavy Duty Pillow Block, Gray Cast Iron
SAO	Heavy Duty Pillow Block, Gray Cast Iron
FL300	Heavy Duty 2 Bolt Flange, Gray Cast Iron
F300	Heavy Duty 4 Bolt Flange, Gray Cast Iron
FS	Heavy Duty 4 Bolt Flange with Pilot, Gray Cast Iron
CJO	Heavy Duty 4 Bolt Flange, Gray Cast Iron
T300	Heavy Duty Take-Up, Gray Cast Iron
C300	Heavy Duty Cartridge, Gray Cast Iron
P000	Silver Series, Pillow Block, Zinc Alloy
FL000	Silver Series, 2 Bolt Flange, Zinc Alloy
ME	Piloted Flange Cartridge , Gray Cast Iron
SHE	Tap Base Pillow Block, Gray Cast Iron
RCSM	Cartridge Unit,Rubber
SP	Pillow Block, Gray Cast Iron

MATERIALS

Bearing Materials:

Because of repetitive stresses to the rolling contact areas within a bearing, surface fatigue will occur after some duration of operation depending upon the operating conditions. To maximize to the useful life of a bearing by delaying the onset of material fatigue, the highest possible quality materials are used in bearing production with the following properties:

- High Levels of Hardness
- High Rolling Contact Fatigue Resistance
- Good Wear Resistance
- Good Mechanical Strength

The standard material for AMI bearing rings and rolling elements is vacuum-degassed, high-carbon, chrome bearing steel. For applications that operate in wash down or corrosive environments, stainless steel is used.

Table 1

Bearing Rings and Balls:	C	Si	Mn	P	S	Cr	Mo
SUJ2 (US Equivalent AISI 52100)	0.95 ~ 1.10	0.15 ~ 0.35	≤ 0.50	≤ 0.025	≤ 0.025	1.30 ~ 1.60	≤ 0.08
SUS440C Stainless Steel	0.95 ~ 1.20	≤ 1.0	≤ 1.0	≤ 0.040	≤ 0.030	16.0 ~ 18.0	≤ 0.75

Additionally we offer our bearings made with SUJ2 steel that are coated with black oxide, zinc, or Kanigen to impart additional corrosion resistance. Contact AMI for additional information on these coatings and their proper application.

Housing Materials:

Gray Iron

Our bearing housings are one-piece solid cast iron with a minimum tensile strength of 25,000 psi. They are designed to be able to accommodate the full dynamic and static loading of the bearing inserts they are designed to incorporate. Most cast housings are available with Nickel Plating to impart some corrosion resistance.

Ductile/Malleable Iron

For applications requiring additional strength, Ductile/Malleable Iron is available with a minimum strength of 40,000 psi. These should be requested for any application involving shock or impact loading.

Stamped Steel

We offer a wide variety of stamped steel housings for light duty applications, with the advantage of ball bearing construction in an economical low cost unit.

Thermoplastic and Stainless Steel

We also offer our housings made with Polybutylene Terephthalate Thermoplastic (PBT) and Stainless Steel. These products are featured in our “Corrosion Protection Bearing Units” catalog.

TOLERANCES

Inner Bearing Ring Bore Tolerances:

Table 2

Nominal Bore Diameter				Tolerance		
Over		Including		Minimum	Maximum	
in.	mm	in.	mm		in.	mm
0.3937	10	0.7087	18	0	+0.0006	+0.015
0.7087	18	1.2500	31.75	0	+0.0007	+0.018
1.2500	31.75	2.0000	50.8	0	+0.0008	+0.021
2.0000	50.8	3.1496	80	0	+0.0009	+0.024
3.1496	80	4.7244	120	0	+0.0011	+0.028
4.7244	120	7.0866	180	0	+0.0013	+0.033

Bearing Housing Spherical Bore Diameter Tolerances:

The standard spherical inside diameter of AMI Bearing Housings is known as a “J7” fit. The dimensional tolerance on spherical inside diameters of housings are classified into an “H7” for clearance fit, “K7” for interference fit, and “J7” for intermediate fit between “H7” and “K7”.

Radial Internal Clearance:

AMI uses “C0” radial internal clearance as a standard for all of our insert bearings (-4° to 212°F) AMI offers a wide range of internal clearance ranges for cold and high temperature applications.

Recommended Shaft Tolerances:

Table 3

Inch Size Shafting	Metric Size Shafting
Shaft Diameter up to 1-15/16” Nominal to -0.0005”	Shaft Diameter up to 45 mm Nominal to -0.013 mm
Shaft Diameters 2” to 4-7/16” Nominal to -0.0010”	Shaft Diameters 50 mm to 140 mm Nominal to -0.025 mm

Recommended Housing Bore Tolerances for SUE/SER Bearing Types:

Table 4

AMI Bearing #	Dimension in Inches (Millimeters)									
	O.D. of Bearings		Stationary Housing				Rotating Housing			
	Diameters		Diameters		Resultant Fit		Diameters		Resultant Fit	
SUE/SER 204	1.8504 (47.000)	1.8499 (46.988)	1.8503 (46.998)	1.8509 (47.013)	.0010 (0.025)	.0001 (0.003)	1.8498 (46.985)	1.8504 (47.000)	.0005 (0.013)	.0006 (0.015)
SUE/SER 205	2.0472 (52.000)	2.0466 (51.984)	2.0471 (51.996)	2.0476 (52.009)	.0010 (0.025	.0001 (0.003)	2.0466 (51.984)	2.0471 (51.996)	.0005 (0.013)	.0006 (0.015)
SUE/SER 206	2.4409 (62.000)	2.4403 (61.984)	2.4408 (61.996)	2.4413 (62.009)	.0010 (0.025)	.0001 (0.003)	2.4403 (61.984)	2.4408 (61.996)	.0005 (0.013)	.0006 (0.015)
SUE/SER 207	2.8346 (72.000)	2.8340 (71.984)	2.8345 (71.996)	2.8350 (72.009)	.0010 (0.025)	.0001 (0.003)	2.8340 (71.984)	2.8345 (71.996)	.0005 (0.013)	.0006 (0.015)
SUE/SER 208	3.1496 (80.000)	3.1490 (79.985)	3.1495 (79.997)	3.1500 (80.010)	.0010 (0.025)	.0001 (0.003)	3.1490 (79.985)	3.1495 (79.997)	.0005 (0.013)	.0006 (0.015)
SUE/SER 209	3.3465 (85.000)	3.3457 (84.981)	3.3464 (84.999)	3.3470 (85.014)	.0013 (0.033)	.0001 (0.003)	3.3458 (84.983)	3.3464 (84.999)	.0007 (0.018)	.0007 (0.018)
SUE/SER 210	3.5433 (90.000)	3.5425 (89.980)	3.5432 (89.997)	3.5438 (90.013)	.0013 (0.033)	.0001 (0.003)	3.5426 (89.982)	3.5432 (89.997)	.0007 (0.018)	.0007 (0.018)
SUE/SER 211	3.9370 (100.000)	3.9362 (99.980)	3.9369 (99.997)	3.9375 (100.013)	.0013 (0.033)	.0001 (0.003)	3.9363 (99.982)	3.9369 (99.997)	.0007 (0.018)	.0007 (0.018)
SUE/SER 212	4.3307 (110.000)	4.3299 (109.980)	4.3306 (109.997)	4.3312 (110.013)	.0013 (0.033)	.0001 (0.003)	4.3300 (109.982)	4.3306 (109.997)	.0007 (0.018)	.0007 (0.018)

BEARING MOUNTING

Set-Screw Locking:

1. Inspect the Shaft
   - Measure the shaft to ensure it is within recommended tolerances per Table 3 on page 130:
   - Check for any nicks or burrs that might prevent the bearing from sliding on the shaft easily
   - Clean the mounting surface, then apply a film of light weight oil

2. Place the bearing on the shaft
   - Do not hammer the bearing onto the shaft

3. Bolt the housing to the mounting surface
   - The bearing and shaft must be aligned within 2°
   - Rotate the shaft to ensure it rotates smooth and freely
   - It is expected that plain washers will be used under mounting bolt heads to span the slot width

4. Align the setscrews of the bearings at both ends of the shaft
   - See Figure 1

5. Alternate Tightening of Setscrews
   - Tighten set screw “A” half of the recommended tightening torque (Figure 2)
   - Tighten set screw “B” all the way to the recommended tightening torque (Figure 2) per Table 5
   - Go back to set screw “A” and tighten it all the way to the recommended tightening torque with a variable torque wrench per Table 5

Figure 1:

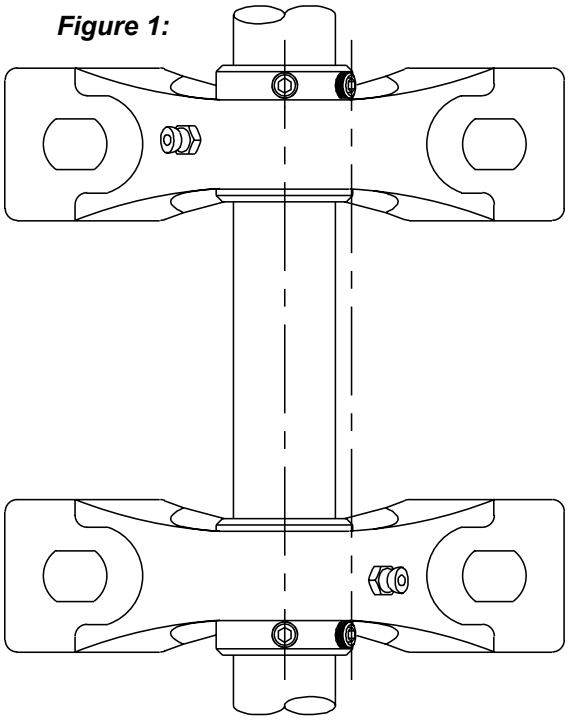
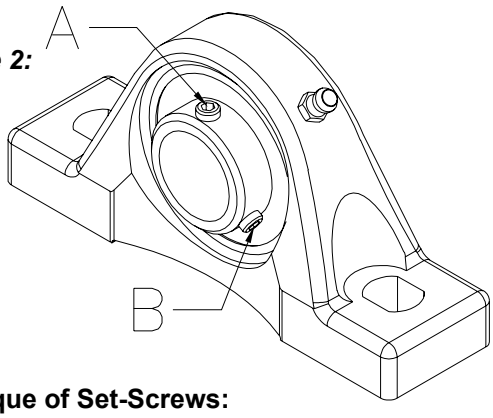


Figure 2:



Recommended Tightening Torque of Set-Screws:

Table 5

Applicable Bearing #					Recommended Tightening Torque (in-lb)	
					zone hardened	through hardened inner ring (reference for stainless inserts)
—	—	—	—	B1-3	—	21
—	—	—	—	B4	22	—
MUC201-203	UC201-203	UC305-306	UCX05	—	—	34
MUC204-206	UC204-206	—	—	B5-6	43	—
MUC207-209	—	UC307	UCX06-X08	—	—	74
—	UC207-209	—	—	B7	104	—
MUC210	—	UC308-309	UCX09-X12	—	—	143
—	UC210-213	—	—	—	207	—
—	UC214-216	—	—	—	346	—
—	UC217-218	UC310-314	UCX13-X17	—	—	246
—	—	UC315-316	UCX18	—	—	246
—	—	UC317-319	UCX20	—	—	589
—	—	UC320-324	—	—	—	589
—	—	UC326-328	—	—	—	991

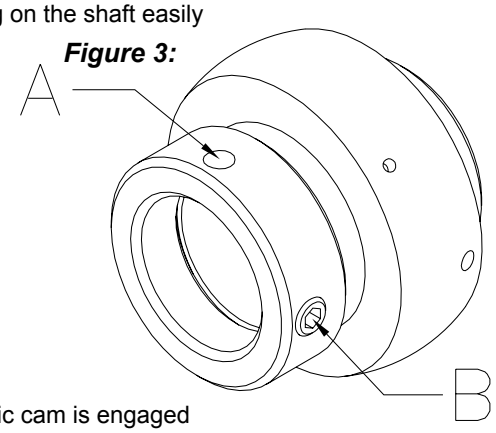
Reference Through-Hardened Tightening Torque Specifications for Stainless Steel Inserts

BEARING MOUNTING (continued)

Eccentric Locking Collar:

1. Inspect the Shaft
   - Measure the shaft to ensure it is within recommended tolerances per Table 3 on page 130:
   - Check for any nicks or burrs that might prevent the bearing from sliding on the shaft easily
   - Clean the mounting surface, then apply a film of light weight oil

Figure 3:



2. Place the bearing on the shaft
   - Do not hammer the bearing onto the shaft

3. Bolt the housing to the mounting surface
   - The bearing and shaft must be aligned within 2°
   - Rotate the shaft to ensure it rotates smooth and freely
   - It is expected that plain washers will be used under mounting bolt heads to span the slot width

4. Fasten the unit to the shaft
   - Place the eccentric locking collar on the track of the inner bearing ring
   - Rotate the collar by hand **in the direction of rotation** until the eccentric cam is engaged
   - Insert a drift pin or straight punch in the hole on the O.D. of the collar “A” and strike with a small hammer to positively engage the collar
   - Tighten the set screw “B” to the recommended tightening torque per Table 6 to hold the collar in the engaged position

Recommended Tightening Torque of Eccentric Locking Collar Set-Screws:

Table 6

Applicable Bearing #		Recommended Tightening Torque (in-lb)
UG204-205	KH(R)201-205	43
UG206	KH(R) 206	104
UG207-210	KH(R)207-210	208
UG211-212	KH(R)211	234

BEARING MOUNTING (continued)

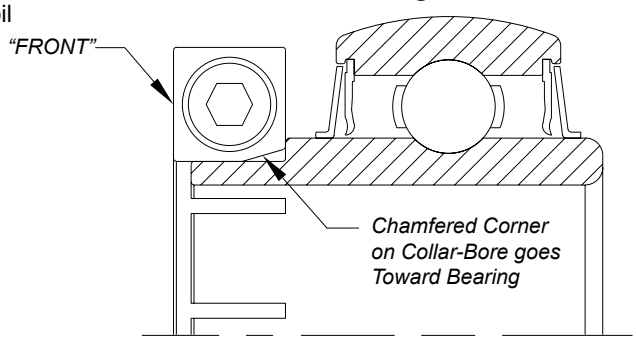
Accu-Loc Concentric Locking Collar:

1. Inspect the Shaft
   - Measure the shaft to ensure it is within recommended tolerances per Table 3 on page 130:
   - Check for any nicks or burrs that might prevent the bearing from sliding on the shaft easily
   - Clean the mounting surface, then apply a film of light weight oil

2. Place the bearing on the shaft
   - Do not hammer the bearing onto the shaft

3. Bolt the housing to the mounting surface
   - The bearing and shaft must be aligned within 2°
   - Rotate the shaft to ensure it rotates smooth and freely
   - It is expected that plain washers will be used under mounting bolt heads to span the slot width

Figure 4:



4. Fasten the unit to the shaft
   - Place the locking collar on the tangs of the inner bearing ring with the chamfered corner on the bore of the collar toward the bearing. The collar is stamped with the word "FRONT" this should be facing away from the bearing and readable to the installer.
   - Tighten the capscrew to the recommended tightening torque per Table 7 using a variable torque wrench

Recommended Tightening Torque of Accu-Loc Collar Capscrews:

Table 7

Applicable Bearing #	Recommended Tightening Torque (in-lb)
UE204-206	70
UE207-209	90
UE210-211	180
UE212	400

BEARING MOUNTING (continued)

Adapter Sleeve:
Bearing units with adapter sleeves permit wider shaft tolerances and can be used in applications where vibration and shock is heavy, as this locking device has superior holding power over all other types.

1. Inspect the Shaft
   - Measure the shaft to ensure it is within recommended tolerances per Table 8:

Recommended Shaft Tolerances for Bearing with Adapter Sleeves:

Table 8

Inch Size Shafting	Metric Size Shafting
Shaft Diameter up to 1-15/16" Nominal to -0.0020"	Shaft Diameter up to 45 mm Nominal to -0.050 mm
Shaft Diameters 2" to 4-7/16" Nominal to -0.0030"	Shaft Diameters 50 mm to 140 mm Nominal to -0.075 mm

   - Check for any nicks or burrs that might prevent the bearing from sliding on the shaft easily
   - Clean the mounting surface, then apply a film of light weight oil

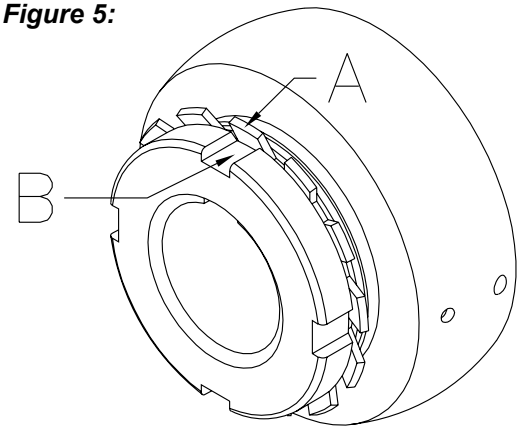
2. Mount the adapter sleeve
   - Slide the adapter sleeve onto the shaft with the threads on the sleeve facing the outboard side
   - Position the sleeve at the approximate location of the bearing centerline

3. Mount the bearing
   - Apply a light coating of oil on the outside diameter of the sleeve and threads
   - Starting with the large end of the bearing bore, slide the bearing onto the adapter sleeve so that the taper of the bearing matches the taper of the sleeve

4. Bolt the housing to the mounting surface
   - The bearing and shaft must be aligned within 2°
   - Rotate the shaft to ensure it rotates smooth and freely
   - It is expected that plain washers will be used under mounting bolt heads to span the slot width

5. Install the Locknut and Lockwasher
   - Slide the lockwasher on the adapter sleeve with the inner prong of the lockwasher pointing toward the bearing
   - Install the locknut on the threads of the adapter sleeve with the chamfered face toward the bearing
   - Tighten the locknut using a spanner wrench to the recommend torque specifications per Table 9
   - Find a lockwasher tang "A" nearest to one of the slots "B" in the locknut. If a slot does not line up with one of the tangs on the lockwasher, back off the locknut until one does
   - Bend the tang of the lockwasher into the slot of the locknut. This will retain the correct position of the locknut

Figure 5:



ADAPTER SLEEVE LOCKNUT RECOMMENDED TIGHTENING TORQUE

Table 9

Applicable Bearing #	Normal Duty Application (ft-lbs)		Standard Duty Application (ft-lbs)	
	min	max	min	max
UK205	14	29	11	22
UK206	22	43	14	29
UK207	36	72	22	43
UK208	43	87	29	58
UK209	43	87	29	58
UK210	54	108	36	72
UK211	76	152	51	101
UK212	105	210	72	145
UK213	119	239	80	159
UK215	134	268	94	188
UK216	170	340	116	231
UK217	217	434	148	297
UK218	260	521	177	354

Applicable Bearing #	Medium Duty Application (ft-lbs)		Standard Duty Application (ft-lbs)	
	min	max	min	max
UKX05	25	51	14	29
UKX06	36	72	25	51
UKX07	43	87	29	58
UKX08	54	108	36	72
UKX09	65	130	43	87
UKX10	87	174	58	116
UKX11	112	224	76	152
UKX12	130	260	87	174
UKX13	174	347	119	239
UKX15	203	405	141	282
UKX16	246	492	166	333
UKX17	304	608	203	405
UKX18	347	694	231	463
UKX20	492	984	333	665

Applicable Bearing #	Heavy Duty Application (ft-lbs)		Standard Duty Application (ft-lbs)	
	min	max	min	max
UK305	22	43	14	29
UK306	33	65	22	43
UK307	43	87	29	58
UK308	58	116	40	80
UK309	80	159	54	108
UK310	112	224	72	145
UK311	130	260	90	181
UK312	166	333	112	224
UK313	195	391	130	260
UK315	260	521	184	369
UK316	325	651	217	434
UK317	383	767	260	521
UK318	448	897	297	593
UK319	521	1042	347	694
UK320	600	1201	434	868
UK322	890	1779	448	897
UK324	1049	2098	593	1186
UK326	1302	2604	723	1447
UK328	1555	3110	1049	2098

LUBRICATION

Proper lubrication is essential for adequate bearing life! A bearing cannot survive without it.

AMI Standard Lubricants:
AMI Bearings have an initial fill of lubricant when we manufacture them, therefore it is not necessary to lubricate prior to their initial operation. Below is a list of our standard used lubricants and their basic physical properties.

Table 10

APPLICATION	General Purpose	High Temperature		Cold Temperature	Free Spinning		Food Grade
PRODUCT NAME	**Shell Alvania #3**	**Yuken Super-Lube #3**	**Kluber Noxlub BF4026**	**Shell AeroShell #7**	**Mobil Velocite 10**	**Amsoil AM-1**	**Citgo Clarion HTEP 2**
PHYSICAL PROPERTY							
Lubricant Type	Grease	Grease	Grease	Grease	Oil	Grease	Grease
Color	Amber	-	White	Amber	-	Red	Off-White
NLGI Grade	3	3	2	2	N/A	1	2
Thickener Type	Lithium	Calcium Complex	PTFE	Microgel	N/A	Lithium Complex	Aluminum Complex
Base Oil Type	Mineral Oil	Silicone	PFPE	Synthetic Diester	Mineral Oil	PAO + Ester	Mineral Oil
Base Oil Viscosity @ 40˚C	98 cSt	-	390 cSt	10.3 cSt	22 cSt	130 cSt	954 cSt
Base Oil Viscosity @ 100˚C	9.4 cSt	-	39 cSt	3.1 cSt	4 cSt	16.5 cSt	101 cSt
Operating Temperature Range	-13˚F ~ 265˚F (-25˚C ~ 130˚C)	-4˚F ~ 400˚F (-20˚C ~ 200˚C)	-20˚F ~ 500˚F (-30˚C ~ 260˚C)	-100˚F ~ 300˚F (-70˚C ~ 150˚C)	-20˚F ~ 250˚F (-30˚C ~ 120˚C)	-40˚F ~ 425˚F (-70˚C ~ 150˚C)	-10˚F ~ 325˚F (-12˚C ~ 160˚C)

We have many other lubricants available as well, including several solid lubricant choices. Additionally, we can change the grease in most of our bearings to anything you specify. Consult with AMI for recommendations.

Relubrication Intervals:

Table 11

Bearing Operating Temperature	Environmental Condition		
˚F	**Clean**	**Dirty**	**Washdown or Extremely Dirty**
Up to 122	12 months	6 months	3 months
Up to 158	6 months	2 months	1 month
Up to 212	3 months	2 weeks	1 week
Up to 248	6 weeks	1 week	3 days
Up to 302	2 weeks	3 days	daily

LUBRICATION (continued)

Compatibility:
Beware of Mixing Greases!

When two incompatible greases are mixed, either one of two things can happen. Either the mixture hardens and will not release any of the oil or the opposite effect; the mixture softens and releases all of the oil.
In either case, the end result is basically the same; there is no means to effectively lubricate the bearing.
Two good greases, when mixed together can make one very bad grease!

It is recommended to use the same type of grease that was originally supplied with the bearing. When changes in grease type are necessary, please consult your lubricant supplier or AMI engineering staff to determine the compatibility of the mixture

Table 12

C = Compatible B = Borderline I = Incompatible	Aluminum Complex	Barium	Bentonite Clay	Calcium	Calcium 12-Hydroxy	Calcium Complex	Calcium Sulfonate	Lithium	Lithium 12-Hydroxy	Lithium Complex	Polyurea	Sodium
Aluminum Complex	C	I	I	I	C	I	B	I	I	C	I	I
Barium	I	C	I	I	C	I	B	I	I	I	I	I
Bentonite Clay	I	I	C	C	C	I	B	I	I	I	I	I
Calcium	I	I	C	C	C	B	I	C	B	B	I	I
Calcium 12-Hydroxy	C	C	C	C	C	B	B	C	C	C	I	I
Calcium Complex	I	I	I	B	B	C	C	I	I	C	C	I
Calcium Sulfonate	B	B	B	I	B	C	C	C	C	C	B	I
Lithium	I	I	I	C	C	I	C	C	C	C	I	B
Lithium 12-Hydroxy	I	I	I	B	C	I	C	C	C	C	I	I
Lithium Complex	C	I	I	B	C	C	C	C	C	C	I	B
Polyurea	I	I	I	I	I	C	B	I	I	I	C	I
Sodium	I	I	I	I	I	I	I	B	I	B	I	C

Load Capacity and Life of Bearings

Bearing "Life" is defined as the number of revolutions and or hours at a given speed, which the bearing runs before the first evidence of fatigue develops in the material of either ring or of any of the rolling elements.

Basic Dynamic Load Rating, Cr : The constant stationary radial load which a rolling bearing could theoretically endure for a basic rating life of one million revolutions.

Basic Static Load Rating, Cor : A load acting on a non-rotating bearing. Maximum load that can be applied to the bearing without permanently damaging the bearing.

The rating life of ball bearings is calculated using the following formulas:

$$L_{10} = \left(\frac{C}{P}\right)^3$$

$$L_{10h} = \left(\frac{C}{P}\right)^3 \times \frac{10^6}{60 \times n}$$

Where:

L_{10} : *Rated Bearing Life in millions of revolutions*

L_{10h} : *Rated Bearing Life in operating hours*

C : *The bearings basic dynamic load rating in lbf or kgf*

P : *The equivalent applied radial load in lbf or kgf*

n : *Shaft speed in RPM*

Additionally an adjusted rating life can be determined using the following formula:

$$L_{10} = a_1 \times a_2 \times a_3 \times L_{10}$$

a_1 Reliability Factor:

This is an adjustment factor where estimated fatigue life other than 90% is desired.

Table 13

RELIABILITY %	L_{na}	a_1
99	L_1	0.21
98	L_2	0.33
97	L_3	0.44
96	L_4	0.53
95	L_5	0.62
90	L_{10}	1
50	L_{50}	5

a_2 Material Factor:

AMI Bearings, Inc. uses AISI 52100 high chromium bearing steel or SUS 440C stainless steel for our rolling elements and bearing rings. A factor of 1.0 is used for these materials. If a reduction in material hardness is expected due to high operating temperatures, a reduced a_2 factor should be used. Consult with AMI engineers in these situations.

a_3 Operating Condition Factor:

This factor should take into account the adequacy of lubrication, presence of contamination, and unusual loading or mounting conditions.

Values less than 1.0 should be considered when the kinematic viscosity of the lubricant is less than 13 cSt at the operating temperature or when the rotational speed is exceptionally low.

Values greater than 1.0 can only be considered when the lubrication conditions are so favorable that the probability of failure caused by surface distress is greatly reduced.

Insert bearings are normally mounted on a shaft with a loose fit and rely on features such as inner bearing width and a locking device, the "American Bearing Manufacturers Association (ABMA)" recommends an a_3 factor of 0.456.

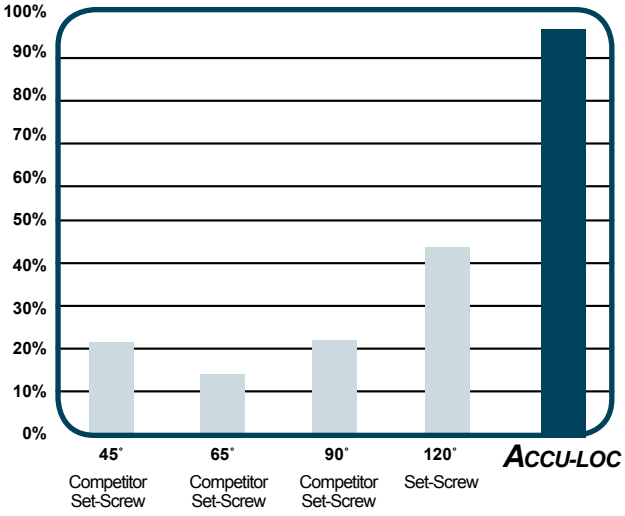
Consult with AMI engineers for proper selection of these life adjustment factors.

These tables show bearing load ratings at various RPM, based on 500 hours minimum life - 2,500 hours average life.

Table 14

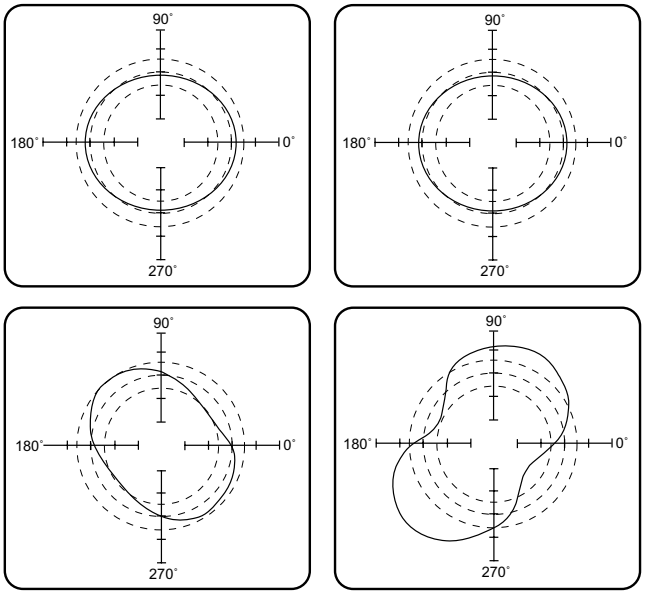
AMI Bearing # NORMAL and MEDIUM DUTY					Radial Load Rating at Various RPM													
UC200 UK200 SER200	UCX00 UKX00	B	UG200	KH200	33-1/3	50	100	250	500	750	1000	1200	1500	2000	2400	3600	5000	rpm
UCW (201-203)	-	1-3	201-203	201-203	2150	1880	1490	1100	870	760	690	650	605	550	515	450	405	Radial Load Rating in Pounds
201-204	-	4	204	204	2890	2520	2000	1480	1170	1020	930	875	810	740	695	605	545	
205	-	5	205	205	3150	2750	2190	610	1280	1120	1020	955	885	805	760	660	595	
206	X05	6	206	206	4410	3850	3060	2250	1790	1560	1420	1340	1240	1130	1060	925	830	
207	X06	7	207	207	5820	5090	4040	2970	2360	2060	1870	1760	1640	1490	1400	1200		
208	X07	-	208	208	6590	5760	4570	3370	2670	2340	2120	2000	1850	1680	1590	1380		
209	X08	-	209	209	7420	6450	5120	3770	3000	2620	2380	2240	2080	1890	1780	1550		
210	X09	-	210	210	7980	6930	5500	4060	3220	2810	2550	2400	2230	2030	1910	1670		
211	X10	-	-	211	9700	8480	6730	4960	3930	3440	3120	2940	2730	2080	2330			
212	X11	-	-	-	11800	10300	8180	6030	4780	4180	3800	3570	3320	3010	2840			
213	X12	-	-	-	12900	11300	8940	6590	5230	4570	4150	3910	3630	3300	3100			
214	X13	-	-	-	14000	12200	9710	7150	5680	4960	4510	4240	3940	3580	3370			
215	X14	-	-	-	14900	13000	10300	7600	6040	5270	4790	4510	4180	3800	3580			
216	X15	-	-	-	16300	14300	11300	8340	6620	5780	5250	4940	4590	4170				
217	X16	-	-	-	18700	16400	13000	9570	7600	6640	6030	5680	5270	4790				
218	X17	-	-	-	21500	18800	14900	11000	8720	7620	6920	6510	6040	5490				
-	X18	-	-	-	24500	21400	17000	12500	9920	8670	7880	7410	6880					
-	X20	-	-	-	30200	26400	20900	15400	12200	10700	9720	9149	8490					
HEAVY DUTY																		
UC 300		UK 300			33-1/3	50	100	250	500	750	1000	1200	1500	2000	2400	3600	5000	
305		305			4780	4180	3220	2440	1940	1700	1540	1450	1350	1220	1150	1010	900	
306		306			6020	5260	4170	3080	2440	2130	1940	1820	1690	1540	1450	1260	1130	
307		307			7530	6550	5200	3830	3040	2660	2410	2270	2110	1920	1800	1570		
308		308			9150	7990	6340	4670	3710	3240	2950	2770	2570	2340	2200	1920		
309		309			11570	10100	8030	5910	4690	4100	3730	3510	3250	2960	2780	2430		
310		310			13900	12100	9630	7110	5630	4920	4470	4210	3910	3550	3340			
311		311			16100	14100	11200	8220	6530	5700	5180	4870	4530	4110	3870			
312		312			18300	16000	12700	9350	7420	6480	5890	5540	5150	4670	4400			
313		313			20800	18200	14400	10600	8450	7380	6710	6310	5860	5320	5010			
314		314			23400	20400	16200	11940	9480	8280	7520	7080	6580	5970	5620			
315		315			25600	22300	17700	13100	10400	9060	8230	7750	7190	6530				
316		316			27650	24100	19100	14100	11200	9760	8870	8350	7750	7040				
317		317			29700	26000	20600	15200	12100	10500	9580	9010	8370	7600				
318		318			32200	28100	22300	16400	13100	11400	10400	9750	9050					
319		319			34400	30000	23800	17600	13900	12200	11100	10400	9670					
320		320			39000	34100	27100	19900	15800	13800	12600	11800	11000					
321		321			41200	36000	28600	21100	16720	14600	13300	12500	11600					
322		322			46100	40300	32000	23500	18700	16300	14800	14000						
324		324			46500	40600	32300	27800	18900	16500	15000	14100						
326		326			51600	45100	35800	26400	20900	18300	16600	15600						
328		328			57300	50100	39700	29300	23200	20300	18400	17400						

Compare *ACCU-LOC*® versus Set-Screws!



100% represents perfect roundness

ACCU-LOC



Tests show the Accu-Loc maintains roundness and near perfect concentricity when compared to set-screw methods.

Table 15

ACCU-LOC			L10 Life	Revolutions Per Minute - (RPM)														
Shaft Size	UE200	SUE 200		*50*	*150*	*500*	*1000*	*1500*	*1750*	*2000*	*2500*	*3000*	*3500*	*4500*	*5500*	*6500*	*7500*	Radial Load Rating - (lbs)
3/4" 20mm	**UE204-12 UE204**	**SUE204-12 SUE204**	500 3000 15000 20000 30000	— 1514 887 809 706	— 1049 617 559 485	1279 706 417 372 328	1014 559 328 304 260	887 485 289 260 230	843 466 274 250 216	809 446 260 235 211	750 417 245 225 196	706 387 230 211 181	671 372 216 196 172	617 338 201 181 157	578 314 186 172 152	544 304 181 157 137	515 279 167 152 132	
1" 25mm	**UE205-16 UE205**	**SUE205-16 SUE205**	500 3000 15000 20000 30000	— 1642 965 877 764	— 1142 666 613 534	1387 764 446 407 358	1103 613 358 328 284	965 534 314 284 250	916 505 299 270 235	877 485 284 255 230	813 446 265 245 206	764 421 250 230 201	730 397 235 216 186	666 368 216 201 172	622 348 201 186 167	588 319 186 172 152	559 309 181 167 142	
1-1/8" 1-3/16" 1-1/4" 30mm	**UE206-18 UE206-19 UE206-20 UE206**	**SUE206-18 SUE206-19 SUE206-20 SUE206**	500 3000 15000 20000 30000	— 2440 1431 1303 1137	— 1705 995 907 794	2063 1137 666 603 529	1642 907 529 485 426	1431 794 461 426 372	1362 750 441 402 348	1303 715 426 377 333	1205 666 392 358 309	1137 627 372 333 294	1078 598 348 319 279	995 554 319 294 260	926 505 294 274 235	877 485 279 260 221	838 461 265 245 216	
1-1/4" 1-3/8" 1-7/16" 35mm	**UE207-20 UE207-22 UE207-23 UE207**	**SUE207-20 SUE207-22 SUE207-23 SUE207**	500 3000 15000 20000 30000	— 3175 1857 1691 1480	— 2195 1284 1171 1024	2671 1480 862 789 686	2122 1171 686 627 544	1857 1024 603 544 475	1769 975 564 515 456	1691 931 544 490 431	1573 862 505 461 402	1480 809 475 431 382	1401 774 456 412 358	1284 706 412 372 328	1205 662 387 353 309	1137 627 368 328 289		
1-1/2" 40mm	**UE208-24 UE208**	**SUE208-24 SUE208**	500 3000 15000 20000 30000	— 3876 2269 2053 1798	— 2680 1568 1426 1250	3263 1798 1049 956 838	2597 1426 838 760 666	2269 1250 730 666 578	2151 1186 691 627 549	2053 1137 666 603 529	1911 1049 617 559 485	1798 995 578 529 461	1710 941 549 500 436	1568 862 500 461 402	1470 809 470 431 372	1382 764 446 402 353		
1-11/16" 1-3/4" 45mm	**UE209-27 UE209-28 UE209**	**SUE209-27 SUE209-28 SUE209**	500 3000 15000 20000 30000	— 4155 2430 2215 1931	— 2886 1686 1529 1343	3513 1931 1132 1029 902	2788 1529 902 818 715	2430 1343 789 715 622	2313 1274 745 681 593	2215 1215 715 652 568	2058 1132 657 603 524	1931 1068 622 568 495	1828 1009 588 539 466	1686 921 539 495 431	1573 867 510 461 402			
1-15/16" 2" 50mm	**UE210-31 UE210-32 UE210**	**SUE210-31 SUE210-32 SUE210**	500 3000 15000 20000 30000	— 4537 2654 2418 2108	— 3151 1840 1669 1466	3836 2108 1236 1124 984	3044 1669 984 893 781	2654 1466 861 781 679	2525 1391 813 744 647	2418 1327 781 712 621	2247 1236 717 658 572	2108 1166 679 621 540	1996 1102 642 589 508	1840 1006 589 540 471	1717 947 556 503 439			
2" 2-3/16" 55mm	**UE211-32 UE211-35 UE211**	**SUE211-32 SUE211-35 SUE211**	500 3000 15000 20000 30000	— 5140 3014 2729 2386	— 3572 2087 1901 1656	4341 2386 1397 1274 1107	3440 1901 1107 1009 882	3014 1656 975 882 774	2857 1573 921 838 730	2729 1499 882 804 701	2543 1397 818 745 652	2386 1308 764 696 608	2264 1245 730 657 578	2087 1147 666 608 529				
2-7/16" 60mm	**UE212-39 UE212**	**SUE212-39 SUE212**	500 3000 15000 20000 30000	— 6199 3621 3293 2881	— 4302 2509 2283 1994	5228 2881 1686 1529 1333	4145 2283 1333 1215 1063	3621 1994 1171 1063 926	3450 1896 1112 1005 877	3293 1813 1063 965 843	3067 1686 985 892 784	2871 1578 921 843 735	2729 1499 877 799 701					