

### 3. LUBRICATION, CLEARANCE AND SPEED LIMITS OF FBJ PILLOW BLOCKS

#### 3.1 BEARING LUBRICATION

Bearing lubrication reduces friction and wear, acts as a coolant, minimizes contamination, prevents corrosion, and generally extends bearing life. Selecting the best lubricant for your specific application becomes a very important decision; however, choosing from the hundreds available lubricants can be an overwhelming task. FBJ engineering staff is available to help make the right decision for your application.

FBJ bearing Inserts with pressed steel housings are for life lubrication and filled with high quality multipurpose grease, with the correct quantity. These bearings cannot be re-lubricate.

Bearing Inserts with Cast iron housings or Thermo Plastic housings are equipped with a grease nipple and also filled with high quality multipurpose grease and with the correct quantity. These bearings are to be re-lubricate after the recommended hours of initial operation, to ensure a long life and smooth running.

It is important to use the correct grease with correct amount in the correct replenishment period. Following tables will help you to decide the both factors, the replenishment period and re-fill quantity.

Table 3.1.1

Bore Dia Ref	Replenishment Grease Quantity (g)			Bore Dia Ref	Replenishment Grease Quantity (g)		
	UC2, UK2	UCX, UKX	UC3, UK3		UC2, UK2	UCX, UKX	UC3, UK3
01	1.8	–	–	11	10.3	13.2	25
02	1.8	–	–	12	13.2	14.9	31
03	1.8	–	–	13	14.9	18.2	39
04	1.8	–	–	14	18.2	21.0	47
05	1.8	3.3	4.2	15	21.0	25.0	56
06	3.3	4.5	5.9	16	25.0	31.0	65
07	4.5	5.6	8.1	17	31.0	38.0	78
08	5.6	6.5	10.1	18	38.0	48.0	90
09	6.5	7.7	12.6	19	–	–	108
10	7.7	10.3	18.1	20	–	–	141

Table 3.1.2 Grease Replenishment Period

Ambient Condition	Bearing Operating Temperature °C		Replenishment Period	
	Over	Below	d <sub>n</sub> : Under 50000	d <sub>n</sub> : Over 50000
			Fairly Clean	–
	50	70	12 ~ 18 Months	6 ~ 12 Months
	70	100	4 ~ 8 Months	1 ~ 3 Months
	100	–	2 ~ 4 Weeks	1 ~ 2 Weeks
Somewhat Dusty	–	50	1 ~ 2 Years	6 ~ 12 Months
	50	70	4 ~ 8 Months	2 ~ 4 Months
	70	100	3 ~ 6 Weeks	2 ~ 4 Weeks
	100	–	1 ~ 2 Weeks	Every Week
Considerable Dusty	–	70	1 ~ 2 Months	3 ~ 6 Weeks
	70	100	2 ~ 4 Weeks	1 ~ 2 Weeks
	100	–	1 ~ 7 Days	1 ~ 3 Days
Much Moisture and Water Splash	–	–	1 ~ 3 Days	Every Day

$d_n = d \text{ (shaft diameter in mm)} \times n \text{ (speed in rpm)}$

#### 3.2 CLEARANCE OF FBJ BEARING INSERTS

All FBJ cylindrical bore insert bearings are of normal clearance and tapered bore insert bearings are of C3 clearance. If you need any special clearance other than this, please consult FBJ Engineering department.

Table 3.2.1

Bore Dia Ref (d)		Clearance (µm)			
(mm)		Normal		C3	
Over	Incl	Min.	Max.	Min.	Max.
2.5	10	2	13	8	23
10	18	3	18	11	25
18	24	5	20	13	28
24	30	5	20	13	28
30	40	6	20	15	33
40	50	6	23	18	36
50	65	8	28	23	43
65	80	10	30	25	51
80	100	12	36	30	58
100	120	15	41	36	66

#### 3.3 SPEED LIMITS FOR FBJ PILLOW BLOCK BEARING INSERTS

Table 3.3.1

BEARING NUMBER	MAX SPEED (rpm)	BEARING NUMBER	MAX SPEED (rpm)	BEARING NUMBER	MAX SPEED (rpm)	BEARING NUMBER	MAX SPEED (rpm)	BEARING NUMBER	MAX SPEED (rpm)
UC, UK 201	5800	–	–	–	–	–	–	SA, SB 201	6800
UC, UK 202	5800	–	–	–	–	–	–	SA, SB 202	6800
UC, UK 203	5800	–	–	–	–	–	–	SA, SB 203	6800
UC, UK 204	5800	–	–	–	–	–	–	SA, SB 204	5800
UC, UK 205	5100	UC, UK X 05	4300	UC, UK 305	4600	SSUC 205	4000	SA, SB 205	5100
UC, UK 206	4300	UC, UK X 06	3700	UC, UK 306	3900	SSUC 206	3300	SA, SB 206	4300
UC, UK 207	3700	UC, UK X 07	3300	UC, UK 307	3400	SSUC 207	3200	SA, SB 207	3700
UC, UK 208	3300	UC, UK X 08	3100	UC, UK 308	3100	SSUC 208	2800	SA, SB 208	3300
UC, UK 209	3100	UC, UK X 09	2800	UC, UK 309	2700	SSUC 209	2600	SA, SB 209	3100
UC, UK 210	2800	UC, UK X 10	2500	UC, UK 310	2400	SSUC 210	2300	SA, SB 210	2800
UC, UK 211	2500	UC, UK X 11	2300	UC, UK 311	2300	SSUC 211	2000	SA, SB 211	2500
UC, UK 212	2300	UC, UK X 12	2200	UC, UK 312	2100	SSUC 212	1800	SA, SB 212	2300
UC, UK 213	2200	UC, UK X 13	2100	UC, UK 313	1900	–	–	–	–
UC, UK 214	2100	UC, UK X 14	2000	UC, UK 314	1800	–	–	–	–
UC, UK 215	2000	UC, UK X 15	1800	UC, UK 315	1700	–	–	–	–
UC, UK 216	1800	UC, UK X 16	1700	UC, UK 316	1600	–	–	–	–
UC, UK 217	1700	UC, UK X 17	1600	UC, UK 317	1500	–	–	–	–
UC, UK 218	1600	–	–	UC, UK 318	1400	–	–	–	–
–	–	–	–	UC, UK 319	1400	–	–	–	–
–	–	–	–	UC, UK 320	1300	–	–	–	–