AIRENG PTY LTD

LUBRICATION INSTRUCTIONS FOR DOUBLE ROW SPHERICAL ROLLER BEARINGS 22500 SERIES SPLIT PILLOW BLOCK

PROCEDURE FOR APPLYING LUBRICANT TO BEARINGS AND PILLOW BLOCKS
Bearing and housing must be clean.

Pack each bearing(race) as full as possible with specified grease by swivelling the outer ring open, rotating it as necessary to inject the grease, then swivelling the outer ring closed, being careful not to use force in case a roller catches the corner of the outer ring sphere.

Before assembling the pillow block cap to the base, and after completing bearing and base assembly, fill the pillow block base to the bottom of the shaft with the same lubricant product used to pack the bearing.

Before mounting the cap to base, lightly coat the interior of the cap with grease.

Smear a liberal amount of grease on the contacting surface of the seals.

RELUBRICATION OF BEARINGS NOT SUPPLIED WITH GREASE NIPPLES.
TABLE 1 should be used as a guide for the relubrication interval. The quantity of grease required is shown on TABLE 2.

Remove pillow block cap and extract the old grease from the bearing and pillow block.

If it is not practical to swivel the outer ring open, purge the old grease from the bearing by forcing fresh grease through the bearing.

Re-pack pillow block as described above.

RELUBRICATION OF BEARINGS SUPPLIED WITH GREASE NIPPLES.
TABLE 1 should be used as a guide for the relubrication interval. The quantity of grease required is shown on TABLE 2.

Bearings should be completely repacked at least once every three years. Bearings operating close to the maximum grease speed listed on TABLE 2 should be repacked every year.

LUBRICANT
Use a multi-purpose roller bearing grease NLGI Grades 1 or 2 with rust inhibitors and anti-oxidant additives. Suggested minimum oil viscosity 400SSU @ 38'C (100'F). Grease for high speed operation should be dynamically stable, must not churn or whip, and must be suitable for 120'C (250'F) continuous. It is not good practice to mix greases with different bases as the results are unpredictable.

Several suitable products are: Shell Alvania RL3, Moblelux 3, Castrol AP3, BP LS3, Ampol RR3...

Consult AIRENG P/L on proper lubrication if bearings are subject to temperatures below -30'C (22'F) or above 95'C (203'F).

STORAGE
If the fan is to be idle and not operated for an extended period of time, bearings should be protected as recommended by the manufacturer. The bearing housing should be completely filled with grease and the shaft should be turned in the bearings at frequent intervals to prevent corrosion and damage. Prior to startup, excess or contaminated grease should be removed.

NOTES
Some bearings will run warm, especially during the "run-in" period. If the bare hand can be held on the bearing cap for five seconds, there is no cause for alarm.

If the bearings are equipped with flushable labyrinth seals, the seals should be lubricated once a month.

TABLE 1

SHAFT	RELUBRICATION INTERVAL IN HOURS OF OPERATION SHAFT SPEED IN RPM										
DIAMETER	500	900	1200	1400	1600	1800	2000	2200	2600	3000	3600
30	4700	2550	1850	1550	1350	1200	1100	950	800	650	500
40	4050	2200	1550	1350	1150	1000	900	800	725	600	400
45	3900	2050	1450	1250	1050	900	800	725	600	500	350
50	3700	1900	1375	1150	975	825	725	650	525	425	300
55	3525	1815	1270	1075	900	760	660	500	475	375	260
60	3350	1725	1200	1000	825	700	600	550	425	325	225
65	3000	1525	1075	875	700	600	500	450	325	225	150
70	2900	1450	1000	800	650	550	450	400	275	200	
75	2775	1350	925	750	600	500	400	350	250	175	
80	2650	1300	875	700	550	450	375	325	225		
90	2425	1175	775	600	475	375	300	250			
100	2225	1050	675	525	400	300	225				
110	2050	950	575	425	300	225					
115	1950	850	525	375	250	175					
125	1800	775	450	325	200						

Lubricants deteriorate in time, and the rate of deteriorate is a function of the lubricant used at the operating conditions encountered. Table 1 is based on the use of an age-resistant, average quality grease and is valid for bearing temperatures of 70'C (158'F) measured on the outer ring. The intervals should be halved for every 15'C (27'F) increase above 70'C, but the maximum permissible operating temperature for the grease should obviously not be exceeded. Conversely, if the operating temperatures are lower than 70'C, the intervals can be lengthened to about twice for operating temperatures of 50'C (122'F) and below.

Where there is a risk of the grease becoming contaminated, the intervals should be reduced.

TABLE 2

SHAFT DIAMETER	COMPLETE PILLOW BLOCK ASSEMBLY NO.	BEARING NUMBER	MAXIMUM GREASE SPEED	RELUBRICATION QUANTITY		INITIAL FILL	
				OUNCES	GRAMS	OUNCES	GRAMS
30	22507	22207K C3	5600	0.3	9	1.8	50
40	22509	22209K C3	4500	0.3	9	2.8	80
45	22510	22210K C3	4300	0.4	11	3.5	100
50	22511	22211K C3	3800	0.4	11	4.6	130
55	22512	22212K C3	3600	0.7	20	6.7	190
60	22513	22213K C3	3200	0.7	20	6.7	190
65	22515	22215K C3	3000	0.7	20	8.5	240
70	22516	22216K C3	2800	0.8	23	9.9	280
75	22517	22217K C3	2600	1.0	28	11.3	320
80	22518	22218K C3	2400	1.1	31	14.0	400
90	22520	22220K C3	2200	1.5	43	21.1	600
100	22522	22222K C3	1900	1.9	54	29.9	850
110	22524	22224K C3	1700	2.2	62	35.2	1000
115	22526	22226K C3	1600	2.6	74	35.2	1000
125	22528	22228K C3	1400	3.0	85	42.2	1200

NOTE: MAXIMUM GREASE SPEED IS BASED ON NSK BRAND BEARINGS. FOR OTHER BRANDS CONSULT SUPPLIER.