

Tribology Guide for Tribology Compliance on-

- **Conveyor Plumber Blocks**
- **Electrical Motors**
- **Water Pumps**

&:

- **Lubricator King® Fail-Proof Automatic Grease Lubricators**



Lubricator King Distributions CC

also trading as GreaseMax South Africa CC

SOLE DISTRIBUTOR OF LUBRICATOR KING LUBRICATORS

Company Registration: 2007/213689/23

Vat Registration: 4820242594

Email: sales@LubricatorKing.com

Consumer Line: 082-455-6886

Fax: 013-697-1010

Web: www.LubricatorKing.com

GreaseMax SA is BBBEE Level 04 Supplier



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Conveyor Plumber Blocks & Lubricator King Type

<u>P/block Nr.</u>	<u>SHAFT SIZE</u>	<u>PRE-SCRIBED LUBRICATOR KING TYPE</u>
<u>Standard Range</u>		
SNL 505	20mm	12 MONTH UNIT
SNL 506-605	25mm	12 MONTH UNIT
SNL 507-606	30mm	12 MONTH UNIT
SNL 508-607	35mm	6 MONTH UNIT
SNL 509	40mm	6 MONTH UNIT
SNL 510-608	45mm	6 MONTH UNIT
SNL 511-609	50mm	6 MONTH UNIT
SNL 512-610	55mm	6 MONTH UNIT
SNL 513-611	60mm	3 MONTH UNIT
SNL 515-612	65mm	3 MONTH UNIT
SNL 516-613	70mm	3 MONTH UNIT
SNL 517	75mm	3 MONTH UNIT
SNL 518-615	80mm	3 MONTH UNIT
SNL 519-616	85mm	3 MONTH UNIT
SNL 520-617	90mm	3 MONTH UNIT
SNL 522-619	100mm	1 MONTH UNIT
SNL 524-620	110mm	1 MONTH UNIT
SNL 526	115mm	1 MONTH UNIT
SNL 528	125mm	1 MONTH UNIT
SNL 530	135mm	1 MONTH UNIT
SNL 532	140mm	1 MONTH UNIT
<u>Heavy Duty Range</u>		
SNL 3134	150mm	1 MONTH UNIT
SNL 3136	160mm	1 MONTH UNIT
SNL 3138	170mm	1 MONTH UNIT
SNL 3140	180mm	1 MONTH UNIT
SNL 3144	200mm	2 OneMonth units on Manifold with single feed point to the Bearing
SNL 3148	220mm	2 OneMonth units on Manifold with single feed point to the Bearing
SNL 3152	240mm	2 OneMonth units on Manifold with single feed point to the Bearing
SNL 3156	260mm	2 OneMonth units on Manifold with single feed point to the Bearing
SNL 3160	280mm	2 OneMonth units on Manifold with single feed point to the Bearing
SNL 3164	300mm	2 OneMonth units on Manifold with single feed point to the Bearing

Electrical Motors and Lubricator King® type

KW	R/min	Pole	Frame	Shaft Dia	Lubricator King Type
37	2950	2	200L	55	06 Month Type Lubricator
	1475	4	225S	60	06 Month Type Lubricator
	980	6	250S	70	03 Month Type Lubricator
	720	8	250M	70	03 Month Type Lubricator
45	2950	2	225M	55	06 Month Type Lubricator
	1475	4	225M	60	06 Month Type Lubricator
	980	6	250M	70	03 Month Type Lubricator
	735	8	280S	80	03 Month Type Lubricator
55	2965	2	250S	60	06 Month Type Lubricator
	1475	4	250S	70	06 Month Type Lubricator
	985	6	280S	80	03 Month Type Lubricator
	735	8	280M	80	03 Month Type Lubricator
75	2970	2	250M	60	06 Month Type Lubricator
	1475	4	280M	70	06 Month Type Lubricator
	985	6	315S	80	03 Month Type Lubricator
	740	8	315M	85	03 Month Type Lubricator
90	2970	2	280S	65	06 Month Type Lubricator
	1480	4	280S	80	06 Month Type Lubricator
	985	6	315S	85	03 Month Type Lubricator
	740	8	315M	85	03 Month Type Lubricator
110	2970	2	280M	65	06 Month Type Lubricator
	1480	4	280M	80	06 Month Type Lubricator
	985	6	315M	85	03 Month Type Lubricator
	740	8	315L	90	03 Month Type Lubricator
132	2980	2	315S	65	06 Month Type Lubricator
	1485	4	315S	85	06 Month Type Lubricator
	985	6	315L	90	03 Month Type Lubricator
	740	8	315LX	90	03 Month Type Lubricator
160	2980	2	315M	65	06 Month Type Lubricator
	1485	4	315M	85	06 Month Type Lubricator
	985	6	315LX	90	03 Month Type Lubricator
185	2980	2	315L	70	06 Month Type Lubricator
	1485	4	315L	90	06 Month Type Lubricator
	985	6	315LX	90	03 Month Type Lubricator
200	2980	2	315L	70	06 Month Type Lubricator
	1485	4	315L	90	06 Month Type Lubricator
	985	6	315LX	90	03 Month Type Lubricator
225	2975	2	315LX	70	06 Month Type Lubricator
	1485	4	315LX	90	06 Month Type Lubricator
250	2935	2	315LX	70	06 Month Type Lubricator
	1485	4	315LX	90	06 Month Type Lubricator

Significantly Larger Frame sizes / 400 KW+ motors you can start using a 01Month Type Lubricator King Units

The True Automatic Lubricator with Fail-Proof Design

Water Pumps & Lubricator King Type

On the following Pages you will find an OEM (Original Equipment Manufacturer) Prescription for Warman Water Pumps.

In Full Compliance of these Instructions for Best Lubrication of Warman Pumps -

TYPE 01 Month Lubricator King Grease Lubricators on every grease nipple are the Tribology Standard optimally lubricating your Water pumps.

It must be left to the good judgement of maintenance personnel, to open the bearing housing at regular intervals (not longer than twelve months) to inspect bearings and grease and to then determine each time the course of action for the period up to the next inspection. This is the preferred method.

If a regular addition of grease is judged necessary, or for unusual circumstances where extreme conditions warrant additional lubricant to be supplied, the plugs on the bearing assembly maybe replaced with grease nipples. Grease nipples must be cleaned prior to use, to prevent ingress of dirt into the bearings whilst greasing. It is preferable to lubricate often and sparingly, than to add large amounts at long intervals. Bearings should not be over greased.

The frequency and amount of lubricant to be added periodically depends upon a number of factors and a combination of them, including speed and size of bearing, duration and extent of on-off operation, and the usual environmental conditions such as ambient and operating temperatures, splash from the shaft seal and the presence of contaminants.

Excess Grease: The immediate effect of an excess of grease within a bearing is increased temperature due to the churning of the grease. This particularly is to be avoided. If bearings run too hot after a change of grease, the trouble is likely to be due to over greasing. Adding more lubricant to correct the overheating could make the problem worse.

There is always some risk of damage due to over-lubricating especially in the case of the frame sizes of D and smaller. Such cautionary measures to avoid over-lubrication, however, do not warrant neglecting the bearings completely. Therefore, judgement and experience should be the final determining factors in establishing routine lubrication procedures. Consequently it is advisable to observe the bearing frequently at the outset of operations taking careful note of any unusual conditions regarding temperature and cleanliness.

Use only recommended clean grease.

For ordinary conditions of continuous operation where bearing operating temperatures do not exceed the temperature where the grease loses its ability to lubricate and seal, the guidelines tabulated below can be used.

SUGGESTED LUBRICATION INTERVAL FOR BOTH PUMP AND DRIVE END BEARINGS (Hours)

FRAME	BEARING	ADD g PER BRG	PUMP SPEED												
			200	300	400	600	800	1000	1200	1500	2000	2500	3000	3500	4000
A	A009	5	-	-	-	-	-	-	2100	1700	1300	1000	800	650	500
B	B009	10	-	-	-	-	-	2200	1800	1400	1050	800	650	500	370
C	C009	15	-	-	-	-	2200	1750	1400	1200	800	580	460	350	-
D	D009	25	-	-	-	2500	1750	1450	1100	850	650	-	-	-	-
E	E009	40	-	-	3300	2050	1500	1100	850	650	500	-	-	-	-
F	F009	65	-	3900	2900	1700	1200	850	650	500	-	-	-	-	-
G	G009	120	5000	3100	2300	1400	850	650	-	-	-	-	-	-	-
H	H009	325	4000	2400	1600	1000	650	-	-	-	-	-	-	-	-
	H009D	155	20000	13000	8500	5500	-	-	-	-	-	-	-	-	-

QUALIFICATION

The above table is based on normal operating conditions and intended to be a guideline. Normal operating conditions include:

- Clean environment - Pump gland correctly adjusted.
- Pump indoors.
- Normal ambient temperatures (10 to 35°C).
- Minimal spray from either badly maintained gland or from heavy washing down.
- Pump running below full power or speed rating.
- Tabulated figures are based on bearing temperatures of 70°C measured on the bearing housing. Intervals should be halved for every 15°C increase above 70°C. The maximum permissible operating temperature for the grease should not be exceeded.

Very dirty or damp atmospheric conditions or conditions that varied from those listed above would require that the recommendations be stepped up to a level that prevents contaminants from entering the bearings.

INITIAL GREASE FILL

The recommended initial quantities of grease to be used for each bearing is given on the attached Basic Bearing Assemblies information sheet.

IMPORTANT

1. During assembly, fill the space between the bearing and end cover with grease. This assists with subsequent labyrinth grease purging.
2. Pump grease into each labyrinth end cover seal until it emerges on the outside before starting the pump for the first time.

LABYRINTH GREASE PURGING

Less contaminants entering the Bearing Assembly will result in longer bearing life and ultimately a cost saving. Consequently, careful attention paid to labyrinth grease purging is an essential maintenance requirement.

Type '-10' Bearing Assembly Sealing Arrangement

Type '-10' is Warmans' standard Bearing Sealing Arrangement and is patented world-wide. The design uses a V-ring seal and larger flinger-labyrinth arrangement for added protection against grit and moisture penetrating to the bearing cavity. To improve the sealing of the pump and drive ends of bearing assemblies, a radially drilled hole in the end covers allows grease to be fed into the space between the piston rings to form a pressurised barrier between the two piston rings. A small groove in the end cover allows the majority of the purging grease to enter the labyrinth seal and hence purge away contaminants. The small amount of grease that enters the bearings will assist in their lubrication and the grease that escapes outwards together with the centrifuging effect when the pump is running will keep the labyrinth purged of grit and moisture. To

improve the purging, particularly on the pump end of the bearing assembly, the standard labyrinth grease purging nipple can be replaced with an automatic grease feeder (say three months capacity on smaller frames [smaller than F or EE, R frame] and one month capacity on the larger frames [F or EE, R frame and larger]).

The type of grease used for labyrinth sealing should be the same as that used for lubricating the bearings.

If an automatic grease feeder is used it will only be necessary to check at regular intervals that it has not fully discharged. If grease nipples are utilised, the guidelines as tabulated below should be followed.

Grease purging of the end cover labyrinth seals only adds minor amounts of grease to the bearings. Consequently, bearing maintenance and greasing should not be neglected, and the recommendations (Bearing Lubrication) need to be followed.

RECOMMENDED INTERVALS FOR "10" LABYRINTH GREASE PURGING

Important

1. Always pump grease into each labyrinth end cover seal until it emerges on the outside before starting the pump for the first time.
2. Labyrinth grease purging is normally carried out when the pump is running.
3. Pump labyrinth end cover greasing is best carried out by installing an automatic greaser. If a reliable automatic feeder is used the grease quantities can be reduced to half of the values tabulated below.

	FRAMES	
	A - F CC - EE N - R	F - G, H FF - GG S - V
Pump End Labyrinth	8 shots daily	16 shots daily
Drive End Labyrinth	8 shots weekly	16 shots weekly

* Shots are from a standard hand operated grease gun (1 shot = 1 gram).

ASSEMBLY INSTRUCTIONS

When bearing assemblies have been dismantled for complete overhaul, all parts should be closely inspected and new parts checked for correct identification.

Used parts being replaced should be thoroughly cleaned and repainted where required. Mating faces and spigots should be free of rust, dirt and burrs and given a coat of grease before they are fitted together to assist future overhaul.

