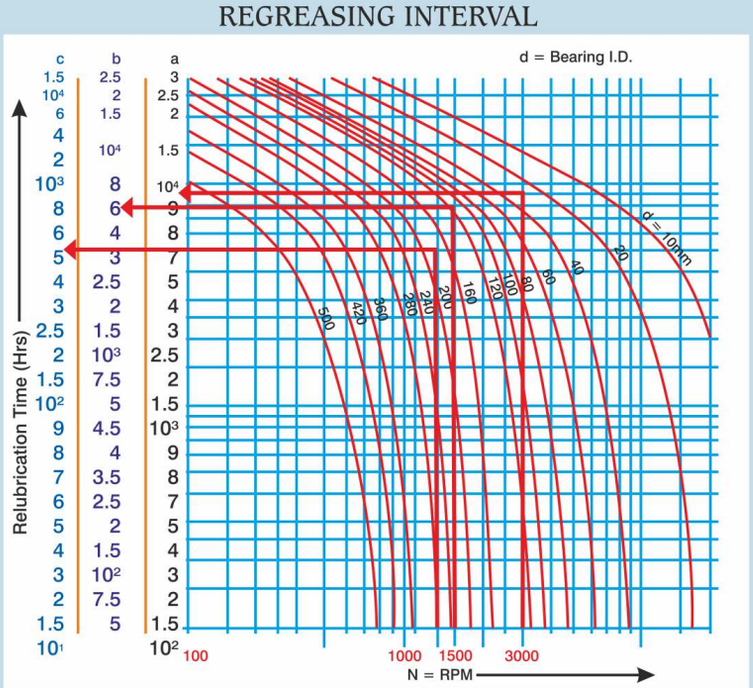
LuBex™

Grease Feeder

Any Grease Lubricated Bearing has to be periodically regressed. The re-greasing Interval and quantity is a complex function of Shaft Dia, RPM, type of Bearings, Operating Temperature etc. Ref. Fig. 1 & Fig. 2.

Over greasing can lead to overheating, under-greasing is a recipe for Bearing failure. Ref. Fig 3.(a), 3 (b).

REGREASING INTERVAL



Scale a : radial ball bearings Scale b : cylindrical roller bearings, needle roller bearings
Scale c : spherical roller bearings, taper roller bearings thrust ball bearings :

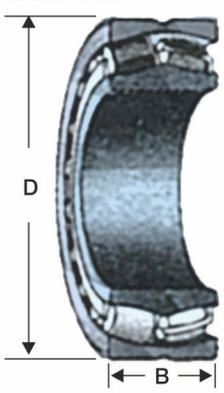
Fig. 1

The grease amount formula

This formula helps determine the correct amount of grease for relubrication.

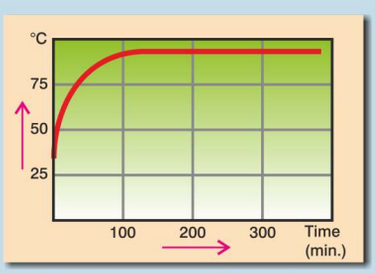
$G_a = 0{,}005\ D\ B$ grams

where
G_a = grease quantity in grams
D = bearing outside diameter in mm
B = total bearing width in mm
(the corresponding dimension for thrust bearings is H)



Ex.-1 6310	Ex.-2 Nu 224	Ex.-3 22236
D = 110 B = 27	D = 215 B= 40	D = 320 B= 86
quantity = 15 gm	quantity = 43 gm	quantity = 137 gm

Fig. 2



Over greasing vs Temp. Rise

Fig. 3(a)

Grease Melting vs Temp.

Fig. 3(b)

THE PROBLEM: -

a) **GREASE NIPPLES**: Grease Nipple is a NRV. Ref. Fig. 4(a), 4(b), when you fill grease the ball has to go down & once greasing has been done, the Spring has to bring back the ball. Invariably **THE BALL SPRING ASSEMBLY GETS JAMMED.** Ref. Fig. 4(b) Grease instead of going in Leaks Ref. Fig. 5. To check press ball with a pin/nail, if ball is not coming back, Nipple has Jammed. Ref. Fig. 4(b) **RESULT** - Total Guess work, **HOW MUCH GREASE HAS GONE IN, HOW MUCH HAS LEAKED?**

Fig. 4(a)

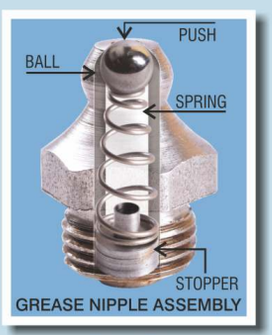


Fig. 4(b)

b) **GREASE GUN COUPLER** - Ref. Fig. 6,7. The coupler has to be opened, pushed into the Nipple retightened and then greasing is to be done.

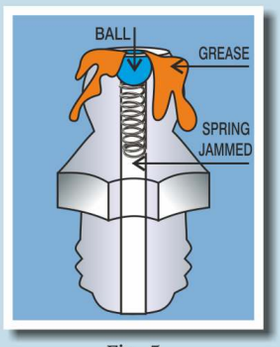


Fig. 5

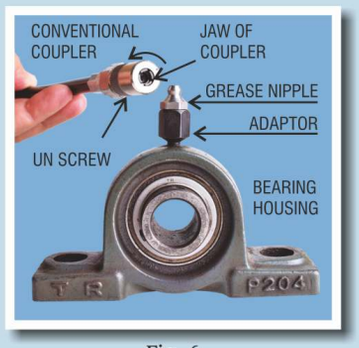


Fig. 6

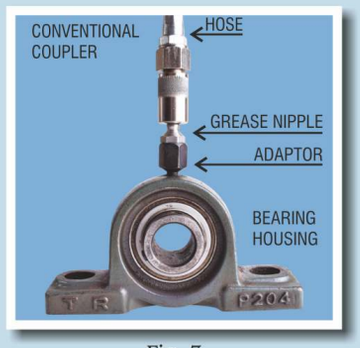


Fig. 7

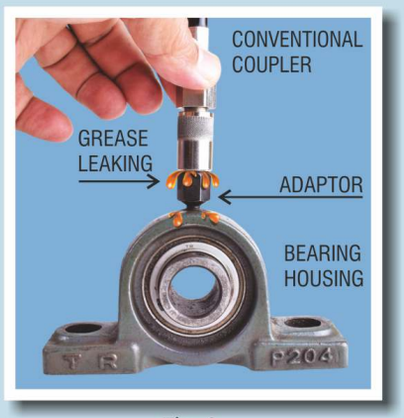


Fig. 8

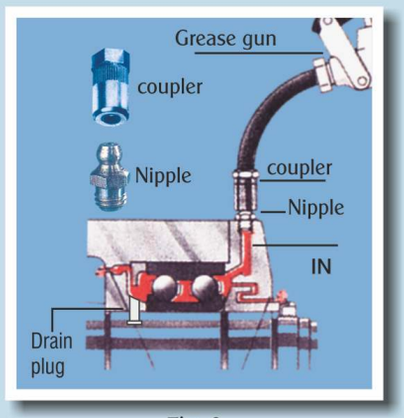


Fig. 9

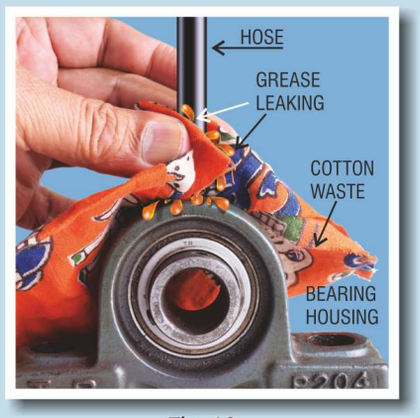


Fig. 10

PROBLEM: Invariably the Coupler/ Nipple is not sealing correctly, Grease leaks. Ref. Fig. 8. Actually the OLD GREASE has to be pushed out & Fresh Grease pushed INTO the Bearing Ref. Fig. 9.

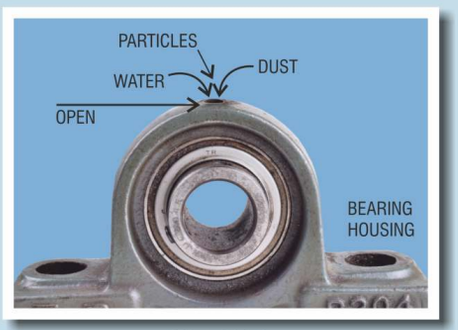


Fig. 11(a)


Fig. 11(b)

PROBLEM: If greasing does not happen correctly the Bearing **RUNS DRY FAILS PREMATURELY** what does the technician do? Puts Cotton waste, Ref. Fig.10. Pushes the Grease Gun hose, does INEFFECTIVE GREASING since there is NO NRV. Old grease cloes not come out. Ref. Fig. 9. Next? In over 50% of cases the Nipple is LOST, the Nipple point is left Open. Ref. Fig 11(a). Dust water gets in and, we talk of Reliability Engineering . Do a plant survey today to find out how many Nipples are working? In how many there are No Nipples. **RESULT:** Bearing failure Ref. Fig. 11(b) A Major BREAKDOWN. Cost of Breakdown? SEVERAL THOUSAND RUPEES.


Fig.12


Fig.13


Fig.14

PLUMMER BLOCK: Both ends of Bearing housing have to be Greased & 30% of Free Space of bottom half Ref. Fig.12, 13,14, Fix Grease Nipple & do Parodic Greasing. (Ask for details of Plummer Block Greasing Quantity/Interval from us).

PROBLEM: All those problem discussed earlier. Vis a Vis Nipple/Coupler.

RESULT: PREMATURE FAILURE of BEARING. Thus includes I.D./F.D Fans, Blowers, Vacuum Pumps, Motors, other Grease Lubricated equipment.

Fig.15

Fig.16

Fig.17

What is the way out? Install a Lubex Auto Grease Feeder Ref. Fig 16,17, 18, 19, 21, 22. Grease Feeder DISPENSES GREASE ON DEMAND. Feed rate can be increased / decreased by changing Spring (Tension) or adjusting valve at Outlet. Ref Fig 20.

Working Principles of Grease Feeder :

When you put Grease in the bowl of the Grease Feeder, the plunger goes up, compressing the Spring above. Ref. Fig 18. Thus the grease is under Appx. 2-3 Psi pressure.

Fig.18

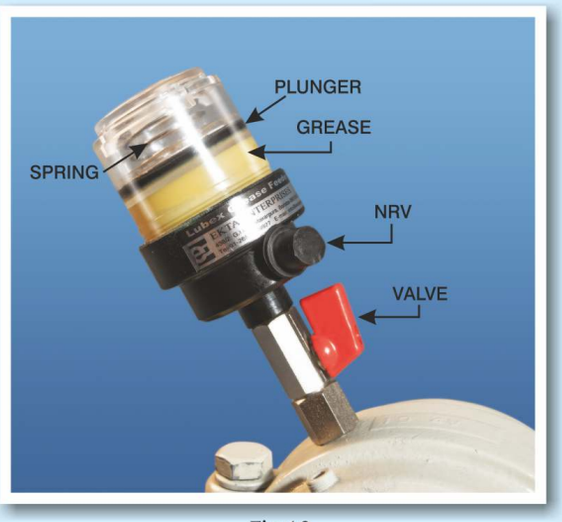


Fig.19

COLOUR CODIFICATION OF SPRING ARE :

1. **RED** - HIGH TENSION 2. **SILVER** - NORMAL
3. **BLUE** - LOW TENSION

Fig.20

Fig.21

Fig.22

This pressure is not Enough to push grease (NLGI #2 or NLGI #3) on its own. If you fill the Grease Feeder with Grease & keep it in the open Air, hardly any grease will come out Surprised ? Possibly yes. We briefly explain with a practical Analogy.

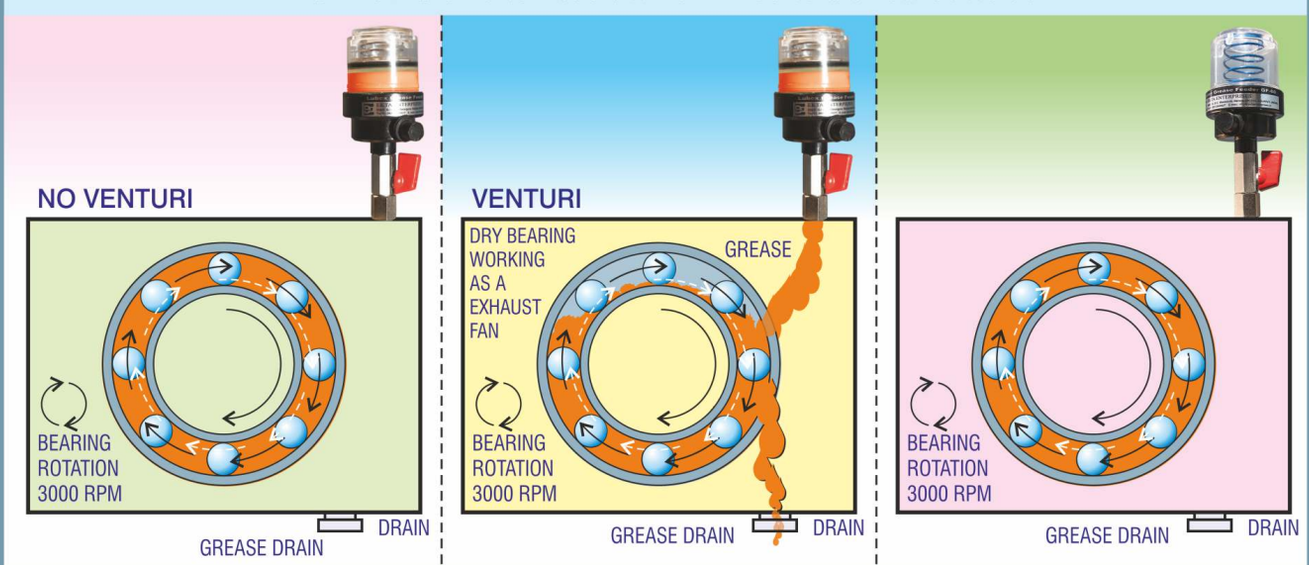
Fig.23

If you take a toothpaste & press from behind, unless you apply a minimum pressure the tooth paste will not come out. Even a small extra pressure causes the tooth-paste to come out. The pressure to be applied depend on the following. 1)Thickness of toothpaste. B) Orifice size of outlet. If you increase the orifice size toothpaste comes out easily (Possibly reason for ever-increasing size of orifice size of toothpaste.

The orifice size is the clearance between Plunger and base. Ref Fig.23. The orifice size is a matching of Grease consistency #2, #3 and Spring tension, hence grease does not come out on its own, unless there is a venture effect.

THE VENTURI EFFECT :

IT IS THE BASIC PRINCIPLE ON WHICH THE GREASE FEEDER WORK



Bearing is full of Grease no displacement of air within bearing or housing.

When grease within bearing melts & drips, Air is internally displaced in the housing and a suction is caused, Bearing work like an exhaust fan. This is called VENTURI.

Due to Venturi Grease which is under pressure moves from grease feeder to bearing. When bearing is filled with grease VENTURI STOPS NO more grease goes in to the bearings.

Limitations : a) You need a EP Grease (Extreme pressure), otherwise OIL SEPARATION will take place, and a Cake of the thickener will be formed. If this is happening, immediately replace the grease. Eg. Servogem 2 to be replaced with Servogem Ep2. b) Max. distance to which grease can be feed is 300-400mm since Spring pressure is 2/3 Psic) c) Max . Temp of Bowl is 110°C. Not suited for Ambient Air Temp. over 120°C.

Model Selection Chart

MODEL	DOME	BASE	DIMENSION OD mm	DIMENSION LENGTH mm	CAPACITY	OPERATING CONDITIONS
Gf 60	Polycarbonate	Aluminium Alloy	75	115	60gm	Dynamic With Vibration
Gf 180	Polycarbonate	Aluminium Alloy	85	160	180gm	Dynamic With Vibration

Note : We also provide a valve to increase/decrease grease feed rate with facility of shut off. This valve has to be fixed between coupler/base.

" THE DESIRE TO CHANGE, HAS TO BE MUCH HIGHER THAN THE DESIRE TO REMAIN THE SAME "

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