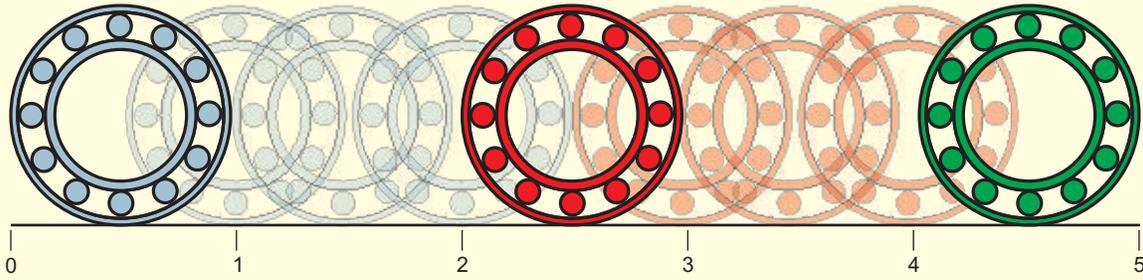


BEARING LIFE



1) In most industrial applications, Bearings are designed and manufactured to last from 25,000 hrs to 50000 hrs. This means bearings should last for an average of 05 years. In most plants we get much lesser LIFE. We briefly give the reasons for lesser life.

a) **STORAGE AND HANDLING** :Store the bearings in a clean safe place .Do not open the bearings until you want to use it .Do not remove the rust preventive coating if any .

b) **IMPROPER MOUNTING AND DISMOUNTING** :You need to have proper tools and techniques for mounting & dismounting .Bearing manufacturers invest hundreds of millions in machines for doing high precision lapping and grinding of rolling elements /races to maintain the internal clearances .With one stroke of a hammer we put the entire investment to FAIL .
This is a shame .

c) **IMPROPER SHAFT ALIGNMENT** :Bearings cannot take too much of misalignment, except angular contact and spherical to some extent) They also fail due to vibration .There is accelerated wear between rolling elements /faces. Once again the hundreds of millions spent by bearing manufacturers is put down the drain .This is very sad .

d) **IMPROPER LUBRICATION** :Both over lubrication & under lubrication are harmful .Please pay a lot of attention to this aspect .Lubrication is like food ,you need to have the RIGHT BALANCE AND RIGHT QUALITY .This includes choice of lubricant ,relubrication quantity & relubrication interval .

e) **DYNAMIC BALANCING** :Rotors ,Impellers ,Couplings ,Fans etc .need to be very precisely balanced, otherwise bearings can fail prematurely .

f) **SEALING ARRANGEMENT** :Dirt ,Dust ,Fumes ,Vapours ,Moisture ,Water and other contaminants can always enter the bearing & substantially reduce its LIFE .
These days very good sealing arrangements are available to take care of this problem .
Please obtain relevant details from these sources and incorporate them in your machines .

There are many other fine points beyond the scope of this discussion.

BENCHMARK your department
Bearing Life (Overall)

- a) 5 years + - Excellent
- b) 4 years + - V. good
- c) 3 years + - good
- d) 2 years + - OK
- f) < 18 months - FAIL*

* In this case you need to probably go back to your engineering college, if you cannot do that, you need to be ashamed of yourself. चुल्लू भर पानी में डूब मरो...

Table 4 Guide to values of requisite basic rating life L10th for different classes of machines

	Operating hours
Household machines, agricultural machines, instruments, technical apparatus for medical use	300 ... 3 000
Machines used for short periods or intermittently: Electric hand tools, lifting tackle in workshops, construction machines	3 000 ... 8 000
Machines to work with high operational reliability during short periods or intermittently: lifts (elevators), cranes for packaged goods or slings of drums, bales etc.	8000...12000
Machines for use 8 hours per day but not always fully utilised: Gear drives for general purposes, electric motors for industrial use, rotary crushers	10000...25000
Machines used 8 hours per day and fully utilised: Machine tools, woodworking machines, machines for the engineering industry, cranes for bulk materials, ventilator fans, conveyor belts, printing equipment, separators and centrifuges	20 000 ... 30 000
Machines for continuous use 24 hours per day: Rolling mill gear units, medium sized electrical machinery, compressors, mine hoists, pumps, textile machinery	40 000 ... 50 000
Water works machinery, rotary furnaces, cable stranding machines, propulsion machinery for ocean-going vessels	60000...100000
Large electric machinery, power station plant, mine pumps and mine ventilator fans, tunnel shaft bearings for ocean-going vessels	100000