

#### 6.4 Life expectancy-Diagram

In view of the multitude of applications, it is not possible to determine the suitability of a driveline by tests. Therefore, the selection and analysis of the required joint size is done by calculations. These are based on the computation of the dynamic load carrying capacity of full rotation needle - and roller bearings according to ISO recommendation R 281. The life expectancy diagrams shown in the catalogue are based on this recommendation and also on an equation formula especially suited for obtaining nominal life expectancy on universal joints. The thus obtained life expectancy lists the hours of operation that will be reached or exceeded by 90% of a larger number of equi-valent universal joint bearings.

There are also methods of obtaining the modified life expectancy. In this case varying survival probabilities, material quality and operating conditions are taken into account. The present technical know how does not allow statements to be made about variations in life expectancy-performance resulting from differences in steel quality (grain, hardness, impurities). For this reason, no guidelines have been set in the International Standards.

All pertinent operating conditions, such as operating temperature, lubrication intervals, the type of grease used and its viscosity in operation, must also be considered. Since these factors vary from case to case, it is not possible to determine the modified life

expectancy and accordingly, a life expectancy diagram valid for universal use.

The two following life expectancy diagrams will allow you to roughly determine the nominal life expectancy.

If the deflection angle is smaller than  $\beta = 3^\circ$ ,  $\beta = 3$  should be used. Otherwise, the obtained result will be less accurate.

If it is necessary to determine the life expectancy accurately, kindly consult the ELBE Engineering Department.