

## Grease Lubrication Help Guide



### Understanding Grease Lubrication

Grease is a form of lubrication that consists of three major components: base oil, thickener, and additive packages. Various greases utilize a combination of these three variables to meet the needs of different applications. Operational parameters that will influence the requirements of the grease are:

- environmental conditions
- operating temperature
- bearing loads
- speed
- bearing geometry
- bearing mass/weight

Selecting the right grease type, quantity, and relubrication frequency is critical to bearing performance, as improper lubrication is one of the largest causes of premature bearing damage. Our Grease Lubrication tool will assist you in selecting the proper grease type for your application and the initial quantity of grease needed. It will also provide suggestions for the relubrication quantity and interval.

### How to Use Our Grease Lubrication Online Tool

Follow these simple steps to get quick grease selection, quantity, and relubrication information to help ensure proper lubrication for your bearings.

1. Go to [engineering.timken.com](http://engineering.timken.com).
2. Select **Grease Lubrication** from the home page.

From here there are 3 options to choose from: **Grease Selection**, **Initial Grease Fill**, **Grease Relubrication**. Choose the tab that corresponds with the results you seek.

**Grease Selection** provides a Timken grease recommendation based on industry segment, equipment type, and application.

**Initial Grease Fill** provides an initial grease fill quantity.

**Grease Relubrication** provides a relubrication fill quantity and frequency for ongoing maintenance.

#### Grease Selection Tab:

1. Click the **Segment** drop-down and select the market segment in which you operate. Contact your Timken Sales Engineer if your specific segment is not listed.
2. Click the **Equipment** drop-down and select your equipment type. Contact your Timken Sales Engineer if your specific equipment type is not listed.
3. Click the **Application** drop-down and select the specific application. Contact your Timken Sales Engineer if your specific application is not listed.
4. Click **Submit**.
5. The recommended Timken grease will be displayed under the Results Section.
6. Click the underlined grease part number (GRXXX) to display the grease properties.

**Note:** Only the most popular markets/ equipment types/ applications are available in the menus. Please contact your Timken Sales Engineer if your application does not appear in the list.

#### Initial Grease Fill Tab:

1. If you know your bearing part number(s), select the **Enter Bearing Part Number** radio button, enter your part number(s), and click **Lookup**. Then select the radio button corresponding to the part number you want and select **Done**. This will auto-fill the bearing geometry data in the box below. These values are readily available in Timken product catalogs. Note: this field only works for Timken part numbers.  
If you do not have a part number but know the bearing geometry, click the **Enter Bearing Specifications** radio button and enter values for **Inner Diameter**, **Outer Diameter**, **Bearing Width/Height**, and **Bearing Weight**.
2. Select your **Bearing Type** from the drop-down.
3. Select the **Unit System** radio button for inch or metric.
4. If you know the bearing grease fill percentage you would like to achieve, select the **Customer Specifications** radio button. If you want a Timken recommendation based on application load and speed, choose the **Timken Company Suggestions** radio button.
5. Select either **Timken Suggestion** or **Customer Specification** from the Specification Type drop-down.  
If **Timken Suggestion** is selected, choose values from the **Load** and **Speed** drop-downs.  
If the **Customer Specifications** radio button is selected, enter the **Grease Fill %**.
6. Click **the printer** icon in the upper right-hand corner of the page to print or save your results. Click **Clear** to reset all selection fields.

## Grease Relubrication Tab:

1. Select your grease **Thickener Type** from the drop-down.
2. If you know your bearing part number(s), select the **Enter Bearing Part Number** radio button, enter your part number(s), and click **Lookup**. This will auto-fill the bearing geometry data in the box below.  
  
If you do not have a part number, click the **Enter Bearing Specifications** radio button and enter values for **Inner Diameter**, **Outer Diameter**, **Bearing Width/Height**, and **Bearing Weight**.
3. Select your **Bearing Type** from the drop-down if manually entering bearing specifications.
4. Select the **Display Units** radio button for inch or metric.
5. These values are readily available in Timken product catalogs.
6. Under Operating Conditions, enter values for **Typical Temperature** and **Speed** in the units designated.
7. If any of the Optional Conditions occur in your application, click the corresponding **Yes** radio button. If not, select the **No** radio button.
8. Select the **Load C/P Ratio** radio button that corresponds to your application. This button corresponds to the magnitude of load applied in your application. C/P is a ratio of the bearing's radial load rating divided by the applied dynamic equivalent radial load.
9. Click **Calculate Frequency** or **Calculate Quantity** to display these results in the Lubrication Output Section. Click **Report Frequency** or **Report Quantity** to generate an exportable report of your inputs and results. Click **Clear** to reset all selection fields.

## How to Apply the Results?

You can take these results and ....

- Enter them into your design software.
- Enter them into Timken's Syber™ Bearing System Designer software.
- Use the data as input into Timken's online **Bearing Fatigue Life** tool.
- Contact your local **Timken sales representative** to order the suggested grease.
- Use the grease amount information to initially fill your bearings.
- Use as a starting point for developing a bearing relubrication schedule.

## Cautions

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication.

## Appendix

### Glossary:

C = Bearing Capacity (C1) (Ca if load is pure axial)

P= Bearing Dynamic Equivalent Radial Load (Axial load on bearing if load is purely axial in direction)

$d_m$  = mean bearing diameter = (Outer Diameter + Inner Diameter)/2

N = bearing rotational speed (rpm)

## Still Need Help?

- Contact your Timken sales office. Locate your local office by visiting [locations.timken.com](https://www.timken.com/locations).
- Email us at [TimkenEngineeringHelp@timken.com](mailto:TimkenEngineeringHelp@timken.com).

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The Timken team applies their know-how to improve the reliability and performance of machinery in diverse markets worldwide. The company designs, makes and markets bearings, gear drives, automated lubrication systems, belts, brakes, clutches, chain, couplings, linear motion products and related industrial motion rebuild and repair services.