## **Quick & Simple Selection Procedures**



Refer to page 11 for LOADING CLASSIFICATIONS. Based on U (Uniformly Loaded), M (Moderate Shock Load), or H (Heavy Shock Load), go to page 12. Find the corresponded hours-per-day operation, and determine the recommended service factor.

Load torque can either be given or calculated. Refer to page 15~16 for a sizing example. A helpful formula to use is:

Torque =  $\frac{63025 \text{ x hp x efficiency}}{\text{output rpm}}$ 

Once you have calculated what the reduction ratio supposed to be, compare it to our standard ratios, and find the closest match. Standard single stage reduction ratios are: 6, 8, 11, 13, 15, 17, 21, 25, 29, 35, 43, 51, 59, 71, and 87. Any combination of two single stage ratios greater than 87 can be made into double stage reduction.

Go to page 23 ~ page 40 for torque rating tables. Make sure to go to the table and column that corresponds to the correct ratio and input rpm. Locate the first frame size with the torque rating greater than or equal to your design torque.

If a sprocket or sheave is connected to the output shaft, you need to consider Overhung Load (OHL). Go to page 41  $\sim$  page 44. If the output shaft is connected to a coupling, proceed to the next step.

Go to page 9 ~ page 10 to construct part number. You need to decide the kind of input method as well as the type of mounting configuration. In addition, the direction of output shaft is especially important for vertical application as it may dictate the lubrication method and the sealed-bearing arrangement.

Contact factory or your nearest distributor for price and availability of DARALI<sup>®</sup> DRIVES.

## EXAMPLE:

You are designing a heavy duty, uniformly fed assembly conveyor. This conveyor will operate 24 hours per day. The output shaft of speed reducer will be coupled to the conveyor. You have determined the torque requirement at the output shaft being 12,000 in-lbs, and the output speed being 59 rpm. Find appropriate DARALI® DRIVES frame size that suits the requirement.

1). Based on conditions given above, refer to LOADING CLASSIFICATIONS. The load nature designation is  $\underline{M}$  which means moderate shock load. Refer to RECOMMENDED SERVICE FACTORS. Based on a 24 hours per day application,

S.F. = 1.35

2). Assuming input rpm = 1750,

$$Ratio = \frac{1750 \text{ rpm}}{59 \text{ rpm}} = 29.66$$

use 29:1 as the reduction ratio.

**3).** Since Load Torque is given already, multiply Load Torque by S.F. to obtain Design Torque.

Design Torque = 12,000 in-lbs x 1.35 = 16,200 in-lbs

**4).** From the TORQUE RATING TABLE, we determine that B17 is the appropriate frame size (B16 torque rating at 1750 rpm input and 29:1 does not exceed 16,200 in-lbs, therefore was not chosen).

**5).** Since the output shaft is directly coupled to the conveyor, no OHL considerations are required.

\*\* For a more detailed SIZING EXAMPLE, please refer to "Sizing Example".

## DARALI<sup>®</sup> DRIVES - ISO 9002