



Screw Conveyor Shaft Mount Speed Reducers EASY SELECTION METHOD (FOR ELECTRIC MOTORS)

When to Use Easy Selection

The Easy Selection tables for Shaft Mount reducers are for electric motor selections up to 75 horsepower with output speeds up to 400 RPM, using AGMA recommended application class numbers. For extreme shock or high energy loads which must be absorbed, as when stalling; for power source other than an electric motor; or for extreme ambient temperatures, or oversized equipment, consult DODGE Application Engineering, (864) 288-9050.

How to Select

Step 1: Determine Class of Service-See Table 1, page G2- 15 to determine Load Classification for applications under normal conditions. Find the type application and duty cycle that most closely matches your specific application.

Class I Steady load not exceeding Motor HP rating and light shock loads during 10 hours a day. Moderate shock loads are allowable if operation is intermittent.

For Class I applications, the maximum value of starting and momentary peak loads should not exceed 2 x Motor HP rating. If it exceeds this amount it should be divided by 2 and the result used in the selection table instead of the Motor HP rating.

Class II Steady load not exceeding Motor HP rating for over 10 hours a day. Moderate shock loads are allowable during 10 hours a day.

For Class II applications, the maximum value of starting and momentary peak loads should not exceed 2.8 x Motor HP rating. If it exceeds this amount it should be divided by 2.8 and the result

used in the selection table instead of the Motor HP rating.

Class III Moderate shock loads for over 10 hours a day. Heavy shock loads are allowable during 10 hours a day.

For Class III applications, the maximum value of starting and momentary peak loads should not exceed 4 x Motor HP rating. If it exceeds this amount it should be divided by 4 and the result used in the selection table instead of the Motor HP rating.

Step 2: Determine Reducer Size-See the Easy Selection Tables, pages G2- 83 thru G2- 88. From Selection Table I, II or III read the reducer size for the application horsepower and output speed. **Note:** For applications where fan cooling is unacceptable use the Easy Selection tables with an increased Class number. Where more than one reducer selection is listed, the most economical ratio is generally listed first. See page G2- 205 for maximum input and output speeds, overhung load ratings and WR2 ratings.

Step 3: Check Dimensions-See Selection/Dimensions sections, pages G2- 90 thru G2- 120 for reducer dimensions, weights and part numbers. See Engineering/Technical section, page G2- 199 and G2- 213 for reducer mounting positions.

Step 4: Select Screw Conveyor Drive Shaft and Adapter to fit screw diameter-See Selection/Dimensions section, pages G2- 90 thru G2- 120 for compatibility of screw diameter, drive shaft diameter and adapter.

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SELECTION



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Step 5: Select a Belt Drive Arrangement-From the Sheave Ratio table, page G2- 162, or the preselected 1750 RPM Motor V-drive tables, pages G2- 166 thru G2- 193 select the required sheave ratio for the belt drive. Select the belt drive so that the sheave mounted on the reducer shaft is not smaller than the minimum sheave diameter shown in Table 19, page G2- 161. **Note:** Mount the sheave as close as possible to the reducer to minimize the effect of overhung load on the reducer.

Step 6: Select Accessories-See Modifications/Accessories section, pages G2- 120 thru G2- 125, for description, dimensions, weights, and part numbers for

accessories available for the Screw Conveyor Drive reducer selected:

- Motor Mounts
- Belt Guards
- Cooling Fans
- Auxiliary Seal Kits
- Alternative drive shaft styles
- Filter Breathers

Note: Screw Conveyor Drive reducers are shipped without oil. Screw Conveyor Drive reducers are suitable from stock for vertical or incline mounting, no modification required.

EXAMPLE: Easy Selection Method-SCXT Screw Conveyor Drive Reducers

A 5 HP 1750 RPM motor is used to drive a heavy duty screw conveyor that runs 10 hours per day in a local feed mill, conveying grain. User needs a replacement reducer drive for a CEMA standard screw conveyor with a 12" diameter screw and 2-7/16, diameter drive shaft. Conveyor speed is 72 RPM.

Step 1: Determine Class of Service-From Table 1, locate "conveyors, general purpose; screw conveyor-heavy duty, not uniformly loaded" for 3 to 10 hours per day. This load is classified as a Class II application.

Step 2: Determine Reducer Size-From Table 10, Class II Selection, page G2- 86, find the column for 5 HP and read down to 72 RPM. An SCXT225 reducer is the correct selection. Check maximum input and output speed, overhung load, and WR2 requirements with reducer ratings on page G2- 205.

Step 3: Check Dimensions-See Selection/Dimensions section, page G2- 95, for reducer dimensions, weights, part numbers and other pertinent drive dimensions. See Engineering/Technical section, page G2- 199 and G2- 213 for information on mounting positions.

Step 4: Select Screw Conveyor Drive Shaft and Adapter to fit screw diameter-See Selection/Dimensions section,

page G2- 95. Here we verify that a 2-7/16" diameter drive shaft is compatible with 12" diameter screw. From this same page, select a C2B adapter with fits the 2-7/16" CEMA standard screw conveyor drive shaft, as well as the 2" and 3" drive shafts.

Step 5: Select a Belt Drive Arrangement-From the Sheave Ratio table, page G2- 162, or the Preselected 1750 RPM Motor V-Drive table for SCXT225 reducers, page G2- 166, select a V-drive ratio for the conveyor speed of 72 RPM. With this information, select a belt drive that meets your customer's needs-i.e. belt style preference, service factor requirements, Taper Lock or QD mounting, etc. Sheave diameter must not be less than minimum diameters shown in Table 19, page G2- 161.

Step 6: Select Accessories-See Selection/Dimensions page G2- 95 and Modifications/Accessories pages G2- 120 thru G2- 125 to pick out accessories for this application:

- M214 Motor Mount-to mount motor to side of SCXT225 reducer.
- SCXT2D Expanded Metal Belt Guard-to cover and protect the rotating belt drive.