



## Products

## Stainless Steel Motor and 700 Series Reducers

## Application

## Tunnel Food Freezer

## Highlights

- Drivetrain features a 10,000:1 ratio
- Stainless steel motor operates at 81% efficiency
- Three 700 Series stainless steel speed reducers are utilized
- Motor and reducers are designed for caustic washdown applications

A food processing OEM selected Boston Gear to provide a complete drivetrain for one of their new commercial tunnel food freezers. The drive powers a food conveyor as it travels through the freezer. The drive positions on the outside of the freezer wall while operating in 15-60°F ambient room temperature. The primary system driver is a new 1/2 HP, totally enclosed, non-ventilated (TENV) stainless steel Boston Gear motor (rated at 1750 rpm). The motor, when combined with a triple worm gear featuring a 10,000:1 ratio produces roughly 120,000 in.lbs. of torque which would normally require a large and expensive gearbox. In this case, the customer did not need that much torque on the output, they were more interested in the low output speed (0.175 rpm).

To meet the performance requirements, Boston Gear engineers custom-configured a triple reduction gearmotor with only 1,800 in.lbs. max output. The system utilizes a combination of three stainless steel 700 Series speed reducers. Since the potential torque produced by the 1/2 HP motor is approximately 70 times greater than the output gearbox rating, the customer is considering the use of a Boston Gear Centric Clutch to protect against an overload of the geardrive and other components in the conveyor system.

The 700 Series units are designed for caustic washdown applications and feature a 316 stainless steel rounded housing with smooth, uninterrupted surfaces which prevent particle accumulation and pooling fluids. The Boston Gear motor is value engineered for washdown performance and features a 300 Series stainless steel housing, end bells, output shaft and conduit box.

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