Dodge Torque-Arm II gear reducers:

Comparison of belt driven (TAlI) vs. direct drive (MTA)

The purpose of this document is to define the mechanical characteristics of both belt driven and direct drive offerings for Dodge Torque-arm II gear reducers, and to compare advantages of both arrangement styles.

Torque-arm II Belt Driven Drives:

Characteristics:

- Reducer is shaft mounted to the driven shaft
- Motor is mounted on a motor mount attached to the reducer; motor is connected to the reducer input shaft via belts and sheaves encased in a belt guard
- Final output speed is determined by the reducer ratio and v-belt ratio

Advantages:

- Output speed can be varied by changing the sheaves, which allows customers to adjust the speed without purchasing a new gearbox or using a vfd
- Can achieve exact output speed requirement (not limited by gearbox ratio)
- Lower initial purchase cost versus direct drive (MTA) packages
- Multiple motor mount height positions to accommodate space constraints
Motorized Torque-arm II (MTA):

Characteristics:
- Reducer is shaft mounted to the driven shaft
- Motor is direct coupled (c-faced) to the reducer
- Final output speed is determined by the reducer ratio (no v-belt drive)

Advantages:
- Beltless design eliminates the need for a motor mount, belt guard, and v-belt drive
- More compact design, which helps accommodate applications with space constraints
- C-face to C-face design reduces assembly time
- Reduced maintenance requirements due to fewer components than belt driven drives
- Multiple ratios available for a wide range of output speeds
- Reducer can be mounted in multiple positions