

WP0311

Dodge Torque-Arm II gear reducers: Comparison of belt driven (TAII) vs. direct drive (MTA)

Dodge® Customer/Order Engineering

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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

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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

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