

Subject: Application Overview	Product: Motion Products	Doc#: AO.MCD.06.051
Title: Conveyors		

Conveyors

Application Overview

Conveyors are used in a broad range of industries and applications to move packaged goods, assemblies, processed byproducts, or any material from one place to another. A process designer will typically look for opportunities to use the force of gravity to accomplish product movement. Electric motors are commonly used when gravity cannot be employed or when the speed of a gravitational fall needs to be controlled.

Application Challenges:

- Electronic Gearing: Follow an external encoder to synchronize conveyor with other sections of the process
- Coordinate conveyor motion with external machine axes
- Reduce application development time

Yaskawa Products:

Product	Feature	Benefit
MP2000iec Series (MP2300Siec – MP2310iec)	IEC61131-3 Programming Environment	Global standard environment provides programming familiarity and consistent performance expectations
	Ethernet/IP and Ethernet Modbus TCP protocols	Most widely used protocols in the industry enhance communication with plant-wide systems
	Distributed network connections to servo axes	Easy quick-connect cable reduces system wiring and improves reliability
	4,8,16 axis control versions with electronic gearing	Best combination of price vs control capabilities
MP2000 Series (MP2300 – MP2200)	Easy-to-use ladder logic programming	Reduced application development time
	Electronic gear to unlimited number of masters	Coordinate conveyor motion with other machine axes
	S-curve acceleration and deceleration	Smoother acceleration and deceleration to protect product
	Three available slots for additional modules	Easily integrate with a variety of communication options
Sigma-5 Servopacks and	Auto-tuning	Out-of-the-box, automatic adaptive tuning requires no intervention or specific knowledge by the installer and speeds installation

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Servomotors	1600 Hz response frequency	Highest performing amplifier in the industry for more responsive control
	EN954-1 Category3 StopO input	Built-in safety circuit for regulatory compliance
	Reduced motor size	Smaller, lighter motors for easier installation

Application Details:

Airports, mines, cement plants, distribution facilities, assembly and food processing plants all contain conveyor applications. Conveyors are typically constant torque loads, meaning the required torque to drive a conveyor is independent of speed. A fixed amount of torque is also required to overcome the frictional, or machine drag, portion of the total load. Conveyors can have nominal amounts of friction and machine inertia for which to compensate.

Yaskawa's motion control products offer a variety of solutions for conveyors. Utilizing the built-in functionality of Yaskawa controllers provides the highest performance through synchronized, coordinated motion control, capable of easily integrating to third-party devices.