

DESIGN ADVANTAGES

VECTOROLLER™ BY DESIGN

How roller design affects load capacity,
installation, and field serviceability.



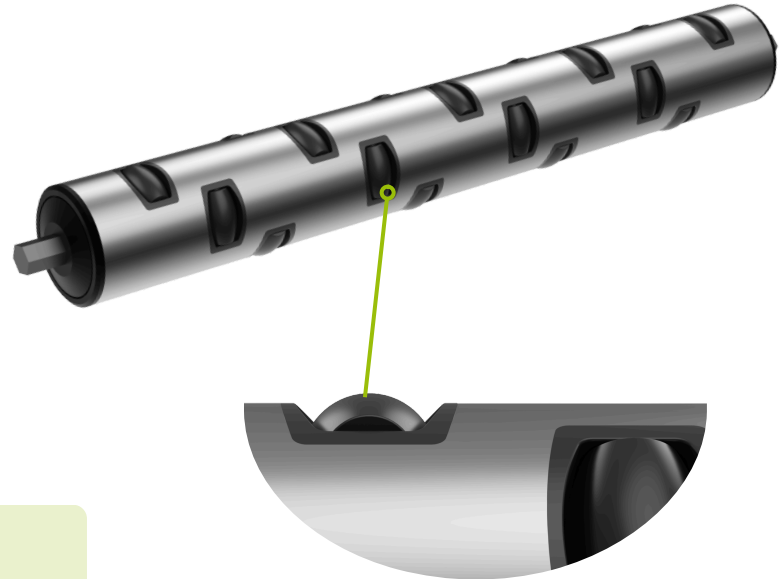
Patent-pending

VectoRoller™

REDUCE STRAIN, INCREASE FLOW

VectoRoller™ is a drop-in replacement conveyor roller designed to reduce friction during lateral package movement while maintaining the familiar characteristics of a conventional steel roller.

Individual transfer wheels are integrated into the roller tube and rotate perpendicular to the roller's normal direction of rotation. This allows packages to move laterally with less sliding resistance while the roller continues to function like a conventional roller during normal conveyor operation.



WHEELS INTEGRATED INTO THE TUBE
Preserves the familiar roller profile.

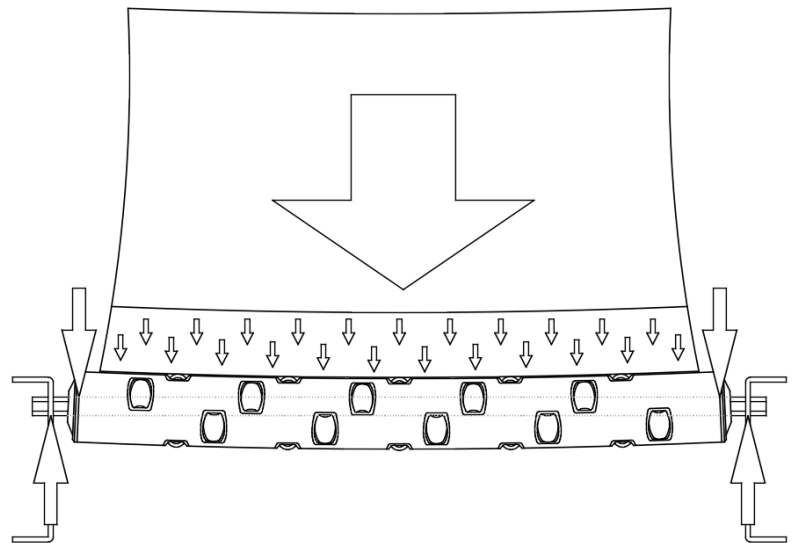
VECTOROLLER™ DESIGN ADVANTAGES

- Optimized to Limit Deflection Under Load
- 2-Inch Roller Center Compatibility
- Comparable Weight and Familiar Installation
- Individual Wheel Serviceability

LOAD CAPACITY STARTS WITH THE STEEL TUBE

VectoRoller™ uses its steel tube as the primary load-bearing member. Conveyed loads transfer through the steel tube to the end bearings, through the axle, and into the conveyor frame. The axle locates and retains the roller rather than serving as the primary structural beam across the conveyor width.

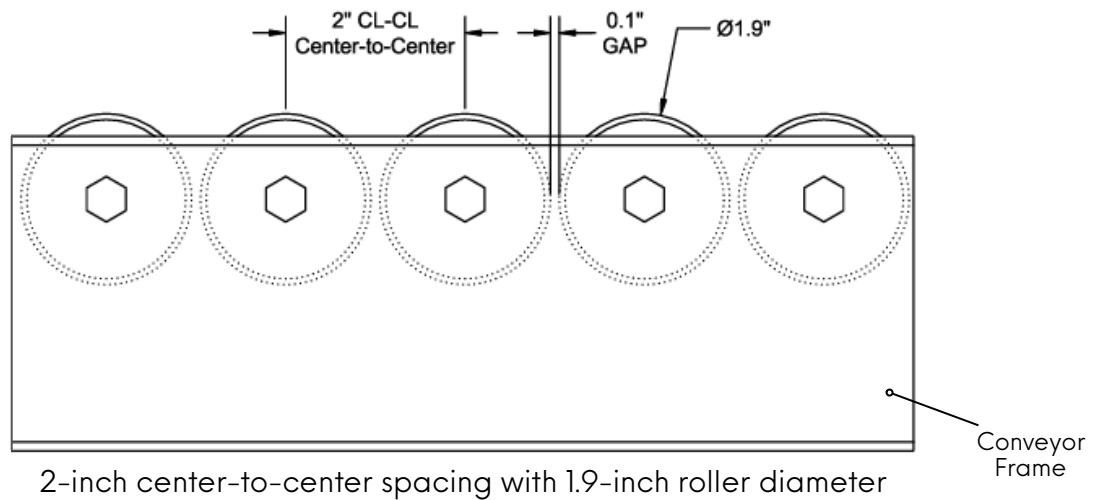
This construction provides structural support for conveyed loads while helping limit roller deflection. It also preserves the familiar structure of a conventional conveyor roller, making VectoRoller™ a practical option for existing conveyor systems.



DESIGNED FOR 2-INCH ROLLER CENTERS

VectoRoller™ integrates its individual transfer wheels within the steel roller tube, maintaining a profile compatible with 2-inch roller centers. This allows adjacent rollers to be installed with their centerlines just 2 inches apart without staggering or offsetting the wheel arrangement.

For existing conveyor systems, this compatibility is an important retrofit advantage. VectoRoller™ can replace conventional rollers in compatible configurations while preserving the established roller spacing and frame layout.



COMPARABLE WEIGHT. FAMILIAR INSTALLATION.

VectoRoller™ maintains approximately the same weight as the conventional steel roller it replaces. The steel removed from the tube to accommodate each transfer wheel assembly is roughly equivalent in weight to the added assembly. This helps reduce the need for changes to conveyor structural components or drive and power requirements.

VectoRoller™ also uses a spring-retained 7/16-inch hex axle and familiar end-bearing construction. These features support established conveyor maintenance practices and allow technicians to install or remove the roller using familiar procedures.

INDIVIDUAL WHEELS SUPPORT FIELD SERVICE

VectoRoller's individual transfer wheels are designed for localized replacement. If a wheel becomes worn or damaged, technicians can remove and replace it using tools included in the VectoRoller™ Spare Parts Kit.

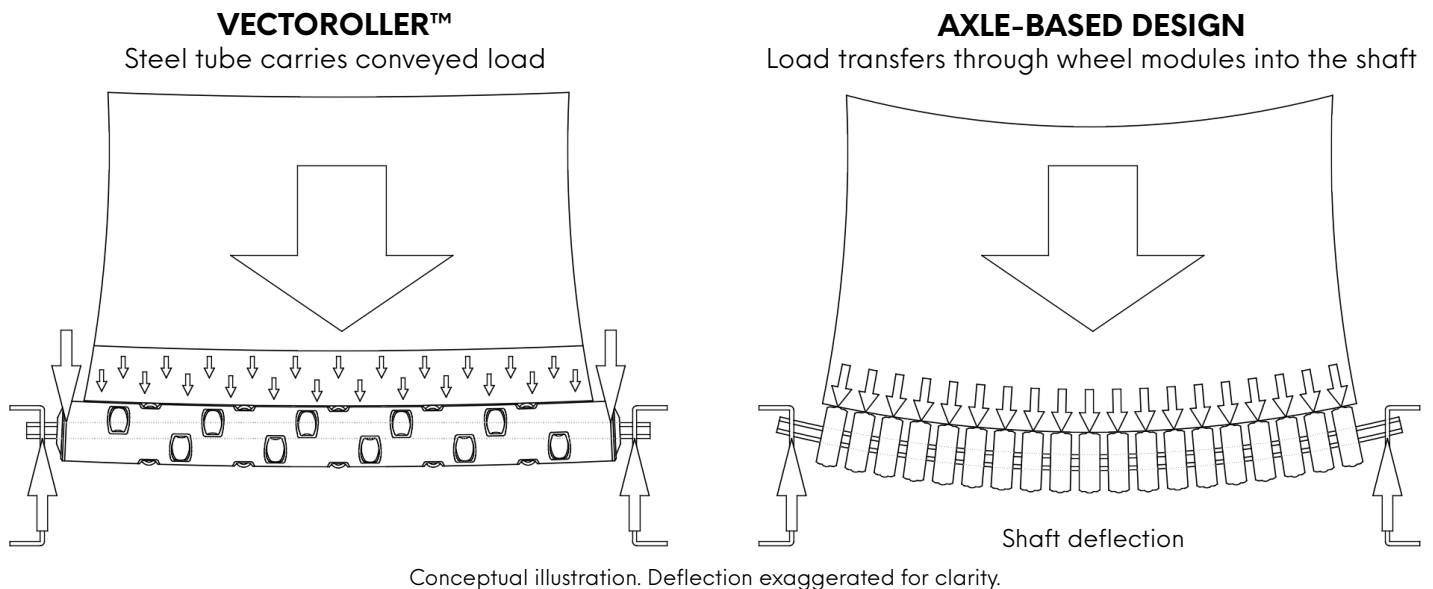
This approach supports practical field maintenance without requiring disassembly or replacement of the complete roller.

HOW DO ROLLER CONSTRUCTION APPROACHES COMPARE?

VectoRoller[™] and axle-based competitive designs both accommodate lateral package movement, but they differ in how their construction carries conveyed loads.

VectoRoller[™] carries conveyed loads through its steel tube to bearings near each end of the roller. The axle locates and retains the roller rather than serving as the primary structural beam across the conveyor width.

Axle-based designs carry conveyed loads through wheel modules mounted along a shaft. In these configurations, the shaft supports the load across the roller span, making axle deflection a primary limitation on roller performance and service life.



In 100 lb center-load testing across 28, 36, and 48-inch between-frame widths, VectoRoller[™] demonstrated 20%–37% lower deflection than the evaluated axle-based design.

WHY ROLLER WEIGHT MATTERS

VectoRoller[™] maintains a weight comparable to conventional steel rollers, while the evaluated axle-based design is heavier due to its construction.

EVALUATED AXLE-BASED ROLLERS AVERAGED
23% GREATER WEIGHT
THAN VECTOROLLER[™]

Additional rotating mass places greater demands on conveyor drive systems during operation. Because of this, heavier axle-based designs require reevaluation of drive-system requirements, while VectoRoller's steel-tube construction helps preserve existing drive requirements.

VECTOROLLER™ VS. AXLE-BASED DESIGNS

VectoRoller™ and axle-based designs use different construction approaches to accommodate lateral package movement. These differences influence load capacity, roller spacing, weight, and field serviceability.

Design Consideration	VectoRoller™	Competitive Axle-Based Designs
Primary Load Path	Steel tube transfers conveyed loads to end bearings.	Wheel modules transfer loads into a supporting shaft.
Deflection	Demonstrated lower deflection under the tested conditions.	Greater deflection observed in the evaluated design under the same test conditions.
Roller Weight	Designed to maintain weight comparable to a conventional steel roller.	Multiple wheel modules and supporting shafts can increase assembly weight.
Roller Centers	Compatible with established 2-inch roller centers without offsetting the wheel arrangement.	Some axle-based designs require staggered wheel arrangements to accommodate 2-inch roller centers.
Field Serviceability	Individual transfer wheels can be replaced using tools from the Spare Parts Kit.	Service procedures depend on the wheel-module and shaft construction.
Installation	Drop-in replacement for compatible conventional roller configurations.	Installation requirements depend on the specific design and conveyor layout.

ENGINEERED FOR LATERAL MOVEMENT. BUILT FOR EXISTING CONVEYORS.

VectoRoller™ combines lateral movement capability with the familiar construction, installation, and service characteristics of a conventional conveyor roller. Its steel-tube design, compatibility with 2-inch roller centers, and individually replaceable wheels provide practical advantages for conveyor applications.

Contact Omni Metalcraft RSL to discuss VectoRoller™ for your application.

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