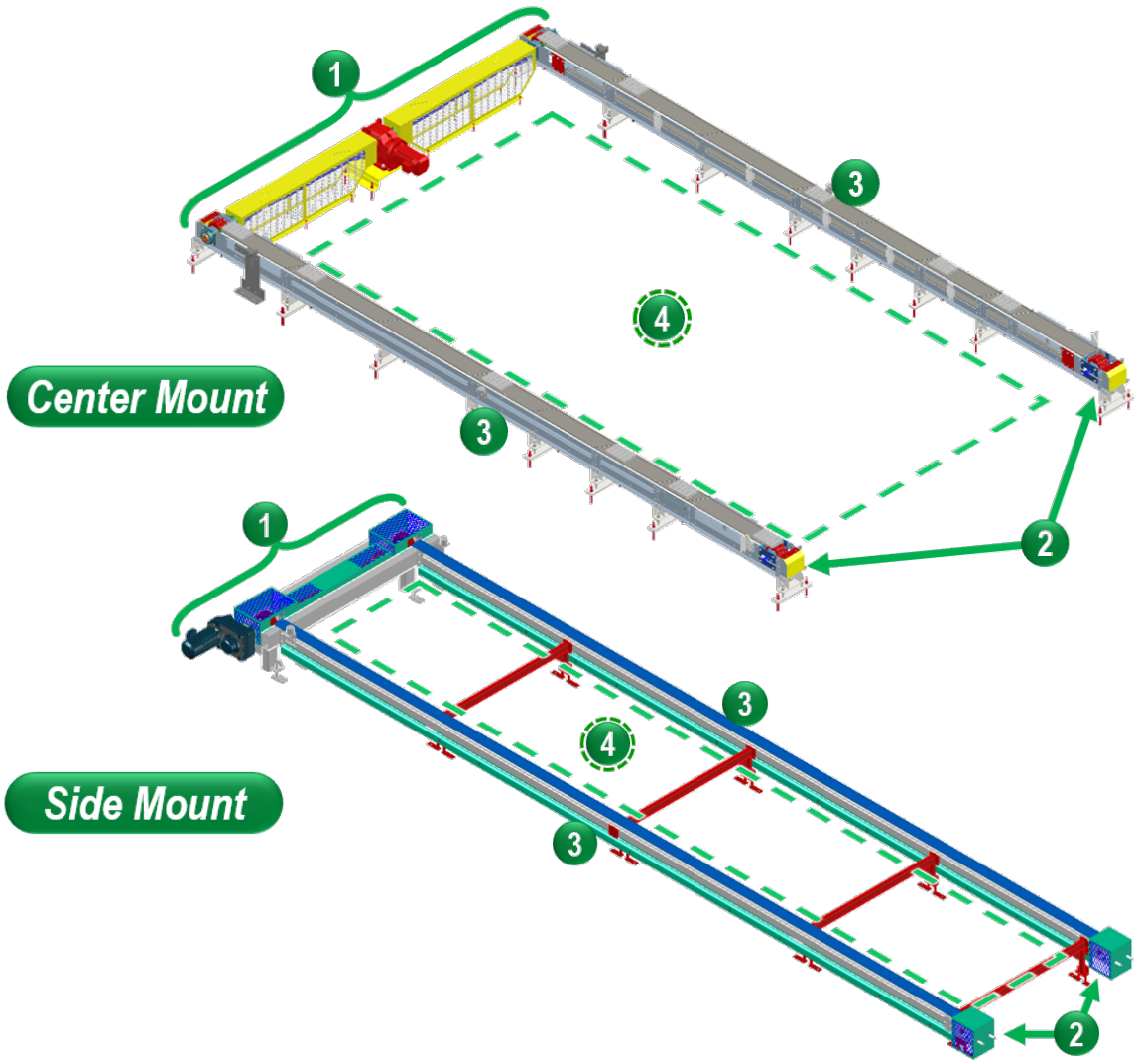
UniChain Cross Transfer - Typical Components



1 Drive Unit 2 Take-Up Units 3 Track 4 Skid Area

UniChain Cross Transfer Overview

A UniChain Cross-Chain Transfer (CCT) conveyor is a material handling conveyor system designed to move products or carriers laterally (perpendicular) between adjacent conveyor lines or process stations using parallel chains. The conveyor uses modular plastic chain sections and sprockets (Unichain brand/type) instead of traditional steel chains and sprockets.

Key Characteristics include:

- **Lateral (cross-direction) movement** - Transfers items across the main flow path, typically at 90 degrees to the primary conveyor direction.

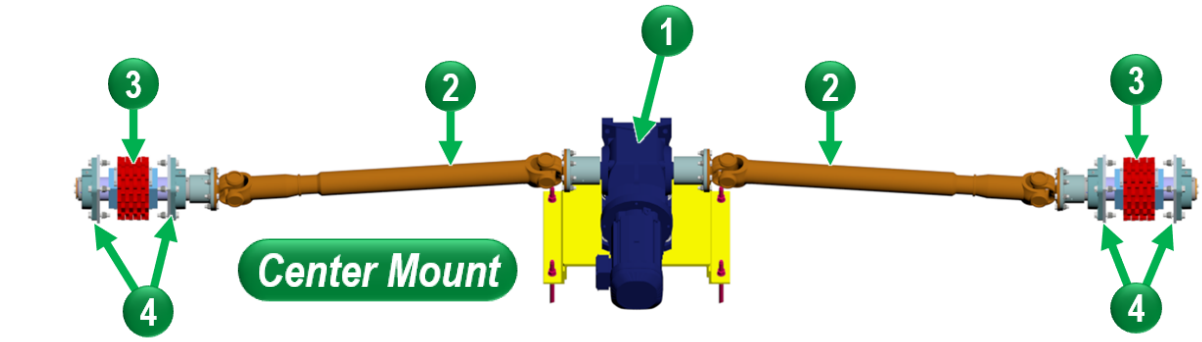
- **Chain-driven transport mechanism** - Utilizes one or more parallel chains mounted on a frame to carry loads such as skids, pallets, or workpiece carriers.
- **Integration within conveyor systems** - Commonly installed between longitudinal conveyor lines to enable line-to-line transfers, merging or diverting flows, and/or buffering between processes.

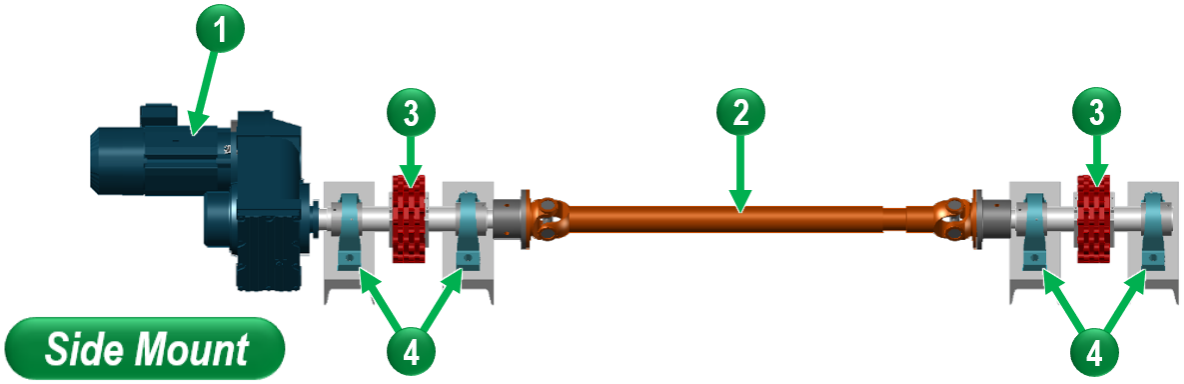
The UniChain Cross Transfer conveyor consists of a drive unit and 2 take-up tensioning units. Between the drive and the take-up units are the conveying track profiles and proximity switches. The length of the conveying track profile is variable. The maximum length depends on the power of the drive unit and the number of skids they shall be conveying at any one time. The module conveys the skids (cross way to the longitudinal axis of the skid) to the floor conveying line.

Unichain is commonly selected for CCT systems because it offers:

- Smooth skid transport with reduced vibration
- Flexibility for modular layouts and replacements
- Lower wear and maintenance in controlled environments
- Compatibility with automotive skid conveyor systems

UniChain Cross Transfer Drive Unit





1 Gearmotor
2 Cardan Shaft
3 Drive Sprocket
4 Pillow Block Bearing

UniChain Cross Transfer Drive Unit Overview

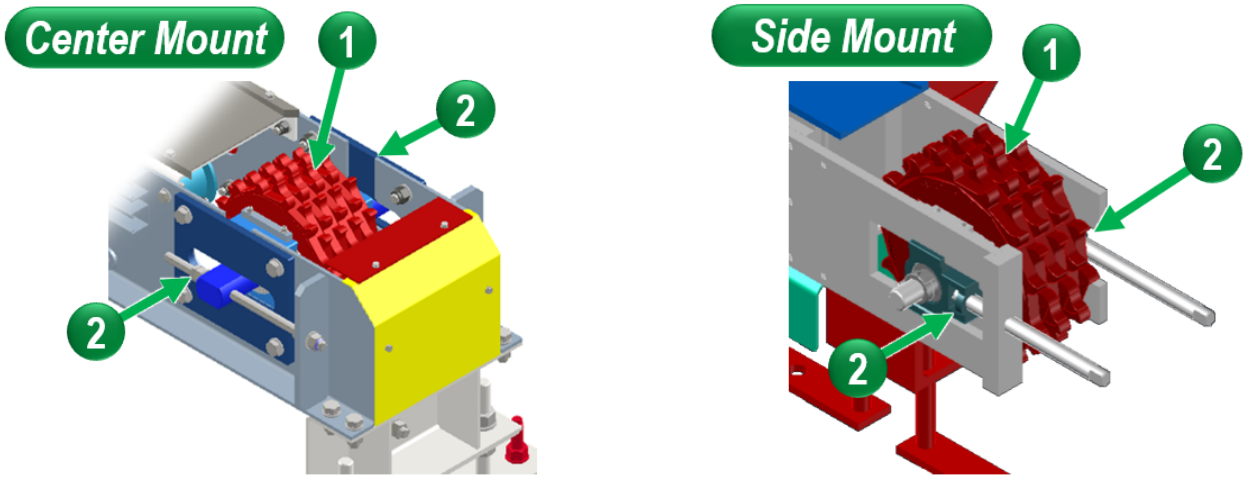
The UniChain Cross Transfer Drive Unit is the primary power source of the cross-chain transfer conveyor system, responsible for generating and transmitting motion to the conveyor chains to facilitate lateral skid transport.

The drive unit consists of a gearmotor, drive shaft, sprockets, bearings, and associated power transmission components, arranged to deliver rotational torque to the conveyor chains. Through this assembly, mechanical energy from the gearmotor is transferred to the drive sprockets, which engage the chain links and initiate controlled movement along the conveyor track.

Power transmission typically occurs via a direct or indirect coupling system, which in this case includes a cardan shaft to connect the gearmotor to the main drive shaft. The shaft is supported by pillow block or split-block bearings to maintain alignment, stability, and smooth operation during continuous conveying.

As the drive sprockets rotate, they engage the underside of the chain, pulling it along the track profile. This motion enables the conveyor to transport skids or carriers perpendicular to the primary conveyor flow, ensuring accurate and synchronized cross-transfer between process stations.

UniChain Cross Transfer Take-Up Unit



1 Take-Up Sprocket Assembly

2 Tension Adjustments

UniChain Cross Transfer Take-Up Unit Overview

The Unichain Chain Cross Transfer Take-Up Unit is responsible for maintaining proper tension and alignment of the conveyor chains within the cross-transfer system.

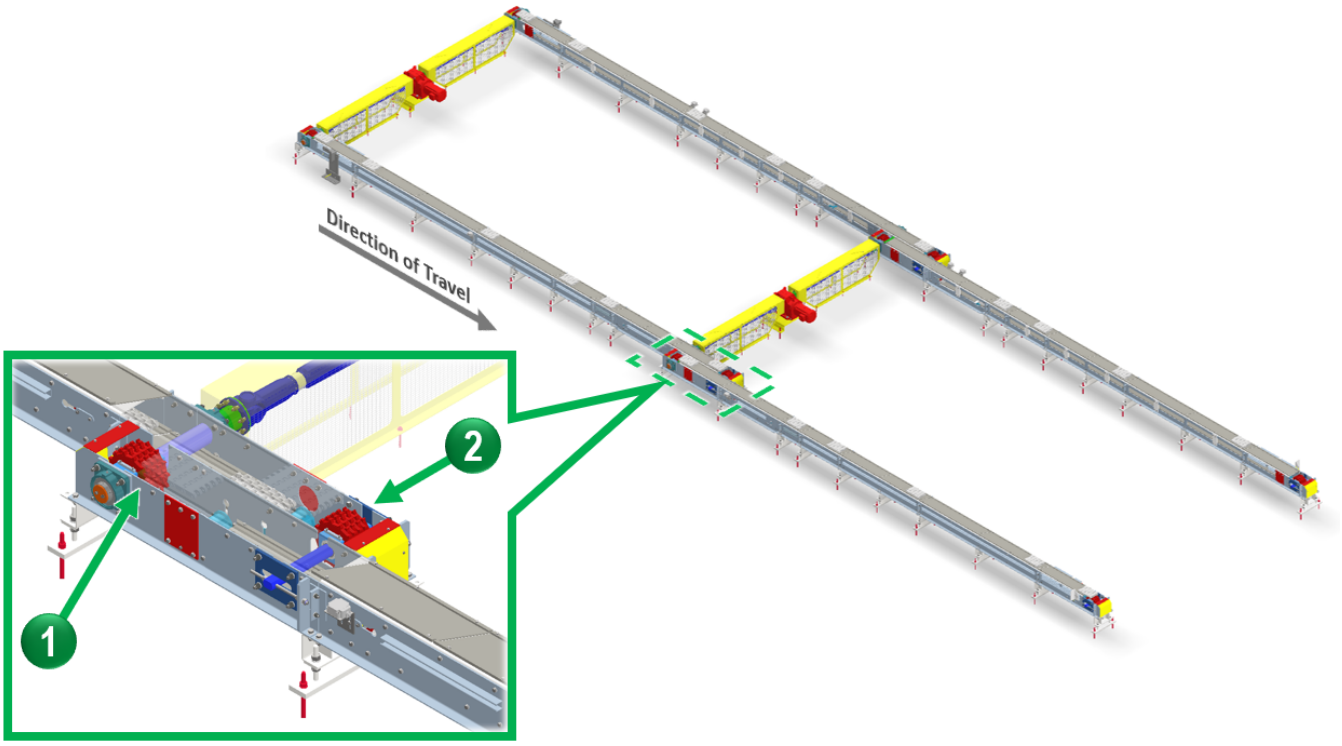
Positioned opposite the drive unit, the take-up unit consists of take-up sprockets, shafts, bearings, and an adjustable tensioning mechanism, all mounted within a structural frame or housing. This assembly enables controlled adjustment of chain position to compensate for wear, elongation, and thermal expansion during operation.

During conveyor operation, the chains engage with the take-up sprockets, which guide the chains along the return path and ensure consistent engagement with the drive sprockets. The adjustable tensioning mechanism allows maintenance personnel to increase or decrease chain tension as required, promoting smooth operation and preventing slack or misalignment.

The take-up unit plays a critical role in overall conveyor performance by ensuring the chains remain properly tensioned and aligned. Proper tensioning helps to:

- Prevent premature wear of chains and sprockets
- Maintain accurate skid positioning during transfer
- Ensure efficient power transmission from the drive unit

UniChain Cross Transfer Nested Assembly



A Nested Assembly featuring two connected Center Mount Cross Transfer units.

1. Nested Drive Shaft Assembly
2. Nested Take Up Shaft Assembly

UniChain Cross Transfer Nested Assembly Overview

In layouts where two or more UniChain Cross Transfer conveyors are connected, a separate Nested Assembly is utilized at the interface between conveyors.

The Nested Assembly is a combined unit that integrates the Take-Up Unit of one Cross Transfer with the Drive Unit of the adjacent Cross Transfer into a single assembly. This configuration allows for a continuous transfer of motion and load support across the transition point, eliminating interruption as the skid moves between conveyors.
By combining these functions, the Nested Assembly enables the skid in motion to transfer seamlessly from one cross-transfer conveyor to the next without stopping or repositioning, ensuring smooth and uninterrupted operation.