LIVING LOGISTICS

UNIT LOAD CONVEYORS

Conveyors, Transfers, Lifting & Stacking for Pallets and Pallet cages

TGW's ULC product family constructs intelligent pallet systems that maximize warehouse footprint. Modular & Flexible technology establishing customer solutions in ambient, chilled and freezer applications. Roller and Chain conveyors provide smooth quiet handling for a varied range of Pallets, Pallet cages, System pallets and Half-pallets.

- Handle different Pallets types
- Weights up to 1500kg, Pallet cages to 1250kg
- Ambient, chilled and freezer applications (-30°C to 40°C, -22°F to 110°F)
- Smooth & Quiet operation
- Automated checking on Pallet Quality, Weight and Dimensions
- Maintenance friendly, simple and easy

SOLUTIONS CLOSE TO CUSTOMER NEEDS

A family of standard products flexible to build demanding customer solutions, modular technology that accomplishes the diverse demands of different market sectors, for example Grocery, Fashion, Industrial & Consumer. The ULC portfolio of mechanical and control solutions handle pallet transportation and distribution operations throughout the facility. Perfect in standalone systems and in automated fulfilment centres filling the gap between the truck and the CTC product line.

Floor space is utilized to its maximum, for example: parallel conveyor-to-conveyor transfers use a single device which reduces the space between conveyors, short transfer elements that are only slightly bigger than the pallet, front and side loading/unloading locations optimizing fork truck access movements.

- Usable over a wide range of Pallet & Pallet cages, design based around but not limited to EURO pallets 1200 × 800/1000/1200mm (47" x 31.5"/39"/47")
- Pallets up to 1500kg, Pallet cages to 1250kg
- Safe operational speed 0.2m/s to 0.4m/s (39 – 79fpm). 0.2m/s (39fpm) max zero pressure accumulation speed
- Operation in all temperature environments, Ambient, Chilled and Freezer applications, -30°C to 40°C (-22°F to 104°F)
- Robust, long lifetime products

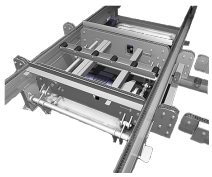
ULC Conveyors. Roller and Chain technology is utilized in the ULC product family to closely match product choice with the operation requirements, type of load, noise and cost optimization. Both technologies are often used in combination to handle pallet orientation without being forced to always turn the pallet. Short-side leading uses either roller or chain conveyors, Long-side leading requires chain conveyors.

- Chain conveyors use duplex chains which overlap to provide smooth and quiet transportation of loads. Removing any sharp transitions significantly reduces noise generation, ensures load stability, and reduces overall wear. A central third duplex chain is possible to provide more stability where appropriate
- Zero pressure contact accumulation is available on roller conveyors, providing storage which balances system flow for example feeding operator workstations
- Stacking machines stack/unstack up to 20 empty pallets on roller or chain conveyors

Automated Pallet checking can be incorporated into the system to avoid potential problems downstream. Each pallet weight and dimensions are verified, empty pallets are checked for broken base plate and a clear fork area. Excessive wear is eliminated to maximize system lifetime and ensure optimal operational conditions.

Simple Maintenance reduces effort and cost. Easy accessibility of critical components and choice of motor mounting locations make maintenance as simple as possible. Tensioning wheels mounted directly on the products correct chain tension without the need for specific tools, and are designed so that chains cannot be over tensioned. Maintenance free gear boxes and drives are used in all products.

CHAIN LIFT TABLE

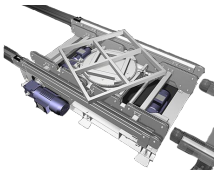


CHAIN TRANSFER

ROLLER LIFT TABLE

Distribution & Transfers. Bi-directional transfers merge and divert pallets in or out of a conveying line, roller-to-chain, chain-to-roller, or chain-to-chain.

The 'Transfer car' is used in areas requiring a high number of transfer points. Pallets are handled on one or two LHDs at high speed between multiple points, lengthwise or crosswise transport, on Roller or Chain.



Two **Pallet turning devices** handle the different system applications.

- **Turntables** (Roller DT-RF, Chain DT-KF). Fast and exact positioning ensure throughput performance. Pallet orientation is retained when turning to multiple stopping points, e.g. 90° bends or when labelling both sides of the pallet (180°)
- **Turn Lift Tables** (DHT) are used to change the orientation of the pallet, for example to prepare a pallet for the rack storage, or directly following a 90° transfer to restore orientation

Front and Side loading **'In/Out feed'** products streamline movement sequences bringing pallets in and out of the system and reduce footprint. Solutions are matched to the operational requirements and type of forklift truck being used (e.g. Hand-pallet, Low-platform, High-platform and Fork-lift).

The **SRM handover** device (RBGU) interfaces the system to the storage crane. Pallets are precisely positioned, aligned and lifted to the crane, single or double pallet preparation is possible.

A choice of **Lifts** fulfil the needs of different requirements. Balancing for example system performance, number of levels, temperature, height, operational noise and cost.

- Frame lifts offer the most cost efficient solution for single pallet applications between two levels (1m/s, up to 10m high. 196fpm, up to ≈33')
- Belt lifts bring greater performance (1.3 – 2m/s, 256 – 394fpm) and (20m high, ≈66'), increased height (20m) and less noise. Variants for 1 or 2 pallets on 1 LHD, or 2 LHD for 2 pallets
- Timing belt lift brings high acceleration (1.5m/s², ≈5ft/s²)

SAFETY

Safety is a prime focus to protect operators from adverse situations when manoeuvring heavy pallet loads.

- Guards on each product remove crushing and nip points
- Chains are enclosed inside the side structure to prevent accidents
- Fencing off specific exposed areas with enclosures or covers, creating restricted zones
- Emergency stop buttons along the conveyor lines

TOTAL COST OF OWNERSHIP

- ULC technology is based on TGW's 50+ years of experience in handling pallet systems, matching customer requirements to long lifetime products, with low wear and low maintenance
- Energy efficiency in motor control is at the heart of TGW philosophy. Energy efficient IE3 drives are used to reduce energy consumption, with regenerating VFD to recover braking energy
- Proactive controls detect out of tolerance pallets, ensuring operational security, reduce maintenance effort and prolong system lifetime