E N G I N E E R I N G  M A N U A L

Medium & Heavy-Load Assembly Automation
ISO Class 4 Approved for Cleanrooms
Efficient, Non-Contact Zoning
Clean, Open Roller Design

ERT™ 250
Edge Roller Technology

Precision Edge Roller Pallet & Tray Handling Conveyors
Zone & Slip Roller Technology

- Non-contact zone control provides simplified traffic control, eliminating pallet stops and costly pneumatic valves
- Low back pressure slip rollers can be used for full length with conventional pneumatic pallet stops
- Individual rollers can be replaced if damaged without affecting the remaining portion of the conveyor
- No belts, reducing product contact and debris

Easily Reconfigurable

- Gears, drive shaft, and gearmotor can be repositioned in the field
- The gearmotor can be moved on 250 mm increments
- Lower gears can be removed and gearmotor added to create new zones
- The drive shaft can be moved to any roller zone
- The drive shaft can be relocated to the lower height for added product clearance

Patent Pending Gearbox Drive Design

- Durable, patent pending linear gearbox design provides a robust and flexible method of driven rollers
- Brushless DC gearmotors and controllers
- Reversible motors for assembly automation
- 50 watt, 3.5 amp, low voltage brushless DC motors are used to save space and provide improved efficiency
- All motor controllers are Ethernet IP, Modbus TCP or PROFINET for ease of control logic, wiring and communication

The Benefits of a Dorner ERT 250 Conveyor

Industry Ready
- Reliable and adaptable edge roller platform for the conveyance of medical and cleanroom-based product assembly
- Versatile and durable low back pressure platform for the conveyance of appliance, electronics, automotive and consumer goods product assembly
- Open drive roller design with aluminum frames
- ISO Class 4 approved for cleanroom applications

Simple & Effective Design
- Non-contact zoning and/or slip roller accumulation capability
- Patent pending linear gearbox technology
- Designed for configuration and modifications in the field
- Variety of automation modules for product traffic control

Safe & Efficient
- Non-jamming; open drive rollers reduce pinch points
- Low-voltage motors are designed to reduce power consumption
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CONVEYOR FEATURES

INNOVATIVE CORNERS:
The corner systems in conjunction with the pallet pin tracking provide a simple, cost effective means for pallet traffic control.

LOW VOLTAGE GEARMOTORS:
Compact, cost efficient 24 VDC brushless gearmotors and controls provide a modular control scheme.

ONSITE RECONFIGURATION AND MAINTENANCE:
Individual rollers, drive shafts, and gearmotors can be removed, repaired, and repositioned without dis-assembly of the complete conveyor.

UNIVERSAL T-SLOT:
Conveyor T-slot is compatible with Dorner 2200 Series and FlexMove® T-slot hardware along with select industry standard 10 mm slot hardware.
CONVEYOR FEATURES

SLIP ROLLER CONVEYOR:
SLIP ROLLER DESIGN MINIMIZES BACK PRESSURE ON ACCUMULATED PALLETS OR TRAYS, ALSO ELIMINATING DUST OFTEN SEEN WITH TRADITIONAL CONVEYORS

INDUSTRY COMPATIBLE PALLETS:
PALLETS AVAILABLE IN INDUSTRY STANDARD SIZES ALONG WITH LOCATION PINS THAT ARE COMPATIBLE WITH INDUSTRY STANDARD PALLETS AND LOCATE STATIONS

ZONING CONVEYOR:
CONVEYOR CAPABLE OF HAVING MULTIPLE ZONES FOR PALLET OR TRAY CONTROL, ELIMINATING STOPS AND PNEUMATIC VALVES
Loop with Close Transfer
Main lines are spaced tightly together to remove transverse conveyors

Loop (Racetrack)
Leading edge orientation is maintained using 90 degree corners

Over Under
The return line is located under the main line. Vertical Transfer Units (Elevators) raise and lower the pallets at each end
USING ZONES VS. SLIP ROLLERS

Typical Application:

Product Required for Slip Roller Conveyor Method:
- (2) Long conveyors – full slip rollers
- (2) Short conveyors – full slip rollers
- (4) Brushless DC gearmotors for conveyors
- (2) 24VDC gearmotor controllers
- (1) Lift and Locate Module
- (4) Lift and Transfer Modules
- (9) Pallet Stops
- (18) Pneumatic solenoid valves with air plumbing and electrical wiring

Benefits:
- Low back pressure contact accumulation
- Continuous run gearmotors
- Low voltage gearmotor wiring

Product Required for Zone Conveyor Method:
- (2) Long conveyors – with (5) zones each
- (2) Short conveyors – with (2) zones each
- (14) Brushless DC gearmotors
- (7) 24VDC gearmotor controllers
- (1) Lift and Locate Module
- (4) Lift and Transfer Modules
- (1) Pallet Stops (for lift and locate)
- (6) Pneumatic solenoid valves with air plumbing and electrical wiring

Benefits:
- Non-contact pallet accumulation
- Flexibility of controlled gearmotors
- Low voltage gearmotor wiring
- Minimized pneumatics to reduce noise, wiring / plumbing costs, and solenoid hardware
Specifications

- 38 mm (1.5 in) diameter rollers on 50 mm (1.97 in) centers
- 120 mm (4.72 in) to 960 mm (37.8 in) wide
  - Standard pallet widths from 320 mm to 800 mm wide
- Lengths from 250 mm to 3500 mm in 50 mm increments
  - Conveyors over 2000 mm contain 2 gearmotors
  - For longer conveyors simply bolt multiple conveyors together
- Load Capacity: Up to 114 kg (250 lbs) per pallet
  - Up to 7 kg (15 lbs) per roller in contact with pallet
- Up to 37 m/min (121 ft/min)
- Driven rollers for indexing / zoning and transport applications
- Slip rollers for low back pressure accumulation
- Brushless DC gearmotor and controller. See page 28-29 for specification
  - Conveyors over 2000 mm in length contain (2) gearmotors with (1) controller
- Bi-directional and reversing
- Gearmotor can be located at multiple locations along length on 250 mm increments
- Outer frame cover: flush design or flexible dual t-slot options available
- Clear anodized aluminum framing
- Electrically conductive polyamide rollers
- ISO Class 4 Cleanroom Rated

STANDARD FEATURE:
Universal T-Slot compatible with industry standard 10 mm hardware

STANDARD OPTION:
Flush outer cover can be provided

STANDARD FEATURE:
Conveyor roller provides pallet guiding

STANDARD FEATURE:
Gearmotor location can be easily moved on 250 mm centers

STANDARD OPTION:
Drive shaft can be located at lower height for added product clearance
SINGLE ZONE CONVEYOR

ERT 250: Single Zone Conveyor

- Cover Style: T = T-Slot  F = Flush
- Controller Type: A = No Controller  B = Controller only
  D = Controller with side mount prox bracket   E = Controller with bottom mount prox bracket
- Speed: 1 = 10 mpm  2 = 15 mpm  3 = 20 MPM  4 = 25 MPM  5 = 37 mpm
- Motor Side: A = A Side (INSIDE)  D = D Side (INSIDE)
- Drive Shaft Height: 1 = at Roller  2 = at Gear
- Second Drive Shaft Location: Roller Position from Infeed End (01 to 70), (00 if not required)
- Location of Second Drive Gearmotor from Infeed End: A - P (0 if not required)
- First Drive Shaft Location: Roller position from infeed end (01 to 70)
- Location of First Drive Gearmotor from Infeed End: A - P
- Roller Type: D = Driven Roller  S = Slip Roller
- Location of First Motor Notch: A - E
- Conveyor Length Reference: LLLL in millimeters 0250 - 3500 (in 50 mm increments)
- Conveyor Width Reference: 120 160 920 960 40 increments up to...
- Conveyor Belt Width (W)*: 120 mm (4.72 in) 160 mm (6.3 in) 920 mm (36.2 in) 960 mm (37.8 in)
- Conveyor Length Reference: 0250 0050 increments up to...
- Conveyor Length (L): 250 mm (.82 ft) 2500 mm (8.2 ft) up to...
- Standard Pallet Widths: 320, 400, 480, 640 and 800 mm

Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

Note: Dimensions = mm (in)
Specifications

- Multiple Zone conveyor. Up to 4 zones per conveyor
- 38 mm (1.5 in) diameter rollers on 50 mm (1.97 in) centers
- 120 mm (4.72 in) to 960 mm (37.8 in) wide
  - Standard pallet widths from 320 mm to 800 mm wide
- Minimum Zone Length: 250 mm (9.8 in)
- Maximum Zone Length: 2000 mm (78.7 in)
- Length increments = 50 mm (1.97 in)
- Total maximum conveyor length: 3500 mm
- Load Capacity: Up to 114 kg (250 lbs) per pallet / per zone
  - Up to 7 kg (15 lbs) per roller in contact with pallet
- Up to 37 m/min (121 ft/min)
- Driven rollers for indexing / zoning and transport applications
- Slip rollers for low back pressure accumulation
- Brushless DC gearmotor provided for each zone. Controller can drive up to 2 gearmotors. See page 28-29 for specifications
- Bi-directional and reversing
- Gearmotor can be located at multiple locations along length on 250 mm increments
- Outer frame cover: flush design or flexible dual t-slot options available
- Clear anodized aluminum framing
- Electrically conductive polyamide rollers
- ISO Class 4 Cleanroom Rated

**STANDARD FEATURE:** Universal T-Slot compatible with industry standard 10 mm hardware

**STANDARD OPTION:** Flush or T-Slot outer cover can be provided

**STANDARD FEATURE:** Conveyor roller provides pallet guiding

**STANDARD FEATURE:** Gearmotor location can be easily moved on 250 mm centers

**STANDARD OPTION:** Drive shaft can be located at lower height for added product clearance
Standard Multiple Zone Sizes

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<tr>
<th>Conveyor Width Reference*</th>
<th>120</th>
<th>160</th>
<th>40 increments up to...</th>
<th>920</th>
<th>960</th>
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<td>120 mm (4.72 in)</td>
<td>160 mm (6.3 in)</td>
<td>40 mm (1.6 in) increments up to...</td>
<td>920 mm (36.2 in)</td>
<td>960 mm (37.8 in)</td>
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<td>0050 increments up to...</td>
<td>2000</td>
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<td>Zone Length (L)</td>
<td>250 mm (.92 ft)</td>
<td>50 mm (2 in) increments up to...</td>
<td>2000 mm (6.56 ft)</td>
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*Standard Pallet Widths: 320, 400, 480, 640 and 800 mm

ERT 250: Multiple Zone Conveyor

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<th>WWW</th>
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<td>Drive Shaft Height:</td>
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<td>U = Europe English</td>
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Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user. Note: Dimensions = mm (in)
90 AND 180 DEGREE CORNER CONVEYOR

Specifications

- 90 and 180 degree corners
- Standard pallet widths: 320 mm, 400 mm, 480 mm, 640 mm and 800 mm wide
- Load Capacity: Up to 114 kg (250 lbs) per pallet
- Up to 37 m/min (121 ft/min)
- Maintains pallet orientation around corner
- Requires pin tracking compatibility in pallet
- Pallet accumulation around corner is acceptable
- Brushless DC gearmotor and controller. See page 28-29 for specifications
  - 90 degree has 2 gearmotors, 1 controller
  - 180 degree has 3 gearmotors, 2 controllers
- Bi-directional
- Clear anodized aluminum framing
- Electrically conductive acetal rollers
- ISO Class 4 Cleanroom Rated
- Pallet length must be at or less then pallet width. For larger rectangular pallet sizes contact factory.

STANDARD FEATURE:
Pin Tracking Bearing Cams
smoothly guide the pallets around corner

STANDARD FEATURE:
Universal T-Slot compatible with industry standard 10 mm hardware

STANDARD FEATURE:
Provides compact conveyor loops

OPTION:
Support post, mounts directly to conveyor. See page 33 for details.
90 AND 180 DEGREE CORNER CONVEYOR

**ERT 250: 90 Degree Corner Conveyor**

<table>
<thead>
<tr>
<th>Width</th>
<th>Length</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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<tbody>
<tr>
<td>320</td>
<td>320</td>
<td>427 mm (16.8 in)</td>
<td>698 mm (27.5 in)</td>
<td>960 mm (37.8 in)</td>
<td>836 mm (32.9 in)</td>
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<td>400</td>
<td>400</td>
<td>527 mm (20.8 in)</td>
<td>737 mm (2.9 in)</td>
<td>1060 mm (37.8 in)</td>
<td>915.67 mm (36.0 in)</td>
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<td>480</td>
<td>320</td>
<td>577 mm (22.7 in)</td>
<td>778 mm (30.6 in)</td>
<td>1110 mm (41.7 mm)</td>
<td>996 mm (39.2 in)</td>
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<td>640</td>
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<td>777 mm (30.6 in)</td>
<td>958 mm (33.8 in)</td>
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<td>640</td>
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<td></td>
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</tr>
<tr>
<td>800</td>
<td>640</td>
<td>927 mm (36.5 in)</td>
<td>1138 mm (44.8 in)</td>
<td>1660 mm (65.3 in)</td>
<td>1316 mm (51.8 in)</td>
</tr>
<tr>
<td></td>
<td>800</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Dependent on pallet thickness

**ERT 250: 90 Degree Corner Conveyor**

- **Controller Type:** A = No Controller  B = Controller with mount bracket
- **Speed:** 1 = 10 MPM  2 = 15 MPM  3 = 20 MPM  4 = 25 MPM  5 = 37 MPM
- **Direction:** L = Left  R = Right
- **Angle:** 090 = 90 Degree  180 = 180 Degree
- **Conveyor Width Reference:** (see offering tab)
- **Documentation Language:** M = US-English  W = Europe English  D = German
- **Corner:** C = Corner Turn
- **Conveyor Type:** ERT250

---

Right Hand

Left Hand

---

90 & 180 Degree Corner Conveyor
Specifications

- Pallet is dimensionally compatible with industry standards
- Pallet Base:
  - Anodized aluminum tool plate is standard (other materials available, contact factory)
  - Thicknesses of 1/4 in to 1/2 in (1/2 in recommended for 480 mm and larger pallets)
- Pallet Skirt Material: Electrostatic Dissipative HPDE
- Includes (4) hardened bushings for Lift and Locate
- Load Capacity to 114 kg (250 lbs)
- Optional ball bearing pin tracking used for pallet tracking at corners
- Plated steel proximity sensor pick-up on bottom and side of pallet
- Custom widths available
- Center of gravity of the combined payload should be located in the center third of the pallet

<table>
<thead>
<tr>
<th>Pallet Sizes</th>
<th>Length (mm)</th>
<th>320</th>
<th>400</th>
<th>480</th>
<th>640</th>
<th>800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width (mm)</td>
<td>320</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>400</td>
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<td></td>
<td>480</td>
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<td>X</td>
<td>X</td>
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<td></td>
<td>640</td>
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<tr>
<td></td>
<td>800</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Load Capacity including Pallet, Fixture and Product kg (lbs):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (mm)</td>
</tr>
<tr>
<td>Width (mm)</td>
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<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*Note: Pallet bumper cannot be used in applications where pallets slide against each other.*
See page 42 & 45 for detailed pallet weights and detailed pallet plate drawings.
Specifications

- Lifts from center of conveyor
- Pallet sizes: see chart
- Lift Capacity:
  - 114 kg (250 lbs) for pallet width 320 to 400 mm wide
  - 182 kg (400 lbs) for pallet width 480 to 800 mm wide
- Repeatability: +/- 0.13 mm (0.005 in)
- Lift height is adjustable. Maximum lift height is 20 mm (0.79 in) above top of roller.
- Includes adjustable bumper lift stroke
- 63 mm diameter pneumatic lift cylinder provided for pallet widths up to 400 mm. 80 mm diameter pneumatic lift cylinder provided for pallet widths 480 to 800 mm. Includes air fittings for ¼ inch push in air line. Solenoid valves, flow control and plumbing not provided.
- Lift cylinder includes magnetic piston for position sensing. Sensors not provided.
- Requires cushioned or non-cushioned pallet stop. See page 24-27
- Optional guarding package available

Pallet Sizes

<table>
<thead>
<tr>
<th>Width (mm)</th>
<th>Length (mm)</th>
<th>320</th>
<th>400</th>
<th>480</th>
<th>640</th>
<th>800</th>
</tr>
</thead>
<tbody>
<tr>
<td>320</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>400</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>480</td>
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<td>X</td>
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<td>X</td>
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</tr>
<tr>
<td>640</td>
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<tr>
<td>800</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Optional:
- Guarding Package
  - Support post recommended for loads exceeding 113.4 kg (250 lbs).
  - See page 33 for details.
ERT 250: Lift and Locate

- Guarding Included: N = No Guarding, G = Guarding Included
- Pallet Sensor Option: N = No Sensor Bracket Included, B = Bottom Sensor Bracket Included, S = Side Sensor Bracket
- Stop Type: C = Cushioned, F = Non-Cushioned, N = None
- Pallet Length Reference: 320 - 800
- Pallet Width Reference: 320 - 800
- Documentation Language: M = US-English
- Conveyor Type: L = Standard Lift and Locate

All combinations are valid except 160 mm width or length is not compatible with the bottom sensor bracket.

For detailed module spacing, see page 43. For pneumatic specifications, see page 42.

Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

Note: Dimensions = mm (in)
Specifications

- 2 position lift and transfer
  - Up position transfers pallet on/off transverse conveyor
  - Down position lowers the transfer conveyor below feed conveyor
  - Indexing motor on feed conveyor is used to position incoming pallet for sending applications, eliminating pallet stops
- Pallet sizes: see chart
- Lift Capacity:
  - 114 kg (250 lbs) for pallet width 320 to 400 mm wide
  - 182 kg (400 lbs) for pallet width 480 to 800 mm wide
- Pallet transfers over conveyor side frame. 10 mm (0.40 in) height change required
- Includes ERT 250 Series Transfer Conveyor
  - 38 mm (1.5 in) diameter rollers on 50 mm (1.97 in) centers
  - Load Capacity: Up to 114 kg (250 lbs) per pallet
  - Up to 37 m/min (121 ft/min)
  - Driven rollers
  - Brushless DC gearmotor and controller. See page 28-29 for specifications
  - Bi-directional and reversing
- 63 mm diameter pneumatic lift cylinder provided for pallet widths up to 400 mm. 80 mm diameter pneumatic lift cylinder provided for pallet widths 480 to 800 mm. Includes air fittings for ¼ inch push in air line. Solenoid valves, flow control and plumbing not provided.
- Lift cylinder includes magnetic piston for position sensing. Sensors not provided.
- Optional guarding package available

### Pallet Sizes

<table>
<thead>
<tr>
<th>Width (mm)</th>
<th>320</th>
<th>400</th>
<th>480</th>
<th>640</th>
<th>800</th>
</tr>
</thead>
<tbody>
<tr>
<td>320</td>
<td>X</td>
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<tr>
<td>400</td>
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<td>480</td>
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<td>640</td>
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<td>800</td>
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<td>X</td>
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</tr>
</tbody>
</table>

See page 40 for detailed pallet stop configurations

**OPTIONAL:** Guarding Package and Pallet Sensor

**OPTIONAL:** Rocker Sensor for receiving applications
ERT 250: Lift and Transfer

Controller Type:  A = No Controller  B = Controller included

Speed:  1 = 10 MPM  2 = 15 MPM  3 = 20 MPM  4 = 25 MPM  5 = 37 MPM

Guarding Included:  N = No Guarding  G = Guarding Included

Pallet Sensor Option:  N = No Sensor Bracket  S = Side Sensor Bracket  R = Rocker Sensor Bracket

Cushion Option:  N = Non-Cushioned  C = Cushioned

Direction:  S = Sending  R = Receiving

Flow Option:  E = End Stop  P = Pass Thru

Pallet Width Reference:  320 - 800

Pallet Length Reference:  320 - 800

Documentation Language:  M = US-English

Conveyor Type:  T = Lift and Transfer

For detailed module spacing, see page 43. For pneumatic specifications, see page 42.

Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

Note: Dimensions = mm (in)
Specifications

- Pneumatic pusher with integrated corner conveyor
- Pallet sizes: see chart
- Load Capacity: Up to 91 kg (200 lbs) per pallet
- Pallet pusher across transfer roller conveyor. No height change required.
- Includes ERT 250 Series Transfer Conveyor
  - 38 mm (1.5 in) diameter rollers on 50 mm (1.97 in) centers
  - Load Capacity: Up to 91 kg (200 lbs) per pallet
  - Up to 37 m/min (121 ft/min)
  - Slip rollers
  - Brushless DC gearmotor and controller. See page 28-29 for specifications
- 32 mm diameter pneumatic pusher cylinder provided. Includes air fittings for ¼ inch push in air line. Solenoid valves, flow control and plumbing not provided
- Pusher cylinder includes magnetic piston for position sensing. Sensors not provided.

### Pallet Sizes

<table>
<thead>
<tr>
<th>Width (mm)</th>
<th>320</th>
<th>400</th>
<th>480</th>
<th>640</th>
<th>800</th>
</tr>
</thead>
<tbody>
<tr>
<td>320</td>
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<td>400</td>
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<td>640</td>
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<td>800</td>
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</tr>
</tbody>
</table>

STANDARD FEATURE:
Break-Away Pusher Blade
for operator safety
ERT 250: Pallet Pusher

- Pallet Sensor Option: N = No Sensor Bracket  S = Side Sensor Bracket
- Controller Type: A = No Controller  B = Controller with mount bracket
- Speed: 1 = 10 MPM  2 = 15 Mpm  3 = 20 MPM  4 = 25 MPM  5 = 37 MPM
- Direction: L = Left  R = Right
- Pallet Length Reference: 320 - 800
- Pallet Width Reference: 320 - 800
- Documentation Language: M = US-English
- Conveyor Type: D = Pallet Pusher

Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

Note: Dimensions = mm (in)

For detailed module spacing, see page 43. For pneumatic specifications, see page 42.
Specifications

- Pneumatic lifts from center of conveyor
- Pneumatic rotation with configurable 90 or 180 degree position
- Includes break-away magnetic coupled rotation plate for product safety
- Pallet sizes: see chart
- Rotation angle: 90 or 180 degrees
  - 90 degrees must be square pallets
  - Rectangular pallet sizes must be 180 degrees
- Lift Capacity:
  - 68 kg (150 lbs) for pallet width 320 to 400 mm wide
  - 114 kg (250 lbs) for pallet width 480 to 800 mm wide
- 63 mm diameter pneumatic lift cylinder provided for pallet widths up to 400 mm. 80 mm diameter pneumatic lift cylinder provided for pallet widths 480 to 800 mm. Includes air fittings for ¼ inch push in air line. Solenoid valves, flow control and plumbing not provided
- 10 mm diameter pneumatic rotary actuator provided for pallets up to 400 mm. 20 mm diameter pneumatic rotary actuator provided for pallets width 480 to 800 mm
- Lift cylinder includes magnetic piston for position sensing. Sensors not provided. See page 34
- Slip Roller base conveyors requires cushioned or non-cushioned pallet stop. See page 24-27
- Optional guarding package available

### Pallet Sizes

<table>
<thead>
<tr>
<th>Width (mm)</th>
<th>320</th>
<th>400</th>
<th>480</th>
<th>640</th>
<th>800</th>
</tr>
</thead>
<tbody>
<tr>
<td>320</td>
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<tr>
<td>400</td>
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<tr>
<td>800</td>
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<td>X</td>
</tr>
</tbody>
</table>

**OPTIONAL:** Guarding Package

**STANDARD FEATURE:** Breakaway Top Plate for operator safety

**OPTIONAL:** Support Post, mounts directly to conveyor. See page 33 for details.
LIFT AND ROTATE

ERT 250: Lift and Rotate

Guarding Included:  
- N = No Guarding
- G = Guarding Included

Pallet Sensor Option:  
- N = No Sensor Bracket Included
- B = Bottom Sensor Bracket Included

Stop Type:  
- C = Cushioned
- F = Non-Cushioned
- N = None

Angle:  
- 090 = 90 Degree
- 180 = 180 Degree

Pallet Length Reference:  
- 320 - 800

Pallet Width Reference:  
- 320 - 800

Documentation Language:  
- M = US-English

Conveyor Type:  
- R = Lift and ROTATE

For detailed module spacing, see page 43. For pneumatic specifications, see page 42.

Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

Note: Dimensions = mm [in]
Standard Load Pallet Stop – Non-cushioned

Non-cushioned pallet stop for traffic control. Stops one or more pallets at the specified location on the conveyor. Air pressure disengages the stop allowing pallets to pass until the pressure is released. A spring return re-engages the pallet stop.

Specifications

- Maximum Load: 68 kg (150 lbs) accumulated
- Typically used for pallets 400 mm wide and narrower
- Pneumatically activated, spring return
- Mounts on the inside of the conveyor rail
- Airline can be mounted on the front or back of the stop
- Includes: stop, mounting hardware, and fittings for 6.3 mm (1/4 in) push in air line
- Optional vertical or side mounted sensor bracket. See page 34

Part Number

ERSSM-LFX where X = Sensor Bracket Option
N = No Sensor Bracket  B = Bottom Sensor Bracket  S = Side Sensor Bracket

For pneumatic specifications, see page 42.

Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

Note: Dimensions = mm (in)
Heavy Load Pallet Stop – Non-cushioned

Non-cushioned pallet stop for traffic control. Stops one or more pallets at the specified location on the conveyor. Air pressure disengages the stop allowing pallets to pass until the pressure is released. A spring return re-engages the pallet stop.

Specifications

- Maximum Load: 250 kg (550 lbs) accumulated
- Recommended for pallets wider than 400 mm
- Pneumatically activated, spring return
- Mounts on the inside of the conveyor rail
- Airline can be mounted on the front or back of the stop
- Includes: stop, mounting hardware, and fittings for 6.3 mm (1/4 in) push in air line
- Optional vertical or side mounted sensor bracket. See page 34

Part Number: ER5SM-HFX where X = Sensor Bracket Option
N = No Sensor Bracket  B = Bottom Sensor Bracket  S = Side Sensor Bracket

Maximum Accumulated Load - Non-cushioned Pallet Stop

For pneumatic specifications, see page 42.

Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

Note: Dimensions = mm (in)
Standard Load Pallet Stop – Cushioned

Cushioned pallet stop for traffic control. Stops one or more pallets at the specified location on the conveyor. Cushioned deceleration of the first pallet into the stopped location, guarding against vibration of sensitive payloads. Accumulated pallets are not cushioned. Air pressure disengages the stop allowing pallets to pass until the pressure is released. A spring return re-engages the pallet stop and resets the cushion.

Specifications

- Maximum Load: 55 kg (120 lbs) accumulated
- Typically used for pallet 400 mm wide and narrower
- Pneumatically activated, spring return
- Stops the pallet on the leading or trailing edge
- Mounts on the inside of the conveyor rail
- Airline can be mounted on the front or back of the stop
- Includes: stop, mounting hardware, and fittings for 6.3 mm (1/4 in) push in air line
- Optional vertical or side mounted sensor bracket. See page 34

Part Number ER5SM-LCX where X = Sensor Bracket Option

N = No Sensor Bracket  B = Bottom Sensor Bracket  S = Side Sensor Bracket

For pneumatic specifications, see page 42.

Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

Note: Dimensions = mm (in)
Heavy Load Pallet Stop – Cushioned

Cushioned pallet stop for traffic control. Stops one or more pallets at the specified location on the conveyor. Cushioned deceleration of the first pallet into the stopped location, guarding against vibration of sensitive payloads. Accumulated pallets are not cushioned. Air pressure disengages the stop allowing pallets to pass until the pressure is released. A spring return re-engages the pallet stop and resets the cushion.

Specifications

- Maximum Load: 114 kg (250 lbs) accumulated
- Recommended for pallets wider than 400 mm
- Pneumatically activated, spring return
- Stops the pallet on the leading or trailing edge
- Mounts on the inside of the conveyor rail
- Airline can be mounted on the front or back of the stop
- Includes: stop, mounting hardware, and fittings for 6.3 mm (1/4 in) push in air line
- Optional vertical or side mounted sensor bracket. See page 34

Part Number ERSSM-HCX where X = Sensor Bracket Option
N = No Sensor Bracket  B = Bottom Sensor Bracket
S = Side Sensor Bracket

Maximum Accumulated Load - Cushioned Pallet Stop

For pneumatic specifications, see page 42.

Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

Note: Dimensions = mm (in)
## Specifications

- Brushless DC Gearmotor
- 50 watt
- 24 VDC
- IP 54 ingress rating
- Aluminum body, steel shaft
- Certifications
  - ETL/UL certified
  - CE certified
  - RoHS and REACH compliant
- Temperature rating: -10° to 40° C (14° to 104° F)
- M8-4 Pin connector with 1 m long cable

### Part Number

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Maximum Speed M/min (Ft/min)</th>
<th>Gear Ratio</th>
<th>Shaft Speed Rev/min</th>
<th>Rated Torque Nm (in-lb)</th>
<th>Starting Torque Nm (in-lb)</th>
<th>Rated Current amps</th>
<th>Starting current amps</th>
</tr>
</thead>
<tbody>
<tr>
<td>826-984</td>
<td>10.3 (33.7)</td>
<td>67.22</td>
<td>8.6 to 86.7</td>
<td>4.4 (39.1)</td>
<td>24 (215)</td>
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<td>3.0</td>
</tr>
<tr>
<td>826-985</td>
<td>15.2 (50)</td>
<td>45</td>
<td>12.8 to 129</td>
<td>2.9 (26.2)</td>
<td>16 (145)</td>
<td>2.5</td>
<td>3.0</td>
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<tr>
<td>826-986</td>
<td>20.8 (68.2)</td>
<td>33</td>
<td>17.5 to 176</td>
<td>2.2 (19.2)</td>
<td>12 (106)</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>826-987</td>
<td>25.4 (83.3)</td>
<td>27</td>
<td>21.3 to 215</td>
<td>1.8 (15.7)</td>
<td>9.8 (87)</td>
<td>2.5</td>
<td>3.0</td>
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<tr>
<td>826-988</td>
<td>37.4 (122.8)</td>
<td>18.33</td>
<td>31.5 to 317</td>
<td>1.2 (10.6)</td>
<td>6.7 (59)</td>
<td>2.5</td>
<td>3.0</td>
</tr>
</tbody>
</table>

*Note: Gearmotor is provided with conveyor part number and not required to be ordered separately.*

---

### Motor Coil Phase U

![Motor Coil Phase U](image)

### Motor Coil Phase W

![Motor Coil Phase W](image)

### Motor Coil Phase V

![Motor Coil Phase V](image)

### Communications Connector

![Communications Connector](image)

**Note:** Dimensions = mm (in)
controllers

Specifications

- Brushless DC Ethernet motor control
- Control can be used as motor drive and/or remote I/O
- Controls up to 2 gearmotors
- Controls up to 4 inputs
- Built in zero pressure accumulation logic for zoning applications
- ConveyLINX software is used to set up controller and adjust control parameters*
- IP 54 ingress rating
- Certifications
  - UL recognized to UL/eUL standard 61800-5-1
  - CAN.CSA to standards: C22.2 NO.61010-1
  - CE certified
  - RoHS and REACH compliant
- Connectivity
  - Ethernet IP
  - Modbus TCP
  - PROFINET

Electrical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage Range</td>
<td>18-28 VDC</td>
</tr>
<tr>
<td>Rated Current</td>
<td>5.2 amps, for 2 gearmotors</td>
</tr>
<tr>
<td>Starting Current</td>
<td>6.0 amps, for 2 gearmotors</td>
</tr>
<tr>
<td>Operating ambient temperature</td>
<td>-10 to 40 °C (14 to 104°F)</td>
</tr>
</tbody>
</table>

---

ConveyLINX Software*

1. Configure Network IP
2. Configure Nodes on Network
3. Upstream / Downstream Gearmotor, select mode
4. Upstream / Downstream gearmotor, select motor speed, acceleration/deceleration, etc.
5. Error Indicators for connection and performance

*ConveyLINX Software provided by Pulse Roller, see www.pulseroller.com for details.

note: due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

Note: Dimensions = mm (in)
LOW VOLTAGE WIRING

Wiring Diagram:

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ERTW1-CE3000</td>
<td>ERT Motor Controller Enclosure, 80 mm x 80 mm x 3000 mm long, Aluminum</td>
<td>Aluminum Extruded Enclosure, requires customer to cut to length and add mounting holes</td>
</tr>
<tr>
<td>2</td>
<td>ERTW1-ECX</td>
<td>ERT Motor Controller Enclosure End Cap. Where X = 1 for closed, X = 2 for with hole for wiring pass through</td>
<td>Plastic end cap for closing motor controller closure. Includes mounting screws</td>
</tr>
<tr>
<td>3</td>
<td>ERTW1-CV3000</td>
<td>ERT Motor Controller Enclosure Cover 3000 mm long, Aluminum</td>
<td>Aluminum Extruded Cover, requires customer to cut to length. Snaps into main enclosure for tight fit</td>
</tr>
<tr>
<td>4</td>
<td>ERTW1-CBE1</td>
<td>ERT Motor Controller Enclosure Cable Entry Single Hole</td>
<td>Plastic 2-piece cover providing cable entry to enclosure</td>
</tr>
<tr>
<td>5</td>
<td>ERTW1-MBXXX</td>
<td>ERT Motor Controller Enclosure Mounting Bracket Where XXX = length of support arm. 0100, 0200, 0300, 0400 mm long</td>
<td>Mounting bracket including hardware. Mounts to conveyor cross members and automation module support arms. Maximum distance between supports = 2000 mm.</td>
</tr>
<tr>
<td>6</td>
<td>ERTCB1-PCXXX</td>
<td>ERT DC Power Supply to Enclosure Cable XXXX mm long. Where XXXX = length in mm. 1000, 2000, 3000, 4000 mm length available.</td>
<td>12 Ga. 3 wire cable. Includes re-usable clamp style wire connectors to splice up to 4 controllers</td>
</tr>
<tr>
<td>7</td>
<td>ERTCB1-LCXXX</td>
<td>ERT Controller Linking Cable XXXX mm long. Where XXXX = length in mm. 1000, 2000, 3000 mm length available.</td>
<td>18 Ga. 3 wire cable</td>
</tr>
<tr>
<td>8</td>
<td>ERTCB1-MCXXX</td>
<td>ERT Controller to Motor Extension Cable XXXX mm long. Where XXXX = length in mm. 2000, 3000 mm length available.</td>
<td>24 Ga. 4 wire cable. Includes M-8 male/female quick disconnect connector on both ends of cable</td>
</tr>
<tr>
<td>9</td>
<td>ERTCB1-SCXXX</td>
<td>ERT Controller to Sensor Cable XXXX mm long. Where XXXX = length in mm. 2000, 3000, 4000 mm length available.</td>
<td>24 Ga. 4 wire cable. Includes M-8 male/female disconnect connector on both ends of cable</td>
</tr>
</tbody>
</table>

Specifications

- Standard enclosures and wiring to support efficient use of low voltage ERT gearmotors and sensors
- All wires are quick disconnect
- All enclosures are aluminum for ease of cutting in the field
- Components are ordered individually

---

All Low Voltage 24VDC

2 Sensors per Controller

2 Gearmotors per Controller

Ethernet IP linking Controller
HIGH VOLTAGE POWER SUPPLIES

Specifications

- Provides 24 VDC power to gearmotor controllers
- 20 AMP output can power up to 4 controllers
- Recommended to be placed near controller on conveyor line
- IP66 painted steel enclosure
- Panel mounted pull-to-release on/off button with indicator light
- See page 30 for low voltage cable to controllers
- High voltage wiring by customer

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Input Volts</th>
<th>Input Phase</th>
<th>Input HZ</th>
<th>Input Amps</th>
<th>Output Volts</th>
<th>Output Amps</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERTPS1-112D-20A</td>
<td>110</td>
<td>1</td>
<td>60</td>
<td>4.5</td>
<td>24 VDC</td>
<td>20</td>
</tr>
<tr>
<td>ERTPS1-122D-20A</td>
<td>220</td>
<td>1</td>
<td>60</td>
<td>2.3</td>
<td>24 VDC</td>
<td>20</td>
</tr>
<tr>
<td>ERTPS1-232D-20A</td>
<td>230</td>
<td>3</td>
<td>60</td>
<td>2.2</td>
<td>24 VDC</td>
<td>20</td>
</tr>
<tr>
<td>ERTPS1-432D-20A</td>
<td>460</td>
<td>3</td>
<td>60</td>
<td>1.1</td>
<td>24 VDC</td>
<td>20</td>
</tr>
</tbody>
</table>

Outside

Inside

Part Number Input Volts Input Phase Input HZ Input Amps Output Volts Output Amps
ERTPS1-112D-20A 110 1 60 4.5 24 VDC 20
ERTPS1-122D-20A 220 1 60 2.3 24 VDC 20
ERTPS1-232D-20A 230 3 60 2.2 24 VDC 20
ERTPS1-432D-20A 460 3 60 1.1 24 VDC 20

300 mm [11.81 in]
255 mm [10.03 in]

161 mm [6.35 in]
154 mm [6.07 in]

250 mm [9.84 in]

Volts
**Fixed Height Support Stands**

- 210 mm (8.27 in) minimum TOB height
- 1970 mm (77.6 in) maximum TOB height
- Aluminum construction with T-Slot mounting for bolt on accessories and structure
- Adjustment range is dependent on stand height. All stands 345 mm (13.6 in) and taller have a minimum of ±50 mm (2 in) of adjustment
- Optional diagonal brace, see page 33

### Stand Width Chart

<table>
<thead>
<tr>
<th>Stand Width</th>
<th>120 mm</th>
<th>160 mm</th>
<th>40 mm increments up to...</th>
<th>920 mm</th>
<th>960 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number Reference</td>
<td>120</td>
<td>160</td>
<td>040</td>
<td>920</td>
<td>960</td>
</tr>
</tbody>
</table>

### Stand Height Chart

<table>
<thead>
<tr>
<th>Stand Height</th>
<th>210-225 mm (8.27 - 8.86 in)</th>
<th>10 mm (0.4 in) increments up to...</th>
<th>1470-1970 mm (57.9 - 77.6 in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number Reference</td>
<td>02100225</td>
<td>00100010 increments up to...</td>
<td>14701970</td>
</tr>
</tbody>
</table>

**ERT 250: Fixed Height Support Stands**

- Footing: F = Fixed Foot
- Upper Height to TOB (in mm)
- Lowest Height to TOB (in mm)
- Conveyor Width Reference: 120 - 960
- Documentation Language: M = US-English

---

**Note:** Due to the wide variety of conveyor and stand options along with possible configurations, stability of the final setup is the responsibility of the end user.

**Note:** Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user. **Note:** Dimensions = mm (in)
Support Post

**Specifications**
- Single support post to provide extra support or stability to conveyors and automation modules
- Aluminum extruded construction with t-slot mounting
- ±50 mm (2 in) adjustment range
- Minimum top of roller height depends on the device mounting to
- From top of roller height subtract the following to determine support post height
  - ERT 250 Conveyor = 93 mm
  - Curve Conveyor = 93 mm
  - All Automation Modules = 310 mm

**Part Number**
400247-LLLLL-M
Where LLLLL-X = Stand Height in mm XXXX.X

---

Conveyor Tie Bracket

**Specifications**
- Tie bracket for connecting conveyors inline
- Can be used in bottom or inside T-Slot. Do not use on cover T-Slot.
- Includes a pair of tie plate assemblies
- Includes all mounting hardware

**Part Number**
206519

---

Diagonal Bracing

**Specifications**
- For use on ERT 250 aluminum support stands
- Provides additional stability for large and heavy pallet applications
- Metric fastener mounting hardware included
- Minimum conveyor top of roller = 510 mm (20 in)
- One brace per stand for conveyors up to 480 mm
- Two braces per stand for conveyors over 480 mm

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>400264-LH</td>
<td>Support brace for ERT stand, LH</td>
</tr>
<tr>
<td>400264-RH</td>
<td>Support brace for ERT stand, RH</td>
</tr>
</tbody>
</table>
**Pallet Sensor Bracket, Sensing**

**Specifications**
- Standard mounting for 12 mm barrel proximity sensors
- Sensor faces upward, sensing pallet pick-up on the bottom of pallet
- Requires a minimum of 25 mm (1 in) long threaded portion on sensor
- Includes all mounting hardware
- Proximity sensor with 4 mm minimum sensory range recommended

**Pallet Sensor Bracket, Side Sensing**

**Specifications**
- Standard mounting for 12 mm barrel proximity sensors
- Sensor faces inward, sensing pallet pick-up on outside of pallet
- Requires a minimum of 25 mm (1 in) long threaded portion on sensor
- Includes all mounting hardware
- Proximity sensor with 4 mm minimum sensory range recommended

**Pallet Sensor Bracket, Rocker**

**Specifications**
- Guide block contacts pallet to engage proximity switch
- Used with Left and Transfer
- Requires a minimum of 25 mm (1 in) long threaded portion on sensor
- Standard mount for 12 mm barrel proximity sensor
- Proximity sensor with 4 mm minimum sensory range recommended
Side Tables

Specifications

- Provides a 152 mm (6 in) or 305 mm (12 in) wide working surface
- Adjusts in/out and up/down
- Can be positioned anywhere along the conveyor
- Anodized aluminum work surface
- Max load: 6 kg/m (5 lbs/ft). Use Adjustable Tie Brackets for added capacity
- Available in 305 mm (1 ft) increments from 305 to 30,175 mm (1 to 99 ft)

Side Tables

<table>
<thead>
<tr>
<th>27MSF</th>
<th>T</th>
<th>06</th>
<th>LLLL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table Length</td>
<td>ex. 0200 = 610 mm (2 ft)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table Width: 06 = 152 mm (6 in)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 = 305 (12 in)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conveyor / Table Type:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 = One Side</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 = Two Sides</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Example: 27MSF1-060200

Supports can be positioned anywhere along table

LLLL = 305 to 30,175 mm (1 to 99 ft), Maximum 2438 mm (8 ft) length single piece
**T-Slot Accessories**

**T-Bars**
- Mounts in T-Slot to attach heavy accessories
- Fits conveyor and stands

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>639971M</td>
<td>(1 hole T-bar, M6-1.0, .75 in long)</td>
</tr>
<tr>
<td>202390M</td>
<td>(1 hole T-Bar, M8-1.25, .63 in long)</td>
</tr>
<tr>
<td>200626M</td>
<td>(0.875 in centers, 2 hole T-bar, M6-1.0, 1.62 in long)</td>
</tr>
<tr>
<td>200830M</td>
<td>(1.0 in centers, 2 hole T-bar, M6-1.0, 1.75&quot; long)</td>
</tr>
<tr>
<td>639717M</td>
<td>(1.25 in centers, 2 hole T-bar, M6-1.0, 2.0&quot; long)</td>
</tr>
<tr>
<td>300150M</td>
<td>(1.875 in centers, 2 hole T-bar, M6-1.0, 2.62 in long)</td>
</tr>
</tbody>
</table>

**Spring Nuts**
- For mounting accessories to conveyor
- Spring retains position in T-Slot
- 20 mm (0.78 in) long

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>205504</td>
<td>M4 x .7</td>
</tr>
<tr>
<td>205505</td>
<td>M5 x .8</td>
</tr>
<tr>
<td>205506</td>
<td>M6 x 1.0</td>
</tr>
<tr>
<td>205508</td>
<td>M8 x 1.25</td>
</tr>
</tbody>
</table>

**T-Bolt Hardware**
- For mounting accessories to conveyor
- Twist in T-Bolt for mounting accessories
- M8-1.25 male threaded post
- (2) lengths available; 20 mm long and 35 mm long
- 20mm long used to mount up to 0.25 in plate thickness
- 35mm long used to mount up to 0.85 in plate thickness
- Provided in a package of 5 T-Bolts and flanged locknuts

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>203446</td>
<td>(20 mm long)</td>
</tr>
<tr>
<td>203447</td>
<td>(35 mm long)</td>
</tr>
</tbody>
</table>

**Slide In Square Nuts**
- For mounting accessories to conveyor
- Must be slid in at section break
- (2) thread sizes available: M6-1.0 or M8-1.25
- Provided in a package of 5 nuts

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>203444 (M6-1.0)</td>
<td>203445 (M8-1.25)</td>
</tr>
</tbody>
</table>

**T-Slot Cover**
- Snaps into conveyor and aluminum stand T-Slots
- Black plastic extrusion
- Can be trimmed to fit

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>645656P</td>
<td>(Per 305 mm (1 ft) of length)</td>
</tr>
</tbody>
</table>
Vertical Transfer Unit (Elevator)
Vertical Transfer Units raise or lower a pallet between two different levels allowing for over/under layouts or transferring pallets over aisles
- Includes Precision Move conveyor to shuttle pallets in and out of the Vertical Transfer Unit
- Transfers standard and custom pallet sizes
- Up to 91 kg (200 lbs) lift capacity
- Minimum Height TOB: 305 mm (12 in)
- Maximum height TOB 3050 mm (120 in)
- Transfer one or more pallet(s) per cycle
- AC VFD rated gearmotor driven lift and shuttle
- Includes Lexan guarding
- Includes proximity sensor brackets for pallet and lift position detection
- Available as a complete package including automation controls

Lift Gate
A manually raised and lowered conveyor section to allow access to the conveyor line
- Available for standard and custom pallet sizes
- Gas spring-controlled pivot mechanism
- Vertical stop position
- Aluminum support structure with T-slot construction and ± 50 mm (2 in) adjustability
- Must be bolted to the floor
Regulatory Approvals:

Conveyors:
All Dorner ERT 250 standard conveyors are CE approved. CE approval follows the provisions of the following directives; Machine Directive 2006/42/EC, EU Low Voltage Directive 2006/95/EC, and EMC Directive 2004/108/EC. All conveyors are marked with the CE symbol on the Dorner serial number tag located on the conveyor frame. Contact the factory for the CE Declaration of Conformity.

All Dorner ERT 250 standard conveyors (not including gearmotors and controllers) are designed and manufactured in accordance with the restrictions defined in the “Restriction of Hazardous Substances” directive, citation 2015/863/EU, commonly known as RoHS. All conveyors are marked with the RoHS symbols on the Dorner serial number tag located on the conveyor frame.

Gearmotors and Controllers:
All Dorner ERT 250 gearmotors and controllers carry one or more of the following approvals. Products are not covered by each approval. Please see the appropriate part number on the gearmotor and controller charts located in this manual. In addition, regulatory symbols are located on the product information tags located on the product.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE</td>
<td>CE marking on a product is a manufacturer’s declaration that the product complies with the essential requirements of the relevant European health, safety and environmental protection legislation, in practice by the Product Directives. CE Marking on a product ensures the free movement of the product within the European Union (EU).</td>
</tr>
<tr>
<td>RoHS</td>
<td>This directive restricts (with exceptions) the use of six hazardous materials in the manufacture of various types of electronic and electrical equipment. It is closely linked with the Waste Electrical and Electronic Equipment Directive (WEEE) 2002/96/EC which sets collection, recycling and recovery targets for electrical goods and is part of a legislative initiative to solve the problem of huge amounts of toxic e-waste.</td>
</tr>
<tr>
<td>UL</td>
<td>The UL Recognized Component mark is for products intended to be installed in another device, system or end product. This Recognized Component Mark is for the United States only. When a complete product or system containing UL Recognized Components is evaluated, the end-product evaluation process can be streamlined.</td>
</tr>
<tr>
<td>CSA</td>
<td>CSA International (Canadian Standards Association), is a provider of product testing and certification services for electrical, mechanical, plumbing, gas and a variety of other products. Recognized in the U.S., Canada and around the world, CSA certification marks indicate that a product, process or service has been tested to a Canadian or U.S. standard and it meets the requirements of an applicable CSA standard or another recognized document used as a basis for certification.</td>
</tr>
<tr>
<td>C-UL-US</td>
<td>The UL Listing Mark means UL found that representative product samples met UL’s safety requirements. These requirements are primarily based on UL’s own published standards for safety. The C-UL-US Mark indicates compliance with both Canadian and U.S. requirements. The products with this type of Mark have been evaluated to Canadian safety requirements and U.S. safety requirements.</td>
</tr>
</tbody>
</table>
Cleanroom Certifications:
ERT 250 Conveyors are often used in Cleanroom applications where the generation of particulates from the conveyor are a concern. In these applications the correct installation and application of the conveyor is critical to the proper running of the conveyor and minimizing the dust generated by the conveyor.

ERT 250 Conveyors are designed and constructed to be used in Cleanroom environments. The following ERT 250 Series products has gone through third party testing and certification and is certified for use in ISO Standard 14644-1:2015 Class 4 and Federal Standard 209 Class 10 Cleanroom applications.

Contact the factory for a copy of the certification.

Conveyor Noise Level (Decibel Ratings)
The actual noise level generated by the conveyor depends on several factors: the installation configuration, the product running on the conveyor, the surrounding equipment, the conveyor options and belt speed. The noise level generated by the conveyor is typically less than the general noise level of factory equipment.

The following charts provide basic decibel ratings for a typical conveyor arrangement.

ERT 250 Conveyors:
# Lift & Transfer Pallet Stop Configurations

<table>
<thead>
<tr>
<th>End Stop</th>
<th>Non-Cushioned</th>
<th>Cushioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sending</td>
<td><img src="image1" alt="Non-Cushioned Sending" /> <img src="image2" alt="Non-Cushioned Sending" /></td>
<td><img src="image3" alt="Cushioned Sending" /> <img src="image4" alt="Cushioned Sending" /></td>
</tr>
<tr>
<td>Receiving</td>
<td><img src="image5" alt="Non-Cushioned Receiving" /> <img src="image6" alt="Non-Cushioned Receiving" /></td>
<td><img src="image7" alt="Cushioned Receiving" /> <img src="image8" alt="Cushioned Receiving" /></td>
</tr>
<tr>
<td>Sending</td>
<td><img src="image9" alt="Non-Cushioned Sending" /> <img src="image10" alt="Non-Cushioned Sending" /></td>
<td><img src="image11" alt="Cushioned Sending" /> <img src="image12" alt="Cushioned Sending" /></td>
</tr>
<tr>
<td>Pass Thru</td>
<td><img src="image13" alt="Non-Cushioned Pass Thru" /> <img src="image14" alt="Non-Cushioned Pass Thru" /></td>
<td><img src="image15" alt="Cushioned Pass Thru" /> <img src="image16" alt="Cushioned Pass Thru" /></td>
</tr>
<tr>
<td>Receiving</td>
<td><img src="image17" alt="Non-Cushioned Receiving" /> <img src="image18" alt="Non-Cushioned Receiving" /></td>
<td><img src="image19" alt="Cushioned Receiving" /> <img src="image20" alt="Cushioned Receiving" /></td>
</tr>
</tbody>
</table>
Calculating Conveyor Belt Speed

ERT 250 Conveyors:
To calculate the conveyor belt speed you need to know the following factors:

- Roller diameter: 38 mm (1.5 in)
- RPM of gearmotor

Note: All gearing in the ERT 250 conveyor is 1:1 ratio

Belt Speed:
\[ \text{Belt Speed (ft/min)} = \left( \frac{\text{Drive roller diameter}}{12} \right) \times 3.14 \times \text{RPM of gearmotor} \]
\[ \text{Belt speed (M/min)} = \left( \frac{\text{Drive roller diameter, mm}}{1000} \right) \times 3.14 \times \text{RPM of gearmotor} \]

Example: ERT 250 Conveyor and gearmotor. The gearmotor is a 33:1 ratio with 176 rpm output.

Belt Speed (ft/min) = \( \frac{1.5}{12} \times 3.14 \times 176 \)
Belt speed (ft/min) = 69 ft/min

Calculating Conveyor Load Capacity

There are several factor(s) that effect the overall conveyor load of the ERT 250 conveyor. These include:

- Conveyor size and configuration
- Conveyor speed
- Application temperature
- Product accumulation
- Number of starts and stops per hour

Located online at www.dornerconveyors.com is the Dorner conveyor configuration tool, DTools. This tool allows you to configure your conveyor layout and determine the maximum load capacity for the conveyor. It is suggested that this program be used to calculate the conveyor load as the calculation is quite complicated. This configuration program however does not take into account temperature, dirty conditions, and conveyor starts and stops. If these conditions are part of your application please use the load reducing factors as shown below.

Maximum Load = (Load from DTools)(Temperature Factor)(Start/Stop Factor)

<table>
<thead>
<tr>
<th>Temperature Factor</th>
<th>Start / Stop Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amb. temp. can neg. affect cap. of the conveyor.</td>
<td>Frequent Start / Stops can neg. affect cap. of the conveyor. All start / stop applications must use a soft start mechanism such as a frequency inverter with a 1 second acceleration cycle.</td>
</tr>
<tr>
<td>Temperature F</td>
<td>Temperature C</td>
</tr>
<tr>
<td>-4</td>
<td>-20</td>
</tr>
<tr>
<td>32</td>
<td>0</td>
</tr>
<tr>
<td>68</td>
<td>20</td>
</tr>
<tr>
<td>104</td>
<td>40</td>
</tr>
<tr>
<td>140</td>
<td>60</td>
</tr>
</tbody>
</table>
### ERT Pallet Weights Kg (lbs)

<table>
<thead>
<tr>
<th>Pallet Width (mm)</th>
<th>Pallet Length (mm)</th>
<th>1/4 in Alum Plate</th>
<th>3/8 in Alum Plate</th>
<th>1/2 in Alum Plate</th>
</tr>
</thead>
<tbody>
<tr>
<td>320</td>
<td>320</td>
<td>2.6 (5.8)</td>
<td>3.6 (8)</td>
<td>4.6 (10.1)</td>
</tr>
<tr>
<td>320</td>
<td>480</td>
<td>3.8 (8.3)</td>
<td>5.3 (11.7)</td>
<td>6.7 (14.8)</td>
</tr>
<tr>
<td>400</td>
<td>400</td>
<td>3.9 (8.6)</td>
<td>5.5 (12.1)</td>
<td>7 (15.4)</td>
</tr>
<tr>
<td>400</td>
<td>480</td>
<td>4.6 (10.1)</td>
<td>6.5 (14.3)</td>
<td>8.3 (18.3)</td>
</tr>
<tr>
<td>480</td>
<td>480</td>
<td>5.4 (11.9)</td>
<td>7.7 (17)</td>
<td>9.9 (21.7)</td>
</tr>
<tr>
<td>480</td>
<td>640</td>
<td>7 (15.5)</td>
<td>10.1 (22.3)</td>
<td>13 (28.6)</td>
</tr>
<tr>
<td>640</td>
<td>640</td>
<td>9.2 (20.2)</td>
<td>13.3 (29.3)</td>
<td>17.1 (37.7)</td>
</tr>
<tr>
<td>640</td>
<td>800</td>
<td>11.3 (24.9)</td>
<td>16.5 (36.3)</td>
<td>21.3 (46.8)</td>
</tr>
<tr>
<td>800</td>
<td>800</td>
<td>14 (30.7)</td>
<td>20.4 (44.9)</td>
<td>26.4 (58)</td>
</tr>
</tbody>
</table>

### Automation Modules – Pneumatic Specifications

<table>
<thead>
<tr>
<th>Device</th>
<th>Action</th>
<th>Bore Diameter</th>
<th>Stroke</th>
<th>Return Type</th>
<th>Force per Psi</th>
<th>Sensor Compatible</th>
<th>Fitting Tap Size</th>
<th>Fitting Tube Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lift and Locate</td>
<td>Lift cylinder, 320 to 400 mm wide</td>
<td>63 mm (2.5 in)</td>
<td>50 mm (2 in)</td>
<td>Pneumatic</td>
<td>4.9 lb</td>
<td>Yes</td>
<td>1/4 NPT</td>
<td>1/4 in</td>
</tr>
<tr>
<td>Lift and Locate</td>
<td>Lift cylinder, 480 to 800 mm wide</td>
<td>80 mm (3.1 in)</td>
<td>50 mm (2 in)</td>
<td>Pneumatic</td>
<td>7.7 lb</td>
<td>Yes</td>
<td>3/8 NPT</td>
<td>1/4 in</td>
</tr>
<tr>
<td>Lift and Transfer</td>
<td>Lift cylinder, 320 to 400 mm wide</td>
<td>63 mm (2.5 in)</td>
<td>50 mm (2 in)</td>
<td>Pneumatic</td>
<td>4.9 lb</td>
<td>Yes</td>
<td>1/4 NPT</td>
<td>1/4 in</td>
</tr>
<tr>
<td>Lift and Transfer</td>
<td>Lift cylinder, 480 to 800 mm wide</td>
<td>80 mm (3.1 in)</td>
<td>50 mm (2 in)</td>
<td>Pneumatic</td>
<td>7.7 lb</td>
<td>Yes</td>
<td>3/8 NPT</td>
<td>1/4 in</td>
</tr>
<tr>
<td>Lift and Rotate</td>
<td>Lift cylinder, 320 to 400 mm wide</td>
<td>63 mm (2.5 in)</td>
<td>50 mm (2 in)</td>
<td>Pneumatic</td>
<td>4.9 lb</td>
<td>Yes</td>
<td>1/4 NPT</td>
<td>1/4 in</td>
</tr>
<tr>
<td>Lift and Rotate</td>
<td>Lift cylinder, 480 to 800 mm wide</td>
<td>80 mm (3.1 in)</td>
<td>50 mm (2 in)</td>
<td>Pneumatic</td>
<td>7.7 lb</td>
<td>Yes</td>
<td>3/8 NPT</td>
<td>1/4 in</td>
</tr>
<tr>
<td></td>
<td>Rotary Actuator, 320 to 400 mm wide</td>
<td>10 mm (0.4 in)</td>
<td>n/a</td>
<td>Pneumatic</td>
<td>n/a</td>
<td>Yes</td>
<td>1/8 NPT</td>
<td>1/4 in</td>
</tr>
<tr>
<td></td>
<td>Rotary Actuator, 480 to 800 mm wide</td>
<td>20 mm (0.8 in)</td>
<td>n/a</td>
<td>Pneumatic</td>
<td>n/a</td>
<td>Yes</td>
<td>1/8 NPT</td>
<td>1/4 in</td>
</tr>
<tr>
<td>Pallet Pusher</td>
<td>Pusher cylinder</td>
<td>32 mm (1.25 in)</td>
<td>52 mm (2.04 in)</td>
<td>Pneumatic</td>
<td>1.2 lb</td>
<td>Yes</td>
<td>1/8 NPT</td>
<td>1/4 in</td>
</tr>
<tr>
<td>Pallet Stop, Cushioned</td>
<td>Light Load, Retract</td>
<td>35 mm (1.4 in)</td>
<td>9 mm (0.35 in)</td>
<td>Spring</td>
<td>n/a</td>
<td>No</td>
<td>GM5</td>
<td>1/4 in</td>
</tr>
<tr>
<td></td>
<td>Heavy Load, Retract</td>
<td>35 mm (1.4 in)</td>
<td>9 mm (0.35 in)</td>
<td>Spring</td>
<td>n/a</td>
<td>No</td>
<td>G 1/8</td>
<td>1/4 in</td>
</tr>
<tr>
<td>Pallet Stop, Non-Cushioned</td>
<td>Light Load, Retract</td>
<td>35 mm (1.4 in)</td>
<td>9 mm (0.35 in)</td>
<td>Spring</td>
<td>n/a</td>
<td>No</td>
<td>GM5</td>
<td>1/4 in</td>
</tr>
<tr>
<td></td>
<td>Heavy Load, Retract</td>
<td>35 mm (1.4 in)</td>
<td>9 mm (0.35 in)</td>
<td>Spring</td>
<td>n/a</td>
<td>No</td>
<td>G 1/8</td>
<td>1/4 in</td>
</tr>
</tbody>
</table>

Dimensions = mm (in)
ERT 250 Module Spacing Guidelines

### Pallet/Stop to Lift & Locate and Lift & Locate Spacing*

<table>
<thead>
<tr>
<th>Pallet Length</th>
<th>Minimum Distance D1</th>
<th>Minimum Distance D2</th>
<th>Minimum Distance D3</th>
</tr>
</thead>
<tbody>
<tr>
<td>320 (12.6)</td>
<td>162 (6.4)</td>
<td>820 (32.3)</td>
<td>410 (16.1)</td>
</tr>
<tr>
<td>400 (15.75)</td>
<td>202 (7.9)</td>
<td>980 (38.6)</td>
<td>490 (19.3)</td>
</tr>
<tr>
<td>480 (18.9)</td>
<td>242 (9.5)</td>
<td>1140 (44.9)</td>
<td>570 (22.4)</td>
</tr>
<tr>
<td>640 (25.2)</td>
<td>402 (15.8)</td>
<td>1460 (57.5)</td>
<td>730 (28.7)</td>
</tr>
<tr>
<td>800 (31.5)</td>
<td>562 (22.1)</td>
<td>1780 (70.1)</td>
<td>890 (35.0)</td>
</tr>
</tbody>
</table>

### Pallet/Stop to Lift & Transfer and Lift & Transfer Spacing*

<table>
<thead>
<tr>
<th>Pallet Length</th>
<th>Minimum Distance D1</th>
<th>Minimum Distance D2</th>
<th>Minimum Distance D3</th>
</tr>
</thead>
<tbody>
<tr>
<td>320 (12.6)</td>
<td>250 (9.8)</td>
<td>880 (34.6)</td>
<td>540 (21.3)</td>
</tr>
<tr>
<td>400 (15.75)</td>
<td>280 (11.0)</td>
<td>1040 (40.9)</td>
<td>620 (24.4)</td>
</tr>
<tr>
<td>480 (18.9)</td>
<td>330 (13.0)</td>
<td>1200 (47.2)</td>
<td>700 (27.6)</td>
</tr>
<tr>
<td>640 (25.2)</td>
<td>410 (16.1)</td>
<td>1520 (59.8)</td>
<td>730 (28.7)</td>
</tr>
<tr>
<td>800 (31.5)</td>
<td>490 (19.3)</td>
<td>1840 (72.4)</td>
<td>890 (35.0)</td>
</tr>
</tbody>
</table>

### Parallel Conveyors with Lift & Transfer

<table>
<thead>
<tr>
<th>Pallet Width</th>
<th>Minimum Distance X</th>
<th>Minimum Distance Y</th>
<th>Minimum Distance Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>320 (12.6)</td>
<td>680 (27.8)</td>
<td>250 (9.8)</td>
<td>435 (17.1)</td>
</tr>
<tr>
<td>400 (15.75)</td>
<td>760 (29.9)</td>
<td>250 (9.8)</td>
<td>515 (20.3)</td>
</tr>
<tr>
<td>480 (18.9)</td>
<td>840 (33.0)</td>
<td>250 (9.8)</td>
<td>595 (23.4)</td>
</tr>
<tr>
<td>640 (25.2)</td>
<td>1000 (39.4)</td>
<td>250 (9.8)</td>
<td>755 (29.7)</td>
</tr>
<tr>
<td>800 (31.5)</td>
<td>1160 (45.7)</td>
<td>250 (9.8)</td>
<td>915 (36.0)</td>
</tr>
</tbody>
</table>

Dimensions = mm (in)
**ERT 250 Module Spacing Guidelines Continued**

### Parallel Conveyors with 180 Degree "U" Curve

<table>
<thead>
<tr>
<th>Pallet Length</th>
<th>Minimum Distance D1</th>
<th>Minimum Distance D2</th>
<th>Minimum Distance X</th>
</tr>
</thead>
<tbody>
<tr>
<td>320 (12.6)</td>
<td>840 (33.1)</td>
<td>1955 (77.0)</td>
<td>250 (9.8)</td>
</tr>
<tr>
<td>400 (15.75)</td>
<td>920 (36.2)</td>
<td>2135 (84.1)</td>
<td>250 (9.8)</td>
</tr>
<tr>
<td>480 (18.9)</td>
<td>1000 (39.4)</td>
<td>2215 (87.2)</td>
<td>250 (9.8)</td>
</tr>
<tr>
<td>640 (25.2)</td>
<td>1160 (45.7)</td>
<td>2475 (97.4)</td>
<td>250 (9.8)</td>
</tr>
<tr>
<td>800 (31.5)</td>
<td>1320 (52.0)</td>
<td>2735 (107.7)</td>
<td>250 (9.8)</td>
</tr>
</tbody>
</table>

### Parallel Conveyors with 180 Degree "S" Curve

<table>
<thead>
<tr>
<th>Pallet Length</th>
<th>Minimum Distance D1</th>
<th>Minimum Distance D2</th>
</tr>
</thead>
<tbody>
<tr>
<td>320 (12.6)</td>
<td>1705 (67.1)</td>
<td>1705 (67.1)</td>
</tr>
<tr>
<td>400 (15.75)</td>
<td>1885 (74.2)</td>
<td>1885 (74.2)</td>
</tr>
<tr>
<td>480 (18.9)</td>
<td>1965 (77.4)</td>
<td>1965 (77.4)</td>
</tr>
<tr>
<td>640 (25.2)</td>
<td>2225 (87.6)</td>
<td>2225 (87.6)</td>
</tr>
<tr>
<td>800 (31.5)</td>
<td>2485 (97.8)</td>
<td>2485 (97.8)</td>
</tr>
</tbody>
</table>

### Lift & Locate Before 90 Degree Corner

<table>
<thead>
<tr>
<th>Pallet Length</th>
<th>Minimum Distance D1</th>
<th>Minimum Distance D2</th>
</tr>
</thead>
<tbody>
<tr>
<td>320 (12.6)</td>
<td>250 (9.8)</td>
<td>1100 (43.3)</td>
</tr>
<tr>
<td>400 (15.75)</td>
<td>290 (11.4)</td>
<td>1230 (48.4)</td>
</tr>
<tr>
<td>480 (18.9)</td>
<td>370 (14.6)</td>
<td>1350 (53.1)</td>
</tr>
<tr>
<td>640 (25.2)</td>
<td>530 (20.9)</td>
<td>1640 (64.6)</td>
</tr>
<tr>
<td>800 (31.5)</td>
<td>690 (27.2)</td>
<td>1930 (76.0)</td>
</tr>
</tbody>
</table>

Dimensions = mm (in)
Note: All dimensions assume square pallets
ERT 250 Pallet Plate Details Dimensions

The following details are for standard square pallets only. For other size pallets contact Dorner.
ERT 250 Pallet Plate Details Dimensions *Continued*

The following details are for standard square pallets only. For other size pallets contact Dorner.
ERT 250™ Conveyors are best for:
- Pallet & Tray Handling
- No & Low Back Pressure Accumulation
- Cleanroom Applications
- Large & Medium Assembly Automation
- Medical Product Manufacturing
- Packaging
- Medical Device Manufacturing
- Automotive Assembly
- Electronic & Consumer Goods Assembly
- Appliance Manufacturing

Sizes & Measurements
- 120 mm to 960 mm wide
- 150 mm long tray minimum
- 38 mm diameter rollers on 50 mm centers

Loads & Speeds
- Loads: up to 114 kg (250 lbs) per pallet or tray
- Up to 6.8 kg (15 lbs) per roller
- Speeds: up to 37 m/min (121 ft/min)

Slip & Driven Rollers
- Driven Roller (over molded on shaft)
- Slip Roller

Slide Rail Options
- Aluminum frame with two T-Slot options
- T-Slot Rail
- Flush Side Rail (Cleanroom)

Pallets
- 320 to 800 mm pallets
- Static conductive HPDE skirt
- Proximity sensor pick-up on side and bottom
- Optional pin tracking ball bearings for corner conveyors

Modules
- Lift & Locate
- Lift & Rotate
- Lift & Transfer
- 90 & 180 Degree Corners
- Pallet Pusher
- Pallet Stops