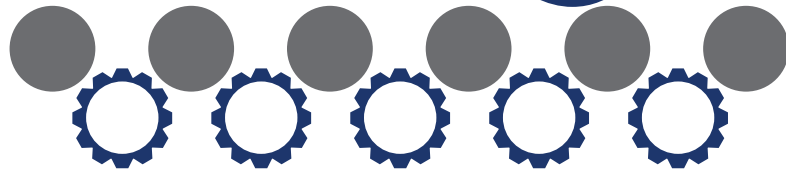| Medium & Heavy-Load Assembly Automation | ISO Class 4 Approved for Cleanrooms | Efficient, Non-Contact Zoning | Clean, Open Roller Design |

ERT®250

Edge Roller Technology

Precision Edge Roller Pallet & Tray Handling Conveyors

DORNER®

ERT®250
Edge Roller Technology

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
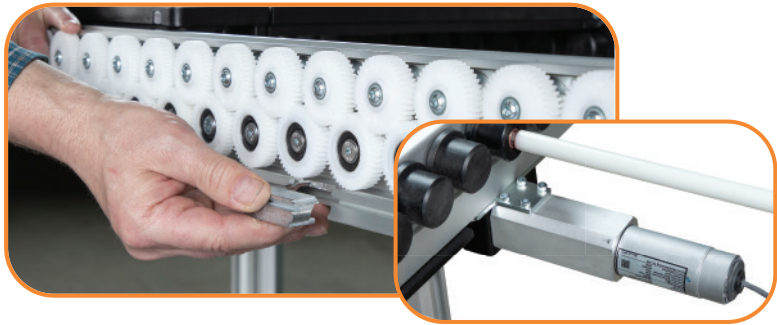
Patent Pending Gearbox Drive Design

- 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
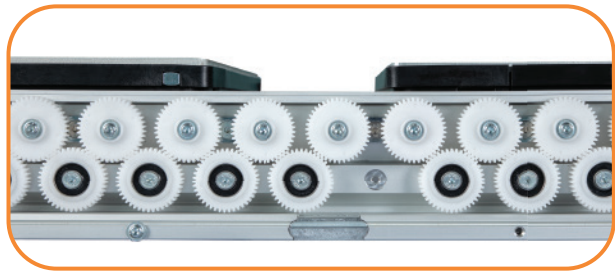
The Benefits of a Dorner ERT®250 Conveyor

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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ERT®250
Edge Roller Technology

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Edge Roller Technology

INNOVATIVE CORNERS:

THE CORNER SYSTEMS IN CONJUNCTION WITH THE PALLET PIN TRACKING PROVIDE A SIMPLE, COST EFFECTIVE MEANS FOR PALLET TRAFFIC CONTROL
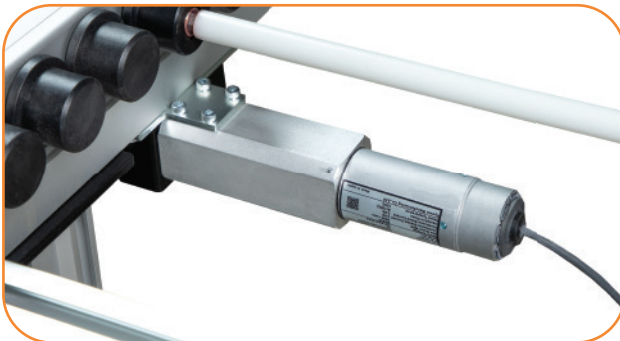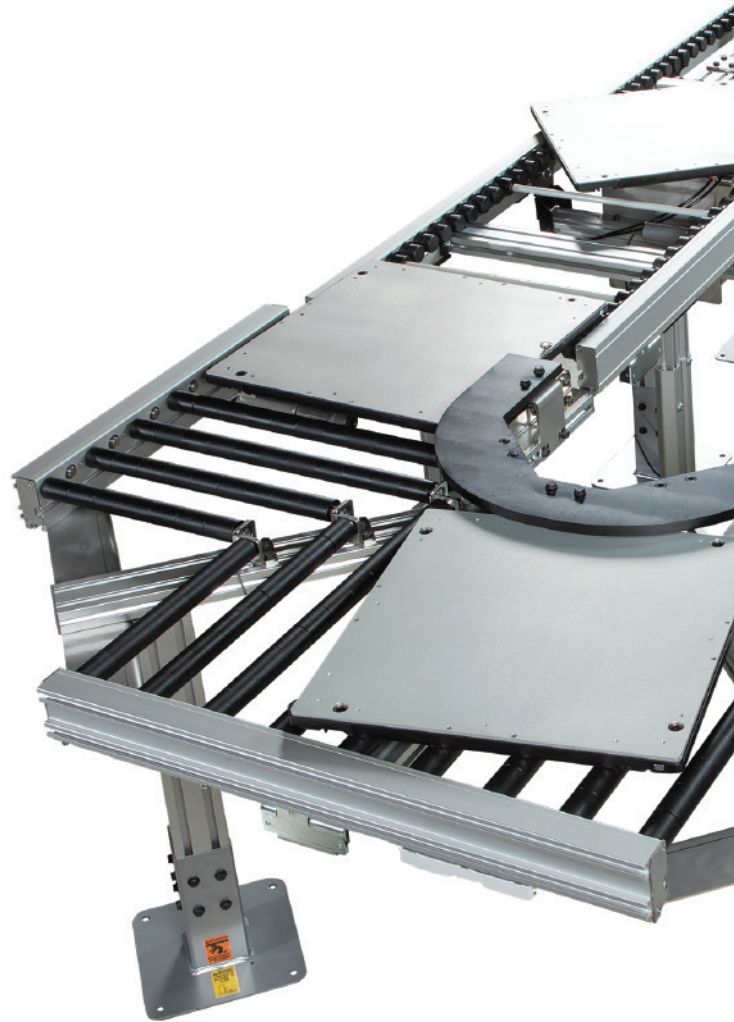
LOW VOLTAGE GEARMOTORS:

COMPACT, COST EFFICIENT 24 VDC BRUSHLESS GEARMOTORS AND CONTROLS PROVIDE A MODULAR CONTROL SCHEME
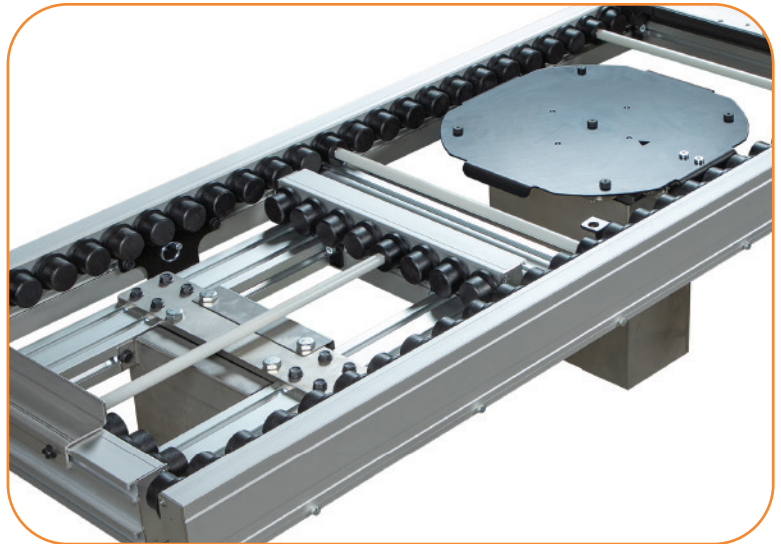
ONSITE RECONFIGURATION AND MAINTENANCE:

INDIVIDUAL ROLLERS, DRIVE SHAFTS, AND GEARMOTORS CAN BE REMOVED, REPAIRED, AND REPOSITIONED WITHOUT DIS-ASSEMBLY OF THE COMPLETE CONVEYOR
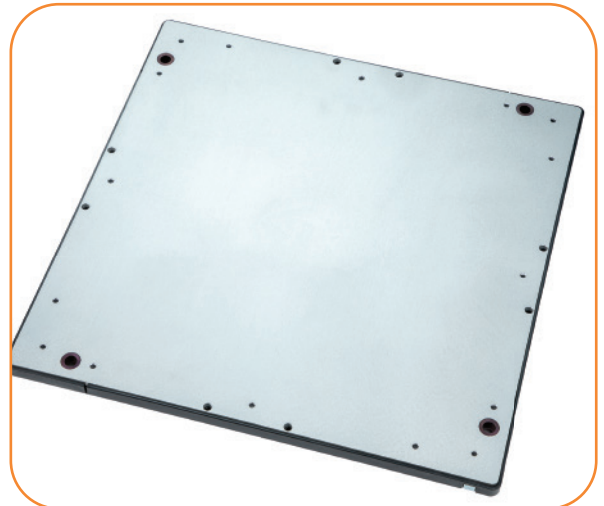
UNIVERSAL T-SLOT:

CONVEYOR T-SLOT IS COMPATIBLE WITH DORNER 2200 SERIES AND FLEXMOVE® T-SLOT HARDWARE ALONG WITH SELECT INDUSTRY STANDARD 10 MM SLOT HARDWARE

DORNER

ZONING CONVEYOR:

CONVEYOR CAPABLE OF HAVING MULTIPLE ZONES FOR PALLET OR TRAY CONTROL, ELIMINATING STOPS AND PNEUMATIC VALVES
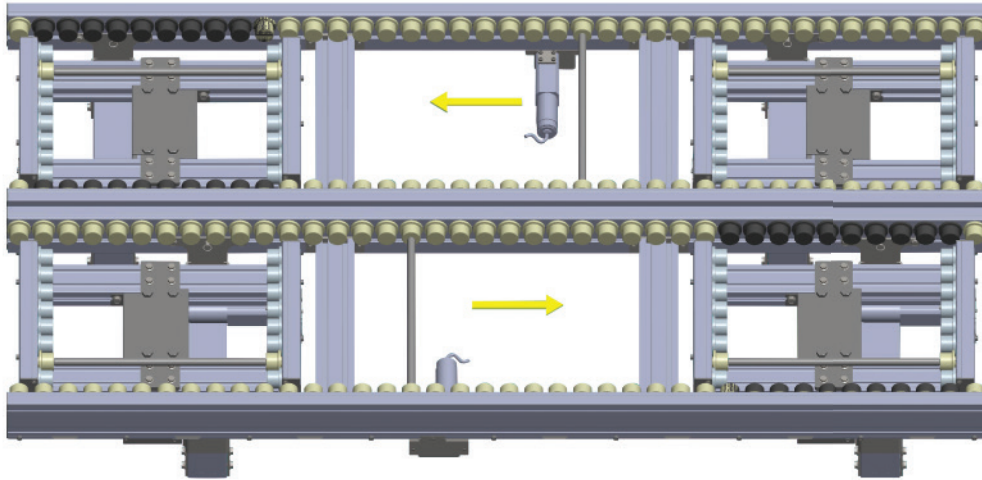

INDUSTRY COMPATIBLE PALLETS:

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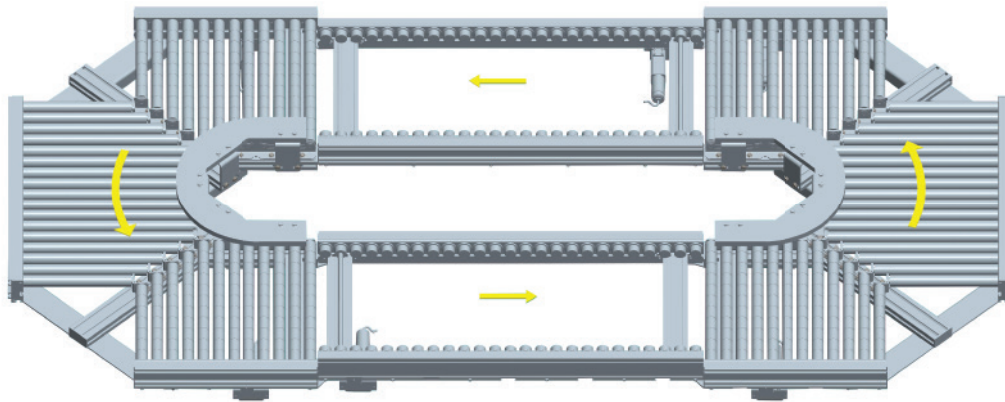

SLIP ROLLER CONVEYOR:

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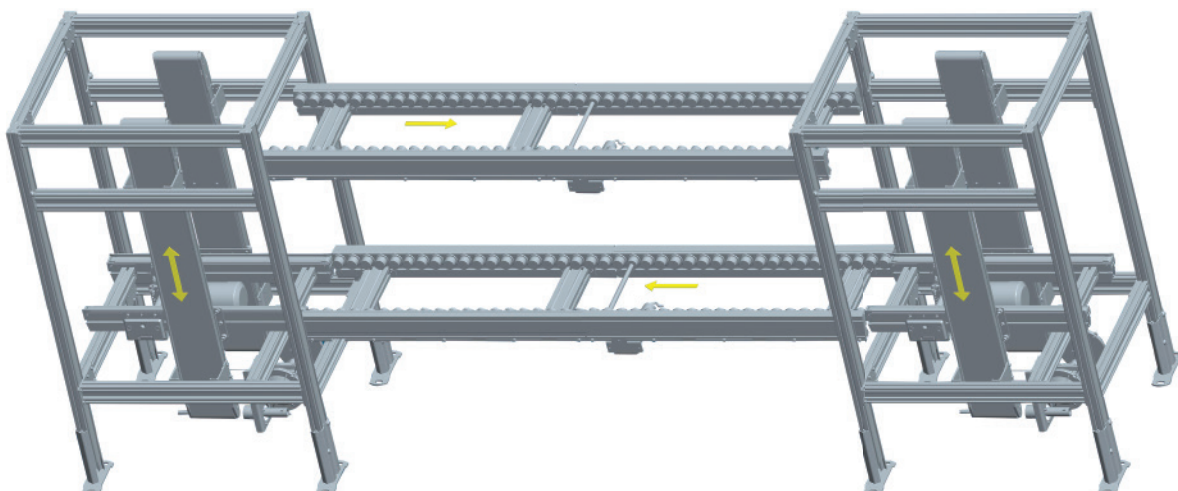
DORNER

Loop with Close Transfer
Main lines are spaced tightly together to remove transverse conveyors
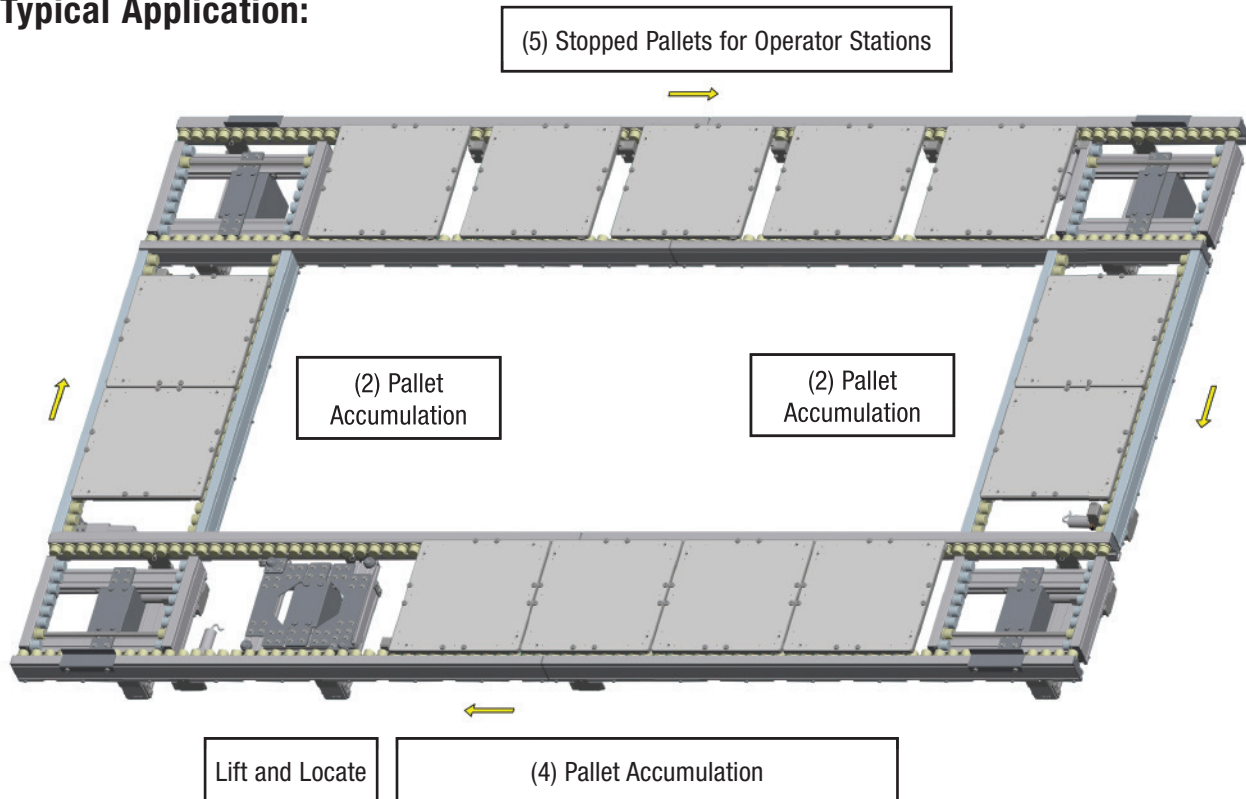

Loop (Racetrack)
Leading edge orientation is maintained using 90 degree corners

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:

(5) Stopped Pallets for Operator Stations

(2) Pallet Accumulation

(2) Pallet Accumulation

Lift and Locate

(4) Pallet Accumulation

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
- (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

Driven Rollers

Slip Rollers

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 specifications
  - 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
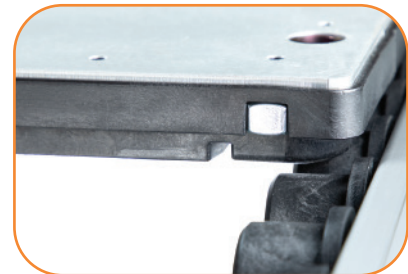- Electrically conductive polyamide rollers
- ISO Class 4 Cleanroom Rated

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

STANDARD OPTION:
Flush outer cover can be provided

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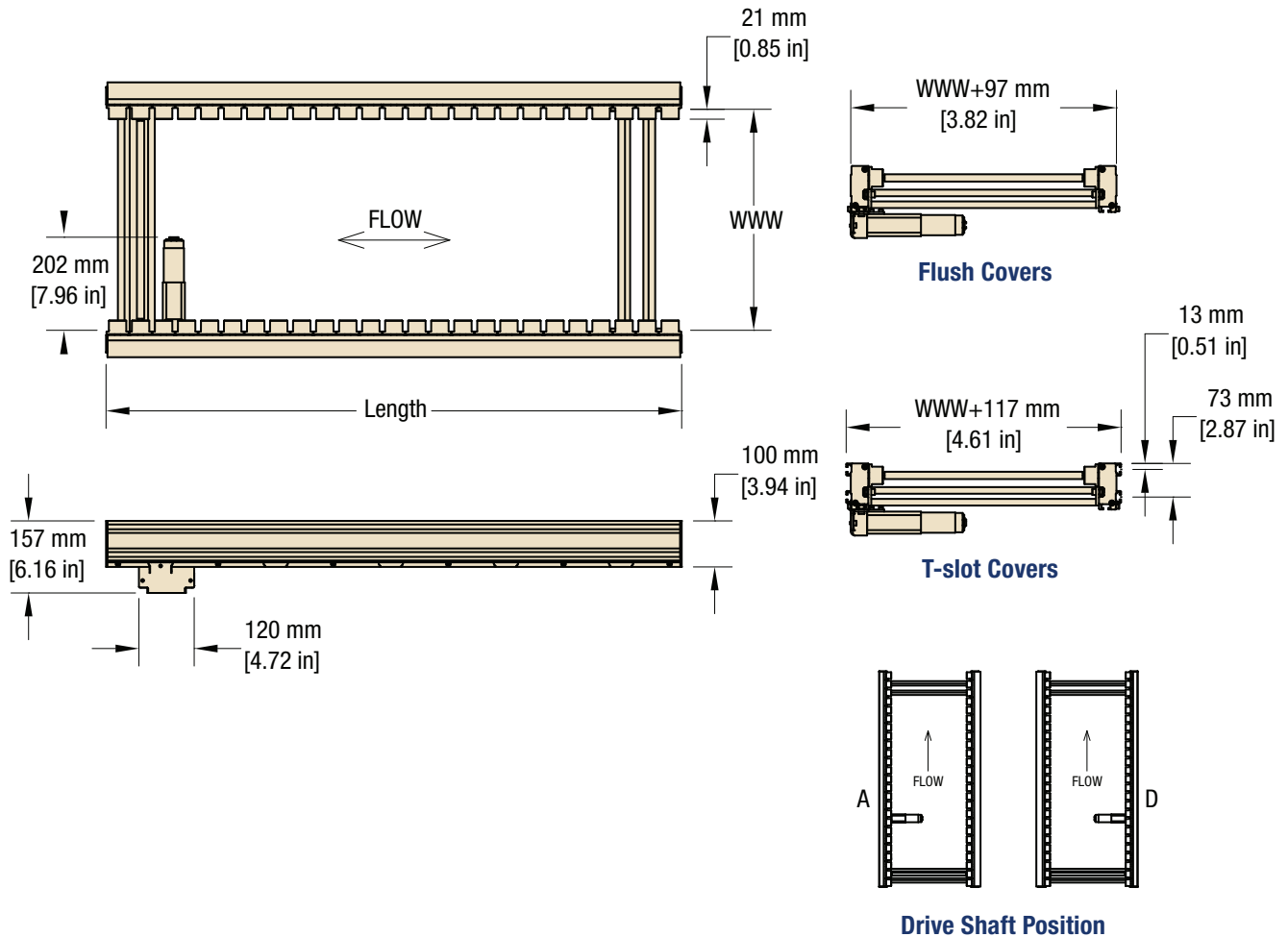**Conveyor roller provides pallet guiding**

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
Edge Roller Technology

21 mm
[0.85 in]

WWW

FLOW

202 mm
[7.96 in]

Length

WWW+97 mm
[3.82 in]

Flush Covers

157 mm
[6.16 in]

100 mm
[3.94 in]

120 mm
[4.72 in]

WWW+117 mm
[4.61 in]

13 mm
[0.51 in]

73 mm
[2.87 in]

T-slot Covers

A   FLOW   FLOW   D

Drive Shaft Position

Standard Single Zone Sizes					
Conveyor Width Reference*	120	160	40 increments **up to...**	920	960
Conveyor Belt Width (W)*	120 mm (4.72 in)	160 mm (6.3 in)	40 mm (1.6 in) increments **up to...**	920 mm (36.2 in)	960 mm (37.8 in)
Conveyor Length Reference	0250	0050 increments **up to...**			3500
Conveyor Length (L)	250 mm (.82 ft)	50 mm (2 in) increments **up to...**			3500 mm (11.48 ft)

*Standard Pallet Widths: 320, 400, 480, 640 and 800 mm

ERT250: Single Zone Conveyor

E R 5 M WWW - LLLL M T R SS R SS - H D S C T

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: WWW in millimeters 120 - 960 (in 40 mm increments)

Documentation Language: M = US-English **U** = Europe English, **D** = German

Conveyor Type: ERT250

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)

DORNER

ERT®250
Edge Roller Technology

Driven Rollers


Slip Rollers

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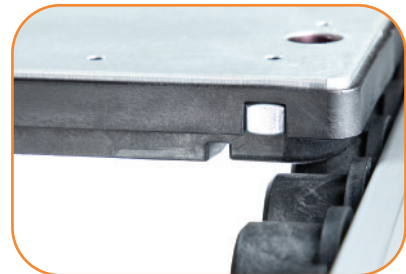
STANDARD FEATURE:
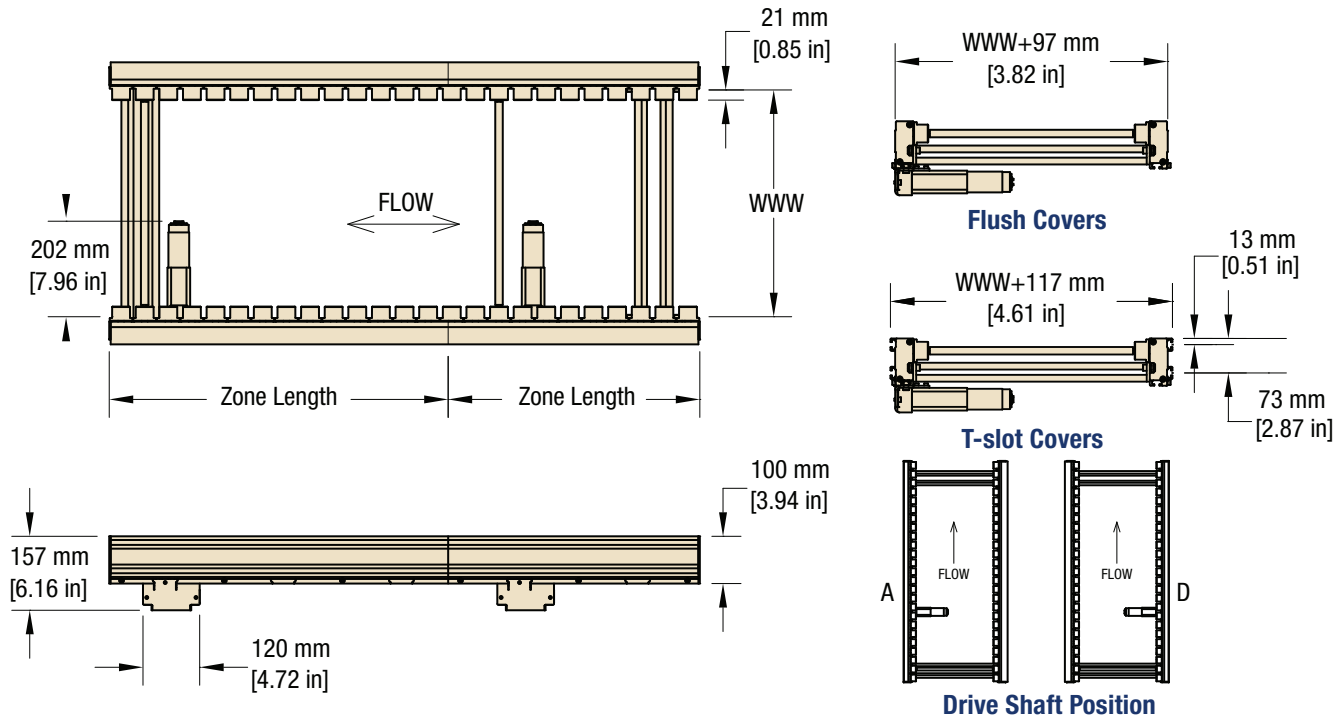**Conveyor roller provides pallet guiding**

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

DORNER

MULTIPLE ZONE CONVEYOR

Flush Covers

T-slot Covers

Drive Shaft Position

Standard Multiple Zone Sizes					
Conveyor Width Reference*	120	160	40 increments **up to...**	920	960
Conveyor Belt Width (W)*	120 mm (4.72 in)	160 mm (6.3 in)	40 mm (1.6 in) increments **up to...**	920 mm (36.2 in)	960 mm (37.8 in)
Zone Length Reference	0250	0050 increments **up to...**			2000
Zone Length (L)	250 mm (.82 ft)	50 mm (2 in) increments **up to...**			2000 mm (6.56 ft)

*Standard Pallet Widths: 320, 400, 480, 640 and 800 mm

ERT250: Multiple Zone Conveyor

ER5 M WWW - LLLL M T R SS - LLLL T R SS - LLLL T R SS - LLLL T R SS - H D S C T

- **Cover Style:** **T** = T-slot   **F** = Flush
- **Controller Type:** **A** = No Controller
  - **B** = Controller no mount bracket with photoeye
  - **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   **D** = D Side
- **Drive Shaft Height:** **1** = at Roller   **2** = at Gear
- **Drive shaft Location:** Roller Position from Infeed End (01 to 70), (00 if not required)
- **Location of Fourth Drive Gearmotor from Infeed End:** **A - P** (0 if not required)
- **Roller Type:** **D** = Driven Roller   **S** = Slip Roller
- **Conveyor Zone Length: LLLL** in millimeters 0250 - 2000 (in 50 mm increments)
- **Drive shaft Location:** Roller Position from Infeed End (01 to 70), (00 if not required)
- **Location of Third Drive Gearmotor from Infeed End:** **A - P** (0 if not required)
- **Roller Type:** **D** = Driven Roller   **S** = Slip Roller
- **Conveyor Zone Length: LLLL** in millimeters 0250 - 2000 (in 50 mm increments)
- **Drive shaft Location:** Roller Position from Infeed End (01 to 70),
- **Location of Second Drive Gearmotor from Infeed End:** **A - P1**
- **Roller Type:** **D** = Driven Roller   **S** = Slip Roller
- **Conveyor Zone Length: LLLL** in millimeters 0250 - 2000 (in 50 mm increments)
- **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 Zone Length: LLLL** in millimeters 0250 - 2000 (in 50 mm increments)
- **Conveyor Width Reference: WWW** in millimeters 120 - 960 (in 40 mm increments)
- **Documentation Language:** **M** = US-English   **U** = Europe English   **D** = German
- **Conveyor Type:** ERT250

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)

Pallet Accumulation Around Corner

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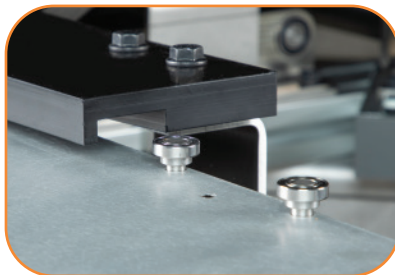
STANDARD FEATURE:
Pin Tracking Bearing Cams
smoothly guide the pallets
around corner

STANDARD FEATURE:
Universal T-slot compatible with
industry standard 10 mm hardware
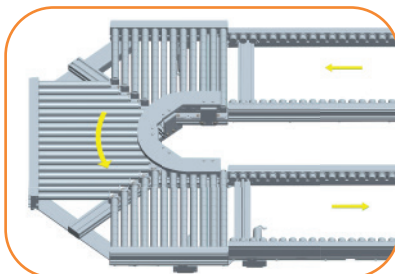
STANDARD FEATURE:
Provides compact conveyor loops

OPTIONAL:
Support post, mounts directly to
conveyor. See page 33 for details.

ERT®250
Edge Roller Technology

WIDTH — A

D

WIDTH

C

B

B

C

233 mm* [9.19 in]
178 mm [7.02 in]

WIDTH — A

B

*Dependent on pallet thickness

90 & 180 Degree Corner Conveyor

Width	Length	A	B	C	D
320	320	427 mm (16.8 in)	598 mm (23.5 in)	860 mm (33.9 in)	836 mm (32.9 in)
400	400	427 mm (16.8 in)	737 mm (2.9 in)	1060 mm (37.8 in)	915.67 mm (36.0 in)
480	320	527 mm (20.8 in)	678 mm (26.7 in)	1010 mm (39.8 in)	996 mm (39.2 in)
480	400	527 mm (20.8 in)	778 mm (30.6 in)	1110 mm (41.7 in)	996 mm (39.2 in)
480	480	527 mm (20.8 in)	778 mm (30.6 in)	1110 mm (41.7 in)	996 mm (39.2 in)
640	480	777 mm (30.6 in)	858 mm (34.6 in)	1260 mm (49.6 in)	1156 mm (45.5 in)
640	640	777 mm (30.6 in)	958 mm (33.8 in)	1360 mm (53.5 in)	1156 mm (45.5 in)
800	640	927 mm (36.5 in)	1038 mm (40.9 in)	1560 mm (61.4 in)	1316 mm (51.8 in)
800	800	927 mm (36.5 in)	1138 mm (44.8 in)	1660 mm (65. 3 in)	1316 mm (51.8 in)

Right Hand   Left Hand
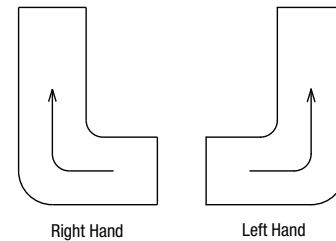
ERT250: 90 Degree Corner Conveyor

E R 5   C   M   W W W - A A A   D   S   C

- **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   U = Europe English   D = German
- **Corner:** C = Corner Turn
- **Conveyor Type:** ERT250

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Edge Roller Technology
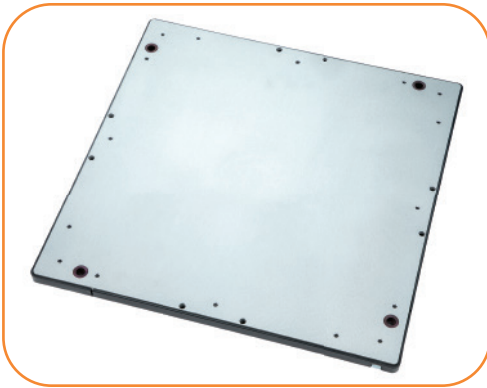
Specifications

- 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

Pallet Sizes

		Length (mm)				
		320	400	480	640	800
Width (mm)	320	X		X		
	400		X	X		
	480	X	X	X	X	
	640			X	X	X
	800				X	X

Total Load Capacity including Pallet, Fixture and Product kg (lbs):

		Length (mm)				
		320	400	480	640	800
Width (mm)	320	41 (90)		55 (120)		
	400		55 (120)	68 (150)		
	480	55 (120)	68 (150)	82 (180)	95 (210)	
	640			95 (210)	114 (250)	114 (250)
	800				114 (250)	114 (250)

Bottom Sensing Location

Side Sensing Location

OPTIONAL: Ball Bearing Pin Tracking

ERT250: Pallets

E R 5 S P M WWW - LLL A T P

- **Pin Tracking System:** **0** = Without Pin Tracking System **1** = Single Side Pin Tracking System **2** = Dual Side Pin Tracking System **4** = 4 Side Pin Tracking System
- **Plate Thickness:** **4** = 1/4 in **6** = 3/8 in **8** = 1/2 in
- **Pallet/Bumper Options:** **A** = Assembled with std aluminum top plate **C** = Kit only without aluminum top plate
- **Pallet Length Reference:** 320 - 800
- **Pallet Width Reference:** 320 - 800
- **Documentation Language:** **M** = US-English
- **Conveyor Type:** **P** = Pallet

Note: Pallet bumper cannot be used in applications where pallets slide against each other.

DORNER

BOTTOM SENSING
PROXIMITY FLAG

SIDE SENSING PROXIMITY FLAG

LOCATION FOR 12 MM PIN

1/3 OF PALLET WIDTH

PALLET PLATE DIMENSIONS
LLL+10 [.39] BY WWW+10 [.39]

WITH PIN TRACKING THE
USABLE PALLET AREA IS
REDUCED BY 25 [1.00] ON
EACH SIDE WITH PINS

1/3 OF PALLET LENGTH

CENTER OF GRAVITY
FOR PAYLOAD

WWW+10 [.39]

26 [1.01] + PLATE THICKNESS
MAXIMUM TOP OF
PIN TRACKING

WWW

LLL+10 [.39]

20 [0.80] + PLATE THICKNESS
MAXIMUM TOP OF
PALLET PLATE

LLL

16 [0.62]
PROX FLAG HEIGHT

18 [0.71]

58 [2.28]
BOTTOM
PROX FLAG

18 [0.71]

LLL-76 [2.99]

WWW-36 [1.42]

23 [0.90]
SIDE PROX FLAG

Note: Dimensions = mm (in)

DORNER

ERT®250
Edge Roller Technology

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 with integrated flow controls for ¼ inch push in air line. Solenoid valves 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					
	Length (mm)				
	320	**400**	**480**	**640**	**800**
320	X		X		
400		X	X		
480	X	X	X	X	
640			X	X	X
800				X	X

Width (mm)
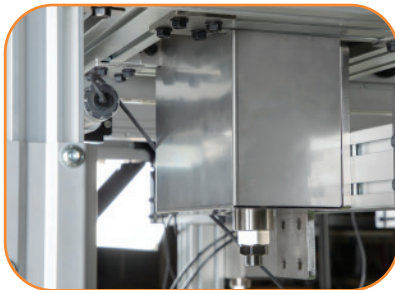
OPTIONAL:
Guarding Package
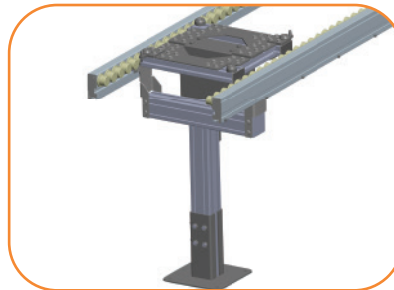
OPTIONAL:
Support post recommended for loads exceeding 113.4 kg (250 lbs). See page 33 for details.

DORNER

WWW

332 mm
[13.05 in]

223 mm
[8.80 in]

WWW

WWW+20 mm
[0.79 in]

INCLUDES FLOW
CONTROLS

PNEUMATIC
VALVE BY
OTHERS

PNEUMATIC SCHEMATIC
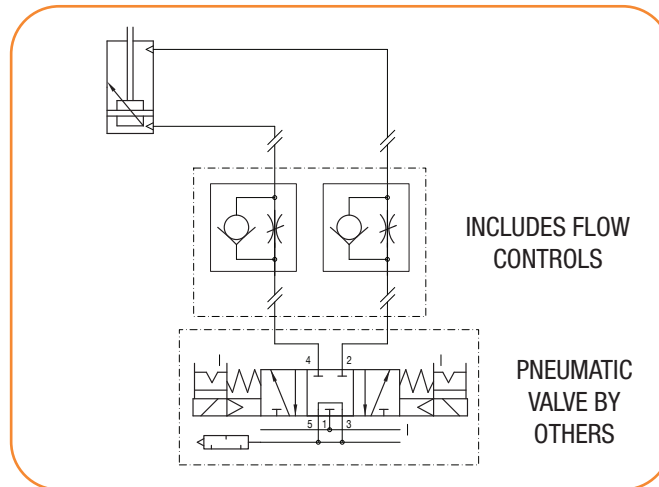
ERT250: Lift and Locate

E R 5 L M W W W - L L L C N G

— **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.

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)
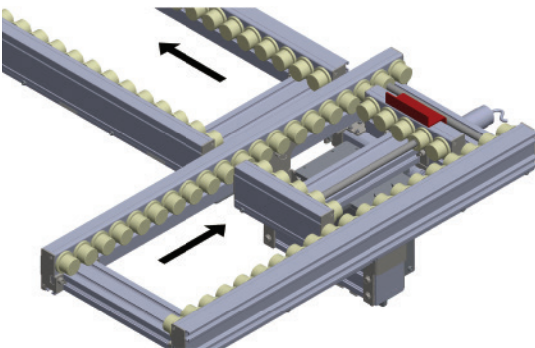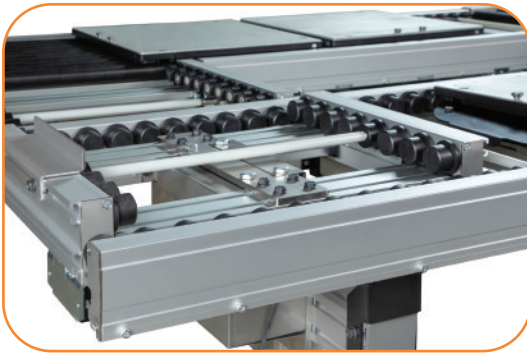
Specifications

- 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 ERT250 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 with integrated flow controls for ¼ inch push in air line. Solenoid valves and plumbing not provided
- Lift cylinder includes magnetic piston for position sensing. Sensors not provided
- Optional guarding package available

Pallet Sizes

		Length (mm)				
		320	400	480	640	800
Width (mm)	320	X		X		
	400		X	X		
	480	X	X	X	X	
	640			X	X	X
	800				X	X

OPTIONAL:
Guarding Package and Pallet Sensor
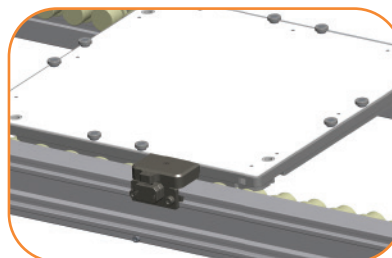
OPTIONAL:
Rocker Sensor for receiving applications

DORNER

LLL

WWW

RECEIVING

SENDING

WWW

WWW+20 mm
[0.79 in]

334 mm
[13.15 in]

368 mm
[14.51 in]

INCLUDES FLOW
CONTROLS

PNEUMATIC
VALVE BY
OTHERS

PNEUMATIC SCHEMATIC

ERT250: Lift and Transfer
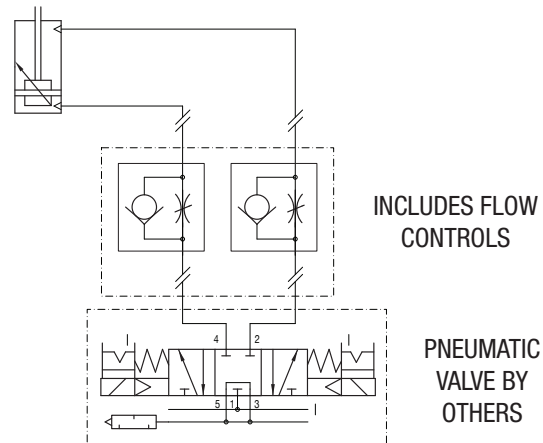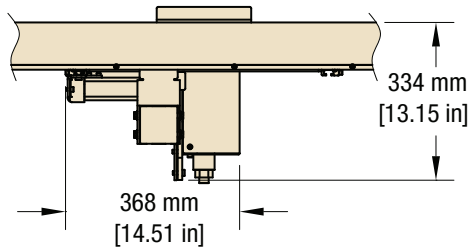
ER5 T M WWW - LLL F D C N G S C

- **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 Length Reference:** 320 - 800
- **Pallet Width Reference:** 320 - 800
- **Documentation Language:** **M** = US-English
- **Conveyor Type:** **T** = Lift and Transfer

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)

DORNER

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 ERT250 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 with integrated flow controls for ¼ inch push in air line. Solenoid valves and plumbing not provided
- Pusher cylinder includes magnetic piston for position sensing. Sensors not provided.

Pallet Sizes						
		Length (mm)				
		320	400	480	640	800
Width (mm)	320	X		X		
	400		X	X		
	480	X	X	X	X	
	640			X	X	X
	800				X	X

STANDARD FEATURE:

**Break-Away Pusher Blade
for operator safety**

LLL

WWW

WWW

LLL+34 mm
[1.34 in]

W+152 mm
[5.98 in]

178 mm
[7.02 in]

Right Hand

Left Hand

PALLET PUSHER 2 POSITION

INCLUDES FLOW CONTROLS

PNEUMATIC VALVE BY OTHERS

4   2

5   1   3
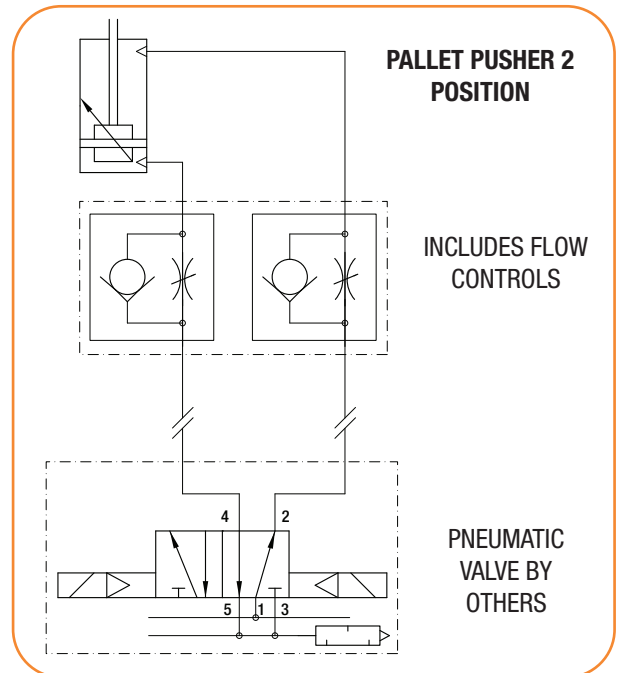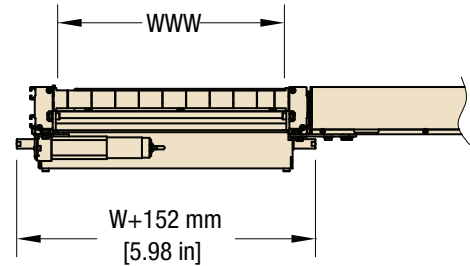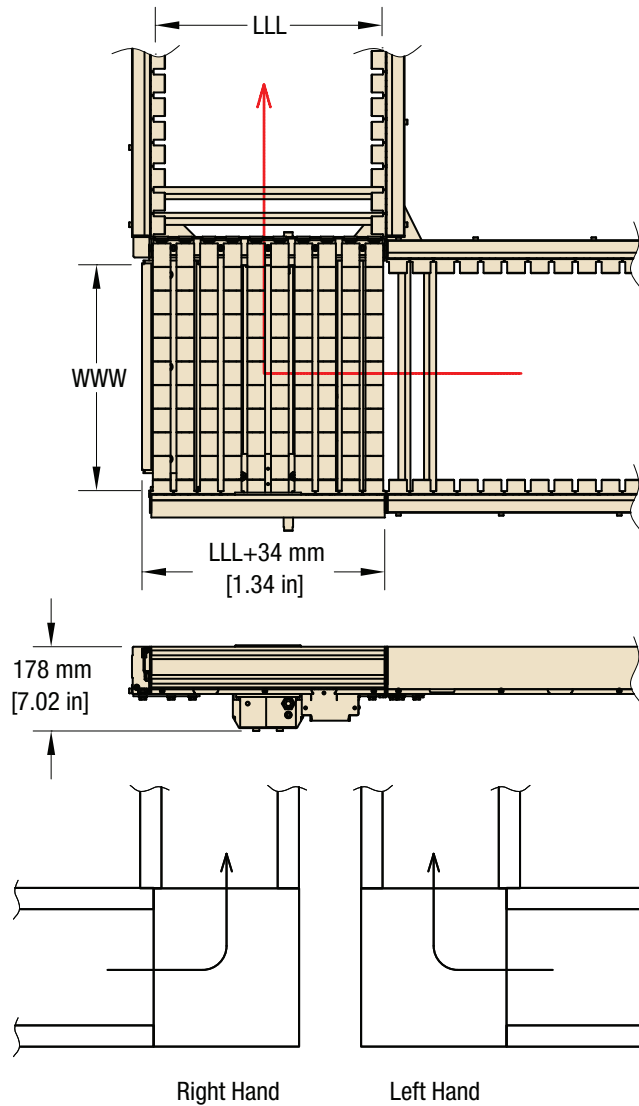
PNEUMATIC SCHEMATICS

ERT250: Pallet Pusher

E R 5   D   M   WWW   -   LLL   D   S   C   N

- **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)
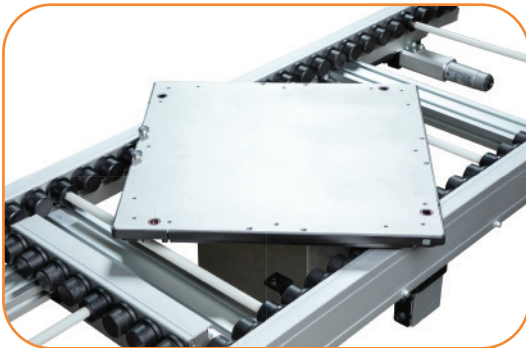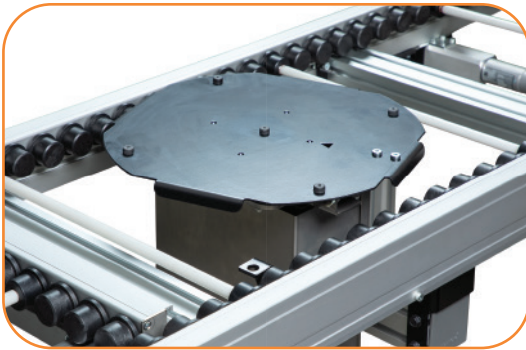
Specifications

- 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 with integrated flow controls for ¼ inch push in air line. Solenoid valves 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						
		Length (mm)				
		320	400	480	640	800
Width (mm)	320	X		X		
	400		X	X		
	480	X	X	X	X	
	640			X	X	X
	800				X	X

OPTIONAL:
Guarding Package

STANDARD FEATURE:
Breakaway Top Plate
for operator safety

OPTIONAL:
Support Post, mounts directly to conveyor. See page 33 for details.

WWW

16.87 [429]

8.94 [227]

WWW

WWW+20 mm
[0.79 IN]

INCLUDES FLOW
CONTROLS

PNEUMATIC
VALVE BY
OTHERS

PNEUMATIC SCHEMATIC
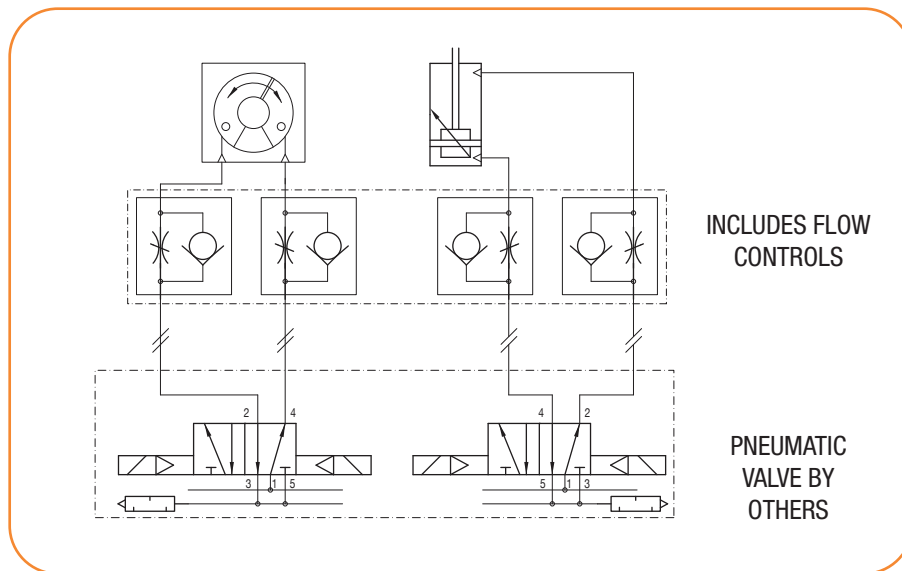
ERT250: Lift and Rotate

E R 5   R   M   WWW   -   LLL   AAA   C   N   G

- **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

Only square combinations are valid for 90 degree.

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)

ERT®250
Edge Roller Technology
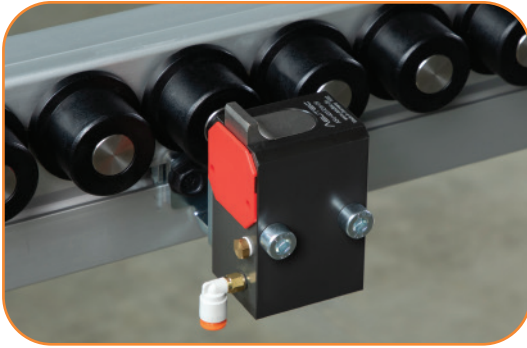
Standard Load Pallet Stop – Non-cushioned

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	ER5SM-LFX where X = Sensor Bracket Option **N** = No Sensor Bracket **B** = Bottom Sensor Bracket **S** = Side Sensor Bracket

Stop Located After Pallet

Stop Located Inside Pallet

Maximum Accumulated Load - Non-cushioned Pallet Stop

FLOW

52 mm
[2.05 in]

95 mm
[3.75 in]

7 mm
[0.26 in]

20 mm
[0.79 in]

87 mm
[3.43 in]

96 mm
[3.78 in]

PNEUMATIC VALVE BY OTHERS

PNEUMATIC SCHEMATIC

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)

DORNER

ERT®250
Edge Roller Technology

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

Stop Located After Pallet

Stop Located Inside Pallet

Maximum Accumulated Load - Non-cushioned Pallet Stop

Belt Speed (m/min)

Load (Lbs) / Load (Kg) vs Belt Speed (ft/min)

FLOW

90 mm
[3.54 in]

128 mm
[5.04 in]

5 mm
[0.21 in]

21 mm
[0.83 IN]

107 mm
[4.21 in]

103 mm
[4.06 in]

PNEUMATIC VALVE BY OTHERS

PNEUMATIC SCHEMATIC

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)

DORNER

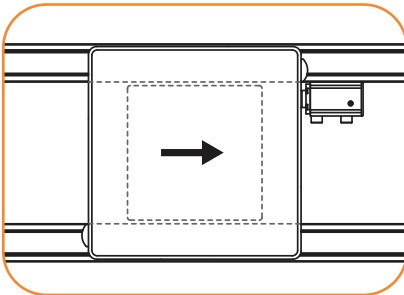**ERT®250**
Edge Roller Technology

Standard Load Pallet Stop – Cushioned

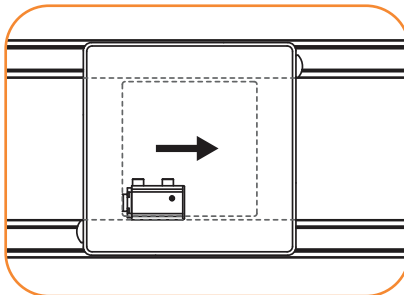Cushioned pallet stop for traffic control. Stops one or more pallets at the specified location on the conveyor. Cushioned deceleration of the first pallet into the stopped location, guarding against vibration of sensitive payloads. Accumulated pallets are not cushioned. Air pressure disengages the stop 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
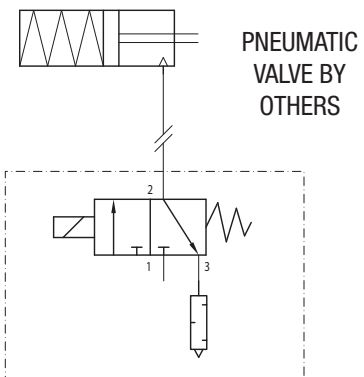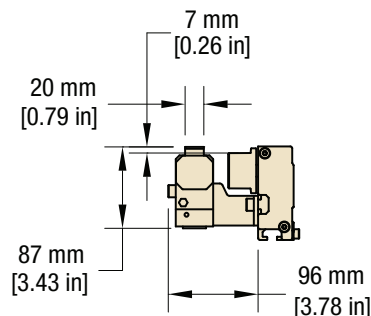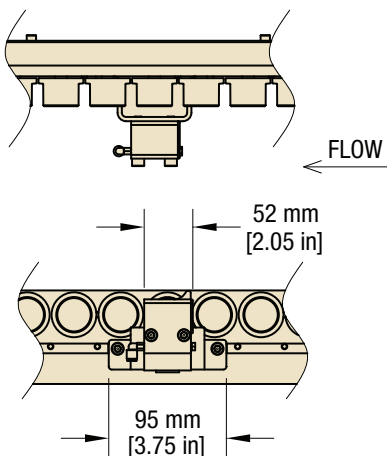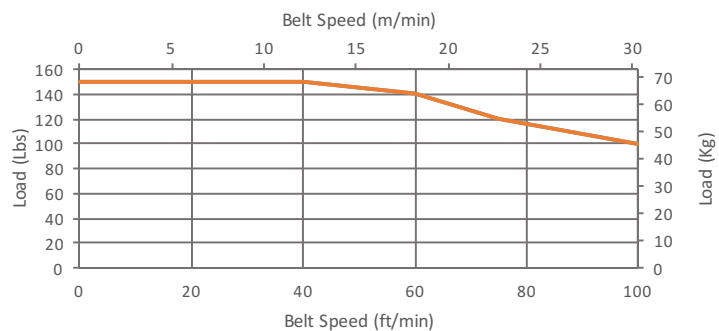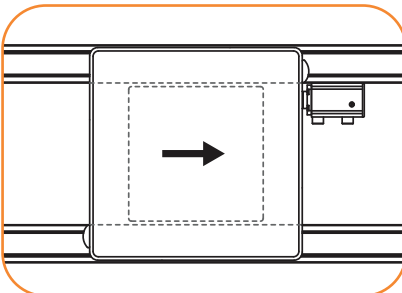

Stop Located After Pallet
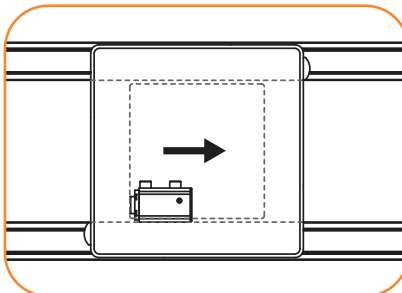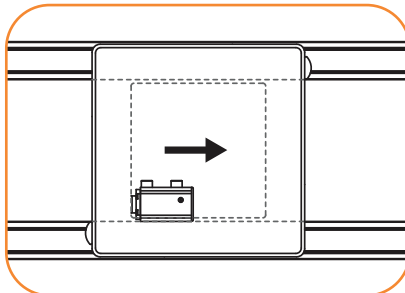
Stop Located Inside Pallet

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

Maximum Accumulated Load - Cushioned Pallet Stop

FLOW

76 mm [2.99 in]

95 mm [3.74 in]

6 mm [0.24 in]

20 mm [0.79 in]

84 mm [3.31 in]

96 mm [3.78 in]

PNEUMATIC VALVE BY OTHERS

PNEUMATIC SCHEMATIC

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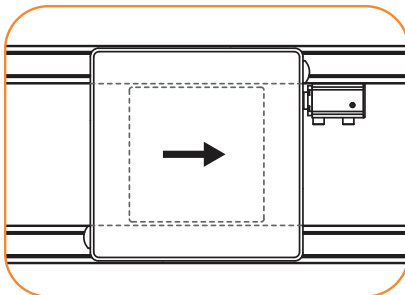**Note:** Dimensions = mm (in)
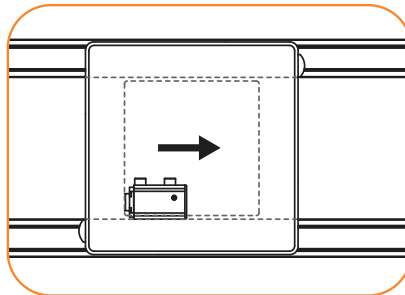
DORNER

ERT®*250*
Edge Roller Technology

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
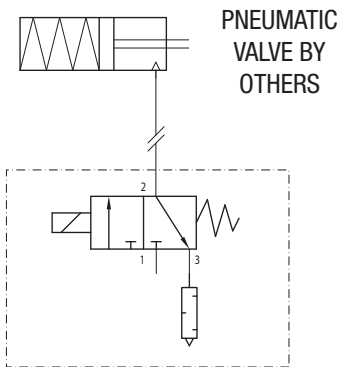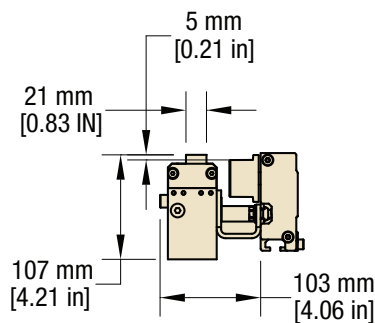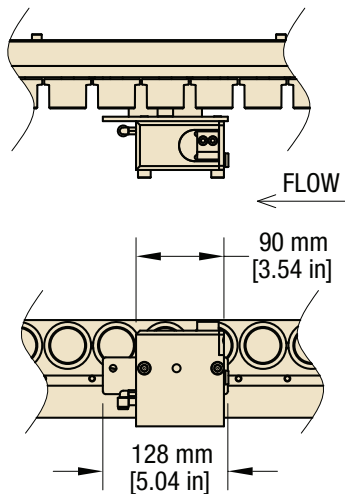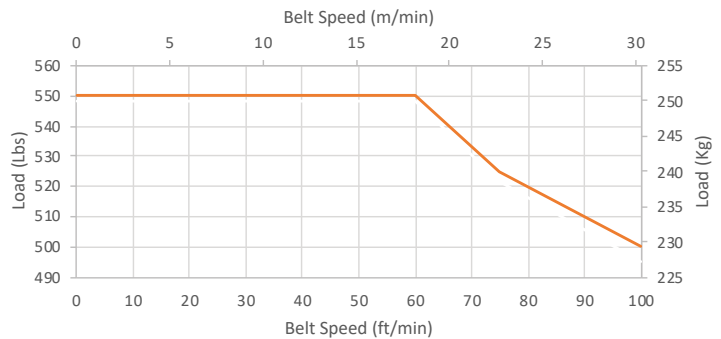- Optional vertical or side mounted sensor bracket. See page 34

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

Stop Located After Pallet

Stop Located Inside Pallet

Maximum Accumulated Load - Cushioned Pallet Stop

Belt Speed (m/min)

Load (Lbs) / Load (kg)

Belt Speed (ft/min)

FLOW

128 mm [5.04 in]

132 mm [5.20 in]

5 mm [0.20 in]

21 mm [0.83 in]

107 mm [4.21 in]

109 mm [4.29 in]

PNEUMATIC VALVE BY OTHERS

PNEUMATIC SCHEMATIC

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)

DORNER

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: -10º to 40º C (14º to 104º F)
- M8-4 Pin connector with 1 m long cable

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

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

48 mm [1.89 in]
48 mm [1.89 in]
28 mm [1.10 in]
215 mm [8.47 in]
16 mm [0.61 in]

CONNECTOR PIN OUT

Motor Coil Phase U
Motor Coil Phase W
Communications Connector
Motor Coil Phase V

2 4
1 3

Note: Dimensions = mm (in)

ERT®250
Edge Roller Technology

Electrical Specifications

Voltage Range	18-28 VDC
Rated Current	5.2 amps, for 2 gearmotors
Starting Current	6.0 amps, for 2 gearmotors
Operating ambient temperature	-10 to 40 C (14 to 104F)

Part Number	400396

205 mm [8.07 in]

175 mm [6.89 in]

56 mm [2.20 in]

27 mm [1.04 in]

INTERFACE CONNECTOR PIN OUT

Sensor Signal

GND

Aux I/O

24V DC
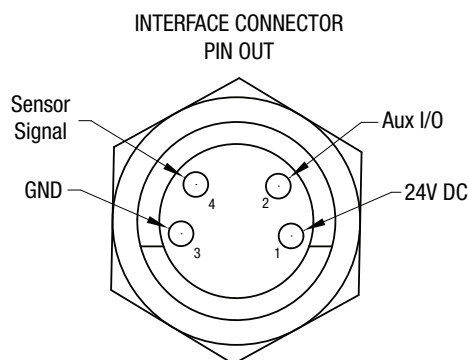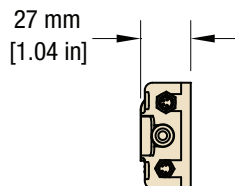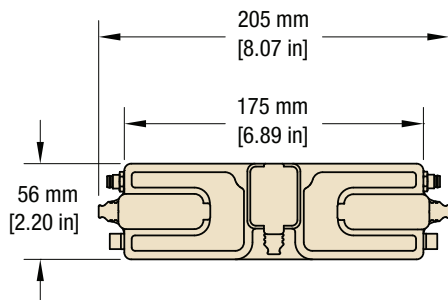
Specifications

- 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

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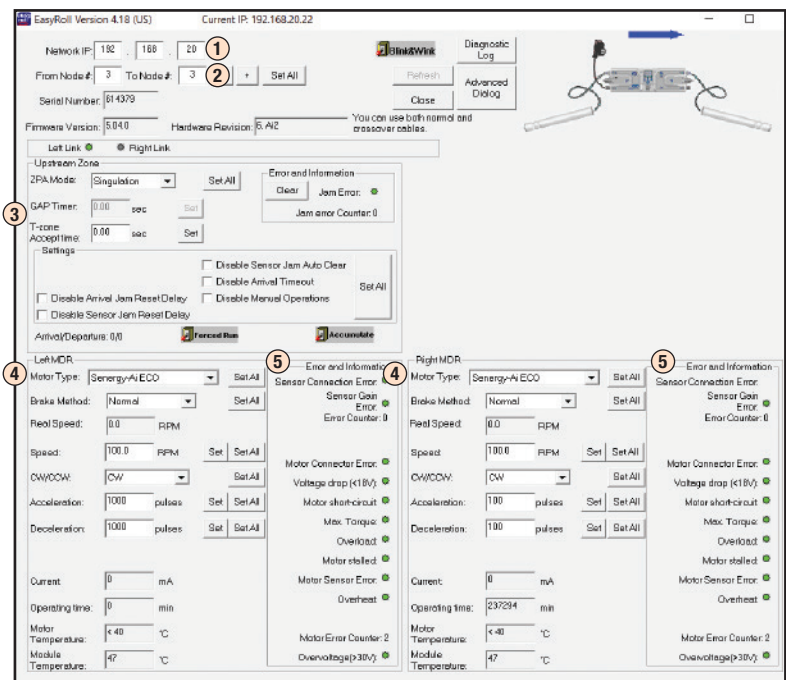
1. Configure Network IP
2. Configure Nodes on Network
3. Upstream / Downstream Gearmotor, select mode
4. Upstream / Downstream gearmotor, select motor speed, acceleration/deceleration, etc.
5. Error Indicators for connection and performance

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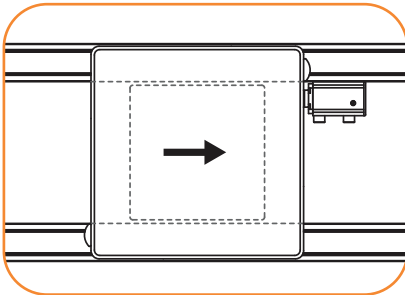**Note:** Dimensions = mm (in)

DORNER®

Wiring Diagram:

**2 Sensors per Controller**

8

2 Gearmotors per Controller

9

PLC

All Low Voltage 24VDC

7

Ethernet IP linking Controller

Power Supply

Low Voltage Power

6

High Voltage Power

ERT Wiring Enc losure and Cables

1

2

3

4
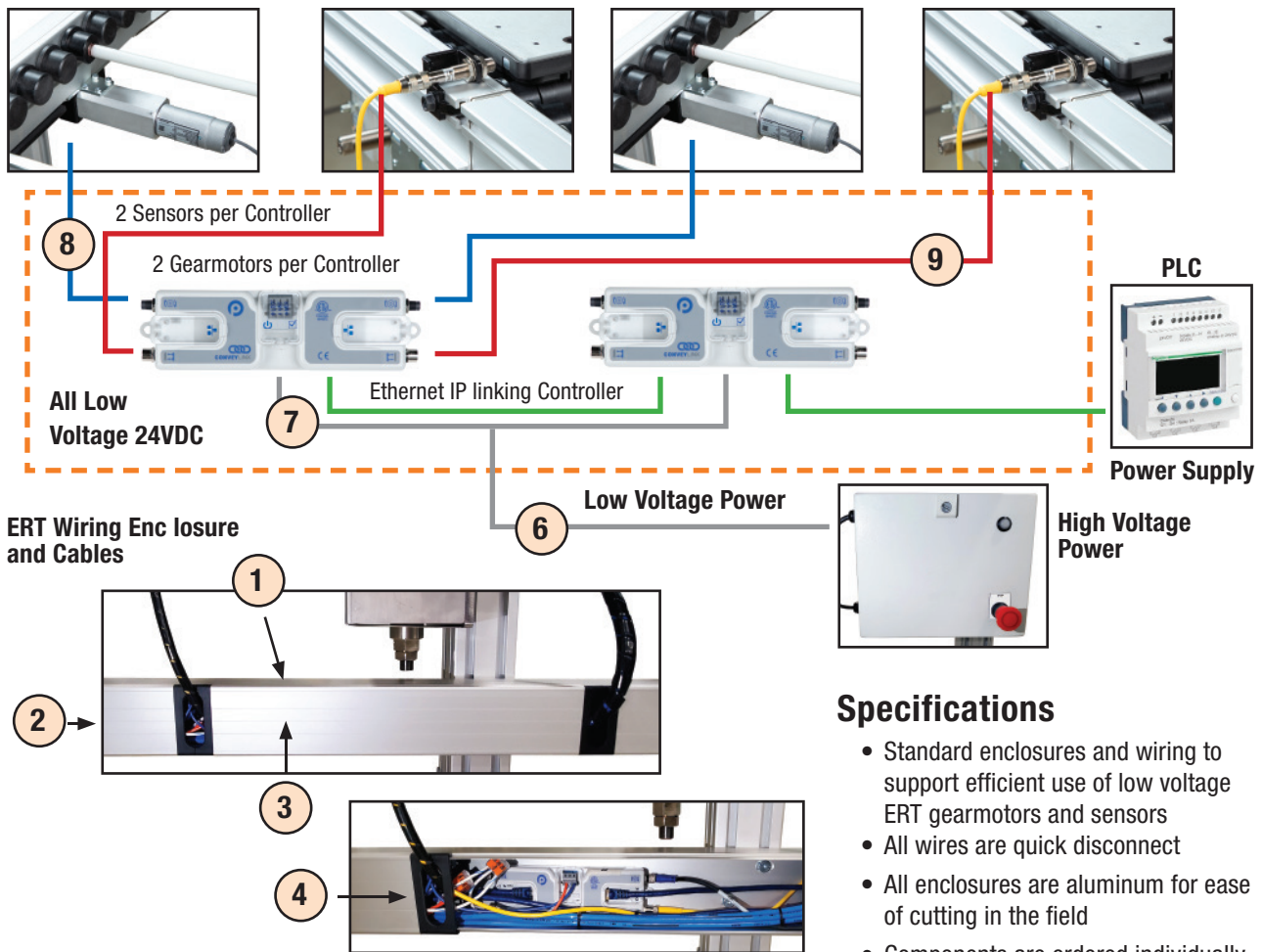
Specifications

- 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

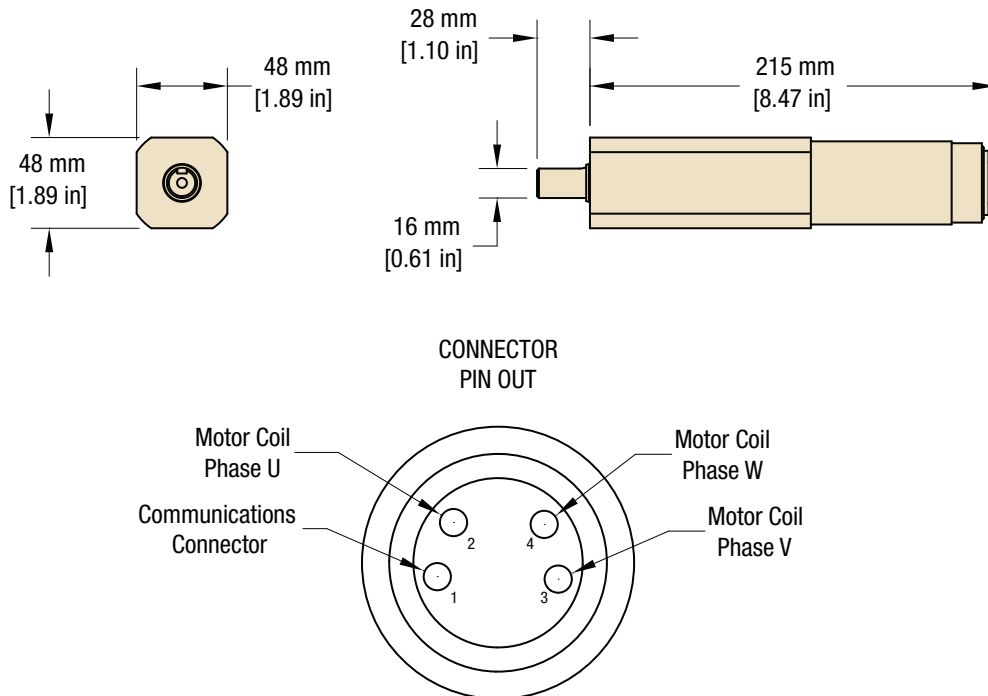| Item	Part Number	Description	Specification
1	ERTW1-CE3000	ERT Motor Controller Enclosure, 80 mm x 80 mm x 3000 mm long, Aluminum	Aluminum Extruded Enclosure, requires customer to cut to length and add mounting holes
2	ERTW1-ECX	ERT Motor Controller Enclosure End Cap. Where X = 1 for closed, X = 2 for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

DORNER

ERT®*250*
Edge Roller Technology

Multiple Conveyor Power Supply

Outside

Inside

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

Part Number	Input Volts	Input Phase	Input H$_3$	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]

250 mm [9.84 in]

154 mm [6.07 in]
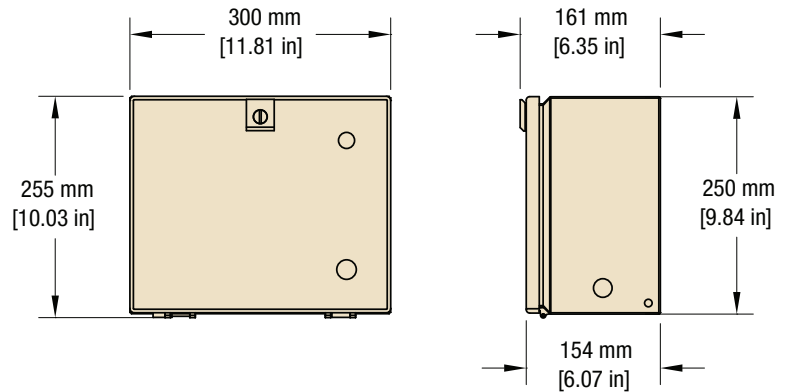
Single Conveyor Power Supply

Specifications

- Provides 24 VDC power to gearmotor controller
- 5 AMP output can power one controller
- 115V, 1 Phase, 60 hz input
- RoHS, REACH certified
- UL, CUL and CE approved
- Black plastic enclosure

Part Number	400386

167 mm [6.57 in]

35 mm [1.40 in]

67 mm [2.64 in]

DORNER
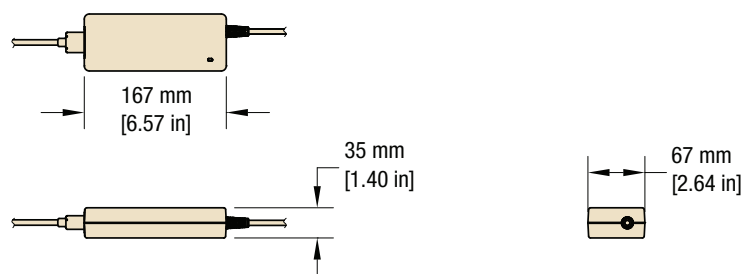
Fixed Height Support Stands

- 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					
Stand Width	120 mm	160 mm	40 mm increments up to...	920 mm	960 mm
Part Number Reference	120	160	040 increments up to...	920	960

Stand Height Chart			
Stand Height	210-225 mm (8.27 - 8.86 in)	10 mm (0.4 in) increments up to...	1470-1970 mm (57.9 - 77.6 in)
Part Number Reference	02100225	00100010 increments up to...	14701970
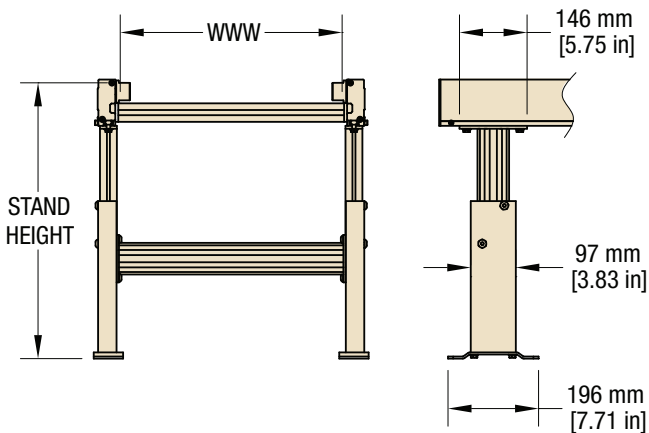
ERT250: Fixed Height Support Stands

E R 5 M WWW - L L L L U U U U F

- 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)

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ERT®250
Edge Roller Technology
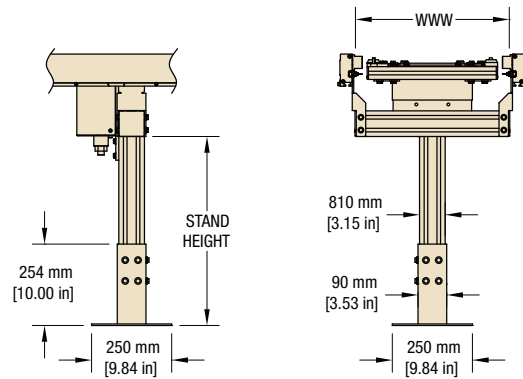
Support Post

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
  - ERT250 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
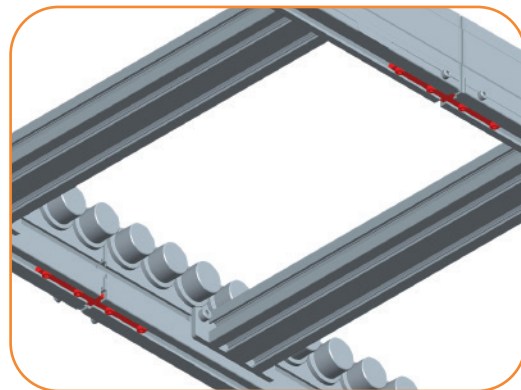
Specifications
- Tie bracket for connecting conveyors inline
- Can be used in bottom or inside T-slot. Do not use with T-slot cover
- Includes a pair of tie plate assemblies
- Includes all mounting hardware

Part Number	206519

159 mm [6.25 in]
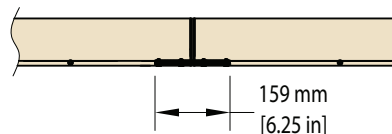
Diagonal Bracing

Specifications
- For use on ERT250 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

Part Number	Description
400264-LH	Support brace for ERT stand, LH
400264-RH	Support brace for ERT stand, RH

DORNER

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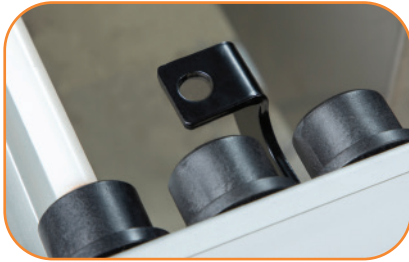
Specifications
- Standard mounting for 12 mm barrel proximity sensors
- Sensor faces upward, sensing pallet pick-up on the bottom of pallet
- Requires a minimum of 25 mm (1 in) long threaded portion on sensor
- Includes all mounting hardware
- Proximity sensor with 4 mm minimum sensory range recommended

Part Number	400268

24 mm [0.94 in]
52 mm [2.05 in]
81 mm [3.17 in]
66 mm [2.58 in]
35 mm [1.39 in]
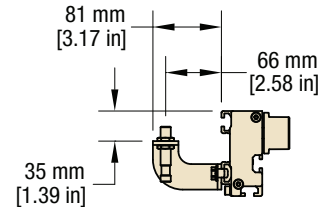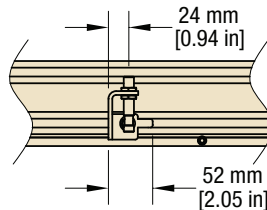
Pallet Sensor Bracket, Side Sensing

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

Part Number	400269

29 mm [1.15 in]
56 mm [2.20 in]
10 mm [0.39 in]
35 mm [1.38 in]
19 mm [0.74 in]
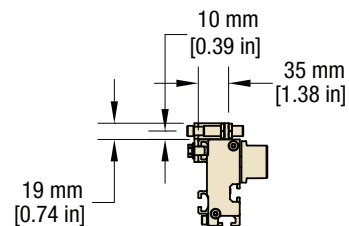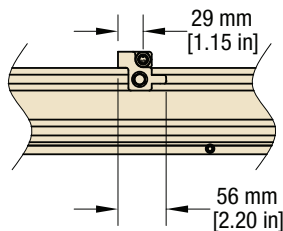
Pallet Sensor Bracket, Rocker
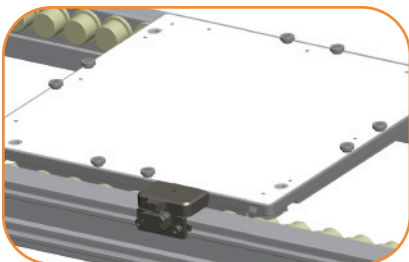
Specifications
- Guide block contacts pallet to engage proximity switch
- Used with Lift and Transfer
- Requires a minimum of 25 mm (1 in) long threaded portion on sensor
- Standard mount for 12 mm barrel proximity sensor
- Proximity sensor with 4 mm minimum sensory range recommended

Part Number	400350

85 mm [3.35 in]
27 mm [1.08 in]
79 mm [3.13 in]
54 mm [2.15 in]
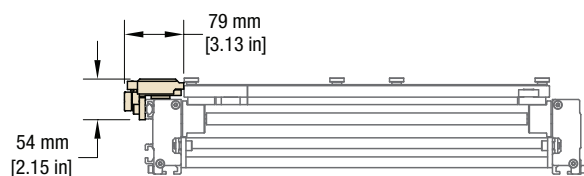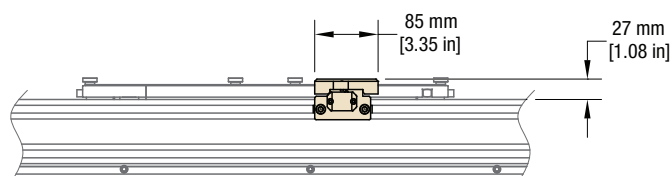
Side Tables

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

27MSF T - 06 LLLL

    Table Length
      ex. 0200 = 610 mm (2 ft)
   Table Width: 06 = 152 mm (6 in)
      12 = 305 (12 in)
  Conveyor / Table Type:
    1 = One Side
    2 = Two Sides

Example: 27MSF1-060200

152 [6.00]

145 [5.73]

LLLL

304 [12] Wide Table

152 [6] Wide Table

W

53 [2.08]

Supports can be positioned anywhere along table
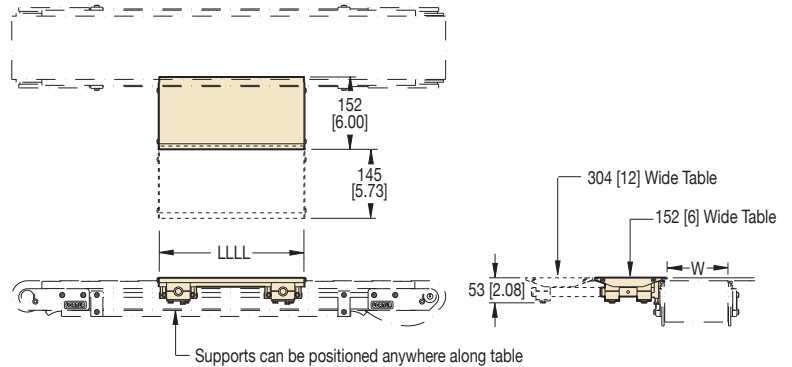
LLLL = 305 to 30,175 mm (1 to 99 ft), Maximum 2438 mm (8 ft) length single piece

T-slot Accessories

67 [2.63]
48 [1.88]
M6-1.0
10 [.38]
300150M shown
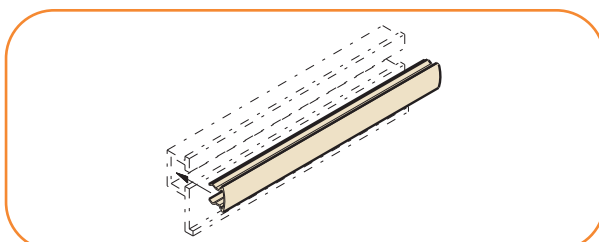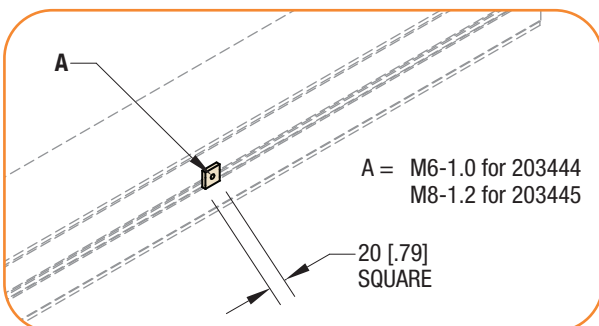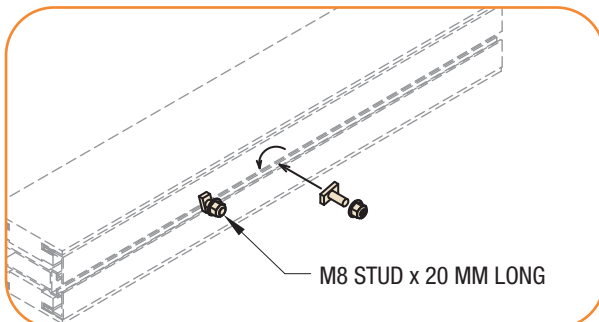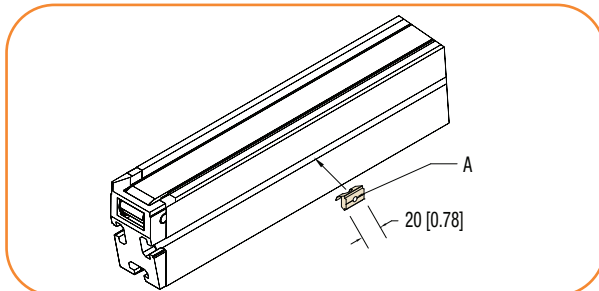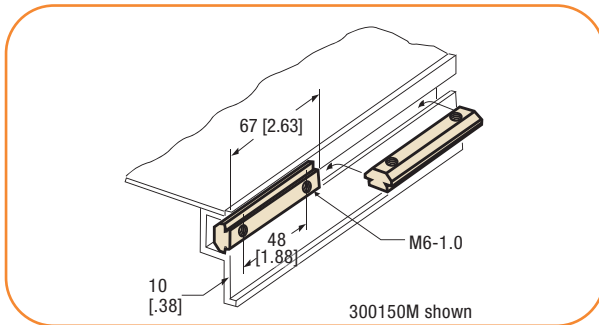
T-Bars

- Mounts in T-slot to attach heavy accessories
- Fits conveyor and stands

Part Number	
	639971M (1 hole T-bar, M6-1.0, .75 in long)
	202390M (1 hole T-bar, M8-1.25, .63 in long)
	643874M (0.75 in centers, 2 hole T-bar, M6-1.0, 1.5 in long)
	200626M (0.875 in centers, 2 hole T-bar, M6-1.0, 1.62 in long)
	200830M (1.0 in centers, 2 hole T-bar, M6-1.0, 1.75" long)
	639717M (1.25 in centers, 2 hole T-bar, M6-1.0, 2.0" long)
	300150M (1.875 in centers, 2 hole T-bar, M6-1.0, 2.62 in long)
	300536M (2.125 in centers, 2 hole T-bar, M6-1.0, 2.88 in long)

A
20 [0.78]

Spring Nuts

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

Part Number	
	205504 M4 x 0.7
	205505 M5 x 0.8
	205506 M6 x 1.0
	205508 M8 x 1.25

M8 STUD x 20 MM LONG

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
- 20 mm long used to mount up to 0.25 in plate thickness
- 35 mm long used to mount up to 0.85 in plate thickness
- Provided in a package of 5 T-Bolts and flanged locknuts

Part Number	
	203446 (20 mm long)
	203447 (35 mm long)

A
A = M6-1.0 for 203444
M8-1.2 for 203445
20 [.79] SQUARE

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

Part Number	
	203444 (M6-1.0)
	203445 (M8-1.25)

T-Slot Cover

- Snaps into conveyor and aluminum stand T-slots
- Black plastic extrusion
- Can be trimmed to fit

Part Number	
	645656P (Per 305 mm (1 ft) of length)
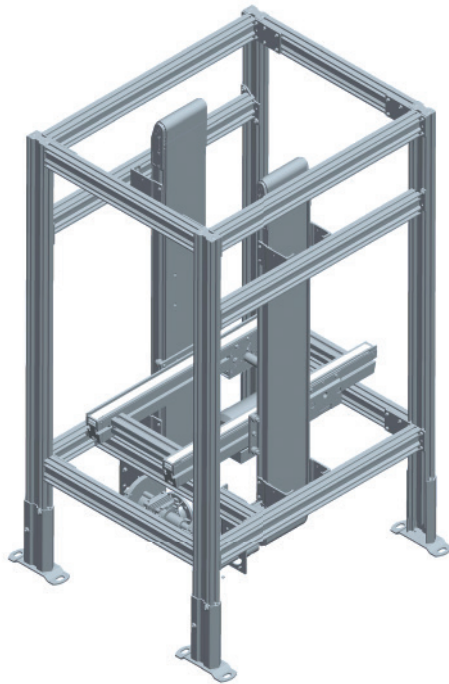
Vertical Transfer Unit (Elevator)

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
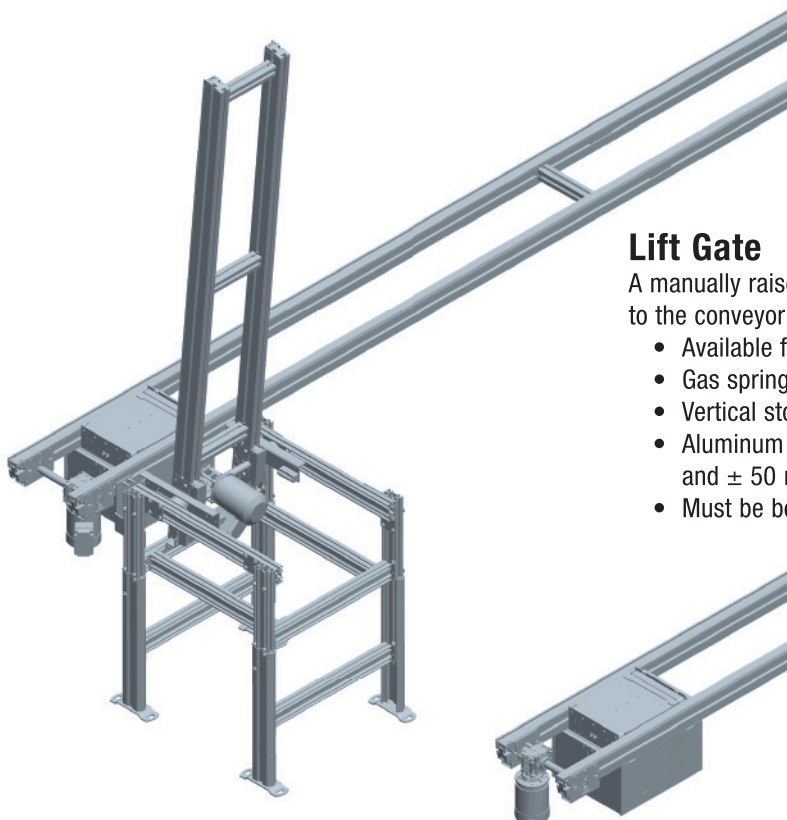
Lift Gate

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

DORNER

ERT250
Edge Roller Technology

Regulatory Approvals:

Conveyors:

All Dorner ERT250 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 ERT250 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 ERT250 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.

Symbol	Description
CE	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).
RoHS	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.
UL	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.
c UL US	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 and Canada. When a complete product or system containing UL Recognized Components is evaluated, the end-product evaluation process can be streamlined.
CSA	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.
c UL US	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.

DORNER

Cleanroom Certifications:

ERT250 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.

ERT250 Conveyors are designed and constructed to be used in Cleanroom environments. The following ERT250 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.

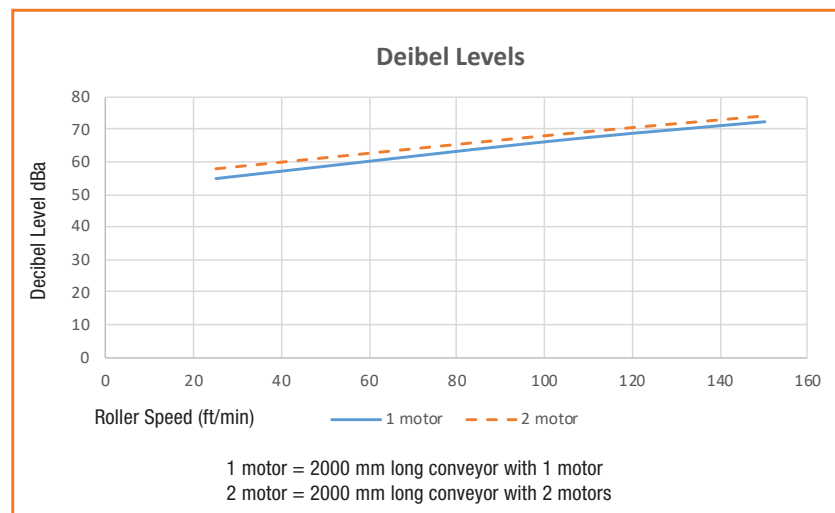TUV Tested and Approved for Cleanroom Class 4 Certification.

Test Report No. : 721653397
Report Date: 27 April 2020

SUBJECT	Airborne particle concentration Test for ERT250 Conveyor
TEST LOCATION	TÜV SÜD China
	TÜV SÜD Products Testing (Shanghai) Co., Ltd.
	B-3/4, No.1999 Du Hui Road, Minhang District Shanghai 201108, P.R. China
CLIENT NAME	Dorner Manufacturing Corp.
CLIENT ADDRESS	975 Cottonwood Avenue Hartland, Wisconsin, USA
TEST PERIOD	13-Apr-2020~21-Apr-2020
TEST REQUEST	ISO 14644-1:2015 Cleanrooms and associated controlled environments - Part1:Classification of air cleanliness by particle concentration

Prepared By
(Nance Gao)
Report Drafter

Authorized By
(Steven Zhang)
Authorized Signatory

TEST CONCLUSION
The airborne particle concentration testing result complies with ISO Class 4 specified in ISO 14644-1:2015 when the conveyor was put in above mentioned laboratory testing condition.

Note: (1) General Terms & Conditions as mentioned overleaf. (2) The results relate only to the items tested.(3) The test report shall not be reproduced except in full without the written approval of the laboratory.(4) Without the agreement of the laboratory , the client is not authorized to use the test results for unapproved propaganda.
Chemical/Microbiology Laboratory: TÜV SÜD Products Testing (Shanghai) Co., Ltd. B-3/4, No.1999 Du Hui Road, Minhang District Shanghai 201108 P.R.China
Phone :+86 (21) 6037 6375 Fax : +86 (21) 6037 6345 Email: food.chem@tuv-sud.cn Webpage: www.tuv-sud.cn
Regional Head Office: TÜV SÜD Certification and Testing (China) Co., Ltd. No.151 Heng Tong Road Shanghai 200 070 P.R.China

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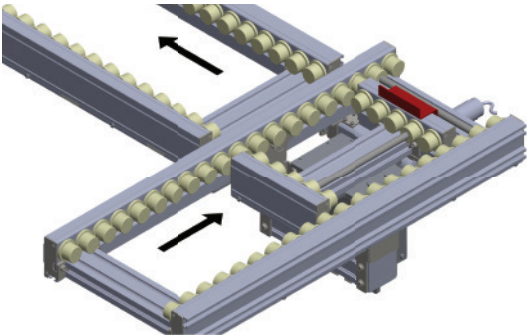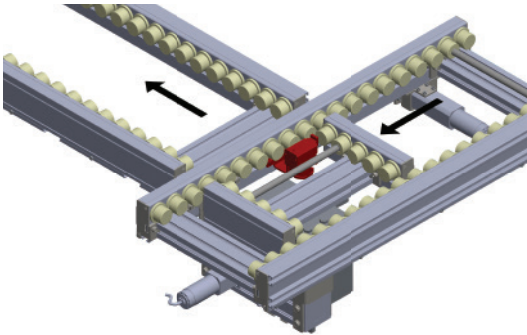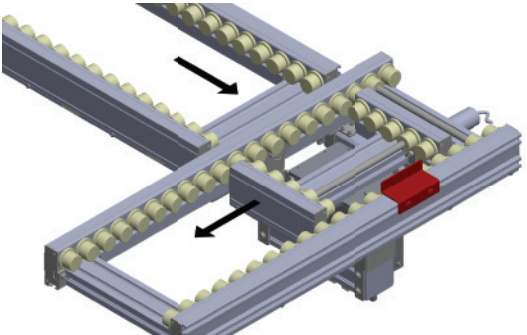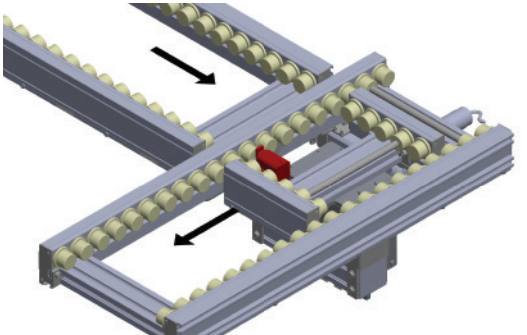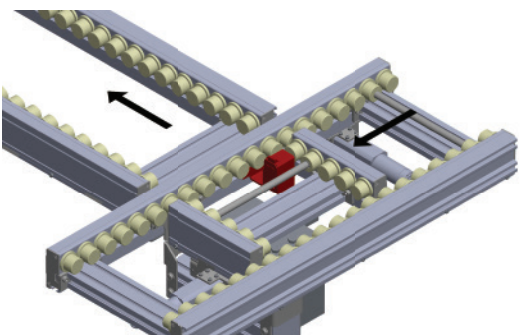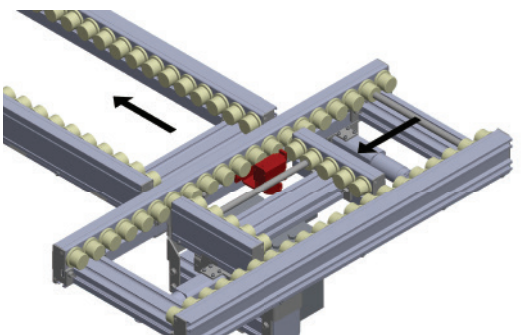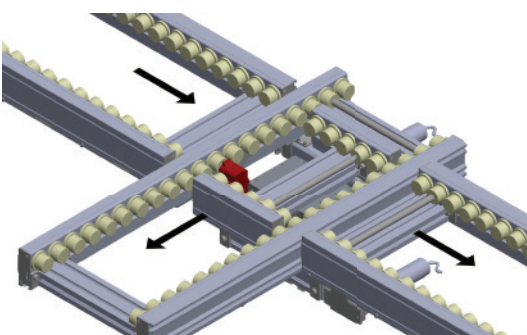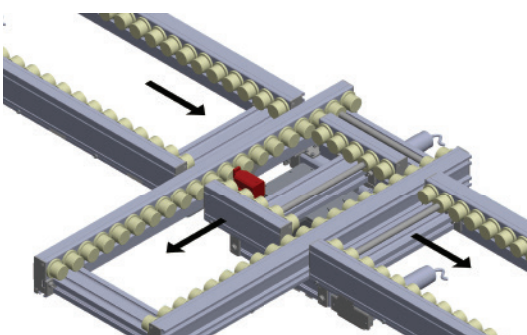
The actual noise level generated by the conveyor depends on several factors: the installation configuration, the product running on the conveyor, the surrounding equipment, the conveyor options and belt speed. The noise level generated by the conveyor is typically less than the general noise level of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

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

ERT250 Conveyors:

Deibel Levels

1 motor = 2000 mm long conveyor with 1 motor
2 motor = 2000 mm long conveyor with 2 motors

Lift & Transfer Pallet Stop Configurations

		Non-Cushioned	Cushioned
End Stop	**Sending**		
	Receiving		
Pass Thru	**Sending**		
	Receiving		

Calculating Conveyor Belt Speed

ERT250 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 ERT250 conveyor is 1:1 ratio

Belt Speed:

(ft/min) = (Drive roller diameter/12)*(3.14)*(RPM of gearmotor)

(m/min) = (Drive roller diameter, mm/1000)*(3.14)*(RPM of gearmotor)

Example: ERT250 Conveyor and gearmotor. The gearmotor is a 33:1 ratio with 176 rpm output.

Belt Speed (ft/min) = (1.5/12)*(3.14)*(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 ERT250 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)

Temperature Factor		
Ambient temperature can negatively affect the capacity of the conveyor.		
Temperature F	Temperature C	Temperature Factor
-4	-20	1.0
32	0	1.0
68	20	1.0
104	40	0.9
140	60	0.8

Start / Stop Factor	
Frequent Start / Stops of the conveyor can negatively affect the capacity of the conveyor. All start / stop applications must use a soft start mechanism such as a Frequency Inverter with a 1 second acceleration cycle.	
Application Condition	Start / Stop Factor
Continuous Run or 1 start/stop per hour	1.0
Maximum 10 starts/stop per hour	0.83
Maximum 30 starts/stop per hour	0.70
Greater than 30 starts/stop per hour	0.62

ERT Pallet Weights Kg (lbs)

ERT250 Pallet Weights Kg (lbs)				
Pallet Width (mm)	Pallet Length (mm)	1/4 in Alum Plate	3/8 in Alum Plate	1/2 in Alum Plate
320	320	2.6 (5.8)	3.6 (8)	4.6 (10.1)
320	480	3.8 (8.3)	5.3 (11.7)	6.7 (14.8)
400	400	3.9 (8.6)	5.5 (12.1)	7 (15.4)
400	480	4.6 (10.1)	6.5 (14.3)	8.3 (18.3)
480	480	5.4 (11.9)	7.7 (17)	9.9 (21.7)
480	640	7 (15.5)	10.1 (22.3)	13 (28.6)
640	640	9.2 (20.2)	13.3 (29.3)	17.1 (37.7)
640	800	11.3 (24.9)	16.5 (36.3)	21.3 (46.8)
800	800	14 (30.7)	20.4 (44.9)	26.4 (58)

Automation Modules – Pneumatic Specifications

| ERT250 Pneumatic Specifications								
Devise	Action	Bore Diameter	Stroke	Return Type	Force per Psi	Sensor Compatible	Fitting Tap Size	Fitting Tube Size
Lift & Locate	Lift cylinder, 320 to 400 mm wide	63 mm (2.5 in)	50 mm (2 in)	Pneumatic	4.9 lb	Yes	1/4 NPT	1/4 in
	Lift cylinder, 480 to 800 mm wide	80 mm (3.1 in)	50 mm (2 in)	Pneumatic	7.7 lb	Yes	3/8 NPT	1/4 in
Lift & Transfer	Lift cylinder, 320 to 400 mm wide	63mm (2.5 in)	50 mm (2 in)	Pneumatic	4.9 lb	Yes	1/4 NPT	1/4 in
	Lift cylinder, 480 to 800 mm wide	80 mm (3.1 in)	50 mm (2 in)	Pneumatic	7.7 lb	Yes	3/8 NPT	1/4 in
Lift & Rotate	Lift cylinder, 320 to 400 mm wide	63 mm (2.5 in)	50 mm (2 in)	Pneumatic	4.9 lb	Yes	1/4 NPT	1/4 in
	Lift cylinder, 480 to 800 mm wide	80 mm (3.1 in)	50 mm (2 in)	Pneumatic	7.7 lb	Yes	3/8 NPT	1/4 in
	Rotary Actuator, 320 to 400 mm wide	10 mm (0.4 in)	n/a	Pneumatic	n/a	Yes	1/8 NPT	1/4 in
	Rotary Actuator, 480 to 800 mm wide	20 mm (0.8 in)	n/a	Pneumatic	n/a	Yes	1/8 NPT	1/4 in
Pallet Pusher	Pusher cylinder	32 mm (1.34 in)	52 mm (2.04 in)	Pneumatic	1.2	Yes	1/8 NPT	1/4 in
Pallet Stop, Cushioned	Light Load, Retract	35 mm (1.4 in)	9 mm (0.35 in)	Spring	n/a	No	GM5	1/4 in
	Heavy Load, Retract			Spring	n/a	No	G 1/8	1/4 in
Pallet Stop, Non-Cushioned	Light Load, Retract	35 mm (1.4 in)	9 mm (0.35 in)	Spring	n/a	No	GM5	1/4 in
	Heavy Load, Retract			Spring	n/a	No	G 1/8	1/4 in

Dimensions = mm (in)

ERT250 Module Spacing Guidelines

Pallet/Stop to Lift & Locate and Lift & Locate Spacing*			
Pallet Length	Minimum Distance D1	Minimum Distance D2	Minimum Distance D3
320 (12.6)	162 (6.4)	820 (32.3)	410 (16.1)
400 (15.75)	202 (7.9)	980 (38.6)	490 (19.3)
480 (18.9)	242 (9.5)	1140 (44.9)	570 (22.4)
640 (25.2)	402 (15.8)	1460 (57.5)	730 (28.7)
800 (31.5)	562 (22.1)	1780 (70.1)	890 (35.0)
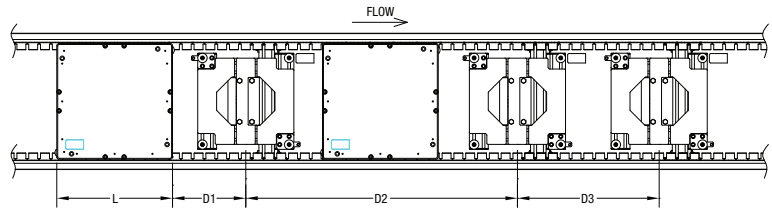
Pallet/Stop to Lift & Transfer and Lift & Transfer Spacing*			
Pallet Length	Minimum Distance D1	Minimum Distance D2	Minimum Distance D3
320 (12.6)	250 (9.8)	880 (34.6)	540 (21.3)
400 (15.75)	280 (11.0)	1040 (40.9)	620 (24.4)
480 (18.9)	330 (13.0)	1200 (47.2)	700 (27.6)
640 (25.2)	410 (16.1)	1520 (59.8)	730 (28.7)
800 (31.5)	490 (19.3)	1840 (72.4)	890 (35.0)
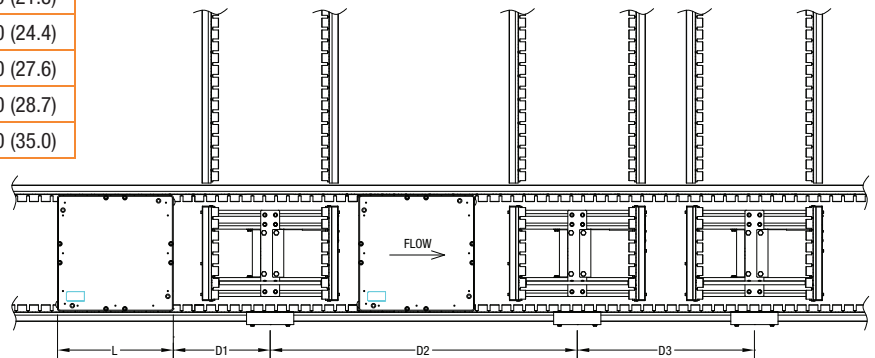
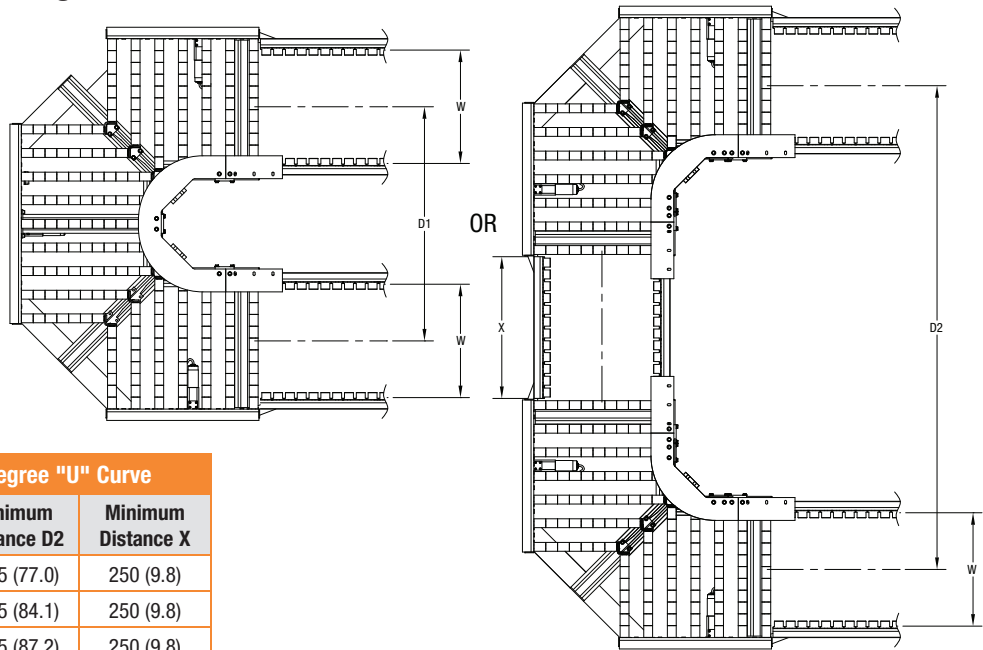| Parallel Conveyors with Lift & Transfer			
Pallet Width	Minimum Distance X	Minimum Distance Y	Minimum Distance Z
320 (12.6)	680 (27.8)	250 (9.8)	435 (17.1)
400 (15.75)	760 (29.9)	250 (9.8)	515 (20.3)
480 (18.9)	840 (33.0)	250 (9.8)	595 (23.4)
640 (25.2)	1000 (39.4)	250 (9.8)	755 (29.7)
800 (31.5)	1160 (45.7)	250 (9.8)	915 (36.0)
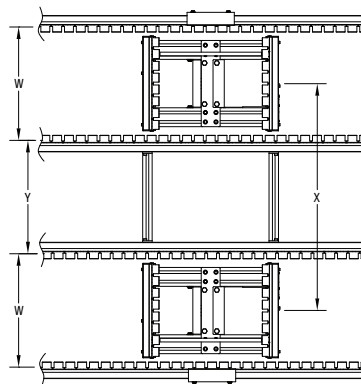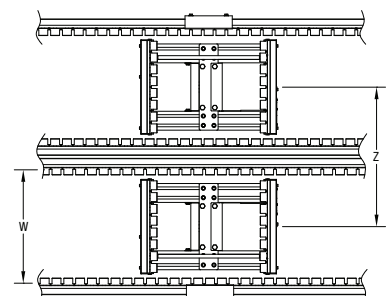
Dimensions = mm (in)

## ERT250 Module Spacing Guidelines *Continued*

OR

Parallel Conveyors with 180 Degree "U" Curve

Pallet Length	Minimum Distance D1	Minimum Distance D2	Minimum Distance X
320 (12.6)	840 (33.1)	1955 (77.0)	250 (9.8)
400 (15.75)	920 (36.2)	2135 (84.1)	250 (9.8)
480 (18.9)	1000 (39.4)	2215 (87.2)	250 (9.8)
640 (25.2)	1160 (45.7)	2475 (97.4)	250 (9.8)
800 (31.5)	1160 (45.7)	2735 (107.7)	250 (9.8)

Parallel Conveyors with 180 Degree "S" Curve

Pallet Length	Minimum Distance D1	Minimum Distance D2
320 (12.6)	1705 (67.1)	1705 (67.1)
400 (15.75)	1885 (74.2)	1885 (74.2)
480 (18.9)	1965 (77.4)	1965 (77.4)
640 (25.2)	2225 (87.6)	2225 (87.6)
800 (31.5)	2485 (97.8)	2485 (97.8)
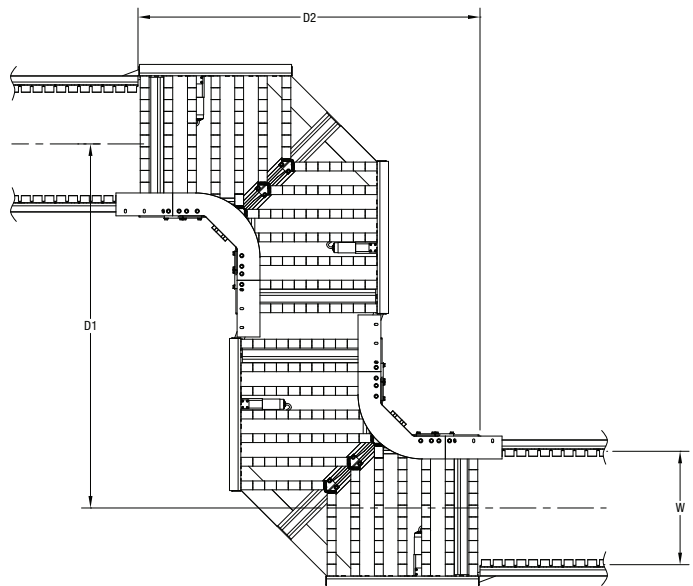
Lift & Locate Before 90 Degree Corner

Pallet Length	Minimum Distance D1	Minimum Distance D2
320 (12.6)	250 (9.8)	1100 (43.3)
400 (15.75)	290 (11.4)	1230 (48.4)
480 (18.9)	370 (14.6)	1350 (53.1)
640 (25.2)	530 (20.9)	1640 (64.6)
800 (31.5)	690 (27.2)	1930 (76.0)
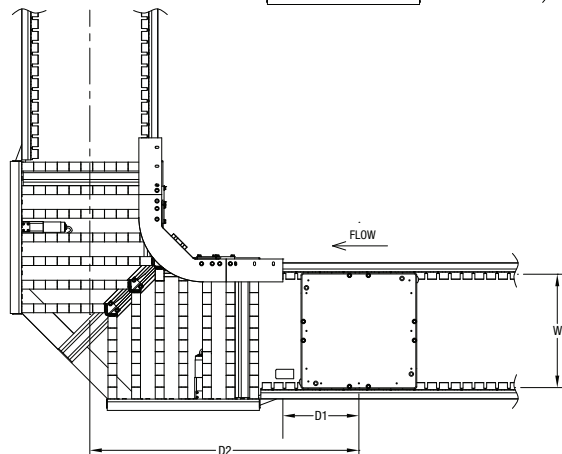
Dimensions = mm (in)
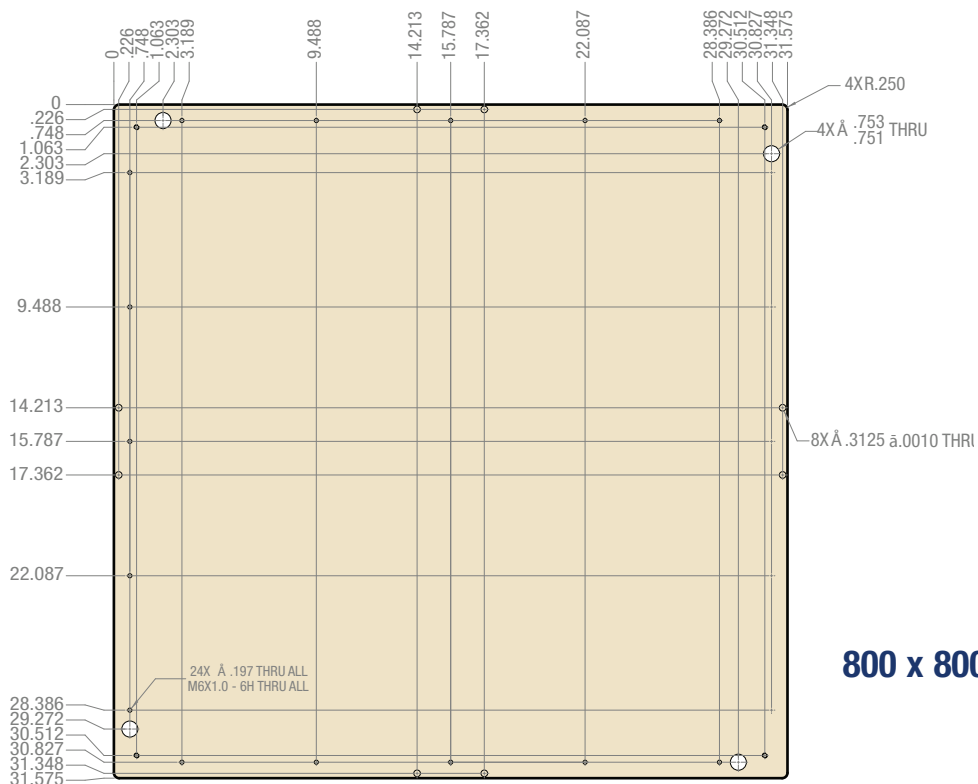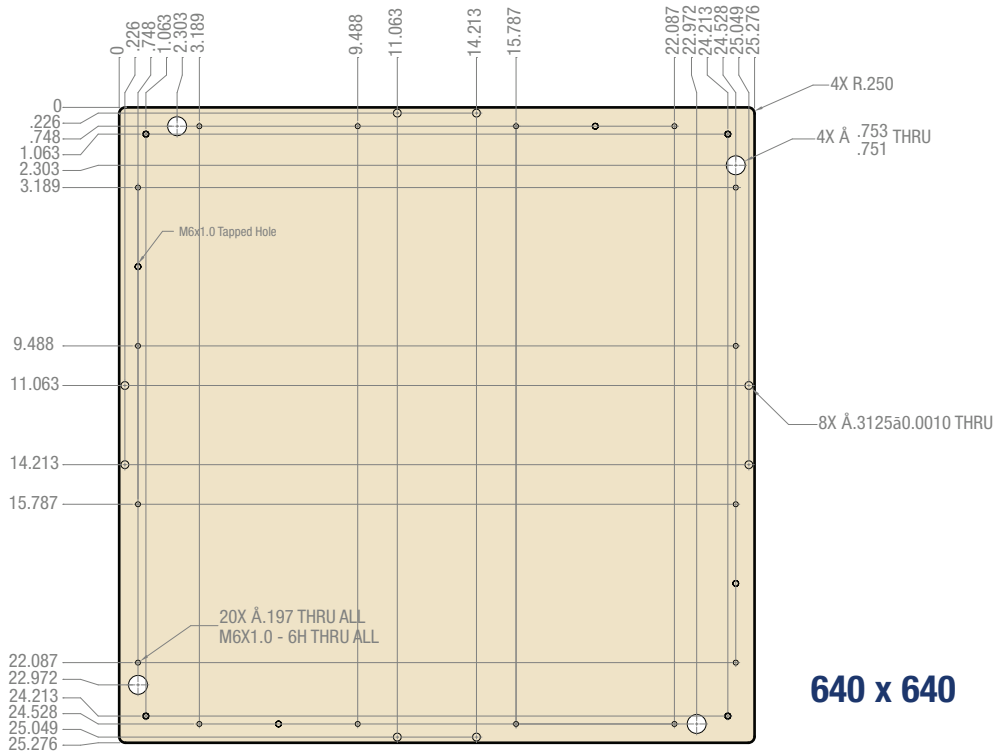Note: All dimensions assume square pallets

FLOW

ERT250 Pallet Plate Details Dimensions

The following details are for standard square pallets only. For other size pallets contact Dorner.

320 x 320

R.25 (4x)

Ø .753 / .751 THRU (4x)

Ø .2500 ±.001 THRU (8x)

M6X1.0 TAP THRU ALL (12x)

400 x 400

R.250 THRU (4X)

Ø .753 / .751 THRU (4X)

Ø .2500 ±.001 THRU (8X)

M6X1.0 TAP THRU ALL (16X)

480 x 480

R.25 (4x)

Ø .753 / .751 THRU (4x)

Ø .2500 ±.001 THRU (8x)

M6X1.0 TAP THRU ALL (12x)
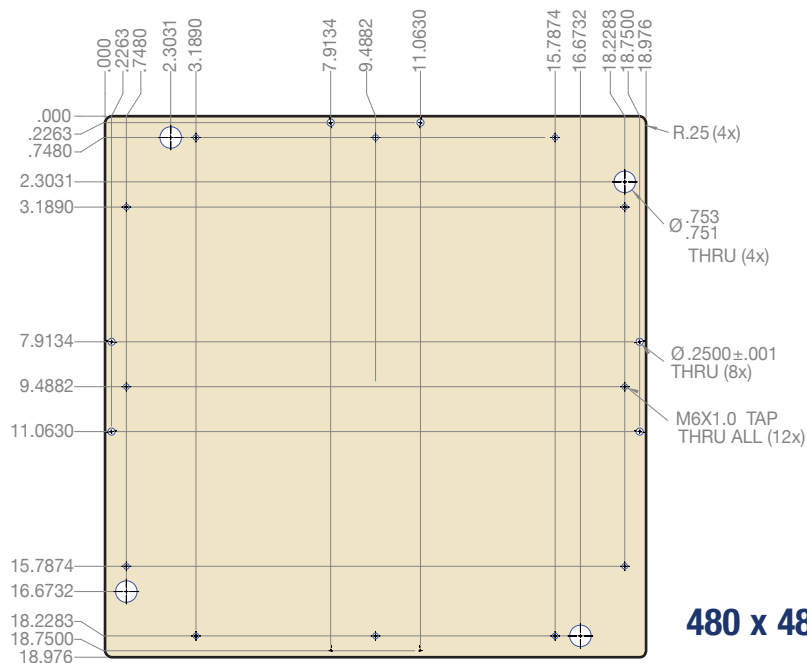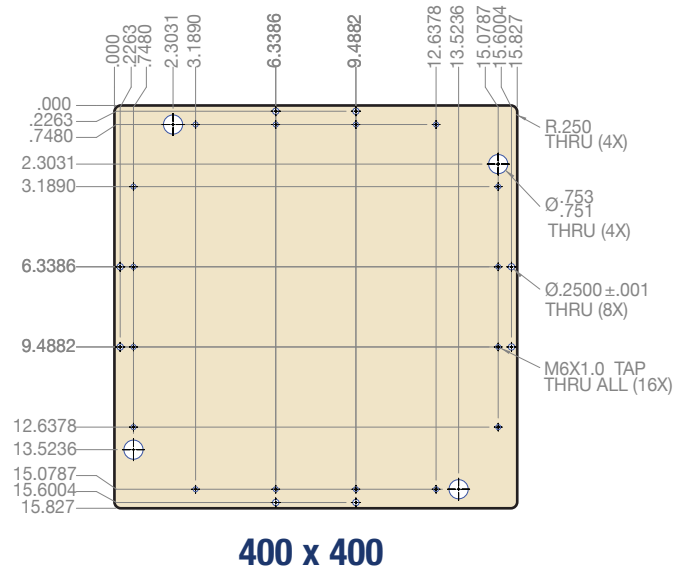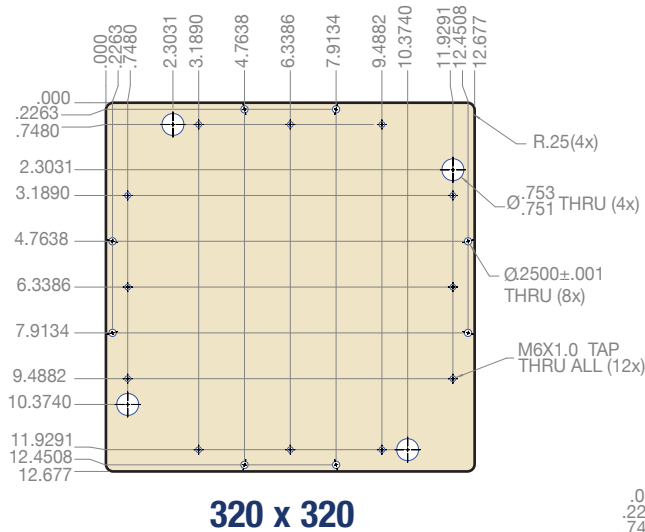
ERT250 Pallet Plate Details Dimensions *Continued*

The following details are for standard square pallets only. For other size pallets contact Dorner.

640 x 640

Labels on drawing: 4X R.250; 4X Ø .753 / .751 THRU; M6x1.0 Tapped Hole; 8X Ø.3125 ā0.0010 THRU; 20X Ø.197 THRU ALL M6X1.0 - 6H THRU ALL

800 x 800

Labels on drawing: 4X R.250; 4X Ø .753 / .751 THRU; 8X Ø .3125 ā.0010 THRU; 24X Ø .197 THRU ALL M6X1.0 - 6H THRU ALL

ERT®250
Edge Roller Technology

ERT250 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
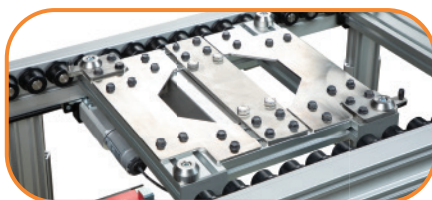
Flush Side Rail (Cleanroom)

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
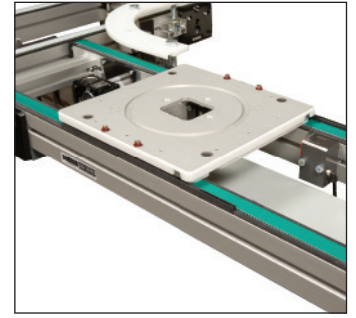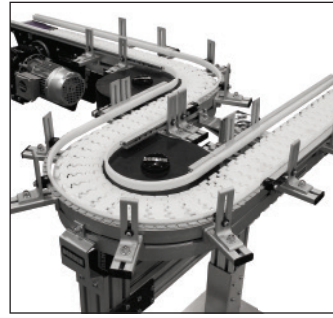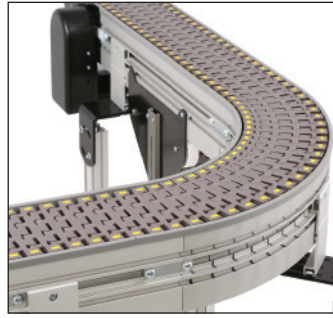
Lift & Transfer

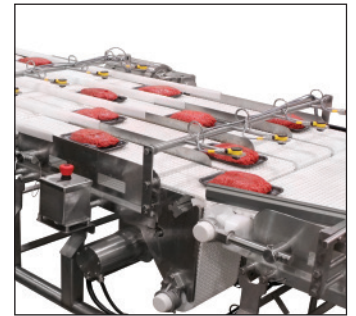90 & 180 Degree Corners

Pallet Pusher

Pallet Stops

DORNER

Industrial & Automation Conveyors

Sanitary Conveyors
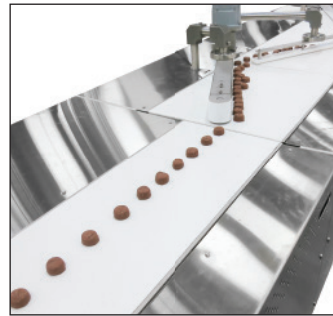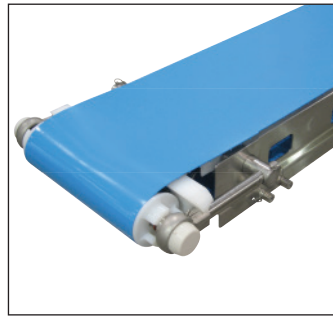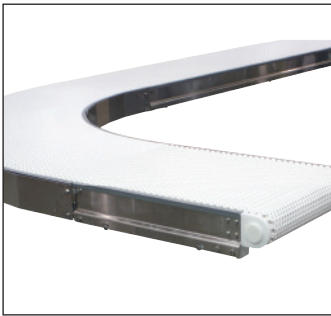
Engineered Solutions

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Service

D Tools — Online Configurator

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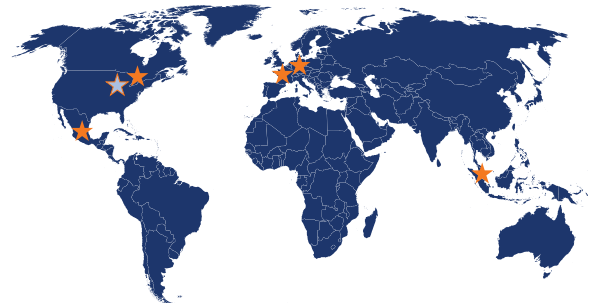info.latinamerica@dorner.com

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