



Vertical Belt Technology Conveyors

Installation and Maintenance Manual



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Introduction

CAUTION

Some illustrations may show guards removed. DO NOT operate equipment without guards.

Upon receipt of shipment:

- Compare shipment with packing slip. Contact factory regarding discrepancies.
- Inspect packages for shipping damage. Contact carrier regarding damage. Accessories may be shipped loose.
- See accessory instructions for installation.

The Dorner Limited Warranty applies.

Dorner reserves the right to make changes at any time without notice or obligation.

Warnings – General Safety



Product Description

Refer to (Figure 1) for typical conveyor components.

Ту	pical Components		
1	Conveyor		
2	Gearmotor		
3	Support Stands		
4	Drive End		
5	Idler End		
6	Hopper (Optional)		
	4		WARNING
	(2)	CP	USH HAZARD!

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Specifications

Specifications

Conveyor Width	12"	14"	16"	18"	20"	22"	24"
	(305 mm)	(357 mm)	(406 mm)	(457 mm)	(508 mm)	(559 mm)	(610 mm)
Pocket Width	6.3"	8.3"	10.3"	12.3"	14.3"	16.3"	18.3"
	(160 mm)	(211 mm)	(262 mm)	(312 mm)	(363 mm)	(414 mm)	(465 mm)
Full Pocket Capacity* (cubic ft.)	0.022	0.029	0.036	0.043	0.051	0.058	0.065

Conveyor Lengths - Infeed and Exit	20" (508 mm) - 120" (3048 mm) in .125" (3 mm) increments
Conveyor Heights	Minimum Infeed Height = 16" (406 mm) Maximum Exit Height = 240" (6096 mm) in .125" (3 mm) increments
Maximum Belt Speed	100 ft/minute (30 m/minute)

*Note: Do not size conveyor capacity beyond 1/2 pocket capacity.

Pocket capacity is dependent on product type and density.

Dorner recommends cleaning all the "food zones" prior to placing conveyor into service. Ensure adequate access is provided for cleaning and servicing equipment so that the required level of hygiene can be maintained.

Conveyor MUST be mounted straight, flat, level, and squared within confines of conveyor. Use a level during setup.

Required Tools

- Level
- 6 mm Hex Wrench
- 1/8" Hex Wrench
- 17 mm Wrench
- Support Strap
- Wooden Dowels
- Rope
- Bar Clamps
- Ladder
- Lift

Recommended Installation Sequence

- 1. Assemble the conveyor.
- 2. Install the gearmotor. Refer to "Drive Package Installation" on page 10.

Connecting Components

Typical Connection Components (Figure 2)

- 1 Conveyor Frames
- 2 Connecting Bars (x2)
- 3 Hex Head Cap Screws (x6)



Figure 2

1. Connect the conveyor frames (Figure 2, item 1) using connecting bar (Figure 2, item 2) and three hex head cap screws (Figure 2, item 3) on each side.

Belt Installation

1. Place the belt (Figure 3, item 1) in front of the conveyor (Figure 3, item 2) on the infeed side.



Figure 3

2. Insert the rope (Figure 4, item 1) through the belt.



Figure 4

3. Pull the rope (Figure 5, item 1) into the conveyor frame (Figure 5, item 2).



Figure 5

4. Bring the rope (Figure 6, item 1) up through the top of the conveyor frame (Figure 6, item 2).



Figure 6

Use the rope (Figure 7, item 1) to assist in lifting the 5. belt (Figure 7, item 2) to the top of the conveyor frame (Figure 7, item 3).



Figure 7

Make sure that the scoop cleats (Figure 8, item 1) are 6. oriented correctly.



Figure 8

Slide the support strap (Figure 9, item 1) through the 7. top of the belt (Figure 9, item 2).



Figure 9

8. Use a lift (Figure 10, item 1) to raise the belt (Figure 10, item 2) above the top of the conveyor frame (Figure 10, item 3).



Figure 10

9. Remove the rope (Figure 10, item 4). 10. On both sides of the conveyor, attach a bar clamp (Figure 11, item 1) to the belt midway up the column (Figure 11, item 2) on the incline side.



Figure 11

11. Make sure to attach the bar clamps above a frame section (Figure 11, item 3) so that the belt does not slip down.

Wear Strip and Crossmember Installation

Standard Wear Strips and Crossmembers

Typical Standard Wear Strips (Figure 12)

- 1 Wear Strips
- 2 Crossmembers
- 3 Pins



Figure 12

 Lift the belt and install the crossmembers (Figure 13, item 1) through the slots (Figure 13, item 2) in the frame.



Figure 13

2. With the belt still lifted, install the wear strips (Figure 14, item 1) onto the crossmembers.



Figure 14

3. Make sure the slots in the wear strips (Figure 14, item 2) line up properly with the crossmember slots (Figure 14, item 3).

End Pulley Installation

Typical End Pulley Components (Figure 15)



1. Lift the belt (Figure 16, item 1) and install the end pulley (Figure 16, item 2) into the frame.



Figure 16

- 2. Repeat the procedure for the other end pulley.
- 3. Lower the belt onto the end pulleys.
- 4. Remove the strap from the lift and then from the belt.

Drive Package Installation

Typical Motor Components (Figure 17)

- 1 Gear Reducer
- 2 Motor



Figure 17

1. Install two hex bars (Figure 18, item 1) to the gear reducer (Figure 18, item 2) with four hex head cap screws (Figure 18, item 3).



2. Install one hex bar (Figure 18, item 4) to the gear reducer with two spacers (Figure 18, item 5) and two hex head cap screws (Figure 18, item 6).

3. Install gear reducer (Figure 19, item 1) to the frame with three hex head cap screws (Figure 19, item 2).



Figure 19

4. Attach the motor (Figure 20, item 1) to the gear reducer (Figure 20, item 2) with four hex head cap screws (Figure 20, item 3).



Figure 20

Drive Pulley Installation

Typical Drive Pulley Components (Figure 21)

1 Drive Pulley



Figure 21

1. Insert dowels (Figure 22, item 1) through the conveyor frame (Figure 22, item 2) to create a space for the drive pulley assembly.



Figure 22

2. Install the drive pulley assembly (Figure 23, item 1) inserting the shaft into the gear reducer.



Figure 23

3. Install three bolts (Figure 24, item 1) into the drive pulley mounting plate (Figure 24, item 2). Tighten the bolts.



Figure 24

- 4. Remove the dowels (Figure 24, item 3).
- 5. Tighten the six set screws (Figure 25, item 1) on the gear reducer (Figure 25, item 2).



Figure 25

Belt Return Installation

Typical Belt Return Components (Figure 26)

1 Belt Returns



Figure 26

1. Install the scalloped return rollers (Figure 27, item 1) to the frame with hardware (Figure 27, item 2).



Figure 27

2. Repeat the procedure for all other scalloped return rollers.

Vibration Roller (Optional)

Typical Vibration Roller Components (Figure 28)





Figure 28

- 1. Lift the belt off of the end pulley to create space to install the vibration roller.
- 2. Install the vibration roller assembly (Figure 29, item 1) into the slots (Figure 29, item 2) in the conveyor frame below the end pulley.



Figure 29

Hopper with Guard (Optional)

1. Install the hopper (Figure 30, item 1) to the conveyor with four screws (Figure 30, item 2).



Figure 30

2. Tighten the screws.

Support Feet

1. Adjust the nuts (Figure 31, item 1) on the feet (Figure 31, item 2) until the conveyor is level and square to itself.



Figure 31

2. Lag bolt the feet to the floor.

Required Tools

- Level
- 6 mm Hex Wrench
- 1/8" Hex Wrench
- 17 mm Wrench
- Support Strap
- Wooden Dowels
- Rope
- Bar Clamps
- Ladder
- Lift

Checklist

• Replace any worn or damaged parts.

Cleaning

NOTE

Proper conveyor application, cleaning, and sanitation are the responsibility of the end user.

Dorner recommends cleaning all the "food zones" prior to placing conveyor into service. Ensure adequate access is provided for cleaning and servicing equipment so that the required level of hygiene can be maintained.

Routine Cleaning



Dorner recommends cleaning the inside and the outside of the conveyor on a daily basis.

DO NOT submerge or soak bearing assemblies. This will reduce the life of the bearing.

Periodic Cleaning

Dorner recommends complete disassembly of the conveyor periodically for thorough cleaning.

For conveyor disassembly and reassembly instructions:

- Refer to "Conveyor Belt Replacement" on page 15.
- Refer to "Pulley Removal" on page 23.

Lubrication

Conveyor Bearings

Conveyor bearing lubrication is required. Dorner recommends using an H-1 food grade grease.

NOTE

Although bearings are sealed, re-greasing is recommended to increase bearing life. An H-1 food grade grease is recommended. The frequency of bearing re-greasing is dependent upon the application in which the conveyor is being used. Frequency of regreasing will increase with the frequency of conveyor washing.

 Add grease to the bearing using the zerk fitting (Figure 32, item 1) on the exterior of the bearing flange assembly.



Figure 32

2. Replace the bearing flange assembly if the bearing becomes worn.

Maintaining the Conveyor Belt

Troubleshooting

Inspect conveyor belt for:

· Surface cuts or wear

Damage to the belt, surface cuts and / or wear indicate:

- · Sharp or heavy parts impacting belt
- Jammed parts
- Accumulated dirt
- Foreign material inside the conveyor
- Improperly positioned accessories
- · Excessive load on belt
- Dirt impacted on spindle
- Excessive or improper side loading
- Improper tracking

Skipping indicates:

- Excessive load on belt
- Worn spindle or impacted dirt on drive spindle
- Improper tracking

Wearstrips and Belt Returns

Replace the wearstrips and belt returns if they become worn.

For wearstrip and belt return installation instructions:

- Refer to "Wear Strip and Crossmember Installation" on page 8.
- Refer to "Belt Return Installation" on page 12.

Belt Guides

 Remove the guides, if equipped, by removing the nuts (Figure 33, item 1) that connect the guide (Figure 33, item 2) to the frame.



Figure 33

- 2. Inspect parts for wear or damage and replace as needed.
- 3. Repeat the procedure for all other belt guides.

Conveyor Belt Replacement



Removal

1. If equipped, remove the hopper (Figure 34, item 1) by removing the four screws (Figure 34, item 2). Lift the hopper off of the conveyor.



Figure 34

2. Lift the belt and remove the wearstrips (Figure 35, item 1).



Figure 35

3. Remove the crossmembers (Figure 36, item 1).



Figure 36

4. With the belt still lifted, remove the end pulley (Figure 37, item 1).

7. Slide the support strap (Figure 39, item 1) through the top of the belt so that the straps can hook onto the lift mechanism (Figure 39, item 2).



Figure 39



Figure 37

5. Loosen the bolt (Figure 38, item 1) and remove the scalloped return roller (Figure 38, item 2) on the inside of the belt.



Figure 38

6. Repeat the procedure for all other scalloped return rollers.

8. Lift the weight of the belt (Figure 40, item 1).



Figure 40

 On both sides of the conveyor, attach a bar clamp (Figure 41, item 1) to the belt midway up the column (Figure 41, item 2) on the incline side.



Figure 41

- Make sure to attach the bar clamps above a frame section (Figure 41, item 3) so that the belt does not slip down.
- 11. Lift the belt (Figure 42, item 1) to create more slack and remove the end pulley (Figure 42, item 2) from the output end.



Figure 42

12. Loosen the six set screws (Figure 43, item 1) on the gear reducer (Figure 43, item 1).



Figure 43

13. Raise the belt (Figure 44, item 1) so that it is not resting on the drive pulley assembly (Figure 44, item 2).



Figure 44

14. Remove the three bolts (Figure 45, item 1) on the drive pulley mounting plate (Figure 45, item 2).



Figure 45

15. Remove the drive pulley assembly (Figure 46, item 1).



Figure 46

 Insert the rope (Figure 47, item 1) through the belt (Figure 47, item 2) so it can support the weight of the belt once the lift is lowered.





17. Lower the lift (Figure 48, item 1) and remove the support strap (Figure 48, item 2).



Figure 48

18. Remove the support strap (Figure 49, item 1) from the belt.



Figure 49

19. Remove the bar clamps (Figure 50, item 1) from the belt (Figure 50, item 2).



Figure 50

20. Use the rope (Figure 51, item 1) to safely lower the belt (Figure 51, item 2).



Figure 51

21. Remove the belt (Figure 52, item 1) from the conveyor frame.



Figure 52

Installation

1. Place the belt (Figure 53, item 1) in front of the conveyor (Figure 53, item 2) on the infeed side.





2. Insert the rope (Figure 54, item 1) through the belt.



Figure 54

3. Pull the rope (Figure 55, item 1) into the conveyor frame (Figure 55, item 2).



Figure 55

4. Bring the rope (Figure 56, item 1) up through the top of the conveyor frame (Figure 56, item 2).



Figure 56

5. Use the rope (Figure 57, item 1) to assist in lifting the belt (Figure 57, item 2) to the top of the conveyor frame (Figure 57, item 3).



Figure 57

6. Make sure that the scoop cleats (Figure 58, item 1) are oriented correctly.



Figure 58

Slide the support strap (Figure 59, item 1) through the 7. top of the belt (Figure 59, item 2).



Figure 59

8. Use a lift (Figure 60, item 1) to raise the belt (Figure 60, item 2) above the top of the conveyor frame (Figure 60, item 3).

10. On both sides of the conveyor, attach a bar clamp (Figure 61, item 1) to the belt midway up the column (Figure 61, item 2) on the incline side.



Figure 61

- 11. Make sure to attach the bar clamps above a frame section (Figure 61, item 3) so that the belt does not slip down.
- 12. Insert dowels (Figure 62, item 1) through the conveyor frame (Figure 62, item 2) to create a space for the drive pulley assembly.



Figure 62



Figure 60

Remove the rope (Figure 60, item 4). 9.

13. Install the drive pulley assembly (Figure 63, item 1) inserting the shaft into the gear reducer.



Figure 63

14. Install three bolts (Figure 64, item 1) into the drive pulley mounting plate (Figure 64, item 2). Tighten the bolts.



Figure 64

15. Remove the dowels (Figure 64, item 3).

16. Lower the belt (Figure 65, item 1) with the lift to create slack in the belt.



Figure 65

- 17. Install the end pulley (Figure 65, item 2) on the output end of the conveyor.
- 18. Lower the belt (Figure 66, item 1) until it is resting on the end pulley (Figure 66, item 2).



Figure 66

19. Remove the support strap (Figure 66, item 3) from the lift and then from the belt.

20. Tighten the six set screws (Figure 67, item 1) on the gear reducer (Figure 67, item 2).



Figure 67

- 21. Remove the slack (Figure 68, item 1) from the belt.

Figure 68

22. On both sides of the conveyor, remove the bar clamps (Figure 69, item 1) from the belt.



Figure 69

23. Lift the belt and install the crossmembers (Figure 70, item 1) through the slots (Figure 70, item 2) in the frame.



Figure 70

24. Install the wear strips (Figure 71, item 1) onto the crossmembers.



Figure 71

- 25. Make sure the slots in the wear strips (Figure 71, item 2) line up properly with the crossmember slots (Figure 71, item 3).
- 26. With the belt still lifted, install the end pulley (Figure 72, item 1) on the infeed end.



Figure 72

27. Install the scalloped return roller (Figure 73, item 1) to the frame with hardware (Figure 73, item 2).



Figure 73

- 28. Repeat the procedure for all other scalloped return rollers.
- 29. If equipped, install the hopper (Figure 74, item 1) to the conveyor with four screws (Figure 74, item 2).





30. Tighten the screws.

Pulley Removal



- Remove the pulley by following the instructions for the specific pulley type:
- A Drive Pulley Removal
- B End Pulleys Removal

A - Drive Pulley Removal



1. Loosen the six set screws (Figure 75, item 1) on the gear reducer (Figure 75, item 1).



Figure 75

2. Remove the three bolts (Figure 76, item 1) on the drive pulley mounting plate (Figure 76, item 2).



Figure 76

3. Remove the drive pulley assembly (Figure 77, item 1).



Figure 77

4. Inspect the drive pulley assembly for worn or damaged parts.

B - End Pulley Removal

1. Lift the belt (Figure 78, item 1) and remove the end pulley (Figure 78, item 2) from the frame.



Figure 78

- 2. Repeat the procedure for the other end pulley.
- 3. Inspect the end pulley assembly for worn or damaged parts.

Bearing Replacement

1. Remove the bearing cover (Figure 79, item 1).



Figure 79

- 2. Use a hex wrench to loosen the bearing shaft assembly fasteners (Figure 79, item 2).
- 3. Remove three screws (Figure 79, item 3) attaching the bearing flange assembly to the mounting plate (Figure 79, item 4).
- 4. Slide the bearing flange assembly (Figure 79, item 5) off the pulley shaft end (Figure 79, item 6).

Optional Vibration Roller Removal

- 1. Lift the belt off of the end pulley to create space to remove the vibration roller.
- Remove the vibration roller assembly (Figure 80, item 1) from the slots (Figure 80, item 2) in the conveyor frame below the end pulley.



Figure 80

Return Policy

Returns must have prior written factory authorization or they will not be accepted. Items that are returned to Dorner without authorization will not be credited nor returned to the original sender. When calling for authorization, please have the following information ready for the Dorner factory representative or your local distributor:

- 1. Name and address of customer.
- 2. Dorner part number(s) of item(s) being returned.
- 3. Reason for return.
- 4. Customer's original order number used when ordering the item(s).
- 5. Dorner or distributor invoice number (if available, part serial number).

A representative will discuss action to be taken on the returned items and provide a Returned Goods Authorization (RMA) number for reference. RMA will automatically close 30 days after being issued. To get credit, items must be new and undamaged. There will be a return charge on all items returned for credit, where Dorner was not at fault. It is the customer's responsibility to prevent damage during return shipping. Damaged or modified items will not be accepted. The customer is responsible for return freight.

	Product Type								
	Standard Products							Engineered to order parts	
Product Line	Conveyors	Gearmotors & Mounting Packages	Support Stands	Accessories	Spare Parts (non-belt)	Spare Belts - Standard Flat Fabric	Spare Belts - Cleated & Specialty Fabric	Spare Belts - Plastic Chain	All equipment and parts
1100									
2200									
2200 Modular Belt									
2200 Precision Move									
2300									
2300 Modular Belt		30% return fee for all products except: 50% return fee for conveyors with modular belt, cleated belt or specialty belts non-returnable							
3200									
3200 LPZ									case-by-case
3200 Precision Move									
4100									
5200									
5300									
6200									
Controls									
7200 / 7300	50% return fee for all products								
7350							•		•
7360	non-returnable								
7400									
7600									

Returns will not be accepted after 60 days from original invoice date. The return charge covers inspection, cleaning, disassembly, disposal and reissuing of components to inventory. If a replacement is needed prior to evaluation of returned item, a purchase order must be issued. Credit (if any) is issued only after return and evaluation is complete.

Dorner has representatives throughout the world. Contact Dorner for the name of your local representative. Our Customer Service Team will gladly help with your questions on Dorner products.

For a copy of Dorner's Warranty, contact factory, distributor, service center or visit our website at www.dorner.com.

For replacement parts, contact an authorized Dorner Service Center or the factory.



Dorner Mfg. Corp. reserves the right to change or discontinue products without notice. All products and services are covered in accordance with our standard warranty. All rights reserved. © Dorner Mfg. Corp. 2015 DORNER MFG. CORP.

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