

# ENGINEERING MANUAL

FDA Approved Materials  
& Components

Fast, Simple to Use  
Online Configurator

Rapid Deliveries

BISSC  
Certified Conveyors



*Aqua***Gard**<sup>®</sup>  
Low Profile **LP**

## CONVEYORS

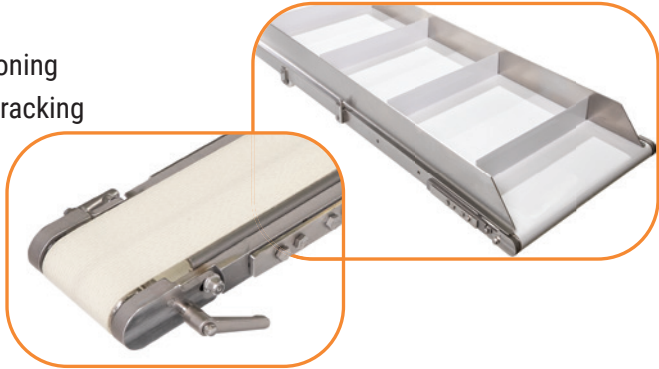
Stainless Steel Conveyors for Dry, Wipe Down  
and Wet Applications

**DORNER**<sup>®</sup>  
By Columbus McKinnon



## Sleek, Low Profile Design

- Quick, five-minute belt change for increased uptime
- Bolt slider mechanism for fast, single point belt tensioning
- V-Groove frame with V-Guided belt ensures accurate tracking
- Streamlined design fits where other conveyors do not
- Low profile, robust welded frame design, for easy cleaning
- Small 31.75mm (1.25 in) diameter end rollers for transfer of small products
- Nose Bar options reduces diameter to 8 mm (0.3 in) or 16 mm (0.6 in) for smaller product transfers



## Innovative and Durable

- 304 Stainless Steel welded frame with minimal horizontal surfaces
- Designed for wipe down and low pressure wash-down with non-caustic chemicals
- Tip-up tails for access inside the conveyor for cleaning and maintenance
- Compact and enclosed tensioning system providing smooth and snag-free cleaning
- Carriage bolt on guiding for easy set up
- Mid drive option allows for motor relocation to middle of conveyor



Tip-Up Tails



High Side Guide Block with Carriage Bolt

## Engineered Solutions

- Dorner's Engineered Solutions Group can tailor fit AquaGard Conveyors for specific applications and product handling requirements
- With a custom-designed conveyor system in place and the help of highly specialized engineering, your products are processed faster, your services are delivered quicker, and your profits are increased
- Solutions include: chicaning, retracting tails, depositing and rejects, merging, product flow, and more!



## The Benefits of Dorner AquaGard Conveyors

### Industry Ready

- Designed and manufactured to food equipment standards
- BISSC certified conveyors
- FDA approved materials and components
- Washdown rated gearmotors and controls

### A Focus on Speed

- Dorner sets the industry standard for rapid delivery
- Sanitary conveyors ship in as little as 10 business days
- Fast and effective design reduces cleaning preparation time



## FABRIC BELTS

PAGE 14-16

## BELTED CONVEYORS PROFILES & GUIDING

PAGE 12

## BELTED CONVEYORS

PAGE 8-11

## SUPPORT STANDS & ACCESSORIES

PAGE 26-28

## BELT SPEED CHARTS

PAGE 19-20

## ENGINEERED SOLUTIONS

PAGE 29

## CONTROLS

PAGE 25

## GEARMOTOR MOUNTING PACKAGES

PAGE 17-18

## GEARMOTORS

PAGE 21-24

## ACCESSORIES

PAGE 30



## TECHNICAL DATA & CALCULATIONS

PAGE 31-44





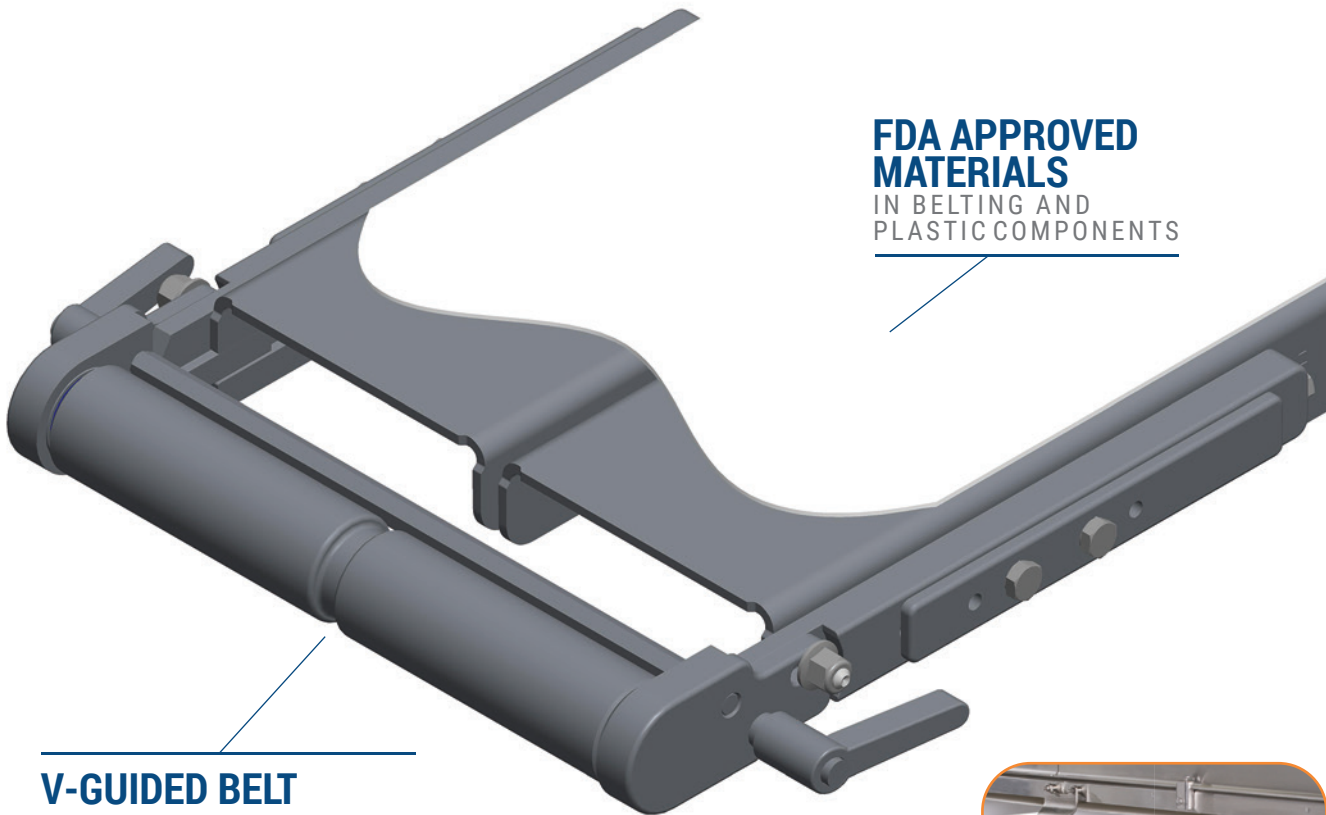
### TIP-UP TAILS\*

FOR ACCESS INSIDE CONVEYOR  
FOR CLEANING AND MAINTENANCE



### TOOL LESS TIP-UP OPTION

ALLOWS FASTER BELT CHANGES  
AND CLEANING



### FDA APPROVED MATERIALS

IN BELTING AND  
PLASTIC COMPONENTS

### V-GUIDED BELT COMPATIBLE

V-GUIDE BELT ENSURE  
PROPER BELT TRACKING AND  
IMPROVES CONVEYOR UP  
TIME

### ROBUST OPEN LEG SUPPORT STANDS

7 GAUGE WELDED STAINLESS STEEL



\*Note: Do not run the conveyor with the tail in the tip-up position.

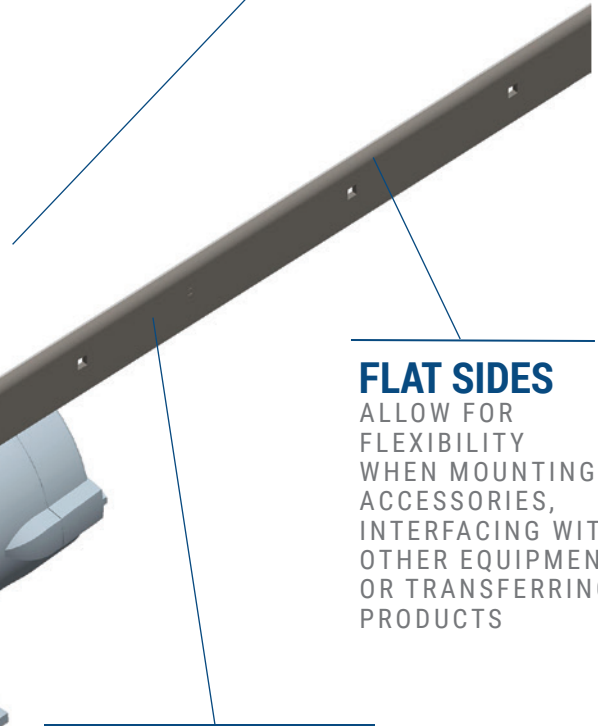




## ENCLOSED TRACKING SYSTEM

BELT TRACKING SYSTEM IS FULLY ENCLOSED TO PROVIDE ADJUSTMENT WITHOUT EXPOSED THREADS

## MINIMAL HORIZONTAL SURFACES FOR EASY TO CLEAN SANITARY SURFACES



## FLAT SIDES

ALLOW FOR FLEXIBILITY WHEN MOUNTING ACCESSORIES, INTERFACING WITH OTHER EQUIPMENT OR TRANSFERRING PRODUCTS

## STAINLESS STEEL BED RAILS

BED PLATE VOIDS TO MINIMIZE BELT "STICK-TION" IN WET APPLICATIONS

## SIDE & BOTTOM MOUNT MOTOR PACKAGES

FOR APPLICATION FLEXIBILITY



## ROBUST STAINLESS GUIDING

BOLT-ON TO 150 MM (6 INCH) TALL



## SIDE & BOTTOM MOUNT MOTOR PACKAGES

FOR APPLICATION FLEXIBILITY

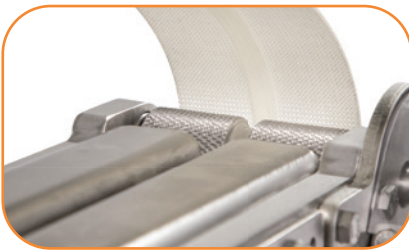


## Specifications

- Loads up to 22.7 kg (50 lbs)\*
- Belt speeds up to 75 m/min (246 ft/min)
- Belt widths: 70 mm (2.75 in) to 457 mm (18 in)
- Conveyor lengths: 500 mm (19.7 in) to 5485 mm (18 ft)
- One revolution of drive pulley moves the belt approximately 107 mm (4.2 in)
- Robust welded 304 Stainless Steel Frame
- Stainless steel bearing with FDA H2 food grade grease
- FDA approved belting and plastic components
- Minimal horizontal surfaces
- Suitable for use in wet environments
- Stainless Steel construction for wipe down and low pressure washdown with non-caustic solutions
- V-guide belt tracking
- Variety of guiding options



**STANDARD FEATURE:  
Nose Bar Tip-Up Tail\*\***



**STANDARD FEATURE:  
V-Guided Belt Tracking**



**STANDARD FEATURE:  
Tip-Up Tail\*\***



**OPTIONAL:  
Tool-less Fully Adjustable Round**

### AquaGard LP Belted Flat Belt End Drive Conveyor

72	E	M	W	W	-	L	L	L	L	V	D	A	I	R	S	P	P	P	P	B	B
Belt Type: See Pages 12-16 for belt selection																					
Profile (D side)																					
Profile (A side)																					
01 = Low Side    02 = 25mm (1 in) SS High Side    04 = 75 mm (3 in) SS High Side    06 = 152 mm (6 in) SS High Side																					
13 = Fully Adjustable Round    14 = Tool-less Fully Adjustable Round																					
Support Type:																					
A = No Stand Mount Mounting brackets    B = Standard Support Stands    C = Table Top Mounting Brackets																					
Return Rollers: 0 = No Return Rollers    1 = INCLUDES RETURN ROLLERS																					
Idle Tail Type: 1 = Standard Tip-up Idler    2 = Tool-less Tip-up Idler    3 = 8 mm (0.3 in) Nosebar Tip-up Tail																					
4 = 16 mm (0.6 in) Nosebar Tip-up Tail    5 = 8 mm (0.3 in) Nosebar Tool-less Tip-up Tail																					
6 = 16 mm (0.6 in) Nosebar Tool-less Tip-up Tail																					
Drive Shaft Position: A, B, C or D																					
Drive Tail Type: 1 = Standard, 2 = Aux shaft																					
V-Guide Options: A = V-Guided Belt (not available for 8 mm nosebar),    B = Non V-Guided Belt																					
Conveyor Length (mm): 00500 to 05485 in 5 mm increments (19.7 in - 18 ft)																					
Conveyor Width Reference (mm): = 070 - 457 (See Width Conversion chart)																					
Documentation Language: M = US English, U = Europe English, D = German, F = French, S = Spanish																					

Width Conversion	
WWW (mm)	WWW (in)
70	2.75
95	3.75
152	6
203	8
254	10
305	12
406	16
457	18

Width Conversion	
WWW (mm)	WWW (in)
70	2.75
95	3.75
152	6
203	8
254	10
305	12
406	16
457	18

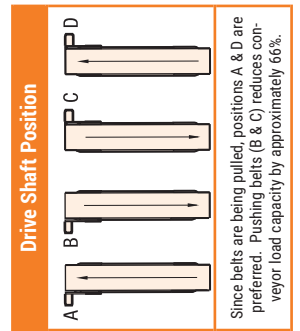
\* Conveyor load capacity depends on conveyor size, incline, motor position, accumulated loads and other factors.

\*\* Note: Do not run the conveyor with the tail in the tip-up position.

Order gearmotor mounting packages and gearmotors separately, see pages 17-23.  
For support stands and accessories, see page 27-29.



**AquaGard<sup>®</sup>**  
Low Profile LP



STANDARD SIZES									
Conveyor Width Reference		070	095	152	203	254	305	406	457
Conveyor Belt Width (W)		70 (2.75)	95 (3.75)	152 (6)	203 (8)	254 (10)	305 (12)	406 (16)	457 (18)
Conveyor Length Reference		00500			00005 increments up to...			05485	
Conveyor Length (L)		500 (19.7)			5 mm (0.2in) increments up to...			5485 (216)	

**VORNER®**



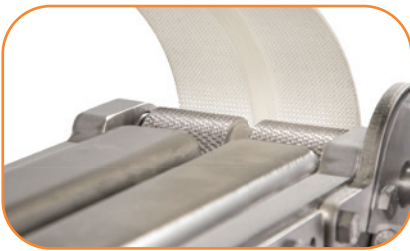


## Specifications

- Mid drive conveyors allows nose bar on both ends
- Loads up to 22.7 kg (50 lbs)\*
- Belt speeds up to 75 m/min (246 ft/min)
- Belt widths: 70 mm (2.75 in) to 457 mm (18 in)
- Conveyor lengths: 1135 mm (45 in) to 5485 mm (18 ft)
- One revolution of drive pulley moves the belt approximately 107 mm (4.2 in)
- Robust welded 304 Stainless Steel Frame
- Stainless steel bearing with FDA H2 food grade grease
- FDA approved belting and plastic components
- Minimal horizontal surfaces
- Suitable for use in wet environments
- Stainless Steel construction for wipe down and low pressure washdown with non-caustic solutions
- V-guide belt tracking
- Variety of guiding options



**STANDARD FEATURE:  
Nose Bar Tip-Up Tail\*\***



### STANDARD FEATURE: V-Guided Belt Tracking



**STANDARD FEATURE:**  
**Tip-Up Tail\*\***



### OPTIONAL: Tool-less Fully Adjustable Round

## AquaGard LP Belted Flat Belt End Drive Conveyor

72 E M W W W - L L L L L V D A I R S P P P P P B B

— Belt Type: See Pages 12-16 for belt selection

— Profile (D side)

— Profile (A side)

01 = Low Side 02 = 25mm (1 in) SS High Side 04 = 75 mm (3 in) SS High Side 06 = 152 mm (6 in) SS High Side

13 = Fully Adjustable Round 14 = Tool-less Fully Adjustable Round

— Support Type:

A = No Stand Mount Mounting brackets B = Standard Support Stands C = Table Top Mounting Brackets

— Return Rollers: 0 = No Return Rollers 1 = INCLUDES RETURN ROLLERS

— Idler Tail Type: 1 = Standard Tip-up Idler 2 = Tool-less Tip-up Idler 3 = 8 mm (0.3 in) Nosebar Tip-up Tail

4 = 16 mm (0.6 in) Nosebar Tip-up Tail 5 = 8 mm (0.3 in) Nosebar Tool-less Tip-up Tail

6 = 16 mm (0.6 in) Nosebar Tool-less Tip-up Tail

— Drive Shaft Position: A, D, E = shaft both sides; drive on A side F = shaft both sides; drive on D side

— Drive Tail Type: 1 = Standard 2 = Aux shaft opposite side as drive 3 = 8mm Nosebar 4 = 16mm Nosebar

5 = Aux shaft same side as drive 6 = Aux shaft both sides

— V-Guide Options: A = V-Guided Belt (not available for 8 mm nosebar), B = Non V-Guided Belt

— Conveyor Length (mm): 001135 to 05485 in 5 mm increments (45 in - 18 ft)

— Conveyor Width Reference (mm): = 070 - 457 (See Width Conversion chart)

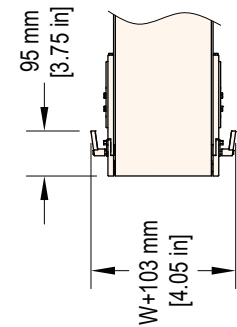
— Documentation Language: M = US English, U = Europe English, D = German, F = French, S = Spanish

\* Conveyor load capacity depends on conveyor size, incline, motor position, accumulated loads and other factors.

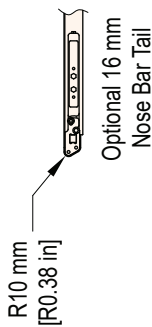
**\*\* Note:** Do not run the conveyor with the tail in the tip-up position.

Order gearmotor mounting packages and gearmotors separately, see pages 17-23.  
For support stands and accessories, see page 27-29.

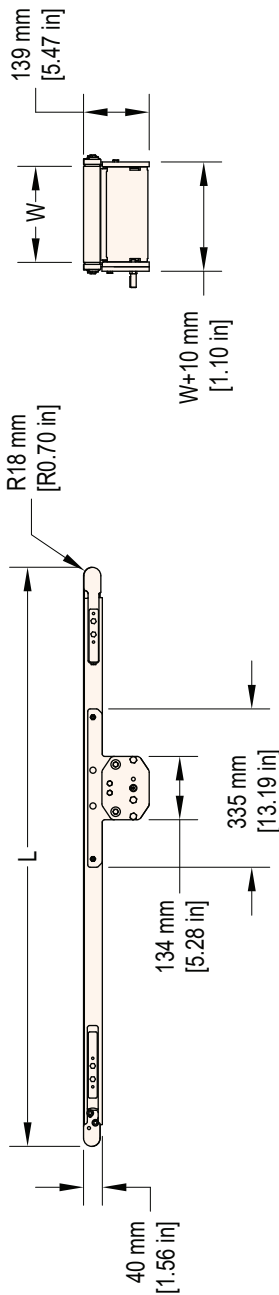
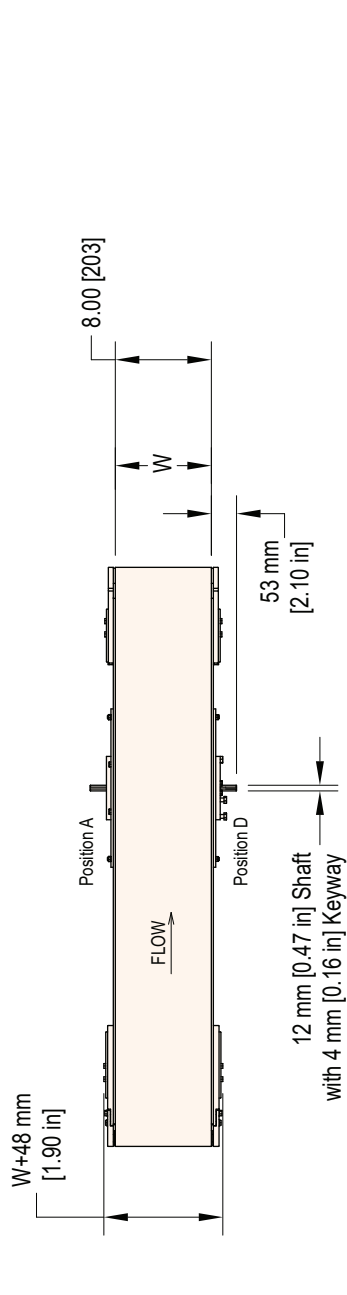




Optional Tool-Less  
Tip Up Tail

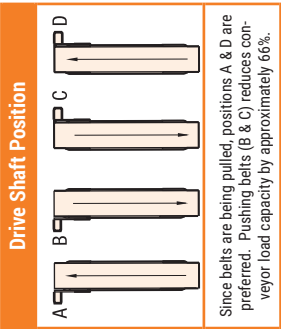


8 mm & 16 mm NoseBar, idler tail only



W = Conveyor Belt Width Dim = mm (in)

STANDARD SIZES									
Conveyor Width Reference	070	095	152	203	254	305	406	457	
Conveyor Belt Width (W)	70 (2.75)	95 (3.75)	152 (6)	203 (8)	254 (10)	305 (12)	406 (16)	457 (18)	
Conveyor Length Reference	00500		00005 increments up to ...		05485				
Conveyor Length (L)	500 (19.7)		5 mm (0.2in) increments up to...		5485 (216)				



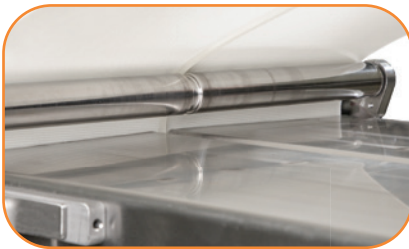
Due to the wide variety of drive set ups and applications, point of installation guarding is the responsibility of the end user.





## Specifications

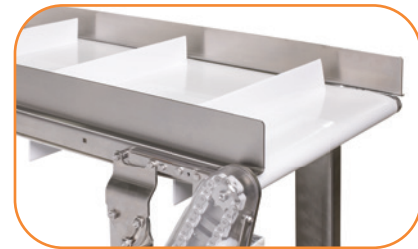
- Loads up to 22.7 kg (50 lbs)\*
- Belt speeds up to 75 m/min (246 ft/min)
- Belt widths: 70 mm (2.75 in) to 457 mm (18 in)
- Conveyor lengths: 500 mm (19.7 in) to 5485 mm (18 ft)
- Cleat heights from 11 mm (0.43 in) to 67 mm (2.63 in)
- Robust welded 304 Stainless Steel Frame
- Stainless steel bearing with FDA H2 food grade grease
- FDA approved belting and plastic components
- Cleated belt options include sealed edge and encased
- Minimal horizontal surfaces
- Suitable for use in wet environments
- Stainless Steel construction for wipe down and low pressure washdown with non-caustic solutions
- Rugged Stainless Steel guiding



**STANDARD FEATURE:**  
**V-Guided Belt Tracking**



**STANDARD FEATURE:**  
**Tip-Up Tail\*\***



**OPTIONAL: High Side Guides**  
**Up to 76 mm (3 in) Tall**

AquaGard LP Cleated Belt Conveyor

72 C M W W W - L L L L V D A I R S P B S S S S

Spacing: SSSS in millimeters

Belt/Cleat Type: See Pages 12-16 for belt selection

Profile

0 = Low Side    2 = Cleated 25mm SS High Side    3 = Cleated 75 mm (3 in) SS High Side    6 = Cleated 152 mm (6 in) SS High Side

Support Type:

A = No Stand Mount Mounting brackets    B = Standard Support Stands    C = Table Top Mounting Brackets

Return Rollers: 0 = No Return Rollers    1 = INCLUDES RETURN ROLLERS

Idler Tail Type: 1 = Standard Tip-up Idler, 2 = Tool-less Tip-up Idler

Drive Shaft Position: A, B, C, or D

Drive Tail Option: 1 = Standard, 2 = Aux shaft

V-Guide Options: A = V-Guided Belt,    B = Non V-Guided Belt

Conveyor Length (mm): 00500 to 05485 in 5 mm increments (36 - 480 in)

Conveyor Width Reference (mm): = 070 - 457 (See Width Conversion chart)

Documentation Language: M = US English, U = Europe English, D = German, F = French, S = Spanish

Width Conversion

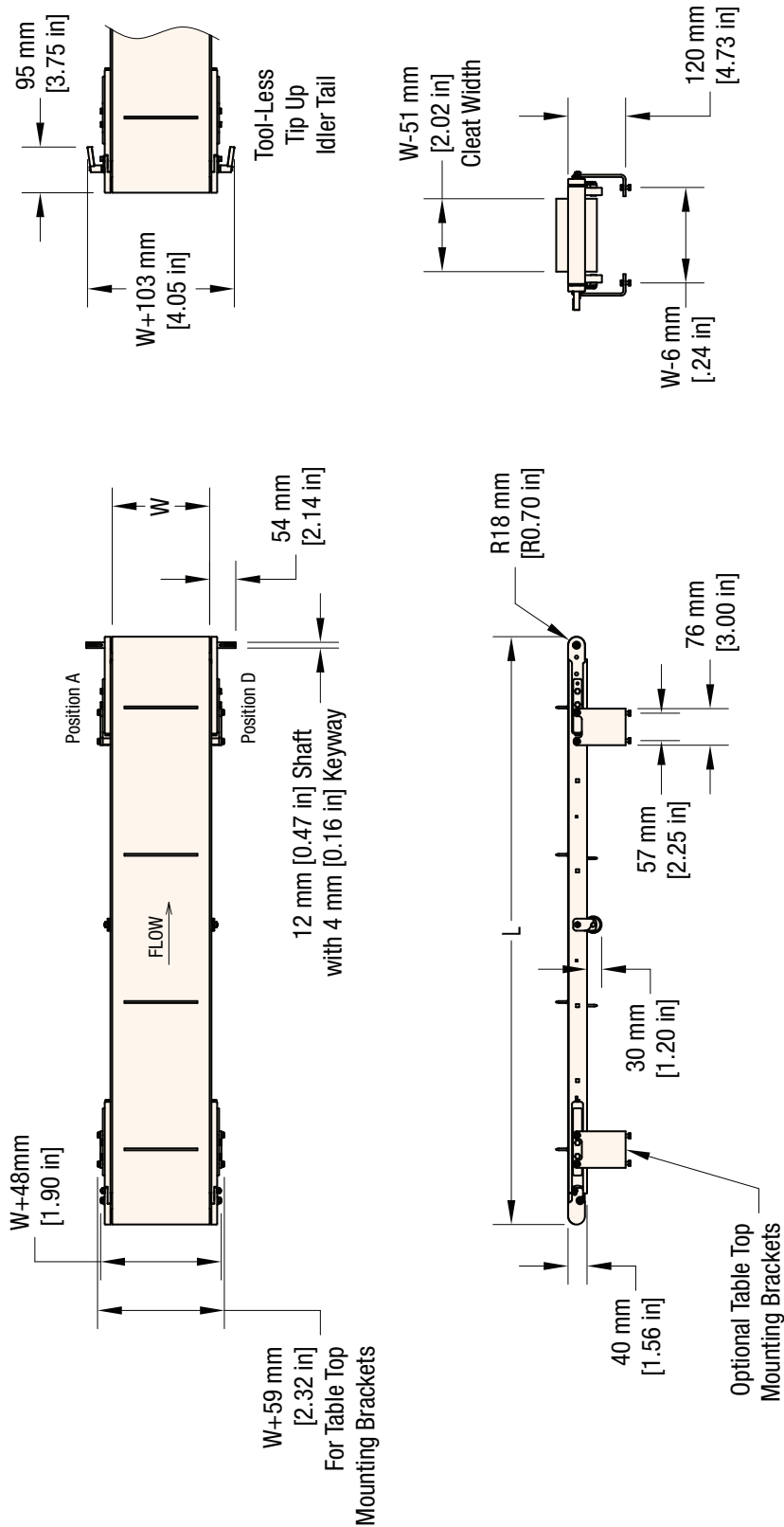
WWW (mm)	WWW (in)
70	2.75
95	3.75
152	6
203	8
254	10
305	12
406	16
457	18

\* Conveyor load capacity depends on conveyor size, incline, motor position, accumulated loads and other factors.

\*\* Note: Do not run the conveyor with the tail in the tip-up position.

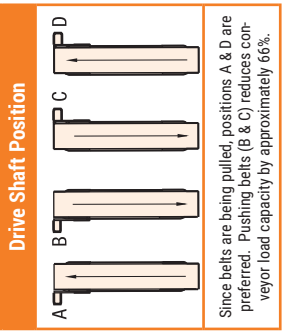
Order gearmotor mounting packages and gearmotors separately, see pages 17-23.  
For support stands and accessories, see page 27-29.





W = Conveyor Belt Width Dim = mm (in)

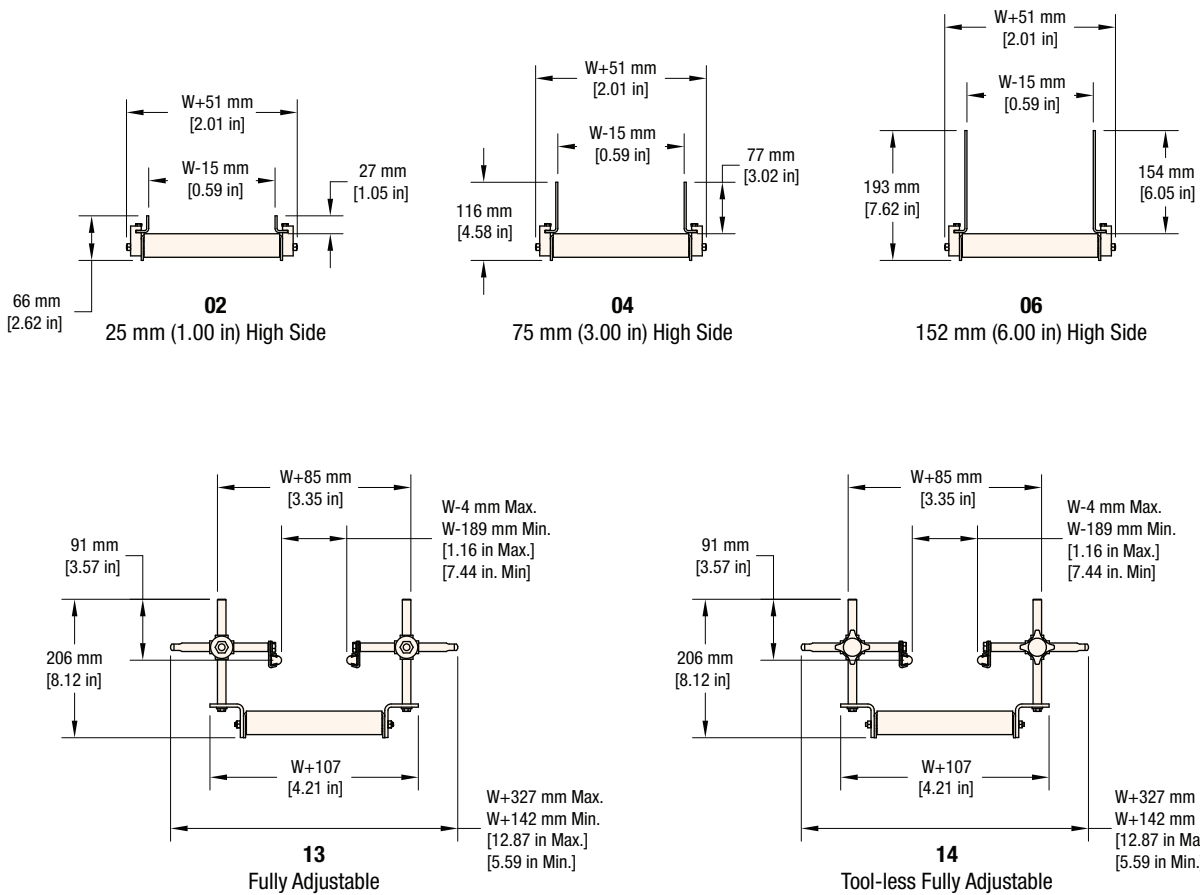
STANDARD SIZES									
Conveyor Width Reference	070	095	152	203	254	305	406	457	
Conveyor Belt Width (W)	70 (2.75)	95 (3.75)	152 (6)	203 (8)	254 (10)	305 (12)	406 (16)	457 (18)	
Conveyor Length Reference	00500		00005 increments up to...		05485		5485 (216)		
Conveyor Length (L)	500 (19.7)		5 mm (0.2in) increments up to...						



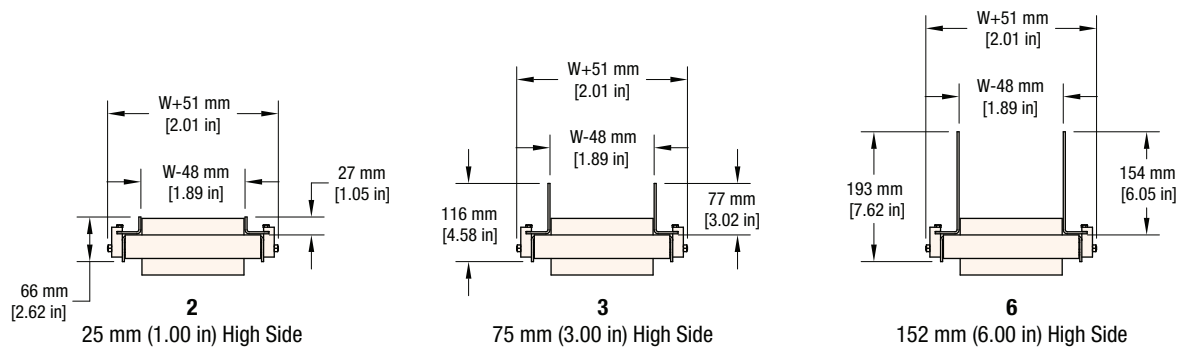
Due to the wide variety of drive set ups and applications, point of installation guarding is the responsibility of the end user.



## FLAT BELT PROFILES



## CLEATED BELT PROFILES



**W** = Conveyor Belt Width    **Dim** = mm (in)

*Due to the wide variety of drive set ups and applications, point of installation guarding is the responsibility of the end user.*





## Standard Belt Selection Guide

Standard belt material is stocked at Dorner, then cut & spliced at the factory for fast conveyor shipment.

Belt Type - Finger Splice	Belt Type - Plastic Clipper	Belt Type - Metal Clipper	Belt Specifications	V-Guidable	Belt Thickness	Surface Material	Maximum Part Temp. °C (°F)	Coefficient of Friction	FDA Approved	Anti-Static	ESD	Chemical Resistance	Special Characteristics or Applications
01	A1	1A	FDA Accumulation	x	1.7 (0.067)	Urethane	100 (212)	Low	x	x		Good	Packaging, clean room and inspection
02	A2	2A	General Purpose	x	1.8 (0.071)	Urethane	100 (212)	Med	x	x		Good	Most versatile belt offering
03	A3	3A	FDA High Friction	x	1.7 (0.067)	Urethane	100 (212)	High	x	x		Good	Packaging, clean room and inspection
05	A5	5A	Accumulation	x	1.2 (0.047)	Urethane	100 (212)	V-Low	x	x		Good	Accumulation of products
06	A6	6A	Static Dissipative	x	1.6 (0.063)	Urethane	80 (176)	V-Low		x	x	Good	Electronics handling
08	A8	8A	High Friction	x	2.1 (0.083)	PVC	70 (158)	V-High		x		Poor	Conveys up to 35° inclines*
09			FDA High Friction	x	1.5 (0.059)	Urethane	100 (212)	High	x			Good	Lower no load torque

Dim = mm (in)

**Note:** See below for splice details. Plastic Clipper splice requires longer lead times. Clipper splice not available on Z-Frame Series Conveyors.

**Note:** Belts with V-Guiding may have a slight high spot or rib on the top surface. This rib would run longitudinally along the center of the belt.

Consult factory with applications for which this may cause interference.

\*Incline varies due to factors like dust, fluids and part material.

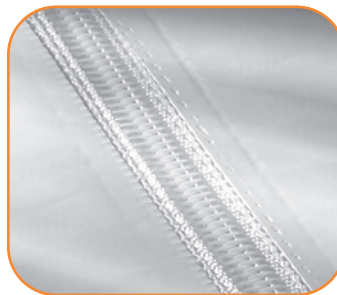
**Note: Wet applications are limited to specialty belt types 54, 55, 68, 69 and 70 only (see next page).**

## BELT SPLICING



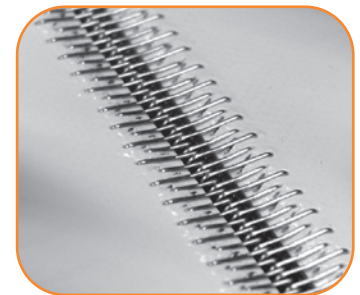
### Finger Splice

All belts are available with a standard Thermoformed finger splice. This splice makes the belt continuous and is virtually undetectable. Splice bonding methods vary by belt type. Consult factory for details.



### Plastic Clipper\*\*

An optional plastic clipper splice is available for quick removal of belts or when conveyors are installed in tight spaces.

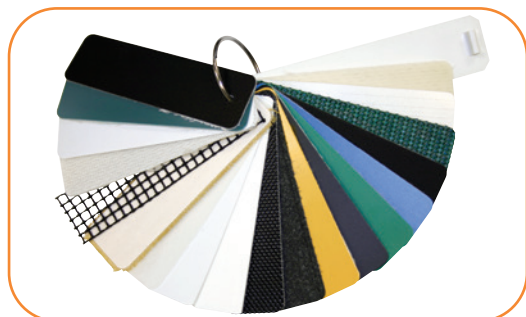


### Metal Clipper\*\*

An optional metal clipper splice is also available for quick removal of belts or when conveyors are installed in tight spaces.

\*\* Plastic and Metal Clippers are slightly thicker than base belt.  
Contact factory for details.





**Note: Wet applications are limited to specialty belt types 54, 55, 68 and 69 only.**

## Specialty Belt Selection Guide

*Specialty belt material is not stocked at Dorner and needs to be custom ordered for your special conveyor needs.*

Belt Type - Finger Splice	Belt Type - Plastic Clipper	Belt Type - Metal Clipper	Belt Specifications	V-Guideable	8 mm (5/16 in) Nose Bar	16 mm (5/8 in) Nose Bar	Belt Thickness	Surface Material	Maximum Part Temperature	Coefficient of Friction	FDA Approved	Anti-Static	Static Conductive	Chemical Resistance	Special Characteristics or Applications
19			Nose bar High friction	x	x		0.7 (0.03)	Urethane	212°F (100°C)	High	x	x		Good	8 mm (5/16 in) Nose bar, high friction
50			Heat Resistant				1.3 (0.05)	Silicone	356°F (180°C)	Low		x		V-Good	High temperature
53			Translucent		x	x	0.02 (0.5)	Urethane	212°F (100°C)	V-Low	x			Good	Back lit inspection
54	F4	4F	FDA Sealed Edge**	x			1.6 (0.06)	Urethane	176°F (80°C)	Low	x	x		Good	Packaging, clean room and inspection
55	F5	5F	FDA Sealed Edge**	x			1.6 (0.06)	Urethane	176°F (80°C)	High	x	x		Good	Packaging, clean room and inspection
56		6F	Cut Resistant	x			2.1 (0.08)	Urethane	212°F (100°C)	Med.		x		Good	Oily product release, metal stamping
57		7F	Cut Resistant	x			2.5 (0.10)	Nitrile	176°F (80°C)	Med.		x		Poor	Felt-like, dry metal stamping, glass and ceramic
58		8F	Cut Resistant	x			1.6 (0.06)	Urethane	194°F (90°C)	Low		x		Good	Surface gold colored
59	F9	9F	Color Contrasting	x			1.6 (0.06)	PVC	158°F (70°C)	Med.		x		Poor	Black colored, hides overspray from ink jet
60	G0	0G	Color Contrasting	x		x	0.05 (1.3)	Urethane	212°F (100°C)	Low	x	x		Good	Green colored
61	G1	1G	Color Contrasting	x		x	0.05 (1.3)	Urethane	212°F (100°C)	Low	x			Good	Blue colored
63		3G	Electrically Conductive	x			0.05 (1.2)	Urethane	176°F (80°C)	Low		x	x	Good	Static conductive, electronics handling
64		4G	High Friction	x			4.4 (0.17)	PVC	176°F (80°C)	V-High		x		Poor	Dark Green colored, rough top surface, product cushioning, incline/decline apps
66		6G	Chemical Resistant	x			1.7 (0.07)	Polyester	212°F (100°C)	Med.	x	x		V-Good	Good cut resistance, metal stamping apps
67			Low Friction Cleated (Do not use with Z-Frame)	x			1.6 (0.06)	Polyester	212°F (100°C)	n/a	x			Good	Excellent product release, consult factory for part number and how to specify low friction
68	G8		FDA Encased**	x			1.5 (0.06)	Urethane	176°F (80°C)	Low	x	x		Good	Urethane enclosed for added sanitary protection
69	G9		FDA Encased**	x			2.2 (0.09)	Urethane	176°F (80°C)	Med.	x	x		Good	Urethane enclosed for added sanitary protection
71			FDA High Release	x			1.8 (0.07)	Urethane	212°F (100°C)	Low	x			Good	High release cover
72			Nose bar	x		x	1.2 (0.05)	Urethane	212°F (100°C)	Med.	x	x		Good	16 mm (5/8 in) Nose bar, medium friction
73			Nose bar Low friction		x	x	0.9 (0.03)	Urethane	212°F (100°C)	Low	x	x		Good	8 mm (5/16 in) Nose bar, low friction
75			Black Urethane	x			1.5 (0.06)	Urethane	176°F (80°C)	Low		x		Good	
76			Black Nose bar	x		x	1.2 (0.05)	Urethane	176°F (80°C)	Med.		x		Good	Black Color, 8 mm (5/16 in) nose bar
77			High Friction, green	x			2.2 (0.09)	Urethane	212°F (100°C)	High		x		Good	Green color, high friction, urethane, grooved
78			Chemical, Polyolefin, HF				1.4 (0.05)	Polyolefin	140°F (60°C)	High	x			V-Good	Chemical resistant, food grade
79			Chemical, Polyolefin, LF				1.3 (0.05)	Polyolefin	140°F (60°C)	Med.	x	x		V-Good	Chemical resistant, food grade
80			High Friction, silicone	x		x	1 (0.04)	Silicone	176°F (80°C)	High	x			Good	Silicone material, high friction
81			Low Friction, silicone	x		x	1 (0.04)	Silicone	212°F (100°C)	Med.	x			Good	Silicone material, low to medium friction

Dim = mm (in)

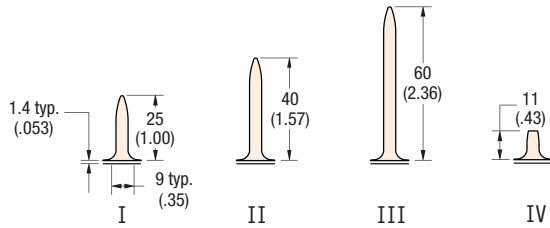
**Note:** Clipper Splices not available on Z-Frame Series Conveyors.

**Note:** Conveyors wider than 1,016 mm (40 in) require V-Guide belt tracking

**Note:** Belts with V-Guiding may have a slight high spot or rib on the top surface. This rib would run longitudinally along the center of the belt. Consult factory with applications for which this may cause interference.

\*\* Not available in 51 mm (2 in) widths

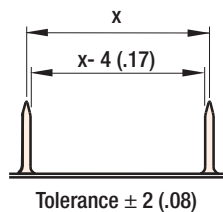




## Standard Cleated Belt Selection Guide

Part No.	Base Belt	Belt Thickness, mm (in)	Belt Surface Material	Cleat Height, mm (in)	Cleat Material	Maximum Part Temp. °C (°F)	FDA Approved	Chemical Resistance	Moisture Resistance	Illustration
A	High Friction	1.4 (0.055)	Urethane	25 (1.00)	Urethane	80 (176)	Yes	Good	Poor	I
B	High Friction	1.4 (0.055)	Urethane	40 (1.57)	Urethane	80 (176)	Yes	Good	Poor	II
C	High Friction	1.4 (0.055)	Urethane	60 (2.36)	Urethane	80 (176)	Yes	Good	Poor	III
G	High Friction	1.4 (0.055)	Urethane	11 (0.43)	Urethane	80 (176)	Yes	Good	Poor	IV
J	Low Friction	1.6 (0.06)	Urethane	25 (1.00)	Urethane	100 (212)	Yes	Good	Poor	I
K	Low Friction	1.6 (0.06)	Urethane	40 (1.57)	Urethane	100 (212)	Yes	Good	Poor	II
L	Low Friction	1.6 (0.06)	Urethane	60 (2.36)	Urethane	100 (212)	Yes	Good	Poor	III
M	Low Friction	1.6 (0.06)	Urethane	11 (0.43)	Urethane	100 (212)	Yes	Good	Poor	IV

## CLEATED BELT SPACING

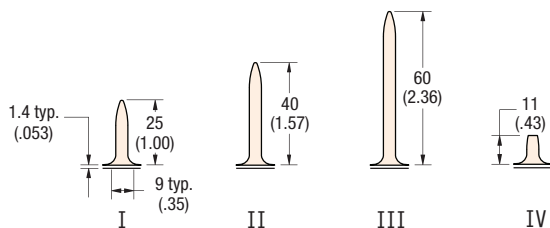


- Cleat spacing is determined by conveyor length and desired number of cleats
- Minimum spacing = 50 mm (2 in)
- Spacing accuracy =  $\pm 2$  mm (.08 in)
- Maximum 2135 mm (84 in) conveyor length for 487 mm (18 in) and wider conveyors
- Maximum 508 mm (20 in) cleat spacing for 2135 mm (84 in) and longer conveyors

Dim = mm (in)



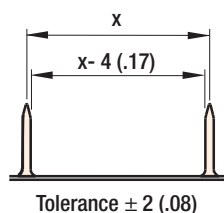
## SPECIALTY CLEATED BELT PROFILES



### Specialty Cleated Belt Selection Guide

	Part No.	Base Belt	Belt Thickness, mm (in)	Belt Surface Material	Cleat Height, mm (in)	Cleat Material	Maximum Part Temp. °C (°F)	FDA Approved	Chemical Resistance	Moisture Resistance	Illustration
<b>Cleated</b>	1	Sealed Edge	1.5 (0.06)	Urethane	25 (1.0)	Urethane	80 (176)	Yes	Good	Good	I
	2	Sealed Edge	1.5 (0.06)	Urethane	40 (1.57)	Urethane	80 (176)	Yes	Good	Good	II
	3	Sealed Edge	1.5 (0.06)	Urethane	60 (2.36)	Urethane	80 (176)	Yes	Good	Good	III
	4	Sealed Edge	2.0 (0.08)	Urethane	11 (0.43)	Urethane	80 (176)	Yes	Good	Good	IV

## SPECIALTY CLEATED BELT SPACING



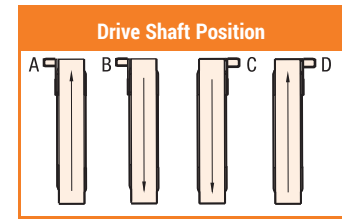
- Cleat spacing is determined by conveyor length and desired number of cleats
- Minimum spacing = 50 mm (2 in)
- Spacing accuracy =  $\pm 2$  mm (.08 in)
- Maximum 2135 mm (84 in) conveyor length for 487 mm (18 in) and wider conveyors
- Maximum 508 mm (20 in) cleat spacing for 2135 mm (84 in) and longer conveyors

Dim = mm (in)

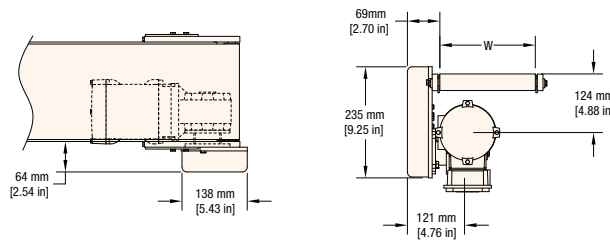


## GEARMOTOR MOUNTING PACKAGE & GEARMOTOR SELECTION STEPS

- Step 1:** Select a **Gearmotor Mounting Package** (below).
- Step 2:** Use the **Belt Speed Chart** (page 19-20) to determine your desired belt speed based on conveyor type and mount package. See Gearmotor column.
- Step 3:** Locate the appropriate gearmotor chart (pages 22-25)



### Bottom Mount Package, 90° Gearmotor

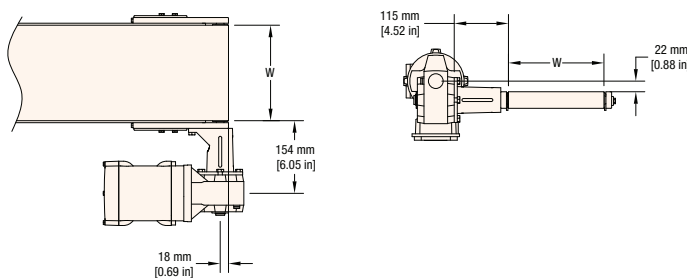


- Includes stainless steel gearmotor mounting bracket, timing belt, plated pulleys, guard and mounting hardware
- Conveyor belt speed can be adjusted with optional ratio pulley kits



W = Conveyor Belt Width

### Side Mount Package, 90° Gearmotor

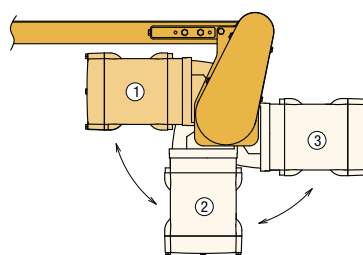


- Includes stainless steel gearmotor bracket, coupling and mounting hardware

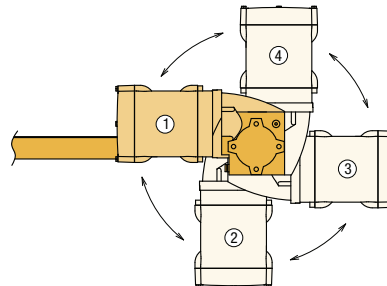


W = Conveyor Belt Width

### 90° Gearmotor Location Options



**Bottom Mount**



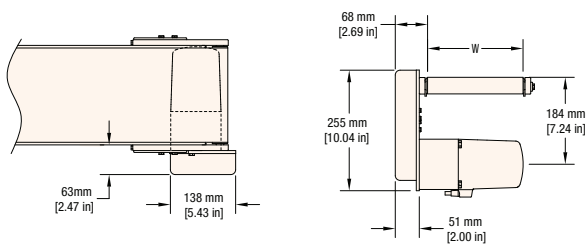
**Side Mount**

*Due to the wide variety of drive set ups and applications, point of installation guarding is the responsibility of the end user.*

**Note:** Conveyor and gearmotor are not included in the mounting package and must be ordered separately. Dimensions = in (mm)



## Bottom Mount Package, Parallel Gearmotor



W = Conveyor Belt Width

## Heavy Duty Sprocket Kit



### Heavy Duty Sprocket Kit Used in Wet Applications

- Compatible with 90 Degree and Parallel Shaft mounting Packages
- Stainless Steel #40 Sprockets
- Stainless Steel/Acetal #40 Chain
- Belt speeds up to 226 ft/min

This kit becomes part of the gearmotor mounting package when you select your belt speed from the "Chain & Sprocket Package" speed chart (see page 17-18).

**Note:** Conveyor and gearmotor are not included in the mounting package and must be ordered separately.

## AquaGard LP Series: Gearmotor Mount Packages

7	2	X	B	S	S	T	S	A	G	S	C	S
												Conveyor Sprocket: 30 = 30 Tooth Blank = Side Drive
												Gearmotor Sprocket: 30 = 30 Tooth Blank = Side Drive
												Drive Position: A, B, C or D
												Gearmotor Size: S = Sanitary Standard Load
												Gearmotor Type: H = 90° Gearmotor P = Parallel Shaft (bottom drive only)
												Drive Type: S = Side B = Bottom
												Configuration: S = Straight
												Conveyor Type: B = Belt
												Gearmotor Type: Z = 60Hz U = 50Hz (not available on parallel shaft)

Dim = mm (in)



## Fixed Speed Belt Chart for 60Hz Motors

Fixed Speed, 90 degree, Timing Belt Package							
Belt Speed		RPM From Gearmotor	Mount Package		Pulley Kit		Gearmotor Chart
Belted Conveyor			Bottom	Side	Drive Pulley	Driven Pulley	
m/min	ft/min						
5	16	58	X		28	32	1
6	20	58	X	X	32	32	1
7	23	58	X		32	28	1
8	26	58	X		44	32	1
8	26	58	X		32	22	1
9	30	58	X		48	32	1
9	30	58	X		44	28	1
10	33	58	X		48	28	1
12	39	58	X		44	22	1
13	43	58	X		48	22	1
15	49	172	X		28	32	1
17	56	172	X	X	32	32	1
20	66	172	X		32	28	1
24	79	172	X		44	32	1
25	82	172	X		32	22	1
26	85	172	X		48	32	1
27	89	172	X		44	28	1
29	95	172	X		48	28	1
30	98	344	X		28	32	1
34	112	344	X	X	32	32	1
34	112	172	X		44	22	1
37	121	172	X		48	22	1
39	128	344	X		32	28	1
47	154	344	X		44	32	1
50	164	344	X		32	22	1
51	167	344	X		48	32	1
54	177	344	X		44	28	1
59	194	344	X		48	28	1
69	226	344	X		44	22	1
75	246	344	X		48	22	1

Fixed Speed, Parallel, Timing Belt Package							
Belt Speed		RPM From Gearmotor	Mount Package		Pulley Kit		Gearmotor Chart
Belted Conveyor			Bottom	Side	Drive Pulley	Driven Pulley	
m/min	ft/min						
4	13	50	X		28	32	2
5	16	50	X	X	32	32	2
7	23	50	X		44	32	2
7	23	50	X		32	22	2
7	23	50	X		48	32	2
8	26	50	X		32	19	2
10	33	50	X		44	22	2
11	36	50	X		48	22	2
12	39	50	X		44	19	2
13	43	50	X		48	19	2
15	49	167	X		28	32	2
17	56	167	X	X	32	32	2
23	75	167	X		44	32	2
24	79	167	X		32	22	2
25	82	167	X		48	32	2
28	92	167	X		32	19	2
33	108	167	X		44	22	2
36	118	167	X		48	22	2
39	128	167	X		44	19	2
42	138	167	X		48	19	2

Fixed Speed, 90 degree, Chain & Sprocket Package							
Belt Speed		RPM From Gearmotor	Mount Package		Pulley Kit		Gearmotor Chart
Belted Conveyor			Bottom	Side	Drive Pulley	Driven Pulley	
m/min	ft/min						
7	23	58	X		12	10	1
9	30	58	X		16	10	1
10	33	58	X		18	10	1
12	39	58	X		20	10	1
21	69	172	X		12	10	1
27	89	172	X		16	10	1
31	102	172	X		18	10	1
34	112	172	X		20	10	1
41	135	344	X		12	10	1
55	180	344	X		16	10	1
62	203	344	X		18	10	1
69	226	344	X		20	10	1

Fixed Speed, Parallel, Chain & Sprocket Package							
Belt Speed		RPM From Gearmotor	Mount Package		Pulley Kit		Gearmotor Chart
Belted Conveyor			Bottom	Side	Drive Pulley	Driven Pulley	
m/min	ft/min						
6	20	50	X		12	10	2
8	26	50	X		16	10	2
9	30	50	X		18	10	2
10	33	50	X		20	10	2
20	66	167	X		12	10	2
27	89	167	X		16	10	2
30	98	167	X		18	10	2
33	108	167	X		20	10	2

Due to the wide variety of drive set ups and applications, point of installation guarding is the responsibility of the end user.



## Fixed Speed Belt Chart for 50Hz Motors

Fixed Speed, 90 degree, Timing Belt Package							
Belt Speed		RPM From Gearmotor	Mount Package		Pulley Kit		Gearmotor Chart
Belted Conveyor			Bottom	Side	Drive Pulley	Driven Pulley	
m/min	ft/min						
13	4	47	X		28	32	5,7
16	5	47	X	X	32	32	5,7
16	5	47	X		32	28	5,7
20	6	47	X		44	32	5,7
23	7	47	X		32	22	5,7
23	7	47	X		48	32	5,7
23	7	47	X		44	28	5,7
26	8	47	X		48	28	5,7
30	9	47	X		44	22	5,7
33	10	47	X		48	22	5,7
39	12	142	X		28	32	5,7
46	14	142	X	X	32	32	5,7
52	16	142	X		32	28	5,7
62	19	142	X		44	32	5,7
69	21	142	X		32	22	5,7
69	21	142	X		48	32	5,7
72	22	142	X		44	28	5,7
79	24	142	X		48	28	5,7
79	24	280	X		28	32	5,7
92	28	280	X	X	32	32	5,7
92	28	142	X		44	22	5,7
102	31	142	X		48	22	5,7
105	32	280	X		32	28	5,7
125	38	280	X		44	32	5,7
135	41	280	X		32	22	5,7
138	42	280	X		48	32	5,7
144	44	280	X		44	28	5,7
157	48	280	X		48	28	5,7
184	56	280	X		44	22	5,7
200	61	280	X		48	22	5,7

Fixed Speed, 90 degree, Chain & Sprocket Package							
Belt Speed		RPM From Gearmotor	Mount Package		Pulley Kit		Gearmotor Chart
Belted Conveyor			Bottom	Side	Drive Pulley	Driven Pulley	
m/min	ft/min						
20	6	47	X		12	10	5,7
23	7	47	X		16	10	5,7
26	8	47	X		18	10	5,7
30	9	47	X		20	10	5,7
56	17	142	X		12	10	5,7
75	23	142	X		16	10	5,7
82	25	142	X		18	10	5,7
92	28	142	X		20	10	5,7
108	33	280	X		12	10	5,7
148	45	280	X		16	10	5,7
164	50	280	X		18	10	5,7
184	56	280	X		20	10	5,7

## Variable Speed Belt Chart for 50Hz Motors

Variable Speed, 90 degree, Timing Belt Package							
Belt Speed		RPM From Gearmotor	Mount Package		Pulley Kit		Gearmotor Chart
Belted Conveyor			Bottom	Side	Drive Pulley	Driven Pulley	
m/min	ft/min						
3 to 13	0.8 to 4	47	X		28	32	<b>6,8</b>
7 to 16	2 to 5	47	X	X	32	32	<b>6,8</b>
7 to 20	2 to 6	47	X		44	32	<b>6,8</b>
7 to 23	2 to 7	47	X		32	22	<b>6,8</b>
7 to 23	2 to 7	47	X		48	32	<b>6,8</b>
7 to 30	2 to 9	47	X		44	22	<b>6,8</b>
7 to 33	2 to 10	47	X		48	22	<b>6,8</b>
13 to 79	4 to 24	280	X		28	32	<b>6,8</b>
20 to 92	6 to 28	280	X	X	32	32	<b>6,8</b>
26 to 125	8 to 38	280	X		44	32	<b>6,8</b>
26 to 135	8 to 41	280	X		32	22	<b>6,8</b>
26 to 138	8 to 42	280	X		48	32	<b>6,8</b>
39 to 184	12 to 56	280	X		44	22	<b>6,8</b>
39 to 200	12 to 61	280	X		48	22	<b>6,8</b>

Variable Speed, 90 degree, Chain & Sprocket Package							
Belt Speed		RPM From Gearmotor	Mount Package		Pulley Kit		Gearmotor Chart
Belted Conveyor			Bottom	Side	Drive Pulley	Driven Pulley	
m/min	ft/min						
7 to 20	2 to 6	47	X		12	10	<b>6,8</b>
7 to 23	2 to 7	47	X		16	10	<b>6,8</b>
7 to 26	2 to 8	47	X		18	10	<b>6,8</b>
7 to 30	2 to 9	47	X		20	10	<b>6,8</b>
20 to 108	6 to 33	280	X		12	10	<b>6,8</b>
33 to 148	10 to 45	280	X		16	10	<b>6,8</b>
33 to 164	10 to 50	280	X		18	10	<b>6,8</b>
39 to 184	12 to 56	280	X		20	10	<b>6,8</b>

Due to the wide variety of drive set ups and applications, point of installation guarding is the responsibility of the end user.



# VARIABLE SPEED BELT CHARTS

## Variable Speed Belt Chart for 60Hz Motors

**Variable Speed, 90 degree, Timing Belt Package**

Belt Speed		RPM From Gearmotor	Mount Package		Pulley Kit		Gearmotor Chart
Belted Conveyor			Bottom	Side	Drive Pulley	Driven Pulley	
m/min	ft/min						
1 to 5	2 to 16	58	X		28	32	3
1 to 6	2 to 20	58	X	X	32	32	3
1 to 8	3 to 26	58	X		44	32	3
1 to 8	3 to 26	58	X		32	22	3
1 to 9	3 to 30	58	X		48	32	3
1 to 12	4 to 39	58	X		44	22	3
1 to 13	4 to 43	58	X		48	22	3
3 to 30	10 to 98	344	X		28	32	3
3 to 34	11 to 112	344	X	X	32	32	3
5 to 47	15 to 154	344	X		44	32	3
5 to 50	16 to 164	344	X		32	22	3
5 to 51	17 to 167	344	X		48	32	3
7 to 69	23 to 226	344	X		44	22	3
8 to 75	25 to 246	344	X		48	22	3

**Variable Speed, Parallel, Timing Belt Package**

Belt Speed		RPM From Gearmotor	Mount Package		Pulley Kit		Gearmotor Chart
Belted Conveyor			Bottom	Side	Drive Pulley	Driven Pulley	
m/min	ft/min						
0 to 4	1 to 13	50	X		28	32	4
1 to 5	2 to 16	50	X	X	32	32	4
1 to 7	2 to 23	50	X		44	32	4
1 to 7	2 to 23	50	X		32	22	4
1 to 7	2 to 23	50	X		48	32	4
1 to 10	3 to 33	50	X		44	22	4
1 to 11	4 to 36	50	X		48	22	4
2 to 15	5 to 49	167	X		28	32	4
2 to 17	6 to 56	167	X	X	32	32	4
2 to 23	8 to 75	167	X		44	32	4
2 to 24	8 to 79	167	X		32	22	4
3 to 25	8 to 82	167	X		48	32	4
3 to 33	11 to 108	167	X		44	22	4
4 to 36	12 to 118	167	X		48	22	4

**Variable Speed, 90 degree, Chain & Sprocket Package**

Belt Speed		RPM From Gearmotor	Mount Package		Pulley Kit		Gearmotor Chart
Belted Conveyor			Bottom	Side	Drive Pulley	Driven Pulley	
m/min	ft/min						
1 to 7	2 to 23	58	X		12	10	3
1 to 9	3 to 30	58	X		16	10	3
1 to 10	3 to 33	58	X		18	10	3
1 to 12	4 to 39	58	X		20	10	3
4 to 41	14 to 135	344	X		12	10	3
6 to 55	18 to 180	344	X		16	10	3
6 to 62	20 to 203	344	X		18	10	3
7 to 69	23 to 226	344	X		20	10	3

**Variable Speed, Parallel, Chain & Sprocket Package**

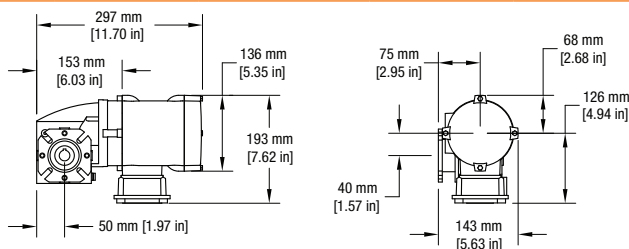
Belt Speed		RPM From Gearmotor	Mount Package		Pulley Kit		Gearmotor Chart
Belted Conveyor			Bottom	Side	Drive Pulley	Driven Pulley	
m/min	ft/min						
1 to 6	2 to 20	50	X		12	10	4
1 to 8	3 to 26	50	X		16	10	4
1 to 9	3 to 30	50	X		18	10	4
1 to 10	3 to 33	50	X		20	10	4
2 to 20	7 to 66	167	X		12	10	4
3 to 27	9 to 89	167	X		16	10	4
3 to 30	10 to 98	167	X		18	10	4
3 to 33	11 to 108	167	X		20	10	4



**STANDARD LOAD, FIXED SPEED**

**Chart 1** 90 degree, Fixed Speed

- Sealed gearmotor
- IP 66 protection rating (Motor IP67)
- Stainless steel shaft and fasteners
- FDA approved white epoxy paint
- Totally enclosed, non-ventilated
- 60 Hz



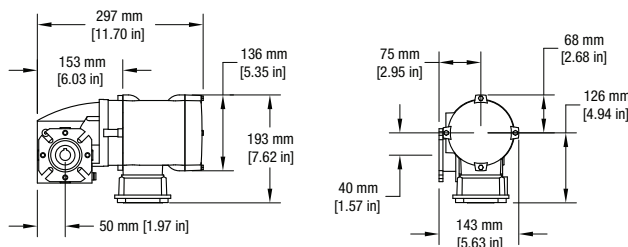
**Regulatory Approvals**



Part Number	RPM	Hp	kW	Volts	FLA	in.-lbs.	Nm
72M030HS423FN	58	0.16	0.11	230/460	0.68/0.34	107	12.1
72M005HS423FN	344	0.33	0.24	230/460	1.2/0.6	53.6	6.1
72M010HS423FN	172	0.33	0.24	230/460	1.2/0.6	100	11.3

**Chart 5** 90 degree, Fixed Speed, 50Hz

- Sealed gearmotor
- IP 66 protection rating (Motor IP67)
- Stainless steel shaft and fasteners
- FDA approved white epoxy paint
- Totally enclosed, non-ventilated
- 50 Hz



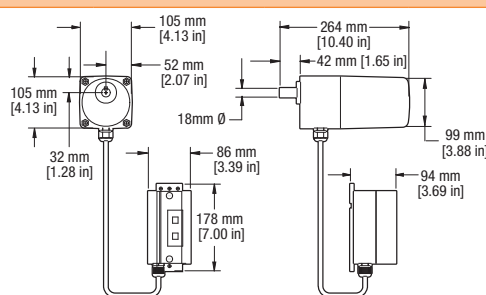
**Regulatory Approvals**



Part Number	RPM	Hp	kW	Volts	FLA	in.-lbs.	Nm
72U030HS423FN	47	0.16	0.12	230/400	0.66/0.38	128	14.4
72U005HS423FN	280	0.33	0.25	230/400	1.15/0.67	66.4	7.5
72U010HS423FN	142	0.33	0.25	230/400	1.15/0.67	124	14

**Chart 2** Parallel Shaft, Fixed Speed

- Sealed gearmotor
- IP 65 protection rating (Motor IP67)
- 115V, 1 phase includes starter, cords and plug
- 230V, 3 phase wiring to starter by others
- Stainless steel shaft and fasteners
- FDA approved white epoxy paint
- Totally enclosed, non-ventilated
- 60 Hz



**Regulatory Approvals**



Part Number	RPM	Hp	kW	Volts	FLA	in.-lbs.	Nm
62M009PY411FN	167	0.12	0.09	115	1.51	26	2.9
62M009PY423FN	167	0.12	0.09	230	0.49	26	2.9
62M030PY411FN	50	0.12	0.09	115	1.51	77	8.7
62M030PY423FN	50	0.12	0.09	230	0.49	77	8.7

**Note:** 115V 1 phase gearmotor must be plugged into a GFI circuit

**CE Note:** When buying a gearmotor only without the starter, the customer must supply their own on/off switch and motor overload protection to comply with the CE Safety Directive.

**FLA = Full Load Amperes** Some motors and gear reducers may normally operate hot to the touch. Consult factory for specific operating temperatures. **Note:** Dimensions = mm (in)

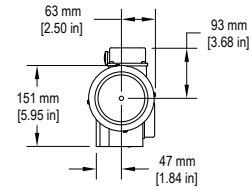
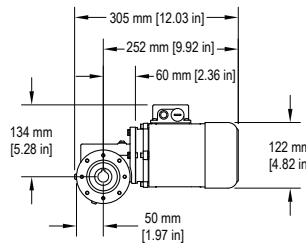


## STANDARD LOAD, FIXED SPEED

Chart 7

90 degree, Fixed Speed, 50Hz

- Totally enclosed, fan cooled gearmotor
- IP 55 protection rating
- Aluminum Body
- Standard industrial paint
- 50 Hz



## Regulatory Approvals



Part Number	RPM	Hp	kW	Volts	FLA	in.-lbs.	Nm
72U010HQ423FN	280	0.33	0.25	230/400	1.17/0.67	62	7
72U020HQ423FN	140	0.33	0.25	230/400	1.17/0.67	124	14
72U030HQ423FN	47	0.33	0.25	230/400	1.17/0.67	177	20

**CE Note:** When buying a gearmotor only without the starter, the customer must supply their own on/off switch and motor overload protection to comply with the CE Safety Directive.

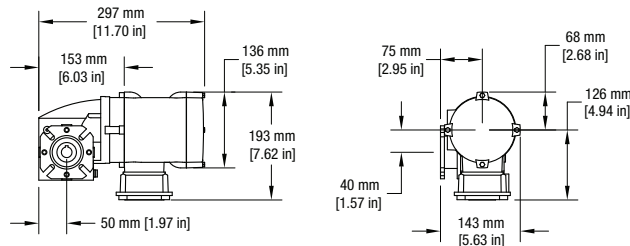
**FLA = Full Load Amperes** Some motors and gear reducers may normally operate hot to the touch. Consult factory for specific operating temperatures. **Note:** Dimensions = mm (in)



**STANDARD LOAD, VARIABLE SPEED**

**Chart 3** 90 degree, Variable Speed

- Variable frequency drive, 10-60 Hz
- IP 66 protection rating
- 230/460V, 3 Phase
- Stainless steel shaft and fasteners
- FDA approved white epoxy paint
- Totally enclosed, non-ventilated
- Order controller separately



**Regulatory Approvals**

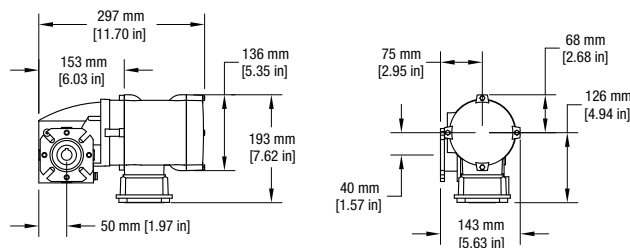


Part Number	RPM	Hp	kW	Volts	FLA*	in.-lbs.*	Nm
72M030HS423EN	58	0.16	0.11	230/460	0.68/0.34	107	12.1
72M005HS423EN	344	0.33	0.24	230/460	1.2/0.6	53.6	6.1

\* At 60 Hz

**Chart 6** 90 degree, Variable Speed, 50Hz

- Variable frequency drive, 10-50 Hz
- IP 66 protection rating
- 230/400V, 3 Phase
- Stainless steel shaft and fasteners
- FDA approved white epoxy paint
- Totally enclosed, non-ventilated
- Order controller separately



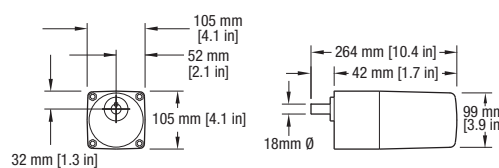
**Regulatory Approvals**



Part Number	RPM	Hp	kW	Volts	FLA*	in.-lbs.*	Nm
72U030HS423EN	58	0.16	0.12	230/400	0.66/0.38	128	14.4
72U005HS423EN	344	0.33	0.25	230/400	1.15/0.67	66.4	7.5

**Chart 4** Parallel Shaft, Variable Speed

- Variable frequency drive, 10-60 Hz
- IP 65 protection rating
- 230V, 3 Phase
- Stainless steel shaft and fasteners
- FDA approved white epoxy paint
- Totally enclosed, non-ventilated
- Order controller separately



**Regulatory Approvals**



Part Number	RPM	Hp	kW	Volts	FLA*	in.-lbs.*	Nm
62M009PY423EN	167	0.12	0.089484	115	0.49	26	2.9
62M030PY423EN	50	0.12	0.089484	115	0.49	77	8.7

\* At 60 Hz

**CE Note:** When buying a gearmotor only without the starter, the customer must supply their own on/off switch and motor overload protection to comply with the CE Safety Directive.

**FLA** = Full Load Amperes Some motors and gear reducers may normally operate hot to the touch. Consult factory for specific operating temperatures. **Note:** Dimensions = mm (in)



STANDARD LOAD, VARIABLE SPEED

**Chart 8**

90 degree, Variable Speed, 50Hz

- Totally enclosed, fan cooled gearmotor
- IP 55 protection rating
- Aluminum Body
- Standard industrial paint
- 10-50 Hz
- Order controller separately

Side view dimensions: 305 mm [12.03 in] (total length), 252 mm [9.92 in] (motor length), 60 mm [2.36 in] (flange width), 134 mm [5.28 in] (motor height), 122 mm [4.82 in] (total height), 50 mm [1.97 in] (base width).

Front view dimensions: 63 mm [2.50 in] (flange diameter), 93 mm [3.68 in] (total width), 151 mm [5.95 in] (motor height), 47 mm [1.84 in] (base width).

**Regulatory Approvals**

UL

CSA

CE

Part Number	RPM	Hp	kW	Volts	FLA*	in.-lbs.*	Nm
72U010HQ423EN	280	0.33	0.25	230/400	1.17/0.67	62	7
72U020HQ423EN	140	0.33	0.25	230/400	1.17/0.67	124	14
72U030HQ423EN	47	0.33	0.25	230/400	1.17/0.67	177	20

**CE Note:** When buying a gearmotor only without the starter, the customer must supply their own on/off switch and motor overload protection to comply with the CE Safety Directive.

**FLA = Full Load Amperes** Some motors and gear reducers may normally operate hot to the touch. Consult factory for specific operating temperatures. **Note:** Dimensions = mm (in)



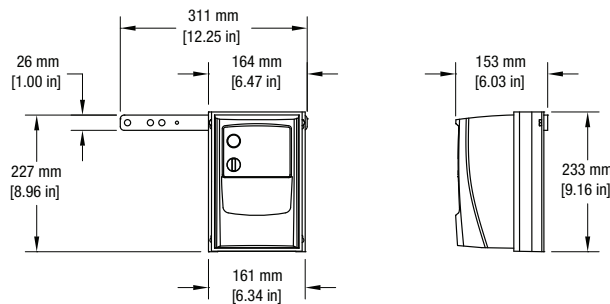
## Variable Speed Controllers

**Chart A**



**Variable Speed Controllers**

- Variable Frequency Drive
- IP 65 Plastic Enclosure
- Stainless Steel mounting hardware
- Digital Display
- Keypad with Start/Stop and Speed variation
- Includes cord to motor
- Power to controller by others
- UL Approved



Part Number	Input			Output		Max Hp	Max Amps
	Volts	Phase	Hz	Volts	Phase		
76MVA1122S	115	1	60	230	3	0.5	2.3
76MVA2122S	230	1	60	230	3	0.5	2.3
76MVA2322S	230	3	60	230	3	0.5	2.3
76MVA4342S	460	3	60	460	3	0.5	1.2

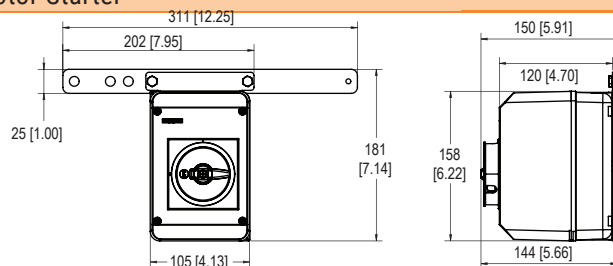
## MANUAL MOTOR STARTER

**Chart B**



**Manual Motor Starter**

- Nema 4X Plastic Enclosure
- Stainless Steel mounting hardware
- IP 65
- Start / Stop Switch
- Lock-out tag-out capable
- Includes wiring to Motor
- Power to Starter by others
- No plug/cord set included



Part Number	Input			FLA
	Volts	Phase	Hz	
74MM23A	208-230	3	60	0.63 - 0.99
74MM23B	208-230	3	60	1 - 1.59
74MM43A	460	3	60	0.63 - 0.99

FLA = Full Load Amperes

**Chart C**



**Manual Motor Starter**

- Start / Stop Switch
- Includes wiring to Motor
- Plug to Starter by others

**Regulatory Approvals**



Part Number	Input			FLA
	Volts	Phase	Hz	
KT103724	230v/400v	3	50	1.2

FLA = Full Load Amperes



## Fixed Height Stands

- Welded open frame Stainless Steel construction with a 2B finish
- Adjustable angle connecting plate from 0° to 60 degrees
- For 70 mm (2.75 in) to 457 mm (18 in) Widths:
- ±100 mm (4 in) of adjustment
- Optional swivel locking caster
- Optional diagonal brace for added stability
- For available heights see page 27



**STANDARD FEATURE:**  
Fixed Foot



**OPTIONAL:**  
Swivel Caster



**OPTIONAL:**  
Diagonal Brace

## Outriggers

- Fixed height support stands are available with outriggers
- Outriggers provide added support for tall applications
- Welded Stainless Steel construction with 2B finish
- Extend stand width 305 mm (12 in)



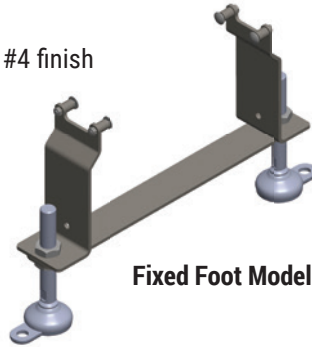
Dimensions = mm (in)

**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.

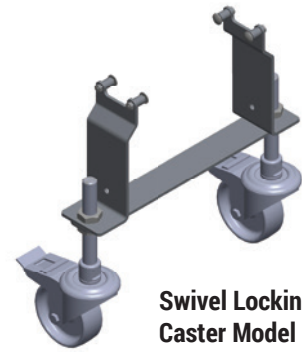


## Low Height Supports Stands

- All components are Stainless Steel brushed to #4 finish
- ±51 mm (2 in) of adjustment
- Fixed Foot self-aligns 10° for sloped floors
- Caster is swivel locking
- Horizontal conveyor mounts only
- For available heights see below



**Fixed Foot Model**



**Swivel Locking Caster Model**

### Support Stand Heights

Type	Fixed Foot				Caster Foot			
	Shortest Stand		Tallest Stand		Shortest Stand		Tallest Stand	
	Minimum Top Of Belt	Maximum Top Of Belt	Minimum Top Of Belt	Maximum Top Of Belt	Minimum Top Of Belt	Maximum Top Of Belt	Minimum Top Of Belt	Maximum Top Of Belt
Angle Mount	400 (15.75)	500 (19.69)	1900 (74.8)	2000 (78.7)	525 (20.67)	625 (24.60)	1900 (74.8)	2000 (78.7)
Angle Mount w/ Outrigger	400 (15.75)	500 (19.69)	1900 (74.8)	2000 (78.7)	525 (20.67)	625 (24.60)	1900 (74.8)	2000 (78.7)
Low Height	250 (9.84)	350 (13.78)	325 (12.8)	425 (16.73)	375 (14.76)	475 (18.70)	450 (17.7)	550 (21.7)

Note: Dimensions = mm (in)  
Height increments of 25 mm (1 in)

### Fixed Height Support Stands Widths\*

Conveyor Width	070	095	152	203	254	305	406	457
Conveyor Belt Width (W)	70 (2.75)	95 (3.75)	152 (6)	203 (8)	254 (10)	305 (12)	406 (16)	457 (18)
Angle Mount Width	348 (14)	373 (15)	430 (17)	430 (17)	481 (19)	532 (21)	633 (25)	684 (27)
Angle Mount w/ outriggers Width	662 (26)	687 (27)	744 (29)	744 (29)	795 (31)	846 (33)	947 (37)	998 (39)
Low Height Stand Width	310 (12)	335 (13)	392 (15)	392 (17)	443 (19)	494 (21)	595 (25)	646 (27)

\*Dimensions shown are nominal.  
Contact factory for specific layout and dimensions.

### AquaGard LP Series: Support Stands

7 2	H	X	WWW	-	HHHH	HHHH	B	S	T	T	F
<p>Foot: F = Fixed Foot B = Fixed Foot with Brace (brace not on low height stands) C = Caster with Brace (brace not on low height stands) Stand Type: AM = Angle Mount LH = Low Height Support Stand (horizontal only) AR = Angle Mount with Outriggers Configuration: S = Straight Belt: B = Belt Maximum Top of Belt Height = 0100 mm (4 in) more than minimum Minimum Top of Belt Height = 0250 to 2000 in 25 mm increments (9.8 – 78.7 in) Width (mm): 70 to 457 Language: Z = Universal Type: H = H Type Support Stand</p>											

Width Conversion	
WWW (mm)	WWW (in)
70	2.75
95	3.75
152	6
203	8
254	10
305	12
406	16
457	18

Dimensions = mm (in)

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.



Table Top Mounting Brackets

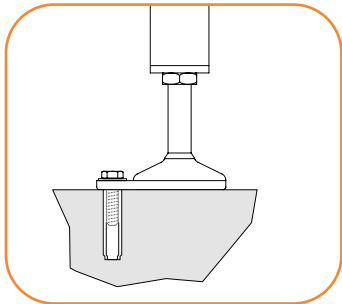


Specifications

- 7 gauge stainless steel, #4 finish
- Comes with mounting hardware
- Compatible with industrial aluminum stands
- Dimensional information see pages 7 and 9

Part Number	531135	Cleated Belts
	531150	Flat Belts

Sanitary Floor Anchor Kits - Type 1

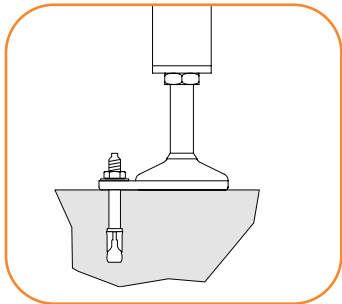


Specifications

- 10 mm (.375 in) x 40 mm (1.57 in) drop in
- Stainless Steel
- Anchor is flush with floor upon removal of bolt
- Two (2) per anchor kit

Part Number	FAS-1
-------------	-------

Sanitary Floor Anchor Kits - Type 2



Specifications

- 10 mm (.375 in) x 70 mm (2.75 in)
- Stainless Steel
- Threaded anchor bolt protrudes above floor after installation
- Two (2) per anchor kit

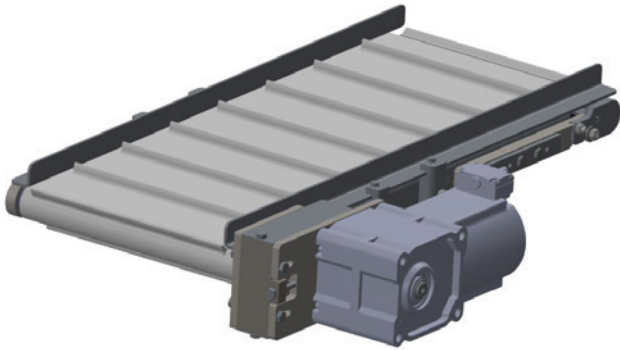
Part Number	FAS-2
-------------	-------

Dimensions = mm (in)

**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.



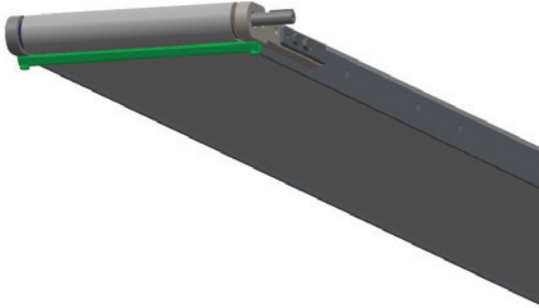
## Light Load Side Drive Solution



### Specifications

- Compact side drive design
- Suitable for short length and/or light load applications
- 230/460V 3 Phase VFD rated gearmotor
- Contact factory for options

## Bottom Wiper Option



### Specifications

- Wiper can be mounted on either the drive or idler tail.
- Cleans flat belt from stick on product

## Drip Pans



### Specifications

- Widths: 152 mm (6 in) to 1524 mm (60 in) available in 50 mm (2 in) increments
- Lengths: 610 mm (24 in) to 25375 mm (999 in) available in 25 mm (1 in) increments maximum section lengths of 2997 mm (118 in)
- Tool-less hook design for fast removal and rapid cleaning
- Provides a 50 mm (2 in) window for clean-out access without removal
- All pans equipped with a 25 mm (1 in) containment lip on all sides
- Contact factory for additional options and ordering

Dimensions = mm (in)

**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.



## Stainless Steel Carriage Bolts

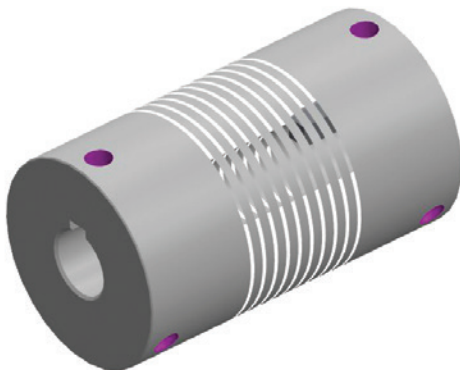


### Specifications

- Stainless Steel Carriage bolts
- Kits come in packs of 10
- Support stand brackets uses M8x20mm with flanged hex nuts
- Stand brace uses M6x30mm with spacer, and nuts
- Stainless Steel guide block uses M6x30mm hardware

Part Number	Size	Description
531373	M8x20mm	Support Stand
531374	M6x30mm	Stand Brace
531101	M6x30mm	Block Assembly

## Side Drive Coupling



### Specifications

- Flexible coupling for gearmotor and conveyor
- Comes with set screws and replacement keys
- 38mm diameter X 67mm long
- 12mm bore with 4mm keyway

Part Number	807-995
-------------	---------

Dimensions = mm (in)

**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.



## Regulatory Approvals:







### Conveyors:

All AquaGard LP Series standard conveyors (not including gearmotors and controllers) 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 AquaGard LP Series 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 2002/95/EC, 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 AquaGard LP Series 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.

	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).
	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.
	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.
	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 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.
	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.



### Baking Industry Standards and Certifications:

AquaGard LP Series Conveyors are often used in food production or food packaging areas where proper design of equipment is essential to maintain proper food safety. AquaGard LP Series conveyors are designed for light wash down environments typically seen in packaged food, dry food production or confectionary production. In these applications the correct installation and application of the conveyor is critical to the proper running of the conveyor and maintaining proper food safety. The end user must ensure that the conveyor belts are properly tracked and the conveyor is properly installed as defined by Dorner.

All AquaGard LP Series products are designed and constructed to be used in dry food or packaged food production environments. The following AquaGard products have gone through testing and certification and are certified to BISSC standard, design requirements for Conveyors section of ANSI/ASB/Z50.2-2015.

#### **AquaGard LP Series Belted Conveyor**

Contact the factory for copy of the certification.





## Materials and Chemical Resistance:

### Conveyor Frames and Plastics

The following is a list of base materials used in the AquaGard LP Series conveyor:

Material	Conveyor Component
Acetal Copolymer, POM	Molded bearing housings
Polyamide, PA	Adjustable Guide Support Brackets
UHMW-PE	Adjustable Guide Face
Aluminum, anodized (Note: cut ends of aluminum is not anodized)	Conveyor Frame, Support Legs, High Side Guiding, Adjustable Guide Horizontal Post, Adjustable Guide Rail

chemicals, however some should be avoided. Avoid the following:

- Acids with PH less than 4
- Bases with PH higher than 9

### Resistance to Materials: Conveyor Frames and Plastics

The following table provides the resistance to materials used in the conveyor to several chemicals. Application testing is recommended to determine long term material durability.

#### Legend:

1 = Very good resistance | 2 = Good resistance | 3 = Moderate resistance |  
4 = Not recommended | X = no data available

Acids	Acetal POM	Polypropylene	Polyamide PA	UHMW-PE	Aluminum
Acetic acid	3	1	4	1	2
Benzoic acid	3	1	4	1	4
Boric acid	3	1	2	1	2
Citric acid	3	1	2	1	2
Chromic acid	4	1	4	1	3
Hydrofluoric acid	4	1	4	1	4
Hydrochloric acid	4	1	4	1	3
Hydro cyanic acid	4	X	4	1	1
Nitric acid	4	1	4	1	3
Oleic acid	3	1	2	1	1
Oxalic acid	4	1	2	1	1
Phosphoric acid	4	1	4	1	3
Sulphuric acid	4	2	4	1	3
Tartaric acid	3	1	2	1	1
Basic Compounds	Acetal POM	Polypropylene	Polyamide PA	UHMW-PE	Aluminum
Ammonia	1	1	2	1	2
Calcium hydroxide	1	X	2	1	4
Caustic soda	1	X	2	1	3
Potassium hydroxide	1	1	2	1	4



## Resistance to Materials: Conveyor Frames and Plastics (continued)

### Legend:

1 = Very good resistance | 2 = Good resistance | 3 = Moderate resistance |  
4 = Not recommended | X = no data available

Salts	Acetal POM	Polypropylene	Polyamide PA	UHMW-PE	Aluminum
Potassium bicarbonate	2	X	2	1	1
Potassium permanganate	2	2	4	1	1
Sodium cyanic	2	X	2	1	4
Sodium hydrochloride	3	X	4	1	4
Acid salt	2	X	3	1	X
Basic salt	1	X	2	1	X
Neutral salt	1	X	2	1	X
Organic Compounds	Acetal POM	Polypropylene	Polyamide PA	UHMW-PE	Aluminum
Acetone	1	1	1	1	1
Aniline	2	1	3	1	1
Benzene	1	3	2	4	1
Benzine	2	X	2	3	1
Butyl alcohol	2	X	2	1	1
Carbon disulphide	1	3	2	3	1
Carbon tetrachloride	1	3	1	3	2
Chloroform	1	4	3	4	X
Ethyl acetate	1	1	2	1	1
Ethyl alcohol	1	X	2	1	1
Heptane	2	1	1	2	X
Methyl alcohol	1	X	2	1	2
Methyl ethyl ketone	1	2	1	2	2
Nitrobenzene	2	2	2	1	1
Phenol	3	1	4	1	1
Gases	Acetal POM	Polypropylene	Polyamide PA	UHMW-PE	Aluminum
Carbon dioxide	3	1	1	1	1
Carbon monoxide	2	X	1	1	1
Chlorine	2	4	4	3	1
Hydrogen Sulfide	3	1	1	1	1
Sulphur dioxide	2	1	3	1	1
Other	Acetal POM	Polypropylene	Polyamide PA	UHMW-PE	Aluminum
Carbon tetrachloride	1	3	1	3	2
Beer	1	1	2	1	1
Fruit juice	1	2	2	1	2
Gasoline	1	1	2	1	1
Milk	1	1	1	1	1
Oil	1	3	1	1	1
Vinegar	1	1	2	1	1



## Belting:

The following is a list of the top coat materials used in AquaGard LP Series conveyor belting:

Material	Belt Number
Urethane	01, 02, 03, 05, 06, 09, 54, 55, 56, 53, 60, 61, 63, 68, 69, 72, 73, 75, 76, 77
PVC (non FDA approved)	08, 18, 59, 64
Silicone	50, 80, 81
Polyester	66
Nitrile	57
Urethane (hard)	58

## Resistance to Materials: Belting

The following table provides the resistance to belt materials used in the conveyor to several chemicals. Application testing is recommended to determine long term material durability.

### Legend:

1 = Good resistance | 3 = Limited resistance | 4 = Not recommended

Materials	Urethane	PVC (non FDA)	Silicone	Polyester	Urethane (hard)
<b>Chemicals</b>					
Acetic acid (glacial acetic acid)	4	3	1	1	4
Acetic acid 10 %	3	1	1	3	1
Acetic anhydride	3	4	1	1	4
Acetone	4	4	1	3	4
Aluminium salts	1	1	1	1	1
Alum	1	1	1	1	1
Ammonia, aqueous	3	1	1	3	1
Ammonia, gaseous	1	1	3	1	1
Ammonium acetate	1	1	1	1	1
Ammonium carbonate	1	1	1	1	1
Ammonium chloride	1	1	1	1	1
Ammonium nitrate	1	1	1	1	1
Ammonium phosphate	1	1	1	1	1
Ammonium sulphate	1	1	1	1	1
Amyl alcohol	1	4	3	1	1
Aniline	3	3	3	4	4
Barium salts	1	1	1	1	1
Benzaldehyde	4	4	4	4	4
Benzine (see also Motor fuels)	1	3	3	1	1
Benzoic acid	1	1	1	1	1
Benzol	3	4	4	3	3
Boric acid	1	1	1	1	1
Boric acid, solution	1	1	1	1	1
Bromine	4	4	4	4	4
Bromine water	4	3	1	4	3
Butane, gaseous	1	1	1	1	1
Butane, liquid	1	1	1	1	1
Butyl acetate	4	4	4	3	4
n-Butyl alcohol	1	3	1	1	1
Calcium chloride	1	1	1	1	1



## Resistance to Materials: Belting (continued)

<b>Legend:</b> 1 = Good resistance   3 = Limited resistance   4 = Not recommended					
Materials	Urethane	PVC (non FDA)	Silicone	Polyester	Urethane (hard)
Calcium nitrate	1	1	1	1	1
Calcium sulphate	1	1	1	1	1
Carbon disulphide	4	4	3	4	4
Carbon tetrachloride	3	4	4	4	3
Chlorine, liquid	4	4	4	4	4
Chlorine, gaseous, dry	4	4	4	4	4
Chlorine, gaseous, wet	4	4	4	4	4
Chlorine water	4	1	3	4	3
Chlorobenzene	4	4	4	4	4
Chloroform	4	4	4	4	4
Chlorosulphonic acid	4	4	4	4	4
Chromic acid	4	4	4	4	4
Chromium salts	1	1	1	1	1
Chromium trioxide	1	1	1	1	1
Citric acid	4	1	1	1	4
Copper salts	1	1	1	1	3
Cresols	3	3	3	4	3
Cresols, aqueous	3	3	3	3	3
Cyclohexane	4	4	4	1	4
Cyclohexanol	4	4	4	4	4
Cyclohexanone	4	4	4	4	4
Decahydronaphthalene	4	4	4	4	4
Dibutyl phthalate	3	4	1	4	4
Diethyl ether	4	4	4	4	4
Dimethyl formamide	4	4	3	4	4
1,4 Dioxan	4	4	3	4	4
Ether	4	4	4	4	4
Ethyl acetate	4	4	4	3	4
Ethyl alcohol, non-denatured 100%	1	3	3	1	1
Ethyl alcohol, non-denatured 96%	1	3	3	1	1
Ethyl alcohol, non-denatured 50%	1	3	3	1	1
Ethyl alcohol, non-denatured 10%	1	3	1	1	1
Ethyl benzene	4	4	4	4	4
Ethyl chloride	4	4	4	4	4
Ethylene chloride	4	4	4	4	4
2-Ethyl hexanol	1	3	1	1	1
Formaldehyde	1	3	1	3	1
Formic acid, dilute	4	1	1	3	3
Glycerine	1	1	1	1	1
Glycerine, aqueous	1	1	1	1	1
Glycol	1	3	1	1	1
Glycol, aqueous	1	1	1	1	1
Heptane	1	3	3	1	1
Hexane	1	3	3	1	1
Hydrochloric acid, conc.	3	1	4	3	1



## Resistance to Materials: Belting (continued)

### Legend:

1 = Good resistance | 3 = Limited resistance | 4 = Not recommended

Materials	Urethane	PVC (non FDA)	Silicone	Polyester	Urethane (hard)
Hydrochloric acid 10 %	3	1	1	1	1
Hydrofluoric acid 40 %	4	4	4	4	4
Hydrogen chloride, gaseous, dilute	3	1	3	3	1
Hydrogen chloride, gaseous, conc.	3	3	3	4	3
Hydrogen peroxide 10%	3	1	1	3	1
Hydrogen sulphide	3	3	3	3	3
Iron salts (sulphate)	1	1	1	1	1
Isooctane	1	3	3	1	1
Isopropyl alcohol	1	3	1	1	1
Lactic acid	1	3	1	1	1
Magnesium salts	1	1	1	1	1
Mercury	1	1	1	1	1
Mercury salts	1	1	1	1	1
Methyl alcohol, aqueous 50 %	3	3	1	1	1
Methyl alcohol (methanol)	1	3	1	1	1
Methyl ethyl ketone	4	4	1	3	4
Methylene chloride	4	4	4	4	4
Naphthalene	3	4	4	3	4
Nickel salts	1	1	1	1	1
Nitric acid	4	3	4	4	4
Nitrobenzene	4	4	1	3	4
Octane (see also isooctane)	1	3	4	1	1
Oleic acid	1	3	4	1	1
Oxalic acid	1	1	1	1	1
Ozone	1	3	3	1	3
Perchloroethylene	4	4	4	4	4
Phenol	3	3	1	4	3
Phenol, aqueous	4	3	1	4	3
Phosphoric acid 85 %	4	1	1	3	1
Phosphoric acid 50 %	1	1	1	1	1
Phosphoric acid 10 %	1	1	1	1	1
Phosphorus pentoxide	1	1	1	1	1
Potash lye 50 %	4	1	4	3	4
Potash lye 25 %	4	1	4	1	4
Potash lye 10 %	4	1	3	1	4
Potassium carbonate (potash)	1	1	1	1	1
Potassium chlorate	1	1	1	1	1
Potassium chloride	1	1	1	1	1
Potassium dichromate	1	1	1	1	1
Potassium iodide	1	1	1	1	1
Potassium nitrate	1	1	1	1	1
Potassium permanganate	1	1	1	1	1
Potassium persulphate	1	1	1	1	1
Potassium sulphate	1	1	1	1	1
Propane, gaseous	1	1	1	1	1
Propane, liquid	1	1	1	1	1



## Resistance to Materials: Belting (continued)

Legend: 1 = Good resistance   3 = Limited resistance   4 = Not recommended					
Materials	Urethane	PVC (non FDA)	Silicone	Polyester	Urethane (hard)
Pyridine	4	4	3	4	4
Silver salts	1	1	1	1	1
Soda lye 50% (see potash lye)	4	1	4	4	4
Soda lye 25%	4	1	4	3	4
Soda lye 10%	4	1	3	1	4
Sodium bisulphite	1	1	1	1	1
Sodium carbonate (natron)	1	1	1	1	1
Sodium carbonate (soda)	1	1	1	1	1
Sodium chlorate	1	1	1	1	1
Sodium chloride (common salt)	1	1	1	1	1
Sodium hydroxide (caustic soda)	4	1	4	1	4
Sodium hypochlorite	1	1	1	3	1
Sodium nitrate	1	1	1	1	1
Sodium nitrite	1	1	1	1	1
Sodium perborate	1	1	1	1	1
Sodium phosphate	1	1	1	1	1
Sodium sulphate (Glauber salt)	1	1	1	1	1
Sodium sulphide	1	1	1	1	1
Sodium sulphite	1	1	1	1	1
Sodium thiosulphate (fixing salt)	1	1	1	1	1
Stearic acid	1	1	1	1	1
Succinic acid	1	1	1	1	1
Sulphur	1	1	1	1	1
Sulphur dioxide	3	3	3	3	4
Sulphuric acid 96%	4	4	4	4	4
Sulphuric acid 50%	4	3	4	3	4
Sulphuric acid 25%	4	3	3	1	3
Sulphuric acid 10%	4	3	1	1	3
Tartaric acids	1	1	1	1	1
Tetrachloroethane	4	4	4	4	4
Tetrachloroethylene (perchloroethylene)	4	4	4	4	4
Tetrahydrofuran	4	4	4	4	4
Tetrahydronaphthalene	4	4	4	4	4
Thiophene	4	4	4	4	4
Tin II chlorides	1	1	1	1	1
Toluene	4	4	4	4	4
Trichloroethylene	4	4	4	4	4
Urea, aqueous	1	1	1	1	1
Water	1	1	1	1	1
Xylene	4	4	4	3	4
Zinc salts	1	1	1	1	1



## Resistance to Materials: Belting (continued)

### Legend:

1 = Good resistance | 3 = Limited resistance | 4 = Not recommended

Materials	Urethane	PVC (non FDA)	Silicone	Polyester	Urethane (hard)
<b>Products</b>					
Alum	1	1	1	1	1
Anti-freeze*	1	3	1	1	1
Aqua regia	4	4	4	4	4
Asphalt	1	3	3	1	1
Battery acid	4	4	4	4	4
Benzine	1	3	3	1	1
Bleaching lye (12.5%)	1	1	1	1	3
Bone oil	1	3	4	1	1
Borax	1	1	1	1	1
Brake fluid* Bosch	1	3	1	1	3
Brake fluid* Skydrol	4	4	3	4	4
Chloride of lime (aqueous suspension)	1	1	1	1	3
Chlorine (active)	4	4	4	4	4
Chrome baths* (technical)	1	3	3	1	1
Chromosulphuric acid	4	4	4	4	4
Cresol solution	3	3	4	4	4
Diesel oil	1	1	3	1	1
Fertilizer salts	1	1	1	1	1
Fixing salt	1	1	1	1	1
Floor wax	1	3	3	1	1
Formalin	1	3	3	1	1
Fuel oils*	1	1	3	1	1
Furniture polish*	1	3	3	1	1
Gypsum	1	1	1	1	1
Ink*	1	1	1	1	1
Linseed oil	1	3	1	1	1
Litex (styrene)	4	4	4	4	4
Mineral oils (non-aromatic)	1	1	1	1	1
Moth balls	3	4	3	3	3
Diesel oil*	1	1	3	1	1
Petrol (gasoline) DIN51635	1	3	3	1	1
Petrol, regular	1	3	3	1	1
Petrol, super	3	4	3	1	3
Motor oils*	1	1	1	1	1
Oil no. 3 (ASTM)	1	3	1	1	1
Oleum	4	4	4	4	4
Paraffin	1	1	1	1	1
Paraffin oil	1	1	1	1	1
Petroleum	1	3	3	1	1
Petroleum ether	1	3	4	1	1
Photographic developer	1	1	1	1	1



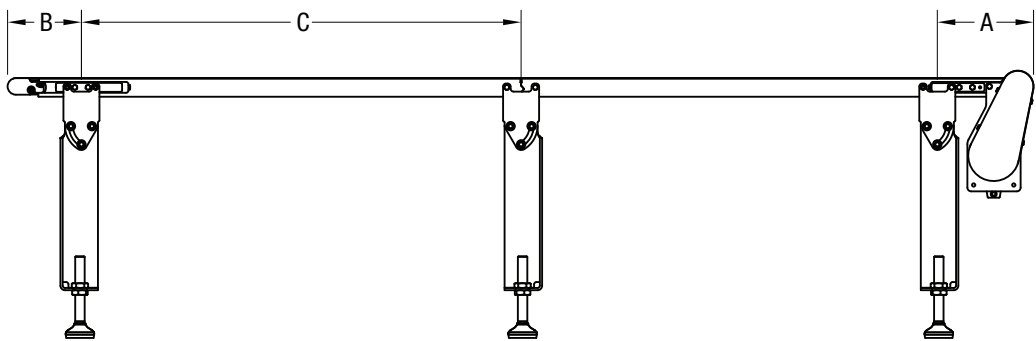
Bearings and Lubrication:

All bearings on AquaGard LP Series Conveyors are sealed and lubricated for life. No grease zerk is available and no greasing over the life of the product is required.

All gearmotors used on AquaGard LP Series conveyor are sealed and may be mounted in any position. Changing gear oil lubrication may be needed over the life of the gearbox. Please check the appropriate gearmotor manual for instructions.

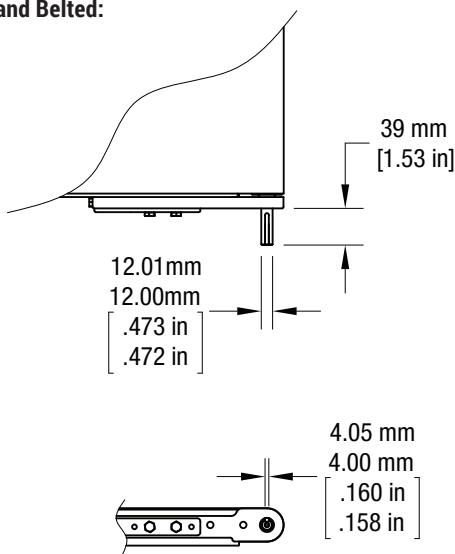
Support Stand Locations:

Support Stand Locations			
Symbol	Description	Distance	
		mm	in
A	Maximum distance back at drive end	188	7.4
B	Maximum distance back at idler end	156	6.1
C	Maximum distance between supports	1400	55.1



Conveyor Drive Shaft Tolerances:

End Drive and Belted:



Note: Dimensions = mm (in)

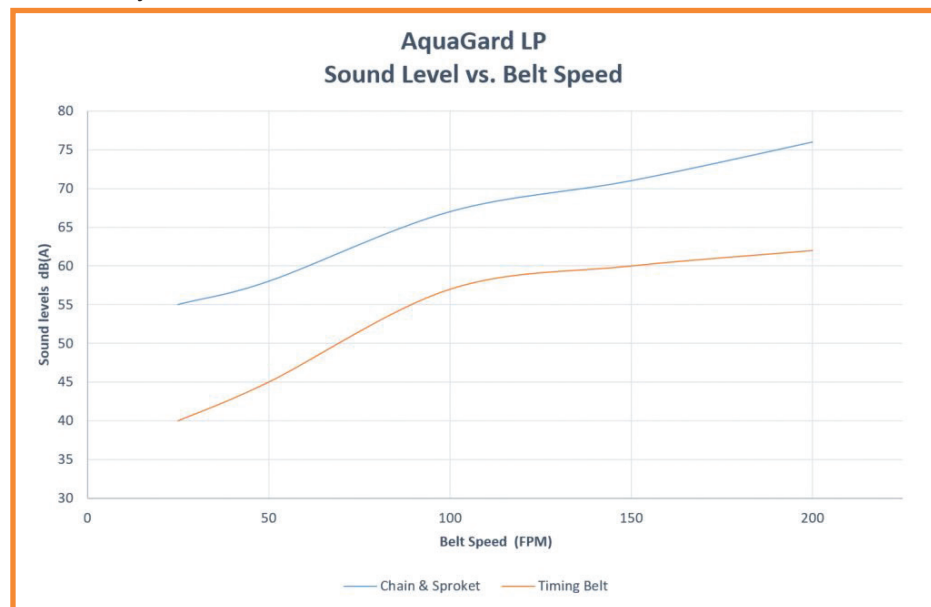


## Conveyor Noise Level (Decibel Ratings)

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.

Generally a higher belt speed will result in a higher noise level. The following charts provide basic decibel ratings for a typical conveyor arrangements.

### Belted Conveyors:



## Maximum Load Capacity

The following Load Capacity Charts **do not** take into account the conveyor configuration, length or gearmotor selection. Your specific conveyor may not be capable of the maximum load condition. Please confirm your maximum load per application with the Dorner DTools program at [www.dornerconveyors.com](http://www.dornerconveyors.com).

All load capacities shown are non-accumulated evenly distributed loads.

AquaGard LP Series Belted End Drive Conveyor					
Belt Width		Pulling the Belt		Pushing the Belt	
mm	in	Kg	Lb	Kg	Lb
70	(2.75)	14	31	7	15
95	(3.75)	16	35	8	18
152	(6)	18	40	9	20
203	(8)	23	51	12	26
254	(10)	27	60	14	31
305	(12)	27	60	14	31
406	(16)	27	60	14	31
457	(18)	27	60	14	31



## No Load Torque:

No load torque is the amount of torque required to turn an empty conveyor. The torque value varies by conveyor length and configuration. The following charts provide basic values for an average length conveyor. Your specific conveyor may not have a higher value. Please confirm your no load torque and maximum load per application with the Dorner DTools program at [www.dornerconveyors.com](http://www.dornerconveyors.com).

Belted Conveyor No Load Torque	
Belt Width mm (in)	Belted End Drive Nm (in-lbs)
70 (2.75)	0.6 (5)
95 (3.75)	0.7 (6)
152 (6)	0.9 (8)
203 (8)	1.1 (10)
254 (10)	1.4 (12)
305 (12)	1.6 (14)
406 (16)	1.8 (16)
457 (18)	1.9 (17)

## Belting and Coefficient of Friction

The coefficient of friction is used to determine the load a conveyor can carry. It effects a conveyor in two ways: the friction that exists between the conveyor belt and the bed surface, and if accumulating product, the friction that exists between the conveyor top surface and the product.

### Coefficient of Friction, between the bottom of the conveyor belt and bed surface:

Product	Surfaces	Application Condition	Coefficient of Friction
AquaGard LP Series Belted	Impregnated polyester fabric to anodized aluminum bed plate	Dry	0.33

### Coefficient of Friction, between the top surface of conveyor belt and product:

AquaGard LP Series Belt		
The following table provides the coefficient of friction between steel product and various belt top surfaces. All factors below are assuming dry conditions.		
Belt Number	Top Surface Material and Type	Coefficient of Friction
01, 54, 58, 68, 73, 81	Smooth hard urethane	0.40
02, 59, 60, 61, 66, 72, 76, 79	Smooth medium urethane	0.50
03, 19, 55, 69, 75, 77, 78, 80	Glossy soft urethane	>1.0, do not accumulate
05, 06, 50, 53, 63	Impregnated polyester fabric	0.20
08, 18, 64	PVC, Very High friction	>1.0, do not accumulate



## Calculating Conveyor Load Capacity

There are several factor that effect the overall conveyor load of AquaGard LP Series 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](http://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

## Calculating Conveyor Belt Speed:

### AquaGard LP Series Conveyors:

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

DR = Drive roller diameter or drive sprocket pitch diameter (mm)

= 31.75 mm (1.25 in) for end drive belted conveyors

TD = Number of teeth of pulley located at drive roller (if equipped)

TG = Number of teeth of pulley located at gearmotor (if equipped)

RPM = Revolutions per minute of gearmotor

Belt Speed (m/min) =  $RPM \times (TD/TG) \times (DR/1000) \times 3.14$

### Example:

AquaGard LP Series Belted End Drive, bottom mount with a 32 tooth pulley located at the drive roller and a 22 tooth pulley located on the gearmotor. The gearmotor is a 10:1 ratio with 172 rpm output.

Belt Speed (m/min) =  $(172) \times (32/22) \times (31.75/1000) \times 3.14$

Belt speed (m/min) = 25 m/min

Belt speed (ft/min) = 25 m/min \* (3.28) = 82 ft/min



## Dorner AquaGard Conveyors are Best for:

- Baking
- Packaged Foods
- Pet Foods
- Secondary Packaging
- Snack Foods
- Tight Transfers
- Confectionary
- Elevation Changes
- And More!

## AquaGard LP Series Specifications\*

- Belted and Cleated Belt Models
- Loads up to 22.7 kg (50 lbs)
- Widths: 70 mm (2.75 in) to 457 mm (18 in)
- Lengths: 500 mm (19.1 in) to 8,485 mm (18 ft)
- Robust welded 304 Stainless Steel frame
- Available in straights only



## 7350 Series Specifications

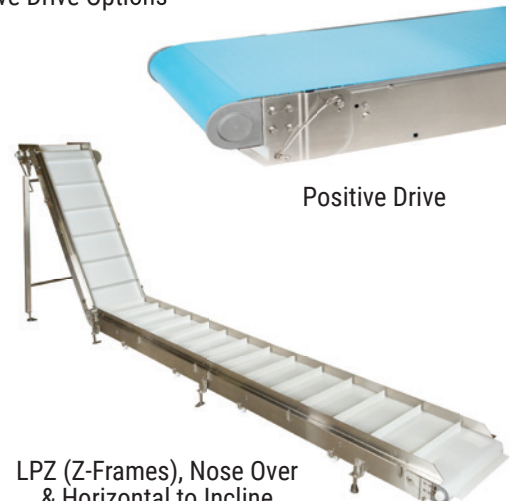
- Belted, Cleated Belt, Modular Belt, Modular Cleated Belt Models and Positive Drive Options
- Loads up to 341 kg (750 lbs)
- Widths: 152 mm (6 in) to 914 mm (36 in)
- Lengths: 914 mm (3 ft) to 25,000 mm (82 ft)
- FDA approved belting and plastic components
- 304 Stainless Steel frame
- Available in straights, curves or Z-Frame configurations



Straights



Curves  
(Modular Belt Only)



LPZ (Z-Frames), Nose Over  
& Horizontal to Incline

Positive Drive

## Options



Nose Bar Transfers



Powered Transfers



Variety of Guiding Options

Other options available including Roller Transfers, Chutes, Drip Pans, Formed Angle Stands, Hoppers and more.

\*Please refer to the AquaGard 7350 Series manual for product information.





**Industrial**



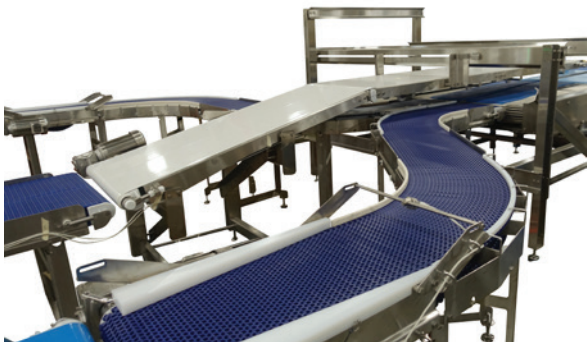
**Flexible Chain**



**Pallet Systems**



**Sanitary Stainless Steel**



**Engineered Solutions Group**

Custom engineered solutions for almost any application.



**CAD Configurator Tool**

Industry leading tool! Configure your own custom conveyor in minutes.

## TRANSFORMING CONVEYOR AUTOMATION

### Contact Dorner

**USA**  
+1-262-367-7600

**Canada**  
+1-289-208-7306

**Mexico**  
+52.33.30037400

**Germany**  
+49 (0) 2461/93767-0

**France**  
+33 (0)1 84 73 24 27

**Malaysia**  
+604-626-2948

# DORNER®

By Columbus McKinnon

**DORNERCONVEYORS.COM**



MAGNETEK

montratec

CONVEYANCE SOLUTIONS

© Dorner Mfg. Corp. 2024. All Rights Reserved.

851-972-EU-EN 0124