

# ENGINEERING MANUAL

Simple & Clean Stainless  
Steel Construction

Multiple Curves,  
Inclines & Declines

Industry Best  
Product Transfers

High Speed  
Performance



*Aqua***Gard**<sup>®</sup>  
Table Top **GT**

**SERIES  
CONVEYORS**

**DORNER**<sup>®</sup>

By Columbus McKinnon

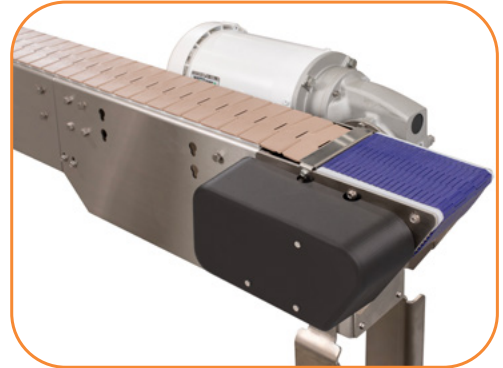
### Clean & Innovative Design

- Smooth frame design for ease of cleaning
- Capable of multiple curves as well as inclines and declines on a single conveyor
- Plain bend corners with 610 mm (24 in) on centerline radius use FDA approved wear strips
- Inclines and declines available up to 10 degrees
  - Incline angles are integrated into the intermediate modules



### Innovative Transfer Options

- Powered Transfers
  - Provides smooth in line transfer of small parts
  - Series driven off of drive or idler module
  - Transfers parts as small as 76 mm (3 in) in diameter
- Standard Tails Side to Side Transfer
  - Flush side tails option brings chain to edge of the conveyor for stable transferring of products
- Inline Transfer modules
  - Standard modules consisting of drive and idler tails in one
  - Used on high speed and unstable products



### Compact Infeed & Outfeed Modules

- Infeed Tail
  - Inline design for simple transfers
  - Flush design for side transfers
  - Variety of transfer options
- Outfeed Module
  - Inline design for simple transfers
  - Flush side for side transfer
  - Motor can be mounted to the side or underneath



Flush Drive Tail

Flush Idler Tail

## The Benefits of a Dorner AquaGard GT Series Conveyor

#### Industry Ready

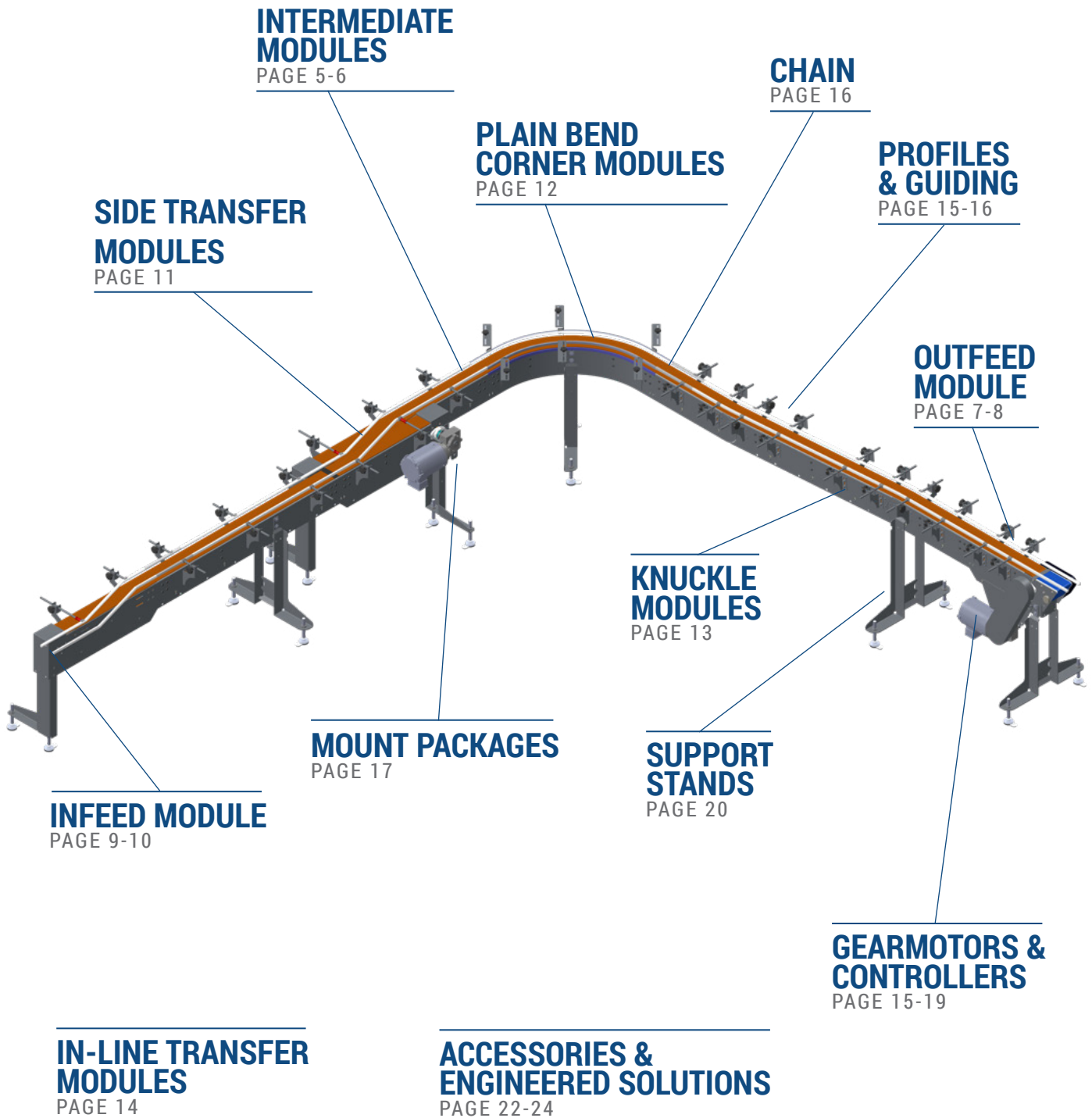
- 304 Stainless Steel frame
- All materials are FDA approved plastics and Stainless Steel

#### Quality Construction

- FDA approved wear strips on curves
- Bolt together construction for modularity and future add-ons

#### Time Saving

- Dorner's online configurator engineers simple or complex conveyors to meet your needs in minutes
- The industry leading tool delivers a complete 3D CAD assembly model for instant validation of fit
- Conveyors are shipped in sub-assemblies for fast and simple installation



**TECHNICAL DATA & CALCULATIONS**  
PAGE 25-31

## ACCURATE AND COST EFFECTIVE TRANSFER OPTION

VARIETY OF TRANSFER MODULES PRE-ENGINEERED AND AVAILABLE IN SHORT LEADTIME. FROM THE SIMPLEST AND MOST COST EFFECTIVE IN-LINE DEADPLATE AND GRAVITY MINI ROLLERS TRANSFER TO MOST PRODUCT STABLE AND HIGH SPEED TRANSFERS WITH FLUSH SIDE AND X-TRANSFER MODULES

## 300 SERIES STAINLESS STEEL & FDA APPROVED PLASTICS CONSTRUCTION

MEETING PACKAGE FOOD HANDLING REQUIREMENTS, AND IDEAL FOR CLEANING UNAVOIDABLE SPILLS ON PRODUCTION LINE

## ADAPTABLE PRODUCT GUIDING

STRONG STAINLESS STEEL GUIDE BRACKETS WITH ADJUSTABILITY FOR QUICK PRODUCT CHANGE OVER. KEY HOLE SLOTS IN ALLOWS FOR QUICK SETUP OF GUIDING ON TO THE FRAME

## HIGH PERFORMANCE CORNER MODULES

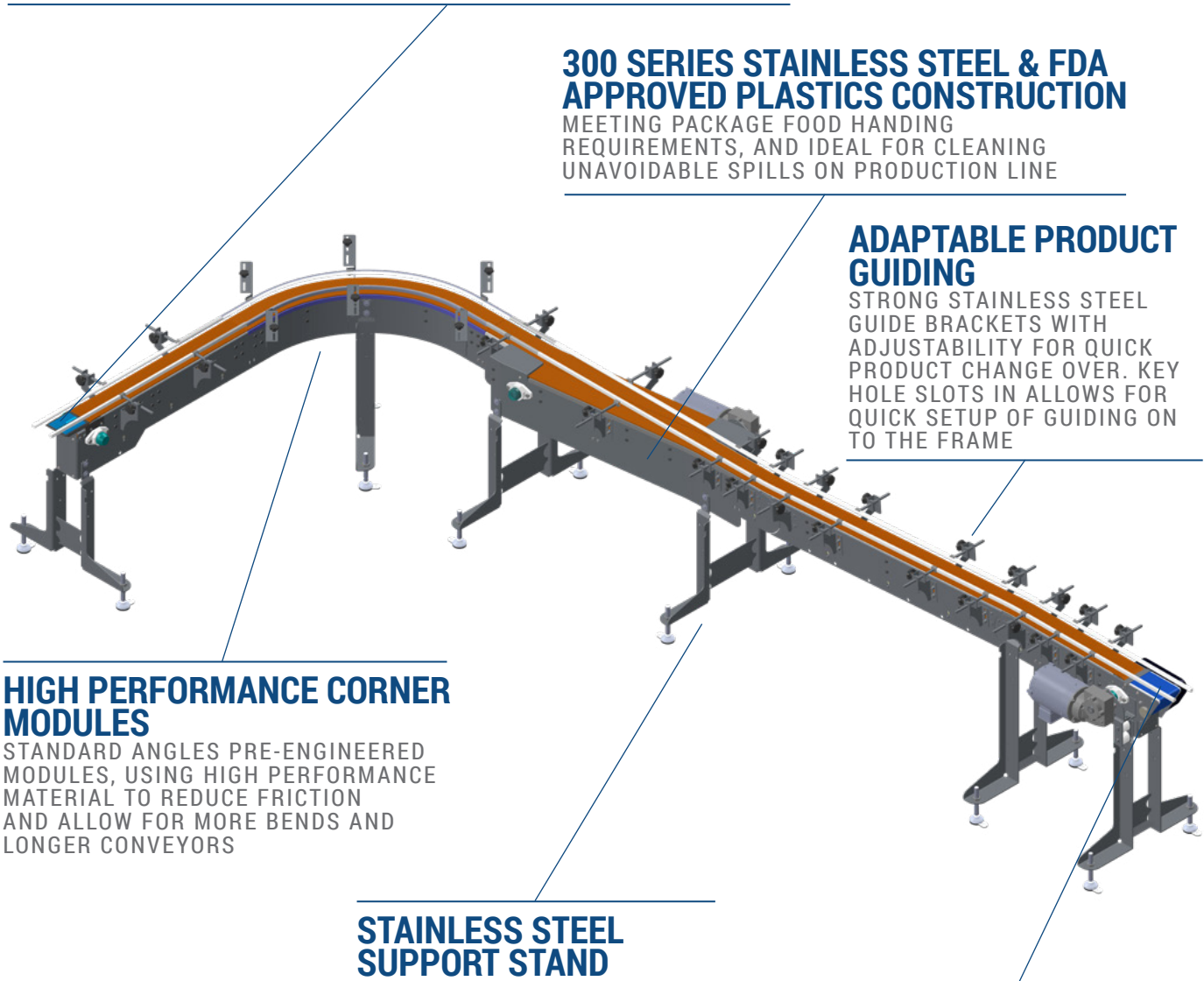
STANDARD ANGLES PRE-ENGINEERED MODULES, USING HIGH PERFORMANCE MATERIAL TO REDUCE FRICTION AND ALLOW FOR MORE BENDS AND LONGER CONVEYORS

## STAINLESS STEEL SUPPORT STAND

PROVIDES ADJUSTABLE HEIGHT AND ANGLE REDUCING SETUP TIME AND INCREASING FLEXIBILITY. OPEN FRAME CONSTRUCTION PROVIDES RIGIDITY WHILE MEETING A HIGHER LEVEL OF SANITATION

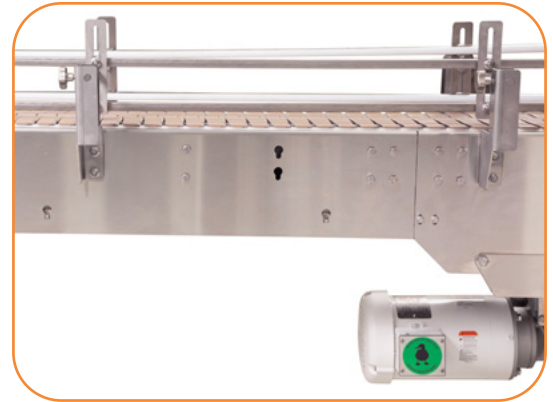
## POWER TRANSFER

INNOVATIVE IN-LINE POWER TRANSFER PROVIDES A SMOOTH AND STABLE TRANSFER WITHOUT TAKING UP VALUABLE FLOOR SPACE, CAN BE USED WITH PRODUCT AS SMALL AS 76MM (3 INCH) IN DIAMETER



## Specifications

- Width:
  - 83 mm (3.25 in)
  - 115 mm (4.50 in)
  - 191 mm (7.50 in)
  - 305 mm (12.0 in)
- Length:
  - Minimum = 300 mm (11.8 in)
  - Maximum = 25000 mm (82 ft)
  - pre-assembled sections of 3000 mm (9.84 ft)
- Bolt together and 300 series stainless steel construction
- Frame width only 13 mm (.5 in) wider than chain width
- Standard with keyslot attachment method for guiding and accessories



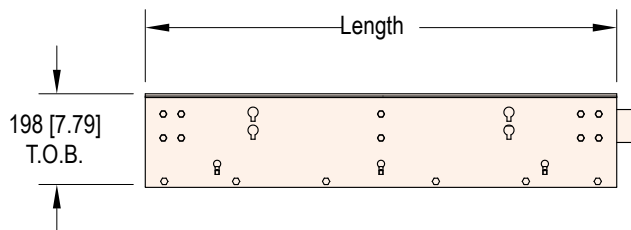
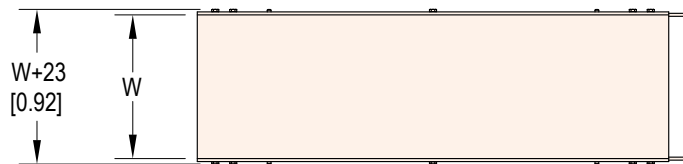
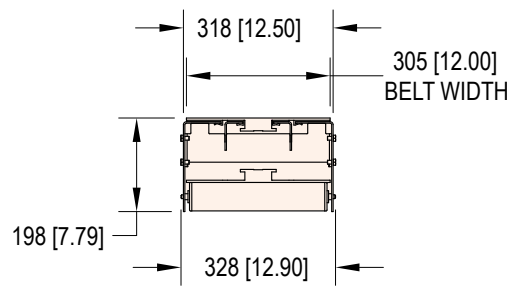
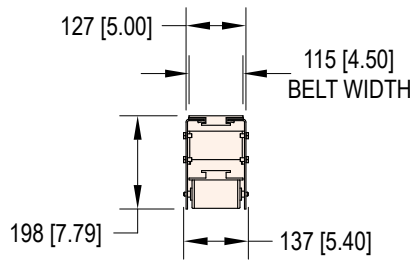
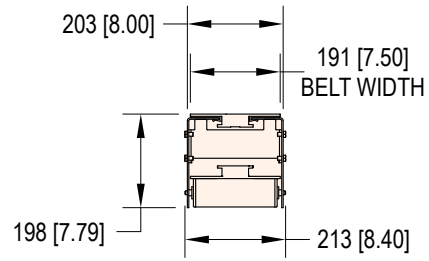
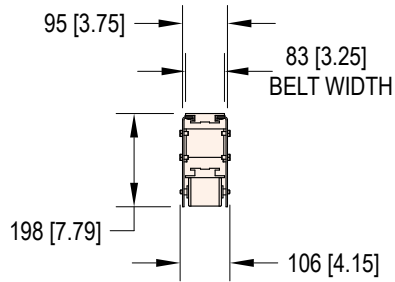
**AquaGard GT Series: Intermediate Modules**

7G 3 M WWW - LLLL - GG GG CC - SS

- Sequence Number: 01 to 99
- Chain: 01 = Low Friction
- Profile (D side): Same options as A side
- Profile (A side):
  - 01 = Low side
  - 13 = Single row tooled adjustable
  - 14 = Single row toolless adjustable
  - 15 = Double Row tooled adjustable
  - 16 = Double row toolless adjustable
- Conveyor Length Reference: 00300 thru 25000 (LLLL = length in mm, 5mm increments)
- Conveyor Width Reference: 083 = 83 mm (3.25 in) 115 = 115 mm (4.5 in) 191 = 191 mm (7.5 in) 305 = 305 mm (12 in)
- Documentation Language: M = US
- Conveyor Type: 3 = Intermediate Module
- 7G = Aquagard GT - Stainless Steel Table Top Chain Conveyor

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

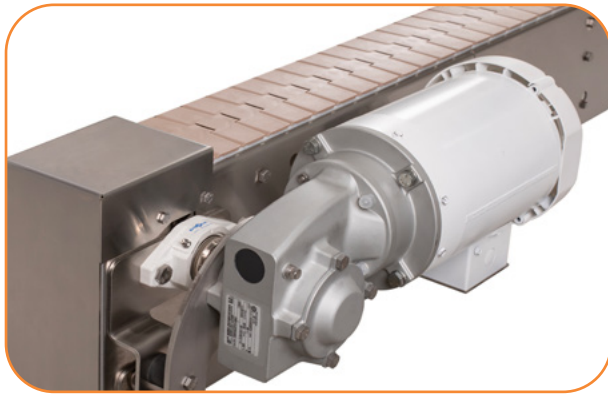
**Note:** Dimensions = mm (in)



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

Note: Dimensions = mm (in)



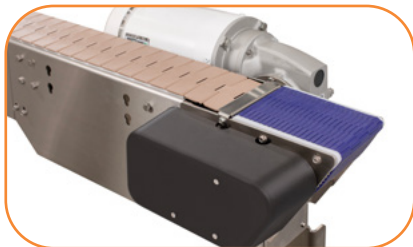


## Specifications

- Outfeed Length: 610-25,000 mm (2-82 ft)
- Pre-assembled end transfer options
  - Mini Rollers
  - Deadplate
  - Power Transfer
- Variety of flushside transfer options
  - Left/Right to be paired with infeed and/or other equipment
  - 3 Standard lengths of drive modules to best fit application needs and best transfer of products
    - 610mm (24 in); available for end transfer and side transfer widths of 83 mm and 115 mm
    - 765mm (30 in); available for all side transfer widths
    - 915mm (36 in); available for all side transfer widths
- Drive Sprocket: 12 tooth, 38 mm (1.5 in) pitch
- Pitch Diameter: 147 mm (5.79 in)
- Internally located Stainless Steel bearings
- Maximum incline or decline: 10°
- Uses catenary loop for belt take-up



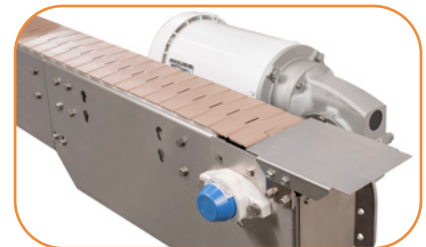
**STANDARD OPTION:  
Mini Roller**



**STANDARD OPTION:  
Power Transfer**



**STANDARD OPTION:  
Flushside**

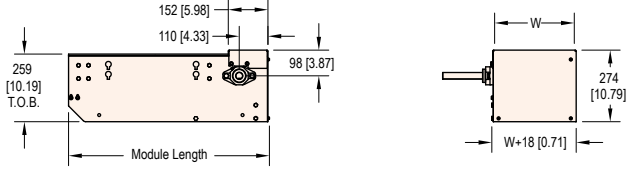
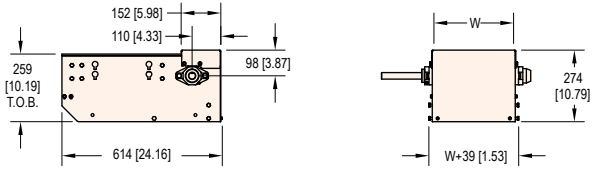
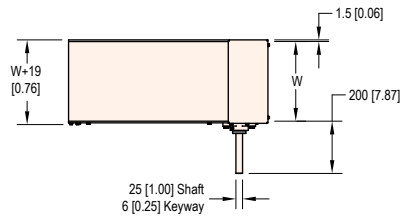
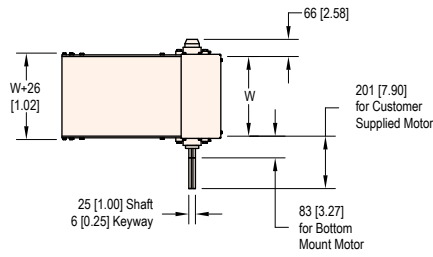


**STANDARD OPTION:  
Dead Plate**

### AquaGard GT Series: Drive Modules (Outfeed)

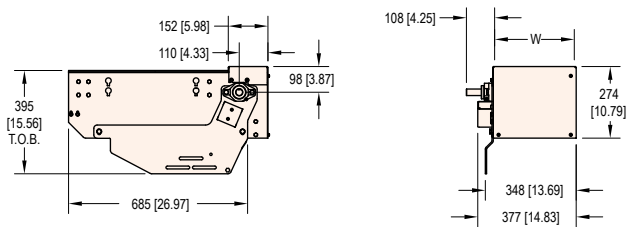
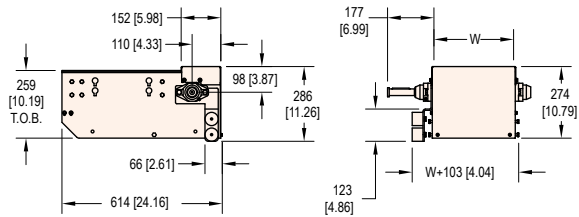
7G	5	M	WW	-	LLLL	-	S	1	A	0	M	GG	GG	CC	-	SS	
- Sequence Number: 01 to 99 - Chain: 01 = Low Friction - Profile (D side) - Profile (A side): 01 = Low side, 13 = Single row tooled adjustable, 14 = Single row toolless adjustable, 15 = Double row tooled adjustable, 16 = Double row toolless adjustable - Mount / Motor Type: N = Customer Supplied, S = Side Mount with Torque Arm 90 Degree Motor, B = Bottom Mount 90 Degree Motor - Take up: 0 = Catenary Take Up - Motor Position: A = Left, D = Right Note: Flush module motors will always have mount on opposite side of transfer area. (e.g. Flush Left with have D side mount) - Module Length: 1 = 610 mm (24 in) End Transfer only, 2 = 610 mm (24 in) Side Transfer, 3 = 765 mm (30 in) Side Transfer, 4 = 915 mm (36 in) Side Transfer - Drive Module Code: S = Standard End Transfer, M = Mini Roller End Transfer, P = Power End Transfer, D = Deadplate End Transfer L = Flush Left Side Transfer, R = Flush Right Side Transfer - Conveyor Length Reference: 0610 to 25000 (LLLL = length in mm, 5mm increments) - Conveyor Width Reference: 083 = 83 mm (3.25 in) 115 = 115 mm (4.5 in) 191 = 191 mm (7.5 in) 305 = 305 mm (12 in) - Documentation Language: M = US - Conveyor Type: 5 = Drive Module (outfeed) 7G = Aquagard GT - Stainless Steel Table Top Chain Conveyor																	

Order gearmotor mounting packages and gearmotors separately, see pages 17-19.  
For support stands and accessories, see page 20-21.



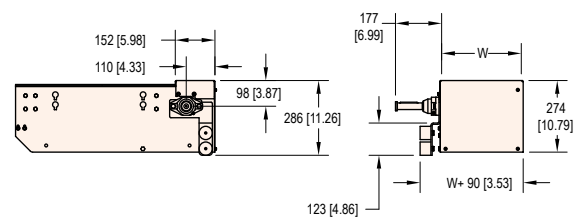
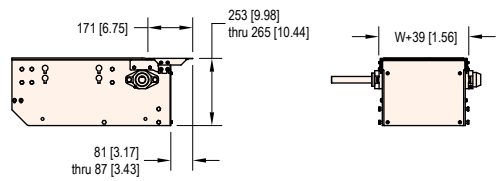
**Standard End Transfer with Customer Supplied and Bottom Mount Motor**

**Flush Side Transfer with Customer Supplied Motor**



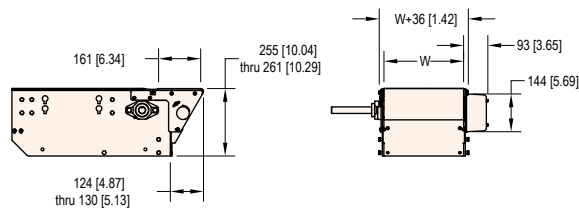
**Standard End Transfer with Side Mount Motor**

**Flush Side Transfer with Bottom Mount Motor**

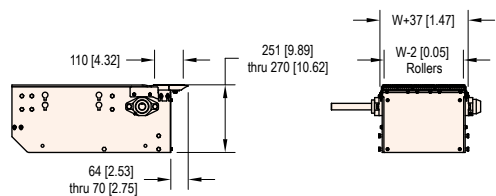


**Optional Deadplate End Transfer**

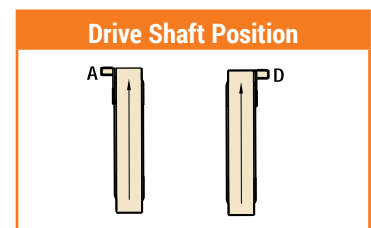
**Flush Side Transfer with Side Mount Motor**



**Optional Power End Transfer**



**Optional Mini Roller End Transfer**





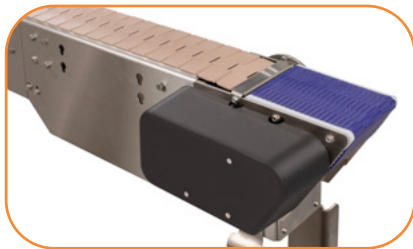


## Specifications

- Infeed Length: 610-25,000 mm (2-82 ft)
- Pre-assembled end transfer options
  - Mini Rollers
  - Deadplate
  - Power Transfer
- Variety of flushside transfer options
  - Left/Right to be paired with outfeed and/or other equipment
  - 4 Standard lengths of idler modules to best fit application needs and best transfer of products
    - 405 mm (16 in); available for end transfer idler tail
    - 610mm (24 in); available only for side transfer idler tails
    - 765mm (30 in); available only for side transfer idler tails
    - 915mm (36 in); available only for side transfer idler tails
- Idler Sprocket: 12 tooth, 38 mm (1.5 in) pitch
- Internally located Stainless Steel bearings with H1 FDA approved lubricant



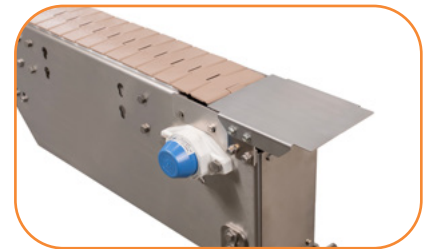
**STANDARD OPTION:  
Mini Roller**



**STANDARD OPTION:  
Power Transfer**



**STANDARD OPTION:  
Flushside**



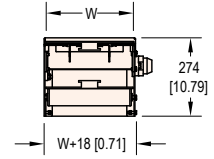
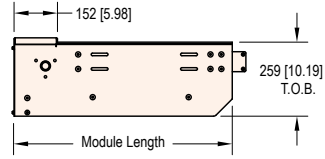
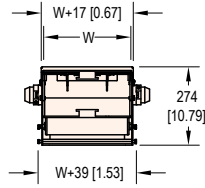
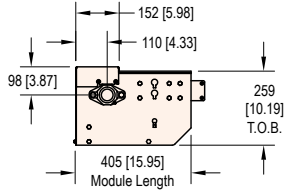
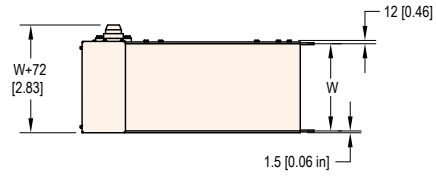
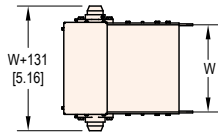
**STANDARD OPTION:  
Dead Plate**

**AquaGard GT Series: Idler Modules (Infeed)**

7G 1 M W W W - L L L L L - S 1 G G G G C C - S S

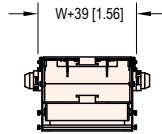
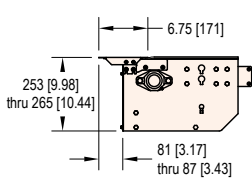
Sequence Number: 01 to 99  
 Chain: 01 = Low Friction  
 Profile (D side)  
 Profile (A side): 01 = Low side, 13 = Single row tooled adjustable, 14 = Single row toolless adjustable, 15 = Double Row tooled adjustable, 16 = Double row toolless adjustable  
 Module Length: 1 = 405 mm (16 in) End Transfer only, 2 = 610 mm (24 in) Side Transfer, 3 = 765 mm (30 in) Side Transfer, 4 = 915 mm (36 in) Side Transfer See Chart below.  
 Tail Module Code: S = Standard End Transfer, M = Mini Roller End Transfer, See Chart below.  
 P = Power End Transfer Cover A, D = Deadplate End Transfer, L = Flush Left Side Transfer, R = Flush Right Side Transfer, Q = Power End Transfer Shaft Cover D  
 Conveyor Length Reference: 00405 to 25000 (LLLL = length in mm, 5mm increments)  
 Conveyor Width Reference: 083 = 83 mm (3.25 in) 115 = 115 mm (4.5 in)  
 191 = 191 mm (7.5 in) 305 = 305 mm (12 in)  
 Documentation Language: M = US  
 Conveyor Type: 1 = Idler Module (infeed)  
 7G = Aquagard GT - Stainless Steel Table Top Chain Conveyor

Order gearmotor mounting packages and gearmotors separately, see pages 17-19.  
 For support stands and accessories, see page 20-21.

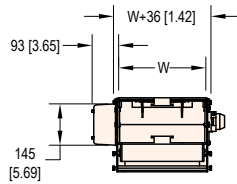
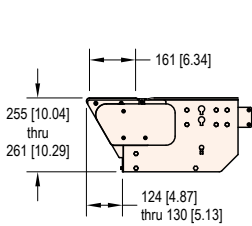


**Standard End Transfer**

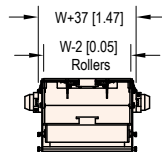
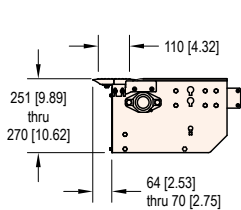
**Flush Side Transfer**



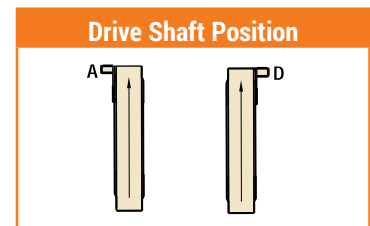
**Optional Deadplate End Transfer**



**Optional Power End Transfer**

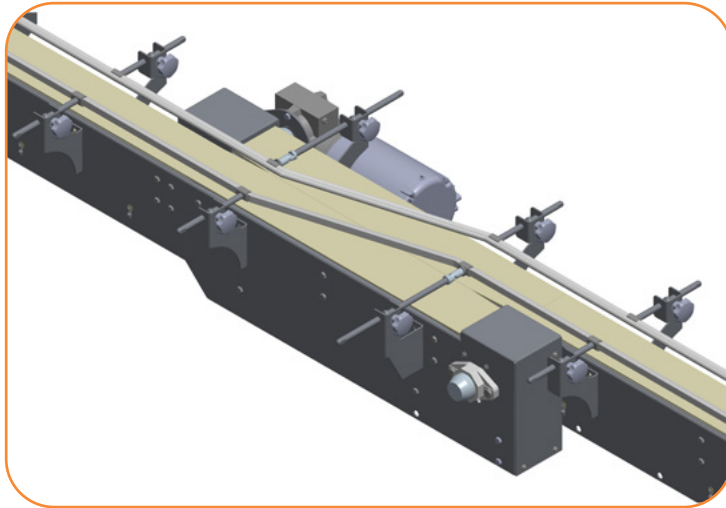


**Optional Mini Roller End Transfer**



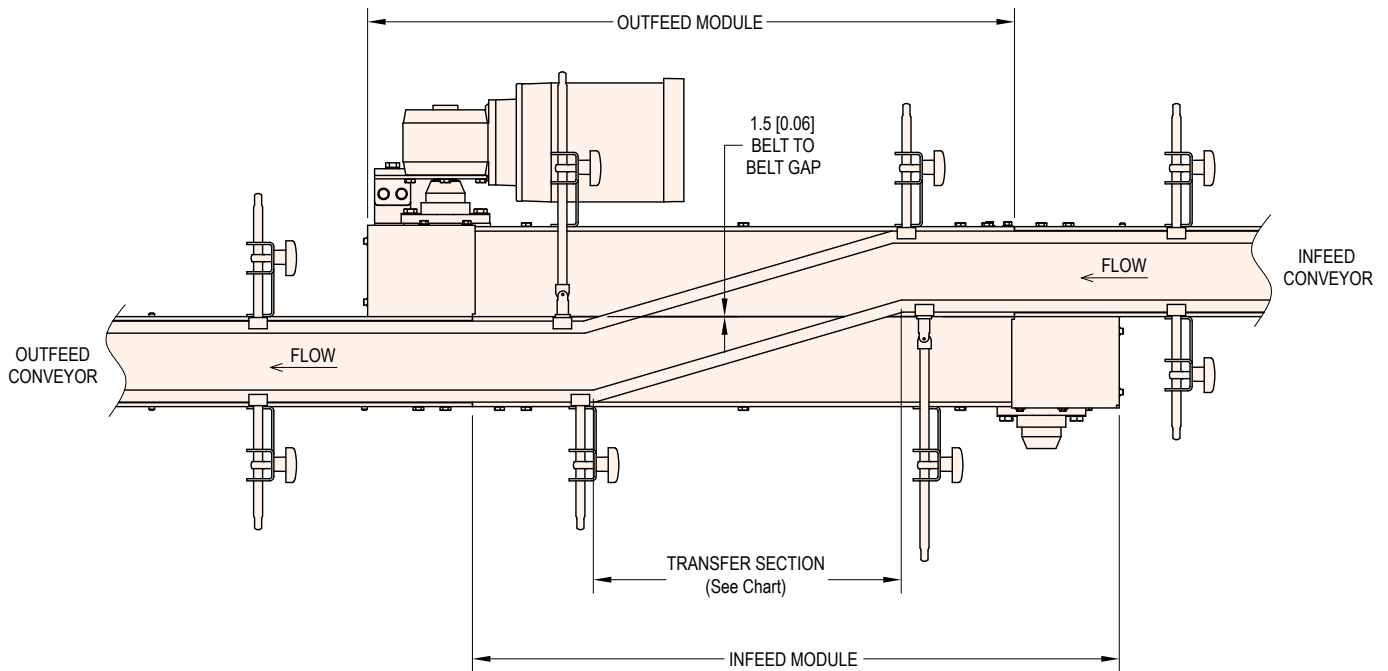
**Note:** Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

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



## Specifications

- Provides the capability for product transfers with conveyors side by side
- Conveyor chains are 3.3 mm (.125 in) edge to edge
- Side transfer module brings chain past frame edge and then back on center line with frame
- Requires (2) modules; one on each conveyor
- Requires plow guiding to move product across chain
- Compatible with low friction chain only
- Can mount directly to drive and idler modules without the need for an intermediate frame



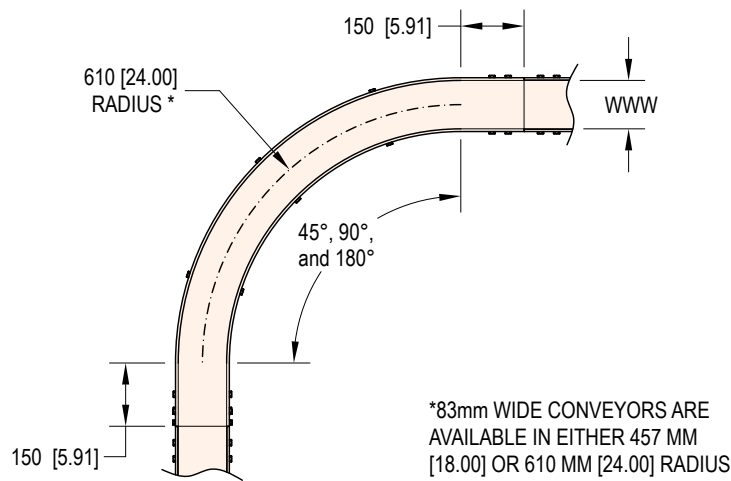
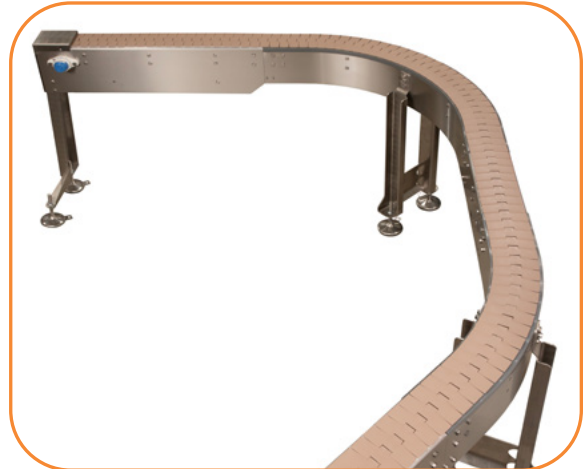
TRANSFER SECTION LENGTH
For 915 length Infeed & Outfeed Modules = 435 [17.11]
For 765 length Infeed & Outfeed Modules = 285 [11.21]
For 610 length Infeed & Outfeed Modules = 130 [5.10]

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

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

**Specifications**

- Angles:
- 45°, 90° and 180°
- Other angles available, contact factory
- Radius at centerline of chain: 610 mm (24 in)
  - 83mm (3.25 in) chain option of 475 mm (18 in) radius available
- Product can be wider than the chain
- Can mount directly to drive and idler tails without the need for an intermediate frame
- Larger and smaller radii available, contact factory



**AquaGard GT Series: Curve Modules**

7G 2 M WWW - C A A A B G G G C C H - S S

Sequence Number: 01 to 99

Curve Direction: R = Right, L = Left

Chain: 01 = Low Friction

Profile (D side): Same options as A side

Profile (A side): 01 = Low side, 13 = Single row tooled adjustable, 14 = Single row toolless adjustable, 15 = Double Row tooled adjustable, 16 = Double row toolless adjustable

Type: B = Plain Bend

Angle: 045 = 45° 090 = 90° 180 = 180°

Center Radius of Bend: A = 18 in (475mm) ONLY AVAILABLE FOR 83 mm CHAIN B = 24 in (610mm)

Conveyor Width Reference: 083 = 83 mm (3.25 in) 115 = 115 mm (4.5 in) 191 = 191 mm (7.5 in) 305 = 305 mm (12 in)

Documentation Language: M = US

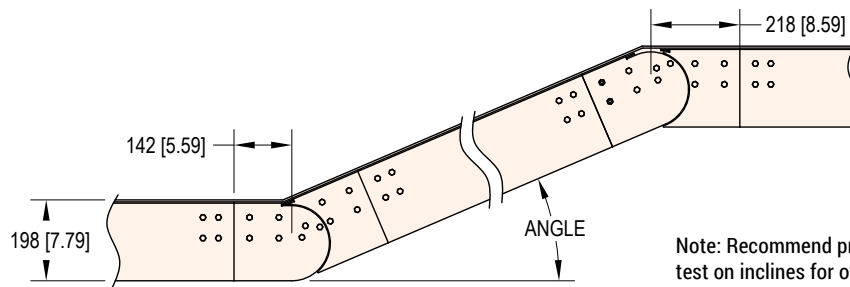
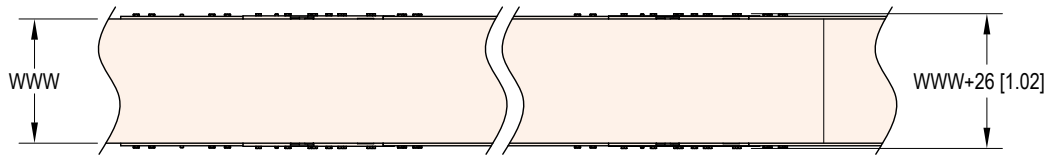
Conveyor Type: 2 = Curve Module

7G = Aquagard GT - Stainless Steel Table Top Chain Conveyor



## Specifications

- Sold as pre-assembled modules
- Field adjustable to reduce integration time
- Angles: -10 to 10 deg°
- Incline angles of 10° and higher require friction top chain
- Can mount directly to drive modules, idler modules and plain bend corners without the need for an intermediate frame
- Compatible with incline or decline configurations



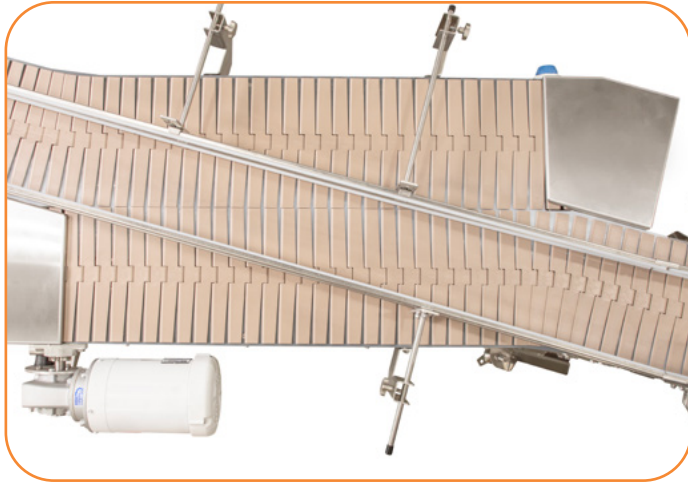
Note: Recommend product application test on inclines for over 4 degrees.

**AquaGard GT Series: Incline/Decline Knuckle Modules**

7G 6 M WWW - A A D G G G G C C - S S

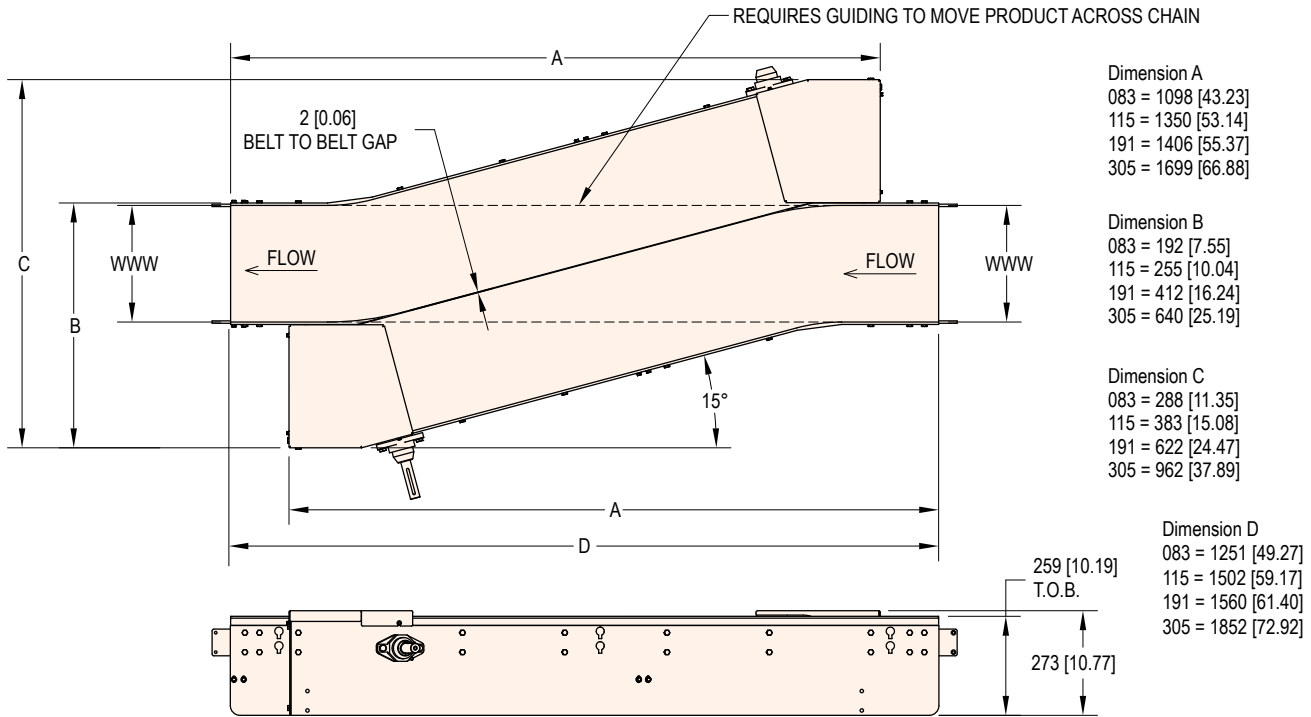
- Sequence Number: 01 to 99
- Chain: 01 = Low Friction
- Profile (D side): Same options as A side
- Profile (A side): 01 = Low side, 13 = Single row tooled adjustable, 14 = Single row toolless adjustable, 15 = Double Row tooled adjustable, 16 = Double row toolless adjustable
- Direction: E = Incline D = Decline
- Angle: 03 to 30 in 01 increments
- Conveyor Width Reference: 083 = 83 mm (3.25 in) 115 = 115 mm (4.5 in) 191 = 191 mm (7.5 in) 305 = 305 mm (12 in)
- Documentation Language: M = US
- Conveyor Type: 6 = Inc/Dec Knuckle

7G = Aquagard GT - Stainless Steel Table Top Chain Conveyor



## Specifications

- Provides the capability for product transfers with conveyors in-line, reducing product pressure and reduction of line speeds
- Conveyor chains are 3.3 mm (.125 in) edge to edge
- One frame design to minimize complexity and allow transfer section to be maximized
- Requires guiding to move product across chain
- Compatible with low friction chain only
- Can mount directly to drive and idler modules without the need for an intermediate frame



### AquaGard GT Series: Transfer Modules

7G 7 M WWW - P 0 M G G G G C C - S S

Sequence Number: 01 to 99

Chain: 01 = Low Friction

Profile (D side): Same options as A side

Profile (A side): 13 = Single row tooled adjustable, 14 = Single row toolless adjustable,

15 = Double Row tooled adjustable, 16 = Double row toolless adjustable

Mount / Motor Type: N = Customer Supplied, S = Side Mount (Torque Arm) 90 Degree Motor

Take up: 0 = Catenary take up

Motor Position: A = Left

Conveyor Width Reference: 083 = 83 mm (3.25 in) 115 = 115 mm (4.5 in) 191 = 191 mm (7.5 in) 305 = 305 mm (12 in)

Documentation Language: M = US

Conveyor Type: 7 = X Transfer Module

7G = Aquagard GT - Stainless Steel Table Top Chain Conveyor

Note: Transfer Modules come with Side Mount package, no option for bottom mount.

Contact factory for ordering details.

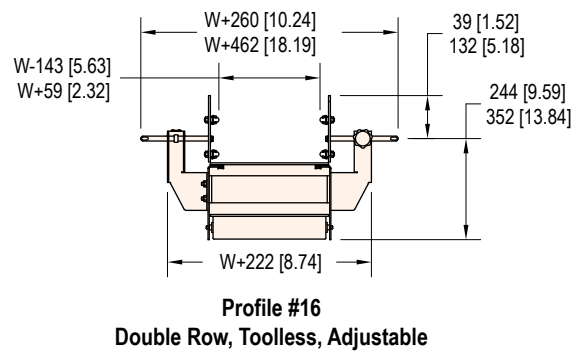
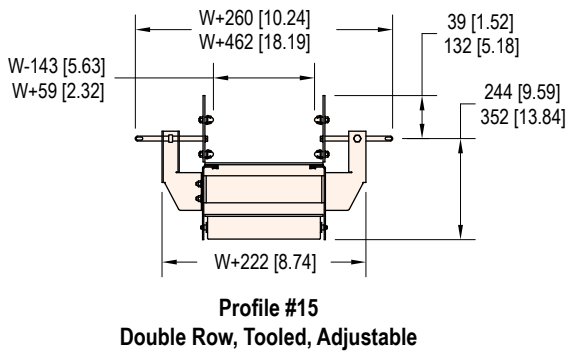
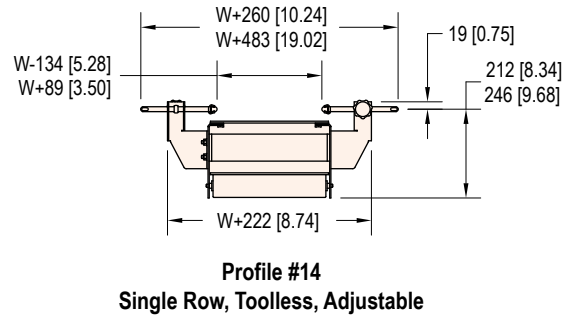
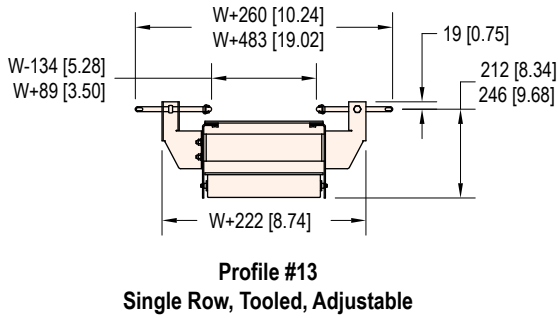
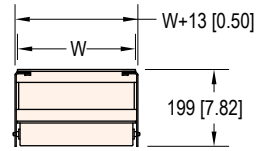
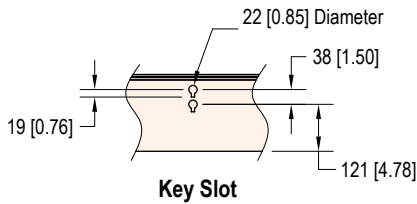
Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

Note: Dimensions = mm (in)



## Profile & Guiding

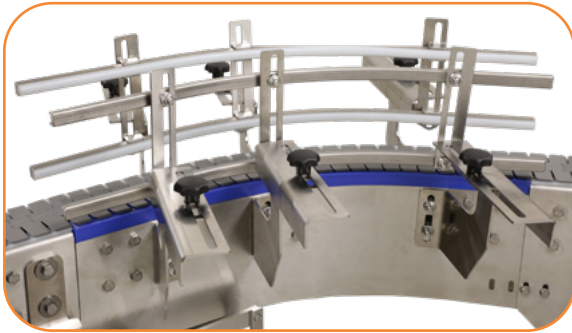
- Simple guiding brackets constructed out of Stainless Steel
- Single or double rows available for a variety of product shapes
- Tool-less options for quick line change overs
- D-shape profiles to accommodate rounded and taper shapes
- Other guide option contact factory



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

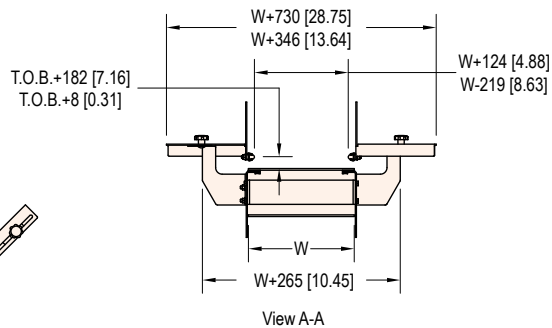
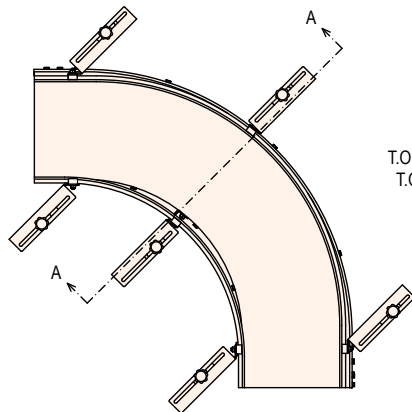


### Curved Guides



### Curved Profile & Guiding

- Simple guiding brackets constructed out of Stainless Steel
- Brackets are aligned with each other to easily adjust for different product sizes
- Single or double rows available for a variety of product shapes
- Tool-less options for quick line change overs
- D-shape profiles to accommodate rounded and taper shapes



### Chain Selection Guide

Standard Chain									
Type	Part Number	Belt Specifications	Color	Pin Material	Maximum Incline*	Maximum Chain Temperature**	Minimal Chain Temperature	Chain Tensile Strength	FDA Approved
Low Friction	01	Acetal	Light Brown, Gray (for 83 mm)	Stainless Steel	7°	200°F (93°C)	-40°F (-40°C)	291 kg (641 lbs) [2850N]	Yes
Friction Insert	08	Acetal with Grip Top Insert	Light Brown Chain with Black insert	Stainless Steel	30°	140°F (60°C)	-40°F (-40°C)	291 kg (641 lbs) [2850N]	No

\* Maximum Incline is provided for reference only. Product testing is recommended.

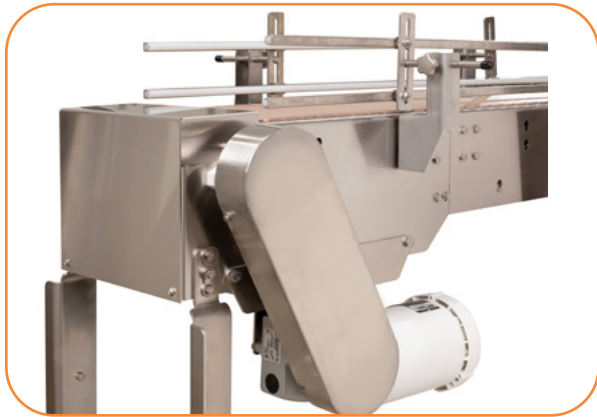
\*\* Part temperature can typically exceed chain temperature by 20° to 30°F assuming parts are not stopped on the chain for long durations.



Contact factory for ordering details.

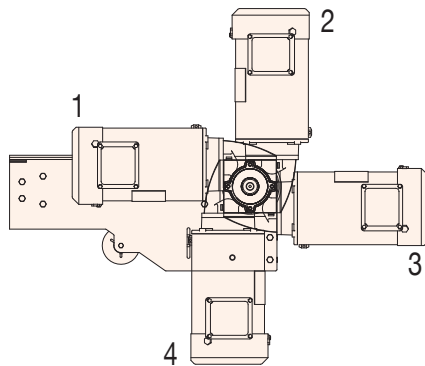
**Note:** Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

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

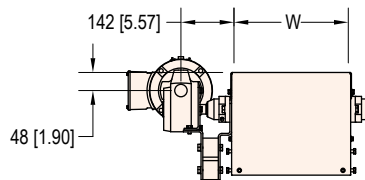


## Mount Packages

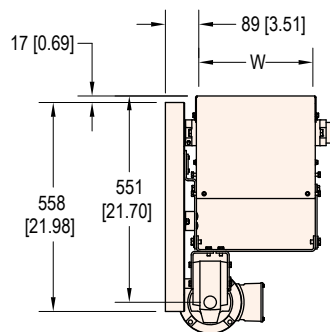
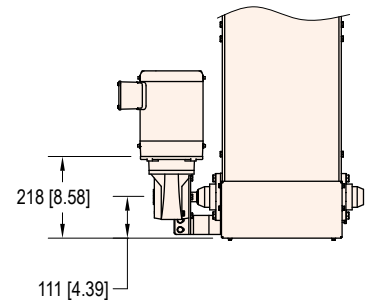
- Hollow shaft gearmotor with Stainless Steel shafting
- Side Mount Motor
  - Direct coupled to conveyor shaft allowing room under conveyor
  - Motor can be mounted in position 1, 2, 3 or 4
- Bottom Mount Motor
  - Minimizes conveyor width
- Compatible with standard and powered transfer drive modules



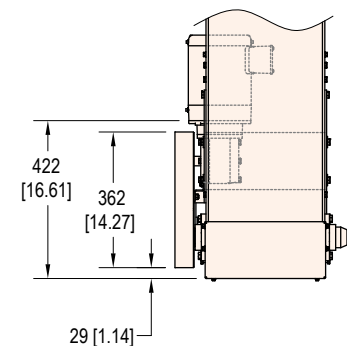
Mounting Positions



Side Mount



Bottom Mount



**AquaGard GT Series: Mount Package**

7G M S H S A

— Drive Shaft Position: A = A position D = D position (to match drive module)

— Motor Type: S = Standard Load

— Motor Output Shaft: H = 90 Degree

— Mount Type: T = Flush one side bottom mount (available to be used on all drive types), S = Side Drive,


A = 083 WD STD Bottom Mount, B = 115 WD STD Bottom Mount,

C = 191 WD STD Bottom Mount, D = 305 WD STD Bottom Mount

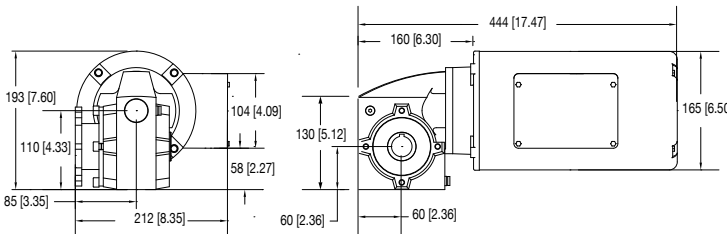
— Documentation Language: M = US

7G = Aquagard GT - Stainless Steel Table Top Chain Conveyor


**Fixed Speed**

**Chart 1**  **90° Nema C-Face, Painted Motor**

- Nema 56C
- IP 55 Protection Rating
- Sealed Gearmotor with H1 FDA approved Lubricant
- FDA approved white epoxy painted motor
- Aluminum gearbox with sanitary coating
- Totally enclosed non-ventilated motor
- 3 Phase, 60 Hz




**Regulatory Approvals**

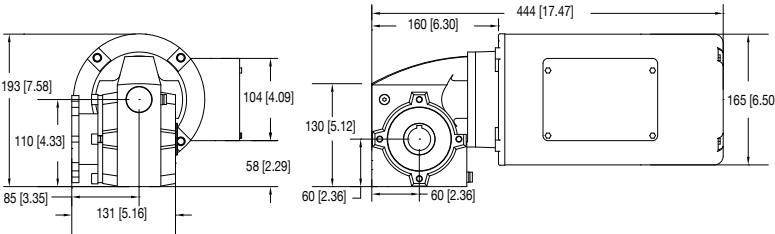


Part Number	Belt Speed		RPM	Hp	kW	Volts	FLA	in.-lbs.	Nm
	M/min	Ft/min							
71M060HS423FN	13.6	44.5	29	0.5	0.37	230/460	1.6/0.8	442	50
71M040HS423FN	20.4	66.8	44	0.5	0.37	230/460	1.6/0.8	486	55
71M030HS423FN	27.1	89.0	58	1	0.74	208-230/460	3.5-3.2/1.6	487	55
71M020HS423FN	40.7	133.5	87	1	0.74	208-230/460	3.5-3.2/1.6	407	46
71M015HS423FN	54.3	178.0	117	1	0.74	208-230/460	3.5-3.2/1.6	470	53
71M010HS423FN	81.4	267.1	175	1.5	1.11	208-230/460	4.6-4.2/2.1	442	50


**Variable Speed**

**Chart 2**  **90° Nema C-Face, Painted Motor, VFD Rated**

- Nema 56C
- IP 55 Protection Rating
- Sealed Gearmotor with H1 FDA approved Lubricant
- FDA approved white epoxy painted motor
- Aluminum gearbox with sanitary coating
- Totally enclosed non-ventilated motor
- 3 Phase, 6 to 60 Hz
- Order controller separately, see page 18



**Regulatory Approvals**



Part Number	Belt Speed		RPM	Hp	kW	Volts	FLA	in.-lbs.	Nm
	M/min	Ft/min							
71M060HS423EN	2.3-13.6	7.4-44.5	29	0.5	0.37	230/460	1.6/0.8	442	50
71M040HS423EN	3.4-20.4	11.1-66.8	44	0.5	0.37	230/460	1.6/0.8	486	55
71M030HS423EN	4.5-27.1	14.8-89.0	58	1	0.74	208-230/460	3.5-3.2/1.6	487	55
71M020HS423EN	6.8-40.7	22.3-133.5	87	1	0.74	208-230/460	3.5-3.2/1.6	407	46
71M015HS423EN	9.0-54.3	29.7-178.0	117	1	0.74	208-230/460	3.5-3.2/1.6	470	53
71M010HS423EN	13.6-81.4	44.5-267.1	175	1.5	1.11	208-230/460	4.6-4.2/2.1	442	50

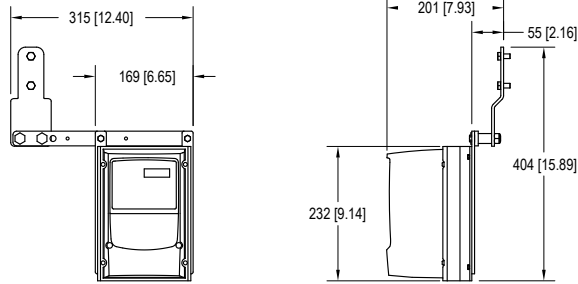
⚠️ **Note:** When buying a gearmotor only without the starter, the customer must supply their own on/off switch and motor overload protection to comply with the CE Safety Directive.

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

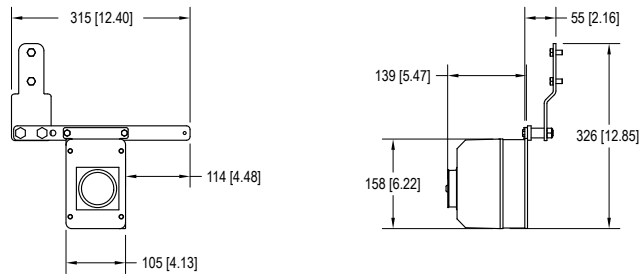


Part Number	Input			Output		Max Hp	Max Amps	A (width)	B (depth)
	Volts	Phase	Hz	Volts	Phase				
74MV1122S -GT	115	1	60	230	3	0.5	2.2	200 (7.9)	96 (3.8)
74MV2322S -GT	230	3	60	230	3	0.5	2.2	155 (6.1)	112 (4.4)
74MV1121S -GT	115	1	60	230	3	1.0	4.0	200 (7.9)	124 (4.9)
74MV2121S -GT	230	1	60	230	3	1.0	4.0	200 (7.9)	124 (4.9)
74MV4341S -GT	460	3	60	460	3	1.0	2.0	155 (6.1)	112 (4.4)
74MV2127S -GT	230	1	60	230	3	2.0	6.8	200 (7.9)	124 (4.9)
74MV2327S -GT	230	3	60	230	3	2.0	6.8	200 (7.9)	124 (4.9)
74MV4347S -GT	460	3	60	460	3	2.0	3.4	200 (7.9)	124 (4.9)

## 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	
74MM11F -GT	115	1	60	6.3 - 10
74MM21D -GT	208-230	1	60	2.5 - 3.9
74MM23A -GT	208-230	3	60	0.63 - 0.99
74MM23B -GT	208-230	3	60	1.0 - 1.59
74MM23C -GT	208-230	3	60	1.6 - 2.4
74MM23D -GT	208-230	3	60	2.5 - 3.9
74MM23E -GT	208-230	3	60	4.0 - 6.3
74MM43A -GT	460	3	60	0.63 - 0.99
74MM43B -GT	460	3	60	1.0 - 1.59
74MM43C -GT	460	3	60	1.6 - 2.4
74MM43D -GT	460	3	60	2.5 - 3.9

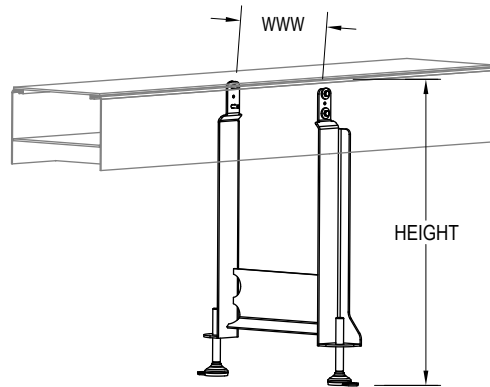
FLA = Full Load Amperes

Note: Dimensions = mm (in)



### Support Stand

- Welded 7 ga Stainless Steel construction
- Open sanitary design with 2B Finish
- Fixed feet and Casters provide  $\pm 50$  mm (2 in) height adjustment
- All stands allow for  $\pm 10$  degrees of adjustment
- Equipped with a Stainless Steel foot for floor mounting
- Stand must be lagged to the floor
- Outrigger legs are to be used when ratio TOB/WWW is greater than 3.5
- Top of Belt Heights:
  - Minimum: 450 mm (17.72 in)
  - Maximum: 1950 mm (76.77 in)
  - Available in 25 mm (1 in) height increments



Flush Side Stand Fixed Feet



H-Style Outrigger Stand Fixed Feet



H-Style Intermediate Stand Fixed Feet

#### AquaGard GT Series: Stands

7 G H M WWW - LLLL UUUU A - F A

Position: A = Adjustable Angle

Footing: C = Casters, F = Fixed SS threaded articulated foot

Stand Type: A = Flush Drive Outrigger A-Side, B = Flush Drive Outrigger D-Side, C = Flush Idler A-Side, D = Flush Idler D-Side  
E = H-Style Outrigger Drive/Tail, F = H-Style Standard Drive/Tail, G = H-Style Outrigger Intermediate, H = H-Style Standard Intermediate  
J = H-Style Outrigger X-Transfer, K = H-Style Standard X-Transfer

Height Upper: Upper height to top of belt (between 450 mm - 2000 mm in 25mm increments)

Height Lower: Lowest height to top of belt (between 350 mm - 1900 mm in 25mm increments)

Conveyor Width Reference: 083 = 83 mm (3.25 in) 115 = 115 mm (4.5 in) 191 = 191 mm (7.5 in) 305 = 305 mm (12 in)

Documentation Language: M = US

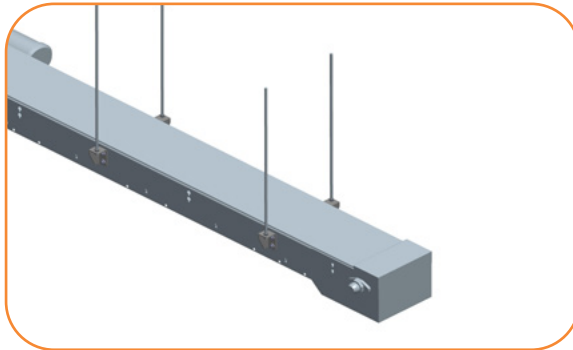
Post Type: H = Support Stand

7G = Aquagard GT - Stainless Steel Table Top Chain Conveyor

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

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

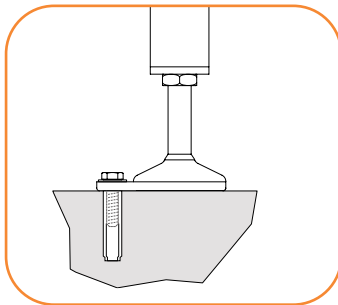
## Ceiling Supports



### Specifications

- All components are Stainless Steel brushed to #4 finish
- Includes a pair of mounting brackets and hardware for support on both sides of conveyor
- Compatible with 12 mm (0.472 in ) or 13 mm (0.5 in) threaded support rod (not provided)

## Sanitary Floor Anchor Kits - Type 1

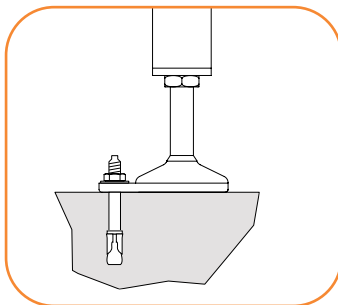


### Specifications

- 10 mm x 40 mm (3/8 in x 1.57 in) drop in
- Stainless Steel
- Anchor is flush with floor upon removal of bolt
- Two (2) per anchor kit

**Part No. FAS-1**

## Sanitary Floor Anchor Kits - Type 2



### Specifications

- 10 mm x 70 mm (3/8 in x 2-3/4 in)
- Stainless Steel
- Threaded anchor bolt protrudes above floor after installation
- Two (2) per anchor kit

**Part No. FAS-2**

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

## Overhead Guide



### Specifications

- For part hold down or cover closing
- Adjustable height and position across width
- Round nose UHMW guide with Stainless Steel backing
- Lengths: .9 m to 3 m (3 ft to 10 ft) in 25 mm (1 in) increments
- Horizontal Brackets provided for every .6 m (2 ft) of length
- Available in standard adjustable and tool-less adjustable mount styles
- All brackets and fasteners are Stainless Steel
- Does not include vertical mounting post. To be used with profiles 13 thru 18 or upper guide assembly.

## Upper Guide



### Specifications

- Used for guiding lids and/or tall parts
- Round nose UHMW guide with Stainless Steel backing
- Equipped with or without tall adjustable height bracket
- Length: 9 m to 3 m (3 ft to 10 ft) in 25 mm (1 in) increments
- (2) width adjusting options (standard 127 mm [5 in] post, 254 mm [10 in] post)
- Brackets provided for every .6 m (2 ft) of length
- Available in standard adjustable and tool-less adjustable mount styles
- All brackets and fasteners are Stainless Steel

**Note:** Due to the wide variety of set-ups and installations, point of installation guarding is the responsibility of the end user.

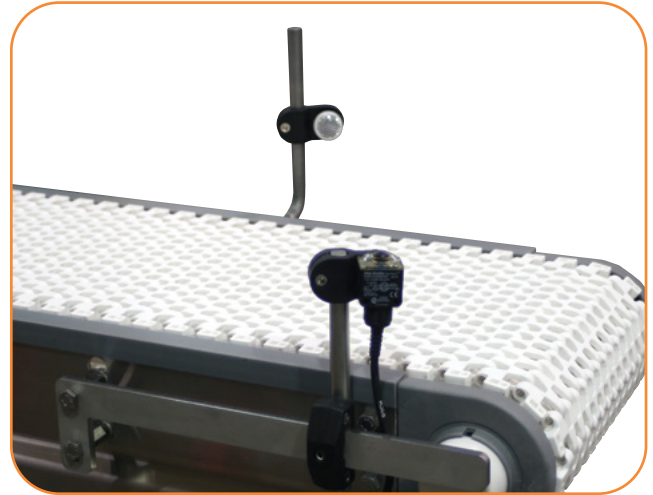
**Note:** Dimensions = mm (in)



## Photo Eye and Reflector Mounting Brackets

### Specifications

- Compatible with accessory mounting bar
- Mounts standard 18 mm barrel or nose mount photo eyes or sensors
- Attach bracket or accessories without frame modifications
- Adjustable along the length of mounting bar
- Adjustable height and angle positioning
- All adjustment screws located outside the food zone
- (3) Photo Eye Types
  - Thru beam includes (2) mounts
  - Reflector includes (1) photo eye mount and (1) reflector mount (reflector included)
  - Convergent includes (1) photo eye mount
- Accessory Mounting Bar Style: (3) Mount versions:
  - To fixed post (does not include mounting post)
  - To fixed post (includes mounting post)
  - To accessory mounting bar (includes Value Guide Block and adjustable post)



## Drip Pans



### Specifications

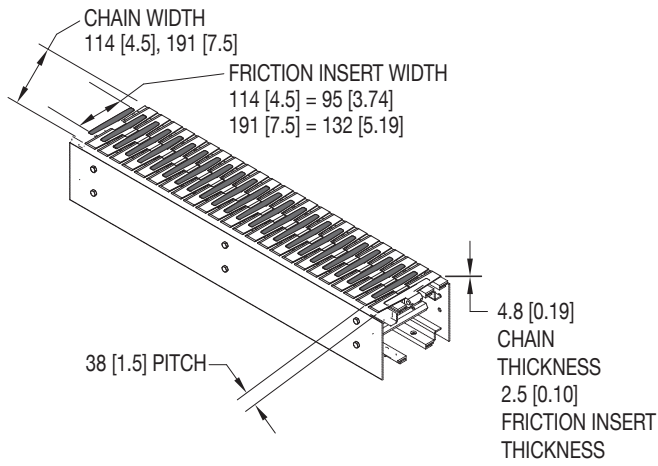
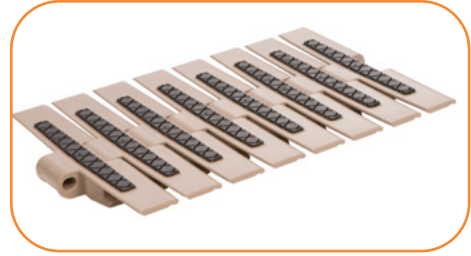
- Widths: 152 mm to 1,524 mm (6 in to 60 in) available in 51 mm (2 in) increments
- Lengths: 610 mm to 25,375 mm (24 in to 999 in) available in 25 mm (1 in) increments maximum section lengths of 2,997 mm (118 in)
- Tool-less hook design for fast removal and rapid cleaning
- Provides a 51 mm (2 in) window 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

**Note:** Due to the wide variety of set-ups and installations, point of installation guarding is the responsibility of the end user.

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

## Special Chain

(Available in 114 mm (4-1/2 in) and 191 mm (7-1/2 in) wide only)



Contact factory for ordering details.

## Materials and Chemical Resistance:

Conveyor Frames, Plastics and Conveyor Chain	
The following is a list of base materials used in the AquaGard GT Series conveyor:	
Material	Conveyor Component
Acetal Copolymer, POM	Conveyor chain & Roller Return End Caps
Polypropylene, PP	Not Used
Polyamide, PA	Side Rail, Adjustable Guide Face, Return Shoes, Wearstrips
UHMW-PE	Side Rail, Adjustable Guide Face, Return Shoes, Wearstrips
Thermoplastic Elastomer, TPE	Modular Belt Friction Insert

The materials used in the AquaGard GT Series product can resist many 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, Plastics and Conveyor Chains					
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.					
<b>Legend:</b>					
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, Plastics and Modular Belting *(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

## Bearings and Lubrication:

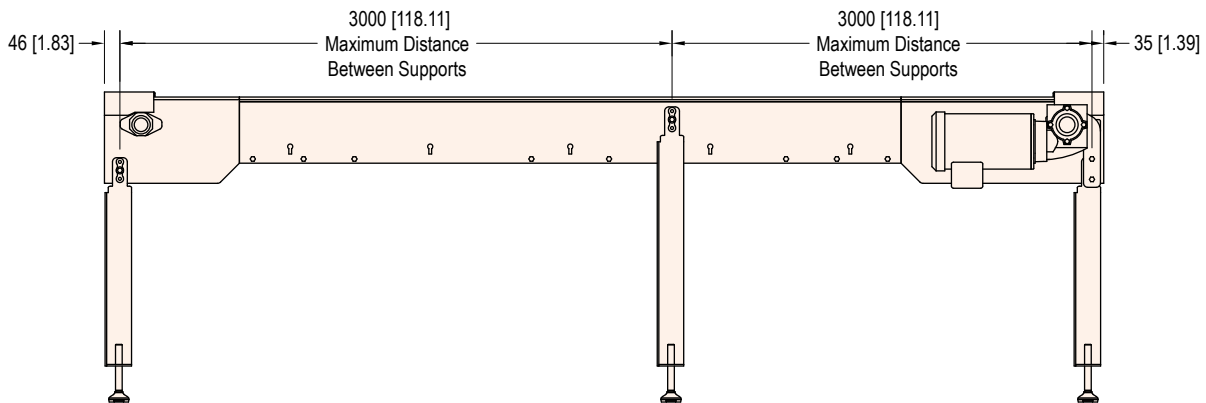
All bearings on the AquaGard GT Series conveyor are sealed and lubricated for life. No grease zerk is available and no greasing over the life of the product is required.

All gearmotors used on the AquaGard GT 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.

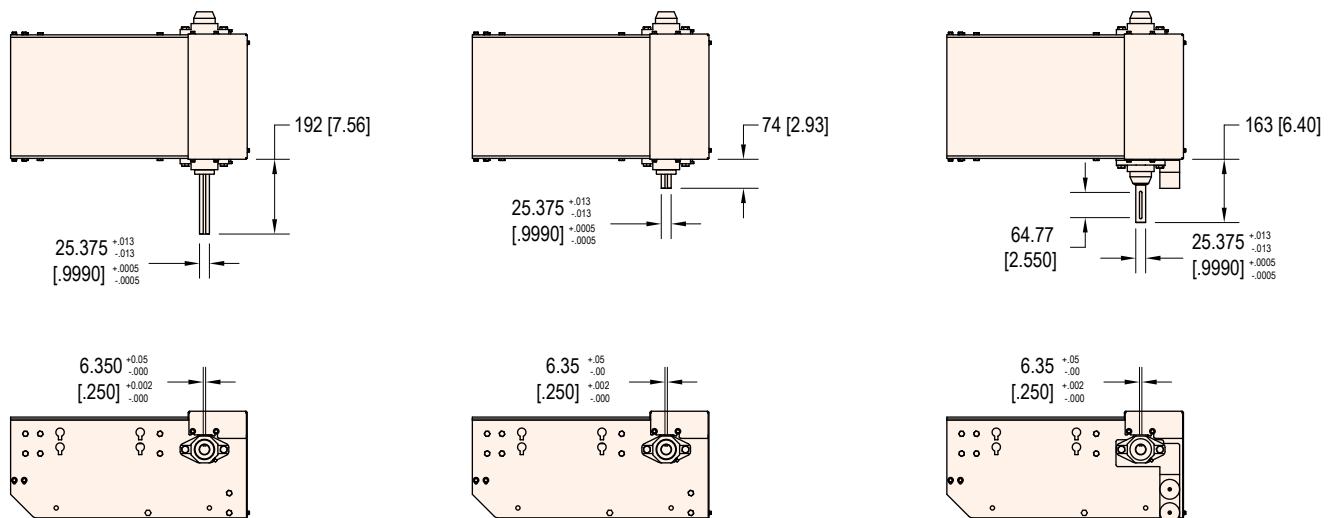
## Support Stand Locations:

Support Stand Locations		
Symbol	Description	Value
A	Maximum distance back at drive end*	N/A
B	Maximum distance back at idler end	914 mm (36 in)
C	Maximum distance between supports	3048 mm (120 in)
D	Maximum distance away from frame split	610 mm (24 in)

\*Note: Support must be located at drive end.



## Conveyor Drive Shaft Tolerances:



Customer Supplied Mount

Bottom Motor Mount

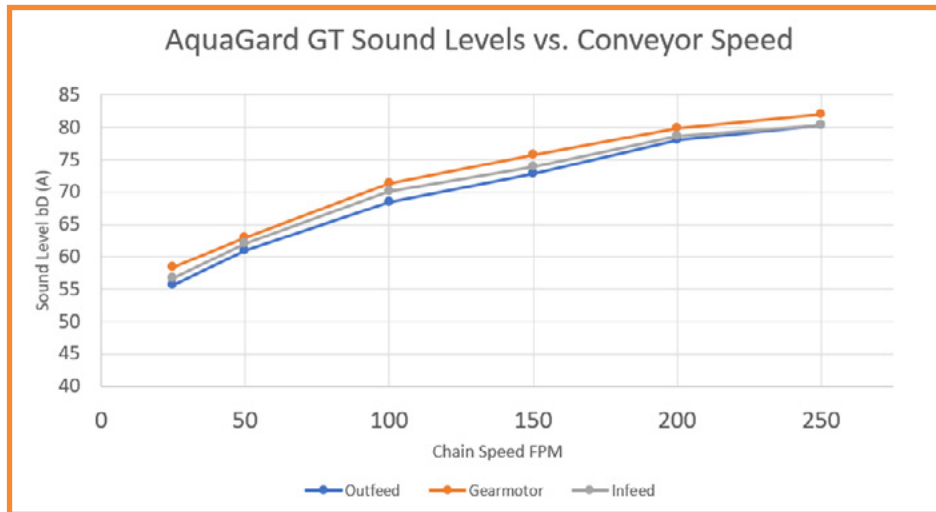
Side Motor Mount

## 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.

### AquaGard GT Series 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 GT Series Chain Conveyor	
Belt Width	Direction 1, Pulling the Belt
114 mm (4-1/2 in) wide	227 (500 lbs)
191 mm (7-1/2 in) wide	272 (600 lbs)
254 mm (10 in) wide	318 (700 lbs)
305 mm (12 in) wide	318 (700 lbs)

Note: Curve conveyor load capacity is very dependent on conveyor configuration and number of curves. Please confirm your maximum load per application with the Dorner DTools program at [www.dornerconveyors.com](http://www.dornerconveyors.com).

## 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. Please confirm your no load torque and maximum load per application with the Dorner DTools program at [www.dornerconveyors.com](http://www.dornerconveyors.com).

## Chain and Coefficient of Friction

The coefficient of friction is used to determine the load a conveyor can carry. It affects 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
Modular Belt	Acetal Chain to UHMW wear strips	Dry	0.30

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

AquaGard GT Series Chain	
The following table provides the coefficient of friction between acetal modular belt and various products. All factors below are assuming dry conditions.	
Product Being Accumulated	Typical Coefficient of Friction
Steel	0.25
Glass	0.20
Aluminum	0.25
Plastic	0.25
Wood	0.30
Paper and Cardboard	0.30

## Calculating Conveyor Belt Speed

### AquaGard GT Series Flexible Chain Conveyors:

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

- Drive sprocket pitch diameter
  - 147 mm (5.796 in) for straight conveyors
- Number of teeth of pulley located at drive roller (if equipped)
- Number of teeth of pulley located at gearmotor (if equipped)
- RPM of gearmotor

$$\text{Belt Speed (ft/min)} = (\text{Drive pitch diameter}/12) * (3.14) * (\text{RPM of gearmotor}) * \frac{(\text{Teeth at gearmotor})}{(\text{Teeth at drive roller})}$$

Example:

AquaGard GT Series Conveyor with a Bottom mount with a 58 tooth pulley located at the drive roller and a 58 tooth pulley located on the gearmotor. The gearmotor is a 20:1 ratio with 87 RPM output.

$$\text{Belt Speed (ft/min)} = (4.85/12) * (3.14) * (87) * (58/58)$$

$$\text{Belt speed (ft/min)} = 110 \text{ ft/min}$$



## Calculating Conveyor Load Capacity

There are several factors that affect the overall conveyor load of the AquaGard GT 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.

$$\text{Maximum Load} = (\text{Load from DTools})(\text{Temperature Factor})(\text{Start/Stop Factor})$$

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

For applications outside typical operating temperature range of 32-100° F, consult engineering.

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

## Regulatory Approvals:







### Conveyors:

All Dorner AquaGard GT 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 Dorner AquaGard GT 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 Dorner AquaGard GT 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.

	<p>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).</p>
	<p>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.</p>
	<p>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.</p>
	<p>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.</p>
	<p>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.</p>
	<p>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.</p>

**AquaGard GT Series Conveyors are Best for:**

- Packaging
- Inclines, Declines & Curves
- Elevation Changes
- Bottling
- Part Handling
- Accumulation
- Dry Food Processing
- Transfers
- Buffering
- Secondary Packaging
- Long Lengths

**Sizes & Measurements**

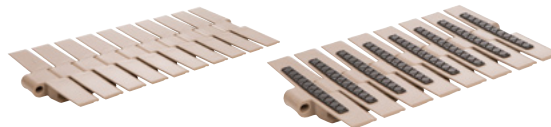
Chain Width	83 mm (3.25 in)	115 mm (4.5 in)	191 mm (7.5 in)	305 mm (12 in)
Frame Width	95 mm (3.7 in)	127 mm (5in)	203 mm (8 in)	318 mm (12.5 in)
Max Part Width	207 mm (8.1 in)	239 mm (9.4 in)	315 mm (12.4 in)	429 mm (16.9 in)
Max Length	30.5 m (100 ft)			

**Loads & Speeds**

- Loads up to 317.5 kg (700 lbs)
- Speeds up to 101 m/min (222 ft/min)

**Flexible Chain Types**

- Standard
  - Low Friction
- Engineered Solutions
  - Metal Chain
  - Friction Insert Chain



Low Friction

Friction Insert

**Guiding Options**



Fully Adjustable

Adjustable Outboard Guides Also Available

**Stands**

- Fixed Foot Support Stands
- Stainless Steel, 2B Finish
- Durable Welded 7 ga Construction
- Incline Mount Version for Angled Applications
- Other Options Also Available



**Transfers**

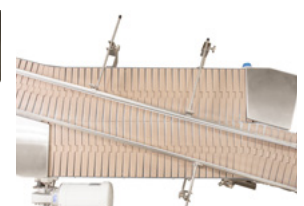
- Industry-Best Transfers
- Multiple Mounting Configurations



Powered Transfer



Roller Transfer



Side to Side Transfer



**Industrial**



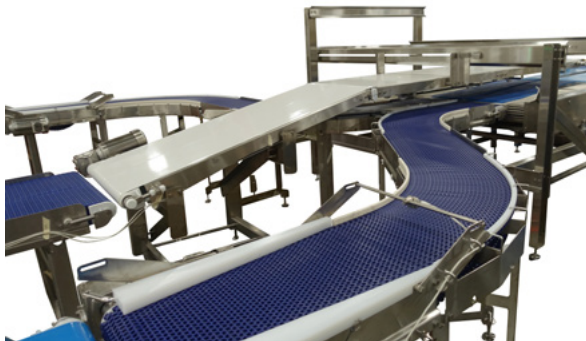
**Flexible Chain**



**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

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**DORNERCONVEYORS.COM**



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CONVEYANCE SOLUTIONS

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