

ENGINEERING MANUAL

Simple & Clean Stainless
Steel Construction

Multiple Curves,
Inclines & Declines

Industry Best
Product Transfers

High Speed Performance
– Up to 250 FPM



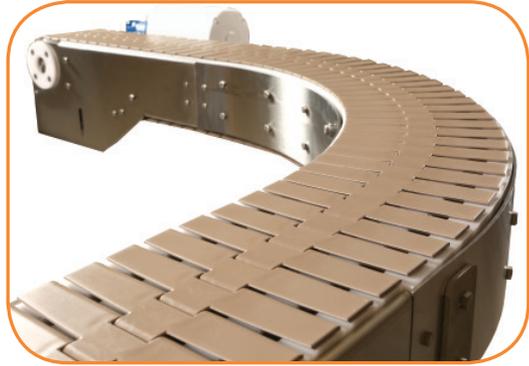
AquaGard[®] 7100 SERIES CONVEYORS

The Next Generation in Stainless
Flexible Chain Conveyors!

DORNER[®]
MOVE FAST. MOVE SMART.

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 24" on centerline radius use FDA approved oil impregnated wear strips
- Inclines and declines available up to 30 degrees
 - Incline angles are integrated into the intermediate modules



Innovative Transfer Options

- Powered Transfers
 - Provides smooth in line transfer of small parts
 - Slave driven off of drive or idler module
 - Transfers parts as small as 3" in diameter
- Standard Tails Side to Side Transfer
 - Side by side drive / idler tail
 - 1" from chain edge to edge
- Side Transfer Modules
 - Intermediate module that brings chain past the frame edge
 - 1/8" from chain edge to edge



Compact Drive Module & Idler Tail

- Idler Tail
 - 12" long
 - Bearings are located inboard
 - Flush design for side transfers
 - Sprocket comes standard for added shaft or powered transfer
- Drive Tail
 - 24" long with a 5" diameter sprocket
 - Catenary belt take-up with sight gauge
 - Motor can be mounted to the side or underneath



Idler Tail



Drive Tail

The Benefits of a Dornier AquaGard 7100 Series Conveyor

Industry Ready

- 300 Series Stainless Steel frame
- All materials are FDA approved plastics and Stainless Steel

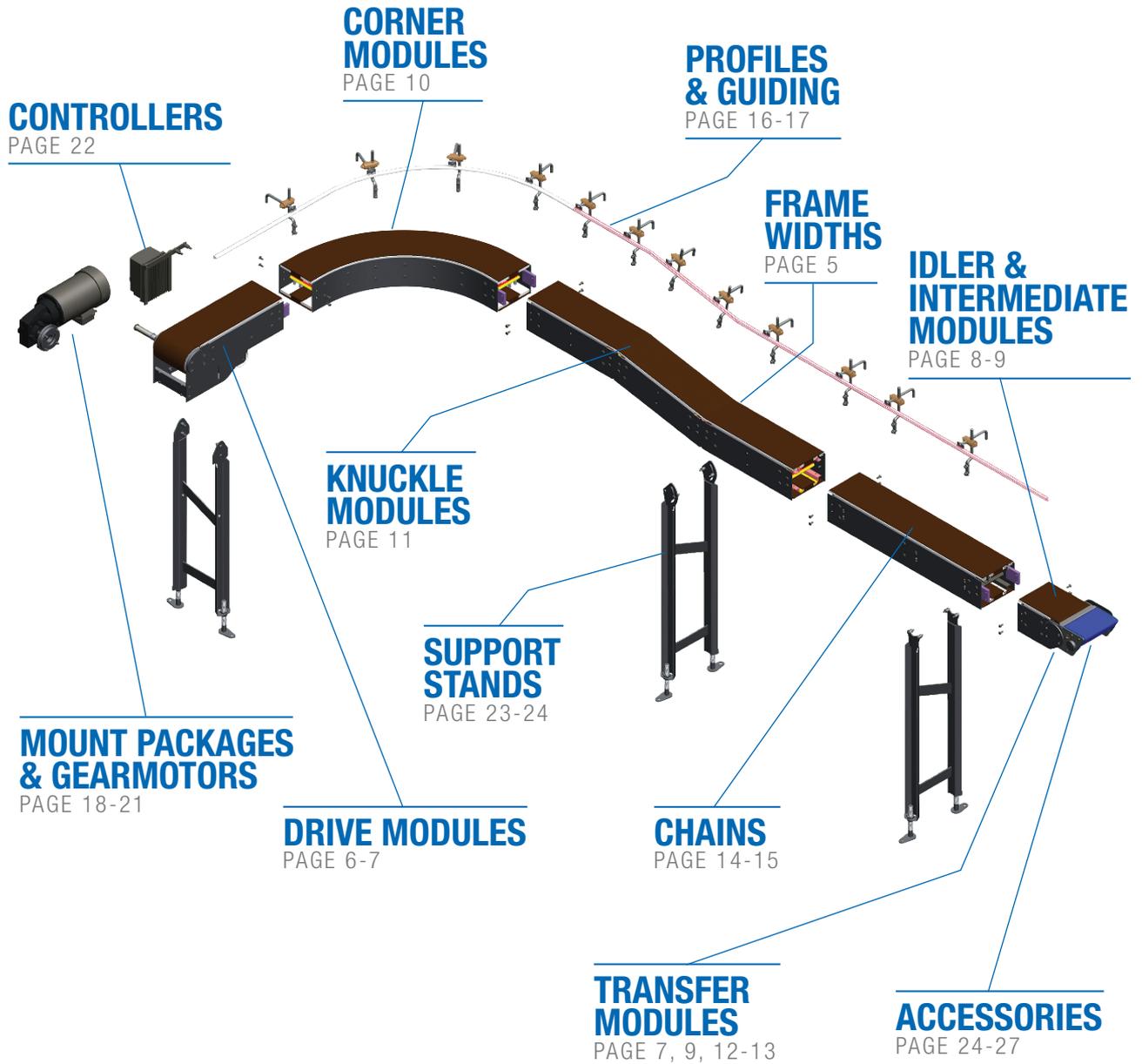
Quality Construction

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

Time Saving

- Dornier'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
- 7100 Series conveyors are shipped in sub-assemblies for fast and simple installation

**CONVEYOR
FEATURES**
PAGE 4



**TECHNICAL DATA
& CALCULATIONS**
PAGE 28-34

OPTIONAL STAINLESS STEEL GEARMOTORS

FOR IMPROVED DURABILITY IN WASHDOWN ENVIRONMENTS

HIGH PERFORMANCE CORNER MATERIAL

REDUCES CORNER FRICTION ALLOWING MULTIPLE CORNER CONFIGURATIONS

COST EFFECTIVE 882 STYLE CHAIN

FOR FLEXIBLE CONVEYOR LAYOUTS

POWERED TRANSFER

FOR SMOOTH IN-LINE TRANSFER OF PRODUCT AS SMALL AS 3" IN DIAMETER

STAINLESS STEEL SUPPORT STAND

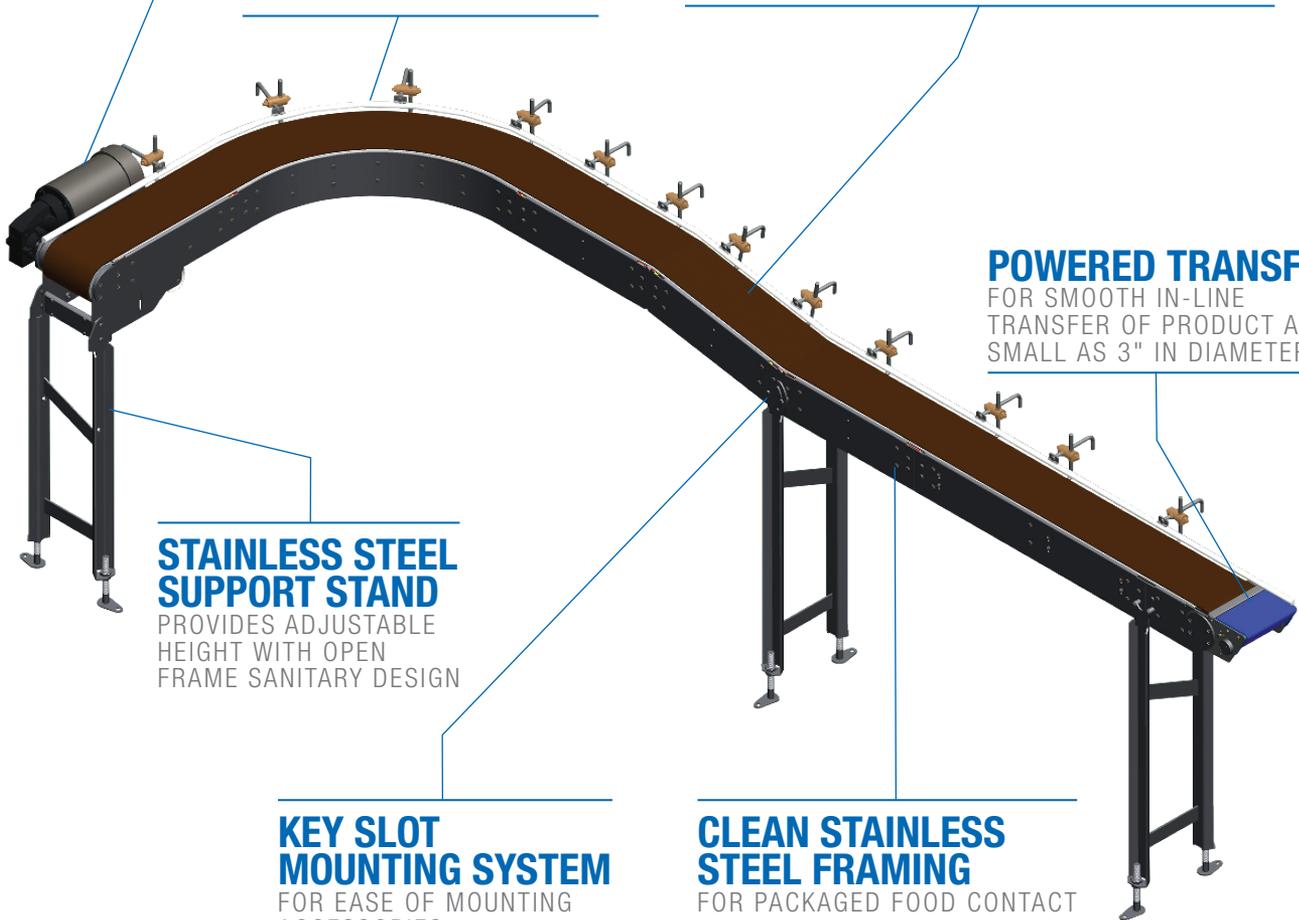
PROVIDES ADJUSTABLE HEIGHT WITH OPEN FRAME SANITARY DESIGN

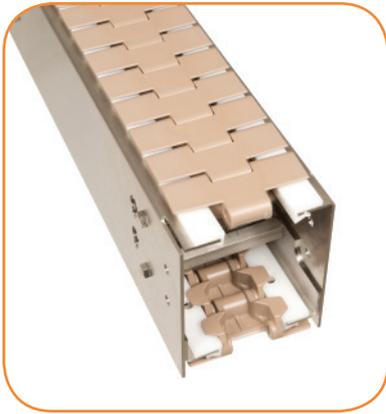
KEY SLOT MOUNTING SYSTEM

FOR EASE OF MOUNTING ACCESSORIES

CLEAN STAINLESS STEEL FRAMING

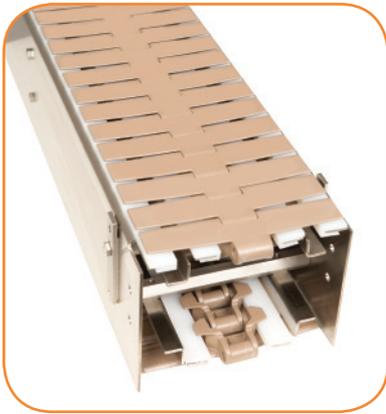
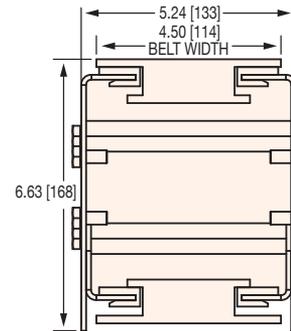
FOR PACKAGED FOOD CONTACT





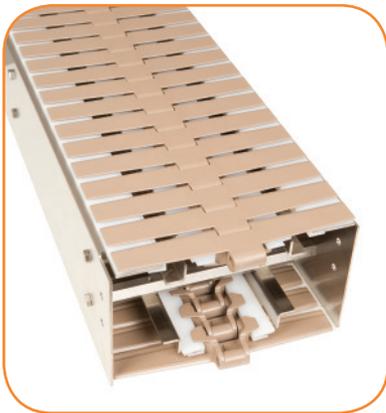
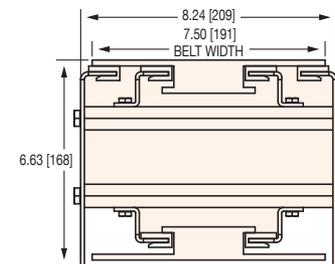
4-1/2" Wide

- Maximum load: 30 lbs/ft
- Maximum total load: 500 lbs non-accumulated
- Maximum length: 99'
- Maximum speed: 222 ft/min



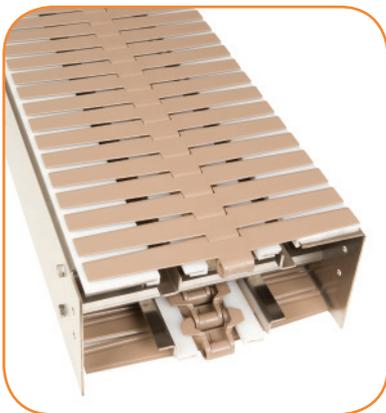
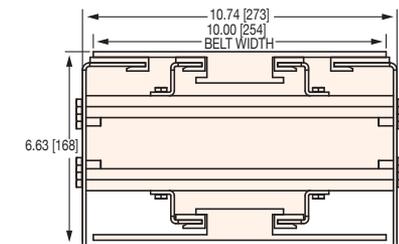
7-1/2" Wide

- Maximum load: 35 lbs/ft
- Maximum total load: 600 lbs non-accumulated
- Maximum length: 98'
- Maximum speed: 222 ft/min



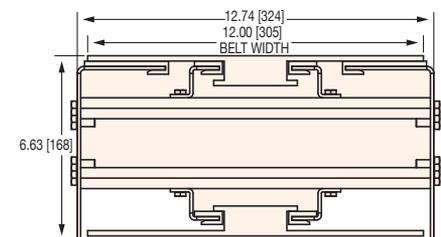
10" Wide

- Maximum load: 40 lbs/ft
- Maximum total load: 700 lbs non-accumulated
- Maximum length: 99'
- Maximum speed: 222 ft/min



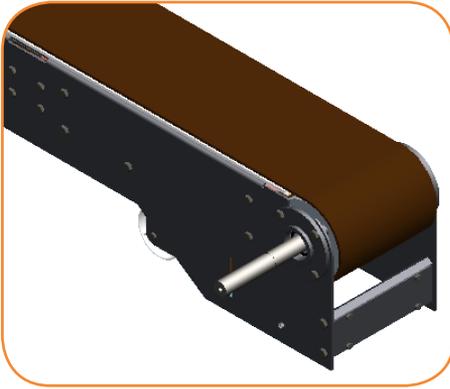
12" Wide

- Maximum load: 40 lbs/ft
- Maximum total load: 700 lbs non-accumulated
- Maximum length: 99'
- Maximum 2speed: 222 ft/min



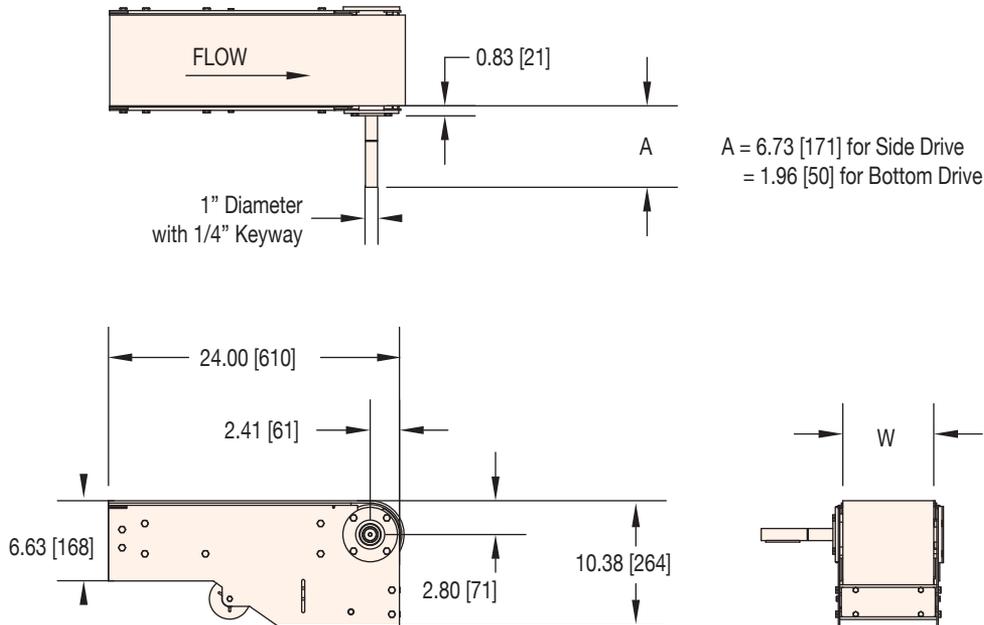
Note: Conveyor modules may be made up of several length of conveyor frames. Maximum length frame is 120" (3048mm).

Note: Dimensions = in (mm)



Catenary Drive Module

- Length: 2' (610mm)
- Drive Sprocket: 10 tooth, 1.5" pitch
- Pitch Diameter: 4.85" (123mm)
- Internally located Stainless Steel bearings with H1 FDA approved lubricant
- Flush Side Tails provide side transfer capability with 1" from belt edge to belt edge
- Maximum incline or decline: 30°
- Uses catenary loop for belt take-up with site gauge
- Optional 1" diameter x 1.5" long dual output shaft for common driven conveyors



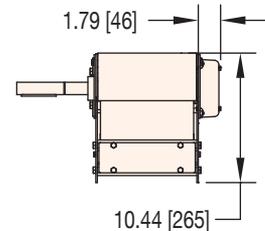
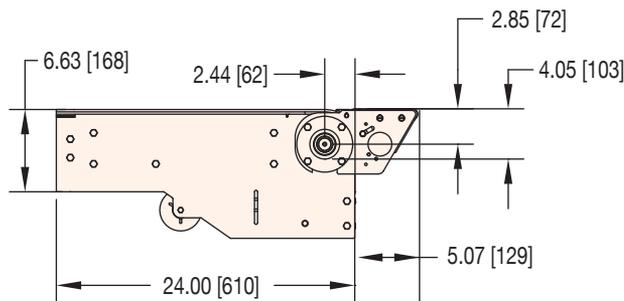
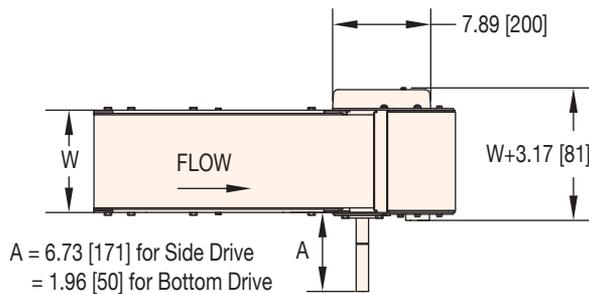
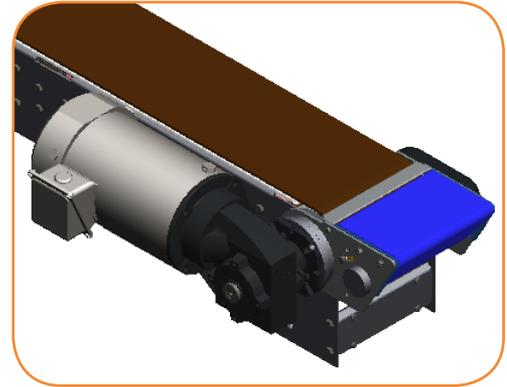
For part number information, see page 7

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

Note: Dimensions = in (mm)

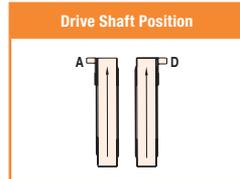
Catenary Drive Module with Outfeed Powered Transfer

- Powered transfer for small part in-line transfer applications
- Length: 29" (737mm)
- Drive Sprocket: 10 tooth, 1.5" pitch
- Pitch Diameter: 4.85" (123mm)
- Internally located Stainless Steel bearings with H1 FDA approved lubricant
- Maximum incline or decline: 7°
- Not available for friction top or roller top chain
- Powered transfer is 8mm micro pitch chain slave driven off drive module
- Transfer parts as small as 3" in diameter
- Uses catenary loop with site gauge for belt take-up



7100 Series: Drive Modules

71	5	M	WWW	-	0200	D	P	O	E	S	P	P	P	B	B	-	S	S
Sequence Number: 01 to 99																		
Belt Material: 01 = Low Friction 08 = Friction Inserts 20 = Roller Top																		
Profile (D side): Same options as A side																		
Profile (A side):																		
01 = Lowside																		
04 = 3" stainless high side																		
05 = 1" stainless high side																		
Mount style: B = Bottom Mount S = Side Mount																		
Gearmotor type: E = eDrive 90° S = SEW N = Customer Supplied																		
Weighted Take-Up Location From End: 0 = Catenary tail																		
Motor Shaft Position: A or D																		
Drive Tail Code: N = Drive tail R = Roller transfer P = Power transfer D = Dual shaft																		
Conveyor Length Reference:																		
Conveyor Width Reference: 045 = 4 1/2" 075 = 7 1/2" 100 = 10" 120 = 12"																		
Documentation Language: M = US																		
Conveyor Type: 5 = Drive Module																		



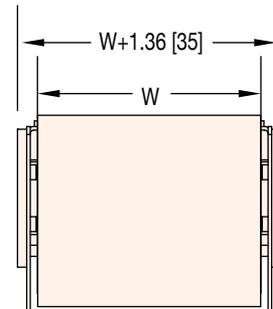
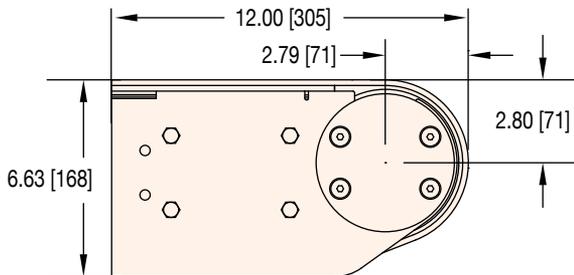
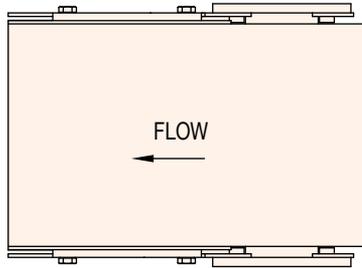
Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

Note: Dimensions = in (mm)



Idler Module

- Length: 12" (305mm)
- Idler Sprocket: 10 tooth, 1.5" pitch
- Internally located Stainless Steel bearings with H1 FDA approved lubricant
- Flush Side Tails provide side transfer capability with 1" from belt edge to belt edge
- Optional 1" diameter x 1.5" long output shaft for encoders and other devices



7100 Series: Idler Modules

71 1 M WWW - 0100 I P P P B B - S S

Sequence Number: 01 to 99

Belt Material: 01 = Low Friction 08 = Friction Inserts 20 = Roller Top

Profile (D side): Same options as A side

Profile (A side):

01 = Lowside

04 = 3" stainless high side

05 = 1" stainless high side

13 = Fully adjustable guiding

14 = Tool-less fully adjustable guiding

50 = Key slot frame - no guide

Idler Tail Code:

N = Drive tail

R = Roller transfer

P = With power transfer, A side

T = With power transfer, D side

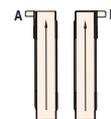
Conveyor Length Reference:

Conveyor Width Reference: 045 = 4 1/2" 075 = 7 1/2" 100 = 10" 120 = 12"

Documentation Language: M = US

Conveyor Type: 1 = Infeed Module

Drive Shaft Position



A = Output shaft, A side

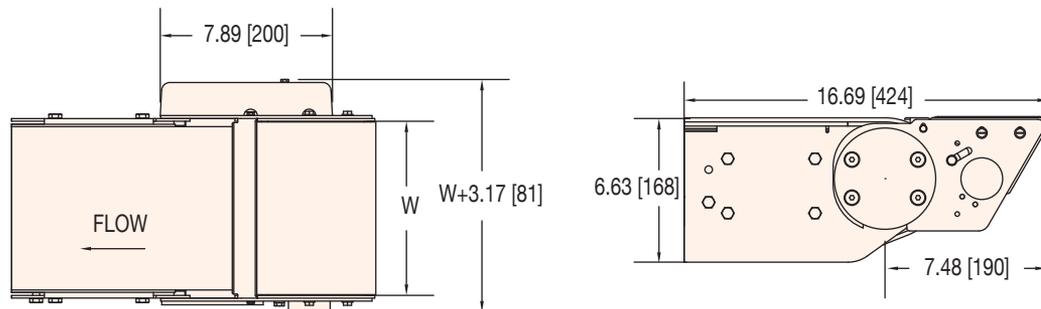
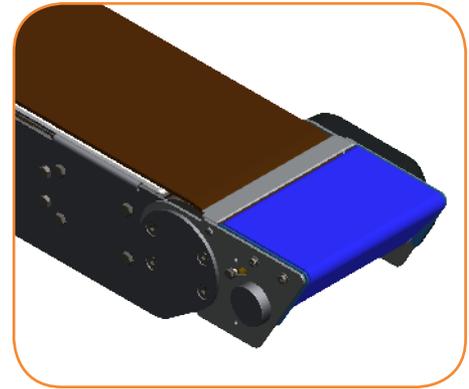
D = Output shaft, D side

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

Note: Dimensions = in (mm)

Idler Module with Infeed Powered Transfer

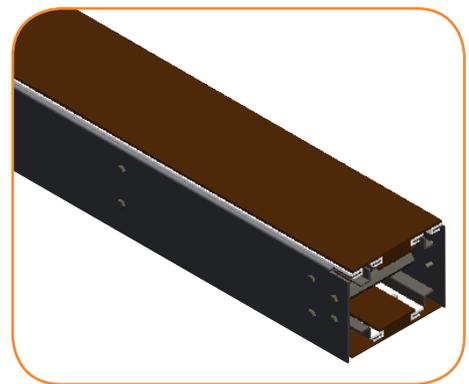
- Powered transfer for small part in-line transfer applications
- Lengths: 16.69" (424mm)
- Idler Sprocket: 10 tooth, 1.5" pitch
- Internally located Stainless Steel bearings with H1 FDA approved lubricant
- Flush Side Tails provide side transfer capability with 1" from belt edge to belt edge
- Not available for friction top chain or roller top chain
- Power transfer is 8mm micro pitch chain slave driven off idler module
- Transfer parts as small as 3" in diameter



For part number information, see page 8

Intermediate Module

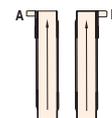
- Length:
 - Minimum = 12" (310mm)
 - Maximum = 10' (3048mm)
- Bolt together construction
- Frame width only 1/2" wider than chain width
- Available with keyslot attachment method



7100 Series: Intermediate Modules

71	3	M	WWW	-	LLLL	PP	PP	BB	-	SS
Sequence Number: 01 to 99 Belt Material: 01 = Low Friction 08 = Friction Inserts 20 = Roller Top Profile (D side): Same options as A side Profile (A side): 01 = Lowside 13 = Fully adjustable guiding 04 = 3" stainless high side 14 = Tool-less fully adjustable guiding 05 = 1" stainless high side 50 = Key slot frame - no guide Conveyor Length Reference: 0100 to 1000 (LLLL = Length (feet.feet)) Conveyor Width Reference: 045 = 4 1/2" 075 = 7 1/2" 100 = 10" 120 = 12" Documentation Language: M = US Conveyor Type: 3 = Intermediate										

Drive Shaft Position

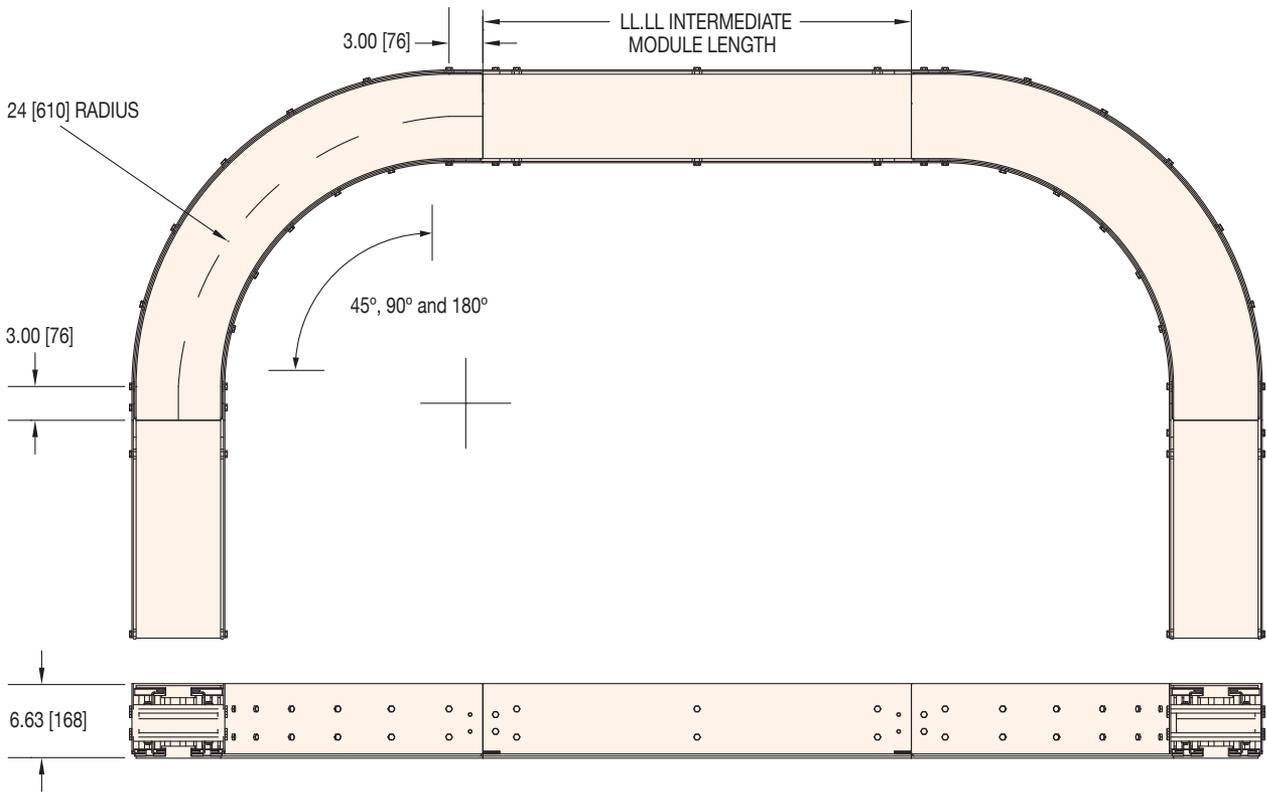


Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.
Note: Dimensions = in (mm)



Plain Bend Corner

- Angles:
 - 45°, 90° and 180°
 - Other angles available, contact factory
- Radius at centerline of chain: 24" (610mm)
- Nyoil® FG, FDA approved lubricated nylon is used for inside corner wearstrips
- 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
- Wheel bend corners are available for 4-1/2" wide chain, contact factory for details



7100 Series: Curve Modules

71 2 M WWW - AAA B L P P P B B - S S

Sequence Number: 01 to 99

Belt Material: 01 = Low Friction 08 = Friction Inserts 20 = Roller Top

Profile (D side): Same options as A side

Profile (A side):

- 01 = Lowside
- 04 = 3" stainless high side
- 05 = 1" stainless high side
- 13 = Fully adjustable guiding
- 14 = Tool-less fully adjustable guiding
- 50 = Key slot frame - no guide

Direction: L = Left hand R = Right hand

Type: B = Plain Bend

Angle: 045 = 45° 090 = 90° 180 = 180°

Conveyor Width Reference: 045 = 4 1/2" 075 = 7 1/2" 100 = 10" 120 = 12"

Documentation Language: M = US

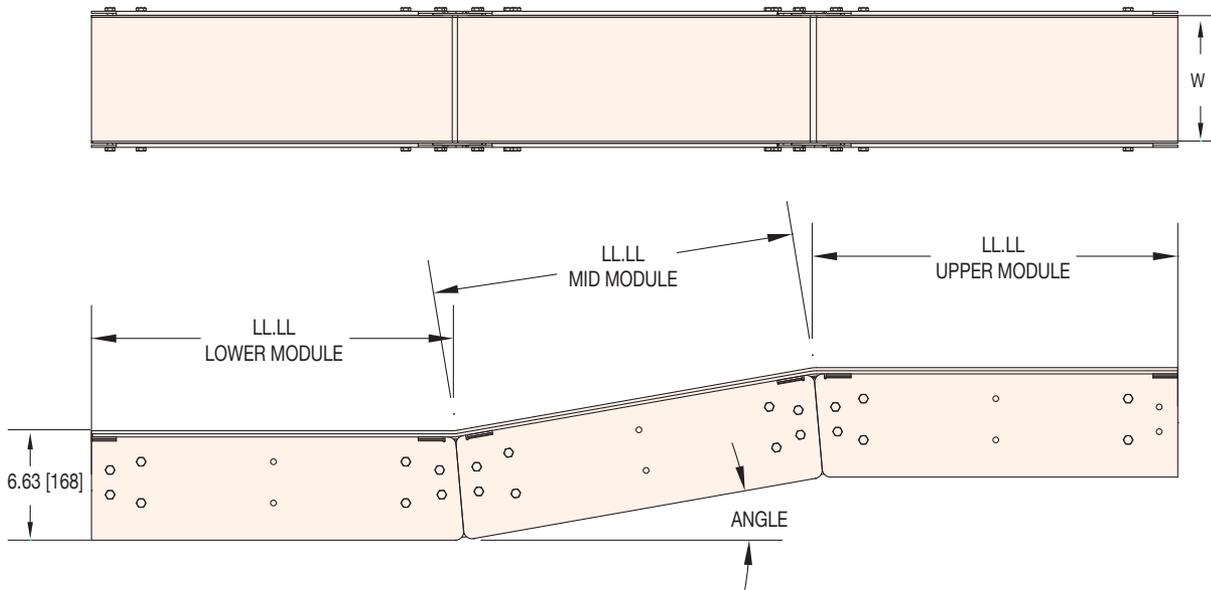
Conveyor Type: 2 = Curve Module

Drive Shaft Position

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

Knuckle Module

- Angles: 3° to 30° in 1° increments
- 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
- Length:
 - Minimum: 1' (305mm)
 - Maximum: 50' (15240mm)



7100 Series: Knuckle Module

71 A M WWW - LLLL - AA D PP PP BB - SS

Sequence Number: 01 to 99

Belt Material: 01 = Low Friction 08 = Friction Inserts 20 = Roller Top

Profile (D side): Same options as A side

Profile (A side):

- 01 = Lowside
- 04 = 3" stainless high side
- 05 = 1" stainless high side
- 13 = Fully adjustable guiding
- 14 = Tool-less fully adjustable guiding
- 50 = Key slot frame - no guide

Direction: E = Incline D = Decline

Angle: 03 to 30 in 01 increments

Conveyor Length Reference: 0100 min to 1000 max (LLLL = Length (feet.feet))

Conveyor Width Reference: 045 = 4 1/2" 075 = 7 1/2" 100 = 10" 120 = 12"

Documentation Language: M = US

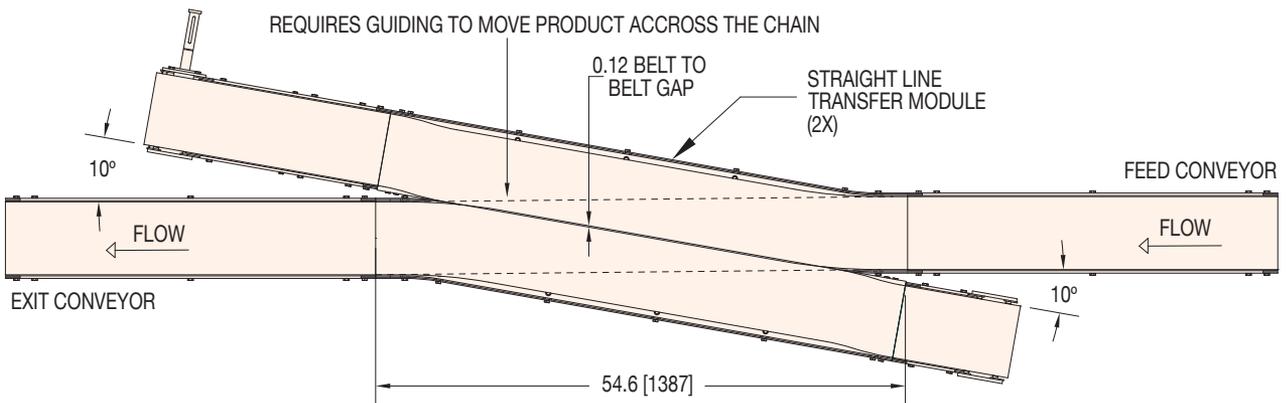
Module Type: A = Lower LPZ C = Mid LPZ Full length E = Mid LPZ Partial Length Exit
 B = Upper LPZ D = Mid LPZ Partial Length Infeed F = Mid Noseover

Drive Shaft Position



In-Line Transfer Module

- Provides the capability for product transfers with conveyors in-line
- Conveyor chains are 1/8" edge to edge
- Requires (2) modules; one on each conveyor
- Requires guiding to move product across chain
- Angle: 10°
- Length: 54.6" (1387mm)
- Compatible with low friction chain only
- Can mount directly to drive and idler modules without the need for an intermediate frame



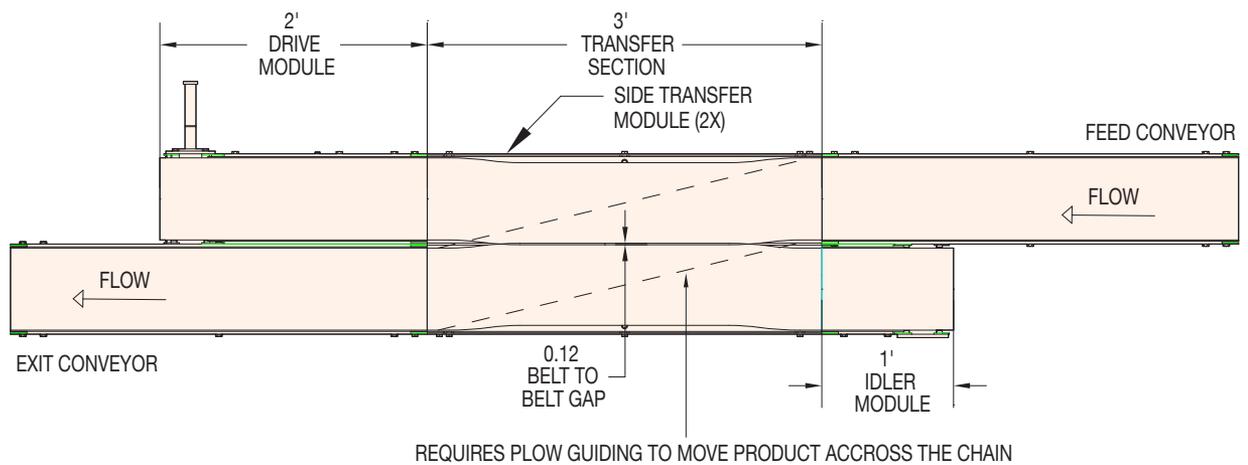
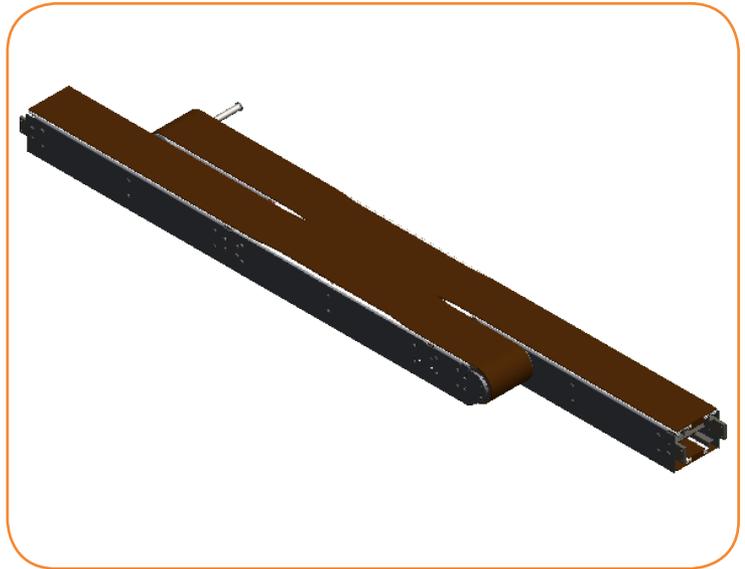
Contact factory for ordering details.

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

Note: Dimensions = in (mm)

Side Transfer Module

- Provides the capability for product transfers with conveyors side by side
- Conveyor chains are 1/8" 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
- Length: 36" (914mm)
- Compatible with low friction chain only
- Can mount directly to drive and idler modules without the need for an intermediate frame



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 = in (mm)

Chain Selection Guide

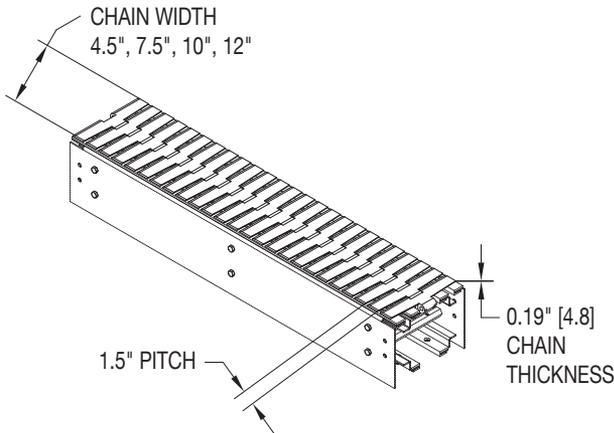
Standard Chain

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	Stainless Steel	7°	200°F (93°C)	-40°F (-40°C)	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)	641 lbs (2850N)	No

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

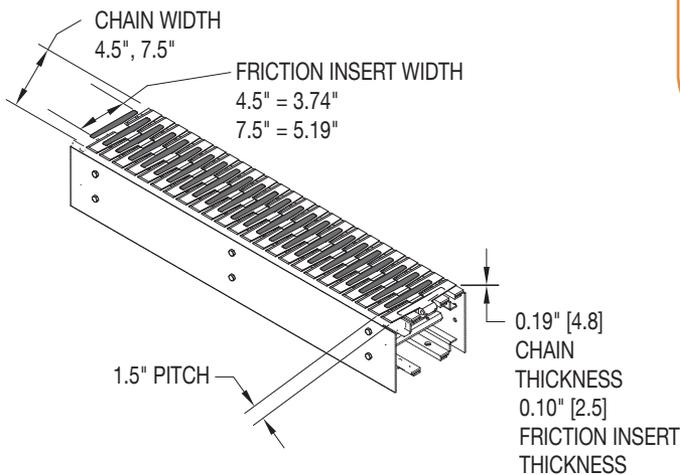
** Part temperature can typically exceed chain temperature by 20° to 30°F assuming parts are not stopped on the chain for long durations.

Low Friction



Friction Insert

(Available in 4 1/2" and 7 1/2" wide only)



Note: Dimensions = in (mm)

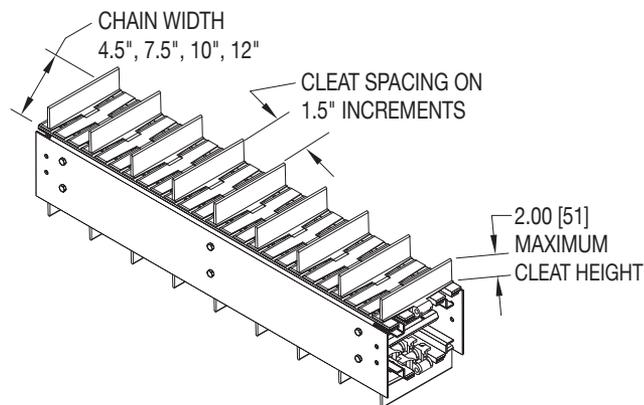
Chain Selection Guide

Specialty Chain									
Type	Part Number	Belt Specifications	Color	Pin Material	Maximum Incline*	Maximum Chain Temperature**	Minimal Chain Temperature	Chain Tensile Strength	FDA Approved
Cleated	Contact Factory	Acetal	Light Brown	Stainless Steel	60°	200°F (93°C)	-40°F (-40°C)	641 lbs (2850N)	Yes
Accumulation Roller Top	20	Acetal with Acetal Rollers	Light Brown with Blue Rollers	Stainless Steel	0°	194°F (90°C)	-40°F (-40°C)	641 lbs (2850N)	No

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

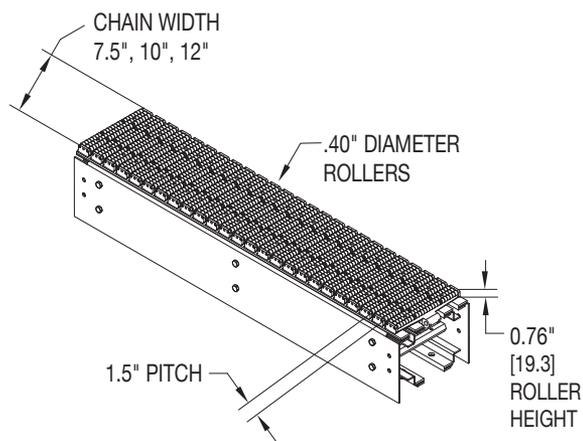
** Part temperature can typically exceed chain temperature by 20° to 30°F assuming parts are not stopped on the chain for long durations.

Cleated



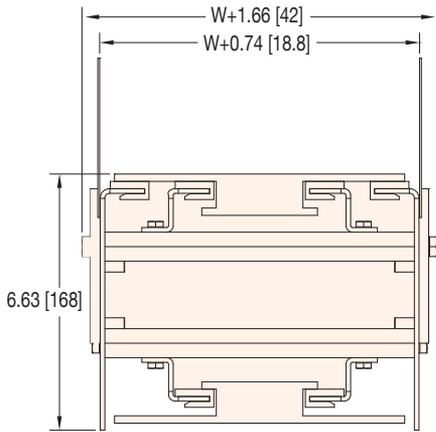
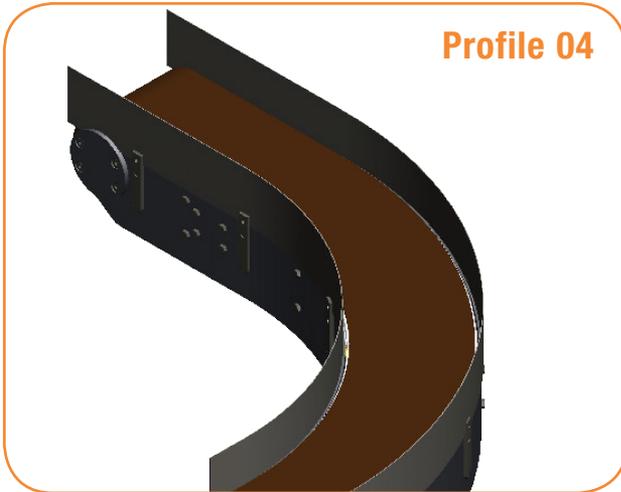
Accumulation Roller Top

(Available in 7 1/2", 10" and 12" wide only)



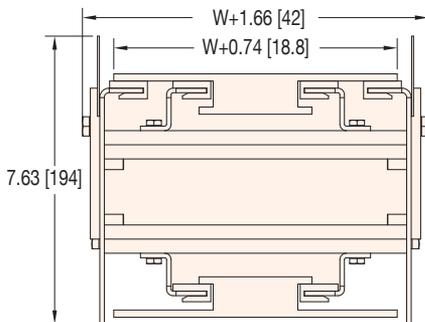
Note: Dimensions = in (mm)





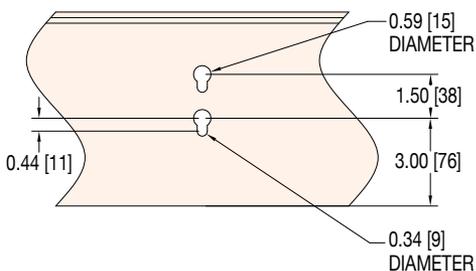
Profile 04: 3" High Side

- Stainless Steel high side with #4 brush finish
- Extends 3.0" above belt surface
- Guide opening width: frame width + 0.74"
- Guiding cold bent to fit around all corners



Profile 05: 1" High Side

- Stainless Steel high side with #4 brush finish
- Extends 1" above belt surface
- Guide opening width: frame width + 0.74"
- Guiding cold bent to fit around all corners

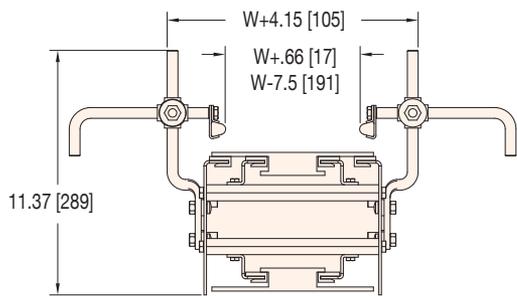
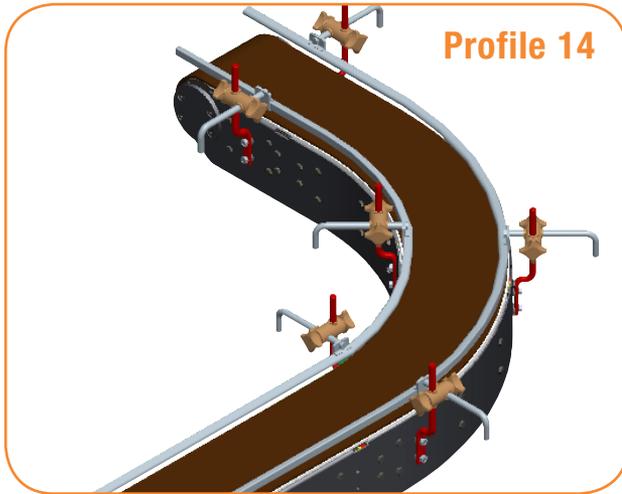


Profile 50: Key Slot Frame Only

- No guiding provided
- Conveyor frame is equipped with key slot mounting for customer guiding
- Slots on 16" centers dependent on conveyor length
- (2) Key hole mounts per location
- For use with Accessory Mounting Belt, see page 26

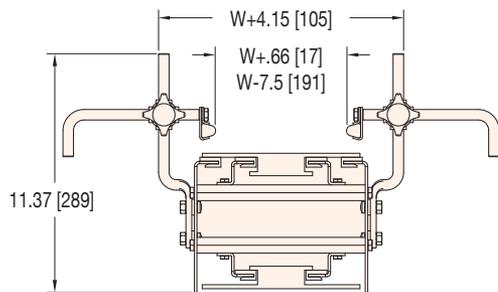
Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

Note: Dimensions = in (mm)



Profile 13: Fully Adjustable Guide

- Stainless Steel rail with UHMW round face
- Guide height is adjustable to 4.9" above belt surface
- UHMW face width is adjustable to 3" inside and 0.3" outside conveyor edge per side
- Overall width to outside of supports: frame width + 14.5"
- Corner modules equipped with flexible UHMW support rail

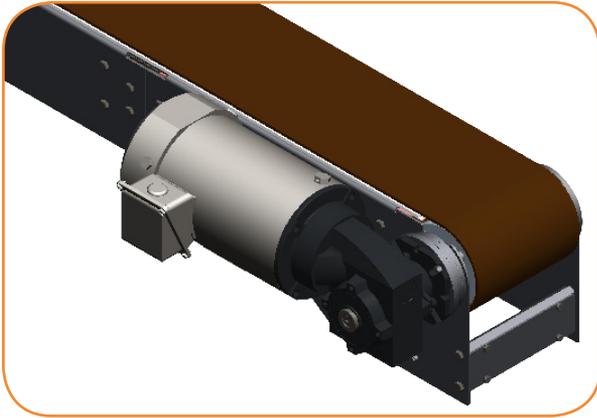


Profile 14: Tool-less Fully Adjustable Guide

- Equipped with tool-less handles at adjustment points
- Stainless Steel rail with UHMW round face
- Guide height is adjustable to 4.9" above belt surface
- UHMW face width is adjustable to 3" inside and 0.3" outside conveyor edge per side
- Overall width to outside of supports: frame width + 14.5"
- Corner modules equipped with flexible UHMW support rail

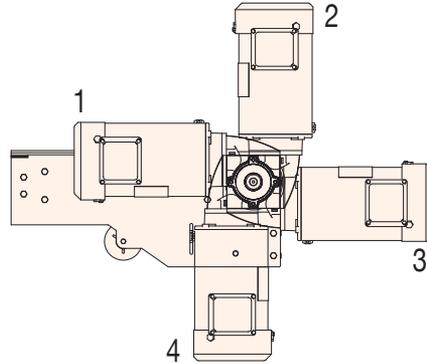
Note: Due to the wide variety of drive setups and applications, point of installation guarding is the responsibility of the end user.

Note: Dimensions = in (mm)

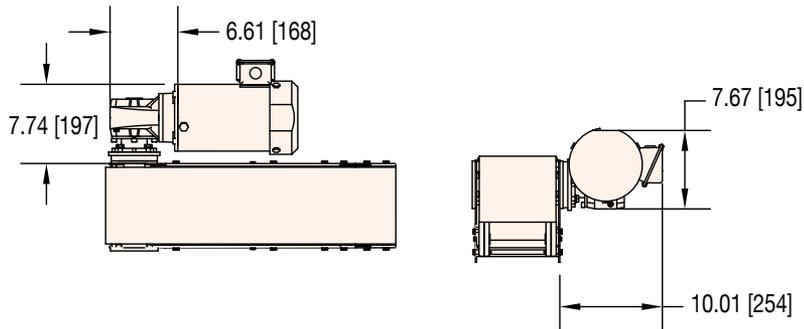


Side Mount Packages

- Hollow shaft gearmotor with Stainless Steel shafting
- Direct coupled to conveyor shaft for space reduction
- Motor can be mounted in position 1, 2, 3 or 4
- Compatible with standard and powered transfer drive modules



Mounting Positions

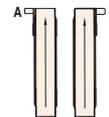


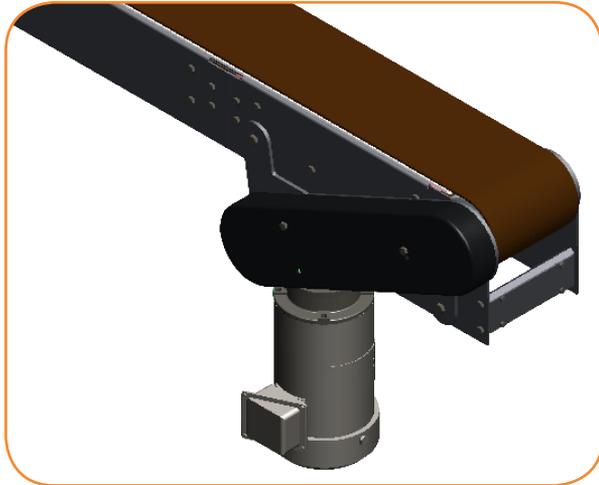
7100 Series: Side Mount

71M SH S A

Drive Shaft Position: A = A position D = D position

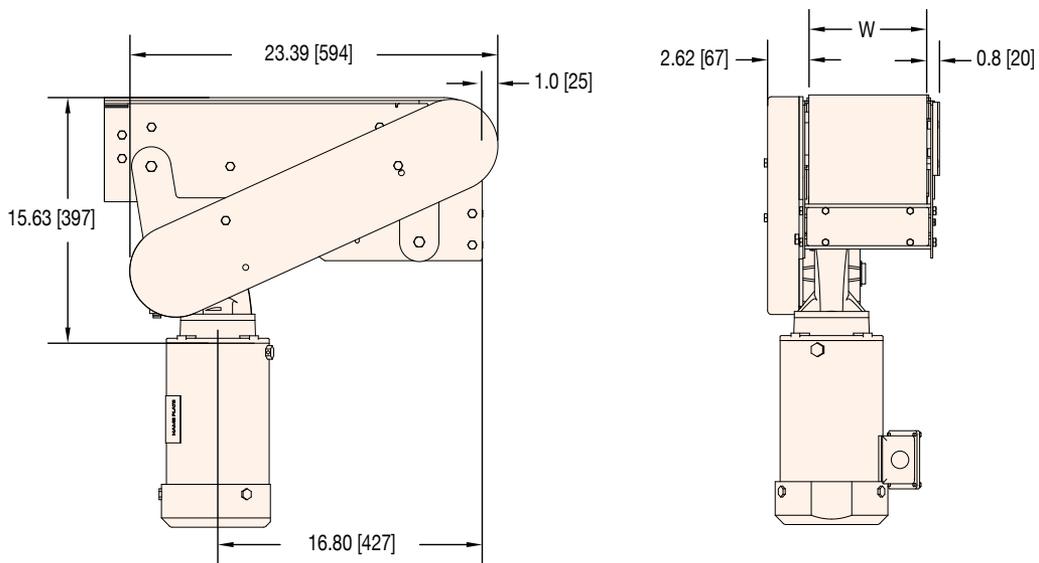
Drive Shaft Position





Bottom Mount Packages

- Hollow shaft gearmotor with bolt in Stainless Steel shafting
- Gearmotor mounted below the conveyor for space reduction
- Includes 1:1 ratio timing belt drive with cover
- Motor can only be mounted vertical down
- Compatible with standard and powered transfer drive modules
- 30" minimum top of belt height

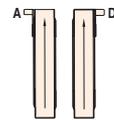


7100 Series: Bottom Mount

71 M BH S A

Drive Shaft Position: A = A position D = D position

Drive Shaft Position



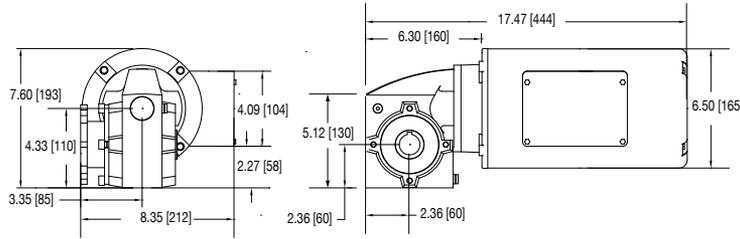
Fixed Speed

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



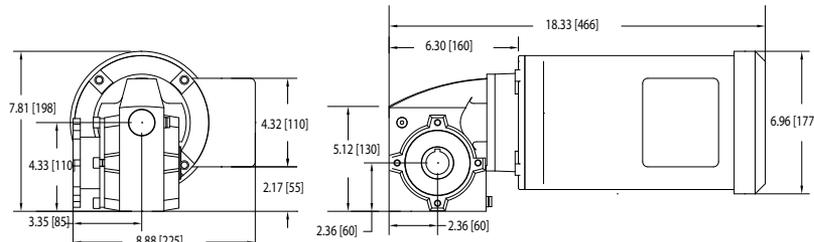
Part Number	Belt Speed		RPM	Hp	kW	Volts	FLA	in.-lbs.	Nm
	Ft/min	M/min							
71M060HS423FN	37	11	29	0.5	0.37	230/460	1.6/0.8	442	50
71M040HS423FN	56	17	44	0.5	0.37	230/460	1.6/0.8	486	55
71M030HS423FN	74	22	58	1	0.74	208-230/460	3.5-3.2/1.6	487	55
71M020HS423FN	110	33	87	1	0.74	208-230/460	3.5-3.2/1.6	407	46
71M015HS423FN	148	45	117	1	0.74	208-230/460	3.5-3.2/1.6	470	53
71M010HS423FN	222	68	175	1.5	1.11	208-230/460	4.6-4.2/2.1	442	50

Chart 2



90° Nema C-Face, Stainless Steel Motor

- Nema 56C
- IP 55 Protection Rating
- Sealed Gearmotor with H1 FDA approved Lubricant
- Stainless Steel motor
- Aluminum gearbox with sanitary coating
- 0.5 HP motor is Totally enclosed non-ventilated
- 1.0 and 1.5 HP motors are totally enclosed fan cooled
- 3 Phase, 60 Hz



Regulatory Approvals



Part Number	Belt Speed		RPM	Hp	kW	Volts	FLA	in.-lbs.	Nm
	Ft/min	M/min							
71M060HVS423FN	37	11	29	0.5	0.37	230/460	1.6/0.8	442	50
71M040HVS423FN	56	17	44	0.5	0.37	230/460	1.6/0.8	486	55
71M030HVS423FN	74	22	58	1	0.74	208-230/460	3.5-3.2/1.6	487	55
71M020HVS423FN	110	33	87	1	0.74	208-230/460	3.5-3.2/1.6	407	46
71M015HVS423FN	148	45	117	1	0.74	208-230/460	3.5-3.2/1.6	470	53
71M010HVS423FN	222	68	175	1.5	1.11	208-230/460	4.6-4.2/2.1	442	50

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 = in (mm)

Variable Speed

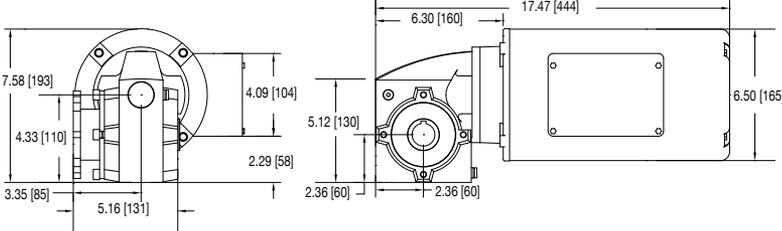
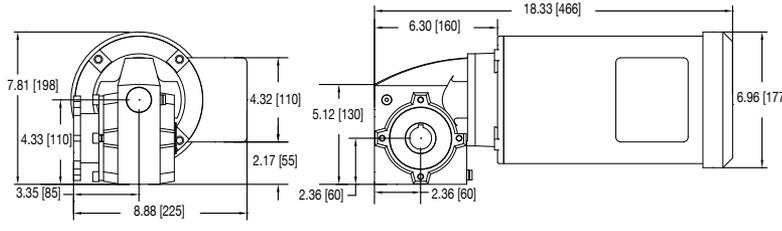
Chart 3  90° Nema C-Face, Painted Motor, VFD Rated									
<ul style="list-style-type: none"> • Nema 56C • IP 55 Protection Rating • Sealed Gearmotor with H1 FDA approved Lubricant • FDA approved white epoxy painted motor • Aluminum gearbox with sanitary coating • Totally enclosed non-ventilated motor • 3 Phase, 6 to 60 Hz • Order controller separately, see page 22 								Regulatory Approvals  	
Part Number	Belt Speed		RPM	Hp	kW	Volts	FLA	in.-lbs.	Nm
	Ft/min	M/min							
71M060HS423EN	4-37	1-11	29	0.5	0.37	230/460	1.6/0.8	442	50
71M040HS423EN	6-56	2-17	44	0.5	0.37	230/460	1.6/0.8	486	55
71M030HS423EN	7-74	2-22	58	1	0.74	208-230/460	3.5-3.2/1.6	487	55
71M020HS423EN	11-110	3-33	87	1	0.74	208-230/460	3.5-3.2/1.6	407	46
71M015HS423EN	15-148	5-45	117	1	0.74	208-230/460	3.5-3.2/1.6	470	53
71M010HS423EN	22-222	7-68	175	1.5	1.11	208-230/460	4.6-4.2/2.1	442	50

Chart 4  90° Nema C-Face, Stainless Steel Motor, VFD Rated									
<ul style="list-style-type: none"> • Nema 56C • IP 55 Protection Rating • Sealed Gearmotor with H1 FDA approved Lubricant • Stainless Steel motor • Aluminum gearbox with sanitary coating • 0.5 HP motor is totally enclosed non-ventilated • 1.0 and 1.5 HP motors are totally enclosed fan cooled • 3 Phase, 6 to 60 Hz • Order controller separately, see page 22 								Regulatory Approvals  	
Part Number	Belt Speed		RPM	Hp	kW	Volts	FLA	in.-lbs.	Nm
	Ft/min	M/min							
71M060HVS423EN	37	11	29	0.5	0.37	230/460	1.6/0.8	442	50
71M040HVS423EN	56	17	44	0.5	0.37	230/460	1.6/0.8	486	55
71M030HVS423EN	74	22	58	1	0.74	208-230/460	3.5-3.2/1.6	487	55
71M020HVS423EN	110	33	87	1	0.74	208-230/460	3.5-3.2/1.6	407	46
71M015HVS423EN	148	45	117	1	0.74	208-230/460	3.5-3.2/1.6	470	53
71M010HVS423EN	222	68	175	1.5	1.11	208-230/460	4.6-4.2/2.1	442	50

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.

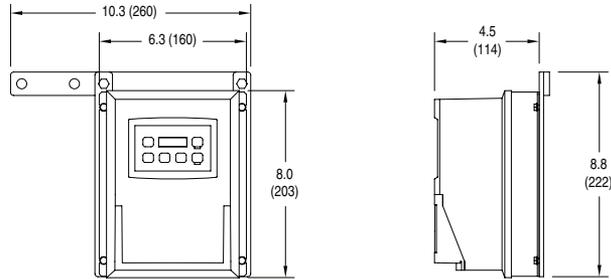
FLA = Full Load Amperes Some motors and gear reducers may normally operate hot to the touch. Consult factory for specific operating temperatures. **Note:** Dimensions = in (mm)

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



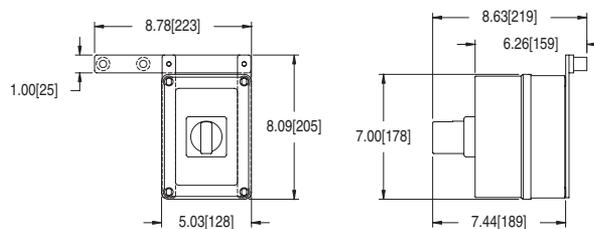
Part Number	Input			Output		Max Hp	Max Amps	A (width)	B (depth)
	Volts	Phase	Hz	Volts	Phase				
74MV1122S	115	1	60	230	3	0.5	2.2	7.9 (200)	3.8 (96)
74MV2322S	230	3	60	230	3	0.5	2.2	6.1 (155)	4.4 (112)
74MV1121S	115	1	60	230	3	1.0	4.0	7.9 (200)	4.9 (124)
74MV2121S	230	1	60	230	3	1.0	4.0	7.9 (200)	4.9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

MANUAL MOTOR STARTER

Chart B

 Manual Motor Starter

- Nema 4X Plastic Enclosure
- Stainless Steel mounting hardware
- IP 66
- Start / Stop Switch
- Lock out tag out capable
- Includes wiring to Motor
- Power to Starter by others
- No plug/cord set included

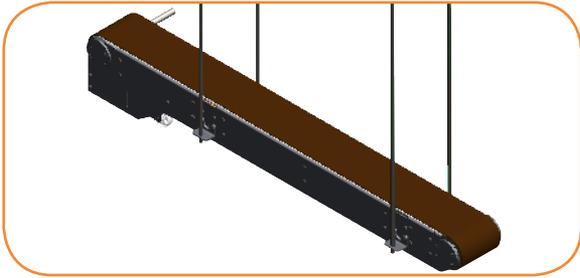


Part Number	Input			FLA
	Volts	Phase	Hz	
74MM11F	115	1	60	6.3 - 10
74MM21D	208-230	1	60	2.5 - 3.9
74MM23A	208-230	3	60	0.63 - 0.99
74MM23B	208-230	3	60	1.0 - 1.59
74MM23C	208-230	3	60	1.6 - 2.4
74MM23D	208-230	3	60	2.5 - 3.9
74MM23E	208-230	3	60	4.0 - 6.3
74MM43A	460	3	60	1.6 - 2.4
74MM43B	460	3	60	2.5 - 3.9
74MM43C	460	3	60	0.63 - 0.99
74MM43D	460	3	60	1.0 - 1.59

FLA = Full Load Amperes

Note: Dimensions = in (mm)

Horizontal Ceiling Supports

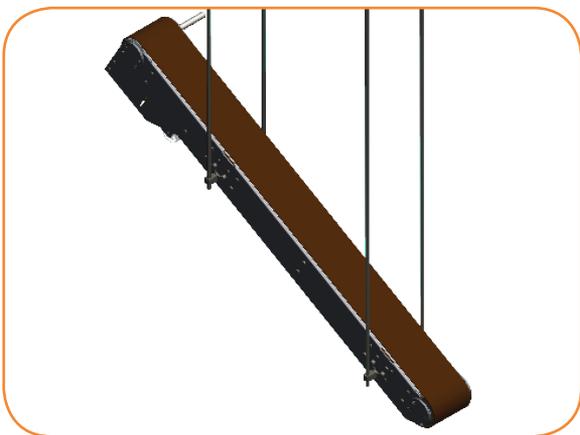


Specifications

- 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 1/2" threaded support rod (not provided)

Part No. 71HCS

Adjustable Angle Ceiling Supports

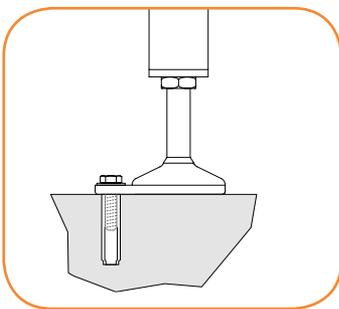


Specifications

- 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 1/2" threaded support rod (not provided)
- Mounting block pivots to support incline mounts from 0° to 60°

Part No. 71ACS

Sanitary Floor Anchor Kits - Type 1

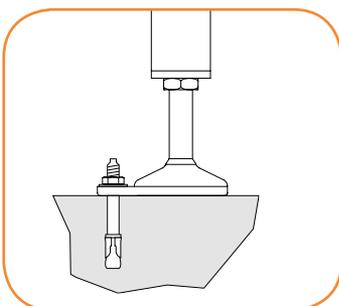


Specifications

- 3/8" (10 mm) x 1.57" (40 mm) 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

- 3/8" (10 mm) x 2 3/4" (70 mm)
- 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 = in (mm)

Roller Transfer Plate

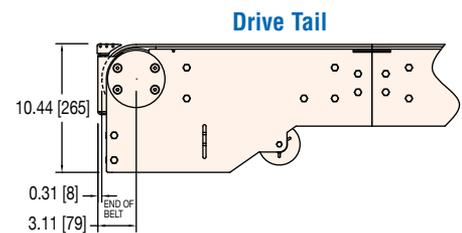
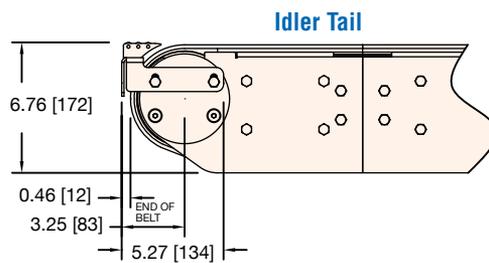
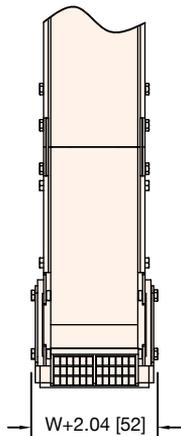


Specifications

- 4.5" wide to 12" wide
- Includes 0.43" diameter rollers mounted in transfer plate
- Adjustable mounting to fine tune small parts transfer
- All brackets and fasteners are Stainless Steel

7100 Series: Roller Transfer Plate

710 A ST - WWW
 |-----|
 |-----| **Conveyor Width:**
 |-----| 045 = 4.5" 075 = 7.5"
 |-----| 100 = 10' 120 = 12'
 |-----| **Drive Shaft: A = Drive End A Position**
 |-----| **D = Drive End D Position O = Idler End**



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: 3' to 10' in 1" increments
- Horizontal Brackets provided for every 2' 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.

AquaGard: Overhead Guide

735HG A - LL
 |-----|
 |-----| **Guide Length: 03-10**
 |-----| **Guide Type: A = Adjustable T = Tool-less**

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

Note: Dimensions = in (mm)

Upper Guide



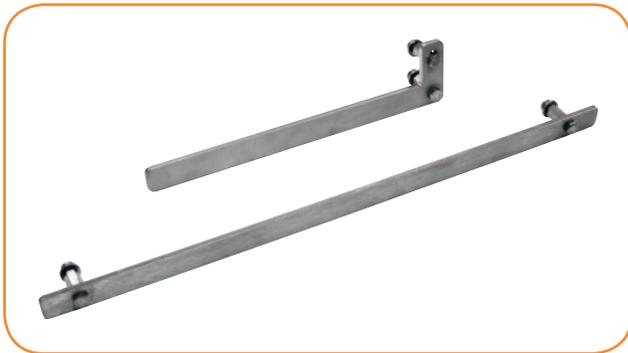
Specifications

- 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: 3' to 10' in 1" increments
- (2) width adjusting options (standard 5" post, 10" post)
- Brackets provided for every 2' of length
- Available in standard adjustable and tool-less adjustable mount styles
- All brackets and fasteners are Stainless Steel

AquaGard: Upper Guide

735UG	A	W	P	-	LL
					Guide Length: 03-10
					Post: V = Vertical post N = No vertical post
					Guide Width: 1 = 5" 2 = 10"
					Guide Type: A = Adjustable T = Tool-less

Accessory Mounting Bar



Specifications

- Used for mounting adjustable devices such as photoeyes and sensors
- Used with Dorner Key Slot System (Profiles 13, 14 and 50)
- Can be mounted directly to frame or in combination with guide brackets
- 2 Versions:
 - 3' bar used to mount to 24" hole pattern in frames
 - 1' L shape used to mount at tail ends
- Compatible with Value Guide blocks (VG-021-02)
- All brackets and fasteners are Stainless Steel

AquaGard: Accessory Mounting Bar

735AM	LL
	Tail Version: 01 = 1" tail 03 = 3" tail

M8 Accessory Mounting Bolt



Specifications

- Stainless Steel mounting hardware
- M8-1.25 Male mounting stud
- Used with Dorner key-slot system (Profiles 13, 14 and 50)
- Eliminates the need to access the inside of the frame
- Package of 10 pieces
- Includes M8 Nut

Part No. 735M8-10 M8 Accessory Mounting Bolt w/Nut (package of 10 pieces)

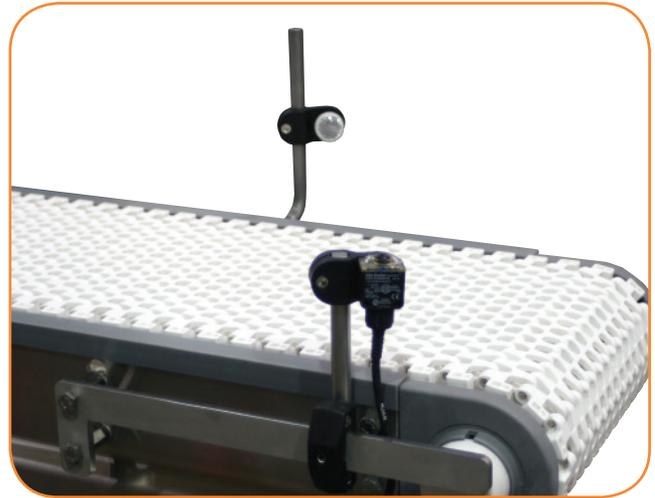
Note: Due to the wide variety of set-ups and installations, point of installation guarding is the responsibility of the end user.

Note: Dimensions = in (mm)

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 mound (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)



AquaGard: Photo Eye Bracket - Accessory Mounting Bar Style

735 PM - FP

- Post Type:**
 NP = Fixed Post w/o post included
 FP = Fixed Post w/ post included
 AM = Accessory Mount
- Mount Type:**
 PM = Photoeye Mount
 RM = Reflective Mount
 CM = Convergent Mount

Drip Pans



Specifications

- Widths: 6" (152 mm) to 60" (1,524 mm) available in 2" increments
- Lengths: 24" (610 mm) to 999" (25,375 mm) available in 1" increments maximum section lengths of 118" (2,997 mm)
- Tool-less hook design for fast removal and rapid cleaning
- Provides a 2" window for clean-out access without removal
- All pans equipped with a 1" containment lip on all sides
- Contact factory for additional options

AquaGard: Drip Pans

7 XXX DP WW - LLL

- Length:** 024-120 (ie. 120 = 120")
Drip Pan Width: 06-60
Conveyor Type: 100 = 7100 Conveyors

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

Note: Dimensions = in (mm)

Materials and Chemical Resistance:

Conveyor Frames, Plastics and Conveyor Chain	
The following is a list of base materials used in the 7100 Series conveyor:	
Material	Conveyor Component
Acetal Copolymer, POM	Conveyor Chains
Polypropylene, PP	Not Used
Polyamide, PA	Chain Sprockets, Corner Wear Strips
UHMW-PE	Slide Rail, Adjustable Guide Face
Thermoplastic Elastomer, TPE	Modular Belt Friction Insert

The materials used in the 7100 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.					
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, 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:

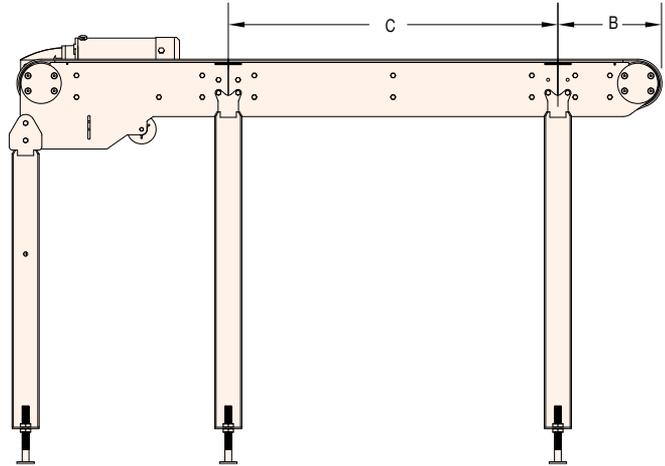
All bearings on the 7100 Series conveyor are sealed and lubricated for life. No grease zerk is available and no greasing over the life of the product is required.

All gearmotors used on the 7100 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:

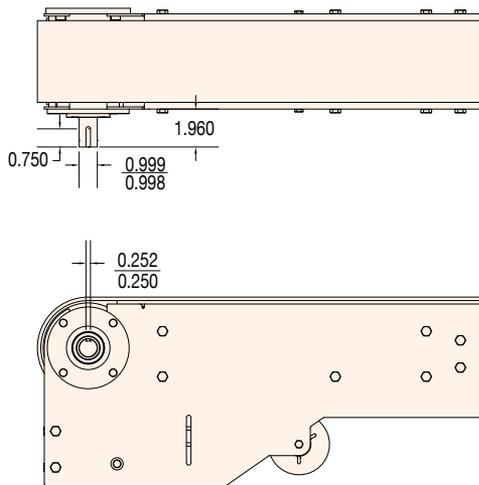
Support Stand Locations		
Symbol	Description	Value, inches
A	Maximum distance back at drive end*	N/A
B	Maximum distance back at idler end	36"
C	Maximum distance between supports	120"
D	Maximum distance away from frame split	24"

*Note: Support must be located at drive end.

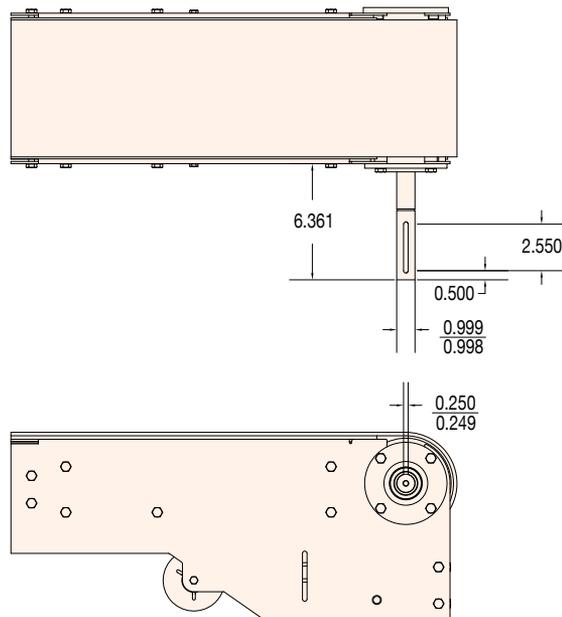


Conveyor Drive Shaft Tolerances:

Bottom Drive:



Side Drive:

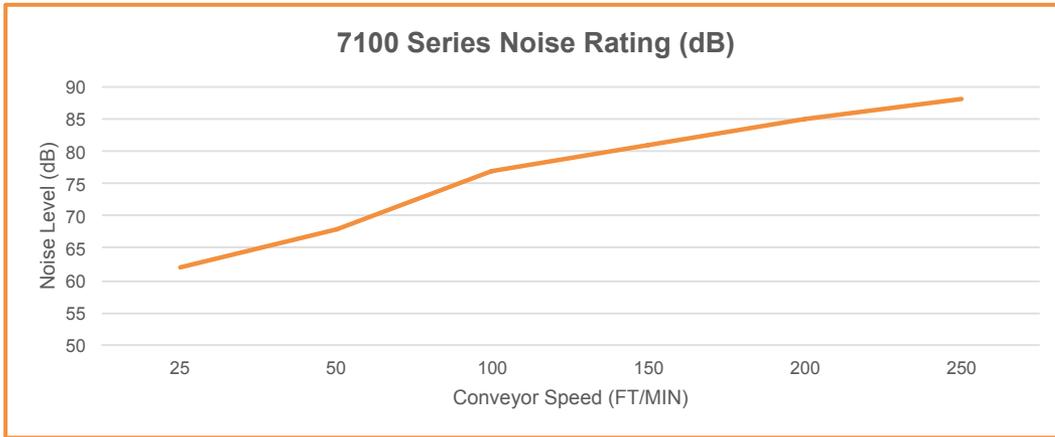


Conveyor Noise Level (Decibel Ratings)

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.

7100 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.

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

7100 Series Chain Conveyor	
Belt Width	Direction 1, Pulling the Belt
4 1/2" wide	500 lbs
7 1/2" wide	600 lbs
10" wide	700 lbs
12" wide	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.

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.

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
7100 Series Modular Belt	Acetal Chain to UHMW wear strips	Dry	0.30

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

7100 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

7100 Series Flexible Chain Conveyors:

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

- Drive sprocket pitch diameter
 - 4.85" (123mm) 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:

7100 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 factor that effect the overall conveyor load of the 7100 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 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

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 7100 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 7100 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 7100 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>

7100 Series Conveyors are Best for:

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

Sizes & Measurements

Chain Width	4 1/2"	7 1/2"	10"	12"
Frame Width	5"	8"	10 1/2"	12 1/2"
Max Part Width	9 1/2"	12 1/2"	15"	17"
Max Length	100ft			

Loads & Speeds

- Loads up to 700 lbs
- Speeds up to 222 fpm

Flexible Chain Types

- Standard
 - Low Friction
 - Friction Insert
 - Roller Top
- Specialty
 - Metal Chain
 - Grip Top Chain
 - Cleated Chain



Low Friction



Friction Insert



Roller Top

Guiding Options



Fully Adjustable



Stainless High Sides

Adjustable Outboard Guides Also Available

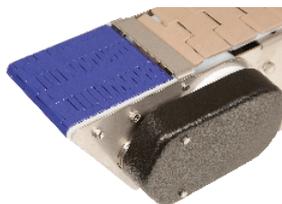
Stands

- 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



At Dorner we make it our mission to provide you with a system that you can depend on to move your product from point A to point B with precision and speed. It's that commitment and history of proven excellence that has made the Dorner Brand a recognized leader in precision conveyors for nearly 50 years. With our complete line of customizable conveyor systems we have the perfect solution for you!



1X Series

The 1X Series Line is designed for small part handling and transfers where space is a premium.

1X Series Family:

- Flat Belt
- Aluminum Frame
- Widths to 10"
- Loads to 15 lbs
- Speeds up to 80 fpm



2X Series

The 2X Series Line is engineered for small to medium sized parts, precision applications and flexible layouts.

2X Series Family:

- Flat Belt
- Cleated Belt
- Modular Belt
- Precision Move - Timing Belt
- SmartFlex® - Flexible Chain
- Aluminum Frame
- Widths to 24"
- Loads to 200 lbs
- Speeds up to 400 fpm
- Curves
- Inclines & Declines



3X Series

The 3X Series Line is designed for medium to heavy sized parts, precision applications, bulk handling and flexible layouts.

3X Series Family:

- Flat Belt
- Cleated Belt
- Modular Belt
- Flexible Chain
- Precision Move - Timing Belt
- Aluminum Frame
- Widths to 60"
- Loads to 1000 lbs
- Speeds up to 600 fpm
- Curves
- Z-Frame Elevators



7X Series

The 7X Series Stainless Steel Line is engineered for small to heavy product requiring various levels of sanitary design and flexible layouts.

7X Series Family:

- AquaPruf® + AquaGuard®
- Flat Belt
- Cleated Belt
- Modular Belt
- Flexible Chain
- Stainless Steel Frame
- Widths to 60"
- Loads to 750 lbs
- Speeds up to 400 fpm
- Curves
- Z-Frame Elevators

NEED SOMETHING DIFFERENT?

DORNER'S **ENGINEERED SOLUTIONS GROUP** PROVIDES EXACTLY WHAT YOU NEED FOR YOUR SPECIFIC APPLICATION. FROM MODIFIED STANDARD CONVEYORS TO COMPLETE CUSTOM DESIGNS.

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