

DAIFUKU INTRALOGISTICS AMERICA

AUTOROLL+™ S MOTORIZED ROLLER CONVEYOR



Why Choose AutoRoll+™ S Motorized Roller conveyor

Daifuku's AutoRoll+™ S Motorized Roller conveyor is available in various configurations to support numerous system applications. It is quiet, safe, requires low-to-no maintenance, and offers zero contact accumulation.

AutoRoll+™ S can accumulate product without bumping, getting side-by-side, skewing or jamming. Intermixed products, such as totes, polybags and cartons can be handled simultaneously even when there are extreme differences in weights from one product to the next.

AutoRoll+™ S conveyor features run-on-demand zones.

It only runs when required to advance product, thereby reducing energy consumption and overall noise levels as well as extending the functional life of the conveyor.

AutoRoll+™ S has an extremely quiet OSHA approved sound level. Since AutoRoll+™ S is run-on-demand, there is no sound generated when the zones are in accumulation mode, or when product is not present.



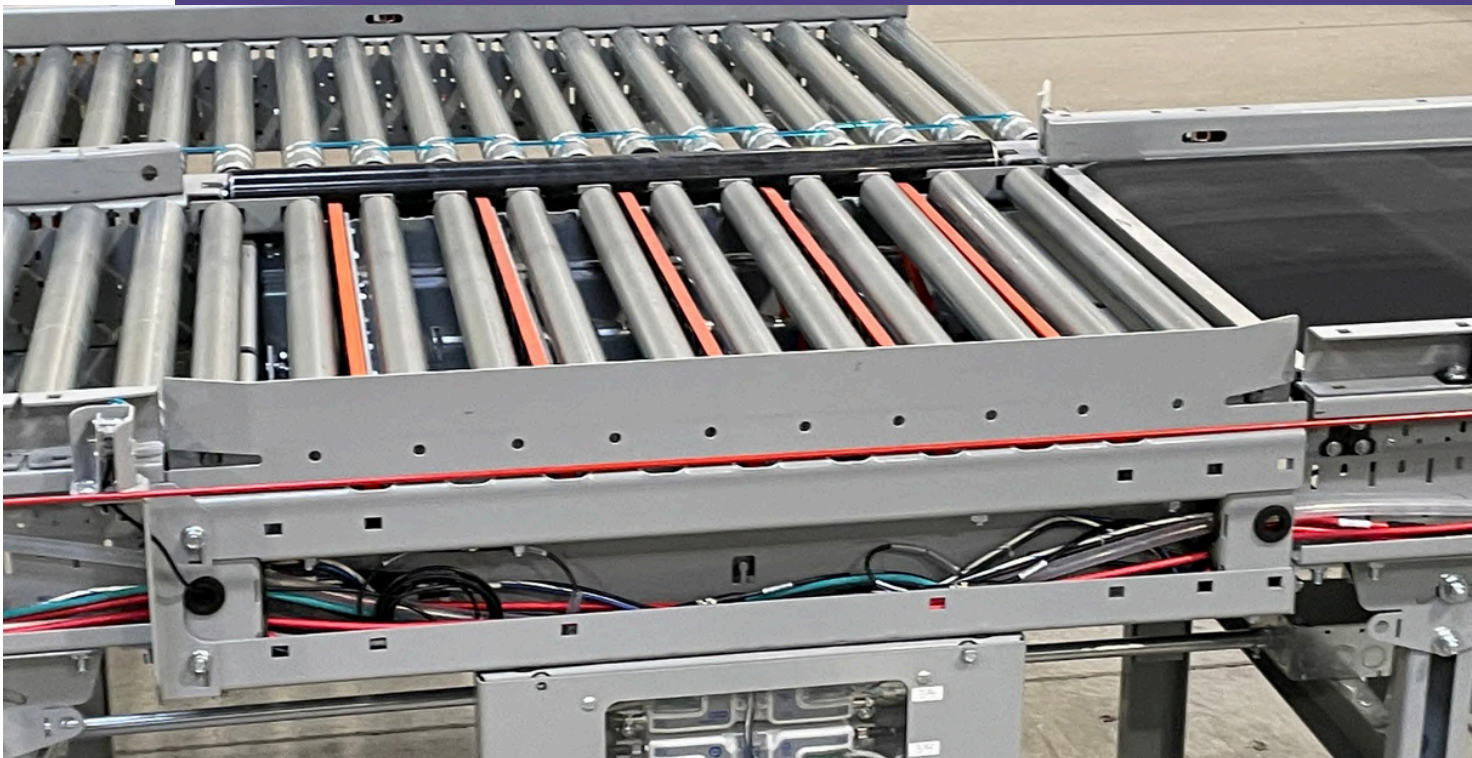
INTRODUCTION

AutoRoll+™ S Motorized Roller Conveyor

Quiet. Efficient. Reliable. Smart.

Daifuku's AutoRoll+™ S Motorized Roller Conveyor is engineered for high-performance material handling where reliability, safety, and flexibility matter.

From high-speed transport to gentle zero-contact accumulation, AutoRoll+™ S delivers smooth, efficient flow for cartons, totes, polybags, and mixed products all with industry-leading quiet operation and ultra-low maintenance.



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AutoRoll+ S Conveyor: Standard Components

- Bed Construction:
 - 6" deep x 1.75" flange x 12GA steel "strong-C" channel
 - All open holes and slots are <math><1/4''</math>
 - Finger Guards are available on 3" roller centers only.
- Rollers-Low Guiderail:
 - 2" tall x 1.25" flange 12GA steel channel, factory-installed
 - Sensors are installed behind guiderail
- Control Voltage and Wiring:
 - 24VDC
 - Power wiring uses NFPA79 compliant colors, includes separate control power and MDR power conductors, maintains network connection when E-stop active
 - A 24VDC Power Supply is required and must be sized to accommodate conveyor loading and Control module settings A 20A circuit can supply 12 motorized rollers in singulation mode or 8 motorized rollers in slug mode.
- Finish:
 - Standard colors as a second bullet point.
 - All AutoRoll+ S conveyor equipment is supplied with a conductive powder coat finish
 - Five standard paint colors. Special colors available
- Ambient Temperature Range
 - 25° F to 104° F.



Motor Driven Roller Features and Capabilities

- Motor Driven Roller:
 - 24VDC Senergy-Ai motor/gearbox
 - 50mm dia. X 16 ga. with 7/16" hex axle
 - Motor speeds of 45 m/min, 60 m/min and 75 m/min are available
 - Brake motor for decline applications

Roller Speed Chart:

Motorized Roller Speed Chart

Nominal Speed*	Mode***	Speed Range (feet per minute)	Speed Code (meters per minute)	Torque (in-lbf)	
				Rated	Starting
160	ECO	20 – 200	45*	8.7	48.3
	Boost	20 – 140		15.9	63.0
220**	ECO	27 – 273	60**	6.4	35.4
	Boost	27 – 191		11.6	46.1
270	ECO	32 – 323	75***	4.4	28.3
	Boost	32 – 233		8.9	42.5

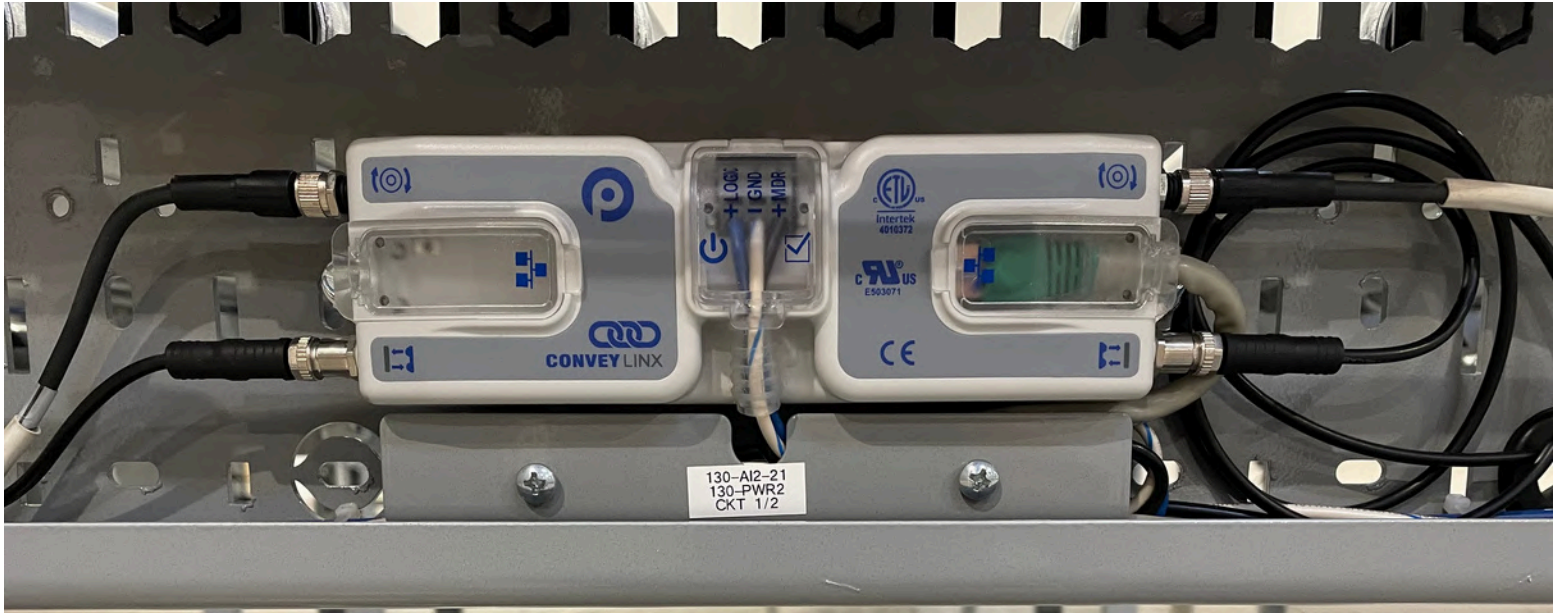
* Nominal Speed is based on Ai2 Factory Default settings - (Eco Mode - 80%)

** Nominal speed 220 - Speed settings above 80% (220 fpm) are not recommended on accumulating conveyors.

*** ECO and BOOST modes provide high starting torque and lower running torque

- Carrying Rollers:
 - 1 7/8" dia. X 16 GA steel tube, 7/16" hex axle.
 - Precision high-speed shielded bearings
 - Double sprung to allow easy removal from either side of the conveyor
 - Non-pop-out axle isolators: Custom conductive plastic insert isolates carrying roller axles from the conveyor frame to reduce noise and prevent wear.
 - Quiet Roller Option: 1-5/8" Dia. roller with 1/8" urethane sleeve, overall diameter of 1-7/8" matches standard roller diameter.

ConveyLinx-Ai2 Control Module Features and Capabilities



- Motor Control Module:
 - ConveyLinx-Ai2 Control Module is CE Certified, UL Recognized, ETL Listed, RoHS compliant
 - Dual-zone networked control modules
 - Configurable using EasyRoll+ software
 - Dust-proof industry-standard M8 motor and sensor connections and extension cables
 - Low profile form-factor
 - FlexZone feature automatically detects when a carton is longer than one zone length and adjusts accumulation control, so the longer carton occupies two zones
 - Automatic Module Replacement – configuration data is automatically updated when cards are replaced (if commissioned by Auto-Configuration procedure) so that the entire linear conveyor does not have to be Auto-Configured again in order to replace a single ConveyLinx-Ai2 Module

Zone-Level Sensing Technologies and Specifications

ZONE SENSORS

To reliably detect various loads, three available sensors provide the capability to detect standard cartons, tapered totes and thin product:

- Narrow Beam retro reflective photo-eye for most cartons and totes.
 - Installed into rollers-low guide rail
 - 1" min. product height
 - Adjustable angle
 - 2" or 8" skew available

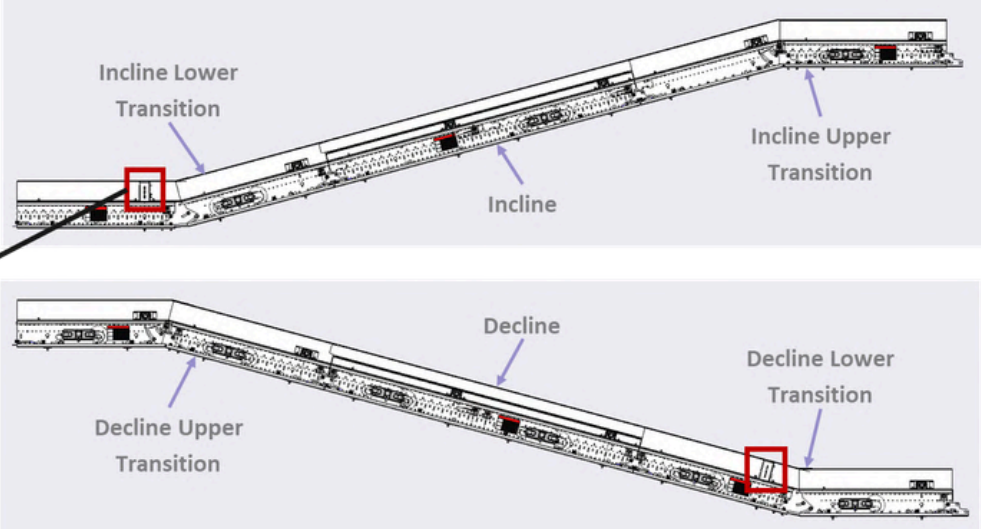
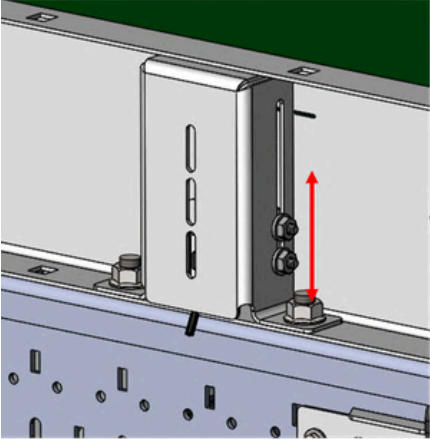
- Array - side mount (optional):
 - Installed into rollers-low guide rail
 - 25mm beam height
 - 1/2" minimum product height
 - 2" sensor skew only

- Between Rollers Sensor Bar
 - Use in areas where a side-mounted sensor would obstruct operations
 - Mounts between 3" center carrying rollers
 - Not available with 2" roller centers.
 - Proximity beams are on ~4" centers across length of sensor bar
 - Can be installed between skewed rollers



Zone-Level Sensing Technologies and Specifications

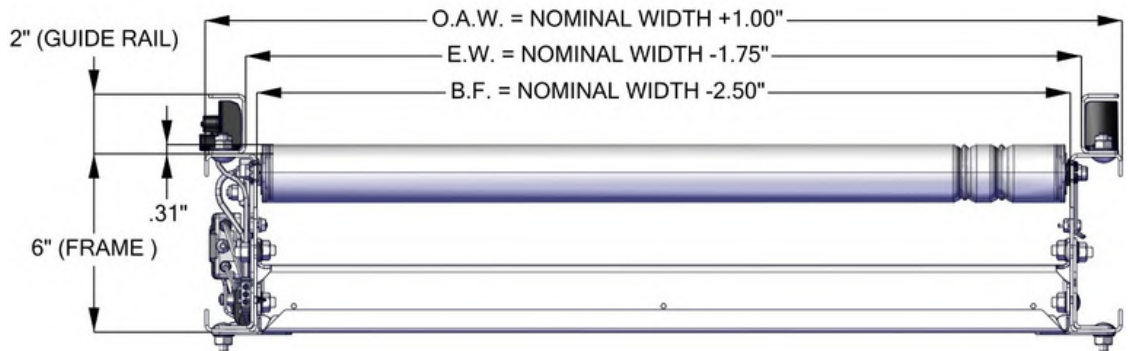
Adjustable photo-eye in incline and decline beds to compensate for “bridging” of longer products.



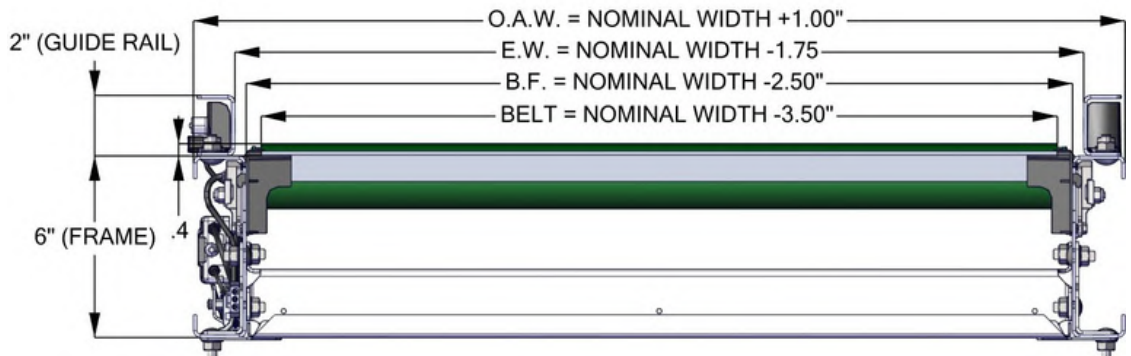
Technical Specifications and Available Configurations

Section View:

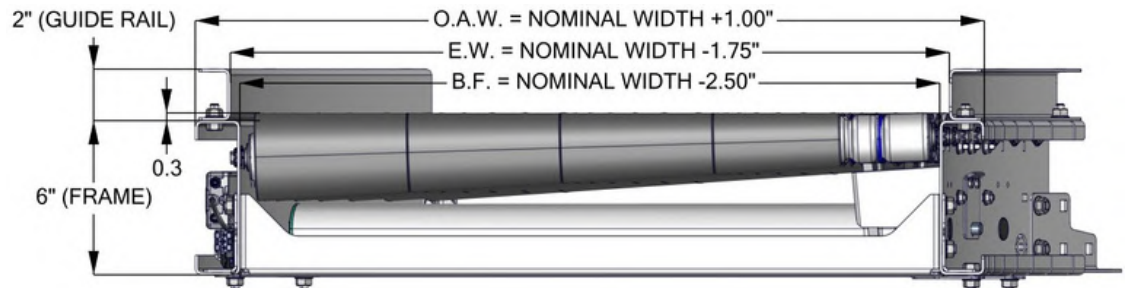
Roller Bed



Belt on Roller



Curve



Technical Specifications and Available Configurations

Typical Applications

- Indexing
- Zero Contact Accumulation
- Staging
- Merging
- Diverting
- Inclines
- Declines
- Curves

Nominal Widths

- 18", 24", 30", 36", 42"

Carrying Roller Centers

- 2" and 3"

Available Zone Lengths

- 24", 30", 36"

Full width belt option

- Belt-Over-Roller (Incline, decline and horizontal beds)
- Belt-Over-Slider (Decline and horizontal beds)

Two MDR rollers per zone option

- For heavier loads



Technical Specifications and Available Configurations

Standard Curve Offering

30°, 45°, 60°, and 90°

Standard Junction Offering

30° and 90°

Product Weight Capacity:

Conveyor Load Guidelines

All Conveyor Except Horizontal Slider Bed		
Roller Speed Code	#MDR per Zone	Max Load (lbs.)
45	1	50
	2	100
60	1	50
	2	100
75	1	40
	2	80

Horizontal Slider Bed		
Roller Speed Code	#MDR per Zone	Max Load (lbs.)
45	1	40
	2	100
60	1	40
	2	100
75	1	20
	2	80

Notes:

Use Boost mode in inclines

Use Boost mode in skews and curves above 50 lbs.

Incline bed up to 80 lbs limited to 15 deg, up to 100 lbs limited to 12 deg.

Decline with roller bed 50 lbs max.

Notes:

Use Boost mode in horizontal slider bed above 20 lbs.

Personnel Gate Overview

Bed Section:

- 10" deep x 1.75" flange x 12GA steel "strong-C" channel frame

Pivoting Bed Section:

- 6" deep x 1.75" flange x 0.100" aluminum "strong- C" channel frame

Lifting Springs:

- Gas-filled spring, 0.85" dia., 10.2" stroke

Accumulation Sensor:

- 24vDC photoelectric, M8 connector

Gate position sensor:

- 24vDC proximity, M12 connector

Power wiring:

- Pre-installed, 3-conductor, heavy-duty plug connectors at bed joints

Finger Guards:

- Belt-edge and full width between zones fingers guards are included.



Bi-Directional Transfer Overview

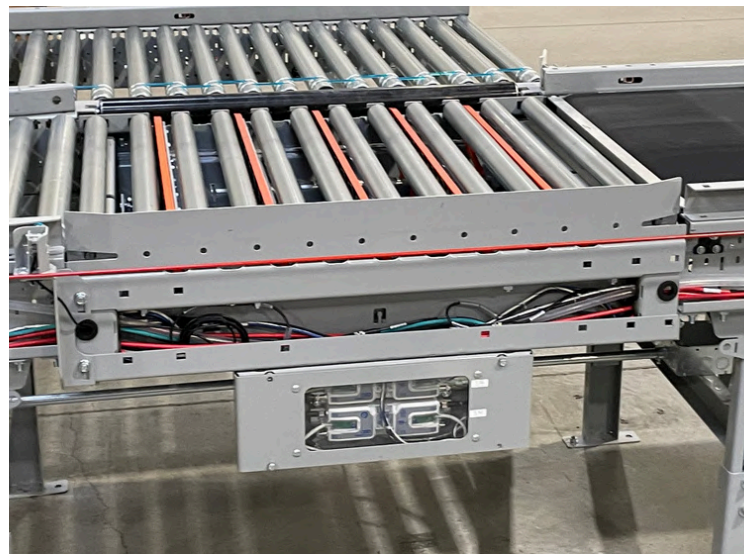


AutoRoll+ S Bi-directional Transfers can transfer product in either direction. They can transfer to a conveyor that is parallel or perpendicular to the transferring conveyor.

When transferring to a perpendicular conveyor the product orientation will be changed by 90 degrees.

Intermixed products, such as totes, polybags and cartons can be handled simultaneously even when there are extreme differences in weights from one product to the next.

AutoRoll+ S is quiet, safe, and requires low-to-no maintenance. Featuring run-on-demand zones, it only runs when required to advance product, thereby reducing energy consumption and overall noise generation as well as extending the functional life of the conveyor.



Bi-Directional Transfer Overview

Standard Components

Bed Section:

- 12GA steel "strong-C" channel

Motor Control Module:

- ConveyLinx-Ai2 network control module.

Motor Driven Roller:

- 50mm dia. 24vDC Brushless with 7/16" hex axle, mounted low.

Idler/Carrying Rollers:

- 1.63" dia., steel 16 GA steel tube, 7/16" dual-spring hex axle.

Gap Roller:

- 50mm dia. 24vDC Brushless with 1/8" urethane coating, with 7/16" hex axle.

Lift Cylinder:

- 63mm bore X 25mm stroke guided cylinder, with 24vDC solenoid.

Corner Sensors:

- 24vDC photoelectric, M8 connector.

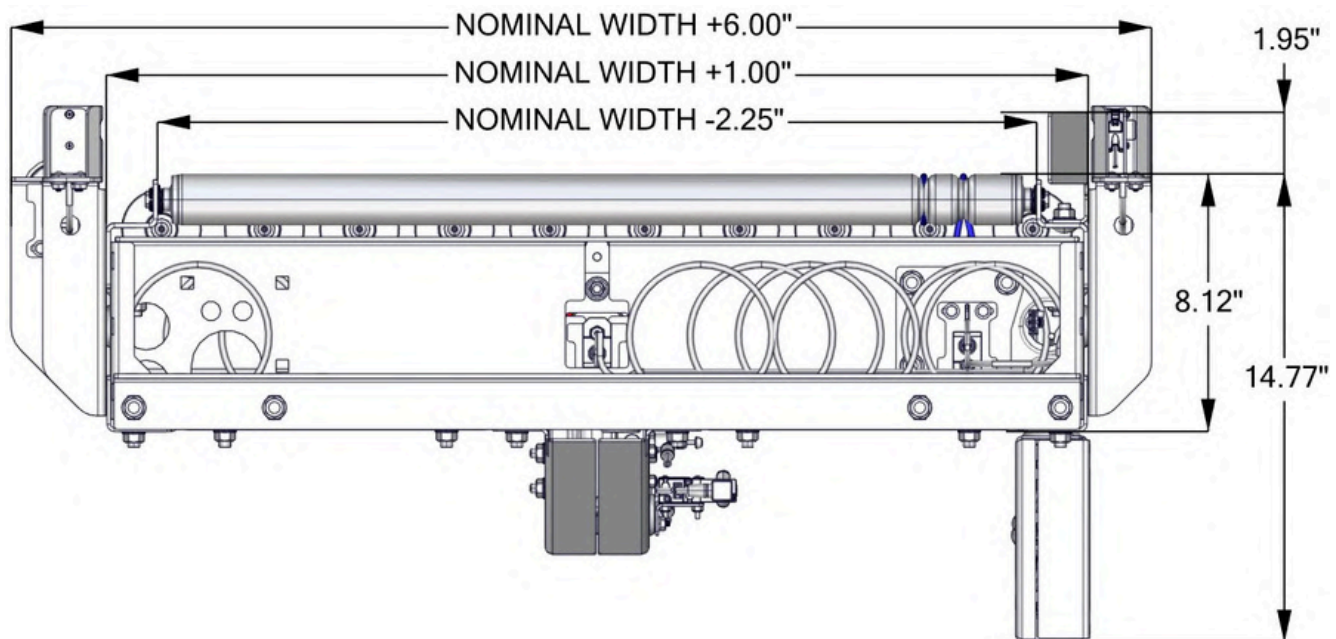


AutoRoll+ S Bi-Directional Transfer Overview

Specifications:

- Standard Bed Length: 36"
- Standard Nominal Widths: 18", 24", 27", 30", 33", 36", 39", 42"
- Carrying rollers are on 3" centers.
- Controls enclosure and drive bands are located on the same side.
- When Gap Roller Qty. is (0) or (1), guardrail is supplied and installed on the same side as carrying roller drive MDR. Guardrail is not included if qty: (2) Gap Rollers are selected.
- Transfer vanes are available with "A" section urethane v-belts or poly-v belts.
- Transfer belts are driven by (1) dual motor MDR.
- Transfers can be ordered with either (4) or (5) vanes.
- Up/down position sensors are included. Lift/lower speed is adjustable with flow controls included.
- Controls enclosure can be remote mounted up to 6ft away from transfer using optional remote mounting kit.
- Bottom Covers included and ship installed.
- Power wiring: Pre-installed, 3-conductor, heavy-duty plug connectors at bed joints.
- Transfer Belts: "A" section urethane v-belt or "J" section poly-v belt
- Pneumatic lift air requirements: 60 PSI, 0.025 cu. ft. per actuation.
- Sort Rate Capacity: Up to 30 Cartons Per Minute, dependent upon carton size /weight and system design.

Section View:



About Daifuku Intralogistics America

Daifuku Intralogistics America Corporation (ILUS), a subsidiary of Daifuku Co., Ltd., headquartered in Japan, specializes in designing, manufacturing, and installing cutting-edge technology that enhances the efficiency and safety of modern manufacturing and material handling operations.

As part of the Daifuku Group, a global leader in automated solutions, ILUS is dedicated to delivering exceptional systems tailored to the North American market, helping customers elevate their operations to new heights.

Contact us today to learn more about how we can support your goals and transform your operations.



Contact Daifuku Today

Are your operations prepared for the next decade? Do you have a conveyance strategy that's part of your operational plan?

If you don't, now is the time to start developing one so that you stay competitive. As world leaders in designing and manufacturing automated solutions, Daifuku is here to help.

With a range of industry-leading intralogistics solutions—from vehicle systems to advanced conveyors and sorters, picking systems, rack systems, and IT systems—we're here to help you meet your goals as a valued partner.



CONTACT DAIFUKU FOR MORE INFORMATION AND TO SPEAK WITH AN EXPERT ABOUT OUR RANGE OF OFFERINGS AND HOW THEY CAN HELP YOU STAY AHEAD OF THE CURVE IN YOUR SUPPLY CHAIN STRATEGY.



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