

ADVANTAGES:

- **Standard model available for belt widths 24” to 36” (610mm to 914mm) wide**
- **Oversized model available for belt widths 39” to 48” (991mm to 1219mm) wide**
- **Left or Right-hand discharge configurations**
- **Quick cycle times compatible with belt speeds of 90 to 240 FPM (27.43 to 73.15 m/min)**
- **Efficient and effective sortation solution**



OVERVIEW:

The G&S Single Paddle Diverter (SPD) sortation device is a gentle and efficient means of diverting baggage in airport baggage screening systems. The SPD redirects baggage effectively from the main line to a secondary line by means of a vertically oriented single paddle conveyor that is designed to pivot towards a discharge chute, forming a powered deflecting face oriented 45° to baggage flow. The unit is typically preceded by a series of queue conveyors, which control flow and optimize baggage spacing.

Quick cycle times are accomplished by a smooth, efficient actuating motion that is capable of redirecting baggage of varying sizes as large as 120 pounds (54.43kgs), including baggage tubs and golf clubs. The speed of the powered face conveyor is proportional to that of the main-line conveyor, resulting in a belt speed relationship that maintains baggage orientation from one conveyor line to the next, optimizing baggage transfer and minimizing baggage jams.

The pivoting paddle conveyor belt *is driven* with a single synchronous belt and sprocket configuration, and is powered by a dedicated drive. This gear motor is coupled with a variable frequency drive (VFD) that allows the paddle's belt speed to be adjusted to correspond with the main line conveyor, resulting in a flexible, effective baggage transfer.

The pivoting paddle conveyor *cycles open and closed* using a simple actuator / connecting arm mechanism that is controlled using inductive proximity switches that ensures the paddle extends and retracts for repeated and reliable operations. The cycling mechanism is powered by a dedicated gear motor and is combined with a variable frequency drive (VFD), providing full adjustment of acceleration, deceleration, and cycle rates on the actuating mechanism. This results in a simple and reliable system that eliminates the need for any clutch / brake modules.

CONTROLS

Each SPD is equipped with its own electrical control panel, functioning as a stand-alone subsystem with its own integrated controls. This approach simplifies overall system controls and requires only feed power supply, and I/O signals from the Baggage Handling System to trigger each cycle.

Safeguards are built into the SPD through the use of strategically placed photo eyes that detect baggage at different stages along the unit and in the discharge chute. These photo eyes monitor the discharge chute and ensure that baggage is not present when the paddle is mid-cycle and detect any baggage jams immediately.

FRAME

- Rigid, box frame design
- Accurate, convenient mounting point for all components

The SPD is assembled on a rigid box frame that provides accurate, convenient mounting points for the pivoting paddle conveyor assembly, the motors, drive, and cycling mechanism, as well as the side guards and protective guarding. The top surface of the frame also doubles as a slider bed and has the baggage discharge chute built into it.

Constructed from formed mild steel and reinforced using standard structural steel sections, the frame is welded in quality controlled jigs to guarantee accurate component alignment.

GUARDING

- Ensures safety to operators and maintenance personnel

A removable protective enclosure is provided over the cycling mechanism, paddle conveyor gear motors, and encloses the synchronous drive components. Additional safety features are built into the guarding in that when removed, the SPD is fully disabled.

PIVOTING “PADDLE” CONVEYOR:

- Lightweight, rigid design
- 3½” (89mm) wide x 12” (305mm) high x 70¾” (1797mm) long

The paddle conveyor is built around a heavy-gauge support that is mounted to the frame, providing the structure that the paddle pivots around. The lightweight, yet durable, body of each conveyor consists of a reinforced, formed mild steel body capable of withstanding the shock loading experienced when baggage is diverted

Power is transmitted to the belting by means of a drive shaft centered in the pivot support, and is transferred to the drive pulley through a standard power-chain configuration.

PADDLE CONVEYOR BELTING:

- Black, longitudinally ribbed 2-ply woven polyester

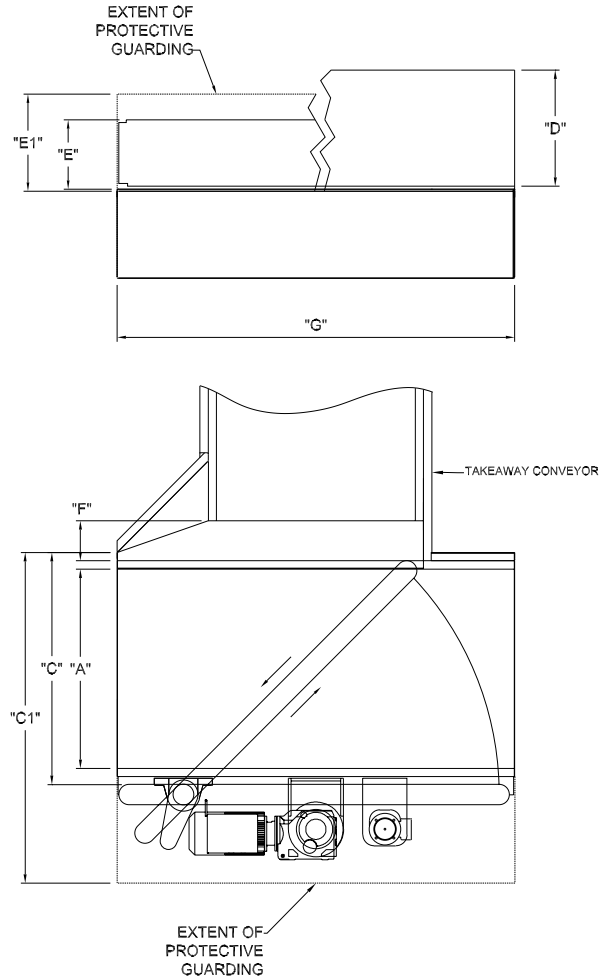
Belting is vulcanized to form a uniform, continuous loop.

MOTOR / REDUCER:

- SEW Eurodrive constant speed gear motors
- Variable Frequency Drive

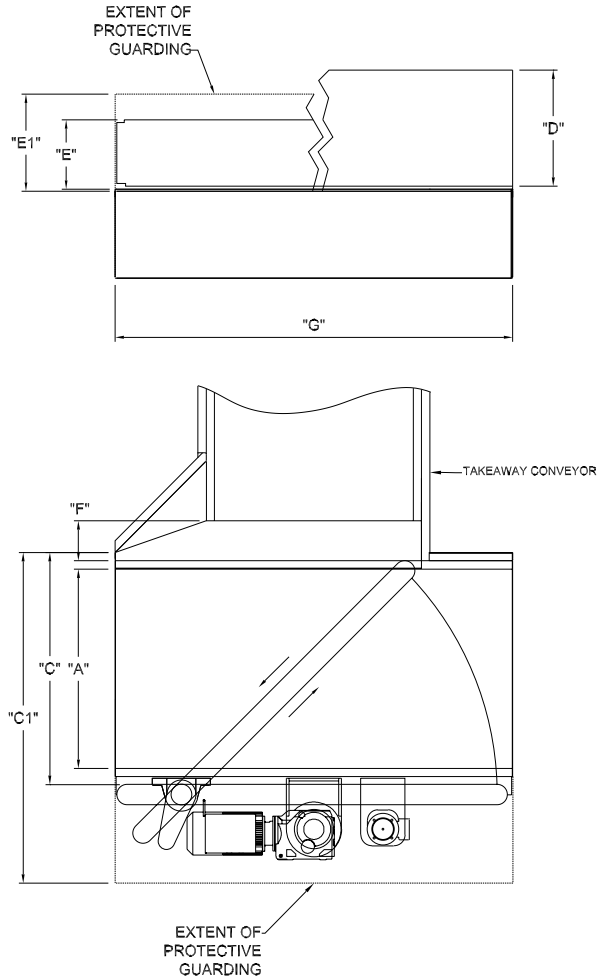
Both the cycling mechanism and the paddle conveyors are powered by individual direct drive motor / gearbox assemblies, which are selected for their reliability, low-noise characteristics, and ease of maintenance.

STANDARD SINGLE PADDLE DIVERTER



SINGLE PADDLE DIVERTER SPECIFICATIONS	
Description	G&S Standards
Dimensions	
Belt Width ("A")	36" (914mm) maximum
Between Frame Width ("B")	39" (991mm)
Overall Frame Width ("C")	42" (1067mm)
Overall Width ("C1")	59 3/4" (1518mm)
Side Guard Height ("D")	9" (229mm), 12" (305mm), 21" (533mm)
Paddle Height ("E")	12 1/2" (318mm)
Protective Guarding Height ("E1")	17 1/8" (436mm)
Spill Plate Length ("F")	4 1/4" (108mm) minimum
Unit Length ("G")	72" (1829mm)
Specifications	
Speed (Main Belt)	90 - 240 ft/min (27.43 - 73.15 m/min)
Speed (Paddle Belt)	Proportional to main belt
Load Capacity (Live Load)	40 lbs/ft (59.52 kg/m) maximum
Baggage Rate (bag / hr)	1350

OVERSIZED SINGLE PADDLE DIVERTER



OVERSIZED SINGLE PADDLE DIVERTER SPECIFICATIONS	
Description	G&S Standards
Dimensions	
Belt Width ("A")	48" (1219mm)
Between Frame Width ("B")	51" (1295mm)
Overall Frame Width ("C")	55 3/4" (1416mm)
Overall Width ("C1")	71 3/4" (1823mm)
Side Guard Height ("D")	9" (229mm), 12" (305mm), 21" (533mm)
Paddle Height ("E")	12 1/2" (318mm)
Protective Guarding Height ("E1")	17 1/8" (436mm)
Spill Plate Length ("F")	4 1/4" (108mm) minimum
Unit Length ("G")	72" (1829mm)
Specifications	
Speed (Main Belt)	90 - 240 ft/min (27.43 - 73.15 m/min)
Speed (Paddle Belt)	Proportional to main belt
Load Capacity (Live Load)	40 lbs/ft (59.52 kg/m) maximum
Baggage Rate (bag / hr)	1350

Drive Options		
Standard		
Application	Make	Model
90 Deg. Reducer	SEW Eurodrive	ST - TorqLOC

Belting Options				
Standard			Optional	
Application	Make	Model	Make	Model
Main Belt	Nitta	BLC-18DKF2	Ammeraal Beltech	EX 10/2 0+00 AS FR
			Habasit	NNT-10ESBU
			Siegling America	E12/2 V1/V1 M-FR Black
Paddle Belt	Nitta	BLRB-16A		