Conveyor Solutions

ISO-9001 CERTIFIED
Quality Management System Certified

PHD is a member of the MAC Distributor Network

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SOLUTIONS FOR INDUSTRIAL AUTOMATION

Stop
Divert
Eject
Reject
Accumulate
Feed
Stack
Turn
Rotate
Locate
Push
Index
Pace
Dispense
Label
Snug

CONVEYOR01
PHD offers a complete line of pneumatic and hydraulic cylinders, escapements, grippers, slides, rotary actuators, clamps, multi-motion actuators, and proximity switches which can be combined or used individually to provide the motion your conveyor application requires. With millions of component variations, we can help pick, place, twist, turn, lift, grip, reach, rotate, eject, and clamp what you need to increase your productivity. If an application requires a modified component, our Unique Solutions® team is ready to help. We welcome special requests for unique products, regardless of quantity or frequency of order.

- automated baggage handling
- goods storage & distribution
- high speed palletizing
- high speed/high accuracy postal/parcel processing

PHD specializes in the use of corrosion-resistant materials to produce the actuators required by the food and medical industries demanding needs. These units are designed to withstand the washdown and sanitizing processes.

**Washdown/Sanitize Food/Medical Conveying Solutions**

**Heavy Duty Slide**  
ML#307246  
100% corrosion resistant, compact slide

**Dual Series SIP Slide Assembly**  
ML#310659  
Slide with FDA-approved materials/plating. Uses vacuum cups to pick food off of conveyor

**Slide Gate Cylinder**  
Drop-in replacement cylinder opens and closes sliding gate on chip dispensing hopper.
High Speed Sorting Solutions

The diverter on a conveyor used for product sorting requires a high speed actuator to provide the highest line speed available. A cylinder with a direct mount valve is used to reduce lag time created by air lines and fittings.

Depalletizing Solutions

This depalletizing device is used to remove containers as they are received on pallets and transfer them to an accumulating table where they are singulated before proceeding to the filler. Between each row of containers is a slip sheet to separate the layers. The clamp/slide combination reaches and holds onto the slip sheet while the tier of containers is swept off the pallet.

SA Slide
- Rugged, compact slide with built-in bumpers
- Compact slide for long life

SA Slide
- Compact slide with valve directly mounted for high speed actuation

Unique SA Slide with Direct Valve Mount
- ML#303927
- Cylinder with valve directly mounted for high speed actuation

SA Slide
- Compact slide for long life

Unique CV Cylinder with Direct Valve Mount
- ML#302516
- Cylinder with valve directly mounted for high speed actuation

Unique CV Cylinder with Direct Valve Mount
- ML#307794
- Clamp provides high clamp force and positive lock. Slide provides rugged and rigid support mechanism.

Depalletizing Solutions

GRM1 Mini-Clamp
- Compact clamp with jaws for holding sheet

SA Slide
- Compact slide with valve directly mounted for high speed actuation

SG Slide
- 30 inches of stroke

GRM2 with SBx Slide
- ML#307794
- Clamp provides high clamp force and positive lock. Slide provides rugged and rigid support mechanism.
This Series GRR Gripper is designed for long stroke, high force applications. Used as an end effector on an industrial robot, the synchronized parallel action automatically centers items for operations such as sorting. The long stroke compensates for items of varying size or position.

**GRR Gripper**
- Long jaw travel for different sizes of cartons

**SD/SE Slide**
- Rugged cantilever slide for long life

**SA Slide**
- Compact slide to fit application requirements

**Orienting Solutions**

**unique SD/SE Slide**
- ML#224359

**unique SA Slide with Direct Valve Mount**
- ML#303927

Usually used in banks of two, three, or four, slides are mounted side by side over a conveyor with cases going underneath. The cases are rotated to the proper orientation after the corner of a case is caught before coming down a conveyor.
Stopping Solutions

A SAH slide serves as conveyor stop to locate a pallet for assembly of small engines, staging up to five pallets at a time. Slides are located at the center of the conveyor below the work area.

Ejecting Solutions

If a box is considered defective it gets pushed into a reject bin by a Series SL Slide.

PDG Gage
Designed to absorb high impact forces

PDG gage used in battery application

SAH Slide
Conveyor stop slide

LCS Escapement
Single rod escapement

unique Cylinder
ML#309590
Provides rapid repeatable ejection function

unique SA Slide with Direct Mount Valve
ML#303927
Direct mount valve for high speed actuation

SL Slide
Long travel slide

Series SL Slide
Pushing/Sweeping/Raking Solutions

In this conveyor routing system, SFP, SD and SE slides are combined to route products off of a conveyor line. Identification of the product being routed is accomplished through an optical sensing system. This system quickly and effectively separates products for packaging and distribution.

A hot casting has just left the shakeout station and needs to be rerouted to another conveyor. The modified SA slide pushes the casting on the other conveyor. The metallic scrapers on the SA slide prevent sand from contaminating the bearings.

In this carton transfer application, an SFP slide is combined with a customer-supplied arm to push the carton onto a moving conveyor. The SFP slide is ideal with its large saddle bearing surface which is necessary for the offset load.

SFM Slide
Provides adjustable mid-stop positions
**Turning Solutions**

**SD/SE, SK/SL Slide, CV Cylinder, RI Rotary Actuator**

Pallet turn, lift and turn

**Air/Oil Tandem Rotary Actuator**

Used to stretch wrap

The pallet turning solution utilizes a PHD Series RI Rotary Actuator, CV Cylinder and slides to lift and rotate a loaded pallet in line on a conveyor before it is sent to the next station.

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**Testing Solutions**

**SFM Slide**

Provides adjustable mid-stop positions

Electronic components are fed on a conveyor to multiple test stations which are required to maintain production. Three SFM Slides are used to shuttle the components to the test fixtures. If the part passes to test, the SFM slides move the component to the “approved” conveyor. If the component is bad, it is taken to another conveyor for rework.
### Snuggling Solutions

**SD/SE Slide**
Providing many options and accessories to fit your application needs.

**SA Slide**
Compact, rugged design.

### Transferring Solutions

**unique SFP**
**ML305566**
Rodless cylinders or slides are used to move boxed product from conveyor offshoots onto staging conveyors to be palletized.

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After orientation, two Series SAH Slides snug cases of bottles together in order to be palletized.

*This conveyor transfer pick-and-place system utilizes the cantilever style slide’s rigidity and speed. The part is picked up with a Series GRW gripper mounted to a vertical Series SD slide. The horizontal motion is provided by a Series SE slide. The final vertical motion is achieved with a Series SB slide retracting in conjunction with the Series SE Slide extending down.*

*An overhead gantry is created using a Series SFP slide for the horizontal axis and a Series SE slide as the vertical axis. A Series GRW gripper grasps the container on the conveyor, lifts, and transfers it to a second conveyor. The long jaw travel and long tooling capability of the Series GRW gripper makes it ideal for this application.*