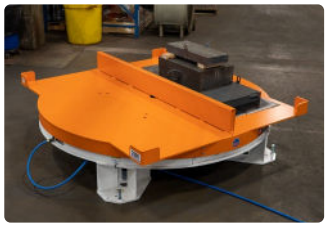
ALIGN PRODUCTION SYSTEMS

BUYER'S GUIDE
AIR CASTER TURNTABLE

POWERED BY AIRFLOAT AIR CASTERS

PRODUCT SITE

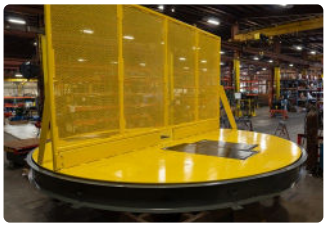


STANDARD
AIR CASTER TURNTABLE

Offers a cost-effective solution for rotating heavy loads with minimal features, making it ideal for straightforward applications.

ROBOTIC
AIR CASTER TURNTABLE

Equipped with an Ethernet I/O Block, this turntable ensures seamless communication and integration with your robotic system.



PIT-MOUNTED
AIR CASTER TURNTABLE

Ideal for rail-based production lines, this turntable includes curb rings for structural support and rollover capability for vehicles.

HIGH-SPEED
AIR CASTER TURNTABLE

Ensuring rapid and seamless rotation, this turntable boost efficiency in fast-paced, dynamic industrial environments.

THE FINAL PAGE CONTAINS A LIST OF QUESTIONS FROM OUR ENGINEERING TEAM. PLEASE FEEL FREE TO FILL THEM OUT IN ADVANCE.

1A. TURNTABLE TOP OPTIONS & LOAD PLACEMENT

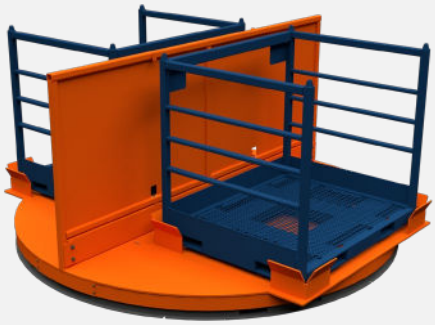
Selecting the appropriate turntable top and ensuring proper load placement enhances performance and safety, as shown in the following examples.

ROUND TOP

The most common option, round tops, typically envelop the load entirely and fit seamlessly with platforms and flush floor pit-mounted turntables. They also avoid the swing radius associated with square tops.

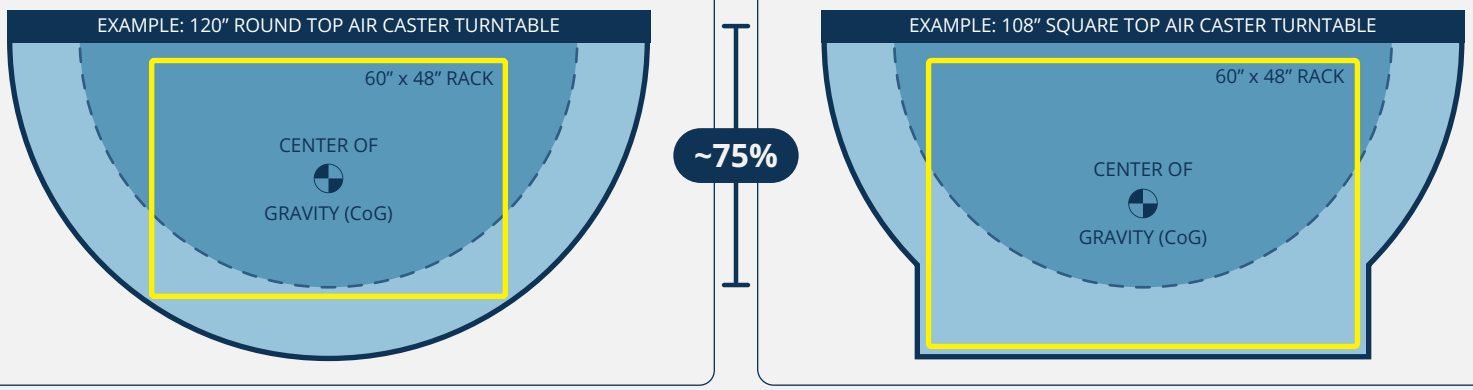
SQUARE TOP

Square tops extend the load past the base, allowing for a smaller turntable size. However, extending the tabletop or load past the base requires careful consideration due to the swing radius (more info in section 2B).



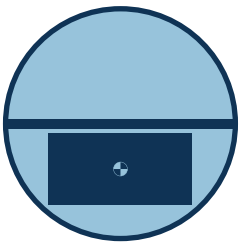
CENTER OF GRAVITY MATTERS

The load placement and center of gravity (CoG) are essential with Air Caster Turntables. The load's CoG should be within the center zone (illustrated below), which extends from the center of the table to the center of the air caster's path, covering roughly 75% of the inner table.



2A. LOADING CONDITIONS

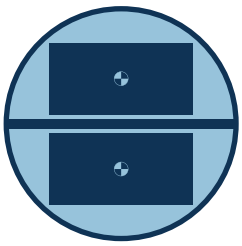
Air Caster Turntables are designed for flexibility, accommodating various loading conditions such as offset, balanced, center loading, and custom configurations to meet industrial demands.



UP TO 8,000 LBS PER SIDE

OFFSET LOADING

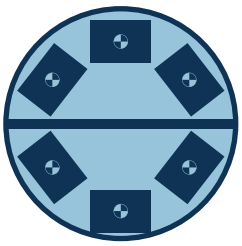
Loading only one side of the turntable creates an uneven weight distribution, but our turntables are rated to handle this condition.



UP TO 8,000 LBS PER SIDE

BALANCED LOADING

Loading both sides of the turntable ensures even weight distribution, creating a more stable condition for our turntables.



UP TO 16,000 LBS CENTERED

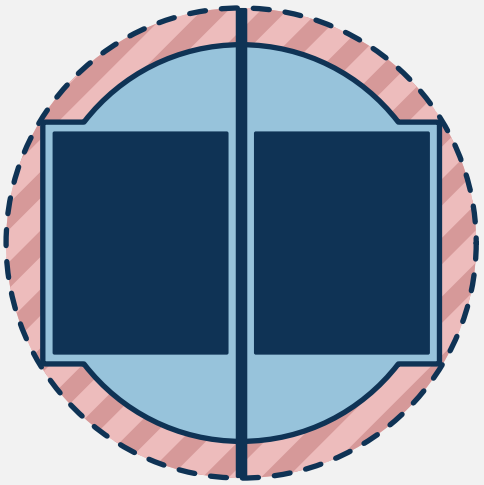
CENTER LOADED

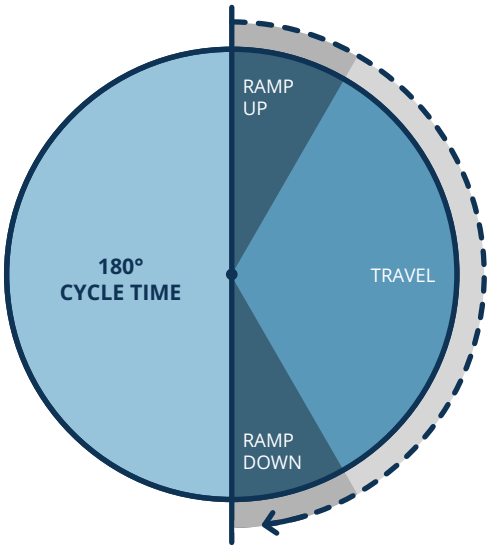
Placing the load in the center of the turntable ensures the most stable condition, with the weight evenly distributed in the center.

2B. PLANNING FOR SWING RADIUS

The swing radius is the furthest point a turntable reaches during rotation. Swing radius is especially important with square table tops or loads that extend beyond the table base. Accounting for the swing radius can help avoid associated risks. Implement safety procedures and mark or fence off areas within the swing radius. Alternatively, use a larger turntable with a round top that fully envelops the load to avoid this issue entirely.

If using a center fence, it is common to extend it beyond the turntable to match the swing radius. This helps separate the two sides, typically completing the safety fence that divides workers, forklifts, and robotic systems (see section 4A for more details).

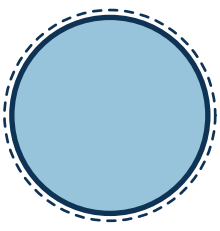




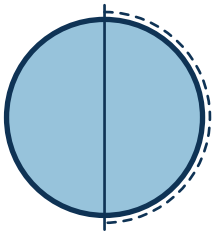
2C. TURNTABLE CYCLE TIME

The time it takes for our turntables to complete a 180° rotation includes the inflation of the air caster, the drive's ramp-up and ramp-down, and the table coming to rest. Turntable cycle times can vary due to several factors, including table size, loading conditions, motor type, and more.

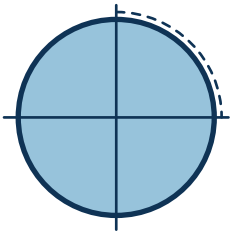
Our standard Air Caster Turntables have two positions (180° rotation) and infinite positions, with four positions and more available as custom options. The standard two-position tables rotate 180° in an oscillating motion, moving back and forth.



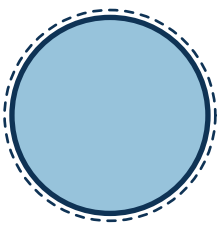
INFINITE POSITIONS



180° 2 POSITIONS



45° or 90° 4 - 8 POSITIONS

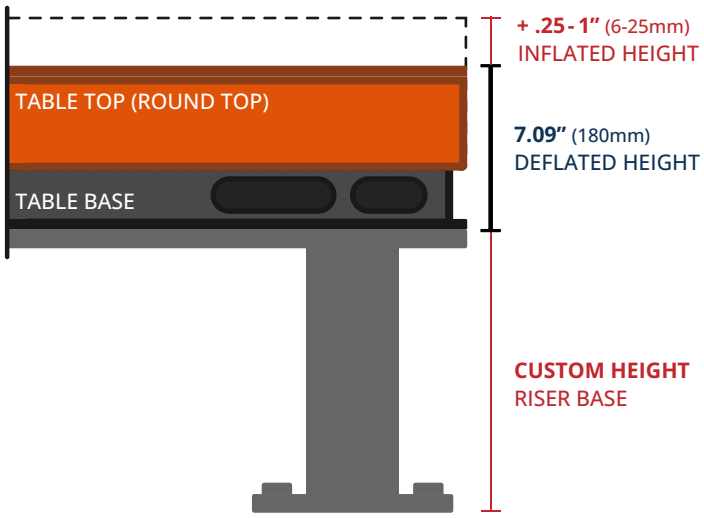


CUSTOM POSITIONS

3A. TURNTABLE HEIGHT

Air Caster technology enables a significantly lower height compared to traditional mechanical turntables. This innovative design reduces the turntable's overall height while still allowing it to rotate a large amount of weight. With heights as low as 7 inches, our low-profile design complies with OSHA's 9-inch max step height requirement.

The inflated height of a turntable can range from 0.25 to 1 inch, varying due to factors such as load weight and loading conditions. When deflated, the turntable rests steel on steel, preventing any movement.

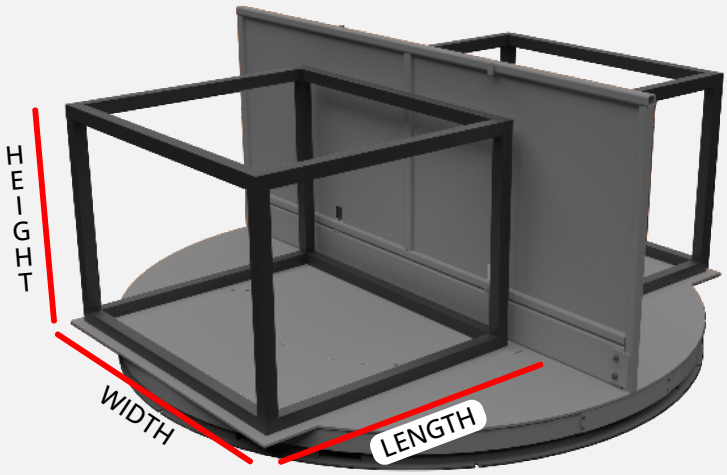


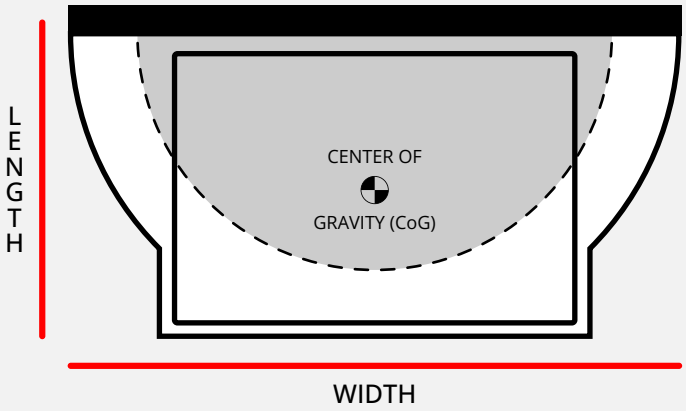
3B. TURNTABLE RISER BASE

While there is much excitement about the low-profile design discussed in section 3A, we also provide riser bases that allow a turntable to be set at any height. Our riser bases come in various shapes and sizes. Depending on your industrial demands, this adjustment can bring the table into a more ergonomic and efficient position, reducing operator strain and increasing the efficiency of robots and forklifts.

3C. LOAD DIMENSIONS

Please measure the **width**, **length** (depth), and **height** of the load, along with its center of gravity, if possible. Our team will use these dimensions to select the appropriate turntable size.





3D. TURNTABLE MAINTENANCE

Air Caster technology floats the load on a cushion of air, significantly reducing friction and allowing heavy loads to be rotated with minimal force. Because the Air Caster does most of the work, our tables require few moving parts and experience minimal wear and tear.

When maintenance is needed, our turntables feature slide-out trays for easy access to components. Regular maintenance, as outlined in the manual, and using the proper air settings with a clean and dry air supply, will prolong the lifespan.

CONTACT SUPPORT

Have questions? Our team is ready to provide expert assistance, guidance, and troubleshooting.

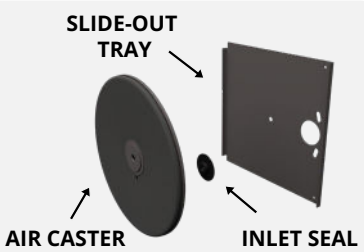
support@alignprod.com

www.alignprod.store

SPARE PARTS

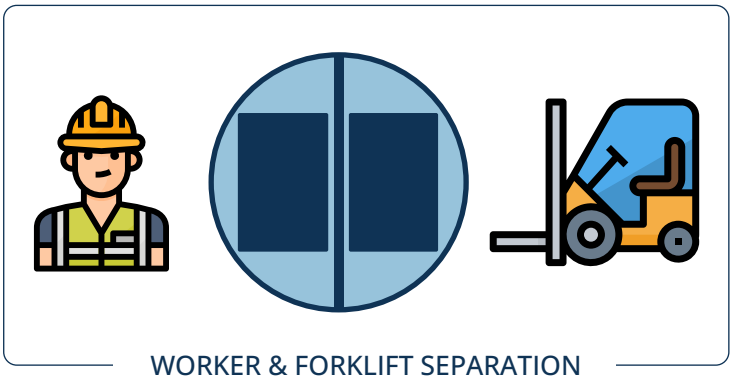
SLIDE-OUT AIR CASTERS

Slide-out Air Casters consist of three components: a slide-out tray, an inlet seal, and an air caster. Once disassembled, inspect and replace any damaged components.

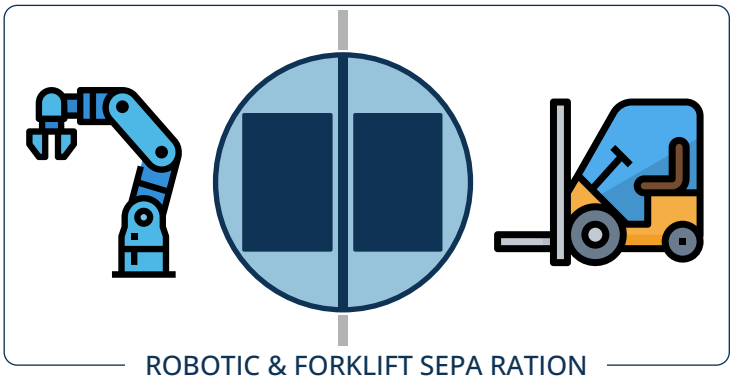


4A. SAFETY WITH SEPARATION

Forklifts and robots pose significant risks to workers. Turntables create physical separation by designating zones for forklifts, robots, and workers. This minimizes direct interaction and enhances safety by establishing clear boundaries and a controlled material handling processes.



WORKER & FORKLIFT SEPARATION



ROBOTIC & FORKLIFT SEPA RATION

4B. POPULAR TURNTABLE OPTIONS

Our turntables offer a wide range of standard and custom options, with too many to fit here. Below are some of the most popular choices. On the next page (section 5A), you'll find examples of turntables used in real-world applications with a list of options. Talk to our team for more information on table options and integration.

UNPOWERED - MANUAL

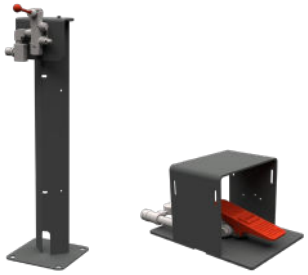
If no advanced features are needed, Air Caster Turntables can be rotated without a drive. With Air Caster Turntables, operators can effortlessly rotate heavy loads on a cushion of air, significantly reducing friction and making the process smooth and easy.

POWERED - PNEUMATIC OR ELECTIC DRIVE

Streamline and automate Air Caster Turntables with pneumatic and electric drives, required for features like Push & Go and robotic integration. These drives are also recommended with shock stops and shot pins, ensuring consistent turntable positioning.

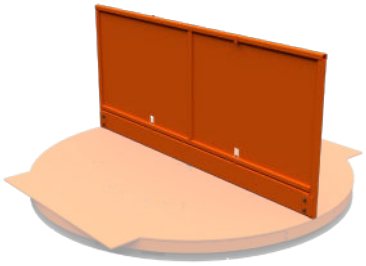
WE OFFER A WIDE RANGE OF STANDARD AND CUSTOM OPTIONS FOR OPERATOR SEFETY, ROBOTIC INTEGRATIONS, FORKLIFTS, AND MORE.

⚠ CAUTION: DO NOT DRILL HOLES INTO TABLE TOP WITHOUT CONSULTING ALIGN PRODUCTION SYSTEMS



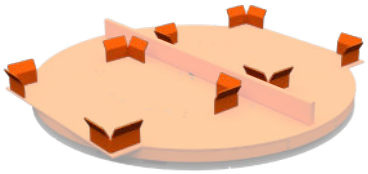
HAND / FOOT CONTROLS

ROBOTIC INTERFACE CONTROLS

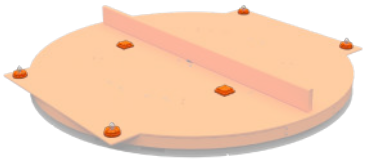


CENTER DIVIDER / FENCE
SCREEN - SOLID - POLYCARBONATE

RISER BASE



CORNER ANGLES



CONICAL LOCATORS

4C. TURNTABLE PAINT COLORS

STANDARD COLORS		OTHER POPULAR COLORS		CUSTOM COLORS	
RAL 2009	RAL 7043	RAL 5017	RAL 7043	PRIMARY	SECONDARY

5A. REAL WORLD EXAMPLES

ROBOTIC TURNTABLE

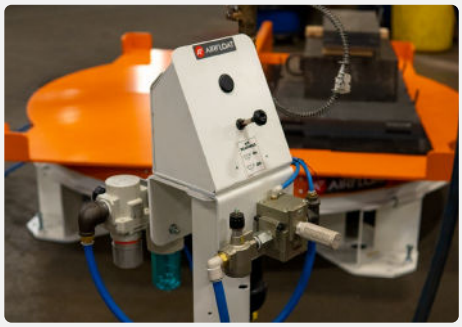
A robotic turntable equipped with rack lead-ins, conical locators, sensors for consistent placement, and a center fence for separation.

+ **PNEUMATIC DRIVE** + **CENTER FENCE**
+ **SENSORS** + **ROBOTIC INTEGRATION**
+ **CONICAL LOCATORS** + **LEAD-INS**

MANUAL TURNABLES

A very simple table, it's inflated using hand controls. Without a drive, operators can manually rotate and position the table.

+ **MANUAL** + **HAND CONTROL**
+ **CENTER DIVIDER** + **RISER BASE**
+ **CORNER ANGLES**



HIGH SPEED TURNTABLE

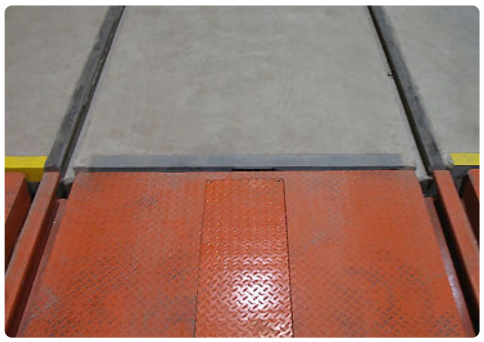
End-of-line metal stamping solution with a fast electric drive & hand control stand. Forklifts can easily remove and place racks using corner angles and lead-ins.

+ **ELECTRIC DRIVE** + **CENTER DIVIDER**
+ **CORNER ANGLES** + **LEAD-IN**
+ **CONTROL STAND**

ERGONOMIC TURNABLES

The table is inflated using a hand control and rotates with a pneumatic drive. Our turntable can have ergonomic equip attached, such as lifts and tilts.

+ **PNEUMATIC DRIVE** + **HAND CONTROL**
+ **CENTER FENCE** + **PNEUMATIC TILT**
+ **PNEUMATIC TILTS**



PIT-MOUNTED TURNTABLE

A large pit-mounted turntable with a curb ring and built-in rails, access panels, and an external pneumatic drive for easy access. The table top is reinforced to allow forklifts and other vehicles to drive over it.

+ **EXTERNAL PNEUMATIC DRIVE**
+ **PIT-MOUNTED CURB RING & RAIL**

Application Form

Air Caster Turntable

www.alignprod.com

THIS SHEET IS OPTIONAL, BUT OUR TEAM WILL ASK THESE AND OTHER QUESTIONS TO BETTER UNDERSTAND YOUR PROJECT.
PLEASE ANSWER TO THE BEST OF YOUR ABILITY, AS SOME RESPONSES MAY AFFECT OTHERS. OUR CAN TEAM WILL HELP YOU WORK THROUGH IT.

Primary Contact Information:

Name:_____

Company:_____

Address: _____

Phone: _____

Email: _____

Project Description:

_____

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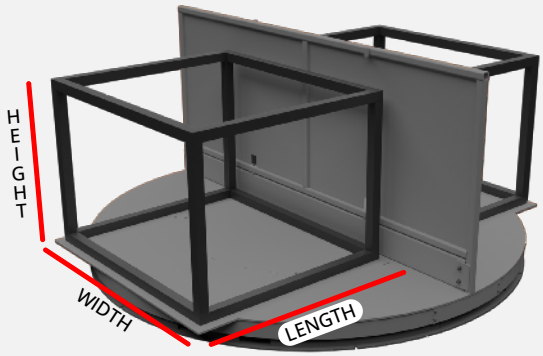

Project Description:

Refer to the rest of the document for guidance in answering the questions.
This step is optional, and our team will assist you later on if needed.

Load Weight:_____ **# of Containers**:_____

Load Dimensions:_____ W x_____ L x_____ H

Load CoG:_____ W x_____ L x_____ H

Top Style: Round / Square **Rotation**: Manual / Pneumatic Drive / Electric Drive

Controls: Hand / Foot / Robotic Interface **Robotic Application**: Yes / No **Cycle Time**:_____

Positions: Infinite / 180 (2) / Custom:_____ **Riser Base** : Yes / No Riser Height:_____

Corner Angle Locators: Yes / No **Other Locators**:_____ **Paint Spec**:_____

Customer Spec:_____ **Safety Features**:_____

_____ _____

Rotary Union / Slip Ring For Equipment on top?: _____ **Electrical Voltage**:_____