

# Crane Revolving Doors

We make access in life smart and secure.



# **Crane Revolving Doors**

# by dormakaba



With more than 100 years of experience and subsidiaries in more than 130 countries worldwide, **dormakaba** is the preferred choice of leading architects, specifiers, and general contractors and your source for complete access solutions and services.

Crane by dormakaba is the premier global manufacturer of revolving doors. Our attention to detail is unsurpassed. Virtually every component of the door—push bars, canopies, glass panels, and more—can be customized to complement the building's exterior and interior design theme.

For over 70 years, highly skilled Crane engineers and dedicated craftsmen have created beautiful, state-of-the-art revolving doors for projects all around the world.

Above: Crane SS4000-M 500 North Lake Shore Drive, Chicago, IL Architect: Solomon Cordwell Buenz

DORMA is a national member of the the United States Green Building Council (USGBC). We understand the importance of LEED certification and welcome the challenge to build safe and sustainable buildings by aligning our products with standards set by the USGBC.



### Contents

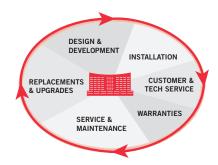
04 Manual revolving doors Automatic 06 revolving doors 08 Security revolving doors 10 Complete entrances 12 Crane 1000 Series Crane 2000 Series Crane 3000 Series 13 Crane 4000 Series 14 Industry-best cladding & finishes 15 Energy savings 16 Safety Bookfold mechanism Rehab kit 17 **Options** Architectural 18 and design support 19 Service and installation

Underpinning all dormakaba access solutions are key values that drive us as a company.

- Innovation
- · Engineering quality
- Sustainability
- · Quality customer experience
- Dependable service and maintenance

Adhering to these key values enables dormakaba to provide premium access solutions backed by a breadth of available services—from writing specifications to ongoing customer and technical service; from installation support to service and maintenance

- Crane Revolving Doors are powerful examples of dormakaba's complete, holistic solutions. We provide an arc of essential products and services stretching from design and specification all the way through ongoing performance.
- When you choose dormakaba products for the reliable, secure, and attractive entrances your project demands, we become your partner for the life of those access solutions.



- Experienced consultants are on staff to assist in building design and in writing specifications to identify the best DORMA access solutions for your project.
- AAADM-certified dormakaba technicians can install your entrances and, post-installation, service and maintain them as well.
- Our Customer and Technical Service teams are on hand to answer your questions and help with any difficulties you encounter.
- We stand behind dormakaba product warranties, the best in the industry.

#### Key values underpin all dormakaba access solutions







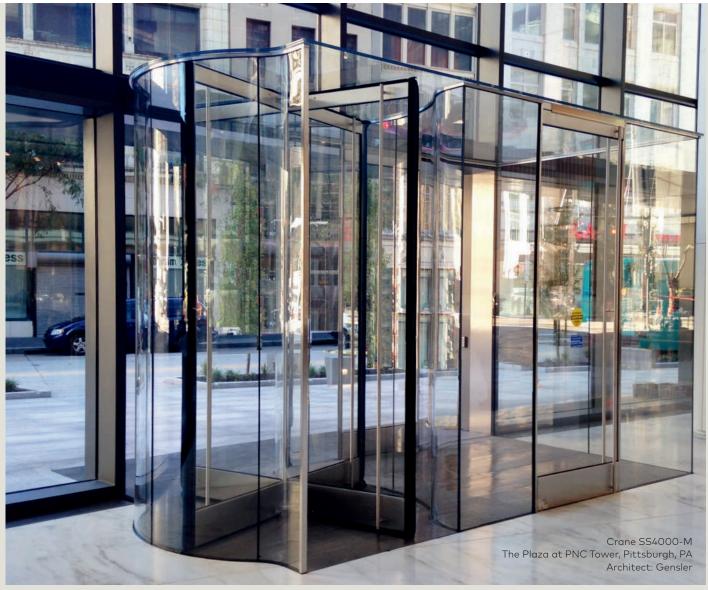
 dormakaba products are the perfect choice when the time comes for product replacements or upgrades.

By focusing on the life cycle of your building, dormakaba access solutions ensure your projects will succeed beyond expectations, now and into the future.

# Manual revolving doors

### Designed to fulfill your vision

- Manual revolving doors allow greater traffic volume and provide a quicker traffic flow compared to automatic or swing doors.
- · Crane manual doors are the most customizable revolving doors on the market.
- Tested to exceed UL standards E783 and E283, Crane manual revolving doors provide the most sustainable entrance possible allowing continuous traffic flow and blocking air infiltration at the same time.
- With a 6' to 10' diameter range and multiple attachment plans, Crane manual revolving doors can be fit into virtually any entrance.
- · Our commitment to quality starts with a 10-year warranty on every revolving door speed control and optional floor grille.
- The industry's widest selection of finishes is available to meet your project needs, including mahogany and oak.



Crane revolving doors are suitable for both new and

retrofit construction.

Crane manual revolving doors are the only doors in the industry that are tested to meet the stringent UL air infiltration standards E783 and E283.

Crane manual doors are available as 1000, 2000, 3000, or 4000 Series revolving doors. (See pages 12-13 for descriptions of each Series.) Our dormakaba representatives and engineers will gladly review your design and specification requirements with the goal of transforming your vision into a safe and reliable entrance.

Standard features of Crane manual revolving doors include the industry's most reliable manual speed control; a heavy-duty bookfold mechanism; a smooth surface canopy without pie wedges or visible supports; and a rubber and felt weather sweep that provides a superior air seal.

All Crane manual revolving doors use the same 100:1 gear ratio manual speed control—a steel-cast, precision machined, sealed unit mounted in the canopy. The centrifugal force brake slowly engages as the door reaches the maximum allowable RPM set by code. The brake shoes can be easily adjusted or replaced. Crane's proven speed control design allows us to provide the industry's best 10 Year Warranty.

#### NOTE

dormakaba offers automatic doors for ADA compliance. For information, visit our web site at **www.dormakaba.com**.





# **Automatic revolving doors**

### Designed without compromise

- Crane automatic revolving doors can be customized to provide automatic features while maintaining the entrance's design aesthetics.
- The revolving door canopy houses the Modular Drive System (MDS), which includes an advanced microprocessor control and is torque driven for safety.
- These automatic doors can range in size from a minumum 8' outside diameter up to 12'.

- Crane automatic doors are designed to meet or exceed all safety and code requirements.
- Automatic doors are available as 1000, 2000, or 3000 Series revolving doors and KTC large diameter revolving doors.
- The industry's widest selection of finishes is available to meet your project needs, including mahogany and oak.





Crane automatic revolving doors are designed to monitor the door itself and its occupants to ensure safe operation.

Standard features for Crane automatic revolving doors include an advanced microprocessor control; a safety sensor system that monitors the door and its occupants; a heavy-duty bookfold mechanism finished to match the door; and a smooth-surface canopy without pie wedges or visible supports.



The KTC Series



Large diameter, perimeter-driven KTC Series doors are the safest and most reliable revolving doors available. Perfect for hospitality and transportation venues where customers are accompanied by luggage, strollers, and large items, KTC doors are eye-catching, functional, and practical—meeting a wide range of applications. Summer configurations enable doors to open for unobstructed flow or passage of bulky items. Offered in outside diameters up to 18'—among the widest in North America—dormakaba KTC doors are available in configurations of two, three, or four wings.



# Security revolving doors

### Designed for both security and design

A Crane Security Revolving Door can be precisely fabricated to meet your security goals, seamlessly interface with your building's security system, as well as match your budget.

Crane 1000, 2000, and 3000 Series are available in three increasingly secure variants. Each level can be set up with one-way or two-way security and integrated into a security system. Various operating modes can be combined or customized per your project's specific security requirements. Be assured that your Crane Security door will be beautiful as well as secure.





#### Service and maintenance

Servicing and maintaining your Crane Security door is vital to ensuring your entrance is fully functional and secure at all times. We offer a variety of service plans to meet your needs. To find out more, visit go.dormakaba.com/ServiceAMER

Crane SS3000-S2 Security Door

#### S1 manual door: entry-level security solution







# NOTE All illustrations show the secure side of the revolving door

on top.

Authorized Person swipes card and enters door compartment.
 Authorized Person pushes manual door 180° and exits.
 Revolving door locks and remains locked until the next Authorized Person swipes card.

#### S1 Security Door

The entry-level solution for a secure entrance, the S1 Security Door is a manually operated revolving door with access control features (electromagnetic lock). The S1 Security Door is the only one of its kind on the market.

### S2 Security Door with anti-tailgating

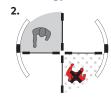
A technology-driven, automatically operated revolving door that prevents unauthorized access and minimizes impact on traffic flow. Anti-tailgating prevents unauthorized access in the opposite direction and in the next chamber. The S2 Security Door provides a strong solution for projects demanding both highly secure entrances and high traffic flow.

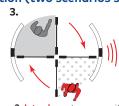
### S3 Security Door with anti-piggybacking

A sophisticated automatic security revolving door with automatic anti-piggybacking, a feature that restricts access to a single confirmed person. The S3 door also features anti-tailgating. The S3 Security Door utilizes cutting edge, highly accurate technology to provide the most secure entrance possible.

#### S2 automatic door: technology driven solution (two scenarios shown)



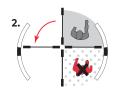


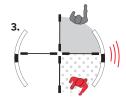




Authorized Person enters compartment leaving secure area.
 Intruder enters opposite compartment.
 Sensors detect Intruder's presence, the door stops, an intruder alert sounds, and the door reverses direction.
 Occupants then exit where they entered from.
 Authorized Person re-enters door compartment, then exits.







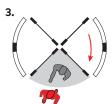


Authorized Person swipes card and enters door compartment.
 Intruder enters next available compartment.
 Sensors detect Intruder's presence, the door stops, an intruder alert sounds, and the door reverses direction.
 Occupants then exit where they entered from.
 Authorized Person re-enters door compartment, then exits.,

#### S3 automatic door: cutting edge, most secure solution









1. Authorized person swipes card and enters door compartment. Intruder follows into same compartment. 2. Sensors detect two occupants in the same compartment. The door stops and an intruder alert sounds. 3. Door reverses direction to clear both occupants from the compartment. 4. Authorized Person re-enters door compartment.

#### Comparing security levels

Security level / Operation	S1 Manual	S2 Auto	S3 Auto
Access control flow	1-way and 2-way		
Interface to security system	<b>√</b>	<b>√</b>	V
Anti-tailgating		<b>√</b>	<b>√</b>
Anti-piggybacking			<b>√</b>
Fail safe	$\checkmark$	<b>√</b>	$\checkmark$
Fail secure with battery backup	<b>√</b>	<b>√</b>	V
Optional battery backup	<b>√</b>	<b>√</b>	<b>√</b>
Optional annunciator	<b>√</b>	<b>√</b>	<b>√</b>
Optional lighting	LED or Florescent 8" Circline, or LED Spotlights		
Power requirements	120VAC, 20A breaker		

# **Complete entrances**

### Designed to unify the entire entrance

- dormakaba is the single source for complete, custom-fabricated entrance systems for both new construction and renovations. For a seamlessly elegant entrance façade, we are able to match finishes across the range of dormakaba doors and hardware.
- A Crane complete entrance is a truly integrated entry system. Most building fronts consist of parts sourced from different manufacturers. In contrast,
- dormakaba is a single source for all the parts that may go into a Crane complete entrance, including Crane revolving doors, dormakaba automatic doors, manual door hardware, complementary architectural hardware, and custom work—all in matching finishes to create a uniform front.
- dormakaba offers consultation at the design phase to plan an entrance that matches your vision and your budget.

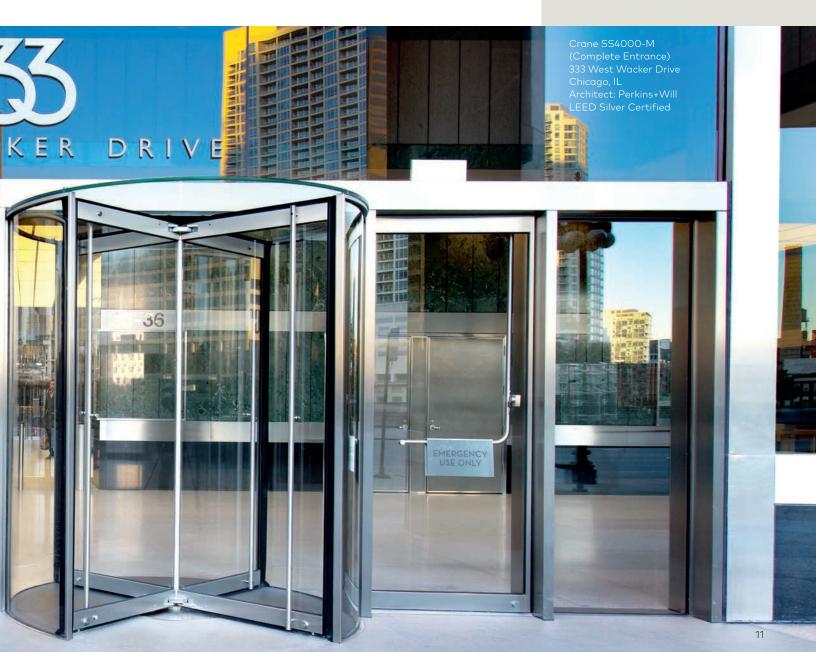




Crane SS4000-M (Complete Entrance) 155 North Wacker Drive, Chicago, IL Architect: Geottsch Partners



Crane BZ3000-A (Complete Entrance) JW Marriott, Chicago, IL Architect: Lucien Lagrange & Associates







Crane 1000 Series

Crane 2000 Series

- 1000 Series door—the industry standard for revolving door design.
- Each piece carefully cut and fitted and connections tightly bolted together.

- 2000 Series door—a cut above the already high standards set by the 1000 Series.
- Constructed of fully formed and welded aluminum, bronze, or steel.
- Best enclosure and canopy in the business.
- Well built door wings fabricated from aluminum and bolted together with heavy-duty fasteners.

#### Crane 1000 Series

The Crane 1000 Series door sets the industry standard for revolving door design, construction, operation, and reliability, and provides the energy savings and traffic flow that you expect from a revolving door.

Fabricated with rigid aluminum construction, the 1000 Series offers many options: different sizes, canopy designs, wing configurations, attachment plans, and finishes (anodized, painted, or clad in stainless steel or bronze). The Crane 1000 is an excellent choice for a budget conscious entrance or for a project that requires a fast lead time.

Crane produces 1000 Series revolving doors from .125 thickness aluminum extrusions and sheet material. Each piece is carefully cut and fitted and connections are tightly bolted together. After fabrication, all exposed surfaces are mechanically finished to eliminate marks caused by rolling and forming. Anodized or painted finish is then applied; standard colors, as well as most exotics and metallics are available.

#### Crane 2000 Series

The Crane 2000 Series door is a cut above the already high standards set by the Crane 1000. Available in a variety of sizes, finishes, and canopy designs, the 2000 Series is a robust,

reliable entrance that catches the eye. The highly customizable 2000 Series beats other manufacturer's products in construction quality and design options. The façade attachments are fully customizable.

Constructed of fully formed and welded aluminum, bronze, or steel, the Crane 2000 Series revolving door's enclosure and canopy are by far the best in the industry. The Crane 2000 Series enclosure and canopy are fully formed and welded from rolled bronze or steel, or from true .125 thick aluminum extrusions and sheet material. After fabrication, all exposed surfaces are mechanically finished to eliminate marks caused by rolling and forming. The anodized, painted, or cladded finish is then applied; standard colors, as well as most exotics and metallics are available.

The Crane 2000's door wings are equally well built—fabricated from aluminum, bolted together with heavy-duty fasteners, then clad with stainless steel or bronze for a sleek appearance. The door wings are made from heavy-duty aluminum extrusions, carefully cut, fitted, and tightly bolted together. dormakaba's meticulous fabrication process makes these door wings the strongest in the industry.





Crane 3000 Series Crane 4000 Series

- 3000 Series—fully formed and welded revolving door.
- Unmatched custom design.

- 4000 Series—the original all glass revolving door.
- Elegant, sophisticated design for exquisite high end store fronts and building entrances.

#### Crane 3000 Series

The only fully formed and welded revolving door in the industry, the Crane 3000 Series combines premium construction with unmatched custom design, using materials such as mahogany or oak, stainless steel, or bronze. Wooden doors are hand-crafted by skilled mill workers to meet your specification meticulously. For a smooth, beautiful appearance, the surface material is welded to a steel or stainless steel subframe, eliminating seams caused by cladding pre-finished materials to an aluminum subframe.

Crane 3000 Series revolving doors are cut, formed, and precisely welded from heavy USS 16 gauge stainless steel or 14 B&S gauge bronze sheet and compatible bar stock to create the sturdiest structural elements possible. The exterior surface metal is fully welded to the interior reinforcing substructure. The four door wing corners and the interior enclosure-post-to-base connections are all welded. Canopy fascia are visually seamless and attached to the ceiling soffit with concealed welds. All exposed surfaces are ground and polished to eliminate blemishes from rolling, forming, and welding.

Fully customizable 3000 Series door wings can be fabricated from wood (e.g. mahogany or oak), welded stainless steel or bronze, or some other custom material. dormakaba's meticulous fabrication process makes Crane door wings the strongest in the industry.

#### Crane 4000 Series

The manually operated Crane 4000 Series is the original all glass revolving door. It provides a spectacular first impression with its elegant and sophisticated design. Rich styling and sleek lines reinforce the exclusive image desired more and more for exquisite high end store fronts and building entrances. The 4000 Series door is fully customizable, including push bars and attachment options to the store front, and the connection between the enclosure wall and exposed ceiling glass.

The four Crane Series are differentiated by their construction and level of customization. All are above the industry standard for design, construction, operation, and reliability of revolving doors.

# Industry best cladding & finishes

### Custom and standard finishes

#### The best cladding in the industry

dormakaba couples modern technology with old world craftsmanship to manufacture the best architectural finishes of any manufacturer, bar none. In our factory in Lake Bluff, IL, experienced craftsmen fabricate welded and cladded revolving doors in stainless steel and bronze using skills honed over many years. Other manufacturers hand off this type of finishing to subcontractors, whereas every Crane revolving door is 100% manufactured by dormakaba.

#### Unparalled choice of finishes

Crane doors can be customized to match virtually any design because dormakaba offers such an extensive range of finishes: wet paint, powder coat, special anodized, and clad finishes—in stock, standard, and custom colors. The base package standard finish is Clear or Dark Bronze Anodized.



**Above:** BZ1000-M doors with bronze mirror finish.

**Below:** SS3000-M door with stainless steel mirror finish and a floor grille fabricated from concentrically rolled bars of stainless steel.



Every revolving door is designed, engineered, and fabricated by union craftsmen in our Chicago factory.



# **Energy savings**

### Sealed barrier / reduced infiltration rate

#### The most energy-efficient entrance

Crane revolving doors provide your building with the most energy-efficient entrance possible, allowing continuous traffic flow while at the same time creating a barrier to prevent air infiltration. All our revolving doors are furnished with Crane factory-made door seals, which are essential for creating the barrier that blocks inside from outside environments. The resulting air infiltration block enhances comfort for everyone inside and ensures the owner's return on investment

Our manual revolving doors are tested to meet the most stringent air-infiltration standards: UL ASTM E283 and ASTM E783. ASTM E283 defines air infiltration requirments in a lab setting. dormakaba takes the extra step of testing Crane manual doors to ASTM E783, a standard that requires real world testing within an actual building.

Revolving doors vs. swing or sliding doors

Revolving doors create a sealed barrier between inside and outside environments. In contrast, open swing or sliding doors provide no protection, creating hot or cold bursts on entry and exit, wasting valuable energy, and making HVAC systems work harder.

A study conducted by MIT\* showed that opening a swing door causes, on average, 8× more air to be exchanged than a revolving door because open swing doors provide no barrier from the elements.

The clear indication is that a revolving door's sealed barrier can dramatically reduce the load on HVAC systems, saving energy in the process, and helping your building achieve LEED certification.

Since traffic rate, building height, and outdoor temperatures are uncontrolled, entrance infiltration can be reduced by reducing the entrance pressure differential. This is done by sealing or tightening the building envelope, pressurizing with outdoor air, or sealing with proper doors.

Net outdoor air supply over exhaust reduces the entrance pressure differential, decreasing the infiltration rate. The use of outdoor air in excess of ventilation needs, merely to pressurize entire buildings and reduce infiltration problems, may add an economically unjustified heating load. Pressurizing only the ground floor requires much less outdoor air. But this may cause excessive pressure differentials across stair and elevator doors on the ground floor.

A revolving door mitigates stack effect by allowing traffic while sealing air flow. Infiltration through a revolving door (except for a small amount passing though the door seals) is virtually not affected by building height, indoor-outdoor pressure difference, and fan operation.

Air Infiltration:
Revolving Door vs.
Swing Door

100,000

100,000

Revolving Door

20,000

100,000

Revolving Door

Infiltration rates through a swing door are about 900 cubic feet (25.5 cubic meters) per person for a single-bank entrance, and 550 cubic feet (15.6 cubic meters) per person for a vestibule entrance. But it is only about 60 cubic feet (1.7 cubic meters) per person for a manually operated revolving door, and 32 cubic feet (0.9 cubic meters) per person for an automatic revolving door.

All Crane manual revolving doors meet the most stringent UL air infiltration standards: ASTM E283 and ASTM E783.

\* Cullum, B.A. "Modifying Habits Towards Sustainability: A Study of Revolving Door Usage on the MIT Campus". MIT

# Safety

### dormakaba attention to detail

Attention to detail goes beyond the aesthetics of a revolving door. To ensure dependable operation with minimum maintenance, we developed and perfected our own operating hardware. All operating hardware used in Crane revolving doors is manufactured by us or under our direct control.

For example, our bookfold mechanism features machined cast bronze discs and hangers that are finished to match your door. Required by revolving door construction standards within the United States, a bookfold mechanism provides emergency egress. The pressure to engage the bookfold mechanism is adjustable to meet local conditions—for example, stack conditions, negative pressure, and wind conditions.

Likewise, our speed control has a precisionmachined, cast-steel gear train mounted in the ceiling canopy or floor. The speed control is factory set to ensure that the revolving door does not exceed the revolutions per minute set by governing building codes.

Safety is paramount. All Crane automatic revolving doors exceed the ANSI 156.27 standard for automatic revolving doors. The drive and safety sensor system continuously monitors the door and its occupants. Standard safety features include:

- Enclosure wall safety bumper
   (2 per door)
- Heel guards (1 per wing)
- Wing sensors (1 per wing)
- · Breakout detection
- Torque-limited drive system
- Handicap door speed reduction switches (2)
- Emergency stop button (1)
- Activation
- Force detection

#### **Bookfold mechanism**

# Aesthetically subtle and code-compliant



- During normal operation, spring tension holds ball in socket maintaining proper wing configuration.
- 2 Panic pressure on wing compresses spring and releases ball.
- Minimal pressure is required to continue bookfolding. Wings bookfold either way, providing a clear passage on both sides.
- Release spring tension is adjustable.

# Revolving door rehab kit

# Make your old revolving door better than new

Crane offers Rehab Kits to replace the wings and hardware of an existing revolving door no matter who originally manufactured the door. Made from aluminum, stainless steel, bronze, or wood, each kit is designed to match the original door as closely as possible or to bring fresh new style to an outdated entrance without replacing the entire door.



A Rehab Kit includes everything needed to properly mount and fit into the existing enclosure and canopy, such as:

- Speed control
- · Center shaft with cover
- Bookfold mechanism
- Hanger discs
- Hangers
- · Pivot bearing
- Pre-glazed wings with weathersweeps
- Push bars
- Bumpers
- Lock cases

# **Options**

#### Welded floor grilles

Floor grilles can be integrated into the revolving door design to ensure a working system and proper aesthetics. Fabricated from concentrically rolled bars of stainless steel, the grilles are curved to the radius of the revolving door, which allows the door to spin properly and minimizes damage to the bottom door sweep. The heavy-duty floor grilles are welded and formed from 304 or 316 solid stainless steel, 1/4" × 1" solid bars polished to a #4 satin finish. The recessed grille pan is welded from 12 gauge stainless steel and can have a drainage fitting added. Tolerances for the grilles aligning concentrically are to a 1/64" variance.

### Self-positioning closer "return to quarter-point"

An add-on feature that automatically resets the revolving door to its home (X) position after every use and provides an optimal weather seal while the door is idle. The



Self-Positioning Closer requires a minimum 6-1/2" canopy, uses 110VAC, and does not require any additional safety sensors. This feature is compliant with ANSI 156.27. The closer works in conjunction with the Manual Speed Control and spins the door in a counter-clockwise direction. The Self-Positioning Closer functions independently from the Manual Speed Control, assuring the revolving door's safe and compliant operation at all times even if the closer is turned off or removed.

#### Custom push bars

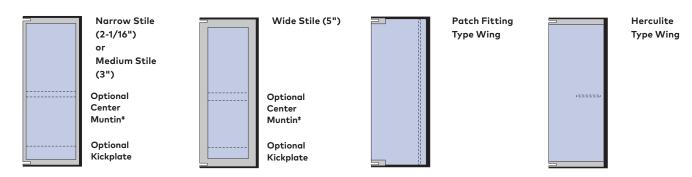
Standard push bars are same material and finish as door. Formed from 1/2" x 1-1/2" rectangular bar or 1" diameter round bar. Mounted with through-bolts or concealed fasteners. Custom push bars are available with a 1-1/4" maximum projection from face of door stile.

dormakaba is the only manufacturer in the industry able to design and fabricate a custom floor grille as an integrated part of the revolving door system.

#### Ceiling light options

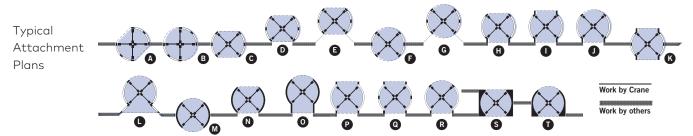
- 8" Circline style with florescent bulb
- 8" Circline style with LED light, or
- · LED spotlights.

#### Wing designs



\*Required on Wide Diameter and Security Doors.

#### **Attachment plans**



# Architectural and design support

The most comprehensive services in the industry—from specification and new installation to ongoing maintenance and support

We provide quality support at all stages of a project, from design and specification all the way through installation and maintenance. In-house Consultants are available to help with design and specifications. Our Customer and Technical Service teams provide exceptional ordering and product support, while our network of Service and Installation providers can help you protect your investment from installation through on-going maintenance.

Experienced on-staff consultants provide comprehensive specification writing services—including consultation on the complete range of access solutions: automatic door systems (sliding, swinging, and revolving doors); glass systems and hardware; architectural hardware; and operable walls.

Consultant services include:

- Developing code-compliant access solution specifications and schedules
- Developing detailed specifications for all other product groups
- Meeting with the Design Professional and/or Owner to discuss project requirements and security coordination
- Assisting with development of a professional key system
- · Preparing budgets
- Reviewing substitution requests
- Reviewing submittals
- Responding to RFIs, Owner's comments, and comments from other entities
- Assisting with punch list development and administration







Related Companies Luxury Apartments 500 Lake Shore Drive – Chicago, IL Architect: Solomon Cordwell Buenz

For comprehensive project support, call dormakaba at **844-SPECNOW** 

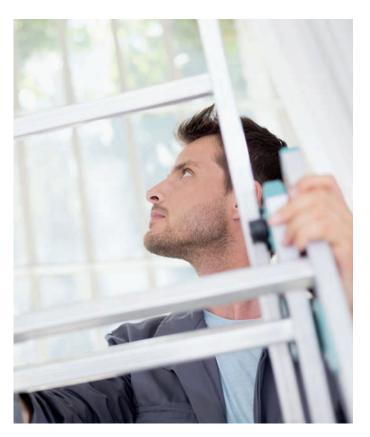
(844-773-2669)

### Service and installation

Nationwide service and maintenance network With an emphasis on customer service, dormakaba is committed to selling, installing, and servicing automatic, revolving, and manual doors and hardware for commercial applications.

dormakaba's nationwide service and maintenance network provides responsive, professional, and comprehensive sales, technical, project management, and maintenance support. With over 28 offices throughout North America, dormakaba has hundreds of dedicated professionals available to respond to your individual needs.

Committed to the highest level of customer service possible, all our service technicians are American Association of Automatic Door Manufacturers (AAADM) certified.







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