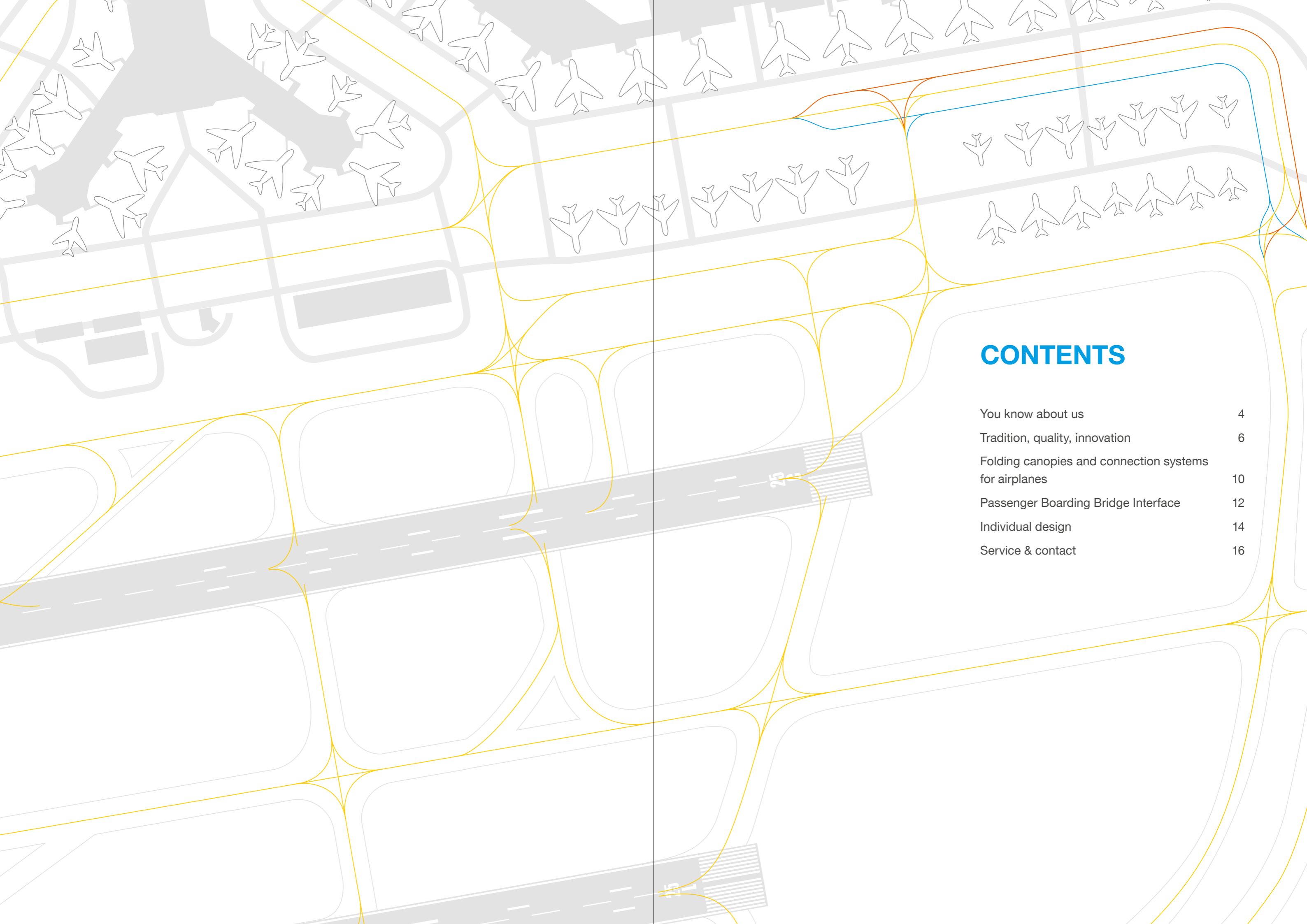


# PRODUCTS AND CONCEPTS FOR AIRPORT TECHNOLOGY





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▲ Folding canopy in the retracted position

## YOU KNOW ABOUT US

Whether it's a flight for holidays or for business, when you board a plane at numerous airports around the world, you will be walking through a folding canopy manufactured by HÜBNER. Established quality and long-standing experience speak for themselves. Worldwide.

### Quality to meet the highest requirements

For decades, HÜBNER products have been recognized internationally as the first choice in transport technology. The daily use of our products at airports throughout the world is a convincing demonstration of their quality and their reliability.

Our strong customer orientation and the consistent production methods employed at all our locations are reflected in the long life and high precision that typify all HÜBNER products. We urge you to benefit from our expertise and our dedication. Whatever your specific standards and individual requirements, we welcome the challenge of providing the products you desire. We take your wishes and make them ready for serial production.

### A family enterprise with values

In 1946 Kurt Hübner laid the foundation for today's international HÜBNER Group with the founding of his rubber product repair business. Since that time, reliability, inventiveness and innovation have come to be the hallmarks of our company. Today around the world over 2,400 highly qualified HÜBNER employees handle a broad range of manufacturing requirements, developing and delivering an impressive array of solutions.

HÜBNER reacts quickly and innovatively to the wishes of its customers. In doing so, we rely on customer-focused consultation, rigorous product testing, continuous product improvement and outstanding service to keep our family business strong. Thanks to our many years of experience and close cooperation with prominent manufacturers of passenger boarding bridges in product development, our products provide the best in safety, quality and convenience. You can rely on HÜBNER. And that's a promise.

### Global knowledge with local presence

HÜBNER develops sophisticated products for customers throughout the world. With our wide range of products and extensive activities in various industries and countries, we are able to deliver unique synergies. Our customers know that they can trust our expertise and that their requirements are in the best of hands with our engineers.

Thinking globally – acting locally: in addition to its headquarters in Kassel, Germany, HÜBNER has locations in Brazil, China, Colombia, France, Hungary, India, Italy, Malaysia, Russia, South Africa, Sweden, Turkey, UK and the USA. These subsidiaries are reinforced by sales partners and trade representatives in over 30 countries.





### Ideas that shape the market

Leading developments from HÜBNER are today proven products for passenger boarding bridges:

- Folding canopies
- Universal kinematic systems
- Passenger Boarding Bridge Interface
- Fulfillment of various international fire-safety requirements

## TRADITION QUALITY INNOVATION

The first folding canopies were manufactured by HÜBNER at the beginning of the 1970s. Now more than 5,000 folding canopy units have been produced which are in use at airports around the world.

### Precision & stability

Since this time, HÜBNER has been developing and producing products for passenger boarding bridges. We have been directly involved in many of the developments in this field, having served as the driving force behind many important advances. Our aim is always to be at least one small step ahead of the current technical know-how.

### Safety & functionality

Thanks to their careful adaptation to the design of passenger boarding bridges, HÜBNER products provide excellent functionality. The use of the most modern development and manufacturing methods with uniform production standards around the world guarantees consistently high quality for all of our products.







## FOLDING CANOPIES

HÜBNER folding canopies provide reliable sealing performance and fit with all aircraft types.

The Passenger Boarding Bridge Interface optimizes the connection between the passenger boarding bridge and the aircraft fuselage and allows for a precise approach and deployment of the flexible sliding floor element.





## FOLDING CANOPIES AND CONNECTION SYSTEMS FOR AIRPLANES

The folding canopy developed by HÜBNER provides passengers with optimal weather protection. It fits with aircraft body contours of nearly all shapes and sizes. With its modular and flexible system design, it also provides a wide range of custom solutions.

### Bumpers for perfect sealing

Adjustable bumpers completely seal the gap between the folding canopy and the aircraft. The bumpers' special polymer structure absorbs very little moisture and therefore guarantees soft cushioning even in winter. The high degree of flexibility in the bumpers' plastic spring elements ensures proper sealing even with very small aircraft such as the EMB 145, as well as with larger aircraft such as the Boeing 747 all the way up to the Airbus A 380.

### A kinematic system for optimal docking with all aircraft types

With the patented HÜBNER kinematic system, it's possible to precisely dock the passenger boarding bridge with a wide spectrum of different aircraft. It fits perfectly with the more sharply curved contours found in smaller airplanes as well with the nearly flat contours of larger aircraft fuselages.

### Highest standards for fire safety

HÜBNER develops and produces its own folding bellows materials used in its folding canopies. These materials meet the highest standards in safety, fire protection and durability. HÜBNER folding canopies are highly fire resistant and meet the most important international fire safety standards such as NFPA 415.

### Four different drives for maximum flexibility

A central motor drives the HÜBNER folding canopies. Four different drive variants are available: a manual drive, a 24V DC drive (for mobile passenger steps), as well as 120V/50 Hz or 230V/50 Hz three-phase AC drives. The motors are designed to handle the extreme weather conditions encountered at airports around the world and are equipped with a freewheel safety mechanism in



▲ Passenger boarding bridge docked to a Boeing 737

addition to being protected against overheating. These drive motors also allow a reduction of the opening and closing times of the folding canopy by approximately 45% – a real benefit in optimizing passenger handling processes.

### Simple assembly & economical shipment

On-site assembly by the customer is simple and quick. The newest, optimized generation of folding canopies can be separated into separate pieces for simple delivery, thus providing a further benefit with economical shipment through full use of truck carrying capacity.

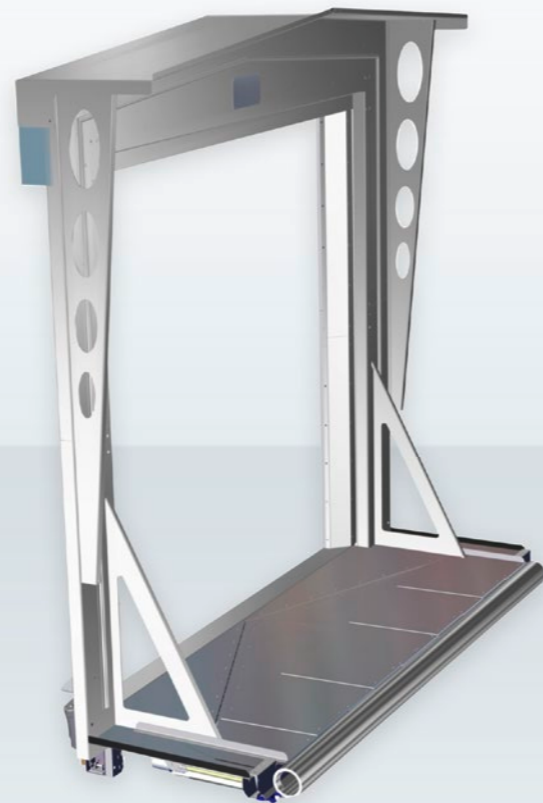
### Easy service & reliable operating safety and performance

HÜBNER provides you with first-class products that deliver dependable operating performance and safety for years after purchase. Original spare parts such as bumpers, motor drives and kinematic systems can be made available quickly and efficiently. The simple replacement of parts can be performed directly by your own trained personnel or economically by HÜBNER technicians.

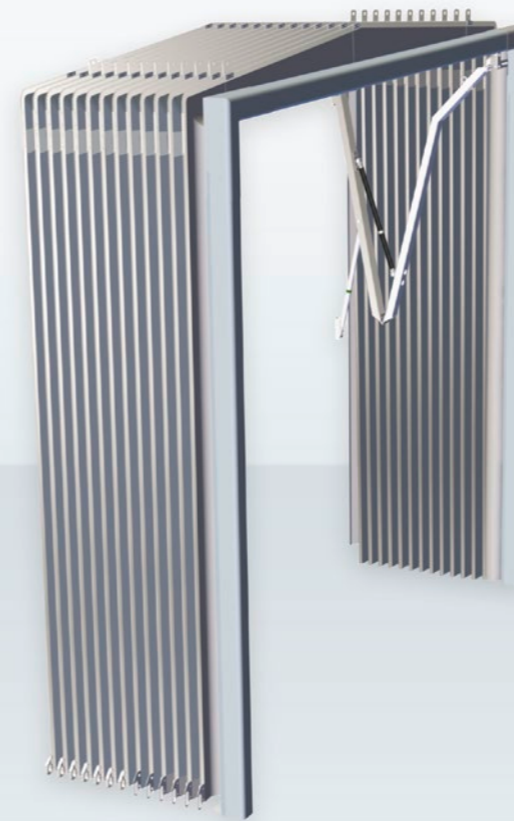




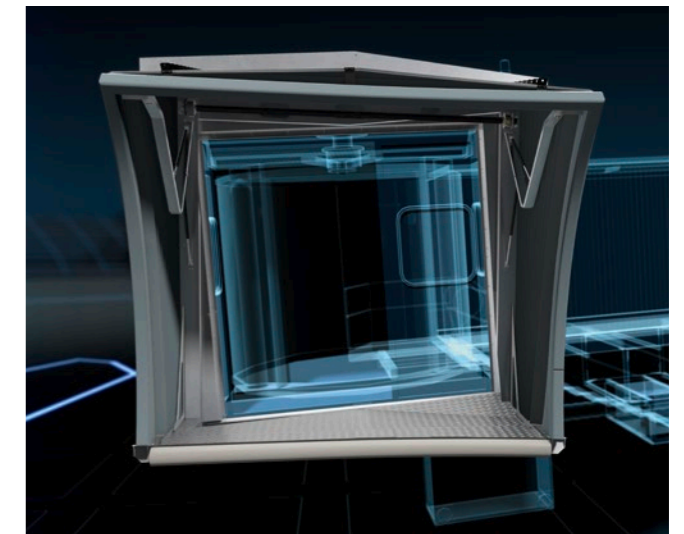
Cabin of the passenger boarding bridge



Interface 2.0



Folding canopy (sectional)



▲ PBB Interface – complete solution

## PBB INTERFACE

The Passenger Boarding Bridge Interface (PBB Interface) connects the passenger boarding bridge with the aircraft fuselage. It provides optimal sealing with all aircraft types, high efficiency as well as optional touchless docking.

### Universally deployable & energy efficient

The Passenger Boarding Bridge Interface (PBB Interface) is suited for handling all standard aircraft types, including the latest generations of aircraft. In comparison to existing aircraft connection systems, impressive energy savings are possible with this system due to improved sealing mechanics.

### Clever construction

The module consists of a solid basic frame that is mounted on the cabin of the passenger boarding bridge as well as a swiveling floor with the folding canopy. The horizontal orientation of the PBB Interface to the airplane entrance is performed via the swivel movement. In contrast to earlier pendulum floors, the new flexible sliding floor element moves together with the complete canopy. This allows for optimal sealing – a noticeable benefit particularly with extreme exterior temperatures.

### Optimal sealing

The combination of the swivel function with the flexible sliding floor makes for gap-free docking between the folding canopy and the aircraft fuselage. Through the horizontal positioning of the interface, the different inclination angles in the passenger boarding bridge which occur in handling different types of aircraft can be compensated for. Low contact pressure of the sliding floor element against the aircraft prevents any damage to the airplane body. If desired, you can also receive floor bumpers with special sensors that support touchless docking.

### Individual branding & practical handling

The Passenger Boarding Bridge Interface can be individually designed and adjusted to the specific requirements of airport operators. Retrofitting of existing passenger boarding bridges can be undertaken without problem. The Interface can be delivered in separate parts facilitating easy shipment.

Depending on the technical specification, the following materials can be selected:

	Specially coated fabric	Silicone
<b>High temperature resistance</b>	+ 80 °C	+ 80 °C
<b>Low temperature resistance</b>	- 40 °C	- 40 °C
<b>Burning behaviour</b>	DIN 5510-2: S3/SR1/ST2 NF F 16-101: M2/F3	NFPA 415: Fulfilled
<b>Range of application</b>	Enhanced standard for high fire protection and long service life	For very high fire protection requirements





## INDIVIDUAL DESIGN

With our high-quality folding bellow materials we can fulfill a wide range of design wishes from our customers. Translucent or colored materials give your folding canopies an individual touch and can enhance the image of your airport.

### Translucent or colored design

Innovative coating processes open up a whole new range of design possibilities. Instead of the usual functional but uninspiring gray design, folding canopies can now be manufactured using colored or translucent material according to customer wishes.

A translucent folding canopy provides distinctive benefits. It brings more light into the dark areas of the passenger boarding bridge. This creates a friendly atmosphere and gives passengers a feeling of well-being.

Colored folding canopies give passenger boarding bridges a customized look. The canopy coloring can be single- or multi-colored so as to display an airport operator's logo, for example, or that of an aircraft manufacturer. Enhance your airport's image with a custom-designed folding canopy from HÜBNER.

We would be pleased to show you some of the different looks for canopy folding bellows by preparing an individual folding canopy design concept for you.



▲ Translucent folding bellows make the canopy airy and light





## SERVICE & CONTACT

A strong partner is there whenever the need arises. This level of service is anchored in the values that shape our company culture – helpfulness, trust and respect. HÜBNER can provide consultation and support with the arrangement of folding canopies, kinematic systems and the Passenger Boarding Bridge Interface.

Direct proximity to our customers is a key part of our approach. Close contact to our customers and clear, well-designed processes lead to first-class results. HÜBNER is there for you in 15 countries around the globe. These locations are supported by sales partners and trade representatives in more than 30 additional countries.



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