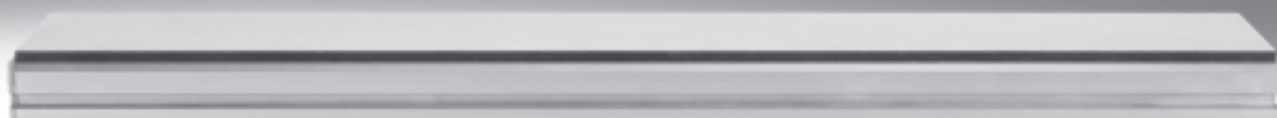


## Air cushion plates ATBT

**FESTO**



# Air cushion plates ATBT

Key features

## At a glance

### Principle

- The air cushion plate uses a porous, air-permeable material. When the plate is supplied with compressed air, a uniform air flow is produced which enables flat workpieces to be carried and moved without contact
- The air cushion plate consists of an aluminium base and a porous plate

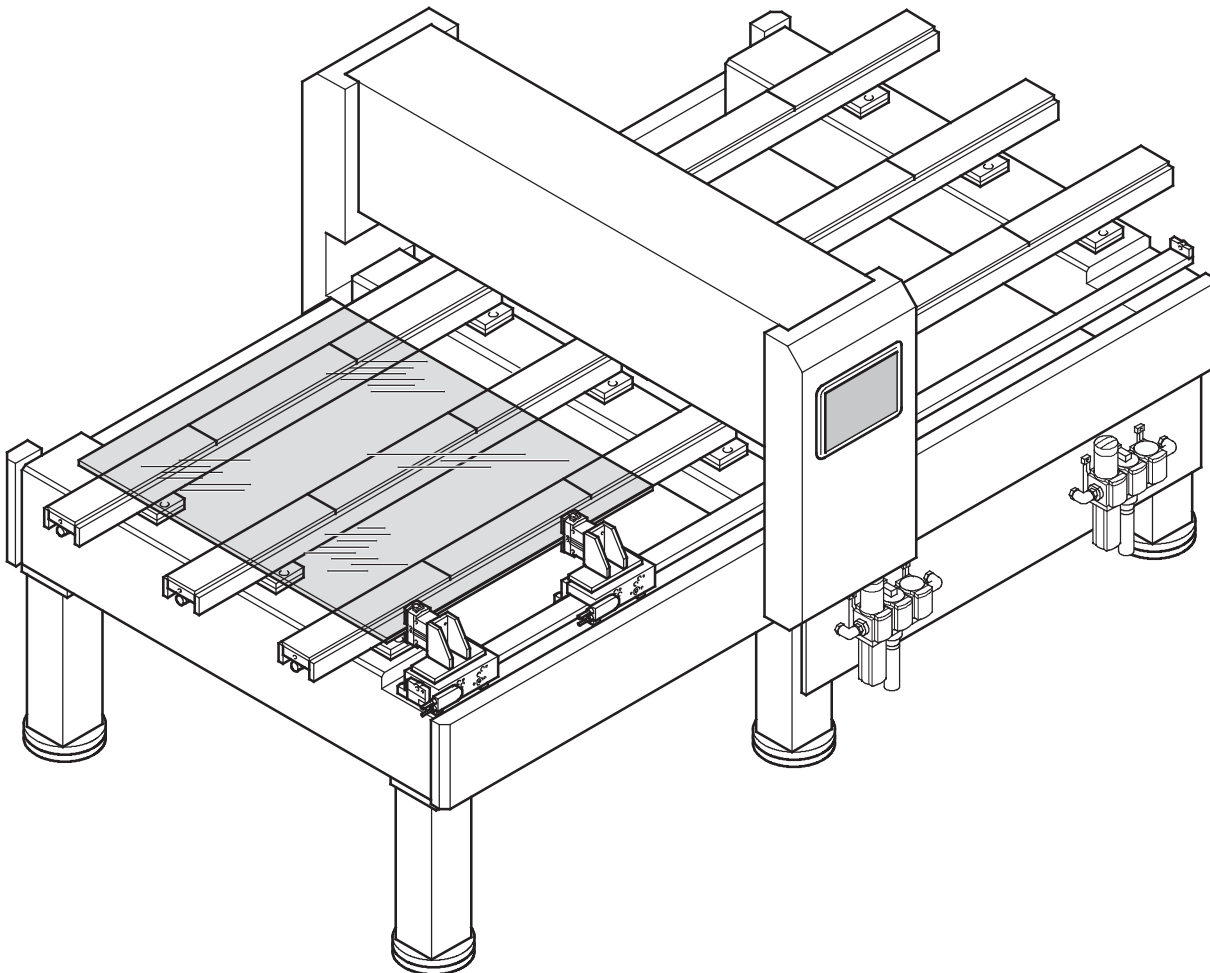
### Advantages

- It works without contact by means of an air cushion, without consuming excessive amounts of compressed air
- Uniform air flow ensures maximum precision and allows for short cycle times

### Applications

- Ideally suited to almost any task in the field of transporting and conveying flat products
- For loading and unloading
- For intermediate buffers
- For lifting and centring, for holding and retaining objects using vacuum

## Sample application



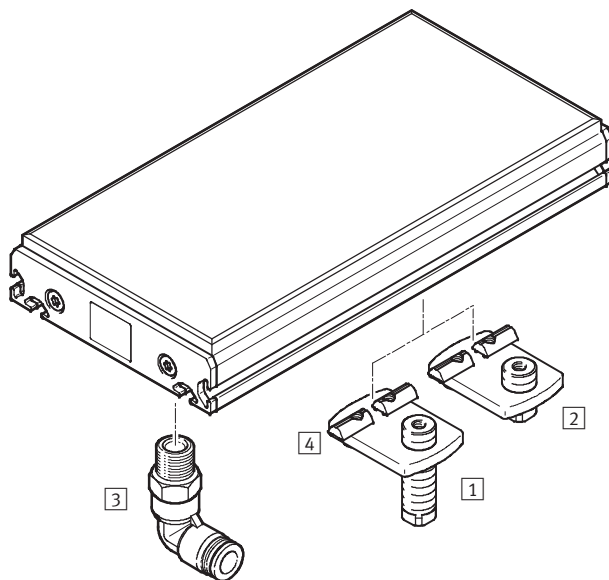
# Air cushion plates ATBT

Type codes and peripherals overview

## Type codes

		ATBT	–	100	–	250
<b>Type</b>						
ATBT	Air cushion plate					
<b>Size</b>						
<b>Length [mm]</b>						

## Peripherals overview

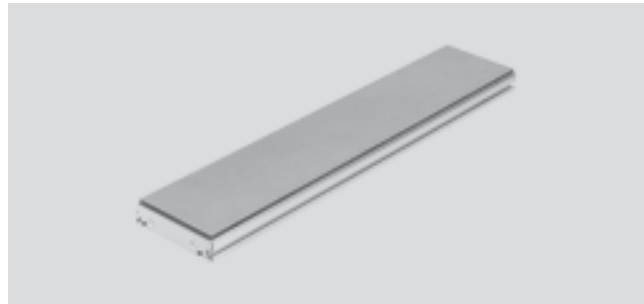


Mounting components and accessories		
	Brief description	→ Page/Internet
1	Adjusting kit ATAB-B-1	Adjustable installation height 35 mm 8
2	Adjusting kit ATAB-B-2	Adjustable installation height 15 mm 8
3	Push-in L-fitting QSL	With different nominal sizes for adjusting the flow rate. For connecting compressed air tubing with standard O.D. 9
4	Slot nut HMBN	For mounting the air cushion plates via the mounting slots 8

# Air cushion plates ATBT

Technical data

-T- Length  
100 ... 1,500 mm



General technical data		
Size		100
Length	[mm]	200; 250; 300; 500; 1,500 100 ... 1,500 <sup>1)</sup>
Pneumatic connection		G1/4
Max. surface load during operation	[kg/m <sup>2</sup> ]	400
Repetition accuracy of the cushion height	[µm]	±10
Flatness		
With adjustable mounting kit	[µm]	60
Direct mounting	[µm]	110
Shore hardness		D 80 ±5
Mounting position		Horizontal
Type of mounting		Via slot nuts
Product weight	[kg/m]	3.6

1) Can be ordered in 10 mm increments.

Operating and environmental conditions		
Operating pressure <sup>1)</sup>	[bar]	≤ 2
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [1:4:1]
Note about the operating/pilot medium		Lubricated operation not possible
Ambient temperature	[°C]	+10 ... +50
Temperature of medium	[°C]	+10 ... +50
Storage temperature	[°C]	+5 ... +60
Corrosion resistance class CRC <sup>2)</sup>		2

1) Typical operating pressure 300 ... 500 mbar

2) Corrosion resistance class 2 according to Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Materials	
Porous plate	Chemically bonded aluminum hydroxide
Profile	Colourless anodised wrought aluminium alloy
End cap	Colourless anodised wrought aluminium alloy
Screws	Galvanised steel
Note on materials	RoHS-compliant

## Note

Only suitable for dry workpieces.

# Air cushion plates ATBT

Technical data

## Adjusting the cushion height

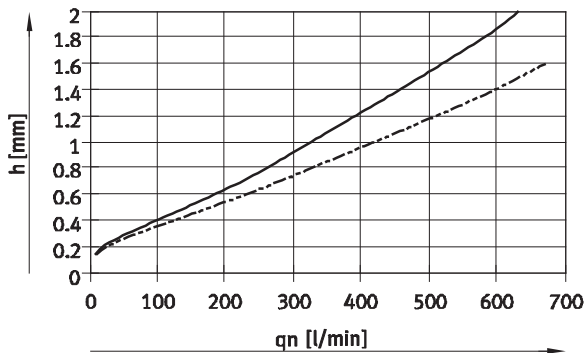
The air cushion plate generates an air cushion between the workpiece and plate surface when compressed air is applied to it.

The air cushion is dependent on the weight of the workpiece, i.e. the surface load on the air cushion plate and the flow rate.

Depending on the push-in L-fitting QSL used (→ 9), the flow rate can be adjusted via the supply pressure.

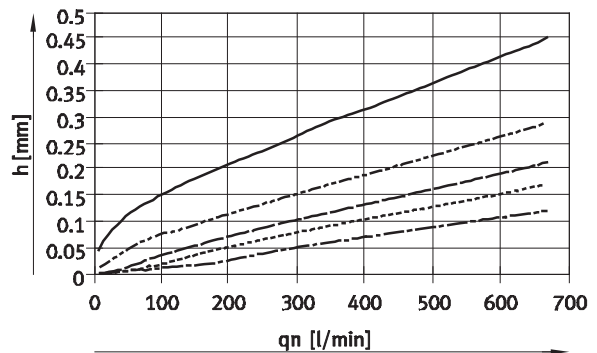
### Cushion height $h$ as a function of flow rate $q_n$

For typical surface loads



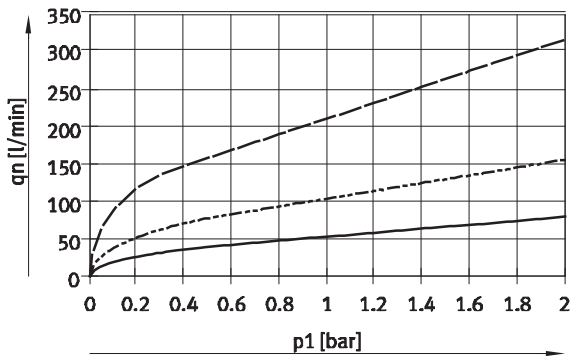
— 0.5 g/cm<sup>2</sup>  
- - - 0.9 g/cm<sup>2</sup>

For high surface loads



— 9 g/cm<sup>2</sup>  
- - - 16 g/cm<sup>2</sup>  
- · - 21 g/cm<sup>2</sup>  
· · · 30 g/cm<sup>2</sup>  
- - - 45 g/cm<sup>2</sup>

### Flow rate $q_n$ of the push-in L-fitting as a function of operating pressure $p_1$



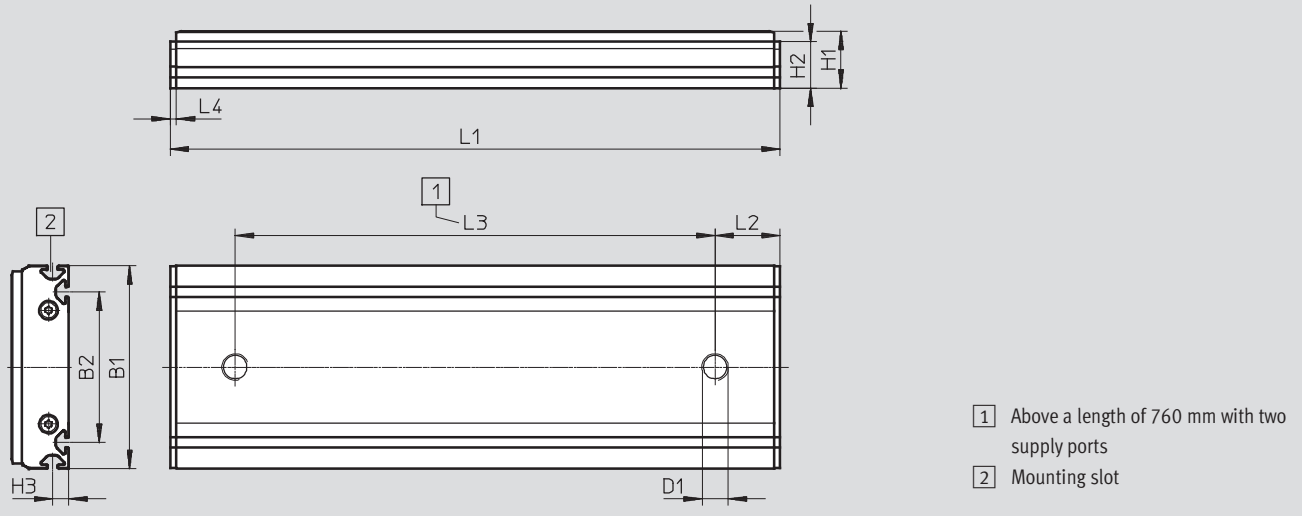
— Nominal size 1.8 mm  
- - - Nominal size 2.5 mm  
- · - Nominal size 3.5 mm

# Air cushion plates ATBT

Technical data

**Dimensions**

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



- 1 Above a length of 760 mm with two supply ports
- 2 Mounting slot

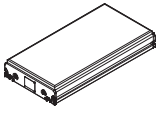
Length	B1	B2	D1	H1	H2	H3
[mm]	-0.5	±0.2		±0.05		±0.2
200	100	74	G¼	28	22.9	8
250						
300						
500						
1,500						
100 ... 1,500						

Length	L1	L2	L3	L4
[mm]	±0.5	±0.35	±0.5	
200	200	32	-	3
250	250	32	-	
300	300	32	-	
500	500	32	-	
1,500	1,500	375	750	
100 ... 1,500	In 10 mm increments	32/0.25 x L1 <sup>1)</sup>	0.5 x L1 <sup>2)</sup>	

1) Length L1 ≤ 750 mm/length L1 ≥ 760 mm  
 2) Length L1 ≥ 760 mm

# Air cushion plates ATBT

Ordering data – Modular products

Ordering data			
Type	Length [mm]	Part No.	Type
	200	2109868	ATBT-100-200
	250	2109869	ATBT-100-250
	300	2109870	ATBT-100-300
	500	2109871	ATBT-100-500
	1,500	2109872	ATBT-100-1500

Ordering data – Modular products							
Size	100	Conditions		Code		Enter code	
<b>M</b> Module No.	8021855						
Function	Air cushion plate			ATBT		ATBT	
Size [mm]	100			-...			
Length [mm]	100 ... 1,500	<sup>1</sup>		-...			

<sup>1</sup> Can be ordered in 10 mm increments

**Transfer order code**

**ATBT**  -  -

**Note**

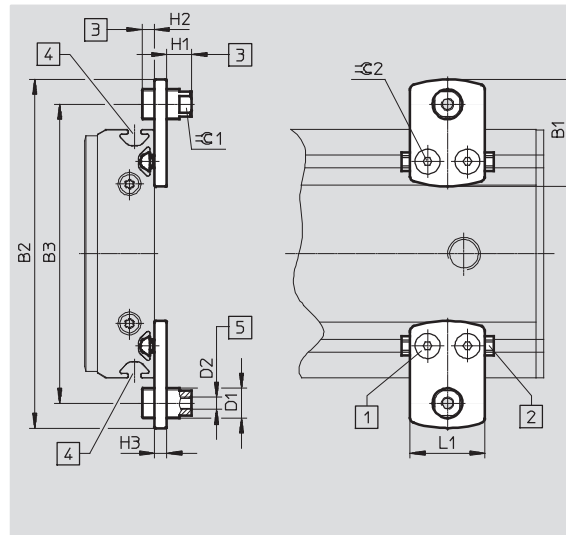
Minimum order quantity 10 items

# Air cushion plates ATBT

Accessories

**Adjusting kit**  
**ATAB-B-...**

Material:  
Nickel-plated steel



**Note**

Mounting of the air cushion plate:  
 • Uniformly at 3 points at least  
 • Symmetrically (left/right) at intervals of max. 200 mm over the length


- 1 Countersunk screw
- 2 Slot nut
- 3 Adjustment height ±3 mm, specified dimensions in mid-position
- 4 Lateral mounting variant
- 5 Screw-in depth max. 20 mm

Installation height = H1 + H3

Dimensions and ordering data								
Type	B1	B2	B3	D1	D2	H1 ±3	H2	H3
ATAB-B-1	43	140	120	M12x1	M5	30	5	5
ATAB-B-1-40						30		
ATAB-B-2						10		
ATAB-B-2-40						10		

Dimensions and ordering data								
Type	L1	⌀ 1	⌀ 2	CRC <sup>2)</sup>	Weight [g]	Part No.	Type	PU <sup>1)</sup>
ATAB-B-1	30	10	3	2	150	2099050	ATAB-B-1	4
ATAB-B-1-40						8005405	ATAB-B-1-40	40
ATAB-B-2						2099049	ATAB-B-2	4
ATAB-B-2-40						8005406	ATAB-B-2-40	40

1) Packaging unit  
 2) Corrosion resistance class 2 according to Festo standard 940 070  
 Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Ordering data – Slot nut		Technical data → Internet: hmbn	
	Brief description	Part No.	Type
	For mounting the air cushion plates via the mounting slots	189654	HMBN-5-M5



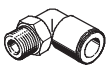
# Air cushion plates ATBT

Accessories

## Special push-in fittings

The air cushion plate is supplied with compressed air via the connecting thread.

The following push-in fittings are recommended for adjusting the flow rate and the resulting air cushions.

Ordering data – Push-in L-fitting									
	Connection Thread	Nominal size [mm]	Flow rate [l/min]	Tubing O.D. [mm]	Weight [g]	Part No.	Type	PU <sup>1)</sup>	
With external hexagon									
	G $\frac{1}{4}$	1.8	0 ... 90	8	27	<b>8005390</b>	<b>QSL-G<math>\frac{1}{4}</math>-8-C18</b>	10	
		2.5	0 ... 180	8	27	<b>8005391</b>	<b>QSL-G<math>\frac{1}{4}</math>-8-C25</b>		
		3.5	0 ... 280	8	27	<b>8005392</b>	<b>QSL-G<math>\frac{1}{4}</math>-8-C35</b>		
			1.8	0 ... 90	8	27	<b>8005393</b>	<b>QSL-G<math>\frac{1}{4}</math>-8-C18-50</b>	50
			2.5	0 ... 180	8	27	<b>8005394</b>	<b>QSL-G<math>\frac{1}{4}</math>-8-C25-50</b>	
			3.5	0 ... 280	8	27	<b>8005395</b>	<b>QSL-G<math>\frac{1}{4}</math>-8-C35-50</b>	

1) Packaging unit

# Product Range and Company Overview

## A Complete Suite of Automation Services

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



**Custom Automation Components**  
Complete custom engineered solutions



**Custom Control Cabinets**  
Comprehensive engineering support and on-site services



**Complete Systems**  
Shipment, stocking and storage services

## The Broadest Range of Automation Components

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



**Electromechanical**  
Electromechanical actuators, motors, controllers & drives



**Pneumatics**  
Pneumatic linear and rotary actuators, valves, and air supply



**PLCs and I/O Devices**  
PLC's, operator interfaces, sensors and I/O devices

## Supporting Advanced Automation... As No One Else Can!

Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 12,000 employees in 56 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

## Quality Assurance, ISO 9001 and ISO 14001 Certifications

Festo Corporation is committed to supply all Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.



© Copyright 2008, Festo Corporation. While every effort is made to ensure that all dimensions and specifications are correct, Festo cannot guarantee that publications are completely free of any error, in particular typing or printing errors. Accordingly, Festo cannot be held responsible for the same. For Liability and Warranty conditions, refer to our "Terms and Conditions of Sale", available from your local Festo office. All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of Festo. All technical data subject to change according to technical update.



Printed on recycled paper at New Horizon Graphic, Inc., FSC certified as an environmentally friendly printing plant.

# Festo North America

## Festo Regional Contact Center

5300 Explorer Drive  
Mississauga, Ontario L4W 5G4  
Canada

### USA Customers:

For ordering assistance,

**Call:** 1.800.99.FESTO (1.800.993.3786)

**Fax:** 1.800.96.FESTO (1.800.963.3786)

**Email:** [customer.service@us.festo.com](mailto:customer.service@us.festo.com)

For technical support,

**Call:** 1.866.GO.FESTO (1.866.463.3786)

**Fax:** 1.800.96.FESTO (1.800.963.3786)

**Email:** [product.support@us.festo.com](mailto:product.support@us.festo.com)

### Canadian Customers:

**Call:** 1.877.GO.FESTO (1.877.463.3786)

**Fax:** 1.877.FX.FESTO (1.877.393.3786)

**Email:** [festo.canada@ca.festo.com](mailto:festo.canada@ca.festo.com)

---

## USA Headquarters

Festo Corporation  
395 Moreland Road  
P.O. Box 18023  
Hauppauge, NY 11788, USA  
[www.festo.com/us](http://www.festo.com/us)

---

## USA Sales Offices

### Appleton

North 922 Tower View Drive, Suite N  
Greenville, WI 54942, USA

### Boston

120 Presidential Way, Suite 330  
Woburn, MA 01801, USA

### Chicago

1441 East Business Center Drive  
Mt. Prospect, IL 60056, USA

### Dallas

1825 Lakeway Drive, Suite 600  
Lewisville, TX 75057, USA

### Detroit – Automotive Engineering Center

2601 Cambridge Court, Suite 320  
Auburn Hills, MI 48326, USA

### New York

395 Moreland Road  
Hauppauge, NY 11788, USA

### Silicon Valley

4935 Southfront Road, Suite F  
Livermore, CA 94550, USA

## United States



**USA Headquarters, East:** Festo Corp., 395 Moreland Road, Hauppauge, NY 11788

Phone: 1.631.435.0800; Fax: 1.631.435.8026;

Email: [info@festo-usa.com](mailto:info@festo-usa.com)

[www.festo.com/us](http://www.festo.com/us)

## Canada



**Headquarters:** Festo Inc., 5300 Explorer Drive, Mississauga, Ontario L4W 5G4

Phone: 1.905.624.9000; Fax: 1.905.624.9001;

Email: [festo.canada@ca.festo.com](mailto:festo.canada@ca.festo.com)

[www.festo.ca](http://www.festo.ca)

## Mexico



**Headquarters:** Festo Pneumatic, S.A., Av. Ceylán 3, Col. Tequesquahuac,  
54020 Tlalneantla, Edo. de México

Phone: 011 52 [55] 53 21 66 00; Fax: 011 52 [55] 53 21 66 65;

Email: [festo.mexico@mx.festo.com](mailto:festo.mexico@mx.festo.com)

[www.festo.com/mx](http://www.festo.com/mx)

---

## Central USA

Festo Corporation  
1441 East Business  
Center Drive  
Mt. Prospect, IL 60056, USA  
Phone: 1.847.759.2600  
Fax: 1.847.768.9480



## Western USA

Festo Corporation  
4935 Southfront Road,  
Suite F  
Livermore, CA 94550, USA  
Phone: 1.925.371.1099  
Fax: 1.925.245.1286



---

## Festo Worldwide

Argentina Australia Austria Belarus Belgium Brazil Bulgaria Canada Chile China Colombia Croatia Czech Republic Denmark  
Estonia Finland France Germany Great Britain Greece Hong Kong Hungary India Indonesia Iran Ireland Israel Italy Japan Latvia  
Lithuania Malaysia Mexico Netherlands New Zealand Norway Peru Philippines Poland Romania Russia Serbia Singapore  
Slovakia Slovenia South Africa South Korea Spain Sweden Switzerland Taiwan Thailand Turkey Ukraine United States Venezuela

[www.festo.com](http://www.festo.com)