

## Precision pressure regulators LRP/LRPS

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# Precision pressure regulators LRP/LRPS

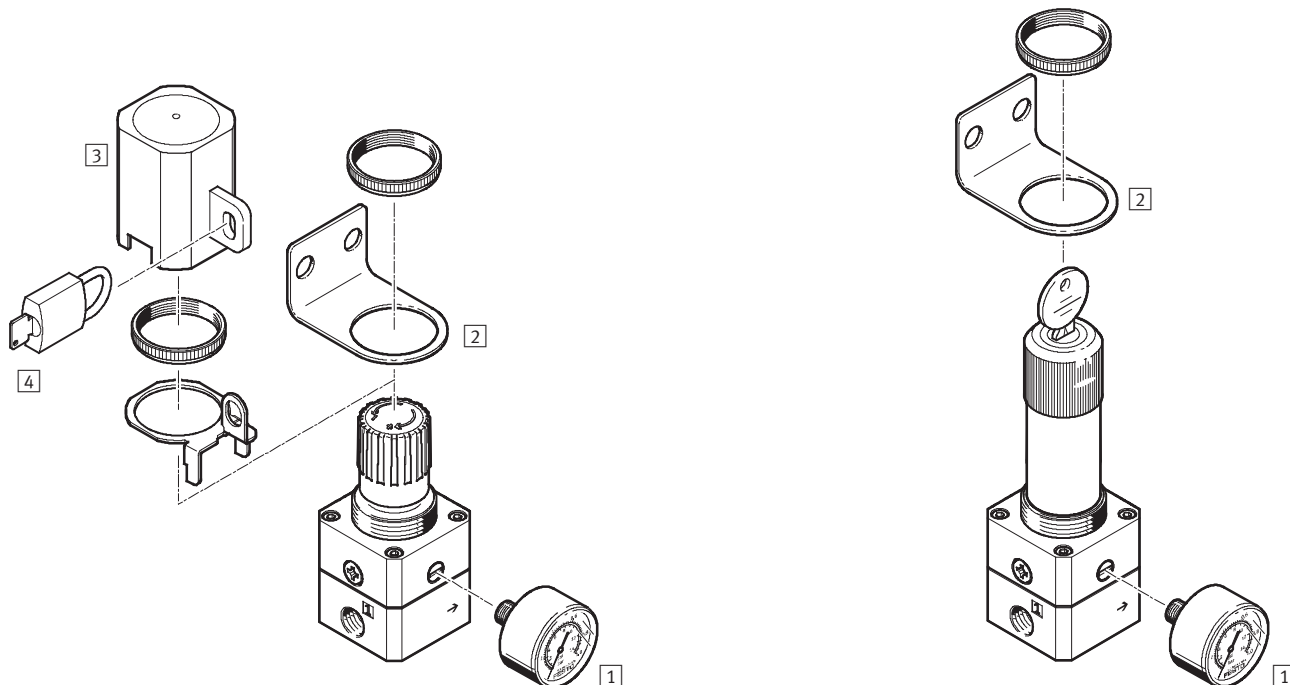
Peripherals overview and type codes

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## Peripherals overview

Precision pressure regulator LRP

Lockable precision pressure regulator LRPS



Mounting attachments and accessories		→ Page/Internet
1	Precision pressure gauge MAP	map
2	Mounting bracket HR-1/4-P	7
3	Regulator lock with lock plate LRVS-LRP-1/4	7
4	Padlock LRVS-D	7

## Type codes

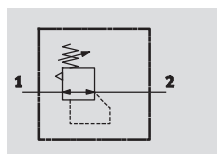
LRP		–	1/4	–	0.7	–	EX4
Service function							
LRP	Precision pressure regulator						
LRPS	Lockable precision pressure regulator						
Pneumatic connection							
1/4	Thread G1/4						
Pressure regulation range							
0.7	0.05 ... 0.7 bar						
2.5	0.05 ... 2.5 bar						
4	0.05 ... 4 bar						
10	0.1 ... 10 bar						
Explosion protection (only for LRP)							
	None						
EX4	For use in explosive areas in zones 1, 2 as well as 21, 22						

# Precision pressure regulators LRP/LRPS

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Technical data

Function



Flow rate

800 ... 2,300 l/min

Temperature range

-10 ... +60 °C

Pressure

1 ... 12 bar

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The precision pressure regulator controls operating pressure (secondary side) with a diaphragm pilot control, which acts upon the main seat and thus achieves improved regulating characteristics.

- Precision pressure adjustment possible both in static and dynamic applications
- Pressure hysteresis of < 0.02 bar for flow rate characteristic curve
- Good response characteristics during rapid alteration of supply pressure and flow rate
- Supply pressure fluctuations are almost entirely compensated
- Product variants LRP-...-EX4 can be used in zones 1 and 2 of explosive gas atmospheres and in zones 21 and 22 of explosive dust atmospheres

General technical data				
LRP/LRPS-1/4-...	0.7	2.5	4	10
Pneumatic connection 1, 2	G1/4			
Constructional design	Pilot-actuated precision diaphragm regulating valve			
Regulating function	Output pressure constant, with secondary venting			
Type of mounting	Via accessories			
	Front panel mounting			
	In-line installation			
Mounting position	Any			
Actuator lock	Rotary knob with detent			
	Rotary knob with integrated lock			
Pressure regulation range [bar]	0.05 ... 0.7	0.05 ... 2.5	0.05 ... 4	0.1 ... 10
Max. hysteresis [bar]	0.02			
Pressure indicator	G1/8 prepared			

Standard nominal flow rate <sup>1)</sup> qnN [l/min]				
LRP/LRPS-1/4-...	0.7	2.5	4	10
Standard nominal flow rate [l/min]	800	1,800	2,000	2,300

1) Measured at p1 = 12 bar, Δp2 = 100 mbar

Operating and environmental conditions	
Operating pressure [bar]	1 ... 12
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
	Inert gases
Note on operating/pilot medium	Operation with lubricated medium not possible
Ambient temperature [°C]	-10 ... +60
Temperature of medium [°C]	-10 ... +60
Corrosion resistance class CRC <sup>1)</sup>	2

1) Corrosion resistance class 2 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

# Precision pressure regulators LRP/LRPS

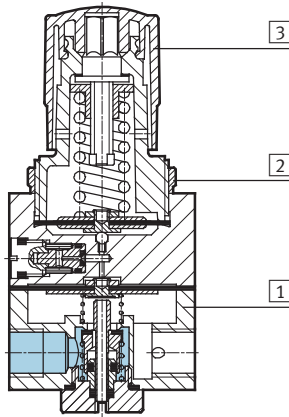
Technical data

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Weight [g]			
Type	LRP	LRP-...-EX4	LRPS
Precision pressure regulator	310	315	410

## Materials

Sectional view

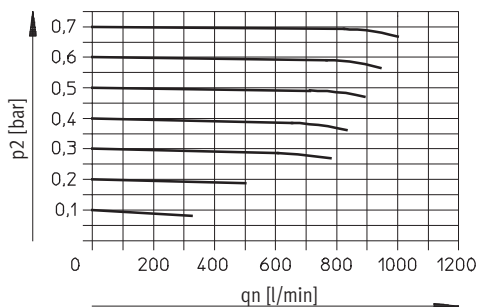


Precision pressure regulator

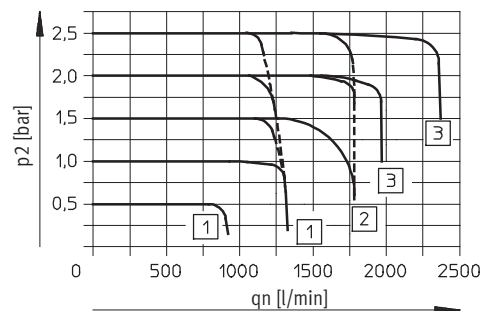
1	Housing	Die-cast aluminium
2	Knurled nut	Aluminium
3	Rotary knob	PA
-	Seals	NBR
Note on materials		RoHS-compliant

## Standard flow rate $q_n$ as a function of output pressure $p_2$

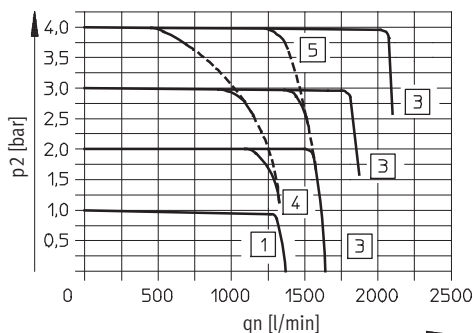
LRP/LRPS-1/4-0,7



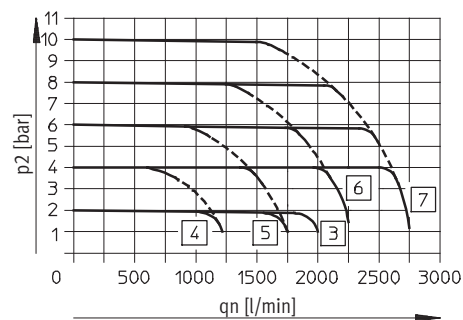
LRP/LRPS-1/4-2,5



LRP/LRPS-1/4-4



LRP/LRPS-1/4-10



- 1 Supply pressure  $p_1 = 5 \dots 12$  bar
- 2 Supply pressure  $p_1 = 7 \dots 12$  bar
- 3 Supply pressure  $p_1 = 10 \dots 12$  bar
- 4 Supply pressure  $p_1 = 5$  bar

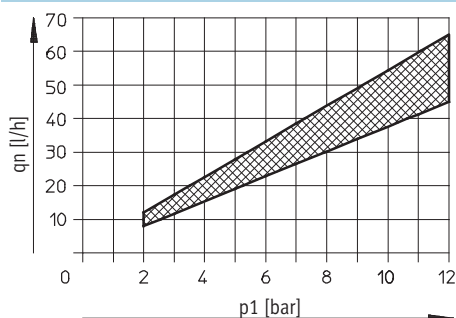
- 5 Supply pressure  $p_1 = 7$  bar
- 6 Supply pressure  $p_1 = 10$  bar
- 7 Supply pressure  $p_1 = 12$  bar

# Precision pressure regulators LRP/LRPS

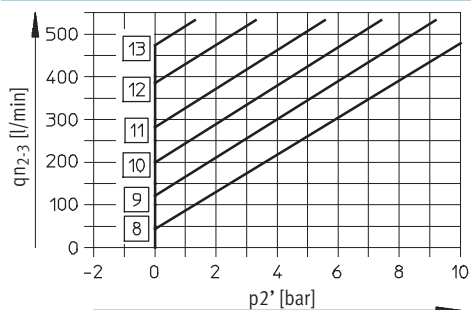
Technical data

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## Internal air consumption $q_n$ as a function of supply pressure $p_1$



## Standard flow rate $q_{n2-3}$ of the secondary exhaust as a factor of the excess output pressure $p_2'$

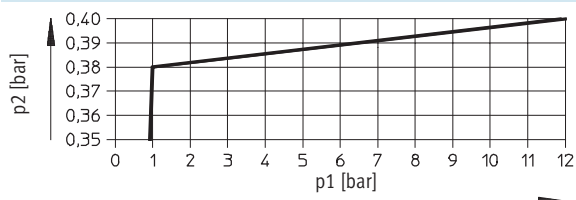


- 8 Output pressure  $p_2 = 0.7$  bar
- 9 Output pressure  $p_2 = 2$  bar
- 10 Output pressure  $p_2 = 4$  bar
- 11 Output pressure  $p_2 = 6$  bar
- 12 Output pressure  $p_2 = 8$  bar
- 13 Output pressure  $p_2 = 10$  bar

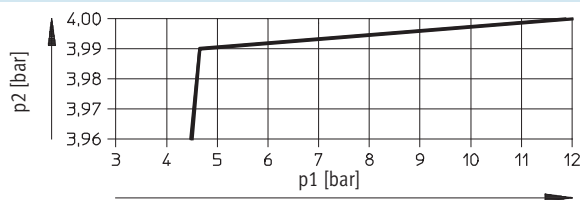
Supply pressure  $p_1 = 5 \dots 12$  bar

## Output pressure $p_2$ as a function of supply pressure $p_1$

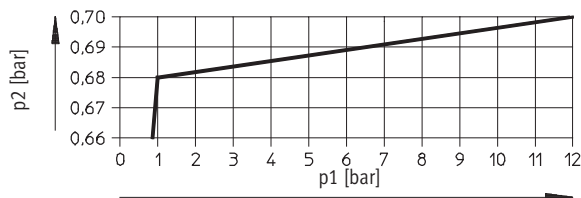
Primary pressure dependence  $q_n = 35$  l/min



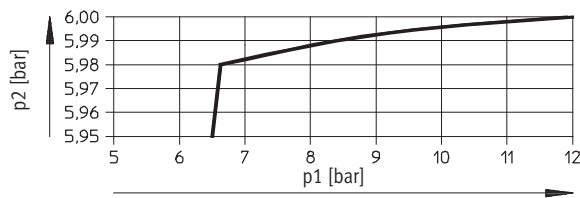
Primary pressure dependence  $q_n = 220$  l/min



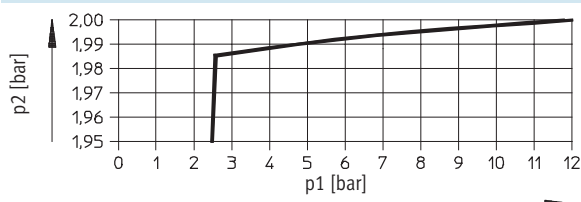
Primary pressure dependence  $q_n = 55$  l/min



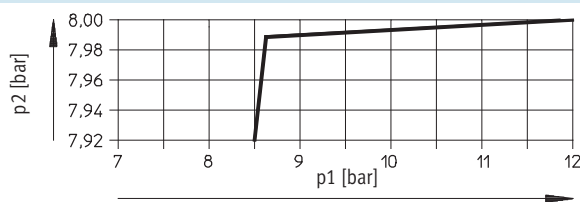
Primary pressure dependence  $q_n = 340$  l/min



Primary pressure dependence  $q_n = 120$  l/min



Primary pressure dependence  $q_n = 420$  l/min



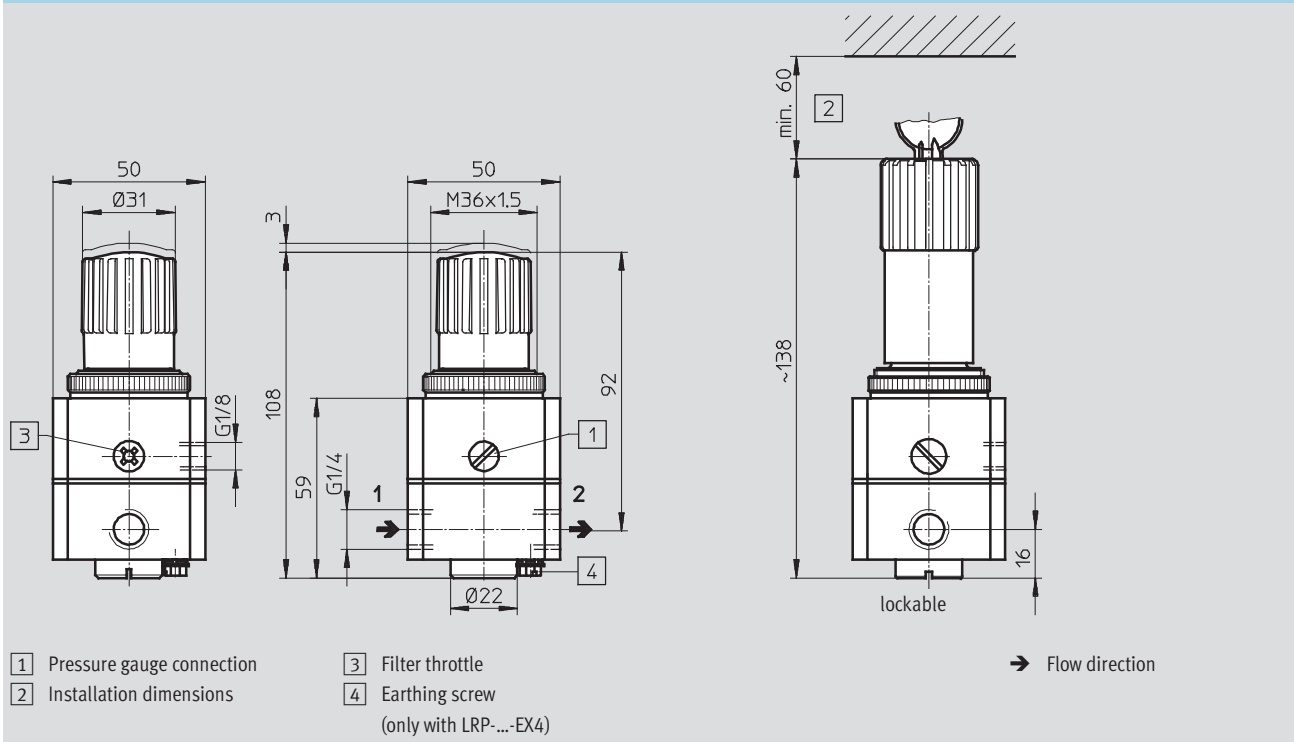
# Precision pressure regulators LRP/LRPS

Technical data

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## Dimensions

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



## Ordering data

Pressure regulation range [bar]	Precision pressure regulator LRP		Lockable precision pressure regulator LRPS	
	Part No.	Type	Part No.	Type
0.05 ... 0.7	159500	LRP-1/4-0,7	194690	LRPS-1/4-0,7
0.05 ... 2.5	162834	LRP-1/4-2,5	194691	LRPS-1/4-2,5
0.05 ... 4	159501	LRP-1/4-4	194692	LRPS-1/4-4
0.1 ... 10	159502	LRP-1/4-10	194693	LRPS-1/4-10
For use in explosive areas in zones 1, 2 as well as 21, 22				
0.05 ... 0.7	549918	LRP-1/4-0,7-EX4	-	
0.05 ... 2.5	549919	LRP-1/4-2,5-EX4	-	
0.05 ... 4	549920	LRP-1/4-4-EX4	-	
0.1 ... 10	549921	LRP-1/4-10-EX4	-	

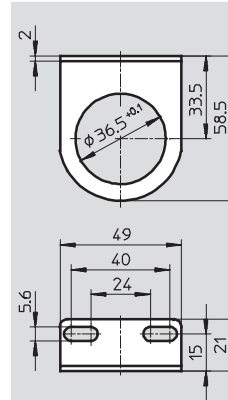
## Precision pressure regulators LRP/LRPS

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Accessories

### Mounting bracket HR for wall mounting

Material:  
Galvanised steel  
Free of copper and PTFE



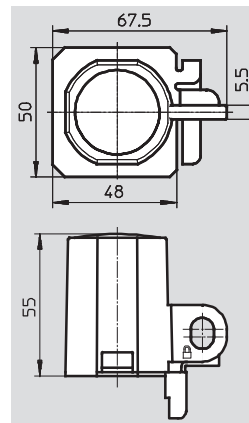
Ordering data		
CRC <sup>1)</sup>	Part No.	Type
2	159503	HR-1/4-P

- 1) Corrosion resistance class 2 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.

### Regulator lock LRVs-LRP

Material:  
Cap: Polyacetate  
Lock plate: Steel  
Knurled nut: Aluminium  
Free of copper and PTFE

Ambient temperature:  
-20 ... +60 °C

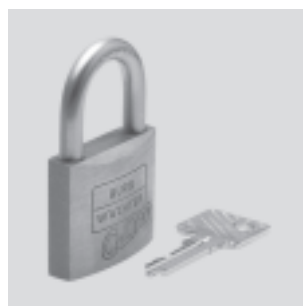


Ordering data		
Weight [g]	Part No.	Type
36	193785	LRVS-LRP-1/4

### Padlock LRVs-D

Material:  
Housing: Brass

Ambient temperature:  
-20 ... +60 °C



Ordering data		
Weight [g]	Part No.	Type
120	193786	LRVS-D

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### 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**  
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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

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# 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

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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 Tlalneapantla, 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  
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