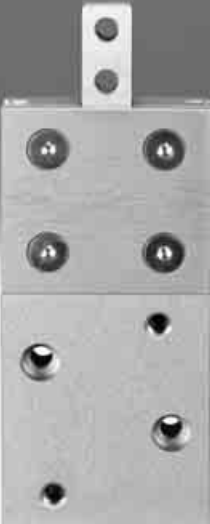


Feed separators HPVS

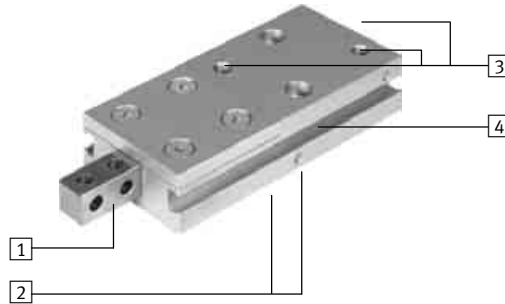


Feed separators HPVS

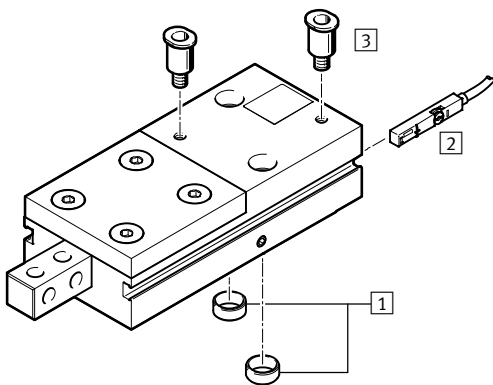
Key features and peripherals overview

At a glance

- 1 Corrosion-resistant thanks to stainless steel plunger
- 2 Optimum and precise adaption options using centring sleeves
- 3 Supply ports optionally on top or at rear
- 4 Supports proximity sensors that can be integrated in the housing (SME/SMT-8)



Peripherals overview



Accessories		
	Brief description	→ Page/Internet
1	Centring sleeve ZBH	For centring when mounting 10
2	Proximity sensor SMT-/SME-8	For position sensing, can be integrated in the sensor slot 10
3	Push-in fitting QS	For connecting compressed air tubing with standard O.D. quick star

Feed separators HPVS

Type codes

Type codes

HPVS – 14 – 20 – A

Type

Double-acting	
HPVS	Feed separator

Size [mm]

Stroke [mm]

Position sensing



A	Via proximity sensor
---	----------------------

Feed separators HPVS

Technical data

Function



-  Size
10 ... 22
-  Stroke length
10 ... 60 mm

General technical data			
Size	10	14	22
Pneumatic connection	M5/M3	M5/M5	
Design	Twin piston		
	Piston rod		
	Non-rotating		
Protection against rotation/guide	Square		
Max. interchangeability [mm]	0.3		
Repetition accuracy [mm]	0.05	0.15	0.25
Cushioning	None		
Position sensing	Via proximity sensor		
Type of mounting	Via through-hole		
	Via female thread		
Mounting position	Any		

Operating and environmental conditions	
Operating medium	Compressed air according to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure [bar]	3 ... 8
Ambient temperature [°C]	+5 ... +60
Protection class	IP40
Corrosion resistance class CRC ¹⁾	2

1) 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.

Forces [N]			
	10	14	22
Theoretical force at 6 bar, advancing	45	90	225
Theoretical force at 6 bar, retracting	35	75	180

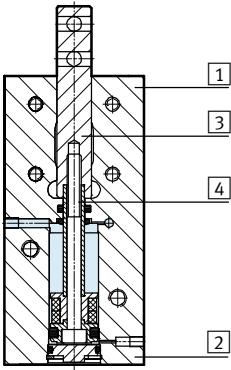
Weight [g]					
Size	10	14		22	
Stroke [mm]	10	20	40	30	60
Product weight	90	183	290	630	1,000

Feed separators HPVS

Technical data

Materials

Sectional view



Feed separator		
1	Housing	Wrought aluminium alloy (with CompCoat)
2	End cap	High-alloy steel
3	Plunger	High-alloy steel
4	Piston rod	High-alloy steel
-	Seals	Nitrile rubber
	Note on materials	Free of copper, PTFE and silicone
		RoHS-compliant

 Note

The plunger slideways in the housing are determined by the appropriate fit selected and cannot be adjusted. The necessary basic lubrication is performed during assembly. We recommend that the feed separator be re-lubricated after 2 million cycles.

Max. permissible weight [g] of the add-on plunger separator for unrestricted operation

Size	10	14	22
Stroke	10	20	40
External add-on plunger separator ¹⁾	56	150	150
			395
			395

1) If the max. permissible weight of the external add-on plunger separator is exceeded, the retracting and advancing times must be adapted in accordance with the table below using one-way flow control valves. Failure to do so may result in components of the feed separator being damaged.

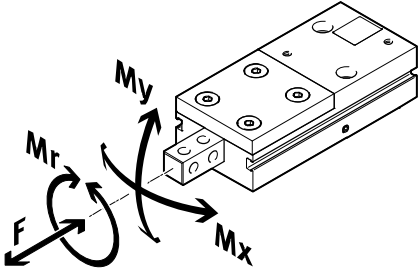
Retracting and advancing times [s] with add-on plunger separators as a function of the load [g] of the plunger separators

Size	10	14	22
Stroke	10	20	40
Weight force			
100 g	0.03	-	-
200 g	0.04	0.03	0.05
300 g	0.05	0.04	0.08
400 g	0.06	0.05	0.11
500 g	-	0.07	0.13
600 g	-	-	-
700 g	-	-	-
800 g	-	-	-
			0.24
			0.30
			0.36
			0.42
			0.48
			0.48
			0.60
			0.72
			0.84
			0.96

Feed separators HPVS

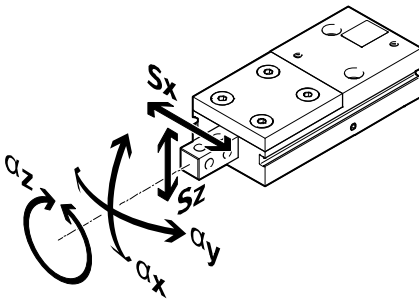
Technical data

Permissible characteristic static load values at the plungers



Size		10	14	22
Force F	[N]	75	100	180
Torque M_x	[Nm]	3	5	9
Torque M_y	[Nm]	3	5	9
Torque M_r	[Nm]	3	5	9

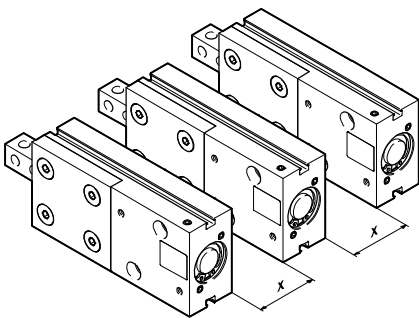
Plunger backlash



Size		10	14	22
Stroke	[mm]	10	20	40
S_x	[mm]	0.03	0.03	0.03
S_z	[mm]	0.05	0.05	0.05
α_x	[°]	0.12	0.12	0.07
α_y	[°]	0.20	0.20	0.12
α_z	[°]	0.262	0.175	0.175

Minimum clearances

To prevent malfunctioning of the proximity sensors, the feed separators must comply with the minimum clearances specified in the table.



Size		10	14	22
For SME-8-...	[mm]	60	59	73
For SMT-8-...-B	[mm]	60	54	69

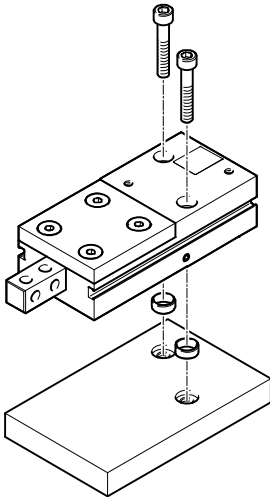
Feed separators HPVS

Technical data

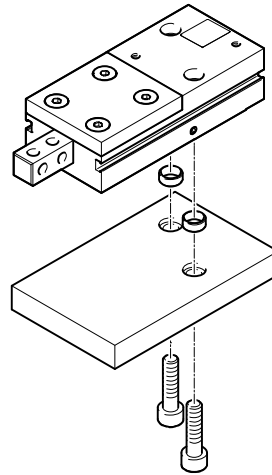
Mounting options

Only the mounting surface on the underside (opposite the supply ports) may be used.

From above via through-hole



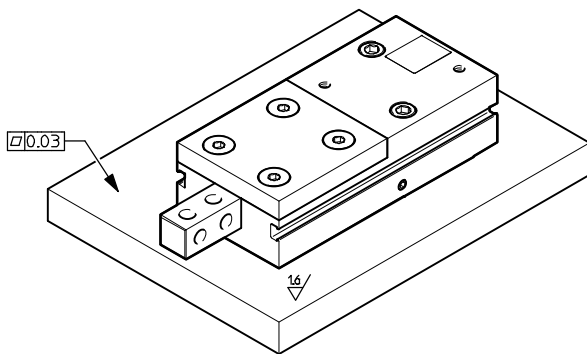
From below via female thread



Size	10	14	22
Screw	M3	M4	M6
Permitted tightening torque [Nm]	1.2	2.9	9.9
Centring sleeve	ZBH-7	ZBH-7	ZBH-12

Size	10	14	22
Screw	M4	M5	M8
Permitted tightening torque [Nm]	2.9	5.9	24
Centring sleeve	ZBH-7	ZBH-7	ZBH-12

Surface finish and positional accuracy of bearing surface

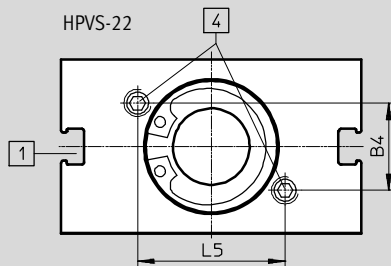
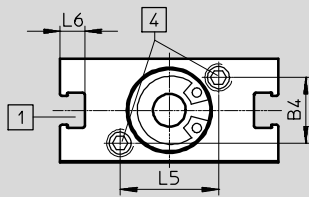
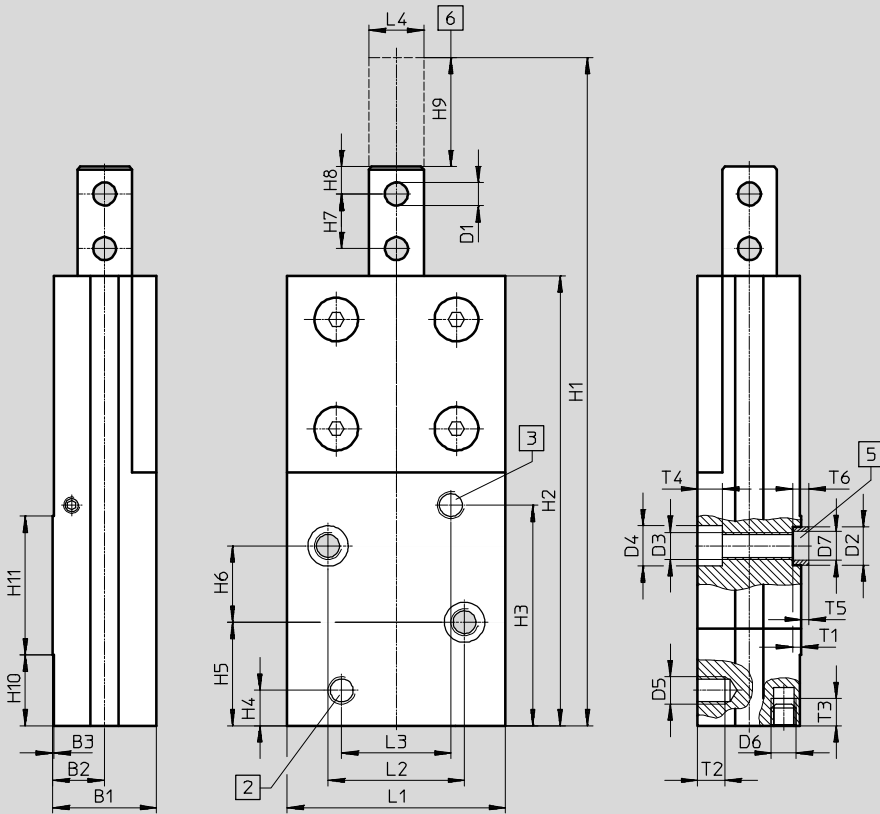


Feed separators HPVS

Technical data

Dimensions

Download CAD data → www.festo.com



- 1 Sensor slot for proximity sensor
- 2 Supply port, advancing
- 3 Supply port, retracting
- 4 Alternative supply port
- 5 Centring sleeves
(2 included in the scope of delivery)
- 6 Stroke

Feed separators HPVS

Technical data

Type	B1 ±0.02	B2	B3 +0.05	B4	D1 ∅ H13	D2 ∅ H8/h7	D3	D4 ∅ H13	D5	D6	D7 ∅	H1 ±0.5
HPVS-10-10-A	18	8	0.2	11	3.2	7	M4	6	M5	M3	5.3	82
HPVS-14-20-A	19	9.5	0.2	12	4.2	7	M5	7.4	M5	M5	5.3	122.5
HPVS-14-40-A	19	9.5	0.2	12	4.2	7	M5	7.4	M5	M5	5.3	192.5
HPVS-22-30-A	32	16	0.2	16	6.2	12	M8	10.4	M5	M5	10.3	178.5
HPVS-22-60-A	32	16	0.2	16	6.2	12	M8	10.4	M5	M5	10.3	283.5

Type	H2	H3	H4	H5	H6 ¹⁾ ±0.02	H7 ±0.2	H8 ±0.1	H9 ±0.5	H10	H11	L1
HPVS-10-10-A	57	27.5	5.5	10	12	7	4	10	4	24	33
HPVS-14-20-A	82.5	40.5	6.5	19	14	10	5	20	13	25.5	40
HPVS-14-40-A	132.5	60.5	6.5	19	34	10	5	40	13	45.5	40
HPVS-22-30-A	118.5	51.5	7.5	22	20	14	8	30	13	37.5	55
HPVS-22-60-A	193.5	81.5	7.5	22	50	14	8	60	13	67.5	55

Type	L2 ¹⁾ ±0.02	L3	L4 ±0.02	L5	L6	T1 +0.1	T2 min.	T3 min.	T4	T5	T6 -0.2
HPVS-10-10-A	20	16	7	12	4.2	1.6	4	4	3.1	1.4	3
HPVS-14-20-A	25	20	10	18	4.5	1.6	5	5	4.6	1.4	3
HPVS-14-40-A	25	20	10	18	4.5	1.6	5	5	4.6	1.4	3
HPVS-22-30-A	37	29	14	27	4.2	2.6	5	5	6.1	2.4	5
HPVS-22-60-A	37	29	14	27	4.2	2.6	5	5	6.1	2.4	5


1) Tolerance for centring hole ±0.02
Tolerance for thread and through-hole ±0.1

Ordering data		
Size	Stroke [mm]	Part No. Type
10	10	2095359 HPVS-10-10-A
14	20	2095360 HPVS-14-20-A
	40	2095361 HPVS-14-40-A
22	30	2095362 HPVS-22-30-A
	60	2095363 HPVS-22-60-A

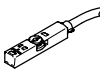
Feed separators HPVS

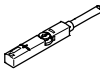
Accessories



FESTO


Ordering data		Technical data → Internet: zbh		
For size	Part No.	Type	PU ¹⁾	
Centring sleeve ZBH				
	10, 14	186717	ZBH-7	10
	22	189653	ZBH-12	10


1) Packaging unit

Ordering data – Proximity sensor for T-slot, magneto-resistive				Technical data → Internet: smt	
Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact					
	Insertable in the slot from above, flush with the cylinder profile, short design	PNP	Cable, 3-wire	2.5	574335 SMT-8M-A-PS-24V-E-2,5-OE
			Plug M8x1, 3-pin	0.3	574334 SMT-8M-A-PS-24V-E-0,3-M8D
		PNP	Plug M12x1, 3-pin	0.3	574337 SMT-8M-A-PS-24V-E-0,3-M12

Ordering data – Proximity sensor for T-slot, magnetic reed				Technical data → Internet: sme	
Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact					
	Insertable in the slot from above, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	543862 SME-8M-DS-24V-K-2,5-OE
				5.0	543863 SME-8M-DS-24V-K-5,0-OE
			Plug M8x1, 3-pin	0.3	543861 SME-8M-DS-24V-K-0,3-M8D

Ordering data – Connecting cables			Technical data → Internet: nebu	
Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541333 NEBU-M8G3-K-2.5-LE3
			5	541334 NEBU-M8G3-K-5-LE3
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541363 NEBU-M12G5-K-2.5-LE3
			5	541364 NEBU-M12G5-K-5-LE3
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541338 NEBU-M8W3-K-2.5-LE3
			5	541341 NEBU-M8W3-K-5-LE3
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541367 NEBU-M12W5-K-2.5-LE3
			5	541370 NEBU-M12W5-K-5-LE3

Ordering data – Slot cover		Part No.	Type
Assembly	Length [m]		
	insertable from above	2 x 0.5	151680 ABP-5-S

Ordering data – One-way flow control valves			Technical data → Internet: grla-m5-qs	
Connection	Material		Part No.	Type
	Thread	For tubing O.D.		
	M5	3	Metal design	193137 GRLA-M5-QS-3-D
		4		193138 GRLA-M5-QS-4-D
		6		193139 GRLA-M5-QS-6-D

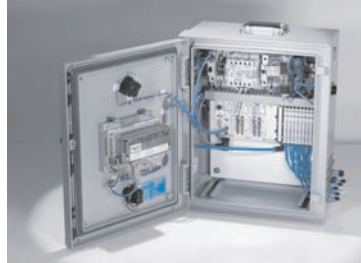
Product Range and Company Overview

A Complete Suite and Company Overview

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 & drivers



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 16,000 employees in 60 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.

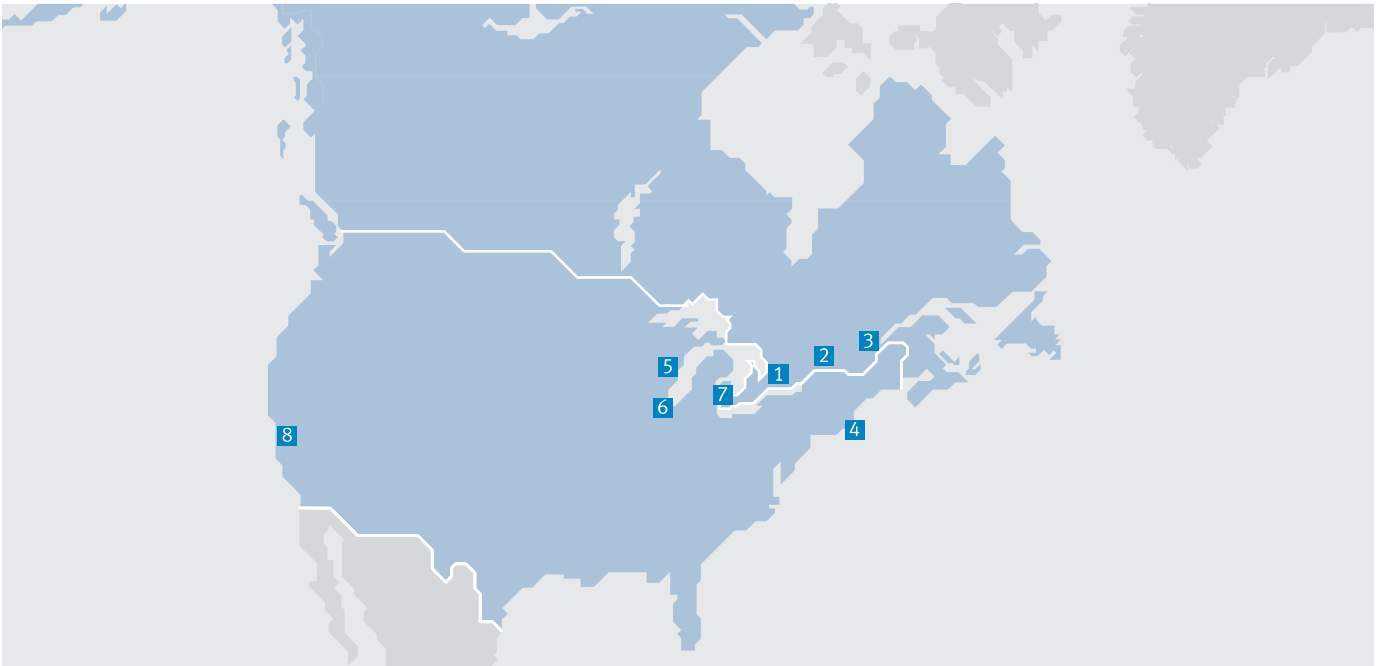


© Copyright 2013, Festo Corporation. While every effort is made to ensure that all dimensions and specifications are correct, Festo cannot guarantee that publications are completely free of any error, in particular typing or printing errors. Accordingly, Festo cannot be held responsible for the same. 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 environmental friendly printing plant.

Festo North America



**1 Festo Canada
Headquarters
Festo Inc.**
5300 Explorer Drive
Mississauga, ON
L4W 5G4

2 Montréal
5600, Trans-Canada
Pointe-Claire, QC
H9R 1B6

3 Québec City
2930, rue Watt#117
Québec, QC
G1X 4G3



**4 Festo United States
Headquarters
Festo Corporation**
395 Moreland Road
Hauppauge, NY
11788

5 Appleton
North 922 Tower View Drive, Suite N
Greenville, WI
54942

7 Detroit
1441 West Long Lake Road
Troy, MI
48098

6 Chicago
85 W Algonquin - Suite 340
Arlington Heights, IL
60005

8 Silicon Valley
4935 Southfront Road, Suite F
Livermore, CA
94550

Festo Regional Contact Center

Canadian Customers

Commercial Support:
Tel: 1 877 GO FESTO (1 877 463 3786)
Fax: 1 877 FX FESTO (1 877 393 3786)
Email: festo.canada@ca.festo.com

Technical Support:
Tel: 1 866 GO FESTO (1 866 463 3786)
Fax: 1 877 FX FESTO (1 877 393 3786)
Email: technical.support@ca.festo.com

USA Customers

Commercial Support:
Tel: 1 800 99 FESTO (1 800 993 3786)
Fax: 1 800 96 FESTO (1 800 963 3786)
Email: customer.service@us.festo.com

Technical Support:
Tel: 1 866 GO FESTO (1 866 463 3786)
Fax: 1 800 96 FESTO (1 800 963 3786)
Email: product.support@us.festo.com