End position controllers SPC11

FESTO

End position controllers SPC11

Key features

Key features at a glance

Fast travel between two fixed stops with electronically controlled end position cushioning and up to two freely selectable intermediate positions.

- Up to 30% faster cycle rates
- Significantly reduced system vibration
- Fast problem-free commissioning, no specialists required
- Simple conversion of existing systems
- Optimum operating behaviour is maintained even with weight/load fluctuations of up to 30% of the total moving mass
- Less expensive than electromechanical drives
- Reduced noise level

Individual components

End position controller

Integrated functions:
- For determining system characteristic values of the connected components.
- Storage of the desired end positions or intermediate positions.
- Comparison of setpoint and actual position, and position control through appropriate actuation of the proportional 5/3-way valve (status control).
- Internal or external teach-in function.

SPC11

Analogue displacement encoders

Analogue displacement encoder based on a conductive-plastic linear potentiometer. The system measures absolute values. It is connected alongside a pneumatic drive. Mounting kits are available as accessories for the mechanical coupling. The displacement encoder is available in fixed stroke lengths ranging from 100 ... 2000 mm.

MLO-POT...-TLF

MLO-POT...-LWG

Digital displacement encoders

Digital displacement encoders, magnetostrictive, contactless method of measurement. The system measures absolute values. It is connected alongside a pneumatic linear drive. Mounting kits are available as accessories for the mechanical coupling. The displacement encoder is available in fixed stroke lengths ranging from 100 ... 2000 mm.

MME-MTS-...-AIF

Pneumatic drives

Pneumatic drives ensure an easy-to-operate system. The stroke length operating range depends on the selected drive. The range extends from 225 ... 2000 mm. The swivel angle with DSMI ranges from 0° ... 270°.

Note

The linear drives DGPL with compressed air supply connections at both ends (D2) should be used for effective cylinder strokes above 600 mm.

DGCI

DGPL, DGPIL

DNC

DNCI

DSMI

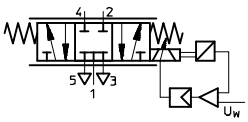
Proportional 5/3-way valves

Valve actuation is via the end position controller. The valve controls the volume of air supplied to the drive. The extremely short switching time of the valve makes the Smart Soft Stop solution package highly dynamic.

Note

Use a 5 µm filter for compressed air preparation. The compressed air supply must be unlubricated.

MPYE-5-...-010B

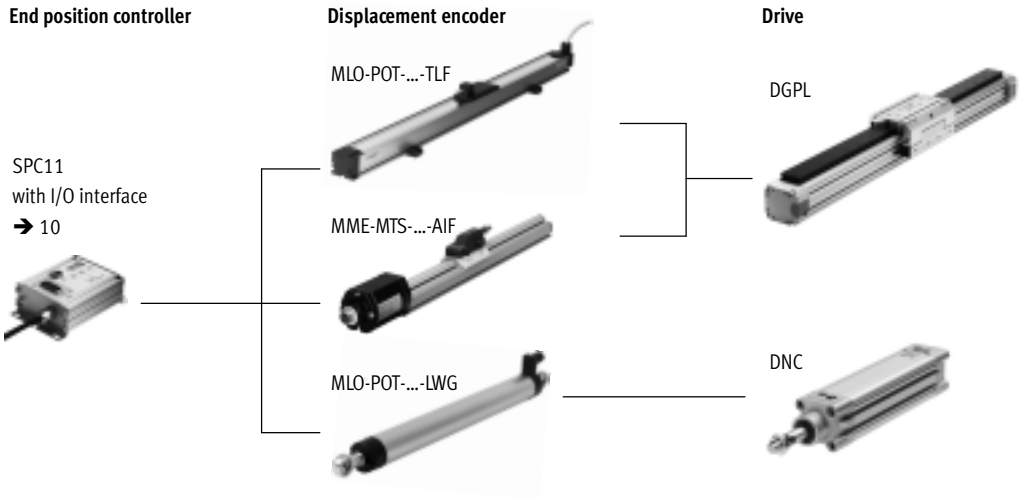


End position controllers SPC11

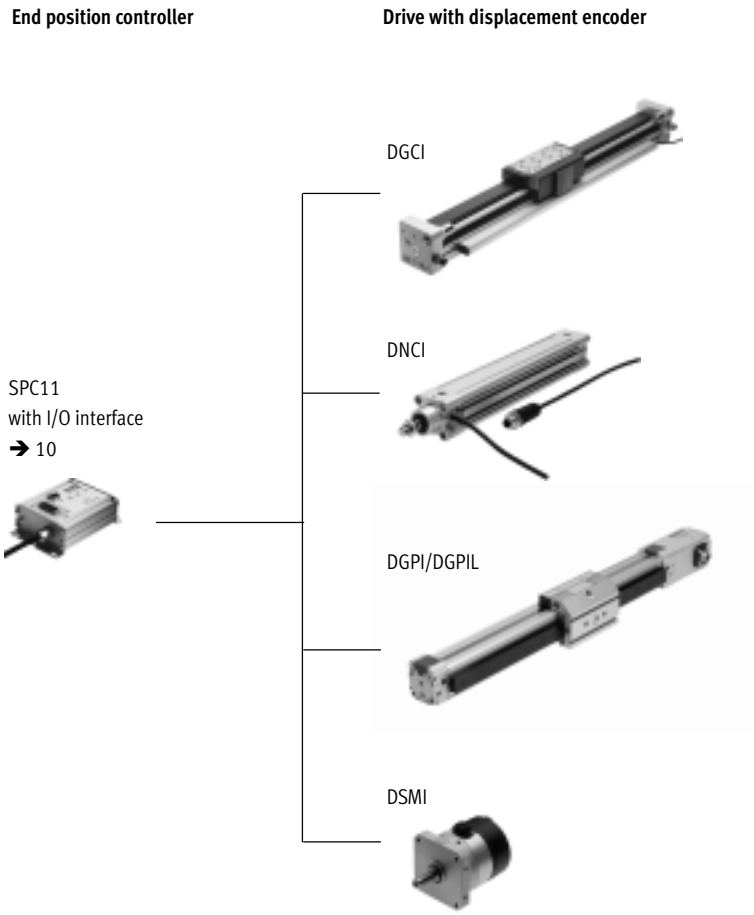
Key features

Possible combinations

with external displacement encoder



with external/integrated displacement encoder



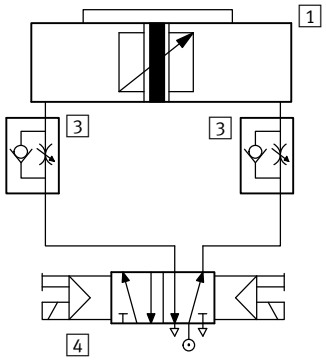
End position controllers SPC11

Key features

Conventional solution

Previously you needed to

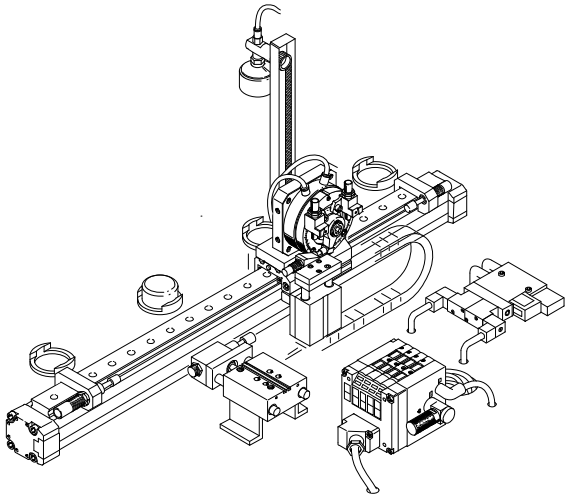
- Harmonise individual components.
- Install additional shock absorbers and possibly replace/exchange existing shock absorbers.
- Fit proximity sensors for position detection.
- Adjust the compressed air supply by means of flow control valves in order to optimise the system.



1 Pneumatic drives DGCI/DGPL, DNC or DSM
2 Shock absorber YSR
3 One-way flow control valves GRLA
4 Double solenoid valve JMFH

Until now, to create intermediate positions you had to

- Construct a complex mechanical solution using stopper cylinders, for example.
- Harmonise a large number of individual components.
- Perform extensive programming.



Solution with end position controller SPC11

Fast travel between two fixed stops with up to two freely selectable intermediate positions

The Smart Soft Stop system with end position controller SPC11 facilitates travel between two fixed mechanical stops as well as travel to up to two freely selectable intermediate positions. The level of accuracy of the intermediate positions is ±0.25% of the displacement encoder length, and no less than ±2 mm. The level of accuracy of the intermediate positions is ±2° for the swivel module DSMI. Typical applications for the intermediate positions are rest or ejector positions, where a low-cost solution is more important than achieving high levels of accuracy. The intermediate positions also have sensor functionality. This means that when the relevant intermediate position is passed, a 50 ms pulse is produced at the corresponding output.

End position controllers SPC11

Key features

The Festo solution package

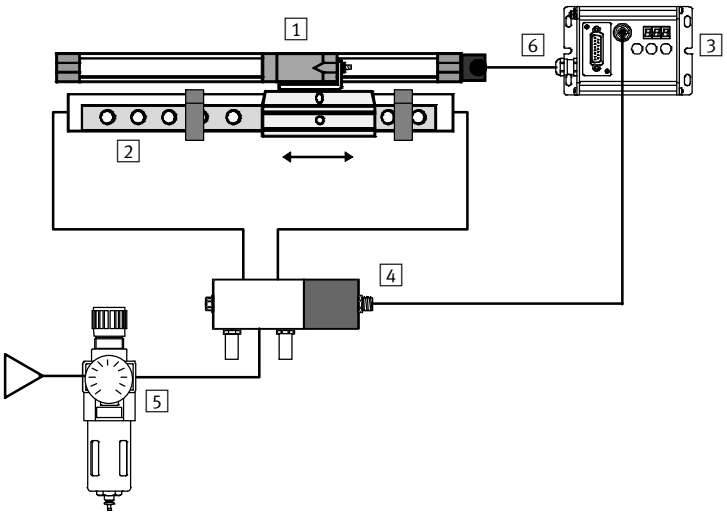
Smart Soft Stop with end position controller SPC11

In an application with up to two intermediate positions you can now:

- Use the Festo solution package with a small number of harmonised components.
- Dispense with complex constructions using stopper cylinders.
- Approach the intermediate positions from both sides.
- Let optimisation be carried out by the learning system itself.

The Smart Soft Stop system with SPC11 has a remote input, which allows all three pushbuttons to be allocated to a master controller:

- All system parameters can be defined and changed externally.
- A signal at the remote input disables all pushbuttons on the end position controller SPC11.



1 Displacement encoder
Digital:
– MME-MTS-...-AIF
– integrated in case of DGPI/DGPIL
– integrated in case of DNCI
Analogue:
– MLO-POT-...-TLF
– MLO-POT-...-LWG
– integrated in case of DSMI

2 Pneumatic drives
DGCI/DGPL, DGPI/DGPIL, DNC, DNCI or DSMI

3 End position controller
SPC11-POT-TLF,
SPC11-POT-LWG or
SPC11-MTS-AIF
SPC11-INC

4 Proportional 5/3-way valve
MPYE-5-...-010B

5 Service unit (without lubricator, with 5 µm filter), supply pressure 5 to 7 bar

6 Operating voltage connection and master controller

End position controllers SPC11

Key features

The solution package

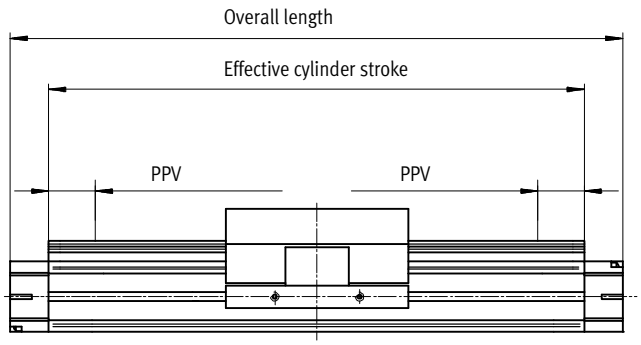
Individual components

- Pneumatic drives DGCI/DGPL, DGPI/DGPIL, DNC, DNCI or DSMI
- Proportional 5/3-way valve MPYE-5-...-010B
- Displacement encoder MLO-POT-...-TLF, MLO-POT-...-LWG or MME-MTS-...-AIF
- End position controller SPC11
- Valve cable KMPYE
- Controller cable KMPV-...
- Manual

Solution packages are uniquely defined, i.e. all components are harmonised for optimum performance. For details of this unique allocation please see ➔ 19 or 33
or
➔ Smart Soft Stop software tool: www.festo.com/en/engineering

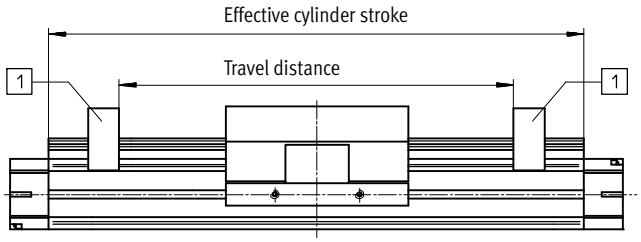
Accessories available on separate order (fittings, tubing, etc.) can be found in the respective solution packages. An example of an order is shown on ➔ 18 or 32.

PPV = Open the internal cushioning 100%



Symmetrical

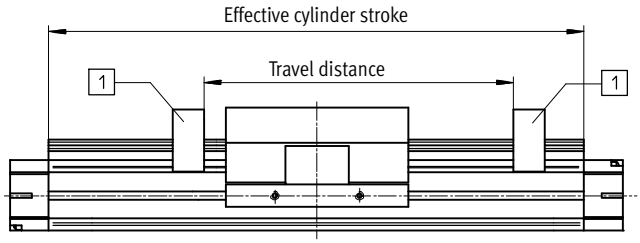
The desired travel distance should not therefore exceed the relevant effective cylinder stroke.
The following thus applies:
travel distance ≤ effective cylinder stroke.



1 Fixed stops, mounted on drive or externally

Asymmetrical

The desired travel distance within the effective cylinder stroke must be limited by means of fixed stops. The same applies to the pneumatic drives DGCI/DNC, DNCI, DNCM and DSMI.



1 Fixed stops, mounted on drive or externally

Note

External limit stops are required in order to realise the effective stroke (or effective swivel angle in the case of DSMI) when using the pneumatic drives DGCI, DNC, DNCI and DSMI with the Smart Soft Stop system.

End position controllers SPC11

Key features

The solution package

Advantages

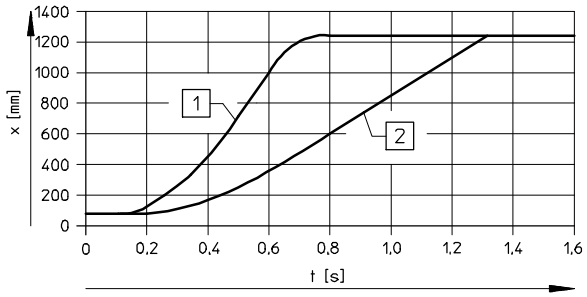
- Up to 30% faster cycle rates
- Significantly reduced system vibration
- Optimum operating behaviour is maintained even with weight/load fluctuations of up to 30% of the total moving mass
- Simple conversion of existing systems
- Considerably reduced noise level
- Fast problem-free commissioning, no specialists required
- Less expensive than electromechanical drives

The graphs apply to the following example:

- DGPL-25-1250-PPV-A-KF-B-GK-...-D2,
- Moving load: 12 kg
- Horizontal mounting position

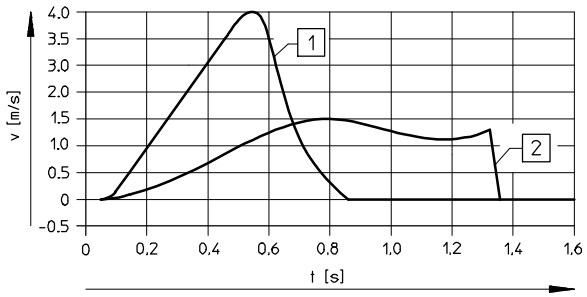
Note

The shape of the curve is identical for the pneumatic drives DGCI, DNC, DNCI, DSMI and DGPIL.



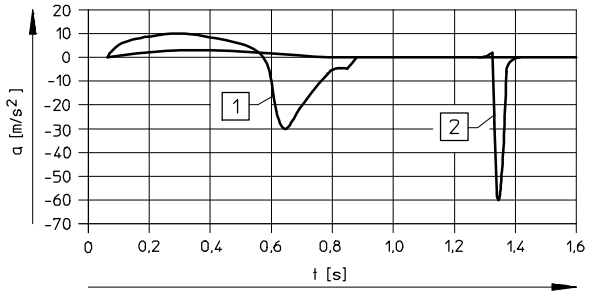
1 = Drive with electronic end position controller SPC11
2 = Drive with shock absorber

x = Travel distance
t = Time



1 = Drive with electronic end position controller SPC11
2 = Drive with shock absorber

v = Velocity
t = Time



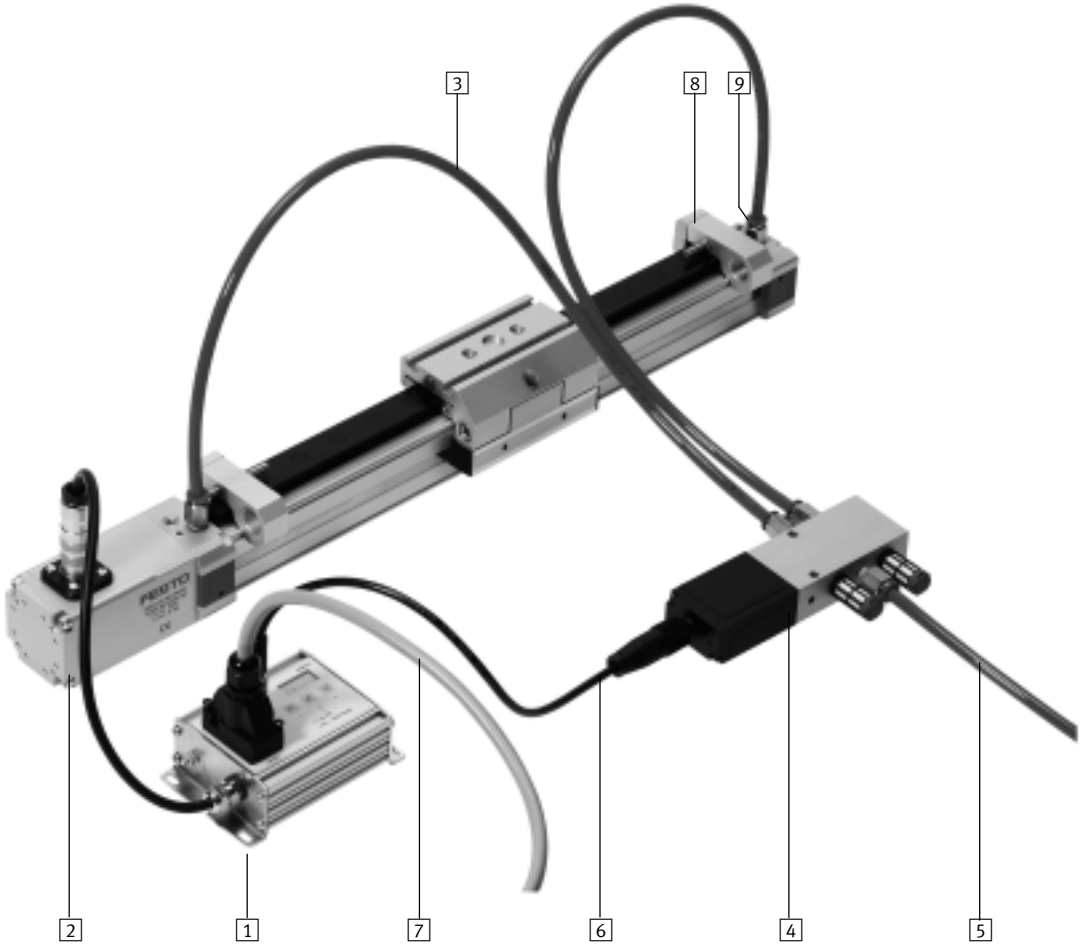
1 = Drive with electronic end position controller SPC11
2 = Drive with shock absorber

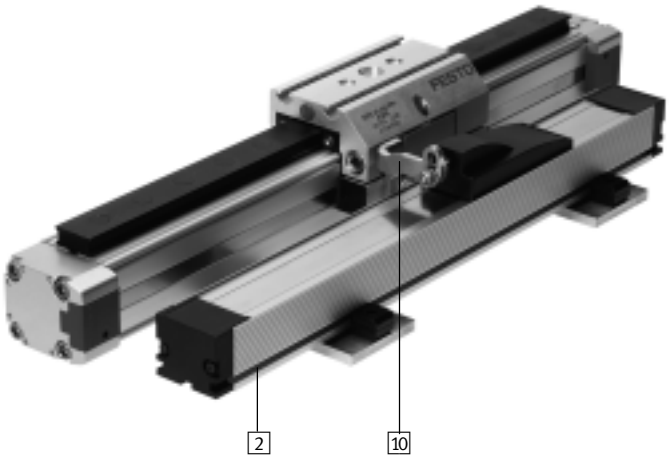
a = Acceleration
t = Time

Festo plug & work = Commissioning in just a few steps

1. Assemble the system components:
   Moving mass must be attached backlash-free.
2. Set up the pneumatic and electrical system connections.
3. Switch on the compressed air and supply voltage.
4. Start the teaching process by means of a button. The system learns autonomously and is ready for operation after 3 minutes.
5. Approach and save intermediate positions by means of buttons.

Variant with drive DGPIL





Note

The same components are required for the drive DGPL as for the drive DGPIL.
The integrated digital displacement encoder of the DGPIL is replaced by an externally mounted displacement encoder (either digital or potentiometric).

End position controllers SPC11

Peripherals overview

Individual components							
	Brief description	Pneumatic drives					
		DGCI	DGPL	DGPI/DGPIL	DNC	DNCI	DSMI
1	End position controller SPC11	■	■	■	■	■	■
1	End position controller SPC11-ASI	–	■	■	■	–	■
2	Analogue displacement encoder MLO-POT-...-TLF	–	■	–	–	–	–
2	Analogue displacement encoder MLO-POT-...-LWG	–	–	–	■	–	–
2	Digital displacement encoder MME-MTS-...-AIF	–	■	–	–	–	–
3	Air supply lines (laid symmetrically)	■	■	■	■	■	■
4	Proportional 5/3-way valve MPYE	■	■	■	■	■	■
5	Compressed air supply	■	■	■	■	■	■
6	Connecting cable KMPYE to proportional 5/3-way valve	■	■	■	■	■	■
7	Connecting cable to controller	■	■	■	■	■	■
8	Fixed stop	■	■	■	1)	1)	■
9	Push-in connector QS (preferably straight)	■	■	■	■	■	■
10	Displacement encoder mounting kit	–	■	–	–	–	–
	Solution packages →	12	18	18	24	28	32

1) External limit stops are required with the DNC and DNCI to limit the travel distance within the effective stroke.

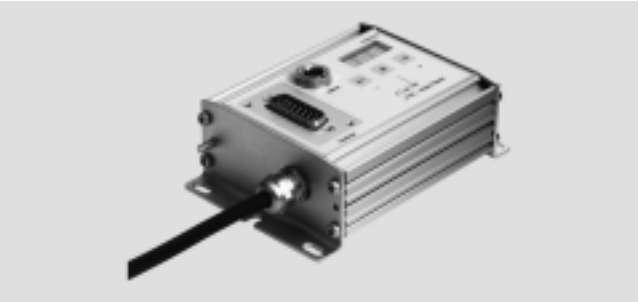
Allocation of end position controller SPC11 to drive and displacement encoder					
End position controller	SPC11-POT-TLF SPC11-POT-TLF-ASI	SPC11-POT-LWG SPC11-POT-LWG-ASI	SPC11-MTS-AIF SPC11-MTS-AIF-ASI	SPC11-INC	SPC11-MTS-AIF-2
Drive					
DGCI	–	–	–	–	■
DGPI/DGPIL	–	–	■	–	–
DNCI	–	–	–	■	–
DSMI	–	■	–	–	–
Displacement encoder					
MLO-POT-TLF	■	–	–	–	–
MLO-POT-LWG	–	■	–	–	–
MME-MTS-AIF	–	–	■	–	–

End position controllers SPC11

Technical data

Teach-in function
SPC11-POT-TLF
SPC11-POT-LWG
SPC11-MTS-AIF
SPC11-INC
SPC11-MTS-AIF-2

The teach-in travel (to determine the system data and end positions) can be started via a button on the end position controller SPC11 or via an external output which is connected through the control cable (e.g. the PLC).

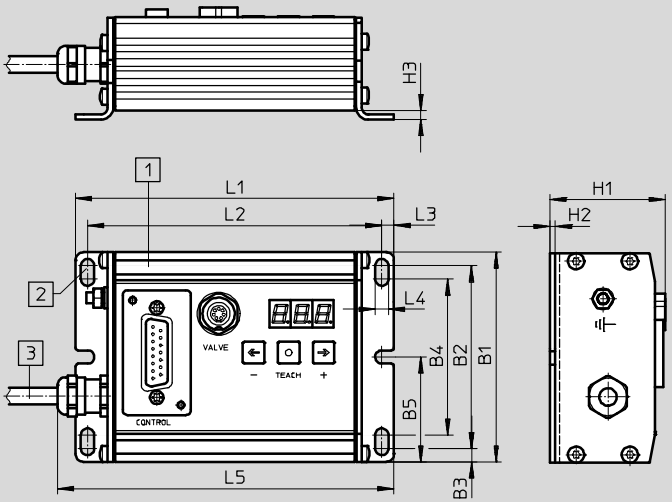


General technical data							
End position controller SPC11-...		Type	...-POT-TLF	...-POT-LWG	...-MTS-AIF	...-INC	...-MTS-AIF-2
Operating voltage		[V DC]	24 (–25 ... +25%)				
Current consumption	with valve	[A]	1.3				1.1
	without valve	[mA]	70		170	80	70
Residual ripple		[%]	Max. 5				
Digital inputs	Number		8				
	Input voltage	[V DC]	24				
	Input current	[mA]	4 (at 24 V DC)				
	Duty cycle	[ms]	min. 20				
	Signal voltage	[V DC]	0 ... 5 (for logic 0)				
			15 ... 30 (for logic 1)				
Digital outputs (short circuit proof)	Number		5				
	Output voltage		min. V_b ... V_b: –3 V DC (at 0.1 A)				
	Output current	[A]	Max. 0.1				
	Max. tripping current	[mA]	500				
Displacement encoder input MLO-POT-...	Operating voltage	[V DC]	+10		–		
	Input voltage	[V DC]	0 ... +10		–		
Displacement encoder input MME-MTS-...	Operating voltage	[V DC]	–		24	–	
	Communication		–		CAN fieldbus (1 Mbaud)	–	
Standard cylinder input DNCI	Operating voltage	[V DC]	–			5	–
	Communication		–			sin/cos	–
Linear drive input DGCI	Operating voltage	[V DC]	–				24
	Communication		–				CAN fieldbus (1 Mbaud)
Valve output	Operating voltage	[V DC]	24				
Valve output	Output voltage	[V DC]	0 ... +10				
Relative air humidity		[%]	95 (non-condensing)				
Weight		[g]	Approx. 400				

Operating and environmental conditions						
End position controller SPC11-...	Type	...-POT-TLF	...-POT-LWG	...-MTS-AIF	...-INC	...-MTS-AIF-2
Temperature range	[°C]	0 ... +50				
Protection class to IEC 60529		IP65				
Vibration resistance, tested to DIN/IEC 68, Part 2-6		Severity level 2				
Shock resistance, tested to DIN/IEC 68, Part 2-27		Severity level 2				
CE mark (see declaration of conformity)		In accordance with EU EMC directive				

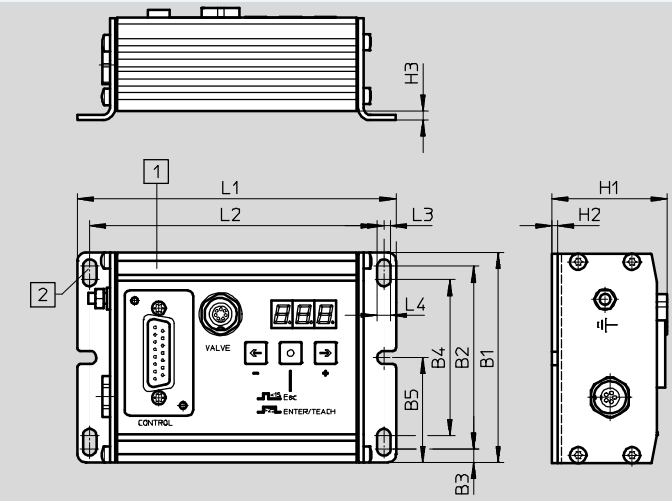
Dimensions Download CAD data ➔ **www.festo.com**

SPC11-POT-TLF, SPC11-POT-LWG, SPC11-MTS-AIF



1 Slot for inscription labels:
18182 IBS-9x20
18576 IBS-6x10
2 Mounting options for M4 screws
3 Connecting cable (length approx. 335 mm)

SPC11-INC, SPC11-MTS-AIF-2



1 Slot for inscription labels:
18182 IBS-9x20
18576 IBS-6x10
2 Mounting options for M4 screws

Type	B1	B2	B3	B4	B5	H1	H2	H3	L1	L2	L3	L4	L5
SPC11-POT-...	78	68	5	58	39	43	2	4.5	118.1	109.1	4.5	5	125
SPC11-MTS-AIF													
SPC11-MTS-AIF-2						42.6		4.2					–
SPC11-INC													–

Ordering data

Description	Part No.	Type
For analogue displacement encoder MLO-POT-...-TLF	**192216**	**SPC11-POT-TLF**
For analogue displacement encoder MLO-POT-...-LWG, swivel module DSMI	**192217**	**SPC11-POT-LWG**
For digital displacement encoder MME-MTS-...-AIF	**192218**	**SPC11-MTS-AIF**
For standard cylinder DNCI	**537321**	**SPC11-INC**
For linear drive DGCI	**548129**	**SPC11-MTS-AIF-2**

Order example

For pneumatic linear drives DGCI

A workpiece weighing 3 kg is to be moved horizontally on a loading station. A workpiece gripper attached to the slide of the linear drive weighs 14 kg. The total weight to be moved is therefore 17 kg. The desired travel distance is 1,100 mm. The travel time is to be < 1.5 seconds.

Step 1:
Selecting the cylinder stroke

For a travel distance of 1,100 mm, use the table on ➔ 13 to select the next-largest effective cylinder stroke of 1,250 mm. This column has a grey background.

Step 2:
Specifying the drive

For a total weight of 17 kg to be moved horizontally, there is a choice of piston diameters of 25, 32 and 40 mm (see data for max. total weight to be moved).
For the purposes of our example, the drive DGCI-32-1250-KF-..., part no. 544427 has been selected.

Step 3:
Specifying a proportional 5/3-way valve

The appropriate proportional 5/3-way valve is shown at the intersection of the grey column used in step 1 and the line for the selected linear drive DGCI-32-... in the "Proportional 5/3-way valve" section of the table.
For the purposes of our example, the proportional 5/3-way valve MPYE-5-¼-010B, part no. 151694 has been selected.

Step 4:
Completing the order information

To order a complete system you must add the data for the end position controller, valve and controller cables and manual (if required). The complete ordering data for our example can be found on ➔ 13. A manual should normally be ordered. If you already have one, leave the appropriate box blank, indicating that you do not want a manual.

Step 5:
Determining the travel time

To calculate the travel time use the "Smart Soft Stop" software tool.
The travel time for the order example is 1.16 seconds.

- Note

For vertical travel, t_{up} and t_{down} are the two different travel times.

- Note

Sizing software
Smart Soft Stop and ProDrive
➔www.festo.com

- Note

Remember when selecting the drive mounting components that some of these are not backlash-free and therefore cannot be used with the Smart Soft Stop system. The drives must be mounted directly.

- Note

Check that the loads placed on the drive by a gripper during movement do not exceed permissible limits. To carry out simulation quickly and easily, use the Smart Soft Stop software tool and ProDrive.

Ordering data

Pneumatic linear drive		Proportional 5/3-way valve		End position controller	
Part No.	Type	Part No.	Type	Part No.	Type
544427	**DGCI-32-1250-KF-...**	**151694**	**MPYE-5-¼-010B**	**548129**	**SPC11-MTS-AIF-2**

Valve cable		Controller cable	
Part No.	Type	Part No.	Type
170238	**KMPYE-AIF-1-GS-GD-2**	**177674**	**KMPV-SUB-D-15-10**

End position controllers SPC11

Technical data

Step 1 and 2:															
Pneumatic linear drives/Type		DGCI-...[1]-...[2]-KF-...													
Effective cylinder stroke	[mm]	100	160	225	300	360	450	500	600	750	1,000	1,250	1,500	1,750	2,000
Max. overall mass to be moved horizontally/ vertically by ∅	18	15/5													
	25	30/10													
	32	45/15													
	40	70/25													
Part No. for ∅	18	544425													
	25	544426													
	32	544427													
	40	544428													

Step 3:															
Proportional 5/3-way valves[3] Part No./Type		1 = 154200 MPYE-5-M5-010-B 2 = 151692 MPYE-5-⅛-LF-010-B							3 = 151693 MPYE-5-⅛-HF-010-B 4 = 151694 MPYE-5-¼-010-B						
Effective cylinder stroke	[mm]	100	160	225	300	360	450	500	600	750	1,000	1,250	1,500	1,750	2,000
Horizontal/vertical for ∅	18	1/1	1/1	1/1	1/1	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	3/3
	25	2/2	2/2	2/2	2/2	3/2	3/2	3/2	3/2	3/2	3/3	3/3	3/3	3/3	3/3
	32	2/2	3/2	3/2	3/2	3/3	3/3	3/3	3/3	3/3	3/3	4/3	4/3	4/3	4/4
	40	3/2	3/2	3/2	3/3	3/3	3/3	3/3	4/3	4/3	4/3	4/4	4/4	4/4	4/4

Step 5:				
End position controllers and accessories		Part No.	Type	Brief description
End position controller	SPC11	**548129**	**SPC11-MTS-AIF-2**	
Cable	Valve	**170238**	**KMPYE-AIF-1-GS-GD-2**	Cable length 2 m
		170239	**KMPYE-AIF-1-GS-GD-0,3**	Cable length 0.3 m
	SPC11/PLC	**177673**	**KMPV-SUB-D-15-5**	Cable length 5 m
		177674	**KMPV-SUB-D-15-10**	Cable length 10 m

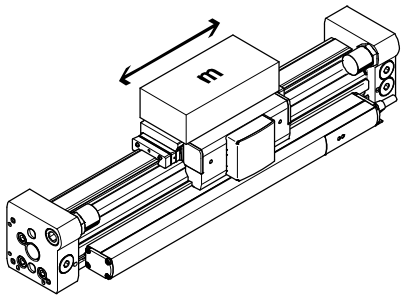
- Note

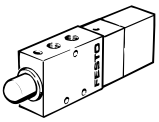
Manuals ➔ 37

1) Indicate piston ∅. Technical data and dimensions ➔ www.festo.com.
2) Indicate calculated effective stroke of cylinder.
3) Technical data and dimensions ➔ Internet: mpye.

Accessories for the solution package for DGCI horizontally mounted

For effective cylinder stroke 100 ... 2,000 mm





Ordering data

Effective cylinder stroke DGCI-... [mm]	Proportional 5/3-way valve Type	Fittings[1] For MPYE-5-... Part No.	Type	For DGCI Part No.	Type	Compressed air tubing Part No.	Type	Silencer[2] Part No.	Type
∅ 18 mm									
100 ... 160	**MPYE-5-M5-010-B**	**153306**	**QSM-M5-6**	**153306**	**QSM-M5-6**	**152586**	**PUN-6x1-SI**	**165003**	**UC-M5**
225 ... 300	**MPYE-5-M5-010-B**								
360 ... 1,750	**MPYE-5-⅛-LF-010-B**	**153002**	**QS-⅛-6**	**153306**	**QSM-M5-6**	**152586**	**PUN-6x1-SI**	**2307**	**U-⅛**
2,000	**MPYE-5-⅛-HF-010-B**								
∅ 25 mm									
100 ... 160	**MPYE-5-⅛-LF-010-B**	**153002**	**QS-⅛-6**	**153002**	**QS-⅛-6**	**152586**	**PUN-6x1-SI**	**2307**	**U-⅛**
225 ... 300	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153004**	**QS-⅛-8**	**152587**	**PUN-8x1,25-SI**	**2307**	**U-⅛**
360 ... 2,000	**MPYE-5-⅛-HF-010-B**								
∅ 32 mm									
100	**MPYE-5-⅛-LF-010-B**	**153002**	**QS-⅛-6**	**153002**	**QS-⅛-6**	**152586**	**PUN-6x1-SI**	**2307**	**U-⅛**
160 ... 1,000	**MPYE-5-⅛-HF-010-B**	**153004**	**QS-⅛-8**	**153004**	**QS-⅛-8**	**152587**	**PUN-8x1,25-SI**		
1,250 ... 2,000	**MPYE-5-¼-010-B**	**153005**	**QS-¼-8**					**2316**	**U-¼**
∅ 40 mm									
100 ... 160	**MPYE-5-⅛-HF-010-B**	**153004**	**QS-⅛-8**	**153005**	**QS-¼-8**	**152587**	**PUN-8x1,25-SI**	**2307**	**U-⅛**
225 ... 500	**MPYE-5-⅛-HF-010-B**								
600 ... 750	**MPYE-5-¼-010-B**	**153005**	**QS-¼-8**	**153005**	**QS-¼-8**	**152587**	**PUN-8x1,25-SI**	**2316**	**U-¼**
1,000 ... 2,000	**MPYE-5-¼-010-B**	**153007**	**QS-¼-10**	**153007**	**QS-¼-10**	**152588**	**PUN-10x1,5-SI**	**2316**	**U-¼**

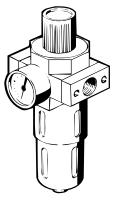
1) Fittings sold only in packs of 10.
2) 2 pieces are required.

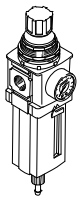
End position controllers SPC11

Technical data

Accessories for the solution package for DGCI horizontally mounted

For effective cylinder stroke 100 ... 2,000 mm



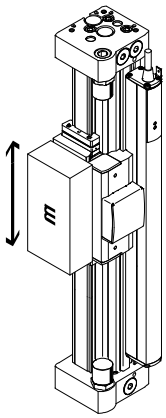


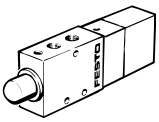
Ordering data

Effective cylinder stroke DGCI... [mm]	Filter regulator, D series with filter cartridge 5 µm		Filter cartridge 5 µm D series		Filter regulator, MS series with filter cartridge 5 µm		Filter cartridge 5 µm MS series	
	Part No.	Type	Part No.	Type	Part No.	Type	Part No.	Type
∅ 18 mm								
100 ... 2,000	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
∅ 25 mm								
100 ... 2,000	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
∅ 32 mm								
100 ... 1,000	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
1,250 ... 2,000	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
∅ 40 mm								
100 ... 500	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
600 ... 2,000	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**

Accessories for the solution package for DGCI vertically mounted

For effective cylinder stroke 100 ... 2,000 mm





Ordering data

Effective cylinder stroke DGCI [mm]	Proportional 5/3-way valve Type	Fittings[1] For MPYE-5-... Part No.	Type	DGCI Part No.	Type	Compressed air tubing Part No.	Type	Silencer[2] Part No.	Type
∅ 18 mm									
100 ... 300	**MPYE-5-M5-010-B**	**153306**	**QSM-M5-6**	**153306**	**QSM-M5-6**	**152586**	**PUN-6x1-SI**	**165003**	**UC-M5**
360 ... 1,750	**MPYE-5-1/8-LF-010-B**	**153002**	**QS-1/8-6**					**2307**	**U-1/8**
2,000	**MPYE-5-1/8-HF-010-B**								
∅ 25 mm									
100 ... 160	**MPYE-5-1/8-LF-010-B**	**153002**	**QS-1/8-6**	**153002**	**QS-1/8-6**	**152586**	**PUN-6x1-SI**	**2307**	**U-1/8**
225 ... 750	**MPYE-5-1/8-LF-010-B**	**153004**	**QS-1/8-8**	**153004**	**QS-1/8-8**	**152587**	**PUN-8x1,25-SI**		
1,000 ... 2,000	**MPYE-5-1/8-HF-010-B**								
∅ 32 mm									
100	**MPYE-5-1/8-LF-010-B**	**153002**	**QS-1/8-6**	**153002**	**QS-1/8-6**	**152586**	**PUN-6x1-SI**	**2307**	**U-1/8**
160 ... 300	**MPYE-5-1/8-LF-010-B**	**153004**	**QS-1/8-8**	**153004**	**QS-1/8-8**	**152587**	**PUN-8x1,25-SI**	**2307**	**U-1/8**
360 ... 1,750	**MPYE-5-1/8-HF-010-B**								
2,000	**MPYE-5-1/4-010-B**	**153005**	**QS-1/4-8**					**2316**	**U-1/4**
∅ 40 mm									
100 ... 225	**MPYE-5-1/8-LF-010-B**	**153004**	**QS-1/8-8**	**153005**	**QS-1/4-8**	**152587**	**PUN-8x1,25-SI**	**2307**	**U-1/8**
300 ... 750	**MPYE-5-1/8-HF-010-B**								
1,000	**MPYE-5-1/8-HF-010-B**	**190643**	**QS-1/8-10**	**153007**	**QS-1/4-10**	**152588**	**PUN-10x1,5-SI**		
1,250 ... 2,000	**MPYE-5-1/4-010-B**	**153007**	**QS-1/4-10**					**2316**	**U-1/4**

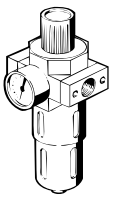
1) Fittings sold only in packs of 10.
2) 2 pieces are required.

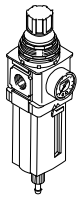
End position controllers SPC11

Technical data

Accessories for the solution package for DGCI vertically mounted

For effective cylinder stroke 100 ... 2,000 mm





Ordering data

Effective cylinder stroke DGCI [mm]	Filter regulator, D series with filter cartridge 5 µm		Filter cartridge 5 µm D series		Filter regulator, MS series with filter cartridge 5 µm		Filter cartridge 5 µm MS series	
	Part No.	Type	Part No.	Type	Part No.	Type	Part No.	Type
∅ 18 mm								
100 ... 2,000	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
∅ 25 mm								
100 ... 2,000	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
∅ 32 mm								
100 ... 1,000	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
1,250 ... 2,000	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
∅ 40 mm								
100 ... 500	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
600 ... 2,000	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**

Order example

For pneumatic linear drives DGPL, DGPI/DGPIL

A workpiece weighing 3 kg is to be moved horizontally on a loading station. A workpiece gripper attached to the slide of the linear drive weighs 14 kg. The total weight to be moved is therefore 17 kg. The desired travel distance is 1,100 mm. The travel time is to be < 1.5 seconds.

Step 1:
Selecting the cylinder stroke

For a travel distance of 1,100 mm, use the table on ➔ 19 to select the next-largest effective cylinder stroke of 1,250 mm. This column has a grey background.

Step 2:
Specifying the drive

For a total weight of 17 kg to be moved horizontally, there is a choice of piston diameters of 25, 32, 40, 50 and 63 mm (see data for max. total weight to be moved).
For the purposes of our example, the drive DGPL-32-1250-PPV-A-B-KF-GK-...-D2, part no. 175 135 has been selected.

Step 3:
Specifying the displacement encoder

The appropriate length of the displacement encoder is governed by the effective cylinder stroke.
The column with the grey background in the "Displacement encoder" section of the table shows Part No. 152633 for this example.
Alternatively, the digital displacement encoder MME-MTS-...-AIF can be used.

Step 4:
Specifying a proportional 5/3-way valve

The appropriate proportional 5/3-way valve is shown at the intersection of the grey column used in step 1 and the line for the selected linear drive DGPL-32-... in the "Proportional 5/3-way valve" section of the table.
For the purposes of our example, the proportional 5/3-way valve MPYE-5-¼-010B, part no. 151694 has been selected.

Step 5:
Completing the order information

To order a complete system you must add the data for the end position controller, valve and controller cables and manual (if required). The complete ordering data for our example can be found on ➔ 19. A manual should normally be ordered. If you already have one, leave the appropriate box blank, indicating that you do not want a manual.

Step 6:
Determining the travel time

To calculate the travel time use the "Smart Soft Stop" software tool.
The travel time for the order example is 1.16 seconds.

- Note

For vertical travel, t_{up} and t_{down} are the two different travel times.

- Note

Sizing software
Smart Soft Stop and ProDrive
➔www.festo.com

- Note

Remember when selecting the drive mounting components that some of these are not backlash-free and therefore cannot be used with the Smart Soft Stop system. The drives must be mounted directly.

- Note

Check that the loads placed on the drive by a gripper during movement do not exceed permissible limits.
To carry out simulation quickly and easily, use the Smart Soft Stop software tool and ProDrive.

- Note

The moment compensator FKP is not backlash-free. It must not therefore be used in combination with linear drives DGPI.

Ordering data

Pneumatic linear drive		Displacement encoder		Proportional 5/3-way valve		End position controller	
Part No.	Type	Part No.	Type	Part No.	Type	Part No.	Type
175135	**DGPL-32-1250-PPV-A-B-KF-GK-...-D2**	**152633**	**MLO-POT-1250-TLF**	**151694**	**MPYE-5-¼-010B**	**192216**	**SPC11-POT-TLF**

Valve cable		Controller cable	
Part No.	Type	Part No.	Type
170238	**KMPYE-AIF-1-GS-GD-2**	**177674**	**KMPV-SUB-D-15-10**

End position controllers SPC11

Technical data

Step 1 and 2:													
Pneumatic linear drives/Type		DGPL-...[1]-...[3]-PPV-A-KF-B-GK-...-D2								DGPI-...[2]-...[3]-PPV-A-B-D2 DGPIL-...[2]-...[3]-PPV-A-B-KF-...-D2			
Effective cylinder stroke	[mm]	225	300	360	450	500	600	750	1,000	1,250	1,500	1,750	2,000
Max. overall mass to be moved horizontally/ vertically by ∅	25	30/10 kg											
	32	45/15 kg											
	40	70/25 kg											
	50	120/40 kg											
	63	180/60 kg											
Part No. for ∅	25	175134											
	32	175135											
	40	175136											
	50	175137											
	63	175138											

Step 3:													
Displacement encoder[5]		MLO-POT-...-TLF MME-MTS-...-AIF											
Effective cylinder stroke	[mm]	225	300	360	450	500	600	750	1,000	1,250	1,500	1,750	2,000
Potentiometer length	[mm]	225	300	360	450	500	600	750	1,000	1,250	1,500	1,750	2,000
Part No.	MLO-POT-...-TLF	152625	152626	152627	152628	152629	152630	152631	152632	152633	152634	152635	152636
	MME-MTS-...-AIF	178310	178309	178308	178307	178306	178305	178304	178303	178302	178301	178300	178299

Step 4:													
Proportional 5/3-way valves[6] Part No./Type		1 = 151692 MPYE-5-1/8-LF-010-B 2 = 151693 MPYE-5-1/8-HF-010-B					3 = 151694 MPYE-5-1/4-010-B 4 = 151695 MPYE-5-3/8-010-B						
Effective cylinder stroke	[mm]	225	300	360	450	500	600	750	1,000	1,250	1,500	1,750	2,000
Horizontal/vertical for ∅	25	1/[4]	1/1	2/1	2/1	2/1	2/2	2/2	2/3	2/3	2/3	2/3	2/3
	32	1/[4]	2/1	2/1	2/1	2/1	2/1	3/2	3/3	3/3	3/3	3/3	3/3
	40	2/1	2/1	2/1	2/1	2/2	3/3	3/4	3/4	3/4	3/4	3/4	3/4
	50	1/1	2/1	2/2	3/2	3/3	4/3	4/4	4/4	4/4	4/4	4/4	4/4
	63	2/1	2/2	3/3	3/3	4/4	4/4	4/4	4/4	4/4	4/4	4/4	4/4

Step 5:				
End position controllers and accessories		Part No.	Type	Brief description
End position controller	SPC11	**192216**	**SPC11-POT-TLF**	
		192218	**SPC11-MTS-AIF**	
Cable	Valve	**170238**	**KMPYE-AIF-1-GS-GD-2**	Cable length 2 m
		170239	**KMPYE-AIF-1-GS-GD-0,3**	Cable length 0.3 m
	SPC11/PLC	**177673**	**KMPV-SUB-D-15-5**	Cable length 5 m
		177674	**KMPV-SUB-D-15-10**	Cable length 10 m

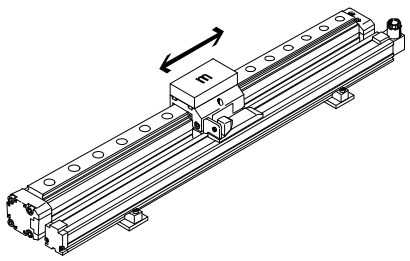
- Note

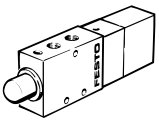
Manuals ➔ 37

1) Indicate piston ∅. Technical data and dimensions ➔ www.festo.com.
2) Indicate piston ∅. Technical data and dimensions ➔ www.festo.com.
3) Indicate calculated effective stroke of cylinder.
4) On request
5) Technical data and dimensions ➔ www.festo.com.
(not needed for DGPI/DGPIL, has integrated displacement encoder).
6) Technical data and dimensions ➔ www.festo.com.

Accessories for the solution package for DGPL, DGPI/DGPIL horizontally mounted

For effective cylinder stroke 225 ... 2,000 mm





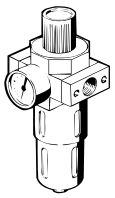
Ordering data

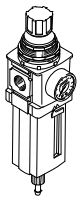
Effective cylinder stroke DGPL, DGPI/DGPIL [mm]	Proportional 5/3-way valve	Fittings[1]				Compressed air tubing		Silencer[2]	
		For MPYE-5-...		DGPL, DGPI/DGPIL					
	Type	Part No.	Type	Part No.	Type	Part No.	Type	Part No.	Type
∅ 25 mm									
225 ... 300	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153004**	**QS-⅛-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
360 ... 2,000	**MPYE-5-⅛-HF-010-B**								
∅ 32 mm									
225	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153004**	**QS-⅛-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
300 ... 600	**MPYE-5-⅛-HF-010-B**								
750 ... 2,000	**MPYE-5-¼-010-B**	**153005**	**QS-¼-8**	**153004**	**QS-⅛-8**	**152587**	**PUN-8x1,25**	**2316**	**U-¼**
∅ 40 mm									
225 ... 500	**MPYE-5-⅛-HF-010-B**	**153004**	**QS-⅛-8**	**153005**	**QS-¼-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
600 ... 2,000	**MPYE-5-¼-010-B**	**153007**	**QS-¼-10**	**153007**	**QS-¼-10**	**152588**	**PUN-10x1,5**	**2316**	**U-¼**
∅ 50 mm									
225	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153005**	**QS-¼-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
300 ... 360	**MPYE-5-⅛-HF-010-B**								
450 ... 500	**MPYE-5-¼-010-B**	**153007**	**QS-¼-10**	**153007**	**QS-¼-10**	**152588**	**PUN-10x1,5**	**2316**	**U-¼**
600 ... 2,000	**MPYE-5-⅜-010-B**	**153008**	**QS-⅜-10**					**2309**	**U-⅜**
∅ 63 mm									
225 ... 300	**MPYE-5-⅛-HF-010-B**	**153004**	**QS-⅛-8**	**153006**	**QS-⅜-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
360 ... 450	**MPYE-5-¼-010-B**	**153007**	**QS-¼-10**	**153008**	**QS-⅜-10**	**152588**	**PUN-10x1,5**	**2316**	**U-¼**
500 ... 2,000	**MPYE-5-⅜-010-B**	**153009**	**QS-⅜-12**	**153009**	**QS-⅜-12**	**152589**	**PUN-12x2**	**2309**	**U-⅜**

1) Fittings sold only in packs of 10.
2) 2 pieces are required.

Accessories for the solution package for DGPL, DGPI/DGPIL horizontally mounted

For effective cylinder stroke 225 ... 2,000 mm






Ordering data

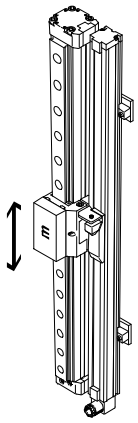
Effective cylinder stroke DGPL, DGPI/DGPIL [mm]	Filter regulator, D series with filter cartridge 5 µm		Filter cartridge 5 µm D series		Filter regulator, MS series with filter cartridge 5 µm		Filter cartridge 5 µm MS series	
	Part No.	Type	Part No.	Type	Part No.	Type	Part No.	Type
∅ 25 mm								
225 ... 2,000	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
∅ 32 mm								
225 ... 600	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
750 ... 2,000	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
∅ 40 mm								
225 ... 500	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
600 ... 2,000	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
∅ 50 mm								
225 ... 360	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
450 ... 500	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
600 ... 2,000	**162724**	**LFR-¾-D-5M-MAXI**	**159641**	**LFP-D-MAXI-5M**	**529224**	**MS6-LFR-⅜-D7-CRM-AS**	**534499**	**MS6-LFP-C**
∅ 63 mm								
225 ... 300	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
360 ... 450	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
500 ... 2,000	**162724**	**LFR-¾-D-5M-MAXI**	**159641**	**LFP-D-MAXI-5M**	**529224**	**MS6-LFR-⅜-D7-CRM-AS**	**534499**	**MS6-LFP-C**

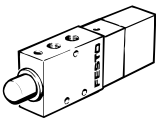
End position controllers SPC11

Technical data

Accessories for the solution package for DGPL, DGPI/DGPIL vertically mounted

For effective cylinder stroke 225 ... 2,000 mm





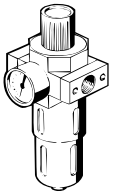
Ordering data

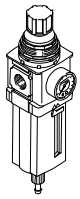
Effective cylinder stroke DGPL, DGPI/DGPIL [mm]	Proportional 5/3-way valve Type	Fittings[1] For MPYE-5-... Part No.	Type	DGPL, DGPI/DGPIL Part No.	Type	Compressed air tubing Part No.	Type	Silencer[2] Part No.	Type
∅ 25 mm									
225 ... 500	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153004**	**QS-⅛-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
600 ... 750	**MPYE-5-⅛-HF-010-B**								
1,000 ... 2,000	**MPYE-5-¼-010-B**	**153005**	**QS-¼-8**					**2316**	**U-¼**
∅ 32 mm									
225 ... 600	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153004**	**QS-⅛-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
750	**MPYE-5-⅛-HF-010-B**								
1,000 ... 2,000	**MPYE-5-¼-010-B**	**153005**	**QS-¼-8**					**2316**	**U-¼**
∅ 40 mm									
225 ... 450	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153005**	**QS-¼-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
500	**MPYE-5-⅛-HF-010-B**			**153005**	**QS-¼-8**				
600	**MPYE-5-¼-010-B**	**153007**	**QS-¼-10**	**153007**	**QS-¼-10**	**152588**	**PUN-10x1,5**	**2316**	**U-¼**
750 ... 2,000	**MPYE-5-⅜-010-B**	**153008**	**QS-⅜-10**					**2309**	**U-⅜**
∅ 50 mm									
225 ... 300	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153005**	**QS-¼-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
360 ... 450	**MPYE-5-⅛-HF-010-B**								
500 ... 600	**MPYE-5-¼-010-B**	**153007**	**QS-¼-10**	**153007**	**QS-¼-10**	**152588**	**PUN-10x1,5**	**2316**	**U-¼**
750 ... 2,000	**MPYE-5-⅜-010-B**	**153008**	**QS-⅜-10**					**2309**	**U-⅜**
∅ 63 mm									
225	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153006**	**QS-⅜-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
300	**MPYE-5-⅛-HF-010-B**								
360 ... 450	**MPYE-5-¼-010-B**	**153007**	**QS-¼-10**	**153008**	**QS-⅜-10**	**152588**	**PUN-10x1,5**	**2316**	**U-¼**
500 ... 2,000	**MPYE-5-⅜-010-B**	**153009**	**QS-⅜-12**	**153009**	**QS-⅜-12**	**152589**	**PUN-12x2**	**2309**	**U-⅜**

1) Fittings sold only in packs of 10.
2) 2 pieces are required.

Accessories for the solution package for DGPL, DGPI/DGPIL vertically mounted

For effective cylinder stroke 225 ... 2,000 mm






Ordering data

Effective cylinder stroke DGPL, DGPI/DGPIL [mm]	Filter regulator, D series with filter cartridge 5 µm		Filter cartridge 5 µm D series		Filter regulator, MS series with filter cartridge 5 µm		Filter cartridge 5 µm MS series	
	Part No.	Type	Part No.	Type	Part No.	Type	Part No.	Type
∅ 25 mm								
225 ... 750	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
1,000 ... 2,000	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
∅ 32 mm								
225 ... 750	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
1,000 ... 2,000	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
∅ 40 mm								
225 ... 500	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
600	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
750 ... 2,000	**162724**	**LFR-¾-D-5M-MAXI**	**159641**	**LFP-D-MAXI-5M**	**529224**	**MS6-LFR-⅜-D7-CRM-AS**		
∅ 50 mm								
225 ... 300	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
360 ... 600	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
750 ... 2,000	**162724**	**LFR-¾-D-5M-MAXI**	**159641**	**LFP-D-MAXI-5M**	**529224**	**MS6-LFR-⅜-D7-CRM-AS**		
∅ 63 mm								
225 ... 300	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
360 ... 450	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
500 ... 2,000	**162724**	**LFR-¾-D-5M-MAXI**	**159641**	**LFP-D-MAXI-5M**	**529224**	**MS6-LFR-⅜-D7-CRM-AS**		

End position controllers SPC11

Technical data

Order example

For the pneumatic drive DNC with displacement encoder LWG

A workpiece weighing 55 kg is to be moved horizontally on a loading station. The workpiece gripper attached to the piston rod of the drive weighs 40 kg. The total weight to be moved is therefore 95 kg. The desired travel distance is 300 mm. The travel time is to be < 1.5 seconds.

Step 1:
Selecting the cylinder stroke

For a travel distance of 300 mm, use the table on ➔ 25 to select the next-largest standard stroke of 320 mm or the effective cylinder stroke of 291 ... 350 mm. This column has a grey background.

Step 2:
Specifying the drive

For a total weight of 95 kg to be moved horizontally, there is a choice of piston diameters of 50, 63 and 80 mm (see data for max. total weight to be moved).
For the purposes of our example, the drive DNC-50-320-PPV-A, part no. 163378 has been selected.

Step 3:
Specifying the displacement encoder

The appropriate length of the displacement encoder is governed by the effective cylinder≤ stroke.
The column with the grey background in the "Displacement encoder" section of the table shows Part No. 152647 for this example.

- - Note

The linear potentiometer is supplied separately and must be mounted by the user.

Step 4:
Specifying a proportional 5/3-way valve

The appropriate proportional 5/3-way valve is shown at the intersection of the grey column used in step 1 and the line for the selected pneumatic drive DNC-50-... in the "Proportional 5/3-way valve" section of the table.
For the purposes of our example, the proportional 5/3-way valve MPYE-5-1/8- HF-010B, part no. 151693 has been selected.

Step 5:
Completing the order information

To order a complete system you must add the data for the end position controller, valve and controller cables and manual (if required). The complete ordering data for our example can be found on ➔ 25. A manual should normally be ordered. If you already have one, leave the appropriate box blank, indicating that you do not want a manual.

Step 6:
Determining the travel time

To calculate the travel time use the "Smart Soft Stop" software tool.
The travel time for the order example is 0.96 seconds.

- - Note

Sizing software
Smart Soft Stop and ProDrive
➔www.festo.com

- - Note

Remember when selecting the drive mounting components that some of these are not backlash-free and therefore cannot be used with the Smart Soft Stop system. The drives must be mounted directly.

- - Note

Check that the loads placed on the drive by a gripper during movement do not exceed permissible limits. To carry out simulation quickly and easily, use the Smart Soft Stop software tool.

- - Note

The self-aligning rod coupler FK is not backlash-free. It must not therefore be used in combination with standard cylinder DNC.

Ordering data

Pneumatic drive		Displacement encoder		Proportional 5/3-way valve		End position controller	
Part No.	Type	Part No.	Type	Part No.	Type	Part No.	Type
163378	**DNC-50-320-PPV-A**	**152647**	**MLO-POT-360-LWG**	**151693**	**MPYE-5-1/8-HF-010B**	**192217**	**SPC11-POT-LWG**

Valve cable		Controller cable	
Part No.	Type	Part No.	Type
170238	**KMPYE-AIF-1-GS-GD-2**	**177674**	**KMPV-SUB-D-15-10**

End position controllers SPC11

Technical data

Step 1 and 2:											
Standard cylinders/Type		DNC-...[1]-...[2]-PPV-A									
Max. effective cylinder stroke	[mm]	100	150	150	225	225	300	360	450	600	750
Effective cylinder stroke (standard stroke)	[mm]	80	100	125	160	200	250	320	400	500	650
Max. overall mass to be moved horizontally by ∅	32	45 kg									
	40	75 kg									
	50	120 kg									
	63	180 kg									
	80	300 kg									
Part No. for ∅	32	163308	163309	163310	163311	163312	163313	163314	163315	163316	163304
	40	163340	163341	163342	163343	163344	163345	163346	163347	163348	163336
	50	163372	163373	163374	163375	163376	163377	163378	163379	163380	163368
	63	163404	163405	163406	163407	163408	163409	163410	163411	163412	163400
	80	163436	163437	163438	163439	163440	163441	163442	163443	163444	163432

Step 3:											
Displacement encoder[3]		MLO-POT-...-LWG									
Max. effective cylinder stroke	[mm]	100	150	150	225	225	300	360	450	600	750
Potentiometer length	[mm]	100	150	150	225	225	300	360	450	600	750
Part No.		192213	192214	192214	152645	152645	152646	152647	152648	152650	152651

Step 4:											
Proportional 5/3-way valves[4] Part No./Type		1 = 151692 MPYE-5-⅛-LF-010-B 2 = 151693 MPYE-5-⅛-HF-010-B				3 = 151694 MPYE-5-¼-010-B 4 = 151695 MPYE-5-⅜-010-B					
Max. effective cylinder stroke	[mm]	100	150	150	225	225	300	360	450	600	750
Horizontal for ∅	32	1	1	1	1	1	1	1	1	2	2
	40	1	1	1	1	1	1	2	2	3	3
	50	1	1	1	1	1	1	2	2	3	3
	63	1	1	1	1	2	2	2	3	3	4
	80	1	1	2	2	3	3	3	3	4	4

Step 5:				
End position controllers and accessories		Part No.	Type	Brief description
End position controller	SPC11	**192217**	**SPC11-POT-LWG**	
Cable	Valve	**170238**	**KMPYE-AIF-1-GS-GD-2**	Cable length 2 m
		170239	**KMPYE-AIF-1-GS-GD-0,3**	Cable length 0.3 m
	SPC11/PLC	**177673**	**KMPV-SUB-D-15-5**	Cable length 5 m
		177674	**KMPV-SUB-D-15-10**	Cable length 10 m

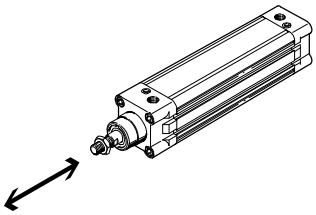
- Note

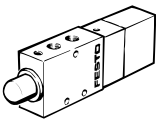
Manuals ➔ 37

1) Indicate piston ∅. Technical data and dimensions ➔ www.festo.com.
2) Indicate calculated effective stroke of cylinder.
3) Technical data and dimensions ➔ www.festo.com.
4) Technical data and dimensions ➔ www.festo.com.

Accessories for the solution package for DNC horizontally mounted

For effective cylinder stroke 80 ...750 mm





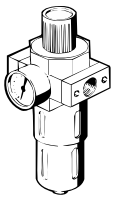
Ordering data

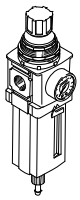
Effective cylinder stroke DNC-... [mm]	Proportional 5/3-way valve Type	Fittings[1] For MPYE-5-... Part No.	Type	DNC Part No.	Type	Compressed air tubing Part No.	Type	Silencer[2] Part No.	Type
∅ 32 mm									
80 ... 440	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153004**	**QS-⅛-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
441 ... 735	**MPYE-5-⅛-HF-010-B**								
∅ 40 mm									
80 ... 290	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153005**	**QS-¼-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
291 ... 440	**MPYE-5-⅛-HF-010-B**			**153005**	**QS-¼-8**				
441 ... 735	**MPYE-5-¼-010-B**	**153007**	**QS-¼-10**	**153007**	**QS-¼-10**	**152588**	**PUN-10x1,5**	**2316**	**U-¼**
∅ 50 mm									
80 ... 290	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153005**	**QS-¼-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
291 ... 440	**MPYE-5-⅛-HF-010-B**								
441 ... 735	**MPYE-5-¼-010-B**	**153007**	**QS-¼-10**	**153007**	**QS-¼-10**	**152588**	**PUN-10x1,5**	**2316**	**U-¼**
∅ 63 mm									
80 ... 175	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153006**	**QS-⅜-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
176 ... 350	**MPYE-5-⅛-HF-010-B**			**153006**	**QS-⅜-8**				
351 ... 590	**MPYE-5-¼-010-B**	**153007**	**QS-¼-10**	**153008**	**QS-⅜-10**	**152588**	**PUN-10x1,5**	**2316**	**U-¼**
591 ... 735	**MPYE-5-⅜-010-B**	**153009**	**QS-⅜-12**	**153009**	**QS-⅜-12**	**152589**	**PUN-12x2**	**2309**	**U-⅜**
∅ 80 mm									
80 ... 115	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153006**	**QS-⅜-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
116 ... 175	**MPYE-5-⅛-HF-010-B**			**153006**	**QS-⅜-8**				
176 ... 440	**MPYE-5-¼-010-B**	**153007**	**QS-¼-10**	**153008**	**QS-⅜-10**	**152588**	**PUN-10x1,5**	**2316**	**U-¼**
441 ... 735	**MPYE-5-⅜-010-B**	**153009**	**QS-⅜-12**	**153009**	**QS-⅜-12**	**152589**	**PUN-12x2**	**2309**	**U-⅜**

1) Fittings sold only in packs of 10.
2) 2 pieces are required.

Accessories for the solution package for DNC horizontally mounted

For effective cylinder stroke 80 ...750 mm






Ordering data

Effective cylinder stroke DNC-... [mm]	Filter regulator, D series with filter cartridge 5 µm		Filter cartridge 5 µm D series		Filter regulator, MS series with filter cartridge 5 µm		Filter cartridge 5 µm MS series	
	Part No.	Type	Part No.	Type	Part No.	Type	Part No.	Type
∅ 32 mm								
80 ... 735	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
∅ 40 mm								
80 ... 440	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
441 ... 735	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
∅ 50 mm								
80 ... 440	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
441 ... 735	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
∅ 63 mm								
80 ... 350	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
351 ... 590	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
591 ... 735	**162724**	**LFR-¾-D-5M-MAXI**	**159641**	**LFP-D-MAXI-5M**	**529224**	**MS6-LFR-⅜-D7-CRM-AS**	**534499**	**MS6-LFP-C**
∅ 80 mm								
80 ... 175	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
176 ... 440	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
441 ... 735	**162724**	**LFR-¾-D-5M-MAXI**	**159641**	**LFP-D-MAXI-5M**	**529224**	**MS6-LFR-⅜-D7-CRM-AS**	**534499**	**MS6-LFP-C**

End position controllers SPC11

Technical data

Order example

For pneumatic standard drive DNCI with integrated displacement encoder

A workpiece weighing 55 kg is to be moved horizontally on a loading station. The workpiece gripper attached to the piston rod of the drive weighs 40 kg. The total weight to be moved is therefore 95 kg. The desired travel distance is 300 mm. The travel time is to be < 1.5 seconds.

Step 1:
Selecting the cylinder stroke

For a travel distance of 300 mm, use the table on ➔ 29 to select the next-largest standard stroke of 320 mm or the effective cylinder stroke of 320 mm. This column has a grey background.

Step 2:
Specifying the drive

For a total weight of 95 kg to be moved horizontally, there is a choice of piston diameters of 50 and 63 mm (see data for max. total weight to be moved).
For the purposes of our example, the drive DNCI-50-320-P-A, part no. 535413 has been selected.

Step 3:
Specifying a proportional 5/3-way valve

The appropriate proportional 5/3-way valve is shown at the intersection of the grey column used in step 1 and the line for the selected pneumatic drive DNCI-50-... in the "Proportional 5/3-way valve" section of the table.
For the purposes of our example, the proportional-5/3-way valve MPYE-5-1/8- HF-010B, part no. 151693 has been selected.

Step 4:
Completing the order information

To order a complete system you must add the data for the end position controller, valve and controller cables and manual (if required). The complete ordering data for our example can be found on ➔ 29. A manual should normally be ordered. If you already have one, leave the appropriate box blank, indicating that you do not want a manual.

Step 5:
Determining the travel time

To calculate the travel time use the "Smart Soft Stop" software tool.
The travel time for the order example is 0.92 seconds.

- Note

Sizing software
Smart Soft Stop and ProDrive
➔www.festo.com

- Note

Remember when selecting the drive mounting components that some of these are not backlash-free and therefore cannot be used with the Smart Soft Stop system. The drives must be mounted directly.

- Note

Check that the loads placed on the drive by a gripper during movement do not exceed permissible limits. To carry out simulation quickly and easily, use the Smart Soft Stop software tool.

- Note

The self-aligning rod coupler FK is not backlash-free. It must not therefore be used in combination with standard cylinder DNCI.

Ordering data

Pneumatic drive		Proportional 5/3-way valve		End position controller	
Part No.	Type	Part No.	Type	Part No.	Type
535413	**DNCI-50-320-P-A**	**151693**	**MPYE-5-1/8-HF-010B**	**537321**	**SPC11-INC**

Valve cable		Controller cable	
Part No.	Type	Part No.	Type
170238	**KMPYE-AIF-1-GS-GD-2**	**177674**	**KMPV-SUB-D-15-10**

End position controllers SPC11

Technical data

Step 1 and 2:								
Standard cylinders/Type		DNCI-...[1]-...[2]-P-A						
Effective cylinder stroke (standard stroke)	[mm]	100	160	200	250	320	400	500
Max. overall mass to be moved horizontally by ∅	32	45 kg						
	40	75 kg						
	50	120 kg						
	63	180 kg						
Part No. for ∅	32	535411						
	40	535412						
	50	535413						
	63	535414						

Step 3:								
Proportional 5/3-way valves[3] Part No./Type		1 = 151692 MPYE-5-⅛-LF-010-B 2 = 151693 MPYE-5-⅛-HF-010-B			3 = 151694 MPYE-5-¼-010-B			
Effective cylinder stroke (standard stroke)	[mm]	100	160	200	250	320	400	500
Horizontal for ∅	32	1	1	1	1	1	1	2
	40	1	1	1	1	2	2	2
	50	1	1	1	1	2	2	3
	63	1	1	2	2	2	3	3

Step 4:				
End position controllers and accessories		Part No.	Type	Brief description
End position controller	SPC11	**537321**	**SPC11-INC**	
Cable	Valve	**170238**	**KMPYE-AIF-1-GS-GD-2**	Cable length 2 m
		170239	**KMPYE-AIF-1-GS-GD-0,3**	Cable length 0.3 m
	SPC11/PLC	**177673**	**KMPV-SUB-D-15-5**	Cable length 5 m
		177674	**KMPV-SUB-D-15-10**	Cable length 10 m

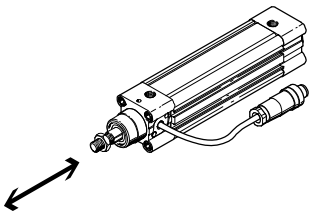
- Note

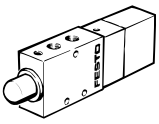
Manuals ➔ 37

1) Indicate piston ∅. Technical data and dimensions ➔ www.festo.com.
2) Indicate calculated effective stroke of cylinder.
3) Technical data and dimensions ➔ www.festo.com.

Accessories for the solution package for DNCI horizontally mounted

For effective cylinder stroke 100 ...500 mm





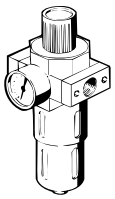
Ordering data

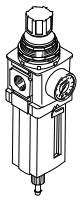
Effective cylinder stroke DNCI-... [mm]	Proportional 5/3-way valve Type	Fittings[1] For MPYE-5-... Part No.	Fittings[1] For MPYE-5-... Type	Fittings[1] DNCI Part No.	Fittings[1] DNCI Type	Compressed air tubing Part No.	Compressed air tubing Type	Silencer[2] Part No.	Silencer[2] Type
∅ 32 mm									
100 ... 400	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153004**	**QS-⅛-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
500	**MPYE-5-⅛-HF-010-B**								
∅ 40 mm									
100 ... 250	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153005**	**QS-¼-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
320 ... 500	**MPYE-5-⅛-HF-010-B**			**153005**	**QS-¼-8**				
∅ 50 mm									
100 ... 250	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153005**	**QS-¼-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
320 ... 400	**MPYE-5-⅛-HF-010-B**								
500	**MPYE-5-¼-010-B**	**153007**	**QS-¼-10**	**153007**	**QS-¼-10**	**152588**	**PUN-10x1,5**	**2316**	**U-¼**
∅ 63 mm									
100 ... 160	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153006**	**QS-⅜-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**
200 ... 320	**MPYE-5-⅛-HF-010-B**			**153006**	**QS-⅜-8**				
400 ... 500	**MPYE-5-¼-010-B**	**153007**	**QS-¼-10**	**153008**	**QS-⅜-10**	**152588**	**PUN-10x1,5**	**2316**	**U-¼**

1) Fittings sold only in packs of 10.
2) 2 pieces are required.

Accessories for the solution package for DNCI horizontally mounted

For effective cylinder stroke 100 ...500 mm






Ordering data

Effective cylinder stroke DNCI-... [mm]	Filter regulator, D series with filter cartridge 5 µm		Filter cartridge 5 µm D series		Filter regulator, MS series with filter cartridge 5 µm		Filter cartridge 5 µm MS series	
	Part No.	Type	Part No.	Type	Part No.	Type	Part No.	Type
∅ 32 mm								
100 ... 500	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
∅ 40 mm								
100 ... 400	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
500	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
∅ 50 mm								
100 ... 400	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
500	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**
∅ 63 mm								
100 ... 320	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
400 ... 500	**162721**	**LFR-⅜-D-5M-MIDI**	**159594**	**LFP-D-MIDI-5M**	**529204**	**MS6-LFR-¼-D7-CRM-AS**	**534499**	**MS6-LFP-C**

Order example for swivel module DSMI

A workpiece with a mass moment of inertia of 400 kgm^2x10^{-4} is to be moved on an unloading station. The workpiece gripper attached to the shaft of the swivel module has a mass moment of inertia of 230 kgm^2x10^{-4}. The total mass moment of inertia to be moved is therefore 630 kgm^2x10^{-4}. The swivel angle is 250°. The travel time is to be < 1 second.

Step 1:
Specifying the swivel angle

The maximum swivel angle of the swivel modules DSMI-25-270 and DSMI-40-270 is 270° and can be fully exploited. The integrated displacement encoder is appropriately designed.

Step 2:
Specifying the drive

DSMI-40-270 must be used for the total mass moment of inertia of 630 kgm^2x10^{-4} to be moved horizontally
➔ 33.

Step 3:
Specifying a proportional 5/3-way valve

As can be seen from the table➔ 33, the proportional 5/3-way valve MPYE-5-⅛-LF-010B is generally required for swivel module DSMI-40-270.

Step 4:
Completing the order information

To order a complete system you must add the data for the end position controller, valve and controller cables and manual (if required). The complete ordering data for our example can be found on ➔ 33. A manual should normally be ordered. If you already have one, leave the appropriate box blank, indicating an express waiver of a manual.

Step 5:
Determining the travel time

To calculate the travel time use the "Smart Soft Stop" software tool. The travel time for the order example is 0.89 seconds.

- Note

Sizing software
Smart Soft Stop and ProDrive
➔www.festo.com

- Note

Remember when selecting the drive mounting components that some of these are not backlash-free and therefore cannot be used with the Smart Soft Stop system. The drives must be mounted directly.

- Note

Check that the loads placed on the drive by a gripper during the movement process do not exceed permissible limits.
To carry out simulation quickly and easily, use the Smart Soft Stop software tool.

Ordering data

Swivel module		Proportional 5/3-way valve		End position controller	
Part No.	Type	Part No.	Type	Part No.	Type
561691	**DSMI-40-270-A-B**	**151692**	**MPYE-5-⅛-LF-010B**	**192217**	**SPC11-POT-LWG**

Valve cable		Controller cable	
Part No.	Type	Part No.	Type
170238	**KMPYE-AIF-1-GS-GD-2**	**177674**	**KMPV-SUB-D-15-10**

End position controllers SPC11

Technical data

Step 1 and 2:		
Swivel module with integrated displacement encoder	DSMI-25-270-A-B	DSMI-40-270-A-B
Swivel angle	270°	
Max. permissible mass moment of inertia, horizontal	300 kgm^2x10^{-4}	1,200 kgm^2x10^{-4}
Part No.	561690	561691

Step 3				
Proportional 5/3-way valves[1)]	Part No.	Type	Part No.	Type
	154200	**MPYE-5-M5-010B**	**151692**	**MPYE-5-1/8-LF-010B**

Step 4				
End position controllers and accessories		Part No.	Type	Brief description
End position controller	SPC11	**192217**	**SPC11-POT-LWG**	
Cable	Valve	**170238**	**KMPYE-AIF-1-GS-GD-2**	Cable length 2 m
		170239	**KMPYE-AIF-1-GS-GD-0,3**	Cable length 0.3 m
	SPC11/PLC	**177673**	**KMPV-SUB-D-15-5**	Cable length 5 m
		177674	**KMPV-SUB-D-15-10**	Cable length 10 m

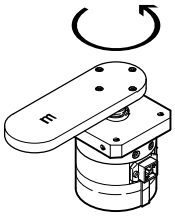
1) Technical data and dimensions ➔ www.festo.com.

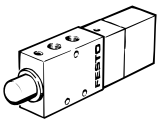
- - Note

Manuals ➔ 37

Accessories for the solution package for DSMI horizontally mounted

For swivel angle 0° ... 270°





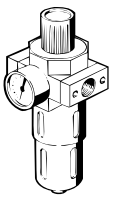
Ordering data

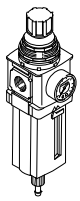
Swivel angle DSMI	Proportional 5/3-way valve Type	Fittings[1] For MPYE-5-... Part No.	Type	DSMI Part No.	Type	Compressed air tubing Part No.	Type	Silencer[2] Part No.	Type
∅ 25 mm									
0° ... 270°	**MPYE-5-M5-010-B**	**153306**	**QSM-M5-6**	**153306**	**QSM-M5-6**	**152586**	**PUN-6x1**	**1205858**	**AMTE-M-LH-M5**
∅ 40 mm									
0° ... 270°	**MPYE-5-⅛-LF-010-B**	**153004**	**QS-⅛-8**	**153004**	**QS-⅛-8**	**152587**	**PUN-8x1,25**	**2307**	**U-⅛**

1) Fittings sold only in packs of 10.
2) 2 pieces are required.

Accessories for the solution package for DSMI horizontally mounted

For swivel angle 0° ... 270°





Ordering data

Swivel angle DSMI	Filter regulator, D series with filter cartridge 5 µm		Filter cartridge 5 µm D series		Filter regulator, MS series with filter cartridge 5 µm		Filter cartridge 5 µm MS series	
	Part No.	Type	Part No.	Type	Part No.	Type	Part No.	Type
∅ 25 mm								
0° ... 270°	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**
∅ 40 mm								
0° ... 270°	**162719**	**LFR-¼-D-5M-MINI**	**159640**	**LFP-D-MINI-5M**	**529152**	**MS4-LFR-¼-D7-CRM-AS**	**534501**	**MS4-LFP-C**

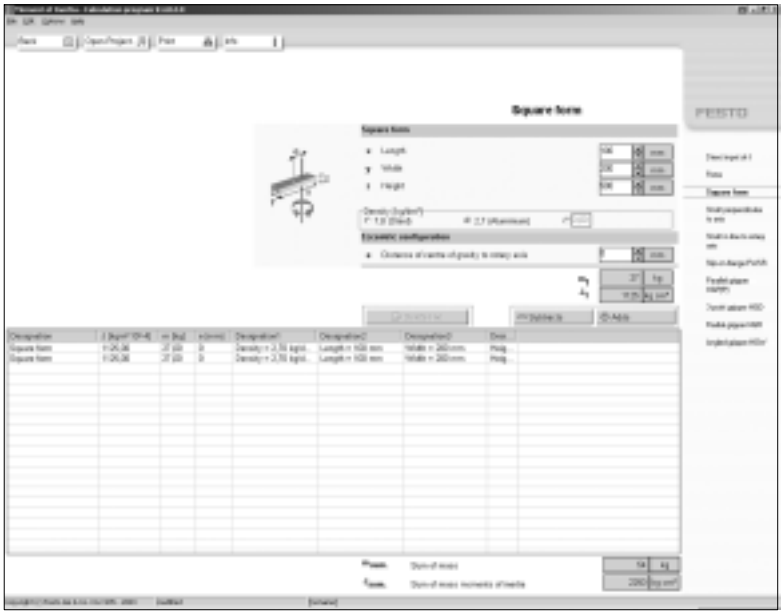
Mass moment of inertia calculation with the aid of Festo software

Software tool: Mass moment of inertia

No matter whether you have discs, blocks, push-on flanges, grippers, etc: This tool does the job of calculating all mass moments of inertia for you.
Just save, send, or print – and you're finished.

- - Note

Sizing software
Inertia calculations
➔www.festo.com



End position controllers SPC11

Technical data

FESTO

Ordering data – Manuals

		Part No.	Type
System description – End position controllers			
SPC11	German	**196723**	**P.BE-SPC11-SYS-DE**
	English	**196724**	**P.BE-SPC11-SYS-EN**
	French	**196727**	**P.BE-SPC11-SYS-FR**
	Italian	**196726**	**P.BE-SPC11-SYS-IT**
	Swedish	**196728**	**P.BE-SPC11-SYS-SV**
	Spanish	**196725**	**P.BE-SPC11-SYS-ES**
Drive-specific supplement			
For DGCI			
SPC11	German	**549166**	**P.BE-SPC11-DGCI-DE**
	English	**549167**	**P.BE-SPC11-DGCI-EN**
	French	**549169**	**P.BE-SPC11-DGCI-FR**
	Italian	**549170**	**P.BE-SPC11-DGCI-IT**
	Swedish	**549171**	**P.BE-SPC11-DGCII-SV**
	Spanish	**549168**	**P.BE-SPC11-DGCI-ES**
For DNC			
SPC11	German	**196735**	**P.BE-SPC11-DNC-DE**
	English	**196736**	**P.BE-SPC11-DNC-EN**
	French	**196739**	**P.BE-SPC11-DNC-FR**
	Italian	**196738**	**P.BE-SPC11-DNC-IT**
	Swedish	**196740**	**P.BE-SPC11-DNC-SV**
	Spanish	**196737**	**P.BE-SPC11-DNC-ES**
For DSMI			
SPC11	German	**196741**	**P.BE-SPC11-DSMI-DE**
	English	**196742**	**P.BE-SPC11-DSMI-EN**
	French	**196745**	**P.BE-SPC11-DSMI-FR**
	Italian	**196744**	**P.BE-SPC11-DSMI-IT**
	Swedish	**196746**	**P.BE-SPC11-DSMI-SV**
	Spanish	**196743**	**P.BE-SPC11-DSMI-ES**

		Part No.	Type
For DGPL/DGPI/DGPIL			
SPC11	German	**196729**	**P.BE-SPC11-DGP-DE**
	English	**196730**	**P.BE-SPC11-DGP-EN**
	French	**196733**	**P.BE-SPC11-DGP-FR**
	Italian	**196732**	**P.BE-SPC11-DGP-IT**
	Swedish	**196734**	**P.BE-SPC11-DGP-SV**
	Spanish	**196731**	**P.BE-SPC11-DGP-ES**
For DNCI			
SPC11	German	**539888**	**P.BE-SPC11-DNCI-DE**
	English	**539889**	**P.BE-SPC11-DNCI-EN**
	French	**539891**	**P.BE-SPC11-DNCI-FR**
	Italian	**539892**	**P.BE-SPC11-DNCI-IT**
	Swedish	**539893**	**P.BE-SPC11-DNCI-SV**
	Spanish	**539890**	**P.BE-SPC11-DNCI-ES**

Converting existing systems

What are the points to note when converting existing systems that use the pneumatic drives DGPL or DNC?

Optimum system behaviour is guaranteed by Festo's uniquely specified solution packages, in which all components are harmonised. When converting existing systems, observe the following points:

Where could system behaviour possibly change when an existing system is converted?

In normal cases, the entire cylinder stroke is used, including the internal cushioning length (PPV); no stroke reserve is available.

What should be noted when installing the pneumatics?

- Make sure that the system configuration is symmetrical, i.e. that the tubing used to connect the compressed air supply to each end of the cylinder is of identical length.
- No flow controls between the valve and cylinder.
- Open the end-position cushioning (PPV) 100%.

Accessories and tubing diameters can be found in the description for the respective solution package.

What should be noted when installing the electrics?

As far as the electrical actuation is concerned, the Smart Soft Stop system behaves like a standard pneumatic system with a double solenoid valve and two proximity sensors.

For further information see the manual
System description:
SPC11-... ➔ 37.

Does the control program need to be adapted?

Existing systems which have provision for two digital inputs/outputs can be converted without adaptation of the control program.

What proportional 5/3-way valve should be selected for the conversion project?

Exactly the same valve as specified in the solution packages on ➔ 19 or 25.

What end position controller is suitable for each drive or displacement encoder?

End position controller	Drive	Displacement encoder
SPC11-POT-TLF	DGPL	MLO-POT-...-TLF
SPC11-POT-LWG	DNC	MLO-POT-...-LWG
	DSMI	Integrated
SPC11-MTS-AIF	DGPL	MME-MTS-...-AIF
	DGPI/DGPIL	Integrated
SPC11-INC	DNCI	Integrated
SPC11-MTS-AIF-2	DGCI	Adapted