

## Service unit FRC, FRCS

**FESTO**



## Characteristics

### At a glance

Filter, regulator and lubricator functions in a single unit.

- High flow rate and extremely efficient in removing contaminants
- Setting values are secured by locking the rotary knob
- BP Energol HLP 32
- Lockable rotary knob (optional)
- Two pressure gauge connections for variable installation

The following oils are recommended for Festo components (viscosity range to ISO 3448, ISO class VG 32, 32 mm<sup>2</sup>/s (= cSt) at 40 °C):

- Festo special oil OFSW-32 (see accessories)
- ARAL Vitam GF 32
- ESSO Nuto H 32
- Mobil DTE 24
- Shell Tellus Oil DO 32

### Diagrams



The diagrams shown in this document are also available online. These can be used to display precise values.

### Version

[D] D series, metal

Sturdy in full metal design for the specific requirements of the process automation industry

### Pressure regulation range

Two pressure regulation ranges: 0.5...7 bar and 0.5...12 bar

### Grade of filtration

Grade of filtration of 5 µm or 40 µm can be selected.

### Pressure gauge

The filter regulator can be ordered with or without a pressure gauge. The interface has a thread of G1/4 or G1/8.

### Condensate drain

The following functions can be selected:

- Manual
- Fully automatic, normally closed

## Type code

<b>001</b>	<b>Series</b>	
<b>FRC</b>	Service unit	

<b>002</b>	<b>Pneumatic connection</b>	
<b>1/8</b>	Female thread G1/8	
<b>1/4</b>	Female thread G1/4	
<b>3/8</b>	Female thread G3/8	
<b>1/2</b>	Female thread G1/2	
<b>3/4</b>	Female thread G3/4	
<b>1</b>	Female thread G1	

<b>003</b>	<b>Version</b>	
<b>D</b>	D series, metal	

<b>004</b>	<b>Pressure regulation range</b>	
	0.5 ... 12 bar (0.05 ... 1.2 MPa)	
<b>7</b>	0.5 ... 7 bar (0.05 ... 0.7 MPa)	

<b>005</b>	<b>Grade of filtration</b>	
	40 µm	
<b>5M</b>	5 µm	

<b>006</b>	<b>Pressure gauge</b>	
	With pressure gauge	

<b>007</b>	<b>Size</b>	
<b>MINI</b>	Grid dimension 40 mm (without connecting plates)	
<b>MIDI</b>	Grid dimension 55 mm (without connecting plates)	
<b>MAXI</b>	Grid dimension 66 mm (without connecting plates)	

<b>008</b>	<b>Condensate drain</b>	
<b>A</b>	Fully automatic	
	Manually rotating	

<b>009</b>	<b>Display unit</b>	
<b>MPA</b>	MPa	

## Datasheet

Technical data – Mini		
Size	Mini	
Grade of filtration	5 µm	40 µm
Pneumatic connection, port 1	G1/8, G1/4, G3/8	
Pneumatic connection, port 2	G1/8, G1/4, G3/8	
Type of mounting	In-line installation With accessories	
Mounting position	Vertical +/-5°	
Air purity class at output	Compressed air to ISO 8573-1:2010 [6:8-] Inert gases	Compressed air to ISO 8573-1:2010 [7:8-] Inert gases
Bowl guard	Metal bowl guard	
Condensate drain	Fully automatic Manually rotating	
Actuator lock	Rotary knob with detent	
Pressure regulation range	0.5 ... 12 bar	
Max. pressure hysteresis	0.2 bar	
Pressure gauge (ANALOG) or Pressure display (DIGITAL)	With pressure gauge	
Max. condensate volume	22 cm <sup>3</sup>	
Operating pressure <sup>1)</sup>	1 ... 16 bar	
Operating medium <sup>2)</sup>	Compressed air to ISO 8573-1:2010 [-:9-] Compressed air to ISO 8573-1:2010 [7:9-] Inert gases	
Ambient temperature	-10 ... 60°C	
Media temperature	-10 ... 60°C	

1) With fully automatic condensate drain: 2 ... 12 bar

2) With fully automatic condensate drain: compressed air to ISO 8573-1:2010 [7:9-]

Technical data – Midi		
Size	Midi	
Grade of filtration	5 µm	40 µm
Pneumatic connection, port 2	G1/4, G3/8, G1/2, G3/4	
Type of mounting	In-line installation With accessories	
Mounting position	Vertical +/-5°	
Air purity class at output	Compressed air to ISO 8573-1:2010 [6:8-] Inert gases	Compressed air to ISO 8573-1:2010 [7:8-] Inert gases
Bowl guard	Metal bowl guard	
Condensate drain	Fully automatic Manually rotating	
Actuator lock	Rotary knob with detent	
Pressure regulation range	0.5 ... 12 bar	
Max. pressure hysteresis	0.2 bar	
Pressure gauge (ANALOG) or Pressure display (DIGITAL)	With pressure gauge	
Max. condensate volume	43 cm <sup>3</sup>	
Operating pressure <sup>1)</sup>	1 ... 16 bar	
Operating medium <sup>2)</sup>	Compressed air to ISO 8573-1:2010 [-:9-] Compressed air to ISO 8573-1:2010 [7:9-] Inert gases	
Ambient temperature	-10 ... 60°C	
Media temperature	-10 ... 60°C	

1) With fully automatic condensate drain: 2 ... 12 bar

2) With fully automatic condensate drain: compressed air to ISO 8573-1:2010 [7:9-]

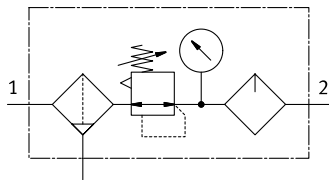
## Datasheet

Technical data – Maxi	
Size	Maxi
Grade of filtration	5 µm   40 µm
Pneumatic connection, port 1	G1/2, G3/4, G1
Pneumatic connection, port 2	G1/2, G3/4, G1
Type of mounting	In-line installation With accessories
Mounting position	Vertical +/-5°
Air purity class at output	Compressed air to ISO 8573-1:2010 [6:8-]   Compressed air to ISO 8573-1:2010 [7:8-] Inert gases   Inert gases
Bowl guard	Metal bowl guard
Condensate drain	Fully automatic Manually rotating
Actuator lock	Rotary knob with detent
Pressure regulation range	0.5 ... 12 bar
Max. pressure hysteresis	0.4 bar
Pressure gauge (ANALOG) or Pressure display (DIGITAL)	With pressure gauge
Max. condensate volume	80 cm <sup>3</sup>
Operating pressure <sup>1)</sup>	1 ... 16 bar
Operating medium <sup>2)</sup>	Compressed air to ISO 8573-1:2010 [-:9-] Compressed air to ISO 8573-1:2010 [7:9-] Inert gases
Ambient temperature	-10 ... 60°C
Media temperature	-10 ... 60°C

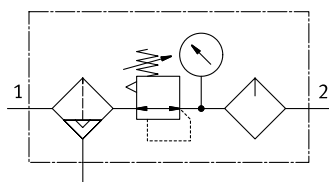
1) With fully automatic condensate drain: 2 ... 12 bar

2) With fully automatic condensate drain: compressed air to ISO 8573-1:2010 [7:9-]

## Function (manual condensate drain, rotating, with pressure gauge)

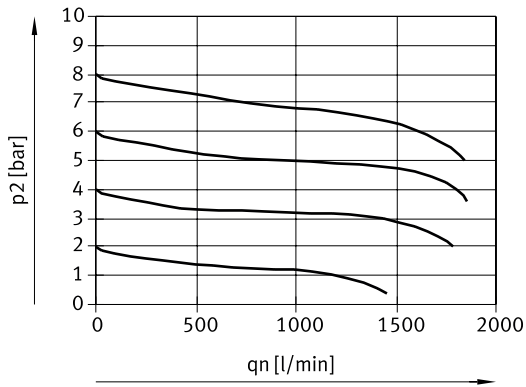


## Function (fully automatic condensate drain, with pressure gauge)

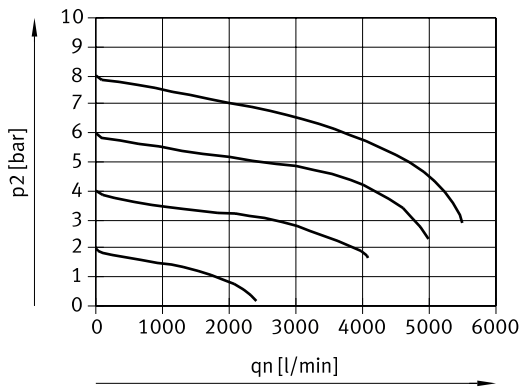


## Datasheet

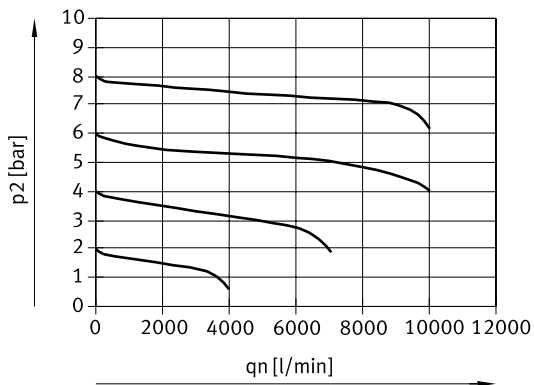
Standard flow rate  $q_n$  as a function of output pressure  $p_2$  (FRC-1/4-D-MINI)



Standard flow rate  $q_n$  as a function of output pressure  $p_2$  (FRC-1/2-D-MIDI)

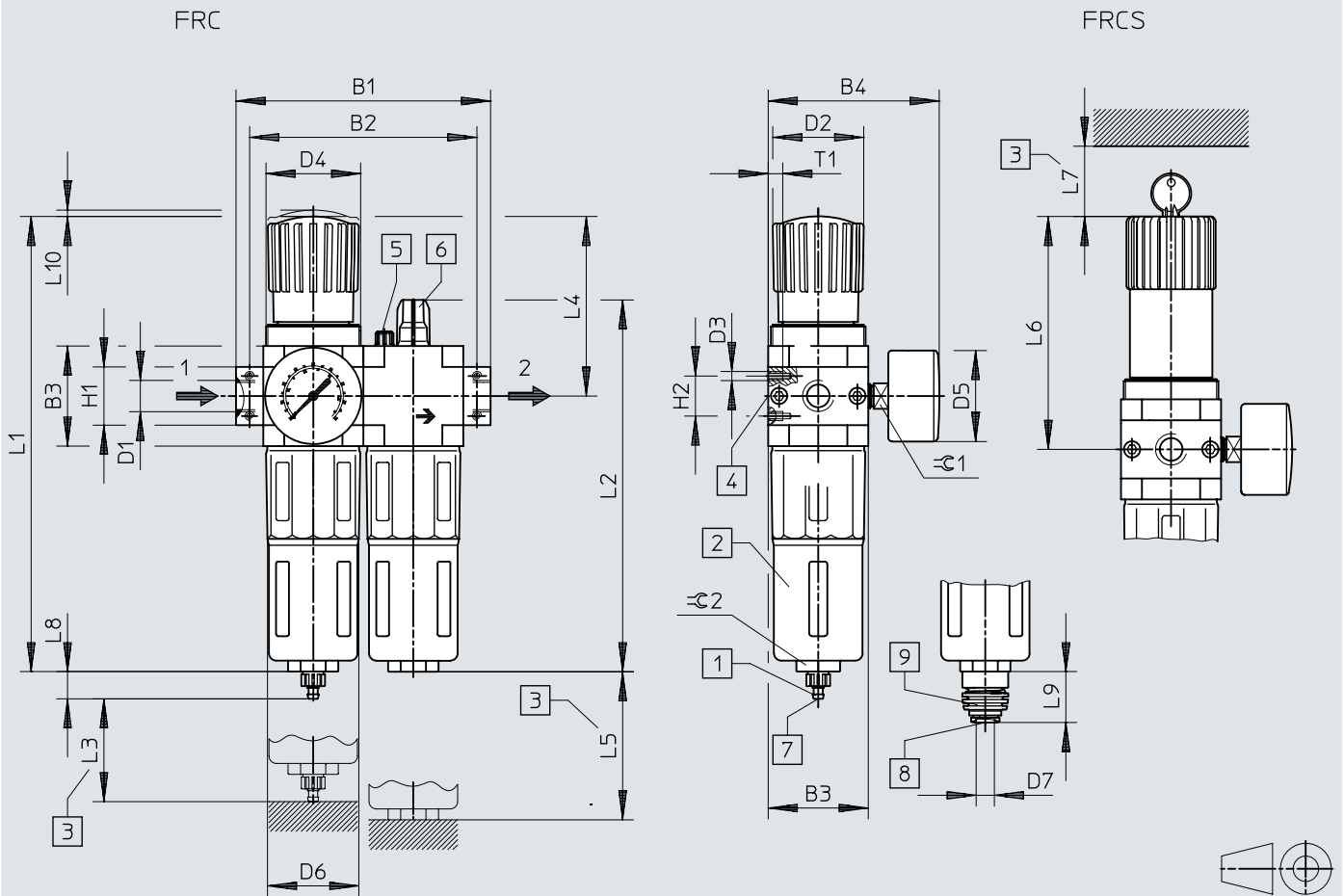


Standard flow rate  $q_n$  as a function of output pressure  $p_2$  (FRC-1-D-MAXI)



## Dimensions

## Dimensions – Mini/Midi/Maxi

Download CAD data [www.festo.com](http://www.festo.com)

- [1] Barbed connector for plastic tubing PUN(-H)-8x1.25
- [2] Metal bowl guard
- [3] Installation dimension
- [4] Second pressure gauge connection
- [5] Vent screw for oil reservoir
- [6] Oil adjusting screw
- [7] Manual condensate drain
- [8] Fully automatic condensate drain

## Dimensions

	B1	B2	B3	B4	D1	D2 ∅	D3	D4	D5 ∅	D6 ∅
FRC-1/8-D-MINI	104	92	40	76	G1/8	31	M4	M36x1,5	39	38
FRC/FRCS-1/4-D-MINI					G1/4					
FRC-3/8-D-MINI	110				G3/8					
FRC/FRCS-1/4-D-MIDI	140	125	55	95	G1/4	50	M5	M52x1,5	39	52
FRC-3/8-D-MIDI					G3/8					
FRC/FRCS-1/2-D-MIDI					G1/2					
FRC-3/4-D-MIDI					G3/4					
FRC/FRCS-1/2-D-MAXI	162	146	66	106	G1/2	31	M5	M36x1,5	39	65
FRC-3/4-D-MAXI					G3/4					
FRC-1-D-MAXI	182	157			G1					

	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	T1	≈ 1	≈ 2
FRC-1/8-D-MINI	20	11	193	169	60	69	100	98	60	15	19	3	7	14	22
FRC/FRCS-1/4-D-MINI															
FRC-3/8-D-MINI															
FRC/FRCS-1/4-D-MIDI	32	22	250	204	80	99	120	130	60	15	19	3	8	14	24
FRC-3/8-D-MIDI															
FRC/FRCS-1/2-D-MIDI															
FRC-3/4-D-MIDI															
FRC/FRCS-1/2-D-MAXI	32														
FRC-3/4-D-MAXI	32	22	252	228	90	82	150	111	60	15	19	3	8	14	24
FRC-1-D-MAXI	40														



## Ordering data

Ordering information – Mini					
Pneumatic connection, port 1	Standard nominal flow rate (standardised to DIN 1343)	Condensate drain	Product weight	Part no.	Type
G1/8	600 l/min	Fully automatic	660 g	8002360	FRC-1/8-D-5M-MINI-A-MPA
		Manually rotating		8002352	FRC-1/8-D-5M-MINI-MPA
	700 l/min	Fully automatic		8002270	FRC-1/8-D-MINI-A-MPA
		Manually rotating		8002266	FRC-1/8-D-MINI-MPA
	800 l/min	Fully automatic		8002344	FRC-1/8-D-7-MINI-A-MPA
		Manually rotating		8002336	FRC-1/8-D-7-MINI-MPA
G1/4	850 l/min	Fully automatic	8002361	FRC-1/4-D-5M-MINI-A-MPA	
		Manually rotating	8002353	FRC-1/4-D-5M-MINI-MPA	
	1,000 l/min	Fully automatic	8002271	FRC-1/4-D-MINI-A-MPA	
		Manually rotating	8002267	FRC-1/4-D-MINI-MPA	
	1,300 l/min	Fully automatic	8002345	FRC-1/4-D-7-MINI-A-MPA	
		Manually rotating	8002337	FRC-1/4-D-7-MINI-MPA	
G3/8	1,050 l/min	Fully automatic	8002362	FRC-3/8-D-5M-MINI-A-MPA	
		Manually rotating	8002354	FRC-3/8-D-5M-MINI-MPA	
	1,200 l/min	Fully automatic	8002334	FRC-3/8-D-MINI-A-MPA	
		Manually rotating	8002332	FRC-3/8-D-MINI-MPA	
	1,500 l/min	Fully automatic	8002346	FRC-3/8-D-7-MINI-A-MPA	
		Manually rotating	8002338	FRC-3/8-D-7-MINI-MPA	

Ordering information – Midi					
Pneumatic connection, port 1	Standard nominal flow rate (standardised to DIN 1343)	Condensate drain	Product weight	Part no.	Type
G1/4	1,300 l/min	Manually rotating	1,440 g	8002380	FRC-1/4-D-5M-MIDI-MPA
		Fully automatic		8002381	FRC-1/4-D-MIDI-A-MPA
	1,500 l/min	Manually rotating		8002379	FRC-1/4-D-MIDI-MPA
		Fully automatic		8002383	FRC-1/4-D-7-MIDI-A-MPA
	1,700 l/min	Manually rotating		8002382	FRC-1/4-D-7-MIDI-MPA
		Fully automatic		8002363	FRC-3/8-D-5M-MIDI-A-MPA
G3/8	2,000 l/min	Manually rotating	8002355	FRC-3/8-D-5M-MIDI-MPA	
		Fully automatic	8002263	FRC-3/8-D-MIDI-A-MPA	
	2,000 l/min	Fully automatic	8002347	FRC-3/8-D-7-MIDI-A-MPA	
		Manually rotating	8002262	FRC-3/8-D-MIDI-MPA	
	2,000 l/min	Fully automatic	8002339	FRC-3/8-D-7-MIDI-MPA	
		Manually rotating	8002364	FRC-1/2-D-5M-MIDI-A-MPA	
G1/2	1,800 l/min	Fully automatic	8002356	FRC-1/2-D-5M-MIDI-MPA	
		Manually rotating	8002265	FRC-1/2-D-MIDI-A-MPA	
	2,600 l/min	Fully automatic	8002264	FRC-1/2-D-MIDI-MPA	
		Manually rotating	8002348	FRC-1/2-D-7-MIDI-A-MPA	
	2,800 l/min	Fully automatic	8002340	FRC-1/2-D-7-MIDI-MPA	
		Manually rotating	8002365	FRC-3/4-D-5M-MIDI-A-MPA	
G3/4	2,100 l/min	Fully automatic	8002357	FRC-3/4-D-5M-MIDI-MPA	
		Manually rotating	8002333	FRC-3/4-D-MIDI-MPA	
	2,600 l/min	Fully automatic	8002349	FRC-3/4-D-7-MIDI-A-MPA	
		Manually rotating	8002341	FRC-3/4-D-7-MIDI-MPA	
	2,800 l/min	Fully automatic			
		Manually rotating			

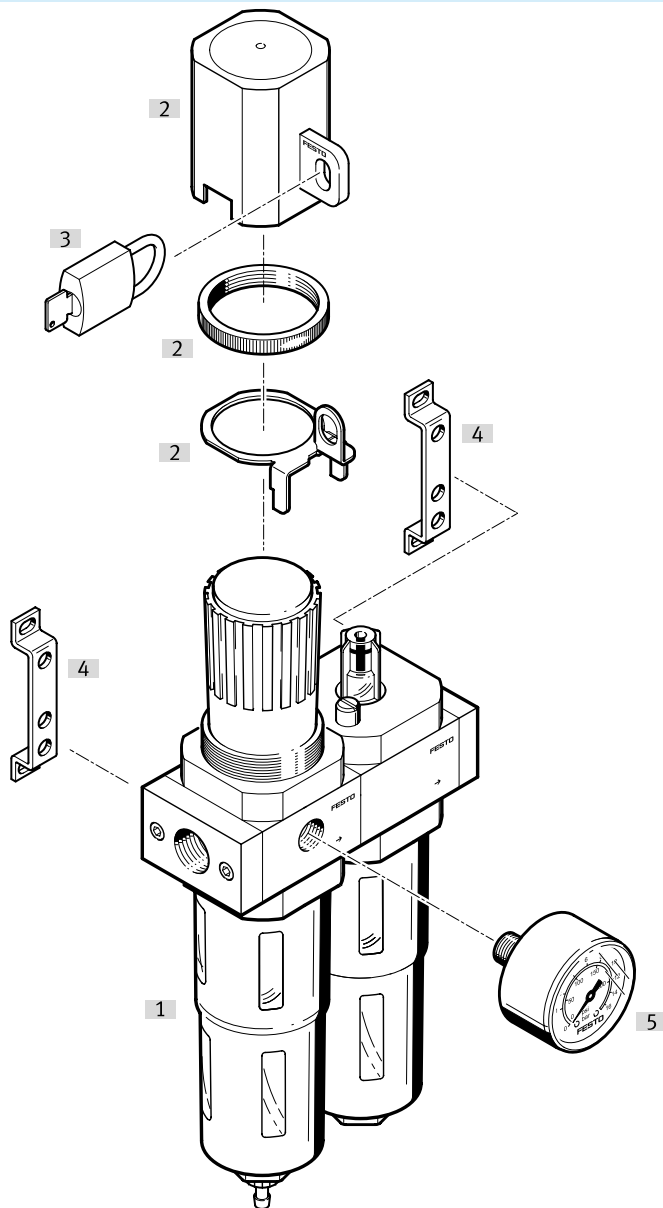
Ordering data – Maxi					
Pneumatic connection, port 1	Standard nominal flow rate (standardised to DIN 1343)	Condensate drain	Product weight	Part no.	Type
G1/2	6,800 l/min	Fully automatic	2,390 g	8002387	FRC-1/2-D-5M-MAXI-A-MPA
		Manually rotating		8002385	FRC-1/2-D-5M-MAXI-MPA
	7,600 l/min	Fully automatic		8002386	FRC-1/2-D-MAXI-A-MPA
		Manually rotating		8002384	FRC-1/2-D-MAXI-MPA
G3/4	7,000 l/min	Fully automatic	8002366	FRC-3/4-D-5M-MAXI-A-MPA	
		Manually rotating	8002272	FRC-3/4-D-MAXI-A-MPA	
	8,300 l/min	Fully automatic	8002268	FRC-3/4-D-MAXI-MPA	
		Manually rotating	8002350	FRC-3/4-D-7-MAXI-A-MPA	
G1	7,200 l/min	Fully automatic	8002342	FRC-3/4-D-7-MAXI-MPA	
		Manually rotating	8002367	FRC-1-D-5M-MAXI-A-MPA	

## Ordering data

Ordering data – Maxi					
Pneumatic connection, port 1	Standard nominal flow rate (standardised to DIN 1343)	Condensate drain	Product weight	Part no.	Type
G1	7,200 l/min	Manually rotating	2,520 g	8002359	FRC-1-D-5M-MAXI-MPA
		Fully automatic		8002273	FRC-1-D-MAXI-A-MPA
	Manually rotating	8002269		FRC-1-D-MAXI-MPA	
	8,500 l/min	Fully automatic		8002351	FRC-1-D-7-MAXI-A-MPA
		Manually rotating		8002343	FRC-1-D-7-MAXI-MPA
		8,700 l/min			

## Peripherals

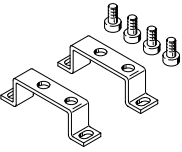
## Service unit FRC



Accessories		→ Link
Type/order code	Description	
[1] Service unit FRC		<a href="#">frc-d</a>
[2] Regulator lock LRVS		<a href="#">12</a>
[3] Padlock LRVS-D		<a href="#">12</a>
[4] Mounting bracket HFOE		<a href="#">12</a>
[5] Pressure gauge MA		<a href="#">12</a>

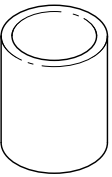
## Accessories

### Mounting bracket HFOE-D-MIDI/MAXI

	Short type code	Corrosion resistance class CRC <sup>1)</sup>	Part no.	Type
	HFOE	2 - Moderate corrosion stress	159593	HFOE-D-MIDI/MAXI


1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

### Filter cartridges, D series, metal

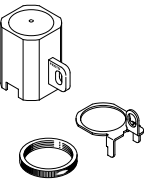
	Size	Grade of filtration <sup>1)</sup>	Part no.	Type
	Maxi	5 µm	159641	LFP-D-MAXI-5M
	Midi		159594	LFP-D-MIDI-5M
	Mini		159640	LFP-D-MINI-5M

1) Grade of filtration 5 µm: colour blue  
Grade of filtration 40 µm: colour white

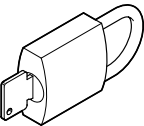
### Pressure gauge MA

	Size	Pneumatic connection	Indicating range	Product weight	Part no.	Type
	Diameter 40 mm	G1/8	0 ... 10 bar	60 g	359874	MA-40-10-1/8
			0 ... 16 bar		345395	MA-40-16-1/8
	Diameter 50 mm	G1/4	0 ... 10 bar	70 g	359873	MA-50-10-1/4
			0 ... 16 bar		356759	MA-50-16-1/4

### Regulator lock LRVS


	Size	LABS (PWIS) conformity	Product weight	Part no.	Type
	Grid dimension 40 mm (without sub-bases)	VDMA24364-B1/B2-L	40 g	193781	LRVS-D-MINI
	Grid dimension 55 mm (without sub-bases)		60 g	193782	LRVS-D-MIDI
	Grid dimension 66 mm (without sub-bases)		36 g	193784	LRVS-D-DI-MAXI
			56 g	193783	LRVS-D-MAXI

### Padlock LRVS-D

	Corrosion resistance class CRC <sup>1)</sup>	LABS (PWIS) conformity	Product weight	Part no.	Type
	2 - Moderate corrosion stress	VDMA24364-B1/B2-L	120 g	193786	LRVS-D

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Accessories

Special oil OPSW-32			
	Short type code	Part no.	Type
	OFSW	152811	OFSW-32