

FRC Filter/Regulator-Lubricators – D Series, NPT

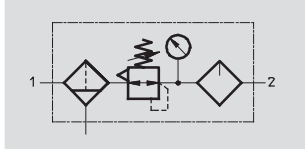
Technical Data

Function

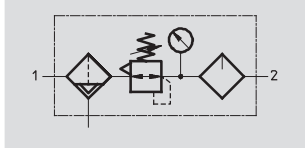
FRC...-D-...

Condensate drain

manual



semi- or fully automatic



Flow rate

90 ... 8700 l/min

Temperature range

-10 ... +60 °C

Input pressure

1 ... 16 bar



- Filter, regulator and lubricator functions in a single unit
- High flow rate and highly efficient removal of contaminants
- Good regulating characteristics with minimal pressure hysteresis
- Setting values are secured by locking the rotary knob
- Lockable rotary knob (via accessories)
- Two pressure regulation ranges: 0.5 ... 7 bar and 0.5 ... 12 bar
- Two pressure gauge connections for different fitting options
- Choice of filter cartridges: 5 µm or 40 µm
- With manual, semi-automatic or fully automatic condensate drain

| General technical data | | | | | | | | | | |
|---------------------------------|---|----------|-----------|---------|---------|------------|---------|---------|-------|--|
| Size | Micro | Mini | | | Midi | | | Maxi | | |
| Pneumatic connection | 1/8 NPT | 1/8 NPT | 1/4 NPT | 1/8 NPT | 3/8 NPT | 1/2 NPT | 3/4 NPT | 3/4 NPT | 1 NPT | |
| Operating medium | Compressed air | | | | | | | | | |
| Design | Filter regulator | | | | | | | | | |
| | Proportional standard mist lubricator | | | | | | | | | |
| Type of mounting | Via accessories | | | | | | | | | |
| | In-line installation | | | | | | | | | |
| Assembly position | Vertical ±5° | | | | | | | | | |
| Grade of filtration [µm] | 5 | 5 or 40 | | | | | | | | |
| Max. hysteresis [bar] | 0.3 | 0.2 | | | | | | 0.4 | | |
| Pressure regulation range [bar] | 0.5 ... 7 | | 0.5 ... 7 | | | 0.5 ... 12 | | | | |
| | Via pressure gauge | | | | | | | | | |
| Pressure indication | Port connection | | M5 | G1/8 | | | G1/4 | | G1/4 | |
| | Max. condensate volume [cm ³] | | 3 | 22 | | | 43 | | 80 | |
| Input pressure [bar] | | | | | | | | | | |
| Condensate drain | manual | 1 ... 10 | 1 ... 16 | | | | | | | |
| | semiautomatic | 1 ... 10 | - | | | | | | | |
| | fully automatic | - | 2 ... 12 | | | | | | | |

Note: This product conforms to ISO 1179-1 and ISO 228-1

FRC Filter/Regulator-Lubricators – D Series, NPT

Technical Data

| Standard nominal flow rate ¹⁾ qnN [l/min] | |
|--|-----------------------|
| Connection | Port block 1/8 NPT |
| Micro | |
| FRC | 140 |

- 1) Measured at p1 = 10 bar, p2 = 6 bar and Δp = 1 bar.
A minimum flow rate of 125 l/min is required for flawless functioning.

| Standard nominal flow rate ²⁾ qnN [l/min] | | | | | | |
|--|---------|---------|---------|---------|---------|-------|
| Connection | 1/8 NPT | 1/4 NPT | 3/8 NPT | 1/2 NPT | 3/4 NPT | 1 NPT |
| Mini | | | | | | |
| FRC-...-D-...(-A) | 700 | 1000 | 1200 | – | – | – |
| FRC-...-D-7-...(-A) | 800 | 1300 | 1500 | – | – | – |
| FRC-...-D-5M-...(-A) | 600 | 850 | 1050 | – | – | – |
| Midi | | | | | | |
| FRC-...-D-...(-A) | – | 1500 | 2000 | 2600 | 2600 | – |
| FRC-...-D-7-...(-A) | – | 1700 | 2000 | 2800 | 2800 | – |
| FRC-...-D-5M-...(-A) | – | 1300 | 1700 | 1800 | 2100 | – |
| Maxi | | | | | | |
| FRC-...-D-...(-A) | – | – | – | 7600 | 8300 | 8500 |
| FRC-...-D-7-...(-A) | – | – | – | 7700 | 8500 | 8700 |
| FRC-...-D-5M-...(-A) | – | – | – | 6800 | 7000 | 7200 |

- 2) Measured at p1 = 10 bar, p2 = 6 bar and Δp = 1 bar.
A minimum flow rate of 125 l/min is required for flawless functioning.

| Screw-in depth of connecting thread [mm] | |
|--|---------|
| Connection | 1/8 NPT |
| Micro | |
| In housing | – |
| In connecting plates | 8 |

| Ambient conditions | | Micro | Mini | Midi | Maxi |
|----------------------------|-------------------|-------------|------|------|------|
| Ambient temperature | [°C] | –10 ... +60 | | | |
| Temperature of medium | [°C] | –10 ... +60 | | | |
| Corrosion resistance class | CRC ³⁾ | 2 | | | |

- 3) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. 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.

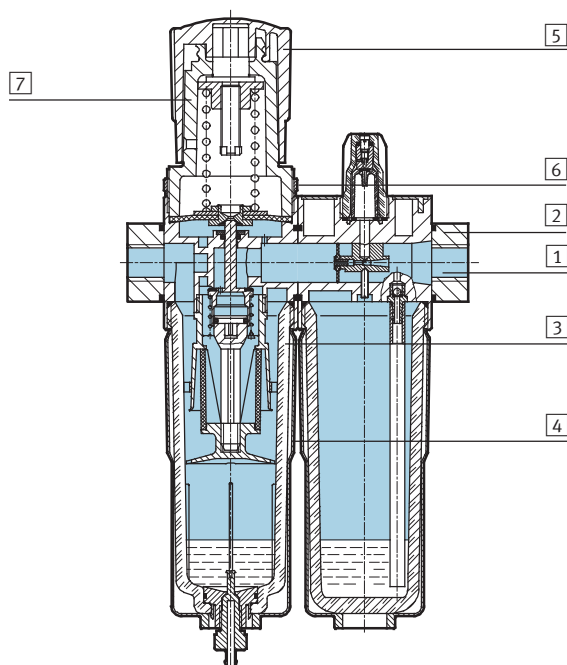
FRC Filter/Regulator-Lubricators – D Series, NPT

Technical Data

| Weight [g] | | | | | | |
|------------------------|---------------|------------------|------|------|--------------------------------|------------------|
| Size | Micro | | Mini | Midi | Maxi | |
| | Female thread | Connecting plate | | | Connection 1/2 NPT, 3/4 NPT | Connection 1 NPT |
| With pressure gauge | | | | | | |
| FRC-... | 113 | 133 | 660 | 1440 | 2390 | 2520 |
| Without pressure gauge | | | | | | |
| FRC-... | 103 | 123 | 600 | 1350 | 2280 | 2460 |

Materials

Sectional view



| Service units | Micro | Mini/Midi/Maxi |
|--------------------|------------------------|------------------------|
| 1 Housing | Wrought aluminum alloy | Die-cast zinc |
| 2 Port blocks | Wrought aluminum alloy | Die-cast zinc/aluminum |
| 3 Bowl | Polycarbonate | Polycarbonate |
| 4 Metal bowl guard | – | Aluminum |
| 5 Regulating knob | Polyacetal | Polyacetal |
| 6 Knurled nut | Wrought aluminum alloy | Aluminum |
| 7 Support | Polycarbonate | – |
| – Seals | Nitrile rubber | Nitrile rubber |

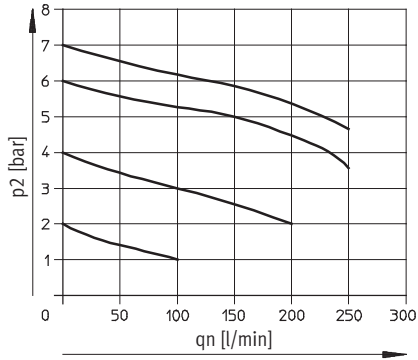
FRC Filter/Regulator-Lubricators – D Series, NPT

Technical Data

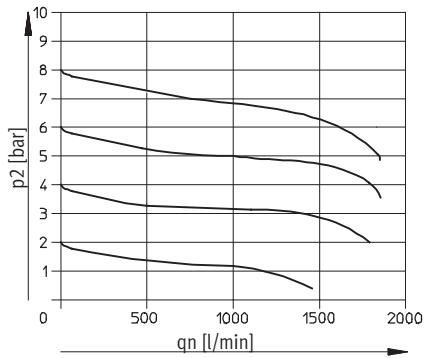


Standard flow rate q_n as a function of the output pressure p_2 ; primary pressure $p_1 = 10$ bar

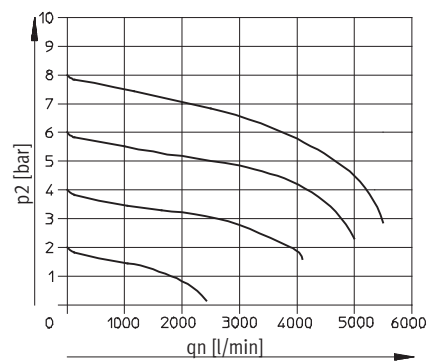
FRC-1/8...-MICRO



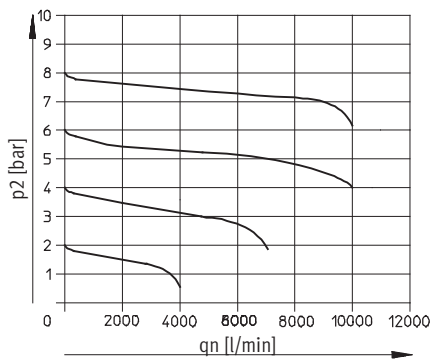
FRC-1/4-D-MINI



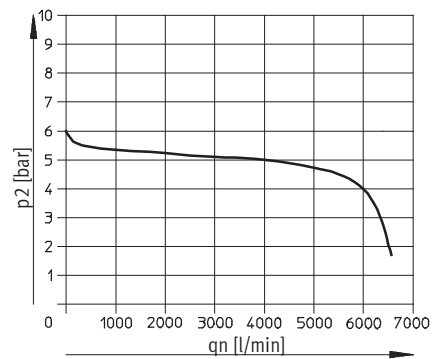
FRC-1/2-D-MIDI



FRC-1-D-MAXI



FRC-1-D-DI-MAXI



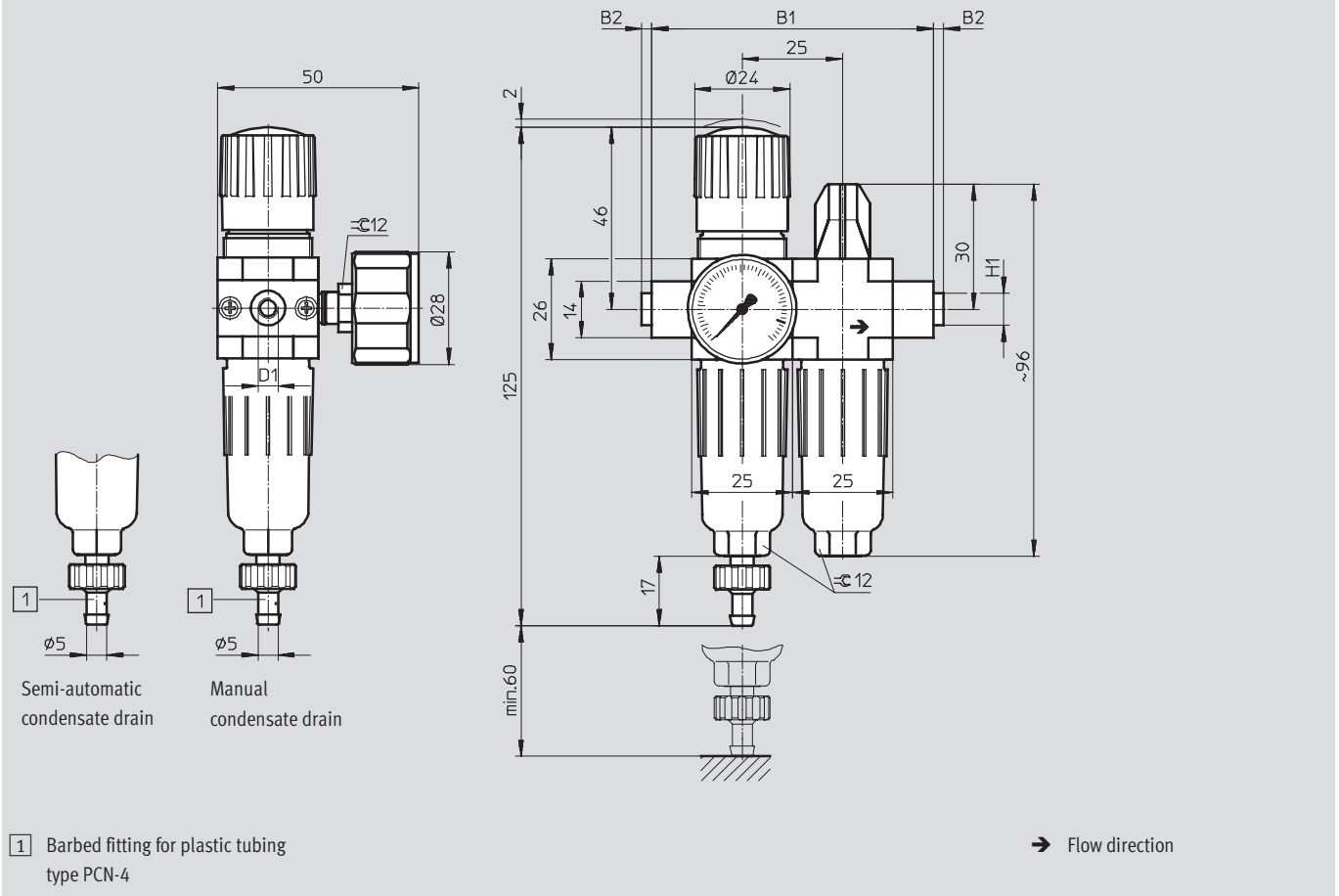
FRC Filter/Regulator-Lubricators – D Series, NPT

Technical Data – Dimensional Drawings

Dimensions

Download CAD Data → www.festo.com/us/cad

Micro



| Type | B1 | B2 | D1 | H1 |
|--------------------------|----|----|---------|----|
| FRC-1/8-D-7-5M-MICRO (H) | 70 | - | 1/8 NPT | - |

Note: This product conforms to ISO 1179-1 and ISO 228-1

FRC Filter/Regulator-Lubricators – D Series, NPT

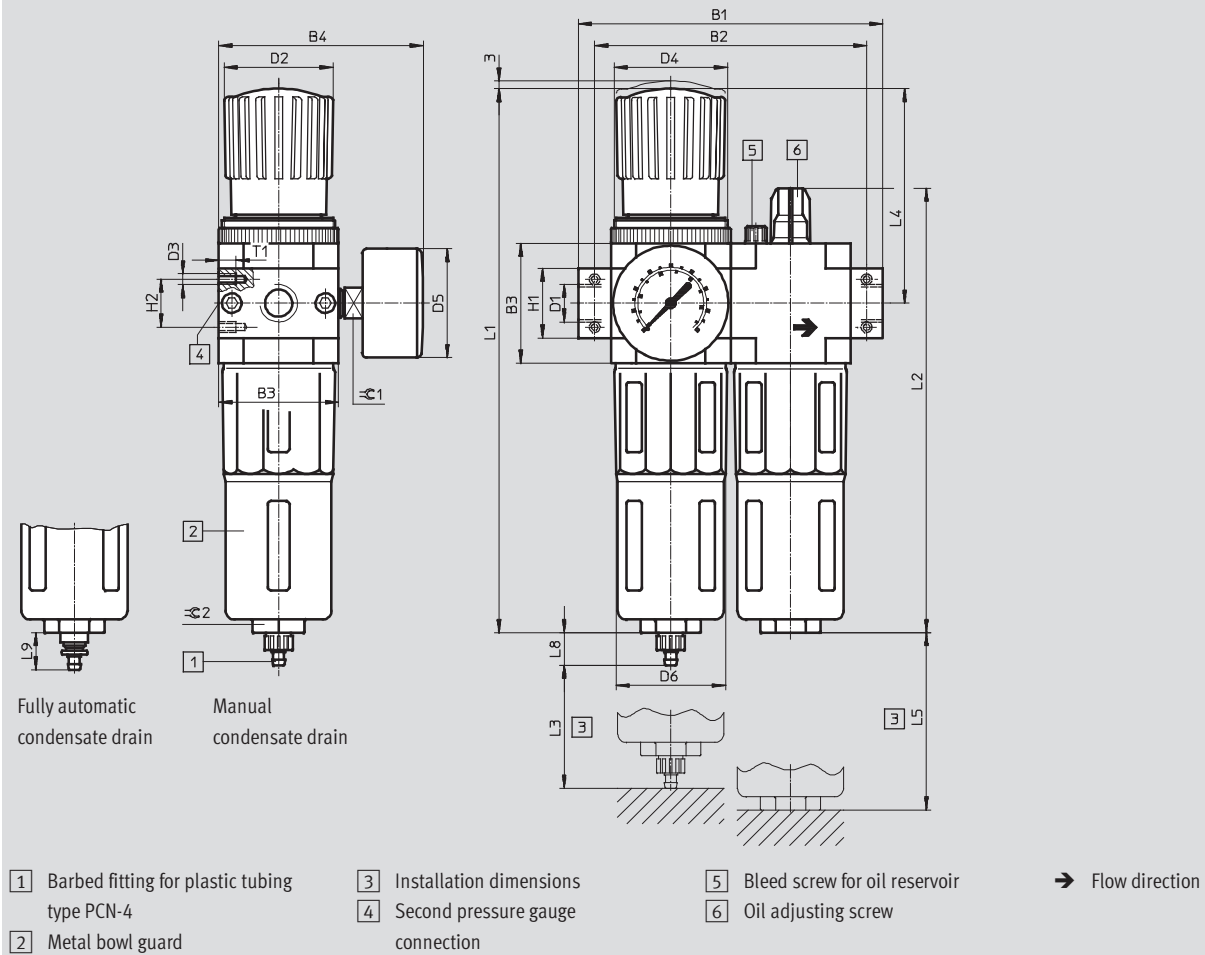
Technical Data – Dimensional Drawings

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Dimensions

Download CAD Data → www.festo.com/us/cad

Mini/Midi/Maxi



FRC Filter/Regulator-Lubricators – D Series, NPT

Technical Data – Dimensional Drawings

| Type | B1 | B2 | B3 | B4 | D1 | D2 Ø | D3 | D4 | D5 Ø | D6 Ø |
|--------------------|-----|---------|-------|-----|---------|---------|----|---------|---------|---------|
| Mini | | | | | | | | | | |
| FRC-1/8-D-MINI-NPT | 104 | 92 | 40 | 76 | 1/8 NPT | 31 | M4 | M36x1.5 | 41 | 38 |
| FRC-1/4-D-MINI-NPT | | | | | 1/4 NPT | | | | | |
| FRC-3/8-D-MINI-NPT | 110 | 3/8 NPT | | | | | | | | |
| Midi | | | | | | | | | | |
| FRC-3/8-D-MIDI-NPT | 140 | 125 | 55 | 95 | 3/8 NPT | 50 | M5 | M52x1.5 | 50 | 52 |
| FRC-1/2-D-MIDI-NPT | | | | | 1/2 NPT | | | | | |
| FRC-3/4-D-MIDI-NPT | | | | | 3/4 NPT | | | | | |
| Maxi | | | | | | | | | | |
| FRC-1/2-D-MAXI-NPT | 162 | 146 | 66 | 107 | 1/2 NPT | 31 | M5 | M36x1.5 | 50 | 65 |
| FRC-3/4-D-MAXI-NPT | | | | | 3/4 NPT | 31 | | M36x1.5 | | |
| FRC-1-D-MAXI-NPT | 182 | 157 | 1 NPT | 31 | M36x1.5 | | | | | |

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

Note: This product conforms to ISO 1179-1 and ISO 228-1

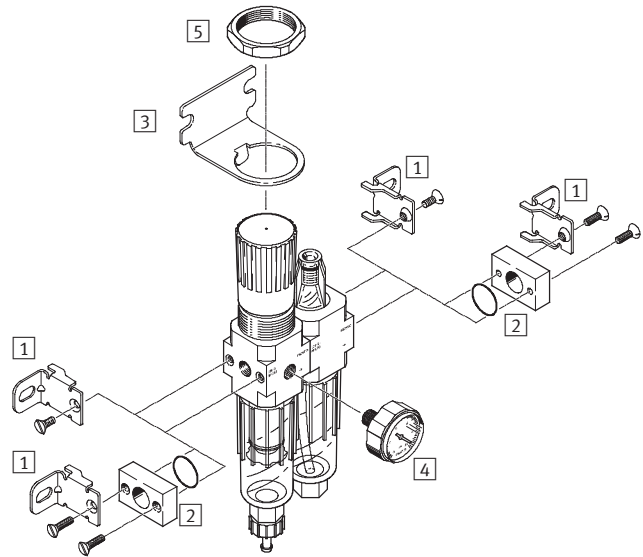
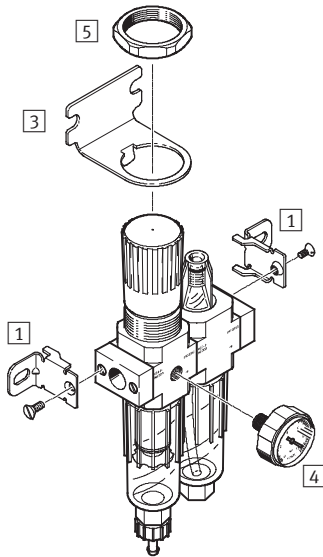
FRC Filter/Regulator-Lubricators – D Series, NPT

Accessories Overview

Micro

FRC filter/regulator-lubricator with port blocks, connection size 1/8 NPT

FRC filter/regulator-lubricator without port blocks, connection size M5 or M7 in housing



| Mounting attachments and accessories | | | |
|--|------------------|---------------------|-----------------|
| | with port blocks | without port blocks | → Page/Internet |
| 1 Mounting bracket HFOE | ■ | ■ | hfoe |
| 2 Connecting plate kit PBL | - | ■ | pbl |
| 3 Mounting bracket HRS | ■ | ■ | hrs |
| 4 Pressure gauge MA-27 | ■ | ■ | ma |
| 5 Hexagon nut (included in scope of delivery) HMR | ■ | ■ | hmr |

Note

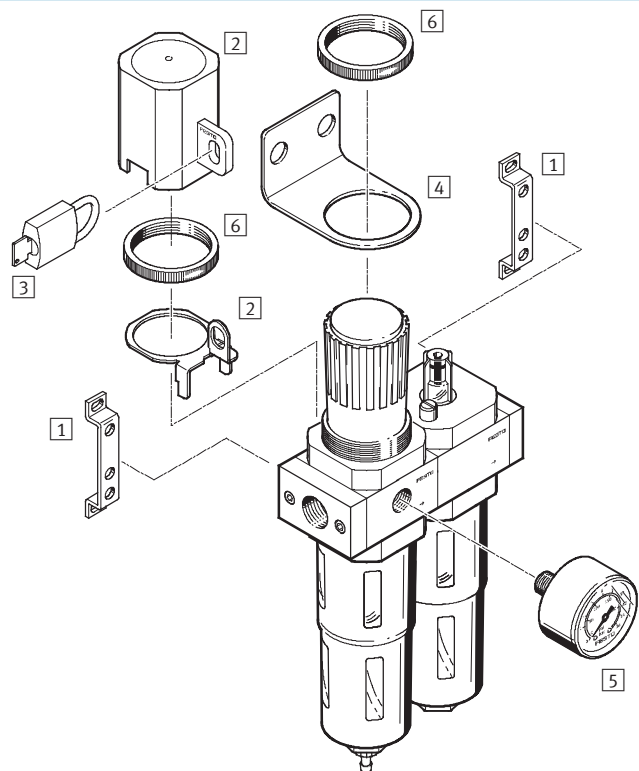
For Custom Combinations → FAST Program Selector Guide starting page 13

FRC Filter/Regulator-Lubricators – D Series, NPT

Accessories Overview

Mini/Midi/Maxi

FRC filter/regulator-lubricator



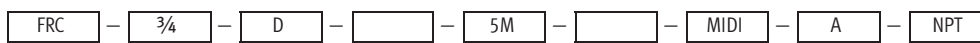
| Mounting attachments and accessories | | Rotary knob with detent | → Page/Internet |
|--------------------------------------|--|-------------------------|-----------------|
| 1 | Mounting bracket HFOE | ■ | hfoe |
| 2 | Regulator lock LRVS | ■ | lrvs |
| 3 | Padlock LRVS-D | ■ | Lrvs-d |
| 4 | Mounting bracket HR-D | ■ | hr |
| 5 | Pressure gauge MA | ■ | ma |
| 6 | Knurled nut (included in scope of delivery) HMR | ■ | hmr |

Note

For Custom Combinations → FAST Program Selector Guide starting page 13

FRC Filter/Regulator-Lubricators – D Series, NPT

Type Codes



Basic function

| | |
|-----|-----------------------------|
| FRC | Filter/regulator-lubricator |
|-----|-----------------------------|

Pneumatic connection

| | |
|-------------------------------|---------------------------------|
| N ¹ / ₈ | 1/8 NPT Thread (for Micro only) |
| 1/8 | 1/8 NPT Thread |
| 1/4 | 1/4 NPT Thread |
| 3/8 | 3/8 NPT Thread |
| 1/2 | 1/2 NPT Thread |
| 3/4 | 3/4 NPT Thread |
| 1 | 1 NPT Thread |

Series

| | |
|---|--------|
| D | Series |
|---|--------|

Pressure regulation range

| | |
|---|----------------|
| | 0.5 ... 12 bar |
| 7 | 0.5 ... 7 bar |

Grade of filtration

| | |
|----|-------|
| | 40 µm |
| 5M | 5 µm |

Pressure gauge

| | |
|---|------------------------|
| | With pressure gauge |
| 0 | Without pressure gauge |

Size

| | |
|-------|--|
| MICRO | Grid dimension 25 mm (without port blocks) |
| MINI | Grid dimension 40 mm (without port blocks) |
| MIDI | Grid dimension 55 mm (without port blocks) |
| MAXI | Grid dimension 66 mm (without port blocks) |

Condensate Drain

| | |
|---|-----------------|
| | Manual |
| A | Fully automatic |

NPT Connection (where available)

| | |
|-----|---|
| NPT | NPT threaded connection (not part of Micro type code) |
|-----|---|

FRC Filter/Regulator-Lubricators – D Series, NPT



Ordering Data – Micro

| Ordering data | | | | |
|---|-------|------------|--------------------------|---------------------------|
| Pressure regulation range 0.5 ... 7 bar | | | | |
| Condensate drain | Size | Connection | Grade of filtration 5 µm | |
| | | | Part No. | Type |
| With pressure gauge | | | | |
| Manual | Micro | 1/8 NPT | 527868 | FRC-N1/8-D-7-5M-MICRO |
| Semiautomatic | Micro | 1/8 NPT | 527869 | FRC-N1/8-D-7-5M-MICRO-H |
| Without pressure gauge | | | | |
| Manual | Micro | 1/8 NPT | 527870 | FRC-N1/8-D-7-0-5M-MICRO |
| Semiautomatic | Micro | 1/8 NPT | 527871 | FRC-N1/8-D-7-0-5M-MICRO-H |

FRC Filter/Regulator-Lubricators – D Series, NPT

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Ordering Data – Mini/Midi/Maxi

| Ordering data | | | | | | | | |
|--|-----------------|------------|--------------------------|-------------------------|---------------------------|----------------------|---------------------------|------------------------|
| Pressure regulation range 0.5 ... 12 bar, metal bowl guard | | | | | | | | |
| Condensate drain | Size | Connection | Grade of filtration 5 µm | | Grade of filtration 40 µm | | Grade of filtration 40 µm | |
| | | | Part No. | Type | Part No. | Type | Part No. | Type |
| With pressure gauge | | | | | | | Without pressure gauge | |
| Manual | Mini | 1/8 NPT | 173832 | FRC-1/8-D-5M-MINI-NPT | 173828 | FRC-1/8-D-MINI-NPT | 173830 | FRC-1/8-D-O-MINI-NPT |
| | | 1/4 NPT | 173840 | FRC-1/4-D-5M-MINI-NPT | 173836 | FRC-1/4-D-MINI-NPT | 173838 | FRC-1/4-D-O-MINI-NPT |
| | | 3/8 NPT | 173848 | FRC-3/8-D-5M-MINI-NPT | 173844 | FRC-3/8-D-MINI-NPT | 173846 | FRC-3/8-D-O-MINI-NPT |
| | Midi | 3/8 NPT | 173856 | FRC-3/8-D-5M-MIDI-NPT | 173852 | FRC-3/8-D-MIDI-NPT | 173854 | FRC-3/8-D-O-MIDI-NPT |
| | | 1/2 NPT | 173864 | FRC-1/2-D-5M-MIDI-NPT | 173860 | FRC-1/2-D-MIDI-NPT | 173862 | FRC-1/2-D-O-MIDI-NPT |
| | | 3/4 NPT | 173872 | FRC-3/4-D-5M-MIDI-NPT | 173868 | FRC-3/4-D-MIDI-NPT | 173870 | FRC-3/4-D-O-MIDI-NPT |
| | Maxi | 3/4 NPT | 173880 | FRC-3/4-D-5M-MAXI-NPT | 173876 | FRC-3/4-D-MAXI-NPT | 173878 | FRC-3/4-D-O-MAXI-NPT |
| | | 1 NPT | 173888 | FRC-1-D-5M-MAXI-NPT | 173884 | FRC-1-D-MAXI-NPT | - | |
| | Fully automatic | Mini | 1/8 NPT | 173833 | FRC-1/8-D-5M-MINI-A-NPT | 173829 | FRC-1/8-D-MINI-A-NPT | 173831 |
| 1/4 NPT | | | 173841 | FRC-1/4-D-5M-MINI-A-NPT | 173837 | FRC-1/4-D-MINI-A-NPT | 173839 | FRC-1/4-D-O-MINI-A-NPT |
| 3/8 NPT | | | 173849 | FRC-3/8-D-5M-MINI-A-NPT | 173845 | FRC-3/8-D-MINI-A-NPT | 173847 | FRC-3/8-D-O-MINI-A-NPT |
| Midi | | 3/8 NPT | 173857 | FRC-3/8-D-5M-MIDI-A-NPT | 173853 | FRC-3/8-D-MIDI-A-NPT | 173855 | FRC-3/8-D-O-MIDI-A-NPT |
| | | 1/2 NPT | 173865 | FRC-1/2-D-5M-MIDI-A-NPT | 173861 | FRC-1/2-D-MIDI-A-NPT | 173863 | FRC-1/2-D-O-MIDI-A-NPT |
| | | 3/4 NPT | 173873 | FRC-3/4-D-5M-MIDI-A-NPT | 173869 | FRC-3/4-D-MIDI-A-NPT | 173871 | FRC-3/4-D-O-MIDI-A-NPT |
| Maxi | | 3/4 NPT | 173881 | FRC-3/4-D-5M-MAXI-A-NPT | 173877 | FRC-3/4-D-MAXI-A-NPT | 173879 | FRC-3/4-D-O-MAXI-A-NPT |
| | | 1 NPT | 173889 | FRC-1-D-5M-MAXI-A-NPT | 173885 | FRC-1-D-MAXI-A-NPT | - | |

| Ordering data | | | | | | | | |
|---|-----------------|------------|---------------------------|------------------------|------------------------|--|--|--|
| Pressure regulation range 0.5 ... 7 bar, metal bowl guard | | | | | | | | |
| Condensate drain | Size | Connection | Grade of filtration 40 µm | | | | | |
| | | | Part No. | Type | | | | |
| With pressure gauge | | | | | | | | |
| Manual | Mini | 1/8 NPT | 173834 | FRC-1/8-D-7-MINI-NPT | | | | |
| | | 1/4 NPT | 173842 | FRC-1/4-D-7-MINI-NPT | | | | |
| | | 3/8 NPT | 173850 | FRC-3/8-D-7-MINI-NPT | | | | |
| | Midi | 3/8 NPT | 173858 | FRC-3/8-D-7-MIDI-NPT | | | | |
| | | 1/2 NPT | 173866 | FRC-1/2-D-7-MIDI-NPT | | | | |
| | | 3/4 NPT | 173874 | FRC-3/4-D-7-MIDI-NPT | | | | |
| | Maxi | 3/4 NPT | 173882 | FRC-3/4-D-7-MAXI-NPT | | | | |
| | | 1 NPT | 173890 | FRC-1-D-7-MAXI-NPT | | | | |
| | Fully automatic | Mini | 1/8 NPT | 173835 | FRC-1/8-D-7-MINI-A-NPT | | | |
| 1/4 NPT | | | 173843 | FRC-1/4-D-7-MINI-A-NPT | | | | |
| 3/8 NPT | | | 173851 | FRC-3/8-D-7-MINI-A-NPT | | | | |
| Midi | | 3/8 NPT | 173859 | FRC-3/8-D-7-MIDI-A-NPT | | | | |
| | | 1/2 NPT | 173867 | FRC-1/2-D-7-MIDI-A-NPT | | | | |
| | | 3/4 NPT | 173875 | FRC-3/4-D-7-MIDI-A-NPT | | | | |
| Maxi | | 3/4 NPT | 173883 | FRC-3/4-D-7-MAXI-A-NPT | | | | |
| | | 1 NPT | 173891 | FRC-1-D-7-MAXI-A-NPT | | | | |

FAST* Program – Custom Combination Selector Guide

Custom Combinations– D Series, NPT

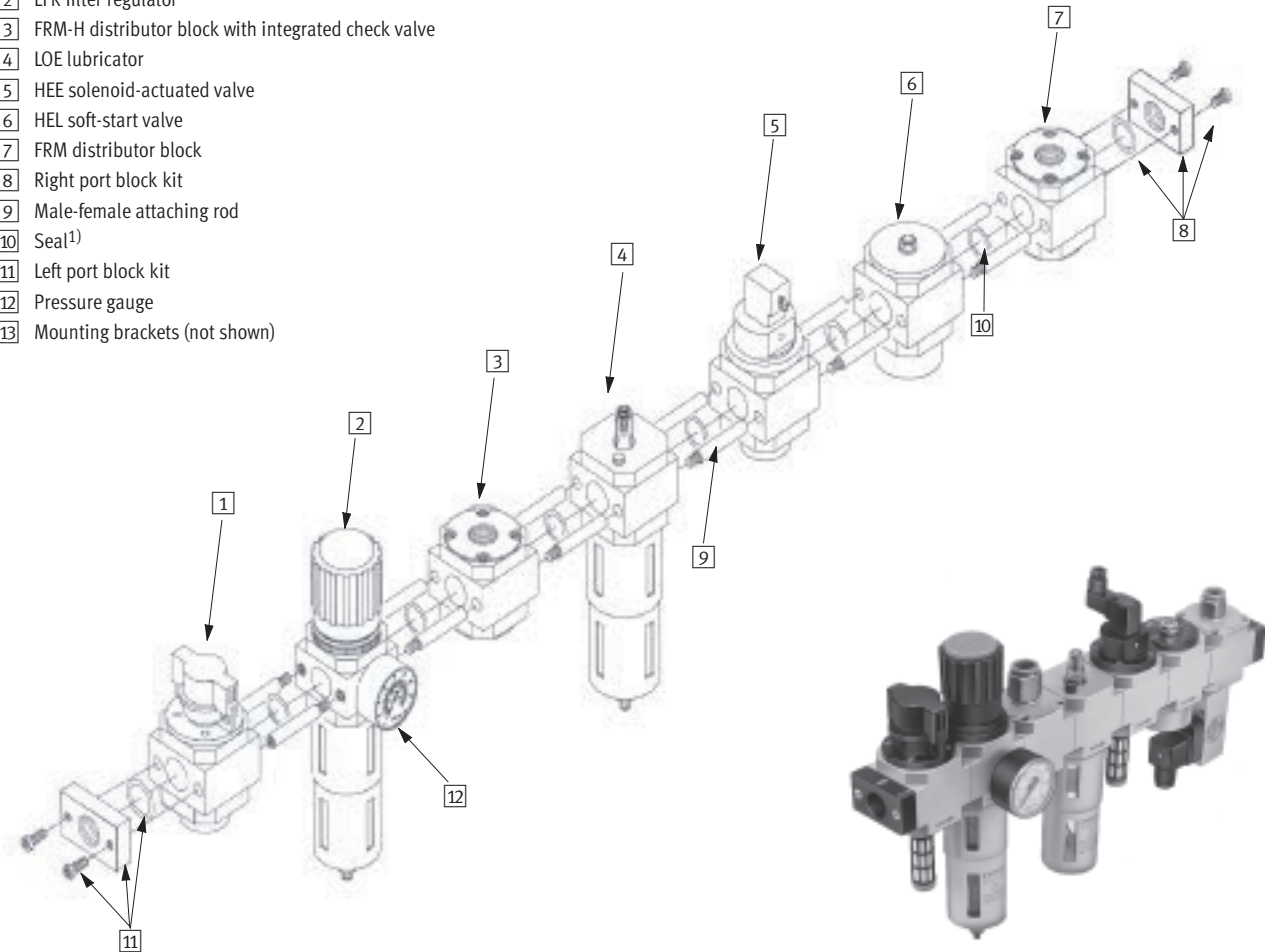
*FAST = Festo Assured Shipping Time

Custom combinations can be delivered same day / next day as separate parts for assembly at the site. Available parts are listed in this section.

Factory assembled custom combinations are also available. Contact your local Festo representative for details.

A combination is an assembly which combines different air preparation functions into a single unit. An example would be as follows

- 1 HE on/off valve
- 2 LFR filter regulator
- 3 FRM-H distributor block with integrated check valve
- 4 LOE lubricator
- 5 HEE solenoid-actuated valve
- 6 HEL soft-start valve
- 7 FRM distributor block
- 8 Right port block kit
- 9 Male-female attaching rod
- 10 Seal¹⁾
- 11 Left port block kit
- 12 Pressure gauge
- 13 Mounting brackets (not shown)



¹⁾ Note: For MAXI sizes only, 2 seals are required.

Example of an assembled D Series combination

Selecting Components for Combinations

The following steps can be used to select the component part numbers and determine quantities needed to assemble a combination.

As an example within each step, the above unit will be used with these requirements:

- Maximum pressure: 7 bar
- Minimum filtration: 40 µm
- Automatic drain filter
- Flow: 2000 l/min
- NPT thread
- 24 V DC system

Parts selected for the example will be highlighted like this.

FAST Program – Custom Combination Selector Guide



Custom Combinations– D Series, NPT

Step 1: Based upon the required functions and flow for a given port, determine the port size and unit type (MINI, MIDI, or MAXI). The flow for an assembly of units will be approximately 80 % of the lowest flow unit selected (as shown in the chart).

Example:

Based upon the functions required, and a flow of 2000 l/min, the minimum suggested port size and unit type is a 3/8 MIDI. The appropriate maximum flow will be 2480 l/min based on the flow rate of the lowest flow component.

80 % of Maximum Flow Per Unit Type (l/min / scfm)

| Function | Type | 1/8 | | 3/8 | |
|--------------------|---------------------|------------|------------|------------|-------------|
| | | MINI | MINI | MIDI | MIDI |
| On/Off Valve | HE, HEE, HEL | 800/28.2 | 1,200/42.4 | 2,080/73.4 | 2,560/90.4 |
| Filter Regulator | LFR (40 µm) | 600/21.2 | 1,200/42.4 | 1,600/56.5 | 2,480/87.5 |
| | LFR (5 µm) | 520/18.4 | 960/33.9 | 1,280/45.2 | 1,920/67.8 |
| Regulator | LR | 800/28.2 | 1,280/45.2 | 1,760/62.1 | 1,440/50.8 |
| Filter | LF (40 µm) | 800/28.2 | 960/33.9 | 1,520/53.7 | 2,160/76.2 |
| | LF (5 µm) | 640/22.6 | 760/26.8 | 1,280/45.2 | 880/31.1 |
| Micro Filter | LFMA (0.01 µm) | 104/3.7 | 128/4.5 | 280/9.9 | 304/10.7 |
| Fine Filter | LFMB (1 µm) | 200/7.1 | 240/8.5 | 400/14.1 | 560/19.8 |
| Lubicator | LOE | 1,040/36.7 | 1,840/65.0 | 2,240/79.1 | 4,400/153.3 |
| Distribution Block | FRM | 1,200/42.4 | 2,640/93.2 | 2,800/98.8 | 5,600/197.7 |
| | FRM-H w/check valve | 1,040/36.7 | 1,600/56.5 | 2,720/96.0 | 4,400/155.3 |

| Function | Type | 1/2 | | 3/4 | | 1 |
|--------------------|---------------------|-------------|-------------|-------------|--------------|--------------|
| | | MIDI | MAXI | MIDI | MAXI | MAXI |
| On/Off Valve | HE, HEE, HEL | 2,880/101.7 | 4,480/158.1 | 3,040/107.3 | 4,800/169.4 | 5,200/183.6 |
| Filter Regulator | LFR (40 µm) | 2,720/96.0 | 7,520/265.5 | 2,720/96.0 | 7,760/273.9 | 8,000/282.4 |
| | LFR (5 µm) | 2,000/70.6 | 6,064/214.1 | 2,080/73.4 | 6,080/214.6 | 6,400/225.9 |
| Regulator | LR | 3,200/113.0 | 8,560/302.2 | 3,600/127.1 | 9,600/338.9 | 10,000/353.0 |
| Filter | LF (40 µm) | 2,400/84.7 | 3,520/124.3 | 2,400/84.7 | 4,000/141.2 | 4,240/149.7 |
| | LF (5 µm) | 1,600/56.5 | 2,960/104.5 | 1,600/56.5 | 2,880/101.7 | 3,040/107.3 |
| Micro Filter | LFMA (0.01 µm) | 720/25.4 | 920/32.5 | 800/28.2 | 960/33.9 | 1,000/35.3 |
| Fine Filter | LFMB (1 µm) | 320/11.3 | 600/21.2 | 368/13.0 | 720/25.4 | 760/26.8 |
| Lubicator | LOE | 4,880/172.3 | 6,640/234.4 | 5,040/177.9 | 6,720/273.3 | 7,200/254.2 |
| Distribution Block | FRM | 6,560/231.2 | 9,360/330.4 | 7,040/248.5 | 16,000/564.8 | 13,920/491.4 |
| | FRM-H w/check valve | 4,480/158.1 | 7,680/271.1 | 4,400/155.3 | 12,000/423.6 | 10,720/378.4 |

FAST Program – Custom Combination Selector Guide

Custom Combinations – D Series, NPT



Step 2: Using this chart, select the Main Unit component part numbers by unit type (MINI, MIDI, or MAXI).

Example:

Based upon the requirements and unit type selected in step 1 (MIDI), the Main Unit(items **1** - **7**) part numbers can be selected.

| Application | Description | Type | MINI | MIDI | Item No. | MAXI | |
|----------------------------------|-----------------------------------|-----------|-----------------------------|--------|----------|----------|--------|
| Control Function | Manual On/Off Valve | HE-... | 170681 | 170682 | 1 | 170683 | |
| | Solenoid Actuated On/Off Valve | HEE-... | 24 V DC | 172956 | 172959 | 5 | 172962 |
| | | | 110 V AC | 172957 | 172960 | | 172963 |
| | | | 230 V AC | 172958 | 172961 | | 172964 |
| | Soft-start Valve | HEL-... | 170690 | 170691 | 6 | 170692 | |
| Filtration / Pressure Regulation | Filter / Pressure Regulator Unit | LFR-... | 7 bar, 40 µm, Manual Drain | 546456 | 546463 | | 546470 |
| | | | 7 bar, 40 µm, Auto Drain | 546457 | 546463 | 2 | 546471 |
| | | | 12 bar, 40 µm, Manual Drain | 546432 | 546425 | | 546537 |
| | | | 12 bar, 40 µm, Auto Drain | 546433 | 546426 | | 546438 |
| | | | 12 bar, 5 µm, Manual Drain | 546454 | 546461 | | 546468 |
| | | | 12 bar, 5 µm, Auto Drain | 546455 | 546462 | | 546469 |
| Pressure Regulation | Pressure Regulator Unit | LR-... | 7 bar | 546452 | 546458 | | 546465 |
| | | | 12 bar | 546430 | 546424 | | 546436 |
| Filtration | Filter Unit | LF-... | 40 µm, Manual Drain | 546428 | 546422 | | 546434 |
| | | | 40 µm, Auto Drain | 546429 | 546423 | | 546435 |
| | | | 5 µm, Manual Drain | 546451 | 546459 | | 546466 |
| | | | 5 µm, Auto Drain | 546453 | 546460 | | 546467 |
| | Micro Filter Unit | LFMA-... | 0.01 µm, Manual Drain | 546439 | 546443 | | 546447 |
| | | | 0.01 µm, Auto Drain | 546441 | 546446 | | 546449 |
| | Fine Filter Unit | LFMB-... | 1 µm, Manual Drain | 546440 | 546444 | | 546448 |
| | | | 1 µm, Auto Drain | 546442 | 546445 | | 546450 |
| Lubrication | Lubricator Unit | LOE-... | 546431 | 546427 | 4 | 546517 | |
| Distribution | Distributor Block w/ Threads | FRM-... | 170684 | 170685 | 7 | 170686 | |
| | Distributor Block w/ Check Valve | FRM-H-... | 170687 | 170688 | 3 | 170689 | |
| | Distributor Block w/o Port Blocks | FRZ | 162786 | 159582 | | 162787 | |

Step3: Based upon the type and number of Main Units being joined, choose the part number and quantity of attaching rods and seals.

Example:

n = 7

| Unit Type | Male-Female Attaching Rod | Item No. | Female-Female Attaching Rod | Item No. | Seals | Item No. |
|-----------|---------------------------|----------|-----------------------------|----------|-------------------|-----------|
| MINI | 546481 (set of 2) | | 546483 (set of 2) | | 546478 | |
| MIDI | 546480 (set of 2) | 9 | 546489 | N/A | 546474 | 10 |
| MAXI | 546476 (set of 2) | | 546494 | | 546477 (set of 2) | |

| n = number of Main Units to be assembled | Qty of Male-Female Attaching Rods | Qty of Female-Female Attaching Rods | Number of Seals |
|--|-----------------------------------|-------------------------------------|-----------------|
| Without an LFR or LR | $(n - 1) \times 2$ | 2 | n - 1 |
| With an LFR or LR | $(n - 1) \times 2$ | 0 | n - 1 |
| | $(7 - 1) \times 2$ | 0 | 7 - 1 = 6 |
| | $(6) \times 2 = 12$ | | |

FAST Program – Custom Combination Selector Guide

Custom Combinations – D Series, NPT

Step 4: Use this chart to select the Port Block Kit part numbers by unit type (MINI, MIDI, or MAXI) based upon the size and type.

Example:

3/8 NPT MIDI

| Type | 1/8 NPT | | 1/4 NPT | | 3/8 NPT | | | 1/2 NPT | | 3/4 NPT | | 1 NPT | | |
|------|---------------------|----------------------|---------------------|----------------------|---------------------|----------|----------------------|----------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|
| | Left Port Block Kit | Right Port Block Kit | Left Port Block Kit | Right Port Block Kit | Left Port Block Kit | Item No. | Right Port Block Kit | Item No. | Left Port Block Kit | Right Port Block Kit | Left Port Block Kit | Right Port Block Kit | Left Port Block Kit | Right Port Block Kit |
| Mini | 546520 | 546521 | 546522 | 546523 | 546524 | | 546525 | | – | – | – | – | – | – |
| Midi | – | – | 546536 | 546537 | 546530 | 11 | 546531 | 8 | 546526 | 546527 | 546528 | 546529 | – | – |
| Maxi | – | – | – | – | – | | – | | 546538 | 546539 | 546490 | 546492 | 546491 | 546493 |

Metric / BSP (G)

| Type | G1/8 | | G1/4 | | G3/8 | | G1/2 | | G3/4 | | G1 | |
|------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|
| | Left Port Block Kit | Right Port Block Kit | Left Port Block Kit | Right Port Block Kit | Left Port Block Kit | Right Port Block Kit | Left Port Block Kit | Right Port Block Kit | Left Port Block Kit | Right Port Block Kit | Left Port Block Kit | Right Port Block Kit |
| Mini | 546495 | 546496 | 546497 | 546498 | 546499 | 546500 | – | – | – | – | – | – |
| Midi | – | – | 546532 | 546533 | 546501 | 546502 | 546503 | 546504 | 546505 | 546506 | – | – |
| Maxi | – | – | – | – | – | – | 546534 | 546535 | 546507 | 546508 | 546509 | 546510 |

Step 5: Use this chart to select the Gauge (if required) and the (optional) Mounting Brackets by unit type (MINI, MIDI, or MAXI).

Example:

MIDI size

Gauge Selection (if required)

| Type | 7 bar | Item | 12 bar |
|------|--------|------|--------|
| Mini | 546485 | | 546479 |
| Midi | 546484 | 12 | 546482 |
| Maxi | 546484 | | 546482 |

Mounting Brackets (2 brackets included)

| Type | Mounting Brackets | Item |
|------|-------------------|------|
| Mini | 159638 | |
| Midi | 159593 | 13 |
| Maxi | 159593 | |

Example:

Result:

| Item | Part No. | Qty | |
|------|---|--------|---|
| 1 | HE On/Off Valve | 170682 | 1 |
| 2 | LFR Filter Regulator | 546464 | 1 |
| 3 | FRM-H Distributor Block with Integrated Check Valve | 170688 | 1 |
| 4 | LOE Lubricator | 546427 | 1 |
| 5 | HEE Solenoid Actuated On-Off Valve | 172959 | 1 |
| 6 | HEL Soft-start Valve | 170691 | 1 |
| 7 | FRM Distributor Block | 170685 | 1 |
| 8 | Right Port Block Kit | 546531 | 1 |
| 9 | Male-Female Attaching Rod | 546480 | 6 |
| 10 | Seal | 546474 | 6 |
| 11 | Left Port Block Kit | 546530 | 1 |
| 12 | MA Pressure Gauge | 546484 | 1 |
| 13 | Mounting Brackets (not shown) | 159593 | 1 |

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