



MANN+HUMMEL In-line fuel filters

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The range of MANN+HUMMEL in-line fuel filters starts with the PreLine® preliminary filter for the separation of water and includes the main fuel filter with single or duplex versions, right up to duplex filters with changeover. The filtration characteristics are mainly defined by the spin-on filter used or the filter media.

The advantages at a glance:

- Easy fitting in existing lines
- Robust, stable cast aluminium design
- More flexibility can be added to the standard version by the addition of an optional optical or electrical service switch (see pages 106-107)
- Duplex types with changeover are available and are particularly suitable for marine applications
- Low pressure drop
- Proven quality of the MANN+HUMMEL spin-on filter

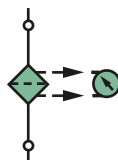
Design

The filter consists of the filter head with connection threads and mounting possibilities and the MANN+HUMMEL spin-on filter.

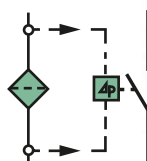
The MANN+HUMMEL service indicator or service switch and bypass valve have to be selected so as to ensure that necessary filter maintenance is signalled before the bypass valve opens. Please contact your MANN+HUMMEL contact partner for further information.

Available versions:

- with service indicator



- with service switch (make/break contact convertible)



Fitting and maintenance

The filter is fitted in the pipeline, whereby the flow direction has to be observed. This is indicated by arrows on the connection threads.

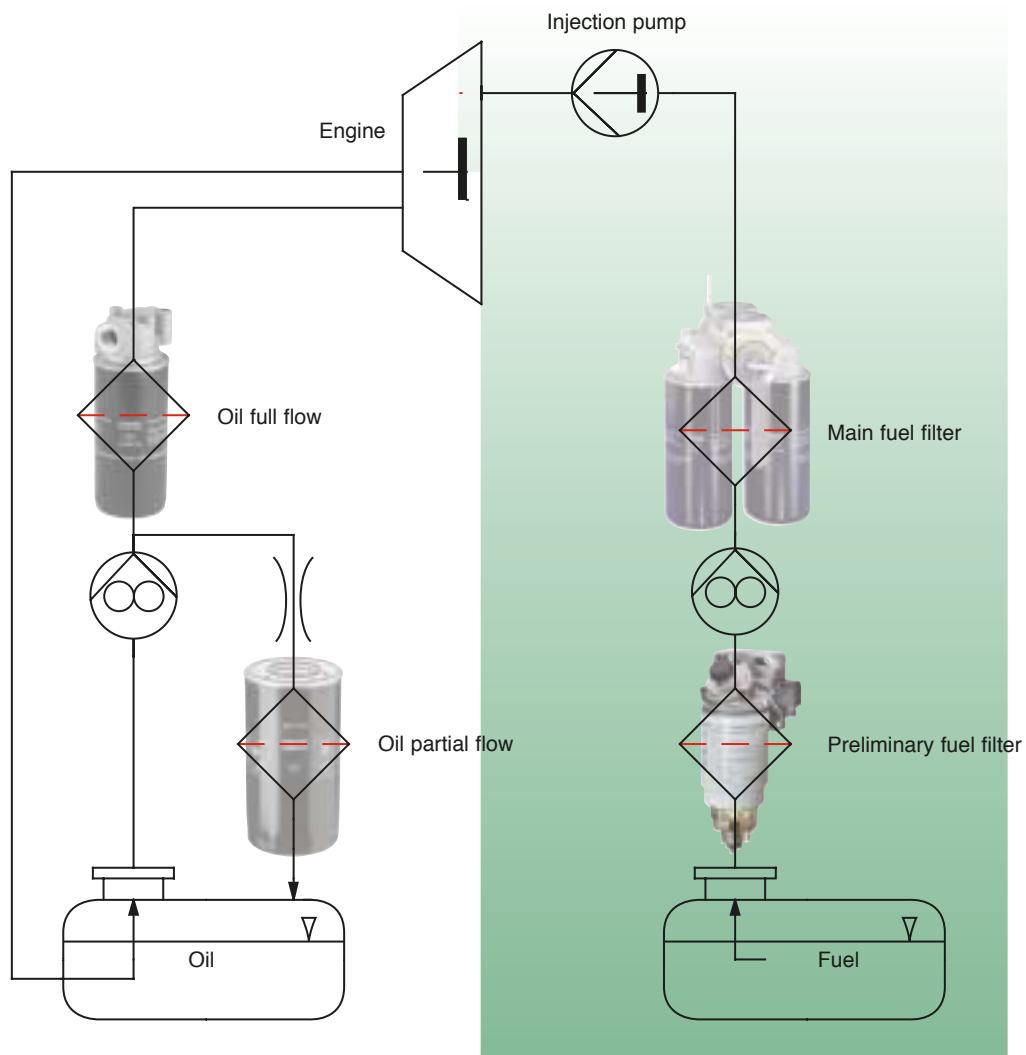
The time for maintenance is usually defined by the engine or equipment manufacturer. Maintenance simply requires replacement of the complete spin-on filter.

The spin-on filter can be easily removed using the respective MANN+HUMMEL filter wrench (see page 105).

The in-line filter allows various combinations between the spin-on filter and the filter head. This catalogue only lists the basic types. If you do not find an in-line filter suitable for your application,

please get in touch with your MANN+HUMMEL contact partners. They will be happy to advise you on the appropriate in-line filter consisting of a filter head, spin-on filter and accessories.

Diagram of filter arrangement around the engine



Overview of fuel filter heads

Single head, screwed on, with optional manual pump and heater

Page 79

This head is designed especially for our PreLine® preliminary fuel filter series. It is optionally available with a manual pump and heater.



Single head

Page 80

The universal head for fuel filtration to reduce weight and save space. In the horizontal plane there are three usable inlet openings and one outlet in the vertical plane. The head is equipped with a vent screw.

Single head with flange

Page 81

In one plane there are respectively two inlet openings for fuel on the raw side and two outlets on the clean side. The head is suitable for fitting to a vertical mounting surface. There is a venting possibility.

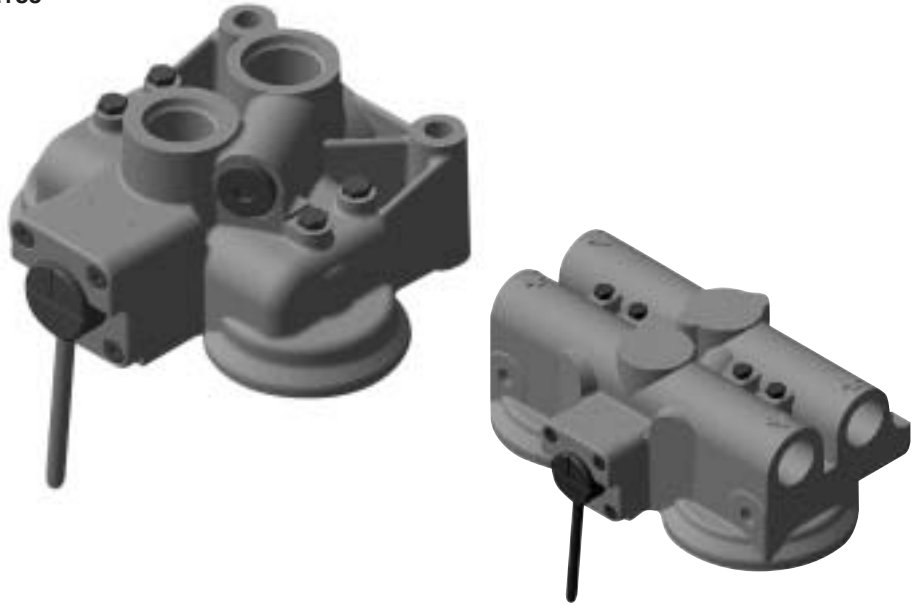


Overview of fuel filter heads

Duplex with changeover

Page 82+83

Both heads are manufactured in cast aluminium. They allow a change of filter during operation. Using a changeover lever it is possible to direct the flow through a single filter or through both filters in parallel. If necessary a MANN+HUMMEL service switch or service indicator can be fitted (see pages 106-107). Both heads are equipped with venting.



Duplex with changeover in spheroidal graphite cast iron (EN-GJS-400-15)

Page 84

This duplex filter is classified according to prevailing regulations in the marine field such as SOLAS * and GL ** and is predestined for use in marine applications on ships. High quality PTFE sealing elements are used on the changeover handle. A change of filter during operation is possible by changing to only one filter.

* SOLAS = Safety of Life at Sea

** GL = German Lloyd



In-line fuel filters

PreLine® preliminary filter for the separation of water

Increasing pressures in injection systems have in turn considerably increased the requirements for fuel filtration with regard to the separation of water and particles. The injection pump manufacturers have therefore drawn up a list of requirements.

MANN+HUMMEL filters more than completely fulfil the requirements.

Our PreLine® preliminary fuel filter series reliably meets the required water separation efficiency of at least 93 % acc. to ISO 4020 thanks to the specially developed melt-blown medium.

The standard version has a manual pump and manual drain. Other versions are available with an electrical diesel heater and water sensor.



PreLine® 270



PreLine® 420 with heater and water sensor

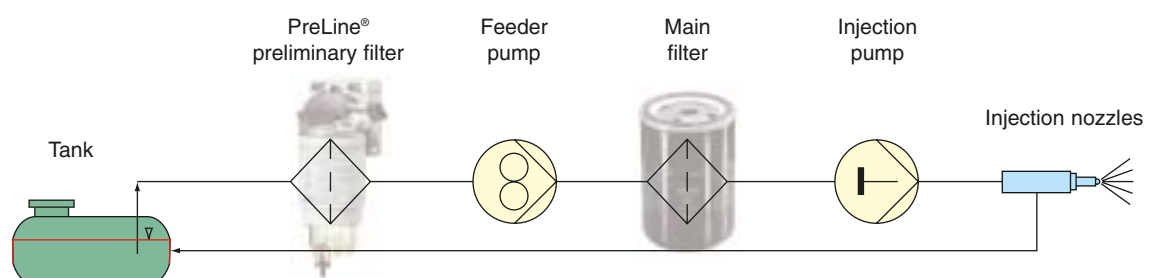


Water trap and fitting tool

The advantages at a glance:

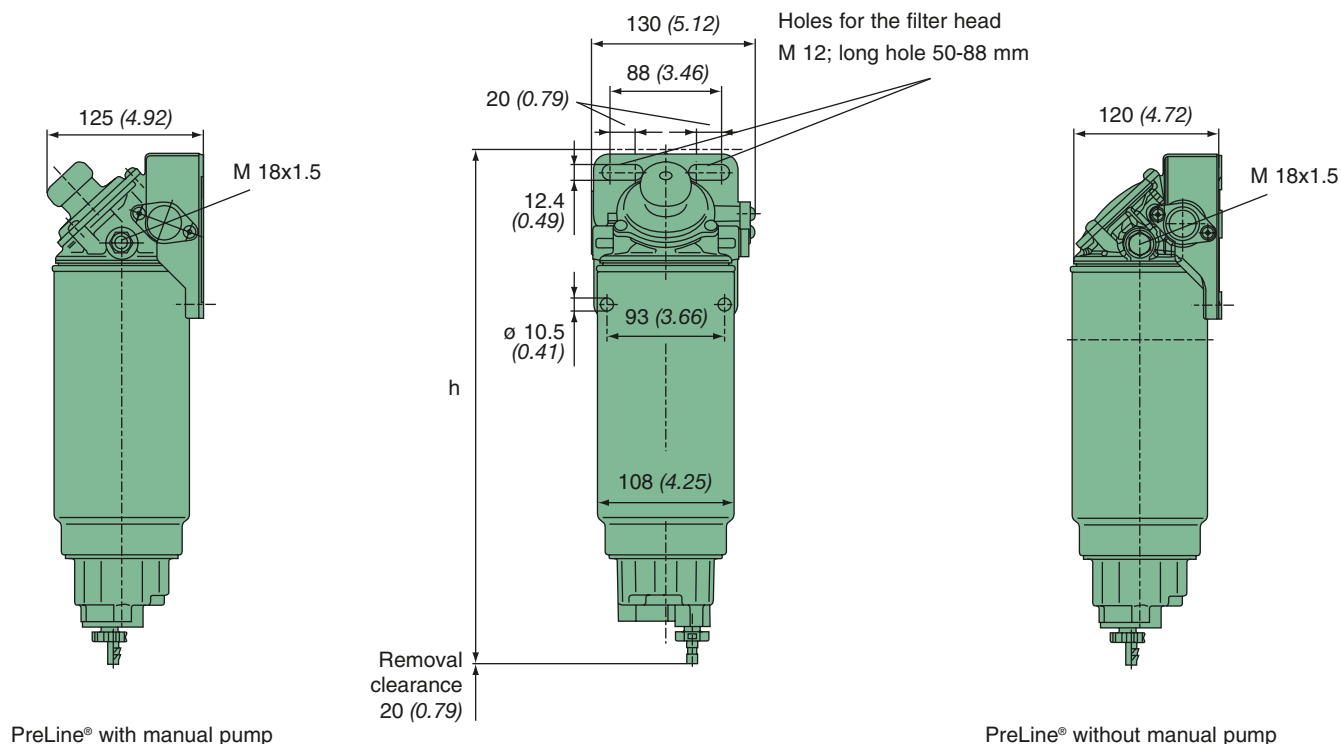
- Excellent water separation
- Design with highly integrated function
- High dynamic stiffness
- Optional: electrical heater in the inflow
- Increases the filter service life of the main filter
- Ideal as retrofit solution
- Protects modern injection systems against damage caused by corrosion and abrasion
- Reduces costs through longer engine life
- Reduces repair costs

Typical arrangement of the fuel filter around the engine



In-line fuel filters

PreLine® preliminary filter for the separation of water



The following is valid for all PreLine® variations:

Water separation: > 93 %

Operating pressure: 4 bar

Separation efficiency acc. to ISO/TR 13 353 for 3-5 µm particles:

Multigrade medium PF: > 45%

Multigrade medium PFO: > 10%

Accessories:

Heater for fitting in the filter head: part no. 29 017 00 202 (24 V, 350 W; temperature switching point 5 °C, switches automatically on and off)

Water trap: part no. 66 606 12 982

Fitting tool: part no. LS 7/4

Part no.	Type	Nominal flow rate [l/h] [gph]	Dimensions in mm (Dimensions in inches) h	MANN-FILTER		Filter head	Water trap
				Multigrade medium PF	Multigrade medium PFO		
66 606 62 251	PreLine® 420	420 (110.96)	406 (15.98)	PL 420/1	–	with pump	with sensor
66 606 62 255				PL 420/1	–	with pump	without sensor
66 606 62 257				PL 420/1	–	without pump	with sensor
66 606 62 253				PL 420/1	–	without pump	without sensor
66 606 62 261				–	PL 420	with pump	with sensor
66 606 62 265				–	PL 420	with pump	without sensor
66 606 62 267				–	PL 420	without pump	with sensor
66 606 62 263				–	PL 420	without pump	without sensor

Part no.	Type	Nominal flow rate [l/h] [gph]	Dimensions in mm (Dimensions in inches) h	MANN-FILTER		Filter head	Water trap
				Multigrade medium PF	Multigrade medium PFO		
66 604 62 251	PreLine® 270	270 (71.33)	326 (12.83)	PL 270/1	–	with pump	with sensor
66 604 62 255				PL 270/1	–	with pump	without sensor
66 604 62 257				PL 270/1	–	without pump	with sensor
66 604 62 253				PL 270/1	–	without pump	without sensor
66 604 62 261				–	PL 270	with pump	with sensor
66 604 62 265				–	PL 270	with pump	without sensor
66 604 62 267				–	PL 270	without pump	with sensor
66 604 62 263				–	PL 270	without pump	without sensor

In-line fuel filters

Main filter with single head

The following shows a selection of MANN+HUMMEL in-line filters equipped with our proven fuel filters. Many other combinations are also available.
Please contact your MANN+HUMMEL contact partner for more information.

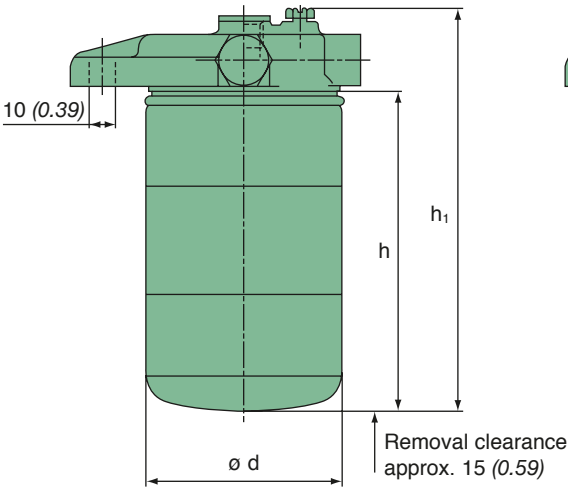


Fig. 1

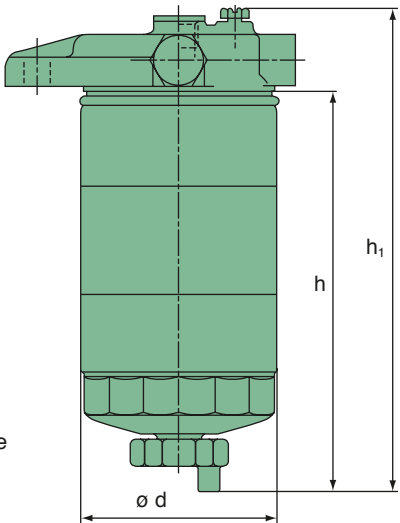
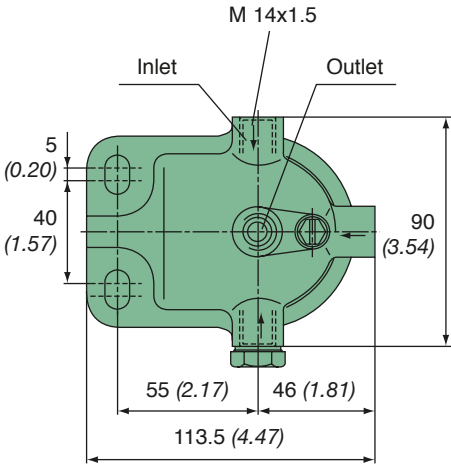


Fig. 2



Part no.	Fig.	MANN-FILTER (see page 70)	Nominal flow rate [l/h] [gph]	max. operating pressure [bar]	Dimensions in mm (Dimensions in inches)			Drain
					h	h ₁	d	
66 403 62 182	1	WK 723	180 (47.56)	2.5	126 (4.96)	153 (6.02)	76 (2.99)	no
66 404 62 242	1	WK 731	180 (47.56)	2.5	119 (4.69)	144 (5.67)	76 (2.99)	no
66 405 62 112	2	WK 842	200 (52.84)	2.5	155 (6.10)	182 (7.17)	80 (3.15)	yes
66 400 62 252	2	WK 842/6	300 (79.26)	2.5	155 (6.10)	182 (7.17)	81 (3.19)	yes

In-line fuel filters

Main filter with single head

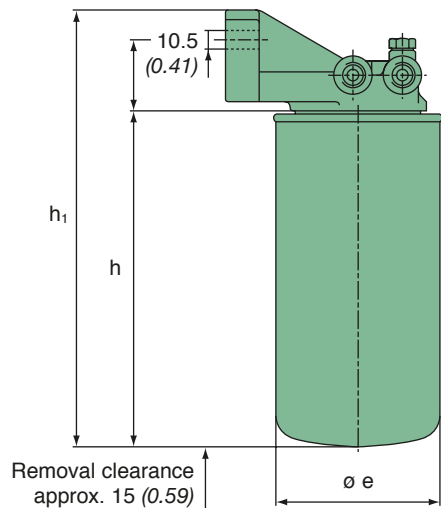


Fig. 1

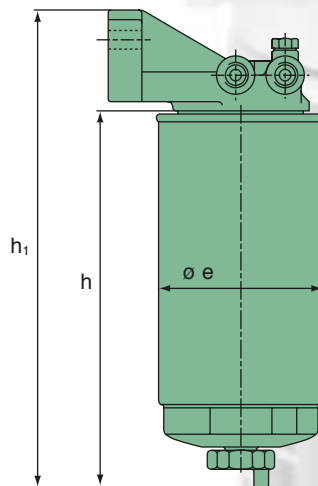
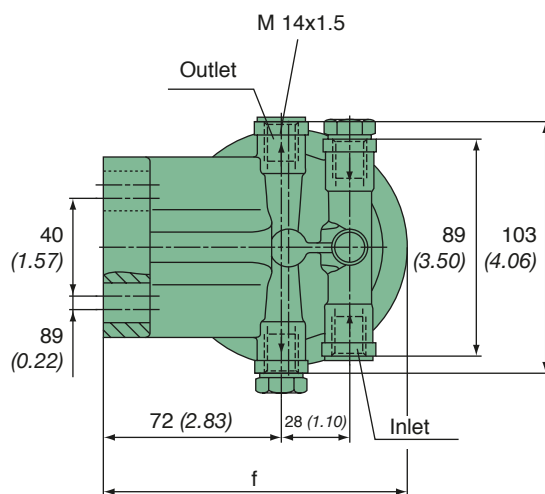


Fig. 2



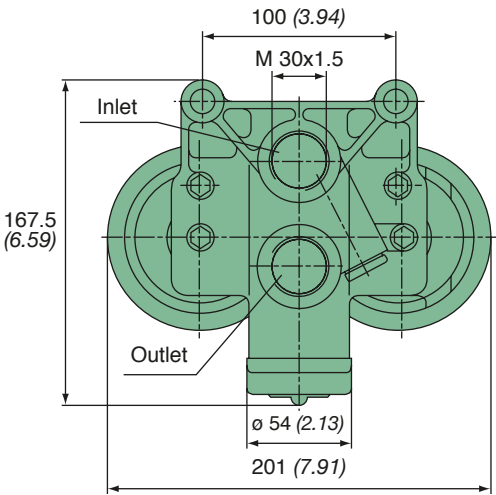
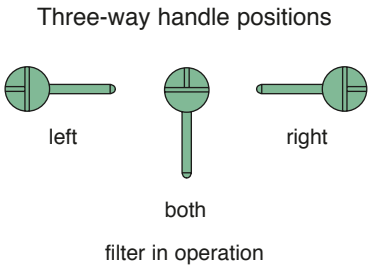
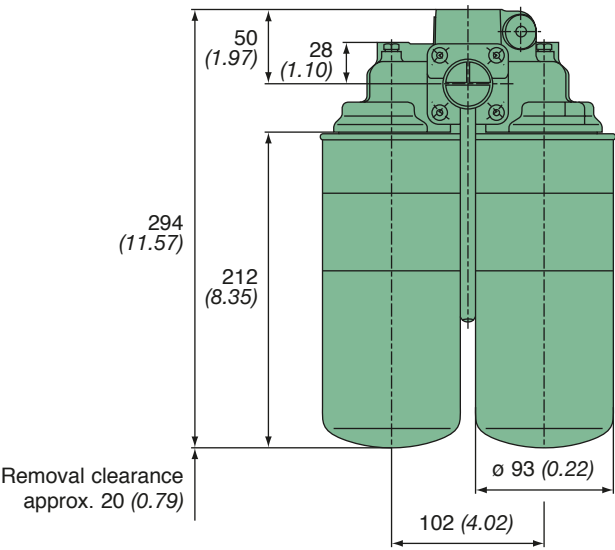
Part no.	Fig.	MANN-FILTER (see page 70)	Nominal flow rate [l/h] [gph]	max. operating pressure [bar]	Dimensions in mm (Dimensions in inches)				Drain
					h	h ₁	e	f	
66 402 62 162	1	WK 712/2	150 (39.63)	2.5	80 (3.15)	137 (5.39)	76 (2.99)	113.5 (4.47)	no
66 404 62 232	1	WK 731	180 (47.56)	2.5	117 (4.61)	174 (6.85)	76 (2.99)	113.5 (4.47)	no
66 405 62 102	2	WK 842	200 (52.84)	2.5	155 (6.10)	212 (8.35)	80 (3.15)	116.5 (4.59)	yes
66 508 62 422	1	WK 962/4	300 (79.26)	2.5	210 (8.27)	267 (10.51)	93 (3.66)	123 (4.84)	no

In-line fuel filters

In-line duplex main filter with changeover

The combination of the unbeatable in-line filter with a duplex function allows either parallel operation of both the spin on filters or operation with respectively one of the spin-on filters. When the flow is restricted to one of the filters, it is possible to change the other filter without stopping the engine.

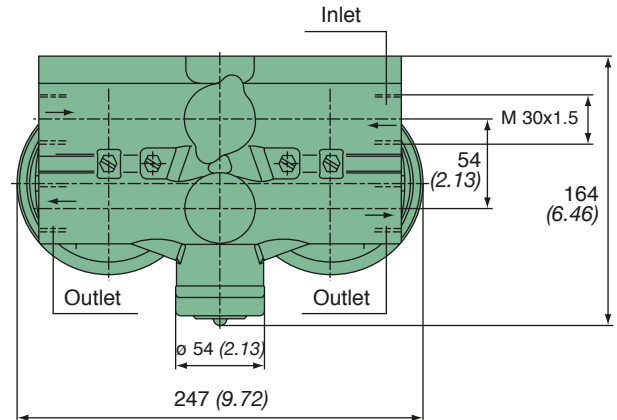
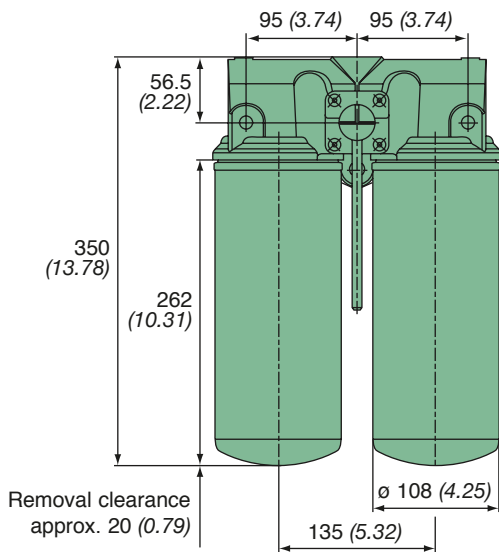
These filter heads are equipped with MANN+HUMMEL spin-on filters containing graded and multigrade media.



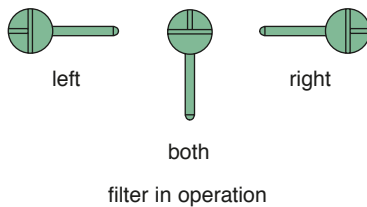
Part no.	MANN-FILTER (see page 71)	Nominal flow rate [l/h] [gph]	max. operating pressure [bar]	Medium
66 511 82 100	WDK 962/15	590 (155.88)	10	Graded medium
66 511 82 110	WDK 962/16	530 (140.03)	15	Multigrade HC
66 511 82 120	WDK 962/14	530 (140.03)	10	Multigrade HE
66 511 82 130	WDK 962/12	580 (153.24)	10	Multigrade HE+

In-line fuel filters

Duplex main filter with changeover, horizontal inlet and outlet

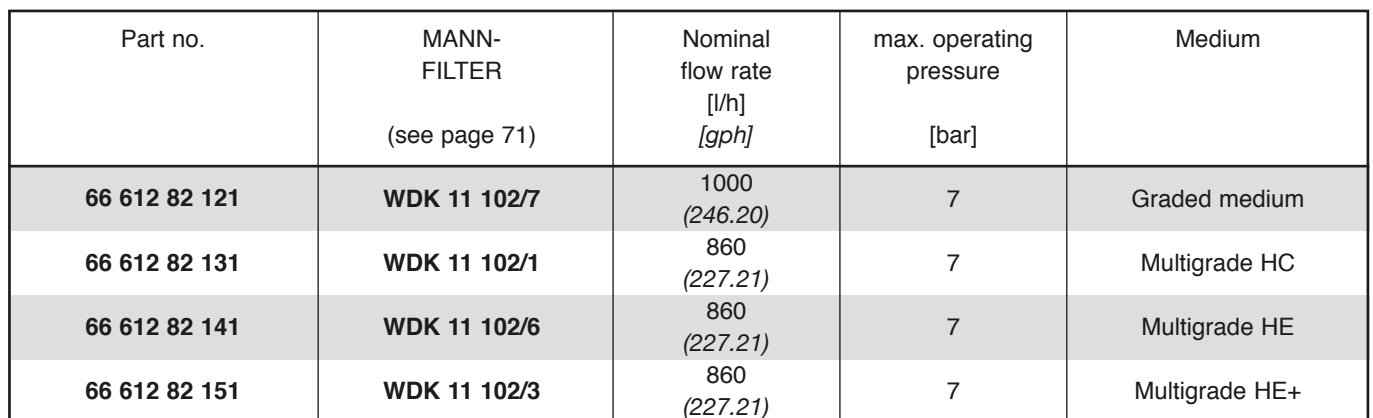


Three-way handle positions



Part no.	MANN-FILTER (see page 71)	Nominal flow rate [l/h] [gph]	max. operating pressure [bar]	Medium
66 619 82 100	WDK 11 102/7	1000 (246.20)	7	Graded medium
66 619 82 110	WDK 11 102/1	860 (227.21)	7	Multigrade HC
66 619 82 120	WDK 11 102/6	860 (227.21)	7	Multigrade HE
66 619 82 130	WDK 11 102/3	860 (227.21)	7	Multigrade HE+

Duplex main filter with changeover, inlet and outlet from above



In-line fuel filters

Fitting the main filter in flexible hose lines

For less demanding filtration requirements our especially economic small filter in synthetic material is available for fitting in flexible hose lines. These filters are characterised by relatively high flow rates for their small size.

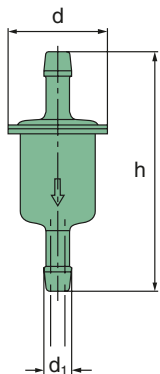


Fig. 1

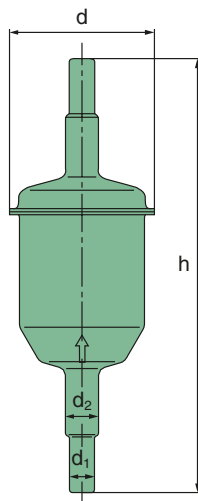


Fig. 2

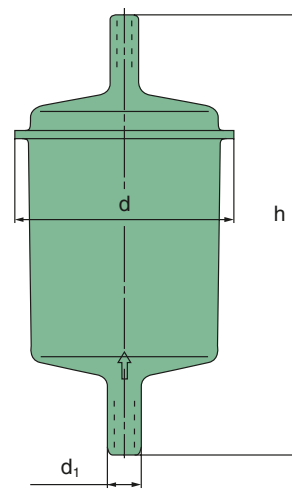


Fig. 3

MANN-FILTER	Fig.	Dimensions in mm (<i>Dimensions in inches</i>)				Mesh size [μm]
		d	d ₁	d ₂	h	
WK 21	1	21 (0.83)	6 (0.24)	—	50 (1.97)	50
WK 21/2	1	21 (0.83)	6 (0.24)	—	50 (1.97)	136
WK 31/2	2	35 (1.38)	6 (0.24)	8 (0.32)	104 (4.09)	Filter paper element
WK 31/4	2	37 (1.46)	8 (0.32)	—	104 (4.09)	200
WK 31/5 ¹⁾	2	37 (1.46)	8 ¹⁾ (0.32)	—	105 (4.13)	200
WK 32	2	37 (1.46)	6 (0.24)	8 (0.32)	142 (5.59)	Filter paper element
WK 43/1	3	59 (2.32)	8 (0.32)	—	108 (4.25)	Filter paper element

¹⁾ Right-angled outlet connection
Further types available on request.

MANN+HUMMEL