



## **MANN+HUMMEL Fuel filters**

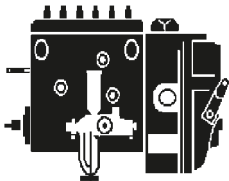
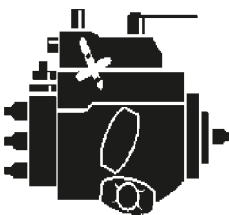
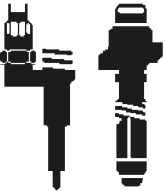
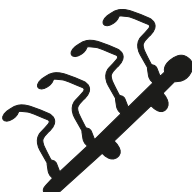
# Application areas for MANN+HUMMEL fuel filters

The rapid development of diesel technology has made the filtration of diesel fuel before it reaches the injection system a top priority. Badly filtered diesel causes particle erosion, corrosion, and can lead to damage in the injection system.

The contamination of fuel with particles and water occurs during production, transportation, in storage, when the fuel is delivered, and when the tank is filled. This contamination has to be removed in a reliable way. The MANN+HUMMEL product range has the right filter for all types of injection systems.



We recommend the MANN+HUMMEL PreLine® (see page 78) as a preliminary fuel filter to pre-separate water and coarse particles.

Application area	Typical required minimum separation efficiency	Filter medium	Page
<b>In-line injection pump</b> 	> 20 %	Standard medium	70
<b>Distributor pump</b> 	> 67 %	Graded medium	71
<b>Unit injector</b> 	> 85 %	Multigrade HC medium	71
<b>Common rail</b> 	> 95 %  > 98.6 %	Multigrade HE medium  Multigrade HE+ Medium	71

# MANN+HUMMEL Multigrade

## Fuel filter media

Modern diesel and petrol injection systems require the highest fuel quality and therefore set ever higher standards for the filtration of fuel.

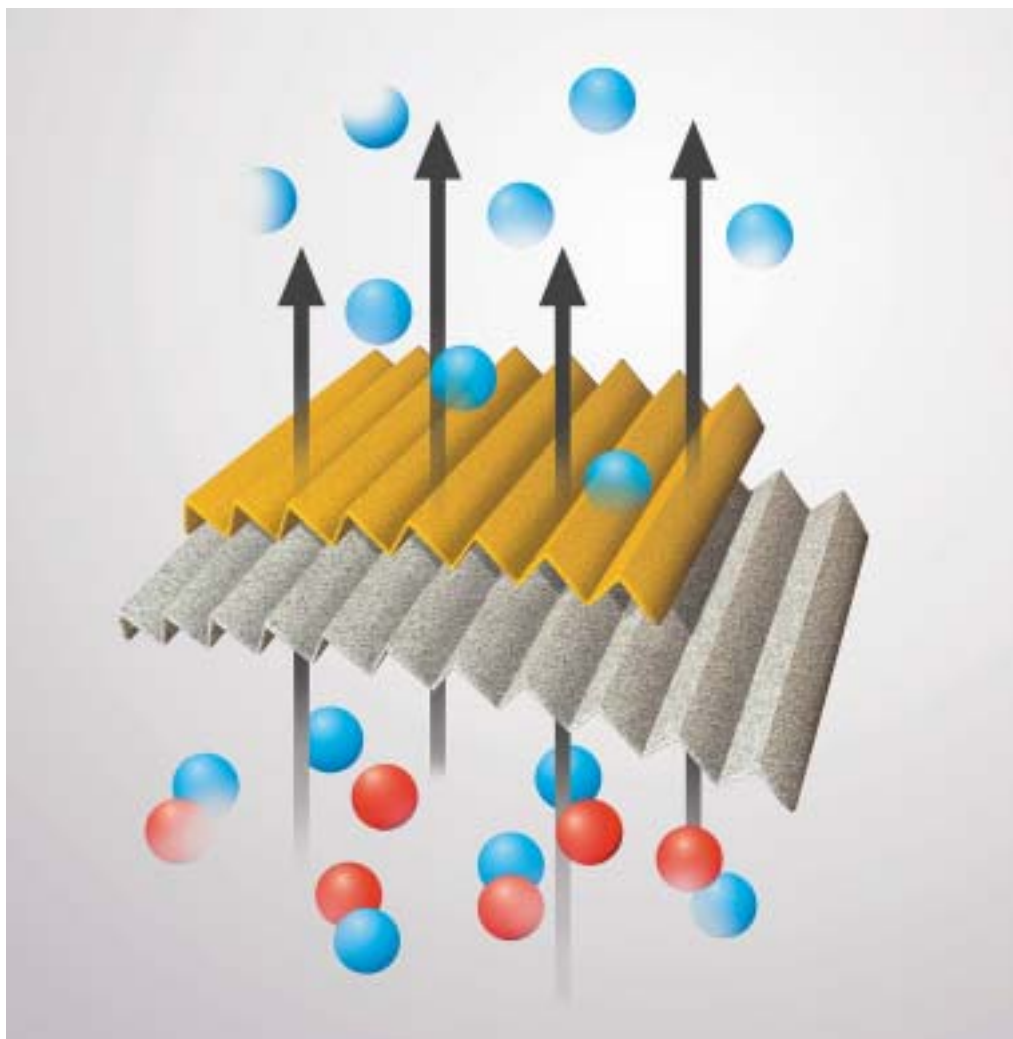
The newly patented MANN+HUMMEL multigrade media were developed for diesel and petrol engines and meet today's highest requirements for fuel filter elements.

Multilayer technology ensures that sensitive injection systems are protected from even the finest particles. In comparison to other media available on the market the multigrade media offers a performance increase in dirt holding capacity of up to 100% with the same high initial separation efficiency.

**multigrade**  
high performance  
filtration

The family of multigrade media represents an important milestone in the field of fuel filtration. These media are used in all our high performance filters.

On page 71 of this catalogue you will find MANN+HUMMEL spin-on filters with the multigrade media HC (high capacity with water separation), HE (high filter fineness) and HE+ (highest filter fineness). This range economically covers all the requirements of modern fuel filtration. The MANN+HUMMEL multigrade media guarantee the protection necessary for the sensitive injection systems of today.



MANN+HUMMEL multigrade media:

Extended service life and high initial separation efficiency are achieved through an open layer with high dirt holding capacity on the in-flow side and a fine filter layer on the out-flow side.

# MANN+HUMMEL Spin-on fuel filters

MANN+HUMMEL spin-on filters are used for the filtration of fuel in a number of applications. MANN+HUMMEL has been a leading manufacturer of spin-on filters worldwide for many years. The filters are distributed under the MANN-FILTER brand and under a variety of customer brands.

## The advantages at a glance:

- Available with a range of filter media
- Efficient separation and high dirt holding capacity with low pressure drop
- Robust, anti-corrosion housing with high pulsation and pressure stability
- Geometry designed for optimum flow
- Undetachable seals
- Stable, non-collapsible central tube
- Non-return valve with low pressure drop

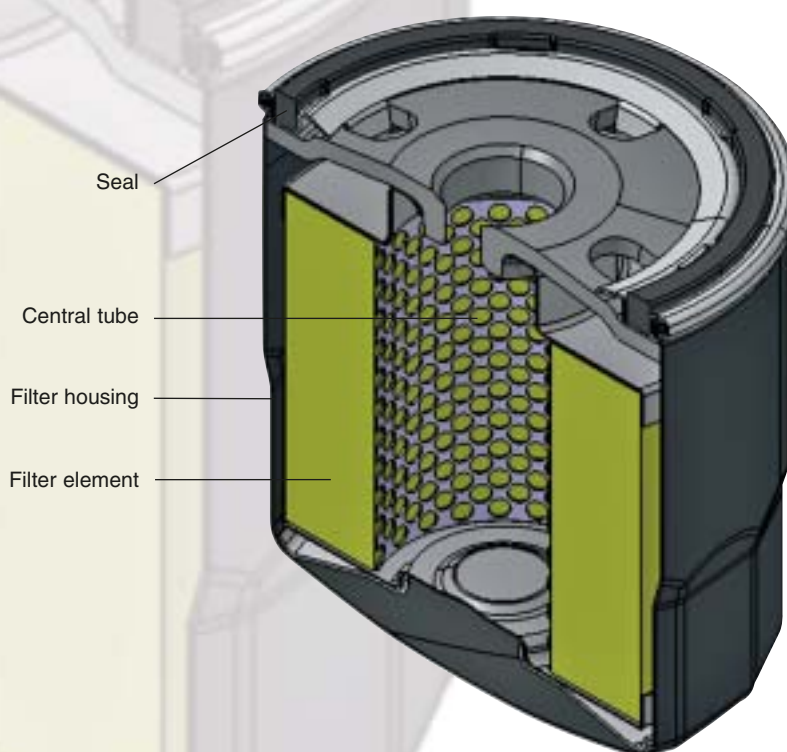
## Design

The spin-on filter consists of a robust metal housing with the fitted filter element. Depending on the application, the spin-on filter can be equipped with various components such as a different filter medium, non-return valve or bypass valve, etc.. The liquid to be filtered enters the cover plate through the concentric inlet openings, flows through the filter element and the cleaned liquid then leaves through the central connection. The filter cover plate has an undetachable seal which ensures secure sealing to the outside under all operating conditions.

## Maintenance

The time for maintenance is usually defined by the engine or machine manufacturer. Maintenance simply requires replacement of the complete spin-on filter. The spin-on filter can easily be removed using a MANN+HUMMEL filter wrench (see page 105).

Cross-section picture



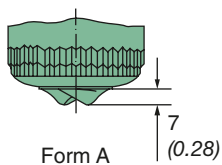
# MANN+HUMMEL Spin-on fuel filters



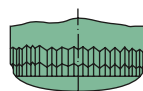
MANN+HUMMEL fuel filters filter out the finest particles from the fuel and thus effectively protect the injection system against wear and dirt particles. They are available with or without a water trap and drain.

## Types of spin-on filter

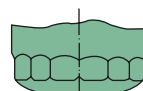
Reference is made to the following types in the dimension table.



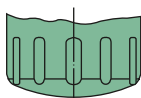
Form A



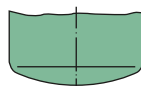
Form B



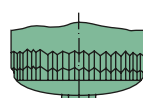
Form C



Form D



Form E



Form F  
Spanner size 30



# WK type, WDK type

## In-line fuel injection pumps

These filters are a particularly economic solution for the typical requirements of in-line injection pumps.

We recommend use of our PreLine® preliminary fuel filter (see page 78) for water separation in addition to the main filter.

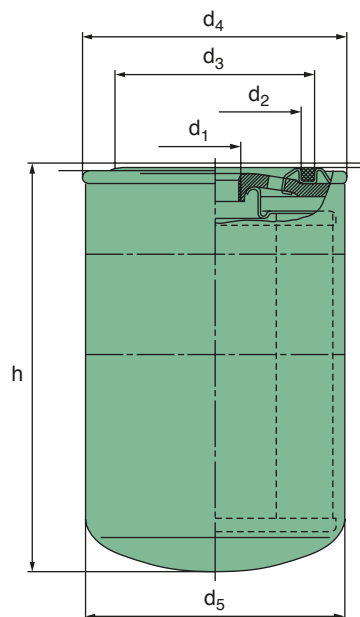


Fig. 1

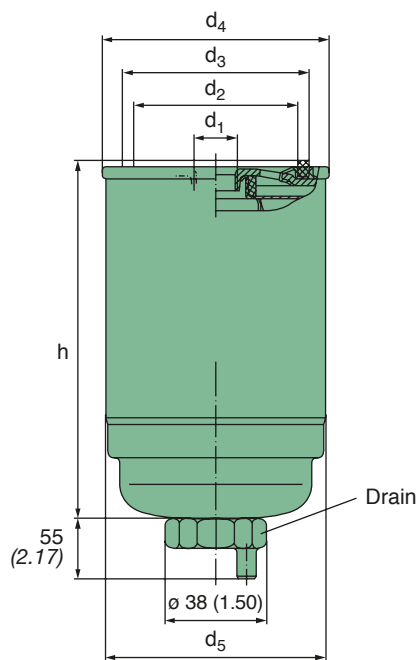


Fig. 2

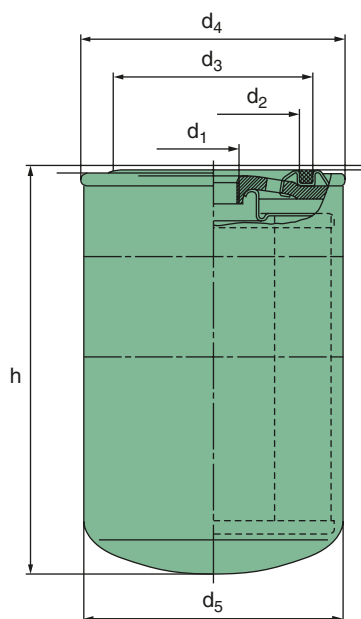
MANN-FILTER	Fig.	Nominal flow rate [l/h] [gph]	Dimensions in mm ( <i>Dimensions in inches</i> )						Separation efficiency *	Permissible operating pressure [bar]	Type (see page 69)
			d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	h			
<b>WK 712/2</b>	1	150 (39.63)	M 16x1.5	62 (2.44)	71 (2.80)	80 (3.15)	76 (2.99)	80 (3.15)	> 20%	6	E
<b>WK 723</b>	1	180 (47.56)	M 16x1.5	62 (2.44)	71 (2.80)	80 (3.15)	76 (2.99)	124 (4.88)	> 20%	9.5	E
<b>WK 731</b>	1	180 (47.56)	M 16x1.5	62 (2.44)	71 (2.80)	80 (3.15)	76 (2.99)	117 (4.61)	> 20%	6	E
<b>WK 731/1</b>	1	180 (47.56)	M 14x1.5	30 (1.18)	38 (1.50)	80 (3.15)	76 (2.99)	115 (4.53)	> 20%	2.5	E
<b>WK 842 <sup>1)</sup></b>	2	200 (52.84)	M 16x1.5	61 (2.40)	70 (2.76)	84 (3.31)	81 (3.19)	134.5 (5.30)	> 20%	6	—
<b>WK 842/6 <sup>1)</sup></b>	2	300 (79.26)	M 16x1.5	61 (2.40)	70 (2.76)	84 (3.31)	81 (3.19)	134.5 (5.30)	Strainer 63 µm	6	—
<b>WK 950/3</b>	1	350 (92)	1"-14 NS	62 (2.44)	71 (2.80)	96 (3.78)	93 (3.66)	170 (6.69)	> 20%	2.5	B
<b>WK 962/4</b>	1	480 (126.82)	M 16x1.5	62 (2.44)	71 (2.80)	96 (3.78)	93 (3.66)	210 (8.27)	> 20%	2.5	B
<b>WDK 962/10</b>	1	600 (158.52)	M 16x1.5	62 (2.44)	71 (2.80)	96 (3.78)	93 (3.66)	212 (8.35)	> 45%	15	E

\* All figures relate to a particle size of 3-5 µm (c) and are given acc. to ISO/TR 13 353 (1994).

1) with drain

# WK type, WDK type

## Fuel distributor pumps / unit injectors / common rail



These fuel filters from MANN+HUMMEL use our high performance graded and patented multigrade media. The multigrade media are especially characterised by a simultaneous high dirt holding capacity and excellent separation performance.

For common rail, unit injectors and distributor pumps we recommend the use of our PreLine® preliminary fuel filter (see page 78) for the separation of water.

MANN-FILTER	Nominal flow rate [l/h] [gph]	Dimensions in mm ( <i>Dimensions in inches</i> )						Separation efficiency *	Permissible operating pressure [bar]	Medium	Type (see page 69)
		d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	h				
<b>WDK 719</b>	170 (44.91)	M 16x1.5	62 (2.44)	71 (2.80)	80 (3.15)	76 (2.99)	127 (5.00)	> 85%	7	Multigrade HC	E
<b>WDK 725 <sup>1)</sup></b>	120 (31.70)	M 16x1.5	62 (2.44)	71 (2.80)	80 (3.15)	76 (2.99)	146 (5.75)	> 67%	6	Graded medium	E
<b>WDK 925</b>	250 (66.05)	M 22x1.5	62 (2.44)	71 (2.80)	96 (3.78)	93 (3.66)	144 (5.67)	> 85%	15	Multigrade HC	E
<b>WK 940/2</b>	250 (66.05)	M 24x1.5	62 (2.44)	71 (2.80)	96 (3.78)	93 (3.66)	144 (5.67)	> 85%	6	Multigrade HC	E
<b>WK 962/7</b>	650 (171.73)	M 18x1.5	62 (2.44)	71 (2.80)	96 (3.78)	93 (3.66)	212 (8.35)	> 85%	7	Multigrade HC	E
<b>WDK 962/15</b>	590 (155.88)	M 16x1.5	62 (2.44)	71 (2.80)	96 (3.78)	93 (3.66)	212 (8.35)	> 67%	10	Graded medium	E
<b>WDK 962/16</b>	530 (140.03)	M 16x1.5	62 (2.44)	71 (2.80)	96 (3.78)	93 (3.66)	212 (8.35)	> 85%	15	Multigrade HC	E
<b>WDK 962/14</b>	530 (140.03)	M 16x1.5	62 (2.44)	71 (2.80)	96 (3.78)	93 (3.66)	212 (8.35)	> 95%	10	Multigrade HE	E
<b>WDK 962/12</b>	580 (153.24)	M 16x1.5	62 (2.44)	71 (2.80)	96 (3.78)	93 (3.66)	212 (8.35)	> 98.6%	15	Multigrade HE+	E
<b>WDK 11 102/7</b>	1000 (264.20)	M 32x1.5	93 (3.66)	104 (4.09)	113 (4.45)	108 (4.25)	262 (10.31)	> 67%	7	Graded medium	E
<b>WDK 11 102/1</b>	860 (227.21)	M 32x1.5	93 (3.66)	104 (4.09)	113 (4.45)	108 (4.25)	262 (10.31)	> 85%	7	Multigrade HC	E
<b>WDK 11 102/6</b>	860 (227.21)	M 32x1.5	93 (3.66)	104 (4.09)	113 (4.45)	108 (4.25)	262 (10.31)	> 95%	7	Multigrade HE	E
<b>WDK 11 102/3</b>	860 (227.21)	M 32x1.5	93 (3.66)	104 (4.09)	113 (4.45)	108 (4.25)	262 (10.31)	> 98.6%	7	Multigrade HE+	E

\* All figures relate to a particle size of 3-5 µm (c) and are given acc. to ISO/TR 13 353 (1994).

1) with drain

**MANN+HUMMEL**