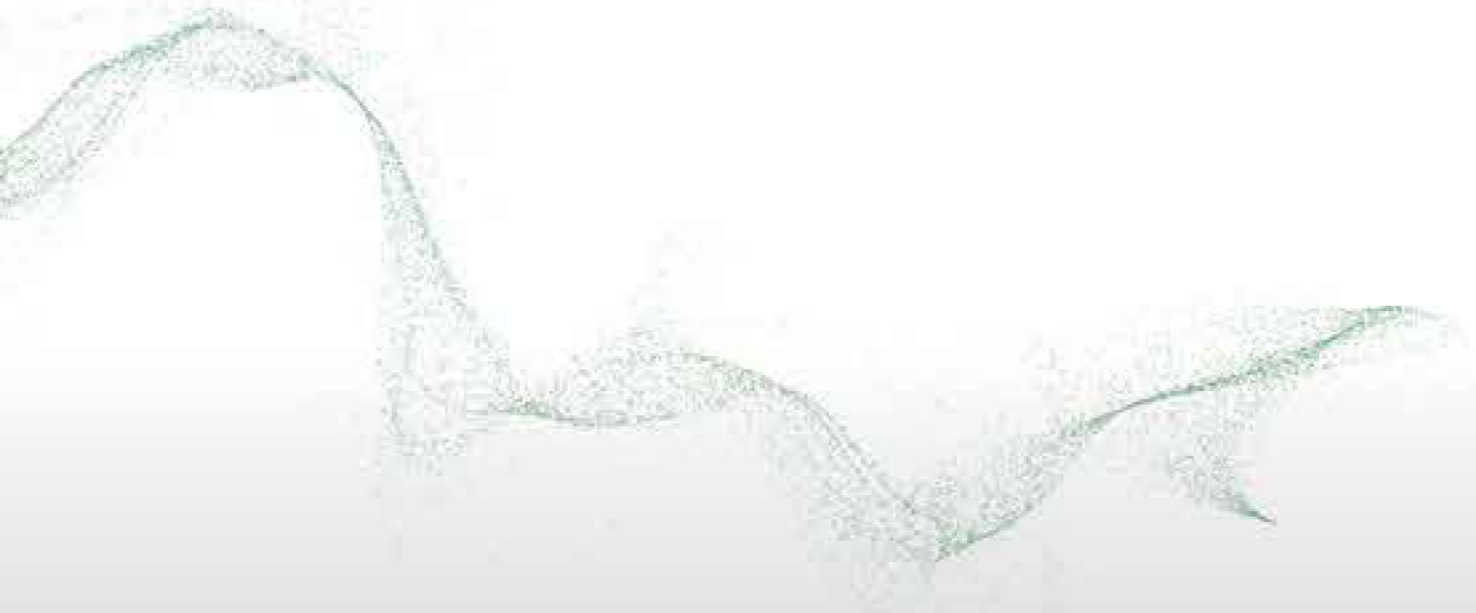




**MANN+HUMMEL Two-way ventilation  
air cleaners for crankcases,  
gear unit housings and hydraulic tanks**

**MANN+HUMMEL Silencer air cleaners**



# Air cleaners for two-way ventilation

The two-way ventilation air cleaners from MANN+HUMMEL are single-stage air cleaners which are mainly used for the two-way ventilation of liquids in tanks and gear units.

Dry air cleaners offer a very high filtration performance of over 99.5%, but must be replaced when they are full of dirt.

There are models available with an integrated pressure regulating valve. There is also the option of using the metal-free filters of the Picolino line (see page 79).



## Silencer air cleaners

### Dimensions and part numbers

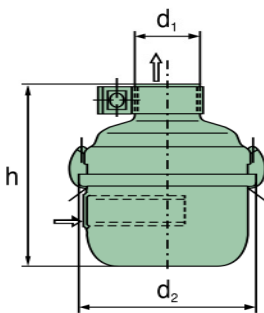


Fig. 1  
Clamp connection

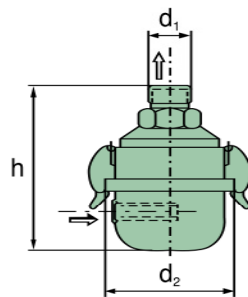
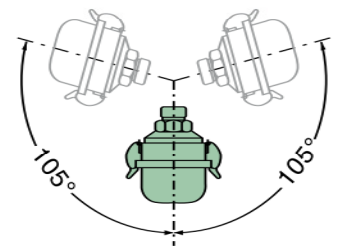


Fig. 2  
Threaded connection



Range of possible  
installation angles

Part No.	Fig.	Nominal flow rate <sup>1)</sup> [m <sup>3</sup> /min]	Dimensions in mm ( <i>Dimensions in inches</i> )				Weight [kg]
			Silencer pipe	d <sub>1</sub>	d <sub>2</sub>	h	
41 007 87 113	1	0.8	with	30 (1.18)	82 (3.23)	85 (3.35)	0.2
41 015 87 113	1	2.0	with	40 (1.57)	118 (4.65)	120 (4.72)	0.5
41 021 87 013	1	2.2	with	52 (2.05)	138 (5.43)	130 (5.12)	0.5
41 004 82 123	2	0.33	without	M 22x1.5	66 (2.60)	74 (2.91)	0.2
41 004 82 183	2	0.33	with	G ½	66 (2.60)	84 (3.31)	0.2

<sup>1)</sup> With 100 mbar flow resistance.

# Two-way ventilation air cleaners (dry air cleaners)

## Dimensions and part numbers

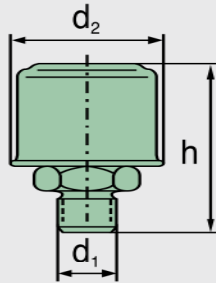


Fig. 1

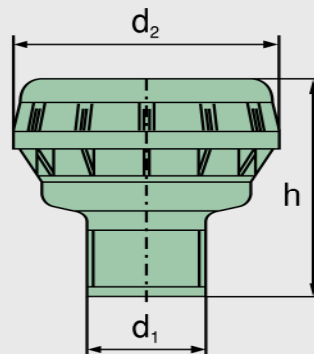


Fig. 2

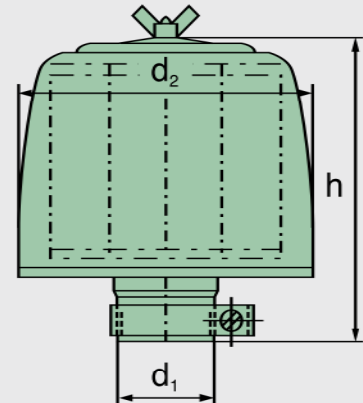


Fig. 3

Part No.	Fig.	Nominal flow rate [m³/min]	Opening pressure		Dimensions in mm (Dimensions in inches)			MANN-FILTER main element	Weight [kg]
			[bar]	[kPa]	d <sub>1</sub>	d <sub>2</sub>	h		
45 001 62 185	1	–	–	–	M 18x1.5	45 (1.77)	47 (1.85)	– <sup>1)</sup>	0.08
45 003 65 900	2	–	–	–	35 (1.38)	80 (3.15)	65 (2.56)	– <sup>1)</sup>	0.06
45 003 62 902	2	–	–	–	G ¾	80 (3.15)	73.5 (2.89)	– <sup>1)</sup>	0.08
45 003 62 900 <sup>2)</sup>	2	0.2	0.85	85	G ¾	80 (3.15)	73.5 (2.89)	– <sup>1)</sup>	0.1
45 003 62 901 <sup>2)</sup>	2	0.2	0.35	35	G ¾	80 (3.15)	73.5 (2.89)	– <sup>1)</sup>	0.1
45 009 77 106	3	0.5	–	–	20 (0.79)	98 (3.86)	110 (4.33)	<b>C 75/4</b>	0.3
45 021 77 125	3	2.0	–	–	40 (1.57)	132 (5.20)	120 (4.72)	<b>C 1112</b>	0.5
45 032 77 105	3	3.5	–	–	52 (2.05)	132 (5.20)	152 (5.98)	<b>C 1132</b>	0.65
45 037 77 015	3	4.5	–	–	60 (2.36)	170 (6.69)	175 (6.89)	<b>C 1337</b>	1.1
45 074 77 115	3	8.0	–	–	80 (3.15)	208 (8.19)	185 (7.28)	<b>C 1574</b>	1.3
45 138 77 126	3	15.0	–	–	100 (3.94)	283 (11.14)	200 (7.87)	<b>C 21 138/1</b>	7.0
45 240 77 104	3	23.0	–	–	140 (5.51)	318 (12.52)	302 (11.89)	<b>C 26 240</b>	9.0
45 375 77 104	3	32.0	–	–	180 (7.09)	396 (15.59)	285 (11.22)	<b>C 30 375</b>	11.0

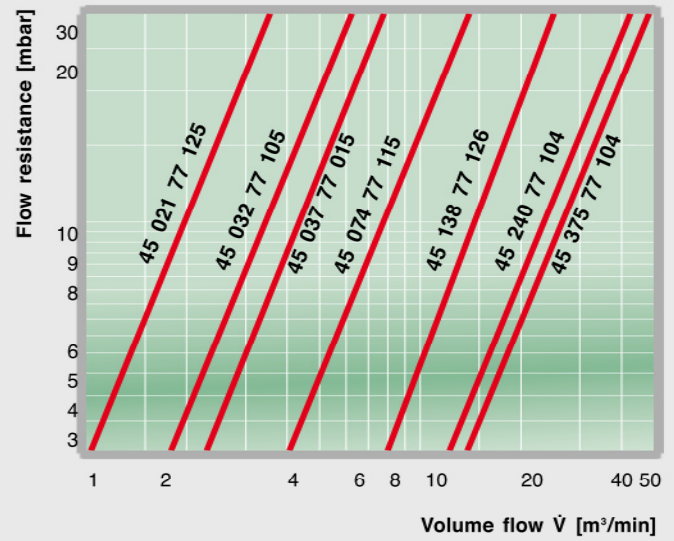
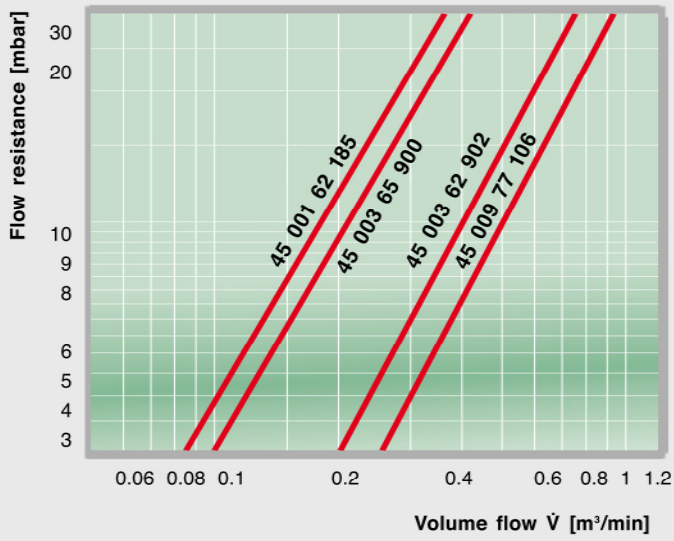
<sup>1)</sup> The entire air cleaner is exchanged during a service.

<sup>2)</sup> With integrated pressure regulating valve.

# Air cleaners for two-way ventilation

## Flow characteristics

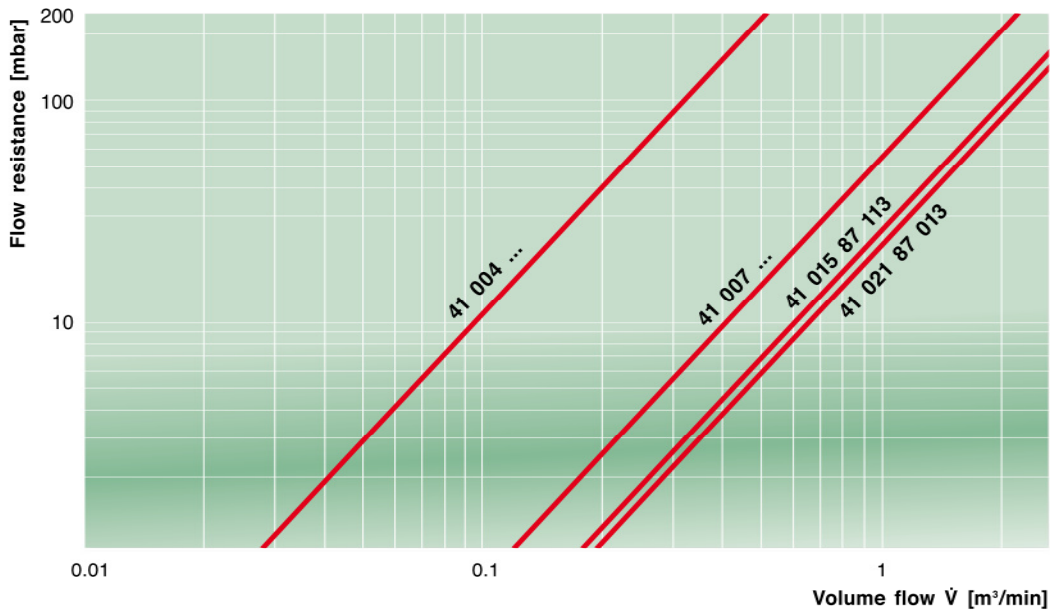
... for flow rates as per ISO 5011



# Silencer air cleaners

## Flow characteristics

... for flow rates as per ISO 5011







## MANN+HUMMEL

### Accessories for air cleaners

The reliable operation of intake air cleaners for internal combustion engines and compressors must also be ensured under the most difficult operating conditions. This is only possible if the air cleaner and the accessories are perfectly matched to each other.

MANN+HUMMEL offers a comprehensive range of accessories for all air cleaners especially designed for the respective type of air cleaner. These are proven products which offer reliability and long life in numerous applications – also under the hardest operating conditions.

<b>Rain caps</b> Protect against ingress of water and coarse dirt particles	Page 100
<b>Precleaners</b> Extend the service life of single-stage air cleaners	Page 102
<b>Air connecting parts</b> For the secure connection of the air cleaner to the engine or compressor	Page 103
<b>Ejectors</b> For the maintenance-free scavenging of precleaners and two-stage air cleaners	Page 111
<b>Service switches / indicator</b> Provide an electrical indication when a filter service is required	Page 113
<b>Service indicators</b> Indicate via a display when a filter service is required	Page 117

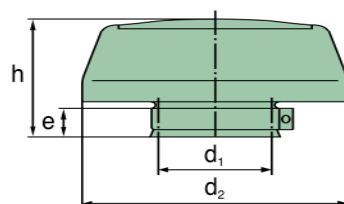
# Rain caps – Design A

In order to effectively prevent ingress of rain, snow, spray water etc. MANN+HUMMEL recommends equipping the air cleaner with a rain cap. Since this also protects the air cleaner against coarse contaminant particles, the main element is less exposed to damage and this extends the service interval.



Part No.	Suitable for				Dimensions in mm ( <i>Dimensions in inches</i> )				Weigh [kg]
	Europiclon	NLG	Piclon	ENTARON XD	d <sub>1</sub>	d <sub>2</sub>	e	h	
39 014 67 910 <sup>1)</sup>	45 050 ...	–	45 043 ...	–	45 (1.77)	150 (5.91)	22 (0.87)	63 (2.48)	0.11
39 020 67 910 <sup>1)</sup>	45 100 ...	–	45 076 ...	–	54 (2.13)	150 (5.91)	22 (0.87)	63 (2.48)	0.11
39 028 67 910 <sup>1)</sup>	45 200 ...	–	45 114 ...	–	62 (2.44)	150 (5.91)	22 (0.87)	63 (2.48)	0.11
39 040 67 910 <sup>1)</sup>	45 300 ...	–	45 165 ...	–	68 (2.68)	200 (7.87)	30 (1.18)	85 (3.35)	0.23
39 056 67 910 <sup>1)</sup>	45 400 ...	–	45 225 ...	–	82 (3.23)	200 (7.87)	30 (1.18)	85 (3.35)	0.23
39 080 67 910 <sup>1)</sup>	45 500 ...	–	45 325 ...	–	102 (4.02)	270 (10.63)	40 (1.57)	115 (4.53)	0.44
39 100 67 910 <sup>1)</sup>	45 600 ...	–	45 440 ...	–	110 (4.33)	270 (10.63)	40 (1.57)	115 (4.53)	0.44
39 160 67 910 <sup>1)</sup>	45 700 ...	NLG 15 - ...	45 650 ...	XD 14/17	132 (5.20)	360 (14.17)	50 (1.97)	150 (5.91)	0.90
39 190 67 910 <sup>1)</sup>	45 800 ...	NLG 21 - ...	45 880 ...	XD 21	150 (5.91)	360 (14.17)	50 (1.97)	150 (5.91)	0.90
39 220 67 910 <sup>1)</sup>	–	NLG 28 - ...	–	XD 28	180 (7.09)	405 (15.94)	33 (1.30)	128 (5.04)	0.95
39 370 67 910 <sup>1)</sup>	–	NLG 37 - ...	45 920 ...	–	210 (8.27)	535 (21.06)	42 (1.56)	126 (4.96)	1.80

<sup>1)</sup> Plastic model, Cr(VI)-free



e = insertion depth

# Rain caps – Design B

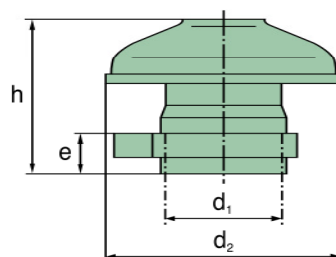
The rain caps are simply pushed on to the dirty air connection of the air cleaner or onto the air intake of the dirty air pipe and then fastened using the tightening strap supplied. In order to cater for different installation requirements and styling, the rain caps are available in two different versions.



Part No.	Suitable for				Dimensions in mm ( <i>Dimensions in inches</i> )				Weigh [kg]
	Europiclon	NLG	Piclon	ENTARON XD	d <sub>1</sub>	d <sub>2</sub>	e	h	
39 014 67 900 <sup>1)</sup>	45 050 ...	–	45 043 ...	–	45 (1.77)	92 (3.62)	22 (0.87)	53 (2.09)	0.07
39 020 67 900 <sup>1)</sup>	45 100 ...	–	45 076 ...	–	54 (2.13)	110 (4.33)	22 (0.87)	53 (2.09)	0.08
39 028 67 900 <sup>1)</sup>	45 200 ...	–	45 114 ...	–	62 (2.44)	124 (4.88)	22 (0.87)	56 (2.20)	0.11
39 040 67 900 <sup>1)</sup>	45 300 ...	–	45 165 ...	–	68 (2.68)	145 (5.71)	22 (0.87)	63 (2.48)	0.12
39 056 67 900 <sup>1)</sup>	45 400 ...	–	45 225 ...	–	82 (3.23)	172 (6.77)	22 (0.87)	64 (2.52)	0.15
39 080 67 900 <sup>1)</sup>	45 500 ...	–	45 325 ...	–	102 (4.02)	203 (7.99)	35 (1.38)	90 (3.54)	0.18
39 100 67 020 <sup>2)</sup>	45 600 ...	–	45 440 ...	–	110 (4.33)	236 (9.29)	40 (1.57)	125 (4.92)	0.82
39 160 67 020 <sup>2)</sup>	45 700 ...	NLG 15 - ...	45 650 ...	<b>XD 14/17</b>	132 (5.20)	292 (11.50)	40 (1.57)	138 (5.43)	1.50
45 880 67 100 <sup>2)</sup>	45 800 ...	NLG 21 - ...	45 880 ...	<b>XD 21</b>	150 (5.91)	342 (13.46)	40 (1.57)	166 (6.54)	2.00
39 220 67 100 <sup>2)</sup>	–	NLG 28 - ...	–	<b>XD 28</b>	180 (7.09)	342 (13.46)	45 (1.77)	163 (6.42)	2.20
39 320 67 100	–	–	45 920 ...	–	210 (8.27)	455 (17.91)	80 (3.15)	223 (8.78)	2.50
39 640 67 100 <sup>2)</sup>	–	–	45 940 ...	–	315 (12.40)	645 (25.39)	86 (3.39)	272 (10.71)	5.80

<sup>1)</sup> Plastic model, Cr(VI)-free

<sup>2)</sup> Metal model



e = insertion depth

# Precleaners

## Dust bowls

The proven precleaners from MANN+HUMMEL are suitable for extending the service life of single-stage air cleaners such as the NLG Pico. Due to its transparent insert, it is possible to read the filling level of the precleaner at any time and accordingly select the right time for the service.

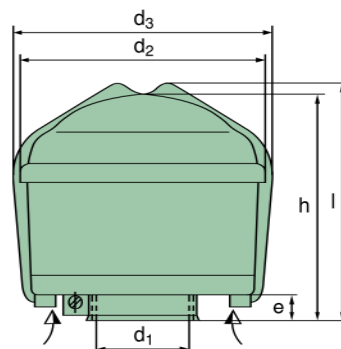
The easy and problem-free emptying of the dust bowl is made possible by the closing clamp. Precleaners offer protection against ingress of spray water and rain.



Part No.	Application		Dimensions in mm ( <i>Dimensions in inches</i> )						Weight [kg]
	Nominal flow rate [m <sup>3</sup> /min]	at $\Delta p$ <sup>1)</sup> [mbar]	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	e <sup>2)</sup>	h	l	
48 017 67 900	1.4 – 1.7	7 – 10.5	42.2 (1.66)	164 (6.46)	175 (6.89)	52 (2.05)	140 (5.51)	150 (5.91)	0.4
48 024 67 900	2 – 2.4	8.5 – 12	54.2 (2.13)	164 (6.46)	175 (6.89)	52 (2.05)	140 (5.51)	150 (5.91)	0.4
48 030 67 900	2.8 – 3.4	9 – 13	62.2 (2.45)	164 (6.46)	175 (6.89)	52 (2.05)	140 (5.51)	150 (5.91)	0.4
48 034 67 900	2.8 – 3.4	6 – 9	62.2 (2.45)	219 (8.62)	236 (9.29)	62 (2.44)	167 (6.57)	180 (7.09)	1.0
48 048 67 900	4 – 4.5	10 – 12.5	68.2 (2.69)	219 (8.62)	236 (9.29)	62 (2.44)	167 (6.57)	180 (7.09)	1.0
48 056 67 900	5.6 – 6.8	12 – 17.5	82.2 (3.24)	219 (8.62)	236 (9.29)	62 (2.44)	167 (6.57)	180 (7.09)	1.0
48 068 67 900	5.6 – 6.8	7 – 10.5	82.2 (3.24)	303 (11.93)	315 (12.40)	84 (3.31)	208 (8.19)	217 (8.54)	1.3
48 096 67 900	8 – 9.6	8.5 – 12	102.2 (4.02)	303 (11.93)	315 (12.40)	84 (3.31)	208 (8.19)	217 (8.54)	1.3
48 120 67 900	10 – 12	11 – 16	110.2 (4.34)	303 (11.93)	315 (12.40)	84 (3.31)	208 (8.19)	217 (8.54)	1.3

<sup>1)</sup>  $\Delta p$  = Flow resistance. When using as precleaner, add 70% of the stated flow resistance to the resistance of the air cleaner fitted downstream.

<sup>2)</sup> e = insertion depth



vertical mounting

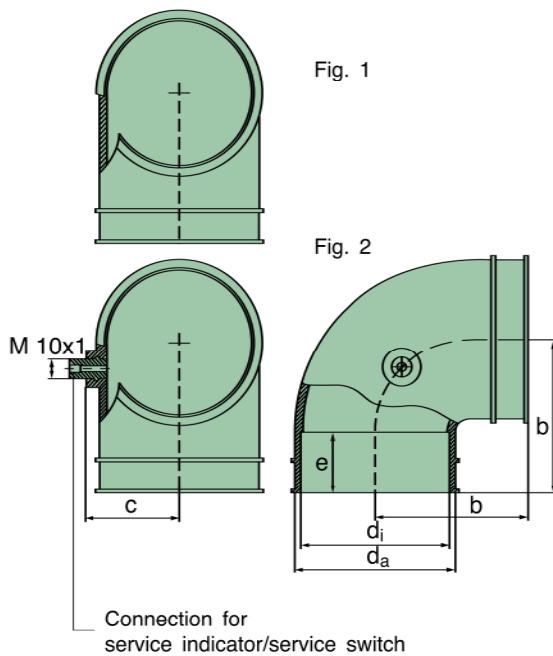
# Air connecting parts

## Elbow pipes



### 90° elbows

Operating temperature:  
-40 °C to +100 °C



Part No.	Fig.	Dimensions in mm (Dimensions in inches)					Connection for
		b	c	d <sub>i</sub>	d <sub>a</sub>	e	
39 100 25 999	1	57	—	50	55	25	—
39 100 25 979	2	(2.24)	33 (1.30)	(1.97)	(2.17)	(0.98)	M 10x1
39 200 25 999	1	62	—	60	65	25	—
39 200 25 979	2	(2.44)	38 (1.50)	(2.36)	(2.56)	(0.98)	M 10x1
39 300 25 999	1	72	—	70	75	28	—
39 300 25 979	2	(2.83)	43 (1.69)	(2.76)	(2.95)	(1.10)	M 10x1
39 400 25 999	1	77	—	80	85	30	—
39 400 25 979	2	(3.03)	48 (1.89)	(3.15)	(3.35)	(1.18)	M 10x1
39 215 25 999	1	77	—	89	94	25	—
		(3.03)		(3.5)	(3.7)	(0.99)	
39 500 25 999	1	92	—	100	105	35	—
39 500 25 979	2	(3.62)	58 (2.28)	(3.94)	(4.13)	(1.38)	M 10x1
39 600 25 999	1	89	—	110	119	27	—
39 600 25 979	2	(3.50)	63 (2.48)	(4.33)	(4.69)	(1.06)	M 10x1
39 700 25 999	1	98.5	—	130	135	27	—
39 700 25 979	2	(3.88)	75 (2.95)	(5.12)	(5.32)	(1.06)	M 10x1
39 800 25 999	1	108.5	—	150	155	27	—
39 800 25 979	2	(4.27)	83 (3.27)	(5.91)	(6.10)	(1.06)	M 10x1
39 930 25 999	1	170	—	180	196	30	—
39 930 25 979	2	(6.69)	98.5 (3.88)	(7.08)	(7.71)	(1.18)	M 10x1

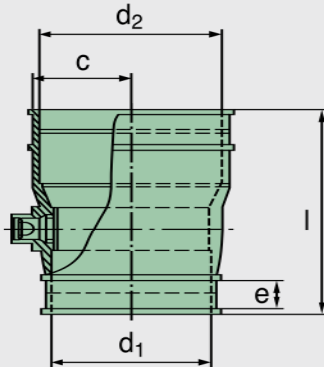


# Air connecting parts

## Connections

### Reducer connections

Operating temperature:  
-40 °C to +100 °C



Part No.	Dimensions in mm ( <i>Dimensions in inches</i> )				
	c	d <sub>1</sub>	d <sub>2</sub>	e	l
<b>39 300 27 949</b>	43 (1.69)	70 (2.76)	80 (3.15)	13.5 (0.53)	89.5 (3.52)
<b>39 300 27 959</b>	43 (1.69)	60 (2.36)	70 (2.76)	13.5 (0.53)	85.5 (3.37)
<b>39 300 27 969</b>	43 (1.69)	50 (1.97)	70 (2.76)	13.5 (0.53)	85.5 (3.37)

### Straight connections

Operating temperature:  
-40 °C to +100 °C

Fig. 1

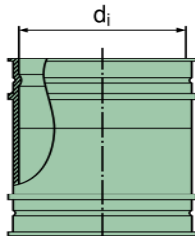
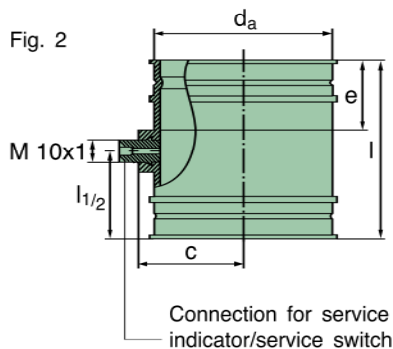


Fig. 2



Part No.	Fig.	Dimensions in mm ( <i>Dimensions in inches</i> )					Con-nection for
		c	d <sub>i</sub>	d <sub>a</sub>	e	l	
<b>39 100 27 999</b>	1	–	50	55	25	68	–
<b>39 100 27 979</b>	2	33 (1.30)	50 (1.97)	55 (2.17)	25 (0.98)	68 (2.68)	M 10x1
<b>39 200 27 999</b>	1	–	60	65	25	68	–
<b>39 200 27 979</b>	2	38 (1.50)	60 (2.36)	65 (2.56)	25 (0.98)	68 (2.68)	M 10x1
<b>39 300 27 999</b>	1	–	70	75	28	75	–
<b>39 300 27 979</b>	2	43 (1.69)	70 (2.76)	75 (2.95)	28 (1.10)	75 (2.95)	M 10x1
<b>39 400 27 999</b>	1	–	80	85	30	78	–
<b>39 400 27 979</b>	2	48 (1.89)	80 (3.15)	85 (3.35)	30 (1.18)	78 (3.07)	M 10x1
<b>39 215 27 999</b>	1	–	89	94	25	70	–
<b>39 500 27 999</b>	1	–	100	105	35	88	–
<b>39 500 27 979</b>	2	58 (2.28)	100 (3.94)	105 (4.13)	35 (1.38)	88 (3.46)	M 10x1
<b>39 600 27 999</b>	1	–	110	119	27	72	–
<b>39 600 27 979</b>	2	63 (2.48)	110 (4.33)	119 (4.69)	27 (1.06)	72 (2.83)	M 10x1
<b>39 700 27 999</b>	1	–	130	135	27	72	–
<b>39 700 27 979</b>	2	75 (2.95)	130 (5.12)	135 (5.32)	27 (1.06)	72 (2.83)	M 10x1
<b>39 800 27 999</b>	1	–	150	155	27	72	–
<b>39 800 27 979</b>	2	83 (3.28)	150 (5.91)	155 (6.10)	27 (1.06)	72 (2.83)	M 10x1
<b>39 930 27 999</b>	1	–	180	195	45	140	–
<b>39 930 27 979</b>	2	109.5 (4.31)	180 (7.09)	195 (7.68)	45 (1.77)	140 (5.51)	M 10x1



# Air connecting parts

## Accordion hoses

**Accordion hoses with  
moulded-on end sleeves  
(standard model)**  
Material: TPO

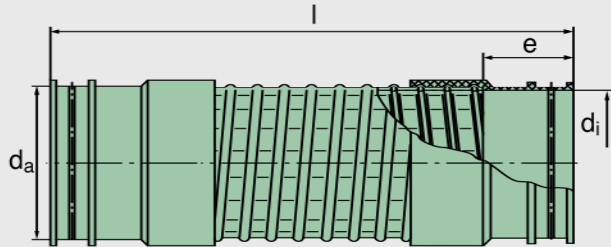


Fig. 1

**Accordion hoses  
(reinforced model)**  
Material: rubber with fabric insert

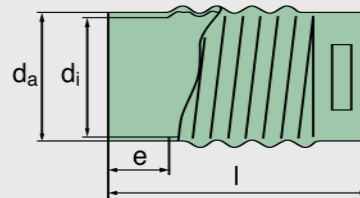


Fig. 2

Fig. 1

Part No.	Dimensions in mm ( <i>Dimensions in inches</i> )				
	$d_i$	$d_a$	e	$l_{min}$	$l_{max}$
39 000 27 164	40 (1.57)	51 (2.01)	30+5 (1.18+0.20)	180 (7.09)	250 (9.84)
39 000 27 161	50 (1.97)	62 (2.44)	30+5 (1.18+0.20)	190 (7.48)	285 (11.22)
39 000 27 140	60 (2.36)	70 (2.76)	30+5 (1.18+0.20)	190 (7.48)	285 (11.22)
39 000 27 139	70 (2.76)	80 (3.15)	30+5 (1.18+0.20)	195 (7.68)	310 (12.20)
39 000 27 138	80 (3.15)	90 (3.54)	30+5 (1.18+0.20)	205 (8.07)	340 (13.39)
39 000 27 158	100 (3.94)	106 (4.17)	40+5 (1.57+0.20)	230 (9.06)	395 (15.55)
39 000 27 152	110 (4.33)	118 (4.65)	35+5 (1.38+0.20)	240 (9.45)	425 (16.73)
39 000 27 151	130 (5.12)	138 (5.43)	45+5 (1.77+0.20)	280 (11.02)	500 (19.69)
39 000 27 150	150 (5.91)	156 (6.14)	45+5 (1.77+0.20)	300 (11.81)	545 (21.46)

Operating temperature:  
-30 °C to +100 °C  
Maximum curvature:  
90° (depending on the  
vibration load)

Fig. 2

Part No.	Dimensions in mm ( <i>Dimensions in inches</i> )			
	$d_i$	$d_a$	e	l
39 000 27 205	50 (1.97)	58 (2.28)	25 (0.98)	110±5 (4.33±0.20)
39 000 27 206	60 (2.36)	68 (2.68)	50 (1.97)	215±5 (8.46±0.20)
39 000 27 207	70 (2.76)	78 (3.07)	50 (1.97)	215±5 (8.46±0.20)
39 000 27 208	80 (3.15)	88 (3.46)	50 (1.97)	215±5 (8.46±0.20)
39 000 27 213	100 (3.94)	108 (4.25)	50 (1.97)	215±5 (8.46±0.20)
39 000 27 214	110 (4.33)	118 (4.65)	50 (1.97)	215±5 (8.46±0.20)
39 000 27 215	130 (5.12)	138 (5.43)	50 (1.97)	215±5 (8.46±0.20)
39 000 27 184	150 (5.91)	158 (6.22)	50 (1.97)	215±5 (8.46±0.20)
39 000 27 346	200 (7.87)	208 (8.19)	50 (1.97)	215±5 (8.46±0.20)

Operating temperature:  
-30 °C to +100 °C  
Maximum curvature:  
45° (depending on the  
vibration load)

# Air connecting parts

## Straight couplings in rubber

### Straight couplings

Material:

rubber (NBR. 60±5 Shore)  
with fabric insert

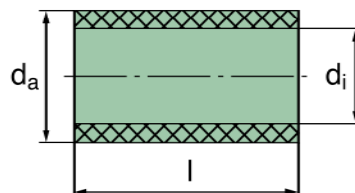
Operating temperature:

-30 °C to +100 °C



Part No.	Dimensions in mm (Dimensions in inches)		
	$d_i$	$d_a$	$l$
39 000 27 203	40 (1.57)	52 (2.05)	100 (3.94)
39 000 27 202	50 (1.97)	63 (2.48)	100 (3.94)
39 000 27 198	60 (2.36)	74 (2.91)	150 (5.91)
39 000 27 197	70 (2.76)	84 (3.31)	150 (5.91)
39 000 27 252	70 (2.76)	84 (3.31)	80 (3.15)
39 000 27 196	80 (3.15)	96 (3.78)	150 (5.91)
39 000 27 950	80 (3.15)	96 (3.78)	75 (2.95)
39 000 27 195	90 (3.54)	106 (4.17)	150 (5.91)
39 000 27 104	100 (3.94)	116 (4.57)	100 (3.94)
39 000 27 194	100 (3.94)	118 (4.65)	150 (5.91)

Part No.	Dimensions in mm (Dimensions in inches)		
	$d_i$	$d_a$	$l$
39 000 27 193	110 (4.33)	126 (4.96)	150 (5.91)
39 000 27 359	110 (4.33)	128 (5.04)	75 (2.95)
39 000 27 188	130 (5.12)	148 (5.83)	100 (3.94)
39 000 27 192	130 (5.12)	148 (5.83)	150 (5.91)
39 000 27 297	130 (5.12)	148 (5.83)	65 (2.56)
39 000 27 183	150 (5.91)	166 (6.54)	150 (5.91)
39 223 27 111	150 (5.91)	168 (6.61)	100 (3.94)
39 000 27 182	180 (7.09)	198 (7.80)	150 (5.91)
39 000 27 345	200 (7.87)	218 (8.58)	200 (7.87)
39 000 27 306	210 (8.27)	228 (8.98)	200 (7.87)



# Air connecting parts

## Elbow pipes in rubber / Couplings in metal

### 90° elbows

Material:  
rubber (NBR. 60±5 Shore)  
with fabric insert

Operating temperature:  
-25 °C to +100 °C

### Couplings

(black painted metal)

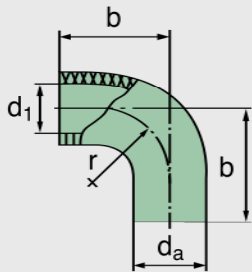


Fig. 1

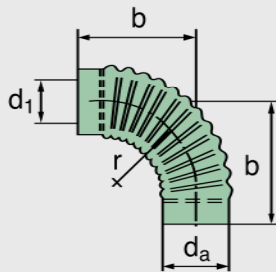


Fig. 2

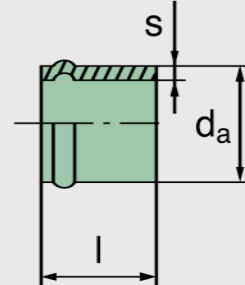


Fig. 3

Part No.	Fig.	Dimensions in mm (Dimensions in inches)			
		b	d <sub>1</sub>	d <sub>a</sub>	r
39 000 25 280	1	115 (4.53)	52 (2.05)	60 (2.36)	75 (2.95)
39 000 25 264	1	115 (4.53)	60 (2.36)	68 (2.68)	75 (2.95)
39 000 25 263	1	140 (5.51)	70 (2.76)	79 (3.11)	90 (3.54)
39 000 25 262	1	140 (5.51)	80 (3.15)	90 (3.54)	95 (3.74)
39 000 25 258	2	205 (8.07)	100 (3.94)	110 (4.33)	155 (6.10)
39 000 25 265	2	215 (8.46)	110 (4.33)	120 (4.72)	165 (6.50)
39 000 25 266	2	265 (10.43)	130 (5.12)	140 (5.51)	210 (8.27)
39 000 25 267	2	300 (11.81)	150 (5.91)	160 (6.30)	245 (9.65)
39 000 25 270	2	355 (13.98)	200 (7.87)	210 (8.27)	300 (11.81)

Part No.	Fig.	Dimensions in mm (Dimensions in inches)		
		d <sub>a</sub>	l	s
39 000 25 177	3	52 (2.05)	50 (1.97)	0.75 (0.03)
39 000 25 167	3	62 (2.44)	65 (2.56)	1.0 (0.04)
39 000 25 164	3	70 (2.76)	50 (1.97)	1.0 (0.04)
39 000 25 168	3	82 (3.23)	50 (1.97)	1.0 (0.04)
39 000 25 165	3	92 (3.62)	50 (1.97)	1.0 (0.04)
39 000 25 175	3	102 (4.02)	50 (1.97)	1.0 (0.04)
39 000 25 176	3	110 (4.33)	50 (1.97)	1.0 (0.04)
39 000 25 174	3	132 (5.20)	50 (1.97)	1.0 (0.04)
39 000 25 184	3	150 (5.91)	90 (3.54)	1.0 (0.04)
39 000 25 185	3	180 (7.09)	90 (3.54)	1.0 (0.04)

# Air connecting parts

## Connection pipes and couplings in metal

**Intermediate pipe**  
(black painted metal)  
only for dirty air intake

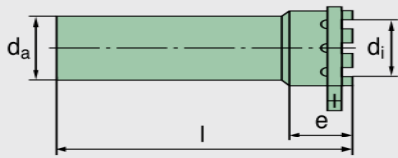


Fig. 4

**Pipes**  
(black painted metal)

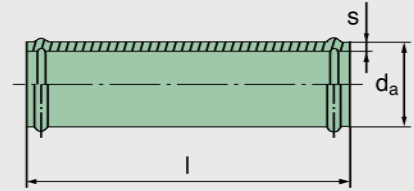


Fig. 5

Part No.	Fig.	Dimensions in mm (Dimensions in inches)			
		$d_i$	$d_a$	$e$	$l$
<b>31 056 25 821</b>	4	82.2 (3.24)	82 (3.23)	80 (3.15)	245 (9.65)
<b>31 080 25 731</b>	4	102.2 (4.02)	102 (4.02)	80 (3.15)	250 (9.84)
<b>39 100 25 991</b>	4	110.2 (4.34)	110 (4.33)	110 (4.33)	200 (7.87)
<b>31 160 25 771</b>	4	132.2 (5.20)	132 (5.20)	110 (4.33)	400 (15.75)

Part No.	Fig.	Dimensions in mm (Dimensions in inches)		
		$d_a$	$l$	$s$
<b>39 000 25 172</b>	5	42 (1.65)	500 (19.69)	0.75 (0.03)
<b>39 000 25 173</b>	5	82 (3.23)	500 (19.69)	0.75 (0.03)
<b>39 000 25 158</b>	5	92 (3.62)	500 (19.69)	0.75 (0.03)
<b>39 000 25 183</b>	5	102 (4.02)	500 (19.69)	0.75 (0.03)
<b>39 000 25 166</b>	5	110 (4.33)	500 (19.69)	0.75 (0.03)
<b>39 000 25 157</b>	5	132 (5.20)	500 (19.69)	0.75 (0.03)
<b>39 000 25 155</b>	5	150 (5.91)	500 (19.69)	0.75 (0.03)

# Air connecting parts

## Elbow pipes in metal



Part No.	Fig.	Dimensions in mm (Dimensions in inches)				
		a	b	d <sub>a</sub>	r	s
39 000 25 188	1	60 (2.36)	60 (2.36)	52 (2.05)	40 (1.57)	0.75 (0.03)
31 034 25 442	1	95 (3.74)	95 (3.74)	62 (2.44)	60 (2.36)	0.75 (0.03)
39 000 25 152	1	70 (2.76)	70 (2.76)	70 (2.76)	60 (2.36)	1.0 (0.04)
39 000 25 207	2	100 (3.94)	100 (3.94)	70 (2.76)	60 (2.36)	1.0 (0.04)
39 000 25 956	2	110 (4.33)	110 (4.33)	80 (3.15)	55 (2.17)	1.0 (0.04)
39 000 25 148	1	61 (2.40)	61 (2.40)	82 (3.23)	55 (2.17)	1.0 (0.04)
39 000 25 153	1	80 (3.15)	67 (2.64)	90 (3.54)	60 (2.36)	1.0 (0.04)
39 000 25 273	1	80 (3.15)	80 (3.15)	100 (3.94)	65 (2.56)	1.0 (0.04)

Part No.	Fig.	Dimensions in mm (Dimensions in inches)				
		a	b	d <sub>a</sub>	r	s
39 000 25 124	2	110 (4.33)	110 (4.33)	100 (3.94)	65 (2.56)	1.0 (0.04)
39 000 25 146	1	90 (3.54)	90 (3.54)	110 (4.33)	85 (3.35)	1.0 (0.04)
39 000 25 192	2	110 (4.33)	110 (4.33)	110 (4.33)	85 (3.35)	1.0 (0.04)
39 000 25 198	2	125 (4.92)	125 (4.92)	110 (4.33)	85 (3.35)	1.0 (0.04)
39 000 25 147	1	120 (4.72)	120 (4.72)	130 (5.12)	95 (3.74)	1.0 (0.04)
39 000 25 224	2	140 (5.51)	140 (5.51)	130 (5.12)	95 (3.74)	1.0 (0.04)
39 000 25 142	1	180 (7.09)	180 (7.09)	150 (5.91)	110 (4.33)	1.0 (0.04)
39 000 25 333	2	180 (7.09)	180 (7.09)	150 (5.91)	110 (4.33)	1.0 (0.04)

### Metal elbow pipes (black painted metal)

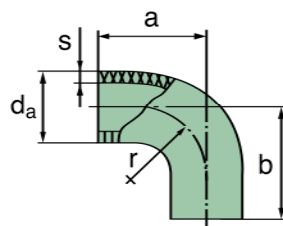


Fig. 1

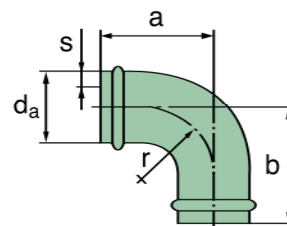


Fig. 2

# Air connecting parts

## Adapter pieces in metal / Hose clips

Adapter pieces  
(black painted metal)

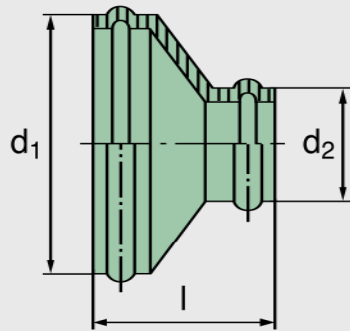


Fig. 1

Hose clips

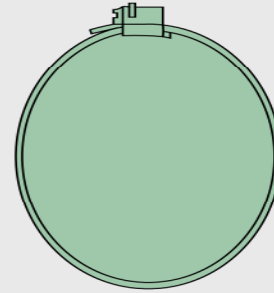


Fig. 2

Fig. 1

Part No.	Dimensions in mm (Dimensions in inches)		
	$d_1$	$d_2$	$l$
39 000 25 621	70 (2.76)	40 (1.57)	65 (2.56)
39 000 25 622	70 (2.76)	60 (2.36)	56 (2.20)
39 000 25 631	80 (3.15)	50 (1.97)	65 (2.56)
39 000 25 431	82 (3.23)	70 (2.76)	56 (2.20)
39 000 25 461	100 (3.94)	70 (2.76)	75 (2.95)
31 080 25 511	102 (4.02)	80 (3.15)	76 (2.99)
39 000 25 295	110 (4.33)	80 (3.15)	75 (2.95)
39 000 25 193	110 (4.33)	100 (3.94)	70 (2.76)
39 000 25 105	132 (5.20)	102 (4.02)	71 (2.80)
39 000 25 253	132 (5.20)	110 (4.33)	76 (2.99)
39 000 25 325	150 (5.91)	130 (5.12)	86 (3.39)
39 000 25 145	180 (7.09)	150 (5.91)	95 (3.74)
39 000 25 327	200 (7.87)	150 (5.91)	105 (4.13)

Fig. 2

Part No.	Clamping range (diameter) (mm and inches)	Part No.	Clamping range (diameter) (mm and inches)
02 018 01 707	32 – 50 (1.26 – 1.97)	02 018 01 717	130 – 150 (5.12 – 5.91)
02 018 01 708	40 – 60 (1.57 – 2.36)	02 018 01 718	140 – 160 (5.51 – 6.30)
02 018 01 709	50 – 70 (1.97 – 2.76)	02 018 01 719	150 – 170 (5.91 – 6.69)
02 018 01 710	60 – 80 (2.36 – 3.15)	02 018 01 720	160 – 180 (6.30 – 7.09)
02 018 01 711	70 – 90 (2.76 – 3.54)	02 018 01 721	170 – 190 (6.69 – 7.48)
02 018 01 712	80 – 100 (3.15 – 3.94)	02 018 01 722	180 – 200 (7.09 – 7.87)
02 018 01 713	90 – 110 (3.54 – 4.33)	02 018 01 723	190 – 210 (7.48 – 8.27)
02 018 01 714	100 – 120 (3.94 – 4.72)	02 018 01 724	200 – 220 (7.87 – 8.66)
02 018 01 715	110 – 130 (4.33 – 5.12)	02 018 01 725	210 – 230 (8.27 – 9.06)
02 018 01 716	120 – 140 (4.72 – 5.51)	02 018 01 728	240 – 260 (9.45 – 10.24)



# Exhaust ejectors

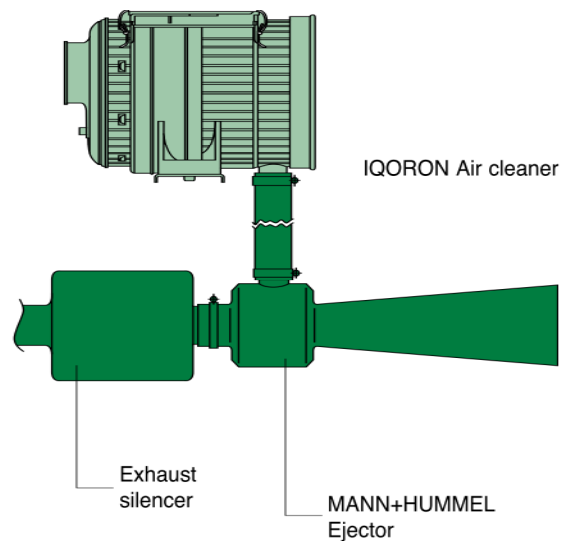
## Maintenance-free dust scavenging with two-stage air cleaners



MANN+HUMMEL ejectors are designed to provide maintenance-free scavenging of the pre-separated dust in two-stage air cleaners. In addition to being maintenance-free, the ejectors achieve a significantly improved pre-separation efficiency of the two-stage air cleaner. This enables a considerably longer filter service life (up to 60%).

The ejector is fitted behind the exhaust silencer on the tailpipe. The flow energy of the exhaust gases generates a negative pressure in the ejector. This enables the pre-separated dust to be scavenged to the ejector and the dust is then blown out together with the exhaust gases.

### Installation example



### Installation instructions

The connection pipe between the air cleaner and ejector should be as short as possible and not have any tight elbows which would increase flow resistance. Coarse contaminant particles in the intake air (e.g. awns,

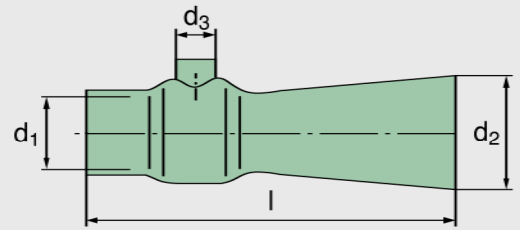
fibres, stems or leaves) can lead to clogging in the air cleaner. In order to avoid this, the scavenging should either be made in a closed area (cooling air shaft, scavenging under engine

bonnet) or in-stalled upstream with a basket sieve. When using an ejector, care should also be taken that the maximum permissible exhaust back pressure specified by the engine producer is not exceeded.

In addition, in all operational conditions there must be a pressure drop to the ejector in order to prevent exhaust gas being sucked in. In case of doubt we recommend use of a non-return adapter.

# Exhaust ejectors

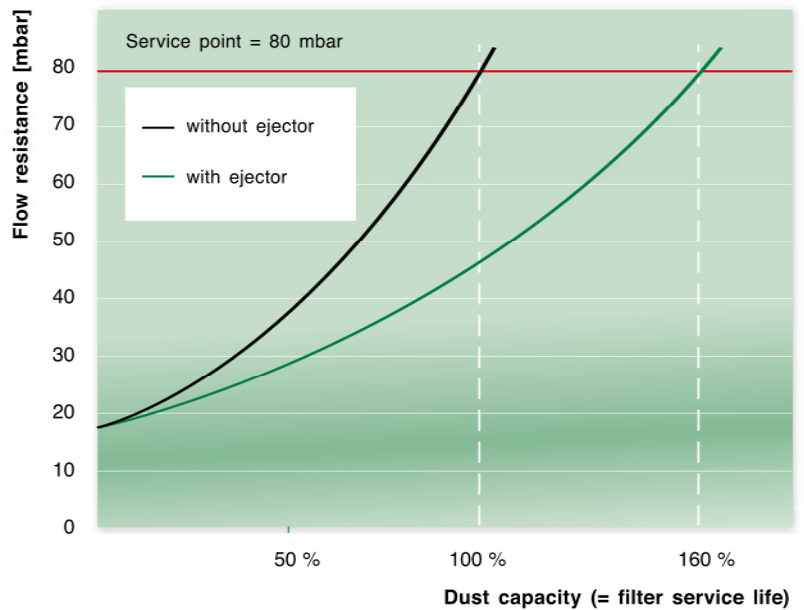
## Dimensions and part numbers



Part No.	Application [kW]	Suitable for				Dimensions in mm (Dimensions in inches)			
		IQORON	Europiclon	NLG-Piclon	Piclon (Metal)	$d_1$	$d_2$	$d_3$	$l$
39 330 70 111	50 – 75	-7, -V 7	45 400 ...	–	45 225 ...	55.5 (2.19)	75 (2.95)	32 (1.26)	352 (13.86)
39 330 70 100	75 – 100	-V 9, -10	45 500 ...	–	45 325 ...	72.5 (2.85)	80 (3.15)	32 (1.26)	312 (12.28)
39 105 67 110	100 – 130	-12, -V 14	45 600 ...	NLG 15	45 440 ...	80.2 (3.16)	88 (3.46)	32 (1.26)	345 (13.58)
39 150 65 100	130 – 195	–	45 700 ...	NLG 21	45 650 ...	90.0 (3.54)	109 (4.29)	40 (1.57)	416 (16.38)
39 170 67 100	180 – 300	–	45 800 ...	NLG 28	45 880 ...	110.0 (4.33)	143 (5.63)	40 (1.57)	547 (21.54)

### Significant extension of the air cleaner service life

The use of exhaust ejectors enables the service life of a two-stage air cleaner to be increased by 60%. This is demonstrated by the graphic pictured here which shows the typical flow characteristics for the dust capacity in relation to the increase in pressure drop.



### Accessories for ejectors

Part No.	Fig.
39 000 25 919	1
39 000 25 751	2

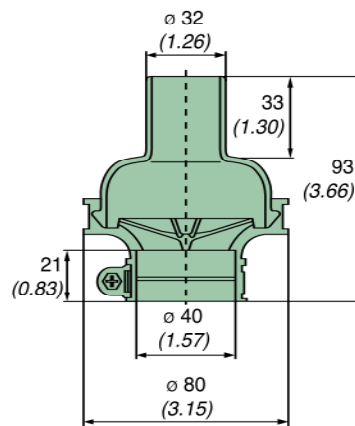


Fig. 1  
Non-return adapter

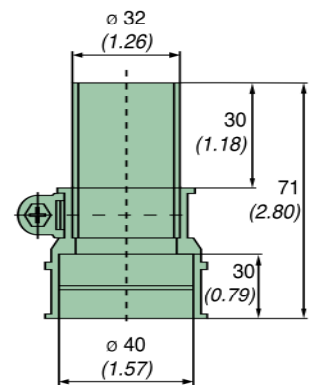


Fig. 2  
Ejector adapter

# New Electronic Service Indicator

The new electronic service indicator from MANN+HUMMEL indicates the optimal point for servicing of your air filter system and hence reduces operational cost, risk and down time.

During operation the indicator exactly displays the continuous increase in differential pressure in air cleaners in combustion engines and compressors. The electronic service indicator offers advantages for machine operators. It is easier to schedule the

servicing – leading to lower running costs.

The service indicator is suitable for differential pressures from 0 to 100 mbar and can be combined with the following air cleaner series: IQORON, IQORON-V, IQORON-S, ENTARON XD, EUROPICLON, NLG.

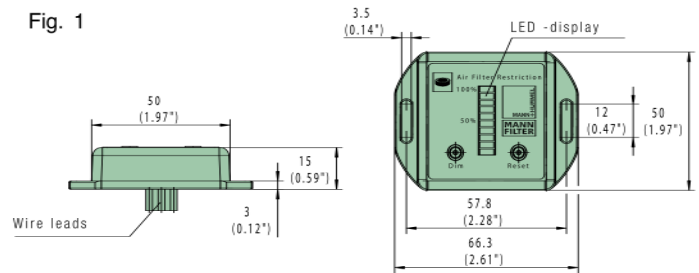
An adapter makes the indicator compatible to all air cleaners for combustion engines available on the market.



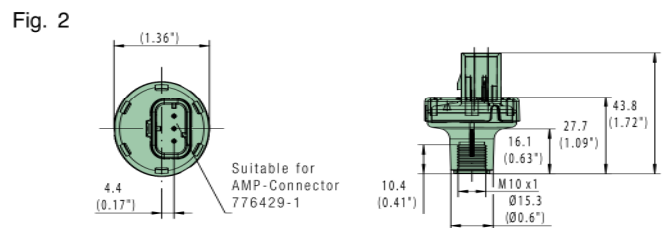
Part No.	Fig.	
39 000 70 920	1	Service indicator assy, packed (Kit including display, pressure sensor, cable harness, manual), programmable for 50/65/80 mbar
39 000 70 910	2	Pressure sensor assy, packed, with connection jack AMPSEAL 16 (Output voltage has to be evaluated with additional interface, e.g. using the on-board electronic system)
26 013 98 100	3	Cable harness assy, packed, suitable for connection jack AMPSEAL 16, with wire leads

## Technical Specification

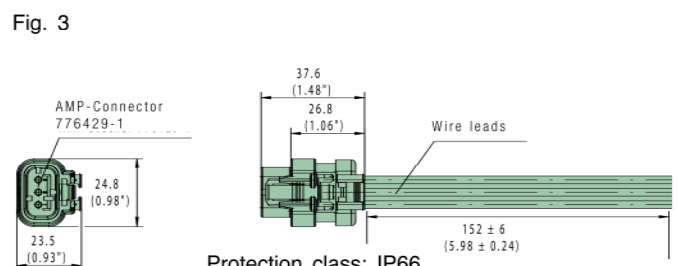
Measurement Type:	Vacuum or Pressure (Reference to atmosphere)
Operational Pressure Range:	0 - 100 mbar [0 - 10 kPa]
Media:	Air
Supply Voltage:	Normal 5 - 30 V DC; Sensor can be powered direct from vehicle up to 30 V DC.
Accuracy:	± 2.5 %
Output Voltage:	0.5 - 4.5 V DC
Over-Voltage Protection:	45 V, Forward Voltage
Reverse Polarity Protection:	36 V, Misconnect 16 V
Operating Temperature:	-40 °C to 125 °C
Storage Temperature:	-40 °C to 125 °C
Vibration Envelope:	10 - 2000 Hz at 10 g
Mounting Connection:	M10x1 female thread fits all MANN+HUMMEL air cleaners (adapter for any other air cleaners on request)



Protection class: IP50



Protection class: IP66



Protection class: IP66

# Service switches

## Electrical monitoring of the level of accumulated dirt

The electrical service switch monitors the level of accumulated dirt in the air cleaner and sends an electrical signal when maintenance is required.

This enables constant supervision of the state of the air cleaner and maintenance only takes place when it is really necessary.

This removes potential damage to equipment which may

occur through frequent and careless maintenance actions.

### Models

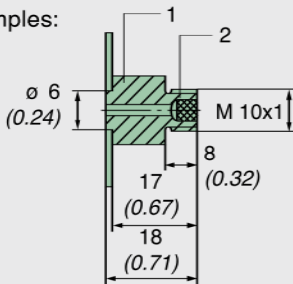
MANN+HUMMEL service switches are available with a number of different connection threads and plug connectors versions (Adapter from M10x1 to 1/8"-27 NPT).



### Accessories for external mounting

Installation examples:

Connection on air cleaner (generally existing)

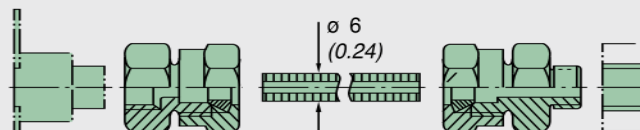


For retro-fitting in the clean air pipe

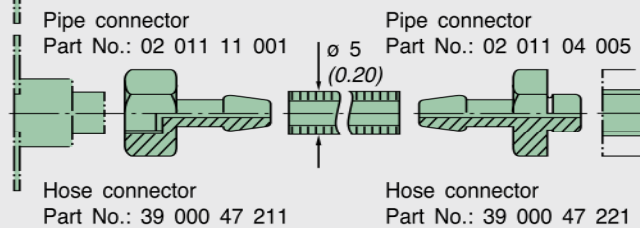
- 1 Connection nipple Part No.: 21 010 15 121
- 2 Felt disc Part No.: 23 005 31 171

Ensure that the felt disc is fitted to the nipple before installing.

Parts for pipe connection



Parts for hose connection



### Specifications

- Material: polyamide 6 GF 30
- Permissible operating temperature: -30 °C to + 120 °C
- Switching pressure (negative pressure): 35 mbar to 80 mbar (3.5 kPa to 8.0 kPa)
- Max. switching capacity: 6W/24V DC (ohmnic load,  $U_{max} = 24V$ ,  $I_{max} = 0.25 A$ )

### Technical instructions

Thanks to the completely insulated and fully enclosed contact insert, the switch is insensitive to dust or humidity. The system is not mechanical but pressure-dependent so that possible tolerances of

the components do not affect the accuracy of the switch. The heart of the system is a kick-over spring that makes readjustment of the switching point unnecessary. The spring contacts are not

affected by contact erosion. As a result of the hysteresis between the points for switching and switching back, contact fluttering is reduced to a minimum. The service switch should not be

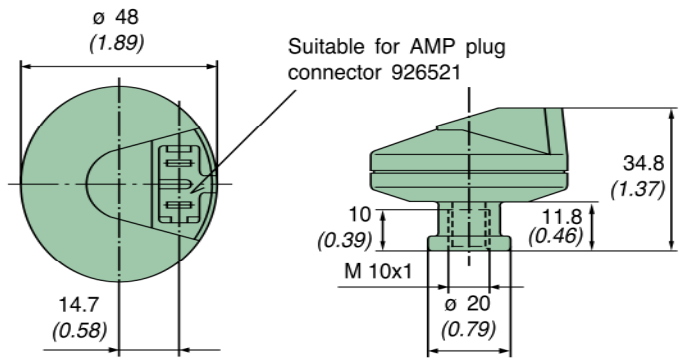
fitted in a hanging position so as to prevent ingress of any condensed water into the air pipe.

# Service switches

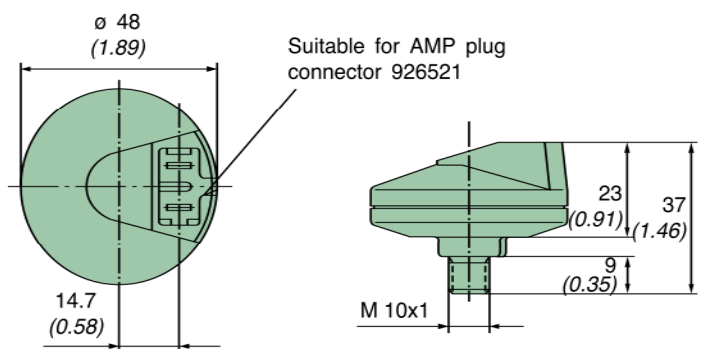
with connection for flat plug (Protection class: IP21)



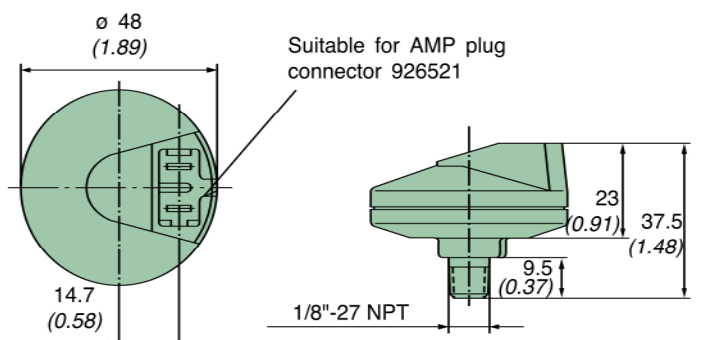
Service switch internal thread M 10x1		
Part No.	switches at gauge pressure	
	[mbar]	[kPa]
39 035 70 902	35±3	3.5±0.3
39 050 70 902	50±3	5.0±0.3
39 055 70 902	55±3	5.5±0.3
39 060 70 902	60±3	6.0±0.3
39 065 70 902	65±3	6.5±0.3
39 070 70 902	70±4	7.0±0.4
39 080 70 902	80±4	8.0±0.4



Service switch external thread M 10x1		
Part No.	switches at gauge pressure	
	[mbar]	[kPa]
39 035 70 952	35±3	3.5±0.3
39 050 70 952	50±3	5.0±0.3
39 055 70 952	55±3	5.5±0.3
39 060 70 952	60±3	6.0±0.3
39 065 70 952	65±3	6.5±0.3
39 070 70 952	70±4	7.0±0.4
39 080 70 952	80±4	8.0±0.4



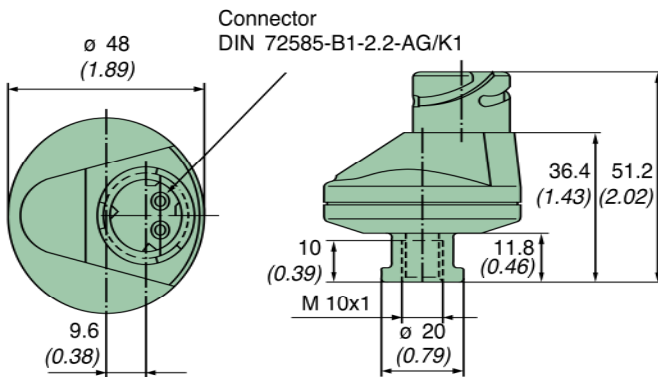
Service switch external thread 1/8"-27 NPT		
Part No.	switches at gauge pressure	
	[mbar]	[kPa]
39 035 70 962	35±3	3.5±0.3
39 050 70 962	50±3	5.0±0.3
39 055 70 962	55±3	5.5±0.3
39 060 70 962	60±3	6.0±0.3
39 065 70 962	65±3	6.5±0.3
39 080 70 962	80±4	8.0±0.4



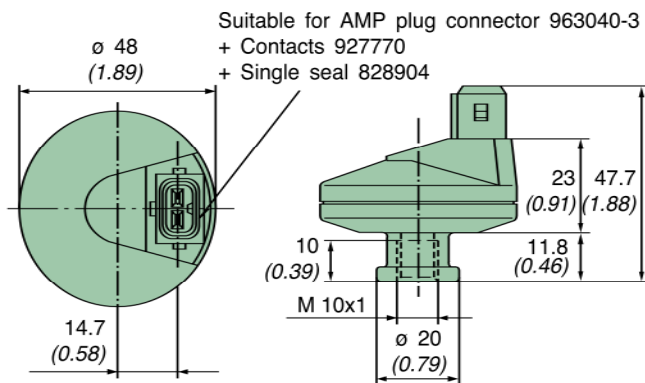


# Service switches

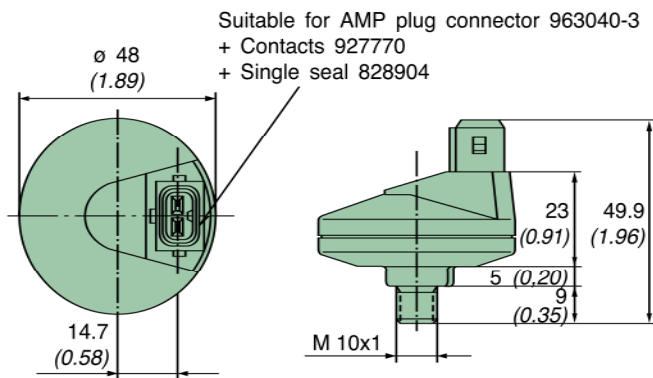
for water-tight electrical connections (Protection class: IP65)



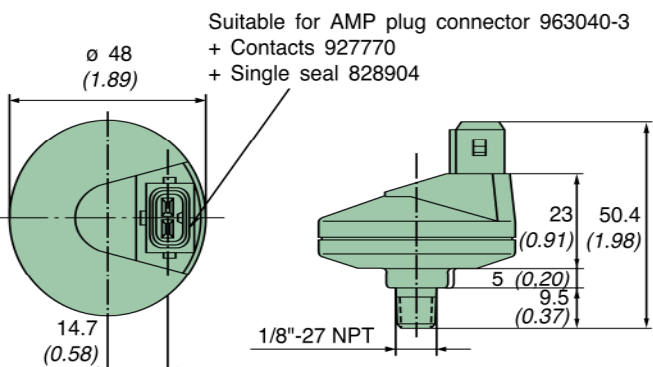
Service switch internal thread M 10x1		
Part No.	switches at gauge pressure [mbar]	[kPa]
39 035 70 702	35±3	3.5±0.3
39 050 70 702	50±3	5.0±0.3
39 055 70 702	55±3	5.5±0.3
39 060 70 702	60±3	6.0±0.3
39 065 70 702	65±3	6.5±0.3
39 070 70 702	70±4	7.0±0.4
39 080 70 702	80±4	8.0±0.4



Service switch internal thread M 10x1		
Part No.	switches at gauge pressure [mbar]	[kPa]
39 035 70 802	35±3	3.5±0.3
39 050 70 802	50±3	5.0±0.3
39 055 70 802	55±3	5.5±0.3
39 060 70 802	60±3	6.0±0.3
39 065 70 802	65±3	6.5±0.3
39 070 70 802	70±4	7.0±0.4
39 080 70 802	80±4	8.0±0.4



Service switch external thread M 10x1		
Part No.	switches at gauge pressure [mbar]	[kPa]
39 035 70 852	35±3	3.5±0.3
39 050 70 852	50±3	5.0±0.3
39 055 70 852	55±3	5.5±0.3
39 060 70 852	60±3	6.0±0.3
39 065 70 852	65±3	6.5±0.3
39 080 70 852	80±4	8.0±0.4



Service switch external thread 1/8"-27 NPT		
Part No.	switches at gauge pressure [mbar]	[kPa]
39 035 70 862	35±3	3.5±0.3
39 050 70 862	50±3	5.0±0.3
39 055 70 862	55±3	5.5±0.3
39 060 70 862	60±3	6.0±0.3
39 065 70 862	65±3	6.5±0.3
39 080 70 862	80±4	8.0±0.4

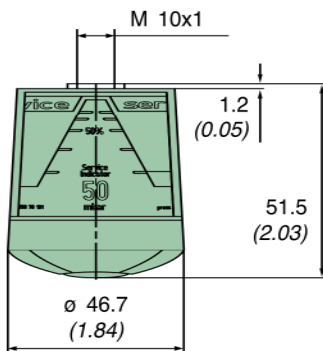


# Service indicators

## Level of dirt accumulation readable at any tim

The MANN+HUMMEL service indicator allows you to read the current level of dirt accumulation in the air cleaner, even when the engine is not in operation. The yellow indicating piston catches on a scale of 12 snap-in positions. In the triangular display, the remaining service life of the filter is displayed, in relation to the increased clogging of the filter element.

The service indicator is insensitive to the intake air pulsations of the engine, excluding the possibility of a false indication. Maintenance is necessary when the yellow piston reaches the red zone. After maintenance has been carried out, the indicator level is readjusted to "zero" by pressing the reset button.



Part No.	snaps into place at gauge pressure	
	[mbar]	[kPa]
39 035 70 911	35±3	3.5±0.3
39 050 70 911	50±4	5.0±0.4
39 050 70 931*	50±4	5.0±0.4
39 060 70 911	60±4	6.0±0.4
39 065 70 911	65±5	6.5±0.5
39 080 70 911	80±5	8.0±0.5
39 080 70 931*	80±5	8.0±0.5

### Specifications

- Material: PC
  - Permissible operating temperature: -30 °C to +100 °C
  - Switching pressure (negative pressure): 35 mbar to 80 mbar (3.5 kPa to 8 kPa)
- \* readable in vertical position

## Service indicators with 90° flange

The 90° connecting flange allows nearly any fitting position. The red indicating piston snaps into position upon reaching the maximum value possible, signalling that maintenance is needed. After maintenance has been carried out, the indicating piston is readjusted to the start position by pressing the reset button.

Part No.	snaps into place at gauge pressure	
	[mbar]	[kPa]
39 000 62 924	35±3	3.5±0.3
39 000 62 925	50±6	5.0±0.6
39 000 62 926	65±7	6.5±0.7
39 000 62 927	80±8	8.0±0.8

### Specifications

- Material: PA
- Permissible operating temperature: -40 °C to +100 °C
- Switching pressure (negative pressure): 35 mbar to 80 mbar (3.5 kPa to 8 kPa)

