Roll-O-Matic®

Automatic Renewable Media Air Filter

- Heavy-duty, rigidly constructed automatic renewable media filter
- Suitable for all types of air conditioning and ventilating systems
- Easy to install, requires little maintenance
- Supplied with a high quality filter media

Application and Description

Roll-O-Matic model G5 is a heavy-duty, rigidly constructed automatic renewable media filter suitable for all types of air conditioning and ventilation systems in commercial, institutional and industrial buildings. The model is equipped with media spools and guide rods to ensure that the media remains stretched as it advances through the filter. This prevents unfiltered air from bypassing the media whilst guaranteeing high quality air filtration. Roll-O-Matic is easy to install and requires little maintenance.

Standard Package

Roll-O-Matic consists of a basic frame assembly, an upper dispensing unit to accommodate the media roll, a lower rewind unit to house the used media executed in galvanized steel, a drive motor with gear assembly to advance the media and a control unit to actuate the drive motor.

Basic Frame Assembly

The basic frame assembly accommodates a set of vertical guide rods and horizontal cross bars which ensure that the media remains flat and stretched as it advances between the upper and lower rollers. To ensure a sturdy construction the upper and lower frame assemblies are supported by braces on either side of the unit.

Dispensing (Top) Unit

The dispensing unit houses pins on which the clean media roll is mounted. This unit also accommodates a media run-out switch.

Rewind (Bottom) Unit

This unit contains pins on which the media rewind spool is fitted as well as a motor reducer with chain and sprocket transmission. As standard, the motor reducer can drive upto two sections simultaneously.

Roll-O-Mat Media

Roll-O-Matic is supplied with Roll-O-Mat filter media. This media is made of continuous spun glass fibres with declining diameter and increasing density from air inlet to air outlet side. Because of this progressive build up and the use of a special adhesive called 'Viscosine', the arrestance and dust holding capacity are very high.

Glass wire strands are bonded to the media every 15 cm running the full length of the roll to ensure that it has sufficient strength and dimensional stability under the tension created.

Standard Roll-O-Mat media (M94) has an arrestance of 80%-85% (ASHRAE 52-76) and a G3 classification according to EN779. The initial resistance is 45 Pa at 2.5 m/s. The recommended final resistance is 130 Pa. The media is capable of withstanding temperatures up to 80°C.

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Control Units

Roll-O-Matic can be supplied with a Timer-, Pressure- or Infra-Red sensor control unit. Each of these units has an early warning 'end of media' signal that warns the user that it is time to replace the media roll. Manual control by means of a push button is also possible.

Timer Control

The metering switch in combination with a solid state timer actuates the drive motor which advances the media by way of pulses via a cam synchroniser. The timer can be easily adjusted to suit local site conditions.

Pressure Control

Media advancement is achieved when the resistance over the media reaches a preset value.

Infra-Red Sensor Control

This control unit consists of an infra-red light source in combination with a detector, calibrated to actuate the drive motor when a preset level of dirt accumulation has been reached. The unit works independently of airflow or time cycles and is therefore ideally suited for variable air volume systems.

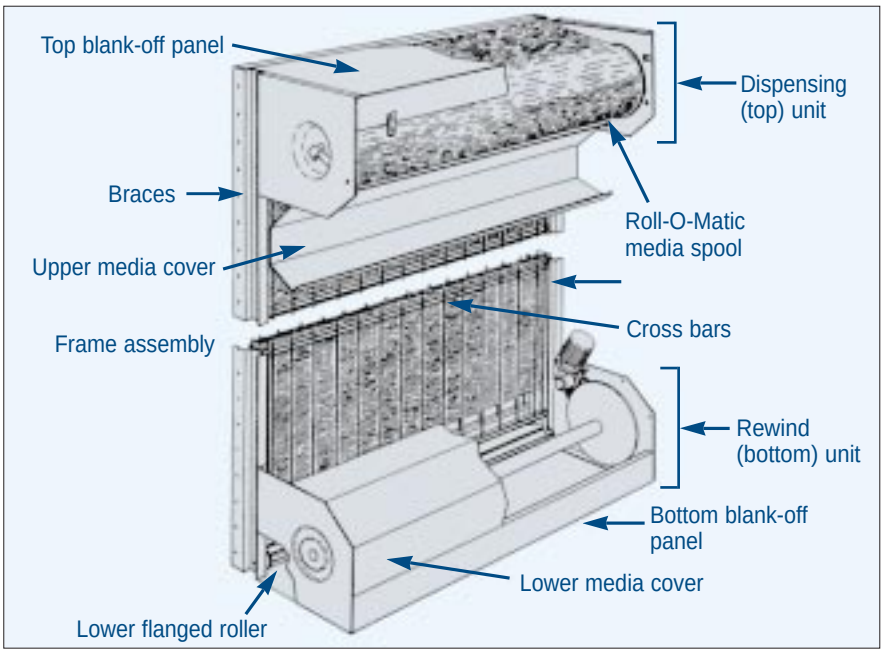
On-Site-Assembly or Pre-Assembled Components

Normally, the Roll-O-Matic is supplied in individual components for assembly on site. This facilitates easy handling and storage and reduces shipping costs. All components are designed for quick and easy installation. However, for Roll-O-Matic sizes up to 6-98, the unit can be supplied in factory assembled sections, mounted on a pallet.

Drive Motor:
0.18 kW with gear reducer
Standard: 220/400V-3ph.-50Hz

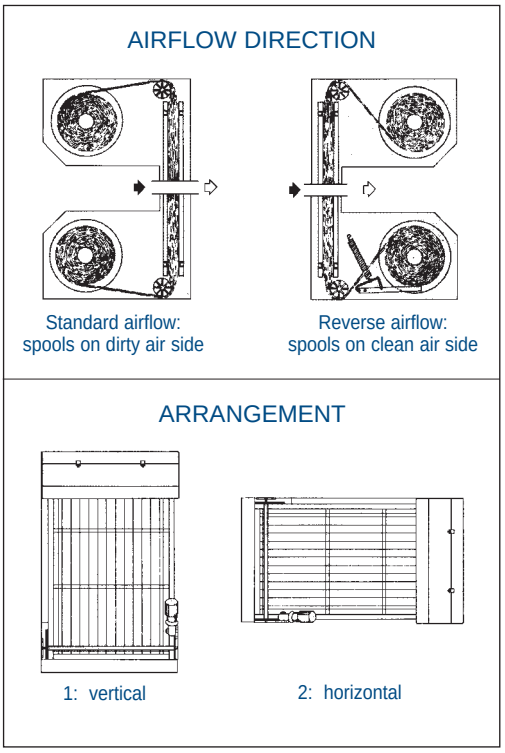
Option

- Drive motor 220V-1ph.-50Hz-0.12kW.



Construction of a Roll-O-Matic

Types



Types of installation

AAF-International B.V.
P.O. Box 7928
1008 AC Amsterdam
The Netherlands
Tel.: + 31 20 549 44 11
Fax: + 31 20 644 43 98

International AAF Offices:
Vienna (A), Montreal (CDN), Dortmund (D), Vitoria (E), Paris (F), Cramlington (GB), Athens (GR), Milan (I), Riyadh (KSA), Mexico (Mex), Amsterdam (NL), Singapore, Istanbul (TR), Louisville, Ky (USA)

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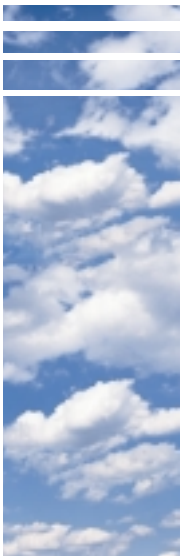

Roll-O-Matic Selection Table Guide

Selection table for low and medium airflow capacities*

Width number		3	4	5	6	7	8	9	10
Overall width A in mm		914	1219	1524	1829	2134	2438	2743	3048
Sections (number x size)		1x3'	1x4'	1x5'	1x6'	1x3' 1x4'	2x4'	1 x4' 1x5'	2x5'
Height number	Overall height B in mm								
38	1117	2.33 1.83	3.21 2.50	4.17 3.25	5.06 3.94				
40	1219	2.54 1.99 **81**	3.52 2.75 **88**	4.55 3.56 **96**	5.51 4.31 **106**				
50	1524	3.27 2.56 **85**	4.59 3.58 **91**	5.89 4.60 **99**	7.20 5.63 **109**	7.86 6.14 **176**	9.17 7.17 **182**	7.71 8.19 **190**	11.81 9.22 **198**
54	1626	3.52 2.75	4.94 3.86	6.35 4.96	7.77 6.07	8.46 6.61	9.88 7.72	11.27 8.81	12.71 9.93
58	1727	3.79 2.96	5.29 4.13	6.80 5.31	8.32 6.50	9.07 7.08	10.59 8.28	12.09 9.44	13.62 10.64
60	1829	4.04 3.15 **89**	5.65 4.42 **95**	7.25 5.67 **103**	8.85 6.78 **113**	9.67 7.75 **184**	11.31 8.83 **190**	12.89 10.07 **198**	14.53 11.35 **206**
64	1930	4.28 3.35	6.01 4.69	7.72 6.03	9.41 7.35	10.28 8.03	12.02 9.39	13.73 10.72	15.43 12.06
68	2032	4.53 3.54	6.35 4.96	8.14 6.36	9.96 7.78	10.88 8.50	12.73 9.94	14.51 11.33	16.34 12.76
70	2134	4.78 3.74 **92**	6.70 5.24 **98**	8.62 6.74 **106**	10.53 8.22 **116**	11.48 8.97 **190**	13.44 10.50 **196**	15.33 11.97 **204**	17.24 13.47 **212**
74	2235	5.03 3.93	7.06 5.51	9.07 7.08	11.09 8.67	12.09 9.44	14.08 11.00	16.13 12.60	18.15 14.18
78	2337	5.28 4.14	7.41 5.79	9.52 7.44	11.63 9.08	12.69 9.92	14.79 11.56	16.93 13.22	19.06 14.89
80	2438	5.55 4.33 **95**	7.77 6.07 **101**	9.97 7.79 **109**	12.16 9.50 **119**	13.30 10.39 **196**	15.50 12.11 **202**	17.74 13.86 **210**	19.96 15.60 **218**
84	2540	5.79 4.53	8.13 6.35	10.43 8.14	12.73 9.94	13.90 10.86	16.21 12.67	18.54 14.49	20.87 16.31
88	2642	6.04 4.72	8.46 6.61	10.88 8.50	13.30 10.39	14.51 11.33	16.93 13.22	19.34 15.11	21.78 17.01
90	2743	6.31 4.93 **99**	8.82 6.89 **105**	11.33 8.85 **113**	13.85 10.82 **123**	15.11 11.81 **204**	17.64 13.78 **210**	20.16 15.75 **218**	22.68 17.72 **226**
94	2845	6.56 5.13	9.17 7.17	11.79 9.21	14.42 11.26	15.72 12.28	18.13 14.33	20.96 16.38	23.59 18.43
98	2947	6.81 5.32	9.53 7.44	12.23 9.56	14.93 11.67	16.36 12.78	19.02 14.86	21.76 17.00	24.32 19.00
100	3048	7.06 5.51 **103**	9.88 7.72 **109**	12.69 9.92 **117**	15.50 12.11 **127**	16.96 13.25 **212**	19.77 15.44 **218**	22.58 17.64 **226**	25.39 19.83 **234**

*** How to read the tables:**

Example Roll-O-Matic 6-80: First number: airflow in m^3/s for a face velocity of 3.2 m/s: 12.16 m^3/s.
Second number: airflow in m^3/s for a face velocity of 2.5 m/s: 9.50 m^3/s.
Third number (in bold) gives the weight in kg of a standard, fully operational Roll-O-Matic 6-80 filter i.e 119 kg.
Weights are given for current sizes only. Roll-O-Matic can be supplied in sections of the following widths: 914 mm (3'), 1219 mm (4'), 1524 mm (5') or 1829 mm (6'). All sections are available in 33 different heights according to the selection tables above.

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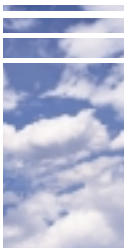

Selection table for high airflow capacities*

Width number		11	12	13	14	15	16	17	18	19	20	21	22	23	24
Overall width A in mm		3353	3658	3962	4267	4572	4877	5182	5486	5791	6096	6401	6706	7010	7315
Sections (number x size)		1x6' 1x5'	2x6'	2x4' 1x5'	2x5' 1x4'	3x5'	2x5' 1x6'	2x6' 1x5'	3x6'	3x5' 1x4'	4x5'	3x5' 1x6'	2x6' 2x5'	3x6' 1x5'	4x6'
Height number	Overall height B in mm														
80	2438	22.17 17.32 **228**	24.39 19.06 **238**	25.49 19.92 **311**	27.72 21.65 **319**	29.92 23.38 **327**	32.78 25.61 **337**	35.02 27.36 **347**	37.28 29.13 **357**	38.45 30.04 **428**	40.71 31.81 **436**	42.95 33.56 **446**	45.21 35.32 **456**	47.45 37.07 **466**	49.71 38.83 **476**
84	2540	23.18 18.11	25.49 19.92	26.67 20.83	28.98 22.64	31.29 24.44	33.94 26.51	36.30 28.36	38.65 30.19	39.75 31.06	42.12 32.90	44.46 34.74	46.83 36.58	49.19 38.43	51.54 40.26
88	2642	24.18 18.89	26.59 20.78	27.81 21.72	30.22 23.61	32.64 25.50	35.52 27.75	37.99 29.68	40.44 31.60	41.63 32.51	44.13 34.43	46.54 36.36	48.99 38.28	51.47 40.21	53.94 42.14
90	2743	25.19 19.68 **236**	27.72 21.65 **246**	28.98 22.64 **323**	31.48 24.60 **331**	34.01 26.57 **339**	37.10 28.99 **349**	39.68 31.00 **359**	42.24 33.00 **369**	43.48 33.97 **444**	46.04 35.97 **452**	48.62 37.99 **462**	51.18 39.99 **472**	53.76 42.00 **482**	56.32 44.00 **492**
94	2845	26.21 20.47	28.82 22.51	30.13 23.54	32.75 25.58	35.36 27.63	37.97 29.67	40.53 31.67	43.20 33.75	44.62 34.86	47.29 36.94	49.78 38.89	52.44 40.97	54.93 42.92	57.60 45.00
98	2947	27.20 18.75	29.90 23.36	31.29 24.44	33.99 26.56	36.69 28.67	39.47 30.83	42.13 32.92	44.80 35.00	46.22 36.11	48.93 38.22	51.63 40.33	54.22 42.36	57.03 44.56	59.81 46.72
100	3048	28.23 22.06 **244**	31.01 24.22 **254**	32.50 25.39 **335**	35.24 27.53 **343**	38.04 29.72 **351**	40.89 31.94 **361**	43.73 34.17 **371**	46.51 36.33 **381**	47.93 37.44 **460**	50.77 39.67 **468**	53.55 41.83 **478**	56.39 44.06 **488**	59.20 46.25 **498**	62.01 48.44 **508**
104	3150	29.19 22.81	32.11 25.08	33.64 26.28	36.55 28.56	39.47 30.83	42.35 33.08	45.16 35.28	48.11 37.58	49.99 38.83	52.48 41.00	55.50 43.36	58.35 45.58	61.23 47.83	64.21 50.17
108	3251	30.22 23.61	33.24 25.97	34.74 27.14	37.83 29.56	40.82 31.89	43.73 34.17	46.93 36.67	49.81 38.92	51.41 40.17	54.19 42.33	57.42 44.86	60.34 47.14	63.36 49.50	66.49 51.94
110	3353	31.22 24.39 **252**	34.35 26.83 **262**	35.91 28.06 **347**	39.11 30.56 **355**	42.17 32.94 **363**	45.19 35.31 **373**	48.36 37.78 **383**	51.63 40.33 **393**	53.08 41.47 **476**	56.04 43.78 **484**	59.38 46.39 **494**	62.36 48.72 **504**	65.69 51.28 **514**	68.69 53.67 **524**
114	3454	32.21 25.17	35.45 27.69	37.01 28.92	40.39 31.56	43.52 34.00	46.76 36.53	50.06 39.11	53.12 41.50	54.79 42.81	57.88 45.22	61.23 47.83	64.39 50.31	67.59 52.81	70.89 55.39
118	3556	33.24 25.97	36.59 28.58	38.22 29.86	41.60 32.50	44.48 34.75	48.21 37.67	51.56 40.28	54.93 42.92	56.46 44.11	59.88 46.78	63.15 49.33	66.53 51.97	69.90 54.61	73.17 57.17
120	3658	34.28 26.78 **260**	37.73 29.47 **270**	39.47 30.83 **359**	42.84 33.47 **367**	46.19 36.08 **375**	49.71 38.83 **385**	53.05 41.44 **395**	56.53 44.17 **405**	58.17 45.44 **492**	61.73 48.22 **500**	65.03 50.81 **510**	68.59 53.58 **520**	71.96 56.22 **530**	75.45 58.94 **540**
124	3760	35.31 27.58	38.83 30.33	40.68 31.78	44.09 34.44	47.54 37.14	51.20 40.00	54.58 42.64	58.13 45.42	59.88 46.78	62.11 49.56	66.92 52.28	70.54 55.11	73.99 57.81	77.65 60.67
128	3861	36.27 28.33	39.89 31.17	41.85 32.69	45.33 35.42	49.24 38.47	52.62 41.11	56.18 43.89	59.73 46.67	61.94 48.39	65.28 51.00	69.16 54.03	72.53 56.67	76.05 59.42	79.79 62.33
130	3962	37.26 29.11 **268**	40.99 32.03 **278**	42.70 33.36 **371**	46.61 36.42 **379**	50.31 39.31 **387**	54.08 42.25 **397**	57.96 45.28 **407**	61.39 47.96 **417**	63.36 49.50 **508**	66.99 52.33 **516**	70.77 55.29 **526**	74.49 58.19 **536**	78.13 61.04 **546**	81.99 64.05 **556**
134	4064	38.29 29.92	42.10 32.89	43.95 34.33	47.86 37.39	51.59 40.31	55.54 43.39	59.38 46.39	63.15 49.33	64.97 50.76	68.84 53.78	72.64 56.75	76.52 59.78	80.36 62.78	84.19 65.78
138	4166	39.29 30.69	43.20 33.75	45.16 35.28	49.10 38.36	52.94 41.36	56.93 44.47	60.80 47.50	64.75 50.58	66.84 52.22	70.54 55.11	74.53 58.22	78.47 61.31	82.38 64.36	86.40 67.50
140	4267	40.25 31.44 **276**	44.30 34.61 **286**	46.29 36.17 **383**	50.35 39.33 **391**	54.29 42.42 **399**	58.38 45.61 **409**	62.58 48.89 **419**	66.67 52.08 **429**	68.62 53.61 **524**	72.53 56.67 **532**	76.52 59.78 **542**	80.57 62.94 **552**	84.80 66.25 **562**	88.61 69.22 **572**
144	4369	41.32 32.28	45.48 35.53	47.50 37.11	51.66 40.36	55.64 43.47	59.91 46.81	64.00 50.00	68.05 53.17	70.40 55.00	74.24 58.00	78.33 61.19	82.60 64.53	86.61 67.67	90.95 71.06
148	4470	42.31 33.06	46.58 36.39	48.68 38.03	52.98 41.39	57.24 44.72	61.33 47.92	65.78 51.39	69.87 54.58	71.82 56.11	76.09 59.44	80.53 62.92	84.62 66.11	88.89 69.44	93.16 72.78
150	4572	43.38 33.89 **284**	47.64 37.22 **294**	49.78 38.89 **395**	54.22 42.36 **403**	58.49 45.69 **411**	62.76 49.03 **421**	67.20 52.50 **431**	71.75 56.06 **441**	73.60 57.50 **540**	78.04 60.97 **548**	82.49 64.44 **558**	86.76 67.78 **568**	91.02 71.11 **578**	95.29 74.44 **588**

AAF-International B.V., 1008 AC Amsterdam, P.O. Box 7928, The Netherlands
Tel.: + 31 20 549 44 11, Fax: + 31 20 644 43 98