

# OIL-X EVOLUTION

## High Efficiency Oil Vapour Removal



Removing oil vapour from compressed air is necessary to meet the air quality standards required by many critical applications and processes within industries such as pharmaceutical, medical, chemical, electronics, food and beverage and breathing air applications.

Compressed air purification equipment must deliver uncompromising performance and reliability whilst providing the right balance of air quality with the lowest cost of operation. Many manufacturers offer products for the filtration and purification of contaminated compressed air, which are often selected only upon their initial purchase cost, with little or no regard for the air quality they provide, the cost of operation throughout their life or indeed their environmental impact. When purchasing purification equipment, delivered air quality, the overall cost of ownership and the equipment's environmental impact must always be considered.



### The Parker domnick hunter Design Philosophy

Parker domnick hunter has been supplying industry with high efficiency filtration and purification products since 1963. Our philosophy 'Designed for Air Quality & Energy Efficiency' ensures products that not only provide the user with clean, high quality compressed air, but also with low lifetime costs and reduced CO<sub>2</sub> emissions.



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### Benefits:

- **Delivered Air quality in accordance with ISO 8573-1:2001, the international standard for compressed air quality**
- **Filtration performance independently verified by Lloyds Register**
- **Adsorption filters tested in accordance with the test methods of the ISO 8573 Series**
- **Suitable for all compressed air applications and all compressor types**
- **Pressure losses start low and stay low to save energy, money and the environment**
- **Low lifetime costs**
- **All OIL-X EVOLUTION filter housings are covered by a 10 year housing guarantee**
- **Helps reduce the release of CO<sub>2</sub> into the environment**



ENGINEERING YOUR SUCCESS.

# Filtration Grades

Filtration Grade	Filter Type	Particle removal (inc water & oil aerosols)	Max Remaining Oil Content at 21°C (70°F)	Initial Dry Differential Pressure	Initial Saturated Differential Pressure	Absorbent Life	Precede with Filtration Grade
ACS	Oil Vapour Removal	N/A	0.003 mg/m <sup>3</sup> 0.003 ppm(w)	<200 mbar (3psi)	N/A	When oil vapour or odour is detected	AA
AC	Oil Vapour Removal	N/A	0.003 mg/m <sup>3</sup> 0.003 ppm(w)	<775 mbar (11psi)	N/A	When oil vapour or odour is detected	AO
OVR	Oil Vapour Removal	N/A	0.003 mg/m <sup>3</sup> 0.003 ppm(w)	<350 mbar (5psi)	N/A	6000hrs*	AA

\* When corrected to match system conditions

## Product Selection - Grade ACS

Stated flows are for operation at 7 bar g (100 psi g) with reference to 20°C, 1 bar a, 0% relative water vapour pressure. For flows at other pressures apply the correction factors shown.

## Correction Factors

Grades ACS and AC only

	Model	Pipe Size	L/S	m <sup>3</sup> /min	m <sup>3</sup> /hr	cfm	Replacement Element kit	No.	Line Pressure		Correction Factor pressure (CFP)
									bar g	psi g	
Cast Aluminum Filters	ACS 005A <input type="checkbox"/> MX	1/4"	6	0.4	22	13	005 ACS	1	1	15	2.65
	ACS 005B <input type="checkbox"/> MX	3/8"	6	0.4	22	13	005 ACS	1	1.5	22	2.16
	ACS 005C <input type="checkbox"/> MX	1/2"	6	0.4	22	13	005 ACS	1	2	29	1.87
	ACS 010A <input type="checkbox"/> MX	1/4"	10	0.6	36	21	010 ACS	1	2.5	37	1.67
	ACS 010B <input type="checkbox"/> MX	3/8"	10	0.6	36	21	010 ACS	1	3	44	1.53
	ACS 010C <input type="checkbox"/> MX	1/2"	10	0.6	36	21	010 ACS	1	3.5	51	1.41
	ACS 015B <input type="checkbox"/> MX	3/8"	20	1.2	72	42	015 ACS	1	4	58	1.32
	ACS 015C <input type="checkbox"/> MX	1/2"	20	1.2	72	42	015 ACS	1	4.5	66	1.25
	ACS 020C <input type="checkbox"/> MX	1/2"	30	1.8	108	64	020 ACS	1	5	73	1.18
	ACS 020D <input type="checkbox"/> MX	3/4"	30	1.8	108	64	020 ACS	1	5.5	80	1.13
	ACS 020E <input type="checkbox"/> MX	1"	30	1.8	108	64	020 ACS	1	6	87	1.08
	ACS 025D <input type="checkbox"/> MX	3/4"	60	3.6	216	127	025 ACS	1	6.5	95	1.04
	ACS 025E <input type="checkbox"/> MX	1"	60	3.6	216	127	025 ACS	1	7	100	1.00
	ACS 030E <input type="checkbox"/> MX	1"	110	6.6	396	233	030 ACS	1	7.5	110	0.97
	ACS 030F <input type="checkbox"/> MX	1 1/4"	110	6.6	396	233	030 ACS	1	8	116	0.94
	ACS 030G <input type="checkbox"/> MX	1 1/2"	110	6.6	396	233	030 ACS	1	8.5	124	0.91
	ACS 035F <input type="checkbox"/> MX	1 1/4"	160	9.6	576	339	035 ACS	1	9	131	0.88
	ACS 035G <input type="checkbox"/> MX	1 1/2"	160	9.6	576	339	035 ACS	1	9.5	139	0.86
	ACS 040G <input type="checkbox"/> MX	1 1/2"	220	13.2	792	466	040 ACS	1	10	145	0.84
	ACS 040H <input type="checkbox"/> MX	2"	220	13.2	792	466	040 ACS	1	10.5	153	0.82
ACS 045H <input type="checkbox"/> MX	2"	330	19.8	1188	699	045 ACS	1	11	160	0.80	
ACS 050I <input type="checkbox"/> MX	2 1/2"	430	25.9	1548	911	050 ACS	1	11.5	168	0.78	
ACS 050J <input type="checkbox"/> MX	3"	430	25.9	1548	911	050 ACS	1	12	174	0.76	
ACS 055I <input type="checkbox"/> MX	2 1/2"	620	37.3	2232	1314	055 ACS	1	12.5	183	0.75	
ACS 055J <input type="checkbox"/> MX	3"	620	37.3	2232	1314	055 ACS	1	13	189	0.73	
ACS 060K <input type="checkbox"/> MX	G 4	1000	60	3600	2119	060 ACS	3	13.5	197	0.72	
Carbon Steel Filters	ACS 150ND MX	DN80	430	25.9	1548	911	150 ACS	1	14	203	0.71
	ACS 200ND MX	DN80	620	37.3	2232	1314	200 ACS	1	14.5	212	0.69
	ACS 250OD MX	DN100	1000	60	3600	2119	060 ACS	3	15	218	0.68
	ACS 300OD MX	DN100	1300	78	4680	2755	060 ACS	4	15.5	226	0.67
	ACS 350PD MX	DN150	1950	117	7020	4132	060 ACS	6	16	232	0.66
	ACS 400QD MX	DN200	3250	195	11700	6887	060 ACS	10	All ACS models are fitted with a manual drain. AC models are supplied with a float drain as standard. For Pressures of 16 to 20 bar g (232 to 290 psi g) a manual drain must be used.		
	ACS 450RD MX	DN250	5200	313	18720	11019	060 ACS	16			
ACS 500SD MX	DN300	7800	469	28080	16528	060 ACS	24	16.5	241	0.65	
								17	248	0.64	
								17.5	256	0.63	
								18	263	0.62	
								18.5	270	0.62	
								19	277	0.61	
								19.5	285	0.60	
								20	290	0.59	

Note: Connection sizes, (005 - 055) BSPT/NPT option available, G = BSPP and DN = flanged connection.

To correctly select a filter model, the flow rate of the filter must be adjusted for the minimum operating pressure of the system

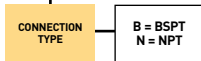
1. Obtain the minimum operating pressure and maximum compressed air flow rate at the inlet of the filter.
2. Select the correction factor for minimum operating pressure from the CFP table (always round down e.g. for 5.3 bar, use 5 bar correction factor)
3. Calculate the minimum filtration capacity  
Minimum Filtration Capacity = Compressed Air Flow Rate x CFP
4. Using the minimum filtration capacity, select a filter model from the flow rate tables above (filter selected must have a flow rate equal to or greater than the minimum filtration capacity)

## Product Selection - Grade AC

	Model	Flow Rates				Replacement Elements		
		Pipe Size BSPT	L/s	m <sup>3</sup> /min	m <sup>3</sup> /hr	cfm		
Cast Aluminum Filters	AC010A <input type="checkbox"/> FI	1/4"	6	0.4	22	13	010AA	010AC
	AC010B <input type="checkbox"/> FI	3/8"	6	0.4	22	13	010AA	010AC
	AC010C <input type="checkbox"/> FI	1/2"	6	0.4	22	13	010AA	010AC
	AC015B <input type="checkbox"/> FI	3/8"	13	0.8	46	27	015AA	015AC
	AC015C <input type="checkbox"/> FI	1/2"	13	0.8	46	27	015AA	015AC
	AC020C <input type="checkbox"/> FI	1/2"	25	1.5	90	53	020AA	020AC
	AC020D <input type="checkbox"/> FI	3/4"	25	1.5	90	53	020AA	020AC
	AC020E <input type="checkbox"/> FI	1"	25	1.5	90	53	020AA	020AC
	AC025D <input type="checkbox"/> FI	3/4"	40	2.4	143	84	025AA	025DAC
	AC025E <input type="checkbox"/> FI	1"	65	3.9	231	136	025AA	025EAC
	AC030E <input type="checkbox"/> FI	1"	85	5.1	305	180	030AA	030AC
	AC030F <input type="checkbox"/> FI	1 1/4"	85	5.1	305	180	030AA	030AC
	AC030G <input type="checkbox"/> FI	1 1/2"	85	5.1	305	180	030AA	030AC

## Product Selection - Grade OVR

	Model	Pipe Size	Flow Rates				Replacement Element Kit	No.
			L/s	m <sup>3</sup> /min	m <sup>3</sup> /hr	cfm		
Modular Aluminum range	OVR100E <input type="checkbox"/> XX	G 1	80	4.8	288	170	100OVR	1
	OVR150H <input type="checkbox"/> XX	G 2	160	9.6	576	339	100OVR	2
	OVR200H <input type="checkbox"/> XX	G 2	330	19.8	1188	699	100OVR	4
	OVR250J <input type="checkbox"/> XX	G 3	620	37.2	2232	1314	100OVR	6
	2 x OVR250J	G 3	1240	74.5	4465	2628		
	3 x OVR250J	G 3	1860	111.8	6696	3941		
	4 x OVR250J	G 3	2480	149.1	8928	5255		
	5 x OVR250J	G 3	3100	186.4	11160	6569		



## Filter Coding Examples

ACS 005 - 060

GRADE	MODEL	PIPE SIZE	CONNECTION TYPE	DRAIN OPTION	BULK OIL INDICATOR
ACS	3 digit code shown above	Letter denotes pipe size	B = BSPT N = NPT	M = Manual	X = None
ACS	010	A	B	M	X

ACS 150 - 500

GRADE	MODEL	FLANGE SIZE	CONNECTION TYPE	DRAIN OPTION	BULK OIL INDICATOR
ACS	3 digit code shown above	Letter denotes flange connection	D = DN	M = Manual	X = None
ACS	150	N	D	M	X

AC 010 - 030

GRADE	MODEL	PIPE SIZE	CONNECTION TYPE	DRAIN OPTION	BULK OIL INDICATOR
AC	3 digit code shown above	Letter denotes pipe size	B = BSPT N = NPT	F = Float M = Manual	I = Bulk Oil Indicator
AC	010	A	B	F	I

AC models are supplied with a float drain as standard. For Pressures of 16 to 20 bar g (232 to 290 psi g) a manual drain must be used.

## Filter Selection - Grade OVR

To correctly select an OVR oil vapour removal filter, the flow rate of the OVR must be adjusted for the minimum operating pressure, maximum operational temperature and pressure dewpoint of the system.

- Obtain the minimum operating pressure, maximum inlet temperature, maximum compressed air flow rate and dewpoint of the compressed air at the inlet of the OVR.
- Select correction factor for maximum inlet temperature from the CFT table that corresponds to compressor type (always round up e.g. for 37°C use 40°C correction factor).
- Select correction factor for minimum inlet pressure from the CFP table that corresponds to compressor type (always round down e.g. for 5.3 bar use 5 bar correction factor).
- Select correction factor for pressure dewpoint from the CFD table.
- Calculate minimum filtration capacity.  
Minimum filtration Capacity = Compressed Air Flow x CFT x CFP x CFD
- Using the minimum filtration capacity, select an OVR model from the flow rate tables above (OVR selected must have a flow rate equal to or greater than the minimum filtration capacity).  
If the minimum filtration capacity exceeds the maximum values of the models shown within the tables, please contact Parker domnick hunter for advice regarding larger multi-banked units.

## Oil Lubricated Compressors

CFT Inlet Air Temperature			Correction Factor	CFP Inlet Pressure			Correction Factor	CFP Inlet Pressure			Correction Factor
°C	°F			bar g	psi g			bar g	psi g		
20	68	1.00	3	44	2.00	9.5	139	1.00			
25	77	1.53	3.5	51	1.78	10	145	1.00			
30	86	2.33	4	58	1.60	10.5	153	1.00			
35	95	3.55	4.5	66	1.45	11	160	1.00			
40	104	5.47	5	73	1.33	11.5	168	1.00			
45	113	8.55	5.5	80	1.23	12	174	1.00			
50	122	13.23	6	87	1.14	12.5	183	1.00			
			6.5	95	1.07	13	189	1.00			
			7	100	1.00	13.5	197	1.00			
			7.5	110	1.00	14	203	1.00			
			8	116	1.00	14.5	212	1.00			
			8.5	124	1.00	15	218	1.00			
			9	131	1.00	15.5	226	1.00			

## Oil-free Compressors

CFT Inlet Air Temperature		Correction Factor
°C	°F	
20	68	1.00
25	77	1.02
30	86	1.03
35	95	1.05
40	104	1.07
45	113	1.09
50	122	1.10

CFD Dewpoint	°C	°F	Correction Factor
Dry	-70 to +3	-100 to +38	1.00
Wet	+3 and above	+38 and above	2.00

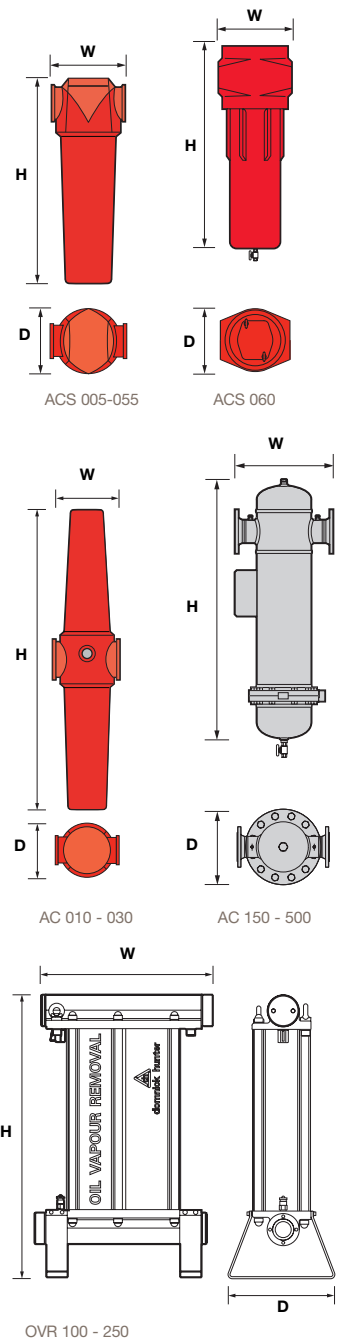
It is assumed inlet oil vapour concentration does not exceed 0.05mg/m<sup>3</sup> at 21°C (70°F). For applications with higher oil vapour concentrations, please contact Parker domnick hunter for accurate sizing.

## Technical Data

Filter Grade	Filter Models	Min Operating Pressure		Max Operating Pressure		Min Operating Temp		Max Operating Temp	
		bar g	psi g	bar g	psi g	°C	°F	°C	°F
ACS	005A <input type="checkbox"/> MX - 060K <input type="checkbox"/> MX	1	15	20	290	2	35	50	122
ACS	150NDMX - 500SDMX	1	15	16	232	2	35	50	122
AC	010A <input type="checkbox"/> FI - 030G <input type="checkbox"/> FI	1	15	16	232	2	35	30	86
OVR	100E <input type="checkbox"/> XX - 250J <input type="checkbox"/> XX	1	15	16	232	2	35	50	122

## Weights and Dimensions

Model	Pipe Size	Height (H)		Width (W)		Depth (D)		Weight	
		mm	ins	mm	ins	mm	ins	kg	lbs
ACS 005A □ MX	1/4"	154	6.1	76	3.0	64	2.5	0.5	1.1
ACS 005B □ MX	3/8"	154	6.1	76	3.0	64	2.5	0.5	1.1
ACS 005C □ MX	1/2"	154	6.1	76	3.0	64	2.5	0.5	1.1
ACS 010A □ MX	1/4"	181	7.2	76	3.0	64	2.5	0.6	1.3
ACS 010B □ MX	3/8"	181	7.2	76	3.0	64	2.5	0.6	1.3
ACS 010C □ MX	1/2"	181	7.2	76	3.0	64	2.5	0.6	1.3
ACS 015B □ MX	3/8"	235	9.3	97	3.8	84	3.3	1.1	2.4
ACS 015C □ MX	1/2"	235	9.3	97	3.8	84	3.3	1.1	2.4
ACS 020C □ MX	1/2"	235	9.3	97	3.8	84	3.3	1.1	2.4
ACS 020D □ MX	3/4"	235	9.3	97	3.8	84	3.3	1.1	2.4
ACS 020E □ MX	1"	235	9.3	97	3.8	84	3.3	1.1	2.4
ACS 025D □ MX	3/4"	275	10.8	129	5.1	115	4.5	2.2	4.8
ACS 025E □ MX	1"	275	10.8	129	5.1	115	4.5	2.2	4.8
ACS 030E □ MX	1"	364	14.3	129	5.1	115	4.5	2.7	5.9
ACS 030F □ MX	1 1/4"	364	14.3	129	5.1	115	4.5	2.7	5.9
ACS 030G □ MX	1 1/2"	364	14.3	129	5.1	115	4.5	2.7	5.9
ACS 035F □ MX	1 1/4"	432	17.0	170	6.7	156	6.1	5.1	11.2
ACS 035G □ MX	1 1/2"	432	17.0	170	6.7	156	6.1	5.1	11.2
ACS 040G □ MX	1 1/2"	524	20.6	170	6.7	156	6.1	5.7	12.5
ACS 040H □ MX	2"	524	20.6	170	6.7	156	6.1	5.7	12.5
ACS 045H □ MX	2"	524	20.6	170	6.7	156	6.1	5.7	12.5
ACS 050I □ MX	2 1/2"	641	25.3	205	8.1	181	7.1	11.1	24.4
ACS 050J □ MX	3"	641	25.3	205	8.1	181	7.1	11.1	24.4
ACS 055I □ MX	2 1/2"	832	32.8	205	8.1	181	7.1	13.9	30.6
ACS 055J □ MX	3"	832	32.8	205	8.1	181	7.1	13.9	30.6
ACS 060K □ MX	G 4	847	33.3	420	16.5	282	11.1	44.5	98
ACS 150ND MX	DN80	1000	39.4	370	14.6	285	11.2	60	132
ACS 200ND MX	DN80	1220	48.0	370	14.6	285	11.2	70	154
ACS 250OD MX	DN100	1345	53.0	500	19.7	405	15.9	145	320
ACS 300OD MX	DN100	1345	53.0	500	19.7	405	15.9	145	320
ACS 350PD MX	DN150	1445	56.9	580	22.8	460	18.1	190	420
ACS 400QD MX	DN200	1710	67.3	750	29.5	640	25.1	375	827
ACS 450RD MX	DN250	1840	72.4	862	33.9	715	28.1	495	1090
ACS 500SD MX	DN300	1930	76.0	1000	39.4	840	33.1	600	1323
AC010A □ FI	1/4"	311	12.3	76	3.0	65	2.6	0.8	1.8
AC010B □ FI	3/8"	311	12.3	76	3.0	65	2.6	0.8	1.8
AC010C □ FI	1/2"	311	12.3	76	3.0	65	2.6	0.8	1.8
AC015B □ FI	3/8"	474	18.7	97	3.8	84	3.3	1.6	3.5
AC015C □ FI	1/2"	474	18.7	97	3.8	84	3.3	1.6	3.5
AC020C □ FI	1/2"	474	18.7	97	3.8	84	3.3	1.45	3.2
AC020D □ FI	3/4"	474	18.7	97	3.8	84	3.3	1.45	3.2
AC020E □ FI	1"	474	18.7	97	3.8	84	3.3	1.45	3.2
AC025D □ FI	3/4"	554	21.8	129	5.1	115	4.5	3.5	7.8
AC025E □ FI	1"	554	21.8	129	5.1	115	4.5	3.4	7.6
AC030E □ FI	1"	733	28.9	129	5.1	115	4.5	4.1	9.0
AC030F □ FI	1 1/4"	733	28.9	129	5.1	115	4.5	4.1	9.0
AC030G □ FI	1 1/2"	733	28.9	129	5.1	115	4.5	4.1	9.0
OVR100E	G 1	670	26.3	352	13.8	250	9.8	25	55
OVR150H	G 2	797	31.3	504	19.9	300	11.8	42	93
OVR200H	G 2	797	31.3	829	32.6	300	11.8	74	163
OVR250J	G 3	816	32.1	1194	47.0	300	11.8	107	235



## Other Filtration Products

- Bulk liquid / water separators
- Oil vapour removal filters
- Filters with working pressures to 50 bar g
- Filters with working pressures to 350 bar g
- Alternative compressed air filter elements
- Oil / water separators
- Sterile air filtration
- Stainless steel filters
- Vacuum pump protection filters
- Vacuum pump exhaust filters
- Medical vacuum filters