

OVR

Oil Vapour Removal Filter



When compressed air is required to meet ISO8573-1 Class 0 or Class 1 air quality via oil free or oil lubricated compressors the Parker domnick hunter OVR Oil Vapour Removal filter is an essential component of the compressed air treatment system.

OVR Oil Vapour Removal filters are designed to reduce oil vapour and also overcome the issues of traditional loose filled carbon towers. The loose filled beds of carbon towers offer reduced contact time due to unrestricted air channelling, meaning they are prone to movement of the carbon adsorbent during operation; resulting in degrading performance, attrition of the adsorbent material, high particulate generation and blockage of downstream filters.

Manufactured from extruded aluminium, the Parker domnick hunter OVR is smaller and lighter than equivalent carbon towers. Compact activated carbon cartridges utilise a unique filling technique to maximise packing density of the adsorbent bed. Retained to prevent movement, 100% of the activated carbon bed is then utilised during operation, guaranteeing performance, whilst the heavy attrition, dusting and blocked particulate filters associated with carbon tower designs is eliminated. The use of cartridges also provides trouble free maintenance, reducing system downtime.

Oil free plant air can be affected by many factors such as pressure, temperature, air flow, oil concentration and humidity. The OVR selection process considers all of these factors to ensure consistent outlet air quality over 12 months of continuous operation.



Benefits:

- **Air Quality Guarantee**
OVR is matched to all inlet parameters maintaining effective operation for 12 months. Correct sizing ensures seasonal variations in temperature do not affect delivered air quality
- **Suitable for use with oil lubricated and oil free compressors**
OVR provides 'Technically Oil Free Air' when used in conjunction with water separators and coalescing filters
- **Delivered air quality to ISO8573-1 Class 0 or ISO8573-1 Class 1 for total oil**
Tested in accordance with ISO8573-5 and 3rd party performance validated by Lloyds Register
- **Plant Scale or application specific oil vapour removal**
Can be installed in the compressor room for plant scale protection, at point of use to protect critical applications (or both if old, contaminated piping is in use)
- **FDA Title 21 compliant & EC1935 exempt**
Materials of construction make OVR suitable for use with applications in the food, beverage and pharmaceutical industries
- **Unique adsorbent fill technique**
Providing maximum packing density, eliminating dusting, performance degradation and blocked outlet filters
- **Modular construction**
Large capacity bed reduces the number of units required but still offers a compact and light weight design with flexible inlet / outlet connectivity
- **Simple, easy maintenance**
Servicing of OVR is easy as piping can remain in-situ, whilst use of active carbon cartridges offers quick, clean, simple maintenance

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OIL-X EVOLUTION - Plant Scale / Point of Use Oil Vapour Removal Grade OVR Filtration Performance

Filtration Grade	Filter Type	Particle Removal (inc Water & Oil Aerosols)	Max Remaining Oil Content	Filtration Efficiency	Test Method Used	Inlet Challenge Concentration	Initial Dry Differential Pressure	Initial Saturated Differential Pressure	Adsorbent Life	Precede with Grade
OVR	Oil Vapour Removal	N/A	0.003 mg/m ³ 0.003 ppm (w)	N/A	ISO8573-5	0.05mg/m ³	<350 mbar <5 psi	N/A	*12 months	AO + AA

*When corrected to match systems conditions.

Product selection Grade OVR

Stated flows are for operation at 7 barg (100 psi g), 35°C (95°F) for flows at other conditions use Correction Factors below.

Model	Pipe Size	L/s	m ³ /min	m ³ /hr	cfm	Replacement Cartridge	No. Required
OVR300H <input type="checkbox"/> XX	2	87	5.2	314	185	300OVR	1
OVR350H <input type="checkbox"/> XX	2	177	10.6	637	375	350OVR	1
OVR400H <input type="checkbox"/> XX	2	354	21.2	1274	750	400OVR	1
OVR450I <input type="checkbox"/> XX	2 1/2	531	31.9	1911	1125	450OVR	1
OVR500I <input type="checkbox"/> XX	2 1/2	708	42.5	2549	1500	500OVR	1
OVR550I <input type="checkbox"/> XX	2 1/2	885	53.1	3186	1875	550OVR	1
2 x OVR550I <input type="checkbox"/> XX	2 1/2	1770	106.2	6371	3750	550OVR	2
3 x OVR550I <input type="checkbox"/> XX	2 1/2	2655	159.3	9557	5625	550OVR	3
4 x OVR550I <input type="checkbox"/> XX	2 1/2	3540	212.4	12743	7500	550OVR	4
5 x OVR550I <input type="checkbox"/> XX	2 1/2	4424	265.5	15928	9375	550OVR	5

G = BSPP / N=NPT

Correction Factors Temperature (CFT)

Oil lubricated compressors		
°C	°F	Correction Factor
25	77	1.00
30	86	1.00
35	95	1.00
40	104	1.25
45	113	1.55
50	122	1.90

Correction Factors Temperature (CFT)

Oil free compressors		
°C	°F	Correction Factor
25	77	1.00
30	86	1.00
35	95	1.00
40	104	1.02
45	113	1.04
50	122	1.05

Correction factors Pressure (CFP)

bar g	psi g	Correction Factor
3	44	2.00
4	58	1.60
5	73	1.33
6	87	1.14
7	100	1.00
8	116	1.00
9	131	1.00
10	145	1.00
11	160	1.00
12	174	1.00
13	189	1.00
14	203	1.00
15	218	1.00
16	232	1.00

Correction Factors - Inlet Dewpoint (CFD)

CDD Dewpoint	°C	°F	Correction Factor
Dry	-70 to +3	-100 to +38	1.00
Wet	+3 and above	+38 and above	4.00

It is assumed inlet oil vapour concentration does not exceed 0.05mg/m³ at 35°C (95°F).

For applications with higher oil vapour concentrations, please contact Parker domnick hunter for accurate sizing.

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.

1. 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.
2. Select correction factor for maximum inlet temperature from the CFT table to compressor type (always round up e.g. for 37°C use 40°C correction factor).
3. Select correction factor for minimum inlet pressure from the CFP table that corresponds type (always round down e.g. for 5.3 bar use 5 bar correction factor).
4. Select correction factor for pressure dewpoint from the CFD table.
5. Calculate minimum filtration capacity.

$$\text{Minimum filtration Capacity} = \text{Compressed Air Flow} \times \text{CFT} \times \text{CFP} \times \text{CFD}$$

6. 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.



ISO 8573-1 CLASS ZERO

OIL FREE AIR
AT THE POINT OF USE



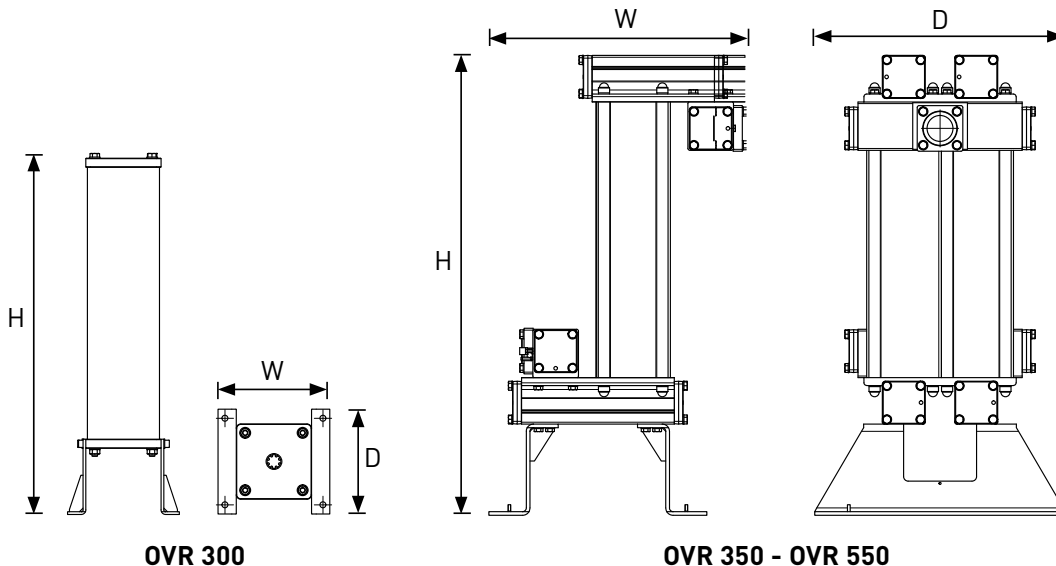
Technical Data

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
OVR	300H □ XX - 500I □ XX	1	15	16	232	2	35	50	122

Weights and Dimensions

Models	Port Size	Height (H)		Width (W)		Depth (D)		Weight	
		mm	ins	mm	ins	mm	ins	kg	lbs
OVR300H □ XX	2"	792	31.2	245	9.6	230	9.1	28.5	62.8
OVR350H □ XX	2"	1009	39.7	590	23.2	550	21.7	62.5	137.8
OVR400H □ XX	2"	1009	39.7	735	28.9	550	21.7	71.5	157.6
OVR450I □ XX	2 1/2"	1009	39.7	888	35.0	550	21.7	92.8	204.6
OVR500I □ XX	2 1/2"	1009	39.7	1065	41.9	550	21.7	100.6	221.8
OVR550I □ XX	2 1/2"	1009	39.7	1234	48.6	550	21.7	122.0	269.0

□ G = BSPP / N=NPT



Parker Worldwide

Europe, Middle East, Africa

AE – United Arab Emirates,
Dubai

Tel: +971 4 8127100
parker.me@parker.com

AT – Austria, Wiener Neustadt

Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Eastern Europe, Wiener
Neustadt

Tel: +43 (0)2622 23501 900
parker.easteurope@parker.com

AZ – Azerbaijan, Baku

Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/LU – Belgium, Nivelles

Tel: +32 (0)67 280 900
parker.belgium@parker.com

BG – Bulgaria, Sofia

Tel: +359 2 980 1344
parker.bulgaria@parker.com

BY – Belarus, Minsk

Tel: +375 17 209 9399
parker.belarus@parker.com

CH – Switzerland, Etoy

Tel: +41 (0)21 821 87 00
parker.switzerland@parker.com

CZ – Czech Republic, Klecany

Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst

Tel: +49 (0)2131 4016 0
parker.germany@parker.com

DK – Denmark, Ballerup

Tel: +45 43 56 04 00
parker.denmark@parker.com

ES – Spain, Madrid

Tel: +34 902 330 001
parker.spain@parker.com

FI – Finland, Vantaa

Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France, Contamine s/Arve

Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Athens

Tel: +30 210 933 6450
parker.greece@parker.com

HU – Hungary, Budaörs

Tel: +36 23 885 470
parker.hungary@parker.com

IE – Ireland, Dublin

Tel: +353 (0)1 466 6370
parker.ireland@parker.com

IT – Italy, Corsico (MI)

Tel: +39 02 45 19 21
parker.italy@parker.com

KZ – Kazakhstan, Almaty

Tel: +7 7273 561 000
parker.easteurope@parker.com

NL – The Netherlands, Oldenzaal

Tel: +31 (0)541 585 000
parker.nl@parker.com

NO – Norway, Asker

Tel: +47 66 75 34 00
parker.norway@parker.com

PL – Poland, Warsaw

Tel: +48 (0)22 573 24 00
parker.poland@parker.com

PT – Portugal, Leca da Palmeira

Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest

Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow

Tel: +7 495 645-2156
parker.russia@parker.com

SE – Sweden, Spånga

Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SK – Slovakia, Banská Bystrica

Tel: +421 484 162 252
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto

Tel: +386 7 337 6650
parker.slovenia@parker.com

TR – Turkey, Istanbul

Tel: +90 216 4997081
parker.turkey@parker.com

UA – Ukraine, Kiev

Tel: +380 44 494 2731
parker.ukraine@parker.com

UK – United Kingdom, Warwick

Tel: +44 (0)1926 317 878
parker.uk@parker.com

ZA – South Africa, Kempton Park

Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

North America

CA – Canada, Milton, Ontario

Tel: +1 905 693 3000

US – USA, Cleveland

Tel: +1 216 896 3000

Asia Pacific

AU – Australia, Castle Hill

Tel: +61 (0)2-9634 7777

CN – China, Shanghai

Tel: +86 21 2899 5000

HK – Hong Kong

Tel: +852 2428 8008

IN – India, Mumbai

Tel: +91 22 6513 7081-85

JP – Japan, Tokyo

Tel: +81 (0)3 6408 3901

KR – South Korea, Seoul

Tel: +82 2 559 0400

MY – Malaysia, Shah Alam

Tel: +60 3 7849 0800

NZ – New Zealand, Mt Wellington

Tel: +64 9 574 1744

SG – Singapore

Tel: +65 6887 6300

TH – Thailand, Bangkok

Tel: +662 186 7000-99

TW – Taiwan, Taipei

Tel: +886 2 2298 8987

South America

AR – Argentina, Buenos Aires

Tel: +54 3327 44 4129

BR – Brazil, Sao Jose dos Campos

Tel: +55 800 727 5374

CL – Chile, Santiago

Tel: +56 2 623 1216

MX – Mexico, Toluca

Tel: +52 72 2275 4200

European Product Information Centre

Free phone: 00 800 27 27 5374

(from AT, BE, CH, CZ, DE, DK, EE, ES, FI,
FR, IE, IL, IS, IT, LU, MT, NL, NO, PL, PT, RU,
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