

OIL-X Compressed Air Filters

Oil Vapor Reduction

Engineering Data Sheet



FILTRATION PERFORMANCE

| FILTRATION GRADE | FILTER TYPE | PARTICLE REDUCTION | MAX REMAINING OIL CONTENT AT 21°C (70°F) | INITIAL DRY DIFFERENTIAL PRESSURE | INITIAL SATURATED DIFFERENTIAL PRESSURE | FILTRATION EFFICIENCY | ADSORBANT LIFE | PRECEDE WITH GRADE |
|------------------|----------------------|--------------------|---------------------------------------------|-----------------------------------|-----------------------------------------|-----------------------|----------------|--------------------|
| OVR | Oil Vapour Reduction | Not Applicable | ≤ 0.003 mg/m ³ ≤ 0.003 ppm(w) | <350 mbar <5 psi | Not Applicable | Not Applicable | *12 Months | AO + AA |

* At system operating temperature and when corrected to match systems conditions.



ISO 8573-1:2010 Classification

When preceded with OIL-X Coalescing Filters Grade AO & Grade AA upstream of the OVR, the delivered air purity downstream of the OVR in meets and exceeds the following ISO 8573-1:2010 Classifications:

ISO 8573-1 Class 0 Total Oil (<0.003mg/m³)

ISO 8573-1 Class 1 Total Oil

TECHNICAL DATA

| FILTRATION GRADE | FILTER MODELS | MIN OPERATING PRESSURE | | MAX OPERATING PRESSURE | | MIN RECOMMENDED OPERATING TEMP | | MAX RECOMMENDED OPERATING TEMP | |
|------------------|----------------|------------------------|-------|------------------------|-------|--------------------------------|----|--------------------------------|-----|
| | | BAR G | PSI G | BAR G | PSI G | °C | °F | °C | °F |
| OVR | P300H to P550I | 1 | 15 | 16 | 232 | 2 | 35 | 50 | 122 |

FLOW RATES

Stated flows are for operation at 7 bar (g) (102 psi g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure.

| MODEL | PIPE SIZE | L/S | M ³ /MIN | M ³ /HR | CFM | REPLACEMENT CARTRIDGE | NO. | DIFFERENTIAL PRESSURE (OVR ONLY) | | | | | | | |
|--------------------------|-----------|------|---------------------|--------------------|------|-----------------------|-----|----------------------------------|-----|----------|-----|----------|-----|----------|-----|
| | | | | | | | | 100% FLOW | | 75% FLOW | | 50% FLOW | | 25% FLOW | |
| | | | | | | | | MBAR | PSI | MBAR | PSI | MBAR | PSI | MBAR | PSI |
| OVRP300H G XX | 2" | 80 | 4.8 | 289 | 170 | P300OVR | 1 | 350 | 5.1 | 198 | 2.9 | 46 | 0.7 | 11 | 0.2 |
| OVRP350H G XX | 2" | 163 | 9.8 | 586 | 345 | P350OVR | 1 | 350 | 5.1 | 198 | 2.9 | 46 | 0.7 | 11 | 0.2 |
| OVRP400I G XX | 2 1/2" | 326 | 19.6 | 1172 | 690 | P400OVR | 1 | 350 | 5.1 | 198 | 2.9 | 46 | 0.7 | 11 | 0.2 |
| OVRP450I G XX | 2 1/2" | 488 | 29.4 | 1758 | 1035 | P450OVR | 1 | 350 | 5.1 | 198 | 2.9 | 46 | 0.7 | 11 | 0.2 |
| OVRP500I G XX | 2 1/2" | 651 | 39.2 | 2345 | 1380 | P500OVR | 1 | 350 | 5.1 | 198 | 2.9 | 46 | 0.7 | 11 | 0.2 |
| OVRP550I G XX | 2 1/2" | 814 | 48.9 | 2931 | 1725 | P550OVR | 1 | | | | | | | | |
| 2 x OVRP550I G XX | 2 1/2" | 1629 | 97.9 | 5862 | 3451 | P550OVR | 2 | | | | | | | | |
| 3 x OVRP550I G XX | 2 1/2" | 2443 | 146.8 | 8793 | 5176 | P550OVR | 3 | | | | | | | | |
| 4 x OVRP550I G XX | 2 1/2" | 3257 | 195.8 | 11724 | 6901 | P550OVR | 4 | | | | | | | | |
| 5 x OVRP550I G XX | 2 1/2" | 4071 | 244.7 | 14656 | 8626 | P550OVR | 5 | | | | | | | | |

Select **G** for BSPP Threads / Select **N** for NPT Threads

1 System Information Required for OVR Sizing & Selection

- Minimum pressure at the inlet of the OVR
- Compressor type (oil lubricated or oil free)
- Maximum inlet temperature at the inlet of the OVR (highest summer inlet temp)
- Maximum compressed air flow rate
- Dewpoint of the compressed air (i.e. is the proposed location of the unit before or after a compressed air dryer)
- Oil vapour concentration expected at the inlet of the OVR (default is 0.05 mg/m³)

2 Select correction factors

- For minimum inlet pressure, select a correction factor from the CFIP table that corresponds to the minimum inlet pressure of the compressed air system, remembering to always round down e.g. for 5 bar g use the 5 bar g correction factor.
- For maximum inlet temperature there are two tables, one for use with an oil lubricated compressor, the other for oil free compressor. Select a correction factor from the CFIT table for the relevant compressor type, remembering to always round up e.g. for 37°C use the 40°C correction factor.
- For pressure dewpoint, select a correction factor from the CFID table.
- For oil vapour concentration, select a correction factor from the CFIV table, remembering to always round up e.g. for 3.25g/m³ use the correction factor for 4mg/m³.

3 Calculate minimum filtration capacity

Minimum filtration Capacity = Compressed Air Flow x CFIT x CFMIP x CFID x CFIV

- Using the minimum filtration capacity, select an OVR model from the flow rate tables.
- The OVR model 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 for advice regarding larger multi-banked units.

Correction Factors Inlet Temperature (CFIT)

| 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 Inlet Temperature (CFIT)

| 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 Factor Minimum Inlet Pressure (CFMIP)

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

Correction Factor - Dewpoint (CFID)

| INSTALLATION | CORRECTION FACTOR |
|--------------|-------------------|
| After Dryer | 1.00 |
| Before Dryer | 4.00 |

Correction Factor Inlet Vapour Content (CFIV)

| INLET VAPOR CONCENTRATION MG/M ³ | 0.05 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 2.0 | 3.0 | 4.0 | 5.0 |
|---------------------------------------------|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | Correction Factor | | | | | | | | | | | | | | |
| | 1 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 40 | 60 | 80 | 100 |

OIL-X OVR - INTERNAL VOLUMES

| MODEL | PIPE SIZE | INTERNAL VOLUME (LITRES) |
|----------|-----------|--------------------------|
| OVR P300 | 2" | 17000 |
| OVR P350 | 2" | 33500 |
| OVR P400 | 2 ½" | 60300 |
| OVR P450 | 2 ½" | 87100 |
| OVR P500 | 2 ½" | 113900 |
| OVR P550 | 2 ½" | 140600 |

MATERIALS OF CONSTRUCTION

| ITEM | DESCRIPTION |
|----------------------------------------|-----------------------------------|
| Columns, Manifolds, Inlet/Outlet block | Aluminium extrusion EN AW-6063 T6 |
| End plates / Flanges | Cast aluminium EN AW-6082 T6 |
| Feet | 8mm Steel plate |
| Fittings | Nickel plated mild steel |
| Adsorbent | Activated carbon |
| Seals | Nitrile, Viton, EPDM, PTFE (tape) |
| Paint | Epoxy coated |

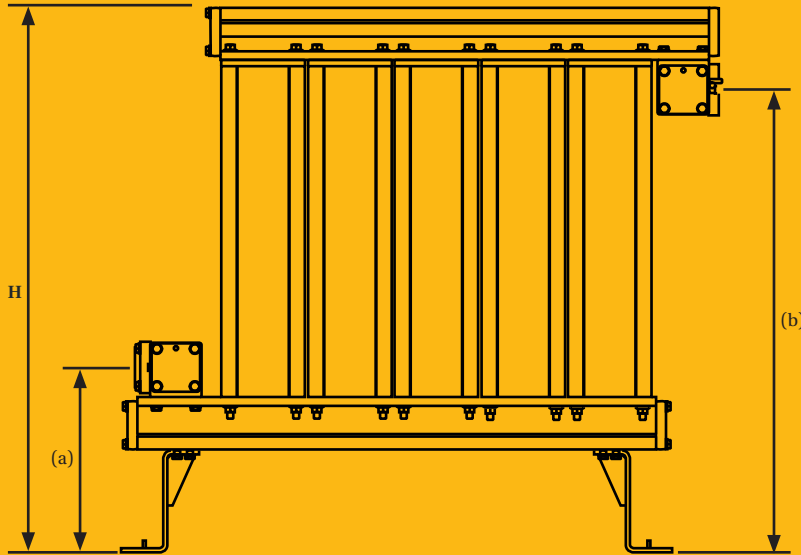
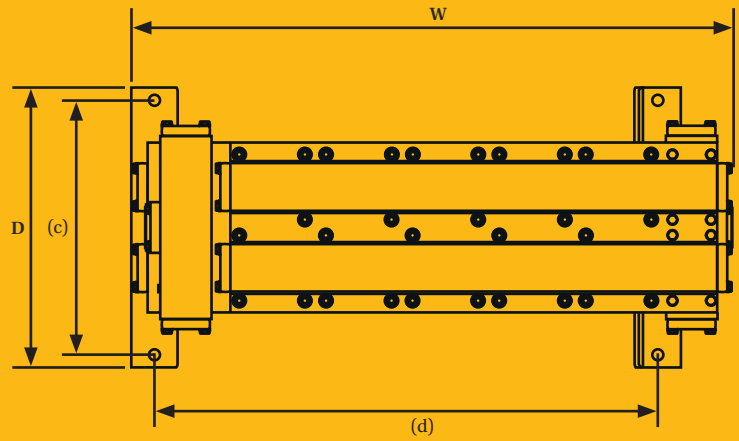
FILTRATION TESTED IN ACCORDANCE WITH:

| Filtration Grade | OVR |
|------------------------------------------|---------------------------------------------------------|
| Filter Type | Oil Vapour Reduction |
| Test Methods Used | ISO8573-5:2001 |
| Oil Vapour Inlet Challenge Concentration | 0.05 mg of oil vapour per cubic metre of compressed air |

QUALITY ASSURANCE / IP RATING / PRESSURE VESSEL APPROVALS

| | |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Development / Manufacture | ISO 9001 / ISO 14001 |
| Ingress Protection Rating | Not Applicable |
| EU | Pressure vessel approved for fluid group 2 in accordance with the Pressure Equipment Directive 2014/68/EU |
| USA | Approval to ASME VIII Div. 1 not required |
| AUS | Approval to AS1210 not required |
| GUS | TR (formerly GOST-R) |
| For use with Compressed Air, N ₂ & CO ₂ | |

WEIGHTS AND DIMENSIONS



| MODEL | DIMENSIONS | | | | | | | | | | | | | | WEIGHT | |
|---------|------------|-------|------|-------|-----|------|-----|-------|-----|-------|-----|-------|-----|-------|--------|-----|
| | H | | W | | D | | (a) | | (b) | | (c) | | (d) | | | |
| | MM | INS | MM | INS | MM | INS | MM | INS | MM | INS | MM | INS | MM | INS | KG | IBS |
| OVRP300 | 998 | 39.29 | 534 | 21.02 | 352 | 13.9 | 296 | 11.65 | 838 | 32.99 | 300 | 11.81 | 391 | 15.39 | 38 | 84 |
| OVRP350 | 1062 | 41.81 | 538 | 21.18 | 551 | 21.7 | 360 | 14.17 | 902 | 35.51 | 500 | 19.69 | 388 | 15.28 | 67 | 147 |
| OVRP400 | 1062 | 41.81 | 682 | 26.85 | 551 | 21.7 | 360 | 14.17 | 902 | 35.51 | 500 | 19.69 | 508 | 20.00 | 93 | 205 |
| OVRP450 | 1062 | 41.81 | 836 | 32.91 | 551 | 21.7 | 360 | 14.17 | 902 | 35.51 | 500 | 19.69 | 646 | 25.43 | 121 | 267 |
| OVRP500 | 1062 | 41.81 | 1005 | 39.57 | 551 | 21.7 | 360 | 14.17 | 902 | 35.51 | 500 | 19.69 | 815 | 32.09 | 144 | 318 |
| OVRP550 | 1062 | 41.81 | 1174 | 46.22 | 551 | 21.7 | 360 | 14.17 | 902 | 35.51 | 500 | 19.69 | 984 | 38.74 | 171 | 377 |

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