Air Vessels (Air Receivers)

Chelyabinsk Compressor Plant serially manufactures a wide range of air vessels (air receivers) with a capacity from 0,91 gal – 227,30 gal (0,2 m^3 up to 50 m^3).

An air vessel is a vertical or horizontal welded cylindrical vessel with elliptical heads.

It is supplied with a manometer, safety valve and a response flange.

The operating temperature is from -94 ^{0}F – +392 ^{0}F (-70°C up to +200°C).

Operation life: 40 years

In accordance with the customers technical requirements besides from standard vessels development and production of any other vessels working under pressure is available.

CHKZ air vessels are produced on a contemporary equipment from the world leading manufacturers:

- Laser cutting machine «BYSTRONIK»: provides high cutting accuracy and minimal metal deformation
- Roll – bending machine «SAHINLER»: shell diameter for one-joint welding is up to 5 meter
- Welding machine «LINCOLN»: welding joint thickness is up to 25 mm.

All the vessels range is certified and has the appliance permission required for technical equipment used at dangerous industrial objects.

Following the customers needs «Chelyabinsk Compressor Plant» CJSC could make a cold zinc coating inside (at a capacity of more than 1m^3) as well as outside (at a capacity from 0,5 up to 50 m^3) a vessel.

Air Vessels (Air Receivers)

Technical characteristics of Receivers

Model	Volume, gal (m^3)	Pressure, psig (Mpa)	Dimensions, LxWxH in (mm)	Weight, lb (kg)
Receivers				
RV-110-10	500,06 (0,11)	145,0 (1,0)	18,1x19,1x42,1 (460x485x1070)	132,3 (60)
RV-250-10	1136,50 (0,25)	145,0 (1,0)	24,4x22,8x51,2 (620x580x1300)	220,5 (100)
RV-500-10	2273,00 (0,5)	188,5 (1,3)	33,1x29,5x77,6 (840x750x1970)	440,9 (200)
RV-900-10	4091,40 (0,9)	145,0 (1,0)	35,4x37,0x89,4 (900x940x2270)	683,4 (310)
Air Receivers				
VV-0,9-0,8/1,0/1,6	4091,40 (0,9)	116,0/145,0/232,1 (0,8/1,0/1,6)	41,1x37,4x85,0 (1045x950x2160)	683,4 (310)
VV-1-0,8/1,0/1,6	4546,00 (1,0)	116,0/145,0/232,1 (0,8/1,0/1,6)	41,1x37,4x94,3 (1045x950x2395)	848,8 (385)
VV-1,6-0,8/1,0/1,6	7273,60 (1,6)	116,0/145,0/232,1 (0,8/1,0/1,6)	51,6x51,6x92,7 (1310x1310x2355)	1477,1 (670)
VV-2,0-0,8/1,0/1,6	9092,00 (2,0)	116,0/145,0/232,1 (0,8/1,0/1,6)	51,6x51,6x116,9 (1310x1310x2970)	1719,6 (780)
VV-2,7-0,8/1,0/1,6	12274,20 (2,7)	116,0/145,0/232,1 (0,8/1,0/1,6)	51,6x51,6x146,5 (1310x1310x3720)	2050,3 (930)
VV-3,2-0,8/1,0/1,6	14547,20 (3,2)	116,0/145,0/232,1 (0,8/1,0/1,6)	61,8x60,0x127,8 (1570x1525x3245)	2689,6 (1220)
VV-4,0-0,8/1,0/1,6	18184,00 (4,0)	116,0/145,0/232,1 (0,8/1,0/1,6)	61,8x60,0x153,7 (1570x1525x3905)	3130,6 (1420)
VV-5,0-0,8/1,0/1,6	22730,00 (5,0)	116,0/145,0/232,1 (0,8/1,0/1,6)	69,6x68,3x146,5 (1768x1735x3720)	3461,3 (1570)
VV-6,3-0,8/1,0/1,6	28639,80 (6,3)	116,0/145,0/232,1 (0,8/1,0/1,6)	69,5x68,3x182,3 (1765x1735x4630)	4069,7 (1846)
VV-8,0-0,8/1,0/1,6	36368,00 (8,0)	116,0/145,0/232,1 (0,8/1,0/1,6)	77,4x76,0x176,8 (1965x1930x4490)	4629,7 (2100)
VV-10,0-0,8/1,0/1,6	45460,00 (10,0)	116,0/145,0/232,1 (0,8/1,0/1,6)	77,4x76,0x216,1 (1965x1930x5490)	5467,5 (2480)
VV-12,5-0,8/1,0/1,6	56825,00 (12,5)	116,0/145,0/232,1 (0,8/1,0/1,6)	92,5x91,7x180,3 (2350x2330x4580)	6966,6 (3160)
VV-16,0-0,8/1,0/1,6	72736,00 (16,0)	116,0/145,0/232,1 (0,8/1,0/1,6)	92,5x91,7x219,5 (2350x2330x5575)	8267,3 (3750)
VV-20,0-0,8/1,0/1,6	90920,00 (20,0)	116,0/145,0/232,1 (0,8/1,0/1,6)	92,5x91,7x236,2 (2350x2330x6000)	9832,6 (4460)
VV-25,0-0,8/1,0/1,6	113650,00 (25,0)	116,0/145,0/232,1 (0,8/1,0/1,6)	92,5x91,7x279,1 (2350x2330x7090)	11089,3 (5030)
VV-32,0-0,8/1,0/1,6	145472,00 (32,0)	116,0/145,0/232,1 (0,8/1,0/1,6)	110,6x114,2x298,8 (2810x2900x7590)	16314,2 (7400)
VV-40,0-0,8/1,0/1,6	181840,00 (40,0)	116,0/145,0/232,1 (0,8/1,0/1,6)	110,6x114,2x384,8 (2810x2900x9775)	22046,2 (10000)
VV-50,0-0,8/1,0/1,6	227300,00 (50,0)	116,0/145,0/232,1 (0,8/1,0/1,6)	110,6x114,2x461,4 (2810x2900x11720)	29255,3 (13270)

*Weight is indicated for the air vessels with 1,0 mPa pressure

Upon the request **U2** and **UHL1** versions air vessels could be manufactured. Production horizontal version of air vessels is also possible (RG and VG types).

Description:

U2 – operation at the temperature up to -40°F (-40°C), steel 09Г2С category 6, 12
UHL1 - operation at the temperature up to -94°F(-70°C), steel 09Г2С category 8, 15
RV – receiver vertical
RG – receiver horizontal
VV – air vessel vertical
VG – air vessel horizontal

Compressed Air Treatment Equipment

Clean air is the pledge of the quality of your products!

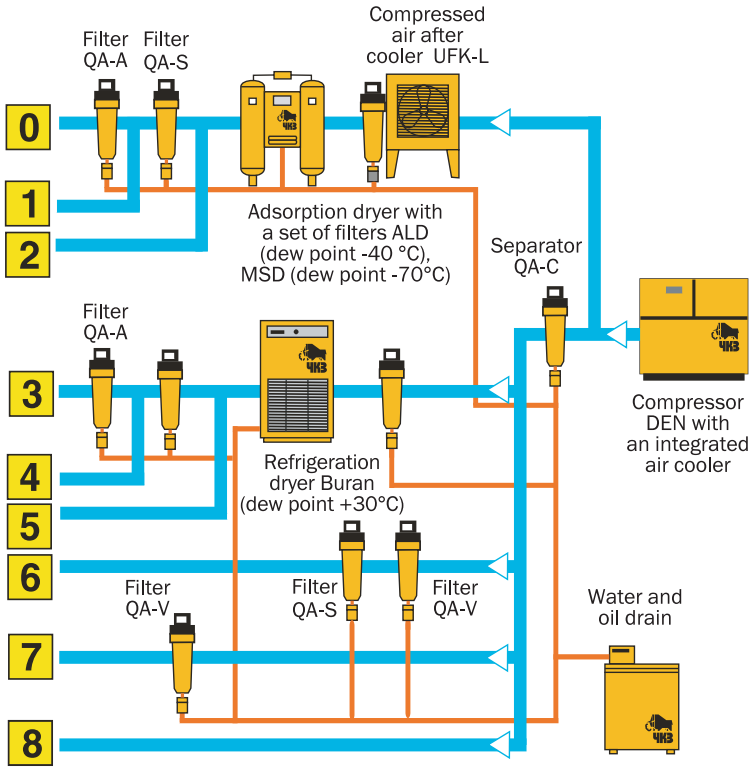
Moisture in a compressed air line may lead to:

- Corrosion of pneumatic line inner surfaces which may result in higher pressure losses, compressed air leakages and finally increase in energy consumption
- Deoiling of inner surfaces in pneumatic instruments, higher abrasive wear, loss in performance, shorter service life and breakdown.

All these factors have adverse effect on the output quality, lead to increase of defects and finally client's dissatisfaction.

Specialists of Chelyabinsk Compressor Plant are ready to conduct an analysis of a compressed air system, to give specific recommendations on compressed air quality, energy efficiency, cost saving. Our specialists will select the necessary air treatment equipment to meet the requirements of the customer.

Scheme of compressed air preparation



0 – food industry (odor-free); as low as possible water vapor content (0,0033 g/m^3, dew point -70 °C) (0,117 g/ m^3,dew point -40 °C), finest filtration of oil (max. 0,003 mg/m^3) and particles (max. 0,01 µm).

Grade higher than 1.1.1(2) (Russian Standards)

1 – chemical plants, high-quality painting, electronic engineering, pharmaceutical industry, instrumentation equipment etc.; as low as possible water vapor content (0,0033 g/m^3, dew point -70 °C) (0,117 g/ m^3,dew point -40 °C), filtration of oil (max. 0,01 mg/m^3) and particles (max. 0,01 µm).

Grade 1.1.1(2) (Russian Standards)

2- oil and gas industry (condensate-free at working temperature up to -70° C), light industry, powder coating; as low as possible water vapor content (0,0033 g/m^3, dew point -70 °C) (0,117 g/ m^3,dew point -40 °C), filtration of oil (max. 0,03 mg/m^3) and particles (max. 0,01 µm).

Grade 2.1.1(2) (Russian Standards)

3 - construction materials manufacturing, painting etc.; lower compressed air dew point (water vapor content 5,95 g/m^3, dew point +3 °C), finest filtration of oil (max. 0,003 mg/m^3) and particles (max. 0,01 µm).

Grade 1.1.4 (Russian Standards)

4 - packing, technological processes control, pneumatic instrument drive

5 - sandblasting, bead-blasting in construction;

6 - sandblasting, bead-blasting with no specific requirements to the compressed air quality; residual oil content 0,01 mg/mi, dust particles up to 0,01 µ , 100%-humidity, oil water condensate.

Grade 1.1.-(Russian Standards)

7 - drilling and blasting, drill-blast works, air flush, chisel hammer;

8 - no requirements to the compressed air quality; residual oil content 3,5 - 5 mg/mi, dust particles up to 5 µ, 100% – humidity, oil-water condensate.

Grade 4.3.-(Russian Standards)

Russian classification of compressed air quality is in accordance with Russian Standard .

Advantages of EcoTec Converter

Eco Tec Converter system is designed to remove the oil from the compressed air. The EcoTec concept uses a special catalyst to convert the oil and other hydrocarbons in water and further harmless air components in a physical-chemical process. Compressed air treated with ETC is technically oil-free (max. residual hydrocarbon vapors 0,003 mg/m). The quality of the air substantially exceeds requirements of contamination grade 1 according to GOST R ISO 8573-1-2005) with maximum allowed oil content 0,01 mg/m^3.

Technical characteristics of EcoTec Converter

Model	Flow capacity at 101,5 barg, cfm (m^3/min)	Maximum pressure, psig (Mpa)	Dimensions, LxWxH in (mm)	Weight, lb (kg)
ETC-SV04	14,13 (0,4)	232,1 (1,6)	27,5x13,3x55,0 (699x339x1397)	132,3 (60)
ETC-SV1	35,31 (1)	232,1 (1,6)	33,9x17,9x55,8 (860x455x1418)	308,6 (140)
ETC-SV2	70,63 (2)	232,1 (1,6)	33,9x17,9x63,7 (860x455x1618)	352,7 (160)
ETC-SV5	176,57 (5)	232,1 (1,6)	46,3x24,3x74,3 (1175x617x1887)	793,7 (360)
ETC-SV7	247,20 (7)	232,1 (1,6)	46,3x24,3x74,3 (1175x617x1887)	903,9 (410)
ETC-SV10	353,15 (10)	232,1 (1,6)	64,2x30,7x82,6 (1630x779x2098)	1300,7 (590)
ETC-SV15	529,72 (15)	232,1 (1,6)	64,2x30,7x82,6 (1630x779x2098)	1697,6 (770)
ETC-SV20	706,29 (20)	232,1 (1,6)	74,6x44,8x84,6 (1895x1138x2148)	1984,2 (900)
ETC-SV30	1059,44 (30)	232,1 (1,6)	74,6x44,8x84,6 (1895x1138x2148)	2425,1 (1100)
ETC-S40	1412,59 (40)	232,1 (1,6)	87,4x35,4x88,2 (2220x900x2240)	3306,9 (1500)
ETC-S50	1765,73 (50)	232,1 (1,6)	87,4x35,4x88,2 (2220x900x2240)	3747,9 (1700)
ETC-MS6	204,83 (5,8)	652,7 (4,5)	37,9x18,4x59,8 (963x467x1518)	485,0 (220)
ETC-MS12	406,12 (11,5)	652,7 (4,5)	37,9x18,4x59,8 (963x467x1518)	595,2 (270)

Absolutely oil-free air – pure water condensate

Compressor DEN + EcoTec Converter = the best alternative to an oil–free compressor!

Extremely robust performance characteristics of oil-injected screw compressor together with outstanding qualities of EcoTec Converter help to achieve the following parameters:

- guaranteed oil-free compressed air; oil/carbonate content max. 0,001 mg/m^3;
- condensate separated in pneumatic system elements after EcoTec Converter, requires no further purification, as a result there is no necessity to install oil separators for condensate;
- low energy consumption (~ 5 W/m^3);
- long working period (20 000 h) before a catalyst agent cartridge replacement;
- absolute operating reliability because the degree of efficiency of the EcoTec Converter is independent of:
  - oil inlet concentration;
  - air humidity;
  - inlet temperature;
- full automation, as a result no continuous attendance is required and corresponding costs are eliminated;
- bacterial destruction in EcoTec Converter heated air (over 360°F (+160°C));

We provide any compressor DEN with EcoTec Converter equipment.

CHELYABINSK
CHKZ COMPRESSOR PLANT

SC Main Cyclone Separator

Main characteristics:

Max. working pressure: 232,1 psig (1,6 MPa)
Max. working temperature: 150,8°F (66°C)
Pressure drop: 0,015 psig (0,001 MPa)

Features:

- patented design for effective water separation – more than 99%;
- automatic drain, safe drain, safety valve and observation hole;
- anodized aluminium alloy housing covered with epoxy inside and with dry powder coating – more than 10 years warranty
- no filter – no need to replace filter.

Technical characteristics of separator SC

Model	Flow capacity at STP*, cfm (m^3/min)	Dimensions, DxH in (mm)	Pressure drop, psig (bar)	Weight, lb (kg)
SC-140R	52,97…88,29 (1,5…2,5)	3,5x6,2 (89x158)	1,5 (0,01)	2,2 (1,0)
SC-220R	81,22…134,20 (2,3…3,8)	3,5x7,6 (89x194)		2,4 (1,1)
SC-270R	102,41…194,23 (2,9…5,5)	3,5x7,8 (85x197)		2,4 (1,1)
SC-540R	187,17…441,43 (5,3…12,5)	4,7x10,1 (120x251)		6,0 (2,7)
SC-1260R	409,65…971,15 (11,6…27,5)	6,3x20,1 (160x511)		13,0 (5,9)
SC-2500R	858,15…1571,50 (24,3…44,5)	8,0x23,7 (202x603)		28,4 (12,9)
SC-2500F	858,15…1571,50 (24,3…44,5)			28,4 (12,9)
SC-2900R	1101,82…1801,05 (31,2…51,0)			48,3 (21,9)
SC-2900F	1101,82…1801,05 (31,2…51,0)	15,4x30,7 (390x780)		68,3 (31)
SC-3600F	1377,27…2436,71 (39,0…69,0)	17,7x31,7 (450x805)		202,8 (92)
SC-6500F	2295,45…4061,19 (65,0…115,0)	22,8x32,9 (580x835)		352,7 (160)
SC-10800F	4131,82…6709,79 (117,0…190,0)	29,5x36,2 (750x920)		767,2 (348)
SC-17300F	6356,64…10770,97 (180,0…305,0)	29,1x39,8 (740x1010)		1124,4 (510)
SC-26000F	9888,11…16174,12 (280,0…458,0)	39,4x39,0 (1000x990)		1459,5 (662)

*-STP standard conditions uses a temperature of 20 °C (293.15 K, 68 °F) and an absolute pressure of 101.325 kPa (14.696 psi, 1 atm).

R – threaded connection, F – flange connection

Explanation:

SC – Separator (cyclonie)

Air flow capacity, m^3/h — SC – 140R — Threaded connection

Air flow capacity, m^3/h — SC – 2900F — Flange connection

Correction factors of separator SC

Pressure psig, (Mpa)	14,5 (0,1)	43,5 (0,3)	72,5 (0,5)	101,5 (0,7)	130,5 (0,9)	159,5 (1,1)	188,5 (1,3)	217,6 (1,5)	246,6 (1,7)	290,7 (2,0)
factor	0,5	0,71	0,87	1,0	1,12	1,22	1,32	1,41	1,50	1,62

FV Main Air Filters

Compressed air is usually polluted with solid abrasive particles: dust, dirt, generated in pipelines rust, as well as with compressor oil, water and acid condensate, vapor, carbohydrates.

If these contaminants are not removed, costs for pneumatic equipment and tools technical maintenance increase and output quality decreases.

Features:

- internal surface of the filter housing has high-quality anticorrosion protection and is in full conformity with standards for high pressure vessels. In normal operation conditions 15-year life time is guaranteed. Filter housing is adapted to a great variety of original filters;
- In filter elements with sizes 035 - 800 aerodynamic technologies are applied. Inlet nozzle with modified 90-degree elbow eliminates turbulence and minimizes local resistance;
- a cone type diffusor at the filter element base is used – diffusion flow expands filter area;
- an adjusting pin simplifies filter element replacement;
- filter elements are produced from high-performance fiber material.

Main characteristics:

Nominal working pressure:	87 psig – 116,0 psig (0,6 MPa ~ 0,8 MPa)
Permissible intake temperature:	⩽140°F (60°C)
Ambient temperature:	⩽104°F (40°C)
Pressure drop: dry air:	⩽1 psig (0.007 MPa)
wet air:	⩽2 psig (0,014 MPa)

Technical characteristics of filters FV

Air filter	Type	Purpose	Residual content	
			Maximum concentration	Maximum particle size
FV	3,0	Dust filter	5 mg/Nm^3	3 µm
FV	1,0	Particle filter	1 mg/Nm^3	1 µm
FV	0,01	Oil filter	0,01 mg/Nm^3	0,01 µm
FV	0,001	Super oil filter	0,001 mg/Nm^3	0,01 µm
FV	0,003	Activated charcoal filter	0,003 mg/Nm^3	0,01 µm

*-STP standard conditions are: temperature of 20 °C (293.15 K, 68 °F (and an absolute pressure of 101.325 kPa (14.696 psi, 1 (atm).

Explanation:

FV-filter

1. FV – xxxx/3,0 – dust filter 3µm
2. FV – xxxx/1,0 – dust filter 1µm
3. FV – xxxx/0,01 – oil filter 0,01 mg/m^3
4. FV – xxxx/0,001 – super oil filter 0,001 mg/m^3
5. FV – xxxx/0,003activated carbon filter 0,003 mg/m^3

Example of filter explanation: FV – 0100/3,0

Air flow capacity, m^3/h

Filter element type

FV Main Air Filters

Table. Main air filters FV series technical characteristics

Model	Flow capacity at STP*, cfm (m^3/min)	Dimensions, DxH, in (mm)	Filter element		Weight, lb (kg)
			Model	Quantity	
FV-0100R	56.50 (1,6)	10,2x4,2 (260x107)	35E	1	4,0 (1,8)
FV-0160R	91.82 (2,6)	12,0x4,2 (305x107)	70E	1	4,6 (2,1)
FV-0230R	134.20 (3,8)	14,4x4,2 (365x107)	100E	1	7,1 (3,2)
FV-0300R	176,57 (5,0)	14,4x4,2 (365x107)	150E	1	9,3 (4,2)
FV-0420R	247,20 (7,0)	21,9x5,3 (555x135)	200E	1	10,6 (4,8)
FV-0510R	300,17 (8,5)	25,0x5,3 (635x135)	300E	1	11,7 (5,3)
FV-0690R	406,12 (11,5)	28,9x5,3 (735x135)	350E	1	13,7 (6,2)
FV-0810R	476,75 (13,5)	29,9x6,7 (760x170)	400E	1	20,3 (9,2)
FV-1020F	600,35 (17,0)	32,3x6,7 (820x170)	600E	1	116,8 (53)
FV-1380F	812,24 (23,0)	41,7x6,7 (1060x170)	800E	1	127,9 (58)
FV-1620F	953,50 (27,0)	44,5x16,9 (1130x430)	400E	2	174,2 (79)
FV-2040F	1200,70 (34,0)	44,5x16,9 (1130x430)	600E	2	187,4 (85)
FV-2700F	1589,16 (45,0)	51,2x16,9 (1300x430)	800E	2	253,5 (115)
FV-3300F	1942,31 (55,0)	47,2x21,3 (1200x540)	600E	3	282,2 (128)
FV-3900F	2295,45 (65,0)	53,1x21,3 (1350x540)	800E	3	297,6 (135)
FV-5220F	3072,38 (87,0)	56,1x23,6 (1425x600)	800E	4	341,7 (155)
FV-6600F	3884,61 (110,0)	56,1x23,6 (1425x600)	800E	5	348,3 (158)
FV-7800F	4590,91 (130,0)	57,3x23,6 (1455x600)	800E	6	374,8 (170)
FV-9600F	5650,35 (160,0)	58,3x29,1 (1480x740)	800E	8	540,1 (245)
FV-12600F	7416,08 (210,0)	64,2x29,5 (1630x750)	800E	10	595,2 (270)
FV-15600F	9181,81 (260,0)	59,1x33,5 (1500x850)	1600E	6	705,5 (320)
FV-18600F	10947,55 (310,0)	59,1x33,5 (1500x850)	800E	14	992,1 (450)
FV-24600F	14479,01 (410,0)	59,1x35,4 (1500x900)	800E	19	959,0 (435)
FV-30600F	18010,48 (510,0)	59,1x35,4 (1500x900)	800E	23	959,0 (435)

R- Threaded connection, F- flange connection

Correction factors for main separator selection

Pressure psig, (bar)	20.3 (1,4)	30.5 (2,1)	40,6 (2,8)	60,9 (4,2)	81,2 (5,6)	101,5 (7,0)	123,3 (8,5)	153,7 (10,6)	204,5 (14,1)	255,3 (17,6)	306,0 (21,1)
Factor	0,3	0,39	0,48	0,65	0,82	1,00	1,17	1,43	1,87	2,31	2,74

OVR Refrigerative Dryers

Dew point

In atmospheric air there is always some water vapor content which depends on air humidity and temperature. By lowering temperature of the atmospheric air it can be cooled to its maximum humidity saturation value. If air temperature will be decreased below this value vapor will not be able to sustain its content in the air and will start falling out as miniature drops termed as condensate. This temperature value is called dew point. The notion «dew point» temperature of compressed air defines the temperature value when water vapor contained in compressed air at the specified pressure will condense into water. With the use of after coolers, separators and drainage devices it becomes possible to remove up to 80% of condensate. Retained moisture can be removed by a dryer.

Main working characteristics:

Inlet air temperature: +41°F (+5° C)<t ≤+113°F (+45°C) ≤ +176°F (80°C) for OVR-D)
Ambient temperature: +41°F (+5°C) < t < 104°F (40°C)
Working pressure: 29-145 psig (2-10 bar)
Dew point: 35,6 – 50°F (2-10°C)
Refrigerent: R134A, R407

Options:

- Various power supply voltage;
- Thread connection NPT;
- Dew point indicator;
- Prefilter and after filter;
- High ambient temperature;
- PLC controller

Features:

- Stable dew point;
- Low pressure losses;
- Operational stability for a prolonged period;
- External condensate drain – easy servicing

Technical characteristics of refrigerated dryers with air inlet temperature up to +45 °C

Model	Flow capacity at STP*, cfm (m^3/min)	Dimensions, LxWxH, in (mm)	Weight, lb (kg)
OVR-0050R	0.7 (25)	23,6x15,7x20,9 (600x400x530)	110,2 (50)
OVR-0100R	1.6 (56)	25,6x16,9x24,8 (650x430x630)	154,3 (70)
OVR-0160R	2.6 (92)	31,5x17,7x27,0 (800x450x685)	172,0 (78)
OVR-0230R	3.8 (134)	31,5x17,7x27,0 (800x450x685)	176,4 (80)
OVR-0300R	5,8 (177)	31,5x17,7x27,0 (800x450x685)	176,4 (80)
OVR-0360R	6.0 (212)	33,5x19,7x28,7 (850x500x730)	260,1 (118)
OVR-0420R	7.0 (247)	38,2x20,5x31,5 (970x520x800)	260,1 (118)
OVR-0510R	8.5 (300)	41,3x20,5x31,9 (1050x520x810)	264,6 (120)
OVR-0690R	11,5 (406)	51,2x21,7x31,9 (1300x550x870)	343,9 (156)
OVR-0810R	13.5 (476)	57,1x23,6x41,3 (1450x600x1050)	440,9 (200)
OVR-1020R	17 (600)	37,4x31,5x50,4 (950x800x1280)	385,8 (175)
OVR-1380R	23 (812)	37,4x31,5x50,4 (950x800x1280)	463,0 (210)
OVR-1620F	27 (953)	37,4x43,3x56,3 (950x1100x1430)	661,4 (300)
OVR-2040F	34 (1200)	41,3x45,3x56,3 (1050x1150x1430)	837,8 (380)
OVR-2700F	45 (1588)	41,3x45,3x58,3 (1050x1150x1480)	1058,2 (480)
OVR-3300F	55 (1941)	45,3x45,3x62,2 (1150x1150x1580)	1322,8 (600)
OVR-3900F	65 (2294)	45,3x45,3x62,2 (1150x1150x1580)	1499,1 (680)
OVR-5220F	87 (3071)	65,0x49,2x70,9 (1650x1250x1800)	1719,6 (780)
OVR-6600F	110 (3883)	78,7x49,2x70,9 (2000x1250x1800)	2160,5 (980)

*-STP standard conditions are: temperature 20 °C (293.15 K, 68 °F) ,absolute pressure 101.325 kPa (14.696 psi, 1 atm).

Example of explanation: OVR – 0050
Air dryer (refrigeration) — Air flow capacity, m^3/h

OVD-R Refrigeration Dryers

Refrigeration dryers technical characteristics (inlet air temperature up to +80°C)

Model	Flow capacity at STP*, cfm (m^3/min)	Dimensions, LxWxH, in (mm)	Weight, lb (kg)
OVR-D-0050R	0.7 (25)	23,6x15,7x30.3 (600x400x770)	121,3 (55)
OVR-D-0100R	1.6 (56)	25,6x16,9x35.6 (650x430x905)	187,4 (85)
OVR-D-0160R	2.6 (92)	31,5x17,7x38,2 (800x450x970)	207,2 (94)
OVR-D-0230R	3.8 (134)	31,5x17,7x38,2 (800x450x970)	209,4 (95)
OVR-D-0300R	5,8 (177)	31,5x17,7x38,2 (800x450x970)	209,4 (95)
OVR-D-0360R	6.0 (212)	33,5x19,7x42,1 (850x500x1070)	326,3(148)
OVR-D-0420R	7.0 (247)	38,2x20,5x47,2 (970x520x1200)	326,3 (148)
OVR-D-0510R	8.5 (300)	38,2x20,5x47,2 (970x520x1200)	363,8 (165)
OVR-D-0690R	11.5 (406)	51,2x21,7x46,9 (1300x550x1190)	451,9 (205)
OVR-D-0810R	13.5 (476)	57,1x23,6x56,3 (1450x600x1430)	564,4 (256)
OVR-D-1020R	17 (600)	45,5x31,5x51,2 (1156x800x1300)	463,0 (210)
OVR-D-1380R	23 (812)	45,5x31,5x51,2 (1156x800x1300)	573,2 (260)
OVR-D-1620F	27 (953)	68,9x45,3x60,2 (1750x1150x1530)	705,5 (320)
OVR-D-2040F	34 (1200)	68,9x45,3x60,2 (1750x1150x1530)	1014,1 (460)
OVR-D-2700F	45 (1588)	68,9x45,3x60,2 (1750x1150x1530)	1212,5 (550)
OVR-D-3300F	55 (1941)	94,7x45,3x68,9 (2406x1150x1750)	1411,0 (640)
OVR-D-3900F	65 (2294)	94,7x45,3x68,9 (2406x1150x1750)	1675,5 (760)
OVR-D-5220F	87 (3071)	98,4x84,6x86,6 (2500x2150x2200)	1918,0 (870)
OVR-D-6600F	110 (3883)	98,4x84,6x86,6 (2500x2150x2200)	2645,5(1200)

*-STP standard conditions are: temperature of 20°C (293.15 K, 68 °F) and an absolute pressure 101.325 kPa (14.696 psi, 1 atm).

Example of explanation: OVR – B – 0050

Air dryer (refrigerative) with an integrated after cooler.

Air flow capacity, m^3/h

In case your working parameters diverge from default parameters (pressure - 7 bar, temperature: 35°C), for calculating capacity of the refrigeration dryer use the correction factors listed below.

Correction factors for refrigeration dryers

Inlet air pressure												
Pressure psig, (bar)	43.5 (3)	58.0 (4)	72.5 (5)	87.0 (6)	101.5 (7)	116.0 (8)	130.5 (9)	145.0 (10)	159.5 (11)	174.0 (12)	188.5 (13)	203.1 (14)
Factor, f_1	0,74	0,83	0,90	0,96	1,00	1,03	1,06	1,08	1,10	1,12	1,13	1,14

Inlet air temperature							
Temperature, °C	30	35	40	45	50	55	60
Factor,f_2	1,21	1,00	0,84	0,70	0,59	0,49	0,41

Ambient temperature						
Ambient temperature, °C	25	30	35	40	45	50
Factor, f_3	1,00	0,94	0,88	0,82	0,76	0,70

Formula: $\text{Capacity} = \frac{\text{Output}}{(f_1 \times f_2 \times f_3)}$

OVA Heatless Regeneration Adsorption Dryers

Main characteristics:

Working pressure:	72,5 – 145 psig (5-10 bar)
Inlet temperature:	+35,6°F (+2° C) ≤ t ≤ +113°F (+45°C)
Ambient temperature:	+37,4°F (+3° C) ≤ t ≤ + 113°F (+45°C)
Pressure dew point:	≤ - 40°F (- 40°C) -94°F (-70°C) for OVA-C))
Regeneration losses:	14,5%
Cycle:	5-10 min
Pressure losses:	≤ 3 psig (0,21 bar)
Adsorbent:	activated alumina
Inlet oil content:	≤ 0,1mg/m^3
Control method:	PIC-controller
Power supply:	220V/1ph/50Hz

Pre-installed air filters
Adsorbent - molecular sieve for dew point -70°C

Dryers OVA series are adsorption dryers with alternating phases of adsorption and regeneration.

While one absorber is used for drying the medium, the other one is used for regeneration. Following regeneration the chambers swap duty and the other chamber is then regenerated. This method secures continuity of the process.

The medium to be dried passes through a prefilter at the dryer inlet. Inlet micro filter eliminates condensate, air-oil mist and dirt particles.

At the absorber outlet the dried medium is lead to an after purification filter. Here the smallest dust particles and possible drying agent particles are caught by a dust filter. Then the dried and purified medium is directed to the working net.

Additional options:

- Specific power supply voltages 110V/1ph/60Hz
- Higher protection level Ip65
- Dew point gauge
- Stainless steel pipelines and components

In case your working parameters diverge from default parameters (pressure 101,5 psig (-7 bar), t - 95°F (35°C)), for calculating capacity of the adsorption dryer use the correction indexes listed below.

OVA Heatless Regeneration Adsorption Dryers

Heatless regeneration adsorption dryers OVA series

Model OVA cold regeneration		Flow capacity at STP*, m^3/min (cfm)	Dimensions**, LxWxH in (mm)	Weight**, lb (kg)
-40°C	-70°C			
0050	0050S	0.7 (25)	27,2x18,5x36,0 (690x470x915)	231,5 (105)
0100	0100S	1.6 (56)	27,2x18,5x51,1 (690x470x1298)	352,7 (160)
0160	0160S	2.6 (92)	30,7x18,5x52,1 (780x470x1324)	451,9 (205)
0230	0230S	3.8 (134)	33,9x18,5x53,1 (860x470x1350)	529,1 (240)
0300	0300S	5.0 (176)	35,4x18,5x66,9 (900x470x1700)	564,4 (256)
0360	0360S	6.0 (211)	35,4x18,5x66,9 (900x470x1700)	621,7 (282)
0420	0420S	7.0 (247)	35,4x18,5x70,9 (900x470x1800)	683,4 (310)
0480	0480S	8.0 (283)	35,4x18,5x78,7 (900x470x2000)	754,0 (342)
0600	0600S	10.0 (354)	39,4x20,5x75,4 (1000x520x1915)	881,8 (400)
0720	0720S	12.0 (425)	47,2x23,6x76,8 (1200x600x1950)	1142,0 (518)
0860	0860S	14.0 (507)	48,0x24,2x77,8 (1220x615x1975)	1314,0 (596)
0960	0960S	16.0 (566)	50,0x25,4x85,6 (1270x645x2175)	1620,4 (735)
1200	1200S	20.0 (708)	55,1x27,6x85,6 (1400x700x2175)	1973,1 (895)
1500	1500S	25.0 (885)	61,8x28,3x85,8 (1570x720x2180)	2195,8 (996)
1800	1800S	30.0 (1062)	63,0x32,7x75,6 (1600x830x1920)	23303,8 (1045)
2100	2100S	35.0 (1239)	71,3x32,7x92,9 (1810x830x2360)	2524,3 (1145)
2580	2580S	43.0 (1522)	78,7x39,8x98,4 (2000x1010x2500)	3075,4 (1395)
3300	3300S	55.0 (1947)	84,6x39,8x98,4 (2150x1010x2500)	3637,6 (1650)

*- STP standard conditions are: temperature 20°C (293.15 K, 68 °F) and an absolute pressure of 101.325 kPa (14.696 psi, 1 atm).
** Dimensions and weights without filters

Example of explanation: OVA – 0050C
Adsorption air dryer Air flow capacity, m^3/h Dew point -70°C

Correction factors of for heatless regenerative adsorption (dew point -40 °C)

Temperature, °C	Working pressure, psig (bar)						
	58,0 (4,0)	72,5 (5,0)	87,0 (6,0)	101,5 (7,0)	116,0 (8,0)	130,5 (9,0)	145,0 (10,0)
25	0,68	0,83	0,92	1,0	1,05	1,11	1,19
30	0,67	0,81	0,92	1,0	1,05	1,11	1,19
35	0,63	0,75	0,88	1,0	1,05	1,11	1,19
40	0,60	0,70	0,83	0,95	1,05	1,11	1,19
45	0,58	0,67	0,81	0,91	1,03	1,11	1,19
50	0,56	0,65	0,78	0,88	1,01	1,09	1,19

Correction factors of for heatless regenerative adsorption (dew point -70 °C)

Temperature, °C	Working pressure, psig (bar)						
	58,0 (4,0)	72,5 (5,0)	87,0 (6,0)	101,5 (7,0)	116,0 (8,0)	130,5 (9,0)	145,0 (10,0)
25	0,68	0,83	0,92	1,0	1,05	1,11	1,19
30	0,67	0,81	0,92	1,0	1,05	1,11	1,19
35	0,63	0,75	0,88	1,0	1,05	1,11	1,19
40	0,60	0,70	0,83	0,95	1,05	1,11	1,19

CHELYABINSK
CHKZ COMPRESSOR PLANT

OVA-T Heated Regenerative Adsorption Dryers

Main characteristics:

Working pressure:	72,5 – 145 psig (5-10 bar)
Inlet temperature:	+35,6°F (+2°C) ≤ t ≤ +113°F (+45°C)
Ambient temperature:	+37,4°F (+3°C) ≤ t ≤ +113°F (+45°C)
Pressure dew point:	≤ - 40°F (- 40°C) (-94°F (-70°C for OVA-TC))
Regeneration losses:	6%
Cycle of operation:	120 minutes
Pressure losses:	≤ 3 psig (0,21 bar)
Adsorbent:	activated alumina
Inlet oil content:	0,1 mg/m^3
Control method:	PIC-controller
Power supply:	380V/3ph/50Hz

Features:

- Adsorption is supported by excess pressure, regeneration process occurs with application of heat.
- Prolonged switching cycle
- Regeneration by high temperature of the electric heater.
- Regeneration cycle: heating + purge cooling
- Heated dry air is used as a gas for regeneration and cooling, air consumption is minimal.
- Simple process, low failure rate, low investment value
- User-friendly
- Automatic operation, no permanent staff attendance
- Pre-installed air filters
- Adsorbent is a molecular sieve for dew point 70°C.

Options:

- Specicfic power supply voltages 110V/1ph/60Hz
- Higher protection level Ip65
- Dew point gauge
- Stainless steel pipelines and components

In case your working parameters diverge from default parameters (pressure - 7 bar, t - 35°C), for calculating capacity of the adsorption dryer use the correction factors listed below.

OVA-T Heated Regenerative Adsorption Dryers

Heated regenerative adsorption dryers technical characteristics

Model OVA heat regeneration		Flow capacity at STP*, m^3/min (cfm)	Heater, kW	Dimensions**, LxWxH in (mm)	Weight**, lb (kg)
-40°C	-70°C				
0050T	0050TS	0.7 (25)	0.9	33,1x20,5x36,0 (840x520x915)	1242,5 (10)
0100T	0100TS	1.6 (56)	0.9	33,1x20,5x51,1 (840x520x1298)	370,4 (168)
0160T	0160TS	2.6 (92)	1.5	36,6x20,5x52,1 (930x520x1324)	474,0 (215)
0230T	0230TS	3.8 (134)	1.5	39,8x20,5x53,1 (1010x520x1350)	555,6 (252)
0300T	0300TS	5.0 (176)	1.8	41,3x20,5x66,9 (1050x520x1700)	593,0 (269)
0360T	0360TS	6.0 (211)	2.1	41,3x20,5x66,9 (1050x520x1700)	652,6 (296)
0420T	0420TS	7.0 (247)	2.4	41,3x20,5x70,9 (1050x520x1800)	718,7 (326)
0480T	0480TS	8.0 (283)	2.4	41,3x20,5x78,7 (1050x520x2000)	791,5 (359)
0600T	0600TS	10.0 (354)	4.5	45,3x22,4x75,4 (1150x570x1915)	925,9 (420)
0720T	0720TS	12.0 (425)	4.5	53,1x25,6x76,8 (1350x650x1950)	1199,3 (544)
0860T	0860TS	14.0 (507)	5.4	53,9x26,2x77,8 (1370x665x1975)	1380,1 (626)
0960T	0960TS	16.0 (566)	7.5	55,9x27,4x85,6 (1420x695x2175)	1702,0 (772)
1200T	1200TS	20.0 (708)	9	61,0x29,5x85,6 (1550x750x2175)	2072,3 (940)
1500T	1500TS	25.0 (885)	10.8	67,7x30,3x85,8 (1720x770x2180)	2303,8 (1045)
1800T	1800TS	30.0 (1062)	15	68,9x34,6x75,6 (1750x880x1920)	2418,5 (1097)
2100T	2100TS	35.0 (1239)	18	77,2x34,6x92,9 (1960x880x2360)	2650,0 (1202)
2580T	2580TS	43.0 (1522)	22.5	84,6x41,7x98,4 (2150x1060x2500)	3229,8 (1465)
3300T	3300TS	55.0 (1947)	28.8	90,6x41,7x98,4 (2300x1060x2500)	3820,6 (1733)

*-STP standard conditions are: temperature 20 °C (293.15 K, 68 °F), and an absolute pressure 101.325 kPa (14.696 psi, 1 atm).
** Dimensions and weights without filters

Example of explanation: OVA – 0050TC

Adsorption air dryer — Air flow capacity, m^3/h — Dew point -70°C

In regeneration process heat energy is used.

Correction factors of for heatless regenerative adsorption (dew point -40 °C)

Temperature, °C	Working pressure, psig (bar)						
	58,0 (4,0)	72,5 (5,0)	87,0 (6,0)	101,5 (7,0)	116,0 (8,0)	130,5 (9,0)	145,0 (10,0)
25	0,68	0,83	0,92	1,0	1,05	1,11	1,19
30	0,67	0,81	0,92	1,0	1,05	1,11	1,19
35	0,63	0,75	0,88	1,0	1,05	1,11	1,19
40	0,60	0,70	0,83	0,95	1,05	1,11	1,19
45	0,58	0,67	0,81	0,91	1,03	1,11	1,19
50	0,56	0,65	0,78	0,88	1,01	1,09	1,19

Correction factors of for heatless regenerative adsorption (dew point -70 °C)

Temperature, °C	Working pressure, psig (bar)						
	58,0 (4,0)	72,5 (5,0)	87,0 (6,0)	101,5 (7,0)	116,0 (8,0)	130,5 (9,0)	145,0 (10,0)
25	0,68	0,83	0,92	1,0	1,05	1,11	1,19
30	0,67	0,81	0,92	1,0	1,05	1,11	1,19
35	0,63	0,75	0,88	1,0	1,05	1,11	1,19
40	0,60	0,70	0,83	0,95	1,05	1,11	1,19