Atlas Copco Condensate management

OSC & OSD oil/water separator series

AUTOMATIC, COMPACT AND RELIABLE

Why Quality Air?

When the air that surrounds us is compressed, its vapour and particle concentration increases dramatically. The compression process causes the oil and water vapours to condense into droplets, and then mix with the high concentration of particles. The result is an abrasive oily sludge that in many cases is also acidic. Without air treatment equipment, much of this corrosive sludge will enter the air net.

Effective Quality Air equipment is an investment with a solid return: it efficiently reduces the contamination in the air that would otherwise produce corrosion in the pipework, lead to premature pneumatic equipment failure and cause product spoilage.

Symptoms of poor air quality

- *Reduced tool reliability*
- *Reduced tool lifetime*
- *Reduced tool performance*

- *Increased scrap rate*
- *Contaminated raw materials*
- *Variable product quality*

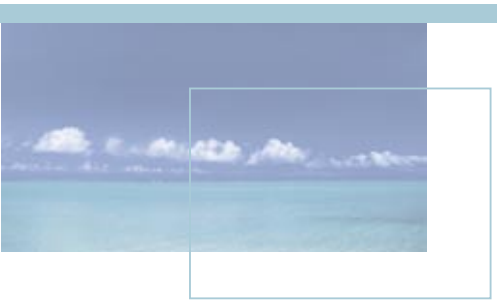
- *Increasing pressure drops*
- *Increasing running costs*
- *Increasing piping repair bill*

From products to total solutions

Based on years of experience, Atlas Copco has the know-how to determine the exact requirements and to offer the right equipment from an extensive range of air treatment products. In addition to providing total solutions, Atlas Copco has built an aftermarket organisation to support your complete installation… from a local point of contact, around the globe.

From compressor to dryer and down to the last filter, Atlas Copco can be your single partner for total quality compressed air solutions.

Condensate treatment - an environmentally sound investment



Oily water condensate – a poisonous mixture

The air compression process has a number of by-products, one of which is a large volume of condensate. Generally, this condensate is an emulsified combination of oil and water which, if left untreated, is extremely harmful to the environment. Because of the potential damage this condensate can cause, strict regulations have been introduced that prohibit the disposal of such waste without rigorous treatment.

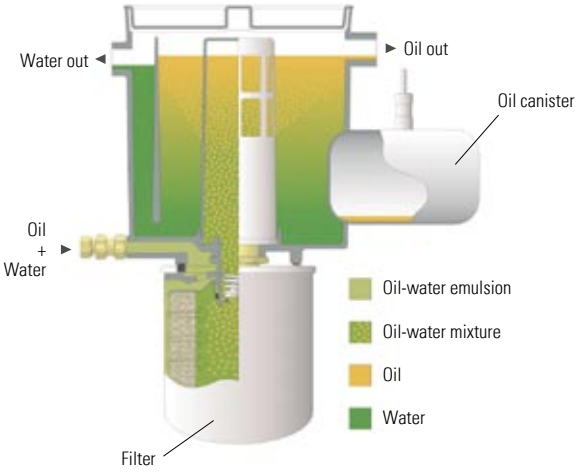
The unique OSD offers a condensate treatment package fully integrated into the compressor, reducing both installation costs and complexity. Clean water is discharged from the compressor outlet drain valves whilst the separated oil is collected in a generously sized oil can.

A clean solution for a dirty problem

The Atlas Copco range of condensate separators is designed to separate the oil from the water, allowing for the water to be drained away and the oil to be disposed of in an environmentally friendly manner.

The new patented OSC technology brings a whole series of new advantaged to the market. These free standing units, with multi-stage oleophilic filtration, can separate all kinds of condensate from all compressor technologies, giving unparalleled performance and reliability for minimal maintenance.

OSD – a unique, high efficiency integrated package



The OSD is a complete condensate management system integrated into the GA compressor. The unique device removes the oil from the discharged condensate, and with it the worries of polluting the environment and contravening strict environmental regulations.

The oil and water are separated through a process of de-emulsification and gravitational separation. Condensate containing fine oil droplets enter the coalescing filter which retains much of the oil. The semi-processed mixture then enters the water tank, where, due to the specific mass difference, the remaining oil separates from the water. The oil rises and flows through the oil outlet and into the oil can, whilst the clean water is discharged though a pipe terminated at the edge of the machine.

Monitoring and maintenance is simplicity itself. When the inlet pressure, which is clearly displayed on a gauge, reaches 2 bar, the easy access screw-on filter cartridge needs to be replaced. Typically this occurs once per year.

GA75-FF with integrated OSD

Benefits of an integrated solution

- *High efficiency separation for worry free condensate discharge (10 mg/l)*
- *Performance independent of filter age*
- *No installation required, saving time and money*
- *Zero footprint, saving space and simplifying placing*
- *Minimal maintenance, reducing lifetime costs*
- *Simple, fast and clean cartridge exchange*

With a separation performance of 10 mg of residual oil per litre of condensate, the OSD offers outstanding efficiency combined with minimal installation work and lowest running costs.

OSC – benefits from the best technology

1 No standing or stagnant water eliminates all potential health risks and requires less regular cleaning.

2 The unit does not rely on gravitational separation and is therefore insensitive to vibrations, shocks and splashes.

As such, performance is both better and more stable and there is no requirement to use electronic "no loss drains" up stream of the machine.

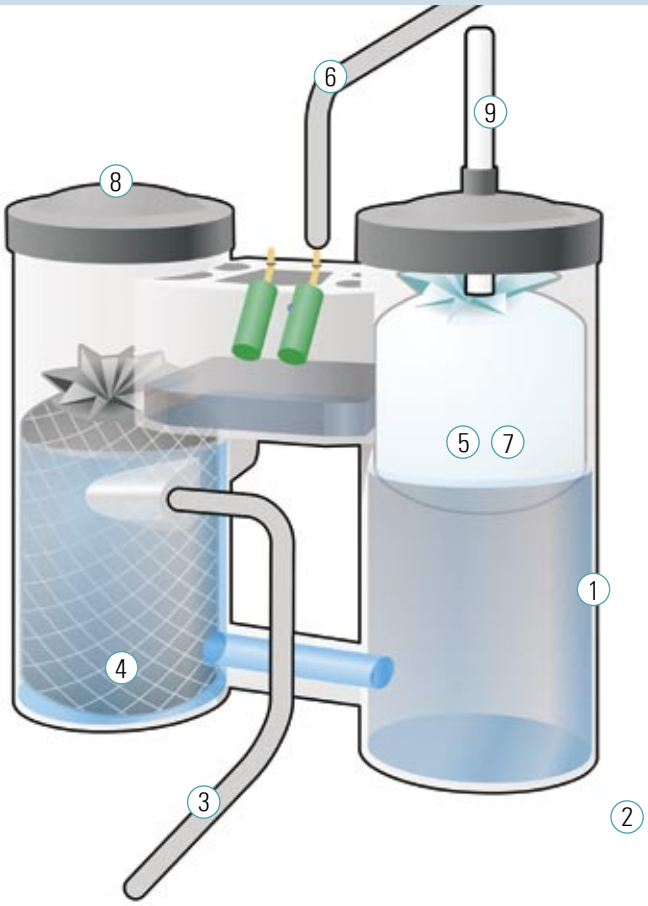
3 The discharge condensate contains so little residual oil, that it can be drained away without damaging the environment or contravening strict pollution regulations.

4 The large capacity chambers reduce the risk that spillage occurs if the unit becomes blocked, or if there is a sudden increase in inlet flow.

5 The system is based on filtration rather than gravitational forces and weir separation – meaning that oil density is no longer a key factor.

The key benefits of this are:

- *No oil collection bottle required, so no chance to ruin previously separated condensate if system malfunctions.*
- *Multiple oil condensate can be easily separated.*
- *Poly-glycol condensate can be separated, although some unit de-ration is necessary in order to maintain filter lifetime.*
- *Most condensate emulsions can be separated.*



6 No de-ration required for synthetic oil based condensates. Meaning model selection is simplified and unit size is reduced for low capital investment.

7 The advanced oleophilic filtration media used ensures stable and reliable performance, extended activated carbon lifetime and can eliminate all bacteria with an optional treatment.

8 The simple but robust design enables easy installation with no special set-up and fast, easy and clean filter changeover.

9 The maintenance indicator accurately identifies when the filter needs to be changed, eliminating the need for special tests.

Make life easy with the genuine OSC service kits

For assured performance and maximum maintenance intervals the specially designed OSC service kits should be used.
Each kit is designed to make life as easy and simple as possible, providing all the equipment needed for a fast, clean and trouble free element changeover.

In addition to the buoyant oleophilic and activated carbon bags needed for one year normal operation, the kit includes a whole series of other components to ensure an easy filter exchange:

- *a set of buckets with a water tight sealing lid to put the old bags into, directly after they have been replaced*
- *two sets of inlet mufflers and two vapour diffusion filters, enough for a years normal operation*
- *two pairs of gloves and two plastic overalls to protect the maintenance engineer from oil splashes*

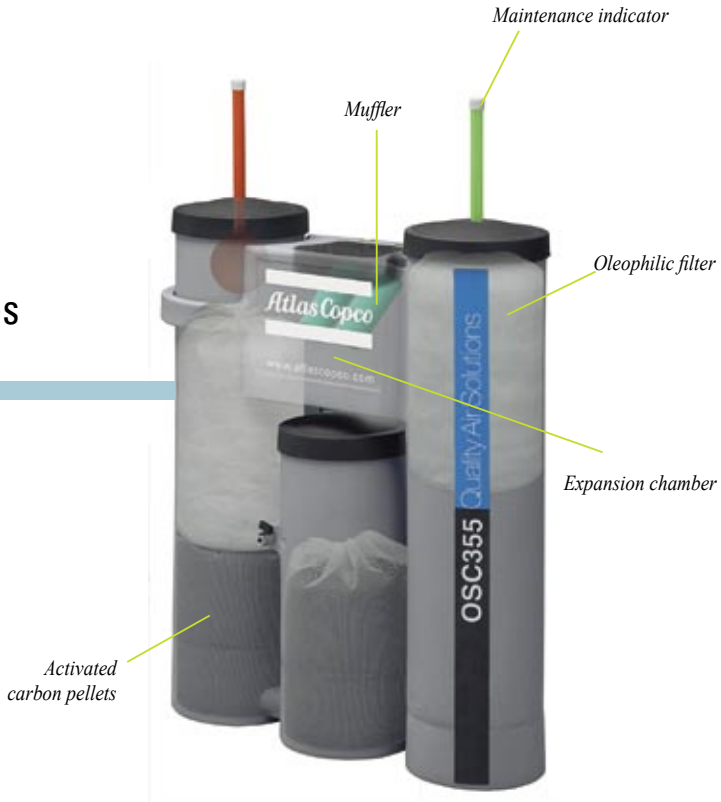
Atlas Copco also offers a full set of spare parts for each machine in the range, and a series of options for multiple installations and for operation in extreme climates.

Factory options to suit all requirements

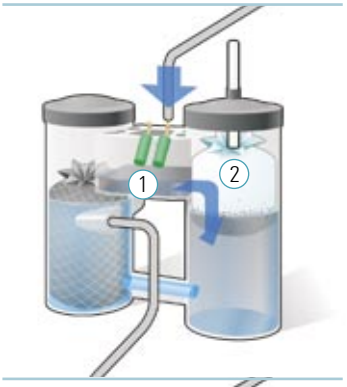
The following options are available and can be fitted on site:

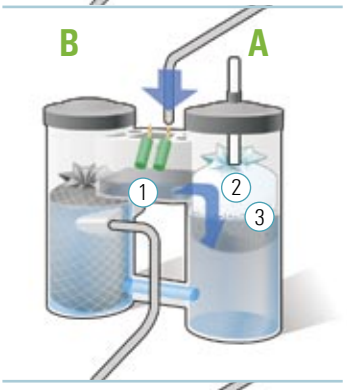
- ☐ Low temperature environment kit – consisting of tower heating and insulation
- ☐ Multiple inlet manifold for easy connection of several condensate lines into one unit
- ☐ Antiseptic buoyant oloephilic filters for elimination of all bacteria in the condensate
- ☐ Electronic alarm sensors for condensate overflow and filter replacement

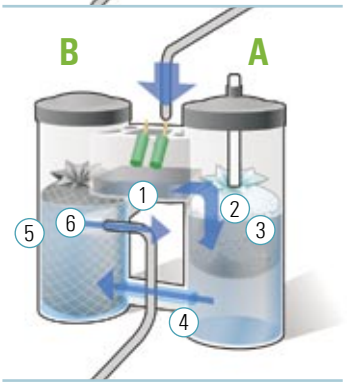
OSC – advanced technology for all compressed air condensates



The new and extensive OSC range from Atlas Copco uses patented technology to separate all kinds of compressed air condensate. The multi-stage separation process, using both buoyant oleophilic filters and activated carbon, ensures exceptional performance, long and known filter lifetime and trouble free operation.







Complete reliability from total simplicity

1 Condensate enters through the mufflers and depressurizes in the expansion chamber.

2 The emulsified oil water mixture then enters tower A and seeps through the white oleophilic filter. The filter absorbs the oil but not the water.

3 The oleophilic filter floats on the water and absorbs any remaining oil from the surface.

The additional weight of the oil causes the filter to gradually sink as it gets more saturated, which ensures that clean filter material is always in contact with the surface of the water.

The indicator stick at the top of tower A shows the status of the filter; as the filter is consumed, the stick sinks.

The filter has to be changed just before it's fully submerged.

4 Significantly cleaner condensate flows from tower A to tower B.

5 Tower B contains a bag of activated carbon pellets (contained in a bag) which absorb any residual oil from the condensate.

6 Clean condensate exits from tower B with almost no residual oil content, enabling it to be discarded easily and safely.

Technical data

OSC 35 - 2400

Installation with compressors, air receivers, dryers and filters.

Capacity is based on the compressor running at 7 barg / 100 psig for 12 hours per day, with all condensate from the compressor, the air receiver, the filters and fridge dryer being piped into the unit.

Model	Cold climate System FAD		Mild climate System FAD		Hot climate System FAD	
	l/s	cfm	l/s	cfm	l/s	cfm
OSC 35	65	138	35	75	17	36
OSC 95	180	382	95	201	45	95
OSC 145	270	572	145	307	70	148
OSC 355	665	1410	355	753	170	360
OSC 600	1150	2438	605	1283	290	615
OSC 825	1550	3286	825	1749	400	848
OSC 1200	2220	4706	1180	2502	570	1208
OSC 2400	4440	9413	2360	5003	1145	2427

Installation with compressors, air receivers, and filters only.

Capacity is based on the compressor running at 7 barg / 100 psig for 12 hours per day, with all condensate from the compressor, the air receiver and filters being piped into the unit.

Model	Cold climate System FAD		Mild climate System FAD		Hot climate System FAD	
	l/s	cfm	l/s	cfm	l/s	cfm
OSC 35	105	223	45	95	20	42
OSC 95	280	594	118	250	50	105
OSC 145	415	880	175	371	75	160
OSC 355	1035	2194	435	922	190	403
OSC 600	1800	3816	760	1611	330	700
OSC 825	2410	5110	1020	2162	440	933
OSC 1200	3450	7315	1455	3085	630	1336
OSC 2400	6895	14620	2910	6170	1260	2671

Notes

1) All capacities are based on an outlet oil content of 15 mg/l.

2) Climatic conditions used in the table above are defined as follows:

- Cold conditions: ambient temperature 15°C, relative humidity 60%
- Mild conditions: ambient temperature 25°C, relative humidity 60%
- Hot conditions: ambient temperature 35°C, relative humidity 70%

3) For poly-glycol based condensates, the capacity of each unit should be halved.

Running hours

Multiply the OSC FAD capacity by the appropriate correction factor to adjust for different running hours:

Hours run per day	8	10	12	14	16	18	20	22	24
Correction factor	1.5	1.2	1	0.86	0.75	0.67	0.6	0.55	0.5

Separation performance

For an outlet oil carryover over 10 mg/l instead of 15 mg/l, multiply the unit capacity by 2/3.

Technical data

OSC 35 - 2400

Model	Dimensions						Weight		Connections (BSP/NPT)	
	A		B		C				Inlet	Outlet
	mm	inch	mm	inch	mm	inch	kg	lbs	inch	inch
OSC 35	470	18.5	165	6.5	600	24	4	9	1 x 1/2	1 x 1/2
OSC 95	680	27	255	10	750	30	13	29	2 x 1/2	1 x 1/2
OSC 145	680	27	255	10	750	30	15	33	2 x 1/2	1 x 3/4
OSC 355	750	30	546	21.5	900	35	25	55	2 x 3/4	1 x 3/4
OSC 600	750	30	546	21.5	1030	41	26	57	2 x 3/4	1 x 3/4
OSC 825	945	37	650	26	1100	43	28	62	2 x 3/4	1 x 3/4
OSC 1200	945	37	695	27	1100	43	30	66	2 x 3/4	1 x 3/4
OSC 2400	945	37	1185	47	1100	43	60	132	2 x 1	1 x 3/4

OSD 22 - 315

Model	Maximum compressor capacity	Weight		Oil content in effluent	Oil canister volume
	l/s	kg	lbs	mg oil/l	l
OSD 22	60	8	18		1
OSD 90	250	9	20	< 10	2
OSD 315	770	13	28		2

The face of innovation

What sets Atlas Copco apart as a company is our conviction that we can only excel in what we do if we provide the best possible know-how and technology to really help our customers produce, grow and succeed.

There is a unique way of achieving that - we simply call it the Atlas Copco way. It builds on **interaction**, on long-term relationships and involvement in the customers' process, needs and objectives. It means having the flexibility to adapt to the diverse demands of the people we cater for.

It's the **commitment** to our customers' business that drives our effort towards increasing their productivity through better solutions. It starts with fully supporting existing products and continuously doing things better, but it goes much further, creating advances in technology through **innovation.**
Not for the sake of technology, but for the sake of our customer's bottom line and peace-of-mind.

That is how Atlas Copco will strive to remain the first choice, to succeed in attracting new business and to maintain our position as the industry leader.

Never use compressed air as breathing air without prior purification in accordance with local legislation and standards.

Service competence
Atlas Copco is committed to provide the levels of after-sales care that you require. Our highly trained engineers offer the best possible support and assistance in operating your equipment with the most modern diagnostic tools available.

Global capability
Global capability with local presence means that we can respond rapidly to any situation anywhere in the world. Our world class logistics ensures timely delivery of our range of guaranteed quality spare parts.

ISO 9001
From design to production and delivery of compressors, Atlas Copco adheres to the ISO 9001 management system.

ISO 14001
Atlas Copco's Environmental Management System forms an integral part of each business.

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