S57
WATER/OIL SEPARATORS

S57

WATER AND OIL IN COMPRESSED AIR SYSTEM

WATER ACCUMULATION

A working compressor draws in many substances including dirt, water vapor and many other substances to form unwanted condensate.

Condensate accumulation usually occurs in the compressed air tank. In addition to damaging the tank, this condensate is spread throughout the compressed air system.

Eliminating the condensates is imperative to prevent expensive damage to the equipment.

OIL AIR COMPRESSORS

Compressed air circulating in compressors with compression chambers inevitably carries a little oil.

The most common examples of these types of compressors are oil-flooded rotary screw machines, lubricated reciprocating, and rotary vane compressors. In most cases, the accumulation of oil will be indicated in ppm or parts per million by weight.

Reciprocating compressors carry a higher level of ppm of oil residue compared to a screw compressor. An AC compressor carries an average of 7 to 10 ppm and this level only increases with the compressor wear. Many lubricated compressors operate with much higher levels of oil residues which can be greater than 25 ppm.

At a concentration of 25 ppm, a typical compressor operating at 100 scfm for 35 hours introduces 240 ml of oil into the compressed air system. This oil, mixed with water vapors and other contaminants, can form a thick, viscous substance that is even more damaging to the entire compressed air system. The breakdown of equipment and corrupt production are significant risks.

For all these reasons, eliminating any form of condensate in the compressed air network remains crucial.

Removing condensates through an automatic bleeder is simple and effective but to get rid of contaminants, the water/oil separator becomes essential in order to comply with municipal by-laws.

DISCHARGING
oil contaminated condensates is
PROHIBITED BY LAW
and harmful to the environment!

Quebec Environment Quality Act

20. No one may emit, deposit, issue or discharge or allow the emission, deposit, issuance or discharge into the environment of a contaminant in a greater quantity or concentration than that provided for by regulation of the Government.

The same prohibition applies to the emission, deposit, issuance or discharge of any contaminant the presence of which in the environment is prohibited by regulation of the Government or is likely to affect the life, health, safety, welfare or comfort of human beings, or to cause damage to or otherwise impair the quality of the soil, vegetation, wildlife or property.

E.Q.A., Chapter 2, a. 20

Source: http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=2&file=/Q_2/Q2_A.html

ENVIRONMENTAL REGULATIONS

To meet with environmental regulations for condensate treatment in your location, please refer to your environmental provincial law on the discharge of any contaminant into the natural environment.

LITERS OF WATER PRODUCED BY A 25 HP COMPRESSOR AFTER 8 HOURS

Ambient Air Temperature °C	% Humidity								
	20 %	30 %	40 %	50 %	60 %	70 %	80 %	90 %	100 %
49	84.5	126.8	169.1	211.4	253.7	296.0	338.0	380.0	422.8
43	64.1	95.5	126.8	159.6	190.1	222.3	253.7	286.4	317.8
38	47.7	70.9	94.1	118.7	141.8	166.4	189.6	212.8	237.3
32	35.6	51.8	69.6	87.3	105.0	121.4	139.1	156.8	174.6
27	25.9	38.2	50.5	62.7	76.4	88.6	101.0	113.2	126.8
21	17.7	27.3	35.5	45.0	54.5	61.4	72.3	81.8	90.0
16	12.3	19.1	25.9	32.4	38.2	45.0	50.5	57.3	64.1
10	9.5	13.6	17.7	21.8	27.3	31.4	35.5	39.6	45.0
4	5.5	9.5	12.3	15.6	17.7	21.8	24.5	27.3	30.0
-1	4.1	5.5	8.2	9.5	12.3	13.6	16.4	17.7	20.5
-7	2.7	4.1	5.5	6.8	7.7	8.6	9.5	10.9	12.3
-12	1.4	2.3	3.2	3.6	4.5	5.5	6.4	6.8	8.2

S57
TREATMENT OF CONTAMINATED CONDENSATES

Over the couse of a year, a typical compressed air system can produce several thousand liters of contaminated condensate with oil and other unwanted particles. For example, a compressor with a 100 scfm refrigerant air dryer operating at 25 ° C in 65% relative humidity for 4000 hours can produce up to 10,000 liters of condensate. Oily condensate can seriously affect wastewater treatment.

For this reason, a very small portion of oil condensate in water discharges is permitted and strictly regulated to protect the environment.

International standards such as ISO 14001 require compressed air users to comply with local environmental laws and put in place adequate disposal procedures.

In the past, the condensates were stored and periodically picked up by a waste collection company. This meant keeping contaminants on site which were health and safety hazards and carried costly collection costs.

A settling tank was also used to separate water and oil through a gravity based system followed by charcoal filtration for the remaining water. Today's lubricants have different properties making this method obsolete. They have a density similar to that of water and the water/oil mixture forms a mixture for which a gravity based separation system becomes ineffective.

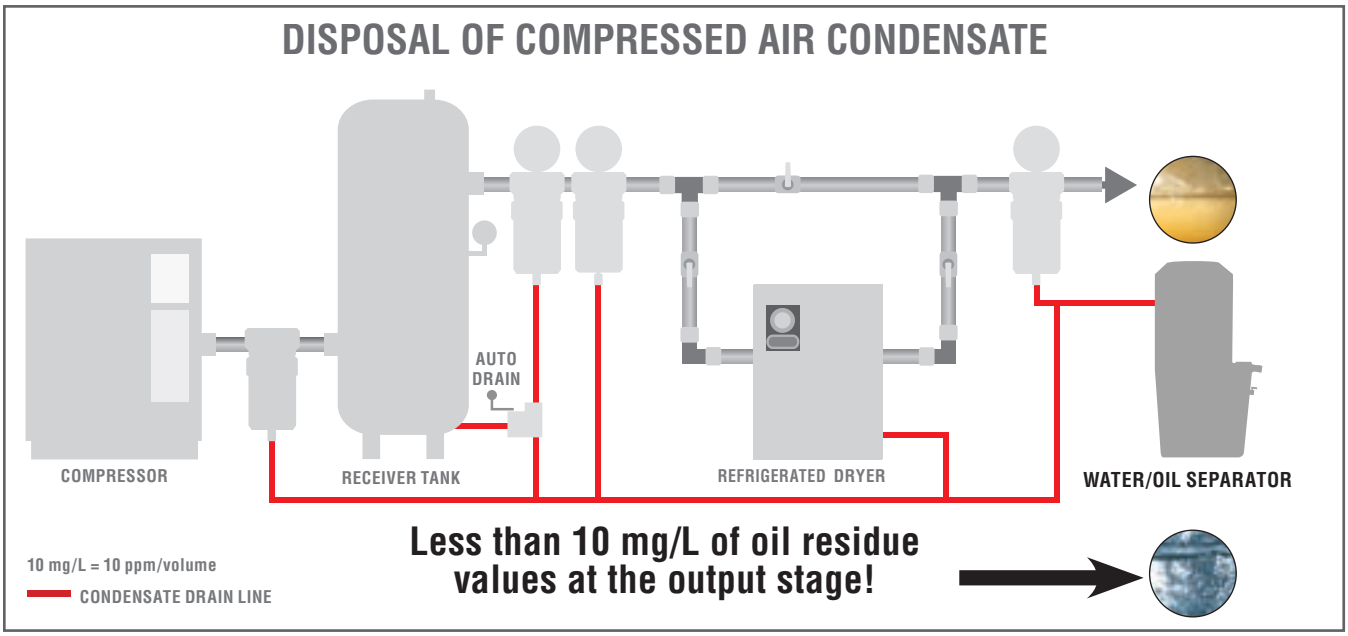
The new generation of water / oil separators are now environmentally friendly and use a highly efficient filters to absorb oils and contaminants.

EFFICIENT ON-SITE DISPOSAL OF CONDENSATE

TOPRING offers a wide range of water / oil separators compatible with any type of drains. It is a simple and effective environmentaly friendly solution. These water / oil separators are integrated in the compressed air system and reduce the oil concentration in the water with by up to 99.9% of the condensate at the outlet. These separators leave a small amount of oil that can be easily and legally disposed of.

Using specially processed polypropylene based adsorbing components, the water / oil separators effectively separate all lubricants from the compressor: no need for a condensate tank, a settling tank or a third party waste-collection resource. The **TOPRING** water /oil separators offer a reliable and economical solution in compliance with environmental standards for condensate treatment as well as ISO 14001 standards.

- Specialized polypropylene media
- No need for a settling tank
- Can separate most types of condensate
- Works with all drains
- Cost effective, reliable performance



S57
HIFLO
WATER/OIL SEPARATORS

General features and benefits

TOPRING water/oil separators efficiently treat oils and other condensate contaminants from the compressed air system for safe and legal disposal in the drain.

They separate any type of condensate discharged from a drain and reduce condensate disposal costs. It is easy to select a water/oil separator model based on the applications airflow requirements (SCFM).

PERFORMANT FILTRATION MEDIA

- Non-carbon based filtration media that attracts oil droplets and repels water
- Clean, lightweight and easy to handle
- Long filtration media service life for lower life cycle costs
- Lower outlet oil concentrations in water down to 5 ppmv or less even with synthetic compressor oils
- Environmentally friendly with 100% recycled and recyclable filtration media

EASY MAINTENANCE

- Service indicator to ensure periodical replacement of the filters
- No settling or collection tanks to be purged and cleaned
- Removable cover for easy access of internal components

The maintenance indicator ensures a quick replacement of the filter elements

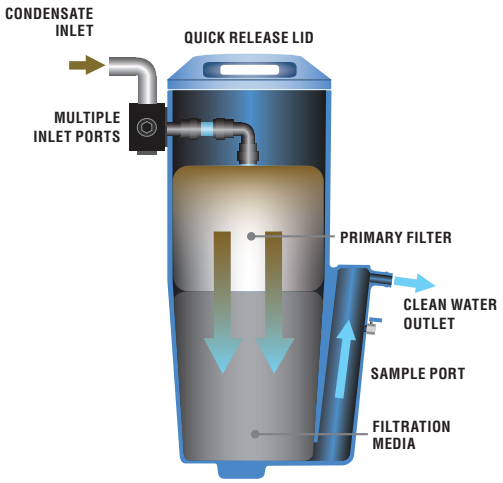
Product No	Expected duration of the filter element
57.500	8 000 hr at 30 SCFM 5 000 hr at 60 SCFM
57.502 to 57.512	5 000 hr at 120 / 2 500 SCFM

EASY INSTALLATION

- The filters are ready to use, requiring no pre-soaking
- Space saving and smaller footprint for easier installation
- Wall mounting kits available

How does it work ?

As the condensate passes through the primary filter, it is depressurized. The solid particles are then trapped, protecting the secondary filter and catching bulk hydrocarbons in a high capacity oil absorber. The condensate then passes through the filtration media which absorbs oil (concentrations of 5 ppm or less).



S57
HIFLO
WATER/OIL SEPARATORS

With an advanced polypropylene filter, it can separate any type of condensate containing any type of compressor lubricant discharged from any type of drain, without the need for a settling or storage tank.

A cost effective and reliable solution that meet environmental regulations for condensate disposal.

Features and benefits

- Highest performance and low operating cost
- Reliable, lightweight, clean, dust-free
- Easy to handle, install and remove
- No pre-soaking required saving installation and maintenance costs
- High quality single piece molded body
- Multiple inlet connections for multiple purge points

Applications

Perfect for installations with:

- Portable applications for restricted floor space
- Any type of oil compressor
- Emulsified mixtures
- Any type of drain
- EPA landfill regulations
- Low cost operations

Material

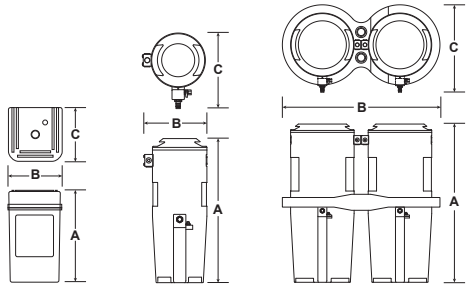
Polyethylene

Specifications

Inlet condensate temperature range: 1.7°C to 43°C

Maximum condensat inlet pressure: 232 PSI

Maximum oil carry over: < 20 ppm



57.500 | 57.510 to 57.512 | 57.502 to 57.508

Product No	Inlet(s) NPT	Outlet NPT	Maximum Flow * SCFM	Maximum Flow ** SCFM	Dimensions cm			Weight kg	Wall mounting bracket	Replacement media kit
					A	B	C		Product No	
57.500	1/4 O.D.	3/8 O.D.	60	30	22.86	12.70	12.70	1.3	Included	--
57.502	1/2 (x 4)	3/4	120	60	48.26	20.32	25.40	2.7	**57.542**	**57.522**
57.504	1/2 (x 4)	3/4	360	180	63.52	33.02	27.94	3.6	**57.544**	**57.524**
57.506	1/2 (x 4)	3/4	900	450	96.52	43.18	48.26	15	--	**57.526**
57.508	1/2 (x 4)	3/4	1250	625	96.52	48.26	48.26	20	--	**57.528**
57.510	1/2 (x 8)	3/4	1800	900	96.52	96.52	50.80	31	--	**57.530**
57.512	1/2 (x 8)	3/4	2500	1250	96.52	109.22	53.34	43	--	**57.532**

* Choice based on a compressor using mineral or synthetic oil with an oil residue adsorption capacity of 5 mg/m^3 or less

** Choice based on a compressor using polyglycol

TECH TIP

Please refer to Series 47 to see the aluminium manifold bars required for water/oil separator installation