



LINE FILTERS

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Line filters on compressed air lines are used for increasing the quality of air used in your process

Line filters have 4 ranges of efficiencies which are removing contaminants as small as 0,01 micron

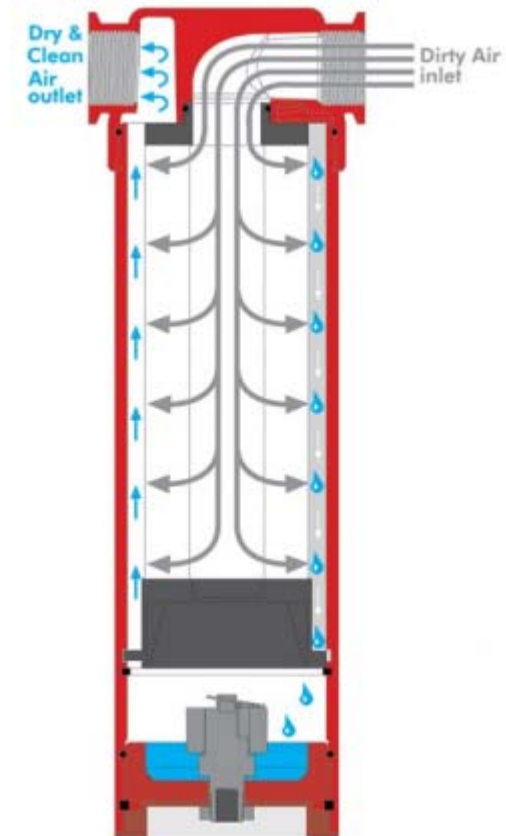
P type → Pre Filter (Particulate Filter)

X type → General Purpose (Water Removal)

Y type → Coalescing Filter (Oil Removal)

A type → Activated Carbon Filter (Oil Removal)

Specifications	Pre Filtering	General Purpose	Oil Removal	Activated Carbon
Grade	P	X	Y	A
Particle Removal (Micron)	5	1	0,01	0,01
Max. Oil carryover at 21°C (mg/m ³)	5	0,5	0,01	0,003
Max. working temperature (°C)	80	80	80	25
Initial pressure loss (mbar)	40	80	100	80
Pressure loss for element change (mbar)	700	700	700	700
Element colour code	WHITE	WHITE	WHITE	METAL SS



IMPORTANCE OF LINE FILTER ELEMENT CHANGE ON TIME



Unchanged clogged line filter elements may cause problems in your compressed air line

- High pressure drops because of clogged filter elements
 - Waste energy because of pressure drops
- Unfiltered low quality air
 - Costly problems on machines which use this low quality air
- Low performance on air dryer because of clogged X type filter before the dryer
 - Increase of water amount in compressed air
 - Blockage of dryer heat exchanger



The advantages of periodical changes for Line Filter elements

Line filter elements must be changed periodically in every 6.000 working hours or 1 year whichever comes first. Following this rule returns you as;

- ✓ Keeping compressed air system efficiency up
- ✓ Low pressure drop
- ✓ Low waste energy
- ✓ High quality compressed air
- ✓ Operational reliability
- ✓ Elimination of unexpected shut down for production machines

* In some cases adverse ambient conditions may shorten the filter element change periods. Best way to decide most suitable replacement period for high efficiency is, checking the pressure drop through the line filters.

WASTE ENERGY COST BECUASE USING NON-GENUINE LINE FILTERS OR LACK OF REPLACEMENT



Average waste energy cost example calculation for 75kW and 7 bar model compressor used line due to non-genuine or clogged line filter elements (X and Y type)

Average total pressure drop through the line filters (X and Y type) are 0,5 Bar more than the total pressure drop with genuine or new line filter elements

This extra 0,5 bar creates an extra power demand of
 $[75 \text{ kW} / 7 \text{ bar}] \times 0,5 \text{ bar} = 5,36 \text{ kW}$

Average Approximate Extra Energy Cost for 3.000 working hours:

$5,36 \text{ kW} \times 3000 \text{ h} = 16.080 \text{ kWh}$

Extra energy cost = $16.080 \text{ kWh} \times 0,114 \text{ \$/ kWh} =$

\$1.833,12



*Energy Cost = 0,114 \$ / kWh