

Gardner
Denver

PROTECTING YOUR INVESTMENT

4,000 Hour Separator Change **Benefits**

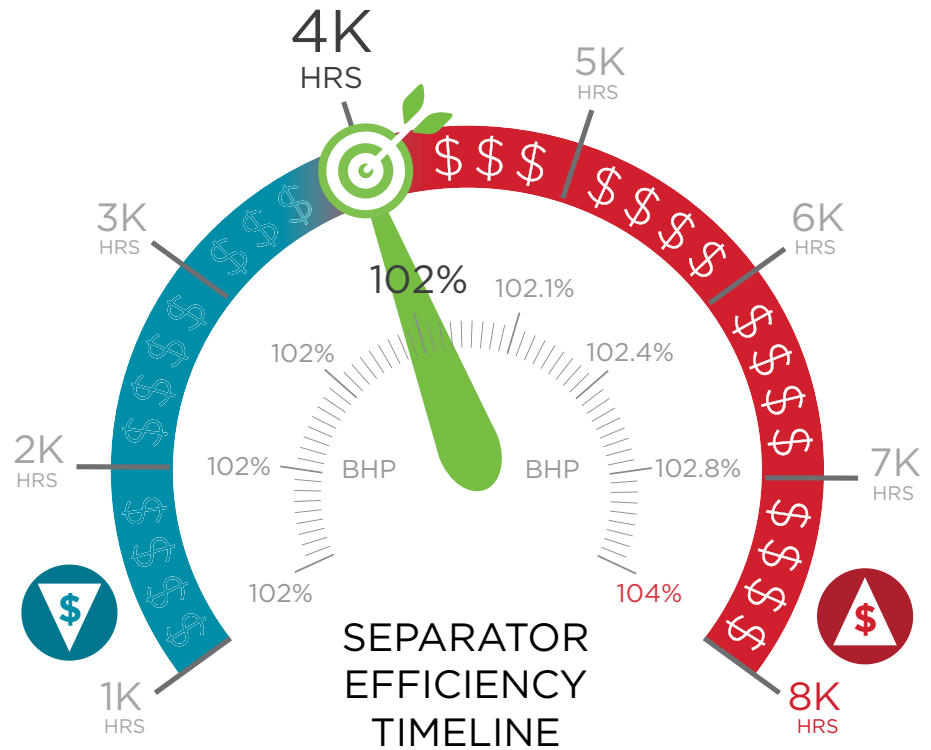


Benefits of a 4,000 Hour Separator Change

Reduced Pressure Drop Across the Separator

Over time, contaminants will build-up in the separator media. As the media becomes more and more loaded with debris, the air compressor will have to work harder to pass air through the separator. This process increases pressure drop.

Installation data shows that the pressure drop experienced due to separator clogging begins to increase around the 4,000–5,000 hour mark.



- MAXIMUM EFFICIENCY, LOWER COST
- LOWER EFFICIENCY, HIGHER COST
- OPTIMAL TIME TO CHANGE SEPARATOR
- BHP % OF FULL LOAD BRAKE HORSEPOWER

As pressure drop builds past 4,000 hours, brake horsepower rises, taking energy consumption with it.



Pressure Drop = Wasted Energy

By changing the separator when pressure drop is about to increase, **money is saved in reduced energy cost** to operate the air compressor. As a rule of thumb, for every 2 psig increase in pressure, horsepower consumption of the air compressor will increase by 1%.



ANNUAL POWER COST SAVINGS
WITH A 4,000 HOUR SEPARATOR CHANGE

COMPRESSOR HP	ENERGY COST PER KW HR				
	\$0.08	\$0.12	\$0.15	\$0.20	\$0.25
25	\$39	\$59	\$73	\$98	\$122
50	\$78	\$118	\$147	\$196	\$245
100	\$157	\$235	\$294	\$392	\$490
200	\$313	\$470	\$587	\$783	\$979
300	\$470	\$705	\$881	\$1,175	\$1,469
500	\$783	\$1,175	\$1,469	\$1,958	\$2,448

For example, a 100 HP compressor will save \$235 at \$0.12 per kW HR energy cost

\$ Savings assuming 8,000 hrs/yr compressor operation.
Savings compared to a separator change at 8,000 hours.

Benefits of a 4,000 Hour Separator Change

Reduced Lubricant Carryover

Lubricant carryover is defined as lubricant that exits an air compressor and makes its way into downstream equipment and processes. Every oil-flooded air compressor experiences some level of lubricant carryover. The key is to minimize lubricant carryover, not to stop it entirely. In addition to potential end-product contamination, lubricant carryover can lead to additional maintenance needs on dryers, filters, oil/water separators and other downstream areas of your compressed air system.

Without a separator change, lubricant carryover will typically increase approximately 1 PPM during the 4,000–8,000 hour period. Even though we are usually talking about tiny amounts of lubricant, the cost of lubricant carryover can really add up in the form of lubricant top-off between lubricant changes.

ANNUAL SAVINGS

FROM REDUCED LUBRICANT CARRYOVER

COMPRESSOR HP	HOURS OF RUN TIME BEYOND 4,000 HOURS		
	+2,000	+3,000	+4,000
25	\$13	\$20	\$26
50	\$26	\$39	\$52
100	\$65	\$98	\$130
200	\$98	\$146	\$195
300	\$195	\$293	\$391
500	\$260	\$391	\$521

Assumes 1.0 PPM carryover reduction.

Assumes lubricant cost of \$100 per gallon

Peace-of-Mind

Along with the quantifiable benefits addressed on the previous pages, there are also benefits to a 4,000 hour separator change that may not directly impact your bank account.

- **Warranty Protection**—Gardner Denver offers an industry-leading 10 Year Platinum Extended Warranty on their oil-flooded rotary screw air compressors. In order to receive the benefits of the warranty program, one of the requirements is to change the separator every 4,000 hours. Following this guideline, along with the other requirements of the warranty program, ensures 10 years of worry-free operation from your Gardner Denver air compressor.
- **Planned Downtime vs. Unplanned Downtime**—An air compressor being taken off-line for maintenance can be very disruptive for an organization. A disruption that can lead to lost productivity. Changing a separator at 8,000 hours increases the likelihood of unplanned downtime in the form of a controller-instructed advisory or shutdown. A 4,000 hour change schedule helps you schedule this downtime and minimize the impact on your operation.



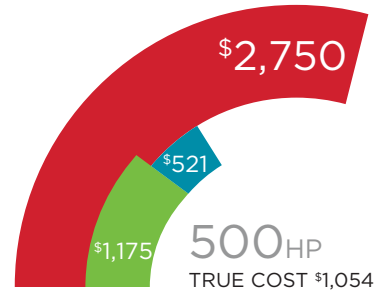
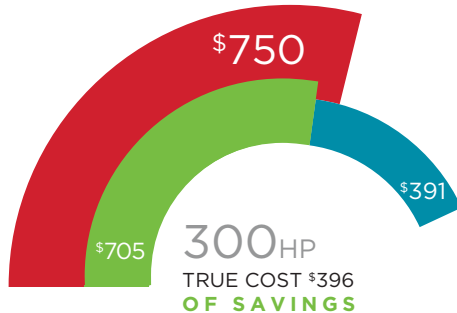
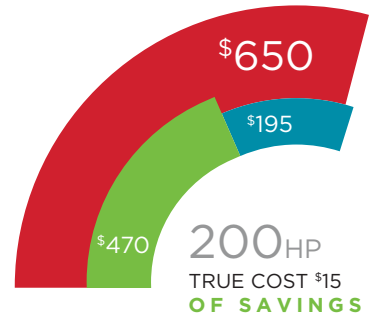
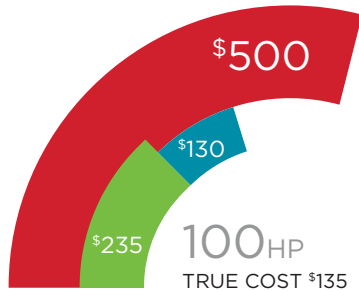
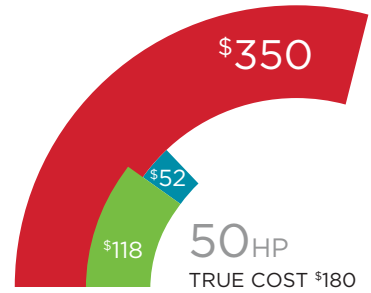
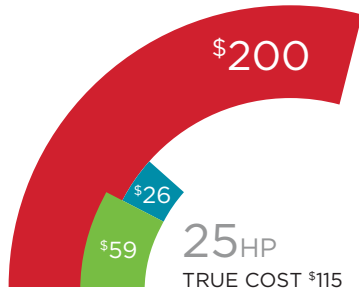
WE BUILD IT
WE TRUST IT
WE **STAND**
BEHIND IT

PLATINUM
WARRANTY

10 YEAR

Bringing the Benefits Together

This page summarizes the financial benefits at different air compressor horsepower. A 4,000 hour separator change often generates savings that cover a large portion of the separator cost. Most importantly, ask yourself the question "How much is 10 year warranty protection and the ability to plan my downtime worth to me?".



- TYPICAL SEPARATOR COST
- ENERGY SAVINGS @ \$.12 PER KW HR
- LUBRICANT TOP-OFF SAVINGS FOR 4,000 HOURS

For example, the "true cost" (separator cost minus energy savings and lubricant savings) of a 4,000 hour separator change for a 200 HP is around \$35.



We take pride in our Gardner Denver air compressors and want them to perform above and beyond the customer's expectations. Years of research and experience has shown that following a **4,000 hour** separator change schedule is one of the most **effective** ways to ensure that the customer brings out the **quality we build in.**

The leader in every market we serve
by continuously improving all business processes
with a focus on innovation and velocity

**Gardner
Denver**[®]


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