

OIL-FREE SCREW COMPRESSOR UPRATE FOR INCREASED FLOW

By Adam Hernandez

Many of our customers are surprised to hear that RMS can offer them a significant flow increase to their existing Oil-Free Screw compressor without any change in operating speed. The solution requires only a minimal increase in power, while optimizing the efficiency of the compressor. If your existing Oil-Free Screw compressor has a symmetric rotor design, then this upgrade is your best solution to increase capacity while minimizing your investment.

We developed this upgrade using state-of-the-art aerodynamic and manufacturing technology to meet the evergrowing need for flow capacity. Depending on the process and application, efficiency improvements are typically expected to yield at least 8% more flow with only a 3%-4% increase in power. Actual results may be as much as 30% flow increase compared to current operating conditions.

Rotating Elements

The legacy design of the AC Compressor Oil-Free Screw compressor included rotors with a symmetrical lobe profile. By upgrading these rotors to the latest asymmetrical lobe profile, the compressor performance can be improved with no change in compressor speed.

This latest generation asymmetric design includes a larger swept flow through each lobe along with tighter clearances, which provides increased volumetric flow more efficient gas compression with each compressor revolution.

Casing

This upgrade requires only minor casing modifications the next time the rotors are replaced. Casing rotor bores are re-machined and enlarged to fit the new rotor designs. In the process, casings are restored to the proper design clearances with improved surface finish. Additionally, the discharge porting is modified to match the upgraded discharge profile of the new rotors. As an alternative to modification, complete new casings may be provided. This approach is recommended for severe service applications, compressors near the end of service life, or simply to minimize compressor downtime.

Any existing AC Compressor Oil-Free Screw compressor design with symmetric rotors may be upgraded, including the following nameplates that fall under RMS: Beloit Power Systems, Fairbanks Morse, Louis Allis, and GE Oil & Gas / Baker Hughes.

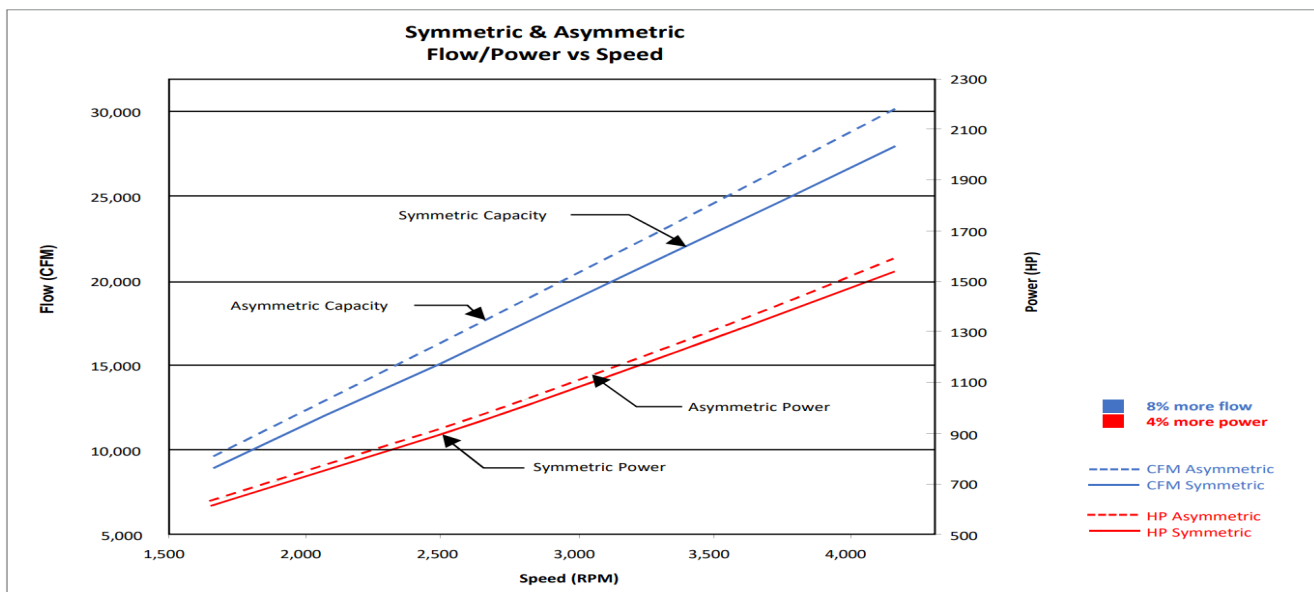


Figure 1

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