



## Application: Compressor

*ISOPur Fluid Technologies removes varnish from the bearings for global leader in turbo compressors*

### Introduction

Three thousand horsepower turbo-centrifugal fans rotate at extremely high speeds to maintain pressures in pipelines and other critical applications. The buildup of contaminants in gear casings and bearings is common, leading to the buildup of varnish on critical components. If not caught in time, gear or bearing failure contributes to downtime and maintenance. At a minimum, costly rebuilds are necessary to clean the compressors.

### The Challenge

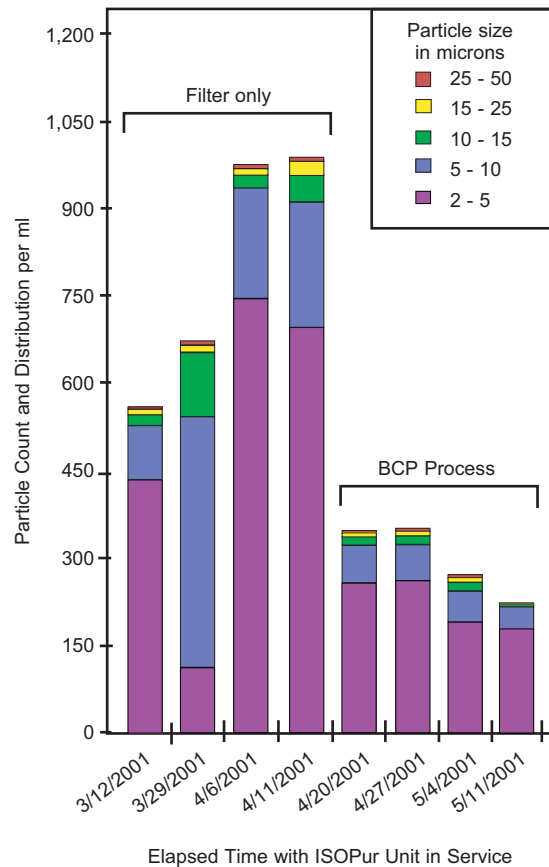
The turbo compressor manufacturer chose ISOPur Fluid Technologies for their purification needs. The ISOPur's patented Balanced Charge Purification (BCP) could not only purify the oil to the sub-micron level, but also had the ability to remove varnish from bearings. The manufacturer could not pass up the opportunity to conduct a six (6) month test in a live production environment.

### The Solution

In April 2001, the ISOPur purification unit was installed in a kidney loop onto the 150-gallon lubrication oil tank. In a short time, ISOPur's Balanced Charge Purification (BCP) technology began to remove contaminants from the walls, lines, bearings and gears of the system. Vigorous scouring of the system began as early as mid May 2001.

In late November 2001, the gears and bearings were inspected to determine the amount of varnish contamination within the compressor. Oil analysis revealed that the fluid was in pristine condition. More dramatically, the machine internals had become nearly spotless. The shafts that were previously covered with brown varnish were now free of contamination. Varnish contamination on the journals was either eliminated or greatly reduced. The BCP process had not only steadily purified the fluid but had removed contaminants from all of the internal surfaces of the equipment as well.

Turbo Compressor Lubricating Oil Analysis



### The Return

The return on investment to the turbo compressor manufacturer is impressive. The ISOPur BCP technology cleaned an enormous range of organic and metallic components, thereby eliminating varnish and leaving nothing but pristine oil behind.

As a result of the BCP technology, vibration was reduced, oil disposal costs were eliminated, inspection and maintenance periods were extended, and productivity increased. Comprehensive scouring not only eliminated the existing costly varnish problem in this critical equipment but prevented varnish and sludge from forming in the future.