Airflow Affects Screening Efficiency
One of our customers, a petroleum company in Texas, called his Kason representative because his 72 inch diameter VIBROSCREEN was not performing satisfactorily. The customer wanted to screen approximately 1200 pounds per hour of material with separation at 60 and 40 microns.

The very fine and abrasive catalyst powder being screened has a bulk density roughly similar to that of silica flour - 80 pounds per cubic foot. Because this material becomes airborne easily, the company installed a dust collection system with a 3 inch diameter vent line connected to one inspection port on the cover and smaller, about 1 inch diameter, vent lines connected to barrels that the discharge spouts are connected with.

When the dust collection system operated, the airflow up through the screen lifted the very fine material off the screen surface, reducing screening efficiency. Kason representative Tim Hays of SPECS, INC., recommended shutting off the dust collection system to test his hypothesis. By removing the slight pressure, only a couple inches of water, the throughput increased greatly from the 400 to 500 pounds per hour the unit had been operating at. To correct the problem, Hays recommended attaching 1.5 inch diameter vacuum lines above and below each of the two screen surfaces. This equalized the vacuum above and below each of the two screen surfaces. With this modification and a few others, efficiency and productivity satisfy customer requirements. Since the petroleum company operation is virtually continuous and the VIBROSCREEN had become a bottleneck, the adjustments were desperately needed.

Other changes that Hays recommended included proper screen tensioning and replacement of Kleen screen rings with 225 balls and a ball tray. These changes lengthen screen life since the uniform tension prevents screen wire from flapping with subsequent fatigue and breakage. Changing from anti-blinding rings to balls reduced wire abrasion which had been occurring as a result of the abrasive catalyst being caught between the plastic sliders and the underside of the screen. The impact of the flexing balls will dislodge near size particles.