Memorandum

To: Kellett Enterprises, Inc

From: J. Von Kaenel

Date: April 8, 1970

Subject: LP-13 Vibration Isolators

When installing the LP-13 pad under heavy machinery with a low center of Gravity, the use of LP contact cement is unnecessary.

When installing the LP-13 pad under light machinery, having a relatively high center of gravity that is susceptible to swaying or jarring during operation, the pads should be installed using LP cement according to instructions.

The construction of the pad (and homogeneity of the neoprene and nylon) permits a more uniform load of distribution and equalization of the machine during the lining and leveling at erection.

The flexible close cell neoprene absorbs the vibration energy, that is the mechanical vibration energy is converted into heat energy. In addition, normal shock loads and impact loads as well as violent shocks from the machines are diffused.

The intermediate layer of nylon transmits vibrations and forces resulting from shock to the base across its surface, thus dampening the effect of the vibration and shock. It is also a function of the nylon intermediate piece to attenuate and diffuse the vibrations and shock being transmitted between it and the two outer layers of neoprene.

The flexible close cell neoprene and bonded construction of the pad makes it practically indestructible, and is unaffected by moisture, oils, grease, cleaning detergents, solvents, and etc.

By reducing the transmitted vibration and shock (impact) loads from the machine to the floor, will result in minimum wear and damage to machine parts, require less frequent machine adjustments, maintain more uniform machine output quality performance, all of which adds up to higher machine productivity or more quality production for less money invested.

By distributing the vibrations and the shocks and impact loads over the surfaces of the pads the vibration and shocks are dampened and minimized. Th associated wear and often breakage of the moving parts of the machine are minimized.

The rigid intermediate layer function is to distribute vibration and shocks over the surface of the base layer thus diffusing the shocks, and damage to the machine in excessive wear of its parts resulting from the normal vibrations and sudden shocks produced during the machine operation are avoided.

The pad minimizes rocking and walking of a machine under which such is inserted. Walking or moving about is avoided through use of the pad. The pad isolates (insulates) the vibrating machine from the building (that is the structure). This pad prevents the greatest portion of the vibration and shocks from the machines from being transmitted to the building. Also, it attenuates the larger shock and impact loads. In addition, it is inherently characteristic of this pad (because of its laminar construction) that the reflected or rebound vibrations and shocks from the floor to the machine are virtually eliminated. It is common knowledge that the rebound shock from a structure to a machine will add to the vibrating forces in the machine causing larger resulting forces on the machine elements which in turn cause part failure, premature wear, machine misalignment, reduced reduction in quality output and reduction in quality output and reduction in production efficiency because by interrupted process.

It is very important, in the above, that the machine foot is not bolted to the floor. Bolting the machine to the floor defeats the purpose of the vibration isolator.

It is extremely important that a vibrating machine or any machine producing vibration be aligned, leveled, and have all of its feet areas with the floor (mounting structure). Failure to have one or more feet not in positive contact with the structure during machine operation will result in impact loads from the machine to the structure, caused by vibrations. Conservatively speaking, impact loads resulting from this clearance during operation is 6 times or more greater than the original load or force caused by the vibration.

In order to determine whether dynamic clearances occur between the foot of the machine and the structure (as described above) proceed as follows:

While the machine is running, check for this dynamic clearance by attempting to pull a leaf gage of .002 to .004” between the foot of the machine and the floor.