

INDUSTRY

CONSTRUCTION &
HEAVY INDUSTRY

APPLICATION

CEMENT MIXER

PRODUCT

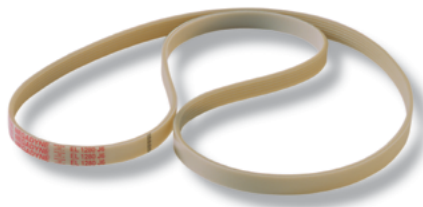
PU/PV ELASTIC

SITUATION/APPLICATION

In the construction industry, portable cement mixers are used widely. Cement mixers, also known as concrete mixers, allow users to mix large amounts of cement without wasting time and manual labor as opposed to hand mixing the materials. A rotating drum allows users to mix materials with ease using a very limited amount of energy. The continual rotation of the drum allows workers ample time to make use of the wet, mixed cement before it hardens. To work efficiently and maximize production, drive systems must mix cement quickly and thoroughly, be easy to maintain and exist in a relatively small space. They also need to be durable enough to survive the tough conditions that exist in the construction environment.

THE PROBLEM

A manufacturer contacted Megadyne with a complaint about the unreliable performance of their belt driven cement mixer. Cement mixers work in a very harsh environment. Dirt and dust is everywhere. Also, the ingredients used to produce cement (sand, gravel, powder) are not only dirty but highly abrasive as well. This abrasion causes rapid wear to the components in the drive system. The previous drive belt was experiencing a very short life and suffered from slippage due to insufficient operating tension. The components of the idler tensioning system were the cause as they also suffered early failures due to the abrasive nature of the environment. The manufacturer was looking for a way to increase the belt life and improve drive reliability while at the same time taking cost and complexity out of the system.

**THE SOLUTION**

Megadyne designed a drive solution that met all of the customers' requests with the application of the Megarib "TEM" thermoset polyurethane elastic belt. Slippage was eliminated and drive life was increased as the elastic construction of the TEM belt automatically maintains belt tension throughout the life of the drive. The Megarib belt was able to do this in a small drive space having the high flexibility of a flat belt with the power transmission capability of a v-belt.

THE RESULT

Reliability and drive life was greatly improved as the Megarib TEM elastic belt now maintains constant, stable drive tension without slippage. Cost savings were further realized as the TEM belt does not require any kind of a tension system. The manufacturer was able to eliminate idlers, bearings, bracketry, nuts, bolts, washers, etc. All the components and associated labor of the previously used tensioning system were eliminated! This not only lowered unit costs but also delivered the advantage of higher quality as there are no tensioning mechanisms that can fail. The elimination of the labor required to install the tensioning mechanism on the assembly line also lowered the production cost of the mixer.

