

INDUSTRY
FITNESS**APPLICATION**
TRAINER**PRODUCT**
PV-K

SITUATION/APPLICATION

The fitness industry focuses on health and overall maintenance of the human body through exercise. Exercise equipment used in fitness centers and residential homes comprise a large portion of the industry. Treadmills, exercise bicycles, steppers, cross trainers, etc. are widely used in the industry. Nearly all of these units use some form of drive system. Chain and various types of belts are all commonly utilized in the drives found in these applications.

THE PROBLEM

One of the many exercise equipment manufacturers that Megadyne works with experienced a belting challenge on the drive of a high end cross trainer they were developing for the fitness center market. In general, all the drives used on exercise equipment must operate at a low noise level and function with a high level of smooth, progressive action to provide a pleasant experience for the user. A drive that does not operate correctly creates a negative experience and gives the impression of a low quality machine.

In this application, the noise generated by chain and timing belt drives proved to be excessive and was considered unacceptable. A V-belt drive was also considered but could not transmit the torque generated when a user stood on the pedals of the machine, causing belt slippage on the pulleys.

THE SOLUTION

After a thorough analysis of the drive and drawing on years of experience in the fitness industry, our Application Engineer suggested a Megadyne PV V-ribbed belt. Also known as Poly-V, Poly-Rib, serpentine, etc., these endless rubber power transmission belts feature multiple longitudinal ribs that transmit power by friction from the driver to the driven side of the machine. It transmits the torque by contact of the belt rib flanks and the pulley grooves, similar to a traditional v-belt but with greater belt rib to pulley groove contact allowing greater power transmission in less space. The increased surface contact area also allows greater reduction of pulley diameters creating opportunities to further reduce overall drive cost. Additionally, PV belts offer greater flexibility than belts or chains for use with smaller pulley diameters and more compact drives. They can also be used on smooth driven pulleys, keeping costs down by eliminating the need to machine matching grooves into the driven pulley.

THE RESULT

The end result for this customer was a readily available, standard product from our wide range of power transmission belts that exceeded all the requirements of the drive. Used where compact, quiet, reliable and low-maintenance drives are needed; Megadyne PV belts guarantee a low noise, vibration-free drive system with the smooth action and power transmission capability necessary to serve the needs of this demanding application.

