

APPLICATION BULLETIN

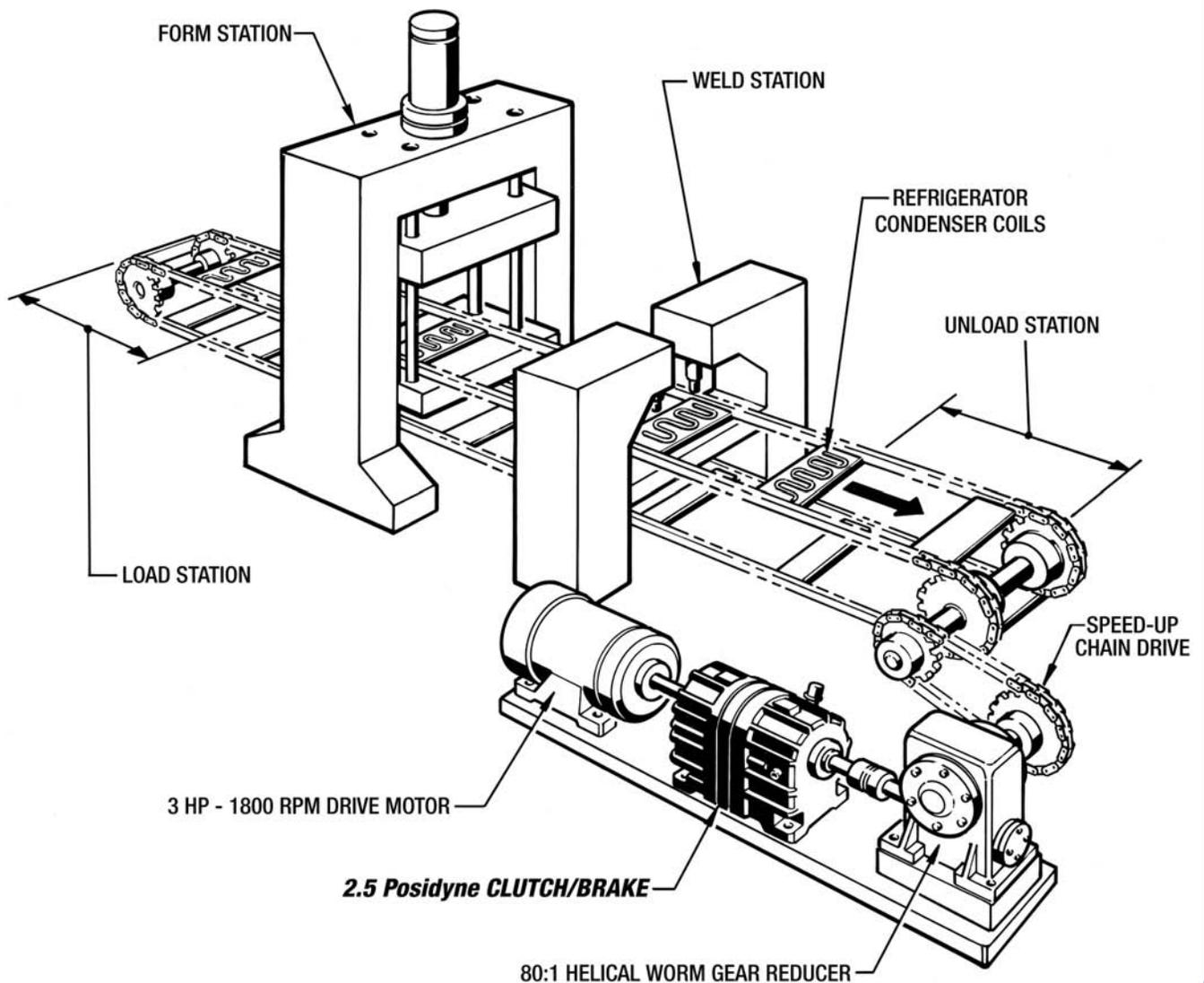


APPLICATION: Multiple Work Station Indexing Conveyor

INDUSTRY: Appliance Industry

PRODUCT: Oil Shear 2.5 Posidyne Clutch/Brake

MULTIPLE WORK STATION INDEXING CONVEYOR



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DRIVE REQUIREMENT: The clutch brake is to provide indexing position function for the drive train of a chain conveyor carrying condenser coils for refrigerators. The coils are to be indexed from a load station to a form station to a welding station and finally to an unload station.

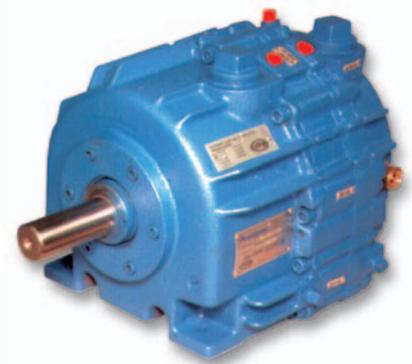
APPROACH: The index required was 54" between stations. It was determined that, by using 38 tooth No. 60 standard roller chain sprockets, two revolutions of the head shaft would result in 54" of chain travel. A 2:1 speed up drive from a reducer output shaft to the head shaft of the conveyor then allowed one revolution of the reducer: output shaft to drive the conveyor from one station to the next.

Based on the time requirement of six seconds total cycle time, three seconds was allowed for index and three seconds dwell for forming and welding. An 80:1 double reduction helical worm gear reducer satisfied the speed time requirement. The start and stop command to the **Posidyne** came from a small cam located on the output shaft of the reducer.

SEQUENCE: The **Posidyne** brake holds the conveyor in position while a coil is loaded at the first station. When loading is completed, the **Posidyne** clutch is engaged, rotating the helical worm reducer output shaft one complete revolution. As the output shaft approaches 360° of rotation, a cam on the shaft trips a limit switch, signaling the **Posidyne** to release the clutch and engage the brake, stopping the conveyor at the 54" index travel. This typical cycle is continued through the machine as parts are continually loaded, formed, welded and unloaded.

FEATURES:

- The total machine cost was greatly reduced by using the **Posidyne** and helical worm gear reducer as a main drive. It was originally thought that a cam type indexer would be necessary to hold the required accuracy for positioning the parts at the forming and welding stations. The cam drive would, of course, been many times the price and would still have required a clutch brake to operate the drive.
- The one revolution cam on the output shaft of the reducer allowed easy adjustment of the stopping position of the conveyor.
- The superior thermal capacity of the **Posidyne** provides significantly lower brake drift than dry type brakes, which have high skin heat build-up.



NOTE - This drive has been cycling trouble-free every six seconds, 16 hours a day, five days a week for two years.



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