Autoquip®

Lift System for Modular Home Manufacturing

The Challenge

A modular home manufacturer was challenged with making their assembly process more ergonomically effective for employees and improving the speed and safety of loading the complete home onto trucks for shipping. Particular design challenges that were presented to Autoquip in developing an effective solution were:

1. Lifts had to be portable in order to be positioned differently for various modular home lengths and configurations.
2. Raise a 40- to 50-foot-long modular home while keeping it level within – inch overall.
3. Must be cost-effective.

The Autoquip Solution

The technical sales team at Autoquip reviewed the customer's specifications, the various modular home configurations, and factory floor plan before recommending a system of eight (8) hydraulic scissors tables that would be placed beneath the home's main frame to raise and lower the frame in unison. This critical synchronization was accomplished by providing each lift with its own hydraulic power unit, mounting a transducer in each lift to sense and signal the lift's precise vertical elevation, and programming a central controller which would receive signals from all the lifts and adjust any given lift's elevation by controlling its power unit accordingly to keep all lift elevations within – inch. The particular lift model was chosen based on its edge load capacity, and each lift was manufactured with a portable base frame for positioning the lift beneath the home as the configuration dictated. This programmable lift system provided the most stable, adaptable, and

cost-effective lifting solution for the application.

Lift Specifications for this Unique Application:

- Lift Quantity: 8
- System Capacity: 41,000 lbs
- Vertical Travel: 48″
- Individual Platforms: 24″ x 64″
- Actuation: Hydraulic
- Controls: Vertical transducer & Programmable Controller (PLC)

The Solution Benefits

By combining the simplicity, reliability, and durability of multiple hydraulic scissors tables with the versatility and precision of a programmable controller (PLC), Autoquip has created a safe and repeatable method of handling this large, flexible load without damage to the interior sheetrock walls or other features. This innovative approach to lifting these homes from beneath rather than above has improved safety, productivity, and factory throughput.

