Application Solution: #115

GOING TO GREAT LENGTHS FOR CUSTOMERS

"Hydra Rig is always looking for new ideas and developing new products for our customers' applications... including very tall single stage and multi-stage coiled tubing equipment. Joyce/Dayton is the only company we found that could meet our extreme length requirements with the oilfield-tough quality we demand."

Mike Lu
Project Engineer
Hydra Rig

Hydra Rig:

application story outline

Any technology that improves oilfield productivity is good business today. Hydra Rig was established in early 1973 as a manufacturer of oilfield equipment. Their first product line was the Hydraulic Workover System which allowed the workover of an oil or gas well to be performed under pressure without the use of "kill" fluids in the well.

Today, they are a leader in the manufacture of coiled tubing equipment, which can be custom designed with different mast lengths and equipment. Screw jacks are used to raise the mast beams on the rear of the trailer to a vertical or less than vertical position, depending the angle that the well has been drilled.

On this particular application, the requirement was for two 15 ton, 454 inch travel stainless steel screw jacks, and two 35 ton, 128 inch stainless steel screw jacks. Although another jack manufacturer declined to bid on the project, Joyce/Dayton stepped up to the plate and developed an innovative solution for Hydra Rig.

UNIQUE FEATURES

A 454 inch (37.8 feet) long stainless steel screw is hardly an off the shelf item... even with Joyce/Dayton's wide inventory. Joyce Application engineers proposed a "spliced screw" technique. Typically, when splicing screws it is very difficult to align the Acme threads, which can cause binding and excessive wear of the jack components. However, instead of joining pre-machined screws - which makes perfect alignment of the Acme threads nearly impossible - Joyce spliced the stainless steel screw stock before machining. Essentially this creates one continuous piece of stock that can be machined as one screw, eliminating the misalignment.

HOW THE SYSTEM WORKS

The coiled tubing rig uses jacks to raise the mast beams on the rear of the trailer and lift the coiled tubing injector to the well head for oilfield services. The mast beams can be lifted to a vertical or less than vertical position, depending on the angle that the well has been drilled. The two 35 ton, 128 inch stainless steel screw jacks are used to elevate the mast beams to the correct angle. The two 15 ton, 454 inch travel stainless steel screw jacks are used to raise the coiled tubing injector to working height.

WHY JOYCE® JACKS?

Starting with a standard “off the shelf” product and adapting it to meet the customer’s needs is one of Joyce/Dayton’s strengths. The Joyce/Dayton Application engineering team is ready, willing and uniquely able to help you design and install a solution to virtually any lifting or positioning application. Joyce® can do this with quicker delivery and better pricing than the competition.

Since 1873, the Joyce/Dayton Corp., with headquarters based in Dayton, Ohio, has been the premier manufacturer of heavy-duty screw jacks for lifting and positioning equipment. Whether you’re processing aluminum, handling spent nuclear fuel or loading cruise ships, Joyce/Dayton has handled the toughest applications imaginable. With unmatched design and manufacturing expertise, Joyce provides solutions that are productive, enduring and cost-effective. For more information about the Joyce/Dayton Corp., visit the company’s web site at www.joycedayton.com.