

## ITT Enidine Inc. Shock Absorber Improves Performance on Top Drive Drilling Systems

### Enidine Energy Absorption Application

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#### Product Overview

A major manufacturer of oil and gas drive drilling systems had manufactured a top drive with a retract feature for one of its prime customers. This feature allowed the top drive to retract from the well center permitting other equipment to operate in the area. The existing equipment was performing as planned, but it was decided that faster cycle times would increase production. With the current technology of the original unit it was realized that the cycle speed was approaching its limit. If the speed were any faster or abrupt stops occurred, it would cause problems and increase downtime. The manufacturer contacted ITT Enidine Inc. to find a solution that would provide a cushion at the end of travel.

#### Product Solution

To improve performance, a heavy-duty guide frame was designed and manufactured. Custom ITT Enidine Inc. shock absorbers were installed to cushion end of travel stopping. The original design had a retract time of twelve seconds. The heavy-duty design with the ITT Enidine Inc. shock absorber incorporated retracted in six seconds with less shock transfer than the original mechanism. The weight being retracted was 110,000 pounds and the distance retracted was 57 inches. Proportional hydraulic valves helped control the speed.



#### Application Opportunity

The original retract frame did the job but did not have the power to increase performance. It had shown that it was moving fast enough to shake the derrick excessively. The new heavy-duty guide frame with the ITT Enidine Inc. shock absorber eliminated excessive mechanical shock to the derrick. The faster cycle time helped increase production. ITT Enidine Inc. shock absorbers are simple devices that protect at all times, even when the hydraulics and electronics have a glitch.