

# Well Construction

## Frank's Tubular Running Service (TRS) - Casing Technologies

### FX-350™ - Top Drive Casing Running Tool

#### Features and Benefits

- Fills, rotates, circulates and reciprocates the casing string simultaneously, thus improving the ease with which casing strings are run to desired target depth, even with troublesome or difficult hole conditions
- Patented thread compensator assists with thread / make-up integrity. Reduces potential for thread damage during make-up
- Equipped with control-operated PRAYING MANTIS® pipe pick-up arms and automated HORSESHOE® single-joint elevator
- Designed to meet or exceed API 8C requirements
- Control panel operates patented FX-350™ casing running tool, PRAYING MANTIS® pipe pick-up arms, HORSESHOE® single joint elevator and spider
- Patented Interlock functionality ensures that either the spider or FX-350™ slips are directed to the set position at all times, reducing the risk of dropped pipe
- Patented mixed string running capability: (e.g. 4 1/2 inches x 5 1/2 inches without redressing slips)
- Graphic display, for advanced functionality, indicates slip position, pipe end position and fault detection
  - o Separate displays for both operator and driller
  - o Zone 1 approved nodes and Class 1, Div. 2, for use on the rig floor
  - o Electronic packages meet Atex Zone 1 and 2, or UL div 2



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Specifications	
Casing size range	4 1/2 in. - 9 5/8 in. (114 mm - 244 mm)
Hoisting Capacity (API 8C) (May be limited by top drive crossover sub.)	350 tons (318 tonnes)
Push down force capacity	77,600 pounds (35,199 kilograms)
Torque capacity	35,000 ft-lbs (47,454 Nm)
RPM, continuous	85
RPM, maximum	100
Thread compensation	4 inches (102 millimeters)
Overall length (Pick-up arm - retracted)	11 feet - 3 3/4 inches (3.4 meters)
Weight	6,950 pounds (3,152 kilograms)
Through bore	2 in (51 mm)
Pressure rating (may be limited by packer cup)	5,000 psi [345 bar] (7,500 psi [518 bar] version available)
PRAYING MANTIS® Pick-up arm capacity (hoist capacity)	5 tons (4.54 tonnes)
PRAYING MANTIS® Pick-up arm length	See diagram below
Max. rotating diameter	27 3/4 in. (705 mm)
Max. circulation rate	20 (BBL/minute with value removed)
Top connection	4 1/2 IF

