



The ACE – Ardyne Casing Expander Tool utilises the field proven DHPT Down Hole Power Tool platform to utilise applied internal pressure to drive a high-force Casing Expansion Head to perform local expansion of the I/D of wellbore casing.

This expansion can be used for a number of highly beneficial wellbore interventions. Firstly the expansion can be used where a well has SACP (Sustained Annulus Casing Pressure) issues caused by leakage through the annular cement. The expansion compresses and densifies the cement in the annulus which acts to repair any leak allowing. This repair doesn't affect the pressure integrity of the well casing and can seal macroscopic cement defects such as cracks and micro-annuli.

Additionally the expansion can be used to expand an inner casing to contact the inside of an outer casing to create an interference fit. This procedure can be used to segregate different fluids such as trapping oil based fluids pre-abandonment as well as being a base for annual cement to prevent the higher density cement from u-tubing into the annulus below.

TYPICAL APPLICATIONS

- Expansion of the casing to compress, seal and repair annular cement where there is SACP (Sustained Annulus Casing Pressure).
- Expansion of casing to close the annulus between two casings to trap Oil Based fluids prior to Abandonment.
- Expansion of casing to close the annulus between two casings to act as a base for cement to prevent U Tubing.

EFFICIENCY GAINS

- Resumption of production on wells which are shut in due to SACP (Sustained Annulus Casing Pressure) issues with the associated increased production revenue.
- Cost and Carbon related rig time savings for leaving oil based fluids in place as well as reduction in the costs for disposal of the fluids.

ADDITIONAL BENEFITS

- Improvement in cement plug quality in the annulus due to having a proper cement base.

ACE Tool Specifications

Casing Size	Casing Weights	Casing ID Range	Stroke Length	Tool Weight
9-5/8 in 244.48 mm	47 to 53.5 lb/ft 69.94 to 79.61 kg/m	8.535 to 8.681 in 216.79 to 220.50 mm	16.75 in 425.45 mm	5,110 lb 2,318 kg
10-3/4 in 273.05 mm	55.5 to 65.7 lb/ft 82.59 to 97.77 kg/m	9.560 to 9.760 in 242.82 to 247.90 mm		

Description	ACE Tool
Power Section OD	8.125 in 206.38 mm
Max Hard OD	8.495 in 215.77 mm
Max. Force Generation *	1,042,409 lbs 473 tonne
Max. Pressure *	6,748 psi 465 bar
Piston Area (in ²)	154.471
Max Expansion	12.09 in 307 mm
Total Length	42.25 ft 12.88 m
Tool Joint	6 5/8 REG Box Up
Make Up Torque	6 5/8 REG - 48,000 ft-lbs Internal - 10,000 ft-lbs

* at 100% force

Strengths and dimensions for reference only