

## The Mechanical Thruster

### Lateral Hole Section

- › Consistent bit engagement
- › Tighter and more consistent running parameters
  - ROP
  - DIFF
  - TORQUE
  - WOB
- › Reduces MWD failures and shock and vibration related survey issues
- › Reduces damage to bits and BHA components
- › Achieve optimal vibratory tool placement without negative consequences to MWD, BHA & BIT

### Vertical Hole Section

- › Reduces shock and vibration
- › Reduces damage to bits and BHA components
- › Reduces weight and torque swings
- › Consistent parameters through tough transitions
- › Consistent bit engagement through interbedding and chert

### Consistent Parameters

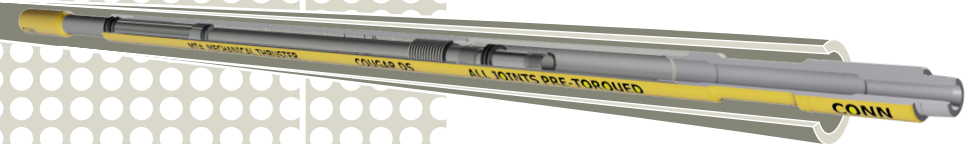


### Increased Reliability



### Reduced Days on Well

Shock, vibration and related equipment damage cause unnecessary trips and increase costs. The Mechanical Thruster reduces shock and vibration induced damages to BHA components, lowering your AFE.



MECHANICAL THRUSTER

Specifications

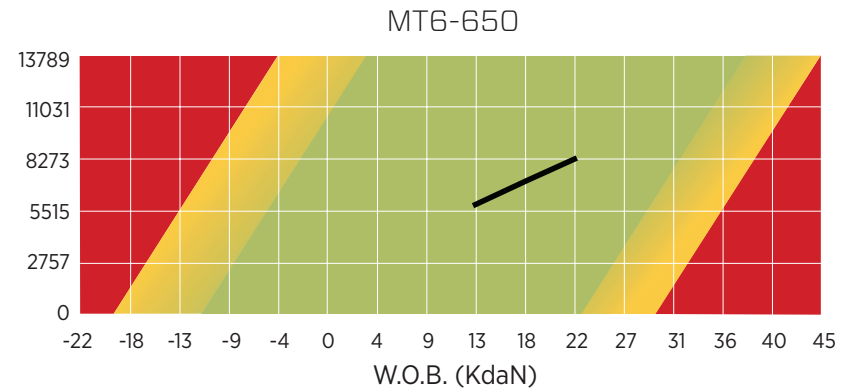
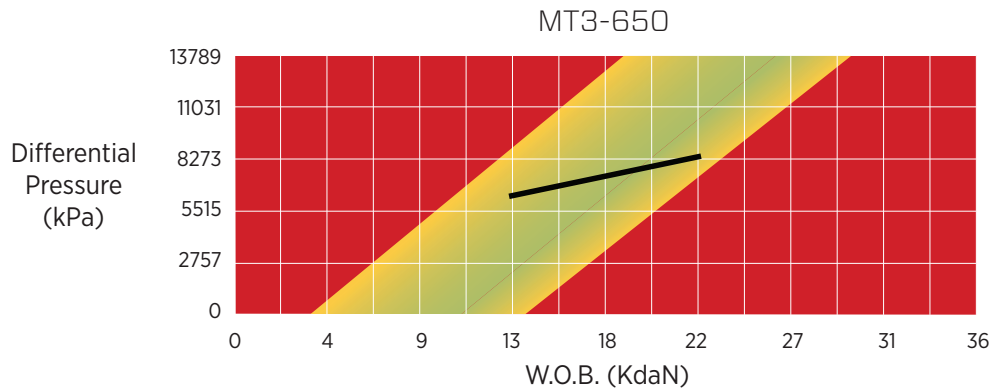
	Size	UP	DOWN	OAL (m)	OD (mm)	ID (mm)	Dry Weight (kg)	POA (cm <sup>2</sup> )
		Max Stroke Length (mm)						
<b>MT3</b>	500 - 127 mm	N/A	610	7.32	127	57.15	454	71.00
	650 - 165 mm	N/A	610	6.40	166	63.50	703	120.65
	800 - 203 mm	N/A	610	6.86	204	76.20	1,225	198.10
<b>MT6</b>	650 - 165 mm	204	204	6.04	166	63.50	726	108.40
	800 - 203 mm	305	305	6.86	204	76.20	1,361	198.10

Maximum temperature rating 204°C

Min/Max spring force for MT3 is directly inverse to total available stroke length. Max spring force for MT6 is standard, variable configurations can be built to suit if needed. Customer and well specific configurations are available.

Mechanical Thruster Optimization Example

Mechanical Thruster performance optimizations are tailored per job and based on well and BHA specifics.



Optimal Non-optimal Not Functional User Parameters

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