

## 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

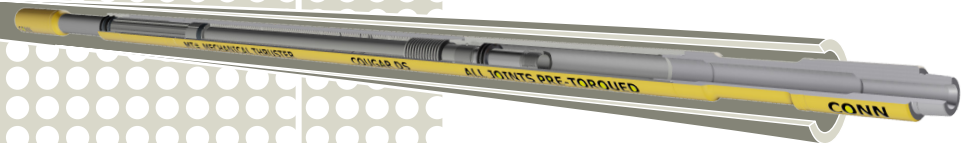


### Increased Reliability



### 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.



### Specifications

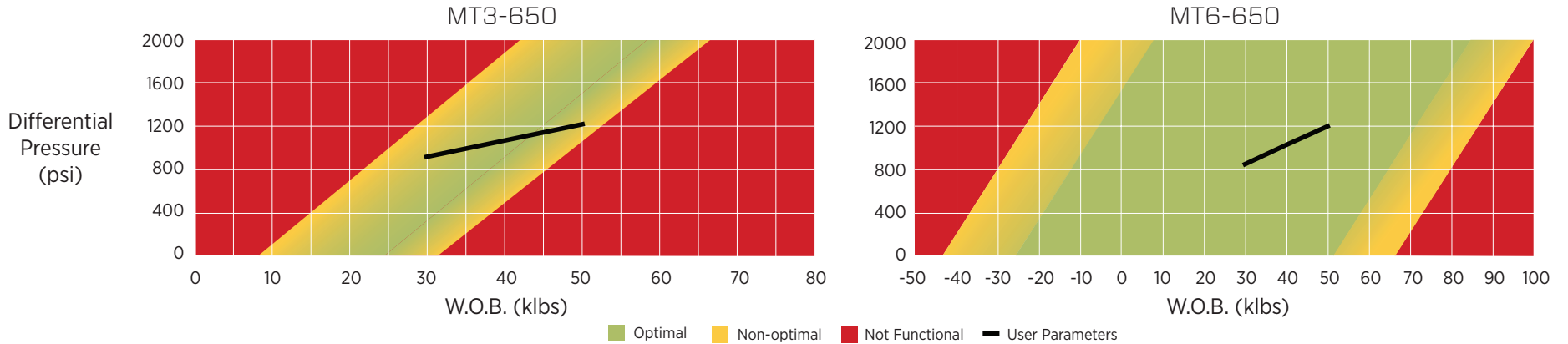
	Size (in)	UP	DOWN	OAL (ft)	OD (in)	ID (in)	Dry Weight (lbs)	POA (in <sup>2</sup> )
		Max Stroke Length (in)	Max Stroke Length (in)					
<b>MT3</b>	500	N/A	24	24.00	5.00	2.25	1,000	11.00
	650	N/A	24	21.00	6.50	2.50	1,550	18.70
	800	N/A	24	22.50	8.10	3.00	2,700	30.70
<b>MT6</b>	650	8	8	19.80	6.55	2.50	1,600	16.80
	800	12	12	22.50	8.10	3.00	3,000	30.70

Maximum temperature rating 400°F

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.



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