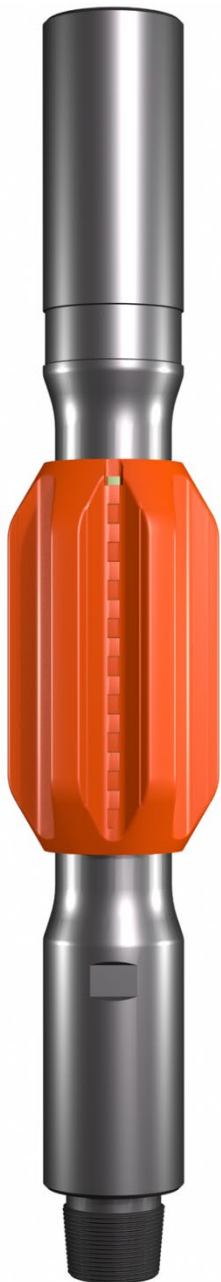


# WWT Silencer

## Non-Rotating Sub (NRS)

Dampen downhole vibration • Reduce torque and stick-slip • Extend bit runs and MWD life

Assist directional control • Efficiently transfer energy from surface to bit



NRS Model	650		850	1225
Sleeve Max OD (in)	6.38		8.38	12.00
Tube OD (in)	3.69		5.00	6.63
Tube ID (in)	2.56		3.25	3.25
Drift Diameter (in)	2.435		3.125	3.125
Sub Length (in)	56.0		65.3	66.3
Side-Load Rating (lbs)	4,800		6,000	8,000
Tube Tensile Yield (lbs)	747,300		1,530,800	3,533,700
Tube Torsional Yield (ft-lbs)	49,100		130,900	349,100
Sub Material	High Strength, Fatigue-Resistant Non-Magnetic Alloy Steel			
Sleeve Material	Proprietary High Temperature, Wear-Resistant Polyurethane			
Max. Operating Temperature	275° F (135° C)			
Connection	NC38	XT39	NC50	6-5/8 REG
Tool Joint OD (in)	4.75	4.88	6.63	8.00
Tool Joint ID (in)	2.56	2.56	3.25	3.25
Connection Tensile Yield (lbs)	609,900	650,500	1,264,300	1,991,400
Connection Torsional Yield (lbs)	19,300	37,600	52,000	94,600
Min MUT @1.0 FF (ft-lbs)	8,900	18,500	26,700	46,900
Bending Stress Ratio (BSR)	2.17	2.46	2.43	2.75
Assembly Weight (lbs)	140	164	375	674
Adj. Weight (lbs/ft)	30.0	35.1	69.0	122.0
Displacement (gal/ft)	0.668	0.761	1.449	2.498

*Additional connections, materials, and sleeve OD's can be made available upon request.*

### Features and Benefits

- Dampens downhole axial and lateral vibration up to 30%.
- More efficient energy transfer to bit for improved ROP.
- Substantially reduce bit wear and BHA damage.
- Mitigate bit tilt for improved directional control.
- WWT's patented fluid bearing reduces torsional friction, thereby mitigating torsional oscillations.
- Non-metallic wear sleeve with a fail-safe design.
- Hinged sleeve design allows for easy field installation and replacement.
- Non-magnetic sub for installation near the MWD.
- Field-proven technology and materials.
- Run above or within the BHA to improve drilling performance.



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