

# PATTERSON RENTAL TOOLS

TUB312CSP110



<sup>1</sup>Rotating Operational Torque is provided to allow for additional rotating torque if needed based on well conditions. Operational torque is not to be applied with tongs at the rotary, but with rotating equipment used to rotate the tubing in the well. Maximum make up torque should be applied at the rotary with calibrated tubing tongs before operational torque is applied to the tubing. Breakout torque will be approximately 80% of the maximum operational torque applied to the tubing. Extra care will need to be taken during the breakout process to prevent damage to the tubing and tubing handling equipment. Operational Torque is based on 65% of the connection's torsion yield.

## 3 1/2" 9.3# P-110 CS Hydril Type Tubing

Tube Size:	3 1/2	in
Nominal Weight / Ft.	9.3	lbs/ft
Tube Grade:	P-110	
Connection:	CS	
Hard Banding/Coating	NONE	
Stencil Markings:		
ID Markings:		
TUBULAR SPECIFICATIONS		
Tube OD:	3.5	in
Tube ID:	2.992	in
Grade:	P-110	
Wall:	0.254	in
Drift OD:	2.867	in
Yield in Tension:	284,900	lbs
Burst Pressure Yield:	13,970	psi
Collapse Pressure Yield:	13,530	psi
Tube Compression Yield:	284,900	lbs
Torsion Yield:	20,748	ft-lbs
Bending Yield:	115.2	°/100ft
CONNECTION SPECIFICATIONS		
Connection OD:	3.915	in
Connection ID:	2.92	in
Make-Up Loss:	2.840	in
Tension Efficiency:	100	%
Connection Burst Yield:	13,970	psi
Connection Collapse Yield:	13,530	psi
Connection Compression Yield:	208,100	lbs
Connection Torsion Yield:	10,000	ft-lbs
Connection Bend Yield	89	°/100ft
<sup>1</sup> Rotating Operational Torque:	8,000	ft-lbs
MAKE-UP TORQUE		
Minimum Make-Up Torque:	3,000	ft-lbs
Optimum Make-Up Torque:	3,400	ft-lbs
Maximum Make-Up Torque:	3,800	ft-lbs

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