



# ABEL RAMLOC CONNECTOR™ vs Renegade WLS RIGLOCK

Spec.	ABEL RAMLOC CONNECTOR™	Renegade WLS RIGLOCK <sup>1</sup>
ID / WP	5-1/8" 15k with 30,000 psi proof of design/concept test	15 ksi
Code	API-6A NACE MR01-75 ASME AISC ISO standard w/ databook Certificate of Conformance	No mention
Service	Wireline, Coil and Snubbing	Wire line
Side load capability	Yes Calc available upon request Axial: 500k without bending, 300k with sideload	unknown
FAILSAFE DESIGN	6x features prevent inadvertent operations LOCKOUT lock rams in closed position mechanically LOCKOUT must be opened hydraulically SHUTOFF is analog to block open pressure Seal testing upon landing (seal is assured/tested) Liner position of rams displayed (similar to rig choke operations) Open tool required two hand operation	PLC features (workings are unknown?)
Latch mechanism	2x ram blocks that bear on loading ring in the mandrel (each ram is 800k working shear load for 1600k total) SF = 2.0 (API SF is 1.5)	Mechanism of cams and levers which can clog with debris
One ram closed	Meets API 15k SF Hydrotested to 15k in acceptance test	unknown
Open time	Open (LOCKOUT disengage + Open) = 2 secs	Minutes (told up to 8 minutes)
Close time	Close = 1 second	Minutes (told up to 8 minutes)
Ram movement	Simple Hydraulic Cylinders 4" Cylinder ID, 2" Rod OD, Stroke 1.56" (open/close). 15.63 cu. in per cylinder or 256 ml or 0.25 liter or 0.72 beers	Hydraulic powered volume unknown?
Locking security	LOCKOUT in each cylinder where lugs land in a race and one cannot retract until hydraulically disengaged	Locking ring that drops in place after cams latch mandrel
Lock visual confirmation	Cylinder rod is flush when closed and seen (yellow on black background) visually	Locking ring can be seen in engaged position.
SHUTOFF analog safety to prevent opening	WHP > 30 psi operates a needle valve in the cylinder open circuit (open pressure will not open cylinder in presence of WHP) Analog design work without power	Unknown if this feature exists?
SHUTOFF tool verification	Test manifold provided on tool for flushing WHP supply to SHUTOFF, Shell testing and proof of function off line	Unknown
Panel open mechanics	Requires two hands (left to hold and disengage LOCKOUT right to operate 4-way handle)	Unknown
Seal test	Test to 15k via test pump between seals after landing (quick test sub), time to 10k=45 sec/ time to 15k=100 sec	No mention of quick test upon landing?
Seal port monitoring	After test seal port is monitored to know if seal failure gauge resolution 0.5% of display pressure 1 psi	No mention of monitoring seal pressure on web page

<sup>1</sup> Renegade published information is from RIGLOCK specs is found on the web page: <https://renegadewls.com/wireline-services/completions/riglock/>

Spec.	<b>ABEL RAMLOC CONNECTOR™</b>	<b>Renegade WLS RIGLOCK</b>
<b>Bell Guide</b>	Steel construction with 50,000 lbs load capacity	Plastic nil load capacity
<b>Seals mounted inside hold-down</b>	Dual Parker polypac-B Hydrogenated Nitrile seals interfaces to colmonoy #5 hard faced seal areas on mandrels	No mention on web page
<b>Mandrels</b>	3x for wells 1x test stand with test flanges	No test stand for field?
<b>Night cap</b>	Upon request only	Yes
<b>WHP and Seal Port gauge</b>	20k electronic gauges and back up analog on test pressure	Electronic / digital (spec?)
<b>Panel design</b>	Simple and straight forward with triple redundancy for accumulator and test circuits (2x air pumps 1x hand pump both accumulator and test) designed per API 16D BOP control. sensors are Nicad batteries do not require power supply	PLC driven technology Spec not stated by RWL Sensors are powered, lights and complexity for closure status.
<b>Accumulator</b>	Can open/close 6x times without accumulator recharge main air pump with 1x air and 1x hand back up	Spec unknown
<b>Utility display</b>	Air Accumulator Manifold Compressor run status	Unknown
<b>Ram engagement display</b>	Linear position indicator displays as per cent open or closed and pressure indication	Pressure indication
<b>Test stand</b>	Test shipping stand for tool for offline testing in the field	None
<b>Air compressor</b>	Tier 4 final /ARB 23 hp Kohler diesel driver of a 13 hp Rotor-Comp screw compressor 200 psi 33 cfm with 80 gal receiver with run status light & ESD on panel	Tier 4 diesel 140 psi 30 cfm
<b>Run mandrel up or down</b>	ABEL prefers to run mandrel on well and hold-down moves well to well to save cost and complexity	Hold-down on well and mandrel moves from well to well.
<b>Connections</b>	API 5-1/8" 15k flange top and bottom DSAs to 7-1/16" 10k or 15k available	unknown
<b>Equipment Spread</b>	Panel Skid with crash frame Panel skid hose basket for storage/moving Air compressor skid with crash frame Test/Transport skid for tool Mandrel shipping Skid with tool storage	Unknown
<b>Turn-a-round</b>	Make ready after a 28 day job with a 4 hour/month checks and top up of oil, etc. Can be left in field does not need to return to shop for make-ready or maintenance	2 full days has been reported (Needs verification)
<b>Support repair and maintenance</b>	Worldwide Oilfield Machine "WOM" (Midland branch) MacCorp LLC and ASAP Industries (Houma, LA)	Unknown
<b>Sales/Rental</b>	International sales only – Rent N. America ABEL provides quality control and training in all aspects	Sale or rent

