

AR15K FRAC DEFENDER™



PULSATION MITIGATION FOR MODERN FRAC SYSTEMS

Every frac system generates pulsation. Every stroke creates pressure waves that travel through monolines, hoses, valves, bends, and connections. When those waves reflect, stack, and amplify, vibration becomes failure.

The FRAC DEFENDER™ AR15K was engineered by PPC's NerdDefender team to attack the problem at the source by reducing pulsation energy before it destroys iron, fatigues connections, and compromises uptime.

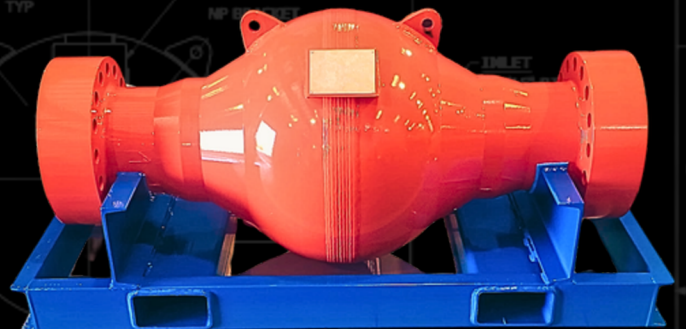
Developed through real-world field analysis and acoustic modeling, the AR15K is the industry's first frac specific dampener purpose-built for high-pressure frac environments.

VERIFIED THROUGH FIELD TESTING

A field study conducted on a 6-pod, 12-pump inline monoline configuration identified dominant resonance activity in the 28–32 Hz range during live operations. PPC modeled the system behavior and engineered the AR15K specifically to reduce downstream pulsation energy within these high-risk operating conditions.

PROVEN PERFORMANCE

- Up to **55% reduction** in downstream peak-to-peak pressure variations
- Up to **70% pulsation energy reduction** throughout the system when strategically deployed in critical areas
- Decreased cyclic fatigue loading on downstream piping
- Reduced risk of connection failures
- **Increased service life** for major iron components
- Backed by **PPC Engineering** acoustic modeling expertise



WHY PULSATION MATTERS



Every frac pump emits pulsation waves with each stroke. Those waves travel through the entire high-pressure system creating acoustic resonance and extreme vibration whenever they encounter:

- 90-DEGREE TURNS
- VALVE STACKS
- CHANGES IN DIAMETER
- UNSUPPORTED CONNECTIONS
- FRAC HOSE TRANSITIONS
- VOLUMETRIC RESTRICTIONS

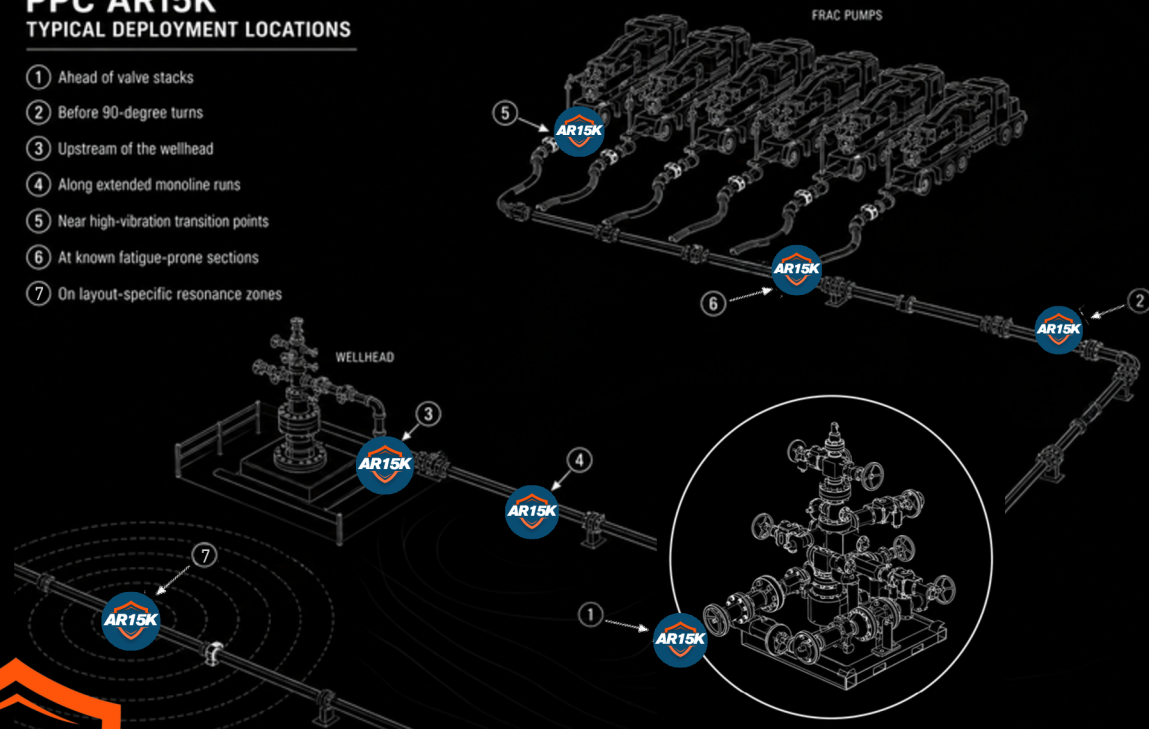
STRATEGIC DEPLOYMENT

The AR15K is not limited to a single application point.

Because every pad layout behaves differently, the AR15K can be deployed strategically throughout the high-pressure system wherever pulsation mitigation is needed most.

PPC AR15K TYPICAL DEPLOYMENT LOCATIONS

- ① Ahead of valve stacks
- ② Before 90-degree turns
- ③ Upstream of the wellhead
- ④ Along extended monoline runs
- ⑤ Near high-vibration transition points
- ⑥ At known fatigue-prone sections
- ⑦ On layout-specific resonance zones



**PPC evaluates deployment based on the realities of your operation, not theoretical lab conditions.*

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