



ARRIVAL
ENERGY SOLUTIONS

Tsunami

Tsunami Gen 2.5 Triple Action On Demand Anti-Friction Tool

Proven performance. Real-time control. Three indexing positions. Two active modes. Adjustable while drilling.

Built on the proven Tsunami platform, the Tsunami Gen. 2 Triple Action On Demand combines Arrival's patented real-time hydraulic control system used in the Avalanche and the Hurricane. No darts. No trips. Select output level while drilling - immediately and on demand from surface.

COST SAVING BENEFITS

- Reduce Drilling Dysfunction
- Mitigate Stick-Slip
- Improve Weight Transfer
- Improve Sliding and Rotating ROP
- Improve Tool Face Control and RSS Performance
- In-Hole Activation & Reactivation
- Superior Adjustable Amplitude Control

FEATURES

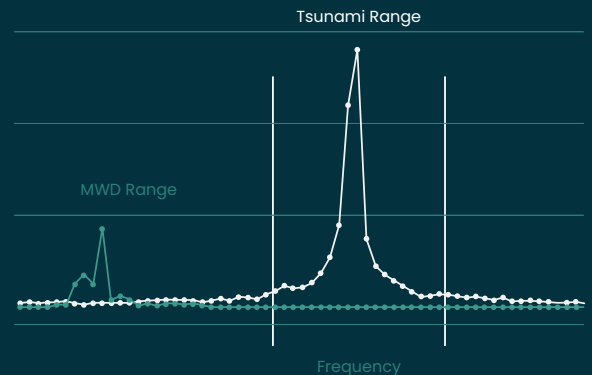
- Surface: Chemically Hardened Materials
- Premium Steel Components
- Power section positioned below the pulse generator
- Consistent RPM output regardless of nozzle setting
- All fluid flows through the rotor and stator — no through bore
- Low Friction Bearings: Lower operating pressures
- Hydraulic Activation: No darts required
- Output controlled via poppet and orifice diameters
- Shock Tool: Configurable amplifiers
- Safety Joint: Arrival manufactured and designed

PATENT

US 10,989,004 B2

US 11,480,020 B1

Additional patents pending



ON DEMAND ACTIVATION

The tool is hydraulically activated from surface.

- No activation darts required
- No tripping out of the hole required
- Immediate response to flow and pressure changes

OPERATIONAL VALUE

- Improve hole cleaning
- Reduce friction
- Improve weight transfer
- Support sliding and rotating performance
- Maintain efficient hydraulics

MULTI-POSITION CONTROL

The tool can be indexed between multiple positions while in hole. The Tsunami remains in selected mode until indexing procedure is performed.

- Off
- On — lower pressure loss
- On — higher pressure loss
- Cycle back to Off at any time

Patents US 10,989,004 B2 | US 12,331,604 | Additional Patents Pending

Arrival Canada
(780) 980-3080

Arrival USA
(432) 313-3326

INNOVATIVE ENGINEERING. DOWNHOLE EXCELLENCE

WWW.ARRIVAL.ENERGY

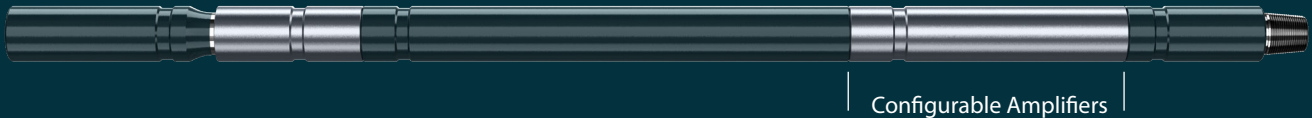
Rev. A
9/16/26

TSUNAMI Technical Specifications: Tsunami Gen. 1.5 Dart-Activated

Hole Size	6.00 to 6.75 inch (152 to 172 mm)
Standard Connection	DS-40 †Can accommodate most drill pipe connections.
Make-up Torque	21,000 ft/lbs (28,472 Nm)
Tool Length	TBD †Tool ships in two pieces
Connection OD (Pin)	5.25 inch (133.35 mm)
Connection OD (Box)	5.25 inch (133.35 mm)
Flow Range	200 - 350 GPM (757 - 1325 LPM)
Temperature	320°F (160°C)
Frequency	8 to 14 Hz
Activation Method	Hydraulic (surface-controlled via pump cycling) — no darts required
Operating Positions	Off / On Low dP / On High dP (configurable)

SHOCK TOOL DESIGN

Dual action design is optimized to allow for maximum force transfer.



ON DEMAND BENEFITS

Hydraulic activation removes the need for dart drops entirely, reducing rig time and operational complexity on every run.

- No activation darts required
- No tripping out of the hole
- Immediate surface-controlled response
- Output controlled via poppet and orifice diameters
- Dual-action shock tool design retained

MULTI-POSITION CONTROL

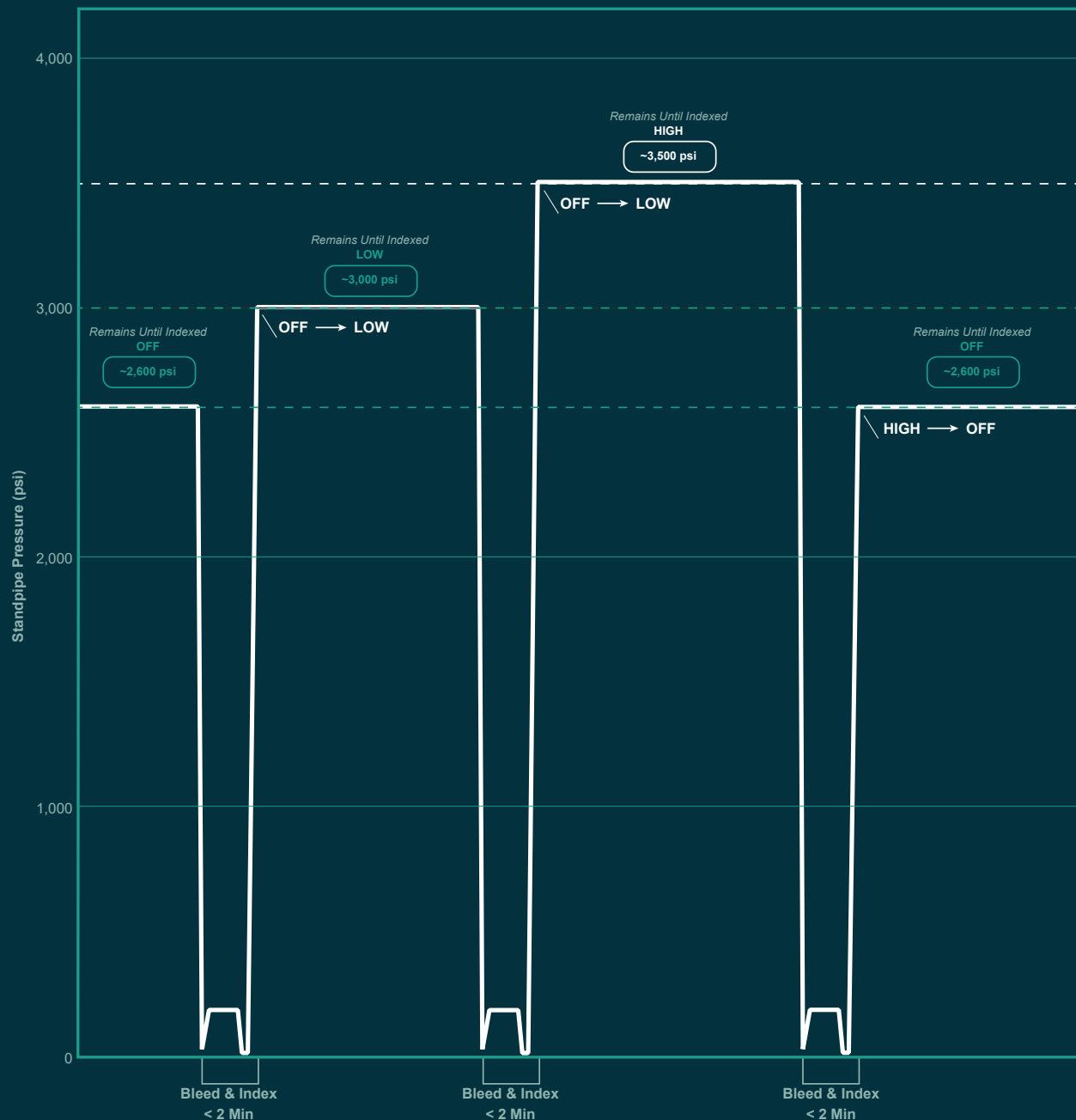
The Tsunami Gen. 2.5 Triple Action On Demand can be configured for multiple output modes, allowing operators to change pulse amplitude and pressure drop on demand from surface — without trips or dart activation.

- Decide when and how to activate
- Control pressure and force output
- Select agitation output on demand
- Cycle back to Off at any time
- Configurable for all applications

TSUNAMI Tsunami Gen. 2.5 Triple Action On Demand Operation Sequence

The Tsunami Gen. 2.5 Triple Action On Demand indexes between three output modes — Off, Low, and High — by performing a pump cycling sequence from surface. The tool remains in its selected mode indefinitely until re-indexed. Operators can cycle the tool through Low and High output and back to Off at any time.

* Flow rates shown are for example purposes only.



Time - the tool remains in selected mode indefinitely until indexing procedure is performed.