



Performance Where It Matters Most

InPulse perforating charges form the basis for Owen Oil Tools' next-generation energetic systems, purpose-built to enhance stimulation effectiveness across varied reservoir conditions. Through engineered energetic reactions, InPulse charges create greater usable tunnel volume, drastically reduce crushed/damaged formation zones, and increase formation contact.

Unlike traditional or reactive shaped charges, InPulse incorporates a specially engineered energetic material directly into the liner. This initiates a secondary deflagrating reaction after the primary perforation event, which:

- Generates additional internal pressure within the tunnel
- Pulverizes crushed zones to produce low-density, flowable debris
- Pushes high-density debris to the tunnel tip, increasing usable tunnel volume
- Creates radial and longitudinal fractures independent of rock moisture content.

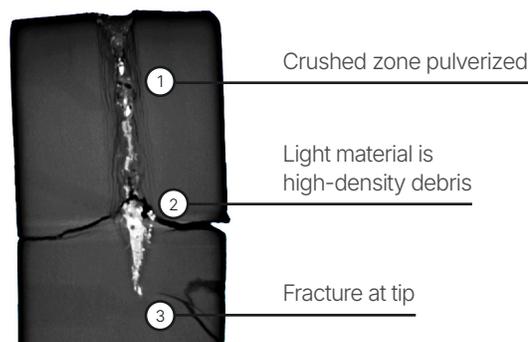
This dual-stage action enhances flow potential and minimizes dynamic underbalance, improving overall completion efficiency.

Key Features

- **Secondary Energetic Reaction:** Controlled secondary pulse is a high pressure event that enhances tunnel cleaning and formation breakdown.
- **Increased Tunnel Volume:** Up to 90% more usable tunnel vs. baseline charges.
- **Optimized Debris Profile:** Reduced high-density debris and improved flow path.
- **Versatile Compatibility:** Fits standard carriers; TCP and wireline-ready.
- **Tailored to Application:** Unique charge configurations for specific well types.

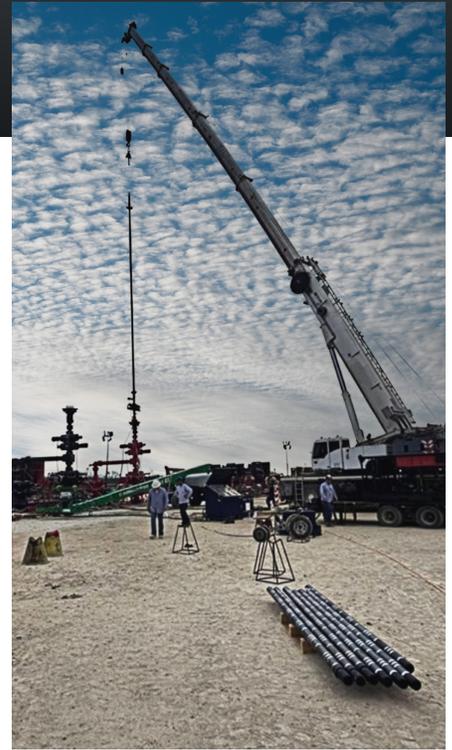
Benefits

- **Improved Treating Efficiency:** Lower breakdown pressures, faster time to rate and decreased stage times
- **Enhanced Productivity:** Higher Productivity Index (PI) and better injectivity.
- **Reservoir-Specific Design:** Solutions for shale, SWD, and conventional reservoirs.
- **Operational Simplicity:** No special hardware needed; seamless integration.



KEY APPLICATIONS

Unconventional (Frac Market) | Salt Water Disposal (SWD) | Conventional Completions



Target Benefits: Unconventional Completions

The InPulse Frac charge generates a secondary energetic pulse of pressure that enhances fracture propagation and tunnel volume. This is confirmed by pressure-time curves recorded at the well-bore that show a clear secondary pressure spike not normally observed in conventional shaped charges, and highlights the enhanced dynamic response. Field and lab testing also indicate greater Stimulated Reservoir Volume (SRV) and production gains.

Reduced or eliminated the need for acidization	Marked reductions in breakdown pressures and time to rate	Optimized proppant distribution of each stage
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InPulse Specs

Hole sizes	0.42" avg. in 5.5in 23lbs/ft casing
Shot density	Various shot densities at 0°, 60°, 90°, 120°, and 180°
Penetration	Designed for unconventional shales and also unconsolidated formations
Temp. rating	330° F
Pressure rating	10,000 psi

Field Trials

- Two multi-well pads completed in South Texas
- Performance matched or exceeded in-gun propellant alternatives
- A major operator achieved proppant placement as per design with 100% efficiency averaged time saving to desired production rate of 10 minutes per stage. lowered treating pressures up to 30% enabling higher rates and more stages placed per day.

Perfect For:

- North American shales
- Horizontal unconventional play
- Custom requirements (charges can be designed to provide specific entry hole size)

**Panel-to-plug solutions
from Owen Oil Tools**

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