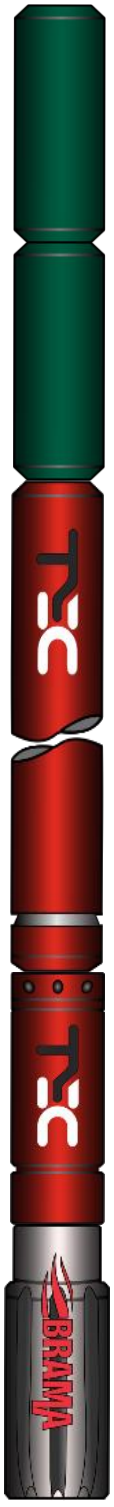
Hell And Back System (H.A.B.S.)

Generating New Ideas. Solving Bigger Problems



TEC uses the **H.A.B. System (Hell & Back System)** to maximize the success of a single-trip mill out of a high-stage plug count well with a long, tortuous horizontal well. Like an orchestra, each component of the Milling BHA compliments one another. The combined result of these tools running in conjunction with one another means smaller debris to manage and circulate out of the well, greater ROP, and of course savings in time & money.

The **Tempress HydroPull™** is the most powerful friction-breaking tool on the market, consistently breaking Industry records for extended-reach applications. This hard-hitting tool pulls the coil string along, agitating debris & sand up from under the coiled tubing to not only clean the well, but to overcome tubular friction and assist the work string in reaching extreme lateral depths.

The **TEC Predator & Brute Force Series Motors** have the power you need to deal with stubborn Composite Bridge Plugs, while maintaining a power section that's hydrocarbon-resistant as well as the endurance to last with high-stage count wells. Both platforms are also available in high rate options, the **PREDATOR EV and Brute Force EV (Extreme Velocity), 800 LPM/ 5 Bbl/ Min & 950 LPM/ 6 Bbl/ Min** respectively.

The **Universal Jet Thruster (UJT)** is the most exciting technology on the market for extreme milling in years. Elegant in its simplicity, the **Universal Jet Thruster (UJT)** is placed below the motor between the bit/ mill and the motor's bit box (can also be used with wash nozzles, spinning wash tools & Venturi Tools) with flow opening multiple 45° up-hole facing ports to the annulus while isolating flow through the mill face. With only 180# of WOB applied, the **UJT** seamlessly & automatically switches from "Thruster Mode" back to "Milling Mode".

The **UJT** assists Friction-Breaking Tools with ROP, overcoming the hydraulic-effect while in "Thruster Mode". Hole cleaning, debris recovery & debris management has never been greater!

The **BRAMA Reaper Mill** is the hardest mill in the industry, period. The hard-coating applied to the gauge area/ OD (Outside Diameter) of the mill maintains its size & integrity in high-stage count wells, thus keeping the debris small & manageable. The next few slides go into greater detail of each of these components. When ran in conjunction together, the **Hell And Back System (H.A.B.S.)** will get you to the end of your wells consistently. If TEC isn't getting you there, you aren't getting there.

Hell And Back System (H.A.B.S.)-
Lowest Back Pressure of any Milling BHA on the Market

Generating New Ideas. Solving Bigger Problems.

Hell And Back System Unique ONLY to Thruster Energy Corp.

Universal Jet Thruster: 200 PSI Back Pressure- Only while there is no WOB, all flow is diverted through the UJT's 45° up-hole facing jets. With only 180# of set down force applied on bit, the back pressure drops back to zero, and flow is diverted once again through the mill face and isolates flow to the annulus.

Universal Jet Thruster Venturi/ Hydraulic-Affect

When the **UJT** is in "Thrust" mode, it creates a pressure drop/ Venturi-Effect which draws residual debris away from the front of the mill face, sucking in the remaining portion of the plug just previously milled, milling it off by the time you get to the next plug. This suction overcomes the Hydraulicing-Effect typically created from the flow path exiting a mill/ bit and increases ROP. The UJT allows the operator to use hydraulic jet force instead of fighting hydraulic jet force to achieve longer, tortuous wellbores and reaching target depths faster than ever before. Once the end of the well has been reached, the **UJT's** "Thrust" mode cleans up all debris as it is circulated behind the BHA while tripping out of hole leaving your wellbore squeaky clean. The illustration below shows how the Venturi-Effect is working.

****Chevron U.S. & Shell U.S.-** The fastest mill outs EVER for both companies was while using the Universal Jet Thruster in their BHA string (Sample size over 2400 runs). Chevron U.S. has since gone back and evaluated every well where the UJT was ran, and they discovered that those wells were by far the cleanest whereas other wells were still flowing back debris.

http://www.thrusterenergy.com/videos/

Universal Jet Thruster (UJT)

Generating New Ideas. Solving Bigger Problems.

The **Universal Jet Thruster (UJT)** Smart-Jet Sub is ran between the bit box of the motor and mill or bit. Elegant in its simplicity, the UJT repeatedly & automatically sequences seamlessly from "Jet Thruster" mode to "Milling" mode simply by setting 180# of weight on bit.

Once through an obstruction, the flow path is isolated from going out the mill face and redirected through several nozzles on the **UJT** to the annulus creating a pressure drop that draws the debris away from in front of the mill/ bit face. This mode not only cleans up the wellbore squeaky clean between plugs and during wiper trips/ Trip-Out-of-Hole scenarios, it also uses the hydraulic forces from pumping to its advantage instead of battling hydraulic forces which assists in thrusting the BHA forward and achieving further target depths faster.

Specifications:

- 0.35m/ 14" OAL
- OD- 73mm (2.875") or 79mm (3.125")
- Torsional Yield 7500 ft-lbs
- Tensile Yield 73,000 daNs (160,000#)
- Temp Rating- Unlimited (O-Ring Dependent)
- Flow Capacity- Only Limited by Nozzle Size up to 1 m^3/ Min (6.29 bbl/ min)
- Pressure Drop- Limited to Nozzle Size, Ideal Pressure Drop @ 1.4 Mpa (200 PSI)
- Compatible with Water, KCl, N2, Acid, Light Mud, Friction Reducer, Lost Circulation Material (LCM), etc.