

## PERFORATING TORCH SYSTEMS



**MCR's Perforating Torch Cutter™** tool provides the industry with a safe, efficient and reliable pipe punching alternative to explosives. MCR's Perforating Torch Cutter tool effectively perforates coiled tubing, tubing, casing and drill pipe without the use of restrictive technologies. When running a job that requires adequate flow into the annulus, explosive perforators and punchers are unreliable in many configurations at producing a consistent or sufficient hole in pipe. MCR's line of punchers allow operators to perforate or circulate with confidence while relying on MCR's field proven technology.

### ADVANCED TECHNOLOGY

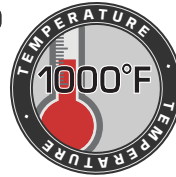
The patented nozzle and proprietary mixture of various powdered metals produces jets of highly energized plasma to perforate virtually any type of pipe in any well condition. Because the **PTC™** tool does not use explosives or hazardous chemicals, the tool can be shipped almost anywhere in the world within 24 hours, saving significant time and associated costs, while remaining compliant with safety regulations.

### SUPPORTING TOOLS

- Generator Safety Sleeve (GSS)
  - Safely dissipates all Thermal Generator energy in the event of operator activation error on surface
- Remote Firing Mechanism (RFM)
  - Data logging tool and firing system
  - Safely enables all MCR systems on coiled tubing, slickline and pipe



UP TO



UP TO



## OPERATION

MCR's Perforating Torch Cutter assembly is lowered into the well to the desired depth. Activation of the Thermal Generator activator activates the primary fuel load causing an increase in internal pressure. Following internal pressure rise, plasma exits thru the side of the torch nozzle and perforates the target pipe. With single nozzle systems the PTC cutting jet forces the tool against the wall of the pipe producing high frictional forces between the PTC and the wall of the pipe resulting in a stabilized torch and successful penetration.

### PTC tools are available for

- Standard punching applications
- Undersized punching through restrictions
- HPHT
- Custom tools available

### Non-hazmat rated PTC tools currently available

- PTC-SP series of tools.

## BENEFITS

- Non-Explosive
- Radio Safe
- Operates in temperatures to 1,000°F (538°C) & pressures up to 30,000 psi (207 MPa)
- Perforates all steel, high chrome, plastic coated tubulars
- Perforates in fluids or dry pipe
- Non-hazmat fuel systems available†
- Single / Dual perforations in flow areas from 0.38 in<sup>2</sup> to 7.0 in<sup>2</sup>
- Deployable within hours not days
- Minimizes downtime and associated costs
- Approved for all methods of transport



†Perforating Torch Cutter tools available as hazmat & non-hazmat