

PTC™

Perforating Torch Cutter

Efficient and reliable pipe punching alternative



Perforating Torch Cutter™ provides the industry with a safe, efficient and reliable pipe punching alternative to explosives.

Perforating Torch Cutter tool effectively perforate coil tubing, tubing, casing and drill pipe without the use of explosives or hazardous chemicals. When running a Radial Cutting Torch job that requires adequate flow into the annulus, explosive perforators and punchers are unreliable at producing a consistent and sufficient hole in pipe. The shortcomings of explosive punchers can have a dramatic effect on the success or failure of an RCT cut. MCR's line of punchers allow operators to perforate with confidence while relying on the field proven technology that the RCT delivers.

Operation

Perforating Torch Cutter assembly is lowered into the well to the desired depth. Thermal Generator ignites and activates the primary fuel load causing an increase in internal pressure. Following internal pressure rise, plasma exits the torch which perforates the target pipe. By design, the PTC cutting jet forces the tool against the wall of the pipe; the high frictional forces between the PTC and the wall of the pipe are greater than the thrust forces exerted by the pressure bubble, stabilizing the perforator to make the cut. It is this feature that allows MCR's perforators to function properly in plugged pipe situations.

Perforating Torch Cutter

Specifications

Description	Pressure (psi)	Recommended Use	Approx. Hole Size (in ²)
¾" O.D.	0-4000	Coil tubing to 15" O.D.	0.38
¾" O.D.	4001-10,000	Coil tubing to 15" O.D.	0.38
¾" O.D.	10,001-15,000	Coil tubing to 15" O.D.	0.42
⅞" O.D.	0-4000	Coil tubing 1.5" to 1.75"	0.42
⅞" O.D.	4001-10,000	Coil tubing 1.5" to 1.75"	0.42
⅞" O.D.	10,001-15,000	Coil tubing 1.5" to 1.75"	0.47
1" O.D.	0-4000	Coil tubing 1.75" to 2"	0.6
1" O.D.	4001-10,000	Coil tubing 1.75" to 2"	0.6
1" O.D.	10,001-15,000	Coil tubing 1.75" to 2"	0.6
1 ¼" O.D.	0-4000 / 4001-10,000	2 ¾" Tubing	1.1
1 ¼" O.D.	0-4000 / 4001-10,000	2 ¾" Tubing	1.1
1 ½" O.D.	0-4000 / 4001-10,000	3 ½" Tubing	1.3
2 ½" O.D.	4001-10,000 / 0-4000	4" Tubing / 4 ½" Tubing	2.2
2 ½" O.D.	4001-10,000	4 ½" Tubing	2.2
2.937" O.D.	0-4000 / 4001-10,000	5 ½" Tubing	7.5

PTCs are available for:

- Standard applications
- Undersized for restrictions
- HP-HT environments
- Custom tools available

Non-HazMat rated PTCs currently available:

- PTC-SP

Benefits

- Non-explosive
- Non-HazMat or HazMat rated fuel
- Radio safe
- Operates in temperatures to 500°F (260°C) and pressures up to 15,000psi (103.4 MPa)
- Perforates all steel, high chrome and plastic coated tubulars
- Perforates in exotic fluids or dry pipe
- Single / Dual perforations in sizes from .38 in² to 7.0 in²
- Deployable within hours not days
- Minimizes downtime and associated costs

Support 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 cutting systems



4" tubing
2 ½" PTC produced 1 hole
appx. flow area 2.2 in²



5" tubing
2 ⅝" PTC produced 2 holes 180° apart
appx. flow area 3.75 in² (7.5 in² total)



5" tubing
2 ⅝" PTC produced 2 holes 180° apart
appx. flow area 3.75 in² (7.5 in² total)

Archer