



**BROCO®**

**INDUSTRIAL CUTTING AND  
WELDING SOLUTIONS**



# Prime-Cut

## ULTRATHERMIC CUTTING SYSTEM

*Cut  
Metal, Concrete or  
refractories in  
no time*

*No  
electricity needed  
to cut*

*Being exothermic  
cutting proccess,  
does not affect  
Microstructure of  
material to be cut*

*Can cut on land  
& underwater*

**Prime cut Cutting and Welding products working in rugged maintenance and repair environments around world including:**

***Aggregate  
Agriculture  
Cement  
Coal  
Construction  
Demolition  
Fire and Rescue***

***Food Processing  
Heavy Equipment  
Marine and Dredge  
Metal Processing and Casting  
Mining  
Nuclear  
Petrochemical***

***Plant Maintenance  
Rail  
Steel  
Utilities  
Welding Shops***



### **Prime cut**

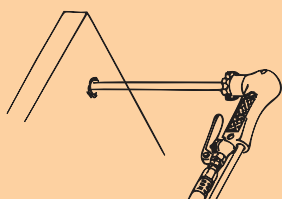
cutting go where you need them to go to get the job done. Our industrial maintenance and repair equipment is portable and powerful. With Prime cut tools you can repair heavy equipment at the construction site, clear rock crushers in the quarry, and demolish structural steel on-site.

### **The portable problem solvers**

Prime-cut tools were pioneered by working professionals and innovative engineers with a strong commitment to quality and performance. That tradition of knowledge and superior engineering continues today. Ask our experts how we can help solve your maintenance and repair challenges quickly, safely, and cost effective.

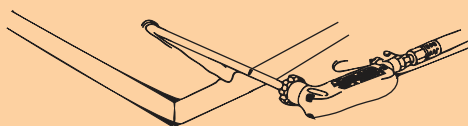
## **Prime cut Ultrathermic Torch**

### **Provides Powerful Performance**



#### **Pin Piercing**

Remove frozen pins, broken bolts and cast wheel wedges. Make starter holes in thick plates.



#### **Gouging**

Gouge cleanly without the smoke, noise, or a welding machine and air compressor. Gouge without pre- or post-grinding or carbon deposits. Realize better depth control and speed.

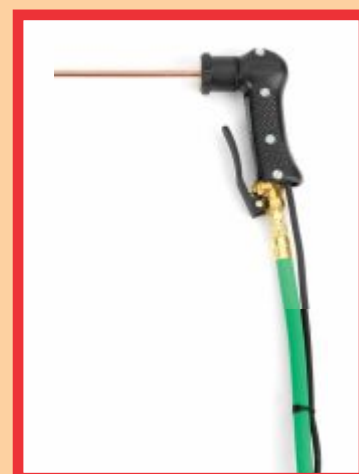


#### **Heavy Cutting**

The fastest cutting of cast, stainless, and non-ferrous metals. Cut a 10" diameter mild steel shaft with a single 1/2" x 48" Broco rod.

## **Prime cut Ultrathermic Torch Advantages**

- No need for surface pre-heat because Prime-cut systems operate at 10,000° F.
- Repairs are made without raising burrs on bearings and bushings because there is no electric arc.
- The need for surface grinding and gouge cleaning is eliminated because the ultrathermic torch does not leave carbon deposits.
- Safer than other types of equipment because Prime-cut systems do not require high amperage or acetylene or any other secondary fuel.
- Increased workplace hygiene and operator comfort and safety because Prime-cut equipment produces less noise, smoke and fumes than air-arc systems.
- User friendly features are task engineered for simplicity of operation. The 12 volt DC ignition system, single oxygen cylinder and regulator, and ergonomic torch ensure Prime-cut systems are easy to operate.
- Cutting rods can be bent for hard to reach places.
- Work from up to 6' away using Prime-cut Rod extender and a 4' or 5' rod.
- Choose from a selection of highly portable industrial torch sets designed to meet a range of industrial needs and settings.







**Prime cut Cutting Rods:** The 10,000° F burning action of prime-cut exothermic cutting rods liquefies nearly any material in its path using the material itself as fuel. Utilizing oxygen, prime-cut rods quickly cut or melt almost any known material including cast iron, stainless steel, brass, nickel, titanium, aluminum and other ferrous and non-ferrous metals as well as concrete.

**High Performance in Adverse Environments :** Ultrathermic rods burn in any environment, even underwater or in mud. This unique performance feature gives operators a substantial advantage under adverse working conditions.

**Cut Downtime, Save Operator Time :** Cutting, piercing and gouging can be completed in just a fraction of the time using Broco Industrial cutting rods and torch kits. Downtime of expensive heavy equipment is greatly reduced during operations such as track and bucket pin removal, gouging and the removal of hardfacing and old welds.

## One Prime cut Torch Makes Maintenance Professionals' Jobs Easier, Faster, Safer and More Cost Effective



### Heavy Equipment Repair and Maintenance

- Remove track and king pins and broken bolts
- Gouge to remove hardfacing and old welds
- Quickly cut bucket tooth shanks and edges
- Remove bushings without damage to shafts or housings

### Marine and Dredge Operations

- On board deck cutting
- Bulkhead penetrations
- Rods burn even when submerged in mud or water
- Pierce and gouge under adverse conditions
- Emergency cutting of wire rope, anchor chain and spud wire
- Cut away hardfacing inside of pumps

### Metal Producing and Casting Plants

- Spill clean-up
- Tap cleaning
- Riser cutting
- Mold repair



### Utility Companies

- For underground and topside piping projects
- Cut both pipe and grout liners
- Cut cast iron valves in sewage treatment plants

### Construction and Demolition

- Lead or iron rivet removal
- Cutting I-beams, wall and girder removal
- Melt into concrete and cut structural steel
- Cut steel doors and remove concrete filled posts
- Use from an aerial lift

### Fire and Rescue

- Forced entry
- Cut through metal bars, locks and gates
- Remove structural steel/building collapse
- Rail derailment and rescue
- Large machinery accidents



### Plant Maintenance

- Machinery repair
- Penetration of concrete for pipe installation
- Installation of machinery anchor bolts
- Specialty metal cutting and frozen bolt removal

### Rail

- Derailment recovery
- Track and car maintenance and repair

### Rock Quarries

- Repair primary and secondary crushers
- Clear rock jams by melting and fracturing boulders of almost any size to avoid machine dismantling

### Welding Shops

- Specialty cutting, piercing, gouging, and washing of ferrous and non-ferrous metals like stainless, aluminum, cast iron, manganese, brass and titanium
- Pierce and gouge for speedy crack repair

# Prime Cut Guide

Cutting rod size	Burn time	Oxygen consumption	Oxygen pressure Main uses range	
3/16" x 18"	30-35 sec	2 cu ft /rod	20si- 60 psi	removing broken bolts, cutting locks, covers, hasps
1/4" x 18"	35 sec	3-3.5 cu ft /rod	15 psi- 70 psi	cutting steel to 5/8" thick, removing large bolts, small pins, piercing hard plate.
3/8" x 18"*	45-50 sec	4.5- 5 cu ft/rod	30 psi- 80 psi	cutting steel to 3" thick removing pins to 8" long cutting cast iron to 1.5" thick removing welds
* the most widely used rod size.				
3/8"x 36"***	1 min 30 sec	8.5-9 cu ft/rod	30 psi- 90 psi	cutting steel plate to 3" thick, cutting steel shafts to 6" dia., removing pins 8"+ long, cutting aluminum, melting Concrete, cutting cast iron to 2.5" thick.
** most forced entry cutting is done with this rod.				
1/2"x 48"****	2 min 30 sec	20+ cu ft/rod	70 psi- 90 psi	cutting steel to 6" thick, cutting cast iron to 4" thick, melting holes into concrete, cutting shafts to 12" dia.
*** the largest Prime Cut rod. For cutting on thick materials or long cuts on moderately thick materials.				

Materials	Thickness range	Cutting rate on 1" thickness with 3/8" rod	Comments
Steel, mild	To 6" plate, 12" round	10"-12" per 18" rod, 45 sec	Easy cut, pierce, gouge.
Steel, stainless	To 4" plate, 12" round	8"-10" per 18" rod, 45 sec slightly slower cutting rate.	Rougher edge than mild steel,
Steel, wear plate	To 6" plate	10"-13" per 18" rod, 45 sec	Some wear plate cuts faster than mild steel due to hardening alloys being more combustible.
Cast iron	To 4" thick	4"-6" per 18" rod, 45 sec	Produces much yellow/brown smoke, faster cutting rate if welding power (100 amps) is used with torch negative (-).
Aluminum	To 6" thick, 12" round	8"-10" per 18" rod, 45 sec	Use only long rod and/or PC/XT rod extender. Use full head covering and leathers. Much sparking and spalling. Aluminum is very volatile. Thin aluminum cuts very quickly.
Titanium	To 6"+ thick, 12"+ round	12"-15" per 18" rod, 45 sec	Very easy to cut, somewhat volatile but much more controlled than Aluminum. A good metal for this process.
Concrete	Holes to 8" depth	3" hole per 18" rod	Melt holes only. Prefer mechanical method with Prime Cut to get the reinforcement bar. Not practical for cutting. Melt series of holes to weaken concrete, then fracture.

Inconel, Monel, Nickel, High chrome, Bronze treat as steel

Good performance on these metals.

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