

Ni-Touch™ Nickel Electrodes



Broco's Ni-Touch™ nickel wet welding electrode was developed to allow underwater wet welding of carbon and high tensile steels which would normally require the use of more expensive dry chamber welding. Nickel wet welding electrodes have been used by the U.S. Navy since the early 1980s for selective ship repairs. Now Broco® brings customers an improved industry-leading nickel electrode which produces welds with less porosity and allows deeper welding in the overhead position. Ni-Touch™ electrode is appropriate for all position groove and fillet welds.

High tensile steels generally have carbon contents and carbon equivalents such that welding using carbon steel wet welding electrodes would result in cracking in the heat-affected-zone due to hydrogen embrittlement within a quench-hardened microstructure. With Ni-Touch™ the nickel electrode mitigates the effect of hydrogen and results in successful underwater wet welds involving a broad range of high carbon equivalent steels, including HY-80 quenched, and tempered steel used in Naval ships with carbon equivalents exceeding 0.50 percent.

About Ni-Touch™:

- Presently qualified to a water depth of 33 feet.
- Test results exceed the requirements of the American Welding Society Specification D3.6 for Class B underwater wet welds.
- Meets the more stringent requirements of the Navy's Naval Ship Technical Manual NSTM 074; and
- Typically, yield strengths exceeding 70 ksi and tensile strengths exceeding 80 ksi can be expected from the nickel weld metal in the as-welded condition.

Broco® Underwater SofTouch® Electrodes



- Proprietary formula key to reliability, ease of use
- Certifiable welds with less labor costs

Broco's flux enhancing proprietary formulation, BroCote, is the secret behind the reliability and ease of operation of the SofTouch® electrode. BroCote makes this electrode particularly impervious to water penetration and denigration and ensures certifiable underwater weld quality with less labor cost and time consumption.

SofTouch® electrodes are used for on-site repairs in many applications where steel must be joined underwater according to code specifications. SofTouch® welds consistently meet or exceed AWS D3.6-98 specifications for Type B welds, the American Welding Society's standard for certifying underwater welds. SofTouch® is designed to pass all AWS test requirements, including radiograph, bends and hardness and is the wet welding electrode welding engineers and divers prefer.

Since 1989, SofTouch® electrodes have been specified in *the U.S. Navy's Ships Husbandry Manual* Chapter 11, "Underwater Wet and Dry Chamber Welding." U.S. and Navy diving commands, shipyards, and contractors use SofTouch® for repairs and maintenance on Naval vessels worldwide.

SofTouch® electrodes are available in various sizes and alloys for both mild steel and stainless. SofTouch® mild steel electrodes are available in 1/8 inch, 5/32 inch and 3/16 inch diameters. Stainless electrodes are sold in 1/8 inch and 5/32 inch sizes.

SofTouch® wet welding electrodes are sealed in a Mil-Spec foil pouch to prevent contamination. The electrodes are then packaged in a rigid resealable plastic tube which provides maximum protection. The color-coded end cap denotes mild or stainless steel electrodes. Operating guidelines are printed on the label.

Broco® Underwater EasyTouch® Electrodes



- Quality electrodes for the economy market

For many non-structural repairs the resultant weld is allowed more leeway in terms of porosity, inclusions, integrity and appearance. To fill the void between to-code work and economy, Broco® applied its significant experience and knowledge to design a quality electrode specifically for the economy market. The result is EasyTouch® , a moderately priced electrode yielding excellent results. It is easy to light, easy to run (a controllable puddle with rippled bead appearance) and easy to clean. Like SofTouch®, EasyTouch® is a high deposition all-position electrode.

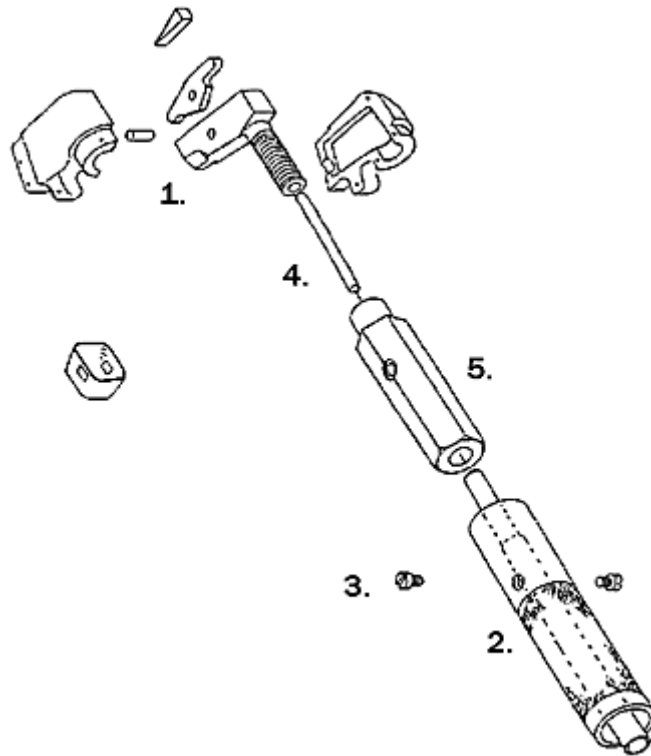
EasyTouch® offers users advantages over other economy priced rods that are more difficult to run, harder to clean, and often need to be grounded and rewelded - all adding to bottom time and increased operating costs.

Broco® Underwater BR-20 Welding Stinger



- Accepts wide range of electrodes
- Optimum angles to reduce fatigue

The BR-20 Welding Stinger is designed to hold the electrode at the optimum angle to the work piece delivering quality welds while reducing operator fatigue. The movable jaw design accepts a wide range of electrode diameters. The BR-20 Welding Stinger meets Mil-H-865D and is Approved for Navy Use (ANU). All brass parts last longer under extreme conditions.



Item	Part No.	Description
1.	242	Stinger Head Assembly
2.	240	Handle, Orange
3.	158	Screw, Handle, Nylon, Slotted (2 required)
4.	234	Pressure Pin
5.	236A	Body/Cable Assembly

Broco® Underwater BR-21 Welding Stinger

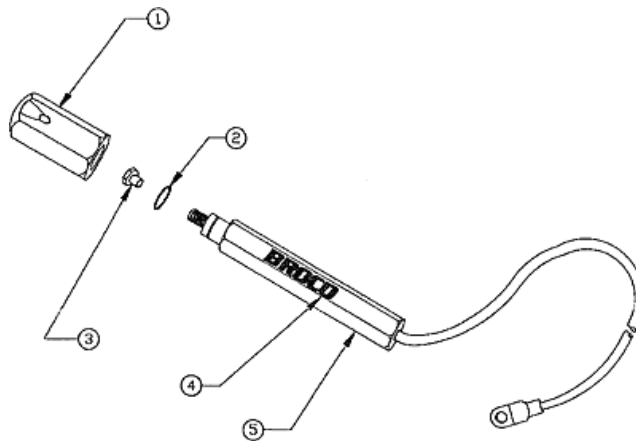


- Lightweight and durable
- Reduces diver fatigue

This new generation compression type welding stinger is engineered with superior features. The BR-21 is lightweight, durable and designed to hold the electrode at the optimum angle to reduce diver fatigue.

Selected features of the BR-21 include:

- Index notch on the head helps divers find the hole, even in the dark. Improves rod insertion in low-vis environment.
- Beveled seat keeps electrode at ideal angle. Groove eliminates electrode "wobble."
- Over-sized head is easier to hold.
- Resistance O-ring on the shoulder ensures tension when head is tightened, increasing head life.
- Handle and head are from hexagonal stock for sure gripping by a gloved hand.



Item	Part No.	Description
1.	210*	Cap Assembly
2.	241	O-Ring, BUNA, Size 116
3.	2105	Screw, Cap, 1/4"-20 x 3/8"
4.	BB-11	Label, BROCO, Blue
5.	211*	Handle & Cable Assembly

*NOTE: This sub-assembly contains one each PN 2105 Cap Screw.