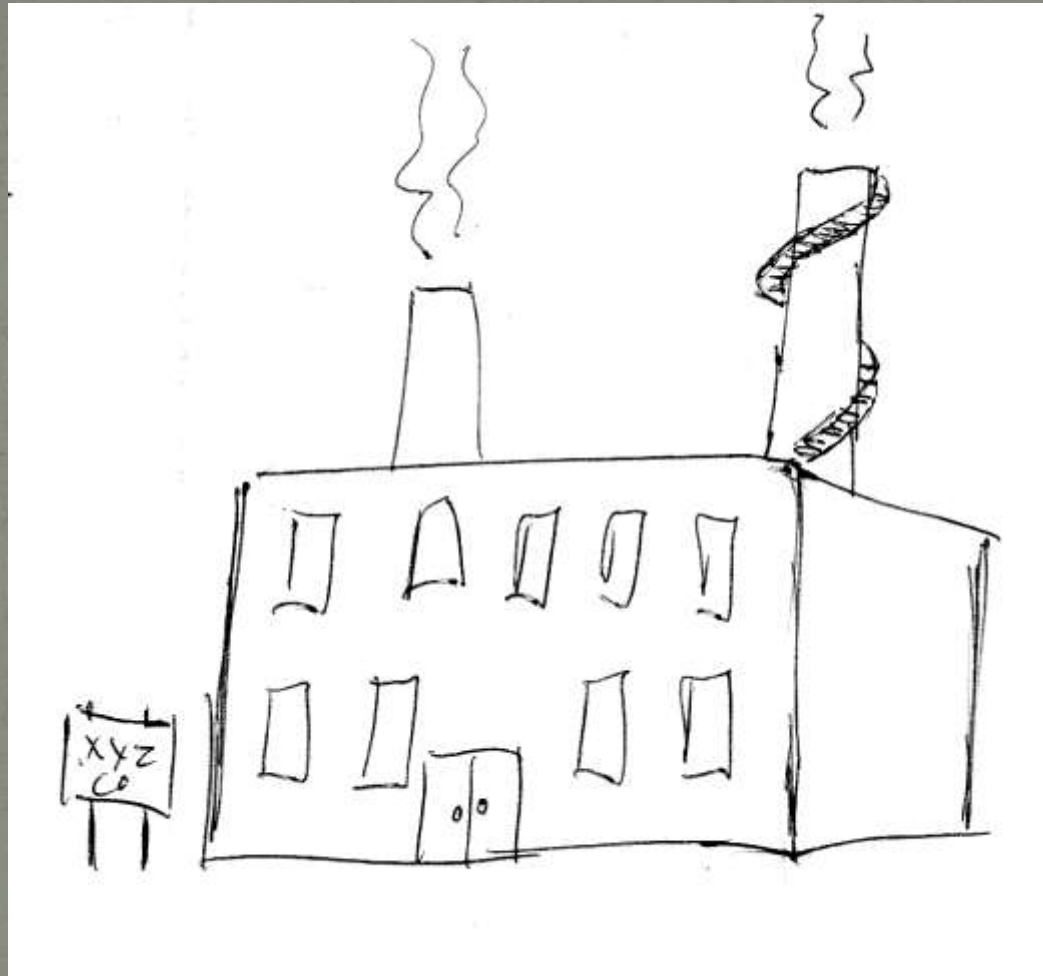


# Electrical Safety

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The Forgotten “Electrical” Workers

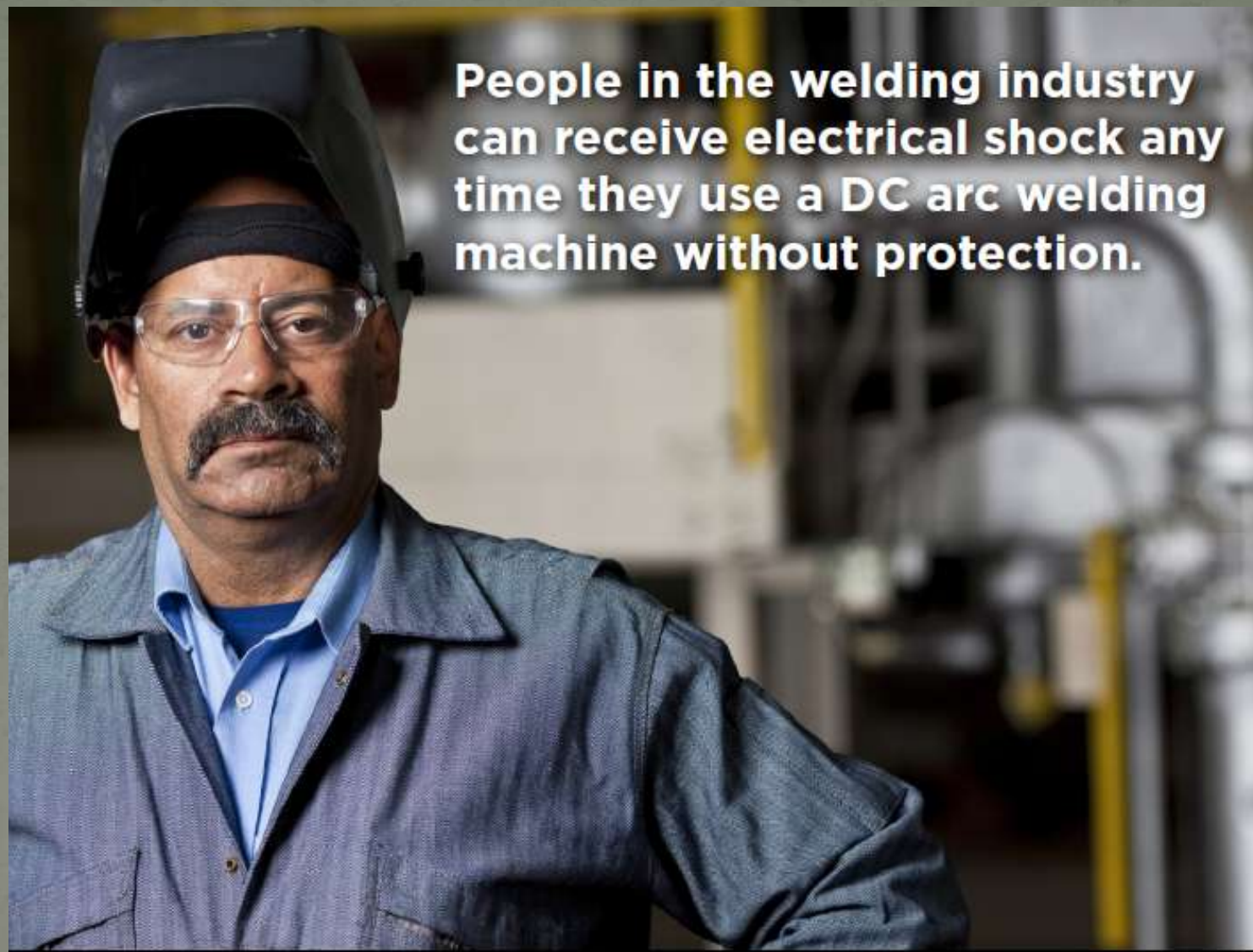
# Welcome to XYZ Company



**(C) Approach to Exposed Live Parts Operating at 50 Volts or More.** No qualified person shall approach or take any conductive object closer to exposed live parts operating at 50 volts or more than the Restricted Approach Boundary set forth in Table 130.2(C), unless any of the following apply:

- (1) The qualified person is insulated or guarded from the live parts operating at 50 volts or more (insulating gloves or insulating gloves and sleeves are considered insulation only with regard to the energized parts upon which work is being performed), and no uninsulated part of the qualified person's body crosses the Prohibited Approach Boundary set forth in Table 130.2(C).
- (2) The live part operating at 50 volts or more is insulated from the qualified person and from any other conductive object at a different potential.
- (3) The qualified person is insulated from any other conductive object as during live-line bare-hand work.





**People in the welding industry can receive electrical shock any time they use a DC arc welding machine without protection.**

# August 4, 2000 and September 16, 2002 US Fatalities





*“Death leaves a heartache no one can heal, love leaves a memory no one can steal” - Unknown*



August 4, 1994

July 27, 2011



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# It happens other places too...

- In New Zealand in 1995
- In Australia, 22 fatalities between 1958 and 1996.

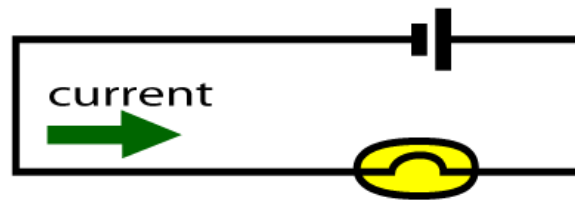




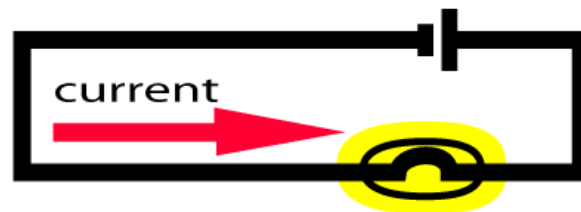
# What are the factors affecting the severity of the shock?

- - The voltage level
- - The individual's body resistance which can be affected by environmental conditions
- - The path of current flow through the body

high resistance  
limits **current**



low resistance  
allows **high current**



# The welding culture

Job has to get done



Taking shocks is part of the job



“You will get used to it”



Senior welder decides what the culture is

A common belief among welders and those in the welding industry is that the electrical output of a welding machine cannot cause injury.

**Welding Machines can Kill!**



# Welding Machine Manufacturer Recommended Methods to Protect Workers

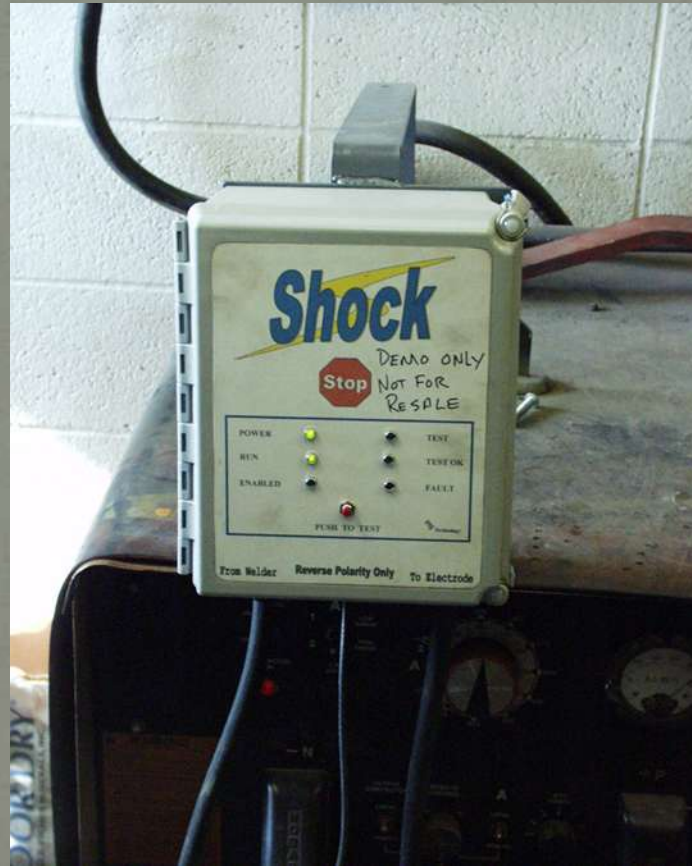
- Insulate worker from work piece and ground.
- Wear dry, hole-free gloves.
- Do not touch electrically “hot” parts or electrode with bare skin or wet clothing.
- Keep electrode holder and cable insulation in good condition.

# What can be done differently?

- Protect welders from electric shock!

Australia has made the use of VRDs (voltage reduction device) mandatory in specific environments.

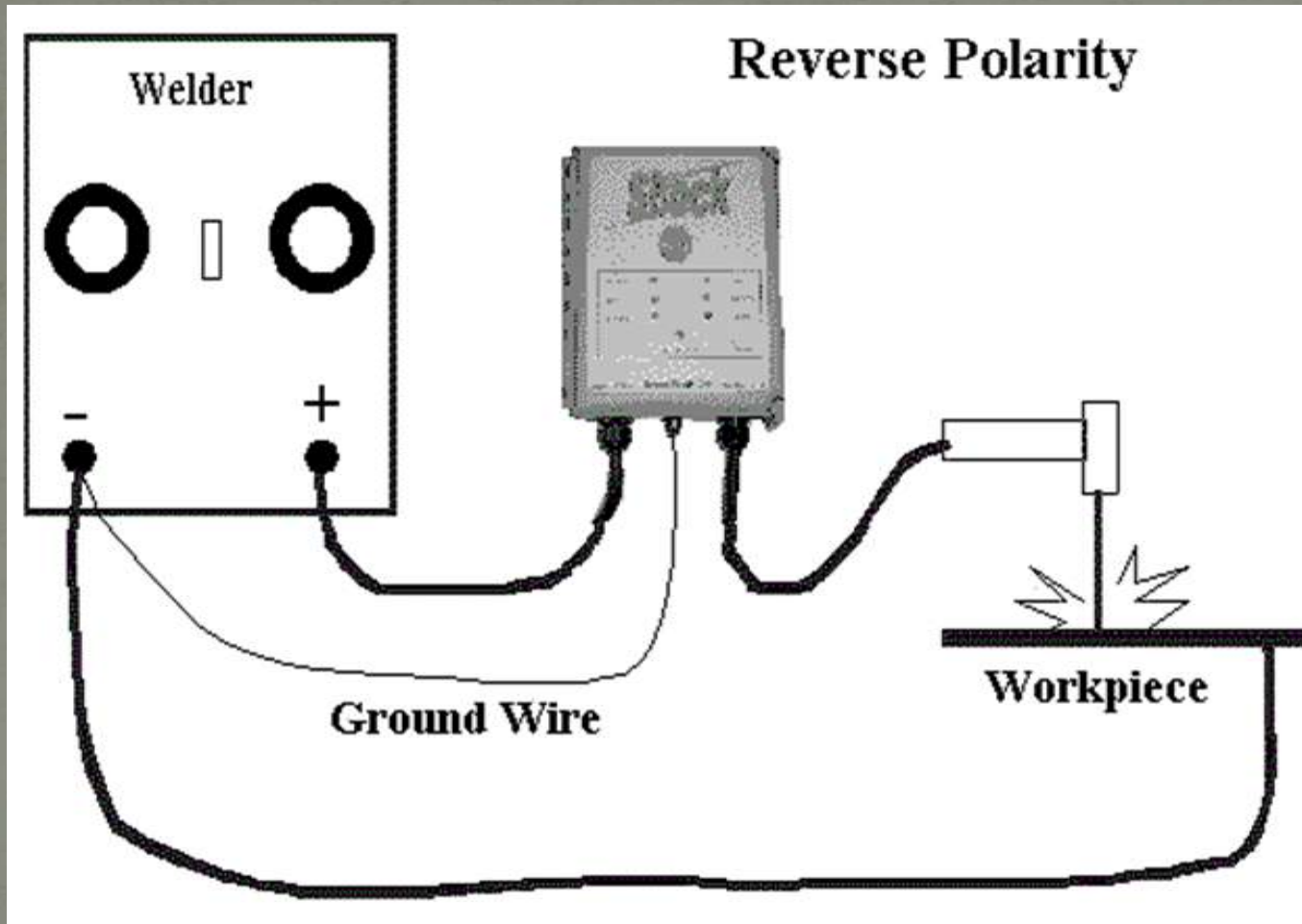
The ShockStop VRD is our answer to protecting welders.



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# How does it work?



# The next culture change...

- Culture will change when:
  - People realize that there is a way to protect welders.
  - People realize that welders receiving shocks is just as dangerous as electricians receiving shocks.
  - Welders discover that they don't have to continually receive shocks.
  - Once the Occupational Health and Safety Organizations realize that they can protect welders.

The most important thing...



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