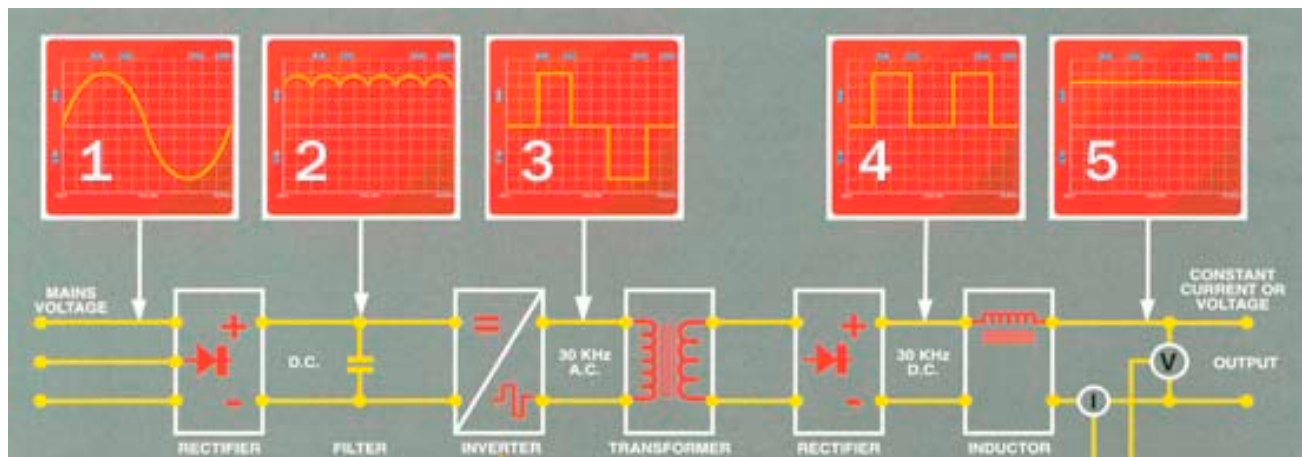


# Tech Talk: INVERTER ADVANTAGES: ARC STABILITY (pt 1 of 3)

By Bob Page, November 27, 2013



Inverter power sources have been around for decades and, as reliability now equals that of the older transformer rectifier (TR) design, are more popular than ever. One reason is superior arc quality. TR DC output is rectified from 60 Hz AC input. The resultant bumpy DC is stabilized by a choke, but the output remains somewhat unstable and erratic as seen in stage 2 below. In contrast, Inverter 60Hz AC input is rectified to 60 Hz DC, inverted to around 30,000 Hz AC, rectified again and then stabilized through a choke. As the illustration below shows, the inverter DC output seen in stage 5 below appears as a straight line which should, and does, mean a more stable arc. What the graphic doesn't show is the exponentially faster amp/volt response that occurs within the welding arc. In the end, the inverter arc for DC stick and wire process will be less violent with higher operator appeal and produce significantly less spatter.



If you would like more information on this or other cost reduction ideas, please contact our **Productivity Enhancement Team** at **303-892-7003**.