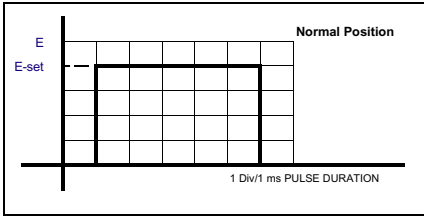


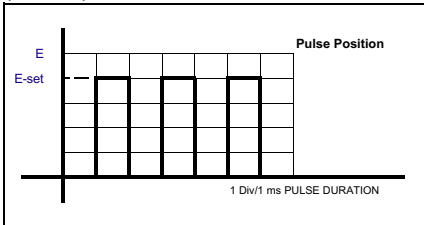
# New Frontier For Welding

The **LWD4** welding machine, besides joining very diminutive elements, allows modulation of the power supply (PULSE SHAPING) by means of preset programs which regulate the use of different laser-power intensities according to the types of alloy to be welded. The **APM**<sup>®</sup> (Automated Pulse Modulation) allows the modulation of five different laser power pulses. By this means, it is possible to optimize welding processes according to the metallurgical properties of the parts to be joined.



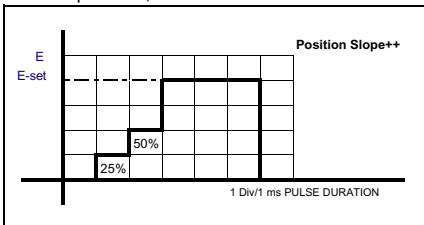
## Normal Position

This is the normal type of constant laser power supply. The graphic shows an example of a 5-ms duration pulse and the peak energy (E-set). It is generally used when joining homogenous metals such as titanium/titanium, gold/gold, silver/silver, platinum/platinum, etc...



## Pulse Position

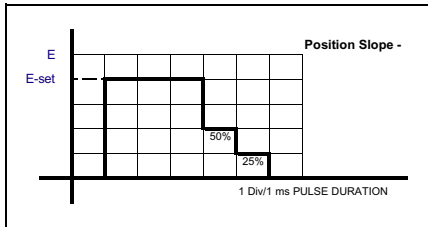
Here, the power is supplied by laser pulses created in a sequence of cycles where the energy is released and stopped for a fraction of the chosen pulse duration. In the graphic, this cycle lasts 1-ms each. This program is particularly useful when welding dissimilar metals reactive on non-reactive metals, such as titanium/gold, titanium/platinum, titanium/silver and titanium/stainless.



## Position Slope +

This is the program providing an ascending slope of

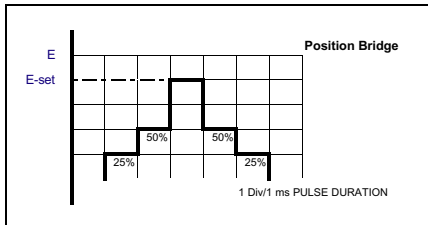
power supply. As shown in the graphic, the energy supplied during the first lapse (1-ms) is equal to 25% of the preset power (E-set); the power rises to 50% of the set-E during the second lapse (another 1-ms); and only for as long as the remaining 3-ms the power supplied reaches the set-E. Generally used when welding next to a heat sensitive zone such as retipping prongs over stones, welding eyeglass frames without removing lenses, etc...



## Position Slope -

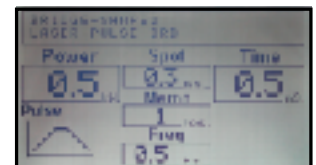
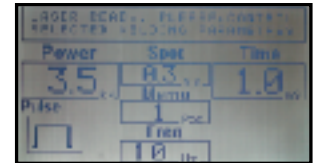
Contrary to the precedent program, this one provides a descending slope of power supply. By this setting, the laser power decreases gradually at the end of the pulse. The rates of decreasing power are the same as those increasing the power in the Position Slope +.

This is presetting of choice when welding posts or thin and delicate jewelry that are prone to cracking while overheating (annealing program).



## Position Bridge

This presetting results from the combination of the preceding laser power supply programs, Slope + and Slope -. It is useful when welding dissimilar metals but none reactive to oxygen such as gold/silver, gold/platinum, gold/stainless, stainless/platinum, etc...



LWD4 Super Duty



LWD4V



LWD4 Heavy Duty