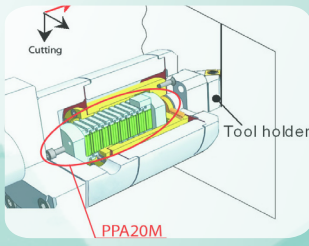


Actuators for Plasma Display Panel (PDP) glass cutting



PDPs, also known as gas plasma displays or plasma screens, are flat screen display devices that are used for television, computer monitors, and dynamic signage. Weakened due to its price in the past, the technology has developed and reaches nowadays the mass market with an excellent image quality, a large display and a compact layout.

In a word, PDPs consist of two layers of glass with hundreds of thousands small independent cells in between. The cells contain the "plasma".

Objective

The piezoelectric technology is an assistant in the cutting scribing process of the glass allowing:

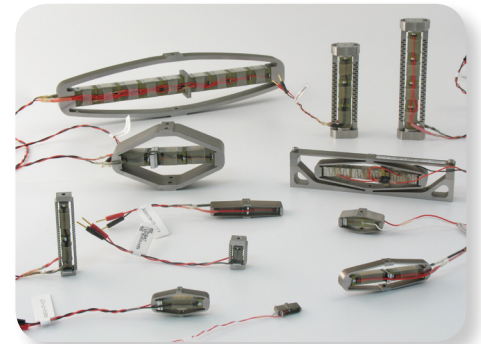
- Higher cutting edge quality, less micro cracks, less fragmentation & less chipping
- Higher cutting speed

CEDRAT TECHNOLOGIES actuators

CEDRAT TECHNOLOGIES designs two main types of actuators: PPA (Parallel Pre-stressed actuators) and APA (Amplified Piezo Actuators).

The main features of these actuators are pointed out:

- A good compacity relative to their stroke achieving deformation up to 10%
- A simple internal design and an easy interface
- A ceramic preload sizing with the shell structure
- An operation with a wide frequency range from quasistatic to ultrasonic applications

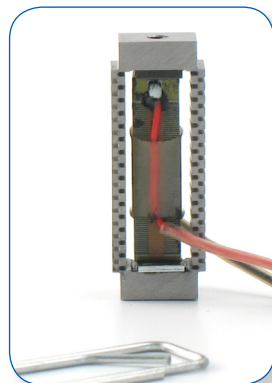


CEDRAT TECHNOLOGIES piezoelectric actuators.

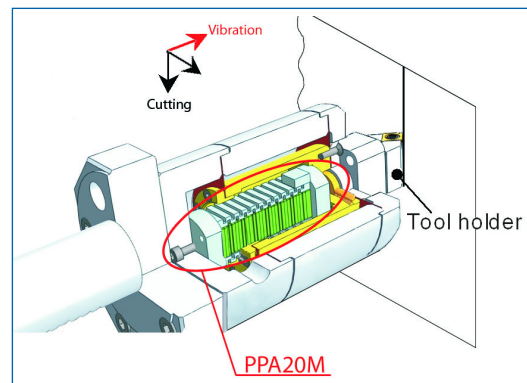
PPA actuator for Plasma Display Panel glass cutting

PPAs have been particularly designed for dynamic applications requiring a large bandwidth with excellent resolution. Hence, they are a valuable assistant for PDP glass cutting tools.

A Parallel prestressed Piezoelectric Actuator is afixed behind the cutting tool and makes it vibrate up to 10 kHz thanks to the powerful driver LA75C.

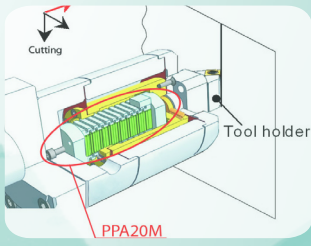


View of a PPA20M.



PPA20M integrated in the glass cutting tool.

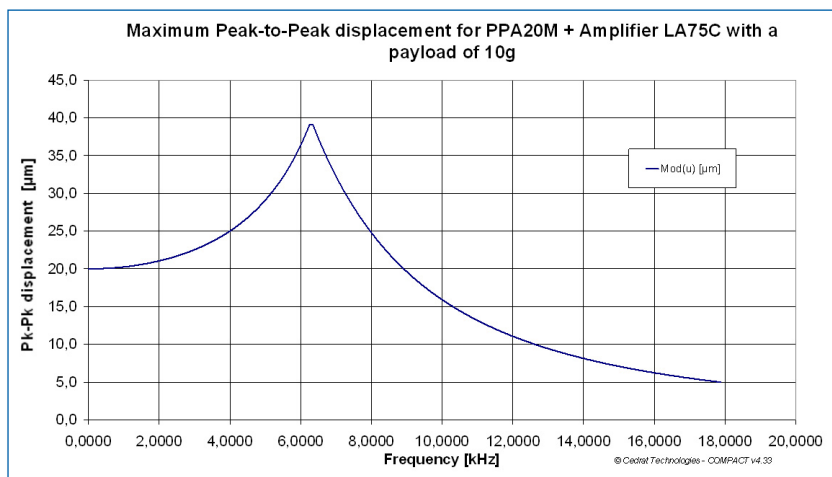
Actuators for Plasma Display Panel (PDP) glass cutting



The vibrations generated improve significantly the cutting quality and speed. Compared to laser machining, the PPA20M vibration cutting assistance provides the following advantages:

- The solution is much cheaper than laser cutting for comparable results
- The integration of the actuator is easy and is suitable for retrofit innovations on traditional cutting tool machines
- The maintenance is much more cost effective than for laser machines

The performances of the PPA20M in the cutting machine driving by a LA75C amplifier are shown in the figure below:



CEDRAT piezo solution is already implemented in SFA and in LG PDP cutting machines. CEDRAT piezo solution already works in LG & Samsung PDP production lines.

For more information, please contact:

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