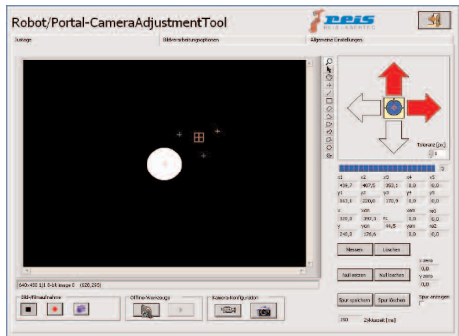


## Adjustment system for beam guiding systems (RP-CAT)



The laser is increasingly being used as a high precision tool in the daily production routine. At present, it is hard to imagine industrial production or rather processing without especially the CO<sub>2</sub> laser, the »workhorse« amongst the laser types.

Depending on application or handling system the laser beam is guided from the laser source to the processed component via different beam guiding elements. For CO<sub>2</sub> laser these mainly are reflecting elements. For laser wavelengths below 2µm transmissive elements and optical fibres are generally used. Adjustment of these optical elements has a vital influence on the accuracy of the total system. Especially with integrated beam guiding systems with mirrors small inaccuracies in the adjustment of the mirror angles will result in large deviations at the component.

With the RP-CAT adjustment tool an auxiliary means is available which will considerably ease and improve the time-consuming visual adjustment of the beam guiding systems by a setter. The accuracy of the system no longer relies on the subjective impression of the setter, but on objective evaluation.

The RP-CAT consists of a specially designed camera module which is mounted to the exit of the beam guiding system for the adjustment process. The camera detects the position of a tracking laser beam which is integrated in the laser source or mounted especially for adjustment. The camera sends signals to the evaluation software which monitors any deviation in beam position as the robot axes are moved. The beam guidance elements can then be manually adjusted in a step by step process until all beam deviations have been eliminated.

The standard resolution of the system is approx. 20 µm. Higher resolutions may be provided for special systems or applications. The adjustment software furthermore allows the documentation of the adjustment accuracy achieved.

We are always at your disposal for any questions or further information.

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