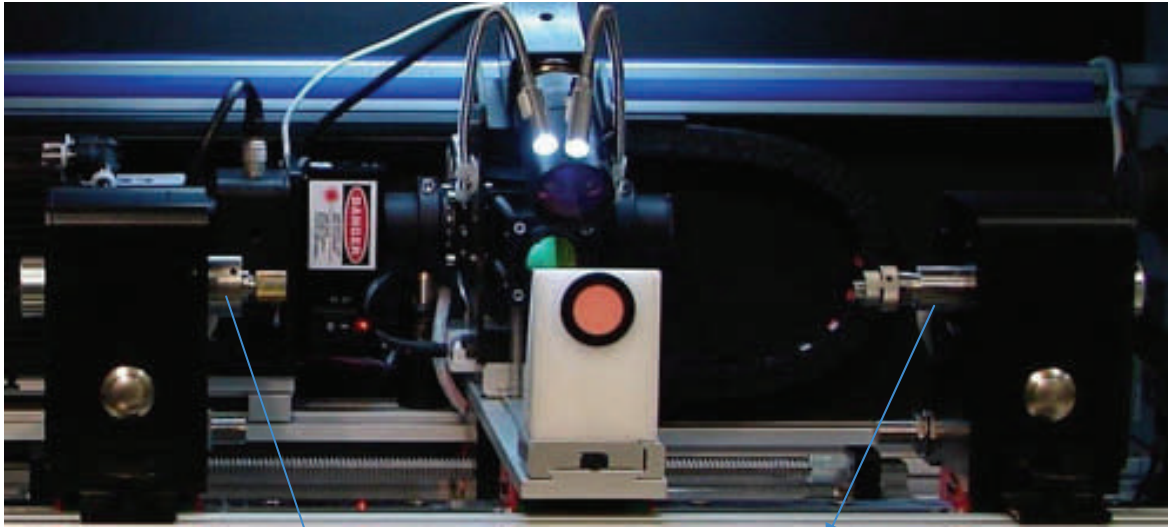


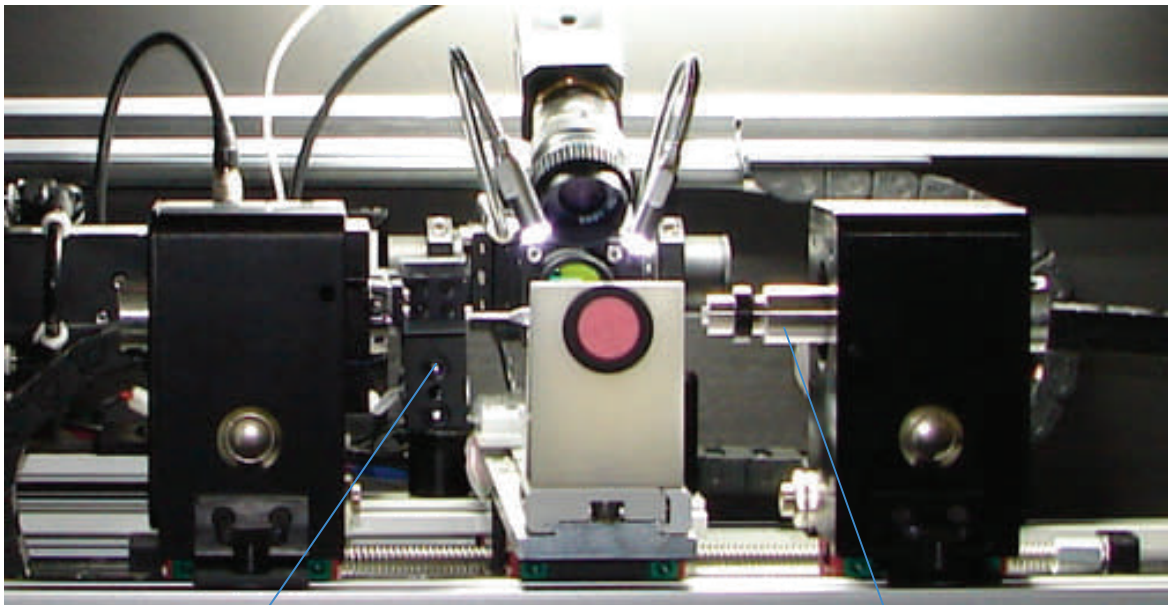
SPINDLES AND CHUCKS

Innova Design currently provides two versions of spindles and three types of sample holding chucks. In addition, powered close/open fixtures are available for two of the three types of chucks. These chucks can be configured easily by the customer in any way they prefer to handle their catheter holding applications. Samples configurations are illustrated in this document



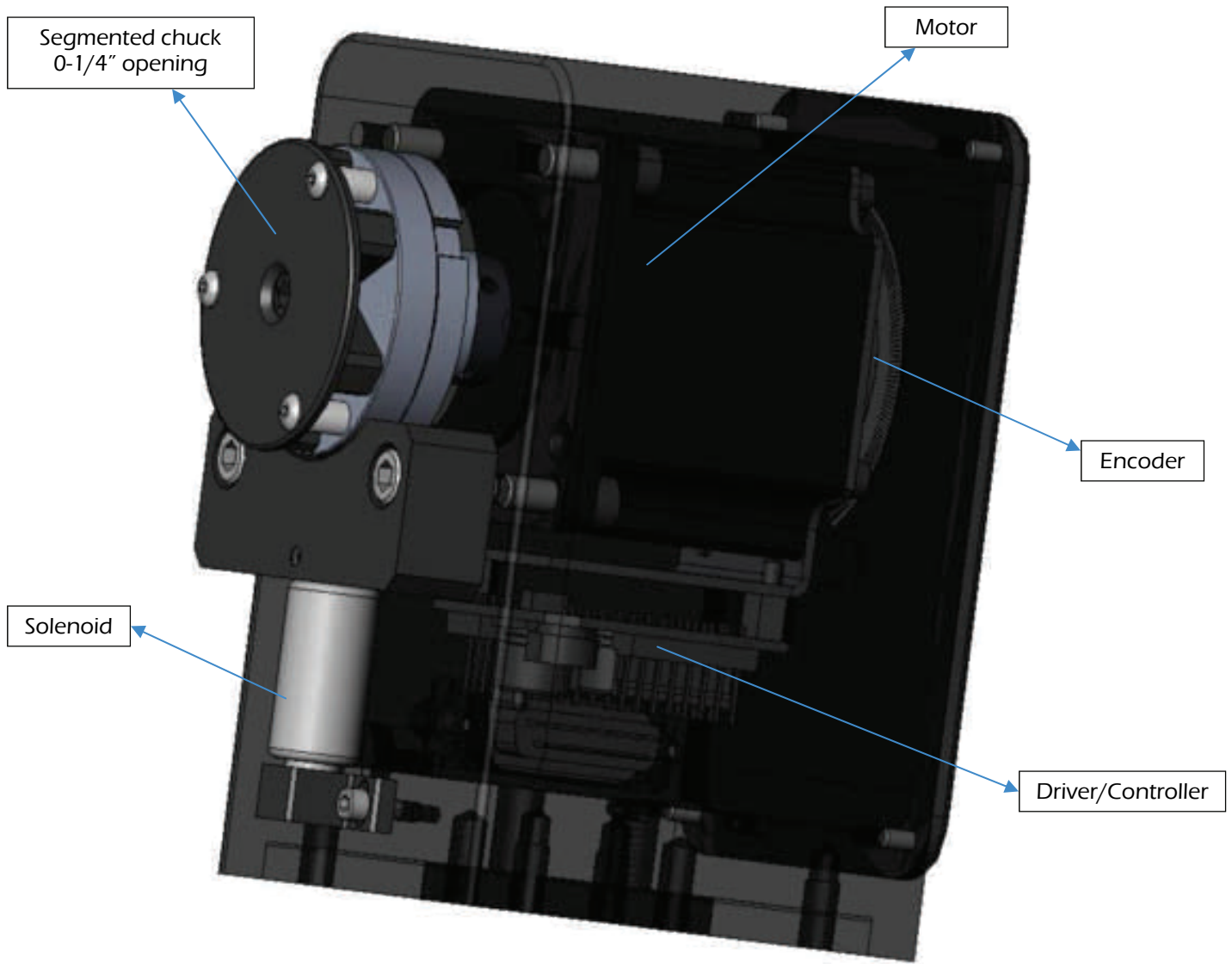
Left spindle equipped with tuohy borst type chuck. Three sizes available: 1-5 Fr.; 5-7 Fr.; 7-9 Fr. Can directly hold tubing. May be replaced

Right spindle equipped with a three jaw gapless micro chuck, opening 0-0.038". The chuck can be opened/closed by rotating a ring. Can precisely hold support mandrel. May be replaced with tuohy borst or segmented chuck



Left spindle equipped with tuohy borst chuck and powered close/open fixture. This allows chuck to close/open when the button on the spindle is pushed

Right spindle equipped with a three jaw gapless micro chuck, opening 0-0.038". The chuck is opened/closed by sliding a ring. Can precisely hold support mandrel. May be replaced with tuohy borst or segmented chuck



Advanced direct drive spindle DDS200 + large opening segmented chuck and powered close/open fixture maximize the efficiency of laser bonding by providing more efficient sample loading/unloading. Instead of using a push button to perform powered close/open action, a foot switch is provided to release the hand to hold the samples during loading. Spring action will keep the chuck close against the tubing sample. No calibration of opening is required.

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