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Rexroth

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[54] **ARTHROSCOPIC SURGICAL INSTRUMENT DRIVE SYSTEM**

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[52] **U.S. Cl.** **606/180**; 606/172

[58] **Field of Search** ..... 128/303.1, 303 R, 305, 128/1 R, 898, 897; 433/99, 27; 200/5 A, 159; 310/68 A, 68 B; 604/110, 111; 606/172, 180

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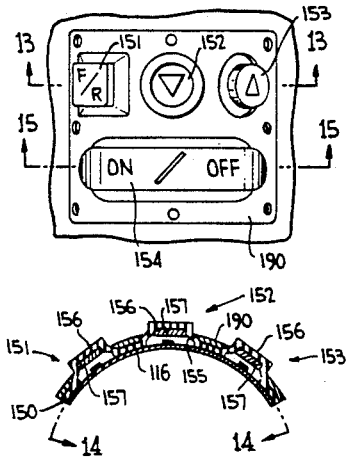
[57] **ABSTRACT**

A motor-driven surgical instrument having particular use in arthroscopic procedures has its drive motor operation controllable entirely from a switch cluster mounted on the instrument handpiece. The switch cluster is curved to substantially follow the circumferential profile of the handpiece and thereby avoid large platforms or projections that would add to the weight and bulk of the handpiece and destroy its balance. The switches in the cluster are arranged to minimize the movement of a surgeon's finger in quickly moving from a speed or direction control switch to an on/off switch. A unique arcuate printed circuit board having a small radius of curvature is employed as part of the switch cluster and is able to withstand the high temperatures to which the handpiece is exposed during sterilization between procedures. Disposable, single-use cutting blades are individually coded to provide a sensible parameter representing the optimum operating speed range of the cutting blade. This parameter is sensed by the handpiece to provide a control signal which both establishes the optimum motor speed range and provides a visible indication of the established range. In this manner the instrument is able to avoid relatively heavy coded adapters employed in the prior art to provide interface between the cutting blade and the handpiece.

9 Claims, 11 Drawing Sheets