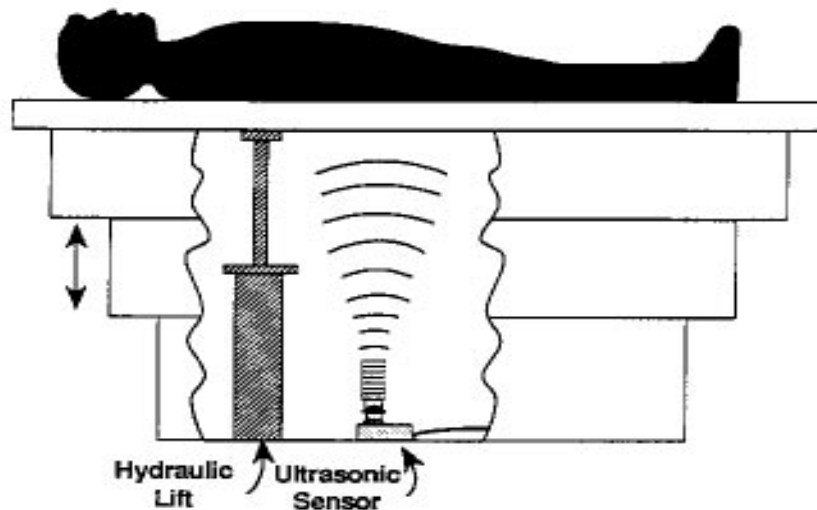


## Diagnostic Equipment Table Height

ULTRASONIC

AP 00204



### PRODUCT

942-M3A-2D-1G1Ultrasonic Amplifier with Analog Output  
942-M88 Ultrasonic Sensor Head (remote)  
942QC020 Connector/Cable assembly

### APPLICATION DESCRIPTION

The medical industry conducts many complex and diverse tests in order to diagnose illnesses. Often, the testing performed involves positioning the patient on a table that is moved into position for testing. In order to obtain satisfactory results the table and consequently the patient need to be positioned accurately.

A manufacturer of medical diagnostic equipment solved the vertical positioning problem with the use of an ultrasonic sensor. In this case, the table used to support the

patient needed to be at the proper height. The table is constructed in a telescoping fashion and a hydraulic cylinder is used to do the actual lifting. As the table lifts, the sections of the support telescope out.

The 942 Series Ultrasonic Sensor was chosen because of its accuracy of  $\pm 1\text{mm}$ . The sensor is mounted inside of the telescoping sections of the table looking up with the underside of the table as the target. As the table is lowered or raised, distance between the sensor and underside of the table varies accordingly.

The electronics of the diagnostic system monitor the sensors output. Depending on the procedure being performed and the variables involved, the machine electronics and ultrasonic sensor accurately control table height.

The sensor and sensor amplifier comprise a two part system. The amplifier is required to drive the remote mounted sensor. In applications where space is critical, the amplifier may be mounted up to 50 meters away from the sensor. In this application, the amplifier was mounted in the same panel as the rest of the diagnostic machines electronics.