



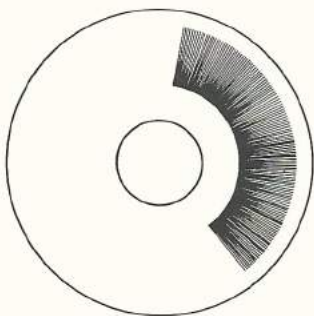
# DATA SHEET

## Diffraction Gratings

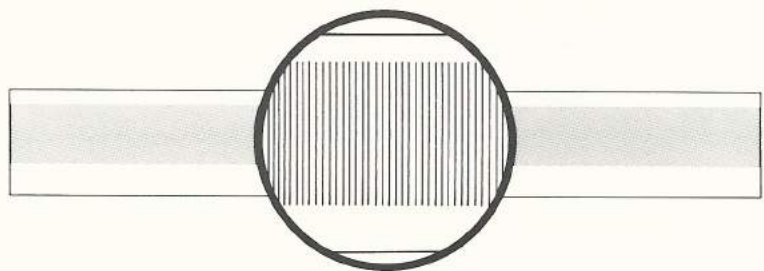
Suitable for most types of jig borer and grinding machine, this system has been used successfully on Newall jig boring machines for the past few years. The system utilises diffraction gratings manufactured by the wholly owned Newall subsidiary company Optical Measuring Tools Limited. The gratings are fitted to a fixed member of a given axis in close proximity to a reading head mounted on the moving member. The interaction between the master scales and the index grating contained in the reading head produces Moire Fringes. These are counted by the mechanism of the control system which dis-

plays the amount moved relative to the zero position.

Rotary readouts can be provided in degrees, minutes and seconds or decimals of a degree, resetting to zero after one complete revolution. Circuits are provided to retain the sign of measurement when one revolution is exceeded so that on return there is no spurious change e.g. a movement from  $359^{\circ}$  to  $1^{\circ}$  will read on return again  $359^{\circ}$ . This facility is cancelled when a further  $100^{\circ}$  is read on the readout. In the region of zero, readout will behave in the normal  $\pm$  manner.



Rotary



Linear

The standard display cabinet with inch/metric switching facilities is used.

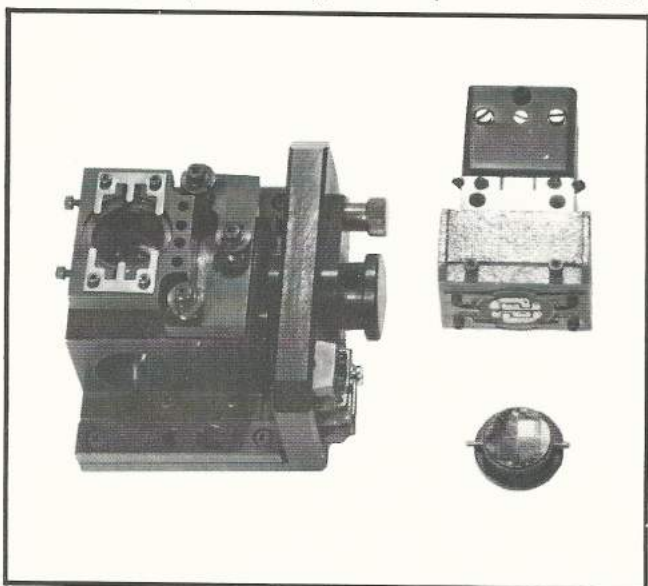
Resolution is to 0.001 mm. (0.00005 in.)

### Design

Integrated circuits (TTL) are used throughout with an extensive use being made of MSI elements. The use of internal plugs and sockets which may give rise to maintenance difficulties has been eliminated.

All adjustments and connections are readily accessible at the rear of the unit but in use are covered by a tamper proof cover.

Facilities may readily be added by the use of standard units to provide for print out or, by special request, serialising for computer interfaces.



### Controls

Remote zero reset button may be provided if required.

### Technical Data

#### Metric/Imperial readout.

No. of Decades 6 + 0/5 + Overflow.

#### Dimensions.

Single Axis Unit 133mm. high x 322mm. wide x 330mm. deep.

Two Axis Unit 169mm. x 322mm. x 330mm.

#### Weight.

Single Axis Unit 6.8 kg. (15lb.).

Two Axis Unit 9.1 kg. (20lb.).

#### Maximum operating temperature.

40°C.

#### Power

Maximum (Two Axis 150 VA.

#### Mains Voltage

110,220/240 v.

Readout is available in one, two or three axis modules which can be coupled to give more complex systems.

Other measuring scales can be provided for special applications



*Control systems for the machine tool and other industries*

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