

# **Newall Electronics**

A division of

**The Newall Engineering Company Limited**

**NEWALL TAPE INDUCTOSYN**

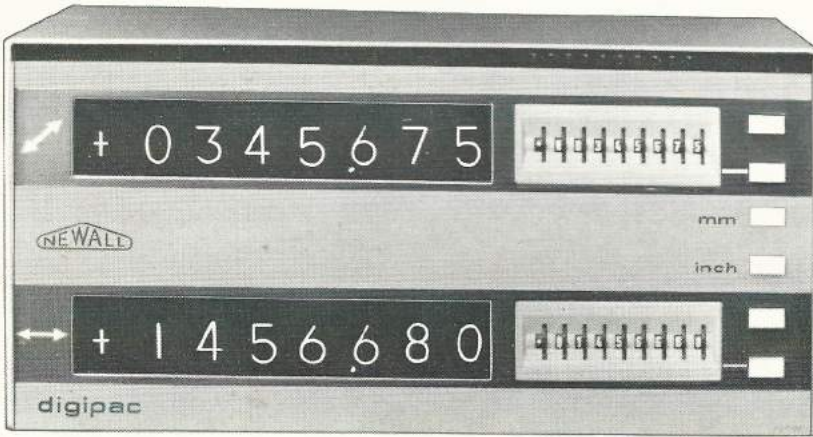
**DIGITAL MEASUREMENT SYSTEMS**

Newall Electronics have been supplying digital measurement systems for machine tools, notably the world famous Newall Jig Borers, for more than five years.

Now, in addition to these ultra high precision systems using diffraction grating transducers, Newall offer two systems ideally suited to plant machines.

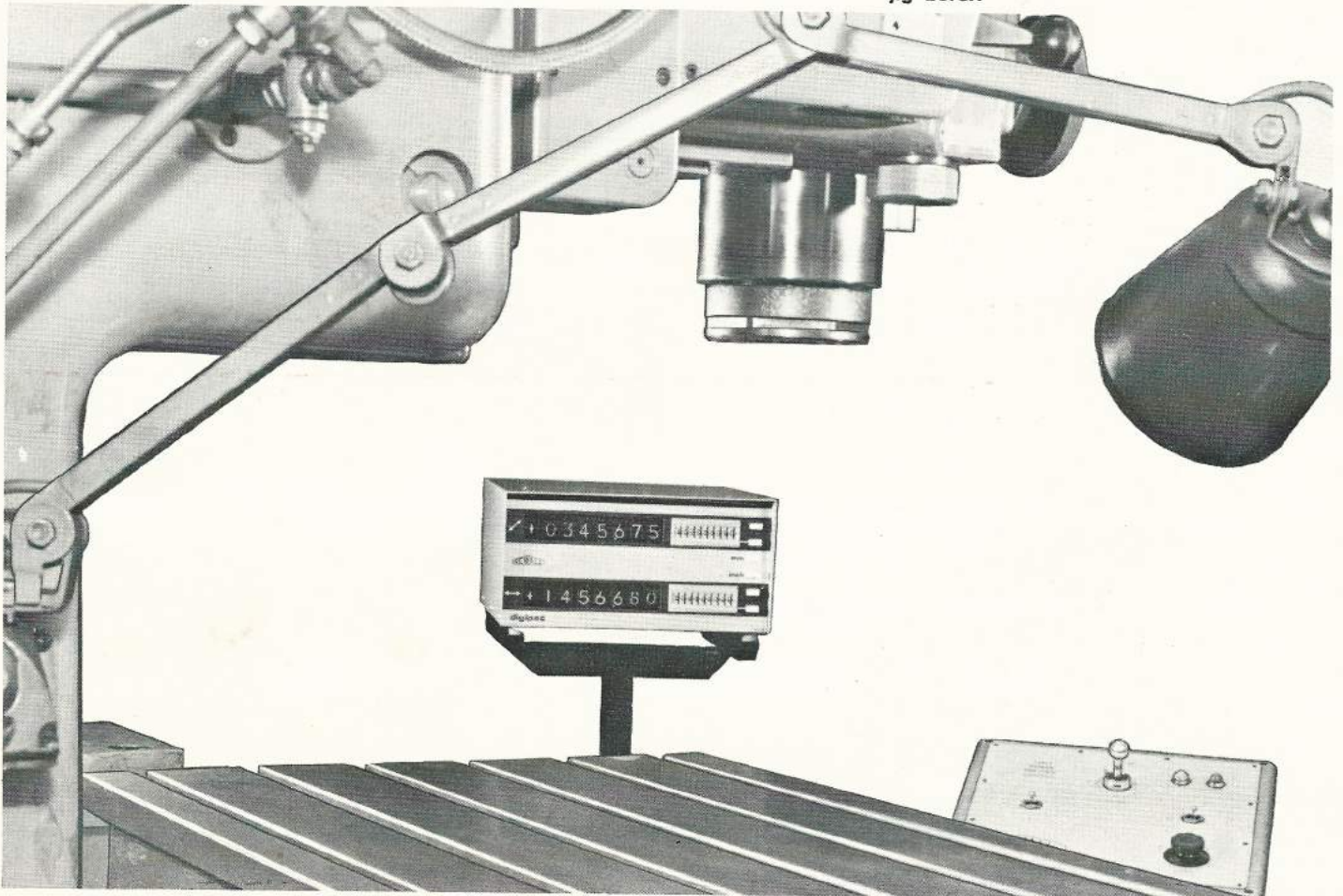
One, based on roller encoder transducers, provides a competitively priced medium accuracy system.

The other is based on a steel tape mounted version of the well known Inductosyn principle—proven in many installations in both the U.S.A. and U.K. The Newall Tape Inductosyn is a high accuracy measurement system at a cost comparable with optical or less productive systems.



Readout cabinets are available in one or two axis modules which may be coupled to give more complex systems.

Retrofit of a two axis readout to a Newall jig borer.





## DISPLAY CABINET

The display unit can comprise any number of digital displays, typically for two or three axes. Facilities provided are

- (a) Reading in inches or millimetres—selection by push button on the front of the cabinet.
- (b) Pre-set datum switches—a set of thumbwheel switches for setting datum and sign for all axes.
- (c) Zero Set Button—one per axis to set the display to zero, at any desired point of the traverses.
- (d) Datum Set Button—a push button is provided to set the display to the selected datum instead of zero—one per machine axis display.

Adequate interference suppression is provided and interruption in the power supply will not produce an unsignalled pulse count.

Dual resolution of 0.0005 inch, 10.0 microns or 0.0002 inch and 5.0 microns, instant selection by simple push button.

### Electronic Construction

The electronic construction is based on the "mother board" principle of sub printed circuit boards bearing M.S.I. and i.c. semiconductors. This gives a highly reliable unit package which can be serviced by your own Plant Engineer in a matter of minutes.

### Power Supply

The equipment uses a power supply of approximately 30 watts at 110V/120V or 220V/240V. 50 or 60 Hz. for each measurement axis.

## TRANSDUCERS

The measuring elements are based on a chrome steel tape mounted version of the well known Inductosyn system. A standard pitch of 0.2 inch is used throughout.

Construction of the transducer is illustrated below.

The tape measuring element is mounted directly to the machine by means of mounting blocks at each end. A spring barrel with preset tension is provided to maintain the tape at a predetermined strain.

Although the measuring element is not affected by cutting oils etc. an enclosing cover is provided to protect against gross physical damage. Access for the slider head connecting bracket is afforded by a nitrile rubber skirt.

The cover assembly is not attached to the measuring element at any point, thus accident damage—from a dropped heavy component, say — will not directly affect the accuracy of the system.

There are no lamps or other finite life components employed with Inductosyns, thus long service without attention is easily attained.

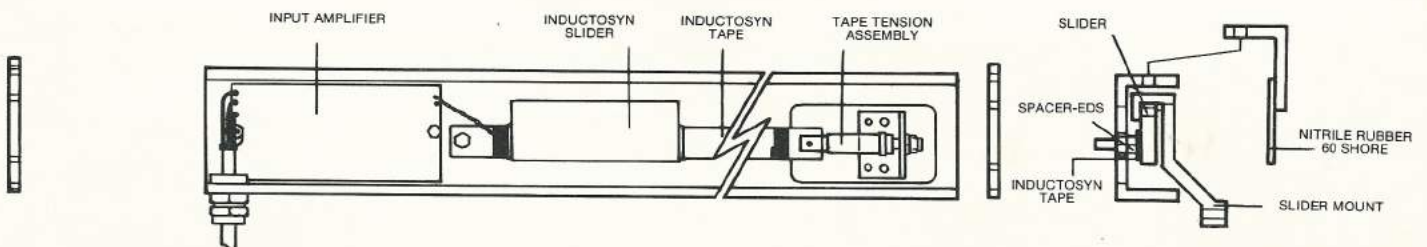
### Accuracy

Total error less than  $\pm 0.0002$  in. for the first foot of displacement and  $\pm 0.0001$  in. per foot thereafter.

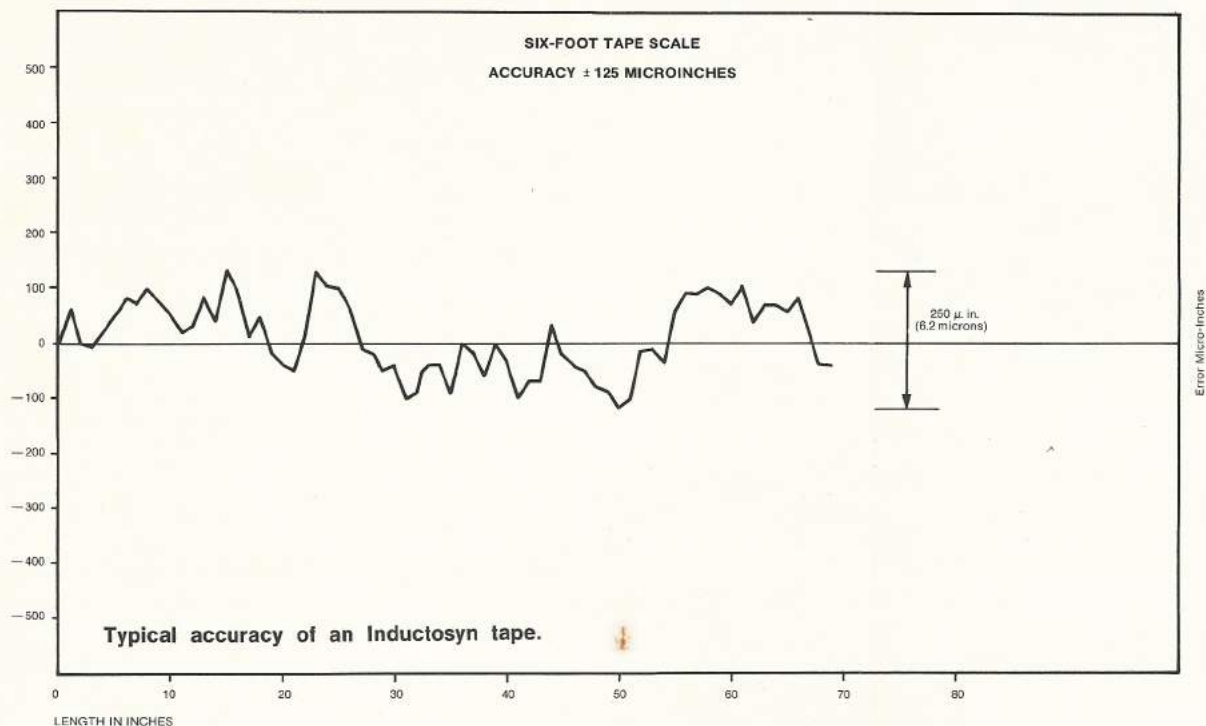
### Weight and Dimensions (Approx.)

		Weight		Height		Width		Length	
		lbs	mm	ins	mm	ins	mm	ins	
1	Axis	17	120	4½	318	12½	330	13	
2	Axis	18	160	6½	318	12½	330	13	
3	Axis	26	240	9	318	12½	330	13	

Transducer Cross Section is approximately 98 mm. (3½") x 39 mm. (1½"). Length 400 mm. (15¾") greater than the machine travel.



Tape Inductosyn transducer general assembly.



## SERVICE FACILITIES

Newall provide a comprehensive after sales service to support their products in the field.

On-site servicing may be carried out by a Newall Engineer based on the main factory at Peterborough

or by an Area Representative.

Spares support is by post or express carrier on telephone request to Newall Electronics. For really urgent spares a messenger service is used.

If immediate on-site spares are required Newall operate a spares rental scheme whereby purchase by the customer of spares to hold in stock becomes unnecessary. For an annual rent Newall provide and maintain all the necessary spares on the customer's premises.

### Training your Engineer

Your own Plant Engineer (with the appropriate skills), will be trained in first line servicing, either on site or at Peterborough, without charge.

## INSTALLATION

The transducers are supplied cut to length for each individual machine traverse. Due to the unique pre-set tensioning device, installation on the machine is a simple matter easily carried out by the customer's maintenance staff. Alternatively, the Newall Electronics Installation and Commissioning service is available on a fixed cost basis.

Accuracy of measurement is ensured because the steel tape is pre-calibrated. No adjustments are made on site to achieve high accuracy. Problems of measurement on large machines, associated with digitiser type systems, do not affect Inductosyn.

## WARRANTY

The Newall Electronics standard twelve months warranty includes a guarantee of workmanship, design and materials.

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