

***Product
Information
Packet***

DP8 Series

Series Features:

- Available in 2 or 3 axis
- Absolute/Incremental
- Inch/Metric Conversion
- Radius/Diameter
- Zero Approach Warning
- Axis Pre-set

- Switchable resolutions for each axis:
Microsyn 5: 0.00005"/0.0001"/0.0002"/0.0005"
Microsyn 10: 0.0002"/0.0005"/0.001"/0.002"
Spherosyn: 0.0002"/0.0005"/0.001"/0.002"
- Radius/Diameter
- Center Find
- Automatic Linear Error Compensation
- Digifind (Absolute Reference)
- Fault Indicator
- Multi-Lingual Message Screen
- Sleep Mode
- 30-Day Battery Backup
- Zero Reset
- Self Diagnostics

DP8 Lathe

Features:



99 Tool Offsets - Tool numbers and offsets are entered via the message prompt and are retained for use with any part. Multiple part runs become simple and consistently accurate.

199 Memory Positions - Allows the operator to enter up to 199 pre-set positions into memory for quick recall. Memory positions can be grouped under specific job numbers.

Taper Calculations - Interactive message screen displays angle of X, Z movement so that a taper can be cut without the use of a mechanical taper attachment.

Axis Summing - Axis Summing combines the movements of any 2 selected axes; X, Z¹; Z, Z¹. Available on a 3 axis display only.

Vectoring - After entering the angle of the compound, the unit will display true X, Z position of the tool when the compound is moved. Available on a 3 axis display only.

DP8 Mill

Features:



199 Memory Positions - Allows the operator to enter up to 199 pre-set positions into memory for quick recall. Memory positions can be grouped under specific job numbers.

Line Hole Calculator - Calculates up to 999 holes along a straight line of any angle.

Bolt Hole Calculator - Automatically calculates the bolt circle and guides the operator to each hole location. Will calculate up to 999 equally spaced holes around a complete or partial circle.

Arc Contouring - Calculate an arc or radius. Eliminates the need for a rotary table when machining a rough arc.

Polar Coordinates - Instead of conventional Cartesian coordinates, Axis position in two planes can be displayed in Polar coordinates. When the axes are moved, the display shows the length of the vector and the angle of the coordinates in decimal form.

DP8 EDM

Features:



EDM Mode Positioning - Displays maximum Z Depth, Target Z Depth and Current Z Position.

Single and Multi-Step machining - Allows single step positioning or up to five programmable positioning steps.

Warning Output - Enter maximum allowable carboning height to prevent material buildup.

Relays - Three, 24 volt DC physical contact relays.

Latched or Pulse Relay - When target depth is reached, ram can be retracted to zero or a defined position.

DRO mode features include:

199 Memory Positions

Bolt Hole Calculator

(Functions operate as described under DP8 Mill)

Topaz Series

Topaz Standard



Standard Series Features:

- Available in 1, 2, or 3 axis
- Absolute/Incremental
- Inch/Metric Conversion
- Radius/Diameter
- Zero Reset
- Axis Pre-set
- Digifind (Absolute Reference)
- Center Find
- Linear Error Compensation
- Sleep Mode
- 30-Day Battery Backup
- Self Diagnostics
- Switchable resolutions for each axis:
 - Microsyn 5: 0.00005"/0.0001"/0.0002"/0.0005"
 - Microsyn 10: 0.0002"/0.0005"/0.001"/0.002"
 - Spherosyn: 0.0002"/0.0005"/0.001"/0.002"

Topaz Lathe



Features:

Includes all of the features of the Topaz Standard display, plus:

Tool Offsets - Store up to 99 tool lengths and offsets in non-volatile memory. Simple prompts guide operators through tool setup and recall. Decrease scrap and increase accuracy when changing tools.

Topaz Lathe is available in a 2 axis configuration.

Topaz Mill



Features:

Includes all of the features of the Topaz Standard display, plus:

Bolt Hole Calculator - Topaz Mill uses simple message prompts to guide operators through a bolt circle routine. Topaz Mill calculates up to 99 bolt hole positions automatically.

Topaz Mill is available in either 2 or 3 axis configurations.

DPG 2000



The DPG display cabinet is the cabinet of choice for the most basic measuring operations. Although commonly used in single axis applications, the DPG 2000 is also available in two or three axis configurations. The DPG 2000 can be used with the Spherosyn, Microsyn 5 or Microsyn 10 scales.

Features:

- Available in 1, 2, or 3 axis
- Absolute/Incremental
- Inch/Metric Conversion
- Radius/Diameter
- Zero Reset
- Linear Error Compensation
- Self Diagnostics
- Center Find
- Absolute Reference Point

- Digifind
- Sleep Mode
- Switchable resolutions for each axis:
 - Microsyn 5:* 0.00005"/0.0001"/0.0002"/0.0005"
 - Microsyn 10:* 0.0002"/0.0005"/0.001"/0.002"
 - Spherosyn:* 0.0002"/0.0005"/0.001"/0.002"



How It Works

Based on the principle of electromagnetics, Newall's Spherosyn, Microsyn 5 and Microsyn 10 scales consist of a tube, constructed of stainless steel or carbon fiber weave, filled with a column of individually graded steel balls. The balls are set under a pre-load at the factory. The tube is then sealed.

The readerhead consists of six copper coil assemblies wound around a fiber composite bobbin. The coil assemblies and required electronic circuitry are potted with an epoxy resin. This completely seals the electronics from coolant, oil and other shop contaminants.

When current is applied to the reader head, the copper coils create an electromagnetic field that is passed through the balls. Because of the spherical shape of the balls, the output resistance is constantly changing.

As the reader head moves along the scale, the relative axial movement between the scale and the reader head produces corresponding signals induced in each pick-up coil. The pick-up coils receive the signals and transmit them to the circuitry of the reader head.

Advantages

- Impervious to coolants, oils, dust, swarf and virtually all shop contaminants.
- Requires no cleaning or regular maintenance.
- The scales will operate when totally submerged in coolant.
- Tolerant to vibration and magnetic interference.
- Covered by a **3-Year No-Fault Warranty**, a **5-Year Manufacturer's Warranty** and a **Lifetime Scale Warranty**.

Specifications

Spherosyn:

Scale Travel Lengths: 2" - 60" in 2" increments and up to 462" in 4" increments
Scale Diameter: 0.601" (15.25 mm)
Overall Scale Length: Travel plus 10"
Construction: Stainless steel
Readerhead Dimensions: 2.04" x 5.16" x 1.10" (51x131x28 mm)
Cable: 11.5" (3.5 m) stainless steel armored
Slew Rate: 4800 inches per minute (2m/sec)
Repeatability: Within one resolution count
Resolution: 0.0002"/0.0005"/0.001"/0.002" switchable
Accuracy: $\pm 10\mu\text{m} + 5\mu\text{m/m}$
Output: 2.0V \pm 0.5 rms, 1 kHz phase analog, 360° per 12.7 mm

Microsyn 5/10:

Scale Travel Lengths: 2" to 40" in 2" increments
Scale Diameter: 0.222" (6.5 mm)
Overall Scale Length: Travel plus 7"
Construction: Carbon fiber composite weave
Readerhead Dimensions: 1.38" x 2.95" x 0.79" (35x75x20 mm)
Cable: 11.5' (3.5m) stainless steel armored
Slew Rate: 1150 inches per minute (0.75 m/sec)
Repeatability: Within one resolution count
Resolution: Microsyn 5: 0.00005"/0.0001"/0.0002"/0.0005"
Microsyn 10: 0.0002"/0.0005"/0.001"/0.002"
Accuracy: Microsyn 5: $\pm 5\mu\text{m/m}$
Microsyn 10: $\pm 10\mu\text{m/m}$
Output: 1.2V \pm 0.5 rms, 1 kHz phase analog, 360° per 5.0 mm

Newall Warranty

Newall is committed to Customer Support and Satisfaction. To demonstrate our product confidence, Newall proudly offers its products with absolutely the best guarantee available from any DRO manufacturer. After reviewing the details listed below, please contact our Customer Service Department at (800) 229-4376 with any questions, or for complete warranty information. For USA and Canada only.

3-Year No Fault Warranty

Newall's unprecedented warranty covers system failures, accidental damage, neglect, improper installation and operator abuse. Newall will repair or replace the part at no cost to you.

5-Year Warranty

Even after the 3-Year No Fault period ends, the workmanship of the DRO remains covered for an additional 2 years under Newall's 5-Year Manufacturer's Warranty.

Lifetime Scale Warranty

Newall guarantees the accuracy and workmanship of their Spherosyn, Microsyn 5 and Microsyn 10 linear scales for as long as you own them!

30-Day No Hassle Trial

If you are not completely satisfied with your Newall DRO system, return it to Newall within 30 days of installation for a full refund!

Technical Specifications

Readout Displays	<i>DPG 2000</i>	<i>Topaz</i>			<i>DP8</i>		
Application	General Machining	Standard	Mill	Lathe	EDM	Mill	Lathe
Number of Axes Available	1, 2, 3	1, 2, 3	2, 3	2	3	2, 3	2, 3
Resolutions as follows:							
Spherosyn	0.0002"/0.0005"/0.001"/0.002"						
Microsyn 10	0.0002"/0.0005"/0.001"/0.002"						
Microsyn 5	0.00005"/0.0001"/0.0002"/0.0005"						
Absolute/Incremental	x	x	x	x	x	x	x
Inch/Metric Conversion	x	x	x	x	x	x	x
Radius/Diameter Readings	x	x	x	x	x	x	x
Center Find	x	x	x	x	x	x	x
Zero Reset	x	x	x	x	x	x	x
Sleep Mode	x	x	x	x	x	x	x
Linear Error Compensation	x	x	x	x	x	x	x
Axis Preset		x	x	x	x	x	x
30-Day Battery Backup	x	x	x	x	x	x	x
Multi-Lingual Message Screen					x	x	x
Digifind	x	x	x	x	x	x	x
Self Diagnostics	x	x	x	x	x	x	x
Bolt Hole Calculator (Holes)			99		999	999	
Line Hole Calculator (Holes)						999	
Axis Vectoring							x
Axis Summing							x
Taper Calculation							x
Zero Approach Warning					x	x	x
Polar Coordinates						x	
Arc Contouring						x	
Programmable Memory Positions					199	199	199
Tool Offsets				99			99
Dimensions	5.5" x 9.5" x 3" (140 x 240 x 80 mm)	5.5" x 9.5" x 3" (140 x 240 x 80 mm)	5.5" x 9.5" x 3" (140 x 240 x 80 mm)			11.6" x 6.7" x 1.2" (295 x 170 x 30 mm)	
Weight	4.5 lbs (2.1 kg)	4.5 lbs (2.1 kg)	4.5 lbs (2.1 kg)			4.6 lbs (2.1 kg)	
Voltage	115/230V	115/230V	115/230V			115/230V	
Operating Temperature	32° - 104° F (0° - 40° C)						
Storage Temperature	-4° - 158° F (-20° - 70° C)						
ISO9001 Certified	Yes						
CE Approved	Yes						