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GAS MEASUREMENT

RECORDING CHARTS, DISPOSABLE PENS AND PEN ARMS

Graphic Controls LLC

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A TRADITION OF EXCELLENCE AND A FUTURE OF INNOVATION

Graphic Controls LLC
Buffalo, NY

Graphic Controls is a world leader of recording charts and high quality disposable pens, pen arms, inks and accessories. We manufacture charts and pens to fit the majority of recorders in use today.

The enormous variety of recording charts made by Graphic Controls includes circular, strip, rectangular and fanfold charts...ink-writing, heat-sensitive, pressure-sensitive and electrosensitive. These charts are used in instruments that record physical measurements such as: temperature, pressure, humidity, flow, liquid level, electric current and voltage...magnetic, seismic and similar information.

Graphic Controls is a single-source supply for your total recording chart requirements. And we bring more than 50 years of experience to bear on the custom design of charts to fill special needs...for any application.

For Your Gas Measurement System: Recording Charts and Disposable Pens from GRAPHIC CONTROLS.

Graphic Controls manufactures the charts and disposable pens we sell...so we've taken the time to make sure they work well...Together.

- Optimal 7 mil thickness to provide stiffness and curl control for use in the field under normal and high stress conditions.
- All disposable pens are designed to meet exacting environmental and performance standards to ensure consistent high quality.
- Easy recording retrofit with patented POSILOC™ Pen Arms.
- Compatibility with OEM specifications to ensure continued reliable performance, that meet or exceed American Gas Association (AGA) specifications.
- Our manufacturing facility has obtained ISO 9001-2000 certification. We are especially proud to be among the manufacturers who have received certification to this exacting standard on our first application. You can be assured that every product we offer meets the highest quality standards and will provide you with reliable performance in the most

Quality System™
Quality Endorsed Company
ISO 9001

Graphic Controls LLC

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Products for the Gas Industry

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Graphic Controls Offers the Unique Combination of Recording Charts and Disposable Pens... Tailored to Your Measurement Requirements.

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All Temperature Pens

Array A (Barton, Rockwell 3-Pen Recorders)	Part Number	Description
	82-79-0414-06	Temperature Scan Green
	82-79-0312-06	Differential Red
	82-72-0111-06	Static Scan Black
	82-72-0113-06	Static Scan Blue

U.S. Patent #4,337,471-Bias Cut Pens

Array B (American Meter, Foxboro, Mercury 3-Pen Recorders)	Part Number	Description
	82-79-0412-06	Differential Scan Red
	82-72-0211-06	Static Scan Black
	82-72-0213-06	Static Scan Blue
	82-72-0114-06	Temperature Scan Green

U.S. Patent #4,337,471-Bias Cut Pens

Look for our "Gas Flame" logo on Series 72™ and Series 79™ Disposable Pens:

- The intense black ink in our Static Pens allows you to forget about retracing!
- Our redesigned bias cut nib covering design provides enhanced visibility while arcing the pens and setting the time lag.
- Our continued commitment to excellence for all of our Gas Measurement Products ensures your satisfaction.

Series 72™ and 79™ Scannable Pens are designed to produce consistently CLEAN, SCANNABLE charts.

- Broader line width assures reliable scanner processing.
- Exclusive Graphic Controls inks virtually eliminate skips and estimations.
- All temperature ink ensures a solid, scannable trace in all types of climates.
- Pen Arrays can be calibrated to a 15 minute time lag (.090″) between Differential and Static pens on the Zero Line of a 24 hour chart.
- Scannable pens allow you to increase the number of charts that can be scanned and will improve the accuracy of your billing operation.

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All Temperature Pens

Array A (Barton, Rockwell 3-Pen Recorders)	Part Number	Description
	82-79-3414-06	Temperature Scan Green
	82-79-3312-06	Differential Red
	82-72-3111-06	Static Scan Black
	82-72-3113-06	Static Scan Blue

U.S. Patent #4,337,471-Bias Cut Pens

Array B (American Meter, Foxboro, Mercury 3-Pen Recorders)	Part Number	Description
	82-79-3412-06	Differential Scan Red
	82-72-3211-06	Static Scan Black
	82-72-3213-06	Static Scan Blue
	82-72-3114-06	Temperature Scan Green

U.S. Patent #4,337,471-Bias Cut Pens

Series 72™ and 79™ Fine Line Pens for Integrators offer performance advantages to gas industry companies that process their charts manually.

- Fine-point pen tips provide sharply defined lines.
- Thinner lines allow integrator operators to trace the flow of gas more accurately.
- Pen Arrays can be calibrated to a 15 minute time lag (.090″) between Differential and Static pens on the Zero Line of a 24 hour chart.

Important

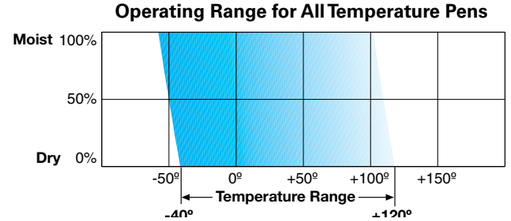
These products are warranted to be free from all defects in material and workmanship. Because of the variety of uses to which these products may be put, seller does not warrant that they can be used for any particular purpose and disclaims all other warranties, whether expressed or implied.

Part Number System

Gas industry pens use a 10-digit part number. The Marking Systems Guide lists gas industry pens with the appropriate recorders.

Color Code
1. Black
2. Red
3. Blue
4. Green
N. Nonscan Green

Operating Range for All Temperature Pens



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The Welker Slot Chart can provide the chart-changing reliability that you need on your recording instruments. Thanks to the patented* Welker Slot, you can be assured of continuous chart readings, which facilitate greater accuracy in chart computation and billing.

*U.S. Patent # 4,224,629

Welker Slot Chart:
When you need chart-changing reliability.
After years of customer usage in both field and off-shore operations, not a single major operating problem has been reported. Automatic chart changing provides gas transmission companies with accurate chart data, which results in a greater amount of billable gas and increased revenues.

The reliability factor of the Welker Slot Chart has been a remarkable achievement of design and quality assurance in our chart repertoire. Welker Slot Charts are used by most of the major gas transmission companies in the United States and the market's continued reliance on our charts is a testament to the accuracy and reliability of our product offering.

We print, die-cut and punch our charts with precision, custom designed equipment. The accuracy of our chart products is the result of millions of dollars of investment in state of the art instruments and equipment. Our financial investments and commitment to continuous improvement allow us to provide exceptional quality and fulfill the most critical requirements of gas measurement.

Used with the Mullins Dial-O-Graph® Automatic Chart Changer, our charts with the exclusive Welker Slot provide fast, accurate and reliable readings. It can be expensive and frustrating when charts become jammed or damaged during the measurement process but the reliability and durability of our high quality charts will make

Welker Slot Charts offer scanner ink in two shades, readout holes, back-printing and overprinting. Our charts function properly on all scanner and integrator units.

Dial-O-Graph® is a registered trademark of the Mullins Manufacturing Company.

Calibration Discs

Gas Measurement Supervisors
For the calibration of your electro scanners and manual integrators, Graphic Controls has the answer. For years Graphic Controls has been selling Calibration Discs to instrument manufacturers for the daily calibration of their equipment.

The accuracy and precision of our Calibration Discs exceeds the American Gas Association AGA-5 specifications.

The most popular Calibration Discs are listed below but if you have any special requirements, contact your sales representative or call our Customer Service Department at the telephone number on the back of this brochure for assistance.

THIN–The thin Calibration Discs are made of a high quality Kodak® film.

Ordering Description	Description Breakdown
CBD 001	Linear Scribing for American Meter (Wescott)–Foxboro–Rockwell
CBD 005	Linear & Square Root Scribing for American Meter (Wescott)–Foxboro
CBD 007	Custom made Calibration Discs

Series 85™ Integrator Pen

The Series 85™ Integrator Pen eliminates the time-consuming and messy chores of filling and cleaning your integrator's tracing pens by replacing bottles of ink with a clean, reliable disposable pen.

Filled and sealed at our on-site factory, the Integrator Pen is a revolutionary self-contained ink system. There's no chance of leaks, spills or clogs and for your convenience, you never have to touch the ink.

Plain dial charts and blotters are available for many different applications. For more information, contact your sales representative or call our Customer Service Department at the telephone number on the back of this brochure.

The Series 85 Integrator Pens are available in 5 colors.
Order by part number indicated:

82-85-0011-10 | 82-85-0012-10 | 82-85-0013-10 | 82-85-0014-10 | 82-85-0018-10

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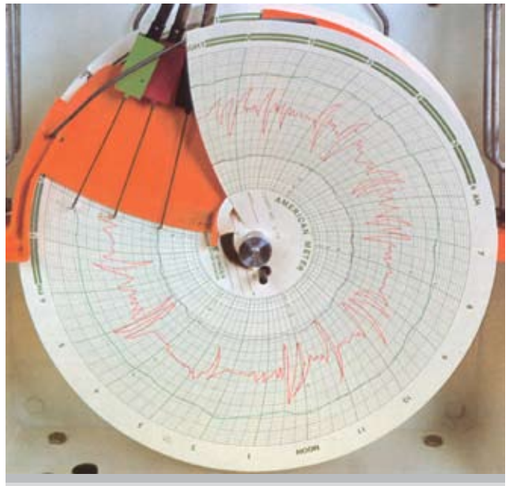


Series 77™ Disposable Pens to fit Barton and American Meter Recorders with Automatic Chart Changers

Our Graphic Controls Series 77 pens couple field retrofit with the convenience and reliability of our Disposable Pens. The pens will quickly convert 1, 2 or 3 pen recorders. They are the ONLY disposables available for this chart-changer equipped application.

What makes these pens different? Their shape! The pen body has been moved away from the writing tip and just a thin metal stylus extends down to the chart's surface. This way, nothing interferes with the critical chart-changing cycle.

Non Chart-Changing Applications
Series 77™ disposable pens are also recommended for applications where frequent pulsation causes writing problems.

To Install
Simply remove the old ink system, connect the pen to its pen arm and place it on the recorder. The pen arm's slotted end allows plenty of room for adjustment to meet the arc line.

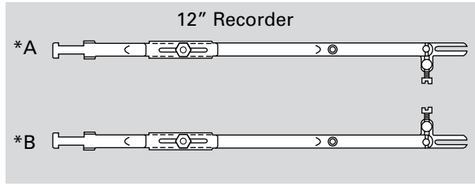
All pen bodies are color coded to match the ink they contain.

Blue Pens are available for inner position:
Order 82-77-1003-03

	Pen Part No	Position	Color	Pen Arm No.
Series 77/To Fit: American Meter	82-77-1001-03	INNER	BLACK*	80-36-3640-01 (1)
	82-77-2002-03	MIDDLE	RED	80-36-3650-01 (2)
	82-77-3004-03	OUTER	GREEN	80-36-3650-01 (2)
Series 77/To Fit: Barton	82-77-1001-03	INNER	BLACK*	80-36-3390-01
	82-77-2002-03	MIDDLE	RED	80-36-3390-01
	82-77-3004-03	OUTER	GREEN	80-36-3390-01

(1) Right Hand Adjustment
(2) Left Hand Adjustment

Pen Arms – For use with Series 72 & 79 Disposable Pens.



Packaging: One pen arm per package

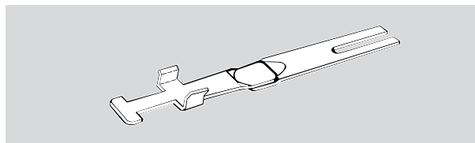
*Adjustable length simplifies recorder retrofit. Finger-tight control allows one pen arm to function in any position on the recorder.

Ident. Letter	Instrument Model Number/Size	Order by GC Part Number
*A	To fit all positions 12″ Recorder	80-36-2490-01
*B		80-36-3030-01

12″ Orifice Meter	
Temperature & Differential	80-36-0980-01
Static	80-36-0970-01

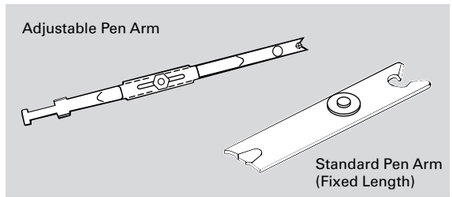
Instrument Model Number/Size	Function	Order by GC Part Number
8″ Round		
Single Pen	Pressure	80-36-3330-01
	Volume	80-36-0990-01
Two Pen	Pressure	80-36-3330-01
	Volume	80-36-0990-01
	Temperature	80-36-3340-01
	Pressure	80-36-3330-01

To Fit: Barton



Instrument Model No.	Replacement for Mfr. part No.	Order by GC Part Number
12″ Recorders	Differential & Static	80-36-2430-01
Model 202	Differential & Static	80-36-1330-01
		80-36-1340-01

To Fit: Foxboro

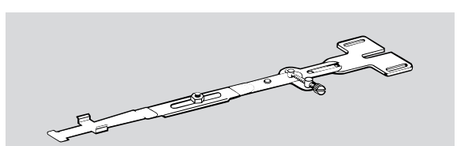


Model 39B Gas Recorder.
12″ Rectangular Case. 80-36-3690-01.

Instrument Model Number	Adjustable Pen Arm Order by GC Part Number	Standard Pen Arm	Light Weight Pen Arm
10″ Round Case and 12″ Rectangular Case (Model 40) Recorders	80-36-2420-01	80-36-1190-01	80-36-3130-01
		80-36-1200-01	80-36-3140-01
		80-36-1210-01	80-36-3150-01
		80-36-1220-01	80-36-3160-01
Rectangular Case (Model 30) and 12″ Round Case	80-36-2410-01	80-36-1230-01	80-36-3170-01
		80-36-1240-01	80-36-3180-01
		80-36-1250-01	80-36-3190-01
		80-36-1260-01	80-36-3200-01
		80-36-1270-01	80-36-3210-01

To Fit: Mercury

Pen Arms (Adjustable) – For use with Universal Series 72 & 79 Disposable Pens



Note: These Posiloc pen arms are adjustable for length and can

Instrument Model Number	Description	Order by GC Part Number
#800 Series (8″) #1200 Series (12″)	#1 Temperature	80-36-3710-01
	#2 Pressure	
	#3 Volume	
	#1 Temperature	

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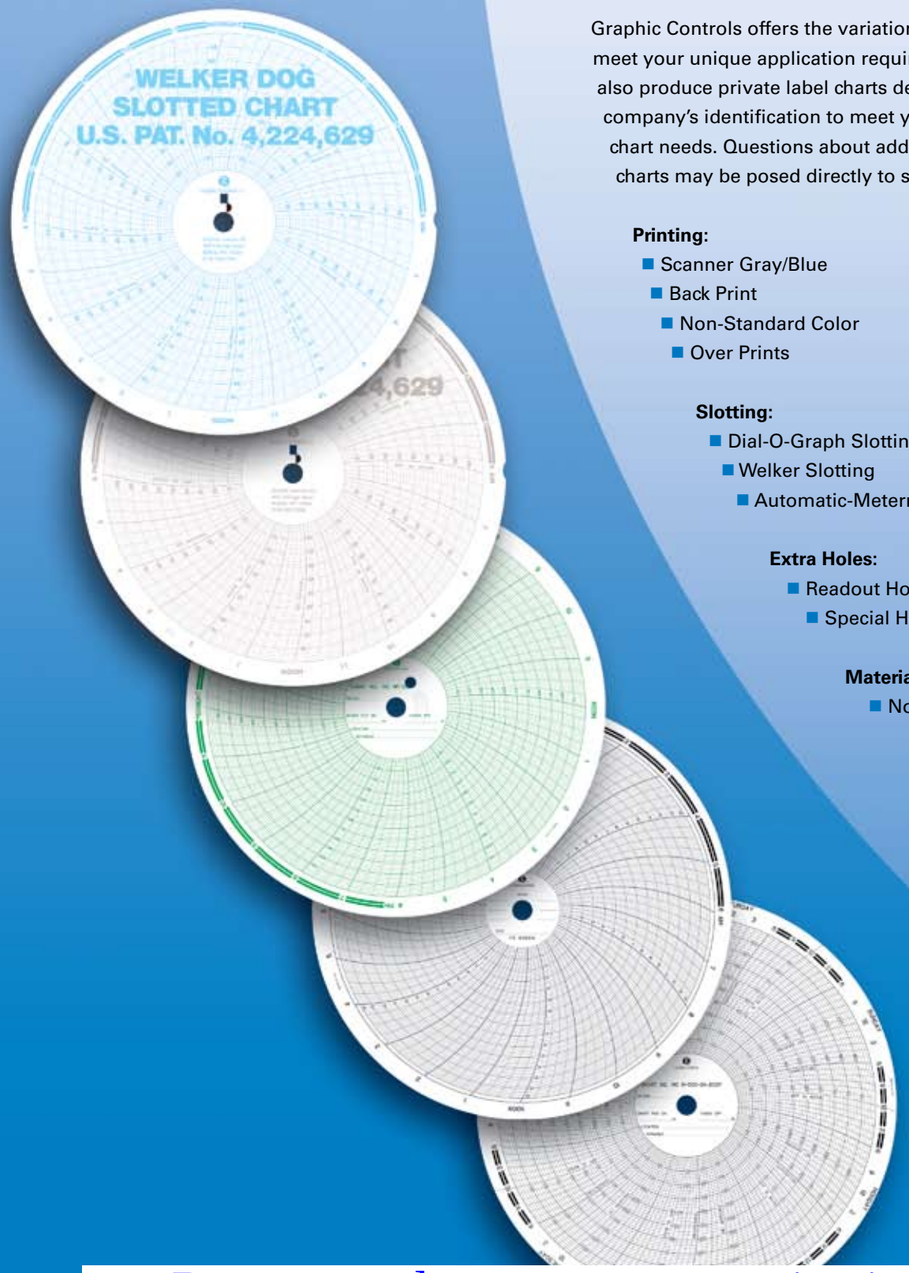

Graphic Controls offers the variations listed below to meet your unique application requirements. We can also produce private label charts designated with your company's identification to meet your organizational chart needs. Questions about additional variations of charts may be posed directly to sales representatives.

Printing:
- Scanner Gray/Blue
- Back Print
- Non-Standard Color
- Over Prints

Slotting:
- Dial-O-Graph Slotting
- Welker Slotting
- Automatic-Meterman Slotting

Extra Holes:
- Readout Hole
- Special Holes

Material:
- Non-Standard Paper

American Meter/Barton

Make & Model Number To Fit:	Size	Chart Range	Part Number
L Series – Sq. Root	11 1/8"	0-10 Sq. Root	L-10
		0-50 Sq. Root; 7 day	L-50-S
		0-100 Sq. Root; 0-250 Pressure	L-100-250
M Series – Pressure & Differential (& Temperature)	11 1/8"	0-100 Pressure; 0-20 Differential	M-100-T
		0-100 Pressure; 0-50 Differential, 0-150T	M-100-150F
MP Series – Pressure (& Pressure & Temperature)	11 1/8"	0-100 Pressure	MP-100
		0-100 Pressure, 0-150 Pressure	MP-100-0-150
		0-150 Pressure, 0-200 Temperature	MP-150-200F
MT Series – Temperature Only	11 1/8"	0-100F	MT-100
Universal Series	11 1/8"	0-100%	0-100%
		0-100%, 150 Temperature, 8 day	0-100%-150-8D
P Series – Pressure	8"	0-100 Pressure; 7 Day	P100-S
Differential Suffixes: X = 0-10; T = 0-20; TV = 0-25; No Suffix = 0-50; H = 0-100; XX = 10-0-10; TV & TV = 25-0-25			

Foxboro

898500 – First Number = Size: 8=12"; 7=10"; 6=8"; 5=6"
79801 – Third Number = Rotation: 8=24HR; 9=7 Day; L=16 Day; N-31 Day -L=7 Pt Paper

Mercury- Designated in Part Number

12" 0-100, -30-120 = P 0-100-30-0-120-12
8" 0-300, -30-120 = P 0-300-30-0-120-8

Scanner Shades

Code 006	Code 161
Shade 34	

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