Pulsar
THE TIME COMPUTER®

JEWELER'S TECHNICAL MANUAL

INTRODUCTION

The fine jewelry business was built and continues to grow on a sound business premise — a combination of quality products, sold and serviced in a quality way. Your profitable Pulsar business is no exception.

Time Computer, Inc. is dedicated to providing you and your discriminating customers with the finest, most innovative digital electronic timepieces available anywhere in the world, supported by equally fine and responsible worldwide service facilities. We continue to be dedicated to these principles.

In publishing this new Jeweler's Technical Manual, we hope to assist you to provide quality service to your customers in three ways:

(1) By identifying those simple, routine service procedures which can and should be provided in the store.

(2) By providing you with the information, materials and equipment you need for prompt, reliable in-store service.

(3) By suggesting when and how your nearest Pulsar Regional Service Center can be utilized for maximum customer convenience and satisfaction.

This Jeweler's Technical Manual also provides you with complete data on every Pulsar model — product numbers, features and specifications, operating instructions, service procedures and replacement materials information. As new models are added to the Pulsar line, supplemental pages will be issued.

Please consult the index on the following page to locate the information you need. And if you ever have a service question or problem, please use our toll-free "hot line" to request what's needed. Call 800-233-0262 (Pennsylvania residents call collect 717-299-0840). We're here to help you and your customers in every possible way.

Customer Service
Time Computer, Inc.
P.O. Box 1707
Lancaster, Pa. 17603

SERVICING THE TIME COMPUTER/CALCULATOR

TROUBLE SHOOTING

PROBLEM: *Display does not light when command button is pressed.*
SOLUTION: Replace all four power cells. If problem remains, return the complete unit to the Lancaster Service Center.

PROBLEM: *Power cells seem to wear out quickly.*
SOLUTION: Advise the customer to be sure to press command button to return computer to timekeeping mode after using Calculator functions. If left in Calculator mode for an extended time, excessive battery drain will occur.

If the Calculator is worn while sleeping, the wearer may inadvertently activate the command button many times during the night. For this reason, wearing the Calculator to bed is not recommended.

PROBLEM: *Time or date displays skip, or unusual displays appear when command button is pressed.*
SOLUTION: On some Calculator models, the "S" (setting) key is located just above and to the right of the command button. If the command button and "S" key are inadvertently pressed at the same time, the month and hours may automatically cycle to 12, or a full array of digits may appear.

To remedy this condition, simply re-set the functions affected and re-cycle the computer back to normal operating mode in the usual manner.

PROBLEM: *Missing LED segments.*
SOLUTION: This condition sometimes occurs when the case back has been removed and replaced. To correct it, put Calculator in setting mode and cycle the hours and minutes (or month and date) to correct display, as indicated in the Power Cell Replacement section of this manual. If power cells are extremely weak, missing LED segments can also result. To remedy the condition in this event, just install fresh cells as indicated previously. If the problem remains, return the complete unit to the Lancaster Service Center.

PROBLEM: *Computer is in calculating mode and will not accept calculations.*
SOLUTION:
1. Calculator may be in overflow. Touch "C" key to clear.
2. A number or function key may be struck. Rotate the calculating tip of the Command Pen around the outer edge of each key, to make sure it is free and operating properly. In most instances, this will "pop" the key back to its correct position. If problem remains, return the complete unit to the Lancaster Service Center.

NOTE: Caution the wearer to use the the special pen stylus provided. Other sharp instruments could cause damage.

PROBLEM: *Excessive timekeeping gain or loss.*
SOLUTION: Adjust Timing with the Pulsar Analyzer, as follows:
1. Remove case back and two **top** cells. (See Power Cell Replacement section of this manual for correct procedure.) Leave cells under L-shaped clamp in place — they power the oscillator and are the only ones needed for timing.
2. With case back removed, place Calculator face down on the Analyzer timing plate. Carefully insert the flat trimmer tool into the trimmer and rotate until the Analyzer meter is centered on zero.
3. Replace two top cells. Make sure case gasket is in place and replace case back. See Power Cell Replacement section of this manual for correct procedure.

NOTE: If the Calculator has received a severe shock, its quartz crystal may require adjustment beyond that possible with the Pulsar Analyzer. If further timing adjustment appears to be necessary, return the complete unit to the Lancaster Service Center.

SERVICING TOUCH/COMMAND MODELS

Pulsar's newest ladies' and solid gold models have the highly reliable 801 module which is 25% smaller than earlier designs. Sensitive pressure points replace moving command buttons and merely have to be touched lightly with the finger tip to activate time and date displays. Setting is also accomplished by touching the command buttons. The Touch/Command display and setting system cannot be activated when the buttons are touched by metal, plastic, cloth or virtually any other material except the skin.

The Touch/Command system responds to capacitance inherent in the skin of the finger tips. The command buttons are permanently attached to the case bezel and are always in contact with the module. They are epoxied in place and cannot be removed in the field. The epoxy cement provides a permanent seal against moisture and dirt, and both buttons are anodized to make them an integral part of the Touch/Command system.

The system will not function correctly if the anodized coating is damaged or removed. Should it be necessary to buff or polish the case, be sure to protect the top of the buttons with tape or other similar material. Moisture or surface contaminants (particularly salt or saline solutions) can activate a display. Should the buttons become wet or dirty, clean and dry thoroughly with a soft cloth or cotton swab.

Water Resistance

Because water and moisture have capacitance properties, they can activate a Touch/Command display. For this reason, we recommend that a Touch/Command model not be worn in the bath, shower, or while swimming. If both buttons become wet — as might happen while swimming — the day and date will be displayed for 1.5 seconds, then go out and remain out

for as long as both buttons are wet. As the module is fully protected by its water-resistant case, no harm will result. To avoid excessive battery drain, however, wet buttons should always be dried promptly with the finger tip or a clean cloth.

Battery Replacement

The 801 module is powered by two Ray-O-Vac RW-48 "Ditronic" cells. **Do not use other cells** — they will materially reduce the intensity of the displays and cannot provide the long life of the recommended Ray-O-Vac RW-48 cells. If one cell fails or tests inadequately, always replace **both** cells — the other may be close to expiration, even though it may test to adequate voltage at that time.

If the display appears dim when new cells are installed, activate the display about 15 or 20 times to "re-energize" the cells. The display brightness will increase.

Touch/Command models have a standard screw-back case construction. To remove the case back, use the proper tool provided by Pulsar. Note that, when the case back is removed, the module rises slightly out of the case.
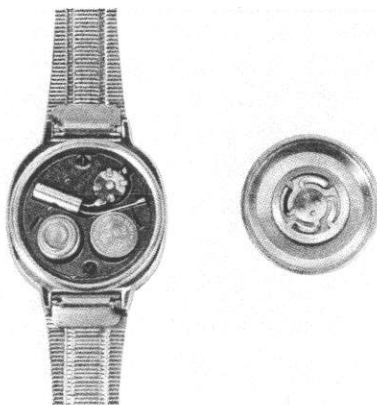

Note which cell is "plus side up" and "plus side down." Instructions are printed in each cell compartment but may be partially obscured by the cell leads.

It is not necessary to have the case back in any special position to close the case. The cell connector on the inside of the case back is a circular ring — it will make proper contact regardless of the position of the case back. Before replacing and tightening the case back, be sure the circular gasket in the case is properly seated.

Module Interchangeability

With Touch/Command models, there is complete interchangeability with all models having the 801 module. Unlike other models which require Command buttons and reed switches to be matched perfectly, any 801 module will function in any Touch/Command model.

There are no screws to hold the module in the case. When the case back is removed, the module can be lifted out with a pair of tweezers.
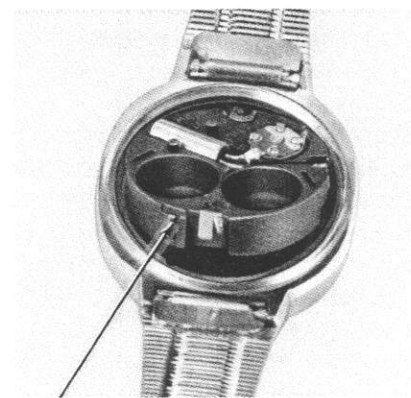
Note that the module has a small T-shaped protrusion on its outer edge, just to the left of the contact spring at "6 o'clock" position. When replacing the module in the case, align this protrusion with the small groove in the comparable position on the inside of the case back. When you replace and tighten the case back, the module is properly seated in operating position.
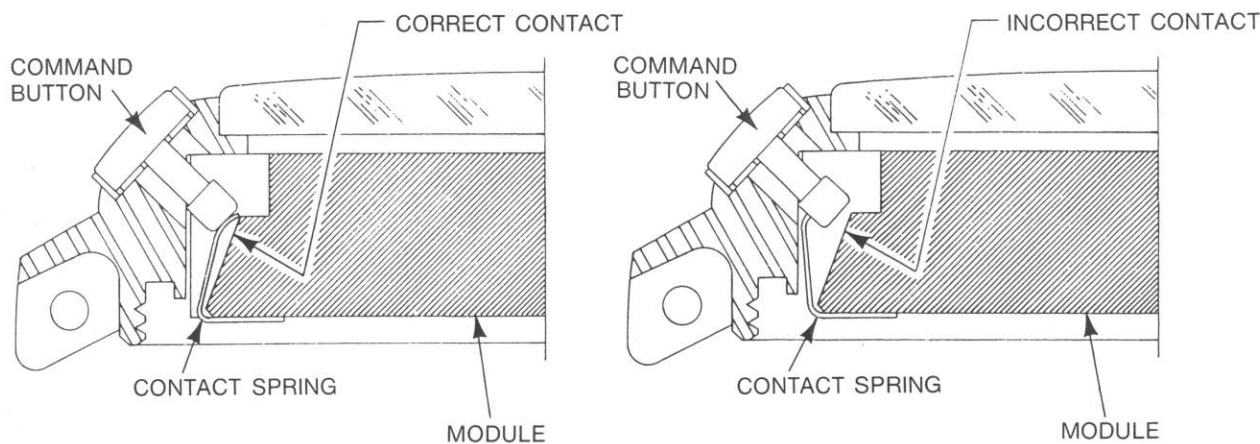
SERVICING TOUCH/COMMAND MODELS (CONT.)

When replacing the module in the case, be sure to keep it flat and straight, to insure proper contact spring position. The contact springs (at 6 and 12 o'clock positions on the module edge) must be kept **inside** the button posts, as shown below.

Note that when the case back has been removed and replaced, it will be necessary to re-set the time and/or date, as when changing energy cells.

CORRECT CONTACT — COMMAND BUTTON — CONTACT SPRING — MODULE

INCORRECT CONTACT — COMMAND BUTTON — CONTACT SPRING — MODULE

TROUBLE SHOOTING

PROBLEM: *Display comes on too easily.*
SOLUTION: Anodized surface of command button(s) may be too sensitive. Return complete unit to your nearest Service Center for de-sensitizing.

PROBLEM: *Display requires hard touch.*
SOLUTION: Make sure customer does not have dry or calloused skin on finger tips — such conditions may impede proper capacitance. If this is not the case, return the complete unit to your nearest Service Center.

PROBLEM: *One display will not light.*
SOLUTION: Check position of contact springs by installing another module. If display activates, it may be that the spring on the first module needs adjustment to provide proper contact — as shown previously.

PROBLEM: *Display lights intermittently (or stays lit constantly) without being touched.*
SOLUTION: Contaminants may have become imbedded in seam between button(s) and case. Clean and dry buttons thoroughly. If problem persists, return complete unit to your nearest Service Center.

PROBLEM: *Display is still dim when new cells have been installed.*
SOLUTION: If the display appears dim when new cells are installed, activate the display about 15 or 20 times to "re-energize" the cells. The display brightness will increase.

PROBLEM: *Cannot set time or date.*
SOLUTION: Check Instruction Manual for proper setting procedure — Touch/Command models have a new and improved setting system. If problem persists, return complete unit to your nearest Service Center.

PROBLEM: *Poor timekeeping.*
SOLUTION: Timing can be adjusted with use of the Pulsar Analyzer. Install special cut-out case back provided by Lancaster Service Center and follow timing procedures in Pulsar Analyzer brochure.

PROBLEM: *Scratched, chipped or broken data screen.*
SOLUTION: Synthetic sapphire data screen is fully guaranteed by Pulsar. Return complete unit to your nearest Service Center for free replacement.

TROUBLE SHOOTING CUSTOMER PROBLEMS (MAGNETIC SET MODELS)

Module Function Test

This essential procedure is used to test a customer's module in which a suspected defect exists. It enables you to determine if you have a defective module, or if the interface between module and case is the problem.

Equipment Needed

1. Plastic carrier
2. One set of Pulsar power cells
3. Timeset bar

By installing the module with power cells in the plastic carrier, the command and time setting functions can be tested.

Procedure

1. Remove module from Pulsar case.
2. Insert module in service case with power cells installed.
3. Using a timeset bar, you can now test time command, month/date command, and setting functions.
4. Refer to illustrations for the checking of each function.

NOTE: When function testing, if LED's do not display, it is possible the magnetic timeset bar may be defective. Try another timeset bar.
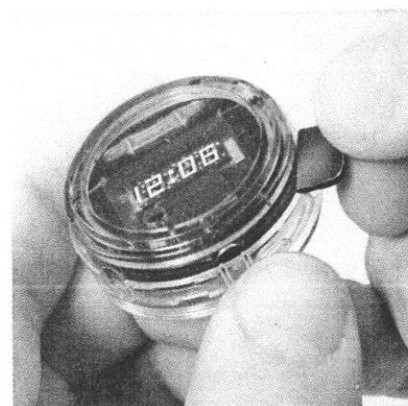

1. Time Command function
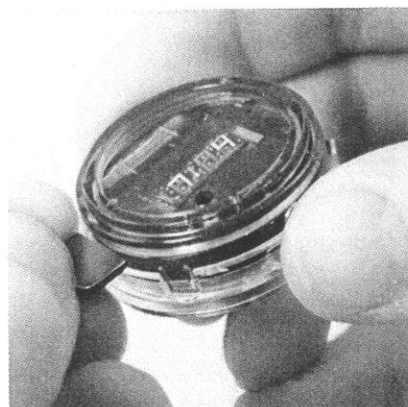
2. Month/Date Command function

3. Hour set function

4. Minute set function

TROUBLE SHOOTING
CUSTOMER PROBLEMS (CONT.)

A. Time does not display when command button is pressed.

1. Take timeset bar and place in hour-setting slot on back of case.

   a. If display **does not light** with the timeset bar, then
      (1) Try another timeset bar. If problem remains, then
      (2) Replace power cells.

   b. If display **does not light** after power cell replacement, then
      (1) Return complete product to Service Center.

   c. If display **lights** with timeset bar, then
      Remove module from case and function test in plastic module carrier, as previously described, then
      (1) If display does not activate, replace module in case and return complete product to Service Center.
      (2) If display activates, return entire unit (case and module) to Service Center to have the command button energized, or to replace defective reed switch.

B. Seconds or date continue to display after respective command button is released.

1. Remove module from case and function test in plastic carrier. (See Function Test) If problem persists in plastic carrier, replace module in case and return complete product to Service Center.

2. If module performs correctly under function test in plastic carrier, then
   a. Install **Hi-Mu 80** shunt (See Page   ) on either time command or date command button cup inside the case, whichever is causing the problem.
   b. If seconds or date continue to display after installation of shunt: return entire unit (case and module) to Service Center for adjustment.

C. Segments of the L.E.D. Display do not light.

1. Use timeset bar to cycle number sequence
   1 through 59 on minutes
   1 through 12 on hours

NOTE: Sometimes, when the command button is first pressed after the case back has been opened and then replaced, odd combinations of numbers appear (e.g., 0:00) or some LED segments may not function. This is normal, and is easily corrected by cycling hours and minutes (or month and date, if necessary) using the timeset bar.

2. If segments still do not light: replace module in case and return complete product to Service Center.

D. Poor timekeeping performance.

1. A reliable time source must be used both in the setting and checking of the time. AM and FM radio, TV, and most telephone time signals are not as reliable as Pulsar accuracy. To obtain truly accurate time reference, a signal from one of the world's official time bureaus is required. In the U.S., for instance, you can tune in on short wave radio to WWV in Boulder, Colorado, or call them at (303) 499-7111.

2. If you are convinced that the Pulsar in question requires timing adjustment, you can do an **approximate regulation** by turning the trimmer on the back of the module inside the case. SEE PAGES COVERING USE OF PULSAR ANALYZER.

3. In order to **precisely adjust** the Pulsar oscillator, a Pulsar Analyzer Model P32-01 is required. (See Analyzer brochure).

4. Large time gains or losses, several minutes or hours, within several days or weeks are usually an indication that Pulsar has been exposed to strong magnetic fields. (The Pulsar setting function is operated by a magnetic switching system.) Such exposure will not damage Pulsar. Just reset the Computer to the correct time.

E. Timeset bar does not activate one or both setting function systems.

1. Try another timeset bar and return defective one to Service Center.

2. If after trying several timeset bars only one or none of the setting functions work, replace module and return defective module to Service Center.

INSTALLING MODULE SHUNT

If a Pulsar module continues to remain lighted after the command button is released, first refer to paragraph B in this manual titled **TROUBLE-SHOOTING CUSTOMER PROBLEMS.**

One of two situations usually cause this problem; (a) the module has shifted too close to the magnetic command button; or (b) the magnet in the command button is too strong.

**Installation of a Hi-Mu 80 shunt will correct the problem in most cases:**

1. Remove module from case and function-test in plastic carrier as outlined in **TROUBLE-SHOOTING CUSTOMER PROBLEMS.**

2. If module operates correctly in function test mode, then install Hi-Mu 80 module shunt as illustrated on this page, using crystal cement, contact cement or equivalent.

3. After cement has set (about 10 minutes) replace module in case, install power cells, close case back and reset.

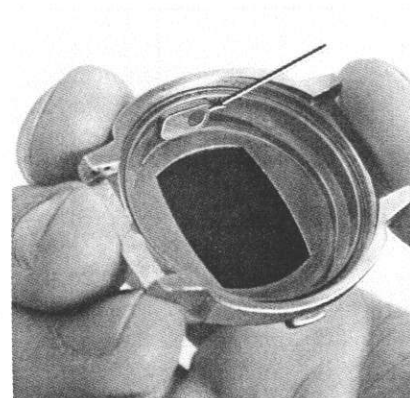4. If problem persists, return case and module to our Service Center.

NOTE: See illustrations and note proper positioning of module shunt for time command position and date command position.
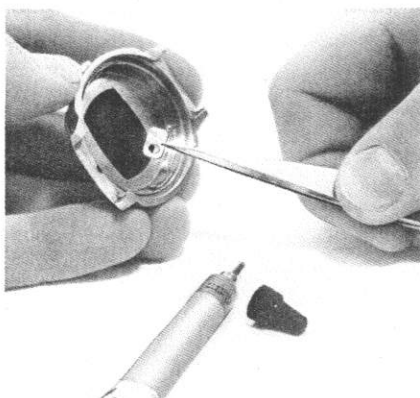
Module shunt held in tweezers, empty case, tube of cement.
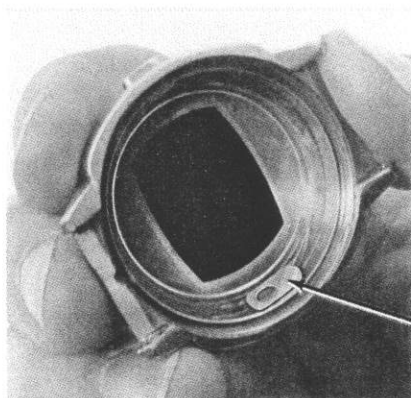
Module shunt installed in case on time command side. Note position of module shunt hole.

Module shunt installed in case on date command side. Note position of module shunt hole.

REGIONAL SERVICE CENTERS

To provide comprehensive service facilities for its jewelers and their customers, Time Computer, Inc. has established a network of Regional Service Centers throughout the country.

Each Center has the proper equipment, genuine replacement parts and trained technicians to assure customer satisfaction. To minimize time in transit, we recommend that you use your *nearest* Regional Service Center for both warranty, non-warranty, and re-warranty work.

Every Center can service any Pulsar product, except the Time Computer/Calculator and Pulse/Time Computer, including time screen and button replacement or case refinishing. The Time Computer/Calculator and Pulse/Time Computer should be sent to the Lancaster Service Center for *all* repairs.

PULSAR SERVICE CENTERS

NORTHWEST
Joe Skinner
4th & Pike Bldg. — Rm. 614
Seattle, WN 98101
(206) 622-8640

WEST
Andre Fleury
760 Market St. — Rm. 524
San Francisco, CA 94102
(415) 421-1586

SOUTH CENTRAL
Jimmy Dickinson
13777 N. Central Expwy.
Suite 414
Dallas, TX 75243
(214) 234-2623

MIDWEST
Leo Kozlowski
Pittsfield Bldg. — Rm. 309
55 E. Washington St.
Chicago, IL 60602
(312) 236-8052

EAST CENTRAL
William Shertzer
21700 Greenfield — Suite 313
Oak Park, MI 48237
(313) 968-0450

SOUTHEAST
George Sillani
Spanish Plaza
801 S. Dixie Highway W.
Pompano Beach, FL 33060
(305) 781-6430

NORTHEAST
Customer Service Center
Time Computer, Inc.
P.O. Box 1707
Lancaster, PA 17604
(717) 299-6311

CANADA
Henry Birks & Son
1240 Phillips Square
Montreal, Quebec CANADA
(514) 393-2511

WORLDWIDE SERVICE

Outside the continental U.S., Pulsar service is available through our General Agents in more than 70 countries of the free world. A list of these General Agents is provided in our "World Service Organization" booklet packaged with each Pulsar — and is available on request to Time Computer, Inc. A customer requiring overseas service under warranty should present his Certificate of Ownership.

SERVICE RETURN CARD

When a serviced product is returned to you by a Pulsar Service Center, it will be accompanied by a Service Return Card (see illustration) indicating the work performed. The card will also indicate your repair number, the case serial number and other information to identify the job.

If there should still be a service problem related to the job, please use the space provided on the reverse side of the Service Return Card (see illustration) to tell us what's needed. Just return the product with the card to the Service Center which performed the initial work. Further inquiries should be directed to that Service Center.

Consumer's Name

Jeweler

City _____ State

Jeweler's Repair No.

Pulsar Invoice No.

Model No.

Case Serial No.

Date

PLEASE NOTE

This Pulsar has been repaired by our

_____

Service Center and the following work performed:

( ) Timing Adjusted
( ) Display Repaired
( ) Demand Switching Repaired
( ) Setting System Repaired

( ) Time Screen Replaced
( ) Case Repaired Replaced
( ) Bracelet Repaired Replaced
( ) Batteries Replaced

( ) Other: _____

_____

(SEE OTHER SIDE)

Your Pulsar has been inspected and found to be in satisfactory condition. We want you to be completely satisfied. If there should still be a problem, please describe it: _____

_____

So that this problem will receive immediate attention, please return your Pulsar with this card *to the Service Center indicated on the reverse side.* If you have any questions, please call our toll free number: 800-233-0262 (In Penna., call collect to 717-299-0840).

PN1499 20M-377 Printed USA

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PULSAR MODELS
AND
MATERIALS
PARTS LIST

PULSAR
LIMITED EDITION

Specifications
— Displays hour, minute, second
— Accurate to within 60 seconds a year
— Water-resistant to a depth of 100 feet
— Shock-resistant
— Synthetic ruby time screen
— Magnetic switching
— Light sensor
— Command button located at "6 o'clock" position.

Battery Requirements
— Two Ray-O-Vac RW-25 power cells which can be installed by the jeweler.

Model Number
No. 2800   18kt. Gold Case,
   18kt. Gold Bracelet

Product Information
This Pulsar model was the world's first solid-state wrist Time Computer, introduced Spring of 1972. Only 450 were manufactured.

Power cell replacement and resetting are the **only** two services a jeweler can perform. All other servicing must be done at the Lancaster Service Center. **For factory service of this model, allow at least 14 working days** from date of receipt at our service center.

NOTE: The only removable parts on this Pulsar model are two battery hatches on the case back. The case itself is soldered and can only be opened at our Service Center.
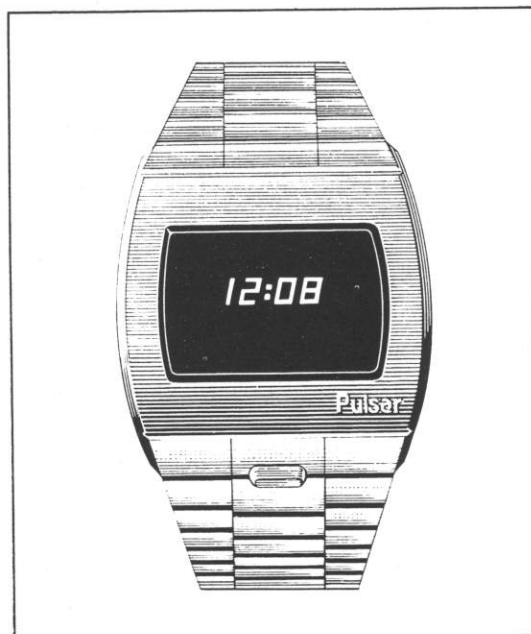
PULSAR II

Specifications
— Displays hour, minute, second
— Accurate to within 60 seconds a year
— Water-resistant to a depth of 100 feet
— Shock-resistant
— Mineralite glass time screen
— Magnetic switching
— Light sensor
— Timing adjustment trimmer on back of module
— Command button located at "3 o'clock" position

Battery Requirements
— Two Ray-O-Vac RW-25 power cells which must be installed by the jeweler.

Product Information
This Pulsar, telling time only, was introduced in the fall of 1972. The jeweler can perform all repairs on these models, as outlined in the **In-Store** section of this manual. Note that only a Pulsar jeweler, equipped with the correct case wrench, can change power cells.

Model Numbers
No. 3238 Stainless Steel Case/Strap
No. 2900 Stainless Steel Case/ Bracelet
No. 3276 14kt. Gold-Filled Case/ Strap
No. 2970 14kt. Gold-Filled Case/ Bracelet
No. 2975 14kt. Gold Case/Steel Back, 14kt. Gold-Filled Bracelet
No. 3286 14kt. Gold Case/Strap
No. 2980 14kt. Gold Case/Bracelet
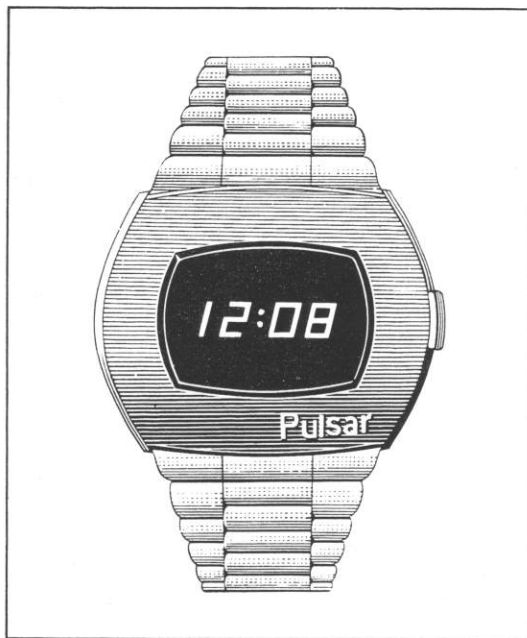
MATERIAL SALES PARTS LIST
P-II (NON-DATE)
MODEL NUMBERS: 2900, 3238, 2970, 3276, 2975, 2980, 3286

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
2898	SCREW PIN, BRACELET/CASE ATTACHMENT	N/C
3191	S/S CASE COMPLETE	50.00
3194	14KT. YGF CASE COMPLETE	110.00
2890	S/S BEZEL COMPLETE (INCLUDES MINERALITE TIME SCREEN)	32.00
2981	14KT. YGF BEZEL COMPLETE (INCLUDES MINERALITE TIME SCREEN)	80.00
2892	S/S CASE BACK	18.00
2979	14KT. YGF CASE BACK	30.00
2879	S/S CASE NUT	N/C
2895	CASE O-RING	N/C
	BRACELET PARTS	
2904	S/S BRACELET	20.00
2982	14KT. YGF BRACELET	60.00
4808	S/S ADJUSTMENT LINK	.50
4818	14KT. YGF ADJUSTMENT LINK	1.50
3952	SPRING BAR, ADJUSTMENT LINK	N/C
3955	S/S CLASP WITH FOLDOVER	6.00
3956	14KT. YGF CLASP WITH FOLDOVER	20.00
3960	SPRING BAR, CLASP	N/C
3997	S/S MAGNET COMPARTMENT	N/C
	STRAP PARTS	
3178	SCREW PIN, STRAP/CASE ATTACHMENT	N/C
3546	S/S BUCKLE WITH COMPARTMENT	3.00
3547	10KT. YGF BUCKLE WITH COMPARTMENT	9.00
3960	SPRING BAR, STRAP BUCKLE	N/C
3501	SHORT, BLACK LEATHER STRAP	5.00
3502	REGULAR, BLACK LEATHER STRAP	5.00
3503	LONG, BLACK LEATHER STRAP	5.00
3507	SHORT, BROWN LEATHER STRAP	5.00
3508	REGULAR, BROWN LEATHER STRAP	5.00
3509	LONG, BROWN LEATHER STRAP	5.00
	MISCELLANEOUS PARTS	
2920	MODULE SCREWS	N/C
2876	SETTING MAGNET	N/C
3538	RW-25 POWER CELLS (PAIR)	5.00
1400	FLAT CASE WRENCH	1.00
1401	LARGE CASE WRENCH	6.00
3850	DISPLAY BOX COLLAR (for gold product)	33.00
3851	DISPLAY BOX, LAYOUT (for gold product)	16.00
3853	DISPLAY BOX, COLLAR (for S/S & GF product)	8.00
3854	DISPLAY BOX, LAYOUT (for S/S & GF product)	8.00
1014	CHAMOIS	1.00

*Keystone

Prices subject to change without notice

NOTE: Prices for other solid gold cases and bracelet parts on request.

PULSAR DATE/COMMAND AND PULSAR DATE II

Specifications
— Displays hour, minute, second, month, date, has AM/PM indicators
— Accurate to within 60 seconds a year
— "Smart calendar" knows the difference between 30 and 31 day months and changes automatically. February is programmed for 29 days, so no adjustment is required in leap year. In other years, change date only on March 1st.
— Water-resistant to a depth of 100 feet
— Shock-resistant
— Mineralite glass time screen
— Magnetic switching
— Light sensor
— Fine-adjust timing trimmer on back of module
— Rough-adjust flat timing trimmer on front of module
— Command buttons at "9 o'clock" position (month/date) and at "3 o'clock" position (time)

Battery Requirements
— Two Ray-O-Vac RW 25 power cells, which must be installed only by the jeweler.

Product Information
These are the first Pulsar month-and-date models, introduced in the fall of 1973 and spring of 1974. Both contain identical Time Computer modules.

Model Numbers
No. 3100	Stainless Steel Case/Bracelet
No. 3336	Stainless Steel Case/Strap
No. 3230	Stainless Steel Case/Bracelet (Date II)
No. 3216	Stainless Steel Case/Strap (Date II)
No. 3120	14kt. Gold-Filled Case/Bracelet
No. 3376	14kt. Gold-Filled Case/Strap
No. 3115	14kt. Gold Top/Stainless Steel Back/Matching Gold-Filled Bracelet
No. 3396	14kt. Gold Top/Stainless Steel Back/Strap
No. 3130	14kt. Gold Case/Bracelet
No. 3386	14kt. Gold Case/Strap, 14kt. Gold Buckle
No. 3140	18kt. Gold Case/Bracelet
No. 3366	18kt. Gold Case/Strap, 18kt. Gold Buckle

Date/Command
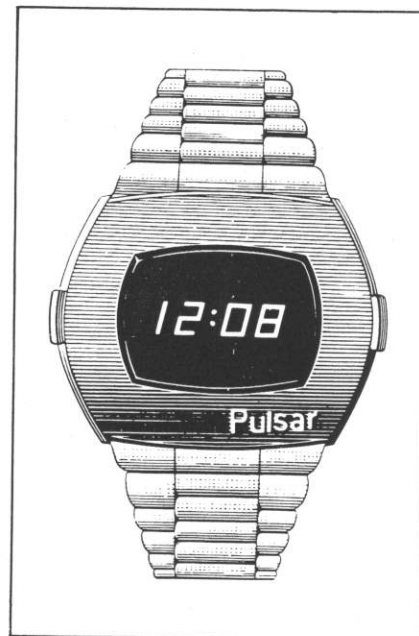
Date II

MATERIAL SALES PARTS LIST
P-II (DATE)
MODEL NUMBERS: 3216, 3230

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
2898	SCREW PIN, BRACELET/CASE ATTACHMENT	N/C
3209	S/S CASE COMPLETE	50.00
3208	S/S BEZEL COMPLETE (INCLUDES MINERALITE TIME SCREEN)	32.00
2892	S/S CASE BACK	18.00
2879	S/S CASE NUT	N/C
2895	CASE O-RING	N/C
	BRACELET PARTS	
2904	S/S BRACELET	20.00
4808	S/S ADJUSTMENT LINK	.50
3952	SPRING BAR ADJUSTMENT LINK	N/C
3955	S/S CLASP WITH FOLDOVER	6.00
3960	SPRING BAR, CLASP	N/C
3997	S/S MAGNET COMPARTMENT	N/C
	STRAP PARTS	
3178	SCREW PIN, STRAP/CASE ATTACHMENT	N/C
3546	S/S STRAP BUCKLE WITH MAGNET COMPARTMENT	3.00
3960	SPRING BAR, STRAP BUCKLE	N/C
3501	SHORT, BLACK LEATHER STRAP	5.00
3502	REGULAR, BLACK LEATHER STRAP	5.00
3503	LONG, BLACK LEATHER STRAP	5.00
3507	SHORT, BROWN LEATHER STRAP	5.00
3508	REGULAR, BROWN LEATHER STRAP	5.00
3509	LONG, BROWN LEATHER STRAP	5.00
	MISCELLANEOUS PARTS	
2920	MODULE SCREWS	N/C
2876	SETTING MAGNET	N/C
3538	RW-25 CELLS (PAIR)	5.00
1400	FLAT CASE WRENCH	1.00
1401	LARGE CASE WRENCH	6.00
3853	DISPLAY BOX, COLLAR	8.00
3854	DISPLAY BOX, LAYOUT	8.00

*Keystone

Prices subject to change without notice

INDEX

IN STORE SERVICE

WHAT A PULSAR JEWELER CAN AND CANNOT SERVICE

In the interest of customer convenience and satisfaction, and as is the case with the other fine products you sell, simple routine service procedures should be performed in the store.

You Can

- Replace power cells with genuine Pulsar (Ray-O-Vac) cells specified for that particular model. Do *not* use other brands — they may adversely affect the Pulsar's performance and cannot provide the long life and satisfactory service of genuine Pulsar cells.

- Re-set your customer's Pulsar to the correct time or date.

- Regulate timing with the Pulsar Analyzer to conform with guaranteed accuracy of plus or minus 60 seconds a year.

- Adjust bracelet length.

- Remove minor scratches on case or bracelet with a glass brush.

- Install module shunt to correct malfunctioning magnetic switching when seconds or date continue to display after command button is released. See page 22 of this Technical Manual.

- Return the Pulsar to your nearest Service Center for problems you cannot correct.

You Cannot

- Make adjustments to or change any of the electronic components attached to the module.

- Replace a damaged time screen.

- Refinish a deeply scratched or damaged case.

- Repair a command button assembly — except for installation of a shunt on magnetic set models.

- Make any repairs to a Time Computer/Calculator.

Module Replacement

The increasing number and complexity of Pulsar product innovations have made it impractical for most jewelers to maintain an inventory of Pulsar replacement modules. For this reason, we recommend that any replacement modules in your stock be returned to the Lancaster Service Center for full credit. In the interests of prompt service to your customers, module replacement — when necesary — will be provided only by the Regional Service Centers.

Non-Warranty Service

The Pulsar warranty does not cover case, bracelet or mineralite time screen repairs. For this reason, the following services are available through our Regional Service Centers at the suggested retail prices* shown:

- Refinish case and bracelet, including new mineralite time screen.
$45.00 plus postage

- Replace mineralite time screen.
$35.00 plus postage.

*Keystone

CONSUMER SERVICE GUIDE

When service cannot be accomplished in the store, you should forward the Pulsar to your *nearest* Pulsar Service Center.

1. Receipt will be acknowledged in writing on the day of arrival in the Service Center.

2. If the product is under warranty and meets guarantee requirements, our acknowledgement will indicate "no charge" and the Pulsar will in most instances be returned within 14 working days. Be sure to allow for time in the mail going to and from the Service Center.

3. Receipt of products out of warranty, and for service not covered by the guarantee will be acknowledged with an invoice estimating cost of repair. Such invoices are accompanied by a return postcard which, when returned to the Service Center, will indicate your authorization to proceed. To expedite service, you can — if you choose — give authorization in advance. *No out of warranty service is performed until we receive your authorization.*

4. When returning a Pulsar for service — either in or out of warranty — *be sure to indicate the problem.* The printed check list in your Consumer Service Guide (sample illustrated) provides a quick, convenient way for you to tell us what service is needed. The more you tell us, the quicker we can perform the needed repairs and return the Pulsar to you. Be sure to note the Pulsar Case Serial Number and to include your own Job Number.

5. Correspondence or telephone inquiries to a Service Center regarding a repair should always refer to the Pulsar service invoice number.

Pulsar
THE TIME COMPUTER®
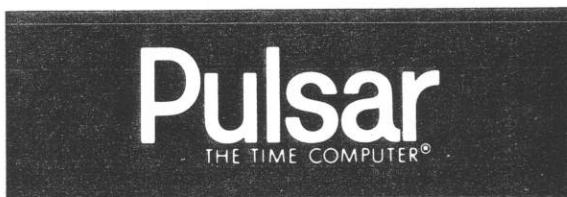
Consumer Service Guide

Most customer service problems can be handled by you on the spot by using this Customer Service Guide. Here's how you can solve the most frequent problems:

1. Ask the customer to describe his problem.
2. Check off the problem as described in one of the boxes below:

☐ Doesn't light up when button is pressed
☐ I can't set my Pulsar
☐ Display stays on after I release the button
☐ When I push for time, I get date instead
☐ It's not keeping good time
☐ Display looks dim
☐ Display looks broken
☐ Date, hours or minutes don't appear in proper sequence

☐ COMMENTS/INFORMATION _____

_____

_____

_____

_____

_____

If you have any questions, call our toll-free service "hot-line" — 800-233-0262 (in Pennsylvania, call collect to — 717-299-0840). A qualified Pulsar Service Representative will assist you with your customer's problem.

Be sure to complete the check list above and return it with the complete Pulsar to your nearest regional Pulsar Service Center.

Jeweler's Name _____

Address _____

Phone _____ Serial No. _____

Model No. _____ Jeweler's Job No. _____

MATERIALS REQUIRED FOR IN-STORE SERVICE OF PULSAR

Most of the jeweler's in-store service on Pulsar products can be accomplished with the familiar tools and equipment shown here.

Items identified with an asterisk (*) are available through the Lancaster Service Center. In some instances, there is a nominal charge — see the Material Sales Parts Lists for each model for part numbers and costs.
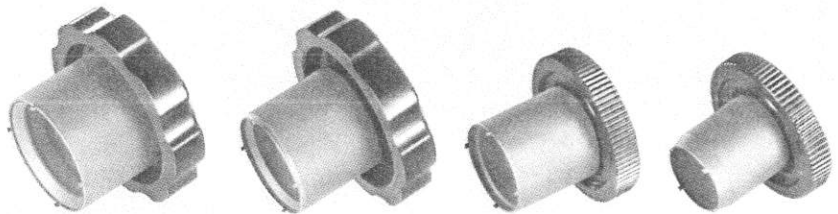
*Heavy Duty Case Wrenches for the following models (left to right): P-II and P-III; P-IV; Lady Pulsar and Men's Dress; Ladies' Touch Command.

Jeweler's Screwdriver
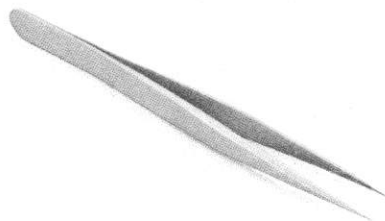
Tweezers
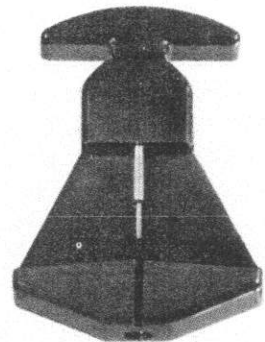
*Bracelet Sizing Fixture for P-IV "Executive" Stainless Steel bracelets only.
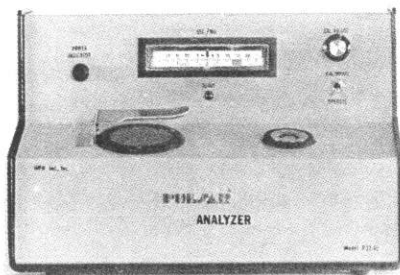
*Pulsar Analyzer for timing regulation and cell testing. See separate brochure on use of Analyzer also timing regulation instructions for individual models.
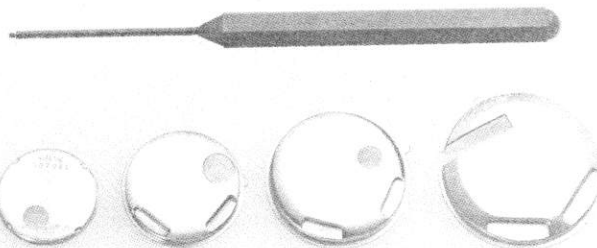
*Cut-Out Case Backs (center), Regulating Screwdrivers (top and bottom) Case backs shown are (left to right) for Ladies' Touch/Command, Lady Pulsar, P-IV and P-III models.

POWER CELL REPLACEMENT

Installation of correct and fresh Pulsar power cells is the single most important service function the jeweler can perform. Our service records indicate that up to 40% of the Time Computers returned for service have battery related problems which could have been solved in the store by proper installation of fresh cells of the type specified by Pulsar. See the Replacement chart in this manual.

Use Ray-O-Vac "Ditronic" Cells Only

Pulsar cells are manufactured only by Ray-O-Vac, a pioneer and world leader in the electronic watch energy cell industry. The Ray-O-Vac "Ditronic" (or Silver II) cells recommended by Pulsar are of the divalent silver oxide type and provide the greatest amount of energy and longest life possible in a watch cell. Other brands of cells will provide from 25% to 40% *less* life and — in the event of leakage — can damage the Time Computer module.

Always Install Fresh Cells

All Ray-O-Vac cells are date coded with a four digit number. The first three digits indicate the day of manufacture, and the fourth digit indicates the year. For example, a date code of 0257 would indicate manufacture the 25th day of the year (January 25), 1977. A date code of 1207 would indicate the date of manufacture to be the 120th day of the year (April 30), 1977. All cells will lose some of their electrical capacity in storage, and cells with less than 90% of full potential should *not* be put in service. Cells you've had in stock for more than 6 months should be discarded.

Cell Storage

If stored at an average room temperature of 72 degrees Farenheit (+22.2°C), a cell will lose 10% of its electrical capacity in 6 months. For this reason, we recommend that, when possible, cells be refrigerated at 40 degrees Farenheit (+4°C). Cells stored at these temperatures will retain 90% of their capacity for as long as 18 months. Only cells packaged in hermetically sealed foil should be refrigerated, and — before the package is opened — it should be brought to room temperature to eliminate condensation before installation in the module. Otherwise, condensation may form on the cell and could greatly reduce its effective life. If refrigeration is not available, store cells in a cool, dry area at about 60-70°F (+15.6-22.2°C).

Bulk cells (i.e., those not foil packaged) should *never* be refrigerated. In those areas of the country where dampness and high humidity are prevalent, only foil packaged cells should be purchased. Extremely high temperatures such as those found in a display window or beneath a spotlight can also reduce cell life.

Due to the relatively limited shelf life of energy cells, we recommend that only a 3 to 5 month inventory of replacement cells be kept by the jeweler. Be sure to rotate your cell stock on a "first in, first out" basis.

Always Replace Both Cells

It is characteristic of watch power cells that they maintain constant voltage almost up to the point of failure. If one cell should fail or test below its effective voltage level, the other cell in the module may be close to failure — even though it tests positively.
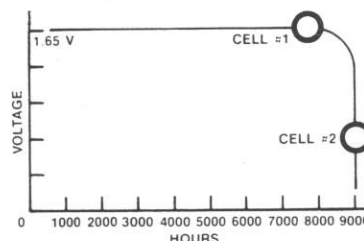
In the diagram above, Cell #1 tests adequately, while Cell #2 has less than the required voltage. If only Cell #2 were replaced, Cell #1 would probably fail in about 1000 hours — a little over one month. For this reason, always replace both cells when one tests inadequately — and all four cells in the Time Computer/Calculator and Pulse/Time Computer.

Cell Testing

The Pulsar Analyzer incorporates a cell testing device. Keep in mind, however, that a positive reading only indicates that the cell will operate the module, not how much energy is left in the cell.

Proper Handling Technique

Do not handle energy cells with bare fingers, use finger cots or plastic tweezers. Moisture on the fingers could cause contamination.

Make Sure Polarity is Correct

Cell holders in the module are marked, "plus side up" and "plus side down." There is a plus sign clearly marked on every Pulsar cell — make sure it's installed properly.

POWER CELL REPLACEMENT GUIDE

IMPORTANT NOTICE!

Only the recommended Ray-O-Vac power cells can assure the fine performance built into each Time Computer at the factory. Do **not** use other brands of cells, even though they may be of the same size and configuration. Other cells will adversely affect product performance and provide from 25% to 50% of the life expectancy of the recommended Ray-O-Vac power cells.

Style	Model No.	Module No.	Setting *	Ray-O-Vac
Limited Edition	2800	201	M	RW 25
P-II 1 button	3238, 2900, 2975, 3276 2970, 3286, 2980	201	M	RW 25
P-II 2 button	3230, 3216	301	M	RW 25
P-III	3100, 3336, 3120, 3376, 3115 3396, 3130, 3386, 3140, 3366	301	M	RW 25
P-IV (Executive)	3201, 5201, 7201	401 402	M A/S	RW 42 RW 42
	3211	406	A/S-24 hr.	RW 42
Classic	3310, 5310 (DOW)	403	A/S	RW 42
	3210, 5210	402		
Big Time	3315 (DOW)	403	A/S	RW 42
	3215	402		
Men's Dress	3408, 5408, 7408	102 104	M A/S	RW 44
	3416	110	A/S	RW 42
Ladies' Cushion	2407, 4407, 6407, 6420	101 103	M A/S	RW 44
Ladies' Oval	2406, 4406, 6406, 6414, 6412	101 103	M A/S	RW 44
Time Computer/Calculator	3822, 5822, 1822	901/902	A/S	RW 42 (4)
Ladies' Oval	2912, 4912	801	A/S	RW 48
Ladies' Cushion	2926, 4926	801	A/S	RW 48
Ladies' Square	2927, 4927	801	A/S	RW 48
Men's Solid Gold Rectangular	7917, 1917	801	A/S	RW 48
Men's Solid Gold Cushion	7918, 1918	801	A/S	RW 48
Ladies' Solid Gold Rectangular	6931, 1931, 1934	801	A/S	RW 48
Ladies' Solid Gold Cushion	6921, 1921	801	A/S	RW 48
Pulse/Time Computer	7725, 3725	910	A/S	RW 42 (4)

DOW–Day of Week   *M–Magnetic Set   * A/S–Auto Set

INSTRUCTIONS FOR POWER CELL REPLACEMENT
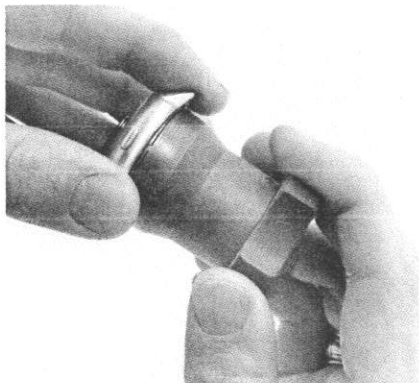
1. Remove one pin bar in clasp of bracelet and lay Pulsar face down. If model has double bracelet attachment spring bars, remove innermost spring bars from both sides of case. This allows full access to back of case.

2. Using case wrench, place it in case back ring slots and turn counter-clockwise until threaded ring is unscrewed. If case nut is frozen due to accumulated dirt, body oils, etc., scrub with a brush and liquid soap to loosen contaminants.

3. Remove ring and case back ("O" ring gasket may stick to back; if not, leave it in place).
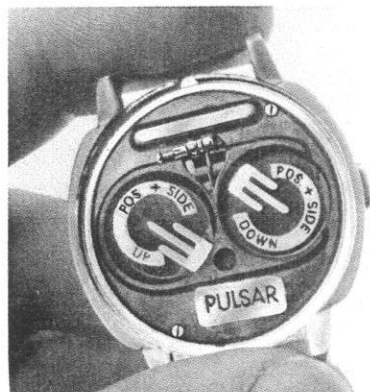
4. Remove old power cells, and replace with new cells. Cell holders are marked "plus side up" and "plus side down," referring to the "plus" sign on one side of each power cell. Be sure cells are placed accordingly.

Do not let cells touch when installing them, and do not handle with tweezers, as this may short-circuit the fresh cells.

5. If "O" ring gasket has been removed, place it back in the case, making certain that it is positioned entirely in its groove.

6. Replace case back, making sure the small tab is properly seated in the slot at the "12 o'clock" position. Press back into place and hold with fingers of left hand.

7. Take case "O" ring in right hand, place into position and start screwing ring into threads in a clockwise direction. Now take case wrench and tighten "O" ring securely.

8. Reset Pulsar to the correct time.

NOTE: Sometimes, when the command button is first pressed after the case back has been opened and then replaced, odd combinations of numbers appear (e.g., 0.00) or some LED segments may not function. This is normal, and is easily corrected by cycling hours and minutes (or month and date, if necessary).
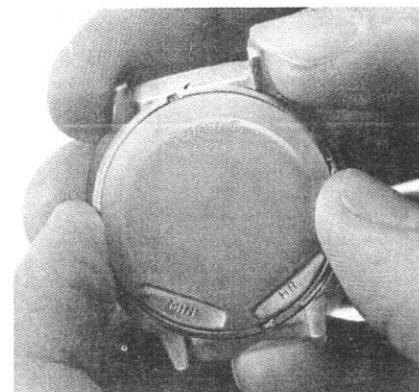
SERVICING THE TIME COMPUTER/CALCULATOR
POWER CELL REPLACEMENT

1. Remove one pin bar from bracelet clasp and lay Calculator face down to allow full access to case back.

2. When removing case back, be sure to use a proper size screwdriver — one with a blade that fits well in the screw slot. Loosen and remove screws in sequence shown below.
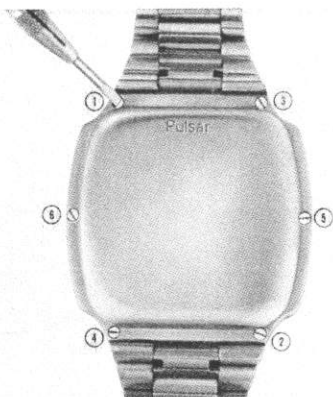
3. When screws are removed, carefully remove case back and gasket. Note cell arrangement — two (at top) are free, two (in center) are held by L-shaped clamp.

4. Examine cell connector in case back to make sure it is fastened securely.

5. Remove two loose cells. To release two cells held by L-shaped clamp, loosen clamp screw slightly and rotate clamp as shown below.

Do not loosen clamp fully or remove it from module. If clamp is removed accidentally, be sure to replace it properly — with the long lead **under** the double connector in the lower left cell cavity.

6. When old power cells have been removed, replace all four with fresh Ray-O-Vac RW-42 "Ditronic" cells.
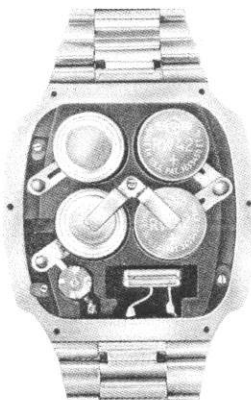
Be sure cells are located properly in accordance with the "+ UP" and "+ DN" markings in each cavity, as pictured above. Re-position L-clamp as shown and tighten screw.

7. After making sure that the gasket and case back are properly positioned, insert case back screws and turn in partially.
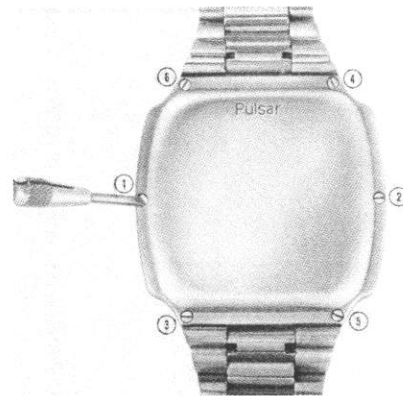
Tighten one screw, then another diagonally opposite, as you did in removing the case back. Do not over-tighten.

NOTE: When the command button is pressed after the case back has been removed and replaced, the display you see will sometimes be unusual (i.e. 0:00), or some LED segments may not light. This condition is normal under these circumstances and is easily remedied. Touch the "S" key to put the Calculator in setting mode and cycle the hours and minutes (or month and date, if necessary) to the correct time or date.

9

THE PULSAR CASE

Cases for Pulsar models are made of stainless steel, 80-micron-thick 14kt. gold-filled, and 14kt. or 18kt. solid gold. Because of the unique Pulsar setting and command systems, there are no holes through the walls of the case. Pulsar cases are tested for water resistance to an underwater depth of 100 feet.

There are three service functions related to the Pulsar case which the jeweler can perform:

1. Repair "bow-tie" cell connector inside case back.

2. Clean accumulated dust and dirt from exterior button well.

3. Repair leaking cases.

Details for correcting each of these problems follow.

REPAIRING "BOW-TIE" CELL CONNECTOR

The "bow-tie" cell connector is fastened to the inside of the case back to maintain proper contact with both power cells in the module. Occasionally, when removing the case back, you may find that this cell connector has broken loose.

1. Remove old epoxy from cell connector and inside of case back using emery paper.

2. Then clean cell connector and inside of case back using a grease-removing solvent such as Chlorothene. After this step, be sure not to touch the cleaned surfaces with your fingers (the natural oil from your fingers on the cleaned surfaces will not permit proper bonding).

3. Use an alpha cyanoacrylate contact cement (available under such trade names as Permabond, Aron Alpha, Eastman 910, etc.) to re-establish bond.

   Apply cement to case back (approximately one drop).

Align the two little dots on the case back through the two holes in the cell connector. Press cell connector into place and hold 10 to 15 seconds.

4. Although an alpha cyanoacrylate contact cement sets in 5 to 10 seconds, full bonding strength is not obtained for 24 hours. We therefore urge you to let the newly epoxied cell connector set for 24 hours before replacing case back onto the Pulsar case.

NOTE: Ladies' Touch/Command models (801 module) have a circular cell connector on the inside of the case back. Should it loosen, use the same repair procedures, being sure to align the connector correctly.
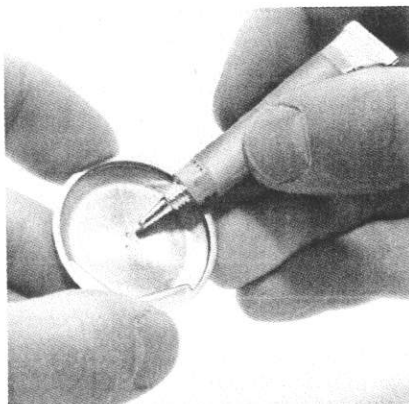
Applying cement.
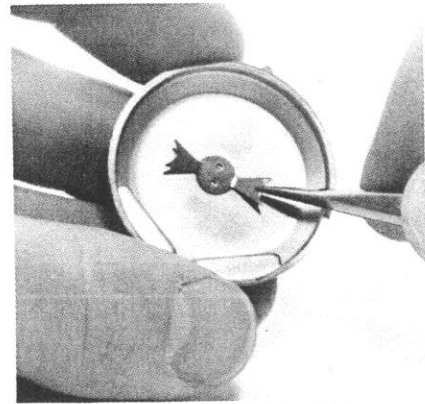
Lining up two dots on case back with two holes in cell connector.

ULTRA SONIC CLEANING OF CASE AND BUTTON ASSEMBLY

After months or years of wearing a Pulsar, the command buttons (date or time) may operate sluggishly, or stick. This probably indicates that excessive dirt or lint has accumulated inside the button well.

Ultrasonic cleaning will generally correct this problem. Proceed as follows:

1. Fill ultrasonic tank with soap/ammonia solution.

   NOTE: Do not use trichloro-ethylene or chlorothene solutions as they will cause the rubber gasket in the button assembly to swell.

2. Open case back and remove module.

3. Place portion of case containing command buttons into the ultra-sonic cleaner, button facing **down** to dislodge dirt, etc. from button assembly. For Date/Command models, case must be turned and processed again to clean second button assembly.

NOTE: Do not place complete case and module in solution. This will damage module.

4. After cleaning, follow with a water rinse, then an alcohol rinse for drying purposes.

5. After case is dry, install module, new power cells and case back. Reset and return to your customer.

6. Never grease or oil the button assembly. If a lubricant is necessary, we suggest a powdered graphite.

NOTE: Oil or grease will coagulate and trap dirt, causing button assembly to stick.

> Do not clean calculator case. Return complete unit to Lancaster Service Center.

Remove module from case before ultrasonic cleaner.
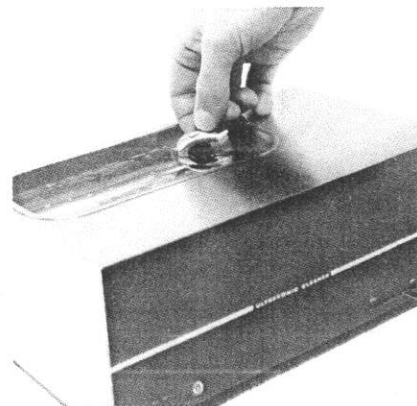
Placing case front in ultrasonic cleaner.
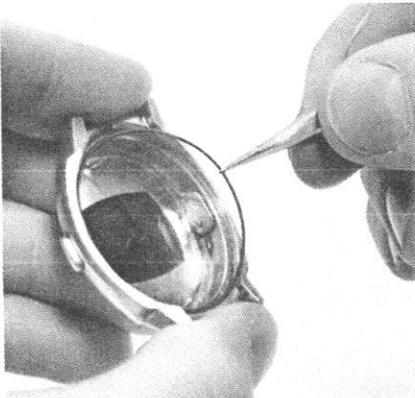
LEAKING CASE

Open case, module, "O" ring gasket.
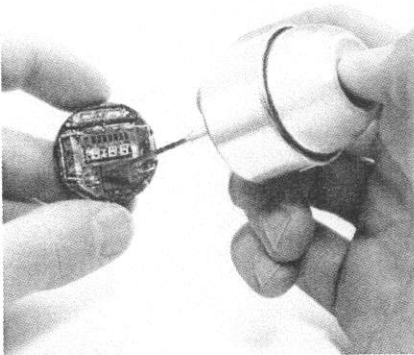
Air-drying module.
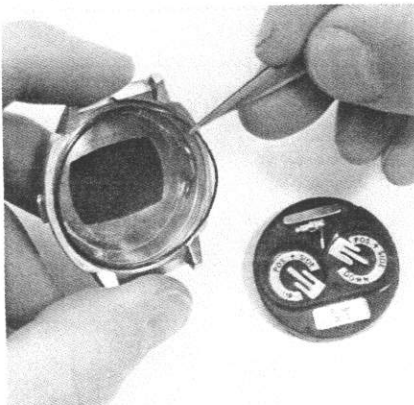
Installing new "O" ring gasket.

Leaking is usually caused by incorrect closing of the case back, or by a faulty "O" ring gasket. If you observe water inside the case of a Pulsar, do not assume that the performance of the module has been adversely affected by such exposure. Unlike mechanical watches, if water enters the case of a Pulsar the only problem it causes, generally, is to short out the power cells. The unique construction of the Pulsar Time Computer module protects it from water damage.

You can correct the problem as follows:

1. Open the case and remove power cells, module and "O" ring gasket.
2. Rinse case and module using fresh water.
3. Dry inside of case with a selvyt cloth.
4. Air-dry the module with an air syringe.
5. Replace module in case.
6. Install new "O" ring gasket and new power cells.
7. Close case and reset Pulsar.

NOTE: When a Pulsar module has been immersed in salt water for an extended period of time it will become permanently damaged. If signs of corrosion appear when you open the case, return entire unit to your Service Center.

If button cup assembly inside case appears to be loose, allowing water to enter the case, return entire unit to the Service Center for resealing.

Do not attempt calculator case repair. Return complete unit to Lancaster Service Center.

TIMING REGULATION OF PULSAR II, DATE/COMMAND AND DATE II MODELS WITHOUT PULSAR ANALYZER
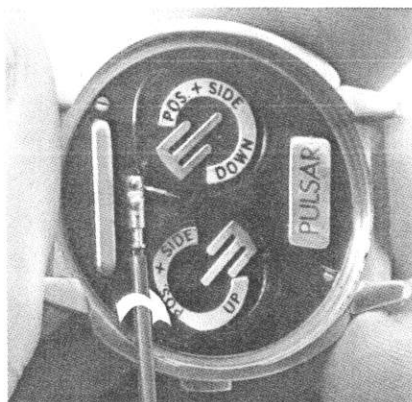
If Pulsar runs fast, turn clockwise.
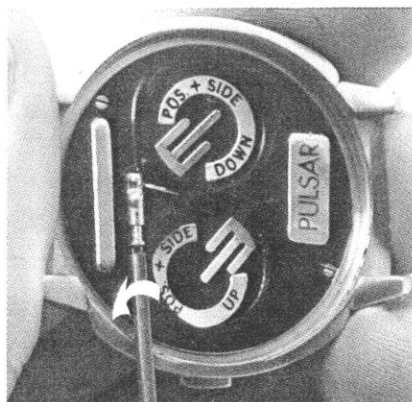
If Pulsar runs slow, turn counter-clockwise.

After assembly, each Pulsar unit is extensively tested and timed to our atomic reference clock, for a minimum of one week. Pulsar releases for sale only those units which conform during this test period to the guaranteed accuracy of 5 seconds a month, sixty seconds a year.

Occasionally, because of slight drift in the quartz crystal frequency, a customer may find that his Pulsar needs regulation. The Pulsar jeweler can make an adjustment by regulating the trimmer located inside the case back.

Begin by removing "O" ring and case back as outlined in **REPLACEMENT OF POWER CELLS.**

Trimmer is located at the "12 o'clock" position, immediately below the quartz crystal housing (see illustration). With slotted end of trimmer toward you, insert screw driver and turn as follows:

If Pulsar runs fast, turn clockwise (left to right) 1 turn equals *minus* 1 second per week.

If Pulsar runs slow, turn counter-clockwise (right to left) 1 turn equals *plus* 1 second per week.

NOTE: Total trimmer adjustment range is approximately 10 seconds per week. There is a span of nine full turns of the trimmer from full clockwise position to full counter-clockwise position.

After necessary adjustments are made, replace case back and "O" ring as outlined in **REPLACEMENT OF POWER CELLS.**

We wish to emphasize that the above timing procedure will generally improve performance, but that there are other factors to consider:

1. Without a Pulsar Analyzer, you cannot *precisely* measure the timing adjustment you have made on the Pulsar module.

2. A customer who complains about his Pulsar timing performance may have used an inaccurate time reference to set it; if so, your adjustment of the trimmer may compound his problem. A Pulsar Analyzer eliminates this possibility.

3. A faulty quartz crystal oscillator may be causing your Pulsar customer's unit to be off time, in which case adjusting the trimmer will not help. Only a Pulsar Analyzer can tell you if it is an adjustment problem, or a defective crystal.

4. The timing trimmer itself may be defective. A Pulsar Analyzer will tell you instantly if your adjustments are having any affect on the module's timekeeping performance.

For these reasons, we recommend having a Pulsar Analyzer in your store — to correct timing to exact factory standards, and to help trouble-shoot problems related to quartz or trimmer performance. Details follow.

USING THE PULSAR ANALYZER TO TIME SINGLE TRIMMER VERSION OF THE NON-DATE SERIES

All necessary instructions for timing this model are contained in the Pulsar Analyzer Brochure.

NOTE: If your customer's Pulsar has received severe shock, it is possible that the quartz crystal cannot be adjusted to factory specifications of plus/minus 5 seconds per month. If this appears to be the case, return complete product to Service Center.
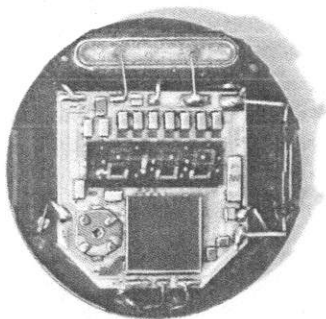
Front of module.
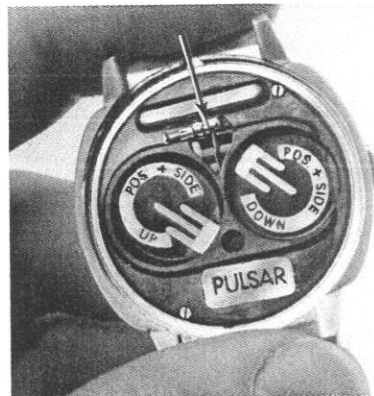
Back of module. Note timing trimmer, which is adjusted with a jeweler's screwdriver.

USING THE PULSAR ANALYZER TO TIME TWO-TRIMMER VERSIONS OF THE NON-DATE AND DATE/COMMAND SERIES

Early in 1973, Pulsar added a second "rough adjustment" timing trimmer to the front of the Computer module. This flat trimmer is also included on our Date/Command two-button series introduced fall 1973. The two-trimmer system enables you to make a much greater range of timing adjustment.

In most instances it is possible to bring the module back to factory timing standards by adjusting only the fine trimmer on the back of the module, as outlined in the Pulsar Analyzer brochure.

However, if regulating the fine trimmer is insufficient to achieve correct adjustment, then use the following procedures:
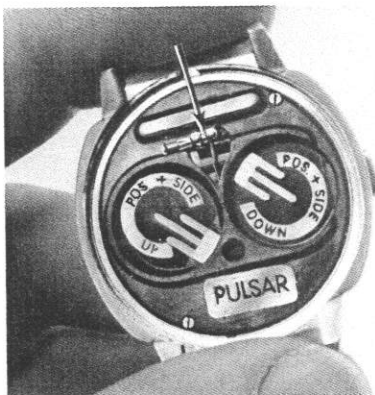
Back of module. Note fine-adjustment trimmer.
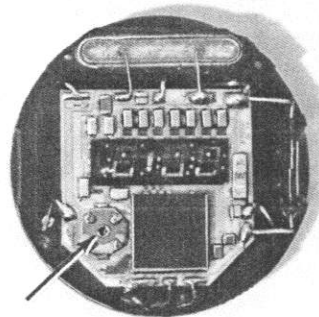
Front of module. Note flat rough-adjustment trimmer.

(Continued)

USING THE PULSAR ANALYZER TO TIME TWO-TRIMMER VERSIONS OF THE NON-DATE AND DATE/COMMAND SERIES (CONT.)

NOTE: Do not attempt to adjust "rough adjustment" trimmer without a Pulsar Analyzer.

1. Tools required:
   (a) Pulsar Analyzer
   (b) Plastic service case (red top, clear base)
   (c) 2 power cells
   (d) Jeweler's screwdriver for fine-adjustment trimmer on back of module.
   (e) Rough-adjustment trimmer tool for trimmer on front of module (Supplied by Pulsar).

2. Remove bracelet or strap.

3. Remove module from case.

4. Using jeweler's screwdriver, turn fine adjustment trimmer on back of module clockwise to full-in position.

5. Next, turn fine-adjustment trimmer **counter-clockwise** 4½ complete 360° turns. This sets the fine-adjustment trimmer to its mid-range.

6. Install module in plastic service case **with power cells.** Position module in service case so that rough-adjustment trimmer on face of module is lined up under hole in the red top of the service case.
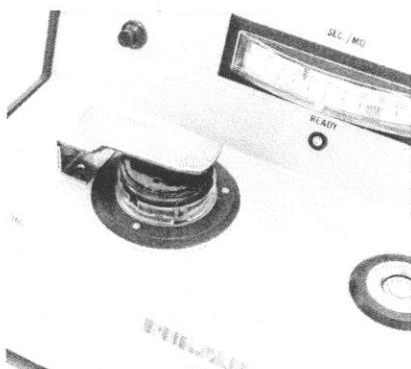
7. Place service case with module on Pulsar Analyzer, **power cells down,** and position it so you have access with rough-trimmer tool to hole over rough trimmer.

NOTE: If your customer's Pulsar has received severe shock it is possible that the quartz crystal cannot be adjusted to factory specifications. If this appears to be the case, after following the foregoing procedures for timing adjustment, **replace** the module in the case and return the complete product to your nearest Service Center.

8. Insert rough trimmer tool into center of rough-adjustment trimmer. Turn until the Pulsar Analyzer meter indicates plus or minus 2 seconds/month.

9. Remove module in service case from Pulsar Analyzer.
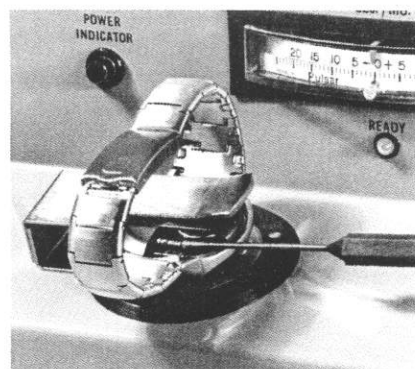
10. Take out module from plastic service case, and install module into Pulsar case with power cells.

11. Place special cut-out service back on case (this maintains contact with the power cells and also permits access with a jeweler's screwdriver to the fine-adjustment trimmer on the back of the module).

12. Place case on Pulsar Analyzer **face down.**

13. Using a jeweler's screwdriver, turn fine-adjustment trimmer clockwise (for slowing) or counter-clockwise (for speeding up) until Pulsar Analyzer meter is **centered at zero.**

14. Remove from Analyzer and replace Pulsar case back. Set to correct time.

USING THE PULSAR ANALYZER TO TIME LADIES' AND MEN'S DRESS PULSAR MODELS
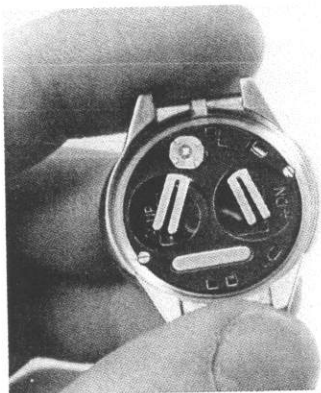
The module used in these models is about ½ smaller than previous versions, but has all the identical features.
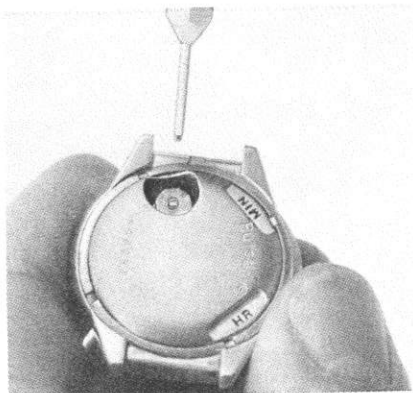
There is only one, flat timing trimmer located on the back of the module. Timing adjustment requires a special tool and a Pulsar Analyzer.

These models have only **one** trimmer, located on the back of the module. It is flat, and requires a special trimmer tool. Timing adjustment of this trimmer can only be accomplished by using a Pulsar Analyzer.

1. Tools required:
   (a) Pulsar Analyzer
   (b) 2 power cells
   (c) Small Pulsar case wrench
   (d) Special cut-out case back
   (e) Flat trimmer tool

2. Remove bracelet or strap.

3. Remove case back, insert special cut-out case back (this maintains contact with the power cells and also permits access to the flat trimmer on the back of the module).

4. Place on Pulsar Analyzer, **face down.** Position so that cut-away hole in Analyzer case back is accessible with flat trimmer tool.

5. Carefully insert flat trimmer tool into hole in case, and turn until Pulsar Analyzer meter is centered at zero.

6. Replace Pulsar case back and set to correct time.

NOTE: If your customer's Pulsar has received severe shock, it is possible that the quartz crystal cannot be adjusted to factory specifications. If this appears to be the case after following the foregoing procedures for timing adjustment, **replace** the module in the case and return the complete product to your nearest Service Center.

MATERIAL SALES PARTS LIST
P-III (DATE/COMMAND)
MODEL NUMBERS: 3336, 3100, 3376, 3120, 3386, 3130, 3366, 3140, 3396, 3115

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
3528	SPRING BAR, BRACELET/CASE ATTACHMENT	N/C
3529	S/S CASE COMPLETE	60.00
3531	14KT. YGF CASE COMPLETE	120.00
3101	S/S BEZEL COMPLETE (INCLUDES MINERALITE TIME SCREEN)	42.00
3121	14KT. YGF BEZEL COMPLETE (INCLUDES MINERALITE TIME SCREEN)	90.00
2892	S/S CASE BACK	18.00
2979	14KT. YGF CASE BACK	30.00
2879	S/S CASE NUT	N/C
2895	CASE O-RING	N/C
	BRACELET PARTS	
3106*	S/S BRACELET	20.00
3126	10KT. YGF BRACELET	50.00
3528	SPRING BAR, BRACELET/CLASP ATTACHMENT	N/C
4032*	S/S ADJUSTMENT LINK	.50
4043	10KT. YGF ADJUSTMENT LINK	1.50
3951*	PUSH PIN, ADJUSTMENT LINK (SOLID LINK)	N/C
3950*	SPRING BAR, ADJUSTMENT LINK (WRAP AROUND LINK)	N/C
3981*	S/S CLASP WITH FOLDOVER (SOLID LINK)	6.00
3969*	S/S CLASP WITH FOLDOVER (WRAP AROUND LINK)	6.00
3965	10KT. YGF CLASP WITH FOLDOVER	16.00
3960	SPRING BAR, CLASP	N/C
3997	S/S MAGNET COMPARTMENT	N/C
	STRAP PARTS	
3528	SPRING BAR, STRAP/CASE ATTACHMENT	N/C
3546	S/S BUCKLE WITH MAGNET COMPARTMENT	3.00
3547	10KT. YGF BUCKLE WITH MAGNET COMPARTMENT	9.00
3960	SPRING BAR, STRAP BUCKLE	N/C
3521	SHORT, BLACK LEATHER STRAP	5.00
3522	REGULAR, BLACK LEATHER STRAP	5.00
3523	LONG, BLACK LEATHER STRAP	5.00
3540	SHORT, BROWN LEATHER STRAP	5.00
3541	REGULAR, BROWN LEATHER STRAP	5.00
3542	LONG, BROWN LEATHER STRAP	5.00
	MISCELLANEOUS PARTS	
2920	MODULE SCREWS	N/C
2876	SETTING MAGNET	N/C
3538	RW-25 CELLS (PAIR)	5.00
4324	BRACELET TOOL (FOR SOLID LINK BRACELET)	2.50
1400	FLAT CASE WRENCH	1.00
1401	LARGE CASE WRENCH	6.00
3850	DISPLAY BOX, COLLAR (FOR GOLD PRODUCT)	33.00
3851	DISPLAY BOX, LAYOUT (FOR GOLD PRODUCT)	16.00
3853	DISPLAY BOX, COLLAR (FOR S/S & GF PRODUCT)	8.00
3854	DISPLAY BOX, LAYOUT (FOR S/S & GF PRODUCT)	8.00
1014	CHAMOIS	1.00

*When ordering these parts, specify if bracelet is: *Keystone
    (a) Solid link construction (Bear) or
    (b) Wrap around link construction (Jacoby Bender)

Prices subject to change without notice

NOTE: Prices for other solid gold cases and bracelet parts on request.

PULSAR FOR LADIES

Specifications
— Displays hour, minute, second, month, date, has AM/PM indicators
— Accurate to within 60 seconds a year
— "Smart calendar" knows the difference between 30 and 31 day months and changes automatically. February is programmed for 29 days, so no adjustment is required in leap year. In other years, change date only on March 1st.
— Water-resistant to a depth of 100 feet
— Shock-resistant
— Mineralite glass time screen
— Magnetic switching
— Light sensor
— Flat timing trimmer on back of module

Battery Requirements
— Two Ray-O-Vac RW 44 power cells, which must be installed only by the jeweler.

Product Information
These are the first Pulsar ladies' models, introduced in the fall of 1974 and spring of 1975. All contain identical Time computer modules.

First models had magnetic settings; Auto/Set feature added in Fall 1975.

Model Numbers
Ladies' Cushion
No. 2407-1 Stainless Steel/Strap
No. 2407-2 Stainless Steel/Bracelet
No. 4407-1 14kt. Gold-Filled Case/ Strap
No. 4407-2 14kt. Gold-Filled Case/ Bracelet
No. 6407-1 14kt. Gold Case/Strap, 14kt. Gold Buckle
No. 6407-2 14kt. Gold Case/Bracelet

Ladies' Oval
No. 2406-1 Stainless Steel/Strap
No. 2406-2 Stainless Steel/Bracelet
No. 4406-1 14kt. Gold-Filled Case/ Strap
No. 4406-2 14kt. Gold-Filled Case/ Bracelet
No. 6406-1 14kt. Gold/Strap
No. 6406-2 14kt. Gold/Bracelet

Special models
No. 6414-2 Oval 14kt. Gold/Bracelet with 22 full-cut diamonds
No. 6420-2 Cushion 14kt. Gold/ Bracelet/with 20 full-cut diamonds
No. 6412-2 Oval 14kt. Gold Case, 14kt. Gold mesh Bracelet

NOTE: Models No. 6414-2 and 6420-2 (diamond) and No. 6412-2 have mesh bracelets which may require sizing to your customer's wrist. In that event, return the Pulsar to Lancaster Service Center with exact sizing instructions.
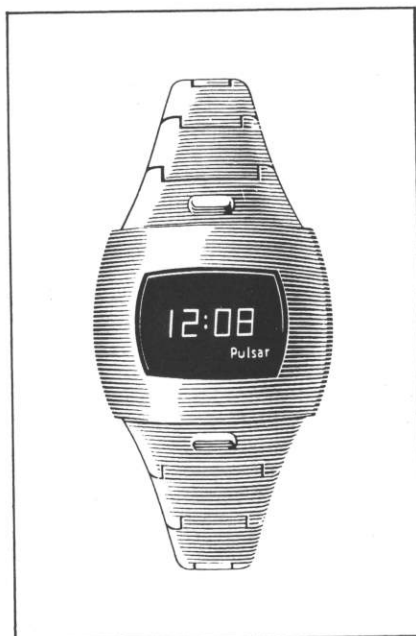
Cushion
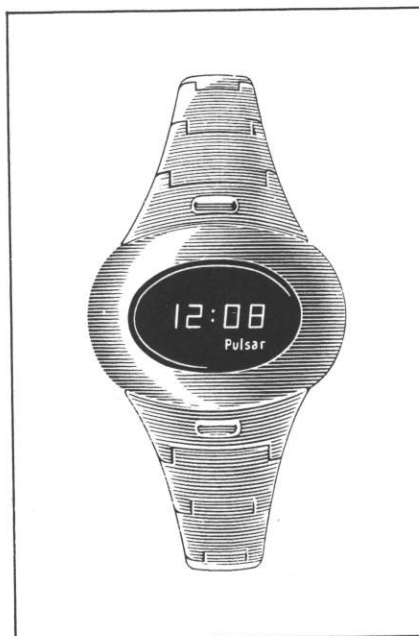
Oval

MATERIAL SALES PARTS LIST
LADY PULSAR DATE/COMMAND-OVAL & CUSHION MODELS
MODEL NUMBERS: OVAL: 2406, 4406, 6406, 1406, 6412, 6414
CUSHION: 2407, 4407, 6407, 1407, 6420

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
3694	SPRING BAR, BRACELET/CASE ATTACHMENT	N/C
5109	S/S OVAL CASE COMPLETE	60.00
3390	S/S CUSHION CASE COMPLETE	60.00
5129	14KT. YGF OVAL CASE COMPLETE	120.00
3392	14KT. YGF CUSHION CASE COMPLETE	120.00
4201	S/S OVAL BEZEL COMPLETE (INCLUDES TIME SCREEN)	42.00
3601	S/S CUSHION BEZEL COMPLETE (INCLUDES TIME SCREEN)	42.00
4221	14KT. YGF OVAL BEZEL COMPLETE (INCLUDES TIME SCREEN)	90.00
3621	14KT. YGF CUSHION BEZEL COMPLETE (INCLUDES TIME SCREEN)	90.00
5104	S/S CASE BACK	18.00
5124	14KT. YGF CASE BACK	30.00
4382	S/S CASE NUT	N/C
4383	CASE O-RING	N/C
	BRACELET PARTS	
5107	S/S BRACELET	20.00
5117	10KT. YGF BRACELET	50.00
3694	SPRING BAR, BRACELET/CASE ATTACHMENT	N/C
4021	S/S ADJUSTMENT LINK	.50
4022	10KT. YGF ADJUSTMENT	1.50
3954	SPRING BAR ADJUSTMENT LINK	N/C
5130	S/S CLASP WITH FOLDOVER	6.00
5131	10KT. YGF CLASP WITH FOLDOVER	16.00
3962	SPRING BAR, CLASP	N/C
	STRAP PARTS	
3694	SPRING BAR, STRAP/CASE ATTACHMENT	N/C
5133	S/S BUCKLE	3.00
5134	10KT. YGF BUCKLE	9.00
4344	SHORT BLACK WITH BLACK STITCHING	5.00
4345	REGULAR BLACK WITH BLACK STITCHING	5.00
4346	LONG BLACK WITH BLACK STITCHING	5.00
4430	SHORT GREY BRUSH PIGSKIN	5.00
4431	REGULAR GREY BRUSH PIGSKIN	5.00
4432	LONG GREY BRUSH PIGSKIN	5.00
4322	REGULAR LIGHT BROWN	5.00
4323	REGULAR DARK BROWN	5.00
4318	LONG DARK BROWN	5.00
4320	SHORT BLUE	5.00
4321	REGULAR BLUE	5.00
4319	REGULAR BONE	5.00
	MISCELLANEOUS PARTS	
3620	MODULE SCREWS	N/C
3678	RW-44 CELLS (PAIR)	5.00
1405	FLAT CASE WRENCH	1.00
1403	LARGE CASE WRENCH	6.00
3865	DISPLAY BOX, COLLAR (FOR GOLD PRODUCT)	14.00
3864	DISPLAY BOX, LAYOUT (FOR GOLD PRODUCT)	12.00
3853	DISPLAY BOX, COLLAR (FOR S/S & GF PRODUCT)	8.00
3854	DISPLAY BOX, LAYOUT (FOR S/S & GF PRODUCT)	8.00
1014	CHAMOIS	1.00

*Keystone

Prices subject to change without notice

NOTE: Prices for other solid gold cases and bracelet parts on request.

MEN'S DRESS MODELS

Specifications

— Displays hour, minute, second, month, date, has AM/PM indicators
— Accurate to within 60 seconds a year
— "Smart calendar" knows the difference between 30 and 31 day months and changes automatically. February is programmed for 29 days, so no adjustment is required in leap year. In other years, change date only on March 1st.
— Water-resistant to a depth of 100 feet
— Shock-resistant
— Mineralite glass time screen
— Magnetic switching
— Light sensor
— Flat timing trimmer on back of module

Battery Requirements

— Two Ray-O-Vac RW 44 power cells, which must be installed only by the jeweler

Product Information

The Pulsar men's dress models were introduced to the market in the spring of 1975. They contain Time Computer modules identical to those used in our ladies' models except the LED are larger.

First models had magnetic settings; beginning in Fall 1975, Auto/Set feature was included.

Model 3416 with a green display was introduced in Spring 1977. This model requires two Ray-O-Vac 42 power cells.

Model Numbers

No. 3408-1 Stainless Steel/Strap
No. 3408-2 Stainless Steel/Bracelet
No. 3416-2 Stainless steel/Bracelet (Emerald Green LED)
No. 5408-1 14K. Gold-Filled/Strap
No. 5408-2 14K. Gold-Filled/Bracelet
No. 7408-1 14K. Gold/Strap
No. 7408-2 14K. Gold/Bracelet

NOTE: Solid 14kt. Gold models have mesh bracelets which may require sizing to your Customer's wrist. In that event, return the Pulsar to Lancaster Service Center with exact sizing instructions.

3408/3416
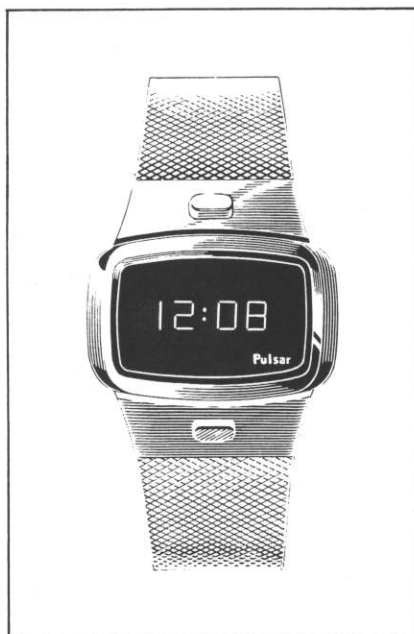
5408
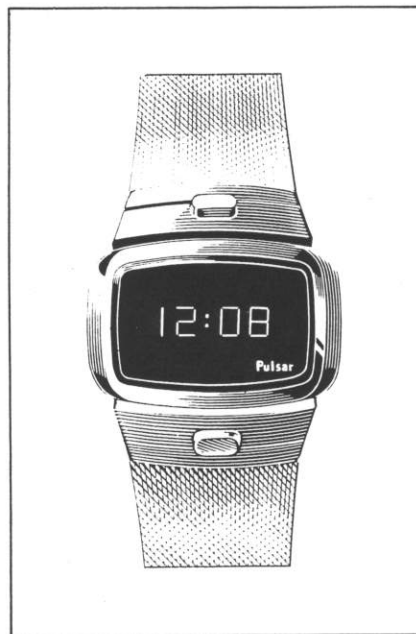
7408

For Setting Instructions see pages 55 & 56.

MATERIAL SALES PARTS LIST
MEN'S DRESS MODELS FOR DETACHABLE BRACELET AND AUTO/SET
MODEL NUMBERS: 3408, 5408, 7408, 3416

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
3528	SPRING BAR, BRACELET/CASE ATTACHMENT	N/C
3809	S/S CASE COMPLETE	60.00
3829	14KGF CASE COMPLETE	120.00
3801	S/S BEZEL COMPLETE WITH TIME SCREEN	42.00
3821	14KGF BEZEL COMPLETE WITH TIME SCREEN	90.00
5104	S/S CASE BACK	18.00
4911	14KGF CASE BACK	30.00
4382*	S/S CASE NUT	N/C
4383*	CASE O-RING	N/C
	BRACELET PARTS	
3528	SPRING BAR, BRACELET/CASE ATTACHMENT	N/C
3807-21	SHORT S/S BRACELET	25.00
3807-20	REGULAR S/S BRACELET	25.00
3807-22	LONG S/S BRACELET	25.00
3827-21	SHORT 14KGF MESH BRACELET	80.00
3827-20	REGULAR 14KGF MESH BRACELET	80.00
3827-22	LONG 14KGF MESH BRACELET	80.00
3739	S/S CLASP WITH FOLDOVER	6.00
5227	14KGF CLASP WITH FOLDOVER	20.00
3960	SPRING BAR, CLASP	N/C
3337	PIN, BRACELET SPRING COMPARTMENT	N/C
	STRAP PARTS	
3528	SPRING BAR, STRAP/CASE ATTACHMENT	N/C
3945	S/S HARDWARE/STRAP COMPLETE	8.00
3946	14KGF HARDWARE/STRAP COMPLETE	14.00
3869	S/S BUCKLE	3.00
3824	14KGF BUCKLE	9.00
3948-21	SHORT BLACK STRAP	5.00
3948-20	REGULAR BLACK STRAP	5.00
3948-22	LONG BLACK STRAP	5.00
3893-21	SHORT BROWN STRAP	5.00
3893-20	REGULAR BROWN STRAP	5.00
3893-22	LONG BROWN STRAP	5.00
	MISCELLANEOUS PARTS	
3620	MODULE SCREWS	N/C
3679	RW-44 CELLS (PAIR)	5.00
1405	FLAT CASE WRENCH	1.00
1403	LARGE CASE WRENCH	6.00
3853	DISPLAY BOX, COLLAR (FOR S/S AND GF PRODUCT)	8.00
3854	DISPLAY BOX, LAYOUT (FOR S/S AND GF PRODUCT)	8.00

FOR MODEL NUMBER 3416 ONLY

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
5909	S/S CASE COMPLETE	60.00
5901	S/S BEZEL COMPLETE WITH TIME SCREEN	42.00
5904	S/S CASE BACK	18.00
4379	RW-42 CELLS (PAIR)	5.00
	BRACELET PARTS	
3807-26	REGULAR	25.00
3807-27	SHORT	25.00
3807-28	LONG	25.00

*Keystone

Prices subject to change without notice

NOTE: Prices for other solid gold cases and bracelet parts on request.

*Specify case material — stainless steel or gold filled.

MATERIAL SALES PARTS LIST
MEN'S DRESS MODELS FOR PERMANENTLY ATTACHED BRACELET AND MAGNETIC SET
MODEL NUMBERS: 5408, 7408

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
4871	14KT. YGF CASE COMPLETE WITH MINERALITE TIME SCREEN, BRACELET, O-RING, BACK AND NUT	120.00
3803	14KT. YGF BEZEL WITH TIME SCREEN ONLY	90.00
4911	14KT. YGF CASE BACK — HAM. GOLD COLOR	30.00
4382	STAINLESS STEEL CASE NUT	N/C
4383	CASE O-RING	N/C
	BRACELET PARTS	
3867	10KT. YGF MESH BRACELET	80.00
3934	10KT. YGF CLASP WITH FOLDOVER	16.00
3960	SPRING BAR, CLASP	N/C
	MISCELLANEOUS PARTS	
3620	MODULE SCREWS	N/C
3678	RW-44 CELLS (PAIR)	5.00
1405	FLAT CASE WRENCH	1.00
1403	LARGE CASE WRENCH	6.00
3853	DISPLAY BOX, COLLAR	8.00

*Keystone

Prices subject to change without notice

NOTE: Prices for other solid gold cases and bracelet parts on request.

AUTO/COMMAND MODELS

Certain models available with Day of Week or 24 hour Display.

Specifications

— A flick of your wrist flashes the hour and minutes
— Push a button to display hour, minutes, seconds, month, date, has AM/PM indicators
— Accurate to within 60 seconds a year
— "Smart Calendar" adjusts automatically for 29, 30, and 31-day months
— Water resistant to a depth of 100 feet
— Shock-resistant
— Synthetic Sapphire Time Screen
— Auto/Set
— Light Sensor
— Flat timing trimmer on back of module
— Command buttons at 12 and 6 o'clock positions

Battery Requirements

— Two Ray-O-Vac RW 42 power cells, which must be installed only by the jeweler.

Product Information

The Auto/Command models were introduced in the fall of 1975. These models contain identical Time Computer Modules with variations for Day of Week or 24 hour display.

Executive and Big Time models introduced with magnetic setting; Auto/Set feature added late in 1975.

Model Numbers

Executive
No. 3201-2 Stainless Steel/Bracelet
No. 5201-2 14K. Gold-Filled/Bracelet

No. 3211-2 Stainless Steel/Bracelet (24 hour)
No. 7201-1 14K. Gold/Strap
No. 7201-2 14K. Gold/Bracelet

Classic
No. 3310-2 Stainless Steel/Bracelet - DOW
No. 5310-2 14K. Gold-Filled/Bracelet DOW
No. 3210-2 Classic-stainless steel case/Bracelet
No. 5210-2 Classic-14K. Gold-Filled case/Bracelet

Big Time
No. 3215-2 Stainless Steel/Bracelet
No. 3315-2 Stainless Steel/Bracelet DOW
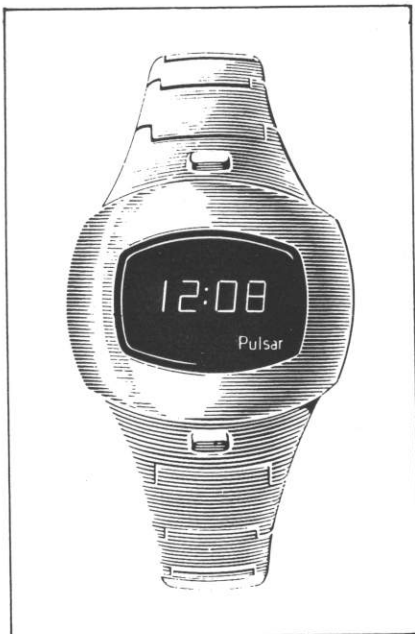
Executive
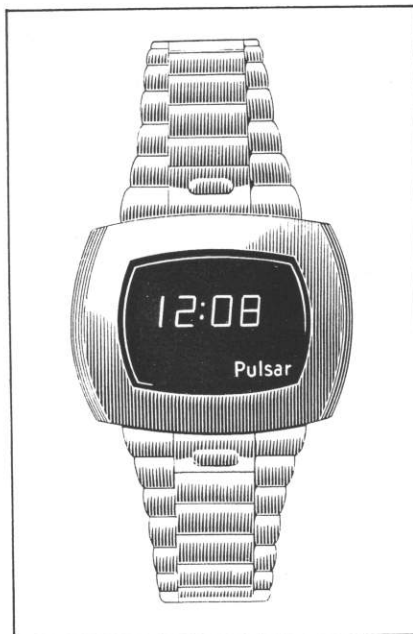
Classic
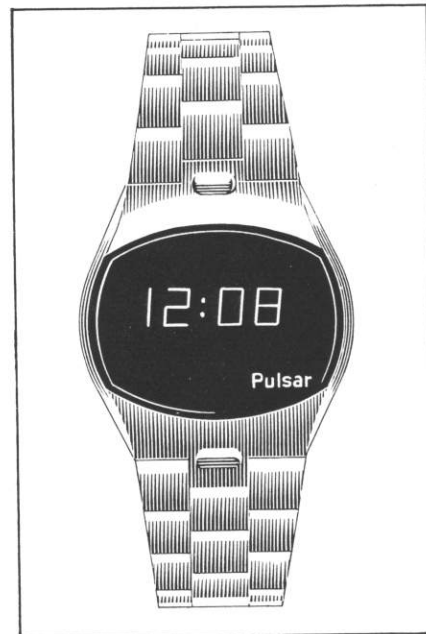
Big Time

For Setting Instructions see pages 55 & 56.

MATERIAL SALES PARTS LIST
AUTO/COMMAND MODELS P-IV-2-CLASSIC
MODEL NUMBERS: 3210, 5210
3310, 5310 (DAY OF WEEK)

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
4850	SCREW PIN, BRACELET/CASE ATTACHMENT	N/C
4859	S/S CASE COMPLETE	60.00
4829	14KT. YGF CASE COMPLETE	120.00
4801	S/S BEZEL COMPLETE (INCLUDES MINERALITE TIME SCREEN)	42.00
4811	14KT. YGF BEZEL COMPLETE (INCLUDES MINERALITE TIME SCREEN)	90.00
4904	S/S CASE BACK	18.00
4924	14KT. YGF CASE BACK	30.00
4082*	S/S CASE NUT	N/C
4083*	CASE O-RING	N/C
	BRACELET PARTS	
4828	S/S BRACELET	20.00
4827	14KT. YGF BRACELET	60.00
4850	SCREW PIN, BRACELET/CASE ATTACHMENT	N/C
4808	S/S ADJUSTMENT LINK	.50
4818	14KT. YGT ADJUSTMENT LINK	1.50
3952	SPRING, ADJUSTMENT LINK	N/C
3989	S/S CLASP WITH FOLDOVER	6.00
3943	14KT. YGF CLASP WITH FOLDOVER	20.00
3960	SPRING BAR, CLASP	N/C
	MISCELLANEOUS PARTS	
3620	MODULE SCREWS	N/C
4086	SETTING MAGNET	N/C
4358	RW-42 CELLS (PAIR)	5.00
1406	FLAT CASE WRENCH	1.00
1404	LARGE CASE WRENCH	6.00
3853	DISPLAY BOX, COLLAR (FOR S/S & GF PRODUCT)	8.00
3854	DISPLAY BOX, LAYOUT (FOR S/S & GF PRODUCT)	8.00
1014	CHAMOIS	1.00

*Keystone

Prices subject to change without notice

*When ordering these parts specify case material, i.e. s/s or gold filled.

MATERIAL SALES PARTS LIST
AUTO/COMMAND MODELS: P-IV-EXECUTIVE
MODEL NUMBERS: 3201, 3211(24 HOUR), 5201, 7201

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
4094	SPRING BAR, BRACELET/CASE ATTACHMENT	N/C
4909	S/S CASE COMPLETE	60.00
4929	14KT. YGF CASE COMPLETE	120.00
4101	S/S BEZEL COMPLETE (INCLUDES MINERALITE TIME SCREEN)	42.00
4121	14KT. YGF BEZEL COMPLETE (INCLUDES MINERALITE TIME SCREEN)	90.00
4904	S/S CASE BACK	18.00
4924	14KT. YGF CASE BACK	30.00
4082	S/S CASE NUT	N/C
4083	CASE O-RING	N/C
	BRACELET PARTS	
4907	S/S BRACELET	20.00
4927	10KT. YGF BRACELET	50.00
4094	SPRING BAR, BRACELET/CASE ATTACHMENT	N/C
4032	S/S ADJUSTMENT LINK	.50
4024	10KT. YGF ADJUSTMENT LINK	1.50
3951	PUSH PIN, LINK ADJUSTMENT (FOR S/S ONLY)	N/C
3950	SPRING BAR, LINK ADJUSTMENT	N/C
3730	S/S CLASP WITH FOLDOVER	6.00
3731	10KT. YGF CLASP WITH FOLDOVER	16.00
3960	SPRING BAR, CLASP	N/C
	STRAP PARTS	
4094	SPRING BAR, STRAP/CASE ATTACHMENT	N/C
4033	S/S BUCKLE	3.00
4034	10KT. YGF BUCKLE	9.00
4040-21	SHORT BLACK	5.00
4041-20	REGULAR BLACK	5.00
4042-22	LONG BLACK	5.00
3940-21	SHORT BROWN	5.00
3941-20	REGULAR BROWN	5.00
3942-22	LONG BROWN	5.00
	MISCELLANEOUS PARTS	
3620	MODULE SCREWS	N/C
4358	RW-42 CELLS (PAIR)	5.00
4324	BRACELET TOOL (FOR SOLID LINK BRACELET)	2.50
1406	FLAT CASE WRENCH	1.00
1404	LARGE CASE WRENCH	6.00
3850	DISPLAY BOX, COLLAR (FOR GOLD PRODUCT)	33.00
3851	DISPLAY BOX, LAYOUT (FOR GOLD PRODUCT)	16.00
3853	DISPLAY BOX, COLLAR (FOR S/S & GF PRODUCT)	8.00
3854	DISPLAY BOX, LAYOUT (FOR S/S & GF PRODUCT)	8.00
1014	CHAMOIS	1.00

*Keystone

Prices subject to change without notice

NOTE: Prices for other solid gold cases and bracelet parts on request.

MATERIAL SALES PARTS LIST
AUTO/COMMAND MODELS: P-IV-LF BIG TIME
MODEL NUMBERS: 3215, 3315 (DAY OF WEEK)

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
4494	PUSH PIN, BRACELET/CASE ATTACHMENT	N/C
4429	S/S CASE COMPLETE	60.00
4401	S/S BEZEL COMPLETE (INCLUDES MINERALITE TIME SCREEN)	42.00
4904	S/S CASE BACK	18.00
4082	S/S CASE NUT	N/C
4083	CASE O-RING	N/C
	BRACELET PARTS	
4468	S/S BRACELET	20.00
4494	PUSH PIN, BRACELET/CASE ATTACHMENT	N/C
4038	S/S ADJUSTMENT LINK	.50
3953	PUSH PIN, ADJUSTMENT LINK	N/C
3738	S/S CLASP WITH FOLDOVER	6.00
3960	SPRING BAR CLASP	N/C
	MISCELLANEOUS PARTS	
3620	MODULE SCREWS	N/C
4358	RW-42 CELLS (PAIR)	5.00
4493	BRACELET TOOL	2.50
1406	FLAT CASE WRENCH	1.00
1404	LARGE CASE WRENCH	6.00
3853	DISPLAY BOX, COLLAR	8.00

*Keystone

Prices subject to change without notice

LADY PULSAR TOUCH/COMMAND MODELS

Specifications
— Displays hour, minute, second, month, date, has AM/PM indicators
— Sensitive pressure points at 12 o'clock and 6 o'clock positions merely have to be touched for time and date
— "Smart Calendar" adjusts automatically for 29, 30 and 31-day months
— Water-resistant to a depth of 100 feet
— Shock resistant
— Synthetic sapphire time screen
— Auto/Set
— Light sensor
— Flat timing trimmer on back of module
— Accurate to within 60 seconds a year

Battery Requirements
— Two Ray-O-Vac RW 48 power cells which must be installed only by a jeweler

Product Information
These Lady Pulsar models were introduced in the fall of 1976. All contain identical Time Computer modules.

Model Numbers

Ladies Oval
No. 2912-1 Stainless Steel/Strap
No. 2912-2 Stainless Steel/Bracelet
No. 4912-1 14K. Gold-Filled/Strap
No. 4912-2 14K. Gold-Filled/Bracelet

Ladies Cushion
No. 2926-1 Stainless Steel/Strap
No. 2926-2 Stainless Steel/Bracelet
No. 4926-1 14K. Gold-Filled/Strap
No. 4926-2 14K. Gold-Filled/Bracelet

Ladies Square
No. 2927-1 Stainless Steel/Strap
No. 2927-2 Stainless Steel/Bracelet
No. 4927-1 14K. Gold-Filled/Strap
No. 4927-2 14K. Gold-Filled/Bracelet
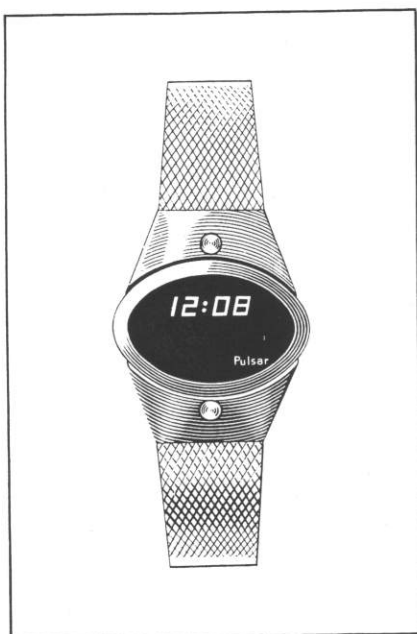
Oval

Cushion
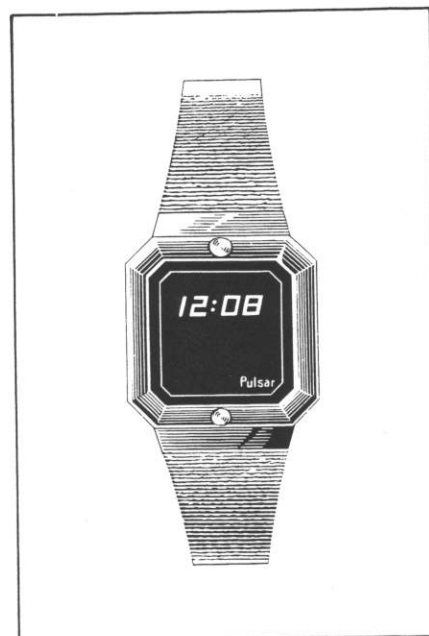
Square

For Setting Instructions see pages 57 & 58.

MATERIAL SALES PARTS LIST
LADY PULSAR TOUCH/COMMAND OVAL & CUSHION MODELS
MODEL NUMBERS: OVAL: 2912, 4912
CUSHION: 2926, 4926

PART NO.	DESCRIPTION		SUGGESTED RETAIL PRICE*
	CASE PARTS		
5337	SPRING BAR, BRACELET/CASE ATTACHMENT		N/C
5309	S/S OVAL CASE COMPLETE**		60.00
5509	S/S CUSHION CASE COMPLETE**		60.00
5329	14K. YGF OVAL CASE COMPLETE**		120.00
5529	14K. YGF CUSHION CASE COMPLETE**		120.00
5301	S/S OVAL BEZEL COMPLETE**		42.00
5501	S/S CUSHION BEZEL COMPLETE**		42.00
5321	14K. YGF OVAL BEZEL COMPLETE**		90.00
5521	14K. YGF CUSHION BEZEL COMPLETE**		90.00
5304	S/S CASE BACK		18.00
5324	14K. YGF CASE BACK		30.00
5336	CASE O-RING (FOR S/S PRODUCT ONLY)		N/C
5836	CASE O-RING (FOR 14K. YGF PRODUCT ONLY)		N/C
	BRACELET PARTS		
5337	SPRING BAR, BRACELET/CASE ATTACHMENT		N/C
5307-21	SHORT S/S BRACELET	(WRIST SIZE 5-5/8" to 6-7/8")	20.00
5307-20	REGULAR S/S BRACELET	(WRIST SIZE 6-1/8" to 7-3/8")	20.00
5307-22	LONG S/S BRACELET	(WRIST SIZE 6-5/8" to 7-7/8")	20.00
5327-21	SHORT 14K. YGF BRACELET	(WRIST SIZE 5-1/4" to 6-1/8")	60.00
5327-20	REGULAR 14K. YGF BRACELET	(WRIST SIZE 6" to 6-3/4")	60.00
5327-22	LONG 14K. YGF BRACELET	(WRIST SIZE 6-1/2" to 7-1/4")	60.00
5338	S/S CLASP W/FOLDOVER		6.00
5538	14K. YGF CLASP W/FOLDOVER		20.00
5537	SPRING BAR, CLASP (FOR S/S BRACELET)		N/C
3962	SPRING BAR, CLASP (FOR 14K. YGF BRACELET)		N/C
5637	PIN, S/S BRACELET SPRING COMPARTMENT		N/C
	STRAP PARTS		
5337	SPRING BAR, STRAP/CASE ATTACHMENT		N/C
5333	S/S BUCKLE		3.00
5533	14K. YGF BUCKLE		9.00
5334-21	SHORT BLACK STRAP	(WRIST SIZE 5-3/16" to 6-7/16")	5.00
5334-20	REGULAR BLACK STRAP	(WRIST SIZE 5-13/16" to 7-1/16")	5.00
5334-22	LONG BLACK STRAP	(WRIST SIZE 6-13/16" to 8-1/16")	5.00
5335-21	SHORT BLUE STRAP	(WRIST SIZE 5-3/16" to 6-7/16")	5.00
5335-20	REGULAR BLUE STRAP	(WRIST SIZE 5-13/16" to 7-1/16")	5.00
5335-22	LONG BLUE STRAP	(WRIST SIZE 6-13/16" to 8-1/16")	5.00
5534-21	SHORT BROWN STRAP	(WRIST SIZE 5-3/16" to 6-7/16")	5.00
5534-20	REGULAR BROWN STRAP	(WRIST SIZE 5-13/16" to 7-1/16")	5.00
5534-22	LONG BROWN STRAP	(WRIST SIZE 6-13/16" to 8-1/16")	5.00
5535-21	SHORT BONE STRAP	(WRIST SIZE 5-3/16" to 6-7/16")	5.00
5535-20	REGULAR BONE STRAP	(WRIST SIZE 5-13/16" to 7-1/16")	5.00
5535-22	LONG BONE STRAP	(WRIST SIZE 6-13/16" to 8-1/16")	5.00
5635-21	SHORT RED STRAP	(WRIST SIZE 5-3/16" to 6-7/16")	5.00
5635-20	REGULAR RED STRAP	(WRIST SIZE 5-3/16" to 6-7/16")	5.00
5635-22	LONG RED STRAP	(WRIST SIZE 5-3/16" to 6-7/16")	5.00
	MISCELLANEOUS		
5080	RW-48 POWER CELLS (PAIR)		5.00
3853	DISPLAY BOX, COLLAR		8.00
3854	DISPLAY BOX, LAYOUT		8.00

**Includes Sapphire Time Screen   *Keystone

Prices subject to change without notice

MATERIAL SALES PARTS LIST
LADY PULSAR TOUCH/COMMAND SQUARE MODELS
MODEL NUMBER: 2927, 4927

PART NO.	DESCRIPTION		SUGGESTED RETAIL PRICE*
	CASE PARTS		
5837	SPRING BAR, BRACELET/CASE ATTACHMENT		N/C
5809	S/S CASE COMPLETE**		70.00
5829	14K. YGF CASE COMPLETE**		130.00
5801	S/S BEZEL COMPLETE**		52.00
5821	14K. YGF BEZEL COMPLETE**		100.00
5804	S/S CASE BACK		18.00
5324	14K. YGF CASE BACK		30.00
5836	CASE O-RING		N/C
	BRACELET PARTS		
5837	SPRING BAR, BRACELET/CASE ATTACHMENT		N/C
5807-21	SHORT S/S BRACELET	(WRIST SIZE 5-1/4" to 6-1/8")	40.00
5807-20	REGULAR S/S BRACELET	(WRIST SIZE 6" to 6-3/4")	40.00
5807-22	LONG S/S BRACELET	(WRIST SIZE 6-1/2" to 7-1/4")	40.00
5827-21	SHORT 14K. YGF BRACELET	(WRIST SIZE 5-1/4" to 6-1/8")	80.00
5827-20	REGULAR 14K. YGF BRACELET	(WRIST SIZE 6" to 6-3/4")	80.00
5827-22	LONG 14K. YGF BRACELET	(WRIST SIZE 6-1/2" to 7-1/4")	80.00
5838	S/S CLASP WITH FOLDOVER		6.00
5538	14K.YGF CLASP WITH FOLDOVER		20.00
5737	SPRING BAR, CLASP (FOR S/S BRACELET ONLY)		N/C
3962	SPRING BAR, CLASP (FOR 14K. YGF BRACELET ONLY)		N/C
	STRAP PARTS		
3837	SPRING BAR, STRAP/CASE ATTACHMENT		N/C
5633	S/S STRAP BUCKLE		3.00
5733	14K. YGF STRAP BUCKLE		9.00
5834-21	SHORT BLACK STRAP	(WRIST SIZE 5-3/16" to 6-7/16")	5.00
5834-20	REGULAR BLACK STRAP	(WRIST SIZE 5-13/16" to 7-1/16")	5.00
5834-22	LONG BLACK STRAP	(WRIST SIZE 6-13/16" to 8-1/16")	5.00
5835-21	SHORT BLUE STRAP	(WRIST SIZE 5-3/16" to 6-7/16")	5.00
5835-20	REGULAR BLUE STRAP	(WRIST SIZE 5-13/16" to 7-1/16")	5.00
5835-22	LONG BLUE STRAP	(WRIST SIZE 6-13/16" to 8-1/16")	5.00
5434-21	SHORT BROWN STRAP	(WRIST SIZE 5-3/16" to 6-7/16")	5.00
5434-20	REGULAR BROWN STRAP	(WRIST SIZE 5-13/16" to 7-1/16")	5.00
5434-22	LONG BROWN STRAP	(WRIST SIZE 6-13/16" to 8-1/16")	5.00
5435-21	SHORT BONE STRAP	(WRIST SIZE 5-3/16" to 6-7/16")	5.00
5435-20	REGULAR BONE STRAP	(WRIST SIZE 5-13/16" to 7-1/16")	5.00
5435-22	LONG BONE STRAP	(WRIST SIZE 6-13/16" to 8-1/16")	5.00
5735-21	SHORT RED STRAP	(WRIST SIZE 5-3/16" to 6-7/16")	5.00
5735-20	REGULAR RED STRAP	(WRIST SIZE 5-13/16" to 7-1/16")	5.00
5735-22	LONG RED STRAP	(WRIST SIZE 6-13/16" to 8-1/16")	5.00
	MISCELLANEOUS		
5080	RW-48 POWER CELLS (PAIR)		5.00
3853	DISPLAY BOX, COLLAR		8.00
3854	DISPLAY BOX, LAYOUT		8.00

**Includes Sapphire Time Screen   *Keystone

Prices subject to change without notice

MENS AND LADIES SOLID GOLD TOUCH/COMMAND MODELS

Specifications
— Displays hour, minute, second, month, date, has AM/PM indicators.
— Sensitive pressure points at 12 o'clock and 6 o'clock positions merely have to be touched for time, date, and setting. "Smart Calendar" adjusts automatically for 29, 30, and 31- day months.
— Water-resistant to a depth of 100 feet.
— Shock-resistant
— Synthetic sapphire time screen
— Auto/Set
— Light sensor
— Flat timing trimmer on back of module.
— Accurate to within 60 seconds a year.

Battery Requirements
— Two Ray-O-Vac RW 48 power cells which must be installed by a jeweler.

Product Information
These Mens and Ladies Pulsar models were introduced in the fall of 1976. All contain identical Time Computer modules.

Model Numbers

Mens Rectangular
No. 7917-2 14K. Gold/Mesh Bracelet
No. 7917-1 14K. Gold/Strap
No. 1917-2 18K. Gold/Mesh Bracelet

Mens Cushion
No. 7918-2 14K. Gold/Mesh Bracelet
No. 1918-2 18K. Gold/Mesh Bracelet

Ladies Rectangular
No. 6931-2 14K. Gold/Mesh Bracelet
No. 1931-2 18K. Gold/Mesh Bracelet

Ladies Cushion
No. 6921-2 14K. Gold/Mesh Bracelet
No. 1921-2 18K. Gold/Mesh Bracelet
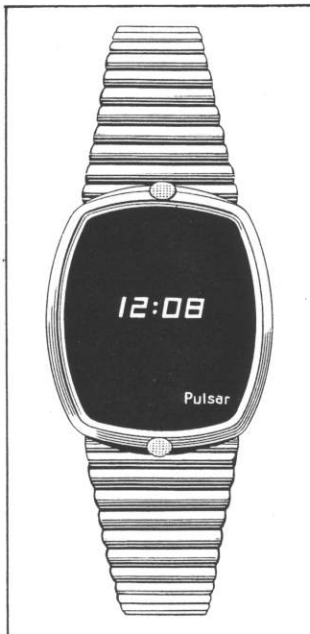
Men's Rectangle	**Men's Cushion**	**Ladies Rectangle**	**Ladies Cushion**
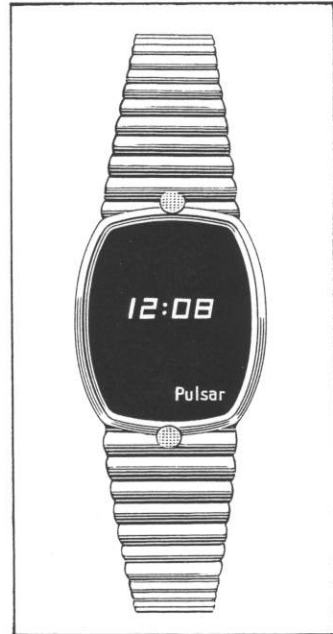
For Setting Instructions see pages 57 & 58.

MATERIAL SALES PARTS LIST
MEN'S PULSAR TOUCH/COMMAND GOLD MODELS
MODEL NUMBERS: RECTANGULAR: 7917, 1917
CUSHION: 7918, 1918

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
5636	O-RING CASE BACK (Rectangular model)	N/C
6736	GASKET, CASE BACK (Cushion model)	N/C
	MISCELLANEOUS	
5080	RW-48 POWER CELLS (PAIR)	5.00
3850	DISPLAY BOX, COLLAR	33.00
3851	DISPLAY BOX, LAYOUT	16.00
1014	CHAMOIS	1.00
	STRAP PARTS	
5837	SPRING BAR, STRAP/CASE ATTACHMENT	N/C
3825	14K. STRAP BUCKLE	115.00
5634-21	SHORT BROWN STRAP	5.00
5634-20	REGULAR BROWN STRAP	5.00
5634-22	LONG BROWN STRAP	5.00

*Keystone

NOTE: Prices for other solid gold cases and bracelet parts on request.

MATERIAL SALES PARTS LIST
LADY PULSAR TOUCH/COMMAND GOLD MODELS
MODEL NUMBERS: RECTANGULAR: 6931, 1931
CUSHION: 6921, 1921

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
5736	O-RING, CASE BACK (Rectangular Model)	N/C
6636	O-RING, CASE BACK (Cushion model)	N/C
	MISCELLANEOUS	
5080	RW-48 POWER CELLS (PAIR)	5.00
3865	DISPLAY BOX, COLLAR	33.00
3864	DISPLAY BOX, LAYOUT	16.00
1014	CHAMOIS	1.00

*Keystone

Prices subject to change without notice

NOTE: Prices for other solid gold cases and bracelet parts on request.

TIME COMPUTER CALCULATOR (901)

Specifications
— Displays hour, minute, second, month, date, has AM/PM indicators for resetting
— Add, subtract, multiply and divide
— Memory add or subtract, percent and floating decimal
— Six digit display computes answers to 12 places.
— Accurate to within 60 seconds a year
— "Smart Calendar" adjusts automatically for 29, 30, and 31-day months
— Water-resistant (Not intended for underwater use.)
— Shock-resistant
— Mineralite time screen
— Auto/Set (Key and Stylus)

Battery Requirements
— Four Ray-O-Vac RW 42, which must be installed only by the jeweler.

Product Information
The Pulsar wrist calculator models were introduced to the market in the fall of 1975. They contain a custom designed computer module which utilizes large scale integrated circuits.

Model Numbers
No. 3822-2 Stainless Steel/Bracelet
No. 5822-2 14K. Gold-Filled/Bracelet
No. 1822-2 18K. Gold/Bracelet

NOTE: Return to Lancaster Service Center for all module repairs.

For Setting Instructions see pages 56 & 57.

MATERIAL SALES PARTS LIST
WRIST CALCULATOR (901)
MODEL NUMBERS: 3822, 5822, 1822

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
4183	SPRING BAR, BRACELET/CASE ATTACHMENT	N/C
4509	S/S CASE COMPLETE	120.00
5229	14KT. YGF CASE COMPLETE	225.00
4501	S/S BEZEL COMPLETE WITH KEYBOARD AND SAPPHIRE TIME SCREEN	100.00
5251	14KT. YGF BEZEL COMPLETE WITH KEYBOARD AND SAPPHIRE TIME SCREEN	170.00
4504	S/S CASE BACK	20.00
5254	14KT. YGF CASE BACK	54.00
4538	S/S CASE SCREWS (6 REQUIRED)	.50
4536	CASE GASKET	N/C
	BRACELET PARTS	
4183	SPRING BAR, BRACELET/CASE ATTACHMENT	N/C
4507	S/S BRACELET	20.00
4517	14KT. YGF BRACELET	60.00
4808	S/S ADJUSTMENT LINK	.50
4815	14KT. YGF ADJUSTMENT LINK	1.50
3952	SPRING BAR, LINK ADJUSTMENT	N/C
4179	S/S CLASP WITH FOLDOVER	6.00
5259	14KT. YGF CLASP WITH FOLDOVER	20.00
3960	SPRING BAR, CLASP	N/C
	MISCELLANEOUS PARTS	
4358	RW-42 CELLS (PACKAGE OF 4)	10.00
3939	DISPLAY BOX (FOR G/F & GOLD PRODUCT)	16.00
3729	DISPLAY BOX (FOR S/S PRODUCT)	16.00
1014	CHAMOIS	1.00
4676	INSTRUCTION MANUAL	
3443	POCKET CARD — INSTRUCTIONS	
4375	S/S PEN COMPLETE	8.00
4376	12KT. YGF PEN COMPLETE	14.00
3571	STYLUS REPLACEMENT	2.50
3728	BLUE INK CARTRIDGE REPLACEMENT	.50

*Keystone

Prices subject to change without notice

NOTE: Prices for other solid gold cases and bracelet parts on request.

TIME COMPUTER/CALCULATOR (902)

Specifications

— Displays hour, minute, second, month, date and day of week.
— Add, subtract, multiply, divide, percentage
— Memory add and subtract, floating decimal.
— Six digit display, 12 digit calculating capacity.
— Accurate to within 60 seconds a year.
— "Smart calendar" adjusts automatically for 28, 30 and 31 day months.
— Auto/Command
— Auto/Set
— Calculator mode indicator light
— Mineralite time screen
— Shock-resistant
— Water-resistant*

Battery Requirements

— Four Ray-O-Vac RW-42 cells which must be installed by the jeweler.

Product Information

— The 902 Calculator module was introduced in Spring 1977, on a limited "phase in" basis, in solid 14kt. gold case only. By mid-year, the 902 module will replace the 901 in all new production of other case qualities.

Models with the 902 module can be identified by the key locations. In contrast with 901 models, the "R" and "S" keys, as well as the "=" and "C" keys, have been transposed.

Model Numbers

No. 3822-2 Stainless Steel, bracelet[1]
No. 5822-2 14kt. gold-filled/bracelet
No. 1823-2 18kt. gold, bracelet
[1]Available approx. 7/1/77

*Not intended for underwater use. A special urethane shield protects the Computer module from water, dust and dirt as long as case and data screen remain intact.
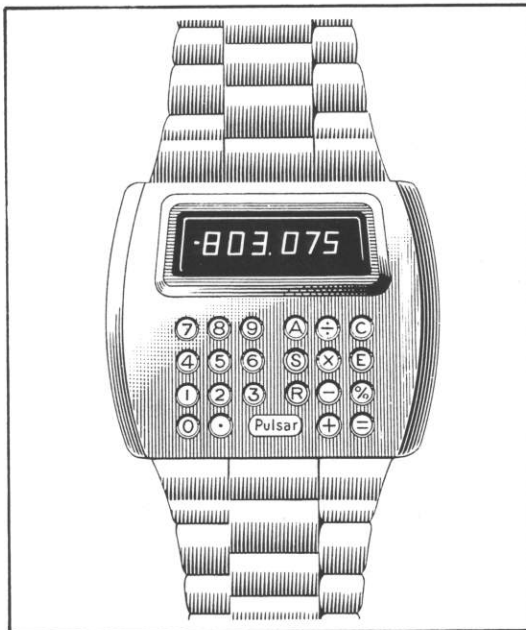
3822-2/5822-2

1823-2

MATERIALS SALES PARTS LIST
WRIST CALCULATOR (902)
MODEL NUMBERS: 3823, 1823,
3822, 5822, 1822 (SOME MODELS ONLY)

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
4183	SPRING BAR, BRACELET/CASE ATTACHMENT	N/C
6909	S/S CASE COMPLETE	120.00
6929	14KT. YGF CASE COMPLETE	225.00
6901	S/S BEZEL COMPLETE WITH KEYBOARD AND SAPPHIRE TIME SCREEN	100.00
6921	14KT. YGF BEZEL COMPLETE WITH KEYBOARD AND SAPPHIRE TIME SCREEN	170.00
4504	S/S CASE BACK	20.00
5254	14KT. YGF CASE BACK	54.00
4538	S/S CASE SCREWS (6 REQUIRED)	.50
4536	CASE GASKET	N/C
	BRACELET PARTS	
4183	SPRING BAR, BRACELET/CASE ATTACHMENT	N/C
4507	S/S BRACELET	20.00
4517	14KT. YGF BRACELET	60.00
4808	S/S ADJUSTMENT LINK	.50
4815	14KT. YGF ADJUSTMENT LINK	1.50
3952	SPRING BAR, LINK ADJUSTMENT	N/C
4179	S/S CLASP WITH FOLDOVER	6.00
5259	14KT. YGF CLASP WITH FOLDOVER	20.00
3960	SPRING BAR, CLASP	N/C
	MISCELLANEOUS PARTS	
4358	RW-42 CELLS (PACKAGE OF 4)	10.00
3939	DISPLAY BOX (FOR G/F & GOLD PRODUCT)	16.00
3729	DISPLAY BOX (FOR S/S PRODUCT)	16.00
1014	CHAMOIS	1.00
4676	INSTRUCTION MANUAL	
3443	POCKET CARD — INSTRUCTIONS	
4375	S/S PEN COMPLETE	8.00
4376	12KT. YGF PEN COMPLETE	14.00
3571	STYLUS REPLACEMENT	2.50
3728	BLUE INK CARTRIDGE REPLACEMENT	.50

*Keystone

Prices subject to change without notice.

NOTE: Prices for other solid gold cases and bracelet parts on request.

PULSE/TIME COMPUTER

Specifications

— Computes and displays constantly updated average pulse rate

— Sensor disc on lower bezel incorporates infra-red light transmitter and photo transistor. Amplified pulse signals from Sensor Disc are computed and converted into digital pulse rate display when activated by finger touch. (Note: See Instruction Manual for complete description of system.)

— Displays hour, minute, second, month, date, has AM/PM indicators

— "Smart calendar" adjusts automatically for 29, 30 and 31 day months

— Auto/Set

— Water resistant to a depth of 100 feet

— Shock resistant

— Light sensor

— Mineralite data screen

— Accurate to within 60 seconds a year

— Flat trimmer on back of module for timing adjustment

Battery Requirements

— Four Ray-O-Vac RW-42 "Ditronic" power cells which must be installed by the jeweler.

Product Information

The Pulse/Time Computer was introduced in April, 1977 in solid 14K gold, and in June, 1977 in stainless steel.

Model Numbers

No. 3725-2 Stainless steel, bracelet
No. 7725-2 14K gold, bracelet

NOTE: Please read Instruction Manual fully before attempting to determine pulse rate, and before demonstrating product to a customer.

7725-2

3725-2

MATERIAL SALES PARTS LIST
PULSE/TIME COMPUTER
MODEL NUMBERS: 3725, 7725

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
2898	SCREW PIN, BRACELET/CASE ATTACHMENT	N/C
6109	S/S CASE COMPLETE	65.00
6101	S/S BEZEL COMPLETE W/SAPPHIRE TIME SCREEN	45.00
6104	S/S CASE BACK	18.00
2895	CASE O-RING	N/C
2879	CASE NUT	N/C
	BRACELET PARTS	
2898	SCREW PIN, BRACELET/CASE ATTACHMENT	N/C
2904	S/S BRACELET	20.00
4808	S/S ADJUSTMENT LINK	.50
3952	PUSH PIN, ADJUSTMENT LINK	N/C
3955	S/S CLASP WITH FOLDOVER	6.00
3960	SPRING BAR CLASP	N/C
	MISCELLANEOUS PARTS	
2920	MODULE SCREWS	N/C
4358	RW-42 CELLS (PACKAGE OF 4)	10.00
1401	LARGE CASE WRENCH	6.00
7072	INSTRUCTION MANUAL	N/C
7070	DISPLAY BOX (FOR SOLID GOLD)	16.00
7071	DISPLAY BOX (FOR S/S PRODUCT)	16.00
7156	POCKET CARD — INSTRUCTIONS	
1014	CHAMOIS	1.00
		*Keystone

Prices subject to change without notice

NOTE: Prices for other solid gold cases and bracelet parts on request.

MATERIAL SALES PARTS LIST
PULSE/TIME COMPUTER
MODEL NUMBERS: 3725, 7725

PART NO.	DESCRIPTION	SUGGESTED RETAIL PRICE*
	CASE PARTS	
2898	SCREW PIN, BRACELET/CASE ATTACHMENT	N/C
6109	S/S CASE COMPLETE	65.00
6101	S/S BEZEL COMPLETE W/SAPPHIRE TIME SCREEN	45.00
6104	S/S CASE BACK	18.00
2895	CASE O-RING	N/C
2879	CASE NUT	N/C
	BRACELET PARTS	
2898	SCREW PIN, BRACELET/CASE ATTACHMENT	N/C
2904	S/S BRACELET	20.00
4808	S/S ADJUSTMENT LINK	.50
3952	PUSH PIN, ADJUSTMENT LINK	N/C
3955	S/S CLASP WITH FOLDOVER	6.00
3960	SPRING BAR CLASP	N/C
	MISCELLANEOUS PARTS	
2920	MODULE SCREWS	N/C
4358	RW-42 CELLS (PACKAGE OF 4)	10.00
1401	LARGE CASE WRENCH	6.00
7072	INSTRUCTION MANUAL	N/C
7070	DISPLAY BOX (FOR SOLID GOLD)	16.00
7071	DISPLAY BOX (FOR S/S PRODUCT)	16.00
7156	POCKET CARD — INSTRUCTIONS	
1014	CHAMOIS	1.00

*Keystone

Prices subject to change without notice

NOTE: Prices for other solid gold cases and bracelet parts on request.

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GENERAL SECTION

PULSAR 3-YEAR WARRANTY

The Full 3-Year Warranty is one of your most impressive Pulsar sales. features. On completion of each sale, be sure to complete your customer's. Certificate of Ownership. The Case Serial Number and Date of Purchase are particularly important to establish the warranty period. The Record of Warranty should also be completed and returned to Pulsar at the time of sale — be sure to retain a copy for your own records. .

If a Pulsar requires timing adjustment within the warranty period, it can usually be done in the store. See the appropriate instructions in this manual, including those on use of the Pulsar Analyzer.

Should further attention be required, send the Pulsar to your nearest Service Center — in most instance, it will be serviced and returned within 14 days of its receipt by the Center. Allow for time in the mail, to and from the Service

Center. Be sure to indicate what's wrong, being as specific as possible.

A free Power Cell Certificate entitles the Pulsar owner to a fresh set of power cells. We urge you to provide fresh cells upon presentation of the Certificate, even if you did not sell that customer. For each Power Cell Certificate you return to us, we will provide you with a fresh set of cells of your choice at no charge.

PULSAR RE-WARRANTY CARD

For Pulsar owners whose Time Computers may require service after the initial 3-Year Warranty period, we now provide a 2-Year Re-Warranty Service Program.

To obtain this service, return the Time Computer to *any* authorized Pulsar Service Center, where the following work will be performed and the module will be re-warranted for a 2-year period:

1. Module repaired or replaced and installed in the original case
2. Case and bracelet ultrasonically cleaned

3. Fresh set of power cells installed
4. Timing adjusted to within 60 seconds
5. Time set to your customer's local area
6. A Certificate of Re-Warranty provided for your customer (See illustration)
7. The re-warranted Pulsar returned to you — prepaid.

When you return a Pulsar to our Service Center for this work, be sure to mark the carton "Out of Warranty — Please Service and Re-Warrant".

Include the same instructions — with your name and address — *inside* the carton. Normally, this work will be completed within 14 days after its receipt by the Service Center. Suggested consumer cost of the 2-Year Re-Warranty is $50.00 (Keystone).

For service under the Re-Warranty, send the complete product (module, case and bracelet) to the Service Center, along with the Certificate of Re-Warranty. The Certificate will be returned with the product on completion of the work.

Pulsar. CERTIFICATE OF RE-WARRANTY

OWNER'S NAME

SERIAL NO.   DATE OF RE-WARRANTY

PULSAR JEWELER   CITY   STATE

Pulsar. 2-YEAR RE-WARRANTY

Time Computer. Inc. re-warrants the performance and accuracy of the module to within 60 seconds a year to any owner from the date indicated on the opposite side of this Certificate. Within this period, if anything goes wrong or if timing adjustment is required, take your Pulsar to an authorized jeweler. If necessary, he will forward it to a Service Center which is open Monday through Friday, including time in the mail, allow up to 14 days for re-warranty repairs. If you need assistance in the U.S., call the toll-free number below. This re-warranty does not apply to power cells, case, strap or bracelet, and is void if the Pulsar has been damaged by accident or abuse.

For service under this re-warranty, please return this card to the jeweler with your Pulsar. It will be returned with your Time Computer.

Toll-free Number: 800-233-0262. In Penna. call collect: 717-299-0840.

Time Computer, Inc., Lancaster, Penna. 17604

BRACELET LENGTHS

Model	Bracelet Type	Supplier	# Links Foldover Side	# Links Buckle Side	# Links Removable	Link Size	Buckle Size	Bracelet Length	Case Between Pins	Min. Length	Max. Length	Case Lug Opening	Spring Bar P/N
P2	All	J-B	9	13	4	1/4"	7/8"	6 1/8"	1 5/8"	6 5/8"	7 3/4"	.415	*2898
P3	S/S	Bear	7	8	5	3/8"	1"	6 1/8"	1 3/4"	5 7/8"	7 7/8"	.750	3528
P3	S/S,GF,SG	J-B	7	7	5	3/8"	1"	6 1/4"	1 3/4"	6"	8"	.750	3528
P4 Executive	All	Bear, J-B	7	8	5	3/8"	1"	6 1/8"	1 11/16"	5 13/16"	7 13/16"	.600	4094
P4LF Big Time	S/S	Bear	7	8	6	3/8"	1"	6 3/8"	1 1/2"	5 1/4"	7 7/8"	.315	**4494
P4-2 Classic	All	J-B	9	13	4	1/4"	7/8"	6 1/8"	1 1/2"	6 3/8"	7 5/8"	.415	**4850
SM Man's Dress	S/S Short	Bear	40 mm	63.5 mm	—	—	31 mm	134.5 mm	1 3/8"	5 7/8"	7 3/8"	.750	3528
	S/S Regular	Bear	63.5 mm	70 mm	—	—	31 mm	164.5 mm	1 3/8"	7"	8 1/2"	.750	3528
	S/S Long	Bear	70 mm	70 mm	—	—	31 mm	171 mm	1 3/8"	7 1/4"	8 3/4"	.750	3528
	GF Short	L&W	Mesh	—	—	—	7/8"	5 5/8"	1 3/8"	6 1/4"	7"	.750	3528
	GF Regular	L&W	Mesh	—	—	—	7/8"	6 3/16"	1 3/8"	6 13/16"	7 9/16"	.750	3528
	GF Long	L&W	Mesh	—	—	—	7/8"	6 5/8"	1 3/8"	7 1/4"	8"	.750	3528
	GF Extra Long	L&W	Mesh	—	—	—	7/8"	7 1/4"	1 3/8"	7 3/4"	8 1/2"	.750	3528
LP/P3L	All	J-B	5	6	3	3/8"	1 1/8"	5 7/16"	1 3/8"	4 15/16"	6 13/16"	.500	3694
Men's P3L	S/S	Bear	8	8	4	3/8"	1"	6 1/2"	1 3/8"	5 3/4"	7 7/8"	.500	3694
Wrist Calculator	All	J-B	9	13	4	1/4"	7/8"	6 1/8"	1 3/4"	6 1/8"	7 7/8"	.420	4183
Ladies	S/S Short	Bear	53 mm	53 mm	—	—	24 mm	130 mm	1 1/8"	5 5/8"	6 7/8"	.443	5337
Oval/Cushion	S/S Regular	Bear	53 mm	65 mm	—	—	24 mm	142 mm	1 1/8"	6 1/8"	7 3/8"	.443	5337
	S/S Long	Bear	65 mm	65 mm	—	—	24 mm	154 mm	1 1/8"	6 5/8"	7 7/8"	.443	5337
	GF Short	L&W, J-B	Mesh	Mesh	—	—	—	5 1/4"	1 1/8"	5 1/2"	6 1/4"	.443	5337
	GF Regular	L&W, J-B	Mesh	—	—	—	—	5 3/4"	1 1/8"	6"	6 3/4"	.443	5337
	GF Long	L&W, J-B	Mesh	—	—	—	—	6 1/4"	1 1/8"	6 1/2"	7 1/4"	.443	5337
Ladies Square	S/S Short	Chatelain	Mesh	—	—	—	—	133 mm	1 1/8"	5 1/2"	6 1/4"	.568	5837
	S/S Regular	Chatelain	Mesh	—	—	—	—	146 mm	1 1/8"	6"	6 3/4"	.568	5837
	S/S Long	Chatelain	Mesh	—	—	—	—	159 mm	1 1/8"	6 1/2"	7 1/4"	.568	5837
	GF Short	J-B	Mesh	—	—	—	—	5 1/4"	1 1/8"	5 1/2"	6 1/4"	.568	5837
	GF Regular	J-B	Mesh	—	—	—	—	5 3/4"	1 1/8"	6"	6 3/4"	.568	5837
	GF Long	J-B	Mesh	—	—	—	—	6 1/4"	1 1/8"	6 1/2"	7 1/4"	.568	5837

* Threaded Pin
** Push Pin

New Solid Gold Mens — Cushion & Rectangular — Bracelet + Case = 8" with 1/4" adjustment in clasp. (Requires sizing)
New Solid Gold Ladies — Cushion & Rectangular — Bracelet + Case = 7 1/2" with 1/4" adjustment in clasp. (Requires sizing)

SETTING INSTRUCTIONS

Each Time Computer has specific setting procedures to follow. These are listed according to styles and model numbers. For a more comprehensive explanation consult the particular instruction manual.

1. Limited Edition
(Model number 2800)

P-II 1 Button
(Model numbers 3238, 2900, 2975, 3276, 2970, 3286, 2980)

To set the time, a timeset bar has been provided and is stored in the bracelet clasp. Minute setting is accomplished by inserting the timeset bar in the "MIN." recess in the case back. Insertion of the timeset bar activates the displays and causes the minutes to advance. Set the time on your Pulsar to the upcoming minute. **DO NOT PRESS THE COMMAND BUTTON AT THIS TIME.**

Next set the hours by placing the setting bar in the "HR." recess in the case back. Again the displays will light and the hours will advance. When the proper hour has been reached, remove the timeset bar.

When the minute on your time source and the minute which you programmed into the Pulsar Time Computer coincide, press the command button. This will start the Time Computer and verify that you have set the proper time.

MAGNETIC SET MODELS ONLY

2. P-II 2 Button
(Model number's 3230, 3216)

P-III
(Model number's 3100, 3336, 3120, 3376, 3115, 3396, 3130, 3386, 3140, 3366)

P-IV (Executive)
(Model number's 3201, 5201, 7201)

Men's Dress
(Model number's 3408, 5408, 7408)

Ladies' Cushion
(Model number's 2407, 4407, 6407, 6420)

Ladies' Oval
(Model number's 2406, 4406, 6406, 6414, 6412)

NOTE: Command buttons on P-II and P-III models are located at 3 O'Clock position (time) and 9 O'Clock position (month/day).

To set the time, a magnetic timeset bar is stored in the clasp of the bracelet or strap.

Resetting Hours Only — Take the timeset bar and insert it into the recess on the case back marked "HR." This causes the displays to light up and the hours to advance. Remove the timeset bar when the proper hour has been reached.

NOTE: The AM/PM dot will alternate if the hours display passes through 12 during hours setting. If the wrong AM/PM dot position occurs, merely advance the hours through 12 to correct hour indication. This will simultaneously reverse the AM/PM indication.

RESETTING TIME, MONTH AND DATE –

Hour/minute/second reset and month/date reset functions operate independently of one another. However, when it becomes necessary to completely reset the Pulsar, do so in the following sequence to minimize setting confusion: minutes, hours, AM/PM, date, then month.

To Reset Minutes and Seconds — Insert the timeset bar in the recess on the case back marked "MIN." This causes the displays to light up and minute digits to advance. It also automatically resets seconds to 00. Set the time to the upcoming minute and quickly remove the timeset bar. **DO NOT PRESS THE COMMAND BUTTON AT THIS TIME.** When the minute on your time source and the minute which you programmed into the Pulsar Time

Computer coincide, press the command button. This will start the Time Computer and verify that you have set the proper time.

To Reset Month — Hold date button in, then place timeset bar in "HR" recess in the case back. This will cause the display to light and advance the month. Remove timeset bar when month display is correct.

To Reset Date and AM/PM Indicators — Simultaneously press both command buttons, then place timeset bar in the "HR." recess in the case back. This will cause the displays to light up and advance the date. At the same time, as each date number changes, the AM and PM indicators (upper and lower dots between month and date numbers) will alternately light up. Remove the timeset bar when the proper date appears and when the AM or PM indicator is correct. (Upper dot indicates AM, lower dot for PM.)

3. P-IV (Executive)
(Model number's 3201, 5201, 7201, | auto-set models only| and 3211)

Classic
(Model number's 3310, 5310, 3210, 5210)

Big Time
(Model number's 3315, 3215)

Men's Dress
(Model number's 3408, 5408, 7408 | auto-set models only| and 3416)

Ladies' Cushion
(Model number's 2407, 4407, 6407, 6420 | auto-set models only|)

Ladies' Oval
(Model number's 2406, 4406, 6406, 6414, 6412| auto-set models only|)

These Time Computers have Pulsar's exclusive and convenient Auto/Set system, which enables you to re-set the

SETTING INSTRUCTIONS (CONT.)

time and calendar, solely by use of the buttons, while on your wrist.

To Set Month — Touch TOP button three times in rapid succession to activate month re-set mode. Release the button, then pause a second or two. While display is still lit, touch button again and hold, to advance month figure to desired setting. Release button when month is correct — the display will turn off automatically.

To Set Date & AM/PM Indicators* — Touch TOP button three times in rapid succession to activate date re-set mode. Release the button, then pause a second or two. While display is still lit, touch and hold the BOTTOM button to advance the date figures to the desired setting. The AM/PM indicator will flash alternately with each successive change. Release button when date and AM/PM indication are correct — the display will turn off automatically.

To Set Hour — Touch BOTTOM button three times in rapid succession to activate hour re-set mode. Release the button, then pause a second or two. While the display is still lit, touch and hold the TOP button to advance the hour figure to the desired setting. Release button when setting is correct – the display will turn off automatically.

To Set Day of Week (Models 3310, 3315, 3510 only) — Touch TOP button three times in rapid succession to activate day of week re-set mode. Release the button, then pause a moment or two. While display is still lit, touch and hold both buttons to advance day letters to the desired setting. Release when correct — the display will turn off automatically.

***NOTE:** Model 3211 (24 hr. display) does not have an AM/PM indicator.

TO SET MINUTE AND SECOND —

1. Minute — Touch BOTTOM button three times in rapid succession to activate minute re-set mode. Release the button, then pause a second or two. While display is still lit, touch button again and hold, to advance minute

figure to desired setting. Release button when setting is correct — the display will turn off automatically. Nothing will happen at this time until you touch the BOTTOM button again, which "unlocks" the seconds and re-activates the computer.

2. Second — Unless you have previously done so, advance the minute display at least one figure to activate the second re-set mode. When your pre-determined minute setting coincides with your time signal, touch BOTTOM button once to "unlock" the seconds, beginning at :01. Your computer will be reactivated and function normally.

NOTE: Reset calendar, and time displays remain lit for five seconds after the command buttons are released. If you want to change any calendar display (month, day or date) while still in calendar reset mode, you can do so within that five second period. Similarly, when in time reset mode, you can change either the hour or minute — in any sequence — while the time display remains lit for the five second period. If you reset minutes in this manner, remember to touch the BOTTOM command button once more, to re-activate the computer with seconds beginning at :01.

A Final Reminder — Pulsar functional displays can be set independently, as well as in related Month/Date and Hour/Minute combinations, as indicated previously. Should you inadvertently activate a re-set mode, the display will light, hold for 5 seconds and go out. No functions will change and you will not affect any setting or alter their performance in any way.

4. Time Computer/Calculator (with 901 module)

Pulsar setting is accomplished by using the "S" key on the calculator keyboard in conjunction with the command button when in timekeeping mode. By pressing the "S" key repeatedly, setting information is displayed in the following order:

Month set — 1 press
Date set — 2 presses
Hour set — 3 presses
Minutes set — 4 presses
Normal Operations — 5 presses

Resetting Hours Only — With Pulsar in timekeeping mode, press the "S" key with the command pen's plastic tip three times. Hour will light up along with A (to indicate AM) or P (to indicate PM). Now press the command button to cycle the hours to the time desired, making certain the correct AM or PM indicator is lighted. Release the button. Then press the "S" key twice to restore to normal operation. The hour is now reset.

When it becomes necessary to completely reset your Pulsar (after replacing the power cells, for instance) follow these procedures.

Resetting Month — (1st press of "S" key.) With the plastic tip of the command pen, press the "S" key once. This will cause month to light up. Press command button to cycle month to setting desired. Release command button.

Resetting Date — (2nd press of "S" key). Again press the "S" key once with the command pen. This will cause date to light up. Press command button to cycle date to setting desired. Release command button.

Resetting Hour — (3rd press of "S" key). Again press the "S" key once with the command pen. This will cause hour to light up, together with A for AM or P for PM. Press command button to cycle hour and AM/PM indicator if desired setting. Release command button.

Resetting Minutes — (4th press of "S" key). Again press the "S" key once with the command pen. This will cause minutes to light up. Press command button to cycle minutes to desired setting (this automatically resets seconds to 00). Always set ahead by at least one minute to give yourself

Continued

SETTING INSTRUCTIONS (CONT.)

time to synchronize, as outlined below. Release command button. Then press "S" key once to blank the display. **DO NOT PRESS THE COMMAND BUTTON AT THIS TIME.** (Pulsar will not begin time calculations until the command button is pressed.)

TO Synchronize to the Exact Second — Use an accurate time source such as a clock of known accuracy. When your time source and the time you have set coincide, press the command button. This starts the Time Computer. Note that to properly synchronize the seconds, you must always start your Pulsar on the exact minute (such as 12:08:00).

Do not leave the computer in any setting mode for an extended period, as this will drain the energy cells prematurely. Always return to time-keeping mode by sequencing the "S" key as indicated previously.

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5. **Time Computer/Calculator (With 902 Module)**

Setting is accomplished by using the "S" key in conjunction with the command button when in timekeeping mode. Time and calendar functions can be set in sequence or independently. Put computer in setting mode by pressing the "S" key, as follows:

Hour and AM/PM — 1 press
Minute and Second — 2 presses
Month — 3 presses
Date — 4 presses
Day — 5 presses
Normal Operation — 6 presses

To Set Hour and AM/PM Indicator — With the computer in normal timekeeping mode, press the "S" key once with the setting tip of the command pen for Hour and AM/PM setting mode, indicated by an Hour and "A" (for AM) or "P" (for PM) on the data screen. Press and hold the command button for at least two seconds, after which the display will advance. Release the button when hour

and AM/PM setting is correct. If setting Hour only (i.e., for time zone and daylight saving time changes), press the "S" key 5 more times to return to normal timekeeping operation.

To Set Minute — If your computer is still in Hour and AM/PM setting mode, press the "S" key once more for Minute setting mode. If the computer is in normal timekeeping mode, press the "S" key twice for Minute setting mode, indicated by a colon and two figures at right on the data screen. With computer in Minute setting mode, press and hold the command button for at least two seconds, after which the display will advance. Release the button when Minute setting is correct.

To Set Seconds — Keep the computer in the Minute setting mode. When the pre-determined Minute setting coincides with the time signal, quickly press and release the command button one time. This reactivates the seconds in coincidence with the signal. After setting seconds, press the "S" key 4 more times to return to normal timekeeping operation.

To Set Month — If your computer is still in Minute setting mode, press the "S" key once more for Month setting mode. If the computer is in normal time-keeping mode, press the "S" key 3 times for Month setting mode, indicated by one or two digits at left on the data screen. With the computer in Month setting mode, press and hold the command button for at least two seconds, after which the display will begin to advance. Release the button when Month setting is correct. If you are resetting only the Month, press the "S" key 3 more times to return to normal timekeeping operation.

To Set Date — If your computer is still in Month setting mode, press the "S" key once more for Date setting mode. If computer is in normal timekeeping mode, press the "S" key 4 times for Date setting mode, indicated by one or two digits at right on the data screen. With the computer in Date set mode,

press and hold the command button for at least two seconds, after which the display will begin to advance. Release the button when Date setting is correct. If setting Date only, press the "S" key twice more to return to normal timekeeping operation.

To Set Day — If your computer is still in Date setting mode, press the "S" key once more for Day setting mode. If computer is normal timekeeping mode, press the "S" key 5 times for Day setting mode, indicated by two alpha-numeric letters at left on the data screen. With the computer in Day setting mode, press and hold the command button for at least two seconds, after which the display will begin to advance. Release the button when Day setting is correct. Press the "S" key once more to return to normal timekeeping operation.

Do not leave the computer in any setting mode for an extended period, as this will drain the energy cells prematurely. Always return to time-keeping mode by sequencing the "S" key as indicated previously.

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6. **Ladies' Oval (Model number's 2912, 4912)**

Ladies' Cushion (Model number's 2926, 4926)

Ladies' Square (Model number's 2927, 4927)

Men's solid gold rectangular (Model number's 7917, 1917)

Men's solid gold cushion (Model number's 7918, 1918)

Ladies' solid gold rectangular (Model number's 6931, 1931, 1934)

Ladies' solid gold cushion (Model number's 6921, 1921)

All settings are accomplished by touching the command buttons. Touch the top button to display the elements you want to change. Touch the bottom button to make the changes you want. Each element can be set independently or in sequence.

SETTING INSTRUCTIONS (CONT.)

To Set Hour and AM/PM Indication — Touch and release the top button three times. You will know the computer is in setting mode because the hour is displayed with an "A" (for AM) "P" (for PM). While the display is lit touch and hold the bottom button until correct hour and AM/PM appears. Release the button when display is correct. The computer will return automatically to normal operating mode.

To Set Minute — Put the computer in setting mode by touching top button three times. After the hour and AM/PM display appears, touch the top button once more. A minute and colon will be displayed, indicating that the computer is in minute setting mode. While this display is still lit, touch and hold the bottom button until the correct minute appears. When setting is correct, release the button. When the display goes out, a blinking colon will appear to indicate that the minute is reset and the computer "locked" with seconds at :00.

To Synchronize Seconds — "Unlock" the computer and synchronize the seconds beginning with :00 by touching the bottom button in coincidence with your pre-determined time signal, WHILE THE COLON IS BLINKING. Note: If you choose to continue the setting sequence before synchronizing the seconds, you can do so. Just put the computer into the setting mode you want and continue to check or reset other elements. When other displays go out, the blinking colon will reappear to remind you the computer is "locked" with seconds at :00.

To Set Day — If you have previously set the minute and synchronized the seconds, the computer is operating normally. Return the computer to setting mode by touching the top button three times. Following the hour and AM/PM display, touch the top button

once more and a minute display will appear. Now, touch the top button once again. The alphabetical day display will appear. While the display is lit touch and hold the bottom button until the correct day is displayed. When setting is correct, release button. The display will go out and the computer will function normally.

To Set Month — Return the computer to day setting mode as indicated previously. While the alphabetical day is displayed, touch the top button once more. This causes the numerical month display to appear at left on the time screen. While the month display is lit, touch and hold the bottom button until the correct month appears. When setting is correct, release the button — the display will go out, indicating that the computer is functioning normally.

To Set Date — Return the computer to month setting mode as indicated previously. While the month is displayed, touch the top button once more. This causes the numerical date to appear at right on the time screen. While the date display is lit, touch and hold the bottom button until the correct date appears. When setting is correct, release the button — the display will go out, indicating that the computer is functioning normally.

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7. Pulse/Time Computer (Model number's: 7725, 3725)

The PulseTime Computer has the Auto/Set system, which enables you to reset the time and date with the command buttons. The left (Date Command) button initiates calendar resets and changes displays on the left side of the data screen (hour and month). The right (Time Command) button initiates all time resets and changes displays on the right side of the data screen (minutes, seconds, date).

Display can be reset independently or in sequence. The following setting sequence is recommended:

1. Month
2. Date and AM/PM
3. Hour
4. Minute and Second

To initiate any resetting procedure, press the appropriate command button three times in rapid succession. This causes the display to light, hold for 1.5 seconds, to off, reappear and remain lit for about 3 more seconds, indicating that you are in setting mode. When the display is lit for this second time, press the appropriate command button to reset, as indicated subsequently.

To Set Month — Press left command button three times in rapid succession to activate the calendar reset mode. Release the button and pause a moment or two. While the display is still lit, press the left button again and hold, to advance month display to desired setting. Release button when month is correct — the display will turn off automatically.

To Set Date and AM/PM Indicator — Press left command button three times in rapid succession to activate the calendar reset mode. Release the button and pause a moment or two. While the display is still lit, press and hold the right button, to advance date display to desired setting. The AM/PM indicator will flash successively with each date change. Release the button when date and AM/PM indication are correct — the display will turn off automatically.

To Set Hour — Press right button three times in rapid succession to activate time reset mode. Release the button and pause a moment or two.

Continued

SETTING INSTRUCTIONS (CONT.)

While the time display is still lit, press and hold the left button, to advance hour display to desired setting. Release the button when setting is correct — the display will turn off automatically.

To Set Minute and Second —

Minute — Press the right command button three times in rapid succession to activate time reset mode. Release the button and pause a moment or two. When the display is lit, press and hold the right button again, to advance minute display to desired setting. Release the button when minute is correct — the display will turn off automatically. Remember that by advancing the minutes, you have "locked" the seconds at :00. You must "unlock" it by touching the right button once again.

Second — When your pre-determined minute setting coincides with your time signal, touch the right button once to "unlock" the seconds beginning with :00. Your computer will be reactivated and function normally.

An Extra Convenience — Reset month, date, hour and minute displays remain lit for 5 seconds. When you are in calendar reset mode, you can change either the month or date within that five second period. Similarly, when you are in time reset mode, you can change either the hour or minute within that 5 second period. If you change the minute, however, remember to touch the right button once to "unlock" the seconds beginning at :00.

A Final Reminder — Displays can be set independently or in the related Month/Date or Hour/Minute combinations indicated previously. If you should inadvertently activate a reset mode, the display will light, hold for 3 seconds then go out. If you should inadvertently touch the Sensor Disc while in reset mode, the LED's will light and then go out. In either instance, no displays will change and you will not have altered the setting or performance in any way.