

*Price List*

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**Brunswick  
Electronic Repair  
2011 U.S. Prices**

March 2011 / 10-095200-001  
0211-34

***Brunswick***   
CUSTOMER SERVICE  
A tradition in excellence.

## **Brunswick Electronic Repair 2011 Price List**

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Reorder Part No. 10-095200-001

Notice: If available, updates to this manual can be found on-line at [www.brunswickbowling.com](http://www.brunswickbowling.com).

Confidential proprietary information. All information contained in this document is subject to change without notice.

Brunswick Bowling & Billiards Corporation  
525 West Laketon Avenue  
P.O. Box 329  
Muskegon, MI 49443-0329  
U.S.A.

231.725.3300

# Brunswick Electronic Repair

*Since 1968*

Brunswick Bowling and Billiards

March 1, 2011

## We Appreciate Your Business

*From the Brunswick Electronic Repair Center Team*

Committed to Service  
Brunswick Electronic Repair Center

We sincerely thank you for trusting Brunswick to repair your electronic bowling equipment. Our advantage of having direct access to the designers and manufacturers of our scoring systems is clearly to your benefit. We have access to supplies of obsolete components and assemblies enabling us to repair your items for many years after they were last manufactured. The goal is to quickly respond to your needs with the least cost solution—and Brunswick does just that.

### Our Work is Guaranteed

Our goal is to ship you a high-quality, ready to use assembly. We back it up with a 90-day warranty on our rebuilt assembly materials and workmanship. We trust you won't need it.

## Exchanging Electronic Assemblies

*Send it to us - we send a rebuilt unit back*

Standard Procedure  
Brunswick Electronic Assembly Exchange Program

When you need something repaired, here is what you need to do:

- 1) Complete the Electronic Assembly Repair Traveler. If you would like the exchange item shipped by priority or overnight freight, you may note this on the Repair Traveler. However, the additional freight cost of the priority shipment will be charged to your open account, and is not covered under Brunswick warranty.
- 2) Identify and note any specific software or firmware versions unique to your assembly.
- 3) Carefully package your assembly so it cannot be damaged in shipment. Take special care with fragile, computer hard drive assemblies. All assemblies must be covered by a static-protective bag or material prior to placing it in a shipping box.
- 4) Label the package with one of the shipping locations shown below. Print your return address on the outside of the box.
- 5) Insure your shipment for the replacement value of the item(s) and request delivery tracking information. If the item is damaged or lost in delivery, you must make a claim to the carrier.

Please allow for adequate shipping time to and from the Brunswick Electronic Repair Center.

**IMPORTANT:** Assemblies must be in repairable condition. There must be no missing or broken parts. There will be an additional cost assessment for severely damaged assemblies. An example would be broken flat screen displays.

## INSIDE THIS YEAR'S PRICE PAGES

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## Contacting Us

*Here when you need us!*

In North America – Brunswick Electronic Repair  
Brunswick Bowling & Billiards  
Electronic Repair: 8:00 a.m.-4:30 p.m. ET  
525 West Laketon Avenue  
Muskegon, MI 49441  
Toll free 24 hrs - (800) 937-2695  
Direct dial - (231) 725-3370  
Fax: (231) 725-4778  
E-mail: [ERC@brunbowl.com](mailto:ERC@brunbowl.com)  
Website: <http://www.brunswickbowling.com>

In Canada - French/English spoken  
Striker Bowling Solutions  
#9 – 505 Iroquois Shore Road  
Oakville, ON Canada L6H 2R3  
Toll free - (800) 232-2369 ext. 5  
Fax: (866) 789-2695

## Shipping Instructions

Here are a few tips for shipping items to Brunswick and receiving them back from being repaired.

- \* Identify each assembly and its serial number. Log the entire shipment in a book by date for future reference. After shipping your package, log the shipping company's tracking number in your book in case it gets lost. (e.g. UPS tracking number)
- \* Package assemblies so they can survive the trip. More padding is better than not having enough. Heavier assemblies require more padding. Reason: If your assembly arrives damaged from shipping, we will return it to you un-repaired. It will be your responsibility to file a claim with your shipping company.
- \* Include written instructions in the box. The best thing to do is attach a Repair Traveler to EACH defective assembly, noting the failure and anything else you want us to know. (e.g. returning for exchange)
- \* Mark the outside of the box with the address of the location you are using. Make sure it says "Brunswick Electronic Repair Center" or it may get lost.
- \* If you are returning a "pre-shipment," indicate on the Repair Traveler that this is a return for pre-shipment. Include a copy of your invoice

## Troubleshooting

*Making sure it is defective*

It is important to make sure your assembly is truly defective. Why? Whether or not the assembly is defective, we must charge you the exchange price - even if it is in working condition.

The standard procedure for troubleshooting an electronic assembly is to place the suspect unit in a known good system. This verifies you have identified the proper assembly as having failed because the symptom will move with the suspect assembly.

If you need help troubleshooting your electronic assembly, we can suggest two methods:

- 1) Read the Brunswick Service Manual for your system. It normally contains the theory of operation and troubleshooting information you will need.
- 2) If you cannot determine which assembly has failed, you can obtain technical assistance from the Customer Response Center at USA 1-800-937-2695, or USA 1-231-725-4966.

## Repairable or Not?

Not all electronic assemblies are repairable. The best way to know is to identify your part in the attached catalogue pages. If it's there, we will likely exchange it.

If the item is not in the catalogue, you must purchase a new replacement from a Brunswick service parts distributor (if the part is available).

Another reason an item might not be repairable is that it is too badly damaged. In this case, your assembly will be returned to you without being repaired. You must purchase a new replacement (if available) from a Brunswick distributor.

## Manufacturer's Warranty

*We take care of electronic warranty repairs*

The warranty on your electronic product is in the original order, contract, or with the equipment itself. Most electronic products carry a one year warranty on materials and a 90-day warranty on labor. Your warranty covers defects in materials and workmanship. It is always good to review this warranty before you need it. Warranty information for scoring systems is also contained in the Service and Support Guide provided at the time of your installation. To be covered, repairable items may only be exchanged for rebuilt items during the warranty period. So it is very important to know which items should be exchanged, and which items must be replaced.

Your warranty does not cover:

- Damage from product abuse, acts of god, and other conditions as described in your warranty policy.
- Repairs, replacements, or modifications made by anyone other than Seller or a Seller-certified installer.
- Abuse, misuse, accident, alteration, tampering, neglect, or lack of reasonable care Water, atmospheric conditions, moisture, storms, lightning, or from other causes over which Seller has no control.
- Buyer's failure to maintain products in accordance with applicable product manuals and service bulletins. Please refer to [www.brunswickbowling.com](http://www.brunswickbowling.com) for current publications.

Note that damage to assemblies from an electrical power surge of any type is not covered under Brunswick warranty. You must claim these repairs or replacements to your business insurers.

If a non-repairable assembly fails while under manufacturer's warranty, you should contact your Brunswick parts distributor. For questions or warranty claims, contact the Brunswick warranty administrator at USA 1-800-937-2695. Outside the USA, call USA 1-231-725-3494.

## Pre-shipments

*When you have to have it right away*

Sometimes you need us to send you a rebuilt assembly right away. You do not have time to wait. We have the answer. It's called a "pre-shipment."

Pre-shipments can be requested for most items in our inventory. Our goal is to ship it to you within two working days if we have it in stock. We will let you know. Just call us, fax us, or e-mail us at [ERC@brunbowl.com](mailto:ERC@brunbowl.com).

With pre-shipments there is a non-refundable charge of US \$60.00 for administration and stocking costs. This is not covered under manufacturer's warranty.

You must return your defective assemblies within 15 days or you will be charged the "full price" of the item.

When you have returned the items that have failed within the Brunswick Electronic Repair 90-day warranty, we will credit you the pre-shipment charges after the defective item(s) are returned.

## Speeding Up Delivery

There are several ways to speed up the exchange process. The best way is to use one of the many overnight express freight/mail services. Brunswick mostly uses UPS. On your Repair Traveler form, indicate you want overnight return services. We will do our best to arrange this on the return shipment. It is important to note that express freight service is not covered in the manufacturer's warranty, and will be at an additional charge.

## Brunswick 90-day Warranty

Brunswick offers a 90-day warranty on all rebuilt assemblies, regardless of manufacturer's warranty. The 90-day repair/exchange warranty begins as soon as we send it back to you, not when you put it into service. So don't forget to put it in to use as soon as you get it. In other words, please DO NOT put exchange/repair units directly in your spare parts inventory. Put them in a working system, and put the known to be working assembly in your spare parts inventory.

## Importance of Failure Information

A key element to the Brunswick Electronic Repair Business is the sharing of resources. When one customer sends us an electronic circuit board to repair, they usually receive someone else's repaired unit as an exchange. Rarely is the same unit returned. This process allows quick turnaround as we carry an inventory of repaired units.

Since we share the pool of exchange units, it is in everyone's best interest to indicate as much information about the failure as possible. We request that you complete the Electronic Assembly Repair Traveler form (back cover) in as much detail as possible. Failure information helps the technician properly test the unit to the extent of the failure reported. Better failure data means our repair

### Brunswick Technical Support

# 1-800-937-2695

Call us for Technical Assistance-24/7

## Software/Firmware

*Something you can't see, so it's hard to troubleshoot*

Most automatic scoring and office systems today operate on computers using software. When something appears wrong with a computer, software is something that can be misleading in the troubleshooting process. For that reason, it is always best to reset or reboot computers (and clear volatile memory) before concluding that any particular assembly is defective.

You may ultimately suspect the software itself. It resides on either EPROM chip(s) or a hard drive. Changing the chip(s) or hard drive will determine your suspicions. (Remember lane number assignments)

The most important thing to remember is to make sure the "version" of your software is compatible with your system, and the entire system is running compatible software. Typically this means all assemblies have the same version.

Brunswick determines the most compatible version when exchanging your assemblies. It is your responsibility to verify this upon installation and update the software if required through the front desk.

### READING YOUR INVOICE

There are several types of charges that could appear on your Brunswick open account invoice.

**Exchange Price** - This is the amount charged to exchange the defective board with a rebuilt assembly of the same model. The part numbers have an -8xx extension.

**Full Price** - If you had an item pre-shipped, and you fail to return the defective assembly within 15 days of receiving that item, you will be charged the full price of the item. These part numbers have a -9xx extension.

**Pre-shipment Fee** - This is the non-refundable fee.

**Freight** - the cost of mailing the assembly to your bowling center. If you would like the return item shipped faster, say priority or overnight freight, you may note this on the Repair Traveler. However, the additional freight cost of priority shipment will be charged to your open account, and is not covered under Brunswick warranty. Brunswick does not arrange for freight pickup on Electronic Repair items.

### ARRANGING FOR PAYMENT

You must arrange for payment of your repair charges in advance.

**Open Account** - The easiest method of payment is through an open account with Brunswick. Contact your Credit Manager for details. Note: If your account is overdue, we are not allowed to ship anything to you, even if you send it to us first. Even if your equipment is under manufacturer's warranty, we are not allowed to ship items to you if your balance or open account is overdue.

**Cash in Advance** - Include credit card charge information or a cashier's check for the invoice when sending your assembly to us.

**Purchase Order** - Many companies are required to provide Brunswick a purchase order number. Put this number on your Repair Traveler form.

Failure to arrange for payment in advance of your repair will result in considerable delays.

## Other electronic products bulletins:

### 1. GS-10 Red Box Electrical (out of warranty)

These are no longer repaired in North America. Ship these units for repair to the Brunswick Spobag Repair Facility, Service - und Handels Gmbh, Tichauer Weg 21, D-40231 Dusseldorf, Germany. Contact Hans Seebach at 49-211-21-80-88.

### 2. Wyse 185, and Digital VT-420 and VT-520 Terminals (out of warranty)

Contact Map & Associates 740-592-6890 for repairs on terminals. If the keyboard fails, it cannot be repaired. Your service parts catalog lists a Color Terminal Processor and a keyboard for whichever type of terminal you are replacing (Front desk, Cash Express, and remote office terminal). A VGA monitor may be purchased locally.

### 3. Digital or Dell, desk or office VGA Monitors (out of warranty)

Contact your Brunswick sales representative and order a new VGA monitor. Note: Standard VGA monitors may be purchased locally.

### 4. Monitors and office computers (in warranty)

First contact the Brunswick Customer Response Center at USA 1-800-937-2695, or USA 1-231-725-4966 for service instructions. If you call a local service dealer, you will be responsible for those charges.

### 5. Small Plug-in Power Supplies (out of warranty)

Most of these power supplies can be purchased locally, or from a Brunswick service parts distributor. Power and voltage ratings are listed on the unit being replaced. Make sure you get the proper connector and polarity on the "tip."

### 6. Printers (out of warranty)

Most printers used by Brunswick can be purchased locally. If you cannot find a dot matrix printer of the exact same model, look for one that supports "Epson emulation." When set to this mode, they support CMS printer outputs. CenterMaster and Classic printers may be any make or brand supported by Windows NT 4.0.

### 7. Speakers (out of warranty)

Speakers cannot be repaired. You must purchase new replacements.

### 8. DTS Cash Terminals (out of warranty)

Brunswick no longer supports DTS Cash Terminal repairs. Please contact your local DTS Cash Register Dealer, or Quality Retail, 18-2 Route 67, Schaghticoke, New York, 12154 phone: 800-753-7702.

### 9. Zot Repair Services may be contacted at 800-525-8116.

10. Ceronix Monitors – We have resolved some of the issues with obsolete components, enabling us to again offer limited repairs for the Ceronix #1492 (CPA4106) PCB. However, the CRT industry has discontinued support of the entire series of Ceronix 13" Chungwa YC-17 and Orion CRTs. These models operated on a filament current of 600 ma. The manufacturers discontinued these some time ago, and we are now out of "new" working stock. We do have limited inventory of some used CRT units that you can exchange to extend the life of your AS scoring equipment. If you choose to replace the 600ma CRT with a new 300 ma CRT purchased on the "open market," please make certain that you also purchase a matching chassis, as they are not reverse compatible. For Frameworx Powerworx and Touchworx consoles, Brunswick Electronic Repair can now supply a 15" flat screen LCD replacement that is easy to install. This unit is industrial grade and provides a 168 degree viewing angle with a crisper display image. There are no modifications to the pedestal and no specialty tools are required for installation (all hardware is included).

11. GS-Series Pinsetters - We no longer exchange complete electrical boxes. Instead, you must remove defective PCB assemblies and exchange them with the repair center. We have found most of the boxes are damaged beyond use during shipping and handling. This includes Consolidated Low/High Voltage and NexGen Boxes.

# Obsolete Assemblies

In the past year many additional repair components have become obsolete. Every year, the speed of obsolescence in electronics is more rapid. The older a component is, the more difficult it is to procure replacement parts. Our ability to repair electronic assemblies is directly related to the age of the product's design. As a result, the types of older items we are still able to repair and the cost to repair them changes continuously.

Brunswick does everything possible to stretch the life of your electronic product investment by maintaining qualified and well-inventoried repair services. The best way to do this is to purchase obsolete products and assemblies when they are discontinued. This is a sizeable investment that has a time and financial limit. Please look closely at the list of items Brunswick repairs to see if you can still exchange them with us. If you have the need to repair a repairable electronic assembly that is not listed in the price pages, please contact us. If we can help you, we will simply charge you time and materials to repair it.

The list below serves as official notice of the "discontinuation of service" for these products. We no longer offer repairs or exchanges on the items in this list. You can contact your Brunswick Capital Equipment Sales Representative for exciting information on our newest Brunswick Scoring System, Vector, and our Center Network System, Vector Plus.

BowlerVision I and II Scoring Systems	Standard CMS, CenterMaster, and Classic Cash Drawer.
MCC 1.5 Keyboard	MC 1.5 Panasonic, Magnavox, and Roland Monitors
'79 Scanner PCBs and Assemblies	AS80 23" Black & White Overheads
'79 and '86 Scanner Testers	Instant Replay, BowlerTracker, Balltracker and GS-3 Controller.
Zenith 25" CRTs, Overhead and PCB Assemblies	Digital and Wyse Office and Desk Terminal Keyboards
DTS Cash Registers	Ball Lift Control PCB Assemblies.
AS80 three and four board CPU PCB Assemblies.	B-2000 Pinfall Display, Player Control Station and PCB
Computone 6 and 8 Port PCB Assemblies	Framework 13" CRT Monitors and Touchscreens.

If an item is not listed in the price pages, we do not offer standard repair and/or exchange services. However, if you call us by telephone at 1-800-YES-BOWL we can tell you if we are able to repair your assembly on a time and materials basis.

Brunswick and the Brunswick Electronic Repair Center reserve the right to modify prices without notice.

We reserve the right to discontinue support of any assembly without written or verbal notice.

Electronic Repair Part Number	Description	Exchange Price	Full Price
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**Lower Monitor Video Assemblies - AS-80/AS-90/AS-K/AS-90C, Frameworx, Vector**

57-214011-800	12" Zenith CRT Assembly	\$114	\$300
57-214011-858	12" Zenith CRT PCB	\$75	\$250
57-860606-800	Z-Axis 12" CRT PCB	\$100	\$300
57-860627-800	AS-K Video Buffer PCB	\$23	\$100
57-214351-802	Color Decode PCB (CV100)	\$99	\$300
57-215262-800	AS-K Color Select PCB	\$20	\$45
57-215310-810	13" Ceronix PCB (1492)	\$100	\$500
57-861631-800	13" Ceronix PCB (1493-4152)	\$150	No Preship
57-300895-800	13" Ceronix PCB (1493-4203/4233)	\$100	\$500
57-215806-800	Ceronix Remote Adjustment PCB	\$25	\$25
57-300060-800	FW 15" LCD Replacement for CRT Monitor	\$250	\$788
57-300070-800	FW 15" LCD Touchscreen Replacement for CRT Monitor	\$275	\$912
57-861850-810	FW 13" LCD Flatscreen Touchscreen Monitor (Use w/Brick)	\$440	\$1,500
57-861892-800	FW 13" LCD Flatscreen Touchscreen Monitor (Use w/o Brick)	\$440	No Preship
57-500242-800	Vector LCD Flatscreen Power Supply	\$100	\$400
57-500312-810	Vector 13" LCD Flatscreen Touchscreen Monitor (Sanyo)	\$440	\$1,500
57-500413-810	Vector 13" LCD Flatscreen Touchscreen Monitor (Sharp)	\$440	\$1,500
57-500476-800	Vector 13" LCD Flatscreen Touchscreen Monitor (Magic)	\$440	\$1,500
57-500718-800	Vector 13" LCD Flatscreen Touchscreen Monitor (Magic w/bright)	\$440	\$1,500

**Overhead Monitor Video Assemblies - AS-80/AS-90/AS-90C, Frameworx, Classic, Vector**

57-214351-800	AS Color Decoder PCB (Blank)	\$99	No Preship
57-214849-800	AS Color Decoder Board (CC100)	\$100	\$300
57-860688-800	AS Color Decode PCB AS90C (Software Version)	\$90	\$250
57-860477-810	Zenith F5 27" Video Decode PCB	\$99	No Preship
57-860479-802	Zenith F5 27" RGB Processor PCB	\$123	No Preship
57-215110-800	Zenith 27" Interface PCB	\$88	No Preship
57-860772-802	Zenith 27" F5AT RGB Process Module	\$123	No Preship
57-860772-803	Zenith 27" F5AT Video Output Module	\$75	No Preship
68-100228-810	Zenith 27" RGB PCB	\$85	No Preship
68-860048-801	Zenith 27" HV Power Supply	\$120	No Preship
68-860048-802	Zenith 27" Process Module	\$117	No Preship
68-860048-803	Zenith 27" Video Output Assy	\$55	No Preship
57-500815-800	Classic 28" ST70-782 Grundig Monitor - Complete	\$300	No Preship
57-500815-810	Classic 28" ST70-284/8 Grundig Monitor - Complete	\$300	No Preship
57-500822-800	Classic 33" M84/211-8 Grundig Monitor - Complete	\$800	No Preship
57-500823-800	Classic 28" ST70-782 NIC/TOP Grundig Chassis	\$200	No Preship
57-500824-800	Classic 28" ST70-284/8 DOLBY Grundig Chassis	\$200	No Preship
57-500825-800	Classic 33" M84/211-8 IDTV Grundig Chassis	\$200	\$700
57-300041-800	FW Video Receiver PCB	\$65	\$200
57-300123-810	FW TV-Only PCB	\$75	\$200
57-300120-800	FW & Vector 27" Ceronix PCB	\$150	\$500
57-860787-800	FW & Vector 27" CRT Only (w/Yoke)	\$300	\$300
57-300539-800	FW 27" Overhead w/o Shell (Ceronix)	\$500	\$1,200
57-300540-800	FW 27" TV Only w/o Shell (Ceronix)	\$500	\$1,200
57-860922-800	FW 27" Overhead Monitor-Complete	\$600	\$1,500
57-301010-800	FW & Vector 36" CRT Only (w/Yoke)	\$500	\$500
57-861876-810	FW 36" Monitor w/o bezel (Ceronix)	\$995	\$2,000
57-861875-810	FW 36" TV Only Monitor w/o bezel (Ceronix)	\$995	\$2,000
57-500291-800	Vector Overhead Display Interface PCB	\$150	\$300
57-500316-810	Vector TV-Only Monitor PCB	\$125	\$250
57-301027-810	FW & Vector 36" Ceronix PCB	\$125	\$500
57-500032-800	Vector 27" Overhead (Ceronix)	\$500	\$1,200
57-500322-810	Vector 27" TV Only (Ceronix)	\$500	\$1,200
57-500101-800	Vector 36" Monitor w/o bezel (Ceronix)	\$995	\$2,500
57-500321-810	Vector 36" TV Only Monitor w/o bezel (Ceronix)	\$995	\$2,500

Electronic Repair Part Number	Description	Exchange Price	Full Price
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**Vector Scorer Assemblies**

57-500156-810	Vector Distribution PCB 5.0 (Software Version)	\$150	\$250
57-500203-800	Vector Camera Only	\$100	\$150
57-500204-800	Vector Camera Assembly	\$200	\$450
57-500587-800	Vector Camera Assembly-New Style	\$250	\$450
57-500887-800	Vector BNC Camera PCB	\$100	\$150
57-500216-800	Vector Ball Detect - (1) Only (w/o plate assembly)	\$49	\$150
57-500219-800	Vector Ball Detect - (2) w/plate assembly	\$99	\$200
57-500269-800	Vector Motherboard	\$500	\$750
57-500367-810	Vector Keypad Interface PCB	\$150	\$200
57-500304-800	Vector Keypad & Mounting Plate (No PCB)	\$100	\$300
57-500371-810	Vector Keypad Assembly (Complete)	\$275	\$500
57-500229-800	Vector 3com Ethernet PCB 10/100	\$50	\$150
57-500234-800	Vector Scoring Computer Power Supply	\$50	\$150
57-500248-800	Vector LCD Interface PCB	\$150	\$300
57-500283-800	Vector Video 3 PCB	\$399	\$1,000
57-500329-800	Vector Primary Patch Panel PCB w/sound	\$250	\$500
57-500703-800	Vector Primary RJ-45 Panel PCB	\$155	\$400
57-500826-800	Vector Combined Secondary RJ-45 Panel	\$200	\$500
57-500709-800	Vector Primary Differential Video Processor	\$159	\$400
57-500763-800	Vector Primary Sub-D Panel PCB	\$200	\$400
57-500767-800	Vector Secondary Sub-D Panel PCB	\$200	\$400
57-500770-800	Vector Primary Single-Ended Video Processor	\$100	\$300
57-500742-800	Vector G4S601-B-G Motherboard Complete	\$500	\$900
57-500295-810	Vector Hard Drive w/mounting bracket	\$150	\$400
57-500295-820	Vector Hard Drive w/mounting bracket	\$150	\$400
57-500748-800	Vector Hard Drive w/mounting bracket - G4S601 Motherboard	\$150	\$400
57-500751-800	Vector Hard Drive w/ "L" bracket - CRT version	\$150	\$400
57-500751-810	Vector Hard Drive w/ "L" bracket - CRT version-embedded XP	\$150	\$400
57-500845-800	Vector Hard Drive w/ "L" bracket - LCD version	\$150	\$400
57-500845-810	Vector Hard Drive w/ "L" bracket - LCD version-embedded XP	\$150	\$400
57-500347-810	Vector Scoring Computer LCD	\$1,500	\$3,000
57-500348-810	Vector Scoring Computer Keypad	\$1,500	\$3,000

**Scanners & Pin Sensing Assemblies**

57-214105-800	79 Scanner D/A PCB Assembly	\$200	No Preship
57-214921-800	Ball Detect Assy	\$59	\$150
57-214930-800	86 Scanner PCB	\$150	\$500
57-214690-850	86 Scanner W/O PCB	\$637	No Preship
57-215331-800	CCD Firmware Upgrade	\$75	\$75
57-860407-800	CCD Camera Assembly	\$331	\$1,000
57-860408-800	CCD Processor Assembly (Software Version)	\$336	\$1,000
57-860376-800	CCD Camera Tester No LCD Replacement	\$313	No Preship
57-860376-801	CCD Camera Tester W/LCD Replacement	\$400	No Preship
57-300667-800	VPS Ball Detect	\$75	\$200
57-300710-800	VPS Camera Only	\$100	\$200
57-300713-810	VPS Firmware Upgrade	\$50	\$50
57-300704-800	VPS Assembly - Video Pin Sensor (Software Version)	\$313	\$1,000

**Vector/Framework LCD Overhead Video Assemblies**

57-500436-800	Vector Synch Separator PCB	\$100	\$250
57-500441-810	Vector Serial Communications Controller PCB	\$100	\$250
57-500454-800	Vector Bridging Tapoff Amplifier PCB	\$75	\$200
57-500469-800	Vector Triple Output Power Supply Assy	\$100	\$200
57-500700-800	Vector VGA Adapter Module	\$150	\$400
57-301187-800	FW LCD OH Interface PCB Assy	\$125	\$500
57-863033-800	Vector 40" NEC LCD4010 Monitor	\$500	\$1,000
57-863048-800	Vector 32" NEC LCD3210 Monitor	\$400	\$1,000
57-863327-800	Vector 42" Olevia LCD Monitor	\$400	No Preship
57-863328-800	Vector 37" Olevia LCD Monitor	\$350	\$1,000
57-863329-800	Vector 32" Olevia LCD Monitor	\$300	\$1,000

Electronic Repair Part Number	Description	Exchange Price	Full Price
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### Classic Scorer Assemblies

57-500039-800	Classic Keyboard Controller PCB	\$57	\$85
57-500802-800	Classic Lane Server Hard Drive (PCI or ISA)	\$150	\$400
57-500804-800	Classic Camera Chassis	\$225	No Preship
57-500805-800	Classic/Viking Photocell/Ball Detect	\$66	\$100
57-500807-810	Classic Camera Processor PCB	\$163	\$325
57-500809-800	Classic Pet-48 PCB	\$100	\$245
57-500810-800	Classic 4-Port Moxa PCB 83047	\$90	\$230
57-500810-810	Classic 8-Port Moxa PCB 83047	\$113	\$245
57-500810-820	Classic 8-Port Moxa PCB (PCI) 83047	\$113	\$240
57-500814-800	Classic/Viking Camera Only	\$188	No Preship
57-500816-800	Classic Scorer Lane Server Mother Board	\$375	\$750
57-500817-800	Classic Scanner Distribution Board	\$150	\$186
57-500818-800	Classic Scorer RS232/485 Converter	\$100	\$110
57-500820-800	Classic 8-Port Video Output PCB	\$500	\$800
57-500828-800	Classic Patch Panel PCB	\$200	\$800
57-861567-800	Cm Customer Display (110V) (White or Black)	\$250	No Preship
57-861659-800	Cm Customer Display (220V) (White or Black)	\$250	No Preship
57-863139-800	Classic Client PCI Serial Card (Low Profile)	\$125	\$200
57-863143-800	Classic Lane Server - GS - Complete	\$1,195	\$2,500
57-863152-800	Classic Lane Server - Non GS - Complete (PCI or ISA)	\$1,195	\$2,500

### Frameworkx Scorer Assemblies

57-300044-810	FW I/O PCB (1995-2001)	\$125	\$400
57-300671-800	FW I/O PCB (2001+ w/lane ID Switch)	\$150	\$400
57-300106-810	FW Console Video PCB	\$125	\$400
57-861167-810	FW Remote Video PCB	\$125	\$400
57-301081-800	FW Remote Video PCB 2002+	\$125	\$500
57-300160-800	FW Primary Power Supply Assy	\$125	\$200
57-300392-810	FW 3Com Lan Card (Scorer)	\$50	\$200
57-300391-800	FW 486 CPU PCB w/16MB Ram	\$310	\$1,200
57-300265-810	FW Programmed Hard Drive (Universal Version)	\$149	\$300
57-300164-810	FW Console Audio PCB (Standard)	\$99	\$200
57-300164-820	FW Console Audio PCB (Modified)	\$99	\$200
57-300195-810	FW Console Control PCB	\$99	\$200
57-300192-810	FW Console Option PCB (Except LCD Flatscreen)	\$86	\$200
57-300249-800	FW Console Option PCB LCD Flatscreen)	\$86	\$200
57-300377-800	FW Microtouch Controller	\$200	No Preship
57-300815-800	FW Touchworx Power Supply PCB (In Brick)	\$74	\$125
57-300856-800	FW Touch Control Unit (Brick)	\$325	\$900
57-300368-800	FW Sound Card PCB	\$125	\$250
57-300478-810	FW CMOS Maintenance PCB	\$75	\$100
57-861686-800	FW CMOS-X Maintenance PCB	\$75	\$100
57-300178-810	FW Pinsetter I/O PCB Only	\$118	\$250
57-300199-810	FW HDLC Converter PCB (Pinsetter Interface Add-On)	\$100	\$200
57-300554-810	FW HDLC Pinsetter Interface PCB	\$80	\$500
57-300565-810	FW Pinsetter Interface Box (GS Single Board)	\$100	No Preship
57-860950-810	FW Pinsetter Interface Box Assy. (A-2)	\$175	No Preship
57-860951-810	FW Pinsetter Interface Box Assy. (GS)	\$175	No Preship

### AS-80/AS-K/AS-90/AS-90C Scorer Assemblies

57-214155-800	AS-80/90 +5 Volt Power Supply	\$150	\$300
57-214156-800	AS-80/90 +12 Volt Power Supply	\$100	\$300
57-214259-810	AS-80 I/O PCB Assy ('81)	\$150	\$700
57-215313-800	AS-90/AS-K I/O PCB	\$150	\$700
57-214805-800	AS-80 AC PCB ('84/'90)	\$165	\$500
57-214802-800	AS-80/AS-90 CPU PCB (Software Version)	\$175	\$700
57-215312-800	AS-K CPU PCB (Software Version)	\$175	\$700
57-860633-810	AS-90C CPU PCB (Software Version)	\$175	\$700
57-860404-800	AS-90 Control PCB (B&W or Color Lowers)	\$150	\$500

Electronic Repair Part Number	Description	Exchange Price	Full Price
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**Vector, Vector Plus, and Frameworx Center Management Systems Assy. - Front Desk and Back Office**

57-300125-810	FW Ethernet Lan PCB (Office)	\$75	\$200
57-300183-800	FW Cms Handset PCB	\$90	\$150
57-300184-800	FW Cms Intercom/Handset	\$155	\$275
57-300361-800	FW Cash Drawer Adaptor PCB Assy	\$125	\$350
57-301174-810	Vector A/V Box Assy	\$195	\$500
57-300490-810	FW Cms A/V Box Assy.	\$195	\$750
57-300490-811	FW Cms A/V Box Transformer Assy	\$75	\$125
57-300487-810	FW Cms A/V Audio PCB	\$90	\$300
57-300080-800	FW Cms A/V Composite/RGB PCB (Analog)	\$75	\$250
57-300956-800	FW Cms A/V Composite/RGB PCB (Digital)	\$100	\$500
57-300400-800	FW Cms Beep Speaker Assembly	\$80	\$200
57-861017-800	Okidata 320 Turbo Printer	\$250	\$800
57-861017-810	Okidata 320 Turbo Printer w/USB	\$250	\$800
57-861410-800	Cm Receipt Printer (220V) (White or Black)	\$250	\$968
57-863408-800	Cm Receipt Printer (110V) (White or Black)	\$315	\$968
57-863527-800	CTS-2000 USB Receipt Printer	\$315	\$500
57-861968-800	Epson TM-U230 Receipt Printer	\$315	\$968
57-861662-800	Elo 17" LCD Flatscreen Monitor	\$500	\$1,500
57-863195-800	Elo 19" LCD Flatscreen Monitor	\$500	\$1,500
57-860388-800	Cms Port Loop Back Tester	\$35	\$35
57-861591-800	3Com 905B-Tpo Ethernet Lan Card	\$135	\$227
57-861657-800	Siig 2-Db9 Serial Port PCB	\$70	\$128
57-863183-800	Vector 8-Port Ethernet Switch	\$200	\$500

**AS-90 Center Management System Assemblies - Front Desk & Back Office**

57-215128-800	AS-90 SIU PCB (B&W or Color Lowers)	\$250	\$750
57-860372-800	AS-90 SIU Complete Assy (B&W or Color Lowers)	\$325	No Preship
57-215193-800	AS-90 SIU Power Supply Assy	\$66	No Preship
57-860370-810	AS-90 LIU PCB (Mother or Daughter Board)	\$210	\$2,044
57-860370-832	LIU Interface 32 Lanes	\$325	No Preship
57-860370-864	LIU Interface 64 Lanes	\$455	No Preship
57-860377-800	Star Printer DP8340	\$300	\$1,109
57-860377-801	Star Printer Power Supply	\$150	No Preship
57-860393-800	Customer Pole Display (White or Black)	\$100	\$500
57-861094-800	Tape Drive (800/1250)	\$211	\$600
57-861094-810	Tape Drive 3200 or Travan TR-3	\$211	\$600
57-861715-800	Tape Drive Travan TR-4	\$325	\$600
57-861418-800	Dorio Color Processor - 120V	\$350	\$750
57-861419-800	Dorio Color Processor - 220V	\$350	\$750

**MC 1.5 Assemblies**

57-214705-800	MC 1.5 Power Supply	\$90	\$450
57-214717-800	MC 1.5 Handset	\$94	\$200
57-214722-800	MC 1.5 Audio PCB	\$49	\$150
57-214950-807	MC 1.5 PCB Magnavox	\$225	\$1,000
57-214952-807	MC 1.5 Chassis Magnavox	\$300	\$1,000
57-215339-800	AS-K MC 1.5 PCB	\$250	\$1,000
57-860554-800	AS-K MC 1.5 Keyboard (Control PCB Software Version)	\$228	\$750
57-860555-810	AS-K MC 1.5 Chassis	\$300	\$1,000

**5 Pin String & Duckpin Assemblies**

57-215213-810	Model "M" 5 Pin PCB Assy	\$175	No Preship
57-215235-810	Model "S" Duckpin PCB Assy	\$175	No Preship
57-215299-810	Model "P" 5 Pin PCB Assy	\$175	No Preship
57-215299-811	Model "P" 5 Pin PCB Assy (Modified)	\$175	No Preship
57-215587-810	Model "CA-1" 5 Pin PCB Assy	\$225	No Preship

Electronic Repair Part Number	Description	Exchange Price	Full Price
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**Authority22 Lane Machine Electronic Assemblies**

14-100089-800	A22 Motor Controller PCB Assy	\$200	\$600
14-100110-800	A22 Controller PCB Assy (Software V0.33 or V1.01)	\$250	\$1,000
14-100129-800	A22 Injector Driver PCB	\$100	\$600
14-100154-815	A22 Electrical Control Enclosure Assy 115V	\$895	\$2,500
14-100154-830	A22 Electrical Control Enclosure Assy 230V	\$895	\$2,500
14-100157-800	A22 Power Supply-Meanwell SP-500 Series	\$99	\$700
14-100175-800	A22 Keypad for GUI	\$150	\$500
14-100176-800	A22 LCD Module	\$295	\$500
14-100177-800	A22 UPS Assy	\$150	\$400
14-100178-800	A22 Viper PC104 PCB - V2.3	\$295	\$900
14-100179-800	A22 Inverter PCB	\$150	\$500
14-100180-800	A22 Adapter PCB for Viper	\$150	\$500
14-100181-800	A22 Ethernet PCB	\$150	\$500
14-100285-815	A22 Regenerative Drive - 115V	\$150	\$500
14-100285-830	A22 Regenerative Drive - 230V	\$150	\$500
14-100362-800	A22 Graphical User Interface Assy (New Style: Software V1.03 or V2.0)	\$995	\$5,000
14-100466-800	A22 Controller PCB Assy (Software V1.01)	\$395	\$1,500

**GS-X Pinsetter Assemblies (NexGen)**

47-142666-800	GS-X Nexgen LCD Display Assy	\$75	\$150
47-142708-800	GS-X Nexgen ESD I/O PCB	\$99	\$200
47-142750-800	GS-X Rear Display Assy	\$875	\$1,500
47-142736-810	GS-X Nexgen CPU PCB (V4.9.4 T07)	\$250	\$500
47-142977-800	GS-X Nexgen to AS-90 Interface PCB	\$100	\$150
47-862851-800	GS-X Nexgen CPU PCB	\$250	\$500
47-862851-810	GS-X Nexgen CPU PCB (V4.9.1)	\$250	\$500
47-862852-810	GS-X Nexgen HV PCB (Mod)	\$200	\$500

**GS-10/GS-92/GS-96/GS-98 Silver Box, Smart Shark and Consolidated Electronics Assemblies**

47-142806-800	GS-92 Gamesetter CPU PCB	\$250	No Preship
47-142815-800	GS-92 Gamesetter I/O PCB	\$250	No Preship
47-142839-800	GS-92 Gamesetter Assy	\$400	No Preship
47-142807-810	GS-92 Smart Shark CPU PCB	\$250	No Preship
47-142825-800	GS-92 Smart Shark Gamesetter I/O PCB	\$250	No Preship
47-862711-800	GS-92 Smart Shark Gamesetter	\$400	No Preship
47-172903-800	GS-92 Universal Common Box PCB	\$195	No Preship
47-162809-800	GS-92 High Voltage PCB	\$230	No Preship
47-162839-800	GS-92 Smart Shark High Voltage PCB	\$110	\$300
47-142530-800	GS-98 Consolidated I/O PCB	\$250	\$500
47-142533-810	GS-98 Consolidated CPU PCB - Indirect (Software Version 2.4)	\$320	\$750
47-142533-820	GS-98 Consolidated CPU PCB - Direct (Software Version 3.0)	\$320	\$750
47-142781-800	GS-98 Consolidated Rear Display PCB	\$125	\$200

**Telefoul / Ball Detect / Electronic Triggering /Lightworx / Miscellaneous Assemblies**

12-752400-810	Universal Electronic Trigger PCB	\$125	No Preship
12-752408-810	Universal Electronic Trigger PCB	\$75	No Preship
12-862585-810	Universal Diagnostic Trigger PCB	\$75	\$200
12-862890-800	Time Delay PCB	\$98	\$200
17-300226-800	Automated Bumper Controller PCB	\$115	\$250
17-300237-800	Front Desk Automated Bumper Control Center	\$250	\$750
53-600135-801	Telefoul Assy W/O PCB	\$276	No Preship
53-600173-800	S.S. Telefoul PCB	\$114	\$250
53-600177-800	Infrared Telefoul Assy - Narrow	\$87	No Preship
53-600177-803	Infrared Telefoul Sensor Block	\$50	\$100
53-600179-801	Infrared Telefoul PCB - Narrow	\$182	\$400
57-214199-800	AMF Interface PCB	\$57	\$250
57-861237-800	Dual Output Ball Detect	\$100	\$300
57-500561-800	Billiards Control AC Power PCB	\$300	\$500
61-860160-800	Computer Lane Monitor	\$380	No Preship
84-200292-800	Lightworx Addressable Lane Module	\$90	\$190
84-200330-800	Lightworx Control Center	\$275	\$600

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**SERVICE AND SUPPORT** - Getting you up and running *fast* with Pre-Ship exchange, assembly exchange & assembly repair

## Electronic Repair Center Assembly Traveler Form

<b><u>Center Information</u></b> Name _____ Address _____ City _____ State _____ Zip _____ Customer No. _____ Install Date _____		<b><u>Ship To:</u></b> Brunswick Bowling & Billiards Electronic Repair Center 525 West Laketon Avenue Muskegon, MI 49441 email: erc @ brunbowl.com Telephone: 231-725-3370 Fax: 231-725-4778 _____ Sent By _____
<b>Part Name</b> _____ <b>Serial No.</b> _____ <b>Part No.</b> _____ <b>Lanes Affected</b> _____ <b>Malfunction</b> _____ ___ Odd ___ Even ___ Both     ___ Constant ___ Intermittent - How often? _____ Lightning Strike / Power Surge? _____		
<b>Failure Type</b> (Check all that apply. Please be specific.)		
<b>Consoles / Keypads / Bricks</b> ___ No intercom audio to scorer ___ No intercom audio to desk ___ No communication to scorer ___ Console will not reboot ___ Hard drive failure ___ No power ___ No or wrong keyboard entry ___ No console video ___ Local LAN failure  <b>CRT Video Displays</b> ___ No video display ___ Incorrect color ___ Incorrect horizontal output ___ Incorrect vertical output ___ Distorted picture ___ No TV video  <b>Pinsetter Interface</b> ___ Pinsetter will not turn on ___ Local LAN failure  <b>Foul Units</b> ___ Continuous foul ___ Continuous buzzer ___ No foul  <b>LCD Flat Screen Displays</b> ___ Broken bracket ___ Broken touch screen ___ Broken LCD display ___ No video display ___ No touch screen action ___ No power	<b>Control Desk</b> ___ Comline failure - can't clear ___ No intercom audio to scorer ___ No intercom audio to desk ___ No keyboard entry ___ Fails to print correctly ___ No LRS communications ___ Incorrect video display ___ No video display ___ Power supply malfunction ___ Loss of memory ___ No scorer control ___ No pinsetter control  <b>Back Office</b> ___ No communication on port _____ ___ Ethernet LAN failure ___ Hub failure ___ Port failure  <b>A &amp; A-2 Pinsetter</b> ___ No trigger, first ball ___ No trigger, second ball ___ Wrong time delay  <b>GS-Series Pinsetter</b> ___ Gamemaker / Gamesetter trouble code ___ Solenoid malfunction ___ Motor malfunction  <b>Pinball Wizard</b> ___ No Communication ___ No Bumpers	<b>Scanners &amp; Cameras</b> ___ All LEDs lit (locked up) ___ No new pin solenoid operation ___ No foul signal ___ Failed to score ___ Incorrect score ___ No take data signals ___ Blurry pins ___ Trips circuit breaker ___ Impact damage ___ No video on tester ___ No power ___ Constant ball detect ___ No ball detect signal ___ No data from scanner ___ Unable to calibrate/align ___ Can't adjust gain/bias pots ___ No scanner start ___ Incorrect motor operation  <b>Lane Machine</b> ___ GUI battery dead ___ No communication ___ No power to GUI ___ Burnt traces on circuit board ___ No forward ___ No reverse ___ No duster motor ___ No buffer motor  <b>Hard Drives</b> ___ Lock up / No Operation ___ Unable to Update ___ No Boot / Reboot
<b>Additional Detail of Problem Observed</b> _____ _____ _____ _____		