

INSTALLATION AND OPERATING INSTRUCTIONS

BELCO REFRIGERATED ROLL-IN INCUBATOR

Stock Numbers:

7728-01100 100V - Single Window

7728-01005 115V - Single Window

7728-51100 100V - Double Window

7728-51005 115V - Double Window

**DO NOT USE
ECO CHANGE – NEW OMRON PART
SEE ECO#280**

**Bellco Glass, Inc.
340 Edrudo Road
Vineland, NJ 08360 USA**

**Telephone: (856) 691-1075
Fax: (856) 691-3247
Website: www.bellcoglass.com**

**IS# 223
Rev: 2/06**

WARNING:

Use of this equipment is limited to conventional laboratory applications. It is not intended for use in adverse environments outside the environmental conditions listed below. It is also not intended for use with corrosive or explosive solutions.

Environmental Conditions, operating: indoor use, pollution degree 2, 4° to 50° C
relative humidity 0-90% non-condensing

Environmental Conditions, non-operating: -10° to 60° C, relative humidity 95% maximum

SAFETY SYMBOL DEFINITIONS:



Electrical Hazard. Be extremely careful. Do not remove cover while the unit is connected to a power supply. There are voltages within the unit which could, if contacted, cause personal injury.



Protective Earth Ground (Safety Ground): Do not operate if green screw is loose or missing. Screw provides an uninterruptible safety earth ground from the mains (power source).



Caution or Warning Note. Denotes a hazard. Included text gives proper procedures. Failure to follow directions could result in minor personal injury and/or property damage.



Do not modify the unit in any way if you are not a trained certified electrician. All user modifications and/or repairs must receive prior approval from Bellco Glass Service & Repair Department. Failure to do so not only voids the warranty, but also presents the risks of shock, fire and electrical damage.

GENERAL DESCRIPTION

The Bellco Refrigerated Roll-In Incubators have 38 cubic feet of volume and are designed for use with Bellco's Cell Production Roller Apparatus (CPRA) up to 8 decks high. The flush-to-floor design allows easy movement of the CPRA in and out of the chamber. Four internal convenience outlets allow simple connection for internally placed appliances such as CPRA, Roller Drums, Magnetic Stirrers, etc. Shelf brackets are included for mounting optional shelves to hold these appliances.

Fans take air from the chamber top, pass it over the 1100 watt heater and inject it into the chamber on the bottom back wall. When the refrigeration mode is active, the air is cooled using a compressor charged with R134A refrigerant. A microprocessor temperature controller and membrane keypad allows simple setting and monitoring of chamber temperature. The control panel contains indicator lights and dials for controlling temperature. A safety thermostat is included to prevent over-temperature failures. The unit is not intended for use with CO₂ environments.

SPECIFICATIONS:

Power:	7728-01100/7728-51100	100V 50 Hz	15 Amps
	7728-01005/7728-51005	115V 60 Hz	15 Amps
Watts:	1500		
	<u>Main Power Fuse</u>	<u>Refrigeration Fuse</u>	<u>Convenience Outlet Fuse</u>
	15 Amp	10 Amp	3 Amp

Dimensions:

	Width	Depth	Height
Exterior	41" (104 cm)	32" (81 cm)	87" (221 cm)
Interior	35 1/16" (89 cm)	26" (66 cm)	70" (178 cm)

Volume: 38 cubic ft (1075 L)

Shipping Weight: 760 lbs (345 kg) - approx.

Temperature Control Range: 20°C to 50°C

Controller Accuracy: ±0.1°C

Chamber Accuracy: ±1.0°C or better (adjusted)

Refrigerant: R134A, EPA approved, environmentally friendly non-CFC type 12 oz.

INSTALLATION

These instructions will help you properly install your new Bellco Roll-In Incubator. They explain the cabinet's features and provide helpful information for service and maintenance. If the cabinet is installed and maintained according to the information presented on the following pages, years of satisfactory, trouble-free performance should follow.

- A. **Inspection** - Examine the incubator carefully before discarding the shipping crate. If any damage is found, contact the delivering carrier **IMMEDIATELY**, and have his agent make an inspection report for the purpose of filing a claim. **This is your responsibility.** If further instructions are necessary, contact Bellco Glass, Inc., Claims Department (856) 691-1075. See Warranty and Shipping section.
- B. **Location** - In locating the incubator, consider all possible conditions that might affect its performance. Do not place near extreme heat (steam radiators, stoves, ovens, etc.). Avoid direct sun rays and rapidly moving air currents. Floor should be level, especially when used with CPRAs. Do not obstruct air vents on top and front of unit.
- C. **Moving** - This unit should be move upright on its original shipping pallet using forklift or pallet jack. Care should be taken not to tilt the unit while on pallet. Slide unit into place.



**WARNING: Do not stand behind unit when pushing from pallet! Do not tip unit in excess of 20 degrees!
Push only on edges of door! Do not push on glass!**

- D. **Power Source** - The supply circuit to this incubator must conform to all National and Local Electrical Codes. Consult the cabinet serial-data plate for voltage, cycle, and amperage requirements before making connections. The plug is not shipped attached; have a qualified electrician verify that the plug is correct for your service before attaching.



VOLTAGE MUST NOT VARY MORE THAN 10VAC FROM SERIAL PLATE RATINGS.

- E. **Condensate Drainage** - The disposal of water condensate is the customer's responsibility. While a container may be used to hold this water, Bellco recommends directing the tube towards a permanent drain. An access port is provided on the side of the unit.



WARNING: The Bellco Refrigerated Roll-in Incubator is NOT intended for use in elevated CO₂ atmospheres and/or with high humidity. These conditions cause corrosion which may adversely affect the performance of the unit. Problems caused by use under these conditions will VOID the Bellco Warranty.

STARTING INSTRUCTIONS



Note: If refrigeration is turned off, wait at least 5 minutes before turning it back on or the fuse may blow.

- A. Verify that power supply is compatible with requirements listed on serial plate.
- B. Plug service cord securely into outlet.
- C. Start unit by flipping all three rocker switches located on the control panel to the on positions. If the unit is to be used without refrigeration (set point 5° or more above ambient), it is not necessary to turn on the cooling unit. Follow *Operating Instructions* below to set controls. After starting, allow time for temperature to stabilize before using incubator.

OPERATING INSTRUCTIONS

- A. Turn temperature knob marked "SAFETY" fully clockwise.
- B. (Ref. Figures 1,2,3,4) Depress downward or upward setting key until the desired temperature is displayed. Let incubator stabilize at the set temperature.
- C. Take reading from a calibrated thermometer under actual conditions of use (i.e. Inside the incubator). Compare the temperature on the controller to the thermometer reading.
- D. If the temperature controller setpoint and the calibrated thermometer temperature aren't in agreement, see the Temperature Corrections instructions below.
- E. Very slowly bring safety counter clockwise until "SAFETY" light is on. Then rotate clockwise until light goes out.

F. Under normal operation, the "SAFETY" light is OFF. If the "SAFETY" light is cycling ON and OFF, it generally means that the safety control is set too close to the primary control setting. To correct this situation, turn the safety control just slightly clockwise.

Temperature Correction Procedures:

All Temperature controllers are preprogrammed for general use; however there are some parameters which may be customized to suit specific applications. Refer to Figure 1 & 3 for all nomenclature used below:

1. Temperature Offset (To adjust the display temperature to coincide with the mean chamber temperature):
 The temperature controller can be programmed to compensate for a consistent discrepancy. If the mean chamber temperature and the display do not agree after stabilization, correct the display as follows:

Note the display and mean chamber temperatures.
 Press and hold (for at least one second) the display key on the temperature controller. The controller display will change to menu "level 0".
 Press the up arrow key twice so that "level 2" is displayed.
 Press and hold the display key to enter "level 2".
 Press the display key briefly eleven times, so that "inSH" is shown on the upper display.

The value in the lower display is the existing input shift value.
 Subtract the displayed temperature from the mean chamber temperature.
 Adjust the input shift by this amount by pressing the up or down arrows.

2. Example:
 The temperature displayed is 37.0°C, but the mean chamber temperature is 36.5°C. The difference is -0.5°C. With the input shift previously set to -1.5°C, you would use the down arrow to adjust the input shift to -2.0°C.

Press the display key once briefly, so that "inSL" is shown in the upper display.
 Press the up or down arrows to set the value (on the lower display) to the same value entered in "inSH" above.
 Press and hold the display key for at least one second.
 The controller displays will change to menu "level 2".

Press the down arrow key twice so that "level 0" is displayed.
 Press and hold the display key to return to operating mode.

Figure 1: DISPLAY SYMBOLS

A	b	c	d	E	F	G	H	I	J	K	L	M
A	B	C	D	E	F	G	H	I	J	K	L	M
n	o	P	q	r	S	t	U	v	w	x	y	z
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

This table shows the correspondence between the E5CK display symbols and alphabet characters.

CLEANING

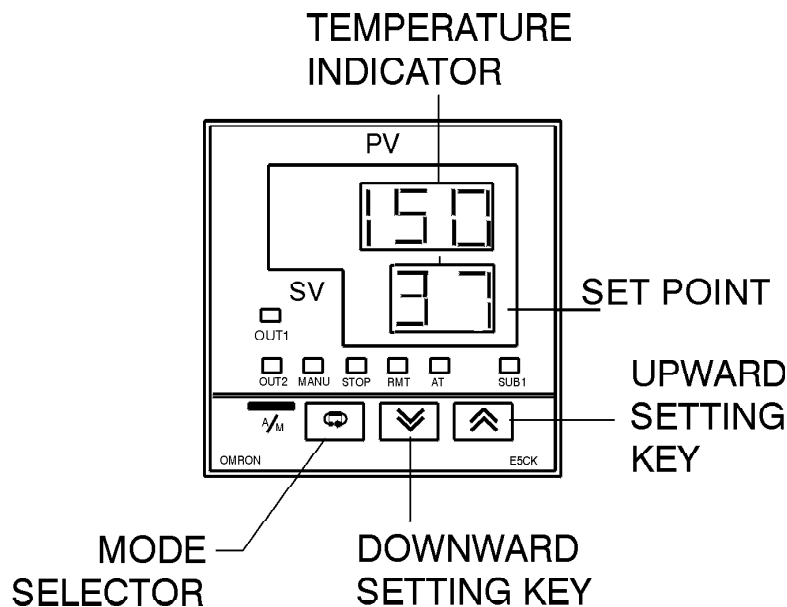
- A. Any shelves or shelf slides present may be taken out for cleaning.
- B. Wash the exterior with a mild soap and water solution. Rinse with clear water, then wipe dry.
- C. Sanitizing solution such as Roccal (National Laboratories) can be used to disinfect the interior.

TROUBLE SHOOTING

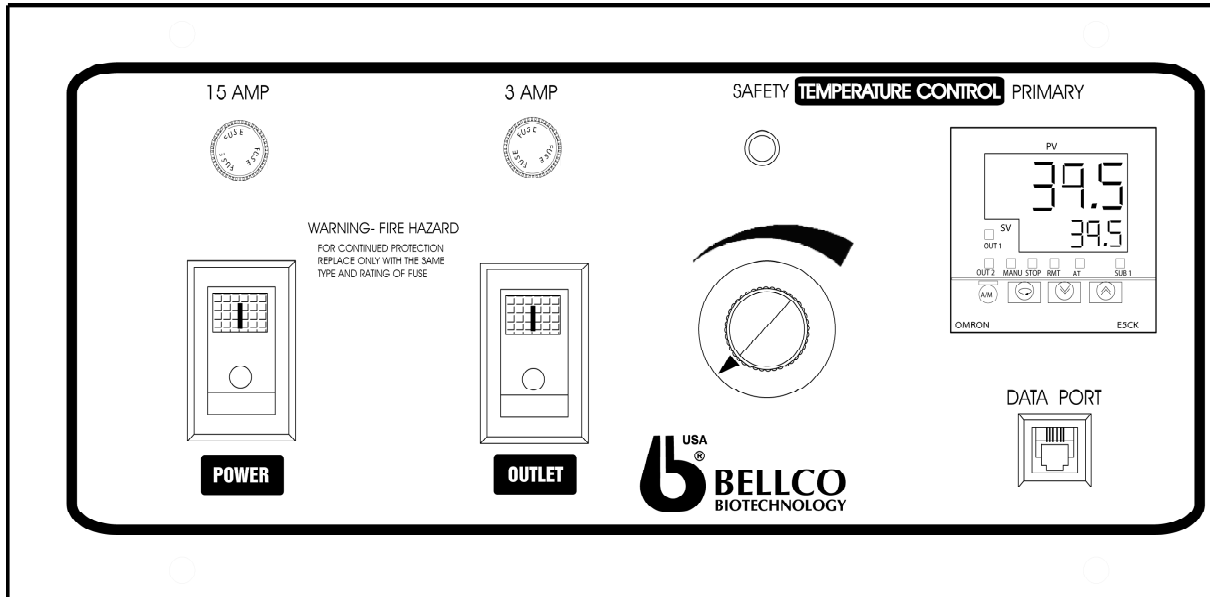
⚡ WARNING: Disconnect the power cord before removing the top cover or performing any service on unit.

- A. In the event the incubator does not operate properly, check the following before calling for service:
 - 1. Is electrical power reaching the unit? Check for blown fuses. Additional fuses are accessed by removing the cover panel (with a screwdriver) off the top of the incubator.
 - 2. Is service cord connected to outlet?
 - 3. Is door closed tightly?
- B. If this does not correct the difficulty, contact your nearest service person. Do **NOT** attempt to service the refrigeration unit yourself. Only if you have licensed personnel, will Bellco provide them with instructions.

**Figure 2:
Temperature Controller (A500-693)**



**Figure 3:
CONTROL PANEL (B512-A55)**



**Figure 4:
Refrigeration Panel (B512-230A)**

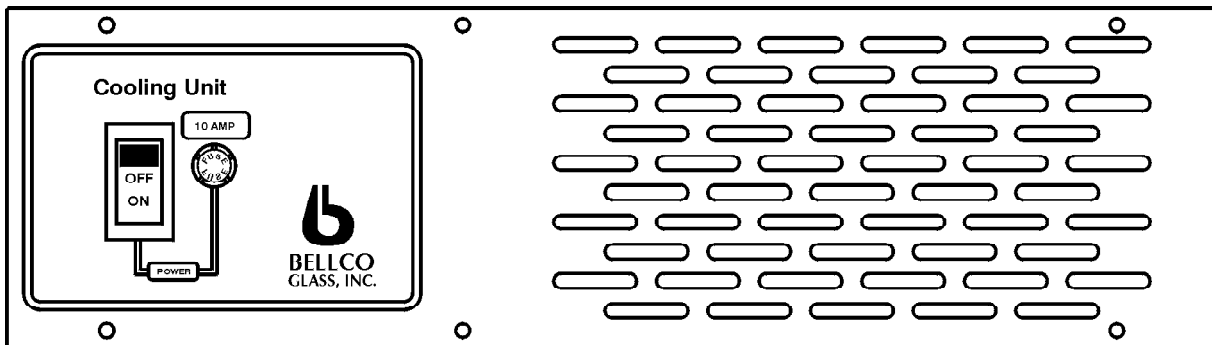
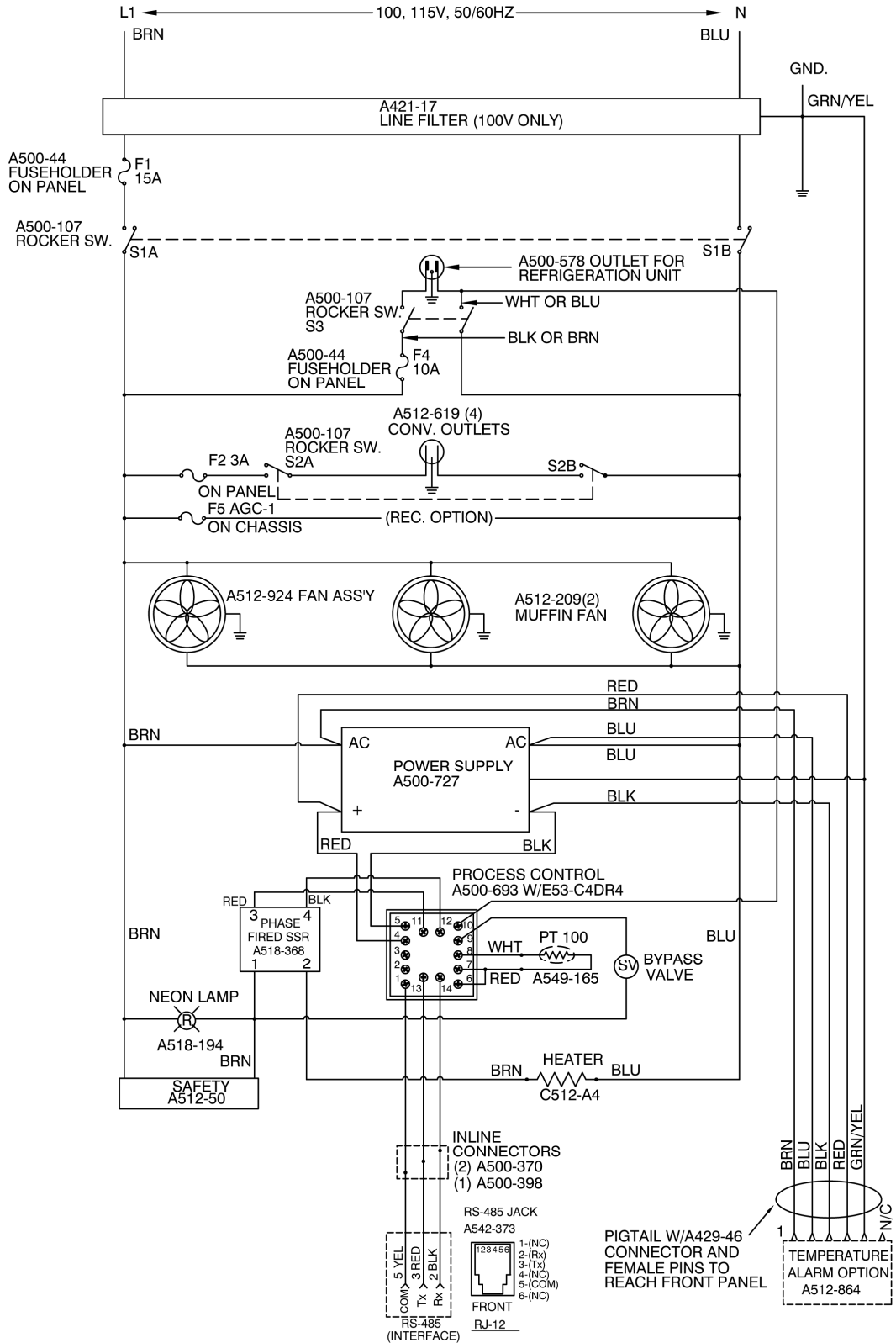


Figure 4: Refrigerated Roll-In Incubator Wiring Diagram (B512-A57)



REPLACEMENT PARTS

Part # Description

A521-17	Line Filter (100V)
A432-6	Outlet Fuse AGC-3, 3 AMP
A432-10	Main AGC-15, 15 AMP Fuse
A500-107	Power Switch
A512-924	Fan Assembly (consists of fan housing/blade/motor/bracket)
A512-50	Safety Temperature Controller
A512-209	Secondary Fan Unit
A512-872	Sensor Assembly
A512-269	Door Gasket
A500-693	Temperature Controller
A518-368	Solid State Relay
A500-727	Power Supply

Optional Accessories:

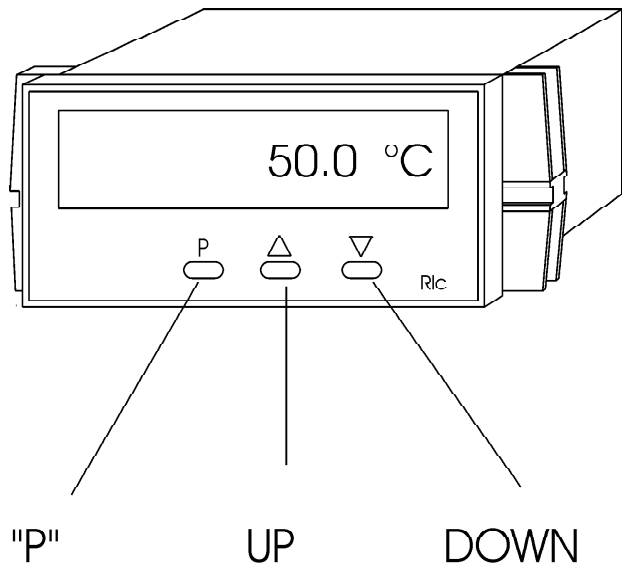
7728-40035	Stainless Steel Shelf
7728-40050	Heavy Duty Stainless Steel Shelf
7728-96000	Mobile Roll-In Shelf Cart

To order - Contact Belco Customer Service @ 1-800-257-7043

OPTIONAL TEMPERATURE ALARM OPERATION:

1. Press the "P" button momentarily to enter program mode. Display shows "Pro 0".
2. Press the up button repeatedly to reach level 6. Display shows "Pro 6". Press the "P" button again to enter level 6. Display shows "trAc".
3. Once into level 6, press the "P" button repeatedly to display "AL-1", the low alarm. Use the up and down buttons to set or modify the low alarm temperature as desired. Push the "P" button once to save the new alarm setting.
4. Continue to momentarily press the "P" button to display "AL-2", the high alarm setting. Once again use the up and down buttons to set or modify the high alarm temperature. Push the "P" button once to save the new alarm setting.
5. Press the "P" button repeatedly until "Pro 0" shows again. Press the button once more to exit program mode. The new alarm settings are now in effect.

For more information and options, consult the "Model IMR Instruction Manual".



BELCO WARRANTY AND LIMITATION OF LIABILITY

Bellco Glass, Inc. warrants to the original purchaser, its products to be free from defects in material and workmanship for a **period of one (1) year from the date of shipment, unless otherwise specified.** Our obligation under this warranty is limited to, at our option, repair, replace, or cause any necessary repairs to be made to, any defective part or parts, which shall be returned to us. **Bellco takes no responsibility for damage to merchandise in transit.** All such claims must be submitted to the carrier. This warranty shall not apply to any equipment or parts which shall have been repaired or altered outside our factory, or subjected to misuse, negligence, accidents, faulty installation by other parties, or **unauthorized** repairs or modifications. In addition, Bellco Glass, Inc., shall not be responsible to the original purchaser or any other party or parties for bodily or property loss, damages, or injuries of any kind or nature through either direct or indirect use of the product. This warranty is made expressly in lieu of any and all other warranties, expressed or implied, or statutory as to the merchantability, fitness for purpose sold, description, quality, productiveness or any other matter. All other such warranties are specifically excluded.

The provisions of this warranty and limitation of liability may not be modified in any respect except in writing signed by a duly authorized officer of Bellco. The liability of Bellco, if any, for damages relating to any allegedly defective product shall, under any legal or equitable theory, be limited to the actual price paid by purchaser for such product and in no event include incidental or consequential damages of any kind.

SHIPMENTS

All items are shipped F.O.B. Vineland, New Jersey with the charges prepaid and added to the invoice. Special shipping instructions should accompany your order. We will select the best method if none is specified. Air shipments are available for an additional charge. Delivery of large products shall be to the customer's loading dock. **It is the customer's responsibility to arrange movement from the loading dock to the site of use, unless otherwise agreed to by Bellco Glass, Inc.** Products requiring special packaging or crating may incur additional handling fees.

Bellco takes every reasonable precaution to ensure that its products arrive without damage. However, occasionally damage will occur during the shipment of a product. For this reason, it is imperative that Purchaser examine each product **immediately** upon receipt in order to determine whether the product has arrived in proper condition. In the event Purchaser detects any damage to the product, Purchaser shall **immediately** notify Bellco and the carrier who delivered the product. **Failure to notify Bellco and the carrier of any damage within five (5) days of receipt of the product shall constitute a waiver of any claim for damage to the product.** The freight carrier shall be exclusively responsible for any damage which occurs during shipment.