INSTALLATION AND OPERATING INSTRUCTIONS

BELLCO ROLL-IN INCUBATOR

Stock Numbers

7728-95220 230 Volt,   SINGLE WINDOW DOOR
7728-59522 230 Volt, DOUBLE WINDOW DOOR

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

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IS# 360
Rev: 1/09

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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

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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.

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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

Bellco Roll-In Incubators have 40 cubic feet of volume and are designed for use with Bellco's Cell Production Roller Apparatus (CPRA). The flush-to-floor design allows easy movement of the CPRA in and out of the chamber. Four internal convenience outlets allow simple connection to internally placed appliances such as CPRA, Roller Drums, Magnetic Stirrers, etc. Fans take air from the chamber top, pass it over the 900 watt heater and re-inject it into the chamber on the bottom back wall. A microprocessor temperature controller and membrane keypad allows simple setting and monitoring of chamber temperature. A safety thermostat is included to prevent over-temperature failures. Shelf brackets are included for mounting of optional shelves. The control panel features indicating lights and dials for automatic control of temperature **(Reference Figure 2)**.

SPECIFICATIONS

Power: 7728-95220   230±10VAC@50/60 Hz line voltage
                              10 Amp @ 230V, 50 Hz average power consumption
                                   (includes 5 amp convenience outlet load)

              7728-59522   230±10VAC@50/60 Hz line voltage
                              10 Amp @ 230V, 50 Hz average power consumption
                                   (includes 5 amp convenience outlet load)

Wattage: 1500 Watts

Dimensions:

	Width	Depth	Height
Exterior	41" (104cm)	31" (78cm)	87" (221cm)
Interior	35" (89cm)	26" (66cm)	76" (193cm)

Volume: 40 cubic ft (1132 L)

Shipping Weight: 700 lbs (318 kg)

Temperature Control Range: Ambient +9°C to 50°C

Temperature Uniformity: ±2° @ 37°C (or better)

Features

- "Flush-to-Floor" design accommodates 52 position, programmable Cell Production Roller Apparatus or 45 position standard Cell Production Roller Apparatus
- Optional adjustable shelves accommodate Bellco Magnetic Stirrers, Rockers and other, bench top equipment
- Forced air circulation facilitates even temperature distribution throughout the chamber
- Accessory outlets in chamber provide power for supplemental equipment
- Control panel features main power switch, convenience outlet power switch, safety thermostat, and microprocessor-based, digital temperature controller
- Accepts optional High/Low Temperature Alarms and Temperature Recorder Modules
- Left hand opening door is standard - Right hand opening door is optional
- Special models available with ports, solid door and right hand opening door

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. There are no shipping bolts to loosen.

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.

C. **Moving -** This unit should be moved upright on its original shipping pallet using a 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 SHOULD NOT VARY MORE THAN 10 VAC FROM SERIAL PLATE RATINGS.**

⚠ **WARNING: The Bellco Roll-in Incubator is NOT intended for use in elevated CO_2 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 <u>VOID</u> the Bellco Warranty**.

OPERATING INSTRUCTIONS

A. Plug service cord securely into outlet. Turn on power switches **(Ref. Figure 2).**

B. After starting, allow time for temperature to stabilize before using incubator. Stabilization will occur when the upper temperature display matches the lower (setpoint) display.

C. Turn temperature knob marked "SAFETY" fully clockwise.

D. **(Reference Figure 3)** Depress downward or upward setting key until the desired temperature is displayed. Let incubator stabilize at the set temperature.

E. Take a 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.

F. If the temperature controller <u>setpoint</u> and the calibrated thermometer temperature aren't in agreement, see the <u>Temperature Corrections</u> instructions on the next page.

G. Very slowly bring safety counter clockwise until "SAFETY" light is on. Then rotate clockwise until light goes out.

H. 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.

Cleaning
A. The shelves and shelf clips may be taken out for cleaning.
B. Wash the cabinet 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.

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	u	Y	o	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.

TROUBLE SHOOTING

⚡ **WARNING: Disconnect the power cord before removing the top cover or performing any service on this 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 fuse.)
    2.   Is service cord connected to outlet?
    3.   Is door closed tightly?
B.   If this does not correct the difficulty, contact Bellco Service Dept @ 1-800-257-7043.

REPLACEMENT PARTS

A421-17	Line Filter
A421-22	Line Choke
A500-727	Power Supply
A500-68	Power Switch, Convenience Outlet Switch
A512-924	Primary Fan Unit
A534-35	Secondary Fan Unit
A512-50	Safety Temperature Controller
A512-872	Pt 100 Temperature Sensor
A512-269	Door Gasket
A528-603	Temperature Controller
A518-368	Solid State Relay
A432-5	AGC-2, 2 Amp Fuse (2 rqd.)
A432-9	AGC-10, 10 Amp Fuse (2 rqd.)
7728-40035	Shelf (Optional)
7728-40050	Ultra-Flow Shelf (Optional)

To order, contact Bellco's Customer Service Department @ 1-800-257-7043
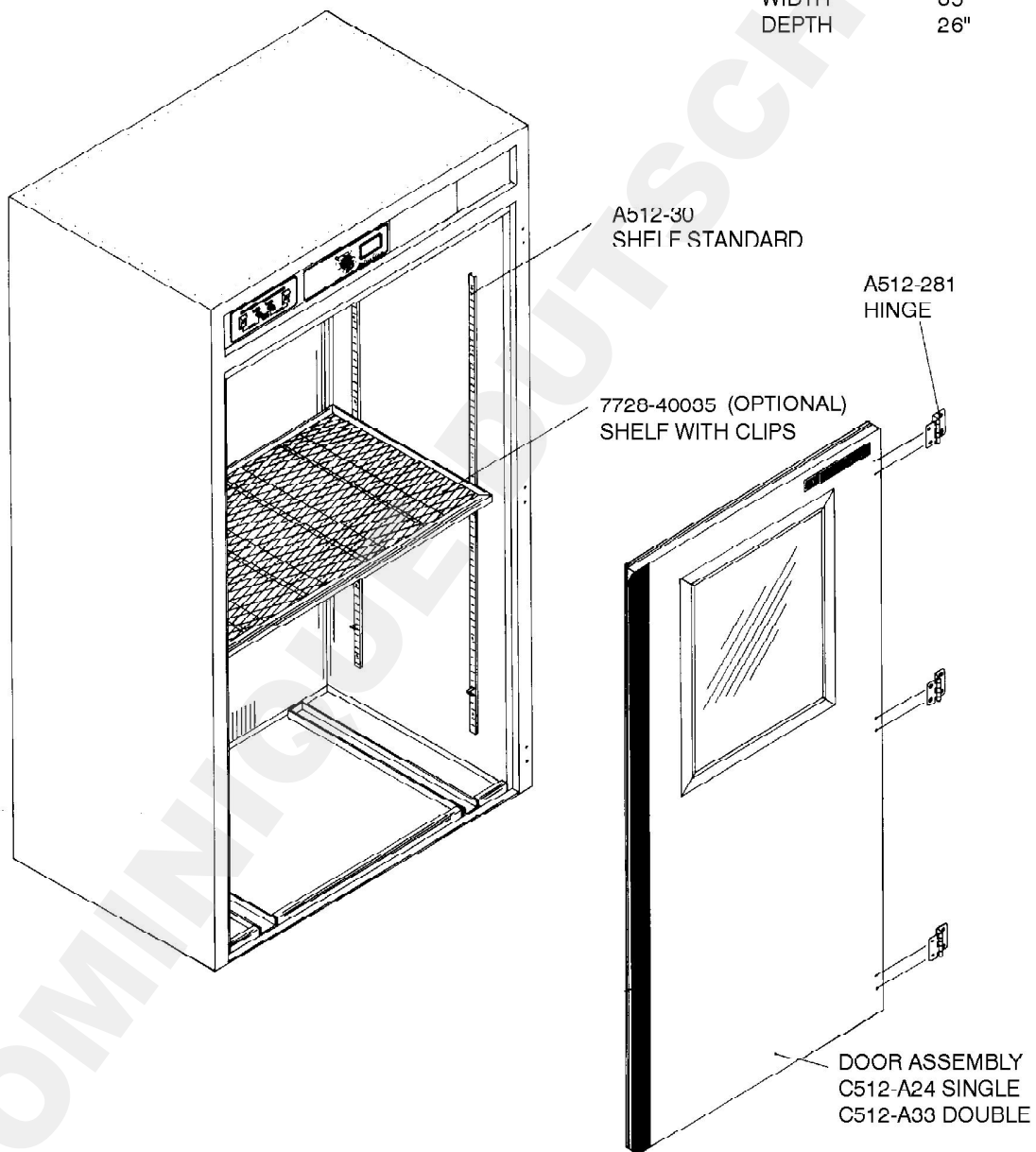
FIGURE 2:
CONTROL PANEL (B512-273A)
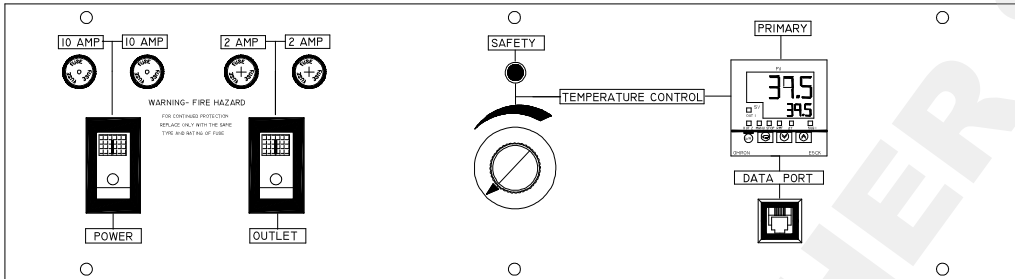
FIGURE 3:
CONTROLLER FEATURES
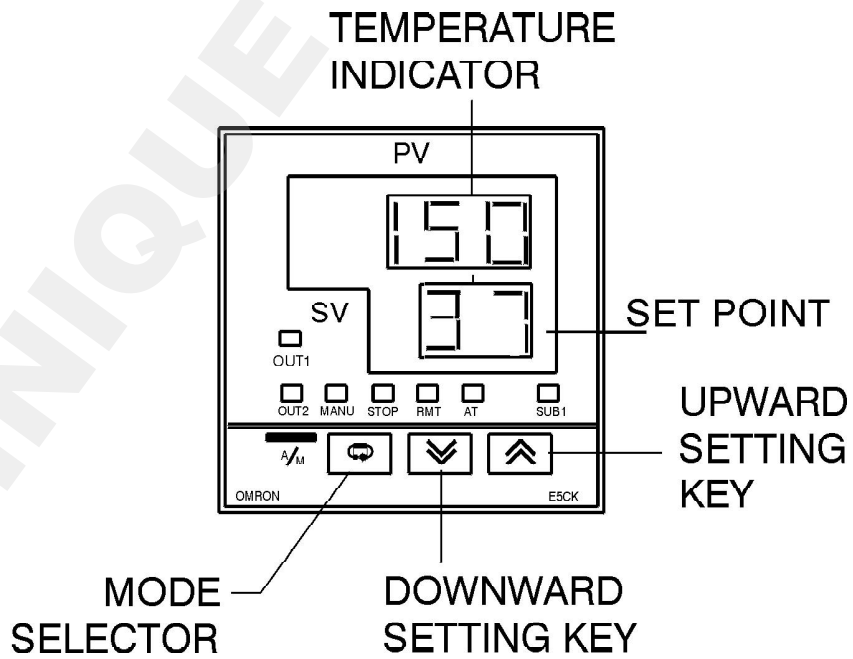
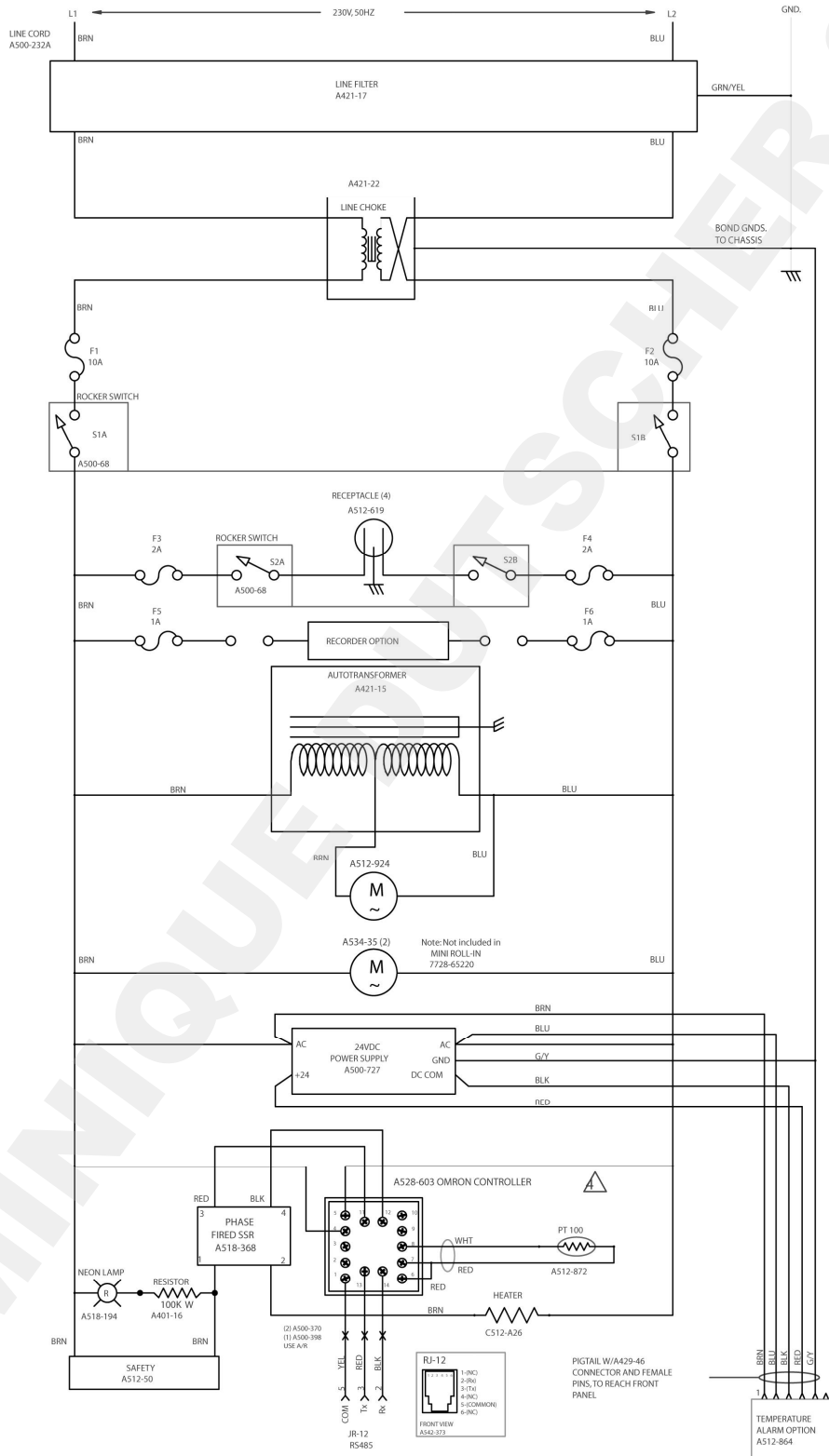# FIGURE 4:
ROLL-IN INCUBATOR EXPLODED VIEW
(A512-A7)

INCUBATOR DIMENSIONS:

EXTERIOR:	HEIGHT	87"
	WIDTH	41"
	DEPTH	31"
INTERIOR:	HEIGHT	76"
	WIDTH	35"
	DEPTH	26"

A512-30
SHELF STANDARD

A512-281
HINGE

7728-40035 (OPTIONAL)
SHELF WITH CLIPS

DOOR ASSEMBLY
C512-A24 SINGLE
C512-A33 DOUBLE

FIGURE 5:
WIRING DIAGRAM, 230V   (B512-A46)

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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".
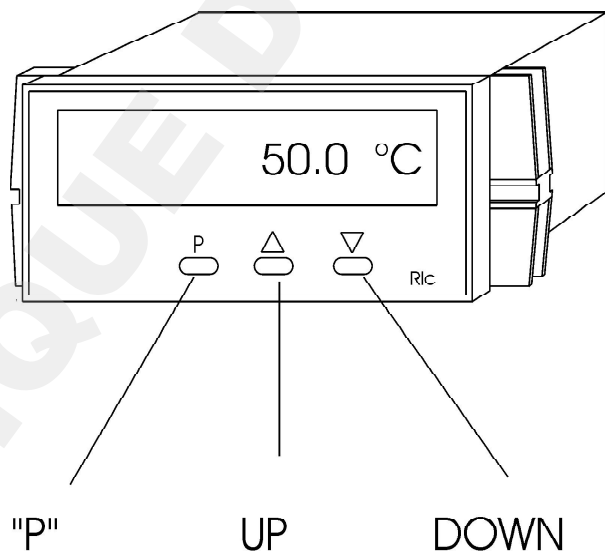
BELLCO WARRANTY AND LIMITATION OF LIABILITY

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.