SECTION 2

Hardware Installation

Refer to this section for help with the following tasks:

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Install the Infinity ECU 2-4
Install the I-Boxes 2-6
Install the All-Bottle Coded Pourers 2-7
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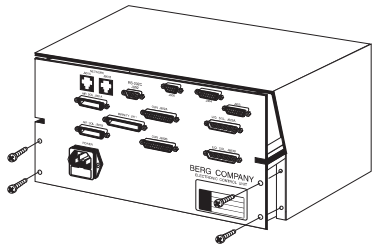
Set Infinity ECU Number and Baud Rate

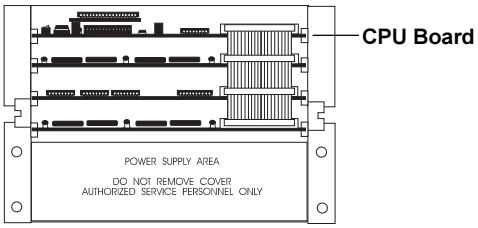
Each ECU in a network must be assigned a unique number to communicate properly with **Infinity** software. The correct baud rate must also be set at the ECU for network communication to take place.



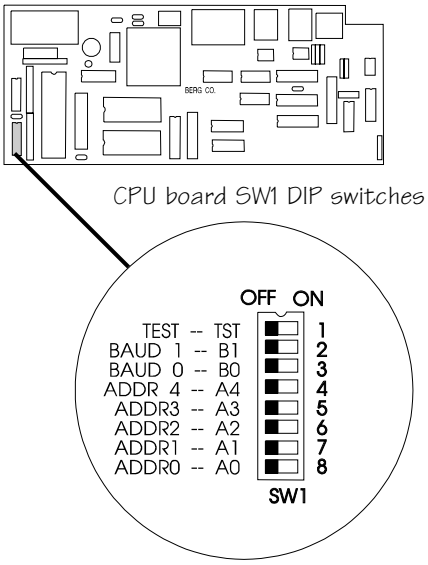
Infinity ECU cover removal

■ To set the number in an Infinity ECU:

1. Disconnect the ECU from any power source.
2. Remove the ECU chassis cover by loosening 4 machine screws. Slide the chassis out from under the cover.
3. Locate the CPU board within the ECU chassis. You'll be looking directly down on it from the top of the ECU. You don't need to remove the CPU board from the chassis.
4. Locate the SW1 DIP switches on the CPU board.
5. Use a small screwdriver to set SW1 switches 4 through 8 to the on/off positions that correspond to the correct ECU number. Refer to the *ECU Number Table.*



ECU board positions
(view from back of ECU)



CPU board SW1 DIP switches

■ To set the baud rate in an Infinity ECU:

1. Perform steps 1-3 above if you haven't already done so.
2. Use a small screwdriver to set SW1 switches 2 and 3 to the on/off positions that correspond to the correct baud rate. Refer to the *Baud Rate Table.*

   Set the baud rate to 9600 if the ECU will be connected to a local network. Set the baud rate to match the baud rate of the modem if the ECU will be connected to a remote network.

> Switch 1
>
> Switch 1 should always be in the off position.

ECU Number Table

ECU Number	Switch Setting				
	4	5	6	7	8
1	off	off	off	off	off
2	off	off	off	off	on
3	off	off	off	on	off
4	off	off	off	on	on
5	off	off	on	off	off
6	off	off	on	off	on
7	off	off	on	on	off
8	off	off	on	on	on
9	off	on	off	off	off
10	off	on	off	off	on
11	off	on	off	on	off
12	off	on	off	on	on
13	off	on	on	off	off
14	off	on	on	off	on
15	off	on	on	on	off
16	off	on	on	on	on
17	on	off	off	off	off
18	on	off	off	off	on
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20	on	off	off	on	on
21	on	off	on	off	off
22	on	off	on	off	on
23	on	off	on	on	off
24	on	off	on	on	on
25	on	on	off	off	off
26	on	on	off	off	on
27	on	on	off	on	off
28	on	on	off	on	on
29	on	on	on	off	off
30	on	on	on	off	on
31	on	on	on	on	off
32	on	on	on	on	on

Baud Rate Table

Baud Rate	Switch Setting	
	2	3
1200	off	off
2400	off	on
9600	on	off

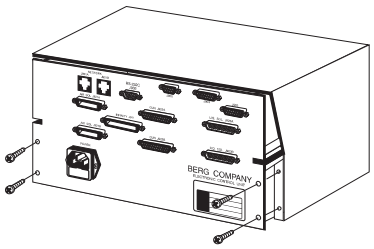
Notes

❑ Do not set switches 1, 2, and 3 all to the "on" position. If you do, when you turn on the power, the ECU automatically clears memory.

❑ No two ECUs on the same network can have the same number.

Install the Infinity ECU

It is very important that the ECU be located in a secure, dry place to protect it from spills, moisture, vibration and physical shock. It must also be within 6 ft (1.8 m) of a properly grounded AC outlet. Avoid locations near dishwashers and other sources of steam and high humidity that could produce condensation on and in the ECU. If such a location is unavailable or impractical, you need to use the drip-proof ECU housing.



Infinity ECU cover removal

Laser Board Jumpers

You may want to set or verify the Laser driver board jumper settings before installing the ECU. *See Set Laser Driver Board Jumpers* in this section.

To install the ECU:

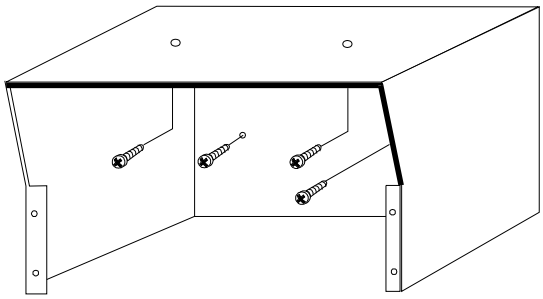
1. Remove the ECU chassis cover by loosening four machine screws. Slide the chassis out from under the cover.
2. Mount the ECU cover (not the chassis) using four wood screws to secure the back or top of the cover to an appropriate mounting surface. Select a location within 6 ft (1.8 m) of a properly grounded 110 VAC (or 220 VAC) electrical outlet.

   Since the ECU is sensitive to erratic power that often comes from a circuit shared by other electrical devices, Berg recommends each ECU have its own dedicated circuit and/or a line filter.
3. Slide the ECU chassis back into the mounted cover, and secure it with the four machine screws.

Caution:

Since the ECU has no on/off switch, the electrical outlet must be easily accessible.

The space for installing the Infinity ECU must be:
7 in (17.8 cm)H
11 in (27.9 cm)W
9 in (22.9 cm)D
(includes cable space)

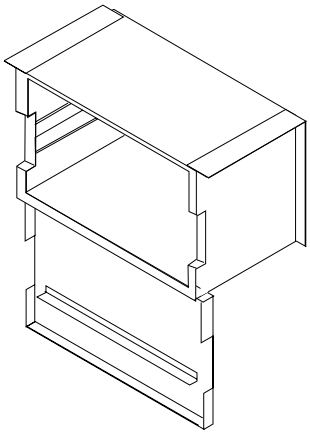


Standard ECU cover

■ To install the optional drip-proof ECU housing:

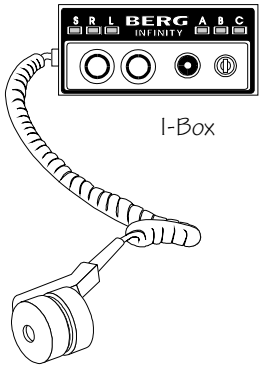
1. Mount the drip-proof ECU housing using four wood screws to secure the back or top of the housing to an appropriate mounting surface.
2. Slide the ECU chassis into the mounted housing and close the housing lid.

Drip-proof ECU housing



Install the I-Boxes

I-Boxes are typically mounted under the bar or some other horizontal surface. They should be mounted near an ice bin and allow easy access for a bartender. Keep dispensers well away from sinks, dishwashers and any other sources of water or steam. Consider individual preferences at each location. For example, right-handed bartenders may prefer the I-Box mounted to the right of an ice bin.

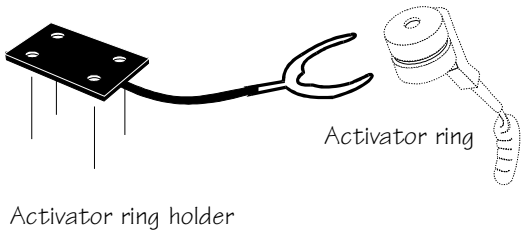


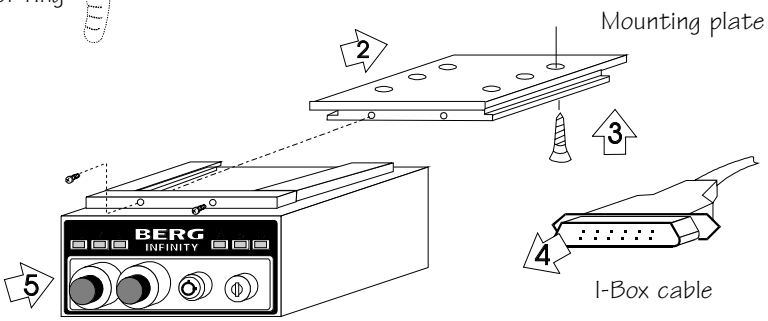
To install an I-Box:

1. Mount the activator ring holder to a secure surface left of the I-Box location using four wood screws. It should be within the bartender's convenient reach.
2. Remove the mounting plate from the top of the I-Box by loosening the two screws above the front panel. Slide the mounting plate to the rear.
3. Attach the mounting plate with the drip guard toward the mounting surface. Use four wood screws through any two pairs of holes in the mounting plate.
4. Plug the I-Box cable into the rear panel port. Secure it with the captive screws in the flanges of the cable connector.
5. Slide the I-Box into the mounting plate and secure it with the two screws you removed.

Note

- ❑ The I-Box cable (connecting the I-Box to the Infinity ECU) can be ordered in the following lengths:
  15 ft (4.6 m) standard cable
  25 ft (7.6 m) optional cable
  up to 150 ft (45.7 m) custom cable

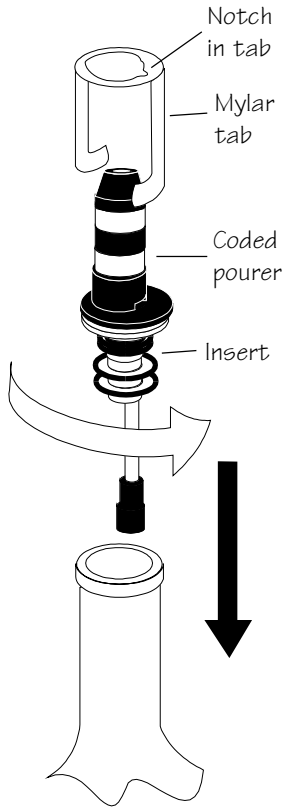


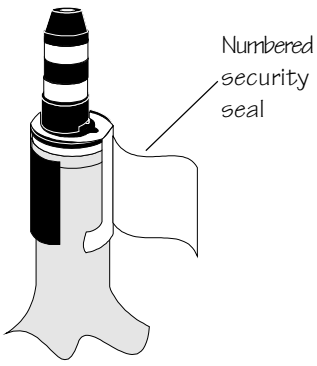


Mounting the I-Box

Install the All-Bottle Coded Pourers

To insure a perfect fit in each liquor bottle, Berg offers inserts (the part of the coded pourer that fits in the bottle) in four sizes. To complete an **Infinity** installation, be sure to have an ample supply of varying sizes of inserts, an appropriate number of each of the coded pourers and a box of security seals.





■ To install the All-Bottle coded pourers:

1. Select the appropriately coded pourer for the liquor bottle and attach the right size insert. Remove a numbered seal and mylar tab from the box of security seals.
2. Firmly insert the pourer into the bottle.
3. Slide the opening in the mylar tab over the top of the pourer with the adhesive side down. Align the notch in the mylar tab with the notch in the pourer. Pull both tab ends down tight onto the neck of the bottle.
4. Wrap a numbered seal around the neck of the bottle and the mylar tab ends. Make sure you can still read the number on the seal. The lower edge of the seal should be even with the lower edge of the mylar tab ends.
5. Repeat steps 1-4 for each liquor bottle.

■ To change an insert on the All-Bottle coded pourers:

1. Remove the current insert by pulling and twisting it from the coded pourer.
2. Select a new size insert. Choose from an undersize insert (Berg PN 9007281), a standard size insert (Berg PN 9007122), an oversize insert (Berg PN 9007282) or an extra large insert (Berg PN 9008799).
3. Push the new insert onto the coded pourer.

Install the All-Bottle ID Dispenser

The All-Bottle ID dispenser is designed for easy installation under the bar. It should be mounted 1/4 inch to 3/4 inch (.6 cm to 1.6 cm) back from the front edge of the bar to help protect it from liquid damage. It should be mounted near an ice bin and allow easy access for a bartender. Install the dispenser as far away from sinks, dishwashers and other sources of water or steam as is practical.

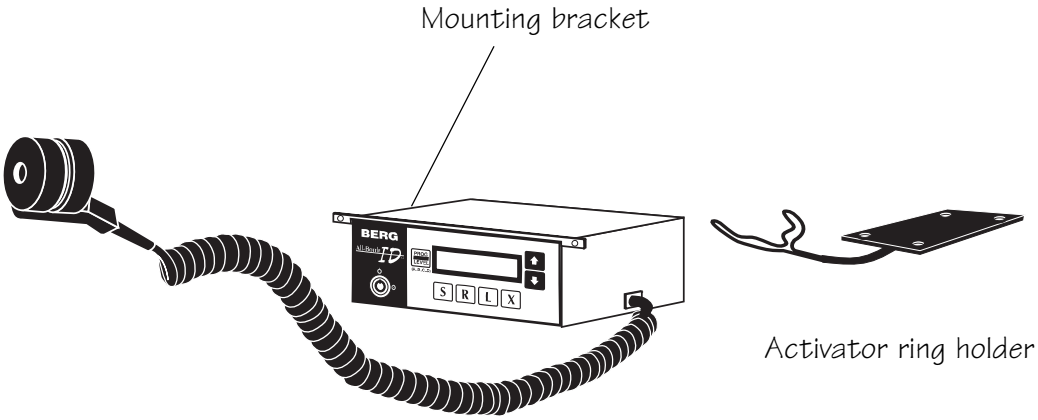
■ To install the All-Bottle ID dispenser:

1. Select a location within 14 feet (4.3 meters) of an Infinity ECU.
2. Install the dispenser mounting bracket securely under the bar using the four wood screws provided.
3. Attach the ECU cable to the **ECU** RJ-45 port on the back of the dispenser before mounting the dispenser to insure ease of access.
4. Secure the dispenser to the mounting bracket with the two machine screws provided.
5. Mount the activator ring holder to the right of the dispenser using 4 wood screws. Mount the holder to a secure surface where it will be within the bartender's convenient reach.

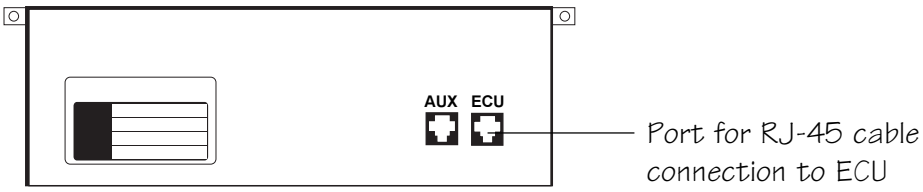
Note

❑ The cable connecting the All-Bottle ID dispenser to the Infinity ECU can be ordered in the following lengths:

14 ft (4.3 m) standard cable (Berg PN 8009526)
25 ft (7.6 m) optional cable (Berg PN 8009527)
up to 150 ft (45.7 m) custom cable



All-Bottle ID dispenser



All-Bottle ID dispenser back panel

Program All-Bottle ID Pourers

Each All-Bottle ID pourer must be programmed with a brand's prices and portions.

■ To program an All-Bottle ID pourer:

1. Enable **Program Mode** for the ECU. See *Enter Infinity ECU Options* in the *Network and ECU Setup* section.

2. Assign brands to the All-Bottle ID dispenser(s). See *Assign Brands to Dispensers* in the *Brands, Cocktails, Prices and Portions* section.

```
DISPENSER DISABLED
```

3. At the All-Bottle ID dispenser, turn the On/Off key counter-clockwise until it's in the vertical position.
   The display reads "DISPENSER DISABLED".

```
Sorting Brands...
```

4. Hold down the [Price Level] button while turning the ON/Off switch clockwise (back to the horizontal position).
   The ECU sorts the assigned brands in alphabetical order.
   The first brand in the list appears when the sort is complete.

```
Absolut
Program Brand# 1
```

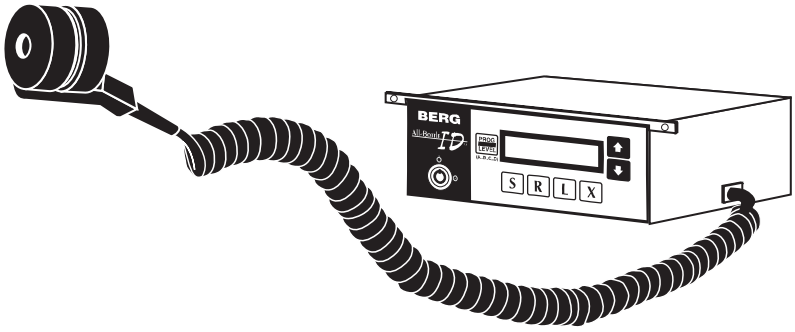
5. Select a brand you want to assign to a pourer. Scroll through the alphabetical list using the up and down arrow buttons. Use the portion size buttons to quickly jump down the list. [S] takes you to the top of the list, [R] takes you 1/4 down, [L] takes you to the middle and [X] takes you 3/4 down the list.

6. With the selected brand displayed on the LCD, insert a pourer into the activator ring and press the [Price Level] button.
   The bottom line of the LCD display blinks off and then on to indicate the pourer is programmed.

7. Repeat steps 5 and 6 for each pourer you need to program.

```
C:          R:
```

8. Disable programming mode by turning the On/Off key counter-clockwise to the vertical position and then back to the horizontal (On) position.



Notes

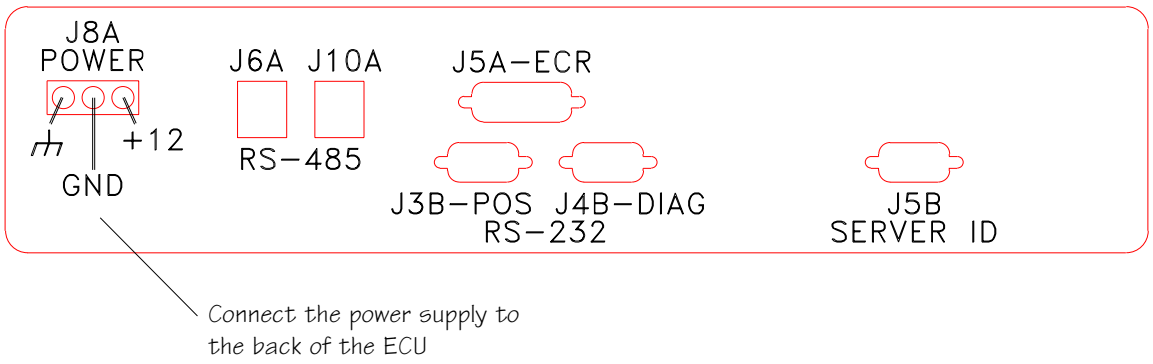
- You can re-program any pourer to a different brand by repeating the programming steps for the new brand.
- If you don't know the brand assigned to a pourer, you can slip the pourer in the activator ring (with the dispenser in pouring mode) and the brand name displays on the LCD panel.

Install the 1544 Infinity ECU

The 1544 Infinity ECU is designed for easy installation under the bar top at the bartender's work station. It should be mounted 1/4 inch to 3/4 inch (.6 cm to 1.6 cm) back from the front edge of the bar to help protect it from liquid damage. Install the ECU and power supply as far away from sinks, dishwashers and other sources of water or steam as is practical.

■ To install the ECU:

1. Attach the cable that connects the power supply (AC adaptor) to the ECU. Use the 3-pin J8A port on the back of the ECU. Tighten the connecting screws.
2. Mount the power supply in a secure, dry location with the 2 wood screws provided. Select a location within 3 feet (.9 meters) of the ECU and within 5 1/2 feet (1.7 meters) of a properly grounded 110 VAC (or 220 VAC) electrical outlet.
3. Attach any cables to the back of the ECU before mounting the ECU to insure ease of access. See the appropriate tasks in this section.
4. Secure the activator ring cable to either the right or left side of the ECU using the cable clamp and an existing screw on the ECU.
5. Mount the ECU securely under the bar using the four wood screw provided.
6. Mount the activator ring holder to the right or left of the ECU using 4 wood screws. Mount the holder to a secure surface where it will be within the bartender's convenient reach.



About Installing a 1544 System with Infinity

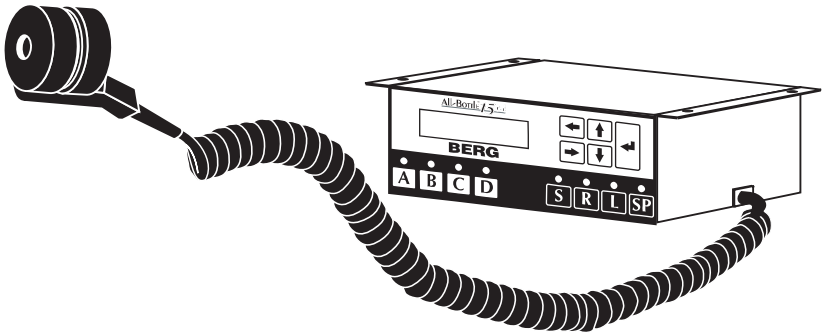
You should refer to the *All-Bottle 744/1544 Installation/Service and User Manual* for details on installing an All-Bottle 1544 system. Included here are tips to consider when installing the All-Bottle 1544 as part of an **Infinity** system.

ECU Number and Baud Rate

See *Set Station Number* and *Serial Port Setup* in the *ECU Setup* section of the *All-Bottle 744/1544 Installation/Service and User Manual*. Remember to give every ECU in the network (Infinity, TAP 1 or All-Bottle 1544) a unique number. Set the baud rate to 9600 if the ECU will be connected to a local network. Set the baud rate to match the baud rate of the modem if the ECU will be connected to a remote network.

Calibration, Prices, Portions Pouring Control

You won't use these sections of the *All-Bottle 744/1544 Installation/Service and User Manual*. These tasks are now performed using **Infinity** software.



1544 Infinity ECU

Caution

Operating Environment

The components that comprise the **1544** system have been designed to perform well in a typical bar, restaurant, or stadium environment. However, as with all electronic equipment, certain guidelines should be followed in locating the components. For the ECU, Power Supply and Remote Server Access Box, a protected, dry and clean location is required. The operating temperature range for these components is from 5° C to 40° C (41° F to 104° F).

About Installing a Laser System with Infinity

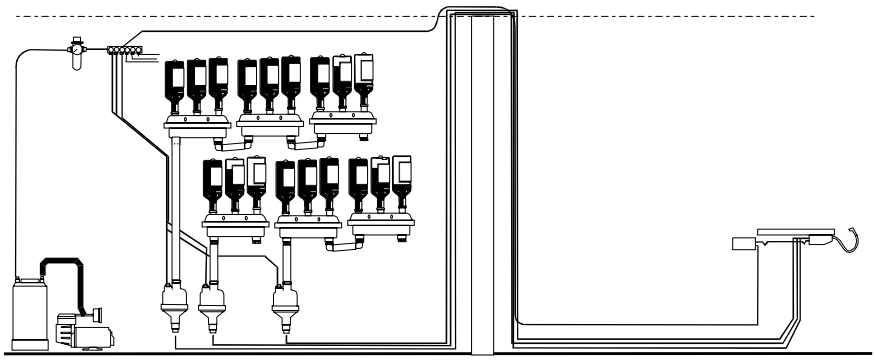
You should refer to the *Laser Installation/Service Manual* for details on installing a Laser system. Included here are tips to consider when installing the Laser system as part of an **Infinity** system.

Calibration, Brands, Prices and Portion Sizes, Dispenser Control

These tasks are performed using the **Infinity** software.

Accuracy Utility

To help determine maximum distance between the Laser guns and the back room liquor racks and how many Laser guns can share the same source bottles, use the Accuracy utility provided with **Infinity** software. For help with the utility, see *Accuracy Utility* in this section.



Laser system overview

About Installing a TAP 1 System with Infinity

You should refer to the *TAP 1 Installation/Service Manual* for details on installing a TAP 1 system. Included here are tips to consider when installing the TAP 1 system as part of an **Infinity** system.

ECU Number and Baud Rate

See *Enter the ECU Number* and *Set the Baud Rate* in the *ECU Setup* section of the *TAP 1 Installation/Service* manual. Remember to give every ECU in the network (Infinity or TAP 1) a unique number. Set the baud rate to 9600 if the ECU will be connected to a local network. Set the baud rate to match the baud rate of the modem if the ECU will be connected to a remote network.

Infinity Interface

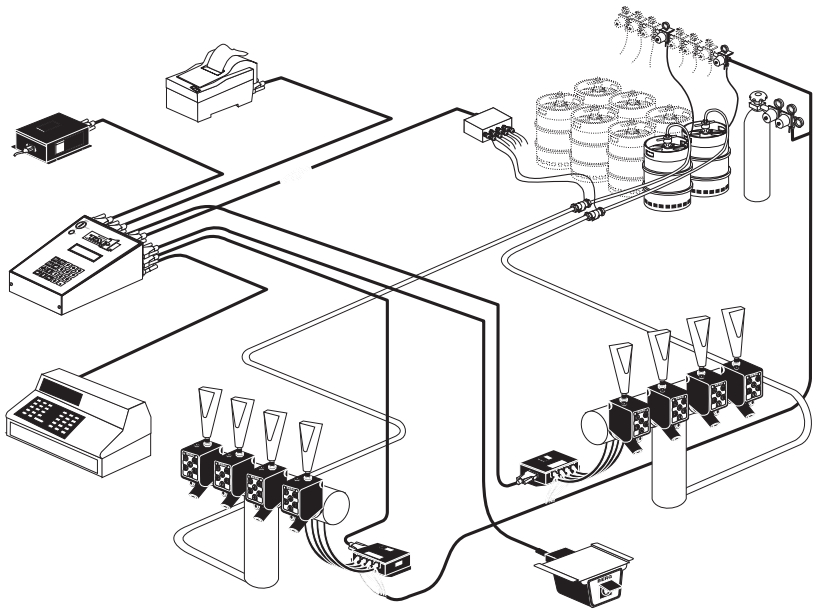
You don't have to do anything at the TAP 1 ECU to configure the interface. Once the TAP 1 ECU is defined with a network name and number at the computer, it automatically goes into **Infinity** interface mode.

Calibration, Brands, Prices and Portion Sizes, Tap Control

You will not use these sections of the *TAP 1 Installation/Service* manual when TAP 1 is part of an **Infinity** system. These tasks are now performed using **Infinity** software instead of the TAP 1 ECU.

TAP 1 ECU Network Connections

See *Connect ECUs in a Network, Install a Local Network* or *Install a Remote Network* in this section.



TAP 1 system overview

Connect Dispensers to the Infinity ECU

Each Infinity ECU can control one I-Box or All-Bottle ID dispenser and one or two Laser dispensers.

To connect the I-Box or All-Bottle ID dispenser to the ECU:

1. Run the I-Box or All-Bottle ID dispenser cable in a safe path from the dispenser to the ECU. The cable comes in two lengths: the standard 15 ft (4.6 m) cable or an optional 25 ft (7.6 m) cable. Custom cable lengths can be ordered up to 150 ft (45.7 m).

2. Plug the ECU end of the I-Box or All-Bottle ID dispenser cable into the INFINITY J911 port on the ECU. Secure it with the captive screws in the flanges of the cable connector.

To connect the Laser dispenser to the ECU:

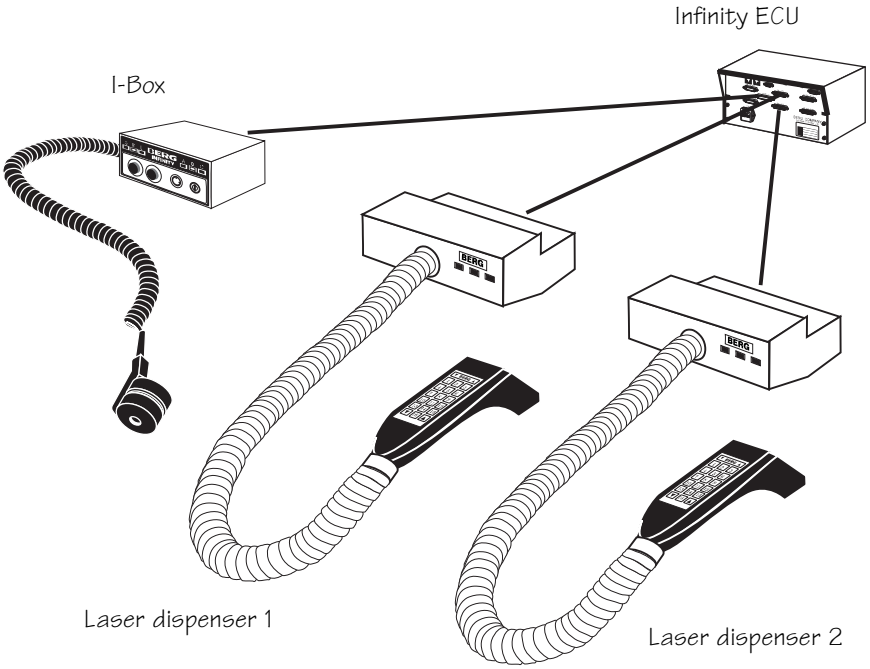
1. Run the Laser dispenser cable in a safe path from the dispenser to the ECU. The cable comes in two lengths: the standard 10 ft (3 m) cable or an optional 25 ft (7.6 m) cable. Custom cable lengths can be ordered up to 200 ft (61 m).

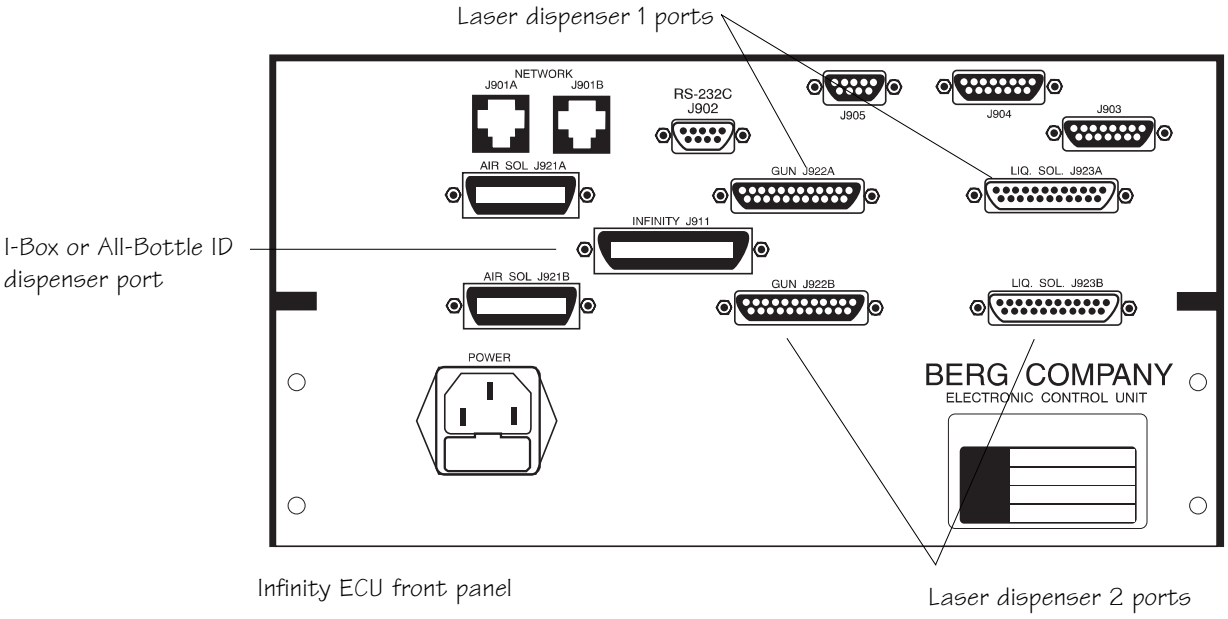
2. Plug the ECU ends of the two 25-pin Laser dispenser cables from dispenser 1 into the GUN J922A and LIQ SOL J923A ports on the ECU. Secure them with the captive screws in the flanges of the cable connectors.

   Plug the ECU ends of the two 25-pin Laser dispenser cables from dispenser 2 (if any) into the GUN J922B and LIQ SOL J923B ports on the ECU. Secure them with the captive screws in the flanges of the cable connectors.

Note

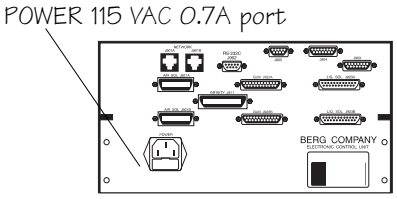
- ❑ Do not plug the air solenoid cable from the Laser dispenser into the ECU at this time. First verify the operation of all solenoids. Failure to do so can result in damage to one or more ECUs.


Infinity ECU
I-Box
Laser dispenser 1
Laser dispenser 2

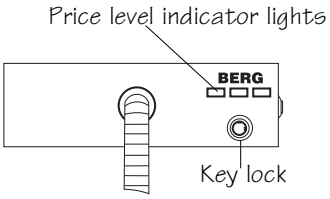

Laser dispenser 1 ports
NETWORK
J901A
J901B
RS-232C
J902
J905
J904
J903
AIR SOL J921A
GUN J922A
LIQ. SOL. J923A
INFINITY J911
I-Box or All-Bottle ID
dispenser port
AIR SOL J921B
GUN J922B
LIQ. SOL. J923B
POWER
BERG COMPANY
ELECTRONIC CONTROL UNIT
Infinity ECU front panel
Laser dispenser 2 ports

Verify Air Solenoid Operation and Connect to ECU

Perform the following task after the liquor room, air delivery system and Laser dispensers are completely installed. See the *Laser Installation/Service Manual* for help with those installations. This task requires two people, one at the dispenser and one at the air solenoids. A telephone, intercom or two-way radio is also recommended. This task must be performed for each Infinity ECU with Laser dispensers before the air solenoid cables can be plugged into the ECU.



Infinity ECU front panel



Laser dispenser front panel

To verify air solenoid operation:

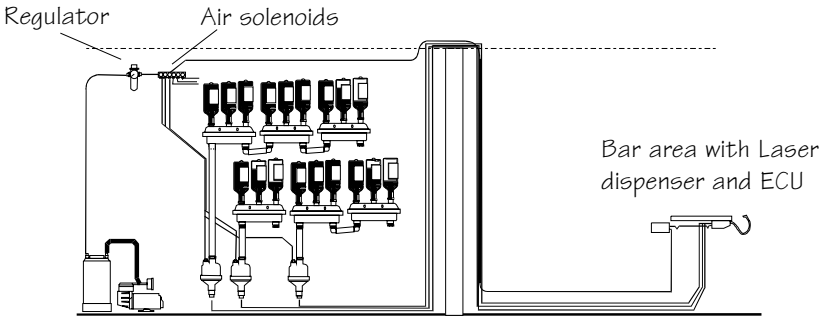
1. Plug the Infinity ECU power cord into the ECU using the POWER 115 VAC 0.7A port. Plug the other end of the cord into the 115V power supply.

2. Use a key to turn on the Laser dispensers connected to the ECU if they are not already unlocked. Watch for the price level indicator lights to come on at each Laser dispenser.

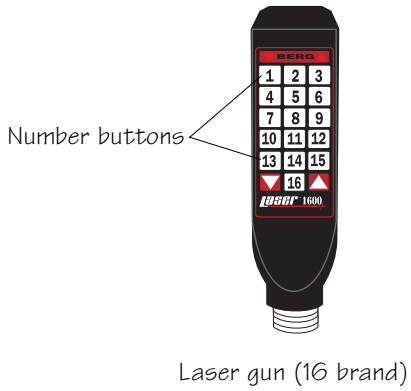
   If the lights do not come on, you cannot verify Laser solenoid operation for that dispenser. Make a note of the ECU number and complete this task for other Infinity ECUs in the system. Then you can troubleshoot the problem for this ECU once the software is installed and come back to verify solenoid operation.

3. The person at the dispenser should verify that air solenoid cables are NOT plugged into this or any ECU in the system and that the Laser dispenser is on.

4. The person at the air solenoids should verify that the air supply is connected to air solenoids in the liquor room and that the air regulator is set to 10 psi.



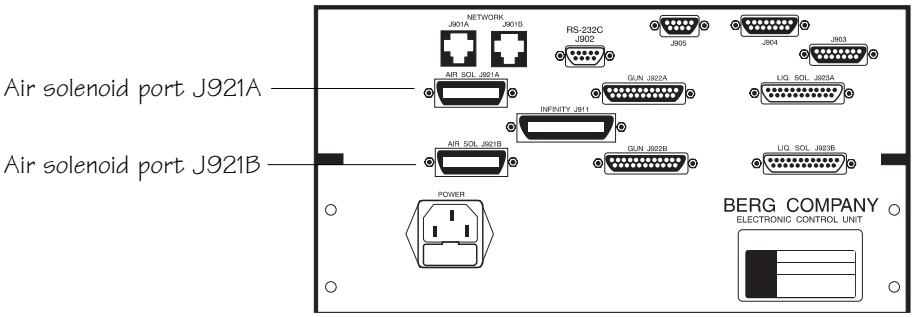
Laser System Overview



5. Press each number button in turn on the Laser gun of the first dispenser, verifying that the liquor solenoids inside the dispenser are operating. A "click" sounds as the solenoid opens and closes.

   If one or more liquor solenoids don't operate, the solenoid may be stuck–the "poppet" could be stuck to the rubber seat. See Berg over-the-counter #190.

6. If all the liquor solenoids operate, plug the air solenoid cable from one Laser dispenser into the correct port. Use port AIR SOL J921A for the cable from dispenser 1 or port AIR SOL J921B for the cable from dispenser 2. Only one air solenoid cable should be plugged in at a time for this test.



7. Press each button on the Laser gun in turn, at about ten second intervals between buttons. The person at the air solenoids should verify the operation of each air solenoid associated with the buttons. For example, when button 1 is pressed, the air solenoid for button 1 should fire, air should leave the solenoid through the breather filter, etc.

   If one or more air solenoids do not operate, check connections from the air solenoid pigtail to the air line.

8. If all the air solenoids for this dispenser operate correctly, disconnect the air solenoid cable for this dispenser from the ECU.

9. Repeat steps 5 through 8 for a second Laser dispenser (if any) at this ECU. Repeat steps 1-8 for each Infinity ECU in the system.

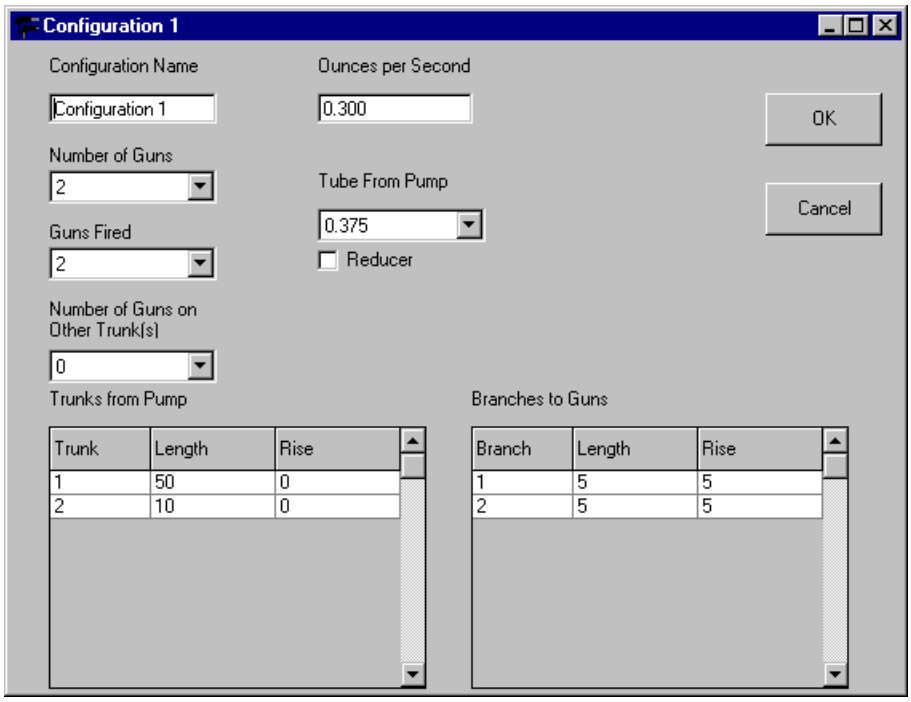
10. When you have verified air solenoid operation for all Laser dispensers in the system, connect all air solenoid cables to the correct ports on the ECU(s).

Accuracy Utility

This utility can be used as a worksheet to help you determine the appropriate distance between Laser guns and the the liquor racks. It also helps determine how many guns can share the same source bottles. This utility is only available on the **Infinity** installation CD.

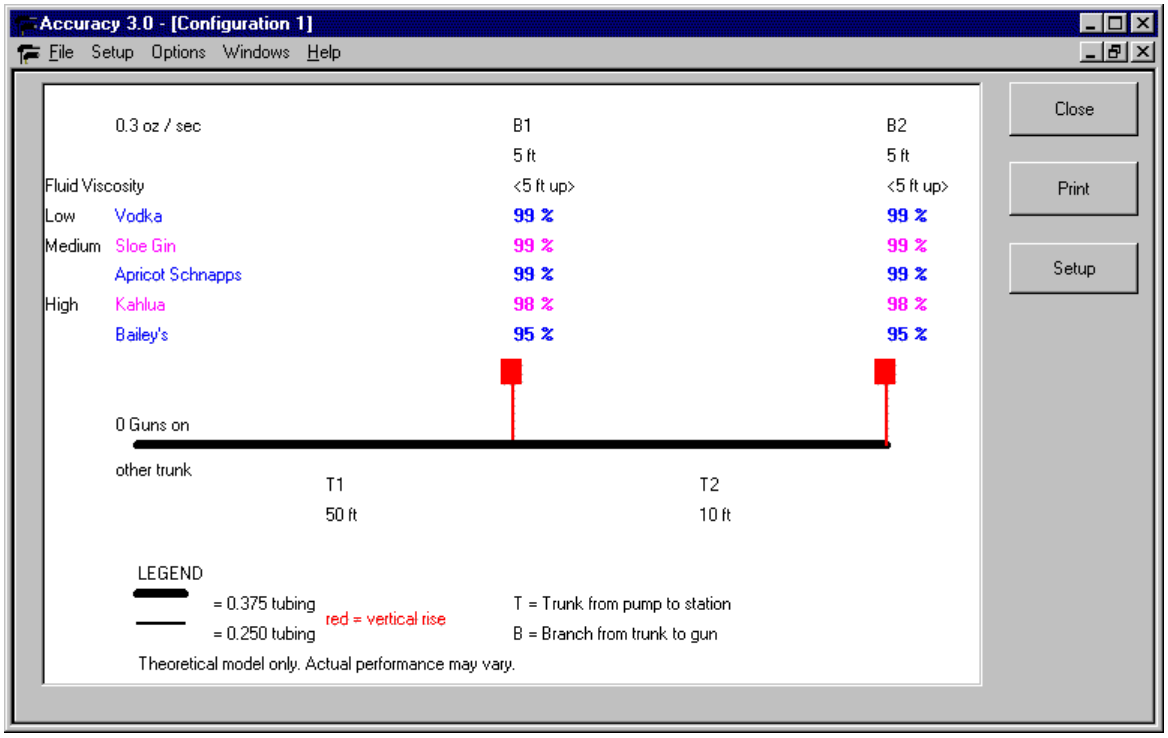
■ To use the Accuracy utility:

1. Run "Accuracy.exe" found on the **Infinity** installation CD.



2. Enter the configuration data from your Laser system and click **OK**.

   The program uses the data you enter to determine the percentage of accuracy for the flow at each gun.



3. The accuracy results are displayed in a window. Accuracy percentages are given for Low, Medium and High viscosities for each gun, given the distance measurements, tubing diameters and flow per second you've entered.

   To print the worksheet, click **Print**.

   To enter different measurements, click **Setup**.

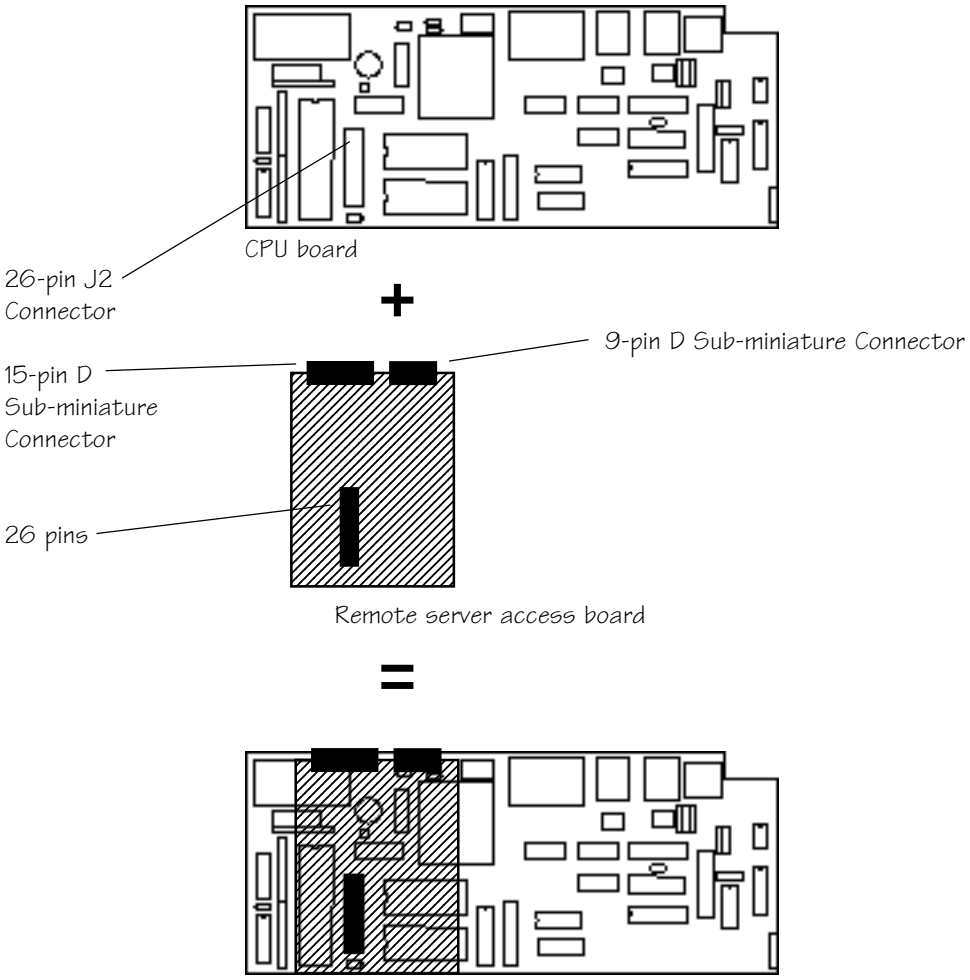
   To exit click **Close**.

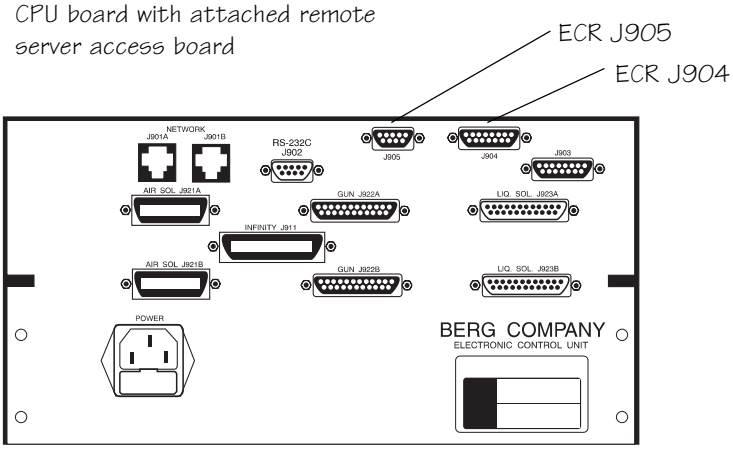
Install a Remote Server Access Board

If you are installing an **Infinity** system with server ID, you must install a circuit board in the Infinity ECU to control the remote server access box.

■ To install a remote server access board:

1. Disconnect the Infinity ECU from any power source.
2. Remove the ECU chassis cover by loosening 4 machine screws. Slide the chassis out from under the cover.
3. Locate the CPU board within the ECU chassis. You'll be looking directly down on it from the top of the ECU. You don't need to remove the CPU board from the chassis.
4. Locate the 26-pin J2 connector on the CPU board.
5. Remove the black connector cover from the ECR J905 and J904 ports on the front of the ECU.
6. Insert the 9-pin D sub-miniature connector (on the front of the access board) into the ECR J905 opening on the front of the ECU. Match the 26 pins on the bottom of the board with the 26-pin J2 connector on the CPU board. Press down gently to lock the board into position.
7. Secure the board to the ECU with 2 hex standoffs screwed into the D sub-miniature connector on the front of the ECU.
8. Replace the ECU chassis cover.

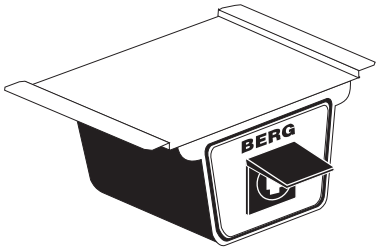




Infinity ECU front panel

Install a Server or Bartender Access Box

If you are installing an optional remote server access box, you want to choose a location on the front of the bar so servers can have access to the system without having to walk around the bar. You must also install a remote server access board in the Infinity ECU. In the TAP 1 ECU you must install an option board. Install a bartender box in a convenient location behind the bar.

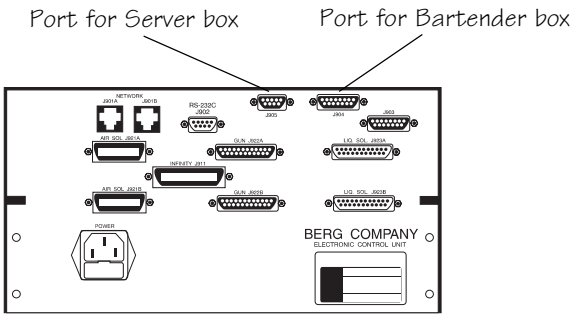


Remote Server or Bartender Access Box

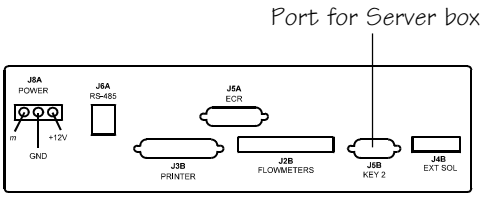
■ **To install an access box:**

1. Mount the access box underneath the bar with the 4 wood screws provided. The box must be located within 40 ft (12.2 m) of an Infinity ECU and within 100 ft (30.5 m) of a TAP 1 ECU.
2. Attach the cable from the access box to the correct ECU port and tighten the connecting screws.

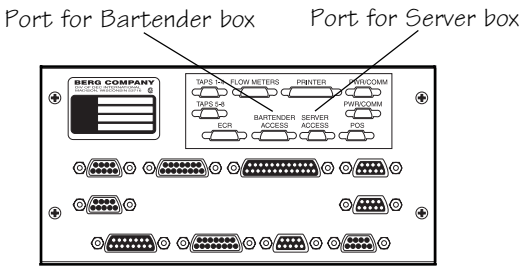
	Server Box	**Bartender Box**
Infinity ECU	J905	J904
1544 Infinity ECU	J5B	
TAP 1 ECU	SERVER ACCESS	BARTENDER ACCESS



Infinity ECU front panel



1544 Infinity ECU back panel



TAP 1 ECU back panel

Install a Datakey Programming Box

If you are installing an **Infinity** system with Server ID, you must install a Datakey programming box within 6 ft (1.8 m) of the computer. The Datakey box is used to program the server keys.

■ To install a Datakey programming box:

1. Set the Datakey programming box on a desktop or shelf in the secure, dry location you've chosen.
2. Insert the communication cable plug from the Datakey programming box into the serial port of the computer.

Note

❑ The Datakey programming box can share the computer serial port used by an **Infinity** network if you also install a switchbox. See *Install a Switchbox for a Datakey Programming Box* in this section.

Datakey programming box

Install a Switchbox for a Datakey Programming Box

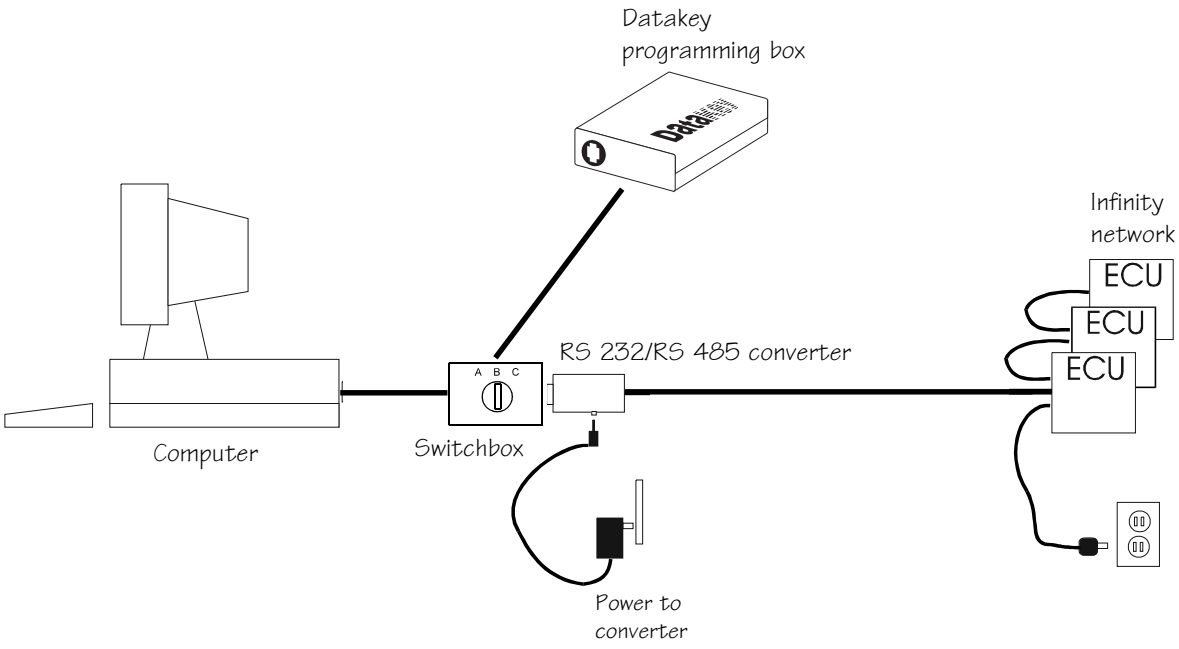
If you have a limited number of available COM ports at the computer, you can install a switchbox to use with the Datakey programming box. The switchbox lets the Datakey box and the network share the same COM port at the computer. The switchbox is not a Berg part.

■ To install a switchbox:

1. Choose a switchbox that has D sub-miniature connections.
2. Connect the Datakey programming box to the switchbox using the cable provided with the Datakey box.
3. Connect the **Infinity** network to the switchbox using the RS-232 / RS-485 converter (instead of connecting the network to the computer).
4. Connect the switchbox to a serial port of the computer.

■ To use a switchbox:

1. Select the **Infinity** network or the Datakey programming box with the switch on the switchbox.



Crimp Plugs to Communication Cables

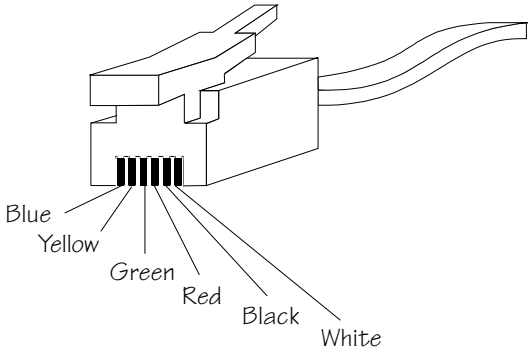
If you use custom length communication cables to connect ECUs in a network, you must manually attach or "crimp" a plug to each end of the cable. Be sure to use a quality crimping tool to assure a good connection between cable and plug.

■ To crimp a plug to a cable end:

1. If you have not already done so, determine the length of communication cable you need between each ECU and cut the appropriate lengths.
2. Carefully strip back about 1/4 in (0.6 cm) of the outer jacket from one end of the cable. Do not strip any insulation from the individual wires within the cable.
3. Insert the individual wires in the correct color sequence all the way into the plug. The color sequence is important. See the illustration.
4. Attach the crimping tool to the plug and crimp firmly.
5. Check the plug and verify that all six wires are completely crimped, and that the cable is held firmly in place by the V-type crimp on its outer jacket.
6. Repeat steps 2-5 for all other cable ends.

Note

❑ You can order a crimping tool (Berg PN 8008669) from Berg.



Connect ECUs in a Network

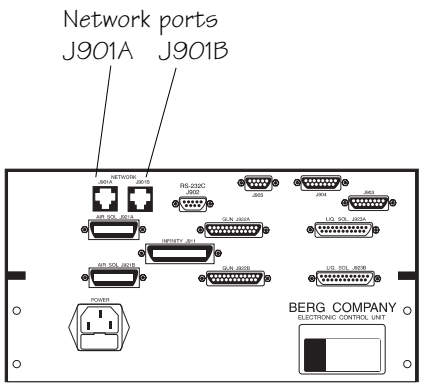
You should have determined by now which network configuration (hub and spoke, daisy chain, or combination) works best for this installation. You should have appropriate lengths of communication cable with crimped plugs at each end to connect all the ECUs (Infinity and TAP 1) in the network.

■ To connect ECUs in a network:

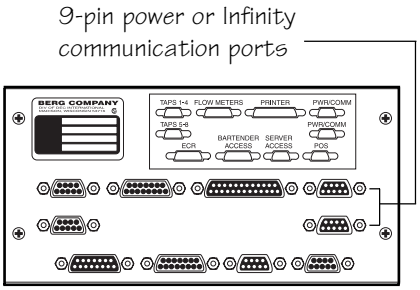
1. Run the cable lengths between ECUs in the configuration that you have chosen.

   Keep all cable a safe distance (12 in or 30.5 cm) from any high-current devices (transformers, dishwashers), any heat sources (hot water pipes, light bulbs), and any sharp objects.

2. Secure the cable with tie straps or something that won't cut the cable. Do not use narrow or sharp-edged staples.



3. **At each Infinity ECU**, insert the communication cable plug into one of the two NETWORK ports, J901A or J901B. The two ports are interchangeable, allowing for two cable connections at the ECU if necessary for your configuration.

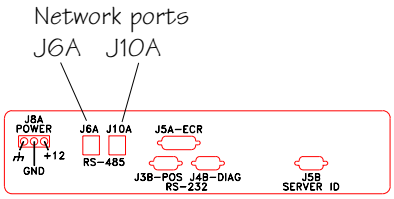


4. **At each TAP 1 ECU**, determine if the communication cable will connect to the TAP 1 ECU itself or to its power supply unit.

   There should be one free DB9 connector on both the TAP 1 ECU and its power supply unit. These connectors on the ECU and the power supply are exactly the same and can be used interchangeably to accommodate your configuration.

5. Connect a DB9 to RJ-12 (Berg PN 8004811) converter to one of the 9-pin D sockets on the ECU or its power supply.

6. Insert the communication cable plug into the RJ-12 socket on the DB9 to RJ-12 converter.



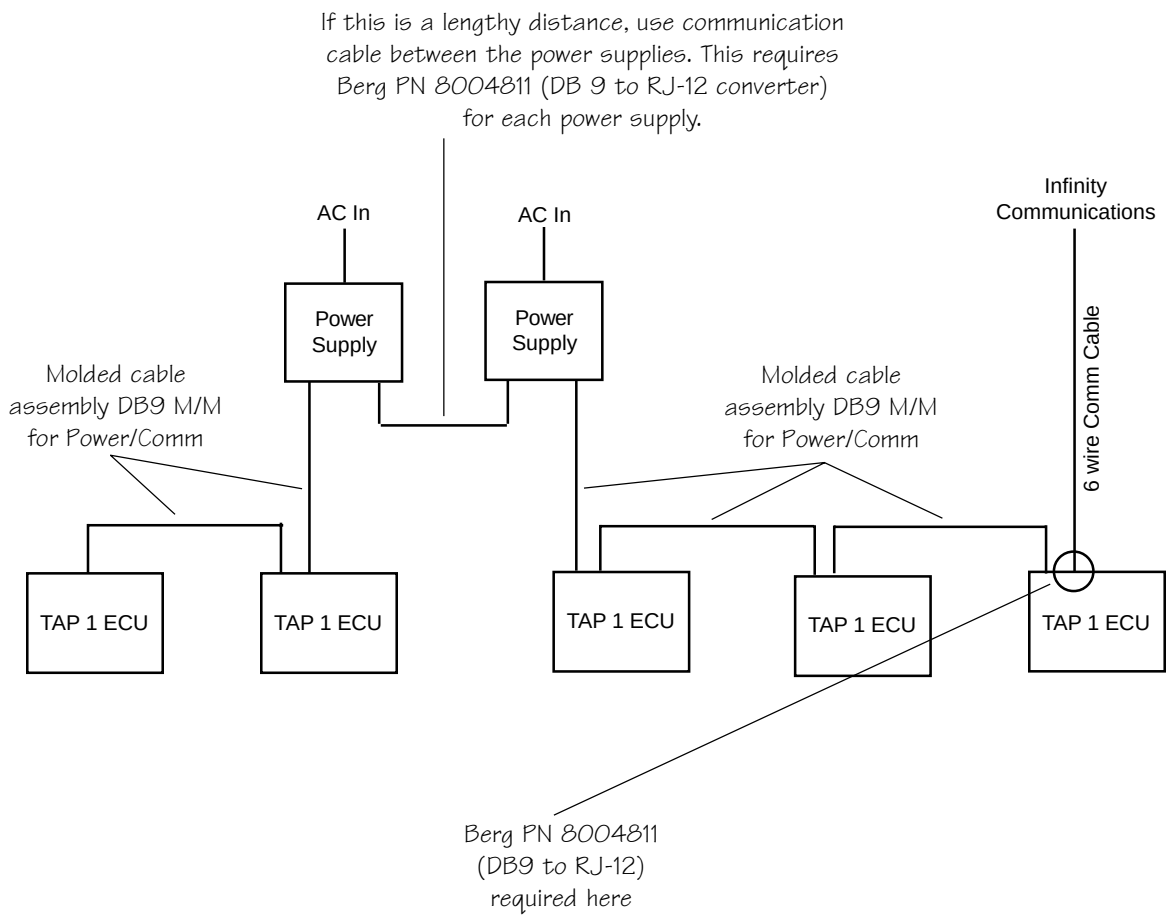
7. **At each 1544 Infinity ECU**, insert the communication cable plug into the J6A or J10A port on the back of the ECU.

At each network junction box (if any), insert the communication cable plug into any port on the box. These ports can be used interchangeably.

8. Check every ECU in the network to make sure it is properly connected.

Note

- Remember that your network must have a single component through which all network-to-computer communication flows. It must be either a single ECU, a single power supply, or a single network junction box.



Example TAP 1 Layout

All connections shown are DB 9 connectors on new TAP 1 systems. Old style systems used 7 pin round connectors and required an additional cable for communications (Berg PN 8004810, 7 pin round to DB 9).

Connect a Local Network

If your network of ECUs is within 4,000 feet (1219 m) of the computer and hardwiring is practical, you can install a local network. In addition to lengths of communication cable with plugs attached, you need an RS-232 / RS-485 PC converter (Berg PN 8009344) to connect the network to the computer.

■ To connect a local network:

1. Run the cable length between the computer and a single component of the network.

   Keep all cable a safe distance (12 in or 30.5 cm) from any high-current devices (transformers, dishwashers), any heat sources (hot water pipes, light bulbs), and any sharp objects.

2. Secure the cable with tie straps or something that won't cut the cable. Do not use narrow or sharp-edged staples.

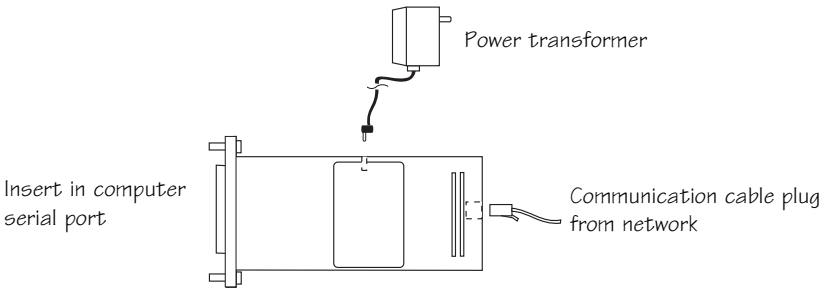
3. Plug the connector from the power transformer into the side of the RS-232 / RS-485 PC converter.

4. Plug the power transformer into the same buffered power strip used by the computer.

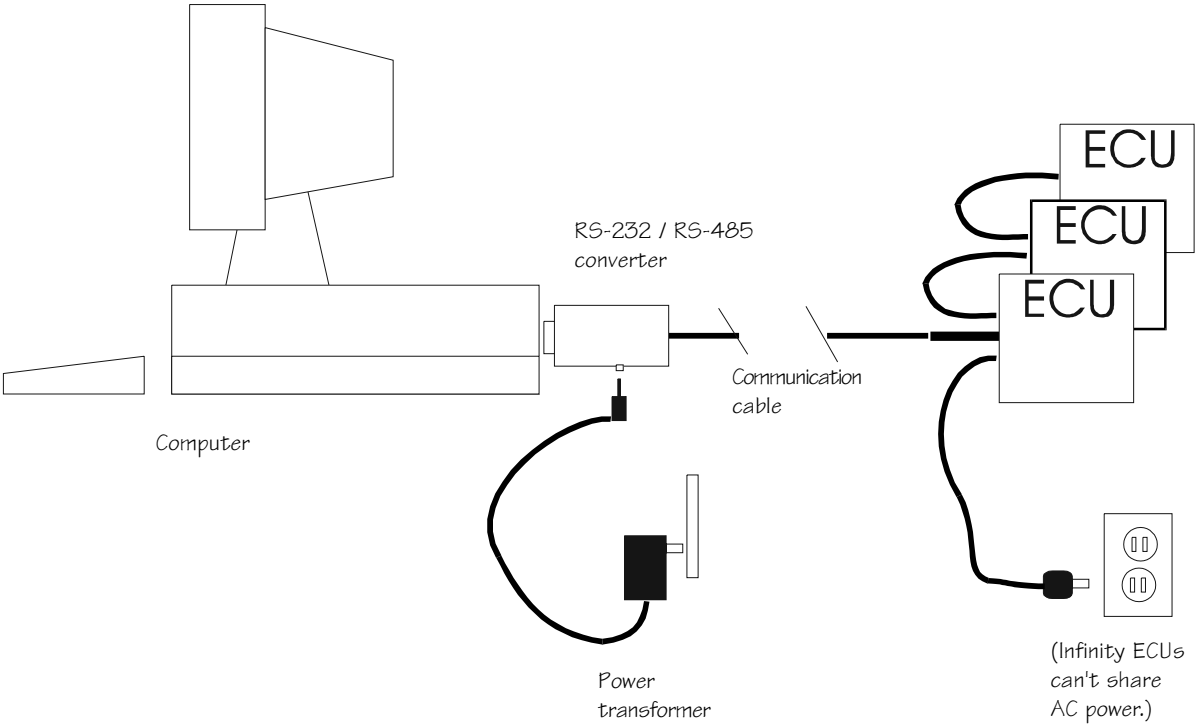
5. Insert the RS-232 / RS-485 PC converter into a serial port of the computer and secure it with the captive screws in the connector flanges.

   If the PC converter does not fit in the serial port, insert a 9-to25-pin adapter cable.

6. Insert the communication cable plug from a single component of the network into the RJ-12 socket on the converter.



RS-232 / RS-485 converter
(Berg PN 8009344, European 8009345)



4000 ft (1219 m) Distance Limit

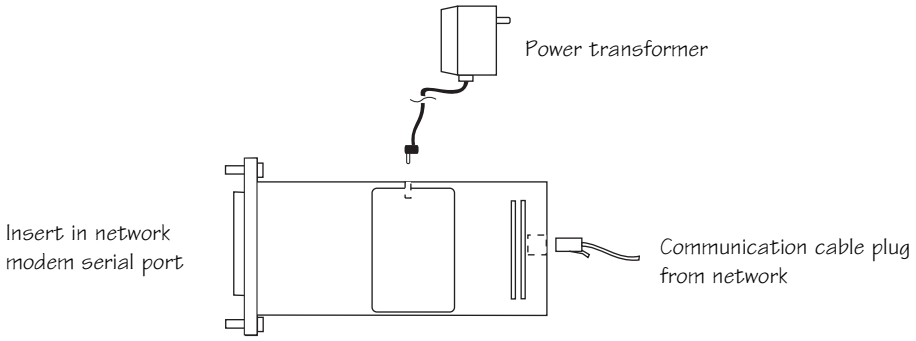
- The industry standard for the RS-485 communication protocol used by Infinity is 32 nodes at up to 5000 ft (1524 m).
- Even though the RS-485 protocol is capable of communicating over long distances, the results at each installation depend very much on the number and strength of outside interference sources such as compressors, refrigeration equipment, switching lights, radio communication devices and appliances.
- Long distances of clear RS-485 communication are obtainable if the Infinity installation is performed with care and if the site has a suitable limited-interference communication route available.
- If your Infinity network is 4000 ft (1219 m) or more from the computer or if hardwiring is impractical because of interference or other reasons, connect the network to the computer via modem.

Connect a Remote Network

If your **Infinity** network is more than 4000 ft from the computer or hardwiring is impractical, you should connect the network to the computer via modem. Please note that a remote **Infinity** network does not require a continuously open phone line. The line is only used during data exchange between the ECUs and the computer (setup, reports, etc.). The rest of the time the ECUs function without communication with the computer. You need a modem for the computer and one for each remote network.

■ To connect a remote network:

1. Determine an appropriate location for the network modem. Install the modem with a buffered power strip.
2. Plug the connector from the power transformer into the side of the RS-232 / RS-485 modem converter (Berg PN 8002619).
3. Plug the power transformer into the same power strip used by the network modem.
4. Insert the RS-232 / RS-485 modem converter into the network modem's input serial port and secure it with the captive screws in the connector flanges.
5. Insert the communication cable plug from a single component of the network into the RJ-12 socket on the RS-232 / RS-485 modem converter.
6. Connect the network modem to the telephone system according to the modem manufacturer's instructions.
7. If an internal or external modem is not already installed at the computer, install one according to the manufacturer's instructions.



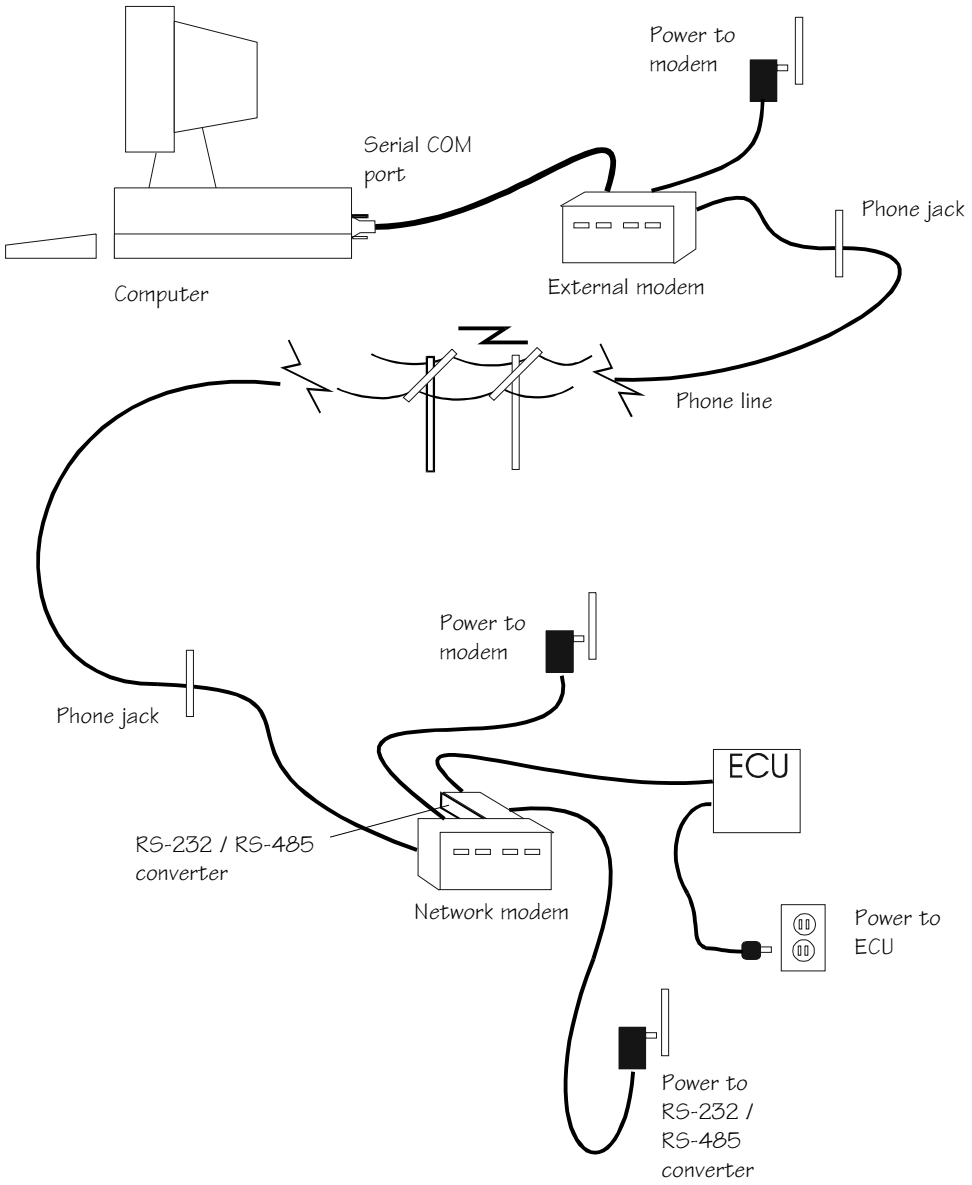
RS-232 / RS-485 modem converter
(Berg PN 8002619, European 8002631)

Note

- While you may use any Hayes-compatible modem, Berg strongly recommends you get modems for this application from Berg. The modems you order from Berg are individually tested to ensure compatibility with **Infinity**. Order Berg PN 8002616 for a computer modem or PN 8002617 for a station modem. Berg does not support modems purchased elsewhere.

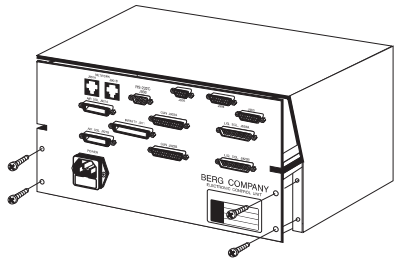
Dip Switch Settings

Computer Modem	Station Modem
DTR Normal	DTR Forced
Auto Answer Off	Auto Answer On
Carrier Detect Normal	Carrier Detect Forced
Load Factory Defaults	Load Factory Defaults
Smart Mode	Dumb Mode

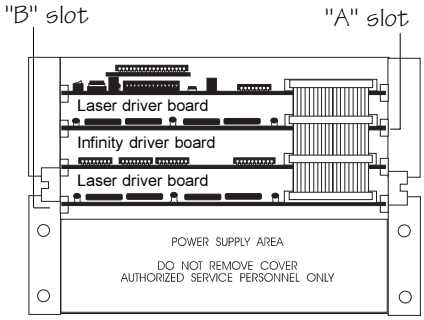


Set Laser Driver Board Jumpers

For each Laser dispenser connected to an Infinity ECU, a Laser driver board resides in the ECU. You may need to remove this board to verify or make jumper settings. A jumper (or bridge clip) connects a middle pin to one of the other two pins at a jumper location. Jumpers are preset at the factory on new systems and seldom need to be changed. Verify the correct jumper settings on any Laser driver boards before actual installation.



Infinity ECU cover removal



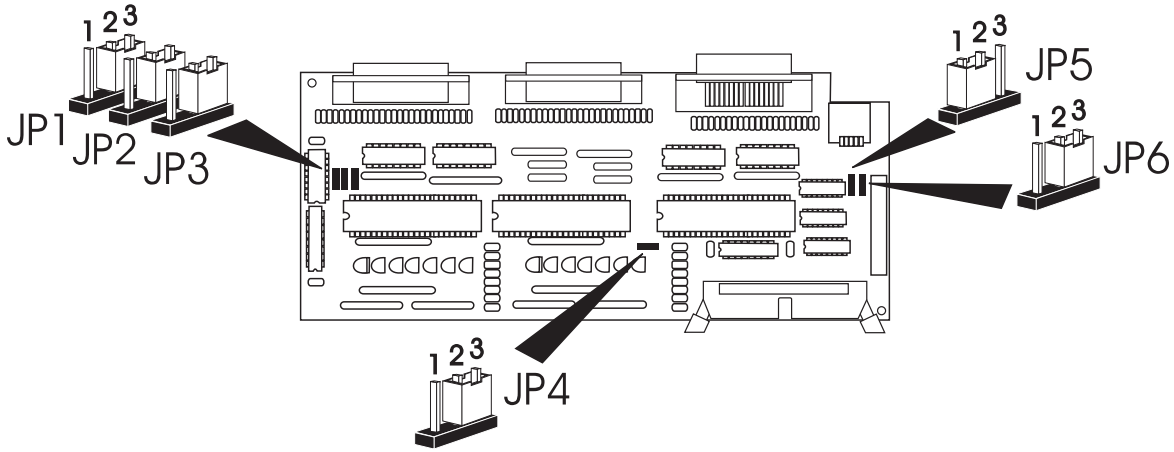
ECU board positions
(view from back of ECU)

■ **To verify or set Laser driver board jumpers:**

1. Disconnect the ECU from any power source.
2. Remove the ECU chassis cover by loosening 4 machine screws. Slide the chassis out from under the cover.
3. Locate the Laser driver board(s) within the ECU chassis. If you have only one board, it should be in the top or "A" slot. A second driver board fits in the "B" slot.
4. Remove the hex screws connecting the board to the side of the ECU chassis. Carefully remove the driver board from the ECU chassis. Remove the screws attaching the ribbon cable. Handle the board gently, by its edges, and take care not to bump or rub it against ay other object or surface that might disengage board subcomponents or scratch the surface connector tracings.
5. Locate the six jumpers on the driver board. Orient the board so the components are facing you and turned to match the illustration.
6. Jumpers **JP1** (yellow, middle), **JP2** (red, left) and **JP3** (red, right) control the front panel LEDs indicating portion size or price level.

   If price levels will be used, set JP1, JP2 and JP3 to the up position by connecting pins 2 and 3. Front panel lights will indicate price levels A, B, or C.

   If price levels will not be used, set JP1, JP2 and JP3 to the



down position by connecting pins 1 and 2. Front panel lights will indicate portion sizes A, B, or C.

7. Jumper **JP4** controls the **Infinity** lockout feature which prevents simultaneous pouring of the same brand from more than one dispenser. Simultaneous pouring can cause minor inaccuracies in portion size.

   To enable the lockout feature and prevent simultaneous pouring, set JP4 to the left position by connecting pins 1 and 2.

   To disable the lockout feature and allow simultaneous pouring, set JP4 to the right position by connecting pins 2 and 3

8. Jumper **JP5** should always be set to the down position by connecting pins 1 and 2 to assure proper performance.

9. Jumper **JP6** determines the address for the Laser dispenser attached to the driver board. The address is a number (1 or 2) that the ECU uses to distinguish two Laser dispensers.

   To specify address 1 for the driver board from the "A" slot: set JP6 to the up position by connecting pins 2 and 3. Use this setting if you have only one Laser dispenser.

   To specify address 2 for the driver board from the "B" slot: set JP6 to the down position by connecting pins 1 and 2.

10. Return the board to the correct slot in the ECU and re-attach the ribbon cable to the driver board. Make sure the edge connector is firmly seated in the slot. Replace the hex screws on the side of the ECU chassis.

11. Replace the ECU chassis cover with the 4 machine screws.

SECTION 3

Software Installation

Infinity software allows you to manage all aspects of beverage dispensing including brand and price assignment, dispenser operation and management reports conveniently run on a schedule. You must install the software on your computer before the hardware connections can be fully tested. This section provides help with the following tasks:

Install **Infinity** Software at a New Site 3-2

Windows NT/2000 Installation Notes 3-4

Upgrade Existing **Infinity** Software 3-5

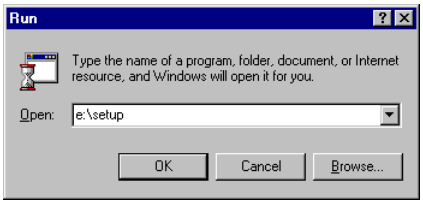
Infinity Programs 3-7

Install Infinity Software at a New Site

Infinity can be installed on Windows 95, 98, 2000, ME or NT. **Infinity's** setup program makes installation easy. Simply respond to the prompts on each setup screen. If you're installing with Windows NT or 2000, see *Windows NT/2000 Installation Notes* in this section.

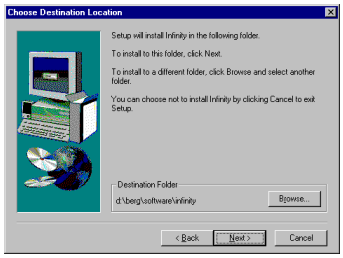
■ To install Infinity software at a new site:

1. Close all other programs running under Windows.
2. Insert the **Infinity** CD in a CD drive.
3. If the setup program doesn't start automatically, click **Start** and then **Run.** Type **e:\setup** (where **e** is the CD drive letter) and click **OK**.

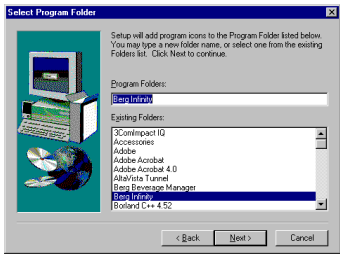


4. Follow the instructions on your screen. Click **Next** to continue through the setup process or **Back** to return to a previous screen. Click **Cancel** to stop the setup process.

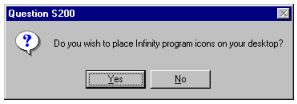
5. Choose **Typical** in the **Setup Options** screen.
6. Click **Next** to accept the default destination directory (C:\Berg Company\Infinity) for the software. If you prefer a different destination, enter a new directory.



7. Click **Next** to accept the program group or folder for the placement of **Infinity** program icons. Or, if you prefer, enter a different group or folder.

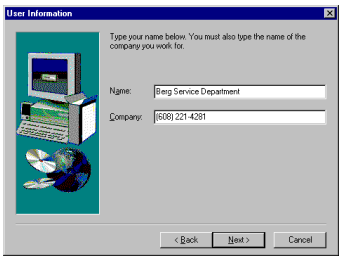


8. Click **Yes** to place the **Infinity** program icons on your computer desktop.

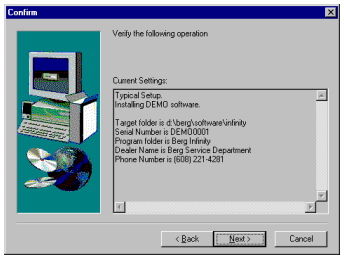


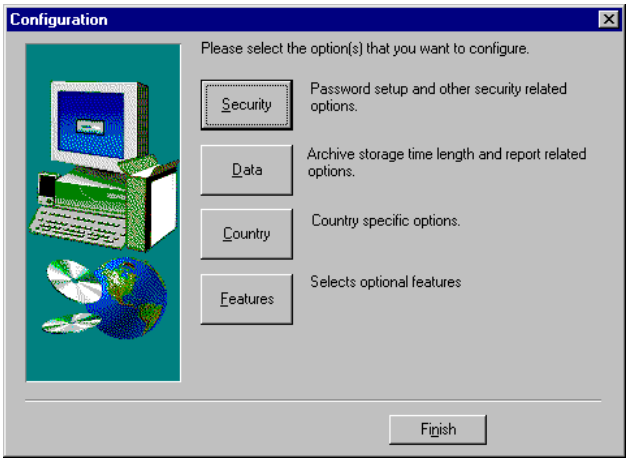
> Infinity Serial Number
>
> For security purposes, each Infinity CD is coded with a unique serial number assigned to a specific customer. Be sure to install the software at each site with the Infinity CD coded for that site.

9. Enter the dealer's name and phone number for technical support and click **Next**. (The Berg Company name and phone number are used if you don't enter a dealer name.)



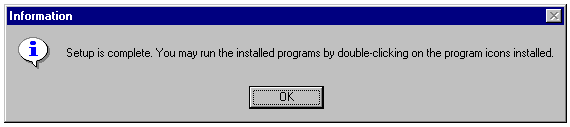
10. Click **Next** to confirm the installation. To change anything, click **Back** until you get to the appropriate screen.





11. Wait while the software is installed.

12. When the installation is complete, the **Configuration** screen appears. For help entering configuration options, see the *Configuration Options* section. Or, click **Help** on the option screens for detailed instructions. After you enter your



options, you'll be returned to the **Configuration** screen. Click **Finish** to exit.

13. Click **OK** to return to Windows.

Windows NT/2000 Installation Notes

If you're installing **Infinity** with Windows NT or 2000, you can follow the steps outlined in install *Infinity Software at a New Site* in this section. However, the following notes are important to your installation.

Windows NT Service Pack

If you don't already have a Windows NT Service Pack 2 (or greater) installed on your computer, you need to install one before you can install **Infinity**. You can tell if a Service Pack is installed on your computer by watching the messages as your computer boots up. If you don't have a Service Pack, you can order one from Microsoft by calling 1-800-370-8758 (USA and Canada only).

Infinity is a Single User Application

Though **Infinity** runs under Windows NT or 2000, it is not a client/server application. It should be installed on a local drive and run from the computer where it is installed.

Install Infinity as the Administrator

You must log on to Windows NT or 2000 as the administrator to install **Infinity** correctly.

The install program checks your administrator status as you begin the installation. If you're not logged on as the administrator you won't be able to proceed with the **Infinity** installation.

Upgrade Existing Infinity Software

Only **Infinity** versions 3.0 or later can be upgraded to the current version. If you're upgrading **Infinity** *and* installing on a new computer, first move the entire database to the new computer. Then install the **Infinity** upgrade in the same directory. If you install the **Infinity** upgrade on the new computer and then try to move the old database to the new computer, it won't work.

Backing Up Infinity

- Always keep a current backup of your database and configuration data and your original software disks. It's the best defense against unforeseen computer problems.

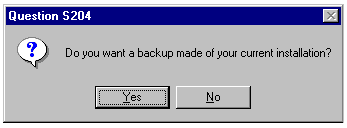
■ To upgrade existing Infinity software:

1. Exit your current version of **Infinity** and close all programs.

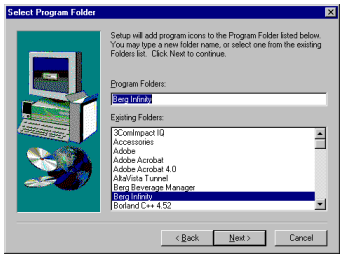
2. Insert the **Infinity** CD in a CD drive.
3. Click **Start**. Click **Run.**
4. Type **e:\setup** (where **e** is the drive letter), and click **OK**.
5. Follow the instructions on your screen. Click **Next** to continue through the setup process or **Back** to return to a previous screen. Click **Cancel** to stop the setup process.
6. Click **Typical** in the **Setup Options** screen.

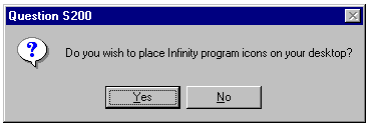
Infinity defaults to the directory of the most recent installation.

7. Click **Next** to accept the destination directory for **Infinity** or click **Browse** to choose a different directory.
8. Select **Upgrade** as the type of upgrade for this installation and click **Next**. (Click **Overwrite** only if your existing database is flawed, you want to completely start over, or you are directed to do so by Berg.)



9. Click **Yes** to have the setup data from your current installation of **Infinity** copied to the backup subdirectory. Click **No** if you already have a current backup.
10. Click **Next** to accept the program group or folder for the placement of **Infinity** program icons. Or, if you prefer, enter a different group or folder.

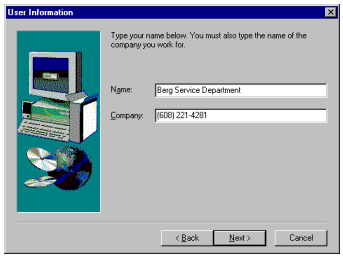




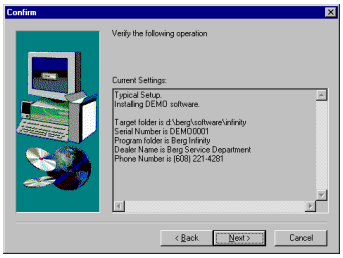
11. Click **Yes** to place the **Infinity** program icons on your computer desktop.

(continued on next page)

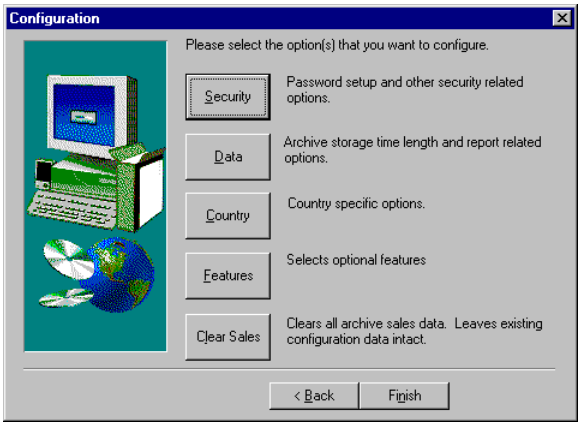
12. Enter the dealer's name and phone number for technical support and click **Next**.



13. Click **Next** to confirm the installation. To change anything, click **Back** till you get to the appropriate screen.



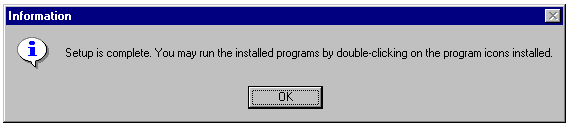
14. Wait while the software is installed.



If you chose Upgrade as your upgrade option, all previous configuration options are still valid and you don't have to re-enter them.

15. The **Configuration** screen appears. For help entering configuration options, see the *Configuration Options* section. Or, click **Help** on the option screens for detailed instructions. After you enter your options, you'll be returned to the **Configuration** screen. Click **Finish** to exit.

16. Click **OK** after reading the STORE disks message. Don't forget to run **Utilities\Store Database Configuration** so you have a current backup of this installation.



17. Click **OK** to return to Windows.

Infinity Programs

The **Infinity** software package is a collection of programs that each perform specific functions. When you install **Infinity** software, a new group or folder is created in your Windows operating environment that contains the icons for each **Infinity** program. Take care not to delete any individual program from the **Infinity** group or you won't be able to perform certain tasks. You can pause one **Infinity** program to use another. See *Run Infinity Software* in the *Software Basics* section.

Infinity Help

Click this icon to access **Infinity** online help without running any other **Infinity** program. You can always access online help from within any other **Infinity** program.

Manager

Click this icon to access the **Manager** program where you can perform equipment setup tasks, pouring setup tasks or server ID setup tasks. If you install **Interface** software, click this icon to access **Interface**.

Report

Click this icon to access the **Report** program where you can configure and run system reports or exports.

Schedule

Click this icon to access the **Schedule** program where you can configure and run a schedule.

Utilities

Click this icon to access the **Utilities** program where you can perform various system maintenance or repair tasks.

SECTION 4

Software Basics

Review this section if you need to familiarize yourself with basic Infinity software functions. This section provides help with the following tasks.

Run **Infinity** Software 4-2

Run Infinity Software with Password Protection 4-4

Enter Software Preferences 4-5

Infinity Demo Version Setup 4-6

Uninstall **Infinity** Software 4-8

Run Infinity Software

You can run **Infinity** software programs just like any other Windows programs. If you're not sure which **Infinity** program you need to run to perform a specific task, see *Infinity Programs* in the *Software Installation* section. Since only one **Infinity** program can be active at a time, simply pause the program you're working in before loading another **Infinity** program.

■ To run an Infinity program:

1. Double-click one of the **Infinity** program icons on your Windows desktop.

   OR

   Click **Start** and point to **Programs**.

   Point to the **Berg Infinity** folder and click the program you want to run.

2. The main window for the program appears with a button for the program on the taskbar at the bottom of the screen.

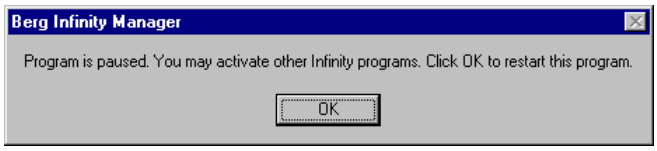
■ To load another Infinity program:

1. While on the main window, press the **F5** function key on your keyboard.

   OR

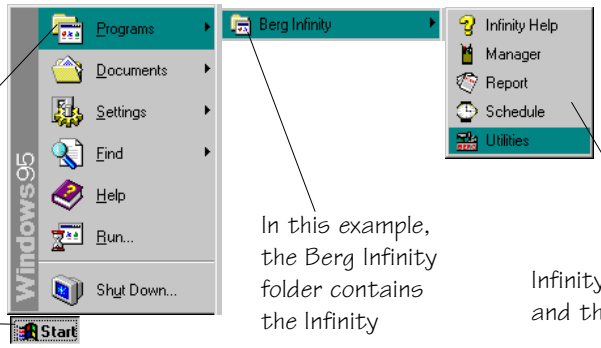
   From the main window, pull down the **File** menu and click **Pause**.

2. The current **Infinity** program pauses. You can now run another **Infinity** program.

3. To return to a paused program, click **OK** to restart it. You must exit or pause the other **Infinity** program before you can restart this one.

You can also right-click Start and click Open. Click Programs, then the folder containing your Infinity program icons. Click the program you want to run. The advantage of this method is it leaves the folder up when you reboot.



Programs contains the folder with your Infinity program icons.

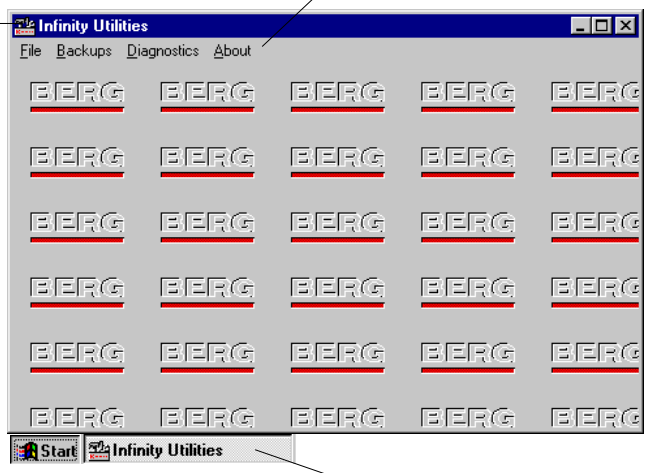
Start button

In this example, the Berg Infinity folder contains the Infinity programs.

Infinity programs and their icons

Menu bar

Infinity Utilities main window



Taskbar button

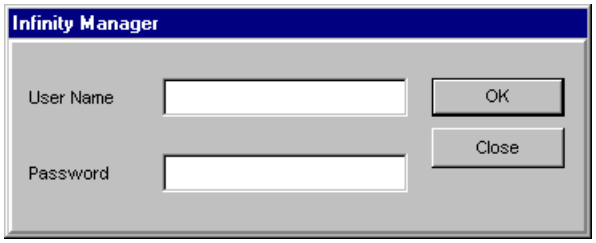
Run Infinity Software with Password Protection

If you enable passwords when you set configuration options for Infinity software, no one can run the software without entering a valid user name and password. The security level defined for the user determines which features of the software can be accessed.

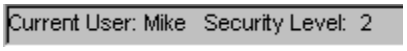
■ To run Infinity software with password protection:

1. Follow the steps outlined in *Run Infinity Software* in this section.

   The password screen appears.



2. Type a registered **User Name**.
3. Type a registered **Password**.
4. Click **OK**.



   The status bar at the bottom of the **Manager**, **Report** or **Schedule** program displays the name of the user and the security level.

   If a registered user tries to perform software tasks not included in the displayed security level, an error message appears and the particular software function is disabled.

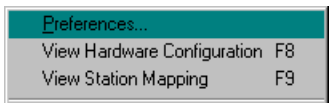
   If a user enters an invalid user name or password, an error message appears and access to the software is denied.

Enter Software Preferences

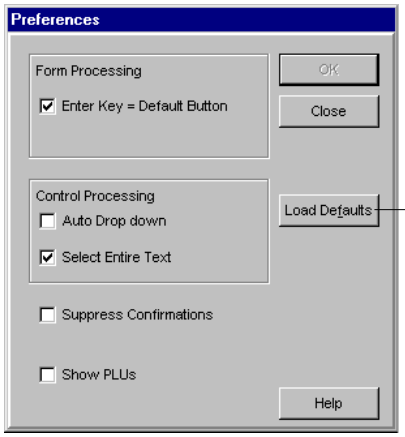
You can specify your preferences for entering data in **Infinity** in the **Manager**, **Report** or **Schedule** program and your choices take effect in all **Infinity** programs. If you're not sure about your preferences, you can try the defaults at first.

To enter software preferences:

1. Run **Manager**, **Report** or **Schedule**.

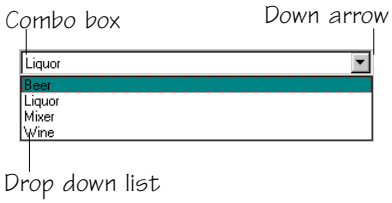


2. Pull down the **Options** menu and click **Preferences...**.



Click to display the default entries.

3. Check or uncheck the various options.

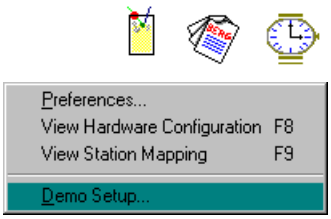


Check **Enter Key=Default Button** to use the Enter key as a shortcut to clicking **OK** (or whatever button is the default on the screen). Uncheck this option to use the Enter key as a Tab key (which moves focus from one control to another).
Check **Auto Drop down** to automatically display drop down lists on combo boxes. Uncheck this option to pull down the list with the down arrow.
Select Entire Text specifies whether the entire text in a text entry field is automatically selected when you first enter the field. You can still de-select parts of the text after you enter the field even if you select this option.
Check **Show PLUs** to see a PLU column on the **Modify Prices and Portions** screen. (You won't see this option if you've installed Interface software or enabled the Reconciliation report feature.)
Check **Suppress Confirmations** if you don't want to see typical confirmation questions for software tasks. Confirmation questions usually ask if you really want to do the operation ("Are you sure you want to delete X?").

4. Click **OK** to save your changes and exit or click **Cancel** to exit without saving changes.

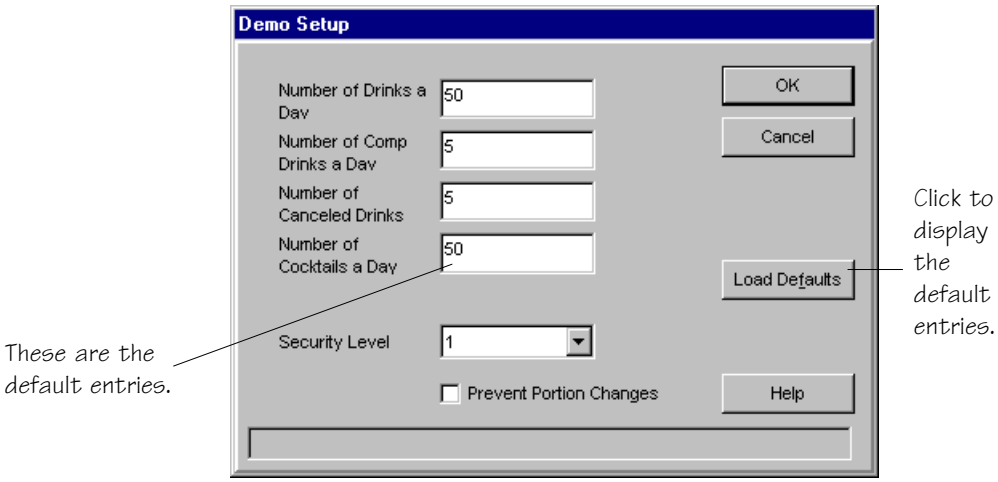
Infinity Demo Version Setup

If you are installing a demo version of **Infinity**, you can set it up to simulate the sales data of an actual system even though you have no **Infinity** hardware connected.



To set up a demo version:

1. Run a DEMO version of **Manager**, **Report** or **Schedule**.
2. Pull down the **Options** menu and click **Demo Setup...**.
3. Enter your choices in each entry field on the **Demo Setup** screen.



4. Click **OK** to save your changes and exit or click **Cancel** to exit without saving changes.

Note

- When you install a demo version of **Infinity**, you'll be prompted to load a sample database. Click **Yes** to install the database.

Number of Drinks a Day

Enter the approximate number of drinks per brand for the software to simulate. A random factor is included so the number will not be exactly the same each time.

Number of Comp Drinks a Day

Enter the approximate number of comp drinks per brand for the software to simulate. Enter 0 if you don't want any to appear.

Number of Canceled Drinks a Day

Enter the approximate number of canceled drinks per brand for the software to simulate. Enter 0 if you don't want any to appear.

Number of Cocktails a Day

Enter the approximate number of each cocktail for the software to simulate. Enter 0 if you don't want any to appear.

Security Level

Enter the security level you want to demonstrate on the software. (You can also show security levels by creating fictitious users and switching between them.)

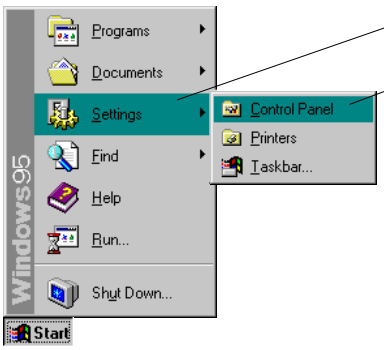
Prevent Portion Changes

Check this option to simulate a portion lockout jumper (no portion size changes are allowed).

Uninstall Infinity Software

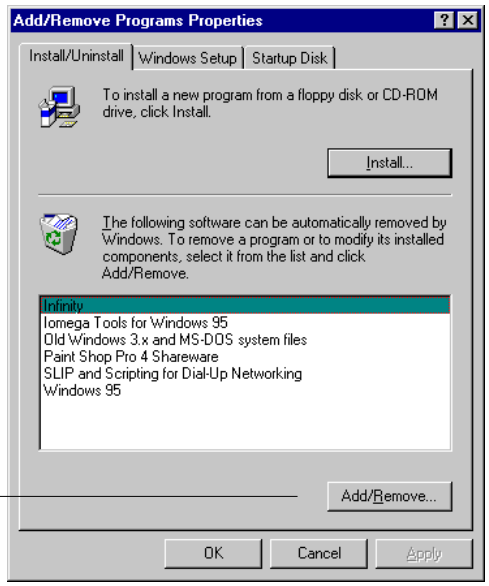
You can uninstall **Infinity** software using Windows commands.

■ **To uninstall Infinity software with Windows 95/NT:**



1. Click **Start** and point to **Settings**.
2. Click **Control Panel**.
3. Click **Add/Remove Programs**.

4. Select **Infinity** from a list of programs you can remove from your computer. Click **Add/Remove...** .



5. Click **OK** to confirm **Infinity** deletion.