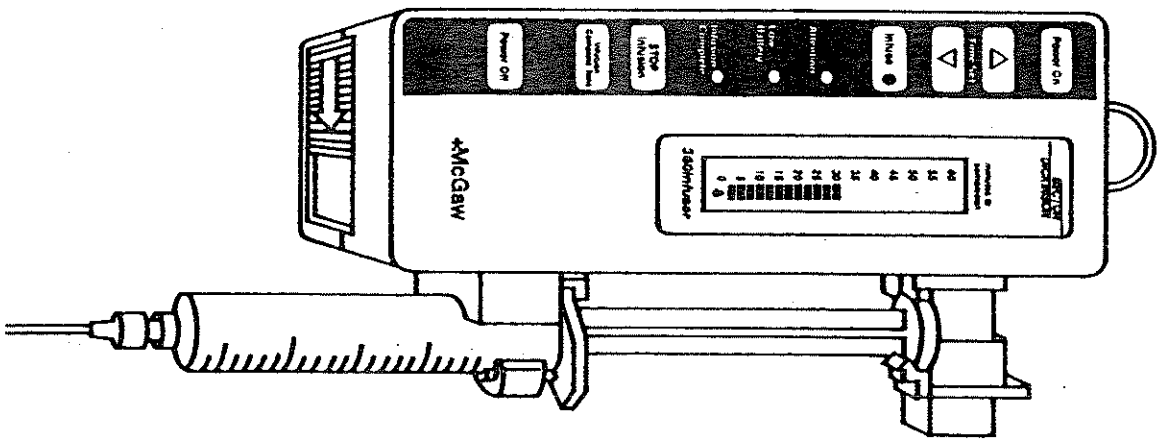


# **B.D.** *360infuser*<sup>™</sup> OPERATOR'S GUIDE



**McGraw**

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## INTRODUCTION

From critical care to general medical, obstetrical, and surgical services, the **B-D 360Infuser** is the most cost-effective and time-saving system you can use for intermittent IV drug therapy.

The **B-D 360Infuser** accommodates all B-D Plastipak™ syringes between 3 cc and 60 cc – and all infusions up to 60 ml – and features the ability to vary the duration of infusion from 10 to 60 minutes. This flexibility provides greater accuracy, control of drug dosage and delivery rate and, therefore, improved patient safety. The unit's advanced self-monitoring system also helps ensure safe administration of IV medications.

Because the unit is battery-operated, it can conveniently be used anywhere, eg, attached to an IV pole or placed near the patient's bed.

Please read the following procedures and precautions before operating the **B-D 360Infuser**. The instructions are also outlined on the back of the unit.

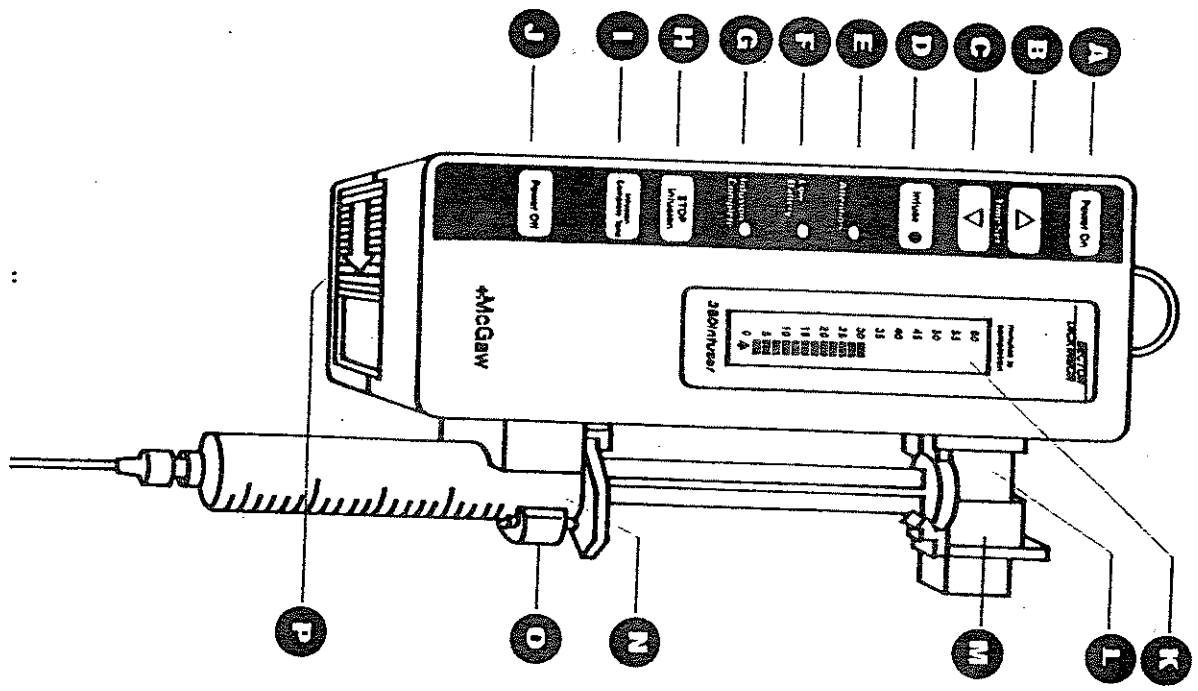
## METHODS FOR USE

The **B.D. 360Infuser** may be used for the following intermittent infusions:

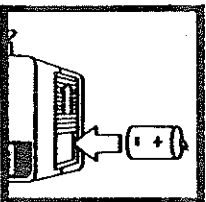
- As a primary intermittent infusion system in combination with a heparin lock.
- As a piggyback in combination with a primary IV delivering compatible maintenance fluids or drug diluents, the primary line need not be interrupted. The microbore extension set is attached to the primary line at the lower injection port or flashball site.
- As a piggyback in combination with an IV controller or IV pump. No change to the pump or controller is required. The microbore extension set is attached to the primary line at an injection port or flashball site downstream from the primary infusion device.
- As a piggyback in combination with a volume control chamber (burette). The flow rate for the burette is not interrupted. The microbore extension set is attached to the primary line at either the lower injection port or the flashball site.

**PRODUCT DIAGRAM**

- A** POWER ON SWITCH
- B** INCREASE DELIVERY TIME SWITCH
- C** DECREASE DELIVERY TIME SWITCH
- D** INFUSE SWITCH AND LIGHT
- E** ATTENTION LIGHT
- F** LOW BATTERY LIGHT
- G** INFUSION COMPLETE LIGHT
- H** STOP INFUSION SWITCH
- I** INFUSION COMPLETE TONE (ON/OFF) SWITCH
- J** POWER OFF SWITCH
- K** TIME SCALE
- L** SYRINGE PUSHER
- M** PLUNGER LOCK
- N** SYRINGE
- O** SYRINGE CLAMP
- P** BATTERY COVER



## PRODUCT SET-UP

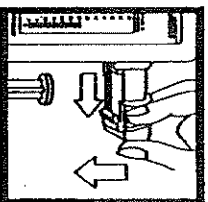


1. To load Batteries: slide the BATTERY COVER (P) on the bottom of the unit in the direction of the arrow. Insert 4 C-size *alkaline* batteries with the positive (+) end facing up as illustrated by the diagram inside the battery well. Slide the battery cover back. Rechargeable batteries are *not recommended* for use with the **B.D 360Infuser**.

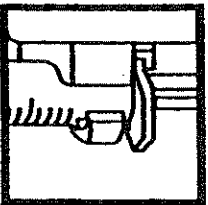
2. Connect the microbore tubing set to the filled syringe. Verify that the syringe size and medication are correct for the patient.
3. Using standard, accepted, aseptic IV techniques, prime the syringe and tubing set, *making sure all air bubbles are eliminated.*
4. Press the POWER ON switch (A). The system will automatically perform an electronics check. One beep sounds, the TIME SCALE (K) rises to 60 minutes, each of the four indicator lights (G,F,E,D) flashes, and the time scale sets to 30 minutes.

**NOTE:** *If any indicator fails, do not use the pump. Call McGaw, Inc. Technical Services at 1-800-627-7867.*

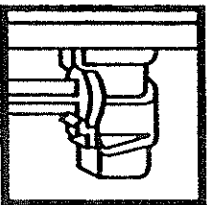
5. Pull the PLUNGER LOCK (M) all the way back, (some units may have a button which should be depressed), then slide the entire SYRINGE PUSHER (L) up to the top of the unit.



6. Press open the **SYRINGE CLAMP (O)** and insert the filled syringe, making sure the rim of the syringe barrel flanges are positioned in the clamp notch.



7. Pull the **PLUNGER LOCK (M)**, all the way back, (some units may have a button which should be depressed), then slide the entire **SYRINGE PUSHER (L)** down. Assure that the **PLUNGER LOCK** fully engages the syringe.



**NOTE:** To ensure accurate operation, make sure the plunger rim is positioned between the lock notch and the syringe driver notch.

8. If a 30-minute delivery time is not desired, set the delivery time (indicated on the **TIME SCALE (K)**) using the **INCREASE DELIVERY TIME (B)** or **DECREASE DELIVERY TIME (C)** switches. The top bar on the screen indicates the established delivery time throughout the infusion. Delivery time may be set between 10 minutes and 60 minutes in 2.5-minute increments.

9. Using aseptic technique, attach the distal end of the microbore tubing set to the appropriate infusion site.

10. The **INFUSION COMPLETE TONE** will be activated automatically when the unit is powered ON. A small bell symbol (🔔) appears at the bottom of the **TIME SCALE (K)** to indicate infusion complete tone is activated. Upon completion of an infusion a continuous beep tone sounds. If no audible alarm is desired, press the **INFUSION COMPLETE TONE (on/off)** button (I) and the small bell symbol (🔔) located at the bottom of the display screen disappears. To reactivate the infusion complete tone, push the **INFUSION COMPLETE TONE (on/off)** switch and the bell symbol (🔔) will reappear at the bottom of the display screen.



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**INFUSE**

After pressing the **POWER ON** switch (A) and successful completion of the automatic electronics check, press the **INFUSE** switch (D). Throughout the infusion, the green **INFUSE** indicator light (D) and the top bar on the screen will flash. As the **TIME SCALE** (K) counts down, one bar will disappear every 2.5 minutes.

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**COMPLETING INFUSION:**

When the infusion is completed, the **INFUSION COMPLETE LIGHT** (G) flashes. A continuous double beep will begin if the **INFUSION COMPLETE TONE** symbol (A) is visible. Turn the pump off by pressing the **POWER OFF** switch (J).

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**STOPPING INFUSION**

You may stop the infusion at any time by pressing either the **POWER OFF** switch (J) or the **STOP INFUSION** switch (H). The **STOP INFUSION** switch allows you to restart the infusion without altering the time setting.

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**CHANGING THE DELIVERY TIME DURING INFUSION**

To change the delivery time for the remaining volume, press the **STOP INFUSION** switch (H), press the appropriate **INCREASE TIME DELIVERY** (B) or **DECREASE DELIVERY TIME** (C) switch until the desired time is indicated on the time scale. Then press the **INFUSE** switch (D) to restart the infusion.

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**POLE CLAMP**

The **B-D 360infuser** has the capability to accept an optional IV **POLE CLAMP**. Please contact your McGaw Representative for information to obtain this item.

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**INFUSION SPEED RANGE**

The **B-D 360infuser** allows volumetric deliveries between 360 ml/hour (a completely filled 60-cc syringe set to deliver in 10 minutes) and 1.5 ml/hour (a 3-cc syringe filled to 1.5 cc and set to deliver in 60 minutes).

You may set the delivery time between 10 and 60 minutes. Certain low volume-high time combinations are beyond the range of the pump. Table 1 shows the maximum time setting for the indicated B-D syringe sizes filled to the levels specified.

**NOTE:** *Should the user select a time of infusion with a volume in the syringe which is outside the pump's range, the audible alarm will beep rapidly when the infuse switch is pressed.*

## DELIVERY TIME CHART

Table 1:  
DELIVERY TIME SETTINGS FOR PARTIAL, 1/1,  
FILLED BECTON DICKINSON SYRINGES\*

Syringe Size (B-D syringes)	Volume Level (cc)	Maximum Time Setting (min)
3 cc	1 1/2-3	No limit
	1	40
	1/2	20
5 cc	3-5	No limit
	2	40
	1	20
10 cc	5-10	No limit
	4	55
	3	42 1/2
	2	27 1/2
	1	12 1/2
20 cc	8-20	No limit
	5	40
	3	25
	2	15
	1	Not feasible
30 cc	12-30	No limit
	8	40
	4	20
	2	10
	< 2	Not feasible
60 cc	15-60	No limit
	10	40
	5	20
	3	12 1/2
	< 3	Not feasible

\* This table is to be used as a guide for out-of-range settings.

## INDICATORS AND ALARMS

### FLASHING GREEN INFUSE LIGHT

Indicates a normal infusion is in progress.

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### FLASHING RED ATTENTION LIGHT and BEEPING ALARM

1. Indicates an occlusion, in which case the **SYRINGE PUSHER (L)** stops. You should press the **STOP INFUSION** switch (H) to turn off the audible alarm and light. Then proceed with the following steps:
  - Release the **SYRINGE PUSHER (L)** by pulling the **SYRINGE LOCK (M)** all the way back and slide the **SYRINGE PUSHER** up; or disconnect the microbore tubing set to prevent an accidental bolus. (Take care to preserve the aseptic integrity of the infusion).
  - Clear the occlusion.
  - Reset the **SYRINGE PUSHER**.
  - Reset the delivery time if needed.
  - Reconnect the microbore tubing set.
  - Press the **INFUSE SWITCH (D)** to restart the infusion.
2. If the syringe is removed or dislodged during an infusion, the red Attention indicator will flash and an audible alarm will be activated.
3. While infusion is in progress, if the **SYRINGE PUSHER** is physically moved up or down, the red Attention indicator will flash and an audible alarm will be activated.

**NOTE:** When delivering large volumes in short periods of time (i.e., 60 cc in 10 min.), the attention alarm may trigger due to high back pressure in the delivery system. If this should occur,

*consideration should be given to increasing the time of delivery or using a larger inside diameter delivery set such as Cat. No. 332823.*

*If any indicator fails, do not use the pump. Call Technical Services at 1-800-627-7867.*

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#### **BEEPING ALARM**

When the **INFUSE SWITCH (D)** is pressed the audible alarm indicates the delivery time is set out of range for the syringe size (refer to Table 1).

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#### **FLASHING YELLOW LOW BATTERY LIGHT**

Indicates a minimum of 10 hours remains in the battery. You should complete the infusion, then replace the batteries with 4 C-size alkaline batteries.

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#### **FLASHING RED INFUSION COMPLETE LIGHT**

Signals the end of the infusion. Turn the pump off by pressing the **POWER OFF switch (J)**.

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#### **FLASHING RED INFUSION COMPLETE LIGHT and CONTINUOUS DOUBLE BEEPING ALARM**

Signals the end of infusion. Turn the pump off by pressing the **POWER OFF switch (J)**.

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#### **FLASHING TIME SCALE, FLASHING RED ATTENTION LIGHT, and BEEPING ALARM**

Indicates no movement of the **SYRINGE PUSHER** or an electronic malfunction. Do not use the pump.

**D**

## CAUTIONS

The **B-D 360infuser** is not designed to be placed in direct contact with the active lead of any ELECTROSURGICAL UNIT (ESU).

Disposable tubing sets should be changed in accordance with institution policies, national, state and/or the Centers for Disease Control (CDC) guidelines.

Disposable syringes should not be reused under any circumstances.

When infusing viscous liquids, such as lipids or dextrose, Becton Dickinson recommends the use of larger diameter microbore tubing (.050" inner diameter or greater), Catalog No. 332823.

While other sizes, types and manufacturers of syringes may apparently fit the **B-D 360infuser**, Becton Dickinson cannot make any claims to the accuracy of delivery or the effectiveness of the occlusion detection system. Therefore, we do not recommend their use.

## CLEANING & MAINTENANCE

### DEVICE PROBLEM REPORTING

In the event that a problem arises during the use or testing of the **B-D 360infuser**, please contact McGraw, Inc., Technical Services at 1-800-627-7867. Technical service support is available via the same number. Any device returned without prior approval will not be accepted.

### CLEANING

Clean the **B-D 360infuser** with a damp cloth and mild soap or detergent. The pump may be disinfected with mild alcohol or bleach-based solution. Harsh chemicals or solvents may damage the case. Do not sterilize the pump or submerge it in liquids.

### MAINTENANCE

Maintenance should only be performed by qualified personnel. A technical manual detailing maintenance and repair procedures is available. Routine maintenance is recommended by Becton Dickinson Infusion Systems to be performed every six (6) to twelve (12) months or more frequently as per your individual institution's policy.

## SPECIFICATIONS

Dimensions:	9.75" x 5" x 2.75" approximate
Weight:	2 lbs.(approx.) including batteries.
Syringes Accepted:	Becton Dickinson Plastipak™(BD) 3 cc to 60 cc
Infusion Delivery:	Delivery time is 10-60 minutes, in 2.5-minute increments. Volumetric rate between 1.5 ml/hr (using a 3-cc syringe) and 360 ml/hr (using a 60-cc syringe). *
Accuracy:	+/- 3% using Becton Dickinson 5- to 60-cc Plastipak™ syringes +/- 5% using Becton Dickinson 3-cc Plastipak™ syringes based upon drive system.
Battery Life:	400 hours typical with alkaline batteries - (A minimum of 10 hours remain after the Low Battery Light illuminates.) *
Batteries:	4 C-size alkaline
Accessories:	Pole Clamp (Cat. No. 2810)
Disposables:	Microbore Tubing 60", I.D. .023" (Catalog No. 332804) Microbore Tubing 36", I.D. .023" (Catalog No. 332811) Microbore Tubing 60", ( I.D. .050" Catalog No. 332823) Microbore Tubing 60" w/Protected Needle, I.D. .023" (Catalog No. 332804-22)

*Please refer to the single-use product packaging for specific product data.*

*\* Battery life minimum can only be assured by the use of high quality alkaline batteries.*





**OCCLUSION PRESSURE**  
(using the following B-D Plastipak™ syringes)

Syringe Size	Maximum Occlusion Pressure (psi)	Typical Occlusion Pressure (psi)
3 cc	46.8	36.4
5 cc	30.0	17.9
10 cc	22.8	17.0
20 cc	21.6	13.9
30 cc	16.8	9.4
60 cc	13.2	8.4

NOTES

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NOTES



## WARRANTY STATEMENT

**B-D 360infuser** Limited Warranty Statement, the manufacturer warrants that the **B-D 360infuser** is free from defects in materials and workmanship (excluding batteries and accessories) for a period of 365 days from date of delivery to the original purchaser subject to the terms and conditions outlined here. If you comply with the conditions of this warranty, the manufacturer will repair any defects occurring within 365 days from original purchase delivery date at no cost to you. The manufacturer will not be liable for any damages or claims, medical or otherwise of any nature whatsoever, whether direct or consequential, caused by defects, failures or malfunctions of any infusion pump, whether a claim for such damages is based on warranty, contract, tort or otherwise.

THIS WARRANTY REPRESENTS THE MANUFACTURER'S ENTIRE OBLIGATION TO THE PURCHASER. IT IS MADE IN LIEU OF ANY OTHER WARRANTY, WHETHER EXPRESSED OR IMPLIED, EXCEPT MERCHANTABILITY. THIS WARRANTY IS SUBJECT TO THE LIMITATIONS STATED IN THE PRECEDING PARAGRAPH ON INCIDENTAL, OR CONSEQUENTIAL DAMAGES.

The manufacturer will inspect the device and determine whether it is defective. This decision is made solely by the manufacturer.

Where there is evidence of improper handling, defacing or altering of the pump, the warranty is void. Under such circumstances, the purchaser must pay the manufacturer for the parts and labor necessary to make the repair if the purchaser chooses to have those repairs made.

ONLY THE OPTIONS LISTED IN THE WARRANTY ARE AVAILABLE TO YOU. No person or entity has the authority to bind the manufacturer to any warranty or representation contrary to or in addition to those contained in this warranty.

**TECHNICAL SERVICE**

For sales, technical or service assistance, please  
contact:

McGaw, Inc. Customer Service  
1-800-624-2963

McGaw, Inc. Technical Services  
1-800-627-7867

McGaw, Inc. Clinical Support  
1-800-854-6851

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**CAUTION:** Federal (U.S.A.) law restricts this device to sale  
by or on order of a physician.

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