

**AutoChill<sup>®</sup> System (20BE/BG)**

# **Operator's Manual**

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for use with Aircast<sup>®</sup> Cryo/Cuff<sup>®</sup>  
cold and compression dressings



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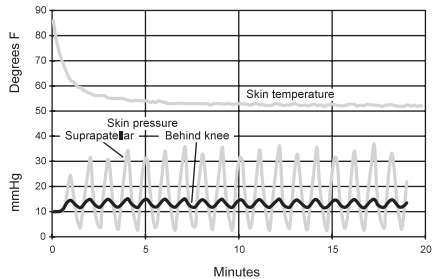
## Introduction

Aircast® pioneered the use of graduated, pneumatic compression and cold for functional management of orthopedic injuries. The Cryo/Cuff® product line evolved from this unique experience, and from performance principles established by earlier researchers in pneumatic compression and cold therapy. The Cryo/Cuff applies “safe compression”<sup>6</sup> to minimize hemarthrosis and swelling, and cold to minimize pain.<sup>5</sup> The AutoChill System enhances Aircast Cryo/Cuff products by eliminating the need for manual water recycling through the use of an electronic pump to substitute warm water for cold. Pulsating pressure resulting from the automatic exchange of water provides comfort and the therapeutic benefits of intermittent compression.

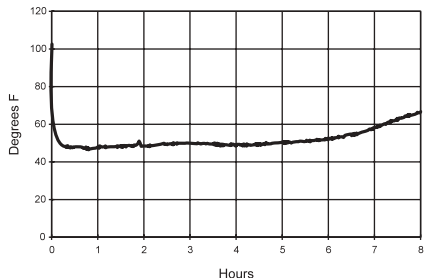
## Function

The cooler is filled with water and ice, and the Cryo/Cuff applied. After the cooler is initially filled, the AutoChill System is connected and the power/timing switch is set to the correct position. During the on-cycle, the pump forces air into the cooler, forcing chilled water into the cuff. During the off-cycle, the warmed water returns to the cooler to be recharged. This automatic, repetitive cycling maintains continuous cold and applies pulsating pressure.

Typical AutoChill Temperature & Pressure



Typical 8 Hour Temperature Curve



# AutoChill® System (20BE/BG)

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## Indications

The Cryo/Cuff® applies “safe compression”<sup>6</sup> to minimize hemarthrosis and swelling, and cold to minimize pain.<sup>5</sup>

## Contraindications

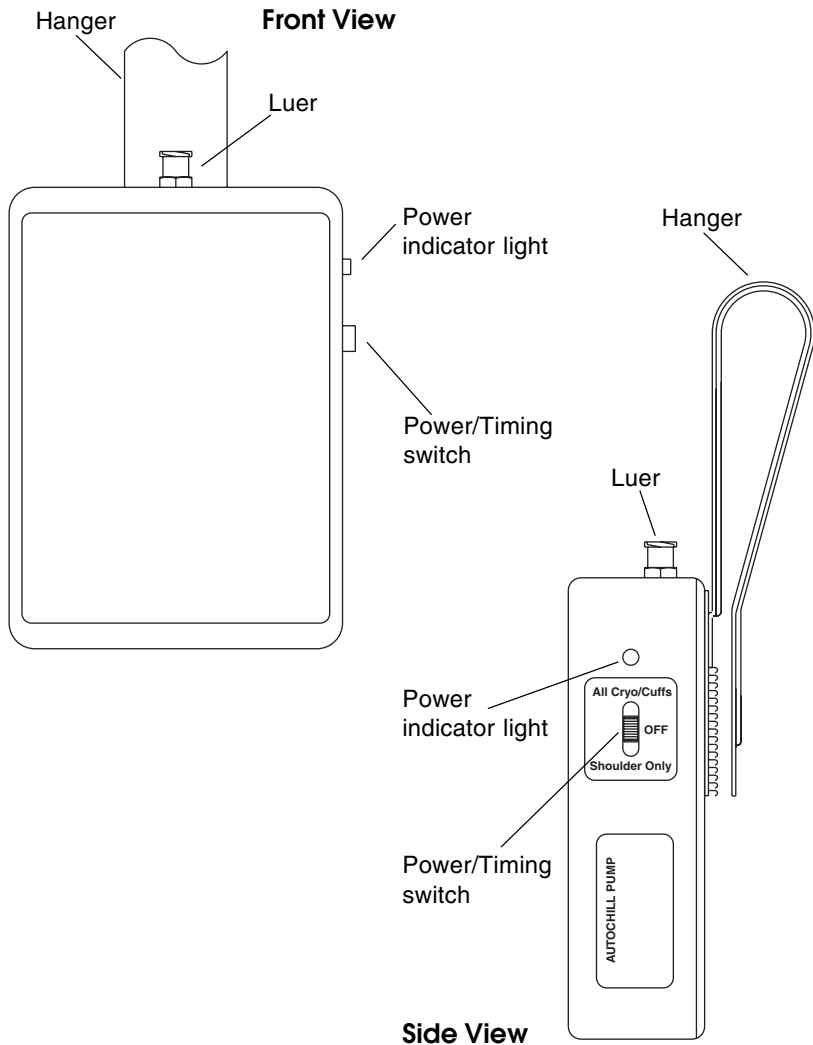
Cryotherapy should not be used on persons with Raynaud’s or other vasospastic disease, cold hypersensitivity, decreased skin sensitivity, or compromised local circulation. Observe all Cryo/Cuff Contraindication, Caution, and Warning statements.

## Classification

Class IIa Medical Device per Annex IX of the Medical Device Directive.

Electrical Equipment Classification: Class II BF

## AutoChill® Pump Features



# AutoChill® System (20BE/BG)

## Application (Shown with the Knee Cryo/Cuff®)

- 1 **Prepare cooler** (See *Cryo/Cuff instruction sheet*.)
- 2 **Apply the EMPTY cuff** (See *Cryo/Cuff instruction sheet*.)
- 3 **Fill cuff** (See *Cryo/Cuff instruction sheet*.)

When using the **AutoChill System**, the cooler must remain connected to cuff.

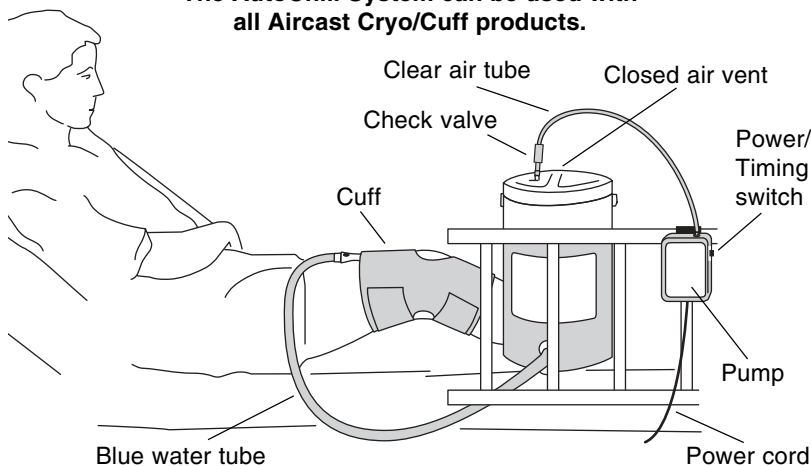
- 4 **Correctly position cooler**

Place the cooler on a bed or table. The base of the cooler should be even with the bottom of the cuff. **Do not raise cooler above the cuff when using the AutoChill System.**

- 5 **Connect air pump**

Connect clear air tube from pump to fitting on cooler lid, with check valve at cooler end. Connect wall adapter power cord to bottom of pump. Plug wall adapter into outlet and set pump power switch to correct position to begin AutoChill operation.

**The AutoChill System can be used with all Aircast Cryo/Cuff products.**



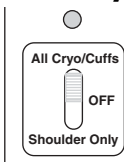
## Operation

The AutoChill System is connected and power/timing switch is set to the correct position (*see Power/Timing Switch Settings*). During every cycle, the air pump drives air into cooler, forcing chilled water into the cuff. During the pump's off-cycle, the warmed water returns to the cooler to be recharged. This repetitive cycling maintains continuous cold, and applies pulsating pressure.

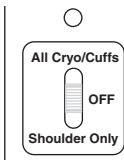
## Check Valve

In the event of the cooler being tipped from its up-right position, the check valve will close off the air tube, preventing water from entering the pump and causing pump damage. The excess water will be vented from the air tube outside of the system. Once the cooler is up-righted, the system will self-clear.

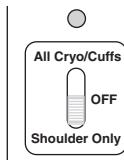
## Power/Timing Switch Settings



**All Cryo/Cuffs** — switch position for all cuff models except the Shoulder Cryo/Cuff. Power indicator light will illuminate.



**OFF** — switch position to turn off AutoChill System. Power indicator light *will not* illuminate



**Shoulder Only** — switch position for Shoulder Cryo/Cuff only. Power indicator light will illuminate.



## Cautions and Warnings

 **CAUTION**

Patient's skin should be observed frequently due to individual sensitivity and susceptibility to cold.

AutoChill® System pump can only be used with approved Aircast power supply: 2008E (UK Only) or 2008G.

During use, power supply must be plugged into a socket that remains accessible.

Unplug pump before cleaning to prevent electrical shock.

Do not allow fluid to come in contact with pump.

 **WARNING**

Risk of explosion if used in the presence of flammable anesthetics.

If bandages or dressings become moist or wet, discontinue use of the AutoChill System and immediately contact your healthcare professional.

Indications that the EUT has experienced electromagnetic interference include variations in the run time of motor. This interference may be intermittent and careful correlation between the effect and its possible source is important. The EUT will not display this indication if it is used within its intended electromagnetic environment.

# AutoChill® System (20BE/BG)

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## Specifications

### General

Size .....	4.5" × 3.5" × 1.25" (11 cm × 9 cm × 3 cm)
Weight .....	0.5 lb (.3 kg)
Power-Input: 2008E .....	50 Hz
2008G .....	230V~ 50 Hz
Mounting .....	Strap to bed rail
Pressure Range (preset) .....	45 ±10% mmHg
Pressure Cycle ..	(All Cryo/Cuffs except Shoulder): 30 sec. On / 30 sec. Off (Shoulder Cryo/Cuff Only): 60 sec. On / 30 sec. Off
Life Expectancy .....	1000 Hours

### Environmental

Storage/Transportation Temperatures .....	-20°C to +60°C
Relative Humidity .....	10% – 90% Noncondensing
Altitude .....	0 to 3,048 m above sea level
Operating Temperatures .....	0°C to 40°C

Products that bear the CE mark are certified to meet European EMC Directive 89/336 EEC.

Standards: EN 60601-1, Part 1  
EN 60601-1-2, 1992

## Components and Accessories

The AutoChill System 20BE/20BG includes:

<u>P/N</u>	<u>Product</u>	<u>Qty</u>
20B01	AutoChill Dual Time Pump	1
2007XL	AutoChill 5 ft (1.5 m) Tube Assembly	1
2008E	12V DC Wall Adapter (UK Only)	1
2008G	12V DC Wall Adapter	1
2020EG	AutoChill System Operator's Manual	1

Available Cryo/Cuff® models:

10A	Ankle Cryo/Cuff w/cooler	1
10B	Large Foot Cryo/Cuff w/cooler	1
10C	Medium Foot Cryo/Cuff w/cooler	1
10D	Small Foot Cryo/Cuff w/cooler	1
10P	Pediatric Ankle Cryo/Cuff	1
10W	Cryo/Cuff for Walking Brace w/cooler	1
11A	Medium Knee Cryo/Cuff w/cooler	1
11B	Large Knee Cryo/Cuff w/cooler	1
11C	Small Knee Cryo/Cuff w/cooler	1
11P	Pediatric Knee/Elbow Cryo/Cuff	1
12A	Shoulder Cryo/Cuff w/cooler	1
12AXL	Shoulder Cryo/Cuff with XL Strap w/cooler	1
13A	Thigh Cryo/Cuff w/cooler	1
13B	XL Thigh Cryo/Cuff w/cooler	1
13C	Calf Cryo/Cuff w/cooler	1
14A	Back/Hip/Rib Cryo/Cuff w/cooler	1
15A	Elbow Cryo/Cuff w/cooler	1
16A	Hand and Wrist Cryo/Cuff w/cooler	1



## References

1. Duffley H, Knight K: Ankle Compression Variability Using the Elastic Wrap, Elastic Wrap with a Horseshoe, Edema II Boot, and Air-Stirrup Brace. *Athletic Training* 24: 320–323, 1989
2. Effect of the Cryo/Cuff Knee Compression Dressing and an Elastic Wrap on Swelling of the Calf. *Aircast Inc.*, 1991
3. Husni E, Ximenes J, Hamilton F: Pressure Bandaging of the Lower Extremity, Use and Abuse. *JAMA* 206: 2715–2718, 1968
4. Mindrebo N, Shelbourne KD: Knee Pressure Dressings and Their Effects on Lower Extremity Venous Capacitance and Venous Outflow. *Orthopaedics International Edition* 2: 3, 1994
5. Shelbourne KD, Rubinstein RA, McCarroll JR, et al: Postoperative Cryotherapy for the Knee in ACL Reconstructive Surgery. *Orthopaedics International Edition* 2: 2, 1994
6. Shelbourne KD, Wilckens JH: Current Concepts in Anterior Cruciate Ligament Rehabilitation. *Orthopedic Review* 19: 957–964, 1990



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