

ORDERING INFORMATION

CODE No.	DESCRIPTION	SHIPPING UNIT
A-V IMPULSE SYSTEM FOOT PUMP		
5000	Dual Channel Controller	1 each
IMPAD UNDER CAST INFLATION PAD		
5017	Right Foot	1 each, 6/carton
5019	Left Foot	1 each, 6/carton
IMPAD RIGID SOLE FOOT COVER		
5046	Right Foot, Regular Size	1 each, 4/carton
5048	Left Foot, Regular Size	1 each, 4/carton
5057	Right Foot, Large Size	1 each, 4/carton
5059	Left Foot, Large Size	1 each, 4/carton
ACCESSORIES		
5006	Red Tubing Assembly, Left	1 each
5007	Blue Tubing Assembly, Right	1 each
5008	Power Cord	1 each
5009	Fan Filter	1 each

IMPAD RIGID SOLE FOOT COVER SIZING CHART

	REGULAR	LARGE
Women's shoe size	5 1/2 - 9	9 1/2 - 11 1/2
Men's shoe size	4 1/2 - 8	8 1/2 - 12 1/2

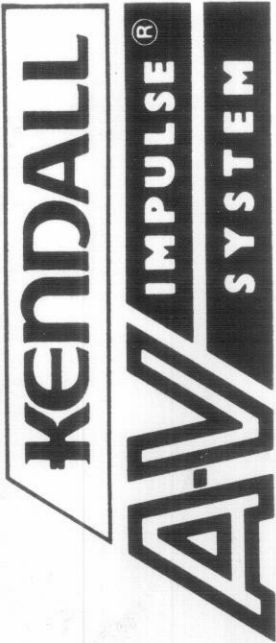
Note: For ImPad Under Cast Inflation Pads, one size fits all.

The Kendall A-V Impulse System Controller and Accessories are Exclusively Distributed by:
Kendall Healthcare Products Company a Division of The Kendall Company,
Mansfield MA 02048. Kendall Customer Service 1-800-421-8268.

Novamedix, A-V Impulse System and ImPad are Trademarks of Novamedix Ltd. U.K.
Kendall and T.E.D. are Trademarks of The Kendall Company. Webril is a Trademark of Veratec, Inc.
Made in England under one or more of the following Patents: U.S. Patent Numbers
Re 32,939 Re 32,940 4,696,289 4,721,101 Novamedix Ltd. 1994. All rights reserved.
In line with its policy of continuing product improvement, the Company maintains the right to change specifications without notice.

FEDERAL LAW RESTRICTS THIS DEVICE TO SALE
BY OR ON THE ORDER OF A PHYSICIAN

98574
ISS 5 JAN 1994



OPERATOR'S
INSTRUCTION MANUAL
FOR CONTROLLER AND
ACCESSORIES

CONTENTS

	Page
INTRODUCTION	3
KENDALL A-V IMPULSE SYSTEM	3
INDICATIONS FOR USE	4
CONTRAINDICATIONS	4
CONTROLLER	5
INSTALLATION	6
OPERATION OF THE A-V IMPULSE SYSTEM ACCESSORIES AND CONTROLLER	6
ALARM INDICATION AND CORRECTION	9
GENERAL USE NOTES	10
Patient and Skin Care	10
Cleaning	10
Fault Conditions	10
Routine Maintenance	11
Repair	11
Safety Note	11
SPECIFICATIONS	11
ORDERING INFORMATION	Back Cover

INTRODUCTION

The veins in the sole of the foot act as a very powerful natural blood pump during weightbearing and walking. On weightbearing, the veins in the foot are forcibly emptied into the deep veins of the leg. The blood flow generated is highly pulsatile and is so powerful that it can overcome a calf cuff inflated to 100 mmHg. This action alone is sufficient to return blood from the foot to the right atrium of the heart in the upright position. This important physiological process led to the design of the Kendall A-V Impulse System Controller and Accessories.

The A-V Impulse System® has been developed to mimic the natural effects of walking on the blood circulation in the feet and legs. For the patient who is immobile or partially mobile as a result of trauma, surgery or pathology, the system has been shown to prevent venous stasis and to increase substantially the circulation of blood in the lower extremities.

Venous stasis is accepted as being a major factor in the development of deep vein thrombosis and may prevent the complication-free recovery of the patient. The A-V Impulse System has been shown to be highly effective in increasing the circulation of blood in patients with restricted mobility. It provides great benefits by reducing pain and swelling after injury and surgery, prevents venous stasis and its sequelae and can assist in many indications where medical judgment assesses the need for improved blood circulation.

The maintenance of blood circulation in the lower extremities is essential in the immobile patient. The A-V Impulse System achieves this simply, safely and effectively.

KENDALL A-V IMPULSE SYSTEM

The A-V Impulse System is simple to use and consists of a controller connected by an air supply hose to a specially designed inflation pad – ImPad®.

The ImPad inflation pad is rapidly inflated by a controlled impulse of air from the controller. The ImPad is perforated on the foot contact side to provide skin ventilation. The controller automatically deflates the inflation pad after each impulse which is delivered approximately three times every minute.

To transfer the impulse pressure effectively to the foot, the ImPad inflation pad must be retained in the correct position. The ImPad is available in two configurations: a rigid sole foot cover and an under cast inflation pad which may be fitted inside an immobilization cast.

The system has built-in alarms to alert attention to fault conditions.

INDICATIONS FOR USE

The Kendall A-V Impulse System is safe and effective for the following indications. The proper duration of use for each indication is subject to the clinical judgment of the prescribing physician.

Recommended Guidelines are as follows:

Acute Edema

Continuous use until edema is reduced.

Chronic Edema

As required, but at least 4 hours per day.

Deep Vein Thrombosis Prophylaxis

Continuous use until the patient is fully ambulatory and weightbearing (not just mobilized).

Circulation Enhancement

For temporary impairments such as temporary trauma or disease conditions, continuous use until the condition is resolved. For chronic impairments, daily use depending on the severity of the patient's condition and activity.

Leg Ulcers

Continuous use until ulcer severity is reduced or physician recommends alternative therapy.

Leg Pain Incident to Trauma or Surgery

Continuous use until severity of pain is reduced or physician recommends alternative therapy.

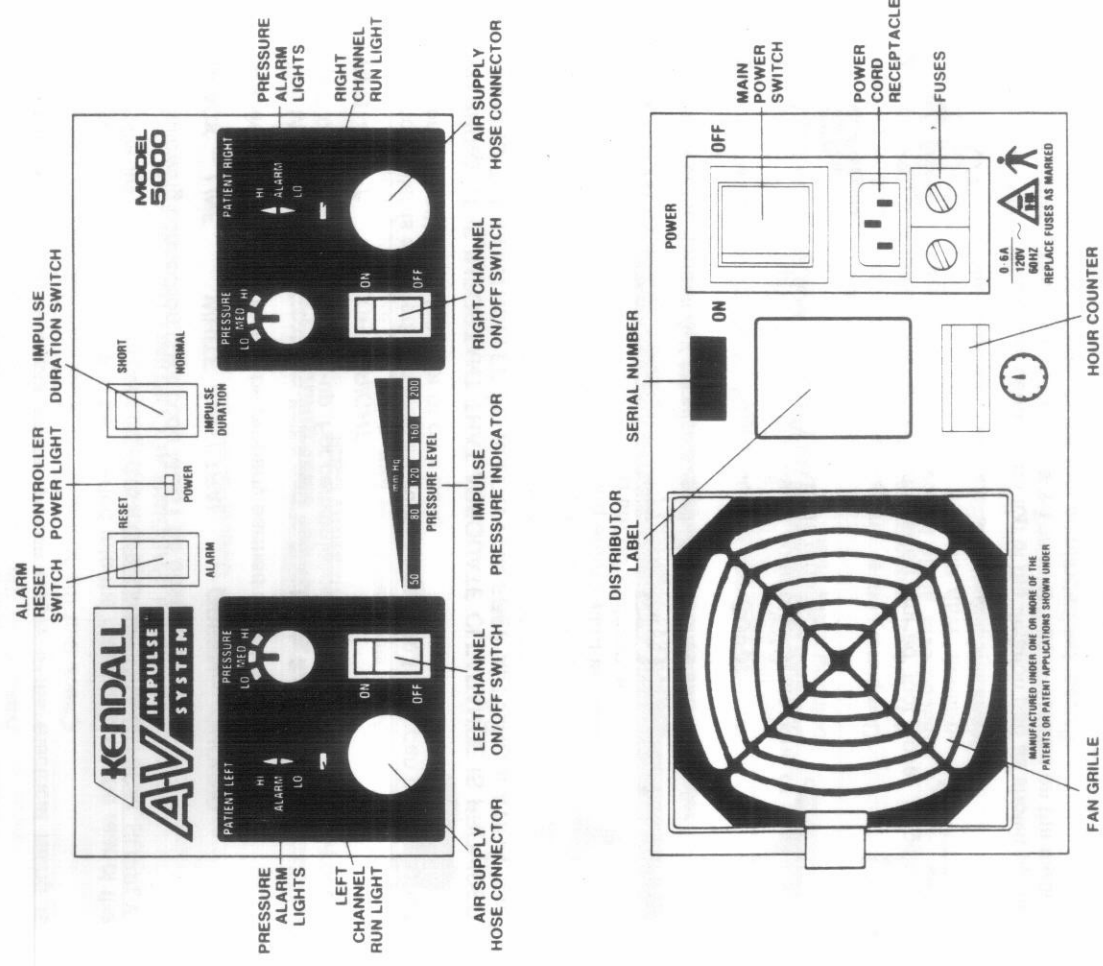
Venous Stasis/ Venous Insufficiency

For temporary impairments such as temporary trauma or disease conditions, continuous use until condition is resolved. For chronic impairments, daily use depending on the severity of the patient's condition and activity level.

CONTRAINDICATIONS

The A-V Impulse System is contraindicated for patients with conditions where an increase of fluid to the heart may be detrimental, patients with congestive heart failure and those with pre-existing deep vein thrombosis, thrombophlebitis or pulmonary embolism. The device should be used with caution on the infected or insensative extremity.

CONTROLLER



INSTALLATION

Controller

Check electrical rating on label on the rear of the unit.

WARNING: DO NOT connect to the power supply if the electrical rating is incorrect.

The power cord coupler should be inserted into the receptacle on the rear of the controller and the fitted plug connected to a GROUND ELECTRICAL SUPPLY.

The following connection color code MUST be observed:

BLACK – LINE WHITE – NEUTRAL GREEN – GROUND

WARNING: Controller MUST be properly earthed at all times.

The Model 5000 can treat two limbs and is fitted with independent controls for each channel for optimum set-up. For convenience the channels are color-coded:

RED – LEFT BLUE – RIGHT

The controller is supplied with long air supply hoses so that it can be positioned conveniently either on the floor or on a table.

WARNING: IT IS IMPORTANT THAT ADEQUATE CLEARANCE IS PROVIDED AROUND THE CONTROLLER TO ALLOW FOR FREE AIR CIRCULATION AND THAT THERE IS REASONABLE FREEDOM FROM DUST. DO NOT USE ON WET SURFACES.

OPERATION

Operation of the Kendall A-V Impulse System Accessories and Controller

A. Directions for ImPad® Rigid Sole Foot Cover

1



Apply T.E.D.* graduated compression stocking or stockinette over the foot and ankle as required.

Avoid wrinkles.

2



Select the appropriate sized ImPad foot cover (regular or large).

Red graphics – Left. Blue graphics – Right.

Place foot centrally on top of the inflation pad as shown by the graphics on the ImPad. The inlet tube should be on the medial side (inside) of the foot pointing to the rear.

CAUTION: THE INFLATION PAD MUST BE PLACED DIRECTLY UNDER THE ARCH OF THE FOOT.

3



Wrap the medial side (inside) of the foot cover over the top of the foot and then overlap the lateral side (outside) of the cover and secure with the fastener strap.

Next, wrap the rear strap around the back of the heel and secure in place with the fastener tab.

Check that the foot cover is fitted securely and the patient is comfortable.

WARNING: CHECK FOR SKIN IRRITATION AND USE ADDITIONAL PADDING ACCORDING TO CLINICAL JUDGMENT.

For Controller Directions see Section C.

B. Directions for ImPad® Under Cast Inflation Pad – for use with Immobilization Cast

1



Apply stockinette over foot, ankle and leg as required. Avoid wrinkles.

2



Select a cast pad.

Red graphics – Left. Blue graphics – Right.

Wrap Webriil® undercast padding around the foot. Place the foot centrally on the printed side of the inflation pad as shown by the graphics on the pad.

CAUTION: THE CAST INFLATION PAD MUST BE PLACED DIRECTLY UNDER THE ARCH OF THE FOOT.

3



With the inflation pad central under the arch, wrap the strap over the top of the foot and secure with the adhesive tab. The pad inlet tube should be on the medial side (inside) of the foot pointing to the rear.

4



Completely cover and secure the cast inflation pad in place with Webriil undercast padding. Ensure that extra padding is placed over ankle bones and on top of the foot to eliminate irritation. With the inlet tube exposed at least 3 inches, cast normally and ensure that the inside of the cast is smoothly finished and that the pad inlet tube is not obstructed.

CAUTION: DO NOT INFLATE CAST PAD UNTIL THE CAST IS FULLY HARDENED.

Use SHORT IMPULSE DURATION for casted limb.

For Controller Directions see Section C.

GENERAL USE NOTES

For optimum results, good priming of the veins in the foot is required. This is assisted by a slight degree (15°) of leg dependency.

Where optimum venous flow results are required it is recommended to use the A-V Impulse System in conjunction with T.E.D. thigh length graduated compression stockings.

PATIENT AND SKIN CARE

As with any treatment technique it is important regularly to check for patient comfort and compliance and to pay particular attention to skin care and hygiene.

It is recommended that after a few hours use to check that the impulse is felt directly under the arch of the foot, and that the foot cover fits snugly and is comfortable and that there are no skin pressure problems. If not, make the necessary corrections.

Regularly remove the foot cover, T.E.D. graduated compression stocking or stockinette to check skin condition.

WARNING: Special attention, additional padding and checking every shift change should be given to patients with poor circulation, fragile skin, insensitive extremities, diabetes and those who may be predisposed to tissue viability problems, including those receiving anticoagulation therapy. To minimise pressure effects reduce the IMPULSE PRESSURE and set the IMPULSE DURATION to SHORT. Check for skin reddening and any early signs which may lead to tissue viability problems and use additional padding or discontinue treatment according to clinical judgment.

CLEANING

ImPad Rigid Sole Foot Cover

The foot covers are supplied in individually sealed packages. They are for single use only and are not reusable.

Controller

Cleaning can be carried out using a mild soap solution, antiseptic or disinfectant wipes.

WARNING: Before beginning cleaning procedures, the equipment MUST BE switched OFF and UNPLUGGED from the power supply. Care should be taken to avoid excessive moisture on the controller case. NO solvent based cleaning materials should be used.

FAULT CONDITIONS

Unit does not operate when POWER switch is ON and power light does not illuminate:

CHECK – There is electrical supply to the unit.

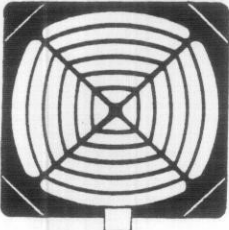
CHECK – Fuses on rear panel and replace.

Screw-in fuse holders are incorporated in the power cord input socket. Fuse values are given on the voltage rating label. Observe strictly these fuse values.

WARNING: IMPORTANT SAFETY NOTE

The changing of fuses and removal of covers must only be carried out by qualified personnel. Beware of electrical shocks, switch off unit and disconnect from power supply before cleaning, maintenance and repair.

ROUTINE MAINTENANCE



Fan Filter

The fan filter is removed by pulling the tab provided.

Remove the foam filter and replace with a clean filter.

IMPORTANT. The fan filter must be replaced at least every two weeks and inspected regularly.

CAUTION. Failure to replace the fan filter regularly may affect performance of the controller.

REPAIR

In the event of any problem occurring with this equipment, contact your local representative for proper return procedure and prompt replacement or call Kendall Customer Service at 1-800-421-8268.

The company considers itself responsible for the effects of safety, reliability and performance only if readjustments, modifications or repairs are carried out by the Kendall Service Department, and the equipment is used in accordance with the Instruction Manual.

SAFETY NOTE

DANGER: This system is not explosion proof and must not be used in the presence of flammable anesthetics or other gases.

DANGER: This system should not be used on wet surfaces, nor while the patient is bathing or otherwise in contact with water.

DANGER: Switch off unit and disconnect from power supply before cleaning, maintenance and repair.

SPECIFICATIONS

All values stated are nominal.

A-V System Controller

Height: 6.2in (15.8cm) overall Depth: 10.2in (26.0cm) overall
Width: 9.2in (23.3cm) Weight: 10.3lb (4.7kg)

Electrical Supply: 120V 0.6A 60Hz

Fuses: T630mA x 20mm (Antisurge)

The Controller is tested to UL Specification 544. Testing performed by ETL Cortland, NY.

Performance

Cycle Time: Controller delivers approx. 3 impulses/min

Inflate Time: 50-350ms

Inflation Hold Time: 1 sec short duration, 3.5 sec long duration

Output Impulse LO - 90mm Hg, MED - 130mm Hg, HI - 170mm Hg

Pressure Control:

Operating Limits: Temperature and Humidity + 15 to 35°C/45% to 75% RH